

REQUEST NUMBER: 10-2014

NATIONAL LABORATORY

These Samples are on:

LANL Request Number:10-2014

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

according to the schedule indicated:

TURNAROUND/REPORT DUE: 3/25/2010

TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

Signature:

PRIORITY	METHOD CODE	QNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS

EPA:901.1			
1	RE15-10-8013	R	2/18/2010
1	RE15-10-8014	R	2/18/2010
1	RE15-10-8015	R	2/18/2010
1	RE15-10-8016	R	2/18/2010
1	RE15-10-8017	R	2/18/2010
1	RE15-10-8018	R	2/18/2010
1	RE15-10-8019	R	2/18/2010
1	RE15-10-8020	R	2/18/2010
1	RE15-10-8021	R	2/18/2010

Tuesday, February 23, 2010

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PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:901.1		1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	
		1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8065	R	2/18/2010	
		1	RE15-10-8066	R	2/18/2010	
		1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	
		1	RE15-10-8016	R	2/18/2010	
		1	RE15-10-8017	R	2/18/2010	
		1	RE15-10-8018	R	2/18/2010	
		1	RE15-10-8019	R	2/18/2010	
EPA:906.0		1	RE15-10-8020	R	2/18/2010	
		1	RE15-10-8021	R	2/18/2010	
		1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	
		1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8065	R	2/18/2010	
		1	RE15-10-8066	R	2/18/2010	
		1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	
		1	RE15-10-8016	R	2/18/2010	
		1	RE15-10-8017	R	2/18/2010	
HASL-300:AM-241		1	RE15-10-8018	R	2/18/2010	
		1	RE15-10-8019	R	2/18/2010	
		1	RE15-10-8020	R	2/18/2010	
		1	RE15-10-8021	R	2/18/2010	
		1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	
		1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8065	R	2/18/2010	
		1	RE15-10-8066	R	2/18/2010	
		1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	

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PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:AM-241						
1		1	RE15-10-8016	R	2/18/2010	
1		1	RE15-10-8017	R	2/18/2010	
1		1	RE15-10-8018	R	2/18/2010	
1		1	RE15-10-8019	R	2/18/2010	
1		1	RE15-10-8020	R	2/18/2010	
1		1	RE15-10-8021	R	2/18/2010	
1		1	RE15-10-8022	R	2/18/2010	
1		1	RE15-10-8023	R	2/18/2010	
1		1	RE15-10-8024	R	2/18/2010	
1		1	RE15-10-8025	R	2/18/2010	
HASL-300:ISOPU						
1		1	RE15-10-8013	R	2/18/2010	
1		1	RE15-10-8014	R	2/18/2010	
1		1	RE15-10-8015	R	2/18/2010	
1		1	RE15-10-8016	R	2/18/2010	
1		1	RE15-10-8017	R	2/18/2010	
1		1	RE15-10-8018	R	2/18/2010	
1		1	RE15-10-8019	R	2/18/2010	
1		1	RE15-10-8020	R	2/18/2010	
1		1	RE15-10-8021	R	2/18/2010	
1		1	RE15-10-8022	R	2/18/2010	
1		1	RE15-10-8023	R	2/18/2010	
1		1	RE15-10-8024	R	2/18/2010	
1		1	RE15-10-8025	R	2/18/2010	
1		1	RE15-10-8026	R	2/18/2010	
1		1	RE15-10-8033	R	2/18/2010	
1		1	RE15-10-8065	R	2/18/2010	
1		1	RE15-10-8066	R	2/18/2010	
1		1	RE15-10-8066	R	2/18/2010	
1		1	RE15-10-8013	R	2/18/2010	
1		1	RE15-10-8014	R	2/18/2010	
1		1	RE15-10-8015	R	2/18/2010	
1		1	RE15-10-8016	R	2/18/2010	
1		1	RE15-10-8017	R	2/18/2010	
1		1	RE15-10-8018	R	2/18/2010	
1		1	RE15-10-8019	R	2/18/2010	
1		1	RE15-10-8020	R	2/18/2010	
1		1	RE15-10-8021	R	2/18/2010	
1		1	RE15-10-8022	R	2/18/2010	
1		1	RE15-10-8023	R	2/18/2010	
1		1	RE15-10-8024	R	2/18/2010	
1		1	RE15-10-8025	R	2/18/2010	
1		1	RE15-10-8026	R	2/18/2010	

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PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOU		1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8065	R	2/18/2010	
		1	RE15-10-8066	R	2/18/2010	
		1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	
		1	RE15-10-8016	R	2/18/2010	
		1	RE15-10-8017	R	2/18/2010	
		1	RE15-10-8018	R	2/18/2010	
		1	RE15-10-8019	R	2/18/2010	
		1	RE15-10-8020	R	2/18/2010	
		1	RE15-10-8021	R	2/18/2010	
		1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	
		1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8065	R	2/18/2010	
		1	RE15-10-8066	R	2/18/2010	

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LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2014

LOS ALAMOS

REQUEST NUMBER: 10-2014

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/25/2010

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
RE15-10-8019	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8019	1	POLY	H3	Ice	R
RE15-10-8013	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8013	1	POLY	H3	Ice	R
RE15-10-8026	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8026	1	POLY	H3	Ice	R
RE15-10-8017	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8017	1	POLY	H3	Ice	R
RE15-10-8025	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8025	1	POLY	H3	Ice	R
RE15-10-8022	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8022	1	POLY	H3	Ice	R
RE15-10-8014	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8014	1	POLY	H3	Ice	R
RE15-10-8023	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8023	1	POLY	H3	Ice	R
RE15-10-8020	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8020	1	POLY	H3	Ice	R
RE15-10-8018	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8018	1	POLY	H3	Ice	R
RE15-10-8015	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8015	1	POLY	H3	Ice	R
RE15-10-8021	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8021	1	POLY	H3	Ice	R
RE15-10-8024	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8024	1	POLY	H3	Ice	R
RE15-10-8018	1	POLY	AM241+GS+ISOPU+ISO U	None	R

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LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2014

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-8016	1	POLY	H3	Ice	R
RE15-10-8065	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8065	1	POLY	H3	Ice	R
RE15-10-8066	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8066	1	POLY	H3	Ice	R
RE15-10-8033	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8033	1	POLY	H3	Ice	R

Relinquished By:

Date Time

Received By:

Date

Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8014

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/18/2010	MEDIA:		OBT3
TIME COLLECTED (HH:MM)		1152	SUB-MEDIA:		TUFF 1
PRS ID:	15-008(b)	ok	SAMPLE TECH CODE:		HA
LOCATION ID:	15-610776	↓	FIELD QC TYPE:		NA
LOCATION TYPE:	GENERIC	↓	FIELD PREP:		NA
TOP DEPTH:	0	1.0	SAMPLE USAGE:		INV
BOTTOM DEPTH:	0	2.0	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	R	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA	WATER FLOWING: YES/NO/NA		
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA	BOREHOLE DIRECTION: NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10 LC	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown dry tuff and black ash

SAMPLE COMMENTS:

Tuff at 1.5 ft

LOCATION DESC:

8b-23

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 33 dpm
Beta/Gamma \leq 2250 dpm

PID $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{0.1}$ ppm

COLLECTED BY (PRINT)

T. McFarland

REVIEWED BY (PRINT) Jon Roberson

RELINQUISHED BY (Printed Name) Jon Roberson (Signature) Jon Roberson	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) (Signature) [Signature]	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8013

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:	QBT3		SED
TIME COLLECTED (HH:MM)		12:11:45		SUB-MEDIA:	TUFF 1		NA
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	15-610776			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	SED		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	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10 LC	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:

moist dark brown silty sand

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-23, drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 5 dpm
Beta/Gamma \leq 2220 dpm

HE neg.
PID $\frac{\text{Ambient Reading}}{0.1} = \frac{0.0}{0.1}$ ppm

COLLECTED BY (PRINT)

TLMCFarlane

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Jon Roberson (Signature) <i>[Signature]</i>	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) <i>[Signature]</i> (Signature) <i>[Signature]</i>	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8015

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		1209		SUB-MEDIA:		TUFF 1	
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610777	↓		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	SED		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	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10 de	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:

Frozen dark brown sand, tuff fragments, pine needles

SAMPLE COMMENTS:

Tuff at 0.5 ft 12m 2/18/10

LOCATION DESC:

8b-15, drainage

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha \leq 5 dpm
Beta/Gamma \leq 1762 dpm

PID $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{0.2}$ ppm

COLLECTED BY (PRINT)

J. McFarland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Jon Roberson (Signature) <i>[Signature]</i>	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) <i>[Signature]</i> (Signature) <i>[Signature]</i>	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8016

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:	OBT3		Allh
TIME COLLECTED (HH:MM)		1215		SUB-MEDIA:	TUFF 1		NA
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	15-610777	↓		FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		↓
TOP DEPTH:	0	0.5	1.1m	SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	2.0	2/18/10	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	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10 2e	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown silty sand and clay

FR: RE15-10-8086

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-15, drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 22 dpm
Beta/Gamma \leq 2100 dpm

PID $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{0.3}$ ppm

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Jon Roberson (Signature) <i>Jon Roberson</i>	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) (Signature) <i>Geoffrey S</i>	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8017

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		1317		SUB-MEDIA:		TUFF1	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610778	↓		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	SED		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	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10 XC	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:

moist dark brown sand

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-4, drainage

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha = 27 dpm

Beta/Gamma = 3560 dpm

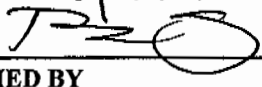
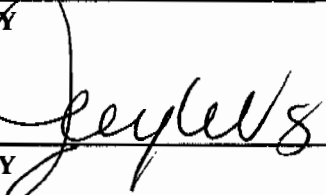
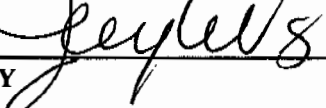
PID $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{0.0}$ ppm

COLLECTED BY (PRINT)

Th McFarlane

REVIEWED BY (PRINT)

Larry A Lopez

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name)  (Signature) 	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8018

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:	OBT3		SED
TIME COLLECTED (HH:MM)		1339		SUB-MEDIA:	TUFF 1		NA
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	15-610778	↓		FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		↓
TOP DEPTH:	0	1.0		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	2.0		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	SED		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	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10 LC	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:

moist dark brown silty sand, roots

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-4 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 16 dpm
Beta/Gamma = 3980 dpm

PID $\frac{\text{Ambient Reading}}{0.0} = 0.0$ ppm

COLLECTED BY (PRINT)

JLM of Farland

REVIEWED BY (PRINT)

Larry A. Lopez

RELINQUISHED BY (Printed Name) <i>Riley G. Jones</i> (Signature) <i>[Signature]</i>	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) <i>[Signature]</i> (Signature) <i>[Signature]</i>	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8019

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/18/2010	MEDIA:		QBT3
TIME COLLECTED (HH:MM)		1320	SUB-MEDIA:		TUFF 1
PRS ID:	15-008(b)	ok	SAMPLE TECH CODE:		HA
LOCATION ID:	15-610779	↓	FIELD QC TYPE:		NA
LOCATION TYPE:	GENERIC	↓	FIELD PREP:		NA
TOP DEPTH:	0	0.0	SAMPLE USAGE:		INV
BOTTOM DEPTH:	0	0.5	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA	WATER FLOWING: YES/NO/NA		
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA	BOREHOLE DIRECTION: NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10 Xc	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:

Light brown and dark brown sandy silt

SAMPLE COMMENTS:

Tuff at 6 in

LOCATION DESC: 8b-24

FIELD SCREENING/MEASUREMENT RESULTS:

HE = neg

Alpha \leq 19 dpm
Beta/Gamma \leq 2410 dpmPID $\frac{\text{Ambient Reading}}{0.0} = 0.0$ ppm

COLLECTED BY (PRINT)

Theresa Farland

REVIEWED BY (PRINT) Loney A. Lopez

RELINQUISHED BY (Printed Name) Loney A. Lopez (Signature) [Signature]	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) [Signature] (Signature) [Signature]	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8020

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		1327		SUB-MEDIA:		TUFF 1	
PRS ID: 15-008(b)		OK		SAMPLE TECH CODE:		HA	
LOCATION ID: 15-610779		↓		FIELD QC TYPE:		NA	
LOCATION TYPE: GENERIC		↓		FIELD PREP:		NA	
TOP DEPTH: 0		1.0		SAMPLE USAGE:		INV	
BOTTOM DEPTH: 0		2.0		SCREEN/PORT DESC:		NA	
FIELD MATRIX: R		R		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			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	y	
1		H3	500 ML POLY	Ice	y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10	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:

Light brown weathered
tuff, weather roots
73m 2/18/10

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-24

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 44 dpm
Beta/Gamma = 2340 dpm

PID $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{0.1} \text{ ppm}$

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

LARRY A. LOPEZ

RELINQUISHED BY (Printed Name) Riley Swens (Signature)	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) (Signature)	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8021

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA: OBT3		Allh	
TIME COLLECTED (HH:MM)		1404		SUB-MEDIA: TUFF 1		NA	
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE: HA		OK	
LOCATION ID:	15-610780	↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE:	GENERIC	↓		FIELD PREP: NA		↓	
TOP DEPTH:	0	0.0		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH:	0	0.5		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10 RC	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, tuff fragments

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-26

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha \leq 11 dpmBeta/Gamma \leq 2170 dpmPID $\frac{\text{Ambient}}{\text{Reading}} \frac{0.0}{0.0}$ ppm

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT)

Lacey A Lopez

RELINQUISHED BY (Printed Name) Riley Ewings (Signature) [Signature]	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) [Signature] (Signature) [Signature]	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8022

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/18/2010	MEDIA:	OBT3	ok
TIME COLLECTED (HH:MM)		1410	SUB-MEDIA:	TUFF1	L
PRS ID:	15-008(b)	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	15-610780	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	1.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	2.0	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	R	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	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10 RC	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:

Gray tuff, some roots

FR: RE15-10-8088

SAMPLE COMMENTS:

Tuff at 1.0 ft

LOCATION DESC:

8b-26

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \pm 27 dpm
Beta/Gamma \pm 2270 dpm

PID $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{0.0}$ ppm

COLLECTED BY (PRINT)

JLMcFarland

REVIEWED BY (PRINT)

Larry A. Lopez

RELINQUISHED BY (Printed Name) Riley Wans (Signature) [Signature]	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) [Signature] (Signature) [Signature]	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8023

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/18/2010	MEDIA:		OBT3
TIME COLLECTED (HH:MM)		1424	SUB-MEDIA:		TUFF 1
PRS ID:	15-008(b)	OK	SAMPLE TECH CODE:		HA
LOCATION ID:	15-610781	↓	FIELD QC TYPE:		NA
LOCATION TYPE:	GENERIC	↓	FIELD PREP:		NA
TOP DEPTH:	0	0.0	SAMPLE USAGE:		INV
BOTTOM DEPTH:	0	0.5	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA	WATER FLOWING: YES/NO/NA		

BOREHOLE: YES/NO/NA BOREHOLE DECLINATION: NA BOREHOLE DIRECTION: NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+ClO4+C N	1 GAL POLY liter 1/11/10	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:

moist brown silty sand, roots

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-14

FIELD SCREENING/MEASUREMENT RESULTS:

HE neg

Alpha \leq 11 dpm
Beta/Gamma \leq 2000 dpm

PID $\frac{\text{Ambient Reading}}{\text{Reading}} = \text{ppm}$

COLLECTED BY (PRINT)

JLMcFarland

REVIEWED BY (PRINT)

Larry A. Lopez

RELINQUISHED BY (Printed Name) Riley Evans (Signature) <i>[Signature]</i>	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) <i>[Signature]</i> (Signature) <i>[Signature]</i>	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8024

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		1435		SUB-MEDIA:		TUFF1	
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610781	↓		FIELD QC TYPE:		NA	
LOCATION TYPE:	GENERIC	↓		FIELD PREP:		NA	
TOP DEPTH:	0	1.0		SAMPLE USAGE:		INV	
BOTTOM DEPTH:	0	2.0		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	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10 LC	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:

moist brown silty clay

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-14

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 22 dpm
Beta/Gamma \leq 2060 dpm

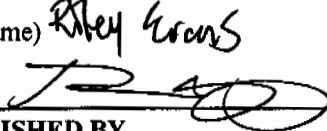
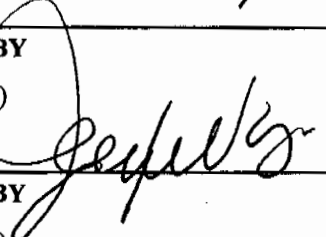
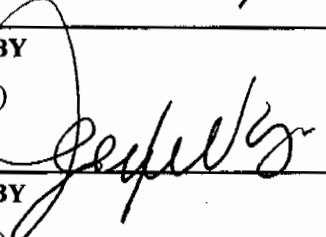
PID $\frac{\text{Ambient Reading}}{0.0}$ 0.0 ppm

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Grey A. Lopez

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name)  (Signature) 	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8025

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		OBT3	
TIME COLLECTED(HH:MM)		1504		SUB-MEDIA:		TUFF 1	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610782	↓		FIELD QC TYPE:		NA	
LOCATION TYPE:	GENERIC	↓		FIELD PREP:		NA	
TOP DEPTH:	0	0.0		SAMPLE USAGE:		INV	
BOTTOM DEPTH:	0	0.5		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10 PC	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:

moist brown silty sand, some clay

FD: RE15-10-8066

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-12

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

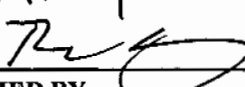
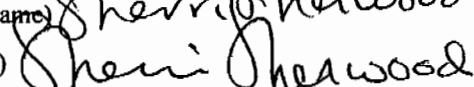
Alpha \pm 22 dpmBeta/Gamma \pm 180 dpmPID $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{0.0}$ ppm

COLLECTED BY (PRINT)

TLMCFarland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) Sherri Shearwood (Signature) 	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8026

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:	QBT3		Allh
TIME COLLECTED (HH:MM)		1515		SUB-MEDIA:	TUFF 1		NA
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	15-610782			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0	1.0		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	2.0		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	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10	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 slightly moist silty clay

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-12

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 0 dpm
Beta/Gamma \leq 200 dpm

PID $\frac{\text{Ambient}}{\text{Reading}} \frac{0.0}{0.0}$ ppm

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT) Jon Roberson

RELINQUISHED BY (Printed Name) Ricky Wans (Signature) <i>[Signature]</i>	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) Sherrif Sherwood (Signature) <i>[Signature]</i>	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8033

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		1055		SUB-MEDIA:		TUFF 1	
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:		HA	
LOCATION ID:	UNK	15-610773		FIELD QC TYPE:		NA	
LOCATION TYPE:	GENERIC	OK		FIELD PREP:		NA	
TOP DEPTH:	0	0.0		SAMPLE USAGE:		INV	
BOTTOM DEPTH:	0	0.8		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	SED		EXCAVATED: YES/NO/NA		NA	
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA		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	250 ML AMBER GLASS	Ice	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY Lter 1/11/10 LC	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: QC sample of RE15-10-8007
Brown merist silty sand

SAMPLE COMMENTS: NA

LOCATION DESC: 8b-10 drainage HE neg

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 22 dpm
Beta/Gamma \leq 2010 dpm

PID $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{0.0}$ ppm

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT) Jen Roberson

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy Z	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) (Signature) [Signature]	Date/Time 2/16/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8065

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/18/2010	MEDIA:		QBT3
TIME COLLECTED (HH:MM)		1307	SUB-MEDIA:		TUFF 1
PRS ID:	15-008(b)	OK	SAMPLE TECH CODE:		HA
LOCATION ID:	UNK	15-G10717	FIELD QC TYPE:		ED
LOCATION TYPE:	GENERIC	OK	FIELD PREP:		NA
TOP DEPTH:	0	0.0	SAMPLE USAGE:		QC
BOTTOM DEPTH:	0	0.5	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	SED	EXCAVATED: YES/NO		NA
COMPOSITE TYPE:		NA	COMPOSITE TIME INTERVAL:		NA
			WATER FLOWING: YES/NO		NA
BOREHOLE: YES/NO		NA	BOREHOLE DECLINATION:		NA
			BOREHOLE DIRECTION:		NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+NMED-HEXP	250 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 liter 1/11/10 OK	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: QC Sample of RE15-10-7895

Brown sand, roots

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-17 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative


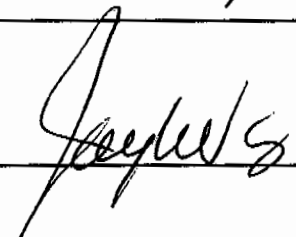
Alpha \leq 27 dpm
Beta/Gamma \leq 2130 dpmPID $\frac{\text{Ambient Reading}}{2.0} = 0.0$ ppm

COLLECTED BY (PRINT)

ThMcFarland

REVIEWED BY (PRINT)

Lacey A. Lopez

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) (Signature) 	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8066

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA: OBT3		A 11h	
TIME COLLECTED(HH:MM)		1504		SUB-MEDIA: TUFF 1		NA	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID:	UNK	15-610782		FIELD QC TYPE: ED		↓	
LOCATION TYPE:	GENERIC	ok		FIELD PREP: NA		↓	
TOP DEPTH:	0	0.0		SAMPLE USAGE: QC		↓	
BOTTOM DEPTH:	0	0.5		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	B	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	250 ML AMBER GLASS	Ice	Y	
1		H3	1 LITER POLY	None	Y	
1		Met+U+CLO4+C N	1 EA 8 IN RESEALABLE POLY BAG	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: QC Sample of RE15-10-8025

moist brown silty sand, some clay

SAMPLE COMMENTS:

NA

LOCATION DESC: 8b-12

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 22 dpm
Beta/Gamma \leq 1810 dpm

PID $\frac{\text{Ambient}}{\text{Reading}} \frac{0.0}{0.0}$ ppm

COLLECTED BY (PRINT)

T. McFarland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Riley Gouns (Signature)	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) Sherri Sherwood (Signature)	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8086

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010	MEDIA:	NA		ok	
TIME COLLECTED (HH:MM)		1240	SUB-MEDIA:	OTHER			
PRS ID:	15-008(b)	ok	SAMPLE TECH CODE:	DC			
LOCATION ID:	UNK	15-G10777	FIELD QC TYPE:	ER			
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 RE15-10-8016

SAMPLE COMMENTS:

FTB Rinsate
T3m 2/18/10

LOCATION DESC:

NA

FIELD SCREENING/MEASUREMENT RESULTS:

NA

Alpha = ~~73m 2/18/10~~ dpm
Beta/Gamma = ~~73m 2/18/10~~ dpmPID ~~Ambient Reading~~ = ppm 73m 2/18/10

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) TL McFarland (Signature) Tracy T.	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) Sherrishenwood (Signature) Sherrishenwood	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8088

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:	NA		ok
TIME COLLECTED (HH:MM)		1420		SUB-MEDIA:	OTHER		
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:	DC		
LOCATION ID:	UNK	15-G10780		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 RE15-10-8022

SAMPLE COMMENTS:

Rinsate

LOCATION DESC:

NA

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = ~~NA~~ dpm ^{NA}
 Beta/Gamma = ~~NA~~ dpm ^{NA}

PID ^{Ambient} Reading = ppm

COLLECTED BY (PRINT)

TL-McFarland

REVIEWED BY (PRINT)

Laney A. Lopez

RELINQUISHED BY (Printed Name) TL-McFarland (Signature) Tracy R. T.	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) Sherrish Sherwood (Signature) Sherrish Sherwood	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2499

EVENT NAME: 4th Qtr. FY09 - SWMU 15-008(b) - Threemile Canyon

SAMPLE ID: RE15-10-8089

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:	NA		OK
TIME COLLECTED (HH:MM)		1042		SUB-MEDIA:	OTHER		
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:	DC		
LOCATION ID:	UNK	15-6107H		FIELD QC TYPE:	ER		
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	NO	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

RE15-10-8004

SAMPLE COMMENTS:

Rinsate

LOCATION DESC:

NA

FIELD SCREENING/MEASUREMENT RESULTS:

NA

Alpha = ~~dpm~~ 12m 2/18/10
Beta/Gamma = ~~dpm~~PID ~~Ambient Reading~~ = ppm 72m 2/18/10

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) <i>Tracy Z...</i>	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) <i>Sheri Sherwood</i>	Date/Time 2/18/10 1650
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):

RE15-10-7893

7894

8001

8002

8003

8004

8005

8006

8009

8010

8007

8008

RE15-10-8011

8012

8013

8014

8015

8016

7895

7896

8017

8018

8019

8020

7897

RE15-10-7898

8021

8022

8023

8024

7899

7900

8025

8026

8066

8065

8033

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):

RE15-10-8086

8088

8089

Reason: Rinsate

Print Last Name McFarland

Signature Tracy Zint

Date 2/18/10



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00062

Client Sample ID: RE15-10-8013

Sample Collection Date: 02/18/10 11:45

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00062-001

Date Received: 02/19/10 00:00

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	24.49	25.95	37.39	26.12		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	43.59	15.63	18.23	16.51		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.04	43.78	0.14	43.78		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	21.40	12.31	3.59	12.33		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.15	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.13	0.28	0.15	0.28		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.56	0.34	0.08	0.34		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.50	-2.18	0.38	-2.18		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.15	0.50	0.15	0.50		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	0.81	0.58	0.37	0.58		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.87	1.23	0.61	1.23		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	13.23	5.36	1.73	6.15		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.04	0.25	0.14	0.25		pCi/g	EPA 901.1M	2/22/2010	NP	N/A

NOTES: % Moisture: 2.39

M. J. Edley
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: ARS2-10-00062

Request or PO Number:

Client Sample ID: RE15-10-8014

ARS Sample ID: ARS2-10-00062-002

Sample Collection Date: 02/18/10 11:52

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	14.40	20.52	34.06	20.59		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	20.94	12.78	17.92	13.03		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.04	43.11	0.14	43.11		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	2.71	7.30	3.32	7.30		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.08	0.12	0.14	0.12		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	-0.05	41.91	0.10	41.91		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.00	36.95	0.08	36.95		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	0.30	0.35	0.37	0.35		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.43	0.54	0.15	0.54		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	0.14	0.36	0.36	0.36		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.85	0.80	0.45	0.80		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	4.18	5.06	2.15	5.15		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	-0.04	-0.41	0.12	-0.41		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 0.67										

Matthew J. Edler
Quality Assurance Review

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

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: ARS2-10-00062

Request or PO Number:

Client Sample ID: RE15-10-8015

ARS Sample ID: ARS2-10-00062-003

Sample Collection Date: 02/18/10 12:09

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	17.26	21.39	32.75	21.50		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	77.63	19.44	18.31	21.64		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.03	35.80	0.11	35.80		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	20.25	7.79	1.23	7.82		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.10	0.12	0.12	0.12		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.07	0.09	0.11	0.09		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.42	0.26	0.07	0.26		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	0.05	0.09	0.31	0.09		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	0.74	0.37	0.12	0.37		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	1.15	0.88	0.30	0.89		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	2.28	1.08	0.52	1.09		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	7.80	4.08	1.51	4.45		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.06	0.23	0.12	0.23		pCi/g	EPA 901.1M	2/22/2010	NP	N/A

NOTES: % Moisture: 4.14

Matthew L. Eden
Quality Assurance Review

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

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NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00062

Client Sample ID: RE15-10-8016

Sample Collection Date: 02/18/10 12:13

Sample Matrix: Soil/Solid

Request or PO Number:

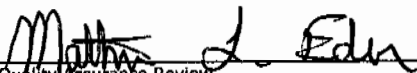
ARS Sample ID: ARS2-10-00062-004

Date Received: 02/19/10 00:00

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	23.52	24.07	33.91	24.24		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	34.55	14.55	17.73	15.15		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	0.04	0.16	0.13	0.16		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	28.71	9.85	1.39	9.88		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.08	0.11	0.13	0.11		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.25	0.22	0.10	0.22		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.00	0.00	0.08	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.54	156.01	0.35	156.01		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.12	0.49	0.16	0.49		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	1.91	0.86	0.34	0.86		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.42	0.38	0.42	0.38		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	3.60	3.47	1.50	3.57		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.00	-0.14	0.09	-0.14		pCi/g	EPA 901.1M	2/22/2010	NP	N/A

NOTES: % Moisture: 1.22


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: ARS2-10-00062

Client Sample ID: RE15-10-8017

Sample Collection Date: 02/18/10 13:17

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00062-005

Date Received: 02/19/10 00:00

Report Date: 02/22/10 14:25

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	29.37	27.79	37.46	28.02		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	95.03	20.48	18.42	23.55		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.03	30.58	0.10	30.58		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	19.54	8.03	1.67	8.05		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.05	0.11	0.14	0.11		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.00	0.00	0.06	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.41	135.26	0.30	135.26		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	0.93	0.38	0.12	0.39		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	1.07	0.86	0.36	0.86		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	1.40	1.15	0.57	1.16		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	48.91	8.17	2.20	13.84		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.67	0.69	0.27	0.69		pCi/g	EPA 901.1M	2/22/2010	NP	N/A

NOTES: % Moisture: 2.31

Matthew J. Edin
Quality Assurance Review

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ARS Sample Delivery Group: ARS2-10-00062

Request or PO Number:

Client Sample ID: RE15-10-8018

ARS Sample ID: ARS2-10-00062-006

Sample Collection Date: 02/18/10 13:39

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	9.75	18.43	34.06	18.47		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	66.88	17.68	17.92	19.48		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.04	44.91	0.14	44.91		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	0.94	4.98	2.68	4.98		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.09	0.18	0.15	0.18		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.38	0.24	0.11	0.24		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.02	0.04	0.09	0.04		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.59	-3.11	0.41	-3.11		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.93	0.64	0.17	0.64		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	3.61	1.25	0.38	1.25		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	2.06	1.30	0.68	1.30		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	43.49	7.76	1.97	12.61		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.20	0.48	0.24	0.48		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 1.93										

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Quality Assurance Review

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ARS Sample Delivery Group: ARS2-10-00062

Client Sample ID: RE15-10-8019

Sample Collection Date: 02/18/10 13:20

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00062-007

Date Received: 02/19/10 00:00

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	17.26	21.39	32.75	21.50		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	45.07	16.17	18.31	17.08		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.05	52.03	0.17	52.03		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	30.52	11.54	1.79	11.57		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.17	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	-0.07	50.59	0.12	50.59		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.36	0.30	0.10	0.30		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.08	-0.15	0.47	-0.15		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	0.86	0.54	0.22	0.54		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	1.32	1.18	0.44	1.18		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	1.14	0.85	0.64	0.85		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	7.04	4.82	1.89	5.09		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.07	0.23	0.13	0.23		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 1.66										

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ARS Sample Delivery Group: ARS2-10-00062

Request or PO Number:

Client Sample ID: RE15-10-8020

ARS Sample ID: ARS2-10-00062-008

Sample Collection Date: 02/18/10 13:27

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	18.91	22.31	33.89	22.43		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	42.25	15.42	17.91	16.27		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.04	42.91	0.14	42.91		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	17.38	12.48	3.82	12.49		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.14	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.22	0.16	0.10	0.16		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.05	0.10	0.08	0.10		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	0.01	0.02	0.37	0.02		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.56	0.63	0.23	0.63		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	0.86	0.48	0.36	0.48		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.89	0.59	0.51	0.59		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	4.04	4.13	1.76	4.23		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.47	0.40	0.15	0.40		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 0.53										


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ARS Sample Delivery Group: ARS2-10-00062

Request or PO Number:

Client Sample ID: RE15-10-8021

ARS Sample ID: ARS2-10-00062-009


Sample Collection Date: 02/18/10 14:04

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	-0.22	14.30	37.46	14.30		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	40.79	15.04	18.42	15.84		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.04	46.56	0.13	46.56		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	25.36	9.95	1.60	9.97		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.16	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.28	0.18	0.13	0.18		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.54	0.34	0.09	0.34		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.60	-2.94	0.42	-2.94		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.58	0.60	0.17	0.60		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	1.71	0.90	0.39	0.90		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.50	0.39	0.53	0.39		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	4.93	3.82	1.69	3.99		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.03	0.14	0.08	0.14		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 1.49										


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ARS Sample Delivery Group: ARS2-10-00062

Request or PO Number:

Client Sample ID: RE15-10-8022

ARS Sample ID: ARS2-10-00062-010

Sample Collection Date: 02/18/10 14:10

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	5.17	16.04	34.07	16.06		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	25.34	13.23	18.08	13.59		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.05	46.87	0.15	46.87		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	36.33	11.95	1.62	11.99		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.16	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	-0.06	45.57	0.11	45.57		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.05	0.17	0.10	0.17		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	0.29	0.35	0.41	0.35		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.49	0.63	0.18	0.63		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	1.55	1.32	0.39	1.32		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.04	0.07	0.61	0.07		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	10.62	5.23	1.73	5.76		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.16	0.20	0.09	0.20		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 0.34										

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ARS Sample Delivery Group: ARS2-10-00062
 Client Sample ID: RE15-10-8023
 Sample Collection Date: 02/18/10 14:24
 Sample Matrix: Soil/Solid

Request or PO Number:
 ARS Sample ID: ARS2-10-00062-011
 Date Received: 02/19/10 00:00
 Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	17.26	21.39	32.75	21.50		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	36.70	15.22	18.31	15.87		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	0.04	0.14	0.12	0.14		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	0.00	972.02	2.18	972.02		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.12	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.25	0.16	0.10	0.16		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.21	0.19	0.07	0.19		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	0.58	0.48	0.32	0.48		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.42	0.50	0.15	0.51		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	0.00	136.13	0.31	136.13		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	-0.11	-0.48	0.46	-0.48		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	1.93	3.16	1.46	3.19		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.41	0.38	0.14	0.38		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 2.18										

Matthew J. Selzer
 Quality Assurance Review

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ARS Sample Delivery Group: ARS2-10-00062

Request or PO Number:

Client Sample ID: RE15-10-8024

ARS Sample ID: ARS2-10-00062-012

Sample Collection Date: 02/18/10 14:33

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	23.52	24.07	33.91	24.24		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	30.24	14.05	17.73	14.53		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	0.00	0.00	0.16	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	29.00	10.96	1.70	10.99		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.16	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	-0.06	48.08	0.11	48.08		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.17	0.20	0.09	0.20		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.67	191.41	0.43	191.41		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.28	0.60	0.21	0.60		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	2.01	1.42	0.41	1.42		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	1.17	1.38	0.64	1.38		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	2.08	3.93	1.85	3.96		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	-0.04	46.83	0.11	46.83		pCi/g	EPA 901.1M	2/22/2010	NP	N/A

NOTES: % Moisture: 1.34


Quality Assurance Review

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ARS Sample Delivery Group: ARS2-10-00062

Client Sample ID: RE15-10-8025

Sample Collection Date: 02/18/10 15:04

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00062-013

Date Received: 02/19/10 00:00

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	4.74	17.25	37.39	17.26		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	35.76	14.45	18.23	15.10		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.03	34.73	0.11	34.73		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	19.64	7.56	1.20	7.58		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.04	0.07	0.12	0.07		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.20	0.17	0.12	0.17		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.00	0.00	0.07	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.23	-0.51	0.33	-0.51		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.19	0.44	0.11	0.44		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	0.76	0.68	0.44	0.68		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	1.68	1.05	0.44	1.06		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	1.63	2.40	1.21	2.43		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.07	0.21	0.10	0.21		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 3.32										

Matthew L. Eder
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ARS Sample Delivery Group: ARS2-10-00062

Request or PO Number:

Client Sample ID: RE15-10-8026

ARS Sample ID: ARS2-10-00062-014

Sample Collection Date: 02/18/10 15:15

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	-8.67	3.43	34.06	3.59		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	18.53	11.95	17.92	12.16		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.04	43.85	0.14	43.85		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	29.40	10.39	1.51	10.43		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.18	0.25	0.15	0.25		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.32	0.24	0.10	0.24		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.00	0.00	0.08	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	0.64	0.60	0.40	0.60		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.12	0.52	0.18	0.52		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	1.26	0.54	0.56	0.54		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.92	0.86	0.46	0.86		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	4.56	4.34	1.77	4.46		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.01	0.19	0.11	0.19		pCi/g	EPA 901.1M	2/22/2010	NP	N/A

NOTES: % Moisture: 0.92


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: ARS2-10-00062

Request or PO Number:

Client Sample ID: RE15-10-8033

ARS Sample ID: ARS2-10-00062-015


Sample Collection Date: 02/18/10 10:55

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	22.02	23.32	32.65	23.48		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	53.34	17.04	18.12	18.24		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.04	37.39	0.12	37.39		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	1.31	7.58	3.94	7.58		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.27	0.20	0.12	0.20		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	-0.05	119.33	0.22	119.33		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.87	0.39	0.07	0.39		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	0.11	0.16	0.34	0.16		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.15	0.46	0.13	0.46		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	1.78	0.84	0.31	0.84		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.92	1.05	0.54	1.05		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	24.28	5.45	1.39	7.78		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.18	0.36	0.17	0.36		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 3.05										


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: ARS2-10-00062

Request or PO Number:

Client Sample ID: RE15-10-8065

ARS Sample ID: ARS2-10-00062-016

Sample Collection Date: 02/18/10 13:07

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	23.52	24.07	33.91	24.24		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	36.27	14.74	17.73	15.40		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	0.05	0.20	0.16	0.20		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	0.00	0.00	1.79	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.17	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.01	0.04	0.25	0.04		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.02	0.05	0.10	0.05		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.16	-0.33	0.47	-0.33		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.56	0.57	0.10	0.57		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	1.24	0.66	0.43	0.66		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	1.93	1.20	0.88	1.21		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	0.91	2.87	1.59	2.88		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	-0.04	49.19	0.11	49.19		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
NOTES: % Moisture: 0.91										


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: ARS2-10-00062

Request or PO Number:

Client Sample ID: RE15-10-8066

ARS Sample ID: ARS2-10-00062-017

Sample Collection Date: 02/18/10 13:04

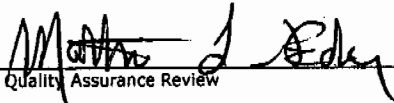
Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 14:25

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Quel	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	-0.17	14.27	37.46	14.27		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	21.95	12.81	18.42	13.09		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.03	34.18	0.11	34.18		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	0.84	8.53	3.88	8.53		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.11	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.00	0.00	0.12	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.04	0.08	0.07	0.08		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.21	-0.44	0.30	-0.44		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.26	0.45	0.13	0.46		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	0.00	0.00	0.29	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.42	0.38	0.35	0.38		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	6.70	4.98	1.83	5.21		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.19	0.24	0.10	0.24		pCi/g	EPA 901.1M	2/22/2010	NP	N/A


NOTES: % Moisture: 2.22


Quality Assurance Review


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LELAP Certificate# 30658

NELAP Certificate # E87558


DATA VALIDATION COVER SHEET	
5119-1 Data Validation Cover Sheet	Records Use only 

Section I.							
REQUEST NUMBER: <u>10-2014</u>		VALIDATION DATE: <u>04/05/10</u>		LAB CODE: <u>GEL</u>			
CONTRACT LABORATORY NAME: <u>GEL Laboratories LLC</u>							
VALIDATOR: <u>David Schwent</u>		ORGANIZATION: <u>Analytical Quality Associates, Inc.</u>					
ANALYTICAL SUITE (CHECK ALL THAT APPLY):							
<input type="checkbox"/> TPH-GRO	<input type="checkbox"/> HIGH EXPLOSIVES	<input type="checkbox"/> DIOXIN FURANS	<input type="checkbox"/> LCMSMS PERCHLORATES				
<input type="checkbox"/> TPH-DRO	<input type="checkbox"/> METALS	<input type="checkbox"/> PCB CONGENERS	<input type="checkbox"/> ORGANOCHLORINE PESTICIDES/POLYCHLORINATED BIPHENYLS				
<input type="checkbox"/> GENERAL CHEMISTRY	<input checked="" type="checkbox"/> RADIOCHEMISTRY	<input type="checkbox"/> LCMSMS HIGH EXPLOSIVES					
<input type="checkbox"/> OTHER (DESCRIBE): _____							
Section II. Completeness Check							
YES	NO	N/A	(CHECK ONE)	YES	NO	N/A	(CHECK ONE)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. CHAIN-OF-CUSTODY FORM(S)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. RAW/BSS DATA
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. CASE NARRATIVE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7. QUALITY CONTROL FORMS
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. SAMPLE RESULT FORMS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8. QUANTITATION REPORTS
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. SAMPLE CHROMATOGRAMS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. TICS FORMS
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. STANDARD CHROMATOGRAMS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. TICS MASS SPECTRA
Comments/problems noted (include information about requests for further information submitted to the contract laboratory and agreed-upon date of resolution and contract laboratory point of contact):							
1. All reported sample results that were rejected by the laboratory due to interference or low abundance were qualified R,R5a. In the QC samples, several results were also rejected by the laboratory. No sample data were qualified as a result. 2. The %Rs of alpha spec isotopic tracer U-232 for samples RE15-10-8017 and -8018 were < the laboratory LAL. All associated sample results were detects and, thus, were qualified J+,R3b. The %R of alpha spec isotopic tracer Pu-236 for sample -8065 was < the laboratory LAL. All associated sample results were NDs and, thus, were not qualified. 3. It should be noted that no MS analysis was performed for the tritium analyses. However, an LCS analysis was performed and was within acceptance limits. No sample data were qualified as a result.							
Reviewed by: <u>ETM</u>			Level: <u>1</u>		Date: <u>4/6/10</u>		


DATA VALIDATION COVER SHEET	
5119-1 Data Validation Cover Sheet	Records Use only  Los Alamos NATIONAL LABORATORY EST. 1942
VALIDATOR'S SIGNATURE: <u>David Schwant</u> DATE: <u>04/05/10</u>	
Form 5119-1, Revision 0.0	LOS ALAMOS Environmental Restoration Project

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

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

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

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

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID:	RE15-10-8019	Project:	LANL01004
Sample ID:	247911001	Client ID:	LANL010
Matrix:	R		
Collect Date:	18-FEB-10		
Receive Date:	24-FEB-10		
Collector:	Client		
Moisture:	16.3%		

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00297	0.0215	+/-0.0021	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00105	0.0268	+/-0.0069	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.0124	0.0227	+/-0.00676	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.72	0.074	+/-0.136	0.100	pCi/g		KXM4	03/21/10	0858	961708	4
Uranium-235/236		0.140	0.0452	+/-0.0238	0.100	pCi/g						
Uranium-238		5.53	0.052	+/-0.398	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0811	0.135	+/-0.0431	0.200	pCi/g		MXR1	03/06/10	1722	957714	5
Bismuth-211	UI	4.40	R,R5a	0.453	+/-0.306	pCi/g						
Bismuth-214		1.31		0.154	+/-0.104	pCi/g						
Cadmium-109	UI	2.47	R,R5a	1.21	+/-0.428	pCi/g						
Cerium-139	U	-0.0192		0.0591	+/-0.0182	pCi/g						
Cesium-134	U	0.111		0.118	+/-0.0358	pCi/g						
Cesium-137		0.407		0.0852	+/-0.056	pCi/g						
Cobalt-60	U	-0.0103		0.0818	+/-0.0259	pCi/g						
Europium-152	U	-0.141		0.197	+/-0.0724	pCi/g						
Lanthanum-140	U	0.0152		0.166	+/-0.0499	pCi/g						
Lead-212		1.97		0.113	+/-0.125	pCi/g						
Lead-214		1.60		0.136	+/-0.119	pCi/g						
Mercury-203	U	0.0275		0.0868	+/-0.0248	pCi/g						
Potassium-40		30.7		0.665	+/-1.39	pCi/g						
Radium-223	U	-0.546		1.25	+/-0.446	pCi/g						
Radium-224	UI	4.83	R,R5a	1.21	+/-0.791	pCi/g						
Radium-226		1.31		0.154	+/-0.104	pCi/g						
Radium-228		2.17		0.294	+/-0.217	pCi/g						
Ruthenium-106	U	-0.0383		0.709	+/-0.219	pCi/g						
Sodium-22	U	-0.0307		0.0885	+/-0.0289	pCi/g						
Strontium-85	U	0.0317		0.082	+/-0.0273	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: March 23, 2010

Client Sample ID: RE15-10-8019
Sample ID: 247911001

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RI	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thallium-208		0.635	0.0655	+/-0.0577	0.080	pCi/g						
Thorium-227	U	0.0385	0.523	+/-0.152		pCi/g						
Thorium-231	U	-0.546	1.25	+/-0.446		pCi/g						
Thorium-234		7.95	1.32	+/-0.955	2.00	pCi/g						
Tin-113	U	0.0184	0.0946	+/-0.0277	0.100	pCi/g						
Uranium-235	U	0.122	0.418	+/-0.125	0.500	pCi/g						
Yttrium-88	U	0.031	0.0824	+/-0.0226	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		580	175	+/-73.8	250	pCi/L		KXK2	03/13/10	0811	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	89.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	69.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.1	(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

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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: March 23, 2010

Client Sample ID: RE15-10-8013
Sample ID: 247911002
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 21.7%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0149	0.025	+/-0.00579	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00163	0.0216	+/-0.00163	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.0135	0.0182	+/-0.00507	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		4.71	0.078	+/-0.344	0.100	pCi/g		KXM4	03/21/10	0858	961708	4
Uranium-235/236		0.479	0.0476	+/-0.0522	0.100	pCi/g						
Uranium-238		19.4	0.0548	+/-1.35	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0422	0.160	+/-0.0528	0.200	pCi/g		MXR1	03/06/10	1723	957714	5
Bismuth-211	UI	3.93	R,R5a	0.436	+/-0.308	pCi/g						
Bismuth-214		1.41		0.151	+/-0.127	pCi/g						
Cadmium-109	UI	2.90	R,R5a	1.46	+/-0.557	pCi/g						
Cerium-139	U	-0.0168	0.0641	+/-0.0188	0.050	pCi/g						
Cesium-134	U	0.0452	0.117	+/-0.0334	0.100	pCi/g						
Cesium-137		0.240	0.0892	+/-0.0466	0.100	pCi/g						
Cobalt-60	U	-0.0346	0.0901	+/-0.0287	0.100	pCi/g						
Europium-152	U	-0.068	0.198	+/-0.068	0.200	pCi/g						
Lanthanum-140	U	0.0742	0.198	+/-0.0555		pCi/g						
Lead-212		1.72	0.153	+/-0.120	0.100	pCi/g						
Lead-214		1.43	0.161	+/-0.118	0.100	pCi/g						
Mercury-203	U	0.0455	0.088	+/-0.0255	0.100	pCi/g						
Potassium-40		27.6	0.745	+/-1.63	1.00	pCi/g						
Radium-223	U	0.205	1.33	+/-0.456		pCi/g						
Radium-224	UI	2.34	R,R5a	1.64	+/-0.514	pCi/g						
Radium-226		1.41	0.151	+/-0.127		pCi/g						
Radium-228		1.75	0.319	+/-0.209	0.500	pCi/g						
Ruthenium-106	U	-0.308	0.744	+/-0.236	0.800	pCi/g						
Sodium-22	U	-0.0426	0.0909	+/-0.0291	0.080	pCi/g						
Strontium-85	U	-0.198	0.0983	+/-0.035		pCi/g						
Thallium-208		0.501	0.0869	+/-0.0569	0.080	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8013
Sample ID: 247911002

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.019	0.536	+/-0.160		pCi/g						
Thorium-231	U	0.205	1.33	+/-0.456		pCi/g						
Thorium-234		23.1	1.50	+/-2.40	2.00	pCi/g						
Tin-113	U	-0.0237	0.0982	+/-0.0292	0.100	pCi/g						
Uranium-235		0.820	0.429	+/-0.226	0.500	pCi/g						
Yttrium-88	U	-0.00714	0.0682	+/-0.0211	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		2740	175	+/-211	250	pCi/L		KXK2	03/13/10	0949	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	75.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	89.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	87.4	(50%-105%)

Notes:

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

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- A The TIC is a suspected aldol-condensation product
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- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8026
Sample ID: 247911003
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 9.06%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00204	0.0205	+/-0.002	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00688	0.0213	+/-0.0038	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.00803	0.018	+/-0.00362	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.819	0.0671	+/-0.0712	0.100	pCi/g		KXM4	03/21/10	0858	961708	4
Uranium-235/236		0.0471	0.041	+/-0.0129	0.100	pCi/g						
Uranium-238		0.909	0.0472	+/-0.0775	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0475	0.531	+/-0.152	0.200	pCi/g		MXR1	03/06/10	1723	957714	5
Bismuth-211	UI	4.50	R,R5a	0.409	+/-0.350	pCi/g						
Bismuth-214		1.20		0.143	+/-0.114	pCi/g						
Cadmium-109	UI	4.39	R,R5a	1.80	+/-0.614	pCi/g						
Cerium-139	U	0.00383	0.0662	+/-0.0198	0.050	pCi/g						
Cesium-134	U	0.094	0.112	+/-0.0305	0.100	pCi/g						
Cesium-137	U	-0.018	0.0711	+/-0.0216	0.100	pCi/g						
Cobalt-60	U	-0.00227	0.0711	+/-0.0222	0.100	pCi/g						
Europium-152	U	-0.0366	0.203	+/-0.0748	0.200	pCi/g						
Lanthanum-140	U	-0.0171	0.167	+/-0.0518		pCi/g						
Lead-212		1.68	0.124	+/-0.123	0.100	pCi/g						
Lead-214		1.63	0.149	+/-0.135	0.100	pCi/g						
Mercury-203	U	0.0551	0.0902	+/-0.0286	0.100	pCi/g						
Potassium-40		27.6	0.737	+/-1.67	1.00	pCi/g						
Radium-223	U	-1.5	1.34	+/-0.454		pCi/g						
Radium-224	UI	6.07	R,R5a	1.33	+/-0.881	pCi/g						
Radium-226		1.20	0.143	+/-0.114		pCi/g						
Radium-228		2.32	0.295	+/-0.233	0.500	pCi/g						
Ruthenium-106	U	-0.382	0.525	+/-0.179	0.800	pCi/g						
Sodium-22	U	-0.0719	0.0697	+/-0.0261	0.080	pCi/g						
Strontium-85	UI	0.121	R,R5a	0.0958	+/-0.0289	pCi/g						
Thallium-208		0.547	0.0727	+/-0.0564	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8026
247911003

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RI	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.0323	0.569	+/-0.165		pCi/g						
Thorium-231	U	-1.5	1.34	+/-0.454		pCi/g						
Thorium-234	U	-0.0746	4.24	+/-1.24	2.00	pCi/g						
Tin-113	U	-0.00583	0.0984	+/-0.0294	0.100	pCi/g						
Uranium-235	U	-0.121	0.433	+/-0.133	0.500	pCi/g						
Yttrium-88	U	0.0232	0.0624	+/-0.0166	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		243	175	+/-58.5	250	pCi/L		KXK2	03/13/10	1127	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	92.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	94.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	97.3	(50%-105%)

Notes:

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

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

Report Date: March 23, 2010

Client Sample ID:	RE15-10-8017	Project:	LANL01004
Sample ID:	247911004	Client ID:	LANL010
Matrix:	R		
Collect Date:	18-FEB-10		
Receive Date:	24-FEB-10		
Collector:	Client		
Moisture:	24.9%		

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0109	0.0207	+/-0.00554	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00627	0.0254	+/-0.00408	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240		0.0535	0.0214	+/-0.0106	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		13.8	J+,R3b	0.198	+/-1.12	0.100	pCi/g	KXM4	03/20/10	1243	961708	4
Uranium-235/236		1.72	↓	0.121	+/-0.182	0.100	pCi/g					
Uranium-238		91.1	↓	0.139	+/-7.15	0.100	pCi/g					
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0726		0.220	+/-0.0665	0.200	pCi/g	MXR1	03/06/10	1724	957714	5
Bismuth-211	UI	3.24	R,R5a	0.423	+/-0.289		pCi/g					
Bismuth-214		1.18		0.165	+/-0.116	0.200	pCi/g					
Cadmium-109	UI	2.53	R,R5a	2.29	+/-0.701		pCi/g					
Cerium-139	U	0.0347		0.0634	+/-0.0199	0.050	pCi/g					
Cesium-134	U	0.124		0.132	+/-0.0391	0.100	pCi/g					
Cesium-137		0.530		0.0979	+/-0.0563	0.100	pCi/g					
Cobalt-60	U	0.00245		0.0911	+/-0.0269	0.100	pCi/g					
Europium-152	U	-0.0844		0.188	+/-0.0588	0.200	pCi/g					
Lanthanum-140	U	-0.115		0.141	+/-0.0538		pCi/g					
Lead-212		1.53		0.108	+/-0.099	0.100	pCi/g					
Lead-214		1.18		0.154	+/-0.110	0.100	pCi/g					
Mercury-203	U	0.0106		0.0788	+/-0.025	0.100	pCi/g					
Potassium-40		25.9		0.431	+/-1.53	1.00	pCi/g					
Radium-223	U	-0.856		1.23	+/-0.383		pCi/g					
Radium-224	UI	4.67	R,R5a	1.15	+/-0.786		pCi/g					
Radium-226		1.18		0.165	+/-0.116		pCi/g					
Radium-228		1.43		0.293	+/-0.233	0.500	pCi/g					
Ruthenium-106	U	-0.376		0.673	+/-0.221	0.800	pCi/g					
Sodium-22	U	-0.0167		0.0792	+/-0.0256	0.080	pCi/g					
Strontium-85	U	-0.176		0.0884	+/-0.0325		pCi/g					
Thallium-208		0.424		0.0808	+/-0.0561	0.080	pCi/g					

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8017
247911004

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RI	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	0.261	0.555	+/-0.181		pCi/g						
Thorium-231	U	-0.856	1.23	+/-0.383		pCi/g						
Thorium-234		79.6	1.97	+/-7.72	2.00	pCi/g						
Tin-113	U	0.0331	0.0988	+/-0.0279	0.100	pCi/g						
Uranium-235		1.41	0.435	+/-0.244	0.500	pCi/g						
Yttrium-88	U	0.0131	0.0745	+/-0.0215	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		35400	211	+/-2490	250	pCi/L		KXK2	03/13/10	1304	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	89.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	85.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	35.4 *	(50%-105%)

Notes:

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8025
Sample ID: 247911005
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 32.2%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RI	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00165	0.0226	+/-0.0016	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00391	0.0232	+/-0.00609	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.0037	0.0196	+/-0.00465	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.08	0.0812	+/-0.0948	0.100	pCi/g		KXM4	03/20/10	1243	961708	4
Uranium-235/236		0.0889	0.0496	+/-0.0195	0.100	pCi/g						
Uranium-238		2.40	0.0571	+/-0.189	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0933	0.279	+/-0.0918	0.200	pCi/g		MXR1	03/06/10	1724	957714	5
Bismuth-211	UI	3.28	R,R5a	0.269	+/-0.222	pCi/g						
Bismuth-214		1.02		0.094	+/-0.081	0.200	pCi/g					
Cadmium-109	UI	3.74	R,R5a	1.10	+/-0.511	pCi/g						
Cerium-139	U	-0.0123		0.0431	+/-0.0126	0.050	pCi/g					
Cesium-134	UI	0.107	R,R5a	0.0736	+/-0.0311	0.100	pCi/g					
Cesium-137	U	0.0496		0.052	+/-0.0192	0.100	pCi/g					
Cobalt-60	U	-0.00284		0.0495	+/-0.0153	0.100	pCi/g					
Europium-152	U	-0.0383		0.129	+/-0.0469	0.200	pCi/g					
Lanthanum-140	U	-0.0565		0.115	+/-0.0378	pCi/g						
Lead-212		1.48		0.0741	+/-0.0714	0.100	pCi/g					
Lead-214		1.19		0.0978	+/-0.0872	0.100	pCi/g					
Mercury-203	U	0.0261		0.0567	+/-0.0164	0.100	pCi/g					
Potassium-40		26.6		0.514	+/-1.23	1.00	pCi/g					
Radium-223	U	0.142		0.869	+/-0.298	pCi/g						
Radium-224	UI	4.15	R,R5a	0.794	+/-0.526	pCi/g						
Radium-226		1.02		0.094	+/-0.081	pCi/g						
Radium-228		1.53		0.176	+/-0.165	0.500	pCi/g					
Ruthenium-106	U	0.0547		0.397	+/-0.120	0.800	pCi/g					
Sodium-22	U	-0.0402		0.0553	+/-0.0185	0.080	pCi/g					
Strontium-85	UI	0.0706	R,R5a	0.0579	+/-0.0175	pCi/g						
Thallium-208		0.380		0.0496	+/-0.0369	0.080	pCi/g					

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Report Date: March 23, 2010

Client Sample ID: RE15-10-8025
Sample ID: 247911005

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.103	0.355	+/-0.104		pCi/g						
Thorium-231	U	0.142	0.869	+/-0.298		pCi/g						
Thorium-234		2.91	2.32	+/-1.27	2.00	pCi/g						
Tin-113	U	-0.0041	0.0577	+/-0.017	0.100	pCi/g						
Uranium-235	U	0.0544	0.311	+/-0.0956	0.500	pCi/g						
Yttrium-88	U	-0.00299	0.0393	+/-0.0123	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		274	175	+/-59.6	250	pCi/L		KXK2	03/13/10	1400	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	88.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	94.6	(50%-105%)

Notes:

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

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

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: March 23, 2010

Client Sample ID: RE15-10-8022
Sample ID: 247911006
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 4.04%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00285	0.0209	+/-0.00202	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0114	0.0275	+/-0.0085	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.00058	0.0233	+/-0.00256	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.02	0.0664	+/-0.0855	0.100	pCi/g		KXM4	03/21/10	0858	961708	4
Uranium-235/236		0.064	0.0406	+/-0.016	0.100	pCi/g						
Uranium-238		1.27	0.0467	+/-0.103	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0089	0.248	+/-0.0821	0.200	pCi/g		MXR1	03/06/10	1725	957714	5
Bismuth-211	UI	5.13	R,R5a	+/-0.379		pCi/g						
Bismuth-214		1.56		+/-0.125	0.200	pCi/g						
Cadmium-109	UI	4.40	R,R5a	+/-0.601		pCi/g						
Cerium-139	U	0.00201	0.0546	+/-0.016	0.050	pCi/g						
Cesium-134	UI	0.168	R,R5a	+/-0.0345	0.100	pCi/g						
Cesium-137	U	-0.00895	0.0662	+/-0.0203	0.100	pCi/g						
Cobalt-60	U	-0.0495	0.0584	+/-0.020	0.100	pCi/g						
Europium-152	U	-0.0908	0.161	+/-0.0581	0.200	pCi/g						
Lanthanum-140	U	-0.129	0.161	+/-0.0542		pCi/g						
Lead-212		2.25	0.102	+/-0.161	0.100	pCi/g						
Lead-214		1.86	0.122	+/-0.147	0.100	pCi/g						
Mercury-203	U	0.0365	0.0735	+/-0.0221	0.100	pCi/g						
Potassium-40		39.6	0.531	+/-2.01	1.00	pCi/g						
Radium-223	U	-0.0138	1.11	+/-0.378		pCi/g						
Radium-224	UI	5.56	R,R5a	+/-0.800		pCi/g						
Radium-226		1.56	0.110	+/-0.125		pCi/g						
Radium-228		2.62	0.225	+/-0.247	0.500	pCi/g						
Ruthenium-106	U	0.0902	0.517	+/-0.153	0.800	pCi/g						
Sodium-22	U	0.00367	0.0759	+/-0.0229	0.080	pCi/g						
Strontium-85	UI	0.161	R,R5a	+/-0.0246		pCi/g						
Thallium-208		0.773	0.0594	+/-0.0576	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8022
Sample ID: 247911006
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0856	0.447	+/-0.139		pCi/g						
Thorium-231	U	-0.0138	1.11	+/-0.378		pCi/g						
Thorium-234		3.26	2.09	+/-1.03	2.00	pCi/g						
Tin-113	U	-0.0118	0.079	+/-0.0241	0.100	pCi/g						
Uranium-235	U	-0.0867	0.367	+/-0.112	0.500	pCi/g						
Yttrium-88	U	-0.0157	0.0565	+/-0.0183	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		1340	175	+/-119	250	pCi/L		KXK2	03/13/10	1538	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	89.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	76.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	99.5	(50%-105%)

Notes:

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

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- D Results are reported from a diluted aliquot of the sample

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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: March 23, 2010

Client Sample ID: RE15-10-8014
Sample ID: 247911007
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 5.98%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00375	0.0214	+/-0.00279	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00357	0.0208	+/-0.00294	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.000438	0.0176	+/-0.00193	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.01	0.0864	+/-0.0908	0.100	pCi/g		KXM4	03/20/10	1243	961708	4
Uranium-235/236	U	0.0379	0.0528	+/-0.0154	0.100	pCi/g						
Uranium-238		1.06	0.0607	+/-0.0944	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.187	0.385	+/-0.120	0.200	pCi/g		MXR1	03/06/10	1725	957714	5
Bismuth-211	UI	5.07	R,R5a	+/-0.319		pCi/g						
Bismuth-214		1.34	0.134	+/-0.116	0.200	pCi/g						
Cadmium-109	UI	5.03	R,R5a	+/-0.613		pCi/g						
Cerium-139	U	-0.0202	0.061	+/-0.0184	0.050	pCi/g						
Cesium-134	U	0.0773	0.112	+/-0.0349	0.100	pCi/g						
Cesium-137	U	0.0278	0.0802	+/-0.0234	0.100	pCi/g						
Cobalt-60	U	0.00168	0.0789	+/-0.0241	0.100	pCi/g						
Europium-152	U	-0.0112	0.189	+/-0.0811	0.200	pCi/g						
Lanthanum-140	U	-0.0888	0.163	+/-0.0553		pCi/g						
Lead-212		2.21	0.112	+/-0.104	0.100	pCi/g						
Lead-214		1.84	0.135	+/-0.126	0.100	pCi/g						
Mercury-203	U	0.0554	0.0843	+/-0.0262	0.100	pCi/g						
Potassium-40		30.5	0.707	+/-1.50	1.00	pCi/g						
Radium-223	U	-0.109	1.25	+/-0.420		pCi/g						
Radium-224	UI	5.13	R,R5a	+/-0.726		pCi/g						
Radium-226		1.34	0.134	+/-0.116		pCi/g						
Radium-228		2.27	0.313	+/-0.214	0.500	pCi/g						
Ruthenium-106	U	0.0757	0.631	+/-0.188	0.800	pCi/g						
Sodium-22	U	0.0235	0.0992	+/-0.0293	0.080	pCi/g						
Strontium-85	U	0.0264	0.0786	+/-0.026		pCi/g						
Thallium-208		0.704	0.0701	+/-0.0549	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: March 23, 2010

Client Sample ID: RE15-10-8014
Sample ID: 247911007

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0752	0.508	+/-0.156		pCi/g						
Thorium-231	U	-0.109	1.25	+/-0.420		pCi/g						
Thorium-234		3.70	3.26	+/-1.56	2.00	pCi/g						
Tin-113	U	-0.0163	0.0904	+/-0.027	0.100	pCi/g						
Uranium-235	U	0.130	0.427	+/-0.124	0.500	pCi/g						
Yttrium-88	U	0.0076	0.0727	+/-0.0214	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		1060	175	+/-101	250	pCi/L		KXK2	03/13/10	1716	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	85.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	97.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	89.7	(50%-105%)

Notes:

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

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- D Results are reported from a diluted aliquot of the sample

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8023
Sample ID: 247911008
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 17.9%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00142	0.0212	+/-0.00145	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00157	0.0208	+/-0.00157	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.00288	0.0176	+/-0.0037	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.30	0.0931	+/-0.113	0.100	pCi/g		KXM4	03/20/10	1243	961708	4
Uranium-235/236		0.0979	0.0569	+/-0.0212	0.100	pCi/g						
Uranium-238		1.91	0.0654	+/-0.157	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0191	0.0831	+/-0.0279	0.200	pCi/g		MXR1	03/06/10	1726	957714	5
Bismuth-211	UI	4.69	R,R5a	0.348	+/-0.339	pCi/g						
Bismuth-214		1.37		0.119	+/-0.128	pCi/g						
Cadmium-109	UI	4.12	R,R5a	0.856	+/-0.429	pCi/g						
Cerium-139	U	-0.00781	0.0474	+/-0.0143	0.050	pCi/g						
Cesium-134	U	0.0911	0.107	+/-0.0313	0.100	pCi/g						
Cesium-137		0.0888	0.0801	+/-0.0362	0.100	pCi/g						
Cobalt-60	U	-0.0012	0.0751	+/-0.0231	0.100	pCi/g						
Europium-152	U	-0.0214	0.159	+/-0.0476	0.200	pCi/g						
Lanthanum-140	U	-0.102	0.168	+/-0.0578	pCi/g							
Lead-212		2.08	0.0838	+/-0.134	0.100	pCi/g						
Lead-214		1.70	0.130	+/-0.132	0.100	pCi/g						
Mercury-203	U	0.00188	0.0674	+/-0.0209	0.100	pCi/g						
Potassium-40		33.1	0.508	+/-1.72	1.00	pCi/g						
Radium-223	U	0.217	1.04	+/-0.339	pCi/g							
Radium-224	UI	5.32	R,R5a	0.899	+/-0.753	pCi/g						
Radium-226		1.37	0.119	+/-0.128	pCi/g							
Radium-228		1.83	0.243	+/-0.218	0.500	pCi/g						
Ruthenium-106	U	0.114	0.585	+/-0.169	0.800	pCi/g						
Sodium-22	U	0.00433	0.0893	+/-0.027	0.080	pCi/g						
Strontium-85	U	0.042	0.0693	+/-0.0222	pCi/g							
Thallium-208		0.673	0.0685	+/-0.0639	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8023
Sample ID: 247911008

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0558	0.384	+/-0.120		pCi/g						
Thorium-231	U	0.217	1.04	+/-0.339		pCi/g						
Thorium-234		2.44	0.860	+/-0.543	2.00	pCi/g						
Tin-113	U	0.00543	0.0816	+/-0.0242	0.100	pCi/g						
Uranium-235	U	0.123	0.308	+/-0.0899	0.500	pCi/g						
Yttrium-88	U	-0.00868	0.0541	+/-0.0175	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	160	175	+/-55.7	250	pCi/L		KXK2	03/13/10	1854	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	90.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	84.6	(50%-105%)

Notes:

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8020
Sample ID: 247911009
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 6.12%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00347	0.0208	+/-0.00203	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00172	0.0228	+/-0.00172	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.00906	0.0193	+/-0.00441	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.832	0.0668	+/-0.0721	0.100	pCi/g		KXM4	03/20/10	1224	961708	4
Uranium-235/236		0.0585	0.0408	+/-0.0143	0.100	pCi/g						
Uranium-238		0.864	0.0469	+/-0.0743	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0433	0.239	+/-0.073	0.200	pCi/g		MXR1	03/06/10	1729	957714	5
Bismuth-211	UI	4.97	R,R5a	0.319	+/-0.359	pCi/g						
Bismuth-214		1.54		0.131	+/-0.113	pCi/g						
Cadmium-109	UI	4.81	R,R5a	1.00	+/-0.576	pCi/g						
Cerium-139	U	0.00228		0.0485	+/-0.0141	pCi/g						
Cesium-134	UI	0.184	R,R5a	0.0976	+/-0.039	pCi/g						
Cesium-137	U	-0.00155		0.0588	+/-0.0179	pCi/g						
Cobalt-60	U	-0.0226		0.0568	+/-0.019	pCi/g						
Europium-152	U	-0.0396		0.146	+/-0.043	pCi/g						
Lanthanum-140	U	-0.0419		0.122	+/-0.0473	pCi/g						
Lead-212		2.22		0.0908	+/-0.145	pCi/g						
Lead-214		1.81		0.116	+/-0.139	pCi/g						
Mercury-203	U	0.00545		0.0633	+/-0.0213	pCi/g						
Potassium-40		35.4		0.570	+/-1.80	pCi/g						
Radium-223	U	0.0358		1.03	+/-0.354	pCi/g						
Radium-224	UI	5.97	R,R5a	0.973	+/-0.556	pCi/g						
Radium-226		1.54		0.131	+/-0.113	pCi/g						
Radium-228		2.09		0.208	+/-0.202	pCi/g						
Ruthenium-106	U	0.058		0.464	+/-0.138	pCi/g						
Sodium-22	U	-0.00524		0.0722	+/-0.0224	pCi/g						
Strontium-85	U	0.0211		0.0605	+/-0.0195	pCi/g						
Thallium-208		0.669		0.061	+/-0.0496	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8020
Sample ID: 247911009

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0778	0.400	+/-0.122		pCi/g						
Thorium-231	U	0.0358	1.03	+/-0.354		pCi/g						
Thorium-234	U	0.502	2.16	+/-0.640	2.00	pCi/g						
Tin-113	U	-0.00788	0.0711	+/-0.0208	0.100	pCi/g						
Uranium-235	U	0.0411	0.335	+/-0.0971	0.500	pCi/g						
Yttrium-88	U	-0.00604	0.0441	+/-0.0141	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		187	175	+/-56.4	250	pCi/L		KXK2	03/13/10	2032	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	89.0	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	81.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	104	(50%-105%)

Notes:

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

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- > 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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8018
Sample ID: 247911010
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 20.8%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0049	0.0217	+/-0.00317	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00711	0.022	+/-0.00392	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.000929	0.0186	+/-0.00289	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		11.1	J+,R3b	0.138	+/-0.842	0.100	pCi/g	KXM4	03/20/10	1224	961708	4
Uranium-235/236		1.61		0.0846	+/-0.154	0.100	pCi/g					
Uranium-238		70.8		0.0973	+/-5.21	0.100	pCi/g					
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	UI	0.650	R,R5a	0.566	+/-0.180	0.200	pCi/g	MXR1	03/06/10	2038	957714	5
Bismuth-211	UI	4.58	R,R5a	0.338	+/-0.297		pCi/g					
Bismuth-214		1.45		0.108	+/-0.101	0.200	pCi/g					
Cadmium-109	UI	3.30	R,R5a	1.59	+/-0.533		pCi/g					
Cerium-139	U	0.0501		0.0552	+/-0.0257	0.050	pCi/g					
Cesium-134	UI	0.115	R,R5a	0.0826	+/-0.0323	0.100	pCi/g					
Cesium-137	U	0.0555		0.0602	+/-0.0212	0.100	pCi/g					
Cobalt-60	U	0.0269		0.0581	+/-0.0169	0.100	pCi/g					
Europium-152	U	0.0212		0.163	+/-0.0578	0.200	pCi/g					
Lanthanum-140	U	-0.0421		0.121	+/-0.046		pCi/g					
Lead-212		2.02		0.0922	+/-0.132	0.100	pCi/g					
Lead-214		1.66		0.116	+/-0.117	0.100	pCi/g					
Mercury-203	U	0.0192		0.0704	+/-0.0202	0.100	pCi/g					
Potassium-40		28.2		0.471	+/-1.54	1.00	pCi/g					
Radium-223	U	-1.0		1.07	+/-0.341		pCi/g					
Radium-224	UI	5.79	R,R5a	0.988	+/-0.727		pCi/g					
Radium-226		1.45		0.108	+/-0.101		pCi/g					
Radium-228		2.28		0.186	+/-0.187	0.500	pCi/g					
Ruthenium-106	U	0.00903		0.479	+/-0.146	0.800	pCi/g					
Sodium-22	U	0.013		0.0667	+/-0.0201	0.080	pCi/g					
Strontium-85	UI	0.126	R,R5a	0.0673	+/-0.0206		pCi/g					
Thallium-208		0.590		0.0565	+/-0.0442	0.080	pCi/g					

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8018
Sample ID: 247911010

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.063	0.453	+/-0.149		pCi/g						
Thorium-231	U	-1.0	1.07	+/-0.341		pCi/g						
Thorium-234		64.0	4.07	+/-6.80	2.00	pCi/g						
Tin-113	U	-0.014	0.073	+/-0.0219	0.100	pCi/g						
Uranium-235		0.928	0.368	+/-0.160	0.500	pCi/g						
Yttrium-88	U	-0.0133	0.0432	+/-0.0141	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		6430	176	+/-465	250	pCi/L		KXK2	03/13/10	2211	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	89.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	47.2 *	(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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8015
Sample ID: 247911011
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 37.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00748	0.0208	+/-0.00365	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00448	0.0283	+/-0.00423	0.050	pCi/g		KXM4	03/20/10	1135	961706	3
Plutonium-239/240	U	0.0123	0.024	+/-0.00632	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		3.18	0.0731	+/-0.236	0.100	pCi/g		KXM4	03/20/10	1224	961708	4
Uranium-235/236		0.375	0.0447	+/-0.0434	0.100	pCi/g						
Uranium-238		15.5	0.0514	+/-1.08	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.122	0.582	+/-0.190	0.200	pCi/g		MXR1	03/08/10	1217	957714	5
Bismuth-211	UI	3.47	R,R5a	0.468	+/-0.325	pCi/g						
Bismuth-214		1.37		0.148	+/-0.120	pCi/g						
Cadmium-109	UI	5.69	R,R5a	1.93	+/-0.995	pCi/g						
Cerium-139	U	0.00373		0.0762	+/-0.023	pCi/g						
Cesium-134	UI	0.127	R,R5a	0.117	+/-0.0309	pCi/g						
Cesium-137		0.278		0.081	+/-0.0504	pCi/g						
Cobalt-60	U	0.0135		0.0721	+/-0.0214	pCi/g						
Europium-152	U	0.0525		0.228	+/-0.0807	pCi/g						
Lanthanum-140	U	-0.0713		0.205	+/-0.0674	pCi/g						
Lead-212		1.81		0.135	+/-0.133	pCi/g						
Lead-214		1.26		0.165	+/-0.123	pCi/g						
Mercury-203	U	0.0567		0.100	+/-0.0284	pCi/g						
Potassium-40		29.3		0.649	+/-1.77	pCi/g						
Radium-223	U	-0.746		1.49	+/-0.464	pCi/g						
Radium-224	UI	4.70	R,R5a	1.45	+/-0.879	pCi/g						
Radium-226		1.37		0.148	+/-0.120	pCi/g						
Radium-228		1.92		0.280	+/-0.197	pCi/g						
Ruthenium-106	U	-0.387		0.608	+/-0.205	pCi/g						
Sodium-22	U	0.0289		0.0942	+/-0.0276	pCi/g						
Strontium-85	UI	0.132	R,R5a	0.104	+/-0.0318	pCi/g						
Thallium-208		0.549		0.0756	+/-0.0568	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8015
Sample ID: 247911011

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RI	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.120	0.629	+/-0.182		pCi/g						
Thorium-231	U	-0.746	1.49	+/-0.464		pCi/g						
Thorium-234		15.2	4.44	+/-2.36	2.00	pCi/g						
Tin-113	U	-0.0631	0.0999	+/-0.0319	0.100	pCi/g						
Uranium-235	U	0.420	0.527	+/-0.157	0.500	pCi/g						
Yttrium-88	U	-0.000979	0.0716	+/-0.022	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		1040	176	+/-99.8	250	pCi/L		KXK2	03/13/10	2349	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	91.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	96.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.3	(50%-105%)

Notes:

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8021
Sample ID: 247911012
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 14.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00416	0.0204	+/-0.00242	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0091	0.033	+/-0.00709	0.050	pCi/g		KXM4	03/20/10	1135	961706	3
Plutonium-239/240	U	0.0275	0.0279	+/-0.00896	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.19	0.0715	+/-0.167	0.100	pCi/g		KXM4	03/20/10	1224	961708	4
Uranium-235/236		0.154	0.0437	+/-0.0243	0.100	pCi/g						
Uranium-238		5.45	0.0503	+/-0.391	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0768	0.243	+/-0.0764	0.200	pCi/g		MXR1	03/08/10	1218	957714	5
Bismuth-211	UI	4.60	R,R5a	0.329	+/-0.345	pCi/g						
Bismuth-214		1.45		0.107	+/-0.115	0.200	pCi/g					
Cadmium-109	UI	4.37	R,R5a	1.23	+/-0.584	pCi/g						
Cerium-139	U	0.0075		0.054	+/-0.0156	0.050	pCi/g					
Cesium-134	UI	0.123	R,R5a	0.0803	+/-0.0333	0.100	pCi/g					
Cesium-137		0.325		0.0598	+/-0.0436	0.100	pCi/g					
Cobalt-60	U	0.00986		0.0648	+/-0.020	0.100	pCi/g					
Europium-152	U	-0.108		0.159	+/-0.0738	0.200	pCi/g					
Lanthanum-140	U	0.0253		0.145	+/-0.0494	pCi/g						
Lead-212		1.94		0.0903	+/-0.141	0.100	pCi/g					
Lead-214		1.67		0.120	+/-0.133	0.100	pCi/g					
Mercury-203	U	0.0607		0.0723	+/-0.0213	0.100	pCi/g					
Potassium-40		35.7		0.447	+/-1.81	1.00	pCi/g					
Radium-223	U	0.341		1.06	+/-0.351	pCi/g						
Radium-224	UI	5.28	R,R5a	0.967	+/-0.658	pCi/g						
Radium-226		1.45		0.107	+/-0.115	pCi/g						
Radium-228		2.09		0.218	+/-0.210	0.500	pCi/g					
Ruthenium-106	U	-0.0263		0.485	+/-0.146	0.800	pCi/g					
Sodium-22	U	-0.0575		0.0649	+/-0.0217	0.080	pCi/g					
Strontium-85	UI	0.141	R,R5a	0.0771	+/-0.0241	pCi/g						
Thallium-208		0.535		0.0572	+/-0.0488	0.080	pCi/g					

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8021
247911012

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.227	0.464	+/-0.138		pCi/g						
Thorium-231	U	0.341	1.06	+/-0.351		pCi/g						
Thorium-234		8.35	2.06	+/-1.27	2.00	pCi/g						
Tin-113	U	-0.0103	0.0735	+/-0.0222	0.100	pCi/g						
Uranium-235	U	0.0873	0.363	+/-0.106	0.500	pCi/g						
Yttrium-88	U	0.026	0.0621	+/-0.0176	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		1910	176	+/-156	250	pCi/L		KXK2	03/14/10	0127	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	91.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	77.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.6	(50%-105%)

Notes:

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

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 Contact: Ms. Joylene Valdez
 Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8024
 Sample ID: 247911013
 Matrix: R
 Collect Date: 18-FEB-10
 Receive Date: 24-FEB-10
 Collector: Client
 Moisture: 13%

Project: LANL01004
 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00242	0.0203	+/-0.00171	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00134	0.0334	+/-0.00297	0.050	pCi/g		KXM4	03/20/10	1135	961706	3
Plutonium-239/240	U	-0.00268	0.0283	+/-0.00326	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.842	0.0741	+/-0.0745	0.100	pCi/g		KXM4	03/20/10	1224	961708	4
Uranium-235/236		0.0682	0.0453	+/-0.0156	0.100	pCi/g						
Uranium-238		0.904	0.0521	+/-0.079	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.494	0.527	+/-0.164	0.200	pCi/g		MXR1	03/08/10	1457	957714	5
Bismuth-211	UI	4.31	R,R5a	0.430	+/-0.344	pCi/g						
Bismuth-214		1.32		0.145	+/-0.124	pCi/g						
Cadmium-109	U	2.05		2.23	+/-0.762	pCi/g						
Cerium-139	U	-0.0264		0.0694	+/-0.0215	pCi/g						
Cesium-134	U	0.0534		0.110	+/-0.0312	pCi/g						
Cesium-137	U	-0.0336		0.0705	+/-0.0221	pCi/g						
Cobalt-60	U	0.0284		0.080	+/-0.023	pCi/g						
Europium-152	U	0.0459		0.217	+/-0.0765	pCi/g						
Lanthanum-140	U	-0.000569		0.137	+/-0.0485	pCi/g						
Lead-212		2.17		0.126	+/-0.151	pCi/g						
Lead-214		1.57		0.157	+/-0.132	pCi/g						
Mercury-203	U	0.0761		0.105	+/-0.0293	pCi/g						
Potassium-40		31.6		0.774	+/-1.87	pCi/g						
Radium-223	U	-0.597		1.37	+/-0.490	pCi/g						
Radium-224	UI	5.92	R,R5a	1.35	+/-0.999	pCi/g						
Radium-226		1.32		0.145	+/-0.124	pCi/g						
Radium-228		2.16		0.283	+/-0.225	pCi/g						
Ruthenium-106	U	-0.0677		0.649	+/-0.202	pCi/g						
Sodium-22	U	-0.00971		0.0822	+/-0.026	pCi/g						
Strontium-85	UI	0.108	R,R5a	0.0997	+/-0.0309	pCi/g						
Thallium-208		0.664		0.0716	+/-0.0588	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8024
Sample ID: 247911013

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.0337	0.581	+/-0.169		pCi/g						
Thorium-231	U	-0.597	1.37	+/-0.490		pCi/g						
Thorium-234	U	2.86	4.53	+/-1.29	2.00	pCi/g						
Tin-113	U	-0.0187	0.0999	+/-0.0303	0.100	pCi/g						
Uranium-235	U	0.0627	0.481	+/-0.144	0.500	pCi/g						
Yttrium-88	U	0.0162	0.0723	+/-0.0206	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	109	175	+/-54.1	250	pCi/L		KXK2	03/14/10	0305	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	92.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	75.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	84.9	(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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8016
Sample ID: 247911014
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 9.36%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RI	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00142	0.0215	+/-0.00147	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00804	0.029	+/-0.00477	0.050	pCi/g		KXM4	03/20/10	1135	961706	3
Plutonium-239/240	U	-0.00235	0.0245	+/-0.00327	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.884	0.071	+/-0.0769	0.100	pCi/g		KXM4	03/20/10	1224	961708	4
Uranium-235/236		0.056	0.0434	+/-0.0151	0.100	pCi/g						
Uranium-238		0.846	0.0499	+/-0.0741	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0615	0.200	+/-0.0585	0.200	pCi/g		MXR1	03/08/10	1458	957714	5
Bismuth-211	UI	5.15	R,R5a	+/-0.348		pCi/g						
Bismuth-214		1.55		+/-0.121	0.200	pCi/g						
Cadmium-109	UI	4.56	R,R5a	+/-0.635		pCi/g						
Cerium-139	U	-0.00728		+/-0.0146	0.050	pCi/g						
Cesium-134	UI	0.143	R,R5a	+/-0.0321	0.100	pCi/g						
Cesium-137	U	0.0049		+/-0.0187	0.100	pCi/g						
Cobalt-60	U	-0.0248		+/-0.0209	0.100	pCi/g						
Europium-152	U	0.0413		+/-0.0537	0.200	pCi/g						
Lanthanum-140	U	0.0514		+/-0.0441		pCi/g						
Lead-212		2.38		+/-0.142	0.100	pCi/g						
Lead-214		1.87		+/-0.136	0.100	pCi/g						
Mercury-203	U	0.015		+/-0.0195	0.100	pCi/g						
Potassium-40		36.6		+/-1.85	1.00	pCi/g						
Radium-223	U	0.0942		+/-0.352		pCi/g						
Radium-224	UI	6.06	R,R5a	+/-0.747		pCi/g						
Radium-226		1.55		+/-0.121		pCi/g						
Radium-228		2.34		+/-0.229	0.500	pCi/g						
Ruthenium-106	U	0.0897		+/-0.155	0.800	pCi/g						
Sodium-22	U	0.0155		+/-0.0234	0.080	pCi/g						
Strontium-85	U	0.0521		+/-0.0227		pCi/g						
Thallium-208		0.682		+/-0.0546	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8016
247911014

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RI	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0602	0.415	+/-0.121		pCi/g						
Thorium-231	U	0.0942	1.06	+/-0.352		pCi/g						
Thorium-234	U	1.09	2.01	+/-0.562	2.00	pCi/g						
Tin-113	U	0.0113	0.0765	+/-0.0224	0.100	pCi/g						
Uranium-235	U	0.0271	0.349	+/-0.105	0.500	pCi/g						
Yttrium-88	U	0.0323	0.0615	+/-0.0161	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		511	176	+/-70.4	250	pCi/L		KXK2	03/14/10	0443	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	89.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	87.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.2	(50%-105%)

Notes:

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

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- D Results are reported from a diluted aliquot of the sample

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8065
Sample ID: 247911015
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 9.23%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0115	0.0211	+/-0.00415	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00498	0.0331	+/-0.00354	0.050	pCi/g		KXM4	03/22/10	0307	961706	3
Plutonium-239/240	U	0.00498	0.0279	+/-0.00354	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.11	0.0729	+/-0.0935	0.100	pCi/g		KXM4	03/20/10	1224	961708	5
Uranium-235/236		0.0863	0.0446	+/-0.0193	0.100	pCi/g						
Uranium-238		2.06	0.0513	+/-0.160	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0465	0.0886	+/-0.0286	0.200	pCi/g		MXR1	03/08/10	1459	957714	6
Bismuth-211	UI	5.40	R,R5a	0.359	+/-0.360	pCi/g						
Bismuth-214		1.75		0.150	+/-0.152	0.200	pCi/g					
Cadmium-109	UI	5.23	R,R5a	0.848	+/-0.443	pCi/g						
Cerium-139	U	0.0207	0.051	+/-0.0141	0.050	pCi/g						
Cesium-134	U	0.129	0.132	+/-0.0395	0.100	pCi/g						
Cesium-137	U	0.000763	0.0901	+/-0.0273	0.100	pCi/g						
Cobalt-60	U	0.00804	0.088	+/-0.0257	0.100	pCi/g						
Europium-152	U	-0.0168	0.168	+/-0.0517	0.200	pCi/g						
Lanthanum-140	U	-0.206	0.159	+/-0.0705	pCi/g							
Lead-212		2.57	0.0977	+/-0.146	0.100	pCi/g						
Lead-214		1.96	0.131	+/-0.142	0.100	pCi/g						
Mercury-203	U	-0.0489	0.0674	+/-0.0217	0.100	pCi/g						
Potassium-40		33.5	0.685	+/-1.83	1.00	pCi/g						
Radium-223	U	-0.431	1.13	+/-0.406	pCi/g							
Radium-224	UI	5.89	R,R5a	1.05	+/-0.667	pCi/g						
Radium-226		1.75	0.150	+/-0.152	pCi/g							
Radium-228		2.78	0.283	+/-0.277	0.500	pCi/g						
Ruthenium-106	U	0.0334	0.700	+/-0.210	0.800	pCi/g						
Sodium-22	U	-0.00861	0.107	+/-0.0337	0.080	pCi/g						
Strontium-85	U	0.0607	0.0792	+/-0.0234	pCi/g							
Thallium-208		0.792	0.0733	+/-0.069	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8065
247911015

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.135	0.430	+/-0.131		pCi/g						
Thorium-231	U	-0.431	1.13	+/-0.406		pCi/g						
Thorium-234		2.77	0.911	+/-0.471	2.00	pCi/g						
Tin-113	U	-0.0406	0.0862	+/-0.0282	0.100	pCi/g						
Uranium-235	U	0.0844	0.326	+/-0.0991	0.500	pCi/g						
Yttrium-88	U	-0.0112	0.079	+/-0.0258	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		474	176	+/-68.6	250	pCi/L		KXK2	03/14/10	0621	961542	7

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R
7	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	89.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	49.7 *	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	85.7	(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.

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C Analyte has been confirmed by GC/MS analysis

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8066
Sample ID: 247911016
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 19.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00194	0.0216	+/-0.00236	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0135	0.0187	+/-0.00496	0.050	pCi/g		KXM4	03/22/10	0307	961706	3
Plutonium-239/240	U	-0.000226	0.0158	+/-0.00266	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.883	0.0698	+/-0.0765	0.100	pCi/g		KXM4	03/20/10	1224	961708	5
Uranium-235/236		0.052	0.0427	+/-0.0157	0.100	pCi/g						
Uranium-238		1.38	0.0491	+/-0.111	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0225	0.125	+/-0.043	0.200	pCi/g		MXR1	03/09/10	1147	957714	6
Bismuth-211	UI	3.77	R,R5a	0.412	+/-0.299	pCi/g						
Bismuth-214		1.29		0.157	+/-0.121	pCi/g						
Cadmium-109	UI	2.69	R,R5a	1.18	+/-0.480	pCi/g						
Cerium-139	U	0.00219	0.0625	+/-0.0192	0.050	pCi/g						
Cesium-134	U	0.102	0.114	+/-0.0465	0.100	pCi/g						
Cesium-137	U	0.0134	0.083	+/-0.0253	0.100	pCi/g						
Cobalt-60	U	0.0178	0.0909	+/-0.0272	0.100	pCi/g						
Europium-152	U	-0.0529	0.201	+/-0.072	0.200	pCi/g						
Lanthanum-140	U	-0.218	0.170	+/-0.071		pCi/g						
Lead-212		1.74	0.110	+/-0.116	0.100	pCi/g						
Lead-214		1.37	0.145	+/-0.115	0.100	pCi/g						
Mercury-203	U	0.00639	0.0897	+/-0.0266	0.100	pCi/g						
Potassium-40		29.1	0.842	+/-1.44	1.00	pCi/g						
Radium-223	U	-0.984	1.45	+/-0.466		pCi/g						
Radium-224	UI	4.01	R,R5a	1.18	+/-0.819	pCi/g						
Radium-226		1.29	0.157	+/-0.121		pCi/g						
Radium-228		2.26	0.285	+/-0.269	0.500	pCi/g						
Ruthenium-106	U	0.0182	0.697	+/-0.216	0.800	pCi/g						
Sodium-22	U	0.00834	0.107	+/-0.0327	0.080	pCi/g						
Strontium-85	U	0.0495	0.0879	+/-0.0288		pCi/g						
Thallium-208		0.564	0.074	+/-0.0513	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8066
247911016

Project:
Client ID: LANL01004
LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	0.256	0.547	+/-0.158		pCi/g						
Thorium-231	U	-0.984	1.45	+/-0.466		pCi/g						
Thorium-234		2.12	1.32	+/-0.625	2.00	pCi/g						
Tin-113	U	-0.0179	0.0988	+/-0.0305	0.100	pCi/g						
Uranium-235	U	0.116	0.425	+/-0.128	0.500	pCi/g						
Yttrium-88	U	-0.031	0.0812	+/-0.0277	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		1230	176	+/-112	250	pCi/L		KXK2	03/14/10	0759	961542	7

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R
7	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	87.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.1	(50%-105%)

Notes:

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8033
Sample ID: 247911017
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 24.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RI	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0188	0.0297	+/-0.00633	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0285	+/-0.00227	0.050	pCi/g		KXM4	03/20/10	1135	961706	3
Plutonium-239/240	U	0.0147	0.0241	+/-0.00676	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		5.20	0.0731	+/-0.375	0.100	pCi/g		KXM4	03/20/10	1224	961708	4
Uranium-235/236		0.500	0.0447	+/-0.0527	0.100	pCi/g						
Uranium-238		19.2	0.0514	+/-1.33	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.162	0.377	+/-0.122	0.200	pCi/g		MXR1	03/09/10	1148	957714	5
Bismuth-211	UI	4.61	0.397	+/-0.283		pCi/g						
Bismuth-214		1.36	0.125	+/-0.117	0.200	pCi/g						
Cadmium-109	UI	4.91	1.88	+/-0.914		pCi/g						
Cerium-139	U	-0.0158	0.0638	+/-0.0195	0.050	pCi/g						
Cesium-134	U	0.0663	0.0981	+/-0.0317	0.100	pCi/g						
Cesium-137		0.630	0.0724	+/-0.0449	0.100	pCi/g						
Cobalt-60	U	0.0302	0.0771	+/-0.0217	0.100	pCi/g						
Europium-152	U	-0.0301	0.195	+/-0.0668	0.200	pCi/g						
Lanthanum-140	U	-0.0216	0.183	+/-0.0605		pCi/g						
Lead-212		1.91	0.112	+/-0.0936	0.100	pCi/g						
Lead-214		1.67	0.143	+/-0.113	0.100	pCi/g						
Mercury-203	U	0.00787	0.0809	+/-0.0267	0.100	pCi/g						
Potassium-40		31.6	0.568	+/-1.49	1.00	pCi/g						
Radium-223	U	0.348	1.25	+/-0.408		pCi/g						
Radium-224	UI	5.45	1.19	+/-0.583		pCi/g						
Radium-226		1.36	0.125	+/-0.117		pCi/g						
Radium-228		1.90	0.225	+/-0.202	0.500	pCi/g						
Ruthenium-106	U	-0.104	0.615	+/-0.189	0.800	pCi/g						
Sodium-22	U	-0.0293	0.0731	+/-0.0235	0.080	pCi/g						
Strontium-85	UI	0.0861	0.0805	+/-0.0242		pCi/g						
Thallium-208		0.571	0.0615	+/-0.0503	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: March 23, 2010

Client Sample ID:
Sample ID:

RI:15-10-8033
247911017

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RI	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.0113	0.526	+/-0.162		pCi/g						
Thorium-231	U	0.348	1.25	+/-0.408		pCi/g						
Thorium-234		24.7	3.11	+/-2.80	2.00	pCi/g						
Tin-113	U	0.0322	0.0917	+/-0.0262	0.100	pCi/g						
Uranium-235		0.432	0.419	+/-0.177	0.500	pCi/g						
Yttrium-88	U	-0.0122	0.059	+/-0.0194	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	157	175	+/-55.5	250	pCi/L		KXX2	03/14/10	0937	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	60.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	89.2	(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

Tuesday, February 23, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2014

LOS ALAMOS

REQUEST NUMBER: 10-2014

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/25/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

247911'.

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-8019	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8019	1	POLY	H3	Ice	R
RE15-10-8013	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8013	1	POLY	H3	Ice	R
RE15-10-8026	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8026	1	POLY	H3	Ice	R
RE15-10-8017	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8017	1	POLY	H3	Ice	R
RE15-10-8025	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8025	1	POLY	H3	Ice	R
RE15-10-8022	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8022	1	POLY	H3	Ice	R
RE15-10-8014	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8014	1	POLY	H3	Ice	R
RE15-10-8023	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8023	1	POLY	H3	Ice	R
RE15-10-8020	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8020	1	POLY	H3	Ice	R
RE15-10-8018	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8018	1	POLY	H3	Ice	R
RE15-10-8015	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8015	1	POLY	H3	Ice	R
RE15-10-8021	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8021	1	POLY	H3	Ice	R
RE15-10-8024	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8024	1	POLY	H3	Ice	R
RE15-10-8018	1	POLY	AM241+GS+ISOPU+ISO U	None	R

Tuesday, February 23, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2014

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-8016	1	POLY	H3	Ice	R
RE15-10-8065	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8065	1	POLY	H3	Ice	R
RE15-10-8066	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8066	1	POLY	H3	Ice	R
RE15-10-8033	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8033	1	POLY	H3	Ice	R

Relinquished By: *[Signature]* Date 2/23/10 Time 1400 Received By: *Patricia Dover-Dent* Date 2/24/10 Time 08:50

Printed Name Signature Printed Name Signature

Printed Name Signature

Printed Name Signature

Printed Name Signature

Printed Name Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name Signature

Tuesday, February 23, 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: 10-2014

Per Agreement Number: 126310011

Project Cost Code: MR3A0529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/23/2010

TURNAROUND/REPORT DUE: 3/25/2010

TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ERM SMO CONTACT:

Signature: 

PRIORITY	METHOD CODE	QNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-901.1	1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	
		1	RE15-10-8016	R	2/18/2010	
		1	RE15-10-8017	R	2/18/2010	
		1	RE15-10-8018	R	2/18/2010	
		1	RE15-10-8019	R	2/18/2010	
		1	RE15-10-8020	R	2/18/2010	
		1	RE15-10-8021	R	2/18/2010	

Tuesday, February 23, 2010

Page 2 of 4

REQUEST NUMBER: 10-2014

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-901.1	1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	
		1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8065	R	2/18/2010	
		1	RE15-10-8066	R	2/18/2010	
	EPA-906.0	1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	
		1	RE15-10-8016	R	2/18/2010	
		1	RE15-10-8017	R	2/18/2010	
		1	RE15-10-8018	R	2/18/2010	
		1	RE15-10-8019	R	2/18/2010	
		1	RE15-10-8020	R	2/18/2010	
		1	RE15-10-8021	R	2/18/2010	
		1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	
		1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8065	R	2/18/2010	
		1	RE15-10-8066	R	2/18/2010	
	HASL-300-AM-241	1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	

Tuesday, February 23, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:AM-241	1	RE15-10-8016	R	2/18/2010	
		1	RE15-10-8017	R	2/18/2010	
		1	RE15-10-8018	R	2/18/2010	
		1	RE15-10-8019	R	2/18/2010	
		1	RE15-10-8020	R	2/18/2010	
		1	RE15-10-8021	R	2/18/2010	
		1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	
		1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8065	R	2/18/2010	
		1	RE15-10-8066	R	2/18/2010	
	HASL-300:ISOPU	1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	
		1	RE15-10-8016	R	2/18/2010	
		1	RE15-10-8017	R	2/18/2010	
		1	RE15-10-8018	R	2/18/2010	
		1	RE15-10-8019	R	2/18/2010	
		1	RE15-10-8020	R	2/18/2010	
		1	RE15-10-8021	R	2/18/2010	
		1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	

Tuesday, February 23, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOPU	1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8085	R	2/18/2010	
		1	RE15-10-8086	R	2/18/2010	
	HASL-300:ISOU	1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	
		1	RE15-10-8016	R	2/18/2010	
		1	RE15-10-8017	R	2/18/2010	
		1	RE15-10-8018	R	2/18/2010	
		1	RE15-10-8019	R	2/18/2010	
		1	RE15-10-8020	R	2/18/2010	
		1	RE15-10-8021	R	2/18/2010	
		1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	
		1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8085	R	2/18/2010	
		1	RE15-10-8086	R	2/18/2010	

Final Page of REQUEST NUMBER 10-2014



March 02, 2010

www.gel.com

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

Re: LANL ER Project
Work Order: 247911
SDG: 10-2014

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on February 24, 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: 10-2014
Enclosures

Los Alamos National Laboratory (72733-001-09)

LANL ER Project

Work Order #: 247911

SDG: 10-2014

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Case Narrative

**Case Narrative for
Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Workorder #: 247911
SDG # : 10-2014**

March 02, 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 February 24, 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 11/13C temperatures. Shipping container temperature was within specification (0 - 6C).

Sample Identification The laboratory received the following samples:

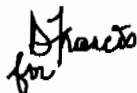
<u>Laboratory ID</u>	<u>Client ID</u>
247911001	RE15-10-8019
247911002	RE15-10-8013
247911003	RE15-10-8026
247911004	RE15-10-8017
247911005	RE15-10-8025
247911006	RE15-10-8022
247911007	RE15-10-8014
247911008	RE15-10-8023
247911009	RE15-10-8020
247911010	RE15-10-8018
247911011	RE15-10-8015
247911012	RE15-10-8021
247911013	RE15-10-8024
247911014	RE15-10-8016
247911015	RE15-10-8065
247911016	RE15-10-8066
247911017	RE15-10-8033

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.

A handwritten signature in black ink, appearing to read "for Valerie Davis".

Valerie Davis

Project Manager

List of current GEL Certifications as of 02 March 2010

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

Chain of Custody and Supporting Documentation

Tuesday, February 23, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2014

LOS ALAMOS

REQUEST NUMBER: 10-2014

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/25/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

247911'.

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-8019	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8019	1	POLY	H3	Ice	R
RE15-10-8013	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8013	1	POLY	H3	Ice	R
RE15-10-8026	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8026	1	POLY	H3	Ice	R
RE15-10-8017	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8017	1	POLY	H3	Ice	R
RE15-10-8025	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8025	1	POLY	H3	Ice	R
RE15-10-8022	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8022	1	POLY	H3	Ice	R
RE15-10-8014	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8014	1	POLY	H3	Ice	R
RE15-10-8023	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8023	1	POLY	H3	Ice	R
RE15-10-8020	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8020	1	POLY	H3	Ice	R
RE15-10-8018	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8018	1	POLY	H3	Ice	R
RE15-10-8015	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8015	1	POLY	H3	Ice	R
RE15-10-8021	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8021	1	POLY	H3	Ice	R
RE15-10-8024	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8024	1	POLY	H3	Ice	R
RE15-10-8018	1	POLY	AM241+GS+ISOPU+ISO U	None	R

Tuesday, February 23, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2014

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-8016	1	POLY	H3	Ice	R
RE15-10-8065	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8065	1	POLY	H3	Ice	R
RE15-10-8066	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8066	1	POLY	H3	Ice	R
RE15-10-8033	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8033	1	POLY	H3	Ice	R

Relinquished By:

Date

Time

Received By:

Date

Time

Printed Name

Signature

2/23/10 1400

Printed Name

Signature

Patricia D. Dent P. L. Dent 2/24/10 08:50

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature

Tuesday, February 23, 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: 2/23/2010

TURNAROUND/REPORT DUE: 3/25/2010

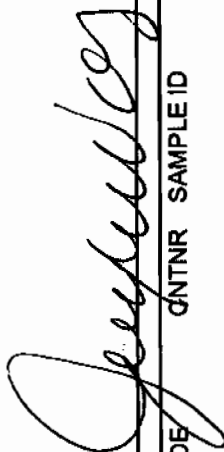
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature:



Page 1 of 4

REQUEST NUMBER: 10-2014

These Samples are on:

LANL Request Number: 10-2014

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

PRIORITY	METHOD CODE	QNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	
		1	RE15-10-8016	R	2/18/2010	
		1	RE15-10-8017	R	2/18/2010	
		1	RE15-10-8018	R	2/18/2010	
		1	RE15-10-8019	R	2/18/2010	
		1	RE15-10-8020	R	2/18/2010	
		1	RE15-10-8021	R	2/18/2010	

Tuesday, February 23, 2010

REQUEST NUMBER: 10-2014

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	
		1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8065	R	2/18/2010	
		1	RE15-10-8066	R	2/18/2010	
	EPA:906.0	1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	
		1	RE15-10-8016	R	2/18/2010	
		1	RE15-10-8017	R	2/18/2010	
		1	RE15-10-8018	R	2/18/2010	
		1	RE15-10-8019	R	2/18/2010	
		1	RE15-10-8020	R	2/18/2010	
		1	RE15-10-8021	R	2/18/2010	
		1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	
		1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8065	R	2/18/2010	
		1	RE15-10-8066	R	2/18/2010	
	HASL-300:AM-241	1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	

Tuesday, February 23, 2010

REQUEST NUMBER: 10-2014

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:AM-241	1	RE15-10-8016	R	2/18/2010	
		1	RE15-10-8017	R	2/18/2010	
		1	RE15-10-8018	R	2/18/2010	
		1	RE15-10-8019	R	2/18/2010	
		1	RE15-10-8020	R	2/18/2010	
		1	RE15-10-8021	R	2/18/2010	
		1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	
		1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8065	R	2/18/2010	
		1	RE15-10-8066	R	2/18/2010	
	HASL-300:ISOPU	1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	
		1	RE15-10-8016	R	2/18/2010	
		1	RE15-10-8017	R	2/18/2010	
		1	RE15-10-8018	R	2/18/2010	
		1	RE15-10-8019	R	2/18/2010	
		1	RE15-10-8020	R	2/18/2010	
		1	RE15-10-8021	R	2/18/2010	
		1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	

Tuesday, February 23, 2010

REQUEST NUMBER: 10-2014

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOPU	1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8065	R	2/18/2010	
		1	RE15-10-8066	R	2/18/2010	
	HASL-300:ISOU	1	RE15-10-8013	R	2/18/2010	
		1	RE15-10-8014	R	2/18/2010	
		1	RE15-10-8015	R	2/18/2010	
		1	RE15-10-8016	R	2/18/2010	
		1	RE15-10-8017	R	2/18/2010	
		1	RE15-10-8018	R	2/18/2010	
		1	RE15-10-8019	R	2/18/2010	
		1	RE15-10-8020	R	2/18/2010	
		1	RE15-10-8021	R	2/18/2010	
		1	RE15-10-8022	R	2/18/2010	
		1	RE15-10-8023	R	2/18/2010	
		1	RE15-10-8024	R	2/18/2010	
		1	RE15-10-8025	R	2/18/2010	
		1	RE15-10-8026	R	2/18/2010	
		1	RE15-10-8033	R	2/18/2010	
		1	RE15-10-8065	R	2/18/2010	
		1	RE15-10-8066	R	2/18/2010	

Final Page of REQUEST NUMBER 10-2014



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL		SDG/ARCOC/Work Order: 10-2014	
Received By: Mercedes Simmons		Date Received: 2/24/10	
Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		X	Maximum Counts Observed*: 60cpm
Classified Radioactive II by RSO?		X	
COC/Samples marked containing PCBs?		X	
Shipped as a DOT Hazardous?		X	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		X	

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

Comments:

Fed Ex Tracking Numbers:

7209 7850 1768 1C 7209 7850 1702 11C
 7209 7850 1757 1C 7209 7850 1713 13C
 7209 7850 1805 2C 7209 7850 1724 13C
 7209 7850 1790 3C
 7209 7850 1735 3C
 7209 7850 1746 4C
 7209 7850 1779 5C
 7209 7850 1780 5C

Page 1 (of 1) Review: Initials

Date

2/26/10

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

SHIP DATE: 23FEB10
ACTMGT: 54.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

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

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 23FEB10
ACTMGT: 47.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR3A05529E00

FedEx



2 of 2
TRKH 7209 7850 1768
NN MASTER NN

WED - 24FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA



ORIGIN ID: SAFA (505) 665-9969
JOYLENE VALDEZ
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GENERAL ENGINEERING LAB
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CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR3A05529E00

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2 of 2
RK# 7209 7850 1805

WED - 24FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

13 of 1023

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

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

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2 of 2
RK# 7209 7850 1790

Mstr# 7209 7850 1780 0201

WED - 24FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA



BILL SENDER

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REF: 6B010AMR3A05528E00



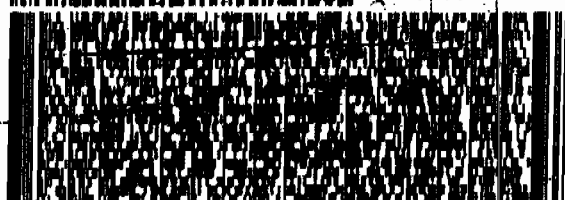
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BILL SENDER

REF: 68010AMR3A05529E00



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SC-US
CHS

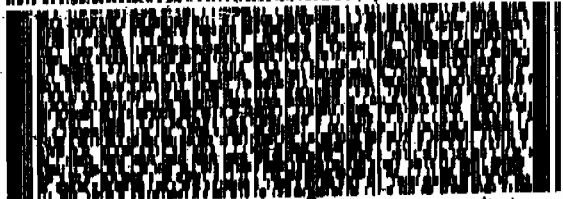
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Page 14 of 1023

XX CHSA

**BILL SENDER**

REF: 68010AMR3A05529E00



XX CHSA



WED - 24FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

ORIGIN ID: SAFA (505) 655-8968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGO BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 23FEB10
ACTWGT: 57.8 LB MAN
CAD: 0014175/CAPE2450

BILL SENDER

ORIGIN ID: SAFA (505) 655-8968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGO BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 23FEB10
ACTWGT: 58.8 LB MAN
CAD: 0014175/CAPE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 65010AAREW0136DM00

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

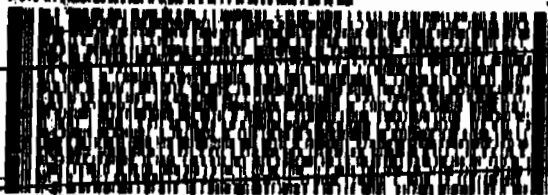
(843) 556-8171

REF: 65010AAREW0136DM00

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FedEx



FedEx

EXPRESS



2 of 2
MPS# 7209 7850 1702

Matr# 7209 7850 1808 [0201]

WED - 24FEB A1
PRIORITY OVERNIGHT

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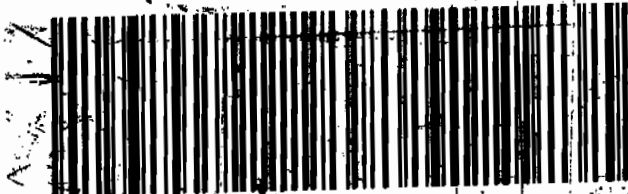
29407
SC-US
CHS

TRK# 7209 7850 1713

XX CHSA

WED - 24FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS



ORIGIN ID: SAFA (505) 655-8968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGO BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 23FEB10
ACTWGT: 49.8 LB MAN
CAD: 0014175/CAPE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 65010AAREW0136DM00

13°



FedEx



1 of 2
TRK# 7209 7850 1724

MM MASTER MM

XX CHSA

WED - 24FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier	Explanation
-----------	-------------

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

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Los Alamos National Laboratory (LANL)
SDG 10-2014**

Method/Analysis Information

Product: AM241
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 967508
Prep Batch Number: 957588

Sample ID	Client ID
247911001	RE15-10-8019
247911002	RE15-10-8013
247911003	RE15-10-8026
247911004	RE15-10-8017
247911005	RE15-10-8025
247911006	RE15-10-8022
247911007	RE15-10-8014
247911008	RE15-10-8023
247911009	RE15-10-8020
247911010	RE15-10-8018
247911011	RE15-10-8015
247911012	RE15-10-8021
247911013	RE15-10-8024
247911014	RE15-10-8016
247911015	RE15-10-8065
247911016	RE15-10-8066
247911017	RE15-10-8033
1202076580	Method Blank (MB)
1202076581	247911017(RE15-10-8033) Sample Duplicate (DUP)
1202076582	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 solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

Aliquot for sample 1202076580 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 247911017 (RE15-10-8033). The QC was from LANL work order 247911.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

Samples were reprepared due to low carrier/tracer yield.

Miscellaneous Information:

Data Exception (DER) Documentation

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: ISOPU

Analytical Method: DOE EML HASL-300, Pu-11-RC Modified
 Prep Method: Dry Soil Prep
 Analytical Batch Number: 961706
 Prep Batch Number: 957588

Sample ID	Client ID
247911001	RE15-10-8019
247911002	RE15-10-8013
247911003	RE15-10-8026
247911004	RE15-10-8017
247911005	RE15-10-8025
247911006	RE15-10-8022
247911007	RE15-10-8014
247911008	RE15-10-8023
247911009	RE15-10-8020
247911010	RE15-10-8018
247911011	RE15-10-8015
247911012	RE15-10-8021
247911013	RE15-10-8024
247911014	RE15-10-8016
247911015	RE15-10-8065
247911016	RE15-10-8066
247911017	RE15-10-8033
1202062785	Method Blank (MB)
1202062786	247911001(RE15-10-8019) Sample Duplicate (DUP)
1202062787	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 solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:**Blank Information**

Aliquot for sample 1202062785 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 247911001 (RE15-10-8019). The QC was from LANL work order 247911.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The Pu-238 blank, 1202062785 (MB), 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

Samples 247911015 (RE15-10-8065) and 247911016 (RE15-10-8066) were recounted to achieve 400 tracer counts.

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 247911015 (RE15-10-8065) did not meet the client's yield requirement. However, there are 400 tracer counts, GEL's standard tracer yield requirements are met, and the client's detection limits are met.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	ISOU
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	961708

Prep Batch Number: 957588

Sample ID	Client ID
247911001	RE15-10-8019
247911002	RE15-10-8013
247911003	RE15-10-8026
247911004	RE15-10-8017
247911005	RE15-10-8025
247911006	RE15-10-8022
247911007	RE15-10-8014
247911008	RE15-10-8023
247911009	RE15-10-8020
247911010	RE15-10-8018
247911011	RE15-10-8015
247911012	RE15-10-8021
247911013	RE15-10-8024
247911014	RE15-10-8016
247911015	RE15-10-8065
247911016	RE15-10-8066
247911017	RE15-10-8033
1202062788	Method Blank (MB)
1202062789	247911001(RE15-10-8019) Sample Duplicate (DUP)
1202062790	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 solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

Aliquot for sample 1202062788 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 247911001 (RE15-10-8019). The QC was from LANL work order 247911.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The U233/234 and U238 blank results are greater than 1.65 times the CSU but less than the MDC.

Technical Information:**Holding Time**

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

Sample Re-prep/Re-analysis

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

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

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population. Samples 247911004 (RE15-10-8017) and 247911010 (RE15-10-8018) did not meet the client's yield requirement. However, there are 400 tracer counts, GEL's standard tracer yield requirements are met, and the client's detection limits are met.

Blank Decision Level

The U238 blank result is greater than the decision level but less than the MDC.

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:	957714
Prep Batch Number:	957588

Sample ID	Client ID
247911001	RE15-10-8019
247911002	RE15-10-8013
247911003	RE15-10-8026
247911004	RE15-10-8017

247911005	RE15-10-8025
247911006	RE15-10-8022
247911007	RE15-10-8014
247911008	RE15-10-8023
247911009	RE15-10-8020
247911010	RE15-10-8018
247911011	RE15-10-8015
247911012	RE15-10-8021
247911013	RE15-10-8024
247911014	RE15-10-8016
247911015	RE15-10-8065
247911016	RE15-10-8066
247911017	RE15-10-8033
1202053647	Method Blank (MB)
1202053648	247911001(RE15-10-8019) Sample Duplicate (DUP)
1202053649	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# 19.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met. The initial Calibrations were performed in March 2009, April 2009, June 2009, July 2009, August 2009, October 2009, November 2009, December 2009, January 2010 and February 2010.

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

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: 247911001 (RE15-10-8019). The QC was from LANL work order 247911.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The method blank 1202053647 (MB) result is greater than 1.65 times the CSU but less than the MDC for Cs-137 and Eu-152.

Technical Information:**Holding Time**

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

Sample Re-prep/Re-analysis

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

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

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

Additional Comments

Additional comments were not required for this sample set.

Blank Decision Level

The method blank 1202053647 (MB) result is greater than the decision level but less than the MDC for Eu-152 and K-40.

Qualifier information

Qualifier	Reason	Analyte	Sample	Client Sample
UJ	Data rejected due to interference.	Bismuth-211	247911001	RE15-10-8019
			247911002	RE15-10-8013
			247911003	RE15-10-8026
			247911004	RE15-10-8017
			247911005	RE15-10-8025
			247911006	RE15-10-8022
			247911007	RE15-10-8014
			247911008	RE15-10-8023
			247911009	RE15-10-8020
			247911010	RE15-10-8018
			247911011	RE15-10-8015
			247911012	RE15-10-8021
			247911013	RE15-10-8024
			247911014	RE15-10-8016
			247911015	RE15-10-8065
			247911016	RE15-10-8066
			247911017	RE15-10-8033

	1202053648	RE15-10-8019(247911001DUP)
Cadmium-109	247911001	RE15-10-8019
	247911002	RE15-10-8013
	247911003	RE15-10-8026
	247911004	RE15-10-8017
	247911005	RE15-10-8025
	247911006	RE15-10-8022
	247911007	RE15-10-8014
	247911008	RE15-10-8023
	247911009	RE15-10-8020
	247911010	RE15-10-8018
	247911011	RE15-10-8015
	247911012	RE15-10-8021
	247911014	RE15-10-8016
	247911015	RE15-10-8065
	247911016	RE15-10-8066
	247911017	RE15-10-8033
	1202053648	RE15-10-8019(247911001DUP)
Radium-224	247911001	RE15-10-8019
	247911002	RE15-10-8013
	247911003	RE15-10-8026
	247911004	RE15-10-8017
	247911005	RE15-10-8025
	247911006	RE15-10-8022
	247911007	RE15-10-8014
	247911008	RE15-10-8023
	247911009	RE15-10-8020
	247911010	RE15-10-8018
	247911011	RE15-10-8015
	247911012	RE15-10-8021
	247911013	RE15-10-8024
	247911014	RE15-10-8016

UI	Data rejected due to low abundance.		247911015	RE15-10-8065
			247911016	RE15-10-8066
			247911017	RE15-10-8033
			1202053648	RE15-10-8019(247911001DUP)
		Americium-241	247911010	RE15-10-8018
		Cesium-134	247911005	RE15-10-8025
			247911006	RE15-10-8022
			247911009	RE15-10-8020
			247911010	RE15-10-8018
		Strontium-85	247911011	RE15-10-8015
			247911012	RE15-10-8021
			247911014	RE15-10-8016
			247911003	RE15-10-8026
			247911005	RE15-10-8025
			247911006	RE15-10-8022
			247911010	RE15-10-8018
			247911011	RE15-10-8015
			247911012	RE15-10-8021
			247911013	RE15-10-8024
			247911017	RE15-10-8033

Method/Analysis Information

Product: H3
Analytical Method: GL-RAD-A-002
Analytical Batch Number: 961542

Sample ID	Client ID
247911001	RE15-10-8019
247911002	RE15-10-8013
247911003	RE15-10-8026
247911004	RE15-10-8017
247911005	RE15-10-8025

247911006	RE15-10-8022
247911007	RE15-10-8014
247911008	RE15-10-8023
247911009	RE15-10-8020
247911010	RE15-10-8018
247911011	RE15-10-8015
247911012	RE15-10-8021
247911013	RE15-10-8024
247911014	RE15-10-8016
247911015	RE15-10-8065
247911016	RE15-10-8066
247911017	RE15-10-8033
1202062415	Method Blank (MB)
1202062416	247911004(RE15-10-8017) Sample Duplicate (DUP)
1202062417	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 18.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

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: 247911004 (RE15-10-8017). The QC was from LANL work order 247911.

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

Manual qualifiers were not required.

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:

Theresa J. Austin 3/23/2010

Reviewer/Date: _____

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: 10-2014 GEL Work Order: 247911

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: March 23, 2010

Client Sample ID: RE15-10-8019
Sample ID: 247911001
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 16.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00297	0.0215	+/-0.0021	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00105	0.0268	+/-0.0069	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.0124	0.0227	+/-0.00676	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.72	0.074	+/-0.136	0.100	pCi/g		KXM4	03/21/10	0858	961708	4
Uranium-235/236		0.140	0.0452	+/-0.0238	0.100	pCi/g						
Uranium-238		5.53	0.052	+/-0.398	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0811	0.135	+/-0.0431	0.200	pCi/g		MXR1	03/06/10	1722	957714	5
Bismuth-211	UI	4.40	0.453	+/-0.306		pCi/g						
Bismuth-214		1.31	0.154	+/-0.104	0.200	pCi/g						
Cadmium-109	UI	2.47	1.21	+/-0.428		pCi/g						
Cerium-139	U	-0.0192	0.0591	+/-0.0182	0.050	pCi/g						
Cesium-134	U	0.111	0.118	+/-0.0358	0.100	pCi/g						
Cesium-137		0.407	0.0852	+/-0.056	0.100	pCi/g						
Cobalt-60	U	-0.0103	0.0818	+/-0.0259	0.100	pCi/g						
Europium-152	U	-0.141	0.197	+/-0.0724	0.200	pCi/g						
Lanthanum-140	U	0.0152	0.166	+/-0.0499		pCi/g						
Lead-212		1.97	0.113	+/-0.125	0.100	pCi/g						
Lead-214		1.60	0.136	+/-0.119	0.100	pCi/g						
Mercury-203	U	0.0275	0.0868	+/-0.0248	0.100	pCi/g						
Potassium-40		30.7	0.665	+/-1.39	1.00	pCi/g						
Radium-223	U	-0.546	1.25	+/-0.446		pCi/g						
Radium-224	UI	4.83	1.21	+/-0.791		pCi/g						
Radium-226		1.31	0.154	+/-0.104		pCi/g						
Radium-228		2.17	0.294	+/-0.217	0.500	pCi/g						
Ruthenium-106	U	-0.0383	0.709	+/-0.219	0.800	pCi/g						
Sodium-22	U	-0.0307	0.0885	+/-0.0289	0.080	pCi/g						
Strontium-85	U	0.0317	0.082	+/-0.0273		pCi/g						

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

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8019
247911001

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thallium-208		0.635	0.0655	+/-0.0577	0.080	pCi/g						
Thorium-227	U	0.0385	0.523	+/-0.152		pCi/g						
Thorium-231	U	-0.546	1.25	+/-0.446		pCi/g						
Thorium-234		7.95	1.32	+/-0.955	2.00	pCi/g						
Tin-113	U	0.0184	0.0946	+/-0.0277	0.100	pCi/g						
Uranium-235	U	0.122	0.418	+/-0.125	0.500	pCi/g						
Yttrium-88	U	0.031	0.0824	+/-0.0226	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		580	175	+/-73.8	250	pCi/L		KXK2	03/13/10	0811	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	89.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	69.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.1	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8019
Sample ID: 247911001

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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D Results are reported from a diluted aliquot of the sample
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.
U1 Gamma Spectroscopy--Uncertain identification
UJ Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

GEL LABORATORIES LLC

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Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8013
Sample ID: 247911002
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 21.7%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0149	0.025	+/-0.00579	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00163	0.0216	+/-0.00163	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.0135	0.0182	+/-0.00507	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		4.71	0.078	+/-0.344	0.100	pCi/g		KXM4	03/21/10	0858	961708	4
Uranium-235/236		0.479	0.0476	+/-0.0522	0.100	pCi/g						
Uranium-238		19.4	0.0548	+/-1.35	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0422	0.160	+/-0.0528	0.200	pCi/g		MXR1	03/06/10	1723	957714	5
Bismuth-211	UI	3.93	0.436	+/-0.308		pCi/g						
Bismuth-214		1.41	0.151	+/-0.127	0.200	pCi/g						
Cadmium-109	UI	2.90	1.46	+/-0.557		pCi/g						
Cerium-139	U	-0.0168	0.0641	+/-0.0188	0.050	pCi/g						
Cesium-134	U	0.0452	0.117	+/-0.0334	0.100	pCi/g						
Cesium-137		0.240	0.0892	+/-0.0466	0.100	pCi/g						
Cobalt-60	U	-0.0346	0.0901	+/-0.0287	0.100	pCi/g						
Europium-152	U	-0.068	0.198	+/-0.068	0.200	pCi/g						
Lanthanum-140	U	0.0742	0.198	+/-0.0555		pCi/g						
Lead-212		1.72	0.153	+/-0.120	0.100	pCi/g						
Lead-214		1.43	0.161	+/-0.118	0.100	pCi/g						
Mercury-203	U	0.0455	0.088	+/-0.0255	0.100	pCi/g						
Potassium-40		27.6	0.745	+/-1.63	1.00	pCi/g						
Radium-223	U	0.205	1.33	+/-0.456		pCi/g						
Radium-224	UI	2.34	1.64	+/-0.514		pCi/g						
Radium-226		1.41	0.151	+/-0.127		pCi/g						
Radium-228		1.75	0.319	+/-0.209	0.500	pCi/g						
Ruthenium-106	U	-0.308	0.744	+/-0.236	0.800	pCi/g						
Sodium-22	U	-0.0426	0.0909	+/-0.0291	0.080	pCi/g						
Strontium-85	U	-0.198	0.0983	+/-0.035		pCi/g						
Thallium-208		0.501	0.0869	+/-0.0569	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: March 23, 2010

Client Sample ID: RE15-10-8013
Sample ID: 247911002

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.019	0.536	+/-0.160		pCi/g						
Thorium-231	U	0.205	1.33	+/-0.456		pCi/g						
Thorium-234		23.1	1.50	+/-2.40	2.00	pCi/g						
Tin-113	U	-0.0237	0.0982	+/-0.0292	0.100	pCi/g						
Uranium-235		0.820	0.429	+/-0.226	0.500	pCi/g						
Yttrium-88	U	-0.00714	0.0682	+/-0.0211	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		2740	175	+/-211	250	pCi/L		KXK2	03/13/10	0949	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	75.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	89.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	87.4	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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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: March 23, 2010

Client Sample ID: RE15-10-8013 Project: LANL01004
Sample ID: 247911002 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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F Estimated Value
H Analytical holding time was exceeded
J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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
UJ 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: March 23, 2010

Client Sample ID: RE15-10-8026
Sample ID: 247911003
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 9.06%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00204	0.0205	+/-0.002	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00688	0.0213	+/-0.0038	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.00803	0.018	+/-0.00362	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.819	0.0671	+/-0.0712	0.100	pCi/g		KXM4	03/21/10	0858	961708	4
Uranium-235/236		0.0471	0.041	+/-0.0129	0.100	pCi/g						
Uranium-238		0.909	0.0472	+/-0.0775	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0475	0.531	+/-0.152	0.200	pCi/g		MXR1	03/06/10	1723	957714	5
Bismuth-211	UI	4.50	0.409	+/-0.350		pCi/g						
Bismuth-214		1.20	0.143	+/-0.114	0.200	pCi/g						
Cadmium-109	UI	4.39	1.80	+/-0.614		pCi/g						
Cerium-139	U	0.00383	0.0662	+/-0.0198	0.050	pCi/g						
Cesium-134	U	0.094	0.112	+/-0.0305	0.100	pCi/g						
Cesium-137	U	-0.018	0.0711	+/-0.0216	0.100	pCi/g						
Cobalt-60	U	-0.00227	0.0711	+/-0.0222	0.100	pCi/g						
Europium-152	U	-0.0366	0.203	+/-0.0748	0.200	pCi/g						
Lanthanum-140	U	-0.0171	0.167	+/-0.0518		pCi/g						
Lead-212		1.68	0.124	+/-0.123	0.100	pCi/g						
Lead-214		1.63	0.149	+/-0.135	0.100	pCi/g						
Mercury-203	U	0.0551	0.0902	+/-0.0286	0.100	pCi/g						
Potassium-40		27.6	0.737	+/-1.67	1.00	pCi/g						
Radium-223	U	-1.5	1.34	+/-0.454		pCi/g						
Radium-224	UI	6.07	1.33	+/-0.881		pCi/g						
Radium-226		1.20	0.143	+/-0.114		pCi/g						
Radium-228		2.32	0.295	+/-0.233	0.500	pCi/g						
Ruthenium-106	U	-0.382	0.525	+/-0.179	0.800	pCi/g						
Sodium-22	U	-0.0719	0.0697	+/-0.0261	0.080	pCi/g						
Strontium-85	UI	0.121	0.0958	+/-0.0289		pCi/g						
Thallium-208		0.547	0.0727	+/-0.0564	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8026
247911003

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.0323	0.569	+/-0.165		pCi/g						
Thorium-231	U	-1.5	1.34	+/-0.454		pCi/g						
Thorium-234	U	-0.0746	4.24	+/-1.24	2.00	pCi/g						
Tin-113	U	-0.00583	0.0984	+/-0.0294	0.100	pCi/g						
Uranium-235	U	-0.121	0.433	+/-0.133	0.500	pCi/g						
Yttrium-88	U	0.0232	0.0624	+/-0.0166	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		243	175	+/-58.5	250	pCi/L		KXK2	03/13/10	1127	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	92.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	94.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	97.3	(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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8026 Project: LANL01004
Sample ID: 247911003 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
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F Estimated Value
H Analytical holding time was exceeded
J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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
UJ 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: March 23, 2010

Client Sample ID: RE15-10-8017
Sample ID: 247911004
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 24.9%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0109	0.0207	+/-0.00554	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00627	0.0254	+/-0.00408	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240		0.0535	0.0214	+/-0.0106	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		13.8	0.198	+/-1.12	0.100	pCi/g		KXM4	03/20/10	1243	961708	4
Uranium-235/236		1.72	0.121	+/-0.182	0.100	pCi/g						
Uranium-238		91.1	0.139	+/-7.15	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0726	0.220	+/-0.0665	0.200	pCi/g		MXR1	03/06/10	1724	957714	5
Bismuth-211	UI	3.24	0.423	+/-0.289		pCi/g						
Bismuth-214		1.18	0.165	+/-0.116	0.200	pCi/g						
Cadmium-109	UI	2.53	2.29	+/-0.701		pCi/g						
Cerium-139	U	0.0347	0.0634	+/-0.0199	0.050	pCi/g						
Cesium-134	U	0.124	0.132	+/-0.0391	0.100	pCi/g						
Cesium-137		0.530	0.0979	+/-0.0563	0.100	pCi/g						
Cobalt-60	U	0.00245	0.0911	+/-0.0269	0.100	pCi/g						
Europium-152	U	-0.0844	0.188	+/-0.0588	0.200	pCi/g						
Lanthanum-140	U	-0.115	0.141	+/-0.0538		pCi/g						
Lead-212		1.53	0.108	+/-0.099	0.100	pCi/g						
Lead-214		1.18	0.154	+/-0.110	0.100	pCi/g						
Mercury-203	U	0.0106	0.0788	+/-0.025	0.100	pCi/g						
Potassium-40		25.9	0.431	+/-1.53	1.00	pCi/g						
Radium-223	U	-0.856	1.23	+/-0.383		pCi/g						
Radium-224	UI	4.67	1.15	+/-0.786		pCi/g						
Radium-226		1.18	0.165	+/-0.116		pCi/g						
Radium-228		1.43	0.293	+/-0.233	0.500	pCi/g						
Ruthenium-106	U	-0.376	0.673	+/-0.221	0.800	pCi/g						
Sodium-22	U	-0.0167	0.0792	+/-0.0256	0.080	pCi/g						
Strontium-85	U	-0.176	0.0884	+/-0.0325		pCi/g						
Thallium-208		0.424	0.0808	+/-0.0561	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8017
Sample ID: 247911004
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.261	0.555	+/-0.181		pCi/g						
Thorium-231	U	-0.856	1.23	+/-0.383		pCi/g						
Thorium-234		79.6	1.97	+/-7.72	2.00	pCi/g						
Tin-113	U	0.0331	0.0988	+/-0.0279	0.100	pCi/g						
Uranium-235		1.41	0.435	+/-0.244	0.500	pCi/g						
Yttrium-88	U	0.0131	0.0745	+/-0.0215	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		35400	211	+/-2490	250	pCi/L		KXK2	03/13/10	1304	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	89.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	85.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	35.4 *	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8017
247911004

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: March 23, 2010

Client Sample ID: RE15-10-8025
Sample ID: 247911005
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 32.2%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00165	0.0226	+/-0.0016	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00391	0.0232	+/-0.00609	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.0037	0.0196	+/-0.00465	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.08	0.0812	+/-0.0948	0.100	pCi/g		KXM4	03/20/10	1243	961708	4
Uranium-235/236		0.0889	0.0496	+/-0.0195	0.100	pCi/g						
Uranium-238		2.40	0.0571	+/-0.189	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0933	0.279	+/-0.0918	0.200	pCi/g		MXR1	03/06/10	1724	957714	5
Bismuth-211	UI	3.28	0.269	+/-0.222		pCi/g						
Bismuth-214		1.02	0.094	+/-0.081	0.200	pCi/g						
Cadmium-109	UI	3.74	1.10	+/-0.511		pCi/g						
Cerium-139	U	-0.0123	0.0431	+/-0.0126	0.050	pCi/g						
Cesium-134	UI	0.107	0.0736	+/-0.0311	0.100	pCi/g						
Cesium-137	U	0.0496	0.052	+/-0.0192	0.100	pCi/g						
Cobalt-60	U	-0.00284	0.0495	+/-0.0153	0.100	pCi/g						
Europium-152	U	-0.0383	0.129	+/-0.0469	0.200	pCi/g						
Lanthanum-140	U	-0.0565	0.115	+/-0.0378		pCi/g						
Lead-212		1.48	0.0741	+/-0.0714	0.100	pCi/g						
Lead-214		1.19	0.0978	+/-0.0872	0.100	pCi/g						
Mercury-203	U	0.0261	0.0567	+/-0.0164	0.100	pCi/g						
Potassium-40		26.6	0.514	+/-1.23	1.00	pCi/g						
Radium-223	U	0.142	0.869	+/-0.298		pCi/g						
Radium-224	UI	4.15	0.794	+/-0.526		pCi/g						
Radium-226		1.02	0.094	+/-0.081		pCi/g						
Radium-228		1.53	0.176	+/-0.165	0.500	pCi/g						
Ruthenium-106	U	0.0547	0.397	+/-0.120	0.800	pCi/g						
Sodium-22	U	-0.0402	0.0553	+/-0.0185	0.080	pCi/g						
Strontium-85	UI	0.0706	0.0579	+/-0.0175		pCi/g						
Thallium-208		0.380	0.0496	+/-0.0369	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8025
Sample ID: 247911005
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.103	0.355	+/-0.104		pCi/g						
Thorium-231	U	0.142	0.869	+/-0.298		pCi/g						
Thorium-234		2.91	2.32	+/-1.27	2.00	pCi/g						
Tin-113	U	-0.0041	0.0577	+/-0.017	0.100	pCi/g						
Uranium-235	U	0.0544	0.311	+/-0.0956	0.500	pCi/g						
Yttrium-88	U	-0.00299	0.0393	+/-0.0123	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		274	175	+/-59.6	250	pCi/L		KXK2	03/13/10	1400	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	88.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	94.6	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8025
Sample ID: 247911005

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: March 23, 2010

Client Sample ID: RE15-10-8022
Sample ID: 247911006
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 4.04%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00285	0.0209	+/-0.00202	0.050	pCi/g	JXD2	03/22/10	2043	967508	1	
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0114	0.0275	+/-0.0085	0.050	pCi/g	KXM4	03/19/10	2107	961706	3	
Plutonium-239/240	U	0.00058	0.0233	+/-0.00256	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.02	0.0664	+/-0.0855	0.100	pCi/g	KXM4	03/21/10	0858	961708	4	
Uranium-235/236		0.064	0.0406	+/-0.016	0.100	pCi/g						
Uranium-238		1.27	0.0467	+/-0.103	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0089	0.248	+/-0.0821	0.200	pCi/g	MXR1	03/06/10	1725	957714	5	
Bismuth-211	UI	5.13	0.336	+/-0.379		pCi/g						
Bismuth-214		1.56	0.110	+/-0.125	0.200	pCi/g						
Cadmium-109	UI	4.40	1.29	+/-0.601		pCi/g						
Cerium-139	U	0.00201	0.0546	+/-0.016	0.050	pCi/g						
Cesium-134	UI	0.168	0.0915	+/-0.0345	0.100	pCi/g						
Cesium-137	U	-0.00895	0.0662	+/-0.0203	0.100	pCi/g						
Cobalt-60	U	-0.0495	0.0584	+/-0.020	0.100	pCi/g						
Europium-152	U	-0.0908	0.161	+/-0.0581	0.200	pCi/g						
Lanthanum-140	U	-0.129	0.161	+/-0.0542		pCi/g						
Lead-212		2.25	0.102	+/-0.161	0.100	pCi/g						
Lead-214		1.86	0.122	+/-0.147	0.100	pCi/g						
Mercury-203	U	0.0365	0.0735	+/-0.0221	0.100	pCi/g						
Potassium-40		39.6	0.531	+/-2.01	1.00	pCi/g						
Radium-223	U	-0.0138	1.11	+/-0.378		pCi/g						
Radium-224	UI	5.56	1.09	+/-0.800		pCi/g						
Radium-226		1.56	0.110	+/-0.125		pCi/g						
Radium-228		2.62	0.225	+/-0.247	0.500	pCi/g						
Ruthenium-106	U	0.0902	0.517	+/-0.153	0.800	pCi/g						
Sodium-22	U	0.00367	0.0759	+/-0.0229	0.080	pCi/g						
Strontium-85	UI	0.161	0.0795	+/-0.0246		pCi/g						
Thallium-208		0.773	0.0594	+/-0.0576	0.080	pCi/g						

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Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8022
Sample ID: 247911006
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.0856	0.447	+/-0.139		pCi/g						
Thorium-231	U	-0.0138	1.11	+/-0.378		pCi/g						
Thorium-234		3.26	2.09	+/-1.03	2.00	pCi/g						
Tin-113	U	-0.0118	0.079	+/-0.0241	0.100	pCi/g						
Uranium-235	U	-0.0867	0.367	+/-0.112	0.500	pCi/g						
Yttrium-88	U	-0.0157	0.0565	+/-0.0183	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		1340	175	+/-119	250	pCi/L		KXK2	03/13/10	1538	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	89.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	76.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	99.5	(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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8022 Project: LANL01004
Sample ID: 247911006 Client ID: LANL010

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

H Analytical holding time was exceeded

J Value is estimated

M M if above MDC and less than LLD

M Matrix Related Failure

N/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

UJ 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: March 23, 2010

Client Sample ID: RE15-10-8014
Sample ID: 247911007
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 5.98%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00375	0.0214	+/-0.00279	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00357	0.0208	+/-0.00294	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.000438	0.0176	+/-0.00193	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.01	0.0864	+/-0.0908	0.100	pCi/g		KXM4	03/20/10	1243	961708	4
Uranium-235/236	U	0.0379	0.0528	+/-0.0154	0.100	pCi/g						
Uranium-238		1.06	0.0607	+/-0.0944	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.187	0.385	+/-0.120	0.200	pCi/g		MXR1	03/06/10	1725	957714	5
Bismuth-211	UI	5.07	0.370	+/-0.319		pCi/g						
Bismuth-214		1.34	0.134	+/-0.116	0.200	pCi/g						
Cadmium-109	UI	5.03	1.52	+/-0.613		pCi/g						
Cerium-139	U	-0.0202	0.061	+/-0.0184	0.050	pCi/g						
Cesium-134	U	0.0773	0.112	+/-0.0349	0.100	pCi/g						
Cesium-137	U	0.0278	0.0802	+/-0.0234	0.100	pCi/g						
Cobalt-60	U	0.00168	0.0789	+/-0.0241	0.100	pCi/g						
Europium-152	U	-0.0112	0.189	+/-0.0811	0.200	pCi/g						
Lanthanum-140	U	-0.0888	0.163	+/-0.0553		pCi/g						
Lead-212		2.21	0.112	+/-0.104	0.100	pCi/g						
Lead-214		1.84	0.135	+/-0.126	0.100	pCi/g						
Mercury-203	U	0.0554	0.0843	+/-0.0262	0.100	pCi/g						
Potassium-40		30.5	0.707	+/-1.50	1.00	pCi/g						
Radium-223	U	-0.109	1.25	+/-0.420		pCi/g						
Radium-224	UI	5.13	1.20	+/-0.726		pCi/g						
Radium-226		1.34	0.134	+/-0.116		pCi/g						
Radium-228		2.27	0.313	+/-0.214	0.500	pCi/g						
Ruthenium-106	U	0.0757	0.631	+/-0.188	0.800	pCi/g						
Sodium-22	U	0.0235	0.0992	+/-0.0293	0.080	pCi/g						
Strontium-85	U	0.0264	0.0786	+/-0.026		pCi/g						
Thallium-208		0.704	0.0701	+/-0.0549	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8014
247911007

Project: LANL01004
Client ID: LANL010

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

GAMMA SPEC "Dry Weight Corrected"

Thorium-227	U	-0.0752	0.508	+/-0.156		pCi/g						
Thorium-231	U	-0.109	1.25	+/-0.420		pCi/g						
Thorium-234		3.70	3.26	+/-1.56	2.00	pCi/g						
Tin-113	U	-0.0163	0.0904	+/-0.027	0.100	pCi/g						
Uranium-235	U	0.130	0.427	+/-0.124	0.500	pCi/g						
Yttrium-88	U	0.0076	0.0727	+/-0.0214	0.100	pCi/g						

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium		1060	175	+/-101	250	pCi/L	KXK2	03/13/10	1716	961542	6	
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The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	85.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	97.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	89.7	(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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8014
247911007

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: March 23, 2010

Client Sample ID: RE15-10-8023
Sample ID: 247911008
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 17.9%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00142	0.0212	+/-0.00145	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00157	0.0208	+/-0.00157	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.00288	0.0176	+/-0.0037	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.30	0.0931	+/-0.113	0.100	pCi/g		KXM4	03/20/10	1243	961708	4
Uranium-235/236		0.0979	0.0569	+/-0.0212	0.100	pCi/g						
Uranium-238		1.91	0.0654	+/-0.157	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0191	0.0831	+/-0.0279	0.200	pCi/g		MXR1	03/06/10	1726	957714	5
Bismuth-211	UI	4.69	0.348	+/-0.339		pCi/g						
Bismuth-214		1.37	0.119	+/-0.128	0.200	pCi/g						
Cadmium-109	UI	4.12	0.856	+/-0.429		pCi/g						
Cerium-139	U	-0.00781	0.0474	+/-0.0143	0.050	pCi/g						
Cesium-134	U	0.0911	0.107	+/-0.0313	0.100	pCi/g						
Cesium-137		0.0888	0.0801	+/-0.0362	0.100	pCi/g						
Cobalt-60	U	-0.0012	0.0751	+/-0.0231	0.100	pCi/g						
Europium-152	U	-0.0214	0.159	+/-0.0476	0.200	pCi/g						
Lanthanum-140	U	-0.102	0.168	+/-0.0578		pCi/g						
Lead-212		2.08	0.0838	+/-0.134	0.100	pCi/g						
Lead-214		1.70	0.130	+/-0.132	0.100	pCi/g						
Mercury-203	U	0.00188	0.0674	+/-0.0209	0.100	pCi/g						
Potassium-40		33.1	0.508	+/-1.72	1.00	pCi/g						
Radium-223	U	0.217	1.04	+/-0.339		pCi/g						
Radium-224	UI	5.32	0.899	+/-0.753		pCi/g						
Radium-226		1.37	0.119	+/-0.128		pCi/g						
Radium-228		1.83	0.243	+/-0.218	0.500	pCi/g						
Ruthenium-106	U	0.114	0.585	+/-0.169	0.800	pCi/g						
Sodium-22	U	0.00433	0.0893	+/-0.027	0.080	pCi/g						
Strontium-85	U	0.042	0.0693	+/-0.0222		pCi/g						
Thallium-208		0.673	0.0685	+/-0.0639	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8023
247911008

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0558	0.384	+/-0.120		pCi/g						
Thorium-231	U	0.217	1.04	+/-0.339		pCi/g						
Thorium-234		2.44	0.860	+/-0.543	2.00	pCi/g						
Tin-113	U	0.00543	0.0816	+/-0.0242	0.100	pCi/g						
Uranium-235	U	0.123	0.308	+/-0.0899	0.500	pCi/g						
Yttrium-88	U	-0.00868	0.0541	+/-0.0175	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	160	175	+/-55.7	250	pCi/L		KXK2	03/13/10	1854	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	90.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	84.6	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8023
Sample ID: 247911008
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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F Estimated Value
H Analytical holding time was exceeded
J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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
UJ 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: March 23, 2010

Client Sample ID: RE15-10-8020
Sample ID: 247911009
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 6.12%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00347	0.0208	+/-0.00203	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00172	0.0228	+/-0.00172	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.00906	0.0193	+/-0.00441	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.832	0.0668	+/-0.0721	0.100	pCi/g		KXM4	03/20/10	1224	961708	4
Uranium-235/236		0.0585	0.0408	+/-0.0143	0.100	pCi/g						
Uranium-238		0.864	0.0469	+/-0.0743	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0433	0.239	+/-0.073	0.200	pCi/g		MXR1	03/06/10	1729	957714	5
Bismuth-211	UI	4.97	0.319	+/-0.359		pCi/g						
Bismuth-214		1.54	0.131	+/-0.113	0.200	pCi/g						
Cadmium-109	UI	4.81	1.00	+/-0.576		pCi/g						
Cerium-139	U	0.00228	0.0485	+/-0.0141	0.050	pCi/g						
Cesium-134	UI	0.184	0.0976	+/-0.039	0.100	pCi/g						
Cesium-137	U	-0.00155	0.0588	+/-0.0179	0.100	pCi/g						
Cobalt-60	U	-0.0226	0.0568	+/-0.019	0.100	pCi/g						
Europium-152	U	-0.0396	0.146	+/-0.043	0.200	pCi/g						
Lanthanum-140	U	-0.0419	0.122	+/-0.0473		pCi/g						
Lead-212		2.22	0.0908	+/-0.145	0.100	pCi/g						
Lead-214		1.81	0.116	+/-0.139	0.100	pCi/g						
Mercury-203	U	0.00545	0.0633	+/-0.0213	0.100	pCi/g						
Potassium-40		35.4	0.570	+/-1.80	1.00	pCi/g						
Radium-223	U	0.0358	1.03	+/-0.354		pCi/g						
Radium-224	UI	5.97	0.973	+/-0.556		pCi/g						
Radium-226		1.54	0.131	+/-0.113		pCi/g						
Radium-228		2.09	0.208	+/-0.202	0.500	pCi/g						
Ruthenium-106	U	0.058	0.464	+/-0.138	0.800	pCi/g						
Sodium-22	U	-0.00524	0.0722	+/-0.0224	0.080	pCi/g						
Strontium-85	U	0.0211	0.0605	+/-0.0195		pCi/g						
Thallium-208		0.669	0.061	+/-0.0496	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: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8020
247911009

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0778	0.400	+/-0.122		pCi/g						
Thorium-231	U	0.0358	1.03	+/-0.354		pCi/g						
Thorium-234	U	0.502	2.16	+/-0.640	2.00	pCi/g						
Tin-113	U	-0.00788	0.0711	+/-0.0208	0.100	pCi/g						
Uranium-235	U	0.0411	0.335	+/-0.0971	0.500	pCi/g						
Yttrium-88	U	-0.00604	0.0441	+/-0.0141	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		187	175	+/-56.4	250	pCi/L		KXK2	03/13/10	2032	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	89.0	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	81.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	104	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8020
247911009

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: March 23, 2010

Client Sample ID: RE15-10-8018
Sample ID: 247911010
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 20.8%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0049	0.0217	+/-0.00317	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00711	0.022	+/-0.00392	0.050	pCi/g		KXM4	03/19/10	2107	961706	3
Plutonium-239/240	U	0.000929	0.0186	+/-0.00289	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		11.1	0.138	+/-0.842	0.100	pCi/g		KXM4	03/20/10	1224	961708	4
Uranium-235/236		1.61	0.0846	+/-0.154	0.100	pCi/g						
Uranium-238		70.8	0.0973	+/-5.21	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	UI	0.650	0.566	+/-0.180	0.200	pCi/g		MXR1	03/06/10	2038	957714	5
Bismuth-211	UI	4.58	0.338	+/-0.297		pCi/g						
Bismuth-214		1.45	0.108	+/-0.101	0.200	pCi/g						
Cadmium-109	UI	3.30	1.59	+/-0.533		pCi/g						
Cerium-139	U	0.0501	0.0552	+/-0.0257	0.050	pCi/g						
Cesium-134	UI	0.115	0.0826	+/-0.0323	0.100	pCi/g						
Cesium-137	U	0.0555	0.0602	+/-0.0212	0.100	pCi/g						
Cobalt-60	U	0.0269	0.0581	+/-0.0169	0.100	pCi/g						
Europium-152	U	0.0212	0.163	+/-0.0578	0.200	pCi/g						
Lanthanum-140	U	-0.0421	0.121	+/-0.046		pCi/g						
Lead-212		2.02	0.0922	+/-0.132	0.100	pCi/g						
Lead-214		1.66	0.116	+/-0.117	0.100	pCi/g						
Mercury-203	U	0.0192	0.0704	+/-0.0202	0.100	pCi/g						
Potassium-40		28.2	0.471	+/-1.54	1.00	pCi/g						
Radium-223	U	-1.0	1.07	+/-0.341		pCi/g						
Radium-224	UI	5.79	0.988	+/-0.727		pCi/g						
Radium-226		1.45	0.108	+/-0.101		pCi/g						
Radium-228		2.28	0.186	+/-0.187	0.500	pCi/g						
Ruthenium-106	U	0.00903	0.479	+/-0.146	0.800	pCi/g						
Sodium-22	U	0.013	0.0667	+/-0.0201	0.080	pCi/g						
Strontium-85	UI	0.126	0.0673	+/-0.0206		pCi/g						
Thallium-208		0.590	0.0565	+/-0.0442	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8018
Sample ID: 247911010
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.063	0.453	+/-0.149		pCi/g						
Thorium-231	U	-1.0	1.07	+/-0.341		pCi/g						
Thorium-234		64.0	4.07	+/-6.80	2.00	pCi/g						
Tin-113	U	-0.014	0.073	+/-0.0219	0.100	pCi/g						
Uranium-235		0.928	0.368	+/-0.160	0.500	pCi/g						
Yttrium-88	U	-0.0133	0.0432	+/-0.0141	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		6430	176	+/-465	250	pCi/L		KXK2	03/13/10	2211	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	89.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	47.2 *	(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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8018
Sample ID: 247911010

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: March 23, 2010

Client Sample ID: RE15-10-8015
Sample ID: 247911011
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 37.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00748	0.0208	+/-0.00365	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00448	0.0283	+/-0.00423	0.050	pCi/g		KXM4	03/20/10	1135	961706	3
Plutonium-239/240	U	0.0123	0.024	+/-0.00632	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		3.18	0.0731	+/-0.236	0.100	pCi/g		KXM4	03/20/10	1224	961708	4
Uranium-235/236		0.375	0.0447	+/-0.0434	0.100	pCi/g						
Uranium-238		15.5	0.0514	+/-1.08	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.122	0.582	+/-0.190	0.200	pCi/g		MXR1	03/08/10	1217	957714	5
Bismuth-211	UI	3.47	0.468	+/-0.325		pCi/g						
Bismuth-214		1.37	0.148	+/-0.120	0.200	pCi/g						
Cadmium-109	UI	5.69	1.93	+/-0.995		pCi/g						
Cerium-139	U	0.00373	0.0762	+/-0.023	0.050	pCi/g						
Cesium-134	UI	0.127	0.117	+/-0.0309	0.100	pCi/g						
Cesium-137		0.278	0.081	+/-0.0504	0.100	pCi/g						
Cobalt-60	U	0.0135	0.0721	+/-0.0214	0.100	pCi/g						
Europium-152	U	0.0525	0.228	+/-0.0807	0.200	pCi/g						
Lanthanum-140	U	-0.0713	0.205	+/-0.0674		pCi/g						
Lead-212		1.81	0.135	+/-0.133	0.100	pCi/g						
Lead-214		1.26	0.165	+/-0.123	0.100	pCi/g						
Mercury-203	U	0.0567	0.100	+/-0.0284	0.100	pCi/g						
Potassium-40		29.3	0.649	+/-1.77	1.00	pCi/g						
Radium-223	U	-0.746	1.49	+/-0.464		pCi/g						
Radium-224	UI	4.70	1.45	+/-0.879		pCi/g						
Radium-226		1.37	0.148	+/-0.120		pCi/g						
Radium-228		1.92	0.280	+/-0.197	0.500	pCi/g						
Ruthenium-106	U	-0.387	0.608	+/-0.205	0.800	pCi/g						
Sodium-22	U	0.0289	0.0942	+/-0.0276	0.080	pCi/g						
Strontium-85	UI	0.132	0.104	+/-0.0318		pCi/g						
Thallium-208		0.549	0.0756	+/-0.0568	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8015
Sample ID: 247911011
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.120	0.629	+/-0.182		pCi/g						
Thorium-231	U	-0.746	1.49	+/-0.464		pCi/g						
Thorium-234		15.2	4.44	+/-2.36	2.00	pCi/g						
Tin-113	U	-0.0631	0.0999	+/-0.0319	0.100	pCi/g						
Uranium-235	U	0.420	0.527	+/-0.157	0.500	pCi/g						
Yttrium-88	U	-0.000979	0.0716	+/-0.022	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		1040	176	+/-99.8	250	pCi/L		KXK2	03/13/10	2349	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	91.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	96.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.3	(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

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Client Sample ID: RE15-10-8015
Sample ID: 247911011

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: March 23, 2010

Client Sample ID: RE15-10-8021
Sample ID: 247911012
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 14.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00416	0.0204	+/-0.00242	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0091	0.033	+/-0.00709	0.050	pCi/g		KXM4	03/20/10	1135	961706	3
Plutonium-239/240	U	0.0275	0.0279	+/-0.00896	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.19	0.0715	+/-0.167	0.100	pCi/g		KXM4	03/20/10	1224	961708	4
Uranium-235/236		0.154	0.0437	+/-0.0243	0.100	pCi/g						
Uranium-238		5.45	0.0503	+/-0.391	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0768	0.243	+/-0.0764	0.200	pCi/g		MXR1	03/08/10	1218	957714	5
Bismuth-211	UI	4.60	0.329	+/-0.345		pCi/g						
Bismuth-214		1.45	0.107	+/-0.115	0.200	pCi/g						
Cadmium-109	UI	4.37	1.23	+/-0.584		pCi/g						
Cerium-139	U	0.0075	0.054	+/-0.0156	0.050	pCi/g						
Cesium-134	UI	0.123	0.0803	+/-0.0333	0.100	pCi/g						
Cesium-137		0.325	0.0598	+/-0.0436	0.100	pCi/g						
Cobalt-60	U	0.00986	0.0648	+/-0.020	0.100	pCi/g						
Europium-152	U	-0.108	0.159	+/-0.0738	0.200	pCi/g						
Lanthanum-140	U	0.0253	0.145	+/-0.0494		pCi/g						
Lead-212		1.94	0.0903	+/-0.141	0.100	pCi/g						
Lead-214		1.67	0.120	+/-0.133	0.100	pCi/g						
Mercury-203	U	0.0607	0.0723	+/-0.0213	0.100	pCi/g						
Potassium-40		35.7	0.447	+/-1.81	1.00	pCi/g						
Radium-223	U	0.341	1.06	+/-0.351		pCi/g						
Radium-224	UI	5.28	0.967	+/-0.658		pCi/g						
Radium-226		1.45	0.107	+/-0.115		pCi/g						
Radium-228		2.09	0.218	+/-0.210	0.500	pCi/g						
Ruthenium-106	U	-0.0263	0.485	+/-0.146	0.800	pCi/g						
Sodium-22	U	-0.0575	0.0649	+/-0.0217	0.080	pCi/g						
Strontium-85	UI	0.141	0.0771	+/-0.0241		pCi/g						
Thallium-208		0.535	0.0572	+/-0.0488	0.080	pCi/g						

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Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8021
Sample ID: 247911012

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.227	0.464	+/-0.138		pCi/g						
Thorium-231	U	0.341	1.06	+/-0.351		pCi/g						
Thorium-234		8.35	2.06	+/-1.27	2.00	pCi/g						
Tin-113	U	-0.0103	0.0735	+/-0.0222	0.100	pCi/g						
Uranium-235	U	0.0873	0.363	+/-0.106	0.500	pCi/g						
Yttrium-88	U	0.026	0.0621	+/-0.0176	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		1910	176	+/-156	250	pCi/L		KXK2	03/14/10	0127	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	91.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	77.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.6	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8021
247911012

Project: LANL01004
Client ID: LANL010

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

H Analytical holding time was exceeded

J Value is estimated

M M if above MDC and less than LLD

M Matrix Related Failure

N/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

UJ 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: March 23, 2010

Client Sample ID: RE15-10-8024
Sample ID: 247911013
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 13%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00242	0.0203	+/-0.00171	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00134	0.0334	+/-0.00297	0.050	pCi/g		KXM4	03/20/10	1135	961706	3
Plutonium-239/240	U	-0.00268	0.0283	+/-0.00326	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.842	0.0741	+/-0.0745	0.100	pCi/g		KXM4	03/20/10	1224	961708	4
Uranium-235/236		0.0682	0.0453	+/-0.0156	0.100	pCi/g						
Uranium-238		0.904	0.0521	+/-0.079	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.494	0.527	+/-0.164	0.200	pCi/g		MXR1	03/08/10	1457	957714	5
Bismuth-211	UI	4.31	0.430	+/-0.344		pCi/g						
Bismuth-214		1.32	0.145	+/-0.124	0.200	pCi/g						
Cadmium-109	U	2.05	2.23	+/-0.762		pCi/g						
Cerium-139	U	-0.0264	0.0694	+/-0.0215	0.050	pCi/g						
Cesium-134	U	0.0534	0.110	+/-0.0312	0.100	pCi/g						
Cesium-137	U	-0.0336	0.0705	+/-0.0221	0.100	pCi/g						
Cobalt-60	U	0.0284	0.080	+/-0.023	0.100	pCi/g						
Europium-152	U	0.0459	0.217	+/-0.0765	0.200	pCi/g						
Lanthanum-140	U	-0.000569	0.137	+/-0.0485		pCi/g						
Lead-212		2.17	0.126	+/-0.151	0.100	pCi/g						
Lead-214		1.57	0.157	+/-0.132	0.100	pCi/g						
Mercury-203	U	0.0761	0.105	+/-0.0293	0.100	pCi/g						
Potassium-40		31.6	0.774	+/-1.87	1.00	pCi/g						
Radium-223	U	-0.597	1.37	+/-0.490		pCi/g						
Radium-224	UI	5.92	1.35	+/-0.999		pCi/g						
Radium-226		1.32	0.145	+/-0.124		pCi/g						
Radium-228		2.16	0.283	+/-0.225	0.500	pCi/g						
Ruthenium-106	U	-0.0677	0.649	+/-0.202	0.800	pCi/g						
Sodium-22	U	-0.00971	0.0822	+/-0.026	0.080	pCi/g						
Strontium-85	UI	0.108	0.0997	+/-0.0309		pCi/g						
Thallium-208		0.664	0.0716	+/-0.0588	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8024
247911013

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	0.0337	0.581	+/-0.169		pCi/g						
Thorium-231	U	-0.597	1.37	+/-0.490		pCi/g						
Thorium-234	U	2.86	4.53	+/-1.29	2.00	pCi/g						
Tin-113	U	-0.0187	0.0999	+/-0.0303	0.100	pCi/g						
Uranium-235	U	0.0627	0.481	+/-0.144	0.500	pCi/g						
Yttrium-88	U	0.0162	0.0723	+/-0.0206	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	109	175	+/-54.1	250	pCi/L		KXK2	03/14/10	0305	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	92.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	75.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	84.9	(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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8024
Sample ID: 247911013

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: March 23, 2010

Client Sample ID: RE15-10-8016
Sample ID: 247911014
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 9.36%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00142	0.0215	+/-0.00147	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00804	0.029	+/-0.00477	0.050	pCi/g		KXM4	03/20/10	1135	961706	3
Plutonium-239/240	U	-0.00235	0.0245	+/-0.00327	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.884	0.071	+/-0.0769	0.100	pCi/g		KXM4	03/20/10	1224	961708	4
Uranium-235/236		0.056	0.0434	+/-0.0151	0.100	pCi/g						
Uranium-238		0.846	0.0499	+/-0.0741	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0615	0.200	+/-0.0585	0.200	pCi/g		MXR1	03/08/10	1458	957714	5
Bismuth-211	UI	5.15	0.321	+/-0.348		pCi/g						
Bismuth-214		1.55	0.115	+/-0.121	0.200	pCi/g						
Cadmium-109	UI	4.56	1.16	+/-0.635		pCi/g						
Cerium-139	U	-0.00728	0.0475	+/-0.0146	0.050	pCi/g						
Cesium-134	UI	0.143	0.0921	+/-0.0321	0.100	pCi/g						
Cesium-137	U	0.0049	0.0646	+/-0.0187	0.100	pCi/g						
Cobalt-60	U	-0.0248	0.0627	+/-0.0209	0.100	pCi/g						
Europium-152	U	0.0413	0.165	+/-0.0537	0.200	pCi/g						
Lanthanum-140	U	0.0514	0.143	+/-0.0441		pCi/g						
Lead-212		2.38	0.0942	+/-0.142	0.100	pCi/g						
Lead-214		1.87	0.117	+/-0.136	0.100	pCi/g						
Mercury-203	U	0.015	0.0682	+/-0.0195	0.100	pCi/g						
Potassium-40		36.6	0.380	+/-1.85	1.00	pCi/g						
Radium-223	U	0.0942	1.06	+/-0.352		pCi/g						
Radium-224	UI	6.06	1.01	+/-0.747		pCi/g						
Radium-226		1.55	0.115	+/-0.121		pCi/g						
Radium-228		2.34	0.240	+/-0.229	0.500	pCi/g						
Ruthenium-106	U	0.0897	0.516	+/-0.155	0.800	pCi/g						
Sodium-22	U	0.0155	0.0781	+/-0.0234	0.080	pCi/g						
Strontium-85	U	0.0521	0.0714	+/-0.0227		pCi/g						
Thallium-208		0.682	0.0649	+/-0.0546	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8016
Sample ID: 247911014
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	-0.0602	0.415	+/-0.121		pCi/g						
Thorium-231	U	0.0942	1.06	+/-0.352		pCi/g						
Thorium-234	U	1.09	2.01	+/-0.562	2.00	pCi/g						
Tin-113	U	0.0113	0.0765	+/-0.0224	0.100	pCi/g						
Uranium-235	U	0.0271	0.349	+/-0.105	0.500	pCi/g						
Yttrium-88	U	0.0323	0.0615	+/-0.0161	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		511	176	+/-70.4	250	pCi/L		KXK2	03/14/10	0443	961542	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	89.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	87.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.2	(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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8016 Project: LANL01004
Sample ID: 247911014 Client ID: LANL010

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

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
UJ 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: March 23, 2010

Client Sample ID: RE15-10-8065
Sample ID: 247911015
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 9.23%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0115	0.0211	+/-0.00415	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00498	0.0331	+/-0.00354	0.050	pCi/g		KXM4	03/22/10	0307	961706	3
Plutonium-239/240	U	0.00498	0.0279	+/-0.00354	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.11	0.0729	+/-0.0935	0.100	pCi/g		KXM4	03/20/10	1224	961708	5
Uranium-235/236		0.0863	0.0446	+/-0.0193	0.100	pCi/g						
Uranium-238		2.06	0.0513	+/-0.160	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0465	0.0886	+/-0.0286	0.200	pCi/g		MXR1	03/08/10	1459	957714	6
Bismuth-211	UI	5.40	0.359	+/-0.360		pCi/g						
Bismuth-214		1.75	0.150	+/-0.152	0.200	pCi/g						
Cadmium-109	UI	5.23	0.848	+/-0.443		pCi/g						
Cerium-139	U	0.0207	0.051	+/-0.0141	0.050	pCi/g						
Cesium-134	U	0.129	0.132	+/-0.0395	0.100	pCi/g						
Cesium-137	U	0.000763	0.0901	+/-0.0273	0.100	pCi/g						
Cobalt-60	U	0.00804	0.088	+/-0.0257	0.100	pCi/g						
Europium-152	U	-0.0168	0.168	+/-0.0517	0.200	pCi/g						
Lanthanum-140	U	-0.206	0.159	+/-0.0705		pCi/g						
Lead-212		2.57	0.0977	+/-0.146	0.100	pCi/g						
Lead-214		1.96	0.131	+/-0.142	0.100	pCi/g						
Mercury-203	U	-0.0489	0.0674	+/-0.0217	0.100	pCi/g						
Potassium-40		33.5	0.685	+/-1.83	1.00	pCi/g						
Radium-223	U	-0.431	1.13	+/-0.406		pCi/g						
Radium-224	UI	5.89	1.05	+/-0.667		pCi/g						
Radium-226		1.75	0.150	+/-0.152		pCi/g						
Radium-228		2.78	0.283	+/-0.277	0.500	pCi/g						
Ruthenium-106	U	0.0334	0.700	+/-0.210	0.800	pCi/g						
Sodium-22	U	-0.00861	0.107	+/-0.0337	0.080	pCi/g						
Strontium-85	U	0.0607	0.0792	+/-0.0234		pCi/g						
Thallium-208		0.792	0.0733	+/-0.069	0.080	pCi/g						

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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: March 23, 2010

Client Sample ID: RE15-10-8065
Sample ID: 247911015
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Thorium-227	U	-0.135	0.430	+/-0.131		pCi/g					
Thorium-231	U	-0.431	1.13	+/-0.406		pCi/g					
Thorium-234		2.77	0.911	+/-0.471	2.00	pCi/g					
Tin-113	U	-0.0406	0.0862	+/-0.0282	0.100	pCi/g					
Uranium-235	U	0.0844	0.326	+/-0.0991	0.500	pCi/g					
Yttrium-88	U	-0.0112	0.079	+/-0.0258	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium		474	176	+/-68.6	250	pCi/L		KXK2	03/14/10	0621 961542	7

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R
7	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	89.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	49.7 *	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	85.7	(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

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Report Date: March 23, 2010

Client Sample ID: RE15-10-8065
Sample ID: 247911015

Project: LANL01004
Client ID: LANL010

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

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
UJ 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: March 23, 2010

Client Sample ID: RE15-10-8066
Sample ID: 247911016
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 19.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00194	0.0216	+/-0.00236	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0135	0.0187	+/-0.00496	0.050	pCi/g		KXM4	03/22/10	0307	961706	3
Plutonium-239/240	U	-0.000226	0.0158	+/-0.00266	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.883	0.0698	+/-0.0765	0.100	pCi/g		KXM4	03/20/10	1224	961708	5
Uranium-235/236		0.052	0.0427	+/-0.0157	0.100	pCi/g						
Uranium-238		1.38	0.0491	+/-0.111	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0225	0.125	+/-0.043	0.200	pCi/g		MXR1	03/09/10	1147	957714	6
Bismuth-211	UI	3.77	0.412	+/-0.299		pCi/g						
Bismuth-214		1.29	0.157	+/-0.121	0.200	pCi/g						
Cadmium-109	UI	2.69	1.18	+/-0.480		pCi/g						
Cerium-139	U	0.00219	0.0625	+/-0.0192	0.050	pCi/g						
Cesium-134	U	0.102	0.114	+/-0.0465	0.100	pCi/g						
Cesium-137	U	0.0134	0.083	+/-0.0253	0.100	pCi/g						
Cobalt-60	U	0.0178	0.0909	+/-0.0272	0.100	pCi/g						
Europium-152	U	-0.0529	0.201	+/-0.072	0.200	pCi/g						
Lanthanum-140	U	-0.218	0.170	+/-0.071		pCi/g						
Lead-212		1.74	0.110	+/-0.116	0.100	pCi/g						
Lead-214		1.37	0.145	+/-0.115	0.100	pCi/g						
Mercury-203	U	0.00639	0.0897	+/-0.0266	0.100	pCi/g						
Potassium-40		29.1	0.842	+/-1.44	1.00	pCi/g						
Radium-223	U	-0.984	1.45	+/-0.466		pCi/g						
Radium-224	UI	4.01	1.18	+/-0.819		pCi/g						
Radium-226		1.29	0.157	+/-0.121		pCi/g						
Radium-228		2.26	0.285	+/-0.269	0.500	pCi/g						
Ruthenium-106	U	0.0182	0.697	+/-0.216	0.800	pCi/g						
Sodium-22	U	0.00834	0.107	+/-0.0327	0.080	pCi/g						
Strontium-85	U	0.0495	0.0879	+/-0.0288		pCi/g						
Thallium-208		0.564	0.074	+/-0.0513	0.080	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8066
Sample ID: 247911016

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Thorium-227	U	0.256	0.547	+/-0.158		pCi/g						
Thorium-231	U	-0.984	1.45	+/-0.466		pCi/g						
Thorium-234		2.12	1.32	+/-0.625	2.00	pCi/g						
Tin-113	U	-0.0179	0.0988	+/-0.0305	0.100	pCi/g						
Uranium-235	U	0.116	0.425	+/-0.128	0.500	pCi/g						
Yttrium-88	U	-0.031	0.0812	+/-0.0277	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		1230	176	+/-112	250	pCi/L		KXK2	03/14/10	0759	961542	7

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R
7	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	87.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	95.1	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8066
Sample ID: 247911016

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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D Results are reported from a diluted aliquot of the sample
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
UJ 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: March 23, 2010

Client Sample ID: RE15-10-8033
Sample ID: 247911017
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 24.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0188	0.0297	+/-0.00633	0.050	pCi/g		JXD2	03/22/10	2043	967508	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0285	+/-0.00227	0.050	pCi/g		KXM4	03/20/10	1135	961706	3
Plutonium-239/240	U	0.0147	0.0241	+/-0.00676	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		5.20	0.0731	+/-0.375	0.100	pCi/g		KXM4	03/20/10	1224	961708	4
Uranium-235/236		0.500	0.0447	+/-0.0527	0.100	pCi/g						
Uranium-238		19.2	0.0514	+/-1.33	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.162	0.377	+/-0.122	0.200	pCi/g		MXR1	03/09/10	1148	957714	5
Bismuth-211	UI	4.61	0.397	+/-0.283		pCi/g						
Bismuth-214		1.36	0.125	+/-0.117	0.200	pCi/g						
Cadmium-109	UI	4.91	1.88	+/-0.914		pCi/g						
Cerium-139	U	-0.0158	0.0638	+/-0.0195	0.050	pCi/g						
Cesium-134	U	0.0663	0.0981	+/-0.0317	0.100	pCi/g						
Cesium-137		0.630	0.0724	+/-0.0449	0.100	pCi/g						
Cobalt-60	U	0.0302	0.0771	+/-0.0217	0.100	pCi/g						
Europium-152	U	-0.0301	0.195	+/-0.0668	0.200	pCi/g						
Lanthanum-140	U	-0.0216	0.183	+/-0.0605		pCi/g						
Lead-212		1.91	0.112	+/-0.0936	0.100	pCi/g						
Lead-214		1.67	0.143	+/-0.113	0.100	pCi/g						
Mercury-203	U	0.00787	0.0809	+/-0.0267	0.100	pCi/g						
Potassium-40		31.6	0.568	+/-1.49	1.00	pCi/g						
Radium-223	U	0.348	1.25	+/-0.408		pCi/g						
Radium-224	UI	5.45	1.19	+/-0.583		pCi/g						
Radium-226		1.36	0.125	+/-0.117		pCi/g						
Radium-228		1.90	0.225	+/-0.202	0.500	pCi/g						
Ruthenium-106	U	-0.104	0.615	+/-0.189	0.800	pCi/g						
Sodium-22	U	-0.0293	0.0731	+/-0.0235	0.080	pCi/g						
Strontium-85	UI	0.0861	0.0805	+/-0.0242		pCi/g						
Thallium-208		0.571	0.0615	+/-0.0503	0.080	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8033
Sample ID: 247911017
Project: LANL01004
Client ID: LANL010

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

Rad Gamma Spec Analysis

GAMMA SPEC "Dry Weight Corrected"

Thorium-227	U	0.0113	0.526	+/-0.162		pCi/g					
Thorium-231	U	0.348	1.25	+/-0.408		pCi/g					
Thorium-234		24.7	3.11	+/-2.80	2.00	pCi/g					
Tin-113	U	0.0322	0.0917	+/-0.0262	0.100	pCi/g					
Uranium-235		0.432	0.419	+/-0.177	0.500	pCi/g					
Yttrium-88	U	-0.0122	0.059	+/-0.0194	0.100	pCi/g					

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium	U	157	175	+/-55.5	250	pCi/L	KXK2	03/14/10	0937	961542	6
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The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE HASL 300, 4.5.2.3/Ga-01-R
6	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	60.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	89.2	(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

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8033 Project: LANL01004
Sample ID: 247911017 Client ID: LANL010

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

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
UJ 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: March 23, 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: 247911

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	961706										
QC1202062786	247911001	DUP									
Plutonium-238	U	0.00105	U	0.00114	pCi/g	0.00456		(0-1)	KXM4	03/20/10	11:35
	TPU:	+/-0.0069		+/-0.00258							
	Yield:	69.0		92.6							
Plutonium-239/240	U	0.0124		0.0275	pCi/g	0.493		(0-1)			
	TPU:	+/-0.00676		+/-0.00861							
	Yield:	69.0		92.6							
QC1202062787	LCS										
Plutonium-238				3.79	pCi/g			(75%-125%)		03/20/10	11:35
	TPU:			+/-0.437							
	Yield:			92.6							
Plutonium-239/240	41.8			37.9	pCi/g		90.8	(75%-125%)			
	TPU:			+/-2.66							
	Yield:			92.6							
QC1202062785	MB										
Plutonium-238			U	0.0118	pCi/g					03/20/10	11:35
	TPU:			+/-0.00594							
	Yield:			85.1							
Plutonium-239/240			U	-0.00149	pCi/g						
	TPU:			+/-0.00331							
	Yield:			85.1							
Batch	961708										
QC1202062789	247911001	DUP									
Uranium-233/234		1.72		1.97	pCi/g	0.432		(0-1)	KXM4	03/20/10	12:24
	TPU:	+/-0.136		+/-0.154							
	Yield:	93.1		85.7							
Uranium-235/236		0.140		0.149	pCi/g	0.0976		(0-1)			
	TPU:	+/-0.0238		+/-0.0247							
	Yield:	93.1		85.7							
Uranium-238		5.53		6.10	pCi/g	0.340		(0-1)			
	TPU:	+/-0.398		+/-0.439							
	Yield:	93.1		85.7							
QC1202062790	LCS										
Uranium-233/234				6.06	pCi/g					03/20/10	12:43
	TPU:			+/-0.535							
	Yield:			90.4							
Uranium-235/236				0.404	pCi/g						
	TPU:			+/-0.0947							
	Yield:			90.4							
Uranium-238	5.75			5.18	pCi/g		90.1	(75%-125%)			
	TPU:			+/-0.471							
	Yield:			90.4							
QC1202062788	MB										
Uranium-233/234			U	0.0119	pCi/g					03/20/10	12:24

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QC Summary

Workorder: 247911

Page 2 of 6

Parname	NOM	Sample	Qual	QC	Units	RER	REC %	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	961708										
		TPU:		+/-0.00564							
		Yield:		93.6							
Uranium-235/236			U	0.00157	pCi/g						
		TPU:		+/-0.00415							
		Yield:		93.6							
Uranium-238			U	0.019	pCi/g						
		TPU:		+/-0.00671							
		Yield:		93.6							
Batch	967508										
QC1202076581	247911017	DUP									
Americium-241		U	0.0188	U	0.0128	pCi/g	0.279	(0-1)	JXD2	03/22/1020:44	
		TPU:	+/-0.00633		+/-0.00457						
		Yield:	60.6		80.0						
QC1202076582	LCS										
Americium-241	33.1				30.7	pCi/g	92.5	(75%-125%)		03/22/1020:44	
		TPU:			+/-2.27						
		Yield:			105						
QC1202076580	MB										
Americium-241			U	0.000105	pCi/g					03/22/1020:43	
		TPU:		+/-0.00377							
		Yield:		96.1							
Rad Gamma Spec											
Batch	957714										
QC1202053648	247911001	DUP									
Americium-241		U	0.0811	U	0.0907	pCi/g	0.0576	(0-1)	MXR1	03/09/1011:50	
		TPU:	+/-0.0431		+/-0.0397						
Bismuth-211		UI	4.40	UI	4.29	pCi/g	0.0818	(0-1)			
		TPU:	+/-0.306		+/-0.372						
Bismuth-214			1.31		1.48	pCi/g	0.373	(0-1)			
		TPU:	+/-0.104		+/-0.126						
Cadmium-109		UI	2.47	UI	2.92	pCi/g	0.261	(0-1)			
		TPU:	+/-0.428		+/-0.439						
Cerium-139		U	-0.0192	U	0.0137	pCi/g	0.461	(0-1)			
		TPU:	+/-0.0182		+/-0.0175						
Cesium-134		U	0.111	U	0.0454	pCi/g	0.488	(0-1)			
		TPU:	+/-0.0358		+/-0.0312						
Cesium-137			0.407		0.380	pCi/g	0.125	(0-1)			
		TPU:	+/-0.056		+/-0.0531						
Cobalt-60		U	-0.0103	U	-0.0122	pCi/g	0.0179	(0-1)			
		TPU:	+/-0.0259		+/-0.0262						
Europium-152		U	-0.141	U	-0.0563	pCi/g	0.327	(0-1)			
		TPU:	+/-0.0724		+/-0.0571						
Lanthanum-140		U	0.0152	U	-0.106	pCi/g	0.537	(0-1)			
		TPU:	+/-0.0499		+/-0.0626						
Lead-212			1.97		1.90	pCi/g	0.139	(0-1)			
		TPU:	+/-0.125		+/-0.117						
Lead-214			1.60		1.56	pCi/g	0.0766	(0-1)			
		TPU:	+/-0.119		+/-0.142						
Mercury-203		U	0.0275	U	0.0268	pCi/g	0.00712	(0-1)			

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Workorder: 247911

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QC Summary

Workorder: 247911

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch	957714								
Lead-212	TPU:		+/-0.0414						
			0.806	pCi/g					
Lead-214	TPU:		+/-0.127						
			0.688	pCi/g					
Mercury-203	TPU:	U	+/-0.115						
			0.0613	pCi/g					
Potassium-40	TPU:		+/-0.0308						
			0.876	pCi/g					
Radium-223	TPU:	U	+/-0.316						
			0.154	pCi/g					
Radium-224	TPU:		+/-0.588						
			4.45	pCi/g					
Radium-226	TPU:		+/-0.726						
			0.639	pCi/g					
Radium-228	TPU:		+/-0.121						
			0.942	pCi/g					
Ruthenium-106	TPU:	U	+/-0.271						
			-0.24	pCi/g					
Sodium-22	TPU:	U	+/-0.287						
			-0.00693	pCi/g					
Strontium-85	TPU:	U	+/-0.0252						
			0.0452	pCi/g					
Thallium-208	TPU:		+/-0.035						
			0.364	pCi/g					
Thorium-227	TPU:	U	+/-0.051						
			-0.146	pCi/g					
Thorium-231	TPU:	U	+/-0.207						
			0.154	pCi/g					
Thorium-234	TPU:	U	+/-0.588						
			-1.38	pCi/g					
Tin-113	TPU:	U	+/-0.822						
			0.0155	pCi/g					
Uranium-235	TPU:	U	+/-0.0422						
			-0.0529	pCi/g					
Yttrium-88	TPU:	U	+/-0.150						
			-0.00972	pCi/g					
	TPU:		+/-0.0253						
QC1202053647 MB									
Americium-241	TPU:	U	-0.0812	pCi/g					03/09/1011:49
			+/-0.0295						
Bismuth-211	TPU:	U	-0.0536	pCi/g					
			+/-0.0476						
Bismuth-214	TPU:	U	0.00553	pCi/g					
			+/-0.0201						
Cadmium-109	TPU:	U	-0.614	pCi/g					
			+/-0.167						
Cerium-139	TPU:	U	0.0056	pCi/g					
			+/-0.00646						
Cesium-134	TPU:	U	-0.00489	pCi/g					
			+/-0.0108						
Cesium-137	TPU:	U	0.0172	pCi/g					

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QC Summary

Workorder: 247911

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	957714										
Cobalt-60	TPU:			+/-0.00967							
		U		-0.000327	pCi/g						
Europium-152	TPU:			+/-0.0115							
		U		0.0578	pCi/g						
Lanthanum-140	TPU:			+/-0.0227							
		U		-0.0236	pCi/g						
Lead-212	TPU:			+/-0.0199							
		U		-0.00134	pCi/g						
Lead-214	TPU:			+/-0.0148							
		U		-0.00567	pCi/g						
Mercury-203	TPU:			+/-0.0175							
		U		-0.00406	pCi/g						
Potassium-40	TPU:			+/-0.00849							
		U		0.150	pCi/g						
Radium-223	TPU:			+/-0.0997							
		U		-0.36	pCi/g						
Radium-224	TPU:			+/-0.158							
		U		-0.274	pCi/g						
Radium-226	TPU:			+/-0.142							
		U		0.00553	pCi/g						
Radium-228	TPU:			+/-0.0201							
		U		0.0268	pCi/g						
Ruthenium-106	TPU:			+/-0.0393							
		U		-0.0473	pCi/g						
Sodium-22	TPU:			+/-0.0791							
		U		-0.00871	pCi/g						
Strontium-85	TPU:			+/-0.010							
		U		-0.0449	pCi/g						
Thallium-208	TPU:			+/-0.0149							
		U		0.0164	pCi/g						
Thorium-227	TPU:			+/-0.0104							
		U		-0.0178	pCi/g						
Thorium-231	TPU:			+/-0.0531							
		U		-0.36	pCi/g						
Thorium-234	TPU:			+/-0.158							
		U		-0.439	pCi/g						
Tin-113	TPU:			+/-0.254							
		U		0.00997	pCi/g						
Uranium-235	TPU:			+/-0.00958							
		U		-0.039	pCi/g						
Yttrium-88	TPU:			+/-0.0492							
		U		0.00234	pCi/g						
	TPU:			+/-0.00973							
Rad Liquid Scintillation											
Batch	961542										
QC1202062416	247911004	DUP									
Tritium			35400	38600	pCi/L	0.311		(0-1)	KXK2	03/14/1016:08	
		TPU:	+/-2490	+/-2720							
QC1202062417	LCS										
Tritium	5540			5630	pCi/L		102	(80%-120%)		03/14/1017:58	

GEL LABORATORIES LLC

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QC Summary

Workorder: 247911

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Parrrname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation											
Batch 961542											

RAW DATA

Radiochemistry Batch Checklist, Rev10

Batch# 961706

Product: Pu

Date: 3/21/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			MA
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.			MA
Smears Taken for Radioactive batches.			MA
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.			MA
Aux data is correct.			MA
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 REW	✓		
Hlt notification complete (if necessary)			MA
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			MA
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			MA
Allquot Correction completed if required.			MA
Review sample historical results if available (If REMF, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADcheckdistrev10, revised 1/13/2010

Primary Review Performed By: Denise Green 3/21/10

Secondary Review Performed By: K. Bell 3/23/10

3/24
LANC

Plutonium Que Sheet

05-MAR-10

Batch #: 961706 Pu-238 Analyst: KXM4 First Client Due Date: 24-MAR-10 Internal Due Date: 13-MAR-10
 Tracer Isotope(s): Pu-238 Tracer Code: 1430-C Expiration Date: 3-4-11 Vol: 0.11
 LCS Isotope(s): Pu-238 LCS Code: SEM 0244-B Expiration Date: 4/30/20 Vol: 0.13
 Spike Isotope(s): Pu-238 Spike Code: NA Expiration Date: NA Vol: NA
 Prep Date: 3-17-10 Initials: LM Pipet ID: 297058 Balance ID: 5010272 Witness: MDA 3/17/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/1/1)	Pu Det #
247911001-1	REIS-10-8019	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	1	1	1.255	83
247911002-1	REIS-10-8013	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	2	2	1.260	84
247911003-1	REIS-10-8026	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	3	3	1.254	85
247911004-1	REIS-10-8017	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	4	4	1.260	86
247911005-1	REIS-10-8025	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	5	5	1.253	87
247911006-1	REIS-10-8022	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	6	6	1.252	88
247911007-1	REIS-10-8014	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	7	7	1.257	107
247911008-1	REIS-10-8023	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	8	8	1.254	108
247911009-1	REIS-10-8020	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	9	9	1.255	109
247911010-1	REIS-10-8018	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	10	10	1.259	117
247911011-1	REIS-10-8015	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	11	11	1.28	209
247911012-1	REIS-10-8021	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	12	12	1.260	210
247911013-1	REIS-10-8024	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	13	13	1.251	213
247911014-1	REIS-10-8016	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	14	14	1.256	214
247911015-1	REIS-10-8065	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	15	15	1.292	215
247911016-1	REIS-10-8066	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	16	16	1.292	216
247911017-1	REIS-10-8033	SAMPLE	.05 pCi/g		SOIL	LANL010	18-FEB-10	17	17	1.253	217
1202062785-1	MB for batch 961706	MB	.05 pCi/g		SOIL	QC ACCOUNT	18-FEB-10	18	18	1	218
1202062786-1	REIS-10-8019(247911001DUP)	DUP	.05 pCi/g		SOIL	QC ACCOUNT	18-FEB-10	19	19	1.252	112
1202062787-1	LCS for batch 961706	LCS	.05 pCi/g		SOIL	QC ACCOUNT	18-FEB-10	20	20	0.100	95

Data Reviewed By: [Signature] 3/21/10

Solid Sample Dissolution by: LEACH or DIGESTION
 Circle One

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

GEL Laboratories LLC, Radiochemistry Division

Blank Correction Report

Batch ID 961706

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202062786	DUP	Plutonium-238	1.25 g	0.00114	0.00258	0.0289	.00944	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0275	0.00861	0.0245	-.001192	pCi/g	NO
1202062787	LCS	Plutonium-238	0.100 g	3.79	0.437	0.387	.118	pCi/g	NO
		Plutonium-239/240	0.100 g	37.9	2.66	0.328	-.0149	pCi/g	NO
1202062785	MB	Plutonium-238	1.00 g	0.0118	0.00594	0.0371	.0118	pCi/g	YES
		Plutonium-239/240	1.00 g	-0.00149	0.00331	0.0315	-.00149	pCi/g	NO
247911001	RE15-10-8019	Plutonium-238	1.26 g	0.00105	0.0069	0.0268	.009365079	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0124	0.00676	0.0227	-.00118254	pCi/g	NO
247911002	RE15-10-8013	Plutonium-238	1.26 g	0.00163	0.00163	0.0216	.009365079	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0135	0.00507	0.0182	-.00118254	pCi/g	NO
247911003	RE15-10-8026	Plutonium-238	1.25 g	0.00688	0.0038	0.0213	.00944	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00803	0.00362	0.018	-.001192	pCi/g	NO
247911004	RE15-10-8017	Plutonium-238	1.26 g	0.00627	0.00408	0.0254	.009365079	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0535	0.0106	0.0214	-.00118254	pCi/g	NO
247911005	RE15-10-8025	Plutonium-238	1.25 g	0.00391	0.00609	0.0232	.00944	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0037	0.00465	0.0196	-.001192	pCi/g	NO
247911006	RE15-10-8022	Plutonium-238	1.25 g	0.0114	0.0085	0.0275	.00944	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00058	0.00256	0.0233	-.001192	pCi/g	NO
247911007	RE15-10-8014	Plutonium-238	1.26 g	0.00357	0.00294	0.0208	.009365079	pCi/g	YES
		Plutonium-239/240	1.26 g	0.000438	0.00193	0.0176	-.00118254	pCi/g	NO
247911008	RE15-10-8023	Plutonium-238	1.25 g	0.00157	0.00157	0.0208	.00944	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00288	0.0037	0.0176	-.001192	pCi/g	NO
247911009	RE15-10-8020	Plutonium-238	1.26 g	0.00172	0.00172	0.0228	.009365079	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00906	0.00441	0.0193	-.00118254	pCi/g	NO
247911010	RE15-10-8018	Plutonium-238	1.25 g	0.00711	0.00392	0.022	.00944	pCi/g	YES
		Plutonium-239/240	1.25 g	0.000929	0.00289	0.0186	-.001192	pCi/g	NO
247911011	RE15-10-8015	Plutonium-238	1.25 g	0.00448	0.00423	0.0283	.00944	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0123	0.00632	0.024	-.001192	pCi/g	NO
247911012	RE15-10-8021	Plutonium-238	1.26 g	0.0091	0.00709	0.033	.009365079	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0275	0.00896	0.0279	-.00118254	pCi/g	NO
247911013	RE15-10-8024	Plutonium-238	1.25 g	-0.00134	0.00297	0.0334	.00944	pCi/g	YES
		Plutonium-239/240	1.25 g	-0.00268	0.00326	0.0283	-.001192	pCi/g	NO
247911014	RE15-10-8016	Plutonium-238	1.26 g	0.00804	0.00477	0.029	.009365079	pCi/g	YES
		Plutonium-239/240	1.26 g	-0.00235	0.00327	0.0245	-.00118254	pCi/g	NO
247911015	RE15-10-8065	Plutonium-238	1.25 g	0.00498	0.00354	0.0331	.00944	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00498	0.00354	0.0279	-.001192	pCi/g	NO
247911016	RE15-10-8066	Plutonium-238	1.25 g	0.0135	0.00496	0.0187	.00944	pCi/g	YES
		Plutonium-239/240	1.25 g	-0.000226	0.00266	0.0158	-.001192	pCi/g	NO
247911017	RE15-10-8033	Plutonium-238	1.25 g	0.00	0.00227	0.0285	.00944	pCi/g	YES

Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
247911017	RE15-10-8033	Plutonium-239/240	1.25 g	0.0147	0.00676	0.0241	-0.001192	pCi/g	NO

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER	:	961706
SAMPLE ID	:	S02479
SAMPLE QTY	:	1.29
SAMPLE DATE	:	18-FEB-2018
ANALYST	:	KXM4
% YIELD	:	69.033

ATCH NUMBER : 961706
SAMPLE ID : S0247911001_PU
SAMPLE QTY : 1.255 G
SAMPLE DATE : 18-FEB-2010 00:00:00
ANALYST : KXM4
% YIELD : 69.033

CHAMBER :	083
DETECTOR S/N :	64278
AVERAGE %EFFICIENCY :	35.8135
COUNT DATE :	19-MAR-2008
ELAPSED LIVE TIME(SEC) :	43199.99

LIB FILE :	ENV_ALPHA.PU
BKG FILE :	B083.CNF;1032
BKG DATE :	14-MAR-2010
BKG LIVE TIME(SEC)	59999.99
EFF FILE :	W083.CNF;294
CAL DATE :	12-MAR-2010

TRACER	ID	: 1430-C
	NUCLIDE	: PU-236
	NOMINAL	: 3.0300E+00 dpm
	RESULTS	: 2.0917E+00 dpm

MS/MSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

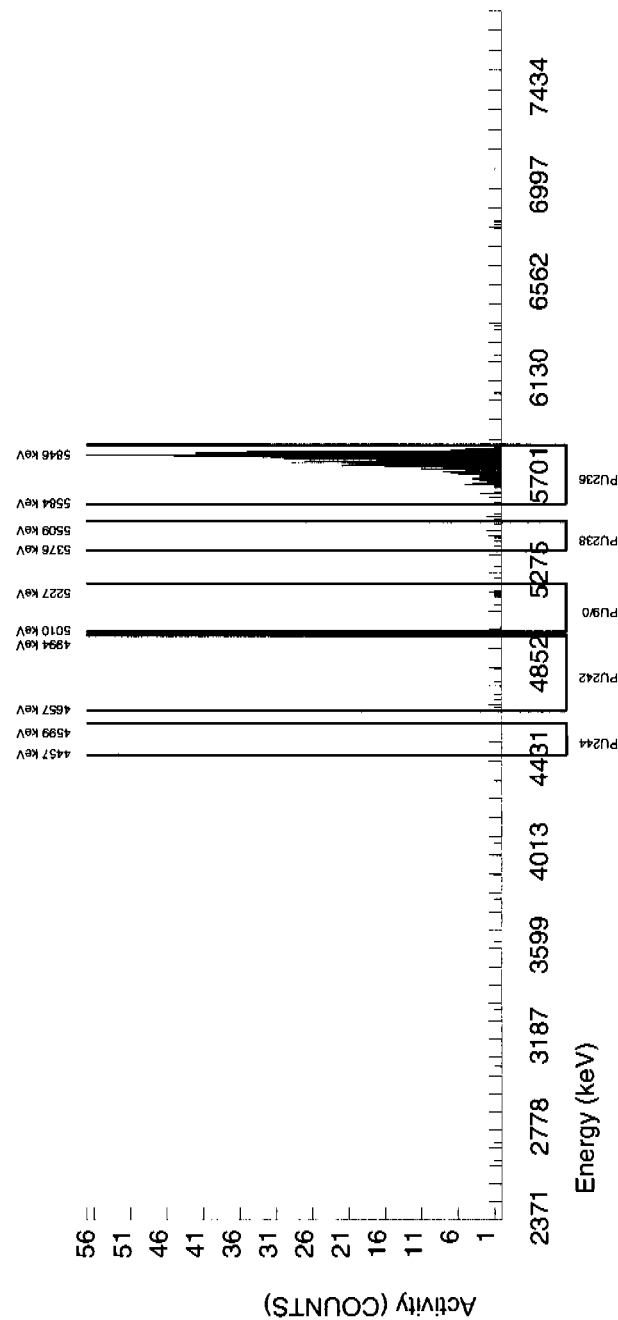
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
PU-236	5749.000	5783.698	47.011	533.000	528.680	4.320	2.0785	100.0000	1.09E+00	8.12E-02	9.04E-03	2.35E-02	4.76E-02
PU-238	5499.000	5450.345	5.060	7.000	0.520	6.480	2.4495	99.900000	1.05E-03	6.90E-03	1.07E-02	2.68E-02	6.90E-03
PU-9/0	5155.000	5145.808	182.151	9.000	6.120	2.880	1.9732	99.900000	1.24E-02	6.76E-03	8.59E-03	2.27E-02	6.72E-03
PU242	4890.000	4754.557	172.031	5.000	4.280	0.720	*****	100.0000	8.63E-03	4.77E-03	5.42E-01	1.09E+00	4.74E-03
PU-244	4589.000	4528.010	0.000	1.000	-0.440	1.440	6.4609	99.900000	-8.88E-04	2.88E-03	2.81E-02	6.17E-02	2.88E-03

NOTES:

* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 961706 SAMPLE ID : S0247911002_PU SAMPLE QTY : 1.260 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 89.047</p>	<p>CHAMBER : 084 DETECTOR S/N : 78265 AVERAGE %EFFICIENCY : 34.3452 COUNT DATE : 19-MAR-2010 21:07:01 ELAPSED LIVE TIME(SEC) : 43199.99</p>	<p>LIB FILE : ENV_ALPHA_PU BKG FILE : B084.CNF;1030 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W084.CNF;297 CAL DATE : 12-MAR-2010</p>
		<p>LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>

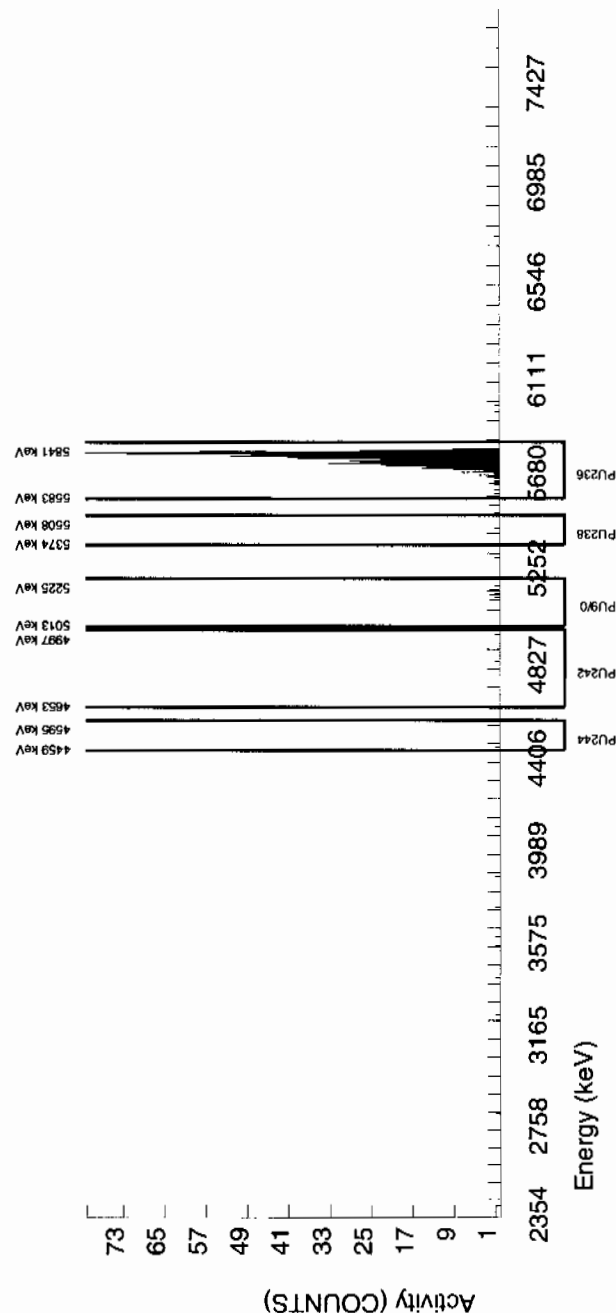
<p>TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.6982E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-236	5749.000	5773.068	29.435	654.000	654.000	0.000	0.0000	100.0000	1.08E+00	7.50E-02	0.00E+00	4.40E-03	4.24E-02
PU-238	5499.000	5454.581	5.020	1.000	1.000	0.000	2.4495	99.900000	1.63E-03	1.63E-03	8.59E-03	2.16E-02	1.63E-03
PU-9/0	5155.000	5161.245	50.203	9.000	8.280	0.720	1.9732	99.900000	1.35E-02	5.07E-03	6.92E-03	1.82E-02	5.01E-03
PU242	4890.000	4834.324	311.258	3.000	0.840	2.160	*****	100.0000	1.36E-03	3.47E-03	4.37E-01	8.78E-01	3.47E-03
PU-244	4589.000	4479.740	5.020	1.000	0.280	0.720	6.4609	99.900000	4.55E-04	2.00E-03	2.27E-02	4.97E-02	2.00E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961706 SAMPLE ID : S0247911003_PU SAMPLE QTY : 1.254 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 94.787		CHAMBER : 085 DETECTOR S/N : 78776 AVERAGE %EFFICIENCY : 32.8080 COUNT DATE : 19-MAR-2010 21:07:01 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B085.CNF:1033 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W085.CNF:304 CAL DATE : 12-MAR-2010
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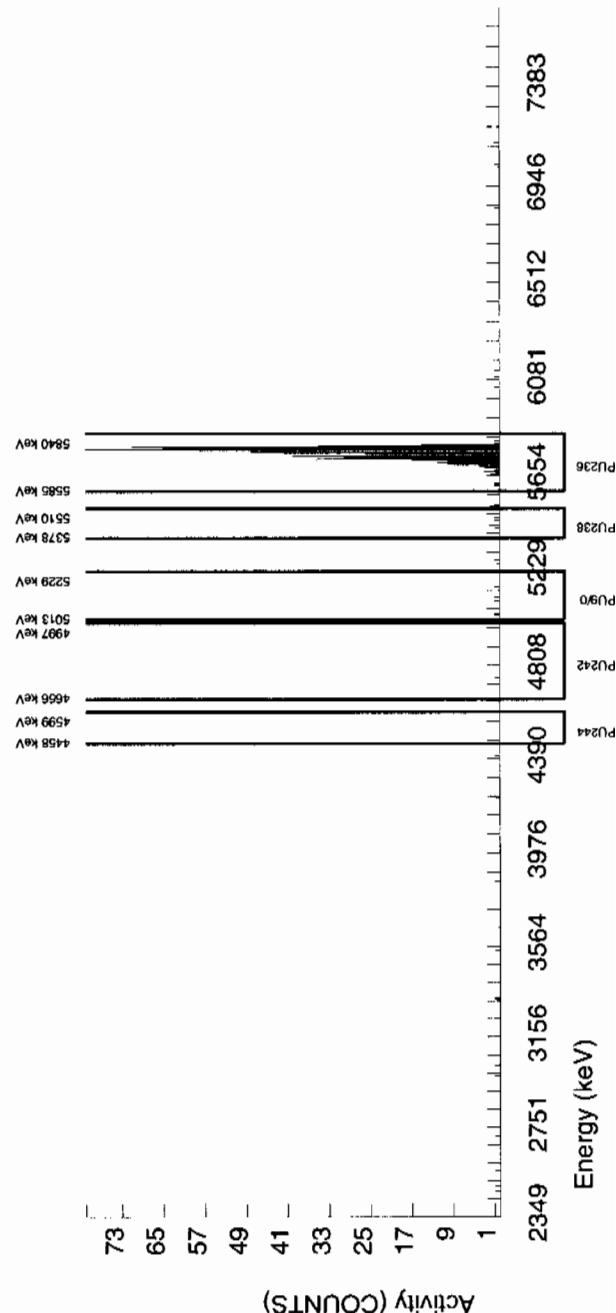
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.8721E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-236	5749.000	5760.184	29.906	665.000	665.000	0.000	0.0000	100.0000	1.09E+00	7.50E-02	0.00E+00	4.35E-03	4.22E-02
PU-238	5499.000	5449.643	5.002	5.000	4.280	0.720	2.4495	99.900000	6.88E-03	3.80E-03	8.49E-03	2.13E-02	3.77E-03
PU-9/0	5155.000	5094.298	124.429	5.000	5.000	0.000	1.9732	99.900000	8.03E-03	3.62E-03	6.84E-03	1.80E-02	3.59E-03
PU242	4890.000	4755.887	5.002	1.000	-0.440	1.440	*****	100.0000	-7.06E-04	2.29E-03	4.31E-01	8.67E-01	2.29E-03
PU-244	4589.000	4528.480	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	1.61E-03	2.24E-02	4.91E-02	1.61E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961706
SAMPLE ID : S0247911004_PU
SAMPLE QTY : 1.260 G
SAMPLE DATE : 18-FEB-2010 00:00:00
ANALYST : KXM4
% YIELD : 85.597

CHAMBER : 086
DETECTOR S/N : 78198
AVERAGE %EFFICIENCY : 30.3911
COUNT DATE : 19-MAR-2010 21:07:01
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B086.CNF;1032
BKG DATE : 14-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W086.CNF;285
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0300E+00 dpm
RESULTS : 2.5936E+00 dpm

MS/MSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

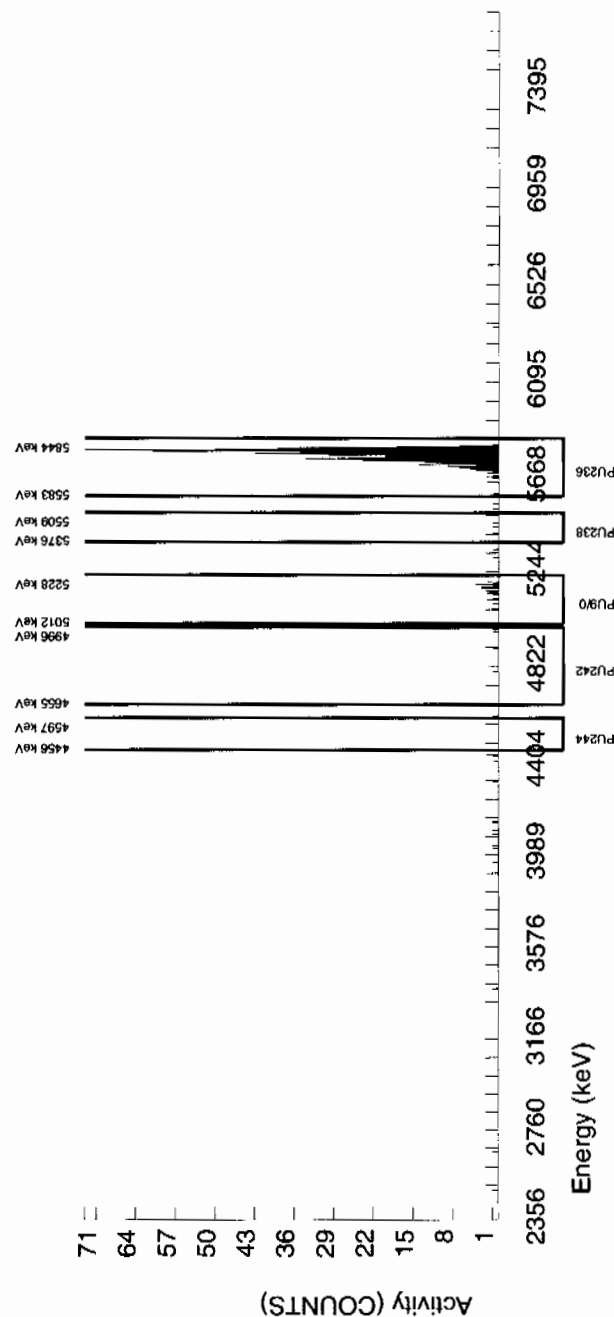
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5776.018	28.114	557.000	556.280	0.720	0.8485	100.0000	1.08E+00	7.92E-02	3.49E-03	1.22E-02	4.60E-02
PU-238	5499.000	5453.008	50.274	4.000	3.280	0.720	2.4495	99.90000	6.27E-03	4.08E-03	1.01E-02	2.54E-02	4.06E-03
PU-9/0	5155.000	5160.663	20.110	28.000	28.000	0.000	1.9732	99.90000	5.35E-02	1.06E-02	8.13E-03	2.14E-02	1.01E-02
PU242	4890.000	4920.964	180.988	4.000	-0.320	4.320	*****	100.0000	-6.11E-04	5.09E-03	5.13E-01	1.03E+00	5.09E-03
PU-244	4589.000	4526.632	0.000	0.000	-0.720	0.720	6.4609	99.90000	-1.38E-03	2.36E-03	2.66E-02	5.84E-02	2.35E-03

NOTES:

* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER	: 961706	CHAMBER	: 087	LIB FILE	: ENV_ALPHA_PU
SAMPLE ID	: S0247911005_PU	DETECTOR S/N	: 78199	BKG FILE	: B087.CNF;1039
SAMPLE QTY	: 1.253 G	AVERAGE %EFFICIENCY	: 32.3127	BKG DATE	: 14-MAR-2010
SAMPLE DATE	: 18-FEB-2010 00:00:00	COUNT DATE	: 19-MAR-2010 21:07:01	BKG LIVE TIME(SEC)	: 59999.99
ANALYST	: KXM4	ELAPSED LIVE TIME(SEC)	: 43199.99	EFF FILE	: W087.CNF;278
% YIELD	: 88.611			CAL DATE	: 12-MAR-2010

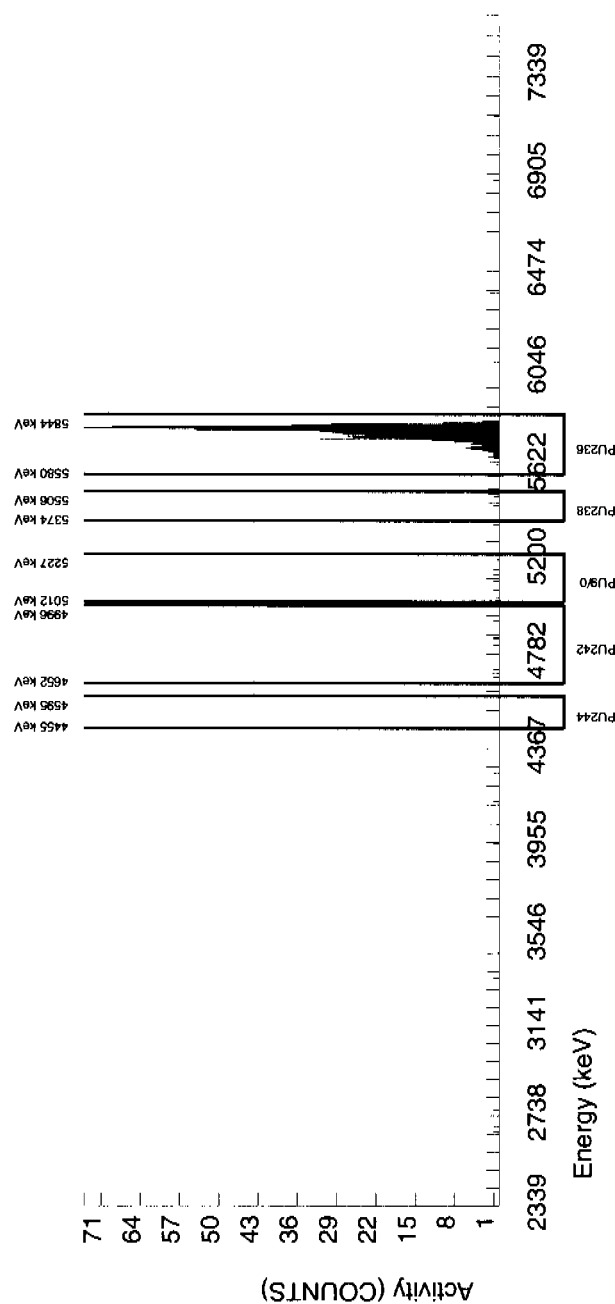
TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0300E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-236	5749.000	5771.943	23.610	613.000	612.280	0.720	0.8485	100.0000	1.09E+00	7.71E-02	3.19E-03	1.11E-02	4.41E-02
PU-238	5499.000	5458.185	99.436	8.000	2.240	5.760	2.4495	99.90000	3.91E-03	6.09E-03	9.22E-03	2.32E-02	6.09E-03
PU-9/0	5155.000	5103.975	124.295	5.000	2.120	2.880	1.9732	99.90000	3.70E-03	4.65E-03	7.43E-03	1.96E-02	4.64E-03
PU242	4890.000	4812.592	243.618	6.000	3.840	2.160	*****	100.0000	6.70E-03	4.81E-03	4.69E-01	9.43E-01	4.79E-03
PU-244	4589.000	4524.985	0.000	0.000	-1.440	1.440	6.4609	99.90000	-2.51E-03	2.49E-03	2.43E-02	5.34E-02	2.49E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 961706 SAMPLE ID : S0247911006_PU SAMPLE QTY : 1.252 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 76.269</p>		<p>CHAMBER : 088 DETECTOR S/N : 33452 AVERAGE %EFFICIENCY : 31.6430 COUNT DATE : 19-MAR-2010 21:07:01 ELAPSED LIVE TIME(SEC) : 43199.99</p>	<p>LIB FILE : ENV_ALPHA_PU BKG FILE : B088.CNF;1027 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W088.CNF;288 CAL DATE : 12-MAR-2010</p>
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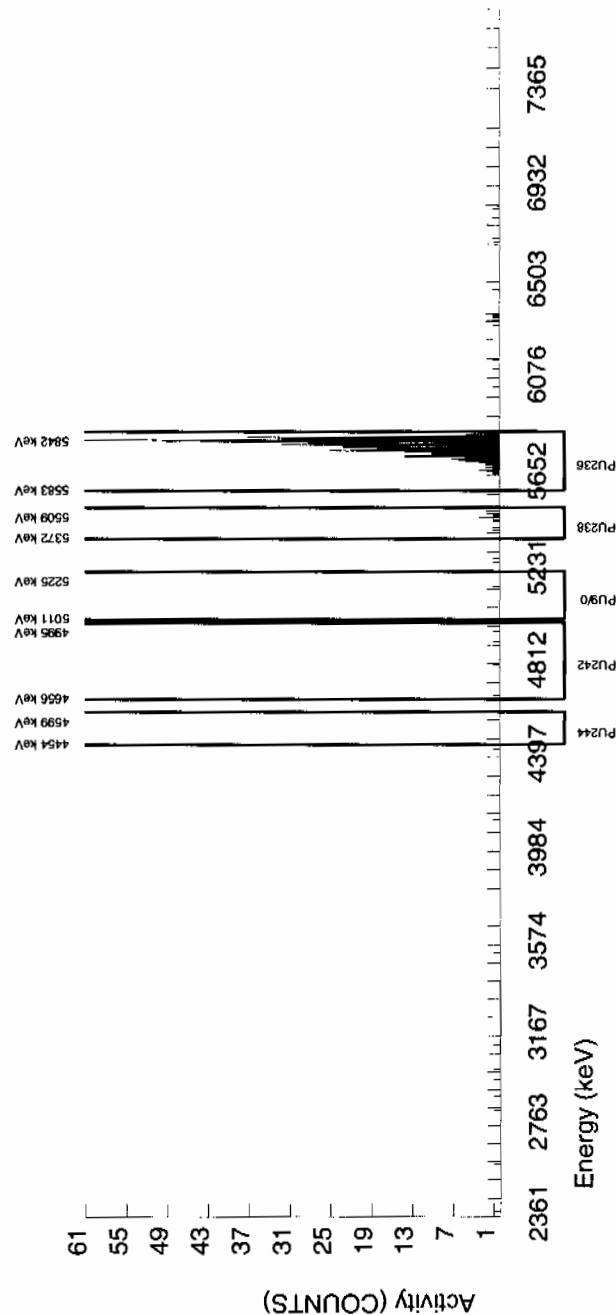
<p>TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.3110E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/g</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/g</p>
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-236	5749.000	5785.322	32.564	524.000	516.080	7.920	2.8142	100.0000	1.09E+00	8.24E-02	1.26E-02	3.08E-02	4.86E-02
PU-238	5499.000	5461.451	28.696	12.000	5.520	6.480	2.4495	99.90000	1.14E-02	8.50E-03	1.10E-02	2.75E-02	8.47E-03
PU-9/0	5155.000	5162.414	5.000	1.000	0.280	0.720	1.9732	99.90000	5.80E-04	2.56E-03	8.82E-03	2.33E-02	2.55E-03
PU242	4890.000	4813.273	279.977	5.000	2.840	2.160	*****	100.0000	5.88E-03	5.31E-03	5.57E-01	1.12E+00	5.30E-03
PU-244	4589.000	4526.248	0.000	0.000	-0.720	0.720	6.4609	99.90000	-1.49E-03	2.56E-03	2.89E-02	6.34E-02	2.55E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER	: 961706
SAMPLE ID	: S0247911007_PU
SAMPLE QTY	: 1.257 G
SAMPLE DATE	: 18-FEB-2010 00:00:00
ANALYST	: KXM4
% YIELD	: 97.161

CHAMBER : 107
DETECTOR S/N : 67578
AVERAGE %EFFICIENCY : 32.7767
COUNT DATE : 19-MAR-2008
ELAPSED LIVE TIME(SEC) : 43199.99

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LIB FILE : ENV_ALPHA_PU
BKG FILE : B107.CNF:693
BKG DATE : 14-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W107.CNF:234
CAL DATE : 12-MAR-2010
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TRACER	:	1430-C
ID	:	PU-236
NUCLIDE	:	3.0300E+00 dpm
NOMINAL	:	2.9440E+00 dpm
RESULTS	:	

MS/MSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E

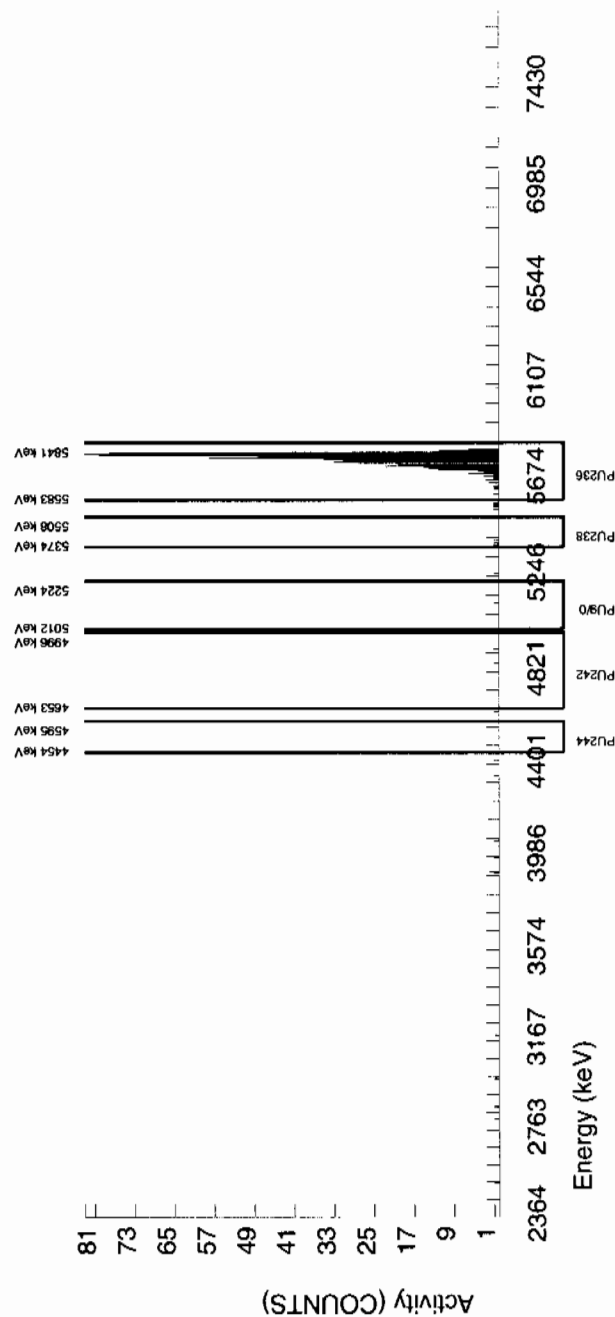
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-236	5749.000	5772.871	28.735	681.000	681.000	0.000	0.0000	100.0000	1.09E+00	7.43E-02	0.00E+00	4.24E-03	4.16E-02
PU-238	5499.000	5400.585	24.801	3.000	2.280	0.720	2.4495	99.90000	3.37E-03	2.94E-03	8.27E-03	2.08E-02	2.94E-03
PU-9/0	5155.000	5133.960	4.960	1.000	0.280	0.720	1.9732	99.90000	4.38E-04	1.93E-03	6.66E-03	1.76E-02	1.93E-03
PU242	4890.000	4835.538	203.370	3.000	0.120	2.880	*****	100.0000	1.88E-04	3.52E-03	4.20E-01	8.45E-01	3.52E-03
PU-244	4589.000	4524.356	0.000	0.000	0.000	0.000	6.4609	99.90000	0.00E+00	1.57E-03	2.18E-02	4.79E-02	1.56E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 961706 SAMPLE ID : S0247911008_PU SAMPLE QTY : 1.254 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 90.283</p>	<p>CHAMBER : 108 DETECTOR S/N : 78778 AVERAGE %EFFICIENCY : 35.3171 COUNT DATE : 19-MAR-2010 21:07:02 ELAPSED LIVE TIME(SEC) : 43199.99</p>	<p>LIB FILE : ENV_ALPHA_PU BKG FILE : B108.CNF:691 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W108.CNF:215 CAL DATE : 12-MAR-2010</p>
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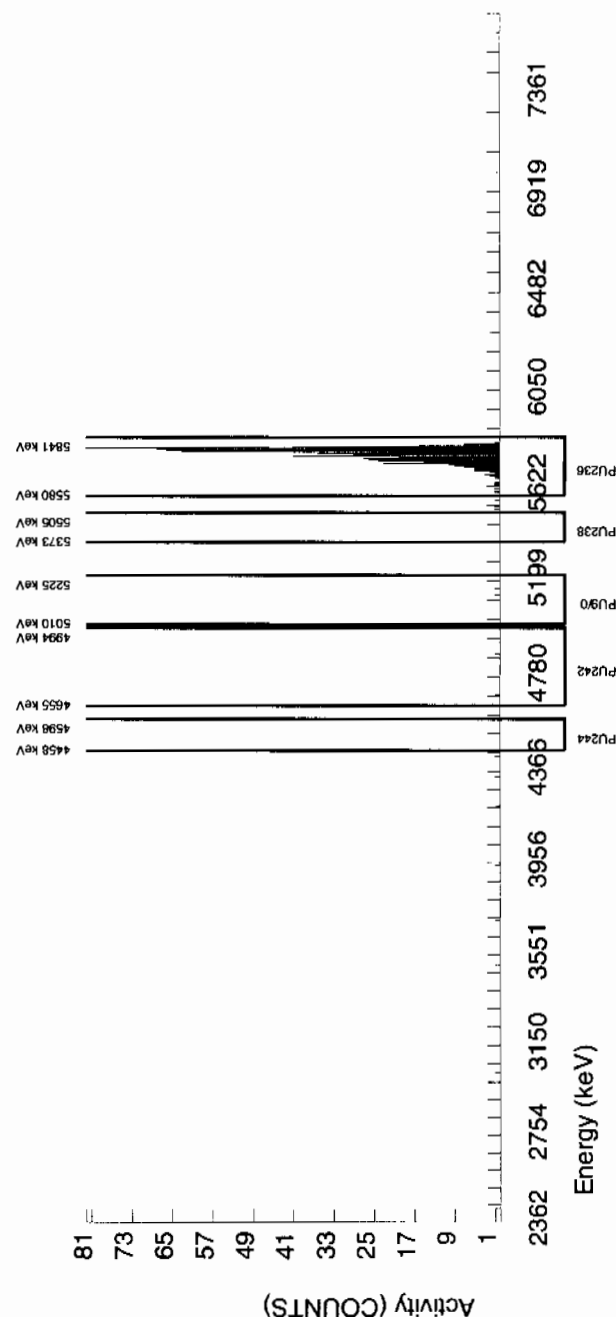
<p>TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.7356E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-236	5749.000	5769.946	24.051	684.000	681.840	2.160	1.4697	100.0000	1.09E+00	7.45E-02	4.96E-03	1.42E-02	4.18E-02
PU-238	5499.000	5378.136	4.867	1.000	1.000	0.000	2.4495	99.900000	1.57E-03	1.57E-03	8.28E-03	2.08E-02	1.57E-03
PU-9/0	5155.000	5185.604	0.000	4.000	1.840	2.160	1.9732	99.900000	2.88E-03	3.70E-03	6.67E-03	1.76E-02	3.69E-03
PU242	4890.000	4795.557	170.331	2.000	0.560	1.440	*****	100.0000	8.76E-04	2.73E-03	4.21E-01	8.46E-01	2.73E-03
PU-244	4589.000	4528.223	0.000	0.000	-0.720	0.720	6.4609	99.900000	-1.13E-03	1.93E-03	2.18E-02	4.79E-02	1.93E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as $\sqrt{\text{BKG AREA}}$.



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 961706 SAMPLE ID : S0247911009_PU SAMPLE QTY : 1.255 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 81.691</p>	<p>CHAMBER : 109 DETECTOR S/N : 79463 AVERAGE %EFFICIENCY : 35.5809 COUNT DATE : 19-MAR-2010 21:07:02 ELAPSED LIVE TIME(SEC) : 43199.99</p>	<p>LIB FILE : ENV_ALPHA_PU BKG FILE : B109.CNF:689 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W109.CNF:196 CAL DATE : 12-MAR-2010</p>
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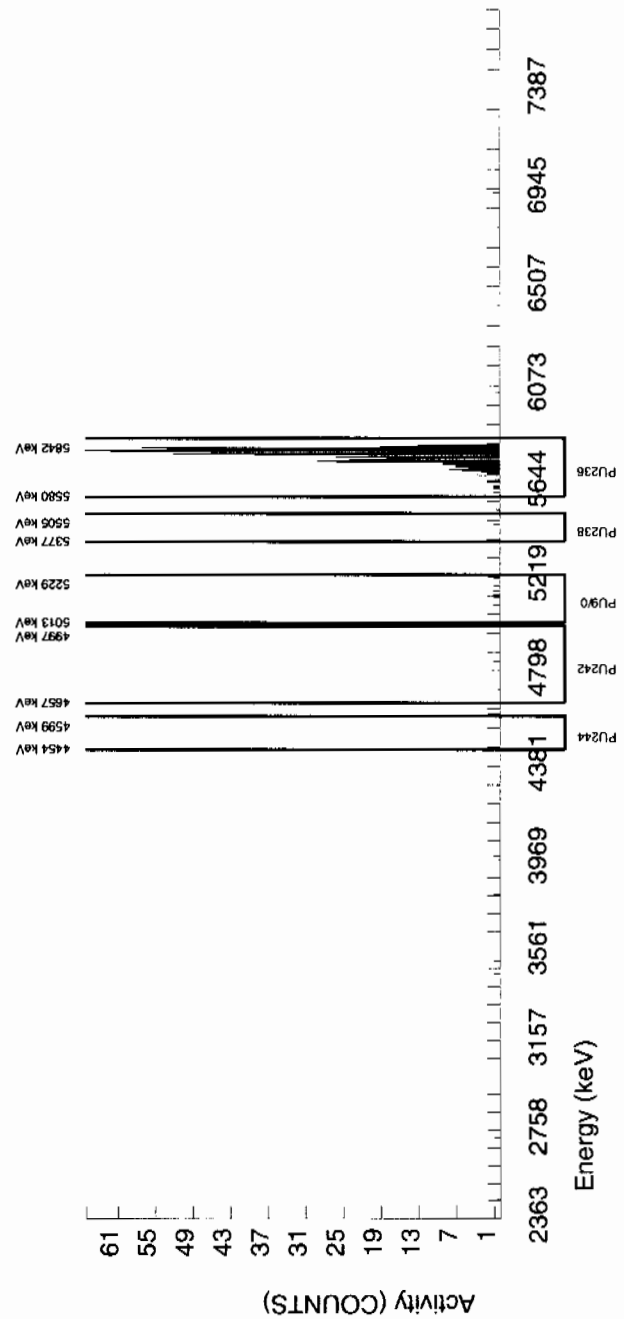
<p>TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.4753E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-236	5749.000	5772.627	34.083	623.000	621.560	1.440	1.2000	100.0000	1.09E+00	7.67E-02	4.44E-03	1.35E-02	4.37E-02
PU-238	5499.000	5457.183	4.911	1.000	1.000	0.000	2.4495	99.900000	1.72E-03	1.72E-03	9.07E-03	2.28E-02	1.72E-03
PU-9/0	5155.000	5156.056	117.856	6.000	5.280	0.720	1.9732	99.900000	9.06E-03	4.41E-03	7.31E-03	1.93E-02	4.38E-03
PU242	4890.000	4844.870	4.911	1.000	-0.440	1.440	*****	100.0000	-7.55E-04	2.45E-03	4.61E-01	9.27E-01	2.45E-03
PU-244	4589.000	4526.500	0.000	0.000	-1.440	1.440	6.4609	99.900000	-2.47E-03	2.45E-03	2.39E-02	5.25E-02	2.45E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961706 SAMPLE ID : S0247911010_PU SAMPLE QTY : 1.251 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 89.903		CHAMBER : 112 DETECTOR S/N : 78261 AVERAGE %EFFICIENCY : 33.5504 COUNT DATE : 19-MAR-2010 21:07:02 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B112.CNF:696 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W112.CNF:223 CAL DATE : 12-MAR-2010
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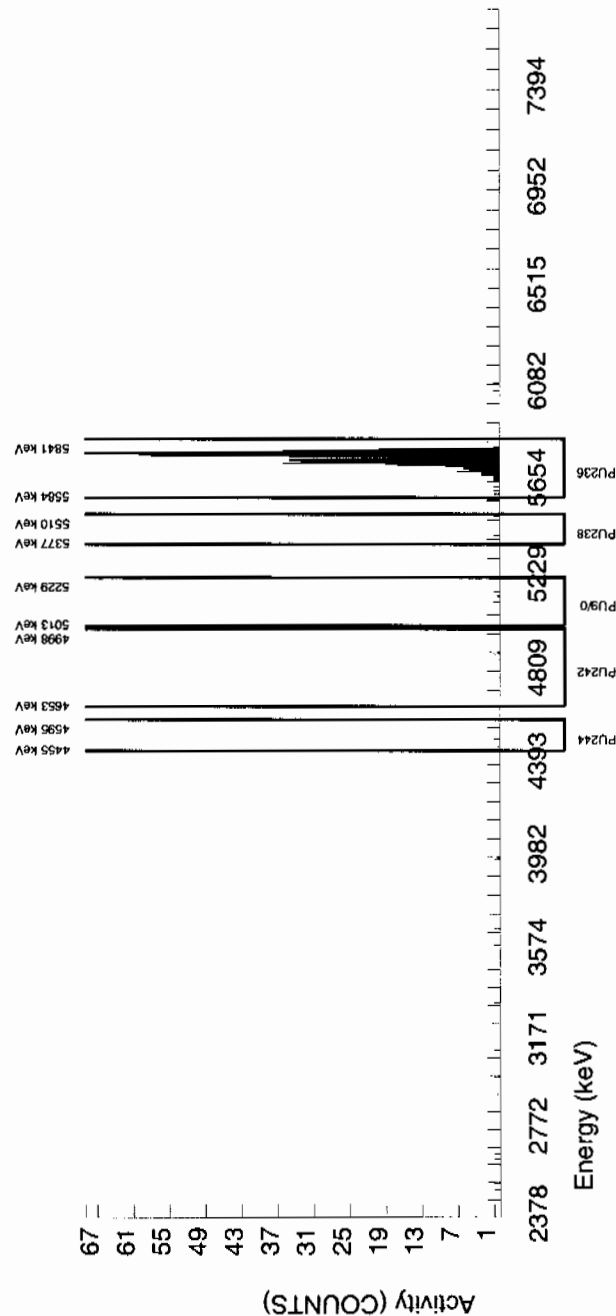
TRACER ID : 1430-C NUCLEIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.7241E+00 dpm	MS/MSD ID : 0244-B NUCLEIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLEIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-236	5749.000	5765.361	54.510	645.000	645.000	0.000	0.0000	100.0000	1.09E+00	7.60E-02	0.00E+00	4.49E-03	4.30E-02
PU-238	5499.000	5482.255	4.905	5.000	4.280	0.720	2.4495	99.900000	7.11E-03	3.92E-03	8.77E-03	2.20E-02	3.90E-03
PU-9/0	5155.000	5147.462	49.047	2.000	0.560	1.440	1.9732	99.900000	9.29E-04	2.89E-03	7.07E-03	1.86E-02	2.89E-03
PU242	4890.000	4887.516	4.905	1.000	-1.160	2.160	*****	100.0000	-1.92E-03	2.65E-03	4.46E-01	8.96E-01	2.65E-03
PU-244	4589.000	4512.325	4.905	1.000	1.000	0.000	6.4609	99.900000	1.66E-03	1.66E-03	2.31E-02	5.08E-02	1.66E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961706 SAMPLE ID : S0247911011_PU SAMPLE QTY : 1.251 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 96.695	CHAMBER : 096 DETECTOR S/N : 80016 AVERAGE %EFFICIENCY : 32.7970 COUNT DATE : 20-MAR-2010 11:35:11 ELAPSED LIVE TIME(SEC) : 30300.00	LIB FILE : ENV_ALPHA_PU BKG FILE : B096.CNF:687 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W096.CNF:181 CAL DATE : 12-MAR-2010
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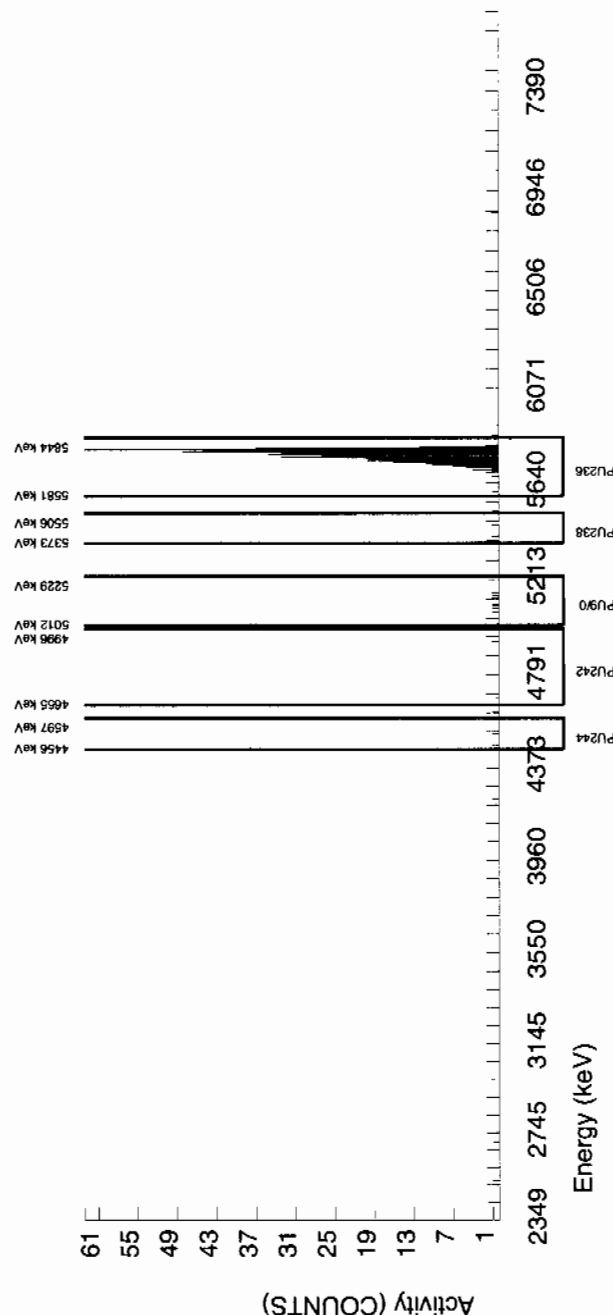
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0301E+00 dpm RESULTS : 2.9300E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-236	5749.000	5771.086	36.234	476.000	475.495	0.505	0.7106	100.0000	1.09E+00	8.42E-02	3.22E-03	1.25E-02	5.01E-02
PU-238	5499.000	5420.899	64.023	3.000	1.990	1.010	2.4495	99.900000	4.48E-03	4.23E-03	1.11E-02	2.83E-02	4.22E-03
PU-9/0	5155.000	5118.055	83.723	7.000	5.485	1.515	1.9732	99.900000	1.23E-02	6.32E-03	8.96E-03	2.40E-02	6.27E-03
PU242	4890.000	4817.419	241.318	2.000	-0.525	2.525	*****	100.0000	-1.18E-03	4.07E-03	5.66E-01	1.14E+00	4.07E-03
PU-244	4589.000	4489.441	0.000	3.000	3.000	0.000	6.4609	99.900000	6.75E-03	3.92E-03	2.93E-02	6.48E-02	3.90E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961706 SAMPLE ID : S0247911012_PU SAMPLE QTY : 1.260 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 77.863	CHAMBER : 097 DETECTOR S/N : 67599 AVERAGE %EFFICIENCY : 34.7742 COUNT DATE : 20-MAR-2010 11:35:11 ELAPSED LIVE TIME(SEC) : 30300.00	LIB FILE : ENV_ALPHA_PU BKG FILE : B097.CNF;684 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W097.CNF;195 CAL DATE : 12-MAR-2010
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TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0301E+00 dpm RESULTS : 2.3593E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/g	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/g
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NUCLIDE ACTIVITY SUMMARY

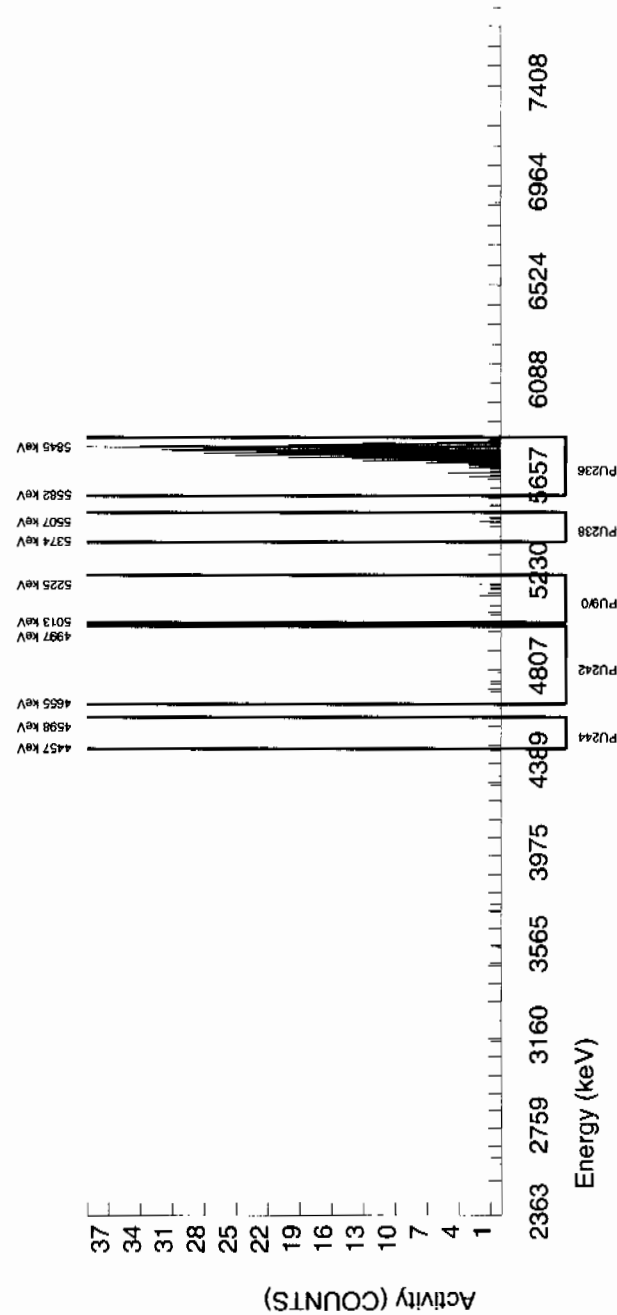
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLG pCi/g	MDC pCi/g	UNC pCi/g
PU-236	5749.000	5781.559	54.771	409.000	405.970	3.030	1.7407	100.0000	1.08E+00	8.88E-02	9.18E-03	2.55E-02	5.41E-02
PU-238	5499.000	5453.540	7.240	6.000	3.475	2.525	2.4495	99.90000	9.10E-03	7.09E-03	1.29E-02	3.30E-02	7.06E-03
PU-9/0	5155.000	5148.900	51.758	11.000	10.495	0.505	1.9732	99.90000	2.75E-02	8.96E-03	1.04E-02	2.79E-02	8.78E-03
PU242	4890.000	4756.076	88.728	4.000	2.485	1.515	*****	100.0000	6.50E-03	5.72E-03	6.58E-01	1.32E+00	5.71E-03
PU-244	4589.000	4527.076	0.000	0.000	-1.010	1.010	6.4609	99.90000	-2.64E-03	3.22E-03	3.41E-02	7.53E-02	3.22E-03

NOTES:

* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER	: 961706
SAMPLE ID	: S0247911013_PU
SAMPLE QTY	: 1.251 G
SAMPLE DATE	: 18-FEB-2010 00:00
ANALYST	: KXM4
% YIELD	: 75.584

CHAMBER : 098
DETECTOR S/N : 80017
AVERAGE %EFFICIENCY : 35.6488
COUNT DATE : 20-MAR-2010 11:35:11
ELAPSED LIVE TIME(SEC) : 30300.00

LIB FILE	:	ENV_ALPHA_PU
BKG FILE	:	B098.CNF:690
BKG DATE	:	14-MAR-2010
BKG LIVE TIME(SEC)	:	59999.99
EFF FILE	:	W098.CNF:200
CAL DATE	:	12-MAR-2010

TRACER	:	1430-C
ID	:	PU-236
NUCLIDE	:	3.0301E+00 dpm
NOMINAL	:	2.2903E+00 dpm
RESULTS	:	

MS/MSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

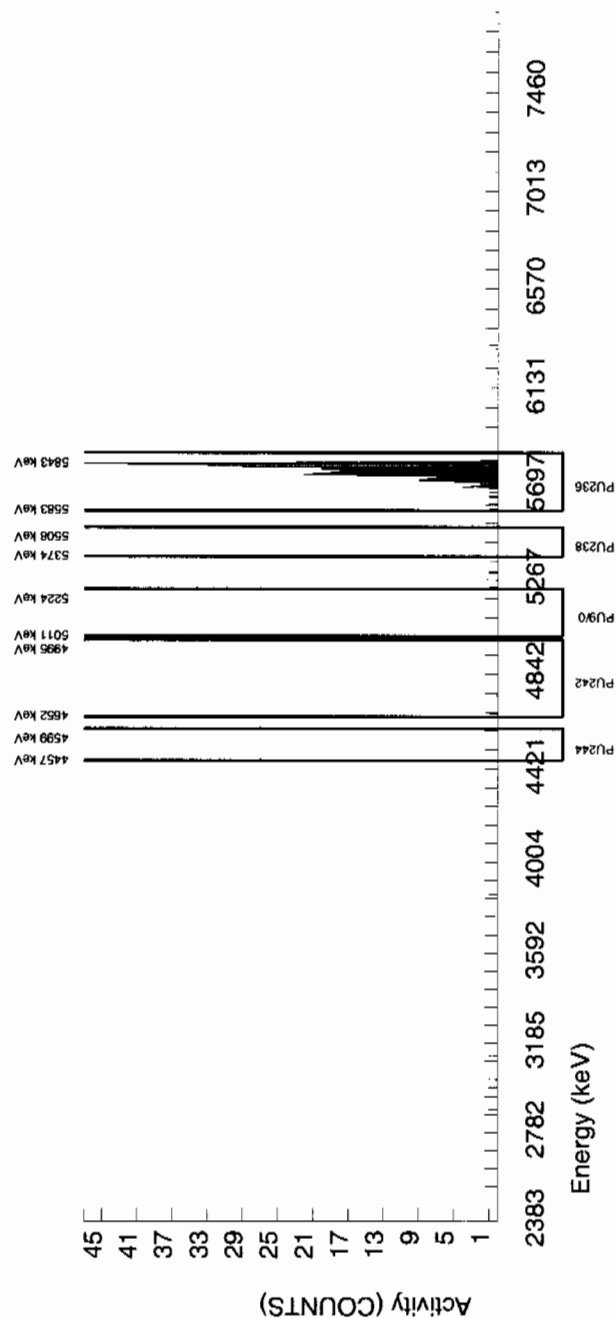
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-236	5749.000	5772.592	27.269	404.000	404.000	0.000	0.0000	100.0000	1.09E+00	8.92E-02	0.00E+00	7.17E-03	5.43E-02
PU-238	5499.000	5441.003	0.000	0.000	-0.505	0.505	2.4495	99.900000	-1.34E-03	2.97E-03	1.31E-02	3.34E-02	2.97E-03
PU-9/0	5155.000	5117.573	0.000	0.000	-1.010	1.010	1.9732	99.900000	-2.68E-03	3.26E-03	1.05E-02	2.83E-02	3.26E-03
PU242	4890.000	4712.257	79.259	2.000	0.990	1.010	*****	100.0000	2.62E-03	4.20E-03	6.66E-01	1.34E+00	4.19E-03
PU-244	4589.000	4528.178	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	2.65E-03	3.45E-02	7.63E-02	2.65E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961706
SAMPLE ID : S0247911014_PU
SAMPLE QTY : 1.256 G
SAMPLE DATE : 18-FEB-2010 00:00:00
ANALYST : KXM4
% YIELD : 87.844

CHAMBER : 099
DETECTOR S/N : 70317
AVERAGE %EFFICIENCY : 35.1904
COUNT DATE : 20-MAR-2010 11:35:11
ELAPSED LIVE TIME(SEC) : 30300.00

LIB FILE : ENV_ALPHA_PU
BKG FILE : B099.CNF;687
BKG DATE : 14-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W099.CNF;195
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0301E+00 dpm
RESULTS : 2.6618E+00 dpm

MS/MSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

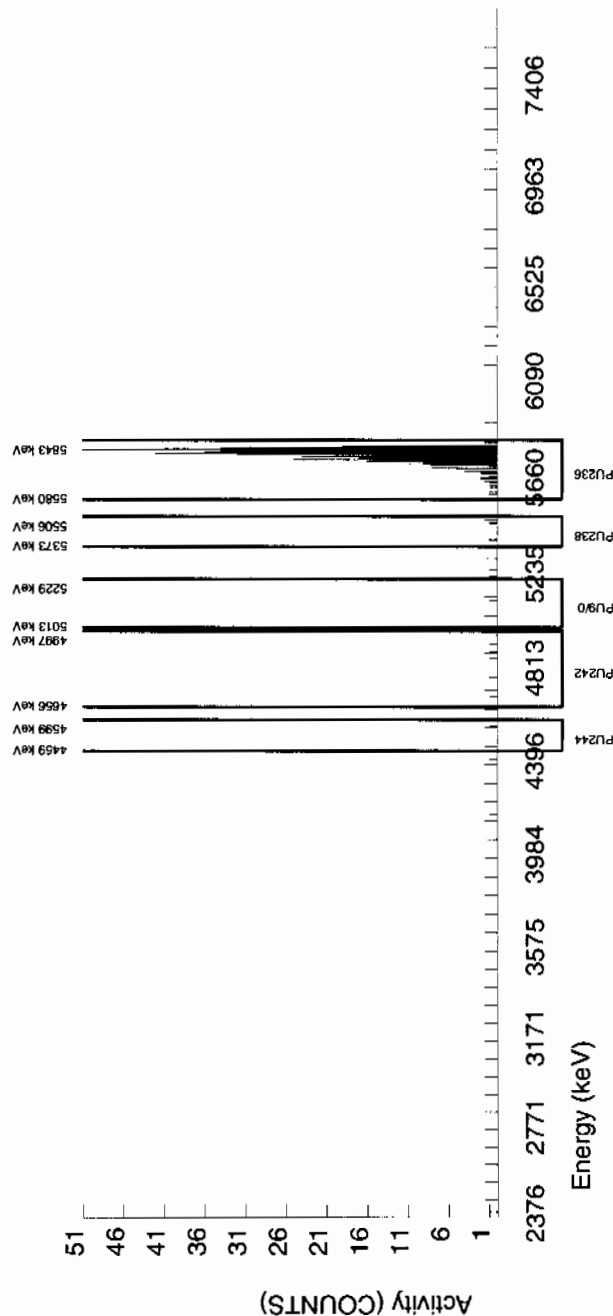
LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-236	5749.000	5781.624	34.088	464.000	463.495	0.505	0.7106	100.0000	1.09E+00	8.46E-02	3.29E-03	1.28E-02	5.05E-02
PU-238	5499.000	5445.679	78.648	4.000	3.495	0.505	2.4495	99.900000	8.04E-03	4.77E-03	1.14E-02	2.90E-02	4.75E-03
PU-9/0	5155.000	5139.513	4.915	1.000	-1.020	2.020	1.9732	99.900000	-2.35E-03	3.27E-03	9.16E-03	2.45E-02	3.27E-03
PU242	4890.000	4846.872	226.112	5.000	3.990	1.010	*****	100.0000	9.17E-03	5.42E-03	5.78E-01	1.16E+00	5.39E-03
PU-244	4589.000	4520.926	103.225	2.000	1.495	0.505	6.4609	99.900000	3.44E-03	3.46E-03	3.00E-02	6.62E-02	3.45E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961706 SAMPLE ID : S0247911015_PU SAMPLE QTY : 1.252 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 49.650	CHAMBER : 255 DETECTOR S/N : 79448 AVERAGE %EFFICIENCY : 40.4666 COUNT DATE : 22-MAR-2010 03:07:18 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_PU BKG FILE : B255.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W255.CNF:30 CAL DATE : 28-FEB-2010
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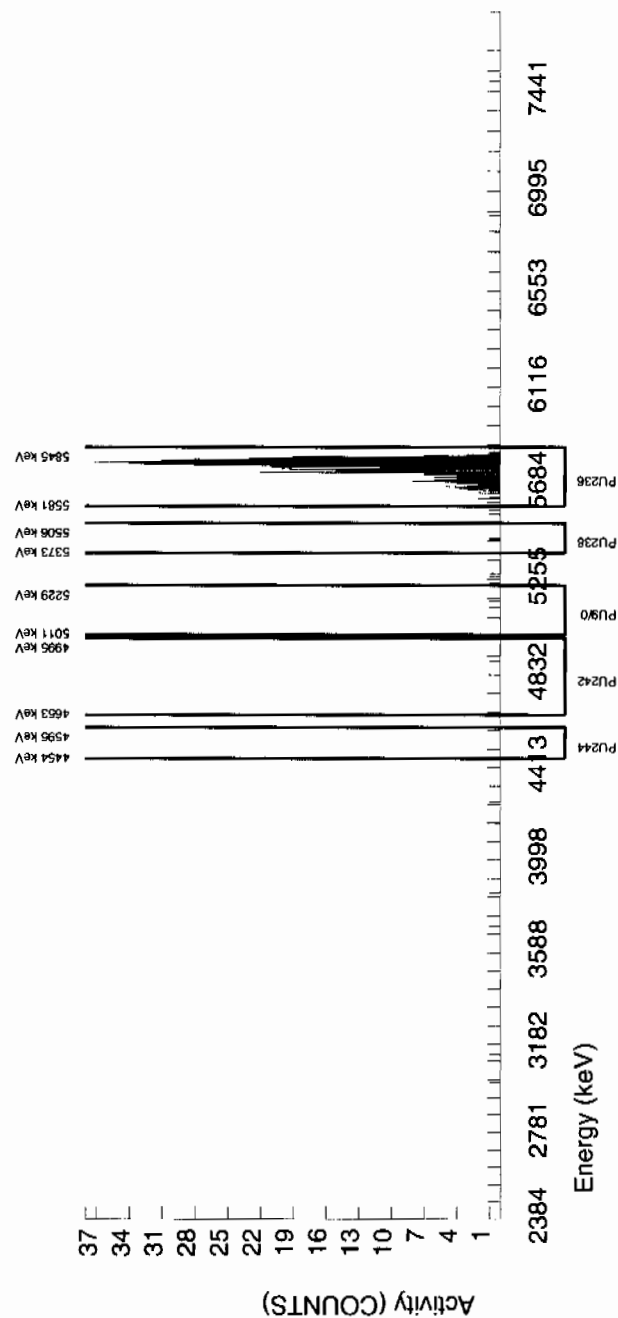
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 1.5044E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-236	5749.000	5762.318	64.992	429.000	429.000	0.000	0.0000	100.0000	1.09E+00	8.72E-02	0.00E+00	6.74E-03	5.26E-02
PU-238	5499.000	5439.458	9.243	2.000	2.000	0.000	2.4495	99.90000	4.98E-03	3.54E-03	1.32E-02	3.31E-02	3.52E-03
PU-9/0	5155.000	5151.697	29.578	2.000	2.000	0.000	1.9732	99.90000	4.98E-03	3.54E-03	1.06E-02	2.79E-02	3.52E-03
PU242	4890.000	4900.266	4.930	1.000	1.000	0.000	*****	100.0000	2.49E-03	2.49E-03	6.69E-01	1.34E+00	2.49E-03
PU-244	4589.000	4524.785	0.000	0.000	0.000	0.000	6.4609	99.90000	0.00E+00	2.49E-03	3.47E-02	7.62E-02	2.49E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961706 SAMPLE ID : S0247911016_PU SAMPLE QTY : 1.252 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 87.797	CHAMBER : 256 DETECTOR S/N : 79449 AVERAGE %EFFICIENCY : 40.3572 COUNT DATE : 22-MAR-2010 03:07:21 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_PU BKG FILE : B256.CNF:93 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W256.CNF:30 CAL DATE : 28-FEB-2010
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TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.6603E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

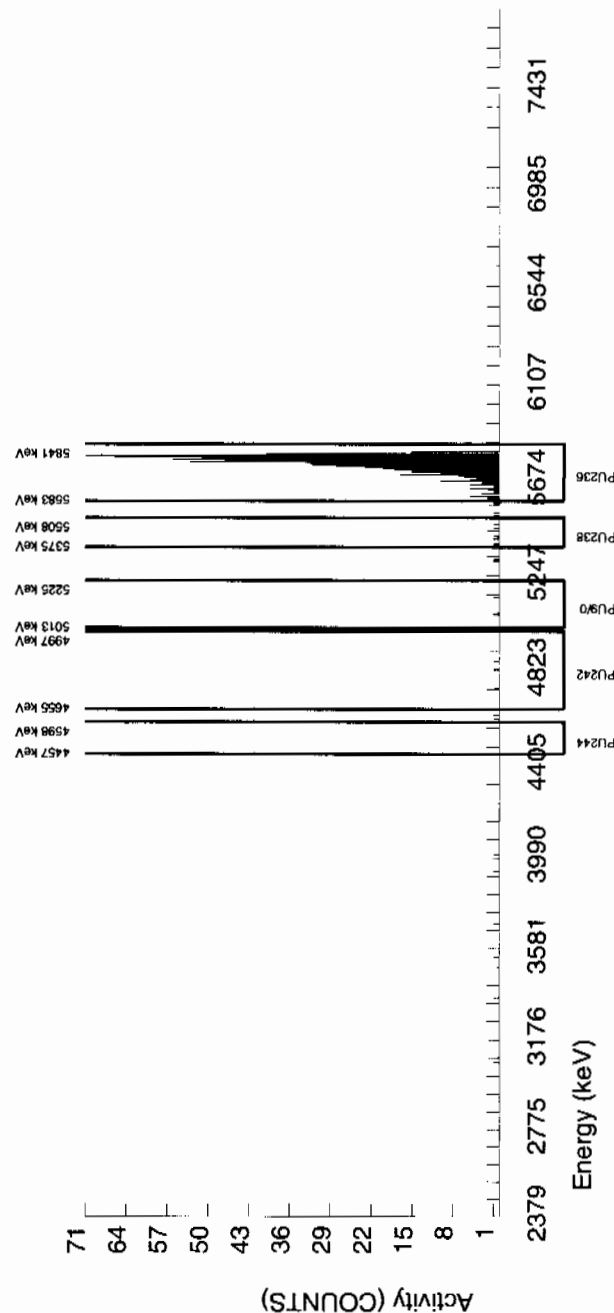
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5759.241	39.114	758.000	756.560	1.440	1.2000	100.0000	1.09E+00	7.22E-02	3.65E-03	1.11E-02	3.97E-02
PU-238	5499.000	5453.189	39.363	11.000	9.560	1.440	2.4495	99.900000	1.35E-02	4.96E-03	7.46E-03	1.87E-02	4.90E-03
PU-9/0	5155.000	5116.528	78.727	2.000	-0.160	2.160	1.9732	99.900000	-2.26E-04	2.66E-03	6.01E-03	1.58E-02	2.66E-03
PU242	4890.000	4818.094	118.090	3.000	1.560	1.440	*****	100.0000	2.20E-03	2.84E-03	3.79E-01	7.62E-01	2.83E-03
PU-244	4589.000	4527.153	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	1.41E-03	1.97E-02	4.32E-02	1.41E-03

NOTES:

* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961706 SAMPLE ID : S0247911017_PU SAMPLE QTY : 1.253 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 89.227		CHAMBER : 108 DETECTOR S/N : 78778 AVERAGE %EFFICIENCY : 35.3171 COUNT DATE : 20-MAR-2010 11:35:13 ELAPSED LIVE TIME(SEC) : 30299.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B108.CNF;691 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W108.CNF;215 CAL DATE : 12-MAR-2010
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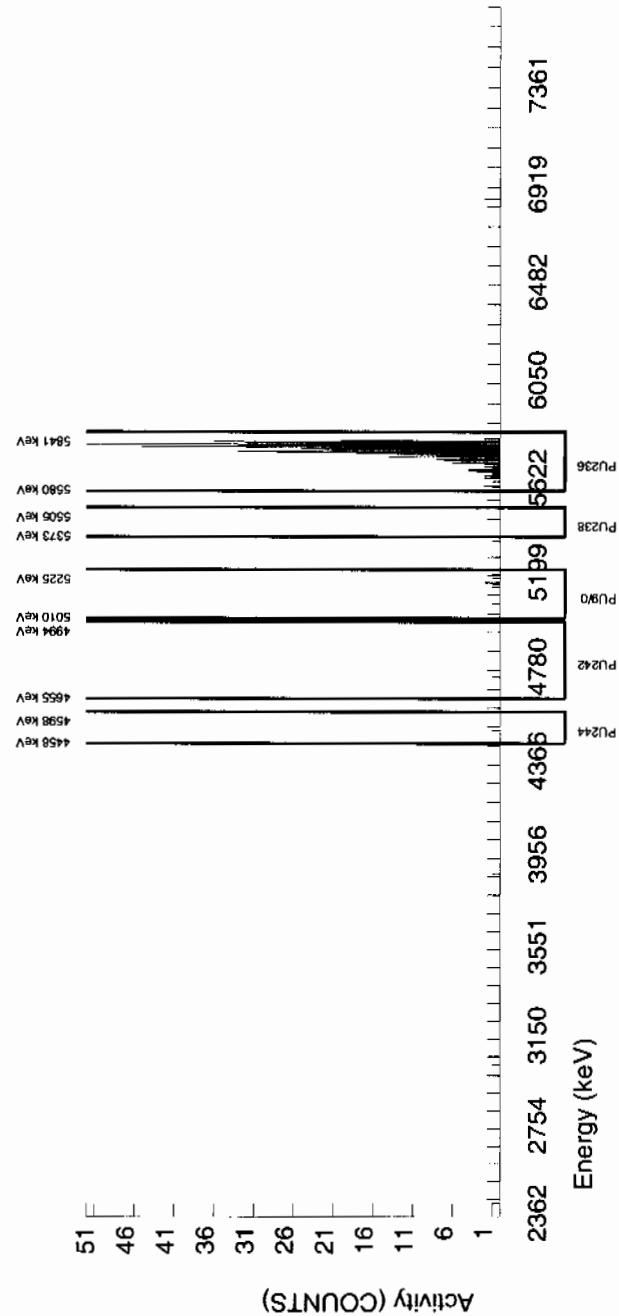
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0301E+00 dpm RESULTS : 2.7037E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/g	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/g
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-236	5749.000	5767.097	47.813	474.000	472.485	1.515	1.2309	100.0000	1.09E+00	8.43E-02	5.61E-03	1.73E-02	5.02E-02
PU-238	5499.000	5438.991	0.000	0.000	0.000	0.000	2.4495	99.900000	0.00E+00	2.27E-03	1.12E-02	2.85E-02	2.26E-03
PU-9/0	5155.000	5146.817	4.867	8.000	6.485	1.515	1.9732	99.900000	1.47E-02	6.76E-03	9.00E-03	2.41E-02	6.69E-03
PU242	4890.000	4873.774	0.000	2.000	0.990	1.010	*****	100.0000	2.24E-03	3.58E-03	5.68E-01	1.14E+00	3.58E-03
PU-244	4589.000	4520.464	4.867	1.000	0.495	0.505	6.4609	99.900000	1.12E-03	2.54E-03	2.95E-02	6.51E-02	2.53E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).

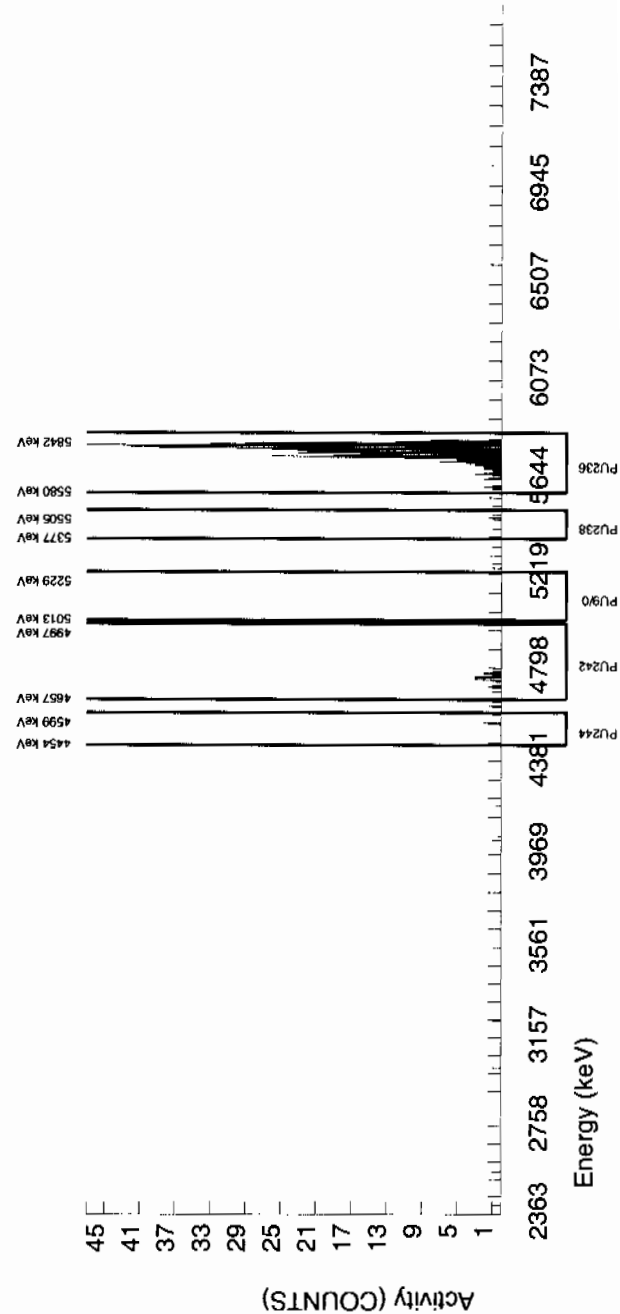


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961706 SAMPLE ID : S1202062785_PU SAMPLE QTY : 1.000 G SAMPLE DATE : 17-MAR-2010 00:00:00 ANALYST : KXM4 % YIELD : 85.099				CHAMBER : 109 DETECTOR S/N : 79463 AVERAGE %EFFICIENCY : 35.5809 COUNT DATE : 20-MAR-2010 11:35:13 ELAPSED LIVE TIME(SEC) : 30299.99				LIB FILE : ENV_ALPHA_PU BKG FILE : B109.CNF;689 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W109.CNF;196 CAL DATE : 12-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 2.9763E+00 dpm RESULTS : 2.5328E+00 dpm		MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G		LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G									
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLG pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5768.023	57.357	455.000	453.990	1.010	1.0050	100.0000	1.34E+00	1.05E-01	5.97E-03	1.99E-02	6.30E-02
PU-238	5499.000	5439.905	0.000	4.000	4.000	0.000	2.4495	99.90000	1.18E-02	5.94E-03	1.46E-02	3.71E-02	5.90E-03
PU-9/0	5155.000	5120.875	0.000	0.000	-0.505	0.505	1.9732	99.90000	-1.49E-03	3.31E-03	1.17E-02	3.15E-02	3.30E-03
PU242	4890.000	4755.438	34.375	23.000	21.990	1.010	*****	100.0000	6.48E-02	1.49E-02	7.41E-01	1.49E+00	1.43E-02
PU-244	4589.000	4553.803	4.911	4.000	2.990	1.010	6.4609	99.90000	8.82E-03	6.29E-03	3.84E-02	8.49E-02	6.26E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961706 SAMPLE ID : S1202062786_PU SAMPLE QTY : 1.252 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 92.636		CHAMBER : 112 DETECTOR S/N : 78261 AVERAGE %EFFICIENCY : 33.5504 COUNT DATE : 20-MAR-2010 11:35:13 ELAPSED LIVE TIME(SEC) : 30299.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B112.CNF;696 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W112.CNF;223 CAL DATE : 12-MAR-2010
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TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0301E+00 dpm RESULTS : 2.8070E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

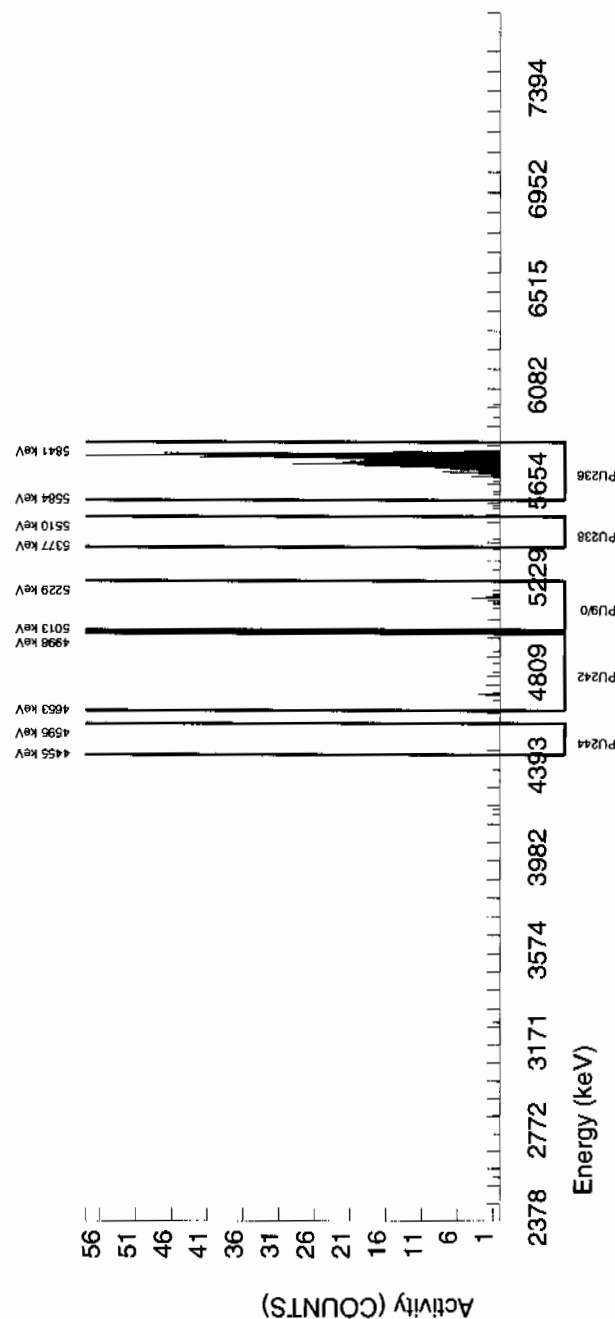
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5767.631	25.726	466.000	466.000	0.000	0.0000	100.0000	1.09E+00	8.47E-02	0.00E+00	6.21E-03	5.05E-02
PU-238	5499.000	5419.643	4.905	1.000	0.495	0.505	2.4495	99.90000	1.14E-03	2.58E-03	1.13E-02	2.89E-02	2.57E-03
PU-9/0	5155.000	5157.796	7.204	13.000	11.990	1.010	1.9732	99.90000	2.75E-02	8.61E-03	9.14E-03	2.45E-02	8.43E-03
PU242	4890.000	4762.872	46.288	13.000	11.485	1.515	*****	100.0000	2.63E-02	8.66E-03	5.77E-01	1.16E+00	8.50E-03
PU-244	4589.000	4525.294	0.000	0.000	0.000	0.000	6.4609	99.90000	0.00E+00	2.30E-03	2.99E-02	6.61E-02	2.29E-03

NOTES:

* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER	:	961706
SAMPLE ID	:	S1202062787_PU
SAMPLE QTY	:	0.100 G
SAMPLE DATE	:	17-MAR-2010 00:00:00
ANALYST	:	KXM4
% YIELD	:	92.649

CHAMBER :	095
DETECTOR S/N :	64279
AVERAGE %EFFICIENCY :	31.3449
COUNT DATE :	20-MAR-2000
ELAPSED LIVE TIME(SEC) :	30300.00

LIB FILE	:	ENV_ALPHA_PU
BKG FILE	:	B095.CNF:690
BKG DATE	:	14-MAR-2010
BKG LIVE TIME(SEC)	:	59999.99
EFF FILE	:	W095.CNF:211
CAL DATE	:	12-MAR-2010

TRACER	ID	: 1430-C
	NUCLIDE	: PU-236
	NOMINAL	: 2.9763E+00 dpm
	RESULTS	: 2.7575E+00 dpm

MS/MSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

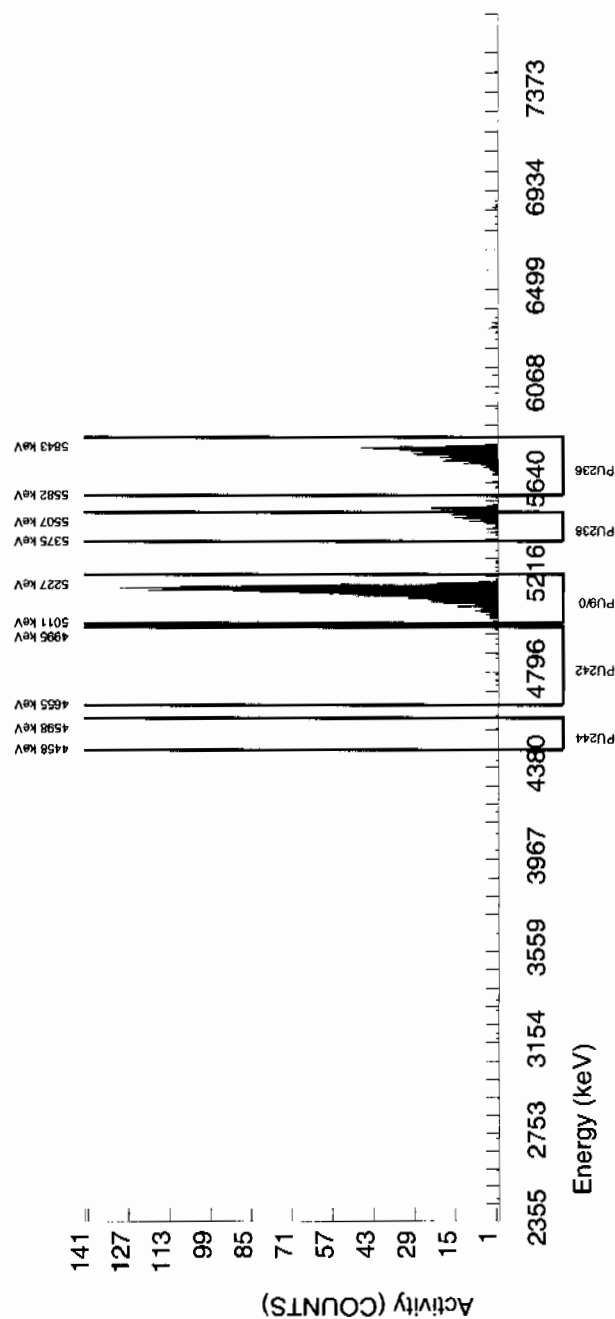
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
PU-236	5749.000	5771.369	39.650	443.000	435.425	7.575	2.7523	100.0000	1.34E+01	1.08E+00	1.71E-01	4.24E-01	6.51E-01
PU-238	5499.000	5480.447	0.000	134.000	123.395	10.605	2.4495	99.90000	3.79E+00	4.37E-01	1.52E-01	3.87E-01	3.63E-01
PU-9/0	5155.000	5154.705	36.002	1236.000	1233.980	2.020	1.9732	99.90000	3.79E+01	2.66E+00	1.22E-01	3.28E-01	1.08E+00
PU242	4890.000	4869.448	232.371	12.000	10.485	1.515	*****	100.0000	3.22E+01	1.12E-01	7.73E+00	1.55E+01	1.10E-01
PU-244	4589.000	4509.641	93.937	2.000	2.000	0.000	6.4609	99.90000	6.15E-02	4.37E-02	4.01E-01	8.85E-01	4.35E-02

NOTES:

* BKG Sq calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of PU-236 calculated as $\sqrt{\text{BKG AREA}}$.



Radiochemistry Batch Checklist, Rev10

Batch# 96/708 Product: U Date: 3/22/10

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.	✓		case narrative
Method blank is less than the RDL/ LLD.			
(If rad samples, < 5% of lowest activity)	✓		case narrative
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 stated.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			N/A
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required.			N/A
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: J. L. L. - 3/22/10

Secondary Review Performed By: K. Bell - 3/22/10

3/24
LANL

Uranium Que Sheet

05-MAR-10

Batch #: 961708 Analyst: KXM4 First Client Due Date: 24-MAR-10 Internal Due Date: 13-MAR-10
 Tracer Isotope: U-232/U-236 Tracer Code: 1283-H Expiration Date: 12-9-10 Vol: 0.12
 LCS Isotope: U-238 LCS Code: SEM 0244-A Expiration Date: 10/31/20 Vol: 0.12
 Spike Isotope: U-238 Spike Code: NA Expiration Date: NA Vol: NA
 Prep Date: 3-17-10 Initials: YW Pipet ID: 50410272 Balance ID: 2471058
 Witness: MDA 3/17/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l/h)	U Det #
247911001-1	RE15-10-8019	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	1	1	0.505	161
247911002-1	RE15-10-8013	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	2	2	0.502	162
247911003-1	RE15-10-8026	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	3	3	0.515	164
247911004-1	RE15-10-8017	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	4	4	0.520	1
247911005-1	RE15-10-8025	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	5	5	0.514	3
247911006-1	RE15-10-8022	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	6	6	0.506	171
247911007-1	RE15-10-8014	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	7	7	0.525	4
247911008-1	RE15-10-8023	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	8	8	0.503	6
247911009-1	RE15-10-8020	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	9	9	0.503	161
247911010-1	RE15-10-8018	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	10	10	0.524	162
247911011-1	RE15-10-8015	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	11	11	0.504	164
247911012-1	RE15-10-8021	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	12	12	0.504	165
247911013-1	RE15-10-8024	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	13	13	0.512	166
247911014-1	RE15-10-8016	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	14	14	0.503	167
247911015-1	RE15-10-8065	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	15	15	0.520	169
247911016-1	RE15-10-8066	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	16	16	0.508	169
247911017-1	RE15-10-8033	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	17	17	0.511	170
1202062788-1	MB for batch 961708	MB		.1 pCi/g	SOIL	QC ACCOUNT		18	18	1	171
1202062789-1	RE15-10-8019(247911001DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	18-FEB-10	19	19	0.502	172
1202062790-1	LCS for batch 961708	LCS		.1 pCi/g	SOIL	QC ACCOUNT		20	20	0.100	2

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION
 Circle One

Data Reviewed By: Jap/LC 3/22/10

Blank Correction Report

Batch ID 961708

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202062789	DUP	Uranium-233/234	5.02E-01 g	1.97E+00	1.54E-01	7.73E-02	.023705179	pCi/g	NO
		Uranium-235/236	5.02E-01 g	1.49E-01	2.47E-02	4.72E-02	.003127490	pCi/g	NO
		Uranium-238	5.02E-01 g	6.10E+00	4.39E-01	5.43E-02	.037848606	pCi/g	NO
1202062790	LCS	Uranium-233/234	1.00E-01 g	6.06E+00	5.35E-01	4.61E-01	.119	pCi/g	NO
		Uranium-235/236	1.00E-01 g	4.04E-01	9.47E-02	2.81E-01	.0157	pCi/g	NO
		Uranium-238	1.00E-01 g	5.18E+00	4.71E-01	3.24E-01	.19	pCi/g	NO
1202062788	MB	Uranium-233/234	1.00E+00 g	1.19E-02	5.64E-03	3.58E-02	.0119	pCi/g	YES
		Uranium-235/236	1.00E+00 g	1.57E-03	4.15E-03	2.18E-02	.00157	pCi/g	YES
		Uranium-238	1.00E+00 g	1.90E-02	6.71E-03	2.51E-02	.019	pCi/g	YES
247911001	RE15-10-8019	Uranium-233/234	5.05E-01 g	1.72E+00	1.36E-01	7.40E-02	.023564356	pCi/g	NO
		Uranium-235/236	5.05E-01 g	1.40E-01	2.38E-02	4.52E-02	.003108911	pCi/g	NO
		Uranium-238	5.05E-01 g	5.53E+00	3.98E-01	5.20E-02	.037623762	pCi/g	NO
247911002	RE15-10-8013	Uranium-233/234	5.02E-01 g	4.71E+00	3.44E-01	7.80E-02	.023705179	pCi/g	NO
		Uranium-235/236	5.02E-01 g	4.79E-01	5.22E-02	4.76E-02	.003127490	pCi/g	NO
		Uranium-238	5.02E-01 g	1.94E+01	1.35E+00	5.48E-02	.037848606	pCi/g	NO
247911003	RE15-10-8026	Uranium-233/234	5.15E-01 g	8.19E-01	7.12E-02	6.71E-02	.023106796	pCi/g	NO
		Uranium-235/236	5.15E-01 g	4.71E-02	1.29E-02	4.10E-02	.003048544	pCi/g	NO
		Uranium-238	5.15E-01 g	9.09E-01	7.75E-02	4.72E-02	.036893204	pCi/g	NO
247911004	RE15-10-8017	Uranium-233/234	5.20E-01 g	1.38E+01	1.12E+00	1.98E-01	.022884615	pCi/g	NO
		Uranium-235/236	5.20E-01 g	1.72E+00	1.82E-01	1.21E-01	.003019231	pCi/g	NO
		Uranium-238	5.20E-01 g	9.11E+01	7.15E+00	1.39E-01	.036538462	pCi/g	NO
247911005	RE15-10-8025	Uranium-233/234	5.14E-01 g	1.08E+00	9.48E-02	8.12E-02	.023151751	pCi/g	NO
		Uranium-235/236	5.14E-01 g	8.89E-02	1.95E-02	4.96E-02	.003054475	pCi/g	NO
		Uranium-238	5.14E-01 g	2.40E+00	1.89E-01	5.71E-02	.036964981	pCi/g	NO
247911006	RE15-10-8022	Uranium-233/234	5.06E-01 g	1.02E+00	8.55E-02	6.64E-02	.023517787	pCi/g	NO
		Uranium-235/236	5.06E-01 g	6.40E-02	1.60E-02	4.06E-02	.003102767	pCi/g	NO
		Uranium-238	5.06E-01 g	1.27E+00	1.03E-01	4.67E-02	.037549407	pCi/g	NO
247911007	RE15-10-8014	Uranium-233/234	5.25E-01 g	1.01E+00	9.08E-02	8.64E-02	.022666667	pCi/g	NO
		Uranium-235/236	5.25E-01 g	3.79E-02	1.54E-02	5.28E-02	.002990476	pCi/g	NO
		Uranium-238	5.25E-01 g	1.06E+00	9.44E-02	6.07E-02	.036190476	pCi/g	NO
247911008	RE15-10-8023	Uranium-233/234	5.03E-01 g	1.30E+00	1.13E-01	9.31E-02	.023658052	pCi/g	NO
		Uranium-235/236	5.03E-01 g	9.79E-02	2.12E-02	5.69E-02	.003121272	pCi/g	NO
		Uranium-238	5.03E-01 g	1.91E+00	1.57E-01	6.54E-02	.037773360	pCi/g	NO
247911009	RE15-10-8020	Uranium-233/234	5.03E-01 g	8.32E-01	7.21E-02	6.68E-02	.023658052	pCi/g	NO
		Uranium-235/236	5.03E-01 g	5.85E-02	1.43E-02	4.08E-02	.003121272	pCi/g	NO
		Uranium-238	5.03E-01 g	8.64E-01	7.43E-02	4.69E-02	.037773360	pCi/g	NO
247911010	RE15-10-8018	Uranium-233/234	5.24E-01 g	1.11E+01	8.42E-01	1.38E-01	.022709924	pCi/g	NO
		Uranium-235/236	5.24E-01 g	1.61E+00	1.54E-01	8.46E-02	.002996183	pCi/g	NO
		Uranium-238	5.24E-01 g	7.08E+01	5.21E+00	9.73E-02	.036259542	pCi/g	NO
247911011	RE15-10-8015	Uranium-233/234	5.04E-01 g	3.18E+00	2.36E-01	7.31E-02	.023611111	pCi/g	NO
		Uranium-235/236	5.04E-01 g	3.75E-01	4.34E-02	4.47E-02	.003115079	pCi/g	NO

Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Allquot	Result	TPU	MDA	Allquot Corrected Blank Result	Units	Activity <5X Corrected Blank
247911011	RE15-10-8015	Uranium-238	5.04E-01 g	1.55E+01	1.08E+00	5.14E-02	.037698413	pCi/g	NO
247911012	RE15-10-8021	Uranium-233/234	5.06E-01 g	2.19E+00	1.67E-01	7.15E-02	.023517787	pCi/g	NO
		Uranium-235/236	5.06E-01 g	1.54E-01	2.43E-02	4.37E-02	.003102767	pCi/g	NO
		Uranium-238	5.06E-01 g	5.45E+00	3.91E-01	5.03E-02	.037549407	pCi/g	NO
247911013	RE15-10-8024	Uranium-233/234	5.12E-01 g	8.42E-01	7.45E-02	7.41E-02	.023242188	pCi/g	NO
		Uranium-235/236	5.12E-01 g	6.82E-02	1.56E-02	4.53E-02	.003066406	pCi/g	NO
		Uranium-238	5.12E-01 g	9.04E-01	7.90E-02	5.21E-02	.037109375	pCi/g	NO
247911014	RE15-10-8016	Uranium-233/234	5.03E-01 g	8.84E-01	7.69E-02	7.10E-02	.023658052	pCi/g	NO
		Uranium-235/236	5.03E-01 g	5.60E-02	1.51E-02	4.34E-02	.003121272	pCi/g	NO
		Uranium-238	5.03E-01 g	8.46E-01	7.41E-02	4.99E-02	.037773360	pCi/g	NO
247911015	RE15-10-8065	Uranium-233/234	5.20E-01 g	1.11E+00	9.35E-02	7.29E-02	.022884615	pCi/g	NO
		Uranium-235/236	5.20E-01 g	8.63E-02	1.93E-02	4.46E-02	.003019231	pCi/g	NO
		Uranium-238	5.20E-01 g	2.06E+00	1.60E-01	5.13E-02	.036538462	pCi/g	NO
247911016	RE15-10-8066	Uranium-233/234	5.08E-01 g	8.83E-01	7.65E-02	6.98E-02	.023425197	pCi/g	NO
		Uranium-235/236	5.08E-01 g	5.20E-02	1.57E-02	4.27E-02	.003090551	pCi/g	NO
		Uranium-238	5.08E-01 g	1.38E+00	1.11E-01	4.91E-02	.037401575	pCi/g	NO
247911017	RE15-10-8033	Uranium-233/234	5.11E-01 g	5.20E+00	3.75E-01	7.31E-02	.023287671	pCi/g	NO
		Uranium-235/236	5.11E-01 g	5.00E-01	5.27E-02	4.47E-02	.003072407	pCi/g	NO
		Uranium-238	5.11E-01 g	1.92E+01	1.33E+00	5.14E-02	.037181996	pCi/g	NO

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961708 SAMPLE ID : S0247911001_UU SAMPLE QTY : 0.505 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 93.083	CHAMBER : 161 DETECTOR S/N : 70321 AVERAGE %EFFICIENCY : 36.5056 COUNT DATE : 21-MAR-2010 08:58:18 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B161.CNF:180 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W161.CNF:63 CAL DATE : 22-FEB-2010
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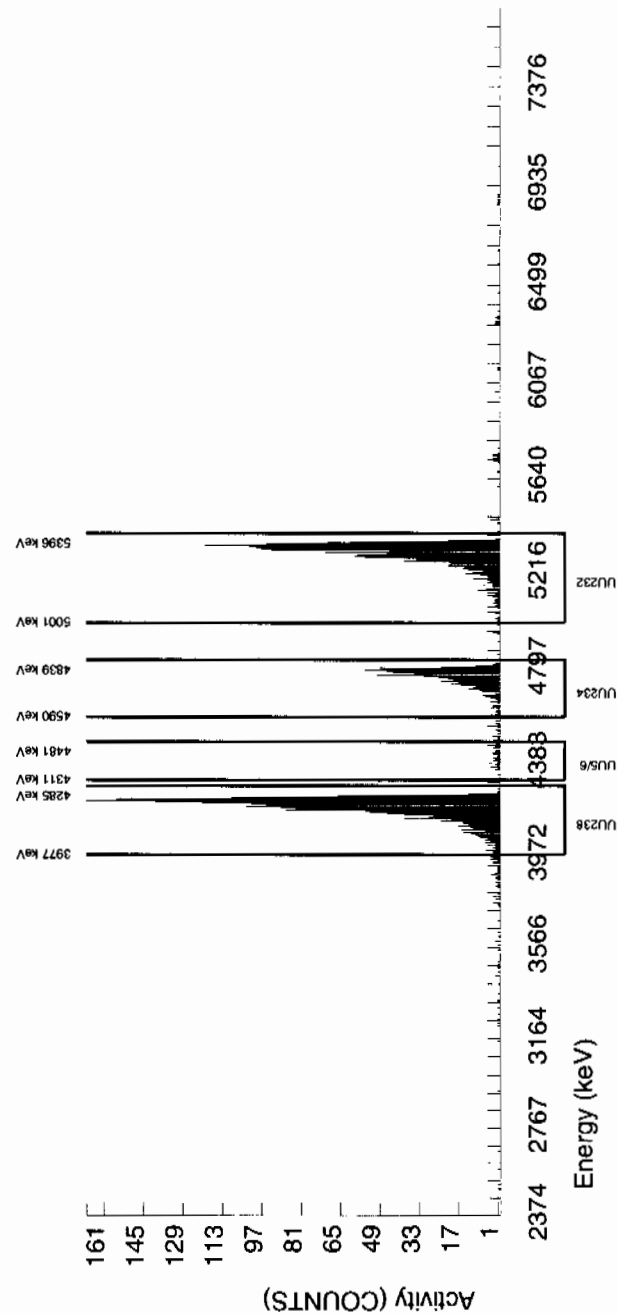
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 4.1921E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5303.704	45.650	1538.000	1529.000	9.000	3.0000	100.0000	4.02E+00	2.95E-01	1.83E-02	4.38E-02	1.03E-01
U-3/4	4763.020	4764.770	41.265	658.000	655.451	1.000	5.4790	100.0000	1.72E+00	1.36E-01	3.35E-02	7.40E-02	6.73E-02
U-235	4391.000	4414.098	85.281	44.000	43.000	1.000	2.4127	80.90000	1.40E-01	2.38E-02	1.82E-02	4.52E-02	2.18E-02
U-238	4184.730	4192.003	56.958	2108.000	2107.000	1.000	3.6781	100.0000	5.53E+00	3.98E-01	2.25E-02	5.20E-02	1.21E-01

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961708 SAMPLE ID : S0247911002_UU SAMPLE QTY : 0.502 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 87.441		LIB FILE : ENV_ALPHA_UU BKG FILE : B162.CNF;180 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W162.CNF;69 CAL DATE : 22-FEB-2010
AVERAGE %EFFICIENCY : 37.1075 COUNT DATE : 21-MAR-2010 08:58:19 ELAPSED LIVE TIME(SEC) : 60000.00		

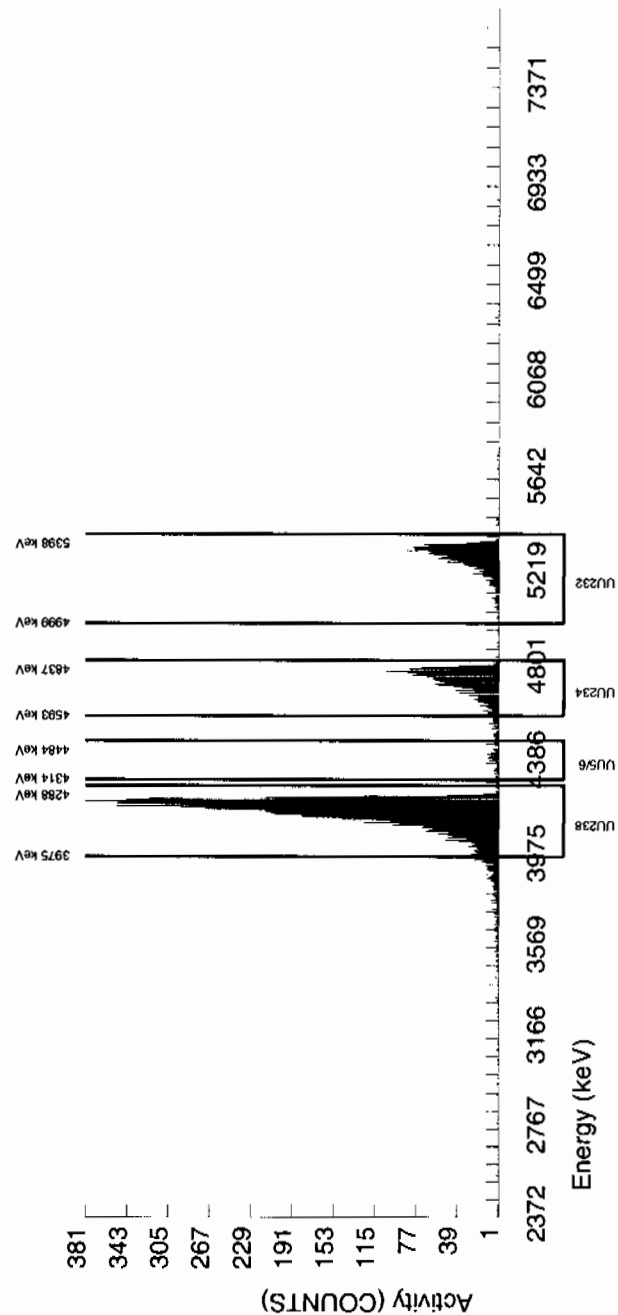
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 3.9380E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/g	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/g
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
U232	5302.100	5291.933	78.686	1470.000	1460.000	10.000	3.1623	100.0000	4.04E+00	2.98E-01	2.03E-02	4.82E-02	1.06E-01
U-3/4	4763.020	4749.243	77.563	1706.000	1704.521	0.000	5.4790	100.0000	4.71E+00	3.44E-01	3.52E-02	7.80E-02	1.14E-01
U-235	4391.000	4410.129	52.440	140.000	140.000	0.000	2.4127	80.90000	4.79E-01	5.22E-02	1.92E-02	4.76E-02	4.04E-02
U-238	4184.730	4175.634	78.035	7007.000	7005.000	2.000	3.6781	100.0000	1.94E+01	1.35E+00	2.37E-02	5.48E-02	2.32E-01

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 961708 SAMPLE ID : S0247911003_UU SAMPLE QTY : 0.515 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 97.348</p>	<p>CHAMBER : 164 DETECTOR S/N : 70325 AVERAGE %EFFICIENCY : 37.7598 COUNT DATE : 21-MAR-2010 08:58:22 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_UU BKG FILE : B164.CNF;178 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W164.CNF;58 CAL DATE : 22-FEB-2010</p>
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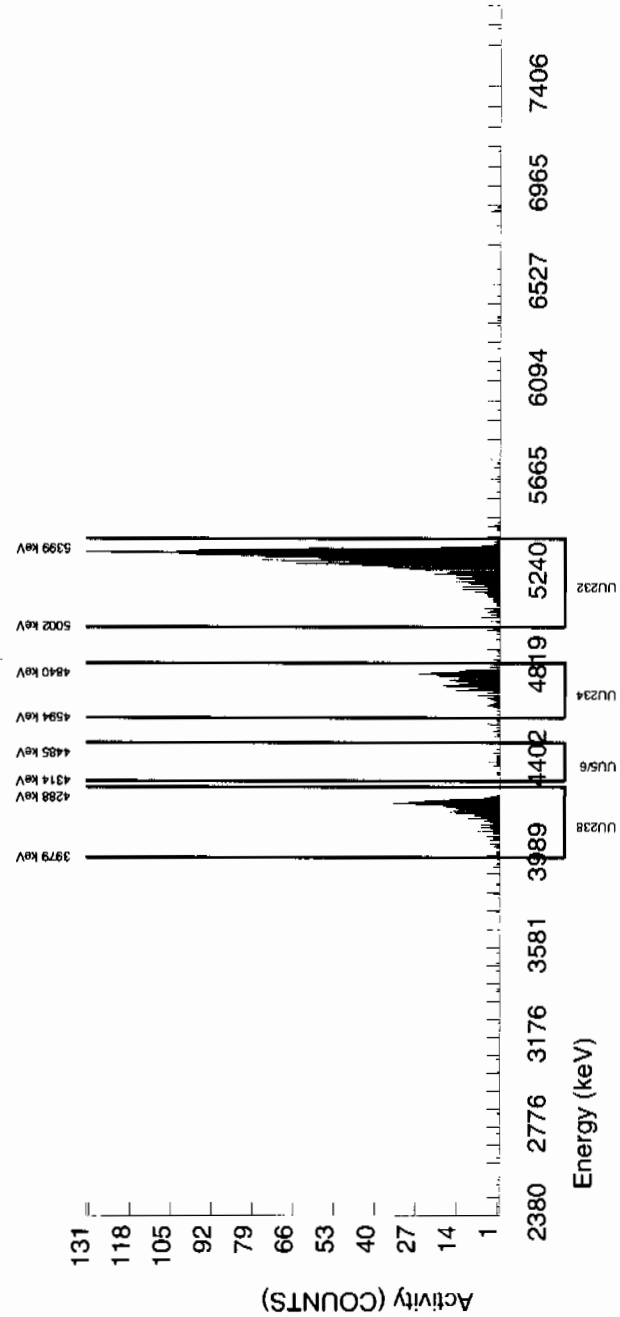
<p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 4.3841E+00 dpm</p>	<p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>	<p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5302.283	50.070	1663.000	1654.000	9.000	3.0000	100.0000	3.94E+00	2.86E-01	1.66E-02	3.97E-02	9.74E-02
U-3/4	4763.020	4761.266	62.239	346.000	344.325	0.000	5.4790	100.0000	8.19E-01	7.12E-02	3.03E-02	6.71E-02	4.42E-02
U-235	4391.000	4408.827	58.998	17.000	16.000	1.000	2.4127	80.90000	4.71E-02	1.29E-02	1.65E-02	4.10E-02	1.25E-02
U-238	4184.730	4186.842	34.743	382.000	382.000	0.000	3.6781	100.0000	9.09E-01	7.75E-02	2.04E-02	4.72E-02	4.65E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 961708 SAMPLE ID : S0247911004_UU SAMPLE QTY : 0.520 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 35.364</p>	<p>CHAMBER : 001 DETECTOR S/N : 79451 AVERAGE %EFFICIENCY : 34.8147 COUNT DATE : 20-MAR-2010 12:43:03 ELAPSED LIVE TIME(SEC) : 59999.99</p>	<p>LIB FILE : ENV_ALPHA_UU BKG FILE : B001.CNF:1133 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W001.CNF:384 CAL DATE : 4-MAR-2010</p>

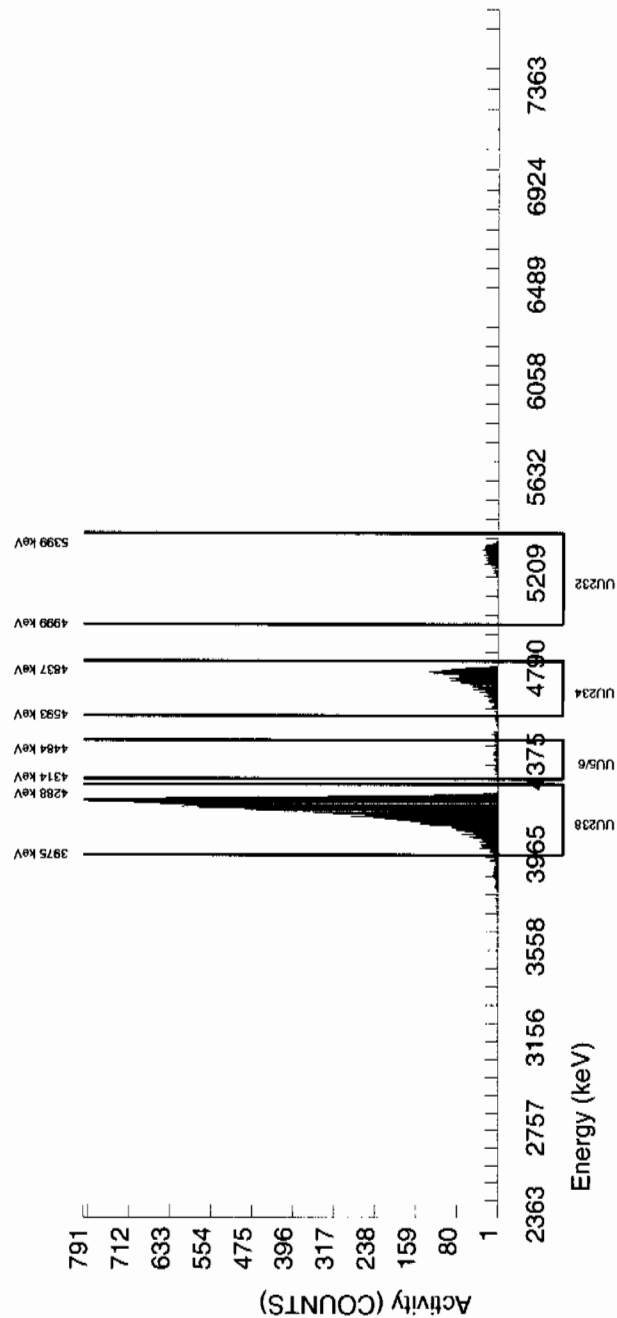
<p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 1.5926E+00 dpm</p>	<p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>	<p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5293.722	84.719	556.000	554.000	2.000	1.4142	100.0000	3.90E+00	3.47E-01	2.31E-02	6.54E-02	1.66E-01
U-3/4	4763.020	4754.092	73.032	1960.000	1958.439	1.000	5.4790	100.0000	1.38E+01	1.12E+00	8.97E-02	1.98E-01	3.12E-01
U-235	4391.000	4409.779	0.000	198.000	198.000	0.000	2.4127	80.90000	1.72E+00	1.82E-01	4.88E-02	1.21E-01	1.22E-01
U-238	4184.730	4183.027	68.793	12950.000	12948.000	2.000	3.6781	100.0000	9.11E+01	7.15E+00	6.02E-02	1.39E-01	8.01E-01

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961708 SAMPLE ID : S0247911005_UU SAMPLE QTY : 0.514 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 94.604		CHAMBER : 003 DETECTOR S/N : 79453 AVERAGE %EFFICIENCY : 32.1827 COUNT DATE : 20-MAR-2010 12:43:03 ELAPSED LIVE TIME(SEC) : 59999.99	LIB FILE : ENV_ALPHA_UU BKG FILE : B003.CNF:1118 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W003.CNF:343 CAL DATE : 4-MAR-2010
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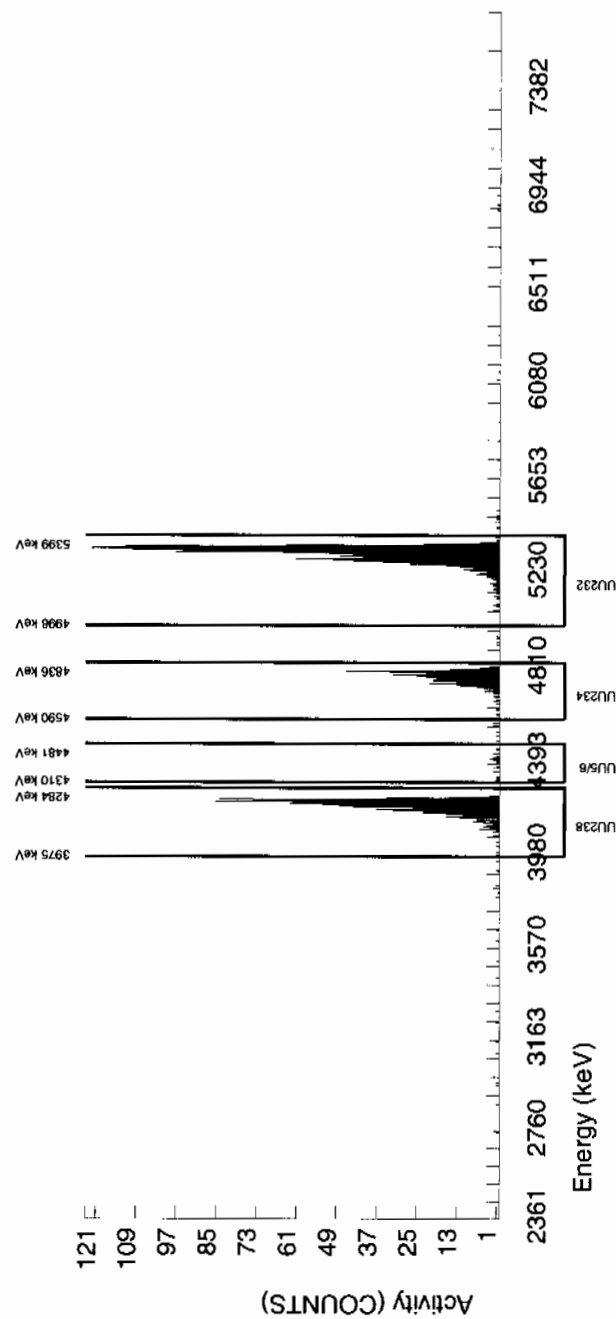
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 4.2606E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/g	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/g
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
U232	5302.100	5318.994	35.852	1373.000	1370.000	3.000	1.7321	100.0000	3.95E+00	2.99E-01	1.16E-02	3.10E-02	1.07E-01
U-3/4	4763.020	4775.129	26.455	379.000	375.612	2.000	5.4790	100.0000	1.08E+00	9.48E-02	3.67E-02	8.12E-02	5.61E-02
U-235	4391.000	4406.696	82.056	26.000	25.000	1.000	2.4127	80.90000	8.89E-02	1.95E-02	2.00E-02	4.96E-02	1.85E-02
U-238	4184.730	4204.244	39.254	833.000	833.000	0.000	3.6781	100.0000	2.40E+00	1.89E-01	2.46E-02	5.71E-02	8.31E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4

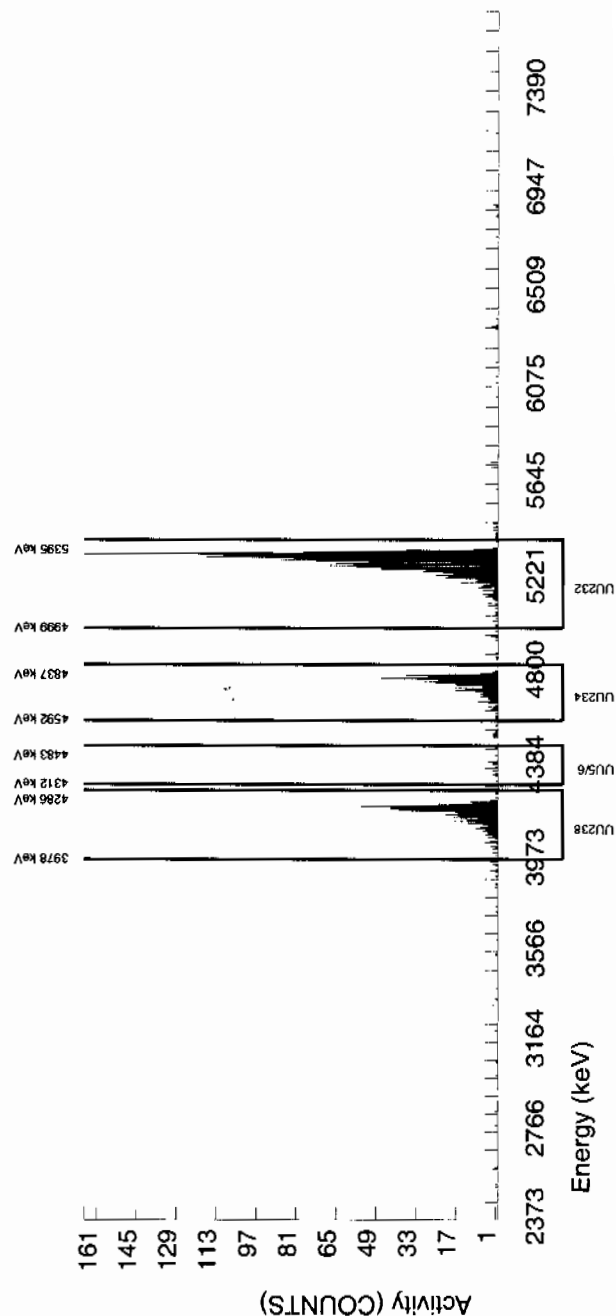


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961708				CHAMBER : 171				LIB FILE : ENV_ALPHA.UU					
SAMPLE ID : S0247911006_UU				DETECTOR S/N : 78260				BKG FILE : B171.CNF;185					
SAMPLE QTY : 0.506 G				AVERAGE %EFFICIENCY : 37.9771				BKG DATE : 14-MAR-2010					
SAMPLE DATE : 18-FEB-2010 00:00:00				COUNT DATE : 21-MAR-2010 08:58:25				BKG LIVE TIME(SEC) : 60000.00					
ANALYST : KXM4				ELAPSED LIVE TIME(SEC) : 60000.00				EFF FILE : W171.CNF;75					
% YIELD : 99.542								CAL DATE : 22-FEB-2010					
TRACER				MS/MSD				LCS/LCSD					
ID : 1283-H				ID : 0244-A				ID : 0244-A					
NUCLIDE : U232				NUCLIDE : U-238				NUCLIDE : U-238					
NOMINAL : 4.5036E+00 dpm				NOMINAL : 5.7500E+00 pCi/G				NOMINAL : 5.7500E+00 pCi/G					
RESULTS : 4.4829E+00 dpm													
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5298.694	36.082	1712.000	1701.000	11.000	3.3166	100.0000	4.01E+00	2.90E-01	1.82E-02	4.27E-02	9.78E-02
U-3/4	4763.020	4757.379	34.097	441.000	434.277	5.000	5.4790	100.0000	1.02E+00	8.55E-02	3.00E-02	6.64E-02	4.96E-02
U-235	4391.000	4388.581	8.092	25.000	22.000	3.000	2.4127	80.90000	6.40E-02	1.60E-02	1.63E-02	4.06E-02	1.54E-02
U-238	4184.730	4185.031	30.190	547.000	541.000	6.000	3.6781	100.0000	1.27E+00	1.03E-01	2.01E-02	4.67E-02	5.54E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER	:	961708
SAMPLE ID	:	S0247911007_UU
SAMPLE QTY	:	0.525 G
SAMPLE DATE	:	18-FEB-2010 00:00:00
ANALYST	:	KXM4
% YIELD	:	89.724

CHAMBER :	004
DETECTOR S/N :	68548
AVERAGE %EFFICIENCY :	31.2086
COUNT DATE :	20-MAR-
ELAPSED LIVE TIME(SEC) :	59999.9

LIB FILE	:	ENV_ALPHA_UU
BKG FILE	:	B004.CNF:1127
BKG DATE	:	14-MAR-2010
BKG LIVE TIME(SEC)	:	60000.00
EFF FILE	:	W004.CNF:332
CAL DATE	:	4-MAR-2010

TRACER	ID	: 1283-H
	NUCLIDE	: U232
	NOMINAL	: 4.5036E+00 dpm
	RESULTS	: 4.0408E+00 dpm

MS/MSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

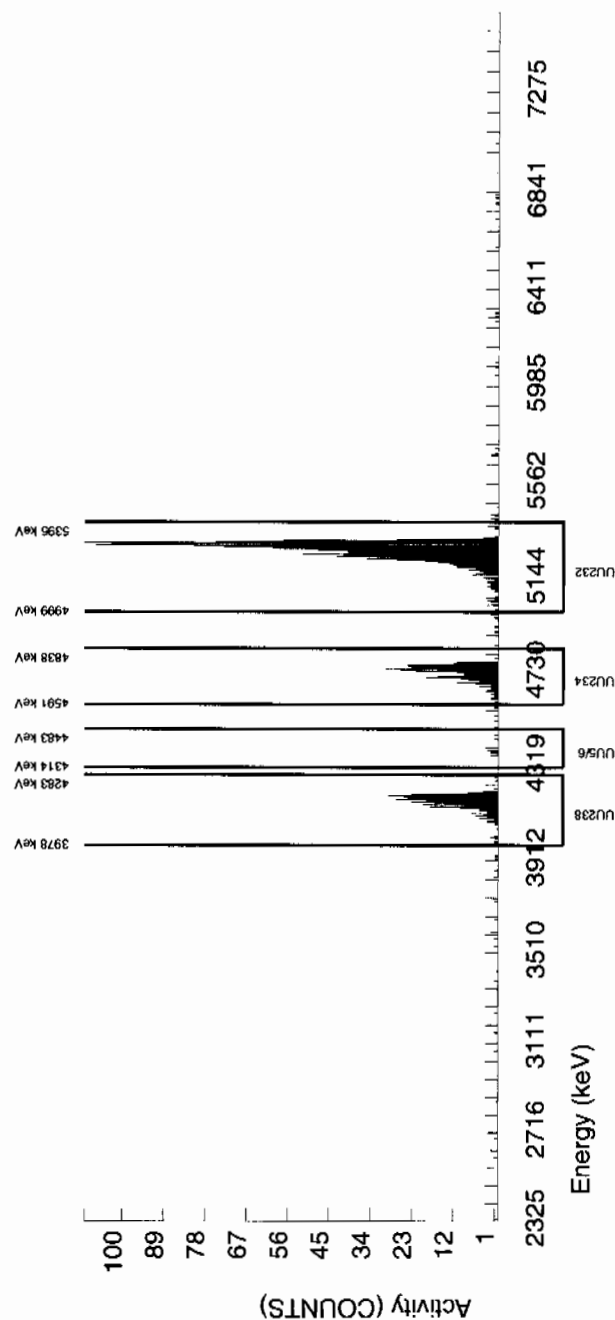
LCS/LCSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	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-232	5732.100	5273.329	35.735	1269.000	1260.000	9.000	3.0000	100.0000	3.86E+00	2.96E-01	2.14E-02	5.11E-02	1.10E-01
U-3/4	4763.020	4735.145	59.172	331.000	328.724	1.000	5.4790	100.0000	1.01E+00	9.08E-02	3.91E-02	8.64E-02	5.57E-02
U-235	4391.000	4391.001	27.713	13.000	10.000	3.000	2.4127	80.900000	3.79E-02	1.54E-02	2.13E-02	5.28E-02	1.52E-02
U-238	4184.730	4166.341	60.807	346.000	345.000	1.000	3.6781	100.0000	1.06E+00	9.44E-02	2.62E-02	6.07E-02	5.71E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area
due to tracer impurity:
U-3/4



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961708		CHAMBER : 006		LIB FILE : ENV_ALPHA_UU	
SAMPLE ID : S0247911008_UU		DETECTOR S/N : 79455		BKG FILE : B006.CNF;1126	
SAMPLE QTY : 0.503 G		AVERAGE %EFFICIENCY : 32.0671		BKG DATE : 14-MAR-2010	
SAMPLE DATE : 18-FEB-2010 00:00:00		COUNT DATE : 20-MAR-2010 12:43:03		BKG LIVE TIME(SEC) : 60000.00	
ANALYST : KXM4		ELAPSED LIVE TIME(SEC) : 59999.99		EFF FILE : W006.CNF;363	
% YIELD : 84.619				CAL DATE : 4-MAR-2010	

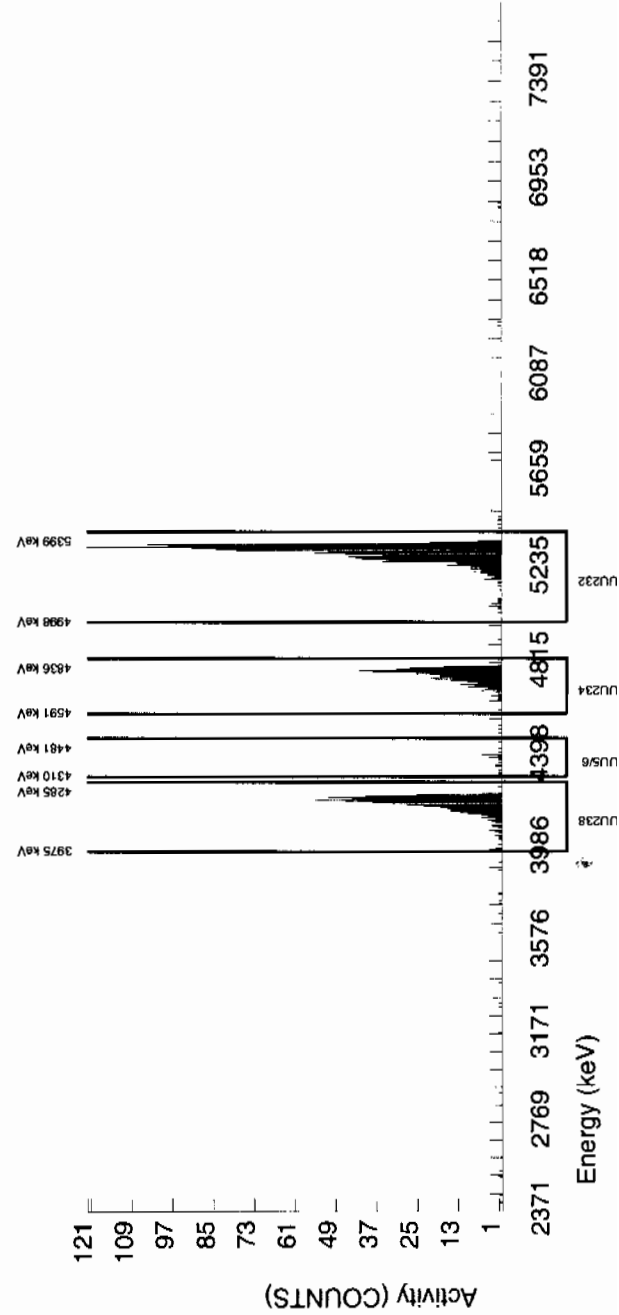
TRACER ID : 1283-H		MS/MSD ID : 0244-A		LCS/LCSD ID : 0244-A	
NUCLIDE : U232		NUCLIDE : U-238		NUCLIDE : U-238	
NOMINAL : 4.5036E+00 dpm		NOMINAL : 5.7500E+00 pCi/g		NOMINAL : 5.7500E+00 pCi/g	
RESULTS : 3.8109E+00 dpm					

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
U232	5302.100	5309.591	33.887	1222.000	1221.000	1.000	1.0000	100.0000	4.03E+00	3.10E-01	7.68E-03	2.43E-02	1.16E-01
U-3/4	4763.020	4763.988	35.272	395.000	392.763	1.000	5.4790	100.0000	1.30E+00	1.13E-01	4.21E-02	9.31E-02	6.56E-02
U-235	4391.000	4394.129	5.438	24.000	24.000	0.000	2.4127	80.90000	9.79E-02	2.12E-02	2.29E-02	5.69E-02	2.00E-02
U-238	4184.730	4192.112	44.214	578.000	578.000	0.000	3.6781	100.0000	1.91E+00	1.57E-01	2.82E-02	6.54E-02	7.93E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER	: 961708
SAMPLE ID	: S0247911009_UU
SAMPLE QTY	: 0.503 G
SAMPLE DATE	: 18-FEB-2010 00:00:00
ANALYST	: KXM4
% YIELD	: 103.613

CHAMBER : 161
DETECTOR S/N : 70321
AVERAGE %EFFICIENCY : 36.5056
COUNT DATE : 20-MAR-2000
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE	:	ENV_ALPHA_UU
BKG FILE	:	B161.CNF:180
BKG DATE	:	14-MAR-2010
TIME(SEC)	:	60000.00
EFF FILE	:	W161.CNF:63
CAL DATE	:	22-FEB-2010

TRACER	:	1283-H
ID	:	U232
NUCLIDE	:	4.5036E+00 dpm
NOMINAL	:	4.6663E+00 dpm
RESULTS	:	

MS/MSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

_CS/LCSD	
ID	: 0244-A
NUCLIDE	: U-238
NOMINAL	: 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5309.856	52.672	1711.000	1702.000	9.000	3.0000	100.0000	4.03E+00	2.92E-01	1.65E-02	3.95E-02	9.83E-02
U-3/4	4763.020	4766.645	42.287	354.000	351.276	1.000	5.4790	100.0000	8.32E-01	7.21E-02	3.02E-02	6.68E-02	4.45E-02
U-235	4391.000	4387.705	106.919	21.000	20.000	1.000	2.4127	80.90000	5.85E-02	1.43E-02	1.64E-02	4.08E-02	1.37E-02
U-238	4184.730	4191.483	50.814	366.000	365.000	1.000	3.6781	100.0000	8.64E-01	7.43E-02	2.03E-02	4.69E-02	4.54E-02

NOTES:

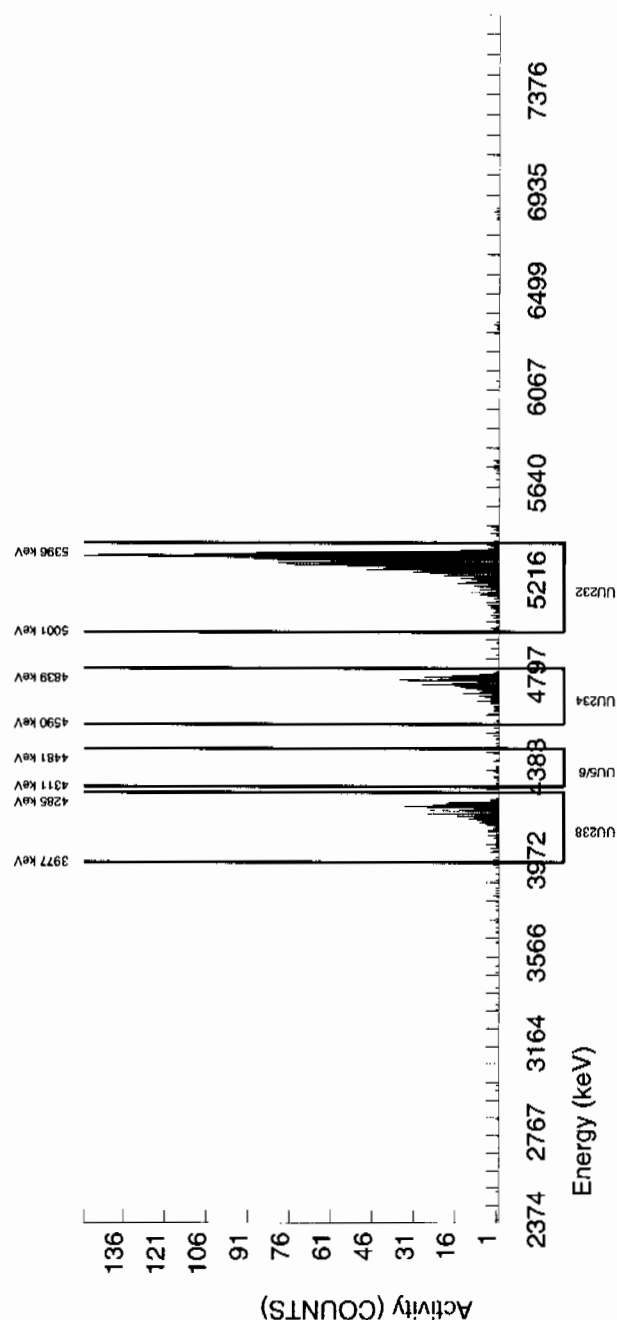
* BKG Sg calculated via blank population.

DLG Sg calculated via DLG
(Sg updated 8-MAR-2010)

* BKG Sg of U232 calculated as sqrt(BKG AREA).

* Corrections made to the following net area due to tracer impurity:

U-3/4



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961708 SAMPLE ID : S0247911010_UU SAMPLE QTY : 0.524 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 47.193	CHAMBER : 162 DETECTOR S/N : 70323 AVERAGE %EFFICIENCY : 37.1075 COUNT DATE : 20-MAR-2010 12:24:02 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B162.CNF:180 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W162.CNF:69 CAL DATE : 22-FEB-2010
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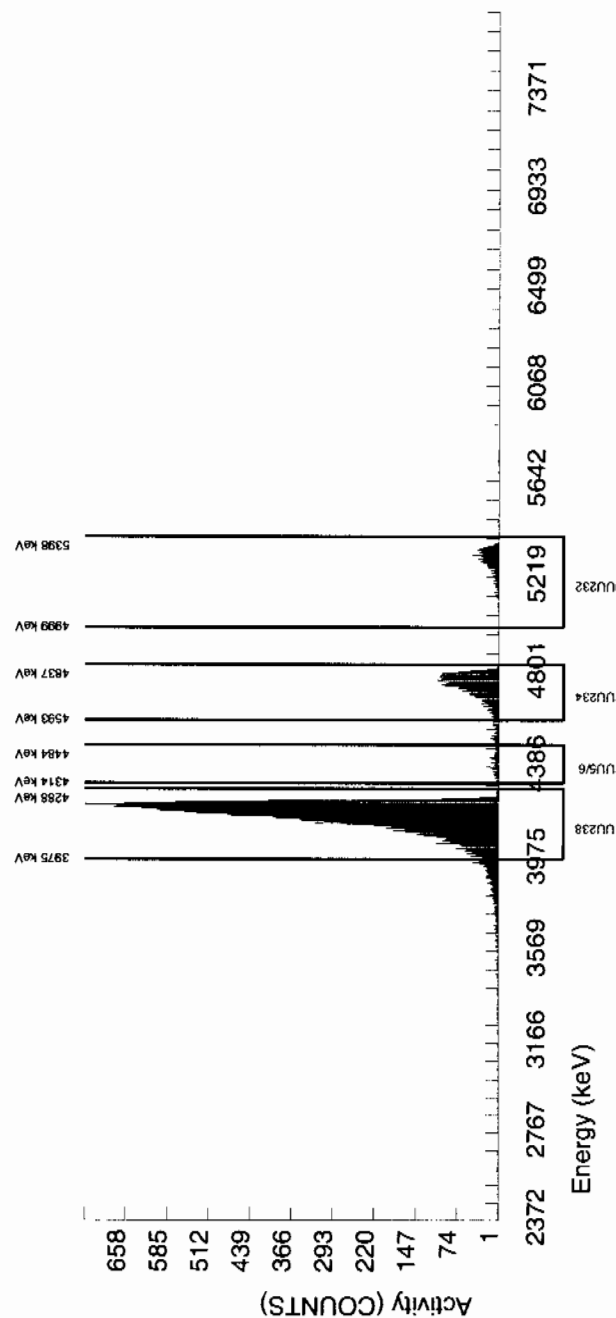
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 2.1254E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5285.500	78.901	798.000	788.000	10.000	3.1623	100.0000	3.87E+00	3.16E-01	3.61E-02	8.55E-02	1.40E-01
U-3/4	4763.020	4747.886	83.479	2255.000	2254.202	0.000	5.4790	100.0000	1.11E+01	8.42E-01	6.26E-02	1.38E-01	2.33E-01
U-235	4391.000	4408.353	0.000	265.000	265.000	0.000	2.4127	80.90000	1.61E+00	1.54E-01	3.41E-02	8.46E-02	9.88E-02
U-238	4184.730	4171.958	77.662	14428.000	14426.000	2.000	3.6781	100.0000	7.08E+01	5.21E+00	4.20E-02	9.73E-02	5.90E-01

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area
due to tracer impurity:
U-3/4



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER :	961708
SAMPLE ID :	S0247911011_UU
SAMPLE QTY :	0.504 G
SAMPLE DATE :	18-FEB-2010 00:00:00
ANALYST :	KXM4
% YIELD :	91.284

CHAMBER : 164
DETECTOR S/N : 70325
AVERAGE %EFFICIENCY : 37.7598
COUNT DATE : 20-MAR-2010 12:24:07
ELAPSED LIVE TIME(SEC) : 60000.00

```
LIB FILE : ENV_ALPHA_UU
BKG FILE : B164.CNF:178
BKG DATE : 14-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W164.CNF:58
CAL DATE : 22-FEB-2010
```

TRACER	:	1283-H
ID	:	U232
NUCLIDE	:	4.5036EE
NOMINAL	:	4.1110EE
RESULTS	:	

MS/MSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

LCS/LCSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
U232	5302.100	5296.352	69.555	1560.000	1551.000	9.000	3.0000	100.0000	4.03E+00	2.94E-01	1.81E-02	4.32E-02	1.03E-01
U-3/4	4763.020	4755.078	58.737	1227.000	1225.429	0.000	5.4790	100.0000	3.18E+00	2.36E-01	3.31E-02	7.31E-02	9.08E-02
U-235	4391.000	4409.501	63.510	118.000	117.000	1.000	2.4127	80.90000	3.75E+01	4.34E-02	1.80E-02	4.47E-02	3.50E-02
U-238	4184.730	4180.734	57.346	5964.000	5964.000	0.000	3.6781	100.0000	1.55E+01	1.08E+00	2.22E-02	5.14E-02	2.00E-01

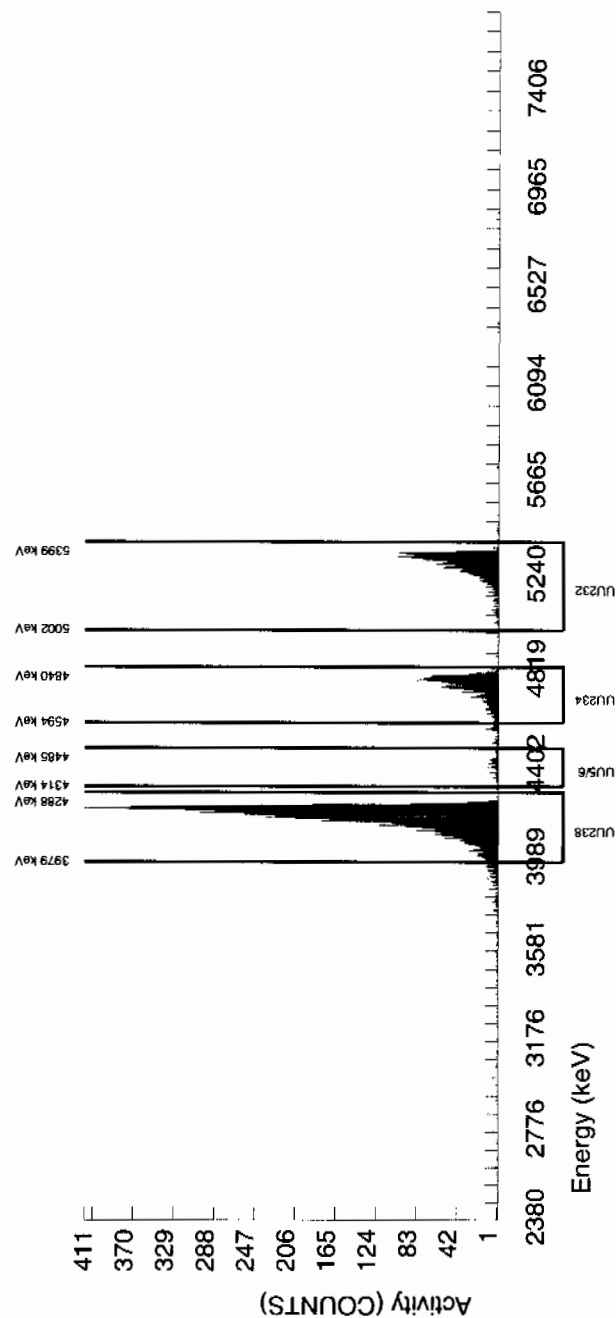
NOTES:

* BKG Sg calculated via blank population.

DLA Sg calculated via B
(Sg updated 8-MAR-2010)

* BKG Sg of U232 calculated as $\sqrt{\text{BKG AREA}}$.

* Corrections made to the following net area due to tracer impurity:

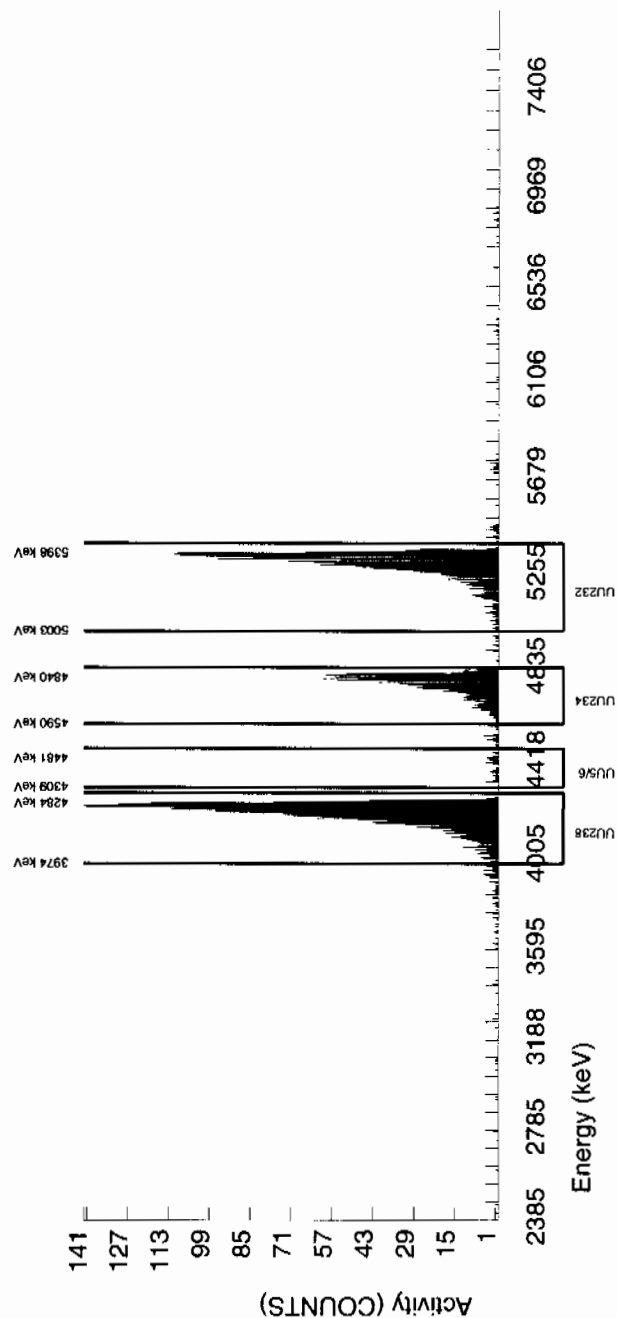


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961708 SAMPLE ID : S0247911012_UU SAMPLE QTY : 0.506 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 92.642				CHAMBER : 165 DETECTOR S/N : 72544 AVERAGE %EFFICIENCY : 37.8780 COUNT DATE : 20-MAR-2010 12:24:10 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B165.CNF:178 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W165.CNF:58 CAL DATE : 22-FEB-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 4.1722E+00 dpm				MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G				LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5309.260	58.566	1588.000	1579.000	9.000	3.0000	100.0000	4.01E+00	2.93E-01	1.77E-02	4.23E-02	1.01E-01
U-3/4	4763.020	4770.439	46.846	865.000	862.401	1.000	5.4790	100.0000	2.19E+00	1.67E-01	3.23E-02	7.15E-02	7.46E-02
U-235	4391.000	4414.893	0.000	49.000	49.000	0.000	2.4127	80.90000	1.54E-01	2.43E-02	1.76E-02	4.37E-02	2.20E-02
U-238	4184.730	4195.364	58.680	2149.000	2147.000	2.000	3.6781	100.0000	5.45E+00	3.91E-01	2.17E-02	5.03E-02	1.18E-01

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 961708 SAMPLE ID : S0247911013_UU SAMPLE QTY : 0.512 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 84.881</p>	<p>CHAMBER : 166 DETECTOR S/N : 74545 AVERAGE %EFFICIENCY : 39.4562 COUNT DATE : 20-MAR-2010 12:24:12 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_UU BKG FILE : B166.CNF:179 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W166.CNF:58 CAL DATE : 22-FEB-2010</p>
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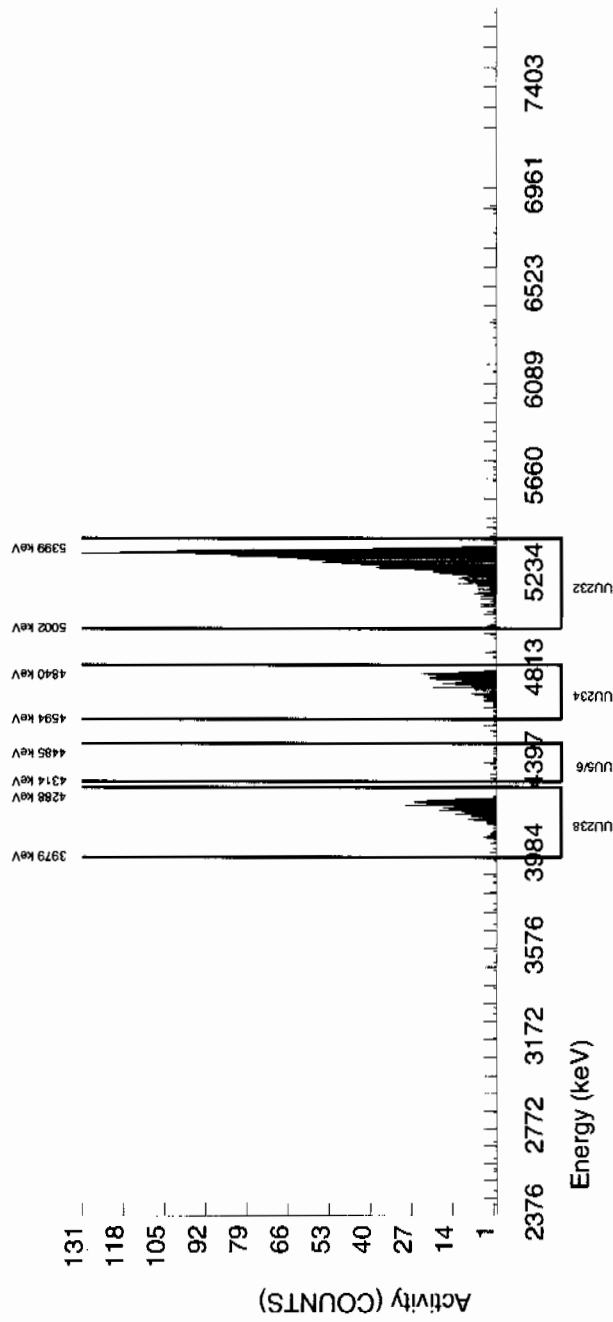
<p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 3.8227E+00 dpm</p>	<p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>	<p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5303.959	38.163	1513.000	1507.000	6.000	2.4495	100.0000	3.96E+00	2.91E-01	1.50E-02	3.71E-02	1.02E-01
U-3/4	4763.020	4762.619	67.283	322.000	320.474	0.000	5.4790	100.0000	8.42E-01	7.45E-02	3.35E-02	7.41E-02	4.70E-02
U-235	4391.000	4401.489	0.000	21.000	21.000	0.000	2.4127	80.90000	6.82E-02	1.56E-02	1.82E-02	4.53E-02	1.49E-02
U-238	4184.730	4189.862	83.122	345.000	344.000	1.000	3.6781	100.0000	9.04E-01	7.90E-02	2.25E-02	5.21E-02	4.89E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961708 SAMPLE ID : S0247911014_UU SAMPLE QTY : 0.503 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 92.180		CHAMBER : 167 DETECTOR S/N : 72546 AVERAGE %EFFICIENCY : 38.5981 COUNT DATE : 20-MAR-2010 12:24:15 ELAPSED LIVE TIME(SEC) : 60000.00		LIB FILE : ENV_ALPHA_UU BKG FILE : B167.CNF:179 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W167.CNF:58 CAL DATE : 22-FEB-2010	
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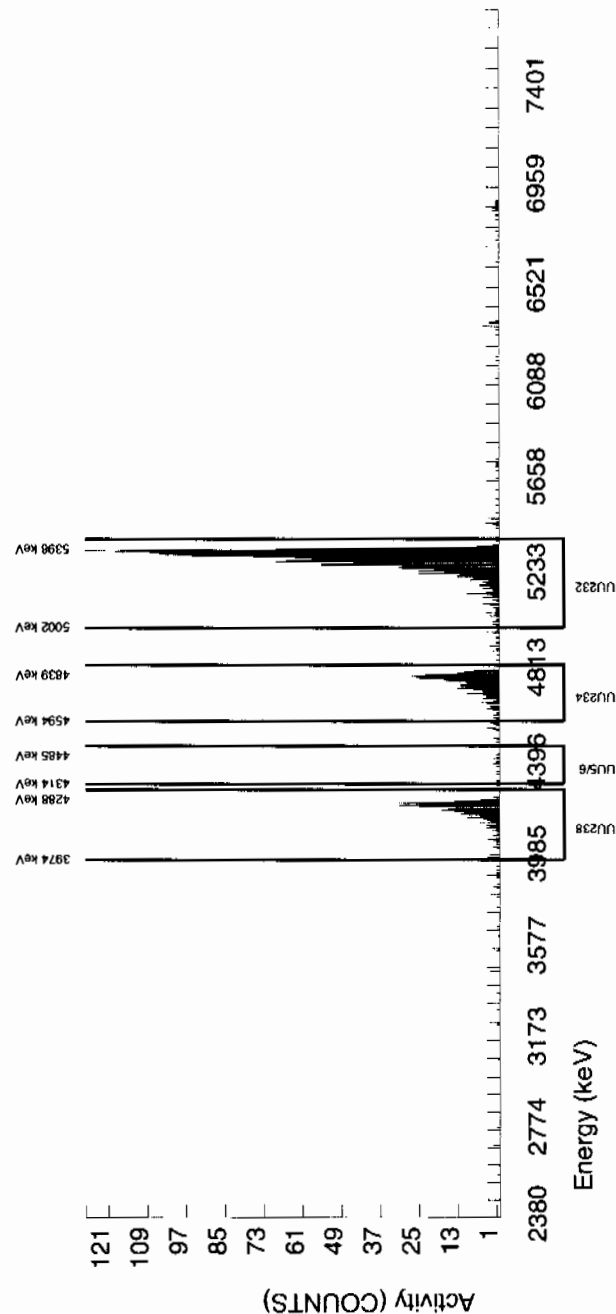
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 4.1514E+00 dpm		MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/g		LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/g	
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
U232	5302.100	5308.290	55.602	1605.000	1601.000	4.000	2.0000	100.0000	4.03E+00	2.94E-01	1.17E-02	3.02E-02	1.01E-01
U-3/4	4763.020	4760.851	47.790	355.000	351.378	2.000	5.4790	100.0000	8.84E-01	7.69E-02	3.21E-02	7.10E-02	4.74E-02
U-235	4391.000	4394.676	110.244	20.000	18.000	2.000	2.4127	80.90000	5.60E-02	1.51E-02	1.75E-02	4.34E-02	1.46E-02
U-238	4184.730	4197.362	40.031	338.000	336.000	2.000	3.6781	100.0000	8.46E-01	7.41E-02	2.15E-02	4.99E-02	4.64E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961708 SAMPLE ID : S0247911015_UU SAMPLE QTY : 0.520 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 85.663		CHAMBER : 168 DETECTOR S/N : 72547 AVERAGE %EFFICIENCY : 39.0962 COUNT DATE : 20-MAR-2010 12:24:17 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B168.CNF;179 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W168.CNF;58 CAL DATE : 22-FEB-2010
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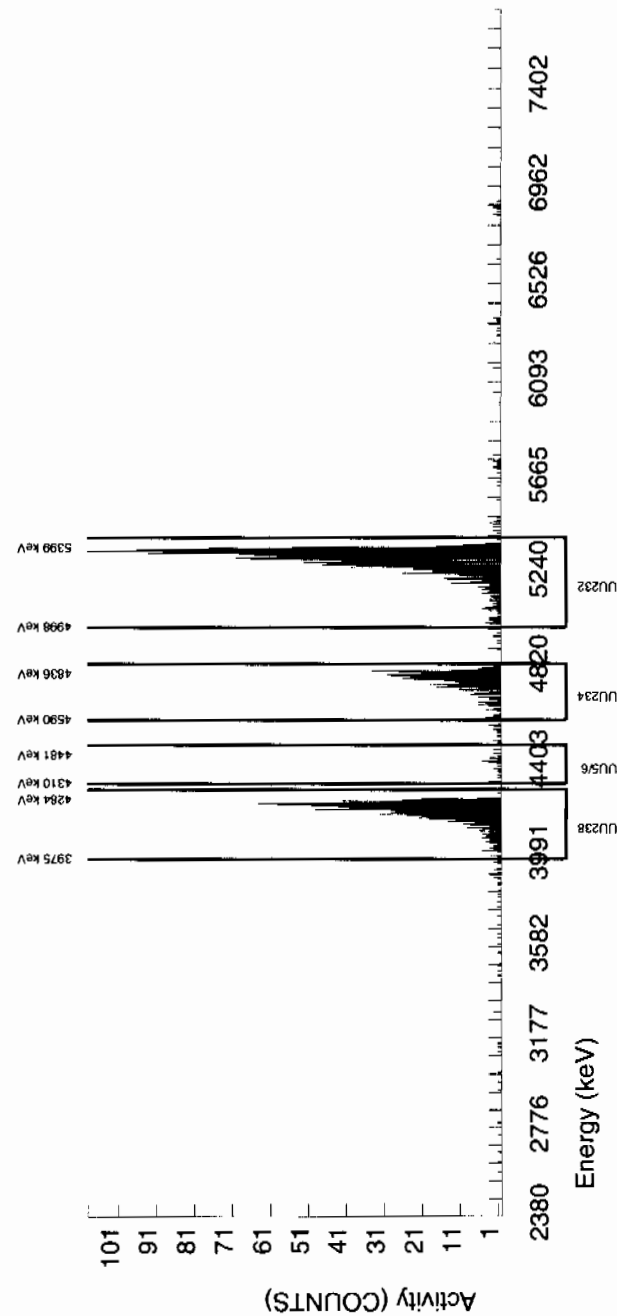
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 3.8579E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/g	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/g
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
U232	5302.100	5300.222	56.690	1517.000	1507.000	10.000	3.1623	100.0000	3.90E+00	2.86E-01	1.90E-02	4.51E-02	1.01E-01
U-3/4	4763.020	4761.276	60.696	435.000	429.474	4.000	5.4790	100.0000	1.11E+00	9.35E-02	3.30E-02	7.29E-02	5.41E-02
U-235	4391.000	4411.443	26.940	30.000	27.000	3.000	2.4127	80.90000	8.63E-02	1.93E-02	1.79E-02	4.46E-02	1.84E-02
U-238	4184.730	4189.979	41.574	800.000	798.000	2.000	3.6781	100.0000	2.06E+00	1.60E-01	2.21E-02	5.13E-02	7.32E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 961708 SAMPLE ID : S0247911016_UU SAMPLE QTY : 0.508 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 95.067</p>	<p>CHAMBER : 169 DETECTOR S/N : 72548 AVERAGE %EFFICIENCY : 37.6596 COUNT DATE : 20-MAR-2010 12:24:19 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_UU BKG FILE : B169.CNF;181 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W169.CNF;68 CAL DATE : 22-FEB-2010</p>
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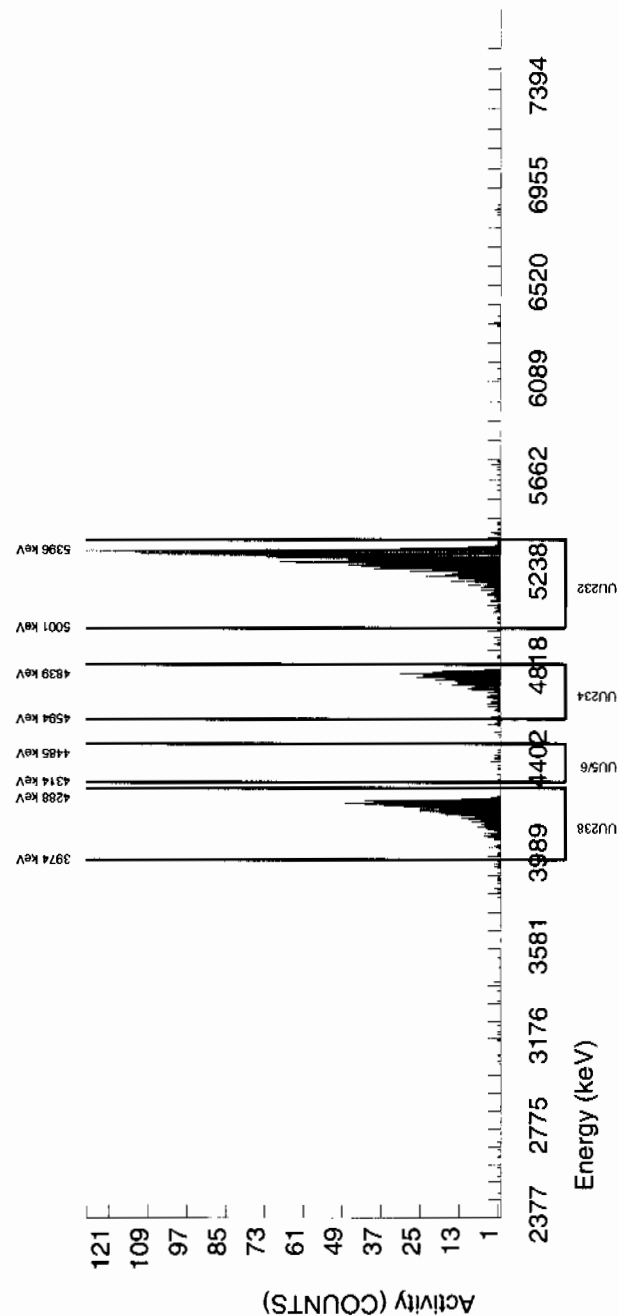
<p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 4.2814E+00 dpm</p>	<p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>	<p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5306.578	57.805	1623.000	1611.000	12.000	3.4641	100.0000	3.99E+00	2.91E-01	2.00E-02	4.66E-02	1.00E-01
U-3/4	4763.020	4763.991	59.593	360.000	356.368	2.000	5.4790	100.0000	8.83E-01	7.65E-02	3.16E-02	6.98E-02	4.70E-02
U-235	4391.000	4410.147	31.820	21.000	17.000	4.000	2.4127	80.90000	5.20E-02	1.57E-02	1.72E-02	4.27E-02	1.53E-02
U-238	4184.730	4193.719	51.332	559.000	557.000	2.000	3.6781	100.0000	1.38E+00	1.11E-01	2.12E-02	4.91E-02	5.87E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



TRACER					
ID	:	1283-H			
NUCLIDE	:	U232			
NOMINAL	:	4.5036E+00 dpm			
RESULTS	:	4.1773E+00 dpm			
			MS/MSD		
			ID	:	0244-A
			NUCLIDE	:	U-238
			NOMINAL	:	5.7500E+00 pCi/G
			LCS/LCSD		
			ID	:	0244-A
			NUCLIDE	:	U-238
			NOMINAL	:	5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

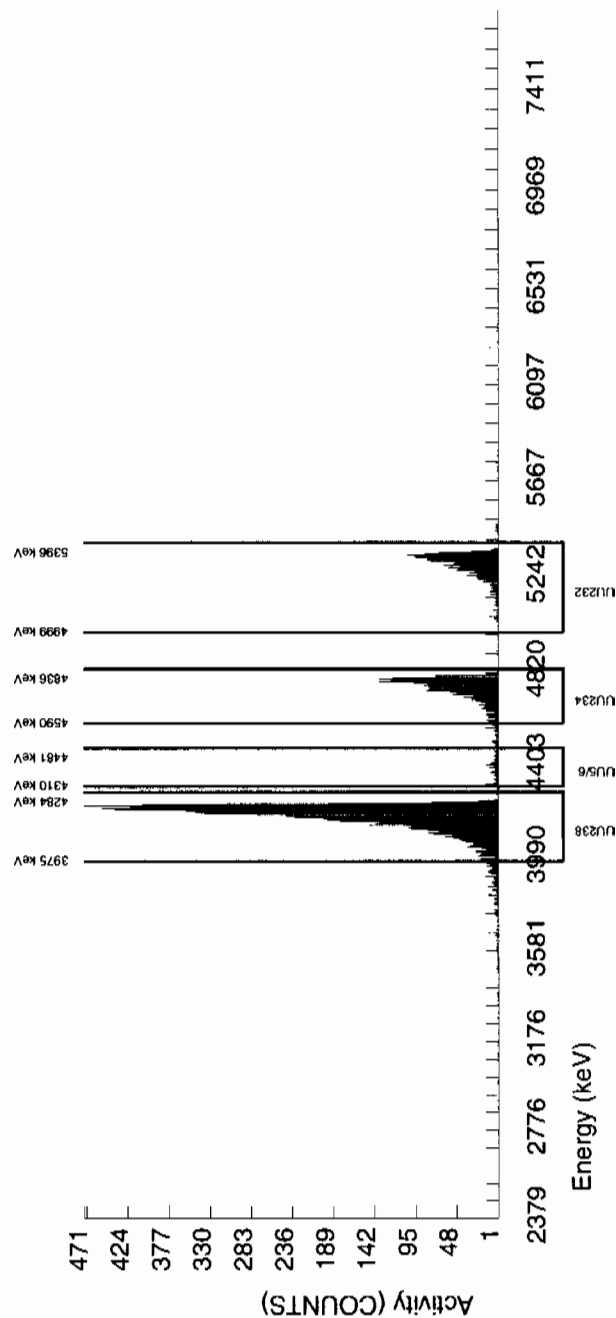
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5298.443	68.268	1534.000	1530.000	4.000	2.0000	100.0000	3.97E+00	2.91E-01	1.21E-02	3.12E-02	1.02E-01
U-3/4	4763.020	4753.132	67.119	2007.000	2005.450	0.000	5.4790	100.0000	5.20E+00	3.75E-01	3.30E-02	7.31E-02	1.16E-01
U-235	4391.000	4399.598	134.193	156.000	156.000	0.000	2.4127	80.90000	5.00E-01	5.27E-02	1.80E-02	4.47E-02	4.00E-02
U-238	4184.730	4180.030	59.967	7395.000	7393.000	2.000	3.6781	100.0000	1.92E+01	1.33E+00	2.22E-02	5.14E-02	2.23E-01

* BKG Sg calculated via blank population.

ENVIS Sg consolidated via Sg
(Sg updated 8-MAR-2010)

* BKG Sq of U232 calculated as sqrt(BKG AREA).

* Corrections made to the following net area due to tracer impurity:



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961708 SAMPLE ID : S1202062788_UU SAMPLE QTY : 1.000 G SAMPLE DATE : 17-MAR-2010 00:00:00 ANALYST : KXM4 % YIELD : 93.571				CHAMBER : 171 DETECTOR S/N : 78260 AVERAGE %EFFICIENCY : 37.9771 COUNT DATE : 20-MAR-2010 12:24:23 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B171.CNF;185 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W171.CNF;75 CAL DATE : 22-FEB-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5002E+00 dpm RESULTS : 4.2109E+00 dpm				MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G				LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5293.206	57.558	1610.000	1599.000	11.000	3.3166	100.0000	2.03E+00	1.47E-01	9.78E-03	2.30E-02	5.10E-02
U-3/4	4763.020	4722.585	57.409	16.000	9.380	5.000	5.4790	100.0000	1.19E-02	5.64E-03	1.62E-02	3.57E-02	5.58E-03
U-235	4391.000	4420.647	136.806	4.000	1.000	3.000	2.4127	80.90000	1.57E-03	4.15E-03	8.79E-03	2.18E-02	4.15E-03
U-238	4184.730	4166.495	29.315	21.000	15.000	6.000	3.6781	100.0000	1.90E-02	6.71E-03	1.08E-02	2.51E-02	6.59E-03

NOTES:

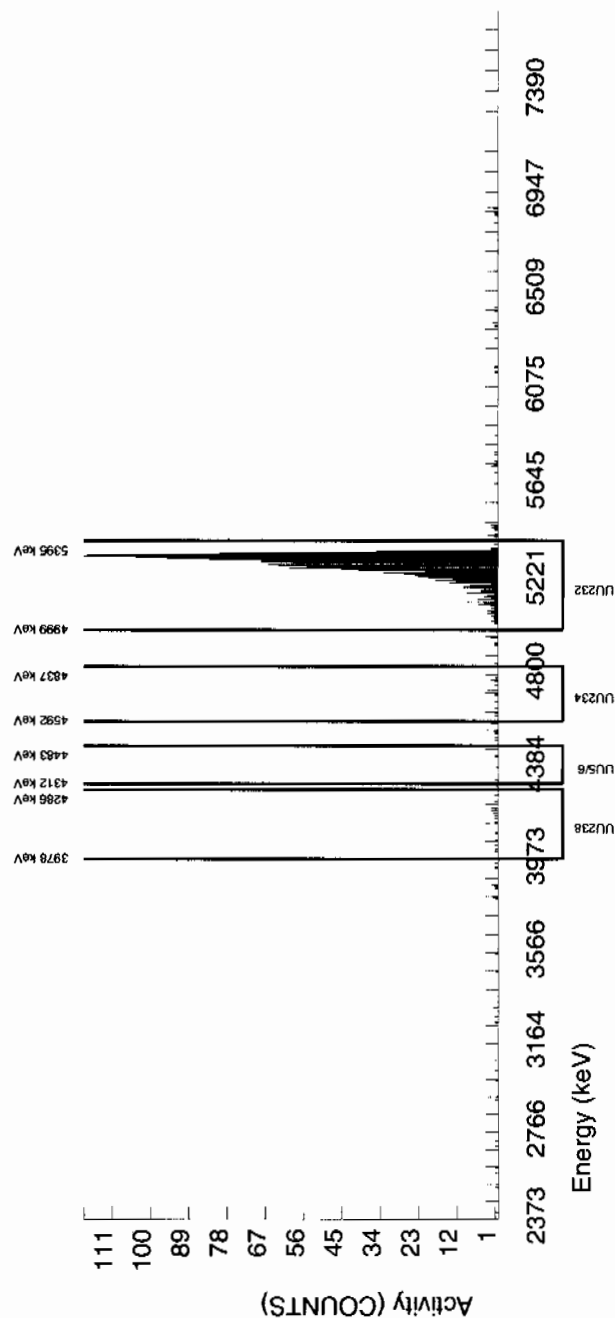
* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of U232 calculated as sqrt(BKG AREA).

* Corrections made to the following net area
due to tracer impurity:

U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961708 SAMPLE ID : S1202062789_UU SAMPLE QTY : 0.502 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 85.739	CHAMBER : 172 DETECTOR S/N : 78772 AVERAGE %EFFICIENCY : 38.2060 COUNT DATE : 20-MAR-2010 12:24:26 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B172.CNF:183 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W172.CNF:68 CAL DATE : 22-FEB-2010
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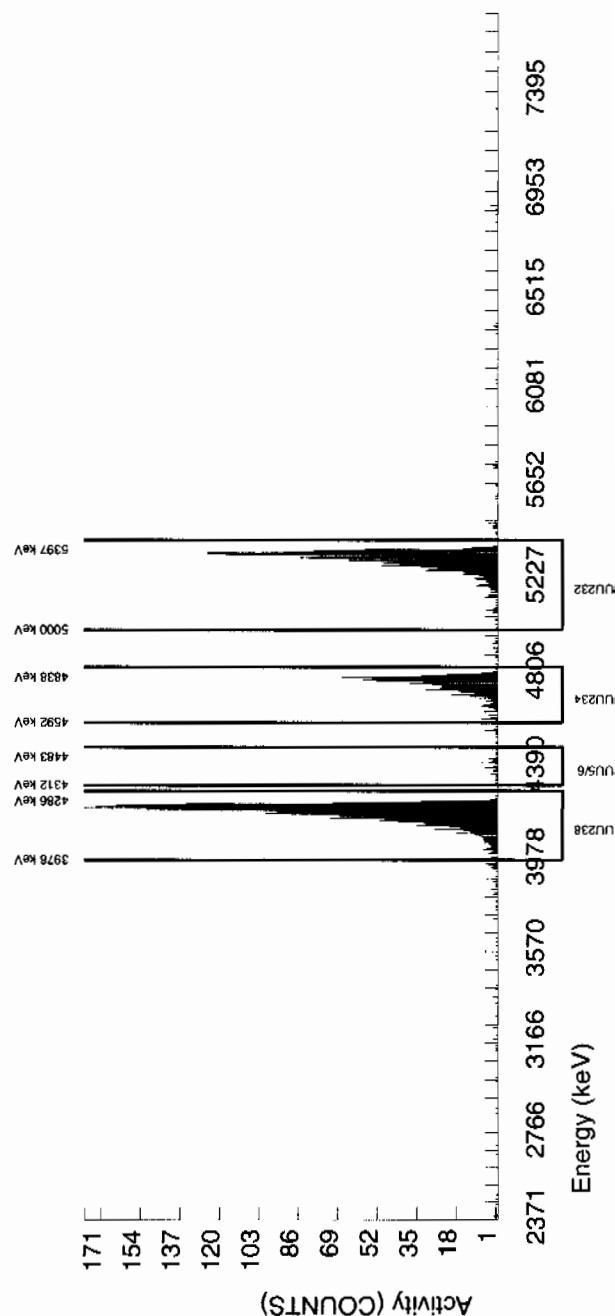
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 3.8613E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5310.643	40.054	1478.000	1474.000	4.000	2.0000	100.0000	4.04E+00	2.97E-01	1.27E-02	3.29E-02	1.06E-01
U-3/4	4763.020	4762.861	36.366	722.000	719.507	1.000	5.4790	100.0000	1.97E+00	1.54E-01	3.49E-02	7.73E-02	7.36E-02
U-235	4391.000	4409.007	23.273	44.000	44.000	0.000	2.4127	80.90000	1.49E-01	2.47E-02	1.90E-02	4.72E-02	2.25E-02
U-238	4184.730	4190.899	47.662	2228.000	2227.000	1.000	3.6781	100.0000	6.10E+00	4.39E-01	2.34E-02	5.43E-02	1.29E-01

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 961708 SAMPLE ID : S1202062790_UU SAMPLE QTY : 0.100 G SAMPLE DATE : 17-MAR-2010 00:00:00 ANALYST : KXM4 % YIELD : 90.434</p>	<p>CHAMBER : 002 DETECTOR S/N : 79452 AVERAGE %EFFICIENCY : 30.4967 COUNT DATE : 20-MAR-2010 12:43:03 ELAPSED LIVE TIME(SEC) : 59999.99</p>	<p>LIB FILE : ENV_ALPHA_UU BKG FILE : B002.CNF;1123 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W002.CNF;330 CAL DATE : 4-MAR-2010</p>
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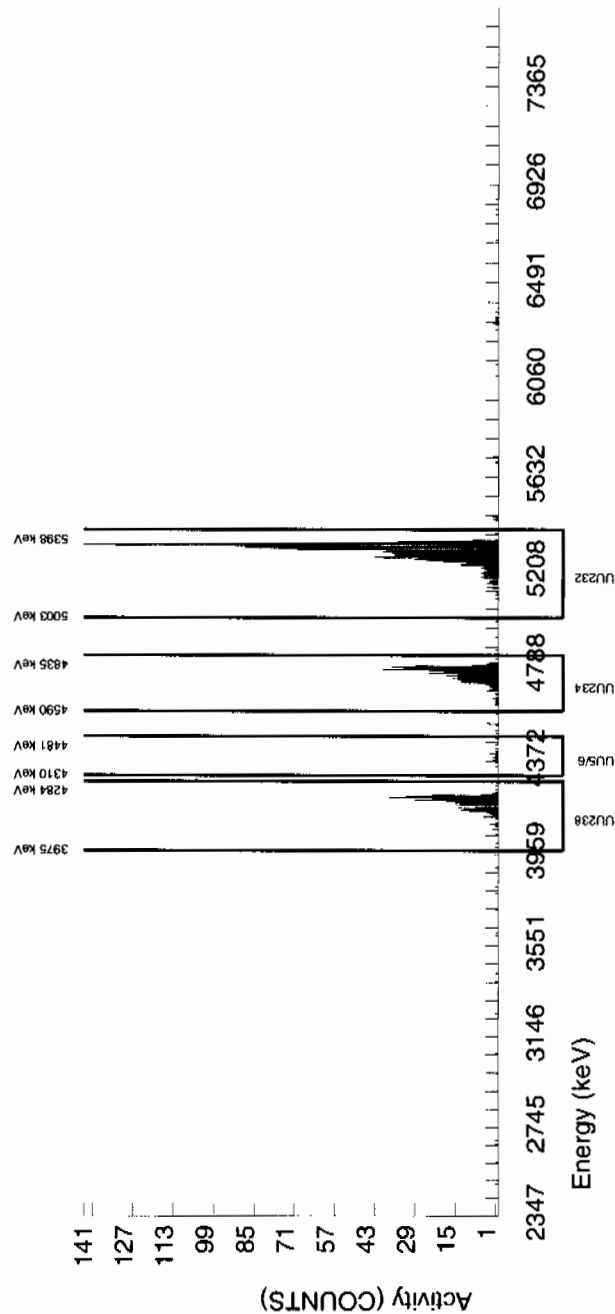
<p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5002E+00 dpm RESULTS : 4.0697E+00 dpm</p>	<p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>	<p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5306.237	28.724	1248.000	1241.000	7.000	2.6458	100.0000	2.03E+01	1.55E+00	1.01E-01	2.45E-01	5.79E-01
U-3/4	4763.020	4758.406	33.694	376.000	370.743	4.000	5.4790	100.0000	6.06E+00	5.35E-01	2.08E-01	4.61E-01	3.18E-01
U-235	4391.000	4402.739	29.573	20.000	20.000	0.000	2.4127	80.90000	4.04E-01	9.47E-02	1.13E-01	2.81E-01	9.03E-02
U-238	4184.730	4191.555	25.248	320.000	317.000	3.000	3.6781	100.0000	5.18E+00	4.71E-01	1.40E-01	3.24E-01	2.94E-01

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



Radiochemistry Batch Checklist, Rev10

Batch# 967508 Product: Am Date: 3/23/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.	✓		
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			N/A
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs initialed and dated.	✓		
No transcription errors are apparent.			
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			N/A
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required.			N/A
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: J. P. M. 3/23/10Secondary Review Performed By: Meg & John 3/23/10

3/24

LANL

Am/Cm Que Sheet

21-MAR-10

Batch #: 967508 Analyst: JXD2 First Client Due Date: 24-MAR-10 Internal Due Date: 18-MAR-10 Comments:
 Tracer Code: 445-14-2-VV Expiration Date: 03/01/10 Vol: 0.1
 LCS Isotope(s): Am241/Cm244 LCS Code(s): 52A 0244-B NA NA Expiration Date: 4/30/20 / NA NA Vol(s): 0.105g NA
 Spike Isotope(s): Am241/Cm244 Spike Code(s): NA / NA NA Expiration Date: NA / NA NA Vol(s): NA / NA
 Prep Date: 03/11/10 Initials: gyo Pipet ID: 443706 Balance ID: 19350208 Witness: 3/24/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l/f)	Am/Cm Det #
247911001-2	RE15-10-8019	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	1			1.251	215
247911002-2	RE15-10-8013	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	2			1.251	216
247911003-2	RE15-10-8026	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	3			1.253	217
247911004-2	RE15-10-8017	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	4			1.257	218
247911005-2	RE15-10-8025	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	5			1.249	219
247911006-2	RE15-10-8022	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	6			1.260	220
247911007-2	RE15-10-8014	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	7			1.266	221
247911008-2	RE15-10-8023	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	8			1.250	222
247911009-2	RE15-10-8020	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	9			1.251	223
247911010-2	RE15-10-8018	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	10			1.255	224
247911011-2	RE15-10-8015	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	11			1.250	225
247911012-2	RE15-10-8021	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	12			1.257	226
247911013-2	RE15-10-8024	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	13			1.254	227
247911014-2	RE15-10-8016	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	14			1.253	228
247911015-2	RE15-10-8065	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	15			1.254	229
247911016-2	RE15-10-8066	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	16			1.250	230
247911017-2	RE15-10-8033	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	17			1.261	231
1202076580-1	MB for batch 967508	MB	UCF pCi/g to pCi/soil	QC ACCOUNT			18				232
1202076581-2	RE15-10-8033(247911017DUP)	DUP	.05 pCi/g	SOIL	QC ACCOUNT	18-FEB-10	19			1.261	233
1202076582-1	LCS for batch 967508	LCS	UCF pCi/g to pCi/soil	QC ACCOUNT			20			0.105	234

3/23/10

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

Solid Sample Dissolution by: LEACH or DIGESTION
 Circle One

Data Reviewed By: JPLMLC-3/23/10

Blank Correction Report

Batch ID 967508

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Alliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202076581	DUP	Americium-241	1.26E+00 g	1.28E-02	4.57E-03	2.31E-02	.000083333	pCi/g	NO
1202076582	LCS	Americium-241	1.05E-01 g	3.07E+01	2.27E+00	2.10E-01	.001	pCi/g	NO
1202076580	MB	Americium-241	1.00E+00 g	1.05E-04	3.77E-03	2.47E-02	.000105	pCi/g	YES
247911001	RE15-10-8019	Americium-241	1.25E+00 g	2.97E-03	2.10E-03	2.15E-02	.000084	pCi/g	NO
247911002	RE15-10-8013	Americium-241	1.25E+00 g	1.49E-02	5.79E-03	2.50E-02	.000084	pCi/g	NO
247911003	RE15-10-8026	Americium-241	1.25E+00 g	-2.04E-03	2.00E-03	2.05E-02	.000084	pCi/g	YES
247911004	RE15-10-8017	Americium-241	1.26E+00 g	1.09E-02	5.54E-03	2.07E-02	.000083333	pCi/g	NO
247911005	RE15-10-8025	Americium-241	1.25E+00 g	1.65E-03	1.60E-03	2.26E-02	.000084	pCi/g	NO
247911006	RE15-10-8022	Americium-241	1.26E+00 g	2.85E-03	2.02E-03	2.09E-02	.000083333	pCi/g	NO
247911007	RE15-10-8014	Americium-241	1.27E+00 g	-3.75E-03	2.79E-03	2.14E-02	.000082677	pCi/g	YES
247911008	RE15-10-8023	Americium-241	1.25E+00 g	-1.42E-03	1.45E-03	2.12E-02	.000084	pCi/g	YES
247911009	RE15-10-8020	Americium-241	1.25E+00 g	-3.47E-03	2.03E-03	2.08E-02	.000084	pCi/g	YES
247911010	RE15-10-8018	Americium-241	1.26E+00 g	4.90E-03	3.17E-03	2.17E-02	.000083333	pCi/g	NO
247911011	RE15-10-8015	Americium-241	1.25E+00 g	7.48E-03	3.65E-03	2.08E-02	.000084	pCi/g	NO
247911012	RE15-10-8021	Americium-241	1.26E+00 g	4.16E-03	2.42E-03	2.04E-02	.000083333	pCi/g	NO
247911013	RE15-10-8024	Americium-241	1.25E+00 g	-2.42E-03	1.71E-03	2.03E-02	.000084	pCi/g	YES
247911014	RE15-10-8016	Americium-241	1.25E+00 g	-1.42E-03	1.47E-03	2.15E-02	.000084	pCi/g	YES
247911015	RE15-10-8065	Americium-241	1.25E+00 g	1.15E-02	4.15E-03	2.11E-02	.000084	pCi/g	NO
247911016	RE15-10-8066	Americium-241	1.25E+00 g	1.94E-03	2.36E-03	2.16E-02	.000084	pCi/g	NO
247911017	RE15-10-8033	Americium-241	1.26E+00 g	1.88E-02	6.33E-03	2.97E-02	.000083333	pCi/g	NO

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508	CHAMBER : 215	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0247911001_AM	DETECTOR S/N : 79468	BKG FILE : B215.CNF:91
SAMPLE QTY : 1.251 G	AVERAGE %EFFICIENCY : 38.2619	BKG DATE : 21-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 22-MAR-2010 20:43:14	BKG LIVE TIME(SEC) : 60000.00
ANALYST : JXD2	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W215.CNF:35
% YIELD : 89.218		CAL DATE : 28-FEB-2010

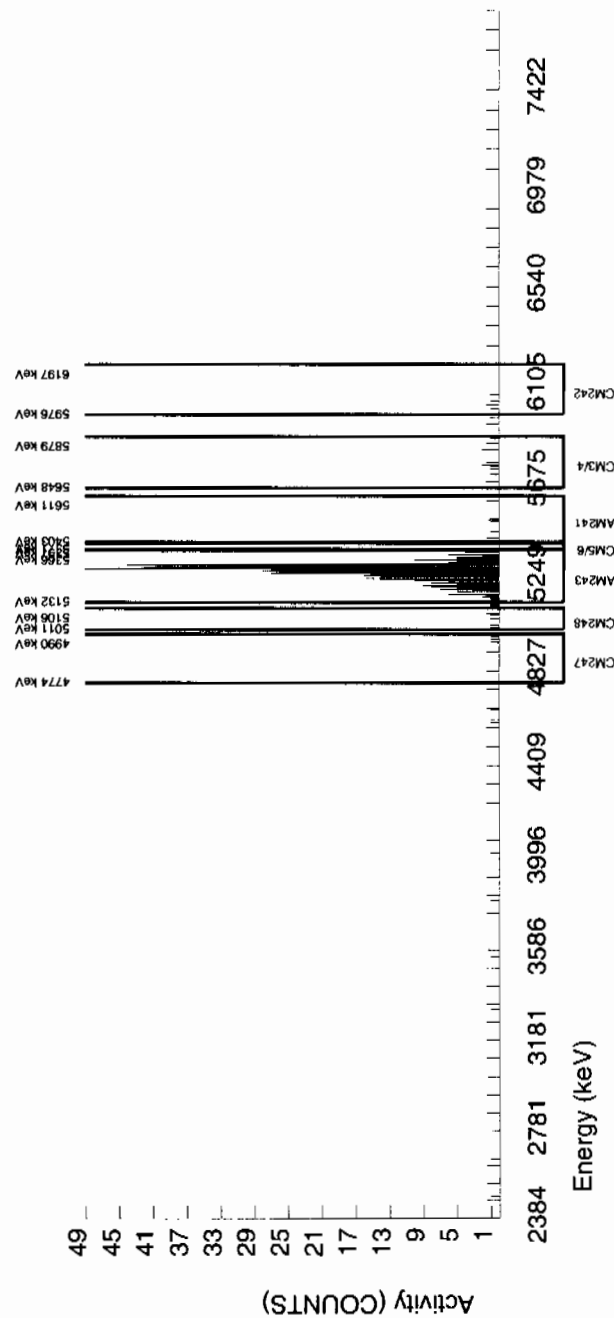
TRACER ID : 445-96-2-VV	MS/MSD ID : 0244-B	LCS/LCSD ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3153E+01 pCi/G	NOMINAL : 3.3153E+01 pCi/G
RESULTS : 2.0300E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5489.803	59.150	3.000	2.029	0.000	2.7707	99.94000	2.97E-03	2.10E-03	8.76E-03	2.15E-02	2.09E-03
AM243	5270.000	5274.994	44.336	558.000	558.000	0.000	0.0000	99.78000	8.19E-01	6.45E-02	0.00E+00	3.98E-03	3.47E-02
CM-242	6102.000	6035.240	59.150	4.000	4.000	0.000	4.0092	100.0000	6.75E-03	3.40E-03	1.27E-02	2.93E-02	3.37E-03
CM-3/4	5795.020	5772.694	71.319	9.000	9.000	0.000	4.8510	100.0000	1.32E-02	4.50E-03	1.53E-02	3.46E-02	4.41E-03
CM-5/6	5386.000	5373.183	0.000	7.000	7.000	0.000	6.1294	86.09000	1.19E-02	4.57E-03	2.25E-02	4.96E-02	4.50E-03
CM-247	4946.000	4931.925	152.803	5.000	4.280	0.720	6.3427	79.30000	7.91E-03	4.37E-03	2.53E-02	5.56E-02	4.34E-03
CM-248	5078.600	5062.612	0.000	5.000	5.000	0.000	11.0244	91.00000	8.05E-03	3.64E-03	3.83E-02	8.09E-02	3.60E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508	CHAMBER : 216	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0247911002_AM	DETECTOR S/N : 79195	BKG FILE : B216.CNF:91
SAMPLE QTY : 1.251 G	AVERAGE %EFFICIENCY : 38.6826	BKG DATE : 21-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 22-MAR-2010 20:43:16	BKG LIVE TIME(SEC) : 60000.00
ANALYST : JXD2	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W216.CNF:30
% YIELD : 75.931		CAL DATE : 28-FEB-2010

TRACER ID : 445-96-2-VV	MS/MSD ID : 0244-B	LCS/LCSD ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3153E+01 pCi/G	NOMINAL : 3.3153E+01 pCi/G
RESULTS : 1.7277E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

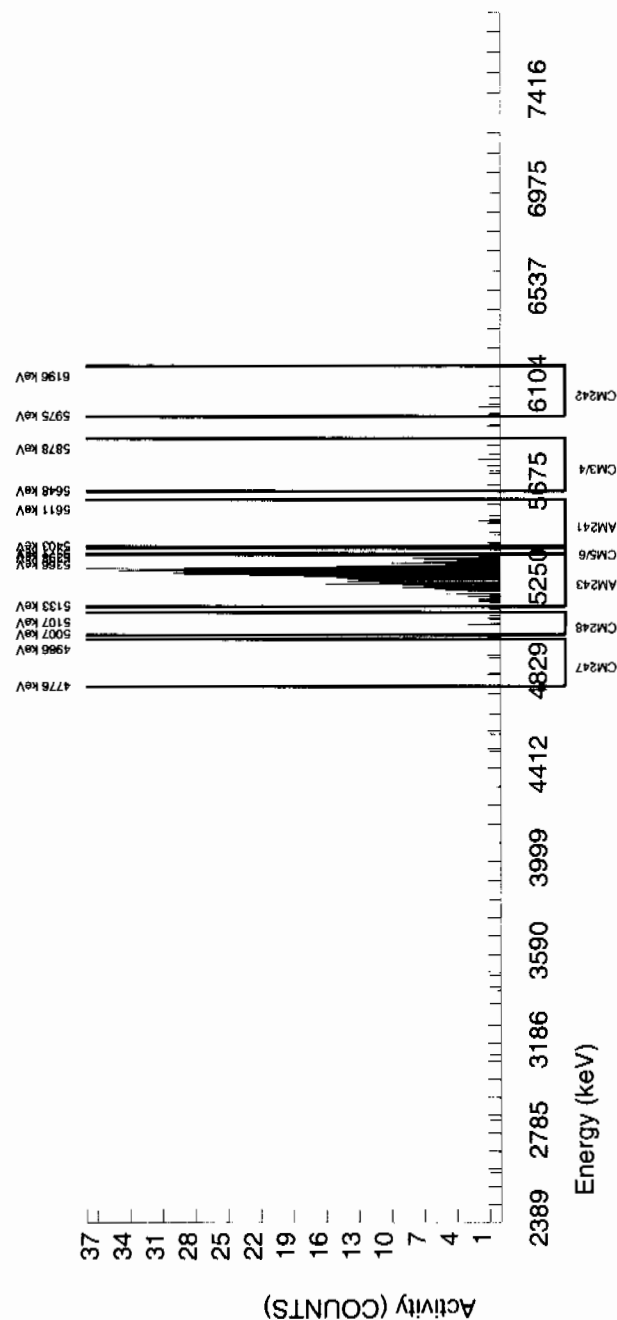
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLG pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5493.068	9.857	11.000	8.725	1.440	2.7707	99.94000	1.49E-02	5.79E-03	1.02E-02	2.50E-02	5.70E-03
AM243	5270.000	5281.734	41.867	483.000	480.120	2.880	1.6971	99.78000	8.19E-01	6.77E-02	6.25E-03	1.71E-02	3.76E-02
CM-242	6102.000	6032.417	4.929	7.000	6.280	0.720	4.0092	100.0000	1.23E-02	5.44E-03	1.47E-02	3.41E-02	5.37E-03
CM-3/4	5795.020	5773.102	4.929	5.000	5.000	0.000	4.8510	100.0000	8.54E-03	3.87E-03	1.78E-02	4.03E-02	3.82E-03
CM-5/6	5386.000	5377.371	0.000	8.000	8.000	0.000	6.1294	86.09000	1.58E-02	5.70E-03	2.62E-02	5.77E-02	5.59E-03
CM-247	4946.000	4873.103	69.000	2.000	2.000	0.000	6.3427	79.30000	4.29E-03	3.05E-03	2.94E-02	6.46E-02	3.04E-03
CM-248	5078.600	5073.166	4.929	7.000	5.560	1.440	11.0244	91.00000	1.04E-02	5.35E-03	4.45E-02	9.41E-02	5.30E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of AM243 calculated as sqrt(BKG AREA).

* Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508 SAMPLE ID : S0247911003_AM SAMPLE QTY : 1.253 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 92.875	CHAMBER : 217 DETECTOR S/N : 79410 AVERAGE %EFFICIENCY : 38.4865 COUNT DATE : 22-MAR-2010 20:43:18 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B217.CNF:93 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W217.CNF:32 CAL DATE : 28-FEB-2010
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TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.1132E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5496.351	4.912	1.000	-1.457	1.440	2.7707	99.94000	-2.04E-03	2.00E-03	8.35E-03	2.05E-02	2.00E-03
AM-243	5270.000	5283.834	43.578	585.000	584.280	0.720	0.8485	99.78000	8.18E-01	6.36E-02	2.56E-03	8.92E-03	3.39E-02
CM-242	6102.000	6049.488	7.215	8.000	8.000	0.000	4.0092	100.0000	1.29E-02	4.63E-03	1.21E-02	2.79E-02	4.55E-03
CM-3/4	5795.020	5763.314	4.912	9.000	8.280	0.720	4.8510	100.0000	1.16E-02	4.39E-03	1.46E-02	3.30E-02	4.32E-03
CM-5/6	5386.000	5377.653	0.000	6.000	5.280	0.720	6.1294	86.09000	8.57E-03	4.18E-03	2.15E-02	4.73E-02	4.14E-03
CM-247	4946.000	4879.009	0.000	7.000	6.280	0.720	6.3427	79.30000	1.11E-02	4.88E-03	2.41E-02	5.30E-02	4.83E-03
CM-248	5078.600	5073.203	0.000	11.000	11.000	0.000	11.0244	91.00000	1.69E-02	5.21E-03	3.65E-02	7.72E-02	5.09E-03

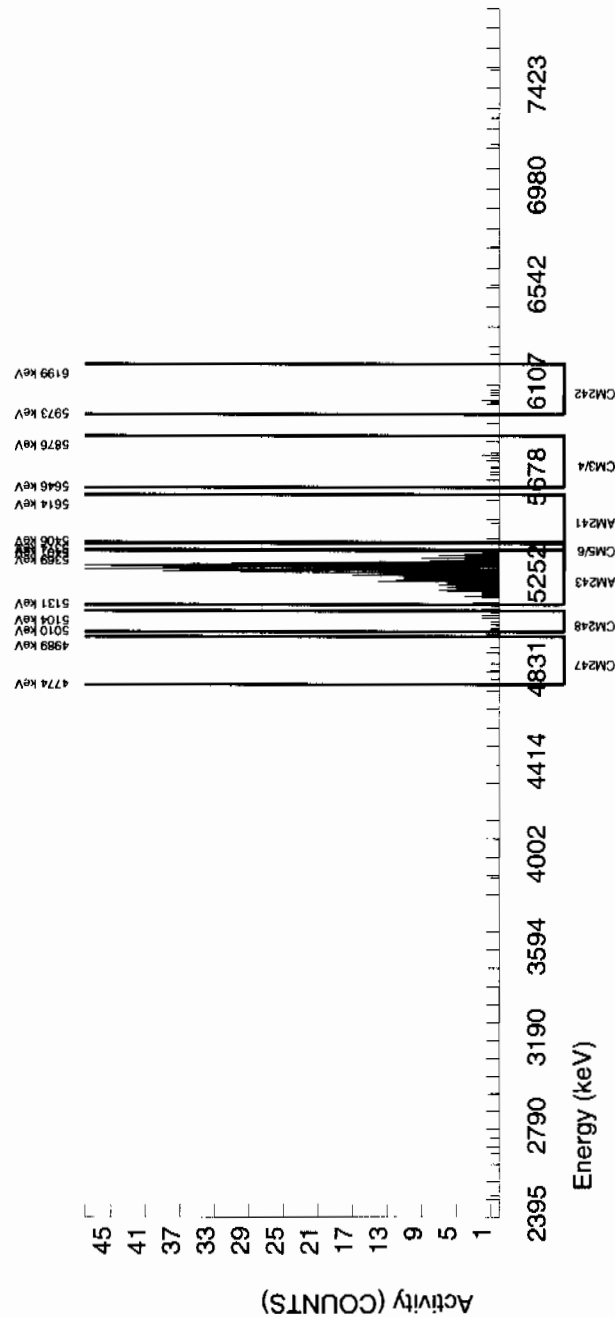
NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of AM243 calculated as sqrt(BKG AREA).

* Corrections made to the following net area
due to tracer impurity:

AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 967508 SAMPLE ID : S0247911004_AM SAMPLE QTY : 1.257 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 89.392</p>	<p>CHAMBER : 218 DETECTOR S/N : 79411 AVERAGE %EFFICIENCY : 39.3974 COUNT DATE : 22-MAR-2010 20:43:21 ELAPSED LIVE TIME(SEC) : 43200.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B218.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W218.CNF:30 CAL DATE : 28-FEB-2010</p>
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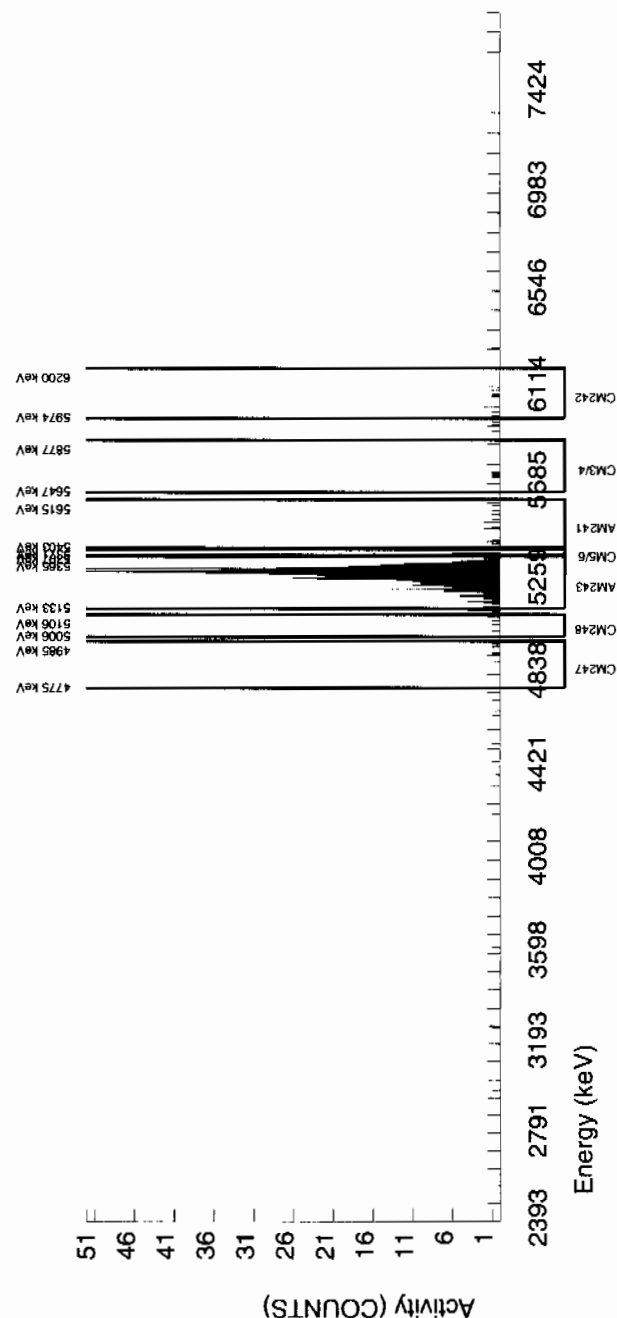
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.0340E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G</p>
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5507.106	29.573	13.000	7.678	4.320	2.7707	99.94000	1.09E-02	5.54E-03	8.45E-03	2.07E-02	5.50E-03
AM243	5270.000	5286.981	32.231	580.000	575.680	4.320	2.0785	99.78000	8.15E-01	6.38E-02	6.35E-03	1.65E-02	3.42E-02
CM-242	6102.000	6050.984	4.946	8.000	8.000	0.000	4.0092	100.0000	1.30E-02	4.68E-03	1.22E-02	2.83E-02	4.60E-03
CM-3/4	5795.020	5727.290	24.112	5.000	3.560	1.440	4.8510	100.0000	5.05E-03	3.50E-03	1.48E-02	3.34E-02	3.48E-03
CM-5/6	5386.000	5381.290	7.264	13.000	13.000	0.000	6.1294	86.09000	2.13E-02	6.08E-03	2.17E-02	4.79E-02	5.92E-03
CM-247	4946.000	4943.982	84.082	7.000	4.840	2.160	6.3427	79.30000	8.63E-03	5.24E-03	2.44E-02	5.36E-02	5.21E-03
CM-248	5078.600	5055.422	0.000	9.000	9.000	0.000	11.0244	91.00000	1.40E-02	4.75E-03	3.69E-02	7.81E-02	4.66E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508	CHAMBER : 219	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0247911005_AM	DETECTOR S/N : 79412	BKG FILE : B219.CNF:91
SAMPLE QTY : 1.249 G	AVERAGE %EFFICIENCY : 40.6279	BKG DATE : 21-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 22-MAR-2010 20:43:23	BKG LIVE TIME(SEC) : 60000.00
ANALYST : JXD2	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W219.CNF:30
% YIELD : 80.107		CAL DATE : 28-FEB-2010

TRACER ID : 445-96-2-VV	MS/MSD ID : 0244-B	LCS/LCSD ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3153E+01 pCi/G	NOMINAL : 3.3153E+01 pCi/G
RESULTS : 1.8227E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5467.079	93.726	2.000	1.074	0.000	2.7707	99.94000	1.65E-03	1.60E-03	9.21E-03	2.26E-02	1.60E-03
AM-243	5270.000	5281.455	24.078	532.000	532.000	0.000	0.0000	99.78000	8.21E-01	6.55E-02	0.00E+00	4.18E-03	3.56E-02
CM-242	6102.000	6046.899	103.592	6.000	5.280	0.720	4.0092	100.0000	9.36E-03	4.57E-03	1.33E-02	3.08E-02	4.52E-03
CM-3/4	5795.020	5751.337	128.257	7.000	7.000	0.000	4.8510	100.0000	1.08E-02	4.15E-03	1.61E-02	3.64E-02	4.09E-03
CM-5/6	5386.000	5377.436	0.000	8.000	8.000	0.000	6.1294	86.09000	1.43E-02	5.15E-03	2.36E-02	5.21E-02	5.06E-03
CM-247	4946.000	4914.505	162.788	7.000	7.000	0.000	6.3427	79.30000	1.36E-02	5.21E-03	2.66E-02	5.84E-02	5.13E-03
CM-248	5078.600	5066.004	41.930	13.000	13.000	0.000	11.0244	91.00000	2.20E-02	6.27E-03	4.02E-02	8.50E-02	6.10E-03

NOTES:

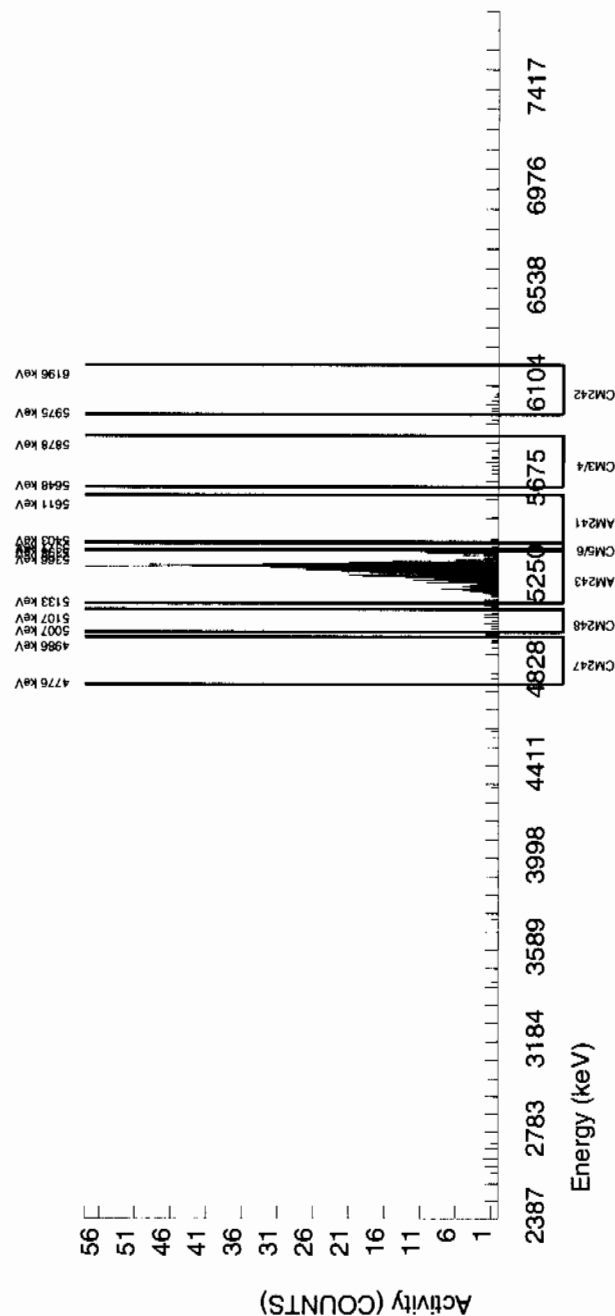
* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of AM243 calculated as sqrt(BKG AREA).

* Corrections made to the following net area due to tracer impurity:

AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

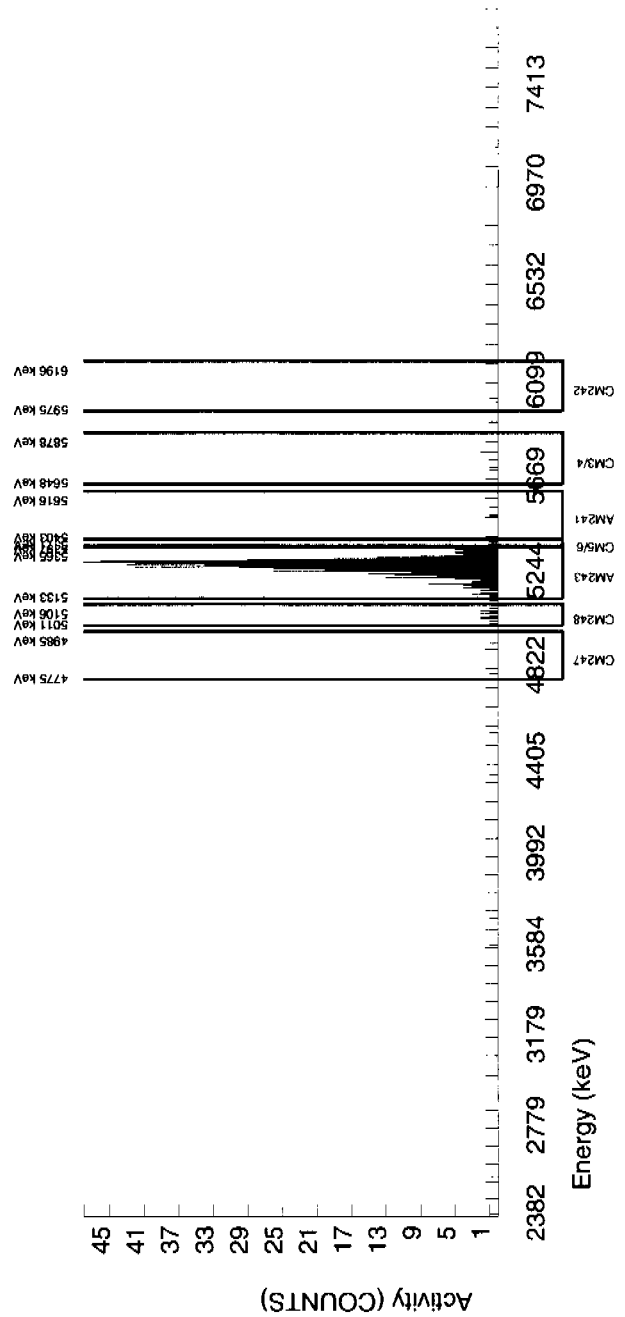
BATCH NUMBER : 967508 SAMPLE ID : S0247911006_AM SAMPLE QTY : 1.260 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 89.700		CHAMBER : 220 DETECTOR S/N : 79413 AVERAGE %EFFICIENCY : 38.9430 COUNT DATE : 22-MAR-2010 20:43:25 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B220.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W220.CNF:32 CAL DATE : 28-FEB-2010
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TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.0410E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY									
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G
AM-241	5479.150	5524.936	43.715	3.000	2.007	0.000	2.7707	99.94000	2.85E-03
AM243	5270.000	5281.016	52.235	3.000	3.000	0.000	4.0092	99.78000	8.13E-01
CM-242	6102.000	6014.167	0.000	3.000	5.280	0.720	4.8510	100.00000	4.91E-03
CM-3/4	5795.020	5774.228	4.926	6.000	9.000	0.000	6.1294	100.00000	7.53E-03
CM-5/6	5386.000	5380.763	9.436	9.000	1.560	1.440	6.3427	79.30000	1.49E-02
CM-247	4946.000	4909.682	0.000	3.000	18.000	0.000	11.0244	91.00000	2.80E-03
CM-248	5078.600	5057.836	66.342	18.000	18.000	0.000	11.0244	91.00000	2.81E-02

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508 SAMPLE ID : S0247911007_AM SAMPLE QTY : 1.266 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 85.152		CHAMBER : 221 DETECTOR S/N : 79414 AVERAGE %EFFICIENCY : 39.7297 COUNT DATE : 22-MAR-2010 20:43:28 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B221.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W221.CNF:30 CAL DATE : 28-FEB-2010
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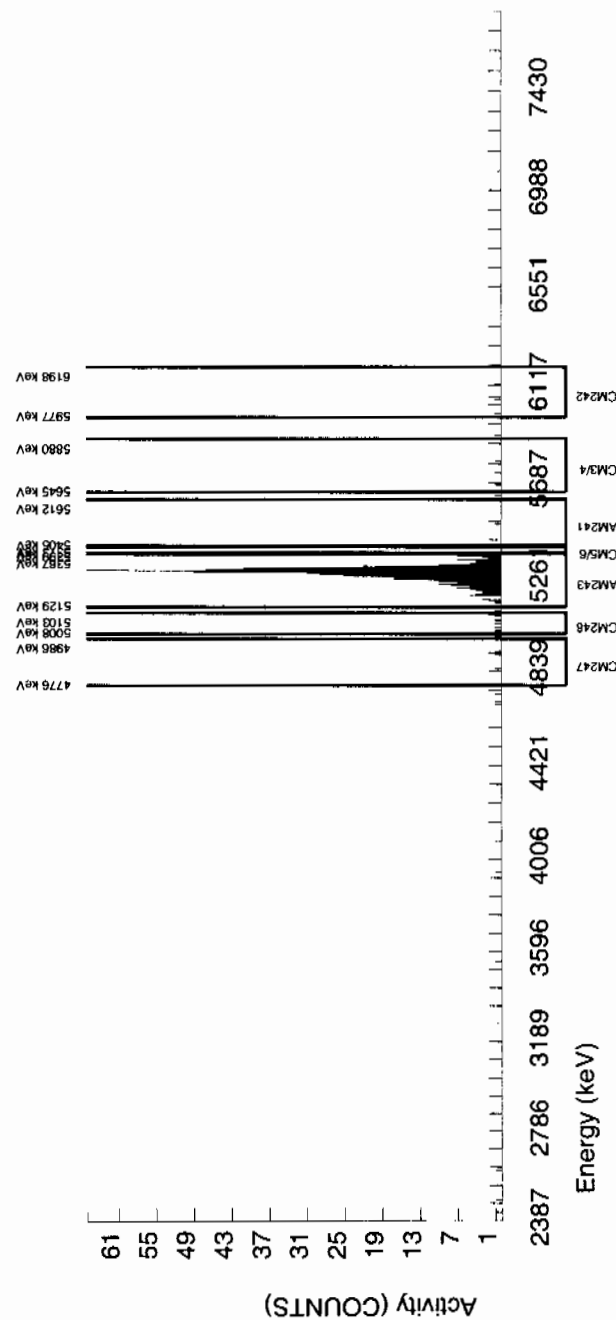
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.9375E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5508.437	9.310	2.000	-2.562	3.600	2.7707	99.94000	-3.75E-03	2.79E-03	8.74E-03	2.14E-02	2.79E-03
AM243	5270.000	5283.415	21.197	553.000	553.000	0.000	0.0000	99.78000	8.10E-01	6.39E-02	0.00E+00	3.97E-03	3.44E-02
CM-242	6102.000	6064.252	4.965	5.000	5.000	0.000	4.0092	100.0000	8.41E-03	3.80E-03	1.26E-02	2.92E-02	3.76E-03
CM-3/4	5795.020	5744.822	104.269	4.000	1.120	2.880	4.8510	100.0000	1.64E-03	3.61E-03	1.53E-02	3.45E-02	3.61E-03
CM-5/6	5386.000	5376.732	0.000	8.000	7.280	0.720	6.1294	86.09000	1.24E-02	5.02E-03	2.24E-02	4.95E-02	4.95E-03
CM-247	4946.000	4902.213	79.443	3.000	3.000	0.000	6.3427	79.30000	5.53E-03	3.21E-03	2.52E-02	5.54E-02	3.19E-03
CM-248	5078.600	5055.767	68.892	7.000	7.000	0.000	11.0244	91.00000	1.12E-02	4.31E-03	3.82E-02	8.07E-02	4.25E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508 SAMPLE ID : S0247911008_AM SAMPLE QTY : 1.250 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 88.919	CHAMBER : 222 DETECTOR S/N : 79415 AVERAGE %EFFICIENCY : 38.9602 COUNT DATE : 22-MAR-2010 20:43:30 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B222.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W222.CNF:30 CAL DATE : 28-FEB-2010
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TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.0232E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5507.112	0.000	0.000	-0.985	0.000	2.7707	99.94000	-1.42E-03	1.45E-03	8.64E-03	2.12E-02	1.45E-03
AM243	5270.000	5288.338	37.930	567.000	566.280	0.720	0.8485	99.78000	8.20E-01	6.43E-02	2.65E-03	9.23E-03	3.45E-02
CM-242	6102.000	6037.688	54.016	7.000	7.000	0.000	4.0092	100.0000	1.16E-02	4.47E-03	1.25E-02	2.89E-02	4.40E-03
CM-3/4	5795.020	5779.819	105.519	4.000	2.560	1.440	4.8510	100.0000	3.71E-03	3.26E-03	1.51E-02	3.42E-02	3.25E-03
CM-5/6	5386.000	5382.773	0.000	18.000	18.000	0.000	6.1294	86.09000	3.02E-02	7.40E-03	2.22E-02	4.89E-02	7.12E-03
CM-247	4946.000	4915.068	52.603	14.000	13.280	0.720	6.3427	79.30000	2.42E-02	7.12E-03	2.49E-02	5.48E-02	6.94E-03
CM-248	5078.600	5062.809	0.000	10.000	10.000	0.000	11.0244	91.00000	1.59E-02	5.13E-03	3.78E-02	7.98E-02	5.02E-03

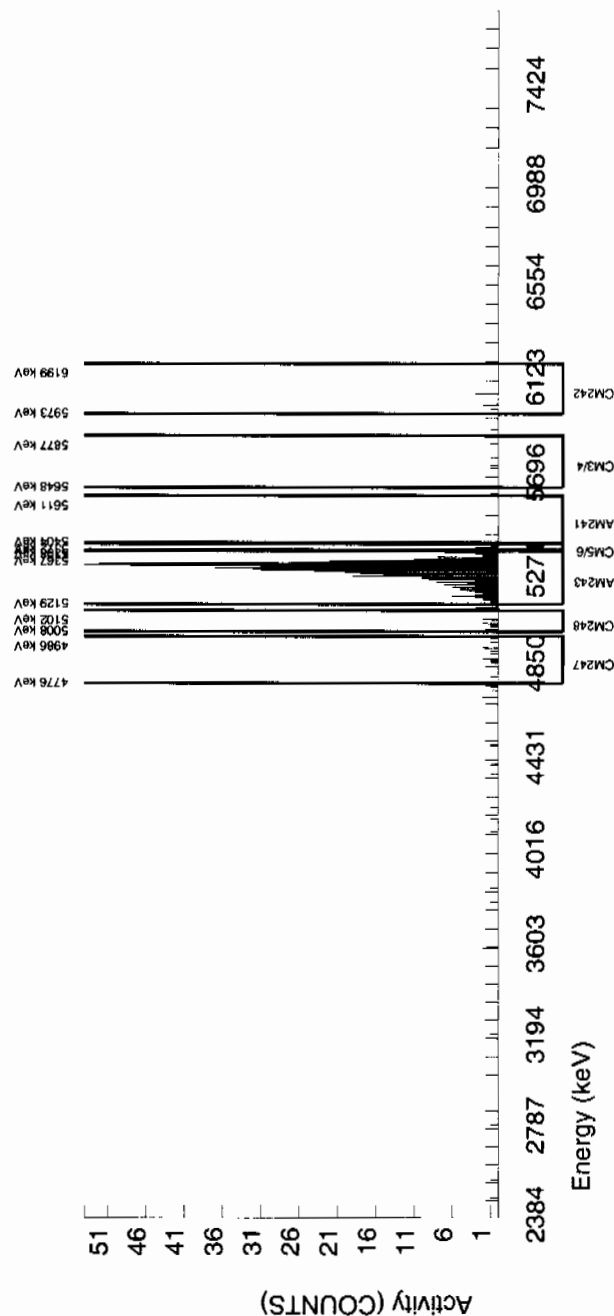
NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of AM243 calculated as sqrt(BKG AREA).

* Corrections made to the following net area
due to tracer impurity:

AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508	CHAMBER : 223	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0247911009_AM	DETECTOR S/N : 79416	BKG FILE : B223.CNF:93
SAMPLE QTY : 1.251 G	AVERAGE %EFFICIENCY : 39.5920	BKG DATE : 21-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 22-MAR-2010 20:43:33	BKG LIVE TIME(SEC) : 60000.00
ANALYST : JXD2	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W223.CNF:30
% YIELD : 89.002		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3153E+01 pCi/g	NOMINAL : 3.3153E+01 pCi/g
RESULTS : 2.0251E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

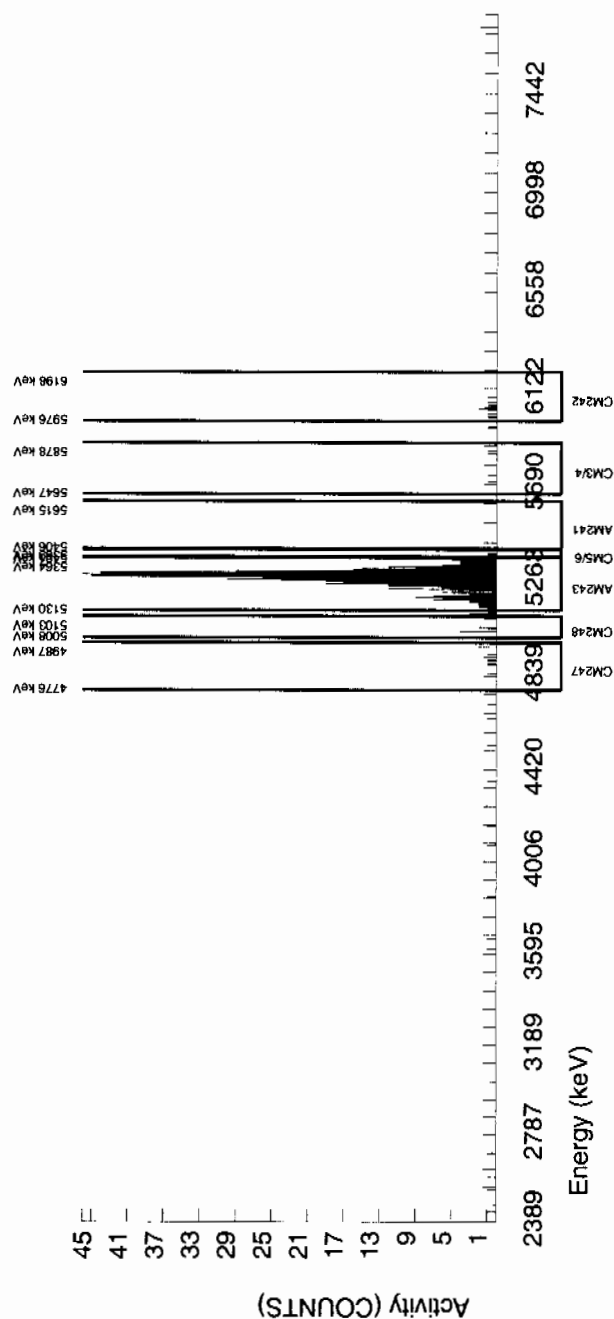
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
AM-241	5479.150	5510.531	0.000	0.000	-2.442	1.440	2.7707	99.94000	-3.47E-03	2.03E-03	8.49E-03	2.08E-02	2.03E-03
AM-243	5270.000	5277.336	42.812	576.000	576.000	0.000	0.0000	99.78000	8.19E-01	6.39E-02	0.00E+00	3.85E-03	3.41E-02
CM-242	6102.000	6037.697	7.264	10.000	10.000	0.000	4.0092	100.0000	1.63E-02	5.28E-03	1.23E-02	2.84E-02	5.17E-03
CM-3/4	5795.020	5767.942	143.433	6.000	5.280	0.720	4.8510	100.0000	7.52E-03	3.67E-03	1.49E-02	3.36E-02	3.64E-03
CM-5/6	5386.000	5376.531	0.000	10.000	10.000	0.000	6.1294	86.09000	1.65E-02	5.33E-03	2.18E-02	4.81E-02	5.21E-03
CM-247	4946.000	4910.543	4.946	10.000	10.000	0.000	6.3427	79.30000	1.79E-02	5.78E-03	2.45E-02	5.38E-02	5.66E-03
CM-248	5078.600	5054.724	4.946	10.000	10.000	0.000	11.0244	91.00000	1.56E-02	5.04E-03	3.71E-02	7.84E-02	4.93E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of AM243 calculated as sqrt(BKG AREA).

* Corrections made to the following net area
due to tracer impurity:
AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508 SAMPLE ID : S0247911010_AM SAMPLE QTY : 1.255 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 87.930		CHAMBER : 224 DETECTOR S/N : 79417 AVERAGE %EFFICIENCY : 38.4049 COUNT DATE : 22-MAR-2010 20:43:36 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B224.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W224.CNF:30 CAL DATE : 28-FEB-2010
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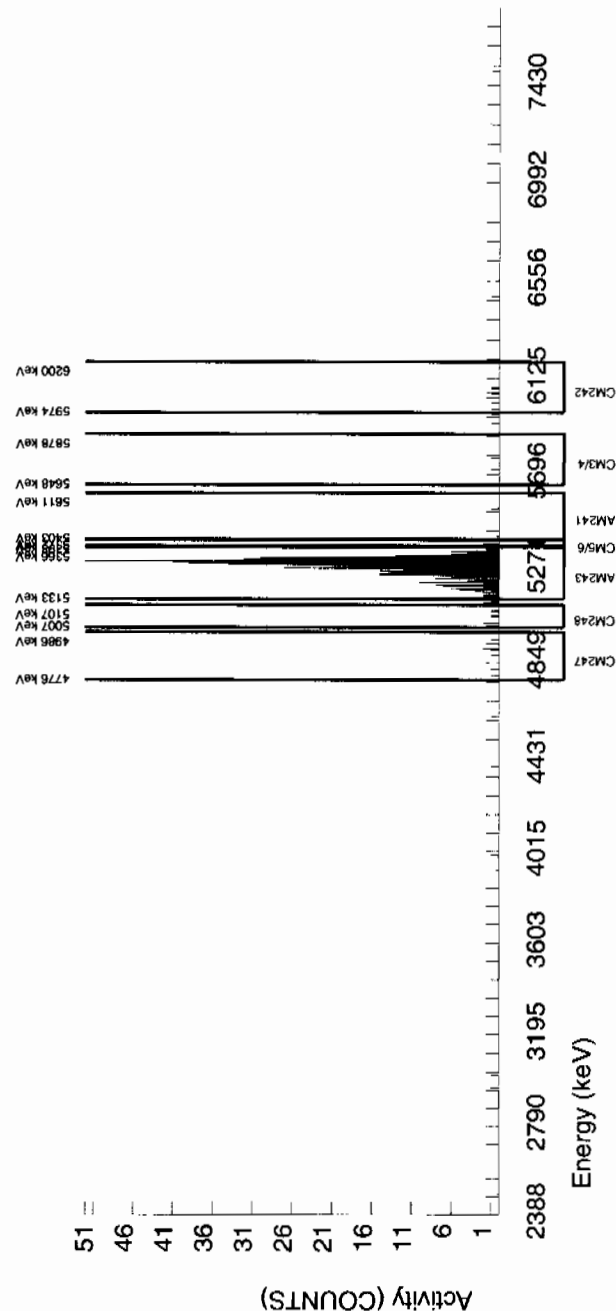
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.0007E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/g	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/g
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
AM-241	5479.150	5473.541	135.056	5.000	3.320	0.720	2.7707	99.94000	4.90E-03	3.17E-03	8.83E-03	2.17E-02	3.15E-03
AM243	5270.000	5284.042	46.959	552.000	552.000	0.000	0.0000	99.78000	8.17E-01	6.45E-02	0.00E+00	4.01E-03	3.48E-02
CM-242	6102.000	6059.545	6.201	9.000	9.000	0.000	4.0092	100.0000	1.53E-02	5.20E-03	1.28E-02	2.95E-02	5.10E-03
CM-3/4	5795.020	5761.961	65.027	3.000	3.000	0.000	4.8510	100.0000	4.44E-03	2.58E-03	1.54E-02	3.49E-02	2.57E-03
CM-5/6	5386.000	5377.445	0.000	10.000	9.280	0.720	6.1294	86.09000	1.59E-02	5.66E-03	2.27E-02	5.00E-02	5.56E-03
CM-247	4946.000	4896.368	7.347	8.000	7.280	0.720	6.3427	79.30000	1.36E-02	5.51E-03	2.55E-02	5.60E-02	5.43E-03
CM-248	5078.600	5051.677	0.000	12.000	12.000	0.000	11.0244	91.00000	1.95E-02	5.77E-03	3.86E-02	8.16E-02	5.62E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508 SAMPLE ID : S0247911011_AM SAMPLE QTY : 1.250 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 91.063	CHAMBER : 225 DETECTOR S/N : 79418 AVERAGE %EFFICIENCY : 38.8004 COUNT DATE : 22-MAR-2010 20:43:39 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B225.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W225.CNF:30 CAL DATE : 28-FEB-2010
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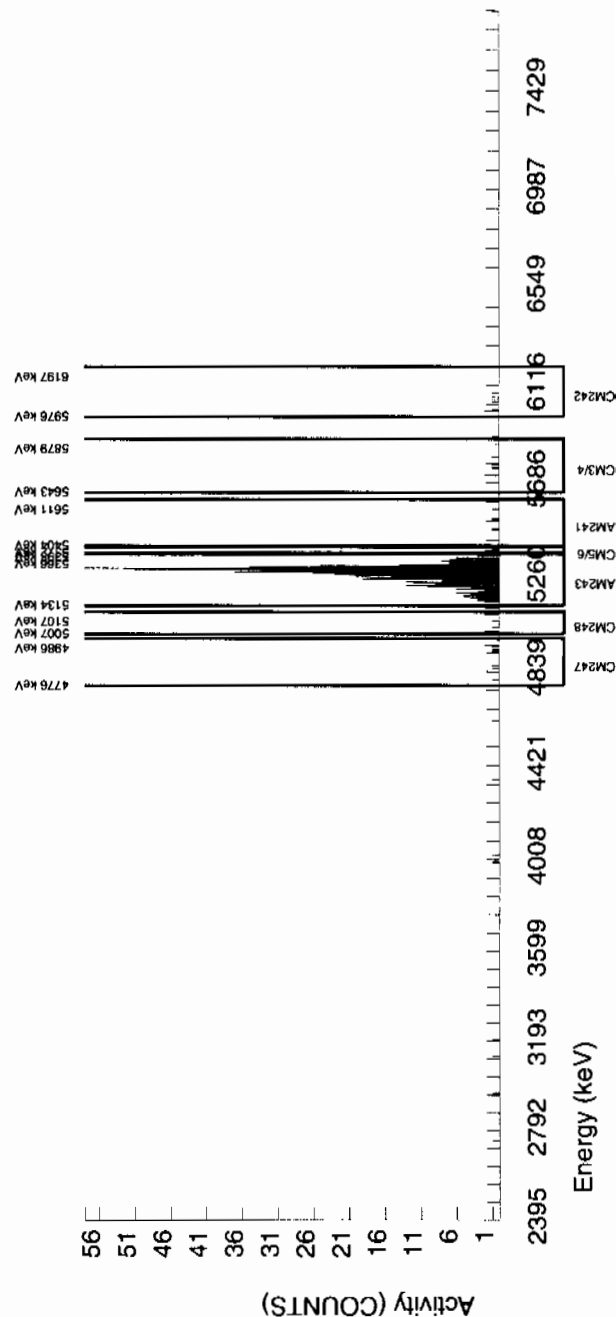
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.0720E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5513.742	93.227	7.000	5.275	0.720	2.7707	99.94000	7.48E-03	3.65E-03	8.47E-03	2.08E-02	3.62E-03
AM243	5270.000	5280.307	30.749	579.000	577.560	1.440	1.2000	99.78000	8.20E-01	6.40E-02	3.68E-03	1.12E-02	3.42E-02
CM-242	6102.000	6040.920	7.254	7.000	7.000	0.000	4.0092	100.0000	1.14E-02	4.38E-03	1.23E-02	2.83E-02	4.31E-03
CM-3/4	5795.020	5734.119	4.939	8.000	7.280	0.720	4.8510	100.0000	1.03E-02	4.20E-03	1.48E-02	3.35E-02	4.15E-03
CM-5/6	5386.000	5382.337	0.000	9.000	9.000	0.000	6.1294	86.09000	1.48E-02	5.03E-03	2.18E-02	4.80E-02	4.94E-03
CM-247	4946.000	4919.338	7.254	12.000	12.000	0.000	6.3427	79.30000	2.14E-02	6.35E-03	2.44E-02	5.37E-02	6.19E-03
CM-248	5078.600	5064.930	78.924	9.000	9.000	0.000	11.0244	91.00000	1.40E-02	4.76E-03	3.70E-02	7.83E-02	4.67E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508 SAMPLE ID : S0247911012_AM SAMPLE QTY : 1.257 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 91.836		CHAMBER : 226 DETECTOR S/N : 79419 AVERAGE %EFFICIENCY : 38.9218 COUNT DATE : 22-MAR-2010 20:43:42 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B226.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W226.CNF:30 CAL DATE : 28-FEB-2010
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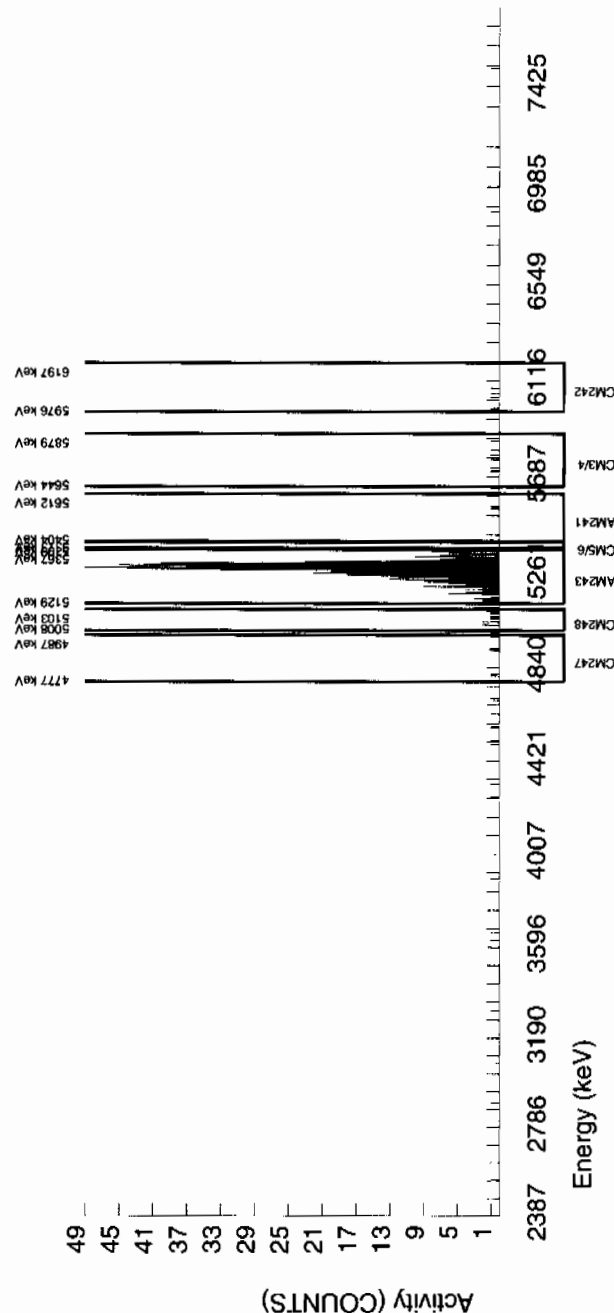
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.0896E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLG pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5548.037	44.739	4.000	2.983	0.000	2.7707	99.94000	4.16E-03	2.42E-03	8.33E-03	2.04E-02	2.41E-03
AM243	5270.000	5282.902	37.260	585.000	584.280	0.720	0.8485	99.78000	8.15E-01	6.34E-02	2.55E-03	8.89E-03	3.38E-02
CM-242	6102.000	6037.781	94.449	6.000	6.000	0.000	4.0092	100.00000	9.62E-03	3.98E-03	1.20E-02	2.79E-02	3.93E-03
CM-3/4	5795.020	5769.562	133.595	8.000	8.000	0.000	4.8510	100.00000	1.12E-02	4.02E-03	1.46E-02	3.29E-02	3.95E-03
CM-5/6	5386.000	5376.384	0.000	7.000	7.000	0.000	6.1294	86.09000	1.13E-02	4.34E-03	2.14E-02	4.72E-02	4.28E-03
CM-247	4946.000	4899.058	169.013	6.000	6.000	0.000	6.3427	79.30000	1.05E-02	4.36E-03	2.40E-02	5.28E-02	4.30E-03
CM-248	5078.600	5059.677	19.677	13.000	13.000	0.000	11.0244	91.00000	1.99E-02	5.67E-03	3.64E-02	7.69E-02	5.52E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508 SAMPLE ID : S0247911013_AM SAMPLE QTY : 1.254 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 92.898		CHAMBER : 227 DETECTOR S/N : 79420 AVERAGE %EFFICIENCY : 38.7585 COUNT DATE : 22-MAR-2010 20:43:45 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B227.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W227.CNF:30 CAL DATE : 28-FEB-2010
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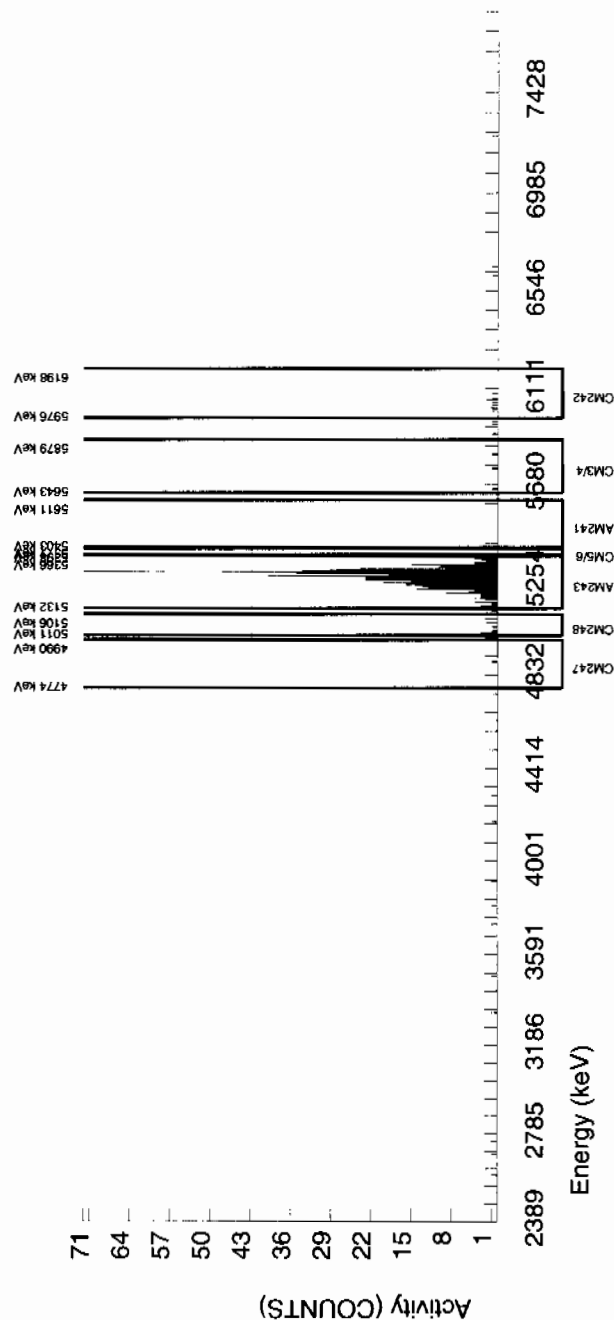
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.1137E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5506.777	0.000	0.000	-1.744	0.720	2.7707	99.94000	-2.42E-03	1.71E-03	8.29E-03	2.03E-02	1.71E-03
AM243	5270.000	5277.424	25.465	590.000	588.560	1.440	1.2000	99.78000	8.17E-01	6.34E-02	3.60E-03	1.10E-02	3.38E-02
CM-242	6102.000	6031.835	0.000	12.000	12.000	0.000	4.0092	100.0000	1.91E-02	5.67E-03	1.20E-02	2.77E-02	5.53E-03
CM-3/4	5795.020	5744.047	147.269	7.000	7.000	0.000	4.8510	100.0000	9.73E-03	3.73E-03	1.45E-02	3.28E-02	3.68E-03
CM-5/6	5386.000	5384.264	0.000	3.000	3.000	0.000	6.1294	86.09000	4.83E-03	2.81E-03	2.13E-02	4.69E-02	2.79E-03
CM-247	4946.000	4897.730	9.243	2.000	0.560	1.440	6.3427	79.30000	9.78E-04	3.05E-03	2.39E-02	5.26E-02	3.04E-03
CM-248	5078.600	5042.572	48.011	10.000	10.000	0.000	11.0244	91.00000	1.52E-02	4.92E-03	3.62E-02	7.66E-02	4.82E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508	CHAMBER : 228	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0247911014_AM	DETECTOR S/N : 79421	BKG FILE : B228.CNF:91
SAMPLE QTY : 1.253 G	AVERAGE %EFFICIENCY : 38.2168	BKG DATE : 21-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 22-MAR-2010 20:43:47	BKG LIVE TIME(SEC) : 60000.00
ANALYST : JXD2	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W228.CNF:30
% YIELD : 89.323		CAL DATE : 28-FEB-2010

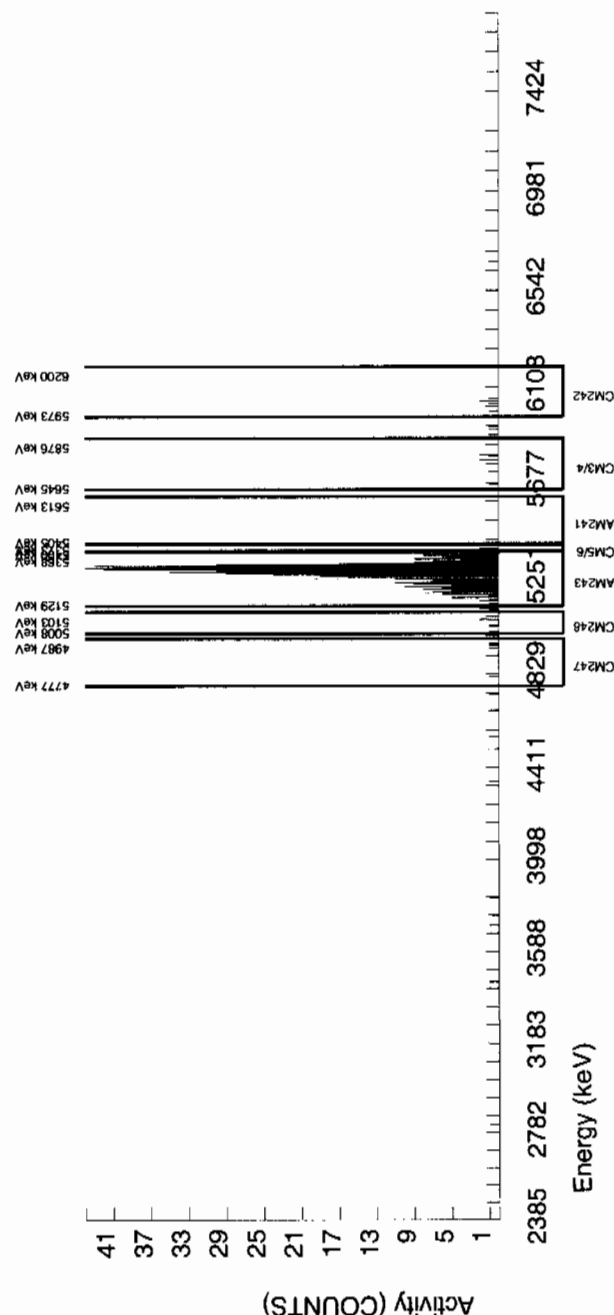
TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3153E+01 pCi/G	NOMINAL : 3.3153E+01 pCi/G
RESULTS : 2.0324E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5509.091	0.000	0.000	-0.971	0.000	2.7707	99.94000	-1.42E-03	1.47E-03	8.75E-03	2.15E-02	1.46E-03
AM243	5270.000	5280.344	44.486	558.000	558.000	0.000	0.0000	99.78000	8.18E-01	6.44E-02	0.00E+00	3.97E-03	3.46E-02
CM-242	6102.000	6039.660	4.936	5.000	5.000	0.000	4.0092	100.0000	8.42E-03	3.81E-03	1.27E-02	2.93E-02	3.77E-03
CM-3/4	5795.020	5769.155	24.681	8.000	8.000	0.000	4.8510	100.0000	1.17E-02	4.22E-03	1.53E-02	3.46E-02	4.15E-03
CM-5/6	5386.000	5382.183	17.277	6.000	6.000	0.000	6.1294	86.09000	1.02E-02	4.22E-03	2.25E-02	4.95E-02	4.16E-03
CM-247	4946.000	4943.107	0.000	6.000	5.280	0.720	6.3427	79.30000	9.74E-03	4.75E-03	2.52E-02	5.55E-02	4.71E-03
CM-248	5078.600	5050.258	7.250	7.000	6.280	0.720	11.0244	91.00000	1.01E-02	4.46E-03	3.82E-02	8.08E-02	4.41E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER	:	967508
SAMPLE ID	:	S0247911015_AM
SAMPLE QTY	:	1.254 G
SAMPLE DATE	:	18-FEB-2010 00:00:00
ANALYST	:	JXD2
% YIELD	:	89.677

CHAMBER : 229
DETECTOR S/N : 79422
AVERAGE %EFFICIENCY : 38.6797
COUNT DATE : 22-MAR-2000
ELAPSED LIVE TIME(SEC) : 43200.00

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LIB FILE : ENV_ALPHA_AM
BKG FILE : B229.CNF;91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W229.CNF;30
CAL DATE : 28-FEB-2010
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TRACER

ID	: 445-96-2-VV
NUCLIDE	: AM243
NOMINAL	: 2.2753E+00 dpm
RESULTS	: 2.0405E+00 dpm

MS/MSD

ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3153E+01 pCi/G

LCS/LCSD

LOG LOG
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3153E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

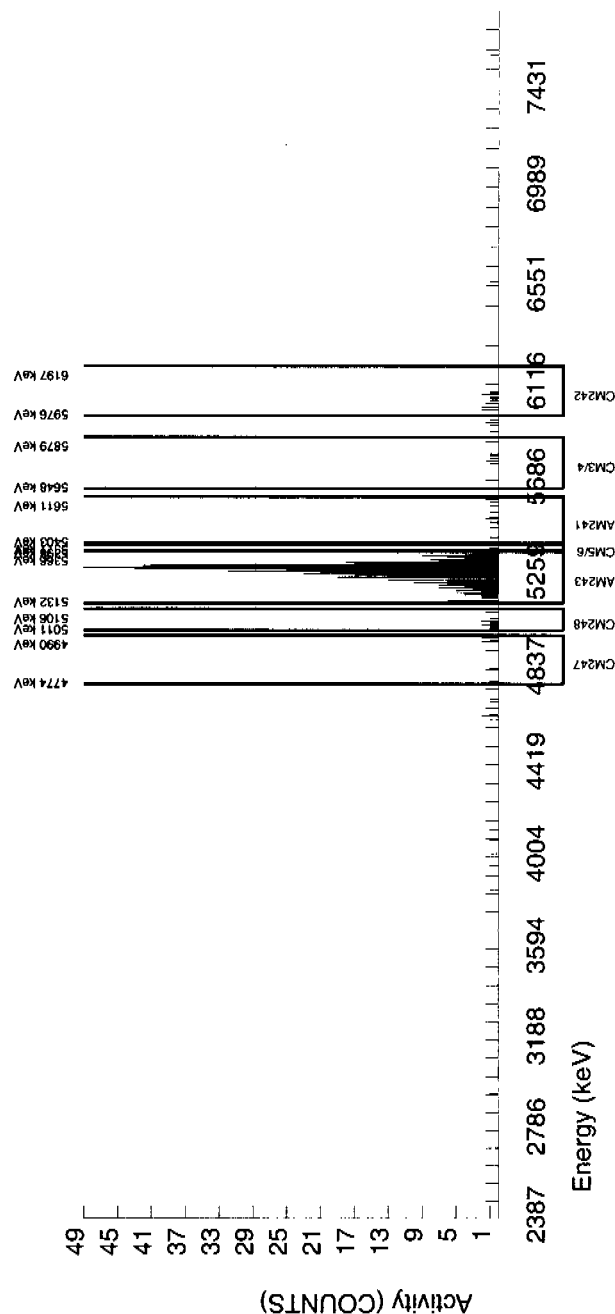
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5528.405	168.393	9.000	8.013	0.000	2.7707	99.94000	1.15E-02	4.15E-03	8.60E-03	2.11E-02	4.07E-03
AM-243	5270.000	5278.690	36.495	567.000	567.000	0.000	0.0000	99.78000	1.17E-01	6.40E-02	0.00E+00	3.91E-03	3.43E-02
CM-242	6102.000	6050.096	71.815	13.000	12.280	0.720	4.0092	100.0000	2.03E-02	6.24E-03	1.24E-02	2.88E-02	6.09E-03
CM-3/4	5795.020	5804.635	94.102	6.000	4.560	1.440	4.8510	100.0000	6.58E-03	3.85E-03	1.51E-02	3.40E-02	3.83E-03
CM-5/6	5386.000	5377.175	0.000	6.000	6.000	0.000	6.1294	86.09000	1.00E-02	4.15E-03	2.21E-02	4.87E-02	4.09E-03
CM-247	4946.000	4915.402	19.708	9.000	9.000	0.000	6.3427	79.30000	1.63E-02	5.55E-03	2.48E-02	5.46E-02	5.44E-03
CM-248	5078.600	5056.572	0.000	12.000	12.000	0.000	11.0244	91.00000	1.90E-02	5.62E-03	3.76E-02	7.95E-02	5.48E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of AM243 calculated as sqrt(BKG AREA).

* Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

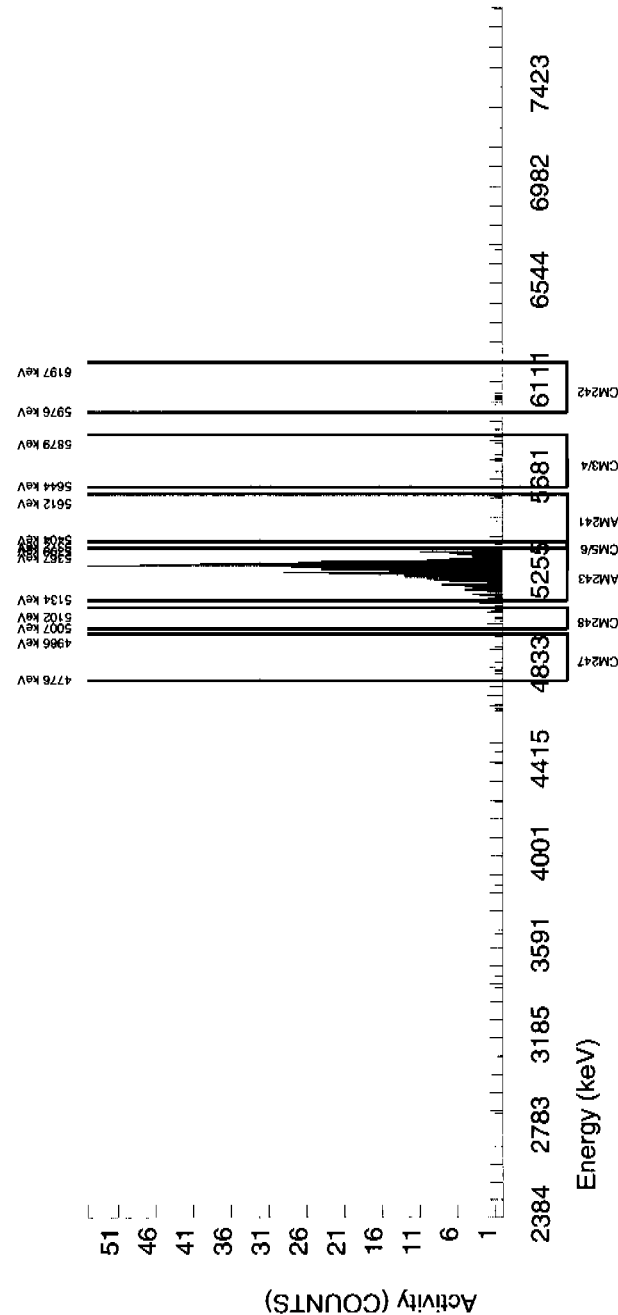
BATCH NUMBER : 967508 SAMPLE ID : S0247911016_AM SAMPLE QTY : 1.250 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 88.833				CHAMBER : 230 DETECTOR S/N : 79423 AVERAGE %EFFICIENCY : 38.1908 COUNT DATE : 22-MAR-2010 20:43:52 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B230.CNF;91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W230.CNF;30 CAL DATE : 28-FEB-2010					
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.0212E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5512.135	168.481	3.000	1.315	0.720	2.7707	99.94000	1.94E-03	2.36E-03	8.82E-03	2.16E-02	2.36E-03
AM243	5270.000	5280.452	45.003	556.000	554.560	1.440	1.2000	99.78000	8.20E-01	6.47E-02	3.83E-03	1.17E-02	3.49E-02
CM-242	6102.000	6047.058	49.553	6.000	6.000	0.000	4.0092	100.0000	1.02E-02	4.22E-03	1.28E-02	2.95E-02	4.16E-03
CM-3/4	5795.020	5783.524	4.955	8.000	7.280	0.720	4.8510	100.0000	1.08E-02	4.38E-03	1.54E-02	3.49E-02	4.32E-03
CM-5/6	5386.000	5378.330	0.000	11.000	11.000	0.000	6.1294	86.09000	1.89E-02	5.82E-03	2.27E-02	5.00E-02	5.68E-03
CM-247	4946.000	4868.709	163.526	7.000	7.000	0.000	6.3427	79.30000	1.30E-02	5.00E-03	2.55E-02	5.60E-02	4.92E-03
CM-248	5078.600	5068.367	0.000	11.000	11.000	0.000	11.0244	91.00000	1.78E-02	5.51E-03	3.86E-02	8.15E-02	5.38E-03

NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of AM243 calculated as sqrt(BKG AREA).

* Corrections made to the following net area
due to tracer impurity:
AM-241



ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508				CHAMBER : 231				LIB FILE : ENV_ALPHA_AM					
SAMPLE ID : S0247911017_AM				DETECTOR S/N : 79424				BKG FILE : B231.CNF;91					
SAMPLE QTY : 1.261 G				AVERAGE %EFFICIENCY : 40.4350				BKG DATE : 21-MAR-2010					
SAMPLE DATE : 18-FEB-2010 00:00:00				COUNT DATE : 22-MAR-2010 20:43:55				BKG LIVE TIME(SEC) : 60000.00					
ANALYST : JXD2				ELAPSED LIVE TIME(SEC) : 43200.00				EFF FILE : W231.CNF;30					
% YIELD : 60.603								CAL DATE : 28-FEB-2010					
TRACER				MS/MSD				LCS/LCSD					
ID : 445-96-2-VV				ID : 0244-B				ID : 0244-B					
NUCLIDE : AM243				NUCLIDE : AM-241				NUCLIDE : AM-241					
NOMINAL : 2.2753E+00 dpm				NOMINAL : 3.3153E+01 pCi/G				NOMINAL : 3.3153E+01 pCi/G					
RESULTS : 1.3789E+00 dpm													
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5508.418	9.271	10.000	9.303	0.000	2.7707	99.94000	1.88E-02	6.33E-03	1.21E-02	2.97E-02	6.18E-03
AM243	5270.000	5284.474	25.980	402.000	400.560	1.440	1.2000	99.78000	8.13E-01	7.10E-02	5.25E-03	1.60E-02	4.07E-02
CM-242	6102.000	6045.317	4.945	9.000	9.000	0.000	4.0092	100.0000	2.10E-02	7.15E-03	1.75E-02	4.05E-02	6.99E-03
CM-3/4	5795.020	5796.422	89.003	5.000	2.840	2.160	4.8510	100.0000	5.77E-03	5.22E-03	2.12E-02	4.79E-02	5.20E-03
CM-5/6	5386.000	5380.458	0.000	14.000	14.000	0.000	6.1294	86.09000	3.29E-02	9.11E-03	3.11E-02	6.86E-02	8.80E-03
CM-247	4946.000	4812.266	39.557	3.000	2.280	0.720	6.3427	79.30000	5.82E-03	4.81E-03	3.49E-02	7.68E-02	4.79E-03
CM-248	5078.600	5049.610	14.834	8.000	7.280	0.720	11.0244	91.00000	1.62E-02	6.60E-03	5.29E-02	1.12E-01	6.49E-03

NOTES:

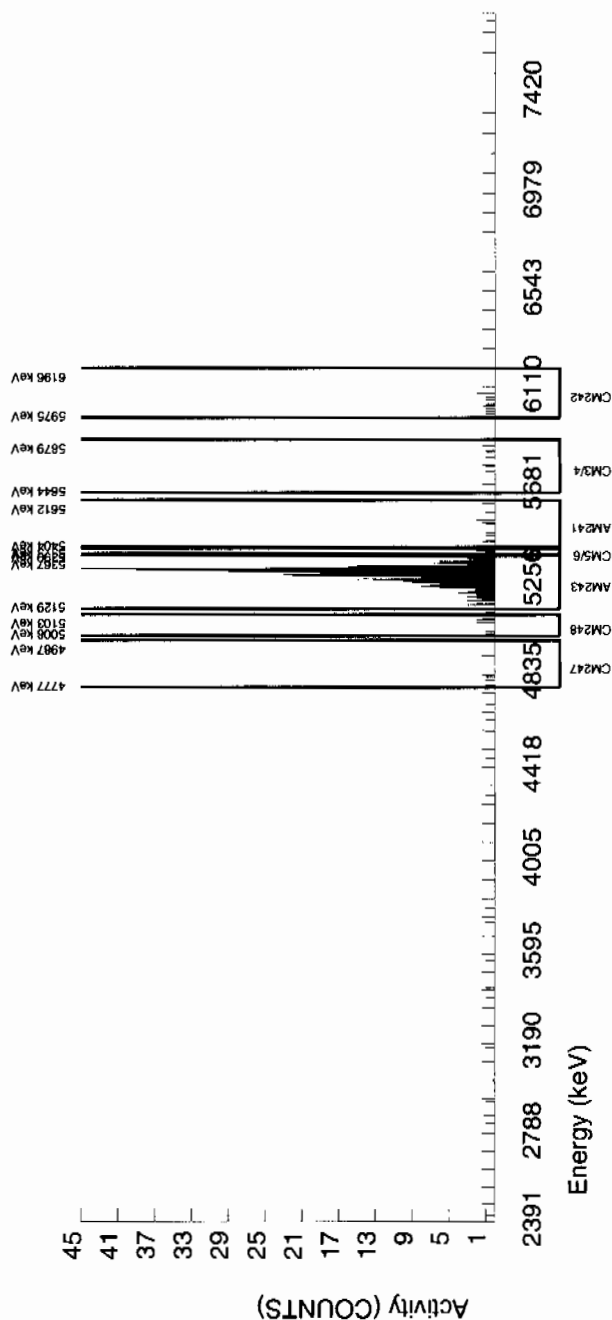
* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of AM243 calculated as $\sqrt{\text{BKG AREA}}$.

* Corrections made to the following net area due to tracer impurity:

AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508 SAMPLE ID : S1202076580_AM SAMPLE QTY : 1.000 G SAMPLE DATE : 22-MAR-2010 00:00:00 ANALYST : JXD2 % YIELD : 96.063	CHAMBER : 232 DETECTOR S/N : 79425 AVERAGE %EFFICIENCY : 38.7095 COUNT DATE : 22-MAR-2010 20:43:57 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B232.CNF;93 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W232.CNF;30 CAL DATE : 28-FEB-2010
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TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.1857E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3148E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3148E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5447.417	0.000	4.000	0.062	2.880	2.7707	99.94000	1.05E-04	3.77E-03	1.01E-02	2.47E-02	3.77E-03
AM243	5270.000	5286.677	43.172	610.000	607.840	2.160	1.4697	99.78000	1.02E+00	7.89E-02	5.35E-03	1.53E-02	4.17E-02
CM-242	6102.000	6026.456	7.482	11.000	11.000	0.000	4.0092	100.0000	1.86E-02	5.74E-03	1.46E-02	3.37E-02	5.61E-03
CM-3/4	5795.020	5767.098	22.447	7.000	7.000	0.000	4.8510	100.0000	1.18E-02	4.52E-03	1.76E-02	3.98E-02	4.45E-03
CM-5/6	5386.000	5381.984	0.000	12.000	11.280	0.720	6.1294	86.09000	2.20E-02	7.06E-03	2.58E-02	5.70E-02	6.91E-03
CM-247	4946.000	4879.845	0.000	4.000	3.280	0.720	6.3427	79.30000	6.96E-03	4.53E-03	2.90E-02	6.38E-02	4.51E-03
CM-248	5078.600	5065.749	73.576	11.000	9.560	1.440	11.0244	91.00000	1.77E-02	6.52E-03	4.40E-02	9.30E-02	6.41E-03

NOTES:

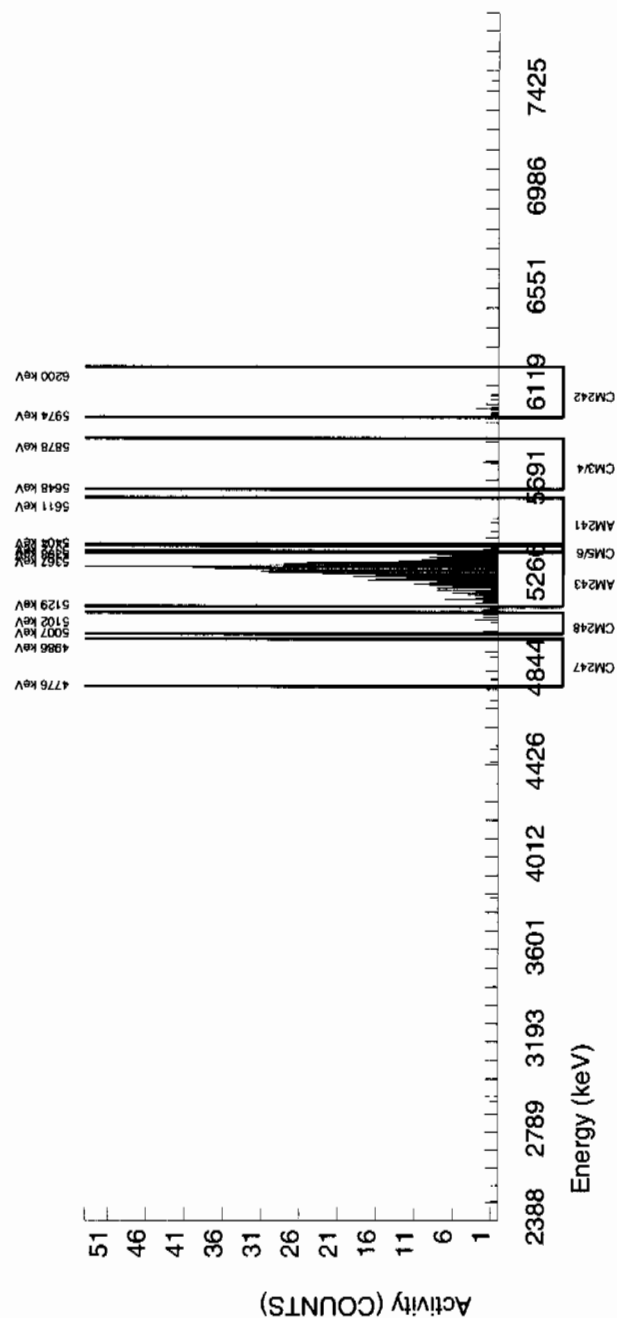
* BKG Sg calculated via blank population.

(Sg updated 8-MAR-2010)

* BKG Sg of AM243 calculated as sqrt(BKG AREA).

* Corrections made to the following net area due to tracer impurity:

AM-241

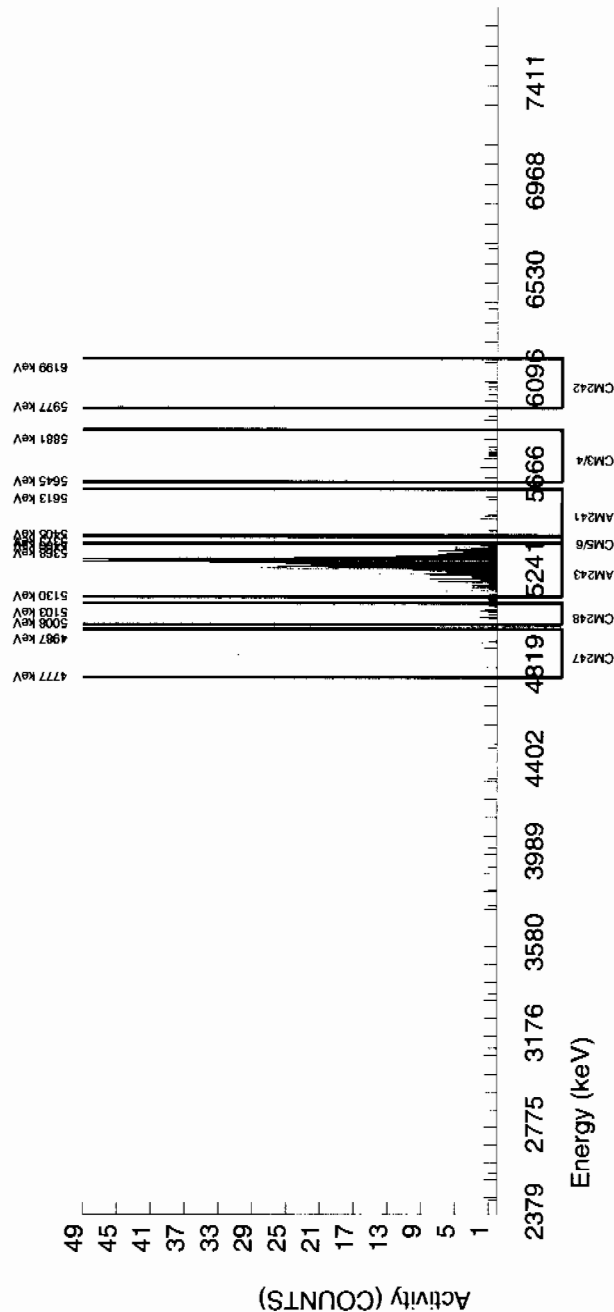


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508 SAMPLE ID : S1202076581_AM SAMPLE QTY : 1.261 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 80.002				CHAMBER : 233 DETECTOR S/N : 79426 AVERAGE %EFFICIENCY : 39.4029 COUNT DATE : 22-MAR-2010 20:44:00 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B233.CNF:92 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W233.CNF:31 CAL DATE : 2-MAR-2010					
TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.8203E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5495.396	39.402	9.000	8.103	0.000	2.7707	99.94000	1.28E-02	4.57E-03	9.41E-03	2.31E-02	4.48E-03
AM243	5270.000	5280.972	49.722	516.000	515.280	0.720	0.8485	99.78000	8.13E-01	6.56E-02	2.89E-03	1.00E-02	3.58E-02
CM-242	6102.000	6071.116	54.178	5.000	4.280	0.720	4.0092	100.0000	7.76E-03	4.29E-03	1.36E-02	3.15E-02	4.26E-03
CM-3/4	5795.020	5746.409	4.925	10.000	8.560	1.440	4.8510	100.0000	1.35E-02	5.33E-03	1.65E-02	3.72E-02	5.25E-03
CM-5/6	5386.000	5376.883	0.000	7.000	6.280	0.720	6.1294	86.09000	1.15E-02	5.07E-03	2.42E-02	5.33E-02	5.01E-03
CM-247	4946.000	4936.362	7.234	3.000	2.280	0.720	6.3427	79.30000	4.53E-03	3.74E-03	2.72E-02	5.97E-02	3.72E-03
CM-248	5078.600	5061.893	34.272	11.000	10.280	0.720	11.0244	91.00000	1.78E-02	5.99E-03	4.11E-02	8.70E-02	5.87E-03

NOTES:

- * BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)
- * BKG Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967508	CHAMBER : 234	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S1202076582_AM	DETECTOR S/N : 79427	BKG FILE : B234.CNF:92
SAMPLE QTY : 0.105 G	AVERAGE %EFFICIENCY : 39.7384	BKG DATE : 21-MAR-2010
SAMPLE DATE : 22-MAR-2010 00:00:00	COUNT DATE : 22-MAR-2010 20:44:03	BKG LIVE TIME(SEC) : 60000.00
ANALYST : JXD2	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W234.CNF:30
% YIELD : 104.992		CAL DATE : 28-FEB-2010

TRACER ID : 445-96-2-VV	MS/MSD ID : 0244-B	LCS/LCSD ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3148E+01 pCi/G	NOMINAL : 3.3148E+01 pCi/G
RESULTS : 2.3889E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5504.510	43.602	2149.000	2147.813	0.000	2.7707	99.94000	3.07E+01	2.27E+00	8.54E-02	2.10E-01	6.62E-01
AM243	5270.000	5280.853	38.340	682.000	682.000	0.000	0.0000	99.78000	9.76E+00	7.86E-01	0.00E+00	3.88E-02	3.74E-01
CM-242	6102.000	6046.034	98.279	6.000	6.000	0.000	4.0092	100.0000	8.61E-02	3.57E-02	1.24E-01	2.86E-01	3.51E-02
CM-3/4	5795.020	5760.528	58.865	10.000	9.280	0.720	4.8510	100.0000	1.33E-01	4.73E-02	1.49E-01	3.38E-01	4.63E-02
CM-5/6	5386.000	5388.954	0.000	58.000	58.000	0.000	6.1294	86.09000	9.62E-01	1.44E-01	2.19E-01	4.84E-01	1.26E-01
CM-247	4946.000	4899.533	100.583	14.000	12.560	1.440	6.3427	79.30000	2.26E-01	7.16E-02	2.46E-01	5.42E-01	6.98E-02
CM-248	5078.600	5067.388	43.407	17.000	17.000	0.000	11.0244	91.00000	2.67E-01	6.74E-02	3.73E-01	7.89E-01	6.47E-02

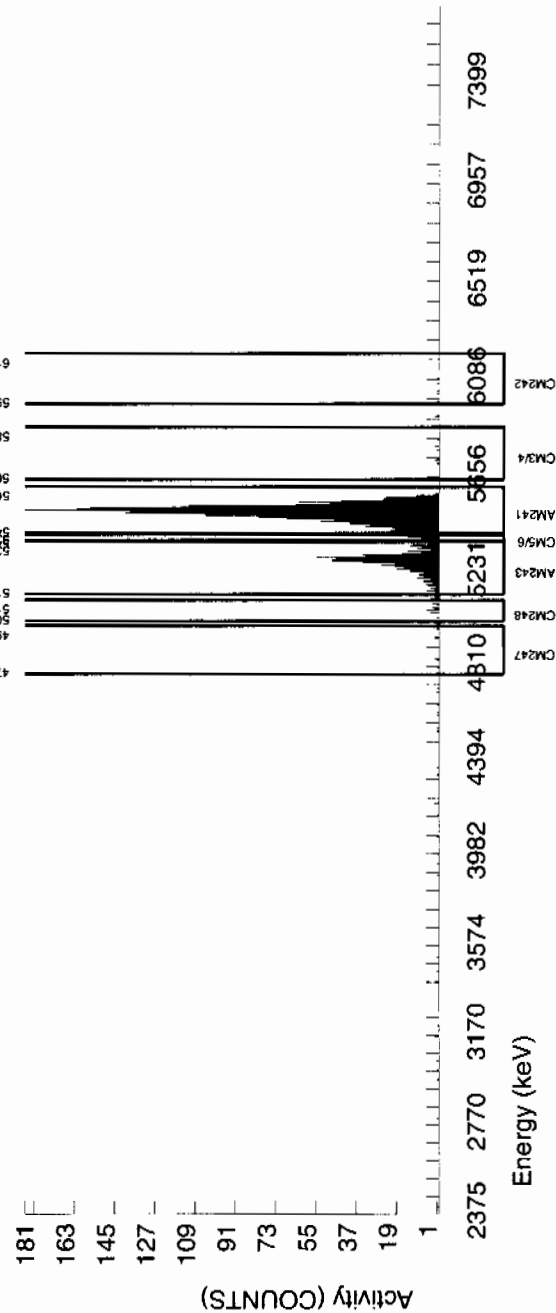
NOTES:

* BKG Sg calculated via blank population.
(Sg updated 8-MAR-2010)

* BKG Sg of AM243 calculated as sqrt(BKG AREA).

* Corrections made to the following net area due to tracer impurity:

AM-241



Radiochemistry Batch Checklist, Rev10

Batch# 957714 Product: YS Date: 3/14/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NA
Samples have been blank corrected (if required)			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
Aliquot Correction completed if required.			NA
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: Heulane 3/14/10

Secondary Review Performed By: for Haulan 3/17/10

LAVL
3/24/10

Gamma Spec Que Sheet

I.G. - 3/5/10

02/25/2010

Batch #: 957714 Analyst: MXR1 First Client Due Date: 03/24/2010 Internal Due Date: 03/13/2010
 Gamma Spike Isotope: Mixed Gamma Spike Code: 012 Vol: 012 Nominal Concentration: 012
 Gamma LCS Isotope: Mixed Gamma LCS Code: 10322-A Expiration Date: 12/2/10 Vol: 1.0 mL Nominal Concentration: 241-15.9 C(37-5.553)
 Initials: RF Prep Date: 2/26/10 Library: Solid Witness: 012 C(40-4.364)

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Allyquot (1/g/F)	Detector	Sealing Date/Time (if Applicable)
247911001-1	RE15-10-8019	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00	CAN	126.00	5	2/26/10
247911002-1	RE15-10-8013	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		131.19	13	
247911003-1	RE15-10-8026	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		128.72	15	
247911004-1	RE15-10-8017	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		140.24	17	
247911005-1	RE15-10-8025	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		125.45	18	
247911006-1	RE15-10-8022	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		116.57	22	
247911007-1	RE15-10-8014	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		131.47	23	
247911008-1	RE15-10-8023	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		116.92	25	
247911009-1	RE15-10-8020	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		135.51	16	
247911010-1	RE15-10-8018	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		134.89	15	
247911011-1	RE15-10-8015	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		121.87	15	
247911012-1	RE15-10-8021	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		124.41	12	
247911013-1	RE15-10-8024	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		126.13	15	
247911014-1	RE15-10-8016	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		133.33	20	
247911015-1	RE15-10-8065	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		127.46	21	
247911016-1	RE15-10-8066	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		107.42	5	
247911017-1	RE15-10-8033	SAMPLE		LANL010	SOIL	18-FEB-10 12:00:00		124.99	19	
1202053647-1	MB	MB		QC ACCOUNT	SOIL	2/26/10		140.24	14	
1202053648-1	DUP RE15-10-8019(247911001)	DUP		QC ACCOUNT	SOIL	18-FEB-10 12:00:00		126.00	17	
1202053649-1	LCS	LCS		QC ACCOUNT	SOIL	2/26/10		155.44	7	

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: Huland 3/14/10

dailies

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
957714	247911001	SAMPLE	06-MAR-10		Cerium-139	-0.01918	0.05912	0.050
					Cesium-134	0.1107	0.1183	0.100
					Sodium-22	-0.03074	0.08845	0.080
957714	247911002	SAMPLE	06-MAR-10		Cerium-139	-0.01681	0.06412	0.050
					Cesium-134	0.04517	0.117	0.100
					Sodium-22	-0.04264	0.09085	0.080
957714	247911003	SAMPLE	06-MAR-10		Americium-241	0.04747	0.5309	0.200
					Cerium-139	0.00383	0.06621	0.050
					Cesium-134	0.09399	0.1122	0.100
					Europium-152	-0.03663	0.2028	0.200
					Thorium-234	-0.07458	4.243	2.00
957714	247911004	SAMPLE	06-MAR-10		Americium-241	0.07256	0.2203	0.200
					Cerium-139	0.03466	0.06339	0.050
					Cesium-134	0.1237	0.1322	0.100
957714	247911005	SAMPLE	06-MAR-10		Americium-241	-0.09325	0.2786	0.200
957714	247911006	SAMPLE	06-MAR-10		Americium-241	-0.0089	0.2484	0.200
					Cerium-139	0.00201	0.0546	0.050
957714	247911007	SAMPLE	06-MAR-10		Americium-241	0.1866	0.3854	0.200
					Cerium-139	-0.02023	0.06101	0.050
					Cesium-134	0.07731	0.1124	0.100
					Sodium-22	0.02345	0.09918	0.080
957714	247911008	SAMPLE	06-MAR-10		Cesium-134	0.09114	0.1069	0.100
					Sodium-22	0.00433	0.08934	0.080
957714	247911009	SAMPLE	06-MAR-10		Americium-241	-0.04327	0.2387	0.200
					Thorium-234	0.5018	2.161	2.00
957714	247911010	SAMPLE	06-MAR-10		Cerium-139	0.05008	0.05524	0.050
957714	247911011	SAMPLE	08-MAR-10		Americium-241	0.1217	0.582	0.200
					Cerium-139	0.00373	0.0762	0.050
					Europium-152	0.0525	0.2283	0.200
					Mercury-203	0.05674	0.1004	0.100
					Sodium-22	0.02893	0.09419	0.080
					Uranium-235	0.4195	0.5269	0.500
957714	247911012	SAMPLE	08-MAR-10		Americium-241	0.07682	0.2426	0.200
					Cerium-139	0.0075	0.05396	0.050
957714	247911013	SAMPLE	08-MAR-10		Americium-241	-0.4941	0.5274	0.200
					Cerium-139	-0.02643	0.06941	0.050
					Cesium-134	0.05339	0.1104	0.100
					Europium-152	0.0459	0.2169	0.200
					Mercury-203	0.07606	0.1046	0.100
					Sodium-22	-0.00971	0.0822	0.080
					Thorium-234	2.863	4.53	2.00
957714	247911014	SAMPLE	08-MAR-10		Americium-241	-0.0615	0.2001	0.200
					Thorium-234	1.093	2.005	2.00
957714	247911015	SAMPLE	08-MAR-10		Cerium-139	0.02066	0.05098	0.050

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
957714	247911015	SAMPLE	08-MAR-10		Cesium-134	0.1291	0.132	0.100
					Sodium-22	-0.00861	0.1071	0.080
957714	247911016	SAMPLE	09-MAR-10		Cerium-139	0.00219	0.06252	0.050
					Cesium-134	0.102	0.114	0.100
					Europium-152	-0.05289	0.2011	0.200
					Sodium-22	0.00834	0.1067	0.080
957714	247911017	SAMPLE	09-MAR-10		Americium-241	0.1619	0.3768	0.200
					Cerium-139	-0.01578	0.06379	0.050
957714	1202053647	MB	09-MAR-10					
957714	1202053648	DUP	09-MAR-10		Cerium-139	0.01372	0.05972	0.050
					Cesium-134	0.04537	0.1112	0.100
					Sodium-22	-0.06827	0.09248	0.080
					Tin-113	0.00073	0.1028	0.100
957714	1202053649	LCS	06-MAR-10		Cerium-139	0.00945	0.07884	0.050
					Cesium-134	0.06567	0.1655	0.100
					Europium-152	0.00519	0.312	0.200
					Mercury-203	0.06131	0.1125	0.100
					Ruthenium-106	-0.2397	0.9588	0.800
					Sodium-22	-0.00693	0.08244	0.080
					Thorium-234	-1.382	2.549	2.00
					Tin-113	0.01548	0.1449	0.100
					Uranium-235	-0.05291	0.5086	0.500

GEL QUALS

Batch ID: 957714

Report run on: March 14, 2010 5:05 PM

Samp Id	Parname	Cofa	Edd	Qual Comments	Auto	Result	MDA	Uncert	SQL
247911001-1 06-MAR-2010 17:22	Bismuth-211	UI	UI	Data rejected due to interference.		4.396			
	Cadmium-109	UI	UI	Data rejected due to interference.		2.466			
	Radium-224	UI	UI	Data rejected due to interference.		4.831			
247911002-1 06-MAR-2010 17:23	Bismuth-211	UI	UI	Data rejected due to interference.		3.927			
	Cadmium-109	UI	UI	Data rejected due to interference.		2.902			
	Radium-224	UI	UI	Data rejected due to interference.		2.337			
247911003-1 06-MAR-2010 17:23	Bismuth-211	UI	UI	Data rejected due to interference.		4.496			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.387			
	Radium-224	UI	UI	Data rejected due to interference.		6.072			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.1214			
247911004-1 06-MAR-2010 17:24	Bismuth-211	UI	UI	Data rejected due to interference.		3.243			
	Cadmium-109	UI	UI	Data rejected due to interference.		2.529			
	Radium-224	UI	UI	Data rejected due to interference.		4.674			
247911005-1 06-MAR-2010 17:24	Bismuth-211	UI	UI	Data rejected due to interference.		3.278			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.738			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.107		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		4.148			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.07062			
247911006-1 06-MAR-2010 17:25	Bismuth-211	UI	UI	Data rejected due to interference.		5.126			

GEL QUALS

Batch ID: 957714

Report run on: March 14, 2010 5:05 PM

Samp Id	Parmname	Cofa	Edd	Qual Comments	Auto	Result	MDA	Uncert	SQL
247911006-1 06-MAR-2010 17:25	Cadmium-109	UI	UI	Data rejected due to interference.		4.398			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1681		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		5.561			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.1606			
247911007-1 06-MAR-2010 17:25	Bismuth-211	UI	UI	Data rejected due to interference.		5.068			
	Cadmium-109	UI	UI	Data rejected due to interference.		5.033			
	Radium-224	UI	UI	Data rejected due to interference.		5.127			
247911008-1 06-MAR-2010 17:26	Bismuth-211	UI	UI	Data rejected due to interference.		4.888			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.121			
	Radium-224	UI	UI	Data rejected due to interference.		5.316			
247911009-1 06-MAR-2010 17:29	Bismuth-211	UI	UI	Data rejected due to interference.		4.973			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.812			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1837		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		5.971			
247911010-1 06-MAR-2010 20:38	Americium-241	UI	UI	Data rejected due to low abundance.		.6501		.2	.2
	Bismuth-211	UI	UI	Data rejected due to interference.		4.577			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.297			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1145		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		5.793			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.1257			

GEL QUALS

Batch ID: 957714

Report run on: March 14, 2010 5:05 PM

Samp Id	Parmname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
247911011-1 08-MAR-2010 12:17	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.473			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.694			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1273		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.695			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1323			
247911012-1 08-MAR-2010 12:18	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.601			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.365			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1232		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.283			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1407			
247911013-1 08-MAR-2010 14:57	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.314			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.915			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1079			
247911014-1 08-MAR-2010 14:58	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.146			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.564			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1427		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		6.064			
247911015-1 08-MAR-2010 14:59	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.401			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.225			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.891			

GEL QUALS

Batch ID: 957714

Report run on: March 14, 2010 5:05 PM

Samp Id	Parmname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
247911016-1 09-MAR-2010 11:47	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.769			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.686			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.013			
247911017-1 09-MAR-2010 11:48	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.605			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.914			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.452			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.08609			
1202053648-1 DUP 09-MAR-2010 11:50	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.285			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.918			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.995			

Gamma Review Report based on Result > MDA for Batch:957714

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
247911001	18-FEB-10 12:00	06-MAR-10 17:22	16.2	SAMPLE	LOAD	I	LANL	LANL01004IGEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>ML</i>	2.166	0.217	pCi/g	0.2935	N	910 3	1.968	IDENTIFIED 7.746	<input type="checkbox"/>	
Annihilation Rad. HE	0.06406	0.03593	pCi/g	0.05918	N	509.9 1	1.584	IDENTIFIED 55.99	<input type="checkbox"/>	
Barium-137m <i>ML</i>	0.3856	0.05301	pCi/g	0.08067	N	660.6 2	1.53	IDENTIFIED 13.35	<input type="checkbox"/>	
Bismuth-211 <i>DT</i>	4.396	0.3058	pCi/g	0.4526	Y	351.4 2	1.349	IDENTIFIED 5.722	<input checked="" type="checkbox"/> <i>UT</i>	
Bismuth-212 <i>✓</i>	3.01	0.6267	pCi/g	1.458	N	0 5 0	FAIL_ABUND 0		<input type="checkbox"/>	
Bismuth-214 <i>✓</i>	1.308	0.1043	pCi/g	0.1535	0.200	608.4 2	1.515	IDENTIFIED 6.764	<input type="checkbox"/>	
Cadmium-109 <i>DT</i>	2.466	0.428	pCi/g	1.208	Y	89.27 1	1.238	IDENTIFIED 16.91	<input checked="" type="checkbox"/> <i>UT</i>	
Cerium-143	2332	341.6	pCi/g	0	N	0 5 0	SHORT_HLIF 0		<input type="checkbox"/>	
Cesium-135 HE	0.3702	0.1298	pCi/g	0.2934	N	269.4 1	1.911	IDENTIFIED 34.65	<input type="checkbox"/>	
Cesium-137 <i>✓</i>	0.4074	0.05601	pCi/g	0.08522	0.100	660.6 2	1.53	IDENTIFIED 13.35	<input type="checkbox"/>	
Gross Gamma	11.59	1.525	pCi/g	4.918	N	0			<input type="checkbox"/>	
Iodine-133 HE	2452	9627	pCi/g	0	N	0 5 0	SHORT_HLIF 0		<input type="checkbox"/>	
Lead-210 <i>ML</i>	2.18	0.5149	pCi/g	1.014	N	45.87 1	1.15	IDENTIFIED 23.3	<input type="checkbox"/>	
Lead-212 <i>✓</i>	1.965	0.125	pCi/g	0.1127	0.100	238.1 2	1.252	IDENTIFIED 3.333	<input type="checkbox"/>	
Lead-214 <i>✓</i>	1.595	0.1194	pCi/g	0.1357	0.100	351.4 2	1.349	IDENTIFIED 5.722	<input type="checkbox"/>	
Neptunium-237 <i>ML</i>	1.184	0.1821	pCi/g	0.3503	N	86.69 2	1.159	IDENTIFIED 10.6	<input type="checkbox"/>	
Niobium-95 HE	0.1539	0.04112	pCi/g	0.08758	N	766.9 1	2.136	IDENTIFIED 26.42	<input type="checkbox"/>	
Niobium-95m <i>ML</i>	1.9	0.15	pCi/g	0.428	N	0 5 0	NOT_IDENTI 0		<input type="checkbox"/>	
Potassium-40 <i>✓</i>	30.74	1.394	pCi/g	0.6654	1.00	1459 1	1.991	IDENTIFIED 3.299	<input type="checkbox"/>	
Radium-224 <i>DT</i>	4.831	0.7906	pCi/g	1.208	Y	241 1	1.846	IDENTIFIED 15.62	<input checked="" type="checkbox"/> <i>UT</i>	
Radium-226 <i>✓</i>	1.308	0.1043	pCi/g	0.1535	Y	608.4 2	1.515	IDENTIFIED 6.764	<input type="checkbox"/>	
Radium-228 <i>✓</i>	2.166	0.217	pCi/g	0.2935	0.500	910 3	1.968	IDENTIFIED 7.746	<input type="checkbox"/>	
Silver-110m HE	0.1617	0.03325	pCi/g	0.1103	N	0 5 0	NOT_IDENTI 0		<input type="checkbox"/>	
Thallium-208 <i>✓</i>	0.6345	0.0577	pCi/g	0.06545	0.080	582.4 1	1.519	IDENTIFIED 8.319	<input type="checkbox"/>	
Thorium-228 <i>ML</i>	1.965	0.125	pCi/g	0.1127	N	238.1 2	1.252	IDENTIFIED 3.333	<input type="checkbox"/>	
Thorium-232 <i>ML</i>	2.166	0.217	pCi/g	0.2935	N	910 3	1.968	IDENTIFIED 7.746	<input type="checkbox"/>	
Thorium-234 <i>✓</i>	7.952	0.9547	pCi/g	1.321	2.00	62.71 2	1.249	IDENTIFIED 7.855	<input type="checkbox"/>	
Tin-126 <i>ML</i>	0.3967	0.04467	pCi/g	0.1177	N	86.69 2	1.159	IDENTIFIED 10.6	<input type="checkbox"/>	
Total Uranium	23.712	2.84E-06	ug/g	1.9678	N	0			<input type="checkbox"/>	
Uranium-238 <i>ML</i>	7.952	0.9547	pCi/g	1.321	N	62.71 2	1.249	IDENTIFIED 7.855	<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
247911002	18-FEB-10 12:00	06-MAR-10 17:23	16.2	SAMPLE	LOAD	I	LANL	LANL01004IGEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>ML</i>	1.751	0.2092	pCi/g	0.3194	N	911 3	2.027	IDENTIFIED 10.47	<input type="checkbox"/>	
Barium-137m <i>ML</i>	0.2276	0.04406	pCi/g	0.08445	N	661.4 2	1.531	IDENTIFIED 18.87	<input type="checkbox"/>	
Bismuth-211 <i>DT</i>	3.927	0.3077	pCi/g	0.4358	Y	351.8 2	1.471	IDENTIFIED 6.221	<input checked="" type="checkbox"/> <i>UT</i>	
Bismuth-212 HE	1.76	0.452	pCi/g	1.475	N	0 6 0	FAIL_ABUND 0		<input type="checkbox"/>	
Bismuth-214 <i>✓</i>	1.407	0.1274	pCi/g	0.1506	0.200	609.2 2	1.408	IDENTIFIED 7.408	<input type="checkbox"/>	
Cadmium-109 <i>DT</i>	2.902	0.5572	pCi/g	1.461	Y	87.21 3	1.106	IDENTIFIED 18.52	<input checked="" type="checkbox"/> <i>UT</i>	
Cerium-141 HE	0.2634	0.07	pCi/g	0.1425	N	143.9 2	1.094	IDENTIFIED 26.02	<input type="checkbox"/>	

Cerium-143		1304	234.3	pCi/g 0	N	0	6	0	SHORT_HLIF 0	□
Cesium-137	✓	0.2404	0.04655	pCi/g 0.08921	0.100	661.4	2	1.531	IDENTIFIED 18.87	□
Gross Gamma		12.05	1.405	pCi/g 4.632	N		0			□
Iodine-135		7.15E+16 0		pCi/g 0	N	0	6	0	SHORT_HLIF 0	□
Lead-210	AL	2.904	0.5282	pCi/g 1.204	N	46.56	1	1.264	IDENTIFIED 17.35	□
Lead-212	✓	1.716	0.1197	pCi/g 0.1528	0.100	238.5	2	1.257	IDENTIFIED 4.689	□
Lead-214	✓	1.425	0.1184	pCi/g 0.1607	0.100	351.8	2	1.471	IDENTIFIED 6.221	□
Neptunium-237	AL	0.845	0.1849	pCi/g 0.4373	N	87.21	3	1.106	IDENTIFIED 18.52	□
Niobium-95	HE	0.232	0.06801	pCi/g 0.09649	N	766	1	3.013	IDENTIFIED 28.99	□
Niobium-95m	HE	0.3153	0.08771	pCi/g 0.2803	N	0	6	0	NOT_IDENTI 0	□
Potassium-40	✓	27.61	1.625	pCi/g 0.7447	1.00	1460	1	2.409	IDENTIFIED 3.826	□
Protactinium-234m	N/AL	38.86	5.612	pCi/g 10.34	N	1001	1	1.231	IDENTIFIED 13.58	□
Radium-224	INT	2.337	0.5137	pCi/g 1.638	Y	241.8	1	1.362	IDENTIFIED 21.48	✓ U
Radium-226	✓	1.407	0.1274	pCi/g 0.1506	Y	609.2	2	1.408	IDENTIFIED 7.408	□
Radium-228	✓	1.751	0.2092	pCi/g 0.3194	0.500	911	3	2.027	IDENTIFIED 10.47	□
Sodium-24	HE	1361	1.93E+06	pCi/g 0	N	0	6	0	SHORT_HLIF 0	□
Technetium-99m		3.37E+17 0		pCi/g 0	N	0	6	0	SHORT_HLIF 0	□
Thallium-208	✓	0.501	0.05686	pCi/g 0.08694	0.080	583.3	1	1.468	IDENTIFIED 10.28	□
Thorium-228	AL	1.716	0.1197	pCi/g 0.1528	N	238.5	2	1.257	IDENTIFIED 4.689	□
Thorium-232	AL	1.751	0.2092	pCi/g 0.3194	N	911	3	2.027	IDENTIFIED 10.47	□
Thorium-234	✓	23.11	2.403	pCi/g 1.504	2.00	63.3	2	1.157	IDENTIFIED 3.903	□
Tin-126	AL	0.2832	0.05437	pCi/g 0.1424	N	87.21	3	1.106	IDENTIFIED 18.52	□
Total Uranium		69.125	7.15E-06	ug/g 2.2406	N		0			□
Uranium-235	✓	0.8204	0.226	pCi/g 0.4293	0.500	143.9	2	1.094	IDENTIFIED 26.02	□
Uranium-238	AL	23.11	2.403	pCi/g 1.504	N	63.3	2	1.157	IDENTIFIED 3.903	□

*** = 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
247911003	18-FEB-10 12:00	06-MAR-10 17:23	16.2	SAMPLE	LOAD	1	LANL	LANL01004	GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err (%)	Qual	Qual Comment
Actinium-228	AL	2.317	0.2332	pCi/g 0.2947	N	911.1	3	1.934	IDENTIFIED 8.037	□	
Annihilation Rad. HE		0.1185	0.04482	pCi/g 0.05597	N	510.8	1	2.101	IDENTIFIED 37.57	□	
Bismuth-211	INT	4.496	0.3501	pCi/g 0.409	Y	352	2	1.392	IDENTIFIED 5.994	✓ U	
Bismuth-212	HE	1.635	0.566	pCi/g 1.447	N	0	7	0	FAIL_ABUND 0	□	
Bismuth-214	✓	1.195	0.1143	pCi/g 0.1434	0.200	609.2	2	1.754	IDENTIFIED 8.168	□	
Cadmium-109	INT	4.387	0.614	pCi/g 1.803	Y	87.35	3	1.38	IDENTIFIED 12.56	✓ U	
Cerium-143		1859	291	pCi/g 0	N	0	7	0	SHORT_HLIF 0	□	
Gross Gamma		9.61	1.407	pCi/g 3.787	N		0			□	
Iodine-133	HE	6114	9619	pCi/g 0	N	0	7	0	SHORT_HLIF 0	□	
Iodine-135		5.47E+16 0		pCi/g 0	N	0	7	0	SHORT_HLIF 0	□	
Lead-212	✓	1.678	0.1231	pCi/g 0.124	0.100	238.7	2	1.27	IDENTIFIED 4.256	□	
Lead-214	✓	1.632	0.1348	pCi/g 0.1487	0.100	352	2	1.392	IDENTIFIED 5.994	□	
Neptunium-237	AL	1.277	0.2234	pCi/g 0.5484	N	87.35	3	1.38	IDENTIFIED 12.56	□	
Niobium-95m	HE	0.4004	0.1021	pCi/g 0.3286	N	0	7	0	NOT_IDENTI 0	□	
Potassium-40	✓	27.63	1.67	pCi/g 0.7374	1.00	1460	1	1.986	IDENTIFIED 3.523	□	
Radium-224	INT	6.072	0.8807	pCi/g 1.328	Y	241.8	1	2.305	IDENTIFIED 13.42	✓ U	
Radium-226	✓	1.195	0.1143	pCi/g 0.1434	Y	609.2	2	1.754	IDENTIFIED 8.168	□	

Radium-228	V	2.317	0.2332	pCi/g	0.2947	0.500	911.1	3	1.934	IDENTIFIED	8.037	<input type="checkbox"/>
Sodium-24	HE	3.10E+05	1.58E+06	pCi/g	0	N	0	7	0	SHORT_HLIF	0	<input type="checkbox"/>
Strontium-85	LA	0.1214	0.02893	pCi/g	0.09582	Y	0	7	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Thallium-208	V	0.5471	0.05638	pCi/g	0.07271	0.080	583.3	1	1.691	IDENTIFIED	9.235	<input type="checkbox"/>
Thorium-228	AL	1.678	0.1231	pCi/g	0.124	N	238.7	2	1.27	IDENTIFIED	4.256	<input type="checkbox"/>
Thorium-232	AL	2.317	0.2332	pCi/g	0.2947	N	911.1	3	1.934	IDENTIFIED	8.037	<input type="checkbox"/>
Tin-126	AL	0.4281	0.05992	pCi/g	0.1773	N	87.35	3	1.38	IDENTIFIED	12.56	<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
247911004	18-FEB-10 12:00	06-MAR-10 17:24	16.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	AL	1.425	0.2331	pCi/g	0.2929	N	910.6	3	1.461	IDENTIFIED	15.28	<input type="checkbox"/>		
Barium-137m	AL	0.5017	0.05323	pCi/g	0.09263	N	661	2	1.243	IDENTIFIED	9.738	<input type="checkbox"/>		
Bismuth-211	INT	3.243	0.2893	pCi/g	0.4225	Y	351.7	2	1.224	IDENTIFIED	7.604	<input checked="" type="checkbox"/> UJ		
Bismuth-212	LA	3.011	0.5781	pCi/g	1.603	N	0	6	0	FAIL_ABUND	0	<input type="checkbox"/>		
Bismuth-214	V	1.181	0.116	pCi/g	0.1653	0.200	608.8	2	1.428	IDENTIFIED	8.38	<input type="checkbox"/>		
Cadmium-109	INT	2.529	0.7009	pCi/g	2.286	Y	87.16	3	1.215	IDENTIFIED	27.28	<input checked="" type="checkbox"/> UJ		
Cerium-141	HE	0.186	0.04675	pCi/g	0.154	N	0	6	0	NOT_IDENTI	0	<input type="checkbox"/>		
Cerium-143		997.9	193.8	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>		
Cesium-137	V	0.53	0.05625	pCi/g	0.09785	0.100	661	2	1.243	IDENTIFIED	9.738	<input type="checkbox"/>		
Europium-155	HE	0.4428	0.1057	pCi/g	0.2378	N	105.2	1	1.833	IDENTIFIED	23.26	<input type="checkbox"/>		
Gadolinium-153	LA	0.9721	0.09644	pCi/g	0.2474	N	0	6	0	FAIL_ABUND	0	<input type="checkbox"/>		
Gross Gamma		19.1	1.761	pCi/g	8.457	N	0					<input type="checkbox"/>		
Iodine-135		7.61E+16	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>		
Lead-210	HE	1.704	0.5248	pCi/g	1.406	N	46.53	1	1.07	IDENTIFIED	30.33	<input type="checkbox"/>		
Lead-212	V	1.526	0.09895	pCi/g	0.1075	0.100	238.5	2	1.091	IDENTIFIED	4.052	<input type="checkbox"/>		
Lead-214	V	1.177	0.1099	pCi/g	0.1537	0.100	351.7	2	1.224	IDENTIFIED	7.604	<input type="checkbox"/>		
Neptunium-237	HE	0.7365	0.2182	pCi/g	0.592	N	87.16	3	1.215	IDENTIFIED	27.28	<input type="checkbox"/>		
Niobium-95	AL	0.4276	0.06296	pCi/g	0.09069	N	765.8	1	1.451	IDENTIFIED	14.06	<input type="checkbox"/>		
Potassium-40	V	25.88	1.532	pCi/g	0.4312	1.00	1459	1	2.055	IDENTIFIED	3.917	<input type="checkbox"/>		
Protactinium-234m	AL	115.9	9.157	pCi/g	9.344	N	1000	1	1.441	IDENTIFIED	6.102	<input type="checkbox"/>		
Radium-224	INT	4.674	0.7861	pCi/g	1.152	Y	241.4	1	1.822	IDENTIFIED	16.2	<input checked="" type="checkbox"/> UJ		
Radium-226	V	1.181	0.116	pCi/g	0.1653	Y	608.8	2	1.428	IDENTIFIED	8.38	<input type="checkbox"/>		
Radium-228	V	1.425	0.2331	pCi/g	0.2929	0.500	910.6	3	1.461	IDENTIFIED	15.28	<input type="checkbox"/>		
Sodium-24	HE	1.12E+06	1.40E+06	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>		
Thallium-208	V	0.4239	0.05607	pCi/g	0.08077	0.080	582.6	1	1.421	IDENTIFIED	12.35	<input type="checkbox"/>		
Thorium-228	AL	1.526	0.09895	pCi/g	0.1075	N	238.5	2	1.091	IDENTIFIED	4.052	<input type="checkbox"/>		
Thorium-232	AL	1.425	0.2331	pCi/g	0.2929	N	910.6	3	1.461	IDENTIFIED	15.28	<input type="checkbox"/>		
Thorium-234	V	79.6	7.719	pCi/g	1.966	2.00	63.29	2	0.9743	IDENTIFIED	1.882	<input type="checkbox"/>		
Tin-126	HE	0.2468	0.0684	pCi/g	0.2225	N	87.16	3	1.215	IDENTIFIED	27.28	<input type="checkbox"/>		
Total Uranium		237.45	2.30E-05	ug/g	2.9272	N	0					<input type="checkbox"/>		
Uranium-235	V	1.407	0.2443	pCi/g	0.4349	0.500	143.8	1	0.9532	IDENTIFIED	14.91	<input type="checkbox"/>		
Uranium-238	AL	79.6	7.719	pCi/g	1.966	N	63.29	2	0.9743	IDENTIFIED	1.882	<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
247911005	18-FEB-10 12:00	06-MAR-10 17:24	16.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228 <i>AL</i>	1.528	0.1649	pCi/g	0.1764	N	910.7 3	1.482	IDENTIFIED	8.396				
Annihilation Rad.	0.1202	0.03055	pCi/g	0.03739	N	510.5 1	1.786	IDENTIFIED	25.19				
Bismuth-211 <i>INT</i>	3.278	0.2224	pCi/g	0.2688	Y	351.8 2	1.301	IDENTIFIED	5.979			✓ U±	
Bismuth-212 HE	1.467	0.3266	pCi/g	0.9153	N	0 8 0		FAIL_ABUND	0				
Bismuth-214 <i>V</i>	1.017	0.08099	pCi/g	0.09404	0.200	609.2 2	1.452	IDENTIFIED	6.574				
Cadmium-109 <i>INT</i>	3.738	0.5112	pCi/g	1.104	Y	87.37 3	1.186	IDENTIFIED	12.88			✓ U±	
Cerium-143	1377	191.2	pCi/g	0	N	0 8 0		SHORT_HLIF	0				
Cesium-134 <i>LA</i>	0.107	0.03111	pCi/g	0.07364	0.100	0 8 0		FAIL_ABUND	0			☒ UI	Data rejected due to low abundance.
Europium-155 HE	0.1909	0.04935	pCi/g	0.1766	N	0 8 0		FAIL_ABUND	0				
Gross Gamma	8.4	1.141	pCi/g	2.222	N	0							
Iodine-133 HE	3922	5817	pCi/g	0	N	0 8 0		SHORT_HLIF	0				
Lead-212 <i>V</i>	1.482	0.07139	pCi/g	0.07414	0.100	238.7 2	1.169	IDENTIFIED	3.197				
Lead-214 <i>V</i>	1.19	0.08715	pCi/g	0.09775	0.100	351.8 2	1.301	IDENTIFIED	5.979				
Neptunium-237 <i>AL</i>	1.089	0.1876	pCi/g	0.3288	N	87.37 3	1.186	IDENTIFIED	12.88				
Niobium-95 HE	0.09859	0.02055	pCi/g	0.06952	N	0 8 0		NOT_IDENTI	0				
Potassium-40 <i>V</i>	26.61	1.228	pCi/g	0.5139	1.00	1460 1	2.209	IDENTIFIED	2.623				
Radium-224 <i>INT</i>	4.148	0.5259	pCi/g	0.7936	Y	241.6 1	1.721	IDENTIFIED	12.37			✓ U±	
Radium-226 <i>V</i>	1.017	0.08099	pCi/g	0.09404	Y	609.2 2	1.452	IDENTIFIED	6.574				
Radium-228 <i>V</i>	1.528	0.1649	pCi/g	0.1764	0.500	910.7 3	1.482	IDENTIFIED	8.396				
Strontium-85 <i>LA</i>	0.07062	0.01751	pCi/g	0.05786	Y	0 8 0		NOT_IDENTI	0			☒ UI	Data rejected due to low abundance.
Technetium-99m	1.31E+170		pCi/g	0	N	0 8 0		SHORT_HLIF	0				
Thallium-208 <i>V</i>	0.3795	0.03687	pCi/g	0.04958	0.080	583 1	1.618	IDENTIFIED	8.893				
Thorium-228 <i>AL</i>	1.482	0.07139	pCi/g	0.07414	N	238.7 2	1.169	IDENTIFIED	3.197				
Thorium-232 <i>AL</i>	1.528	0.1649	pCi/g	0.1764	N	910.7 3	1.482	IDENTIFIED	8.396				
Thorium-234 <i>V</i>	2.912	1.271	pCi/g	2.323	2.00	63.45 2	0.7889	IDENTIFIED	42.7				
Tin-126 <i>AL</i>	0.3648	0.04988	pCi/g	0.1084	N	87.37 3	1.186	IDENTIFIED	12.88				
Total Uranium	8.687	3.78E-06	ug/g	3.4579	N	0							
Uranium-238 HE	2.912	1.271	pCi/g	2.323	N	63.45 2	0.7889	IDENTIFIED	42.7				

*** = 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
247911006	18-FEB-10 12:00	06-MAR-10 17:25	16.2	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228 <i>AL</i>	2.618	0.2471	pCi/g	0.2253	N	911.3 3	2.064	IDENTIFIED	6.573				
Annihilation Rad.	0.1734	0.03629	pCi/g	0.04722	N	510.7 1	1.849	IDENTIFIED	20.32				
Bismuth-211 <i>INT</i>	5.126	0.3785	pCi/g	0.3358	Y	351.9 2	1.336	IDENTIFIED	4.55			✓ U±	
Bismuth-212 <i>V</i>	2.344	0.4245	pCi/g	0.8783	N	727 1	1.474	IDENTIFIED	16.69				
Bismuth-214 <i>V</i>	1.564	0.1245	pCi/g	0.1095	0.200	609.3 2	1.573	IDENTIFIED	5.414				
Cadmium-109 <i>INT</i>	4.398	0.601	pCi/g	1.285	Y	87.21 3	1.348	IDENTIFIED	12.83			✓ U±	
Cerium-143	1969	285.3	pCi/g	0	N	0 8 0		SHORT_HLIF	0				
Cesium-134 <i>LA</i>	0.1681	0.03452	pCi/g	0.09151	0.100	0 8 0		FAIL_ABUND	0			☒ UI	Data rejected due to low abundance.
Cesium-135 HE	0.323	0.1011	pCi/g	0.3045	N	0 8 0		NOT_IDENTI	0				
Gross Gamma	12.65	1.453	pCi/g	3.038	N	0							
Iodine-133 HE	2964	7286	pCi/g	0	N	0 8 0		SHORT_HLIF	0				
Lead-212 <i>V</i>	2.251	0.1606	pCi/g	0.1015	0.100	238.7 2	1.219	IDENTIFIED	2.648				
Lead-214 <i>V</i>	1.86	0.1466	pCi/g	0.1221	0.100	351.9 2	1.336	IDENTIFIED	4.55				
Neptunium-237 <i>AL</i>	1.281	0.2206	pCi/g	0.4259	N	87.21 3	1.348	IDENTIFIED	12.83				

Niobium-95m	HE	0.3435	0.07842	pCi/g	0.2404	N	0	8	0	NOT_IDENTI	0	<input type="checkbox"/>
Potassium-40	✓	39.59	2.013	pCi/g	0.5311	1.00	1461	1	2.709	IDENTIFIED	2.21	<input type="checkbox"/>
Protactinium-234m	HE	10.1	3.687	pCi/g	8.386	N	0	8	0	FAIL_ABUND	0	<input type="checkbox"/>
Radium-224	INT	5.561	0.8	pCi/g	1.086	Y	241.6	1	1.878	IDENTIFIED	12.95	U ±
Radium-226	✓	1.564	0.1245	pCi/g	0.1095	Y	609.3	2	1.573	IDENTIFIED	5.414	<input type="checkbox"/>
Radium-228	✓	2.618	0.2471	pCi/g	0.2253	0.500	911.3	3	2.064	IDENTIFIED	6.573	<input type="checkbox"/>
Sodium-24	HE	2.02E+05	1.34E+06	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>
Strontium-85	LA	0.1606	0.02464	pCi/g	0.07953	Y	0	8	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Thallium-208	✓	0.7733	0.05761	pCi/g	0.05942	0.080	583.2	1	1.708	IDENTIFIED	5.114	<input type="checkbox"/>
Thorium-228	M	2.251	0.1606	pCi/g	0.1015	N	238.7	2	1.219	IDENTIFIED	2.648	<input type="checkbox"/>
Thorium-232	M	2.618	0.2471	pCi/g	0.2253	N	911.3	3	2.064	IDENTIFIED	6.573	<input type="checkbox"/>
Thorium-234	✓	3.259	1.031	pCi/g	2.092	2.00	63.4	2	1.475	IDENTIFIED	30.36	<input type="checkbox"/>
Tin-126	M	0.4292	0.05865	pCi/g	0.1259	N	87.21	3	1.348	IDENTIFIED	12.83	<input type="checkbox"/>
Total Uranium		9.654	3.07E-06	ug/g	3.1146	N		0				<input type="checkbox"/>
Uranium-238	HE	3.259	1.031	pCi/g	2.092	N	63.4	2	1.475	IDENTIFIED	30.36	<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	
247911007	18-FEB-10 12:00	06-MAR-10 17:25	16.2	SAMPLE	LOAD	1	LANL	LANL01004.GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	2.265	0.214	pCi/g	0.3127	N	910	3	2.091	IDENTIFIED	7.344	
Annihilation Rad.	0.1546	0.04094	pCi/g	0.05828	N	510	1	1.931	IDENTIFIED	26.32	
Bismuth-211	5.068	0.3185	pCi/g	0.3699	Y	351.4	2	1.242	IDENTIFIED	5.374	U ±
Bismuth-212	2.447	0.5391	pCi/g	1.426	N	0	4	0	FAIL_ABUND	0	
Bismuth-214	1.343	0.1155	pCi/g	0.1343	0.200	608.6	2	1.669	IDENTIFIED	7.72	
Cadmium-109	5.033	0.6127	pCi/g	1.515	Y	87.11	3	1.191	IDENTIFIED	11.17	U ±
Cerium-143	2589	337.9	pCi/g	0	N	0	4	0	SHORT_HLIF	0	
Cesium-135	0.3954	0.1128	pCi/g	0.3569	N	0	4	0	NOT_IDENTI	0	
Gross Gamma	10.97	1.483	pCi/g	3.455	N		0				
Lead-212	2.211	0.1042	pCi/g	0.1118	0.100	238.3	2	1.137	IDENTIFIED	3.007	
Lead-214	1.839	0.1262	pCi/g	0.1345	0.100	351.4	2	1.242	IDENTIFIED	5.374	
Neptunium-237	1.465	0.2354	pCi/g	0.4507	N	87.11	3	1.191	IDENTIFIED	11.17	
Niobium-95m	1.049	0.1084	pCi/g	0.362	N	0	4	0	NOT_IDENTI	0	
Potassium-40	30.47	1.5	pCi/g	0.7073	1.00	1459	1	2.285	IDENTIFIED	3.2	
Radium-224	5.127	0.7256	pCi/g	1.198	Y	241.3	1	1.703	IDENTIFIED	13.87	U ±
Radium-226	1.343	0.1155	pCi/g	0.1343	Y	608.6	2	1.669	IDENTIFIED	7.72	
Radium-228	2.265	0.214	pCi/g	0.3127	0.500	910	3	2.091	IDENTIFIED	7.344	
Thallium-208	0.7042	0.05493	pCi/g	0.07005	0.080	582.4	1	1.409	IDENTIFIED	7.096	
Thorium-228	2.211	0.1042	pCi/g	0.1118	N	238.3	2	1.137	IDENTIFIED	3.007	
Thorium-232	2.265	0.214	pCi/g	0.3127	N	910	3	2.091	IDENTIFIED	7.344	
Thorium-234	3.699	1.562	pCi/g	3.263	2.00	62.85	2	1.227	IDENTIFIED	41.21	
Tin-126	0.4911	0.05979	pCi/g	0.1488	N	87.11	3	1.191	IDENTIFIED	11.17	
Total Uranium	11.066	4.65E-06	ug/g	4.858	N		0				
Uranium-238	3.699	1.562	pCi/g	3.263	N	62.85	2	1.227	IDENTIFIED	41.21	

*** = 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
247911008	18-FEB-10 12:00	06-MAR-10 17:26	16.2	SAMPLE	LOAD	1	LANL	LANL01004 GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>ML</i>	1.833	0.2184	pCi/g	0.2429	N	910.9 3	1.3	IDENTIFIED	10.23	□	
Annihilation Rad. HE	0.12	0.04052	pCi/g	0.04781	N	510.7 1	1.332	IDENTIFIED	33.38	□	
Barium-137m HE	0.08404	0.03426	pCi/g	0.07585	N	661.8 2	1.394	IDENTIFIED	40.39	□	
Bismuth-211 <i>INT</i>	4.688	0.3385	pCi/g	0.3477	Y	351.9 2	1.144	IDENTIFIED	4.946	✓ <i>UI</i>	
Bismuth-212 <i>LA</i>	3.804	0.5567	pCi/g	1.51	N	0 3 0	FAIL_ABUND	0	0	□	
Bismuth-214 ✓	1.37	0.1276	pCi/g	0.1192	0.200	609.2 2	1.396	IDENTIFIED	7.077	□	
Cadmium-109 <i>INT</i>	4.121	0.4286	pCi/g	0.8564	Y	87.17 3	1.003	IDENTIFIED	8.917	✓ <i>UI</i>	
Cerium-143	970.8	173.5	pCi/g	0	N	0 3 0	SHORT_HLIF	0	0	□	
Cesium-137 ✓	0.08878	0.03619	pCi/g	0.08013	0.100	661.8 2	1.394	IDENTIFIED	40.39	□	
Europium-155 HE	0.212	0.06716	pCi/g	0.1332	N	104.8 1	1.182	IDENTIFIED	31.12	□	
Gross Gamma	11.32	1.391	pCi/g	3.76	N	0				□	
Iodine-135	9.19E+16 0		pCi/g	0	N	0 3 0	SHORT_HLIF	0	0	□	
Lead-210 HE	1.305	0.332	pCi/g	0.6615	N	46.48 1	0.8979	IDENTIFIED	24.92	□	
Lead-212 ✓	2.083	0.1337	pCi/g	0.08378	0.100	238.6 2	0.9798	IDENTIFIED	2.923	□	
Lead-214 ✓	1.701	0.1315	pCi/g	0.1304	0.100	351.9 2	1.144	IDENTIFIED	4.946	□	
Neptunium-237 <i>ML</i>	1.2	0.1772	pCi/g	0.2528	N	87.17 3	1.003	IDENTIFIED	8.917	□	
Potassium-40 ✓	33.08	1.717	pCi/g	0.5083	1.00	1460 1	1.999	IDENTIFIED	2.97	□	
Radium-224 <i>INT</i>	5.316	0.7532	pCi/g	0.8991	Y	241.5 1	1.797	IDENTIFIED	13.15	✓ <i>UI</i>	
Radium-226 ✓	1.37	0.1276	pCi/g	0.1192	Y	609.2 2	1.396	IDENTIFIED	7.077	□	
Radium-228 ✓	1.833	0.2184	pCi/g	0.2429	0.500	910.9 3	1.3	IDENTIFIED	10.23	□	
Thallium-208 ✓	0.673	0.06394	pCi/g	0.06846	0.080	583.1 1	1.351	IDENTIFIED	7.652	□	
Thorium-228 <i>ML</i>	2.083	0.1337	pCi/g	0.08378	N	238.6 2	0.9798	IDENTIFIED	2.923	□	
Thorium-232 <i>ML</i>	1.833	0.2184	pCi/g	0.2429	N	910.9 3	1.3	IDENTIFIED	10.23	□	
Thorium-234 ✓	2.442	0.543	pCi/g	0.8598	2.00	63.22 2	0.8577	IDENTIFIED	20.11	□	
Tin-126 <i>ML</i>	0.4022	0.04182	pCi/g	0.08341	N	87.17 3	1.003	IDENTIFIED	8.917	□	
Total Uranium	7.3216	1.62E-06 ug/g		1.2817	N	0				□	
Uranium-238 <i>ML</i>	2.442	0.543	pCi/g	0.8598	N	63.22 2	0.8577	IDENTIFIED	20.11	□	

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue
247911009	18-FEB-10 12:00	06-MAR-10 17:29	16.2	SAMPLE	LOAD	I	LANL	LANL01004	GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>ML</i>	2.086	0.2016	pCi/g	0.2083	N	911.1 3	1.524	IDENTIFIED	7.494	□	
Annihilation Rad.	0.1369	0.03871	pCi/g	0.04696	N	510.9 1	2.006	IDENTIFIED	27.88	□	
Bismuth-211 <i>INT</i>	4.973	0.3587	pCi/g	0.3189	Y	351.8 2	1.049	IDENTIFIED	4.716	✓ <i>UI</i>	
Bismuth-212 <i>LA</i>	2.565	0.424	pCi/g	1.22	N	0 5 0	FAIL_ABUND	0	0	□	
Bismuth-214 ✓	1.539	0.1129	pCi/g	0.131	0.200	609.1 2	1.256	IDENTIFIED	5.061	□	
Cadmium-109 <i>INT</i>	4.812	0.5761	pCi/g	1.004	Y	87.2 3	1.295	IDENTIFIED	10.98	✓ <i>UI</i>	
Cerium-143	1088	190.9	pCi/g	0	N	0 5 0	SHORT_HLIF	0	0	□	
Cesium-134 <i>LA</i>	0.1837	0.03902	pCi/g	0.09756	0.100	0 5 0	FAIL_ABUND	0	0	□	Data rejected due to low abundance.
Gross Gamma	11.86	1.319	pCi/g	3.346	N	0				□	
Iodine-133 HE	603.5	6732	pCi/g	0	N	0 5 0	SHORT_HLIF	0	0	□	
Lead-212 ✓	2.219	0.1447	pCi/g	0.09079	0.100	238.5 2	0.9566	IDENTIFIED	2.691	□	
Lead-214 ✓	1.805	0.1394	pCi/g	0.116	0.100	351.8 2	1.049	IDENTIFIED	4.716	□	
Neptunium-237 <i>ML</i>	1.401	0.223	pCi/g	0.297	N	87.2 3	1.295	IDENTIFIED	10.98	□	
Potassium-40 ✓	35.42	1.799	pCi/g	0.5698	1.00	1461 1	1.931	IDENTIFIED	2.544	□	
Radium-224 <i>INT</i>	5.971	0.5561	pCi/g	0.9731	Y	241.5 1	1.584	IDENTIFIED	7.503	✓ <i>UI</i>	

Radium-226	V	1.539	0.1129	pCi/g 0.131	Y	609.1	2	1.256	IDENTIFIED	5.061	<input type="checkbox"/>
Radium-228	V	2.086	0.2016	pCi/g 0.2083	0.500	911.1	3	1.524	IDENTIFIED	7.494	<input type="checkbox"/>
Sodium-24	HE	1.11E+06	1.17E+06	pCi/g 0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208	V	0.6693	0.04959	pCi/g 0.06102	0.080	583.1	1	1.428	IDENTIFIED	5.511	<input type="checkbox"/>
Thorium-228	M	2.219	0.1447	pCi/g 0.09079	N	238.5	2	0.9566	IDENTIFIED	2.691	<input type="checkbox"/>
Thorium-232	M	2.086	0.2016	pCi/g 0.2083	N	911.1	3	1.524	IDENTIFIED	7.494	<input type="checkbox"/>
Tin-126	M	0.4696	0.05622	pCi/g 0.0984	N	87.2	3	1.295	IDENTIFIED	10.98	<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
247911010	18-FEB-10 12:00	06-MAR-10 20:38	16.4	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	V	2.282	0.1867	pCi/g 0.1862	N	911	3	1.868	IDENTIFIED	5.5	<input type="checkbox"/>
Americium-241	U	0.6501	0.1795	pCi/g 0.5663	0.200	0	10	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Annihilation Rad.		0.1297	0.02975	pCi/g 0.04528	N	511	1	1.605	IDENTIFIED	22.53	<input type="checkbox"/>
Bismuth-211	INT	4.577	0.297	pCi/g 0.3382	Y	352	2	1.541	IDENTIFIED	4.172	<input checked="" type="checkbox"/> UI
Bismuth-212	V	2.026	0.3487	pCi/g 1.032	N	0	10	0	FAIL_ABUND	0	<input type="checkbox"/>
Bismuth-214	V	1.447	0.1007	pCi/g 0.1083	0.200	609.3	2	1.676	IDENTIFIED	4.855	<input type="checkbox"/>
Cadmium-109	INT	3.297	0.5332	pCi/g 1.591	Y	87.29	3	1.187	IDENTIFIED	14.95	<input checked="" type="checkbox"/> UI
Cerium-141	LA	0.2919	0.04509	pCi/g 0.1377	N	0	10	0	NOT_IDENTI	0	<input type="checkbox"/>
Cerium-143	-	1720	255.6	pCi/g 0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>
Cesium-134	LA	0.1145	0.03227	pCi/g 0.08256	0.100	0	10	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Gadolinium-153		0.8687	0.09864	pCi/g 0.2235	N	0	10	0	FAIL_ABUND	0	<input type="checkbox"/>
Gross Gamma		18.09	1.847	pCi/g 6.397	N	0					<input type="checkbox"/>
Iodine-133	HE	5320	7989	pCi/g 0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>
Iodine-135		7.01E+15	0	pCi/g 0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212	V	2.019	0.1318	pCi/g 0.0922	0.100	238.7	2	1.378	IDENTIFIED	2.63	<input type="checkbox"/>
Lead-214	V	1.661	0.1171	pCi/g 0.1162	0.100	352	2	1.541	IDENTIFIED	4.172	<input type="checkbox"/>
Neptunium-237	HE	0.9599	0.185	pCi/g 0.6117	N	87.29	3	1.187	IDENTIFIED	14.95	<input type="checkbox"/>
Niobium-95	M	0.3111	0.0402	pCi/g 0.06112	N	766.7	1	1.598	IDENTIFIED	12.16	<input type="checkbox"/>
Niobium-95m	LA	0.6095	0.08243	pCi/g 0.2527	N	0	10	0	NOT_IDENTI	0	<input type="checkbox"/>
Potassium-40	V	28.24	1.538	pCi/g 0.4714	1.00	1460	1	2.171	IDENTIFIED	2.353	<input type="checkbox"/>
Protactinium-234m	M	83.85	6.282	pCi/g 6.182	N	1001	1	1.846	IDENTIFIED	5.408	<input type="checkbox"/>
Radium-224	INT	5.793	0.7266	pCi/g 0.9877	Y	241.7	1	2.062	IDENTIFIED	11.27	<input checked="" type="checkbox"/> UI
Radium-226	V	1.447	0.1007	pCi/g 0.1083	Y	609.3	2	1.676	IDENTIFIED	4.855	<input type="checkbox"/>
Radium-228	V	2.282	0.1867	pCi/g 0.1862	0.500	911	3	1.868	IDENTIFIED	5.5	<input type="checkbox"/>
Strontium-85	Lot	0.1257	0.02058	pCi/g 0.06733	Y	0	10	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Thallium-208	V	0.5897	0.04419	pCi/g 0.05654	0.080	583.2	1	1.691	IDENTIFIED	5.936	<input type="checkbox"/>
Thorium-228	M	2.019	0.1318	pCi/g 0.0922	N	238.7	2	1.378	IDENTIFIED	2.63	<input type="checkbox"/>
Thorium-232	M	2.282	0.1867	pCi/g 0.1862	N	911	3	1.868	IDENTIFIED	5.5	<input type="checkbox"/>
Thorium-234	V	64.03	6.801	pCi/g 4.069	2.00	63.24	2	1.218	IDENTIFIED	3.813	<input type="checkbox"/>
Tin-126	M	0.3217	0.05202	pCi/g 0.2123	N	87.29	3	1.187	IDENTIFIED	14.95	<input type="checkbox"/>
Total Uranium		190.91	2.02E-05	ug/g 6.0567	N	0					<input type="checkbox"/>
Uranium-235	V	0.9283	0.1604	pCi/g 0.3683	0.500	143.9	1	1.365	IDENTIFIED	14.82	<input type="checkbox"/>
Uranium-238	M	64.03	6.801	pCi/g 4.069	N	63.24	2	1.218	IDENTIFIED	3.813	<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
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247911011	18-FEB-10 12:00	08-MAR-10 12:17	18	SAMPLE	LOAD	1	LANL	LANL01004.GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 ML	1.923	0.1973	pCi/g	0.2799	N	911.2	3	1.635 IDENTIFIED 8.281	<input type="checkbox"/>	
Annihilation Rad.	0.1696	0.04849	pCi/g	0.06574	N	511	1	1.954 IDENTIFIED 28.25	<input type="checkbox"/>	
Barium-137m ML	0.2635	0.04766	pCi/g	0.07665	N	661.6	2	1.342 IDENTIFIED 17.61	<input type="checkbox"/>	
Bismuth-211 INT	3.473	0.3249	pCi/g	0.4682	Y	352	2	1.433 IDENTIFIED 7.926	<input checked="" type="checkbox"/>	U
Bismuth-212 HE	1.816	0.6177	pCi/g	1.408	N	0	8	0 FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214 V	1.373	0.1202	pCi/g	0.1483	0.200	609.4	2	1.597 IDENTIFIED 7.197	<input type="checkbox"/>	
Cadmium-109 INT	5.694	0.9953	pCi/g	1.929	Y	87.26	3	1.627 IDENTIFIED 16.35	<input checked="" type="checkbox"/>	U
Cerium-143	3879	683.2	pCi/g	0	N	0	8	0 SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-134 LA	0.1273	0.03094	pCi/g	0.1167	0.100	0	8	0 NOT_IDENTI 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-137 V	0.2784	0.05035	pCi/g	0.08097	0.100	661.6	2	1.342 IDENTIFIED 17.61	<input type="checkbox"/>	
Gross Gamma	11.07	1.258	pCi/g	3.792	N	0			<input type="checkbox"/>	
Lead-212 V	1.814	0.1326	pCi/g	0.135	0.100	238.8	2	1.382 IDENTIFIED 4.214	<input type="checkbox"/>	
Lead-214 V	1.26	0.1229	pCi/g	0.1653	0.100	352	2	1.433 IDENTIFIED 7.926	<input type="checkbox"/>	
Neptunium-237 ML	1.654	0.337	pCi/g	0.5753	N	87.26	3	1.627 IDENTIFIED 16.35	<input type="checkbox"/>	
Niobium-95 HE	0.1465	0.03278	pCi/g	0.1219	N	0	8	0 NOT_IDENTI 0	<input type="checkbox"/>	
Niobium-95m HE	0.5659	0.1125	pCi/g	0.3616	N	0	8	0 NOT_IDENTI 0	<input type="checkbox"/>	
Potassium-40 V	29.31	1.772	pCi/g	0.6489	1.00	1461	1	1.968 IDENTIFIED 3.522	<input type="checkbox"/>	
Protactinium-234m HE	23.81	4.7	pCi/g	15.36	N	0	8	0 FAIL_ABUND 0	<input type="checkbox"/>	
Radium-224 INT	4.695	0.8785	pCi/g	1.446	Y	241.6	1	1.846 IDENTIFIED 17.88	<input checked="" type="checkbox"/>	UI
Radium-226 V	1.373	0.1202	pCi/g	0.1483	Y	609.4	2	1.597 IDENTIFIED 7.197	<input type="checkbox"/>	
Radium-228 V	1.923	0.1973	pCi/g	0.2799	0.500	911.2	3	1.635 IDENTIFIED 8.281	<input type="checkbox"/>	
Sodium-24 HE	1.28E+07	1.03E+07	pCi/g	0	N	0	8	0 SHORT_HLIF 0	<input type="checkbox"/>	
Strontium-85 LA	0.1323	0.03179	pCi/g	0.1043	Y	0	8	0 NOT_IDENTI 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208 V	0.5489	0.05677	pCi/g	0.07556	0.080	583.4	1	1.439 IDENTIFIED 9.276	<input type="checkbox"/>	
Thorium-228 ML	1.814	0.1326	pCi/g	0.135	N	238.8	2	1.382 IDENTIFIED 4.214	<input type="checkbox"/>	
Thorium-232 ML	1.923	0.1973	pCi/g	0.2799	N	911.2	3	1.635 IDENTIFIED 8.281	<input type="checkbox"/>	
Thorium-234 V	15.24	2.355	pCi/g	4.436	2.00	63.37	2	1.279 IDENTIFIED 11.86	<input type="checkbox"/>	
Tin-126 ML	0.5542	0.09687	pCi/g	0.1892	N	87.26	3	1.627 IDENTIFIED 16.35	<input type="checkbox"/>	
Total Uranium	45.526	7.01E-06	ug/g	6.604	N	0			<input type="checkbox"/>	
Uranium-238 ML	15.24	2.355	pCi/g	4.436	N	63.37	2	1.279 IDENTIFIED 11.86	<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
247911012	18-FEB-10 12:00	08-MAR-10 12:18	18	SAMPLE	LOAD	1	LANL	LANL01004.GEL	N		RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>ML</i>	2.086	0.21	pCi/g	0.2181	N	911.4 3	1.973	IDENTIFIED	7.45	<input type="checkbox"/>	
Annihilation Rad.	0.1829	0.02927	pCi/g	0.04465	N	510.7 1	1.884	IDENTIFIED	15.2	<input type="checkbox"/>	
Barium-137m <i>ML</i>	0.3072	0.0413	pCi/g	0.05662	N	661.4 2	1.575	IDENTIFIED	12.37	<input type="checkbox"/>	
Bismuth-211 <i>INT</i>	4.601	0.3451	pCi/g	0.3289	Y	351.9 2	1.392	IDENTIFIED	4.737	<input checked="" type="checkbox"/>	<i>U</i> <i>±</i>
Bismuth-212 <i>LA</i>	2.135	0.4523	pCi/g	1.077	N	0 9 0		FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214 <i>✓</i>	1.449	0.115	pCi/g	0.1066	0.200	609.3 2	1.588	IDENTIFIED	5.377	<input type="checkbox"/>	
Cadmium-109 <i>INT</i>	4.365	0.5838	pCi/g	1.229	Y	87.06 3	1.399	IDENTIFIED	12.52	<input checked="" type="checkbox"/>	<i>U</i> <i>±</i>
Cerium-143	4199	640.8	pCi/g	0	N	0 9 0		SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134 <i>LA</i>	0.1232	0.03328	pCi/g	0.08029	0.100	0 9 0		FAIL_ABUND	0	<input checked="" type="checkbox"/>	<i>UI</i> Data rejected due to low abundance.
Cesium-135 <i>HE</i>	0.3731	0.09893	pCi/g	0.3007	N	0 9 0		NOT_IDENTI	0	<input type="checkbox"/>	
Cesium-137 <i>✓</i>	0.3245	0.04364	pCi/g	0.05982	0.100	661.4 2	1.575	IDENTIFIED	12.37	<input type="checkbox"/>	

Thorium-232 *MM* 2.164 0.2251 pCi/g 0.2827 N 911.1 3 1.89 IDENTIFIED 8.455 ☐
 Total Uranium 8.5458 3.84E-06 ug/g 6.7428 N 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
247911014	18-FEB-10 12:00	08-MAR-10 14:58	18.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>MM</i>	2.339	0.2286	pCi/g	0.2402	N	911.3	3	1.538	IDENTIFIED	7.484	<input type="checkbox"/>	
Annihilation Rad.	0.1643	0.03727	pCi/g	0.05038	N	510.5	1	1.705	IDENTIFIED	22.2	<input type="checkbox"/>	
Bismuth-211 <i>INT</i>	5.146	0.3478	pCi/g	0.3205	Y	352	2	1.312	IDENTIFIED	4.776	<input checked="" type="checkbox"/>	<i>UI</i>
Bismuth-212 <i>HE</i>	2.06	0.4581	pCi/g	1.252	N	0	6	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214 <i>✓</i>	1.551	0.1205	pCi/g	0.1145	0.200	609.4	2	1.367	IDENTIFIED	5.398	<input type="checkbox"/>	
Cadmium-109 <i>INT</i>	4.564	0.6349	pCi/g	1.164	Y	87.3	3	1.598	IDENTIFIED	13.1	<input checked="" type="checkbox"/>	<i>UI</i>
Cerium-143	2748	495.7	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134 <i>LA</i>	0.1427	0.03205	pCi/g	0.09213	0.100	0	6	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	<i>UI</i> Data rejected due to low abundance.
Gross Gamma	12.22	1.35	pCi/g	4.178	N	0					<input type="checkbox"/>	
Iodine-133 <i>HE</i>	27850	33970	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>	
Iodine-135	1.12E+16	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212 <i>✓</i>	2.384	0.1417	pCi/g	0.09422	0.100	238.6	2	1.162	IDENTIFIED	2.61	<input type="checkbox"/>	
Lead-214 <i>✓</i>	1.868	0.1363	pCi/g	0.1166	0.100	352	2	1.312	IDENTIFIED	4.776	<input type="checkbox"/>	
Neptunium-237 <i>MM</i>	1.325	0.2308	pCi/g	0.3416	N	87.3	3	1.598	IDENTIFIED	13.1	<input type="checkbox"/>	
Potassium-40 <i>✓</i>	36.58	1.846	pCi/g	0.3802	1.00	1461	1	1.955	IDENTIFIED	2.54	<input type="checkbox"/>	
Radium-224 <i>INT</i>	6.064	0.7471	pCi/g	1.009	Y	241.5	1	1.793	IDENTIFIED	11.33	<input checked="" type="checkbox"/>	<i>UI</i>
Radium-226 <i>✓</i>	1.551	0.1205	pCi/g	0.1145	Y	609.4	2	1.367	IDENTIFIED	5.398	<input type="checkbox"/>	
Radium-228 <i>✓</i>	2.339	0.2286	pCi/g	0.2402	0.500	911.3	3	1.538	IDENTIFIED	7.484	<input type="checkbox"/>	
Sodium-24 <i>HE</i>	5.11E+06	9.18E+06	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208 <i>✓</i>	0.6815	0.05462	pCi/g	0.06494	0.080	583.3	1	1.444	IDENTIFIED	6.152	<input type="checkbox"/>	
Thorium-228 <i>MM</i>	2.384	0.1417	pCi/g	0.09422	N	238.6	2	1.162	IDENTIFIED	2.61	<input type="checkbox"/>	
Thorium-232 <i>MM</i>	2.339	0.2286	pCi/g	0.2402	N	911.3	3	1.538	IDENTIFIED	7.484	<input type="checkbox"/>	
Tin-126 <i>MM</i>	0.4441	0.06178	pCi/g	0.1136	N	87.3	3	1.598	IDENTIFIED	13.1	<input type="checkbox"/>	
Total Uranium	3.2643	1.67E-06	ug/g	2.9853	N	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
247911015	18-FEB-10 12:00	08-MAR-10 14:59	18.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>MM</i>	2.783	0.2769	pCi/g	0.2825	N	910.5	3	1.442	IDENTIFIED	8.052	<input type="checkbox"/>	
Annihilation Rad.	0.1904	0.04295	pCi/g	0.05943	N	510.5	1	1.512	IDENTIFIED	22.04	<input type="checkbox"/>	
Bismuth-211 <i>INT</i>	5.401	0.3602	pCi/g	0.3587	Y	351.6	2	0.8227	IDENTIFIED	4.913	<input checked="" type="checkbox"/>	<i>UI</i>
Bismuth-212 <i>LA</i>	3.674	0.6386	pCi/g	1.791	N	0	5	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214 <i>✓</i>	1.752	0.1516	pCi/g	0.15	0.200	608.8	2	1.334	IDENTIFIED	6.306	<input type="checkbox"/>	
Cadmium-109 <i>INT</i>	5.225	0.4431	pCi/g	0.8483	Y	87.15	3	0.9003	IDENTIFIED	7.078	<input checked="" type="checkbox"/>	<i>UI</i>
Cadmium-115 <i>HE</i>	15.75	16.65	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cerium-143	3392	557.6	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	
Europium-155 <i>HE</i>	0.1796	0.07335	pCi/g	0.1389	N	105.3	1	1.02	IDENTIFIED	40.52	<input type="checkbox"/>	
Gross Gamma	12.44	1.482	pCi/g	4.739	N	0					<input type="checkbox"/>	
Iodine-135	1.68E+19	0	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-210 <i>HE</i>	1.372	0.3523	pCi/g	0.6795	N	46.41	1	0.6266	IDENTIFIED	25.24	<input type="checkbox"/>	

Lead-212	✓	2.57	0.146	pCi/g	0.09767	0.100	238.4	2	0.8349	IDENTIFIED	2.71	□
Lead-214	✓	1.96	0.1415	pCi/g	0.1306	0.100	351.6	2	0.8227	IDENTIFIED	4.913	□
Neptunium-237	MM	1.517	0.2046	pCi/g	0.2472	N	87.15	3	0.9003	IDENTIFIED	7.078	□
Potassium-40	✓	33.54	1.826	pCi/g	0.6854	1.00	1460	1	2.087	IDENTIFIED	3.381	□
Radium-224	INT	5.891	0.6668	pCi/g	1.05	Y	241.3	1	1.562	IDENTIFIED	10.41	✓ U±
Radium-226	✓	1.752	0.1516	pCi/g	0.15	Y	608.8	2	1.334	IDENTIFIED	6.306	□
Radium-228	✓	2.783	0.2769	pCi/g	0.2825	0.500	910.5	3	1.442	IDENTIFIED	8.052	□
Technetium-99m		7.62E+19	0	pCi/g	0	N	0	5	0	SHORT_HLIF	0	□
Thallium-208	✓	0.7915	0.06896	pCi/g	0.07334	0.080	582.8	1	1.484	IDENTIFIED	6.806	□
Thorium-228	MM	2.57	0.146	pCi/g	0.09767	N	238.4	2	0.8349	IDENTIFIED	2.71	□
Thorium-232	MM	2.783	0.2769	pCi/g	0.2825	N	910.5	3	1.442	IDENTIFIED	8.052	□
Thorium-234	✓	2.771	0.4714	pCi/g	0.9112	2.00	63.27	2	0.9675	IDENTIFIED	14.42	□
Tin-126	MM	0.5084	0.04312	pCi/g	0.08317	N	87.15	3	0.9003	IDENTIFIED	7.078	□
Total Uranium		8.2836	1.40E-06	ug/g	1.3583	N	0					□
Uranium-238	MM	2.771	0.4714	pCi/g	0.9112	N	63.27	2	0.9675	IDENTIFIED	14.42	□

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
247911016	18-FEB-10 12:00	09-MAR-10 11:47	19	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	MM	2.259	0.2691	pCi/g 0.2852	N	910.5	3	2.06	IDENTIFIED	10.08	☐
Annihilation Rad. HE		0.1476	0.04692	pCi/g 0.06187	N	510.2	1	2.366	IDENTIFIED	31.62	☐
Bismuth-211	INT	3.769	0.2992	pCi/g 0.4116	Y	351.4	2	1.535	IDENTIFIED	6.88	☑ U±
Bismuth-212	HE	2.333	0.5635	pCi/g 1.555	N	0	8	0	FAIL_ABUND	0	☐
Bismuth-214	✓	1.291	0.1208	pCi/g 0.1565	0.200	608.7	2	1.526	IDENTIFIED	8.356	☐
Cadmium-109	INT	2.686	0.4797	pCi/g 1.183	Y	89.22	1	1.287	IDENTIFIED	17.42	☑ U±
Cadmium-115	HE	21.04	24.72	pCi/g 0	N	0	8	0	SHORT_HLIF	0	☐
Cerium-143		10780	1540	pCi/g 0	N	0	8	0	SHORT_HLIF	0	☐
Cesium-135	HE	0.4555	0.1671	pCi/g 0.3086	N	269.6	1	1.975	IDENTIFIED	36.29	☐
Gadolinium-153	HE	0.1656	0.04989	pCi/g 0.1554	N	0	8	0	NOT_IDENTI	0	☐
Gross Gamma		9.649	1.531	pCi/g 4.429	N		0				☐
Iodine-135		6.77E+18	0	pCi/g 0	N	0	8	0	SHORT_HLIF	0	☐
Lead-210	HE	1.71	0.5769	pCi/g 0.9794	N	45.84	1	1.195	IDENTIFIED	33.52	☐
Lead-212	✓	1.744	0.1159	pCi/g 0.1097	0.100	238	2	1.172	IDENTIFIED	3.852	☐
Lead-214	✓	1.368	0.115	pCi/g 0.1445	0.100	351.4	2	1.535	IDENTIFIED	6.88	☐
Neptunium-237	MM	1.216	0.1871	pCi/g 0.3415	N	86.49	2	1.195	IDENTIFIED	10.6	☐
Niobium-95m	LA	1.856	0.1555	pCi/g 0.4559	N	0	8	0	NOT_IDENTI	0	☐
Potassium-40	✓	29.11	1.44	pCi/g 0.8424	1.00	1460	1	2.042	IDENTIFIED	3.849	☐
Promethium-149	HE	127.5	198	pCi/g 0	N	0	8	0	SHORT_HLIF	0	☐
Radium-224	INT	4.013	0.8188	pCi/g 1.176	Y	240.9	1	1.899	IDENTIFIED	19.81	☑ U±
Radium-226	✓	1.291	0.1208	pCi/g 0.1565	Y	608.7	2	1.526	IDENTIFIED	8.356	☐
Radium-228	✓	2.259	0.2691	pCi/g 0.2852	0.500	910.5	3	2.06	IDENTIFIED	10.08	☐
Sodium-24	HE	4.47E+07	3.90E+07	pCi/g 0	N	0	8	0	SHORT_HLIF	0	☐
Thallium-208	✓	0.5639	0.0513	pCi/g 0.07403	0.080	582.4	1	1.608	IDENTIFIED	8.325	☐
Thorium-228	MM	1.744	0.1159	pCi/g 0.1097	N	238	2	1.172	IDENTIFIED	3.852	☐
Thorium-232	MM	2.259	0.2691	pCi/g 0.2852	N	910.5	3	2.06	IDENTIFIED	10.08	☐
Thorium-234	✓	2.118	0.6248	pCi/g 1.323	2.00	62.88	2	1.084	IDENTIFIED	28.06	☐

Tin-126 *ML* 0.4074 0.04592 pCi/g 0.1148 N 86.49 2 1.195 IDENTIFIED 10.6 ☐
 Total Uranium 6.3557 1.86E-06 ug/g 1.9714 N 0 ☐
 Uranium-238 HE 2.118 0.6248 pCi/g 1.323 N 62.88 2 1.084 IDENTIFIED 28.06 ☐

*** = 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
247911017	18-FEB-10 12:00	09-MAR-10 11:48	19	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>ML</i>	1.903	0.2023	pCi/g	0.2246	N	911.4 3	1.532	IDENTIFIED 8.893	<input type="checkbox"/>	
Annihilation Rad.	0.1904	0.03351	pCi/g	0.05111	N	510.8 1	1.849	IDENTIFIED 17.36	<input type="checkbox"/>	
Barium-137m <i>ML</i>	0.596	0.04249	pCi/g	0.06849	N	661.7 2	1.707	IDENTIFIED 6.506	<input type="checkbox"/>	
Bismuth-211 <i>INT</i>	4.605	0.2829	pCi/g	0.3967	Y	351.8 2	1.497	IDENTIFIED 5.248	<input checked="" type="checkbox"/> <i>UI</i>	
Bismuth-212 HE	2.143	0.4585	pCi/g	1.303	N	0 11 0		FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214 <i>V</i>	1.355	0.1173	pCi/g	0.1247	0.200	609.2 2	1.537	IDENTIFIED 7.701	<input type="checkbox"/>	
Cadmium-109 <i>INT</i>	4.914	0.9137	pCi/g	1.878	Y	87.29 3	1.799	IDENTIFIED 18.05	<input checked="" type="checkbox"/> <i>UI</i>	
Cadmium-115 HE	18.6	21.1	pCi/g	0	N	0 11 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cerium-141 HE	0.1787	0.05153	pCi/g	0.1617	N	0 11 0		NOT_IDENTI 0	<input type="checkbox"/>	
Cerium-143	8772	1210	pCi/g	0	N	0 11 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-135 HE	0.476	0.1064	pCi/g	0.3546	N	0 11 0		NOT_IDENTI 0	<input type="checkbox"/>	
Cesium-137 <i>V</i>	0.6297	0.04491	pCi/g	0.07236	0.100	661.7 2	1.707	IDENTIFIED 6.506	<input type="checkbox"/>	
Gadolinium-153 HE	0.3186	0.08603	pCi/g	0.2112	N	0 11 0		FAIL_ABUND 0	<input type="checkbox"/>	
Gross Gamma	13.54	1.827	pCi/g	5.83	N	0			<input type="checkbox"/>	
Iodine-133 HE	14470	74210	pCi/g	0	N	0 11 0		SHORT_HLIF 0	<input type="checkbox"/>	
Lead-212 <i>V</i>	1.908	0.09356	pCi/g	0.1115	0.100	238.5 2	1.338	IDENTIFIED 3.284	<input type="checkbox"/>	
Lead-214 <i>V</i>	1.671	0.1125	pCi/g	0.1432	0.100	351.8 2	1.497	IDENTIFIED 5.248	<input type="checkbox"/>	
Neptunium-237 <i>ML</i>	1.425	0.3042	pCi/g	0.5529	N	87.29 3	1.799	IDENTIFIED 18.05	<input type="checkbox"/>	
Niobium-95 HE	0.1451	0.03119	pCi/g	0.1146	N	0 11 0		NOT_IDENTI 0	<input type="checkbox"/>	
Niobium-95m HE	0.3859	0.09875	pCi/g	0.3076	N	0 11 0		NOT_IDENTI 0	<input type="checkbox"/>	
Potassium-40 <i>V</i>	31.58	1.487	pCi/g	0.5677	1.00	1461 1	1.875	IDENTIFIED 2.88	<input type="checkbox"/>	
Promethium-149 HE	127.1	175.3	pCi/g	0	N	0 11 0		SHORT_HLIF 0	<input type="checkbox"/>	
Protactinium-234m <i>V ML</i>	31.15	5.163	pCi/g	8.145	N	1001 1	1.907	IDENTIFIED 15.91	<input type="checkbox"/>	
Radium-224 <i>INT</i>	5.452	0.5834	pCi/g	1.194	Y	241.5 1	1.951	IDENTIFIED 10.32	<input checked="" type="checkbox"/> <i>UI</i>	
Radium-226 <i>V</i>	1.355	0.1173	pCi/g	0.1247	Y	609.2 2	1.537	IDENTIFIED 7.701	<input type="checkbox"/>	
Radium-228 <i>V</i>	1.903	0.2023	pCi/g	0.2246	0.500	911.4 3	1.532	IDENTIFIED 8.893	<input type="checkbox"/>	
Strontium-85 <i>LA</i>	0.08609	0.02418	pCi/g	0.0805	Y	0 11 0		NOT_IDENTI 0	<input checked="" type="checkbox"/> <i>UI</i>	Data rejected due to low abundance.
Thallium-208 <i>V</i>	0.5706	0.05028	pCi/g	0.0615	0.080	583.1 1	1.657	IDENTIFIED 8.132	<input type="checkbox"/>	
Thorium-228 <i>ML</i>	1.908	0.09356	pCi/g	0.1115	N	238.5 2	1.338	IDENTIFIED 3.284	<input type="checkbox"/>	
Thorium-232 <i>ML</i>	1.903	0.2023	pCi/g	0.2246	N	911.4 3	1.532	IDENTIFIED 8.893	<input type="checkbox"/>	
Thorium-234 <i>V</i>	24.68	2.798	pCi/g	3.111	2.00	63.18 2	1.325	IDENTIFIED 6.97	<input type="checkbox"/>	
Tin-126 <i>ML</i>	0.4776	0.0888	pCi/g	0.1833	N	87.29 3	1.799	IDENTIFIED 18.05	<input type="checkbox"/>	
Total Uranium	73.624	8.32E-06 ug/g		4.6319	N	0			<input type="checkbox"/>	
Uranium-235	0.432	0.1774	pCi/g	0.4188	0.500	143.8 1	1.138	IDENTIFIED 40.31	<input type="checkbox"/>	
Uranium-238 <i>ML</i>	24.68	2.798	pCi/g	3.111	N	63.18 2	1.325	IDENTIFIED 6.97	<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
1202053647		09-MAR-10 11:49	0	MB	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Cerium-143 HE	1.504	4.412	pCi/g	0	N	0	3	0	SHORT_HLIF	0		☐	
Iodine-133 HE	49.3	80.04	pCi/g	0	N	0	3	0	SHORT_HLIF	0		☐	
Iodine-135 HE	1.19E+11	1.53E+11	pCi/g	0	N	0	3	0	SHORT_HLIF	0		☐	

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202053648	18-FEB-10 12:00	09-MAR-10 11:50	19	DUP	LOAD	1		LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228 μ	1.874	0.2276	pCi/g	0.3539	N	910.3	3	1.478	IDENTIFIED	10.65		☐	
Annihilation Rad.	0.1985	0.04453	pCi/g	0.05241	N	510.4	1	2.082	IDENTIFIED	21.99		☐	
Barium-137m μ	0.3599	0.05029	pCi/g	0.1021	N	661	2	1.027	IDENTIFIED	13.32		☐	
Bismuth-211 μ	4.285	0.3723	pCi/g	0.4083	Y	351.6	2	1.279	IDENTIFIED	7.332		☐	☐
Bismuth-212 HE	1.924	0.4603	pCi/g	1.55	N	0	6	0	FAIL_ABUND	0		☐	
Bismuth-214 \checkmark	1.48	0.1264	pCi/g	0.1491	0.200	608.8	2	1.205	IDENTIFIED	6.842		☐	
Cadmium-109 μ	2.918	0.4385	pCi/g	1.139	Y	87.2	3	0.8328	IDENTIFIED	14.22		☐	☐
Cadmium-115 HE	39.82	23.03	pCi/g	0	N	0	6	0	SHORT_HLIF	0		☐	
Cerium-141 HE	0.154	0.069	pCi/g	0.1191	N	143.9	2	1.152	IDENTIFIED	44.51		☐	
Cerium-143	3864	809.6	pCi/g	0	N	0	6	0	SHORT_HLIF	0		☐	
Cesium-137 \checkmark	0.3802	0.05313	pCi/g	0.1079	0.100	661	2	1.027	IDENTIFIED	13.32		☐	
Gross Gamma	11.3	1.54	pCi/g	4.839	N	0						☐	
Iodine-135	6.77E+19	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0		☐	
Lead-210 μ	2.986	0.5557	pCi/g	0.9315	N	46.25	1	1.021	IDENTIFIED	17.81		☐	
Lead-212 \checkmark	1.898	0.1167	pCi/g	0.1069	0.100	238.4	2	1.055	IDENTIFIED	3.495		☐	
Lead-214 \checkmark	1.555	0.1418	pCi/g	0.1486	0.100	351.6	2	1.279	IDENTIFIED	7.332		☐	
Neptunium-237 μ	0.8461	0.155	pCi/g	0.3838	N	87.2	3	0.8328	IDENTIFIED	14.22		☐	
Potassium-40 \checkmark	31.44	1.793	pCi/g	0.6757	1.00	1459	1	1.608	IDENTIFIED	3.582		☐	
Promethium-149 HE	23.61	169.8	pCi/g	0	N	0	6	0	SHORT_HLIF	0		☐	
Radium-224 μ	4.995	0.6426	pCi/g	1.146	Y	241.4	1	1.503	IDENTIFIED	12.04		☐	☐
Radium-226 \checkmark	1.48	0.1264	pCi/g	0.1491	Y	608.8	2	1.205	IDENTIFIED	6.842		☐	
Radium-228 \checkmark	1.874	0.2276	pCi/g	0.3539	0.500	910.3	3	1.478	IDENTIFIED	10.65		☐	
Sodium-24 HE	1.41E+07	3.88E+07	pCi/g	0	N	0	6	0	SHORT_HLIF	0		☐	
Thallium-208 \checkmark	0.5985	0.05903	pCi/g	0.07245	0.080	582.6	1	1.51	IDENTIFIED	8.658		☐	
Thorium-228 μ	1.898	0.1167	pCi/g	0.1069	N	238.4	2	1.055	IDENTIFIED	3.495		☐	
Thorium-232 μ	1.874	0.2276	pCi/g	0.3539	N	910.3	3	1.478	IDENTIFIED	10.65		☐	
Thorium-234 \checkmark	6.988	0.946	pCi/g	1.27	2.00	63.19	2	0.9469	IDENTIFIED	9.629		☐	
Tin-126 μ	0.2836	0.04262	pCi/g	0.1106	N	87.2	3	0.8328	IDENTIFIED	14.22		☐	
Total Uranium	20.999	2.82E-06	ug/g	1.8917	N	0						☐	
Uranium-235 \checkmark	0.4522	0.2052	pCi/g	0.3613	0.500	143.9	2	1.152	IDENTIFIED	44.51		☐	
Uranium-238 μ	6.988	0.946	pCi/g	1.27	N	63.19	2	0.9469	IDENTIFIED	9.629		☐	

*** = 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
1202053649		06-MAR-10 18:11	0	LCS	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228 HE	0.9421	0.2707	pCi/g	0.5261	N	911.7	3	1.947	IDENTIFIED	28.1		☐	
Americium-241	13.56	0.6069	pCi/g	0.4269	0.200	59.56	1	0.9886	IDENTIFIED	2.081		☐	
Barium-137m	5.707	0.2869	pCi/g	0.1134	N	661.8	2	1.557	IDENTIFIED	2.384		☐	
Bismuth-211	1.894	0.3121	pCi/g	0.6348	Y	352.2	2	1.273	IDENTIFIED	15.85		☐	

Bismuth-214		0.6391	0.1207	pCi/g 0.3286	0.200	0	7	0	FAIL_ABUND 0	<input type="checkbox"/>
Cadmium-109		31.49	1.781	pCi/g 1.813	Y	88.07	2	1.135	IDENTIFIED 3.135	<input type="checkbox"/>
Cesium-137		6.029	0.3035	pCi/g 0.1198	0.100	661.8	2	1.557	IDENTIFIED 2.384	<input type="checkbox"/>
Cobalt-57		0.2099	0.03047	pCi/g 0.06313	N	122	1	0.9689	IDENTIFIED 13.86	<input type="checkbox"/>
Cobalt-60		6.538	0.3145	pCi/g 0.09869	0.100	1333	1	2.114	IDENTIFIED 2.522	<input type="checkbox"/>
Gross Gamma		26.8	2.072	pCi/g 3.293	N		0			<input type="checkbox"/>
Iodine-133	HE	10.56	31.57	pCi/g 0	N	0	7	0	SHORT_HLIF 0	<input type="checkbox"/>
Iodine-135	HE	3.49E+08	3.67E+08	pCi/g 0	N	0	7	0	SHORT_HLIF 0	<input type="checkbox"/>
Lead-212		0.806	0.127	pCi/g 0.1793	0.100	238.6	2	1.195	IDENTIFIED 15.01	<input type="checkbox"/>
Lead-214		0.6875	0.1148	pCi/g 0.2275	0.100	352.2	2	1.273	IDENTIFIED 15.85	<input type="checkbox"/>
Neptunium-237		4.098	0.5328	pCi/g 0.9998	N	0	7	0	NOT_IDENTI 0	<input type="checkbox"/>
Potassium-40		0.8764	0.3159	pCi/g 0.4317	1.00	1461	1	3.248	IDENTIFIED 35.79	<input type="checkbox"/>
Radium-224		4.453	0.7262	pCi/g 2.517	Y	0	7	0	NOT_IDENTI 0	<input type="checkbox"/>
Radium-226		0.6391	0.1207	pCi/g 0.3286	Y	0	7	0	FAIL_ABUND 0	<input type="checkbox"/>
Radium-228		0.9421	0.2707	pCi/g 0.5261	0.500	911.7	3	1.947	IDENTIFIED 28.1	<input type="checkbox"/>
Sodium-24	HE	131.3	363.1	pCi/g 0	N	0	7	0	SHORT_HLIF 0	<input type="checkbox"/>
Thallium-208		0.3639	0.05096	pCi/g 0.106	0.080	583.5	1	1.463	IDENTIFIED 13.17	<input type="checkbox"/>
Thorium-228		0.806	0.127	pCi/g 0.1793	N	238.6	2	1.195	IDENTIFIED 15.01	<input type="checkbox"/>
Thorium-232	HE	0.9421	0.2707	pCi/g 0.5261	N	911.7	3	1.947	IDENTIFIED 28.1	<input type="checkbox"/>
Tin-126		3.108	0.1758	pCi/g 0.1794	N	88.07	2	1.135	IDENTIFIED 3.135	<input type="checkbox"/>

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

Result Greater Than DL

Batch Id	Sample Id	Sample Type	Run Date	Paramname	Result	Uncertainty	Units	DL	RDL
957714	247911016	SAMPLE	09-MAR-10	Radium-224	4.013	0.8188	pCi/g	0.5883	Y
				Radium-226	1.291	0.1208	pCi/g	0.07828	Y
				Radium-228	2.259	0.2691	pCi/g	0.1427	0.500
				Sodium-24	4.47E+07	3.90E+07	pCi/g	0	N
				Strontium-85	0.04948	0.02881	pCi/g	0.04399	Y
				Thallium-208	0.5639	0.0513	pCi/g	0.03704	0.080
				Thorium-234	2.118	0.6248	pCi/g	0.6618	2.00
957714	247911017	SAMPLE	09-MAR-10	Bismuth-211	4.605	0.2829	pCi/g	0.1984	Y
				Bismuth-214	1.355	0.1173	pCi/g	0.06239	0.200
				Cadmium-109	4.914	0.9137	pCi/g	0.9396	Y
				Cadmium-115	18.6	21.1	pCi/g	0	N
				Cerium-143	8772	1210	pCi/g	0	N
				Cesium-134	0.06629	0.03165	pCi/g	0.04906	0.100
				Cesium-137	0.6297	0.04491	pCi/g	0.0362	0.100
				Gross Gamma	13.54	1.827	pCi/g	2.858	N
				Iodine-133	14470	74210	pCi/g	0	N
				Lead-212	1.908	0.09356	pCi/g	0.05578	0.100
				Lead-214	1.671	0.1125	pCi/g	0.07162	0.100
				Potassium-40	31.58	1.487	pCi/g	0.284	1.00
				Promethium-149	127.1	175.3	pCi/g	0	N
				Protactinium-234m	31.15	5.163	pCi/g	4.075	N
				Radium-224	5.452	0.5834	pCi/g	0.5975	Y
				Radium-226	1.355	0.1173	pCi/g	0.06239	Y
				Radium-228	1.903	0.2023	pCi/g	0.1124	0.500
				Strontium-85	0.08609	0.02418	pCi/g	0.04028	Y
				Thallium-208	0.5706	0.05028	pCi/g	0.03077	0.080
				Thorium-234	24.68	2.798	pCi/g	1.557	2.00
				Uranium-235	0.432	0.1774	pCi/g	0.2095	0.500
				Uranium-238	24.68	2.798	pCi/g	1.557	N
957714	1202053647	MB	09-MAR-10	Europium-152	0.05783	0.02272	pCi/g	0.04358	0.200
				Iodine-133	49.3	80.04	pCi/g	0	N
				Iodine-135	1.19E+11	1.53E+11	pCi/g	0	N
				Potassium-40	0.1495	0.0997	pCi/g	0.1095	1.00
957714	1202053648	DUP	09-MAR-10	Americium-241	0.09068	0.03968	pCi/g	0.06584	0.200
				Bismuth-211	4.285	0.3723	pCi/g	0.2043	Y
				Bismuth-214	1.48	0.1264	pCi/g	0.07458	0.200
				Cadmium-109	2.918	0.4385	pCi/g	0.57	Y

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VAX/VMS Nuclide Identification Report Generated 9-MAR-2010 22:23:03.13

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911001.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:22:30.
Sample ID          : G247911001 Sample quantity : 1.26000E+02 GRAM
Detector name      : GAM05 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.96 0.0%
Energy tolerance   : 1.60000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 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	45.87*	236	708	1.15	92.72	88	10	3.28E-02	23.3	
2	0	62.71*	796	862	1.25	126.41	122	10	1.11E-01	7.9	
3	1	74.14*	851	805	1.45	149.26	143	23	1.18E-01	7.1	8.18E+00
4	1	76.61*	1143	655	1.29	154.20	143	23	1.59E-01	5.3	
5	2	83.77*	208	488	1.56	168.51	165	28	2.89E-02	18.6	2.85E+00
6	2	86.69*	388	465	1.16	174.37	165	28	5.38E-02	10.6	
7	2	89.27	234	443	1.24	179.51	165	28	3.25E-02	16.9	
8	2	92.25*	1169	468	1.37	185.47	165	28	1.62E-01	4.6	
9	0	128.10	73	485	1.34	257.17	253	9	1.02E-02	55.5	
10	0	185.28*	347	419	1.37	371.50	365	12	4.82E-02	13.3	
11	0	209.00	167	318	1.20	418.94	414	11	2.32E-02	22.2	
12	2	238.09*	1375	224	1.25	477.10	470	20	1.91E-01	3.3	1.37E+00
13	2	240.98*	315	238	1.85	482.89	470	20	4.38E-02	15.6	
14	0	269.45	87	233	1.91	539.81	535	10	1.20E-02	34.6	
15	0	294.63*	378	217	1.47	590.17	585	10	5.25E-02	9.1	
16	0	300.09	93	215	1.40	601.08	596	10	1.29E-02	31.5	
17	0	326.60	107	248	1.49	654.08	646	16	1.49E-02	34.3	
18	0	337.75	225	229	1.23	676.37	671	12	3.12E-02	15.0	
19	0	351.42*	671	195	1.35	703.71	699	11	9.32E-02	5.7	
20	0	462.11	62	129	1.65	925.00	921	9	8.66E-03	35.3	
21	0	509.95*	55	151	1.58	1020.64	1015	14	7.61E-03	56.0	
22	0	582.40*	409	146	1.52	1165.48	1156	16	5.69E-02	8.3	
23	0	608.43*	434	100	1.51	1217.51	1212	12	6.03E-02	6.8	
24	0	660.57	235	170	1.53	1321.74	1317	14	3.26E-02	13.3	
25	0	726.24	125	92	2.08	1453.00	1446	18	1.73E-02	20.0	
26	0	766.89	76	76	2.14	1534.24	1528	13	1.06E-02	26.4	
27	0	793.80	69	76	0.81	1588.04	1583	14	9.56E-03	29.1	
28	0	909.97*	284	36	1.97	1820.19	1811	16	3.94E-02	7.7	
29	0	933.62	26	54	3.52	1867.46	1862	11	3.57E-03	59.1	
30	6	963.48	43	32	1.56	1927.14	1924	19	6.00E-03	23.9	8.95E-01
31	6	967.72*	151	72	2.13	1935.60	1924	19	2.10E-02	14.7	
32	0	1119.51	92	88	1.52	2238.91	2230	16	1.28E-02	25.1	
33	0	1459.23*	1105	30	1.99	2917.62	2910	19	1.53E-01	3.3	
34	0	1586.31	41	9	1.90	3171.46	3166	12	5.65E-03	21.6	
35	0	1762.46	114	0	2.24	3523.26	3511	22	1.58E-02	9.4	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 9-MAR-2010 22:23:05

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911001.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:22:30
 Sample ID : G247911001 Sample quantity : 126.00 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA5 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.96 0.0%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 1.60 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	+	1460.82	*	3.074E+01	2.787E+00	6.658E-01	4.141E-02	46.175
NB-95	+	765.81	*	1.539E-01	8.225E-02	8.680E-02	7.021E-03	1.773
CD-109	+	88.03	*	2.466E+00	8.561E-01	1.161E+00	8.843E-02	2.124
SN-126	+	64.28	*	3.065E+00	6.643E-01	4.932E-01	7.350E-02	6.214
	+	86.94	*	1.649E+00	7.635E-01	4.696E-01	1.933E-01	3.512
	+	87.57	*	3.967E-01	8.935E-02	1.132E-01	8.619E-03	3.505
CS-135	+	268.22	*	3.702E-01	2.596E-01	2.865E-01	3.065E-02	1.292
BA-137M	+	661.66	*	3.856E-01	1.060E-01	7.978E-02	5.246E-03	4.834
CS-137	+	661.66	*	4.074E-01	1.120E-01	8.428E-02	5.561E-03	4.834
TL-208		277.37		9.272E-01	4.972E-01	8.675E-01	1.129E-01	1.069
	+	583.19	*	6.345E-01	1.154E-01	6.461E-02	4.746E-03	9.820
		860.56		5.145E-01	4.048E-01	7.244E-01	7.350E-02	0.710
PB-210	+	46.54	*	2.180E+00	1.030E+00	9.661E-01	7.451E-02	2.257
BI-211	+	72.87	*	2.563E+01	4.162E+00	3.730E+00	2.937E-01	6.872
	+	351.06	*	4.396E+00	6.116E-01	4.435E-01	3.516E-02	9.910
PB-212	+	74.82	*	3.067E+00	5.805E-01	4.478E-01	5.592E-02	6.849
	+	77.11	*	2.483E+00	3.249E-01	2.704E-01	2.105E-02	9.184
	+	238.63	*	1.965E+00	2.499E-01	1.099E-01	1.189E-02	17.890
	+	300.09	*	2.087E+00	1.335E+00	1.496E+00	1.606E-01	1.395
BI-214	+	609.32	*	1.308E+00	2.086E-01	1.516E-01	1.280E-02	8.626
	+	1120.29	*	1.460E+00	7.452E-01	5.803E-01	5.575E-02	2.515
		1764.49		1.963E+00	5.145E-01	1.063E+00	6.143E-02	1.848
PB-214	+	74.82	*	5.436E+00	9.823E-01	7.937E-01	8.845E-02	6.849
	+	77.11	*	4.378E+00	6.771E-01	4.767E-01	5.406E-02	9.184
	+	242.00	*	2.732E+00	9.081E-01	6.079E-01	6.908E-02	4.494
	+	295.22	*	1.504E+00	3.201E-01	2.732E-01	3.029E-02	5.504
	+	351.93	*	1.595E+00	2.388E-01	1.330E-01	1.281E-02	11.996
RA-224	+	240.99	*	4.831E+00	1.581E+00	1.178E+00	1.152E-01	4.102
RA-226	+	609.32	*	1.308E+00	2.086E-01	1.516E-01	1.280E-02	8.626
	+	1120.29	*	1.460E+00	7.452E-01	5.803E-01	5.575E-02	2.515
		1764.49		1.963E+00	5.145E-01	1.063E+00	6.143E-02	1.848
AC-228	+	338.32	*	1.632E+00	8.370E-01	4.585E-01	1.906E-01	3.559
	+	911.20	*	2.166E+00	4.339E-01	2.917E-01	3.702E-02	7.426
	+	968.97	*	1.994E+00	7.637E-01	4.873E-01	1.200E-01	4.091

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.632E+00	8.370E-01	4.585E-01	1.906E-01	3.559
	+	911.20	*	2.166E+00	4.339E-01	2.917E-01	3.702E-02	7.426
	+	968.97		1.994E+00	7.637E-01	4.873E-01	1.200E-01	4.091
TH-228	+	74.82		3.067E+00	4.993E-01	4.478E-01	3.545E-02	6.849
	+	77.11		2.483E+00	3.249E-01	2.704E-01	2.105E-02	9.184
	+	238.63	*	1.965E+00	2.499E-01	1.099E-01	1.189E-02	17.890
	+	300.09		2.087E+00	1.834E+00	1.496E+00	9.163E-01	1.395
TH-229	+	85.43		9.985E-01	2.249E-01	2.831E-01	2.165E-02	3.527
	+	88.47		3.710E-01	1.288E-01	1.749E-01	1.345E-02	2.121
		193.51	*	-5.780E-01	6.864E-01	1.058E+00	1.057E-01	-0.546
		210.85		1.869E+00	1.212E+00	1.817E+00	1.811E-01	1.029
TH-232	+	338.32		1.632E+00	5.068E-01	4.585E-01	3.595E-02	3.559
	+	911.20	*	2.166E+00	4.339E-01	2.917E-01	3.702E-02	7.426
	+	968.97		1.994E+00	7.637E-01	4.873E-01	1.200E-01	4.091
TH-234	+	63.29	*	7.952E+00	1.909E+00	1.264E+00	2.293E-01	6.293
	+	92.59		1.060E+01	2.527E+00	1.005E+00	2.211E-01	10.548
U-235	+	89.96		2.566E+00	1.069E+00	1.215E+00	2.964E-01	2.111
	+	93.35		8.009E+00	1.984E+00	7.612E-01	1.756E-01	10.522
		143.76	*	1.221E-01	2.490E-01	4.045E-01	7.716E-02	0.302
		163.33		1.557E-01	5.356E-01	8.713E-01	1.636E-01	0.179
	+	185.72		3.185E-01	9.033E-02	7.660E-02	7.645E-03	4.158
		205.31		2.162E-02	6.704E-01	9.354E-01	1.761E-01	0.023
NP-237	+	86.48	*	1.184E+00	3.643E-01	3.366E-01	7.511E-02	3.516
		95.86		1.570E+00	1.103E+00	1.585E+00	3.823E-01	0.991
U-238	+	63.29	*	7.952E+00	1.909E+00	1.264E+00	2.293E-01	6.293
	+	92.59		1.060E+01	1.318E+00	1.005E+00	8.447E-02	10.548
ANH-511	+	511.00	*	6.406E-02	7.185E-02	5.831E-02	3.732E-03	1.099

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-4.342E-01	4.427E-01	6.765E-01	4.844E-02	-0.642
NA-22		1274.54	*	-3.074E-02	5.771E-02	8.832E-02	5.144E-03	-0.348
NA-24		1368.63	*	-1.999E+00	5.771E-02	Half-Life too short		
SC-46		889.28	*	2.591E-02	5.178E-02	8.904E-02	8.943E-03	0.291
	+	1120.55		2.492E-01	1.261E-01	1.635E-01	1.124E-02	1.524
V-48		944.13		-5.648E-01	1.219E+00	1.926E+00	1.863E-01	-0.293
		983.53	*	1.746E-03	9.145E-02	1.507E-01	1.380E-02	0.012
		1312.11		1.679E-02	1.172E-01	1.920E-01	1.113E-02	0.087
CR-51		320.08	*	1.546E-02	5.435E-01	7.858E-01	6.944E-02	0.020
MN-54		834.85	*	1.623E-02	5.028E-02	8.536E-02	7.820E-03	0.190
CO-56		846.77	*	6.540E-03	5.089E-02	8.527E-02	7.975E-03	0.077
		1037.84		-1.538E-01	4.026E-01	6.363E-01	5.607E-02	-0.242
		1238.28		1.345E-01	1.201E-01	2.108E-01	1.303E-02	0.638
		1771.35		2.478E-02	2.965E-01	4.953E-01	2.860E-02	0.050
CO-57		122.06	*	-1.532E-02	3.060E-02	4.695E-02	6.661E-03	-0.326
		136.47		1.086E-01	2.393E-01	3.937E-01	5.272E-02	0.276
CO-58		810.76	*	-3.882E-02	4.772E-02	7.350E-02	6.469E-03	-0.528

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
FE-59	1099.45	*		-6.343E-02	1.247E-01	1.944E-01	1.573E-02	-0.326
	1291.59			-8.982E-02	1.710E-01	2.614E-01	1.941E-02	-0.344
CO-60	1173.23			-7.555E-03	6.129E-02	9.868E-02	5.724E-03	-0.077
	1332.49	*		-1.031E-02	5.183E-02	8.171E-02	4.728E-03	-0.126
ZN-65	1115.54	*		5.976E-04	1.541E-01	2.156E-01	1.506E-02	0.003
SE-75	121.12			2.788E-02	1.530E-01	2.505E-01	3.913E-02	0.111
	136.00			3.192E-02	4.589E-02	7.603E-02	9.916E-03	0.420
	264.66	*		-2.826E-02	6.251E-02	8.836E-02	8.437E-03	-0.320
	279.54			4.526E-03	1.393E-01	2.331E-01	2.233E-02	0.019
	400.66			-8.392E-02	3.286E-01	5.330E-01	4.860E-02	-0.157
SR-85	514.00	*		3.169E-02	5.466E-02	8.078E-02	5.178E-03	0.392
Y-88	898.04			-3.967E-02	5.657E-02	8.788E-02	8.985E-03	-0.451
	1836.06	*		3.103E-02	4.517E-02	8.272E-02	4.733E-03	0.375
Y-91	1204.77	*		-8.210E+00	2.982E+01	4.731E+01	2.749E+00	-0.174
NB-94	702.65	*		-1.207E-02	4.255E-02	6.987E-02	5.000E-03	-0.173
	871.09			-5.859E-02	4.456E-02	6.459E-02	6.294E-03	-0.907
NB-95M	235.69	*		1.900E+00	3.001E-01	4.171E-01	4.569E-02	4.555
ZR-95	724.19			1.583E-01	1.519E-01	2.382E-01	1.976E-02	0.665
	756.73	*		4.782E-02	9.195E-02	1.592E-01	1.420E-02	0.300
MO-99	140.51			-3.593E+01	3.602E+01	5.424E+01	1.380E+01	-0.662
	181.07			3.409E+00	3.286E+01	4.627E+01	8.997E+00	0.074
	366.42			-3.675E+00	1.633E+02	2.694E+02	1.849E+01	-0.014
	739.50	*		8.200E+00	2.163E+01	3.704E+01	5.656E+00	0.221
	777.92			-1.079E+01	6.493E+01	1.069E+02	8.845E+00	-0.101
TC-99M	140.51	*		-9.965E+11	6.493E+01	Half-Life	too short	
RU-103	497.08	*		-5.017E-02	5.158E-02	7.766E-02	9.857E-03	-0.646
	610.33			1.259E+01	2.555E+00	3.307E+00	5.083E-01	3.807
RH-106	621.93	*		-3.832E-02	4.378E-01	7.007E-01	8.434E-02	-0.055
	1050.41			4.079E-01	3.285E+00	5.442E+00	4.431E-01	0.075
RU-106	621.93	*		-3.832E-02	4.378E-01	7.007E-01	4.619E-02	-0.055
	1050.41			4.079E-01	3.285E+00	5.442E+00	4.431E-01	0.075
AG-108M	433.94	*		-3.210E-02	3.755E-02	5.822E-02	3.759E-03	-0.551
	614.28			2.414E-02	5.136E-02	7.485E-02	5.206E-03	0.323
	722.91			3.035E-02	5.485E-02	8.344E-02	6.482E-03	0.364
AG-110M	657.76	*		1.617E-01	6.651E-02	1.091E-01	7.542E-03	1.482
	677.62			1.252E-02	3.965E-01	6.668E-01	4.742E-02	0.019
	706.68			-9.782E-02	2.642E-01	4.306E-01	3.233E-02	-0.227
	763.94			1.396E-01	2.543E-01	3.794E-01	3.154E-02	0.368
	884.68			1.413E-02	6.265E-02	1.056E-01	1.078E-02	0.134
	937.49			-2.813E-02	1.564E-01	2.162E-01	2.168E-02	-0.130
	1384.29			9.485E-02	1.645E-01	2.957E-01	1.823E-02	0.321
	1505.03			-1.090E-01	3.636E-01	5.824E-01	3.424E-02	-0.187
SN-113	391.69	*		1.843E-02	5.531E-02	9.281E-02	5.757E-03	0.199
CD-115	260.90			1.004E+02	2.328E+02	3.968E+02	3.794E+01	0.253
	492.35			5.525E+01	7.081E+01	1.210E+02	7.665E+00	0.457
	527.90	*		-1.021E+01	2.168E+01	3.408E+01	2.198E+00	-0.299
SN-117M	156.02			6.612E-02	3.094E+00	4.997E+00	5.510E-01	0.013
	158.56	*		1.856E-02	7.281E-02	1.185E-01	1.274E-02	0.157
TE-123M	159.00	*		-7.799E-03	3.604E-02	5.762E-02	6.192E-03	-0.135

---- Non-Identified Nuclides ----

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SB-124		602.73		-1.473E-02	5.776E-02	7.816E-02	5.147E-03	-0.188
		645.85		1.147E-01	6.557E-01	1.068E+00	7.717E-02	0.107
		722.78		2.143E-01	5.565E-01	8.338E-01	6.400E-02	0.257
SB-125		1690.97	*	7.498E-02	9.627E-02	1.790E-01	1.138E-02	0.419
		427.87	*	1.176E-01	1.175E-01	2.034E-01	1.273E-02	0.578
	+	463.37		6.397E-01	4.540E-01	6.939E-01	4.917E-02	0.922
		600.60		-4.218E-02	2.341E-01	3.621E-01	2.679E-02	-0.116
		635.95		-2.062E-01	3.756E-01	5.786E-01	4.330E-02	-0.356
TE-125M		109.28	*	-2.385E+00	1.183E+01	1.917E+01	2.488E+00	-0.124
I-126		388.63		-1.636E-01	2.219E-01	3.501E-01	2.083E-02	-0.467
		666.33	*	1.353E-01	3.893E-01	5.564E-01	3.695E-02	0.243
		753.82		8.730E-01	2.498E+00	4.272E+00	3.378E-01	0.204
SB-126		414.70		-2.984E-02	1.041E-01	1.683E-01	1.002E-02	-0.177
		666.50		4.406E-02	1.339E-01	1.910E-01	1.269E-02	0.231
		695.00		1.630E-02	1.053E-01	1.784E-01	1.257E-02	0.091
		697.00		-7.914E-02	4.128E-01	6.367E-01	4.504E-02	-0.124
		720.70	*	1.565E-01	2.114E-01	3.288E-01	2.439E-02	0.476
SB-127		856.80		5.275E-01	6.840E-01	1.194E+00	1.136E-01	0.442
		252.40		1.983E+00	6.438E+00	1.084E+01	4.538E+00	0.183
		473.00		2.745E+00	2.701E+00	4.645E+00	5.406E-01	0.591
		685.70	*	4.382E-01	2.025E+00	3.448E+00	3.622E-01	0.127
		783.70		3.764E+00	5.748E+00	9.975E+00	1.245E+00	0.377
I-131		80.19		-1.216E+00	4.986E+00	7.129E+00	5.559E-01	-0.171
		284.31		-7.533E-01	1.993E+00	3.269E+00	3.142E-01	-0.230
		364.49	*	1.090E-01	1.547E-01	2.650E-01	1.992E-02	0.411
TE-132		636.99		-8.929E-01	2.353E+00	3.674E+00	2.658E-01	-0.243
		49.72		-1.288E+01	6.980E+00	9.271E+00	9.459E-01	-1.389
		111.76		3.202E+00	5.111E+01	8.350E+01	1.176E+01	0.038
BA-133		116.30		-3.329E+01	4.336E+01	6.827E+01	1.016E+01	-0.488
		228.16	*	-4.722E-02	1.080E+00	1.815E+00	3.041E-01	-0.026
		81.00		1.429E-01	1.193E-01	1.328E-01	1.996E-02	1.076
		276.40		7.374E-01	4.713E-01	7.986E-01	1.162E-01	0.923
		302.85		7.775E-02	1.889E-01	2.806E-01	3.701E-02	0.277
I-133		356.01	*	-2.270E-02	5.638E-02	7.816E-02	9.445E-03	-0.290
		383.85		1.986E-01	3.688E-01	6.249E-01	6.788E-02	0.318
		529.87	*	2.452E-03	3.688E-01	Half-Life too short		
CS-134		875.33		1.540E-01	3.688E-01	Half-Life too short		
		1298.22		5.321E-01	3.688E-01	Half-Life too short		
		563.25		5.688E-02	4.843E-01	7.904E-01	5.251E-02	0.072
		569.33		3.185E-01	2.585E-01	4.518E-01	3.027E-02	0.705
		604.72		2.179E-02	4.963E-02	7.203E-02	4.764E-03	0.303
I-135		795.86	*	1.107E-01	7.161E-02	1.173E-01	1.010E-02	0.943
		801.95		-3.149E-01	5.677E-01	7.910E-01	6.875E-02	-0.398
		1365.19		-3.361E-01	1.370E+00	2.125E+00	1.358E-01	-0.158
		546.56		-2.430E+11	1.370E+00	Half-Life too short		
		836.80		5.668E+11	1.370E+00	Half-Life too short		
		1038.76		-3.982E+10	1.370E+00	Half-Life too short		
		1131.51		-8.628E+10	1.370E+00	Half-Life too short		
		1260.41	*	-2.604E+10	1.370E+00	Half-Life too short		

----- Non-Identified Nuclides -----

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CS-136	1457.56			2.663E+13	1.370E+00	Half-Life	too short	
	1678.03			3.092E+10	1.370E+00	Half-Life	too short	
	1791.20			-2.228E+11	1.370E+00	Half-Life	too short	
	153.25			6.683E-01	1.143E+00	1.879E+00	2.371E-01	0.356
	176.60			-4.175E-01	6.395E-01	9.969E-01	1.071E-01	-0.419
	273.65			-1.337E+00	8.162E-01	1.055E+00	1.060E-01	-1.268
	340.55			3.882E-01	2.119E-01	3.387E-01	2.754E-02	1.146
	818.51			3.413E-02	9.997E-02	1.706E-01	1.520E-02	0.200
CE-139	1048.07	*		-6.595E-02	1.494E-01	2.348E-01	2.010E-02	-0.281
	1235.36			1.129E+00	8.325E-01	1.473E+00	1.458E-01	0.766
	165.86	*		-1.918E-02	3.642E-02	5.733E-02	5.691E-03	-0.335
	162.66			-2.739E-01	1.071E+00	1.708E+00	1.842E-01	-0.160
BA-140	304.85			-4.938E-02	1.943E+00	2.806E+00	8.225E-01	-0.018
	423.72			-1.241E+00	2.685E+00	4.239E+00	1.370E+00	-0.293
	537.26	*		-1.949E-01	3.660E-01	5.617E-01	1.878E-01	-0.347
	328.76			6.169E-01	4.369E-01	6.849E-01	5.924E-02	0.901
LA-140	487.02			-8.739E-02	1.848E-01	2.916E-01	2.048E-02	-0.300
	815.77			-3.317E-02	4.256E-01	7.027E-01	6.918E-02	-0.047
	1596.21	*		1.520E-02	9.984E-02	1.666E-01	9.794E-03	0.091
	145.44	*		-2.473E-02	8.012E-02	1.281E-01	1.566E-02	-0.193
CE-141	57.36			2.018E-04	8.012E-02	Half-Life	too short	
	293.27	*		2.332E-03	8.012E-02	Half-Life	too short	
	664.57			1.080E-03	8.012E-02	Half-Life	too short	
	721.93			4.947E-04	8.012E-02	Half-Life	too short	
CE-144	80.12			-4.903E-01	2.456E+00	3.518E+00	2.719E-01	-0.139
	133.52	*		-1.177E-01	2.525E-01	3.689E-01	6.744E-02	-0.319
PM-144	476.78			-1.111E-01	9.008E-02	1.353E-01	9.823E-03	-0.822
	618.01			-3.467E-02	4.184E-02	6.293E-02	4.345E-03	-0.551
PR-144	696.49	*		-4.211E-03	4.957E-02	7.697E-02	5.443E-03	-0.055
	696.51	*		-3.009E-01	3.713E+00	5.767E+00	4.076E-01	-0.052
PM-146	1489.16			1.448E+00	1.604E+01	2.703E+01	1.588E+00	0.054
	453.88	*		-1.771E-02	5.533E-02	8.875E-02	7.732E-03	-0.200
	633.25			8.081E-01	1.989E+00	3.257E+00	1.231E+00	0.248
	735.93			-5.257E-03	2.063E-01	3.193E-01	8.857E-02	-0.016
ND-147	747.24			-8.788E-02	1.283E-01	2.025E-01	2.860E-02	-0.434
	91.11	+		4.489E+00	5.808E-01	7.643E-01	6.803E-02	5.873
	319.41			2.171E+00	5.073E+00	7.534E+00	6.323E-01	0.288
	531.02	*		7.436E-01	7.922E-01	1.356E+00	1.874E-01	0.548
PM-149	285.90	*		8.912E+01	1.564E+02	2.667E+02	4.228E+01	0.334
EU-152	121.78			-2.451E-02	8.736E-02	1.355E-01	2.024E-02	-0.181
	244.70			-6.081E-02	4.155E-01	6.018E-01	5.867E-02	-0.101
	344.28	*		-1.410E-01	1.448E-01	1.927E-01	1.584E-02	-0.732
GD-153	778.90			-1.006E-01	3.598E-01	5.875E-01	4.869E-02	-0.171
	964.08	+		6.126E-01	2.991E-01	8.233E-01	7.756E-02	0.744
	1085.87			-3.325E-01	4.984E-01	7.618E-01	5.735E-02	-0.436
	1112.07			-1.781E-01	5.208E-01	6.986E-01	4.919E-02	-0.255
GD-153	1408.01			-4.733E-02	2.021E-01	3.276E-01	1.914E-02	-0.144
	69.67			-2.669E-01	1.414E+00	2.035E+00	1.618E-01	-0.131
	97.43	*		1.198E-01	1.009E-01	1.515E-01	1.404E-02	0.791

Sample ID : G247911001

Acquisition date : 6-MAR-2010 17:22:30

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		103.18		-3.518E-02	1.221E-01	1.975E-01	2.042E-02	-0.178
		123.07		-1.051E-02	6.882E-02	9.709E-02	1.547E-02	-0.108
		723.31		1.703E-01	2.613E-01	3.998E-01	3.378E-02	0.426
		873.19		1.267E-01	3.550E-01	6.048E-01	7.718E-02	0.209
		996.26		-3.544E-01	5.269E-01	8.130E-01	1.435E-01	-0.436
EU-155		1004.73		-4.737E-01	3.193E-01	4.525E-01	5.345E-02	-1.047
		1274.44	*	-9.314E-02	1.630E-01	2.481E-01	2.340E-02	-0.375
	+	86.55		4.812E-01	1.086E-01	1.828E-01	1.413E-02	2.633
		105.31	*	5.263E-02	1.239E-01	2.021E-01	2.189E-02	0.260
	+	86.79		1.290E+00	2.905E-01	4.923E-01	3.755E-02	2.620
TB-160		197.04		3.766E-01	7.322E-01	1.175E+00	1.174E-01	0.320
		215.65		-8.763E-02	9.231E-01	1.466E+00	1.458E-01	-0.060
	+	298.57		2.970E-01	1.891E-01	2.502E-01	2.226E-02	1.187
		879.36	*	-1.261E-03	1.764E-01	2.917E-01	2.882E-02	-0.004
	+	962.29		1.163E+00	5.676E-01	1.389E+00	1.312E-01	0.837
HO-166M		966.15		1.521E+00	4.684E-01	7.566E-01	7.108E-02	2.011
		1177.93		-1.355E-01	4.968E-01	7.893E-01	4.580E-02	-0.172
		1271.85		-3.230E-02	9.115E-01	1.470E+00	8.544E-02	-0.022
		80.57		4.027E-01	3.342E-01	3.764E-01	2.906E-02	1.070
	+	184.41		2.530E-01	7.176E-02	8.843E-02	8.823E-03	2.862
TA-182		280.46		-1.156E-01	1.083E-01	1.718E-01	1.591E-02	-0.673
		410.95		3.220E-01	3.297E-01	5.682E-01	3.373E-02	0.567
		711.68	*	2.136E-02	7.661E-02	1.307E-01	9.525E-03	0.163
		752.31		-3.538E-02	3.547E-01	5.878E-01	4.635E-02	-0.060
		810.29		-4.888E-02	7.131E-02	1.113E-01	9.767E-03	-0.439
IR-192		67.75		9.285E-03	1.026E-01	1.260E-01	1.009E-02	0.074
		100.11		-2.739E-02	1.897E-01	3.087E-01	3.014E-02	-0.089
		152.43		1.338E-01	4.392E-01	7.167E-01	8.175E-02	0.187
		222.11		-9.981E-02	4.187E-01	6.989E-01	6.931E-02	-0.143
		1121.30		7.181E-01	2.453E-01	4.326E-01	2.970E-02	1.660
HG-203		1189.05		-6.576E-02	4.250E-01	6.820E-01	3.960E-02	-0.096
		1221.41	*	-2.264E-01	2.622E-01	3.930E-01	2.285E-02	-0.576
		1231.02		-3.961E-01	6.886E-01	1.059E+00	6.157E-02	-0.374
	+	295.96		1.124E+00	2.280E-01	3.309E-01	2.983E-02	3.396
		308.46		-5.819E-02	1.225E-01	1.992E-01	1.736E-02	-0.292
BI-207		316.51	*	-3.275E-02	4.553E-02	7.301E-02	6.197E-03	-0.449
		468.07		-5.887E-03	1.053E-01	1.536E-01	1.087E-02	-0.038
		70.83		1.574E-01	1.160E+00	1.687E+00	2.649E-01	0.093
	+	72.87		6.488E+00	1.346E+00	1.357E+00	2.053E-01	4.781
		279.20	*	2.745E-02	4.968E-02	8.478E-02	8.041E-03	0.324
PB-211		72.81		1.475E+00	2.394E-01	3.073E-01	2.419E-02	4.799
	+	74.97		8.840E-01	1.435E-01	2.303E-01	1.803E-02	3.838
		569.70		5.294E-02	4.111E-02	7.194E-02	4.708E-03	0.736
		1063.66	*	4.786E-02	6.561E-02	1.144E-01	9.057E-03	0.418
		1770.23		-8.471E-02	6.095E-01	8.215E-01	4.745E-02	-0.103
BI-212		404.85	*	-5.340E-01	1.014E+00	1.568E+00	7.525E-01	-0.341
		427.09		2.771E+00	2.341E+00	3.481E+00	1.596E+00	0.796
		832.01		-1.299E-01	1.322E+00	2.176E+00	1.130E+00	-0.060
	+	727.33	*	3.010E+00	1.253E+00	1.443E+00	1.692E-01	2.086

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		785.37		4.006E+00	4.241E+00	7.374E+00	6.185E-01	0.543
		1620.50		1.360E+00	2.931E+00	5.171E+00	3.035E-01	0.263
RN-219		271.23		1.229E-01	3.411E-01	5.062E-01	5.532E-02	0.243
		401.81	*	1.810E-01	5.216E-01	8.737E-01	1.177E-01	0.207
RA-223		81.07		3.345E-01	2.674E-01	3.019E-01	2.328E-02	1.108
	+	83.79		3.170E-01	1.205E-01	1.988E-01	1.525E-02	1.594
		94.87		1.125E+00	5.609E-01	8.546E-01	7.527E-02	1.316
		144.24		1.653E-01	8.440E-01	1.362E+00	1.765E-01	0.121
		154.21		7.098E-01	4.904E-01	8.209E-01	9.740E-02	0.865
	+	269.46		4.261E-01	2.981E-01	3.976E-01	3.815E-02	1.072
		323.87	*	-5.457E-01	8.919E-01	1.222E+00	2.096E-01	-0.447
AC-227	+	338.28		6.476E+00	2.084E+00	2.719E+00	3.135E-01	2.381
		79.69		2.532E-01	1.227E+00	1.783E+00	2.998E-01	0.142
		235.96		3.252E+00	4.657E-01	5.675E-01	6.451E-02	5.731
		256.23	*	3.846E-02	3.030E-01	5.106E-01	6.528E-02	0.075
	+	299.98		2.295E+00	1.477E+00	1.977E+00	2.546E-01	1.161
		304.50		3.761E-02	2.200E+00	3.187E+00	5.291E-01	0.012
TH-227		334.37		4.180E-02	2.656E+00	3.349E+00	5.101E-01	0.012
		79.80		2.848E-03	1.611E+00	2.326E+00	4.988E-01	0.001
		235.96		3.252E+00	4.521E-01	5.675E-01	6.151E-02	5.731
		256.23	*	3.846E-02	3.030E-01	5.106E-01	7.281E-02	0.075
	+	299.98		2.295E+00	1.477E+00	1.977E+00	2.546E-01	1.161
		304.50		3.761E-02	2.200E+00	3.187E+00	5.291E-01	0.012
		334.37		4.180E-02	2.656E+00	3.349E+00	5.101E-01	0.012
PA-231		283.69	*	-1.214E+00	1.763E+00	2.835E+00	4.235E-01	-0.428
	+	301.36		1.475E+00	9.474E-01	1.266E+00	1.558E-01	1.165
TH-231		81.07		3.345E-01	2.674E-01	3.019E-01	2.328E-02	1.108
	+	83.79		3.170E-01	1.205E-01	1.988E-01	1.525E-02	1.594
		94.87		1.125E+00	5.609E-01	8.546E-01	7.527E-02	1.316
		144.24		1.653E-01	8.440E-01	1.362E+00	1.765E-01	0.121
		154.21		7.098E-01	4.904E-01	8.209E-01	9.740E-02	0.865
	+	269.46		4.261E-01	2.981E-01	3.976E-01	3.815E-02	1.072
		323.87	*	-5.457E-01	8.919E-01	1.222E+00	2.096E-01	-0.447
PA-233	+	338.28		6.476E+00	2.084E+00	2.719E+00	3.135E-01	2.381
	+	300.13		1.039E+00	6.731E-01	8.923E-01	1.336E-01	1.164
		311.90	*	6.906E-02	8.229E-02	1.417E-01	1.252E-02	0.487
		340.48		1.744E+00	9.470E-01	1.390E+00	3.304E-01	1.255
PA-234		94.67		7.291E-01	2.248E-01	3.332E-01	4.168E-02	2.188
		98.44		1.681E-01	1.425E-01	1.645E-01	9.200E-02	1.022
		111.00		-1.899E-03	2.245E-01	3.660E-01	5.338E-02	-0.005
		131.20		-9.026E-04	1.415E-01	2.008E-01	2.696E-02	-0.004
		569.50		4.745E-01	3.585E-01	6.294E-01	4.119E-02	0.754
		733.00		1.156E-01	5.302E-01	7.816E-01	1.706E-01	0.148
		880.51		-1.412E-01	3.584E-01	5.725E-01	5.668E-02	-0.247
		883.24		-9.263E-02	3.629E-01	5.781E-01	3.896E-01	-0.160
		926.50		-1.132E-01	2.596E-01	3.633E-01	9.348E-02	-0.311
		946.00	*	-2.347E-01	4.184E-01	6.535E-01	1.259E-01	-0.359
		949.00		6.110E-01	6.140E-01	1.086E+00	1.044E-01	0.563
PA-234M	+	766.42		4.025E+01	2.946E+01	2.949E+01	1.494E+01	1.365

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		1.068E+01	6.745E+00	1.219E+01	1.246E+00	0.876
	99.53			2.363E-01	1.780E-01	2.924E-01	2.823E-02	0.808
	103.37			-2.368E-02	1.105E-01	1.793E-01	1.861E-02	-0.132
	106.12			1.265E-01	9.922E-02	1.647E-01	1.796E-02	0.768
	117.23	*		-5.960E-01	4.698E-01	7.192E-01	9.457E-02	-0.829
	228.18			-8.405E-03	2.518E-01	4.234E-01	4.184E-02	-0.020
AM-241	277.60			5.023E-01	2.236E-01	3.987E-01	3.711E-02	1.260
	59.54	*		8.114E-02	8.625E-02	1.294E-01	1.158E-02	0.627
CM-247	278.00			1.966E+00	9.565E-01	1.698E+00	1.580E-01	1.158
	287.50			1.732E-01	1.597E+00	2.532E+00	2.311E-01	0.068
CF-249	402.40	*		1.515E-02	4.834E-02	8.087E-02	4.758E-03	0.187
	252.80			4.250E-01	1.156E+00	1.966E+00	1.900E-01	0.216
	333.37			6.486E-02	3.449E-01	3.419E-01	2.733E-02	0.190
CF-251	388.16	*		-3.651E-02	4.985E-02	7.867E-02	4.698E-03	-0.464
	177.52	*		-1.248E-01	1.593E-01	2.469E-01	2.460E-02	-0.505
	227.38			8.485E-03	4.104E-01	6.915E-01	6.837E-02	0.012
	285.41			1.992E+00	2.604E+00	4.487E+00	4.113E-01	0.444

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]G247911001      *
* Acquisition date   : 6-MAR-2010 17:22:30 Detector SN#      :              *
* Detector ID        : GAM05                      Sensitivity   : 5.000        *
* Geometry           : CAN                          Energy tolerance: 1.600      *
* Elapsed live time  : 0 02:00:00.00              Abundance limit : 75.000      *
* Elapsed real time  : 0 02:00:01.96              Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247911001              Analyst initials: MXR1         *
* Batch Number       : 957714                  Sample Quantity : 1.2600E+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	3.074E+01	2.732E+00	6.654E-01	0.000E+00
NB-95	1.539E-01	8.060E-02	8.758E-02	0.000E+00
CD-109	2.466E+00	8.390E-01	1.208E+00	0.000E+00
SN-126	3.967E-01	8.756E-02	1.177E-01	0.000E+00
CS-135	3.702E-01	2.544E-01	2.934E-01	0.000E+00
BA-137M	3.856E-01	1.039E-01	8.067E-02	0.000E+00
CS-137	4.074E-01	1.098E-01	8.522E-02	0.000E+00
TL-208	6.345E-01	1.131E-01	6.545E-02	0.000E+00
PB-210	2.180E+00	1.009E+00	1.014E+00	0.000E+00
BI-211	4.396E+00	5.994E-01	4.526E-01	0.000E+00
PB-212	1.965E+00	2.449E-01	1.127E-01	0.000E+00
BI-214	1.308E+00	2.044E-01	1.535E-01	0.000E+00
PB-214	1.595E+00	2.340E-01	1.357E-01	0.000E+00
RA-224	4.831E+00	1.550E+00	1.208E+00	0.000E+00
RA-226	1.308E+00	2.044E-01	1.535E-01	0.000E+00
AC-228	2.166E+00	4.252E-01	2.935E-01	0.000E+00
RA-228	2.166E+00	4.252E-01	2.935E-01	0.000E+00
TH-228	1.965E+00	2.449E-01	1.127E-01	0.000E+00
TH-229	-5.780E-01	6.726E-01	1.089E+00	0.000E+00
TH-232	2.166E+00	4.252E-01	2.935E-01	0.000E+00
TH-234	7.952E+00	1.871E+00	1.321E+00	0.000E+00
U-235	1.221E-01	2.440E-01	4.180E-01	0.000E+00
NP-237	1.184E+00	3.570E-01	3.503E-01	0.000E+00
U-238	7.952E+00	1.871E+00	1.321E+00	0.000E+00
ANH-511	6.406E-02	7.042E-02	5.918E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-4.342E-01	4.339E-01	6.872E-01	0.000E+00 NOT IDENT.
NA-22	-3.074E-02	5.656E-02	8.845E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.798E+06	0.000E+00	0.000E+00	SHORT HLIF
SC-46	2.591E-02	5.074E-02	8.964E-02	0.000E+00	FAIL ABUN
V-48	1.746E-03	8.962E-02	1.515E-01	0.000E+00	NOT IDENT.
CR-51	1.546E-02	5.326E-01	8.029E-01	0.000E+00	NOT IDENT.
MN-54	1.623E-02	4.928E-02	8.602E-02	0.000E+00	NOT IDENT.
CO-56	6.540E-03	4.987E-02	8.591E-02	0.000E+00	NOT IDENT.
CO-57	-1.532E-02	2.999E-02	4.863E-02	0.000E+00	NOT IDENT.
CO-58	-3.882E-02	4.676E-02	7.410E-02	0.000E+00	NOT IDENT.
FE-59	-6.343E-02	1.222E-01	1.951E-01	0.000E+00	NOT IDENT.
CO-60	-1.031E-02	5.079E-02	8.178E-02	0.000E+00	NOT IDENT.
ZN-65	5.976E-04	1.510E-01	2.163E-01	0.000E+00	NOT IDENT.
SE-75	-2.826E-02	6.126E-02	9.053E-02	0.000E+00	NOT IDENT.
SR-85	3.169E-02	5.357E-02	8.198E-02	0.000E+00	NOT IDENT.
Y-88	3.103E-02	4.427E-02	8.239E-02	0.000E+00	NOT IDENT.
Y-91	-8.210E+00	2.922E+01	4.742E+01	0.000E+00	NOT IDENT.
NB-94	-1.207E-02	4.170E-02	7.059E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.941E-01	4.280E-01	0.000E+00	NOT IDENT.
ZR-95	4.782E-02	9.011E-02	1.606E-01	0.000E+00	NOT IDENT.
MO-99	8.200E+00	2.120E+01	3.739E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	9.986E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-5.017E-02	5.055E-02	7.885E-02	0.000E+00	NOT IDENT.
RH-106	-3.832E-02	4.291E-01	7.092E-01	0.000E+00	NOT IDENT.
RU-106	-3.832E-02	4.290E-01	7.092E-01	0.000E+00	NOT IDENT.
AG-108M	-3.210E-02	3.680E-02	5.923E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	6.518E-02	1.103E-01	0.000E+00	NOT IDENT.
SN-113	1.843E-02	5.421E-02	9.456E-02	0.000E+00	NOT IDENT.
CD-115	-1.021E+01	2.125E+01	3.457E+01	0.000E+00	NOT IDENT.
SN-117M	1.856E-02	7.135E-02	1.223E-01	0.000E+00	NOT IDENT.
TE-123M	-7.799E-03	3.532E-02	5.946E-02	0.000E+00	NOT IDENT.
SB-124	7.498E-02	9.435E-02	1.785E-01	0.000E+00	NOT IDENT.
SB-125	1.176E-01	1.151E-01	2.069E-01	0.000E+00	FAIL ABUN
TE-125M	-2.385E+00	1.159E+01	1.988E+01	0.000E+00	NOT IDENT.
I-126	1.353E-01	3.815E-01	5.625E-01	0.000E+00	NOT IDENT.
SB-126	1.565E-01	2.072E-01	3.321E-01	0.000E+00	NOT IDENT.
SB-127	4.382E-01	1.985E+00	3.484E+00	0.000E+00	NOT IDENT.
I-131	1.090E-01	1.516E-01	2.703E-01	0.000E+00	NOT IDENT.
TE-132	-4.722E-02	1.058E+00	1.863E+00	0.000E+00	NOT IDENT.
BA-133	-2.270E-02	5.525E-02	7.974E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.887E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.107E-01	7.018E-02	1.183E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.532E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.595E-02	1.464E-01	2.358E-01	0.000E+00	NOT IDENT.
CE-139	-1.918E-02	3.570E-02	5.912E-02	0.000E+00	NOT IDENT.
BA-140	-1.949E-01	3.587E-01	5.696E-01	0.000E+00	NOT IDENT.
LA-140	1.520E-02	9.784E-02	1.663E-01	0.000E+00	NOT IDENT.
CE-141	-2.473E-02	7.852E-02	1.323E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	6.696E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.177E-01	2.475E-01	3.816E-01	0.000E+00	NOT IDENT.
PM-144	-4.211E-03	4.857E-02	7.777E-02	0.000E+00	NOT IDENT.
PR-144	-3.009E-01	3.638E+00	5.827E+00	0.000E+00	NOT IDENT.
PM-146	-1.771E-02	5.422E-02	9.022E-02	0.000E+00	NOT IDENT.
ND-147	7.436E-01	7.763E-01	1.376E+00	0.000E+00	FAIL ABUN
PM-149	8.912E+01	1.533E+02	2.730E+02	0.000E+00	NOT IDENT.
EU-152	-1.410E-01	1.419E-01	1.967E-01	0.000E+00	FAIL ABUN
GD-153	1.198E-01	9.887E-02	1.574E-01	0.000E+00	NOT IDENT.
EU-154	-9.314E-02	1.598E-01	2.485E-01	0.000E+00	NOT IDENT.
EU-155	5.263E-02	1.214E-01	2.097E-01	0.000E+00	FAIL ABUN
TB-160	-1.261E-03	1.728E-01	2.937E-01	0.000E+00	FAIL ABUN
HO-166M	2.136E-02	7.508E-02	1.320E-01	0.000E+00	FAIL ABUN
TA-182	-2.264E-01	2.570E-01	3.938E-01	0.000E+00	NOT IDENT.
IR-192	-3.275E-02	4.462E-02	7.461E-02	0.000E+00	FAIL ABUN
HG-203	2.745E-02	4.869E-02	8.679E-02	0.000E+00	FAIL ABUN
BI-207	4.786E-02	6.430E-02	1.149E-01	0.000E+00	FAIL ABUN
PB-211	-5.340E-01	9.937E-01	1.597E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.228E+00	1.458E+00	0.000E+00	FAIL ABUN
RN-219	1.810E-01	5.112E-01	8.898E-01	0.000E+00	NOT IDENT.
RA-223	-5.457E-01	8.741E-01	1.248E+00	0.000E+00	FAIL ABUN
AC-227	3.846E-02	2.969E-01	5.233E-01	0.000E+00	FAIL ABUN
TH-227	3.846E-02	2.970E-01	5.233E-01	0.000E+00	FAIL ABUN
PA-231	-1.214E+00	1.727E+00	2.902E+00	0.000E+00	FAIL ABUN
TH-231	-5.457E-01	8.741E-01	1.248E+00	0.000E+00	FAIL ABUN
PA-233	6.906E-02	8.064E-02	1.449E-01	0.000E+00	FAIL ABUN
PA-234	-2.347E-01	4.100E-01	6.573E-01	0.000E+00	NOT IDENT.
PA-234M	1.068E+01	6.610E+00	1.225E+01	0.000E+00	FAIL ABUN
NP-239	-5.960E-01	4.604E-01	7.452E-01	0.000E+00	NOT IDENT.
AM-241	8.114E-02	8.452E-02	1.354E-01	0.000E+00	NOT IDENT.
CM-247	1.515E-02	4.737E-02	8.236E-02	0.000E+00	NOT IDENT.
CF-249	-3.651E-02	4.885E-02	8.016E-02	0.000E+00	NOT IDENT.

CF-251	-1.248E-01	1.561E-01	2.544E-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]G247911001.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:22:30.
Sample ID          : G247911001 Sample quantity : 1.26000E+02 GRAM
Detector name      : GAM05 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.96 0.0%
Energy tolerance   : 1.60000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 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	1460.82	1105	10.66*	1.004E+00	3.074E+01	3.074E+01	9.07
NB-95	765.81	76	99.81*	1.763E+00	1.290E-01	1.539E-01	53.45
CD-109	88.03	234	3.70*	7.821E+00	2.406E+00	2.466E+00	34.71
SN-126	64.28	796	9.60	8.061E+00	3.065E+00	3.065E+00	21.68
	86.94	388	8.90	7.869E+00	1.649E+00	1.649E+00	46.30
	87.57	388	37.00*	7.869E+00	3.967E-01	3.967E-01	22.52
CS-135	268.22	87	16.00*	4.358E+00	3.702E-01	3.702E-01	70.12
BA-137M	661.66	235	89.90*	2.018E+00	3.853E-01	3.856E-01	27.49
CS-137	661.66	235	85.10*	2.018E+00	4.070E-01	4.074E-01	27.50
TL-208	277.37	-----	6.60	4.261E+00	-----	Line Not Found	-----
	583.19	409	85.00*	2.262E+00	6.345E-01	6.345E-01	18.19
	860.56	-----	12.50	1.589E+00	-----	Line Not Found	-----
PB-210	46.54	236	4.25*	7.597E+00	2.177E+00	2.180E+00	47.24
BI-211	72.87	851	1.23	8.042E+00	2.563E+01	2.563E+01	16.24
	351.06	671	12.92*	3.520E+00	4.396E+00	4.396E+00	13.91
PB-212	74.82	851	10.28	8.042E+00	3.067E+00	3.067E+00	18.93
	77.11	1143	17.10	8.017E+00	2.483E+00	2.483E+00	13.08
	238.63	1375	43.60*	4.781E+00	1.965E+00	1.965E+00	12.72
	300.09	93	3.30	4.005E+00	2.087E+00	2.087E+00	63.96
BI-214	609.32	434	45.49*	2.174E+00	1.308E+00	1.308E+00	15.94
	1120.29	92	14.92	1.259E+00	1.460E+00	1.460E+00	51.06
	1764.49	-----	15.30	8.612E-01	-----	Line Not Found	-----
PB-214	74.82	851	5.80	8.042E+00	5.436E+00	5.436E+00	18.07
	77.11	1143	9.70	8.017E+00	4.378E+00	4.378E+00	15.47
	242.00	315	7.25	4.738E+00	2.732E+00	2.732E+00	33.24
	295.22	378	18.42	4.064E+00	1.504E+00	1.504E+00	21.28
	351.93	671	35.60*	3.520E+00	1.595E+00	1.595E+00	14.97
RA-224	240.99	315	4.10*	4.738E+00	4.831E+00	4.831E+00	32.73
RA-226	609.32	434	45.49*	2.174E+00	1.308E+00	1.308E+00	15.94
	1120.29	92	14.92	1.259E+00	1.460E+00	1.460E+00	51.06
	1764.49	-----	15.30	8.612E-01	-----	Line Not Found	-----
AC-228	338.32	225	11.27	3.638E+00	1.632E+00	1.632E+00	51.29

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	284	25.80*	1.512E+00	2.166E+00	2.166E+00	20.03
	968.97	151	15.80	1.431E+00	1.994E+00	1.994E+00	38.30
RA-228	338.32	225	11.27	3.638E+00	1.632E+00	1.632E+00	51.29
	911.20	284	25.80*	1.512E+00	2.166E+00	2.166E+00	20.03
	968.97	151	15.80	1.431E+00	1.994E+00	1.994E+00	38.30
TH-228	74.82	851	10.28	8.042E+00	3.067E+00	3.067E+00	16.28
	77.11	1143	17.10	8.017E+00	2.483E+00	2.483E+00	13.08
	238.63	1375	43.60*	4.781E+00	1.965E+00	1.965E+00	12.72
	300.09	93	3.30	4.005E+00	2.087E+00	2.087E+00	87.90
TH-229	85.43	388	14.70	7.869E+00	9.985E-01	9.985E-01	22.52
	88.47	234	24.00	7.821E+00	3.710E-01	3.710E-01	34.71
	193.51	-----	4.41*	5.516E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.209E+00	-----	Line Not Found	-----
TH-232	338.32	225	11.27	3.638E+00	1.632E+00	1.632E+00	31.05
	911.20	284	25.80*	1.512E+00	2.166E+00	2.166E+00	20.03
	968.97	151	15.80	1.431E+00	1.994E+00	1.994E+00	38.30
TH-234	63.29	796	3.70*	8.061E+00	7.952E+00	7.952E+00	24.01
	92.59	1169	4.23	7.763E+00	1.060E+01	1.060E+01	23.83
U-235	89.96	234	3.47	7.821E+00	2.566E+00	2.566E+00	41.67
	93.35	1169	5.60	7.763E+00	8.009E+00	8.009E+00	24.77
	143.76	-----	10.96*	6.557E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.119E+00	-----	Line Not Found	-----
	185.72	347	57.20	5.671E+00	3.185E-01	3.185E-01	28.36
	205.31	-----	5.01	5.304E+00	-----	Line Not Found	-----
NP-237	86.48	388	12.40*	7.869E+00	1.184E+00	1.184E+00	30.77
	95.86	-----	2.68	7.688E+00	-----	Line Not Found	-----
U-238	63.29	796	3.70*	8.061E+00	7.952E+00	7.952E+00	24.01
	92.59	1169	4.23	7.763E+00	1.060E+01	1.060E+01	12.43
ANH-511	511.00	55	100.00*	2.548E+00	6.406E-02	6.406E-02	112.17

Flag: "*" = Keyline

Total number of lines in spectrum 35
Number of unidentified lines 7
Number of lines tentatively identified by NID 28 80.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.074E+01	3.074E+01	0.279E+01	9.07	
NB-95	64.03D	1.19	1.290E-01	1.539E-01	0.822E-01	53.45	
CD-109	461.40D	1.02	2.406E+00	2.466E+00	0.856E+00	34.71	
SN-126	2.30E+05Y	1.00	3.967E-01	3.967E-01	0.893E-01	22.52	
CS-135	2.30E+06Y	1.00	3.702E-01	3.702E-01	2.596E-01	70.12	
BA-137M	30.08Y	1.00	3.853E-01	3.856E-01	1.060E-01	27.49	
CS-137	30.08Y	1.00	4.070E-01	4.074E-01	1.120E-01	27.50	
TL-208	1.41E+10Y	1.00	6.345E-01	6.345E-01	1.154E-01	18.19	
PB-210	22.20Y	1.00	2.177E+00	2.180E+00	1.030E+00	47.24	
BI-211	7.04E+08Y	1.00	4.396E+00	4.396E+00	0.612E+00	13.91	
PB-212	1.41E+10Y	1.00	1.965E+00	1.965E+00	0.250E+00	12.72	
BI-214	1600.00Y	1.00	1.308E+00	1.308E+00	0.209E+00	15.94	
PB-214	1600.00Y	1.00	1.595E+00	1.595E+00	0.239E+00	14.97	
RA-224	1.41E+10Y	1.00	4.831E+00	4.831E+00	1.581E+00	32.73	
RA-226	1600.00Y	1.00	1.308E+00	1.308E+00	0.209E+00	15.94	
AC-228	1.41E+10Y	1.00	2.166E+00	2.166E+00	0.434E+00	20.03	
RA-228	1.41E+10Y	1.00	2.166E+00	2.166E+00	0.434E+00	20.03	
TH-228	1.41E+10Y	1.00	1.965E+00	1.965E+00	0.250E+00	12.72	
TH-229	7340.00Y	1.00	3.710E-01	3.710E-01	1.288E-01	34.71	K
TH-232	1.41E+10Y	1.00	2.166E+00	2.166E+00	0.434E+00	20.03	
TH-234	4.47E+09Y	1.00	7.952E+00	7.952E+00	1.909E+00	24.01	
U-235	7.04E+08Y	1.00	3.185E-01	3.185E-01	0.903E-01	28.36	K
NP-237	2.14E+06Y	1.00	1.184E+00	1.184E+00	0.364E+00	30.77	
U-238	4.47E+09Y	1.00	7.952E+00	7.952E+00	1.909E+00	24.01	
ANH-511	1.00E+09Y	1.00	6.406E-02	6.406E-02	7.185E-02	112.17	
Total Activity :			7.935E+01	7.944E+01			

Grand Total Activity : 7.935E+01 7.944E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247911001

Page : 4
Acquisition date : 6-MAR-2010 17:22:30

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	83.77	208	488	1.56	168.51	165	28	2.89E-02	37.2	7.92E+00	T
0	128.10	73	485	1.34	257.17	253	9	1.02E-02	****	6.93E+00	
0	209.00	167	318	1.20	418.94	414	11	2.32E-02	44.4	5.24E+00	
0	326.60	107	248	1.49	654.08	646	16	1.49E-02	68.6	3.74E+00	
0	462.11	62	129	1.65	925.00	921	9	8.66E-03	70.6	2.78E+00	T
0	726.24	125	92	2.08	1453.00	1446	18	1.73E-02	40.0	1.85E+00	T
0	793.80	69	76	0.81	1588.04	1583	14	9.56E-03	58.3	1.71E+00	
0	933.62	26	54	3.52	1867.46	1862	11	3.57E-03	****	1.48E+00	
6	963.48	43	32	1.56	1927.14	1924	19	6.00E-03	47.9	1.44E+00	T
0	1586.31	41	9	1.90	3171.46	3166	12	5.65E-03	43.1	9.38E-01	
0	1762.46	114	0	2.24	3523.26	3511	22	1.58E-02	18.7	8.62E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911001.CNF;1
* Acquisition date   : 6-MAR-2010 17:22:30.  Detector SN#      :
* Detector ID        : GAM05                      Sensitivity    : 5.00000
* Geometry           : CAN                        Energy tolerance: 1.60000
* Elapsed live time  : 0 02:00:00.00             Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.96             Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date       : 18-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID        : G247911001           Analyst initials: MXR1
* Batch Number     : 957714              Sample Quantity : 1.26000E+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	3.074E+01	2.787E+00	6.658E-01	4.141E-02	46.175
NB-95	1.539E-01	8.225E-02	8.680E-02	7.021E-03	1.773
CD-109	2.466E+00	8.561E-01	1.161E+00	8.843E-02	2.124
SN-126	3.967E-01	8.935E-02	1.132E-01	8.619E-03	3.505
CS-135	3.702E-01	2.596E-01	2.865E-01	3.065E-02	1.292
BA-137M	3.856E-01	1.060E-01	7.978E-02	5.246E-03	4.834
CS-137	4.074E-01	1.120E-01	8.428E-02	5.561E-03	4.834
TL-208	6.345E-01	1.154E-01	6.461E-02	4.746E-03	9.820
PB-210	2.180E+00	1.030E+00	9.661E-01	7.451E-02	2.257
BI-211	4.396E+00	6.116E-01	4.435E-01	3.516E-02	9.910
PB-212	1.965E+00	2.499E-01	1.099E-01	1.189E-02	17.890
BI-214	1.308E+00	2.086E-01	1.516E-01	1.280E-02	8.626
PB-214	1.595E+00	2.388E-01	1.330E-01	1.281E-02	11.996
RA-224	4.831E+00	1.581E+00	1.178E+00	1.152E-01	4.102
RA-226	1.308E+00	2.086E-01	1.516E-01	1.280E-02	8.626
AC-228	2.166E+00	4.339E-01	2.917E-01	3.702E-02	7.426
RA-228	2.166E+00	4.339E-01	2.917E-01	3.702E-02	7.426
TH-228	1.965E+00	2.499E-01	1.099E-01	1.189E-02	17.890

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229	3.710E-01	1.288E-01	1.058E+00	1.057E-01	0.351
TH-232	2.166E+00	4.339E-01	2.917E-01	3.702E-02	7.426
TH-234	7.952E+00	1.909E+00	1.264E+00	2.293E-01	6.293
U-235	3.185E-01	9.033E-02	4.045E-01	7.716E-02	0.787
NP-237	1.184E+00	3.643E-01	3.366E-01	7.511E-02	3.516
U-238	7.952E+00	1.909E+00	1.264E+00	2.293E-01	6.293
ANH-511	6.406E-02	7.185E-02	5.831E-02	3.732E-03	1.099

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-4.342E-01		4.427E-01	6.765E-01	4.844E-02	-0.642
NA-22	-3.074E-02		5.771E-02	8.832E-02	5.144E-03	-0.348
NA-24	-1.999E+00		1.428E+00	Half-Life	too short	
SC-46	2.591E-02		5.178E-02	8.904E-02	8.943E-03	0.291
V-48	1.746E-03		9.145E-02	1.507E-01	1.380E-02	0.012
CR-51	1.546E-02		5.435E-01	7.858E-01	6.944E-02	0.020
MN-54	1.623E-02		5.028E-02	8.536E-02	7.820E-03	0.190
CO-56	6.540E-03		5.089E-02	8.527E-02	7.975E-03	0.077
CO-57	-1.532E-02		3.060E-02	4.695E-02	6.661E-03	-0.326
CO-58	-3.882E-02		4.772E-02	7.350E-02	6.469E-03	-0.528
FE-59	-6.343E-02		1.247E-01	1.944E-01	1.573E-02	-0.326
CO-60	-1.031E-02		5.183E-02	8.171E-02	4.728E-03	-0.126
ZN-65	5.976E-04		1.541E-01	2.156E-01	1.506E-02	0.003
SE-75	-2.826E-02		6.251E-02	8.836E-02	8.437E-03	-0.320
SR-85	3.169E-02		5.466E-02	8.078E-02	5.178E-03	0.392
Y-88	3.103E-02		4.517E-02	8.272E-02	4.733E-03	0.375
Y-91	-8.210E+00		2.982E+01	4.731E+01	2.749E+00	-0.174
NB-94	-1.207E-02		4.255E-02	6.987E-02	5.000E-03	-0.173
NB-95M	1.900E+00		3.001E-01	4.171E-01	4.569E-02	4.555
ZR-95	4.782E-02		9.195E-02	1.592E-01	1.420E-02	0.300
MO-99	8.200E+00		2.163E+01	3.704E+01	5.656E+00	0.221
TC-99M	-9.965E+11		5.095E+11	Half-Life	too short	
RU-103	-5.017E-02		5.158E-02	7.766E-02	9.857E-03	-0.646
RH-106	-3.832E-02		4.378E-01	7.007E-01	8.434E-02	-0.055
RU-106	-3.832E-02		4.378E-01	7.007E-01	4.619E-02	-0.055
AG-108M	-3.210E-02		3.755E-02	5.822E-02	3.759E-03	-0.551
AG-110M	1.617E-01		6.651E-02	1.091E-01	7.542E-03	1.482
SN-113	1.843E-02		5.531E-02	9.281E-02	5.757E-03	0.199
CD-115	-1.021E+01		2.168E+01	3.408E+01	2.198E+00	-0.299
SN-117M	1.856E-02		7.281E-02	1.185E-01	1.274E-02	0.157
TE-123M	-7.799E-03		3.604E-02	5.762E-02	6.192E-03	-0.135
SB-124	7.498E-02		9.627E-02	1.790E-01	1.138E-02	0.419
SB-125	1.176E-01		1.175E-01	2.034E-01	1.273E-02	0.578
TE-125M	-2.385E+00		1.183E+01	1.917E+01	2.488E+00	-0.124
I-126	1.353E-01		3.893E-01	5.564E-01	3.695E-02	0.243
SB-126	1.565E-01		2.114E-01	3.288E-01	2.439E-02	0.476

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	4.382E-01		2.025E+00	3.448E+00	3.622E-01	0.127
I-131	1.090E-01		1.547E-01	2.650E-01	1.992E-02	0.411
TE-132	-4.722E-02		1.080E+00	1.815E+00	3.041E-01	-0.026
BA-133	-2.270E-02		5.638E-02	7.816E-02	9.445E-03	-0.290
I-133	2.452E-03		9.627E-03	Half-Life	too short	
CS-134	1.107E-01		7.161E-02	1.173E-01	1.010E-02	0.943
I-135	-2.604E+10		7.815E+10	Half-Life	too short	
CS-136	-6.595E-02		1.494E-01	2.348E-01	2.010E-02	-0.281
CE-139	-1.918E-02		3.642E-02	5.733E-02	5.691E-03	-0.335
BA-140	-1.949E-01		3.660E-01	5.617E-01	1.878E-01	-0.347
LA-140	1.520E-02		9.984E-02	1.666E-01	9.794E-03	0.091
CE-141	-2.473E-02		8.012E-02	1.281E-01	1.566E-02	-0.193
CE-143	2.332E-03	+	3.416E-04	Half-Life	too short	
CE-144	-1.177E-01		2.525E-01	3.689E-01	6.744E-02	-0.319
PM-144	-4.211E-03		4.957E-02	7.697E-02	5.443E-03	-0.055
PR-144	-3.009E-01		3.713E+00	5.767E+00	4.076E-01	-0.052
PM-146	-1.771E-02		5.533E-02	8.875E-02	7.732E-03	-0.200
ND-147	7.436E-01		7.922E-01	1.356E+00	1.874E-01	0.548
PM-149	8.912E+01		1.564E+02	2.667E+02	4.228E+01	0.334
EU-152	-1.410E-01		1.448E-01	1.927E-01	1.584E-02	-0.732
GD-153	1.198E-01		1.009E-01	1.515E-01	1.404E-02	0.791
EU-154	-9.314E-02		1.630E-01	2.481E-01	2.340E-02	-0.375
EU-155	5.263E-02		1.239E-01	2.021E-01	2.189E-02	0.260
TB-160	-1.261E-03		1.764E-01	2.917E-01	2.882E-02	-0.004
HO-166M	2.136E-02		7.661E-02	1.307E-01	9.525E-03	0.163
TA-182	-2.264E-01		2.622E-01	3.930E-01	2.285E-02	-0.576
IR-192	-3.275E-02		4.553E-02	7.301E-02	6.197E-03	-0.449
HG-203	2.745E-02		4.968E-02	8.478E-02	8.041E-03	0.324
BI-207	4.786E-02		6.561E-02	1.144E-01	9.057E-03	0.418
PB-211	-5.340E-01		1.014E+00	1.568E+00	7.525E-01	-0.341
BI-212	3.010E+00	+	1.253E+00	1.443E+00	1.692E-01	2.086
RN-219	1.810E-01		5.216E-01	8.737E-01	1.177E-01	0.207
RA-223	-5.457E-01		8.919E-01	1.222E+00	2.096E-01	-0.447
AC-227	3.846E-02		3.030E-01	5.106E-01	6.528E-02	0.075
TH-227	3.846E-02		3.030E-01	5.106E-01	7.281E-02	0.075
PA-231	-1.214E+00		1.763E+00	2.835E+00	4.235E-01	-0.428
TH-231	-5.457E-01		8.919E-01	1.222E+00	2.096E-01	-0.447
PA-233	6.906E-02		8.229E-02	1.417E-01	1.252E-02	0.487
PA-234	-2.347E-01		4.184E-01	6.535E-01	1.259E-01	-0.359
PA-234M	1.068E+01		6.745E+00	1.219E+01	1.246E+00	0.876
NP-239	-5.960E-01		4.698E-01	7.192E-01	9.457E-02	-0.829
AM-241	8.114E-02		8.625E-02	1.294E-01	1.158E-02	0.627
CM-247	1.515E-02		4.834E-02	8.087E-02	4.758E-03	0.187
CF-249	-3.651E-02		4.985E-02	7.867E-02	4.698E-03	-0.464
CF-251	-1.248E-01		1.593E-01	2.469E-01	2.460E-02	-0.505

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]G247911001           *
* Acquisition date   : 6-MAR-2010 17:22:30 Detector SN# :                   *
* Detector ID        : GAM05 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.600                       *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000            *
* Elapsed real time  : 0 02:00:01.96 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G247911001 Analyst initials: MXR1                 *
* Batch Number       : 957714 Sample Quantity : 1.2600E+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	3.074E+01	2.732E+00	3.329E-01	1.394E+00
NB-95	1.539E-01	8.060E-02	4.382E-02	4.112E-02
CD-109	2.466E+00	8.390E-01	6.044E-01	4.280E-01
SN-126	3.967E-01	8.756E-02	5.891E-02	4.467E-02
CS-135	3.702E-01	2.544E-01	1.468E-01	1.298E-01
BA-137M	3.856E-01	1.039E-01	4.036E-02	5.301E-02
CS-137	4.074E-01	1.098E-01	4.264E-02	5.601E-02
TL-208	6.345E-01	1.131E-01	3.275E-02	5.770E-02
PB-210	2.180E+00	1.009E+00	5.072E-01	5.149E-01
BI-211	4.396E+00	5.994E-01	2.264E-01	3.058E-01
PB-212	1.965E+00	2.449E-01	5.639E-02	1.250E-01
BI-214	1.308E+00	2.044E-01	7.680E-02	1.043E-01
PB-214	1.595E+00	2.340E-01	6.789E-02	1.194E-01
RA-224	4.831E+00	1.550E+00	6.044E-01	7.906E-01
RA-226	1.308E+00	2.044E-01	7.680E-02	1.043E-01
AC-228	2.166E+00	4.252E-01	1.469E-01	2.170E-01
RA-228	2.166E+00	4.252E-01	1.469E-01	2.170E-01
TH-228	1.965E+00	2.449E-01	5.639E-02	1.250E-01
TH-229	-5.780E-01	6.726E-01	5.446E-01	3.432E-01
TH-232	2.166E+00	4.252E-01	1.469E-01	2.170E-01
TH-234	7.952E+00	1.871E+00	6.606E-01	9.547E-01
U-235	1.221E-01	2.440E-01	2.091E-01	1.245E-01
NP-237	1.184E+00	3.570E-01	1.753E-01	1.821E-01
U-238	7.952E+00	1.871E+00	6.606E-01	9.547E-01
ANH-511	6.406E-02	7.042E-02	2.961E-02	3.593E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-4.342E-01	4.339E-01	3.438E-01	2.214E-01 NOT IDENT.
NA-22	-3.074E-02	5.656E-02	4.425E-02	2.886E-02 NOT IDENT.

NA-24	-1.999E+06	2.798E+06	0.000E+00	1.428E+06	SHORT HLIF
SC-46	2.591E-02	5.074E-02	4.485E-02	2.589E-02	FAIL ABUN
V-48	1.746E-03	8.962E-02	7.578E-02	4.573E-02	NOT IDENT.
CR-51	1.546E-02	5.326E-01	4.017E-01	2.717E-01	NOT IDENT.
MN-54	1.623E-02	4.928E-02	4.303E-02	2.514E-02	NOT IDENT.
CO-56	6.540E-03	4.987E-02	4.298E-02	2.544E-02	NOT IDENT.
CO-57	-1.532E-02	2.999E-02	2.433E-02	1.530E-02	NOT IDENT.
CO-58	-3.882E-02	4.676E-02	3.707E-02	2.386E-02	NOT IDENT.
FE-59	-6.343E-02	1.222E-01	9.759E-02	6.237E-02	NOT IDENT.
CO-60	-1.031E-02	5.079E-02	4.091E-02	2.591E-02	NOT IDENT.
ZN-65	5.976E-04	1.510E-01	1.082E-01	7.703E-02	NOT IDENT.
SE-75	-2.826E-02	6.126E-02	4.529E-02	3.125E-02	NOT IDENT.
SR-85	3.169E-02	5.357E-02	4.101E-02	2.733E-02	NOT IDENT.
Y-88	3.103E-02	4.427E-02	4.122E-02	2.259E-02	NOT IDENT.
Y-91	-8.210E+00	2.922E+01	2.372E+01	1.491E+01	NOT IDENT.
NB-94	-1.207E-02	4.170E-02	3.532E-02	2.127E-02	NOT IDENT.
NB-95M	1.900E+00	2.941E-01	2.141E-01	1.500E-01	NOT IDENT.
ZR-95	4.782E-02	9.011E-02	8.035E-02	4.598E-02	NOT IDENT.
MO-99	8.200E+00	2.120E+01	1.871E+01	1.082E+01	NOT IDENT.
TC-99M	-9.965E+17	9.986E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-5.017E-02	5.055E-02	3.945E-02	2.579E-02	NOT IDENT.
RH-106	-3.832E-02	4.291E-01	3.548E-01	2.189E-01	NOT IDENT.
RU-106	-3.832E-02	4.290E-01	3.548E-01	2.189E-01	NOT IDENT.
AG-108M	-3.210E-02	3.680E-02	2.963E-02	1.877E-02	NOT IDENT.
AG-110M	1.617E-01	6.518E-02	5.520E-02	3.325E-02	NOT IDENT.
SN-113	1.843E-02	5.421E-02	4.731E-02	2.766E-02	NOT IDENT.
CD-115	-1.021E+01	2.125E+01	1.729E+01	1.084E+01	NOT IDENT.
SN-117M	1.856E-02	7.135E-02	6.117E-02	3.640E-02	NOT IDENT.
TE-123M	-7.799E-03	3.532E-02	2.975E-02	1.802E-02	NOT IDENT.
SB-124	7.498E-02	9.435E-02	8.931E-02	4.814E-02	NOT IDENT.
SB-125	1.176E-01	1.151E-01	1.035E-01	5.874E-02	FAIL ABUN
TE-125M	-2.385E+00	1.159E+01	9.947E+00	5.914E+00	NOT IDENT.
I-126	1.353E-01	3.815E-01	2.814E-01	1.946E-01	NOT IDENT.
SB-126	1.565E-01	2.072E-01	1.661E-01	1.057E-01	NOT IDENT.
SB-127	4.382E-01	1.985E+00	1.743E+00	1.013E+00	NOT IDENT.
I-131	1.090E-01	1.516E-01	1.352E-01	7.733E-02	NOT IDENT.
TE-132	-4.722E-02	1.058E+00	9.322E-01	5.400E-01	NOT IDENT.
BA-133	-2.270E-02	5.525E-02	3.989E-02	2.819E-02	NOT IDENT.
I-133	2.452E+03	1.887E+04	0.000E+00	9.627E+03	SHORT HLIF
CS-134	1.107E-01	7.018E-02	5.920E-02	3.580E-02	NOT IDENT.
I-135	-2.604E+16	1.532E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.595E-02	1.464E-01	1.180E-01	7.470E-02	NOT IDENT.
CE-139	-1.918E-02	3.570E-02	2.958E-02	1.821E-02	NOT IDENT.
BA-140	-1.949E-01	3.587E-01	2.850E-01	1.830E-01	NOT IDENT.
LA-140	1.520E-02	9.784E-02	8.321E-02	4.992E-02	NOT IDENT.
CE-141	-2.473E-02	7.852E-02	6.619E-02	4.006E-02	NOT IDENT.
CE-143	2.332E+03	6.696E+02	0.000E+00	3.416E+02	SHORT HLIF
CE-144	-1.177E-01	2.475E-01	1.909E-01	1.263E-01	NOT IDENT.
PM-144	-4.211E-03	4.857E-02	3.891E-02	2.478E-02	NOT IDENT.
PR-144	-3.009E-01	3.638E+00	2.915E+00	1.856E+00	NOT IDENT.
PM-146	-1.771E-02	5.422E-02	4.514E-02	2.766E-02	NOT IDENT.
ND-147	7.436E-01	7.763E-01	6.884E-01	3.961E-01	FAIL ABUN
PM-149	8.912E+01	1.533E+02	1.366E+02	7.820E+01	NOT IDENT.
EU-152	-1.410E-01	1.419E-01	9.841E-02	7.239E-02	FAIL ABUN
GD-153	1.198E-01	9.887E-02	7.872E-02	5.045E-02	NOT IDENT.
EU-154	-9.314E-02	1.598E-01	1.243E-01	8.151E-02	NOT IDENT.
EU-155	5.263E-02	1.214E-01	1.049E-01	6.195E-02	FAIL ABUN
TB-160	-1.261E-03	1.728E-01	1.470E-01	8.818E-02	FAIL ABUN
HO-166M	2.136E-02	7.508E-02	6.606E-02	3.830E-02	FAIL ABUN
TA-182	-2.264E-01	2.570E-01	1.970E-01	1.311E-01	NOT IDENT.
IR-192	-3.275E-02	4.462E-02	3.733E-02	2.277E-02	FAIL ABUN
HG-203	2.745E-02	4.869E-02	4.342E-02	2.484E-02	FAIL ABUN
BI-207	4.786E-02	6.430E-02	5.746E-02	3.281E-02	FAIL ABUN
PB-211	-5.340E-01	9.937E-01	7.989E-01	5.070E-01	NOT IDENT.
BI-212	3.010E+00	1.228E+00	7.292E-01	6.267E-01	FAIL ABUN
RN-219	1.810E-01	5.112E-01	4.452E-01	2.608E-01	NOT IDENT.
RA-223	-5.457E-01	8.741E-01	6.244E-01	4.460E-01	FAIL ABUN
AC-227	3.846E-02	2.969E-01	2.618E-01	1.515E-01	FAIL ABUN
TH-227	3.846E-02	2.970E-01	2.618E-01	1.515E-01	FAIL ABUN
PA-231	-1.214E+00	1.727E+00	1.452E+00	8.814E-01	FAIL ABUN
TH-231	-5.457E-01	8.741E-01	6.244E-01	4.460E-01	FAIL ABUN
PA-233	6.906E-02	8.064E-02	7.248E-02	4.115E-02	FAIL ABUN
PA-234	-2.347E-01	4.100E-01	3.289E-01	2.092E-01	NOT IDENT.
PA-234M	1.068E+01	6.610E+00	6.131E+00	3.372E+00	FAIL ABUN
NP-239	-5.960E-01	4.604E-01	3.728E-01	2.349E-01	NOT IDENT.
AM-241	8.114E-02	8.452E-02	6.773E-02	4.312E-02	NOT IDENT.
CM-247	1.515E-02	4.737E-02	4.121E-02	2.417E-02	NOT IDENT.
CF-249	-3.651E-02	4.885E-02	4.010E-02	2.492E-02	NOT IDENT.

CF-251	-1.248E-01	1.561E-01	1.273E-01	7.967E-02 NOT IDENT.
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 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON , SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	510.4200
49.72	679.6517
57.36	0.0000
59.54	646.8030
63.29	740.8307
63.29	740.8307
64.28	760.6262
67.75	742.8941
69.67	766.3651
70.83	797.5151
72.81	711.1313
72.87	711.1890
72.87	711.1890
74.82	713.0154
74.82	713.0154
74.82	713.0154
74.97	713.1528
77.11	715.1276
77.11	715.1276
77.11	715.1276
79.69	717.4731
79.80	717.5720
80.12	717.8604
80.19	717.9236
80.57	542.6885
81.00	542.9790
81.07	543.0267
81.07	543.0267
83.79	560.8737
83.79	560.8737
85.43	561.9888
86.48	562.6981
86.55	562.7451
86.79	562.9053
86.94	563.0078
87.57	563.4286
88.03	563.7363
88.47	564.0289
89.96	565.0159
91.11	565.7742
92.59	566.7398
92.59	566.7398
93.35	567.2333
94.67	551.8546
94.87	566.5904
94.87	566.5904
95.86	446.9522
97.43	450.9940
98.44	420.5302
99.53	420.8026
100.11	476.6199
103.18	484.3530
103.37	480.3554
105.31	482.3764
106.12	447.8653
109.28	526.6451
111.00	524.4835
111.76	509.3936
116.30	469.1786
117.23	461.3014
121.12	393.1920
121.78	409.0980
122.06	417.5613
123.07	409.6094
131.20	411.0828
133.52	400.9900
136.00	346.9009

136.47	358.6874
140.51	435.3842
140.51	0.0000
143.76	389.7741
144.24	410.1787
144.24	410.1787
145.44	441.5396
152.43	408.7832
153.25	405.8442
154.21	369.6362
154.21	369.6362
156.02	433.6880
158.56	388.2294
159.00	402.3939
162.66	391.6953
163.33	365.9251
165.86	371.0071
176.60	353.3601
177.52	364.5566
181.07	354.7847
184.41	357.6582
185.72	320.7750
193.51	392.1921
197.04	316.5524
205.31	319.9734
210.85	274.5483
215.65	301.5511
222.11	307.3800
227.38	280.3255
228.16	283.1918
228.18	283.1956
235.69	270.5852
235.96	270.6323
235.96	270.6323
238.63	272.3106
238.63	272.3106
240.99	272.7162
242.00	225.8813
244.70	246.1382
252.40	251.6102
252.80	247.0625
256.23	245.7294
256.23	245.7294
260.90	228.8187
264.66	250.6860
268.22	209.3445
269.46	216.9443
269.46	216.9443
271.23	273.4030
273.65	329.7878
276.40	233.7128
277.37	222.6195
277.60	209.5516
278.00	218.9551
279.20	250.9425
279.54	261.2934
280.46	284.8553
283.69	241.2575
284.31	235.7077
285.41	201.0874
285.90	206.7817
287.50	224.6063
293.27	0.0000
295.22	217.3040
295.96	217.3938
298.57	217.7054
299.98	203.6621
299.98	203.6621
300.09	203.6752
300.09	203.6752
300.13	203.6805
301.36	191.1771
302.85	197.6573
304.50	200.9981
304.50	200.9981
304.85	202.6198
308.46	225.5348
311.90	199.2542

316.51	236.0551
319.41	189.8330
320.08	201.0688
323.87	203.0651
323.87	203.0651
328.76	173.1226
333.37	163.8885
334.37	185.6737
334.37	185.6737
338.28	183.6241
338.28	183.6241
338.32	183.6288
338.32	183.6288
338.32	183.6288
340.48	166.0904
340.55	166.0967
344.28	219.7189
351.06	212.3526
351.93	144.3317
356.01	164.1168
364.49	145.8643
366.42	169.5155
383.85	153.1249
388.16	173.2248
388.63	174.2533
391.69	148.7183
400.66	169.2322
401.81	158.3653
402.40	162.3911
404.85	199.4702
410.95	163.0099
414.70	164.2803
423.72	158.8911
427.09	124.8810
427.87	130.9680
433.94	153.5289
453.88	147.6851
463.37	165.3018
468.07	156.5909
473.00	124.2022
476.78	168.5945
477.60	157.3367
487.02	124.8935
492.35	111.7085
497.08	129.5303
511.00	114.5963
514.00	119.9414
527.90	126.8580
529.87	0.0000
531.02	98.6656
537.26	114.6709
546.56	0.0000
563.25	115.7513
569.33	92.5883
569.50	92.5926
569.70	96.8564
583.19	80.2039
600.60	107.5781
602.73	109.4505
604.72	104.1385
609.32	116.8868
609.32	116.8868
610.33	104.3344
614.28	93.6660
618.01	109.2926
621.93	110.5166
621.93	110.5166
633.25	98.9669
635.95	111.0271
636.99	105.6201
645.85	90.6354
657.76	107.7897
661.66	108.6559
661.66	108.6559
664.57	0.0000
666.33	109.9146
666.50	109.9194
677.62	91.0008

685.70	85.7003
695.00	94.2616
696.49	96.1543
696.51	96.1543
697.00	98.9432
702.65	100.0393
706.68	94.5978
711.68	85.4526
720.70	70.2493
721.93	0.0000
722.78	87.8673
722.91	86.2716
723.31	94.2720
724.19	103.8862
727.33	79.3192
733.00	76.9152
735.93	89.8125
739.50	85.2236
747.24	97.6185
752.31	87.4221
753.82	82.7578
756.73	74.3566
763.94	90.5430
765.81	85.7387
766.42	105.7087
777.92	93.7451
778.90	98.5072
783.70	83.4650
785.37	76.6016
795.86	71.7839
801.95	78.6462
810.29	74.5278
810.76	75.4930
815.77	67.9406
818.51	67.0335
832.01	84.5786
834.85	85.6049
836.80	0.0000
846.77	70.4395
856.80	74.4966
860.56	73.6018
871.09	84.4866
873.19	61.2133
875.33	0.0000
879.36	64.2302
880.51	71.0633
883.24	66.2430
884.68	62.3698
889.28	63.4184
898.04	84.0946
911.20	67.2768
911.20	67.2768
911.20	67.2768
926.50	70.9116
937.49	60.9459
944.13	73.1991
946.00	82.1388
949.00	62.3925
962.29	61.3163
964.08	57.9347
966.15	64.6416
968.97	63.1214
968.97	63.1214
968.97	63.1214
983.53	56.9211
996.26	91.1500
1001.03	54.1494
1004.73	104.3787
1037.84	65.7379
1038.76	0.0000
1048.07	68.9324
1050.41	59.8402
1050.41	59.8402
1063.66	49.8474
1085.87	67.4744
1099.45	73.8281
1112.07	86.3721
1115.54	89.9650

1120.29	61.8042
1120.29	61.8042
1120.55	61.8066
1121.30	58.2840
1131.51	0.0000
1173.23	76.0446
1177.93	78.2043
1189.05	78.3844
1204.77	81.7832
1221.41	87.3229
1231.02	96.9788
1235.36	71.7437
1238.28	72.8408
1260.41	0.0000
1271.85	52.0745
1274.44	61.6698
1274.54	61.6698
1291.59	60.8107
1298.22	0.0000
1312.11	51.4121
1332.49	44.0847
1365.19	27.0467
1368.63	0.0000
1384.29	20.4738
1408.01	29.9096
1457.56	0.0000
1460.82	26.4199
1489.16	25.6035
1505.03	33.2813
1596.21	17.6794
1620.50	19.3910
1678.03	0.0000
1690.97	11.7673
1764.49	10.4150
1764.49	10.4150
1770.23	13.8989
1771.35	15.8873
1791.20	0.0000
1836.06	12.0322

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911001

Total Uranium Activity	2.3712E+01	ug/g
Total Uranium Counting Unc.	5.5677E+00	ug/g
Total Uranium Tpu	2.8407E-06	ug/g
Total Uranium Mda	1.9678E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 957714                          SAMPLE ID   : G247911001
*  ANALYST       : MXR1                             DETECTOR    : GAM05
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 6-MAR-2010 17:22:30.21          SAMPLE ALQT  : 126.000 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.159E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 1.525E+00
GROSS GAMMA MDA (pCi/GRAM )     : 4.918E+00
GROSS GAMMA DLC (pCi/GRAM )     : 2.404E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 19:23:49.56

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911002.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:23:00.
Sample ID          : G247911002      Sample quantity   : 1.31190E+02 GRAM
Detector name      : GAM13           Detector geometry: CAN
Elapsed live time   : 0 02:00:00.00   Elapsed real time: 0 02:00:01.97  0.0%
Energy tolerance    : 1.50000 keV     Analyst Initials : MXR1
Abundance limit     : 75.00000         Sensitivity       : 5.00000
Batch ID           : 957714           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	46.56*	298	721	1.26	92.67	89	8	4.14E-02	17.3	
2	0	63.30*	2208	1345	1.16	126.13	121	10	3.07E-01	3.9	
3	2	74.77*	613	1177	1.30	149.08	143	22	8.51E-02	10.5	1.07E+00
4	2	77.13*	989	961	1.16	153.79	143	22	1.37E-01	6.4	
5	0	84.07*	168	891	1.24	167.67	165	7	2.34E-02	31.2	
6	3	87.21	267	891	1.11	173.95	171	21	3.71E-02	18.5	4.61E+00
7	3	89.97	188	732	1.02	179.48	171	21	2.61E-02	23.0	
8	3	92.62*	3192	818	1.26	184.77	171	21	4.43E-01	2.5	
9	0	98.93*	288	603	1.29	197.39	193	9	4.00E-02	16.8	
10	0	112.72*	170	815	0.99	224.98	220	11	2.36E-02	34.1	
11	0	143.94*	194	591	1.09	287.41	282	11	2.70E-02	26.0	
12	0	185.73*	647	607	1.33	370.98	363	13	8.99E-02	9.2	
13	1	209.11	190	315	1.45	417.74	406	16	2.64E-02	18.2	2.20E+00
14	0	238.50*	1196	476	1.26	476.51	470	11	1.66E-01	4.7	
15	0	241.79*	152	301	1.36	483.10	481	7	2.11E-02	21.5	
16	0	295.18*	348	350	1.17	589.87	583	13	4.84E-02	12.5	
17	0	300.42*	100	251	1.73	600.36	596	10	1.39E-02	32.6	
18	0	328.29	158	220	2.18	656.09	651	13	2.19E-02	20.9	
19	0	338.23*	202	262	1.29	675.98	671	11	2.80E-02	17.4	
20	0	351.85*	603	207	1.47	703.21	698	10	8.37E-02	6.2	
21	0	463.19	76	168	1.20	925.91	920	11	1.05E-02	35.4	
22	0	583.31*	328	171	1.47	1166.14	1158	14	4.55E-02	10.3	
23	0	609.24*	474	160	1.41	1218.01	1211	14	6.58E-02	7.4	
24	0	661.41	141	141	1.53	1322.36	1317	12	1.95E-02	18.9	
25	0	727.19	74	81	1.77	1453.94	1450	9	1.03E-02	24.9	
26	0	766.01	117	183	3.01	1531.58	1524	19	1.63E-02	29.0	
27	0	910.99*	235	84	2.03	1821.56	1815	12	3.26E-02	10.5	
28	0	969.00	119	84	2.12	1937.59	1932	12	1.65E-02	18.3	
29	0	1000.87*	156	62	1.23	2001.34	1995	13	2.17E-02	13.6	
30	0	1120.38	144	67	2.32	2240.42	2233	17	2.00E-02	15.8	
31	0	1460.45*	1032	72	2.41	2920.69	2910	24	1.43E-01	3.8	
32	0	1763.76*	87	15	2.09	3527.47	3519	15	1.21E-02	15.1	

Flag: "*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911002.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:23:00
Sample ID         : G247911002 Sample quantity : 131.19 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA13 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.97 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	+	1460.82	*	2.761E+01	3.251E+00	7.439E-01	6.656E-02	37.116
NB-95	+	765.81	*	2.320E-01	1.360E-01	9.533E-02	8.355E-03	2.434
CD-109	+	88.03	*	2.902E+00	1.114E+00	1.394E+00	1.409E-01	2.082
SN-126	+	64.28		8.906E+00	1.608E+00	5.338E-01	8.679E-02	16.686
	+	86.94		1.177E+00	6.566E-01	5.817E-01	2.425E-01	2.024
	+	87.57	*	2.832E-01	1.087E-01	1.358E-01	1.373E-02	2.085
BA-137M	+	661.66	*	2.276E-01	8.813E-02	8.323E-02	7.222E-03	2.735
CS-137	+	661.66	*	2.404E-01	9.311E-02	8.792E-02	7.644E-03	2.735
CE-141	+	145.44	*	2.634E-01	1.400E-01	1.370E-01	1.465E-02	1.923
TL-208		277.37		2.766E-01	4.992E-01	8.272E-01	1.080E-01	0.334
	+	583.19	*	5.010E-01	1.137E-01	8.550E-02	8.241E-03	5.859
		860.56		6.166E-01	4.055E-01	7.339E-01	6.768E-02	0.840
PB-210	+	46.54	*	2.904E+00	1.056E+00	1.137E+00	1.245E-01	2.553
BI-211		72.87		6.676E+00	3.350E+00	5.015E+00	5.120E-01	1.331
	+	351.06	*	3.927E+00	6.154E-01	4.250E-01	4.050E-02	9.241
PB-212	+	74.82		2.302E+00	5.835E-01	5.347E-01	7.530E-02	4.305
	+	77.11		2.238E+00	3.643E-01	3.229E-01	3.279E-02	6.931
	+	238.63	*	1.716E+00	2.395E-01	1.481E-01	1.530E-02	11.587
	+	300.09		2.254E+00	1.491E+00	1.680E+00	1.875E-01	1.341
BI-214	+	609.32	*	1.407E+00	2.547E-01	1.482E-01	1.542E-02	9.495
	+	1120.29		2.216E+00	7.401E-01	6.427E-01	6.814E-02	3.447
	+	1764.49		1.878E+00	5.899E-01	2.723E-01	2.289E-02	6.894
PB-214	+	74.82		4.080E+00	1.008E+00	9.478E-01	1.223E-01	4.305
	+	77.11		3.945E+00	7.200E-01	5.692E-01	7.447E-02	6.931
	+	242.00		1.322E+00	5.861E-01	1.062E+00	1.161E-01	1.245
	+	295.22		1.384E+00	3.793E-01	2.814E-01	3.213E-02	4.919
	+	351.93	*	1.425E+00	2.368E-01	1.567E-01	1.724E-02	9.096
RA-224	+	240.99	*	2.337E+00	1.027E+00	1.588E+00	1.472E-01	1.472
RA-226	+	609.32	*	1.407E+00	2.547E-01	1.482E-01	1.542E-02	9.495
	+	1120.29		2.216E+00	7.401E-01	6.427E-01	6.814E-02	3.447
	+	1764.49		1.878E+00	5.899E-01	2.723E-01	2.289E-02	6.894
AC-228	+	338.32		1.459E+00	7.930E-01	4.978E-01	2.083E-01	2.930
	+	911.20	*	1.751E+00	4.183E-01	3.165E-01	3.632E-02	5.533
	+	968.97		1.527E+00	6.714E-01	6.007E-01	1.460E-01	2.541

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.459E+00	7.930E-01	4.978E-01	2.083E-01	2.930
	+	911.20	*	1.751E+00	4.183E-01	3.165E-01	3.632E-02	5.533
	+	968.97		1.527E+00	6.714E-01	6.007E-01	1.460E-01	2.541
TH-228	+	74.82		2.302E+00	5.395E-01	5.347E-01	5.480E-02	4.305
	+	77.11		2.238E+00	3.643E-01	3.229E-01	3.279E-02	6.931
	+	238.63	*	1.716E+00	2.395E-01	1.481E-01	1.530E-02	11.587
	+	300.09		2.254E+00	2.017E+00	1.680E+00	1.030E+00	1.341
TH-229	+	85.43		4.468E-01	2.825E-01	3.507E-01	3.546E-02	1.274
	+	88.47		4.366E-01	1.677E-01	2.099E-01	2.127E-02	2.080
		193.51	*	-1.582E-01	6.664E-01	1.094E+00	9.760E-02	-0.145
		210.85		2.603E+00	1.218E+00	1.923E+00	1.744E-01	1.354
TH-232	+	338.32		1.459E+00	5.238E-01	4.978E-01	4.584E-02	2.930
	+	911.20	*	1.751E+00	4.183E-01	3.165E-01	3.632E-02	5.533
	+	968.97		1.527E+00	6.714E-01	6.007E-01	1.460E-01	2.541
PA-234M	+	766.42		6.068E+01	4.676E+01	2.495E+01	1.267E+01	2.432
	+	1001.03	*	3.886E+01	1.122E+01	1.026E+01	1.007E+00	3.788
TH-234	+	63.29	*	2.311E+01	4.807E+00	1.427E+00	2.751E-01	16.194
	+	92.59		2.996E+01	7.004E+00	1.206E+00	2.753E-01	24.837
U-235	+	89.96		2.141E+00	1.123E+00	1.458E+00	3.678E-01	1.468
	+	93.35		2.263E+01	5.508E+00	9.134E-01	2.176E-01	24.776
	+	143.76	*	8.204E-01	4.520E-01	4.127E-01	7.472E-02	1.988
		163.33		1.192E-01	5.808E-01	9.541E-01	1.726E-01	0.125
	+	185.72		6.011E-01	1.225E-01	8.525E-02	7.538E-03	7.051
		205.31		6.523E-01	6.321E-01	1.044E+00	1.915E-01	0.625
NP-237	+	86.48	*	8.450E-01	3.697E-01	4.170E-01	9.706E-02	2.026
		95.86		1.078E+00	1.550E+00	1.778E+00	4.403E-01	0.606
U-238	+	63.29	*	2.311E+01	4.807E+00	1.427E+00	2.751E-01	16.194
	+	92.59		2.996E+01	3.458E+00	1.206E+00	1.251E-01	24.837

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	1.886E-01	4.402E-01	7.451E-01	7.230E-02	0.253
NA-22		1274.54	*	-4.264E-02	5.817E-02	9.054E-02	7.650E-03	-0.471
NA-24		1368.63	*	1.361E-03	5.817E-02	Half-Life too short		
SC-46		889.28	*	-3.306E-02	5.326E-02	8.340E-02	7.080E-03	-0.396
	+	1120.55		3.782E-01	1.238E-01	1.692E-01	1.390E-02	2.235
V-48		944.13		2.558E-01	1.354E+00	2.257E+00	1.912E-01	0.113
		983.53	*	1.002E-03	1.053E-01	1.727E-01	1.461E-02	0.006
		1312.11		3.444E-02	1.140E-01	1.946E-01	1.669E-02	0.177
CR-51		320.08	*	2.999E-03	5.017E-01	8.061E-01	7.842E-02	0.004
MN-54		834.85	*	2.364E-02	5.354E-02	9.140E-02	7.915E-03	0.259
CO-56		846.77	*	1.187E-02	5.410E-02	9.116E-02	7.866E-03	0.130
		1037.84		1.407E-01	4.260E-01	7.140E-01	6.325E-02	0.197
		1238.28		1.276E-01	1.251E-01	2.215E-01	1.897E-02	0.576
		1771.35		-1.577E+00	4.848E-01	3.701E-01	3.106E-02	-4.261
CO-57		122.06	*	3.042E-02	3.067E-02	5.316E-02	6.614E-03	0.572
		136.47		-9.564E-02	2.510E-01	4.179E-01	4.936E-02	-0.229

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-58	810.76	*		-6.347E-03	5.714E-02	9.435E-02	8.238E-03	-0.067
FE-59	1099.45	*		-1.363E-02	1.266E-01	2.037E-01	1.832E-02	-0.067
	1291.59			-1.363E-01	1.725E-01	2.533E-01	2.452E-02	-0.538
CO-60	1173.23			1.323E-02	6.163E-02	1.013E-01	8.142E-03	0.131
	1332.49	*		-3.464E-02	5.738E-02	8.984E-02	7.770E-03	-0.386
ZN-65	1115.54	*		7.588E-02	1.455E-01	2.137E-01	1.760E-02	0.355
SE-75	121.12			1.117E-01	1.606E-01	2.769E-01	3.930E-02	0.403
	136.00			-2.206E-02	4.840E-02	8.038E-02	9.169E-03	-0.274
	264.66	*		-3.627E-02	5.824E-02	9.186E-02	8.631E-03	-0.395
	279.54			7.587E-02	1.417E-01	2.350E-01	2.276E-02	0.323
	400.66			1.130E-01	3.177E-01	5.412E-01	6.044E-02	0.209
SR-85	514.00	*		-1.982E-01	7.001E-02	9.644E-02	8.805E-03	-2.055
Y-88	898.04			1.580E-02	5.904E-02	9.938E-02	8.445E-03	0.159
	1836.06	*		-7.137E-03	4.223E-02	6.842E-02	5.654E-03	-0.104
Y-91	1204.77	*		-1.870E-01	3.125E+01	5.230E+01	4.272E+00	-0.004
NB-94	702.65	*		6.017E-02	4.793E-02	8.309E-02	7.267E-03	0.724
	871.09			-2.160E-02	4.937E-02	7.898E-02	6.756E-03	-0.273
NB-95M	235.69	*		3.153E-01	1.754E-01	2.716E-01	2.833E-02	1.161
ZR-95	724.19			6.086E-02	1.618E-01	2.415E-01	2.289E-02	0.252
	756.73	*		1.435E-02	1.104E-01	1.779E-01	1.718E-02	0.081
MO-99	140.51			1.214E+01	3.943E+01	5.925E+01	1.464E+01	0.205
	181.07			-3.883E-01	3.206E+01	4.685E+01	8.840E+00	-0.008
	366.42			2.645E+01	1.789E+02	3.031E+02	2.719E+01	0.087
	739.50	*		-5.067E+00	2.367E+01	3.910E+01	6.193E+00	-0.130
	777.92			-3.256E+01	6.432E+01	1.034E+02	9.052E+00	-0.315
TC-99M	140.51	*		3.370E+11	6.432E+01	Half-Life too short		
RU-103	497.08	*		2.301E-02	5.886E-02	9.901E-02	1.413E-02	0.232
	610.33			1.481E+01	3.287E+00	3.515E+00	5.810E-01	4.213
RH-106	621.93	*		-3.080E-01	4.734E-01	7.325E-01	9.849E-02	-0.421
	1050.41			-2.965E-01	3.595E+00	5.819E+00	4.873E-01	-0.051
RU-106	621.93	*		-3.080E-01	4.724E-01	7.325E-01	6.526E-02	-0.421
	1050.41			-2.965E-01	3.595E+00	5.819E+00	4.873E-01	-0.051
AG-108M	433.94	*		-1.169E-02	3.848E-02	6.297E-02	5.780E-03	-0.186
	614.28			-1.167E-02	5.376E-02	7.372E-02	6.796E-03	-0.158
	722.91			-3.956E-03	6.295E-02	9.069E-02	8.195E-03	-0.044
AG-110M	657.76	*		-2.782E-02	6.464E-02	8.646E-02	7.746E-03	-0.322
	677.62			-1.115E-01	4.578E-01	7.250E-01	6.492E-02	-0.154
	706.68			-3.517E-01	3.159E-01	4.643E-01	4.176E-02	-0.757
	763.94			6.637E-01	2.833E-01	4.761E-01	4.284E-02	1.394
	884.68			2.171E-03	7.155E-02	1.185E-01	1.041E-02	0.018
	937.49			-5.462E-02	1.483E-01	2.364E-01	2.077E-02	-0.231
	1384.29			-1.557E-01	2.323E-01	3.580E-01	3.192E-02	-0.435
	1505.03			4.038E-02	3.814E-01	6.344E-01	5.519E-02	0.064
SN-113	391.69	*		-2.372E-02	5.845E-02	9.592E-02	8.564E-03	-0.247
CD-115	260.90			8.354E+01	2.488E+02	4.109E+02	3.841E+01	0.203
	492.35			-8.245E+01	7.540E+01	1.157E+02	1.053E+01	-0.713
	527.90	*		7.229E+00	2.320E+01	3.878E+01	3.543E+00	0.186
SN-117M	156.02			-1.552E+00	2.977E+00	4.898E+00	4.704E-01	-0.317
	158.56	*		-1.748E-02	7.401E-02	1.229E-01	1.151E-02	-0.142

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-123M		159.00	*	1.735E-02	3.609E-02	6.131E-02	5.743E-03	0.283
SB-124		602.73		1.836E-02	6.295E-02	9.071E-02	8.159E-03	0.202
		645.85		-4.015E-01	7.207E-01	1.119E+00	1.037E-01	-0.359
		722.78		-2.196E-02	6.414E-01	9.265E-01	8.300E-02	-0.024
		1690.97	*	5.201E-03	1.116E-01	1.827E-01	1.625E-02	0.028
SB-125		427.87	*	-1.799E-02	1.177E-01	1.946E-01	1.758E-02	-0.092
	+	463.37		7.709E-01	5.508E-01	6.921E-01	6.678E-02	1.114
		600.60		7.228E-02	2.562E-01	4.130E-01	3.970E-02	0.175
		635.95		2.286E-01	3.783E-01	6.373E-01	6.067E-02	0.359
TE-125M		109.28	*	7.661E+00	1.447E+01	2.083E+01	2.693E+00	0.368
I-126		388.63		1.517E-01	2.384E-01	4.111E-01	3.579E-02	0.369
		666.33	*	-3.405E-02	3.665E-01	5.049E-01	4.386E-02	-0.067
		753.82		1.757E+00	2.771E+00	4.811E+00	4.218E-01	0.365
SB-126		414.70		-4.609E-02	1.049E-01	1.711E-01	1.507E-02	-0.269
		666.50		-1.170E-02	1.262E-01	1.738E-01	1.510E-02	-0.067
		695.00		1.170E-01	1.225E-01	2.088E-01	1.824E-02	0.560
		697.00		-3.478E-02	4.305E-01	6.884E-01	6.016E-02	-0.051
		720.70	*	-5.908E-02	2.385E-01	3.647E-01	3.196E-02	-0.162
		856.80		-3.635E-01	6.956E-01	1.107E+00	9.521E-02	-0.328
SB-127		252.40		4.391E+00	6.857E+00	1.109E+01	4.633E+00	0.396
		473.00		8.846E-01	2.652E+00	4.469E+00	5.968E-01	0.198
		685.70	*	6.807E-01	2.362E+00	3.876E+00	4.564E-01	0.176
		783.70		3.781E+00	6.161E+00	1.064E+01	1.357E+00	0.355
I-131		80.19		-6.143E+00	6.040E+00	8.294E+00	8.448E-01	-0.741
		284.31		-1.882E-01	2.070E+00	3.336E+00	3.268E-01	-0.056
		364.49	*	1.610E-01	1.709E-01	2.988E-01	2.822E-02	0.539
		636.99		1.174E+00	2.420E+00	3.977E+00	3.707E-01	0.295
TE-132		49.72		-2.496E+00	7.685E+00	1.104E+01	1.395E+00	-0.226
	+	111.76		1.389E+02	9.658E+01	1.002E+02	1.379E+01	1.387
		116.30		3.938E+01	5.151E+01	7.462E+01	1.049E+01	0.528
		228.16	*	5.762E-01	1.174E+00	1.958E+00	3.202E-01	0.294
BA-133		81.00		3.631E-02	1.360E-01	1.560E-01	2.558E-02	0.233
		276.40		2.203E-01	4.611E-01	7.619E-01	1.111E-01	0.289
		302.85		1.237E-01	2.041E-01	2.982E-01	4.046E-02	0.415
		356.01	*	-1.337E-02	6.054E-02	8.745E-02	1.159E-02	-0.153
		383.85		-1.502E-01	3.907E-01	6.428E-01	8.053E-02	-0.234
I-133		529.87	*	-2.606E-03	3.907E-01	Half-Life	too short	
		875.33		-5.425E-01	3.907E-01	Half-Life	too short	
		1298.22		-2.279E-02	3.907E-01	Half-Life	too short	
CS-134		563.25		7.343E-01	4.962E-01	8.768E-01	8.051E-02	0.837
		569.33		-1.123E-01	2.954E-01	4.655E-01	4.284E-02	-0.241
		604.72		-6.404E-03	5.555E-02	7.721E-02	6.954E-03	-0.083
		795.86	*	4.517E-02	6.670E-02	1.157E-01	1.018E-02	0.390
		801.95		1.546E-01	5.759E-01	9.534E-01	8.365E-02	0.162
		1365.19		1.468E+00	1.859E+00	3.295E+00	2.988E-01	0.445
CS-135		268.22	*	9.978E-02	2.069E-01	3.427E-01	3.638E-02	0.291
I-135		546.56		-2.424E+11	2.069E-01	Half-Life	too short	
		836.80		7.135E+11	2.069E-01	Half-Life	too short	
		1038.76		-7.179E+10	2.069E-01	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136		1131.51		1.088E+10	2.069E-01	Half-Life	too short	
		1260.41	*	7.145E+10	2.069E-01	Half-Life	too short	
		1457.56		1.773E+13	2.069E-01	Half-Life	too short	
		1678.03		-7.796E+10	2.069E-01	Half-Life	too short	
		1791.20		0.000E+00	2.069E-01	Half-Life	too short	
		153.25		2.111E-01	1.136E+00	1.916E+00	2.172E-01	0.110
		176.60		-1.433E-01	6.474E-01	1.069E+00	1.029E-01	-0.134
		273.65		-1.542E+00	7.483E-01	1.077E+00	1.083E-01	-1.431
		340.55		5.390E-01	2.341E-01	3.682E-01	3.498E-02	1.464
		818.51		-2.511E-02	1.120E-01	1.833E-01	1.595E-02	-0.137
CE-139		1048.07	*	3.118E-02	1.547E-01	2.564E-01	2.244E-02	0.122
		1235.36		1.084E+00	8.918E-01	1.539E+00	1.774E-01	0.704
		165.86	*	-1.681E-02	3.757E-02	6.177E-02	5.336E-03	-0.272
BA-140		162.66		5.344E-01	1.153E+00	1.911E+00	1.819E-01	0.280
		304.85		4.998E-01	2.052E+00	2.930E+00	8.643E-01	0.171
LA-140	+	423.72		2.450E+00	2.832E+00	4.736E+00	1.561E+00	0.517
		537.26	*	-6.126E-02	4.041E-01	6.558E-01	2.233E-01	-0.093
		328.76		1.497E+00	6.424E-01	7.527E-01	7.320E-02	1.989
		487.02		1.698E-01	1.959E-01	3.387E-01	3.251E-02	0.501
		815.77		4.764E-01	4.917E-01	8.684E-01	8.427E-02	0.549
CE-143		1596.21	*	7.421E-02	1.109E-01	1.976E-01	1.708E-02	0.376
		57.36		-5.636E-04	1.109E-01	Half-Life	too short	
		293.27	*	1.304E-03	1.109E-01	Half-Life	too short	
		664.57		5.559E-03	1.109E-01	Half-Life	too short	
CE-144		721.93		3.183E-03	1.109E-01	Half-Life	too short	
		80.12		-2.989E+00	2.972E+00	4.085E+00	4.138E-01	-0.732
PM-144		133.52	*	-2.025E-02	2.376E-01	4.002E-01	6.851E-02	-0.051
		476.78		5.211E-02	8.805E-02	1.502E-01	1.469E-02	0.347
PR-144		618.01		3.245E-02	4.475E-02	7.596E-02	6.959E-03	0.427
		696.49	*	1.679E-02	5.211E-02	8.552E-02	7.476E-03	0.196
		696.51	*	1.220E+00	3.899E+00	6.396E+00	5.589E-01	0.191
PM-146		1489.16		-4.962E+00	1.686E+01	2.665E+01	2.319E+00	-0.186
		453.88	*	-1.176E-02	5.700E-02	9.352E-02	1.019E-02	-0.126
ND-147	+	633.25		-1.454E+00	2.107E+00	3.129E+00	1.197E+00	-0.465
		735.93		-1.005E-02	2.052E-01	3.428E-01	9.624E-02	-0.029
		747.24		-2.025E-02	1.514E-01	2.515E-01	3.690E-02	-0.081
		91.11		7.437E-01	3.515E-01	1.034E+00	1.126E-01	0.720
		319.41		-7.940E-01	4.703E+00	7.488E+00	6.973E-01	-0.106
		531.02	*	5.987E-01	8.577E-01	1.458E+00	2.224E-01	0.411
		285.90	*	-1.013E+02	1.654E+02	2.583E+02	4.128E+01	-0.392
EU-152		121.78		8.640E-02	8.799E-02	1.524E-01	2.032E-02	0.567
		244.70		9.207E-02	4.596E-01	6.656E-01	6.181E-02	0.138
GD-153		344.28	*	-6.802E-02	1.359E-01	1.931E-01	1.863E-02	-0.352
		778.90		-1.860E-01	3.480E-01	5.580E-01	4.884E-02	-0.333
		964.08		5.655E-01	4.385E-01	6.957E-01	5.891E-02	0.813
		1085.87		1.562E-01	5.110E-01	8.527E-01	7.080E-02	0.183
		1112.07		1.694E-01	4.413E-01	6.669E-01	5.493E-02	0.254
		1408.01		2.638E-02	2.598E-01	4.336E-01	3.771E-02	0.061
		69.67		6.923E-01	1.650E+00	2.415E+00	2.479E-01	0.287

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		97.43	*	1.419E-01	1.522E-01	1.783E-01	1.903E-02	0.796
		103.18		-9.757E-02	1.543E-01	2.115E-01	2.337E-02	-0.461
		123.07		4.442E-02	6.232E-02	1.074E-01	1.547E-02	0.414
		723.31		-5.695E-02	2.868E-01	4.082E-01	3.929E-02	-0.140
		873.19		-3.287E-01	4.081E-01	6.310E-01	7.472E-02	-0.521
		996.26		-1.210E-01	5.875E-01	8.037E-01	1.397E-01	-0.151
		1004.73		2.754E-01	3.505E-01	5.330E-01	6.131E-02	0.517
EU-155		1274.44	*	-1.178E-01	1.652E-01	2.573E-01	2.893E-02	-0.458
	+	86.55		3.435E-01	1.320E-01	1.995E-01	2.032E-02	1.722
TB-160		105.31	*	1.403E-01	1.331E-01	2.174E-01	2.451E-02	0.645
	+	86.79		9.207E-01	3.536E-01	5.310E-01	5.368E-02	1.734
		197.04		8.823E-02	7.308E-01	1.185E+00	1.061E-01	0.074
		215.65		5.268E-01	9.003E-01	1.515E+00	1.380E-01	0.348
		298.57		1.911E-01	2.415E-01	2.642E-01	2.476E-02	0.723
		879.36	*	5.800E-02	2.065E-01	3.482E-01	2.969E-02	0.167
		962.29		6.580E-01	8.249E-01	1.257E+00	1.064E-01	0.524
		966.15		1.138E+00	3.749E-01	6.424E-01	5.439E-02	1.771
		1177.93		-4.945E-01	5.239E-01	7.764E-01	6.258E-02	-0.637
		1271.85		-1.783E-01	9.097E-01	1.489E+00	1.256E-01	-0.120
HO-166M		80.57		-3.518E-01	3.248E-01	4.446E-01	4.503E-02	-0.791
	+	184.41		4.776E-01	9.729E-02	1.116E-01	9.854E-03	4.279
		280.46		-4.121E-02	1.087E-01	1.728E-01	1.621E-02	-0.238
		410.95		3.288E-01	3.247E-01	5.670E-01	4.982E-02	0.580
		711.68	*	1.033E-01	9.068E-02	1.560E-01	1.366E-02	0.662
		752.31		-8.078E-02	4.060E-01	6.710E-01	5.884E-02	-0.120
		810.29		2.423E-02	8.222E-02	1.396E-01	1.216E-02	0.174
TA-182		67.75		1.988E-02	9.981E-02	1.454E-01	1.498E-02	0.137
	+	100.11		9.089E-01	3.202E-01	3.735E-01	4.050E-02	2.434
		152.43		8.035E-02	4.390E-01	7.408E-01	7.364E-02	0.108
		222.11		-1.349E-01	4.361E-01	7.076E-01	6.478E-02	-0.191
	+	1121.30		1.045E+00	3.421E-01	4.551E-01	3.737E-02	2.297
		1189.05		-2.118E-01	4.664E-01	7.250E-01	5.877E-02	-0.292
		1221.41	*	-1.647E-01	2.620E-01	4.172E-01	3.436E-02	-0.395
IR-192		1231.02		1.185E-01	6.419E-01	1.086E+00	8.987E-02	0.109
	+	295.96		1.034E+00	2.755E-01	3.353E-01	3.163E-02	3.084
		308.46		-1.066E-01	1.260E-01	1.932E-01	1.814E-02	-0.552
		316.51	*	1.369E-03	4.568E-02	7.354E-02	6.870E-03	0.019
HG-203		468.07		3.834E-02	9.643E-02	1.432E-01	1.381E-02	0.268
		70.83		2.956E-01	1.337E+00	1.943E+00	3.300E-01	0.152
		72.87		1.690E+00	8.755E-01	1.269E+00	2.091E-01	1.331
BI-207		279.20	*	4.550E-02	5.091E-02	8.552E-02	8.196E-03	0.532
		72.81		3.575E-01	1.916E-01	2.867E-01	2.927E-02	1.247
	+	74.97		6.635E-01	1.553E-01	2.069E-01	2.106E-02	3.207
		569.70		-6.077E-04	4.615E-02	7.441E-02	6.765E-03	-0.008
PB-211		1063.66	*	-9.879E-03	7.667E-02	1.235E-01	1.031E-02	-0.080
		1770.23		-7.933E-01	7.662E-01	7.526E-01	6.318E-02	-1.054
		404.85	*	-1.352E+00	1.136E+00	1.435E+00	6.947E-01	-0.942
		427.09		-9.650E-03	2.013E+00	3.354E+00	1.553E+00	-0.003
		832.01		-4.044E-01	1.395E+00	2.242E+00	1.163E+00	-0.180

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-212	+	727.33	*	1.760E+00	9.040E-01	1.456E+00	1.829E-01	1.209
		785.37		3.225E+00	4.596E+00	7.985E+00	6.985E-01	0.404
		1620.50		4.446E-01	3.037E+00	5.060E+00	4.362E-01	0.088
RN-219		271.23	*	2.263E-01	3.391E-01	5.282E-01	5.754E-02	0.428
		401.81		3.709E-01	5.059E-01	8.736E-01	1.305E-01	0.425
RA-223	+	81.07	*	7.943E-02	3.082E-01	3.533E-01	3.578E-02	0.225
		83.79		2.659E-01	1.681E-01	2.380E-01	2.408E-02	1.117
		94.87		4.935E+00	9.523E-01	1.170E+00	1.230E-01	4.219
	+	144.24	*	2.750E+00	1.466E+00	1.622E+00	1.865E-01	1.695
		154.21		1.161E-01	4.828E-01	8.156E-01	8.571E-02	0.142
		269.46		2.665E-01	2.647E-01	4.179E-01	3.981E-02	0.638
	+	323.87	*	2.050E-01	9.126E-01	1.298E+00	2.295E-01	0.158
		338.28		5.788E+00	2.135E+00	2.750E+00	3.437E-01	2.105
		79.69		-1.016E+00	1.483E+00	2.057E+00	3.710E-01	-0.494
AC-227		235.96	*	6.419E-01	2.251E-01	3.533E-01	3.839E-02	1.817
		256.23		-1.897E-02	3.199E-01	5.199E-01	6.536E-02	-0.036
		299.98		2.479E+00	1.649E+00	2.070E+00	2.737E-01	1.198
	+	304.50	*	2.572E-01	2.319E+00	3.289E+00	5.567E-01	0.078
		334.37		1.644E+00	3.473E+00	3.669E+00	5.847E-01	0.448
		79.80		-1.421E+00	1.968E+00	2.709E+00	6.074E-01	-0.525
TH-227		235.96	*	6.419E-01	2.240E-01	3.533E-01	3.642E-02	1.817
		256.23		-1.897E-02	3.199E-01	5.199E-01	7.314E-02	-0.036
		299.98		2.479E+00	1.649E+00	2.070E+00	2.737E-01	1.198
	+	304.50	*	2.572E-01	2.319E+00	3.289E+00	5.567E-01	0.078
		334.37		1.644E+00	3.473E+00	3.669E+00	5.847E-01	0.448
		283.69		-5.864E-01	1.813E+00	2.886E+00	4.343E-01	-0.203
PA-231	+	301.36	*	1.592E+00	1.058E+00	1.306E+00	1.657E-01	1.220
TH-231	+	81.07	*	7.943E-02	3.082E-01	3.533E-01	3.578E-02	0.225
		83.79		2.659E-01	1.681E-01	2.380E-01	2.408E-02	1.117
		94.87		4.935E+00	9.523E-01	1.170E+00	1.230E-01	4.219
	+	144.24	*	2.750E+00	1.466E+00	1.622E+00	1.865E-01	1.695
		154.21		1.161E-01	4.828E-01	8.156E-01	8.571E-02	0.142
		269.46		2.665E-01	2.647E-01	4.179E-01	3.981E-02	0.638
	+	323.87	*	2.050E-01	9.126E-01	1.298E+00	2.295E-01	0.158
		338.28		5.788E+00	2.135E+00	2.750E+00	3.437E-01	2.105
		300.13		1.122E+00	7.511E-01	9.382E-01	1.433E-01	1.196
PA-233	+	311.90	*	-6.336E-03	8.107E-02	1.299E-01	1.243E-02	-0.049
		340.48		2.360E+00	1.090E+00	1.508E+00	3.660E-01	1.566
		94.67		2.693E+00	4.718E-01	4.685E-01	6.454E-02	5.749
PA-234	+	98.44	*	4.572E-01	2.991E-01	2.021E-01	1.135E-01	2.262
		111.00		4.401E-01	2.876E-01	4.211E-01	6.049E-02	1.045
		131.20		-1.171E-01	1.312E-01	2.146E-01	2.520E-02	-0.546
	+	569.50	*	-9.530E-02	4.087E-01	6.501E-01	5.911E-02	-0.147
		733.00		3.228E-01	5.999E-01	9.054E-01	2.015E-01	0.357
		880.51		2.970E-01	4.237E-01	7.331E-01	6.247E-02	0.405
	+	883.24	*	3.287E-01	4.657E-01	7.171E-01	4.819E-01	0.458
		926.50		1.565E-01	2.456E-01	4.192E-01	1.057E-01	0.373
		946.00		1.561E-01	4.552E-01	7.441E-01	1.391E-01	0.210
		949.00		-4.590E-01	6.460E-01	1.001E+00	8.477E-02	-0.459

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	99.53		8.295E-01	2.923E-01	3.593E-01	3.883E-02	2.308
		103.37		-7.113E-03	1.374E-01	1.939E-01	2.145E-02	-0.037
		106.12		1.502E-02	1.073E-01	1.713E-01	1.927E-02	0.088
		117.23	*	6.963E-02	5.615E-01	7.929E-01	9.562E-02	0.088
		228.18		1.308E-01	2.728E-01	4.558E-01	4.191E-02	0.287
		277.60		1.761E-01	2.260E-01	3.782E-01	3.547E-02	0.466
AM-241		59.54	*	-4.224E-02	1.057E-01	1.518E-01	1.683E-02	-0.278
CM-247		278.00		9.814E-01	9.633E-01	1.625E+00	1.524E-01	0.604
		287.50		1.576E+00	1.637E+00	2.675E+00	2.509E-01	0.589
		402.40	*	2.586E-02	4.629E-02	7.961E-02	6.953E-03	0.325
CF-249		252.80		9.238E-02	1.215E+00	1.988E+00	1.853E-01	0.046
		333.37		2.686E-01	3.475E-01	3.819E-01	3.528E-02	0.703
		388.16	*	3.455E-02	5.385E-02	9.288E-02	8.092E-03	0.372
CF-251		177.52	*	-3.030E-03	1.611E-01	2.679E-01	2.347E-02	-0.011
		227.38		5.278E-01	4.460E-01	7.619E-01	7.002E-02	0.693
		285.41		-2.695E+00	2.834E+00	4.355E+00	4.086E-01	-0.619
ANH-511		511.00	*	4.375E-02	6.049E-02	1.079E-01	9.849E-03	0.405

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]G247911002      *
* Acquisition date   : 6-MAR-2010 17:23:00 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 02:00:01.97 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID        : G247911002 Analyst initials: MXR1                   *
* Batch Number     : 957714 Sample Quantity : 1.3119E+02 GRAM            *
* Recovery         : 1.00000 Carrier Weight : 0.00000                   *
*****
*                                     QC DATA                                *
*                                     *                                       *
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME : 10-FEB-2010 14:02:26 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	2.761E+01	3.186E+00	7.447E-01	0.000E+00
NB-95	2.320E-01	1.333E-01	9.649E-02	0.000E+00
CD-109	2.902E+00	1.092E+00	1.461E+00	0.000E+00
SN-126	2.832E-01	1.066E-01	1.424E-01	0.000E+00
BA-137M	2.276E-01	8.636E-02	8.445E-02	0.000E+00
CS-137	2.404E-01	9.124E-02	8.921E-02	0.000E+00
CE-141	2.634E-01	1.372E-01	1.425E-01	0.000E+00
TL-208	5.010E-01	1.115E-01	8.694E-02	0.000E+00
PB-210	2.904E+00	1.035E+00	1.204E+00	0.000E+00
BI-211	3.927E+00	6.030E-01	4.358E-01	0.000E+00
PB-212	1.716E+00	2.347E-01	1.528E-01	0.000E+00
BI-214	1.407E+00	2.496E-01	1.506E-01	0.000E+00
PB-214	1.425E+00	2.320E-01	1.607E-01	0.000E+00
RA-224	2.337E+00	1.007E+00	1.638E+00	0.000E+00
RA-226	1.407E+00	2.496E-01	1.506E-01	0.000E+00
AC-228	1.751E+00	4.099E-01	3.194E-01	0.000E+00
RA-228	1.751E+00	4.099E-01	3.194E-01	0.000E+00
TH-228	1.716E+00	2.347E-01	1.528E-01	0.000E+00
TH-229	-1.582E-01	6.531E-01	1.133E+00	0.000E+00
TH-232	1.751E+00	4.099E-01	3.194E-01	0.000E+00
PA-234M	3.886E+01	1.100E+01	1.034E+01	0.000E+00
TH-234	2.311E+01	4.711E+00	1.504E+00	0.000E+00
U-235	8.204E-01	4.430E-01	4.293E-01	0.000E+00
NP-237	8.450E-01	3.623E-01	4.373E-01	0.000E+00
U-238	2.311E+01	4.711E+00	1.504E+00	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.886E-01	4.314E-01	7.602E-01	0.000E+00 NOT IDENT.
NA-22	-4.264E-02	5.701E-02	9.085E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	3.787E+06	0.000E+00	0.000E+00	SHORT HLIF
SC-46	-3.306E-02	5.220E-02	8.420E-02	0.000E+00	FAIL ABUN
V-48	1.002E-03	1.032E-01	1.741E-01	0.000E+00	NOT IDENT.
CR-51	2.999E-03	4.916E-01	8.279E-01	0.000E+00	NOT IDENT.
MN-54	2.364E-02	5.247E-02	9.237E-02	0.000E+00	NOT IDENT.
CO-56	1.187E-02	5.302E-02	9.211E-02	0.000E+00	NOT IDENT.
CO-57	3.042E-02	3.005E-02	5.545E-02	0.000E+00	NOT IDENT.
CO-58	-6.347E-03	5.600E-02	9.540E-02	0.000E+00	NOT IDENT.
FE-59	-1.363E-02	1.241E-01	2.049E-01	0.000E+00	NOT IDENT.
CO-60	-3.464E-02	5.624E-02	9.007E-02	0.000E+00	NOT IDENT.
ZN-65	7.588E-02	1.426E-01	2.149E-01	0.000E+00	NOT IDENT.
SE-75	-3.627E-02	5.708E-02	9.463E-02	0.000E+00	NOT IDENT.
SR-85	-1.982E-01	6.861E-02	9.827E-02	0.000E+00	NOT IDENT.
Y-88	-7.137E-03	4.138E-02	6.822E-02	0.000E+00	NOT IDENT.
Y-91	-1.870E-01	3.063E+01	5.252E+01	0.000E+00	NOT IDENT.
NB-94	6.017E-02	4.697E-02	8.422E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.719E-01	2.803E-01	0.000E+00	NOT IDENT.
ZR-95	1.435E-02	1.081E-01	1.801E-01	0.000E+00	NOT IDENT.
MO-99	-5.067E+00	2.320E+01	3.960E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.075E+18	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.301E-02	5.768E-02	1.009E-01	0.000E+00	FAIL ABUN
RH-106	-3.080E-01	4.639E-01	7.440E-01	0.000E+00	NOT IDENT.
RU-106	-3.080E-01	4.629E-01	7.440E-01	0.000E+00	NOT IDENT.
AG-108M	-1.169E-02	3.771E-02	6.434E-02	0.000E+00	NOT IDENT.
AG-110M	-2.782E-02	6.335E-02	8.774E-02	0.000E+00	NOT IDENT.
SN-113	-2.372E-02	5.728E-02	9.818E-02	0.000E+00	NOT IDENT.
CD-115	7.229E+00	2.274E+01	3.950E+01	0.000E+00	NOT IDENT.
SN-117M	-1.748E-02	7.253E-02	1.277E-01	0.000E+00	NOT IDENT.
TE-123M	1.735E-02	3.537E-02	6.368E-02	0.000E+00	NOT IDENT.
SB-124	5.201E-03	1.093E-01	1.824E-01	0.000E+00	NOT IDENT.
SB-125	-1.799E-02	1.154E-01	1.988E-01	0.000E+00	FAIL ABUN
TE-125M	7.661E+00	1.418E+01	2.176E+01	0.000E+00	NOT IDENT.
I-126	-3.405E-02	3.592E-01	5.123E-01	0.000E+00	NOT IDENT.
SB-126	-5.908E-02	2.337E-01	3.696E-01	0.000E+00	NOT IDENT.
SB-127	6.807E-01	2.314E+00	3.930E+00	0.000E+00	NOT IDENT.
I-131	1.610E-01	1.674E-01	3.062E-01	0.000E+00	NOT IDENT.
TE-132	5.762E-01	1.150E+00	2.022E+00	0.000E+00	FAIL ABUN
BA-133	-1.337E-02	5.933E-02	8.965E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.053E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	4.517E-02	6.537E-02	1.170E-01	0.000E+00	NOT IDENT.
CS-135	9.978E-02	2.028E-01	3.530E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.382E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.118E-02	1.516E-01	2.581E-01	0.000E+00	NOT IDENT.
CE-139	-1.681E-02	3.682E-02	6.412E-02	0.000E+00	NOT IDENT.
BA-140	-6.126E-02	3.960E-01	6.677E-01	0.000E+00	NOT IDENT.
LA-140	7.421E-02	1.087E-01	1.975E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	4.593E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.025E-02	2.329E-01	4.169E-01	0.000E+00	NOT IDENT.
PM-144	1.679E-02	5.106E-02	8.670E-02	0.000E+00	NOT IDENT.
PR-144	1.220E+00	3.821E+00	6.484E+00	0.000E+00	NOT IDENT.
PM-146	-1.176E-02	5.586E-02	9.548E-02	0.000E+00	NOT IDENT.
ND-147	5.987E-01	8.405E-01	1.485E+00	0.000E+00	FAIL ABUN
PM-149	-1.013E+02	1.621E+02	2.657E+02	0.000E+00	NOT IDENT.
EU-152	-6.802E-02	1.332E-01	1.981E-01	0.000E+00	NOT IDENT.
GD-153	1.419E-01	1.492E-01	1.867E-01	0.000E+00	NOT IDENT.
EU-154	-1.178E-01	1.619E-01	2.582E-01	0.000E+00	NOT IDENT.
EU-155	1.403E-01	1.304E-01	2.273E-01	0.000E+00	FAIL ABUN
TB-160	5.800E-02	2.024E-01	3.516E-01	0.000E+00	FAIL ABUN
HO-166M	1.033E-01	8.886E-02	1.581E-01	0.000E+00	FAIL ABUN
TA-182	-1.647E-01	2.568E-01	4.190E-01	0.000E+00	FAIL ABUN
IR-192	1.369E-03	4.476E-02	7.554E-02	0.000E+00	FAIL ABUN
HG-203	4.550E-02	4.989E-02	8.802E-02	0.000E+00	NOT IDENT.
BI-207	-9.879E-03	7.514E-02	1.243E-01	0.000E+00	FAIL ABUN
PB-211	-1.352E+00	1.113E+00	1.468E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.859E-01	1.475E+00	0.000E+00	FAIL ABUN
RN-219	3.709E-01	4.958E-01	8.938E-01	0.000E+00	NOT IDENT.
RA-223	2.050E-01	8.943E-01	1.333E+00	0.000E+00	FAIL ABUN
AC-227	-1.897E-02	3.135E-01	5.359E-01	0.000E+00	FAIL ABUN
TH-227	-1.897E-02	3.135E-01	5.359E-01	0.000E+00	FAIL ABUN
PA-231	-5.864E-01	1.777E+00	2.970E+00	0.000E+00	FAIL ABUN
TH-231	2.050E-01	8.943E-01	1.333E+00	0.000E+00	FAIL ABUN
PA-233	-6.336E-03	7.945E-02	1.335E-01	0.000E+00	FAIL ABUN
PA-234	1.561E-01	4.461E-01	7.504E-01	0.000E+00	FAIL ABUN
NP-239	6.963E-02	5.503E-01	8.276E-01	0.000E+00	FAIL ABUN
AM-241	-4.224E-02	1.036E-01	1.601E-01	0.000E+00	NOT IDENT.
CM-247	2.586E-02	4.536E-02	8.144E-02	0.000E+00	NOT IDENT.
CF-249	3.455E-02	5.277E-02	9.508E-02	0.000E+00	NOT IDENT.
CF-251	-3.030E-03	1.578E-01	2.778E-01	0.000E+00	NOT IDENT.

ANH-511	4.375E-02	5.928E-02	1.100E-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]G247911002.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:23:00.
Sample ID        : G247911002 Sample quantity   : 1.31190E+02 GRAM
Detector name    : GAM13 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.97 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 957714 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	1460.82	1032	10.66*	1.003E+00	2.761E+01	2.761E+01	11.77
NB-95	765.81	117	99.81*	1.729E+00	1.945E-01	2.320E-01	58.63
CD-109	88.03	267	3.70*	7.287E+00	2.832E+00	2.902E+00	38.40
SN-126	64.28	2208	9.60	7.388E+00	8.906E+00	8.906E+00	18.05
	86.94	267	8.90	7.287E+00	1.177E+00	1.177E+00	55.78
	87.57	267	37.00*	7.287E+00	2.832E-01	2.832E-01	38.40
BA-137M	661.66	141	89.90*	1.970E+00	2.274E-01	2.276E-01	38.72
CS-137	661.66	141	85.10*	1.970E+00	2.402E-01	2.404E-01	38.72
CE-141	145.44	194	48.29*	6.185E+00	1.862E-01	2.634E-01	53.16
TL-208	277.37	-----	6.60	4.098E+00	-----	Line Not Found	-----
	583.19	328	85.00*	2.202E+00	5.010E-01	5.010E-01	22.70
	860.56	-----	12.50	1.561E+00	-----	Line Not Found	-----
PB-210	46.54	298	4.25*	6.916E+00	2.900E+00	2.904E+00	36.38
BI-211	72.87	-----	1.23	7.416E+00	-----	Line Not Found	-----
	351.06	603	12.92*	3.398E+00	3.927E+00	3.927E+00	15.67
PB-212	74.82	613	10.28	7.408E+00	2.302E+00	2.302E+00	25.35
	77.11	989	17.10	7.394E+00	2.238E+00	2.238E+00	16.28
	238.63	1196	43.60*	4.574E+00	1.716E+00	1.716E+00	13.95
	300.09	100	3.30	3.855E+00	2.254E+00	2.254E+00	66.14
BI-214	609.32	474	45.49*	2.119E+00	1.407E+00	1.407E+00	18.10
	1120.29	144	14.92	1.244E+00	2.216E+00	2.216E+00	33.40
	1764.49	87	15.30	8.703E-01	1.878E+00	1.878E+00	31.41
PB-214	74.82	613	5.80	7.408E+00	4.080E+00	4.080E+00	24.71
	77.11	989	9.70	7.394E+00	3.945E+00	3.945E+00	18.25
	242.00	152	7.25	4.530E+00	1.322E+00	1.322E+00	44.34
	295.22	348	18.42	3.908E+00	1.384E+00	1.384E+00	27.41
	351.93	603	35.60*	3.398E+00	1.425E+00	1.425E+00	16.61
RA-224	240.99	152	4.10*	4.530E+00	2.337E+00	2.337E+00	43.96
RA-226	609.32	474	45.49*	2.119E+00	1.407E+00	1.407E+00	18.10
	1120.29	144	14.92	1.244E+00	2.216E+00	2.216E+00	33.40
	1764.49	87	15.30	8.703E-01	1.878E+00	1.878E+00	31.41
AC-228	338.32	202	11.27	3.509E+00	1.459E+00	1.459E+00	54.36

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	235	25.80*	1.485E+00	1.751E+00	1.751E+00	23.89
	968.97	119	15.80	1.408E+00	1.527E+00	1.527E+00	43.98
	338.32	202	11.27	3.509E+00	1.459E+00	1.459E+00	54.36
TH-228	911.20	235	25.80*	1.485E+00	1.751E+00	1.751E+00	23.89
	968.97	119	15.80	1.408E+00	1.527E+00	1.527E+00	43.98
	74.82	613	10.28	7.408E+00	2.302E+00	2.302E+00	23.43
TH-229	77.11	989	17.10	7.394E+00	2.238E+00	2.238E+00	16.28
	238.63	1196	43.60*	4.574E+00	1.716E+00	1.716E+00	13.95
	300.09	100	3.30	3.855E+00	2.254E+00	2.254E+00	89.50
TH-232	85.43	168	14.70	7.327E+00	4.468E-01	4.468E-01	63.22
	88.47	267	24.00	7.287E+00	4.366E-01	4.366E-01	38.40
	193.51	-----	4.41*	5.254E+00	-----	Line Not Found	-----
TH-232	210.85	-----	2.80	4.974E+00	-----	Line Not Found	-----
	338.32	202	11.27	3.509E+00	1.459E+00	1.459E+00	35.91
	911.20	235	25.80*	1.485E+00	1.751E+00	1.751E+00	23.89
PA-234M	968.97	119	15.80	1.408E+00	1.527E+00	1.527E+00	43.98
	766.42	117	0.32	1.729E+00	6.068E+01	6.068E+01	77.06
	1001.03	156	0.84*	1.369E+00	3.886E+01	3.886E+01	28.88
TH-234	63.29	2208	3.70*	7.388E+00	2.311E+01	2.311E+01	20.80
	92.59	3192	4.23	7.206E+00	2.996E+01	2.996E+01	23.38
	89.96	188	3.47	7.247E+00	2.141E+00	2.141E+00	52.46
U-235	93.35	3192	5.60	7.206E+00	2.263E+01	2.263E+01	24.34
	143.76	194	10.96*	6.185E+00	8.204E-01	8.204E-01	55.10
	163.33	-----	5.08	5.799E+00	-----	Line Not Found	-----
NP-237	185.72	647	57.20	5.388E+00	6.011E-01	6.011E-01	20.37
	205.31	-----	5.01	5.061E+00	-----	Line Not Found	-----
	86.48	267	12.40*	7.287E+00	8.450E-01	8.450E-01	43.75
U-238	95.86	-----	2.68	7.153E+00	-----	Line Not Found	-----
	63.29	2208	3.70*	7.388E+00	2.311E+01	2.311E+01	20.80
	92.59	3192	4.23	7.206E+00	2.996E+01	2.996E+01	11.54

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	1.25E+09Y	1.00	2.761E+01	2.761E+01	0.325E+01	11.77	
NB-95	64.03D	1.19	1.945E-01	2.320E-01	1.360E-01	58.63	
CD-109	461.40D	1.02	2.832E+00	2.902E+00	1.114E+00	38.40	
SN-126	2.30E+05Y	1.00	2.832E-01	2.832E-01	1.087E-01	38.40	
BA-137M	30.08Y	1.00	2.274E-01	2.276E-01	0.881E-01	38.72	
CS-137	30.08Y	1.00	2.402E-01	2.404E-01	0.931E-01	38.72	
CE-141	32.51D	1.41	1.862E-01	2.634E-01	1.400E-01	53.16	
TL-208	1.41E+10Y	1.00	5.010E-01	5.010E-01	1.137E-01	22.70	
PB-210	22.20Y	1.00	2.900E+00	2.904E+00	1.056E+00	36.38	
BI-211	7.04E+08Y	1.00	3.927E+00	3.927E+00	0.615E+00	15.67	
PB-212	1.41E+10Y	1.00	1.716E+00	1.716E+00	0.239E+00	13.95	
BI-214	1600.00Y	1.00	1.407E+00	1.407E+00	0.255E+00	18.10	
PB-214	1600.00Y	1.00	1.425E+00	1.425E+00	0.237E+00	16.61	
RA-224	1.41E+10Y	1.00	2.337E+00	2.337E+00	1.027E+00	43.96	
RA-226	1600.00Y	1.00	1.407E+00	1.407E+00	0.255E+00	18.10	
AC-228	1.41E+10Y	1.00	1.751E+00	1.751E+00	0.418E+00	23.89	
RA-228	1.41E+10Y	1.00	1.751E+00	1.751E+00	0.418E+00	23.89	
TH-228	1.41E+10Y	1.00	1.716E+00	1.716E+00	0.239E+00	13.95	
TH-229	7340.00Y	1.00	4.366E-01	4.366E-01	1.677E-01	38.40	K
TH-232	1.41E+10Y	1.00	1.751E+00	1.751E+00	0.418E+00	23.89	
PA-234M	4.47E+09Y	1.00	3.886E+01	3.886E+01	1.122E+01	28.88	
TH-234	4.47E+09Y	1.00	2.311E+01	2.311E+01	0.481E+01	20.80	
U-235	7.04E+08Y	1.00	8.204E-01	8.204E-01	4.520E-01	55.10	
NP-237	2.14E+06Y	1.00	8.450E-01	8.450E-01	3.697E-01	43.75	
U-238	4.47E+09Y	1.00	2.311E+01	2.311E+01	0.481E+01	20.80	
Total Activity :			1.413E+02	1.415E+02			

Grand Total Activity : 1.413E+02 1.415E+02

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	98.93	288	603	1.29	197.39	193	9	4.00E-02	33.5	7.10E+00	T
0	112.72	170	815	0.99	224.98	220	11	2.36E-02	68.1	6.83E+00	T
1	209.11	190	315	1.45	417.74	406	16	2.64E-02	36.4	5.00E+00	
0	328.29	158	220	2.18	656.09	651	13	2.19E-02	41.8	3.59E+00	T
0	463.19	76	168	1.20	925.91	920	11	1.05E-02	70.8	2.70E+00	T
0	727.19	74	81	1.77	1453.94	1450	9	1.03E-02	49.8	1.81E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911002.CNF;1
* Acquisition date   : 6-MAR-2010 17:23:00.  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 02:00:01.97         Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G247911002           Analyst initials: MXR1
* Batch Number       : 957714              Sample Quantity : 1.31190E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 10-FEB-2010 14:02:26.9MS 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	2.761E+01	3.251E+00	7.439E-01	6.656E-02	37.116
NB-95	2.320E-01	1.360E-01	9.533E-02	8.355E-03	2.434
CD-109	2.902E+00	1.114E+00	1.394E+00	1.409E-01	2.082
SN-126	2.832E-01	1.087E-01	1.358E-01	1.373E-02	2.085
BA-137M	2.276E-01	8.813E-02	8.323E-02	7.222E-03	2.735
CS-137	2.404E-01	9.311E-02	8.792E-02	7.644E-03	2.735
CE-141	2.634E-01	1.400E-01	1.370E-01	1.465E-02	1.923
TL-208	5.010E-01	1.137E-01	8.550E-02	8.241E-03	5.859
PB-210	2.904E+00	1.056E+00	1.137E+00	1.245E-01	2.553
BI-211	3.927E+00	6.154E-01	4.250E-01	4.050E-02	9.241
PB-212	1.716E+00	2.395E-01	1.481E-01	1.530E-02	11.587
BI-214	1.407E+00	2.547E-01	1.482E-01	1.542E-02	9.495
PB-214	1.425E+00	2.368E-01	1.567E-01	1.724E-02	9.096
RA-224	2.337E+00	1.027E+00	1.588E+00	1.472E-01	1.472
RA-226	1.407E+00	2.547E-01	1.482E-01	1.542E-02	9.495
AC-228	1.751E+00	4.183E-01	3.165E-01	3.632E-02	5.533
RA-228	1.751E+00	4.183E-01	3.165E-01	3.632E-02	5.533
TH-228	1.716E+00	2.395E-01	1.481E-01	1.530E-02	11.587

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229	4.366E-01	1.677E-01	1.094E+00	9.760E-02	0.399
TH-232	1.751E+00	4.183E-01	3.165E-01	3.632E-02	5.533
PA-234M	3.886E+01	1.122E+01	1.026E+01	1.007E+00	3.788
TH-234	2.311E+01	4.807E+00	1.427E+00	2.751E-01	16.194
U-235	8.204E-01	4.520E-01	4.127E-01	7.472E-02	1.988
NP-237	8.450E-01	3.697E-01	4.170E-01	9.706E-02	2.026
U-238	2.311E+01	4.807E+00	1.427E+00	2.751E-01	16.194

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.886E-01		4.402E-01	7.451E-01	7.230E-02	0.253
NA-22	-4.264E-02		5.817E-02	9.054E-02	7.650E-03	-0.471
NA-24	1.361E-03		1.932E+00	Half-Life too short		
SC-46	-3.306E-02		5.326E-02	8.340E-02	7.080E-03	-0.396
V-48	1.002E-03		1.053E-01	1.727E-01	1.461E-02	0.006
CR-51	2.999E-03		5.017E-01	8.061E-01	7.842E-02	0.004
MN-54	2.364E-02		5.354E-02	9.140E-02	7.915E-03	0.259
CO-56	1.187E-02		5.410E-02	9.116E-02	7.866E-03	0.130
CO-57	3.042E-02		3.067E-02	5.316E-02	6.614E-03	0.572
CO-58	-6.347E-03		5.714E-02	9.435E-02	8.238E-03	-0.067
FE-59	-1.363E-02		1.266E-01	2.037E-01	1.832E-02	-0.067
CO-60	-3.464E-02		5.738E-02	8.984E-02	7.770E-03	-0.386
ZN-65	7.588E-02		1.455E-01	2.137E-01	1.760E-02	0.355
SE-75	-3.627E-02		5.824E-02	9.186E-02	8.631E-03	-0.395
SR-85	-1.982E-01		7.001E-02	9.644E-02	8.805E-03	-2.055
Y-88	-7.137E-03		4.223E-02	6.842E-02	5.654E-03	-0.104
Y-91	-1.870E-01		3.125E+01	5.230E+01	4.272E+00	-0.004
NB-94	6.017E-02		4.793E-02	8.309E-02	7.267E-03	0.724
NB-95M	3.153E-01		1.754E-01	2.716E-01	2.833E-02	1.161
ZR-95	1.435E-02		1.104E-01	1.779E-01	1.718E-02	0.081
MO-99	-5.067E+00		2.367E+01	3.910E+01	6.193E+00	-0.130
TC-99M	3.370E+11		5.484E+11	Half-Life too short		
RU-103	2.301E-02		5.886E-02	9.901E-02	1.413E-02	0.232
RH-106	-3.080E-01		4.734E-01	7.325E-01	9.849E-02	-0.421
RU-106	-3.080E-01		4.724E-01	7.325E-01	6.526E-02	-0.421
AG-108M	-1.169E-02		3.848E-02	6.297E-02	5.780E-03	-0.186
AG-110M	-2.782E-02		6.464E-02	8.646E-02	7.746E-03	-0.322
SN-113	-2.372E-02		5.845E-02	9.592E-02	8.564E-03	-0.247
CD-115	7.229E+00		2.320E+01	3.878E+01	3.543E+00	0.186
SN-117M	-1.748E-02		7.401E-02	1.229E-01	1.151E-02	-0.142
TE-123M	1.735E-02		3.609E-02	6.131E-02	5.743E-03	0.283
SB-124	5.201E-03		1.116E-01	1.827E-01	1.625E-02	0.028
SB-125	-1.799E-02		1.177E-01	1.946E-01	1.758E-02	-0.092
TE-125M	7.661E+00		1.447E+01	2.083E+01	2.693E+00	0.368
I-126	-3.405E-02		3.665E-01	5.049E-01	4.386E-02	-0.067
SB-126	-5.908E-02		2.385E-01	3.647E-01	3.196E-02	-0.162

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	6.807E-01		2.362E+00	3.876E+00	4.564E-01	0.176
I-131	1.610E-01		1.709E-01	2.988E-01	2.822E-02	0.539
TE-132	5.762E-01		1.174E+00	1.958E+00	3.202E-01	0.294
BA-133	-1.337E-02		6.054E-02	8.745E-02	1.159E-02	-0.153
I-133	-2.606E-03		1.047E-02	Half-Life	too short	
CS-134	4.517E-02		6.670E-02	6.177E-01	1.018E-02	0.390
CS-135	9.978E-02		2.069E-01	3.427E-01	3.638E-02	0.291
I-135	7.145E+10		7.051E+10	Half-Life	too short	
CS-136	3.118E-02		1.547E-01	2.564E-01	2.244E-02	0.122
CE-139	-1.681E-02		3.757E-02	6.177E-02	5.336E-03	-0.272
BA-140	-6.126E-02		4.041E-01	6.558E-01	2.233E-01	-0.093
LA-140	7.421E-02		1.109E-01	1.976E-01	1.708E-02	0.376
CE-143	1.304E-03		2.343E-04	Half-Life	too short	
CE-144	-2.025E-02		2.376E-01	4.002E-01	6.851E-02	-0.051
PM-144	1.679E-02		5.211E-02	8.552E-02	7.476E-03	0.196
PR-144	1.220E+00		3.899E+00	6.396E+00	5.589E-01	0.191
PM-146	-1.176E-02		5.700E-02	9.352E-02	1.019E-02	-0.126
ND-147	5.987E-01		8.577E-01	1.458E+00	2.224E-01	0.411
PM-149	-1.013E+02		1.654E+02	2.583E+02	4.128E+01	-0.392
EU-152	-6.802E-02		1.359E-01	1.931E-01	1.863E-02	-0.352
GD-153	1.419E-01		1.522E-01	1.783E-01	1.903E-02	0.796
EU-154	-1.178E-01		1.652E-01	2.573E-01	2.893E-02	-0.458
EU-155	1.403E-01		1.331E-01	2.174E-01	2.451E-02	0.645
TB-160	5.800E-02		2.065E-01	3.482E-01	2.969E-02	0.167
HO-166M	1.033E-01		9.068E-02	1.560E-01	1.366E-02	0.662
TA-182	-1.647E-01		2.620E-01	4.172E-01	3.436E-02	-0.395
IR-192	1.369E-03		4.568E-02	7.354E-02	6.870E-03	0.019
HG-203	4.550E-02		5.091E-02	8.552E-02	8.196E-03	0.532
BI-207	-9.879E-03		7.667E-02	1.235E-01	1.031E-02	-0.080
PB-211	-1.352E+00		1.136E+00	1.435E+00	6.947E-01	-0.942
BI-212	1.760E+00	+	9.040E-01	1.456E+00	1.829E-01	1.209
RN-219	3.709E-01		5.059E-01	8.736E-01	1.305E-01	0.425
RA-223	2.050E-01		9.126E-01	1.298E+00	2.295E-01	0.158
AC-227	-1.897E-02		3.199E-01	5.199E-01	6.536E-02	-0.036
TH-227	-1.897E-02		3.199E-01	5.199E-01	7.314E-02	-0.036
PA-231	-5.864E-01		1.813E+00	2.886E+00	4.343E-01	-0.203
TH-231	2.050E-01		9.126E-01	1.298E+00	2.295E-01	0.158
PA-233	-6.336E-03		8.107E-02	1.299E-01	1.243E-02	-0.049
PA-234	1.561E-01		4.552E-01	7.441E-01	1.391E-01	0.210
NP-239	6.963E-02		5.615E-01	7.929E-01	9.562E-02	0.088
AM-241	-4.224E-02		1.057E-01	1.518E-01	1.683E-02	-0.278
CM-247	2.586E-02		4.629E-02	7.961E-02	6.953E-03	0.325
CF-249	3.455E-02		5.385E-02	9.288E-02	8.092E-03	0.372
CF-251	-3.030E-03		1.611E-01	2.679E-01	2.347E-02	-0.011
ANH-511	4.375E-02		6.049E-02	1.079E-01	9.849E-03	0.405

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]G247911002            *
* Acquisition date   : 6-MAR-2010 17:23:00 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 02:00:01.97 Half life ratio        : 8.000          *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library   : SOLID          *
* Sample ID          : G247911002 Analyst initials: MXR1          *
* Batch Number       : 957714 Sample Quantity : 1.3119E+02 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000            *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 10-FEB-2010 14:02:26 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	2.761E+01	3.186E+00	3.726E-01	1.625E+00
NB-95	2.320E-01	1.333E-01	4.827E-02	6.801E-02
CD-109	2.902E+00	1.092E+00	7.310E-01	5.572E-01
SN-126	2.832E-01	1.066E-01	7.124E-02	5.437E-02
BA-137M	2.276E-01	8.636E-02	4.225E-02	4.406E-02
CS-137	2.404E-01	9.124E-02	4.463E-02	4.655E-02
CE-141	2.634E-01	1.372E-01	7.128E-02	7.000E-02
TL-208	5.010E-01	1.115E-01	4.349E-02	5.686E-02
PB-210	2.904E+00	1.035E+00	6.026E-01	5.282E-01
BI-211	3.927E+00	6.030E-01	2.180E-01	3.077E-01
PB-212	1.716E+00	2.347E-01	7.647E-02	1.197E-01
BI-214	1.407E+00	2.496E-01	7.532E-02	1.274E-01
PB-214	1.425E+00	2.320E-01	8.038E-02	1.184E-01
RA-224	2.337E+00	1.007E+00	8.197E-01	5.137E-01
RA-226	1.407E+00	2.496E-01	7.532E-02	1.274E-01
AC-228	1.751E+00	4.099E-01	1.598E-01	2.092E-01
RA-228	1.751E+00	4.099E-01	1.598E-01	2.092E-01
TH-228	1.716E+00	2.347E-01	7.647E-02	1.197E-01
TH-229	-1.582E-01	6.531E-01	5.669E-01	3.332E-01
TH-232	1.751E+00	4.099E-01	1.598E-01	2.092E-01
PA-234M	3.886E+01	1.100E+01	5.172E+00	5.612E+00
TH-234	2.311E+01	4.711E+00	7.524E-01	2.403E+00
U-235	8.204E-01	4.430E-01	2.148E-01	2.260E-01
NP-237	8.450E-01	3.623E-01	2.188E-01	1.849E-01
U-238	2.311E+01	4.711E+00	7.524E-01	2.403E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.886E-01	4.314E-01	3.803E-01	2.201E-01 NOT IDENT.
NA-22	-4.264E-02	5.701E-02	4.545E-02	2.908E-02 NOT IDENT.

NA-24	1.361E+03	3.787E+06	0.000E+00	1.932E+06	SHORT HLIF
SC-46	-3.306E-02	5.220E-02	4.213E-02	2.663E-02	FAIL ABUN
V-48	1.002E-03	1.032E-01	8.709E-02	5.266E-02	NOT IDENT.
CR-51	2.999E-03	4.916E-01	4.142E-01	2.508E-01	NOT IDENT.
MN-54	2.364E-02	5.247E-02	4.621E-02	2.677E-02	NOT IDENT.
CO-56	1.187E-02	5.302E-02	4.608E-02	2.705E-02	NOT IDENT.
CO-57	3.042E-02	3.005E-02	2.774E-02	1.533E-02	NOT IDENT.
CO-58	-6.347E-03	5.600E-02	4.773E-02	2.857E-02	NOT IDENT.
FE-59	-1.363E-02	1.241E-01	1.025E-01	6.332E-02	NOT IDENT.
CO-60	-3.464E-02	5.624E-02	4.506E-02	2.869E-02	NOT IDENT.
ZN-65	7.588E-02	1.426E-01	1.075E-01	7.276E-02	NOT IDENT.
SE-75	-3.627E-02	5.708E-02	4.734E-02	2.912E-02	NOT IDENT.
SR-85	-1.982E-01	6.861E-02	4.916E-02	3.500E-02	NOT IDENT.
Y-88	-7.137E-03	4.138E-02	3.413E-02	2.111E-02	NOT IDENT.
Y-91	-1.870E-01	3.063E+01	2.628E+01	1.563E+01	NOT IDENT.
NB-94	6.017E-02	4.697E-02	4.213E-02	2.396E-02	NOT IDENT.
NB-95M	3.153E-01	1.719E-01	1.402E-01	8.771E-02	NOT IDENT.
ZR-95	1.435E-02	1.081E-01	9.011E-02	5.518E-02	NOT IDENT.
MO-99	-5.067E+00	2.320E+01	1.981E+01	1.184E+01	NOT IDENT.
TC-99M	3.370E+17	1.075E+18	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.301E-02	5.768E-02	5.050E-02	2.943E-02	FAIL ABUN
RH-106	-3.080E-01	4.639E-01	3.722E-01	2.367E-01	NOT IDENT.
RU-106	-3.080E-01	4.629E-01	3.722E-01	2.362E-01	NOT IDENT.
AG-108M	-1.169E-02	3.771E-02	3.219E-02	1.924E-02	NOT IDENT.
AG-110M	-2.782E-02	6.335E-02	4.390E-02	3.232E-02	NOT IDENT.
SN-113	-2.372E-02	5.728E-02	4.912E-02	2.922E-02	NOT IDENT.
CD-115	7.229E+00	2.274E+01	1.976E+01	1.160E+01	NOT IDENT.
SN-117M	-1.748E-02	7.253E-02	6.389E-02	3.700E-02	NOT IDENT.
TE-123M	1.735E-02	3.537E-02	3.186E-02	1.805E-02	NOT IDENT.
SB-124	5.201E-03	1.093E-01	9.126E-02	5.578E-02	NOT IDENT.
SB-125	-1.799E-02	1.154E-01	9.948E-02	5.887E-02	FAIL ABUN
TE-125M	7.661E+00	1.418E+01	1.089E+01	7.235E+00	NOT IDENT.
I-126	-3.405E-02	3.592E-01	2.563E-01	1.833E-01	NOT IDENT.
SB-126	-5.908E-02	2.337E-01	1.849E-01	1.192E-01	NOT IDENT.
SB-127	6.807E-01	2.314E+00	1.966E+00	1.181E+00	NOT IDENT.
I-131	1.610E-01	1.674E-01	1.532E-01	8.543E-02	NOT IDENT.
TE-132	5.762E-01	1.150E+00	1.011E+00	5.869E-01	FAIL ABUN
BA-133	-1.337E-02	5.933E-02	4.485E-02	3.027E-02	NOT IDENT.
I-133	-2.606E+03	2.053E+04	0.000E+00	1.047E+04	SHORT HLIF
CS-134	4.517E-02	6.537E-02	5.854E-02	3.335E-02	NOT IDENT.
CS-135	9.978E-02	2.028E-01	1.766E-01	1.035E-01	NOT IDENT.
I-135	7.145E+16	1.382E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.118E-02	1.516E-01	1.291E-01	7.733E-02	NOT IDENT.
CE-139	-1.681E-02	3.682E-02	3.208E-02	1.879E-02	NOT IDENT.
BA-140	-6.126E-02	3.960E-01	3.341E-01	2.020E-01	NOT IDENT.
LA-140	7.421E-02	1.087E-01	9.880E-02	5.545E-02	FAIL ABUN
CE-143	1.304E+03	4.593E+02	0.000E+00	2.343E+02	SHORT HLIF
CE-144	-2.025E-02	2.329E-01	2.086E-01	1.188E-01	NOT IDENT.
PM-144	1.679E-02	5.106E-02	4.337E-02	2.605E-02	NOT IDENT.
PR-144	1.220E+00	3.821E+00	3.244E+00	1.950E+00	NOT IDENT.
PM-146	-1.176E-02	5.586E-02	4.777E-02	2.850E-02	NOT IDENT.
ND-147	5.987E-01	8.405E-01	7.428E-01	4.288E-01	FAIL ABUN
PM-149	-1.013E+02	1.621E+02	1.329E+02	8.269E+01	NOT IDENT.
EU-152	-6.802E-02	1.332E-01	9.910E-02	6.795E-02	NOT IDENT.
GD-153	1.419E-01	1.492E-01	9.339E-02	7.611E-02	NOT IDENT.
EU-154	-1.178E-01	1.619E-01	1.292E-01	8.260E-02	NOT IDENT.
EU-155	1.403E-01	1.304E-01	1.137E-01	6.653E-02	FAIL ABUN
TB-160	5.800E-02	2.024E-01	1.759E-01	1.032E-01	FAIL ABUN
HO-166M	1.033E-01	8.886E-02	7.907E-02	4.534E-02	FAIL ABUN
TA-182	-1.647E-01	2.568E-01	2.096E-01	1.310E-01	FAIL ABUN
IR-192	1.369E-03	4.476E-02	3.779E-02	2.284E-02	FAIL ABUN
HG-203	4.550E-02	4.989E-02	4.404E-02	2.546E-02	NOT IDENT.
BI-207	-9.879E-03	7.514E-02	6.220E-02	3.834E-02	FAIL ABUN
PB-211	-1.352E+00	1.113E+00	7.344E-01	5.680E-01	NOT IDENT.
BI-212	1.760E+00	8.859E-01	7.379E-01	4.520E-01	FAIL ABUN
RN-219	3.709E-01	4.958E-01	4.472E-01	2.529E-01	NOT IDENT.
RA-223	2.050E-01	8.943E-01	6.670E-01	4.563E-01	FAIL ABUN
AC-227	-1.897E-02	3.135E-01	2.681E-01	1.600E-01	FAIL ABUN
TH-227	-1.897E-02	3.135E-01	2.681E-01	1.600E-01	FAIL ABUN
PA-231	-5.864E-01	1.777E+00	1.486E+00	9.067E-01	FAIL ABUN
TH-231	2.050E-01	8.943E-01	6.670E-01	4.563E-01	FAIL ABUN
PA-233	-6.336E-03	7.945E-02	6.677E-02	4.054E-02	FAIL ABUN
PA-234	1.561E-01	4.461E-01	3.754E-01	2.276E-01	FAIL ABUN
NP-239	6.963E-02	5.503E-01	4.140E-01	2.807E-01	FAIL ABUN
AM-241	-4.224E-02	1.036E-01	8.012E-02	5.284E-02	NOT IDENT.
CM-247	2.586E-02	4.536E-02	4.075E-02	2.314E-02	NOT IDENT.
CF-249	3.455E-02	5.277E-02	4.757E-02	2.692E-02	NOT IDENT.
CF-251	-3.030E-03	1.578E-01	1.390E-01	8.054E-02	NOT IDENT.

ANH-511	4.375E-02	5.928E-02	5.501E-02	3.024E-02 NOT IDENT.
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 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON ,SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	629.2830
49.72	692.6023
57.36	0.0000
59.54	942.5057
63.29	859.5020
63.29	859.5020
64.28	811.5209
67.75	895.9259
69.67	925.4778
70.83	963.0371
72.81	969.0997
72.87	969.2338
72.87	969.2338
74.82	936.6221
74.82	936.6221
74.82	936.6221
74.97	936.9401
77.11	941.4548
77.11	941.4548
77.11	941.4548
79.69	946.8190
79.80	947.0458
80.12	947.7042
80.19	947.8465
80.57	948.6249
81.00	801.2980
81.07	801.4182
81.07	801.4182
83.79	806.0727
83.79	806.0727
85.43	802.2632
86.48	804.0093
86.55	804.1248
86.79	804.5157
86.94	804.7689
87.57	756.2703
88.03	756.9796
88.47	757.6575
89.96	759.9357
91.11	761.6829
92.59	763.9157
92.59	763.9157
93.35	765.0549
94.67	512.4645
94.87	583.0285
94.87	583.0285
95.86	584.1410
97.43	585.8959
98.44	457.1306
99.53	449.6158
100.11	455.1791
103.18	553.0619
103.37	519.2065
105.31	499.9662
106.12	546.3156
109.28	533.3257
111.00	533.2037
111.76	541.3936
116.30	426.6116
117.23	437.7410
121.12	430.0323
121.78	416.4370
122.06	416.6269
123.07	425.2340
131.20	503.8540
133.52	426.0002
136.00	440.1820

136.47	437.7954
140.51	412.3976
140.51	0.0000
143.76	442.5290
144.24	442.8374
144.24	442.8374
145.44	467.8324
152.43	431.4469
153.25	433.7791
154.21	422.3655
154.21	422.3655
156.02	435.4357
158.56	435.0860
159.00	401.9270
162.66	416.0255
163.33	418.2603
165.86	412.1609
176.60	370.3768
177.52	372.7039
181.07	363.6472
184.41	389.2950
185.72	389.9114
193.51	376.0881
197.04	347.4644
205.31	319.3094
210.85	278.3752
215.65	285.2023
222.11	316.1977
227.38	279.7159
228.16	300.0826
228.18	300.0894
235.69	277.6475
235.96	277.7226
235.96	277.7226
238.63	492.6149
238.63	492.6149
240.99	493.7818
242.00	686.2683
244.70	280.1565
252.40	246.5690
252.80	265.2411
256.23	263.0072
256.23	263.0072
260.90	249.6094
264.66	275.5371
268.22	276.4475
269.46	257.8916
269.46	257.8916
271.23	261.4584
273.65	354.6429
276.40	259.5207
277.37	256.5820
277.60	246.0728
278.00	240.8793
279.20	240.0791
279.54	243.3257
280.46	257.2902
283.69	234.6675
284.31	233.7332
285.41	262.6712
285.90	243.6340
287.50	213.0798
293.27	0.0000
295.22	231.6687
295.96	257.5708
298.57	258.1458
299.98	258.4534
299.98	258.4534
300.09	258.4772
300.09	258.4772
300.13	258.4863
301.36	241.5034
302.85	215.8997
304.50	211.0100
304.50	211.0100
304.85	209.3424
308.46	231.0122
311.90	201.2146

316.51	209.6162
319.41	215.5800
320.08	214.5993
323.87	189.7752
323.87	189.7752
328.76	210.5791
333.37	172.6150
334.37	194.8969
334.37	194.8969
338.28	218.8144
338.28	218.8144
338.32	218.8204
338.32	218.8204
338.32	218.8204
340.48	181.5779
340.55	181.5879
344.28	199.3670
351.06	197.4011
351.93	202.9172
356.01	171.1136
364.49	183.0600
366.42	210.5445
383.85	200.3141
388.16	183.4070
388.63	182.5457
391.69	189.3998
400.66	155.2415
401.81	147.9193
402.40	151.7022
404.85	206.0221
410.95	164.7422
414.70	178.2897
423.72	149.1414
427.09	164.6033
427.87	159.9538
433.94	159.6266
453.88	162.5965
463.37	146.7679
468.07	124.5407
473.00	139.1841
476.78	138.5228
477.60	139.5647
487.02	123.6560
492.35	165.3853
497.08	152.0167
511.00	170.1358
514.00	344.8322
527.90	138.5930
529.87	0.0000
531.02	127.7658
537.26	143.3382
546.56	0.0000
563.25	103.3647
569.33	138.5958
569.50	137.5823
569.70	134.5149
583.19	144.7510
600.60	127.4740
602.73	128.7683
604.72	146.3096
609.32	115.2180
609.32	115.2180
610.33	89.0757
614.28	117.2473
618.01	106.2374
621.93	143.3246
621.93	143.3246
633.25	128.2051
635.95	100.7867
636.99	96.5898
645.85	125.7697
657.76	151.8282
661.66	122.3969
661.66	122.3969
664.57	0.0000
666.33	107.5928
666.50	107.6025
677.62	120.0404

685.70	110.7059
695.00	108.9819
696.49	125.4106
696.51	125.4106
697.00	130.8926
702.65	96.2242
706.68	138.0186
711.68	100.9934
720.70	124.8936
721.93	0.0000
722.78	129.2061
722.91	129.2146
723.31	132.3867
724.19	135.5898
727.33	124.3268
733.00	98.1162
735.93	108.1403
739.50	116.6331
747.24	131.8683
752.31	120.9757
753.82	102.4290
756.73	109.6375
763.94	92.9695
765.81	107.6113
766.42	107.6370
777.92	100.6151
778.90	99.7136
783.70	101.7905
785.37	103.7449
795.86	101.3357
801.95	90.1854
810.29	88.5744
810.76	100.9752
815.77	79.2174
818.51	96.4999
832.01	98.9200
834.85	99.9883
836.80	0.0000
846.77	82.0878
856.80	98.8748
860.56	73.7734
871.09	95.4978
873.19	100.4476
875.33	0.0000
879.36	87.9675
880.51	87.0263
883.24	76.3464
884.68	88.1378
889.28	84.3605
898.04	82.6567
911.20	83.0430
911.20	83.0430
911.20	83.0430
926.50	70.5681
937.49	79.8161
944.13	84.9983
946.00	80.0505
949.00	96.1582
962.29	81.0689
964.08	75.9396
966.15	82.9018
968.97	100.8443
968.97	100.8443
968.97	100.8443
983.53	79.0410
996.26	81.9894
1001.03	78.6229
1004.73	71.7200
1037.84	68.0652
1038.76	0.0000
1048.07	69.3200
1050.41	77.6550
1050.41	77.6550
1063.66	84.2135
1085.87	62.8101
1099.45	74.6315
1112.07	63.3081
1115.54	77.8595

1120.29	80.3851
1120.29	80.3851
1120.55	80.3913
1121.30	80.4098
1131.51	0.0000
1173.23	76.2666
1177.93	98.9554
1189.05	102.5069
1204.77	97.5403
1221.41	95.1945
1231.02	89.8326
1235.36	86.1906
1238.28	91.8853
1260.41	0.0000
1271.85	60.5536
1274.44	72.9045
1274.54	72.9045
1291.59	63.7238
1298.22	0.0000
1312.11	53.5508
1332.49	65.3675
1365.19	44.5898
1368.63	0.0000
1384.29	58.4389
1408.01	48.0054
1457.56	0.0000
1460.82	35.7213
1489.16	32.9643
1505.03	35.0916
1596.21	20.4701
1620.50	24.6948
1678.03	0.0000
1690.97	22.9806
1764.49	7.4236
1764.49	7.4236
1770.23	27.8714
1771.35	74.3408
1791.20	0.0000
1836.06	16.9431

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911002

Total Uranium Activity	6.9125E+01	ug/g
Total Uranium Counting Unc.	1.4015E+01	ug/g
Total Uranium Tpu	7.1507E-06	ug/g
Total Uranium Mda	2.2406E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 957714          SAMPLE ID   : G247911002
*  ANALYST       : MXR1            DETECTOR    : GAM13
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 6-MAR-2010 17:23:00.30  SAMPLE ALQT: 131.190 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.205E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.405E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.632E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.272E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 19:24:38.65

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911003.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:23:36.
Sample ID          : G247911003      Sample quantity   : 1.28720E+02 GRAM
Detector name      : GAM15            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:01.29  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity      : 5.00000
Batch ID           : 957714            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	75.02*	302	396	1.46	148.96	141	20	4.19E-02	14.7	3.43E+00
2	1	77.40*	464	396	1.46	153.73	141	20	6.45E-02	9.7	
3	2	87.35	242	297	1.38	173.63	170	23	3.36E-02	12.6	1.69E+00
4	2	90.20	155	403	1.56	179.32	170	23	2.16E-02	25.3	
5	2	92.88*	226	368	1.55	184.69	170	23	3.14E-02	18.6	
6	0	186.13*	157	299	1.41	371.18	366	10	2.18E-02	23.3	
7	0	209.58	106	270	1.46	418.06	414	9	1.47E-02	29.6	
8	5	238.71*	1032	235	1.27	476.33	470	19	1.43E-01	4.3	1.38E+00
9	5	241.82*	348	257	2.31	482.53	470	19	4.83E-02	13.4	
10	0	270.51	122	206	1.85	539.93	535	10	1.69E-02	23.9	
11	0	277.05	61	191	1.59	553.01	549	9	8.47E-03	42.8	
12	0	295.33*	395	201	1.51	589.55	583	12	5.48E-02	8.9	
13	0	299.89	82	125	1.94	598.68	595	8	1.13E-02	26.1	
14	0	338.34	236	182	1.46	675.58	670	11	3.27E-02	12.9	
15	0	351.98*	626	158	1.39	702.85	696	14	8.69E-02	6.0	
16	0	463.07	54	97	1.37	925.05	921	9	7.52E-03	35.7	
17	0	510.79*	98	182	2.10	1020.49	1012	19	1.37E-02	37.6	
18	0	583.25*	349	125	1.69	1165.42	1158	16	4.85E-02	9.2	
19	0	609.25*	395	117	1.75	1217.41	1210	17	5.48E-02	8.2	
20	0	727.44*	68	107	1.99	1453.81	1447	13	9.51E-03	34.1	
21	0	768.57	38	52	0.96	1536.09	1529	11	5.23E-03	40.6	
22	0	860.18*	58	47	2.25	1719.34	1713	11	8.01E-03	27.1	
23	0	911.11*	306	56	1.93	1821.21	1814	16	4.25E-02	8.0	
24	2	964.48	61	52	2.22	1927.96	1921	25	8.42E-03	30.1	1.85E+00
25	2	968.76*	134	64	2.07	1936.53	1921	25	1.87E-02	15.2	
26	0	1119.79*	155	47	2.43	2238.64	2229	17	2.15E-02	13.2	
27	0	1377.55*	21	15	1.62	2754.31	2746	12	2.97E-03	45.6	
28	0	1460.49*	976	34	1.99	2920.23	2912	18	1.36E-01	3.5	
29	0	1764.39	73	21	1.87	3528.26	3522	14	1.01E-02	17.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 19:24:41

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911003.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:23:36
 Sample ID : G247911003 Sample quantity : 128.72 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA15 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.29 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	+	1460.82	*	2.763E+01	3.341E+00	7.372E-01	7.244E-02	37.479
CD-109	+	88.03	*	4.387E+00	1.228E+00	1.726E+00	2.143E-01	2.541
SN-126		64.28		2.474E-01	8.977E-01	1.482E+00	2.508E-01	0.167
	+	86.94		1.780E+00	8.755E-01	7.640E-01	3.230E-01	2.330
	+	87.57	*	4.281E-01	1.198E-01	1.697E-01	2.100E-02	2.522
TL-208	+	277.37		7.270E-01	6.310E-01	7.910E-01	1.119E-01	0.919
	+	583.19	*	5.471E-01	1.128E-01	7.163E-02	6.552E-03	7.637
	+	860.56		8.535E-01	4.704E-01	5.110E-01	4.996E-02	1.670
BI-211		72.87		1.207E+01	5.065E+00	8.646E+00	9.902E-01	1.396
	+	351.06	*	4.496E+00	7.002E-01	3.998E-01	3.981E-02	11.248
PB-212	+	74.82		2.635E+00	8.692E-01	8.193E-01	1.234E-01	3.216
	+	77.11		2.252E+00	5.089E-01	4.570E-01	5.297E-02	4.927
	+	238.63	*	1.678E+00	2.462E-01	1.205E-01	1.439E-02	13.930
	+	300.09		2.055E+00	1.103E+00	1.596E+00	1.943E-01	1.288
BI-214	+	609.32	*	1.195E+00	2.286E-01	1.414E-01	1.409E-02	8.448
	+	1120.29		2.466E+00	7.024E-01	5.320E-01	5.761E-02	4.636
	+	1764.49		1.627E+00	5.942E-01	4.011E-01	3.517E-02	4.055
PB-214	+	74.82		4.670E+00	1.518E+00	1.452E+00	2.029E-01	3.216
	+	77.11		3.969E+00	9.551E-01	8.056E-01	1.146E-01	4.927
	+	242.00		3.434E+00	1.016E+00	7.323E-01	9.123E-02	4.689
	+	295.22		1.762E+00	3.834E-01	2.762E-01	3.442E-02	6.381
	+	351.93	*	1.632E+00	2.696E-01	1.454E-01	1.652E-02	11.227
RA-224	+	240.99	*	6.072E+00	1.761E+00	1.291E+00	1.424E-01	4.704
RA-226	+	609.32	*	1.195E+00	2.286E-01	1.414E-01	1.409E-02	8.448
	+	1120.29		2.466E+00	7.024E-01	5.320E-01	5.761E-02	4.636
	+	1764.49		1.627E+00	5.942E-01	4.011E-01	3.517E-02	4.055
AC-228	+	338.32		1.888E+00	9.296E-01	4.775E-01	2.005E-01	3.954
	+	911.20	*	2.317E+00	4.663E-01	2.924E-01	3.542E-02	7.924
	+	968.97		1.760E+00	6.872E-01	4.640E-01	1.140E-01	3.793
RA-228	+	338.32		1.888E+00	9.296E-01	4.775E-01	2.005E-01	3.954
	+	911.20	*	2.317E+00	4.663E-01	2.924E-01	3.542E-02	7.924
	+	968.97		1.760E+00	6.872E-01	4.640E-01	1.140E-01	3.793
TH-228	+	74.82		2.635E+00	8.311E-01	8.193E-01	9.473E-02	3.216
	+	77.11		2.252E+00	5.089E-01	4.570E-01	5.297E-02	4.927

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	+	238.63	*	1.678E+00	2.462E-01	1.205E-01	1.439E-02	13.930
	+	300.09		2.055E+00	1.659E+00	1.596E+00	9.817E-01	1.288
	+	338.32		1.888E+00	5.198E-01	4.775E-01	4.707E-02	3.954
	+	911.20	*	2.317E+00	4.663E-01	2.924E-01	3.542E-02	7.924
U-235	+	968.97		1.760E+00	6.872E-01	4.640E-01	1.140E-01	3.793
	+	89.96		2.800E+00	1.592E+00	1.744E+00	4.535E-01	1.606
	+	93.35		2.437E+00	1.082E+00	1.033E+00	2.514E-01	2.358
		143.76	*	-1.213E-01	2.667E-01	4.177E-01	7.433E-02	-0.290
NP-237		163.33		-1.168E-01	5.884E-01	9.213E-01	1.749E-01	-0.127
	+	185.72		1.646E-01	7.882E-02	8.655E-02	9.368E-03	1.901
		205.31		2.376E-01	7.078E-01	1.004E+00	1.944E-01	0.237
	+	86.48	*	1.277E+00	4.468E-01	5.248E-01	1.275E-01	2.434
ANH-511		95.86		8.145E-01	1.383E+00	2.021E+00	5.058E-01	0.403
	+	511.00	*	1.185E-01	8.965E-02	5.503E-02	4.755E-03	2.154

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	1.735E-01	4.157E-01	6.961E-01	6.470E-02	0.249
NA-22		1274.54	*	-7.190E-02	5.226E-02	6.954E-02	6.317E-03	-1.034
NA-24		1368.63	*	3.097E-01	5.226E-02	Half-Life too short		
SC-46		889.28	*	-3.616E-02	4.976E-02	7.667E-02	7.125E-03	-0.472
	+	1120.55		4.210E-01	1.165E-01	1.714E-01	1.458E-02	2.456
V-48		944.13		-3.256E-01	1.114E+00	1.782E+00	1.648E-01	-0.183
		983.53	*	-4.564E-02	8.769E-02	1.363E-01	1.246E-02	-0.335
		1312.11		6.188E-02	9.472E-02	1.649E-01	1.554E-02	0.375
CR-51		320.08	*	4.175E-01	4.780E-01	8.262E-01	8.768E-02	0.505
MN-54		834.85	*	-2.942E-03	4.435E-02	7.312E-02	6.636E-03	-0.040
CO-56		846.77	*	-2.732E-05	4.523E-02	7.491E-02	6.835E-03	0.000
		1037.84		-3.850E-01	3.907E-01	5.742E-01	5.384E-02	-0.670
		1238.28		1.372E-01	1.242E-01	2.158E-01	1.939E-02	0.636
CO-57		1771.35		1.405E-01	2.998E-01	4.752E-01	4.151E-02	0.296
		122.06	*	-2.319E-02	3.288E-02	5.175E-02	5.213E-03	-0.448
		136.47		-5.330E-02	2.687E-01	4.315E-01	4.585E-02	-0.124
CO-58		810.76	*	-3.066E-02	4.587E-02	7.147E-02	6.425E-03	-0.429
FE-59		1099.45	*	-8.117E-02	1.164E-01	1.765E-01	1.647E-02	-0.460
		1291.59		4.769E-02	1.445E-01	2.422E-01	2.502E-02	0.197
CO-60		1173.23		2.161E-02	4.980E-02	8.447E-02	6.876E-03	0.256
		1332.49	*	-2.268E-03	4.437E-02	7.099E-02	6.824E-03	-0.032
ZN-65		1115.54	*	1.035E-01	1.295E-01	1.989E-01	1.699E-02	0.520
SE-75		121.12		-4.235E-02	1.691E-01	2.719E-01	3.330E-02	-0.156
		136.00		2.406E-02	5.104E-02	8.415E-02	8.520E-03	0.286
		264.66	*	1.470E-02	6.470E-02	9.556E-02	1.048E-02	0.154
		279.54		9.378E-02	1.605E-01	2.415E-01	2.674E-02	0.388
SR-85		400.66		1.377E-01	3.317E-01	5.579E-01	6.112E-02	0.247
		514.00	*	1.214E-01	5.786E-02	9.422E-02	8.140E-03	1.289
Y-88		898.04		-4.004E-02	5.314E-02	8.171E-02	7.652E-03	-0.490
		1836.06	*	2.322E-02	3.315E-02	6.265E-02	5.276E-03	0.371

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	1204.77	*		-1.304E+01	2.756E+01	4.270E+01	3.599E+00	-0.306
NB-94	702.65	*		-1.552E-02	3.822E-02	6.192E-02	5.227E-03	-0.251
	871.09			-1.650E-02	3.949E-02	6.268E-02	5.781E-03	-0.263
NB-95	765.81	*		6.991E-02	5.806E-02	9.340E-02	8.183E-03	0.749
NB-95M	235.69	*		4.004E-01	2.042E-01	3.192E-01	3.846E-02	1.254
ZR-95	724.19			1.791E-01	1.332E-01	2.154E-01	2.001E-02	0.831
	756.73	*		9.659E-02	9.175E-02	1.637E-01	1.574E-02	0.590
MO-99	140.51			-1.401E+01	3.747E+01	5.886E+01	1.432E+01	-0.238
	181.07			2.265E+01	3.414E+01	4.927E+01	9.793E+00	0.460
	366.42			-6.780E+01	1.601E+02	2.573E+02	2.358E+01	-0.263
	739.50	*		1.202E+01	1.876E+01	3.273E+01	5.160E+00	0.367
	777.92			-6.782E+01	5.953E+01	8.943E+01	7.887E+00	-0.758
TC-99M	140.51	*		-3.894E+11	5.953E+01	Half-Life too short		
RU-103	497.08	*		-3.010E-02	5.233E-02	8.143E-02	1.138E-02	-0.370
	610.33			1.257E+01	2.898E+00	3.255E+00	5.292E-01	3.863
RH-106	621.93	*		-3.819E-01	3.609E-01	5.176E-01	6.789E-02	-0.738
	1050.41			1.735E+00	3.141E+00	5.397E+00	4.795E-01	0.321
RU-106	621.93	*		-3.819E-01	3.588E-01	5.176E-01	4.350E-02	-0.738
	1050.41			1.735E+00	3.141E+00	5.397E+00	4.795E-01	0.321
AG-108M	433.94	*		-1.410E-02	3.658E-02	5.834E-02	5.156E-03	-0.242
	614.28			4.058E-02	4.537E-02	6.934E-02	6.048E-03	0.585
	722.91			1.380E-02	5.147E-02	7.624E-02	6.729E-03	0.181
AG-110M	657.76	*		-4.754E-03	3.890E-02	6.468E-02	5.505E-03	-0.073
	677.62			1.662E-01	3.643E-01	6.309E-01	5.404E-02	0.264
	706.68			-1.939E-01	2.542E-01	3.956E-01	3.448E-02	-0.490
	763.94			3.375E-02	2.109E-01	3.082E-01	2.769E-02	0.110
	884.68			-6.662E-03	5.424E-02	8.851E-02	8.438E-03	-0.075
	937.49			-9.467E-02	1.386E-01	2.136E-01	2.040E-02	-0.443
	1384.29			2.921E-01	1.861E-01	3.501E-01	3.446E-02	0.834
	1505.03			-3.654E-01	3.193E-01	4.316E-01	4.125E-02	-0.847
SN-113	391.69	*		-5.825E-03	5.888E-02	9.634E-02	8.367E-03	-0.060
CD-115	260.90			-1.084E+02	2.481E+02	4.063E+02	4.452E+01	-0.267
	492.35			1.436E+01	6.982E+01	1.152E+02	9.957E+00	0.125
	527.90	*		6.266E+00	2.159E+01	3.571E+01	3.082E+00	0.175
SN-117M	156.02			1.312E+00	3.222E+00	5.274E+00	5.497E-01	0.249
	158.56	*		-2.975E-02	7.706E-02	1.221E-01	1.280E-02	-0.244
TE-123M	159.00	*		-3.584E-02	3.837E-02	5.911E-02	6.229E-03	-0.606
SB-124	602.73			3.071E-02	5.287E-02	7.808E-02	6.617E-03	0.393
	645.85			1.384E-01	6.270E-01	1.024E+00	9.029E-02	0.135
	722.78			1.219E-01	5.224E-01	7.711E-01	6.745E-02	0.158
	1690.97	*		5.181E-02	8.599E-02	1.573E-01	1.482E-02	0.329
SB-125	427.87	*		1.423E-01	1.155E-01	2.024E-01	1.762E-02	0.703
	463.37			5.824E-01	4.194E-01	6.412E-01	5.941E-02	0.908
	600.60			1.287E-02	2.321E-01	3.536E-01	3.228E-02	0.036
	635.95			-1.926E-02	3.124E-01	4.991E-01	4.525E-02	-0.039
TE-125M	109.28	*		-1.191E+01	1.293E+01	2.019E+01	2.398E+00	-0.590
I-126	388.63			3.396E-02	2.309E-01	3.833E-01	3.261E-02	0.089
	666.33	*		2.124E-01	2.693E-01	4.764E-01	3.928E-02	0.446
	753.82			2.734E-01	2.418E+00	4.063E+00	3.536E-01	0.067

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	414.70			-3.332E-02	9.553E-02	1.531E-01	1.302E-02	-0.218
	666.50			7.812E-02	9.313E-02	1.652E-01	1.362E-02	0.473
	695.00			2.996E-02	9.378E-02	1.607E-01	1.350E-02	0.186
	697.00			2.716E-02	3.358E-01	5.653E-01	4.756E-02	0.048
	720.70	*		-9.956E-02	2.237E-01	3.066E-01	2.617E-02	-0.325
SB-127	856.80			2.204E-01	7.380E-01	1.086E+00	9.959E-02	0.203
	252.40			1.461E+00	6.857E+00	1.155E+01	4.871E+00	0.126
	473.00			-1.746E-01	2.464E+00	3.999E+00	5.226E-01	-0.044
	685.70	*		7.248E-01	1.869E+00	3.218E+00	3.702E-01	0.225
	783.70			4.526E+00	5.287E+00	9.298E+00	1.191E+00	0.487
I-131	80.19			-2.776E+00	7.914E+00	1.121E+01	1.323E+00	-0.248
	284.31			-4.260E-01	2.038E+00	3.364E+00	3.741E-01	-0.127
	364.49	*		1.969E-01	1.572E-01	2.764E-01	2.670E-02	0.712
TE-132	636.99			4.272E-02	1.985E+00	3.195E+00	2.830E-01	0.013
	49.72			-5.457E+01	6.994E+01	1.117E+02	1.726E+01	-0.489
	111.76			-1.686E+01	5.479E+01	8.812E+01	1.107E+01	-0.191
	116.30			2.630E+01	4.774E+01	7.917E+01	9.888E+00	0.332
BA-133	228.16	*		-4.130E-01	1.198E+00	1.982E+00	3.460E-01	-0.208
	81.00			-2.077E-01	1.551E-01	2.028E-01	3.548E-02	-1.024
	276.40			6.721E-01	5.849E-01	8.305E-01	1.293E-01	0.809
	302.85			1.677E-01	1.987E-01	3.024E-01	4.352E-02	0.554
	356.01	*		-2.647E-03	5.664E-02	8.084E-02	1.092E-02	-0.033
I-133	383.85			-1.219E-01	3.727E-01	6.015E-01	7.489E-02	-0.203
	529.87	*		6.114E-03	3.727E-01	Half-Life	too short	
	875.33			8.108E-03	3.727E-01	Half-Life	too short	
	1298.22			-4.088E-01	3.727E-01	Half-Life	too short	
CS-134	563.25			1.492E-01	4.123E-01	6.858E-01	5.941E-02	0.218
	569.33			6.259E-02	2.562E-01	4.032E-01	3.502E-02	0.155
	604.72			-6.866E-03	4.667E-02	6.372E-02	5.409E-03	-0.108
	795.86	*		9.399E-02	6.098E-02	1.111E-01	9.955E-03	0.846
	801.95			-2.761E-01	5.019E-01	7.950E-01	7.137E-02	-0.347
CS-135	1365.19			-1.582E-01	1.437E+00	2.369E+00	2.367E-01	-0.067
	268.22	*		1.611E-01	2.398E-01	3.619E-01	4.343E-02	0.445
I-135	546.56			-3.348E+11	2.398E-01	Half-Life	too short	
	836.80			2.668E+11	2.398E-01	Half-Life	too short	
	1038.76			-4.089E+11	2.398E-01	Half-Life	too short	
	1131.51			-4.931E+10	2.398E-01	Half-Life	too short	
	1260.41	*		5.466E+10	2.398E-01	Half-Life	too short	
	1457.56			1.660E+13	2.398E-01	Half-Life	too short	
	1678.03			2.495E+11	2.398E-01	Half-Life	too short	
	1791.20			3.245E+10	2.398E-01	Half-Life	too short	
	153.25			9.875E-02	1.240E+00	2.006E+00	2.360E-01	0.049
	176.60			-2.251E-01	7.005E-01	1.108E+00	1.272E-01	-0.203
CS-136	273.65			1.526E-01	1.175E+00	1.165E+00	1.335E-01	0.131
	340.55			7.917E-01	2.518E-01	4.138E-01	4.179E-02	1.913
	818.51			2.499E-02	8.457E-02	1.442E-01	1.299E-02	0.173
	1048.07	*		-1.561E-01	1.449E-01	2.108E-01	1.949E-02	-0.741
	1235.36			7.852E-01	8.268E-01	1.428E+00	1.690E-01	0.550
BA-137M	661.66	*		-1.708E-02	4.089E-02	6.643E-02	5.461E-03	-0.257

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-137		661.66	*	-1.804E-02	4.320E-02	7.018E-02	5.782E-03	-0.257
CE-139		165.86	*	3.829E-03	3.961E-02	6.399E-02	6.830E-03	0.060
BA-140		162.66		-6.850E-02	1.166E+00	1.839E+00	2.034E-01	-0.037
		304.85		-6.440E-01	2.062E+00	2.897E+00	8.654E-01	-0.222
		423.72		6.592E-02	2.495E+00	4.098E+00	1.347E+00	0.016
		537.26	*	-4.039E-01	3.701E-01	5.048E-01	1.712E-01	-0.800
LA-140		328.76		8.399E-01	4.407E-01	7.790E-01	8.169E-02	1.078
		487.02		-3.128E-02	1.895E-01	3.052E-01	2.798E-02	-0.102
		815.77		-8.396E-02	3.824E-01	6.215E-01	6.194E-02	-0.135
		1596.21	*	-1.707E-02	1.036E-01	1.670E-01	1.566E-02	-0.102
CE-141		145.44	*	1.846E-02	8.426E-02	1.373E-01	1.419E-02	0.134
CE-143		57.36		-3.631E-03	8.426E-02	Half-Life	too short	
		293.27	*	1.859E-03	8.426E-02	Half-Life	too short	
		664.57		1.671E-03	8.426E-02	Half-Life	too short	
		721.93		-2.406E-04	8.426E-02	Half-Life	too short	
CE-144		80.12		-9.344E-01	3.914E+00	5.577E+00	6.555E-01	-0.168
		133.52	*	6.367E-02	2.571E-01	4.204E-01	6.784E-02	0.151
PM-144		476.78		8.098E-02	8.144E-02	1.410E-01	1.322E-02	0.574
		618.01		-7.390E-04	4.000E-02	5.807E-02	5.032E-03	-0.013
		696.49	*	1.679E-02	4.068E-02	7.006E-02	5.895E-03	0.240
PR-144		696.51	*	6.058E-01	3.094E+00	5.250E+00	4.415E-01	0.115
		1489.16		-8.158E+00	1.433E+01	2.164E+01	2.072E+00	-0.377
PM-146		453.88	*	1.114E-02	5.339E-02	8.843E-02	9.351E-03	0.126
		633.25		-2.145E-01	1.667E+00	2.645E+00	1.009E+00	-0.081
		735.93		-1.523E-01	1.809E-01	2.654E-01	7.438E-02	-0.574
		747.24		-1.074E-02	1.167E-01	1.932E-01	2.824E-02	-0.056
ND-147	+	91.11		9.726E-01	5.066E-01	7.549E-01	9.347E-02	1.288
		319.41		4.141E+00	4.481E+00	7.765E+00	7.954E-01	0.533
		531.02	*	3.225E-01	7.978E-01	1.328E+00	1.986E-01	0.243
PM-149		285.90	*	7.793E+00	1.610E+02	2.691E+02	4.525E+01	0.029
EU-152		121.78		-5.281E-02	9.336E-02	1.479E-01	1.654E-02	-0.357
		244.70		8.973E-01	4.742E-01	7.552E-01	8.324E-02	1.188
		344.28	*	-3.663E-02	1.497E-01	1.981E-01	2.017E-02	-0.185
		778.90		-3.241E-01	3.075E-01	4.635E-01	4.090E-02	-0.699
	+	964.08		8.545E-01	5.197E-01	7.054E-01	6.488E-02	1.211
		1085.87		-2.130E-01	4.994E-01	7.816E-01	6.806E-02	-0.273
		1112.07		1.394E-03	4.339E-01	6.060E-01	5.186E-02	0.002
		1408.01		3.284E-01	2.216E-01	4.265E-01	4.109E-02	0.770
GD-153		69.67		1.008E+00	3.054E+00	4.492E+00	5.127E-01	0.224
		97.43	*	5.607E-02	1.257E-01	1.842E-01	2.033E-02	0.304
		103.18		-1.970E-01	1.493E-01	2.290E-01	2.421E-02	-0.860
EU-154		123.07		-2.534E-03	6.693E-02	1.086E-01	1.355E-02	-0.023
		723.31		1.182E-01	2.395E-01	3.621E-01	3.415E-02	0.326
		873.19		-9.623E-02	3.291E-01	5.290E-01	6.531E-02	-0.182
		996.26		-4.358E-02	3.989E-01	6.470E-01	1.146E-01	-0.067
		1004.73		-2.411E-02	2.559E-01	4.159E-01	4.981E-02	-0.058
		1274.44	*	-2.159E-01	1.495E-01	1.952E-01	2.289E-02	-1.106
EU-155	+	86.55		5.193E-01	1.455E-01	2.585E-01	3.188E-02	2.009
		105.31	*	1.092E-01	1.377E-01	2.308E-01	2.431E-02	0.473

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	86.79		1.392E+00	3.897E-01	6.856E-01	8.430E-02	2.030
		197.04		-2.144E-01	7.522E-01	1.187E+00	1.294E-01	-0.181
		215.65		7.446E-01	9.846E-01	1.619E+00	1.781E-01	0.460
		298.57		2.925E-01	1.560E-01	2.663E-01	2.818E-02	1.098
		879.36	*	3.392E-02	1.631E-01	2.747E-01	2.543E-02	0.123
		962.29		1.081E+00	7.321E-01	1.201E+00	1.105E-01	0.900
		966.15		1.640E+00	3.663E-01	6.913E-01	6.354E-02	2.372
		1177.93		-5.339E-02	4.273E-01	6.852E-01	5.607E-02	-0.078
		1271.85		-2.403E-01	7.716E-01	1.197E+00	1.084E-01	-0.201
		80.57		-5.563E-01	4.373E-01	5.846E-01	6.888E-02	-0.952
HO-166M		184.41		1.198E-01	5.466E-02	8.295E-02	8.970E-03	1.444
		280.46		1.313E-02	1.194E-01	1.745E-01	1.885E-02	0.075
		410.95		1.432E-01	3.087E-01	5.204E-01	4.417E-02	0.275
		711.68	*	-2.064E-02	7.496E-02	1.228E-01	1.042E-02	-0.168
		752.31		-2.883E-02	3.465E-01	5.741E-01	4.992E-02	-0.050
		810.29		2.773E-03	6.735E-02	1.122E-01	1.006E-02	0.025
		67.75		-3.767E-02	2.034E-01	3.069E-01	3.502E-02	-0.123
		100.11		2.568E-01	2.512E-01	3.957E-01	4.271E-02	0.649
		152.43		-7.263E-02	4.786E-01	7.676E-01	7.938E-02	-0.095
		222.11		6.630E-01	4.583E-01	8.049E-01	8.871E-02	0.824
TA-182		1121.30		8.487E-01	2.665E-01	4.697E-01	3.992E-02	1.807
		1189.05		-3.242E-01	3.983E-01	5.953E-01	4.932E-02	-0.545
		1221.41	*	-1.861E-01	2.314E-01	3.436E-01	2.949E-02	-0.542
		1231.02		-5.761E-01	6.378E-01	9.484E-01	8.225E-02	-0.607
		295.96		1.317E+00	2.737E-01	3.651E-01	3.895E-02	3.606
	+	308.46		-1.088E-01	1.244E-01	1.965E-01	2.057E-02	-0.554
		316.51	*	-8.321E-02	4.512E-02	6.590E-02	6.794E-03	-1.263
		468.07		3.670E-02	8.906E-02	1.309E-01	1.211E-02	0.280
		70.83		1.294E+00	2.329E+00	3.446E+00	6.108E-01	0.375
		72.87		3.055E+00	1.341E+00	2.188E+00	3.779E-01	1.396
HG-203		279.20	*	5.512E-02	5.725E-02	8.789E-02	9.658E-03	0.627
		72.81		6.363E-01	2.884E-01	4.926E-01	5.642E-02	1.292
	+	74.97		7.594E-01	2.394E-01	3.433E-01	3.951E-02	2.212
		569.70		2.552E-02	3.715E-02	6.303E-02	5.399E-03	0.405
		1063.66	*	9.552E-03	7.042E-02	1.141E-01	1.006E-02	0.084
		1770.23		4.601E-01	5.756E-01	9.813E-01	8.578E-02	0.469
	PB-210	46.54	*	-2.718E-01	1.247E+01	2.037E+01	2.508E+00	-0.013
		404.85	*	-9.621E-01	1.081E+00	1.514E+00	7.321E-01	-0.636
		427.09		1.001E+00	1.980E+00	3.258E+00	1.507E+00	0.307
		832.01		-4.392E-01	1.242E+00	1.965E+00	1.020E+00	-0.224
		727.33	*	1.635E+00	1.132E+00	1.431E+00	1.778E-01	1.143
BI-212	+	785.37		3.704E+00	3.909E+00	6.931E+00	6.136E-01	0.534
		1620.50		2.294E+00	2.916E+00	5.343E+00	4.973E-01	0.429
		271.23		8.704E-01	4.301E-01	5.945E-01	7.265E-02	1.464
		401.81	*	1.544E-01	5.239E-01	8.752E-01	1.293E-01	0.176
		81.07		-4.672E-01	3.457E-01	4.593E-01	5.427E-02	-1.017
	RA-223	83.79		1.253E-01	2.624E-01	2.830E-01	3.403E-02	0.443
		94.87		1.841E+00	7.271E-01	1.120E+00	1.267E-01	1.644
		144.24		1.829E-01	8.825E-01	1.423E+00	1.572E-01	0.128

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		154.21		3.710E-01	5.244E-01	8.664E-01	9.596E-02	0.428
	+	269.46		6.763E-01	3.323E-01	4.591E-01	5.065E-02	1.473
		323.87	*	-1.495E+00	9.070E-01	1.309E+00	2.375E-01	-1.142
	+	338.28		7.493E+00	2.158E+00	2.948E+00	3.829E-01	2.541
		79.69		1.537E+00	2.025E+00	2.992E+00	5.679E-01	0.514
		235.96		9.173E-01	2.753E-01	4.272E-01	5.308E-02	2.147
TH-227		256.23	*	3.225E-02	3.290E-01	5.532E-01	7.656E-02	0.058
	+	299.98		2.261E+00	1.224E+00	1.976E+00	2.784E-01	1.144
		304.50		-8.946E-03	2.301E+00	3.324E+00	5.843E-01	-0.003
		334.37		-2.184E+00	2.623E+00	3.503E+00	5.729E-01	-0.623
		79.80		6.930E-01	2.622E+00	3.822E+00	8.862E-01	0.181
		235.96		9.173E-01	2.735E-01	4.272E-01	5.102E-02	2.147
TH-229		256.23	*	3.225E-02	3.290E-01	5.532E-01	8.416E-02	0.058
	+	299.98		2.261E+00	1.224E+00	1.976E+00	2.784E-01	1.144
		304.50		-8.946E-03	2.301E+00	3.324E+00	5.843E-01	-0.003
		334.37		-2.184E+00	2.623E+00	3.503E+00	5.729E-01	-0.623
		85.43		8.083E-01	3.398E-01	5.186E-01	6.309E-02	1.559
	+	88.47		6.600E-01	1.848E-01	3.295E-01	4.061E-02	2.003
PA-231		193.51	*	1.974E-01	7.108E-01	1.150E+00	1.252E-01	0.172
	+	210.85		2.454E+00	1.477E+00	2.074E+00	2.278E-01	1.183
		283.69	*	-5.377E-01	1.853E+00	2.962E+00	4.723E-01	-0.182
TH-231	+	301.36		1.452E+00	7.845E-01	1.283E+00	1.743E-01	1.132
		81.07		-4.672E-01	3.457E-01	4.593E-01	5.427E-02	-1.017
		83.79		1.253E-01	2.624E-01	2.830E-01	3.403E-02	0.443
PA-233		94.87		1.841E+00	7.271E-01	1.120E+00	1.267E-01	1.644
		144.24		1.829E-01	8.825E-01	1.423E+00	1.572E-01	0.128
		154.21		3.710E-01	5.244E-01	8.664E-01	9.596E-02	0.428
	+	269.46		6.763E-01	3.323E-01	4.591E-01	5.065E-02	1.473
		323.87	*	-1.495E+00	9.070E-01	1.309E+00	2.375E-01	-1.142
	+	338.28		7.493E+00	2.158E+00	2.948E+00	3.829E-01	2.541
PA-234	+	300.13		1.023E+00	5.594E-01	8.988E-01	1.441E-01	1.138
		311.90	*	5.425E-02	7.965E-02	1.367E-01	1.447E-02	0.397
		340.48		3.412E+00	1.281E+00	1.695E+00	4.157E-01	2.013
PA-234M		94.67		5.574E-01	2.531E-01	4.210E-01	6.075E-02	1.324
		98.44		1.731E-01	1.634E-01	2.015E-01	1.132E-01	0.859
		111.00		-7.903E-02	2.375E-01	3.816E-01	5.066E-02	-0.207
		131.20		-9.344E-02	1.388E-01	2.185E-01	2.194E-02	-0.428
		569.50		2.109E-01	3.304E-01	5.588E-01	4.787E-02	0.377
		733.00		-1.953E-01	5.168E-01	7.082E-01	1.571E-01	-0.276
TH-234		880.51		-8.264E-02	3.282E-01	5.296E-01	4.904E-02	-0.156
		883.24		-1.131E-02	3.224E-01	5.307E-01	3.572E-01	-0.021
		926.50		-8.379E-02	2.123E-01	3.350E-01	8.547E-02	-0.250
		946.00	*	9.961E-02	3.527E-01	5.951E-01	1.134E-01	0.167
		949.00		-1.359E-01	5.443E-01	8.749E-01	8.079E-02	-0.155
		766.42		1.587E+01	1.752E+01	2.467E+01	1.252E+01	0.643
U-238		1001.03	*	-2.066E+00	5.655E+00	8.792E+00	9.117E-01	-0.235
	+	63.29	*	-7.458E-02	2.472E+00	4.042E+00	8.015E-01	-0.018
		92.59		3.227E+00	1.416E+00	1.783E+00	4.175E-01	1.810
		63.29	*	-7.458E-02	2.472E+00	4.042E+00	8.015E-01	-0.018

Sample ID : G247911003

Acquisition date : 6-MAR-2010 17:23:36

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		3.227E+00	1.255E+00	1.783E+00	2.072E-01	1.810
		99.53		4.487E-01	2.411E-01	3.723E-01	4.036E-02	1.205
		103.37		-1.241E-01	1.328E-01	2.079E-01	2.196E-02	-0.597
		106.12		9.150E-02	1.081E-01	1.815E-01	1.889E-02	0.504
		117.23	*	3.252E-01	5.126E-01	8.533E-01	8.613E-02	0.381
		228.18		-9.673E-02	2.788E-01	4.619E-01	5.095E-02	-0.209
AM-241	+	277.60		3.323E-01	2.868E-01	4.118E-01	4.459E-02	0.807
		59.54	*	4.747E-02	3.034E-01	5.053E-01	5.932E-02	0.094
CM-247	+	278.00		1.411E+00	1.218E+00	1.722E+00	1.863E-01	0.820
		287.50		-5.652E-01	1.647E+00	2.540E+00	2.723E-01	-0.223
		402.40	*	2.297E-02	4.776E-02	8.065E-02	6.820E-03	0.285
CF-249		252.80		2.717E-01	1.249E+00	2.112E+00	2.322E-01	0.129
		333.37		-3.690E-01	2.879E-01	3.720E-01	3.707E-02	-0.992
		388.16	*	2.137E-03	5.152E-02	8.503E-02	7.248E-03	0.025
CF-251		177.52	*	-5.158E-02	1.720E-01	2.724E-01	2.931E-02	-0.189
		227.38		-3.917E-01	4.630E-01	7.487E-01	8.259E-02	-0.523
		285.41		6.303E-01	2.687E+00	4.532E+00	4.871E-01	0.139

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]G247911003      *
* Acquisition date   : 6-MAR-2010 17:23:36 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 02:00:01.29 Half life ratio        : 8.000          *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library   : SOLID         *
* Sample ID          : G247911003      Analyst initials     : MXR1           *
* Batch Number       : 957714          Sample Quantity      : 1.2872E+02 GRAM  *
* Recovery           : 1.00000         Carrier Weight       : 0.00000         *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                                *
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32 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	2.763E+01	3.274E+00	7.374E-01	0.000E+00
CD-109	4.387E+00	1.203E+00	1.803E+00	0.000E+00
SN-126	4.281E-01	1.174E-01	1.773E-01	0.000E+00
TL-208	5.471E-01	1.105E-01	7.271E-02	0.000E+00
BI-211	4.496E+00	6.862E-01	4.090E-01	0.000E+00
PB-212	1.678E+00	2.412E-01	1.240E-01	0.000E+00
BI-214	1.195E+00	2.240E-01	1.434E-01	0.000E+00
PB-214	1.632E+00	2.642E-01	1.487E-01	0.000E+00
RA-224	6.072E+00	1.726E+00	1.328E+00	0.000E+00
RA-226	1.195E+00	2.240E-01	1.434E-01	0.000E+00
AC-228	2.317E+00	4.570E-01	2.947E-01	0.000E+00
RA-228	2.317E+00	4.570E-01	2.947E-01	0.000E+00
TH-228	1.678E+00	2.412E-01	1.240E-01	0.000E+00
TH-232	2.317E+00	4.570E-01	2.947E-01	0.000E+00
U-235	-1.213E-01	2.613E-01	4.332E-01	0.000E+00
NP-237	1.277E+00	4.378E-01	5.484E-01	0.000E+00
ANH-511	1.185E-01	8.786E-02	5.597E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.735E-01	4.074E-01	7.088E-01	0.000E+00 NOT IDENT.
NA-22	-7.190E-02	5.121E-02	6.971E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.105E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-3.616E-02	4.876E-02	7.730E-02	0.000E+00 FAIL ABUN
V-48	-4.564E-02	8.594E-02	1.372E-01	0.000E+00 NOT IDENT.
CR-51	4.175E-01	4.685E-01	8.465E-01	0.000E+00 NOT IDENT.
MN-54	-2.942E-03	4.347E-02	7.380E-02	0.000E+00 NOT IDENT.
CO-56	-2.732E-05	4.432E-02	7.558E-02	0.000E+00 NOT IDENT.
CO-57	-2.319E-02	3.222E-02	5.380E-02	0.000E+00 NOT IDENT.
CO-58	-3.066E-02	4.495E-02	7.216E-02	0.000E+00 NOT IDENT.

FE-59	-8.117E-02	1.141E-01	1.773E-01	0.000E+00	NOT IDENT.
CO-60	-2.268E-03	4.348E-02	7.111E-02	0.000E+00	NOT IDENT.
ZN-65	1.035E-01	1.270E-01	1.998E-01	0.000E+00	NOT IDENT.
SE-75	1.470E-02	6.341E-02	9.819E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.670E-02	9.582E-02	0.000E+00	NOT IDENT.
Y-88	2.322E-02	3.249E-02	6.243E-02	0.000E+00	NOT IDENT.
Y-91	-1.304E+01	2.701E+01	4.284E+01	0.000E+00	NOT IDENT.
NB-94	-1.552E-02	3.746E-02	6.266E-02	0.000E+00	NOT IDENT.
NB-95	6.991E-02	5.690E-02	9.439E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.001E-01	3.286E-01	0.000E+00	NOT IDENT.
ZR-95	9.659E-02	8.992E-02	1.655E-01	0.000E+00	NOT IDENT.
MO-99	1.202E+01	1.838E+01	3.310E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.023E+18	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.010E-02	5.128E-02	8.285E-02	0.000E+00	FAIL ABUN
RH-106	-3.819E-01	3.537E-01	5.249E-01	0.000E+00	NOT IDENT.
RU-106	-3.819E-01	3.517E-01	5.249E-01	0.000E+00	NOT IDENT.
AG-108M	-1.410E-02	3.585E-02	5.949E-02	0.000E+00	NOT IDENT.
AG-110M	-4.754E-03	3.812E-02	6.553E-02	0.000E+00	NOT IDENT.
SN-113	-5.825E-03	5.770E-02	9.839E-02	0.000E+00	NOT IDENT.
CD-115	6.266E+00	2.116E+01	3.630E+01	0.000E+00	NOT IDENT.
SN-117M	-2.975E-02	7.552E-02	1.264E-01	0.000E+00	NOT IDENT.
TE-123M	-3.584E-02	3.760E-02	6.120E-02	0.000E+00	NOT IDENT.
SB-124	5.181E-02	8.427E-02	1.570E-01	0.000E+00	NOT IDENT.
SB-125	1.423E-01	1.131E-01	2.065E-01	0.000E+00	FAIL ABUN
TE-125M	-1.191E+01	1.267E+01	2.102E+01	0.000E+00	NOT IDENT.
I-126	2.124E-01	2.639E-01	4.825E-01	0.000E+00	NOT IDENT.
SB-126	-9.956E-02	2.193E-01	3.101E-01	0.000E+00	NOT IDENT.
SB-127	7.248E-01	1.831E+00	3.258E+00	0.000E+00	NOT IDENT.
I-131	1.969E-01	1.541E-01	2.826E-01	0.000E+00	NOT IDENT.
TE-132	-4.130E-01	1.174E+00	2.041E+00	0.000E+00	NOT IDENT.
BA-133	-2.647E-03	5.551E-02	8.268E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.885E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	9.399E-02	5.976E-02	1.122E-01	0.000E+00	NOT IDENT.
CS-135	1.611E-01	2.350E-01	3.718E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.168E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.561E-01	1.420E-01	2.119E-01	0.000E+00	NOT IDENT.
BA-137M	-1.708E-02	4.007E-02	6.729E-02	0.000E+00	NOT IDENT.
CS-137	-1.804E-02	4.233E-02	7.109E-02	0.000E+00	NOT IDENT.
CE-139	3.829E-03	3.882E-02	6.621E-02	0.000E+00	NOT IDENT.
BA-140	-4.039E-01	3.627E-01	5.130E-01	0.000E+00	NOT IDENT.
LA-140	-1.707E-02	1.015E-01	1.668E-01	0.000E+00	NOT IDENT.
CE-141	1.846E-02	8.257E-02	1.424E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.704E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	6.367E-02	2.520E-01	4.365E-01	0.000E+00	NOT IDENT.
PM-144	1.679E-02	3.987E-02	7.091E-02	0.000E+00	NOT IDENT.
PR-144	6.058E-01	3.032E+00	5.314E+00	0.000E+00	NOT IDENT.
PM-146	1.114E-02	5.232E-02	9.011E-02	0.000E+00	NOT IDENT.
ND-147	3.225E-01	7.818E-01	1.350E+00	0.000E+00	FAIL ABUN
PM-149	7.793E+00	1.578E+02	2.762E+02	0.000E+00	NOT IDENT.
EU-152	-3.663E-02	1.467E-01	2.028E-01	0.000E+00	FAIL ABUN
GD-153	5.607E-02	1.232E-01	1.921E-01	0.000E+00	NOT IDENT.
EU-154	-2.159E-01	1.465E-01	1.957E-01	0.000E+00	NOT IDENT.
EU-155	1.092E-01	1.350E-01	2.405E-01	0.000E+00	FAIL ABUN
TB-160	3.392E-02	1.599E-01	2.770E-01	0.000E+00	FAIL ABUN
HO-166M	-2.064E-02	7.347E-02	1.242E-01	0.000E+00	NOT IDENT.
TA-182	-1.861E-01	2.267E-01	3.447E-01	0.000E+00	NOT IDENT.
IR-192	-8.321E-02	4.422E-02	6.752E-02	0.000E+00	FAIL ABUN
HG-203	5.512E-02	5.611E-02	9.023E-02	0.000E+00	NOT IDENT.
BI-207	9.552E-03	6.901E-02	1.147E-01	0.000E+00	FAIL ABUN
PB-210	-2.718E-01	1.222E+01	2.148E+01	0.000E+00	NOT IDENT.
PB-211	-9.621E-01	1.060E+00	1.545E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.109E+00	1.447E+00	0.000E+00	FAIL ABUN
RN-219	1.544E-01	5.134E-01	8.935E-01	0.000E+00	FAIL ABUN
RA-223	-1.495E+00	8.888E-01	1.341E+00	0.000E+00	FAIL ABUN
AC-227	3.225E-02	3.224E-01	5.687E-01	0.000E+00	FAIL ABUN
TH-227	3.225E-02	3.224E-01	5.687E-01	0.000E+00	FAIL ABUN
TH-229	1.974E-01	6.966E-01	1.188E+00	0.000E+00	FAIL ABUN
PA-231	-5.377E-01	1.816E+00	3.040E+00	0.000E+00	FAIL ABUN
TH-231	-1.495E+00	8.888E-01	1.341E+00	0.000E+00	FAIL ABUN
PA-233	5.425E-02	7.805E-02	1.402E-01	0.000E+00	FAIL ABUN
PA-234	9.961E-02	3.457E-01	5.994E-01	0.000E+00	NOT IDENT.
PA-234M	-2.066E+00	5.542E+00	8.848E+00	0.000E+00	NOT IDENT.
TH-234	-7.458E-02	2.422E+00	4.243E+00	0.000E+00	FAIL ABUN
U-238	-7.458E-02	2.422E+00	4.243E+00	0.000E+00	FAIL ABUN
NP-239	3.252E-01	5.023E-01	8.876E-01	0.000E+00	FAIL ABUN
AM-241	4.747E-02	2.974E-01	5.309E-01	0.000E+00	NOT IDENT.
CM-247	2.297E-02	4.680E-02	8.233E-02	0.000E+00	FAIL ABUN
CF-249	2.137E-03	5.049E-02	8.685E-02	0.000E+00	NOT IDENT.

CF-251	-5.158E-02	1.686E-01	2.815E-01	0.000E+00 NOT IDENT.
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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911003.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:23:36.
Sample ID        : G247911003 Sample quantity   : 1.28720E+02 GRAM
Detector name    : GAM15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.29 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 957714 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	1460.82	976	10.66*	9.663E-01	2.763E+01	2.763E+01	12.09
CD-109	88.03	242	3.70*	4.448E+00	4.281E+00	4.387E+00	27.99
SN-126	64.28	-----	9.60	1.941E+00	-----	Line Not Found	-----
	86.94	242	8.90	4.448E+00	1.780E+00	1.780E+00	49.19
	87.57	242	37.00*	4.448E+00	4.281E-01	4.281E-01	27.99
TL-208	277.37	61	6.60	3.708E+00	7.270E-01	7.270E-01	86.79
	583.19	349	85.00*	2.190E+00	5.471E-01	5.471E-01	20.61
	860.56	58	12.50	1.576E+00	8.535E-01	8.535E-01	55.12
BI-211	72.87	-----	1.23	3.001E+00	-----	Line Not Found	-----
	351.06	626	12.92*	3.141E+00	4.496E+00	4.496E+00	15.57
PB-212	74.82	302	10.28	3.251E+00	2.635E+00	2.635E+00	32.99
	77.11	464	17.10	3.517E+00	2.252E+00	2.252E+00	22.60
	238.63	1032	43.60*	4.115E+00	1.678E+00	1.678E+00	14.67
	300.09	82	3.30	3.509E+00	2.055E+00	2.055E+00	53.68
BI-214	609.32	395	45.49*	2.117E+00	1.195E+00	1.195E+00	19.13
	1120.29	155	14.92	1.227E+00	2.466E+00	2.466E+00	28.48
	1764.49	73	15.30	8.554E-01	1.627E+00	1.627E+00	36.53
PB-214	74.82	302	5.80	3.251E+00	4.670E+00	4.670E+00	32.51
	77.11	464	9.70	3.517E+00	3.969E+00	3.969E+00	24.06
	242.00	348	7.25	4.078E+00	3.434E+00	3.434E+00	29.58
	295.22	395	18.42	3.546E+00	1.762E+00	1.762E+00	21.76
	351.93	626	35.60*	3.141E+00	1.632E+00	1.632E+00	16.52
RA-224	240.99	348	4.10*	4.078E+00	6.072E+00	6.072E+00	29.01
RA-226	609.32	395	45.49*	2.117E+00	1.195E+00	1.195E+00	19.13
	1120.29	155	14.92	1.227E+00	2.466E+00	2.466E+00	28.48
	1764.49	73	15.30	8.554E-01	1.627E+00	1.627E+00	36.53
AC-228	338.32	236	11.27	3.227E+00	1.888E+00	1.888E+00	49.23
	911.20	306	25.80*	1.494E+00	2.317E+00	2.317E+00	20.13
	968.97	134	15.80	1.410E+00	1.760E+00	1.760E+00	39.06
RA-228	338.32	236	11.27	3.227E+00	1.888E+00	1.888E+00	49.23
	911.20	306	25.80*	1.494E+00	2.317E+00	2.317E+00	20.13
	968.97	134	15.80	1.410E+00	1.760E+00	1.760E+00	39.06

Sample ID : G247911003

Acquisition date : 6-MAR-2010 17:23:36

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	302	10.28	3.251E+00	2.635E+00	2.635E+00	31.55
	77.11	464	17.10	3.517E+00	2.252E+00	2.252E+00	22.60
	238.63	1032	43.60*	4.115E+00	1.678E+00	1.678E+00	14.67
	300.09	82	3.30	3.509E+00	2.055E+00	2.055E+00	80.73
TH-232	338.32	236	11.27	3.227E+00	1.888E+00	1.888E+00	27.53
	911.20	306	25.80*	1.494E+00	2.317E+00	2.317E+00	20.13
	968.97	134	15.80	1.410E+00	1.760E+00	1.760E+00	39.06
U-235	89.96	155	3.47	4.658E+00	2.800E+00	2.800E+00	56.85
	93.35	226	5.60	4.834E+00	2.437E+00	2.437E+00	44.40
	143.76	-----	10.96*	5.506E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.224E+00	-----	Line Not Found	-----
	185.72	157	57.20	4.855E+00	1.646E-01	1.646E-01	47.90
	205.31	-----	5.01	4.560E+00	-----	Line Not Found	-----
NP-237	86.48	242	12.40*	4.448E+00	1.277E+00	1.277E+00	34.98
	95.86	-----	2.68	5.004E+00	-----	Line Not Found	-----
ANH-511	511.00	98	100.00*	2.419E+00	1.185E-01	1.185E-01	75.64

Flag: "*" = Keyline

Total number of lines in spectrum 29
Number of unidentified lines 2
Number of lines tentatively identified by NID 27 93.10%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.763E+01	2.763E+01	0.334E+01	12.09	
CD-109	461.40D	1.02	4.281E+00	4.387E+00	1.228E+00	27.99	
SN-126	2.30E+05Y	1.00	4.281E-01	4.281E-01	1.198E-01	27.99	
TL-208	1.41E+10Y	1.00	5.471E-01	5.471E-01	1.128E-01	20.61	
BI-211	7.04E+08Y	1.00	4.496E+00	4.496E+00	0.700E+00	15.57	
PB-212	1.41E+10Y	1.00	1.678E+00	1.678E+00	0.246E+00	14.67	
BI-214	1600.00Y	1.00	1.195E+00	1.195E+00	0.229E+00	19.13	
PB-214	1600.00Y	1.00	1.632E+00	1.632E+00	0.270E+00	16.52	
RA-224	1.41E+10Y	1.00	6.072E+00	6.072E+00	1.761E+00	29.01	
RA-226	1600.00Y	1.00	1.195E+00	1.195E+00	0.229E+00	19.13	
AC-228	1.41E+10Y	1.00	2.317E+00	2.317E+00	0.466E+00	20.13	
RA-228	1.41E+10Y	1.00	2.317E+00	2.317E+00	0.466E+00	20.13	
TH-228	1.41E+10Y	1.00	1.678E+00	1.678E+00	0.246E+00	14.67	
TH-232	1.41E+10Y	1.00	2.317E+00	2.317E+00	0.466E+00	20.13	
U-235	7.04E+08Y	1.00	1.646E-01	1.646E-01	0.788E-01	47.90	K
NP-237	2.14E+06Y	1.00	1.277E+00	1.277E+00	0.447E+00	34.98	
ANH-511	1.00E+09Y	1.00	1.185E-01	1.185E-01	0.896E-01	75.64	

Total Activity : 5.934E+01 5.945E+01

Grand Total Activity : 5.934E+01 5.945E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247911003

Page : 4
Acquisition date : 6-MAR-2010 17:23:36

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.58	106	270	1.46	418.06	414	9	1.47E-02	59.2	4.50E+00	T
0	270.51	122	206	1.85	539.93	535	10	1.69E-02	47.9	3.77E+00	T
0	463.07	54	97	1.37	925.05	921	9	7.52E-03	71.4	2.60E+00	T
0	727.44	68	107	1.99	1453.81	1447	13	9.51E-03	68.1	1.83E+00	T
0	768.57	38	52	0.96	1536.09	1529	11	5.23E-03	81.1	1.74E+00	
2	964.48	61	52	2.22	1927.96	1921	25	8.42E-03	60.1	1.42E+00	T
0	1377.55	21	15	1.62	2754.31	2746	12	2.97E-03	91.1	1.01E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911003.CNF;1
* Acquisition date   : 6-MAR-2010 17:23:36.   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 02:00:01.29           Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G247911003             Analyst initials: MXR1
* Batch Number       : 957714                 Sample Quantity : 1.28720E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32.11MS 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	2.763E+01	3.341E+00	7.372E-01	7.244E-02	37.479
CD-109	4.387E+00	1.228E+00	1.726E+00	2.143E-01	2.541
SN-126	4.281E-01	1.198E-01	1.697E-01	2.100E-02	2.522
TL-208	5.471E-01	1.128E-01	7.163E-02	6.552E-03	7.637
BI-211	4.496E+00	7.002E-01	3.998E-01	3.981E-02	11.248
PB-212	1.678E+00	2.462E-01	1.205E-01	1.439E-02	13.930
BI-214	1.195E+00	2.286E-01	1.414E-01	1.409E-02	8.448
PB-214	1.632E+00	2.696E-01	1.454E-01	1.652E-02	11.227
RA-224	6.072E+00	1.761E+00	1.291E+00	1.424E-01	4.704
RA-226	1.195E+00	2.286E-01	1.414E-01	1.409E-02	8.448
AC-228	2.317E+00	4.663E-01	2.924E-01	3.542E-02	7.924
RA-228	2.317E+00	4.663E-01	2.924E-01	3.542E-02	7.924
TH-228	1.678E+00	2.462E-01	1.205E-01	1.439E-02	13.930
TH-232	2.317E+00	4.663E-01	2.924E-01	3.542E-02	7.924
U-235	1.646E-01	7.882E-02	4.177E-01	7.433E-02	0.394
NP-237	1.277E+00	4.468E-01	5.248E-01	1.275E-01	2.434
ANH-511	1.185E-01	8.965E-02	5.503E-02	4.755E-03	2.154

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.735E-01		4.157E-01	6.961E-01	6.470E-02	0.249

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-7.190E-02		5.226E-02	6.954E-02	6.317E-03	-1.034
NA-24	3.097E-01		1.584E+00	Half-Life too short		
SC-46	-3.616E-02		4.976E-02	7.667E-02	7.125E-03	-0.472
V-48	-4.564E-02		8.769E-02	1.363E-01	1.246E-02	-0.335
CR-51	4.175E-01		4.780E-01	8.262E-01	8.768E-02	0.505
MN-54	-2.942E-03		4.435E-02	7.312E-02	6.636E-03	-0.040
CO-56	-2.732E-05		4.523E-02	7.491E-02	6.835E-03	0.000
CO-57	-2.319E-02		3.288E-02	5.175E-02	5.213E-03	-0.448
CO-58	-3.066E-02		4.587E-02	7.147E-02	6.425E-03	-0.429
FE-59	-8.117E-02		1.164E-01	1.765E-01	1.647E-02	-0.460
CO-60	-2.268E-03		4.437E-02	7.099E-02	6.824E-03	-0.032
ZN-65	1.035E-01		1.295E-01	1.989E-01	1.699E-02	0.520
SE-75	1.470E-02		6.470E-02	9.556E-02	1.048E-02	0.154
SR-85	1.214E-01		5.786E-02	9.422E-02	8.140E-03	1.289
Y-88	2.322E-02		3.315E-02	6.265E-02	5.276E-03	0.371
Y-91	-1.304E+01		2.756E+01	4.270E+01	3.599E+00	-0.306
NB-94	-1.552E-02		3.822E-02	6.192E-02	5.227E-03	-0.251
NB-95	6.991E-02		5.806E-02	9.340E-02	8.183E-03	0.749
NB-95M	4.004E-01		2.042E-01	3.192E-01	3.846E-02	1.254
ZR-95	9.659E-02		9.175E-02	1.637E-01	1.574E-02	0.590
MO-99	1.202E+01		1.876E+01	3.273E+01	5.160E+00	0.367
TC-99M	-3.894E+11		5.221E+11	Half-Life too short		
RU-103	-3.010E-02		5.233E-02	8.143E-02	1.138E-02	-0.370
RH-106	-3.819E-01		3.609E-01	5.176E-01	6.789E-02	-0.738
RU-106	-3.819E-01		3.588E-01	5.176E-01	4.350E-02	-0.738
AG-108M	-1.410E-02		3.658E-02	5.834E-02	5.156E-03	-0.242
AG-110M	-4.754E-03		3.890E-02	6.468E-02	5.505E-03	-0.073
SN-113	-5.825E-03		5.888E-02	9.634E-02	8.367E-03	-0.060
CD-115	6.266E+00		2.159E+01	3.571E+01	3.082E+00	0.175
SN-117M	-2.975E-02		7.706E-02	1.221E-01	1.280E-02	-0.244
TE-123M	-3.584E-02		3.837E-02	5.911E-02	6.229E-03	-0.606
SB-124	5.181E-02		8.599E-02	1.573E-01	1.482E-02	0.329
SB-125	1.423E-01		1.155E-01	2.024E-01	1.762E-02	0.703
TE-125M	-1.191E+01		1.293E+01	2.019E+01	2.398E+00	-0.590
I-126	2.124E-01		2.693E-01	4.764E-01	3.928E-02	0.446
SB-126	-9.956E-02		2.237E-01	3.066E-01	2.617E-02	-0.325
SB-127	7.248E-01		1.869E+00	3.218E+00	3.702E-01	0.225
I-131	1.969E-01		1.572E-01	2.764E-01	2.670E-02	0.712
TE-132	-4.130E-01		1.198E+00	1.982E+00	3.460E-01	-0.208
BA-133	-2.647E-03		5.664E-02	8.084E-02	1.092E-02	-0.033
I-133	6.114E-03		9.619E-03	Half-Life too short		
CS-134	9.399E-02		6.098E-02	1.111E-01	9.955E-03	0.846
CS-135	1.611E-01		2.398E-01	3.619E-01	4.343E-02	0.445
I-135	5.466E+10		5.959E+10	Half-Life too short		
CS-136	-1.561E-01		1.449E-01	2.108E-01	1.949E-02	-0.741
BA-137M	-1.708E-02		4.089E-02	6.643E-02	5.461E-03	-0.257
CS-137	-1.804E-02		4.320E-02	7.018E-02	5.782E-03	-0.257
CE-139	3.829E-03		3.961E-02	6.399E-02	6.830E-03	0.060

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-140	-4.039E-01		3.701E-01	5.048E-01	1.712E-01	-0.800
LA-140	-1.707E-02		1.036E-01	1.670E-01	1.566E-02	-0.102
CE-141	1.846E-02		8.426E-02	1.373E-01	1.419E-02	0.134
CE-143	1.859E-03		2.910E-04	Half-Life too short		
CE-144	6.367E-02		2.571E-01	4.204E-01	6.784E-02	0.151
PM-144	1.679E-02		4.068E-02	7.006E-02	5.895E-03	0.240
PR-144	6.058E-01		3.094E+00	5.250E+00	4.415E-01	0.115
PM-146	1.114E-02		5.339E-02	8.843E-02	9.351E-03	0.126
ND-147	3.225E-01		7.978E-01	1.328E+00	1.986E-01	0.243
PM-149	7.793E+00		1.610E+02	2.691E+02	4.525E+01	0.029
EU-152	-3.663E-02		1.497E-01	1.981E-01	2.017E-02	-0.185
GD-153	5.607E-02		1.257E-01	1.842E-01	2.033E-02	0.304
EU-154	-2.159E-01		1.495E-01	1.952E-01	2.289E-02	-1.106
EU-155	1.092E-01		1.377E-01	2.308E-01	2.431E-02	0.473
TB-160	3.392E-02		1.631E-01	2.747E-01	2.543E-02	0.123
HO-166M	-2.064E-02		7.496E-02	1.228E-01	1.042E-02	-0.168
TA-182	-1.861E-01		2.314E-01	3.436E-01	2.949E-02	-0.542
IR-192	-8.321E-02		4.512E-02	6.590E-02	6.794E-03	-1.263
HG-203	5.512E-02		5.725E-02	8.789E-02	9.658E-03	0.627
BI-207	9.552E-03		7.042E-02	1.141E-01	1.006E-02	0.084
PB-210	-2.718E-01		1.247E+01	2.037E+01	2.508E+00	-0.013
PB-211	-9.621E-01		1.081E+00	1.514E+00	7.321E-01	-0.636
BI-212	1.635E+00	+	1.132E+00	1.431E+00	1.778E-01	1.143
RN-219	1.544E-01		5.239E-01	8.752E-01	1.293E-01	0.176
RA-223	-1.495E+00		9.070E-01	1.309E+00	2.375E-01	-1.142
AC-227	3.225E-02		3.290E-01	5.532E-01	7.656E-02	0.058
TH-227	3.225E-02		3.290E-01	5.532E-01	8.416E-02	0.058
TH-229	1.974E-01		7.108E-01	1.150E+00	1.252E-01	0.172
PA-231	-5.377E-01		1.853E+00	2.962E+00	4.723E-01	-0.182
TH-231	-1.495E+00		9.070E-01	1.309E+00	2.375E-01	-1.142
PA-233	5.425E-02		7.965E-02	1.367E-01	1.447E-02	0.397
PA-234	9.961E-02		3.527E-01	5.951E-01	1.134E-01	0.167
PA-234M	-2.066E+00		5.655E+00	8.792E+00	9.117E-01	-0.235
TH-234	-7.458E-02		2.472E+00	4.042E+00	8.015E-01	-0.018
U-238	-7.458E-02		2.472E+00	4.042E+00	8.015E-01	-0.018
NP-239	3.252E-01		5.126E-01	8.533E-01	8.613E-02	0.381
AM-241	4.747E-02		3.034E-01	5.053E-01	5.932E-02	0.094
CM-247	2.297E-02		4.776E-02	8.065E-02	6.820E-03	0.285
CF-249	2.137E-03		5.152E-02	8.503E-02	7.248E-03	0.025
CF-251	-5.158E-02		1.720E-01	2.724E-01	2.931E-02	-0.189

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G247911003             *
* Acquisition date   : 6-MAR-2010 17:23:36 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 02:00:01.29 Half life ratio : 8.000                *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID            *
* Sample ID         : G247911003 Analyst initials: MXR1                    *
* Batch Number      : 957714 Sample Quantity : 1.2872E+02 GRAM              *
* Recovery          : 1.00000 Carrier Weight  : 0.00000                    *
*****
*                                     QC DATA                               *
*                                     *                                       *
* CALIB. DATE/TIME  : 3-FEB-2010 11:04:32 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	2.763E+01	3.274E+00	3.689E-01	1.670E+00
CD-109	4.387E+00	1.203E+00	9.022E-01	6.140E-01
SN-126	4.281E-01	1.174E-01	8.872E-02	5.992E-02
TL-208	5.471E-01	1.105E-01	3.637E-02	5.638E-02
BI-211	4.496E+00	6.862E-01	2.046E-01	3.501E-01
PB-212	1.678E+00	2.412E-01	6.202E-02	1.231E-01
BI-214	1.195E+00	2.240E-01	7.176E-02	1.143E-01
PB-214	1.632E+00	2.642E-01	7.439E-02	1.348E-01
RA-224	6.072E+00	1.726E+00	6.645E-01	8.807E-01
RA-226	1.195E+00	2.240E-01	7.176E-02	1.143E-01
AC-228	2.317E+00	4.570E-01	1.474E-01	2.332E-01
RA-228	2.317E+00	4.570E-01	1.474E-01	2.332E-01
TH-228	1.678E+00	2.412E-01	6.202E-02	1.231E-01
TH-232	2.317E+00	4.570E-01	1.474E-01	2.332E-01
U-235	-1.213E-01	2.613E-01	2.167E-01	1.333E-01
NP-237	1.277E+00	4.378E-01	2.744E-01	2.234E-01
ANH-511	1.185E-01	8.786E-02	2.800E-02	4.482E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.735E-01	4.074E-01	3.546E-01	2.078E-01 NOT IDENT.
NA-22	-7.190E-02	5.121E-02	3.487E-02	2.613E-02 NOT IDENT.
NA-24	3.097E+05	3.105E+06	0.000E+00	1.584E+06 SHORT HLIF
SC-46	-3.616E-02	4.876E-02	3.867E-02	2.488E-02 FAIL ABUN
V-48	-4.564E-02	8.594E-02	6.866E-02	4.385E-02 NOT IDENT.
CR-51	4.175E-01	4.685E-01	4.235E-01	2.390E-01 NOT IDENT.
MN-54	-2.942E-03	4.347E-02	3.692E-02	2.218E-02 NOT IDENT.
CO-56	-2.732E-05	4.432E-02	3.781E-02	2.261E-02 NOT IDENT.
CO-57	-2.319E-02	3.222E-02	2.692E-02	1.644E-02 NOT IDENT.
CO-58	-3.066E-02	4.495E-02	3.610E-02	2.294E-02 NOT IDENT.

FE-59	-8.117E-02	1.141E-01	8.872E-02	5.820E-02	NOT IDENT.
CO-60	-2.268E-03	4.348E-02	3.558E-02	2.219E-02	NOT IDENT.
ZN-65	1.035E-01	1.270E-01	9.996E-02	6.477E-02	NOT IDENT.
SE-75	1.470E-02	6.341E-02	4.912E-02	3.235E-02	NOT IDENT.
SR-85	1.214E-01	5.670E-02	4.794E-02	2.893E-02	NOT IDENT.
Y-88	2.322E-02	3.249E-02	3.124E-02	1.657E-02	NOT IDENT.
Y-91	-1.304E+01	2.701E+01	2.143E+01	1.378E+01	NOT IDENT.
NB-94	-1.552E-02	3.746E-02	3.135E-02	1.911E-02	NOT IDENT.
NB-95	6.991E-02	5.690E-02	4.722E-02	2.903E-02	NOT IDENT.
NB-95M	4.004E-01	2.001E-01	1.644E-01	1.021E-01	NOT IDENT.
ZR-95	9.659E-02	8.992E-02	8.281E-02	4.588E-02	NOT IDENT.
MO-99	1.202E+01	1.838E+01	1.656E+01	9.379E+00	NOT IDENT.
TC-99M	-3.894E+17	1.023E+18	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.010E-02	5.128E-02	4.145E-02	2.617E-02	FAIL ABUN
RH-106	-3.819E-01	3.537E-01	2.626E-01	1.805E-01	NOT IDENT.
RU-106	-3.819E-01	3.517E-01	2.626E-01	1.794E-01	NOT IDENT.
AG-108M	-1.410E-02	3.585E-02	2.976E-02	1.829E-02	NOT IDENT.
AG-110M	-4.754E-03	3.812E-02	3.278E-02	1.945E-02	NOT IDENT.
SN-113	-5.825E-03	5.770E-02	4.923E-02	2.944E-02	NOT IDENT.
CD-115	6.266E+00	2.116E+01	1.816E+01	1.079E+01	NOT IDENT.
SN-117M	-2.975E-02	7.552E-02	6.325E-02	3.853E-02	NOT IDENT.
TE-123M	-3.584E-02	3.760E-02	3.062E-02	1.918E-02	NOT IDENT.
SB-124	5.181E-02	8.427E-02	7.855E-02	4.299E-02	NOT IDENT.
SB-125	1.423E-01	1.131E-01	1.033E-01	5.773E-02	FAIL ABUN
TE-125M	-1.191E+01	1.267E+01	1.052E+01	6.463E+00	NOT IDENT.
I-126	2.124E-01	2.639E-01	2.414E-01	1.347E-01	NOT IDENT.
SB-126	-9.956E-02	2.193E-01	1.552E-01	1.119E-01	NOT IDENT.
SB-127	7.248E-01	1.831E+00	1.630E+00	9.343E-01	NOT IDENT.
I-131	1.969E-01	1.541E-01	1.414E-01	7.861E-02	NOT IDENT.
TE-132	-4.130E-01	1.174E+00	1.021E+00	5.988E-01	NOT IDENT.
BA-133	-2.647E-03	5.551E-02	4.137E-02	2.832E-02	FAIL ABUN
I-133	6.114E+03	1.885E+04	0.000E+00	9.619E+03	SHORT HLIF
CS-134	9.399E-02	5.976E-02	5.612E-02	3.049E-02	NOT IDENT.
CS-135	1.611E-01	2.350E-01	1.860E-01	1.199E-01	NOT IDENT.
I-135	5.466E+16	1.168E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.561E-01	1.420E-01	1.060E-01	7.244E-02	NOT IDENT.
BA-137M	-1.708E-02	4.007E-02	3.367E-02	2.045E-02	NOT IDENT.
CS-137	-1.804E-02	4.233E-02	3.557E-02	2.160E-02	NOT IDENT.
CE-139	3.829E-03	3.882E-02	3.313E-02	1.981E-02	NOT IDENT.
BA-140	-4.039E-01	3.627E-01	2.567E-01	1.850E-01	NOT IDENT.
LA-140	-1.707E-02	1.015E-01	8.347E-02	5.178E-02	NOT IDENT.
CE-141	1.846E-02	8.257E-02	7.122E-02	4.213E-02	NOT IDENT.
CE-143	1.859E+03	5.704E+02	0.000E+00	2.910E+02	SHORT HLIF
CE-144	6.367E-02	2.520E-01	2.184E-01	1.285E-01	NOT IDENT.
PM-144	1.679E-02	3.987E-02	3.548E-02	2.034E-02	NOT IDENT.
PR-144	6.058E-01	3.032E+00	2.658E+00	1.547E+00	NOT IDENT.
PM-146	1.114E-02	5.232E-02	4.508E-02	2.669E-02	NOT IDENT.
ND-147	3.225E-01	7.818E-01	6.752E-01	3.989E-01	FAIL ABUN
PM-149	7.793E+00	1.578E+02	1.382E+02	8.049E+01	NOT IDENT.
EU-152	-3.663E-02	1.467E-01	1.014E-01	7.484E-02	FAIL ABUN
GD-153	5.607E-02	1.232E-01	9.611E-02	6.285E-02	NOT IDENT.
EU-154	-2.159E-01	1.465E-01	9.788E-02	7.474E-02	NOT IDENT.
EU-155	1.092E-01	1.350E-01	1.203E-01	6.886E-02	FAIL ABUN
TB-160	3.392E-02	1.599E-01	1.386E-01	8.156E-02	FAIL ABUN
HO-166M	-2.064E-02	7.347E-02	6.215E-02	3.748E-02	NOT IDENT.
TA-182	-1.861E-01	2.267E-01	1.724E-01	1.157E-01	NOT IDENT.
IR-192	-8.321E-02	4.422E-02	3.378E-02	2.256E-02	FAIL ABUN
HG-203	5.512E-02	5.611E-02	4.514E-02	2.863E-02	NOT IDENT.
BI-207	9.552E-03	6.901E-02	5.737E-02	3.521E-02	FAIL ABUN
PB-210	-2.718E-01	1.222E+01	1.075E+01	6.236E+00	NOT IDENT.
PB-211	-9.621E-01	1.060E+00	7.731E-01	5.407E-01	NOT IDENT.
BI-212	1.635E+00	1.109E+00	7.241E-01	5.660E-01	FAIL ABUN
RN-219	1.544E-01	5.134E-01	4.470E-01	2.620E-01	FAIL ABUN
RA-223	-1.495E+00	8.888E-01	6.708E-01	4.535E-01	FAIL ABUN
AC-227	3.225E-02	3.224E-01	2.845E-01	1.645E-01	FAIL ABUN
TH-227	3.225E-02	3.224E-01	2.845E-01	1.645E-01	FAIL ABUN
TH-229	1.974E-01	6.966E-01	5.942E-01	3.554E-01	FAIL ABUN
PA-231	-5.377E-01	1.816E+00	1.521E+00	9.267E-01	FAIL ABUN
TH-231	-1.495E+00	8.888E-01	6.708E-01	4.535E-01	FAIL ABUN
PA-233	5.425E-02	7.805E-02	7.012E-02	3.982E-02	FAIL ABUN
PA-234	9.961E-02	3.457E-01	2.999E-01	1.764E-01	NOT IDENT.
PA-234M	-2.066E+00	5.542E+00	4.426E+00	2.827E+00	NOT IDENT.
TH-234	-7.458E-02	2.422E+00	2.123E+00	1.236E+00	FAIL ABUN
U-238	-7.458E-02	2.422E+00	2.123E+00	1.236E+00	FAIL ABUN
NP-239	3.252E-01	5.023E-01	4.441E-01	2.563E-01	FAIL ABUN
AM-241	4.747E-02	2.974E-01	2.656E-01	1.517E-01	NOT IDENT.
CM-247	2.297E-02	4.680E-02	4.119E-02	2.388E-02	FAIL ABUN
CF-249	2.137E-03	5.049E-02	4.345E-02	2.576E-02	NOT IDENT.

CF-251	-5.158E-02	1.686E-01	1.409E-01	8.601E-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
46.54	269.2005
49.72	304.1449
57.36	0.0000
59.54	328.3639
63.29	374.1568
63.29	374.1568
64.28	368.8245
67.75	405.0580
69.67	378.5391
70.83	375.9801
72.81	400.9460
72.87	400.9777
72.87	400.9777
74.82	402.0182
74.82	402.0182
74.82	402.0182
74.97	402.0986
77.11	403.2233
77.11	403.2233
77.11	403.2233
79.69	426.7356
79.80	433.1898
80.12	433.3651
80.19	433.4032
80.57	481.6129
81.00	485.0755
81.07	485.1181
81.07	485.1181
83.79	413.6691
83.79	413.6691
85.43	407.2568
86.48	441.6227
86.55	441.6611
86.79	441.7865
86.94	490.2482
87.57	427.6780
88.03	427.9142
88.47	428.1390
89.96	428.8960
91.11	429.4766
92.59	430.2174
92.59	430.2174
93.35	430.5959
94.67	431.2509
94.87	362.9847
94.87	362.9847
95.86	361.7649
97.43	337.9202
98.44	297.4452
99.53	284.7158
100.11	317.9183
103.18	399.4215
103.37	378.9646
105.31	327.2715
106.12	318.2844
109.28	378.2599
111.00	354.0900
111.76	357.4777
116.30	327.9091
117.23	311.5454
121.12	325.3029
121.78	338.0741
122.06	348.6373
123.07	335.3564
131.20	378.1053
133.52	330.2336
136.00	314.0145

136.47	341.7442
140.51	330.2122
140.51	0.0000
143.76	347.1945
144.24	321.6910
144.24	321.6910
145.44	347.7078
152.43	375.6505
153.25	372.6802
154.21	342.8001
154.21	342.8001
156.02	343.3241
158.56	344.0544
159.00	360.4130
162.66	318.0791
163.33	318.2534
165.86	319.9946
176.60	318.3380
177.52	316.3667
181.07	276.6972
184.41	318.0388
185.72	315.0369
193.51	300.1843
197.04	309.8740
205.31	267.3087
210.85	282.1530
215.65	243.9360
222.11	236.8371
227.38	294.1263
228.16	275.1455
228.18	275.1492
235.69	294.5045
235.96	294.5555
235.96	294.5555
238.63	254.0880
238.63	254.0880
240.99	254.4701
242.00	254.6341
244.70	197.9774
252.40	225.7611
252.80	227.6671
256.23	226.2920
256.23	226.2920
260.90	220.4227
264.66	198.8594
268.22	228.8621
269.46	225.9135
269.46	225.9135
271.23	199.6354
273.65	220.2236
276.40	253.4282
277.37	203.4821
277.60	204.5548
278.00	187.8979
279.20	189.5967
279.54	195.9025
280.46	188.1665
283.69	194.7970
284.31	192.3532
285.41	179.2638
285.90	184.0336
287.50	197.1887
293.27	0.0000
295.22	177.0918
295.96	123.3826
298.57	123.5619
299.98	185.4857
299.98	185.4857
300.09	185.4976
300.09	185.4976
300.13	185.5023
301.36	199.9050
302.85	165.1364
304.50	176.4094
304.50	176.4094
304.85	185.9808
308.46	193.9899
311.90	151.2669

316.51	204.4249
319.41	147.0664
320.08	150.0015
323.87	232.1949
323.87	232.1949
328.76	171.9334
333.37	230.7574
334.37	205.0443
334.37	205.0443
338.28	164.0385
338.28	164.0385
338.32	164.0426
338.32	164.0426
338.32	164.0426
340.48	152.2375
340.55	152.2422
344.28	163.5621
351.06	143.6013
351.93	143.6624
356.01	133.8322
364.49	115.0476
366.42	143.6974
383.85	147.8650
388.16	146.1728
388.63	147.1979
391.69	152.3855
400.66	138.0101
401.81	139.0814
402.40	134.1145
404.85	180.3538
410.95	131.6157
414.70	122.7774
423.72	117.2022
427.09	118.3854
427.87	106.2792
433.94	123.8094
453.88	116.6691
463.37	115.0721
468.07	90.9298
473.00	110.3660
476.78	96.0720
477.60	108.5030
487.02	117.2099
492.35	109.1413
497.08	119.7561
511.00	96.3220
514.00	101.3236
527.90	108.5297
529.87	0.0000
531.02	104.4382
537.26	108.9094
546.56	0.0000
563.25	77.9207
569.33	85.5781
569.50	84.5142
569.70	83.4501
583.19	96.7456
600.60	94.6265
602.73	81.1670
604.72	97.4663
609.32	100.8718
609.32	100.8718
610.33	100.9082
614.28	66.9993
618.01	73.0408
621.93	84.9621
621.93	84.9621
633.25	76.5352
635.95	72.2246
636.99	71.1556
645.85	82.3407
657.76	76.2286
661.66	86.4382
661.66	86.4382
664.57	0.0000
666.33	70.9107
666.50	70.9154
677.62	72.0887

685.70	71.3447
695.00	73.4083
696.49	79.0200
696.51	84.5979
697.00	82.7512
702.65	83.8257
706.68	84.8626
711.68	90.5941
720.70	94.7227
721.93	0.0000
722.78	80.3223
722.91	80.3258
723.31	81.9429
724.19	75.5357
727.33	83.5154
733.00	80.5681
735.93	84.1566
739.50	61.2152
747.24	76.4566
752.31	85.0781
753.82	82.2776
756.73	68.1504
763.94	69.9185
765.81	66.7022
766.42	73.2223
777.92	92.3722
778.90	82.8723
783.70	68.6777
785.37	68.7100
795.86	68.9136
801.95	75.7421
810.29	60.5416
810.76	70.1603
815.77	57.7454
818.51	49.1209
832.01	77.3356
834.85	72.5571
836.80	0.0000
846.77	58.2324
856.80	71.7346
860.56	55.1063
871.09	60.5620
873.19	60.5948
875.33	0.0000
879.36	53.8407
880.51	59.7317
883.24	52.9146
884.68	50.9738
889.28	73.6084
898.04	76.7241
911.20	69.0871
911.20	69.0871
911.20	69.0871
926.50	62.4181
937.49	71.5313
944.13	60.7021
946.00	51.7694
949.00	62.7680
962.29	53.1191
964.08	58.0000
966.15	58.0283
968.97	58.0684
968.97	58.0684
968.97	58.0684
983.53	58.2726
996.26	49.3798
1001.03	53.4712
1004.73	57.5566
1037.84	68.1777
1038.76	0.0000
1048.07	71.3985
1050.41	50.0069
1050.41	50.0069
1063.66	58.3452
1085.87	64.8098
1099.45	66.0365
1112.07	56.7612
1115.54	55.0285

1120.29	51.5308
1120.29	51.5308
1120.55	51.5349
1121.30	58.6523
1131.51	0.0000
1173.23	44.0303
1177.93	55.6181
1189.05	74.6806
1204.77	70.7022
1221.41	66.7094
1231.02	89.1201
1235.36	74.3323
1238.28	72.2500
1260.41	0.0000
1271.85	38.5078
1274.44	57.7903
1274.54	56.7222
1291.59	35.4358
1298.22	0.0000
1312.11	28.0313
1332.49	30.3060
1365.19	29.8717
1368.63	0.0000
1384.29	14.4268
1408.01	19.7593
1457.56	0.0000
1460.82	31.3484
1489.16	23.8682
1505.03	30.6362
1596.21	21.3923
1620.50	16.5968
1678.03	0.0000
1690.97	9.8748
1764.49	14.9843
1764.49	14.9843
1770.23	8.7485
1771.35	10.5000
1791.20	0.0000
1836.06	6.0592

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911003

Total Uranium Activity	-2.7798E-01	ug/g
Total Uranium Counting Unc.	7.2069E+00	ug/g
Total Uranium Tpu	3.6770E-06	ug/g
Total Uranium Mda	6.3158E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 957714                      SAMPLE ID   : G247911003
*  ANALYST       : MXR1                        DETECTOR    : GAM15
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00    COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 6-MAR-2010 17:23:36.73    SAMPLE ALQT  : 128.720 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.610E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.407E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.787E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.841E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 19:25:27.83

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911004.CNF;1
Sample date     : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:24:04.
Sample ID       : G247911004      Sample quantity   : 1.40240E+02 GRAM
Detector name   : GAM17           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:11.89 0.2%
Energy tolerance : 1.50000 keV    Analyst Initials  : MXR1
Abundance limit  : 75.00000       Sensitivity     : 5.00000
Batch ID        : 957714          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	46.53*	171	956	1.07	92.68	90	6	2.37E-02	30.3	
2	0	63.29*	7456	3015	0.97	126.21	120	12	1.04E+00	1.9	
3	2	74.73*	607	1537	1.08	149.11	142	16	8.43E-02	11.1	1.57E+00
4	2	77.11*	873	1460	0.94	153.88	142	16	1.21E-01	7.9	
5	0	83.81*	404	1944	1.74	167.28	163	8	5.61E-02	19.6	
6	0	87.16*	228	1436	1.22	173.98	172	6	3.16E-02	27.3	
7	3	92.58*	10425	1275	1.05	184.82	181	14	1.45E+00	1.1	8.64E+00
8	3	94.45	456	1041	1.24	188.55	181	14	6.33E-02	22.9	
9	0	98.51*	653	780	1.10	196.68	194	8	9.07E-02	8.5	
10	0	105.22	221	745	1.83	210.11	206	9	3.07E-02	23.3	
11	2	111.14	100	373	0.82	221.95	220	10	1.39E-02	26.7	2.62E+00
12	2	112.82*	487	556	0.92	225.31	220	10	6.76E-02	8.6	
13	0	143.81*	322	596	0.95	287.31	283	9	4.47E-02	14.9	
14	0	163.41	137	532	1.14	326.52	322	9	1.90E-02	31.6	
15	0	185.71*	1494	448	0.96	371.14	366	11	2.08E-01	3.8	
16	0	205.00	131	247	0.81	409.74	407	7	1.82E-02	21.8	
17	0	209.39	139	386	1.17	418.52	414	11	1.94E-02	28.5	
18	5	238.50*	1000	210	1.09	476.76	470	18	1.39E-01	4.1	9.41E-01
19	5	241.43*	285	285	1.82	482.64	470	18	3.96E-02	16.2	
20	0	257.98	101	266	1.66	515.75	511	10	1.40E-02	31.9	
21	0	270.15	124	205	2.17	540.09	536	9	1.72E-02	22.8	
22	0	277.54	52	204	1.28	554.89	552	9	7.17E-03	51.9	
23	0	294.91*	251	240	1.19	589.64	586	9	3.49E-02	12.9	
24	0	338.01	167	247	1.04	675.89	671	11	2.32E-02	19.8	
25	0	351.69*	455	203	1.22	703.24	698	10	6.33E-02	7.6	
26	0	582.57*	244	150	1.42	1165.24	1160	13	3.39E-02	12.4	
27	0	608.77*	349	119	1.43	1217.68	1212	12	4.85E-02	8.4	
28	0	660.97*	270	100	1.24	1322.13	1315	12	3.75E-02	9.7	
29	0	727.06	110	66	1.11	1454.39	1448	13	1.53E-02	18.2	
30	0	765.81	186	106	1.45	1531.93	1525	15	2.59E-02	14.1	
31	0	794.10*	69	81	1.16	1588.56	1582	14	9.63E-03	30.2	
32	0	860.65	46	51	0.92	1721.73	1715	12	6.38E-03	35.0	
33	0	910.57*	162	87	1.46	1821.65	1814	16	2.25E-02	15.3	
34	0	967.92*	117	60	1.28	1936.43	1930	13	1.63E-02	16.8	
35	0	1000.15*	394	36	1.44	2000.93	1994	15	5.47E-02	6.1	
36	0	1119.05	106	21	1.64	2238.89	2231	14	1.47E-02	13.4	
37	0	1459.44*	802	43	2.06	2920.25	2912	14	1.11E-01	3.9	
38	0	1586.78	30	3	1.00	3175.14	3170	12	4.11E-03	21.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1762.92	63	4	2.02	3527.78	3520	15	8.81E-03	14.2	

Flag: "*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911004.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:24:04
Sample ID         : G247911004 Sample quantity : 140.24 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA17 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:11.89 0.2%
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	+	1460.82	*	2.588E+01	3.065E+00	4.296E-01	3.814E-02	60.260
NB-95	+	765.81	*	4.276E-01	1.259E-01	8.912E-02	7.784E-03	4.798
CD-109	+	88.03	*	2.529E+00	1.402E+00	2.151E+00	2.100E-01	1.176
SN-126	+	64.28		3.068E+01	5.036E+00	7.085E-01	1.131E-01	43.302
	+	86.94		1.026E+00	7.041E-01	7.590E-01	3.158E-01	1.352
	+	87.57	*	2.468E-01	1.368E-01	2.094E-01	2.044E-02	1.179
BA-137M	+	661.66	*	5.017E-01	1.065E-01	9.075E-02	7.644E-03	5.528
CS-137	+	661.66	*	5.300E-01	1.125E-01	9.586E-02	8.092E-03	5.528
EU-155	+	86.55		2.994E-01	1.660E-01	2.265E-01	2.227E-02	1.322
	+	105.31	*	4.428E-01	2.113E-01	2.245E-01	2.412E-02	1.972
TL-208	+	277.37		5.871E-01	6.137E-01	7.696E-01	9.942E-02	0.763
	+	583.19	*	4.239E-01	1.121E-01	7.892E-02	7.456E-03	5.371
	+	860.56		7.891E-01	5.580E-01	6.370E-01	5.990E-02	1.239
PB-210	+	46.54	*	1.704E+00	1.050E+00	1.308E+00	1.410E-01	1.303
BI-211		72.87		4.997E+00	3.482E+00	5.964E+00	5.832E-01	0.838
	+	351.06	*	3.243E+00	5.786E-01	4.086E-01	3.813E-02	7.938
PB-212	+	74.82		2.326E+00	6.082E-01	6.789E-01	9.356E-02	3.427
	+	77.11		2.016E+00	3.731E-01	4.100E-01	3.997E-02	4.917
	+	238.63	*	1.526E+00	1.979E-01	1.031E-01	1.044E-02	14.797
		300.09		6.596E-01	1.066E+00	1.649E+00	1.813E-01	0.400
BI-214	+	609.32	*	1.181E+00	2.319E-01	1.616E-01	1.652E-02	7.310
	+	1120.29		1.945E+00	5.600E-01	4.789E-01	5.144E-02	4.061
		1764.49		1.431E+00	4.602E-01	9.599E-01	8.117E-02	1.491
PB-214	+	74.82		4.123E+00	1.053E+00	1.203E+00	1.513E-01	3.427
	+	77.11		3.554E+00	7.201E-01	7.228E-01	9.229E-02	4.917
	+	242.00		2.643E+00	9.022E-01	6.279E-01	6.747E-02	4.210
	+	295.22		1.076E+00	3.034E-01	2.812E-01	3.166E-02	3.825
	+	351.93	*	1.177E+00	2.198E-01	1.487E-01	1.611E-02	7.918
RA-224	+	240.99	*	4.674E+00	1.572E+00	1.106E+00	1.000E-01	4.225
RA-226	+	609.32	*	1.181E+00	2.319E-01	1.616E-01	1.652E-02	7.310
	+	1120.29		1.945E+00	5.600E-01	4.789E-01	5.144E-02	4.061
		1764.49		1.431E+00	4.602E-01	9.599E-01	8.117E-02	1.491
AC-228	+	338.32		1.317E+00	7.583E-01	4.752E-01	1.986E-01	2.771
	+	911.20	*	1.425E+00	4.662E-01	2.889E-01	3.377E-02	4.932

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	968.97		1.777E+00	7.387E-01	4.650E-01	1.135E-01	3.821
	+	338.32		1.317E+00	7.583E-01	4.752E-01	1.986E-01	2.771
	+	911.20	*	1.425E+00	4.662E-01	2.889E-01	3.377E-02	4.932
TH-228	+	968.97		1.777E+00	7.387E-01	4.650E-01	1.135E-01	3.821
	+	74.82		2.326E+00	5.652E-01	6.789E-01	6.674E-02	3.427
	+	77.11		2.016E+00	3.731E-01	4.100E-01	3.997E-02	4.917
	+	238.63	*	1.526E+00	1.979E-01	1.031E-01	1.044E-02	14.797
TH-232		300.09		6.596E-01	1.138E+00	1.649E+00	1.011E+00	0.400
	+	338.32		1.317E+00	5.349E-01	4.752E-01	4.282E-02	2.771
	+	911.20	*	1.425E+00	4.662E-01	2.889E-01	3.377E-02	4.932
PA-234M	+	968.97		1.777E+00	7.387E-01	4.650E-01	1.135E-01	3.821
	+	766.42		1.118E+02	6.489E+01	2.333E+01	1.184E+01	4.794
TH-234	+	1001.03	*	1.159E+02	1.831E+01	9.234E+00	9.266E-01	12.553
	+	63.29	*	7.960E+01	1.544E+01	1.838E+00	3.498E-01	43.300
	+	92.59		1.000E+02	2.276E+01	1.751E+00	3.967E-01	57.095
U-235		89.96		-1.348E+00	1.849E+00	2.118E+00	5.310E-01	-0.636
	+	93.35		7.554E+01	1.794E+01	1.326E+00	3.137E-01	56.949
	+	143.76	*	1.407E+00	4.886E-01	4.132E-01	7.357E-02	3.406
	+	163.33		1.384E+00	9.090E-01	9.085E-01	1.629E-01	1.523
	+	185.72		1.454E+00	1.671E-01	7.444E-02	6.375E-03	19.531
NP-237	+	205.31		1.553E+00	7.340E-01	9.772E-01	1.780E-01	1.589
	+	86.48	*	7.365E-01	4.364E-01	5.570E-01	1.288E-01	1.322
	+	95.86		6.933E+00	3.601E+00	2.796E+00	6.871E-01	2.480
U-238	+	63.29	*	7.960E+01	1.544E+01	1.838E+00	3.498E-01	43.300
	+	92.59		1.000E+02	1.023E+01	1.751E+00	1.747E-01	57.095

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-2.227E-01	4.157E-01	6.544E-01	6.225E-02	-0.340
NA-22		1274.54	*	-1.665E-02	5.127E-02	7.870E-02	6.630E-03	-0.212
NA-24		1368.63	*	1.120E+00	5.127E-02	Half-Life too short		
SC-46		889.28	*	-6.221E-02	5.201E-02	7.515E-02	6.579E-03	-0.828
		1120.55		2.567E-01	8.416E-02	1.552E-01	1.303E-02	1.654
V-48		944.13		1.216E-01	1.235E+00	2.053E+00	1.796E-01	0.059
		983.53	*	-3.445E-02	1.005E-01	1.593E-01	1.390E-02	-0.216
		1312.11		-2.205E-03	9.891E-02	1.655E-01	1.404E-02	-0.013
CR-51		320.08	*	1.627E-02	4.408E-01	7.431E-01	7.092E-02	0.022
MN-54		834.85	*	1.723E-02	4.776E-02	8.184E-02	7.196E-03	0.210
CO-56		846.77	*	3.490E-02	5.189E-02	9.116E-02	8.013E-03	0.383
		1037.84		-1.789E-01	3.699E-01	5.693E-01	5.172E-02	-0.314
		1238.28		1.575E-01	1.114E-01	2.022E-01	1.738E-02	0.779
		1771.35		6.497E-02	2.115E-01	3.752E-01	3.169E-02	0.173
CO-57		122.06	*	6.885E-03	3.184E-02	5.301E-02	6.211E-03	0.130
		136.47		-3.203E-01	2.616E-01	4.072E-01	4.581E-02	-0.786
CO-58		810.76	*	-1.703E-02	5.279E-02	8.550E-02	7.529E-03	-0.199
FE-59		1099.45	*	-1.353E-02	1.161E-01	1.865E-01	1.711E-02	-0.073
		1291.59		1.263E-01	1.594E-01	2.798E-01	2.695E-02	0.452

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60	1173.23			1.771E-02	5.836E-02	9.736E-02	7.953E-03	0.182
	1332.49	*		2.448E-03	5.378E-02	9.056E-02	7.718E-03	0.027
ZN-65	1115.54	*		4.368E-02	1.202E-01	1.784E-01	1.502E-02	0.245
SE-75	121.12			-1.989E-02	1.713E-01	2.823E-01	3.833E-02	-0.070
	136.00			-8.753E-02	5.107E-02	7.735E-02	8.366E-03	-1.132
	264.66	*		-3.288E-02	5.783E-02	8.362E-02	7.684E-03	-0.393
	279.54			-6.273E-03	1.390E-01	2.077E-01	1.971E-02	-0.030
	400.66			8.024E-03	3.094E-01	5.141E-01	5.645E-02	0.016
SR-85	514.00	*		-1.755E-01	6.490E-02	8.614E-02	7.696E-03	-2.037
Y-88	898.04			4.448E-03	5.357E-02	8.930E-02	7.844E-03	0.050
	1836.06	*		1.305E-02	4.294E-02	7.454E-02	6.216E-03	0.175
Y-91	1204.77	*		-5.428E+00	2.940E+01	4.658E+01	3.844E+00	-0.117
NB-94	702.65	*		1.557E-02	4.751E-02	8.175E-02	7.012E-03	0.191
	871.09			-2.074E-02	4.571E-02	7.249E-02	6.361E-03	-0.286
NB-95M	235.69	*		-5.868E-03	1.601E-01	2.265E-01	2.317E-02	-0.026
ZR-95	724.19			7.249E-03	1.555E-01	2.286E-01	2.142E-02	0.032
	756.73	*		6.242E-02	1.012E-01	1.770E-01	1.701E-02	0.353
MO-99	140.51			-8.877E+00	4.249E+01	6.171E+01	1.510E+01	-0.144
	181.07			-1.683E+01	3.190E+01	4.449E+01	8.337E+00	-0.378
	366.42			-1.824E+02	1.620E+02	2.511E+02	2.197E+01	-0.727
	739.50	*		-4.181E+00	2.446E+01	4.055E+01	6.404E+00	-0.103
	777.92			5.687E+00	6.713E+01	1.130E+02	9.890E+00	0.050
TC-99M	140.51	*		-2.469E+11	6.713E+01	Half-Life too short		
RU-103	497.08	*		-1.972E-02	5.503E-02	8.759E-02	1.239E-02	-0.225
	610.33			1.025E+01	2.381E+00	3.266E+00	5.361E-01	3.139
RH-106	621.93	*		-3.761E-01	4.436E-01	6.580E-01	8.751E-02	-0.572
	1050.41			1.399E-01	3.600E+00	5.902E+00	5.080E-01	0.024
RU-106	621.93	*		-3.761E-01	4.419E-01	6.580E-01	5.716E-02	-0.572
	1050.41			1.399E-01	3.600E+00	5.902E+00	5.080E-01	0.024
AG-108M	433.94	*		-2.210E-03	3.745E-02	6.157E-02	5.519E-03	-0.036
	614.28			-1.546E-02	5.350E-02	7.264E-02	6.543E-03	-0.213
	722.91			-6.802E-02	6.163E-02	7.930E-02	7.070E-03	-0.858
AG-110M	657.76	*		2.620E-02	5.541E-02	8.148E-02	7.101E-03	0.322
	677.62			-2.057E-02	4.185E-01	6.655E-01	5.817E-02	-0.031
	706.68			-9.231E-04	2.826E-01	4.758E-01	4.205E-02	-0.002
	763.94			1.229E+00	3.245E-01	5.838E-01	5.234E-02	2.105
	884.68			2.532E-02	6.815E-02	1.165E-01	1.052E-02	0.217
	937.49			-8.602E-02	1.495E-01	2.324E-01	2.105E-02	-0.370
	1384.29			9.753E-02	1.724E-01	3.068E-01	2.705E-02	0.318
	1505.03			-2.738E-01	3.486E-01	5.038E-01	4.357E-02	-0.543
SN-113	391.69	*		3.314E-02	5.577E-02	9.574E-02	8.319E-03	0.346
CD-115	260.90			4.255E+01	2.618E+02	3.729E+02	3.408E+01	0.114
	492.35			2.810E+01	6.936E+01	1.167E+02	1.039E+01	0.241
	527.90	*		-2.960E+00	2.134E+01	3.436E+01	3.072E+00	-0.086
SN-117M	156.02			-1.886E+00	2.948E+00	4.687E+00	4.315E-01	-0.402
	158.56	*		-3.076E-02	8.202E-02	1.172E-01	1.053E-02	-0.263
TE-123M	159.00	*		1.028E-02	3.949E-02	5.829E-02	5.247E-03	0.176
SB-124	602.73			-1.187E-02	6.100E-02	8.403E-02	7.380E-03	-0.141
	645.85			-3.312E-01	7.028E-01	1.081E+00	9.769E-02	-0.306

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125	722.78			-1.091E+00	6.653E-01	7.994E-01	7.063E-02	-1.365
	1690.97	*		7.228E-03	9.775E-02	1.629E-01	1.452E-02	0.044
	427.87	*		-7.364E-03	1.087E-01	1.788E-01	1.576E-02	-0.041
	463.37			2.099E-01	3.791E-01	6.423E-01	6.073E-02	0.327
	600.60			-1.074E-01	2.314E-01	3.584E-01	3.375E-02	-0.300
TE-125M	635.95			2.492E-01	3.829E-01	6.456E-01	6.008E-02	0.386
	109.28	*		1.356E+01	1.934E+01	2.367E+01	2.940E+00	0.573
	388.63			1.535E-01	2.155E-01	3.727E-01	3.154E-02	0.412
I-126	666.33	*		-1.417E-01	3.987E-01	5.335E-01	4.504E-02	-0.266
	753.82			-1.159E+00	2.748E+00	4.457E+00	3.883E-01	-0.260
SB-126	414.70			-6.220E-02	9.596E-02	1.517E-01	1.301E-02	-0.410
	666.50			-1.631E-02	1.261E-01	1.836E-01	1.551E-02	-0.089
	695.00			-7.614E-02	1.177E-01	1.892E-01	1.618E-02	-0.402
	697.00			-8.371E-02	4.067E-01	6.758E-01	5.784E-02	-0.124
	720.70	*		-1.115E-01	2.621E-01	3.674E-01	3.171E-02	-0.304
SB-127	856.80			2.987E-01	7.257E-01	1.101E+00	9.674E-02	0.271
	252.40			1.561E+00	6.544E+00	9.980E+00	4.164E+00	0.156
	473.00			7.853E-01	2.565E+00	4.292E+00	5.673E-01	0.183
	685.70	*		3.530E-02	2.121E+00	3.389E+00	3.941E-01	0.010
	783.70			5.248E+00	6.645E+00	1.164E+01	1.484E+00	0.451
I-131	80.19			-1.044E+00	8.779E+00	1.054E+01	1.032E+00	-0.099
	284.31			-9.123E-01	1.852E+00	3.058E+00	2.938E-01	-0.298
	364.49	*		-1.004E-01	1.591E-01	2.555E-01	2.361E-02	-0.393
	636.99			-2.757E-01	2.512E+00	3.996E+00	3.637E-01	-0.069
TE-132	49.72			-1.387E+01	9.802E+00	1.436E+01	1.784E+00	-0.966
	+	111.76		8.315E+01	4.570E+01	1.323E+02	1.755E+01	0.628
		116.30		-4.283E+01	5.345E+01	7.622E+01	1.029E+01	-0.562
BA-133	228.16	*		-1.954E-01	1.145E+00	1.814E+00	2.944E-01	-0.108
	81.00			-2.498E-02	1.665E-01	1.995E-01	3.225E-02	-0.125
	+	276.40		5.427E-01	5.684E-01	7.221E-01	1.044E-01	0.752
	302.85			-2.255E-01	1.678E-01	2.596E-01	3.489E-02	-0.869
	356.01	*		2.934E-03	5.372E-02	7.942E-02	1.042E-02	0.037
I-133	383.85			2.214E-01	3.373E-01	5.822E-01	7.198E-02	0.380
	529.87	*		-4.919E-03	3.373E-01	Half-Life	too short	
	875.33			5.607E-02	3.373E-01	Half-Life	too short	
	1298.22			-6.555E-02	3.373E-01	Half-Life	too short	
CS-134	563.25			3.431E-01	4.833E-01	8.227E-01	7.393E-02	0.417
	569.33			7.196E-02	2.687E-01	4.435E-01	3.995E-02	0.162
	604.72			3.365E-02	4.974E-02	7.492E-02	6.589E-03	0.449
	795.86	*		1.237E-01	7.810E-02	1.300E-01	1.148E-02	0.952
	801.95			7.714E-02	5.406E-01	8.748E-01	7.723E-02	0.088
CS-135	1365.19			8.739E-01	1.424E+00	2.579E+00	2.312E-01	0.339
	268.22	*		2.614E-01	2.155E-01	3.263E-01	3.405E-02	0.801
I-135	546.56			1.316E+11	2.155E-01	Half-Life	too short	
	836.80			1.635E+11	2.155E-01	Half-Life	too short	
	1038.76			-1.708E+11	2.155E-01	Half-Life	too short	
	1131.51			-2.957E+10	2.155E-01	Half-Life	too short	
	1260.41	*		7.610E+10	2.155E-01	Half-Life	too short	
	1457.56			2.091E+13	2.155E-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
	1678.03			9.674E+10	2.155E-01	Half-Life	too short	
	1791.20			4.117E+09	2.155E-01	Half-Life	too short	
CS-136	153.25			9.364E-01	1.148E+00	1.923E+00	2.109E-01	0.487
	176.60			4.676E-01	6.790E-01	1.129E+00	1.057E-01	0.414
	273.65			1.148E+00	7.946E-01	1.023E+00	1.009E-01	1.122
	340.55			1.727E-01	1.987E-01	3.109E-01	2.894E-02	0.555
	818.51			3.178E-02	9.719E-02	1.667E-01	1.467E-02	0.191
	1048.07	*		-6.954E-03	1.542E-01	2.507E-01	2.250E-02	-0.028
	1235.36			1.866E-01	7.866E-01	1.295E+00	1.497E-01	0.144
CE-139	165.86	*		3.466E-02	3.980E-02	6.040E-02	5.036E-03	0.574
BA-140	162.66	+		2.736E+00	1.747E+00	2.103E+00	1.936E-01	1.301
	304.85			3.367E-02	1.572E+00	2.656E+00	7.817E-01	0.013
	423.72			-2.172E-01	2.521E+00	4.143E+00	1.363E+00	-0.052
	537.26	*		-3.434E-01	4.117E-01	5.982E-01	2.034E-01	-0.574
LA-140	328.76			3.224E-01	3.883E-01	6.762E-01	6.452E-02	0.477
	487.02			6.569E-02	1.988E-01	3.324E-01	3.127E-02	0.198
	815.77			3.793E-02	4.237E-01	7.119E-01	6.963E-02	0.053
	1596.21	*		-1.151E-01	1.077E-01	1.405E-01	1.212E-02	-0.819
CE-141	145.44	*		1.860E-01	9.350E-02	1.463E-01	1.493E-02	1.271
CE-143	57.36			2.402E-04	9.350E-02	Half-Life	too short	
	293.27	*		9.979E-04	9.350E-02	Half-Life	too short	
	664.57			2.749E-03	9.350E-02	Half-Life	too short	
	721.93			-5.378E-03	9.350E-02	Half-Life	too short	
CE-144	80.12			-6.024E-01	4.319E+00	5.181E+00	5.046E-01	-0.116
	133.52	*		-7.264E-02	2.603E-01	4.241E-01	7.085E-02	-0.171
PM-144	476.78			-2.010E-02	8.250E-02	1.329E-01	1.274E-02	-0.151
	618.01			3.151E-02	4.375E-02	7.428E-02	6.646E-03	0.424
	696.49	*		6.006E-03	4.813E-02	8.180E-02	7.003E-03	0.073
PR-144	696.51	*		4.553E-01	3.604E+00	6.127E+00	5.243E-01	0.074
	1489.16			8.589E+00	1.495E+01	2.706E+01	2.339E+00	0.317
PM-146	453.88	*		-1.615E-03	5.508E-02	9.043E-02	9.697E-03	-0.018
	633.25			-6.047E-01	1.972E+00	3.063E+00	1.170E+00	-0.197
	735.93			-6.111E-02	1.967E-01	3.209E-01	8.999E-02	-0.190
	747.24			-5.861E-02	1.510E-01	2.461E-01	3.600E-02	-0.238
ND-147	91.11	+		4.234E+01	4.589E+00	1.452E+00	1.530E-01	29.151
	319.41			1.147E-01	4.140E+00	6.977E+00	6.363E-01	0.016
	531.02	*		-2.581E-01	8.524E-01	1.356E+00	2.052E-01	-0.190
PM-149	285.90	*		1.168E+00	1.442E+02	2.444E+02	3.878E+01	0.005
EU-152	121.78			1.204E-02	9.214E-02	1.530E-01	1.938E-02	0.079
	244.70			7.100E-02	4.317E-01	6.175E-01	5.598E-02	0.115
	344.28	*		-8.435E-02	1.177E-01	1.817E-01	1.718E-02	-0.464
	778.90			2.973E-01	3.683E-01	6.513E-01	5.702E-02	0.457
	964.08			4.699E-01	3.944E-01	6.449E-01	5.636E-02	0.729
	1085.87			-5.572E-02	5.143E-01	8.280E-01	7.046E-02	-0.067
	1112.07			2.591E-01	3.973E-01	6.173E-01	5.199E-02	0.420
	1408.01			2.002E-01	2.108E-01	3.952E-01	3.400E-02	0.506
GD-153	69.67			2.025E+00	1.908E+00	2.965E+00	2.911E-01	0.683
	97.43	+	*	9.721E-01	1.929E-01	2.333E-01	2.385E-02	4.167
	103.18			2.200E-01	1.820E-01	2.306E-01	2.429E-02	0.954

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		123.07		1.644E-03	6.486E-02	1.073E-01	1.480E-02	0.015
		723.31		-2.648E-01	2.821E-01	3.713E-01	3.531E-02	-0.713
		873.19		9.703E-02	3.662E-01	6.218E-01	7.465E-02	0.156
		996.26		1.050E-01	5.642E-01	8.211E-01	1.438E-01	0.128
		1004.73		1.120E-02	2.850E-01	4.069E-01	4.758E-02	0.028
TB-160	+	1274.44	*	-6.442E-02	1.481E-01	2.237E-01	2.511E-02	-0.288
		86.79		8.026E-01	4.448E-01	6.518E-01	6.357E-02	1.231
		197.04		-2.052E-01	6.908E-01	1.090E+00	9.462E-02	-0.188
		215.65		3.111E-01	9.171E-01	1.493E+00	1.323E-01	0.208
		298.57		1.573E-01	1.520E-01	2.405E-01	2.207E-02	0.654
		879.36	*	-4.298E-03	1.952E-01	3.228E-01	2.830E-02	-0.013
		962.29		-1.134E-01	7.621E-01	1.064E+00	9.297E-02	-0.107
		966.15		1.187E+00	3.731E-01	6.678E-01	5.835E-02	1.778
		1177.93		3.119E-02	4.610E-01	7.511E-01	6.145E-02	0.042
		1271.85		1.221E-03	8.193E-01	1.317E+00	1.107E-01	0.001
HO-166M	+	80.57		2.030E-01	4.628E-01	5.669E-01	5.522E-02	0.358
		184.41		1.155E+00	1.328E-01	1.376E-01	1.176E-02	8.397
		280.46		-3.607E-03	1.051E-01	1.572E-01	1.443E-02	-0.023
		410.95		2.645E-01	3.001E-01	5.218E-01	4.462E-02	0.507
		711.68	*	-1.192E-02	7.697E-02	1.279E-01	1.101E-02	-0.093
		752.31		-8.573E-03	3.854E-01	6.449E-01	5.617E-02	-0.013
		810.29		-3.833E-02	8.104E-02	1.296E-01	1.138E-02	-0.296
		67.75		-8.609E-02	1.170E-01	1.746E-01	1.720E-02	-0.493
		100.11		5.445E-01	2.795E-01	4.067E-01	4.216E-02	1.339
		152.43		4.558E-01	4.599E-01	7.743E-01	7.361E-02	0.589
TA-182	+	222.11		-2.347E-01	4.243E-01	6.599E-01	5.881E-02	-0.356
		1121.30		5.481E-01	2.204E-01	3.959E-01	3.321E-02	1.384
		1189.05		-1.050E-01	4.124E-01	6.488E-01	5.328E-02	-0.162
		1221.41	*	-1.106E-01	2.851E-01	4.428E-01	3.673E-02	-0.250
		1231.02		-5.556E-01	6.139E-01	8.909E-01	7.411E-02	-0.624
		295.96		8.037E-01	2.207E-01	3.176E-01	2.935E-02	2.531
		308.46		-7.586E-02	1.140E-01	1.852E-01	1.704E-02	-0.410
		316.51	*	-1.800E-04	4.085E-02	6.877E-02	6.292E-03	-0.003
		468.07		-6.518E-03	8.327E-02	1.359E-01	1.284E-02	-0.048
		70.83		1.537E+00	1.574E+00	2.419E+00	4.046E-01	0.635
HG-203	+	72.87		1.265E+00	8.965E-01	1.510E+00	2.446E-01	0.838
		279.20	*	1.057E-02	4.993E-02	7.587E-02	7.122E-03	0.139
		72.81		2.666E-01	1.997E-01	3.419E-01	3.343E-02	0.780
BI-207	+	74.97		6.705E-01	1.627E-01	2.316E-01	2.260E-02	2.896
		569.70		1.963E-03	4.195E-02	6.813E-02	6.058E-03	0.029
		1063.66	*	8.097E-03	6.893E-02	1.138E-01	9.759E-03	0.071
		1770.23		-8.357E-01	6.085E-01	6.673E-01	5.636E-02	-1.252
PB-211	+	404.85	*	-4.911E-01	9.134E-01	1.412E+00	6.830E-01	-0.348
		427.09		-1.007E+00	1.905E+00	2.940E+00	1.360E+00	-0.343
		832.01		-2.199E-01	1.334E+00	2.181E+00	1.132E+00	-0.101
BI-212	+	727.33	*	3.011E+00	1.156E+00	1.573E+00	1.964E-01	1.913
		785.37		4.212E+00	4.904E+00	8.640E+00	7.571E-01	0.488
		1620.50		2.597E+00	3.135E+00	5.801E+00	4.998E-01	0.448
RN-219	+	271.23		8.403E-01	3.937E-01	5.063E-01	5.426E-02	1.660

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		401.81	*	3.549E-01	4.832E-01	8.330E-01	1.233E-01	0.426
		81.07		-6.066E-02	3.775E-01	4.520E-01	4.403E-02	-0.134
	+	83.79		6.511E-01	2.636E-01	3.135E-01	3.055E-02	2.076
	+	94.87		3.265E+00	1.531E+00	1.277E+00	1.289E-01	2.557
	+	144.24		4.716E+00	1.500E+00	1.831E+00	2.018E-01	2.575
		154.21		-3.153E-01	4.923E-01	7.838E-01	7.934E-02	-0.402
	+	269.46		6.529E-01	3.040E-01	4.057E-01	3.782E-02	1.609
AC-227		323.87	*	-8.555E-01	7.665E-01	1.187E+00	2.085E-01	-0.721
	+	338.28		5.226E+00	2.168E+00	2.648E+00	3.271E-01	1.974
		79.69		-7.573E-02	2.111E+00	2.543E+00	4.532E-01	-0.030
		235.96		1.603E-01	1.977E-01	2.937E-01	3.134E-02	0.546
		256.23	*	2.606E-01	3.621E-01	5.336E-01	6.624E-02	0.488
		299.98		7.791E-01	1.168E+00	1.810E+00	2.368E-01	0.431
		304.50		1.851E-01	1.802E+00	3.057E+00	5.142E-01	0.061
TH-227		334.37		4.677E-01	2.370E+00	3.553E+00	5.621E-01	0.132
		79.80		-9.721E-02	2.787E+00	3.358E+00	7.470E-01	-0.029
		235.96		1.603E-01	1.977E-01	2.937E-01	2.968E-02	0.546
		256.23	*	2.606E-01	3.625E-01	5.336E-01	7.432E-02	0.488
		299.98		7.791E-01	1.168E+00	1.810E+00	2.368E-01	0.431
		304.50		1.851E-01	1.802E+00	3.057E+00	5.142E-01	0.061
		334.37		4.677E-01	2.370E+00	3.553E+00	5.621E-01	0.132
TH-229		85.43		4.125E-01	3.994E-01	4.962E-01	4.837E-02	0.831
	+	88.47		3.805E-01	2.109E-01	3.083E-01	3.016E-02	1.234
		193.51	*	-9.194E-02	6.426E-01	1.030E+00	8.911E-02	-0.089
PA-231	+	210.85		3.008E+00	1.738E+00	1.786E+00	1.575E-01	1.684
		283.69	*	-8.870E-02	1.683E+00	2.754E+00	4.110E-01	-0.032
		301.36		3.799E-01	6.520E-01	1.128E+00	1.416E-01	0.337
TH-231		81.07		-6.066E-02	3.775E-01	4.520E-01	4.403E-02	-0.134
	+	83.79		6.511E-01	2.636E-01	3.135E-01	3.055E-02	2.076
	+	94.87		3.265E+00	1.531E+00	1.277E+00	1.289E-01	2.557
	+	144.24		4.716E+00	1.500E+00	1.831E+00	2.018E-01	2.575
		154.21		-3.153E-01	4.923E-01	7.838E-01	7.934E-02	-0.402
	+	269.46		6.529E-01	3.040E-01	4.057E-01	3.782E-02	1.609
		323.87	*	-8.555E-01	7.665E-01	1.187E+00	2.085E-01	-0.721
PA-233	+	338.28		5.226E+00	2.168E+00	2.648E+00	3.271E-01	1.974
		300.13		4.645E-01	5.022E-01	8.218E-01	1.246E-01	0.565
		311.90	*	8.779E-02	7.835E-02	1.385E-01	1.299E-02	0.634
		340.48		8.129E-01	8.268E-01	1.272E+00	3.078E-01	0.639
PA-234	+	94.67		1.183E+00	5.647E-01	5.538E-01	7.454E-02	2.137
	+	98.44		1.059E+00	6.204E-01	2.634E-01	1.477E-01	4.021
	+	111.00		3.616E-01	1.994E-01	4.949E-01	6.871E-02	0.731
		131.20		-3.791E-02	1.425E-01	2.327E-01	2.584E-02	-0.163
		569.50		9.984E-02	3.680E-01	6.077E-01	5.404E-02	0.164
		733.00		3.067E-01	5.426E-01	8.388E-01	1.863E-01	0.366
		880.51		1.191E-01	3.857E-01	6.561E-01	5.751E-02	0.182
		883.24		-7.348E-02	3.991E-01	6.449E-01	4.336E-01	-0.114
		926.50		1.928E-01	2.299E-01	4.013E-01	1.016E-01	0.480
		946.00	*	1.759E-01	4.186E-01	7.138E-01	1.344E-01	0.246
		949.00		2.867E-01	6.083E-01	1.044E+00	9.136E-02	0.274

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	99.53		1.921E+00	3.812E-01	4.428E-01	4.576E-02	4.339
		103.37		1.717E-01	1.477E-01	2.114E-01	2.229E-02	0.812
	+	106.12		3.529E-01	1.684E-01	1.875E-01	2.007E-02	1.882
		117.23	*	-4.323E-01	5.762E-01	8.245E-01	9.391E-02	-0.524
		228.18		-4.667E-02	2.667E-01	4.226E-01	3.786E-02	-0.110
	+	277.60		2.683E-01	2.794E-01	3.541E-01	3.250E-02	0.758
AM-241		59.54	*	7.256E-02	1.329E-01	2.058E-01	2.185E-02	0.353
CM-247	+	278.00		1.140E+00	1.187E+00	1.542E+00	1.415E-01	0.739
		287.50		6.771E-02	1.380E+00	2.343E+00	2.152E-01	0.029
		402.40	*	3.777E-02	4.473E-02	7.781E-02	6.609E-03	0.485
CF-249		252.80		3.933E-01	1.285E+00	1.852E+00	1.686E-01	0.212
		333.37		1.150E-01	2.451E-01	3.743E-01	3.385E-02	0.307
		388.16	*	6.514E-03	4.849E-02	8.126E-02	6.882E-03	0.080
CF-251		177.52	*	1.069E-01	1.646E-01	2.734E-01	2.316E-02	0.391
		227.38		-7.221E-02	4.377E-01	6.939E-01	6.213E-02	-0.104
		285.41		-1.532E+00	2.444E+00	4.004E+00	3.677E-01	-0.383
ANH-511		511.00	*	5.728E-02	5.550E-02	1.023E-01	9.135E-03	0.560

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]G247911004      *
* Acquisition date   : 6-MAR-2010 17:24:04 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 02:00:11.89 Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247911004 Analyst initials: MXR1          *
* Batch Number       : 957714 Sample Quantity : 1.4024E+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	2.588E+01	3.004E+00	4.312E-01	0.000E+00
NB-95	4.276E-01	1.234E-01	9.069E-02	0.000E+00
CD-109	2.529E+00	1.374E+00	2.286E+00	0.000E+00
SN-126	2.468E-01	1.341E-01	2.225E-01	0.000E+00
BA-137M	5.017E-01	1.043E-01	9.263E-02	0.000E+00
CS-137	5.300E-01	1.103E-01	9.785E-02	0.000E+00
EU-155	4.428E-01	2.071E-01	2.378E-01	0.000E+00
TL-208	4.239E-01	1.099E-01	8.077E-02	0.000E+00
PB-210	1.704E+00	1.029E+00	1.406E+00	0.000E+00
BI-211	3.243E+00	5.671E-01	4.225E-01	0.000E+00
PB-212	1.526E+00	1.939E-01	1.075E-01	0.000E+00
BI-214	1.181E+00	2.273E-01	1.653E-01	0.000E+00
PB-214	1.177E+00	2.154E-01	1.537E-01	0.000E+00
RA-224	4.674E+00	1.541E+00	1.152E+00	0.000E+00
RA-226	1.181E+00	2.273E-01	1.653E-01	0.000E+00
AC-228	1.425E+00	4.569E-01	2.929E-01	0.000E+00
RA-228	1.425E+00	4.569E-01	2.929E-01	0.000E+00
TH-228	1.526E+00	1.939E-01	1.075E-01	0.000E+00
TH-232	1.425E+00	4.569E-01	2.929E-01	0.000E+00
PA-234M	1.159E+02	1.795E+01	9.344E+00	0.000E+00
TH-234	7.960E+01	1.513E+01	1.966E+00	0.000E+00
U-235	1.407E+00	4.789E-01	4.349E-01	0.000E+00
NP-237	7.365E-01	4.277E-01	5.920E-01	0.000E+00
U-238	7.960E+01	1.513E+01	1.966E+00	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.227E-01	4.074E-01	6.725E-01	0.000E+00 NOT IDENT.
NA-22	-1.665E-02	5.024E-02	7.924E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.744E+06	0.000E+00	0.000E+00 SHORT HLIF

SC-46	-6.221E-02	5.097E-02	7.624E-02	0.000E+00	NOT IDENT.
V-48	-3.445E-02	9.853E-02	1.613E-01	0.000E+00	NOT IDENT.
CR-51	1.627E-02	4.320E-01	7.699E-01	0.000E+00	NOT IDENT.
MN-54	1.723E-02	4.681E-02	8.314E-02	0.000E+00	NOT IDENT.
CO-56	3.490E-02	5.085E-02	9.257E-02	0.000E+00	NOT IDENT.
CO-57	6.885E-03	3.121E-02	5.597E-02	0.000E+00	NOT IDENT.
CO-58	-1.703E-02	5.174E-02	8.690E-02	0.000E+00	NOT IDENT.
FE-59	-1.353E-02	1.138E-01	1.883E-01	0.000E+00	NOT IDENT.
CO-60	2.448E-03	5.271E-02	9.108E-02	0.000E+00	NOT IDENT.
ZN-65	4.368E-02	1.178E-01	1.801E-01	0.000E+00	NOT IDENT.
SE-75	-3.288E-02	5.667E-02	8.696E-02	0.000E+00	NOT IDENT.
SR-85	-1.755E-01	6.360E-02	8.839E-02	0.000E+00	NOT IDENT.
Y-88	1.305E-02	4.208E-02	7.446E-02	0.000E+00	NOT IDENT.
Y-91	-5.428E+00	2.881E+01	4.695E+01	0.000E+00	NOT IDENT.
NB-94	1.557E-02	4.656E-02	8.334E-02	0.000E+00	NOT IDENT.
NB-95M	-5.868E-03	1.569E-01	2.361E-01	0.000E+00	NOT IDENT.
ZR-95	6.242E-02	9.914E-02	1.802E-01	0.000E+00	NOT IDENT.
MO-99	-4.181E+00	2.397E+01	4.130E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.159E+18	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.972E-02	5.393E-02	8.994E-02	0.000E+00	NOT IDENT.
RH-106	-3.761E-01	4.347E-01	6.725E-01	0.000E+00	NOT IDENT.
RU-106	-3.761E-01	4.331E-01	6.725E-01	0.000E+00	NOT IDENT.
AG-108M	-2.210E-03	3.671E-02	6.339E-02	0.000E+00	NOT IDENT.
AG-110M	2.620E-02	5.430E-02	8.318E-02	0.000E+00	NOT IDENT.
SN-113	3.314E-02	5.465E-02	9.879E-02	0.000E+00	NOT IDENT.
CD-115	-2.960E+00	2.091E+01	3.524E+01	0.000E+00	NOT IDENT.
SN-117M	-3.076E-02	8.038E-02	1.231E-01	0.000E+00	NOT IDENT.
TE-123M	1.028E-02	3.870E-02	6.124E-02	0.000E+00	NOT IDENT.
SB-124	7.228E-03	9.579E-02	1.630E-01	0.000E+00	NOT IDENT.
SB-125	-7.364E-03	1.066E-01	1.841E-01	0.000E+00	NOT IDENT.
TE-125M	1.356E+01	1.896E+01	2.505E+01	0.000E+00	NOT IDENT.
I-126	-1.417E-01	3.907E-01	5.445E-01	0.000E+00	NOT IDENT.
SB-126	-1.115E-01	2.569E-01	3.743E-01	0.000E+00	NOT IDENT.
SB-127	3.530E-02	2.078E+00	3.457E+00	0.000E+00	NOT IDENT.
I-131	-1.004E-01	1.559E-01	2.640E-01	0.000E+00	NOT IDENT.
TE-132	-1.954E-01	1.122E+00	1.892E+00	0.000E+00	FAIL ABUN
BA-133	2.934E-03	5.264E-02	8.210E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.986E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.237E-01	7.654E-02	1.322E-01	0.000E+00	NOT IDENT.
CS-135	2.614E-01	2.112E-01	3.392E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.354E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.954E-03	1.511E-01	2.534E-01	0.000E+00	NOT IDENT.
CE-139	3.466E-02	3.901E-02	6.339E-02	0.000E+00	NOT IDENT.
BA-140	-3.434E-01	4.035E-01	6.133E-01	0.000E+00	FAIL ABUN
LA-140	-1.151E-01	1.055E-01	1.407E-01	0.000E+00	NOT IDENT.
CE-141	0.000E+00	9.163E-02	1.540E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.798E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-7.264E-02	2.551E-01	4.470E-01	0.000E+00	NOT IDENT.
PM-144	6.006E-03	4.716E-02	8.341E-02	0.000E+00	NOT IDENT.
PR-144	4.553E-01	3.532E+00	6.247E+00	0.000E+00	NOT IDENT.
PM-146	-1.615E-03	5.397E-02	9.303E-02	0.000E+00	NOT IDENT.
ND-147	-2.581E-01	8.354E-01	1.390E+00	0.000E+00	FAIL ABUN
PM-149	1.168E+00	1.413E+02	2.538E+02	0.000E+00	NOT IDENT.
EU-152	-8.435E-02	1.153E-01	1.879E-01	0.000E+00	NOT IDENT.
GD-153	0.000E+00	1.890E-01	2.474E-01	0.000E+00	FAIL ABUN
EU-154	-6.442E-02	1.451E-01	2.252E-01	0.000E+00	NOT IDENT.
TB-160	-4.298E-03	1.913E-01	3.275E-01	0.000E+00	FAIL ABUN
HO-166M	-1.192E-02	7.543E-02	1.304E-01	0.000E+00	FAIL ABUN
TA-182	-1.106E-01	2.794E-01	4.463E-01	0.000E+00	NOT IDENT.
IR-192	-1.800E-04	4.004E-02	7.126E-02	0.000E+00	FAIL ABUN
HG-203	1.057E-02	4.893E-02	7.881E-02	0.000E+00	NOT IDENT.
BI-207	8.097E-03	6.755E-02	1.150E-01	0.000E+00	FAIL ABUN
PB-211	-4.911E-01	8.951E-01	1.456E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.133E+00	1.603E+00	0.000E+00	FAIL ABUN
RN-219	3.549E-01	4.735E-01	8.590E-01	0.000E+00	FAIL ABUN
RA-223	-8.555E-01	7.512E-01	1.229E+00	0.000E+00	FAIL ABUN
AC-227	2.606E-01	3.549E-01	5.553E-01	0.000E+00	NOT IDENT.
TH-227	2.606E-01	3.552E-01	5.553E-01	0.000E+00	NOT IDENT.
TH-229	-9.194E-02	6.298E-01	1.078E+00	0.000E+00	FAIL ABUN
PA-231	-8.870E-02	1.650E+00	2.860E+00	0.000E+00	NOT IDENT.
TH-231	-8.555E-01	7.512E-01	1.229E+00	0.000E+00	FAIL ABUN
PA-233	8.779E-02	7.678E-02	1.435E-01	0.000E+00	NOT IDENT.
PA-234	1.759E-01	4.103E-01	7.232E-01	0.000E+00	FAIL ABUN
NP-239	-4.323E-01	5.647E-01	8.713E-01	0.000E+00	FAIL ABUN
AM-241	7.256E-02	1.303E-01	2.203E-01	0.000E+00	NOT IDENT.
CM-247	3.777E-02	4.383E-02	8.024E-02	0.000E+00	FAIL ABUN
CF-249	6.514E-03	4.752E-02	8.385E-02	0.000E+00	NOT IDENT.
CF-251	1.069E-01	1.613E-01	2.866E-01	0.000E+00	NOT IDENT.

ANH-511	5.728E-02	5.439E-02	1.050E-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]G247911004.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:24:04.
Sample ID        : G247911004 Sample quantity : 1.40240E+02 GRAM
Detector name    : GAM17 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:11.89 0.2%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957714 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	1460.82	802	10.66*	7.784E-01	2.588E+01	2.588E+01	11.84
NB-95	765.81	186	99.81*	1.393E+00	3.586E-01	4.276E-01	29.45
CD-109	88.03	228	3.70*	6.676E+00	2.468E+00	2.529E+00	55.42
SN-126	64.28	7456	9.60	6.776E+00	3.068E+01	3.068E+01	16.42
	86.94	228	8.90	6.676E+00	1.026E+00	1.026E+00	68.62
	87.57	228	37.00*	6.676E+00	2.468E-01	2.468E-01	55.42
BA-137M	661.66	270	89.90*	1.605E+00	5.012E-01	5.017E-01	21.22
CS-137	661.66	270	85.10*	1.605E+00	5.294E-01	5.300E-01	21.23
EU-155	86.55	228	30.70	6.676E+00	2.975E-01	2.994E-01	55.44
	105.31	221	21.10*	6.374E+00	4.399E-01	4.428E-01	47.73
TL-208	277.37	52	6.60	3.566E+00	5.871E-01	5.871E-01	104.53
	583.19	244	85.00*	1.813E+00	4.239E-01	4.239E-01	26.45
	860.56	46	12.50	1.246E+00	7.891E-01	7.891E-01	70.71
PB-210	46.54	171	4.25*	6.313E+00	1.701E+00	1.704E+00	61.60
BI-211	72.87	-----	1.23	6.803E+00	-----	Line Not Found	-----
	351.06	455	12.92*	2.909E+00	3.243E+00	3.243E+00	17.84
PB-212	74.82	607	10.28	6.796E+00	2.326E+00	2.326E+00	26.14
	77.11	873	17.10	6.782E+00	2.016E+00	2.016E+00	18.51
	238.63	1000	43.60*	4.023E+00	1.526E+00	1.526E+00	12.97
	300.09	-----	3.30	3.340E+00	-----	Line Not Found	-----
BI-214	609.32	349	45.49*	1.738E+00	1.181E+00	1.181E+00	19.63
	1120.29	106	14.92	9.779E-01	1.945E+00	1.945E+00	28.80
	1764.49	-----	15.30	6.714E-01	-----	Line Not Found	-----
PB-214	74.82	607	5.80	6.796E+00	4.123E+00	4.123E+00	25.53
	77.11	873	9.70	6.782E+00	3.554E+00	3.554E+00	20.26
	242.00	285	7.25	3.986E+00	2.643E+00	2.643E+00	34.13
	295.22	251	18.42	3.390E+00	1.076E+00	1.076E+00	28.20
	351.93	455	35.60*	2.909E+00	1.177E+00	1.177E+00	18.67
RA-224	240.99	285	4.10*	3.986E+00	4.674E+00	4.674E+00	33.64
RA-226	609.32	349	45.49*	1.738E+00	1.181E+00	1.181E+00	19.63
	1120.29	106	14.92	9.779E-01	1.945E+00	1.945E+00	28.80
	1764.49	-----	15.30	6.714E-01	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AC-228	338.32	167	11.27	3.013E+00	1.317E+00	1.317E+00	57.58
	911.20	162	25.80*	1.182E+00	1.425E+00	1.425E+00	32.73
	968.97	117	15.80	1.116E+00	1.777E+00	1.777E+00	41.57
RA-228	338.32	167	11.27	3.013E+00	1.317E+00	1.317E+00	57.58
	911.20	162	25.80*	1.182E+00	1.425E+00	1.425E+00	32.73
	968.97	117	15.80	1.116E+00	1.777E+00	1.777E+00	41.57
TH-228	74.82	607	10.28	6.796E+00	2.326E+00	2.326E+00	24.30
	77.11	873	17.10	6.782E+00	2.016E+00	2.016E+00	18.51
	238.63	1000	43.60*	4.023E+00	1.526E+00	1.526E+00	12.97
TH-232	300.09	-----	3.30	3.340E+00	-----	Line Not Found	-----
	338.32	167	11.27	3.013E+00	1.317E+00	1.317E+00	40.62
	911.20	162	25.80*	1.182E+00	1.425E+00	1.425E+00	32.73
	968.97	117	15.80	1.116E+00	1.777E+00	1.777E+00	41.57
PA-234M	766.42	186	0.32	1.393E+00	1.118E+02	1.118E+02	58.03
	1001.03	394	0.84*	1.083E+00	1.159E+02	1.159E+02	15.80
TH-234	63.29	7456	3.70*	6.776E+00	7.960E+01	7.960E+01	19.40
	92.59	10425	4.23	6.597E+00	1.000E+02	1.000E+02	22.76
U-235	89.96	-----	3.47	6.637E+00	-----	Line Not Found	-----
	93.35	10425	5.60	6.597E+00	7.554E+01	7.554E+01	23.74
	143.76	322	10.96*	5.591E+00	1.407E+00	1.407E+00	34.73
	163.33	137	5.08	5.209E+00	1.384E+00	1.384E+00	65.69
	185.72	1494	57.20	4.810E+00	1.454E+00	1.454E+00	11.49
NP-237	205.31	131	5.01	4.498E+00	1.553E+00	1.553E+00	47.27
	86.48	228	12.40*	6.676E+00	7.365E-01	7.365E-01	59.26
	95.86	456	2.68	6.567E+00	6.933E+00	6.933E+00	51.95
U-238	63.29	7456	3.70*	6.776E+00	7.960E+01	7.960E+01	19.40
	92.59	10425	4.23	6.597E+00	1.000E+02	1.000E+02	10.23

Flag: "*" = Keyline

Total number of lines in spectrum 39
Number of unidentified lines 5
Number of lines tentatively identified by NID 34 87.18%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.588E+01	2.588E+01	0.306E+01	11.84	
NB-95	64.03D	1.19	3.586E-01	4.276E-01	1.259E-01	29.45	
CD-109	461.40D	1.02	2.468E+00	2.529E+00	1.402E+00	55.42	
SN-126	2.30E+05Y	1.00	2.468E-01	2.468E-01	1.368E-01	55.42	
BA-137M	30.08Y	1.00	5.012E-01	5.017E-01	1.065E-01	21.22	
CS-137	30.08Y	1.00	5.294E-01	5.300E-01	1.125E-01	21.23	
EU-155	4.75Y	1.01	4.399E-01	4.428E-01	2.113E-01	47.73	
TL-208	1.41E+10Y	1.00	4.239E-01	4.239E-01	1.121E-01	26.45	
PB-210	22.20Y	1.00	1.701E+00	1.704E+00	1.050E+00	61.60	
BI-211	7.04E+08Y	1.00	3.243E+00	3.243E+00	0.579E+00	17.84	
PB-212	1.41E+10Y	1.00	1.526E+00	1.526E+00	0.198E+00	12.97	
BI-214	1600.00Y	1.00	1.181E+00	1.181E+00	0.232E+00	19.63	
PB-214	1600.00Y	1.00	1.177E+00	1.177E+00	0.220E+00	18.67	
RA-224	1.41E+10Y	1.00	4.674E+00	4.674E+00	1.572E+00	33.64	
RA-226	1600.00Y	1.00	1.181E+00	1.181E+00	0.232E+00	19.63	
AC-228	1.41E+10Y	1.00	1.425E+00	1.425E+00	0.466E+00	32.73	
RA-228	1.41E+10Y	1.00	1.425E+00	1.425E+00	0.466E+00	32.73	
TH-228	1.41E+10Y	1.00	1.526E+00	1.526E+00	0.198E+00	12.97	
TH-232	1.41E+10Y	1.00	1.425E+00	1.425E+00	0.466E+00	32.73	
PA-234M	4.47E+09Y	1.00	1.159E+02	1.159E+02	0.183E+02	15.80	
TH-234	4.47E+09Y	1.00	7.960E+01	7.960E+01	1.544E+01	19.40	
U-235	7.04E+08Y	1.00	1.407E+00	1.407E+00	0.489E+00	34.73	
NP-237	2.14E+06Y	1.00	7.365E-01	7.365E-01	4.364E-01	59.26	
U-238	4.47E+09Y	1.00	7.960E+01	7.960E+01	1.544E+01	19.40	

Total Activity : 3.286E+02 3.287E+02

Grand Total Activity : 3.286E+02 3.287E+02

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	83.81	404	1944	1.74	167.28	163	8	5.61E-02	39.3	6.72E+00	T
0	98.51	653	780	1.10	196.68	194	8	9.07E-02	17.0	6.50E+00	T
2	111.14	100	373	0.82	221.95	220	10	1.39E-02	53.3	6.26E+00	T
2	112.82	487	556	0.92	225.31	220	10	6.76E-02	17.2	6.22E+00	
0	209.39	139	386	1.17	418.52	414	11	1.94E-02	57.1	4.43E+00	T
0	257.98	101	266	1.66	515.75	511	10	1.40E-02	63.9	3.78E+00	
0	270.15	124	205	2.17	540.09	536	9	1.72E-02	45.6	3.65E+00	T
0	727.06	110	66	1.11	1454.39	1448	13	1.53E-02	36.3	1.46E+00	T
0	794.10	69	81	1.16	1588.56	1582	14	9.63E-03	60.4	1.35E+00	
0	1586.78	30	3	1.00	3175.14	3170	12	4.11E-03	43.8	7.28E-01	
0	1762.92	63	4	2.02	3527.78	3520	15	8.81E-03	28.4	6.72E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911004.CNF;1  *
* Acquisition date   : 6-MAR-2010 17:24:04. 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 02:00:11.89 Half life ratio : 8.00000   *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247911004 Analyst initials: MXR1          *
* Batch Number       : 957714 Sample Quantity : 1.40240E+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	2.588E+01	3.065E+00	4.296E-01	3.814E-02	60.260
NB-95	4.276E-01	1.259E-01	8.912E-02	7.784E-03	4.798
CD-109	2.529E+00	1.402E+00	2.151E+00	2.100E-01	1.176
SN-126	2.468E-01	1.368E-01	2.094E-01	2.044E-02	1.179
BA-137M	5.017E-01	1.065E-01	9.075E-02	7.644E-03	5.528
CS-137	5.300E-01	1.125E-01	9.586E-02	8.092E-03	5.528
EU-155	4.428E-01	2.113E-01	2.245E-01	2.412E-02	1.972
TL-208	4.239E-01	1.121E-01	7.892E-02	7.456E-03	5.371
PB-210	1.704E+00	1.050E+00	1.308E+00	1.410E-01	1.303
BI-211	3.243E+00	5.786E-01	4.086E-01	3.813E-02	7.938
PB-212	1.526E+00	1.979E-01	1.031E-01	1.044E-02	14.797
BI-214	1.181E+00	2.319E-01	1.616E-01	1.652E-02	7.310
PB-214	1.177E+00	2.198E-01	1.487E-01	1.611E-02	7.918
RA-224	4.674E+00	1.572E+00	1.106E+00	1.000E-01	4.225
RA-226	1.181E+00	2.319E-01	1.616E-01	1.652E-02	7.310
AC-228	1.425E+00	4.662E-01	2.889E-01	3.377E-02	4.932
RA-228	1.425E+00	4.662E-01	2.889E-01	3.377E-02	4.932
TH-228	1.526E+00	1.979E-01	1.031E-01	1.044E-02	14.797

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.425E+00	4.662E-01	2.889E-01	3.377E-02	4.932
PA-234M	1.159E+02	1.831E+01	9.234E+00	9.266E-01	12.553
TH-234	7.960E+01	1.544E+01	1.838E+00	3.498E-01	43.300
U-235	1.407E+00	4.886E-01	4.132E-01	7.357E-02	3.406
NP-237	7.365E-01	4.364E-01	5.570E-01	1.288E-01	1.322
U-238	7.960E+01	1.544E+01	1.838E+00	3.498E-01	43.300

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.227E-01		4.157E-01	6.544E-01	6.225E-02	-0.340
NA-22	-1.665E-02		5.127E-02	7.870E-02	6.630E-03	-0.212
NA-24	1.120E+00		1.400E+00	Half-Life	too short	
SC-46	-6.221E-02		5.201E-02	7.515E-02	6.579E-03	-0.828
V-48	-3.445E-02		1.005E-01	1.593E-01	1.390E-02	-0.216
CR-51	1.627E-02		4.408E-01	7.431E-01	7.092E-02	0.022
MN-54	1.723E-02		4.776E-02	8.184E-02	7.196E-03	0.210
CO-56	3.490E-02		5.189E-02	9.116E-02	8.013E-03	0.383
CO-57	6.885E-03		3.184E-02	5.301E-02	6.211E-03	0.130
CO-58	-1.703E-02		5.279E-02	8.550E-02	7.529E-03	-0.199
FE-59	-1.353E-02		1.161E-01	1.865E-01	1.711E-02	-0.073
CO-60	2.448E-03		5.378E-02	9.056E-02	7.718E-03	0.027
ZN-65	4.368E-02		1.202E-01	1.784E-01	1.502E-02	0.245
SE-75	-3.288E-02		5.783E-02	8.362E-02	7.684E-03	-0.393
SR-85	-1.755E-01		6.490E-02	8.614E-02	7.696E-03	-2.037
Y-88	1.305E-02		4.294E-02	7.454E-02	6.216E-03	0.175
Y-91	-5.428E+00		2.940E+01	4.658E+01	3.844E+00	-0.117
NB-94	1.557E-02		4.751E-02	8.175E-02	7.012E-03	0.191
NB-95M	-5.868E-03		1.601E-01	2.265E-01	2.317E-02	-0.026
ZR-95	6.242E-02		1.012E-01	1.770E-01	1.701E-02	0.353
MO-99	-4.181E+00		2.446E+01	4.055E+01	6.404E+00	-0.103
TC-99M	-2.469E+11		5.915E+11	Half-Life	too short	
RU-103	-1.972E-02		5.503E-02	8.759E-02	1.239E-02	-0.225
RH-106	-3.761E-01		4.436E-01	6.580E-01	8.751E-02	-0.572
RU-106	-3.761E-01		4.419E-01	6.580E-01	5.716E-02	-0.572
AG-108M	-2.210E-03		3.745E-02	6.157E-02	5.519E-03	-0.036
AG-110M	2.620E-02		5.541E-02	8.148E-02	7.101E-03	0.322
SN-113	3.314E-02		5.577E-02	9.574E-02	8.319E-03	0.346
CD-115	-2.960E+00		2.134E+01	3.436E+01	3.072E+00	-0.086
SN-117M	-3.076E-02		8.202E-02	1.172E-01	1.053E-02	-0.263
TE-123M	1.028E-02		3.949E-02	5.829E-02	5.247E-03	0.176
SB-124	7.228E-03		9.775E-02	1.629E-01	1.452E-02	0.044
SB-125	-7.364E-03		1.087E-01	1.788E-01	1.576E-02	-0.041
TE-125M	1.356E+01		1.934E+01	2.367E+01	2.940E+00	0.573
I-126	-1.417E-01		3.987E-01	5.335E-01	4.504E-02	-0.266
SB-126	-1.115E-01		2.621E-01	3.674E-01	3.171E-02	-0.304
SB-127	3.530E-02		2.121E+00	3.389E+00	3.941E-01	0.010

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	-1.004E-01		1.591E-01	2.555E-01	2.361E-02	-0.393
TE-132	-1.954E-01		1.145E+00	1.814E+00	2.944E-01	-0.108
BA-133	2.934E-03		5.372E-02	7.942E-02	1.042E-02	0.037
I-133	-4.919E-03		1.013E-02	Half-Life	too short	
CS-134	1.237E-01		7.810E-02	1.300E-01	1.148E-02	0.952
CS-135	2.614E-01		2.155E-01	3.263E-01	3.405E-02	0.801
I-135	7.610E+10		6.909E+10	Half-Life	too short	
CS-136	-6.954E-03		1.542E-01	2.507E-01	2.250E-02	-0.028
CE-139	3.466E-02		3.980E-02	6.040E-02	5.036E-03	0.574
BA-140	-3.434E-01		4.117E-01	5.982E-01	2.034E-01	-0.574
LA-140	-1.151E-01		1.077E-01	1.405E-01	1.212E-02	-0.819
CE-141	1.860E-01		9.350E-02	1.463E-01	1.493E-02	1.271
CE-143	9.979E-04		1.938E-04	Half-Life	too short	
CE-144	-7.264E-02		2.603E-01	4.241E-01	7.085E-02	-0.171
PM-144	6.006E-03		4.813E-02	8.180E-02	7.003E-03	0.073
PR-144	4.553E-01		3.604E+00	6.127E+00	5.243E-01	0.074
PM-146	-1.615E-03		5.508E-02	9.043E-02	9.697E-03	-0.018
ND-147	-2.581E-01		8.524E-01	1.356E+00	2.052E-01	-0.190
PM-149	1.168E+00		1.442E+02	2.444E+02	3.878E+01	0.005
EU-152	-8.435E-02		1.177E-01	1.817E-01	1.718E-02	-0.464
GD-153	9.721E-01	+	1.929E-01	2.333E-01	2.385E-02	4.167
EU-154	-6.442E-02		1.481E-01	2.237E-01	2.511E-02	-0.288
TB-160	-4.298E-03		1.952E-01	3.228E-01	2.830E-02	-0.013
HO-166M	-1.192E-02		7.697E-02	1.279E-01	1.101E-02	-0.093
TA-182	-1.106E-01		2.851E-01	4.428E-01	3.673E-02	-0.250
IR-192	-1.800E-04		4.085E-02	6.877E-02	6.292E-03	-0.003
HG-203	1.057E-02		4.993E-02	7.587E-02	7.122E-03	0.139
BI-207	8.097E-03		6.893E-02	1.138E-01	9.759E-03	0.071
PB-211	-4.911E-01		9.134E-01	1.412E+00	6.830E-01	-0.348
BI-212	3.011E+00	+	1.156E+00	1.573E+00	1.964E-01	1.913
RN-219	3.549E-01		4.832E-01	8.330E-01	1.233E-01	0.426
RA-223	-8.555E-01		7.665E-01	1.187E+00	2.085E-01	-0.721
AC-227	2.606E-01		3.621E-01	5.336E-01	6.624E-02	0.488
TH-227	2.606E-01		3.625E-01	5.336E-01	7.432E-02	0.488
TH-229	-9.194E-02		6.426E-01	1.030E+00	8.911E-02	-0.089
PA-231	-8.870E-02		1.683E+00	2.754E+00	4.110E-01	-0.032
TH-231	-8.555E-01		7.665E-01	1.187E+00	2.085E-01	-0.721
PA-233	8.779E-02		7.835E-02	1.385E-01	1.299E-02	0.634
PA-234	1.759E-01		4.186E-01	7.138E-01	1.344E-01	0.246
NP-239	-4.323E-01		5.762E-01	8.245E-01	9.391E-02	-0.524
AM-241	7.256E-02		1.329E-01	2.058E-01	2.185E-02	0.353
CM-247	3.777E-02		4.473E-02	7.781E-02	6.609E-03	0.485
CF-249	6.514E-03		4.849E-02	8.126E-02	6.882E-03	0.080
CF-251	1.069E-01		1.646E-01	2.734E-01	2.316E-02	0.391
ANH-511	5.728E-02		5.550E-02	1.023E-01	9.135E-03	0.560

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G247911004          *
* Acquisition date   : 6-MAR-2010 17:24:04 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 02:00:11.89 Half life ratio : 8.000   *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247911004 Analyst initials: MXR1         *
* Batch Number       : 957714 Sample Quantity : 1.4024E+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	2.588E+01	3.004E+00	2.157E-01	1.532E+00
NB-95	4.276E-01	1.234E-01	4.537E-02	6.296E-02
CD-109	2.529E+00	1.374E+00	1.144E+00	7.009E-01
SN-126	2.468E-01	1.341E-01	1.113E-01	6.840E-02
BA-137M	5.017E-01	1.043E-01	4.634E-02	5.323E-02
CS-137	5.300E-01	1.103E-01	4.895E-02	5.625E-02
EU-155	4.428E-01	2.071E-01	1.190E-01	1.057E-01
TL-208	4.239E-01	1.099E-01	4.041E-02	5.607E-02
PB-210	1.704E+00	1.029E+00	7.036E-01	5.248E-01
BI-211	3.243E+00	5.671E-01	2.114E-01	2.893E-01
PB-212	1.526E+00	1.939E-01	5.376E-02	9.895E-02
BI-214	1.181E+00	2.273E-01	8.268E-02	1.160E-01
PB-214	1.177E+00	2.154E-01	7.690E-02	1.099E-01
RA-224	4.674E+00	1.541E+00	5.766E-01	7.861E-01
RA-226	1.181E+00	2.273E-01	8.268E-02	1.160E-01
AC-228	1.425E+00	4.569E-01	1.465E-01	2.331E-01
RA-228	1.425E+00	4.569E-01	1.465E-01	2.331E-01
TH-228	1.526E+00	1.939E-01	5.376E-02	9.895E-02
TH-232	1.425E+00	4.569E-01	1.465E-01	2.331E-01
PA-234M	1.159E+02	1.795E+01	4.675E+00	9.157E+00
TH-234	7.960E+01	1.513E+01	9.834E-01	7.719E+00
U-235	1.407E+00	4.789E-01	2.176E-01	2.443E-01
NP-237	7.365E-01	4.277E-01	2.962E-01	2.182E-01
U-238	7.960E+01	1.513E+01	9.834E-01	7.719E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.227E-01	4.074E-01	3.364E-01	2.079E-01 NOT IDENT.
NA-22	-1.665E-02	5.024E-02	3.964E-02	2.563E-02 NOT IDENT.
NA-24	1.120E+06	2.744E+06	0.000E+00	1.400E+06 SHORT HLIF

SC-46	-6.221E-02	5.097E-02	3.814E-02	2.601E-02	NOT IDENT.
V-48	-3.445E-02	9.853E-02	8.070E-02	5.027E-02	NOT IDENT.
CR-51	1.627E-02	4.320E-01	3.852E-01	2.204E-01	NOT IDENT.
MN-54	1.723E-02	4.681E-02	4.159E-02	2.388E-02	NOT IDENT.
CO-56	3.490E-02	5.085E-02	4.631E-02	2.594E-02	NOT IDENT.
CO-57	6.885E-03	3.121E-02	2.800E-02	1.592E-02	NOT IDENT.
CO-58	-1.703E-02	5.174E-02	4.348E-02	2.640E-02	NOT IDENT.
FE-59	-1.353E-02	1.138E-01	9.421E-02	5.805E-02	NOT IDENT.
CO-60	2.448E-03	5.271E-02	4.557E-02	2.689E-02	NOT IDENT.
ZN-65	4.368E-02	1.178E-01	9.011E-02	6.011E-02	NOT IDENT.
SE-75	-3.288E-02	5.667E-02	4.351E-02	2.891E-02	NOT IDENT.
SR-85	-1.755E-01	6.360E-02	4.422E-02	3.245E-02	NOT IDENT.
Y-88	1.305E-02	4.208E-02	3.725E-02	2.147E-02	NOT IDENT.
Y-91	-5.428E+00	2.881E+01	2.349E+01	1.470E+01	NOT IDENT.
NB-94	1.557E-02	4.656E-02	4.169E-02	2.375E-02	NOT IDENT.
NB-95M	-5.868E-03	1.569E-01	1.181E-01	8.006E-02	NOT IDENT.
ZR-95	6.242E-02	9.914E-02	9.014E-02	5.058E-02	NOT IDENT.
MO-99	-4.181E+00	2.397E+01	2.066E+01	1.223E+01	NOT IDENT.
TC-99M	-2.469E+17	1.159E+18	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.972E-02	5.393E-02	4.499E-02	2.752E-02	NOT IDENT.
RH-106	-3.761E-01	4.347E-01	3.364E-01	2.218E-01	NOT IDENT.
RU-106	-3.761E-01	4.331E-01	3.364E-01	2.210E-01	NOT IDENT.
AG-108M	-2.210E-03	3.671E-02	3.172E-02	1.873E-02	NOT IDENT.
AG-110M	2.620E-02	5.430E-02	4.161E-02	2.770E-02	NOT IDENT.
SN-113	3.314E-02	5.465E-02	4.942E-02	2.789E-02	NOT IDENT.
CD-115	-2.960E+00	2.091E+01	1.763E+01	1.067E+01	NOT IDENT.
SN-117M	-3.076E-02	8.038E-02	6.158E-02	4.101E-02	NOT IDENT.
TE-123M	1.028E-02	3.870E-02	3.064E-02	1.975E-02	NOT IDENT.
SB-124	7.228E-03	9.579E-02	8.154E-02	4.887E-02	NOT IDENT.
SB-125	-7.364E-03	1.066E-01	9.213E-02	5.437E-02	NOT IDENT.
TE-125M	1.356E+01	1.896E+01	1.253E+01	9.672E+00	NOT IDENT.
I-126	-1.417E-01	3.907E-01	2.724E-01	1.993E-01	NOT IDENT.
SB-126	-1.115E-01	2.569E-01	1.873E-01	1.311E-01	NOT IDENT.
SB-127	3.530E-02	2.078E+00	1.730E+00	1.060E+00	NOT IDENT.
I-131	-1.004E-01	1.559E-01	1.321E-01	7.955E-02	NOT IDENT.
TE-132	-1.954E-01	1.122E+00	9.467E-01	5.726E-01	FAIL ABUN
BA-133	2.934E-03	5.264E-02	4.108E-02	2.686E-02	FAIL ABUN
I-133	-4.919E+03	1.986E+04	0.000E+00	1.013E+04	SHORT HLIF
CS-134	1.237E-01	7.654E-02	6.612E-02	3.905E-02	NOT IDENT.
CS-135	2.614E-01	2.112E-01	1.697E-01	1.077E-01	NOT IDENT.
I-135	7.610E+16	1.354E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.954E-03	1.511E-01	1.268E-01	7.709E-02	NOT IDENT.
CE-139	3.466E-02	3.901E-02	3.172E-02	1.990E-02	NOT IDENT.
BA-140	-3.434E-01	4.035E-01	3.068E-01	2.059E-01	FAIL ABUN
LA-140	-1.151E-01	1.055E-01	7.041E-02	5.384E-02	NOT IDENT.
CE-141	1.860E-01	9.163E-02	7.704E-02	4.675E-02	NOT IDENT.
CE-143	9.979E+02	3.798E+02	0.000E+00	1.938E+02	SHORT HLIF
CE-144	-7.264E-02	2.551E-01	2.236E-01	1.302E-01	NOT IDENT.
PM-144	6.006E-03	4.716E-02	4.173E-02	2.406E-02	NOT IDENT.
PR-144	4.553E-01	3.532E+00	3.126E+00	1.802E+00	NOT IDENT.
PM-146	-1.615E-03	5.397E-02	4.654E-02	2.754E-02	NOT IDENT.
ND-147	-2.581E-01	8.354E-01	6.954E-01	4.262E-01	FAIL ABUN
PM-149	1.168E+00	1.413E+02	1.270E+02	7.211E+01	NOT IDENT.
EU-152	-8.435E-02	1.153E-01	9.403E-02	5.884E-02	NOT IDENT.
GD-153	9.721E-01	1.890E-01	1.238E-01	9.644E-02	FAIL ABUN
EU-154	-6.442E-02	1.451E-01	1.127E-01	7.403E-02	NOT IDENT.
TB-160	-4.298E-03	1.913E-01	1.639E-01	9.762E-02	FAIL ABUN
HO-166M	-1.192E-02	7.543E-02	6.524E-02	3.848E-02	FAIL ABUN
TA-182	-1.106E-01	2.794E-01	2.233E-01	1.425E-01	NOT IDENT.
IR-192	-1.800E-04	4.004E-02	3.565E-02	2.043E-02	FAIL ABUN
HG-203	1.057E-02	4.893E-02	3.943E-02	2.496E-02	NOT IDENT.
BI-207	8.097E-03	6.755E-02	5.756E-02	3.446E-02	FAIL ABUN
PB-211	-4.911E-01	8.951E-01	7.283E-01	4.567E-01	NOT IDENT.
BI-212	3.011E+00	1.133E+00	8.019E-01	5.781E-01	FAIL ABUN
RN-219	3.549E-01	4.735E-01	4.298E-01	2.416E-01	FAIL ABUN
RA-223	-8.555E-01	7.512E-01	6.149E-01	3.833E-01	FAIL ABUN
AC-227	2.606E-01	3.549E-01	2.778E-01	1.810E-01	NOT IDENT.
TH-227	2.606E-01	3.552E-01	2.778E-01	1.812E-01	NOT IDENT.
TH-229	-9.194E-02	6.298E-01	5.395E-01	3.213E-01	FAIL ABUN
PA-231	-8.870E-02	1.650E+00	1.431E+00	8.417E-01	NOT IDENT.
TH-231	-8.555E-01	7.512E-01	6.149E-01	3.833E-01	FAIL ABUN
PA-233	8.779E-02	7.678E-02	7.181E-02	3.917E-02	NOT IDENT.
PA-234	1.759E-01	4.103E-01	3.618E-01	2.093E-01	FAIL ABUN
NP-239	-4.323E-01	5.647E-01	4.359E-01	2.881E-01	FAIL ABUN
AM-241	7.256E-02	1.303E-01	1.102E-01	6.647E-02	NOT IDENT.
CM-247	3.777E-02	4.383E-02	4.014E-02	2.236E-02	FAIL ABUN
CF-249	6.514E-03	4.752E-02	4.195E-02	2.425E-02	NOT IDENT.
CF-251	1.069E-01	1.613E-01	1.434E-01	8.230E-02	NOT IDENT.

ANH-511	5.728E-02	5.439E-02	5.251E-02	2.775E-02 NOT IDENT.
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*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON , SC 29417                           *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT             *
*****

```

ENERGY	MDA COUNTS
46.54	792.8126
49.72	1227.5616
57.36	0.0000
59.54	1521.1343
63.29	1371.3798
63.29	1371.3798
64.28	1374.7283
67.75	1340.9071
69.67	1283.2788
70.83	1355.9094
72.81	1445.3528
72.87	1445.5508
72.87	1445.5508
74.82	1451.8702
74.82	1451.8702
74.82	1451.8702
74.97	1452.3569
77.11	1459.1879
77.11	1459.1879
77.11	1459.1879
79.69	1335.2302
79.80	1335.5380
80.12	1371.7589
80.19	1371.9594
80.57	1294.2122
81.00	1374.3096
81.07	1374.5099
81.07	1374.5099
83.79	1348.0887
83.79	1348.0887
85.43	1373.2072
86.48	1376.1292
86.55	1376.3199
86.79	1376.9761
86.94	1314.0354
87.57	1724.8383
88.03	1730.1034
88.47	1646.8756
89.96	1651.7137
91.11	1655.4242
92.59	1541.7867
92.59	1541.7867
93.35	1544.0332
94.67	1547.9098
94.87	1548.4926
94.87	1548.4926
95.86	1551.3895
97.43	550.9749
98.44	678.7392
99.53	555.9323
100.11	561.2297
103.18	465.8695
103.37	492.5490
105.31	580.7372
106.12	611.0703
109.28	634.5252
111.00	695.4217
111.76	614.1431
116.30	531.6511
117.23	509.1866
121.12	469.4550
121.78	443.5695
122.06	433.0138
123.07	438.6028
131.20	514.5388
133.52	460.6262
136.00	459.3262

136.47	440.6591
140.51	452.3026
140.51	0.0000
143.76	414.0206
144.24	414.3000
144.24	414.3000
145.44	365.9092
152.43	390.4169
153.25	369.3655
154.21	409.8022
154.21	409.8022
156.02	378.9622
158.56	377.1545
159.00	343.3487
162.66	372.9712
163.33	373.2935
165.86	291.8080
176.60	328.9768
177.52	319.8446
181.07	329.1766
184.41	314.5279
185.72	270.7742
193.51	299.0598
197.04	287.3035
205.31	312.3145
210.85	253.3377
215.65	256.8442
222.11	258.5910
227.38	257.7672
228.16	255.7381
228.18	255.7428
235.69	237.9891
235.96	238.0537
235.96	238.0537
238.63	211.0351
238.63	211.0351
240.99	211.5240
242.00	211.7332
244.70	212.8563
252.40	186.6381
252.80	190.4832
256.23	204.8717
256.23	204.8717
260.90	183.2841
264.66	202.6534
268.22	179.2913
269.46	198.6581
269.46	198.6581
271.23	204.2108
273.65	122.4423
276.40	220.2331
277.37	211.9972
277.60	212.0415
278.00	189.6394
279.20	182.8093
279.54	182.8633
280.46	173.1549
283.69	175.4565
284.31	184.5062
285.41	182.9143
285.90	167.0794
287.50	168.1953
293.27	0.0000
295.22	198.7047
295.96	213.9880
298.57	180.1437
299.98	183.2156
299.98	183.2156
300.09	186.0974
300.09	186.0974
300.13	175.3670
301.36	176.4391
302.85	210.7348
304.50	156.2458
304.50	156.2458
304.85	154.4945
308.46	176.5693
311.90	150.8647

316.51	156.8657
319.41	152.6832
320.08	153.6720
323.87	181.4946
323.87	181.4946
328.76	166.6232
333.37	160.2348
334.37	170.6554
334.37	170.6554
338.28	167.8451
338.28	167.8451
338.32	167.8507
338.32	167.8507
338.32	167.8507
340.48	144.8467
340.55	144.8539
344.28	156.6951
351.06	152.6990
351.93	152.7966
356.01	127.0891
364.49	155.1382
366.42	161.0040
383.85	105.7969
388.16	127.1411
388.63	117.6191
391.69	123.6145
400.66	123.3984
401.81	107.0926
402.40	108.1001
404.85	138.2432
410.95	112.5927
414.70	123.5719
423.72	115.4846
427.09	118.6755
427.87	107.9405
433.94	117.2187
453.88	117.6723
463.37	129.3779
468.07	102.5852
473.00	101.8754
476.78	106.1440
477.60	110.2408
487.02	106.7752
492.35	91.8004
497.08	113.5237
511.00	117.5025
514.00	238.4919
527.90	95.7061
529.87	0.0000
531.02	111.4964
537.26	110.8232
546.56	0.0000
563.25	83.7205
569.33	92.4853
569.50	91.4301
569.70	96.7569
583.19	95.2741
600.60	91.7755
602.73	98.5699
604.72	81.3550
609.32	105.1731
609.32	105.1731
610.33	88.5179
614.28	90.4262
618.01	75.1255
621.93	98.1738
621.93	98.1738
633.25	85.5363
635.95	75.7635
636.99	91.1789
645.85	89.3477
657.76	76.3019
661.66	110.2104
661.66	110.2104
664.57	0.0000
666.33	99.7555
666.50	92.0439
677.62	72.7322

685.70	68.4984
695.00	103.7302
696.49	90.2563
696.51	90.2588
697.00	98.4034
702.65	89.5931
706.68	80.6823
711.68	72.6777
720.70	101.8331
721.93	0.0000
722.78	124.7417
722.91	106.4925
723.31	106.5096
724.19	98.9388
727.33	76.8161
733.00	59.5823
735.93	77.0909
739.50	92.8307
747.24	101.4250
752.31	79.4597
753.82	87.8286
756.73	68.4952
763.94	61.8864
765.81	69.6735
766.42	69.6918
777.92	74.6777
778.90	66.3025
783.70	84.2058
785.37	84.2607
795.86	65.8044
801.95	59.6781
810.29	71.8438
810.76	66.1838
815.77	50.2064
818.51	48.3628
832.01	66.7188
834.85	58.2017
836.80	0.0000
846.77	49.8354
856.80	51.3021
860.56	63.5733
871.09	60.9159
873.19	50.3179
875.33	0.0000
879.36	60.1276
880.51	55.3009
883.24	61.1820
884.68	54.4113
889.28	65.2072
898.04	50.7647
911.20	50.0188
911.20	50.0188
911.20	50.0188
926.50	40.4244
937.49	61.3597
944.13	51.5785
946.00	52.6041
949.00	50.6700
962.29	58.2137
964.08	43.2709
966.15	51.6276
968.97	43.3407
968.97	43.3407
968.97	43.3407
983.53	55.2739
996.26	52.1384
1001.03	45.4812
1004.73	38.7891
1037.84	42.9475
1038.76	0.0000
1048.07	51.2915
1050.41	54.4078
1050.41	54.4078
1063.66	46.3843
1085.87	48.7740
1099.45	44.8057
1112.07	31.3770
1115.54	38.3890

1120.29	31.4531
1120.29	31.4531
1120.55	31.4546
1121.30	33.2098
1131.51	0.0000
1173.23	46.8402
1177.93	46.9025
1189.05	55.6029
1204.77	57.9946
1221.41	71.2046
1231.02	63.8197
1235.36	57.3968
1238.28	40.1020
1260.41	0.0000
1271.85	30.6209
1274.44	37.2074
1274.54	35.0203
1291.59	28.5810
1298.22	0.0000
1312.11	30.3910
1332.49	36.1039
1365.19	17.7344
1368.63	0.0000
1384.29	15.0052
1408.01	16.0357
1457.56	0.0000
1460.82	8.1878
1489.16	13.4622
1505.03	26.0574
1596.21	22.6547
1620.50	13.8621
1678.03	0.0000
1690.97	12.0605
1764.49	3.4979
1764.49	3.4979
1770.23	20.4281
1771.35	5.1080
1791.20	0.0000
1836.06	9.3124

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911004

Total Uranium Activity	2.3745E+02	ug/g
Total Uranium Counting Unc.	4.5012E+01	ug/g
Total Uranium Tpu	2.2965E-05	ug/g
Total Uranium Mda	2.9272E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 957714          SAMPLE ID   : G247911004
*  ANALYST       : MXR1           DETECTOR    : GAM17
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 6-MAR-2010 17:24:04.07  SAMPLE ALQT: 140.240 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.910E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 1.761E+00
GROSS GAMMA MDA (pCi/GRAM )     : 8.457E+00
GROSS GAMMA DLC (pCi/GRAM )     : 4.167E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 19:26:17.98

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911005.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:24:30.
Sample ID          : G247911005      Sample quantity   : 1.25450E+02 GRAM
Detector name      : GAM18           Detector geometry: CAN
Elapsed live time   : 0 02:00:00.00   Elapsed real time: 0 02:00:01.60  0.0%
Energy tolerance    : 1.50000 keV     Analyst Initials  : MXR1
Abundance limit     : 75.00000        Sensitivity       : 5.00000
Batch ID           : 957714          Detector SN#      :
Matrix Spike ID    :                  LCS ID           : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.45*	112	602	0.79	126.02	121	10	1.55E-02	42.7	
2	1	74.98*	354	366	1.07	149.07	145	16	4.91E-02	10.4	2.75E+00
3	1	77.34*	571	361	1.03	153.80	145	16	7.94E-02	6.9	
4	4	87.37	291	423	1.19	173.85	162	29	4.04E-02	12.9	3.19E+00
5	4	89.98	149	407	1.09	179.07	162	29	2.06E-02	24.1	
6	4	92.81*	405	445	1.31	184.73	162	29	5.63E-02	10.9	
7	0	128.55	107	437	0.96	256.17	252	10	1.49E-02	37.6	
8	0	186.13*	323	461	1.54	371.31	366	13	4.49E-02	15.2	
9	0	209.28	136	369	1.21	417.58	413	10	1.89E-02	27.7	
10	4	238.70*	1467	225	1.17	476.40	470	19	2.04E-01	3.2	1.17E+00
11	4	241.60*	384	327	1.72	482.20	470	19	5.33E-02	12.4	
12	0	270.20	113	232	1.75	539.37	536	9	1.57E-02	26.1	
13	0	295.18*	462	264	1.16	589.33	584	11	6.42E-02	8.4	
14	0	300.13	111	227	1.00	599.23	595	10	1.55E-02	27.0	
15	0	328.34	117	193	1.48	655.62	651	11	1.62E-02	24.8	
16	0	338.29*	270	221	1.34	675.52	671	10	3.75E-02	12.2	
17	0	351.83*	772	283	1.30	702.59	696	14	1.07E-01	6.0	
18	0	462.96	145	153	1.37	924.77	917	15	2.01E-02	20.4	
19	0	510.55*	173	238	1.79	1019.93	1011	19	2.41E-02	25.2	
20	0	583.05*	424	189	1.62	1164.89	1156	16	5.89E-02	8.9	
21	0	609.22*	589	186	1.45	1217.22	1211	14	8.19E-02	6.6	
22	0	661.71	51	101	0.73	1322.18	1318	9	7.02E-03	38.6	
23	0	726.68*	109	94	1.30	1452.08	1447	13	1.52E-02	21.4	
24	0	767.54	90	91	2.56	1533.78	1528	12	1.25E-02	23.6	
25	0	794.55	84	100	1.94	1587.79	1580	16	1.17E-02	28.7	
26	0	860.66	67	90	1.33	1719.98	1713	13	9.27E-03	31.9	
27	0	910.66*	366	108	1.48	1819.97	1812	16	5.09E-02	8.4	
28	0	933.29	52	48	4.74	1865.21	1858	12	7.26E-03	29.9	
29	1	964.40*	91	81	2.32	1927.42	1920	22	1.27E-02	24.4	8.37E-01
30	1	968.51*	201	64	1.97	1935.63	1920	22	2.79E-02	11.2	
31	0	1119.83	153	92	1.65	2238.23	2230	17	2.12E-02	16.6	
32	0	1459.77*	1795	67	2.21	2918.02	2906	21	2.49E-01	2.6	
33	0	1763.76*	104	37	2.29	3525.97	3518	15	1.44E-02	16.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 19:26:23

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911005.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:24:30
 Sample ID : G247911005 Sample quantity : 125.45 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA18 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.60 0.0%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 1.50 keV Half life ratio : 8.00
 Errors propagated: Yes Systematic Error : 0.00 %
 Efficiency type : Empirical Efficiencies at : Peak Energy
 Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.661E+01	2.455E+00	5.143E-01	3.903E-02	51.744
CD-109	+	88.03	*	3.738E+00	1.022E+00	1.062E+00	9.819E-02	3.520
SN-126	+	64.28		1.122E+00	9.726E-01	8.532E-01	1.261E-01	1.315
	+	86.94		1.517E+00	7.405E-01	4.376E-01	1.815E-01	3.466
	+	87.57	*	3.648E-01	9.977E-02	1.043E-01	9.611E-03	3.497
BA-137M	+	661.66	*	4.695E-02	3.638E-02	4.867E-02	3.710E-03	0.965
CS-137	+	661.66	*	4.960E-02	3.843E-02	5.142E-02	3.929E-03	0.965
TL-208		277.37		3.934E-01	3.287E-01	5.599E-01	6.006E-02	0.703
	+	583.19	*	3.795E-01	7.374E-02	4.896E-02	3.832E-03	7.750
	+	860.56		5.482E-01	3.549E-01	3.592E-01	4.017E-02	1.526
BI-211		72.87		3.883E+00	3.259E+00	5.074E+00	4.190E-01	0.765
	+	351.06	*	3.278E+00	4.449E-01	2.636E-01	1.692E-02	12.436
PB-212	+	74.82		2.086E+00	5.093E-01	5.457E-01	6.996E-02	3.823
	+	77.11		1.899E+00	3.062E-01	3.088E-01	2.617E-02	6.148
	+	238.63	*	1.482E+00	1.428E-01	7.230E-02	5.212E-03	20.493
	+	300.09		1.689E+00	9.234E-01	9.590E-01	8.009E-02	1.761
BI-214	+	609.32	*	1.017E+00	1.620E-01	9.293E-02	8.351E-03	10.945
	+	1120.29		1.313E+00	4.534E-01	3.888E-01	3.744E-02	3.376
	+	1764.49		1.196E+00	4.099E-01	2.676E-01	1.627E-02	4.471
PB-214	+	74.82		3.698E+00	8.783E-01	9.671E-01	1.114E-01	3.823
	+	77.11		3.347E+00	6.064E-01	5.444E-01	6.438E-02	6.148
	+	242.00		2.346E+00	6.102E-01	4.390E-01	3.529E-02	5.344
	+	295.22		1.244E+00	2.351E-01	1.811E-01	1.572E-02	6.868
	+	351.93	*	1.190E+00	1.743E-01	9.585E-02	8.113E-03	12.413
RA-224	+	240.99	*	4.148E+00	1.052E+00	7.740E-01	4.312E-02	5.360
RA-226	+	609.32	*	1.017E+00	1.620E-01	9.293E-02	8.351E-03	10.945
	+	1120.29		1.313E+00	4.534E-01	3.888E-01	3.744E-02	3.376
	+	1764.49		1.196E+00	4.099E-01	2.676E-01	1.627E-02	4.471
AC-228	+	338.32		1.286E+00	6.159E-01	3.020E-01	1.245E-01	4.257
	+	911.20	*	1.528E+00	3.297E-01	1.753E-01	2.375E-02	8.715
	+	968.97		1.442E+00	4.830E-01	2.945E-01	7.347E-02	4.896
RA-228	+	338.32		1.286E+00	6.159E-01	3.020E-01	1.245E-01	4.257
	+	911.20	*	1.528E+00	3.297E-01	1.753E-01	2.375E-02	8.715
	+	968.97		1.442E+00	4.830E-01	2.945E-01	7.347E-02	4.896

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.086E+00	4.677E-01	5.457E-01	4.602E-02	3.823
	+	77.11		1.899E+00	3.062E-01	3.088E-01	2.617E-02	6.148
	+	238.63	*	1.482E+00	1.428E-01	7.230E-02	5.212E-03	20.493
	+	300.09		1.689E+00	1.375E+00	9.590E-01	5.838E-01	1.761
TH-232	+	338.32		1.286E+00	3.225E-01	3.020E-01	1.747E-02	4.257
	+	911.20	*	1.528E+00	3.297E-01	1.753E-01	2.375E-02	8.715
	+	968.97		1.442E+00	4.830E-01	2.945E-01	7.347E-02	4.896
TH-234	+	63.29	*	2.912E+00	2.541E+00	2.225E+00	4.007E-01	1.309
	+	92.59		4.129E+00	1.280E+00	8.581E-01	1.890E-01	4.811
U-235	+	89.96		1.912E+00	1.035E+00	1.078E+00	2.664E-01	1.774
	+	93.35		3.119E+00	9.893E-01	6.431E-01	1.479E-01	4.849
		143.76	*	5.437E-02	1.912E-01	3.009E-01	4.692E-02	0.181
		163.33		6.438E-02	3.704E-01	6.231E-01	1.035E-01	0.103
	+	185.72		2.210E-01	6.828E-02	5.419E-02	2.882E-03	4.078
		205.31		-6.003E-02	4.516E-01	6.521E-01	1.099E-01	-0.092
NP-237	+	86.48	*	1.089E+00	3.751E-01	3.162E-01	7.231E-02	3.443
		95.86		-2.884E-01	9.327E-01	1.331E+00	3.166E-01	-0.217
U-238	+	63.29	*	2.912E+00	2.541E+00	2.225E+00	4.007E-01	1.309
	+	92.59		4.129E+00	9.658E-01	8.581E-01	7.266E-02	4.811
ANH-511	+	511.00	*	1.202E-01	6.109E-02	3.686E-02	2.434E-03	3.262

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	1.586E-01	2.458E-01	4.211E-01	3.050E-02	0.377
NA-22		1274.54	*	-4.018E-02	3.703E-02	5.521E-02	3.757E-03	-0.728
NA-24		1368.63	*	-1.634E-01	3.703E-02	Half-Life too short		
SC-46		889.28	*	-1.326E-02	2.946E-02	4.624E-02	5.157E-03	-0.287
	+	1120.55		2.241E-01	7.594E-02	1.001E-01	6.914E-03	2.239
V-48		944.13		-9.766E-02	7.673E-01	1.197E+00	1.267E-01	-0.082
		983.53	*	-2.653E-02	5.965E-02	9.283E-02	9.181E-03	-0.286
		1312.11		-3.710E-02	6.218E-02	9.556E-02	6.961E-03	-0.388
CR-51		320.08	*	3.699E-02	3.094E-01	5.015E-01	3.224E-02	0.074
MN-54		834.85	*	1.909E-02	3.146E-02	5.365E-02	5.495E-03	0.356
CO-56		846.77	*	7.497E-03	3.200E-02	5.341E-02	5.576E-03	0.140
		1037.84		-7.413E-02	2.421E-01	3.957E-01	3.662E-02	-0.187
		1238.28		1.249E-01	7.813E-02	1.400E-01	9.335E-03	0.892
		1771.35		-1.151E+00	3.063E-01	2.755E-01	1.665E-02	-4.177
CO-57		122.06	*	-1.141E-02	2.268E-02	3.558E-02	2.108E-03	-0.321
		136.47		-1.075E-02	1.815E-01	2.882E-01	1.883E-02	-0.037
CO-58		810.76	*	-2.578E-02	3.141E-02	4.841E-02	4.779E-03	-0.533
FE-59		1099.45	*	-5.765E-02	7.931E-02	1.250E-01	1.028E-02	-0.461
		1291.59		4.464E-02	9.099E-02	1.559E-01	1.311E-02	0.286
CO-60		1173.23		2.798E-02	3.511E-02	6.140E-02	3.394E-03	0.456
		1332.49	*	-2.840E-03	3.053E-02	4.945E-02	3.736E-03	-0.057
ZN-65		1115.54	*	1.242E-01	8.145E-02	1.331E-01	9.374E-03	0.934
SE-75		121.12		1.172E-02	1.180E-01	1.902E-01	1.745E-02	0.062
		136.00		1.842E-03	3.459E-02	5.522E-02	3.146E-03	0.033

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		264.66	*	-2.723E-02	3.882E-02	5.895E-02	3.372E-03	-0.462
		279.54		1.778E-02	9.365E-02	1.538E-01	9.514E-03	0.116
		400.66		4.639E-02	2.045E-01	3.461E-01	3.142E-02	0.134
SR-85		514.00	*	7.062E-02	3.503E-02	5.704E-02	3.779E-03	1.238
Y-88		898.04		-1.589E-02	3.478E-02	5.315E-02	6.024E-03	-0.299
		1836.06	*	-2.991E-03	2.458E-02	3.943E-02	2.246E-03	-0.076
Y-91		1204.77	*	-3.018E+00	1.744E+01	2.842E+01	1.680E+00	-0.106
NB-94		702.65	*	-2.632E-03	2.739E-02	4.545E-02	3.729E-03	-0.058
		871.09		6.595E-03	2.627E-02	4.387E-02	4.757E-03	0.150
NB-95		765.81	*	9.859E-02	4.110E-02	6.893E-02	6.305E-03	1.430
NB-95M		235.69	*	2.140E-02	1.136E-01	1.661E-01	1.223E-02	0.129
ZR-95		724.19		1.302E-01	8.692E-02	1.394E-01	1.290E-02	0.934
		756.73	*	3.442E-03	5.530E-02	9.212E-02	9.097E-03	0.037
MO-99		140.51		4.709E+00	2.784E+01	4.392E+01	1.002E+01	0.107
		181.07		-1.181E+01	2.065E+01	2.944E+01	5.156E+00	-0.401
		366.42		2.555E+01	9.545E+01	1.631E+02	9.422E+00	0.157
		739.50	*	4.774E+00	1.279E+01	2.175E+01	3.442E+00	0.220
		777.92		-2.549E+01	3.761E+01	5.908E+01	5.516E+00	-0.431
TC-99M		140.51	*	1.311E+11	3.761E+01	Half-Life	too short	
RU-103		497.08	*	-5.160E-04	3.168E-02	5.202E-02	6.643E-03	-0.010
	+	610.33		1.070E+01	2.190E+00	2.331E+00	3.655E-01	4.593
RH-106		621.93	*	5.467E-02	2.392E-01	3.920E-01	4.889E-02	0.139
		1050.41		-1.548E+00	2.087E+00	3.290E+00	2.812E-01	-0.470
RU-106		621.93	*	5.467E-02	2.392E-01	3.920E-01	2.885E-02	0.139
		1050.41		-1.548E+00	2.087E+00	3.290E+00	2.812E-01	-0.470
AG-108M		433.94	*	-2.156E-02	2.325E-02	3.649E-02	2.352E-03	-0.591
		614.28		1.488E-02	3.061E-02	4.463E-02	3.410E-03	0.333
		722.91		1.706E-02	3.181E-02	4.798E-02	4.213E-03	0.356
AG-110M		657.76	*	1.738E-02	3.165E-02	4.807E-02	3.792E-03	0.361
		677.62		-4.219E-02	2.363E-01	3.910E-01	3.174E-02	-0.108
		706.68		1.538E-02	1.723E-01	2.890E-01	2.463E-02	0.053
		763.94		1.274E-01	1.440E-01	2.219E-01	2.073E-02	0.574
		884.68		2.510E-02	3.648E-02	6.286E-02	7.098E-03	0.399
		937.49		2.869E-02	9.970E-02	1.435E-01	1.571E-02	0.200
		1384.29		-1.683E-02	1.411E-01	2.273E-01	1.759E-02	-0.074
		1505.03		9.372E-02	2.148E-01	3.752E-01	2.693E-02	0.250
SN-113		391.69	*	-4.104E-03	3.406E-02	5.671E-02	3.478E-03	-0.072
CD-115		260.90		4.267E+01	1.608E+02	2.665E+02	1.505E+01	0.160
		492.35		1.489E+01	4.363E+01	7.324E+01	4.741E+00	0.203
		527.90	*	-7.238E+00	1.264E+01	1.987E+01	1.335E+00	-0.364
SN-117M		156.02		-9.950E-01	1.927E+00	3.205E+00	1.712E-01	-0.310
		158.56	*	-2.036E-02	4.654E-02	7.753E-02	4.121E-03	-0.263
TE-123M		159.00	*	-2.645E-03	2.296E-02	3.873E-02	2.089E-03	-0.068
SB-124		602.73		-3.812E-03	3.683E-02	5.085E-02	3.678E-03	-0.075
		645.85		-1.743E-01	4.161E-01	6.480E-01	5.237E-02	-0.269
		722.78		1.735E-01	3.237E-01	4.881E-01	4.246E-02	0.356
		1690.97	*	-1.688E-02	5.477E-02	8.594E-02	5.952E-03	-0.196
SB-125		427.87	*	1.149E-02	6.962E-02	1.170E-01	7.299E-03	0.098
	+	463.37		9.017E-01	3.741E-01	4.424E-01	3.156E-02	2.038

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M I-126		600.60		-4.592E-02	1.494E-01	2.368E-01	1.887E-02	-0.194
		635.95		-1.955E-02	2.131E-01	3.404E-01	2.809E-02	-0.057
		109.28	*	-2.289E+00	9.052E+00	1.448E+01	1.299E+00	-0.158
		388.63		1.243E-01	1.333E-01	2.342E-01	1.346E-02	0.531
		666.33	*	9.592E-02	2.161E-01	3.247E-01	2.496E-02	0.295
SB-126		753.82		6.186E-01	1.465E+00	2.500E+00	2.241E-01	0.247
		414.70		1.373E-02	6.252E-02	1.055E-01	6.242E-03	0.130
		666.50		3.230E-02	7.434E-02	1.116E-01	8.583E-03	0.289
		695.00		7.730E-03	6.752E-02	1.136E-01	9.194E-03	0.068
		697.00		6.940E-03	2.356E-01	3.943E-01	3.203E-02	0.018
SB-127		720.70	*	1.157E-01	1.286E-01	2.006E-01	1.698E-02	0.577
		856.80		4.072E-01	4.516E-01	6.934E-01	7.355E-02	0.587
		252.40		-2.597E+00	4.302E+00	6.629E+00	2.725E+00	-0.392
		473.00		-4.123E-01	1.528E+00	2.479E+00	2.896E-01	-0.166
		685.70	*	-6.505E-01	1.281E+00	2.069E+00	2.322E-01	-0.314
I-131		783.70		4.894E+00	3.474E+00	6.165E+00	8.150E-01	0.794
		80.19		3.279E-01	6.437E+00	7.529E+00	6.570E-01	0.044
		284.31		-1.292E+00	1.340E+00	2.067E+00	1.316E-01	-0.625
		364.49	*	-4.976E-02	9.659E-02	1.582E-01	1.023E-02	-0.315
		636.99		2.405E-01	1.344E+00	2.191E+00	1.760E-01	0.110
TE-132		49.72		1.622E+01	3.059E+01	5.259E+01	5.626E+00	0.308
		111.76		1.906E+01	4.005E+01	6.490E+01	6.374E+00	0.294
		116.30		-6.271E+00	3.327E+01	5.312E+01	5.115E+00	-0.118
		228.16	*	-4.372E-01	7.833E-01	1.229E+00	1.795E-01	-0.356
		81.00		-1.875E-02	1.193E-01	1.372E-01	2.136E-02	-0.137
BA-133		276.40		1.967E-01	3.142E-01	5.082E-01	6.373E-02	0.387
		302.85		8.485E-02	1.229E-01	1.822E-01	2.074E-02	0.466
		356.01	*	-1.472E-02	3.936E-02	5.302E-02	5.973E-03	-0.278
		383.85		-9.219E-02	2.248E-01	3.687E-01	3.923E-02	-0.250
		529.87	*	3.922E-03	2.248E-01	Half-Life	too short	
I-133		875.33		3.796E-02	2.248E-01	Half-Life	too short	
		1298.22		-3.240E-01	2.248E-01	Half-Life	too short	
CS-134		563.25		3.190E-01	2.797E-01	4.872E-01	3.443E-02	0.655
		569.33		6.772E-03	1.587E-01	2.534E-01	1.812E-02	0.027
		604.72		-1.406E-02	3.307E-02	4.432E-02	3.222E-03	-0.317
	+	795.86	*	1.070E-01	6.222E-02	7.305E-02	7.065E-03	1.465
		801.95		1.135E-01	3.585E-01	5.329E-01	5.199E-02	0.213
CS-135 I-135		1365.19		4.896E-02	9.653E-01	1.583E+00	1.260E-01	0.031
		268.22	*	2.074E-01	1.516E-01	2.339E-01	1.768E-02	0.887
		546.56		7.385E+10	1.516E-01	Half-Life	too short	
		836.80		5.255E+11	1.516E-01	Half-Life	too short	
		1038.76		1.162E+11	1.516E-01	Half-Life	too short	
CS-136		1131.51		-3.352E+10	1.516E-01	Half-Life	too short	
		1260.41	*	-1.979E+10	1.516E-01	Half-Life	too short	
		1457.56		2.184E+13	1.516E-01	Half-Life	too short	
		1678.03		1.122E+11	1.516E-01	Half-Life	too short	
		1791.20		-1.827E+10	1.516E-01	Half-Life	too short	
CS-136		153.25		5.811E-01	7.415E-01	1.291E+00	1.000E-01	0.450
		176.60		2.233E-01	4.170E-01	7.158E-01	4.750E-02	0.312

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	273.65			-7.747E-01	5.350E-01	6.875E-01	4.635E-02	-1.127
	340.55			4.445E-01	1.571E-01	2.552E-01	1.599E-02	1.742
	818.51			-4.768E-02	6.117E-02	9.429E-02	9.415E-03	-0.506
	1048.07	*		7.452E-02	9.343E-02	1.645E-01	1.474E-02	0.453
	1235.36			1.083E+00	5.395E-01	9.734E-01	9.915E-02	1.112
CE-139	165.86	*		-1.228E-02	2.523E-02	4.185E-02	2.197E-03	-0.294
BA-140	162.66			2.670E-01	7.278E-01	1.233E+00	7.619E-02	0.217
	304.85			-4.510E-02	1.271E+00	1.791E+00	5.114E-01	-0.025
	423.72			-9.588E-01	1.620E+00	2.557E+00	8.260E-01	-0.375
	537.26	*		-1.170E-01	2.336E-01	3.637E-01	1.218E-01	-0.322
LA-140	328.76		+	7.346E-01	3.672E-01	4.828E-01	3.135E-02	1.521
	487.02			4.254E-02	1.140E-01	1.920E-01	1.370E-02	0.222
	815.77			1.041E-01	2.700E-01	4.572E-01	4.948E-02	0.228
	1596.21	*		-5.645E-02	7.563E-02	1.149E-01	7.882E-03	-0.491
CE-141	145.44	*		5.640E-02	5.898E-02	9.703E-02	5.540E-03	0.581
CE-143	57.36			-9.430E-04	5.898E-02	Half-Life	too short	
	293.27	*		1.377E-03	5.898E-02	Half-Life	too short	
	664.57			3.584E-03	5.898E-02	Half-Life	too short	
	721.93			-3.902E-04	5.898E-02	Half-Life	too short	
CE-144	80.12			1.885E-01	3.173E+00	3.714E+00	3.216E-01	0.051
	133.52	*		-4.320E-02	1.993E-01	2.789E-01	3.857E-02	-0.155
PM-144	476.78			-4.203E-03	5.018E-02	8.235E-02	6.045E-03	-0.051
	618.01			1.751E-02	2.516E-02	4.152E-02	3.162E-03	0.422
	696.49	*		4.027E-03	2.841E-02	4.785E-02	3.885E-03	0.084
PR-144	696.51	*		2.880E-01	2.127E+00	3.581E+00	2.906E-01	0.080
	1489.16			-5.046E+00	1.079E+01	1.644E+01	1.188E+00	-0.307
PM-146	453.88	*		-2.888E-03	3.176E-02	5.231E-02	4.570E-03	-0.055
	633.25			-1.757E-01	1.122E+00	1.782E+00	6.762E-01	-0.099
	735.93			-1.145E-01	1.210E-01	1.759E-01	4.933E-02	-0.651
	747.24			-5.504E-02	7.709E-02	1.209E-01	1.781E-02	-0.455
ND-147	91.11		+	6.641E-01	3.261E-01	5.215E-01	4.908E-02	1.273
	319.41			7.629E-02	2.920E+00	4.711E+00	2.721E-01	0.016
	531.02	*		3.320E-01	4.862E-01	8.252E-01	1.151E-01	0.402
PM-149	285.90	*		4.250E+01	1.013E+02	1.679E+02	2.375E+01	0.253
EU-152	121.78			-2.524E-02	6.553E-02	1.034E-01	7.935E-03	-0.244
	244.70			5.143E-02	2.964E-01	4.323E-01	2.414E-02	0.119
	344.28	*		-3.828E-02	9.382E-02	1.267E-01	8.263E-03	-0.302
	778.90			-1.518E-01	2.060E-01	3.221E-01	3.011E-02	-0.471
	964.08		+	7.039E-01	3.513E-01	4.963E-01	5.083E-02	1.418
	1085.87			2.202E-03	3.164E-01	5.277E-01	4.088E-02	0.004
	1112.07			-1.626E-01	2.925E-01	3.905E-01	2.780E-02	-0.416
	1408.01			2.233E-01	1.571E-01	2.874E-01	2.134E-02	0.777
GD-153	69.67			-1.068E+00	1.728E+00	2.735E+00	2.220E-01	-0.391
	97.43	*		-1.076E-02	8.845E-02	1.268E-01	9.917E-03	-0.085
	103.18			-9.225E-02	1.021E-01	1.592E-01	1.148E-02	-0.580
EU-154	123.07			1.370E-03	4.738E-02	7.239E-02	6.836E-03	0.019
	723.31			7.677E-02	1.477E-01	2.221E-01	2.086E-02	0.346
	873.19			-6.918E-02	2.165E-01	3.449E-01	4.699E-02	-0.201
	996.26			-1.231E-01	3.003E-01	4.683E-01	8.429E-02	-0.263

Sample ID : G247911005

Acquisition date : 6-MAR-2010 17:24:30

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1004.73		-1.974E-01	1.810E-01	2.636E-01	3.240E-02	-0.749
		1274.44	*	-7.076E-02	1.017E-01	1.569E-01	1.579E-02	-0.451
		86.55		4.425E-01	1.211E-01	1.793E-01	1.652E-02	2.468
		105.31	*	1.909E-01	9.869E-02	1.703E-01	1.217E-02	1.121
TB-160	+	86.79		1.186E+00	3.244E-01	4.776E-01	4.370E-02	2.484
		197.04		9.425E-03	4.617E-01	7.718E-01	4.145E-02	0.012
		215.65		-4.572E-01	6.401E-01	9.924E-01	5.417E-02	-0.461
		298.57		1.911E-01	1.452E-01	1.698E-01	9.751E-03	1.126
HO-166M		879.36	*	-4.261E-02	1.075E-01	1.699E-01	1.866E-02	-0.251
		962.29		9.945E-01	5.671E-01	8.916E-01	9.160E-02	1.115
		966.15		1.494E+00	2.773E-01	4.813E-01	4.912E-02	3.104
		1177.93		-2.116E-01	2.936E-01	4.593E-01	2.565E-02	-0.461
		1271.85		3.538E-02	5.711E-01	9.428E-01	6.371E-02	0.038
		80.57		4.341E-03	3.431E-01	4.000E-01	3.475E-02	0.011
		184.41		1.540E-01	3.383E-02	5.856E-02	3.111E-03	2.630
		280.46		-5.985E-02	7.200E-02	1.123E-01	6.408E-03	-0.533
		410.95		2.049E-01	1.910E-01	3.359E-01	1.977E-02	0.610
		711.68	*	-1.439E-02	4.910E-02	7.885E-02	6.572E-03	-0.182
		752.31		1.183E-01	2.088E-01	3.595E-01	3.215E-02	0.329
		810.29		-3.674E-02	4.616E-02	7.123E-02	7.014E-03	-0.516
TA-182		67.75		-1.625E-02	1.256E-01	1.860E-01	1.495E-02	-0.087
		100.11		9.016E-02	1.577E-01	2.621E-01	1.970E-02	0.344
		152.43		2.732E-01	3.021E-01	4.959E-01	2.668E-02	0.551
		222.11		-1.797E-01	2.912E-01	4.694E-01	2.576E-02	-0.383
IR-192	+	1121.30		6.192E-01	2.099E-01	2.763E-01	1.903E-02	2.241
		1189.05		-5.666E-02	2.565E-01	4.173E-01	2.386E-02	-0.136
		1221.41	*	-4.085E-02	1.620E-01	2.625E-01	1.605E-02	-0.156
		1231.02		-5.946E-01	4.358E-01	6.528E-01	4.072E-02	-0.911
HG-203	+	295.96		9.292E-01	1.652E-01	2.438E-01	1.422E-02	3.811
		308.46		5.477E-03	7.774E-02	1.261E-01	7.346E-03	0.043
		316.51	*	-2.639E-02	2.816E-02	4.289E-02	2.488E-03	-0.615
		468.07		-3.136E-02	5.947E-02	8.109E-02	5.787E-03	-0.387
BI-207		70.83		2.150E-01	1.446E+00	2.128E+00	3.366E-01	0.101
		72.87		9.829E-01	8.347E-01	1.284E+00	1.970E-01	0.765
		279.20	*	2.613E-02	3.287E-02	5.544E-02	3.342E-03	0.471
		72.81		1.975E-01	1.868E-01	2.895E-01	2.390E-02	0.682
PB-210	+	74.97		6.013E-01	1.346E-01	2.191E-01	1.831E-02	2.745
		569.70		7.169E-03	2.460E-02	3.992E-02	2.798E-03	0.180
		1063.66	*	-1.274E-02	4.160E-02	6.786E-02	5.601E-03	-0.188
		1770.23		1.087E-01	3.773E-01	5.619E-01	3.399E-02	0.193
PB-211		46.54	*	3.407E+00	4.918E+00	8.526E+00	6.536E-01	0.400
		404.85	*	-4.362E-01	6.206E-01	9.390E-01	4.505E-01	-0.465
		427.09		8.245E-01	1.219E+00	2.006E+00	9.198E-01	0.411
		832.01		-1.436E-01	7.992E-01	1.292E+00	6.734E-01	-0.111
BI-212	+	727.33	*	1.467E+00	6.532E-01	9.068E-01	1.126E-01	1.618
		785.37		1.677E+00	2.711E+00	4.462E+00	4.217E-01	0.376
		1620.50		2.096E+00	1.999E+00	3.673E+00	2.484E-01	0.571
		271.23		4.943E-01	2.613E-01	3.705E-01	2.943E-02	1.334
RN-219	+	401.81	*	1.618E-01	3.217E-01	5.509E-01	7.407E-02	0.294

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-5.215E-02	2.698E-01	3.093E-01	2.697E-02	-0.169
		83.79		2.547E-01	1.236E-01	1.961E-01	1.748E-02	1.299
		94.87		1.130E+00	4.656E-01	7.426E-01	6.047E-02	1.521
		144.24		2.052E-01	6.400E-01	1.009E+00	7.016E-02	0.203
		154.21		8.567E-04	3.154E-01	5.354E-01	3.536E-02	0.002
	+	269.46		3.841E-01	2.020E-01	2.922E-01	1.733E-02	1.314
		323.87	*	1.419E-01	5.958E-01	8.512E-01	1.371E-01	0.167
AC-227	+	338.28		5.102E+00	1.350E+00	1.936E+00	1.983E-01	2.635
		79.69		1.813E-01	1.588E+00	1.866E+00	3.218E-01	0.097
		235.96		2.753E-01	1.439E-01	2.269E-01	1.808E-02	1.213
		256.23	*	1.026E-01	2.072E-01	3.470E-01	3.515E-02	0.296
	+	299.98		1.858E+00	1.024E+00	1.353E+00	1.483E-01	1.373
		304.50		1.914E-01	1.440E+00	2.055E+00	3.130E-01	0.093
		334.37		2.611E-01	2.191E+00	2.229E+00	3.169E-01	0.117
TH-227		79.80		2.094E-01	2.090E+00	2.454E+00	5.347E-01	0.085
		235.96		2.753E-01	1.436E-01	2.269E-01	1.632E-02	1.213
		256.23	*	1.026E-01	2.073E-01	3.470E-01	4.142E-02	0.296
	+	299.98		1.858E+00	1.024E+00	1.353E+00	1.483E-01	1.373
		304.50		1.914E-01	1.440E+00	2.055E+00	3.130E-01	0.093
		334.37		2.611E-01	2.191E+00	2.229E+00	3.169E-01	0.117
		85.43		6.365E-01	2.139E-01	3.439E-01	3.109E-02	1.851
TH-229	+	88.47		5.624E-01	1.538E-01	2.237E-01	2.049E-02	2.515
		193.51	*	-5.892E-02	4.352E-01	6.997E-01	3.746E-02	-0.084
		210.85		1.805E+00	8.434E-01	1.359E+00	7.390E-02	1.328
PA-231		283.69	*	-9.665E-01	1.184E+00	1.833E+00	2.398E-01	-0.527
	+	301.36		1.193E+00	6.565E-01	8.652E-01	8.925E-02	1.379
TH-231		81.07		-5.215E-02	2.698E-01	3.093E-01	2.697E-02	-0.169
		83.79		2.547E-01	1.236E-01	1.961E-01	1.748E-02	1.299
		94.87		1.130E+00	4.656E-01	7.426E-01	6.047E-02	1.521
		144.24		2.052E-01	6.400E-01	1.009E+00	7.016E-02	0.203
		154.21		8.567E-04	3.154E-01	5.354E-01	3.536E-02	0.002
	+	269.46		3.841E-01	2.020E-01	2.922E-01	1.733E-02	1.314
		323.87	*	1.419E-01	5.958E-01	8.512E-01	1.371E-01	0.167
PA-233	+	338.28		5.102E+00	1.350E+00	1.936E+00	1.983E-01	2.635
	+	300.13		8.405E-01	4.679E-01	6.097E-01	8.149E-02	1.379
		311.90	*	3.022E-02	5.179E-02	8.618E-02	5.281E-03	0.351
PA-234		340.48		1.960E+00	7.761E-01	1.049E+00	2.434E-01	1.869
		94.67		5.464E-01	1.825E-01	2.839E-01	3.434E-02	1.924
		98.44		7.348E-02	9.633E-02	1.391E-01	7.742E-02	0.528
		111.00		1.240E-01	1.726E-01	2.820E-01	3.025E-02	0.440
		131.20		5.582E-02	1.048E-01	1.532E-01	8.722E-03	0.364
		569.50		5.274E-02	2.177E-01	3.521E-01	2.467E-02	0.150
		733.00		1.152E-01	3.214E-01	4.758E-01	1.057E-01	0.242
		880.51		-9.067E-02	2.154E-01	3.397E-01	3.739E-02	-0.267
		883.24		9.007E-02	2.245E-01	3.653E-01	2.469E-01	0.247
		926.50		3.240E-03	1.505E-01	2.104E-01	5.499E-02	0.015
PA-234M		946.00	*	-2.499E-02	2.480E-01	3.875E-01	7.644E-02	-0.064
		949.00		4.651E-02	3.593E-01	5.896E-01	6.192E-02	0.079
	+	766.42		2.636E+01	1.827E+01	1.798E+01	9.138E+00	1.466

Sample ID : G247911005

Acquisition date : 6-MAR-2010 17:24:30

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1001.03		*	2.687E+00	3.944E+00	6.501E+00	7.013E-01	0.413
NP-239	99.53			1.444E-01	1.482E-01	2.472E-01	1.873E-02	0.584
	103.37			-6.976E-02	9.271E-02	1.455E-01	1.047E-02	-0.479
	106.12			7.509E-02	7.773E-02	1.304E-01	9.063E-03	0.576
	117.23		*	-3.049E-01	3.628E-01	5.618E-01	3.469E-02	-0.543
	228.18			-1.002E-01	1.821E-01	2.865E-01	1.580E-02	-0.350
	277.60			1.784E-01	1.494E-01	2.558E-01	1.457E-02	0.697
AM-241	59.54		*	-9.325E-02	1.835E-01	2.667E-01	2.212E-02	-0.350
CM-247	278.00			7.354E-01	6.274E-01	1.074E+00	6.119E-02	0.685
	287.50			2.021E-01	9.670E-01	1.588E+00	9.084E-02	0.127
	402.40		*	2.357E-02	2.948E-02	5.127E-02	2.986E-03	0.460
CF-249	252.80			-5.167E-01	7.589E-01	1.202E+00	6.753E-02	-0.430
	333.37			-7.286E-03	2.375E-01	2.368E-01	1.369E-02	-0.031
	388.16		*	1.048E-02	3.043E-02	5.196E-02	2.987E-03	0.202
CF-251	177.52		*	1.007E-01	1.018E-01	1.776E-01	9.388E-03	0.567
	227.38			-2.828E-01	2.863E-01	4.519E-01	2.491E-02	-0.626
	285.41			-3.549E-01	1.726E+00	2.775E+00	1.586E-01	-0.128

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]G247911005      *
* Acquisition date   : 6-MAR-2010 17:24:30 Detector SN#                   *
* Detector ID        : GAM18 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.60 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G247911005 Analyst initials: MXR1                 *
* Batch Number      : 957714 Sample Quantity : 1.2545E+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	2.661E+01	2.406E+00	5.139E-01	0.000E+00
CD-109	3.738E+00	1.002E+00	1.104E+00	0.000E+00
SN-126	3.648E-01	9.777E-02	1.084E-01	0.000E+00
BA-137M	4.695E-02	3.565E-02	4.920E-02	0.000E+00
CS-137	4.960E-02	3.767E-02	5.197E-02	0.000E+00
TL-208	3.795E-01	7.227E-02	4.958E-02	0.000E+00
BI-211	3.278E+00	4.360E-01	2.688E-01	0.000E+00
PB-212	1.482E+00	1.399E-01	7.414E-02	0.000E+00
BI-214	1.017E+00	1.587E-01	9.404E-02	0.000E+00
PB-214	1.190E+00	1.708E-01	9.775E-02	0.000E+00
RA-224	4.148E+00	1.031E+00	7.936E-01	0.000E+00
RA-226	1.017E+00	1.587E-01	9.404E-02	0.000E+00
AC-228	1.528E+00	3.231E-01	1.764E-01	0.000E+00
RA-228	1.528E+00	3.231E-01	1.764E-01	0.000E+00
TH-228	1.482E+00	1.399E-01	7.414E-02	0.000E+00
TH-232	1.528E+00	3.231E-01	1.764E-01	0.000E+00
TH-234	2.912E+00	2.490E+00	2.323E+00	0.000E+00
U-235	5.437E-02	1.874E-01	3.107E-01	0.000E+00
NP-237	1.089E+00	3.676E-01	3.288E-01	0.000E+00
U-238	2.912E+00	2.490E+00	2.323E+00	0.000E+00
ANH-511	1.202E-01	5.987E-02	3.739E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.586E-01	2.408E-01	4.276E-01	0.000E+00 NOT IDENT.
NA-22	-4.018E-02	3.629E-02	5.528E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.012E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.326E-02	2.888E-02	4.654E-02	0.000E+00 FAIL ABUN
V-48	-2.653E-02	5.845E-02	9.330E-02	0.000E+00 NOT IDENT.
CR-51	3.699E-02	3.032E-01	5.121E-01	0.000E+00 NOT IDENT.

MN-54	1.909E-02	3.083E-02	5.404E-02	0.000E+00	NOT IDENT.
CO-56	7.497E-03	3.136E-02	5.380E-02	0.000E+00	NOT IDENT.
CO-57	-1.141E-02	2.223E-02	3.682E-02	0.000E+00	NOT IDENT.
CO-58	-2.578E-02	3.078E-02	4.879E-02	0.000E+00	NOT IDENT.
FE-59	-5.765E-02	7.772E-02	1.254E-01	0.000E+00	NOT IDENT.
CO-60	-2.840E-03	2.992E-02	4.948E-02	0.000E+00	NOT IDENT.
ZN-65	1.242E-01	7.982E-02	1.335E-01	0.000E+00	NOT IDENT.
SE-75	-2.723E-02	3.804E-02	6.036E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.433E-02	5.786E-02	0.000E+00	NOT IDENT.
Y-88	-2.991E-03	2.408E-02	3.927E-02	0.000E+00	NOT IDENT.
Y-91	-3.018E+00	1.709E+01	2.848E+01	0.000E+00	NOT IDENT.
NB-94	-2.632E-03	2.684E-02	4.590E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	4.028E-02	6.952E-02	0.000E+00	NOT IDENT.
NB-95M	2.140E-02	1.113E-01	1.704E-01	0.000E+00	NOT IDENT.
ZR-95	3.442E-03	5.420E-02	9.293E-02	0.000E+00	NOT IDENT.
MO-99	4.774E+00	1.253E+01	2.195E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.599E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-5.160E-04	3.104E-02	5.279E-02	0.000E+00	FAIL ABUN
RH-106	5.467E-02	2.344E-01	3.965E-01	0.000E+00	NOT IDENT.
RU-106	5.467E-02	2.344E-01	3.965E-01	0.000E+00	NOT IDENT.
AG-108M	-2.156E-02	2.279E-02	3.710E-02	0.000E+00	NOT IDENT.
AG-110M	1.738E-02	3.102E-02	4.860E-02	0.000E+00	NOT IDENT.
SN-113	-4.104E-03	3.338E-02	5.774E-02	0.000E+00	NOT IDENT.
CD-115	-7.238E+00	1.239E+01	2.015E+01	0.000E+00	NOT IDENT.
SN-117M	-2.036E-02	4.561E-02	7.995E-02	0.000E+00	NOT IDENT.
TE-123M	-2.645E-03	2.250E-02	3.993E-02	0.000E+00	NOT IDENT.
SB-124	-1.688E-02	5.367E-02	8.569E-02	0.000E+00	NOT IDENT.
SB-125	1.149E-02	6.823E-02	1.189E-01	0.000E+00	FAIL ABUN
TE-125M	-2.289E+00	8.871E+00	1.500E+01	0.000E+00	NOT IDENT.
I-126	9.592E-02	2.118E-01	3.281E-01	0.000E+00	NOT IDENT.
SB-126	1.157E-01	1.260E-01	2.025E-01	0.000E+00	NOT IDENT.
SB-127	-6.505E-01	1.255E+00	2.090E+00	0.000E+00	NOT IDENT.
I-131	-4.976E-02	9.466E-02	1.613E-01	0.000E+00	NOT IDENT.
TE-132	-4.372E-01	7.676E-01	1.261E+00	0.000E+00	NOT IDENT.
BA-133	-1.472E-02	3.858E-02	5.406E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.140E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.098E-02	7.364E-02	0.000E+00	FAIL ABUN
CS-135	2.074E-01	1.486E-01	2.394E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.412E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	7.452E-02	9.156E-02	1.652E-01	0.000E+00	NOT IDENT.
CE-139	-1.228E-02	2.472E-02	4.313E-02	0.000E+00	NOT IDENT.
BA-140	-1.170E-01	2.289E-01	3.687E-01	0.000E+00	NOT IDENT.
LA-140	-5.645E-02	7.411E-02	1.146E-01	0.000E+00	FAIL ABUN
CE-141	5.640E-02	5.780E-02	1.002E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.748E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-4.320E-02	1.953E-01	2.883E-01	0.000E+00	NOT IDENT.
PM-144	4.027E-03	2.784E-02	4.833E-02	0.000E+00	NOT IDENT.
PR-144	2.880E-01	2.084E+00	3.617E+00	0.000E+00	NOT IDENT.
PM-146	-2.888E-03	3.112E-02	5.316E-02	0.000E+00	NOT IDENT.
ND-147	3.320E-01	4.765E-01	8.367E-01	0.000E+00	FAIL ABUN
PM-149	4.250E+01	9.923E+01	1.717E+02	0.000E+00	NOT IDENT.
EU-152	-3.828E-02	9.195E-02	1.293E-01	0.000E+00	FAIL ABUN
GD-153	-1.076E-02	8.668E-02	1.317E-01	0.000E+00	NOT IDENT.
EU-154	-7.076E-02	9.965E-02	1.571E-01	0.000E+00	NOT IDENT.
EU-155	0.000E+00	9.672E-02	1.766E-01	0.000E+00	FAIL ABUN
TB-160	-4.261E-02	1.053E-01	1.710E-01	0.000E+00	FAIL ABUN
HO-166M	-1.439E-02	4.812E-02	7.961E-02	0.000E+00	NOT IDENT.
TA-182	-4.085E-02	1.588E-01	2.629E-01	0.000E+00	FAIL ABUN
IR-192	-2.639E-02	2.760E-02	4.381E-02	0.000E+00	FAIL ABUN
HG-203	2.613E-02	3.222E-02	5.673E-02	0.000E+00	NOT IDENT.
BI-207	-1.274E-02	4.077E-02	6.812E-02	0.000E+00	FAIL ABUN
PB-210	3.407E+00	4.820E+00	8.939E+00	0.000E+00	NOT IDENT.
PB-211	-4.362E-01	6.082E-01	9.558E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.402E-01	9.153E-01	0.000E+00	FAIL ABUN
RN-219	1.618E-01	3.153E-01	5.608E-01	0.000E+00	FAIL ABUN
RA-223	1.419E-01	5.839E-01	8.691E-01	0.000E+00	FAIL ABUN
AC-227	1.026E-01	2.031E-01	3.554E-01	0.000E+00	FAIL ABUN
TH-227	1.026E-01	2.032E-01	3.554E-01	0.000E+00	FAIL ABUN
TH-229	-5.892E-02	4.265E-01	7.195E-01	0.000E+00	FAIL ABUN
PA-231	-9.665E-01	1.160E+00	1.875E+00	0.000E+00	FAIL ABUN
TH-231	1.419E-01	5.839E-01	8.691E-01	0.000E+00	FAIL ABUN
PA-233	3.022E-02	5.075E-02	8.804E-02	0.000E+00	FAIL ABUN
PA-234	-2.499E-02	2.430E-01	3.896E-01	0.000E+00	NOT IDENT.
PA-234M	2.687E+00	3.865E+00	6.532E+00	0.000E+00	FAIL ABUN
NP-239	-3.049E-01	3.555E-01	5.817E-01	0.000E+00	NOT IDENT.
AM-241	-9.325E-02	1.799E-01	2.786E-01	0.000E+00	NOT IDENT.
CM-247	2.357E-02	2.889E-02	5.219E-02	0.000E+00	NOT IDENT.
CF-249	1.048E-02	2.982E-02	5.292E-02	0.000E+00	NOT IDENT.

CF-251	1.007E-01	9.979E-02	1.829E-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]G247911005.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:24:30.
Sample ID        : G247911005 Sample quantity : 1.25450E+02 GRAM
Detector name    : GAM18 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.60 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957714 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	1460.82	1795	10.66*	1.894E+00	2.661E+01	2.661E+01	9.23
CD-109	88.03	291	3.70*	6.454E+00	3.648E+00	3.738E+00	27.35
SN-126	64.28	112	9.60	3.107E+00	1.122E+00	1.122E+00	86.67
	86.94	291	8.90	6.454E+00	1.517E+00	1.517E+00	48.83
	87.57	291	37.00*	6.454E+00	3.648E-01	3.648E-01	27.35
BA-137M	661.66	51	89.90*	3.587E+00	4.690E-02	4.695E-02	77.49
CS-137	661.66	51	85.10*	3.587E+00	4.955E-02	4.960E-02	77.50
TL-208	277.37	-----	6.60	6.258E+00	-----	Line Not Found	-----
	583.19	424	85.00*	3.934E+00	3.795E-01	3.795E-01	19.43
	860.56	67	12.50	2.914E+00	5.482E-01	5.482E-01	64.74
BI-211	72.87	-----	1.23	4.622E+00	-----	Line Not Found	-----
	351.06	772	12.92*	5.452E+00	3.278E+00	3.278E+00	13.57
PB-212	74.82	354	10.28	4.933E+00	2.086E+00	2.086E+00	24.41
	77.11	571	17.10	5.266E+00	1.899E+00	1.899E+00	16.13
	238.63	1467	43.60*	6.793E+00	1.482E+00	1.482E+00	9.64
	300.09	111	3.30	5.984E+00	1.689E+00	1.689E+00	54.68
BI-214	609.32	589	45.49*	3.812E+00	1.017E+00	1.017E+00	15.93
	1120.29	153	14.92	2.335E+00	1.313E+00	1.313E+00	34.55
	1764.49	104	15.30	1.695E+00	1.196E+00	1.196E+00	34.26
PB-214	74.82	354	5.80	4.933E+00	3.698E+00	3.698E+00	23.75
	77.11	571	9.70	5.266E+00	3.347E+00	3.347E+00	18.12
	242.00	384	7.25	6.749E+00	2.346E+00	2.346E+00	26.01
	295.22	462	18.42	6.041E+00	1.244E+00	1.244E+00	18.91
	351.93	772	35.60*	5.452E+00	1.190E+00	1.190E+00	14.65
RA-224	240.99	384	4.10*	6.749E+00	4.148E+00	4.148E+00	25.36
RA-226	609.32	589	45.49*	3.812E+00	1.017E+00	1.017E+00	15.93
	1120.29	153	14.92	2.335E+00	1.313E+00	1.313E+00	34.55
	1764.49	104	15.30	1.695E+00	1.196E+00	1.196E+00	34.26
AC-228	338.32	270	11.27	5.580E+00	1.286E+00	1.286E+00	47.91
	911.20	366	25.80*	2.780E+00	1.528E+00	1.528E+00	21.58
	968.97	201	15.80	2.640E+00	1.442E+00	1.442E+00	33.49
RA-228	338.32	270	11.27	5.580E+00	1.286E+00	1.286E+00	47.91

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	366	25.80*	2.780E+00	1.528E+00	1.528E+00	21.58
	968.97	201	15.80	2.640E+00	1.442E+00	1.442E+00	33.49
TH-228	74.82	354	10.28	4.933E+00	2.086E+00	2.086E+00	22.42
	77.11	571	17.10	5.266E+00	1.899E+00	1.899E+00	16.13
	238.63	1467	43.60*	6.793E+00	1.482E+00	1.482E+00	9.64
	300.09	111	3.30	5.984E+00	1.689E+00	1.689E+00	81.40
TH-232	338.32	270	11.27	5.580E+00	1.286E+00	1.286E+00	25.08
	911.20	366	25.80*	2.780E+00	1.528E+00	1.528E+00	21.58
	968.97	201	15.80	2.640E+00	1.442E+00	1.442E+00	33.49
TH-234	63.29	112	3.70*	3.107E+00	2.912E+00	2.912E+00	87.28
	92.59	405	4.23	6.947E+00	4.129E+00	4.129E+00	30.99
U-235	89.96	149	3.47	6.704E+00	1.912E+00	1.912E+00	54.13
	93.35	405	5.60	6.947E+00	3.119E+00	3.119E+00	31.72
	143.76	-----	10.96*	8.222E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.005E+00	-----	Line Not Found	-----
	185.72	323	57.20	7.645E+00	2.210E-01	2.210E-01	30.89
	205.31	-----	5.01	7.323E+00	-----	Line Not Found	-----
NP-237	86.48	291	12.40*	6.454E+00	1.089E+00	1.089E+00	34.46
	95.86	-----	2.68	7.180E+00	-----	Line Not Found	-----
U-238	63.29	112	3.70*	3.107E+00	2.912E+00	2.912E+00	87.28
	92.59	405	4.23	6.947E+00	4.129E+00	4.129E+00	23.39
ANH-511	511.00	173	100.00*	4.311E+00	1.202E-01	1.202E-01	50.82

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247911005

Page : 3
Acquisition date : 6-MAR-2010 17:24:30

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	1.25E+09Y	1.00	2.661E+01	2.661E+01	0.246E+01	9.23	
CD-109	461.40D	1.02	3.648E+00	3.738E+00	1.022E+00	27.35	
SN-126	2.30E+05Y	1.00	3.648E-01	3.648E-01	0.998E-01	27.35	
BA-137M	30.08Y	1.00	4.690E-02	4.695E-02	3.638E-02	77.49	
CS-137	30.08Y	1.00	4.955E-02	4.960E-02	3.843E-02	77.50	
TL-208	1.41E+10Y	1.00	3.795E-01	3.795E-01	0.737E-01	19.43	
BI-211	7.04E+08Y	1.00	3.278E+00	3.278E+00	0.445E+00	13.57	
PB-212	1.41E+10Y	1.00	1.482E+00	1.482E+00	0.143E+00	9.64	
BI-214	1600.00Y	1.00	1.017E+00	1.017E+00	0.162E+00	15.93	
PB-214	1600.00Y	1.00	1.190E+00	1.190E+00	0.174E+00	14.65	
RA-224	1.41E+10Y	1.00	4.148E+00	4.148E+00	1.052E+00	25.36	
RA-226	1600.00Y	1.00	1.017E+00	1.017E+00	0.162E+00	15.93	
AC-228	1.41E+10Y	1.00	1.528E+00	1.528E+00	0.330E+00	21.58	
RA-228	1.41E+10Y	1.00	1.528E+00	1.528E+00	0.330E+00	21.58	
TH-228	1.41E+10Y	1.00	1.482E+00	1.482E+00	0.143E+00	9.64	
TH-232	1.41E+10Y	1.00	1.528E+00	1.528E+00	0.330E+00	21.58	
TH-234	4.47E+09Y	1.00	2.912E+00	2.912E+00	2.541E+00	87.28	
U-235	7.04E+08Y	1.00	2.210E-01	2.210E-01	0.683E-01	30.89	K
NP-237	2.14E+06Y	1.00	1.089E+00	1.089E+00	0.375E+00	34.46	
U-238	4.47E+09Y	1.00	2.912E+00	2.912E+00	2.541E+00	87.28	
ANH-511	1.00E+09Y	1.00	1.202E-01	1.202E-01	0.611E-01	50.82	

Total Activity : 5.655E+01 5.664E+01

Grand Total Activity : 5.655E+01 5.664E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247911005

Page : 4
Acquisition date : 6-MAR-2010 17:24:30

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.55	107	437	0.96	256.17	252	10	1.49E-02	75.2	8.24E+00	
0	209.28	136	369	1.21	417.58	413	10	1.89E-02	55.3	7.26E+00	
0	270.20	113	232	1.75	539.37	536	9	1.57E-02	52.3	6.35E+00	T
0	328.34	117	193	1.48	655.62	651	11	1.62E-02	49.6	5.68E+00	T
0	462.96	145	153	1.37	924.77	917	15	2.01E-02	40.9	4.60E+00	T
0	726.68	109	94	1.30	1452.08	1447	13	1.52E-02	42.8	3.34E+00	T
0	767.54	90	91	2.56	1533.78	1528	12	1.25E-02	47.1	3.20E+00	T
0	794.55	84	100	1.94	1587.79	1580	16	1.17E-02	57.3	3.11E+00	T
0	933.29	52	48	4.74	1865.21	1858	12	7.26E-03	59.8	2.72E+00	
1	964.40	91	81	2.32	1927.42	1920	22	1.27E-02	48.9	2.65E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911005.CNF;1
* Acquisition date   : 6-MAR-2010 17:24:30.  Detector SN#      :
* Detector ID        : GAM18                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:01.60             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G247911005           Analyst initials: MXR1
* Batch Number       : 957714              Sample Quantity : 1.25450E+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	2.661E+01	2.455E+00	5.143E-01	3.903E-02	51.744
CD-109	3.738E+00	1.022E+00	1.062E+00	9.819E-02	3.520
SN-126	3.648E-01	9.977E-02	1.043E-01	9.611E-03	3.497
BA-137M	4.695E-02	3.638E-02	4.867E-02	3.710E-03	0.965
CS-137	4.960E-02	3.843E-02	5.142E-02	3.929E-03	0.965
TL-208	3.795E-01	7.374E-02	4.896E-02	3.832E-03	7.750
BI-211	3.278E+00	4.449E-01	2.636E-01	1.692E-02	12.436
PB-212	1.482E+00	1.428E-01	7.230E-02	5.212E-03	20.493
BI-214	1.017E+00	1.620E-01	9.293E-02	8.351E-03	10.945
PB-214	1.190E+00	1.743E-01	9.585E-02	8.113E-03	12.413
RA-224	4.148E+00	1.052E+00	7.740E-01	4.312E-02	5.360
RA-226	1.017E+00	1.620E-01	9.293E-02	8.351E-03	10.945
AC-228	1.528E+00	3.297E-01	1.753E-01	2.375E-02	8.715
RA-228	1.528E+00	3.297E-01	1.753E-01	2.375E-02	8.715
TH-228	1.482E+00	1.428E-01	7.230E-02	5.212E-03	20.493
TH-232	1.528E+00	3.297E-01	1.753E-01	2.375E-02	8.715
TH-234	2.912E+00	2.541E+00	2.225E+00	4.007E-01	1.309
U-235	2.210E-01	6.828E-02	3.009E-01	4.692E-02	0.734

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.089E+00	3.751E-01	3.162E-01	7.231E-02	3.443
U-238	2.912E+00	2.541E+00	2.225E+00	4.007E-01	1.309
ANH-511	1.202E-01	6.109E-02	3.686E-02	2.434E-03	3.262

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.586E-01		2.458E-01	4.211E-01	3.050E-02	0.377
NA-22	-4.018E-02		3.703E-02	5.521E-02	3.757E-03	-0.728
NA-24	-1.634E-01		1.026E+00	Half-Life too short		
SC-46	-1.326E-02		2.946E-02	4.624E-02	5.157E-03	-0.287
V-48	-2.653E-02		5.965E-02	9.283E-02	9.181E-03	-0.286
CR-51	3.699E-02		3.094E-01	5.015E-01	3.224E-02	0.074
MN-54	1.909E-02		3.146E-02	5.365E-02	5.495E-03	0.356
CO-56	7.497E-03		3.200E-02	5.341E-02	5.576E-03	0.140
CO-57	-1.141E-02		2.268E-02	3.558E-02	2.108E-03	-0.321
CO-58	-2.578E-02		3.141E-02	4.841E-02	4.779E-03	-0.533
FE-59	-5.765E-02		7.931E-02	1.250E-01	1.028E-02	-0.461
CO-60	-2.840E-03		3.053E-02	4.945E-02	3.736E-03	-0.057
ZN-65	1.242E-01		8.145E-02	1.331E-01	9.374E-03	0.934
SE-75	-2.723E-02		3.882E-02	5.895E-02	3.372E-03	-0.462
SR-85	7.062E-02		3.503E-02	5.704E-02	3.779E-03	1.238
Y-88	-2.991E-03		2.458E-02	3.943E-02	2.246E-03	-0.076
Y-91	-3.018E+00		1.744E+01	2.842E+01	1.680E+00	-0.106
NB-94	-2.632E-03		2.739E-02	4.545E-02	3.729E-03	-0.058
NB-95	9.859E-02		4.110E-02	6.893E-02	6.305E-03	1.430
NB-95M	2.140E-02		1.136E-01	1.661E-01	1.223E-02	0.129
ZR-95	3.442E-03		5.530E-02	9.212E-02	9.097E-03	0.037
MO-99	4.774E+00		1.279E+01	2.175E+01	3.442E+00	0.220
TC-99M	1.311E+11		3.877E+11	Half-Life too short		
RU-103	-5.160E-04		3.168E-02	5.202E-02	6.643E-03	-0.010
RH-106	5.467E-02		2.392E-01	3.920E-01	4.889E-02	0.139
RU-106	5.467E-02		2.392E-01	3.920E-01	2.885E-02	0.139
AG-108M	-2.156E-02		2.325E-02	3.649E-02	2.352E-03	-0.591
AG-110M	1.738E-02		3.165E-02	4.807E-02	3.792E-03	0.361
SN-113	-4.104E-03		3.406E-02	5.671E-02	3.478E-03	-0.072
CD-115	-7.238E+00		1.264E+01	1.987E+01	1.335E+00	-0.364
SN-117M	-2.036E-02		4.654E-02	7.753E-02	4.121E-03	-0.263
TE-123M	-2.645E-03		2.296E-02	3.873E-02	2.089E-03	-0.068
SB-124	-1.688E-02		5.477E-02	8.594E-02	5.952E-03	-0.196
SB-125	1.149E-02		6.962E-02	1.170E-01	7.299E-03	0.098
TE-125M	-2.289E+00		9.052E+00	1.448E+01	1.299E+00	-0.158
I-126	9.592E-02		2.161E-01	3.247E-01	2.496E-02	0.295
SB-126	1.157E-01		1.286E-01	2.006E-01	1.698E-02	0.577
SB-127	-6.505E-01		1.281E+00	2.069E+00	2.322E-01	-0.314
I-131	-4.976E-02		9.659E-02	1.582E-01	1.023E-02	-0.315
TE-132	-4.372E-01		7.833E-01	1.229E+00	1.795E-01	-0.356

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	-1.472E-02		3.936E-02	5.302E-02	5.973E-03	-0.278
I-133	3.922E-03		5.817E-03	Half-Life too short		
CS-134	1.070E-01	+	6.222E-02	7.305E-02	7.065E-03	1.465
CS-135	2.074E-01		1.516E-01	2.339E-01	1.768E-02	0.887
I-135	-1.979E+10		4.292E+10	Half-Life too short		
CS-136	7.452E-02		9.343E-02	1.645E-01	1.474E-02	0.453
CE-139	-1.228E-02		2.523E-02	4.185E-02	2.197E-03	-0.294
BA-140	-1.170E-01		2.336E-01	3.637E-01	1.218E-01	-0.322
LA-140	-5.645E-02		7.563E-02	1.149E-01	7.882E-03	-0.491
CE-141	5.640E-02		5.898E-02	9.703E-02	5.540E-03	0.581
CE-143	1.377E-03		1.912E-04	Half-Life too short		
CE-144	-4.320E-02		1.993E-01	2.789E-01	3.857E-02	-0.155
PM-144	4.027E-03		2.841E-02	4.785E-02	3.885E-03	0.084
PR-144	2.880E-01		2.127E+00	3.581E+00	2.906E-01	0.080
PM-146	-2.888E-03		3.176E-02	5.231E-02	4.570E-03	-0.055
ND-147	3.320E-01		4.862E-01	8.252E-01	1.151E-01	0.402
PM-149	4.250E+01		1.013E+02	1.679E+02	2.375E+01	0.253
EU-152	-3.828E-02		9.382E-02	1.267E-01	8.263E-03	-0.302
GD-153	-1.076E-02		8.845E-02	1.268E-01	9.917E-03	-0.085
EU-154	-7.076E-02		1.017E-01	1.569E-01	1.579E-02	-0.451
EU-155	1.909E-01		9.869E-02	1.703E-01	1.217E-02	1.121
TB-160	-4.261E-02		1.075E-01	1.699E-01	1.866E-02	-0.251
HO-166M	-1.439E-02		4.910E-02	7.885E-02	6.572E-03	-0.182
TA-182	-4.085E-02		1.620E-01	2.625E-01	1.605E-02	-0.156
IR-192	-2.639E-02		2.816E-02	4.289E-02	2.488E-03	-0.615
HG-203	2.613E-02		3.287E-02	5.544E-02	3.342E-03	0.471
BI-207	-1.274E-02		4.160E-02	6.786E-02	5.601E-03	-0.188
PB-210	3.407E+00		4.918E+00	8.526E+00	6.536E-01	0.400
PB-211	-4.362E-01		6.206E-01	9.390E-01	4.505E-01	-0.465
BI-212	1.467E+00	+	6.532E-01	9.068E-01	1.126E-01	1.618
RN-219	1.618E-01		3.217E-01	5.509E-01	7.407E-02	0.294
RA-223	1.419E-01		5.958E-01	8.512E-01	1.371E-01	0.167
AC-227	1.026E-01		2.072E-01	3.470E-01	3.515E-02	0.296
TH-227	1.026E-01		2.073E-01	3.470E-01	4.142E-02	0.296
TH-229	-5.892E-02		4.352E-01	6.997E-01	3.746E-02	-0.084
PA-231	-9.665E-01		1.184E+00	1.833E+00	2.398E-01	-0.527
TH-231	1.419E-01		5.958E-01	8.512E-01	1.371E-01	0.167
PA-233	3.022E-02		5.179E-02	8.618E-02	5.281E-03	0.351
PA-234	-2.499E-02		2.480E-01	3.875E-01	7.644E-02	-0.064
PA-234M	2.687E+00		3.944E+00	6.501E+00	7.013E-01	0.413
NP-239	-3.049E-01		3.628E-01	5.618E-01	3.469E-02	-0.543
AM-241	-9.325E-02		1.835E-01	2.667E-01	2.212E-02	-0.350
CM-247	2.357E-02		2.948E-02	5.127E-02	2.986E-03	0.460
CF-249	1.048E-02		3.043E-02	5.196E-02	2.987E-03	0.202
CF-251	1.007E-01		1.018E-01	1.776E-01	9.388E-03	0.567

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]G247911005
* Acquisition date   : 6-MAR-2010 17:24:30 Detector SN#      :
* Detector ID        : GAM18                               Sensitivity      : 5.000
* Geometry           : CAN                                 Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00                      Abundance limit : 75.000
* Elapsed real time  : 0 02:00:01.60                      Half life ratio  : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G247911005                      Analyst initials: MXR1
* Batch Number       : 957714                          Sample Quantity : 1.2545E+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	2.661E+01	2.406E+00	2.571E-01	1.228E+00
CD-109	3.738E+00	1.002E+00	5.524E-01	5.112E-01
SN-126	3.648E-01	9.777E-02	5.425E-02	4.988E-02
BA-137M	4.695E-02	3.565E-02	2.461E-02	1.819E-02
CS-137	4.960E-02	3.767E-02	2.600E-02	1.922E-02
TL-208	3.795E-01	7.227E-02	2.480E-02	3.687E-02
BI-211	3.278E+00	4.360E-01	1.345E-01	2.224E-01
PB-212	1.482E+00	1.399E-01	3.709E-02	7.139E-02
BI-214	1.017E+00	1.587E-01	4.705E-02	8.099E-02
PB-214	1.190E+00	1.708E-01	4.890E-02	8.715E-02
RA-224	4.148E+00	1.031E+00	3.970E-01	5.259E-01
RA-226	1.017E+00	1.587E-01	4.705E-02	8.099E-02
AC-228	1.528E+00	3.231E-01	8.824E-02	1.649E-01
RA-228	1.528E+00	3.231E-01	8.824E-02	1.649E-01
TH-228	1.482E+00	1.399E-01	3.709E-02	7.139E-02
TH-232	1.528E+00	3.231E-01	8.824E-02	1.649E-01
TH-234	2.912E+00	2.490E+00	1.162E+00	1.271E+00
U-235	5.437E-02	1.874E-01	1.554E-01	9.562E-02
NP-237	1.089E+00	3.676E-01	1.645E-01	1.876E-01
U-238	2.912E+00	2.490E+00	1.162E+00	1.271E+00
ANH-511	1.202E-01	5.987E-02	1.871E-02	3.055E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.586E-01	2.408E-01	2.139E-01	1.229E-01 NOT IDENT.
NA-22	-4.018E-02	3.629E-02	2.765E-02	1.851E-02 NOT IDENT.
NA-24	-1.634E+05	2.012E+06	0.000E+00	1.026E+06 SHORT HLIF
SC-46	-1.326E-02	2.888E-02	2.328E-02	1.473E-02 FAIL ABUN
V-48	-2.653E-02	5.845E-02	4.668E-02	2.982E-02 NOT IDENT.
CR-51	3.699E-02	3.032E-01	2.562E-01	1.547E-01 NOT IDENT.

MN-54	1.909E-02	3.083E-02	2.704E-02	1.573E-02	NOT IDENT.
CO-56	7.497E-03	3.136E-02	2.692E-02	1.600E-02	NOT IDENT.
CO-57	-1.141E-02	2.223E-02	1.842E-02	1.134E-02	NOT IDENT.
CO-58	-2.578E-02	3.078E-02	2.441E-02	1.571E-02	NOT IDENT.
FE-59	-5.765E-02	7.772E-02	6.276E-02	3.965E-02	NOT IDENT.
CO-60	-2.840E-03	2.992E-02	2.476E-02	1.527E-02	NOT IDENT.
ZN-65	1.242E-01	7.982E-02	6.680E-02	4.072E-02	NOT IDENT.
SE-75	-2.723E-02	3.804E-02	3.020E-02	1.941E-02	NOT IDENT.
SR-85	7.062E-02	3.433E-02	2.895E-02	1.751E-02	NOT IDENT.
Y-88	-2.991E-03	2.408E-02	1.965E-02	1.229E-02	NOT IDENT.
Y-91	-3.018E+00	1.709E+01	1.425E+01	8.718E+00	NOT IDENT.
NB-94	-2.632E-03	2.684E-02	2.296E-02	1.369E-02	NOT IDENT.
NB-95	9.859E-02	4.028E-02	3.478E-02	2.055E-02	NOT IDENT.
NB-95M	2.140E-02	1.113E-01	8.524E-02	5.678E-02	NOT IDENT.
ZR-95	3.442E-03	5.420E-02	4.649E-02	2.765E-02	NOT IDENT.
MO-99	4.774E+00	1.253E+01	1.098E+01	6.394E+00	NOT IDENT.
TC-99M	1.311E+17	7.599E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-5.160E-04	3.104E-02	2.641E-02	1.584E-02	FAIL ABUN
RH-106	5.467E-02	2.344E-01	1.984E-01	1.196E-01	NOT IDENT.
RU-106	5.467E-02	2.344E-01	1.984E-01	1.196E-01	NOT IDENT.
AG-108M	-2.156E-02	2.279E-02	1.856E-02	1.163E-02	NOT IDENT.
AG-110M	1.738E-02	3.102E-02	2.431E-02	1.582E-02	NOT IDENT.
SN-113	-4.104E-03	3.338E-02	2.889E-02	1.703E-02	NOT IDENT.
CD-115	-7.238E+00	1.239E+01	1.008E+01	6.322E+00	NOT IDENT.
SN-117M	-2.036E-02	4.561E-02	4.000E-02	2.327E-02	NOT IDENT.
TE-123M	-2.645E-03	2.250E-02	1.998E-02	1.148E-02	NOT IDENT.
SB-124	-1.688E-02	5.367E-02	4.287E-02	2.738E-02	NOT IDENT.
SB-125	1.149E-02	6.823E-02	5.951E-02	3.481E-02	FAIL ABUN
TE-125M	-2.289E+00	8.871E+00	7.506E+00	4.526E+00	NOT IDENT.
I-126	9.592E-02	2.118E-01	1.642E-01	1.081E-01	NOT IDENT.
SB-126	1.157E-01	1.260E-01	1.013E-01	6.429E-02	NOT IDENT.
SB-127	-6.505E-01	1.255E+00	1.046E+00	6.404E-01	NOT IDENT.
I-131	-4.976E-02	9.466E-02	8.069E-02	4.829E-02	NOT IDENT.
TE-132	-4.372E-01	7.676E-01	6.306E-01	3.917E-01	NOT IDENT.
BA-133	-1.472E-02	3.858E-02	2.705E-02	1.968E-02	NOT IDENT.
I-133	3.922E+03	1.140E+04	0.000E+00	5.817E+03	SHORT HLIF
CS-134	1.070E-01	6.098E-02	3.684E-02	3.111E-02	FAIL ABUN
CS-135	2.074E-01	1.486E-01	1.198E-01	7.581E-02	NOT IDENT.
I-135	-1.979E+16	8.412E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	7.452E-02	9.156E-02	8.264E-02	4.672E-02	NOT IDENT.
CE-139	-1.228E-02	2.472E-02	2.158E-02	1.261E-02	NOT IDENT.
BA-140	-1.170E-01	2.289E-01	1.844E-01	1.168E-01	NOT IDENT.
LA-140	-5.645E-02	7.411E-02	5.735E-02	3.781E-02	FAIL ABUN
CE-141	5.640E-02	5.780E-02	5.011E-02	2.949E-02	NOT IDENT.
CE-143	1.377E+03	3.748E+02	0.000E+00	1.912E+02	SHORT HLIF
CE-144	-4.320E-02	1.953E-01	1.442E-01	9.963E-02	NOT IDENT.
PM-144	4.027E-03	2.784E-02	2.418E-02	1.421E-02	NOT IDENT.
PR-144	2.880E-01	2.084E+00	1.809E+00	1.063E+00	NOT IDENT.
PM-146	-2.888E-03	3.112E-02	2.659E-02	1.588E-02	NOT IDENT.
ND-147	3.320E-01	4.765E-01	4.186E-01	2.431E-01	FAIL ABUN
PM-149	4.250E+01	9.923E+01	8.592E+01	5.063E+01	NOT IDENT.
EU-152	-3.828E-02	9.195E-02	6.468E-02	4.691E-02	FAIL ABUN
GD-153	-1.076E-02	8.668E-02	6.587E-02	4.422E-02	NOT IDENT.
EU-154	-7.076E-02	9.965E-02	7.858E-02	5.084E-02	NOT IDENT.
EU-155	1.909E-01	9.672E-02	8.834E-02	4.935E-02	FAIL ABUN
TB-160	-4.261E-02	1.053E-01	8.556E-02	5.373E-02	FAIL ABUN
HO-166M	-1.439E-02	4.812E-02	3.983E-02	2.455E-02	NOT IDENT.
TA-182	-4.085E-02	1.588E-01	1.315E-01	8.101E-02	FAIL ABUN
IR-192	-2.639E-02	2.760E-02	2.192E-02	1.408E-02	FAIL ABUN
HG-203	2.613E-02	3.222E-02	2.838E-02	1.644E-02	NOT IDENT.
BI-207	-1.274E-02	4.077E-02	3.408E-02	2.080E-02	FAIL ABUN
PB-210	3.407E+00	4.820E+00	4.472E+00	2.459E+00	NOT IDENT.
PB-211	-4.362E-01	6.082E-01	4.782E-01	3.103E-01	NOT IDENT.
BI-212	1.467E+00	6.402E-01	4.579E-01	3.266E-01	FAIL ABUN
RN-219	1.618E-01	3.153E-01	2.806E-01	1.609E-01	FAIL ABUN
RA-223	1.419E-01	5.839E-01	4.348E-01	2.979E-01	FAIL ABUN
AC-227	1.026E-01	2.031E-01	1.778E-01	1.036E-01	FAIL ABUN
TH-227	1.026E-01	2.032E-01	1.778E-01	1.036E-01	FAIL ABUN
TH-229	-5.892E-02	4.265E-01	3.600E-01	2.176E-01	FAIL ABUN
PA-231	-9.665E-01	1.160E+00	9.383E-01	5.921E-01	FAIL ABUN
TH-231	1.419E-01	5.839E-01	4.348E-01	2.979E-01	FAIL ABUN
PA-233	3.022E-02	5.075E-02	4.405E-02	2.589E-02	FAIL ABUN
PA-234	-2.499E-02	2.430E-01	1.949E-01	1.240E-01	NOT IDENT.
PA-234M	2.687E+00	3.865E+00	3.268E+00	1.972E+00	FAIL ABUN
NP-239	-3.049E-01	3.555E-01	2.910E-01	1.814E-01	NOT IDENT.
AM-241	-9.325E-02	1.799E-01	1.394E-01	9.177E-02	NOT IDENT.
CM-247	2.357E-02	2.889E-02	2.611E-02	1.474E-02	NOT IDENT.
CF-249	1.048E-02	2.982E-02	2.648E-02	1.522E-02	NOT IDENT.

CF-251

1.007E-01

9.979E-02

9.151E-02

5.091E-02 NOT IDENT.

```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD      *
*               CHARLESTON ,SC 29417  *
*               GAMMA SPECTROSCOPY BACKGROUNND REPORT *
*****

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ENERGY	MDA COUNTS
46.54	281.8092
49.72	271.1254
57.36	0.0000
59.54	304.5492
63.29	332.0858
63.29	332.0858
64.28	364.8974
67.75	347.5131
69.67	377.5728
70.83	348.0048
72.81	355.9643
72.87	356.0294
72.87	356.0294
74.82	391.8833
74.82	391.8833
74.82	391.8833
74.97	392.0585
77.11	394.5396
77.11	394.5396
77.11	394.5396
79.69	381.1113
79.80	381.2305
80.12	381.5781
80.19	381.6523
80.57	382.0645
81.00	382.5273
81.07	382.6035
81.07	382.6035
83.79	319.2487
83.79	319.2487
85.43	320.6801
86.48	321.5891
86.55	321.6505
86.79	321.8543
86.94	321.9854
87.57	322.5272
88.03	322.9218
88.47	323.2971
89.96	324.5635
91.11	325.5340
92.59	326.7746
92.59	326.7746
93.35	327.4070
94.67	313.0051
94.87	313.1623
94.87	313.1623
95.86	357.4536
97.43	340.1227
98.44	297.7963
99.53	285.4136
100.11	293.1421
103.18	355.4091
103.37	353.4583
105.31	289.3516
106.12	314.3178
109.28	344.4015
111.00	316.7445
111.76	332.3375
116.30	328.0507
117.23	339.5917
121.12	300.6965
121.78	321.9903
122.06	321.0785
123.07	296.1875
131.20	312.5070
133.52	324.0527
136.00	299.6023

136.47	310.0562
140.51	356.9010
140.51	0.0000
143.76	353.3208
144.24	351.3347
144.24	351.3347
145.44	329.0932
152.43	285.4570
153.25	301.0367
154.21	317.3189
154.21	317.3189
156.02	320.0746
158.56	308.2241
159.00	299.6148
162.66	304.1345
163.33	312.4889
165.86	336.1487
176.60	265.5896
177.52	250.4881
181.07	291.6181
184.41	256.2847
185.72	290.5516
193.51	284.7281
197.04	300.1221
205.31	296.0634
210.85	269.2658
215.65	296.9746
222.11	289.2650
227.38	281.4763
228.16	270.0177
228.18	270.0240
235.69	278.1324
235.96	270.3228
235.96	270.3228
238.63	236.9213
238.63	236.9213
240.99	237.6105
242.00	237.9041
244.70	241.2848
252.40	229.8108
252.80	230.9288
256.23	218.6977
256.23	218.6977
260.90	220.9039
264.66	244.2039
268.22	223.3707
269.46	243.4159
269.46	243.4159
271.23	225.7724
273.65	292.4778
276.40	237.9619
277.37	221.9185
277.60	221.9741
278.00	216.8834
279.20	218.2063
279.54	236.9967
280.46	253.8849
283.69	225.5350
284.31	229.8660
285.41	200.8477
285.90	181.0671
287.50	187.6665
293.27	0.0000
295.22	209.7041
295.96	198.8665
298.57	199.4058
299.98	185.2494
299.98	185.2494
300.09	185.2707
300.09	185.2707
300.13	185.2760
301.36	178.7025
302.85	172.1586
304.50	180.9841
304.50	180.9841
304.85	184.4648
308.46	182.1399
311.90	172.0166

316.51	197.6459
319.41	185.2126
320.08	183.1650
323.87	184.4959
323.87	184.4959
328.76	202.1970
333.37	197.5946
334.37	184.5959
334.37	184.5959
338.28	186.3755
338.28	186.3755
338.32	186.3833
338.32	186.3833
338.32	186.3833
340.48	185.6547
340.55	185.6649
344.28	196.9518
351.06	178.5376
351.93	178.6768
356.01	179.3335
364.49	165.3300
366.42	141.1750
383.85	163.5114
388.16	148.4297
388.63	133.7321
391.69	154.4138
400.66	163.0051
401.81	154.7668
402.40	149.2441
404.85	190.6623
410.95	141.8187
414.70	148.8348
423.72	155.5818
427.09	127.4538
427.87	137.9978
433.94	160.6315
453.88	131.0153
463.37	120.1953
468.07	138.9032
473.00	132.8313
476.78	131.2125
477.60	112.5332
487.02	121.2226
492.35	128.6488
497.08	126.0631
511.00	130.2763
514.00	119.7410
527.90	127.6398
529.87	0.0000
531.02	114.5949
537.26	136.6270
546.56	0.0000
563.25	99.1841
569.33	114.2238
569.50	110.0424
569.70	110.0577
583.19	138.4231
600.60	143.0457
602.73	133.6029
604.72	155.1564
609.32	134.1095
609.32	134.1095
610.33	114.5078
614.28	102.2131
618.01	93.4438
621.93	97.2532
621.93	97.2532
633.25	107.6552
635.95	104.5477
636.99	99.1602
645.85	122.6367
657.76	107.0564
661.66	126.9998
661.66	126.9998
664.57	0.0000
666.33	115.4526
666.50	115.4628
677.62	104.8708

685.70	119.2917
695.00	123.6104
696.49	126.5158
696.51	126.5186
697.00	128.4236
702.65	127.8542
706.68	119.6361
711.68	114.2696
720.70	81.3110
721.93	0.0000
722.78	92.7920
722.91	92.7980
723.31	97.7009
724.19	101.0008
727.33	105.6433
733.00	88.3508
735.93	115.7350
739.50	95.7418
747.24	112.4368
752.31	87.6638
753.82	90.6188
756.73	93.6412
763.94	92.9922
765.81	88.0881
766.42	98.0891
777.92	108.2291
778.90	110.2297
783.70	85.0547
785.37	103.3184
795.86	97.7496
801.95	77.7389
810.29	100.9313
810.76	103.9233
815.77	82.3330
818.51	96.3369
832.01	100.9096
834.85	105.0363
836.80	0.0000
846.77	89.4925
856.80	77.9041
860.56	88.4336
871.09	76.2009
873.19	83.3864
875.33	0.0000
879.36	82.5820
880.51	83.6416
883.24	70.4614
884.68	63.3509
889.28	78.8282
898.04	86.3054
911.20	81.6054
911.20	81.6054
911.20	81.6054
926.50	69.4878
937.49	75.1597
944.13	82.6822
946.00	81.6959
949.00	82.8414
962.29	93.9598
964.08	85.4363
966.15	85.5055
968.97	77.8985
968.97	77.8985
968.97	77.8985
983.53	85.0114
996.26	93.9619
1001.03	79.1549
1004.73	104.9704
1037.84	82.7080
1038.76	0.0000
1048.07	77.4188
1050.41	97.0865
1050.41	97.0865
1063.66	86.2917
1085.87	86.0203
1099.45	107.3169
1112.07	98.4822
1115.54	70.1880

1120.29	94.6908
1120.29	94.6908
1120.55	94.7012
1121.30	88.7452
1131.51	0.0000
1173.23	75.9243
1177.93	102.3633
1189.05	101.7511
1204.77	97.3461
1221.41	107.7417
1231.02	154.6616
1235.36	97.2925
1238.28	104.3372
1260.41	0.0000
1271.85	71.2798
1274.44	85.4002
1274.54	95.4506
1291.59	50.4953
1298.22	0.0000
1312.11	58.9305
1332.49	53.1498
1365.19	44.3647
1368.63	0.0000
1384.29	61.2018
1408.01	40.7234
1457.56	0.0000
1460.82	55.6110
1489.16	43.7570
1505.03	34.6965
1596.21	47.0231
1620.50	28.9618
1678.03	0.0000
1690.97	21.5992
1764.49	24.8524
1764.49	24.8524
1770.23	17.7745
1771.35	107.0098
1791.20	0.0000
1836.06	19.2754

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911005

Total Uranium Activity	8.6870E+00	ug/g
Total Uranium Counting Unc.	7.4096E+00	ug/g
Total Uranium Tpu	3.7804E-06	ug/g
Total Uranium Mda	3.4579E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 957714          SAMPLE ID   : G247911005
*  ANALYST       : MXR1           DETECTOR    : GAM18
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 6-MAR-2010 17:24:30.20  SAMPLE ALQT: 125.450 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.400E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.141E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.222E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.077E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 19:27:09.20

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911006.CNF;1
Sample date   : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:25:00.
Sample ID     : G247911006 Sample quantity : 1.16570E+02 GRAM
Detector name : GAM22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.39 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID       : 957714 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	63.40*	163	663	1.47	127.04	123	9	2.26E-02	30.4	
2	3	74.88	563	704	1.09	149.99	145	15	7.82E-02	9.0	5.88E-01
3	3	77.14*	938	554	0.97	154.50	145	15	1.30E-01	5.3	
4	7	87.21	369	661	1.35	174.62	171	21	5.12E-02	12.8	1.66E+00
5	7	90.06	268	539	1.14	180.33	171	21	3.72E-02	15.7	
6	7	92.79*	419	641	1.53	185.76	171	21	5.82E-02	13.2	
7	0	129.03	89	570	1.13	258.19	254	9	1.24E-02	49.5	
8	0	186.00*	304	606	1.20	372.01	367	12	4.22E-02	17.8	
9	0	209.33*	246	472	1.35	418.63	414	10	3.42E-02	18.0	
10	5	238.67*	2045	267	1.22	477.26	471	17	2.84E-01	2.6	2.57E+00
11	5	241.57*	472	411	1.88	483.06	471	17	6.56E-02	12.9	
12	0	270.41	139	452	2.35	540.69	535	12	1.93E-02	31.8	
13	2	295.29*	701	260	1.62	590.40	582	26	9.74E-02	5.8	2.13E+00
14	2	300.11	200	233	1.65	600.04	582	26	2.77E-02	16.2	
15	0	328.04	127	283	1.48	655.85	651	10	1.76E-02	26.4	
16	0	338.34*	402	239	1.37	676.43	672	9	5.58E-02	8.8	
17	0	351.92*	1111	299	1.34	703.57	697	14	1.54E-01	4.5	
18	0	462.85	125	195	1.33	925.26	919	12	1.73E-02	24.1	
19	0	510.73*	231	284	1.85	1020.97	1013	18	3.22E-02	20.3	
20	0	583.15*	802	149	1.71	1165.72	1157	17	1.11E-01	5.1	
21	0	609.30*	842	232	1.57	1217.98	1211	16	1.17E-01	5.4	
22	0	727.04*	162	126	1.47	1453.34	1446	13	2.25E-02	16.7	
23	1	785.61	71	57	2.36	1570.43	1566	31	9.90E-03	21.7	1.35E+00
24	1	794.95	123	108	2.37	1589.10	1566	31	1.71E-02	19.8	
25	0	860.67	116	100	1.01	1720.49	1715	12	1.61E-02	19.5	
26	0	911.27*	585	137	2.06	1821.66	1814	19	8.12E-02	6.6	
27	2	964.94	122	145	2.81	1928.98	1921	23	1.69E-02	26.1	2.21E+00
28	2	969.09*	324	92	2.43	1937.26	1921	23	4.49E-02	8.7	
29	0	1000.99*	68	92	2.81	2001.04	1993	18	9.43E-03	36.1	
30	0	1120.47*	191	96	2.00	2239.97	2232	16	2.65E-02	13.9	
31	0	1377.74	54	41	2.32	2754.49	2749	11	7.50E-03	26.7	
32	0	1460.74*	2502	70	2.71	2920.51	2907	25	3.47E-01	2.2	
33	0	1764.62*	178	23	3.19	3528.43	3515	23	2.48E-02	11.0	

Flag: "*" = Peak area was modified by background subtraction

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911006.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:25:00
 Sample ID : G247911006 Sample quantity : 116.57 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA22 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.39 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	+	1460.82	*	3.959E+01	4.027E+00	5.330E-01	4.883E-02	74.272
CD-109	+	88.03	*	4.398E+00	1.202E+00	1.253E+00	1.189E-01	3.510
SN-126	+	64.28		1.256E+00	7.839E-01	7.893E-01	1.146E-01	1.591
	+	86.94		1.784E+00	8.710E-01	5.133E-01	2.131E-01	3.476
	+	87.57	*	4.292E-01	1.173E-01	1.228E-01	1.159E-02	3.496
TL-208		277.37		3.719E-01	4.549E-01	7.208E-01	1.199E-01	0.516
	+	583.19	*	7.733E-01	1.152E-01	5.906E-02	6.399E-03	13.093
	+	860.56		1.023E+00	4.167E-01	4.543E-01	5.293E-02	2.252
BI-211		72.87		4.180E+00	3.604E+00	5.495E+00	4.398E-01	0.761
	+	351.06	*	5.126E+00	7.570E-01	3.321E-01	3.875E-02	15.435
BI-212	+	727.33	*	2.344E+00	8.490E-01	8.750E-01	1.230E-01	2.679
	+	785.37		6.635E+00	2.968E+00	4.978E+00	5.471E-01	1.333
		1620.50		4.374E+00	2.685E+00	5.019E+00	4.375E-01	0.872
PB-212	+	74.82		2.856E+00	6.283E-01	5.752E-01	7.305E-02	4.966
	+	77.11		2.733E+00	3.679E-01	3.313E-01	2.771E-02	8.248
	+	238.63	*	2.251E+00	3.213E-01	9.996E-02	1.324E-02	22.523
	+	300.09		3.292E+00	1.174E+00	1.306E+00	1.915E-01	2.521
BI-214	+	609.32	*	1.564E+00	2.490E-01	1.089E-01	1.271E-02	14.364
	+	1120.29		1.758E+00	5.258E-01	4.877E-01	5.412E-02	3.604
	+	1764.49		2.189E+00	5.151E-01	3.495E-01	2.911E-02	6.263
PB-214	+	74.82		5.063E+00	1.077E+00	1.020E+00	1.160E-01	4.966
	+	77.11		4.817E+00	7.606E-01	5.841E-01	6.860E-02	8.248
	+	242.00		3.145E+00	9.230E-01	5.953E-01	8.233E-02	5.283
	+	295.22		2.054E+00	3.885E-01	2.311E-01	3.468E-02	8.887
	+	351.93	*	1.860E+00	2.933E-01	1.208E-01	1.554E-02	15.406
RA-224	+	240.99	*	5.561E+00	1.600E+00	1.070E+00	1.340E-01	5.196
RA-226	+	609.32	*	1.564E+00	2.490E-01	1.089E-01	1.271E-02	14.364
	+	1120.29		1.758E+00	5.258E-01	4.877E-01	5.412E-02	3.604
	+	1764.49		2.189E+00	5.151E-01	3.495E-01	2.911E-02	6.263
AC-228	+	338.32		2.077E+00	9.557E-01	3.849E-01	1.636E-01	5.398
	+	911.20	*	2.618E+00	4.942E-01	2.250E-01	3.048E-02	11.634
	+	968.97		2.489E+00	7.599E-01	3.752E-01	9.433E-02	6.635
RA-228	+	338.32		2.077E+00	9.557E-01	3.849E-01	1.636E-01	5.398
	+	911.20	*	2.618E+00	4.942E-01	2.250E-01	3.048E-02	11.634

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		2.489E+00	7.599E-01	3.752E-01	9.433E-02	6.635
	+	74.82		2.856E+00	5.645E-01	5.752E-01	4.744E-02	4.966
	+	77.11		2.733E+00	3.679E-01	3.313E-01	2.771E-02	8.248
	+	238.63	*	2.251E+00	3.213E-01	9.996E-02	1.324E-02	22.523
	+	300.09		3.292E+00	2.306E+00	1.306E+00	8.103E-01	2.521
TH-232	+	338.32		2.077E+00	4.410E-01	3.849E-01	4.577E-02	5.398
	+	911.20	*	2.618E+00	4.942E-01	2.250E-01	3.048E-02	11.634
	+	968.97		2.489E+00	7.599E-01	3.752E-01	9.433E-02	6.635
TH-234	+	63.29	*	3.259E+00	2.062E+00	2.033E+00	3.618E-01	1.603
	+	92.59		4.058E+00	1.401E+00	1.034E+00	2.303E-01	3.924
U-235	+	89.96		3.234E+00	1.294E+00	1.283E+00	3.191E-01	2.520
	+	93.35		3.065E+00	1.078E+00	7.775E-01	1.808E-01	3.942
		143.76	*	-8.666E-02	2.242E-01	3.600E-01	6.153E-02	-0.241
		163.33		1.658E-01	4.791E-01	7.905E-01	1.462E-01	0.210
	+	185.72		2.250E-01	8.368E-02	6.875E-02	7.199E-03	3.273
		205.31		-1.117E-01	5.879E-01	8.373E-01	1.632E-01	-0.133
NP-237	+	86.48	*	1.281E+00	4.411E-01	4.153E-01	9.528E-02	3.084
		95.86		4.942E-02	1.005E+00	1.448E+00	3.487E-01	0.034
U-238	+	63.29	*	3.259E+00	2.062E+00	2.033E+00	3.618E-01	1.603
	+	92.59		4.058E+00	1.132E+00	1.034E+00	9.406E-02	3.924
ANH-511	+	511.00	*	1.734E-01	7.258E-02	4.687E-02	4.697E-03	3.699

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-9.034E-02	3.319E-01	5.280E-01	5.510E-02	-0.171
NA-22		1274.54	*	3.673E-03	4.574E-02	7.610E-02	6.558E-03	0.048
NA-24		1368.63	*	2.023E-01	4.574E-02	Half-Life too short		
SC-46		889.28	*	7.492E-03	4.005E-02	6.718E-02	7.520E-03	0.112
	+	1120.55		3.001E-01	8.747E-02	1.264E-01	1.117E-02	2.375
V-48		944.13		-1.155E+00	9.628E-01	1.449E+00	1.571E-01	-0.797
		983.53	*	-1.616E-03	7.026E-02	1.152E-01	1.208E-02	-0.014
		1312.11		-5.951E-03	8.395E-02	1.378E-01	1.214E-02	-0.043
CR-51		320.08	*	1.879E-01	3.958E-01	6.736E-01	8.718E-02	0.279
MN-54		834.85	*	2.570E-02	3.947E-02	6.793E-02	7.546E-03	0.378
CO-56		846.77	*	-1.633E-02	3.779E-02	6.116E-02	6.808E-03	-0.267
		1037.84		-2.409E-01	3.272E-01	5.065E-01	5.218E-02	-0.476
		1238.28		1.279E-01	1.003E-01	1.733E-01	1.502E-02	0.738
		1771.35		1.515E-01	2.597E-01	4.003E-01	3.326E-02	0.378
CO-57		122.06	*	1.899E-02	2.847E-02	4.617E-02	3.807E-03	0.411
		136.47		-1.676E-01	2.195E-01	3.614E-01	3.350E-02	-0.464
CO-58		810.76	*	-2.769E-02	3.946E-02	6.305E-02	6.981E-03	-0.439
FE-59		1099.45	*	2.632E-02	1.034E-01	1.706E-01	1.671E-02	0.154
		1291.59		2.287E-02	1.224E-01	2.050E-01	2.021E-02	0.112
CO-60		1173.23		-7.637E-03	4.728E-02	7.816E-02	6.286E-03	-0.098
		1332.49	*	-4.948E-02	3.994E-02	5.859E-02	5.225E-03	-0.845
ZN-65		1115.54	*	8.191E-02	1.045E-01	1.546E-01	1.379E-02	0.530
SE-75		121.12		6.180E-02	1.480E-01	2.382E-01	2.571E-02	0.260

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.00		-2.274E-02	4.197E-02	6.971E-02	6.051E-03	-0.326
		264.66	*	5.868E-03	5.354E-02	7.558E-02	1.017E-02	0.078
		279.54		7.962E-02	1.232E-01	2.015E-01	2.861E-02	0.395
		400.66		-4.316E-02	2.572E-01	4.186E-01	4.889E-02	-0.103
SR-85		514.00	*	1.606E-01	4.927E-02	7.895E-02	7.922E-03	2.034
Y-88		898.04		-3.129E-02	4.241E-02	6.675E-02	7.499E-03	-0.469
		1836.06	*	-1.566E-02	3.655E-02	5.687E-02	4.598E-03	-0.275
Y-91		1204.77	*	-2.800E+01	2.317E+01	3.565E+01	2.931E+00	-0.785
NB-94		702.65	*	-6.609E-03	3.464E-02	5.593E-02	5.994E-03	-0.118
		871.09		-2.314E-02	3.404E-02	5.394E-02	6.025E-03	-0.429
NB-95		765.81	*	5.106E-02	4.799E-02	8.146E-02	8.908E-03	0.627
NB-95M		235.69	*	3.435E-01	1.568E-01	2.368E-01	3.133E-02	1.451
ZR-95		724.19		1.673E-01	1.140E-01	1.747E-01	1.989E-02	0.958
		756.73	*	2.948E-02	7.862E-02	1.301E-01	1.513E-02	0.227
MO-99		140.51		-1.694E+01	3.171E+01	5.129E+01	1.221E+01	-0.330
		181.07		-6.291E+00	2.733E+01	3.931E+01	7.713E+00	-0.160
		366.42		-9.451E+01	1.301E+02	2.072E+02	2.197E+01	-0.456
		739.50	*	-1.537E+01	1.670E+01	2.520E+01	4.305E+00	-0.610
		777.92		-6.737E+01	5.444E+01	7.554E+01	8.288E+00	-0.892
TC-99M		140.51	*	-4.719E+11	5.444E+01	Half-Life too short		
RU-103		497.08	*	-3.506E-02	4.132E-02	6.268E-02	9.292E-03	-0.559
	+	610.33		1.646E+01	3.368E+00	2.943E+00	5.108E-01	5.594
RH-106		621.93	*	9.021E-02	3.068E-01	5.145E-01	7.466E-02	0.175
		1050.41		4.749E-01	2.742E+00	4.523E+00	4.415E-01	0.105
RU-106		621.93	*	9.021E-02	3.066E-01	5.145E-01	5.375E-02	0.175
		1050.41		4.749E-01	2.742E+00	4.523E+00	4.415E-01	0.105
AG-108M		433.94	*	1.020E-02	2.920E-02	4.843E-02	4.767E-03	0.211
		614.28		-5.191E-03	3.986E-02	5.605E-02	5.973E-03	-0.093
		722.91		2.436E-02	4.180E-02	6.114E-02	6.734E-03	0.398
AG-110M		657.76	*	-2.240E-02	3.668E-02	5.809E-02	6.244E-03	-0.386
		677.62		1.947E-01	3.274E-01	5.527E-01	5.979E-02	0.352
		706.68		-9.665E-02	2.173E-01	3.450E-01	3.771E-02	-0.280
		763.94		-2.269E-01	1.873E-01	2.805E-01	3.118E-02	-0.809
		884.68		-3.724E-03	5.196E-02	8.585E-02	9.790E-03	-0.043
		937.49		6.919E-02	1.137E-01	1.943E-01	2.166E-02	0.356
		1384.29		1.241E-02	1.838E-01	2.582E-01	2.365E-02	0.048
		1505.03		3.228E-02	2.893E-01	4.757E-01	4.230E-02	0.068
SN-113		391.69	*	-1.183E-02	4.811E-02	7.824E-02	7.472E-03	-0.151
CD-115		260.90		-3.442E+01	2.084E+02	3.328E+02	4.422E+01	-0.103
		492.35		9.559E+00	5.513E+01	8.968E+01	8.902E+00	0.107
		527.90	*	-6.694E+00	1.650E+01	2.707E+01	2.733E+00	-0.247
SN-117M		156.02		2.288E-01	2.542E+00	4.269E+00	4.003E-01	0.054
		158.56	*	5.372E-03	6.186E-02	1.038E-01	9.842E-03	0.052
TE-123M		159.00	*	4.894E-03	3.062E-02	5.147E-02	4.916E-03	0.095
SB-124		602.73		-1.457E-02	4.588E-02	6.373E-02	6.620E-03	-0.229
		645.85		-6.280E-02	4.845E-01	7.911E-01	8.638E-02	-0.079
		722.78		2.367E-01	4.247E-01	6.199E-01	6.789E-02	0.382
		1690.97	*	3.481E-02	6.703E-02	1.184E-01	1.056E-02	0.294
SB-125		427.87	*	2.397E-02	9.294E-02	1.536E-01	1.490E-02	0.156

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	463.37		8.403E-01	4.143E-01	5.374E-01	5.560E-02	1.564
		600.60		-9.429E-03	1.882E-01	2.966E-01	3.237E-02	-0.032
		635.95		-3.020E-02	2.631E-01	4.306E-01	4.765E-02	-0.070
TE-125M		109.28	*	5.869E+00	1.090E+01	1.773E+01	1.823E+00	0.331
I-126		388.63		1.610E-01	1.891E-01	3.219E-01	3.048E-02	0.500
		666.33	*	5.703E-02	2.512E-01	4.170E-01	4.406E-02	0.137
		753.82		1.081E+00	2.069E+00	3.451E+00	3.761E-01	0.313
SB-126		414.70		-2.945E-02	8.357E-02	1.344E-01	1.272E-02	-0.219
		666.50		1.657E-02	8.632E-02	1.430E-01	1.511E-02	0.116
		695.00		3.790E-02	8.722E-02	1.457E-01	1.557E-02	0.260
		697.00		2.545E-02	3.043E-01	4.993E-01	5.339E-02	0.051
		720.70	*	-1.327E-01	1.886E-01	2.462E-01	2.655E-02	-0.539
		856.80		6.856E-01	5.527E-01	8.671E-01	9.668E-02	0.791
SB-127		252.40		2.451E+00	5.805E+00	9.375E+00	4.006E+00	0.261
		473.00		-7.911E-01	1.981E+00	3.126E+00	4.341E-01	-0.253
		685.70	*	-1.718E-01	1.679E+00	2.731E+00	3.623E-01	-0.063
		783.70		6.651E+00	5.065E+00	7.676E+00	1.103E+00	0.866
I-131		80.19		-8.296E-01	5.540E+00	8.028E+00	6.996E-01	-0.103
		284.31		-1.742E+00	1.840E+00	2.791E+00	3.945E-01	-0.624
		364.49	*	1.055E-02	1.229E-01	2.043E-01	2.265E-02	0.052
		636.99		-1.214E-01	1.654E+00	2.713E+00	2.958E-01	-0.045
TE-132		49.72		4.212E+00	2.095E+01	3.541E+01	3.848E+00	0.119
		111.76		-3.391E+01	4.686E+01	7.259E+01	8.060E+00	-0.467
		116.30		-2.001E+01	3.925E+01	6.113E+01	6.761E+00	-0.327
		228.16	*	1.904E-01	1.004E+00	1.644E+00	2.976E-01	0.116
BA-133		81.00		-6.353E-02	1.063E-01	1.505E-01	2.344E-02	-0.422
		276.40		5.621E-01	4.514E-01	6.590E-01	1.175E-01	0.853
		302.85		9.403E-02	1.575E-01	2.372E-01	3.914E-02	0.396
		356.01	*	3.019E-02	4.579E-02	6.851E-02	1.009E-02	0.441
		383.85		-1.867E-01	3.102E-01	4.954E-01	6.545E-02	-0.377
I-133		529.87	*	2.964E-03	3.102E-01	Half-Life	too short	
		875.33		1.488E-01	3.102E-01	Half-Life	too short	
		1298.22		1.749E-01	3.102E-01	Half-Life	too short	
CS-134		563.25		2.942E-01	3.670E-01	6.337E-01	6.537E-02	0.464
		569.33		-1.238E-01	2.065E-01	3.277E-01	3.399E-02	-0.378
		604.72		1.448E-02	3.774E-02	5.526E-02	5.753E-03	0.262
	+	795.86	*	1.681E-01	6.905E-02	9.125E-02	1.010E-02	1.842
		801.95		-4.293E-02	4.785E-01	6.538E-01	7.240E-02	-0.066
		1365.19		-1.564E+00	1.287E+00	1.865E+00	1.738E-01	-0.838
CS-135		268.22	*	3.230E-01	2.023E-01	3.003E-01	4.344E-02	1.075
I-135		546.56		1.958E+11	2.023E-01	Half-Life	too short	
		836.80		4.818E+11	2.023E-01	Half-Life	too short	
		1038.76		-1.155E+11	2.023E-01	Half-Life	too short	
		1131.51		-3.880E+10	2.023E-01	Half-Life	too short	
		1260.41	*	-4.651E+10	2.023E-01	Half-Life	too short	
		1457.56		2.694E+13	2.023E-01	Half-Life	too short	
		1678.03		9.799E+10	2.023E-01	Half-Life	too short	
		1791.20		1.033E+11	2.023E-01	Half-Life	too short	
CS-136		153.25		1.103E+00	9.682E-01	1.667E+00	1.803E-01	0.662

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		176.60		-3.340E-01	5.634E-01	9.147E-01	9.992E-02	-0.365
		273.65		-1.232E+00	7.584E-01	9.361E-01	1.334E-01	-1.317
		340.55		9.579E-01	2.307E-01	3.536E-01	4.256E-02	2.709
		818.51		6.165E-03	7.672E-02	1.289E-01	1.428E-02	0.048
		1048.07	*	-1.225E-01	1.215E-01	1.838E-01	1.858E-02	-0.667
		1235.36		1.039E+00	6.661E-01	1.173E+00	1.361E-01	0.886
BA-137M		661.66	*	-8.476E-03	3.847E-02	6.241E-02	6.581E-03	-0.136
CS-137		661.66	*	-8.954E-03	4.064E-02	6.593E-02	6.961E-03	-0.136
CE-139		165.86	*	2.014E-03	3.207E-02	5.358E-02	5.255E-03	0.038
BA-140		162.66		-3.550E-01	9.532E-01	1.540E+00	1.568E-01	-0.231
		304.85		-2.372E-01	1.599E+00	2.315E+00	7.160E-01	-0.102
		423.72		-4.345E-01	2.168E+00	3.499E+00	1.160E+00	-0.124
		537.26	*	-1.953E-02	2.780E-01	4.633E-01	1.590E-01	-0.042
LA-140	+	328.76		8.650E-01	4.693E-01	6.338E-01	8.011E-02	1.365
		487.02		-1.572E-02	1.474E-01	2.362E-01	2.448E-02	-0.067
		815.77		3.407E-01	3.323E-01	5.858E-01	6.955E-02	0.582
		1596.21	*	-1.292E-01	1.083E-01	1.614E-01	1.415E-02	-0.800
CE-141		145.44	*	-9.624E-03	7.048E-02	1.140E-01	1.038E-02	-0.084
CE-143		57.36		5.328E-04	7.048E-02	Half-Life	too short	
		293.27	*	1.969E-03	7.048E-02	Half-Life	too short	
		664.57		2.246E-03	7.048E-02	Half-Life	too short	
		721.93		-9.214E-04	7.048E-02	Half-Life	too short	
CE-144		80.12		-4.028E-01	2.729E+00	3.956E+00	3.419E-01	-0.102
		133.52	*	1.026E-01	2.354E-01	3.579E-01	5.454E-02	0.287
PM-144		476.78		-1.649E-02	6.523E-02	1.039E-01	1.091E-02	-0.159
		618.01		-8.513E-03	3.360E-02	5.049E-02	5.369E-03	-0.169
		696.49	*	9.441E-03	3.629E-02	6.011E-02	6.429E-03	0.157
PR-144		696.51	*	6.925E-01	2.717E+00	4.499E+00	4.810E-01	0.154
		1489.16		4.951E+00	1.402E+01	2.358E+01	2.100E+00	0.210
PM-146		453.88	*	3.873E-02	4.265E-02	7.214E-02	8.294E-03	0.537
		633.25		3.447E-01	1.352E+00	2.251E+00	8.703E-01	0.153
		735.93		-3.352E-02	1.526E-01	2.443E-01	7.032E-02	-0.137
		747.24		-1.329E-02	1.009E-01	1.623E-01	2.600E-02	-0.082
ND-147	+	91.11		1.123E+00	3.696E-01	6.013E-01	5.944E-02	1.868
		319.41		-1.578E-01	3.798E+00	6.346E+00	8.033E-01	-0.025
		531.02	*	3.309E-01	6.064E-01	1.039E+00	1.648E-01	0.318
PM-149		285.90	*	-5.600E+01	1.449E+02	2.268E+02	4.292E+01	-0.247
EU-152		121.78		6.058E-02	8.166E-02	1.327E-01	1.270E-02	0.457
		244.70		5.384E-01	3.942E-01	5.902E-01	7.473E-02	0.912
		344.28	*	-9.077E-02	1.162E-01	1.589E-01	1.910E-02	-0.571
		778.90		-1.240E-01	3.005E-01	4.172E-01	4.578E-02	-0.297
	+	964.08		1.010E+00	5.392E-01	6.298E-01	6.721E-02	1.604
		1085.87		-2.102E-01	4.113E-01	6.451E-01	6.010E-02	-0.326
		1112.07		9.271E-02	3.625E-01	5.125E-01	4.592E-02	0.181
		1408.01		1.034E-01	2.006E-01	3.415E-01	3.054E-02	0.303
GD-153		69.67		5.864E-02	1.946E+00	2.872E+00	2.229E-01	0.020
		97.43	*	-1.014E-01	1.023E-01	1.384E-01	1.217E-02	-0.733
		103.18		-3.754E-02	1.243E-01	1.973E-01	1.686E-02	-0.190
EU-154		123.07		1.357E-02	5.733E-02	9.159E-02	1.015E-02	0.148

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	723.31		1.328E-01	1.932E-01	2.844E-01	3.272E-02	0.467
		873.19		-7.497E-02	2.895E-01	4.731E-01	6.556E-02	-0.158
		996.26		3.401E-01	3.825E-01	5.780E-01	1.063E-01	0.588
		1004.73		1.563E-01	2.507E-01	3.702E-01	4.778E-02	0.422
		1274.44	*	1.127E-02	1.296E-01	2.157E-01	2.452E-02	0.052
		86.55		5.206E-01	1.424E-01	1.959E-01	1.843E-02	2.657
		105.31	*	1.252E-01	1.180E-01	1.951E-01	1.674E-02	0.642
		86.79		1.395E+00	3.814E-01	5.255E-01	4.914E-02	2.656
		197.04		1.601E-01	6.456E-01	1.036E+00	1.127E-01	0.155
		215.65		8.160E-01	8.625E-01	1.403E+00	1.621E-01	0.582
TB-160	+	298.57		3.041E-01	1.289E-01	2.229E-01	2.987E-02	1.365
		879.36	*	4.378E-02	1.526E-01	2.575E-01	2.879E-02	0.170
		962.29		2.040E+00	6.731E-01	1.113E+00	1.190E-01	1.832
		966.15		7.133E-01	3.806E-01	5.872E-01	6.255E-02	1.215
		1177.93		-3.187E-01	3.978E-01	6.179E-01	4.986E-02	-0.516
		1271.85		1.978E-02	7.431E-01	1.232E+00	1.059E-01	0.016
		80.57		-5.047E-02	2.961E-01	4.286E-01	3.724E-02	-0.118
		184.41		1.105E-01	4.612E-02	7.249E-02	7.558E-03	1.525
		280.46		-6.666E-02	9.769E-02	1.511E-01	2.110E-02	-0.441
		410.95		2.328E-01	2.602E-01	4.418E-01	4.170E-02	0.527
HO-166M	+	711.68	*	-7.125E-02	6.321E-02	9.536E-02	1.025E-02	-0.747
		752.31		6.221E-02	2.935E-01	4.818E-01	5.248E-02	0.129
		810.29		-4.050E-02	5.882E-02	9.409E-02	1.040E-02	-0.430
		67.75		-3.813E-02	1.270E-01	1.845E-01	1.407E-02	-0.207
		100.11		-1.198E-01	1.918E-01	3.012E-01	2.610E-02	-0.398
		152.43		2.088E-01	3.685E-01	6.283E-01	5.797E-02	0.332
		222.11		6.798E-03	3.923E-01	6.402E-01	7.555E-02	0.011
		1121.30		8.293E-01	2.417E-01	3.514E-01	3.103E-02	2.360
		1189.05		-2.741E-02	3.261E-01	5.407E-01	4.398E-02	-0.051
		1221.41	*	-1.143E-01	2.027E-01	3.255E-01	2.707E-02	-0.351
TA-182	+	1231.02		-8.906E-01	5.473E-01	8.222E-01	6.881E-02	-1.083
		295.96		1.535E+00	2.730E-01	3.081E-01	4.169E-02	4.981
		308.46		9.169E-02	1.010E-01	1.705E-01	2.232E-02	0.538
		316.51	*	8.144E-03	3.648E-02	6.161E-02	7.874E-03	0.132
		468.07		6.089E-02	7.603E-02	1.125E-01	1.164E-02	0.541
		70.83		3.269E-01	1.519E+00	2.253E+00	3.528E-01	0.145
		72.87		1.058E+00	9.225E-01	1.391E+00	2.114E-01	0.761
		279.20	*	3.654E-02	4.416E-02	7.254E-02	1.026E-02	0.504
		72.81		1.955E-01	2.062E-01	3.126E-01	2.500E-02	0.626
		74.97		8.233E-01	1.624E-01	2.397E-01	1.959E-02	3.435
IR-192	+	569.70		-1.908E-02	3.171E-02	5.031E-02	5.168E-03	-0.379
		1063.66	*	-2.207E-02	5.776E-02	8.934E-02	8.577E-03	-0.247
		1770.23		1.057E+00	6.369E-01	1.084E+00	9.007E-02	0.976
		46.54	*	1.190E+00	3.110E+00	5.209E+00	4.797E-01	0.228
		404.85	*	-5.009E-01	7.966E-01	1.206E+00	5.854E-01	-0.415
		427.09		7.854E-01	1.599E+00	2.604E+00	1.210E+00	0.302
		832.01		-8.132E-01	1.122E+00	1.657E+00	8.668E-01	-0.491
		271.23		6.598E-01	4.312E-01	4.827E-01	7.131E-02	1.367
		401.81	*	1.990E-01	4.112E-01	6.885E-01	1.055E-01	0.289

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07	-1.409E-01	2.401E-01	3.410E-01	2.980E-02	-0.413
		83.79	4.392E-02	1.430E-01	2.078E-01	1.875E-02	0.211
		94.87	1.051E+00	5.201E-01	8.007E-01	7.159E-02	1.312
		144.24	-1.532E-01	7.425E-01	1.200E+00	1.186E-01	-0.128
		154.21	3.455E-01	4.141E-01	7.094E-01	7.142E-02	0.487
+ AC-227		269.46	5.127E-01	3.339E-01	3.701E-01	5.082E-02	1.385
		323.87 *	-1.380E-02	7.562E-01	1.098E+00	2.146E-01	-0.013
		338.28	8.244E+00	1.884E+00	2.483E+00	3.623E-01	3.320
		79.69	-7.165E-04	1.340E+00	1.955E+00	3.368E-01	0.000
		235.96	8.297E-01	2.268E-01	3.297E-01	4.480E-02	2.516
+ TH-227		256.23 *	-8.562E-02	2.775E-01	4.410E-01	6.870E-02	-0.194
		299.98	3.621E+00	1.316E+00	1.675E+00	2.729E-01	2.162
		304.50	-3.746E-02	1.800E+00	2.630E+00	5.080E-01	-0.014
		334.37	-1.929E+00	2.342E+00	2.743E+00	4.862E-01	-0.703
		79.80	5.662E-02	1.768E+00	2.582E+00	5.623E-01	0.022
+ TH-229		235.96	8.297E-01	2.251E-01	3.297E-01	4.335E-02	2.516
		256.23 *	-8.562E-02	2.776E-01	4.410E-01	7.414E-02	-0.194
		299.98	3.621E+00	1.316E+00	1.675E+00	2.729E-01	2.162
		304.50	-3.746E-02	1.800E+00	2.630E+00	5.080E-01	-0.014
		334.37	-1.929E+00	2.342E+00	2.743E+00	4.862E-01	-0.703
+ TH-229		85.43	4.300E-01	2.459E-01	3.719E-01	3.421E-02	1.156
		88.47	6.616E-01	1.808E-01	2.455E-01	2.319E-02	2.695
		193.51 *	-3.147E-01	5.618E-01	9.063E-01	9.740E-02	-0.347
		210.85	3.143E+00	1.198E+00	1.807E+00	2.057E-01	1.739
		283.69 *	-7.607E-01	1.591E+00	2.479E+00	4.509E-01	-0.307
+ PA-231		301.36	2.326E+00	8.412E-01	1.098E+00	1.737E-01	2.120
		81.07	-1.409E-01	2.401E-01	3.410E-01	2.980E-02	-0.413
		83.79	4.392E-02	1.430E-01	2.078E-01	1.875E-02	0.211
		94.87	1.051E+00	5.201E-01	8.007E-01	7.159E-02	1.312
		144.24	-1.532E-01	7.425E-01	1.200E+00	1.186E-01	-0.128
+ TH-231		154.21	3.455E-01	4.141E-01	7.094E-01	7.142E-02	0.487
		269.46	5.127E-01	3.339E-01	3.701E-01	5.082E-02	1.385
		323.87 *	-1.380E-02	7.562E-01	1.098E+00	2.146E-01	-0.013
		338.28	8.244E+00	1.884E+00	2.483E+00	3.623E-01	3.320
		300.13	1.639E+00	6.087E-01	7.602E-01	1.368E-01	2.155
+ PA-233		311.90 *	-3.964E-03	6.630E-02	1.109E-01	1.453E-02	-0.036
		340.48	4.050E+00	1.311E+00	1.446E+00	3.671E-01	2.800
		94.67	5.415E-01	2.019E-01	3.055E-01	3.860E-02	1.773
		98.44	8.381E-02	1.101E-01	1.562E-01	8.719E-02	0.536
		111.00	4.878E-02	2.004E-01	3.226E-01	3.837E-02	0.151
+ PA-234		131.20	5.136E-02	1.241E-01	1.889E-01	1.600E-02	0.272
		569.50	-1.586E-01	2.827E-01	4.497E-01	4.619E-02	-0.353
		733.00	7.128E-01	4.653E-01	6.834E-01	1.582E-01	1.043
		880.51	8.285E-05	3.053E-01	5.069E-01	5.669E-02	0.000
		883.24	-2.337E-02	3.050E-01	5.033E-01	3.402E-01	-0.046
+ PA-234M		926.50	-3.219E-02	1.830E-01	2.988E-01	7.823E-02	-0.108
		946.00 *	-8.486E-02	3.112E-01	5.035E-01	1.001E-01	-0.169
		949.00	6.687E-01	4.689E-01	8.298E-01	8.966E-02	0.806
		766.42	1.952E+01	1.601E+01	2.187E+01	1.119E+01	0.892

Sample ID : G247911006

Acquisition date : 6-MAR-2010 17:25:00

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	1001.03	*	1.010E+01	7.374E+00	8.383E+00	9.606E-01	1.205
NP-239		99.53		-2.685E-02	1.756E-01	2.773E-01	2.410E-02	-0.097
		103.37		5.066E-03	1.120E-01	1.799E-01	1.536E-02	0.028
		106.12		3.365E-03	9.646E-02	1.547E-01	1.308E-02	0.022
		117.23	*	-3.596E-01	4.298E-01	6.598E-01	5.452E-02	-0.545
		228.18		4.184E-02	2.337E-01	3.828E-01	4.605E-02	0.109
		277.60		1.968E-01	1.996E-01	3.289E-01	4.585E-02	0.598
AM-241		59.54	*	-8.898E-03	1.643E-01	2.413E-01	1.886E-02	-0.037
CM-247		278.00		9.062E-01	8.499E-01	1.403E+00	1.957E-01	0.646
		287.50		9.959E-01	1.481E+00	2.248E+00	3.092E-01	0.443
		402.40	*	3.210E-02	3.755E-02	6.392E-02	5.995E-03	0.502
CF-249		252.80		3.367E-01	1.040E+00	1.698E+00	2.203E-01	0.198
		333.37		1.582E-02	3.083E-01	3.015E-01	3.648E-02	0.052
		388.16	*	2.527E-02	4.264E-02	7.191E-02	6.826E-03	0.351
CF-251		177.52	*	-1.630E-02	1.360E-01	2.248E-01	2.290E-02	-0.073
		227.38		1.601E-01	3.861E-01	6.372E-01	7.646E-02	0.251
		285.41		-2.403E+00	2.474E+00	3.747E+00	5.178E-01	-0.641

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]G247911006      *
* Acquisition date   : 6-MAR-2010 17:25:00 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 02:00:02.39           Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247911006                      Analyst initials: MXR1      *
* Batch Number       : 957714                          Sample Quantity : 1.1657E+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	3.959E+01	3.946E+00	5.311E-01	0.000E+00
CD-109	4.398E+00	1.178E+00	1.285E+00	0.000E+00
SN-126	4.292E-01	1.150E-01	1.259E-01	0.000E+00
TL-208	7.733E-01	1.129E-01	5.942E-02	0.000E+00
BI-211	5.126E+00	7.418E-01	3.358E-01	0.000E+00
BI-212	2.344E+00	8.320E-01	8.783E-01	0.000E+00
PB-212	2.251E+00	3.148E-01	1.015E-01	0.000E+00
BI-214	1.564E+00	2.440E-01	1.095E-01	0.000E+00
PB-214	1.860E+00	2.874E-01	1.221E-01	0.000E+00
RA-224	5.561E+00	1.568E+00	1.086E+00	0.000E+00
RA-226	1.564E+00	2.440E-01	1.095E-01	0.000E+00
AC-228	2.618E+00	4.843E-01	2.253E-01	0.000E+00
RA-228	2.618E+00	4.843E-01	2.253E-01	0.000E+00
TH-228	2.251E+00	3.148E-01	1.015E-01	0.000E+00
TH-232	2.618E+00	4.843E-01	2.253E-01	0.000E+00
TH-234	3.259E+00	2.020E+00	2.092E+00	0.000E+00
U-235	-8.666E-02	2.197E-01	3.674E-01	0.000E+00
NP-237	1.281E+00	4.323E-01	4.259E-01	0.000E+00
U-238	3.259E+00	2.020E+00	2.092E+00	0.000E+00
ANH-511	1.734E-01	7.113E-02	4.722E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-9.034E-02	3.253E-01	5.323E-01	0.000E+00 NOT IDENT.
NA-22	3.673E-03	4.482E-02	7.594E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.630E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	7.492E-03	3.924E-02	6.729E-02	0.000E+00 FAIL ABUN
V-48	-1.616E-03	6.886E-02	1.153E-01	0.000E+00 NOT IDENT.
CR-51	1.879E-01	3.879E-01	6.818E-01	0.000E+00 NOT IDENT.
MN-54	2.570E-02	3.868E-02	6.809E-02	0.000E+00 NOT IDENT.

CO-56	-1.633E-02	3.703E-02	6.129E-02	0.000E+00	NOT IDENT.
CO-57	1.899E-02	2.790E-02	4.719E-02	0.000E+00	NOT IDENT.
CO-58	-2.769E-02	3.867E-02	6.321E-02	0.000E+00	NOT IDENT.
FE-59	2.632E-02	1.014E-01	1.705E-01	0.000E+00	NOT IDENT.
CO-60	-4.948E-02	3.914E-02	5.844E-02	0.000E+00	NOT IDENT.
ZN-65	8.191E-02	1.024E-01	1.545E-01	0.000E+00	NOT IDENT.
SE-75	5.868E-03	5.246E-02	7.665E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.829E-02	7.953E-02	0.000E+00	NOT IDENT.
Y-88	-1.566E-02	3.581E-02	5.654E-02	0.000E+00	NOT IDENT.
Y-91	-2.800E+01	2.270E+01	3.560E+01	0.000E+00	NOT IDENT.
NB-94	-6.609E-03	3.395E-02	5.616E-02	0.000E+00	NOT IDENT.
NB-95	5.106E-02	4.703E-02	8.173E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.537E-01	2.404E-01	0.000E+00	NOT IDENT.
ZR-95	2.948E-02	7.705E-02	1.305E-01	0.000E+00	NOT IDENT.
MO-99	-1.537E+01	1.637E+01	2.529E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	8.708E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.506E-02	4.049E-02	6.316E-02	0.000E+00	FAIL ABUN
RH-106	9.021E-02	3.006E-01	5.173E-01	0.000E+00	NOT IDENT.
RU-106	9.021E-02	3.005E-01	5.173E-01	0.000E+00	NOT IDENT.
AG-108M	1.020E-02	2.861E-02	4.887E-02	0.000E+00	NOT IDENT.
AG-110M	-2.240E-02	3.595E-02	5.837E-02	0.000E+00	NOT IDENT.
SN-113	-1.183E-02	4.715E-02	7.904E-02	0.000E+00	NOT IDENT.
CD-115	-6.694E+00	1.617E+01	2.726E+01	0.000E+00	NOT IDENT.
SN-117M	5.372E-03	6.063E-02	1.058E-01	0.000E+00	NOT IDENT.
TE-123M	4.894E-03	3.001E-02	5.247E-02	0.000E+00	NOT IDENT.
SB-124	3.481E-02	6.569E-02	1.178E-01	0.000E+00	NOT IDENT.
SB-125	2.397E-02	9.108E-02	1.550E-01	0.000E+00	FAIL ABUN
TE-125M	5.869E+00	1.069E+01	1.814E+01	0.000E+00	NOT IDENT.
I-126	5.703E-02	2.462E-01	4.189E-01	0.000E+00	NOT IDENT.
SB-126	-1.327E-01	1.848E-01	2.471E-01	0.000E+00	NOT IDENT.
SB-127	-1.718E-01	1.645E+00	2.743E+00	0.000E+00	NOT IDENT.
I-131	1.055E-02	1.205E-01	2.065E-01	0.000E+00	NOT IDENT.
TE-132	1.904E-01	9.838E-01	1.670E+00	0.000E+00	NOT IDENT.
BA-133	3.019E-02	4.488E-02	6.927E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.428E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.767E-02	9.151E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.982E-01	3.045E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.138E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.225E-01	1.191E-01	1.838E-01	0.000E+00	NOT IDENT.
BA-137M	-8.476E-03	3.770E-02	6.270E-02	0.000E+00	NOT IDENT.
CS-137	-8.954E-03	3.982E-02	6.624E-02	0.000E+00	NOT IDENT.
CE-139	2.014E-03	3.142E-02	5.460E-02	0.000E+00	NOT IDENT.
BA-140	-1.953E-02	2.724E-01	4.664E-01	0.000E+00	NOT IDENT.
LA-140	-1.292E-01	1.062E-01	1.607E-01	0.000E+00	FAIL ABUN
CE-141	-9.624E-03	6.907E-02	1.163E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.593E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.026E-01	2.307E-01	3.654E-01	0.000E+00	NOT IDENT.
PM-144	9.441E-03	3.557E-02	6.036E-02	0.000E+00	NOT IDENT.
PR-144	6.925E-01	2.663E+00	4.518E+00	0.000E+00	NOT IDENT.
PM-146	3.873E-02	4.180E-02	7.276E-02	0.000E+00	NOT IDENT.
ND-147	3.309E-01	5.943E-01	1.047E+00	0.000E+00	FAIL ABUN
PM-149	-5.600E+01	1.420E+02	2.299E+02	0.000E+00	NOT IDENT.
EU-152	-9.077E-02	1.139E-01	1.608E-01	0.000E+00	FAIL ABUN
GD-153	-1.014E-01	1.002E-01	1.418E-01	0.000E+00	NOT IDENT.
EU-154	1.127E-02	1.270E-01	2.152E-01	0.000E+00	NOT IDENT.
EU-155	1.252E-01	1.156E-01	1.997E-01	0.000E+00	FAIL ABUN
TB-160	4.378E-02	1.496E-01	2.579E-01	0.000E+00	FAIL ABUN
HO-166M	-7.125E-02	6.194E-02	9.573E-02	0.000E+00	NOT IDENT.
TA-182	-1.143E-01	1.987E-01	3.250E-01	0.000E+00	FAIL ABUN
IR-192	8.144E-03	3.575E-02	6.237E-02	0.000E+00	FAIL ABUN
HG-203	3.654E-02	4.328E-02	7.353E-02	0.000E+00	NOT IDENT.
BI-207	-2.207E-02	5.660E-02	8.933E-02	0.000E+00	FAIL ABUN
PB-210	1.190E+00	3.048E+00	5.375E+00	0.000E+00	NOT IDENT.
PB-211	-5.009E-01	7.806E-01	1.218E+00	0.000E+00	NOT IDENT.
RN-219	1.990E-01	4.030E-01	6.953E-01	0.000E+00	FAIL ABUN
RA-223	-1.380E-02	7.411E-01	1.111E+00	0.000E+00	FAIL ABUN
AC-227	-8.562E-02	2.719E-01	4.474E-01	0.000E+00	FAIL ABUN
TH-227	-8.562E-02	2.720E-01	4.474E-01	0.000E+00	FAIL ABUN
TH-229	-3.147E-01	5.505E-01	9.221E-01	0.000E+00	FAIL ABUN
PA-231	-7.607E-01	1.560E+00	2.512E+00	0.000E+00	FAIL ABUN
TH-231	-1.380E-02	7.411E-01	1.111E+00	0.000E+00	FAIL ABUN
PA-233	-3.964E-03	6.498E-02	1.123E-01	0.000E+00	FAIL ABUN
PA-234	-8.486E-02	3.050E-01	5.040E-01	0.000E+00	NOT IDENT.
PA-234M	0.000E+00	7.227E+00	8.386E+00	0.000E+00	FAIL ABUN
NP-239	-3.596E-01	4.212E-01	6.746E-01	0.000E+00	NOT IDENT.
AM-241	-8.898E-03	1.610E-01	2.484E-01	0.000E+00	NOT IDENT.
CM-247	3.210E-02	3.680E-02	6.455E-02	0.000E+00	NOT IDENT.
CF-249	2.527E-02	4.178E-02	7.264E-02	0.000E+00	NOT IDENT.

CF-251	-1.630E-02	1.333E-01	2.289E-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]G247911006.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:25:00.
Sample ID          : G247911006 Sample quantity   : 1.16570E+02 GRAM
Detector name      : GAM22 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.39 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity        : 5.00000
Batch ID           : 957714 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	1460.82	2502	10.66*	1.909E+00	3.959E+01	3.959E+01	10.17
CD-109	88.03	369	3.70*	7.479E+00	4.292E+00	4.398E+00	27.33
SN-126	64.28	163	9.60	4.353E+00	1.256E+00	1.256E+00	62.42
	86.94	369	8.90	7.479E+00	1.784E+00	1.784E+00	48.82
	87.57	369	37.00*	7.479E+00	4.292E-01	4.292E-01	27.33
TL-208	277.37	-----	6.60	6.182E+00	-----	Line Not Found	-----
	583.19	802	85.00*	3.931E+00	7.733E-01	7.733E-01	14.90
	860.56	116	12.50	2.923E+00	1.023E+00	1.023E+00	40.72
BI-211	72.87	-----	1.23	5.897E+00	-----	Line Not Found	-----
	351.06	1111	12.92*	5.401E+00	5.126E+00	5.126E+00	14.77
BI-212	727.33	162	6.67*	3.343E+00	2.344E+00	2.344E+00	36.22
	785.37	71	1.10	3.146E+00	6.635E+00	6.635E+00	44.73
	1620.50	-----	1.47	1.789E+00	-----	Line Not Found	-----
PB-212	74.82	563	10.28	6.175E+00	2.856E+00	2.856E+00	22.00
	77.11	938	17.10	6.465E+00	2.733E+00	2.733E+00	13.46
	238.63	2045	43.60*	6.709E+00	2.251E+00	2.251E+00	14.27
	300.09	200	3.30	5.915E+00	3.292E+00	3.292E+00	35.65
BI-214	609.32	842	45.49*	3.811E+00	1.564E+00	1.564E+00	15.92
	1120.29	191	14.92	2.345E+00	1.758E+00	1.758E+00	29.91
	1764.49	178	15.30	1.716E+00	2.189E+00	2.189E+00	23.53
PB-214	74.82	563	5.80	6.175E+00	5.063E+00	5.063E+00	21.26
	77.11	938	9.70	6.465E+00	4.817E+00	4.817E+00	15.79
	242.00	472	7.25	6.666E+00	3.145E+00	3.145E+00	29.35
	295.22	701	18.42	5.970E+00	2.054E+00	2.054E+00	18.91
	351.93	1111	35.60*	5.401E+00	1.860E+00	1.860E+00	15.76
RA-224	240.99	472	4.10*	6.666E+00	5.561E+00	5.561E+00	28.77
RA-226	609.32	842	45.49*	3.811E+00	1.564E+00	1.564E+00	15.92
	1120.29	191	14.92	2.345E+00	1.758E+00	1.758E+00	29.91
	1764.49	178	15.30	1.716E+00	2.189E+00	2.189E+00	23.53
AC-228	338.32	402	11.27	5.526E+00	2.077E+00	2.077E+00	46.01
	911.20	585	25.80*	2.788E+00	2.618E+00	2.618E+00	18.88
	968.97	324	15.80	2.649E+00	2.489E+00	2.489E+00	30.53

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	402	11.27	5.526E+00	2.077E+00	2.077E+00	46.01
	911.20	585	25.80*	2.788E+00	2.618E+00	2.618E+00	18.88
	968.97	324	15.80	2.649E+00	2.489E+00	2.489E+00	30.53
TH-228	74.82	563	10.28	6.175E+00	2.856E+00	2.856E+00	19.76
	77.11	938	17.10	6.465E+00	2.733E+00	2.733E+00	13.46
	238.63	2045	43.60*	6.709E+00	2.251E+00	2.251E+00	14.27
	300.09	200	3.30	5.915E+00	3.292E+00	3.292E+00	70.05
TH-232	338.32	402	11.27	5.526E+00	2.077E+00	2.077E+00	21.23
	911.20	585	25.80*	2.788E+00	2.618E+00	2.618E+00	18.88
	968.97	324	15.80	2.649E+00	2.489E+00	2.489E+00	30.53
TH-234	63.29	163	3.70*	4.353E+00	3.259E+00	3.259E+00	63.27
	92.59	419	4.23	7.865E+00	4.058E+00	4.058E+00	34.52
U-235	89.96	268	3.47	7.691E+00	3.234E+00	3.234E+00	40.02
	93.35	419	5.60	7.865E+00	3.065E+00	3.065E+00	35.18
	143.76	-----	10.96*	8.364E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.031E+00	-----	Line Not Found	-----
	185.72	304	57.20	7.605E+00	2.250E-01	2.250E-01	37.19
	205.31	-----	5.01	7.253E+00	-----	Line Not Found	-----
NP-237	86.48	369	12.40*	7.479E+00	1.281E+00	1.281E+00	34.45
	95.86	-----	2.68	8.032E+00	-----	Line Not Found	-----
U-238	63.29	163	3.70*	4.353E+00	3.259E+00	3.259E+00	63.27
	92.59	419	4.23	7.865E+00	4.058E+00	4.058E+00	27.90
ANH-511	511.00	231	100.00*	4.299E+00	1.734E-01	1.734E-01	41.86

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	1.25E+09Y	1.00	3.959E+01	3.959E+01	0.403E+01	10.17	
CD-109	461.40D	1.02	4.292E+00	4.398E+00	1.202E+00	27.33	
SN-126	2.30E+05Y	1.00	4.292E-01	4.292E-01	1.173E-01	27.33	
TL-208	1.41E+10Y	1.00	7.733E-01	7.733E-01	1.152E-01	14.90	
BI-211	7.04E+08Y	1.00	5.126E+00	5.126E+00	0.757E+00	14.77	
BI-212	1.41E+10Y	1.00	2.344E+00	2.344E+00	0.849E+00	36.22	
PB-212	1.41E+10Y	1.00	2.251E+00	2.251E+00	0.321E+00	14.27	
BI-214	1600.00Y	1.00	1.564E+00	1.564E+00	0.249E+00	15.92	
PB-214	1600.00Y	1.00	1.860E+00	1.860E+00	0.293E+00	15.76	
RA-224	1.41E+10Y	1.00	5.561E+00	5.561E+00	1.600E+00	28.77	
RA-226	1600.00Y	1.00	1.564E+00	1.564E+00	0.249E+00	15.92	
AC-228	1.41E+10Y	1.00	2.618E+00	2.618E+00	0.494E+00	18.88	
RA-228	1.41E+10Y	1.00	2.618E+00	2.618E+00	0.494E+00	18.88	
TH-228	1.41E+10Y	1.00	2.251E+00	2.251E+00	0.321E+00	14.27	
TH-232	1.41E+10Y	1.00	2.618E+00	2.618E+00	0.494E+00	18.88	
TH-234	4.47E+09Y	1.00	3.259E+00	3.259E+00	2.062E+00	63.27	
U-235	7.04E+08Y	1.00	2.250E-01	2.250E-01	0.837E-01	37.19	K
NP-237	2.14E+06Y	1.00	1.281E+00	1.281E+00	0.441E+00	34.45	
U-238	4.47E+09Y	1.00	3.259E+00	3.259E+00	2.062E+00	63.27	
ANH-511	1.00E+09Y	1.00	1.734E-01	1.734E-01	0.726E-01	41.86	

Total Activity : 8.365E+01 8.376E+01

Grand Total Activity : 8.365E+01 8.376E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247911006

Page : 4
Acquisition date : 6-MAR-2010 17:25:00

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.03	89	570	1.13	258.19	254	9	1.24E-02	99.1	8.53E+00	
0	209.33	246	472	1.35	418.63	414	10	3.42E-02	36.0	7.18E+00	
0	270.41	139	452	2.35	540.69	535	12	1.93E-02	63.7	6.27E+00	T
0	328.04	127	283	1.48	655.85	651	10	1.76E-02	52.8	5.62E+00	T
0	462.85	125	195	1.33	925.26	919	12	1.73E-02	48.2	4.58E+00	T
1	794.95	123	108	2.37	1589.10	1566	31	1.71E-02	39.6	3.12E+00	T
2	964.94	122	145	2.81	1928.98	1921	23	1.69E-02	52.3	2.66E+00	T
0	1000.99	68	92	2.81	2001.04	1993	18	9.43E-03	72.1	2.58E+00	T
0	1377.74	54	41	2.32	2754.49	2749	11	7.50E-03	53.5	1.99E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911006.CNF;1  *
* Acquisition date   : 6-MAR-2010 17:25:00.  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 02:00:02.39           Half life ratio  : 8.00000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G247911006           Analyst initials: MXR1          *
* Batch Number       : 957714              Sample Quantity : 1.16570E+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	3.959E+01	4.027E+00	5.330E-01	4.883E-02	74.272
CD-109	4.398E+00	1.202E+00	1.253E+00	1.189E-01	3.510
SN-126	4.292E-01	1.173E-01	1.228E-01	1.159E-02	3.496
TL-208	7.733E-01	1.152E-01	5.906E-02	6.399E-03	13.093
BI-211	5.126E+00	7.570E-01	3.321E-01	3.875E-02	15.435
BI-212	2.344E+00	8.490E-01	8.750E-01	1.230E-01	2.679
PB-212	2.251E+00	3.213E-01	9.996E-02	1.324E-02	22.523
BI-214	1.564E+00	2.490E-01	1.089E-01	1.271E-02	14.364
PB-214	1.860E+00	2.933E-01	1.208E-01	1.554E-02	15.406
RA-224	5.561E+00	1.600E+00	1.070E+00	1.340E-01	5.196
RA-226	1.564E+00	2.490E-01	1.089E-01	1.271E-02	14.364
AC-228	2.618E+00	4.942E-01	2.250E-01	3.048E-02	11.634
RA-228	2.618E+00	4.942E-01	2.250E-01	3.048E-02	11.634
TH-228	2.251E+00	3.213E-01	9.996E-02	1.324E-02	22.523
TH-232	2.618E+00	4.942E-01	2.250E-01	3.048E-02	11.634
TH-234	3.259E+00	2.062E+00	2.033E+00	3.618E-01	1.603
U-235	2.250E-01	8.368E-02	3.600E-01	6.153E-02	0.625
NP-237	1.281E+00	4.411E-01	4.153E-01	9.528E-02	3.084

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	3.259E+00	2.062E+00	2.033E+00	3.618E-01	1.603
ANH-511	1.734E-01	7.258E-02	4.687E-02	4.697E-03	3.699

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-9.034E-02		3.319E-01	5.280E-01	5.510E-02	-0.171
NA-22	3.673E-03		4.574E-02	7.610E-02	6.558E-03	0.048
NA-24	2.023E-01		1.342E+00	Half-Life too short		
SC-46	7.492E-03		4.005E-02	6.718E-02	7.520E-03	0.112
V-48	-1.616E-03		7.026E-02	1.152E-01	1.208E-02	-0.014
CR-51	1.879E-01		3.958E-01	6.736E-01	8.718E-02	0.279
MN-54	2.570E-02		3.947E-02	6.793E-02	7.546E-03	0.378
CO-56	-1.633E-02		3.779E-02	6.116E-02	6.808E-03	-0.267
CO-57	1.899E-02		2.847E-02	4.617E-02	3.807E-03	0.411
CO-58	-2.769E-02		3.946E-02	6.305E-02	6.981E-03	-0.439
FE-59	2.632E-02		1.034E-01	1.706E-01	1.671E-02	0.154
CO-60	-4.948E-02		3.994E-02	5.859E-02	5.225E-03	-0.845
ZN-65	8.191E-02		1.045E-01	1.546E-01	1.379E-02	0.530
SE-75	5.868E-03		5.354E-02	7.558E-02	1.017E-02	0.078
SR-85	1.606E-01		4.927E-02	7.895E-02	7.922E-03	2.034
Y-88	-1.566E-02		3.655E-02	5.687E-02	4.598E-03	-0.275
Y-91	-2.800E+01		2.317E+01	3.565E+01	2.931E+00	-0.785
NB-94	-6.609E-03		3.464E-02	5.593E-02	5.994E-03	-0.118
NB-95	5.106E-02		4.799E-02	8.146E-02	8.908E-03	0.627
NB-95M	3.435E-01		1.568E-01	2.368E-01	3.133E-02	1.451
ZR-95	2.948E-02		7.862E-02	1.301E-01	1.513E-02	0.227
MO-99	-1.537E+01		1.670E+01	2.520E+01	4.305E+00	-0.610
TC-99M	-4.719E+11		4.443E+11	Half-Life too short		
RU-103	-3.506E-02		4.132E-02	6.268E-02	9.292E-03	-0.559
RH-106	9.021E-02		3.068E-01	5.145E-01	7.466E-02	0.175
RU-106	9.021E-02		3.066E-01	5.145E-01	5.375E-02	0.175
AG-108M	1.020E-02		2.920E-02	4.843E-02	4.767E-03	0.211
AG-110M	-2.240E-02		3.668E-02	5.809E-02	6.244E-03	-0.386
SN-113	-1.183E-02		4.811E-02	7.824E-02	7.472E-03	-0.151
CD-115	-6.694E+00		1.650E+01	2.707E+01	2.733E+00	-0.247
SN-117M	5.372E-03		6.186E-02	1.038E-01	9.842E-03	0.052
TE-123M	4.894E-03		3.062E-02	5.147E-02	4.916E-03	0.095
SB-124	3.481E-02		6.703E-02	1.184E-01	1.056E-02	0.294
SB-125	2.397E-02		9.294E-02	1.536E-01	1.490E-02	0.156
TE-125M	5.869E+00		1.090E+01	1.773E+01	1.823E+00	0.331
I-126	5.703E-02		2.512E-01	4.170E-01	4.406E-02	0.137
SB-126	-1.327E-01		1.886E-01	2.462E-01	2.655E-02	-0.539
SB-127	-1.718E-01		1.679E+00	2.731E+00	3.623E-01	-0.063
I-131	1.055E-02		1.229E-01	2.043E-01	2.265E-02	0.052
TE-132	1.904E-01		1.004E+00	1.644E+00	2.976E-01	0.116
BA-133	3.019E-02		4.579E-02	6.851E-02	1.009E-02	0.441

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	2.964E-03		7.286E-03	Half-Life too short		
CS-134	1.681E-01	+	6.905E-02	9.125E-02	1.010E-02	1.842
CS-135	3.230E-01		2.023E-01	3.003E-01	4.344E-02	1.075
I-135	-4.651E+10		5.805E+10	Half-Life too short		
CS-136	-1.225E-01		1.215E-01	1.838E-01	1.858E-02	-0.667
BA-137M	-8.476E-03		3.847E-02	6.241E-02	6.581E-03	-0.136
CS-137	-8.954E-03		4.064E-02	6.593E-02	6.961E-03	-0.136
CE-139	2.014E-03		3.207E-02	5.358E-02	5.255E-03	0.038
BA-140	-1.953E-02		2.780E-01	4.633E-01	1.590E-01	-0.042
LA-140	-1.292E-01		1.083E-01	1.614E-01	1.415E-02	-0.800
CE-141	-9.624E-03		7.048E-02	1.140E-01	1.038E-02	-0.084
CE-143	1.969E-03		2.853E-04	Half-Life too short		
CE-144	1.026E-01		2.354E-01	3.579E-01	5.454E-02	0.287
PM-144	9.441E-03		3.629E-02	6.011E-02	6.429E-03	0.157
PR-144	6.925E-01		2.717E+00	4.499E+00	4.810E-01	0.154
PM-146	3.873E-02		4.265E-02	7.214E-02	8.294E-03	0.537
ND-147	3.309E-01		6.064E-01	1.039E+00	1.648E-01	0.318
PM-149	-5.600E+01		1.449E+02	2.268E+02	4.292E+01	-0.247
EU-152	-9.077E-02		1.162E-01	1.589E-01	1.910E-02	-0.571
GD-153	-1.014E-01		1.023E-01	1.384E-01	1.217E-02	-0.733
EU-154	1.127E-02		1.296E-01	2.157E-01	2.452E-02	0.052
EU-155	1.252E-01		1.180E-01	1.951E-01	1.674E-02	0.642
TB-160	4.378E-02		1.526E-01	2.575E-01	2.879E-02	0.170
HO-166M	-7.125E-02		6.321E-02	9.536E-02	1.025E-02	-0.747
TA-182	-1.143E-01		2.027E-01	3.255E-01	2.707E-02	-0.351
IR-192	8.144E-03		3.648E-02	6.161E-02	7.874E-03	0.132
HG-203	3.654E-02		4.416E-02	7.254E-02	1.026E-02	0.504
BI-207	-2.207E-02		5.776E-02	8.934E-02	8.577E-03	-0.247
PB-210	1.190E+00		3.110E+00	5.209E+00	4.797E-01	0.228
PB-211	-5.009E-01		7.966E-01	1.206E+00	5.854E-01	-0.415
RN-219	1.990E-01		4.112E-01	6.885E-01	1.055E-01	0.289
RA-223	-1.380E-02		7.562E-01	1.098E+00	2.146E-01	-0.013
AC-227	-8.562E-02		2.775E-01	4.410E-01	6.870E-02	-0.194
TH-227	-8.562E-02		2.776E-01	4.410E-01	7.414E-02	-0.194
TH-229	-3.147E-01		5.618E-01	9.063E-01	9.740E-02	-0.347
PA-231	-7.607E-01		1.591E+00	2.479E+00	4.509E-01	-0.307
TH-231	-1.380E-02		7.562E-01	1.098E+00	2.146E-01	-0.013
PA-233	-3.964E-03		6.630E-02	1.109E-01	1.453E-02	-0.036
PA-234	-8.486E-02		3.112E-01	5.035E-01	1.001E-01	-0.169
PA-234M	1.010E+01	+	7.374E+00	8.383E+00	9.606E-01	1.205
NP-239	-3.596E-01		4.298E-01	6.598E-01	5.452E-02	-0.545
AM-241	-8.898E-03		1.643E-01	2.413E-01	1.886E-02	-0.037
CM-247	3.210E-02		3.755E-02	6.392E-02	5.995E-03	0.502
CF-249	2.527E-02		4.264E-02	7.191E-02	6.826E-03	0.351
CF-251	-1.630E-02		1.360E-01	2.248E-01	2.290E-02	-0.073

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]G247911006          *
* Acquisition date   : 6-MAR-2010 17:25:00 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 02:00:02.39           Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G247911006           Analyst initials: MXRl         *
* Batch Number       : 957714              Sample Quantity : 1.1657E+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	3.959E+01	3.946E+00	2.657E-01	2.013E+00
CD-109	4.398E+00	1.178E+00	6.427E-01	6.010E-01
SN-126	4.292E-01	1.150E-01	6.298E-02	5.865E-02
TL-208	7.733E-01	1.129E-01	2.973E-02	5.761E-02
BI-211	5.126E+00	7.418E-01	1.680E-01	3.785E-01
BI-212	2.344E+00	8.320E-01	4.394E-01	4.245E-01
PB-212	2.251E+00	3.148E-01	5.077E-02	1.606E-01
BI-214	1.564E+00	2.440E-01	5.478E-02	1.245E-01
PB-214	1.860E+00	2.874E-01	6.109E-02	1.466E-01
RA-224	5.561E+00	1.568E+00	5.436E-01	8.000E-01
RA-226	1.564E+00	2.440E-01	5.478E-02	1.245E-01
AC-228	2.618E+00	4.843E-01	1.127E-01	2.471E-01
RA-228	2.618E+00	4.843E-01	1.127E-01	2.471E-01
TH-228	2.251E+00	3.148E-01	5.077E-02	1.606E-01
TH-232	2.618E+00	4.843E-01	1.127E-01	2.471E-01
TH-234	3.259E+00	2.020E+00	1.047E+00	1.031E+00
U-235	-8.666E-02	2.197E-01	1.838E-01	1.121E-01
NP-237	1.281E+00	4.323E-01	2.131E-01	2.206E-01
U-238	3.259E+00	2.020E+00	1.047E+00	1.031E+00
ANH-511	1.734E-01	7.113E-02	2.362E-02	3.629E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-9.034E-02	3.253E-01	2.663E-01	1.660E-01 NOT IDENT.
NA-22	3.673E-03	4.482E-02	3.799E-02	2.287E-02 NOT IDENT.
NA-24	2.023E+05	2.630E+06	0.000E+00	1.342E+06 SHORT HLIF
SC-46	7.492E-03	3.924E-02	3.367E-02	2.002E-02 FAIL ABUN
V-48	-1.616E-03	6.886E-02	5.768E-02	3.513E-02 NOT IDENT.
CR-51	1.879E-01	3.879E-01	3.411E-01	1.979E-01 NOT IDENT.
MN-54	2.570E-02	3.868E-02	3.406E-02	1.973E-02 NOT IDENT.

CO-56	-1.633E-02	3.703E-02	3.066E-02	1.889E-02	NOT IDENT.
CO-57	1.899E-02	2.790E-02	2.361E-02	1.424E-02	NOT IDENT.
CO-58	-2.769E-02	3.867E-02	3.163E-02	1.973E-02	NOT IDENT.
FE-59	2.632E-02	1.014E-01	8.530E-02	5.171E-02	NOT IDENT.
CO-60	-4.948E-02	3.914E-02	2.924E-02	1.997E-02	NOT IDENT.
ZN-65	8.191E-02	1.024E-01	7.728E-02	5.224E-02	NOT IDENT.
SE-75	5.868E-03	5.246E-02	3.835E-02	2.677E-02	NOT IDENT.
SR-85	1.606E-01	4.829E-02	3.979E-02	2.464E-02	NOT IDENT.
Y-88	-1.566E-02	3.581E-02	2.829E-02	1.827E-02	NOT IDENT.
Y-91	-2.800E+01	2.270E+01	1.781E+01	1.158E+01	NOT IDENT.
NB-94	-6.609E-03	3.395E-02	2.810E-02	1.732E-02	NOT IDENT.
NB-95	5.106E-02	4.703E-02	4.089E-02	2.400E-02	NOT IDENT.
NB-95M	3.435E-01	1.537E-01	1.203E-01	7.842E-02	NOT IDENT.
ZR-95	2.948E-02	7.705E-02	6.530E-02	3.931E-02	NOT IDENT.
MO-99	-1.537E+01	1.637E+01	1.265E+01	8.352E+00	NOT IDENT.
TC-99M	-4.719E+17	8.708E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.506E-02	4.049E-02	3.160E-02	2.066E-02	FAIL ABUN
RH-106	9.021E-02	3.006E-01	2.588E-01	1.534E-01	NOT IDENT.
RU-106	9.021E-02	3.005E-01	2.588E-01	1.533E-01	NOT IDENT.
AG-108M	1.020E-02	2.861E-02	2.445E-02	1.460E-02	NOT IDENT.
AG-110M	-2.240E-02	3.595E-02	2.920E-02	1.834E-02	NOT IDENT.
SN-113	-1.183E-02	4.715E-02	3.954E-02	2.406E-02	NOT IDENT.
CD-115	-6.694E+00	1.617E+01	1.364E+01	8.249E+00	NOT IDENT.
SN-117M	5.372E-03	6.063E-02	5.293E-02	3.093E-02	NOT IDENT.
TE-123M	4.894E-03	3.001E-02	2.625E-02	1.531E-02	NOT IDENT.
SB-124	3.481E-02	6.569E-02	5.895E-02	3.351E-02	NOT IDENT.
SB-125	2.397E-02	9.108E-02	7.755E-02	4.647E-02	FAIL ABUN
TE-125M	5.869E+00	1.069E+01	9.076E+00	5.452E+00	NOT IDENT.
I-126	5.703E-02	2.462E-01	2.096E-01	1.256E-01	NOT IDENT.
SB-126	-1.327E-01	1.848E-01	1.236E-01	9.428E-02	NOT IDENT.
SB-127	-1.718E-01	1.645E+00	1.372E+00	8.395E-01	NOT IDENT.
I-131	1.055E-02	1.205E-01	1.033E-01	6.147E-02	NOT IDENT.
TE-132	1.904E-01	9.838E-01	8.354E-01	5.019E-01	NOT IDENT.
BA-133	3.019E-02	4.488E-02	3.466E-02	2.290E-02	NOT IDENT.
I-133	2.964E+03	1.428E+04	0.000E+00	7.286E+03	SHORT HLIF
CS-134	1.681E-01	6.767E-02	4.578E-02	3.452E-02	FAIL ABUN
CS-135	3.230E-01	1.982E-01	1.524E-01	1.011E-01	NOT IDENT.
I-135	-4.651E+16	1.138E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.225E-01	1.191E-01	9.194E-02	6.074E-02	NOT IDENT.
BA-137M	-8.476E-03	3.770E-02	3.137E-02	1.923E-02	NOT IDENT.
CS-137	-8.954E-03	3.982E-02	3.314E-02	2.032E-02	NOT IDENT.
CE-139	2.014E-03	3.142E-02	2.731E-02	1.603E-02	NOT IDENT.
BA-140	-1.953E-02	2.724E-01	2.334E-01	1.390E-01	NOT IDENT.
LA-140	-1.292E-01	1.062E-01	8.038E-02	5.416E-02	FAIL ABUN
CE-141	-9.624E-03	6.907E-02	5.821E-02	3.524E-02	NOT IDENT.
CE-143	1.969E+03	5.593E+02	0.000E+00	2.853E+02	SHORT HLIF
CE-144	1.026E-01	2.307E-01	1.828E-01	1.177E-01	NOT IDENT.
PM-144	9.441E-03	3.557E-02	3.020E-02	1.815E-02	NOT IDENT.
PR-144	6.925E-01	2.663E+00	2.260E+00	1.358E+00	NOT IDENT.
PM-146	3.873E-02	4.180E-02	3.640E-02	2.133E-02	NOT IDENT.
ND-147	3.309E-01	5.943E-01	5.236E-01	3.032E-01	FAIL ABUN
PM-149	-5.600E+01	1.420E+02	1.150E+02	7.246E+01	NOT IDENT.
EU-152	-9.077E-02	1.139E-01	8.043E-02	5.811E-02	FAIL ABUN
GD-153	-1.014E-01	1.002E-01	7.093E-02	5.113E-02	NOT IDENT.
EU-154	1.127E-02	1.270E-01	1.077E-01	6.479E-02	NOT IDENT.
EU-155	1.252E-01	1.156E-01	9.989E-02	5.899E-02	FAIL ABUN
TB-160	4.378E-02	1.496E-01	1.290E-01	7.631E-02	FAIL ABUN
HO-166M	-7.125E-02	6.194E-02	4.790E-02	3.160E-02	NOT IDENT.
TA-182	-1.143E-01	1.987E-01	1.626E-01	1.014E-01	FAIL ABUN
IR-192	8.144E-03	3.575E-02	3.120E-02	1.824E-02	FAIL ABUN
HG-203	3.654E-02	4.328E-02	3.679E-02	2.208E-02	NOT IDENT.
BI-207	-2.207E-02	5.660E-02	4.469E-02	2.888E-02	FAIL ABUN
PB-210	1.190E+00	3.048E+00	2.689E+00	1.555E+00	NOT IDENT.
PB-211	-5.009E-01	7.806E-01	6.093E-01	3.983E-01	NOT IDENT.
RN-219	1.990E-01	4.030E-01	3.479E-01	2.056E-01	FAIL ABUN
RA-223	-1.380E-02	7.411E-01	5.560E-01	3.781E-01	FAIL ABUN
AC-227	-8.562E-02	2.719E-01	2.238E-01	1.387E-01	FAIL ABUN
TH-227	-8.562E-02	2.720E-01	2.238E-01	1.388E-01	FAIL ABUN
TH-229	-3.147E-01	5.505E-01	4.613E-01	2.809E-01	FAIL ABUN
PA-231	-7.607E-01	1.560E+00	1.257E+00	7.957E-01	FAIL ABUN
TH-231	-1.380E-02	7.411E-01	5.560E-01	3.781E-01	FAIL ABUN
PA-233	-3.964E-03	6.498E-02	5.617E-02	3.315E-02	FAIL ABUN
PA-234	-8.486E-02	3.050E-01	2.522E-01	1.556E-01	NOT IDENT.
PA-234M	1.010E+01	7.227E+00	4.196E+00	3.687E+00	FAIL ABUN
NP-239	-3.596E-01	4.212E-01	3.375E-01	2.149E-01	NOT IDENT.
AM-241	-8.898E-03	1.610E-01	1.243E-01	8.213E-02	NOT IDENT.
CM-247	3.210E-02	3.680E-02	3.229E-02	1.878E-02	NOT IDENT.
CF-249	2.527E-02	4.178E-02	3.634E-02	2.132E-02	NOT IDENT.

CF-251	-1.630E-02	1.333E-01	1.145E-01	6.801E-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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46.54	334.2379
49.72	352.0430
57.36	0.0000
59.54	437.2531
63.29	474.2168
63.29	474.2168
64.28	521.2551
67.75	559.0116
69.67	573.2879
70.83	578.6163
72.81	614.2039
72.87	614.3315
72.87	614.3315
74.82	593.1385
74.82	593.1385
74.82	593.1385
74.97	593.4371
77.11	597.6558
77.11	597.6558
77.11	597.6558
79.69	543.6338
79.80	543.8250
80.12	564.4278
80.19	564.5535
80.57	565.2348
81.00	603.1206
81.07	603.2545
81.07	603.2545
83.79	566.2708
83.79	566.2708
85.43	556.5726
86.48	651.1328
86.55	651.2686
86.79	517.4008
86.94	517.6364
87.57	518.6094
88.03	519.3190
88.47	519.9960
89.96	522.2741
91.11	524.0206
92.59	526.2498
92.59	526.2498
93.35	527.3882
94.67	441.3095
94.87	441.5562
94.87	441.5562
95.86	429.8492
97.43	483.6521
98.44	395.8030
99.53	443.9839
100.11	485.0031
103.18	506.5542
103.37	490.3169
105.31	455.2310
106.12	518.1877
109.28	459.8579
111.00	450.6265
111.76	493.0287
116.30	437.1805
117.23	442.7020
121.12	428.3881
121.78	424.4416
122.06	428.1686
123.07	433.7785
131.20	452.5308
133.52	439.2222
136.00	469.1463

136.47	482.9793
140.51	476.2851
140.51	0.0000
143.76	470.4129
144.24	452.7588
144.24	452.7588
145.44	438.4263
152.43	436.2202
153.25	429.5369
154.21	439.5642
154.21	439.5642
156.02	454.0590
158.56	445.0689
159.00	444.5018
162.66	465.3519
163.33	433.9850
165.86	439.7619
176.60	441.4380
177.52	413.2372
181.07	413.9902
184.41	417.8700
185.72	399.4421
193.51	429.2518
197.04	406.7970
205.31	425.5356
210.85	385.2147
215.65	385.8498
222.11	407.9103
227.38	373.5055
228.16	372.8721
228.18	372.8830
235.69	343.5054
235.96	372.2685
235.96	372.2685
238.63	381.4335
238.63	381.4335
240.99	382.6426
242.00	368.5106
244.70	308.4778
252.40	320.6242
252.80	322.9408
256.23	342.7391
256.23	342.7391
260.90	313.2246
264.66	288.4680
268.22	307.2925
269.46	307.7582
269.46	307.7582
271.23	313.7076
273.65	448.9586
276.40	301.4761
277.37	338.6017
277.60	329.6521
278.00	327.5897
279.20	320.2734
279.54	320.4009
280.46	368.6375
283.69	319.7295
284.31	341.2169
285.41	347.2552
285.90	323.9167
287.50	293.4497
293.27	0.0000
295.22	288.1914
295.96	288.4320
298.57	289.2783
299.98	289.7325
299.98	289.7325
300.09	289.7713
300.09	289.7713
300.13	289.7829
301.36	290.1789
302.85	258.9706
304.50	259.4444
304.50	259.4444
304.85	265.6516
308.46	243.2004
311.90	275.0825

316.51	270.8770
319.41	287.5337
320.08	264.4542
323.87	275.7955
323.87	275.7955
328.76	297.5592
333.37	264.3525
334.37	297.6965
334.37	297.6965
338.28	256.1803
338.28	256.1803
338.32	256.1935
338.32	256.1935
338.32	256.1935
340.48	251.9926
340.55	248.8421
344.28	278.4042
351.06	240.2313
351.93	240.4358
356.01	199.5474
364.49	205.3876
366.42	235.9943
383.85	255.6789
388.16	234.7872
388.63	227.9182
391.69	254.4895
400.66	220.2966
401.81	209.4422
402.40	199.4743
404.85	258.4563
410.95	225.3089
414.70	231.1205
423.72	224.6702
427.09	196.4955
427.87	200.7391
433.94	181.0498
453.88	172.3982
463.37	199.4444
468.07	161.1958
473.00	184.5601
476.78	185.0880
477.60	189.4842
487.02	176.8045
492.35	173.1699
497.08	188.9722
511.00	180.9965
514.00	159.3947
527.90	190.5475
529.87	0.0000
531.02	165.9297
537.26	170.3599
546.56	0.0000
563.25	165.7537
569.33	177.8197
569.50	174.9857
569.70	174.0570
583.19	173.6461
600.60	181.5557
602.73	189.7827
604.72	168.3486
609.32	158.9310
609.32	158.9310
610.33	159.0305
614.28	167.6548
618.01	155.5225
621.93	144.4250
621.93	144.4250
633.25	133.5278
635.95	144.6396
636.99	140.7606
645.85	145.4742
657.76	181.5855
661.66	189.0289
661.66	189.0289
664.57	0.0000
666.33	178.4368
666.50	178.4548
677.62	151.1614

685.70	161.0056
695.00	164.8979
696.49	169.1324
696.51	169.1357
697.00	176.3567
702.65	170.7248
706.68	166.9702
711.68	177.7494
720.70	172.6662
721.93	0.0000
722.78	131.8693
722.91	131.8770
723.31	135.4704
724.19	146.2312
727.33	169.6926
733.00	109.2817
735.93	153.8547
739.50	155.1874
747.24	148.4327
752.31	153.0388
753.82	149.9852
756.73	151.2654
763.94	218.6948
765.81	171.0822
766.42	162.6279
777.92	173.1764
778.90	145.9893
783.70	117.6161
785.37	132.4261
795.86	114.6152
801.95	126.0746
810.29	142.3996
810.76	142.4316
815.77	100.7773
818.51	120.5281
832.01	163.5984
834.85	148.7505
836.80	0.0000
846.77	122.1140
856.80	99.8492
860.56	122.8789
871.09	129.2016
873.19	131.2375
875.33	0.0000
879.36	135.4381
880.51	141.2732
883.24	135.6692
884.68	131.9041
889.28	118.6629
898.04	135.5786
911.20	116.8694
911.20	116.8694
911.20	116.8694
926.50	128.4140
937.49	114.2340
944.13	141.2120
946.00	127.4860
949.00	102.9064
962.29	102.7224
964.08	120.2194
966.15	116.5838
968.97	109.9828
968.97	109.9828
968.97	109.9828
983.53	99.3401
996.26	81.1851
1001.03	121.2493
1004.73	106.2469
1037.84	130.1626
1038.76	0.0000
1048.07	138.8986
1050.41	122.5444
1050.41	122.5444
1063.66	128.3248
1085.87	128.3366
1099.45	133.1657
1112.07	112.4427
1115.54	108.8893

1120.29	129.9368
1120.29	129.9368
1120.55	133.1191
1121.30	125.7568
1131.51	0.0000
1173.23	142.1708
1177.93	156.5470
1189.05	142.9357
1204.77	168.4330
1221.41	154.0526
1231.02	215.0039
1235.36	148.0267
1238.28	146.2434
1260.41	0.0000
1271.85	107.9513
1274.44	109.9860
1274.54	109.9895
1291.59	87.0960
1298.22	0.0000
1312.11	86.6653
1332.49	94.1447
1365.19	81.0643
1368.63	0.0000
1384.29	64.4121
1408.01	74.9937
1457.56	0.0000
1460.82	52.4661
1489.16	55.9891
1505.03	57.2743
1596.21	87.2408
1620.50	41.9841
1678.03	0.0000
1690.97	22.3349
1764.49	37.5578
1764.49	37.5578
1770.23	33.8475
1771.35	26.7290
1791.20	0.0000
1836.06	40.1942

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911006

Total Uranium Activity	9.6540E+00	ug/g
Total Uranium Counting Unc.	6.0117E+00	ug/g
Total Uranium Tpu	3.0672E-06	ug/g
Total Uranium Mda	3.1146E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 957714          SAMPLE ID   : G247911006
*  ANALYST       : MXR1            DETECTOR    : GAM22
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 6-MAR-2010 17:25:00.61  SAMPLE ALQT: 116.570 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.265E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.453E+00
GROSS GAMMA MDA (pCi/GRAM ) : 3.038E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.483E+00

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VAX/VMS Nuclide Identification Report Generated 9-MAR-2010 22:26:57.28

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911007.CNF;1
Sample date     : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:25:47.
Sample ID       : G247911007      Sample quantity   : 1.31970E+02 GRAM
Detector name   : GAM23           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.93 0.0%
Energy tolerance : 1.60000 keV   Analyst Initials  : MXR1
Abundance limit  : 75.00000      Sensitivity     : 5.00000
Batch ID        : 957714         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	62.85*	122	625	1.23	125.71	122	11	1.69E-02	41.2	
2	2	74.59	525	552	1.52	149.18	141	20	7.29E-02	9.7	3.68E+00
3	2	76.94	698	378	1.04	153.88	141	20	9.70E-02	5.9	
4	2	84.27	147	508	1.54	168.54	162	32	2.04E-02	28.3	1.99E+00
5	2	87.11	333	378	1.19	174.22	162	32	4.63E-02	11.2	
6	2	89.74	214	312	1.04	179.49	162	32	2.98E-02	15.1	
7	2	92.73*	335	442	1.56	185.46	162	32	4.66E-02	13.6	
8	0	185.71*	314	497	1.55	371.42	364	14	4.36E-02	16.4	
9	0	209.13	119	374	1.76	418.26	413	9	1.65E-02	30.7	
10	3	238.28*	1572	219	1.14	476.56	471	22	2.18E-01	3.0	1.07E+00
11	3	241.26*	340	256	1.70	482.52	471	22	4.72E-02	13.9	
12	0	269.97	152	246	1.76	539.93	533	12	2.11E-02	22.3	
13	0	277.26	66	245	1.06	554.52	549	10	9.21E-03	45.8	
14	2	294.79	427	167	1.32	589.59	584	22	5.92E-02	7.1	1.12E+00
15	2	299.88	134	195	1.84	599.76	584	22	1.86E-02	22.9	
16	0	327.22*	67	200	0.88	654.44	650	10	9.31E-03	41.9	
17	0	337.84	256	279	1.15	675.68	670	13	3.56E-02	14.8	
18	0	351.39*	792	220	1.24	702.77	696	14	1.10E-01	5.4	
19	0	462.42	98	110	1.32	924.84	921	9	1.37E-02	21.8	
20	0	510.04*	138	189	1.93	1020.08	1013	17	1.92E-02	26.3	
21	0	582.43	479	144	1.41	1164.86	1158	15	6.66E-02	7.1	
22	0	608.64*	471	148	1.67	1217.28	1208	18	6.54E-02	7.7	
23	0	726.92	108	90	1.75	1453.83	1448	14	1.50E-02	21.4	
24	0	793.88	70	58	1.67	1587.77	1582	11	9.78E-03	24.1	
25	0	859.76	59	82	1.72	1719.51	1713	13	8.14E-03	34.8	
26	0	909.99	314	55	2.09	1819.98	1813	12	4.36E-02	7.3	
27	0	967.95	201	75	1.88	1935.90	1931	15	2.79E-02	12.2	
28	0	1119.36	103	80	1.91	2238.72	2230	16	1.43E-02	21.5	
29	0	1459.26*	1139	25	2.29	2918.52	2909	22	1.58E-01	3.2	
30	0	1763.07*	83	7	3.32	3526.14	3519	16	1.16E-02	13.7	

Flag: "*" = Peak area was modified by background subtraction

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911007.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:25:47
 Sample ID : G247911007 Sample quantity : 131.97 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA23 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.93 0.0%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 1.60 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	+	1460.82	*	3.047E+01	3.001E+00	7.064E-01	5.285E-02	43.135
CD-109	+	88.03	*	5.033E+00	1.225E+00	1.443E+00	1.409E-01	3.487
SN-126	+	64.28		1.426E+00	1.195E+00	1.134E+00	1.726E-01	1.257
	+	86.94		2.042E+00	9.639E-01	5.942E-01	2.471E-01	3.436
	+	87.57	*	4.911E-01	1.196E-01	1.417E-01	1.379E-02	3.466
TL-208	+	277.37		6.902E-01	6.370E-01	6.995E-01	7.548E-02	0.987
	+	583.19	*	7.042E-01	1.099E-01	6.885E-02	4.459E-03	10.228
	+	860.56		8.278E-01	5.811E-01	5.346E-01	4.832E-02	1.548
BI-211	+	72.87		2.190E+01	5.248E+00	8.278E+00	7.302E-01	2.645
	+	351.06	*	5.068E+00	6.370E-01	3.605E-01	2.349E-02	14.059
PB-212	+	74.82		3.604E+00	8.424E-01	7.147E-01	9.420E-02	5.042
	+	77.11		2.707E+00	3.997E-01	4.051E-01	3.645E-02	6.682
	+	238.63	*	2.211E+00	2.083E-01	1.082E-01	7.851E-03	20.430
	+	300.09		2.961E+00	1.382E+00	1.407E+00	1.188E-01	2.105
BI-214	+	609.32	*	1.343E+00	2.310E-01	1.321E-01	1.002E-02	10.162
	+	1120.29		1.556E+00	6.842E-01	5.387E-01	5.036E-02	2.888
	+	1764.49		1.771E+00	4.981E-01	3.407E-01	2.118E-02	5.197
PB-214	+	74.82		6.387E+00	1.449E+00	1.267E+00	1.509E-01	5.042
	+	77.11		4.772E+00	8.071E-01	7.141E-01	8.717E-02	6.682
	+	242.00		2.900E+00	8.377E-01	6.583E-01	5.323E-02	4.405
	+	295.22		1.668E+00	2.772E-01	2.485E-01	2.179E-02	6.711
	+	351.93	*	1.839E+00	2.525E-01	1.311E-01	1.119E-02	14.028
RA-224	+	240.99	*	5.127E+00	1.451E+00	1.160E+00	6.537E-02	4.420
RA-226	+	609.32	*	1.343E+00	2.310E-01	1.321E-01	1.002E-02	10.162
	+	1120.29		1.556E+00	6.842E-01	5.387E-01	5.036E-02	2.888
	+	1764.49		1.771E+00	4.981E-01	3.407E-01	2.118E-02	5.197
AC-228	+	338.32		1.821E+00	9.250E-01	4.354E-01	1.796E-01	4.182
	+	911.20	*	2.265E+00	4.279E-01	3.097E-01	3.679E-02	7.312
	+	968.97		2.504E+00	8.628E-01	5.994E-01	1.457E-01	4.177
RA-228	+	338.32		1.821E+00	9.250E-01	4.354E-01	1.796E-01	4.182
	+	911.20	*	2.265E+00	4.279E-01	3.097E-01	3.679E-02	7.312
	+	968.97		2.504E+00	8.628E-01	5.994E-01	1.457E-01	4.177
TH-228	+	74.82		3.604E+00	7.672E-01	7.147E-01	6.410E-02	5.042
	+	77.11		2.707E+00	3.997E-01	4.051E-01	3.645E-02	6.682

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229	+	238.63	*	2.211E+00	2.083E-01	1.082E-01	7.851E-03	20.430
	+	300.09		2.961E+00	2.258E+00	1.407E+00	8.565E-01	2.105
	+	85.43		5.702E-01	3.272E-01	3.677E-01	3.511E-02	1.551
	+	88.47		4.703E-01	1.484E-01	2.159E-01	2.088E-02	2.178
TH-232		193.51	*	5.823E-02	6.485E-01	1.054E+00	5.580E-02	0.055
		210.85		2.748E+00	1.305E+00	2.023E+00	1.098E-01	1.358
	+	338.32		1.821E+00	5.507E-01	4.354E-01	2.572E-02	4.182
	+	911.20	*	2.265E+00	4.279E-01	3.097E-01	3.679E-02	7.312
TH-234	+	968.97		2.504E+00	8.628E-01	5.994E-01	1.457E-01	4.177
	+	63.29	*	3.699E+00	3.124E+00	3.092E+00	5.689E-01	1.196
U-235	+	92.59		4.033E+00	1.417E+00	1.170E+00	2.596E-01	3.448
	+	89.96		3.253E+00	1.271E+00	1.467E+00	3.650E-01	2.218
NP-237		93.35		3.047E+00	1.090E+00	8.773E-01	2.031E-01	3.473
		143.76	*	1.303E-01	2.479E-01	4.095E-01	6.377E-02	0.318
		163.33		-2.976E-01	5.380E-01	8.546E-01	1.415E-01	-0.348
	+	185.72		2.846E-01	9.461E-02	7.805E-02	4.087E-03	3.646
U-238		205.31		4.107E-02	6.928E-01	9.740E-01	1.641E-01	0.042
	+	86.48	*	1.465E+00	4.709E-01	4.292E-01	9.904E-02	3.414
ANH-511		95.86		-3.287E-02	1.229E+00	1.787E+00	4.272E-01	-0.018
	+	63.29	*	3.699E+00	3.124E+00	3.092E+00	5.689E-01	1.196
	+	92.59		4.033E+00	1.156E+00	1.170E+00	1.041E-01	3.448
	+	511.00	*	1.546E-01	8.187E-02	5.716E-02	3.320E-03	2.705

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-6.780E-02	3.784E-01	6.156E-01	4.182E-02	-0.110
NA-22		1274.54	*	2.345E-02	5.856E-02	9.882E-02	6.636E-03	0.237
NA-24		1368.63	*	-1.284E+00	5.856E-02	Half-Life too short		
SC-46		889.28	*	6.745E-03	4.524E-02	7.635E-02	6.822E-03	0.088
V-48	+	1120.55		2.656E-01	1.154E-01	1.467E-01	9.560E-03	1.810
		944.13		-7.591E-02	1.039E+00	1.714E+00	1.493E-01	-0.044
		983.53	*	4.604E-02	8.625E-02	1.495E-01	1.244E-02	0.308
		1312.11		-6.385E-02	9.626E-02	1.438E-01	1.023E-02	-0.444
CR-51		320.08	*	-2.792E-02	4.595E-01	7.485E-01	4.901E-02	-0.037
MN-54		834.85	*	2.484E-02	4.641E-02	8.046E-02	6.371E-03	0.309
CO-56		846.77	*	1.275E-02	4.874E-02	8.306E-02	6.757E-03	0.153
CO-57		1037.84		-1.089E-01	3.523E-01	5.639E-01	4.617E-02	-0.193
		1238.28		1.780E-01	1.238E-01	2.193E-01	1.459E-02	0.812
		1771.35		-1.905E-01	2.693E-01	3.862E-01	2.389E-02	-0.493
		122.06	*	1.233E-02	3.022E-02	5.041E-02	2.972E-03	0.245
CO-58		136.47		-1.900E-01	2.487E-01	3.956E-01	2.567E-02	-0.480
		810.76	*	-1.547E-02	4.853E-02	7.928E-02	5.956E-03	-0.195
FE-59		1099.45	*	-3.269E-02	1.125E-01	1.801E-01	1.386E-02	-0.182
CO-60		1291.59		7.038E-02	1.538E-01	2.618E-01	2.173E-02	0.269
		1173.23		-2.028E-02	5.342E-02	8.446E-02	4.765E-03	-0.240
ZN-65		1332.49	*	1.676E-03	4.821E-02	7.865E-02	5.773E-03	0.021
		1115.54	*	9.096E-02	1.483E-01	2.225E-01	1.469E-02	0.409

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SE-75	121.12			-5.521E-02	1.597E-01	2.594E-01	2.378E-02	-0.213
	136.00			-2.470E-02	4.748E-02	7.630E-02	4.310E-03	-0.324
	264.66	*		-6.979E-03	6.190E-02	8.553E-02	4.980E-03	-0.082
	279.54			7.186E-02	1.459E-01	2.209E-01	1.391E-02	0.325
	400.66			1.559E-01	3.206E-01	5.453E-01	4.944E-02	0.286
SR-85	514.00	*		2.638E-02	5.197E-02	7.707E-02	4.472E-03	0.342
Y-88	898.04			-1.371E-02	5.007E-02	8.169E-02	7.470E-03	-0.168
	1836.06	*		7.603E-03	4.284E-02	7.291E-02	4.293E-03	0.104
Y-91	1204.77	*		-3.000E+00	3.029E+01	4.908E+01	2.927E+00	-0.061
NB-94	702.65	*		1.387E-02	4.163E-02	6.883E-02	3.933E-03	0.201
	871.09			1.555E-02	4.164E-02	7.029E-02	6.036E-03	0.221
NB-95	765.81	*		4.610E-02	5.728E-02	9.706E-02	6.523E-03	0.475
NB-95M	235.69	*		1.049E+00	2.169E-01	3.504E-01	2.594E-02	2.994
ZR-95	724.19			2.947E-01	1.391E-01	2.304E-01	1.624E-02	1.279
	756.73	*		1.883E-02	9.927E-02	1.617E-01	1.248E-02	0.116
MO-99	140.51			-7.957E+00	3.594E+01	5.748E+01	1.310E+01	-0.138
	181.07			9.059E+00	3.061E+01	4.411E+01	7.713E+00	0.205
	366.42			-2.890E+01	1.441E+02	2.375E+02	1.392E+01	-0.122
	739.50	*		-6.729E+00	2.014E+01	3.143E+01	4.594E+00	-0.214
	777.92			7.318E+01	5.830E+01	1.060E+02	7.341E+00	0.690
TC-99M	140.51	*		-2.220E+11	5.830E+01	Half-Life too short		
RU-103	497.08	*		1.982E-02	4.720E-02	7.965E-02	9.910E-03	0.249
	610.33			1.289E+01	2.455E+00	3.149E+00	4.697E-01	4.095
RH-106	621.93	*		7.569E-02	3.763E-01	6.204E-01	7.081E-02	0.122
	1050.41			1.298E+00	3.096E+00	5.294E+00	3.983E-01	0.245
RU-106	621.93	*		7.569E-02	3.762E-01	6.204E-01	3.333E-02	0.122
	1050.41			1.298E+00	3.096E+00	5.294E+00	3.983E-01	0.245
AG-108M	433.94	*		-2.234E-02	3.440E-02	5.455E-02	3.409E-03	-0.410
	614.28			-1.036E-02	4.525E-02	6.185E-02	3.623E-03	-0.168
	722.91			-6.259E-03	5.356E-02	7.335E-02	4.707E-03	-0.085
AG-110M	657.76	*		-5.545E-03	4.231E-02	6.781E-02	3.769E-03	-0.082
	677.62			-7.693E-02	3.991E-01	6.356E-01	3.643E-02	-0.121
	706.68			1.730E-01	2.587E-01	4.384E-01	2.692E-02	0.395
	763.94			3.821E-02	2.183E-01	3.549E-01	2.481E-02	0.108
	884.68			-6.220E-03	5.610E-02	9.258E-02	8.440E-03	-0.067
	937.49			-1.561E-01	1.208E-01	1.733E-01	1.574E-02	-0.901
	1384.29			-6.818E-02	1.924E-01	2.975E-01	2.252E-02	-0.229
	1505.03			-6.377E-02	3.356E-01	5.255E-01	3.732E-02	-0.121
SN-113	391.69	*		-1.633E-02	5.398E-02	8.823E-02	5.435E-03	-0.185
CD-115	260.90			-2.164E+01	2.404E+02	3.827E+02	2.198E+01	-0.057
	492.35			8.685E-01	6.387E+01	1.051E+02	6.137E+00	0.008
	527.90	*		-4.476E+00	1.854E+01	2.984E+01	1.722E+00	-0.150
SN-117M	156.02			4.935E-01	2.952E+00	4.844E+00	2.535E-01	0.102
	158.56	*		2.662E-03	7.219E-02	1.179E-01	6.125E-03	0.023
TE-123M	159.00	*		4.456E-03	3.546E-02	5.808E-02	3.065E-03	0.077
SB-124	602.73			1.833E-02	5.374E-02	7.811E-02	4.283E-03	0.235
	645.85			8.247E-02	5.581E-01	9.157E-01	5.498E-02	0.090
	722.78			-1.120E-01	5.419E-01	7.343E-01	4.630E-02	-0.153
	1690.97	*		-4.059E-02	8.895E-02	1.356E-01	9.487E-03	-0.299

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125		427.87	*	6.279E-02	1.013E-01	1.740E-01	1.057E-02	0.361
	+	463.37		9.706E-01	4.287E-01	6.765E-01	4.585E-02	1.435
		600.60		-1.763E-01	2.621E-01	3.434E-01	2.214E-02	-0.513
		635.95		9.053E-02	3.320E-01	5.497E-01	3.498E-02	0.165
TE-125M		109.28	*	-2.981E-01	1.209E+01	1.993E+01	1.813E+00	-0.015
I-126		388.63		6.810E-03	2.140E-01	3.565E-01	2.062E-02	0.019
		666.33	*	-7.302E-02	2.928E-01	4.649E-01	2.406E-02	-0.157
		753.82		6.914E-01	2.540E+00	4.165E+00	2.717E-01	0.166
SB-126		414.70		-9.178E-02	9.116E-02	1.415E-01	8.234E-03	-0.649
		666.50		-1.706E-02	1.008E-01	1.611E-01	8.339E-03	-0.106
		695.00		4.480E-02	1.041E-01	1.733E-01	9.704E-03	0.258
		697.00		-1.445E-01	3.688E-01	5.778E-01	3.252E-02	-0.250
		720.70	*	2.385E-02	2.000E-01	2.817E-01	1.688E-02	0.085
		856.80		1.282E+00	7.031E-01	1.194E+00	9.939E-02	1.073
SB-127		252.40		-3.310E+00	6.552E+00	1.000E+01	4.113E+00	-0.331
		473.00		-9.805E-01	2.310E+00	3.694E+00	4.222E-01	-0.265
		685.70	*	1.075E+00	1.971E+00	3.315E+00	3.187E-01	0.324
		783.70		1.893E+00	5.382E+00	9.239E+00	1.074E+00	0.205
I-131		80.19		8.369E-01	9.199E+00	9.825E+00	9.070E-01	0.085
		284.31		-1.936E-01	1.896E+00	3.180E+00	2.061E-01	-0.061
		364.49	*	-9.490E-02	1.429E-01	2.291E-01	1.498E-02	-0.414
		636.99		8.144E-01	2.044E+00	3.417E+00	2.072E-01	0.238
TE-132		49.72		-2.746E+01	3.808E+01	6.225E+01	6.942E+00	-0.441
		111.76		-3.159E+01	5.183E+01	8.352E+01	8.277E+00	-0.378
		116.30		2.825E+01	4.569E+01	7.548E+01	7.298E+00	0.374
		228.16	*	-5.371E-01	1.146E+00	1.801E+00	2.634E-01	-0.298
BA-133		81.00		-1.338E-02	1.708E-01	1.799E-01	2.853E-02	-0.074
	+	276.40		6.381E-01	5.903E-01	7.536E-01	9.490E-02	0.847
		302.85		-3.261E-02	1.776E-01	2.567E-01	2.939E-02	-0.127
		356.01	*	-3.420E-02	5.496E-02	7.565E-02	8.563E-03	-0.452
		383.85		-1.910E-02	3.463E-01	5.744E-01	6.126E-02	-0.033
I-133		529.87	*	-4.362E-03	3.463E-01	Half-Life	too short	
		875.33		-2.030E-01	3.463E-01	Half-Life	too short	
		1298.22		-4.420E-01	3.463E-01	Half-Life	too short	
CS-134		563.25		3.266E-02	4.156E-01	6.825E-01	3.948E-02	0.048
		569.33		7.256E-02	2.334E-01	3.809E-01	2.214E-02	0.190
		604.72		3.600E-03	4.912E-02	6.950E-02	3.826E-03	0.052
		795.86	*	7.731E-02	6.976E-02	1.111E-01	8.114E-03	0.696
		801.95		-2.404E-01	5.100E-01	8.053E-01	5.953E-02	-0.299
		1365.19		-1.369E+00	1.442E+00	2.017E+00	1.570E-01	-0.679
CS-135		268.22	*	3.954E-01	2.257E-01	3.462E-01	2.645E-02	1.142
I-135		546.56		4.019E+10	2.257E-01	Half-Life	too short	
		836.80		2.053E+11	2.257E-01	Half-Life	too short	
		1038.76		-1.543E+11	2.257E-01	Half-Life	too short	
		1131.51		1.581E+10	2.257E-01	Half-Life	too short	
		1260.41	*	-1.671E+09	2.257E-01	Half-Life	too short	
		1457.56		2.514E+13	2.257E-01	Half-Life	too short	
		1678.03		-1.431E+11	2.257E-01	Half-Life	too short	
		1791.20		2.172E+11	2.257E-01	Half-Life	too short	

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	153.25			4.653E-01	1.110E+00	1.837E+00	1.410E-01	0.253
	176.60			2.361E-02	6.304E-01	1.025E+00	6.713E-02	0.023
	273.65			8.484E-01	8.543E-01	9.654E-01	6.602E-02	0.879
	340.55			3.012E-01	2.020E-01	3.216E-01	2.050E-02	0.936
	818.51			-1.191E-01	9.315E-02	1.383E-01	1.056E-02	-0.861
	1048.07	*		7.002E-02	1.431E-01	2.458E-01	1.958E-02	0.285
	1235.36			8.858E-01	8.444E-01	1.459E+00	1.485E-01	0.607
BA-137M	661.66	*		2.631E-02	4.429E-02	7.477E-02	3.820E-03	0.352
CS-137	661.66	*		2.779E-02	4.679E-02	7.899E-02	4.057E-03	0.352
CE-139	165.86	*		-2.023E-02	3.685E-02	5.872E-02	2.994E-03	-0.345
BA-140	162.66			-2.749E-01	1.047E+00	1.689E+00	1.024E-01	-0.163
	304.85			-6.091E-01	1.817E+00	2.584E+00	7.386E-01	-0.236
	423.72			-2.619E+00	2.453E+00	3.534E+00	1.141E+00	-0.741
LA-140	537.26	*		-1.661E-02	3.322E-01	5.418E-01	1.804E-01	-0.031
	328.76			6.244E-01	5.254E-01	6.975E-01	4.609E-02	0.895
	487.02			5.140E-02	1.765E-01	2.958E-01	1.953E-02	0.174
	815.77			1.746E-01	3.825E-01	6.644E-01	5.786E-02	0.263
	1596.21	*		-8.878E-02	1.105E-01	1.634E-01	1.121E-02	-0.543
CE-141	145.44	*		1.879E-02	7.754E-02	1.279E-01	7.213E-03	0.147
CE-143	57.36			1.037E-03	7.754E-02	Half-Life	too short	
	293.27	*		2.589E-03	7.754E-02	Half-Life	too short	
	664.57			-2.818E-04	7.754E-02	Half-Life	too short	
	721.93			-1.959E-03	7.754E-02	Half-Life	too short	
CE-144	80.12			5.590E-01	4.537E+00	4.858E+00	4.453E-01	0.115
	133.52	*		7.437E-02	2.386E-01	3.953E-01	5.460E-02	0.188
PM-144	476.78			4.690E-03	7.372E-02	1.219E-01	8.416E-03	0.038
	618.01			2.298E-02	3.753E-02	6.376E-02	3.681E-03	0.360
PR-144	696.49	*		-3.962E-02	4.507E-02	6.788E-02	3.819E-03	-0.584
	696.51	*		-2.940E+00	3.377E+00	5.089E+00	2.861E-01	-0.578
	1489.16			-2.085E+01	1.498E+01	1.805E+01	1.288E+00	-1.155
PM-146	453.88	*		8.285E-02	4.953E-02	8.913E-02	7.573E-03	0.929
	633.25			8.003E-01	1.766E+00	2.920E+00	1.098E+00	0.274
	735.93			-6.587E-02	1.820E-01	2.736E-01	7.494E-02	-0.241
	747.24			-2.404E-02	1.193E-01	1.884E-01	2.525E-02	-0.128
ND-147	91.11			1.130E+00	3.587E-01	7.247E-01	7.129E-02	1.559
	319.41			1.621E+00	4.178E+00	7.136E+00	4.216E-01	0.227
	531.02	*		-2.599E-01	7.019E-01	1.100E+00	1.485E-01	-0.236
PM-149	285.90	*		-6.460E+01	1.529E+02	2.523E+02	3.582E+01	-0.256
EU-152	121.78			1.602E-02	8.602E-02	1.424E-01	1.091E-02	0.112
	244.70			1.100E-02	4.290E-01	6.011E-01	3.400E-02	0.018
	344.28	*		-1.116E-02	1.622E-01	1.844E-01	1.221E-02	-0.061
	778.90			2.715E-01	3.119E-01	5.552E-01	3.853E-02	0.489
	964.08			1.494E+00	4.234E-01	7.764E-01	6.615E-02	1.925
	1085.87			-9.018E-02	4.953E-01	8.025E-01	5.646E-02	-0.112
	1112.07			4.077E-01	4.401E-01	6.898E-01	4.584E-02	0.591
GD-153	1408.01			3.224E-01	2.326E-01	4.331E-01	3.150E-02	0.744
	69.67			-1.836E-01	2.813E+00	3.844E+00	3.359E-01	-0.048
	97.43	*		5.186E-02	1.137E-01	1.689E-01	1.380E-02	0.307
	103.18			-1.179E-01	1.360E-01	2.176E-01	1.626E-02	-0.542

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		123.07		1.466E-02	6.156E-02	1.021E-01	9.619E-03	0.144
		723.31		1.648E-01	2.409E-01	3.588E-01	2.593E-02	0.459
		873.19		-2.128E-01	3.516E-01	5.454E-01	6.490E-02	-0.390
		996.26		-9.505E-02	4.465E-01	7.252E-01	1.251E-01	-0.131
		1004.73		-1.684E-01	2.557E-01	3.967E-01	4.461E-02	-0.424
		1274.44	*	6.639E-02	1.659E-01	2.798E-01	2.800E-02	0.237
EU-155	+	86.55		5.957E-01	1.453E-01	2.356E-01	2.290E-02	2.529
		105.31	*	2.287E-02	1.290E-01	2.143E-01	1.579E-02	0.107
TB-160	+	86.79		1.597E+00	3.888E-01	6.244E-01	6.033E-02	2.557
		197.04		-2.891E-01	6.996E-01	1.101E+00	5.861E-02	-0.263
		215.65		-5.544E-01	9.196E-01	1.443E+00	7.886E-02	-0.384
	+	298.57		4.214E-01	1.950E-01	2.479E-01	1.457E-02	1.700
		879.36	*	8.855E-02	1.588E-01	2.771E-01	2.423E-02	0.320
		962.29		9.941E-01	7.667E-01	1.234E+00	1.054E-01	0.805
		966.15		1.878E+00	4.221E-01	7.427E-01	6.312E-02	2.529
		1177.93		-3.251E-02	4.539E-01	7.389E-01	4.204E-02	-0.044
		1271.85		5.718E-01	8.997E-01	1.553E+00	1.037E-01	0.368
		80.57		1.950E-02	4.902E-01	5.214E-01	4.795E-02	0.037
HO-166M	+	184.41		2.261E-01	7.517E-02	8.246E-02	4.310E-03	2.742
		280.46		3.829E-02	1.096E-01	1.647E-01	9.590E-03	0.233
		410.95		4.071E-01	2.769E-01	4.956E-01	2.881E-02	0.821
		711.68	*	1.957E-02	7.146E-02	1.178E-01	6.893E-03	0.166
		752.31		-1.009E-01	3.597E-01	5.650E-01	3.671E-02	-0.179
		810.29		-5.845E-02	7.462E-02	1.174E-01	8.780E-03	-0.498
		67.75		4.652E-02	2.350E-01	2.546E-01	2.217E-02	0.183
		100.11		1.565E-01	2.277E-01	3.587E-01	2.807E-02	0.436
TA-182		152.43		1.970E-01	4.279E-01	7.099E-01	3.752E-02	0.278
		222.11		8.871E-02	4.375E-01	7.104E-01	3.915E-02	0.125
		1121.30		5.252E-01	2.208E-01	3.821E-01	2.485E-02	1.375
		1189.05		2.282E-01	4.115E-01	7.027E-01	4.078E-02	0.325
		1221.41	*	3.208E-01	2.686E-01	4.762E-01	2.923E-02	0.674
		1231.02		-6.962E-01	6.590E-01	9.860E-01	6.151E-02	-0.706
	+	295.96		1.246E+00	1.910E-01	3.325E-01	1.983E-02	3.747
		308.46		6.801E-02	1.099E-01	1.899E-01	1.132E-02	0.358
IR-192		316.51	*	-7.952E-03	4.109E-02	6.829E-02	4.051E-03	-0.116
		468.07		1.165E-02	9.180E-02	1.326E-01	8.948E-03	0.088
HG-203		70.83		1.902E+00	2.035E+00	3.068E+00	4.951E-01	0.620
		72.87		5.543E+00	1.509E+00	2.095E+00	3.279E-01	2.645
		279.20	*	5.541E-02	5.244E-02	8.181E-02	5.025E-03	0.677
BI-207		72.81		1.199E+00	2.990E-01	4.721E-01	4.164E-02	2.539
	+	74.97		1.039E+00	2.208E-01	3.221E-01	2.866E-02	3.225
		569.70		8.777E-03	3.585E-02	5.822E-02	3.280E-03	0.151
		1063.66	*	6.403E-02	6.469E-02	1.153E-01	8.473E-03	0.555
PB-210		1770.23		1.309E-01	4.811E-01	7.406E-01	4.585E-02	0.177
		46.54	*	3.576E+00	6.161E+00	1.039E+01	8.023E-01	0.344
PB-211		404.85	*	-1.359E+00	1.081E+00	1.303E+00	6.250E-01	-1.043
		427.09		4.890E-01	1.738E+00	2.903E+00	1.330E+00	0.168
BI-212		832.01		1.027E+00	1.322E+00	2.149E+00	1.112E+00	0.478
	+	727.33	*	2.447E+00	1.078E+00	1.407E+00	1.529E-01	1.739

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	785.37		2.390E+00	4.004E+00	6.854E+00	4.832E-01	0.349
		1620.50		1.359E+00	2.517E+00	4.535E+00	3.076E-01	0.300
		271.23		9.450E-01	4.286E-01	5.045E-01	4.048E-02	1.873
		401.81	*	-1.616E-01	5.018E-01	8.179E-01	1.099E-01	-0.198
RA-223	+	81.07		-3.930E-02	3.863E-01	4.062E-01	3.748E-02	-0.097
		83.79		3.394E-01	1.947E-01	2.586E-01	2.436E-02	1.312
		94.87		1.119E+00	6.270E-01	9.709E-01	8.287E-02	1.152
		144.24		3.808E-01	8.266E-01	1.366E+00	9.428E-02	0.279
AC-227	+	154.21		-1.336E-02	4.774E-01	7.783E-01	5.077E-02	-0.017
		269.46		7.343E-01	3.307E-01	4.079E-01	2.461E-02	1.800
		323.87	*	-1.088E-01	8.402E-01	1.214E+00	1.962E-01	-0.090
		338.28		7.226E+00	2.269E+00	2.814E+00	2.901E-01	2.568
	+	79.69		8.584E-01	2.283E+00	2.487E+00	4.352E-01	0.345
		235.96		2.323E+00	3.272E-01	5.037E-01	4.031E-02	4.613
		256.23	*	-7.517E-02	3.117E-01	4.928E-01	5.017E-02	-0.153
		299.98		3.257E+00	1.537E+00	1.956E+00	2.157E-01	1.665
TH-227	+	304.50		-8.961E-01	2.047E+00	2.896E+00	4.425E-01	-0.309
		334.37		-1.479E+00	2.441E+00	3.181E+00	4.538E-01	-0.465
		79.80		1.022E+00	3.006E+00	3.264E+00	7.178E-01	0.313
		235.96		2.323E+00	3.174E-01	5.037E-01	3.642E-02	4.613
	+	256.23	*	-7.517E-02	3.117E-01	4.928E-01	5.904E-02	-0.153
		299.98		3.257E+00	1.537E+00	1.956E+00	2.157E-01	1.665
		304.50		-8.961E-01	2.047E+00	2.896E+00	4.425E-01	-0.309
		334.37		-1.479E+00	2.441E+00	3.181E+00	4.538E-01	-0.465
PA-231	+	283.69	*	-4.982E-01	1.723E+00	2.789E+00	3.662E-01	-0.179
		301.36		2.092E+00	9.845E-01	1.223E+00	1.271E-01	1.711
TH-231	+	81.07		-3.930E-02	3.863E-01	4.062E-01	3.748E-02	-0.097
		83.79		3.394E-01	1.947E-01	2.586E-01	2.436E-02	1.312
		94.87		1.119E+00	6.270E-01	9.709E-01	8.287E-02	1.152
		144.24		3.808E-01	8.266E-01	1.366E+00	9.428E-02	0.279
PA-233	+	154.21		-1.336E-02	4.774E-01	7.783E-01	5.077E-02	-0.017
		269.46		7.343E-01	3.307E-01	4.079E-01	2.461E-02	1.800
		323.87	*	-1.088E-01	8.402E-01	1.214E+00	1.962E-01	-0.090
		338.28		7.226E+00	2.269E+00	2.814E+00	2.901E-01	2.568
	+	300.13		1.474E+00	7.047E-01	8.809E-01	1.182E-01	1.673
		311.90	*	-4.398E-02	7.251E-02	1.179E-01	7.376E-03	-0.373
		340.48		1.483E+00	8.908E-01	1.335E+00	3.102E-01	1.111
		94.67		5.680E-01	2.393E-01	3.670E-01	4.538E-02	1.548
PA-234	+	98.44		1.161E-01	1.372E-01	1.841E-01	1.026E-01	0.630
		111.00		-9.841E-02	2.237E-01	3.630E-01	3.926E-02	-0.271
		131.20		-1.516E-02	1.284E-01	2.098E-01	1.186E-02	-0.072
		569.50		8.478E-02	3.203E-01	5.210E-01	2.935E-02	0.163
	+	733.00		7.577E-03	4.898E-01	6.804E-01	1.454E-01	0.011
		880.51		8.668E-02	3.131E-01	5.345E-01	4.686E-02	0.162
		883.24		-1.499E-01	3.418E-01	5.221E-01	3.511E-01	-0.287
		926.50		3.426E-02	2.101E-01	3.537E-01	8.972E-02	0.097
PA-234M	+	946.00	*	6.126E-02	3.339E-01	5.634E-01	1.059E-01	0.109
		949.00		8.504E-02	5.173E-01	8.709E-01	7.549E-02	0.098
		766.42		9.064E+00	1.583E+01	2.535E+01	1.279E+01	0.358

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		1.309E-01	5.590E+00	9.261E+00	8.836E-01	0.014
	99.53			1.703E-01	2.204E-01	3.316E-01	2.618E-02	0.514
	103.37			8.325E-03	1.203E-01	1.992E-01	1.485E-02	0.042
	106.12			5.079E-02	1.035E-01	1.735E-01	1.244E-02	0.293
	117.23	*		-9.359E-02	4.935E-01	7.933E-01	4.938E-02	-0.118
	228.18			-1.275E-01	2.664E-01	4.192E-01	2.328E-02	-0.304
AM-241	+	277.60		3.155E-01	2.897E-01	3.734E-01	2.171E-02	0.845
CM-247	+	59.54	*	1.866E-01	2.390E-01	3.648E-01	3.395E-02	0.511
	+	278.00		1.340E+00	1.230E+00	1.603E+00	9.324E-02	0.836
CF-249		287.50		2.464E-01	1.528E+00	2.453E+00	1.434E-01	0.100
		402.40	*	-6.534E-03	4.567E-02	7.524E-02	4.361E-03	-0.087
		252.80		-2.514E-01	1.158E+00	1.835E+00	1.046E-01	-0.137
		333.37		-2.533E-01	3.176E-01	3.322E-01	1.963E-02	-0.762
CF-251		388.16	*	-2.354E-03	4.856E-02	8.055E-02	4.660E-03	-0.029
		177.52	*	-5.832E-02	1.573E-01	2.517E-01	1.302E-02	-0.232
		227.38		1.985E-01	4.275E-01	7.014E-01	3.891E-02	0.283
		285.41		-1.199E+00	2.516E+00	4.147E+00	2.422E-01	-0.289

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]G247911007      *
* Acquisition date   : 6-MAR-2010 17:25:47 Detector SN#                   *
* Detector ID        : GAM23 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.600                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.93 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G247911007 Analyst initials: MXR1                  *
* Batch Number      : 957714 Sample Quantity : 1.3197E+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	3.047E+01	2.941E+00	7.073E-01	0.000E+00
CD-109	5.033E+00	1.201E+00	1.515E+00	0.000E+00
SN-126	4.911E-01	1.172E-01	1.488E-01	0.000E+00
TL-208	7.042E-01	1.077E-01	7.005E-02	0.000E+00
BI-211	5.068E+00	6.243E-01	3.699E-01	0.000E+00
PB-212	2.211E+00	2.042E-01	1.118E-01	0.000E+00
BI-214	1.343E+00	2.263E-01	1.343E-01	0.000E+00
PB-214	1.839E+00	2.474E-01	1.345E-01	0.000E+00
RA-224	5.127E+00	1.422E+00	1.198E+00	0.000E+00
RA-226	1.343E+00	2.263E-01	1.343E-01	0.000E+00
AC-228	2.265E+00	4.194E-01	3.127E-01	0.000E+00
RA-228	2.265E+00	4.194E-01	3.127E-01	0.000E+00
TH-228	2.211E+00	2.042E-01	1.118E-01	0.000E+00
TH-229	5.823E-02	6.356E-01	1.092E+00	0.000E+00
TH-232	2.265E+00	4.194E-01	3.127E-01	0.000E+00
TH-234	3.699E+00	3.062E+00	3.263E+00	0.000E+00
U-235	1.303E-01	2.429E-01	4.265E-01	0.000E+00
NP-237	1.465E+00	4.615E-01	4.507E-01	0.000E+00
U-238	3.699E+00	3.062E+00	3.263E+00	0.000E+00
ANH-511	1.546E-01	8.023E-02	5.828E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-6.780E-02	3.708E-01	6.285E-01	0.000E+00 NOT IDENT.
NA-22	2.345E-02	5.739E-02	9.918E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.968E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	6.745E-03	4.434E-02	7.711E-02	0.000E+00 FAIL ABUN
V-48	4.604E-02	8.452E-02	1.508E-01	0.000E+00 NOT IDENT.
CR-51	-2.792E-02	4.503E-01	7.693E-01	0.000E+00 NOT IDENT.
MN-54	2.484E-02	4.548E-02	8.136E-02	0.000E+00 NOT IDENT.

CO-56	1.275E-02	4.777E-02	8.396E-02	0.000E+00	NOT IDENT.
CO-57	1.233E-02	2.961E-02	5.264E-02	0.000E+00	NOT IDENT.
CO-58	-1.547E-02	4.756E-02	8.020E-02	0.000E+00	NOT IDENT.
FE-59	-3.269E-02	1.102E-01	1.812E-01	0.000E+00	NOT IDENT.
CO-60	1.676E-03	4.725E-02	7.887E-02	0.000E+00	NOT IDENT.
ZN-65	9.096E-02	1.453E-01	2.238E-01	0.000E+00	NOT IDENT.
SE-75	-6.979E-03	6.066E-02	8.818E-02	0.000E+00	NOT IDENT.
SR-85	2.638E-02	5.093E-02	7.858E-02	0.000E+00	NOT IDENT.
Y-88	7.603E-03	4.199E-02	7.270E-02	0.000E+00	NOT IDENT.
Y-91	-3.000E+00	2.969E+01	4.931E+01	0.000E+00	NOT IDENT.
NB-94	1.387E-02	4.080E-02	6.980E-02	0.000E+00	NOT IDENT.
NB-95	4.610E-02	5.614E-02	9.828E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.126E-01	3.620E-01	0.000E+00	NOT IDENT.
ZR-95	1.883E-02	9.729E-02	1.638E-01	0.000E+00	NOT IDENT.
MO-99	-6.729E+00	1.973E+01	3.185E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	9.837E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.982E-02	4.626E-02	8.126E-02	0.000E+00	NOT IDENT.
RH-106	7.569E-02	3.688E-01	6.305E-01	0.000E+00	NOT IDENT.
RU-106	7.569E-02	3.687E-01	6.305E-01	0.000E+00	NOT IDENT.
AG-108M	-2.234E-02	3.371E-02	5.577E-02	0.000E+00	NOT IDENT.
AG-110M	-5.545E-03	4.146E-02	6.885E-02	0.000E+00	NOT IDENT.
SN-113	-1.633E-02	5.290E-02	9.037E-02	0.000E+00	NOT IDENT.
CD-115	-4.476E+00	1.817E+01	3.041E+01	0.000E+00	NOT IDENT.
SN-117M	2.662E-03	7.074E-02	1.225E-01	0.000E+00	NOT IDENT.
TE-123M	4.456E-03	3.475E-02	6.038E-02	0.000E+00	NOT IDENT.
SB-124	-4.059E-02	8.717E-02	1.354E-01	0.000E+00	NOT IDENT.
SB-125	6.279E-02	9.925E-02	1.779E-01	0.000E+00	FAIL ABUN
TE-125M	-2.981E-01	1.184E+01	2.084E+01	0.000E+00	NOT IDENT.
I-126	-7.302E-02	2.870E-01	4.719E-01	0.000E+00	NOT IDENT.
SB-126	2.385E-02	1.960E-01	2.856E-01	0.000E+00	NOT IDENT.
SB-127	1.075E+00	1.932E+00	3.364E+00	0.000E+00	NOT IDENT.
I-131	-9.490E-02	1.401E-01	2.349E-01	0.000E+00	NOT IDENT.
TE-132	-5.371E-01	1.123E+00	1.861E+00	0.000E+00	NOT IDENT.
BA-133	-3.420E-02	5.386E-02	7.761E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.622E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	7.731E-02	6.836E-02	1.124E-01	0.000E+00	NOT IDENT.
CS-135	0.000E+00	2.212E-01	3.569E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.212E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	7.002E-02	1.403E-01	2.475E-01	0.000E+00	NOT IDENT.
BA-137M	2.631E-02	4.341E-02	7.591E-02	0.000E+00	NOT IDENT.
CS-137	2.779E-02	4.586E-02	8.019E-02	0.000E+00	NOT IDENT.
CE-139	-2.023E-02	3.611E-02	6.101E-02	0.000E+00	NOT IDENT.
BA-140	-1.661E-02	3.256E-01	5.520E-01	0.000E+00	NOT IDENT.
LA-140	-8.878E-02	1.083E-01	1.633E-01	0.000E+00	FAIL ABUN
CE-141	1.879E-02	7.599E-02	1.331E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	6.624E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	7.437E-02	2.338E-01	4.122E-01	0.000E+00	NOT IDENT.
PM-144	-3.962E-02	4.417E-02	6.885E-02	0.000E+00	NOT IDENT.
PR-144	-2.940E+00	3.309E+00	5.162E+00	0.000E+00	NOT IDENT.
PM-146	8.285E-02	4.854E-02	9.107E-02	0.000E+00	NOT IDENT.
ND-147	-2.599E-01	6.879E-01	1.121E+00	0.000E+00	FAIL ABUN
PM-149	-6.460E+01	1.498E+02	2.598E+02	0.000E+00	NOT IDENT.
EU-152	-1.116E-02	1.589E-01	1.893E-01	0.000E+00	NOT IDENT.
GD-153	5.186E-02	1.115E-01	1.770E-01	0.000E+00	NOT IDENT.
EU-154	6.639E-02	1.626E-01	2.809E-01	0.000E+00	NOT IDENT.
EU-155	2.287E-02	1.264E-01	2.243E-01	0.000E+00	FAIL ABUN
TB-160	8.855E-02	1.556E-01	2.799E-01	0.000E+00	FAIL ABUN
HO-166M	1.957E-02	7.003E-02	1.194E-01	0.000E+00	FAIL ABUN
TA-182	3.208E-01	2.633E-01	4.783E-01	0.000E+00	NOT IDENT.
IR-192	-7.952E-03	4.027E-02	7.020E-02	0.000E+00	FAIL ABUN
HG-203	5.541E-02	5.139E-02	8.427E-02	0.000E+00	NOT IDENT.
BI-207	6.403E-02	6.339E-02	1.161E-01	0.000E+00	FAIL ABUN
PB-210	3.576E+00	6.038E+00	1.101E+01	0.000E+00	NOT IDENT.
PB-211	-1.359E+00	1.060E+00	1.334E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.057E+00	1.426E+00	0.000E+00	FAIL ABUN
RN-219	-1.616E-01	4.917E-01	8.374E-01	0.000E+00	FAIL ABUN
RA-223	-1.088E-01	8.234E-01	1.248E+00	0.000E+00	FAIL ABUN
AC-227	-7.517E-02	3.054E-01	5.083E-01	0.000E+00	FAIL ABUN
TH-227	-7.517E-02	3.055E-01	5.083E-01	0.000E+00	FAIL ABUN
PA-231	-4.982E-01	1.689E+00	2.872E+00	0.000E+00	FAIL ABUN
TH-231	-1.088E-01	8.234E-01	1.248E+00	0.000E+00	FAIL ABUN
PA-233	-4.398E-02	7.106E-02	1.213E-01	0.000E+00	FAIL ABUN
PA-234	6.126E-02	3.272E-01	5.684E-01	0.000E+00	NOT IDENT.
PA-234M	1.309E-01	5.478E+00	9.334E+00	0.000E+00	NOT IDENT.
NP-239	-9.359E-02	4.836E-01	8.289E-01	0.000E+00	FAIL ABUN
AM-241	1.866E-01	2.342E-01	3.854E-01	0.000E+00	NOT IDENT.
CM-247	-6.534E-03	4.476E-02	7.703E-02	0.000E+00	FAIL ABUN
CF-249	-2.354E-03	4.759E-02	8.252E-02	0.000E+00	NOT IDENT.

CF-251	-5.832E-02	1.542E-01	2.612E-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]G247911007.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:25:47.
Sample ID          : G247911007 Sample quantity : 1.31970E+02 GRAM
Detector name      : GAM23 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.93 0.0%
Energy tolerance   : 1.60000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 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	1460.82	1139	10.66*	9.975E-01	3.047E+01	3.047E+01	9.85
CD-109	88.03	333	3.70*	5.218E+00	4.911E+00	5.033E+00	24.35
SN-126	64.28	122	9.60	2.530E+00	1.426E+00	1.426E+00	83.82
	86.94	333	8.90	5.218E+00	2.042E+00	2.042E+00	47.21
	87.57	333	37.00*	5.218E+00	4.911E-01	4.911E-01	24.35
TL-208	277.37	66	6.60	4.141E+00	6.902E-01	6.902E-01	92.29
	583.19	479	85.00*	2.278E+00	7.042E-01	7.042E-01	15.60
	860.56	59	12.50	1.610E+00	8.278E-01	8.278E-01	70.19
BI-211	72.87	-----	1.23	3.829E+00	-----	Line Not Found	-----
	351.06	792	12.92*	3.442E+00	5.068E+00	5.068E+00	12.57
PB-212	74.82	525	10.28	4.031E+00	3.604E+00	3.604E+00	23.38
	77.11	698	17.10	4.291E+00	2.707E+00	2.707E+00	14.77
	238.63	1572	43.60*	4.639E+00	2.211E+00	2.211E+00	9.42
	300.09	134	3.30	3.898E+00	2.961E+00	2.961E+00	46.66
BI-214	609.32	471	45.49*	2.194E+00	1.343E+00	1.343E+00	17.20
	1120.29	103	14.92	1.259E+00	1.556E+00	1.556E+00	43.98
	1764.49	83	15.30	8.744E-01	1.771E+00	1.771E+00	28.13
PB-214	74.82	525	5.80	4.031E+00	6.387E+00	6.387E+00	22.69
	77.11	698	9.70	4.291E+00	4.772E+00	4.772E+00	16.91
	242.00	340	7.25	4.597E+00	2.900E+00	2.900E+00	28.89
	295.22	427	18.42	3.950E+00	1.667E+00	1.668E+00	16.62
	351.93	792	35.60*	3.442E+00	1.839E+00	1.839E+00	13.73
RA-224	240.99	340	4.10*	4.597E+00	5.127E+00	5.127E+00	28.30
RA-226	609.32	471	45.49*	2.194E+00	1.343E+00	1.343E+00	17.20
	1120.29	103	14.92	1.259E+00	1.556E+00	1.556E+00	43.98
	1764.49	83	15.30	8.744E-01	1.771E+00	1.771E+00	28.13
AC-228	338.32	256	11.27	3.551E+00	1.821E+00	1.821E+00	50.80
	911.20	314	25.80*	1.527E+00	2.265E+00	2.265E+00	18.90
	968.97	201	15.80	1.442E+00	2.504E+00	2.504E+00	34.46
RA-228	338.32	256	11.27	3.551E+00	1.821E+00	1.821E+00	50.80
	911.20	314	25.80*	1.527E+00	2.265E+00	2.265E+00	18.90
	968.97	201	15.80	1.442E+00	2.504E+00	2.504E+00	34.46

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	525	10.28	4.031E+00	3.604E+00	3.604E+00	21.29
	77.11	698	17.10	4.291E+00	2.707E+00	2.707E+00	14.77
	238.63	1572	43.60*	4.639E+00	2.211E+00	2.211E+00	9.42
	300.09	134	3.30	3.898E+00	2.961E+00	2.961E+00	76.25
TH-229	85.43	147	14.70	4.993E+00	5.702E-01	5.702E-01	57.38
	88.47	214	24.00	5.404E+00	4.703E-01	4.703E-01	31.55
	193.51	-----	4.41*	5.353E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.059E+00	-----	Line Not Found	-----
TH-232	338.32	256	11.27	3.551E+00	1.821E+00	1.821E+00	30.24
	911.20	314	25.80*	1.527E+00	2.265E+00	2.265E+00	18.90
	968.97	201	15.80	1.442E+00	2.504E+00	2.504E+00	34.46
TH-234	63.29	122	3.70*	2.530E+00	3.699E+00	3.699E+00	84.46
	92.59	335	4.23	5.589E+00	4.033E+00	4.033E+00	35.14
U-235	89.96	214	3.47	5.404E+00	3.253E+00	3.253E+00	39.08
	93.35	335	5.60	5.589E+00	3.047E+00	3.047E+00	35.78
	143.76	-----	10.96*	6.189E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.887E+00	-----	Line Not Found	-----
	185.72	314	57.20	5.490E+00	2.846E-01	2.846E-01	33.24
NP-237	205.31	-----	5.01	5.150E+00	-----	Line Not Found	-----
	86.48	333	12.40*	5.218E+00	1.465E+00	1.465E+00	32.13
	95.86	-----	2.68	5.757E+00	-----	Line Not Found	-----
U-238	63.29	122	3.70*	2.530E+00	3.699E+00	3.699E+00	84.46
	92.59	335	4.23	5.589E+00	4.033E+00	4.033E+00	28.66
ANH-511	511.00	138	100.00*	2.547E+00	1.546E-01	1.546E-01	52.96

Flag: "*" = Keyline

Total number of lines in spectrum 30
Number of unidentified lines 2
Number of lines tentatively identified by NID 28 93.33%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.047E+01	3.047E+01	0.300E+01	9.85	
CD-109	461.40D	1.02	4.911E+00	5.033E+00	1.225E+00	24.35	
SN-126	2.30E+05Y	1.00	4.911E-01	4.911E-01	1.196E-01	24.35	
TL-208	1.41E+10Y	1.00	7.042E-01	7.042E-01	1.099E-01	15.60	
BI-211	7.04E+08Y	1.00	5.068E+00	5.068E+00	0.637E+00	12.57	
PB-212	1.41E+10Y	1.00	2.211E+00	2.211E+00	0.208E+00	9.42	
BI-214	1600.00Y	1.00	1.343E+00	1.343E+00	0.231E+00	17.20	
PB-214	1600.00Y	1.00	1.839E+00	1.839E+00	0.252E+00	13.73	
RA-224	1.41E+10Y	1.00	5.127E+00	5.127E+00	1.451E+00	28.30	
RA-226	1600.00Y	1.00	1.343E+00	1.343E+00	0.231E+00	17.20	
AC-228	1.41E+10Y	1.00	2.265E+00	2.265E+00	0.428E+00	18.90	
RA-228	1.41E+10Y	1.00	2.265E+00	2.265E+00	0.428E+00	18.90	
TH-228	1.41E+10Y	1.00	2.211E+00	2.211E+00	0.208E+00	9.42	
TH-229	7340.00Y	1.00	4.703E-01	4.703E-01	1.484E-01	31.55	K
TH-232	1.41E+10Y	1.00	2.265E+00	2.265E+00	0.428E+00	18.90	
TH-234	4.47E+09Y	1.00	3.699E+00	3.699E+00	3.124E+00	84.46	
U-235	7.04E+08Y	1.00	2.846E-01	2.846E-01	0.946E-01	33.24	K
NP-237	2.14E+06Y	1.00	1.465E+00	1.465E+00	0.471E+00	32.13	
U-238	4.47E+09Y	1.00	3.699E+00	3.699E+00	3.124E+00	84.46	
ANH-511	1.00E+09Y	1.00	1.546E-01	1.546E-01	0.819E-01	52.96	

Total Activity : 7.229E+01 7.241E+01

Grand Total Activity : 7.229E+01 7.241E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247911007

Page : 4
Acquisition date : 6-MAR-2010 17:25:47

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.13	119	374	1.76	418.26	413	9	1.65E-02	61.3	5.09E+00	
0	269.97	152	246	1.76	539.93	533	12	2.11E-02	44.6	4.23E+00	T
0	327.22	67	200	0.88	654.44	650	10	9.31E-03	83.9	3.64E+00	T
0	462.42	98	110	1.32	924.84	921	9	1.37E-02	43.6	2.76E+00	T
0	726.92	108	90	1.75	1453.83	1448	14	1.50E-02	42.7	1.88E+00	T
0	793.88	70	58	1.67	1587.77	1582	11	9.78E-03	48.1	1.73E+00	

Flags: "T" = Tentatively associated


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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911007.CNF;1  *
* Acquisition date   : 6-MAR-2010 17:25:47.  Detector SN#      :             *
* Detector ID        : GAM23                      Sensitivity    : 5.00000      *
* Geometry           : CAN                      Energy tolerance: 1.60000      *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000      *
* Elapsed real time  : 0 02:00:01.93             Half life ratio : 8.00000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G247911007             Analyst initials: MXR1          *
* Batch Number       : 957714                 Sample Quantity : 1.31970E+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	3.047E+01	3.001E+00	7.064E-01	5.285E-02	43.135
CD-109	5.033E+00	1.225E+00	1.443E+00	1.409E-01	3.487
SN-126	4.911E-01	1.196E-01	1.417E-01	1.379E-02	3.466
TL-208	7.042E-01	1.099E-01	6.885E-02	4.459E-03	10.228
BI-211	5.068E+00	6.370E-01	3.605E-01	2.349E-02	14.059
PB-212	2.211E+00	2.083E-01	1.082E-01	7.851E-03	20.430
BI-214	1.343E+00	2.310E-01	1.321E-01	1.002E-02	10.162
PB-214	1.839E+00	2.525E-01	1.311E-01	1.119E-02	14.028
RA-224	5.127E+00	1.451E+00	1.160E+00	6.537E-02	4.420
RA-226	1.343E+00	2.310E-01	1.321E-01	1.002E-02	10.162
AC-228	2.265E+00	4.279E-01	3.097E-01	3.679E-02	7.312
RA-228	2.265E+00	4.279E-01	3.097E-01	3.679E-02	7.312
TH-228	2.211E+00	2.083E-01	1.082E-01	7.851E-03	20.430
TH-229	4.703E-01	1.484E-01	1.054E+00	5.580E-02	0.446
TH-232	2.265E+00	4.279E-01	3.097E-01	3.679E-02	7.312
TH-234	3.699E+00	3.124E+00	3.092E+00	5.689E-01	1.196
U-235	2.846E-01	9.461E-02	4.095E-01	6.377E-02	0.695
NP-237	1.465E+00	4.709E-01	4.292E-01	9.904E-02	3.414

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	3.699E+00	3.124E+00	3.092E+00	5.689E-01	1.196
ANH-511	1.546E-01	8.187E-02	5.716E-02	3.320E-03	2.705

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-6.780E-02		3.784E-01	6.156E-01	4.182E-02	-0.110
NA-22	2.345E-02		5.856E-02	9.882E-02	6.636E-03	0.237
NA-24	-1.284E+00		1.514E+00	Half-Life too short		
SC-46	6.745E-03		4.524E-02	7.635E-02	6.822E-03	0.088
V-48	4.604E-02		8.625E-02	1.495E-01	1.244E-02	0.308
CR-51	-2.792E-02		4.595E-01	7.485E-01	4.901E-02	-0.037
MN-54	2.484E-02		4.641E-02	8.046E-02	6.371E-03	0.309
CO-56	1.275E-02		4.874E-02	8.306E-02	6.757E-03	0.153
CO-57	1.233E-02		3.022E-02	5.041E-02	2.972E-03	0.245
CO-58	-1.547E-02		4.853E-02	7.928E-02	5.956E-03	-0.195
FE-59	-3.269E-02		1.125E-01	1.801E-01	1.386E-02	-0.182
CO-60	1.676E-03		4.821E-02	7.865E-02	5.773E-03	0.021
ZN-65	9.096E-02		1.483E-01	2.225E-01	1.469E-02	0.409
SE-75	-6.979E-03		6.190E-02	8.553E-02	4.980E-03	-0.082
SR-85	2.638E-02		5.197E-02	7.707E-02	4.472E-03	0.342
Y-88	7.603E-03		4.284E-02	7.291E-02	4.293E-03	0.104
Y-91	-3.000E+00		3.029E+01	4.908E+01	2.927E+00	-0.061
NB-94	1.387E-02		4.163E-02	6.883E-02	3.933E-03	0.201
NB-95	4.610E-02		5.728E-02	9.706E-02	6.523E-03	0.475
NB-95M	1.049E+00		2.169E-01	3.504E-01	2.594E-02	2.994
ZR-95	1.883E-02		9.927E-02	1.617E-01	1.248E-02	0.116
MO-99	-6.729E+00		2.014E+01	3.143E+01	4.594E+00	-0.214
TC-99M	-2.220E+11		5.019E+11	Half-Life too short		
RU-103	1.982E-02		4.720E-02	7.965E-02	9.910E-03	0.249
RH-106	7.569E-02		3.763E-01	6.204E-01	7.081E-02	0.122
RU-106	7.569E-02		3.762E-01	6.204E-01	3.333E-02	0.122
AG-108M	-2.234E-02		3.440E-02	5.455E-02	3.409E-03	-0.410
AG-110M	-5.545E-03		4.231E-02	6.781E-02	3.769E-03	-0.082
SN-113	-1.633E-02		5.398E-02	8.823E-02	5.435E-03	-0.185
CD-115	-4.476E+00		1.854E+01	2.984E+01	1.722E+00	-0.150
SN-117M	2.662E-03		7.219E-02	1.179E-01	6.125E-03	0.023
TE-123M	4.456E-03		3.546E-02	5.808E-02	3.065E-03	0.077
SB-124	-4.059E-02		8.895E-02	1.356E-01	9.487E-03	-0.299
SB-125	6.279E-02		1.013E-01	1.740E-01	1.057E-02	0.361
TE-125M	-2.981E-01		1.209E+01	1.993E+01	1.813E+00	-0.015
I-126	-7.302E-02		2.928E-01	4.649E-01	2.406E-02	-0.157
SB-126	2.385E-02		2.000E-01	2.817E-01	1.688E-02	0.085
SB-127	1.075E+00		1.971E+00	3.315E+00	3.187E-01	0.324
I-131	-9.490E-02		1.429E-01	2.291E-01	1.498E-02	-0.414
TE-132	-5.371E-01		1.146E+00	1.801E+00	2.634E-01	-0.298
BA-133	-3.420E-02		5.496E-02	7.565E-02	8.563E-03	-0.452

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	-4.362E-03		8.276E-03	Half-Life too short		
CS-134	7.731E-02		6.976E-02	1.111E-01	8.114E-03	0.696
CS-135	3.954E-01		2.257E-01	3.462E-01	2.645E-02	1.142
I-135	-1.671E+09		6.183E+10	Half-Life too short		
CS-136	7.002E-02		1.431E-01	2.458E-01	1.958E-02	0.285
BA-137M	2.631E-02		4.429E-02	7.477E-02	3.820E-03	0.352
CS-137	2.779E-02		4.679E-02	7.899E-02	4.057E-03	0.352
CE-139	-2.023E-02		3.685E-02	5.872E-02	2.994E-03	-0.345
BA-140	-1.661E-02		3.322E-01	5.418E-01	1.804E-01	-0.031
LA-140	-8.878E-02		1.105E-01	1.634E-01	1.121E-02	-0.543
CE-141	1.879E-02		7.754E-02	1.279E-01	7.213E-03	0.147
CE-143	2.589E-03	+	3.379E-04	Half-Life too short		
CE-144	7.437E-02		2.386E-01	3.953E-01	5.460E-02	0.188
PM-144	-3.962E-02		4.507E-02	6.788E-02	3.819E-03	-0.584
PR-144	-2.940E+00		3.377E+00	5.089E+00	2.861E-01	-0.578
PM-146	8.285E-02		4.953E-02	8.913E-02	7.573E-03	0.929
ND-147	-2.599E-01		7.019E-01	1.100E+00	1.485E-01	-0.236
PM-149	-6.460E+01		1.529E+02	2.523E+02	3.582E+01	-0.256
EU-152	-1.116E-02		1.622E-01	1.844E-01	1.221E-02	-0.061
GD-153	5.186E-02		1.137E-01	1.689E-01	1.380E-02	0.307
EU-154	6.639E-02		1.659E-01	2.798E-01	2.800E-02	0.237
EU-155	2.287E-02		1.290E-01	2.143E-01	1.579E-02	0.107
TB-160	8.855E-02		1.588E-01	2.771E-01	2.423E-02	0.320
HO-166M	1.957E-02		7.146E-02	1.178E-01	6.893E-03	0.166
TA-182	3.208E-01		2.686E-01	4.762E-01	2.923E-02	0.674
IR-192	-7.952E-03		4.109E-02	6.829E-02	4.051E-03	-0.116
HG-203	5.541E-02		5.244E-02	8.181E-02	5.025E-03	0.677
BI-207	6.403E-02		6.469E-02	1.153E-01	8.473E-03	0.555
PB-210	3.576E+00		6.161E+00	1.039E+01	8.023E-01	0.344
PB-211	-1.359E+00		1.081E+00	1.303E+00	6.250E-01	-1.043
BI-212	2.447E+00	+	1.078E+00	1.407E+00	1.529E-01	1.739
RN-219	-1.616E-01		5.018E-01	8.179E-01	1.099E-01	-0.198
RA-223	-1.088E-01		8.402E-01	1.214E+00	1.962E-01	-0.090
AC-227	-7.517E-02		3.117E-01	4.928E-01	5.017E-02	-0.153
TH-227	-7.517E-02		3.117E-01	4.928E-01	5.904E-02	-0.153
PA-231	-4.982E-01		1.723E+00	2.789E+00	3.662E-01	-0.179
TH-231	-1.088E-01		8.402E-01	1.214E+00	1.962E-01	-0.090
PA-233	-4.398E-02		7.251E-02	1.179E-01	7.376E-03	-0.373
PA-234	6.126E-02		3.339E-01	5.634E-01	1.059E-01	0.109
PA-234M	1.309E-01		5.590E+00	9.261E+00	8.836E-01	0.014
NP-239	-9.359E-02		4.935E-01	7.933E-01	4.938E-02	-0.118
AM-241	1.866E-01		2.390E-01	3.648E-01	3.395E-02	0.511
CM-247	-6.534E-03		4.567E-02	7.524E-02	4.361E-03	-0.087
CF-249	-2.354E-03		4.856E-02	8.055E-02	4.660E-03	-0.029
CF-251	-5.832E-02		1.573E-01	2.517E-01	1.302E-02	-0.232

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G247911007
* Acquisition date   : 6-MAR-2010 17:25:47 Detector SN#
* Detector ID        : GAM23 Sensitivity : 5.000
* Geometry           : CAN Energy tolerance: 1.600
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 02:00:01.93 Half life ratio : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G247911007 Analyst initials: MXR1
* Batch Number       : 957714 Sample Quantity : 1.3197E+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	3.047E+01	2.941E+00	3.539E-01	1.500E+00
CD-109	5.033E+00	1.201E+00	7.580E-01	6.127E-01
SN-126	4.911E-01	1.172E-01	7.442E-02	5.979E-02
TL-208	7.042E-01	1.077E-01	3.504E-02	5.493E-02
BI-211	5.068E+00	6.243E-01	1.851E-01	3.185E-01
PB-212	2.211E+00	2.042E-01	5.592E-02	1.042E-01
BI-214	1.343E+00	2.263E-01	6.720E-02	1.155E-01
PB-214	1.839E+00	2.474E-01	6.731E-02	1.262E-01
RA-224	5.127E+00	1.422E+00	5.993E-01	7.256E-01
RA-226	1.343E+00	2.263E-01	6.720E-02	1.155E-01
AC-228	2.265E+00	4.194E-01	1.564E-01	2.140E-01
RA-228	2.265E+00	4.194E-01	1.564E-01	2.140E-01
TH-228	2.211E+00	2.042E-01	5.592E-02	1.042E-01
TH-229	5.823E-02	6.356E-01	5.462E-01	3.243E-01
TH-232	2.265E+00	4.194E-01	1.564E-01	2.140E-01
TH-234	3.699E+00	3.062E+00	1.633E+00	1.562E+00
U-235	1.303E-01	2.429E-01	2.134E-01	1.239E-01
NP-237	1.465E+00	4.615E-01	2.255E-01	2.354E-01
U-238	3.699E+00	3.062E+00	1.633E+00	1.562E+00
ANH-511	1.546E-01	8.023E-02	2.916E-02	4.094E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-6.780E-02	3.708E-01	3.144E-01	1.892E-01	NOT IDENT.
NA-22	2.345E-02	5.739E-02	4.962E-02	2.928E-02	NOT IDENT.
NA-24	-1.284E+06	2.968E+06	0.000E+00	1.514E+06	SHORT HLIF
SC-46	6.745E-03	4.434E-02	3.858E-02	2.262E-02	FAIL ABUN
V-48	4.604E-02	8.452E-02	7.542E-02	4.312E-02	NOT IDENT.
CR-51	-2.792E-02	4.503E-01	3.849E-01	2.298E-01	NOT IDENT.
MN-54	2.484E-02	4.548E-02	4.070E-02	2.321E-02	NOT IDENT.

CO-56	1.275E-02	4.777E-02	4.200E-02	2.437E-02	NOT IDENT.
CO-57	1.233E-02	2.961E-02	2.634E-02	1.511E-02	NOT IDENT.
CO-58	-1.547E-02	4.756E-02	4.012E-02	2.427E-02	NOT IDENT.
FE-59	-3.269E-02	1.102E-01	9.065E-02	5.623E-02	NOT IDENT.
CO-60	1.676E-03	4.725E-02	3.946E-02	2.410E-02	NOT IDENT.
ZN-65	9.096E-02	1.453E-01	1.120E-01	7.415E-02	NOT IDENT.
SE-75	-6.979E-03	6.066E-02	4.412E-02	3.095E-02	NOT IDENT.
SR-85	2.638E-02	5.093E-02	3.931E-02	2.598E-02	NOT IDENT.
Y-88	7.603E-03	4.199E-02	3.637E-02	2.142E-02	NOT IDENT.
Y-91	-3.000E+00	2.969E+01	2.467E+01	1.515E+01	NOT IDENT.
NB-94	1.387E-02	4.080E-02	3.492E-02	2.081E-02	NOT IDENT.
NB-95	4.610E-02	5.614E-02	4.917E-02	2.864E-02	NOT IDENT.
NB-95M	1.049E+00	2.126E-01	1.811E-01	1.084E-01	NOT IDENT.
ZR-95	1.883E-02	9.729E-02	8.195E-02	4.964E-02	NOT IDENT.
MO-99	-6.729E+00	1.973E+01	1.593E+01	1.007E+01	NOT IDENT.
TC-99M	-2.220E+17	9.837E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.982E-02	4.626E-02	4.065E-02	2.360E-02	NOT IDENT.
RH-106	7.569E-02	3.688E-01	3.154E-01	1.881E-01	NOT IDENT.
RU-106	7.569E-02	3.687E-01	3.154E-01	1.881E-01	NOT IDENT.
AG-108M	-2.234E-02	3.371E-02	2.790E-02	1.720E-02	NOT IDENT.
AG-110M	-5.545E-03	4.146E-02	3.444E-02	2.115E-02	NOT IDENT.
SN-113	-1.633E-02	5.290E-02	4.521E-02	2.699E-02	NOT IDENT.
CD-115	-4.476E+00	1.817E+01	1.521E+01	9.270E+00	NOT IDENT.
SN-117M	2.662E-03	7.074E-02	6.131E-02	3.609E-02	NOT IDENT.
TE-123M	4.456E-03	3.475E-02	3.021E-02	1.773E-02	NOT IDENT.
SB-124	-4.059E-02	8.717E-02	6.773E-02	4.447E-02	NOT IDENT.
SB-125	6.279E-02	9.925E-02	8.902E-02	5.064E-02	FAIL ABUN
TE-125M	-2.981E-01	1.184E+01	1.043E+01	6.043E+00	NOT IDENT.
I-126	-7.302E-02	2.870E-01	2.361E-01	1.464E-01	NOT IDENT.
SB-126	2.385E-02	1.960E-01	1.429E-01	9.999E-02	NOT IDENT.
SB-127	1.075E+00	1.932E+00	1.683E+00	9.856E-01	NOT IDENT.
I-131	-9.490E-02	1.401E-01	1.175E-01	7.146E-02	NOT IDENT.
TE-132	-5.371E-01	1.123E+00	9.312E-01	5.731E-01	NOT IDENT.
BA-133	-3.420E-02	5.386E-02	3.883E-02	2.748E-02	FAIL ABUN
I-133	-4.362E+03	1.622E+04	0.000E+00	8.276E+03	SHORT HLIF
CS-134	7.731E-02	6.836E-02	5.624E-02	3.488E-02	NOT IDENT.
CS-135	3.954E-01	2.212E-01	1.786E-01	1.128E-01	NOT IDENT.
I-135	-1.671E+15	1.212E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	7.002E-02	1.403E-01	1.238E-01	7.157E-02	NOT IDENT.
BA-137M	2.631E-02	4.341E-02	3.798E-02	2.215E-02	NOT IDENT.
CS-137	2.779E-02	4.586E-02	4.012E-02	2.340E-02	NOT IDENT.
CE-139	-2.023E-02	3.611E-02	3.052E-02	1.842E-02	NOT IDENT.
BA-140	-1.661E-02	3.256E-01	2.762E-01	1.661E-01	NOT IDENT.
LA-140	-8.878E-02	1.083E-01	8.171E-02	5.527E-02	FAIL ABUN
CE-141	1.879E-02	7.599E-02	6.661E-02	3.877E-02	NOT IDENT.
CE-143	2.589E+03	6.624E+02	0.000E+00	3.379E+02	SHORT HLIF
CE-144	7.437E-02	2.338E-01	2.062E-01	1.193E-01	NOT IDENT.
PM-144	-3.962E-02	4.417E-02	3.444E-02	2.253E-02	NOT IDENT.
PR-144	-2.940E+00	3.309E+00	2.583E+00	1.688E+00	NOT IDENT.
PM-146	8.285E-02	4.854E-02	4.556E-02	2.477E-02	NOT IDENT.
ND-147	-2.599E-01	6.879E-01	5.606E-01	3.509E-01	FAIL ABUN
PM-149	-6.460E+01	1.498E+02	1.300E+02	7.644E+01	NOT IDENT.
EU-152	-1.116E-02	1.589E-01	9.471E-02	8.110E-02	NOT IDENT.
GD-153	5.186E-02	1.115E-01	8.855E-02	5.686E-02	NOT IDENT.
EU-154	6.639E-02	1.626E-01	1.405E-01	8.295E-02	NOT IDENT.
EU-155	2.287E-02	1.264E-01	1.122E-01	6.449E-02	FAIL ABUN
TB-160	8.855E-02	1.556E-01	1.400E-01	7.938E-02	FAIL ABUN
HO-166M	1.957E-02	7.003E-02	5.974E-02	3.573E-02	FAIL ABUN
TA-182	3.208E-01	2.633E-01	2.393E-01	1.343E-01	NOT IDENT.
IR-192	-7.952E-03	4.027E-02	3.512E-02	2.054E-02	FAIL ABUN
HG-203	5.541E-02	5.139E-02	4.216E-02	2.622E-02	NOT IDENT.
BI-207	6.403E-02	6.339E-02	5.810E-02	3.234E-02	FAIL ABUN
PB-210	3.576E+00	6.038E+00	5.510E+00	3.080E+00	NOT IDENT.
PB-211	-1.359E+00	1.060E+00	6.672E-01	5.407E-01	NOT IDENT.
BI-212	2.447E+00	1.057E+00	7.134E-01	5.391E-01	FAIL ABUN
RN-219	-1.616E-01	4.917E-01	4.189E-01	2.509E-01	FAIL ABUN
RA-223	-1.088E-01	8.234E-01	6.241E-01	4.201E-01	FAIL ABUN
AC-227	-7.517E-02	3.054E-01	2.543E-01	1.558E-01	FAIL ABUN
TH-227	-7.517E-02	3.055E-01	2.543E-01	1.558E-01	FAIL ABUN
PA-231	-4.982E-01	1.689E+00	1.437E+00	8.616E-01	FAIL ABUN
TH-231	-1.088E-01	8.234E-01	6.241E-01	4.201E-01	FAIL ABUN
PA-233	-4.398E-02	7.106E-02	6.067E-02	3.626E-02	FAIL ABUN
PA-234	6.126E-02	3.272E-01	2.844E-01	1.670E-01	NOT IDENT.
PA-234M	1.309E-01	5.478E+00	4.670E+00	2.795E+00	NOT IDENT.
NP-239	-9.359E-02	4.836E-01	4.147E-01	2.467E-01	FAIL ABUN
AM-241	1.866E-01	2.342E-01	1.928E-01	1.195E-01	NOT IDENT.
CM-247	-6.534E-03	4.476E-02	3.854E-02	2.284E-02	FAIL ABUN
CF-249	-2.354E-03	4.759E-02	4.128E-02	2.428E-02	NOT IDENT.

CF-251	-5.832E-02	1.542E-01	1.307E-01	7.865E-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
46.54	341.5214
49.72	377.0911
57.36	0.0000
59.54	375.3569
63.29	501.6589
63.29	501.6589
64.28	502.4124
67.75	505.0058
69.67	536.4268
70.83	509.5097
72.81	506.4138
72.87	506.4568
72.87	506.4568
74.82	507.8288
74.82	507.8288
74.82	507.8288
74.97	507.9334
77.11	509.4182
77.11	509.4182
77.11	509.4182
79.69	479.2310
79.80	479.3003
80.12	479.5041
80.19	479.5483
80.57	479.7886
81.00	480.0597
81.07	480.1039
81.07	480.1039
83.79	431.3289
83.79	431.3289
85.43	432.2325
86.48	432.8074
86.55	432.8470
86.79	432.9760
86.94	433.0587
87.57	433.4012
88.03	433.6508
88.47	433.8883
89.96	434.6886
91.11	435.3031
92.59	436.0862
92.59	436.0862
93.35	436.4873
94.67	437.1775
94.87	440.3837
94.87	440.3837
95.86	436.2446
97.43	395.0580
98.44	370.6097
99.53	381.9930
100.11	382.2487
103.18	452.0901
103.37	406.1853
105.31	420.8044
106.12	419.2205
109.28	431.5205
111.00	433.3162
111.76	445.5256
116.30	388.1243
117.23	399.4329
121.12	397.0541
121.78	370.3674
122.06	370.4735
123.07	377.8515
131.20	424.2505
133.52	384.8050
136.00	397.8693

136.47	412.2291
140.51	403.6332
140.51	0.0000
143.76	389.5542
144.24	388.7059
144.24	388.7059
145.44	400.3680
152.43	391.5895
153.25	397.0141
154.21	411.7615
154.21	411.7615
156.02	401.0761
158.56	399.8969
159.00	392.8114
162.66	388.8617
163.33	404.6452
165.86	396.1531
176.60	344.0732
177.52	364.2743
181.07	320.0405
184.41	343.0511
185.72	343.4033
193.51	348.6627
197.04	349.5936
205.31	350.0298
210.85	332.4891
215.65	328.4458
222.11	306.0623
227.38	276.6769
228.16	309.5200
228.18	309.5243
235.69	304.9651
235.96	301.5144
235.96	301.5144
238.63	273.2955
238.63	273.2955
240.99	273.7230
242.00	273.9053
244.70	245.0774
252.40	256.9307
252.80	247.0265
256.23	253.1175
256.23	253.1175
260.90	241.6151
264.66	226.7800
268.22	221.9088
269.46	210.4357
269.46	210.4357
271.23	147.9139
273.65	148.1314
276.40	195.5880
277.37	208.7490
277.60	206.9775
278.00	223.5303
279.20	214.6833
279.54	220.7333
280.46	208.8337
283.69	224.7899
284.31	219.5513
285.41	225.1182
285.90	230.6113
287.50	216.1165
293.27	0.0000
295.22	186.4019
295.96	186.4819
298.57	186.7597
299.98	186.9099
299.98	186.9099
300.09	186.9224
300.09	186.9224
300.13	186.9274
301.36	164.2456
302.85	196.3476
304.50	191.9608
304.50	191.9608
304.85	191.9993
308.46	171.3177
311.90	190.9223

316.51	195.0881
319.41	180.6516
320.08	193.6271
323.87	186.3275
323.87	186.3275
328.76	192.9932
333.37	219.7805
334.37	204.4104
334.37	204.4104
338.28	173.1785
338.28	173.1785
338.32	173.1807
338.32	173.1807
338.32	173.1807
340.48	169.3390
340.55	169.3456
344.28	171.2305
351.06	147.1492
351.93	147.2143
356.01	170.6984
364.49	156.6463
366.42	144.5170
383.85	156.2364
388.16	165.1504
388.63	161.3690
391.69	164.4729
400.66	160.3706
401.81	171.0251
402.40	165.3065
404.85	186.6611
410.95	113.8573
414.70	148.8491
423.72	141.6959
427.09	120.5261
427.87	110.8452
433.94	138.4448
453.88	96.3814
463.37	121.7871
468.07	122.0295
473.00	121.9520
476.78	109.2333
477.60	117.2178
487.02	114.6813
492.35	111.9330
497.08	102.1345
511.00	120.8269
514.00	122.6506
527.90	101.3574
529.87	0.0000
531.02	95.3907
537.26	102.7384
546.56	0.0000
563.25	96.5565
569.33	91.6248
569.50	91.6313
569.70	90.6082
583.19	101.3999
600.60	126.6718
602.73	100.7188
604.72	121.6398
609.32	99.2096
609.32	99.2096
610.33	78.3508
614.28	90.6636
618.01	81.7039
621.93	89.1566
621.93	89.1566
633.25	87.3952
635.95	88.5302
636.99	81.1809
645.85	75.0787
657.76	93.4248
661.66	90.3561
661.66	90.3561
664.57	0.0000
666.33	103.2709
666.50	102.2109
677.62	99.3756

685.70	80.3503
695.00	92.4101
696.49	119.3304
696.51	119.3304
697.00	109.6724
702.65	91.5555
706.68	80.8868
711.68	77.7744
720.70	72.2152
721.93	0.0000
722.78	93.9390
722.91	93.9432
723.31	83.1148
724.19	75.9080
727.33	77.0669
733.00	70.6764
735.93	83.4368
739.50	86.0687
747.24	82.9951
752.31	96.2457
753.82	90.8198
756.73	96.3746
763.94	103.1659
765.81	96.6346
766.42	102.1433
777.92	67.0414
778.90	69.8167
783.70	88.3125
785.37	83.3353
795.86	85.4579
801.95	85.7527
810.29	93.6251
810.76	82.5122
815.77	56.6340
818.51	85.4807
832.01	69.0182
834.85	80.2733
836.80	0.0000
846.77	72.1092
856.80	54.7342
860.56	66.0702
871.09	56.5625
873.19	71.6860
875.33	0.0000
879.36	52.9090
880.51	54.8163
883.24	65.2589
884.68	60.5534
889.28	58.7330
898.04	64.5662
911.20	84.9353
911.20	84.9353
911.20	84.9353
926.50	62.1779
937.49	67.1488
944.13	56.6929
946.00	52.8751
949.00	58.6879
962.29	69.5024
964.08	43.0444
966.15	84.4776
968.97	106.3611
968.97	106.3611
968.97	106.3611
983.53	51.4322
996.26	70.0884
1001.03	60.4245
1004.73	70.2334
1037.84	56.0444
1038.76	0.0000
1048.07	60.1213
1050.41	56.2114
1050.41	56.2114
1063.66	51.4393
1085.87	68.6069
1099.45	64.8281
1112.07	56.5829
1115.54	85.7980

1120.29	58.4067
1120.29	58.4067
1120.55	58.4090
1121.30	58.4185
1131.51	0.0000
1173.23	66.9104
1177.93	70.0220
1189.05	72.2249
1204.77	87.7742
1221.41	72.7189
1231.02	108.7863
1235.36	82.1777
1238.28	76.0596
1260.41	0.0000
1271.85	48.6428
1274.44	59.0225
1274.54	59.0248
1291.59	44.6797
1298.22	0.0000
1312.11	44.8634
1332.49	39.8075
1365.19	37.9526
1368.63	0.0000
1384.29	37.0337
1408.01	25.5088
1457.56	0.0000
1460.82	32.1997
1489.16	32.3657
1505.03	28.1296
1596.21	32.0363
1620.50	15.1384
1678.03	0.0000
1690.97	18.1882
1764.49	11.8659
1764.49	11.8659
1770.23	8.4833
1771.35	19.3938
1791.20	0.0000
1836.06	15.6719

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911007

Total Uranium Activity	1.1066E+01	ug/g
Total Uranium Counting Unc.	9.1099E+00	ug/g
Total Uranium Tpu	4.6479E-06	ug/g
Total Uranium Mda	4.8580E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 957714          SAMPLE ID   : G247911007
*  ANALYST       : MXR1           DETECTOR    : GAM23
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 6-MAR-2010 17:25:47.68  SAMPLE ALQT: 131.970 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.097E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.483E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.455E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.682E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 19:28:42.30

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911008.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:26:18.
Sample ID          : G247911008          Sample quantity  : 1.16920E+02 GRAM
Detector name      : GAM25                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:02.08  0.0%
Energy tolerance   : 1.50000 keV          Analyst Initials : MXR1
Abundance limit    : 75.00000             Sensitivity       : 5.00000
Batch ID           : 957714                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	46.48*	158	455	0.90	92.52	89	7	2.20E-02	24.9	
2	0	63.22*	275	811	0.86	126.00	122	9	3.82E-02	20.1	
3	3	74.79*	852	459	0.92	149.14	144	17	1.18E-01	5.0	3.50E+00
4	3	77.08*	1362	413	0.85	153.71	144	17	1.89E-01	3.6	
5	0	84.19*	170	441	1.15	167.93	165	6	2.36E-02	21.6	
6	3	87.17	436	439	1.00	173.89	171	11	6.05E-02	8.9	1.19E+00
7	3	89.83	255	348	1.10	179.22	171	11	3.54E-02	12.8	
8	0	92.86*	651	528	1.35	185.26	182	9	9.04E-02	7.9	
9	0	104.84	123	410	1.18	209.24	205	9	1.70E-02	31.1	
10	0	128.92	115	353	1.08	257.39	254	8	1.60E-02	29.6	
11	0	186.00*	324	331	1.06	371.54	367	11	4.50E-02	12.7	
12	0	209.48	175	306	0.96	418.49	414	10	2.44E-02	20.1	
13	6	238.56*	1510	155	0.98	476.64	470	23	2.10E-01	2.9	1.65E+00
14	6	241.55	359	239	1.80	482.63	470	23	4.99E-02	13.2	
15	0	270.48	82	193	1.67	540.49	536	8	1.14E-02	31.4	
16	2	295.20*	441	121	1.22	589.91	585	19	6.13E-02	6.4	1.73E+00
17	2	300.04	136	121	1.39	599.59	585	19	1.89E-02	16.8	
18	0	327.52	82	140	0.86	654.55	650	9	1.13E-02	28.4	
19	0	338.18	247	171	1.12	675.88	671	9	3.43E-02	11.2	
20	0	351.89*	733	147	1.14	703.30	699	11	1.02E-01	4.9	
21	0	463.17	91	114	1.14	925.84	919	12	1.27E-02	25.7	
22	0	510.66*	105	176	1.33	1020.81	1013	16	1.46E-02	33.4	
23	0	583.10*	445	157	1.35	1165.69	1160	14	6.18E-02	7.7	
24	0	609.25*	466	131	1.40	1217.98	1212	14	6.47E-02	7.1	
25	0	661.76*	52	91	1.39	1323.02	1316	11	7.28E-03	40.4	
26	0	727.24*	162	53	1.58	1453.96	1447	15	2.25E-02	12.8	
27	0	767.96	78	68	2.02	1535.41	1530	10	1.09E-02	22.6	
28	0	795.11*	41	43	1.27	1589.71	1584	9	5.66E-03	33.9	
29	0	860.85	59	70	1.42	1721.19	1714	14	8.19E-02	32.8	
30	0	910.87*	247	83	1.30	1821.23	1815	14	3.43E-02	10.2	
31	3	964.29	61	54	1.80	1928.07	1923	27	8.51E-03	25.2	1.64E+00
32	3	968.87*	170	44	1.97	1937.22	1923	27	2.36E-02	11.3	
33	0	1119.79*	95	80	1.12	2239.07	2232	14	1.32E-02	22.7	
34	0	1376.98	37	13	1.91	2753.49	2747	13	5.14E-03	26.0	
35	0	1460.45*	1218	16	2.00	2920.43	2910	18	1.69E-01	3.0	
36	0	1764.15	82	19	1.81	3527.88	3520	15	1.14E-02	15.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 19:28:45

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911008.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:26:18
Sample ID         : G247911008 Sample quantity : 116.92 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA25 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.08 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	+	1460.82	*	3.308E+01	3.434E+00	5.100E-01	4.344E-02	64.850
CD-109	+	88.03	*	4.121E+00	8.571E-01	8.348E-01	8.971E-02	4.937
SN-126	+	64.28		9.411E-01	4.071E-01	3.224E-01	5.137E-02	2.919
	+	86.94		1.672E+00	7.604E-01	3.370E-01	1.410E-01	4.961
	+	87.57	*	4.022E-01	8.364E-02	8.129E-02	8.717E-03	4.947
BA-137M	+	661.66	*	8.404E-02	6.852E-02	7.548E-02	8.361E-03	1.113
CS-137	+	661.66	*	8.878E-02	7.239E-02	7.973E-02	8.843E-03	1.113
EU-155	+	86.55		4.879E-01	1.016E-01	1.002E-01	1.076E-02	4.870
	+	105.31	*	2.120E-01	1.343E-01	1.300E-01	1.537E-02	1.631
TL-208		277.37		5.321E-01	4.240E-01	7.075E-01	1.017E-01	0.752
	+	583.19	*	6.730E-01	1.279E-01	6.803E-02	7.663E-03	9.892
	+	860.56		8.588E-01	5.701E-01	4.950E-01	5.172E-02	1.735
PB-210	+	46.54	*	1.305E+00	6.640E-01	6.407E-01	6.562E-02	2.037
BI-211		72.87		1.750E+00	1.872E+00	2.819E+00	2.845E-01	0.621
	+	351.06	*	4.688E+00	6.770E-01	3.437E-01	3.622E-02	13.639
PB-212	+	74.82		2.746E+00	4.742E-01	3.162E-01	4.448E-02	8.685
	+	77.11		2.649E+00	3.315E-01	1.916E-01	1.964E-02	13.825
	+	238.63	*	2.083E+00	2.673E-01	8.249E-02	9.425E-03	25.250
	+	300.09		2.974E+00	1.064E+00	1.169E+00	1.467E-01	2.544
BI-214	+	609.32	*	1.370E+00	2.552E-01	1.185E-01	1.434E-02	11.564
	+	1120.29		1.459E+00	6.822E-01	5.086E-01	5.545E-02	2.868
	+	1764.49		1.834E+00	6.028E-01	3.032E-01	2.498E-02	6.049
PB-214	+	74.82		4.867E+00	7.944E-01	5.604E-01	7.224E-02	8.685
	+	77.11		4.670E+00	6.999E-01	3.378E-01	4.444E-02	13.825
	+	242.00		3.007E+00	8.695E-01	5.026E-01	6.040E-02	5.982
	+	295.22		1.708E+00	3.093E-01	2.061E-01	2.641E-02	8.289
	+	351.93	*	1.701E+00	2.630E-01	1.289E-01	1.531E-02	13.198
RA-224	+	240.99	*	5.316E+00	1.506E+00	8.853E-01	9.303E-02	6.005
RA-226	+	609.32	*	1.370E+00	2.552E-01	1.185E-01	1.434E-02	11.564
	+	1120.29		1.459E+00	6.822E-01	5.086E-01	5.545E-02	2.868
	+	1764.49		1.834E+00	6.028E-01	3.032E-01	2.498E-02	6.049
AC-228	+	338.32		1.751E+00	8.350E-01	3.795E-01	1.599E-01	4.613
	+	911.20	*	1.833E+00	4.368E-01	2.425E-01	2.965E-02	7.559
	+	968.97		2.174E+00	7.259E-01	4.000E-01	9.847E-02	5.434

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.751E+00	8.350E-01	3.795E-01	1.599E-01	4.613
	+	911.20	*	1.833E+00	4.368E-01	2.425E-01	2.965E-02	7.559
	+	968.97		2.174E+00	7.259E-01	4.000E-01	9.847E-02	5.434
TH-228	+	74.82		2.746E+00	3.931E-01	3.162E-01	3.234E-02	8.685
	+	77.11		2.649E+00	3.315E-01	1.916E-01	1.964E-02	13.825
	+	238.63	*	2.083E+00	2.673E-01	8.249E-02	9.425E-03	25.250
	+	300.09		2.974E+00	2.085E+00	1.169E+00	7.201E-01	2.544
TH-229	+	85.43		3.905E-01	1.734E-01	2.068E-01	2.196E-02	1.888
	+	88.47		6.200E-01	1.289E-01	1.258E-01	1.355E-02	4.927
		193.51	*	1.203E-01	4.972E-01	8.211E-01	7.831E-02	0.146
	+	210.85		3.416E+00	1.417E+00	1.299E+00	1.287E-01	2.630
TH-232	+	338.32		1.751E+00	4.318E-01	3.795E-01	3.956E-02	4.613
	+	911.20	*	1.833E+00	4.368E-01	2.425E-01	2.965E-02	7.559
	+	968.97		2.174E+00	7.259E-01	4.000E-01	9.847E-02	5.434
TH-234	+	63.29	*	2.442E+00	1.086E+00	8.353E-01	1.586E-01	2.923
	+	92.59		5.346E+00	1.495E+00	6.495E-01	1.501E-01	8.232
U-235	+	89.96		2.524E+00	9.101E-01	8.517E-01	2.170E-01	2.964
	+	93.35		4.038E+00	1.162E+00	4.923E-01	1.187E-01	8.202
		143.76	*	1.232E-01	1.797E-01	3.017E-01	5.542E-02	0.408
		163.33		-1.727E-01	4.082E-01	6.521E-01	1.189E-01	-0.265
	+	185.72		2.833E-01	7.690E-02	5.903E-02	5.527E-03	4.799
		205.31		4.436E-01	5.252E-01	7.929E-01	1.485E-01	0.559
NP-237	+	86.48	*	1.200E+00	3.544E-01	2.463E-01	5.795E-02	4.871
		95.86		-5.590E-01	7.011E-01	1.019E+00	2.550E-01	-0.549
U-238	+	63.29	*	2.442E+00	1.086E+00	8.353E-01	1.586E-01	2.923
	+	92.59		5.346E+00	1.026E+00	6.495E-01	7.136E-02	8.232
ANH-511	+	511.00	*	1.200E-01	8.104E-02	4.745E-02	4.884E-03	2.528

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-1.458E-01	3.645E-01	5.758E-01	6.095E-02	-0.253
NA-22		1274.54	*	4.326E-03	5.404E-02	8.952E-02	7.340E-03	0.048
NA-24		1368.63	*	-1.900E+00	5.404E-02	Half-Life too short		
SC-46		889.28	*	-1.963E-02	4.915E-02	7.694E-02	7.368E-03	-0.255
	+	1120.55		2.490E-01	1.153E-01	1.511E-01	1.299E-02	1.648
V-48		944.13		2.584E-01	1.123E+00	1.856E+00	1.741E-01	0.139
		983.53	*	-1.035E-01	9.209E-02	1.301E-01	1.206E-02	-0.796
		1312.11		4.254E-03	8.836E-02	1.457E-01	1.187E-02	0.029
CR-51		320.08	*	1.399E-01	3.553E-01	6.119E-01	6.791E-02	0.229
MN-54		834.85	*	4.526E-02	4.363E-02	7.714E-02	7.827E-03	0.587
CO-56		846.77	*	-1.659E-02	4.518E-02	7.121E-02	7.145E-03	-0.233
		1037.84		-1.584E-01	3.735E-01	6.024E-01	5.711E-02	-0.263
		1238.28		9.080E-02	1.141E-01	1.987E-01	1.685E-02	0.457
		1771.35		-1.423E+00	4.218E-01	2.423E-01	1.995E-02	-5.874
CO-57		122.06	*	-1.423E-02	2.025E-02	3.300E-02	4.256E-03	-0.431
		136.47		1.034E-01	1.801E-01	3.080E-01	3.774E-02	0.336
CO-58		810.76	*	-2.541E-02	4.477E-02	6.944E-02	7.205E-03	-0.366

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
FE-59	1099.45	*		-6.866E-03	1.074E-01	1.781E-01	1.677E-02	-0.039
	1291.59			-4.431E-02	1.546E-01	2.462E-01	2.313E-02	-0.180
CO-60	1173.23			6.929E-03	5.341E-02	8.951E-02	7.368E-03	0.077
	1332.49	*		-1.198E-03	4.612E-02	7.525E-02	6.112E-03	-0.016
ZN-65	1115.54	*		4.639E-02	1.347E-01	2.006E-01	1.733E-02	0.231
SE-75	121.12			-5.308E-02	1.057E-01	1.742E-01	2.542E-02	-0.305
	136.00			1.925E-02	3.464E-02	5.923E-02	7.027E-03	0.325
	264.66	*		-4.223E-02	4.618E-02	6.902E-02	7.564E-03	-0.612
	279.54			-1.056E-01	1.236E-01	1.854E-01	2.116E-02	-0.570
	400.66			1.392E-01	2.651E-01	4.526E-01	5.224E-02	0.308
SR-85	514.00	*		4.197E-02	4.445E-02	6.878E-02	7.096E-03	0.610
Y-88	898.04			-1.608E-02	5.067E-02	7.986E-02	7.596E-03	-0.201
	1836.06	*		-8.677E-03	3.503E-02	5.437E-02	4.443E-03	-0.160
Y-91	1204.77	*		2.169E+01	2.602E+01	4.589E+01	3.777E+00	0.473
NB-94	702.65	*		5.817E-03	3.831E-02	6.444E-02	7.076E-03	0.090
	871.09			-1.548E-02	4.069E-02	6.388E-02	6.249E-03	-0.242
NB-95	765.81	*		9.309E-02	6.030E-02	9.880E-02	1.055E-02	0.942
NB-95M	235.69	*		-1.508E-02	1.345E-01	1.911E-01	2.194E-02	-0.079
ZR-95	724.19			1.239E-02	1.237E-01	1.801E-01	2.068E-02	0.069
	756.73	*		2.201E-02	8.770E-02	1.477E-01	1.695E-02	0.149
MO-99	140.51			-1.600E+01	2.531E+01	4.021E+01	1.001E+01	-0.398
	181.07			-2.514E+00	2.344E+01	3.415E+01	6.520E+00	-0.074
	366.42			6.340E+01	1.273E+02	2.187E+02	2.144E+01	0.290
	739.50	*		4.893E-01	1.882E+01	3.123E+01	5.330E+00	0.016
	777.92			-6.398E+01	5.841E+01	8.666E+01	9.190E+00	-0.738
TC-99M	140.51	*		-4.469E+11	5.841E+01	Half-Life too short		
RU-103	497.08	*		1.928E-02	4.096E-02	6.891E-02	1.032E-02	0.280
	610.33			1.442E+01	3.263E+00	3.373E+00	5.955E-01	4.275
RH-106	621.93	*		1.136E-01	3.376E-01	5.814E-01	8.650E-02	0.195
	1050.41			-5.924E-01	2.859E+00	4.696E+00	4.222E-01	-0.126
RU-106	621.93	*		1.136E-01	3.374E-01	5.814E-01	6.367E-02	0.195
	1050.41			-5.924E-01	2.859E+00	4.696E+00	4.222E-01	-0.126
AG-108M	433.94	*		1.646E-02	3.096E-02	5.269E-02	5.177E-03	0.312
	614.28			1.197E-03	4.144E-02	6.098E-02	6.796E-03	0.020
	722.91			-2.020E-02	4.619E-02	6.287E-02	6.994E-03	-0.321
AG-110M	657.76	*		1.943E-02	4.387E-02	6.689E-02	7.538E-03	0.290
	677.62			5.120E-02	3.585E-01	6.047E-01	6.799E-02	0.085
	706.68			8.635E-03	2.585E-01	4.308E-01	4.809E-02	0.020
	763.94			1.070E-01	1.976E-01	3.010E-01	3.276E-02	0.355
	884.68			-2.828E-02	6.162E-02	9.594E-02	9.477E-03	-0.295
	937.49			-7.147E-02	1.363E-01	2.092E-01	2.026E-02	-0.342
	1384.29			1.498E-02	2.182E-01	3.213E-01	2.709E-02	0.047
	1505.03			-1.754E-01	3.232E-01	4.770E-01	3.954E-02	-0.368
SN-113	391.69	*		5.426E-03	4.836E-02	8.072E-02	7.539E-03	0.067
CD-115	260.90			9.145E+01	1.956E+02	3.201E+02	3.478E+01	0.286
	492.35			7.688E+00	5.797E+01	9.516E+01	9.648E+00	0.081
	527.90	*		-1.803E+01	1.687E+01	2.442E+01	2.545E+00	-0.738
SN-117M	156.02			-1.304E+00	2.145E+00	3.458E+00	3.448E-01	-0.377
	158.56	*		-3.849E-03	5.013E-02	8.278E-02	8.037E-03	-0.046

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-123M		159.00	*	-1.580E-03	2.481E-02	4.098E-02	3.979E-03	-0.039
SB-124		602.73		-6.311E-03	4.474E-02	6.785E-02	7.375E-03	-0.093
		645.85		-2.950E-01	5.567E-01	8.762E-01	1.001E-01	-0.337
		722.78		-2.010E-01	4.702E-01	6.409E-01	7.091E-02	-0.314
		1690.97	*	5.121E-02	9.238E-02	1.673E-01	1.450E-02	0.306
SB-125		427.87	*	2.507E-02	1.013E-01	1.692E-01	1.634E-02	0.148
	+	463.37		9.148E-01	4.793E-01	6.040E-01	6.309E-02	1.514
		600.60		-1.114E-01	1.892E-01	3.047E-01	3.465E-02	-0.366
		635.95		3.105E-03	3.138E-01	5.270E-01	6.092E-02	0.006
TE-125M		109.28	*	1.120E+00	8.663E+00	1.334E+01	1.788E+00	0.084
I-126		388.63		-4.078E-02	1.973E-01	3.231E-01	2.967E-02	-0.126
		666.33	*	3.407E-01	2.971E-01	4.803E-01	5.318E-02	0.709
		753.82		2.242E+00	2.339E+00	4.125E+00	4.435E-01	0.543
SB-126		414.70		-8.644E-02	8.940E-02	1.356E-01	1.269E-02	-0.637
		666.50		7.381E-02	1.068E-01	1.658E-01	1.835E-02	0.445
		695.00		3.573E-03	9.687E-02	1.617E-01	1.780E-02	0.022
		697.00		-8.127E-03	3.304E-01	5.489E-01	6.038E-02	-0.015
		720.70	*	3.675E-02	1.934E-01	2.848E-01	3.109E-02	0.129
		856.80		-7.432E-03	6.537E-01	9.213E-01	9.151E-02	-0.008
SB-127		252.40		2.818E+00	5.175E+00	8.324E+00	3.505E+00	0.339
		473.00		-5.143E-02	2.285E+00	3.721E+00	5.204E-01	-0.014
		685.70	*	-3.606E-01	1.802E+00	2.956E+00	4.012E-01	-0.122
		783.70		7.332E+00	4.847E+00	8.786E+00	1.235E+00	0.835
I-131		80.19		1.964E+00	3.328E+00	4.921E+00	5.131E-01	0.399
		284.31		-6.748E-01	1.655E+00	2.547E+00	2.923E-01	-0.265
		364.49	*	-1.041E-01	1.296E-01	2.044E-01	2.098E-02	-0.509
		636.99		-9.472E-01	2.011E+00	3.253E+00	3.709E-01	-0.291
TE-132		49.72		-2.184E+00	4.185E+00	6.040E+00	7.264E-01	-0.362
		111.76		-8.515E+00	3.453E+01	5.717E+01	8.124E+00	-0.149
		116.30		-1.535E+01	2.878E+01	4.749E+01	6.875E+00	-0.323
		228.16	*	1.418E-01	9.178E-01	1.491E+00	2.532E-01	0.095
BA-133		81.00		4.495E-03	7.136E-02	9.005E-02	1.493E-02	0.050
		276.40		6.025E-01	3.955E-01	6.610E-01	1.042E-01	0.912
		302.85		6.204E-02	1.345E-01	2.082E-01	3.064E-02	0.298
		356.01	*	-9.924E-03	4.980E-02	7.204E-02	1.005E-02	-0.138
		383.85		2.554E-01	3.137E-01	5.435E-01	7.024E-02	0.470
I-133		529.87	*	-1.494E-02	3.137E-01	Half-Life	too short	
		875.33		2.131E-01	3.137E-01	Half-Life	too short	
		1298.22		7.247E-04	3.137E-01	Half-Life	too short	
CS-134		563.25		-2.316E-01	4.010E-01	6.106E-01	6.549E-02	-0.379
		569.33		2.125E-02	2.232E-01	3.455E-01	3.728E-02	0.061
		604.72		1.288E-02	3.848E-02	5.851E-02	6.375E-03	0.220
	+	795.86	*	9.114E-02	6.256E-02	1.066E-01	1.122E-02	0.855
		801.95		-2.024E-01	4.956E-01	7.772E-01	8.137E-02	-0.260
		1365.19		5.526E-01	1.450E+00	2.480E+00	2.129E-01	0.223
CS-135		268.22	*	2.052E-01	1.777E-01	2.710E-01	3.271E-02	0.757
I-135		546.56		3.205E+10	1.777E-01	Half-Life	too short	
		836.80		2.803E+10	1.777E-01	Half-Life	too short	
		1038.76		-2.592E+11	1.777E-01	Half-Life	too short	

Sample ID : G247911008

Acquisition date : 6-MAR-2010 17:26:18

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136		1131.51		5.711E+10	1.777E-01	Half-Life	too short	
		1260.41	*	9.191E+10	1.777E-01	Half-Life	too short	
		1457.56		1.768E+13	1.777E-01	Half-Life	too short	
		1678.03		2.275E+11	1.777E-01	Half-Life	too short	
		1791.20		-2.473E+11	1.777E-01	Half-Life	too short	
		153.25		8.066E-01	8.152E-01	1.401E+00	1.636E-01	0.576
		176.60		3.031E-01	5.016E-01	8.456E-01	8.456E-02	0.358
		273.65		-3.443E-01	6.450E-01	8.705E-01	1.014E-01	-0.396
		340.55		2.355E-01	1.667E-01	2.700E-01	2.877E-02	0.872
		818.51		-4.388E-03	9.405E-02	1.536E-01	1.582E-02	-0.029
CE-139		1048.07	*	-3.270E-02	1.332E-01	2.181E-01	2.040E-02	-0.150
		1235.36		4.553E-01	8.146E-01	1.393E+00	1.599E-01	0.327
		165.86	*	-7.809E-03	2.851E-02	4.653E-02	4.149E-03	-0.168
		162.66		-6.225E-01	8.100E-01	1.275E+00	1.251E-01	-0.488
BA-140		304.85		2.149E-01	1.391E+00	2.208E+00	6.633E-01	0.097
		423.72		-1.024E+00	2.277E+00	3.595E+00	1.191E+00	-0.285
		537.26	*	-2.307E-01	3.365E-01	4.970E-01	1.711E-01	-0.464
		328.76		7.558E-01	4.370E-01	5.900E-01	6.490E-02	1.281
LA-140	+	487.02		-1.607E-01	1.626E-01	2.425E-01	2.559E-02	-0.663
		815.77		-1.909E-01	4.010E-01	6.277E-01	7.015E-02	-0.304
		1596.21	*	-1.022E-01	1.155E-01	1.688E-01	1.404E-02	-0.605
		145.44	*	-2.905E-02	5.656E-02	9.210E-02	1.024E-02	-0.315
CE-141		57.36		1.883E-04	5.656E-02	Half-Life	too short	
		293.27	*	9.708E-04	5.656E-02	Half-Life	too short	
		664.57		2.337E-03	5.656E-02	Half-Life	too short	
		721.93		5.537E-04	5.656E-02	Half-Life	too short	
CE-144		80.12		9.376E-01	1.636E+00	2.418E+00	2.507E-01	0.388
		133.52	*	-2.110E-01	1.806E-01	2.666E-01	4.648E-02	-0.791
PM-144		476.78		-6.656E-02	7.374E-02	1.116E-01	1.188E-02	-0.597
		618.01		7.167E-03	3.380E-02	5.777E-02	6.428E-03	0.124
PR-144		696.49	*	-1.462E-02	3.993E-02	6.458E-02	7.106E-03	-0.226
		696.51	*	-1.094E+00	2.990E+00	4.836E+00	5.320E-01	-0.226
PM-146		1489.16		-1.208E+01	1.417E+01	1.938E+01	1.605E+00	-0.623
		453.88	*	2.858E-02	4.458E-02	7.610E-02	8.794E-03	0.376
		633.25		5.712E-02	1.541E+00	2.594E+00	1.007E+00	0.022
		735.93		-6.394E-02	1.608E-01	2.477E-01	7.130E-02	-0.258
ND-147		747.24		-7.409E-02	1.146E-01	1.784E-01	2.847E-02	-0.415
	+	91.11		8.768E-01	2.451E-01	3.983E-01	4.574E-02	2.201
		319.41		1.802E-01	3.369E+00	5.696E+00	6.120E-01	0.032
		531.02	*	-3.147E-01	6.481E-01	9.990E-01	1.606E-01	-0.315
PM-149		285.90	*	-6.815E+01	1.318E+02	2.005E+02	3.421E+01	-0.340
EU-152		121.78		-4.076E-02	5.776E-02	9.405E-02	1.294E-02	-0.433
		244.70		-2.029E-01	2.923E-01	4.469E-01	4.727E-02	-0.454
		344.28	*	-2.140E-02	9.521E-02	1.573E-01	1.689E-02	-0.136
		778.90		-1.085E-01	2.957E-01	4.711E-01	4.992E-02	-0.230
	+	964.08		8.439E-01	4.328E-01	6.901E-01	6.437E-02	1.223
		1085.87		-7.203E-02	4.764E-01	7.851E-01	6.913E-02	-0.092
		1112.07		4.541E-01	4.171E-01	6.938E-01	6.001E-02	0.655
		1408.01		2.650E-02	2.232E-01	3.686E-01	3.028E-02	0.072

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153		69.67		-1.137E-01	8.598E-01	1.351E+00	1.350E-01	-0.084
		97.43	*	-4.595E-02	6.958E-02	1.037E-01	1.168E-02	-0.443
		103.18		1.161E-02	8.879E-02	1.374E-01	1.595E-02	0.085
EU-154		123.07		-4.067E-03	4.196E-02	7.047E-02	1.043E-02	-0.058
		723.31		-1.375E-01	2.136E-01	2.825E-01	3.279E-02	-0.487
		873.19		2.972E-01	3.352E-01	5.867E-01	7.477E-02	0.507
		996.26		-1.307E-01	4.385E-01	6.835E-01	1.215E-01	-0.191
		1004.73		-1.848E-01	2.634E-01	3.918E-01	4.727E-02	-0.472
TB-160		1274.44	*	4.001E-02	1.500E-01	2.529E-01	2.797E-02	0.158
	+	86.79		1.308E+00	2.720E-01	3.909E-01	4.176E-02	3.345
		197.04		-8.002E-02	5.534E-01	8.963E-01	8.617E-02	-0.089
		215.65		-1.921E-01	7.341E-01	1.173E+00	1.174E-01	-0.164
	+	298.57		4.233E-01	1.493E-01	2.156E-01	2.372E-02	1.963
		879.36	*	-1.339E-01	1.742E-01	2.623E-01	2.542E-02	-0.510
		962.29		1.021E+00	7.866E-01	1.245E+00	1.162E-01	0.820
		966.15		1.454E+00	3.325E-01	6.314E-01	5.885E-02	2.303
		1177.93		1.082E-02	4.448E-01	7.385E-01	6.078E-02	0.015
		1271.85		-6.585E-02	8.755E-01	1.429E+00	1.171E-01	-0.046
HO-166M		80.57		2.793E-02	2.027E-01	2.571E-01	2.672E-02	0.109
		184.41		7.187E-02	3.950E-02	6.443E-02	6.014E-03	1.115
		280.46		-1.125E-01	9.472E-02	1.382E-01	1.541E-02	-0.814
		410.95		2.064E-01	2.738E-01	4.712E-01	4.390E-02	0.438
		711.68	*	-1.017E-02	7.464E-02	1.228E-01	1.344E-02	-0.083
		752.31		1.222E-02	3.308E-01	5.484E-01	5.902E-02	0.022
		810.29		-2.119E-02	6.590E-02	1.049E-01	1.087E-02	-0.202
TA-182		67.75		-3.491E-02	5.335E-02	8.189E-02	8.147E-03	-0.426
		100.11		7.706E-02	1.399E-01	2.333E-01	2.664E-02	0.330
		152.43		-1.940E-01	3.148E-01	5.082E-01	5.251E-02	-0.382
		222.11		-6.586E-02	3.476E-01	5.559E-01	5.638E-02	-0.118
		1121.30		6.368E-01	2.285E-01	4.041E-01	3.472E-02	1.576
		1189.05		-5.682E-02	3.854E-01	6.301E-01	5.186E-02	-0.090
		1221.41	*	-9.649E-02	2.548E-01	4.079E-01	3.354E-02	-0.237
IR-192		1231.02		5.074E-02	6.603E-01	1.095E+00	9.003E-02	0.046
	+	295.96		1.276E+00	2.160E-01	3.177E-01	3.520E-02	4.018
		308.46		-2.783E-02	9.193E-02	1.526E-01	1.668E-02	-0.182
		316.51	*	-2.497E-02	3.272E-02	5.247E-02	5.668E-03	-0.476
HG-203		468.07		-1.051E-03	8.263E-02	1.179E-01	1.235E-02	-0.009
		70.83		-1.564E-02	7.569E-01	1.098E+00	1.851E-01	-0.014
		72.87		4.430E-01	4.773E-01	7.135E-01	1.170E-01	0.621
BI-207		279.20	*	1.875E-03	4.181E-02	6.643E-02	7.528E-03	0.028
		72.81		8.057E-02	1.069E-01	1.601E-01	1.615E-02	0.503
	+	74.97		7.915E-01	1.129E-01	1.552E-01	1.578E-02	5.099
		569.70		4.362E-04	3.442E-02	5.286E-02	5.654E-03	0.008
PB-211		1063.66	*	-2.944E-02	6.244E-02	9.995E-02	8.920E-03	-0.295
		1770.23		-5.038E-01	5.630E-01	5.340E-01	4.397E-02	-0.944
		404.85	*	-1.648E-01	8.093E-01	1.292E+00	6.269E-01	-0.128
		427.09		9.995E-01	1.749E+00	2.881E+00	1.338E+00	0.347
BI-212		832.01		-6.239E-01	1.210E+00	1.817E+00	9.474E-01	-0.343
	+	727.33	*	3.804E+00	1.113E+00	1.504E+00	2.124E-01	2.529

Sample ID : G247911008

Acquisition date : 6-MAR-2010 17:26:18

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	785.37		1.736E+00	3.666E+00	6.260E+00	6.606E-01	0.277
		1620.50		3.030E+00	2.792E+00	5.325E+00	4.426E-01	0.569
		271.23		5.041E-01	3.227E-01	4.500E-01	5.560E-02	1.120
		401.81	*	7.265E-03	4.308E-01	7.134E-01	1.086E-01	0.010
RA-223	+	81.07		1.111E-02	1.618E-01	2.043E-01	2.127E-02	0.054
		83.79		2.324E-01	1.032E-01	1.483E-01	1.563E-02	1.567
		94.87		3.778E-01	3.262E-01	5.274E-01	5.862E-02	0.716
		144.24		5.065E-01	6.092E-01	1.031E+00	1.228E-01	0.491
	+	154.21		5.210E-01	3.524E-01	6.135E-01	6.666E-02	0.849
		269.46		3.917E-01	2.498E-01	3.500E-01	3.900E-02	1.119
		323.87	*	2.166E-01	6.770E-01	1.030E+00	1.899E-01	0.210
		338.28		6.948E+00	1.811E+00	2.567E+00	3.444E-01	2.707
AC-227	+	79.69		-2.218E-01	8.346E-01	1.184E+00	2.151E-01	-0.187
		235.96		7.914E-02	1.644E-01	2.426E-01	2.881E-02	0.326
		256.23	*	-5.580E-02	2.403E-01	3.779E-01	5.170E-02	-0.148
		299.98		3.271E+00	1.194E+00	1.694E+00	2.443E-01	1.931
	+	304.50		8.530E-01	1.614E+00	2.505E+00	4.470E-01	0.341
		334.37		-3.389E-01	1.927E+00	2.812E+00	4.696E-01	-0.121
		79.80		4.932E-01	1.068E+00	1.565E+00	3.524E-01	0.315
		235.96		7.914E-02	1.644E-01	2.426E-01	2.759E-02	0.326
TH-227	+	256.23	*	-5.580E-02	2.403E-01	3.779E-01	5.695E-02	-0.148
		299.98		3.271E+00	1.194E+00	1.694E+00	2.443E-01	1.931
		304.50		8.530E-01	1.614E+00	2.505E+00	4.470E-01	0.341
		334.37		-3.389E-01	1.927E+00	2.812E+00	4.696E-01	-0.121
PA-231	+	283.69	*	-2.151E-01	1.440E+00	2.257E+00	3.655E-01	-0.095
		301.36		2.101E+00	7.628E-01	1.009E+00	1.405E-01	2.082
		81.07		1.111E-02	1.618E-01	2.043E-01	2.127E-02	0.054
		83.79		2.324E-01	1.032E-01	1.483E-01	1.563E-02	1.567
TH-231	+	94.87		3.778E-01	3.262E-01	5.274E-01	5.862E-02	0.716
		144.24		5.065E-01	6.092E-01	1.031E+00	1.228E-01	0.491
		154.21		5.210E-01	3.524E-01	6.135E-01	6.666E-02	0.849
		269.46		3.917E-01	2.498E-01	3.500E-01	3.900E-02	1.119
	+	323.87	*	2.166E-01	6.770E-01	1.030E+00	1.899E-01	0.210
		338.28		6.948E+00	1.811E+00	2.567E+00	3.444E-01	2.707
		300.13		1.480E+00	5.518E-01	7.634E-01	1.246E-01	1.939
		311.90	*	5.089E-02	6.384E-02	1.120E-01	1.237E-02	0.454
PA-233	+	340.48		1.099E+00	7.244E-01	1.114E+00	2.757E-01	0.987
		94.67		2.251E-01	1.248E-01	2.021E-01	2.878E-02	1.114
		98.44		1.259E-01	9.755E-02	1.221E-01	6.870E-02	1.031
		111.00		-8.411E-02	1.465E-01	2.423E-01	3.583E-02	-0.347
PA-234	+	131.20		3.769E-02	9.349E-02	1.441E-01	1.760E-02	0.261
		569.50		1.760E-02	3.065E-01	4.728E-01	5.057E-02	0.037
		733.00		-1.918E-01	4.345E-01	5.835E-01	1.351E-01	-0.329
		880.51		-1.017E-02	3.322E-01	5.395E-01	5.220E-02	-0.019
	+	883.24		-3.002E-03	3.408E-01	5.543E-01	3.734E-01	-0.005
		926.50		-1.138E-01	1.939E-01	2.903E-01	7.420E-02	-0.392
		946.00	*	-2.077E-01	3.886E-01	5.937E-01	1.135E-01	-0.350
		949.00		2.055E-01	5.501E-01	9.195E-01	8.616E-02	0.224
PA-234M		766.42		3.195E+01	2.321E+01	2.794E+01	1.429E+01	1.143

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		1001.03	*	3.293E+00	5.338E+00	9.129E+00	9.562E-01	0.361
		99.53		2.128E-01	1.243E-01	2.208E-01	2.515E-02	0.963
	+	103.37		2.002E-01	1.268E-01	1.262E-01	1.467E-02	1.586
	+	106.12		1.690E-01	1.070E-01	1.151E-01	1.358E-02	1.468
		117.23	*	-3.334E-01	3.144E-01	5.032E-01	6.313E-02	-0.662
		228.18		3.554E-02	2.139E-01	3.477E-01	3.569E-02	0.102
AM-241		277.60		2.650E-01	1.941E-01	3.270E-01	3.641E-02	0.810
		59.54	*	-1.908E-02	5.588E-02	8.071E-02	8.386E-03	-0.236
CM-247		278.00		9.036E-01	8.328E-01	1.388E+00	1.547E-01	0.651
		287.50		1.108E+00	1.196E+00	1.997E+00	2.217E-01	0.555
CF-249		402.40	*	-2.366E-02	3.965E-02	6.294E-02	5.801E-03	-0.376
		252.80		4.218E-01	9.230E-01	1.514E+00	1.624E-01	0.279
		333.37		8.774E-02	1.968E-01	3.013E-01	3.168E-02	0.291
CF-251		388.16	*	-1.042E-02	4.403E-02	7.200E-02	6.621E-03	-0.145
		177.52	*	-3.885E-03	1.221E-01	2.005E-01	1.840E-02	-0.019
		227.38		-6.501E-03	3.506E-01	5.648E-01	5.788E-02	-0.012
		285.41		-1.924E+00	2.213E+00	3.282E+00	3.649E-01	-0.586

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]G247911008      *
* Acquisition date   : 6-MAR-2010 17:26:18 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 02:00:02.08 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G247911008 Analyst initials: MXR1                  *
* Batch Number       : 957714 Sample Quantity : 1.1692E+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	3.308E+01	3.366E+00	5.083E-01	0.000E+00
CD-109	4.121E+00	8.400E-01	8.564E-01	0.000E+00
SN-126	4.022E-01	8.197E-02	8.341E-02	0.000E+00
BA-137M	8.404E-02	6.715E-02	7.585E-02	0.000E+00
CS-137	8.878E-02	7.094E-02	8.013E-02	0.000E+00
EU-155	2.120E-01	1.316E-01	1.332E-01	0.000E+00
TL-208	6.730E-01	1.253E-01	6.846E-02	0.000E+00
PB-210	1.305E+00	6.507E-01	6.615E-01	0.000E+00
BI-211	4.688E+00	6.634E-01	3.477E-01	0.000E+00
PB-212	2.083E+00	2.620E-01	8.378E-02	0.000E+00
BI-214	1.370E+00	2.501E-01	1.192E-01	0.000E+00
PB-214	1.701E+00	2.577E-01	1.304E-01	0.000E+00
RA-224	5.316E+00	1.476E+00	8.991E-01	0.000E+00
RA-226	1.370E+00	2.501E-01	1.192E-01	0.000E+00
AC-228	1.833E+00	4.281E-01	2.429E-01	0.000E+00
RA-228	1.833E+00	4.281E-01	2.429E-01	0.000E+00
TH-228	2.083E+00	2.620E-01	8.378E-02	0.000E+00
TH-229	1.203E-01	4.872E-01	8.358E-01	0.000E+00
TH-232	1.833E+00	4.281E-01	2.429E-01	0.000E+00
TH-234	2.442E+00	1.064E+00	8.598E-01	0.000E+00
U-235	1.232E-01	1.761E-01	3.080E-01	0.000E+00
NP-237	1.200E+00	3.473E-01	2.528E-01	0.000E+00
U-238	2.442E+00	1.064E+00	8.598E-01	0.000E+00
ANH-511	1.200E-01	7.942E-02	4.781E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.458E-01	3.572E-01	5.807E-01	0.000E+00 NOT IDENT.
NA-22	4.326E-03	5.295E-02	8.934E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.246E+06	0.000E+00	0.000E+00 SHORT HLIF

SC-46	-1.963E-02	4.817E-02	7.709E-02	0.000E+00	FAIL ABUN
V-48	-1.035E-01	9.025E-02	1.302E-01	0.000E+00	NOT IDENT.
CR-51	1.399E-01	3.482E-01	6.196E-01	0.000E+00	NOT IDENT.
MN-54	4.526E-02	4.276E-02	7.733E-02	0.000E+00	NOT IDENT.
CO-56	-1.659E-02	4.428E-02	7.138E-02	0.000E+00	NOT IDENT.
CO-57	-1.423E-02	1.985E-02	3.375E-02	0.000E+00	NOT IDENT.
CO-58	-2.541E-02	4.388E-02	6.964E-02	0.000E+00	NOT IDENT.
FE-59	-6.866E-03	1.052E-01	1.780E-01	0.000E+00	NOT IDENT.
CO-60	-1.198E-03	4.520E-02	7.507E-02	0.000E+00	NOT IDENT.
ZN-65	4.639E-02	1.320E-01	2.005E-01	0.000E+00	NOT IDENT.
SE-75	-4.223E-02	4.526E-02	7.002E-02	0.000E+00	NOT IDENT.
SR-85	4.197E-02	4.356E-02	6.930E-02	0.000E+00	NOT IDENT.
Y-88	-8.677E-03	3.433E-02	5.405E-02	0.000E+00	NOT IDENT.
Y-91	2.169E+01	2.550E+01	4.583E+01	0.000E+00	NOT IDENT.
NB-94	5.817E-03	3.754E-02	6.472E-02	0.000E+00	NOT IDENT.
NB-95	9.309E-02	5.909E-02	9.914E-02	0.000E+00	NOT IDENT.
NB-95M	-1.508E-02	1.319E-01	1.941E-01	0.000E+00	NOT IDENT.
ZR-95	2.201E-02	8.595E-02	1.482E-01	0.000E+00	NOT IDENT.
MO-99	4.893E-01	1.845E+01	3.135E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.981E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.928E-02	4.014E-02	6.946E-02	0.000E+00	FAIL ABUN
RH-106	1.136E-01	3.309E-01	5.847E-01	0.000E+00	NOT IDENT.
RU-106	1.136E-01	3.307E-01	5.847E-01	0.000E+00	NOT IDENT.
AG-108M	1.646E-02	3.034E-02	5.319E-02	0.000E+00	NOT IDENT.
AG-110M	1.943E-02	4.299E-02	6.723E-02	0.000E+00	NOT IDENT.
SN-113	5.426E-03	4.740E-02	8.157E-02	0.000E+00	NOT IDENT.
CD-115	-1.803E+01	1.653E+01	2.460E+01	0.000E+00	NOT IDENT.
SN-117M	-3.849E-03	4.912E-02	8.442E-02	0.000E+00	NOT IDENT.
TE-123M	-1.580E-03	2.431E-02	4.180E-02	0.000E+00	NOT IDENT.
SB-124	5.121E-02	9.053E-02	1.665E-01	0.000E+00	NOT IDENT.
SB-125	2.507E-02	9.924E-02	1.709E-01	0.000E+00	FAIL ABUN
TE-125M	1.120E+00	8.489E+00	1.366E+01	0.000E+00	NOT IDENT.
I-126	3.407E-01	2.911E-01	4.827E-01	0.000E+00	NOT IDENT.
SB-126	3.675E-02	1.895E-01	2.860E-01	0.000E+00	NOT IDENT.
SB-127	-3.606E-01	1.766E+00	2.969E+00	0.000E+00	NOT IDENT.
I-131	-1.041E-01	1.270E-01	2.066E-01	0.000E+00	NOT IDENT.
TE-132	1.418E-01	8.995E-01	1.515E+00	0.000E+00	NOT IDENT.
BA-133	-9.924E-03	4.881E-02	7.287E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.517E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	9.114E-02	6.131E-02	1.069E-01	0.000E+00	FAIL ABUN
CS-135	2.052E-01	1.742E-01	2.749E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.343E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.270E-02	1.305E-01	2.182E-01	0.000E+00	NOT IDENT.
CE-139	-7.809E-03	2.794E-02	4.743E-02	0.000E+00	NOT IDENT.
BA-140	-2.307E-01	3.297E-01	5.005E-01	0.000E+00	NOT IDENT.
LA-140	-1.022E-01	1.132E-01	1.681E-01	0.000E+00	FAIL ABUN
CE-141	-2.905E-02	5.543E-02	9.402E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.400E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.110E-01	1.770E-01	2.724E-01	0.000E+00	NOT IDENT.
PM-144	-1.462E-02	3.913E-02	6.486E-02	0.000E+00	NOT IDENT.
PR-144	-1.094E+00	2.930E+00	4.857E+00	0.000E+00	NOT IDENT.
PM-146	2.858E-02	4.369E-02	7.678E-02	0.000E+00	NOT IDENT.
ND-147	-3.147E-01	6.351E-01	1.006E+00	0.000E+00	FAIL ABUN
PM-149	-6.815E+01	1.292E+02	2.033E+02	0.000E+00	NOT IDENT.
EU-152	-2.140E-02	9.330E-02	1.592E-01	0.000E+00	FAIL ABUN
GD-153	-4.595E-02	6.819E-02	1.063E-01	0.000E+00	NOT IDENT.
EU-154	4.001E-02	1.470E-01	2.525E-01	0.000E+00	NOT IDENT.
TB-160	-1.339E-01	1.707E-01	2.628E-01	0.000E+00	FAIL ABUN
HO-166M	-1.017E-02	7.315E-02	1.233E-01	0.000E+00	NOT IDENT.
TA-182	-9.649E-02	2.497E-01	4.073E-01	0.000E+00	NOT IDENT.
IR-192	-2.497E-02	3.207E-02	5.314E-02	0.000E+00	FAIL ABUN
HG-203	1.875E-03	4.097E-02	6.736E-02	0.000E+00	NOT IDENT.
BI-207	-2.944E-02	6.119E-02	9.995E-02	0.000E+00	FAIL ABUN
PB-211	-1.648E-01	7.931E-01	1.306E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.091E+00	1.510E+00	0.000E+00	FAIL ABUN
RN-219	7.265E-03	4.222E-01	7.207E-01	0.000E+00	FAIL ABUN
RA-223	2.166E-01	6.635E-01	1.043E+00	0.000E+00	FAIL ABUN
AC-227	-5.580E-02	2.355E-01	3.835E-01	0.000E+00	FAIL ABUN
TH-227	-5.580E-02	2.355E-01	3.835E-01	0.000E+00	FAIL ABUN
PA-231	-2.151E-01	1.411E+00	2.288E+00	0.000E+00	FAIL ABUN
TH-231	2.166E-01	6.635E-01	1.043E+00	0.000E+00	FAIL ABUN
PA-233	5.089E-02	6.256E-02	1.134E-01	0.000E+00	FAIL ABUN
PA-234	-2.077E-01	3.808E-01	5.944E-01	0.000E+00	NOT IDENT.
PA-234M	3.293E+00	5.231E+00	9.134E+00	0.000E+00	NOT IDENT.
NP-239	-3.334E-01	3.081E-01	5.148E-01	0.000E+00	FAIL ABUN
AM-241	-1.908E-02	5.476E-02	8.313E-02	0.000E+00	NOT IDENT.
CM-247	-2.366E-02	3.886E-02	6.358E-02	0.000E+00	NOT IDENT.
CF-249	-1.042E-02	4.315E-02	7.276E-02	0.000E+00	NOT IDENT.

CF-251	-3.885E-03	1.197E-01	2.042E-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]G247911008.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:26:18.
Sample ID        : G247911008 Sample quantity : 1.16920E+02 GRAM
Detector name    : GAM25 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.08 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957714 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	1460.82	1218	10.66*	1.109E+00	3.308E+01	3.308E+01	10.38
CD-109	88.03	436	3.70*	9.406E+00	4.022E+00	4.121E+00	20.80
SN-126	64.28	275	9.60	9.778E+00	9.411E-01	9.411E-01	43.26
	86.94	436	8.90	9.406E+00	1.672E+00	1.672E+00	45.48
	87.57	436	37.00*	9.406E+00	4.022E-01	4.022E-01	20.80
BA-137M	661.66	52	89.90*	2.230E+00	8.395E-02	8.404E-02	81.54
CS-137	661.66	52	85.10*	2.230E+00	8.869E-02	8.878E-02	81.54
EU-155	86.55	436	30.70	9.406E+00	4.847E-01	4.879E-01	20.84
	105.31	123	21.10*	8.848E+00	2.107E-01	2.120E-01	63.35
TL-208	277.37	-----	6.60	4.738E+00	-----	Line Not Found	-----
	583.19	445	85.00*	2.497E+00	6.730E-01	6.730E-01	19.00
	860.56	59	12.50	1.765E+00	8.588E-01	8.588E-01	66.38
PB-210	46.54	158	4.25*	9.186E+00	1.303E+00	1.305E+00	50.88
BI-211	72.87	-----	1.23	9.724E+00	-----	Line Not Found	-----
	351.06	733	12.92*	3.886E+00	4.688E+00	4.688E+00	14.44
PB-212	74.82	852	10.28	9.694E+00	2.746E+00	2.746E+00	17.27
	77.11	1362	17.10	9.652E+00	2.649E+00	2.649E+00	12.51
	238.63	1510	43.60*	5.340E+00	2.083E+00	2.083E+00	12.83
	300.09	136	3.30	4.443E+00	2.974E+00	2.974E+00	35.79
BI-214	609.32	466	45.49*	2.401E+00	1.370E+00	1.370E+00	18.63
	1120.29	95	14.92	1.398E+00	1.459E+00	1.459E+00	46.77
	1764.49	82	15.30	9.414E-01	1.834E+00	1.834E+00	32.86
PB-214	74.82	852	5.80	9.694E+00	4.867E+00	4.867E+00	16.32
	77.11	1362	9.70	9.652E+00	4.670E+00	4.670E+00	14.98
	242.00	359	7.25	5.289E+00	3.006E+00	3.007E+00	28.92
	295.22	441	18.42	4.503E+00	1.708E+00	1.708E+00	18.10
	351.93	733	35.60*	3.886E+00	1.701E+00	1.701E+00	15.46
RA-224	240.99	359	4.10*	5.289E+00	5.316E+00	5.316E+00	28.33
RA-226	609.32	466	45.49*	2.401E+00	1.370E+00	1.370E+00	18.63
	1120.29	95	14.92	1.398E+00	1.459E+00	1.459E+00	46.77
	1764.49	82	15.30	9.414E-01	1.834E+00	1.834E+00	32.86
AC-228	338.32	247	11.27	4.019E+00	1.751E+00	1.751E+00	47.69

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	247	25.80*	1.678E+00	1.833E+00	1.833E+00	23.83
	968.97	170	15.80	1.589E+00	2.174E+00	2.174E+00	33.39
	338.32	247	11.27	4.019E+00	1.751E+00	1.751E+00	47.69
	911.20	247	25.80*	1.678E+00	1.833E+00	1.833E+00	23.83
TH-228	968.97	170	15.80	1.589E+00	2.174E+00	2.174E+00	33.39
	74.82	852	10.28	9.694E+00	2.746E+00	2.746E+00	14.31
	77.11	1362	17.10	9.652E+00	2.649E+00	2.649E+00	12.51
	238.63	1510	43.60*	5.340E+00	2.083E+00	2.083E+00	12.83
TH-229	300.09	136	3.30	4.443E+00	2.974E+00	2.974E+00	70.12
	85.43	170	14.70	9.487E+00	3.905E-01	3.905E-01	44.39
	88.47	436	24.00	9.406E+00	6.200E-01	6.200E-01	20.80
	193.51	-----	4.41*	6.239E+00	-----	Line Not Found	-----
TH-232	210.85	175	2.80	5.891E+00	3.416E+00	3.416E+00	41.48
	338.32	247	11.27	4.019E+00	1.751E+00	1.751E+00	24.66
	911.20	247	25.80*	1.678E+00	1.833E+00	1.833E+00	23.83
	968.97	170	15.80	1.589E+00	2.174E+00	2.174E+00	33.39
TH-234	63.29	275	3.70*	9.778E+00	2.442E+00	2.442E+00	44.48
	92.59	651	4.23	9.238E+00	5.346E+00	5.346E+00	27.96
U-235	89.96	255	3.47	9.329E+00	2.524E+00	2.524E+00	36.05
	93.35	651	5.60	9.238E+00	4.038E+00	4.038E+00	28.76
	143.76	-----	10.96*	7.568E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.998E+00	-----	Line Not Found	-----
NP-237	185.72	324	57.20	6.415E+00	2.833E-01	2.833E-01	27.15
	205.31	-----	5.01	5.979E+00	-----	Line Not Found	-----
	86.48	436	12.40*	9.406E+00	1.200E+00	1.200E+00	29.53
	95.86	-----	2.68	9.143E+00	-----	Line Not Found	-----
U-238	63.29	275	3.70*	9.778E+00	2.442E+00	2.442E+00	44.48
	92.59	651	4.23	9.238E+00	5.346E+00	5.346E+00	19.19
ANH-511	511.00	105	100.00*	2.809E+00	1.200E-01	1.200E-01	67.55

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	1.25E+09Y	1.00	3.308E+01	3.308E+01	0.343E+01	10.38	
CD-109	461.40D	1.02	4.022E+00	4.121E+00	0.857E+00	20.80	
SN-126	2.30E+05Y	1.00	4.022E-01	4.022E-01	0.836E-01	20.80	
BA-137M	30.08Y	1.00	8.395E-02	8.404E-02	6.852E-02	81.54	
CS-137	30.08Y	1.00	8.869E-02	8.878E-02	7.239E-02	81.54	
EU-155	4.75Y	1.01	2.107E-01	2.120E-01	1.343E-01	63.35	
TL-208	1.41E+10Y	1.00	6.730E-01	6.730E-01	1.279E-01	19.00	
PB-210	22.20Y	1.00	1.303E+00	1.305E+00	0.664E+00	50.88	
BI-211	7.04E+08Y	1.00	4.688E+00	4.688E+00	0.677E+00	14.44	
PB-212	1.41E+10Y	1.00	2.083E+00	2.083E+00	0.267E+00	12.83	
BI-214	1600.00Y	1.00	1.370E+00	1.370E+00	0.255E+00	18.63	
PB-214	1600.00Y	1.00	1.701E+00	1.701E+00	0.263E+00	15.46	
RA-224	1.41E+10Y	1.00	5.316E+00	5.316E+00	1.506E+00	28.33	
RA-226	1600.00Y	1.00	1.370E+00	1.370E+00	0.255E+00	18.63	
AC-228	1.41E+10Y	1.00	1.833E+00	1.833E+00	0.437E+00	23.83	
RA-228	1.41E+10Y	1.00	1.833E+00	1.833E+00	0.437E+00	23.83	
TH-228	1.41E+10Y	1.00	2.083E+00	2.083E+00	0.267E+00	12.83	
TH-229	7340.00Y	1.00	6.200E-01	6.200E-01	1.289E-01	20.80	K
TH-232	1.41E+10Y	1.00	1.833E+00	1.833E+00	0.437E+00	23.83	
TH-234	4.47E+09Y	1.00	2.442E+00	2.442E+00	1.086E+00	44.48	
U-235	7.04E+08Y	1.00	2.833E-01	2.833E-01	0.769E-01	27.15	K
NP-237	2.14E+06Y	1.00	1.200E+00	1.200E+00	0.354E+00	29.53	
U-238	4.47E+09Y	1.00	2.442E+00	2.442E+00	1.086E+00	44.48	
ANH-511	1.00E+09Y	1.00	1.200E-01	1.200E-01	0.810E-01	67.55	
Total Activity :			7.108E+01	7.118E+01			

Grand Total Activity : 7.108E+01 7.118E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.92	115	353	1.08	257.39	254	8	1.60E-02	59.3	8.04E+00	
0	270.48	82	193	1.67	540.49	536	8	1.14E-02	62.8	4.84E+00	T
0	327.52	82	140	0.86	654.55	650	9	1.13E-02	56.8	4.13E+00	T
0	463.17	91	114	1.14	925.84	919	12	1.27E-02	51.3	3.06E+00	T
0	727.24	162	53	1.58	1453.96	1447	15	2.25E-02	25.6	2.05E+00	T
0	767.96	78	68	2.02	1535.41	1530	10	1.09E-02	45.2	1.95E+00	
0	795.11	41	43	1.27	1589.71	1584	9	5.66E-03	67.8	1.89E+00	T
3	964.29	61	54	1.80	1928.07	1923	27	8.51E-03	50.4	1.60E+00	T
0	1376.98	37	13	1.91	2753.49	2747	13	5.14E-03	51.9	1.17E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                                *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911008.CNF;1
* Acquisition date   : 6-MAR-2010 17:26:18.   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 02:00:02.08           Half life ratio     : 8.00000
*****
*                               SAMPLE DATA                                *
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library   : SOLID
* Sample ID          : G247911008             Analyst initials  : MXR1
* Batch Number       : 957714                 Sample Quantity   : 1.16920E+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	3.308E+01	3.434E+00	5.100E-01	4.344E-02	64.850
CD-109	4.121E+00	8.571E-01	8.348E-01	8.971E-02	4.937
SN-126	4.022E-01	8.364E-02	8.129E-02	8.717E-03	4.947
BA-137M	8.404E-02	6.852E-02	7.548E-02	8.361E-03	1.113
CS-137	8.878E-02	7.239E-02	7.973E-02	8.843E-03	1.113
EU-155	2.120E-01	1.343E-01	1.300E-01	1.537E-02	1.631
TL-208	6.730E-01	1.279E-01	6.803E-02	7.663E-03	9.892
PB-210	1.305E+00	6.640E-01	6.407E-01	6.562E-02	2.037
BI-211	4.688E+00	6.770E-01	3.437E-01	3.622E-02	13.639
PB-212	2.083E+00	2.673E-01	8.249E-02	9.425E-03	25.250
BI-214	1.370E+00	2.552E-01	1.185E-01	1.434E-02	11.564
PB-214	1.701E+00	2.630E-01	1.289E-01	1.531E-02	13.198
RA-224	5.316E+00	1.506E+00	8.853E-01	9.303E-02	6.005
RA-226	1.370E+00	2.552E-01	1.185E-01	1.434E-02	11.564
AC-228	1.833E+00	4.368E-01	2.425E-01	2.965E-02	7.559
RA-228	1.833E+00	4.368E-01	2.425E-01	2.965E-02	7.559
TH-228	2.083E+00	2.673E-01	8.249E-02	9.425E-03	25.250
TH-229	6.200E-01	1.289E-01	8.211E-01	7.831E-02	0.755

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.833E+00	4.368E-01	2.425E-01	2.965E-02	7.559
TH-234	2.442E+00	1.086E+00	8.353E-01	1.586E-01	2.923
U-235	2.833E-01	7.690E-02	3.017E-01	5.542E-02	0.939
NP-237	1.200E+00	3.544E-01	2.463E-01	5.795E-02	4.871
U-238	2.442E+00	1.086E+00	8.353E-01	1.586E-01	2.923
ANH-511	1.200E-01	8.104E-02	4.745E-02	4.884E-03	2.528

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.458E-01		3.645E-01	5.758E-01	6.095E-02	-0.253
NA-22	4.326E-03		5.404E-02	8.952E-02	7.340E-03	0.048
NA-24	-1.900E+00		1.656E+00	Half-Life too short		
SC-46	-1.963E-02		4.915E-02	7.694E-02	7.368E-03	-0.255
V-48	-1.035E-01		9.209E-02	1.301E-01	1.206E-02	-0.796
CR-51	1.399E-01		3.553E-01	6.119E-01	6.791E-02	0.229
MN-54	4.526E-02		4.363E-02	7.714E-02	7.827E-03	0.587
CO-56	-1.659E-02		4.518E-02	7.121E-02	7.145E-03	-0.233
CO-57	-1.423E-02		2.025E-02	3.300E-02	4.256E-03	-0.431
CO-58	-2.541E-02		4.477E-02	6.944E-02	7.205E-03	-0.366
FE-59	-6.866E-03		1.074E-01	1.781E-01	1.677E-02	-0.039
CO-60	-1.198E-03		4.612E-02	7.525E-02	6.112E-03	-0.016
ZN-65	4.639E-02		1.347E-01	2.006E-01	1.733E-02	0.231
SE-75	-4.223E-02		4.618E-02	6.902E-02	7.564E-03	-0.612
SR-85	4.197E-02		4.445E-02	6.878E-02	7.096E-03	0.610
Y-88	-8.677E-03		3.503E-02	5.437E-02	4.443E-03	-0.160
Y-91	2.169E+01		2.602E+01	4.589E+01	3.777E+00	0.473
NB-94	5.817E-03		3.831E-02	6.444E-02	7.076E-03	0.090
NB-95	9.309E-02		6.030E-02	9.880E-02	1.055E-02	0.942
NB-95M	-1.508E-02		1.345E-01	1.911E-01	2.194E-02	-0.079
ZR-95	2.201E-02		8.770E-02	1.477E-01	1.695E-02	0.149
MO-99	4.893E-01		1.882E+01	3.123E+01	5.330E+00	0.016
TC-99M	-4.469E+11		3.562E+11	Half-Life too short		
RU-103	1.928E-02		4.096E-02	6.891E-02	1.032E-02	0.280
RH-106	1.136E-01		3.376E-01	5.814E-01	8.650E-02	0.195
RU-106	1.136E-01		3.374E-01	5.814E-01	6.367E-02	0.195
AG-108M	1.646E-02		3.096E-02	5.269E-02	5.177E-03	0.312
AG-110M	1.943E-02		4.387E-02	6.689E-02	7.538E-03	0.290
SN-113	5.426E-03		4.836E-02	8.072E-02	7.539E-03	0.067
CD-115	-1.803E+01		1.687E+01	2.442E+01	2.545E+00	-0.738
SN-117M	-3.849E-03		5.013E-02	8.278E-02	8.037E-03	-0.046
TE-123M	-1.580E-03		2.481E-02	4.098E-02	3.979E-03	-0.039
SB-124	5.121E-02		9.238E-02	1.673E-01	1.450E-02	0.306
SB-125	2.507E-02		1.013E-01	1.692E-01	1.634E-02	0.148
TE-125M	1.120E+00		8.663E+00	1.334E+01	1.788E+00	0.084
I-126	3.407E-01		2.971E-01	4.803E-01	5.318E-02	0.709
SB-126	3.675E-02		1.934E-01	2.848E-01	3.109E-02	0.129

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	-3.606E-01		1.802E+00	2.956E+00	4.012E-01	-0.122
I-131	-1.041E-01		1.296E-01	2.044E-01	2.098E-02	-0.509
TE-132	1.418E-01		9.178E-01	1.491E+00	2.532E-01	0.095
BA-133	-9.924E-03		4.980E-02	7.204E-02	1.005E-02	-0.138
I-133	-1.494E-02		7.737E-03	Half-Life	too short	
CS-134	9.114E-02	+	6.256E-02	1.066E-01	1.122E-02	0.855
CS-135	2.052E-01		1.777E-01	2.710E-01	3.271E-02	0.757
I-135	9.191E+10		6.850E+10	Half-Life	too short	
CS-136	-3.270E-02		1.332E-01	2.181E-01	2.040E-02	-0.150
CE-139	-7.809E-03		2.851E-02	4.653E-02	4.149E-03	-0.168
BA-140	-2.307E-01		3.365E-01	4.970E-01	1.711E-01	-0.464
LA-140	-1.022E-01		1.155E-01	1.688E-01	1.404E-02	-0.605
CE-141	-2.905E-02		5.656E-02	9.210E-02	1.024E-02	-0.315
CE-143	9.708E-04		1.735E-04	Half-Life	too short	
CE-144	-2.110E-01		1.806E-01	2.666E-01	4.648E-02	-0.791
PM-144	-1.462E-02		3.993E-02	6.458E-02	7.106E-03	-0.226
PR-144	-1.094E+00		2.990E+00	4.836E+00	5.320E-01	-0.226
PM-146	2.858E-02		4.458E-02	7.610E-02	8.794E-03	0.376
ND-147	-3.147E-01		6.481E-01	9.990E-01	1.606E-01	-0.315
PM-149	-6.815E+01		1.318E+02	2.005E+02	3.421E+01	-0.340
EU-152	-2.140E-02		9.521E-02	1.573E-01	1.689E-02	-0.136
GD-153	-4.595E-02		6.958E-02	1.037E-01	1.168E-02	-0.443
EU-154	4.001E-02		1.500E-01	2.529E-01	2.797E-02	0.158
TB-160	-1.339E-01		1.742E-01	2.623E-01	2.542E-02	-0.510
HO-166M	-1.017E-02		7.464E-02	1.228E-01	1.344E-02	-0.083
TA-182	-9.649E-02		2.548E-01	4.079E-01	3.354E-02	-0.237
IR-192	-2.497E-02		3.272E-02	5.247E-02	5.668E-03	-0.476
HG-203	1.875E-03		4.181E-02	6.643E-02	7.528E-03	0.028
BI-207	-2.944E-02		6.244E-02	9.995E-02	8.920E-03	-0.295
PB-211	-1.648E-01		8.093E-01	1.292E+00	6.269E-01	-0.128
BI-212	3.804E+00	+	1.113E+00	1.504E+00	2.124E-01	2.529
RN-219	7.265E-03		4.308E-01	7.134E-01	1.086E-01	0.010
RA-223	2.166E-01		6.770E-01	1.030E+00	1.899E-01	0.210
AC-227	-5.580E-02		2.403E-01	3.779E-01	5.170E-02	-0.148
TH-227	-5.580E-02		2.403E-01	3.779E-01	5.695E-02	-0.148
PA-231	-2.151E-01		1.440E+00	2.257E+00	3.655E-01	-0.095
TH-231	2.166E-01		6.770E-01	1.030E+00	1.899E-01	0.210
PA-233	5.089E-02		6.384E-02	1.120E-01	1.237E-02	0.454
PA-234	-2.077E-01		3.886E-01	5.937E-01	1.135E-01	-0.350
PA-234M	3.293E+00		5.338E+00	9.129E+00	9.562E-01	0.361
NP-239	-3.334E-01		3.144E-01	5.032E-01	6.313E-02	-0.662
AM-241	-1.908E-02		5.588E-02	8.071E-02	8.386E-03	-0.236
CM-247	-2.366E-02		3.965E-02	6.294E-02	5.801E-03	-0.376
CF-249	-1.042E-02		4.403E-02	7.200E-02	6.621E-03	-0.145
CF-251	-3.885E-03		1.221E-01	2.005E-01	1.840E-02	-0.019

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G247911008          *
* Acquisition date   : 6-MAR-2010 17:26:18 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 02:00:02.08 Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247911008 Analyst initials: MXR1          *
* Batch Number       : 957714 Sample Quantity : 1.1692E+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	3.308E+01	3.366E+00	2.543E-01	1.717E+00
CD-109	4.121E+00	8.400E-01	4.285E-01	4.286E-01
SN-126	4.022E-01	8.197E-02	4.173E-02	4.182E-02
BA-137M	8.404E-02	6.715E-02	3.795E-02	3.426E-02
CS-137	8.878E-02	7.094E-02	4.009E-02	3.619E-02
EU-155	2.120E-01	1.316E-01	6.662E-02	6.716E-02
TL-208	6.730E-01	1.253E-01	3.425E-02	6.394E-02
PB-210	1.305E+00	6.507E-01	3.310E-01	3.320E-01
BI-211	4.688E+00	6.634E-01	1.740E-01	3.385E-01
PB-212	2.083E+00	2.620E-01	4.191E-02	1.337E-01
BI-214	1.370E+00	2.501E-01	5.961E-02	1.276E-01
PB-214	1.701E+00	2.577E-01	6.524E-02	1.315E-01
RA-224	5.316E+00	1.476E+00	4.498E-01	7.532E-01
RA-226	1.370E+00	2.501E-01	5.961E-02	1.276E-01
AC-228	1.833E+00	4.281E-01	1.215E-01	2.184E-01
RA-228	1.833E+00	4.281E-01	1.215E-01	2.184E-01
TH-228	2.083E+00	2.620E-01	4.191E-02	1.337E-01
TH-229	1.203E-01	4.872E-01	4.181E-01	2.486E-01
TH-232	1.833E+00	4.281E-01	1.215E-01	2.184E-01
TH-234	2.442E+00	1.064E+00	4.302E-01	5.430E-01
U-235	1.232E-01	1.761E-01	1.541E-01	8.987E-02
NP-237	1.200E+00	3.473E-01	1.265E-01	1.772E-01
U-238	2.442E+00	1.064E+00	4.302E-01	5.430E-01
ANH-511	1.200E-01	7.942E-02	2.392E-02	4.052E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.458E-01	3.572E-01	2.905E-01	1.822E-01 NOT IDENT.
NA-22	4.326E-03	5.295E-02	4.470E-02	2.702E-02 NOT IDENT.
NA-24	-1.900E+06	3.246E+06	0.000E+00	1.656E+06 SHORT HLIF

SC-46	-1.963E-02	4.817E-02	3.857E-02	2.458E-02	FAIL ABUN
V-48	-1.035E-01	9.025E-02	6.515E-02	4.604E-02	NOT IDENT.
CR-51	1.399E-01	3.482E-01	3.100E-01	1.777E-01	NOT IDENT.
MN-54	4.526E-02	4.276E-02	3.869E-02	2.181E-02	NOT IDENT.
CO-56	-1.659E-02	4.428E-02	3.571E-02	2.259E-02	NOT IDENT.
CO-57	-1.423E-02	1.985E-02	1.688E-02	1.013E-02	NOT IDENT.
CO-58	-2.541E-02	4.388E-02	3.484E-02	2.239E-02	NOT IDENT.
FE-59	-6.866E-03	1.052E-01	8.905E-02	5.369E-02	NOT IDENT.
CO-60	-1.198E-03	4.520E-02	3.756E-02	2.306E-02	NOT IDENT.
ZN-65	4.639E-02	1.320E-01	1.003E-01	6.733E-02	NOT IDENT.
SE-75	-4.223E-02	4.526E-02	3.503E-02	2.309E-02	NOT IDENT.
SR-85	4.197E-02	4.356E-02	3.467E-02	2.222E-02	NOT IDENT.
Y-88	-8.677E-03	3.433E-02	2.704E-02	1.752E-02	NOT IDENT.
Y-91	2.169E+01	2.550E+01	2.293E+01	1.301E+01	NOT IDENT.
NB-94	5.817E-03	3.754E-02	3.238E-02	1.915E-02	NOT IDENT.
NB-95	9.309E-02	5.909E-02	4.960E-02	3.015E-02	NOT IDENT.
NB-95M	-1.508E-02	1.319E-01	9.712E-02	6.727E-02	NOT IDENT.
ZR-95	2.201E-02	8.595E-02	7.416E-02	4.385E-02	NOT IDENT.
MO-99	4.893E-01	1.845E+01	1.568E+01	9.412E+00	NOT IDENT.
TC-99M	-4.469E+17	6.981E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.928E-02	4.014E-02	3.475E-02	2.048E-02	FAIL ABUN
RH-106	1.136E-01	3.309E-01	2.925E-01	1.688E-01	NOT IDENT.
RU-106	1.136E-01	3.307E-01	2.925E-01	1.687E-01	NOT IDENT.
AG-108M	1.646E-02	3.034E-02	2.661E-02	1.548E-02	NOT IDENT.
AG-110M	1.943E-02	4.299E-02	3.363E-02	2.194E-02	NOT IDENT.
SN-113	5.426E-03	4.740E-02	4.081E-02	2.418E-02	NOT IDENT.
CD-115	-1.803E+01	1.653E+01	1.230E+01	8.435E+00	NOT IDENT.
SN-117M	-3.849E-03	4.912E-02	4.224E-02	2.506E-02	NOT IDENT.
TE-123M	-1.580E-03	2.431E-02	2.091E-02	1.240E-02	NOT IDENT.
SB-124	5.121E-02	9.053E-02	8.330E-02	4.619E-02	NOT IDENT.
SB-125	2.507E-02	9.924E-02	8.548E-02	5.063E-02	FAIL ABUN
TE-125M	1.120E+00	8.489E+00	6.832E+00	4.331E+00	NOT IDENT.
I-126	3.407E-01	2.911E-01	2.415E-01	1.485E-01	NOT IDENT.
SB-126	3.675E-02	1.895E-01	1.431E-01	9.670E-02	NOT IDENT.
SB-127	-3.606E-01	1.766E+00	1.485E+00	9.012E-01	NOT IDENT.
I-131	-1.041E-01	1.270E-01	1.034E-01	6.481E-02	NOT IDENT.
TE-132	1.418E-01	8.995E-01	7.580E-01	4.589E-01	NOT IDENT.
BA-133	-9.924E-03	4.881E-02	3.645E-02	2.490E-02	NOT IDENT.
I-133	-1.494E+04	1.517E+04	0.000E+00	7.737E+03	SHORT HLIF
CS-134	9.114E-02	6.131E-02	5.349E-02	3.128E-02	FAIL ABUN
CS-135	2.052E-01	1.742E-01	1.375E-01	8.887E-02	NOT IDENT.
I-135	9.191E+16	1.343E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.270E-02	1.305E-01	1.092E-01	6.658E-02	NOT IDENT.
CE-139	-7.809E-03	2.794E-02	2.373E-02	1.426E-02	NOT IDENT.
BA-140	-2.307E-01	3.297E-01	2.504E-01	1.682E-01	NOT IDENT.
LA-140	-1.022E-01	1.132E-01	8.410E-02	5.775E-02	FAIL ABUN
CE-141	-2.905E-02	5.543E-02	4.704E-02	2.828E-02	NOT IDENT.
CE-143	9.708E+02	3.400E+02	0.000E+00	1.735E+02	SHORT HLIF
CE-144	-2.110E-01	1.770E-01	1.363E-01	9.030E-02	NOT IDENT.
PM-144	-1.462E-02	3.913E-02	3.245E-02	1.996E-02	NOT IDENT.
PR-144	-1.094E+00	2.930E+00	2.430E+00	1.495E+00	NOT IDENT.
PM-146	2.858E-02	4.369E-02	3.841E-02	2.229E-02	NOT IDENT.
ND-147	-3.147E-01	6.351E-01	5.034E-01	3.240E-01	FAIL ABUN
PM-149	-6.815E+01	1.292E+02	1.017E+02	6.590E+01	NOT IDENT.
EU-152	-2.140E-02	9.330E-02	7.964E-02	4.760E-02	FAIL ABUN
GD-153	-4.595E-02	6.819E-02	5.318E-02	3.479E-02	NOT IDENT.
EU-154	4.001E-02	1.470E-01	1.263E-01	7.502E-02	NOT IDENT.
TB-160	-1.339E-01	1.707E-01	1.315E-01	8.709E-02	FAIL ABUN
HO-166M	-1.017E-02	7.315E-02	6.168E-02	3.732E-02	NOT IDENT.
TA-182	-9.649E-02	2.497E-01	2.037E-01	1.274E-01	NOT IDENT.
IR-192	-2.497E-02	3.207E-02	2.658E-02	1.636E-02	FAIL ABUN
HG-203	1.875E-03	4.097E-02	3.370E-02	2.090E-02	NOT IDENT.
BI-207	-2.944E-02	6.119E-02	5.000E-02	3.122E-02	FAIL ABUN
PB-211	-1.648E-01	7.931E-01	6.531E-01	4.046E-01	NOT IDENT.
BI-212	3.804E+00	1.091E+00	7.555E-01	5.567E-01	FAIL ABUN
RN-219	7.265E-03	4.222E-01	3.605E-01	2.154E-01	FAIL ABUN
RA-223	2.166E-01	6.635E-01	5.217E-01	3.385E-01	FAIL ABUN
AC-227	-5.580E-02	2.355E-01	1.919E-01	1.202E-01	FAIL ABUN
TH-227	-5.580E-02	2.355E-01	1.919E-01	1.202E-01	FAIL ABUN
PA-231	-2.151E-01	1.411E+00	1.145E+00	7.201E-01	FAIL ABUN
TH-231	2.166E-01	6.635E-01	5.217E-01	3.385E-01	FAIL ABUN
PA-233	5.089E-02	6.256E-02	5.674E-02	3.192E-02	FAIL ABUN
PA-234	-2.077E-01	3.808E-01	2.974E-01	1.943E-01	NOT IDENT.
PA-234M	3.293E+00	5.231E+00	4.570E+00	2.669E+00	NOT IDENT.
NP-239	-3.334E-01	3.081E-01	2.576E-01	1.572E-01	FAIL ABUN
AM-241	-1.908E-02	5.476E-02	4.159E-02	2.794E-02	NOT IDENT.
CM-247	-2.366E-02	3.886E-02	3.181E-02	1.982E-02	NOT IDENT.
CF-249	-1.042E-02	4.315E-02	3.640E-02	2.202E-02	NOT IDENT.

CF-251	-3.885E-03	1.197E-01	1.022E-01	6.107E-02 NOT IDENT.
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 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON , SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	280.2441
49.72	311.3042
57.36	0.0000
59.54	378.1525
63.29	409.7918
63.29	409.7918
64.28	411.2811
67.75	429.1731
69.67	423.8757
70.83	432.9788
72.81	434.2935
72.87	434.3805
72.87	434.3805
74.82	445.4927
74.82	445.4927
74.82	445.4927
74.97	445.7102
77.11	448.7944
77.11	448.7944
77.11	448.7944
79.69	421.4857
79.80	374.9607
80.12	375.3328
80.19	375.4134
80.57	379.8870
81.00	380.3901
81.07	380.4716
81.07	380.4716
83.79	345.3411
83.79	345.3411
85.43	370.7652
86.48	371.9103
86.55	371.9864
86.79	357.4532
86.94	357.6125
87.57	358.2675
88.03	358.7431
88.47	359.1989
89.96	340.8276
91.11	341.9377
92.59	289.4691
92.59	289.4691
93.35	290.0789
94.67	279.7899
94.87	278.6814
94.87	278.6814
95.86	322.4211
97.43	341.5614
98.44	263.9691
99.53	265.5812
100.11	295.6535
103.18	265.5280
103.37	246.3129
105.31	260.0559
106.12	296.0806
109.28	290.5518
111.00	300.5332
111.76	293.1844
116.30	265.2992
117.23	269.4309
121.12	251.2065
121.78	252.4795
122.06	255.3354
123.07	251.4077
131.20	227.0084
133.52	280.9348
136.00	245.5154

136.47	245.7553
140.51	251.5253
140.51	0.0000
143.76	232.4570
144.24	235.5042
144.24	235.5042
145.44	273.8309
152.43	271.7969
153.25	233.8755
154.21	221.8144
154.21	221.8144
156.02	263.0302
158.56	225.5457
159.00	225.7259
162.66	259.4111
163.33	248.0055
165.86	265.7980
176.60	228.7997
177.52	238.1598
181.07	223.4634
184.41	221.6511
185.72	210.9644
193.51	218.7267
197.04	246.7726
205.31	211.7223
210.85	203.9718
215.65	217.5977
222.11	211.0279
227.38	203.9406
228.16	198.7568
228.18	198.7625
235.69	211.1564
235.96	211.2312
235.96	211.2312
238.63	165.4220
238.63	165.4220
240.99	165.9350
242.00	166.1547
244.70	166.7368
252.40	147.1962
252.80	150.6184
256.23	155.7479
256.23	155.7479
260.90	154.3954
264.66	183.4069
268.22	150.0872
269.46	163.9746
269.46	163.9746
271.23	166.0320
273.65	197.4071
276.40	161.8809
277.37	167.8115
277.60	167.8560
278.00	178.2853
279.20	178.5345
279.54	212.0200
280.46	211.0948
283.69	148.2005
284.31	156.4151
285.41	163.5734
285.90	156.6980
287.50	119.7727
293.27	0.0000
295.22	131.0753
295.96	131.1844
298.57	131.5618
299.98	131.7641
299.98	131.7641
300.09	131.7801
300.09	131.7801
300.13	131.7869
301.36	133.2041
302.85	110.7101
304.50	113.7500
304.50	113.7500
304.85	126.8317
308.46	137.4406
311.90	128.0903

316.51	135.9129
319.41	124.5887
320.08	117.4475
323.87	120.4473
323.87	120.4473
328.76	144.3839
333.37	127.4733
334.37	145.2008
334.37	145.2008
338.28	132.5149
338.28	132.5149
338.32	132.5193
338.32	132.5193
338.32	132.5193
340.48	115.0957
340.55	115.1033
344.28	129.5944
351.06	134.1738
351.93	142.6788
356.01	139.3025
364.49	131.1673
366.42	102.0970
383.85	111.4086
388.16	136.8995
388.63	138.8870
391.69	123.7871
400.66	105.2595
401.81	119.0215
402.40	128.8418
404.85	128.1336
410.95	119.9485
414.70	121.3109
423.72	121.2256
427.09	106.6131
427.87	112.6620
433.94	92.1755
453.88	87.5275
463.37	80.9890
468.07	97.1210
473.00	107.3928
476.78	115.9802
477.60	105.6887
487.02	107.4635
492.35	84.8377
497.08	70.4126
511.00	79.5988
514.00	78.2764
527.90	86.9722
529.87	0.0000
531.02	85.0031
537.26	100.4898
546.56	0.0000
563.25	90.1254
569.33	73.9253
569.50	73.9335
569.70	73.9417
583.19	93.4926
600.60	90.9000
602.73	83.6802
604.72	73.6834
609.32	75.0951
609.32	75.0951
610.33	75.1397
614.28	75.6205
618.01	70.9370
621.93	70.1892
621.93	70.1892
633.25	73.4082
635.95	82.7139
636.99	90.1212
645.85	75.7919
657.76	69.7906
661.66	102.5825
661.66	102.5825
664.57	0.0000
666.33	63.8907
666.50	76.3651
677.62	76.2065

685.70	75.5977
695.00	84.5239
696.49	88.3931
696.51	88.3954
697.00	83.6645
702.65	79.1479
706.68	88.8722
711.68	90.0642
720.70	67.3853
721.93	0.0000
722.78	73.8834
722.91	73.8890
723.31	78.7238
724.19	81.9744
727.33	55.0601
733.00	59.7411
735.93	65.7590
739.50	70.9540
747.24	80.9898
752.31	77.2815
753.82	66.5723
756.73	73.5315
763.94	59.0347
765.81	62.3716
766.42	67.3157
777.92	89.1584
778.90	70.3708
783.70	47.6848
785.37	66.6140
795.86	68.2800
801.95	74.1572
810.29	62.3754
810.76	66.4141
815.77	66.5688
818.51	65.6443
832.01	73.1672
834.85	56.9816
836.80	0.0000
846.77	62.4044
856.80	59.9455
860.56	53.5260
871.09	64.1161
873.19	49.6840
875.33	0.0000
879.36	72.6523
880.51	59.1890
883.24	59.2586
884.68	69.6990
889.28	68.7957
898.04	65.9162
911.20	49.4510
911.20	49.4510
911.20	49.4510
926.50	54.0045
937.49	68.0781
944.13	56.5312
946.00	72.5854
949.00	57.7125
962.29	66.2616
964.08	44.8029
966.15	45.1992
968.97	45.2500
968.97	45.2500
968.97	45.2500
983.53	70.4352
996.26	62.0752
1001.03	43.6426
1004.73	67.7429
1037.84	63.6234
1038.76	0.0000
1048.07	59.2396
1050.41	53.7331
1050.41	53.7331
1063.66	63.3073
1085.87	62.8834
1099.45	56.5869
1112.07	52.5778
1115.54	73.1721

1120.29	50.4918
1120.29	50.4918
1120.55	50.4961
1121.30	52.1384
1131.51	0.0000
1173.23	60.9569
1177.93	65.8971
1189.05	71.0069
1204.77	55.7336
1221.41	84.5478
1231.02	93.6857
1235.36	87.8918
1238.28	76.1133
1260.41	0.0000
1271.85	52.9504
1274.44	48.9940
1274.54	52.9935
1291.59	52.2708
1298.22	0.0000
1312.11	32.3698
1332.49	36.6416
1365.19	27.7493
1368.63	0.0000
1384.29	34.1051
1408.01	33.2982
1457.56	0.0000
1460.82	16.2949
1489.16	25.5449
1505.03	27.7932
1596.21	33.7826
1620.50	14.1629
1678.03	0.0000
1690.97	12.4899
1764.49	8.5550
1764.49	8.5550
1770.23	15.4193
1771.35	59.7341
1791.20	0.0000
1836.06	10.9321

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911008

Total Uranium Activity	7.3216E+00	ug/g
Total Uranium Counting Unc.	3.1674E+00	ug/g
Total Uranium Tpu	1.6160E-06	ug/g
Total Uranium Mda	1.2817E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 957714          SAMPLE ID   : G247911008
*  ANALYST       : MXR1            DETECTOR    : GAM25
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00 COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 6-MAR-2010 17:26:18.80 SAMPLE ALQT: 116.920 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.132E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.391E+00
GROSS GAMMA MDA (pCi/GRAM ) : 3.760E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.826E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 19:29:30.77

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911009.CNF;1
Sample date   : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:29:00.
Sample ID    : G247911009 Sample quantity : 1.35510E+02 GRAM
Detector name : GAM16 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.29 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID : 957714 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	74.88	608	490	0.91	149.95	146	19	8.44E-02	6.6	2.25E+00
2	4	77.10*	877	407	0.91	154.38	146	19	1.22E-01	4.9	
3	5	87.20	392	493	1.29	174.59	165	28	5.45E-02	11.0	2.12E+00
4	5	89.95	278	471	1.38	180.10	165	28	3.86E-02	15.1	
5	5	92.90*	443	443	1.41	185.99	165	28	6.15E-02	10.1	
6	0	129.14	91	458	0.84	258.46	255	8	1.27E-02	42.0	
7	0	185.85*	225	370	1.03	371.90	368	8	3.12E-02	17.1	
8	0	209.21	140	383	1.02	418.61	415	9	1.94E-02	26.6	
9	5	238.54*	1825	195	0.96	477.28	470	18	2.53E-01	2.7	3.78E+00
10	5	241.54	458	240	1.58	483.26	470	18	6.36E-02	7.5	
11	0	270.52	138	304	1.25	541.23	535	11	1.91E-02	26.1	
12	0	277.33	91	251	1.87	554.85	550	10	1.27E-02	34.3	
13	0	295.22	572	249	1.13	590.64	586	10	7.95E-02	6.7	
14	0	300.00	153	229	1.27	600.20	596	11	2.12E-02	20.8	
15	0	327.55	86	178	0.73	655.28	651	9	1.20E-02	29.9	
16	0	338.29*	336	205	1.10	676.77	672	9	4.67E-02	9.6	
17	0	351.80*	914	225	1.05	703.79	698	12	1.27E-01	4.7	
18	0	510.85*	146	230	2.01	1021.86	1014	18	2.03E-02	27.9	
19	0	583.08*	548	99	1.43	1166.31	1162	9	7.61E-02	5.5	
20	0	609.14*	651	106	1.26	1218.42	1212	11	9.04E-02	5.1	
21	0	727.20	137	75	1.24	1454.49	1448	12	1.91E-02	15.2	
22	0	794.42	103	75	1.90	1588.91	1581	15	1.44E-02	20.7	
23	0	860.54	87	72	1.49	1721.11	1715	13	1.20E-02	22.8	
24	0	911.15*	354	78	1.52	1822.30	1816	13	4.92E-02	7.5	
25	1	964.67	89	49	1.76	1929.32	1925	18	1.24E-02	18.0	2.90E+00
26	1	968.92*	224	60	1.54	1937.82	1925	18	3.11E-02	9.0	
27	0	1120.35*	115	50	1.77	2240.57	2235	11	1.60E-02	15.6	
28	0	1237.58	70	61	1.04	2474.96	2470	10	9.76E-03	23.9	
29	0	1376.68	63	16	3.35	2753.04	2746	14	8.74E-03	18.8	
30	0	1460.70*	1647	16	1.93	2921.01	2915	15	2.29E-01	2.5	
31	0	1589.05	59	16	2.63	3177.57	3170	20	8.19E-03	20.8	
32	0	1729.06	34	10	2.13	3457.43	3450	14	4.66E-03	26.8	
33	0	1764.46*	111	16	1.75	3528.19	3521	13	1.54E-02	12.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 19:29:33

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911009.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:29:00
 Sample ID : G247911009 Sample quantity : 135.51 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA16 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.29 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	+	1460.82	*	3.542E+01	3.598E+00	5.685E-01	4.997E-02	62.315
CD-109	+	88.03	*	4.812E+00	1.152E+00	9.512E-01	9.166E-02	5.059
SN-126		64.28		1.764E-01	4.713E-01	7.491E-01	1.091E-01	0.235
	+	86.94		1.952E+00	9.177E-01	3.901E-01	1.621E-01	5.004
	+	87.57	*	4.696E-01	1.124E-01	9.324E-02	8.940E-03	5.036
TL-208	+	277.37		8.147E-01	5.728E-01	5.710E-01	8.580E-02	1.427
	+	583.19	*	6.693E-01	9.917E-02	5.983E-02	5.924E-03	11.187
	+	860.56		9.988E-01	4.671E-01	4.004E-01	4.007E-02	2.494
BI-211		72.87		2.183E+00	3.066E+00	4.857E+00	3.949E-01	0.449
	+	351.06	*	4.973E+00	7.173E-01	3.098E-01	3.387E-02	16.052
PB-212	+	74.82		3.203E+00	5.877E-01	5.192E-01	6.637E-02	6.168
	+	77.11		2.651E+00	3.439E-01	2.980E-01	2.531E-02	8.895
	+	238.63	*	2.219E+00	2.893E-01	8.757E-02	1.040E-02	25.336
	+	300.09		2.889E+00	1.262E+00	1.104E+00	1.456E-01	2.617
BI-214	+	609.32	*	1.539E+00	2.258E-01	1.285E-01	1.365E-02	11.976
	+	1120.29		1.407E+00	4.642E-01	4.246E-01	4.579E-02	3.314
	+	1764.49		1.900E+00	5.018E-01	2.933E-01	2.427E-02	6.478
PB-214	+	74.82		5.676E+00	9.914E-01	9.203E-01	1.056E-01	6.168
	+	77.11		4.673E+00	7.185E-01	5.253E-01	6.220E-02	8.895
	+	242.00		3.377E+00	6.587E-01	5.327E-01	6.645E-02	6.339
	+	295.22		1.918E+00	3.638E-01	2.043E-01	2.753E-02	9.386
	+	351.93	*	1.805E+00	2.787E-01	1.127E-01	1.378E-02	16.017
RA-224	+	240.99	*	5.971E+00	1.112E+00	9.387E-01	1.035E-01	6.361
RA-226	+	609.32	*	1.539E+00	2.258E-01	1.285E-01	1.365E-02	11.976
	+	1120.29		1.407E+00	4.642E-01	4.246E-01	4.579E-02	3.314
	+	1764.49		1.900E+00	5.018E-01	2.933E-01	2.427E-02	6.478
AC-228	+	338.32		2.035E+00	9.445E-01	3.616E-01	1.528E-01	5.628
	+	911.20	*	2.086E+00	4.033E-01	2.060E-01	2.514E-02	10.129
	+	968.97		2.272E+00	6.928E-01	3.736E-01	9.188E-02	6.081
RA-228	+	338.32		2.035E+00	9.445E-01	3.616E-01	1.528E-01	5.628
	+	911.20	*	2.086E+00	4.033E-01	2.060E-01	2.514E-02	10.129
	+	968.97		2.272E+00	6.928E-01	3.736E-01	9.188E-02	6.081
TH-228	+	74.82		3.203E+00	4.997E-01	5.192E-01	4.348E-02	6.168
	+	77.11		2.651E+00	3.439E-01	2.980E-01	2.531E-02	8.895

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	2.219E+00	2.893E-01	8.757E-02	1.040E-02	25.336
	+	300.09		2.889E+00	2.151E+00	1.104E+00	6.814E-01	2.617
TH-232	+	338.32		2.035E+00	4.494E-01	3.616E-01	3.947E-02	5.628
	+	911.20	*	2.086E+00	4.033E-01	2.060E-01	2.514E-02	10.129
	+	968.97		2.272E+00	6.928E-01	3.736E-01	9.188E-02	6.081
U-235	+	89.96		3.448E+00	1.350E+00	9.727E-01	2.423E-01	3.544
	+	93.35		3.317E+00	1.024E+00	5.876E-01	1.369E-01	5.645
		143.76	*	4.110E-02	1.942E-01	3.203E-01	5.420E-02	0.128
		163.33		4.365E-01	3.981E-01	6.732E-01	1.221E-01	0.648
	+	185.72		1.771E-01	6.297E-02	6.504E-02	6.213E-03	2.723
		205.31		1.677E-02	4.773E-01	6.956E-01	1.313E-01	0.024
NP-237	+	86.48	*	1.401E+00	4.460E-01	2.814E-01	6.472E-02	4.980
		95.86		-1.862E-01	8.391E-01	1.263E+00	3.048E-01	-0.147
ANH-511	+	511.00	*	1.369E-01	7.743E-02	4.592E-02	4.368E-03	2.980

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-1.037E-01	3.163E-01	5.126E-01	5.184E-02	-0.202
NA-22		1274.54	*	-5.236E-03	4.482E-02	7.183E-02	5.977E-03	-0.073
NA-24		1368.63	*	1.114E+00	4.482E-02	Half-Life too short		
SC-46		889.28	*	-2.975E-02	3.570E-02	5.482E-02	5.182E-03	-0.543
	+	1120.55		2.402E-01	7.759E-02	1.240E-01	1.047E-02	1.937
V-48		944.13		-1.131E+00	9.087E-01	1.330E+00	1.243E-01	-0.850
		983.53	*	-6.761E-02	7.315E-02	1.106E-01	1.018E-02	-0.611
		1312.11		4.682E-02	8.625E-02	1.472E-01	1.236E-02	0.318
CR-51		320.08	*	1.778E-01	3.724E-01	6.057E-01	7.079E-02	0.293
MN-54		834.85	*	5.204E-04	3.653E-02	6.139E-02	5.765E-03	0.008
CO-56		846.77	*	1.941E-02	3.639E-02	6.362E-02	5.987E-03	0.305
		1037.84		7.566E-02	2.937E-01	4.961E-01	4.659E-02	0.153
	+	1238.28		2.424E-01	1.175E-01	1.877E-01	1.593E-02	1.291
		1771.35		-3.462E-01	2.718E-01	3.542E-01	2.927E-02	-0.977
CO-57		122.06	*	-1.360E-03	2.308E-02	3.858E-02	3.206E-03	-0.035
		136.47		-1.206E-01	1.914E-01	3.105E-01	2.820E-02	-0.388
CO-58		810.76	*	-1.770E-02	3.755E-02	6.075E-02	5.691E-03	-0.291
FE-59		1099.45	*	-4.242E-02	9.078E-02	1.425E-01	1.324E-02	-0.298
		1291.59		-5.442E-04	1.354E-01	2.192E-01	2.093E-02	-0.002
CO-60		1173.23		2.345E-02	4.460E-02	7.608E-02	6.117E-03	0.308
		1332.49	*	-2.258E-02	3.791E-02	5.656E-02	4.771E-03	-0.399
ZN-65		1115.54	*	-8.321E-02	1.041E-01	1.322E-01	1.123E-02	-0.629
SE-75		121.12		-5.725E-02	1.212E-01	1.991E-01	2.160E-02	-0.287
		136.00		-1.889E-02	3.683E-02	6.010E-02	5.102E-03	-0.314
		264.66	*	-1.009E-02	4.802E-02	6.745E-02	7.871E-03	-0.150
		279.54		3.157E-03	1.187E-01	1.690E-01	2.070E-02	0.019
		400.66		2.749E-02	2.332E-01	3.937E-01	4.574E-02	0.070
SR-85		514.00	*	2.111E-02	3.900E-02	5.916E-02	5.625E-03	0.357
Y-88		898.04		2.175E-02	3.716E-02	6.513E-02	6.185E-03	0.334
		1836.06	*	-6.044E-03	2.823E-02	4.423E-02	3.591E-03	-0.137

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	1204.77	*		1.565E+01	2.215E+01	3.814E+01	3.101E+00	0.410
NB-94	702.65	*		1.140E-02	3.567E-02	5.873E-02	5.309E-03	0.194
	871.09			-1.380E-02	3.153E-02	5.068E-02	4.784E-03	-0.272
NB-95	765.81	*		-1.422E-02	4.457E-02	6.881E-02	6.360E-03	-0.207
NB-95M	235.69	*		1.946E-02	1.342E-01	1.948E-01	2.320E-02	0.100
ZR-95	724.19			-2.731E-02	1.034E-01	1.404E-01	1.377E-02	-0.195
	756.73	*		-2.516E-02	7.676E-02	1.194E-01	1.202E-02	-0.211
MO-99	140.51			-1.434E+01	2.798E+01	4.466E+01	1.058E+01	-0.321
	181.07			-2.632E+01	2.360E+01	3.405E+01	6.530E+00	-0.773
	366.42			-3.470E+01	1.153E+02	1.910E+02	1.932E+01	-0.182
	739.50	*		-1.577E+01	1.724E+01	2.518E+01	4.044E+00	-0.626
	777.92			1.448E+01	4.354E+01	7.166E+01	6.648E+00	0.202
TC-99M	140.51	*		-4.023E+11	4.354E+01	Half-Life too short		
RU-103	497.08	*		-1.301E-02	3.829E-02	6.170E-02	8.969E-03	-0.211
	610.33	+		1.620E+01	3.159E+00	3.136E+00	5.227E-01	5.166
RH-106	621.93	*		5.796E-02	2.752E-01	4.550E-01	6.189E-02	0.127
	1050.41			3.278E-02	2.620E+00	4.323E+00	3.843E-01	0.008
RU-106	621.93	*		5.796E-02	2.751E-01	4.550E-01	4.161E-02	0.127
	1050.41			3.278E-02	2.620E+00	4.323E+00	3.843E-01	0.008
AG-108M	433.94	*		-6.496E-03	2.633E-02	4.319E-02	4.179E-03	-0.150
	614.28			2.848E-02	3.667E-02	5.879E-02	5.558E-03	0.484
	722.91			3.296E-03	3.963E-02	5.607E-02	5.256E-03	0.059
AG-110M	657.76	*		-8.178E-03	3.290E-02	5.212E-02	4.771E-03	-0.157
	677.62			1.386E-01	3.288E-01	5.471E-01	5.023E-02	0.253
	706.68			-1.072E-01	2.330E-01	3.617E-01	3.360E-02	-0.297
	763.94			-1.554E-01	1.701E-01	2.505E-01	2.369E-02	-0.621
	884.68			1.017E-02	4.605E-02	7.841E-02	7.608E-03	0.130
	937.49			-6.917E-02	1.099E-01	1.727E-01	1.666E-02	-0.401
	1384.29			-5.679E-03	1.469E-01	2.210E-01	1.929E-02	-0.026
	1505.03			-2.877E-01	2.673E-01	3.795E-01	3.245E-02	-0.758
SN-113	391.69	*		-7.877E-03	4.168E-02	6.922E-02	6.570E-03	-0.114
CD-115	260.90			-6.378E+01	1.892E+02	2.978E+02	3.438E+01	-0.214
	492.35			5.440E+00	5.248E+01	8.737E+01	8.314E+00	0.062
	527.90	*		-9.614E+00	1.456E+01	2.268E+01	2.153E+00	-0.424
SN-117M	156.02			-1.202E+00	2.234E+00	3.612E+00	3.186E-01	-0.333
	158.56	*		4.733E-02	5.286E-02	9.023E-02	8.014E-03	0.525
TE-123M	159.00	*		5.123E-03	2.603E-02	4.335E-02	3.877E-03	0.118
SB-124	602.73			6.090E-03	3.831E-02	5.559E-02	5.143E-03	0.110
	645.85			2.119E-01	4.580E-01	7.700E-01	7.289E-02	0.275
	722.78			8.072E-02	4.019E-01	5.765E-01	5.361E-02	0.140
	1690.97	*		6.713E-02	6.341E-02	1.247E-01	1.095E-02	0.538
SB-125	427.87	*		1.476E-02	8.376E-02	1.413E-01	1.350E-02	0.104
	463.37			4.962E-01	2.849E-01	5.104E-01	5.146E-02	0.972
	600.60			-7.492E-02	1.595E-01	2.498E-01	2.462E-02	-0.300
	635.95			1.260E-01	2.441E-01	4.127E-01	4.014E-02	0.305
TE-125M	109.28	*		5.691E+00	8.643E+00	1.487E+01	1.537E+00	0.383
I-126	388.63			3.292E-02	1.697E-01	2.882E-01	2.696E-02	0.114
	666.33	*		1.650E-02	2.125E-01	3.457E-01	3.074E-02	0.048
	753.82			-7.443E-02	1.894E+00	3.020E+00	2.782E-01	-0.025

Sample ID : G247911009

Acquisition date : 6-MAR-2010 17:29:00

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126		414.70		4.155E-03	7.417E-02	1.245E-01	1.164E-02	0.033
		666.50		1.516E-02	7.185E-02	1.182E-01	1.051E-02	0.128
		695.00		-3.223E-02	7.883E-02	1.225E-01	1.104E-02	-0.263
		697.00		2.866E-02	2.696E-01	4.380E-01	3.950E-02	0.065
		720.70	*	6.595E-02	1.716E-01	2.510E-01	2.285E-02	0.263
SB-127		856.80		9.212E-02	4.982E-01	7.431E-01	7.002E-02	0.124
		252.40		-8.576E-01	4.930E+00	7.832E+00	3.310E+00	-0.109
		473.00		-3.008E-01	1.940E+00	3.184E+00	4.351E-01	-0.094
		685.70	*	-6.142E-02	1.591E+00	2.558E+00	3.061E-01	-0.024
		783.70		3.249E-01	4.196E+00	6.739E+00	8.845E-01	0.048
I-131		80.19		-5.309E+00	4.737E+00	6.907E+00	6.112E-01	-0.769
		284.31		-4.035E-01	1.532E+00	2.405E+00	2.953E-01	-0.168
		364.49	*	1.073E-01	1.146E-01	2.025E-01	2.142E-02	0.530
TE-132		636.99		8.047E-01	1.630E+00	2.746E+00	2.617E-01	0.293
		49.72		-5.737E+00	2.135E+01	3.311E+01	3.617E+00	-0.173
		111.76		7.097E+00	3.789E+01	6.415E+01	7.153E+00	0.111
		116.30		-1.343E+01	3.282E+01	5.420E+01	6.019E+00	-0.248
BA-133		228.16	*	1.944E-01	8.687E-01	1.420E+00	2.448E-01	0.137
		81.00		3.680E-02	1.002E-01	1.264E-01	1.978E-02	0.291
	+	276.40		7.532E-01	5.318E-01	6.005E-01	9.820E-02	1.254
		302.85		1.112E-02	1.428E-01	2.029E-01	3.095E-02	0.055
		356.01	*	1.520E-02	4.209E-02	6.445E-02	9.167E-03	0.236
I-133		383.85		7.079E-02	2.767E-01	4.716E-01	6.165E-02	0.150
		529.87	*	6.035E-04	2.767E-01	Half-Life	too short	
		875.33		1.018E-01	2.767E-01	Half-Life	too short	
CS-134		1298.22		-1.388E-01	2.767E-01	Half-Life	too short	
		563.25		2.482E-01	3.307E-01	5.700E-01	5.407E-02	0.435
		569.33		6.164E-02	1.906E-01	3.179E-01	3.019E-02	0.194
		604.72		2.103E-03	3.321E-02	4.766E-02	4.413E-03	0.044
	+	795.86	*	1.837E-01	7.804E-02	9.621E-02	9.020E-03	1.909
CS-135		801.95		-2.404E-01	3.717E-01	5.424E-01	5.086E-02	-0.443
		1365.19		1.638E-01	1.178E+00	1.934E+00	1.717E-01	0.085
		268.22	*	1.139E-01	1.775E-01	2.606E-01	3.323E-02	0.437
		546.56		2.260E+11	1.775E-01	Half-Life	too short	
I-135		836.80		3.456E+11	1.775E-01	Half-Life	too short	
		1038.76		1.097E+11	1.775E-01	Half-Life	too short	
		1131.51		-9.720E+10	1.775E-01	Half-Life	too short	
		1260.41	*	-6.370E+10	1.775E-01	Half-Life	too short	
		1457.56		1.056E+13	1.775E-01	Half-Life	too short	
		1678.03		4.040E+10	1.775E-01	Half-Life	too short	
		1791.20		4.533E+10	1.775E-01	Half-Life	too short	
		153.25		8.225E-01	8.458E-01	1.445E+00	1.500E-01	0.569
		176.60		-7.293E-02	5.084E-01	8.303E-01	8.430E-02	-0.088
		273.65		2.069E-01	6.688E-01	7.742E-01	9.608E-02	0.267
CS-136		340.55		2.093E-01	1.481E-01	2.411E-01	2.681E-02	0.868
		818.51		-3.250E-02	7.437E-02	1.205E-01	1.129E-02	-0.270
		1048.07	*	1.293E-01	1.125E-01	2.027E-01	1.876E-02	0.638
		1235.36		1.293E+00	7.077E-01	1.167E+00	1.339E-01	1.108
		661.66	*	-1.469E-03	3.396E-02	5.472E-02	4.856E-03	-0.027
BA-137M								

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-137		661.66	*	-1.552E-03	3.587E-02	5.781E-02	5.140E-03	-0.027
CE-139		165.86	*	2.276E-03	2.810E-02	4.649E-02	4.216E-03	0.049
BA-140		162.66		5.617E-01	7.710E-01	1.308E+00	1.248E-01	0.430
		304.85		1.058E+00	1.401E+00	2.054E+00	6.222E-01	0.515
		423.72		4.457E-01	1.922E+00	3.247E+00	1.075E+00	0.137
		537.26	*	8.888E-02	2.636E-01	4.409E-01	1.505E-01	0.202
LA-140	+	328.76		6.843E-01	4.174E-01	5.433E-01	6.266E-02	1.260
		487.02		-9.827E-02	1.274E-01	1.979E-01	1.979E-02	-0.497
		815.77		2.354E-01	3.308E-01	5.761E-01	5.933E-02	0.409
		1596.21	*	-4.191E-02	9.467E-02	1.220E-01	1.039E-02	-0.344
CE-141		145.44	*	-2.717E-02	6.142E-02	9.872E-02	8.636E-03	-0.275
CE-143		57.36		1.554E-03	6.142E-02	Half-Life	too short	
		293.27	*	1.088E-03	6.142E-02	Half-Life	too short	
		664.57		7.507E-04	6.142E-02	Half-Life	too short	
		721.93		1.309E-04	6.142E-02	Half-Life	too short	
CE-144		80.12		-2.694E+00	2.331E+00	3.393E+00	2.979E-01	-0.794
		133.52	*	1.548E-01	2.041E-01	3.149E-01	4.773E-02	0.492
PM-144		476.78		-3.224E-02	6.418E-02	1.028E-01	1.047E-02	-0.314
		618.01		-1.179E-02	3.039E-02	4.784E-02	4.495E-03	-0.246
		696.49	*	-1.442E-03	3.256E-02	5.224E-02	4.712E-03	-0.028
PR-144		696.51	*	-1.004E-01	2.439E+00	3.914E+00	3.529E-01	-0.026
		1489.16		-5.842E+00	9.901E+00	1.488E+01	1.272E+00	-0.393
PM-146		453.88	*	2.465E-02	3.908E-02	6.742E-02	7.616E-03	0.366
		633.25		-1.456E+00	1.403E+00	1.877E+00	7.190E-01	-0.776
		735.93		7.014E-02	1.432E-01	2.370E-01	6.682E-02	0.296
		747.24		-4.057E-02	1.030E-01	1.593E-01	2.378E-02	-0.255
ND-147	+	91.11		1.198E+00	3.815E-01	4.797E-01	4.797E-02	2.496
		319.41		-1.083E+00	3.548E+00	5.507E+00	6.254E-01	-0.197
		531.02	*	1.801E-01	5.677E-01	9.537E-01	1.475E-01	0.189
PM-149		285.90	*	-5.627E+01	1.230E+02	1.902E+02	3.347E+01	-0.296
EU-152		121.78		1.209E-02	6.572E-02	1.109E-01	1.068E-02	0.109
		244.70		-1.097E-01	3.351E-01	4.697E-01	5.223E-02	-0.234
		344.28	*	-3.959E-02	8.607E-02	1.419E-01	1.585E-02	-0.279
		778.90		-1.397E-01	2.515E-01	3.800E-01	3.525E-02	-0.368
	+	964.08		9.763E-01	3.637E-01	5.893E-01	5.467E-02	1.657
		1085.87		-1.391E-01	4.029E-01	6.419E-01	5.573E-02	-0.217
		1112.07		1.754E-01	2.946E-01	5.082E-01	4.324E-02	0.345
		1408.01		-4.404E-03	1.917E-01	3.072E-01	2.616E-02	-0.014
GD-153		69.67		-2.564E-01	1.514E+00	2.585E+00	2.037E-01	-0.099
		97.43	*	-1.026E-01	8.353E-02	1.177E-01	1.046E-02	-0.872
		103.18		-8.182E-03	9.826E-02	1.654E-01	1.425E-02	-0.049
EU-154		123.07		1.318E-02	4.740E-02	8.015E-02	8.908E-03	0.164
		723.31		-7.396E-03	1.781E-01	2.482E-01	2.469E-02	-0.030
		873.19		1.395E-01	2.555E-01	4.466E-01	5.583E-02	0.313
		996.26		-2.814E-01	3.389E-01	5.108E-01	9.061E-02	-0.551
		1004.73		6.958E-02	2.186E-01	3.709E-01	4.454E-02	0.188
		1274.44	*	-1.868E-02	1.277E-01	2.041E-01	2.276E-02	-0.091
EU-155	+	86.55		5.697E-01	1.366E-01	1.761E-01	1.682E-02	3.234
		105.31	*	1.065E-01	9.690E-02	1.689E-01	1.460E-02	0.631

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	86.79		1.527E+00	3.656E-01	4.802E-01	4.560E-02	3.180
		197.04		-1.149E-01	5.473E-01	8.749E-01	8.615E-02	-0.131
		215.65		5.913E-01	7.281E-01	1.221E+00	1.263E-01	0.484
	+	298.57		4.112E-01	1.779E-01	1.990E-01	2.336E-02	2.066
		879.36	*	-1.368E-02	1.354E-01	2.245E-01	2.120E-02	-0.061
		962.29		1.040E+00	5.630E-01	9.622E-01	8.932E-02	1.081
	+	966.15		6.892E-01	2.567E-01	5.061E-01	4.691E-02	1.362
		1177.93		-1.023E-01	3.578E-01	5.690E-01	4.583E-02	-0.180
		1271.85		1.849E-01	7.142E-01	1.188E+00	9.865E-02	0.156
HO-166M	+	80.57		-2.922E-01	2.529E-01	3.680E-01	3.247E-02	-0.794
		184.41		1.407E-01	5.003E-02	6.273E-02	5.971E-03	2.243
		280.46		-2.832E-02	9.015E-02	1.249E-01	1.498E-02	-0.227
	+	410.95		1.198E-01	2.392E-01	4.073E-01	3.802E-02	0.294
		711.68	*	2.930E-02	6.372E-02	1.059E-01	9.612E-03	0.277
		752.31		-1.439E-01	2.801E-01	4.280E-01	3.940E-02	-0.336
	+	810.29		-3.927E-02	5.669E-02	8.993E-02	8.407E-03	-0.437
		67.75		6.997E-02	1.062E-01	1.690E-01	1.307E-02	0.414
		100.11		1.284E-01	1.563E-01	2.712E-01	2.372E-02	0.473
TA-182	+	152.43		-2.066E-02	3.254E-01	5.376E-01	4.697E-02	-0.038
		222.11		3.125E-02	3.419E-01	5.565E-01	5.852E-02	0.056
		1121.30		6.637E-01	2.144E-01	3.408E-01	2.877E-02	1.947
	+	1189.05		8.903E-03	2.950E-01	4.826E-01	3.903E-02	0.018
		1221.41	*	8.439E-02	2.102E-01	3.527E-01	2.884E-02	0.239
		1231.02		-6.981E-01	5.709E-01	7.260E-01	5.956E-02	-0.961
	+	295.96		1.433E+00	2.557E-01	3.127E-01	3.699E-02	4.583
		308.46		-4.790E-02	8.451E-02	1.285E-01	1.491E-02	-0.373
		316.51	*	1.551E-03	3.263E-02	5.184E-02	5.925E-03	0.030
IR-192	+	468.07		4.922E-02	6.327E-02	1.098E-01	1.106E-02	0.448
		70.83		-1.124E+00	1.338E+00	1.984E+00	3.119E-01	-0.567
		72.87		5.525E-01	7.792E-01	1.230E+00	1.877E-01	0.449
	+	279.20	*	5.445E-03	4.269E-02	6.122E-02	7.449E-03	0.089
		72.81		1.162E-01	1.763E-01	2.789E-01	2.266E-02	0.417
		74.97		9.231E-01	1.436E-01	2.332E-01	1.937E-02	3.958
	+	569.70		1.241E-02	2.918E-02	4.899E-02	4.599E-03	0.253
		1063.66	*	2.668E-02	5.305E-02	9.105E-02	8.026E-03	0.293
		1770.23		-2.815E+00	8.049E-01	6.756E-01	5.584E-02	-4.166
PB-210	+	46.54	*	-5.879E-01	3.231E+00	5.025E+00	4.646E-01	-0.117
		404.85	*	1.289E-02	6.853E-01	1.150E+00	5.578E-01	0.011
		427.09		-9.866E-01	1.506E+00	2.294E+00	1.065E+00	-0.430
	+	832.01		-7.778E-01	1.015E+00	1.458E+00	7.581E-01	-0.533
		727.33	*	2.565E+00	8.480E-01	1.201E+00	1.539E-01	2.136
		785.37		3.106E+00	2.848E+00	5.167E+00	4.802E-01	0.601
	+	1620.50		1.232E-01	2.367E+00	4.000E+00	3.398E-01	0.031
		271.23		7.392E-01	3.972E-01	4.273E-01	5.576E-02	1.730
		401.81	*	-8.318E-02	3.779E-01	6.251E-01	9.548E-02	-0.133
RA-223	+	81.07		8.647E-02	2.268E-01	2.865E-01	2.543E-02	0.302
		83.79		3.639E-01	1.159E-01	1.924E-01	1.762E-02	1.892
		94.87		8.141E-01	4.021E-01	6.606E-01	5.974E-02	1.232
	+	144.24		3.754E-01	6.484E-01	1.083E+00	1.037E-01	0.347

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		154.21		1.325E-01	3.629E-01	6.087E-01	5.837E-02	0.218
	+	269.46		5.743E-01	3.071E-01	3.431E-01	4.080E-02	1.674
		323.87	*	3.584E-02	7.076E-01	9.976E-01	1.874E-01	0.036
	+	338.28		8.076E+00	1.910E+00	2.531E+00	3.493E-01	3.192
		79.69		-1.579E+00	1.180E+00	1.663E+00	2.876E-01	-0.950
		235.96		7.093E-02	1.592E-01	2.350E-01	2.889E-02	0.302
		256.23	*	-7.784E-02	2.446E-01	3.860E-01	5.477E-02	-0.202
TH-227	+	299.98		3.178E+00	1.407E+00	1.650E+00	2.472E-01	1.926
		304.50		1.371E+00	1.576E+00	2.361E+00	4.318E-01	0.581
		334.37		-3.143E-01	1.771E+00	2.620E+00	4.461E-01	-0.120
		79.80		-1.989E+00	1.577E+00	2.203E+00	4.808E-01	-0.903
		235.96		7.093E-02	1.592E-01	2.350E-01	2.775E-02	0.302
		256.23	*	-7.784E-02	2.447E-01	3.860E-01	5.995E-02	-0.202
	+	299.98		3.178E+00	1.407E+00	1.650E+00	2.472E-01	1.926
TH-229		304.50		1.371E+00	1.576E+00	2.361E+00	4.318E-01	0.581
		334.37		-3.143E-01	1.771E+00	2.620E+00	4.461E-01	-0.120
		85.43		6.530E-01	1.945E-01	3.224E-01	3.011E-02	2.025
	+	88.47		7.240E-01	1.734E-01	2.106E-01	2.020E-02	3.438
		193.51	*	5.645E-02	5.013E-01	8.232E-01	8.030E-02	0.069
		210.85		1.028E+00	9.521E-01	1.457E+00	1.488E-01	0.705
		283.69	*	1.914E-01	1.371E+00	2.204E+00	3.698E-01	0.087
PA-231	+	301.36		2.042E+00	9.004E-01	9.908E-01	1.436E-01	2.061
TH-231		81.07		8.647E-02	2.268E-01	2.865E-01	2.543E-02	0.302
		83.79		3.639E-01	1.159E-01	1.924E-01	1.762E-02	1.892
		94.87		8.141E-01	4.021E-01	6.606E-01	5.974E-02	1.232
		144.24		3.754E-01	6.484E-01	1.083E+00	1.037E-01	0.347
	+	154.21		1.325E-01	3.629E-01	6.087E-01	5.837E-02	0.218
		269.46		5.743E-01	3.071E-01	3.431E-01	4.080E-02	1.674
		323.87	*	3.584E-02	7.076E-01	9.976E-01	1.874E-01	0.036
PA-233	+	338.28		8.076E+00	1.910E+00	2.531E+00	3.493E-01	3.192
	+	300.13		1.438E+00	6.459E-01	7.478E-01	1.258E-01	1.923
		311.90	*	8.035E-02	6.026E-02	1.023E-01	1.196E-02	0.786
		340.48		9.348E-01	6.378E-01	9.859E-01	2.461E-01	0.948
	PA-234	94.67		4.009E-01	1.594E-01	2.570E-01	3.267E-02	1.560
		98.44		6.290E-02	9.407E-02	1.363E-01	7.606E-02	0.462
		111.00		-9.348E-02	1.669E-01	2.745E-01	3.277E-02	-0.341
PA-234M		131.20		7.872E-02	1.049E-01	1.628E-01	1.361E-02	0.484
		569.50		7.859E-02	2.620E-01	4.363E-01	4.096E-02	0.180
		733.00		-2.367E-01	4.043E-01	5.553E-01	1.244E-01	-0.426
		880.51		-8.830E-02	2.710E-01	4.350E-01	4.110E-02	-0.203
		883.24		4.536E-02	2.732E-01	4.547E-01	3.062E-01	0.100
		926.50		-7.285E-02	1.669E-01	2.654E-01	6.780E-02	-0.275
		946.00	*	-6.797E-02	2.892E-01	4.705E-01	8.987E-02	-0.144
		949.00		5.286E-01	4.434E-01	8.026E-01	7.486E-02	0.659
	PA-234M	766.42		2.730E+00	1.186E+01	1.900E+01	9.664E+00	0.144
		1001.03	*	1.807E+00	4.696E+00	7.976E+00	8.304E-01	0.227
	TH-234	63.29	*	5.018E-01	1.281E+00	2.036E+00	3.630E-01	0.246
	+	92.59		4.391E+00	1.323E+00	1.296E+00	2.893E-01	3.387
	U-238	63.29	*	5.018E-01	1.281E+00	2.036E+00	3.630E-01	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	+	92.59		4.391E+00	9.766E-01	1.296E+00	1.194E-01	3.387
		99.53		2.455E-01	1.469E-01	2.570E-01	2.255E-02	0.955
		103.37		2.427E-03	8.935E-02	1.510E-01	1.300E-02	0.016
		106.12		-2.344E-02	7.578E-02	1.263E-01	1.076E-02	-0.186
		117.23	*	-2.606E-01	3.532E-01	5.747E-01	4.784E-02	-0.454
		228.18		4.415E-02	2.021E-01	3.305E-01	3.530E-02	0.134
AM-241	+	277.60		3.724E-01	2.596E-01	3.016E-01	3.611E-02	1.235
CM-247	+	59.54	*	-4.327E-02	1.460E-01	2.247E-01	1.763E-02	-0.193
CF-249		278.00		1.582E+00	1.103E+00	1.264E+00	1.514E-01	1.251
		287.50		5.336E-01	1.151E+00	1.882E+00	2.241E-01	0.283
		402.40	*	-3.311E-03	3.517E-02	5.865E-02	5.453E-03	-0.056
CF-251		252.80		-2.823E-01	8.940E-01	1.412E+00	1.600E-01	-0.200
		333.37		-5.731E-02	1.999E-01	2.733E-01	3.017E-02	-0.210
		388.16	*	1.616E-02	3.830E-02	6.577E-02	6.165E-03	0.246
CF-251		177.52	*	4.916E-02	1.226E-01	2.046E-01	1.912E-02	0.240
		227.38		2.680E-01	3.327E-01	5.572E-01	5.938E-02	0.481
		285.41		-1.926E+00	2.109E+00	3.164E+00	3.776E-01	-0.609

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]G247911009          *
* Acquisition date   : 6-MAR-2010 17:29:00 Detector SN#      :                  *
* Detector ID        : GAM16                               Sensitivity      : 5.000    *
* Geometry           : CAN                                   Energy tolerance: 1.500    *
* Elapsed live time  : 0 02:00:00.00                      Abundance limit : 75.000    *
* Elapsed real time  : 0 02:00:02.29                      Half life ratio  : 8.000    *
*****
*
*                               SAMPLE DATA                                *
*
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID              *
* Sample ID        : G247911009                      Analyst initials: MXR1        *
* Batch Number     : 957714                          Sample Quantity : 1.3551E+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	3.542E+01	3.526E+00	5.698E-01	0.000E+00
CD-109	4.812E+00	1.129E+00	1.004E+00	0.000E+00
SN-126	4.696E-01	1.102E-01	9.840E-02	0.000E+00
TL-208	6.693E-01	9.719E-02	6.102E-02	0.000E+00
BI-211	4.973E+00	7.030E-01	3.189E-01	0.000E+00
PB-212	2.219E+00	2.835E-01	9.079E-02	0.000E+00
BI-214	1.539E+00	2.213E-01	1.310E-01	0.000E+00
PB-214	1.805E+00	2.731E-01	1.160E-01	0.000E+00
RA-224	5.971E+00	1.090E+00	9.731E-01	0.000E+00
RA-226	1.539E+00	2.213E-01	1.310E-01	0.000E+00
AC-228	2.086E+00	3.952E-01	2.083E-01	0.000E+00
RA-228	2.086E+00	3.952E-01	2.083E-01	0.000E+00
TH-228	2.219E+00	2.835E-01	9.079E-02	0.000E+00
TH-232	2.086E+00	3.952E-01	2.083E-01	0.000E+00
U-235	4.110E-02	1.903E-01	3.351E-01	0.000E+00
NP-237	1.401E+00	4.371E-01	2.970E-01	0.000E+00
ANH-511	1.369E-01	7.588E-02	4.696E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.037E-01	3.100E-01	5.248E-01	0.000E+00 NOT IDENT.
NA-22	-5.236E-03	4.392E-02	7.219E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.299E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.975E-02	3.498E-02	5.547E-02	0.000E+00 FAIL ABUN
V-48	-6.761E-02	7.169E-02	1.117E-01	0.000E+00 NOT IDENT.
CR-51	1.778E-01	3.650E-01	6.247E-01	0.000E+00 NOT IDENT.
MN-54	5.204E-04	3.580E-02	6.219E-02	0.000E+00 NOT IDENT.
CO-56	1.941E-02	3.567E-02	6.444E-02	0.000E+00 FAIL ABUN
CO-57	-1.360E-03	2.262E-02	4.048E-02	0.000E+00 NOT IDENT.
CO-58	-1.770E-02	3.680E-02	6.158E-02	0.000E+00 NOT IDENT.

FE-59	-4.242E-02	8.897E-02	1.436E-01	0.000E+00	NOT IDENT.
CO-60	-2.258E-02	3.715E-02	5.680E-02	0.000E+00	NOT IDENT.
ZN-65	-8.321E-02	1.020E-01	1.332E-01	0.000E+00	NOT IDENT.
SE-75	-1.009E-02	4.706E-02	6.979E-02	0.000E+00	NOT IDENT.
SR-85	2.111E-02	3.822E-02	6.048E-02	0.000E+00	NOT IDENT.
Y-88	-6.044E-03	2.767E-02	4.414E-02	0.000E+00	NOT IDENT.
Y-91	1.565E+01	2.170E+01	3.837E+01	0.000E+00	NOT IDENT.
NB-94	1.140E-02	3.496E-02	5.969E-02	0.000E+00	NOT IDENT.
NB-95	-1.422E-02	4.368E-02	6.982E-02	0.000E+00	NOT IDENT.
NB-95M	1.946E-02	1.315E-01	2.020E-01	0.000E+00	NOT IDENT.
ZR-95	-2.516E-02	7.523E-02	1.212E-01	0.000E+00	NOT IDENT.
MO-99	-1.577E+01	1.690E+01	2.557E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.734E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.301E-02	3.753E-02	6.312E-02	0.000E+00	FAIL ABUN
RH-106	5.796E-02	2.697E-01	4.635E-01	0.000E+00	NOT IDENT.
RU-106	5.796E-02	2.696E-01	4.635E-01	0.000E+00	NOT IDENT.
AG-108M	-6.496E-03	2.580E-02	4.429E-02	0.000E+00	NOT IDENT.
AG-110M	-8.178E-03	3.224E-02	5.304E-02	0.000E+00	NOT IDENT.
SN-113	-7.877E-03	4.084E-02	7.112E-02	0.000E+00	NOT IDENT.
CD-115	-9.614E+00	1.427E+01	2.317E+01	0.000E+00	NOT IDENT.
SN-117M	4.733E-02	5.180E-02	9.423E-02	0.000E+00	NOT IDENT.
TE-123M	5.123E-03	2.551E-02	4.528E-02	0.000E+00	NOT IDENT.
SB-124	6.713E-02	6.214E-02	1.247E-01	0.000E+00	NOT IDENT.
SB-125	1.476E-02	8.209E-02	1.450E-01	0.000E+00	NOT IDENT.
TE-125M	5.691E+00	8.470E+00	1.563E+01	0.000E+00	NOT IDENT.
I-126	1.650E-02	2.082E-01	3.517E-01	0.000E+00	NOT IDENT.
SB-126	6.595E-02	1.682E-01	2.550E-01	0.000E+00	NOT IDENT.
SB-127	-6.142E-02	1.560E+00	2.601E+00	0.000E+00	NOT IDENT.
I-131	1.073E-01	1.123E-01	2.083E-01	0.000E+00	NOT IDENT.
TE-132	1.944E-01	8.514E-01	1.474E+00	0.000E+00	NOT IDENT.
BA-133	1.520E-02	4.125E-02	6.633E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.320E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.648E-02	9.756E-02	0.000E+00	FAIL ABUN
CS-135	1.139E-01	1.740E-01	2.696E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.138E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.293E-01	1.103E-01	2.045E-01	0.000E+00	NOT IDENT.
BA-137M	-1.469E-03	3.328E-02	5.568E-02	0.000E+00	NOT IDENT.
CS-137	-1.552E-03	3.516E-02	5.882E-02	0.000E+00	NOT IDENT.
CE-139	2.276E-03	2.754E-02	4.851E-02	0.000E+00	NOT IDENT.
BA-140	8.888E-02	2.583E-01	4.504E-01	0.000E+00	NOT IDENT.
LA-140	-4.191E-02	9.277E-02	1.221E-01	0.000E+00	FAIL ABUN
CE-141	-2.717E-02	6.019E-02	1.033E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.742E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.548E-01	2.000E-01	3.299E-01	0.000E+00	NOT IDENT.
PM-144	-1.442E-03	3.191E-02	5.311E-02	0.000E+00	NOT IDENT.
PR-144	-1.004E-01	2.390E+00	3.979E+00	0.000E+00	NOT IDENT.
PM-146	2.465E-02	3.830E-02	6.909E-02	0.000E+00	NOT IDENT.
ND-147	1.801E-01	5.564E-01	9.744E-01	0.000E+00	FAIL ABUN
PM-149	-5.627E+01	1.205E+02	1.966E+02	0.000E+00	NOT IDENT.
EU-152	-3.959E-02	8.435E-02	1.461E-01	0.000E+00	FAIL ABUN
GD-153	-1.026E-01	8.186E-02	1.240E-01	0.000E+00	NOT IDENT.
EU-154	-1.868E-02	1.252E-01	2.052E-01	0.000E+00	NOT IDENT.
EU-155	1.065E-01	9.496E-02	1.776E-01	0.000E+00	FAIL ABUN
TB-160	-1.368E-02	1.327E-01	2.272E-01	0.000E+00	FAIL ABUN
HO-166M	2.930E-02	6.244E-02	1.077E-01	0.000E+00	FAIL ABUN
TA-182	8.439E-02	2.060E-01	3.548E-01	0.000E+00	FAIL ABUN
IR-192	1.551E-03	3.198E-02	5.348E-02	0.000E+00	FAIL ABUN
HG-203	5.445E-03	4.183E-02	6.329E-02	0.000E+00	NOT IDENT.
BI-207	2.668E-02	5.199E-02	9.182E-02	0.000E+00	FAIL ABUN
PB-210	-5.879E-01	3.166E+00	5.361E+00	0.000E+00	NOT IDENT.
PB-211	1.289E-02	6.716E-01	1.180E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.310E-01	1.220E+00	0.000E+00	FAIL ABUN
RN-219	-8.318E-02	3.703E-01	6.420E-01	0.000E+00	FAIL ABUN
RA-223	3.584E-02	6.935E-01	1.029E+00	0.000E+00	FAIL ABUN
AC-227	-7.784E-02	2.397E-01	3.997E-01	0.000E+00	FAIL ABUN
TH-227	-7.784E-02	2.398E-01	3.997E-01	0.000E+00	FAIL ABUN
TH-229	5.645E-02	4.912E-01	8.567E-01	0.000E+00	FAIL ABUN
PA-231	1.914E-01	1.343E+00	2.278E+00	0.000E+00	FAIL ABUN
TH-231	3.584E-02	6.935E-01	1.029E+00	0.000E+00	FAIL ABUN
PA-233	8.035E-02	5.906E-02	1.055E-01	0.000E+00	FAIL ABUN
PA-234	-6.797E-02	2.834E-01	4.755E-01	0.000E+00	NOT IDENT.
PA-234M	1.807E+00	4.602E+00	8.053E+00	0.000E+00	NOT IDENT.
TH-234	5.018E-01	1.255E+00	2.161E+00	0.000E+00	FAIL ABUN
U-238	5.018E-01	1.255E+00	2.161E+00	0.000E+00	FAIL ABUN
NP-239	-2.606E-01	3.462E-01	6.034E-01	0.000E+00	FAIL ABUN
AM-241	-4.327E-02	1.431E-01	2.387E-01	0.000E+00	NOT IDENT.
CM-247	-3.311E-03	3.447E-02	6.023E-02	0.000E+00	FAIL ABUN
CF-249	1.616E-02	3.753E-02	6.759E-02	0.000E+00	NOT IDENT.

CF-251	4.916E-02	1.201E-01	2.132E-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]G247911009.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:29:00.
Sample ID          : G247911009          Sample quantity  : 1.35510E+02 GRAM
Detector name      : GAM16              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:02.29 0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID          : 957714              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	1460.82	1647	10.66*	1.208E+00	3.542E+01	3.542E+01	10.16
CD-109	88.03	392	3.70*	6.255E+00	4.696E+00	4.812E+00	23.94
SN-126	64.28	-----	9.60	3.681E+00	-----	Line Not Found	-----
	86.94	392	8.90	6.255E+00	1.952E+00	1.952E+00	47.01
	87.57	392	37.00*	6.255E+00	4.696E-01	4.696E-01	23.94
TL-208	277.37	91	6.60	4.695E+00	8.147E-01	8.147E-01	70.31
	583.19	548	85.00*	2.668E+00	6.693E-01	6.693E-01	14.82
	860.56	87	12.50	1.919E+00	9.988E-01	9.988E-01	46.77
BI-211	72.87	-----	1.23	4.872E+00	-----	Line Not Found	-----
	351.06	914	12.92*	3.941E+00	4.973E+00	4.973E+00	14.43
PB-212	74.82	608	10.28	5.113E+00	3.203E+00	3.203E+00	18.35
	77.11	877	17.10	5.361E+00	2.651E+00	2.651E+00	12.98
	238.63	1825	43.60*	5.226E+00	2.219E+00	2.219E+00	13.04
	300.09	153	3.30	4.433E+00	2.889E+00	2.889E+00	43.69
BI-214	609.32	651	45.49*	2.575E+00	1.539E+00	1.539E+00	14.67
	1120.29	115	14.92	1.516E+00	1.407E+00	1.407E+00	32.99
	1764.49	111	15.30	1.056E+00	1.900E+00	1.900E+00	26.41
PB-214	74.82	608	5.80	5.113E+00	5.676E+00	5.676E+00	17.46
	77.11	877	9.70	5.361E+00	4.673E+00	4.673E+00	15.37
	242.00	458	7.25	5.181E+00	3.377E+00	3.377E+00	19.51
	295.22	572	18.42	4.486E+00	1.918E+00	1.918E+00	18.97
	351.93	914	35.60*	3.941E+00	1.805E+00	1.805E+00	15.44
RA-224	240.99	458	4.10*	5.181E+00	5.971E+00	5.971E+00	18.63
RA-226	609.32	651	45.49*	2.575E+00	1.539E+00	1.539E+00	14.67
	1120.29	115	14.92	1.516E+00	1.407E+00	1.407E+00	32.99
	1764.49	111	15.30	1.056E+00	1.900E+00	1.900E+00	26.41
AC-228	338.32	336	11.27	4.057E+00	2.035E+00	2.035E+00	46.41
	911.20	354	25.80*	1.824E+00	2.086E+00	2.086E+00	19.33
	968.97	224	15.80	1.727E+00	2.272E+00	2.272E+00	30.50
RA-228	338.32	336	11.27	4.057E+00	2.035E+00	2.035E+00	46.41
	911.20	354	25.80*	1.824E+00	2.086E+00	2.086E+00	19.33
	968.97	224	15.80	1.727E+00	2.272E+00	2.272E+00	30.50

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	608	10.28	5.113E+00	3.203E+00	3.203E+00	15.60
	77.11	877	17.10	5.361E+00	2.651E+00	2.651E+00	12.98
	238.63	1825	43.60*	5.226E+00	2.219E+00	2.219E+00	13.04
	300.09	153	3.30	4.433E+00	2.889E+00	2.889E+00	74.46
TH-232	338.32	336	11.27	4.057E+00	2.035E+00	2.035E+00	22.08
	911.20	354	25.80*	1.824E+00	2.086E+00	2.086E+00	19.33
	968.97	224	15.80	1.727E+00	2.272E+00	2.272E+00	30.50
U-235	89.96	278	3.47	6.436E+00	3.448E+00	3.448E+00	39.16
	93.35	443	5.60	6.601E+00	3.317E+00	3.317E+00	30.88
	143.76	-----	10.96*	6.943E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.588E+00	-----	Line Not Found	-----
	185.72	225	57.20	6.145E+00	1.771E-01	1.771E-01	35.55
	205.31	-----	5.01	5.780E+00	-----	Line Not Found	-----
NP-237	86.48	392	12.40*	6.255E+00	1.401E+00	1.401E+00	31.83
	95.86	-----	2.68	6.742E+00	-----	Line Not Found	-----
ANH-511	511.00	146	100.00*	2.964E+00	1.369E-01	1.369E-01	56.57

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247911009

Page : 3
Acquisition date : 6-MAR-2010 17:29:00

Total number of lines in spectrum 33
Number of unidentified lines 5
Number of lines tentatively identified by NID 28 84.85%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.542E+01	3.542E+01	0.360E+01	10.16	
CD-109	461.40D	1.02	4.696E+00	4.812E+00	1.152E+00	23.94	
SN-126	2.30E+05Y	1.00	4.696E-01	4.696E-01	1.124E-01	23.94	
TL-208	1.41E+10Y	1.00	6.693E-01	6.693E-01	0.992E-01	14.82	
BI-211	7.04E+08Y	1.00	4.973E+00	4.973E+00	0.717E+00	14.43	
PB-212	1.41E+10Y	1.00	2.219E+00	2.219E+00	0.289E+00	13.04	
BI-214	1600.00Y	1.00	1.539E+00	1.539E+00	0.226E+00	14.67	
PB-214	1600.00Y	1.00	1.805E+00	1.805E+00	0.279E+00	15.44	
RA-224	1.41E+10Y	1.00	5.971E+00	5.971E+00	1.112E+00	18.63	
RA-226	1600.00Y	1.00	1.539E+00	1.539E+00	0.226E+00	14.67	
AC-228	1.41E+10Y	1.00	2.086E+00	2.086E+00	0.403E+00	19.33	
RA-228	1.41E+10Y	1.00	2.086E+00	2.086E+00	0.403E+00	19.33	
TH-228	1.41E+10Y	1.00	2.219E+00	2.219E+00	0.289E+00	13.04	
TH-232	1.41E+10Y	1.00	2.086E+00	2.086E+00	0.403E+00	19.33	
U-235	7.04E+08Y	1.00	1.771E-01	1.771E-01	0.630E-01	35.55	K
NP-237	2.14E+06Y	1.00	1.401E+00	1.401E+00	0.446E+00	31.83	
ANH-511	1.00E+09Y	1.00	1.369E-01	1.369E-01	0.774E-01	56.57	

Total Activity : 6.950E+01 6.961E+01

Grand Total Activity : 6.950E+01 6.961E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.14	91	458	0.84	258.46	255	8	1.27E-02	84.1	7.13E+00	
0	209.21	140	383	1.02	418.61	415	9	1.94E-02	53.3	5.71E+00	
0	270.52	138	304	1.25	541.23	535	11	1.91E-02	52.1	4.78E+00	T
0	327.55	86	178	0.73	655.28	651	9	1.20E-02	59.9	4.16E+00	T
0	727.20	137	75	1.24	1454.49	1448	12	1.91E-02	30.5	2.22E+00	T
0	794.42	103	75	1.90	1588.91	1581	15	1.44E-02	41.4	2.06E+00	T
1	964.67	89	49	1.76	1929.32	1925	18	1.24E-02	36.1	1.73E+00	T
0	1237.58	70	61	1.04	2474.96	2470	10	9.76E-03	47.7	1.39E+00	T
0	1376.68	63	16	3.35	2753.04	2746	14	8.74E-03	37.6	1.27E+00	
0	1589.05	59	16	2.63	3177.57	3170	20	8.19E-03	41.5	1.13E+00	
0	1729.06	34	10	2.13	3457.43	3450	14	4.66E-03	53.5	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]G247911009.CNF;1
* Acquisition date   : 6-MAR-2010 17:29:00.  Detector SN#      :
* Detector ID        : GAM16                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:02.29           Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G247911009             Analyst initials: MXR1
* Batch Number       : 957714                 Sample Quantity : 1.35510E+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	3.542E+01	3.598E+00	5.685E-01	4.997E-02	62.315
CD-109	4.812E+00	1.152E+00	9.512E-01	9.166E-02	5.059
SN-126	4.696E-01	1.124E-01	9.324E-02	8.940E-03	5.036
TL-208	6.693E-01	9.917E-02	5.983E-02	5.924E-03	11.187
BI-211	4.973E+00	7.173E-01	3.098E-01	3.387E-02	16.052
PB-212	2.219E+00	2.893E-01	8.757E-02	1.040E-02	25.336
BI-214	1.539E+00	2.258E-01	1.285E-01	1.365E-02	11.976
PB-214	1.805E+00	2.787E-01	1.127E-01	1.378E-02	16.017
RA-224	5.971E+00	1.112E+00	9.387E-01	1.035E-01	6.361
RA-226	1.539E+00	2.258E-01	1.285E-01	1.365E-02	11.976
AC-228	2.086E+00	4.033E-01	2.060E-01	2.514E-02	10.129
RA-228	2.086E+00	4.033E-01	2.060E-01	2.514E-02	10.129
TH-228	2.219E+00	2.893E-01	8.757E-02	1.040E-02	25.336
TH-232	2.086E+00	4.033E-01	2.060E-01	2.514E-02	10.129
U-235	1.771E-01	6.297E-02	3.203E-01	5.420E-02	0.553
NP-237	1.401E+00	4.460E-01	2.814E-01	6.472E-02	4.980
ANH-511	1.369E-01	7.743E-02	4.592E-02	4.368E-03	2.980

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.037E-01		3.163E-01	5.126E-01	5.184E-02	-0.202

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-5.236E-03		4.482E-02	7.183E-02	5.977E-03	-0.073
NA-24	1.114E+00		1.173E+00	Half-Life too short		
SC-46	-2.975E-02		3.570E-02	5.482E-02	5.182E-03	-0.543
V-48	-6.761E-02		7.315E-02	1.106E-01	1.018E-02	-0.611
CR-51	1.778E-01		3.724E-01	6.057E-01	7.079E-02	0.293
MN-54	5.204E-04		3.653E-02	6.139E-02	5.765E-03	0.008
CO-56	1.941E-02		3.639E-02	6.362E-02	5.987E-03	0.305
CO-57	-1.360E-03		2.308E-02	3.858E-02	3.206E-03	-0.035
CO-58	-1.770E-02		3.755E-02	6.075E-02	5.691E-03	-0.291
FE-59	-4.242E-02		9.078E-02	1.425E-01	1.324E-02	-0.298
CO-60	-2.258E-02		3.791E-02	5.656E-02	4.771E-03	-0.399
ZN-65	-8.321E-02		1.041E-01	1.322E-01	1.123E-02	-0.629
SE-75	-1.009E-02		4.802E-02	6.745E-02	7.871E-03	-0.150
SR-85	2.111E-02		3.900E-02	5.916E-02	5.625E-03	0.357
Y-88	-6.044E-03		2.823E-02	4.423E-02	3.591E-03	-0.137
Y-91	1.565E+01		2.215E+01	3.814E+01	3.101E+00	0.410
NB-94	1.140E-02		3.567E-02	5.873E-02	5.309E-03	0.194
NB-95	-1.422E-02		4.457E-02	6.881E-02	6.360E-03	-0.207
NB-95M	1.946E-02		1.342E-01	1.948E-01	2.320E-02	0.100
ZR-95	-2.516E-02		7.676E-02	1.194E-01	1.202E-02	-0.211
MO-99	-1.577E+01		1.724E+01	2.518E+01	4.044E+00	-0.626
TC-99M	-4.023E+11		3.946E+11	Half-Life too short		
RU-103	-1.301E-02		3.829E-02	6.170E-02	8.969E-03	-0.211
RH-106	5.796E-02		2.752E-01	4.550E-01	6.189E-02	0.127
RU-106	5.796E-02		2.751E-01	4.550E-01	4.161E-02	0.127
AG-108M	-6.496E-03		2.633E-02	4.319E-02	4.179E-03	-0.150
AG-110M	-8.178E-03		3.290E-02	5.212E-02	4.771E-03	-0.157
SN-113	-7.877E-03		4.168E-02	6.922E-02	6.570E-03	-0.114
CD-115	-9.614E+00		1.456E+01	2.268E+01	2.153E+00	-0.424
SN-117M	4.733E-02		5.286E-02	9.023E-02	8.014E-03	0.525
TE-123M	5.123E-03		2.603E-02	4.335E-02	3.877E-03	0.118
SB-124	6.713E-02		6.341E-02	1.247E-01	1.095E-02	0.538
SB-125	1.476E-02		8.376E-02	1.413E-01	1.350E-02	0.104
TE-125M	5.691E+00		8.643E+00	1.487E+01	1.537E+00	0.383
I-126	1.650E-02		2.125E-01	3.457E-01	3.074E-02	0.048
SB-126	6.595E-02		1.716E-01	2.510E-01	2.285E-02	0.263
SB-127	-6.142E-02		1.591E+00	2.558E+00	3.061E-01	-0.024
I-131	1.073E-01		1.146E-01	2.025E-01	2.142E-02	0.530
TE-132	1.944E-01		8.687E-01	1.420E+00	2.448E-01	0.137
BA-133	1.520E-02		4.209E-02	6.445E-02	9.167E-03	0.236
I-133	6.035E-04		6.732E-03	Half-Life too short		
CS-134	1.837E-01	+	7.804E-02	9.621E-02	9.020E-03	1.909
CS-135	1.139E-01		1.775E-01	2.606E-01	3.323E-02	0.437
I-135	-6.370E+10		5.807E+10	Half-Life too short		
CS-136	1.293E-01		1.125E-01	2.027E-01	1.876E-02	0.638
BA-137M	-1.469E-03		3.396E-02	5.472E-02	4.856E-03	-0.027
CS-137	-1.552E-03		3.587E-02	5.781E-02	5.140E-03	-0.027
CE-139	2.276E-03		2.810E-02	4.649E-02	4.216E-03	0.049

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-140	8.888E-02		2.636E-01	4.409E-01	1.505E-01	0.202
LA-140	-4.191E-02		9.467E-02	1.220E-01	1.039E-02	-0.344
CE-141	-2.717E-02		6.142E-02	9.872E-02	8.636E-03	-0.275
CE-143	1.088E-03		1.909E-04	Half-Life too short		
CE-144	1.548E-01		2.041E-01	3.149E-01	4.773E-02	0.492
PM-144	-1.442E-03		3.256E-02	5.224E-02	4.712E-03	-0.028
PR-144	-1.004E-01		2.439E+00	3.914E+00	3.529E-01	-0.026
PM-146	2.465E-02		3.908E-02	6.742E-02	7.616E-03	0.366
ND-147	1.801E-01		5.677E-01	9.537E-01	1.475E-01	0.189
PM-149	-5.627E+01		1.230E+02	1.902E+02	3.347E+01	-0.296
EU-152	-3.959E-02		8.607E-02	1.419E-01	1.585E-02	-0.279
GD-153	-1.026E-01		8.353E-02	1.177E-01	1.046E-02	-0.872
EU-154	-1.868E-02		1.277E-01	2.041E-01	2.276E-02	-0.091
EU-155	1.065E-01		9.690E-02	1.689E-01	1.460E-02	0.631
TB-160	-1.368E-02		1.354E-01	2.245E-01	2.120E-02	-0.061
HO-166M	2.930E-02		6.372E-02	1.059E-01	9.612E-03	0.277
TA-182	8.439E-02		2.102E-01	3.527E-01	2.884E-02	0.239
IR-192	1.551E-03		3.263E-02	5.184E-02	5.925E-03	0.030
HG-203	5.445E-03		4.269E-02	6.122E-02	7.449E-03	0.089
BI-207	2.668E-02		5.305E-02	9.105E-02	8.026E-03	0.293
PB-210	-5.879E-01		3.231E+00	5.025E+00	4.646E-01	-0.117
PB-211	1.289E-02		6.853E-01	1.150E+00	5.578E-01	0.011
BI-212	2.565E+00	+	8.480E-01	1.201E+00	1.539E-01	2.136
RN-219	-8.318E-02		3.779E-01	6.251E-01	9.548E-02	-0.133
RA-223	3.584E-02		7.076E-01	9.976E-01	1.874E-01	0.036
AC-227	-7.784E-02		2.446E-01	3.860E-01	5.477E-02	-0.202
TH-227	-7.784E-02		2.447E-01	3.860E-01	5.995E-02	-0.202
TH-229	5.645E-02		5.013E-01	8.232E-01	8.030E-02	0.069
PA-231	1.914E-01		1.371E+00	2.204E+00	3.698E-01	0.087
TH-231	3.584E-02		7.076E-01	9.976E-01	1.874E-01	0.036
PA-233	8.035E-02		6.026E-02	1.023E-01	1.196E-02	0.786
PA-234	-6.797E-02		2.892E-01	4.705E-01	8.987E-02	-0.144
PA-234M	1.807E+00		4.696E+00	7.976E+00	8.304E-01	0.227
TH-234	5.018E-01		1.281E+00	2.036E+00	3.630E-01	0.246
U-238	5.018E-01		1.281E+00	2.036E+00	3.630E-01	0.246
NP-239	-2.606E-01		3.532E-01	5.747E-01	4.784E-02	-0.454
AM-241	-4.327E-02		1.460E-01	2.247E-01	1.763E-02	-0.193
CM-247	-3.311E-03		3.517E-02	5.865E-02	5.453E-03	-0.056
CF-249	1.616E-02		3.830E-02	6.577E-02	6.165E-03	0.246
CF-251	4.916E-02		1.226E-01	2.046E-01	1.912E-02	0.240

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]G247911009          *
* Acquisition date   : 6-MAR-2010 17:29:00 Detector SN# :                  *
* Detector ID        : GAM16 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:02.29 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G247911009 Analyst initials: MXR1                 *
* Batch Number       : 957714 Sample Quantity : 1.3551E+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	3.542E+01	3.526E+00	2.851E-01	1.799E+00
CD-109	4.812E+00	1.129E+00	5.022E-01	5.761E-01
SN-126	4.696E-01	1.102E-01	4.923E-02	5.622E-02
TL-208	6.693E-01	9.719E-02	3.053E-02	4.959E-02
BI-211	4.973E+00	7.030E-01	1.596E-01	3.587E-01
PB-212	2.219E+00	2.835E-01	4.542E-02	1.447E-01
BI-214	1.539E+00	2.213E-01	6.553E-02	1.129E-01
PB-214	1.805E+00	2.731E-01	5.803E-02	1.394E-01
RA-224	5.971E+00	1.090E+00	4.868E-01	5.561E-01
RA-226	1.539E+00	2.213E-01	6.553E-02	1.129E-01
AC-228	2.086E+00	3.952E-01	1.042E-01	2.016E-01
RA-228	2.086E+00	3.952E-01	1.042E-01	2.016E-01
TH-228	2.219E+00	2.835E-01	4.542E-02	1.447E-01
TH-232	2.086E+00	3.952E-01	1.042E-01	2.016E-01
U-235	4.110E-02	1.903E-01	1.677E-01	9.709E-02
NP-237	1.401E+00	4.371E-01	1.486E-01	2.230E-01
ANH-511	1.369E-01	7.588E-02	2.349E-02	3.871E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.037E-01	3.100E-01	2.625E-01	1.581E-01 NOT IDENT.
NA-22	-5.236E-03	4.392E-02	3.612E-02	2.241E-02 NOT IDENT.
NA-24	1.114E+06	2.299E+06	0.000E+00	1.173E+06 SHORT HLIF
SC-46	-2.975E-02	3.498E-02	2.775E-02	1.785E-02 FAIL ABUN
V-48	-6.761E-02	7.169E-02	5.587E-02	3.658E-02 NOT IDENT.
CR-51	1.778E-01	3.650E-01	3.125E-01	1.862E-01 NOT IDENT.
MN-54	5.204E-04	3.580E-02	3.111E-02	1.826E-02 NOT IDENT.
CO-56	1.941E-02	3.567E-02	3.224E-02	1.820E-02 FAIL ABUN
CO-57	-1.360E-03	2.262E-02	2.025E-02	1.154E-02 NOT IDENT.
CO-58	-1.770E-02	3.680E-02	3.081E-02	1.878E-02 NOT IDENT.

FE-59	-4.242E-02	8.897E-02	7.184E-02	4.539E-02	NOT IDENT.
CO-60	-2.258E-02	3.715E-02	2.841E-02	1.896E-02	NOT IDENT.
ZN-65	-8.321E-02	1.020E-01	6.665E-02	5.204E-02	NOT IDENT.
SE-75	-1.009E-02	4.706E-02	3.492E-02	2.401E-02	NOT IDENT.
SR-85	2.111E-02	3.822E-02	3.026E-02	1.950E-02	NOT IDENT.
Y-88	-6.044E-03	2.767E-02	2.208E-02	1.412E-02	NOT IDENT.
Y-91	1.565E+01	2.170E+01	1.920E+01	1.107E+01	NOT IDENT.
NB-94	1.140E-02	3.496E-02	2.986E-02	1.784E-02	NOT IDENT.
NB-95	-1.422E-02	4.368E-02	3.493E-02	2.228E-02	NOT IDENT.
NB-95M	1.946E-02	1.315E-01	1.011E-01	6.708E-02	NOT IDENT.
ZR-95	-2.516E-02	7.523E-02	6.062E-02	3.838E-02	NOT IDENT.
MO-99	-1.577E+01	1.690E+01	1.279E+01	8.620E+00	NOT IDENT.
TC-99M	-4.023E+17	7.734E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.301E-02	3.753E-02	3.158E-02	1.915E-02	FAIL ABUN
RH-106	5.796E-02	2.697E-01	2.319E-01	1.376E-01	NOT IDENT.
RU-106	5.796E-02	2.696E-01	2.319E-01	1.375E-01	NOT IDENT.
AG-108M	-6.496E-03	2.580E-02	2.216E-02	1.316E-02	NOT IDENT.
AG-110M	-8.178E-03	3.224E-02	2.654E-02	1.645E-02	NOT IDENT.
SN-113	-7.877E-03	4.084E-02	3.558E-02	2.084E-02	NOT IDENT.
CD-115	-9.614E+00	1.427E+01	1.159E+01	7.280E+00	NOT IDENT.
SN-117M	4.733E-02	5.180E-02	4.714E-02	2.643E-02	NOT IDENT.
TE-123M	5.123E-03	2.551E-02	2.265E-02	1.301E-02	NOT IDENT.
SB-124	6.713E-02	6.214E-02	6.237E-02	3.170E-02	NOT IDENT.
SB-125	1.476E-02	8.209E-02	7.254E-02	4.188E-02	NOT IDENT.
TE-125M	5.691E+00	8.470E+00	7.820E+00	4.321E+00	NOT IDENT.
I-126	1.650E-02	2.082E-01	1.759E-01	1.062E-01	NOT IDENT.
SB-126	6.595E-02	1.682E-01	1.276E-01	8.582E-02	NOT IDENT.
SB-127	-6.142E-02	1.560E+00	1.301E+00	7.957E-01	NOT IDENT.
I-131	1.073E-01	1.123E-01	1.042E-01	5.731E-02	NOT IDENT.
TE-132	1.944E-01	8.514E-01	7.372E-01	4.344E-01	NOT IDENT.
BA-133	1.520E-02	4.125E-02	3.319E-02	2.104E-02	FAIL ABUN
I-133	6.035E+02	1.320E+04	0.000E+00	6.732E+03	SHORT HLIF
CS-134	1.837E-01	7.648E-02	4.881E-02	3.902E-02	FAIL ABUN
CS-135	1.139E-01	1.740E-01	1.349E-01	8.876E-02	NOT IDENT.
I-135	-6.370E+16	1.138E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.293E-01	1.103E-01	1.023E-01	5.627E-02	NOT IDENT.
BA-137M	-1.469E-03	3.328E-02	2.786E-02	1.698E-02	NOT IDENT.
CS-137	-1.552E-03	3.516E-02	2.943E-02	1.794E-02	NOT IDENT.
CE-139	2.276E-03	2.754E-02	2.427E-02	1.405E-02	NOT IDENT.
BA-140	8.888E-02	2.583E-01	2.253E-01	1.318E-01	NOT IDENT.
LA-140	-4.191E-02	9.277E-02	6.107E-02	4.733E-02	FAIL ABUN
CE-141	-2.717E-02	6.019E-02	5.166E-02	3.071E-02	NOT IDENT.
CE-143	1.088E+03	3.742E+02	0.000E+00	1.909E+02	SHORT HLIF
CE-144	1.548E-01	2.000E-01	1.650E-01	1.020E-01	NOT IDENT.
PM-144	-1.442E-03	3.191E-02	2.657E-02	1.628E-02	NOT IDENT.
PR-144	-1.004E-01	2.390E+00	1.991E+00	1.219E+00	NOT IDENT.
PM-146	2.465E-02	3.830E-02	3.456E-02	1.954E-02	NOT IDENT.
ND-147	1.801E-01	5.564E-01	4.875E-01	2.839E-01	FAIL ABUN
PM-149	-5.627E+01	1.205E+02	9.834E+01	6.150E+01	NOT IDENT.
EU-152	-3.959E-02	8.435E-02	7.311E-02	4.303E-02	FAIL ABUN
GD-153	-1.026E-01	8.186E-02	6.204E-02	4.177E-02	NOT IDENT.
EU-154	-1.868E-02	1.252E-01	1.026E-01	6.387E-02	NOT IDENT.
EU-155	1.065E-01	9.496E-02	8.887E-02	4.845E-02	FAIL ABUN
TB-160	-1.368E-02	1.327E-01	1.137E-01	6.769E-02	FAIL ABUN
HO-166M	2.930E-02	6.244E-02	5.386E-02	3.186E-02	FAIL ABUN
TA-182	8.439E-02	2.060E-01	1.775E-01	1.051E-01	FAIL ABUN
IR-192	1.551E-03	3.198E-02	2.675E-02	1.631E-02	FAIL ABUN
HG-203	5.445E-03	4.183E-02	3.166E-02	2.134E-02	NOT IDENT.
BI-207	2.668E-02	5.199E-02	4.594E-02	2.653E-02	FAIL ABUN
PB-210	-5.879E-01	3.166E+00	2.682E+00	1.615E+00	NOT IDENT.
PB-211	1.289E-02	6.716E-01	5.906E-01	3.426E-01	NOT IDENT.
BI-212	2.565E+00	8.310E-01	6.104E-01	4.240E-01	FAIL ABUN
RN-219	-8.318E-02	3.703E-01	3.212E-01	1.889E-01	FAIL ABUN
RA-223	3.584E-02	6.935E-01	5.146E-01	3.538E-01	FAIL ABUN
AC-227	-7.784E-02	2.397E-01	2.000E-01	1.223E-01	FAIL ABUN
TH-227	-7.784E-02	2.398E-01	2.000E-01	1.223E-01	FAIL ABUN
TH-229	5.645E-02	4.912E-01	4.286E-01	2.506E-01	FAIL ABUN
PA-231	1.914E-01	1.343E+00	1.140E+00	6.854E-01	FAIL ABUN
TH-231	3.584E-02	6.935E-01	5.146E-01	3.538E-01	FAIL ABUN
PA-233	8.035E-02	5.906E-02	5.279E-02	3.013E-02	FAIL ABUN
PA-234	-6.797E-02	2.834E-01	2.379E-01	1.446E-01	NOT IDENT.
PA-234M	1.807E+00	4.602E+00	4.029E+00	2.348E+00	NOT IDENT.
TH-234	5.018E-01	1.255E+00	1.081E+00	6.404E-01	FAIL ABUN
U-238	5.018E-01	1.255E+00	1.081E+00	6.404E-01	FAIL ABUN
NP-239	-2.606E-01	3.462E-01	3.019E-01	1.766E-01	FAIL ABUN
AM-241	-4.327E-02	1.431E-01	1.194E-01	7.300E-02	NOT IDENT.
CM-247	-3.311E-03	3.447E-02	3.013E-02	1.759E-02	FAIL ABUN
CF-249	1.616E-02	3.753E-02	3.382E-02	1.915E-02	NOT IDENT.

CF-251	4.916E-02	1.201E-01	1.067E-01	6.129E-02 NOT IDENT.
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 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON, SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	279.7987
49.72	281.3778
57.36	0.0000
59.54	356.5222
63.29	360.0649
63.29	360.0649
64.28	357.2729
67.75	381.6012
69.67	436.0248
70.83	477.4498
72.81	463.2916
72.87	463.3560
72.87	463.3560
74.82	447.7109
74.82	447.7109
74.82	447.7109
74.97	447.8671
77.11	450.0621
77.11	450.0621
77.11	450.0621
79.69	452.6718
79.80	452.7822
80.12	453.1000
80.19	453.1700
80.57	453.5497
81.00	342.0910
81.07	342.1438
81.07	342.1438
83.79	280.7663
83.79	280.7663
85.43	281.7464
86.48	282.3689
86.55	282.4102
86.79	282.5510
86.94	282.6420
87.57	283.0129
88.03	283.2827
88.47	283.5410
89.96	284.4085
91.11	285.0724
92.59	285.9218
92.59	285.9218
93.35	286.3555
94.67	287.1055
94.87	270.0114
94.87	270.0114
95.86	326.2345
97.43	360.4863
98.44	293.2147
99.53	278.6892
100.11	303.9546
103.18	330.8102
103.37	330.0316
105.31	317.7122
106.12	347.0264
109.28	299.1498
111.00	350.0733
111.76	323.2264
116.30	323.9424
117.23	318.9411
121.12	324.7314
121.78	302.8586
122.06	314.1192
123.07	311.8572
131.20	294.7960
133.52	298.6956
136.00	330.6277

136.47	334.6541
140.51	344.3352
140.51	0.0000
143.76	325.8714
144.24	311.7129
144.24	311.7129
145.44	329.5562
152.43	320.2615
153.25	295.3690
154.21	313.2772
154.21	313.2772
156.02	328.7005
158.56	268.1913
159.00	284.9997
162.66	261.8140
163.33	253.1831
165.86	298.5224
176.60	306.7222
177.52	280.9884
181.07	324.1747
184.41	279.3635
185.72	315.2962
193.51	280.4052
197.04	286.7112
205.31	242.7740
210.85	264.6505
215.65	245.5924
222.11	254.7190
227.38	216.8247
228.16	227.6406
228.18	227.6449
235.69	266.9511
235.96	258.9841
235.96	258.9841
238.63	239.7980
238.63	239.7980
240.99	240.3720
242.00	240.6170
244.70	217.4658
252.40	199.5028
252.80	201.7622
256.23	213.3765
256.23	213.3765
260.90	207.7377
264.66	195.2430
268.22	207.5157
269.46	176.1771
269.46	176.1771
271.23	173.1355
273.65	163.5118
276.40	188.4574
277.37	188.6225
277.60	188.6637
278.00	184.2654
279.20	196.2021
279.54	192.9079
280.46	189.7116
283.69	175.1096
284.31	177.4510
285.41	198.9846
285.90	182.2039
287.50	161.0612
293.27	0.0000
295.22	171.7937
295.96	136.1621
298.57	136.4673
299.98	157.1283
299.98	157.1283
300.09	157.1423
300.09	157.1423
300.13	157.1479
301.36	157.3136
302.85	157.5129
304.50	123.4446
304.50	123.4446
304.85	123.4819
308.46	141.0601
311.90	125.3637

316.51	146.6241
319.41	171.2755
320.08	154.0004
323.87	165.5107
323.87	165.5107
328.76	164.4139
333.37	173.7938
334.37	171.4731
334.37	171.4731
338.28	164.7749
338.28	164.7749
338.32	164.7806
338.32	164.7806
338.32	164.7806
340.48	128.5153
340.55	128.5220
344.28	152.2663
351.06	150.3893
351.93	150.4873
356.01	132.9099
364.49	115.9555
366.42	133.2239
383.85	136.7340
388.16	138.0649
388.63	141.7696
391.69	138.4082
400.66	126.3575
401.81	137.5344
402.40	139.4358
404.85	142.4458
410.95	132.8188
414.70	124.7724
423.72	118.9637
427.09	135.1868
427.87	115.5302
433.94	111.2714
453.88	102.1819
463.37	115.2704
468.07	100.1882
473.00	119.8128
476.78	127.8327
477.60	120.1439
487.02	99.3837
492.35	107.5142
497.08	107.8113
511.00	111.6396
514.00	101.3375
527.90	95.7451
529.87	0.0000
531.02	90.9167
537.26	87.2177
546.56	0.0000
563.25	79.2902
569.33	88.7205
569.50	88.7284
569.70	84.6591
583.19	110.9268
600.60	91.1824
602.73	78.0021
604.72	83.0640
609.32	136.5372
609.32	136.5372
610.33	114.9450
614.28	86.2389
618.01	90.9241
621.93	69.1099
621.93	69.1099
633.25	88.4374
635.95	66.4146
636.99	73.8303
645.85	69.9034
657.76	84.1400
661.66	85.3589
661.66	85.3589
664.57	0.0000
666.33	75.9185
666.50	71.6476
677.62	90.2831

685.70	84.1414
695.00	87.7409
696.49	82.3782
696.51	82.3805
697.00	80.2284
702.65	98.9064
706.68	113.2358
711.68	88.3861
720.70	77.1203
721.93	0.0000
722.78	73.6805
722.91	75.4390
723.31	75.4516
724.19	89.5239
727.33	71.4072
733.00	86.6322
735.93	69.4657
739.50	98.2808
747.24	93.0619
752.31	88.8184
753.82	77.7652
756.73	91.2065
763.94	105.9792
765.81	96.0125
766.42	90.4551
777.92	59.4649
778.90	77.4460
783.70	75.3464
785.37	58.5175
795.86	52.7364
801.95	67.9688
810.29	80.9213
810.76	76.3895
815.77	55.5821
818.51	72.9707
832.01	81.6058
834.85	81.6927
836.80	0.0000
846.77	57.1684
856.80	57.0763
860.56	55.6113
871.09	65.1345
873.19	52.1473
875.33	0.0000
879.36	66.2661
880.51	63.4927
883.24	55.1440
884.68	57.9782
889.28	65.5703
898.04	49.8027
911.20	56.6470
911.20	56.6470
911.20	56.6470
926.50	65.4978
937.49	75.2776
944.13	78.3164
946.00	64.9868
949.00	52.6179
962.29	49.6535
964.08	51.2865
966.15	65.4367
968.97	62.6101
968.97	62.6101
968.97	62.6101
983.53	72.5958
996.26	67.0712
1001.03	61.3358
1004.73	66.2851
1037.84	53.2037
1038.76	0.0000
1048.07	48.4354
1050.41	66.2770
1050.41	66.2770
1063.66	58.6082
1085.87	71.0173
1099.45	66.2900
1112.07	54.4456
1115.54	79.0601

1120.29	55.5908
1120.29	55.5908
1120.55	52.2242
1121.30	48.8667
1131.51	0.0000
1173.23	60.5701
1177.93	68.8746
1189.05	61.8750
1204.77	64.2251
1221.41	78.0542
1231.02	102.8599
1235.36	59.2012
1238.28	69.7070
1260.41	0.0000
1271.85	50.6484
1274.44	59.1336
1274.54	58.0776
1291.59	58.3435
1298.22	0.0000
1312.11	42.6621
1332.49	42.8887
1365.19	30.2750
1368.63	0.0000
1384.29	27.1619
1408.01	39.3451
1457.56	0.0000
1460.82	32.2898
1489.16	20.4334
1505.03	36.3578
1596.21	24.4754
1620.50	22.0098
1678.03	0.0000
1690.97	6.8012
1764.49	13.5296
1764.49	13.5296
1770.23	87.9027
1771.35	32.6012
1791.20	0.0000
1836.06	12.0093

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911009

Total Uranium Activity	1.5119E+00	ug/g
Total Uranium Counting Unc.	3.7353E+00	ug/g
Total Uranium Tpu	1.9058E-06	ug/g
Total Uranium Mda	3.2171E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 957714                      SAMPLE ID : G247911009
*  ANALYST       : MXR1                        DETECTOR  : GAM16
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00    COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 6-MAR-2010 17:29:00.83    SAMPLE ALQT: 135.510 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.186E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.319E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.346E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.624E+00

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VAX/VMS Nuclide Identification Report Generated 7-MAR-2010 00:38:45.08

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911010.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 20:38:06.
Sample ID          : G247911010 Sample quantity : 1.34890E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00 Elapsed real time: 0 04:00:03.71 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.24*	3087	2477	1.22	125.42	118	13	2.14E-01	3.8	
2	3	74.95*	594	2157	1.40	148.82	144	17	4.13E-02	14.5	2.14E+00
3	3	77.30*	1062	2095	1.41	153.52	144	17	7.37E-02	8.4	
4	0	83.82	224	2460	1.35	166.57	164	8	1.56E-02	38.8	
5	2	87.29	380	1440	1.19	173.51	171	31	2.64E-02	14.9	2.37E+01
6	2	92.74*	11178	1911	1.58	184.40	171	31	7.76E-01	1.2	
7	2	98.57	887	1450	1.65	196.06	171	31	6.16E-02	10.0	
8	0	113.00*	830	2346	1.47	224.92	218	14	5.76E-02	13.0	
9	0	143.93*	402	978	1.36	286.78	283	8	2.80E-02	14.8	
10	0	164.39*	138	1212	1.36	327.70	322	11	9.58E-03	51.0	
11	0	185.90*	2169	1187	1.46	370.70	365	11	1.51E-01	3.9	
12	0	205.19	193	862	1.44	409.29	405	9	1.34E-02	28.4	
13	0	209.28	251	710	1.36	417.48	414	8	1.74E-02	19.5	
14	4	238.73*	2603	551	1.38	476.36	468	21	1.81E-01	2.6	1.50E+00
15	4	241.68*	696	727	2.06	482.27	468	21	4.84E-02	11.3	
16	0	258.96	245	638	1.73	516.82	511	12	1.70E-02	21.7	
17	0	270.20	190	825	1.45	539.31	533	13	1.32E-02	32.0	
18	0	295.20*	705	576	1.34	589.31	583	12	4.90E-02	7.9	
19	0	299.92	188	410	1.48	598.75	595	9	1.30E-02	20.8	
20	0	338.52	552	588	1.46	675.94	671	13	3.84E-02	10.0	
21	0	351.99*	1335	411	1.54	702.89	697	11	9.27E-02	4.2	
22	0	462.93	210	336	1.65	924.76	918	14	1.46E-02	19.8	
23	0	510.97*	225	370	1.61	1020.85	1014	15	1.57E-02	22.5	
24	0	583.21*	789	280	1.69	1165.33	1160	13	5.48E-02	5.9	
25	0	609.32*	1002	257	1.68	1217.56	1211	15	6.96E-02	4.9	
26	0	661.51	67	182	1.65	1321.95	1318	9	4.67E-03	38.1	
27	0	727.21*	178	161	1.57	1453.36	1449	10	1.23E-02	16.1	
28	0	742.64	78	228	1.53	1484.22	1480	13	5.38E-03	41.7	
29	0	766.75	327	281	1.60	1532.44	1527	14	2.27E-02	12.2	
30	0	794.54	106	177	1.65	1588.04	1583	13	7.34E-03	27.8	
31	0	835.48	35	91	1.41	1669.91	1667	7	2.43E-03	48.3	
32	0	860.73*	93	114	1.82	1720.43	1715	10	6.44E-03	24.9	
33	0	911.03*	632	110	1.87	1821.05	1814	15	4.39E-02	5.5	
34	0	934.35	56	135	1.35	1867.70	1860	15	3.92E-03	46.8	
35	2	964.76	96	121	1.88	1928.53	1921	22	6.69E-03	23.0	2.19E+00
36	2	968.83*	357	99	1.99	1936.66	1921	22	2.48E-02	8.2	
37	0	1000.92	692	145	1.85	2000.86	1994	15	4.80E-02	5.4	
38	0	1120.17*	157	188	1.56	2239.40	2231	16	1.09E-02	21.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1238.11*	100	143	1.88	2475.35	2467	14	6.91E-03	27.9	
40	0	1460.50*	2091	59	2.17	2920.26	2913	16	1.45E-01	2.4	
41	1	1588.05	59	39	2.49	3175.45	3165	26	4.10E-03	27.1	1.64E+00
42	1	1591.83	57	31	2.27	3183.00	3165	26	3.94E-03	26.1	
43	0	1623.35	29	40	5.42	3246.07	3231	21	2.01E-03	58.9	
44	0	1730.26	46	36	2.67	3459.97	3449	19	3.17E-03	35.5	
45	0	1764.21	197	21	2.05	3527.91	3517	20	1.37E-02	9.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 7-MAR-2010 00:38:48

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911010.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 20:38:06
Sample ID        : G247911010 Sample quantity : 134.89 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA15 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:03.71 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

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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	+	1460.82	*	2.824E+01	3.077E+00	4.703E-01	4.622E-02	60.045
MN-54	+	834.85	*	3.120E-02	3.025E-02	5.704E-02	5.177E-03	0.547
NB-95	+	765.81	*	3.111E-01	8.039E-02	6.026E-02	5.279E-03	5.162
CD-109	+	88.03	*	3.297E+00	1.066E+00	1.509E+00	1.873E-01	2.185
SN-126	+	64.28		2.468E+01	4.581E+00	1.411E+00	2.389E-01	17.489
	+	86.94		1.337E+00	6.926E-01	8.016E-01	3.389E-01	1.668
	+	87.57	*	3.217E-01	1.040E-01	2.013E-01	2.491E-02	1.598
BA-137M	+	661.66	*	5.252E-02	4.021E-02	5.600E-02	4.604E-03	0.938
CS-137	+	661.66	*	5.548E-02	4.248E-02	5.915E-02	4.873E-03	0.938
CE-139	+	165.86	*	5.008E-02	5.131E-02	5.298E-02	5.655E-03	0.945
TL-208		277.37		4.323E-01	4.186E-01	6.746E-01	9.539E-02	0.641
	+	583.19	*	5.897E-01	8.837E-02	5.546E-02	5.073E-03	10.632
	+	860.56		6.547E-01	3.322E-01	3.890E-01	3.803E-02	1.683
BI-211		72.87		1.643E+01	5.862E+00	8.526E+00	9.765E-01	1.927
	+	351.06	*	4.577E+00	5.939E-01	3.287E-01	3.274E-02	13.923
PB-212	+	74.82		2.481E+00	8.095E-01	8.914E-01	1.343E-01	2.783
	+	77.11		2.465E+00	5.042E-01	4.972E-01	5.764E-02	4.957
	+	238.63	*	2.019E+00	2.636E-01	8.899E-02	1.063E-02	22.688
	+	300.09		2.257E+00	9.778E-01	1.239E+00	1.509E-01	1.821
BI-214	+	609.32	*	1.447E+00	2.014E-01	1.063E-01	1.059E-02	13.612
	+	1120.29		1.191E+00	5.290E-01	4.152E-01	4.496E-02	2.868
	+	1764.49		2.099E+00	4.215E-01	2.707E-01	2.373E-02	7.757
PB-214	+	74.82		4.398E+00	1.413E+00	1.580E+00	2.208E-01	2.783
	+	77.11		4.345E+00	9.584E-01	8.766E-01	1.247E-01	4.957
	+	242.00		3.276E+00	8.434E-01	5.410E-01	6.739E-02	6.056
	+	295.22		1.501E+00	3.031E-01	2.248E-01	2.802E-02	6.677
	+	351.93	*	1.661E+00	2.342E-01	1.130E-01	1.284E-02	14.704
RA-224	+	240.99	*	5.793E+00	1.453E+00	9.535E-01	1.052E-01	6.076
RA-226	+	609.32	*	1.447E+00	2.014E-01	1.063E-01	1.059E-02	13.612
	+	1120.29		1.191E+00	5.290E-01	4.152E-01	4.496E-02	2.868
	+	1764.49		2.099E+00	4.215E-01	2.707E-01	2.373E-02	7.757
AC-228	+	338.32		2.114E+00	9.839E-01	3.746E-01	1.573E-01	5.643
	+	911.20	*	2.282E+00	3.734E-01	1.842E-01	2.231E-02	12.390
	+	968.97		2.230E+00	6.588E-01	3.207E-01	7.878E-02	6.952

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		2.114E+00	9.839E-01	3.746E-01	1.573E-01	5.643
	+	911.20	*	2.282E+00	3.734E-01	1.842E-01	2.231E-02	12.390
	+	968.97		2.230E+00	6.588E-01	3.207E-01	7.878E-02	6.952
TH-228	+	74.82		2.481E+00	7.732E-01	8.914E-01	1.031E-01	2.783
	+	77.11		2.465E+00	5.042E-01	4.972E-01	5.764E-02	4.957
	+	238.63	*	2.019E+00	2.636E-01	8.899E-02	1.063E-02	22.688
	+	300.09		2.257E+00	1.676E+00	1.239E+00	7.625E-01	1.821
TH-232	+	338.32		2.114E+00	4.727E-01	3.746E-01	3.693E-02	5.643
	+	911.20	*	2.282E+00	3.734E-01	1.842E-01	2.231E-02	12.390
	+	968.97		2.230E+00	6.588E-01	3.207E-01	7.878E-02	6.952
PA-234M	+	766.42		8.121E+01	4.571E+01	1.635E+01	8.301E+00	4.966
	+	1001.03	*	8.385E+01	1.256E+01	6.124E+00	6.351E-01	13.691
TH-234	+	63.29	*	6.403E+01	1.360E+01	3.838E+00	7.610E-01	16.683
	+	92.59		7.620E+01	1.793E+01	1.207E+00	2.826E-01	63.153
U-235		89.96		2.211E+01	5.914E+00	2.540E+00	6.607E-01	8.706
	+	93.35		5.756E+01	1.409E+01	9.031E-01	2.197E-01	63.734
	+	143.76	*	9.283E-01	3.209E-01	3.523E-01	6.269E-02	2.635
	+	163.33		7.260E-01	7.526E-01	7.633E-01	1.449E-01	0.951
	+	185.72		1.086E+00	1.444E-01	7.069E-02	7.651E-03	15.359
	+	205.31		1.174E+00	7.056E-01	8.457E-01	1.638E-01	1.388
NP-237	+	86.48	*	9.599E-01	3.700E-01	5.800E-01	1.409E-01	1.655
		95.86		9.461E+00	2.765E+00	2.344E+00	5.869E-01	4.036
U-238	+	63.29	*	6.403E+01	1.360E+01	3.838E+00	7.610E-01	16.683
	+	92.59		7.620E+01	9.028E+00	1.207E+00	1.403E-01	63.153
ANH-511	+	511.00	*	1.297E-01	5.949E-02	4.431E-02	3.828E-03	2.926

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	4.245E-02	3.028E-01	4.968E-01	4.618E-02	0.085
NA-22		1274.54	*	1.296E-02	4.024E-02	6.642E-02	6.034E-03	0.195
NA-24		1368.63	*	-6.930E-01	4.024E-02	Half-Life too short		
SC-46		889.28	*	4.184E-02	3.447E-02	6.057E-02	5.628E-03	0.691
	+	1120.55		2.036E-01	8.941E-02	1.096E-01	9.317E-03	1.858
V-48		944.13		-1.465E-01	8.421E-01	1.372E+00	1.268E-01	-0.107
		983.53	*	-1.304E-02	6.613E-02	1.072E-01	9.803E-03	-0.122
		1312.11		-3.032E-02	7.727E-02	1.207E-01	1.138E-02	-0.251
CR-51		320.08	*	-2.416E-01	3.829E-01	6.213E-01	6.594E-02	-0.389
CO-56		846.77	*	-2.508E-02	3.470E-02	5.496E-02	5.015E-03	-0.456
		1037.84		7.433E-02	2.687E-01	4.476E-01	4.197E-02	0.166
	+	1238.28		2.150E-01	1.213E-01	1.520E-01	1.366E-02	1.414
		1771.35		-6.788E-02	1.994E-01	2.582E-01	2.256E-02	-0.263
CO-57		122.06	*	-1.521E-02	2.930E-02	4.701E-02	4.735E-03	-0.324
		136.47		-4.562E-02	2.357E-01	3.800E-01	4.037E-02	-0.120
CO-58		810.76	*	-2.240E-02	3.520E-02	5.631E-02	5.062E-03	-0.398
FE-59		1099.45	*	-1.023E-01	8.526E-02	1.274E-01	1.189E-02	-0.802
		1291.59		3.612E-02	1.093E-01	1.808E-01	1.868E-02	0.200
CO-60		1173.23		-2.582E-02	3.839E-02	5.947E-02	4.841E-03	-0.434

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1332.49	*		2.688E-02	3.377E-02	5.786E-02	5.562E-03	0.465
ZN-65	1115.54	*		-2.814E-02	9.032E-02	1.223E-01	1.045E-02	-0.230
SE-75	121.12			-4.935E-02	1.539E-01	2.483E-01	3.041E-02	-0.199
	136.00			-1.207E-02	4.583E-02	7.377E-02	7.468E-03	-0.164
	264.66	*		4.529E-02	7.412E-02	7.596E-02	8.329E-03	0.596
	279.54			4.280E-02	1.128E-01	1.901E-01	2.105E-02	0.225
	400.66			1.780E-01	2.470E-01	4.157E-01	4.554E-02	0.428
SR-85	514.00	*		1.257E-01	4.116E-02	6.589E-02	5.693E-03	1.907
Y-88	898.04			1.314E-02	3.399E-02	5.742E-02	5.377E-03	0.229
	1836.06	*		-1.331E-02	2.822E-02	4.324E-02	3.642E-03	-0.308
Y-91	1204.77	*		6.233E+00	1.938E+01	3.204E+01	2.701E+00	0.195
NB-94	702.65	*		9.008E-03	3.008E-02	5.099E-02	4.305E-03	0.177
	871.09			-3.101E-03	2.900E-02	4.764E-02	4.394E-03	-0.065
NB-95M	235.69	*		6.095E-01	1.649E-01	2.439E-01	2.939E-02	2.499
ZR-95	724.19			6.205E-02	1.041E-01	1.552E-01	1.441E-02	0.400
	756.73	*		6.371E-02	6.713E-02	1.165E-01	1.119E-02	0.547
MO-99	140.51			-9.306E+00	3.927E+01	5.446E+01	1.325E+01	-0.171
	181.07			1.786E+01	3.020E+01	4.282E+01	8.512E+00	0.417
	366.42			8.625E+01	1.342E+02	2.262E+02	2.072E+01	0.381
	739.50	*		1.207E+01	1.903E+01	2.840E+01	4.476E+00	0.425
	777.92			-7.957E+01	4.653E+01	6.967E+01	6.145E+00	-1.142
TC-99M	140.51	*		-4.005E+11	4.653E+01	Half-Life too short		
RU-103	497.08	*		-3.036E-02	3.961E-02	6.188E-02	8.650E-03	-0.491
	610.33			1.528E+01	2.894E+00	2.459E+00	3.998E-01	6.214
RH-106	621.93	*		9.030E-03	2.919E-01	4.703E-01	6.168E-02	0.019
	1050.41			1.484E+00	2.278E+00	3.871E+00	3.439E-01	0.383
RU-106	621.93	*		9.030E-03	2.919E-01	4.703E-01	3.952E-02	0.019
	1050.41			1.484E+00	2.278E+00	3.871E+00	3.439E-01	0.383
AG-108M	433.94	*		-2.641E-03	2.764E-02	4.509E-02	3.985E-03	-0.059
	614.28			1.580E-02	3.508E-02	5.025E-02	4.383E-03	0.314
	722.91			-4.720E-03	3.866E-02	5.520E-02	4.872E-03	-0.086
AG-110M	657.76	*		8.376E-03	3.611E-02	5.313E-02	4.522E-03	0.158
	677.62			1.309E-01	2.741E-01	4.695E-01	4.021E-02	0.279
	706.68			-1.674E-01	1.992E-01	3.090E-01	2.693E-02	-0.542
	763.94			8.083E-01	2.083E-01	3.437E-01	3.088E-02	2.352
	884.68			-3.553E-02	4.638E-02	7.310E-02	6.969E-03	-0.486
	937.49			1.470E-02	1.067E-01	1.528E-01	1.459E-02	0.096
	1384.29			-3.535E-02	1.419E-01	2.324E-01	2.287E-02	-0.152
	1505.03			-2.756E-01	2.380E-01	3.486E-01	3.332E-02	-0.791
SN-113	391.69	*		-1.402E-02	4.372E-02	7.106E-02	6.172E-03	-0.197
CD-115	260.90			1.827E+02	2.446E+02	3.653E+02	4.002E+01	0.500
	492.35			2.814E+01	5.333E+01	8.878E+01	7.671E+00	0.317
	527.90	*		1.836E+00	1.633E+01	2.664E+01	2.299E+00	0.069
SN-117M	156.02			2.215E+00	2.707E+00	4.429E+00	4.616E-01	0.500
	158.56	*		-4.819E-02	7.603E-02	1.045E-01	1.096E-02	-0.461
TE-123M	159.00	*		9.153E-03	3.633E-02	5.151E-02	5.428E-03	0.178
SB-124	602.73			4.043E-02	4.013E-02	5.946E-02	5.040E-03	0.680
	645.85			-3.786E-01	4.608E-01	7.044E-01	6.208E-02	-0.538
	722.78			-5.695E-02	3.938E-01	5.613E-01	4.910E-02	-0.101

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125		1690.97	*	-1.482E-02	6.621E-02	1.062E-01	1.000E-02	-0.140
		427.87	*	-2.416E-02	8.526E-02	1.381E-01	1.202E-02	-0.175
	+	463.37		1.078E+00	4.375E-01	5.081E-01	4.708E-02	2.121
		600.60		-1.178E-01	1.717E-01	2.588E-01	2.363E-02	-0.455
TE-125M		635.95		4.885E-03	2.538E-01	4.081E-01	3.700E-02	0.012
		109.28	*	-3.220E+00	1.470E+01	2.086E+01	2.478E+00	-0.154
	I-126	388.63		1.358E-01	1.724E-01	2.914E-01	2.479E-02	0.466
		666.33	*	1.800E-01	2.570E-01	3.878E-01	3.198E-02	0.464
SB-126		753.82		1.645E+00	1.780E+00	3.088E+00	2.687E-01	0.533
		414.70		-7.182E-02	7.870E-02	1.242E-01	1.056E-02	-0.578
		666.50		6.200E-02	8.851E-02	1.335E-01	1.101E-02	0.464
		695.00		5.378E-02	7.440E-02	1.284E-01	1.079E-02	0.419
SB-127		697.00		-2.846E-02	2.681E-01	4.466E-01	3.757E-02	-0.064
		720.70	*	1.545E-02	1.584E-01	2.390E-01	2.040E-02	0.065
		856.80		5.876E-02	5.200E-01	7.469E-01	6.846E-02	0.079
		252.40		2.174E+00	6.037E+00	9.221E+00	3.890E+00	0.236
I-131		473.00		8.356E-02	1.893E+00	3.094E+00	4.058E-01	0.027
		685.70	*	1.201E+00	1.446E+00	2.508E+00	2.899E-01	0.479
		783.70		9.550E+00	4.380E+00	7.704E+00	9.910E-01	1.240
		80.19		3.114E+00	1.197E+01	1.257E+01	1.484E+00	0.248
TE-132		284.31		-8.039E-01	1.653E+00	2.713E+00	3.018E-01	-0.296
		364.49	*	1.425E-02	1.247E-01	2.067E-01	1.997E-02	0.069
		636.99		-5.768E-01	1.657E+00	2.613E+00	2.315E-01	-0.221
	+	49.72		-2.695E+01	6.944E+01	1.143E+02	1.771E+01	-0.236
BA-133		111.76		4.206E+02	1.219E+02	1.100E+02	1.388E+01	3.822
		116.30		6.311E+01	5.204E+01	7.581E+01	9.503E+00	0.833
		228.16	*	1.235E+00	1.017E+00	1.721E+00	3.009E-01	0.718
		81.00		-3.440E-02	2.209E-01	2.281E-01	3.991E-02	-0.151
I-133		276.40		4.217E-01	4.198E-01	6.258E-01	9.741E-02	0.674
		302.85		1.286E-01	1.523E-01	2.269E-01	3.265E-02	0.567
		356.01	*	6.179E-03	4.479E-02	6.464E-02	8.733E-03	0.096
		383.85		-1.912E-01	2.797E-01	4.470E-01	5.566E-02	-0.428
CS-134		529.87	*	5.320E-03	2.797E-01	Half-Life	too short	
		875.33		-4.213E-01	2.797E-01	Half-Life	too short	
		1298.22		2.592E-01	2.797E-01	Half-Life	too short	
		563.25		3.787E-01	3.565E-01	6.010E-01	5.207E-02	0.630
I-135		569.33		4.212E-02	2.084E-01	3.143E-01	2.730E-02	0.134
		604.72		9.811E-03	3.525E-02	4.986E-02	4.233E-03	0.197
	+	795.86	*	1.145E-01	6.454E-02	8.145E-02	7.300E-03	1.406
		801.95		-3.818E-01	4.566E-01	6.075E-01	5.453E-02	-0.629
CS-135		1365.19		2.900E-01	1.076E+00	1.837E+00	1.835E-01	0.158
		268.22	*	2.260E-01	1.869E-01	2.814E-01	3.376E-02	0.803
		546.56		-4.720E+10	1.869E-01	Half-Life	too short	
	+	836.80		5.057E+11	1.869E-01	Half-Life	too short	
I-135		1038.76		-8.129E+10	1.869E-01	Half-Life	too short	
		1131.51		-6.514E+08	1.869E-01	Half-Life	too short	
		1260.41	*	7.009E+09	1.869E-01	Half-Life	too short	
		1457.56		2.597E+13	1.869E-01	Half-Life	too short	
		1678.03		2.042E+09	1.869E-01	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	1791.20			2.393E+10	1.869E-01	Half-Life too short		
	153.25			1.073E+00	1.034E+00	1.693E+00	1.992E-01	0.634
	176.60			-1.791E-01	5.713E-01	9.091E-01	1.044E-01	-0.197
	273.65			-6.873E-01	6.630E-01	9.177E-01	1.051E-01	-0.749
	340.55			8.704E-01	2.083E-01	3.194E-01	3.225E-02	2.725
	818.51			-6.497E-02	6.954E-02	1.088E-01	9.805E-03	-0.597
BA-140	1048.07	*		3.861E-02	9.991E-02	1.674E-01	1.548E-02	0.231
	1235.36			8.936E-01	6.812E-01	1.026E+00	1.214E-01	0.871
	162.66			1.269E+00	1.174E+00	1.662E+00	1.839E-01	0.763
	304.85			4.747E-02	1.581E+00	2.287E+00	6.833E-01	0.021
	423.72			9.631E-01	2.015E+00	3.326E+00	1.093E+00	0.290
	537.26	*		4.343E-02	2.654E-01	4.328E-01	1.468E-01	0.100
LA-140	328.76			3.923E-01	3.245E-01	5.533E-01	5.802E-02	0.709
	487.02			8.285E-02	1.356E-01	2.265E-01	2.077E-02	0.366
	815.77			-2.858E-02	2.976E-01	4.911E-01	4.894E-02	-0.058
	1596.21	*		-4.214E-02	9.208E-02	1.211E-01	1.136E-02	-0.348
CE-141	145.44	*		2.919E-01	9.018E-02	1.318E-01	1.362E-02	2.215
CE-143	57.36			6.486E-03	9.018E-02	Half-Life too short		
	293.27	*		1.720E-03	9.018E-02	Half-Life too short		
	664.57			3.694E-03	9.018E-02	Half-Life too short		
	721.93			7.122E-04	9.018E-02	Half-Life too short		
CE-144	80.12			1.857E+00	5.821E+00	6.124E+00	7.197E-01	0.303
	133.52	*		-7.479E-02	2.342E-01	3.765E-01	6.076E-02	-0.199
PM-144	476.78			-4.704E-03	6.052E-02	9.834E-02	9.219E-03	-0.048
	618.01			-1.082E-02	3.155E-02	4.673E-02	4.049E-03	-0.232
PR-144	696.49	*		-2.164E-03	3.136E-02	5.233E-02	4.403E-03	-0.041
	696.51	*		3.626E-01	2.325E+00	3.918E+00	3.295E-01	0.093
	1489.16			4.970E+00	1.018E+01	1.773E+01	1.698E+00	0.280
PM-146	453.88	*		2.694E-02	3.968E-02	6.653E-02	7.035E-03	0.405
	633.25			4.541E-01	1.320E+00	2.142E+00	8.167E-01	0.212
	735.93			-1.580E-02	1.471E-01	2.263E-01	6.342E-02	-0.070
	747.24			1.295E-02	1.004E-01	1.456E-01	2.128E-02	0.089
ND-147	91.11			2.701E+01	3.412E+00	1.421E+00	1.760E-01	19.005
	319.41			-3.644E+00	3.643E+00	5.820E+00	5.962E-01	-0.626
	531.02	*		-1.358E-01	5.896E-01	9.456E-01	1.414E-01	-0.144
PM-149	285.90	*		-1.095E+02	1.389E+02	2.242E+02	3.771E+01	-0.489
EU-152	121.78			-4.198E-02	8.389E-02	1.346E-01	1.506E-02	-0.312
	244.70			3.261E-01	3.622E-01	5.444E-01	6.000E-02	0.599
	344.28	*		2.119E-02	1.156E-01	1.581E-01	1.609E-02	0.134
	778.90			-1.799E-01	2.367E-01	3.775E-01	3.331E-02	-0.477
	+ 964.08			6.481E-01	3.042E-01	4.670E-01	4.295E-02	1.388
	1085.87			-1.672E-02	3.429E-01	5.580E-01	4.858E-02	-0.030
GD-153	1112.07			-1.797E-01	3.226E-01	4.265E-01	3.650E-02	-0.421
	1408.01			8.777E-02	1.581E-01	2.749E-01	2.649E-02	0.319
	69.67			-8.174E-01	3.406E+00	4.562E+00	5.208E-01	-0.179
	+ 97.43	*		8.687E-01	1.973E-01	2.124E-01	2.344E-02	4.091
EU-154	103.18			-2.738E-01	1.592E-01	2.130E-01	2.252E-02	-1.285
	123.07			2.909E-04	5.952E-02	9.671E-02	1.207E-02	0.003
	723.31			-6.809E-02	1.801E-01	2.525E-01	2.381E-02	-0.270

----- Non-Identified Nuclides -----

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EU-155	+	873.19		-3.915E-02	2.363E-01	3.867E-01	4.774E-02	-0.101
		996.26		-1.374E-01	3.806E-01	5.174E-01	9.163E-02	-0.266
		1004.73		6.392E-01	2.323E-01	3.813E-01	4.567E-02	1.676
		1274.44	*	5.721E-02	1.128E-01	1.883E-01	2.208E-02	0.304
		86.55		3.903E-01	1.263E-01	2.607E-01	3.216E-02	1.497
TB-160	+	105.31	*	6.570E-02	1.407E-01	2.145E-01	2.260E-02	0.306
		86.79		1.048E+00	3.389E-01	6.911E-01	8.498E-02	1.516
		197.04		1.599E-01	6.036E-01	9.714E-01	1.059E-01	0.165
		215.65		8.837E-02	7.856E-01	1.294E+00	1.423E-01	0.068
		298.57		3.217E-01	1.380E-01	2.048E-01	2.167E-02	1.571
HO-166M	+	879.36	*	1.247E-01	1.277E-01	2.216E-01	2.051E-02	0.563
		962.29		5.963E-01	5.475E-01	8.337E-01	7.671E-02	0.715
		966.15		4.583E-01	2.151E-01	4.808E-01	4.419E-02	0.953
		1177.93		4.348E-02	3.005E-01	4.927E-01	4.032E-02	0.088
		1271.85		7.844E-01	6.545E-01	1.137E+00	1.029E-01	0.690
TA-182	+	80.57		-9.851E-02	6.338E-01	6.550E-01	7.718E-02	-0.150
		184.41		8.625E-01	1.147E-01	1.010E-01	1.092E-02	8.540
		280.46		-5.775E-02	8.693E-02	1.420E-01	1.533E-02	-0.407
		410.95		3.346E-01	2.364E-01	4.055E-01	3.442E-02	0.825
		711.68	*	4.520E-03	5.383E-02	9.035E-02	7.670E-03	0.050
IR-192	+	752.31		-1.008E-01	2.586E-01	4.130E-01	3.592E-02	-0.244
		810.29		-2.142E-02	5.235E-02	8.492E-02	7.615E-03	-0.252
		67.75		-3.247E-01	2.196E-01	3.006E-01	3.431E-02	-1.080
		100.11		1.245E+00	2.918E-01	4.153E-01	4.483E-02	2.998
		152.43		4.282E-01	3.936E-01	6.465E-01	6.686E-02	0.662
HG-203	+	222.11		3.091E-02	3.616E-01	6.100E-01	6.723E-02	0.051
		1121.30		5.624E-01	2.470E-01	3.052E-01	2.594E-02	1.842
		1189.05		6.840E-02	2.732E-01	4.502E-01	3.730E-02	0.152
		1221.41	*	-8.557E-02	1.807E-01	2.842E-01	2.439E-02	-0.301
		1231.02		-1.610E-01	5.101E-01	6.869E-01	5.956E-02	-0.234
BI-207	+	295.96		1.123E+00	2.150E-01	2.550E-01	2.720E-02	4.406
		308.46		-2.441E-02	9.565E-02	1.577E-01	1.650E-02	-0.155
		316.51	*	6.203E-03	3.512E-02	5.864E-02	6.046E-03	0.106
		468.07		3.725E-03	6.796E-02	9.623E-02	8.900E-03	0.039
		70.83		2.344E+00	2.466E+00	3.595E+00	6.371E-01	0.652
PB-210	+	72.87		4.170E+00	1.582E+00	2.164E+00	3.736E-01	1.927
		279.20	*	1.922E-02	4.033E-02	6.810E-02	7.483E-03	0.282
		72.81		8.783E-01	3.347E-01	4.883E-01	5.592E-02	1.799
		74.97		7.151E-01	2.227E-01	3.099E-01	3.566E-02	2.308
		569.70		2.086E-02	2.955E-02	4.921E-02	4.215E-03	0.424
PB-211	+	1063.66	*	-2.298E-02	5.014E-02	7.524E-02	6.638E-03	-0.305
		1770.23		-2.612E-02	3.721E-01	5.135E-01	4.489E-02	-0.051
		46.54	*	-1.075E+01	1.196E+01	1.896E+01	2.334E+00	-0.567
		404.85	*	-8.687E-01	8.213E-01	1.106E+00	5.349E-01	-0.786
		427.09		-1.167E-01	1.440E+00	2.350E+00	1.087E+00	-0.050
BI-212	+	832.01		2.135E-01	9.905E-01	1.429E+00	7.419E-01	0.149
		727.33	*	2.026E+00	6.974E-01	1.017E+00	1.263E-01	1.992
		785.37		3.760E+00	3.067E+00	5.353E+00	4.739E-01	0.703
		1620.50		-4.756E-02	2.027E+00	3.345E+00	3.113E-01	-0.014

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	271.23		6.484E-01	4.222E-01	4.510E-01	5.511E-02	1.438
		401.81	*	4.406E-01	3.919E-01	6.623E-01	9.788E-02	0.665
RA-223		81.07		-7.213E-02	4.997E-01	5.165E-01	6.103E-02	-0.140
	+	83.79		3.043E-01	2.387E-01	3.272E-01	3.933E-02	0.930
		94.87		2.556E+01	3.041E+00	1.869E+00	2.116E-01	13.675
	+	144.24		3.111E+00	9.839E-01	1.391E+00	1.537E-01	2.237
		154.21		-1.668E-02	4.387E-01	7.070E-01	7.830E-02	-0.024
	+	269.46		5.038E-01	3.269E-01	3.424E-01	3.778E-02	1.471
		323.87	*	-1.000E+00	6.826E-01	1.040E+00	1.886E-01	-0.962
	+	338.28		8.389E+00	2.005E+00	2.218E+00	2.880E-01	3.783
AC-227		79.69		1.902E+00	2.982E+00	3.154E+00	5.986E-01	0.603
		235.96		1.218E+00	2.396E-01	3.230E-01	4.013E-02	3.771
		256.23	*	6.301E-02	2.981E-01	4.377E-01	6.058E-02	0.144
	+	299.98		2.482E+00	1.090E+00	1.531E+00	2.157E-01	1.622
		304.50		-1.478E-02	1.778E+00	2.568E+00	4.513E-01	-0.006
		334.37		8.900E-01	1.917E+00	2.808E+00	4.592E-01	0.317
TH-227		79.80		2.260E+00	3.877E+00	4.085E+00	9.473E-01	0.553
		235.96		1.218E+00	2.359E-01	3.230E-01	3.858E-02	3.771
		256.23	*	6.301E-02	2.981E-01	4.377E-01	6.659E-02	0.144
	+	299.98		2.482E+00	1.090E+00	1.531E+00	2.157E-01	1.622
		304.50		-1.478E-02	1.778E+00	2.568E+00	4.513E-01	-0.006
		334.37		8.900E-01	1.917E+00	2.808E+00	4.592E-01	0.317
TH-229		85.43		1.248E+00	5.151E-01	5.553E-01	6.756E-02	2.248
	+	88.47		4.959E-01	1.604E-01	3.302E-01	4.069E-02	1.502
		193.51	*	1.394E-01	5.649E-01	9.093E-01	9.894E-02	0.153
		210.85		2.578E+00	1.077E+00	1.644E+00	1.805E-01	1.568
PA-231		283.69	*	-4.746E-01	1.444E+00	2.381E+00	3.798E-01	-0.199
	+	301.36		1.595E+00	6.977E-01	9.782E-01	1.328E-01	1.630
TH-231		81.07		-7.213E-02	4.997E-01	5.165E-01	6.103E-02	-0.140
	+	83.79		3.043E-01	2.387E-01	3.272E-01	3.933E-02	0.930
		94.87		2.556E+01	3.041E+00	1.869E+00	2.116E-01	13.675
	+	144.24		3.111E+00	9.839E-01	1.391E+00	1.537E-01	2.237
		154.21		-1.668E-02	4.387E-01	7.070E-01	7.830E-02	-0.024
	+	269.46		5.038E-01	3.269E-01	3.424E-01	3.778E-02	1.471
		323.87	*	-1.000E+00	6.826E-01	1.040E+00	1.886E-01	-0.962
	+	338.28		8.389E+00	2.005E+00	2.218E+00	2.880E-01	3.783
PA-233	+	300.13		1.123E+00	5.006E-01	6.934E-01	1.112E-01	1.620
		311.90	*	-2.750E-02	6.468E-02	1.059E-01	1.121E-02	-0.260
		340.48		3.704E+00	1.184E+00	1.293E+00	3.170E-01	2.865
PA-234		94.67		1.174E+01	1.734E+00	7.460E-01	1.076E-01	15.745
	+	98.44		9.459E-01	5.639E-01	2.245E-01	1.262E-01	4.213
		111.00		1.292E+00	3.280E-01	4.430E-01	5.881E-02	2.916
		131.20		2.135E-01	1.244E-01	2.057E-01	2.065E-02	1.038
		569.50		2.019E-01	2.604E-01	4.349E-01	3.725E-02	0.464
		733.00		-1.056E-01	3.997E-01	5.633E-01	1.250E-01	-0.187
		880.51		4.407E-01	2.586E-01	4.613E-01	4.271E-02	0.955
		883.24		-6.237E-02	2.711E-01	4.369E-01	2.941E-01	-0.143
		926.50		7.791E-02	1.789E-01	2.613E-01	6.667E-02	0.298
		946.00	*	1.770E-01	2.769E-01	4.691E-01	8.939E-02	0.377

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	949.00		3.587E-01	4.017E-01	6.927E-01	6.397E-02	0.518
		99.53		1.716E+00	3.897E-01	3.956E-01	4.289E-02	4.338
		103.37		-3.290E-02	1.373E-01	1.950E-01	2.059E-02	-0.169
	*	106.12		5.173E-02	1.113E-01	1.697E-01	1.766E-02	0.305
		117.23		1.515E-01	5.335E-01	7.655E-01	7.726E-02	0.198
		228.18		2.745E-01	2.249E-01	3.857E-01	4.255E-02	0.712
AM-241	*	277.60		1.821E-01	1.905E-01	3.079E-01	3.334E-02	0.591
		59.54		6.501E-01	3.591E-01	5.336E-01	6.264E-02	1.218
CM-247		278.00		6.880E-01	7.853E-01	1.304E+00	1.411E-01	0.528
		287.50		-3.274E-02	1.286E+00	2.023E+00	2.170E-01	-0.016
CF-249	*	402.40		1.565E-02	3.594E-02	5.999E-02	5.073E-03	0.261
		252.80		1.755E-01	1.103E+00	1.618E+00	1.780E-01	0.108
		333.37		2.905E-02	2.039E-01	2.951E-01	2.941E-02	0.098
CF-251	*	388.16		3.376E-02	3.847E-02	6.519E-02	5.557E-03	0.518
		177.52		7.651E-02	1.394E-01	2.264E-01	2.437E-02	0.338
		227.38		4.381E-01	3.687E-01	6.322E-01	6.974E-02	0.693
		285.41		-1.381E+00	2.168E+00	3.538E+00	3.802E-01	-0.390

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]G247911010      *
* Acquisition date   : 6-MAR-2010 20:38:06 Detector SN# :                    *
* Detector ID        : GAM15 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                      *
* Elapsed live time  : 0 04:00:00.00 Abundance limit : 75.000           *
* Elapsed real time  : 0 04:00:03.71 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G247911010 Analyst initials: MXR1                  *
* Batch Number      : 957714 Sample Quantity : 1.3489E+02 GRAM           *
* Recovery          : 1.00000 Carrier Weight  : 0.00000                  *
*****
*                                     QC DATA                               *
*
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME  : 3-FEB-2010 11:04:32 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	2.824E+01	3.015E+00	4.714E-01	0.000E+00
MN-54	3.120E-02	2.964E-02	5.777E-02	0.000E+00
NB-95	3.111E-01	7.878E-02	6.112E-02	0.000E+00
CD-109	3.297E+00	1.045E+00	1.591E+00	0.000E+00
SN-126	3.217E-01	1.020E-01	2.123E-01	0.000E+00
BA-137M	5.252E-02	3.941E-02	5.696E-02	0.000E+00
CS-137	5.548E-02	4.163E-02	6.017E-02	0.000E+00
CE-139	5.008E-02	5.028E-02	5.524E-02	0.000E+00
TL-208	5.897E-01	8.660E-02	5.654E-02	0.000E+00
BI-211	4.577E+00	5.820E-01	3.382E-01	0.000E+00
PB-212	2.019E+00	2.583E-01	9.220E-02	0.000E+00
BI-214	1.447E+00	1.973E-01	1.083E-01	0.000E+00
PB-214	1.661E+00	2.295E-01	1.162E-01	0.000E+00
RA-224	5.793E+00	1.424E+00	9.877E-01	0.000E+00
RA-226	1.447E+00	1.973E-01	1.083E-01	0.000E+00
AC-228	2.282E+00	3.659E-01	1.862E-01	0.000E+00
RA-228	2.282E+00	3.659E-01	1.862E-01	0.000E+00
TH-228	2.019E+00	2.583E-01	9.220E-02	0.000E+00
TH-232	2.282E+00	3.659E-01	1.862E-01	0.000E+00
PA-234M	8.385E+01	1.231E+01	6.182E+00	0.000E+00
TH-234	6.403E+01	1.333E+01	4.069E+00	0.000E+00
U-235	9.283E-01	3.144E-01	3.683E-01	0.000E+00
NP-237	9.599E-01	3.626E-01	6.117E-01	0.000E+00
U-238	6.403E+01	1.333E+01	4.069E+00	0.000E+00
ANH-511	1.297E-01	5.830E-02	4.528E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	4.245E-02	2.968E-01	5.083E-01	0.000E+00 NOT IDENT.
NA-22	1.296E-02	3.943E-02	6.674E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.698E+06	0.000E+00	0.000E+00	SHORT HLIF
SC-46	4.184E-02	3.378E-02	6.127E-02	0.000E+00	FAIL ABUN
V-48	-1.304E-02	6.481E-02	1.083E-01	0.000E+00	NOT IDENT.
CR-51	-2.416E-01	3.753E-01	6.404E-01	0.000E+00	NOT IDENT.
CO-56	-2.508E-02	3.401E-02	5.564E-02	0.000E+00	FAIL ABUN
CO-57	-1.521E-02	2.871E-02	4.928E-02	0.000E+00	NOT IDENT.
CO-58	-2.240E-02	3.450E-02	5.706E-02	0.000E+00	NOT IDENT.
FE-59	-1.023E-01	8.355E-02	1.284E-01	0.000E+00	NOT IDENT.
CO-60	2.688E-02	3.309E-02	5.808E-02	0.000E+00	NOT IDENT.
ZN-65	-2.814E-02	8.851E-02	1.232E-01	0.000E+00	NOT IDENT.
SE-75	4.529E-02	7.264E-02	7.855E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.034E-02	6.733E-02	0.000E+00	NOT IDENT.
Y-88	-1.331E-02	2.765E-02	4.315E-02	0.000E+00	NOT IDENT.
Y-91	6.233E+00	1.899E+01	3.223E+01	0.000E+00	NOT IDENT.
NB-94	9.008E-03	2.948E-02	5.181E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.616E-01	2.527E-01	0.000E+00	NOT IDENT.
ZR-95	6.371E-02	6.579E-02	1.182E-01	0.000E+00	NOT IDENT.
MO-99	1.207E+01	1.865E+01	2.882E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.658E+18	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.036E-02	3.881E-02	6.327E-02	0.000E+00	FAIL ABUN
RH-106	9.030E-03	2.861E-01	4.789E-01	0.000E+00	NOT IDENT.
RU-106	9.030E-03	2.861E-01	4.789E-01	0.000E+00	NOT IDENT.
AG-108M	-2.641E-03	2.709E-02	4.622E-02	0.000E+00	NOT IDENT.
AG-110M	8.376E-03	3.539E-02	5.405E-02	0.000E+00	NOT IDENT.
SN-113	-1.402E-02	4.284E-02	7.297E-02	0.000E+00	NOT IDENT.
CD-115	1.836E+00	1.601E+01	2.720E+01	0.000E+00	NOT IDENT.
SN-117M	-4.819E-02	7.451E-02	1.091E-01	0.000E+00	NOT IDENT.
TE-123M	9.153E-03	3.560E-02	5.375E-02	0.000E+00	NOT IDENT.
SB-124	-1.482E-02	6.489E-02	1.061E-01	0.000E+00	NOT IDENT.
SB-125	-2.416E-02	8.355E-02	1.416E-01	0.000E+00	FAIL ABUN
TE-125M	-3.220E+00	1.441E+01	2.191E+01	0.000E+00	NOT IDENT.
I-126	1.800E-01	2.519E-01	3.944E-01	0.000E+00	NOT IDENT.
SB-126	1.545E-02	1.553E-01	2.427E-01	0.000E+00	NOT IDENT.
SB-127	1.201E+00	1.417E+00	2.549E+00	0.000E+00	NOT IDENT.
I-131	1.425E-02	1.222E-01	2.126E-01	0.000E+00	NOT IDENT.
TE-132	1.235E+00	9.967E-01	1.784E+00	0.000E+00	FAIL ABUN
BA-133	6.179E-03	4.389E-02	6.649E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.566E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.325E-02	8.256E-02	0.000E+00	FAIL ABUN
CS-135	2.260E-01	1.832E-01	2.909E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.444E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.861E-02	9.791E-02	1.688E-01	0.000E+00	NOT IDENT.
BA-140	4.343E-02	2.601E-01	4.419E-01	0.000E+00	NOT IDENT.
LA-140	-4.214E-02	9.024E-02	1.212E-01	0.000E+00	NOT IDENT.
CE-141	0.000E+00	8.838E-02	1.377E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.009E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-7.479E-02	2.296E-01	3.941E-01	0.000E+00	NOT IDENT.
PM-144	-2.164E-03	3.074E-02	5.318E-02	0.000E+00	NOT IDENT.
PR-144	3.626E-01	2.278E+00	3.982E+00	0.000E+00	NOT IDENT.
PM-146	2.694E-02	3.889E-02	6.814E-02	0.000E+00	NOT IDENT.
ND-147	-1.358E-01	5.778E-01	9.657E-01	0.000E+00	NOT IDENT.
PM-149	-1.095E+02	1.362E+02	2.316E+02	0.000E+00	NOT IDENT.
EU-152	2.119E-02	1.133E-01	1.627E-01	0.000E+00	FAIL ABUN
GD-153	0.000E+00	1.933E-01	2.235E-01	0.000E+00	FAIL ABUN
EU-154	5.721E-02	1.105E-01	1.892E-01	0.000E+00	NOT IDENT.
EU-155	6.570E-02	1.379E-01	2.255E-01	0.000E+00	FAIL ABUN
TB-160	1.247E-01	1.251E-01	2.242E-01	0.000E+00	FAIL ABUN
HO-166M	4.520E-03	5.275E-02	9.177E-02	0.000E+00	FAIL ABUN
TA-182	-8.557E-02	1.771E-01	2.858E-01	0.000E+00	FAIL ABUN
IR-192	6.203E-03	3.441E-02	6.045E-02	0.000E+00	FAIL ABUN
HG-203	1.922E-02	3.952E-02	7.036E-02	0.000E+00	NOT IDENT.
BI-207	-2.298E-02	4.913E-02	7.586E-02	0.000E+00	FAIL ABUN
PB-210	-1.075E+01	1.172E+01	2.021E+01	0.000E+00	NOT IDENT.
PB-211	-8.687E-01	8.048E-01	1.135E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.835E-01	1.032E+00	0.000E+00	FAIL ABUN
RN-219	4.406E-01	3.841E-01	6.798E-01	0.000E+00	FAIL ABUN
RA-223	-1.000E+00	6.689E-01	1.071E+00	0.000E+00	FAIL ABUN
AC-227	6.301E-02	2.921E-01	4.530E-01	0.000E+00	FAIL ABUN
TH-227	6.301E-02	2.922E-01	4.530E-01	0.000E+00	FAIL ABUN
TH-229	1.394E-01	5.536E-01	9.456E-01	0.000E+00	FAIL ABUN
PA-231	-4.746E-01	1.415E+00	2.460E+00	0.000E+00	FAIL ABUN
TH-231	-1.000E+00	6.689E-01	1.071E+00	0.000E+00	FAIL ABUN
PA-233	-2.750E-02	6.339E-02	1.092E-01	0.000E+00	FAIL ABUN
PA-234	1.770E-01	2.714E-01	4.740E-01	0.000E+00	FAIL ABUN
NP-239	1.515E-01	5.228E-01	8.030E-01	0.000E+00	FAIL ABUN
AM-241	0.000E+00	3.519E-01	5.663E-01	0.000E+00	NOT IDENT.
CM-247	1.565E-02	3.522E-02	6.158E-02	0.000E+00	NOT IDENT.
CF-249	3.376E-02	3.770E-02	6.696E-02	0.000E+00	NOT IDENT.

CF-251	7.651E-02	1.366E-01	2.358E-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]G247911010.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 20:38:06.
Sample ID          : G247911010 Sample quantity : 1.34890E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00 Elapsed real time: 0 04:00:03.71 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 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	1460.82	2091	10.66*	9.663E-01	2.824E+01	2.824E+01	10.90
MN-54	834.85	35	99.98*	1.619E+00	3.008E-02	3.120E-02	96.94
NB-95	765.81	327	99.81*	1.749E+00	2.604E-01	3.111E-01	25.84
CD-109	88.03	380	3.70*	4.444E+00	3.217E+00	3.297E+00	32.34
SN-126	64.28	3087	9.60	1.813E+00	2.468E+01	2.468E+01	18.56
	86.94	380	8.90	4.444E+00	1.337E+00	1.337E+00	51.79
	87.57	380	37.00*	4.444E+00	3.217E-01	3.217E-01	32.34
BA-137M	661.66	67	89.90*	1.982E+00	5.246E-02	5.252E-02	76.57
CS-137	661.66	67	85.10*	1.982E+00	5.542E-02	5.548E-02	76.58
CE-139	165.86	138	80.00*	5.207E+00	4.610E-02	5.008E-02	102.46
TL-208	277.37	-----	6.60	3.705E+00	-----	Line Not Found	-----
	583.19	789	85.00*	2.191E+00	5.897E-01	5.897E-01	14.99
	860.56	93	12.50	1.576E+00	6.547E-01	6.547E-01	50.73
BI-211	72.87	-----	1.23	3.001E+00	-----	Line Not Found	-----
	351.06	1335	12.92*	3.141E+00	4.577E+00	4.577E+00	12.98
PB-212	74.82	594	10.28	3.243E+00	2.481E+00	2.481E+00	32.63
	77.11	1062	17.10	3.505E+00	2.465E+00	2.465E+00	20.45
	238.63	2603	43.60*	4.114E+00	2.019E+00	2.019E+00	13.06
	300.09	188	3.30	3.508E+00	2.257E+00	2.257E+00	43.33
BI-214	609.32	1002	45.49*	2.117E+00	1.447E+00	1.447E+00	13.91
	1120.29	157	14.92	1.227E+00	1.191E+00	1.191E+00	44.42
	1764.49	197	15.30	8.554E-01	2.099E+00	2.099E+00	20.08
PB-214	74.82	594	5.80	3.243E+00	4.398E+00	4.398E+00	32.14
	77.11	1062	9.70	3.505E+00	4.345E+00	4.345E+00	22.05
	242.00	696	7.25	4.079E+00	3.276E+00	3.276E+00	25.74
	295.22	705	18.42	3.547E+00	1.501E+00	1.501E+00	20.19
	351.93	1335	35.60*	3.141E+00	1.661E+00	1.661E+00	14.10
RA-224	240.99	696	4.10*	4.079E+00	5.793E+00	5.793E+00	25.08
RA-226	609.32	1002	45.49*	2.117E+00	1.447E+00	1.447E+00	13.91
	1120.29	157	14.92	1.227E+00	1.191E+00	1.191E+00	44.42
	1764.49	197	15.30	8.554E-01	2.099E+00	2.099E+00	20.08
AC-228	338.32	552	11.27	3.226E+00	2.114E+00	2.114E+00	46.54

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	632	25.80*	1.494E+00	2.282E+00	2.282E+00	16.36
	968.97	357	15.80	1.410E+00	2.230E+00	2.230E+00	29.55
RA-228	338.32	552	11.27	3.226E+00	2.114E+00	2.114E+00	46.54
	911.20	632	25.80*	1.494E+00	2.282E+00	2.282E+00	16.36
	968.97	357	15.80	1.410E+00	2.230E+00	2.230E+00	29.55
TH-228	74.82	594	10.28	3.243E+00	2.481E+00	2.481E+00	31.16
	77.11	1062	17.10	3.505E+00	2.465E+00	2.465E+00	20.45
	238.63	2603	43.60*	4.114E+00	2.019E+00	2.019E+00	13.06
	300.09	188	3.30	3.508E+00	2.257E+00	2.257E+00	74.26
TH-232	338.32	552	11.27	3.226E+00	2.114E+00	2.114E+00	22.36
	911.20	632	25.80*	1.494E+00	2.282E+00	2.282E+00	16.36
	968.97	357	15.80	1.410E+00	2.230E+00	2.230E+00	29.55
PA-234M	766.42	327	0.32	1.749E+00	8.121E+01	8.121E+01	56.28
	1001.03	692	0.84*	1.367E+00	8.385E+01	8.385E+01	14.98
TH-234	63.29	3087	3.70*	1.813E+00	6.403E+01	6.403E+01	21.24
	92.59	11178	4.23	4.825E+00	7.620E+01	7.620E+01	23.53
U-235	89.96	-----	3.47	4.642E+00	-----	Line Not Found	-----
	93.35	11178	5.60	4.825E+00	5.756E+01	5.756E+01	24.49
	143.76	402	10.96*	5.504E+00	9.283E-01	9.283E-01	34.56
	163.33	138	5.08	5.207E+00	7.260E-01	7.260E-01	103.66
	185.72	2169	57.20	4.859E+00	1.086E+00	1.086E+00	13.30
	205.31	193	5.01	4.562E+00	1.174E+00	1.174E+00	60.10
NP-237	86.48	380	12.40*	4.444E+00	9.599E-01	9.599E-01	38.54
	95.86	-----	2.68	5.004E+00	-----	Line Not Found	-----
U-238	63.29	3087	3.70*	1.813E+00	6.403E+01	6.403E+01	21.24
	92.59	11178	4.23	4.825E+00	7.620E+01	7.620E+01	11.85
ANH-511	511.00	225	100.00*	2.419E+00	1.297E-01	1.297E-01	45.88

Flag: "*" = Keyline

Total number of lines in spectrum 45
Number of unidentified lines 8
Number of lines tentatively identified by NID 37 82.22%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.824E+01	2.824E+01	0.308E+01	10.90	
MN-54	312.05D	1.04	3.008E-02	3.120E-02	3.025E-02	96.94	
NB-95	64.03D	1.19	2.604E-01	3.111E-01	0.804E-01	25.84	
CD-109	461.40D	1.03	3.217E+00	3.297E+00	1.066E+00	32.34	
SN-126	2.30E+05Y	1.00	3.217E-01	3.217E-01	1.040E-01	32.34	
BA-137M	30.08Y	1.00	5.246E-02	5.252E-02	4.021E-02	76.57	
CS-137	30.08Y	1.00	5.542E-02	5.548E-02	4.248E-02	76.58	
CE-139	137.64D	1.09	4.610E-02	5.008E-02	5.131E-02	102.46	
TL-208	1.41E+10Y	1.00	5.897E-01	5.897E-01	0.884E-01	14.99	
BI-211	7.04E+08Y	1.00	4.577E+00	4.577E+00	0.594E+00	12.98	
PB-212	1.41E+10Y	1.00	2.019E+00	2.019E+00	0.264E+00	13.06	
BI-214	1600.00Y	1.00	1.447E+00	1.447E+00	0.201E+00	13.91	
PB-214	1600.00Y	1.00	1.661E+00	1.661E+00	0.234E+00	14.10	
RA-224	1.41E+10Y	1.00	5.793E+00	5.793E+00	1.453E+00	25.08	
RA-226	1600.00Y	1.00	1.447E+00	1.447E+00	0.201E+00	13.91	
AC-228	1.41E+10Y	1.00	2.282E+00	2.282E+00	0.373E+00	16.36	
RA-228	1.41E+10Y	1.00	2.282E+00	2.282E+00	0.373E+00	16.36	
TH-228	1.41E+10Y	1.00	2.019E+00	2.019E+00	0.264E+00	13.06	
TH-232	1.41E+10Y	1.00	2.282E+00	2.282E+00	0.373E+00	16.36	
PA-234M	4.47E+09Y	1.00	8.385E+01	8.385E+01	1.256E+01	14.98	
TH-234	4.47E+09Y	1.00	6.403E+01	6.403E+01	1.360E+01	21.24	
U-235	7.04E+08Y	1.00	9.283E-01	9.283E-01	3.209E-01	34.56	
NP-237	2.14E+06Y	1.00	9.599E-01	9.599E-01	3.700E-01	38.54	
U-238	4.47E+09Y	1.00	6.403E+01	6.403E+01	1.360E+01	21.24	
ANH-511	1.00E+09Y	1.00	1.297E-01	1.297E-01	0.595E-01	45.88	

Total Activity : 2.725E+02 2.727E+02

Grand Total Activity : 2.725E+02 2.727E+02

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	83.82	224	2460	1.35	166.57	164	8	1.56E-02	77.5	4.15E+00	T
2	98.57	887	1450	1.65	196.06	171	31	6.16E-02	19.9	5.14E+00	T
0	113.00	830	2346	1.47	224.92	218	14	5.76E-02	26.1	5.56E+00	T
0	209.28	251	710	1.36	417.48	414	8	1.74E-02	39.0	4.50E+00	
0	258.96	245	638	1.73	516.82	511	12	1.70E-02	43.3	3.89E+00	
0	270.20	190	825	1.45	539.31	533	13	1.32E-02	63.9	3.77E+00	T
0	462.93	210	336	1.65	924.76	918	14	1.46E-02	39.5	2.60E+00	T
0	727.21	178	161	1.57	1453.36	1449	10	1.23E-02	32.1	1.83E+00	T
0	742.64	78	228	1.53	1484.22	1480	13	5.38E-03	83.4	1.80E+00	
0	794.54	106	177	1.65	1588.04	1583	13	7.34E-03	55.6	1.69E+00	T
0	934.35	56	135	1.35	1867.70	1860	15	3.92E-03	93.5	1.46E+00	
2	964.76	96	121	1.88	1928.53	1921	22	6.69E-03	46.0	1.42E+00	T
0	1238.11	100	143	1.88	2475.35	2467	14	6.91E-03	55.7	1.12E+00	T
1	1588.05	59	39	2.49	3175.45	3165	26	4.10E-03	54.3	9.08E-01	
1	1591.83	57	31	2.27	3183.00	3165	26	3.94E-03	52.2	9.07E-01	
0	1623.35	29	40	5.42	3246.07	3231	21	2.01E-03	****	8.96E-01	
0	1730.26	46	36	2.67	3459.97	3449	19	3.17E-03	71.0	8.63E-01	

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911010.CNF;1
* Acquisition date   : 6-MAR-2010 20:38:06.  Detector SN#      :
* Detector ID        : GAM15                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 04:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 04:00:03.71          Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G247911010           Analyst initials: MXR1
* Batch Number       : 957714               Sample Quantity  : 1.34890E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32.11MS Isotope      :
* MSD ID             :                      MSD Isotope      :
* LCS ID             : 1032-A               LCS Isotope      :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.824E+01	3.077E+00	4.703E-01	4.622E-02	60.045
MN-54	3.120E-02	3.025E-02	5.704E-02	5.177E-03	0.547
NB-95	3.111E-01	8.039E-02	6.026E-02	5.279E-03	5.162
CD-109	3.297E+00	1.066E+00	1.509E+00	1.873E-01	2.185
SN-126	3.217E-01	1.040E-01	2.013E-01	2.491E-02	1.598
BA-137M	5.252E-02	4.021E-02	5.600E-02	4.604E-03	0.938
CS-137	5.548E-02	4.248E-02	5.915E-02	4.873E-03	0.938
CE-139	5.008E-02	5.131E-02	5.298E-02	5.655E-03	0.945
TL-208	5.897E-01	8.837E-02	5.546E-02	5.073E-03	10.632
BI-211	4.577E+00	5.939E-01	3.287E-01	3.274E-02	13.923
PB-212	2.019E+00	2.636E-01	8.899E-02	1.063E-02	22.688
BI-214	1.447E+00	2.014E-01	1.063E-01	1.059E-02	13.612
PB-214	1.661E+00	2.342E-01	1.130E-01	1.284E-02	14.704
RA-224	5.793E+00	1.453E+00	9.535E-01	1.052E-01	6.076
RA-226	1.447E+00	2.014E-01	1.063E-01	1.059E-02	13.612
AC-228	2.282E+00	3.734E-01	1.842E-01	2.231E-02	12.390
RA-228	2.282E+00	3.734E-01	1.842E-01	2.231E-02	12.390
TH-228	2.019E+00	2.636E-01	8.899E-02	1.063E-02	22.688

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	2.282E+00	3.734E-01	1.842E-01	2.231E-02	12.390
PA-234M	8.385E+01	1.256E+01	6.124E+00	6.351E-01	13.691
TH-234	6.403E+01	1.360E+01	3.838E+00	7.610E-01	16.683
U-235	9.283E-01	3.209E-01	3.523E-01	6.269E-02	2.635
NP-237	9.599E-01	3.700E-01	5.800E-01	1.409E-01	1.655
U-238	6.403E+01	1.360E+01	3.838E+00	7.610E-01	16.683
ANH-511	1.297E-01	5.949E-02	4.431E-02	3.828E-03	2.926

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	4.245E-02		3.028E-01	4.968E-01	4.618E-02	0.085
NA-22	1.296E-02		4.024E-02	6.642E-02	6.034E-03	0.195
NA-24	-6.930E-01		1.376E+00	Half-Life too short		
SC-46	4.184E-02		3.447E-02	6.057E-02	5.628E-03	0.691
V-48	-1.304E-02		6.613E-02	1.072E-01	9.803E-03	-0.122
CR-51	-2.416E-01		3.829E-01	6.213E-01	6.594E-02	-0.389
CO-56	-2.508E-02		3.470E-02	5.496E-02	5.015E-03	-0.456
CO-57	-1.521E-02		2.930E-02	4.701E-02	4.735E-03	-0.324
CO-58	-2.240E-02		3.520E-02	5.631E-02	5.062E-03	-0.398
FE-59	-1.023E-01		8.526E-02	1.274E-01	1.189E-02	-0.802
CO-60	2.688E-02		3.377E-02	5.786E-02	5.562E-03	0.465
ZN-65	-2.814E-02		9.032E-02	1.223E-01	1.045E-02	-0.230
SE-75	4.529E-02		7.412E-02	7.596E-02	8.329E-03	0.596
SR-85	1.257E-01		4.116E-02	6.589E-02	5.693E-03	1.907
Y-88	-1.331E-02		2.822E-02	4.324E-02	3.642E-03	-0.308
Y-91	6.233E+00		1.938E+01	3.204E+01	2.701E+00	0.195
NB-94	9.008E-03		3.008E-02	5.099E-02	4.305E-03	0.177
NB-95M	6.095E-01		1.649E-01	2.439E-01	2.939E-02	2.499
ZR-95	6.371E-02		6.713E-02	1.165E-01	1.119E-02	0.547
MO-99	1.207E+01		1.903E+01	2.840E+01	4.476E+00	0.425
TC-99M	-4.005E+11		8.460E+11	Half-Life too short		
RU-103	-3.036E-02		3.961E-02	6.188E-02	8.650E-03	-0.491
RH-106	9.030E-03		2.919E-01	4.703E-01	6.168E-02	0.019
RU-106	9.030E-03		2.919E-01	4.703E-01	3.952E-02	0.019
AG-108M	-2.641E-03		2.764E-02	4.509E-02	3.985E-03	-0.059
AG-110M	8.376E-03		3.611E-02	5.313E-02	4.522E-03	0.158
SN-113	-1.402E-02		4.372E-02	7.106E-02	6.172E-03	-0.197
CD-115	1.836E+00		1.633E+01	2.664E+01	2.299E+00	0.069
SN-117M	-4.819E-02		7.603E-02	1.045E-01	1.096E-02	-0.461
TE-123M	9.153E-03		3.633E-02	5.151E-02	5.428E-03	0.178
SB-124	-1.482E-02		6.621E-02	1.062E-01	1.000E-02	-0.140
SB-125	-2.416E-02		8.526E-02	1.381E-01	1.202E-02	-0.175
TE-125M	-3.220E+00		1.470E+01	2.086E+01	2.478E+00	-0.154
I-126	1.800E-01		2.570E-01	3.878E-01	3.198E-02	0.464
SB-126	1.545E-02		1.584E-01	2.390E-01	2.040E-02	0.065
SB-127	1.201E+00		1.446E+00	2.508E+00	2.899E-01	0.479

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	1.425E-02		1.247E-01	2.067E-01	1.997E-02	0.069
TE-132	1.235E+00		1.017E+00	1.721E+00	3.009E-01	0.718
BA-133	6.179E-03		4.479E-02	6.464E-02	8.733E-03	0.096
I-133	5.320E-03		7.989E-03	Half-Life	too short	
CS-134	1.145E-01	+	6.454E-02	8.145E-02	7.300E-03	1.406
CS-135	2.260E-01		1.869E-01	2.814E-01	3.376E-02	0.803
I-135	7.009E+09		7.367E+10	Half-Life	too short	
CS-136	3.861E-02		9.991E-02	1.674E-01	1.548E-02	0.231
BA-140	4.343E-02		2.654E-01	4.328E-01	1.468E-01	0.100
LA-140	-4.214E-02		9.208E-02	1.211E-01	1.136E-02	-0.348
CE-141	2.919E-01		9.018E-02	1.318E-01	1.362E-02	2.215
CE-143	1.720E-03		2.556E-04	Half-Life	too short	
CE-144	-7.479E-02		2.342E-01	3.765E-01	6.076E-02	-0.199
PM-144	-2.164E-03		3.136E-02	5.233E-02	4.403E-03	-0.041
PR-144	3.626E-01		2.325E+00	3.918E+00	3.295E-01	0.093
PM-146	2.694E-02		3.968E-02	6.653E-02	7.035E-03	0.405
ND-147	-1.358E-01		5.896E-01	9.456E-01	1.414E-01	-0.144
PM-149	-1.095E+02		1.389E+02	2.242E+02	3.771E+01	-0.489
EU-152	2.119E-02		1.156E-01	1.581E-01	1.609E-02	0.134
GD-153	8.687E-01	+	1.973E-01	2.124E-01	2.344E-02	4.091
EU-154	5.721E-02		1.128E-01	1.883E-01	2.208E-02	0.304
EU-155	6.570E-02		1.407E-01	2.145E-01	2.260E-02	0.306
TB-160	1.247E-01		1.277E-01	2.216E-01	2.051E-02	0.563
HO-166M	4.520E-03		5.383E-02	9.035E-02	7.670E-03	0.050
TA-182	-8.557E-02		1.807E-01	2.842E-01	2.439E-02	-0.301
IR-192	6.203E-03		3.512E-02	5.864E-02	6.046E-03	0.106
HG-203	1.922E-02		4.033E-02	6.810E-02	7.483E-03	0.282
BI-207	-2.298E-02		5.014E-02	7.524E-02	6.638E-03	-0.305
PB-210	-1.075E+01		1.196E+01	1.896E+01	2.334E+00	-0.567
PB-211	-8.687E-01		8.213E-01	1.106E+00	5.349E-01	-0.786
BI-212	2.026E+00	+	6.974E-01	1.017E+00	1.263E-01	1.992
RN-219	4.406E-01		3.919E-01	6.623E-01	9.788E-02	0.665
RA-223	-1.000E+00		6.826E-01	1.040E+00	1.886E-01	-0.962
AC-227	6.301E-02		2.981E-01	4.377E-01	6.058E-02	0.144
TH-227	6.301E-02		2.981E-01	4.377E-01	6.659E-02	0.144
TH-229	1.394E-01		5.649E-01	9.093E-01	9.894E-02	0.153
PA-231	-4.746E-01		1.444E+00	2.381E+00	3.798E-01	-0.199
TH-231	-1.000E+00		6.826E-01	1.040E+00	1.886E-01	-0.962
PA-233	-2.750E-02		6.468E-02	1.059E-01	1.121E-02	-0.260
PA-234	1.770E-01		2.769E-01	4.691E-01	8.939E-02	0.377
NP-239	1.515E-01		5.335E-01	7.655E-01	7.726E-02	0.198
AM-241	6.501E-01		3.591E-01	5.336E-01	6.264E-02	1.218
CM-247	1.565E-02		3.594E-02	5.999E-02	5.073E-03	0.261
CF-249	3.376E-02		3.847E-02	6.519E-02	5.557E-03	0.518
CF-251	7.651E-02		1.394E-01	2.264E-01	2.437E-02	0.338

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]G247911010             *
* Acquisition date   : 6-MAR-2010 20:38:06 Detector SN#      :                 *
* Detector ID        : GAM15                      Sensitivity  : 5.000          *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time  : 0 04:00:00.00             Abundance limit : 75.000       *
* Elapsed real time  : 0 04:00:03.71             Half life ratio : 8.000       *
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID             *
* Sample ID          : G247911010                 Analyst initials: MXR1        *
* Batch Number       : 957714                     Sample Quantity : 1.3489E+02 GRAM *
* Recovery           : 1.00000                     Carrier Weight  : 0.00000     *
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME  : 3-FEB-2010 11:04:32 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	2.824E+01	3.015E+00	2.358E-01	1.538E+00
MN-54	3.120E-02	2.964E-02	2.890E-02	1.512E-02
NB-95	3.111E-01	7.878E-02	3.058E-02	4.020E-02
CD-109	3.297E+00	1.045E+00	7.959E-01	5.332E-01
SN-126	3.217E-01	1.020E-01	1.062E-01	5.202E-02
BA-137M	5.252E-02	3.941E-02	2.849E-02	2.011E-02
CS-137	5.548E-02	4.163E-02	3.010E-02	2.124E-02
CE-139	5.008E-02	5.028E-02	2.764E-02	2.566E-02
TL-208	5.897E-01	8.660E-02	2.829E-02	4.419E-02
BI-211	4.577E+00	5.820E-01	1.692E-01	2.970E-01
PB-212	2.019E+00	2.583E-01	4.613E-02	1.318E-01
BI-214	1.447E+00	1.973E-01	5.420E-02	1.007E-01
PB-214	1.661E+00	2.295E-01	5.815E-02	1.171E-01
RA-224	5.793E+00	1.424E+00	4.942E-01	7.266E-01
RA-226	1.447E+00	1.973E-01	5.420E-02	1.007E-01
AC-228	2.282E+00	3.659E-01	9.317E-02	1.867E-01
RA-228	2.282E+00	3.659E-01	9.317E-02	1.867E-01
TH-228	2.019E+00	2.583E-01	4.613E-02	1.318E-01
TH-232	2.282E+00	3.659E-01	9.317E-02	1.867E-01
PA-234M	8.385E+01	1.231E+01	3.093E+00	6.282E+00
TH-234	6.403E+01	1.333E+01	2.036E+00	6.801E+00
U-235	9.283E-01	3.144E-01	1.843E-01	1.604E-01
NP-237	9.599E-01	3.626E-01	3.060E-01	1.850E-01
U-238	6.403E+01	1.333E+01	2.036E+00	6.801E+00
ANH-511	1.297E-01	5.830E-02	2.265E-02	2.975E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	4.245E-02	2.968E-01	2.543E-01	1.514E-01 NOT IDENT.
NA-22	1.296E-02	3.943E-02	3.339E-02	2.012E-02 NOT IDENT.

NA-24	-6.930E+05	2.698E+06	0.000E+00	1.376E+06	SHORT HLIF
SC-46	4.184E-02	3.378E-02	3.065E-02	1.724E-02	FAIL ABUN
V-48	-1.304E-02	6.481E-02	5.417E-02	3.307E-02	NOT IDENT.
CR-51	-2.416E-01	3.753E-01	3.204E-01	1.915E-01	NOT IDENT.
CO-56	-2.508E-02	3.401E-02	2.784E-02	1.735E-02	FAIL ABUN
CO-57	-1.521E-02	2.871E-02	2.466E-02	1.465E-02	NOT IDENT.
CO-58	-2.240E-02	3.450E-02	2.854E-02	1.760E-02	NOT IDENT.
FE-59	-1.023E-01	8.355E-02	6.423E-02	4.263E-02	NOT IDENT.
CO-60	2.688E-02	3.309E-02	2.906E-02	1.688E-02	NOT IDENT.
ZN-65	-2.814E-02	8.851E-02	6.165E-02	4.516E-02	NOT IDENT.
SE-75	4.529E-02	7.264E-02	3.930E-02	3.706E-02	NOT IDENT.
SR-85	1.257E-01	4.034E-02	3.369E-02	2.058E-02	NOT IDENT.
Y-88	-1.331E-02	2.765E-02	2.159E-02	1.411E-02	NOT IDENT.
Y-91	6.233E+00	1.899E+01	1.612E+01	9.691E+00	NOT IDENT.
NB-94	9.008E-03	2.948E-02	2.592E-02	1.504E-02	NOT IDENT.
NB-95M	6.095E-01	1.616E-01	1.264E-01	8.243E-02	NOT IDENT.
ZR-95	6.371E-02	6.579E-02	5.913E-02	3.357E-02	NOT IDENT.
MO-99	1.207E+01	1.865E+01	1.442E+01	9.516E+00	NOT IDENT.
TC-99M	-4.005E+17	1.658E+18	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.036E-02	3.881E-02	3.165E-02	1.980E-02	FAIL ABUN
RH-106	9.030E-03	2.861E-01	2.396E-01	1.460E-01	NOT IDENT.
RU-106	9.030E-03	2.861E-01	2.396E-01	1.459E-01	NOT IDENT.
AG-108M	-2.641E-03	2.709E-02	2.312E-02	1.382E-02	NOT IDENT.
AG-110M	8.376E-03	3.539E-02	2.704E-02	1.806E-02	NOT IDENT.
SN-113	-1.402E-02	4.284E-02	3.651E-02	2.186E-02	NOT IDENT.
CD-115	1.836E+00	1.601E+01	1.361E+01	8.167E+00	NOT IDENT.
SN-117M	-4.819E-02	7.451E-02	5.458E-02	3.802E-02	NOT IDENT.
TE-123M	9.153E-03	3.560E-02	2.689E-02	1.817E-02	NOT IDENT.
SB-124	-1.482E-02	6.489E-02	5.309E-02	3.311E-02	NOT IDENT.
SB-125	-2.416E-02	8.355E-02	7.082E-02	4.263E-02	FAIL ABUN
TE-125M	-3.220E+00	1.441E+01	1.096E+01	7.352E+00	NOT IDENT.
I-126	1.800E-01	2.519E-01	1.973E-01	1.285E-01	NOT IDENT.
SB-126	1.545E-02	1.553E-01	1.214E-01	7.922E-02	NOT IDENT.
SB-127	1.201E+00	1.417E+00	1.275E+00	7.232E-01	NOT IDENT.
I-131	1.425E-02	1.222E-01	1.064E-01	6.236E-02	NOT IDENT.
TE-132	1.235E+00	9.967E-01	8.926E-01	5.085E-01	FAIL ABUN
BA-133	6.179E-03	4.389E-02	3.326E-02	2.239E-02	NOT IDENT.
I-133	5.320E+03	1.566E+04	0.000E+00	7.989E+03	SHORT HLIF
CS-134	1.145E-01	6.325E-02	4.130E-02	3.227E-02	FAIL ABUN
CS-135	2.260E-01	1.832E-01	1.455E-01	9.347E-02	NOT IDENT.
I-135	7.009E+15	1.444E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.861E-02	9.791E-02	8.444E-02	4.995E-02	NOT IDENT.
BA-140	4.343E-02	2.601E-01	2.211E-01	1.327E-01	NOT IDENT.
LA-140	-4.214E-02	9.024E-02	6.063E-02	4.604E-02	NOT IDENT.
CE-141	2.919E-01	8.838E-02	6.891E-02	4.509E-02	NOT IDENT.
CE-143	1.720E+03	5.009E+02	0.000E+00	2.556E+02	SHORT HLIF
CE-144	-7.479E-02	2.296E-01	1.972E-01	1.171E-01	NOT IDENT.
PM-144	-2.164E-03	3.074E-02	2.660E-02	1.568E-02	NOT IDENT.
PR-144	3.626E-01	2.278E+00	1.992E+00	1.162E+00	NOT IDENT.
PM-146	2.694E-02	3.889E-02	3.409E-02	1.984E-02	NOT IDENT.
ND-147	-1.358E-01	5.778E-01	4.831E-01	2.948E-01	NOT IDENT.
PM-149	-1.095E+02	1.362E+02	1.159E+02	6.947E+01	NOT IDENT.
EU-152	2.119E-02	1.133E-01	8.141E-02	5.779E-02	FAIL ABUN
GD-153	8.687E-01	1.933E-01	1.118E-01	9.864E-02	FAIL ABUN
EU-154	5.721E-02	1.105E-01	9.463E-02	5.639E-02	NOT IDENT.
EU-155	6.570E-02	1.379E-01	1.128E-01	7.036E-02	FAIL ABUN
TB-160	1.247E-01	1.251E-01	1.122E-01	6.384E-02	FAIL ABUN
HO-166M	4.520E-03	5.275E-02	4.591E-02	2.691E-02	FAIL ABUN
TA-182	-8.557E-02	1.771E-01	1.430E-01	9.033E-02	FAIL ABUN
IR-192	6.203E-03	3.441E-02	3.024E-02	1.756E-02	FAIL ABUN
HG-203	1.922E-02	3.952E-02	3.520E-02	2.016E-02	NOT IDENT.
BI-207	-2.298E-02	4.913E-02	3.795E-02	2.507E-02	FAIL ABUN
PB-210	-1.075E+01	1.172E+01	1.011E+01	5.982E+00	NOT IDENT.
PB-211	-8.687E-01	8.048E-01	5.679E-01	4.106E-01	NOT IDENT.
BI-212	2.026E+00	6.835E-01	5.165E-01	3.487E-01	FAIL ABUN
RN-219	4.406E-01	3.841E-01	3.401E-01	1.960E-01	FAIL ABUN
RA-223	-1.000E+00	6.689E-01	5.359E-01	3.413E-01	FAIL ABUN
AC-227	6.301E-02	2.921E-01	2.266E-01	1.490E-01	FAIL ABUN
TH-227	6.301E-02	2.922E-01	2.266E-01	1.491E-01	FAIL ABUN
TH-229	1.394E-01	5.536E-01	4.731E-01	2.825E-01	FAIL ABUN
PA-231	-4.746E-01	1.415E+00	1.231E+00	7.218E-01	FAIL ABUN
TH-231	-1.000E+00	6.689E-01	5.359E-01	3.413E-01	FAIL ABUN
PA-233	-2.750E-02	6.339E-02	5.465E-02	3.234E-02	FAIL ABUN
PA-234	1.770E-01	2.714E-01	2.371E-01	1.385E-01	FAIL ABUN
NP-239	1.515E-01	5.228E-01	4.018E-01	2.667E-01	FAIL ABUN
AM-241	6.501E-01	3.519E-01	2.833E-01	1.795E-01	NOT IDENT.
CM-247	1.565E-02	3.522E-02	3.081E-02	1.797E-02	NOT IDENT.
CF-249	3.376E-02	3.770E-02	3.350E-02	1.923E-02	NOT IDENT.

CF-251	7.651E-02	1.366E-01	1.180E-01	6.970E-02 NOT IDENT.
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 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON ,SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	1130.0715
49.72	1175.4530
57.36	0.0000
59.54	1417.5994
63.29	1593.3412
63.29	1593.3412
64.28	1651.3947
67.75	1881.3567
69.67	1843.4064
70.83	1821.4501
72.81	1929.2930
72.87	1929.4454
72.87	1929.4454
74.82	2090.7783
74.82	2090.7783
74.82	2090.7783
74.97	2091.1963
77.11	2097.0457
77.11	2097.0457
77.11	2097.0457
79.69	2201.6038
79.80	2141.9717
80.12	2142.8386
80.19	2143.0269
80.57	2204.0588
81.00	2205.2527
81.07	2205.4460
81.07	2205.4460
83.79	2526.1929
83.79	2526.1929
85.43	2366.2747
86.48	2369.2893
86.55	2369.4958
86.79	2370.1687
86.94	2370.6084
87.57	2642.7275
88.03	1435.5310
88.47	1436.2853
89.96	1438.8246
91.11	1440.7726
92.59	1443.2577
92.59	1443.2577
93.35	1444.5273
94.67	1446.7249
94.87	1447.0559
94.87	1447.0559
95.86	1448.6891
97.43	1451.2611
98.44	1452.9052
99.53	1209.2240
100.11	1223.0985
103.18	1452.2927
103.37	1298.1334
105.31	1348.8801
106.12	1340.4338
109.28	1562.6472
111.00	1386.5417
111.76	1286.9196
116.30	1190.8826
117.23	1185.3312
121.12	1173.6008
121.78	1173.3159
122.06	1179.9227
123.07	1161.1718
131.20	1153.3267
133.52	1240.4930
136.00	1165.8848

136.47	1146.2229
140.51	1111.2174
140.51	0.0000
143.76	1080.0419
144.24	1085.8407
144.24	1085.8407
145.44	1052.7521
152.43	1037.6135
153.25	1058.7994
154.21	1120.0292
154.21	1120.0292
156.02	1034.2909
158.56	1092.3186
159.00	1007.8575
162.66	1014.3792
163.33	980.1772
165.86	976.9631
176.60	903.4213
177.52	866.7130
181.07	895.3004
184.41	927.6132
185.72	923.0027
193.51	841.6277
197.04	843.7935
205.31	891.6273
210.85	783.4248
215.65	772.9661
222.11	757.6973
227.38	708.4530
228.16	701.5300
228.18	701.5394
235.69	677.5128
235.96	677.6302
235.96	677.6302
238.63	609.0773
238.63	609.0773
240.99	609.9933
242.00	610.3864
244.70	595.4669
252.40	589.5166
252.80	598.4745
256.23	616.7384
256.23	616.7384
260.90	585.9338
264.66	512.6843
268.22	597.8438
269.46	586.1287
269.46	586.1287
271.23	598.9063
273.65	699.7174
276.40	577.2532
277.37	574.0542
277.60	577.6586
278.00	580.3959
279.20	581.9522
279.54	579.2445
280.46	605.8962
283.69	541.9754
284.31	542.1719
285.41	544.3959
285.90	558.7072
287.50	512.4546
293.27	0.0000
295.22	515.4636
295.96	446.0754
298.57	446.7238
299.98	491.4577
299.98	491.4577
300.09	491.4893
300.09	491.4893
300.13	491.5019
301.36	458.5123
302.85	439.8344
304.50	462.4788
304.50	462.4788
304.85	460.9780
308.46	470.1627
311.90	489.2238

316.51	460.6758
319.41	495.9886
320.08	485.5817
323.87	550.1381
323.87	550.1381
328.76	469.4361
333.37	461.5148
334.37	440.7646
334.37	440.7646
338.28	443.5834
338.28	443.5834
338.32	443.5946
338.32	443.5946
338.32	443.5946
340.48	435.6583
340.55	435.6720
344.28	414.7468
351.06	426.5709
351.93	381.1450
356.01	362.3263
364.49	366.7757
366.42	367.1172
383.85	368.1740
388.16	334.1092
388.63	337.1627
391.69	372.4980
400.66	332.0243
401.81	315.1846
402.40	342.2922
404.85	406.7979
410.95	316.4804
414.70	365.3130
423.72	310.1817
427.09	312.6588
427.87	311.7522
433.94	298.3605
453.88	273.2513
463.37	257.8847
468.07	243.6234
473.00	265.0846
476.78	272.7205
477.60	263.5073
487.02	238.5688
492.35	245.3081
497.08	294.7041
511.00	274.3084
514.00	214.8759
527.90	251.8311
529.87	0.0000
531.02	264.7878
537.26	234.7368
546.56	0.0000
563.25	244.4362
569.33	242.8279
569.50	236.4258
569.70	241.7913
583.19	254.7634
600.60	258.3453
602.73	202.0156
604.72	234.6411
609.32	250.5527
609.32	250.5527
610.33	250.6429
614.28	193.7546
618.01	221.6478
621.93	211.3160
621.93	211.3160
633.25	196.8047
635.95	206.8249
636.99	218.9404
645.85	216.2816
657.76	206.2501
661.66	237.2454
661.66	237.2454
664.57	0.0000
666.33	224.1779
666.50	224.1928
677.62	183.9187

685.70	170.4860
695.00	194.2069
696.49	222.1856
696.51	212.8891
697.00	232.4473
702.65	207.7014
706.68	215.4205
711.68	195.1976
720.70	207.9082
721.93	0.0000
722.78	208.8379
722.91	208.8470
723.31	224.9414
724.19	236.2500
727.33	191.4285
733.00	206.2545
735.93	205.7162
739.50	200.1939
747.24	179.6123
752.31	204.1875
753.82	175.9038
756.73	173.2156
763.94	185.3653
765.81	185.4647
766.42	200.1410
777.92	222.8361
778.90	198.1315
783.70	163.1096
785.37	191.8153
795.86	146.0311
801.95	203.8051
810.29	169.1322
810.76	172.9980
815.77	146.2883
818.51	167.5890
832.01	150.8044
834.85	189.6158
836.80	0.0000
846.77	162.0802
856.80	158.4835
860.56	140.2705
871.09	134.7993
873.19	132.9176
875.33	0.0000
879.36	132.1545
880.51	121.4217
883.24	163.6432
884.68	172.5267
889.28	115.8105
898.04	116.0698
911.20	120.4090
911.20	120.4090
911.20	120.4090
926.50	127.3839
937.49	120.9219
944.13	145.2871
946.00	135.3968
949.00	127.5286
962.29	150.7896
964.08	128.0000
966.15	128.0625
968.97	121.8579
968.97	121.8579
968.97	121.8579
983.53	133.6251
996.26	146.8438
1001.03	118.0402
1004.73	93.4754
1037.84	116.0039
1038.76	0.0000
1048.07	117.2976
1050.41	118.3836
1050.41	118.3836
1063.66	133.0680
1085.87	125.5047
1099.45	155.8048
1112.07	145.4505
1115.54	138.4587

1120.29	137.8598
1120.29	137.8598
1120.55	137.8706
1121.30	147.5195
1131.51	0.0000
1173.23	136.2842
1177.93	115.4338
1189.05	131.4799
1204.77	136.1282
1221.41	164.1262
1231.02	165.5088
1235.36	162.0140
1238.28	134.7857
1260.41	0.0000
1271.85	94.1302
1274.44	105.9489
1274.54	111.3040
1291.59	91.2740
1298.22	0.0000
1312.11	101.3438
1332.49	66.0238
1365.19	68.1447
1368.63	0.0000
1384.29	80.5650
1408.01	65.8643
1457.56	0.0000
1460.82	56.0471
1489.16	40.0986
1505.03	67.9740
1596.21	54.4531
1620.50	46.8616
1678.03	0.0000
1690.97	35.5492
1764.49	29.9686
1764.49	29.9686
1770.23	22.7460
1771.35	26.2500
1791.20	0.0000
1836.06	32.3158

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911010

Total Uranium Activity	1.9091E+02	ug/g
Total Uranium Counting Unc.	3.9657E+01	ug/g
Total Uranium Tpu	2.0233E-05	ug/g
Total Uranium Mda	6.0567E+00	ug/g

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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                          *
*                               GROSS GAMMA REPORT                            *
*
*****
*
*   BATCH ID      : 957714                      SAMPLE ID   : G247911010          *
*   ANALYST       : MXR1                        DETECTOR    : GAM15           *
*   SAMPLE DATE   : 18-FEB-2010 12:00:00.00    COUNT TIME   : 0 04:00:00.00      *
*   ANALYSIS DATE : 6-MAR-2010 20:38:06.55    SAMPLE ALQT : 134.890 GRAM        *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.809E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 1.847E+00
GROSS GAMMA MDA (pCi/GRAM )     : 6.397E+00
GROSS GAMMA DLC (pCi/GRAM )     : 3.157E+00

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VAX/VMS Nuclide Identification Report Generated 8-MAR-2010 14:18:29.48

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911011.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 12:17:57.
Sample ID          : G247911011 Sample quantity : 1.21870E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.37 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 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	63.37*	335	390	1.28	125.67	121	8	4.65E-02	11.9	
2	3	74.82*	360	513	1.46	148.56	141	23	4.99E-02	13.1	2.26E+00
3	3	77.22*	533	523	1.52	153.37	141	23	7.41E-02	9.3	
4	2	87.26	296	569	1.63	173.44	164	28	4.11E-02	16.4	5.76E+00
5	2	92.73*	1425	470	1.57	184.38	164	28	1.98E-01	4.0	
6	0	185.97*	484	375	1.26	370.85	365	12	6.73E-02	9.5	
7	0	209.47	123	257	1.22	417.85	415	9	1.70E-02	25.2	
8	5	238.77*	1056	260	1.38	476.45	471	17	1.47E-01	4.2	7.30E-01
9	5	241.60*	255	306	1.85	482.10	471	17	3.54E-02	17.9	
10	0	295.24*	290	267	1.27	589.37	583	12	4.02E-02	13.0	
11	0	338.62*	298	175	1.46	676.13	671	13	4.15E-02	11.0	
12	0	351.98*	457	203	1.43	702.85	697	12	6.35E-02	7.9	
13	0	510.97*	133	174	1.95	1020.84	1012	20	1.85E-02	28.3	
14	0	583.37*	332	120	1.44	1165.66	1159	15	4.61E-02	9.3	
15	0	609.43*	429	99	1.60	1217.78	1211	16	5.96E-02	7.2	
16	0	661.59	152	134	1.34	1322.10	1317	13	2.11E-02	17.6	
17	0	727.79*	72	92	1.52	1454.51	1447	17	9.99E-03	33.4	
18	0	911.24*	241	36	1.63	1821.46	1816	11	3.34E-02	8.3	
19	0	969.66	96	126	1.66	1938.33	1929	14	1.34E-02	26.7	
20	0	1001.09*	89	47	1.47	2001.20	1995	11	1.23E-02	19.0	
21	0	1120.58*	74	68	1.55	2240.23	2233	16	1.03E-02	27.8	
22	0	1377.87	27	16	1.51	2754.94	2749	13	3.68E-03	36.9	
23	0	1460.82	980	36	1.97	2920.89	2910	20	1.36E-01	3.5	
24	0	1764.50*	85	0	2.84	3528.49	3522	14	1.17E-02	11.8	

Flag: "*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911011.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 12:17:57
Sample ID         : G247911011 Sample quantity : 121.87 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA15 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.37 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	+	1460.82	*	2.931E+01	3.543E+00	6.501E-01	6.388E-02	45.082
CD-109	+	88.03	*	5.694E+00	1.991E+00	1.866E+00	2.316E-01	3.052
SN-126	+	64.28		5.873E+00	1.711E+00	1.589E+00	2.690E-01	3.696
	+	86.94		2.304E+00	1.232E+00	7.689E-01	3.251E-01	2.996
	+	87.57	*	5.542E-01	1.937E-01	1.830E-01	2.264E-02	3.029
BA-137M	+	661.66	*	2.635E-01	9.531E-02	7.601E-02	6.249E-03	3.467
CS-137	+	661.66	*	2.784E-01	1.007E-01	8.030E-02	6.616E-03	3.467
TL-208		277.37		3.361E-01	5.339E-01	9.124E-01	1.290E-01	0.368
	+	583.19	*	5.489E-01	1.135E-01	7.481E-02	6.842E-03	7.337
		860.56		7.426E-01	4.087E-01	7.426E-01	7.260E-02	1.000
BI-211		72.87		1.476E+01	6.706E+00	1.022E+01	1.170E+00	1.445
	+	351.06	*	3.473E+00	6.497E-01	4.607E-01	4.588E-02	7.538
PB-212	+	74.82		3.338E+00	1.011E+00	9.820E-01	1.479E-01	3.399
	+	77.11		2.747E+00	6.025E-01	5.477E-01	6.349E-02	5.015
	+	238.63	*	1.814E+00	2.652E-01	1.322E-01	1.579E-02	13.721
		300.09		1.407E+00	1.325E+00	2.005E+00	2.441E-01	0.702
BI-214	+	609.32	*	1.373E+00	2.404E-01	1.469E-01	1.464E-02	9.347
	+	1120.29		1.253E+00	7.088E-01	5.463E-01	5.917E-02	2.293
	+	1764.49		1.990E+00	5.012E-01	4.375E-01	3.836E-02	4.547
PB-214	+	74.82		5.916E+00	1.761E+00	1.741E+00	2.432E-01	3.399
	+	77.11		4.843E+00	1.135E+00	9.656E-01	1.374E-01	5.015
	+	242.00		2.655E+00	1.006E+00	8.036E-01	1.001E-01	3.304
	+	295.22		1.365E+00	3.933E-01	3.383E-01	4.216E-02	4.036
	+	351.93	*	1.260E+00	2.458E-01	1.627E-01	1.849E-02	7.748
RA-224	+	240.99	*	4.695E+00	1.757E+00	1.416E+00	1.562E-01	3.315
RA-226	+	609.32	*	1.373E+00	2.404E-01	1.469E-01	1.464E-02	9.347
	+	1120.29		1.253E+00	7.088E-01	5.463E-01	5.917E-02	2.293
	+	1764.49		1.990E+00	5.012E-01	4.375E-01	3.836E-02	4.547
AC-228	+	338.32		2.529E+00	1.200E+00	5.459E-01	2.292E-01	4.633
	+	911.20	*	1.923E+00	3.946E-01	2.787E-01	3.376E-02	6.900
	+	968.97		1.334E+00	7.844E-01	4.040E-01	9.926E-02	3.302
RA-228	+	338.32		2.529E+00	1.200E+00	5.459E-01	2.292E-01	4.633
	+	911.20	*	1.923E+00	3.946E-01	2.787E-01	3.376E-02	6.900
	+	968.97		1.334E+00	7.844E-01	4.040E-01	9.926E-02	3.302

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		3.338E+00	9.586E-01	9.820E-01	1.135E-01	3.399
	+	77.11		2.747E+00	6.025E-01	5.477E-01	6.349E-02	5.015
	+	238.63	*	1.814E+00	2.652E-01	1.322E-01	1.579E-02	13.721
		300.09		1.407E+00	1.573E+00	2.005E+00	1.233E+00	0.702
TH-232	+	338.32		2.529E+00	6.115E-01	5.459E-01	5.382E-02	4.633
	+	911.20	*	1.923E+00	3.946E-01	2.787E-01	3.376E-02	6.900
	+	968.97		1.334E+00	7.844E-01	4.040E-01	9.926E-02	3.302
TH-234	+	63.29	*	1.524E+01	4.710E+00	4.274E+00	8.475E-01	3.565
	+	92.59		2.151E+01	5.322E+00	1.488E+00	3.486E-01	14.454
NP-237	+	86.48	*	1.654E+00	6.741E-01	5.563E-01	1.351E-01	2.972
		95.86		4.084E-01	1.726E+00	2.495E+00	6.247E-01	0.164
U-238	+	63.29	*	1.524E+01	4.710E+00	4.274E+00	8.475E-01	3.565
	+	92.59		2.151E+01	3.033E+00	1.488E+00	1.730E-01	14.454
ANH-511	+	511.00	*	1.696E-01	9.698E-02	6.498E-02	5.615E-03	2.611

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-2.631E-01	4.149E-01	6.431E-01	5.977E-02	-0.409
NA-22		1274.54	*	2.893E-02	5.522E-02	9.420E-02	8.557E-03	0.307
NA-24		1368.63	*	1.281E+01	5.522E-02	Half-Life too short		
SC-46		889.28	*	-3.055E-03	5.194E-02	8.534E-02	7.930E-03	-0.036
	+	1120.55		2.170E-01	1.219E-01	1.550E-01	1.318E-02	1.400
V-48		944.13		1.002E-01	1.215E+00	2.016E+00	1.864E-01	0.050
		983.53	*	3.723E-02	9.630E-02	1.641E-01	1.500E-02	0.227
		1312.11		3.010E-03	1.185E-01	1.917E-01	1.807E-02	0.016
CR-51		320.08	*	-7.189E-02	5.461E-01	9.003E-01	9.554E-02	-0.080
MN-54		834.85	*	-9.824E-03	4.682E-02	7.595E-02	6.893E-03	-0.129
CO-56		846.77	*	-2.074E-02	4.703E-02	7.454E-02	6.802E-03	-0.278
		1037.84		-4.433E-01	3.901E-01	5.563E-01	5.216E-02	-0.797
		1238.28		8.217E-02	1.277E-01	2.169E-01	1.949E-02	0.379
		1771.35		6.169E-02	2.814E-01	4.229E-01	3.694E-02	0.146
CO-57		122.06	*	4.817E-03	3.707E-02	6.052E-02	6.097E-03	0.080
		136.47		4.341E-02	2.967E-01	4.831E-01	5.133E-02	0.090
CO-58		810.76	*	-4.977E-02	5.162E-02	7.822E-02	7.032E-03	-0.636
FE-59		1099.45	*	3.739E-02	1.198E-01	2.012E-01	1.878E-02	0.186
		1291.59		-1.151E-01	1.749E-01	2.608E-01	2.694E-02	-0.441
CO-60		1173.23		3.251E-02	5.998E-02	1.021E-01	8.312E-03	0.318
		1332.49	*	1.348E-02	4.281E-02	7.213E-02	6.934E-03	0.187
ZN-65		1115.54	*	-2.115E-02	1.370E-01	1.872E-01	1.599E-02	-0.113
SE-75		121.12		-5.597E-02	1.981E-01	3.185E-01	3.900E-02	-0.176
		136.00		-2.024E-02	5.805E-02	9.269E-02	9.383E-03	-0.218
		264.66	*	-3.441E-02	6.387E-02	1.041E-01	1.141E-02	-0.331
		279.54		1.379E-01	1.559E-01	2.692E-01	2.981E-02	0.512
		400.66		-1.778E-01	3.534E-01	5.626E-01	6.164E-02	-0.316
SR-85		514.00	*	1.323E-01	6.359E-02	1.031E-01	8.911E-03	1.282
Y-88		898.04		2.622E-02	5.730E-02	9.807E-02	9.184E-03	0.267
		1836.06	*	-9.785E-04	4.405E-02	7.193E-02	6.058E-03	-0.014

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	1204.77	*		-1.411E+01	2.925E+01	4.523E+01	3.813E+00	-0.312
NB-94	702.65	*		-1.570E-02	4.114E-02	6.681E-02	5.640E-03	-0.235
	871.09			3.931E-03	4.469E-02	7.446E-02	6.868E-03	0.053
NB-95	765.81	*		1.465E-01	6.555E-02	1.211E-01	1.061E-02	1.209
NB-95M	235.69	*		5.659E-01	2.250E-01	3.540E-01	4.265E-02	1.599
ZR-95	724.19			8.876E-02	1.369E-01	2.102E-01	1.952E-02	0.422
	756.73	*		8.119E-02	9.794E-02	1.726E-01	1.659E-02	0.470
MO-99	140.51			-1.159E+02	7.586E+01	1.060E+02	2.579E+01	-1.093
	181.07			-2.487E+01	6.121E+01	8.333E+01	1.656E+01	-0.298
	366.42			-2.167E+00	2.756E+02	4.548E+02	4.167E+01	-0.005
	739.50	*		-1.257E+01	3.199E+01	5.159E+01	8.133E+00	-0.244
	777.92			1.337E+01	9.455E+01	1.591E+02	1.403E+01	0.084
TC-99M	140.51	*		-2.867E+14	9.455E+01	Half-Life	too short	
RU-103	497.08	*		-6.012E-04	5.301E-02	8.619E-02	1.205E-02	-0.007
	610.33	+		1.492E+01	3.240E+00	3.649E+00	5.931E-01	4.089
RH-106	621.93	*		-3.867E-01	4.108E-01	6.023E-01	7.900E-02	-0.642
	1050.41			4.131E+00	3.256E+00	5.921E+00	5.261E-01	0.698
RU-106	621.93	*		-3.867E-01	4.089E-01	6.023E-01	5.062E-02	-0.642
	1050.41			4.131E+00	3.256E+00	5.921E+00	5.261E-01	0.698
AG-108M	433.94	*		1.171E-02	4.032E-02	6.721E-02	5.940E-03	0.174
	614.28			2.623E-02	4.839E-02	7.134E-02	6.222E-03	0.368
	722.91			-2.016E-02	5.359E-02	7.385E-02	6.518E-03	-0.273
AG-110M	657.76	*		5.080E-03	4.994E-02	7.316E-02	6.226E-03	0.069
	677.62			-1.927E-01	4.022E-01	6.496E-01	5.564E-02	-0.297
	706.68			-1.429E-01	2.642E-01	4.232E-01	3.689E-02	-0.338
	763.94			-6.597E-02	2.393E-01	3.896E-01	3.501E-02	-0.169
	884.68			4.423E-02	6.621E-02	1.153E-01	1.099E-02	0.384
	937.49			-1.661E-01	1.406E-01	2.031E-01	1.940E-02	-0.818
	1384.29			2.160E-01	2.077E-01	3.533E-01	3.478E-02	0.611
	1505.03			4.328E-04	3.453E-01	5.740E-01	5.486E-02	0.001
SN-113	391.69	*		-6.310E-02	6.376E-02	9.846E-02	8.551E-03	-0.641
CD-115	260.90			-1.220E-04	6.376E-02	Half-Life	too short	
	492.35			1.674E-05	6.376E-02	Half-Life	too short	
	527.90	*		-1.068E-05	6.376E-02	Half-Life	too short	
SN-117M	156.02			1.596E+00	3.848E+00	6.297E+00	6.563E-01	0.253
	158.56	*		-1.431E-02	9.418E-02	1.508E-01	1.581E-02	-0.095
TE-123M	159.00	*		-1.763E-02	4.314E-02	6.833E-02	7.200E-03	-0.258
SB-124	602.73			2.880E-03	6.074E-02	8.477E-02	7.184E-03	0.034
	645.85			-1.881E-01	7.110E-01	1.117E+00	9.846E-02	-0.168
	722.78			-1.995E-01	5.572E-01	7.696E-01	6.732E-02	-0.259
	1690.97	*		-3.426E-04	8.468E-02	1.395E-01	1.314E-02	-0.002
SB-125	427.87	*		-3.417E-02	1.235E-01	1.988E-01	1.730E-02	-0.172
	463.37			4.971E-01	3.830E-01	6.690E-01	6.198E-02	0.743
	600.60			-4.955E-02	2.526E-01	3.896E-01	3.556E-02	-0.127
	635.95			-8.859E-02	3.325E-01	5.212E-01	4.725E-02	-0.170
TE-125M	109.28	*		-2.255E+01	1.608E+01	2.458E+01	2.921E+00	-0.917
I-126	388.63			-4.557E-02	2.786E-01	4.374E-01	3.722E-02	-0.104
	666.33	*		-2.505E-01	4.108E-01	5.580E-01	4.602E-02	-0.449
	753.82			3.052E+00	2.751E+00	4.936E+00	4.295E-01	0.618

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Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	414.70		-1.212E-01	1.206E-01	1.847E-01	1.570E-02	-0.656
	666.50		-9.246E-02	1.417E-01	1.915E-01	1.580E-02	-0.483
	695.00		1.073E-01	1.118E-01	1.995E-01	1.676E-02	0.538
	697.00		-1.132E-01	4.003E-01	6.561E-01	5.519E-02	-0.172
	720.70	*	-2.929E-02	2.477E-01	3.520E-01	3.005E-02	-0.083
SB-127	856.80		-1.295E+00	7.305E-01	1.001E+00	9.178E-02	-1.294
	252.40		-2.897E+00	1.028E+01	1.690E+01	7.154E+00	-0.171
	473.00		1.919E+00	3.490E+00	5.897E+00	8.002E-01	0.325
	685.70	*	5.951E-01	2.700E+00	4.597E+00	5.550E-01	0.129
I-131	783.70		3.694E+00	7.984E+00	1.370E+01	1.826E+00	0.270
	80.19		8.164E+00	1.106E+01	1.639E+01	1.936E+00	0.498
	284.31		-1.514E+00	2.656E+00	4.302E+00	4.790E-01	-0.352
TE-132	364.49	*	9.833E-02	2.030E-01	3.438E-01	3.325E-02	0.286
	636.99		-8.401E-01	2.541E+00	3.963E+00	3.516E-01	-0.212
	49.72		-5.794E+01	1.199E+02	1.952E+02	3.095E+01	-0.297
	111.76		1.569E+02	9.915E+01	1.666E+02	2.174E+01	0.942
BA-133	116.30		-8.365E+01	8.394E+01	1.306E+02	1.695E+01	-0.640
	228.16	*	4.140E-01	1.947E+00	3.299E+00	5.876E-01	0.125
	81.00		1.615E-01	2.325E-01	2.532E-01	4.428E-02	0.638
	276.40		1.994E-01	4.991E-01	8.462E-01	1.317E-01	0.236
I-133	302.85		8.935E-02	2.010E-01	3.404E-01	4.899E-02	0.262
	356.01	*	2.046E-02	6.325E-02	9.295E-02	1.256E-02	0.220
	383.85		-2.438E-01	3.988E-01	6.311E-01	7.858E-02	-0.386
	529.87	*	-2.744E-02	3.988E-01	Half-Life	too short	
CS-134	875.33		-6.116E-01	3.988E-01	Half-Life	too short	
	1298.22		2.566E+00	3.988E-01	Half-Life	too short	
	563.25		-1.906E-01	4.703E-01	7.362E-01	6.378E-02	-0.259
	569.33		8.326E-02	2.623E-01	4.337E-01	3.766E-02	0.192
CS-135	604.72		-2.158E-02	5.173E-02	6.854E-02	5.819E-03	-0.315
	795.86	*	1.273E-01	6.188E-02	1.160E-01	1.040E-02	1.097
	801.95		-7.105E-01	5.516E-01	7.898E-01	7.090E-02	-0.900
	1365.19		3.475E-02	1.368E+00	2.296E+00	2.293E-01	0.015
I-135	268.22	*	1.274E-01	2.247E-01	3.836E-01	4.603E-02	0.332
CS-136	546.56		-1.067E+13	2.247E-01	Half-Life	too short	
	836.80		1.769E+13	2.247E-01	Half-Life	too short	
	1038.76		-2.585E+13	2.247E-01	Half-Life	too short	
	1131.51		-3.100E+12	2.247E-01	Half-Life	too short	
CE-139	1260.41	*	-2.642E+12	2.247E-01	Half-Life	too short	
	1457.56		1.221E+15	2.247E-01	Half-Life	too short	
	1678.03		-1.199E+13	2.247E-01	Half-Life	too short	
	1791.20		-9.357E+12	2.247E-01	Half-Life	too short	
CE-139	153.25		2.899E-01	1.414E+00	2.298E+00	2.705E-01	0.126
	176.60		1.090E-01	8.532E-01	1.377E+00	1.581E-01	0.079
	273.65		-1.746E+00	8.839E-01	1.311E+00	1.501E-01	-1.332
	340.55		8.711E-01	3.154E-01	5.024E-01	5.074E-02	1.734
CE-139	818.51		7.000E-02	1.040E-01	1.824E-01	1.644E-02	0.384
	1048.07	*	2.492E-02	1.631E-01	2.707E-01	2.504E-02	0.092
	1235.36		8.423E-01	9.358E-01	1.614E+00	1.910E-01	0.522
CE-139	165.86	*	3.728E-03	4.602E-02	7.427E-02	7.928E-03	0.050

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BA-140	162.66			1.020E+00	1.444E+00	2.379E+00	2.632E-01	0.429
	304.85			-2.383E+00	2.375E+00	3.580E+00	1.070E+00	-0.665
	423.72			1.752E+00	3.159E+00	5.267E+00	1.731E+00	0.333
	537.26	*		1.761E-01	4.036E-01	6.685E-01	2.267E-01	0.263
LA-140	328.76			5.472E-01	4.997E-01	8.654E-01	9.075E-02	0.632
	487.02			-5.268E-02	2.114E-01	3.381E-01	3.100E-02	-0.156
	815.77			7.368E-02	4.831E-01	8.120E-01	8.092E-02	0.091
	1596.21	*		-7.125E-02	1.348E-01	2.061E-01	1.932E-02	-0.346
CE-141	145.44	*		1.150E-01	9.964E-02	1.666E-01	1.722E-02	0.691
CE-143	57.36			1.630E-04	9.964E-02	Half-Life	too short	
	293.27	*		3.879E-03	9.964E-02	Half-Life	too short	
	664.57			1.635E-02	9.964E-02	Half-Life	too short	
	721.93			-8.106E-04	9.964E-02	Half-Life	too short	
CE-144	80.12			4.013E+00	4.716E+00	7.008E+00	8.237E-01	0.573
	133.52	*		-3.787E-01	2.977E-01	4.484E-01	7.236E-02	-0.844
PM-144	476.78			-4.153E-02	8.101E-02	1.269E-01	1.190E-02	-0.327
	618.01			-2.566E-03	4.532E-02	6.554E-02	5.680E-03	-0.039
PR-144	696.49	*		4.565E-03	4.204E-02	7.093E-02	5.968E-03	0.064
	696.51	*		2.124E-01	3.159E+00	5.313E+00	4.468E-01	0.040
	1489.16			6.485E-01	1.558E+01	2.607E+01	2.497E+00	0.025
PM-146	453.88	*		1.270E-02	5.377E-02	8.929E-02	9.442E-03	0.142
	633.25			5.356E-01	1.768E+00	2.896E+00	1.104E+00	0.185
	735.93			9.036E-02	1.985E-01	2.990E-01	8.379E-02	0.302
	747.24			-7.040E-02	1.235E-01	1.959E-01	2.863E-02	-0.359
ND-147	91.11			9.192E+00	1.347E+00	1.404E+00	1.738E-01	6.549
	319.41			-1.250E+00	5.455E+00	8.946E+00	9.164E-01	-0.140
	531.02	*		3.358E-02	9.043E-01	1.471E+00	2.199E-01	0.023
PM-149	285.90	*		-7.776E-05	9.043E-01	Half-Life	too short	
EU-152	121.78			1.434E-02	1.064E-01	1.738E-01	1.944E-02	0.083
	244.70			2.444E-01	5.080E-01	7.621E-01	8.401E-02	0.321
	344.28	*		5.250E-02	1.614E-01	2.246E-01	2.286E-02	0.234
	778.90			-2.991E-02	3.325E-01	5.492E-01	4.846E-02	-0.054
	964.08			2.479E-01	4.340E-01	6.515E-01	5.992E-02	0.380
	1085.87			-1.326E-01	5.176E-01	8.240E-01	7.175E-02	-0.161
	1112.07			2.256E-01	4.281E-01	6.835E-01	5.849E-02	0.330
	1408.01			1.305E-01	2.214E-01	3.952E-01	3.808E-02	0.330
	69.67			3.906E+00	3.526E+00	5.321E+00	6.074E-01	0.734
	97.43	*		2.036E-01	1.512E-01	2.279E-01	2.515E-02	0.894
GD-153	103.18			-2.024E-01	1.715E-01	2.661E-01	2.814E-02	-0.761
	123.07			2.497E-02	7.514E-02	1.235E-01	1.541E-02	0.202
	723.31			-9.192E-02	2.430E-01	3.348E-01	3.157E-02	-0.275
	873.19			9.032E-02	3.736E-01	6.300E-01	7.778E-02	0.143
EU-154	996.26			1.101E-01	5.265E-01	7.622E-01	1.350E-01	0.144
	1004.73			2.141E-01	3.390E-01	5.132E-01	6.145E-02	0.417
	1274.44	*		7.165E-02	1.571E-01	2.660E-01	3.119E-02	0.269
	86.55	+		6.727E-01	2.353E-01	3.061E-01	3.776E-02	2.197
EU-155	105.31	*		6.058E-02	1.580E-01	2.612E-01	2.751E-02	0.232
TB-160	86.79	+		1.833E+00	6.408E-01	8.259E-01	1.015E-01	2.219
	197.04			3.569E-01	8.473E-01	1.377E+00	1.502E-01	0.259

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HO-166M		215.65		-3.585E-01	1.174E+00	1.775E+00	1.953E-01	-0.202
		298.57		1.910E-01	1.932E-01	2.918E-01	3.087E-02	0.655
		879.36	*	2.156E-02	1.886E-01	3.148E-01	2.914E-02	0.068
		962.29		1.323E-01	7.919E-01	1.141E+00	1.050E-01	0.116
		966.15		1.220E+00	3.736E-01	6.567E-01	6.036E-02	1.858
		1177.93		-1.061E-02	4.635E-01	7.510E-01	6.146E-02	-0.014
		1271.85		7.990E-02	9.461E-01	1.543E+00	1.396E-01	0.052
		80.57		5.050E-01	6.659E-01	7.307E-01	8.610E-02	0.691
		184.41		3.780E-01	7.618E-02	1.125E-01	1.216E-02	3.361
		280.46		-2.277E-03	1.201E-01	2.003E-01	2.163E-02	-0.011
		410.95		1.658E-01	3.258E-01	5.506E-01	4.673E-02	0.301
		711.68	*	6.656E-03	7.707E-02	1.297E-01	1.101E-02	0.051
		752.31		-1.597E-01	3.539E-01	5.688E-01	4.946E-02	-0.281
		810.29		-4.852E-02	7.487E-02	1.172E-01	1.051E-02	-0.414
TA-182		67.75		-1.111E-01	2.947E-01	3.528E-01	4.027E-02	-0.315
		100.11		2.970E-01	2.974E-01	4.752E-01	5.129E-02	0.625
		152.43		6.762E-02	5.059E-01	8.204E-01	8.484E-02	0.082
		222.11		-1.719E-01	5.148E-01	8.551E-01	9.423E-02	-0.201
	+	1121.30		5.974E-01	3.357E-01	4.249E-01	3.612E-02	1.406
IR-192		1189.05		1.687E-02	3.968E-01	6.466E-01	5.357E-02	0.026
		1221.41	*	-1.204E-01	2.602E-01	4.029E-01	3.458E-02	-0.299
		1231.02		-1.420E-01	6.839E-01	1.088E+00	9.437E-02	-0.131
	+	295.96		1.037E+00	2.913E-01	3.803E-01	4.056E-02	2.728
		308.46		-1.754E-02	1.366E-01	2.256E-01	2.361E-02	-0.078
HG-203		316.51	*	-6.684E-03	4.808E-02	7.926E-02	8.173E-03	-0.084
		468.07		-4.174E-02	9.744E-02	1.546E-01	1.430E-02	-0.270
		70.83		1.831E+00	2.851E+00	4.216E+00	7.472E-01	0.434
		72.87		3.838E+00	1.812E+00	2.656E+00	4.587E-01	1.445
BI-207		279.20	*	5.674E-02	5.689E-02	9.851E-02	1.083E-02	0.576
		72.81		7.895E-01	3.834E-01	5.838E-01	6.686E-02	1.352
	+	74.97		9.622E-01	2.761E-01	3.914E-01	4.504E-02	2.458
		569.70		5.888E-03	4.122E-02	6.730E-02	5.764E-03	0.087
PB-210		1063.66	*	3.169E-02	6.250E-02	1.074E-01	9.472E-03	0.295
		1770.23		1.709E-01	5.494E-01	8.464E-01	7.399E-02	0.202
		46.54	*	6.573E-01	1.472E+01	2.414E+01	2.971E+00	0.027
PB-211		404.85	*	4.261E-01	1.001E+00	1.650E+00	7.980E-01	0.258
BI-212		427.09		6.875E-01	2.091E+00	3.457E+00	1.599E+00	0.199
		832.01		-7.029E-01	1.235E+00	1.850E+00	9.608E-01	-0.380
	+	727.33	*	1.816E+00	1.235E+00	1.398E+00	1.737E-01	1.299
		785.37		2.603E+00	4.210E+00	7.305E+00	6.468E-01	0.356
		1620.50		1.477E+00	2.779E+00	4.976E+00	4.632E-01	0.297
RN-219		271.23		5.656E-01	3.411E-01	5.970E-01	7.296E-02	0.947
RA-223		401.81	*	-3.261E-02	5.528E-01	9.055E-01	1.338E-01	-0.036
		81.07		3.727E-01	5.241E-01	5.734E-01	6.775E-02	0.650
		83.79		4.370E-01	3.111E-01	3.544E-01	4.261E-02	1.233
		94.87		6.407E+00	1.219E+00	1.707E+00	1.932E-01	3.754
		144.24		1.657E+00	1.039E+00	1.732E+00	1.913E-01	0.957
		154.21		2.495E-01	5.583E-01	9.150E-01	1.013E-01	0.273
		269.46		6.292E-01	2.688E-01	4.764E-01	5.257E-02	1.321

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227	+	323.87	*	-7.459E-01	9.284E-01	1.463E+00	2.654E-01	-0.510
		338.28		1.004E+01	2.570E+00	3.204E+00	4.161E-01	3.132
		79.69		4.220E+00	2.527E+00	3.701E+00	7.025E-01	1.140
	*	235.96		1.073E+00	2.956E-01	4.565E-01	5.673E-02	2.351
		256.23		1.198E-01	3.635E-01	6.166E-01	8.533E-02	0.194
		299.98		1.573E+00	1.462E+00	2.208E+00	3.112E-01	0.712
TH-227		304.50		-2.245E+00	2.376E+00	3.721E+00	6.540E-01	-0.603
		334.37		2.339E+00	2.677E+00	4.054E+00	6.630E-01	0.577
		79.80		4.279E+00	3.276E+00	4.754E+00	1.102E+00	0.900
	*	235.96		1.073E+00	2.933E-01	4.565E-01	5.452E-02	2.351
		256.23		1.198E-01	3.636E-01	6.166E-01	9.379E-02	0.194
		299.98		1.573E+00	1.462E+00	2.208E+00	3.112E-01	0.712
TH-229		304.50		-2.245E+00	2.376E+00	3.721E+00	6.540E-01	-0.603
		334.37		2.339E+00	2.677E+00	4.054E+00	6.630E-01	0.577
		85.43		1.502E+00	4.231E-01	6.307E-01	7.673E-02	2.381
	+	88.47		8.543E-01	2.987E-01	3.886E-01	4.790E-02	2.198
		193.51	*	2.623E-01	7.518E-01	1.220E+00	1.327E-01	0.215
		210.85		2.998E+00	1.548E+00	2.248E+00	2.469E-01	1.334
PA-231	*	283.69		-7.795E-01	1.991E+00	3.253E+00	5.187E-01	-0.240
		301.36		8.571E-01	8.789E-01	1.393E+00	1.891E-01	0.615
TH-231		81.07		3.727E-01	5.241E-01	5.734E-01	6.775E-02	0.650
		83.79		4.370E-01	3.111E-01	3.544E-01	4.261E-02	1.233
		94.87		6.407E+00	1.219E+00	1.707E+00	1.932E-01	3.754
		144.24		1.657E+00	1.039E+00	1.732E+00	1.913E-01	0.957
		154.21		2.495E-01	5.583E-01	9.150E-01	1.013E-01	0.273
		269.46		6.292E-01	2.688E-01	4.764E-01	5.257E-02	1.321
PA-233	*	323.87		-7.459E-01	9.284E-01	1.463E+00	2.654E-01	-0.510
		338.28		1.004E+01	2.570E+00	3.204E+00	4.161E-01	3.132
		300.13		6.960E-01	6.632E-01	9.974E-01	1.599E-01	0.698
	*	311.90		3.210E-02	8.849E-02	1.489E-01	1.575E-02	0.216
		340.48		3.378E+00	1.391E+00	1.864E+00	4.571E-01	1.812
		94.67		3.208E+00	5.893E-01	6.666E-01	9.619E-02	4.813
PA-234		98.44		2.807E-01	2.250E-01	2.450E-01	1.377E-01	1.146
		111.00		1.929E-01	2.878E-01	4.777E-01	6.342E-02	0.404
		131.20		1.101E-01	1.489E-01	2.475E-01	2.485E-02	0.445
		569.50		2.020E-01	3.553E-01	5.978E-01	5.120E-02	0.338
		733.00		-5.366E-02	5.078E-01	7.210E-01	1.600E-01	-0.074
		880.51		1.391E-02	3.867E-01	6.334E-01	5.866E-02	0.022
PA-234M		883.24		1.661E-02	3.735E-01	6.193E-01	4.168E-01	0.027
		926.50		-2.059E-01	2.404E-01	3.557E-01	9.074E-02	-0.579
		946.00	*	1.155E-01	3.703E-01	6.263E-01	1.194E-01	0.184
		949.00		9.404E-02	5.432E-01	9.085E-01	8.390E-02	0.104
		766.42		4.286E+01	2.725E+01	3.154E+01	1.601E+01	1.359
		1001.03	*	2.381E+01	9.399E+00	1.531E+01	1.588E+00	1.555
U-235	+	89.96		8.691E+00	2.736E+00	2.669E+00	6.944E-01	3.256
		93.35		1.625E+01	4.168E+00	2.328E+00	5.663E-01	6.981
	*	143.76		4.195E-01	3.142E-01	5.127E-01	9.124E-02	0.818
		163.33		6.736E-01	6.722E-01	1.103E+00	2.094E-01	0.611
	+	185.72		5.371E-01	1.173E-01	1.475E-01	1.597E-02	3.640

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	205.31			7.090E-01	8.047E-01	1.161E+00	2.249E-01	0.610
	99.53			2.935E-01	2.841E-01	4.379E-01	4.747E-02	0.670
	103.37			-8.687E-02	1.504E-01	2.401E-01	2.535E-02	-0.362
	106.12			-1.046E-01	1.278E-01	2.018E-01	2.100E-02	-0.518
	117.23	*		-2.980E-01	5.951E-01	9.492E-01	9.580E-02	-0.314
	228.18			6.576E-02	3.079E-01	5.220E-01	5.758E-02	0.126
AM-241	277.60			1.192E-01	2.449E-01	4.170E-01	4.515E-02	0.286
	59.54	*		1.217E-01	3.793E-01	5.603E-01	6.577E-02	0.217
CM-247	278.00			1.022E+00	1.011E+00	1.754E+00	1.898E-01	0.583
	287.50			3.440E-01	1.867E+00	2.901E+00	3.111E-01	0.119
CF-249	402.40	*		-2.742E-03	5.075E-02	8.315E-02	7.032E-03	-0.033
	252.80			-1.750E-01	1.339E+00	2.230E+00	2.453E-01	-0.078
	333.37			-1.227E-03	2.935E-01	4.220E-01	4.205E-02	-0.003
CF-251	388.16	*		-1.359E-02	5.751E-02	8.996E-02	7.668E-03	-0.151
	177.52	*		2.800E-02	1.942E-01	3.072E-01	3.306E-02	0.091
	227.38			-5.600E-02	5.062E-01	8.479E-01	9.352E-02	-0.066
	285.41			-3.113E+00	3.097E+00	4.890E+00	5.255E-01	-0.637

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]G247911011      *
* Acquisition date   : 8-MAR-2010 12:17:57 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 02:00:01.37           Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247911011           Analyst initials: MXR1          *
* Batch Number       : 957714              Sample Quantity : 1.2187E+02 GRAM   *
* Recovery           : 1.00000             Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                                    *
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32 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	2.931E+01	3.472E+00	6.489E-01	0.000E+00
CD-109	5.694E+00	1.951E+00	1.929E+00	0.000E+00
SN-126	5.542E-01	1.899E-01	1.892E-01	0.000E+00
BA-137M	2.635E-01	9.341E-02	7.665E-02	0.000E+00
CS-137	2.784E-01	9.869E-02	8.097E-02	0.000E+00
TL-208	5.489E-01	1.113E-01	7.556E-02	0.000E+00
BI-211	3.473E+00	6.367E-01	4.682E-01	0.000E+00
PB-212	1.814E+00	2.599E-01	1.350E-01	0.000E+00
BI-214	1.373E+00	2.356E-01	1.483E-01	0.000E+00
PB-214	1.260E+00	2.409E-01	1.653E-01	0.000E+00
RA-224	4.695E+00	1.722E+00	1.446E+00	0.000E+00
RA-226	1.373E+00	2.356E-01	1.483E-01	0.000E+00
AC-228	1.923E+00	3.867E-01	2.799E-01	0.000E+00
RA-228	1.923E+00	3.867E-01	2.799E-01	0.000E+00
TH-228	1.814E+00	2.599E-01	1.350E-01	0.000E+00
TH-232	1.923E+00	3.867E-01	2.799E-01	0.000E+00
TH-234	1.524E+01	4.616E+00	4.436E+00	0.000E+00
NP-237	1.654E+00	6.606E-01	5.753E-01	0.000E+00
U-238	1.524E+01	4.616E+00	4.436E+00	0.000E+00
ANH-511	1.696E-01	9.504E-02	6.574E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.631E-01	4.066E-01	6.511E-01	0.000E+00 NOT IDENT.
NA-22	2.893E-02	5.411E-02	9.419E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.027E+07	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-3.055E-03	5.090E-02	8.572E-02	0.000E+00 FAIL ABUN
V-48	3.723E-02	9.438E-02	1.647E-01	0.000E+00 NOT IDENT.
CR-51	-7.189E-02	5.351E-01	9.161E-01	0.000E+00 NOT IDENT.
MN-54	-9.824E-03	4.588E-02	7.636E-02	0.000E+00 NOT IDENT.

CO-56	-2.074E-02	4.609E-02	7.493E-02	0.000E+00	NOT IDENT.
CO-57	4.817E-03	3.632E-02	6.232E-02	0.000E+00	NOT IDENT.
CO-58	-4.977E-02	5.059E-02	7.867E-02	0.000E+00	NOT IDENT.
FE-59	3.739E-02	1.174E-01	2.016E-01	0.000E+00	NOT IDENT.
CO-60	1.348E-02	4.195E-02	7.208E-02	0.000E+00	NOT IDENT.
ZN-65	-2.115E-02	1.343E-01	1.875E-01	0.000E+00	NOT IDENT.
SE-75	-3.441E-02	6.259E-02	1.061E-01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	6.231E-02	1.043E-01	0.000E+00	NOT IDENT.
Y-88	-9.785E-04	4.317E-02	7.159E-02	0.000E+00	NOT IDENT.
Y-91	-1.411E+01	2.867E+01	4.526E+01	0.000E+00	NOT IDENT.
NB-94	-1.570E-02	4.031E-02	6.731E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	6.424E-02	1.219E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.205E-01	3.616E-01	0.000E+00	NOT IDENT.
ZR-95	8.119E-02	9.598E-02	1.737E-01	0.000E+00	NOT IDENT.
MO-99	-1.257E+01	3.135E+01	5.195E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.966E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-6.012E-04	5.195E-02	8.723E-02	0.000E+00	FAIL ABUN
RH-106	-3.867E-01	4.025E-01	6.078E-01	0.000E+00	NOT IDENT.
RU-106	-3.867E-01	4.007E-01	6.078E-01	0.000E+00	NOT IDENT.
AG-108M	1.171E-02	3.951E-02	6.814E-02	0.000E+00	NOT IDENT.
AG-110M	5.080E-03	4.895E-02	7.378E-02	0.000E+00	NOT IDENT.
SN-113	-6.310E-02	6.249E-02	9.994E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	3.578E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.431E-02	9.230E-02	1.548E-01	0.000E+00	NOT IDENT.
TE-123M	-1.763E-02	4.227E-02	7.013E-02	0.000E+00	NOT IDENT.
SB-124	-3.426E-04	8.298E-02	1.390E-01	0.000E+00	NOT IDENT.
SB-125	-3.417E-02	1.210E-01	2.015E-01	0.000E+00	NOT IDENT.
TE-125M	-2.255E+01	1.576E+01	2.534E+01	0.000E+00	NOT IDENT.
I-126	-2.505E-01	4.026E-01	5.626E-01	0.000E+00	NOT IDENT.
SB-126	-2.929E-02	2.427E-01	3.546E-01	0.000E+00	NOT IDENT.
SB-127	5.951E-01	2.646E+00	4.633E+00	0.000E+00	NOT IDENT.
I-131	9.833E-02	1.989E-01	3.493E-01	0.000E+00	NOT IDENT.
TE-132	4.140E-01	1.908E+00	3.371E+00	0.000E+00	NOT IDENT.
BA-133	2.046E-02	6.199E-02	9.446E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	8.124E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.064E-02	1.167E-01	0.000E+00	NOT IDENT.
CS-135	1.274E-01	2.202E-01	3.912E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.299E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.492E-02	1.599E-01	2.714E-01	0.000E+00	NOT IDENT.
CE-139	3.728E-03	4.510E-02	7.620E-02	0.000E+00	NOT IDENT.
BA-140	1.761E-01	3.955E-01	6.759E-01	0.000E+00	NOT IDENT.
LA-140	-7.125E-02	1.321E-01	2.054E-01	0.000E+00	NOT IDENT.
CE-141	1.150E-01	9.764E-02	1.712E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.339E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.787E-01	2.917E-01	4.613E-01	0.000E+00	NOT IDENT.
PM-144	4.565E-03	4.120E-02	7.147E-02	0.000E+00	NOT IDENT.
PR-144	2.124E-01	3.096E+00	5.354E+00	0.000E+00	NOT IDENT.
PM-146	1.270E-02	5.270E-02	9.046E-02	0.000E+00	NOT IDENT.
ND-147	3.358E-02	8.862E-01	1.487E+00	0.000E+00	NOT IDENT.
PM-149	0.000E+00	3.098E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	5.250E-02	1.581E-01	2.283E-01	0.000E+00	NOT IDENT.
GD-153	2.036E-01	1.482E-01	2.353E-01	0.000E+00	NOT IDENT.
EU-154	7.165E-02	1.539E-01	2.660E-01	0.000E+00	NOT IDENT.
EU-155	6.058E-02	1.548E-01	2.694E-01	0.000E+00	FAIL ABUN
TB-160	2.156E-02	1.849E-01	3.163E-01	0.000E+00	FAIL ABUN
HO-166M	6.656E-03	7.553E-02	1.306E-01	0.000E+00	NOT IDENT.
TA-182	-1.204E-01	2.550E-01	4.031E-01	0.000E+00	FAIL ABUN
IR-192	-6.684E-03	4.712E-02	8.067E-02	0.000E+00	FAIL ABUN
HG-203	5.674E-02	5.575E-02	1.004E-01	0.000E+00	NOT IDENT.
BI-207	3.169E-02	6.125E-02	1.076E-01	0.000E+00	FAIL ABUN
PB-210	6.573E-01	1.442E+01	2.514E+01	0.000E+00	NOT IDENT.
PB-211	4.261E-01	9.809E-01	1.674E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.211E+00	1.408E+00	0.000E+00	FAIL ABUN
RN-219	-3.261E-02	5.418E-01	9.189E-01	0.000E+00	NOT IDENT.
RA-223	-7.459E-01	9.099E-01	1.488E+00	0.000E+00	FAIL ABUN
AC-227	1.198E-01	3.563E-01	6.292E-01	0.000E+00	NOT IDENT.
TH-227	1.198E-01	3.563E-01	6.292E-01	0.000E+00	NOT IDENT.
TH-229	2.623E-01	7.367E-01	1.249E+00	0.000E+00	FAIL ABUN
PA-231	-7.795E-01	1.951E+00	3.315E+00	0.000E+00	NOT IDENT.
TH-231	-7.459E-01	9.099E-01	1.488E+00	0.000E+00	FAIL ABUN
PA-233	3.210E-02	8.672E-02	1.515E-01	0.000E+00	NOT IDENT.
PA-234	1.155E-01	3.629E-01	6.286E-01	0.000E+00	NOT IDENT.
PA-234M	0.000E+00	9.211E+00	1.536E+01	0.000E+00	FAIL ABUN
U-235	4.195E-01	3.079E-01	5.269E-01	0.000E+00	FAIL ABUN
NP-239	-2.980E-01	5.832E-01	9.779E-01	0.000E+00	NOT IDENT.
AM-241	1.217E-01	3.717E-01	5.820E-01	0.000E+00	NOT IDENT.
CM-247	-2.742E-03	4.974E-02	8.437E-02	0.000E+00	NOT IDENT.
CF-249	-1.359E-02	5.636E-02	9.132E-02	0.000E+00	NOT IDENT.

CF-251	2.800E-02	1.903E-01	3.149E-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]G247911011.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 12:17:57.
Sample ID        : G247911011 Sample quantity : 1.21870E+02 GRAM
Detector name    : GAM15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.37 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957714 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	1460.82	980	10.66*	9.661E-01	2.931E+01	2.931E+01	12.09
CD-109	88.03	296	3.70*	4.441E+00	5.542E+00	5.694E+00	34.96
SN-126	64.28	335	9.60	1.829E+00	5.873E+00	5.873E+00	29.13
	86.94	296	8.90	4.441E+00	2.304E+00	2.304E+00	53.46
	87.57	296	37.00*	4.441E+00	5.542E-01	5.542E-01	34.96
BA-137M	661.66	152	89.90*	1.982E+00	2.632E-01	2.635E-01	36.17
CS-137	661.66	152	85.10*	1.982E+00	2.781E-01	2.784E-01	36.17
TL-208	277.37	-----	6.60	3.705E+00	-----	Line Not Found	-----
	583.19	332	85.00*	2.190E+00	5.489E-01	5.489E-01	20.68
	860.56	-----	12.50	1.576E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.001E+00	-----	Line Not Found	-----
	351.06	457	12.92*	3.141E+00	3.473E+00	3.473E+00	18.71
PB-212	74.82	360	10.28	3.228E+00	3.338E+00	3.338E+00	30.30
	77.11	533	17.10	3.497E+00	2.747E+00	2.747E+00	21.93
	238.63	1056	43.60*	4.114E+00	1.814E+00	1.814E+00	14.62
	300.09	-----	3.30	3.507E+00	-----	Line Not Found	-----
BI-214	609.32	429	45.49*	2.117E+00	1.373E+00	1.373E+00	17.51
	1120.29	74	14.92	1.226E+00	1.253E+00	1.253E+00	56.59
	1764.49	85	15.30	8.554E-01	1.990E+00	1.990E+00	25.19
PB-214	74.82	360	5.80	3.228E+00	5.916E+00	5.916E+00	29.77
	77.11	533	9.70	3.497E+00	4.843E+00	4.843E+00	23.43
	242.00	255	7.25	4.080E+00	2.655E+00	2.655E+00	37.87
	295.22	290	18.42	3.547E+00	1.365E+00	1.365E+00	28.81
	351.93	457	35.60*	3.141E+00	1.260E+00	1.260E+00	19.51
RA-224	240.99	255	4.10*	4.080E+00	4.695E+00	4.695E+00	37.42
RA-226	609.32	429	45.49*	2.117E+00	1.373E+00	1.373E+00	17.51
	1120.29	74	14.92	1.226E+00	1.253E+00	1.253E+00	56.59
	1764.49	85	15.30	8.554E-01	1.990E+00	1.990E+00	25.19
AC-228	338.32	298	11.27	3.226E+00	2.529E+00	2.529E+00	47.44
	911.20	241	25.80*	1.494E+00	1.923E+00	1.923E+00	20.52
	968.97	96	15.80	1.409E+00	1.334E+00	1.334E+00	58.80
RA-228	338.32	298	11.27	3.226E+00	2.529E+00	2.529E+00	47.44

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	241	25.80*	1.494E+00	1.923E+00	1.923E+00	20.52
	968.97	96	15.80	1.409E+00	1.334E+00	1.334E+00	58.80
TH-228	74.82	360	10.28	3.228E+00	3.338E+00	3.338E+00	28.72
	77.11	533	17.10	3.497E+00	2.747E+00	2.747E+00	21.93
	238.63	1056	43.60*	4.114E+00	1.814E+00	1.814E+00	14.62
	300.09	-----	3.30	3.507E+00	-----	Line Not Found	-----
TH-232	338.32	298	11.27	3.226E+00	2.529E+00	2.529E+00	24.18
	911.20	241	25.80*	1.494E+00	1.923E+00	1.923E+00	20.52
	968.97	96	15.80	1.409E+00	1.334E+00	1.334E+00	58.80
TH-234	63.29	335	3.70*	1.829E+00	1.524E+01	1.524E+01	30.91
	92.59	1425	4.23	4.824E+00	2.151E+01	2.151E+01	24.74
NP-237	86.48	296	12.40*	4.441E+00	1.654E+00	1.654E+00	40.77
	95.86	-----	2.68	5.004E+00	-----	Line Not Found	-----
U-238	63.29	335	3.70*	1.829E+00	1.524E+01	1.524E+01	30.91
	92.59	1425	4.23	4.824E+00	2.151E+01	2.151E+01	14.10
ANH-511	511.00	133	100.00*	2.419E+00	1.696E-01	1.696E-01	57.17

Flag: "*" = Keyline

Total number of lines in spectrum 24
Number of unidentified lines 1
Number of lines tentatively identified by NID 23 95.83%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.931E+01	2.931E+01	0.354E+01	12.09	
CD-109	461.40D	1.03	5.542E+00	5.694E+00	1.991E+00	34.96	
SN-126	2.30E+05Y	1.00	5.542E-01	5.542E-01	1.937E-01	34.96	
BA-137M	30.08Y	1.00	2.632E-01	2.635E-01	0.953E-01	36.17	
CS-137	30.08Y	1.00	2.781E-01	2.784E-01	1.007E-01	36.17	
TL-208	1.41E+10Y	1.00	5.489E-01	5.489E-01	1.135E-01	20.68	
BI-211	7.04E+08Y	1.00	3.473E+00	3.473E+00	0.650E+00	18.71	
PB-212	1.41E+10Y	1.00	1.814E+00	1.814E+00	0.265E+00	14.62	
BI-214	1600.00Y	1.00	1.373E+00	1.373E+00	0.240E+00	17.51	
PB-214	1600.00Y	1.00	1.260E+00	1.260E+00	0.246E+00	19.51	
RA-224	1.41E+10Y	1.00	4.695E+00	4.695E+00	1.757E+00	37.42	
RA-226	1600.00Y	1.00	1.373E+00	1.373E+00	0.240E+00	17.51	
AC-228	1.41E+10Y	1.00	1.923E+00	1.923E+00	0.395E+00	20.52	
RA-228	1.41E+10Y	1.00	1.923E+00	1.923E+00	0.395E+00	20.52	
TH-228	1.41E+10Y	1.00	1.814E+00	1.814E+00	0.265E+00	14.62	
TH-232	1.41E+10Y	1.00	1.923E+00	1.923E+00	0.395E+00	20.52	
TH-234	4.47E+09Y	1.00	1.524E+01	1.524E+01	0.471E+01	30.91	
NP-237	2.14E+06Y	1.00	1.654E+00	1.654E+00	0.674E+00	40.77	
U-238	4.47E+09Y	1.00	1.524E+01	1.524E+01	0.471E+01	30.91	
ANH-511	1.00E+09Y	1.00	1.696E-01	1.696E-01	0.970E-01	57.17	

Total Activity : 9.036E+01 9.051E+01

Grand Total Activity : 9.036E+01 9.051E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247911011

Page : 4
Acquisition date : 8-MAR-2010 12:17:57

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	185.97	484	375	1.26	370.85	365	12	6.73E-02	19.0	4.86E+00	T
0	209.47	123	257	1.22	417.85	415	9	1.70E-02	50.4	4.50E+00	T
0	727.79	72	92	1.52	1454.51	1447	17	9.99E-03	66.9	1.83E+00	T
0	1001.09	89	47	1.47	2001.20	1995	11	1.23E-02	38.1	1.37E+00	T
0	1377.87	27	16	1.51	2754.94	2749	13	3.68E-03	73.8	1.01E+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]G247911011.CNF;1
* Acquisition date   : 8-MAR-2010 12:17:57.   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 02:00:01.37           Half life ratio     : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library     : SOLID
* Sample ID          : G247911011             Analyst initials    : MXR1
* Batch Number       : 957714                 Sample Quantity     : 1.21870E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32.11MS 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	2.931E+01	3.543E+00	6.501E-01	6.388E-02	45.082
CD-109	5.694E+00	1.991E+00	1.866E+00	2.316E-01	3.052
SN-126	5.542E-01	1.937E-01	1.830E-01	2.264E-02	3.029
BA-137M	2.635E-01	9.531E-02	7.601E-02	6.249E-03	3.467
CS-137	2.784E-01	1.007E-01	8.030E-02	6.616E-03	3.467
TL-208	5.489E-01	1.135E-01	7.481E-02	6.842E-03	7.337
BI-211	3.473E+00	6.497E-01	4.607E-01	4.588E-02	7.538
PB-212	1.814E+00	2.652E-01	1.322E-01	1.579E-02	13.721
BI-214	1.373E+00	2.404E-01	1.469E-01	1.464E-02	9.347
PB-214	1.260E+00	2.458E-01	1.627E-01	1.849E-02	7.748
RA-224	4.695E+00	1.757E+00	1.416E+00	1.562E-01	3.315
RA-226	1.373E+00	2.404E-01	1.469E-01	1.464E-02	9.347
AC-228	1.923E+00	3.946E-01	2.787E-01	3.376E-02	6.900
RA-228	1.923E+00	3.946E-01	2.787E-01	3.376E-02	6.900
TH-228	1.814E+00	2.652E-01	1.322E-01	1.579E-02	13.721
TH-232	1.923E+00	3.946E-01	2.787E-01	3.376E-02	6.900
TH-234	1.524E+01	4.710E+00	4.274E+00	8.475E-01	3.565
NP-237	1.654E+00	6.741E-01	5.563E-01	1.351E-01	2.972

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	1.524E+01	4.710E+00	4.274E+00	8.475E-01	3.565
ANH-511	1.696E-01	9.698E-02	6.498E-02	5.615E-03	2.611

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.631E-01		4.149E-01	6.431E-01	5.977E-02	-0.409
NA-22	2.893E-02		5.522E-02	9.420E-02	8.557E-03	0.307
NA-24	1.281E+01		1.034E+01	Half-Life	too short	
SC-46	-3.055E-03		5.194E-02	8.534E-02	7.930E-03	-0.036
V-48	3.723E-02		9.630E-02	1.641E-01	1.500E-02	0.227
CR-51	-7.189E-02		5.461E-01	9.003E-01	9.554E-02	-0.080
MN-54	-9.824E-03		4.682E-02	7.595E-02	6.893E-03	-0.129
CO-56	-2.074E-02		4.703E-02	7.454E-02	6.802E-03	-0.278
CO-57	4.817E-03		3.707E-02	6.052E-02	6.097E-03	0.080
CO-58	-4.977E-02		5.162E-02	7.822E-02	7.032E-03	-0.636
FE-59	3.739E-02		1.198E-01	2.012E-01	1.878E-02	0.186
CO-60	1.348E-02		4.281E-02	7.213E-02	6.934E-03	0.187
ZN-65	-2.115E-02		1.370E-01	1.872E-01	1.599E-02	-0.113
SE-75	-3.441E-02		6.387E-02	1.041E-01	1.141E-02	-0.331
SR-85	1.323E-01		6.359E-02	1.031E-01	8.911E-03	1.282
Y-88	-9.785E-04		4.405E-02	7.193E-02	6.058E-03	-0.014
Y-91	-1.411E+01		2.925E+01	4.523E+01	3.813E+00	-0.312
NB-94	-1.570E-02		4.114E-02	6.681E-02	5.640E-03	-0.235
NB-95	1.465E-01		6.555E-02	1.211E-01	1.061E-02	1.209
NB-95M	5.659E-01		2.250E-01	3.540E-01	4.265E-02	1.599
ZR-95	8.119E-02		9.794E-02	1.726E-01	1.659E-02	0.470
MO-99	-1.257E+01		3.199E+01	5.159E+01	8.133E+00	-0.244
TC-99M	-2.867E+14		1.003E+14	Half-Life	too short	
RU-103	-6.012E-04		5.301E-02	8.619E-02	1.205E-02	-0.007
RH-106	-3.867E-01		4.108E-01	6.023E-01	7.900E-02	-0.642
RU-106	-3.867E-01		4.089E-01	6.023E-01	5.062E-02	-0.642
AG-108M	1.171E-02		4.032E-02	6.721E-02	5.940E-03	0.174
AG-110M	5.080E-03		4.994E-02	7.316E-02	6.226E-03	0.069
SN-113	-6.310E-02		6.376E-02	9.846E-02	8.551E-03	-0.641
CD-115	-1.068E-05		1.825E-05	Half-Life	too short	
SN-117M	-1.431E-02		9.418E-02	1.508E-01	1.581E-02	-0.095
TE-123M	-1.763E-02		4.314E-02	6.833E-02	7.200E-03	-0.258
SB-124	-3.426E-04		8.468E-02	1.395E-01	1.314E-02	-0.002
SB-125	-3.417E-02		1.235E-01	1.988E-01	1.730E-02	-0.172
TE-125M	-2.255E+01		1.608E+01	2.458E+01	2.921E+00	-0.917
I-126	-2.505E-01		4.108E-01	5.580E-01	4.602E-02	-0.449
SB-126	-2.929E-02		2.477E-01	3.520E-01	3.005E-02	-0.083
SB-127	5.951E-01		2.700E+00	4.597E+00	5.550E-01	0.129
I-131	9.833E-02		2.030E-01	3.438E-01	3.325E-02	0.286
TE-132	4.140E-01		1.947E+00	3.299E+00	5.876E-01	0.125
BA-133	2.046E-02		6.325E-02	9.295E-02	1.256E-02	0.220

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	-2.744E-02		4.145E-02	Half-Life too short		
CS-134	1.273E-01		6.188E-02	1.160E-01	1.040E-02	1.097
CS-135	1.274E-01		2.247E-01	3.836E-01	4.603E-02	0.332
I-135	-2.642E+12		6.629E+12	Half-Life too short		
CS-136	2.492E-02		1.631E-01	2.707E-01	2.504E-02	0.092
CE-139	3.728E-03		4.602E-02	7.427E-02	7.928E-03	0.050
BA-140	1.761E-01		4.036E-01	6.685E-01	2.267E-01	0.263
LA-140	-7.125E-02		1.348E-01	2.061E-01	1.932E-02	-0.346
CE-141	1.150E-01		9.964E-02	1.666E-01	1.722E-02	0.691
CE-143	3.879E-03		6.832E-04	Half-Life too short		
CE-144	-3.787E-01		2.977E-01	4.484E-01	7.236E-02	-0.844
PM-144	4.565E-03		4.204E-02	7.093E-02	5.968E-03	0.064
PR-144	2.124E-01		3.159E+00	5.313E+00	4.468E-01	0.040
PM-146	1.270E-02		5.377E-02	8.929E-02	9.442E-03	0.142
ND-147	3.358E-02		9.043E-01	1.471E+00	2.199E-01	0.023
PM-149	-7.776E-05		1.581E-04	Half-Life too short		
EU-152	5.250E-02		1.614E-01	2.246E-01	2.286E-02	0.234
GD-153	2.036E-01		1.512E-01	2.279E-01	2.515E-02	0.894
EU-154	7.165E-02		1.571E-01	2.660E-01	3.119E-02	0.269
EU-155	6.058E-02		1.580E-01	2.612E-01	2.751E-02	0.232
TB-160	2.156E-02		1.886E-01	3.148E-01	2.914E-02	0.068
HO-166M	6.656E-03		7.707E-02	1.297E-01	1.101E-02	0.051
TA-182	-1.204E-01		2.602E-01	4.029E-01	3.458E-02	-0.299
IR-192	-6.684E-03		4.808E-02	7.926E-02	8.173E-03	-0.084
HG-203	5.674E-02		5.689E-02	9.851E-02	1.083E-02	0.576
BI-207	3.169E-02		6.250E-02	1.074E-01	9.472E-03	0.295
PB-210	6.573E-01		1.472E+01	2.414E+01	2.971E+00	0.027
PB-211	4.261E-01		1.001E+00	1.650E+00	7.980E-01	0.258
BI-212	1.816E+00	+	1.235E+00	1.398E+00	1.737E-01	1.299
RN-219	-3.261E-02		5.528E-01	9.055E-01	1.338E-01	-0.036
RA-223	-7.459E-01		9.284E-01	1.463E+00	2.654E-01	-0.510
AC-227	1.198E-01		3.635E-01	6.166E-01	8.533E-02	0.194
TH-227	1.198E-01		3.636E-01	6.166E-01	9.379E-02	0.194
TH-229	2.623E-01		7.518E-01	1.220E+00	1.327E-01	0.215
PA-231	-7.795E-01		1.991E+00	3.253E+00	5.187E-01	-0.240
TH-231	-7.459E-01		9.284E-01	1.463E+00	2.654E-01	-0.510
PA-233	3.210E-02		8.849E-02	1.489E-01	1.575E-02	0.216
PA-234	1.155E-01		3.703E-01	6.263E-01	1.194E-01	0.184
PA-234M	2.381E+01	+	9.399E+00	1.531E+01	1.588E+00	1.555
U-235	4.195E-01		3.142E-01	5.127E-01	9.124E-02	0.818
NP-239	-2.980E-01		5.951E-01	9.492E-01	9.580E-02	-0.314
AM-241	1.217E-01		3.793E-01	5.603E-01	6.577E-02	0.217
CM-247	-2.742E-03		5.075E-02	8.315E-02	7.032E-03	-0.033
CF-249	-1.359E-02		5.751E-02	8.996E-02	7.668E-03	-0.151
CF-251	2.800E-02		1.942E-01	3.072E-01	3.306E-02	0.091

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G247911011          *
* Acquisition date   : 8-MAR-2010 12:17:57 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 02:00:01.37             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247911011             Analyst initials: MXR1          *
* Batch Number       : 957714                 Sample Quantity : 1.2187E+02 GRAM   *
* Recovery           : 1.00000                Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32 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	2.931E+01	3.472E+00	3.246E-01	1.772E+00
CD-109	5.694E+00	1.951E+00	9.650E-01	9.953E-01
SN-126	5.542E-01	1.899E-01	9.464E-02	9.687E-02
BA-137M	2.635E-01	9.341E-02	3.835E-02	4.766E-02
CS-137	2.784E-01	9.869E-02	4.051E-02	5.035E-02
TL-208	5.489E-01	1.113E-01	3.780E-02	5.677E-02
BI-211	3.473E+00	6.367E-01	2.343E-01	3.249E-01
PB-212	1.814E+00	2.599E-01	6.754E-02	1.326E-01
BI-214	1.373E+00	2.356E-01	7.420E-02	1.202E-01
PB-214	1.260E+00	2.409E-01	8.271E-02	1.229E-01
RA-224	4.695E+00	1.722E+00	7.236E-01	8.785E-01
RA-226	1.373E+00	2.356E-01	7.420E-02	1.202E-01
AC-228	1.923E+00	3.867E-01	1.400E-01	1.973E-01
RA-228	1.923E+00	3.867E-01	1.400E-01	1.973E-01
TH-228	1.814E+00	2.599E-01	6.754E-02	1.326E-01
TH-232	1.923E+00	3.867E-01	1.400E-01	1.973E-01
TH-234	1.524E+01	4.616E+00	2.219E+00	2.355E+00
NP-237	1.654E+00	6.606E-01	2.878E-01	3.370E-01
U-238	1.524E+01	4.616E+00	2.219E+00	2.355E+00
ANH-511	1.696E-01	9.504E-02	3.289E-02	4.849E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.631E-01	4.066E-01	3.258E-01	2.074E-01 NOT IDENT.
NA-22	2.893E-02	5.411E-02	4.712E-02	2.761E-02 NOT IDENT.
NA-24	1.281E+07	2.027E+07	0.000E+00	1.034E+07 SHORT HLIF
SC-46	-3.055E-03	5.090E-02	4.289E-02	2.597E-02 FAIL ABUN
V-48	3.723E-02	9.438E-02	8.237E-02	4.815E-02 NOT IDENT.
CR-51	-7.189E-02	5.351E-01	4.583E-01	2.730E-01 NOT IDENT.
MN-54	-9.824E-03	4.588E-02	3.820E-02	2.341E-02 NOT IDENT.

CO-56	-2.074E-02	4.609E-02	3.749E-02	2.351E-02	NOT IDENT.
CO-57	4.817E-03	3.632E-02	3.118E-02	1.853E-02	NOT IDENT.
CO-58	-4.977E-02	5.059E-02	3.936E-02	2.581E-02	NOT IDENT.
FE-59	3.739E-02	1.174E-01	1.009E-01	5.988E-02	NOT IDENT.
CO-60	1.348E-02	4.195E-02	3.606E-02	2.140E-02	NOT IDENT.
ZN-65	-2.115E-02	1.343E-01	9.379E-02	6.850E-02	NOT IDENT.
SE-75	-3.441E-02	6.259E-02	5.310E-02	3.193E-02	NOT IDENT.
SR-85	1.323E-01	6.231E-02	5.220E-02	3.179E-02	NOT IDENT.
Y-88	-9.785E-04	4.317E-02	3.581E-02	2.202E-02	NOT IDENT.
Y-91	-1.411E+01	2.867E+01	2.264E+01	1.463E+01	NOT IDENT.
NB-94	-1.570E-02	4.031E-02	3.368E-02	2.057E-02	NOT IDENT.
NB-95	1.465E-01	6.424E-02	6.100E-02	3.278E-02	NOT IDENT.
NB-95M	5.659E-01	2.205E-01	1.809E-01	1.125E-01	NOT IDENT.
ZR-95	8.119E-02	9.598E-02	8.692E-02	4.897E-02	NOT IDENT.
MO-99	-1.257E+01	3.135E+01	2.599E+01	1.599E+01	NOT IDENT.
TC-99M	-2.867E+20	1.966E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-6.012E-04	5.195E-02	4.364E-02	2.651E-02	FAIL ABUN
RH-106	-3.867E-01	4.025E-01	3.041E-01	2.054E-01	NOT IDENT.
RU-106	-3.867E-01	4.007E-01	3.041E-01	2.045E-01	NOT IDENT.
AG-108M	1.171E-02	3.951E-02	3.409E-02	2.016E-02	NOT IDENT.
AG-110M	5.080E-03	4.895E-02	3.691E-02	2.497E-02	NOT IDENT.
SN-113	-6.310E-02	6.249E-02	5.000E-02	3.188E-02	NOT IDENT.
CD-115	-1.068E+01	3.578E+01	0.000E+00	1.825E+01	SHORT HLIF
SN-117M	-1.431E-02	9.230E-02	7.747E-02	4.709E-02	NOT IDENT.
TE-123M	-1.763E-02	4.227E-02	3.509E-02	2.157E-02	NOT IDENT.
SB-124	-3.426E-04	8.298E-02	6.954E-02	4.234E-02	NOT IDENT.
SB-125	-3.417E-02	1.210E-01	1.008E-01	6.174E-02	NOT IDENT.
TE-125M	-2.255E+01	1.576E+01	1.268E+01	8.039E+00	NOT IDENT.
I-126	-2.505E-01	4.026E-01	2.815E-01	2.054E-01	NOT IDENT.
SB-126	-2.929E-02	2.427E-01	1.774E-01	1.238E-01	NOT IDENT.
SB-127	5.951E-01	2.646E+00	2.318E+00	1.350E+00	NOT IDENT.
I-131	9.833E-02	1.989E-01	1.747E-01	1.015E-01	NOT IDENT.
TE-132	4.140E-01	1.908E+00	1.687E+00	9.736E-01	NOT IDENT.
BA-133	2.046E-02	6.199E-02	4.726E-02	3.163E-02	NOT IDENT.
I-133	-2.744E+04	8.124E+04	0.000E+00	4.145E+04	SHORT HLIF
CS-134	1.273E-01	6.064E-02	5.838E-02	3.094E-02	NOT IDENT.
CS-135	1.274E-01	2.202E-01	1.957E-01	1.123E-01	NOT IDENT.
I-135	-2.642E+18	1.299E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.492E-02	1.599E-01	1.358E-01	8.157E-02	NOT IDENT.
CE-139	3.728E-03	4.510E-02	3.812E-02	2.301E-02	NOT IDENT.
BA-140	1.761E-01	3.955E-01	3.381E-01	2.018E-01	NOT IDENT.
LA-140	-7.125E-02	1.321E-01	1.028E-01	6.740E-02	NOT IDENT.
CE-141	1.150E-01	9.764E-02	8.564E-02	4.982E-02	NOT IDENT.
CE-143	3.879E+03	1.339E+03	0.000E+00	6.832E+02	SHORT HLIF
CE-144	-3.787E-01	2.917E-01	2.308E-01	1.488E-01	NOT IDENT.
PM-144	4.565E-03	4.120E-02	3.576E-02	2.102E-02	NOT IDENT.
PR-144	2.124E-01	3.096E+00	2.679E+00	1.579E+00	NOT IDENT.
PM-146	1.270E-02	5.270E-02	4.526E-02	2.689E-02	NOT IDENT.
ND-147	3.358E-02	8.862E-01	7.439E-01	4.521E-01	NOT IDENT.
PM-149	-7.776E+01	3.098E+02	0.000E+00	1.581E+02	SHORT HLIF
EU-152	5.250E-02	1.581E-01	1.142E-01	8.069E-02	NOT IDENT.
GD-153	2.036E-01	1.482E-01	1.177E-01	7.561E-02	NOT IDENT.
EU-154	7.165E-02	1.539E-01	1.331E-01	7.854E-02	NOT IDENT.
EU-155	6.058E-02	1.548E-01	1.348E-01	7.900E-02	FAIL ABUN
TB-160	2.156E-02	1.849E-01	1.582E-01	9.431E-02	FAIL ABUN
HO-166M	6.656E-03	7.553E-02	6.536E-02	3.854E-02	NOT IDENT.
TA-182	-1.204E-01	2.550E-01	2.017E-01	1.301E-01	FAIL ABUN
IR-192	-6.684E-03	4.712E-02	4.036E-02	2.404E-02	FAIL ABUN
HG-203	5.674E-02	5.575E-02	5.024E-02	2.844E-02	NOT IDENT.
BI-207	3.169E-02	6.125E-02	5.383E-02	3.125E-02	FAIL ABUN
PB-210	6.573E-01	1.442E+01	1.258E+01	7.358E+00	NOT IDENT.
PB-211	4.261E-01	9.809E-01	8.375E-01	5.005E-01	NOT IDENT.
BI-212	1.816E+00	1.211E+00	7.043E-01	6.177E-01	FAIL ABUN
RN-219	-3.261E-02	5.418E-01	4.597E-01	2.764E-01	NOT IDENT.
RA-223	-7.459E-01	9.099E-01	7.445E-01	4.642E-01	FAIL ABUN
AC-227	1.198E-01	3.563E-01	3.148E-01	1.818E-01	NOT IDENT.
TH-227	1.198E-01	3.563E-01	3.148E-01	1.818E-01	NOT IDENT.
TH-229	2.623E-01	7.367E-01	6.250E-01	3.759E-01	FAIL ABUN
PA-231	-7.795E-01	1.951E+00	1.658E+00	9.954E-01	NOT IDENT.
TH-231	-7.459E-01	9.099E-01	7.445E-01	4.642E-01	FAIL ABUN
PA-233	3.210E-02	8.672E-02	7.581E-02	4.424E-02	NOT IDENT.
PA-234	1.155E-01	3.629E-01	3.145E-01	1.851E-01	NOT IDENT.
PA-234M	2.381E+01	9.211E+00	7.684E+00	4.700E+00	FAIL ABUN
U-235	4.195E-01	3.079E-01	2.636E-01	1.571E-01	FAIL ABUN
NP-239	-2.980E-01	5.832E-01	4.892E-01	2.976E-01	NOT IDENT.
AM-241	1.217E-01	3.717E-01	2.912E-01	1.896E-01	NOT IDENT.
CM-247	-2.742E-03	4.974E-02	4.221E-02	2.538E-02	NOT IDENT.
CF-249	-1.359E-02	5.636E-02	4.569E-02	2.876E-02	NOT IDENT.

CF-251	2.800E-02	1.903E-01	1.576E-01	9.712E-02 NOT IDENT.
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*                                     *
*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD       *
*               CHARLESTON , SC 29417  *
*               GAMMA SPECTROSCOPY BACKGROUN *
*               REPORT                  *
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ENERGY	MDA COUNTS
46.54	336.7385
49.72	362.4871
57.36	0.0000
59.54	351.2911
63.29	403.2687
63.29	403.2687
64.28	427.3277
67.75	477.1557
69.67	421.1247
70.83	477.0841
72.81	516.3789
72.87	516.4197
72.87	516.4197
74.82	517.7598
74.82	517.7598
74.82	517.7598
74.97	517.8632
77.11	519.3118
77.11	519.3118
77.11	519.3118
79.69	521.0329
79.80	521.1065
80.12	521.3174
80.19	521.3632
80.57	476.0127
81.00	476.2706
81.07	476.3123
81.07	476.3123
83.79	477.9284
83.79	477.9284
85.43	444.2802
86.48	444.8462
86.55	444.8849
86.79	445.0113
86.94	445.0938
87.57	445.4307
88.03	445.6767
88.47	445.9108
89.96	446.6992
91.11	447.3040
92.59	448.0755
92.59	448.0755
93.35	448.4697
94.67	494.7180
94.87	540.4078
94.87	540.4078
95.86	527.9812
97.43	403.2188
98.44	375.8922
99.53	419.9830
100.11	410.5064
103.18	462.0558
103.37	426.2068
105.31	401.3707
106.12	450.1303
109.28	505.3800
111.00	431.7413
111.76	405.1414
116.30	461.1547
117.23	410.5314
121.12	392.2462
121.78	374.7075
122.06	371.6704
123.07	367.8441
131.20	351.7013
133.52	420.2011
136.00	379.7878

136.47	360.8479
140.51	469.7536
140.51	0.0000
143.76	362.1505
144.24	353.7532
144.24	353.7532
145.44	372.3148
152.43	360.5815
153.25	356.5235
154.21	356.8139
154.21	356.8139
156.02	365.9965
158.56	377.5943
159.00	387.4710
162.66	370.1876
163.33	359.5287
165.86	380.9460
176.60	339.1946
177.52	327.3517
181.07	352.4805
184.41	330.4070
185.72	316.1422
193.51	299.0724
197.04	322.1352
205.31	290.6310
210.85	286.6555
215.65	307.1787
222.11	316.6902
227.38	298.6794
228.16	286.9895
228.18	286.9934
235.69	282.2970
235.96	282.3459
235.96	282.3459
238.63	274.2682
238.63	274.2682
240.99	274.6807
242.00	274.8577
244.70	242.4840
252.40	248.8923
252.80	242.4747
256.23	242.0582
256.23	242.0582
260.90	0.0000
264.66	240.4955
268.22	239.1375
269.46	198.1807
269.46	198.1807
271.23	212.4246
273.65	306.4388
276.40	228.0854
277.37	216.0040
277.60	221.6706
278.00	195.4139
279.20	207.7729
279.54	205.9327
280.46	228.6223
283.69	213.9625
284.31	221.5833
285.41	237.7604
285.90	0.0000
287.50	199.5503
293.27	0.0000
295.22	238.1252
295.96	279.9835
298.57	210.6889
299.98	202.9245
299.98	202.9245
300.09	202.9375
300.09	202.9375
300.13	202.9427
301.36	206.7045
302.85	210.5489
304.50	237.4375
304.50	237.4375
304.85	237.4831
308.46	189.2118
311.90	164.6703

316.51	175.6326
319.41	179.7478
320.08	181.7325
323.87	215.8160
323.87	215.8160
328.76	184.4903
333.37	196.8700
334.37	163.0668
334.37	163.0668
338.28	192.1871
338.28	192.1871
338.32	192.1920
338.32	192.1920
338.32	192.1920
340.48	184.6284
340.55	184.6342
344.28	161.6149
351.06	170.9540
351.93	161.2537
356.01	143.6248
364.49	142.5804
366.42	147.6343
383.85	155.8041
388.16	153.1334
388.63	149.1870
391.69	171.3092
400.66	153.0112
401.81	145.0850
402.40	145.1239
404.85	139.2732
410.95	130.6110
414.70	152.9686
423.72	125.2851
427.09	125.4683
427.87	134.6203
433.94	123.8094
453.88	105.4116
463.37	116.0995
468.07	139.9977
473.00	94.8941
476.78	105.3693
477.60	106.4363
487.02	108.9119
492.35	0.0000
497.08	96.8462
511.00	120.4026
514.00	106.5645
527.90	0.0000
529.87	0.0000
531.02	101.2734
537.26	86.7046
546.56	0.0000
563.25	101.4037
569.33	95.2057
569.50	88.7934
569.70	100.5681
583.19	94.5957
600.60	110.5477
602.73	99.2041
604.72	110.1008
609.32	97.6179
609.32	97.6179
610.33	97.6531
614.28	72.4316
618.01	83.9192
621.93	95.8547
621.93	95.8547
633.25	71.0684
635.95	75.5075
636.99	81.0080
645.85	97.7110
657.76	80.2958
661.66	89.1969
661.66	89.1969
664.57	0.0000
666.33	112.0890
666.50	112.0964
677.62	90.5730

685.70	72.2712
695.00	67.8330
696.49	79.0200
696.51	79.9496
697.00	91.1193
702.65	86.6199
706.68	87.6603
711.68	81.2545
720.70	81.8789
721.93	0.0000
722.78	85.1416
722.91	85.1453
723.31	85.1564
724.19	77.1429
727.33	73.1932
733.00	67.6772
735.93	59.6720
739.50	78.1671
747.24	82.1201
752.31	84.1328
753.82	65.2546
756.73	70.0435
763.94	110.0268
765.81	75.9212
766.42	74.0359
777.92	70.4695
778.90	75.2519
783.70	80.1240
785.37	76.3444
795.86	54.5566
801.95	90.1235
810.29	74.9563
810.76	79.7713
815.77	63.5199
818.51	51.0472
832.01	67.6687
834.85	68.6874
836.80	0.0000
846.77	59.2030
856.80	92.4487
860.56	51.6273
871.09	63.4924
873.19	63.5268
875.33	0.0000
879.36	63.6300
880.51	66.5861
883.24	62.7135
884.68	57.8357
889.28	62.8125
898.04	63.9368
911.20	56.2567
911.20	56.2567
911.20	56.2567
926.50	74.3073
937.49	70.5378
944.13	51.7461
946.00	50.7738
949.00	51.8085
962.29	68.5407
964.08	72.0000
966.15	60.0293
968.97	39.4751
968.97	39.4751
968.97	39.4751
983.53	45.2115
996.26	53.5548
1001.03	60.5334
1004.73	58.8549
1037.84	61.0547
1038.76	0.0000
1048.07	55.0789
1050.41	39.8014
1050.41	39.8014
1063.66	41.9676
1085.87	60.6949
1099.45	49.5273
1112.07	52.4252
1115.54	63.9040

1120.29	48.7174
1120.29	48.7174
1120.55	48.7212
1121.30	48.7288
1131.51	0.0000
1173.23	56.6104
1177.93	55.6181
1189.05	56.7993
1204.77	68.5917
1221.41	69.8860
1231.02	81.6934
1235.36	71.1466
1238.28	75.4375
1260.41	0.0000
1271.85	45.9954
1274.44	40.6672
1274.54	39.5985
1291.59	53.6906
1298.22	0.0000
1312.11	39.8906
1332.49	22.7295
1365.19	23.3372
1368.63	0.0000
1384.29	18.0334
1408.01	24.4639
1457.56	0.0000
1460.82	21.8489
1489.16	21.0040
1505.03	23.9345
1596.21	29.1713
1620.50	14.6443
1678.03	0.0000
1690.97	10.8623
1764.49	15.9833
1764.49	15.9833
1770.23	8.7485
1771.35	8.7500
1791.20	0.0000
1836.06	14.1382

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911011

Total Uranium Activity	4.5526E+01	ug/g
Total Uranium Counting Unc.	1.3733E+01	ug/g
Total Uranium Tpu	7.0068E-06	ug/g
Total Uranium Mda	6.6040E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 957714                          SAMPLE ID   : G247911011
*  ANALYST       : MXR1                             DETECTOR    : GAM15
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 8-MAR-2010 12:17:57.58           SAMPLE ALQT  : 121.870 GRAM
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.107E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.258E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.792E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.848E+00

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VAX/VMS Nuclide Identification Report Generated 8-MAR-2010 14:19:13.15

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911012.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 12:18:31.
Sample ID          : G247911012      Sample quantity   : 1.24410E+02 GRAM
Detector name      : GAM22           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:02.47  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials  : MXR1
Abundance limit    : 75.00000        Sensitivity       : 5.00000
Batch ID           : 957714          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	63.04*	439	723	1.06	126.33	122	9	6.10E-02	12.3	
2	2	74.68	573	637	0.99	149.59	144	14	7.96E-02	8.1	1.40E+00
3	2	77.00*	875	608	0.95	154.23	144	14	1.22E-01	5.8	
4	3	87.06*	389	653	1.40	174.33	164	29	5.40E-02	12.5	5.84E+00
5	3	89.80	261	543	1.25	179.81	164	29	3.63E-02	16.3	
6	3	92.57*	1021	576	1.35	185.34	164	29	1.42E-01	5.5	
7	0	185.76*	397	748	1.18	371.54	366	12	5.52E-02	15.1	
8	0	209.69	157	583	1.21	419.35	413	11	2.18E-02	31.0	
9	2	238.61*	1883	382	1.28	477.13	472	23	2.61E-01	3.0	3.16E+00
10	2	241.80	478	355	1.71	483.51	472	23	6.64E-02	10.8	
11	0	270.21	193	370	1.31	540.28	536	10	2.68E-02	20.0	
12	0	295.26*	583	292	1.30	590.35	586	10	8.10E-02	7.0	
13	0	300.28	130	307	1.44	600.38	596	10	1.80E-02	26.8	
14	0	328.33	87	352	1.47	656.42	649	11	1.21E-02	43.0	
15	0	338.23*	410	392	1.23	676.20	670	13	5.69E-02	11.2	
16	0	351.91*	1064	334	1.39	703.55	696	13	1.48E-01	4.7	
17	0	463.10*	170	213	1.19	925.77	920	13	2.36E-02	19.6	
18	0	510.70*	261	196	1.88	1020.91	1014	14	3.62E-02	15.2	
19	0	583.20*	593	255	1.62	1165.81	1159	15	8.23E-02	7.3	
20	0	609.27*	833	210	1.59	1217.93	1210	17	1.16E-01	5.4	
21	0	661.44	328	255	1.57	1322.21	1315	17	4.56E-02	12.4	
22	0	727.16*	158	170	2.06	1453.57	1449	16	2.19E-02	20.0	
23	0	767.96	108	135	2.41	1535.15	1530	12	1.50E-02	23.5	
24	0	794.83	96	116	1.57	1588.86	1580	15	1.34E-02	26.4	
25	0	911.44*	497	150	1.97	1822.00	1814	17	6.91E-02	7.5	
26	4	964.68	91	93	1.92	1928.45	1924	34	1.26E-02	21.7	1.74E+00
27	4	968.98	307	105	2.37	1937.05	1924	34	4.27E-02	9.3	
28	0	1120.38*	169	152	1.80	2239.78	2230	19	2.34E-02	19.5	
29	0	1460.89*	2405	45	2.57	2920.81	2908	26	3.34E-01	2.2	
30	0	1588.12	61	63	6.57	3175.31	3163	25	8.49E-03	37.1	
31	0	1729.49	58	15	2.90	3458.15	3451	15	8.04E-03	19.7	
32	0	1764.75*	175	9	3.00	3528.69	3519	18	2.43E-02	9.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 8-MAR-2010 14:19:15

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911012.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 12:18:31
Sample ID        : G247911012 Sample quantity : 124.41 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.47 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.567E+01	3.624E+00	4.478E-01	4.102E-02	79.652
CD-109	+	88.03	*	4.365E+00	1.168E+00	1.184E+00	1.124E-01	3.686
SN-126	+	64.28		3.217E+00	9.169E-01	7.499E-01	1.089E-01	4.290
	+	86.94		1.766E+00	8.565E-01	4.838E-01	2.009E-01	3.650
	+	87.57	*	4.249E-01	1.136E-01	1.157E-01	1.093E-02	3.671
BA-137M	+	661.66	*	3.072E-01	8.261E-02	5.606E-02	5.912E-03	5.480
CS-137	+	661.66	*	3.245E-01	8.728E-02	5.922E-02	6.253E-03	5.480
TL-208		277.37		3.743E-01	4.168E-01	6.831E-01	1.136E-01	0.548
	+	583.19	*	5.352E-01	9.752E-02	5.655E-02	6.127E-03	9.465
		860.56		4.719E-01	3.114E-01	5.454E-01	6.354E-02	0.865
BI-211		72.87		9.188E+00	3.560E+00	5.580E+00	4.466E-01	1.647
	+	351.06	*	4.601E+00	6.902E-01	3.228E-01	3.766E-02	14.254
PB-212	+	74.82		2.735E+00	5.631E-01	5.672E-01	7.202E-02	4.822
	+	77.11		2.395E+00	3.418E-01	3.267E-01	2.732E-02	7.332
	+	238.63	*	1.942E+00	2.817E-01	8.818E-02	1.168E-02	22.019
	+	300.09		2.006E+00	1.113E+00	1.151E+00	1.688E-01	1.743
BI-214	+	609.32	*	1.449E+00	2.300E-01	1.054E-01	1.230E-02	13.750
	+	1120.29		1.455E+00	5.893E-01	4.438E-01	4.925E-02	3.279
	+	1764.49		2.013E+00	4.187E-01	2.547E-01	2.122E-02	7.903
PB-214	+	74.82		4.847E+00	9.601E-01	1.005E+00	1.144E-01	4.822
	+	77.11		4.222E+00	6.960E-01	5.759E-01	6.764E-02	7.332
	+	242.00		2.988E+00	7.639E-01	5.355E-01	7.406E-02	5.579
	+	295.22		1.601E+00	3.277E-01	2.184E-01	3.276E-02	7.331
	+	351.93	*	1.670E+00	2.669E-01	1.174E-01	1.511E-02	14.228
RA-224	+	240.99	*	5.283E+00	1.316E+00	9.442E-01	1.182E-01	5.596
RA-226	+	609.32	*	1.449E+00	2.300E-01	1.054E-01	1.230E-02	13.750
	+	1120.29		1.455E+00	5.893E-01	4.438E-01	4.925E-02	3.279
	+	1764.49		2.013E+00	4.187E-01	2.547E-01	2.122E-02	7.903
AC-228	+	338.32		1.986E+00	9.547E-01	3.769E-01	1.602E-01	5.268
	+	911.20	*	2.086E+00	4.201E-01	2.169E-01	2.938E-02	9.619
	+	968.97		2.215E+00	6.914E-01	3.528E-01	8.869E-02	6.279
RA-228	+	338.32		1.986E+00	9.547E-01	3.769E-01	1.602E-01	5.268
	+	911.20	*	2.086E+00	4.201E-01	2.169E-01	2.938E-02	9.619
	+	968.97		2.215E+00	6.914E-01	3.528E-01	8.869E-02	6.279

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.735E+00	4.974E-01	5.672E-01	4.677E-02	4.822
	+	77.11		2.395E+00	3.418E-01	3.267E-01	2.732E-02	7.332
	+	238.63	*	1.942E+00	2.817E-01	8.818E-02	1.168E-02	22.019
	+	300.09		2.006E+00	1.644E+00	1.151E+00	7.145E-01	1.743
TH-232	+	338.32		1.986E+00	5.046E-01	3.769E-01	4.483E-02	5.268
	+	911.20	*	2.086E+00	4.201E-01	2.169E-01	2.938E-02	9.619
	+	968.97		2.215E+00	6.914E-01	3.528E-01	8.869E-02	6.279
TH-234	+	63.29	*	8.347E+00	2.530E+00	1.974E+00	3.513E-01	4.228
	+	92.59		9.275E+00	2.304E+00	9.748E-01	2.171E-01	9.515
U-235	+	89.96		2.960E+00	1.213E+00	1.210E+00	3.008E-01	2.447
	+	93.35		7.006E+00	1.804E+00	7.329E-01	1.705E-01	9.559
		143.76	*	8.730E-02	2.115E-01	3.523E-01	6.022E-02	0.248
		163.33		-8.193E-02	4.705E-01	7.610E-01	1.407E-01	-0.108
	+	185.72		2.753E-01	8.794E-02	7.008E-02	7.338E-03	3.928
		205.31		-1.262E-01	5.851E-01	8.327E-01	1.623E-01	-0.152
NP-237	+	86.48	*	1.268E+00	4.309E-01	3.488E-01	8.003E-02	3.635
		95.86		-1.111E+00	1.092E+00	1.452E+00	3.496E-01	-0.766
U-238	+	63.29	*	8.347E+00	2.530E+00	1.974E+00	3.513E-01	4.228
	+	92.59		9.275E+00	1.325E+00	9.748E-01	8.867E-02	9.515
ANH-511	+	511.00	*	1.829E-01	5.854E-02	4.405E-02	4.414E-03	4.152

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	4.150E-01	3.228E-01	5.522E-01	5.761E-02	0.752
NA-22		1274.54	*	-5.748E-02	4.340E-02	6.484E-02	5.588E-03	-0.886
NA-24		1368.63	*	-1.633E+01	4.340E-02	Half-Life too short		
SC-46		889.28	*	-3.547E-02	3.928E-02	6.114E-02	6.844E-03	-0.580
	+	1120.55		2.521E-01	1.007E-01	1.219E-01	1.078E-02	2.068
V-48		944.13		-2.408E-01	9.522E-01	1.544E+00	1.675E-01	-0.156
		983.53	*	9.323E-03	8.874E-02	1.256E-01	1.317E-02	0.074
		1312.11		1.744E-02	8.137E-02	1.365E-01	1.203E-02	0.128
CR-51		320.08	*	9.194E-02	3.980E-01	6.359E-01	8.231E-02	0.145
MN-54		834.85	*	1.548E-02	3.546E-02	6.052E-02	6.723E-03	0.256
CO-56		846.77	*	3.014E-02	3.735E-02	6.498E-02	7.233E-03	0.464
		1037.84		-1.315E-01	3.011E-01	4.765E-01	4.910E-02	-0.276
		1238.28		2.196E-01	9.685E-02	1.750E-01	1.517E-02	1.255
		1771.35		1.298E-01	2.229E-01	3.469E-01	2.883E-02	0.374
CO-57		122.06	*	-3.235E-03	2.708E-02	4.273E-02	3.524E-03	-0.076
		136.47		-2.076E-01	2.120E-01	3.464E-01	3.210E-02	-0.599
CO-58		810.76	*	-1.688E-02	3.695E-02	6.004E-02	6.648E-03	-0.281
FE-59		1099.45	*	-1.280E-01	9.692E-02	1.420E-01	1.391E-02	-0.901
		1291.59		-1.519E-01	1.255E-01	1.877E-01	1.850E-02	-0.810
CO-60		1173.23		-1.233E-02	4.170E-02	6.830E-02	5.493E-03	-0.180
		1332.49	*	9.856E-03	3.996E-02	6.477E-02	5.776E-03	0.152
ZN-65		1115.54	*	6.269E-02	1.028E-01	1.495E-01	1.333E-02	0.419
SE-75		121.12		3.232E-02	1.421E-01	2.272E-01	2.453E-02	0.142
		136.00		-2.835E-02	4.096E-02	6.770E-02	5.876E-03	-0.419

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	264.66	*		-2.767E-02	5.509E-02	7.483E-02	1.007E-02	-0.370
	279.54			1.359E-01	1.162E-01	1.923E-01	2.730E-02	0.707
	400.66			-1.081E-01	2.603E-01	4.186E-01	4.889E-02	-0.258
SR-85	514.00	*		1.407E-01	4.810E-02	7.608E-02	7.633E-03	1.850
Y-88	898.04			-2.382E-02	4.053E-02	6.454E-02	7.251E-03	-0.369
	1836.06	*		2.603E-02	3.517E-02	6.240E-02	5.045E-03	0.417
Y-91	1204.77	*		9.283E+00	2.304E+01	3.915E+01	3.218E+00	0.237
NB-94	702.65	*		-1.968E-02	3.480E-02	5.500E-02	5.894E-03	-0.358
	871.09			2.314E-02	3.202E-02	5.540E-02	6.189E-03	0.418
NB-95	765.81	*		1.106E-01	5.274E-02	8.255E-02	9.028E-03	1.339
NB-95M	235.69	*		3.089E-01	1.565E-01	2.348E-01	3.107E-02	1.315
ZR-95	724.19			7.273E-02	1.115E-01	1.628E-01	1.853E-02	0.447
	756.73	*		-2.759E-02	7.427E-02	1.176E-01	1.368E-02	-0.235
MO-99	140.51			-2.149E+01	4.792E+01	7.816E+01	1.860E+01	-0.275
	181.07			1.882E+01	4.314E+01	6.380E+01	1.252E+01	0.295
	366.42			-1.327E+02	1.966E+02	3.142E+02	3.333E+01	-0.422
	739.50	*		5.945E+00	2.451E+01	4.038E+01	6.896E+00	0.147
	777.92			-1.127E+02	7.524E+01	1.082E+02	1.188E+01	-1.041
TC-99M	140.51	*		-5.325E+13	7.524E+01	Half-Life	too short	
RU-103	497.08	*		-2.414E-02	4.198E-02	6.520E-02	9.666E-03	-0.370
	610.33			1.574E+01	3.215E+00	2.765E+00	4.800E-01	5.693
RH-106	621.93	*		-2.625E-02	2.921E-01	4.799E-01	6.962E-02	-0.055
	1050.41			2.187E+00	2.525E+00	4.336E+00	4.232E-01	0.504
RU-106	621.93	*		-2.625E-02	2.921E-01	4.799E-01	5.012E-02	-0.055
	1050.41			2.187E+00	2.525E+00	4.336E+00	4.232E-01	0.504
AG-108M	433.94	*		5.845E-03	2.834E-02	4.667E-02	4.594E-03	0.125
	614.28			1.368E-04	3.682E-02	5.234E-02	5.579E-03	0.003
	722.91			-3.500E-02	4.219E-02	5.431E-02	5.983E-03	-0.644
AG-110M	657.76	*		4.933E-02	4.036E-02	6.174E-02	6.636E-03	0.799
	677.62			2.983E-01	2.982E-01	5.133E-01	5.552E-02	0.581
	706.68			7.684E-02	2.149E-01	3.572E-01	3.905E-02	0.215
	763.94			5.395E-02	1.848E-01	2.620E-01	2.913E-02	0.206
	884.68			-1.153E-02	4.621E-02	7.542E-02	8.600E-03	-0.153
	937.49			1.578E-02	1.096E-01	1.824E-01	2.034E-02	0.087
	1384.29			-2.093E-01	1.741E-01	2.571E-01	2.356E-02	-0.814
	1505.03			-1.749E-01	2.661E-01	4.034E-01	3.588E-02	-0.434
SN-113	391.69	*		-1.025E-02	4.441E-02	7.225E-02	6.900E-03	-0.142
CD-115	260.90			-1.205E-04	4.441E-02	Half-Life	too short	
	492.35			4.574E-05	4.441E-02	Half-Life	too short	
	527.90	*		-2.919E-05	4.441E-02	Half-Life	too short	
SN-117M	156.02			-1.328E+00	2.661E+00	4.384E+00	4.111E-01	-0.303
	158.56	*		-5.574E-02	6.600E-02	1.072E-01	1.016E-02	-0.520
TE-123M	159.00	*		-8.483E-03	2.966E-02	4.915E-02	4.694E-03	-0.173
SB-124	602.73			6.314E-03	4.278E-02	6.161E-02	6.401E-03	0.102
	645.85			3.272E-01	4.886E-01	8.314E-01	9.078E-02	0.394
	722.78			-3.768E-01	4.377E-01	5.615E-01	6.148E-02	-0.671
	1690.97	*		1.580E-03	7.530E-02	1.250E-01	1.114E-02	0.013
SB-125	427.87	*		-7.536E-02	8.769E-02	1.363E-01	1.322E-02	-0.553
	463.37	+		1.073E+00	4.351E-01	5.444E-01	5.633E-02	1.971

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		600.60		-2.987E-02	1.818E-01	2.762E-01	3.015E-02	-0.108
		635.95		1.903E-01	2.461E-01	4.222E-01	4.672E-02	0.451
TE-125M		109.28	*	7.543E+00	1.105E+01	1.801E+01	1.853E+00	0.419
I-126		388.63		4.372E-02	1.900E-01	3.160E-01	2.992E-02	0.138
		666.33	*	6.892E-02	2.954E-01	4.232E-01	4.472E-02	0.163
		753.82		1.954E+00	2.052E+00	3.496E+00	3.810E-01	0.559
SB-126		414.70		-4.342E-02	9.267E-02	1.483E-01	1.404E-02	-0.293
		666.50		1.515E-02	1.017E-01	1.448E-01	1.530E-02	0.105
		695.00		-3.838E-02	9.480E-02	1.477E-01	1.578E-02	-0.260
		697.00		2.040E-01	3.153E-01	5.316E-01	5.685E-02	0.384
		720.70	*	-4.059E-02	1.940E-01	2.657E-01	2.865E-02	-0.153
		856.80		-2.308E-01	5.779E-01	9.403E-01	1.048E-01	-0.245
SB-127		252.40		6.549E-02	7.584E+00	1.224E+01	5.250E+00	0.005
		473.00		-2.830E+00	2.756E+00	4.162E+00	5.977E-01	-0.680
		685.70	*	-4.070E-01	2.001E+00	3.232E+00	4.447E-01	-0.126
		783.70		8.001E+00	6.185E+00	1.052E+01	1.561E+00	0.760
I-131		80.19		4.588E+00	7.833E+00	9.327E+00	8.142E-01	0.492
		284.31		-9.370E-01	1.958E+00	3.054E+00	4.320E-01	-0.307
		364.49	*	-3.394E-02	1.421E-01	2.325E-01	2.580E-02	-0.146
		636.99		1.409E-01	1.869E+00	3.092E+00	3.375E-01	0.046
TE-132		49.72		-1.887E+00	3.146E+01	5.272E+01	6.024E+00	-0.036
		111.76		-1.248E+01	6.986E+01	1.108E+02	1.291E+01	-0.113
		116.30		6.325E+00	5.858E+01	9.355E+01	1.086E+01	0.068
		228.16	*	-6.821E-01	1.452E+00	2.313E+00	4.267E-01	-0.295
BA-133		81.00		-5.871E-02	1.314E-01	1.465E-01	2.282E-02	-0.401
		276.40		6.121E-01	4.187E-01	6.407E-01	1.142E-01	0.955
		302.85		6.027E-02	1.522E-01	2.272E-01	3.749E-02	0.265
		356.01	*	-4.161E-04	4.454E-02	6.408E-02	9.434E-03	-0.006
		383.85		-4.697E-02	2.903E-01	4.748E-01	6.274E-02	-0.099
I-133		529.87	*	1.191E-02	2.903E-01	Half-Life	too short	
		875.33		-5.578E-01	2.903E-01	Half-Life	too short	
		1298.22		1.988E+00	2.903E-01	Half-Life	too short	
CS-134		563.25		2.699E-01	3.450E-01	5.951E-01	6.140E-02	0.454
		569.33		3.756E-03	1.862E-01	3.103E-01	3.218E-02	0.012
		604.72		9.336E-03	3.703E-02	5.367E-02	5.588E-03	0.174
	+	795.86	*	1.232E-01	6.655E-02	7.970E-02	8.821E-03	1.546
		801.95		7.631E-03	4.291E-01	6.170E-01	6.832E-02	0.012
		1365.19		9.818E-01	1.148E+00	2.020E+00	1.882E-01	0.486
CS-135		268.22	*	3.731E-01	1.979E-01	2.941E-01	4.253E-02	1.269
I-135		546.56		-2.150E+12	1.979E-01	Half-Life	too short	
		836.80		2.788E+13	1.979E-01	Half-Life	too short	
		1038.76		-1.453E+13	1.979E-01	Half-Life	too short	
		1131.51		-2.163E+12	1.979E-01	Half-Life	too short	
		1260.41	*	-5.423E+12	1.979E-01	Half-Life	too short	
		1457.56		2.109E+15	1.979E-01	Half-Life	too short	
		1678.03		2.088E+12	1.979E-01	Half-Life	too short	
		1791.20		-1.067E+13	1.979E-01	Half-Life	too short	
CS-136		153.25		1.071E+00	1.013E+00	1.741E+00	1.883E-01	0.615
		176.60		2.026E-01	5.896E-01	9.889E-01	1.081E-01	0.205

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	273.65			-8.906E-01	7.746E-01	1.001E+00	1.427E-01	-0.890
	340.55			1.010E+00	2.435E-01	3.716E-01	4.474E-02	2.717
	818.51			2.854E-02	7.714E-02	1.318E-01	1.461E-02	0.217
	1048.07	*		1.222E-01	1.225E-01	2.118E-01	2.142E-02	0.577
	1235.36			1.123E+00	6.950E-01	1.224E+00	1.421E-01	0.917
CE-139	165.86	*		7.502E-03	3.122E-02	5.243E-02	5.142E-03	0.143
BA-140	162.66			-4.003E-01	1.024E+00	1.644E+00	1.674E-01	-0.243
	304.85			-6.517E-02	1.666E+00	2.431E+00	7.517E-01	-0.027
	423.72			5.345E-01	2.256E+00	3.715E+00	1.231E+00	0.144
	537.26	*		-4.155E-01	3.199E-01	4.418E-01	1.517E-01	-0.940
LA-140	328.76		+	6.148E-01	5.350E-01	6.628E-01	8.377E-02	0.928
	487.02			-1.571E-03	1.607E-01	2.590E-01	2.684E-02	-0.006
	815.77			-5.790E-02	3.392E-01	5.610E-01	6.660E-02	-0.103
	1596.21	*		2.530E-02	9.887E-02	1.453E-01	1.274E-02	0.174
CE-141	145.44	*		5.745E-02	6.737E-02	1.159E-01	1.055E-02	0.496
CE-143	57.36			-3.572E-03	6.737E-02	Half-Life	too short	
	293.27	*		4.199E-03	6.737E-02	Half-Life	too short	
	664.57			2.693E-02	6.737E-02	Half-Life	too short	
	721.93			-4.234E-03	6.737E-02	Half-Life	too short	
CE-144	80.12			-6.327E-01	3.481E+00	3.960E+00	3.423E-01	-0.160
	133.52	*		-6.298E-02	2.040E-01	3.419E-01	5.211E-02	-0.184
PM-144	476.78			3.603E-02	6.403E-02	1.063E-01	1.117E-02	0.339
	618.01			5.505E-03	3.243E-02	5.020E-02	5.339E-03	0.110
	696.49	*		2.591E-02	3.432E-02	5.816E-02	6.220E-03	0.446
PR-144	696.51	*		1.948E+00	2.573E+00	4.360E+00	4.662E-01	0.447
	1489.16			-3.879E+00	1.177E+01	1.850E+01	1.647E+00	-0.210
PM-146	453.88	*		-2.100E-02	4.205E-02	6.641E-02	7.636E-03	-0.316
	633.25			-6.106E-01	1.316E+00	2.075E+00	8.023E-01	-0.294
	735.93			-7.120E-02	1.660E-01	2.202E-01	6.337E-02	-0.323
	747.24			-7.532E-02	9.609E-02	1.471E-01	2.358E-02	-0.512
ND-147	91.11		+	1.151E+00	3.920E-01	7.383E-01	7.298E-02	1.559
	319.41			-1.228E+00	3.829E+00	6.317E+00	7.996E-01	-0.194
	531.02	*		4.255E-01	6.265E-01	1.079E+00	1.711E-01	0.394
PM-149	285.90	*		5.992E-05	6.265E-01	Half-Life	too short	
EU-152	121.78			2.044E-02	7.667E-02	1.227E-01	1.175E-02	0.167
	244.70			2.079E-01	3.274E-01	5.410E-01	6.850E-02	0.384
	344.28	*		-1.084E-01	1.477E-01	1.558E-01	1.872E-02	-0.696
	778.90			-2.124E-01	2.567E-01	3.914E-01	4.296E-02	-0.543
	964.08		+	7.070E-01	3.158E-01	5.746E-01	6.132E-02	1.230
	1085.87			-9.841E-02	3.881E-01	6.204E-01	5.780E-02	-0.159
	1112.07			8.297E-02	3.395E-01	4.795E-01	4.297E-02	0.173
	1408.01			1.062E-01	1.968E-01	3.349E-01	2.994E-02	0.317
GD-153	69.67			-1.460E+00	1.858E+00	2.648E+00	2.056E-01	-0.551
	97.43	*		-2.399E-02	1.017E-01	1.432E-01	1.259E-02	-0.168
	103.18			-1.487E-01	1.174E-01	1.790E-01	1.529E-02	-0.831
EU-154	123.07			-2.842E-02	5.561E-02	8.631E-02	9.563E-03	-0.329
	723.31			-9.713E-02	1.906E-01	2.536E-01	2.918E-02	-0.383
	873.19			1.285E-01	2.607E-01	4.454E-01	6.173E-02	0.289
	996.26			-5.973E-01	3.751E-01	5.236E-01	9.629E-02	-1.141

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1004.73		1.478E-01	2.175E-01	3.697E-01	4.773E-02	0.400
		1274.44	*	-1.651E-01	1.233E-01	1.829E-01	2.079E-02	-0.903
		86.55		5.157E-01	1.381E-01	1.900E-01	1.787E-02	2.714
		105.31	*	-2.143E-02	1.113E-01	1.772E-01	1.520E-02	-0.121
TB-160	+	86.79		1.405E+00	3.759E-01	5.140E-01	4.807E-02	2.734
		197.04		-4.064E-01	6.415E-01	1.000E+00	1.088E-01	-0.406
		215.65		-3.016E-01	8.212E-01	1.277E+00	1.476E-01	-0.236
		298.57		2.851E-01	1.875E-01	2.100E-01	2.815E-02	1.357
		879.36	*	-3.766E-02	1.326E-01	2.161E-01	2.417E-02	-0.174
		962.29		8.425E-01	6.559E-01	1.003E+00	1.072E-01	0.840
		966.15		5.076E-01	2.267E-01	5.461E-01	5.817E-02	0.929
		1177.93		-7.448E-02	3.551E-01	5.848E-01	4.719E-02	-0.127
HO-166M		1271.85		-2.970E-01	6.802E-01	1.091E+00	9.373E-02	-0.272
		80.57		1.209E-01	3.569E-01	4.189E-01	3.640E-02	0.288
		184.41	+	2.187E-01	6.987E-02	7.774E-02	8.105E-03	2.813
		280.46		-5.049E-02	8.862E-02	1.378E-01	1.925E-02	-0.366
		410.95		1.752E-01	2.530E-01	4.259E-01	4.020E-02	0.411
		711.68	*	-4.210E-02	6.088E-02	9.507E-02	1.022E-02	-0.443
		752.31		7.587E-02	2.686E-01	4.427E-01	4.823E-02	0.171
		810.29		-2.548E-02	5.425E-02	8.808E-02	9.738E-03	-0.289
TA-182		67.75		-3.818E-03	1.139E-01	1.780E-01	1.358E-02	-0.021
		100.11		1.184E-02	1.901E-01	3.063E-01	2.654E-02	0.039
		152.43		1.422E-01	3.564E-01	6.048E-01	5.580E-02	0.235
		222.11		-5.644E-02	3.788E-01	6.144E-01	7.251E-02	-0.092
	+	1121.30		6.940E-01	2.771E-01	3.360E-01	2.967E-02	2.065
		1189.05		-4.249E-02	3.037E-01	5.019E-01	4.082E-02	-0.085
		1221.41	*	7.361E-02	2.000E-01	3.389E-01	2.818E-02	0.217
		1231.02		-9.439E-01	5.022E-01	7.368E-01	6.166E-02	-1.281
IR-192	+	295.96		1.216E+00	2.364E-01	2.856E-01	3.865E-02	4.259
		308.46		7.233E-02	9.289E-02	1.600E-01	2.094E-02	0.452
		316.51	*	1.331E-02	3.331E-02	5.663E-02	7.238E-03	0.235
		468.07		4.105E-02	7.481E-02	1.087E-01	1.125E-02	0.378
HG-203		70.83		-4.805E-01	1.501E+00	2.179E+00	3.413E-01	-0.220
		72.87		2.388E+00	9.754E-01	1.450E+00	2.205E-01	1.647
		279.20	*	6.074E-02	4.265E-02	7.078E-02	1.001E-02	0.858
		72.81		4.774E-01	2.030E-01	3.173E-01	2.538E-02	1.505
BI-207	+	74.97		7.883E-01	1.431E-01	2.316E-01	1.894E-02	3.403
		569.70		-7.909E-04	2.885E-02	4.795E-02	4.926E-03	-0.016
		1063.66	*	2.849E-04	5.387E-02	8.783E-02	8.431E-03	0.003
		1770.23		1.477E+00	5.450E-01	1.036E+00	8.608E-02	1.426
PB-210		46.54	*	8.760E-01	3.201E+00	5.265E+00	4.849E-01	0.166
PB-211		404.85	*	-4.239E-01	7.668E-01	1.181E+00	5.731E-01	-0.359
		427.09		-1.613E+00	1.663E+00	2.290E+00	1.064E+00	-0.704
		832.01		-3.752E-01	9.757E-01	1.560E+00	8.162E-01	-0.241
		727.33	*	2.135E+00	9.045E-01	1.067E+00	1.501E-01	2.001
BI-212	+	785.37		6.245E+00	3.517E+00	5.778E+00	6.351E-01	1.081
		1620.50		1.168E+00	2.020E+00	3.560E+00	3.104E-01	0.328
		271.23	+	8.597E-01	3.663E-01	4.703E-01	6.948E-02	1.828
		401.81	*	-2.329E-01	4.125E-01	6.570E-01	1.007E-01	-0.354

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07	-1.332E-01	2.970E-01	3.316E-01	2.898E-02	-0.402
		83.79	3.873E-01	1.289E-01	2.169E-01	1.957E-02	1.785
		94.87	9.480E-01	5.162E-01	7.878E-01	7.044E-02	1.203
		144.24	5.976E-01	7.052E-01	1.188E+00	1.174E-01	0.503
		154.21	3.390E-01	3.913E-01	6.706E-01	6.752E-02	0.506
	+	269.46	6.680E-01	2.824E-01	3.661E-01	5.026E-02	1.825
	+	323.87 *	3.405E-01	7.009E-01	1.043E+00	2.039E-01	0.326
AC-227		338.28	7.880E+00	2.110E+00	2.401E+00	3.504E-01	3.281
		79.69	5.927E-01	1.658E+00	1.947E+00	3.354E-01	0.304
		235.96	1.018E+00	2.341E-01	3.272E-01	4.446E-02	3.111
		256.23 *	2.274E-01	2.746E-01	4.530E-01	7.056E-02	0.502
	+	299.98	2.207E+00	1.235E+00	1.599E+00	2.606E-01	1.380
TH-227		304.50	-9.011E-01	1.759E+00	2.484E+00	4.799E-01	-0.363
		334.37	-8.397E-01	2.059E+00	2.733E+00	4.844E-01	-0.307
		79.80	8.494E-01	2.190E+00	2.572E+00	5.601E-01	0.330
		235.96	1.018E+00	2.314E-01	3.272E-01	4.302E-02	3.111
		256.23 *	2.274E-01	2.750E-01	4.530E-01	7.614E-02	0.502
	+	299.98	2.207E+00	1.235E+00	1.599E+00	2.606E-01	1.380
		304.50	-9.011E-01	1.759E+00	2.484E+00	4.799E-01	-0.363
TH-229		334.37	-8.397E-01	2.059E+00	2.733E+00	4.844E-01	-0.307
		85.43	8.531E-01	2.246E-01	3.767E-01	3.465E-02	2.265
	+	88.47	4.280E-01	1.449E-01	2.340E-01	2.211E-02	1.829
		193.51 *	-2.930E-01	5.485E-01	8.867E-01	9.529E-02	-0.330
PA-231	+	210.85	2.354E+00	1.483E+00	1.628E+00	1.853E-01	1.446
		283.69 *	-6.809E-01	1.476E+00	2.301E+00	4.184E-01	-0.296
TH-231	+	301.36	1.418E+00	7.914E-01	1.024E+00	1.621E-01	1.384
		81.07	-1.332E-01	2.970E-01	3.316E-01	2.898E-02	-0.402
		83.79	3.873E-01	1.289E-01	2.169E-01	1.957E-02	1.785
		94.87	9.480E-01	5.162E-01	7.878E-01	7.044E-02	1.203
		144.24	5.976E-01	7.052E-01	1.188E+00	1.174E-01	0.503
		154.21	3.390E-01	3.913E-01	6.706E-01	6.752E-02	0.506
	+	269.46	6.680E-01	2.824E-01	3.661E-01	5.026E-02	1.825
PA-233		323.87 *	3.405E-01	7.009E-01	1.043E+00	2.039E-01	0.326
	+	338.28	7.880E+00	2.110E+00	2.401E+00	3.504E-01	3.281
	+	300.13	9.987E-01	5.638E-01	7.239E-01	1.303E-01	1.380
		311.90 *	-2.434E-02	6.066E-02	9.986E-02	1.309E-02	-0.244
		340.48	3.909E+00	1.264E+00	1.385E+00	3.516E-01	2.822
PA-234		94.67	5.792E-01	2.043E-01	3.065E-01	3.874E-02	1.889
		98.44	1.173E-01	1.257E-01	1.599E-01	8.924E-02	0.734
		111.00	-6.306E-02	2.058E-01	3.250E-01	3.865E-02	-0.194
		131.20	-7.684E-02	1.119E-01	1.857E-01	1.573E-02	-0.414
		569.50	1.508E-02	2.552E-01	4.260E-01	4.376E-02	0.035
		733.00	-2.823E-03	4.153E-01	5.776E-01	1.337E-01	-0.005
		880.51	1.760E-01	2.558E-01	4.420E-01	4.943E-02	0.398
		883.24	1.330E-01	2.773E-01	4.495E-01	3.038E-01	0.296
		926.50	-1.024E-01	1.640E-01	2.560E-01	6.701E-02	-0.400
		946.00 *	-5.147E-02	2.849E-01	4.640E-01	9.223E-02	-0.111
		949.00	3.240E-01	4.161E-01	7.175E-01	7.752E-02	0.452
PA-234M		766.42	2.674E+01	1.946E+01	2.182E+01	1.117E+01	1.225

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		6.145E+00	4.825E+00	8.392E+00	9.617E-01	0.732
	99.53			2.314E-01	1.756E-01	2.889E-01	2.511E-02	0.801
	103.37			-1.081E-01	1.048E-01	1.615E-01	1.379E-02	-0.669
	106.12			-5.547E-02	9.027E-02	1.414E-01	1.195E-02	-0.392
	117.23	*		-1.964E-01	4.349E-01	6.800E-01	5.619E-02	-0.289
	228.18			-1.079E-01	2.292E-01	3.660E-01	4.403E-02	-0.295
AM-241	277.60			2.070E-01	1.894E-01	3.126E-01	4.358E-02	0.662
	59.54	*		7.682E-02	1.529E-01	2.326E-01	1.818E-02	0.330
CM-247	278.00			9.795E-01	7.967E-01	1.318E+00	1.840E-01	0.743
	287.50			1.219E+00	1.269E+00	2.091E+00	2.877E-01	0.583
CF-249	402.40	*		1.158E-02	3.715E-02	6.180E-02	5.796E-03	0.187
	252.80			1.616E-02	9.978E-01	1.611E+00	2.090E-01	0.010
	333.37			-2.871E-02	2.562E-01	2.895E-01	3.503E-02	-0.099
CF-251	388.16	*		8.474E-03	3.896E-02	6.475E-02	6.147E-03	0.131
	177.52	*		2.753E-02	1.335E-01	2.229E-01	2.271E-02	0.123
	227.38			-1.915E-01	3.764E-01	6.002E-01	7.203E-02	-0.319
	285.41			-5.026E-01	2.253E+00	3.561E+00	4.921E-01	-0.141

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*                                     *****
*
*                                     DETECTOR DATA
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911012
* Acquisition date   : 8-MAR-2010 12:18:31 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 02:00:02.47                      Half life ratio  : 8.000
* *****
*
*                                     SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G247911012                      Analyst initials: MXR1
* Batch Number       : 957714                          Sample Quantity : 1.2441E+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	3.567E+01	3.552E+00	4.473E-01	0.000E+00
CD-109	4.365E+00	1.144E+00	1.229E+00	0.000E+00
SN-126	4.249E-01	1.114E-01	1.201E-01	0.000E+00
BA-137M	3.072E-01	8.096E-02	5.662E-02	0.000E+00
CS-137	3.245E-01	8.554E-02	5.982E-02	0.000E+00
TL-208	5.352E-01	9.557E-02	5.722E-02	0.000E+00
BI-211	4.601E+00	6.764E-01	3.289E-01	0.000E+00
PB-212	1.942E+00	2.760E-01	9.032E-02	0.000E+00
BI-214	1.449E+00	2.254E-01	1.066E-01	0.000E+00
PB-214	1.670E+00	2.615E-01	1.196E-01	0.000E+00
RA-224	5.283E+00	1.289E+00	9.669E-01	0.000E+00
RA-226	1.449E+00	2.254E-01	1.066E-01	0.000E+00
AC-228	2.086E+00	4.117E-01	2.181E-01	0.000E+00
RA-228	2.086E+00	4.117E-01	2.181E-01	0.000E+00
TH-228	1.942E+00	2.760E-01	9.032E-02	0.000E+00
TH-232	2.086E+00	4.117E-01	2.181E-01	0.000E+00
TH-234	8.347E+00	2.480E+00	2.058E+00	0.000E+00
U-235	8.730E-02	2.073E-01	3.633E-01	0.000E+00
NP-237	1.268E+00	4.222E-01	3.621E-01	0.000E+00
U-238	8.347E+00	2.480E+00	2.058E+00	0.000E+00
ANH-511	1.829E-01	5.737E-02	4.465E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	4.150E-01	3.163E-01	5.602E-01	0.000E+00 NOT IDENT.
NA-22	-5.748E-02	4.253E-02	6.490E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.755E+07	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-3.547E-02	3.849E-02	6.150E-02	0.000E+00 FAIL ABUN
V-48	9.323E-03	8.697E-02	1.261E-01	0.000E+00 NOT IDENT.
CR-51	9.194E-02	3.901E-01	6.487E-01	0.000E+00 NOT IDENT.

MN-54	1.548E-02	3.475E-02	6.093E-02	0.000E+00	NOT IDENT.
CO-56	3.014E-02	3.660E-02	6.541E-02	0.000E+00	NOT IDENT.
CO-57	-3.235E-03	2.653E-02	4.416E-02	0.000E+00	NOT IDENT.
CO-58	-1.688E-02	3.621E-02	6.047E-02	0.000E+00	NOT IDENT.
FE-59	-1.280E-01	9.498E-02	1.424E-01	0.000E+00	NOT IDENT.
CO-60	9.856E-03	3.916E-02	6.479E-02	0.000E+00	NOT IDENT.
ZN-65	6.269E-02	1.007E-01	1.499E-01	0.000E+00	NOT IDENT.
SE-75	-2.767E-02	5.398E-02	7.654E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.713E-02	7.711E-02	0.000E+00	NOT IDENT.
Y-88	2.603E-02	3.447E-02	6.213E-02	0.000E+00	NOT IDENT.
Y-91	9.283E+00	2.258E+01	3.921E+01	0.000E+00	NOT IDENT.
NB-94	-1.968E-02	3.410E-02	5.551E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	5.168E-02	8.322E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.534E-01	2.405E-01	0.000E+00	NOT IDENT.
ZR-95	-2.759E-02	7.278E-02	1.185E-01	0.000E+00	NOT IDENT.
MO-99	5.945E+00	2.402E+01	4.072E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.170E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.414E-02	4.114E-02	6.612E-02	0.000E+00	FAIL ABUN
RH-106	-2.625E-02	2.863E-01	4.851E-01	0.000E+00	NOT IDENT.
RU-106	-2.625E-02	2.863E-01	4.851E-01	0.000E+00	NOT IDENT.
AG-108M	5.845E-03	2.778E-02	4.742E-02	0.000E+00	NOT IDENT.
AG-110M	4.933E-02	3.956E-02	6.236E-02	0.000E+00	NOT IDENT.
SN-113	-1.025E-02	4.352E-02	7.350E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	2.627E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-5.574E-02	6.468E-02	1.104E-01	0.000E+00	NOT IDENT.
TE-123M	-8.483E-03	2.907E-02	5.062E-02	0.000E+00	NOT IDENT.
SB-124	1.580E-03	7.379E-02	1.246E-01	0.000E+00	NOT IDENT.
SB-125	-7.536E-02	8.594E-02	1.385E-01	0.000E+00	FAIL ABUN
TE-125M	7.543E+00	1.082E+01	1.864E+01	0.000E+00	NOT IDENT.
I-126	6.892E-02	2.895E-01	4.274E-01	0.000E+00	NOT IDENT.
SB-126	-4.059E-02	1.901E-01	2.680E-01	0.000E+00	NOT IDENT.
SB-127	-4.070E-01	1.961E+00	3.263E+00	0.000E+00	NOT IDENT.
I-131	-3.394E-02	1.393E-01	2.368E-01	0.000E+00	NOT IDENT.
TE-132	-6.821E-01	1.423E+00	2.371E+00	0.000E+00	NOT IDENT.
BA-133	-4.161E-04	4.365E-02	6.527E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	5.576E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.522E-02	8.029E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.939E-01	3.007E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	9.620E+18	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.222E-01	1.201E-01	2.126E-01	0.000E+00	NOT IDENT.
CE-139	7.502E-03	3.059E-02	5.396E-02	0.000E+00	NOT IDENT.
BA-140	-4.155E-01	3.135E-01	4.476E-01	0.000E+00	NOT IDENT.
LA-140	2.530E-02	9.689E-02	1.450E-01	0.000E+00	FAIL ABUN
CE-141	5.745E-02	6.602E-02	1.195E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.256E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-6.298E-02	1.999E-01	3.529E-01	0.000E+00	NOT IDENT.
PM-144	2.591E-02	3.364E-02	5.870E-02	0.000E+00	NOT IDENT.
PR-144	1.948E+00	2.522E+00	4.401E+00	0.000E+00	NOT IDENT.
PM-146	-2.100E-02	4.121E-02	6.742E-02	0.000E+00	NOT IDENT.
ND-147	4.255E-01	6.140E-01	1.093E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	2.284E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.084E-01	1.447E-01	1.587E-01	0.000E+00	FAIL ABUN
GD-153	-2.399E-02	9.964E-02	1.484E-01	0.000E+00	NOT IDENT.
EU-154	-1.651E-01	1.208E-01	1.830E-01	0.000E+00	NOT IDENT.
EU-155	-2.143E-02	1.091E-01	1.835E-01	0.000E+00	FAIL ABUN
TB-160	-3.766E-02	1.300E-01	2.175E-01	0.000E+00	FAIL ABUN
HO-166M	-4.210E-02	5.966E-02	9.593E-02	0.000E+00	FAIL ABUN
TA-182	7.361E-02	1.960E-01	3.394E-01	0.000E+00	FAIL ABUN
IR-192	1.331E-02	3.264E-02	5.778E-02	0.000E+00	FAIL ABUN
HG-203	6.074E-02	4.180E-02	7.234E-02	0.000E+00	NOT IDENT.
BI-207	2.849E-04	5.279E-02	8.812E-02	0.000E+00	FAIL ABUN
PB-210	8.760E-01	3.137E+00	5.510E+00	0.000E+00	NOT IDENT.
PB-211	-4.239E-01	7.515E-01	1.201E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.864E-01	1.077E+00	0.000E+00	FAIL ABUN
RN-219	-2.329E-01	4.042E-01	6.682E-01	0.000E+00	FAIL ABUN
RA-223	3.405E-01	6.869E-01	1.064E+00	0.000E+00	FAIL ABUN
AC-227	2.274E-01	2.691E-01	4.635E-01	0.000E+00	FAIL ABUN
TH-227	2.274E-01	2.695E-01	4.635E-01	0.000E+00	FAIL ABUN
TH-229	-2.930E-01	5.376E-01	9.107E-01	0.000E+00	FAIL ABUN
PA-231	-6.809E-01	1.446E+00	2.351E+00	0.000E+00	FAIL ABUN
TH-231	3.405E-01	6.869E-01	1.064E+00	0.000E+00	FAIL ABUN
PA-233	-2.434E-02	5.944E-02	1.019E-01	0.000E+00	FAIL ABUN
PA-234	-5.147E-02	2.792E-01	4.663E-01	0.000E+00	NOT IDENT.
PA-234M	6.145E+00	4.729E+00	8.428E+00	0.000E+00	NOT IDENT.
NP-239	-1.964E-01	4.262E-01	7.031E-01	0.000E+00	NOT IDENT.
AM-241	7.682E-02	1.498E-01	2.426E-01	0.000E+00	NOT IDENT.
CM-247	1.158E-02	3.641E-02	6.285E-02	0.000E+00	NOT IDENT.
CF-249	8.474E-03	3.818E-02	6.589E-02	0.000E+00	NOT IDENT.

CF-251	2.753E-02	1.308E-01	2.292E-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]G247911012.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 12:18:31.
Sample ID        : G247911012 Sample quantity : 1.24410E+02 GRAM
Detector name    : GAM22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.47 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957714 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	1460.82	2405	10.66*	1.909E+00	3.567E+01	3.567E+01	10.16
CD-109	88.03	389	3.70*	7.468E+00	4.249E+00	4.365E+00	26.75
SN-126	64.28	439	9.60	4.289E+00	3.217E+00	3.217E+00	28.50
	86.94	389	8.90	7.468E+00	1.766E+00	1.766E+00	48.49
	87.57	389	37.00*	7.468E+00	4.249E-01	4.249E-01	26.75
BA-137M	661.66	328	89.90*	3.591E+00	3.068E-01	3.072E-01	26.89
CS-137	661.66	328	85.10*	3.591E+00	3.242E-01	3.245E-01	26.90
TL-208	277.37	-----	6.60	6.182E+00	-----	Line Not Found	-----
	583.19	593	85.00*	3.930E+00	5.352E-01	5.352E-01	18.22
	860.56	-----	12.50	2.923E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	5.897E+00	-----	Line Not Found	-----
	351.06	1064	12.92*	5.401E+00	4.601E+00	4.601E+00	15.00
PB-212	74.82	573	10.28	6.148E+00	2.735E+00	2.735E+00	20.59
	77.11	875	17.10	6.448E+00	2.395E+00	2.395E+00	14.27
	238.63	1883	43.60*	6.710E+00	1.942E+00	1.942E+00	14.51
	300.09	130	3.30	5.914E+00	2.006E+00	2.006E+00	55.49
BI-214	609.32	833	45.49*	3.811E+00	1.449E+00	1.449E+00	15.87
	1120.29	169	14.92	2.345E+00	1.455E+00	1.455E+00	40.49
	1764.49	175	15.30	1.716E+00	2.013E+00	2.013E+00	20.80
PB-214	74.82	573	5.80	6.148E+00	4.847E+00	4.847E+00	19.81
	77.11	875	9.70	6.448E+00	4.222E+00	4.222E+00	16.48
	242.00	478	7.25	6.663E+00	2.988E+00	2.988E+00	25.56
	295.22	583	18.42	5.970E+00	1.601E+00	1.601E+00	20.47
	351.93	1064	35.60*	5.401E+00	1.670E+00	1.670E+00	15.98
RA-224	240.99	478	4.10*	6.663E+00	5.283E+00	5.283E+00	24.90
RA-226	609.32	833	45.49*	3.811E+00	1.449E+00	1.449E+00	15.87
	1120.29	169	14.92	2.345E+00	1.455E+00	1.455E+00	40.49
	1764.49	175	15.30	1.716E+00	2.013E+00	2.013E+00	20.80
AC-228	338.32	410	11.27	5.527E+00	1.986E+00	1.986E+00	48.08
	911.20	497	25.80*	2.788E+00	2.086E+00	2.086E+00	20.14
	968.97	307	15.80	2.649E+00	2.215E+00	2.215E+00	31.21
RA-228	338.32	410	11.27	5.527E+00	1.986E+00	1.986E+00	48.08

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	497	25.80*	2.788E+00	2.086E+00	2.086E+00	20.14
	968.97	307	15.80	2.649E+00	2.215E+00	2.215E+00	31.21
	74.82	573	10.28	6.148E+00	2.735E+00	2.735E+00	18.19
	77.11	875	17.10	6.448E+00	2.395E+00	2.395E+00	14.27
	238.63	1883	43.60*	6.710E+00	1.942E+00	1.942E+00	14.51
TH-232	300.09	130	3.30	5.914E+00	2.006E+00	2.006E+00	81.95
	338.32	410	11.27	5.527E+00	1.986E+00	1.986E+00	25.41
	911.20	497	25.80*	2.788E+00	2.086E+00	2.086E+00	20.14
TH-234	968.97	307	15.80	2.649E+00	2.215E+00	2.215E+00	31.21
	63.29	439	3.70*	4.289E+00	8.347E+00	8.347E+00	30.31
	92.59	1021	4.23	7.852E+00	9.275E+00	9.275E+00	24.85
U-235	89.96	261	3.47	7.673E+00	2.960E+00	2.960E+00	40.97
	93.35	1021	5.60	7.852E+00	7.006E+00	7.006E+00	25.75
	143.76	-----	10.96*	8.364E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.031E+00	-----	Line Not Found	-----
	185.72	397	57.20	7.609E+00	2.753E-01	2.753E-01	31.95
	205.31	-----	5.01	7.253E+00	-----	Line Not Found	-----
NP-237	86.48	389	12.40*	7.468E+00	1.268E+00	1.268E+00	33.99
	95.86	-----	2.68	8.032E+00	-----	Line Not Found	-----
U-238	63.29	439	3.70*	4.289E+00	8.347E+00	8.347E+00	30.31
	92.59	1021	4.23	7.852E+00	9.275E+00	9.275E+00	14.28
ANH-511	511.00	261	100.00*	4.299E+00	1.829E-01	1.829E-01	32.00

Flag: "*" = Keyline

Total number of lines in spectrum 32
Number of unidentified lines 3
Number of lines tentatively identified by NID 29 90.63%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.567E+01	3.567E+01	0.362E+01	10.16	
CD-109	461.40D	1.03	4.249E+00	4.365E+00	1.168E+00	26.75	
SN-126	2.30E+05Y	1.00	4.249E-01	4.249E-01	1.136E-01	26.75	
BA-137M	30.08Y	1.00	3.068E-01	3.072E-01	0.826E-01	26.89	
CS-137	30.08Y	1.00	3.242E-01	3.245E-01	0.873E-01	26.90	
TL-208	1.41E+10Y	1.00	5.352E-01	5.352E-01	0.975E-01	18.22	
BI-211	7.04E+08Y	1.00	4.601E+00	4.601E+00	0.690E+00	15.00	
PB-212	1.41E+10Y	1.00	1.942E+00	1.942E+00	0.282E+00	14.51	
BI-214	1600.00Y	1.00	1.449E+00	1.449E+00	0.230E+00	15.87	
PB-214	1600.00Y	1.00	1.670E+00	1.670E+00	0.267E+00	15.98	
RA-224	1.41E+10Y	1.00	5.283E+00	5.283E+00	1.316E+00	24.90	
RA-226	1600.00Y	1.00	1.449E+00	1.449E+00	0.230E+00	15.87	
AC-228	1.41E+10Y	1.00	2.086E+00	2.086E+00	0.420E+00	20.14	
RA-228	1.41E+10Y	1.00	2.086E+00	2.086E+00	0.420E+00	20.14	
TH-228	1.41E+10Y	1.00	1.942E+00	1.942E+00	0.282E+00	14.51	
TH-232	1.41E+10Y	1.00	2.086E+00	2.086E+00	0.420E+00	20.14	
TH-234	4.47E+09Y	1.00	8.347E+00	8.347E+00	2.530E+00	30.31	
U-235	7.04E+08Y	1.00	2.753E-01	2.753E-01	0.879E-01	31.95	K
NP-237	2.14E+06Y	1.00	1.268E+00	1.268E+00	0.431E+00	33.99	
U-238	4.47E+09Y	1.00	8.347E+00	8.347E+00	2.530E+00	30.31	
ANH-511	1.00E+09Y	1.00	1.829E-01	1.829E-01	0.585E-01	32.00	

Total Activity : 8.452E+01 8.464E+01

Grand Total Activity : 8.452E+01 8.464E+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	209.69	157	583	1.21	419.35	413	11	2.18E-02	61.9	7.18E+00	T
0	270.21	193	370	1.31	540.28	536	10	2.68E-02	40.0	6.27E+00	T
0	328.33	87	352	1.47	656.42	649	11	1.21E-02	86.1	5.62E+00	T
0	463.10	170	213	1.19	925.77	920	13	2.36E-02	39.2	4.58E+00	T
0	727.16	158	170	2.06	1453.57	1449	16	2.19E-02	40.0	3.34E+00	T
0	767.96	108	135	2.41	1535.15	1530	12	1.50E-02	47.0	3.20E+00	
0	794.83	96	116	1.57	1588.86	1580	15	1.34E-02	52.9	3.12E+00	T
4	964.68	91	93	1.92	1928.45	1924	34	1.26E-02	43.4	2.66E+00	T
0	1588.12	61	63	6.57	3175.31	3163	25	8.49E-03	74.3	1.81E+00	
0	1729.49	58	15	2.90	3458.15	3451	15	8.04E-03	39.3	1.73E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911012.CNF;1
* Acquisition date   : 8-MAR-2010 12:18:31.  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 02:00:02.47        Half life ratio   : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G247911012           Analyst initials: MXR1
* Batch Number       : 957714              Sample Quantity  : 1.24410E+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	3.567E+01	3.624E+00	4.478E-01	4.102E-02	79.652
CD-109	4.365E+00	1.168E+00	1.184E+00	1.124E-01	3.686
SN-126	4.249E-01	1.136E-01	1.157E-01	1.093E-02	3.671
BA-137M	3.072E-01	8.261E-02	5.606E-02	5.912E-03	5.480
CS-137	3.245E-01	8.728E-02	5.922E-02	6.253E-03	5.480
TL-208	5.352E-01	9.752E-02	5.655E-02	6.127E-03	9.465
BI-211	4.601E+00	6.902E-01	3.228E-01	3.766E-02	14.254
PB-212	1.942E+00	2.817E-01	8.818E-02	1.168E-02	22.019
BI-214	1.449E+00	2.300E-01	1.054E-01	1.230E-02	13.750
PB-214	1.670E+00	2.669E-01	1.174E-01	1.511E-02	14.228
RA-224	5.283E+00	1.316E+00	9.442E-01	1.182E-01	5.596
RA-226	1.449E+00	2.300E-01	1.054E-01	1.230E-02	13.750
AC-228	2.086E+00	4.201E-01	2.169E-01	2.938E-02	9.619
RA-228	2.086E+00	4.201E-01	2.169E-01	2.938E-02	9.619
TH-228	1.942E+00	2.817E-01	8.818E-02	1.168E-02	22.019
TH-232	2.086E+00	4.201E-01	2.169E-01	2.938E-02	9.619
TH-234	8.347E+00	2.530E+00	1.974E+00	3.513E-01	4.228
U-235	2.753E-01	8.794E-02	3.523E-01	6.022E-02	0.781

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.268E+00	4.309E-01	3.488E-01	8.003E-02	3.635
U-238	8.347E+00	2.530E+00	1.974E+00	3.513E-01	4.228
ANH-511	1.829E-01	5.854E-02	4.405E-02	4.414E-03	4.152

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	4.150E-01		3.228E-01	5.522E-01	5.761E-02	0.752
NA-22	-5.748E-02		4.340E-02	6.484E-02	5.588E-03	-0.886
NA-24	-1.633E+01		8.952E+00	Half-Life	too short	
SC-46	-3.547E-02		3.928E-02	6.114E-02	6.844E-03	-0.580
V-48	9.323E-03		8.874E-02	1.256E-01	1.317E-02	0.074
CR-51	9.194E-02		3.980E-01	6.359E-01	8.231E-02	0.145
MN-54	1.548E-02		3.546E-02	6.052E-02	6.723E-03	0.256
CO-56	3.014E-02		3.735E-02	6.498E-02	7.233E-03	0.464
CO-57	-3.235E-03		2.708E-02	4.273E-02	3.524E-03	-0.076
CO-58	-1.688E-02		3.695E-02	6.004E-02	6.648E-03	-0.281
FE-59	-1.280E-01		9.692E-02	1.420E-01	1.391E-02	-0.901
CO-60	9.856E-03		3.996E-02	6.477E-02	5.776E-03	0.152
ZN-65	6.269E-02		1.028E-01	1.495E-01	1.333E-02	0.419
SE-75	-2.767E-02		5.509E-02	7.483E-02	1.007E-02	-0.370
SR-85	1.407E-01		4.810E-02	7.608E-02	7.633E-03	1.850
Y-88	2.603E-02		3.517E-02	6.240E-02	5.045E-03	0.417
Y-91	9.283E+00		2.304E+01	3.915E+01	3.218E+00	0.237
NB-94	-1.968E-02		3.480E-02	5.500E-02	5.894E-03	-0.358
NB-95	1.106E-01		5.274E-02	8.255E-02	9.028E-03	1.339
NB-95M	3.089E-01		1.565E-01	2.348E-01	3.107E-02	1.315
ZR-95	-2.759E-02		7.427E-02	1.176E-01	1.368E-02	-0.235
MO-99	5.945E+00		2.451E+01	4.038E+01	6.896E+00	0.147
TC-99M	-5.325E+13		5.972E+13	Half-Life	too short	
RU-103	-2.414E-02		4.198E-02	6.520E-02	9.666E-03	-0.370
RH-106	-2.625E-02		2.921E-01	4.799E-01	6.962E-02	-0.055
RU-106	-2.625E-02		2.921E-01	4.799E-01	5.012E-02	-0.055
AG-108M	5.845E-03		2.834E-02	4.667E-02	4.594E-03	0.125
AG-110M	4.933E-02		4.036E-02	6.174E-02	6.636E-03	0.799
SN-113	-1.025E-02		4.441E-02	7.225E-02	6.900E-03	-0.142
CD-115	-2.919E-05		1.340E-05	Half-Life	too short	
SN-117M	-5.574E-02		6.600E-02	1.072E-01	1.016E-02	-0.520
TE-123M	-8.483E-03		2.966E-02	4.915E-02	4.694E-03	-0.173
SB-124	1.580E-03		7.530E-02	1.250E-01	1.114E-02	0.013
SB-125	-7.536E-02		8.769E-02	1.363E-01	1.322E-02	-0.553
TE-125M	7.543E+00		1.105E+01	1.801E+01	1.853E+00	0.419
I-126	6.892E-02		2.954E-01	4.232E-01	4.472E-02	0.163
SB-126	-4.059E-02		1.940E-01	2.657E-01	2.865E-02	-0.153
SB-127	-4.070E-01		2.001E+00	3.232E+00	4.447E-01	-0.126
I-131	-3.394E-02		1.421E-01	2.325E-01	2.580E-02	-0.146
TE-132	-6.821E-01		1.452E+00	2.313E+00	4.267E-01	-0.295

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	-4.161E-04		4.454E-02	6.408E-02	9.434E-03	-0.006
I-133	1.191E-02		2.845E-02	Half-Life too short		
CS-134	1.232E-01	+	6.655E-02	7.970E-02	8.821E-03	1.546
CS-135	3.731E-01		1.979E-01	2.941E-01	4.253E-02	1.269
I-135	-5.423E+12		4.908E+12	Half-Life too short		
CS-136	1.222E-01		1.225E-01	2.118E-01	2.142E-02	0.577
CE-139	7.502E-03		3.122E-02	5.243E-02	5.142E-03	0.143
BA-140	-4.155E-01		3.199E-01	4.418E-01	1.517E-01	-0.940
LA-140	2.530E-02		9.887E-02	1.453E-01	1.274E-02	0.174
CE-141	5.745E-02		6.737E-02	1.159E-01	1.055E-02	0.496
CE-143	4.199E-03		6.408E-04	Half-Life too short		
CE-144	-6.298E-02		2.040E-01	3.419E-01	5.211E-02	-0.184
PM-144	2.591E-02		3.432E-02	5.816E-02	6.220E-03	0.446
PR-144	1.948E+00		2.573E+00	4.360E+00	4.662E-01	0.447
PM-146	-2.100E-02		4.205E-02	6.641E-02	7.636E-03	-0.316
ND-147	4.255E-01		6.265E-01	1.079E+00	1.711E-01	0.394
PM-149	5.992E-05		1.165E-04	Half-Life too short		
EU-152	-1.084E-01		1.477E-01	1.558E-01	1.872E-02	-0.696
GD-153	-2.399E-02		1.017E-01	1.432E-01	1.259E-02	-0.168
EU-154	-1.651E-01		1.233E-01	1.829E-01	2.079E-02	-0.903
EU-155	-2.143E-02		1.113E-01	1.772E-01	1.520E-02	-0.121
TB-160	-3.766E-02		1.326E-01	2.161E-01	2.417E-02	-0.174
HO-166M	-4.210E-02		6.088E-02	9.507E-02	1.022E-02	-0.443
TA-182	7.361E-02		2.000E-01	3.389E-01	2.818E-02	0.217
IR-192	1.331E-02		3.331E-02	5.663E-02	7.238E-03	0.235
HG-203	6.074E-02		4.265E-02	7.078E-02	1.001E-02	0.858
BI-207	2.849E-04		5.387E-02	8.783E-02	8.431E-03	0.003
PB-210	8.760E-01		3.201E+00	5.265E+00	4.849E-01	0.166
PB-211	-4.239E-01		7.668E-01	1.181E+00	5.731E-01	-0.359
BI-212	2.135E+00	+	9.045E-01	1.067E+00	1.501E-01	2.001
RN-219	-2.329E-01		4.125E-01	6.570E-01	1.007E-01	-0.354
RA-223	3.405E-01		7.009E-01	1.043E+00	2.039E-01	0.326
AC-227	2.274E-01		2.746E-01	4.530E-01	7.056E-02	0.502
TH-227	2.274E-01		2.750E-01	4.530E-01	7.614E-02	0.502
TH-229	-2.930E-01		5.485E-01	8.867E-01	9.529E-02	-0.330
PA-231	-6.809E-01		1.476E+00	2.301E+00	4.184E-01	-0.296
TH-231	3.405E-01		7.009E-01	1.043E+00	2.039E-01	0.326
PA-233	-2.434E-02		6.066E-02	9.986E-02	1.309E-02	-0.244
PA-234	-5.147E-02		2.849E-01	4.640E-01	9.223E-02	-0.111
PA-234M	6.145E+00		4.825E+00	8.392E+00	9.617E-01	0.732
NP-239	-1.964E-01		4.349E-01	6.800E-01	5.619E-02	-0.289
AM-241	7.682E-02		1.529E-01	2.326E-01	1.818E-02	0.330
CM-247	1.158E-02		3.715E-02	6.180E-02	5.796E-03	0.187
CF-249	8.474E-03		3.896E-02	6.475E-02	6.147E-03	0.131
CF-251	2.753E-02		1.335E-01	2.229E-01	2.271E-02	0.123

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G247911012
* Acquisition date   : 8-MAR-2010 12:18:31 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 02:00:02.47 Half life ratio : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G247911012 Analyst initials: MXR1
* Batch Number       : 957714 Sample Quantity : 1.2441E+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	3.567E+01	3.552E+00	2.238E-01	1.812E+00
CD-109	4.365E+00	1.144E+00	6.149E-01	5.838E-01
SN-126	4.249E-01	1.114E-01	6.009E-02	5.682E-02
BA-137M	3.072E-01	8.096E-02	2.833E-02	4.130E-02
CS-137	3.245E-01	8.554E-02	2.993E-02	4.364E-02
TL-208	5.352E-01	9.557E-02	2.863E-02	4.876E-02
BI-211	4.601E+00	6.764E-01	1.645E-01	3.451E-01
PB-212	1.942E+00	2.760E-01	4.519E-02	1.408E-01
BI-214	1.449E+00	2.254E-01	5.333E-02	1.150E-01
PB-214	1.670E+00	2.615E-01	5.982E-02	1.334E-01
RA-224	5.283E+00	1.289E+00	4.837E-01	6.578E-01
RA-226	1.449E+00	2.254E-01	5.333E-02	1.150E-01
AC-228	2.086E+00	4.117E-01	1.091E-01	2.100E-01
RA-228	2.086E+00	4.117E-01	1.091E-01	2.100E-01
TH-228	1.942E+00	2.760E-01	4.519E-02	1.408E-01
TH-232	2.086E+00	4.117E-01	1.091E-01	2.100E-01
TH-234	8.347E+00	2.480E+00	1.029E+00	1.265E+00
U-235	8.730E-02	2.073E-01	1.817E-01	1.057E-01
NP-237	1.268E+00	4.222E-01	1.811E-01	2.154E-01
U-238	8.347E+00	2.480E+00	1.029E+00	1.265E+00
ANH-511	1.829E-01	5.737E-02	2.234E-02	2.927E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	4.150E-01	3.163E-01	2.803E-01	1.614E-01 NOT IDENT.
NA-22	-5.748E-02	4.253E-02	3.247E-02	2.170E-02 NOT IDENT.
NA-24	-1.633E+07	1.755E+07	0.000E+00	8.952E+06 SHORT HLIF
SC-46	-3.547E-02	3.849E-02	3.077E-02	1.964E-02 FAIL ABUN
V-48	9.323E-03	8.697E-02	6.311E-02	4.437E-02 NOT IDENT.
CR-51	9.194E-02	3.901E-01	3.245E-01	1.990E-01 NOT IDENT.

MN-54	1.548E-02	3.475E-02	3.048E-02	1.773E-02	NOT IDENT.
CO-56	3.014E-02	3.660E-02	3.272E-02	1.867E-02	NOT IDENT.
CO-57	-3.235E-03	2.653E-02	2.209E-02	1.354E-02	NOT IDENT.
CO-58	-1.688E-02	3.621E-02	3.026E-02	1.848E-02	NOT IDENT.
FE-59	-1.280E-01	9.498E-02	7.126E-02	4.846E-02	NOT IDENT.
CO-60	9.856E-03	3.916E-02	3.241E-02	1.998E-02	NOT IDENT.
ZN-65	6.269E-02	1.007E-01	7.498E-02	5.138E-02	NOT IDENT.
SE-75	-2.767E-02	5.398E-02	3.829E-02	2.754E-02	NOT IDENT.
SR-85	1.407E-01	4.713E-02	3.858E-02	2.405E-02	NOT IDENT.
Y-88	2.603E-02	3.447E-02	3.109E-02	1.759E-02	NOT IDENT.
Y-91	9.283E+00	2.258E+01	1.962E+01	1.152E+01	NOT IDENT.
NB-94	-1.968E-02	3.410E-02	2.777E-02	1.740E-02	NOT IDENT.
NB-95	1.106E-01	5.168E-02	4.163E-02	2.637E-02	NOT IDENT.
NB-95M	3.089E-01	1.534E-01	1.203E-01	7.825E-02	NOT IDENT.
ZR-95	-2.759E-02	7.278E-02	5.930E-02	3.713E-02	NOT IDENT.
MO-99	5.945E+00	2.402E+01	2.037E+01	1.226E+01	NOT IDENT.
TC-99M	-5.325E+19	1.170E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.414E-02	4.114E-02	3.308E-02	2.099E-02	FAIL ABUN
RH-106	-2.625E-02	2.863E-01	2.427E-01	1.461E-01	NOT IDENT.
RU-106	-2.625E-02	2.863E-01	2.427E-01	1.460E-01	NOT IDENT.
AG-108M	5.845E-03	2.778E-02	2.372E-02	1.417E-02	NOT IDENT.
AG-110M	4.933E-02	3.956E-02	3.120E-02	2.018E-02	NOT IDENT.
SN-113	-1.025E-02	4.352E-02	3.677E-02	2.220E-02	NOT IDENT.
CD-115	-2.919E+01	2.627E+01	0.000E+00	1.340E+01	SHORT HLIF
SN-117M	-5.574E-02	6.468E-02	5.522E-02	3.300E-02	NOT IDENT.
TE-123M	-8.483E-03	2.907E-02	2.532E-02	1.483E-02	NOT IDENT.
SB-124	1.580E-03	7.379E-02	6.234E-02	3.765E-02	NOT IDENT.
SB-125	-7.536E-02	8.594E-02	6.929E-02	4.385E-02	FAIL ABUN
TE-125M	7.543E+00	1.082E+01	9.323E+00	5.523E+00	NOT IDENT.
I-126	6.892E-02	2.895E-01	2.139E-01	1.477E-01	NOT IDENT.
SB-126	-4.059E-02	1.901E-01	1.341E-01	9.701E-02	NOT IDENT.
SB-127	-4.070E-01	1.961E+00	1.632E+00	1.001E+00	NOT IDENT.
I-131	-3.394E-02	1.393E-01	1.185E-01	7.105E-02	NOT IDENT.
TE-132	-6.821E-01	1.423E+00	1.186E+00	7.259E-01	NOT IDENT.
BA-133	-4.161E-04	4.365E-02	3.266E-02	2.227E-02	NOT IDENT.
I-133	1.191E+04	5.576E+04	0.000E+00	2.845E+04	SHORT HLIF
CS-134	1.232E-01	6.522E-02	4.017E-02	3.328E-02	FAIL ABUN
CS-135	3.731E-01	1.939E-01	1.504E-01	9.893E-02	NOT IDENT.
I-135	-5.423E+18	9.620E+18	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.222E-01	1.201E-01	1.064E-01	6.126E-02	NOT IDENT.
CE-139	7.502E-03	3.059E-02	2.700E-02	1.561E-02	NOT IDENT.
BA-140	-4.155E-01	3.135E-01	2.239E-01	1.600E-01	NOT IDENT.
LA-140	2.530E-02	9.689E-02	7.255E-02	4.944E-02	FAIL ABUN
CE-141	5.745E-02	6.602E-02	5.978E-02	3.368E-02	NOT IDENT.
CE-143	4.199E+03	1.256E+03	0.000E+00	6.408E+02	SHORT HLIF
CE-144	-6.298E-02	1.999E-01	1.765E-01	1.020E-01	NOT IDENT.
PM-144	2.591E-02	3.364E-02	2.937E-02	1.716E-02	NOT IDENT.
PR-144	1.948E+00	2.522E+00	2.202E+00	1.287E+00	NOT IDENT.
PM-146	-2.100E-02	4.121E-02	3.373E-02	2.102E-02	NOT IDENT.
ND-147	4.255E-01	6.140E-01	5.469E-01	3.132E-01	FAIL ABUN
PM-149	5.992E+01	2.284E+02	0.000E+00	1.165E+02	SHORT HLIF
EU-152	-1.084E-01	1.447E-01	7.942E-02	7.384E-02	FAIL ABUN
GD-153	-2.399E-02	9.964E-02	7.426E-02	5.084E-02	NOT IDENT.
EU-154	-1.651E-01	1.208E-01	9.156E-02	6.163E-02	NOT IDENT.
EU-155	-2.143E-02	1.091E-01	9.179E-02	5.566E-02	FAIL ABUN
TB-160	-3.766E-02	1.300E-01	1.088E-01	6.632E-02	FAIL ABUN
HO-166M	-4.210E-02	5.966E-02	4.799E-02	3.044E-02	FAIL ABUN
TA-182	7.361E-02	1.960E-01	1.698E-01	1.000E-01	FAIL ABUN
IR-192	1.331E-02	3.264E-02	2.891E-02	1.665E-02	FAIL ABUN
HG-203	6.074E-02	4.180E-02	3.619E-02	2.132E-02	NOT IDENT.
BI-207	2.849E-04	5.279E-02	4.409E-02	2.693E-02	FAIL ABUN
PB-210	8.760E-01	3.137E+00	2.756E+00	1.600E+00	NOT IDENT.
PB-211	-4.239E-01	7.515E-01	6.007E-01	3.834E-01	NOT IDENT.
BI-212	2.135E+00	8.864E-01	5.386E-01	4.523E-01	FAIL ABUN
RN-219	-2.329E-01	4.042E-01	3.343E-01	2.062E-01	FAIL ABUN
RA-223	3.405E-01	6.869E-01	5.324E-01	3.505E-01	FAIL ABUN
AC-227	2.274E-01	2.691E-01	2.319E-01	1.373E-01	FAIL ABUN
TH-227	2.274E-01	2.695E-01	2.319E-01	1.375E-01	FAIL ABUN
TH-229	-2.930E-01	5.376E-01	4.556E-01	2.743E-01	FAIL ABUN
PA-231	-6.809E-01	1.446E+00	1.176E+00	7.378E-01	FAIL ABUN
TH-231	3.405E-01	6.869E-01	5.324E-01	3.505E-01	FAIL ABUN
PA-233	-2.434E-02	5.944E-02	5.098E-02	3.033E-02	FAIL ABUN
PA-234	-5.147E-02	2.792E-01	2.333E-01	1.425E-01	NOT IDENT.
PA-234M	6.145E+00	4.729E+00	4.216E+00	2.413E+00	NOT IDENT.
NP-239	-1.964E-01	4.262E-01	3.517E-01	2.175E-01	NOT IDENT.
AM-241	7.682E-02	1.498E-01	1.214E-01	7.644E-02	NOT IDENT.
CM-247	1.158E-02	3.641E-02	3.144E-02	1.858E-02	NOT IDENT.
CF-249	8.474E-03	3.818E-02	3.296E-02	1.948E-02	NOT IDENT.

CF-251	2.753E-02	1.308E-01	1.147E-01	6.674E-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
46.54	405.6023
49.72	425.3853
57.36	0.0000
59.54	435.8195
63.29	509.1285
63.29	509.1285
64.28	535.8561
67.75	551.3215
69.67	612.0034
70.83	626.4605
72.81	611.1931
72.87	611.3201
72.87	611.3201
74.82	656.7973
74.82	656.7973
74.82	656.7973
74.97	657.1279
77.11	661.7994
77.11	661.7994
77.11	661.7994
79.69	579.0547
79.80	579.2584
80.12	644.6197
80.19	567.6384
80.57	568.3235
81.00	646.4216
81.07	646.5651
81.07	646.5651
83.79	518.9515
83.79	518.9515
85.43	521.5581
86.48	523.2130
86.55	523.3221
86.79	523.6977
86.94	523.9363
87.57	524.9210
88.03	525.6393
88.47	526.3246
89.96	528.6304
91.11	530.3981
92.59	532.6545
92.59	532.6545
93.35	533.8068
94.67	507.3448
94.87	507.6284
94.87	507.6284
95.86	575.2869
97.43	522.6039
98.44	462.2042
99.53	455.9541
100.11	510.0707
103.18	534.0245
103.37	518.9004
105.31	503.8479
106.12	535.9036
109.28	510.0851
111.00	559.3598
111.76	559.2900
116.30	492.8216
117.23	504.1568
121.12	446.7640
121.78	441.6953
122.06	461.5473
123.07	485.6935
131.20	572.7123
133.52	501.2092
136.00	502.0844

136.47	513.2769
140.51	512.2311
140.51	0.0000
143.76	467.6990
144.24	445.5146
144.24	445.5146
145.44	460.2114
152.43	461.0681
153.25	447.9719
154.21	446.0284
154.21	446.0284
156.02	490.1984
158.56	507.4531
159.00	478.9809
162.66	498.1893
163.33	491.2861
165.86	460.5232
176.60	428.9354
177.52	443.0981
181.07	455.8543
184.41	498.9492
185.72	472.6895
193.51	464.8579
197.04	464.4846
205.31	480.3395
210.85	391.7162
215.65	425.6040
222.11	428.5640
227.38	430.7278
228.16	425.9907
228.18	426.0032
235.69	390.6532
235.96	360.4771
235.96	360.4771
238.63	338.1128
238.63	338.1128
240.99	339.1846
242.00	339.6411
244.70	340.8594
252.40	349.6740
252.80	347.6996
256.23	345.9827
256.23	345.9827
260.90	0.0000
264.66	353.1548
268.22	321.3401
269.46	307.7582
269.46	307.7582
271.23	375.3917
273.65	441.8884
276.40	317.7321
277.37	343.9914
277.60	334.0918
278.00	320.9269
279.20	298.0322
279.54	298.1508
280.46	344.1359
283.69	313.0219
284.31	316.6045
285.41	315.8903
285.90	0.0000
287.50	277.3549
293.27	0.0000
295.22	293.0248
295.96	281.1759
298.57	282.0009
299.98	282.4436
299.98	282.4436
300.09	256.6632
300.09	256.6632
300.13	259.7111
301.36	264.6285
302.85	281.8209
304.50	289.9672
304.50	289.9672
304.85	268.7051
308.46	241.8720
311.90	269.5439

316.51	243.9749
319.41	271.7147
320.08	254.9096
323.87	257.0975
323.87	257.0975
328.76	313.2202
333.37	289.5290
334.37	302.4219
334.37	302.4219
338.28	279.9007
338.28	279.9007
338.32	279.9151
338.32	279.9151
338.32	279.9151
340.48	267.8412
340.55	264.6919
344.28	311.8127
351.06	258.4889
351.93	258.7089
356.01	230.1232
364.49	236.5364
366.42	247.6965
383.85	246.7598
388.16	231.8026
388.63	230.9040
391.69	241.5155
400.66	256.5097
401.81	263.8166
402.40	236.7499
404.85	276.6289
410.95	248.6517
414.70	266.7558
423.72	218.5148
427.09	236.6176
427.87	224.4160
433.94	197.6029
453.88	221.8050
463.37	206.5043
468.07	177.1383
473.00	221.8988
476.78	185.0880
477.60	161.6504
487.02	195.1318
492.35	0.0000
497.08	204.1769
511.00	182.0934
514.00	179.5480
527.90	0.0000
529.87	0.0000
531.02	157.5869
537.26	195.4950
546.56	0.0000
563.25	166.7009
569.33	177.8197
569.50	175.9367
569.70	178.8127
583.19	181.3211
600.60	183.6247
602.73	173.1350
604.72	186.6836
609.32	169.6564
609.32	169.6564
610.33	169.7626
614.28	160.9487
618.01	156.8294
621.93	155.2323
621.93	155.2323
633.25	153.3097
635.95	127.7980
636.99	147.6995
645.85	146.4706
657.76	149.6253
661.66	165.9030
661.66	165.9030
664.57	0.0000
666.33	171.0920
666.50	171.1092
677.62	132.9003

685.70	138.5871
695.00	178.2126
696.49	160.9320
696.51	160.9352
697.00	165.0781
702.65	202.6071
706.68	169.0316
711.68	180.8497
720.70	163.7659
721.93	0.0000
722.78	174.6377
722.91	174.6479
723.31	169.3380
724.19	171.1975
727.33	133.9678
733.00	145.1118
735.93	152.5091
739.50	138.4104
747.24	162.1180
752.31	144.5953
753.82	129.9167
756.73	160.7856
763.94	154.6940
765.81	143.9094
766.42	163.9945
777.92	173.1764
778.90	159.3583
783.70	142.5789
785.37	131.6086
795.86	136.7988
801.95	134.6496
810.29	134.9539
810.76	134.0533
815.77	118.5066
818.51	110.2505
832.01	151.3755
834.85	139.3359
836.80	0.0000
846.77	110.7546
856.80	172.1211
860.56	124.7840
871.09	108.1465
873.19	109.2049
875.33	0.0000
879.36	121.0298
880.51	101.8705
883.24	105.8412
884.68	120.3504
889.28	142.7814
898.04	135.5786
911.20	123.6868
911.20	123.6868
911.20	123.6868
926.50	121.5522
937.49	128.0209
944.13	122.4496
946.00	120.5682
949.00	102.9064
962.29	151.4721
964.08	153.3232
966.15	110.6051
968.97	110.7309
968.97	110.7309
968.97	110.7309
983.53	110.6288
996.26	156.3190
1001.03	107.1036
1004.73	123.4488
1037.84	117.8638
1038.76	0.0000
1048.07	102.8878
1050.41	106.0679
1050.41	106.0679
1063.66	130.3945
1085.87	126.2499
1099.45	148.8940
1112.07	112.4427
1115.54	121.8083

1120.29	122.5420
1120.29	122.5420
1120.55	122.5541
1121.30	136.8530
1131.51	0.0000
1173.23	128.0479
1177.93	135.7998
1189.05	139.1494
1204.77	153.2075
1221.41	150.2252
1231.02	206.3654
1235.36	150.9103
1238.28	128.9251
1260.41	0.0000
1271.85	106.0062
1274.44	132.3726
1274.54	132.3767
1291.59	117.4329
1298.22	0.0000
1312.11	75.8321
1332.49	73.3338
1365.19	54.0428
1368.63	0.0000
1384.29	106.6826
1408.01	82.0876
1457.56	0.0000
1460.82	42.1786
1489.16	50.8049
1505.03	62.4811
1596.21	39.2584
1620.50	34.3506
1678.03	0.0000
1690.97	35.9301
1764.49	22.7323
1764.49	22.7323
1770.23	17.8145
1771.35	21.3832
1791.20	0.0000
1836.06	31.1505

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911012

Total Uranium Activity	2.4874E+01	ug/g
Total Uranium Counting Unc.	7.3780E+00	ug/g
Total Uranium Tpu	3.7643E-06	ug/g
Total Uranium Mda	3.0638E+00	ug/g

```

*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 957714                      SAMPLE ID   : G247911012          *
*  ANALYST       : MXR1                        DETECTOR    : GAM22           *
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00    COUNT TIME   : 0 02:00:00.00    *
*  ANALYSIS DATE : 8-MAR-2010 12:18:31.25    SAMPLE ALQT  : 124.410 GRAM      *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.180E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.267E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.884E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.408E+00

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VAX/VMS Nuclide Identification Report Generated 8-MAR-2010 16:57:47.79

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911013.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 14:57:17.
Sample ID          : G247911013      Sample quantity   : 1.26130E+02 GRAM
Detector name      : GAM15            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:01.36  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity      : 5.00000
Batch ID           : 957714            Detector SN#      :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.82*	345	533	1.60	148.56	142	18	4.80E-02	14.6	3.30E+00
2	2	77.26*	620	465	1.54	153.45	142	18	8.61E-02	7.9	
3	0	87.33	110	511	1.04	173.59	170	8	1.53E-02	36.6	
4	0	93.43*	136	502	1.65	185.78	181	10	1.89E-02	34.1	
5	0	186.06*	169	379	1.97	371.04	366	11	2.35E-02	24.5	
6	0	209.61	169	354	1.32	418.13	413	12	2.35E-02	23.6	
7	3	238.78*	1308	235	1.32	476.47	471	18	1.82E-01	3.6	1.42E+00
8	3	241.80*	332	278	2.04	482.51	471	18	4.62E-02	16.0	
9	0	270.10	77	169	1.02	539.11	535	7	1.07E-02	30.4	
10	2	295.22*	375	171	1.85	589.34	581	24	5.21E-02	8.6	1.67E+00
11	2	300.30*	115	143	1.92	599.49	581	24	1.60E-02	22.6	
12	0	328.26	101	151	0.99	655.42	651	10	1.40E-02	24.8	
13	0	338.47*	257	198	1.08	675.84	671	11	3.57E-02	12.5	
14	0	351.90*	588	177	1.37	702.70	697	12	8.17E-02	6.2	
15	0	463.19	82	87	1.34	925.27	920	10	1.13E-02	24.1	
16	0	510.95*	129	139	1.92	1020.81	1014	14	1.79E-02	24.5	
17	0	583.04*	416	112	1.55	1164.99	1157	15	5.77E-02	7.6	
18	0	609.33*	428	129	1.75	1217.58	1211	17	5.94E-02	8.0	
19	0	727.19*	103	60	1.83	1453.31	1448	11	1.43E-02	18.1	
20	0	768.27	30	45	1.26	1535.49	1532	8	4.23E-03	42.0	
21	0	911.06*	280	51	1.89	1821.10	1815	16	3.89E-02	8.5	
22	0	969.20*	165	93	1.95	1937.41	1929	14	2.30E-02	14.9	
23	0	1120.38*	105	55	1.24	2239.84	2232	16	1.46E-02	18.9	
24	0	1460.45	1094	36	2.07	2920.16	2909	20	1.52E-01	3.3	
25	3	1588.00	19	2	1.69	3175.34	3172	16	2.63E-03	26.0	1.50E+00
26	3	1591.92	27	1	2.01	3183.19	3172	16	3.74E-03	22.6	
27	0	1630.39	16	12	1.46	3260.16	3255	11	2.25E-03	50.1	
28	0	1764.31*	68	13	1.56	3528.10	3521	14	9.38E-03	17.8	

Flag: "*" = Peak area was modified by background subtraction


```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911013.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 14:57:17
Sample ID        : G247911013 Sample quantity : 126.13 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA15 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.36 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	+	1460.82	*	3.162E+01	3.743E+00	7.748E-01	7.614E-02	40.811
CD-109	+	88.03	*	2.053E+00	1.524E+00	2.143E+00	2.660E-01	0.958
SN-126		64.28		6.548E-01	9.246E-01	1.557E+00	2.636E-01	0.421
	+	86.94		8.305E-01	7.020E-01	8.468E-01	3.580E-01	0.981
	+	87.57	*	1.998E-01	1.483E-01	2.045E-01	2.530E-02	0.977
TL-208		277.37		6.268E-01	5.522E-01	9.528E-01	1.347E-01	0.658
	+	583.19	*	6.640E-01	1.177E-01	7.062E-02	6.459E-03	9.402
		860.56		7.718E-01	4.214E-01	7.620E-01	7.450E-02	1.013
BI-211		72.87		1.411E+01	5.867E+00	9.034E+00	1.035E+00	1.562
	+	351.06	*	4.314E+00	6.869E-01	4.212E-01	4.194E-02	10.244
PB-212	+	74.82		3.097E+00	1.015E+00	8.725E-01	1.314E-01	3.549
	+	77.11		3.081E+00	6.020E-01	4.866E-01	5.641E-02	6.331
	+	238.63	*	2.170E+00	3.022E-01	1.225E-01	1.464E-02	17.717
	+	300.09		2.961E+00	1.385E+00	1.682E+00	2.048E-01	1.761
BI-214	+	609.32	*	1.322E+00	2.483E-01	1.435E-01	1.430E-02	9.212
	+	1120.29		1.713E+00	6.741E-01	5.964E-01	6.459E-02	2.872
	+	1764.49		1.536E+00	5.633E-01	4.228E-01	3.707E-02	3.633
PB-214	+	74.82		5.488E+00	1.772E+00	1.546E+00	2.161E-01	3.549
	+	77.11		5.431E+00	1.152E+00	8.579E-01	1.220E-01	6.331
	+	242.00		3.345E+00	1.147E+00	7.447E-01	9.276E-02	4.492
	+	295.22		1.708E+00	3.642E-01	2.975E-01	3.708E-02	5.741
	+	351.93	*	1.566E+00	2.638E-01	1.543E-01	1.754E-02	10.149
RA-224	+	240.99	*	5.915E+00	1.999E+00	1.312E+00	1.448E-01	4.507
RA-226	+	609.32	*	1.322E+00	2.483E-01	1.435E-01	1.430E-02	9.212
	+	1120.29		1.713E+00	6.741E-01	5.964E-01	6.459E-02	2.872
	+	1764.49		1.536E+00	5.633E-01	4.228E-01	3.707E-02	3.633
AC-228	+	338.32		2.104E+00	1.028E+00	5.139E-01	2.158E-01	4.094
	+	911.20	*	2.164E+00	4.501E-01	2.808E-01	3.402E-02	7.706
	+	968.97		2.210E+00	8.521E-01	4.384E-01	1.077E-01	5.042
RA-228	+	338.32		2.104E+00	1.028E+00	5.139E-01	2.158E-01	4.094
	+	911.20	*	2.164E+00	4.501E-01	2.808E-01	3.402E-02	7.706
	+	968.97		2.210E+00	8.521E-01	4.384E-01	1.077E-01	5.042
TH-228	+	74.82		3.097E+00	9.699E-01	8.725E-01	1.009E-01	3.549
	+	77.11		3.081E+00	6.020E-01	4.866E-01	5.641E-02	6.331

Sample ID : G247911013

Acquisition date : 8-MAR-2010 14:57:17

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	2.170E+00	3.022E-01	1.225E-01	1.464E-02	17.717
	+	300.09		2.961E+00	2.260E+00	1.682E+00	1.035E+00	1.761
TH-232	+	338.32		2.104E+00	5.651E-01	5.139E-01	5.067E-02	4.094
	+	911.20	*	2.164E+00	4.501E-01	2.808E-01	3.402E-02	7.706
	+	968.97		2.210E+00	8.521E-01	4.384E-01	1.077E-01	5.042
NP-237	+	86.48	*	5.960E-01	4.597E-01	5.614E-01	1.364E-01	1.062
		95.86		1.116E-01	1.357E+00	1.954E+00	4.893E-01	0.057
ANH-511	+	511.00	*	1.582E-01	7.869E-02	5.855E-02	5.059E-03	2.701

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	4.096E-02	4.448E-01	7.296E-01	6.781E-02	0.056
NA-22		1274.54	*	-9.714E-03	5.193E-02	8.208E-02	7.456E-03	-0.118
NA-24		1368.63	*	-1.632E+01	5.193E-02	Half-Life too short		
SC-46		889.28	*	-4.303E-02	4.874E-02	7.344E-02	6.825E-03	-0.586
	+	1120.55		2.970E-01	1.152E-01	1.608E-01	1.367E-02	1.848
V-48		944.13		6.657E-02	1.284E+00	2.123E+00	1.962E-01	0.031
		983.53	*	-5.232E-02	9.702E-02	1.505E-01	1.376E-02	-0.348
		1312.11		5.227E-02	1.144E-01	1.941E-01	1.829E-02	0.269
CR-51		320.08	*	-2.017E-01	5.421E-01	8.823E-01	9.364E-02	-0.229
MN-54		834.85	*	4.359E-02	5.161E-02	9.011E-02	8.177E-03	0.484
CO-56		846.77	*	-3.504E-02	5.032E-02	7.811E-02	7.127E-03	-0.449
		1037.84		1.559E-01	3.985E-01	6.759E-01	6.338E-02	0.231
		1238.28		1.578E-01	1.222E-01	2.165E-01	1.946E-02	0.729
		1771.35		-9.895E-01	4.017E-01	3.635E-01	3.176E-02	-2.722
CO-57		122.06	*	-1.212E-02	3.472E-02	5.561E-02	5.602E-03	-0.218
		136.47		-1.995E-02	2.899E-01	4.681E-01	4.974E-02	-0.043
CO-58		810.76	*	-4.312E-02	5.202E-02	8.023E-02	7.213E-03	-0.538
FE-59		1099.45	*	7.174E-02	1.205E-01	2.072E-01	1.933E-02	0.346
		1291.59		-8.766E-02	1.696E-01	2.577E-01	2.662E-02	-0.340
CO-60		1173.23		-3.969E-03	5.768E-02	9.310E-02	7.579E-03	-0.043
		1332.49	*	2.844E-02	4.601E-02	7.996E-02	7.686E-03	0.356
ZN-65		1115.54	*	4.875E-02	1.321E-01	1.932E-01	1.651E-02	0.252
SE-75		121.12		5.288E-02	1.794E-01	2.948E-01	3.610E-02	0.179
		136.00		-5.224E-02	5.762E-02	8.970E-02	9.081E-03	-0.582
		264.66	*	5.097E-02	7.121E-02	1.079E-01	1.184E-02	0.472
		279.54		1.515E-01	1.600E-01	2.761E-01	3.057E-02	0.549
		400.66		2.107E-01	3.536E-01	5.994E-01	6.567E-02	0.352
SR-85		514.00	*	1.079E-01	6.173E-02	9.821E-02	8.485E-03	1.098
Y-88		898.04		-2.502E-02	5.698E-02	9.055E-02	8.479E-03	-0.276
		1836.06	*	1.617E-02	4.121E-02	7.258E-02	6.112E-03	0.223
Y-91		1204.77	*	-1.165E+00	2.935E+01	4.743E+01	3.998E+00	-0.025
NB-94		702.65	*	1.684E-02	4.243E-02	7.288E-02	6.153E-03	0.231
		871.09		-7.388E-03	4.048E-02	6.578E-02	6.067E-03	-0.112
NB-95		765.81	*	2.985E-02	6.385E-02	9.603E-02	8.414E-03	0.311
NB-95M		235.69	*	3.638E-01	2.113E-01	3.289E-01	3.963E-02	1.106
ZR-95		724.19		1.718E-01	1.435E-01	2.289E-01	2.126E-02	0.751

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
MO-99		756.73	*	8.971E-02	1.036E-01	1.821E-01	1.750E-02	0.493
		140.51		-2.277E+01	6.744E+01	1.063E+02	2.586E+01	-0.214
		181.07		2.309E+01	6.063E+01	8.641E+01	1.718E+01	0.267
		366.42		-1.693E+02	2.719E+02	4.314E+02	3.954E+01	-0.392
		739.50	*	1.242E+01	3.303E+01	5.656E+01	8.917E+00	0.220
TC-99M		777.92		-1.133E+02	9.678E+01	1.447E+02	1.276E+01	-0.783
		140.51	*	-7.440E+13	9.678E+01	Half-Life	too short	
RU-103		497.08	*	-6.472E-03	5.595E-02	9.032E-02	1.263E-02	-0.072
	+	610.33		1.439E+01	3.275E+00	3.568E+00	5.800E-01	4.034
RH-106		621.93	*	-6.765E-02	4.042E-01	6.413E-01	8.411E-02	-0.105
		1050.41		1.368E+00	3.176E+00	5.405E+00	4.803E-01	0.253
RU-106		621.93	*	-6.765E-02	4.042E-01	6.413E-01	5.389E-02	-0.105
		1050.41		1.368E+00	3.176E+00	5.405E+00	4.803E-01	0.253
AG-108M		433.94	*	-5.285E-02	3.877E-02	5.725E-02	5.060E-03	-0.923
		614.28		-7.793E-03	4.927E-02	6.706E-02	5.849E-03	-0.116
AG-110M		722.91		-4.485E-02	5.565E-02	7.298E-02	6.442E-03	-0.615
		657.76	*	4.220E-02	4.008E-02	7.223E-02	6.147E-03	0.584
		677.62		4.523E-01	3.697E-01	6.718E-01	5.755E-02	0.673
		706.68		8.098E-02	2.736E-01	4.667E-01	4.068E-02	0.174
		763.94		-4.065E-02	2.324E-01	3.273E-01	2.941E-02	-0.124
		884.68		-3.983E-02	5.518E-02	8.413E-02	8.021E-03	-0.473
		937.49		6.383E-02	1.430E-01	2.444E-01	2.334E-02	0.261
		1384.29		-1.350E-01	2.017E-01	3.090E-01	3.041E-02	-0.437
SN-113		1505.03		2.684E-01	3.777E-01	6.792E-01	6.492E-02	0.395
		391.69	*	-1.868E-02	6.067E-02	9.803E-02	8.513E-03	-0.191
CD-115		260.90		-5.807E-04	6.067E-02	Half-Life	too short	
		492.35		-5.826E-06	6.067E-02	Half-Life	too short	
		527.90	*	7.825E-06	6.067E-02	Half-Life	too short	
SN-117M		156.02		1.496E-01	3.598E+00	5.810E+00	6.056E-01	0.026
		158.56	*	-6.408E-02	8.844E-02	1.379E-01	1.446E-02	-0.465
TE-123M		159.00	*	-2.226E-02	4.027E-02	6.331E-02	6.672E-03	-0.352
SB-124		602.73		-3.407E-02	6.135E-02	8.005E-02	6.785E-03	-0.426
		645.85		-3.516E-01	6.721E-01	1.032E+00	9.092E-02	-0.341
		722.78		-5.001E-01	5.768E-01	7.500E-01	6.560E-02	-0.667
SB-125		1690.97	*	-7.014E-02	9.257E-02	1.286E-01	1.211E-02	-0.545
		427.87	*	9.939E-02	1.166E-01	2.008E-01	1.748E-02	0.495
	+	463.37		8.972E-01	4.409E-01	6.686E-01	6.195E-02	1.342
TE-125M		600.60		-6.479E-02	2.416E-01	3.704E-01	3.381E-02	-0.175
		635.95		-3.199E-01	3.551E-01	5.255E-01	4.764E-02	-0.609
		109.28	*	-1.193E+01	1.364E+01	2.137E+01	2.540E+00	-0.558
I-126		388.63		-2.899E-02	2.733E-01	4.309E-01	3.667E-02	-0.067
		666.33	*	2.308E-01	3.035E-01	5.360E-01	4.420E-02	0.431
SB-126		753.82		2.043E+00	2.884E+00	5.032E+00	4.380E-01	0.406
		414.70		-1.308E-01	1.161E-01	1.760E-01	1.496E-02	-0.743
		666.50		7.842E-02	1.048E-01	1.850E-01	1.526E-02	0.424
		695.00		-3.605E-02	1.127E-01	1.842E-01	1.547E-02	-0.196
		697.00		-3.417E-01	3.950E-01	6.176E-01	5.196E-02	-0.553
		720.70	*	-3.009E-02	2.407E-01	3.419E-01	2.918E-02	-0.088
		856.80		-1.517E+00	8.094E-01	1.124E+00	1.030E-01	-1.350

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	252.40			-7.222E-01	9.719E+00	1.622E+01	6.870E+00	-0.045
	473.00			1.142E-01	3.662E+00	5.985E+00	8.142E-01	0.019
	685.70	*		1.685E+00	2.693E+00	4.709E+00	5.702E-01	0.358
	783.70			8.197E+00	7.354E+00	1.313E+01	1.754E+00	0.624
I-131	80.19			5.228E+00	9.970E+00	1.469E+01	1.736E+00	0.356
	284.31			-2.377E+00	2.664E+00	4.238E+00	4.718E-01	-0.561
	364.49	*		-6.434E-02	1.931E-01	3.123E-01	3.021E-02	-0.206
	636.99			-1.021E+00	2.618E+00	4.068E+00	3.610E-01	-0.251
TE-132	49.72			-1.280E+02	1.124E+02	1.752E+02	2.782E+01	-0.731
	111.76			-2.349E+01	8.505E+01	1.370E+02	1.793E+01	-0.171
	116.30			-6.091E+00	7.368E+01	1.195E+02	1.555E+01	-0.051
	228.16	*		-6.578E-01	1.905E+00	3.154E+00	5.625E-01	-0.209
BA-133	81.00			-1.762E-01	1.643E-01	2.210E-01	3.866E-02	-0.797
	276.40			5.609E-01	5.165E-01	8.880E-01	1.382E-01	0.632
	302.85			2.454E-01	2.061E-01	3.183E-01	4.580E-02	0.771
	356.01	*		-4.927E-03	6.378E-02	9.084E-02	1.227E-02	-0.054
	383.85			6.094E-02	3.807E-01	6.328E-01	7.879E-02	0.096
I-133	529.87	*		8.365E-02	3.807E-01	Half-Life too short		
	875.33			-1.240E+00	3.807E-01	Half-Life too short		
	1298.22			-1.577E+00	3.807E-01	Half-Life too short		
CS-134	563.25			4.760E-01	4.698E-01	8.114E-01	7.029E-02	0.587
	569.33			9.892E-02	2.575E-01	4.275E-01	3.713E-02	0.231
	604.72			-1.461E-02	5.118E-02	6.891E-02	5.850E-03	-0.212
	795.86	*		5.339E-02	6.232E-02	1.094E-01	9.809E-03	0.488
	801.95			-7.026E-02	5.616E-01	9.023E-01	8.100E-02	-0.078
	1365.19			1.135E+00	1.481E+00	2.694E+00	2.691E-01	0.421
CS-135	268.22	*		2.063E-01	2.619E-01	3.963E-01	4.756E-02	0.521
I-135	546.56			1.440E+13	2.619E-01	Half-Life too short		
	836.80			7.480E+13	2.619E-01	Half-Life too short		
	1038.76			3.312E+13	2.619E-01	Half-Life too short		
	1131.51			7.855E+12	2.619E-01	Half-Life too short		
	1260.41	*		1.017E+13	2.619E-01	Half-Life too short		
	1457.56			2.333E+15	2.619E-01	Half-Life too short		
	1678.03			-2.479E+13	2.619E-01	Half-Life too short		
	1791.20			-8.118E+12	2.619E-01	Half-Life too short		
CS-136	153.25			7.151E-01	1.370E+00	2.250E+00	2.648E-01	0.318
	176.60			-2.811E-01	8.260E-01	1.306E+00	1.500E-01	-0.215
	273.65			-9.581E-01	1.005E+00	1.368E+00	1.567E-01	-0.700
	340.55			9.907E-01	3.162E-01	5.062E-01	5.112E-02	1.957
	818.51			1.150E-02	9.976E-02	1.673E-01	1.508E-02	0.069
	1048.07	*		6.486E-04	1.534E-01	2.510E-01	2.322E-02	0.003
	1235.36			6.182E-02	9.387E-01	1.528E+00	1.808E-01	0.040
BA-137M	661.66	*		-3.181E-02	4.182E-02	6.600E-02	5.426E-03	-0.482
CS-137	661.66	*		-3.360E-02	4.418E-02	6.972E-02	5.744E-03	-0.482
CE-139	165.86	*		-2.643E-02	4.299E-02	6.730E-02	7.184E-03	-0.393
BA-140	162.66			8.986E-01	1.327E+00	2.188E+00	2.421E-01	0.411
	304.85			3.085E-01	2.280E+00	3.325E+00	9.934E-01	0.093
	423.72			-5.247E-01	2.921E+00	4.727E+00	1.554E+00	-0.111
	537.26	*		2.771E-01	3.893E-01	6.468E-01	2.194E-01	0.428

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LA-140	+	328.76		1.207E+00	6.114E-01	8.814E-01	9.242E-02	1.370
		487.02		1.912E-02	2.031E-01	3.331E-01	3.054E-02	0.057
		815.77		-4.218E-01	4.588E-01	6.945E-01	6.921E-02	-0.607
		1596.21	*	-5.691E-04	9.705E-02	1.370E-01	1.285E-02	-0.004
CE-141		145.44	*	1.150E-01	9.463E-02	1.586E-01	1.639E-02	0.725
CE-143		57.36		4.361E-03	9.463E-02	Half-Life	too short	
		293.27	*	4.015E-03	9.463E-02	Half-Life	too short	
		664.57		1.393E-04	9.463E-02	Half-Life	too short	
		721.93		-4.140E-03	9.463E-02	Half-Life	too short	
CE-144		80.12		2.837E+00	4.216E+00	6.245E+00	7.341E-01	0.454
		133.52	*	-5.686E-03	2.828E-01	4.579E-01	7.388E-02	-0.012
PM-144		476.78		3.906E-02	8.559E-02	1.436E-01	1.347E-02	0.272
		618.01		4.968E-03	4.780E-02	6.703E-02	5.810E-03	0.074
		696.49	*	-2.529E-02	4.315E-02	6.909E-02	5.814E-03	-0.366
PR-144		696.51	*	-2.350E+00	3.268E+00	5.179E+00	4.356E-01	-0.454
		1489.16		-7.859E+00	1.577E+01	2.427E+01	2.325E+00	-0.324
PM-146		453.88	*	-1.712E-02	5.339E-02	8.532E-02	9.023E-03	-0.201
		633.25		-4.385E-01	1.857E+00	2.915E+00	1.111E+00	-0.150
		735.93		5.458E-02	1.794E-01	3.052E-01	8.553E-02	0.179
		747.24		-7.129E-02	1.235E-01	1.961E-01	2.866E-02	-0.364
ND-147		91.11		1.979E-01	8.078E-01	8.497E-01	1.052E-01	0.233
		319.41		-7.410E-01	5.461E+00	9.004E+00	9.223E-01	-0.082
		531.02	*	3.004E-01	9.081E-01	1.505E+00	2.251E-01	0.200
PM-149		285.90	*	5.759E-05	9.081E-01	Half-Life	too short	
EU-152		121.78		-2.419E-02	9.855E-02	1.585E-01	1.774E-02	-0.153
		244.70		7.125E-01	4.839E-01	7.594E-01	8.370E-02	0.938
		344.28	*	4.590E-02	1.529E-01	2.125E-01	2.163E-02	0.216
		778.90		-4.282E-01	3.233E-01	4.745E-01	4.186E-02	-0.903
		964.08		1.870E-01	4.760E-01	6.981E-01	6.420E-02	0.268
		1085.87		-2.134E-01	4.451E-01	6.878E-01	5.989E-02	-0.310
		1112.07		-7.143E-02	4.442E-01	6.334E-01	5.420E-02	-0.113
		1408.01		2.479E-02	2.305E-01	3.895E-01	3.753E-02	0.064
GD-153		69.67		1.212E+00	3.146E+00	4.639E+00	5.295E-01	0.261
		97.43	*	-6.437E-02	1.274E-01	1.772E-01	1.955E-02	-0.363
		103.18		-1.584E-01	1.553E-01	2.423E-01	2.562E-02	-0.654
EU-154		123.07		-1.158E-02	7.033E-02	1.135E-01	1.416E-02	-0.102
		723.31		-6.983E-02	2.474E-01	3.454E-01	3.257E-02	-0.202
		873.19		-1.403E-01	3.408E-01	5.414E-01	6.684E-02	-0.259
		996.26		-1.871E-01	4.234E-01	6.617E-01	1.172E-01	-0.283
		1004.73		-6.024E-02	2.828E-01	4.549E-01	5.447E-02	-0.132
		1274.44	*	6.451E-03	1.430E-01	2.323E-01	2.724E-02	0.028
EU-155	+	86.55		2.425E-01	1.800E-01	2.612E-01	3.222E-02	0.928
		105.31	*	1.282E-01	1.445E-01	2.426E-01	2.555E-02	0.529
TB-160	+	86.79		6.614E-01	4.909E-01	7.072E-01	8.695E-02	0.935
		197.04		8.677E-02	7.721E-01	1.240E+00	1.353E-01	0.070
		215.65		3.844E-01	1.198E+00	1.788E+00	1.967E-01	0.215
		298.57		2.573E-01	1.661E-01	2.857E-01	3.022E-02	0.901
		879.36	*	1.527E-01	1.679E-01	2.993E-01	2.771E-02	0.510
		962.29		1.042E+00	8.435E-01	1.339E+00	1.232E-01	0.778

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		966.15		1.244E+00	4.177E-01	7.051E-01	6.481E-02	1.764
		1177.93		-1.394E-01	4.818E-01	7.612E-01	6.229E-02	-0.183
		1271.85		-4.931E-01	8.892E-01	1.343E+00	1.216E-01	-0.367
		80.57		-2.295E-01	4.580E-01	6.441E-01	7.589E-02	-0.356
		184.41		1.032E-01	5.834E-02	8.725E-02	9.435E-03	1.183
		280.46		6.634E-03	1.200E-01	2.007E-01	2.168E-02	0.033
		410.95		7.282E-02	3.261E-01	5.423E-01	4.603E-02	0.134
		711.68	*	1.551E-02	7.685E-02	1.303E-01	1.106E-02	0.119
TA-182		752.31		-7.472E-02	3.716E-01	6.105E-01	5.309E-02	-0.122
		810.29		-8.917E-02	7.897E-02	1.185E-01	1.063E-02	-0.752
		67.75		-3.476E-01	2.112E-01	3.072E-01	3.505E-02	-1.132
		100.11		2.098E-01	2.469E-01	4.044E-01	4.365E-02	0.519
		152.43		1.813E-01	4.849E-01	7.933E-01	8.204E-02	0.228
		222.11		2.455E-01	4.946E-01	8.468E-01	9.332E-02	0.290
	+	1121.30		8.175E-01	3.170E-01	4.361E-01	3.707E-02	1.874
		1189.05		3.827E-02	4.319E-01	7.064E-01	5.852E-02	0.054
IR-192		1221.41	*	9.287E-02	2.728E-01	4.544E-01	3.900E-02	0.204
	+	1231.02		-1.739E-01	6.804E-01	1.079E+00	9.354E-02	-0.161
		295.96		1.299E+00	2.641E-01	3.629E-01	3.872E-02	3.580
		308.46		-7.442E-03	1.285E-01	2.130E-01	2.229E-02	-0.035
		316.51	*	1.906E-02	4.765E-02	8.067E-02	8.318E-03	0.236
		468.07		8.725E-02	9.971E-02	1.519E-01	1.405E-02	0.574
		70.83		9.838E-01	2.471E+00	3.637E+00	6.447E-01	0.270
		72.87		3.674E+00	1.600E+00	2.352E+00	4.062E-01	1.562
HG-203		279.20	*	7.606E-02	5.869E-02	1.021E-01	1.123E-02	0.745
		72.81		7.479E-01	3.345E-01	5.146E-01	5.894E-02	1.453
	+	74.97		8.926E-01	2.794E-01	3.644E-01	4.194E-02	2.449
		569.70		3.629E-02	3.913E-02	6.729E-02	5.764E-03	0.539
		1063.66	*	-7.688E-02	7.223E-02	1.059E-01	9.340E-03	-0.726
		1770.23		7.873E-02	4.631E-01	6.903E-01	6.034E-02	0.114
		46.54	*	6.695E+00	1.317E+01	2.190E+01	2.696E+00	0.306
		404.85	*	-6.950E-01	1.078E+00	1.620E+00	7.834E-01	-0.429
PB-210		427.09		-7.473E-01	2.025E+00	3.193E+00	1.477E+00	-0.234
PB-211		832.01		-7.588E-01	1.397E+00	2.126E+00	1.104E+00	-0.357
BI-212	+	727.33	*	2.505E+00	9.585E-01	1.494E+00	1.856E-01	1.677
		785.37		1.620E+00	3.851E+00	6.609E+00	5.851E-01	0.245
		1620.50		2.662E+00	2.960E+00	5.497E+00	5.117E-01	0.484
	+	271.23		5.603E-01	3.471E-01	5.931E-01	7.247E-02	0.945
		401.81	*	1.731E-01	5.627E-01	9.399E-01	1.389E-01	0.184
		81.07		-4.035E-01	3.680E-01	4.993E-01	5.900E-02	-0.808
		83.79		-6.488E-02	2.486E-01	2.973E-01	3.574E-02	-0.218
	+	94.87		1.465E+00	1.014E+00	1.089E+00	1.232E-01	1.346
RN-219		144.24		7.429E-01	9.623E-01	1.579E+00	1.744E-01	0.471
		154.21		2.654E-01	5.318E-01	8.731E-01	9.670E-02	0.304
	+	269.46		4.354E-01	2.687E-01	4.587E-01	5.061E-02	0.949
		323.87	*	-5.973E-01	9.796E-01	1.337E+00	2.426E-01	-0.447
	+	338.28		8.350E+00	2.351E+00	3.158E+00	4.101E-01	2.644
		79.69		4.415E+00	2.299E+00	3.361E+00	6.379E-01	1.314
		235.96		9.381E-01	2.829E-01	4.387E-01	5.451E-02	2.139

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-227		256.23	*	3.368E-02	3.371E-01	5.670E-01	7.846E-02	0.059
	+	299.98		3.258E+00	1.541E+00	2.132E+00	3.005E-01	1.528
		304.50		-1.585E-01	2.310E+00	3.319E+00	5.835E-01	-0.048
		334.37		2.834E+00	3.273E+00	4.025E+00	6.584E-01	0.704
		79.80		3.777E+00	2.944E+00	4.292E+00	9.953E-01	0.880
		235.96		9.381E-01	2.811E-01	4.387E-01	5.240E-02	2.139
TH-229		256.23	*	3.368E-02	3.371E-01	5.670E-01	8.625E-02	0.059
	+	299.98		3.258E+00	1.541E+00	2.132E+00	3.005E-01	1.528
		304.50		-1.585E-01	2.310E+00	3.319E+00	5.835E-01	-0.048
		334.37		2.834E+00	3.273E+00	4.025E+00	6.584E-01	0.704
		85.43		5.068E-01	3.561E-01	5.339E-01	6.496E-02	0.949
	+	88.47		3.080E-01	2.286E-01	3.336E-01	4.111E-02	0.923
PA-231		193.51	*	1.700E-01	7.095E-01	1.147E+00	1.248E-01	0.148
	+	210.85		4.001E+00	1.938E+00	2.228E+00	2.447E-01	1.795
		283.69	*	-1.398E+00	2.000E+00	3.208E+00	5.115E-01	-0.436
TH-231	+	301.36		2.093E+00	9.866E-01	1.371E+00	1.862E-01	1.526
		81.07		-4.035E-01	3.680E-01	4.993E-01	5.900E-02	-0.808
		83.79		-6.488E-02	2.486E-01	2.973E-01	3.574E-02	-0.218
PA-233	+	94.87		1.465E+00	1.014E+00	1.089E+00	1.232E-01	1.346
		144.24		7.429E-01	9.623E-01	1.579E+00	1.744E-01	0.471
		154.21		2.654E-01	5.318E-01	8.731E-01	9.670E-02	0.304
	+	269.46		4.354E-01	2.687E-01	4.587E-01	5.061E-02	0.949
		323.87	*	-5.973E-01	9.796E-01	1.337E+00	2.426E-01	-0.447
	+	338.28		8.350E+00	2.351E+00	3.158E+00	4.101E-01	2.644
PA-234	+	300.13		1.474E+00	7.062E-01	9.641E-01	1.546E-01	1.529
		311.90	*	-1.417E-01	8.681E-02	1.288E-01	1.362E-02	-1.100
		340.48		3.815E+00	1.444E+00	1.869E+00	4.582E-01	2.042
PA-234M	+	94.67		5.310E-01	3.705E-01	4.070E-01	5.873E-02	1.305
		98.44		9.209E-02	1.474E-01	2.009E-01	1.129E-01	0.458
		111.00		-1.108E-01	2.458E-01	3.928E-01	5.215E-02	-0.282
		131.20		1.747E-01	1.505E-01	2.526E-01	2.536E-02	0.692
		569.50		2.310E-01	3.498E-01	5.914E-01	5.066E-02	0.391
		733.00		1.653E-01	5.250E-01	7.802E-01	1.731E-01	0.212
		880.51		2.002E-01	3.364E-01	5.771E-01	5.344E-02	0.347
		883.24		-1.563E-01	3.464E-01	5.200E-01	3.500E-01	-0.301
		926.50		1.263E-01	2.192E-01	3.759E-01	9.589E-02	0.336
		946.00	*	4.098E-01	3.711E-01	6.576E-01	1.253E-01	0.623
		949.00		-2.443E-02	5.426E-01	8.891E-01	8.211E-02	-0.027
		766.42		1.133E+01	1.743E+01	2.525E+01	1.282E+01	0.449
TH-234		1001.03	*	2.206E+00	5.996E+00	9.842E+00	1.021E+00	0.224
		63.29	*	2.863E+00	2.582E+00	4.333E+00	8.593E-01	0.661
U-235	+	92.59		1.971E+00	1.422E+00	1.755E+00	4.110E-01	1.123
		89.96		-9.656E-01	2.084E+00	2.067E+00	5.378E-01	-0.467
	+	93.35		1.489E+00	1.079E+00	1.285E+00	3.126E-01	1.159
U-238		143.76	*	6.267E-02	2.883E-01	4.650E-01	8.274E-02	0.135
		163.33		4.900E-01	6.086E-01	9.995E-01	1.898E-01	0.490
	+	185.72		1.812E-01	9.082E-02	1.152E-01	1.246E-02	1.573
		205.31		-1.311E-01	7.542E-01	1.037E+00	2.008E-01	-0.126
		63.29	*	2.863E+00	2.582E+00	4.333E+00	8.593E-01	0.661

Sample ID : G247911013

Acquisition date : 8-MAR-2010 14:57:17

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	92.59		1.971E+00	1.364E+00	1.755E+00	2.040E-01	1.123
NP-239		99.53		2.828E-01	2.295E-01	3.691E-01	4.001E-02	0.766
		103.37		-9.324E-02	1.388E-01	2.203E-01	2.326E-02	-0.423
		106.12		9.876E-02	1.144E-01	1.919E-01	1.997E-02	0.515
	*	117.23		-1.629E-01	5.386E-01	8.655E-01	8.735E-02	-0.188
		228.18		-1.006E-01	2.939E-01	4.874E-01	5.376E-02	-0.206
		277.60		2.751E-01	2.528E-01	4.378E-01	4.740E-02	0.628
AM-241	*	59.54		-4.941E-01	3.281E-01	5.042E-01	5.918E-02	-0.980
CM-247		278.00		1.414E+00	1.066E+00	1.858E+00	2.012E-01	0.761
		287.50		-6.560E-01	2.019E+00	2.813E+00	3.017E-01	-0.233
	*	402.40		3.177E-02	5.109E-02	8.677E-02	7.338E-03	0.366
CF-249		252.80		-1.861E-01	1.273E+00	2.119E+00	2.330E-01	-0.088
		333.37		2.900E-01	3.924E-01	4.174E-01	4.160E-02	0.695
	*	388.16		8.106E-03	5.488E-02	8.776E-02	7.481E-03	0.092
CF-251	*	177.52		2.143E-02	1.901E-01	3.004E-01	3.233E-02	0.071
		227.38		-2.394E-01	4.858E-01	8.002E-01	8.826E-02	-0.299
		285.41		3.362E-01	2.923E+00	4.901E+00	5.267E-01	0.069

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911013      *
* Acquisition date   : 8-MAR-2010 14:57:17 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 02:00:01.36 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G247911013 Analyst initials: MXR1                 *
* Batch Number       : 957714 Sample Quantity : 1.2613E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*                                     *                                       *
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32 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	3.162E+01	3.669E+00	7.744E-01	0.000E+00
CD-109	2.053E+00	1.493E+00	2.230E+00	0.000E+00
SN-126	1.998E-01	1.453E-01	2.128E-01	0.000E+00
TL-208	6.640E-01	1.153E-01	7.155E-02	0.000E+00
BI-211	4.314E+00	6.732E-01	4.298E-01	0.000E+00
PB-212	2.170E+00	2.962E-01	1.257E-01	0.000E+00
BI-214	1.322E+00	2.434E-01	1.453E-01	0.000E+00
PB-214	1.566E+00	2.586E-01	1.574E-01	0.000E+00
RA-224	5.915E+00	1.959E+00	1.347E+00	0.000E+00
RA-226	1.322E+00	2.434E-01	1.453E-01	0.000E+00
AC-228	2.164E+00	4.411E-01	2.827E-01	0.000E+00
RA-228	2.164E+00	4.411E-01	2.827E-01	0.000E+00
TH-228	2.170E+00	2.962E-01	1.257E-01	0.000E+00
TH-232	2.164E+00	4.411E-01	2.827E-01	0.000E+00
NP-237	5.960E-01	4.505E-01	5.843E-01	0.000E+00
ANH-511	1.582E-01	7.712E-02	5.943E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	4.096E-02	4.359E-01	7.413E-01	0.000E+00 NOT IDENT.
NA-22	-9.714E-03	5.089E-02	8.220E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.392E+07	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-4.303E-02	4.776E-02	7.394E-02	0.000E+00 FAIL ABUN
V-48	-5.232E-02	9.508E-02	1.513E-01	0.000E+00 NOT IDENT.
CR-51	-2.017E-01	5.313E-01	9.017E-01	0.000E+00 NOT IDENT.
MN-54	4.359E-02	5.058E-02	9.081E-02	0.000E+00 NOT IDENT.
CO-56	-3.504E-02	4.931E-02	7.870E-02	0.000E+00 NOT IDENT.
CO-57	-1.212E-02	3.403E-02	5.761E-02	0.000E+00 NOT IDENT.
CO-58	-4.312E-02	5.098E-02	8.089E-02	0.000E+00 NOT IDENT.
FE-59	7.174E-02	1.181E-01	2.080E-01	0.000E+00 NOT IDENT.

CO-60	2.844E-02	4.509E-02	8.002E-02	0.000E+00	NOT IDENT.
ZN-65	4.875E-02	1.294E-01	1.939E-01	0.000E+00	NOT IDENT.
SE-75	5.097E-02	6.979E-02	1.106E-01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	6.049E-02	9.968E-02	0.000E+00	NOT IDENT.
Y-88	1.617E-02	4.039E-02	7.229E-02	0.000E+00	NOT IDENT.
Y-91	-1.165E+00	2.876E+01	4.754E+01	0.000E+00	NOT IDENT.
NB-94	1.684E-02	4.159E-02	7.364E-02	0.000E+00	NOT IDENT.
NB-95	2.985E-02	6.257E-02	9.690E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.071E-01	3.376E-01	0.000E+00	NOT IDENT.
ZR-95	8.971E-02	1.015E-01	1.837E-01	0.000E+00	NOT IDENT.
MO-99	1.242E+01	3.237E+01	5.711E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.167E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-6.472E-03	5.483E-02	9.171E-02	0.000E+00	FAIL ABUN
RH-106	-6.765E-02	3.961E-01	6.491E-01	0.000E+00	NOT IDENT.
RU-106	-6.765E-02	3.961E-01	6.491E-01	0.000E+00	NOT IDENT.
AG-108M	-5.285E-02	3.800E-02	5.825E-02	0.000E+00	NOT IDENT.
AG-110M	4.220E-02	3.927E-02	7.305E-02	0.000E+00	NOT IDENT.
SN-113	-1.868E-02	5.946E-02	9.988E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	3.799E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-6.408E-02	8.668E-02	1.423E-01	0.000E+00	NOT IDENT.
TE-123M	-2.226E-02	3.946E-02	6.534E-02	0.000E+00	NOT IDENT.
SB-124	-7.014E-02	9.072E-02	1.282E-01	0.000E+00	NOT IDENT.
SB-125	9.939E-02	1.143E-01	2.043E-01	0.000E+00	FAIL ABUN
TE-125M	-1.193E+01	1.337E+01	2.217E+01	0.000E+00	NOT IDENT.
I-126	2.308E-01	2.974E-01	5.419E-01	0.000E+00	NOT IDENT.
SB-126	-3.009E-02	2.359E-01	3.453E-01	0.000E+00	NOT IDENT.
SB-127	1.685E+00	2.639E+00	4.759E+00	0.000E+00	NOT IDENT.
I-131	-6.434E-02	1.892E-01	3.186E-01	0.000E+00	NOT IDENT.
TE-132	-6.578E-01	1.867E+00	3.239E+00	0.000E+00	NOT IDENT.
BA-133	-4.927E-03	6.250E-02	9.268E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	8.650E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	5.339E-02	6.107E-02	1.104E-01	0.000E+00	NOT IDENT.
CS-135	2.063E-01	2.567E-01	4.060E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.692E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	6.486E-04	1.503E-01	2.521E-01	0.000E+00	NOT IDENT.
BA-137M	-3.181E-02	4.099E-02	6.674E-02	0.000E+00	NOT IDENT.
CS-137	-3.360E-02	4.330E-02	7.050E-02	0.000E+00	NOT IDENT.
CE-139	-2.643E-02	4.213E-02	6.941E-02	0.000E+00	NOT IDENT.
BA-140	2.771E-01	3.816E-01	6.561E-01	0.000E+00	NOT IDENT.
LA-140	-5.691E-04	9.511E-02	1.368E-01	0.000E+00	FAIL ABUN
CE-141	1.150E-01	9.274E-02	1.639E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.297E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-5.686E-03	2.771E-01	4.737E-01	0.000E+00	NOT IDENT.
PM-144	-2.529E-02	4.229E-02	6.982E-02	0.000E+00	NOT IDENT.
PR-144	-2.350E+00	3.203E+00	5.233E+00	0.000E+00	NOT IDENT.
PM-146	-1.712E-02	5.233E-02	8.675E-02	0.000E+00	NOT IDENT.
ND-147	3.004E-01	8.900E-01	1.527E+00	0.000E+00	NOT IDENT.
PM-149	0.000E+00	3.108E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	4.590E-02	1.499E-01	2.169E-01	0.000E+00	NOT IDENT.
GD-153	-6.437E-02	1.249E-01	1.841E-01	0.000E+00	NOT IDENT.
EU-154	6.451E-03	1.401E-01	2.326E-01	0.000E+00	NOT IDENT.
EU-155	1.282E-01	1.416E-01	2.518E-01	0.000E+00	FAIL ABUN
TB-160	1.527E-01	1.646E-01	3.014E-01	0.000E+00	FAIL ABUN
HO-166M	1.551E-02	7.531E-02	1.316E-01	0.000E+00	NOT IDENT.
TA-182	9.287E-02	2.674E-01	4.554E-01	0.000E+00	FAIL ABUN
IR-192	1.906E-02	4.670E-02	8.245E-02	0.000E+00	FAIL ABUN
HG-203	7.606E-02	5.751E-02	1.046E-01	0.000E+00	NOT IDENT.
BI-207	-7.688E-02	7.078E-02	1.063E-01	0.000E+00	FAIL ABUN
PB-210	6.695E+00	1.291E+01	2.298E+01	0.000E+00	NOT IDENT.
PB-211	-6.950E-01	1.056E+00	1.650E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.394E-01	1.509E+00	0.000E+00	FAIL ABUN
RN-219	1.731E-01	5.515E-01	9.573E-01	0.000E+00	FAIL ABUN
RA-223	-5.973E-01	9.600E-01	1.366E+00	0.000E+00	FAIL ABUN
AC-227	3.368E-02	3.304E-01	5.812E-01	0.000E+00	FAIL ABUN
TH-227	3.368E-02	3.304E-01	5.812E-01	0.000E+00	FAIL ABUN
TH-229	1.700E-01	6.953E-01	1.180E+00	0.000E+00	FAIL ABUN
PA-231	-1.398E+00	1.960E+00	3.283E+00	0.000E+00	FAIL ABUN
TH-231	-5.973E-01	9.600E-01	1.366E+00	0.000E+00	FAIL ABUN
PA-233	-1.417E-01	8.507E-02	1.316E-01	0.000E+00	FAIL ABUN
PA-234	4.098E-01	3.636E-01	6.615E-01	0.000E+00	FAIL ABUN
PA-234M	2.206E+00	5.877E+00	9.893E+00	0.000E+00	NOT IDENT.
TH-234	2.863E+00	2.531E+00	4.530E+00	0.000E+00	FAIL ABUN
U-235	6.267E-02	2.825E-01	4.805E-01	0.000E+00	FAIL ABUN
U-238	2.863E+00	2.531E+00	4.530E+00	0.000E+00	FAIL ABUN
NP-239	-1.629E-01	5.278E-01	8.970E-01	0.000E+00	NOT IDENT.
AM-241	-4.941E-01	3.216E-01	5.274E-01	0.000E+00	NOT IDENT.
CM-247	3.177E-02	5.007E-02	8.838E-02	0.000E+00	NOT IDENT.
CF-249	8.106E-03	5.378E-02	8.943E-02	0.000E+00	NOT IDENT.

CF-251	2.143E-02	1.863E-01	3.096E-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]G247911013.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 14:57:17.
Sample ID          : G247911013 Sample quantity : 1.26130E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.36 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 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	1460.82	1094	10.66*	9.663E-01	3.162E+01	3.162E+01	11.84
CD-109	88.03	110	3.70*	4.447E+00	1.998E+00	2.053E+00	74.22
SN-126	64.28	---	9.60	1.941E+00	-----	Line Not Found	-----
	86.94	110	8.90	4.447E+00	8.305E-01	8.305E-01	84.53
	87.57	110	37.00*	4.447E+00	1.998E-01	1.998E-01	74.22
TL-208	277.37	---	6.60	3.705E+00	-----	Line Not Found	-----
	583.19	416	85.00*	2.191E+00	6.640E-01	6.640E-01	17.72
	860.56	---	12.50	1.576E+00	-----	Line Not Found	-----
BI-211	72.87	---	1.23	3.001E+00	-----	Line Not Found	-----
	351.06	588	12.92*	3.141E+00	4.314E+00	4.314E+00	15.92
PB-212	74.82	345	10.28	3.228E+00	3.097E+00	3.097E+00	32.78
	77.11	620	17.10	3.502E+00	3.081E+00	3.081E+00	19.54
	238.63	1308	43.60*	4.114E+00	2.170E+00	2.170E+00	13.93
	300.09	115	3.30	3.505E+00	2.961E+00	2.961E+00	46.76
BI-214	609.32	428	45.49*	2.117E+00	1.322E+00	1.322E+00	18.78
	1120.29	105	14.92	1.226E+00	1.713E+00	1.713E+00	39.35
	1764.49	68	15.30	8.554E-01	1.536E+00	1.536E+00	36.68
PB-214	74.82	345	5.80	3.228E+00	5.488E+00	5.488E+00	32.29
	77.11	620	9.70	3.502E+00	5.431E+00	5.431E+00	21.21
	242.00	332	7.25	4.078E+00	3.345E+00	3.345E+00	34.29
	295.22	375	18.42	3.547E+00	1.708E+00	1.708E+00	21.32
	351.93	588	35.60*	3.141E+00	1.566E+00	1.566E+00	16.85
RA-224	240.99	332	4.10*	4.078E+00	5.915E+00	5.915E+00	33.79
RA-226	609.32	428	45.49*	2.117E+00	1.322E+00	1.322E+00	18.78
	1120.29	105	14.92	1.226E+00	1.713E+00	1.713E+00	39.35
	1764.49	68	15.30	8.554E-01	1.536E+00	1.536E+00	36.68
AC-228	338.32	257	11.27	3.227E+00	2.104E+00	2.104E+00	48.86
	911.20	280	25.80*	1.494E+00	2.164E+00	2.164E+00	20.80
	968.97	165	15.80	1.409E+00	2.210E+00	2.210E+00	38.55
RA-228	338.32	257	11.27	3.227E+00	2.104E+00	2.104E+00	48.86
	911.20	280	25.80*	1.494E+00	2.164E+00	2.164E+00	20.80
	968.97	165	15.80	1.409E+00	2.210E+00	2.210E+00	38.55

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	345	10.28	3.228E+00	3.097E+00	3.097E+00	31.32
	77.11	620	17.10	3.502E+00	3.081E+00	3.081E+00	19.54
	238.63	1308	43.60*	4.114E+00	2.170E+00	2.170E+00	13.93
	300.09	115	3.30	3.505E+00	2.961E+00	2.961E+00	76.31
TH-232	338.32	257	11.27	3.227E+00	2.104E+00	2.104E+00	26.86
	911.20	280	25.80*	1.494E+00	2.164E+00	2.164E+00	20.80
	968.97	165	15.80	1.409E+00	2.210E+00	2.210E+00	38.55
NP-237	86.48	110	12.40*	4.447E+00	5.960E-01	5.960E-01	77.13
	95.86	-----	2.68	5.004E+00	-----	Line Not Found	-----
ANH-511	511.00	129	100.00*	2.419E+00	1.582E-01	1.582E-01	49.76

Flag: "*" = Keyline

Total number of lines in spectrum 28
Number of unidentified lines 4
Number of lines tentatively identified by NID 24 85.71%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.162E+01	3.162E+01	0.374E+01	11.84	
CD-109	461.40D	1.03	1.998E+00	2.053E+00	1.524E+00	74.22	
SN-126	2.30E+05Y	1.00	1.998E-01	1.998E-01	1.483E-01	74.22	
TL-208	1.41E+10Y	1.00	6.640E-01	6.640E-01	1.177E-01	17.72	
BI-211	7.04E+08Y	1.00	4.314E+00	4.314E+00	0.687E+00	15.92	
PB-212	1.41E+10Y	1.00	2.170E+00	2.170E+00	0.302E+00	13.93	
BI-214	1600.00Y	1.00	1.322E+00	1.322E+00	0.248E+00	18.78	
PB-214	1600.00Y	1.00	1.566E+00	1.566E+00	0.264E+00	16.85	
RA-224	1.41E+10Y	1.00	5.915E+00	5.915E+00	1.999E+00	33.79	
RA-226	1600.00Y	1.00	1.322E+00	1.322E+00	0.248E+00	18.78	
AC-228	1.41E+10Y	1.00	2.164E+00	2.164E+00	0.450E+00	20.80	
RA-228	1.41E+10Y	1.00	2.164E+00	2.164E+00	0.450E+00	20.80	
TH-228	1.41E+10Y	1.00	2.170E+00	2.170E+00	0.302E+00	13.93	
TH-232	1.41E+10Y	1.00	2.164E+00	2.164E+00	0.450E+00	20.80	
NP-237	2.14E+06Y	1.00	5.960E-01	5.960E-01	4.597E-01	77.13	
ANH-511	1.00E+09Y	1.00	1.582E-01	1.582E-01	0.787E-01	49.76	

Total Activity : 6.051E+01 6.056E+01

Grand Total Activity : 6.051E+01 6.056E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247911013

Page : 4
Acquisition date : 8-MAR-2010 14:57:17

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	93.43	136	502	1.65	185.78	181	10	1.89E-02	68.2	4.87E+00	T
0	186.06	169	379	1.97	371.04	366	11	2.35E-02	48.9	4.86E+00	T
0	209.61	169	354	1.32	418.13	413	12	2.35E-02	47.2	4.50E+00	T
0	270.10	77	169	1.02	539.11	535	7	1.07E-02	60.7	3.77E+00	T
0	328.26	101	151	0.99	655.42	651	10	1.40E-02	49.5	3.30E+00	T
0	463.19	82	87	1.34	925.27	920	10	1.13E-02	48.3	2.60E+00	T
0	727.19	103	60	1.83	1453.31	1448	11	1.43E-02	36.2	1.83E+00	T
0	768.27	30	45	1.26	1535.49	1532	8	4.23E-03	83.9	1.75E+00	
3	1588.00	19	2	1.69	3175.34	3172	16	2.63E-03	51.9	9.09E-01	
3	1591.92	27	1	2.01	3183.19	3172	16	3.74E-03	45.3	9.07E-01	
0	1630.39	16	12	1.46	3260.16	3255	11	2.25E-03	****	8.93E-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]G247911013.CNF;1
* Acquisition date   : 8-MAR-2010 14:57:17.  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 02:00:01.36       Half life ratio      : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G247911013          Analyst initials  : MXR1
* Batch Number       : 957714              Sample Quantity   : 1.26130E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 3-FEB-2010 11:04:32.11MS 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	3.162E+01	3.743E+00	7.748E-01	7.614E-02	40.811
CD-109	2.053E+00	1.524E+00	2.143E+00	2.660E-01	0.958
SN-126	1.998E-01	1.483E-01	2.045E-01	2.530E-02	0.977
TL-208	6.640E-01	1.177E-01	7.062E-02	6.459E-03	9.402
BI-211	4.314E+00	6.869E-01	4.212E-01	4.194E-02	10.244
PB-212	2.170E+00	3.022E-01	1.225E-01	1.464E-02	17.717
BI-214	1.322E+00	2.483E-01	1.435E-01	1.430E-02	9.212
PB-214	1.566E+00	2.638E-01	1.543E-01	1.754E-02	10.149
RA-224	5.915E+00	1.999E+00	1.312E+00	1.448E-01	4.507
RA-226	1.322E+00	2.483E-01	1.435E-01	1.430E-02	9.212
AC-228	2.164E+00	4.501E-01	2.808E-01	3.402E-02	7.706
RA-228	2.164E+00	4.501E-01	2.808E-01	3.402E-02	7.706
TH-228	2.170E+00	3.022E-01	1.225E-01	1.464E-02	17.717
TH-232	2.164E+00	4.501E-01	2.808E-01	3.402E-02	7.706
NP-237	5.960E-01	4.597E-01	5.614E-01	1.364E-01	1.062
ANH-511	1.582E-01	7.869E-02	5.855E-02	5.059E-03	2.701

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	4.096E-02		4.448E-01	7.296E-01	6.781E-02	0.056

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-9.714E-03		5.193E-02	8.208E-02	7.456E-03	-0.118
NA-24	-1.632E+01		1.220E+01	Half-Life too short		
SC-46	-4.303E-02		4.874E-02	7.344E-02	6.825E-03	-0.586
V-48	-5.232E-02		9.702E-02	1.505E-01	1.376E-02	-0.348
CR-51	-2.017E-01		5.421E-01	8.823E-01	9.364E-02	-0.229
MN-54	4.359E-02		5.161E-02	9.011E-02	8.177E-03	0.484
CO-56	-3.504E-02		5.032E-02	7.811E-02	7.127E-03	-0.449
CO-57	-1.212E-02		3.472E-02	5.561E-02	5.602E-03	-0.218
CO-58	-4.312E-02		5.202E-02	8.023E-02	7.213E-03	-0.538
FE-59	7.174E-02		1.205E-01	2.072E-01	1.933E-02	0.346
CO-60	2.844E-02		4.601E-02	7.996E-02	7.686E-03	0.356
ZN-65	4.875E-02		1.321E-01	1.932E-01	1.651E-02	0.252
SE-75	5.097E-02		7.121E-02	1.079E-01	1.184E-02	0.472
SR-85	1.079E-01		6.173E-02	9.821E-02	8.485E-03	1.098
Y-88	1.617E-02		4.121E-02	7.258E-02	6.112E-03	0.223
Y-91	-1.165E+00		2.935E+01	4.743E+01	3.998E+00	-0.025
NB-94	1.684E-02		4.243E-02	7.288E-02	6.153E-03	0.231
NB-95	2.985E-02		6.385E-02	9.603E-02	8.414E-03	0.311
NB-95M	3.638E-01		2.113E-01	3.289E-01	3.963E-02	1.106
ZR-95	8.971E-02		1.036E-01	1.821E-01	1.750E-02	0.493
MO-99	1.242E+01		3.303E+01	5.656E+01	8.917E+00	0.220
TC-99M	-7.440E+13		1.106E+14	Half-Life too short		
RU-103	-6.472E-03		5.595E-02	9.032E-02	1.263E-02	-0.072
RH-106	-6.765E-02		4.042E-01	6.413E-01	8.411E-02	-0.105
RU-106	-6.765E-02		4.042E-01	6.413E-01	5.389E-02	-0.105
AG-108M	-5.285E-02		3.877E-02	5.725E-02	5.060E-03	-0.923
AG-110M	4.220E-02		4.008E-02	7.223E-02	6.147E-03	0.584
SN-113	-1.868E-02		6.067E-02	9.803E-02	8.513E-03	-0.191
CD-115	7.825E-06		1.938E-05	Half-Life too short		
SN-117M	-6.408E-02		8.844E-02	1.379E-01	1.446E-02	-0.465
TE-123M	-2.226E-02		4.027E-02	6.331E-02	6.672E-03	-0.352
SB-124	-7.014E-02		9.257E-02	1.286E-01	1.211E-02	-0.545
SB-125	9.939E-02		1.166E-01	2.008E-01	1.748E-02	0.495
TE-125M	-1.193E+01		1.364E+01	2.137E+01	2.540E+00	-0.558
I-126	2.308E-01		3.035E-01	5.360E-01	4.420E-02	0.431
SB-126	-3.009E-02		2.407E-01	3.419E-01	2.918E-02	-0.088
SB-127	1.685E+00		2.693E+00	4.709E+00	5.702E-01	0.358
I-131	-6.434E-02		1.931E-01	3.123E-01	3.021E-02	-0.206
TE-132	-6.578E-01		1.905E+00	3.154E+00	5.625E-01	-0.209
BA-133	-4.927E-03		6.378E-02	9.084E-02	1.227E-02	-0.054
I-133	8.365E-02		4.413E-02	Half-Life too short		
CS-134	5.339E-02		6.232E-02	1.094E-01	9.809E-03	0.488
CS-135	2.063E-01		2.619E-01	3.963E-01	4.756E-02	0.521
I-135	1.017E+13		8.634E+12	Half-Life too short		
CS-136	6.486E-04		1.534E-01	2.510E-01	2.322E-02	0.003
BA-137M	-3.181E-02		4.182E-02	6.600E-02	5.426E-03	-0.482
CS-137	-3.360E-02		4.418E-02	6.972E-02	5.744E-03	-0.482
CE-139	-2.643E-02		4.299E-02	6.730E-02	7.184E-03	-0.393

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-140	2.771E-01		3.893E-01	6.468E-01	2.194E-01	0.428
LA-140	-5.691E-04		9.705E-02	1.370E-01	1.285E-02	-0.004
CE-141	1.150E-01		9.463E-02	1.586E-01	1.639E-02	0.725
CE-143	4.015E-03		6.617E-04	Half-Life	too short	
CE-144	-5.686E-03		2.828E-01	4.579E-01	7.388E-02	-0.012
PM-144	-2.529E-02		4.315E-02	6.909E-02	5.814E-03	-0.366
PR-144	-2.350E+00		3.268E+00	5.179E+00	4.356E-01	-0.454
PM-146	-1.712E-02		5.339E-02	8.532E-02	9.023E-03	-0.201
ND-147	3.004E-01		9.081E-01	1.505E+00	2.251E-01	0.200
PM-149	5.759E-05		1.586E-04	Half-Life	too short	
EU-152	4.590E-02		1.529E-01	2.125E-01	2.163E-02	0.216
GD-153	-6.437E-02		1.274E-01	1.772E-01	1.955E-02	-0.363
EU-154	6.451E-03		1.430E-01	2.323E-01	2.724E-02	0.028
EU-155	1.282E-01		1.445E-01	2.426E-01	2.555E-02	0.529
TB-160	1.527E-01		1.679E-01	2.993E-01	2.771E-02	0.510
HO-166M	1.551E-02		7.685E-02	1.303E-01	1.106E-02	0.119
TA-182	9.287E-02		2.728E-01	4.544E-01	3.900E-02	0.204
IR-192	1.906E-02		4.765E-02	8.067E-02	8.318E-03	0.236
HG-203	7.606E-02		5.869E-02	1.021E-01	1.123E-02	0.745
BI-207	-7.688E-02		7.223E-02	1.059E-01	9.340E-03	-0.726
PB-210	6.695E+00		1.317E+01	2.190E+01	2.696E+00	0.306
PB-211	-6.950E-01		1.078E+00	1.620E+00	7.834E-01	-0.429
BI-212	2.505E+00	+	9.585E-01	1.494E+00	1.856E-01	1.677
RN-219	1.731E-01		5.627E-01	9.399E-01	1.389E-01	0.184
RA-223	-5.973E-01		9.796E-01	1.337E+00	2.426E-01	-0.447
AC-227	3.368E-02		3.371E-01	5.670E-01	7.846E-02	0.059
TH-227	3.368E-02		3.371E-01	5.670E-01	8.625E-02	0.059
TH-229	1.700E-01		7.095E-01	1.147E+00	1.248E-01	0.148
PA-231	-1.398E+00		2.000E+00	3.208E+00	5.115E-01	-0.436
TH-231	-5.973E-01		9.796E-01	1.337E+00	2.426E-01	-0.447
PA-233	-1.417E-01		8.681E-02	1.288E-01	1.362E-02	-1.100
PA-234	4.098E-01		3.711E-01	6.576E-01	1.253E-01	0.623
PA-234M	2.206E+00		5.996E+00	9.842E+00	1.021E+00	0.224
TH-234	2.863E+00		2.582E+00	4.333E+00	8.593E-01	0.661
U-235	6.267E-02		2.883E-01	4.650E-01	8.274E-02	0.135
U-238	2.863E+00		2.582E+00	4.333E+00	8.593E-01	0.661
NP-239	-1.629E-01		5.386E-01	8.655E-01	8.735E-02	-0.188
AM-241	-4.941E-01		3.281E-01	5.042E-01	5.918E-02	-0.980
CM-247	3.177E-02		5.109E-02	8.677E-02	7.338E-03	0.366
CF-249	8.106E-03		5.488E-02	8.776E-02	7.481E-03	0.092
CF-251	2.143E-02		1.901E-01	3.004E-01	3.233E-02	0.071

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]G247911013             *
* Acquisition date   : 8-MAR-2010 14:57:17 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 02:00:01.36 Half life ratio : 8.000   *
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID             *
* Sample ID          : G247911013 Analyst initials: MXR1       *
* Batch Number       : 957714 Sample Quantity : 1.2613E+02 GRAM *
* Recovery           : 1.00000 Carrier Weight  : 0.00000       *
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME  : 3-FEB-2010 11:04:32 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	3.162E+01	3.669E+00	3.874E-01	1.872E+00
CD-109	2.053E+00	1.493E+00	1.116E+00	7.618E-01
SN-126	1.998E-01	1.453E-01	1.064E-01	7.413E-02
TL-208	6.640E-01	1.153E-01	3.580E-02	5.884E-02
BI-211	4.314E+00	6.732E-01	2.150E-01	3.435E-01
PB-212	2.170E+00	2.962E-01	6.288E-02	1.511E-01
BI-214	1.322E+00	2.434E-01	7.271E-02	1.242E-01
PB-214	1.566E+00	2.586E-01	7.877E-02	1.319E-01
RA-224	5.915E+00	1.959E+00	6.737E-01	9.994E-01
RA-226	1.322E+00	2.434E-01	7.271E-02	1.242E-01
AC-228	2.164E+00	4.411E-01	1.414E-01	2.251E-01
RA-228	2.164E+00	4.411E-01	1.414E-01	2.251E-01
TH-228	2.170E+00	2.962E-01	6.288E-02	1.511E-01
TH-232	2.164E+00	4.411E-01	1.414E-01	2.251E-01
NP-237	5.960E-01	4.505E-01	2.923E-01	2.299E-01
ANH-511	1.582E-01	7.712E-02	2.973E-02	3.935E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	4.096E-02	4.359E-01	3.709E-01	2.224E-01 NOT IDENT.
NA-22	-9.714E-03	5.089E-02	4.112E-02	2.596E-02 NOT IDENT.
NA-24	-1.632E+07	2.392E+07	0.000E+00	1.220E+07 SHORT HLIF
SC-46	-4.303E-02	4.776E-02	3.699E-02	2.437E-02 FAIL ABUN
V-48	-5.232E-02	9.508E-02	7.569E-02	4.851E-02 NOT IDENT.
CR-51	-2.017E-01	5.313E-01	4.511E-01	2.711E-01 NOT IDENT.
MN-54	4.359E-02	5.058E-02	4.543E-02	2.581E-02 NOT IDENT.
CO-56	-3.504E-02	4.931E-02	3.937E-02	2.516E-02 NOT IDENT.
CO-57	-1.212E-02	3.403E-02	2.882E-02	1.736E-02 NOT IDENT.
CO-58	-4.312E-02	5.098E-02	4.047E-02	2.601E-02 NOT IDENT.
FE-59	7.174E-02	1.181E-01	1.041E-01	6.026E-02 NOT IDENT.

CO-60	2.844E-02	4.509E-02	4.004E-02	2.300E-02	NOT IDENT.
ZN-65	4.875E-02	1.294E-01	9.701E-02	6.604E-02	NOT IDENT.
SE-75	5.097E-02	6.979E-02	5.533E-02	3.560E-02	NOT IDENT.
SR-85	1.079E-01	6.049E-02	4.987E-02	3.086E-02	NOT IDENT.
Y-88	1.617E-02	4.039E-02	3.617E-02	2.061E-02	NOT IDENT.
Y-91	-1.165E+00	2.876E+01	2.379E+01	1.468E+01	NOT IDENT.
NB-94	1.684E-02	4.159E-02	3.684E-02	2.122E-02	NOT IDENT.
NB-95	2.985E-02	6.257E-02	4.848E-02	3.192E-02	NOT IDENT.
NB-95M	3.638E-01	2.071E-01	1.689E-01	1.057E-01	NOT IDENT.
ZR-95	8.971E-02	1.015E-01	9.192E-02	5.179E-02	NOT IDENT.
MO-99	1.242E+01	3.237E+01	2.857E+01	1.651E+01	NOT IDENT.
TC-99M	-7.440E+19	2.167E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-6.472E-03	5.483E-02	4.588E-02	2.798E-02	FAIL ABUN
RH-106	-6.765E-02	3.961E-01	3.247E-01	2.021E-01	NOT IDENT.
RU-106	-6.765E-02	3.961E-01	3.247E-01	2.021E-01	NOT IDENT.
AG-108M	-5.285E-02	3.800E-02	2.914E-02	1.939E-02	NOT IDENT.
AG-110M	4.220E-02	3.927E-02	3.655E-02	2.004E-02	NOT IDENT.
SN-113	-1.868E-02	5.946E-02	4.997E-02	3.034E-02	NOT IDENT.
CD-115	7.825E+00	3.799E+01	0.000E+00	1.938E+01	SHORT HLIF
SN-117M	-6.408E-02	8.668E-02	7.120E-02	4.422E-02	NOT IDENT.
TE-123M	-2.226E-02	3.946E-02	3.269E-02	2.013E-02	NOT IDENT.
SB-124	-7.014E-02	9.072E-02	6.416E-02	4.628E-02	NOT IDENT.
SB-125	9.939E-02	1.143E-01	1.022E-01	5.831E-02	FAIL ABUN
TE-125M	-1.193E+01	1.337E+01	1.109E+01	6.822E+00	NOT IDENT.
I-126	2.308E-01	2.974E-01	2.711E-01	1.517E-01	NOT IDENT.
SB-126	-3.009E-02	2.359E-01	1.727E-01	1.204E-01	NOT IDENT.
SB-127	1.685E+00	2.639E+00	2.381E+00	1.347E+00	NOT IDENT.
I-131	-6.434E-02	1.892E-01	1.594E-01	9.653E-02	NOT IDENT.
TE-132	-6.578E-01	1.867E+00	1.620E+00	9.525E-01	NOT IDENT.
BA-133	-4.927E-03	6.250E-02	4.637E-02	3.189E-02	NOT IDENT.
I-133	8.365E+04	8.650E+04	0.000E+00	4.413E+04	SHORT HLIF
CS-134	5.339E-02	6.107E-02	5.521E-02	3.116E-02	NOT IDENT.
CS-135	2.063E-01	2.567E-01	2.031E-01	1.310E-01	NOT IDENT.
I-135	1.017E+19	1.692E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	6.486E-04	1.503E-01	1.261E-01	7.670E-02	NOT IDENT.
BA-137M	-3.181E-02	4.099E-02	3.339E-02	2.091E-02	NOT IDENT.
CS-137	-3.360E-02	4.330E-02	3.527E-02	2.209E-02	NOT IDENT.
CE-139	-2.643E-02	4.213E-02	3.473E-02	2.149E-02	NOT IDENT.
BA-140	2.771E-01	3.816E-01	3.282E-01	1.947E-01	NOT IDENT.
LA-140	-5.691E-04	9.511E-02	6.843E-02	4.853E-02	FAIL ABUN
CE-141	1.150E-01	9.274E-02	8.198E-02	4.732E-02	NOT IDENT.
CE-143	4.015E+03	1.297E+03	0.000E+00	6.617E+02	SHORT HLIF
CE-144	-5.686E-03	2.771E-01	2.370E-01	1.414E-01	NOT IDENT.
PM-144	-2.529E-02	4.229E-02	3.493E-02	2.158E-02	NOT IDENT.
PR-144	-2.350E+00	3.203E+00	2.618E+00	1.634E+00	NOT IDENT.
PM-146	-1.712E-02	5.233E-02	4.340E-02	2.670E-02	NOT IDENT.
ND-147	3.004E-01	8.900E-01	7.639E-01	4.541E-01	NOT IDENT.
PM-149	5.759E+01	3.108E+02	0.000E+00	1.586E+02	SHORT HLIF
EU-152	4.590E-02	1.499E-01	1.085E-01	7.647E-02	NOT IDENT.
GD-153	-6.437E-02	1.249E-01	9.210E-02	6.370E-02	NOT IDENT.
EU-154	6.451E-03	1.401E-01	1.164E-01	7.150E-02	NOT IDENT.
EU-155	1.282E-01	1.416E-01	1.260E-01	7.225E-02	FAIL ABUN
TB-160	1.527E-01	1.646E-01	1.508E-01	8.395E-02	FAIL ABUN
HO-166M	1.551E-02	7.531E-02	6.585E-02	3.842E-02	NOT IDENT.
TA-182	9.287E-02	2.674E-01	2.278E-01	1.364E-01	FAIL ABUN
IR-192	1.906E-02	4.670E-02	4.125E-02	2.383E-02	FAIL ABUN
HG-203	7.606E-02	5.751E-02	5.232E-02	2.934E-02	NOT IDENT.
BI-207	-7.688E-02	7.078E-02	5.319E-02	3.611E-02	FAIL ABUN
PB-210	6.695E+00	1.291E+01	1.150E+01	6.585E+00	NOT IDENT.
PB-211	-6.950E-01	1.056E+00	8.253E-01	5.389E-01	NOT IDENT.
BI-212	2.505E+00	9.394E-01	7.548E-01	4.793E-01	FAIL ABUN
RN-219	1.731E-01	5.515E-01	4.789E-01	2.814E-01	FAIL ABUN
RA-223	-5.973E-01	9.600E-01	6.835E-01	4.898E-01	FAIL ABUN
AC-227	3.368E-02	3.304E-01	2.908E-01	1.686E-01	FAIL ABUN
TH-227	3.368E-02	3.304E-01	2.908E-01	1.686E-01	FAIL ABUN
TH-229	1.700E-01	6.953E-01	5.905E-01	3.547E-01	FAIL ABUN
PA-231	-1.398E+00	1.960E+00	1.643E+00	1.000E+00	FAIL ABUN
TH-231	-5.973E-01	9.600E-01	6.835E-01	4.898E-01	FAIL ABUN
PA-233	-1.417E-01	8.507E-02	6.586E-02	4.340E-02	FAIL ABUN
PA-234	4.098E-01	3.636E-01	3.310E-01	1.855E-01	FAIL ABUN
PA-234M	2.206E+00	5.877E+00	4.949E+00	2.998E+00	NOT IDENT.
TH-234	2.863E+00	2.531E+00	2.266E+00	1.291E+00	FAIL ABUN
U-235	6.267E-02	2.825E-01	2.404E-01	1.442E-01	FAIL ABUN
U-238	2.863E+00	2.531E+00	2.266E+00	1.291E+00	FAIL ABUN
NP-239	-1.629E-01	5.278E-01	4.488E-01	2.693E-01	NOT IDENT.
AM-241	-4.941E-01	3.216E-01	2.639E-01	1.641E-01	NOT IDENT.
CM-247	3.177E-02	5.007E-02	4.422E-02	2.555E-02	NOT IDENT.
CF-249	8.106E-03	5.378E-02	4.474E-02	2.744E-02	NOT IDENT.

CF-251

2.143E-02

1.863E-01

1.549E-01

9.503E-02 NOT IDENT.

 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON ,SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	272.0543
49.72	333.7942
57.36	0.0000
59.54	403.1687
63.29	341.9187
63.29	341.9187
64.28	360.9980
67.75	459.5526
69.67	380.1163
70.83	390.1979
72.81	405.5000
72.87	405.5320
72.87	405.5320
74.82	437.7532
74.82	437.7532
74.82	437.7532
74.97	437.8407
77.11	439.0654
77.11	439.0654
77.11	439.0654
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80.19	450.9952
80.57	494.4132
81.00	523.4974
81.07	523.5433
81.07	523.5433
83.79	487.2995
83.79	487.2995
85.43	465.2064
86.48	485.1402
86.55	485.1825
86.79	547.0505
86.94	578.2534
87.57	595.7905
88.03	629.7605
88.47	577.5837
89.96	631.2054
91.11	632.0599
92.59	657.5021
92.59	657.5021
93.35	453.8086
94.67	331.9818
94.87	320.6637
94.87	320.6637
95.86	353.6170
97.43	350.9799
98.44	315.4226
99.53	302.7151
100.11	320.3061
103.18	404.5555
103.37	391.2886
105.31	342.7089
106.12	341.9754
109.28	385.4943
111.00	366.5142
111.76	362.6585
116.30	347.6877
117.23	356.3496
121.12	329.4868
121.78	353.7741
122.06	361.2008
123.07	358.4122
131.20	370.7122
133.52	388.4479
136.00	412.6744

136.47	374.6451
140.51	397.3199
140.51	0.0000
143.76	376.0383
144.24	353.7532
144.24	353.7532
145.44	355.1968
152.43	347.6651
153.25	344.6753
154.21	344.9561
154.21	344.9561
156.02	348.7223
158.56	365.6931
159.00	364.7422
162.66	331.1062
163.33	323.6844
165.86	372.2386
176.60	347.9764
177.52	337.2381
181.07	333.0940
184.41	369.2784
185.72	311.7207
193.51	287.9545
197.04	293.1541
205.31	303.1891
210.85	295.6603
215.65	298.1440
222.11	291.2824
227.38	303.2324
228.16	293.3671
228.18	293.3710
235.69	300.6082
235.96	300.6602
235.96	300.6602
238.63	252.2534
238.63	252.2534
240.99	252.6328
242.00	252.7956
244.70	210.2551
252.40	227.6116
252.80	235.0709
256.23	228.1468
256.23	228.1468
260.90	0.0000
264.66	215.9489
268.22	259.9998
269.46	251.4651
269.46	251.4651
271.23	249.5443
273.65	299.8789
276.40	239.3489
277.37	231.9695
277.60	236.6991
278.00	225.4775
279.20	228.4562
279.54	231.3217
280.46	242.7348
283.69	235.6415
284.31	239.4986
285.41	206.6251
285.90	0.0000
287.50	225.1337
293.27	0.0000
295.22	197.3309
295.96	197.4121
298.57	197.6990
299.98	197.8514
299.98	197.8514
300.09	197.8641
300.09	197.8641
300.13	197.8691
301.36	166.5875
302.85	161.9607
304.50	171.6416
304.50	171.6416
304.85	171.6746
308.46	177.7444
311.90	203.9230

316.51	173.7132
319.41	188.3988
320.08	195.1942
323.87	191.0871
323.87	191.0871
328.76	206.0625
333.37	159.7551
334.37	164.6813
334.37	164.6813
338.28	182.4807
338.28	182.4807
338.32	182.4853
338.32	182.4853
338.32	182.4853
340.48	184.6284
340.55	184.6342
344.28	155.7734
351.06	153.0445
351.93	155.3899
356.01	163.2100
364.49	149.4636
366.42	155.5081
383.85	139.9260
388.16	142.1953
388.63	151.1762
391.69	155.3735
400.66	144.0105
401.81	154.0902
402.40	145.1239
404.85	184.3616
410.95	145.6815
414.70	151.9622
423.72	128.3162
427.09	136.5985
427.87	110.3279
433.94	147.1506
453.88	119.7393
463.37	152.4020
468.07	99.5081
473.00	116.5547
476.78	110.5344
477.60	118.8366
487.02	101.6511
492.35	0.0000
497.08	116.6320
511.00	104.6979
514.00	113.5523
527.90	0.0000
529.87	0.0000
531.02	103.3833
537.26	78.2456
546.56	0.0000
563.25	87.5274
569.33	97.3451
569.50	90.9330
569.70	85.5898
583.19	90.2959
600.60	109.3461
602.73	115.4375
604.72	113.7107
609.32	99.7872
609.32	99.7872
610.33	99.8231
614.28	88.7288
618.01	88.8404
621.93	90.4084
621.93	90.4084
633.25	91.8422
635.95	99.5824
636.99	90.8603
645.85	96.6131
657.76	61.5339
661.66	91.0360
661.66	91.0360
664.57	0.0000
666.33	70.9107
666.50	70.9154
677.62	60.0740

685.70	68.5650
695.00	91.0635
696.49	98.5426
696.51	102.2612
697.00	101.3470
702.65	87.5513
706.68	88.5928
711.68	84.9904
720.70	81.8789
721.93	0.0000
722.78	102.8125
722.91	102.8170
723.31	93.1900
724.19	83.5714
727.33	80.7002
733.00	72.5113
735.93	72.4397
739.50	74.4000
747.24	87.7835
752.31	95.4766
753.82	83.2233
756.73	84.2415
763.94	81.3006
765.81	81.3442
766.42	82.9853
777.92	90.4676
778.90	90.4928
783.70	60.0930
785.37	70.6186
795.86	79.4420
801.95	85.3297
810.29	94.1759
810.76	84.5768
815.77	72.1817
818.51	55.8630
832.01	91.8360
834.85	75.4594
836.80	0.0000
846.77	74.7316
856.80	117.7505
860.56	61.3683
871.09	58.6084
873.19	63.5268
875.33	0.0000
879.36	45.0304
880.51	47.0020
883.24	57.8140
884.68	55.8751
889.28	67.7197
898.04	78.6914
911.20	61.1914
911.20	61.1914
911.20	61.1914
926.50	52.5105
937.49	59.6094
944.13	61.6973
946.00	43.8049
949.00	57.7864
962.29	70.2543
964.08	96.0000
966.15	94.3318
968.97	49.7729
968.97	49.7729
968.97	49.7729
983.53	58.2726
996.26	56.4341
1001.03	51.4534
1004.73	68.6641
1037.84	51.8965
1038.76	0.0000
1048.07	53.0389
1050.41	50.0069
1050.41	50.0069
1063.66	78.8172
1085.87	50.4076
1099.45	50.5592
1112.07	63.6346
1115.54	58.5787

1120.29	62.1924
1120.29	62.1924
1120.55	62.1973
1121.30	56.8750
1131.51	0.0000
1173.23	62.9004
1177.93	67.1615
1189.05	71.5251
1204.77	68.5917
1221.41	72.0037
1231.02	86.9982
1235.36	88.1368
1238.28	64.8125
1260.41	0.0000
1271.85	49.2044
1274.44	39.5970
1274.54	43.8795
1291.59	52.6168
1298.22	0.0000
1312.11	35.5781
1332.49	25.9766
1365.19	23.3372
1368.63	0.0000
1384.29	39.3457
1408.01	32.9321
1457.56	0.0000
1460.82	33.2483
1489.16	26.7324
1505.03	24.8919
1596.21	10.2100
1620.50	15.6205
1678.03	0.0000
1690.97	17.7746
1764.49	15.9833
1764.49	15.9833
1770.23	6.9988
1771.35	46.0000
1791.20	0.0000
1836.06	11.1086

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911013

Total Uranium Activity	8.5458E+00	ug/g
Total Uranium Counting Unc.	7.5304E+00	ug/g
Total Uranium Tpu	3.8420E-06	ug/g
Total Uranium Mda	6.7428E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 957714                          SAMPLE ID   : G247911013
*  ANALYST       : MXR1                             DETECTOR    : GAM15
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 8-MAR-2010 14:57:17.99          SAMPLE ALQT  : 126.130 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.038E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.430E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 4.235E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 2.061E+00

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VAX/VMS Nuclide Identification Report Generated 8-MAR-2010 16:59:02.03

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911014.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 14:58:03.
Sample ID          : G247911014 Sample quantity : 1.33330E+02 GRAM
Detector name      : GAM20 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:34.10 0.5%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 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	74.94*	772	574	1.24	149.84	144	16	1.07E-01	6.3	3.51E+00
2	2	77.22*	1048	450	1.03	154.37	144	16	1.45E-01	4.7	
3	5	87.30	405	673	1.60	174.51	165	27	5.63E-02	13.1	2.23E+00
4	5	89.99	247	395	1.01	179.89	165	27	3.43E-02	14.5	
5	5	92.97*	333	449	1.19	185.83	165	27	4.62E-02	12.7	
6	0	129.11	107	594	1.47	258.01	253	10	1.49E-02	43.6	
7	0	185.83*	240	345	1.19	371.29	367	9	3.33E-02	15.9	
8	0	209.57	207	398	0.98	418.70	413	12	2.87E-02	20.6	
9	4	238.59*	1938	195	1.16	476.66	469	25	2.69E-01	2.6	1.87E+00
10	4	241.46	460	281	1.79	482.41	469	25	6.39E-02	11.3	
11	0	270.53	163	396	1.44	540.47	533	15	2.26E-02	27.8	
12	0	295.30	429	288	1.26	589.95	584	11	5.96E-02	9.1	
13	0	299.93*	111	165	0.99	599.21	595	8	1.54E-02	22.6	
14	2	328.13	115	124	1.57	655.54	652	34	1.60E-02	18.0	1.27E+00
15	2	338.35	401	115	1.22	675.95	652	34	5.57E-02	6.7	
16	0	351.97*	937	231	1.31	703.18	697	14	1.30E-01	4.8	
17	0	463.04	107	108	1.48	925.11	920	9	1.49E-02	20.0	
18	0	510.52*	175	201	1.71	1019.99	1012	18	2.43E-02	22.2	
19	0	583.34*	555	130	1.44	1165.54	1160	13	7.70E-02	6.2	
20	0	609.39*	652	125	1.37	1217.62	1211	14	9.06E-02	5.4	
21	0	726.98*	110	105	1.60	1452.68	1447	12	1.53E-02	21.2	
22	0	767.72	67	65	2.85	1534.15	1529	10	9.25E-03	25.8	
23	0	795.34	80	56	1.65	1589.36	1584	12	1.11E-02	21.9	
24	0	860.82	118	49	1.34	1720.31	1715	12	1.63E-02	15.0	
25	0	911.28*	399	94	1.54	1821.22	1814	16	5.54E-02	7.5	
26	1	965.00	58	61	1.84	1928.69	1924	18	8.03E-03	27.4	7.79E-01
27	1	969.14*	233	60	1.64	1936.97	1924	18	3.24E-02	9.1	
28	0	1120.68	112	72	1.99	2240.13	2235	12	1.56E-02	17.9	
29	0	1238.51	109	52	1.99	2475.91	2470	13	1.51E-02	16.7	
30	0	1377.89*	49	16	1.48	2754.89	2748	13	6.84E-03	22.4	
31	0	1460.92*	1735	33	1.96	2921.11	2913	19	2.41E-01	2.5	
32	9	1588.18	38	6	2.63	3175.92	3171	18	5.21E-03	20.6	1.71E+00
33	9	1592.23	17	9	2.71	3184.04	3171	18	2.43E-03	41.9	
34	0	1729.75	25	5	2.97	3459.48	3454	10	3.47E-03	26.1	
35	0	1764.75*	108	13	2.46	3529.58	3523	19	1.50E-02	13.1	

Flag: "*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911014.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 14:58:03
Sample ID         : G247911014 Sample quantity : 133.33 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA20 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:34.10 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

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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	+	1460.82	*	3.658E+01	3.691E+00	3.796E-01	3.310E-02	96.370
CD-109	+	88.03	*	4.564E+00	1.270E+00	1.107E+00	1.047E-01	4.123
SN-126		64.28		7.801E-02	4.195E-01	7.014E-01	1.016E-01	0.111
	+	86.94		1.846E+00	9.064E-01	4.509E-01	1.872E-01	4.094
	+	87.57	*	4.441E-01	1.236E-01	1.080E-01	1.016E-02	4.111
TL-208		277.37		6.462E-01	4.061E-01	6.689E-01	9.014E-02	0.966
	+	583.19	*	6.815E-01	1.092E-01	6.377E-02	6.549E-03	10.688
	+	860.56		1.356E+00	4.313E-01	4.227E-01	4.479E-02	3.208
BI-211		72.87		4.287E+00	3.159E+00	4.822E+00	3.808E-01	0.889
	+	351.06	*	5.146E+00	6.957E-01	3.120E-01	2.989E-02	16.495
PB-212	+	74.82		3.494E+00	6.246E-01	4.862E-01	6.143E-02	7.187
	+	77.11		2.755E+00	3.448E-01	2.830E-01	2.340E-02	9.734
	+	238.63	*	2.384E+00	2.833E-01	9.109E-02	9.727E-03	26.170
	+	300.09		2.123E+00	9.926E-01	1.234E+00	1.424E-01	1.720
BI-214	+	609.32	*	1.551E+00	2.410E-01	1.125E-01	1.257E-02	13.783
	+	1120.29		1.357E+00	5.068E-01	4.579E-01	4.977E-02	2.964
	+	1764.49		1.801E+00	4.943E-01	2.793E-01	2.294E-02	6.449
PB-214	+	74.82		6.194E+00	1.051E+00	8.618E-01	9.746E-02	7.187
	+	77.11		4.856E+00	7.280E-01	4.989E-01	5.827E-02	9.734
	+	242.00		3.429E+00	8.681E-01	5.538E-01	6.246E-02	6.192
	+	295.22		1.453E+00	3.143E-01	2.300E-01	2.717E-02	6.316
	+	351.93	*	1.868E+00	2.727E-01	1.135E-01	1.253E-02	16.460
RA-224	+	240.99	*	6.064E+00	1.494E+00	9.761E-01	9.435E-02	6.212
RA-226	+	609.32	*	1.551E+00	2.410E-01	1.125E-01	1.257E-02	13.783
	+	1120.29		1.357E+00	5.068E-01	4.579E-01	4.977E-02	2.964
	+	1764.49		1.801E+00	4.943E-01	2.793E-01	2.294E-02	6.449
AC-228	+	338.32		2.450E+00	1.077E+00	3.917E-01	1.640E-01	6.254
	+	911.20	*	2.339E+00	4.572E-01	2.377E-01	2.988E-02	9.840
	+	968.97		2.358E+00	7.255E-01	3.591E-01	8.884E-02	6.567
RA-228	+	338.32		2.450E+00	1.077E+00	3.917E-01	1.640E-01	6.254
	+	911.20	*	2.339E+00	4.572E-01	2.377E-01	2.988E-02	9.840
	+	968.97		2.358E+00	7.255E-01	3.591E-01	8.884E-02	6.567
TH-228	+	74.82		3.494E+00	5.256E-01	4.862E-01	3.961E-02	7.187
	+	77.11		2.755E+00	3.448E-01	2.830E-01	2.340E-02	9.734

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	+	238.63	*	2.384E+00	2.833E-01	9.109E-02	9.727E-03	26.170
	+	300.09		2.123E+00	1.620E+00	1.234E+00	7.579E-01	1.720
	+	338.32		2.450E+00	4.001E-01	3.917E-01	3.670E-02	6.254
	+	911.20	*	2.339E+00	4.572E-01	2.377E-01	2.988E-02	9.840
U-235	+	968.97		2.358E+00	7.255E-01	3.591E-01	8.884E-02	6.567
	+	89.96		2.837E+00	1.082E+00	1.136E+00	2.825E-01	2.497
	+	93.35		2.332E+00	8.030E-01	6.934E-01	1.614E-01	3.362
		143.76	*	2.705E-02	2.097E-01	3.341E-01	5.637E-02	0.081
NP-237		163.33		-4.871E-01	4.410E-01	6.512E-01	1.171E-01	-0.748
	+	185.72		1.913E-01	6.338E-02	6.241E-02	5.617E-03	3.066
		205.31		-2.911E-01	5.226E-01	7.525E-01	1.389E-01	-0.387
	+	86.48	*	1.325E+00	4.617E-01	3.246E-01	7.443E-02	4.082
ANH-511		95.86		-5.930E-03	9.525E-01	1.377E+00	3.319E-01	-0.004
	+	511.00	*	1.643E-01	7.455E-02	4.936E-02	4.599E-03	3.329

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-2.985E-01	3.236E-01	4.875E-01	4.737E-02	-0.612
NA-22		1274.54	*	1.552E-02	4.686E-02	7.782E-02	6.446E-03	0.199
NA-24		1368.63	*	5.109E+00	4.686E-02	Half-Life too short		
SC-46		889.28	*	-8.607E-03	4.057E-02	6.582E-02	6.562E-03	-0.131
	+	1120.55		2.354E-01	8.645E-02	1.300E-01	1.112E-02	1.810
V-48		944.13		-4.035E-01	1.002E+00	1.590E+00	1.551E-01	-0.254
		983.53	*	3.960E-02	8.315E-02	1.418E-01	1.355E-02	0.279
		1312.11		-2.387E-02	9.129E-02	1.425E-01	1.189E-02	-0.168
CR-51		320.08	*	-1.229E-01	3.906E-01	6.363E-01	6.375E-02	-0.193
MN-54		834.85	*	-1.176E-02	3.618E-02	5.845E-02	5.905E-03	-0.201
CO-56		846.77	*	-2.216E-02	4.008E-02	6.329E-02	6.378E-03	-0.350
		1037.84		-2.054E-01	3.287E-01	5.063E-01	4.881E-02	-0.406
	+	1238.28		3.774E-01	1.298E-01	1.934E-01	1.636E-02	1.952
		1771.35		1.600E-01	1.835E-01	3.310E-01	2.715E-02	0.483
		122.06	*	9.207E-03	2.651E-02	4.315E-02	3.602E-03	0.213
CO-57		136.47		5.655E-03	2.140E-01	3.427E-01	3.099E-02	0.017
		810.76	*	-6.312E-03	3.601E-02	5.891E-02	5.982E-03	-0.107
FE-59		1099.45	*	-6.709E-03	9.889E-02	1.601E-01	1.510E-02	-0.042
		1291.59		1.255E-02	1.344E-01	2.183E-01	2.076E-02	0.057
CO-60		1173.23		1.770E-02	5.040E-02	8.393E-02	6.748E-03	0.211
		1332.49	*	-2.483E-02	4.178E-02	6.247E-02	5.233E-03	-0.397
ZN-65		1115.54	*	-1.120E-02	1.012E-01	1.402E-01	1.207E-02	-0.080
		121.12		6.491E-02	1.386E-01	2.264E-01	2.462E-02	0.287
SE-75		136.00		2.397E-02	4.162E-02	6.803E-02	5.749E-03	0.352
		264.66	*	1.721E-02	4.681E-02	7.062E-02	6.992E-03	0.244
		279.54		-9.200E-02	1.103E-01	1.762E-01	1.804E-02	-0.522
SR-85		400.66		-6.117E-03	2.481E-01	4.058E-01	4.442E-02	-0.015
		514.00	*	5.211E-02	4.532E-02	6.997E-02	6.534E-03	0.745
Y-88		898.04		-3.872E-02	4.123E-02	6.083E-02	6.069E-03	-0.636
		1836.06	*	3.231E-02	3.209E-02	6.164E-02	4.974E-03	0.524

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	1204.77	*		-7.755E+00	2.450E+01	3.862E+01	3.136E+00	-0.201
NB-94	702.65	*		4.650E-02	3.364E-02	6.089E-02	6.160E-03	0.764
	871.09			-6.839E-03	3.325E-02	5.403E-02	5.415E-03	-0.127
NB-95	765.81	*		4.736E-02	4.962E-02	7.833E-02	7.961E-03	0.605
NB-95M	235.69	*		1.186E-01	1.369E-01	2.111E-01	2.272E-02	0.562
ZR-95	724.19			6.543E-02	9.829E-02	1.527E-01	1.645E-02	0.428
	756.73	*		6.927E-02	7.035E-02	1.254E-01	1.372E-02	0.552
MO-99	140.51			-1.864E+01	4.817E+01	7.523E+01	1.781E+01	-0.248
	181.07			2.770E+00	4.118E+01	5.803E+01	1.099E+01	0.048
	366.42			-1.279E+01	1.907E+02	3.125E+02	2.779E+01	-0.041
	739.50	*		-5.751E+00	2.458E+01	4.031E+01	6.710E+00	-0.143
	777.92			-4.935E+01	7.445E+01	1.172E+02	1.191E+01	-0.421
TC-99M	140.51	*		-6.102E+13	7.445E+01	Half-Life too short		
RU-103	497.08	*		8.976E-03	4.089E-02	6.721E-02	9.643E-03	0.134
	610.33			1.688E+01	3.403E+00	3.212E+00	5.469E-01	5.256
RH-106	621.93	*		8.974E-02	3.106E-01	5.072E-01	7.162E-02	0.177
	1050.41			-9.003E-01	2.619E+00	4.144E+00	3.783E-01	-0.217
RU-106	621.93	*		8.974E-02	3.104E-01	5.072E-01	5.021E-02	0.177
	1050.41			-9.003E-01	2.619E+00	4.144E+00	3.783E-01	-0.217
AG-108M	433.94	*		1.801E-02	2.638E-02	4.501E-02	4.057E-03	0.400
	614.28			6.987E-03	3.832E-02	5.445E-02	5.508E-03	0.128
	722.91			1.996E-03	3.826E-02	5.603E-02	5.815E-03	0.036
AG-110M	657.76	*		1.190E-02	3.301E-02	5.692E-02	5.832E-03	0.209
	677.62			3.977E-02	3.169E-01	5.369E-01	5.522E-02	0.074
	706.68			-1.341E-01	2.116E-01	3.381E-01	3.494E-02	-0.397
	763.94			1.693E-01	1.676E-01	2.683E-01	2.781E-02	0.631
	884.68			1.235E-02	4.603E-02	7.788E-02	7.962E-03	0.159
	937.49			-8.901E-02	1.155E-01	1.772E-01	1.783E-02	-0.502
	1384.29			6.049E-02	1.588E-01	2.451E-01	2.124E-02	0.247
	1505.03			-3.987E-01	2.564E-01	3.241E-01	2.748E-02	-1.230
SN-113	391.69	*		1.130E-02	4.482E-02	7.460E-02	6.435E-03	0.151
CD-115	260.90			-1.527E-04	4.482E-02	Half-Life too short		
	492.35			4.532E-05	4.482E-02	Half-Life too short		
	527.90	*		-8.328E-06	4.482E-02	Half-Life too short		
SN-117M	156.02			-1.445E-02	2.754E+00	4.381E+00	3.766E-01	-0.003
	158.56	*		1.816E-03	6.571E-02	1.046E-01	9.028E-03	0.017
TE-123M	159.00	*		9.167E-04	3.017E-02	4.802E-02	4.172E-03	0.019
SB-124	602.73			-1.243E-02	4.737E-02	6.426E-02	6.310E-03	-0.193
	645.85			5.071E-03	4.506E-01	7.599E-01	7.916E-02	0.007
	722.78			-1.446E-03	3.962E-01	5.768E-01	5.947E-02	-0.003
	1690.97	*		-1.319E-02	7.402E-02	1.185E-01	1.033E-02	-0.111
SB-125	427.87	*		-1.703E-02	8.569E-02	1.380E-01	1.221E-02	-0.123
	463.37			8.950E-01	3.680E-01	5.638E-01	5.414E-02	1.587
	600.60			1.782E-01	1.822E-01	3.107E-01	3.223E-02	0.574
	635.95			-3.720E-02	2.518E-01	4.201E-01	4.437E-02	-0.089
TE-125M	109.28	*		-4.838E-01	9.933E+00	1.599E+01	1.661E+00	-0.030
I-126	388.63			1.672E-01	1.886E-01	3.249E-01	2.737E-02	0.515
	666.33	*		1.681E-01	2.600E-01	4.545E-01	4.566E-02	0.370
	753.82			6.676E-01	1.991E+00	3.408E+00	3.463E-01	0.196

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	414.70			-5.021E-02	8.476E-02	1.330E-01	1.140E-02	-0.377
	666.50			7.016E-02	9.086E-02	1.598E-01	1.606E-02	0.439
	695.00			1.108E-02	8.769E-02	1.484E-01	1.500E-02	0.075
	697.00			-1.810E-01	3.091E-01	4.963E-01	5.017E-02	-0.365
	720.70	*		8.222E-02	1.710E-01	2.623E-01	2.660E-02	0.313
SB-127	856.80			-6.547E-02	5.835E-01	8.266E-01	8.313E-02	-0.079
	252.40			1.037E+00	7.054E+00	1.188E+01	4.994E+00	0.087
	473.00			1.170E+00	2.700E+00	4.507E+00	6.254E-01	0.260
	685.70	*		-1.317E+00	2.234E+00	3.581E+00	4.787E-01	-0.368
I-131	783.70			6.622E-01	6.037E+00	1.013E+01	1.445E+00	0.065
	80.19			1.969E+00	6.883E+00	8.059E+00	6.975E-01	0.244
	284.31			-8.683E-01	1.796E+00	2.916E+00	3.014E-01	-0.298
	364.49	*		-1.186E-01	1.391E-01	2.159E-01	2.030E-02	-0.549
TE-132	636.99			-2.522E-01	1.845E+00	3.079E+00	3.204E-01	-0.082
	49.72			9.312E+00	2.138E+01	3.585E+01	4.069E+00	0.260
	111.76			-5.949E+01	6.536E+01	9.977E+01	1.174E+01	-0.596
	116.30			-2.569E+01	5.555E+01	8.767E+01	1.028E+01	-0.293
BA-133	228.16	*		-6.082E-01	1.376E+00	2.269E+00	3.845E-01	-0.268
	81.00			2.443E-02	1.096E-01	1.277E-01	1.984E-02	0.191
	276.40			3.501E-01	3.894E-01	5.994E-01	8.964E-02	0.584
	302.85			2.316E-02	1.461E-01	2.159E-01	2.994E-02	0.107
I-133	356.01	*		2.618E-02	4.389E-02	6.640E-02	8.808E-03	0.394
	383.85			-5.971E-02	2.817E-01	4.564E-01	5.642E-02	-0.131
	529.87	*		2.785E-02	2.817E-01	Half-Life	too short	
	875.33			-4.735E-01	2.817E-01	Half-Life	too short	
CS-134	1298.22			2.996E+00	2.817E-01	Half-Life	too short	
	563.25			6.012E-01	3.797E-01	6.689E-01	6.490E-02	0.899
	569.33			-1.127E-01	1.917E-01	2.930E-01	2.861E-02	-0.385
	604.72			6.523E-03	3.734E-02	5.302E-02	5.220E-03	0.123
+ CS-135	795.86	*		1.427E-01	6.411E-02	9.097E-02	9.283E-03	1.569
	801.95			-2.971E-01	4.234E-01	5.901E-01	6.011E-02	-0.503
	1365.19			-5.337E-01	1.109E+00	1.749E+00	1.543E-01	-0.305
	268.22	*		2.379E-01	1.751E-01	2.759E-01	3.058E-02	0.862
I-135	546.56			-9.813E+12	1.751E-01	Half-Life	too short	
	836.80			2.239E+13	1.751E-01	Half-Life	too short	
	1038.76			3.377E+12	1.751E-01	Half-Life	too short	
	1131.51			-1.348E+13	1.751E-01	Half-Life	too short	
CS-136	1260.41	*		1.121E+10	1.751E-01	Half-Life	too short	
	1457.56			1.032E+15	1.751E-01	Half-Life	too short	
	1678.03			-3.808E+12	1.751E-01	Half-Life	too short	
	1791.20			8.920E+12	1.751E-01	Half-Life	too short	
CS-136	153.25			7.639E-01	1.065E+00	1.739E+00	1.777E-01	0.439
	176.60			1.275E-01	5.914E-01	9.448E-01	9.206E-02	0.135
	273.65			-8.325E-01	6.745E-01	9.035E-01	9.548E-02	-0.921
	340.55			3.860E-01	1.883E-01	3.326E-01	3.207E-02	1.160
BA-137M	818.51			2.965E-02	7.998E-02	1.370E-01	1.388E-02	0.217
	1048.07	*		3.215E-02	1.206E-01	2.019E-01	1.916E-02	0.159
	1235.36			4.979E-01	8.158E-01	1.209E+00	1.385E-01	0.412
	661.66	*		4.635E-03	3.544E-02	6.014E-02	6.036E-03	0.077

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CS-137		661.66	*	4.896E-03	3.744E-02	6.354E-02	6.385E-03	0.077
CE-139		165.86	*	-7.276E-03	2.912E-02	4.566E-02	3.986E-03	-0.159
BA-140		162.66		6.180E-02	9.315E-01	1.484E+00	1.374E-01	0.042
		304.85		3.671E-01	1.565E+00	2.442E+00	7.236E-01	0.150
		423.72		6.752E-01	2.247E+00	3.723E+00	1.225E+00	0.181
		537.26	*	3.214E-01	3.448E-01	5.625E-01	1.920E-01	0.571
LA-140	+	328.76		1.024E+00	3.821E-01	6.506E-01	6.475E-02	1.573
		487.02		-1.141E-02	1.618E-01	2.609E-01	2.519E-02	-0.044
		815.77		1.158E-01	3.560E-01	6.073E-01	6.683E-02	0.191
		1596.21	*	5.138E-02	8.816E-02	1.431E-01	1.208E-02	0.359
CE-141		145.44	*	5.166E-02	6.827E-02	1.120E-01	9.670E-03	0.461
CE-143		57.36		-2.043E-04	6.827E-02	Half-Life	too short	
		293.27	*	2.748E-03	6.827E-02	Half-Life	too short	
		664.57		-6.567E-04	6.827E-02	Half-Life	too short	
		721.93		-1.146E-03	6.827E-02	Half-Life	too short	
CE-144		80.12		8.269E-01	2.891E+00	3.385E+00	2.900E-01	0.244
		133.52	*	4.466E-02	2.272E-01	3.270E-01	4.954E-02	0.137
PM-144		476.78		1.926E-04	6.199E-02	1.006E-01	9.851E-03	0.002
		618.01		-4.967E-03	3.244E-02	5.119E-02	5.167E-03	-0.097
		696.49	*	-5.613E-03	3.347E-02	5.548E-02	5.610E-03	-0.101
PR-144		696.51	*	-4.320E-01	2.508E+00	4.156E+00	4.201E-01	-0.104
		1489.16		-2.119E+00	1.047E+01	1.690E+01	1.433E+00	-0.125
PM-146		453.88	*	1.459E-02	3.941E-02	6.572E-02	7.113E-03	0.222
		633.25		3.754E-01	1.442E+00	2.337E+00	9.002E-01	0.161
		735.93		1.424E-01	1.464E-01	2.524E-01	7.203E-02	0.564
		747.24		4.180E-02	9.092E-02	1.569E-01	2.438E-02	0.266
ND-147	+	91.11		1.111E+00	3.398E-01	5.717E-01	5.659E-02	1.943
		319.41		1.302E-01	3.976E+00	6.602E+00	6.353E-01	0.020
		531.02	*	-1.020E-01	7.189E-01	1.147E+00	1.772E-01	-0.089
PM-149		285.90	*	-1.778E-04	7.189E-01	Half-Life	too short	
EU-152		121.78		3.849E-02	7.535E-02	1.233E-01	1.191E-02	0.312
		244.70		-1.265E-01	3.124E-01	5.149E-01	4.995E-02	-0.246
		344.28	*	4.133E-02	1.074E-01	1.601E-01	1.561E-02	0.258
		778.90		-1.202E-01	2.470E-01	3.949E-01	4.013E-02	-0.304
	+	964.08		6.294E-01	3.505E-01	5.803E-01	5.606E-02	1.085
		1085.87		9.286E-02	3.826E-01	6.375E-01	5.644E-02	0.146
		1112.07		7.761E-02	2.990E-01	4.980E-01	4.297E-02	0.156
		1408.01		1.860E-01	1.786E-01	3.300E-01	2.788E-02	0.564
GD-153		69.67		4.083E-01	1.675E+00	2.475E+00	1.893E-01	0.165
		97.43	*	-7.292E-02	9.396E-02	1.303E-01	1.156E-02	-0.560
		103.18		-1.202E-01	1.116E-01	1.724E-01	1.491E-02	-0.698
EU-154		123.07		-1.250E-02	5.429E-02	8.640E-02	9.624E-03	-0.145
		723.31		9.585E-02	1.695E-01	2.617E-01	2.851E-02	0.366
		873.19		-9.365E-03	2.720E-01	4.487E-01	5.807E-02	-0.021
		996.26		9.647E-02	3.502E-01	5.877E-01	1.053E-01	0.164
		1004.73		6.089E-02	2.145E-01	3.600E-01	4.411E-02	0.169
		1274.44	*	5.014E-02	1.320E-01	2.201E-01	2.448E-02	0.228
EU-155	+	86.55		5.391E-01	1.501E-01	1.727E-01	1.617E-02	3.122
		105.31	*	1.209E-01	1.074E-01	1.784E-01	1.550E-02	0.678

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TB-160	+	86.79		1.471E+00	4.091E-01	4.711E-01	4.386E-02	3.122
		197.04		5.941E-01	5.779E-01	1.000E+00	9.154E-02	0.594
		215.65		9.049E-01	7.929E-01	1.304E+00	1.224E-01	0.694
	+	298.57		3.078E-01	1.426E-01	2.107E-01	2.071E-02	1.460
		879.36	*	-3.916E-02	1.429E-01	2.246E-01	2.246E-02	-0.174
		962.29		6.550E-01	6.101E-01	9.653E-01	9.335E-02	0.679
	+	966.15		4.523E-01	2.519E-01	4.948E-01	4.775E-02	0.914
		1177.93		-3.755E-02	3.955E-01	6.359E-01	5.121E-02	-0.059
		1271.85		-2.191E-01	8.090E-01	1.271E+00	1.051E-01	-0.172
HO-166M		80.57		1.945E-01	3.050E-01	3.655E-01	3.149E-02	0.532
		184.41	+	1.520E-01	5.035E-02	6.525E-02	5.860E-03	2.330
		280.46		-9.507E-02	8.418E-02	1.320E-01	1.313E-02	-0.720
		410.95		4.922E-01	2.456E-01	4.415E-01	3.768E-02	1.115
		711.68	*	5.330E-02	5.781E-02	1.027E-01	1.041E-02	0.519
		752.31		-1.019E-01	2.657E-01	4.304E-01	4.373E-02	-0.237
		810.29		-3.217E-02	5.353E-02	8.407E-02	8.522E-03	-0.383
		67.75		-1.805E-02	9.620E-02	1.567E-01	1.178E-02	-0.115
		100.11		1.569E-01	1.735E-01	2.893E-01	2.533E-02	0.543
TA-182		152.43		1.735E-01	3.752E-01	6.080E-01	5.201E-02	0.285
		222.11		1.716E-01	3.543E-01	6.076E-01	5.751E-02	0.282
		1121.30	+	6.478E-01	2.379E-01	3.594E-01	3.072E-02	1.802
		1189.05		-2.417E-01	3.306E-01	5.004E-01	4.044E-02	-0.483
		1221.41	*	1.179E-01	2.240E-01	3.762E-01	3.070E-02	0.313
		1231.02		-1.800E-03	5.407E-01	8.218E-01	6.724E-02	-0.002
	+	295.96		1.105E+00	2.282E-01	3.019E-01	2.991E-02	3.660
		308.46		6.619E-02	9.383E-02	1.611E-01	1.575E-02	0.411
		316.51	*	1.128E-02	3.473E-02	5.854E-02	5.661E-03	0.193
HG-203		468.07		2.503E-02	7.122E-02	1.100E-01	1.058E-02	0.227
	70.83		1.703E-01	1.347E+00	1.980E+00	3.089E-01	0.086	
	72.87		1.116E+00	8.350E-01	1.255E+00	1.901E-01	0.889	
BI-207		279.20	*	1.498E-02	3.897E-02	6.611E-02	6.710E-03	0.227
		72.81		1.995E-01	1.804E-01	2.735E-01	2.159E-02	0.729
		74.97	+	1.007E+00	1.510E-01	2.226E-01	1.797E-02	4.526
		569.70		-1.275E-02	2.984E-02	4.626E-02	4.469E-03	-0.276
		1063.66	*	-1.908E-02	5.153E-02	8.114E-02	7.326E-03	-0.235
PB-210		1770.23		4.031E-01	3.720E-01	6.927E-01	5.682E-02	0.582
	46.54	*	3.177E-01	1.977E+00	3.271E+00	3.006E-01	0.097	
	404.85	*	-3.769E-01	7.460E-01	1.148E+00	5.552E-01	-0.328	
	427.09		1.804E+00	1.615E+00	2.452E+00	1.135E+00	0.736	
	832.01		-2.130E-01	9.549E-01	1.545E+00	8.053E-01	-0.138	
BI-212	+	727.33	*	2.060E+00	9.161E-01	1.234E+00	1.674E-01	1.669
		785.37		9.898E-01	3.239E+00	5.507E+00	5.594E-01	0.180
		1620.50		2.016E+00	2.298E+00	4.239E+00	3.570E-01	0.476
RN-219	+	271.23		8.837E-01	5.012E-01	4.737E-01	5.382E-02	1.865
		401.81	*	1.333E-01	3.968E-01	6.623E-01	9.785E-02	0.201
RA-223		81.07		5.410E-02	2.480E-01	2.890E-01	2.504E-02	0.187
	83.79		1.557E-01	1.267E-01	1.927E-01	1.727E-02	0.808	
	94.87		1.230E+00	4.763E-01	7.486E-01	6.735E-02	1.643	
	144.24		4.251E-01	7.005E-01	1.135E+00	1.076E-01	0.375	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		154.21		2.224E-01	4.128E-01	6.701E-01	6.302E-02	0.332
	+	269.46		6.866E-01	3.878E-01	3.632E-01	3.649E-02	1.890
		323.87	*	9.417E-02	7.029E-01	1.033E+00	1.841E-01	0.091
	+	338.28		9.722E+00	1.788E+00	2.593E+00	3.272E-01	3.749
		79.69		4.642E-01	1.269E+00	1.714E+00	2.947E-01	0.271
		235.96		3.684E-01	1.792E-01	2.845E-01	3.182E-02	1.295
TH-227		256.23	*	-6.017E-02	2.425E-01	4.012E-01	5.185E-02	-0.150
	+	299.98		2.336E+00	1.104E+00	1.628E+00	2.206E-01	1.434
		304.50		-7.451E-02	1.617E+00	2.484E+00	4.263E-01	-0.030
		334.37		-1.226E+00	1.664E+00	2.623E+00	4.210E-01	-0.467
		79.80		6.576E-01	1.895E+00	2.223E+00	4.833E-01	0.296
		235.96		3.684E-01	1.788E-01	2.845E-01	3.029E-02	1.295
TH-229		256.23	*	-6.017E-02	2.425E-01	4.012E-01	5.771E-02	-0.150
	+	299.98		2.336E+00	1.104E+00	1.628E+00	2.206E-01	1.434
		304.50		-7.451E-02	1.617E+00	2.484E+00	4.263E-01	-0.030
		334.37		-1.226E+00	1.664E+00	2.623E+00	4.210E-01	-0.467
		85.43		5.633E-01	1.989E-01	3.380E-01	3.093E-02	1.666
	+	88.47		6.847E-01	1.905E-01	2.249E-01	2.118E-02	3.044
PA-231		193.51	*	-2.394E-01	5.101E-01	8.487E-01	7.728E-02	-0.282
	+	210.85		3.634E+00	1.536E+00	1.577E+00	1.471E-01	2.305
		283.69	*	-1.414E-01	1.322E+00	2.191E+00	3.374E-01	-0.065
TH-231	+	301.36		1.500E+00	7.072E-01	1.040E+00	1.353E-01	1.443
PA-233		81.07		5.410E-02	2.480E-01	2.890E-01	2.504E-02	0.187
		83.79		1.557E-01	1.267E-01	1.927E-01	1.727E-02	0.808
		94.87		1.230E+00	4.763E-01	7.486E-01	6.735E-02	1.643
		144.24		4.251E-01	7.005E-01	1.135E+00	1.076E-01	0.375
		154.21		2.224E-01	4.128E-01	6.701E-01	6.302E-02	0.332
	+	269.46		6.866E-01	3.878E-01	3.632E-01	3.649E-02	1.890
PA-234		323.87	*	9.417E-02	7.029E-01	1.033E+00	1.841E-01	0.091
	+	338.28		9.722E+00	1.788E+00	2.593E+00	3.272E-01	3.749
	+	300.13		1.057E+00	5.062E-01	7.356E-01	1.144E-01	1.437
		311.90	*	-4.574E-02	6.144E-02	9.756E-02	9.682E-03	-0.469
		340.48		1.710E+00	8.024E-01	1.253E+00	3.049E-01	1.365
		94.67		6.190E-01	1.892E-01	2.870E-01	3.637E-02	2.157
PA-234M		98.44		1.046E-01	1.078E-01	1.464E-01	8.171E-02	0.715
		111.00		-2.243E-01	1.867E-01	2.841E-01	3.402E-02	-0.790
		131.20		8.377E-02	1.218E-01	1.795E-01	1.500E-02	0.467
		569.50		-1.454E-01	2.642E-01	4.051E-01	3.913E-02	-0.359
		733.00		5.572E-02	4.341E-01	6.395E-01	1.460E-01	0.087
		880.51		4.061E-02	2.739E-01	4.468E-01	4.466E-02	0.091
TH-234		883.24		-9.636E-02	2.808E-01	4.374E-01	2.948E-01	-0.220
		926.50		1.020E-01	1.630E-01	2.804E-01	7.211E-02	0.364
		946.00	*	-1.266E-02	2.881E-01	4.722E-01	9.118E-02	-0.027
		949.00		1.519E-01	4.304E-01	7.296E-01	7.102E-02	0.208
	+	766.42		2.723E+01	1.974E+01	2.156E+01	1.100E+01	1.263
		1001.03	*	-1.649E+00	4.837E+00	7.724E+00	8.262E-01	-0.214
U-238	+	63.29	*	1.093E+00	1.124E+00	1.896E+00	3.368E-01	0.577
		92.59		3.087E+00	1.042E+00	1.263E+00	2.816E-01	2.443
		63.29	*	1.093E+00	1.124E+00	1.896E+00	3.368E-01	0.577

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	92.59		3.087E+00	8.322E-01	1.263E+00	1.153E-01	2.443
NP-239		99.53		1.850E-01	1.590E-01	2.668E-01	2.342E-02	0.693
		103.37		-4.262E-02	9.888E-02	1.572E-01	1.358E-02	-0.271
		106.12		2.903E-02	8.570E-02	1.390E-01	1.191E-02	0.209
	*	117.23		-3.570E-01	4.080E-01	6.322E-01	5.295E-02	-0.565
		228.18		-9.923E-02	2.123E-01	3.503E-01	3.340E-02	-0.283
		277.60		3.344E-01	1.766E-01	3.063E-01	3.047E-02	1.092
AM-241	*	59.54		-6.150E-02	1.171E-01	1.890E-01	1.479E-02	-0.325
CM-247		278.00		1.155E+00	7.342E-01	1.295E+00	1.288E-01	0.892
		287.50		-1.203E-01	1.172E+00	1.943E+00	1.926E-01	-0.062
	*	402.40		1.685E-02	3.654E-02	6.146E-02	5.196E-03	0.274
CF-249		252.80		-8.021E-03	9.154E-01	1.533E+00	1.499E-01	-0.005
		333.37		-1.394E-01	1.737E-01	2.741E-01	2.588E-02	-0.508
	*	388.16		1.495E-02	3.813E-02	6.402E-02	5.399E-03	0.233
CF-251	*	177.52		-1.150E-01	1.323E-01	2.004E-01	1.781E-02	-0.574
		227.38		-1.528E-01	3.466E-01	5.726E-01	5.455E-02	-0.267
		285.41		-6.089E-01	2.021E+00	3.315E+00	3.289E-01	-0.184

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]G247911014      *
* Acquisition date   : 8-MAR-2010 14:58:03 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 02:00:34.10           Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247911014           Analyst initials: MXR1          *
* Batch Number       : 957714              Sample Quantity : 1.3333E+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	3.658E+01	3.618E+00	3.802E-01	0.000E+00
CD-109	4.564E+00	1.244E+00	1.164E+00	0.000E+00
SN-126	4.441E-01	1.211E-01	1.136E-01	0.000E+00
TL-208	6.815E-01	1.071E-01	6.494E-02	0.000E+00
BI-211	5.146E+00	6.818E-01	3.205E-01	0.000E+00
PB-212	2.384E+00	2.777E-01	9.422E-02	0.000E+00
BI-214	1.551E+00	2.362E-01	1.145E-01	0.000E+00
PB-214	1.868E+00	2.672E-01	1.166E-01	0.000E+00
RA-224	6.064E+00	1.464E+00	1.009E+00	0.000E+00
RA-226	1.551E+00	2.362E-01	1.145E-01	0.000E+00
AC-228	2.339E+00	4.480E-01	2.402E-01	0.000E+00
RA-228	2.339E+00	4.480E-01	2.402E-01	0.000E+00
TH-228	2.384E+00	2.777E-01	9.422E-02	0.000E+00
TH-232	2.339E+00	4.480E-01	2.402E-01	0.000E+00
U-235	2.705E-02	2.055E-01	3.486E-01	0.000E+00
NP-237	1.325E+00	4.524E-01	3.416E-01	0.000E+00
ANH-511	1.643E-01	7.306E-02	5.038E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.985E-01	3.171E-01	4.982E-01	0.000E+00 NOT IDENT.
NA-22	1.552E-02	4.592E-02	7.814E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.799E+07	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-8.607E-03	3.976E-02	6.653E-02	0.000E+00 FAIL ABUN
V-48	3.960E-02	8.148E-02	1.431E-01	0.000E+00 NOT IDENT.
CR-51	-1.229E-01	3.828E-01	6.548E-01	0.000E+00 NOT IDENT.
MN-54	-1.176E-02	3.546E-02	5.915E-02	0.000E+00 NOT IDENT.
CO-56	-2.216E-02	3.928E-02	6.402E-02	0.000E+00 FAIL ABUN
CO-57	9.207E-03	2.598E-02	4.514E-02	0.000E+00 NOT IDENT.
CO-58	-6.312E-03	3.529E-02	5.964E-02	0.000E+00 NOT IDENT.

FE-59	-6.709E-03	9.691E-02	1.612E-01	0.000E+00	NOT IDENT.
CO-60	-2.483E-02	4.095E-02	6.268E-02	0.000E+00	NOT IDENT.
ZN-65	-1.120E-02	9.919E-02	1.412E-01	0.000E+00	NOT IDENT.
SE-75	1.721E-02	4.587E-02	7.291E-02	0.000E+00	NOT IDENT.
SR-85	5.211E-02	4.442E-02	7.141E-02	0.000E+00	NOT IDENT.
Y-88	3.231E-02	3.145E-02	6.149E-02	0.000E+00	NOT IDENT.
Y-91	-7.755E+00	2.401E+01	3.882E+01	0.000E+00	NOT IDENT.
NB-94	4.650E-02	3.297E-02	6.180E-02	0.000E+00	NOT IDENT.
NB-95	4.736E-02	4.863E-02	7.939E-02	0.000E+00	NOT IDENT.
NB-95M	1.186E-01	1.342E-01	2.184E-01	0.000E+00	NOT IDENT.
ZR-95	6.927E-02	6.895E-02	1.271E-01	0.000E+00	NOT IDENT.
MO-99	-5.751E+00	2.409E+01	4.088E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.552E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	8.976E-03	4.008E-02	6.864E-02	0.000E+00	FAIL ABUN
RH-106	8.974E-02	3.044E-01	5.160E-01	0.000E+00	NOT IDENT.
RU-106	8.974E-02	3.042E-01	5.160E-01	0.000E+00	NOT IDENT.
AG-108M	1.801E-02	2.585E-02	4.608E-02	0.000E+00	NOT IDENT.
AG-110M	1.190E-02	3.235E-02	5.785E-02	0.000E+00	NOT IDENT.
SN-113	1.130E-02	4.392E-02	7.650E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	2.909E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.816E-03	6.440E-02	1.089E-01	0.000E+00	NOT IDENT.
TE-123M	9.167E-04	2.956E-02	5.001E-02	0.000E+00	NOT IDENT.
SB-124	-1.319E-02	7.254E-02	1.184E-01	0.000E+00	NOT IDENT.
SB-125	-1.703E-02	8.397E-02	1.413E-01	0.000E+00	FAIL ABUN
TE-125M	-4.838E-01	9.734E+00	1.676E+01	0.000E+00	NOT IDENT.
I-126	1.681E-01	2.548E-01	4.618E-01	0.000E+00	NOT IDENT.
SB-126	8.222E-02	1.676E-01	2.661E-01	0.000E+00	NOT IDENT.
SB-127	-1.317E+00	2.190E+00	3.637E+00	0.000E+00	NOT IDENT.
I-131	-1.186E-01	1.363E-01	2.217E-01	0.000E+00	NOT IDENT.
TE-132	-6.082E-01	1.349E+00	2.349E+00	0.000E+00	NOT IDENT.
BA-133	2.618E-02	4.301E-02	6.820E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	6.658E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.282E-02	9.213E-02	0.000E+00	FAIL ABUN
CS-135	2.379E-01	1.716E-01	2.848E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.332E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.215E-02	1.182E-01	2.035E-01	0.000E+00	NOT IDENT.
BA-137M	4.635E-03	3.473E-02	6.111E-02	0.000E+00	NOT IDENT.
CS-137	4.896E-03	3.669E-02	6.456E-02	0.000E+00	NOT IDENT.
CE-139	-7.276E-03	2.853E-02	4.752E-02	0.000E+00	NOT IDENT.
BA-140	3.214E-01	3.379E-01	5.736E-01	0.000E+00	NOT IDENT.
LA-140	5.138E-02	8.639E-02	1.431E-01	0.000E+00	FAIL ABUN
CE-141	5.166E-02	6.690E-02	1.168E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	9.716E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	4.466E-02	2.227E-01	3.416E-01	0.000E+00	NOT IDENT.
PM-144	-5.613E-03	3.280E-02	5.632E-02	0.000E+00	NOT IDENT.
PR-144	-4.320E-01	2.458E+00	4.219E+00	0.000E+00	NOT IDENT.
PM-146	1.459E-02	3.862E-02	6.723E-02	0.000E+00	NOT IDENT.
ND-147	-1.020E-01	7.045E-01	1.170E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	2.189E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	4.133E-02	1.052E-01	1.645E-01	0.000E+00	FAIL ABUN
GD-153	-7.292E-02	9.208E-02	1.368E-01	0.000E+00	NOT IDENT.
EU-154	5.014E-02	1.294E-01	2.211E-01	0.000E+00	NOT IDENT.
EU-155	1.209E-01	1.052E-01	1.871E-01	0.000E+00	FAIL ABUN
TB-160	-3.916E-02	1.400E-01	2.271E-01	0.000E+00	FAIL ABUN
HO-166M	5.330E-02	5.665E-02	1.043E-01	0.000E+00	FAIL ABUN
TA-182	1.179E-01	2.196E-01	3.781E-01	0.000E+00	FAIL ABUN
IR-192	1.128E-02	3.404E-02	6.025E-02	0.000E+00	FAIL ABUN
HG-203	1.498E-02	3.819E-02	6.820E-02	0.000E+00	NOT IDENT.
BI-207	-1.908E-02	5.050E-02	8.174E-02	0.000E+00	FAIL ABUN
PB-210	3.177E-01	1.937E+00	3.477E+00	0.000E+00	NOT IDENT.
PB-211	-3.769E-01	7.311E-01	1.176E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.978E-01	1.252E+00	0.000E+00	FAIL ABUN
RN-219	1.333E-01	3.888E-01	6.789E-01	0.000E+00	FAIL ABUN
RA-223	9.417E-02	6.889E-01	1.063E+00	0.000E+00	FAIL ABUN
AC-227	-6.017E-02	2.376E-01	4.145E-01	0.000E+00	FAIL ABUN
TH-227	-6.017E-02	2.376E-01	4.145E-01	0.000E+00	FAIL ABUN
TH-229	-2.394E-01	4.999E-01	8.810E-01	0.000E+00	FAIL ABUN
PA-231	-1.414E-01	1.295E+00	2.260E+00	0.000E+00	FAIL ABUN
TH-231	9.417E-02	6.889E-01	1.063E+00	0.000E+00	FAIL ABUN
PA-233	-4.574E-02	6.021E-02	1.004E-01	0.000E+00	FAIL ABUN
PA-234	-1.266E-02	2.823E-01	4.768E-01	0.000E+00	NOT IDENT.
PA-234M	-1.649E+00	4.740E+00	7.790E+00	0.000E+00	FAIL ABUN
TH-234	1.093E+00	1.102E+00	2.005E+00	0.000E+00	FAIL ABUN
U-238	1.093E+00	1.102E+00	2.005E+00	0.000E+00	FAIL ABUN
NP-239	-3.570E-01	3.998E-01	6.618E-01	0.000E+00	NOT IDENT.
AM-241	-6.150E-02	1.147E-01	2.001E-01	0.000E+00	NOT IDENT.
CM-247	1.685E-02	3.581E-02	6.300E-02	0.000E+00	NOT IDENT.
CF-249	1.495E-02	3.737E-02	6.566E-02	0.000E+00	NOT IDENT.

CF-251	-1.150E-01	1.297E-01	2.083E-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]G247911014.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 14:58:03.
Sample ID        : G247911014 Sample quantity : 1.33330E+02 GRAM
Detector name    : GAM20 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:34.10 0.5%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957714 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	1460.82	1735	10.66*	1.253E+00	3.658E+01	3.658E+01	10.09
CD-109	88.03	405	3.70*	6.939E+00	4.441E+00	4.564E+00	27.82
SN-126	64.28	-----	9.60	4.779E+00	-----	Line Not Found	-----
	86.94	405	8.90	6.939E+00	1.846E+00	1.846E+00	49.09
	87.57	405	37.00*	6.939E+00	4.441E-01	4.441E-01	27.82
TL-208	277.37	-----	6.60	4.721E+00	-----	Line Not Found	-----
	583.19	555	85.00*	2.696E+00	6.815E-01	6.815E-01	16.03
	860.56	118	12.50	1.953E+00	1.356E+00	1.356E+00	31.80
BI-211	72.87	-----	1.23	5.845E+00	-----	Line Not Found	-----
	351.06	937	12.92*	3.969E+00	5.146E+00	5.146E+00	13.52
PB-212	74.82	772	10.28	6.054E+00	3.494E+00	3.494E+00	17.87
	77.11	1048	17.10	6.261E+00	2.755E+00	2.755E+00	12.52
	238.63	1938	43.60*	5.249E+00	2.384E+00	2.384E+00	11.89
	300.09	111	3.30	4.463E+00	2.123E+00	2.123E+00	46.74
BI-214	609.32	652	45.49*	2.603E+00	1.551E+00	1.551E+00	15.54
	1120.29	112	14.92	1.557E+00	1.357E+00	1.357E+00	37.33
	1764.49	108	15.30	1.100E+00	1.801E+00	1.801E+00	27.44
PB-214	74.82	772	5.80	6.054E+00	6.194E+00	6.194E+00	16.96
	77.11	1048	9.70	6.261E+00	4.856E+00	4.856E+00	14.99
	242.00	460	7.25	5.206E+00	3.429E+00	3.429E+00	25.31
	295.22	429	18.42	4.513E+00	1.453E+00	1.453E+00	21.63
	351.93	937	35.60*	3.969E+00	1.868E+00	1.868E+00	14.60
RA-224	240.99	460	4.10*	5.206E+00	6.064E+00	6.064E+00	24.64
RA-226	609.32	652	45.49*	2.603E+00	1.551E+00	1.551E+00	15.54
	1120.29	112	14.92	1.557E+00	1.357E+00	1.357E+00	37.33
	1764.49	108	15.30	1.100E+00	1.801E+00	1.801E+00	27.44
AC-228	338.32	401	11.27	4.086E+00	2.450E+00	2.450E+00	43.96
	911.20	399	25.80*	1.860E+00	2.339E+00	2.339E+00	19.55
	968.97	233	15.80	1.764E+00	2.358E+00	2.358E+00	30.76
RA-228	338.32	401	11.27	4.086E+00	2.450E+00	2.450E+00	43.96
	911.20	399	25.80*	1.860E+00	2.339E+00	2.339E+00	19.55
	968.97	233	15.80	1.764E+00	2.358E+00	2.358E+00	30.76

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	772	10.28	6.054E+00	3.494E+00	3.494E+00	15.04
	77.11	1048	17.10	6.261E+00	2.755E+00	2.755E+00	12.52
	238.63	1938	43.60*	5.249E+00	2.384E+00	2.384E+00	11.89
	300.09	111	3.30	4.463E+00	2.123E+00	2.123E+00	76.30
TH-232	338.32	401	11.27	4.086E+00	2.450E+00	2.450E+00	16.33
	911.20	399	25.80*	1.860E+00	2.339E+00	2.339E+00	19.55
	968.97	233	15.80	1.764E+00	2.358E+00	2.358E+00	30.76
U-235	89.96	247	3.47	7.062E+00	2.837E+00	2.837E+00	38.14
	93.35	333	5.60	7.174E+00	2.332E+00	2.332E+00	34.44
	143.76	-----	10.96*	7.037E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.638E+00	-----	Line Not Found	-----
	185.72	240	57.20	6.176E+00	1.913E-01	1.913E-01	33.13
NP-237	205.31	-----	5.01	5.804E+00	-----	Line Not Found	-----
	86.48	405	12.40*	6.939E+00	1.325E+00	1.325E+00	34.84
	95.86	-----	2.68	7.260E+00	-----	Line Not Found	-----
ANH-511	511.00	175	100.00*	2.994E+00	1.643E-01	1.643E-01	45.36

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247911014

Page : 3
Acquisition date : 8-MAR-2010 14:58:03

Total number of lines in spectrum 35
Number of unidentified lines 5
Number of lines tentatively identified by NID 30 85.71%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.658E+01	3.658E+01	0.369E+01	10.09	
CD-109	461.40D	1.03	4.441E+00	4.564E+00	1.270E+00	27.82	
SN-126	2.30E+05Y	1.00	4.441E-01	4.441E-01	1.236E-01	27.82	
TL-208	1.41E+10Y	1.00	6.815E-01	6.815E-01	1.092E-01	16.03	
BI-211	7.04E+08Y	1.00	5.146E+00	5.146E+00	0.696E+00	13.52	
PB-212	1.41E+10Y	1.00	2.384E+00	2.384E+00	0.283E+00	11.89	
BI-214	1600.00Y	1.00	1.551E+00	1.551E+00	0.241E+00	15.54	
PB-214	1600.00Y	1.00	1.868E+00	1.868E+00	0.273E+00	14.60	
RA-224	1.41E+10Y	1.00	6.064E+00	6.064E+00	1.494E+00	24.64	
RA-226	1600.00Y	1.00	1.551E+00	1.551E+00	0.241E+00	15.54	
AC-228	1.41E+10Y	1.00	2.339E+00	2.339E+00	0.457E+00	19.55	
RA-228	1.41E+10Y	1.00	2.339E+00	2.339E+00	0.457E+00	19.55	
TH-228	1.41E+10Y	1.00	2.384E+00	2.384E+00	0.283E+00	11.89	
TH-232	1.41E+10Y	1.00	2.339E+00	2.339E+00	0.457E+00	19.55	
U-235	7.04E+08Y	1.00	1.913E-01	1.913E-01	0.634E-01	33.13	K
NP-237	2.14E+06Y	1.00	1.325E+00	1.325E+00	0.462E+00	34.84	
ANH-511	1.00E+09Y	1.00	1.643E-01	1.643E-01	0.745E-01	45.36	

Total Activity : 7.179E+01 7.191E+01

Grand Total Activity : 7.179E+01 7.191E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.11	107	594	1.47	258.01	253	10	1.49E-02	87.2	7.29E+00	
0	209.57	207	398	0.98	418.70	413	12	2.87E-02	41.2	5.73E+00	T
0	270.53	163	396	1.44	540.47	533	15	2.26E-02	55.6	4.81E+00	T
2	328.13	115	124	1.57	655.54	652	34	1.60E-02	36.0	4.18E+00	T
0	463.04	107	108	1.48	925.11	920	9	1.49E-02	40.0	3.23E+00	T
0	726.98	110	105	1.60	1452.68	1447	12	1.53E-02	42.4	2.25E+00	T
0	767.72	67	65	2.85	1534.15	1529	10	9.25E-03	51.5	2.15E+00	T
0	795.34	80	56	1.65	1589.36	1584	12	1.11E-02	43.7	2.09E+00	T
1	965.00	58	61	1.84	1928.69	1924	18	8.03E-03	54.8	1.77E+00	T
0	1238.51	109	52	1.99	2475.91	2470	13	1.51E-02	33.3	1.43E+00	T
0	1377.89	49	16	1.48	2754.89	2748	13	6.84E-03	44.8	1.31E+00	
9	1588.18	38	6	2.63	3175.92	3171	18	5.21E-03	41.2	1.18E+00	
9	1592.23	17	9	2.71	3184.04	3171	18	2.43E-03	83.9	1.18E+00	
0	1729.75	25	5	2.97	3459.48	3454	10	3.47E-03	52.2	1.11E+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]G247911014.CNF;1
* Acquisition date   : 8-MAR-2010 14:58:03.  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 02:00:34.10             Half life ratio : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G247911014             Analyst initials: MXR1
* Batch Number       : 957714                 Sample Quantity : 1.33330E+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	3.658E+01	3.691E+00	3.796E-01	3.310E-02	96.370
CD-109	4.564E+00	1.270E+00	1.107E+00	1.047E-01	4.123
SN-126	4.441E-01	1.236E-01	1.080E-01	1.016E-02	4.111
TL-208	6.815E-01	1.092E-01	6.377E-02	6.549E-03	10.688
BI-211	5.146E+00	6.957E-01	3.120E-01	2.989E-02	16.495
PB-212	2.384E+00	2.833E-01	9.109E-02	9.727E-03	26.170
BI-214	1.551E+00	2.410E-01	1.125E-01	1.257E-02	13.783
PB-214	1.868E+00	2.727E-01	1.135E-01	1.253E-02	16.460
RA-224	6.064E+00	1.494E+00	9.761E-01	9.435E-02	6.212
RA-226	1.551E+00	2.410E-01	1.125E-01	1.257E-02	13.783
AC-228	2.339E+00	4.572E-01	2.377E-01	2.988E-02	9.840
RA-228	2.339E+00	4.572E-01	2.377E-01	2.988E-02	9.840
TH-228	2.384E+00	2.833E-01	9.109E-02	9.727E-03	26.170
TH-232	2.339E+00	4.572E-01	2.377E-01	2.988E-02	9.840
U-235	1.913E-01	6.338E-02	3.341E-01	5.637E-02	0.573
NP-237	1.325E+00	4.617E-01	3.246E-01	7.443E-02	4.082
ANH-511	1.643E-01	7.455E-02	4.936E-02	4.599E-03	3.329

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.985E-01		3.236E-01	4.875E-01	4.737E-02	-0.612

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	1.552E-02		4.686E-02	7.782E-02	6.446E-03	0.199
NA-24	5.109E+00		9.177E+00	Half-Life too short		
SC-46	-8.607E-03		4.057E-02	6.582E-02	6.562E-03	-0.131
V-48	3.960E-02		8.315E-02	1.418E-01	1.355E-02	0.279
CR-51	-1.229E-01		3.906E-01	6.363E-01	6.375E-02	-0.193
MN-54	-1.176E-02		3.618E-02	5.845E-02	5.905E-03	-0.201
CO-56	-2.216E-02		4.008E-02	6.329E-02	6.378E-03	-0.350
CO-57	9.207E-03		2.651E-02	4.315E-02	3.602E-03	0.213
CO-58	-6.312E-03		3.601E-02	5.891E-02	5.982E-03	-0.107
FE-59	-6.709E-03		9.889E-02	1.601E-01	1.510E-02	-0.042
CO-60	-2.483E-02		4.178E-02	6.247E-02	5.233E-03	-0.397
ZN-65	-1.120E-02		1.012E-01	1.402E-01	1.207E-02	-0.080
SE-75	1.721E-02		4.681E-02	7.062E-02	6.992E-03	0.244
SR-85	5.211E-02		4.532E-02	6.997E-02	6.534E-03	0.745
Y-88	3.231E-02		3.209E-02	6.164E-02	4.974E-03	0.524
Y-91	-7.755E+00		2.450E+01	3.862E+01	3.136E+00	-0.201
NB-94	4.650E-02		3.364E-02	6.089E-02	6.160E-03	0.764
NB-95	4.736E-02		4.962E-02	7.833E-02	7.961E-03	0.605
NB-95M	1.186E-01		1.369E-01	2.111E-01	2.272E-02	0.562
ZR-95	6.927E-02		7.035E-02	1.254E-01	1.372E-02	0.552
MO-99	-5.751E+00		2.458E+01	4.031E+01	6.710E+00	-0.143
TC-99M	-6.102E+13		7.921E+13	Half-Life too short		
RU-103	8.976E-03		4.089E-02	6.721E-02	9.643E-03	0.134
RH-106	8.974E-02		3.106E-01	5.072E-01	7.162E-02	0.177
RU-106	8.974E-02		3.104E-01	5.072E-01	5.021E-02	0.177
AG-108M	1.801E-02		2.638E-02	4.501E-02	4.057E-03	0.400
AG-110M	1.190E-02		3.301E-02	5.692E-02	5.832E-03	0.209
SN-113	1.130E-02		4.482E-02	7.460E-02	6.435E-03	0.151
CD-115	-8.328E-06		1.484E-05	Half-Life too short		
SN-117M	1.816E-03		6.571E-02	1.046E-01	9.028E-03	0.017
TE-123M	9.167E-04		3.017E-02	4.802E-02	4.172E-03	0.019
SB-124	-1.319E-02		7.402E-02	1.185E-01	1.033E-02	-0.111
SB-125	-1.703E-02		8.569E-02	1.380E-01	1.221E-02	-0.123
TE-125M	-4.838E-01		9.933E+00	1.599E+01	1.661E+00	-0.030
I-126	1.681E-01		2.600E-01	4.545E-01	4.566E-02	0.370
SB-126	8.222E-02		1.710E-01	2.623E-01	2.660E-02	0.313
SB-127	-1.317E+00		2.234E+00	3.581E+00	4.787E-01	-0.368
I-131	-1.186E-01		1.391E-01	2.159E-01	2.030E-02	-0.549
TE-132	-6.082E-01		1.376E+00	2.269E+00	3.845E-01	-0.268
BA-133	2.618E-02		4.389E-02	6.640E-02	8.808E-03	0.394
I-133	2.785E-02		3.397E-02	Half-Life too short		
CS-134	1.427E-01	+	6.411E-02	9.097E-02	9.283E-03	1.569
CS-135	2.379E-01		1.751E-01	2.759E-01	3.058E-02	0.862
I-135	1.121E+10		6.798E+12	Half-Life too short		
CS-136	3.215E-02		1.206E-01	2.019E-01	1.916E-02	0.159
BA-137M	4.635E-03		3.544E-02	6.014E-02	6.036E-03	0.077
CS-137	4.896E-03		3.744E-02	6.354E-02	6.385E-03	0.077
CE-139	-7.276E-03		2.912E-02	4.566E-02	3.986E-03	-0.159

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-140	3.214E-01		3.448E-01	5.625E-01	1.920E-01	0.571
LA-140	5.138E-02		8.816E-02	1.431E-01	1.208E-02	0.359
CE-141	5.166E-02		6.827E-02	1.120E-01	9.670E-03	0.461
CE-143	2.748E-03		4.957E-04	Half-Life too short		
CE-144	4.466E-02		2.272E-01	3.270E-01	4.954E-02	0.137
PM-144	-5.613E-03		3.347E-02	5.548E-02	5.610E-03	-0.101
PR-144	-4.320E-01		2.508E+00	4.156E+00	4.201E-01	-0.104
PM-146	1.459E-02		3.941E-02	6.572E-02	7.113E-03	0.222
ND-147	-1.020E-01		7.189E-01	1.147E+00	1.772E-01	-0.089
PM-149	-1.778E-04		1.117E-04	Half-Life too short		
EU-152	4.133E-02		1.074E-01	1.601E-01	1.561E-02	0.258
GD-153	-7.292E-02		9.396E-02	1.303E-01	1.156E-02	-0.560
EU-154	5.014E-02		1.320E-01	2.201E-01	2.448E-02	0.228
EU-155	1.209E-01		1.074E-01	1.784E-01	1.550E-02	0.678
TB-160	-3.916E-02		1.429E-01	2.246E-01	2.246E-02	-0.174
HO-166M	5.330E-02		5.781E-02	1.027E-01	1.041E-02	0.519
TA-182	1.179E-01		2.240E-01	3.762E-01	3.070E-02	0.313
IR-192	1.128E-02		3.473E-02	5.854E-02	5.661E-03	0.193
HG-203	1.498E-02		3.897E-02	6.611E-02	6.710E-03	0.227
BI-207	-1.908E-02		5.153E-02	8.114E-02	7.326E-03	-0.235
PB-210	3.177E-01		1.977E+00	3.271E+00	3.006E-01	0.097
PB-211	-3.769E-01		7.460E-01	1.148E+00	5.552E-01	-0.328
BI-212	2.060E+00	+	9.161E-01	1.234E+00	1.674E-01	1.669
RN-219	1.333E-01		3.968E-01	6.623E-01	9.785E-02	0.201
RA-223	9.417E-02		7.029E-01	1.033E+00	1.841E-01	0.091
AC-227	-6.017E-02		2.425E-01	4.012E-01	5.185E-02	-0.150
TH-227	-6.017E-02		2.425E-01	4.012E-01	5.771E-02	-0.150
TH-229	-2.394E-01		5.101E-01	8.487E-01	7.728E-02	-0.282
PA-231	-1.414E-01		1.322E+00	2.191E+00	3.374E-01	-0.065
TH-231	9.417E-02		7.029E-01	1.033E+00	1.841E-01	0.091
PA-233	-4.574E-02		6.144E-02	9.756E-02	9.682E-03	-0.469
PA-234	-1.266E-02		2.881E-01	4.722E-01	9.118E-02	-0.027
PA-234M	-1.649E+00		4.837E+00	7.724E+00	8.262E-01	-0.214
TH-234	1.093E+00		1.124E+00	1.896E+00	3.368E-01	0.577
U-238	1.093E+00		1.124E+00	1.896E+00	3.368E-01	0.577
NP-239	-3.570E-01		4.080E-01	6.322E-01	5.295E-02	-0.565
AM-241	-6.150E-02		1.171E-01	1.890E-01	1.479E-02	-0.325
CM-247	1.685E-02		3.654E-02	6.146E-02	5.196E-03	0.274
CF-249	1.495E-02		3.813E-02	6.402E-02	5.399E-03	0.233
CF-251	-1.150E-01		1.323E-01	2.004E-01	1.781E-02	-0.574

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]G247911014           *
* Acquisition date   : 8-MAR-2010 14:58:03 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 02:00:34.10 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID           : G247911014 Analyst initials: MXR1                *
* Batch Number        : 957714 Sample Quantity : 1.3333E+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	3.658E+01	3.618E+00	1.902E-01	1.846E+00
CD-109	4.564E+00	1.244E+00	5.825E-01	6.349E-01
SN-126	4.441E-01	1.211E-01	5.685E-02	6.178E-02
TL-208	6.815E-01	1.071E-01	3.249E-02	5.462E-02
BI-211	5.146E+00	6.818E-01	1.604E-01	3.478E-01
PB-212	2.384E+00	2.777E-01	4.714E-02	1.417E-01
BI-214	1.551E+00	2.362E-01	5.729E-02	1.205E-01
PB-214	1.868E+00	2.672E-01	5.832E-02	1.363E-01
RA-224	6.064E+00	1.464E+00	5.050E-01	7.471E-01
RA-226	1.551E+00	2.362E-01	5.729E-02	1.205E-01
AC-228	2.339E+00	4.480E-01	1.201E-01	2.286E-01
RA-228	2.339E+00	4.480E-01	1.201E-01	2.286E-01
TH-228	2.384E+00	2.777E-01	4.714E-02	1.417E-01
TH-232	2.339E+00	4.480E-01	1.201E-01	2.286E-01
U-235	2.705E-02	2.055E-01	1.744E-01	1.049E-01
NP-237	1.325E+00	4.524E-01	1.709E-01	2.308E-01
ANH-511	1.643E-01	7.306E-02	2.521E-02	3.727E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.985E-01	3.171E-01	2.492E-01	1.618E-01 NOT IDENT.
NA-22	1.552E-02	4.592E-02	3.909E-02	2.343E-02 NOT IDENT.
NA-24	5.109E+06	1.799E+07	0.000E+00	9.177E+06 SHORT HLIF
SC-46	-8.607E-03	3.976E-02	3.329E-02	2.029E-02 FAIL ABUN
V-48	3.960E-02	8.148E-02	7.159E-02	4.157E-02 NOT IDENT.
CR-51	-1.229E-01	3.828E-01	3.276E-01	1.953E-01 NOT IDENT.
MN-54	-1.176E-02	3.546E-02	2.959E-02	1.809E-02 NOT IDENT.
CO-56	-2.216E-02	3.928E-02	3.203E-02	2.004E-02 FAIL ABUN
CO-57	9.207E-03	2.598E-02	2.258E-02	1.326E-02 NOT IDENT.
CO-58	-6.312E-03	3.529E-02	2.984E-02	1.800E-02 NOT IDENT.

FE-59	-6.709E-03	9.691E-02	8.066E-02	4.945E-02	NOT IDENT.
CO-60	-2.483E-02	4.095E-02	3.136E-02	2.089E-02	NOT IDENT.
ZN-65	-1.120E-02	9.919E-02	7.062E-02	5.061E-02	NOT IDENT.
SE-75	1.721E-02	4.587E-02	3.648E-02	2.340E-02	NOT IDENT.
SR-85	5.211E-02	4.442E-02	3.573E-02	2.266E-02	NOT IDENT.
Y-88	3.231E-02	3.145E-02	3.076E-02	1.605E-02	NOT IDENT.
Y-91	-7.755E+00	2.401E+01	1.942E+01	1.225E+01	NOT IDENT.
NB-94	4.650E-02	3.297E-02	3.092E-02	1.682E-02	NOT IDENT.
NB-95	4.736E-02	4.863E-02	3.972E-02	2.481E-02	NOT IDENT.
NB-95M	1.186E-01	1.342E-01	1.093E-01	6.846E-02	NOT IDENT.
ZR-95	6.927E-02	6.895E-02	6.360E-02	3.518E-02	NOT IDENT.
MO-99	-5.751E+00	2.409E+01	2.045E+01	1.229E+01	NOT IDENT.
TC-99M	-6.102E+19	1.552E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	8.976E-03	4.008E-02	3.434E-02	2.045E-02	FAIL ABUN
RH-106	8.974E-02	3.044E-01	2.581E-01	1.553E-01	NOT IDENT.
RU-106	8.974E-02	3.042E-01	2.581E-01	1.552E-01	NOT IDENT.
AG-108M	1.801E-02	2.585E-02	2.305E-02	1.319E-02	NOT IDENT.
AG-110M	1.190E-02	3.235E-02	2.894E-02	1.651E-02	NOT IDENT.
SN-113	1.130E-02	4.392E-02	3.827E-02	2.241E-02	NOT IDENT.
CD-115	-8.328E+00	2.909E+01	0.000E+00	1.484E+01	SHORT HLIF
SN-117M	1.816E-03	6.440E-02	5.451E-02	3.286E-02	NOT IDENT.
TE-123M	9.167E-04	2.956E-02	2.502E-02	1.508E-02	NOT IDENT.
SB-124	-1.319E-02	7.254E-02	5.924E-02	3.701E-02	NOT IDENT.
SB-125	-1.703E-02	8.397E-02	7.069E-02	4.284E-02	FAIL ABUN
TE-125M	-4.838E-01	9.734E+00	8.387E+00	4.966E+00	NOT IDENT.
I-126	1.681E-01	2.548E-01	2.310E-01	1.300E-01	NOT IDENT.
SB-126	8.222E-02	1.676E-01	1.331E-01	8.551E-02	NOT IDENT.
SB-127	-1.317E+00	2.190E+00	1.819E+00	1.117E+00	NOT IDENT.
I-131	-1.186E-01	1.363E-01	1.109E-01	6.954E-02	NOT IDENT.
TE-132	-6.082E-01	1.349E+00	1.175E+00	6.882E-01	NOT IDENT.
BA-133	2.618E-02	4.301E-02	3.412E-02	2.195E-02	NOT IDENT.
I-133	2.785E+04	6.658E+04	0.000E+00	3.397E+04	SHORT HLIF
CS-134	1.427E-01	6.282E-02	4.609E-02	3.205E-02	FAIL ABUN
CS-135	2.379E-01	1.716E-01	1.425E-01	8.757E-02	NOT IDENT.
I-135	1.121E+16	1.332E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.215E-02	1.182E-01	1.018E-01	6.030E-02	NOT IDENT.
BA-137M	4.635E-03	3.473E-02	3.057E-02	1.772E-02	NOT IDENT.
CS-137	4.896E-03	3.669E-02	3.230E-02	1.872E-02	NOT IDENT.
CE-139	-7.276E-03	2.853E-02	2.377E-02	1.456E-02	NOT IDENT.
BA-140	3.214E-01	3.379E-01	2.870E-01	1.724E-01	NOT IDENT.
LA-140	5.138E-02	8.639E-02	7.161E-02	4.408E-02	FAIL ABUN
CE-141	5.166E-02	6.690E-02	5.844E-02	3.413E-02	NOT IDENT.
CE-143	2.748E+03	9.716E+02	0.000E+00	4.957E+02	SHORT HLIF
CE-144	4.466E-02	2.227E-01	1.709E-01	1.136E-01	NOT IDENT.
PM-144	-5.613E-03	3.280E-02	2.818E-02	1.673E-02	NOT IDENT.
PR-144	-4.320E-01	2.458E+00	2.111E+00	1.254E+00	NOT IDENT.
PM-146	1.459E-02	3.862E-02	3.363E-02	1.970E-02	NOT IDENT.
ND-147	-1.020E-01	7.045E-01	5.855E-01	3.594E-01	FAIL ABUN
PM-149	-1.778E+02	2.189E+02	0.000E+00	1.117E+02	SHORT HLIF
EU-152	4.133E-02	1.052E-01	8.232E-02	5.368E-02	FAIL ABUN
GD-153	-7.292E-02	9.208E-02	6.845E-02	4.698E-02	NOT IDENT.
EU-154	5.014E-02	1.294E-01	1.106E-01	6.602E-02	NOT IDENT.
EU-155	1.209E-01	1.052E-01	9.359E-02	5.370E-02	FAIL ABUN
TB-160	-3.916E-02	1.400E-01	1.136E-01	7.144E-02	FAIL ABUN
HO-166M	5.330E-02	5.665E-02	5.216E-02	2.890E-02	FAIL ABUN
TA-182	1.179E-01	2.196E-01	1.891E-01	1.120E-01	FAIL ABUN
IR-192	1.128E-02	3.404E-02	3.014E-02	1.737E-02	FAIL ABUN
HG-203	1.498E-02	3.819E-02	3.412E-02	1.948E-02	NOT IDENT.
BI-207	-1.908E-02	5.050E-02	4.090E-02	2.576E-02	FAIL ABUN
PB-210	3.177E-01	1.937E+00	1.740E+00	9.884E-01	NOT IDENT.
PB-211	-3.769E-01	7.311E-01	5.886E-01	3.730E-01	NOT IDENT.
BI-212	2.060E+00	8.978E-01	6.264E-01	4.581E-01	FAIL ABUN
RN-219	1.333E-01	3.888E-01	3.396E-01	1.984E-01	FAIL ABUN
RA-223	9.417E-02	6.889E-01	5.316E-01	3.515E-01	FAIL ABUN
AC-227	-6.017E-02	2.376E-01	2.074E-01	1.212E-01	FAIL ABUN
TH-227	-6.017E-02	2.376E-01	2.074E-01	1.212E-01	FAIL ABUN
TH-229	-2.394E-01	4.999E-01	4.408E-01	2.551E-01	FAIL ABUN
PA-231	-1.414E-01	1.295E+00	1.130E+00	6.609E-01	FAIL ABUN
TH-231	9.417E-02	6.889E-01	5.316E-01	3.515E-01	FAIL ABUN
PA-233	-4.574E-02	6.021E-02	5.025E-02	3.072E-02	FAIL ABUN
PA-234	-1.266E-02	2.823E-01	2.385E-01	1.441E-01	NOT IDENT.
PA-234M	-1.649E+00	4.740E+00	3.898E+00	2.418E+00	FAIL ABUN
TH-234	1.093E+00	1.102E+00	1.003E+00	5.621E-01	FAIL ABUN
U-238	1.093E+00	1.102E+00	1.003E+00	5.621E-01	FAIL ABUN
NP-239	-3.570E-01	3.998E-01	3.311E-01	2.040E-01	NOT IDENT.
AM-241	-6.150E-02	1.147E-01	1.001E-01	5.854E-02	NOT IDENT.
CM-247	1.685E-02	3.581E-02	3.152E-02	1.827E-02	NOT IDENT.
CF-249	1.495E-02	3.737E-02	3.285E-02	1.906E-02	NOT IDENT.

CF-251	-1.150E-01	1.297E-01	1.042E-01	6.616E-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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46.54	352.0831
49.72	343.6955
57.36	0.0000
59.54	474.1906
63.29	493.5386
63.29	493.5386
64.28	534.6920
67.75	550.1062
69.67	548.8660
70.83	563.6855
72.81	591.5985
72.87	591.6574
72.87	591.6574
74.82	532.0378
74.82	532.0378
74.82	532.0378
74.97	532.1672
77.11	533.9965
77.11	533.9965
77.11	533.9965
79.69	471.0850
79.80	452.5675
80.12	452.7925
80.19	452.8415
80.57	422.0740
81.00	453.4096
81.07	453.4586
81.07	453.4586
83.79	500.5657
83.79	500.5657
85.43	449.1710
86.48	449.8703
86.55	449.9185
86.79	450.0764
86.94	450.1772
87.57	450.5937
88.03	450.8984
88.47	451.1878
89.96	452.1655
91.11	452.9131
92.59	453.8688
92.59	453.8688
93.35	454.3577
94.67	369.1252
94.87	373.9824
94.87	373.9824
95.86	418.9292
97.43	451.6435
98.44	363.0880
99.53	371.0699
100.11	369.2328
103.18	443.4050
103.37	413.5929
105.31	373.9331
106.12	402.2160
109.28	390.9329
111.00	432.8003
111.76	413.7693
116.30	388.9477
117.23	404.6177
121.12	364.9948
121.78	366.3756
122.06	375.2505
123.07	399.7980
131.20	368.1956
133.52	354.1951
136.00	351.2858

136.47	364.8159
140.51	366.4308
140.51	0.0000
143.76	360.9889
144.24	343.2290
144.24	343.2290
145.44	343.6679
152.43	365.4187
153.25	362.3275
154.21	366.0857
154.21	366.0857
156.02	361.0819
158.56	338.1010
159.00	346.2212
162.66	301.7615
163.33	339.7052
165.86	293.5339
176.60	300.0299
177.52	326.9518
181.07	286.1517
184.41	294.0256
185.72	283.8609
193.51	319.3600
197.04	290.2557
205.31	309.4290
210.85	273.6182
215.65	248.0930
222.11	271.9821
227.38	280.3802
228.16	280.5522
228.18	281.4649
235.69	251.3316
235.96	277.6895
235.96	277.6895
238.63	253.5440
238.63	253.5440
240.99	253.9984
242.00	254.1928
244.70	254.7106
252.40	212.7016
252.80	218.3151
256.23	221.6446
256.23	221.6446
260.90	0.0000
264.66	179.1387
268.22	200.5420
269.46	189.1068
269.46	189.1068
271.23	189.3411
273.65	256.8883
276.40	197.1716
277.37	181.9904
277.60	173.2328
278.00	185.5232
279.20	202.6385
279.54	236.6262
280.46	238.6603
283.69	178.6785
284.31	191.9945
285.41	186.4580
285.90	0.0000
287.50	190.5108
293.27	0.0000
295.22	213.4043
295.96	167.7554
298.57	168.0427
299.98	191.1346
299.98	191.1346
300.09	192.6760
300.09	192.6760
300.13	192.6822
301.36	171.4098
302.85	171.5738
304.50	172.5238
304.50	172.5238
304.85	163.6146
308.46	155.6669
311.90	182.0094

316.51	167.0869
319.41	176.0959
320.08	181.0107
323.87	170.7632
323.87	170.7632
328.76	188.7930
333.37	189.3229
334.37	189.4383
334.37	189.4383
338.28	189.8824
338.28	189.8824
338.32	189.8883
338.32	189.8883
338.32	189.8883
340.48	190.1340
340.55	190.1399
344.28	155.5939
351.06	149.9010
351.93	149.9775
356.01	129.7606
364.49	145.1022
366.42	127.3516
383.85	140.6473
388.16	128.8945
388.63	121.8770
391.69	139.2318
400.66	133.8188
401.81	132.8850
402.40	131.9122
404.85	158.4994
410.95	109.0621
414.70	133.7865
423.72	123.1219
427.09	89.4161
427.87	119.2692
433.94	91.7880
453.88	102.0704
463.37	102.1199
468.07	106.2627
473.00	101.9569
476.78	105.2963
477.60	121.1382
487.02	112.1479
492.35	0.0000
497.08	100.9737
511.00	127.2773
514.00	114.8095
527.90	0.0000
529.87	0.0000
531.02	116.5331
537.26	96.2899
546.56	0.0000
563.25	86.4159
569.33	103.0822
569.50	103.0879
569.70	101.9997
583.19	124.6214
600.60	91.0638
602.73	113.8156
604.72	97.8882
609.32	103.6345
609.32	103.6345
610.33	103.6771
614.28	87.5349
618.01	95.0414
621.93	82.8683
621.93	82.8683
633.25	85.4768
635.95	84.6643
636.99	81.0945
645.85	75.0364
657.76	81.7273
661.66	97.3057
661.66	97.3057
664.57	0.0000
666.33	91.0962
666.50	91.1011
677.62	93.2991

685.70	97.2426
695.00	87.4413
696.49	94.8551
696.51	94.8551
697.00	101.3176
702.65	77.5257
706.68	102.5883
711.68	71.2908
720.70	65.0132
721.93	0.0000
722.78	75.9025
722.91	75.9065
723.31	66.6206
724.19	72.8389
727.33	88.4340
733.00	88.6056
735.93	67.2205
739.50	77.5835
747.24	68.4161
752.31	85.4303
753.82	71.3836
756.73	62.9924
763.94	62.8288
765.81	78.5848
766.42	84.8892
777.92	85.2100
778.90	80.5010
783.70	85.3704
785.37	87.3146
795.86	60.9469
801.95	76.3320
810.29	69.8365
810.76	63.1496
815.77	60.3745
818.51	58.5085
832.01	75.1302
834.85	81.9453
836.80	0.0000
846.77	79.3434
856.80	64.7038
860.56	62.1859
871.09	68.2329
873.19	65.3495
875.33	0.0000
879.36	64.4934
880.51	56.6944
883.24	66.5241
884.68	55.7865
889.28	72.5222
898.04	69.7624
911.20	75.9473
911.20	75.9473
911.20	75.9473
926.50	49.5337
937.49	82.4833
944.13	70.6915
946.00	61.7624
949.00	58.8243
962.29	66.7155
964.08	65.0793
966.15	67.1194
968.97	58.4829
968.97	58.4829
968.97	58.4829
983.53	62.4087
996.26	59.5949
1001.03	74.8419
1004.73	63.7798
1037.84	74.5577
1038.76	0.0000
1048.07	55.2999
1050.41	69.6768
1050.41	69.6768
1063.66	64.7750
1085.87	57.9059
1099.45	69.5158
1112.07	60.3676
1115.54	67.7136

1120.29	66.0547
1120.29	66.0547
1120.55	74.0542
1121.30	74.7636
1131.51	0.0000
1173.23	81.3463
1177.93	79.3213
1189.05	85.8924
1204.77	90.4661
1221.41	86.5450
1231.02	85.6641
1235.36	83.9635
1238.28	74.0065
1260.41	0.0000
1271.85	70.2495
1274.44	58.3954
1274.54	59.4768
1291.59	54.2749
1298.22	0.0000
1312.11	49.0671
1332.49	52.5703
1365.19	34.9261
1368.63	0.0000
1384.29	26.8922
1408.01	28.7484
1457.56	0.0000
1460.82	14.9980
1489.16	20.7387
1505.03	37.8239
1596.21	13.1964
1620.50	18.3653
1678.03	0.0000
1690.97	17.6228
1764.49	12.8926
1764.49	12.8926
1770.23	5.1054
1771.35	5.1064
1791.20	0.0000
1836.06	9.0348

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911014

Total Uranium Activity	3.2643E+00	ug/g
Total Uranium Counting Unc.	3.2792E+00	ug/g
Total Uranium Tpu	1.6731E-06	ug/g
Total Uranium Mda	2.9853E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 957714                          SAMPLE ID   : G247911014
*  ANALYST       : MXR1                             DETECTOR    : GAM20
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 8-MAR-2010 14:58:03.41          SAMPLE ALQT  : 133.330 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.222E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 1.350E+00
GROSS GAMMA MDA (pCi/GRAM )     : 4.178E+00
GROSS GAMMA DLC (pCi/GRAM )     : 2.035E+00

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VAX/VMS Nuclide Identification Report Generated 8-MAR-2010 17:00:03.43

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911015.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 14:59:09.
Sample ID          : G247911015 Sample quantity : 1.27460E+02 GRAM
Detector name      : GAM21 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:25.80 0.4%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 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	46.41*	145	427	0.63	92.80	89	7	2.01E-02	25.2	
2	0	63.27	285	561	0.97	126.50	123	6	3.96E-02	14.4	
3	3	74.86*	898	554	0.77	149.67	147	11	1.25E-01	5.0	4.04E+00
4	3	77.07*	1399	381	0.71	154.09	147	11	1.94E-01	3.4	
5	5	87.15*	520	384	0.90	174.24	165	13	7.22E-02	7.1	1.07E+00
6	0	89.94	290	327	0.94	179.82	178	5	4.03E-02	11.1	
7	0	92.96*	627	469	1.59	185.86	183	8	8.70E-02	7.3	
8	0	105.31	98	460	1.02	210.55	207	9	1.37E-02	40.5	
9	0	128.79	145	498	0.76	257.48	252	10	2.01E-02	30.0	
10	0	185.80*	275	311	1.02	371.45	368	8	3.82E-02	12.8	
11	0	208.89	127	283	0.92	417.62	414	8	1.76E-02	24.6	
12	6	238.38*	1670	168	0.83	476.58	472	15	2.32E-01	2.7	2.15E+00
13	6	241.35*	356	217	1.56	482.51	472	15	4.94E-02	10.4	
14	0	269.99	115	187	1.20	539.77	535	9	1.60E-02	23.3	
15	2	294.92*	439	119	1.00	589.63	585	20	6.10E-02	6.2	1.25E+00
16	0	327.64	53	131	0.62	655.04	652	7	7.36E-03	38.4	
17	0	338.00	308	157	0.96	675.76	671	9	4.27E-02	9.3	
18	0	351.59*	711	136	0.82	702.93	698	10	9.87E-02	4.9	
19	0	462.37	85	110	1.45	924.45	920	10	1.19E-02	24.0	
20	0	510.52*	132	127	1.51	1020.74	1014	14	1.83E-02	22.0	
21	0	582.79*	406	90	1.48	1165.26	1160	11	5.64E-02	6.8	
22	0	608.82*	460	83	1.33	1217.34	1211	13	6.39E-02	6.3	
23	0	726.74	118	56	1.53	1453.18	1448	13	1.64E-02	15.9	
24	0	754.76	40	42	1.67	1509.24	1502	12	5.56E-03	36.1	
25	0	794.36	58	68	2.29	1588.44	1582	13	8.07E-03	32.1	
26	0	859.73	60	50	1.37	1719.20	1714	13	8.34E-03	27.3	
27	0	910.52	277	49	1.44	1820.81	1815	14	3.85E-02	8.1	
28	1	964.09	46	61	1.78	1927.98	1921	21	6.37E-03	34.8	6.76E-01
29	1	968.25	130	47	1.66	1936.30	1921	21	1.80E-02	13.4	
30	0	1120.03	58	65	1.29	2239.99	2234	12	7.99E-03	31.1	
31	0	1194.52	27	42	0.97	2389.04	2382	12	3.80E-03	51.0	
32	0	1459.73	875	0	2.09	2919.84	2911	17	1.22E-01	3.4	
33	0	1586.78	16	18	0.84	3174.15	3168	12	2.28E-03	57.2	
34	0	1763.90*	54	21	2.27	3528.74	3520	14	7.51E-03	22.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 8-MAR-2010 17:00:05

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911015.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 14:59:09
Sample ID        : G247911015 Sample quantity : 127.46 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA21 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:25.80 0.4%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.354E+01	3.653E+00	6.854E-01	5.852E-02	48.932
CD-109	+	88.03	*	5.225E+00	8.862E-01	8.136E-01	7.655E-02	6.422
SN-126	+	64.28		1.068E+00	3.462E-01	3.304E-01	4.895E-02	3.233
	+	86.94		2.114E+00	9.271E-01	3.308E-01	1.373E-01	6.389
	+	87.57	*	5.084E-01	8.623E-02	7.976E-02	7.477E-03	6.374
EU-155	+	86.55		6.172E-01	1.050E-01	9.646E-02	9.044E-03	6.399
	+	105.31	*	1.796E-01	1.467E-01	1.336E-01	1.393E-02	1.344
TL-208		277.37		4.312E-01	4.210E-01	7.196E-01	9.165E-02	0.599
	+	583.19	*	7.915E-01	1.379E-01	7.233E-02	7.873E-03	10.943
	+	860.56		1.177E+00	6.528E-01	6.081E-01	6.034E-02	1.935
PB-210	+	46.54	*	1.372E+00	7.045E-01	6.458E-01	6.107E-02	2.124
BI-211		72.87		1.946E+00	1.886E+00	2.973E+00	2.488E-01	0.655
	+	351.06	*	5.401E+00	7.205E-01	3.511E-01	3.169E-02	15.384
PB-212	+	74.82		3.110E+00	5.096E-01	3.519E-01	4.542E-02	8.838
	+	77.11		2.915E+00	3.189E-01	2.127E-01	1.834E-02	13.709
	+	238.63	*	2.570E+00	2.921E-01	9.504E-02	9.495E-03	27.041
		300.09		1.486E+00	9.200E-01	1.598E+00	1.724E-01	0.930
BI-214	+	609.32	*	1.752E+00	3.032E-01	1.480E-01	1.755E-02	11.836
	+	1120.29		1.221E+00	7.721E-01	6.966E-01	7.514E-02	1.754
	+	1764.49		1.739E+00	8.102E-01	4.459E-01	3.707E-02	3.901
PB-214	+	74.82		5.512E+00	8.481E-01	6.237E-01	7.243E-02	8.838
	+	77.11		5.140E+00	7.041E-01	3.749E-01	4.474E-02	13.709
	+	242.00		3.331E+00	7.785E-01	5.175E-01	5.492E-02	6.437
	+	295.22		1.963E+00	3.274E-01	2.297E-01	2.539E-02	8.544
	+	351.93	*	1.960E+00	2.830E-01	1.278E-01	1.351E-02	15.339
RA-224	+	240.99	*	5.891E+00	1.334E+00	1.022E+00	9.078E-02	5.766
RA-226	+	609.32	*	1.752E+00	3.032E-01	1.480E-01	1.755E-02	11.836
	+	1120.29		1.221E+00	7.721E-01	6.966E-01	7.514E-02	1.754
	+	1764.49		1.739E+00	8.102E-01	4.459E-01	3.707E-02	3.901
AC-228	+	338.32		2.574E+00	1.177E+00	4.276E-01	1.785E-01	6.020
	+	911.20	*	2.783E+00	5.539E-01	2.804E-01	3.280E-02	9.923
	+	968.97		2.260E+00	8.191E-01	5.922E-01	1.446E-01	3.817
RA-228	+	338.32		2.574E+00	1.177E+00	4.276E-01	1.785E-01	6.020
	+	911.20	*	2.783E+00	5.539E-01	2.804E-01	3.280E-02	9.923

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		2.260E+00	8.191E-01	5.922E-01	1.446E-01	3.817
	+	74.82		3.110E+00	4.117E-01	3.519E-01	3.013E-02	8.838
	+	77.11		2.915E+00	3.189E-01	2.127E-01	1.834E-02	13.709
	+	238.63	*	2.570E+00	2.921E-01	9.504E-02	9.495E-03	27.041
		300.09		1.486E+00	1.284E+00	1.598E+00	9.791E-01	0.930
TH-232	+	338.32		2.574E+00	5.293E-01	4.276E-01	3.728E-02	6.020
	+	911.20	*	2.783E+00	5.539E-01	2.804E-01	3.280E-02	9.923
	+	968.97		2.260E+00	8.191E-01	5.922E-01	1.446E-01	3.817
TH-234	+	63.29	*	2.771E+00	9.429E-01	8.698E-01	1.570E-01	3.186
	+	92.59		5.439E+00	1.457E+00	6.357E-01	1.430E-01	8.556
U-235	+	89.96		3.045E+00	1.016E+00	7.754E-01	1.933E-01	3.927
	+	93.35		4.109E+00	1.135E+00	4.818E-01	1.132E-01	8.528
		143.76	*	8.441E-02	1.981E-01	3.145E-01	5.568E-02	0.268
		163.33		-2.915E-01	3.878E-01	6.353E-01	1.133E-01	-0.459
	+	185.72		2.600E-01	6.995E-02	6.880E-02	5.774E-03	3.780
		205.31		2.251E-01	5.003E-01	7.743E-01	1.405E-01	0.291
NP-237	+	86.48	*	1.517E+00	4.091E-01	2.370E-01	5.436E-02	6.400
		95.86		1.953E-01	6.587E-01	9.933E-01	2.427E-01	0.197
U-238	+	63.29	*	2.771E+00	9.429E-01	8.698E-01	1.570E-01	3.186
	+	92.59		5.439E+00	9.492E-01	6.357E-01	6.119E-02	8.556
ANH-511	+	511.00	*	1.904E-01	8.590E-02	5.849E-02	5.607E-03	3.255

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	1.276E-01	3.908E-01	6.714E-01	6.577E-02	0.190
NA-22		1274.54	*	-8.613E-03	6.740E-02	1.069E-01	8.768E-03	-0.081
NA-24		1368.63	*	-1.836E+01	6.740E-02	Half-Life too short		
SC-46		889.28	*	-2.895E-02	5.424E-02	8.542E-02	7.595E-03	-0.339
	+	1120.55		2.118E-01	1.331E-01	1.838E-01	1.553E-02	1.152
V-48		944.13		-5.403E-01	1.323E+00	2.095E+00	1.837E-01	-0.258
		983.53	*	-3.945E-02	1.090E-01	1.729E-01	1.512E-02	-0.228
		1312.11		4.350E-02	1.185E-01	2.005E-01	1.633E-02	0.217
CR-51		320.08	*	-7.616E-02	4.524E-01	7.237E-01	6.723E-02	-0.105
MN-54		834.85	*	2.428E-02	5.027E-02	8.798E-02	8.526E-03	0.276
CO-56		846.77	*	8.550E-03	5.537E-02	9.425E-02	8.983E-03	0.091
		1037.84		-5.357E-01	4.395E-01	6.121E-01	5.584E-02	-0.875
		1238.28		1.150E-01	1.592E-01	2.716E-01	2.305E-02	0.423
		1771.35		-9.566E-02	3.595E-01	5.505E-01	4.574E-02	-0.174
CO-57		122.06	*	7.882E-03	2.181E-02	3.507E-02	4.029E-03	0.225
		136.47		-3.538E-02	1.946E-01	3.015E-01	3.338E-02	-0.117
CO-58		810.76	*	2.283E-02	4.935E-02	8.690E-02	8.696E-03	0.263
FE-59		1099.45	*	-1.355E-02	1.245E-01	2.008E-01	1.853E-02	-0.067
		1291.59		1.166E-01	1.927E-01	3.322E-01	3.121E-02	0.351
CO-60		1173.23		-5.101E-02	6.997E-02	1.048E-01	8.636E-03	-0.487
		1332.49	*	8.040E-03	5.132E-02	8.789E-02	7.133E-03	0.091
ZN-65		1115.54	*	-1.298E-01	1.624E-01	2.016E-01	1.709E-02	-0.644
SE-75		121.12		7.839E-02	1.144E-01	1.866E-01	2.496E-02	0.420

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.00		1.441E-02	3.701E-02	5.909E-02	6.280E-03	0.244
		264.66	*	-3.763E-03	5.059E-02	7.898E-02	7.092E-03	-0.048
		279.54		-2.043E-01	1.227E-01	1.781E-01	1.645E-02	-1.147
		400.66		1.031E-01	2.908E-01	4.743E-01	5.064E-02	0.217
SR-85		514.00	*	6.066E-02	4.677E-02	7.796E-02	7.502E-03	0.778
Y-88		898.04		-3.068E-02	5.610E-02	8.807E-02	7.740E-03	-0.348
		1836.06	*	-1.123E-02	5.163E-02	7.931E-02	6.548E-03	-0.142
Y-91		1204.77	*	1.040E+01	3.353E+01	5.599E+01	4.612E+00	0.186
NB-94		702.65	*	3.568E-02	4.792E-02	8.223E-02	8.956E-03	0.434
		871.09		2.466E-02	4.596E-02	8.087E-02	7.423E-03	0.305
NB-95		765.81	*	7.580E-02	6.611E-02	1.156E-01	1.208E-02	0.656
NB-95M		235.69	*	5.115E-02	1.436E-01	2.187E-01	2.208E-02	0.234
ZR-95		724.19		2.041E-01	1.491E-01	2.426E-01	2.755E-02	0.841
		756.73	*	6.617E-02	1.165E-01	1.758E-01	1.983E-02	0.376
MO-99		140.51		2.322E+01	4.532E+01	7.148E+01	1.743E+01	0.325
		181.07		1.359E+00	3.694E+01	6.003E+01	1.120E+01	0.023
		366.42		1.413E+02	2.377E+02	3.969E+02	3.329E+01	0.356
		739.50	*	-2.405E+01	3.753E+01	5.602E+01	9.502E+00	-0.429
		777.92		-5.989E-01	1.103E+02	1.764E+02	1.824E+01	-0.003
TC-99M		140.51	*	7.615E+13	1.103E+02	Half-Life too short		
RU-103		497.08	*	-2.074E-02	5.057E-02	8.157E-02	1.181E-02	-0.254
		610.33		1.438E+01	3.160E+00	3.966E+00	6.936E-01	3.625
RH-106		621.93	*	3.340E-02	4.196E-01	6.913E-01	1.017E-01	0.048
		1050.41		1.980E+00	3.800E+00	6.566E+00	5.679E-01	0.301
RU-106		621.93	*	3.340E-02	4.196E-01	6.913E-01	7.418E-02	0.048
		1050.41		1.980E+00	3.800E+00	6.566E+00	5.679E-01	0.301
AG-108M		433.94	*	-5.340E-02	3.380E-02	4.969E-02	4.399E-03	-1.075
		614.28		1.111E-02	4.777E-02	7.063E-02	7.694E-03	0.157
		722.91		-2.106E-02	5.759E-02	7.684E-02	8.452E-03	-0.274
AG-110M		657.76	*	-3.856E-02	4.908E-02	7.375E-02	8.273E-03	-0.523
		677.62		1.537E-02	4.211E-01	6.856E-01	7.673E-02	0.022
		706.68		-3.366E-01	2.975E-01	4.226E-01	4.677E-02	-0.797
		763.94		-2.262E-01	2.602E-01	3.827E-01	4.081E-02	-0.591
		884.68		4.767E-02	6.540E-02	1.171E-01	1.081E-02	0.407
		937.49		-2.586E-01	1.561E-01	2.081E-01	1.888E-02	-1.243
		1384.29		1.453E-02	2.139E-01	3.610E-01	3.046E-02	0.040
		1505.03		1.731E-01	4.003E-01	7.065E-01	5.879E-02	0.245
SN-113		391.69	*	-4.056E-02	5.649E-02	8.447E-02	6.957E-03	-0.480
CD-115		260.90		-2.803E-04	5.649E-02	Half-Life too short		
		492.35		5.663E-05	5.649E-02	Half-Life too short		
		527.90	*	1.575E-05	5.649E-02	Half-Life too short		
SN-117M		156.02		-3.942E+00	2.393E+00	3.777E+00	3.409E-01	-1.044
		158.56	*	4.724E-02	5.626E-02	9.945E-02	8.754E-03	0.475
TE-123M		159.00	*	2.081E-02	2.576E-02	4.546E-02	4.007E-03	0.458
SB-124		602.73		2.520E-02	5.803E-02	8.765E-02	9.257E-03	0.287
		645.85		-3.072E-01	6.656E-01	1.035E+00	1.171E-01	-0.297
		722.78		-2.435E-01	5.970E-01	7.912E-01	8.652E-02	-0.308
		1690.97	*	3.003E-02	8.727E-02	1.562E-01	1.363E-02	0.192
SB-125		427.87	*	-4.492E-02	1.140E-01	1.881E-01	1.627E-02	-0.239

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	463.37		1.068E+00	5.224E-01	7.283E-01	6.996E-02	1.466
		600.60		-8.680E-02	2.291E-01	3.635E-01	4.023E-02	-0.239
		635.95		-2.287E-01	3.709E-01	5.694E-01	6.497E-02	-0.402
TE-125M		109.28	*	2.031E+00	8.821E+00	1.313E+01	1.597E+00	0.155
I-126		388.63		2.537E-01	2.298E-01	3.950E-01	3.163E-02	0.642
		666.33	*	1.831E-01	3.601E-01	6.103E-01	6.733E-02	0.300
	+	753.82		5.495E+00	4.005E+00	5.328E+00	5.623E-01	1.031
SB-126		414.70		2.082E-02	1.038E-01	1.785E-01	1.481E-02	0.117
		666.50		3.580E-02	1.269E-01	2.111E-01	2.329E-02	0.170
		695.00		4.275E-02	1.324E-01	2.202E-01	2.406E-02	0.194
		697.00		-7.745E-02	4.686E-01	7.472E-01	8.158E-02	-0.104
		720.70	*	1.097E-01	2.447E-01	3.837E-01	4.140E-02	0.286
		856.80		2.098E-01	8.526E-01	1.285E+00	1.207E-01	0.163
SB-127		252.40		5.497E+00	7.583E+00	1.247E+01	5.218E+00	0.441
		473.00		1.836E+00	3.298E+00	5.749E+00	7.998E-01	0.319
		685.70	*	2.729E-01	3.168E+00	5.175E+00	7.267E-01	0.053
		783.70		4.076E+00	9.012E+00	1.499E+01	2.152E+00	0.272
I-131		80.19		6.581E+00	3.698E+00	5.973E+00	5.320E-01	1.102
		284.31		2.490E+00	2.093E+00	3.642E+00	3.414E-01	0.684
		364.49	*	-1.236E-01	1.753E-01	2.642E-01	2.355E-02	-0.468
		636.99		-2.687E+00	2.877E+00	4.270E+00	4.813E-01	-0.629
TE-132		49.72		-8.569E-01	5.752E+00	9.599E+00	1.125E+00	-0.089
		111.76		2.217E+01	5.330E+01	8.635E+01	1.168E+01	0.257
		116.30		-7.107E+00	4.824E+01	7.591E+01	1.045E+01	-0.094
		228.16	*	-1.205E+00	1.416E+00	2.232E+00	3.694E-01	-0.540
BA-133		81.00		7.708E-03	6.174E-02	9.349E-02	1.465E-02	0.082
		276.40		4.348E-01	3.963E-01	6.771E-01	9.682E-02	0.642
		302.85		-1.379E-02	1.660E-01	2.393E-01	3.173E-02	-0.058
		356.01	*	-2.466E-02	5.348E-02	7.254E-02	9.352E-03	-0.340
		383.85		1.136E-01	3.504E-01	5.710E-01	6.891E-02	0.199
I-133		529.87	*	-4.369E-02	3.504E-01	Half-Life too short		
		875.33		4.896E-02	3.504E-01	Half-Life too short		
		1298.22		-1.805E-01	3.504E-01	Half-Life too short		
CS-134		563.25		3.290E-01	4.551E-01	7.941E-01	8.134E-02	0.414
		569.33		-1.362E-01	2.425E-01	3.795E-01	3.922E-02	-0.359
		604.72		1.910E-02	4.858E-02	7.301E-02	7.736E-03	0.262
		795.86	*	1.291E-01	7.900E-02	1.308E-01	1.335E-02	0.987
		801.95		-2.478E-01	5.161E-01	8.041E-01	8.146E-02	-0.308
		1365.19		2.370E+00	1.679E+00	3.311E+00	2.843E-01	0.716
CS-135		268.22	*	1.438E-01	1.860E-01	2.882E-01	2.951E-02	0.499
I-135		546.56		-6.098E+13	1.860E-01	Half-Life too short		
		836.80		3.356E+13	1.860E-01	Half-Life too short		
		1038.76		-4.495E+13	1.860E-01	Half-Life too short		
		1131.51		-3.578E+12	1.860E-01	Half-Life too short		
		1260.41	*	1.684E+13	1.860E-01	Half-Life too short		
		1457.56		2.729E+15	1.860E-01	Half-Life too short		
		1678.03		-2.350E+13	1.860E-01	Half-Life too short		
		1791.20		-1.330E+12	1.860E-01	Half-Life too short		
CS-136		153.25		1.177E+00	9.227E-01	1.645E+00	1.779E-01	0.715

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		176.60		-4.141E-01	5.218E-01	8.520E-01	7.838E-02	-0.486
		273.65		-9.319E-02	6.800E-01	9.865E-01	9.509E-02	-0.094
		340.55		1.094E-02	1.996E-01	2.876E-01	2.595E-02	0.038
		818.51		-3.994E-02	1.137E-01	1.846E-01	1.829E-02	-0.216
		1048.07	*	3.894E-02	1.838E-01	3.086E-01	2.783E-02	0.126
		1235.36		-3.030E-01	1.185E+00	1.873E+00	2.150E-01	-0.162
BA-137M		661.66	*	7.224E-04	5.174E-02	8.425E-02	9.304E-03	0.009
CS-137		661.66	*	7.631E-04	5.466E-02	8.900E-02	9.840E-03	0.009
CE-139		165.86	*	2.066E-02	2.811E-02	4.935E-02	4.011E-03	0.419
BA-140		162.66		-7.856E-01	8.382E-01	1.369E+00	1.235E-01	-0.574
		304.85		5.027E-01	1.861E+00	2.756E+00	8.089E-01	0.182
		423.72		1.118E+00	2.701E+00	4.659E+00	1.530E+00	0.240
		537.26	*	-1.735E-01	4.182E-01	6.640E-01	2.275E-01	-0.261
LA-140	+	328.76		6.408E-01	4.954E-01	7.663E-01	7.110E-02	0.836
		487.02		-3.109E-02	1.930E-01	3.190E-01	3.122E-02	-0.097
		815.77		-3.695E-01	4.903E-01	7.585E-01	8.207E-02	-0.487
		1596.21	*	-2.062E-01	1.409E-01	1.587E-01	1.327E-02	-1.299
CE-141		145.44	*	-3.806E-02	6.799E-02	1.027E-01	1.029E-02	-0.371
CE-143		57.36		7.414E-04	6.799E-02	Half-Life	too short	
		293.27	*	3.392E-03	6.799E-02	Half-Life	too short	
		664.57		-1.667E-03	6.799E-02	Half-Life	too short	
		721.93		2.313E-03	6.799E-02	Half-Life	too short	
CE-144		80.12		2.745E+00	1.551E+00	2.504E+00	2.210E-01	1.096
		133.52	*	-6.385E-03	1.922E-01	2.990E-01	4.957E-02	-0.021
PM-144		476.78		-1.973E-02	7.739E-02	1.272E-01	1.255E-02	-0.155
		618.01		-1.395E-02	3.997E-02	6.319E-02	6.883E-03	-0.221
		696.49	*	4.695E-04	5.057E-02	8.190E-02	8.946E-03	0.006
PR-144		696.51	*	-8.264E-03	3.787E+00	6.127E+00	6.691E-01	-0.001
		1489.16		-2.759E+00	1.716E+01	2.766E+01	2.298E+00	-0.100
PM-146		453.88	*	2.301E-02	4.848E-02	8.437E-02	9.096E-03	0.273
		633.25		8.868E-01	1.854E+00	3.111E+00	1.206E+00	0.285
		735.93		-3.959E-02	2.007E-01	3.159E-01	9.074E-02	-0.125
		747.24		1.034E-01	1.331E-01	2.162E-01	3.425E-02	0.478
ND-147	+	91.11		1.192E+00	2.906E-01	4.063E-01	4.147E-02	2.934
		319.41		-1.518E+00	4.712E+00	7.463E+00	6.609E-01	-0.203
		531.02	*	-1.856E-01	8.139E-01	1.324E+00	2.076E-01	-0.140
PM-149		285.90	*	-2.032E-04	8.139E-01	Half-Life	too short	
EU-152		121.78		2.698E-02	6.213E-02	1.003E-01	1.249E-02	0.269
		244.70		5.823E-02	3.421E-01	5.141E-01	4.577E-02	0.113
		344.28	*	-1.682E-02	1.033E-01	1.640E-01	1.503E-02	-0.103
		778.90		3.159E-01	3.658E-01	6.337E-01	6.545E-02	0.499
	+	964.08		8.603E-01	6.040E-01	8.550E-01	7.491E-02	1.006
		1085.87		-1.917E-01	5.447E-01	8.554E-01	7.322E-02	-0.224
		1112.07		-2.785E-01	4.838E-01	7.181E-01	6.089E-02	-0.388
		1408.01		9.065E-02	2.472E-01	4.332E-01	3.564E-02	0.209
GD-153		69.67		5.799E-01	8.725E-01	1.467E+00	1.202E-01	0.395
		97.43	*	-5.681E-02	6.409E-02	9.828E-02	9.709E-03	-0.578
		103.18		-2.725E-02	9.250E-02	1.340E-01	1.368E-02	-0.203
EU-154		123.07		-1.734E-02	4.507E-02	6.958E-02	9.467E-03	-0.249

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	723.31		-3.041E-02	2.585E-01	3.579E-01	4.110E-02	-0.085
		873.19		-5.508E-02	3.745E-01	6.170E-01	7.578E-02	-0.089
		996.26		-4.311E-01	5.310E-01	7.931E-01	1.390E-01	-0.544
		1004.73		-1.577E-01	2.937E-01	4.549E-01	5.329E-02	-0.347
		1274.44	*	8.393E-04	1.883E-01	3.034E-01	3.356E-02	0.003
		86.79		1.683E+00	2.855E-01	4.347E-01	4.048E-02	3.873
		197.04		-6.274E-01	5.450E-01	8.643E-01	7.372E-02	-0.726
		215.65		6.297E-01	7.338E-01	1.276E+00	1.113E-01	0.493
		298.57		1.490E-01	1.275E-01	2.189E-01	1.953E-02	0.681
		799.36	*	-1.970E-03	1.820E-01	3.039E-01	2.751E-02	-0.006
		962.29		1.577E+00	9.463E-01	1.619E+00	1.419E-01	0.974
		966.15		1.638E+00	4.162E-01	8.090E-01	7.087E-02	2.025
		1177.93		-9.440E-03	5.696E-01	9.232E-01	7.608E-02	-0.010
		1271.85		-4.756E-01	1.180E+00	1.811E+00	1.485E-01	-0.263
HO-166M	+	80.57		3.272E-02	2.012E-01	2.694E-01	2.386E-02	0.121
		184.41		2.066E-01	5.557E-02	6.482E-02	5.430E-03	3.187
		280.46		-7.702E-02	8.995E-02	1.390E-01	1.240E-02	-0.554
		410.95		-5.330E-02	3.030E-01	4.722E-01	3.890E-02	-0.113
		711.68	*	-1.126E-02	7.648E-02	1.215E-01	1.318E-02	-0.093
		752.31		-5.111E-02	4.302E-01	5.921E-01	6.256E-02	-0.086
TA-182		810.29		-1.783E-02	7.341E-02	1.206E-01	1.206E-02	-0.148
		67.75		1.051E-02	5.346E-02	8.871E-02	7.190E-03	0.118
		100.11		2.339E-01	1.435E-01	2.437E-01	2.444E-02	0.960
		152.43		-1.984E-01	3.621E-01	5.446E-01	5.081E-02	-0.364
		222.11		3.828E-01	3.472E-01	6.087E-01	5.339E-02	0.629
		1121.30		5.829E-01	3.664E-01	5.017E-01	4.238E-02	1.162
IR-192	+	1189.05		-2.670E-01	5.355E-01	6.900E-01	5.686E-02	-0.387
		1221.41	*	6.258E-03	3.082E-01	4.995E-01	4.112E-02	0.013
		1231.02		2.682E-01	8.035E-01	1.337E+00	1.100E-01	0.201
		295.96		1.493E+00	2.297E-01	3.604E-01	3.239E-02	4.143
		308.46		-8.176E-03	1.067E-01	1.724E-01	1.542E-02	-0.047
		316.51	*	9.918E-03	4.092E-02	6.732E-02	5.983E-03	0.147
HG-203		468.07		-5.508E-03	8.448E-02	1.310E-01	1.263E-02	-0.042
		70.83		-1.110E+00	7.649E-01	1.159E+00	1.840E-01	-0.958
		72.87		5.066E-01	4.955E-01	7.740E-01	1.192E-01	0.655
BI-207	+	279.20	*	-4.888E-02	4.335E-02	6.575E-02	6.002E-03	-0.743
		72.81		1.075E-01	1.084E-01	1.706E-01	1.427E-02	0.631
		74.97		8.964E-01	1.182E-01	1.681E-01	1.428E-02	5.332
		569.70		-1.214E-02	3.746E-02	6.001E-02	6.145E-03	-0.202
PB-211	+	1063.66	*	3.923E-02	7.358E-02	1.275E-01	1.099E-02	0.308
		1770.23		-1.524E+00	9.672E-01	1.110E+00	9.223E-02	-1.373
		404.85	*	-5.440E-01	9.176E-01	1.322E+00	6.386E-01	-0.412
		427.09		-1.472E+00	2.032E+00	3.081E+00	1.424E+00	-0.478
BI-212	+	832.01		-8.107E-01	1.444E+00	2.197E+00	1.144E+00	-0.369
		727.33	*	3.674E+00	1.277E+00	1.772E+00	2.483E-01	2.073
		785.37		1.919E+00	4.729E+00	7.842E+00	8.049E-01	0.245
RN-219	+	1620.50		1.367E+00	3.613E+00	6.309E+00	5.277E-01	0.217
		271.23		8.048E-01	3.850E-01	4.662E-01	4.905E-02	1.726
		401.81	*	1.075E-01	4.774E-01	7.698E-01	1.122E-01	0.140

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		1.210E-02	1.397E-01	2.112E-01	1.878E-02	0.057
		83.79		2.170E-01	8.931E-02	1.453E-01	1.320E-02	1.493
		94.87		3.520E-01	3.269E-01	5.126E-01	4.993E-02	0.687
		144.24		9.587E-02	6.735E-01	1.057E+00	1.147E-01	0.091
		154.21		4.571E-01	3.543E-01	6.330E-01	6.303E-02	0.722
	+	269.46		6.253E-01	2.973E-01	3.974E-01	3.616E-02	1.574
		323.87	*	-4.308E-01	8.123E-01	1.108E+00	1.933E-01	-0.389
	+	338.28		1.022E+01	2.271E+00	3.175E+00	3.855E-01	3.218
		79.69		-4.715E-01	8.305E-01	1.213E+00	2.102E-01	-0.389
		235.96		5.891E-02	1.704E-01	2.592E-01	2.733E-02	0.227
AC-227		256.23	*	-1.345E-01	2.619E-01	4.185E-01	5.137E-02	-0.321
		299.98		1.597E+00	1.015E+00	1.751E+00	2.261E-01	0.912
		304.50		-4.772E-01	1.991E+00	2.826E+00	4.714E-01	-0.169
		334.37		-4.704E-01	2.241E+00	3.153E+00	4.938E-01	-0.149
		79.80		6.108E-01	1.055E+00	1.620E+00	3.540E-01	0.377
		235.96		5.891E-02	1.704E-01	2.592E-01	2.584E-02	0.227
TH-227		256.23	*	-1.345E-01	2.621E-01	4.185E-01	5.778E-02	-0.321
		299.98		1.597E+00	1.015E+00	1.751E+00	2.261E-01	0.912
		304.50		-4.772E-01	1.991E+00	2.826E+00	4.714E-01	-0.169
		334.37		-4.704E-01	2.241E+00	3.153E+00	4.938E-01	-0.149
		85.43		2.129E-01	1.435E-01	2.282E-01	2.102E-02	0.933
	+	88.47		7.838E-01	1.329E-01	1.594E-01	1.503E-02	4.919
TH-229		193.51	*	-2.499E-01	5.100E-01	8.410E-01	7.139E-02	-0.297
		210.85		3.746E-01	9.179E-01	1.417E+00	1.229E-01	0.264
		283.69	*	1.853E+00	1.580E+00	2.724E+00	4.023E-01	0.680
PA-231		301.36		4.746E-01	6.807E-01	1.041E+00	1.287E-01	0.456
TH-231		81.07		1.210E-02	1.397E-01	2.112E-01	1.878E-02	0.057
		83.79		2.170E-01	8.931E-02	1.453E-01	1.320E-02	1.493
		94.87		3.520E-01	3.269E-01	5.126E-01	4.993E-02	0.687
		144.24		9.587E-02	6.735E-01	1.057E+00	1.147E-01	0.091
		154.21		4.571E-01	3.543E-01	6.330E-01	6.303E-02	0.722
	+	269.46		6.253E-01	2.973E-01	3.974E-01	3.616E-02	1.574
PA-233		323.87	*	-4.308E-01	8.123E-01	1.108E+00	1.933E-01	-0.389
	+	338.28		1.022E+01	2.271E+00	3.175E+00	3.855E-01	3.218
		300.13		7.457E-01	4.650E-01	7.967E-01	1.196E-01	0.936
		311.90	*	-3.401E-02	7.173E-02	1.125E-01	1.027E-02	-0.302
		340.48		9.415E-02	7.304E-01	1.059E+00	2.552E-01	0.089
PA-234		94.67		2.945E-01	1.265E-01	2.022E-01	2.668E-02	1.457
		98.44		1.675E-02	7.064E-02	1.137E-01	6.366E-02	0.147
		111.00		-6.261E-02	1.544E-01	2.404E-01	3.282E-02	-0.260
		131.20		3.723E-03	1.042E-01	1.509E-01	1.646E-02	0.025
		569.50		-1.312E-01	3.304E-01	5.255E-01	5.379E-02	-0.250
		733.00		-7.276E-02	5.806E-01	8.009E-01	1.849E-01	-0.091
		880.51		-1.509E-02	3.637E-01	6.054E-01	5.468E-02	-0.025
		883.24		2.495E-02	3.816E-01	6.413E-01	4.314E-01	0.039
		926.50		1.483E-01	2.422E-01	4.229E-01	1.071E-01	0.351
		946.00	*	-1.048E-01	4.159E-01	6.714E-01	1.264E-01	-0.156
PA-234M		949.00		6.045E-01	6.112E-01	1.107E+00	9.702E-02	0.546
		766.42		2.607E+01	2.168E+01	3.089E+01	1.578E+01	0.844

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		3.873E+00	6.343E+00	1.110E+01	1.117E+00	0.349
	99.53			1.838E-01	1.296E-01	2.189E-01	2.188E-02	0.840
	103.37			-1.417E-02	8.393E-02	1.226E-01	1.253E-02	-0.116
	106.12		+	1.430E-01	1.168E-01	1.198E-01	1.244E-02	1.194
	117.23	*		-2.779E-02	3.486E-01	5.501E-01	6.123E-02	-0.051
AM-241	228.18			-1.870E-01	2.171E-01	3.445E-01	3.036E-02	-0.543
	277.60			1.647E-01	1.934E-01	3.292E-01	2.937E-02	0.500
	59.54	*		-4.646E-02	5.716E-02	8.454E-02	7.172E-03	-0.550
CM-247	278.00			7.695E-01	8.088E-01	1.384E+00	1.234E-01	0.556
	287.50			-2.891E-01	1.254E+00	2.016E+00	1.800E-01	-0.143
CF-249	402.40	*		1.019E-02	4.385E-02	7.076E-02	5.739E-03	0.144
	252.80			9.613E-01	9.539E-01	1.660E+00	1.482E-01	0.579
	333.37			1.169E-01	2.238E-01	3.359E-01	2.943E-02	0.348
CF-251	388.16	*		5.359E-02	4.773E-02	8.201E-02	6.575E-03	0.653
	177.52	*		2.162E-02	1.129E-01	1.934E-01	1.602E-02	0.112
	227.38			-1.093E-01	3.431E-01	5.620E-01	4.951E-02	-0.194
	285.41			-1.152E+00	2.350E+00	3.722E+00	3.322E-01	-0.310

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]G247911015      *
* Acquisition date   : 8-MAR-2010 14:59:09 Detector SN#                   *
* Detector ID        : GAM21 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:25.80 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G247911015 Analyst initials: MXR1                  *
* Batch Number      : 957714 Sample Quantity : 1.2746E+02 GRAM           *
* Recovery          : 1.00000 Carrier Weight : 0.00000                   *
*****
*                                     QC DATA                                *
*
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME  : 28-JUL-2009 10:09:51 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.354E+01	3.579E+00	6.854E-01	0.000E+00
CD-109	5.225E+00	8.684E-01	8.483E-01	0.000E+00
SN-126	5.084E-01	8.451E-02	8.317E-02	0.000E+00
EU-155	1.796E-01	1.438E-01	1.389E-01	0.000E+00
TL-208	7.915E-01	1.352E-01	7.334E-02	0.000E+00
PB-210	1.372E+00	6.904E-01	6.795E-01	0.000E+00
BI-211	5.401E+00	7.061E-01	3.587E-01	0.000E+00
PB-212	2.570E+00	2.862E-01	9.767E-02	0.000E+00
BI-214	1.752E+00	2.972E-01	1.500E-01	0.000E+00
PB-214	1.960E+00	2.773E-01	1.306E-01	0.000E+00
RA-224	5.891E+00	1.307E+00	1.050E+00	0.000E+00
RA-226	1.752E+00	2.972E-01	1.500E-01	0.000E+00
AC-228	2.783E+00	5.428E-01	2.825E-01	0.000E+00
RA-228	2.783E+00	5.428E-01	2.825E-01	0.000E+00
TH-228	2.570E+00	2.862E-01	9.767E-02	0.000E+00
TH-232	2.783E+00	5.428E-01	2.825E-01	0.000E+00
TH-234	2.771E+00	9.240E-01	9.112E-01	0.000E+00
U-235	8.441E-02	1.942E-01	3.256E-01	0.000E+00
NP-237	1.517E+00	4.009E-01	2.472E-01	0.000E+00
U-238	2.771E+00	9.240E-01	9.112E-01	0.000E+00
ANH-511	1.904E-01	8.419E-02	5.943E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.276E-01	3.830E-01	6.829E-01	0.000E+00 NOT IDENT.
NA-22	-8.613E-03	6.606E-02	1.071E-01	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.805E+07	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.895E-02	5.315E-02	8.606E-02	0.000E+00 FAIL ABUN
V-48	-3.945E-02	1.068E-01	1.739E-01	0.000E+00 NOT IDENT.
CR-51	-7.616E-02	4.433E-01	7.405E-01	0.000E+00 NOT IDENT.

MN-54	2.428E-02	4.926E-02	8.873E-02	0.000E+00	NOT IDENT.
CO-56	8.550E-03	5.426E-02	9.503E-02	0.000E+00	NOT IDENT.
CO-57	7.882E-03	2.137E-02	3.640E-02	0.000E+00	NOT IDENT.
CO-58	2.283E-02	4.837E-02	8.768E-02	0.000E+00	NOT IDENT.
FE-59	-1.355E-02	1.220E-01	2.017E-01	0.000E+00	NOT IDENT.
CO-60	8.040E-03	5.030E-02	8.800E-02	0.000E+00	NOT IDENT.
ZN-65	-1.298E-01	1.591E-01	2.025E-01	0.000E+00	NOT IDENT.
SE-75	-3.763E-03	4.957E-02	8.104E-02	0.000E+00	NOT IDENT.
SR-85	6.066E-02	4.583E-02	7.921E-02	0.000E+00	NOT IDENT.
Y-88	-1.123E-02	5.060E-02	7.902E-02	0.000E+00	NOT IDENT.
Y-91	1.040E+01	3.286E+01	5.615E+01	0.000E+00	NOT IDENT.
NB-94	3.568E-02	4.696E-02	8.316E-02	0.000E+00	NOT IDENT.
NB-95	7.580E-02	6.479E-02	1.167E-01	0.000E+00	NOT IDENT.
NB-95M	5.115E-02	1.408E-01	2.248E-01	0.000E+00	NOT IDENT.
ZR-95	6.617E-02	1.142E-01	1.776E-01	0.000E+00	NOT IDENT.
MO-99	-2.405E+01	3.678E+01	5.660E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.468E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.074E-02	4.956E-02	8.292E-02	0.000E+00	NOT IDENT.
RH-106	3.340E-02	4.112E-01	7.004E-01	0.000E+00	NOT IDENT.
RU-106	3.340E-02	4.112E-01	7.004E-01	0.000E+00	NOT IDENT.
AG-108M	-5.340E-02	3.312E-02	5.061E-02	0.000E+00	NOT IDENT.
AG-110M	-3.856E-02	4.809E-02	7.465E-02	0.000E+00	NOT IDENT.
SN-113	-4.056E-02	5.536E-02	8.618E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	3.264E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	4.724E-02	5.514E-02	1.028E-01	0.000E+00	NOT IDENT.
TE-123M	2.081E-02	2.524E-02	4.699E-02	0.000E+00	NOT IDENT.
SB-124	3.003E-02	8.552E-02	1.558E-01	0.000E+00	NOT IDENT.
SB-125	-4.492E-02	1.117E-01	1.916E-01	0.000E+00	FAIL ABUN
TE-125M	2.031E+00	8.645E+00	1.365E+01	0.000E+00	NOT IDENT.
I-126	1.831E-01	3.529E-01	6.176E-01	0.000E+00	FAIL ABUN
SB-126	1.097E-01	2.398E-01	3.879E-01	0.000E+00	NOT IDENT.
SB-127	2.729E-01	3.105E+00	5.235E+00	0.000E+00	NOT IDENT.
I-131	-1.236E-01	1.718E-01	2.698E-01	0.000E+00	NOT IDENT.
TE-132	-1.205E+00	1.388E+00	2.295E+00	0.000E+00	NOT IDENT.
BA-133	-2.466E-02	5.241E-02	7.411E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	7.915E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.291E-01	7.742E-02	1.320E-01	0.000E+00	NOT IDENT.
CS-135	1.438E-01	1.823E-01	2.957E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.041E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.894E-02	1.801E-01	3.102E-01	0.000E+00	NOT IDENT.
BA-137M	7.224E-04	5.070E-02	8.527E-02	0.000E+00	NOT IDENT.
CS-137	7.631E-04	5.356E-02	9.008E-02	0.000E+00	NOT IDENT.
CE-139	2.066E-02	2.755E-02	5.098E-02	0.000E+00	NOT IDENT.
BA-140	-1.735E-01	4.099E-01	6.742E-01	0.000E+00	NOT IDENT.
LA-140	-2.062E-01	1.381E-01	1.585E-01	0.000E+00	FAIL ABUN
CE-141	-3.806E-02	6.663E-02	1.063E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.093E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-6.385E-03	1.884E-01	3.099E-01	0.000E+00	NOT IDENT.
PM-144	4.695E-04	4.956E-02	8.283E-02	0.000E+00	NOT IDENT.
PR-144	-8.264E-03	3.712E+00	6.197E+00	0.000E+00	NOT IDENT.
PM-146	2.301E-02	4.751E-02	8.589E-02	0.000E+00	NOT IDENT.
ND-147	-1.856E-01	7.977E-01	1.345E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	2.525E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.682E-02	1.012E-01	1.676E-01	0.000E+00	FAIL ABUN
GD-153	-5.681E-02	6.281E-02	1.023E-01	0.000E+00	NOT IDENT.
EU-154	8.393E-04	1.846E-01	3.040E-01	0.000E+00	NOT IDENT.
TB-160	-1.970E-03	1.783E-01	3.063E-01	0.000E+00	FAIL ABUN
HO-166M	-1.126E-02	7.496E-02	1.229E-01	0.000E+00	FAIL ABUN
TA-182	6.258E-03	3.021E-01	5.009E-01	0.000E+00	FAIL ABUN
IR-192	9.918E-03	4.010E-02	6.890E-02	0.000E+00	FAIL ABUN
HG-203	-4.888E-02	4.249E-02	6.741E-02	0.000E+00	NOT IDENT.
BI-207	3.923E-02	7.211E-02	1.282E-01	0.000E+00	FAIL ABUN
PB-211	-5.440E-01	8.993E-01	1.348E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.252E+00	1.791E+00	0.000E+00	FAIL ABUN
RN-219	1.075E-01	4.678E-01	7.850E-01	0.000E+00	FAIL ABUN
RA-223	-4.308E-01	7.960E-01	1.134E+00	0.000E+00	FAIL ABUN
AC-227	-1.345E-01	2.567E-01	4.296E-01	0.000E+00	NOT IDENT.
TH-227	-1.345E-01	2.568E-01	4.296E-01	0.000E+00	NOT IDENT.
TH-229	-2.499E-01	4.998E-01	8.669E-01	0.000E+00	FAIL ABUN
PA-231	1.853E+00	1.548E+00	2.792E+00	0.000E+00	NOT IDENT.
TH-231	-4.308E-01	7.960E-01	1.134E+00	0.000E+00	FAIL ABUN
PA-233	-3.401E-02	7.030E-02	1.152E-01	0.000E+00	NOT IDENT.
PA-234	-1.048E-01	4.076E-01	6.758E-01	0.000E+00	NOT IDENT.
PA-234M	3.873E+00	6.217E+00	1.117E+01	0.000E+00	NOT IDENT.
NP-239	-2.779E-02	3.416E-01	5.712E-01	0.000E+00	FAIL ABUN
AM-241	-4.646E-02	5.602E-02	8.864E-02	0.000E+00	NOT IDENT.
CM-247	1.019E-02	4.297E-02	7.216E-02	0.000E+00	NOT IDENT.
CF-249	5.359E-02	4.678E-02	8.367E-02	0.000E+00	NOT IDENT.

CF-251	2.162E-02	1.106E-01	1.996E-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]G247911015.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 8-MAR-2010 14:59:09.
Sample ID          : G247911015 Sample quantity : 1.27460E+02 GRAM
Detector name      : GAM21 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:25.80 0.4%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 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	1460.82	875	10.66*	7.208E-01	3.354E+01	3.354E+01	10.89
CD-109	88.03	520	3.70*	8.137E+00	5.084E+00	5.225E+00	16.96
SN-126	64.28	285	9.60	8.181E+00	1.068E+00	1.068E+00	32.42
	86.94	520	8.90	8.137E+00	2.114E+00	2.114E+00	43.86
	87.57	520	37.00*	8.137E+00	5.084E-01	5.084E-01	16.96
EU-155	86.55	520	30.70	8.137E+00	6.128E-01	6.172E-01	17.01
	105.31	98	21.10*	7.707E+00	1.783E-01	1.796E-01	81.71
TL-208	277.37	-----	6.60	3.801E+00	-----	Line Not Found	-----
	583.19	406	85.00*	1.778E+00	7.915E-01	7.915E-01	17.43
	860.56	60	12.50	1.202E+00	1.177E+00	1.177E+00	55.48
PB-210	46.54	145	4.25*	7.340E+00	1.370E+00	1.372E+00	51.36
BI-211	72.87	-----	1.23	8.278E+00	-----	Line Not Found	-----
	351.06	711	12.92*	2.999E+00	5.401E+00	5.401E+00	13.34
PB-212	74.82	898	10.28	8.275E+00	3.110E+00	3.110E+00	16.39
	77.11	1399	17.10	8.264E+00	2.915E+00	2.915E+00	10.94
	238.63	1670	43.60*	4.389E+00	2.570E+00	2.570E+00	11.36
	300.09	-----	3.30	3.518E+00	-----	Line Not Found	-----
BI-214	609.32	460	45.49*	1.700E+00	1.752E+00	1.752E+00	17.31
	1120.29	58	14.92	9.297E-01	1.221E+00	1.221E+00	63.21
	1764.49	54	15.30	5.984E-01	1.739E+00	1.739E+00	46.58
PB-214	74.82	898	5.80	8.275E+00	5.512E+00	5.512E+00	15.39
	77.11	1399	9.70	8.264E+00	5.140E+00	5.140E+00	13.70
	242.00	356	7.25	4.339E+00	3.331E+00	3.331E+00	23.37
	295.22	439	18.42	3.579E+00	1.963E+00	1.963E+00	16.68
	351.93	711	35.60*	2.999E+00	1.960E+00	1.960E+00	14.43
RA-224	240.99	356	4.10*	4.339E+00	5.891E+00	5.891E+00	22.64
RA-226	609.32	460	45.49*	1.700E+00	1.752E+00	1.752E+00	17.31
	1120.29	58	14.92	9.297E-01	1.221E+00	1.221E+00	63.21
	1764.49	54	15.30	5.984E-01	1.739E+00	1.739E+00	46.58
AC-228	338.32	308	11.27	3.121E+00	2.574E+00	2.574E+00	45.70
	911.20	277	25.80*	1.136E+00	2.783E+00	2.783E+00	19.90
	968.97	130	15.80	1.070E+00	2.260E+00	2.260E+00	36.24

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	308	11.27	3.121E+00	2.574E+00	2.574E+00	45.70
	911.20	277	25.80*	1.136E+00	2.783E+00	2.783E+00	19.90
	968.97	130	15.80	1.070E+00	2.260E+00	2.260E+00	36.24
TH-228	74.82	898	10.28	8.275E+00	3.110E+00	3.110E+00	13.24
	77.11	1399	17.10	8.264E+00	2.915E+00	2.915E+00	10.94
	238.63	1670	43.60*	4.389E+00	2.570E+00	2.570E+00	11.36
TH-232	300.09	-----	3.30	3.518E+00	-----	Line Not Found	-----
	338.32	308	11.27	3.121E+00	2.574E+00	2.574E+00	20.56
	911.20	277	25.80*	1.136E+00	2.783E+00	2.783E+00	19.90
TH-234	968.97	130	15.80	1.070E+00	2.260E+00	2.260E+00	36.24
	63.29	285	3.70*	8.181E+00	2.771E+00	2.771E+00	34.02
	92.59	627	4.23	8.020E+00	5.439E+00	5.439E+00	26.79
U-235	89.96	290	3.47	8.084E+00	3.045E+00	3.045E+00	33.36
	93.35	627	5.60	8.020E+00	4.109E+00	4.109E+00	27.64
	143.76	-----	10.96*	6.567E+00	-----	Line Not Found	-----
NP-237	163.33	-----	5.08	6.017E+00	-----	Line Not Found	-----
	185.72	275	57.20	5.449E+00	2.600E-01	2.600E-01	26.90
	205.31	-----	5.01	5.015E+00	-----	Line Not Found	-----
U-238	86.48	520	12.40*	8.137E+00	1.517E+00	1.517E+00	26.97
	95.86	-----	2.68	7.953E+00	-----	Line Not Found	-----
	63.29	285	3.70*	8.181E+00	2.771E+00	2.771E+00	34.02
ANH-511	92.59	627	4.23	8.020E+00	5.439E+00	5.439E+00	17.45
	511.00	132	100.00*	2.039E+00	1.904E-01	1.904E-01	45.11

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247911015

Page : 3
Acquisition date : 8-MAR-2010 14:59:09

Total number of lines in spectrum 34
Number of unidentified lines 5
Number of lines tentatively identified by NID 29 85.29%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.354E+01	3.354E+01	0.365E+01	10.89	
CD-109	461.40D	1.03	5.084E+00	5.225E+00	0.886E+00	16.96	
SN-126	2.30E+05Y	1.00	5.084E-01	5.084E-01	0.862E-01	16.96	
EU-155	4.75Y	1.01	1.783E-01	1.796E-01	1.467E-01	81.71	
TL-208	1.41E+10Y	1.00	7.915E-01	7.915E-01	1.379E-01	17.43	
PB-210	22.20Y	1.00	1.370E+00	1.372E+00	0.705E+00	51.36	
BI-211	7.04E+08Y	1.00	5.401E+00	5.401E+00	0.720E+00	13.34	
PB-212	1.41E+10Y	1.00	2.570E+00	2.570E+00	0.292E+00	11.36	
BI-214	1600.00Y	1.00	1.752E+00	1.752E+00	0.303E+00	17.31	
PB-214	1600.00Y	1.00	1.960E+00	1.960E+00	0.283E+00	14.43	
RA-224	1.41E+10Y	1.00	5.891E+00	5.891E+00	1.334E+00	22.64	
RA-226	1600.00Y	1.00	1.752E+00	1.752E+00	0.303E+00	17.31	
AC-228	1.41E+10Y	1.00	2.783E+00	2.783E+00	0.554E+00	19.90	
RA-228	1.41E+10Y	1.00	2.783E+00	2.783E+00	0.554E+00	19.90	
TH-228	1.41E+10Y	1.00	2.570E+00	2.570E+00	0.292E+00	11.36	
TH-232	1.41E+10Y	1.00	2.783E+00	2.783E+00	0.554E+00	19.90	
TH-234	4.47E+09Y	1.00	2.771E+00	2.771E+00	0.943E+00	34.02	
U-235	7.04E+08Y	1.00	2.600E-01	2.600E-01	0.699E-01	26.90	K
NP-237	2.14E+06Y	1.00	1.517E+00	1.517E+00	0.409E+00	26.97	
U-238	4.47E+09Y	1.00	2.771E+00	2.771E+00	0.943E+00	34.02	
ANH-511	1.00E+09Y	1.00	1.904E-01	1.904E-01	0.859E-01	45.11	

Total Activity : 7.923E+01 7.937E+01

Grand Total Activity : 7.923E+01 7.937E+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	128.79	145	498	0.76	257.48	252	10	2.01E-02	60.0	7.01E+00	
0	208.89	127	283	0.92	417.62	414	8	1.76E-02	49.2	4.94E+00	
0	269.99	115	187	1.20	539.77	535	9	1.60E-02	46.7	3.90E+00	T
0	327.64	53	131	0.62	655.04	652	7	7.36E-03	76.8	3.22E+00	T
0	462.37	85	110	1.45	924.45	920	10	1.19E-02	48.0	2.26E+00	T
0	726.74	118	56	1.53	1453.18	1448	13	1.64E-02	31.8	1.42E+00	T
0	754.76	40	42	1.67	1509.24	1502	12	5.56E-03	72.1	1.37E+00	T
0	794.36	58	68	2.29	1588.44	1582	13	8.07E-03	64.2	1.30E+00	
1	964.09	46	61	1.78	1927.98	1921	21	6.37E-03	69.7	1.07E+00	T
0	1194.52	27	42	0.97	2389.04	2382	12	3.80E-03	****	8.74E-01	
0	1586.78	16	18	0.84	3174.15	3168	12	2.28E-03	****	6.65E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911015.CNF;1
* Acquisition date   : 8-MAR-2010 14:59:09.  Detector SN#      :
* Detector ID        : GAM21                  Sensitivity      : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:25.80          Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G247911015           Analyst initials: MXR1
* Batch Number       : 957714               Sample Quantity : 1.27460E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 28-JUL-2009 10:09:51.9MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A              LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.354E+01	3.653E+00	6.854E-01	5.852E-02	48.932
CD-109	5.225E+00	8.862E-01	8.136E-01	7.655E-02	6.422
SN-126	5.084E-01	8.623E-02	7.976E-02	7.477E-03	6.374
EU-155	1.796E-01	1.467E-01	1.336E-01	1.393E-02	1.344
TL-208	7.915E-01	1.379E-01	7.233E-02	7.873E-03	10.943
PB-210	1.372E+00	7.045E-01	6.458E-01	6.107E-02	2.124
BI-211	5.401E+00	7.205E-01	3.511E-01	3.169E-02	15.384
PB-212	2.570E+00	2.921E-01	9.504E-02	9.495E-03	27.041
BI-214	1.752E+00	3.032E-01	1.480E-01	1.755E-02	11.836
PB-214	1.960E+00	2.830E-01	1.278E-01	1.351E-02	15.339
RA-224	5.891E+00	1.334E+00	1.022E+00	9.078E-02	5.766
RA-226	1.752E+00	3.032E-01	1.480E-01	1.755E-02	11.836
AC-228	2.783E+00	5.539E-01	2.804E-01	3.280E-02	9.923
RA-228	2.783E+00	5.539E-01	2.804E-01	3.280E-02	9.923
TH-228	2.570E+00	2.921E-01	9.504E-02	9.495E-03	27.041
TH-232	2.783E+00	5.539E-01	2.804E-01	3.280E-02	9.923
TH-234	2.771E+00	9.429E-01	8.698E-01	1.570E-01	3.186
U-235	2.600E-01	6.995E-02	3.145E-01	5.568E-02	0.827

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.517E+00	4.091E-01	2.370E-01	5.436E-02	6.400
U-238	2.771E+00	9.429E-01	8.698E-01	1.570E-01	3.186
ANH-511	1.904E-01	8.590E-02	5.849E-02	5.607E-03	3.255

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.276E-01		3.908E-01	6.714E-01	6.577E-02	0.190
NA-22	-8.613E-03		6.740E-02	1.069E-01	8.768E-03	-0.081
NA-24	-1.836E+01		1.431E+01	Half-Life	too short	
SC-46	-2.895E-02		5.424E-02	8.542E-02	7.595E-03	-0.339
V-48	-3.945E-02		1.090E-01	1.729E-01	1.512E-02	-0.228
CR-51	-7.616E-02		4.524E-01	7.237E-01	6.723E-02	-0.105
MN-54	2.428E-02		5.027E-02	8.798E-02	8.526E-03	0.276
CO-56	8.550E-03		5.537E-02	9.425E-02	8.983E-03	0.091
CO-57	7.882E-03		2.181E-02	3.507E-02	4.029E-03	0.225
CO-58	2.283E-02		4.935E-02	8.690E-02	8.696E-03	0.263
FE-59	-1.355E-02		1.245E-01	2.008E-01	1.853E-02	-0.067
CO-60	8.040E-03		5.132E-02	8.789E-02	7.133E-03	0.091
ZN-65	-1.298E-01		1.624E-01	2.016E-01	1.709E-02	-0.644
SE-75	-3.763E-03		5.059E-02	7.898E-02	7.092E-03	-0.048
SR-85	6.066E-02		4.677E-02	7.796E-02	7.502E-03	0.778
Y-88	-1.123E-02		5.163E-02	7.931E-02	6.548E-03	-0.142
Y-91	1.040E+01		3.353E+01	5.599E+01	4.612E+00	0.186
NB-94	3.568E-02		4.792E-02	8.223E-02	8.956E-03	0.434
NB-95	7.580E-02		6.611E-02	1.156E-01	1.208E-02	0.656
NB-95M	5.115E-02		1.436E-01	2.187E-01	2.208E-02	0.234
ZR-95	6.617E-02		1.165E-01	1.758E-01	1.983E-02	0.376
MO-99	-2.405E+01		3.753E+01	5.602E+01	9.502E+00	-0.429
TC-99M	7.615E+13		7.491E+13	Half-Life	too short	
RU-103	-2.074E-02		5.057E-02	8.157E-02	1.181E-02	-0.254
RH-106	3.340E-02		4.196E-01	6.913E-01	1.017E-01	0.048
RU-106	3.340E-02		4.196E-01	6.913E-01	7.418E-02	0.048
AG-108M	-5.340E-02		3.380E-02	4.969E-02	4.399E-03	-1.075
AG-110M	-3.856E-02		4.908E-02	7.375E-02	8.273E-03	-0.523
SN-113	-4.056E-02		5.649E-02	8.447E-02	6.957E-03	-0.480
CD-115	1.575E-05		1.665E-05	Half-Life	too short	
SN-117M	4.724E-02		5.626E-02	9.945E-02	8.754E-03	0.475
TE-123M	2.081E-02		2.576E-02	4.546E-02	4.007E-03	0.458
SB-124	3.003E-02		8.727E-02	1.562E-01	1.363E-02	0.192
SB-125	-4.492E-02		1.140E-01	1.881E-01	1.627E-02	-0.239
TE-125M	2.031E+00		8.821E+00	1.313E+01	1.597E+00	0.155
I-126	1.831E-01		3.601E-01	6.103E-01	6.733E-02	0.300
SB-126	1.097E-01		2.447E-01	3.837E-01	4.140E-02	0.286
SB-127	2.729E-01		3.168E+00	5.175E+00	7.267E-01	0.053
I-131	-1.236E-01		1.753E-01	2.642E-01	2.355E-02	-0.468
TE-132	-1.205E+00		1.416E+00	2.232E+00	3.694E-01	-0.540

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	-2.466E-02		5.348E-02	7.254E-02	9.352E-03	-0.340
I-133	-4.369E-02		4.038E-02	Half-Life too short		
CS-134	1.291E-01		7.900E-02	1.308E-01	1.335E-02	0.987
CS-135	1.438E-01		1.860E-01	2.882E-01	2.951E-02	0.499
I-135	1.684E+13		1.041E+13	Half-Life too short		
CS-136	3.894E-02		1.838E-01	3.086E-01	2.783E-02	0.126
BA-137M	7.224E-04		5.174E-02	8.425E-02	9.304E-03	0.009
CS-137	7.631E-04		5.466E-02	8.900E-02	9.840E-03	0.009
CE-139	2.066E-02		2.811E-02	4.935E-02	4.011E-03	0.419
BA-140	-1.735E-01		4.182E-01	6.640E-01	2.275E-01	-0.261
LA-140	-2.062E-01		1.409E-01	1.587E-01	1.327E-02	-1.299
CE-141	-3.806E-02		6.799E-02	1.027E-01	1.029E-02	-0.371
CE-143	3.392E-03		5.576E-04	Half-Life too short		
CE-144	-6.385E-03		1.922E-01	2.990E-01	4.957E-02	-0.021
PM-144	4.695E-04		5.057E-02	8.190E-02	8.946E-03	0.006
PR-144	-8.264E-03		3.787E+00	6.127E+00	6.691E-01	-0.001
PM-146	2.301E-02		4.848E-02	8.437E-02	9.096E-03	0.273
ND-147	-1.856E-01		8.139E-01	1.324E+00	2.076E-01	-0.140
PM-149	-2.032E-04		1.288E-04	Half-Life too short		
EU-152	-1.682E-02		1.033E-01	1.640E-01	1.503E-02	-0.103
GD-153	-5.681E-02		6.409E-02	9.828E-02	9.709E-03	-0.578
EU-154	8.393E-04		1.883E-01	3.034E-01	3.356E-02	0.003
TB-160	-1.970E-03		1.820E-01	3.039E-01	2.751E-02	-0.006
HO-166M	-1.126E-02		7.648E-02	1.215E-01	1.318E-02	-0.093
TA-182	6.258E-03		3.082E-01	4.995E-01	4.112E-02	0.013
IR-192	9.918E-03		4.092E-02	6.732E-02	5.983E-03	0.147
HG-203	-4.888E-02		4.335E-02	6.575E-02	6.002E-03	-0.743
BI-207	3.923E-02		7.358E-02	1.275E-01	1.099E-02	0.308
PB-211	-5.440E-01		9.176E-01	1.322E+00	6.386E-01	-0.412
BI-212	3.674E+00	+	1.277E+00	1.772E+00	2.483E-01	2.073
RN-219	1.075E-01		4.774E-01	7.698E-01	1.122E-01	0.140
RA-223	-4.308E-01		8.123E-01	1.108E+00	1.933E-01	-0.389
AC-227	-1.345E-01		2.619E-01	4.185E-01	5.137E-02	-0.321
TH-227	-1.345E-01		2.621E-01	4.185E-01	5.778E-02	-0.321
TH-229	-2.499E-01		5.100E-01	8.410E-01	7.139E-02	-0.297
PA-231	1.853E+00		1.580E+00	2.724E+00	4.023E-01	0.680
TH-231	-4.308E-01		8.123E-01	1.108E+00	1.933E-01	-0.389
PA-233	-3.401E-02		7.173E-02	1.125E-01	1.027E-02	-0.302
PA-234	-1.048E-01		4.159E-01	6.714E-01	1.264E-01	-0.156
PA-234M	3.873E+00		6.343E+00	1.110E+01	1.117E+00	0.349
NP-239	-2.779E-02		3.486E-01	5.501E-01	6.123E-02	-0.051
AM-241	-4.646E-02		5.716E-02	8.454E-02	7.172E-03	-0.550
CM-247	1.019E-02		4.385E-02	7.076E-02	5.739E-03	0.144
CF-249	5.359E-02		4.773E-02	8.201E-02	6.575E-03	0.653
CF-251	2.162E-02		1.129E-01	1.934E-01	1.602E-02	0.112

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G247911015          *
* Acquisition date   : 8-MAR-2010 14:59:09 Detector SN#      :              *
* Detector ID        : GAM21                                           Sensitivity      : 5.000          *
* Geometry           : CAN                                             Energy tolerance: 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000          *
* Elapsed real time  : 0 02:00:25.80 Half life ratio : 8.000          *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247911015 Analyst initials: MXR1              *
* Batch Number       : 957714 Sample Quantity : 1.2746E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 28-JUL-2009 10:09:51 MS Isotope      :              *
* MSD DPM             : 0.000 MSD Isotope                   :              *
* LCS DPM             : 0.000 LCS Isotope                   :              *
* LCSD DPM            : 0.000 LCSD Isotope                  :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.354E+01	3.579E+00	3.429E-01	1.826E+00
CD-109	5.225E+00	8.684E-01	4.244E-01	4.431E-01
SN-126	5.084E-01	8.451E-02	4.161E-02	4.312E-02
EU-155	1.796E-01	1.438E-01	6.952E-02	7.335E-02
TL-208	7.915E-01	1.352E-01	3.669E-02	6.896E-02
PB-210	1.372E+00	6.904E-01	3.400E-01	3.523E-01
BI-211	5.401E+00	7.061E-01	1.795E-01	3.602E-01
PB-212	2.570E+00	2.862E-01	4.886E-02	1.460E-01
BI-214	1.752E+00	2.972E-01	7.504E-02	1.516E-01
PB-214	1.960E+00	2.773E-01	6.533E-02	1.415E-01
RA-224	5.891E+00	1.307E+00	5.252E-01	6.668E-01
RA-226	1.752E+00	2.972E-01	7.504E-02	1.516E-01
AC-228	2.783E+00	5.428E-01	1.413E-01	2.769E-01
RA-228	2.783E+00	5.428E-01	1.413E-01	2.769E-01
TH-228	2.570E+00	2.862E-01	4.886E-02	1.460E-01
TH-232	2.783E+00	5.428E-01	1.413E-01	2.769E-01
TH-234	2.771E+00	9.240E-01	4.559E-01	4.714E-01
U-235	8.441E-02	1.942E-01	1.629E-01	9.907E-02
NP-237	1.517E+00	4.009E-01	1.237E-01	2.046E-01
U-238	2.771E+00	9.240E-01	4.559E-01	4.714E-01
ANH-511	1.904E-01	8.419E-02	2.973E-02	4.295E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.276E-01	3.830E-01	3.416E-01	1.954E-01 NOT IDENT.
NA-22	-8.613E-03	6.606E-02	5.358E-02	3.370E-02 NOT IDENT.
NA-24	-1.836E+07	2.805E+07	0.000E+00	1.431E+07 SHORT HLIF
SC-46	-2.895E-02	5.315E-02	4.306E-02	2.712E-02 FAIL ABUN
V-48	-3.945E-02	1.068E-01	8.700E-02	5.451E-02 NOT IDENT.
CR-51	-7.616E-02	4.433E-01	3.705E-01	2.262E-01 NOT IDENT.

MN-54	2.428E-02	4.926E-02	4.439E-02	2.513E-02	NOT IDENT.
CO-56	8.550E-03	5.426E-02	4.754E-02	2.768E-02	NOT IDENT.
CO-57	7.882E-03	2.137E-02	1.821E-02	1.090E-02	NOT IDENT.
CO-58	2.283E-02	4.837E-02	4.387E-02	2.468E-02	NOT IDENT.
FE-59	-1.355E-02	1.220E-01	1.009E-01	6.223E-02	NOT IDENT.
CO-60	8.040E-03	5.030E-02	4.403E-02	2.566E-02	NOT IDENT.
ZN-65	-1.298E-01	1.591E-01	1.013E-01	8.118E-02	NOT IDENT.
SE-75	-3.763E-03	4.957E-02	4.055E-02	2.529E-02	NOT IDENT.
SR-85	6.066E-02	4.583E-02	3.963E-02	2.338E-02	NOT IDENT.
Y-88	-1.123E-02	5.060E-02	3.953E-02	2.582E-02	NOT IDENT.
Y-91	1.040E+01	3.286E+01	2.809E+01	1.676E+01	NOT IDENT.
NB-94	3.568E-02	4.696E-02	4.160E-02	2.396E-02	NOT IDENT.
NB-95	7.580E-02	6.479E-02	5.839E-02	3.306E-02	NOT IDENT.
NB-95M	5.115E-02	1.408E-01	1.125E-01	7.182E-02	NOT IDENT.
ZR-95	6.617E-02	1.142E-01	8.883E-02	5.827E-02	NOT IDENT.
MO-99	-2.405E+01	3.678E+01	2.832E+01	1.876E+01	NOT IDENT.
TC-99M	7.615E+19	1.468E+20	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.074E-02	4.956E-02	4.148E-02	2.529E-02	NOT IDENT.
RH-106	3.340E-02	4.112E-01	3.504E-01	2.098E-01	NOT IDENT.
RU-106	3.340E-02	4.112E-01	3.504E-01	2.098E-01	NOT IDENT.
AG-108M	-5.340E-02	3.312E-02	2.532E-02	1.690E-02	NOT IDENT.
AG-110M	-3.856E-02	4.809E-02	3.735E-02	2.454E-02	NOT IDENT.
SN-113	-4.056E-02	5.536E-02	4.311E-02	2.824E-02	NOT IDENT.
CD-115	1.575E+01	3.264E+01	0.000E+00	1.665E+01	SHORT HLIF
SN-117M	4.724E-02	5.514E-02	5.144E-02	2.813E-02	NOT IDENT.
TE-123M	2.081E-02	2.524E-02	2.351E-02	1.288E-02	NOT IDENT.
SB-124	3.003E-02	8.552E-02	7.794E-02	4.363E-02	NOT IDENT.
SB-125	-4.492E-02	1.117E-01	9.585E-02	5.701E-02	FAIL ABUN
TE-125M	2.031E+00	8.645E+00	6.828E+00	4.411E+00	NOT IDENT.
I-126	1.831E-01	3.529E-01	3.090E-01	1.801E-01	FAIL ABUN
SB-126	1.097E-01	2.398E-01	1.941E-01	1.224E-01	NOT IDENT.
SB-127	2.729E-01	3.105E+00	2.619E+00	1.584E+00	NOT IDENT.
I-131	-1.236E-01	1.718E-01	1.350E-01	8.765E-02	NOT IDENT.
TE-132	-1.205E+00	1.388E+00	1.148E+00	7.081E-01	NOT IDENT.
BA-133	-2.466E-02	5.241E-02	3.708E-02	2.674E-02	NOT IDENT.
I-133	-4.369E+04	7.915E+04	0.000E+00	4.038E+04	SHORT HLIF
CS-134	1.291E-01	7.742E-02	6.606E-02	3.950E-02	NOT IDENT.
CS-135	1.438E-01	1.823E-01	1.479E-01	9.300E-02	NOT IDENT.
I-135	1.684E+19	2.041E+19	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.894E-02	1.801E-01	1.552E-01	9.190E-02	NOT IDENT.
BA-137M	7.224E-04	5.070E-02	4.266E-02	2.587E-02	NOT IDENT.
CS-137	7.631E-04	5.356E-02	4.506E-02	2.733E-02	NOT IDENT.
CE-139	2.066E-02	2.755E-02	2.551E-02	1.406E-02	NOT IDENT.
BA-140	-1.735E-01	4.099E-01	3.373E-01	2.091E-01	NOT IDENT.
LA-140	-2.062E-01	1.381E-01	7.928E-02	7.047E-02	FAIL ABUN
CE-141	-3.806E-02	6.663E-02	5.317E-02	3.399E-02	NOT IDENT.
CE-143	3.392E+03	1.093E+03	0.000E+00	5.576E+02	SHORT HLIF
CE-144	-6.385E-03	1.884E-01	1.550E-01	9.612E-02	NOT IDENT.
PM-144	4.695E-04	4.956E-02	4.144E-02	2.529E-02	NOT IDENT.
PR-144	-8.264E-03	3.712E+00	3.100E+00	1.894E+00	NOT IDENT.
PM-146	2.301E-02	4.751E-02	4.297E-02	2.424E-02	NOT IDENT.
ND-147	-1.856E-01	7.977E-01	6.729E-01	4.070E-01	FAIL ABUN
PM-149	-2.032E+02	2.525E+02	0.000E+00	1.288E+02	SHORT HLIF
EU-152	-1.682E-02	1.012E-01	8.385E-02	5.166E-02	FAIL ABUN
GD-153	-5.681E-02	6.281E-02	5.119E-02	3.204E-02	NOT IDENT.
EU-154	8.393E-04	1.846E-01	1.521E-01	9.417E-02	NOT IDENT.
TB-160	-1.970E-03	1.783E-01	1.532E-01	9.099E-02	FAIL ABUN
HO-166M	-1.126E-02	7.496E-02	6.148E-02	3.824E-02	FAIL ABUN
TA-182	6.258E-03	3.021E-01	2.506E-01	1.541E-01	FAIL ABUN
IR-192	9.918E-03	4.010E-02	3.447E-02	2.046E-02	FAIL ABUN
HG-203	-4.888E-02	4.249E-02	3.373E-02	2.168E-02	NOT IDENT.
BI-207	3.923E-02	7.211E-02	6.411E-02	3.679E-02	FAIL ABUN
PB-211	-5.440E-01	8.993E-01	6.743E-01	4.588E-01	NOT IDENT.
BI-212	3.674E+00	1.252E+00	8.960E-01	6.386E-01	FAIL ABUN
RN-219	1.075E-01	4.678E-01	3.927E-01	2.387E-01	FAIL ABUN
RA-223	-4.308E-01	7.960E-01	5.673E-01	4.061E-01	FAIL ABUN
AC-227	-1.345E-01	2.567E-01	2.149E-01	1.310E-01	NOT IDENT.
TH-227	-1.345E-01	2.568E-01	2.149E-01	1.310E-01	NOT IDENT.
TH-229	-2.499E-01	4.998E-01	4.337E-01	2.550E-01	FAIL ABUN
PA-231	1.853E+00	1.548E+00	1.397E+00	7.900E-01	NOT IDENT.
TH-231	-4.308E-01	7.960E-01	5.673E-01	4.061E-01	FAIL ABUN
PA-233	-3.401E-02	7.030E-02	5.762E-02	3.586E-02	NOT IDENT.
PA-234	-1.048E-01	4.076E-01	3.381E-01	2.079E-01	NOT IDENT.
PA-234M	3.873E+00	6.217E+00	5.587E+00	3.172E+00	NOT IDENT.
NP-239	-2.779E-02	3.416E-01	2.858E-01	1.743E-01	FAIL ABUN
AM-241	-4.646E-02	5.602E-02	4.435E-02	2.858E-02	NOT IDENT.
CM-247	1.019E-02	4.297E-02	3.610E-02	2.193E-02	NOT IDENT.
CF-249	5.359E-02	4.678E-02	4.186E-02	2.387E-02	NOT IDENT.

CF-251

2.162E-02

1.106E-01

9.987E-02

5.643E-02 NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON , SC 29417                           *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT              *
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ENERGY	MDA COUNTS
46.54	216.4426
49.72	250.1295
57.36	0.0000
59.54	366.5714
63.29	369.7203
63.29	369.7203
64.28	360.7785
67.75	378.2666
69.67	376.0594
70.83	476.8752
72.81	421.1589
72.87	421.2497
72.87	421.2497
74.82	477.7561
74.82	477.7561
74.82	477.7561
74.97	478.0143
77.11	481.6288
77.11	481.6288
77.11	481.6288
79.69	406.6603
79.80	346.1361
80.12	284.3879
80.19	284.4549
80.57	365.0142
81.00	357.2328
81.07	357.3168
81.07	357.3168
83.79	303.2534
83.79	303.2534
85.43	304.8715
86.48	305.8979
86.55	305.9664
86.79	306.1982
86.94	306.3483
87.57	306.9597
88.03	301.7392
88.47	302.1552
89.96	252.2552
91.11	266.0222
92.59	248.5450
92.59	248.5450
93.35	249.1151
94.67	216.8503
94.87	234.3384
94.87	234.3384
95.86	224.8686
97.43	286.3886
98.44	265.3014
99.53	240.8395
100.11	232.4265
103.18	245.9216
103.37	246.0516
105.31	248.1156
106.12	248.6643
109.28	237.9820
111.00	263.2745
111.76	241.0572
116.30	253.0876
117.23	245.6085
121.12	203.7470
121.78	209.9068
122.06	212.3842
123.07	235.1313
131.20	241.6655
133.52	251.7366
136.00	219.3909

136.47	240.1355
140.51	230.1044
140.51	0.0000
143.76	252.5619
144.24	266.3197
144.24	266.3197
145.44	284.2242
152.43	269.6506
153.25	223.4151
154.21	217.1665
154.21	217.1665
156.02	274.9616
158.56	199.6819
159.00	204.0693
162.66	232.7066
163.33	231.3068
165.86	214.4852
176.60	214.4342
177.52	183.3569
181.07	221.4254
184.41	233.3337
185.72	245.3816
193.51	223.5235
197.04	227.5470
205.31	182.5726
210.85	184.1759
215.65	162.7612
222.11	154.0269
227.38	175.1105
228.16	196.1577
228.18	196.1640
235.69	192.5493
235.96	199.8114
235.96	199.8114
238.63	176.0377
238.63	176.0377
240.99	176.6204
242.00	140.6260
244.70	142.6066
252.40	124.5014
252.80	124.5686
256.23	159.6270
256.23	159.6270
260.90	0.0000
264.66	150.6371
268.22	144.1201
269.46	143.3462
269.46	143.3462
271.23	125.0800
273.65	145.1133
276.40	135.5022
277.37	131.6134
277.60	137.7293
278.00	130.7033
279.20	166.4124
279.54	180.6943
280.46	154.4771
283.69	118.3553
284.31	118.4450
285.41	145.1866
285.90	0.0000
287.50	124.0279
293.27	0.0000
295.22	122.0692
295.96	122.1748
298.57	122.5494
299.98	122.7486
299.98	122.7486
300.09	122.7654
300.09	122.7654
300.13	122.7702
301.36	128.1550
302.85	126.8097
304.50	133.3261
304.50	133.3261
304.85	114.5482
308.46	118.6969
311.90	129.7040

316.51	122.9526
319.41	135.0434
320.08	125.5671
323.87	129.8279
323.87	129.8279
328.76	132.1264
333.37	106.8713
334.37	129.6777
334.37	129.6777
338.28	120.4465
338.28	120.4465
338.32	120.4510
338.32	120.4510
338.32	120.4510
340.48	109.3044
340.55	109.3126
344.28	99.3628
351.06	98.9539
351.93	99.0417
356.01	109.3951
364.49	110.3196
366.42	85.9670
383.85	94.2278
388.16	82.0693
388.63	78.6849
391.69	114.3595
400.66	78.4050
401.81	87.7204
402.40	87.7683
404.85	107.6372
410.95	102.4053
414.70	92.8212
423.72	86.4932
427.09	115.9543
427.87	108.9444
433.94	102.3868
453.88	72.4133
463.37	72.9688
468.07	75.6836
473.00	68.9323
476.78	80.1978
477.60	70.1019
487.02	75.2590
492.35	0.0000
497.08	77.7074
511.00	75.6775
514.00	50.0563
527.90	0.0000
529.87	0.0000
531.02	67.1802
537.26	82.9005
546.56	0.0000
563.25	59.8607
569.33	70.9453
569.50	67.9956
569.70	68.0040
583.19	63.6406
600.60	73.4099
602.73	64.4473
604.72	66.1405
609.32	69.7707
609.32	69.7707
610.33	61.5181
614.28	55.1786
618.01	60.9998
621.93	63.1863
621.93	63.1863
633.25	52.3385
635.95	70.9267
636.99	79.1995
645.85	63.0775
657.76	76.0186
661.66	74.1049
661.66	74.1049
664.57	0.0000
666.33	61.7476
666.50	66.9883
677.62	57.9373

685.70	61.3790
695.00	65.9564
696.49	72.3994
696.51	72.4015
697.00	75.6152
702.65	59.8281
706.68	74.9518
711.68	51.5361
720.70	50.3524
721.93	0.0000
722.78	62.2178
722.91	62.2230
723.31	58.7795
724.19	48.4285
727.33	60.6382
733.00	55.6094
735.93	56.5671
739.50	64.3026
747.24	37.9368
752.31	54.4226
753.82	46.1195
756.73	47.5097
763.94	88.3081
765.81	58.5607
766.42	56.3680
777.92	55.5878
778.90	44.4922
783.70	57.9795
785.37	59.1446
795.86	44.8718
801.95	51.0069
810.29	45.1904
810.76	37.0652
815.77	50.7486
818.51	49.0008
832.01	61.1931
834.85	48.4712
836.80	0.0000
846.77	47.8258
856.80	46.2012
860.56	44.4305
871.09	39.0653
873.19	44.6895
875.33	0.0000
879.36	39.2130
880.51	41.1018
883.24	42.0875
884.68	34.6279
889.28	48.7665
898.04	48.0167
911.20	35.9859
911.20	35.9859
911.20	35.9859
926.50	37.1795
937.49	61.3016
944.13	43.2246
946.00	46.1426
949.00	31.7641
962.29	43.5575
964.08	44.5580
966.15	44.5962
968.97	53.3846
968.97	53.3846
968.97	53.3846
983.53	42.9645
996.26	55.9479
1001.03	38.3544
1004.73	47.2758
1037.84	50.8929
1038.76	0.0000
1048.07	43.0819
1050.41	41.1141
1050.41	41.1141
1063.66	36.2848
1085.87	43.7055
1099.45	36.7752
1112.07	57.0177
1115.54	63.3709

1120.29	49.7541
1120.29	49.7541
1120.55	49.7588
1121.30	41.1914
1131.51	0.0000
1173.23	60.8434
1177.93	52.5366
1189.05	52.7393
1204.77	48.7829
1221.41	56.5247
1231.02	64.1953
1235.36	85.7188
1238.28	71.8582
1260.41	0.0000
1271.85	48.7991
1274.44	40.1562
1274.54	42.3287
1291.59	30.5566
1298.22	0.0000
1312.11	21.9697
1332.49	23.0316
1365.19	12.0970
1368.63	0.0000
1384.29	21.5269
1408.01	19.7943
1457.56	0.0000
1460.82	14.7675
1489.16	16.4030
1505.03	16.4757
1596.21	23.8408
1620.50	14.9957
1678.03	0.0000
1690.97	5.0891
1764.49	8.8825
1764.49	8.8825
1770.23	32.1693
1771.35	12.4561
1791.20	0.0000
1836.06	10.5396

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911015

Total Uranium Activity	8.2836E+00	ug/g
Total Uranium Counting Unc.	2.7505E+00	ug/g
Total Uranium Tpu	1.4033E-06	ug/g
Total Uranium Mda	1.3583E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 957714                          SAMPLE ID   : G247911015
*  ANALYST       : MXR1                             DETECTOR    : GAM21
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 8-MAR-2010 14:59:09.54          SAMPLE ALQT  : 127.460 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.244E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.482E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.739E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.298E+00

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VAX/VMS Nuclide Identification Report Generated 9-MAR-2010 13:47:36.11

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911016.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 9-MAR-2010 11:47:08.
Sample ID          : G247911016 Sample quantity : 1.07420E+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           : 957714 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	45.84*	158	538	1.20	92.67	86	13	2.19E-02	33.5	
2	0	62.88*	181	649	1.08	126.73	121	10	2.51E-02	28.1	
3	2	74.13*	667	559	1.29	149.24	142	17	9.26E-02	7.4	1.23E+00
4	2	76.40*	934	450	1.18	153.78	142	17	1.30E-01	5.4	
5	2	86.49	340	344	1.20	173.95	164	27	4.72E-02	10.6	1.61E+00
6	2	89.22	216	374	1.29	179.42	164	27	3.00E-02	17.4	
7	2	92.12*	417	448	1.63	185.21	164	27	5.79E-02	11.6	
8	0	128.58	100	293	1.69	258.13	254	9	1.39E-02	32.5	
9	0	185.42*	154	291	1.30	371.78	366	10	2.13E-02	23.1	
10	0	209.63	55	304	1.18	420.20	413	10	7.59E-03	61.5	
11	4	238.01*	1041	182	1.17	476.95	471	17	1.45E-01	3.9	1.32E+00
12	4	240.88	223	248	1.90	482.69	471	17	3.10E-02	19.8	
13	0	269.57	91	249	1.98	540.06	534	12	1.26E-02	36.3	
14	3	294.50*	370	126	1.54	589.90	585	20	5.13E-02	7.9	2.20E+00
15	3	299.58	69	191	1.75	600.06	585	20	9.61E-03	34.5	
16	0	337.83	190	213	1.33	676.54	670	12	2.64E-02	17.0	
17	0	351.35*	491	150	1.53	703.57	698	12	6.81E-02	6.9	
18	0	462.80	64	103	1.92	926.38	920	12	8.83E-03	34.5	
19	0	510.21*	108	147	2.37	1021.17	1012	19	1.49E-02	31.6	
20	0	582.40*	310	77	1.61	1165.48	1157	13	4.31E-02	8.3	
21	0	608.65*	365	111	1.53	1217.95	1211	15	5.07E-02	8.4	
22	0	726.07	83	69	1.19	1452.66	1447	13	1.15E-02	23.4	
23	0	767.61	35	49	0.73	1535.68	1531	9	4.86E-03	39.9	
24	0	794.79	38	58	1.33	1590.01	1583	14	5.23E-03	45.4	
25	0	910.49*	252	70	2.06	1821.24	1814	18	3.50E-02	10.1	
26	0	934.05	34	37	3.50	1868.32	1863	13	4.69E-03	40.5	
27	0	968.81*	99	100	1.55	1937.78	1931	16	1.38E-02	25.5	
28	0	1119.69	54	72	1.51	2239.28	2231	13	7.56E-03	34.8	
29	0	1377.27	32	23	1.52	2753.89	2746	15	4.40E-03	39.1	
30	0	1459.97*	891	45	2.04	2919.10	2911	18	1.24E-01	3.8	
31	0	1763.82*	68	15	1.78	3525.98	3518	15	9.51E-03	17.9	

Flag: "*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911016.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 9-MAR-2010 11:47:08
Sample ID         : G247911016 Sample quantity : 107.42 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	+	1460.82	*	2.911E+01	2.881E+00	8.478E-01	5.273E-02	34.334
CD-109	+	88.03	*	2.686E+00	9.593E-01	1.170E+00	8.912E-02	2.295
SN-126	+	64.28		8.164E-01	4.742E-01	5.008E-01	7.463E-02	1.630
	+	86.94		1.694E+00	7.843E-01	4.713E-01	1.940E-01	3.593
	+	87.57	*	4.074E-01	9.183E-02	1.136E-01	8.650E-03	3.587
CS-135	+	268.22	*	4.555E-01	3.342E-01	3.074E-01	3.289E-02	1.482
TL-208		277.37		2.107E-01	5.115E-01	8.695E-01	1.132E-01	0.242
	+	583.19	*	5.639E-01	1.026E-01	7.409E-02	5.441E-03	7.611
		860.56		6.892E-01	4.361E-01	7.987E-01	8.104E-02	0.863
PB-210	+	46.54	*	1.710E+00	1.154E+00	9.654E-01	7.446E-02	1.771
BI-211	+	72.87		2.356E+01	3.942E+00	3.761E+00	2.961E-01	6.266
	+	351.06	*	3.769E+00	5.984E-01	4.106E-01	3.255E-02	9.179
PB-212	+	74.82		2.819E+00	5.456E-01	4.515E-01	5.638E-02	6.245
	+	77.11		2.380E+00	3.179E-01	2.633E-01	2.049E-02	9.042
	+	238.63	*	1.744E+00	2.318E-01	1.092E-01	1.182E-02	15.975
	+	300.09		1.827E+00	1.274E+00	1.671E+00	1.794E-01	1.093
BI-214	+	609.32	*	1.291E+00	2.416E-01	1.566E-01	1.322E-02	8.240
	+	1120.29		1.013E+00	7.114E-01	6.406E-01	6.155E-02	1.582
	+	1764.49		1.816E+00	6.582E-01	4.299E-01	2.485E-02	4.225
PB-214	+	74.82		4.997E+00	9.251E-01	8.002E-01	8.918E-02	6.245
	+	77.11		4.196E+00	6.587E-01	4.641E-01	5.263E-02	9.042
	+	242.00		2.270E+00	9.354E-01	6.811E-01	7.739E-02	3.332
	+	295.22		1.725E+00	3.343E-01	2.851E-01	3.161E-02	6.052
	+	351.93	*	1.368E+00	2.299E-01	1.441E-01	1.389E-02	9.490
RA-224	+	240.99	*	4.013E+00	1.638E+00	1.171E+00	1.145E-01	3.429
RA-226	+	609.32	*	1.291E+00	2.416E-01	1.566E-01	1.322E-02	8.240
	+	1120.29		1.013E+00	7.114E-01	6.406E-01	6.155E-02	1.582
	+	1764.49		1.816E+00	6.582E-01	4.299E-01	2.485E-02	4.225
AC-228	+	338.32		1.622E+00	8.703E-01	4.832E-01	2.008E-01	3.357
	+	911.20	*	2.259E+00	5.383E-01	2.862E-01	3.633E-02	7.893
	+	968.97		1.533E+00	8.677E-01	6.695E-01	1.649E-01	2.290
RA-228	+	338.32		1.622E+00	8.703E-01	4.832E-01	2.008E-01	3.357
	+	911.20	*	2.259E+00	5.383E-01	2.862E-01	3.633E-02	7.893
	+	968.97		1.533E+00	8.677E-01	6.695E-01	1.649E-01	2.290

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.819E+00	4.728E-01	4.515E-01	3.574E-02	6.245
	+	77.11		2.380E+00	3.179E-01	2.633E-01	2.049E-02	9.042
	+	238.63	*	1.744E+00	2.318E-01	1.092E-01	1.182E-02	15.975
	+	300.09		1.827E+00	1.684E+00	1.671E+00	1.024E+00	1.093
TH-229	+	85.43		1.025E+00	2.311E-01	2.842E-01	2.172E-02	3.609
	+	88.47		4.024E-01	1.437E-01	1.756E-01	1.350E-02	2.292
	+	193.51	*	-3.427E-01	6.519E-01	1.015E+00	1.014E-01	-0.338
	+	210.85		1.304E+00	1.608E+00	1.747E+00	1.740E-01	0.746
TH-232	+	338.32		1.622E+00	5.649E-01	4.832E-01	3.788E-02	3.357
	+	911.20	*	2.259E+00	5.383E-01	2.862E-01	3.633E-02	7.893
	+	968.97		1.533E+00	8.677E-01	6.695E-01	1.649E-01	2.290
TH-234	+	63.29	*	2.118E+00	1.250E+00	1.306E+00	2.371E-01	1.622
	+	92.59		4.437E+00	1.415E+00	1.009E+00	2.220E-01	4.398
U-235	+	89.96		2.783E+00	1.183E+00	1.220E+00	2.975E-01	2.282
	+	93.35		3.351E+00	1.092E+00	7.285E-01	1.680E-01	4.600
		143.76	*	1.161E-01	2.569E-01	4.216E-01	8.042E-02	0.275
		163.33		-4.896E-01	5.701E-01	8.716E-01	1.636E-01	-0.562
	+	185.72		1.655E-01	7.836E-02	8.184E-02	8.168E-03	2.022
		205.31		-1.473E-01	7.142E-01	9.802E-01	1.846E-01	-0.150
NP-237	+	86.48	*	1.216E+00	3.742E-01	3.379E-01	7.539E-02	3.598
		95.86		-3.542E-01	1.094E+00	1.539E+00	3.712E-01	-0.230
U-238	+	63.29	*	2.118E+00	1.250E+00	1.306E+00	2.371E-01	1.622
	+	92.59		4.437E+00	1.090E+00	1.009E+00	8.478E-02	4.398
ANH-511	+	511.00	*	1.476E-01	9.384E-02	6.187E-02	3.960E-03	2.386

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	1.013E-01	4.867E-01	7.760E-01	5.557E-02	0.130
NA-22		1274.54	*	8.335E-03	6.547E-02	1.073E-01	6.252E-03	0.078
NA-24		1368.63	*	4.470E+01	6.547E-02	Half-Life too short		
SC-46		889.28	*	-2.058E-03	5.339E-02	8.797E-02	8.837E-03	-0.023
	+	1120.55		1.770E-01	1.237E-01	1.659E-01	1.141E-02	1.067
V-48		944.13		-1.024E+00	1.372E+00	2.080E+00	2.012E-01	-0.492
		983.53	*	3.683E-02	1.040E-01	1.774E-01	1.625E-02	0.208
		1312.11		-6.763E-03	1.316E-01	2.113E-01	1.225E-02	-0.032
CR-51		320.08	*	-2.854E-01	5.519E-01	8.912E-01	7.875E-02	-0.320
MN-54		834.85	*	1.310E-02	5.063E-02	8.584E-02	7.864E-03	0.153
CO-56		846.77	*	-1.945E-02	5.714E-02	9.188E-02	8.593E-03	-0.212
		1037.84		-2.684E-01	4.302E-01	6.575E-01	5.794E-02	-0.408
		1238.28		1.558E-01	1.312E-01	2.331E-01	1.441E-02	0.668
		1771.35		-6.508E-01	4.359E-01	5.411E-01	3.125E-02	-1.203
CO-57		122.06	*	5.239E-03	3.087E-02	5.053E-02	7.169E-03	0.104
		136.47		-5.954E-02	2.661E-01	4.271E-01	5.719E-02	-0.139
CO-58		810.76	*	2.760E-02	5.389E-02	9.352E-02	8.231E-03	0.295
FE-59		1099.45	*	-1.118E-02	1.232E-01	1.993E-01	1.613E-02	-0.056
		1291.59		2.604E-02	1.674E-01	2.759E-01	2.049E-02	0.094
CO-60		1173.23		-9.484E-03	6.162E-02	9.872E-02	5.726E-03	-0.096

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1332.49	*		1.783E-02	5.443E-02	9.146E-02	5.292E-03	0.195
ZN-65	1115.54	*		2.007E-01	1.430E-01	2.358E-01	1.647E-02	0.851
SE-75	121.12			-4.689E-03	1.636E-01	2.657E-01	4.152E-02	-0.018
	136.00			-1.437E-02	5.181E-02	8.297E-02	1.082E-02	-0.173
	264.66	*		-1.898E-02	6.464E-02	9.212E-02	8.795E-03	-0.206
	279.54			-9.072E-04	1.448E-01	2.419E-01	2.318E-02	-0.004
	400.66			-8.464E-02	3.253E-01	5.259E-01	4.795E-02	-0.161
SR-85	514.00	*		4.948E-02	5.761E-02	8.792E-02	5.636E-03	0.563
Y-88	898.04			7.610E-04	5.594E-02	9.260E-02	9.468E-03	0.008
	1836.06	*		-3.097E-02	5.546E-02	8.180E-02	4.680E-03	-0.379
Y-91	1204.77	*		-2.050E+00	3.165E+01	5.109E+01	2.969E+00	-0.040
NB-94	702.65	*		-1.720E-02	4.721E-02	7.696E-02	5.507E-03	-0.224
	871.09			6.823E-04	5.231E-02	8.671E-02	8.451E-03	0.008
NB-95	765.81	*		4.250E-02	7.587E-02	1.151E-01	9.309E-03	0.369
NB-95M	235.69	*		1.856E+00	3.110E-01	4.537E-01	4.971E-02	4.090
ZR-95	724.19			3.507E-01	1.622E-01	2.781E-01	2.307E-02	1.261
	756.73	*		-6.069E-02	1.074E-01	1.710E-01	1.526E-02	-0.355
MO-99	140.51			-4.085E+01	7.545E+01	1.183E+02	3.011E+01	-0.345
	181.07			1.977E+00	6.525E+01	9.155E+01	1.780E+01	0.022
	366.42			8.106E+01	3.417E+02	5.725E+02	3.929E+01	0.142
	739.50	*		-4.524E-01	4.206E+01	7.021E+01	1.072E+01	-0.006
	777.92			9.403E+01	1.304E+02	2.297E+02	1.900E+01	0.409
TC-99M	140.51	*		-1.180E+15	1.304E+02	Half-Life	too short	
RU-103	497.08	*		3.229E-02	5.865E-02	9.909E-02	1.258E-02	0.326
	610.33			1.339E+01	2.796E+00	3.768E+00	5.793E-01	3.553
RH-106	621.93	*		1.816E-02	4.315E-01	6.976E-01	8.396E-02	0.026
	1050.41			-4.109E-01	3.448E+00	5.580E+00	4.543E-01	-0.074
RU-106	621.93	*		1.816E-02	4.315E-01	6.976E-01	4.598E-02	0.026
	1050.41			-4.109E-01	3.448E+00	5.580E+00	4.543E-01	-0.074
AG-108M	433.94	*		-1.049E-02	3.912E-02	6.296E-02	4.065E-03	-0.167
	614.28			-3.666E-03	5.713E-02	7.877E-02	5.479E-03	-0.047
	722.91			4.519E-02	5.620E-02	8.826E-02	6.856E-03	0.512
AG-110M	657.76	*		-1.390E-02	5.126E-02	8.043E-02	5.560E-03	-0.173
	677.62			1.295E-01	4.362E-01	7.479E-01	5.318E-02	0.173
	706.68			-9.621E-02	2.904E-01	4.737E-01	3.557E-02	-0.203
	763.94			2.462E-01	2.529E-01	4.019E-01	3.341E-02	0.613
	884.68			1.519E-03	5.893E-02	9.778E-02	9.982E-03	0.016
	937.49			5.232E-02	1.700E-01	2.513E-01	2.520E-02	0.208
	1384.29			2.194E-02	2.052E-01	3.012E-01	1.856E-02	0.073
	1505.03			-1.555E-01	3.107E-01	4.710E-01	2.769E-02	-0.330
SN-113	391.69	*		-1.790E-02	6.097E-02	9.861E-02	6.117E-03	-0.182
CD-115	260.90			-2.225E-04	6.097E-02	Half-Life	too short	
	492.35			3.869E-05	6.097E-02	Half-Life	too short	
	527.90	*		2.104E-05	6.097E-02	Half-Life	too short	
SN-117M	156.02			-3.740E+00	3.578E+00	5.476E+00	6.038E-01	-0.683
	158.56	*		5.342E-02	8.532E-02	1.410E-01	1.516E-02	0.379
TE-123M	159.00	*		2.565E-02	3.687E-02	6.107E-02	6.562E-03	0.420
SB-124	602.73			1.944E-02	6.290E-02	9.054E-02	5.963E-03	0.215
	645.85			-6.746E-01	7.144E-01	1.047E+00	7.563E-02	-0.644

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125		722.78		5.630E-01	5.703E-01	9.141E-01	7.017E-02	0.616
		1690.97	*	-3.868E-02	9.081E-02	1.350E-01	8.586E-03	-0.286
		427.87	*	8.723E-02	1.265E-01	2.163E-01	1.355E-02	0.403
	+	463.37		7.675E-01	5.329E-01	6.941E-01	4.919E-02	1.106
		600.60		1.984E-01	2.556E-01	4.152E-01	3.072E-02	0.478
TE-125M		635.95		6.138E-01	4.100E-01	7.303E-01	5.465E-02	0.840
		109.28	*	-6.757E+00	1.230E+01	1.916E+01	2.488E+00	-0.353
	I-126	388.63		1.972E-01	2.809E-01	4.816E-01	2.866E-02	0.409
SB-126		666.33	*	-2.357E-02	3.612E-01	5.763E-01	3.827E-02	-0.041
		753.82		4.784E-01	3.112E+00	5.257E+00	4.157E-01	0.091
		414.70		-3.244E-02	1.208E-01	1.949E-01	1.161E-02	-0.166
		666.50		-1.506E-02	1.246E-01	1.978E-01	1.314E-02	-0.076
		695.00		-1.035E-01	1.535E-01	2.248E-01	1.584E-02	-0.460
SB-127		697.00		2.680E-01	4.876E-01	8.471E-01	5.993E-02	0.316
		720.70	*	1.901E-01	2.464E-01	3.893E-01	2.888E-02	0.488
		856.80		1.469E-01	8.249E-01	1.388E+00	1.320E-01	0.106
		252.40		-1.075E+01	1.129E+01	1.645E+01	6.924E+00	-0.653
		473.00		4.440E-01	4.445E+00	7.310E+00	9.153E-01	0.061
I-131		685.70	*	-1.560E-01	3.934E+00	6.579E+00	7.551E-01	-0.024
		783.70		7.029E+00	9.757E+00	1.709E+01	2.275E+00	0.411
		80.19		-3.440E+00	8.562E+00	8.615E+00	6.740E-01	-0.399
		284.31		4.806E-01	2.674E+00	4.504E+00	4.337E-01	0.107
		364.49	*	-1.622E-01	2.128E-01	3.347E-01	2.525E-02	-0.485
TE-132		636.99		2.905E+00	3.200E+00	5.508E+00	4.000E-01	0.527
		49.72		-1.152E+01	1.164E+01	1.608E+01	1.790E+00	-0.717
		111.76		-1.064E+01	8.942E+01	1.451E+02	2.144E+01	-0.073
BA-133		116.30		1.062E+01	7.742E+01	1.268E+02	1.970E+01	0.084
		228.16	*	8.639E-01	2.003E+00	3.428E+00	5.942E-01	0.252
		81.00		1.037E-01	1.214E-01	1.342E-01	2.018E-02	0.773
		276.40		2.019E-01	4.985E-01	8.026E-01	1.168E-01	0.251
		302.85		5.079E-02	2.073E-01	3.052E-01	4.025E-02	0.166
I-133		356.01	*	-3.330E-02	6.054E-02	8.241E-02	9.958E-03	-0.404
		383.85		-5.991E-02	4.087E-01	6.681E-01	7.257E-02	-0.090
		529.87	*	-1.027E-01	4.087E-01	Half-Life	too short	
		875.33		1.980E+00	4.087E-01	Half-Life	too short	
		1298.22		-4.242E+00	4.087E-01	Half-Life	too short	
CS-134		563.25		-2.226E-02	5.144E-01	8.168E-01	5.426E-02	-0.027
		569.33		-1.326E-01	2.815E-01	4.356E-01	2.918E-02	-0.304
		604.72		2.815E-02	5.195E-02	7.658E-02	5.064E-03	0.368
	+	795.86	*	1.020E-01	9.296E-02	1.143E-01	9.842E-03	0.892
I-135		801.95		5.211E-01	6.037E-01	9.961E-01	8.659E-02	0.523
		1365.19		-7.502E-01	1.631E+00	2.443E+00	1.561E-01	-0.307
		546.56		-1.342E+14	1.631E+00	Half-Life	too short	
		836.80		3.442E+14	1.631E+00	Half-Life	too short	
		1038.76		-3.202E+14	1.631E+00	Half-Life	too short	
		1131.51		1.085E+14	1.631E+00	Half-Life	too short	
		1260.41	*	6.769E+12	1.631E+00	Half-Life	too short	
		1457.56		2.456E+16	1.631E+00	Half-Life	too short	
		1678.03		3.066E+13	1.631E+00	Half-Life	too short	
						Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	1791.20			4.347E+13	1.631E+00	Half-Life	too short	
	153.25			1.829E+00	1.319E+00	2.220E+00	2.803E-01	0.824
	176.60			4.480E-01	7.785E-01	1.281E+00	1.376E-01	0.350
	273.65			-5.237E-01	9.789E-01	1.373E+00	1.380E-01	-0.382
	340.55			3.665E-01	2.606E-01	4.113E-01	3.346E-02	0.891
	818.51			6.180E-02	1.176E-01	2.045E-01	1.823E-02	0.302
	1048.07	*		-1.085E-01	1.752E-01	2.676E-01	2.293E-02	-0.405
BA-137M	1235.36			1.084E+00	1.036E+00	1.813E+00	1.795E-01	0.598
	661.66	*		1.266E-02	4.792E-02	7.869E-02	5.175E-03	0.161
CS-137	661.66	*		1.338E-02	5.062E-02	8.313E-02	5.484E-03	0.161
CE-139	165.86	*		2.193E-03	3.846E-02	6.209E-02	6.164E-03	0.035
BA-140	162.66			-8.199E-01	1.279E+00	1.997E+00	2.154E-01	-0.410
	304.85			6.258E-01	2.359E+00	3.472E+00	1.018E+00	0.180
LA-140	423.72			-1.591E+00	3.376E+00	5.311E+00	1.716E+00	-0.299
	537.26	*		-2.695E-02	4.655E-01	7.521E-01	2.515E-01	-0.036
	328.76			8.254E-01	5.080E-01	9.006E-01	7.789E-02	0.917
	487.02			2.891E-03	2.240E-01	3.656E-01	2.568E-02	0.008
	815.77			-3.163E-01	5.394E-01	8.463E-01	8.333E-02	-0.374
CE-141	1596.21	*		-2.183E-01	1.420E-01	1.715E-01	1.008E-02	-1.273
CE-143	145.44	*		3.285E-02	8.619E-02	1.414E-01	1.729E-02	0.232
	57.36			2.894E-03	8.619E-02	Half-Life	too short	
+ CE-144	293.27	*		1.078E-02	8.619E-02	Half-Life	too short	
	664.57			1.348E-05	8.619E-02	Half-Life	too short	
	721.93			1.225E-02	8.619E-02	Half-Life	too short	
CE-144	80.12			-1.238E+00	3.343E+00	3.373E+00	2.607E-01	-0.367
	133.52	*		1.225E-01	2.894E-01	4.189E-01	7.658E-02	0.292
PM-144	476.78			-8.701E-03	9.519E-02	1.488E-01	1.081E-02	-0.058
	618.01			1.190E-02	4.605E-02	7.573E-02	5.229E-03	0.157
PR-144	696.49	*		4.777E-03	5.011E-02	8.453E-02	5.979E-03	0.057
	696.51	*		3.753E-01	3.759E+00	6.344E+00	4.483E-01	0.059
PM-146	1489.16			5.657E+00	1.700E+01	2.967E+01	1.743E+00	0.191
	453.88	*		2.297E-02	5.838E-02	9.797E-02	8.536E-03	0.234
ND-147	633.25			8.069E-01	2.196E+00	3.599E+00	1.360E+00	0.224
	735.93			-5.278E-02	1.881E-01	3.059E-01	8.484E-02	-0.173
	747.24			1.029E-02	1.312E-01	2.205E-01	3.113E-02	0.047
	91.11	+		2.237E+00	5.553E-01	7.702E-01	6.855E-02	2.904
	319.41			-3.225E+00	5.768E+00	9.293E+00	7.800E-01	-0.347
PM-149	531.02	*		-1.564E-01	9.878E-01	1.584E+00	2.189E-01	-0.099
EU-152	285.90	*		1.275E-04	9.878E-01	Half-Life	too short	
	121.78			-1.067E-02	8.878E-02	1.437E-01	2.147E-02	-0.074
GD-153	244.70			9.524E-04	4.372E-01	6.394E-01	6.233E-02	0.001
	344.28	*		-5.289E-02	1.440E-01	2.006E-01	1.649E-02	-0.264
	778.90			8.969E-02	3.661E-01	6.218E-01	5.153E-02	0.144
	964.08			7.838E-01	5.121E-01	8.314E-01	7.833E-02	0.943
	1085.87			-7.262E-01	5.940E-01	8.458E-01	6.367E-02	-0.859
	1112.07			-1.365E-01	4.857E-01	6.506E-01	4.581E-02	-0.210
	1408.01			2.252E-02	2.319E-01	3.925E-01	2.293E-02	0.057
GD-153	69.67			-1.461E+00	1.472E+00	2.039E+00	1.621E-01	-0.717
	97.43	*		1.656E-01	9.977E-02	1.539E-01	1.426E-02	1.076

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		103.18		-4.861E-02	1.232E-01	1.980E-01	2.047E-02	-0.245
		123.07		2.987E-02	6.678E-02	1.024E-01	1.631E-02	0.292
		723.31		2.624E-01	2.652E-01	4.220E-01	3.566E-02	0.622
		873.19		-8.363E-02	4.018E-01	6.527E-01	8.328E-02	-0.128
		996.26		-1.877E-01	4.556E-01	7.134E-01	1.259E-01	-0.263
EU-155		1004.73		-1.270E-01	3.075E-01	4.848E-01	5.727E-02	-0.262
		1274.44	*	1.644E-02	1.845E-01	3.013E-01	2.841E-02	0.055
	+	86.55		4.948E-01	1.117E-01	1.891E-01	1.461E-02	2.617
		105.31	*	1.005E-01	1.192E-01	2.000E-01	2.166E-02	0.502
	+	86.79		1.360E+00	3.066E-01	5.227E-01	3.986E-02	2.602
TB-160		197.04		-3.713E-01	7.506E-01	1.141E+00	1.139E-01	-0.325
		215.65		4.026E-01	9.353E-01	1.605E+00	1.596E-01	0.251
	+	298.57		2.669E-01	1.855E-01	2.758E-01	2.454E-02	0.968
		879.36	*	-1.162E-01	1.827E-01	2.818E-01	2.785E-02	-0.412
		962.29		8.282E-01	9.417E-01	1.458E+00	1.377E-01	0.568
HO-166M		966.15		1.631E+00	4.730E-01	8.179E-01	7.683E-02	1.994
		1177.93		-5.719E-01	5.289E-01	7.646E-01	4.436E-02	-0.748
		1271.85		4.271E-02	1.036E+00	1.685E+00	9.794E-02	0.025
		80.57		-9.216E-02	3.639E-01	3.708E-01	2.863E-02	-0.249
	+	184.41		1.315E-01	6.225E-02	8.461E-02	8.443E-03	1.554
TA-182		280.46		-1.212E-01	1.145E-01	1.807E-01	1.673E-02	-0.671
		410.95		1.121E-01	3.249E-01	5.453E-01	3.237E-02	0.206
		711.68	*	1.027E-02	7.920E-02	1.340E-01	9.760E-03	0.077
		752.31		-6.406E-02	3.811E-01	6.275E-01	4.948E-02	-0.102
		810.29		4.436E-02	7.728E-02	1.348E-01	1.183E-02	0.329
IR-192		67.75		4.507E-02	1.044E-01	1.308E-01	1.047E-02	0.345
		100.11		8.978E-03	1.940E-01	3.179E-01	3.103E-02	0.028
		152.43		5.644E-01	4.469E-01	7.524E-01	8.582E-02	0.750
		222.11		5.294E-02	4.254E-01	7.206E-01	7.147E-02	0.073
		1121.30		5.194E-01	2.552E-01	4.347E-01	2.983E-02	1.195
HG-203		1189.05		-3.066E-01	4.355E-01	6.571E-01	3.816E-02	-0.467
		1221.41	*	-1.775E-01	3.092E-01	4.765E-01	2.770E-02	-0.373
		1231.02		-4.604E-01	7.118E-01	1.086E+00	6.317E-02	-0.424
	+	295.96		1.323E+00	2.418E-01	3.676E-01	3.314E-02	3.599
		308.46		-3.167E-02	1.225E-01	2.008E-01	1.750E-02	-0.158
BI-207		316.51	*	1.820E-02	4.590E-02	7.791E-02	6.613E-03	0.234
		468.07		-1.605E-02	1.040E-01	1.446E-01	1.023E-02	-0.111
		70.83		-7.660E-01	1.229E+00	1.726E+00	2.709E-01	-0.444
	+	72.87		6.215E+00	1.314E+00	1.491E+00	2.256E-01	4.169
	*	279.20		6.386E-03	5.317E-02	8.934E-02	8.474E-03	0.071
PB-211	+	72.81		1.356E+00	2.268E-01	3.238E-01	2.550E-02	4.187
	+	74.97		8.128E-01	1.360E-01	2.536E-01	1.985E-02	3.205
		569.70		-3.588E-02	4.373E-02	6.562E-02	4.295E-03	-0.547
		1063.66	*	3.245E-02	7.535E-02	1.283E-01	1.016E-02	0.253
		1770.23		7.610E-02	6.972E-01	1.011E+00	5.838E-02	0.075
BI-212		404.85	*	-8.257E-01	1.005E+00	1.430E+00	6.861E-01	-0.577
		427.09		1.467E+00	2.198E+00	3.585E+00	1.644E+00	0.409
		832.01		-7.841E-01	1.383E+00	2.077E+00	1.079E+00	-0.378
	+	727.33	*	2.333E+00	1.127E+00	1.558E+00	1.826E-01	1.497

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		785.37		1.224E+00	4.413E+00	7.360E+00	6.172E-01	0.166
		1620.50		4.203E+00	2.909E+00	5.882E+00	3.452E-01	0.715
RN-219		271.23		5.977E-01	3.784E-01	5.939E-01	6.491E-02	1.006
		401.81	*	-8.744E-02	5.107E-01	8.308E-01	1.119E-01	-0.105
RA-223		81.07		2.477E-01	2.738E-01	3.055E-01	2.356E-02	0.811
		83.79		3.175E-01	1.176E-01	2.039E-01	1.563E-02	1.557
		94.87		7.534E-02	5.336E-01	7.711E-01	6.791E-02	0.098
		144.24		6.086E-01	8.550E-01	1.417E+00	1.836E-01	0.430
		154.21		8.227E-02	4.916E-01	7.990E-01	9.481E-02	0.103
	+	269.46		5.243E-01	3.839E-01	4.543E-01	4.359E-02	1.154
		323.87	*	-9.839E-01	9.319E-01	1.440E+00	2.472E-01	-0.683
	+	338.28		6.436E+00	2.307E+00	3.014E+00	3.475E-01	2.135
AC-227		79.69		-2.479E-01	1.649E+00	1.696E+00	2.851E-01	-0.146
		235.96		3.057E+00	4.580E-01	5.970E-01	6.787E-02	5.121
		256.23	*	2.561E-01	3.147E-01	5.448E-01	6.966E-02	0.470
	+	299.98		2.009E+00	1.409E+00	2.156E+00	2.775E-01	0.932
		304.50		2.164E+00	2.240E+00	3.443E+00	5.716E-01	0.628
		334.37		6.630E-01	2.604E+00	3.819E+00	5.818E-01	0.174
TH-227		79.80		-4.949E-01	2.176E+00	2.221E+00	4.763E-01	-0.223
		235.96		3.057E+00	4.459E-01	5.970E-01	6.471E-02	5.121
		256.23	*	2.561E-01	3.151E-01	5.448E-01	7.770E-02	0.470
	+	299.98		2.009E+00	1.409E+00	2.156E+00	2.775E-01	0.932
		304.50		2.164E+00	2.240E+00	3.443E+00	5.716E-01	0.628
		334.37		6.630E-01	2.604E+00	3.819E+00	5.818E-01	0.174
PA-231		283.69	*	2.774E-01	1.865E+00	3.136E+00	4.683E-01	0.088
		301.36		9.787E-01	8.774E-01	1.351E+00	1.663E-01	0.724
TH-231		81.07		2.477E-01	2.738E-01	3.055E-01	2.356E-02	0.811
		83.79		3.175E-01	1.176E-01	2.039E-01	1.563E-02	1.557
		94.87		7.534E-02	5.336E-01	7.711E-01	6.791E-02	0.098
		144.24		6.086E-01	8.550E-01	1.417E+00	1.836E-01	0.430
		154.21		8.227E-02	4.916E-01	7.990E-01	9.481E-02	0.103
	+	269.46		5.243E-01	3.839E-01	4.543E-01	4.359E-02	1.154
		323.87	*	-9.839E-01	9.319E-01	1.440E+00	2.472E-01	-0.683
	+	338.28		6.436E+00	2.307E+00	3.014E+00	3.475E-01	2.135
PA-233	+	300.13		9.091E-01	6.412E-01	9.769E-01	1.463E-01	0.931
		311.90	*	7.253E-03	7.986E-02	1.335E-01	1.179E-02	0.054
		340.48		1.479E+00	9.759E-01	1.464E+00	3.481E-01	1.010
PA-234		94.67		1.835E-01	1.952E-01	2.907E-01	3.636E-02	0.631
		98.44		1.392E-01	1.260E-01	1.656E-01	9.263E-02	0.841
		111.00		-6.555E-02	2.158E-01	3.474E-01	5.067E-02	-0.189
		131.20		1.002E-01	1.456E-01	2.138E-01	2.870E-02	0.469
		569.50		-2.195E-01	3.840E-01	5.889E-01	3.854E-02	-0.373
		733.00		8.703E-03	5.660E-01	8.173E-01	1.783E-01	0.011
		880.51		-2.717E-01	3.393E-01	5.102E-01	5.051E-02	-0.532
		883.24		-1.853E-01	3.627E-01	5.296E-01	3.570E-01	-0.350
		926.50		1.122E-01	2.488E-01	3.984E-01	1.025E-01	0.282
		946.00	*	-1.672E-01	4.077E-01	6.426E-01	1.238E-01	-0.260
		949.00		6.155E-01	5.788E-01	1.047E+00	1.006E-01	0.588
PA-234M	+	766.42		2.170E+01	2.052E+01	2.870E+01	1.454E+01	0.756

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		-2.028E+00	6.406E+00	9.989E+00	1.021E+00	-0.203
	99.53			1.043E-01	1.743E-01	2.912E-01	2.812E-02	0.358
	103.37			6.485E-03	1.092E-01	1.789E-01	1.857E-02	0.036
	106.12			6.343E-02	9.523E-02	1.590E-01	1.734E-02	0.399
	117.23	*		-2.798E-01	4.762E-01	7.544E-01	9.920E-02	-0.371
	228.18			1.113E-01	2.559E-01	4.388E-01	4.337E-02	0.254
	277.60			1.406E-01	2.331E-01	3.996E-01	3.719E-02	0.352
AM-241	59.54	*		-2.247E-02	8.594E-02	1.236E-01	1.106E-02	-0.182
CM-247	278.00			8.690E-01	9.764E-01	1.692E+00	1.574E-01	0.514
CF-249	287.50			1.162E+00	1.604E+00	2.634E+00	2.404E-01	0.441
	402.40	*		-1.455E-02	4.665E-02	7.516E-02	4.422E-03	-0.194
	252.80			-1.034E+00	1.146E+00	1.827E+00	1.766E-01	-0.566
	333.37			-1.774E-01	2.779E-01	3.799E-01	3.036E-02	-0.467
	388.16	*		4.638E-02	5.507E-02	9.506E-02	5.676E-03	0.488
CF-251	177.52	*		5.015E-03	1.646E-01	2.649E-01	2.639E-02	0.019
	227.38			-1.897E-01	4.273E-01	7.044E-01	6.965E-02	-0.269
	285.41			7.995E-02	2.795E+00	4.673E+00	4.284E-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]G247911016      *
* Acquisition date   : 9-MAR-2010 11:47:08 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        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247911016           Analyst initials: MXR1          *
* Batch Number       : 957714              Sample Quantity : 1.0742E+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	2.911E+01	2.823E+00	8.424E-01	0.000E+00
CD-109	2.686E+00	9.401E-01	1.183E+00	0.000E+00
SN-126	4.074E-01	8.999E-02	1.148E-01	0.000E+00
CS-135	4.555E-01	3.275E-01	3.086E-01	0.000E+00
TL-208	5.639E-01	1.006E-01	7.403E-02	0.000E+00
PB-210	1.710E+00	1.131E+00	9.794E-01	0.000E+00
BI-211	3.769E+00	5.864E-01	4.116E-01	0.000E+00
PB-212	1.744E+00	2.272E-01	1.097E-01	0.000E+00
BI-214	1.291E+00	2.368E-01	1.565E-01	0.000E+00
PB-214	1.368E+00	2.253E-01	1.445E-01	0.000E+00
RA-224	4.013E+00	1.605E+00	1.176E+00	0.000E+00
RA-226	1.291E+00	2.368E-01	1.565E-01	0.000E+00
AC-228	2.259E+00	5.275E-01	2.852E-01	0.000E+00
RA-228	2.259E+00	5.275E-01	2.852E-01	0.000E+00
TH-228	1.744E+00	2.272E-01	1.097E-01	0.000E+00
TH-229	-3.427E-01	6.388E-01	1.021E+00	0.000E+00
TH-232	2.259E+00	5.275E-01	2.852E-01	0.000E+00
TH-234	2.118E+00	1.225E+00	1.323E+00	0.000E+00
U-235	1.161E-01	2.517E-01	4.249E-01	0.000E+00
NP-237	1.216E+00	3.667E-01	3.415E-01	0.000E+00
U-238	2.118E+00	1.225E+00	1.323E+00	0.000E+00
ANH-511	1.476E-01	9.197E-02	6.187E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.013E-01	4.769E-01	7.764E-01	0.000E+00 NOT IDENT.
NA-22	8.335E-03	6.416E-02	1.067E-01	0.000E+00 NOT IDENT.
NA-24	0.000E+00	7.653E+07	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.058E-03	5.232E-02	8.768E-02	0.000E+00 FAIL ABUN
V-48	3.683E-02	1.019E-01	1.767E-01	0.000E+00 NOT IDENT.

CR-51	-2.854E-01	5.408E-01	8.938E-01	0.000E+00	NOT IDENT.
MN-54	1.310E-02	4.962E-02	8.559E-02	0.000E+00	NOT IDENT.
CO-56	-1.945E-02	5.600E-02	9.160E-02	0.000E+00	NOT IDENT.
CO-57	5.239E-03	3.025E-02	5.097E-02	0.000E+00	NOT IDENT.
CO-58	2.760E-02	5.281E-02	9.326E-02	0.000E+00	NOT IDENT.
FE-59	-1.118E-02	1.208E-01	1.984E-01	0.000E+00	NOT IDENT.
CO-60	1.783E-02	5.334E-02	9.093E-02	0.000E+00	NOT IDENT.
ZN-65	2.007E-01	1.401E-01	2.346E-01	0.000E+00	NOT IDENT.
SE-75	-1.898E-02	6.335E-02	9.249E-02	0.000E+00	NOT IDENT.
SR-85	4.948E-02	5.646E-02	8.792E-02	0.000E+00	NOT IDENT.
Y-88	-3.097E-02	5.435E-02	8.117E-02	0.000E+00	NOT IDENT.
Y-91	-2.050E+00	3.101E+01	5.083E+01	0.000E+00	NOT IDENT.
NB-94	-1.720E-02	4.627E-02	7.681E-02	0.000E+00	NOT IDENT.
NB-95	4.250E-02	7.435E-02	1.148E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	3.048E-01	4.559E-01	0.000E+00	NOT IDENT.
ZR-95	-6.069E-02	1.053E-01	1.706E-01	0.000E+00	NOT IDENT.
MO-99	-4.524E-01	4.122E+01	7.005E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.159E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.229E-02	5.748E-02	9.911E-02	0.000E+00	NOT IDENT.
RH-106	1.816E-02	4.229E-01	6.968E-01	0.000E+00	NOT IDENT.
RU-106	1.816E-02	4.229E-01	6.968E-01	0.000E+00	NOT IDENT.
AG-108M	-1.049E-02	3.834E-02	6.303E-02	0.000E+00	NOT IDENT.
AG-110M	-1.390E-02	5.023E-02	8.031E-02	0.000E+00	NOT IDENT.
SN-113	-1.790E-02	5.975E-02	9.877E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	4.845E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	5.342E-02	8.362E-02	1.420E-01	0.000E+00	NOT IDENT.
TE-123M	2.565E-02	3.613E-02	6.151E-02	0.000E+00	NOT IDENT.
SB-124	-3.868E-02	8.899E-02	1.341E-01	0.000E+00	NOT IDENT.
SB-125	8.723E-02	1.240E-01	2.166E-01	0.000E+00	FAIL ABUN
TE-125M	-6.757E+00	1.206E+01	1.934E+01	0.000E+00	NOT IDENT.
I-126	-2.357E-02	3.540E-01	5.753E-01	0.000E+00	NOT IDENT.
SB-126	1.901E-01	2.414E-01	3.885E-01	0.000E+00	NOT IDENT.
SB-127	-1.560E-01	3.855E+00	6.568E+00	0.000E+00	NOT IDENT.
I-131	-1.622E-01	2.086E-01	3.354E-01	0.000E+00	NOT IDENT.
TE-132	8.639E-01	1.963E+00	3.444E+00	0.000E+00	NOT IDENT.
BA-133	-3.330E-02	5.933E-02	8.260E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.811E+05	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.020E-01	9.110E-02	1.140E-01	0.000E+00	FAIL ABUN
I-135	0.000E+00	1.497E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.085E-01	1.717E-01	2.665E-01	0.000E+00	NOT IDENT.
BA-137M	1.266E-02	4.696E-02	7.857E-02	0.000E+00	NOT IDENT.
CS-137	1.338E-02	4.961E-02	8.300E-02	0.000E+00	NOT IDENT.
CE-139	2.193E-03	3.769E-02	6.252E-02	0.000E+00	NOT IDENT.
BA-140	-2.695E-02	4.562E-01	7.519E-01	0.000E+00	NOT IDENT.
LA-140	-2.183E-01	1.392E-01	1.703E-01	0.000E+00	NOT IDENT.
CE-141	3.285E-02	8.447E-02	1.425E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.019E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.225E-01	2.836E-01	4.223E-01	0.000E+00	NOT IDENT.
PM-144	4.777E-03	4.911E-02	8.438E-02	0.000E+00	NOT IDENT.
PR-144	3.753E-01	3.684E+00	6.332E+00	0.000E+00	NOT IDENT.
PM-146	2.297E-02	5.722E-02	9.804E-02	0.000E+00	NOT IDENT.
ND-147	-1.564E-01	9.680E-01	1.584E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	3.881E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-5.289E-02	1.412E-01	2.011E-01	0.000E+00	NOT IDENT.
GD-153	0.000E+00	9.778E-02	1.554E-01	0.000E+00	NOT IDENT.
EU-154	1.644E-02	1.808E-01	2.996E-01	0.000E+00	NOT IDENT.
EU-155	1.005E-01	1.168E-01	2.020E-01	0.000E+00	FAIL ABUN
TB-160	-1.162E-01	1.791E-01	2.809E-01	0.000E+00	FAIL ABUN
HO-166M	1.027E-02	7.762E-02	1.337E-01	0.000E+00	FAIL ABUN
TA-182	-1.775E-01	3.030E-01	4.740E-01	0.000E+00	NOT IDENT.
IR-192	1.820E-02	4.498E-02	7.814E-02	0.000E+00	FAIL ABUN
HG-203	6.386E-03	5.211E-02	8.967E-02	0.000E+00	FAIL ABUN
BI-207	3.245E-02	7.385E-02	1.277E-01	0.000E+00	FAIL ABUN
PB-211	-8.257E-01	9.849E-01	1.432E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.104E+00	1.555E+00	0.000E+00	FAIL ABUN
RN-219	-8.744E-02	5.005E-01	8.320E-01	0.000E+00	NOT IDENT.
RA-223	-9.839E-01	9.133E-01	1.445E+00	0.000E+00	FAIL ABUN
AC-227	2.561E-01	3.084E-01	5.471E-01	0.000E+00	FAIL ABUN
TH-227	2.561E-01	3.088E-01	5.471E-01	0.000E+00	FAIL ABUN
PA-231	2.774E-01	1.828E+00	3.147E+00	0.000E+00	NOT IDENT.
TH-231	-9.839E-01	9.133E-01	1.445E+00	0.000E+00	FAIL ABUN
PA-233	7.253E-03	7.827E-02	1.339E-01	0.000E+00	FAIL ABUN
PA-234	-1.672E-01	3.996E-01	6.402E-01	0.000E+00	NOT IDENT.
PA-234M	-2.028E+00	6.278E+00	9.949E+00	0.000E+00	FAIL ABUN
NP-239	-2.798E-01	4.667E-01	7.612E-01	0.000E+00	NOT IDENT.
AM-241	-2.247E-02	8.422E-02	1.252E-01	0.000E+00	NOT IDENT.
CM-247	-1.455E-02	4.572E-02	7.527E-02	0.000E+00	NOT IDENT.
CF-249	4.638E-02	5.397E-02	9.522E-02	0.000E+00	NOT IDENT.

CF-251	5.015E-03	1.613E-01	2.666E-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]G247911016.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 9-MAR-2010 11:47:08.
Sample ID          : G247911016           Sample quantity  : 1.07420E+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           : 957714                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	1460.82	891	10.66*	1.004E+00	2.911E+01	2.911E+01	9.90
CD-109	88.03	216	3.70*	7.822E+00	2.610E+00	2.686E+00	35.72
SN-126	64.28	181	9.60	8.062E+00	8.164E-01	8.164E-01	58.08
	86.94	340	8.90	7.872E+00	1.694E+00	1.694E+00	46.31
	87.57	340	37.00*	7.872E+00	4.074E-01	4.074E-01	22.54
CS-135	268.22	91	16.00*	4.356E+00	4.555E-01	4.555E-01	73.36
TL-208	277.37	-----	6.60	4.261E+00	-----	Line Not Found	-----
	583.19	310	85.00*	2.262E+00	5.639E-01	5.639E-01	18.20
	860.56	-----	12.50	1.589E+00	-----	Line Not Found	-----
PB-210	46.54	158	4.25*	7.596E+00	1.707E+00	1.710E+00	67.49
BI-211	72.87	667	1.23	8.042E+00	2.356E+01	2.356E+01	16.73
	351.06	491	12.92*	3.520E+00	3.769E+00	3.769E+00	15.88
PB-212	74.82	667	10.28	8.042E+00	2.819E+00	2.819E+00	19.35
	77.11	934	17.10	8.020E+00	2.380E+00	2.380E+00	13.36
	238.63	1041	43.60*	4.782E+00	1.744E+00	1.744E+00	13.29
	300.09	69	3.30	4.010E+00	1.827E+00	1.827E+00	69.75
BI-214	609.32	365	45.49*	2.173E+00	1.291E+00	1.291E+00	18.72
	1120.29	54	14.92	1.258E+00	1.013E+00	1.013E+00	70.19
	1764.49	68	15.30	8.614E-01	1.816E+00	1.816E+00	36.24
PB-214	74.82	667	5.80	8.042E+00	4.997E+00	4.997E+00	18.51
	77.11	934	9.70	8.020E+00	4.196E+00	4.196E+00	15.70
	242.00	223	7.25	4.740E+00	2.269E+00	2.270E+00	41.22
	295.22	370	18.42	4.065E+00	1.725E+00	1.725E+00	19.37
	351.93	491	35.60*	3.520E+00	1.368E+00	1.368E+00	16.81
RA-224	240.99	223	4.10*	4.740E+00	4.013E+00	4.013E+00	40.81
RA-226	609.32	365	45.49*	2.173E+00	1.291E+00	1.291E+00	18.72
	1120.29	54	14.92	1.258E+00	1.013E+00	1.013E+00	70.19
	1764.49	68	15.30	8.614E-01	1.816E+00	1.816E+00	36.24
AC-228	338.32	190	11.27	3.637E+00	1.622E+00	1.622E+00	53.66
	911.20	252	25.80*	1.511E+00	2.259E+00	2.259E+00	23.83
	968.97	99	15.80	1.430E+00	1.533E+00	1.533E+00	56.60
RA-228	338.32	190	11.27	3.637E+00	1.622E+00	1.622E+00	53.66

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	252	25.80*	1.511E+00	2.259E+00	2.259E+00	23.83
	968.97	99	15.80	1.430E+00	1.533E+00	1.533E+00	56.60
TH-228	74.82	667	10.28	8.042E+00	2.819E+00	2.819E+00	16.77
	77.11	934	17.10	8.020E+00	2.380E+00	2.380E+00	13.36
	238.63	1041	43.60*	4.782E+00	1.744E+00	1.744E+00	13.29
	300.09	69	3.30	4.010E+00	1.827E+00	1.827E+00	92.20
TH-229	85.43	340	14.70	7.872E+00	1.025E+00	1.025E+00	22.54
	88.47	216	24.00	7.822E+00	4.024E-01	4.024E-01	35.72
	193.51	-----	4.41*	5.516E+00	-----	Line Not Found	-----
	210.85	55	2.80	5.229E+00	1.304E+00	1.304E+00	123.36
TH-232	338.32	190	11.27	3.637E+00	1.622E+00	1.622E+00	34.83
	911.20	252	25.80*	1.511E+00	2.259E+00	2.259E+00	23.83
	968.97	99	15.80	1.430E+00	1.533E+00	1.533E+00	56.60
TH-234	63.29	181	3.70*	8.062E+00	2.118E+00	2.118E+00	58.99
	92.59	417	4.23	7.765E+00	4.437E+00	4.437E+00	31.89
U-235	89.96	216	3.47	7.822E+00	2.783E+00	2.783E+00	42.51
	93.35	417	5.60	7.765E+00	3.351E+00	3.351E+00	32.60
	143.76	-----	10.96*	6.557E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.119E+00	-----	Line Not Found	-----
	185.72	154	57.20	5.668E+00	1.655E-01	1.655E-01	47.35
	205.31	-----	5.01	5.304E+00	-----	Line Not Found	-----
NP-237	86.48	340	12.40*	7.872E+00	1.216E+00	1.216E+00	30.79
	95.86	-----	2.68	7.688E+00	-----	Line Not Found	-----
U-238	63.29	181	3.70*	8.062E+00	2.118E+00	2.118E+00	58.99
	92.59	417	4.23	7.765E+00	4.437E+00	4.437E+00	24.56
ANH-511	511.00	108	100.00*	2.547E+00	1.476E-01	1.476E-01	63.56

Flag: "*" = Keyline

Total number of lines in spectrum 31
Number of unidentified lines 3
Number of lines tentatively identified by NID 28 90.32%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.911E+01	2.911E+01	0.288E+01	9.90	
CD-109	461.40D	1.03	2.610E+00	2.686E+00	0.959E+00	35.72	
SN-126	2.30E+05Y	1.00	4.074E-01	4.074E-01	0.918E-01	22.54	
CS-135	2.30E+06Y	1.00	4.555E-01	4.555E-01	3.342E-01	73.36	
TL-208	1.41E+10Y	1.00	5.639E-01	5.639E-01	1.026E-01	18.20	
PB-210	22.20Y	1.00	1.707E+00	1.710E+00	1.154E+00	67.49	
BI-211	7.04E+08Y	1.00	3.769E+00	3.769E+00	0.598E+00	15.88	
PB-212	1.41E+10Y	1.00	1.744E+00	1.744E+00	0.232E+00	13.29	
BI-214	1600.00Y	1.00	1.291E+00	1.291E+00	0.242E+00	18.72	
PB-214	1600.00Y	1.00	1.368E+00	1.368E+00	0.230E+00	16.81	
RA-224	1.41E+10Y	1.00	4.013E+00	4.013E+00	1.638E+00	40.81	
RA-226	1600.00Y	1.00	1.291E+00	1.291E+00	0.242E+00	18.72	
AC-228	1.41E+10Y	1.00	2.259E+00	2.259E+00	0.538E+00	23.83	
RA-228	1.41E+10Y	1.00	2.259E+00	2.259E+00	0.538E+00	23.83	
TH-228	1.41E+10Y	1.00	1.744E+00	1.744E+00	0.232E+00	13.29	
TH-229	7340.00Y	1.00	4.024E-01	4.024E-01	1.437E-01	35.72	K
TH-232	1.41E+10Y	1.00	2.259E+00	2.259E+00	0.538E+00	23.83	
TH-234	4.47E+09Y	1.00	2.118E+00	2.118E+00	1.250E+00	58.99	
U-235	7.04E+08Y	1.00	1.655E-01	1.655E-01	0.784E-01	47.35	K
NP-237	2.14E+06Y	1.00	1.216E+00	1.216E+00	0.374E+00	30.79	
U-238	4.47E+09Y	1.00	2.118E+00	2.118E+00	1.250E+00	58.99	
ANH-511	1.00E+09Y	1.00	1.476E-01	1.476E-01	0.938E-01	63.56	
Total Activity :			6.302E+01	6.310E+01			

Grand Total Activity : 6.302E+01 6.310E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247911016

Page : 4
Acquisition date : 9-MAR-2010 11:47:08

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.58	100	293	1.69	258.13	254	9	1.39E-02	64.9	6.92E+00	
0	462.80	64	103	1.92	926.38	920	12	8.83E-03	69.1	2.78E+00	T
0	726.07	83	69	1.19	1452.66	1447	13	1.15E-02	46.9	1.85E+00	T
0	767.61	35	49	0.73	1535.68	1531	9	4.86E-03	79.8	1.76E+00	T
0	794.79	38	58	1.33	1590.01	1583	14	5.23E-03	90.8	1.71E+00	T
0	934.05	34	37	3.50	1868.32	1863	13	4.69E-03	81.1	1.48E+00	
0	1377.27	32	23	1.52	2753.89	2746	15	4.40E-03	78.2	1.05E+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]G247911016.CNF;1
* Acquisition date   : 9-MAR-2010 11:47:08.  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        : 18-FEB-2010 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G247911016           Analyst initials: MXR1
* Batch Number       : 957714               Sample Quantity  : 1.07420E+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	2.911E+01	2.881E+00	8.478E-01	5.273E-02	34.334
CD-109	2.686E+00	9.593E-01	1.170E+00	8.912E-02	2.295
SN-126	4.074E-01	9.183E-02	1.136E-01	8.650E-03	3.587
CS-135	4.555E-01	3.342E-01	3.074E-01	3.289E-02	1.482
TL-208	5.639E-01	1.026E-01	7.409E-02	5.441E-03	7.611
PB-210	1.710E+00	1.154E+00	9.654E-01	7.446E-02	1.771
BI-211	3.769E+00	5.984E-01	4.106E-01	3.255E-02	9.179
PB-212	1.744E+00	2.318E-01	1.092E-01	1.182E-02	15.975
BI-214	1.291E+00	2.416E-01	1.566E-01	1.322E-02	8.240
PB-214	1.368E+00	2.299E-01	1.441E-01	1.389E-02	9.490
RA-224	4.013E+00	1.638E+00	1.171E+00	1.145E-01	3.429
RA-226	1.291E+00	2.416E-01	1.566E-01	1.322E-02	8.240
AC-228	2.259E+00	5.383E-01	2.862E-01	3.633E-02	7.893
RA-228	2.259E+00	5.383E-01	2.862E-01	3.633E-02	7.893
TH-228	1.744E+00	2.318E-01	1.092E-01	1.182E-02	15.975
TH-229	4.024E-01	1.437E-01	1.015E+00	1.014E-01	0.396
TH-232	2.259E+00	5.383E-01	2.862E-01	3.633E-02	7.893
TH-234	2.118E+00	1.250E+00	1.306E+00	2.371E-01	1.622

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	1.655E-01	7.836E-02	4.216E-01	8.042E-02	0.393
NP-237	1.216E+00	3.742E-01	3.379E-01	7.539E-02	3.598
U-238	2.118E+00	1.250E+00	1.306E+00	2.371E-01	1.622
ANH-511	1.476E-01	9.384E-02	6.187E-02	3.960E-03	2.386

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.013E-01		4.867E-01	7.760E-01	5.557E-02	0.130
NA-22	8.335E-03		6.547E-02	1.073E-01	6.252E-03	0.078
NA-24	4.470E+01		3.904E+01	Half-Life	too short	
SC-46	-2.058E-03		5.339E-02	8.797E-02	8.837E-03	-0.023
V-48	3.683E-02		1.040E-01	1.774E-01	1.625E-02	0.208
CR-51	-2.854E-01		5.519E-01	8.912E-01	7.875E-02	-0.320
MN-54	1.310E-02		5.063E-02	8.584E-02	7.864E-03	0.153
CO-56	-1.945E-02		5.714E-02	9.188E-02	8.593E-03	-0.212
CO-57	5.239E-03		3.087E-02	5.053E-02	7.169E-03	0.104
CO-58	2.760E-02		5.389E-02	9.352E-02	8.231E-03	0.295
FE-59	-1.118E-02		1.232E-01	1.993E-01	1.613E-02	-0.056
CO-60	1.783E-02		5.443E-02	9.146E-02	5.292E-03	0.195
ZN-65	2.007E-01		1.430E-01	2.358E-01	1.647E-02	0.851
SE-75	-1.898E-02		6.464E-02	9.212E-02	8.795E-03	-0.206
SR-85	4.948E-02		5.761E-02	8.792E-02	5.636E-03	0.563
Y-88	-3.097E-02		5.546E-02	8.180E-02	4.680E-03	-0.379
Y-91	-2.050E+00		3.165E+01	5.109E+01	2.969E+00	-0.040
NB-94	-1.720E-02		4.721E-02	7.696E-02	5.507E-03	-0.224
NB-95	4.250E-02		7.587E-02	1.151E-01	9.309E-03	0.369
NB-95M	1.856E+00		3.110E-01	4.537E-01	4.971E-02	4.090
ZR-95	-6.069E-02		1.074E-01	1.710E-01	1.526E-02	-0.355
MO-99	-4.524E-01		4.206E+01	7.021E+01	1.072E+01	-0.006
TC-99M	-1.180E+15		1.102E+15	Half-Life	too short	
RU-103	3.229E-02		5.865E-02	9.909E-02	1.258E-02	0.326
RH-106	1.816E-02		4.315E-01	6.976E-01	8.396E-02	0.026
RU-106	1.816E-02		4.315E-01	6.976E-01	4.598E-02	0.026
AG-108M	-1.049E-02		3.912E-02	6.296E-02	4.065E-03	-0.167
AG-110M	-1.390E-02		5.126E-02	8.043E-02	5.560E-03	-0.173
SN-113	-1.790E-02		6.097E-02	9.861E-02	6.117E-03	-0.182
CD-115	2.104E-05		2.472E-05	Half-Life	too short	
SN-117M	5.342E-02		8.532E-02	1.410E-01	1.516E-02	0.379
TE-123M	2.565E-02		3.687E-02	6.107E-02	6.562E-03	0.420
SB-124	-3.868E-02		9.081E-02	1.350E-01	8.586E-03	-0.286
SB-125	8.723E-02		1.265E-01	2.163E-01	1.355E-02	0.403
TE-125M	-6.757E+00		1.230E+01	1.916E+01	2.488E+00	-0.353
I-126	-2.357E-01		3.612E-01	5.763E-01	3.827E-02	-0.041
SB-126	1.901E-01		2.464E-01	3.893E-01	2.888E-02	0.488
SB-127	-1.560E-01		3.934E+00	6.579E+00	7.551E-01	-0.024
I-131	-1.622E-01		2.128E-01	3.347E-01	2.525E-02	-0.485

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	8.639E-01		2.003E+00	3.428E+00	5.942E-01	0.252
BA-133	-3.330E-02		6.054E-02	8.241E-02	9.958E-03	-0.404
I-133	-1.027E-01		9.237E-02	Half-Life too short		
CS-134	1.020E-01	+	9.296E-02	1.143E-01	9.842E-03	0.892
I-135	6.769E+12		7.636E+13	Half-Life too short		
CS-136	-1.085E-01		1.752E-01	2.676E-01	2.293E-02	-0.405
BA-137M	1.266E-02		4.792E-02	7.869E-02	5.175E-03	0.161
CS-137	1.338E-02		5.062E-02	8.313E-02	5.484E-03	0.161
CE-139	2.193E-03		3.846E-02	6.209E-02	6.164E-03	0.035
BA-140	-2.695E-02		4.655E-01	7.521E-01	2.515E-01	-0.036
LA-140	-2.183E-01		1.420E-01	1.715E-01	1.008E-02	-1.273
CE-141	3.285E-02		8.619E-02	1.414E-01	1.729E-02	0.232
CE-143	1.078E-02	+	1.540E-03	Half-Life too short		
CE-144	1.225E-01		2.894E-01	4.189E-01	7.658E-02	0.292
PM-144	4.777E-03		5.011E-02	8.453E-02	5.979E-03	0.057
PR-144	3.753E-01		3.759E+00	6.344E+00	4.483E-01	0.059
PM-146	2.297E-02		5.838E-02	9.797E-02	8.536E-03	0.234
ND-147	-1.564E-01		9.878E-01	1.584E+00	2.189E-01	-0.099
PM-149	1.275E-04		1.980E-04	Half-Life too short		
EU-152	-5.289E-02		1.440E-01	2.006E-01	1.649E-02	-0.264
GD-153	1.656E-01		9.977E-02	1.539E-01	1.426E-02	1.076
EU-154	1.644E-02		1.845E-01	3.013E-01	2.841E-02	0.055
EU-155	1.005E-01		1.192E-01	2.000E-01	2.166E-02	0.502
TB-160	-1.162E-01		1.827E-01	2.818E-01	2.785E-02	-0.412
HO-166M	1.027E-02		7.920E-02	1.340E-01	9.760E-03	0.077
TA-182	-1.775E-01		3.092E-01	4.765E-01	2.770E-02	-0.373
IR-192	1.820E-02		4.590E-02	7.791E-02	6.613E-03	0.234
HG-203	6.386E-03		5.317E-02	8.934E-02	8.474E-03	0.071
BI-207	3.245E-02		7.535E-02	1.283E-01	1.016E-02	0.253
PB-211	-8.257E-01		1.005E+00	1.430E+00	6.861E-01	-0.577
BI-212	2.333E+00	+	1.127E+00	1.558E+00	1.826E-01	1.497
RN-219	-8.744E-02		5.107E-01	8.308E-01	1.119E-01	-0.105
RA-223	-9.839E-01		9.319E-01	1.440E+00	2.472E-01	-0.683
AC-227	2.561E-01		3.147E-01	5.448E-01	6.966E-02	0.470
TH-227	2.561E-01		3.151E-01	5.448E-01	7.770E-02	0.470
PA-231	2.774E-01		1.865E+00	3.136E+00	4.683E-01	0.088
TH-231	-9.839E-01		9.319E-01	1.440E+00	2.472E-01	-0.683
PA-233	7.253E-03		7.986E-02	1.335E-01	1.179E-02	0.054
PA-234	-1.672E-01		4.077E-01	6.426E-01	1.238E-01	-0.260
PA-234M	-2.028E+00		6.406E+00	9.989E+00	1.021E+00	-0.203
NP-239	-2.798E-01		4.762E-01	7.544E-01	9.920E-02	-0.371
AM-241	-2.247E-02		8.594E-02	1.236E-01	1.106E-02	-0.182
CM-247	-1.455E-02		4.665E-02	7.516E-02	4.422E-03	-0.194
CF-249	4.638E-02		5.507E-02	9.506E-02	5.676E-03	0.488
CF-251	5.015E-03		1.646E-01	2.649E-01	2.639E-02	0.019

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]G247911016          *
* Acquisition date   : 9-MAR-2010 11:47:08 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        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247911016 Analyst initials: MXR1          *
* Batch Number       : 957714 Sample Quantity : 1.0742E+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	2.911E+01	2.823E+00	4.215E-01	1.440E+00
CD-109	2.686E+00	9.401E-01	5.918E-01	4.797E-01
SN-126	4.074E-01	8.999E-02	5.743E-02	4.592E-02
CS-135	4.555E-01	3.275E-01	1.544E-01	1.671E-01
TL-208	5.639E-01	1.006E-01	3.704E-02	5.130E-02
PB-210	1.710E+00	1.131E+00	4.900E-01	5.769E-01
BI-211	3.769E+00	5.864E-01	2.059E-01	2.992E-01
PB-212	1.744E+00	2.272E-01	5.489E-02	1.159E-01
BI-214	1.291E+00	2.368E-01	7.828E-02	1.208E-01
PB-214	1.368E+00	2.253E-01	7.228E-02	1.150E-01
RA-224	4.013E+00	1.605E+00	5.883E-01	8.188E-01
RA-226	1.291E+00	2.368E-01	7.828E-02	1.208E-01
AC-228	2.259E+00	5.275E-01	1.427E-01	2.691E-01
RA-228	2.259E+00	5.275E-01	1.427E-01	2.691E-01
TH-228	1.744E+00	2.272E-01	5.489E-02	1.159E-01
TH-229	-3.427E-01	6.388E-01	5.109E-01	3.259E-01
TH-232	2.259E+00	5.275E-01	1.427E-01	2.691E-01
TH-234	2.118E+00	1.225E+00	6.618E-01	6.248E-01
U-235	1.161E-01	2.517E-01	2.126E-01	1.284E-01
NP-237	1.216E+00	3.667E-01	1.709E-01	1.871E-01
U-238	2.118E+00	1.225E+00	6.618E-01	6.248E-01
ANH-511	1.476E-01	9.197E-02	3.095E-02	4.692E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.013E-01	4.769E-01	3.884E-01	2.433E-01 NOT IDENT.
NA-22	8.335E-03	6.416E-02	5.341E-02	3.274E-02 NOT IDENT.
NA-24	4.470E+07	7.653E+07	0.000E+00	3.904E+07 SHORT HLIF
SC-46	-2.058E-03	5.232E-02	4.387E-02	2.669E-02 FAIL ABUN
V-48	3.683E-02	1.019E-01	8.842E-02	5.201E-02 NOT IDENT.

CR-51	-2.854E-01	5.408E-01	4.471E-01	2.759E-01	NOT IDENT.
MN-54	1.310E-02	4.962E-02	4.282E-02	2.531E-02	NOT IDENT.
CO-56	-1.945E-02	5.600E-02	4.583E-02	2.857E-02	NOT IDENT.
CO-57	5.239E-03	3.025E-02	2.550E-02	1.543E-02	NOT IDENT.
CO-58	2.760E-02	5.281E-02	4.666E-02	2.694E-02	NOT IDENT.
FE-59	-1.118E-02	1.208E-01	9.925E-02	6.161E-02	NOT IDENT.
CO-60	1.783E-02	5.334E-02	4.549E-02	2.722E-02	NOT IDENT.
ZN-65	2.007E-01	1.401E-01	1.174E-01	7.148E-02	NOT IDENT.
SE-75	-1.898E-02	6.335E-02	4.627E-02	3.232E-02	NOT IDENT.
SR-85	4.948E-02	5.646E-02	4.399E-02	2.881E-02	NOT IDENT.
Y-88	-3.097E-02	5.435E-02	4.061E-02	2.773E-02	NOT IDENT.
Y-91	-2.050E+00	3.101E+01	2.543E+01	1.582E+01	NOT IDENT.
NB-94	-1.720E-02	4.627E-02	3.843E-02	2.361E-02	NOT IDENT.
NB-95	4.250E-02	7.435E-02	5.744E-02	3.794E-02	NOT IDENT.
NB-95M	1.856E+00	3.048E-01	2.281E-01	1.555E-01	NOT IDENT.
ZR-95	-6.069E-02	1.053E-01	8.537E-02	5.372E-02	NOT IDENT.
MO-99	-4.524E-01	4.122E+01	3.505E+01	2.103E+01	NOT IDENT.
TC-99M	-1.180E+21	2.159E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.229E-02	5.748E-02	4.959E-02	2.932E-02	NOT IDENT.
RH-106	1.816E-02	4.229E-01	3.486E-01	2.158E-01	NOT IDENT.
RU-106	1.816E-02	4.229E-01	3.486E-01	2.158E-01	NOT IDENT.
AG-108M	-1.049E-02	3.834E-02	3.153E-02	1.956E-02	NOT IDENT.
AG-110M	-1.390E-02	5.023E-02	4.018E-02	2.563E-02	NOT IDENT.
SN-113	-1.790E-02	5.975E-02	4.941E-02	3.048E-02	NOT IDENT.
CD-115	2.104E+01	4.845E+01	0.000E+00	2.472E+01	SHORT HLIF
SN-117M	5.342E-02	8.362E-02	7.104E-02	4.266E-02	NOT IDENT.
TE-123M	2.565E-02	3.613E-02	3.077E-02	1.843E-02	NOT IDENT.
SB-124	-3.868E-02	8.899E-02	6.707E-02	4.540E-02	NOT IDENT.
SB-125	8.723E-02	1.240E-01	1.084E-01	6.326E-02	FAIL ABUN
TE-125M	-6.757E+00	1.206E+01	9.675E+00	6.151E+00	NOT IDENT.
I-126	-2.357E-02	3.540E-01	2.878E-01	1.806E-01	NOT IDENT.
SB-126	1.901E-01	2.414E-01	1.944E-01	1.232E-01	NOT IDENT.
SB-127	-1.560E-01	3.855E+00	3.286E+00	1.967E+00	NOT IDENT.
I-131	-1.622E-01	2.086E-01	1.678E-01	1.064E-01	NOT IDENT.
TE-132	8.639E-01	1.963E+00	1.723E+00	1.002E+00	NOT IDENT.
BA-133	-3.330E-02	5.933E-02	4.132E-02	3.027E-02	NOT IDENT.
I-133	-1.027E+05	1.811E+05	0.000E+00	9.237E+04	SHORT HLIF
CS-134	1.020E-01	9.110E-02	5.703E-02	4.648E-02	FAIL ABUN
I-135	6.769E+18	1.497E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.085E-01	1.717E-01	1.333E-01	8.760E-02	NOT IDENT.
BA-137M	1.266E-02	4.696E-02	3.931E-02	2.396E-02	NOT IDENT.
CS-137	1.338E-02	4.961E-02	4.153E-02	2.531E-02	NOT IDENT.
CE-139	2.193E-03	3.769E-02	3.128E-02	1.923E-02	NOT IDENT.
BA-140	-2.695E-02	4.562E-01	3.762E-01	2.328E-01	NOT IDENT.
LA-140	-2.183E-01	1.392E-01	8.521E-02	7.102E-02	NOT IDENT.
CE-141	3.285E-02	8.447E-02	7.129E-02	4.309E-02	NOT IDENT.
CE-143	1.078E+04	3.019E+03	0.000E+00	1.540E+03	SHORT HLIF
CE-144	1.225E-01	2.836E-01	2.113E-01	1.447E-01	NOT IDENT.
PM-144	4.777E-03	4.911E-02	4.221E-02	2.505E-02	NOT IDENT.
PR-144	3.753E-01	3.684E+00	3.168E+00	1.880E+00	NOT IDENT.
PM-146	2.297E-02	5.722E-02	4.905E-02	2.919E-02	NOT IDENT.
ND-147	-1.564E-01	5.680E-01	7.924E-01	4.939E-01	FAIL ABUN
PM-149	1.275E+02	3.881E+02	0.000E+00	1.980E+02	SHORT HLIF
EU-152	-5.289E-02	1.412E-01	1.006E-01	7.202E-02	NOT IDENT.
GD-153	1.656E-01	9.778E-02	7.776E-02	4.989E-02	NOT IDENT.
EU-154	1.644E-02	1.808E-01	1.499E-01	9.223E-02	NOT IDENT.
EU-155	1.005E-01	1.168E-01	1.010E-01	5.958E-02	FAIL ABUN
TB-160	-1.162E-01	1.791E-01	1.405E-01	9.137E-02	FAIL ABUN
HO-166M	1.027E-02	7.762E-02	6.689E-02	3.960E-02	FAIL ABUN
TA-182	-1.775E-01	3.030E-01	2.371E-01	1.546E-01	NOT IDENT.
IR-192	1.820E-02	4.498E-02	3.909E-02	2.295E-02	FAIL ABUN
HG-203	6.386E-03	5.211E-02	4.486E-02	2.659E-02	FAIL ABUN
BI-207	3.245E-02	7.385E-02	6.390E-02	3.768E-02	FAIL ABUN
PB-211	-8.257E-01	9.849E-01	7.164E-01	5.025E-01	NOT IDENT.
BI-212	2.333E+00	1.104E+00	7.779E-01	5.635E-01	FAIL ABUN
RN-219	-8.744E-02	5.005E-01	4.163E-01	2.554E-01	NOT IDENT.
RA-223	-9.839E-01	9.133E-01	7.227E-01	4.659E-01	FAIL ABUN
AC-227	2.561E-01	3.084E-01	2.737E-01	1.573E-01	FAIL ABUN
TH-227	2.561E-01	3.088E-01	2.737E-01	1.575E-01	FAIL ABUN
PA-231	2.774E-01	1.828E+00	1.575E+00	9.324E-01	NOT IDENT.
TH-231	-9.839E-01	9.133E-01	7.227E-01	4.659E-01	FAIL ABUN
PA-233	7.253E-03	7.827E-02	6.700E-02	3.993E-02	FAIL ABUN
PA-234	-1.672E-01	3.996E-01	3.203E-01	2.039E-01	NOT IDENT.
PA-234M	-2.028E+00	6.278E+00	4.977E+00	3.203E+00	FAIL ABUN
NP-239	-2.798E-01	4.667E-01	3.808E-01	2.381E-01	NOT IDENT.
AM-241	-2.247E-02	8.422E-02	6.265E-02	4.297E-02	NOT IDENT.
CM-247	-1.455E-02	4.572E-02	3.766E-02	2.333E-02	NOT IDENT.
CF-249	4.638E-02	5.397E-02	4.764E-02	2.754E-02	NOT IDENT.

CF-251	5.015E-03	1.613E-01	1.334E-01	8.232E-02 NOT IDENT.
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 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON , SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	370.2823
49.72	412.3729
57.36	0.0000
59.54	499.4498
63.29	575.5085
63.29	575.5085
64.28	570.0792
67.75	531.0123
69.67	615.2952
70.83	616.2617
72.81	525.4470
72.87	525.4896
72.87	525.4896
74.82	526.8392
74.82	526.8392
74.82	526.8392
74.97	526.9407
77.11	492.6434
77.11	492.6434
77.11	492.6434
79.69	498.2452
79.80	498.3139
80.12	498.5142
80.19	498.5580
80.57	498.7946
81.00	419.2117
81.07	419.2486
81.07	419.2486
83.79	410.6397
83.79	410.6397
85.43	411.4561
86.48	411.9754
86.55	412.0098
86.79	412.1271
86.94	412.2021
87.57	412.5103
88.03	412.7355
88.47	412.9498
89.96	413.6723
91.11	414.2276
92.59	414.9345
92.59	414.9345
93.35	377.6153
94.67	405.7755
94.87	423.7252
94.87	423.7252
95.86	401.4444
97.43	296.3210
98.44	313.1856
99.53	332.5040
100.11	345.9832
103.18	356.3527
103.37	334.9173
105.31	326.3738
106.12	332.8174
109.28	365.8690
111.00	359.2918
111.76	346.1396
116.30	312.4398
117.23	338.7033
121.12	321.2285
121.78	326.6522
122.06	313.1710
123.07	298.1511
131.20	298.2035
133.52	319.1036
136.00	337.3823

136.47	335.4098
140.51	350.4312
140.51	0.0000
143.76	323.7468
144.24	311.0966
144.24	311.0966
145.44	313.5571
152.43	267.1575
153.25	264.1208
154.21	305.1648
154.21	305.1648
156.02	340.0631
158.56	281.4663
159.00	274.0162
162.66	309.4609
163.33	321.5378
165.86	280.9673
176.60	258.1826
177.52	268.2173
181.07	252.9158
184.41	253.5521
185.72	266.1375
193.51	254.8141
197.04	252.1312
205.31	268.1342
210.85	245.8374
215.65	226.8385
222.11	216.0701
227.38	230.4293
228.16	202.4095
228.18	202.4122
235.69	220.4205
235.96	220.4589
235.96	220.4589
238.63	195.5519
238.63	195.5519
240.99	195.8432
242.00	206.0403
244.70	195.6875
252.40	202.7628
252.80	199.1250
256.23	176.4448
256.23	176.4448
260.90	0.0000
264.66	187.2408
268.22	175.2291
269.46	193.6670
269.46	193.6670
271.23	212.8194
273.65	245.7853
276.40	209.1729
277.37	209.5242
277.60	203.9386
278.00	190.8839
279.20	200.3794
279.54	199.4821
280.46	233.3190
283.69	183.0553
284.31	181.2414
285.41	182.2942
285.90	0.0000
287.50	152.8734
293.27	0.0000
295.22	171.9536
295.96	172.0247
298.57	172.2713
299.98	184.7168
299.98	184.7168
300.09	184.7287
300.09	184.7287
300.13	184.7335
301.36	188.0172
302.85	175.5197
304.50	132.9436
304.50	132.9436
304.85	155.1308
308.46	153.2114
311.90	147.7722

316.51	148.1317
319.41	183.7711
320.08	183.8344
323.87	219.6941
323.87	219.6941
328.76	157.7339
333.37	184.7763
334.37	165.5791
334.37	165.5791
338.28	148.1879
338.28	148.1879
338.32	148.1917
338.32	148.1917
338.32	148.1917
340.48	141.9025
340.55	141.9079
344.28	151.8645
351.06	132.2746
351.93	123.2495
356.01	139.7430
364.49	147.8222
366.42	129.3413
383.85	148.1854
388.16	127.6914
388.63	127.7198
391.69	136.8208
400.66	117.4670
401.81	117.5290
402.40	118.5555
404.85	135.6398
410.95	123.0075
414.70	118.2017
423.72	135.7614
427.09	111.7886
427.87	113.8414
433.94	114.1366
453.88	108.9814
463.37	107.3610
468.07	100.7352
473.00	102.6465
476.78	102.8015
477.60	94.6077
487.02	92.8960
492.35	0.0000
497.08	91.1894
511.00	93.7606
514.00	86.9141
527.90	0.0000
529.87	0.0000
531.02	93.4174
537.26	96.7864
546.56	0.0000
563.25	90.2648
569.33	88.3314
569.50	88.3354
569.70	93.6633
583.19	76.6392
600.60	75.3047
602.73	82.5365
604.72	80.7971
609.32	90.6322
609.32	90.6322
610.33	86.3457
614.28	90.0635
618.01	82.2399
621.93	75.8447
621.93	75.8447
633.25	88.0915
635.95	68.5756
636.99	71.8652
645.85	86.2674
657.76	87.6934
661.66	70.2422
661.66	70.2422
664.57	0.0000
666.33	72.5436
666.50	72.5468
677.62	75.3744

685.70	90.3079
695.00	97.9581
696.49	89.6824
696.51	89.6824
697.00	85.0727
702.65	90.7764
706.68	81.6138
711.68	67.8048
720.70	49.4938
721.93	0.0000
722.78	55.9155
722.91	62.3072
723.31	65.5111
724.19	63.9300
727.33	70.3874
733.00	65.6984
735.93	65.4883
739.50	61.8105
747.24	66.6434
752.31	74.2618
753.82	71.4727
756.73	82.8276
763.94	61.4399
765.81	85.7387
766.42	98.1580
777.92	57.7621
778.90	68.1973
783.70	62.5988
785.37	67.2852
795.86	70.1525
801.95	47.1877
810.29	50.6407
810.76	52.5584
815.77	64.1129
818.51	47.8811
832.01	67.2784
834.85	62.5204
836.80	0.0000
846.77	66.5798
856.80	63.8542
860.56	56.1698
871.09	69.9199
873.19	63.1565
875.33	0.0000
879.36	53.5252
880.51	50.6204
883.24	46.7598
884.68	40.9302
889.28	51.7104
898.04	51.8257
911.20	47.0938
911.20	47.0938
911.20	47.0938
926.50	44.6481
937.49	47.4023
944.13	56.3831
946.00	56.4086
949.00	37.6335
962.29	68.1292
964.08	68.1585
966.15	76.7175
968.97	86.5787
968.97	86.5787
968.97	86.5787
983.53	38.9460
996.26	49.0808
1001.03	51.1411
1004.73	63.2294
1037.84	54.6130
1038.76	0.0000
1048.07	53.7268
1050.41	49.6978
1050.41	49.6978
1063.66	50.8647
1085.87	66.4520
1099.45	45.1172
1112.07	54.6436
1115.54	42.3365

1120.29	54.7409
1120.29	54.7409
1120.55	54.7430
1121.30	51.2193
1131.51	0.0000
1173.23	56.2522
1177.93	69.8625
1189.05	63.7526
1204.77	60.8132
1221.41	82.0625
1231.02	78.0047
1235.36	63.3032
1238.28	58.0615
1260.41	0.0000
1271.85	45.6980
1274.44	51.0371
1274.54	51.0371
1291.59	34.1393
1298.22	0.0000
1312.11	38.5591
1332.49	31.1818
1365.19	29.2104
1368.63	0.0000
1384.29	19.5432
1408.01	26.1709
1457.56	0.0000
1460.82	31.1378
1489.16	18.9655
1505.03	19.0179
1596.21	30.9018
1620.50	7.7564
1678.03	0.0000
1690.97	11.7673
1764.49	12.1509
1764.49	12.1509
1770.23	12.1616
1771.35	34.7534
1791.20	0.0000
1836.06	20.0537

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911016

Total Uranium Activity	6.3557E+00	ug/g
Total Uranium Counting Unc.	3.6452E+00	ug/g
Total Uranium Tpu	1.8598E-06	ug/g
Total Uranium Mda	1.9714E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 957714                          SAMPLE ID   : G247911016
*  ANALYST       : MXR1                             DETECTOR    : GAM05
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 9-MAR-2010 11:47:08.41           SAMPLE ALQT  : 107.420 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.649E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.531E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.429E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.157E+00

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VAX/VMS Nuclide Identification Report Generated 9-MAR-2010 13:48:59.42

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911017.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 9-MAR-2010 11:48:26.
Sample ID          : G247911017      Sample quantity   : 1.24990E+02 GRAM
Detector name      : GAM19           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.81  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials  : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 957714           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*	1097	1171	1.32	126.22	120	12	1.52E-01	7.0	
2	2	74.77*	436	1090	1.62	149.38	144	14	6.06E-02	15.9	2.40E+00
3	2	77.18	661	750	1.12	154.20	144	14	9.19E-02	8.0	
4	3	84.30	211	915	1.51	168.43	163	31	2.93E-02	25.2	8.52E+00
5	3	87.29	359	1046	1.80	174.41	163	31	4.98E-02	18.1	
6	3	92.63*	2652	602	1.35	185.08	163	31	3.68E-01	2.6	
7	0	98.65	193	655	1.32	197.10	194	11	2.67E-02	26.7	
8	0	112.67	118	774	1.30	225.12	219	11	1.64E-02	46.6	
9	0	129.09	92	358	1.06	257.93	256	7	1.27E-02	35.8	
10	0	143.79*	105	506	1.14	287.32	283	9	1.45E-02	40.3	
11	0	185.70*	708	494	1.33	371.07	365	12	9.84E-02	7.5	
12	1	209.27	165	336	1.61	418.19	404	20	2.30E-02	22.6	2.63E+00
13	3	238.51*	1390	200	1.34	476.61	469	19	1.93E-01	3.3	1.78E+00
14	3	241.48	370	191	1.95	482.56	469	19	5.14E-02	10.3	
15	0	270.04*	125	263	1.27	539.63	535	11	1.73E-02	27.2	
16	2	274.98	58	88	1.22	549.51	547	10	7.99E-03	27.5	2.18E+00
17	2	277.18	67	129	1.22	553.91	547	10	9.31E-03	31.2	
18	0	294.97*	399	253	1.31	589.46	585	10	5.55E-02	9.0	
19	0	327.90	155	242	2.80	655.30	647	15	2.15E-02	23.4	
20	0	338.06*	256	202	1.29	675.59	671	10	3.55E-02	12.2	
21	0	351.76	750	198	1.50	702.98	698	12	1.04E-01	5.2	
22	0	409.23	54	151	1.49	817.86	813	10	7.51E-03	45.0	
23	0	463.03	55	151	1.21	925.40	919	11	7.65E-03	45.3	
24	0	510.81*	180	116	1.85	1020.93	1014	15	2.50E-02	17.4	
25	0	568.49	154	175	2.10	1136.23	1129	18	2.14E-02	21.9	
26	0	583.08*	413	132	1.66	1165.41	1157	17	5.73E-02	8.1	
27	0	609.21*	506	180	1.54	1217.66	1209	18	7.02E-02	7.7	
28	0	661.71	410	77	1.71	1322.63	1318	12	5.70E-02	6.5	
29	0	727.55	101	83	1.27	1454.27	1448	12	1.40E-02	20.7	
30	0	767.82	60	170	1.85	1534.79	1526	15	8.27E-03	49.8	
31	0	795.45	33	64	1.64	1590.05	1586	9	4.56E-03	47.6	
32	0	911.35	285	70	1.53	1821.83	1814	17	3.96E-02	8.9	
33	0	969.70*	116	123	1.56	1938.53	1930	13	1.61E-02	22.1	
34	0	1001.05	140	67	1.91	2001.21	1991	17	1.94E-02	15.9	
35	0	1120.35	111	72	1.65	2239.85	2234	14	1.54E-02	18.6	
36	0	1461.00*	1310	20	1.88	2921.35	2915	14	1.82E-01	2.9	
37	0	1588.27	31	17	1.07	3176.02	3171	11	4.36E-03	30.8	
38	0	1729.29	20	6	0.87	3458.26	3454	9	2.72E-03	32.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1764.57*	98	7	1.64	3528.87	3522	14	1.36E-02	12.0	

Flag: "*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911017.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 9-MAR-2010 11:48:26
Sample ID        : G247911017 Sample quantity : 124.99 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA19 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.81 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.158E+01	2.973E+00	5.682E-01	4.232E-02	55.572
CD-109	+	88.03	*	4.914E+00	1.827E+00	1.808E+00	1.619E-01	2.718
SN-126	+	64.28		9.512E+00	1.920E+00	1.142E+00	1.668E-01	8.327
	+	86.94		1.985E+00	1.091E+00	7.380E-01	3.056E-01	2.690
	+	87.57	*	4.776E-01	1.776E-01	1.765E-01	1.574E-02	2.707
BA-137M	+	661.66	*	5.960E-01	8.497E-02	6.779E-02	3.947E-03	8.793
CS-137	+	661.66	*	6.297E-01	8.983E-02	7.161E-02	4.187E-03	8.793
TL-208	+	277.37		6.757E-01	4.285E-01	7.219E-01	7.779E-02	0.936
	+	583.19	*	5.706E-01	1.006E-01	6.076E-02	4.122E-03	9.391
		860.56		3.823E-01	3.391E-01	5.959E-01	5.335E-02	0.642
BI-211		72.87		1.495E+01	5.167E+00	7.916E+00	6.202E-01	1.888
	+	351.06	*	4.605E+00	5.658E-01	3.891E-01	2.485E-02	11.835
PB-212	+	74.82		2.518E+00	8.592E-01	7.943E-01	9.974E-02	3.169
	+	77.11		2.189E+00	3.939E-01	4.605E-01	3.720E-02	4.754
	+	238.63	*	1.908E+00	1.871E-01	1.088E-01	7.923E-03	17.541
		300.09		1.944E+00	1.034E+00	1.666E+00	1.400E-01	1.167
BI-214	+	609.32	*	1.355E+00	2.347E-01	1.233E-01	9.768E-03	10.989
	+	1120.29		1.536E+00	5.895E-01	4.821E-01	4.438E-02	3.186
	+	1764.49		1.869E+00	4.635E-01	3.243E-01	1.965E-02	5.763
PB-214	+	74.82		4.462E+00	1.502E+00	1.408E+00	1.580E-01	3.169
	+	77.11		3.859E+00	7.638E-01	8.118E-01	9.372E-02	4.754
	+	242.00		3.083E+00	6.836E-01	5.880E-01	4.766E-02	5.244
	+	295.22		1.509E+00	3.024E-01	2.845E-01	2.484E-02	5.305
	+	351.93	*	1.671E+00	2.251E-01	1.404E-01	1.185E-02	11.901
RA-224	+	240.99	*	5.452E+00	1.167E+00	1.165E+00	6.604E-02	4.678
RA-226	+	609.32	*	1.355E+00	2.347E-01	1.233E-01	9.768E-03	10.989
	+	1120.29		1.536E+00	5.895E-01	4.821E-01	4.438E-02	3.186
	+	1764.49		1.869E+00	4.635E-01	3.243E-01	1.965E-02	5.763
AC-228	+	338.32		1.746E+00	8.369E-01	4.285E-01	1.767E-01	4.074
	+	911.20	*	1.903E+00	4.046E-01	2.233E-01	2.604E-02	8.520
	+	968.97		1.337E+00	6.742E-01	4.017E-01	9.726E-02	3.329
RA-228	+	338.32		1.746E+00	8.369E-01	4.285E-01	1.767E-01	4.074
	+	911.20	*	1.903E+00	4.046E-01	2.233E-01	2.604E-02	8.520
	+	968.97		1.337E+00	6.742E-01	4.017E-01	9.726E-02	3.329

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.518E+00	8.241E-01	7.943E-01	6.374E-02	3.169
	+	77.11		2.189E+00	3.939E-01	4.605E-01	3.720E-02	4.754
	+	238.63	*	1.908E+00	1.871E-01	1.088E-01	7.923E-03	17.541
		300.09		1.944E+00	1.563E+00	1.666E+00	1.014E+00	1.167
TH-229	+	85.43		7.305E-01	3.736E-01	4.538E-01	3.958E-02	1.610
	+	88.47		7.363E-01	2.738E-01	2.698E-01	2.398E-02	2.729
		193.51	*	1.803E-02	6.373E-01	1.027E+00	5.540E-02	0.018
		210.85		1.375E+00	1.256E+00	1.859E+00	1.023E-01	0.740
TH-232	+	338.32		1.746E+00	4.388E-01	4.285E-01	2.477E-02	4.074
	+	911.20	*	1.903E+00	4.046E-01	2.233E-01	2.604E-02	8.520
	+	968.97		1.337E+00	6.742E-01	4.017E-01	9.726E-02	3.329
PA-234M	+	766.42		2.755E+01	3.074E+01	2.156E+01	1.089E+01	1.278
	+	1001.03	*	3.115E+01	1.033E+01	8.109E+00	7.548E-01	3.841
TH-234	+	63.29	*	2.468E+01	5.596E+00	2.982E+00	5.333E-01	8.276
	+	92.59		2.951E+01	6.667E+00	1.482E+00	3.257E-01	19.908
U-235		89.96		8.477E+00	2.545E+00	2.436E+00	6.000E-01	3.480
	+	93.35		2.229E+01	5.257E+00	1.114E+00	2.558E-01	20.007
	+	143.76	*	4.320E-01	3.547E-01	4.058E-01	6.337E-02	1.065
		163.33		6.139E-01	5.609E-01	9.209E-01	1.529E-01	0.667
	+	185.72		6.316E-01	1.002E-01	7.945E-02	4.245E-03	7.950
		205.31		6.048E-01	6.061E-01	9.924E-01	1.675E-01	0.609
NP-237	+	86.48	*	1.425E+00	6.084E-01	5.322E-01	1.210E-01	2.678
		95.86		4.073E+00	2.034E+00	2.150E+00	5.107E-01	1.895
U-238	+	63.29	*	2.468E+01	5.596E+00	2.982E+00	5.333E-01	8.276
	+	92.59		2.951E+01	2.906E+00	1.482E+00	1.234E-01	19.908
ANH-511	+	511.00	*	1.904E-01	6.703E-02	5.040E-02	2.974E-03	3.777

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-1.286E-02	3.832E-01	6.330E-01	4.295E-02	-0.020
NA-22		1274.54	*	-2.930E-02	4.692E-02	7.302E-02	4.871E-03	-0.401
NA-24		1368.63	*	-3.835E+01	4.692E-02	Half-Life too short		
SC-46		889.28	*	1.119E-04	4.604E-02	7.430E-02	6.456E-03	0.002
	+	1120.55		2.683E-01	1.014E-01	1.468E-01	9.257E-03	1.828
V-48		944.13		1.352E-01	1.143E+00	1.860E+00	1.567E-01	0.073
		983.53	*	-1.597E-02	9.047E-02	1.426E-01	1.147E-02	-0.112
		1312.11		-6.007E-02	1.042E-01	1.621E-01	1.153E-02	-0.371
CR-51		320.08	*	-5.939E-02	5.091E-01	7.720E-01	4.988E-02	-0.077
MN-54		834.85	*	-2.486E-02	4.220E-02	6.475E-02	5.151E-03	-0.384
CO-56		846.77	*	-1.820E-02	4.246E-02	6.572E-02	5.332E-03	-0.277
		1037.84		4.733E-02	3.153E-01	5.360E-01	4.258E-02	0.088
		1238.28		1.626E-01	1.089E-01	1.983E-01	1.303E-02	0.820
		1771.35		-7.203E-01	3.614E-01	4.070E-01	2.453E-02	-1.770
CO-57		122.06	*	-4.078E-02	3.345E-02	5.203E-02	3.105E-03	-0.784
		136.47		-1.545E-02	2.727E-01	4.418E-01	2.911E-02	-0.035
CO-58		810.76	*	-1.045E-03	4.434E-02	7.170E-02	5.494E-03	-0.015
FE-59		1099.45	*	-3.942E-02	1.010E-01	1.628E-01	1.221E-02	-0.242

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60	1291.59			3.043E-02	1.421E-01	2.377E-01	1.968E-02	0.128
	1173.23			-1.281E-02	5.011E-02	8.176E-02	4.480E-03	-0.157
	1332.49	*		3.019E-02	4.346E-02	7.710E-02	5.682E-03	0.392
ZN-65	1115.54	*		7.406E-04	1.023E-01	1.475E-01	9.431E-03	0.005
SE-75	121.12			-1.223E-01	1.745E-01	2.767E-01	2.548E-02	-0.442
	136.00			-2.306E-02	5.338E-02	8.538E-02	4.919E-03	-0.270
	264.66	*		-2.967E-02	5.992E-02	8.535E-02	4.965E-03	-0.348
	279.54			2.687E-02	1.447E-01	2.148E-01	1.347E-02	0.125
	400.66			1.672E-01	2.912E-01	4.995E-01	4.468E-02	0.335
SR-85	514.00	*		8.609E-02	4.835E-02	7.939E-02	4.688E-03	1.084
Y-88	898.04			-1.255E-02	4.924E-02	7.756E-02	6.865E-03	-0.162
	1836.06	*		-1.222E-02	3.869E-02	5.926E-02	3.383E-03	-0.206
Y-91	1204.77	*		1.341E+01	2.703E+01	4.661E+01	2.721E+00	0.288
NB-94	702.65	*		-1.684E-02	3.973E-02	6.275E-02	3.952E-03	-0.268
	871.09			-2.155E-02	3.767E-02	5.739E-02	4.845E-03	-0.376
NB-95	765.81	*		1.451E-01	6.238E-02	1.136E-01	8.031E-03	1.277
NB-95M	235.69	*		3.859E-01	1.975E-01	3.001E-01	2.230E-02	1.286
ZR-95	724.19			9.631E-02	1.183E-01	1.810E-01	1.355E-02	0.532
	756.73	*		-1.310E-02	8.405E-02	1.348E-01	1.085E-02	-0.097
MO-99	140.51			-1.831E+00	8.426E+01	1.194E+02	2.725E+01	-0.015
	181.07			-1.208E+01	6.783E+01	9.455E+01	1.657E+01	-0.128
	366.42			2.569E+02	3.110E+02	5.402E+02	3.075E+01	0.476
	739.50	*		-2.508E+01	3.930E+01	6.045E+01	8.954E+00	-0.415
	777.92			3.311E+01	1.115E+02	1.852E+02	1.337E+01	0.179
TC-99M	140.51	*		-5.302E+13	1.115E+02	Half-Life	too short	
RU-103	497.08	*		-3.577E-02	4.323E-02	6.666E-02	8.308E-03	-0.537
	610.33	+		1.497E+01	3.229E+00	3.360E+00	5.073E-01	4.455
RH-106	621.93	*		-1.042E-01	3.787E-01	6.084E-01	7.100E-02	-0.171
	1050.41			8.083E-01	2.883E+00	4.941E+00	3.592E-01	0.164
RU-106	621.93	*		-1.042E-01	3.786E-01	6.084E-01	3.587E-02	-0.171
	1050.41			8.083E-01	2.883E+00	4.941E+00	3.592E-01	0.164
AG-108M	433.94	*		-1.047E-03	3.537E-02	5.865E-02	3.599E-03	-0.018
	614.28			-6.187E-03	4.540E-02	6.351E-02	4.009E-03	-0.097
	722.91			-3.857E-03	4.542E-02	6.325E-02	4.365E-03	-0.061
AG-110M	657.76	*		2.918E-02	4.556E-02	6.870E-02	4.263E-03	0.425
	677.62			-3.386E-01	3.279E-01	4.860E-01	3.089E-02	-0.697
	706.68			-2.219E-02	2.476E-01	4.009E-01	2.677E-02	-0.055
	763.94			3.111E-01	2.332E-01	3.680E-01	2.698E-02	0.845
	884.68			-9.571E-03	5.542E-02	8.796E-02	7.831E-03	-0.109
	937.49			-4.273E-02	1.346E-01	2.105E-01	1.852E-02	-0.203
	1384.29			-1.497E-01	1.758E-01	2.597E-01	1.967E-02	-0.576
	1505.03			-4.280E-01	2.964E-01	3.763E-01	2.651E-02	-1.138
SN-113	391.69	*		3.215E-02	5.239E-02	9.008E-02	5.375E-03	0.357
CD-115	260.90			-2.356E-04	5.239E-02	Half-Life	too short	
	492.35			-9.922E-06	5.239E-02	Half-Life	too short	
	527.90	*		1.860E-05	5.239E-02	Half-Life	too short	
SN-117M	156.02			3.407E+00	3.451E+00	5.772E+00	3.093E-01	0.590
	158.56	*		-2.718E-03	8.307E-02	1.342E-01	7.144E-03	-0.020
TE-123M	159.00	*		-3.487E-02	3.668E-02	5.717E-02	3.088E-03	-0.610

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SB-124		602.73		1.926E-02	5.372E-02	7.589E-02	4.493E-03	0.254
		645.85		-4.161E-01	5.898E-01	9.120E-01	5.987E-02	-0.456
		722.78		-5.321E-02	4.762E-01	6.610E-01	4.493E-02	-0.080
SB-125		1690.97	*	-3.868E-02	9.433E-02	1.437E-01	9.882E-03	-0.269
		427.87	*	-4.413E-02	1.072E-01	1.739E-01	1.034E-02	-0.254
	+	463.37		5.167E-01	4.694E-01	6.141E-01	4.137E-02	0.841
		600.60		9.353E-02	2.264E-01	3.442E-01	2.346E-02	0.272
		635.95		2.739E-02	2.977E-01	4.908E-01	3.367E-02	0.056
TE-125M		109.28	*	1.945E+00	1.634E+01	2.346E+01	2.118E+00	0.083
I-126		388.63		-3.520E-02	2.370E-01	3.919E-01	2.187E-02	-0.090
		666.33	*	2.172E-02	3.278E-01	4.667E-01	2.742E-02	0.047
		753.82		2.143E+00	2.478E+00	4.298E+00	2.973E-01	0.499
SB-126		414.70		4.416E-02	1.270E-01	1.884E-01	1.066E-02	0.234
		666.50		4.943E-03	1.134E-01	1.611E-01	9.468E-03	0.031
		695.00		5.689E-02	1.073E-01	1.819E-01	1.129E-02	0.313
		697.00		2.822E-01	3.863E-01	6.623E-01	4.127E-02	0.426
		720.70	*	-1.074E-01	2.262E-01	3.001E-01	1.955E-02	-0.358
SB-127		856.80		-9.001E-01	7.114E-01	1.018E+00	8.397E-02	-0.884
		252.40		9.619E+00	1.134E+01	1.768E+01	7.314E+00	0.544
		473.00		2.811E-01	3.660E+00	6.090E+00	7.501E-01	0.046
		685.70	*	1.476E+00	2.947E+00	4.897E+00	5.390E-01	0.301
		783.70		6.838E+00	8.861E+00	1.510E+01	1.913E+00	0.453
I-131		80.19		-2.149E+00	1.431E+01	1.470E+01	1.232E+00	-0.146
		284.31		9.039E-01	2.356E+00	4.030E+00	2.611E-01	0.224
		364.49	*	2.627E-02	1.882E-01	3.167E-01	2.034E-02	0.083
TE-132		636.99		-2.381E-01	2.504E+00	4.071E+00	2.694E-01	-0.058
		49.72		-1.243E+01	5.493E+01	9.026E+01	1.009E+01	-0.138
	+	111.76		1.837E+02	1.723E+02	1.932E+02	2.091E+01	0.951
BA-133		116.30		1.263E+01	9.814E+01	1.408E+02	1.499E+01	0.090
		228.16	*	8.606E-01	2.086E+00	3.394E+00	5.196E-01	0.254
		81.00		1.080E-01	2.011E-01	2.148E-01	3.301E-02	0.503
	+	276.40		6.250E-01	3.984E-01	7.281E-01	9.161E-02	0.858
		302.85		-9.988E-02	1.598E-01	2.603E-01	2.971E-02	-0.384
I-133		356.01	*	1.255E-02	5.328E-02	7.881E-02	8.858E-03	0.159
		383.85		-6.617E-02	3.369E-01	5.558E-01	5.869E-02	-0.119
		529.87	*	1.447E-02	3.369E-01	Half-Life	too short	
		875.33		2.372E+00	3.369E-01	Half-Life	too short	
		1298.22		-5.308E+00	3.369E-01	Half-Life	too short	
CS-134		563.25		4.752E-01	4.800E-01	7.454E-01	4.514E-02	0.638
	+	569.33		1.177E+00	5.195E-01	5.454E-01	3.330E-02	2.158
		604.72		3.139E-04	4.454E-02	6.328E-02	3.764E-03	0.005
	+	795.86	*	6.629E-02	6.329E-02	9.731E-02	7.317E-03	0.681
		801.95		-1.770E-01	4.920E-01	7.239E-01	5.488E-02	-0.245
CS-135		1365.19		-7.792E-01	1.119E+00	1.655E+00	1.290E-01	-0.471
		268.22	*	4.760E-01	2.128E-01	3.465E-01	2.644E-02	1.374
		546.56		-1.464E+14	2.128E-01	Half-Life	too short	
		836.80		-3.708E+12	2.128E-01	Half-Life	too short	
		1038.76		5.251E+13	2.128E-01	Half-Life	too short	
I-135		1131.51		1.498E+14	2.128E-01	Half-Life	too short	

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136		1260.41	*	-6.616E+13	2.128E-01	Half-Life	too short	
		1457.56		8.830E+15	2.128E-01	Half-Life	too short	
		1678.03		-1.323E+14	2.128E-01	Half-Life	too short	
		1791.20		-1.685E+14	2.128E-01	Half-Life	too short	
		153.25		-3.443E-01	1.312E+00	2.103E+00	1.634E-01	-0.164
		176.60		4.128E-01	7.694E-01	1.265E+00	8.406E-02	0.326
	+	273.65		9.341E-01	5.181E-01	1.153E+00	7.869E-02	0.810
		340.55		5.694E-01	2.581E-01	4.196E-01	2.627E-02	1.357
		818.51		4.847E-02	9.823E-02	1.661E-01	1.288E-02	0.292
		1048.07	*	-8.453E-02	1.458E-01	2.319E-01	1.793E-02	-0.364
CE-139		1235.36		3.539E-01	8.075E-01	1.383E+00	1.401E-01	0.256
		165.86	*	-1.578E-02	3.891E-02	6.193E-02	3.233E-03	-0.255
	BA-140	162.66		9.494E-01	1.269E+00	2.089E+00	1.289E-01	0.454
		304.85		-2.520E+00	1.963E+00	2.863E+00	8.180E-01	-0.880
LA-140		423.72		4.835E-01	2.749E+00	4.607E+00	1.486E+00	0.105
		537.26	*	3.920E-01	4.173E-01	6.930E-01	2.310E-01	0.566
	+	328.76		1.615E+00	7.627E-01	7.940E-01	5.168E-02	2.033
		487.02		5.833E-02	1.992E-01	3.353E-01	2.220E-02	0.174
		815.77		-2.648E-01	4.383E-01	6.686E-01	5.898E-02	-0.396
		1596.21	*	-2.162E-02	1.210E-01	1.838E-01	1.244E-02	-0.118
CE-141		145.44	*	1.787E-01	1.031E-01	1.567E-01	9.026E-03	1.140
CE-143		57.36		1.085E-02	1.031E-01	Half-Life	too short	
		293.27	*	8.772E-03	1.031E-01	Half-Life	too short	
		664.57		4.121E-02	1.031E-01	Half-Life	too short	
		721.93		-6.020E-03	1.031E-01	Half-Life	too short	
CE-144		80.12		-5.207E-01	5.593E+00	5.768E+00	4.780E-01	-0.090
		133.52	*	2.508E-01	2.950E-01	4.330E-01	6.000E-02	0.579
PM-144		476.78		-3.241E-02	7.397E-02	1.190E-01	8.205E-03	-0.272
		618.01		1.522E-02	3.904E-02	6.224E-02	3.891E-03	0.244
PR-144		696.49	*	2.274E-02	3.961E-02	6.726E-02	4.192E-03	0.338
		696.51	*	1.692E+00	2.970E+00	5.041E+00	3.138E-01	0.336
PM-146		1489.16		2.888E-01	1.168E+01	1.932E+01	1.370E+00	0.015
		453.88	*	3.903E-02	4.675E-02	8.123E-02	6.861E-03	0.480
		633.25		-3.483E-01	1.579E+00	2.533E+00	9.541E-01	-0.138
		735.93		5.381E-05	1.613E-01	2.626E-01	7.219E-02	0.000
ND-147		747.24		-4.101E-02	1.179E-01	1.863E-01	2.536E-02	-0.220
		91.11		1.292E+01	1.413E+00	1.468E+00	1.357E-01	8.801
		319.41		-4.690E-01	5.157E+00	8.133E+00	4.729E-01	-0.058
		531.02	*	-6.048E-01	8.209E-01	1.278E+00	1.735E-01	-0.473
PM-149		285.90	*	1.271E-04	8.209E-01	Half-Life	too short	
EU-152		121.78		-1.420E-01	9.544E-02	1.464E-01	1.129E-02	-0.970
		244.70		4.377E-02	4.097E-01	5.751E-01	3.268E-02	0.076
		344.28	*	-3.014E-02	1.336E-01	1.914E-01	1.245E-02	-0.157
		778.90		2.362E-01	2.985E-01	5.141E-01	3.717E-02	0.459
		964.08		4.870E-01	3.811E-01	5.994E-01	4.937E-02	0.812
		1085.87		-2.751E-01	3.886E-01	6.045E-01	4.113E-02	-0.455
GD-153		1112.07		-2.913E-01	3.500E-01	5.110E-01	3.286E-02	-0.570
		1408.01		1.587E-01	2.147E-01	3.817E-01	2.772E-02	0.416
		69.67		1.950E+00	2.928E+00	4.032E+00	3.103E-01	0.484

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154	+	97.43	*	3.186E-01	1.721E-01	2.036E-01	1.584E-02	1.565
		103.18		-1.288E-01	1.662E-01	2.291E-01	1.659E-02	-0.562
		123.07		-1.351E-02	6.708E-02	1.084E-01	1.027E-02	-0.125
		723.31		-1.144E-02	2.064E-01	2.885E-01	2.210E-02	-0.040
		873.19		9.030E-02	3.018E-01	5.010E-01	5.905E-02	0.180
		996.26		3.721E-01	4.015E-01	6.264E-01	1.073E-01	0.594
EU-155		1004.73		2.026E-01	2.775E-01	4.346E-01	4.803E-02	0.466
		1274.44	*	-6.188E-02	1.310E-01	2.071E-01	2.066E-02	-0.299
	+	86.55		5.800E-01	2.158E-01	2.666E-01	2.375E-02	2.175
		105.31	*	-1.084E-01	1.766E-01	2.274E-01	1.635E-02	-0.477
	+	86.79		1.595E+00	5.930E-01	7.233E-01	6.398E-02	2.205
		197.04		2.622E-01	6.996E-01	1.142E+00	6.188E-02	0.230
TB-160		215.65		2.273E-01	9.951E-01	1.556E+00	8.611E-02	0.146
		298.57		2.861E-01	1.522E-01	2.462E-01	1.432E-02	1.162
		879.36	*	-5.551E-03	1.659E-01	2.670E-01	2.284E-02	-0.021
		962.29		3.805E-01	6.997E-01	1.032E+00	8.515E-02	0.369
		966.15		8.064E-01	3.287E-01	5.474E-01	4.497E-02	1.473
		1177.93		-2.403E-01	4.354E-01	6.933E-01	3.836E-02	-0.347
HO-166M		1271.85		-2.991E-01	7.420E-01	1.180E+00	7.818E-02	-0.254
		80.57		-1.747E-01	6.012E-01	6.123E-01	5.094E-02	-0.285
	+	184.41		5.018E-01	7.963E-02	1.075E-01	5.737E-03	4.666
		280.46		7.868E-03	1.079E-01	1.591E-01	9.215E-03	0.049
		410.95		7.638E-02	3.452E-01	5.069E-01	2.860E-02	0.151
		711.68	*	-1.080E-02	6.663E-02	1.072E-01	6.864E-03	-0.101
TA-182		752.31		-4.756E-02	3.090E-01	4.959E-01	3.421E-02	-0.096
		810.29		-1.344E-02	6.531E-02	1.039E-01	7.928E-03	-0.129
		67.75		3.059E-02	1.826E-01	2.652E-01	2.024E-02	0.115
	+	100.11		6.962E-01	3.759E-01	4.264E-01	3.204E-02	1.633
		152.43		1.180E-03	4.426E-01	7.168E-01	3.879E-02	0.002
		222.11		-8.781E-02	4.338E-01	6.893E-01	3.840E-02	-0.127
IR-192	+	1121.30		7.368E-01	2.784E-01	4.027E-01	2.535E-02	1.830
		1189.05		-1.771E-01	3.462E-01	5.517E-01	3.122E-02	-0.321
		1221.41	*	1.021E-01	2.109E-01	3.646E-01	2.198E-02	0.280
		1231.02		-8.963E-02	5.289E-01	8.677E-01	5.329E-02	-0.103
	+	295.96		1.157E+00	2.196E-01	3.426E-01	2.023E-02	3.378
		308.46		-1.328E-02	1.112E-01	1.856E-01	1.092E-02	-0.072
HG-203		316.51	*	2.732E-02	4.052E-02	7.011E-02	4.096E-03	0.390
		468.07		1.813E-02	9.232E-02	1.349E-01	9.059E-03	0.134
		70.83		-1.901E+00	2.295E+00	3.192E+00	4.982E-01	-0.595
		72.87		3.942E+00	1.455E+00	2.088E+00	3.155E-01	1.888
		279.20	*	7.874E-03	5.343E-02	7.912E-02	4.837E-03	0.100
		72.81		7.399E-01	2.971E-01	4.528E-01	3.547E-02	1.634
BI-207	+	74.97		7.257E-01	2.374E-01	3.040E-01	2.416E-02	2.388
	+	569.70		1.821E-01	8.032E-02	8.238E-02	4.890E-03	2.210
		1063.66	*	-1.333E-02	5.535E-02	9.067E-02	6.438E-03	-0.147
		1770.23		-4.556E-01	5.900E-01	6.412E-01	3.868E-02	-0.710
		46.54	*	2.118E+00	4.068E+00	6.808E+00	5.132E-01	0.311
		404.85	*	-2.220E-01	9.577E-01	1.351E+00	6.480E-01	-0.164
PB-210		427.09		-5.013E-01	1.794E+00	2.909E+00	1.332E+00	-0.172

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-212	+	832.01		-2.871E-01	1.121E+00	1.758E+00	9.097E-01	-0.163
		727.33	*	2.143E+00	9.171E-01	1.291E+00	1.440E-01	1.660
		785.37		5.720E+00	3.859E+00	6.889E+00	5.038E-01	0.830
RN-219	+	1620.50		-2.460E-01	2.955E+00	4.727E+00	3.157E-01	-0.052
		271.23		7.544E-01	4.141E-01	4.977E-01	3.988E-02	1.516
		401.81	*	2.250E-01	4.652E-01	7.746E-01	1.034E-01	0.290
RA-223	+	81.07		2.485E-01	4.542E-01	4.864E-01	4.065E-02	0.511
		83.79		4.348E-01	2.223E-01	3.097E-01	2.656E-02	1.404
		94.87		1.012E+01	1.284E+00	1.575E+00	1.268E-01	6.425
	+	144.24		1.448E+00	1.172E+00	1.584E+00	1.108E-01	0.914
		154.21		-9.422E-03	4.891E-01	7.912E-01	5.242E-02	-0.012
		269.46		5.861E-01	3.202E-01	4.026E-01	2.424E-02	1.456
	+	323.87	*	3.481E-01	8.167E-01	1.224E+00	1.974E-01	0.284
		338.28		6.928E+00	1.837E+00	2.695E+00	2.759E-01	2.571
		79.69		1.614E+00	2.809E+00	2.997E+00	5.112E-01	0.538
AC-227		235.96		1.175E+00	2.640E-01	4.166E-01	3.345E-02	2.821
		256.23	*	1.130E-02	3.233E-01	5.134E-01	5.229E-02	0.022
		299.98		2.205E+00	1.152E+00	1.842E+00	2.025E-01	1.197
		304.50		-3.386E+00	1.901E+00	2.801E+00	4.273E-01	-1.209
		334.37		1.668E+00	2.494E+00	3.082E+00	4.383E-01	0.541
		79.80		9.564E-01	3.673E+00	3.862E+00	8.358E-01	0.248
TH-227		235.96		1.175E+00	2.609E-01	4.166E-01	3.025E-02	2.821
		256.23	*	1.130E-02	3.233E-01	5.134E-01	6.153E-02	0.022
		299.98		2.205E+00	1.152E+00	1.842E+00	2.025E-01	1.197
		304.50		-3.386E+00	1.901E+00	2.801E+00	4.273E-01	-1.209
		334.37		1.668E+00	2.494E+00	3.082E+00	4.383E-01	0.541
		283.69	*	6.844E-01	1.659E+00	2.838E+00	3.722E-01	0.241
PA-231		301.36		4.061E-01	6.765E-01	1.105E+00	1.144E-01	0.368
TH-231	+	81.07		2.485E-01	4.542E-01	4.864E-01	4.065E-02	0.511
		83.79		4.348E-01	2.223E-01	3.097E-01	2.656E-02	1.404
		94.87		1.012E+01	1.284E+00	1.575E+00	1.268E-01	6.425
	+	144.24		1.448E+00	1.172E+00	1.584E+00	1.108E-01	0.914
		154.21		-9.422E-03	4.891E-01	7.912E-01	5.242E-02	-0.012
		269.46		5.861E-01	3.202E-01	4.026E-01	2.424E-02	1.456
	+	323.87	*	3.481E-01	8.167E-01	1.224E+00	1.974E-01	0.284
		338.28		6.928E+00	1.837E+00	2.695E+00	2.759E-01	2.571
		300.13		9.568E-01	5.238E-01	8.279E-01	1.109E-01	1.156
PA-233		311.90	*	-6.545E-03	7.280E-02	1.217E-01	7.515E-03	-0.054
		340.48		2.234E+00	1.038E+00	1.492E+00	3.462E-01	1.497
		94.67		3.792E+00	5.732E-01	6.308E-01	7.589E-02	6.011
		98.44		3.444E-01	2.657E-01	2.168E-01	1.206E-01	1.589
PA-234	+	111.00		3.656E-01	3.054E-01	4.531E-01	4.880E-02	0.807
		131.20		1.640E-01	1.551E-01	2.307E-01	1.328E-02	0.711
		569.50		1.616E+00	7.130E-01	7.432E-01	4.411E-02	2.175
	+	733.00		-1.456E-01	4.741E-01	6.404E-01	1.378E-01	-0.227
		880.51		1.539E-01	3.105E-01	5.237E-01	4.488E-02	0.294
		883.24		1.029E-01	3.334E-01	5.415E-01	3.640E-01	0.190
		926.50		4.299E-02	1.985E-01	3.257E-01	8.229E-02	0.132
		946.00	*	6.286E-02	3.342E-01	5.470E-01	1.021E-01	0.115

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	949.00		3.818E-01	4.795E-01	8.284E-01	6.942E-02	0.461
		99.53		6.248E-01	3.374E-01	3.898E-01	2.950E-02	1.603
		103.37		-2.164E-02	1.461E-01	2.076E-01	1.500E-02	-0.104
		106.12		4.944E-02	1.274E-01	1.852E-01	1.296E-02	0.267
		117.23	*	9.276E-02	5.837E-01	8.384E-01	5.231E-02	0.111
AM-241	+	228.18		1.105E-01	2.665E-01	4.344E-01	2.434E-02	0.254
		277.60		3.088E-01	1.938E-01	3.447E-01	1.995E-02	0.896
CM-247	+	59.54	*	1.619E-01	2.440E-01	3.609E-01	2.971E-02	0.449
CF-249	+	278.00		1.312E+00	8.231E-01	1.460E+00	8.453E-02	0.898
		287.50		-5.309E-01	1.375E+00	2.271E+00	1.318E-01	-0.234
		402.40	*	1.735E-02	4.454E-02	7.176E-02	4.024E-03	0.242
CF-251	+	252.80		6.458E-01	1.193E+00	1.952E+00	1.115E-01	0.331
		333.37		1.092E-01	3.053E-01	3.155E-01	1.827E-02	0.346
CF-251	+	388.16	*	-1.266E-02	4.624E-02	7.596E-02	4.241E-03	-0.167
		177.52	*	5.751E-02	1.639E-01	2.679E-01	1.417E-02	0.215
		227.38		2.388E-01	4.355E-01	7.138E-01	3.997E-02	0.335
		285.41		1.358E+00	2.460E+00	4.239E+00	2.459E-01	0.320

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]G247911017      *
* Acquisition date   : 9-MAR-2010 11:48:26 Detector SN#                   *
* Detector ID        : GAM19 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 02:00:01.81 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G247911017 Analyst initials: MXR1                 *
* Batch Number       : 957714 Sample Quantity : 1.2499E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54 MS Isotope                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                              *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.158E+01	2.914E+00	5.677E-01	0.000E+00
CD-109	4.914E+00	1.791E+00	1.878E+00	0.000E+00
SN-126	4.776E-01	1.740E-01	1.833E-01	0.000E+00
BA-137M	5.960E-01	8.327E-02	6.849E-02	0.000E+00
CS-137	6.297E-01	8.803E-02	7.236E-02	0.000E+00
TL-208	5.706E-01	9.854E-02	6.150E-02	0.000E+00
BI-211	4.605E+00	5.544E-01	3.967E-01	0.000E+00
PB-212	1.908E+00	1.834E-01	1.115E-01	0.000E+00
BI-214	1.355E+00	2.300E-01	1.247E-01	0.000E+00
PB-214	1.671E+00	2.206E-01	1.432E-01	0.000E+00
RA-224	5.452E+00	1.143E+00	1.194E+00	0.000E+00
RA-226	1.355E+00	2.300E-01	1.247E-01	0.000E+00
AC-228	1.903E+00	3.965E-01	2.246E-01	0.000E+00
RA-228	1.903E+00	3.965E-01	2.246E-01	0.000E+00
TH-228	1.908E+00	1.834E-01	1.115E-01	0.000E+00
TH-229	1.803E-02	6.246E-01	1.055E+00	0.000E+00
TH-232	1.903E+00	3.965E-01	2.246E-01	0.000E+00
PA-234M	3.115E+01	1.012E+01	8.145E+00	0.000E+00
TH-234	2.468E+01	5.484E+00	3.111E+00	0.000E+00
U-235	4.320E-01	3.477E-01	4.188E-01	0.000E+00
NP-237	1.425E+00	5.962E-01	5.529E-01	0.000E+00
U-238	2.468E+01	5.484E+00	3.111E+00	0.000E+00
ANH-511	1.904E-01	6.569E-02	5.111E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.286E-02	3.756E-01	6.426E-01	0.000E+00 NOT IDENT.
NA-22	-2.930E-02	4.598E-02	7.310E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.778E+07	0.000E+00	0.000E+00 SHORT HLIF
SC-46	1.119E-04	4.512E-02	7.476E-02	0.000E+00 FAIL ABUN

V-48	-1.597E-02	8.866E-02	1.433E-01	0.000E+00	NOT IDENT.
CR-51	-5.939E-02	4.989E-01	7.880E-01	0.000E+00	NOT IDENT.
MN-54	-2.486E-02	4.135E-02	6.521E-02	0.000E+00	NOT IDENT.
CO-56	-1.820E-02	4.161E-02	6.618E-02	0.000E+00	NOT IDENT.
CO-57	-4.078E-02	3.278E-02	5.382E-02	0.000E+00	NOT IDENT.
CO-58	-1.045E-03	4.346E-02	7.224E-02	0.000E+00	NOT IDENT.
FE-59	-3.942E-02	9.898E-02	1.633E-01	0.000E+00	NOT IDENT.
CO-60	3.019E-02	4.259E-02	7.714E-02	0.000E+00	NOT IDENT.
ZN-65	7.406E-04	1.002E-01	1.479E-01	0.000E+00	NOT IDENT.
SE-75	-2.967E-02	5.872E-02	8.735E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.738E-02	8.050E-02	0.000E+00	NOT IDENT.
Y-88	-1.222E-02	3.792E-02	5.901E-02	0.000E+00	NOT IDENT.
Y-91	1.341E+01	2.648E+01	4.670E+01	0.000E+00	NOT IDENT.
NB-94	-1.684E-02	3.893E-02	6.335E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	6.113E-02	1.146E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.936E-01	3.076E-01	0.000E+00	NOT IDENT.
ZR-95	-1.310E-02	8.237E-02	1.360E-01	0.000E+00	NOT IDENT.
MO-99	-2.508E+01	3.852E+01	6.098E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.391E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.577E-02	4.237E-02	6.762E-02	0.000E+00	FAIL ABUN
RH-106	-1.042E-01	3.712E-01	6.153E-01	0.000E+00	NOT IDENT.
RU-106	-1.042E-01	3.710E-01	6.153E-01	0.000E+00	NOT IDENT.
AG-108M	-1.047E-03	3.466E-02	5.961E-02	0.000E+00	NOT IDENT.
AG-110M	2.918E-02	4.464E-02	6.943E-02	0.000E+00	NOT IDENT.
SN-113	3.215E-02	5.134E-02	9.169E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	4.135E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-2.718E-03	8.141E-02	1.383E-01	0.000E+00	NOT IDENT.
TE-123M	-3.487E-02	3.595E-02	5.892E-02	0.000E+00	NOT IDENT.
SB-124	-3.868E-02	9.244E-02	1.433E-01	0.000E+00	NOT IDENT.
SB-125	-4.413E-02	1.050E-01	1.768E-01	0.000E+00	FAIL ABUN
TE-125M	1.945E+00	1.602E+01	2.430E+01	0.000E+00	NOT IDENT.
I-126	2.172E-02	3.212E-01	4.715E-01	0.000E+00	NOT IDENT.
SB-126	-1.074E-01	2.217E-01	3.029E-01	0.000E+00	NOT IDENT.
SB-127	1.476E+00	2.888E+00	4.946E+00	0.000E+00	NOT IDENT.
I-131	2.627E-02	1.844E-01	3.226E-01	0.000E+00	NOT IDENT.
TE-132	8.606E-01	2.044E+00	3.481E+00	0.000E+00	FAIL ABUN
BA-133	1.255E-02	5.221E-02	8.033E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.455E+05	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.629E-02	6.203E-02	9.807E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	2.086E-01	3.546E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.316E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.453E-02	1.429E-01	2.328E-01	0.000E+00	FAIL ABUN
CE-139	-1.578E-02	3.814E-02	6.379E-02	0.000E+00	NOT IDENT.
BA-140	3.920E-01	4.090E-01	7.023E-01	0.000E+00	NOT IDENT.
LA-140	-2.162E-02	1.186E-01	1.834E-01	0.000E+00	FAIL ABUN
CE-141	0.000E+00	1.010E-01	1.617E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.372E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	2.508E-01	2.891E-01	4.473E-01	0.000E+00	NOT IDENT.
PM-144	2.274E-02	3.882E-02	6.791E-02	0.000E+00	NOT IDENT.
PR-144	1.692E+00	2.910E+00	5.090E+00	0.000E+00	NOT IDENT.
PM-146	3.903E-02	4.582E-02	8.252E-02	0.000E+00	NOT IDENT.
ND-147	-6.048E-01	8.045E-01	1.296E+00	0.000E+00	NOT IDENT.
PM-149	0.000E+00	3.436E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-3.014E-02	1.309E-01	1.952E-01	0.000E+00	NOT IDENT.
GD-153	0.000E+00	1.686E-01	2.112E-01	0.000E+00	FAIL ABUN
EU-154	-6.188E-02	1.284E-01	2.074E-01	0.000E+00	NOT IDENT.
EU-155	-1.084E-01	1.730E-01	2.357E-01	0.000E+00	FAIL ABUN
TB-160	-5.551E-03	1.626E-01	2.687E-01	0.000E+00	FAIL ABUN
HO-166M	-1.080E-02	6.530E-02	1.082E-01	0.000E+00	FAIL ABUN
TA-182	1.021E-01	2.066E-01	3.652E-01	0.000E+00	FAIL ABUN
IR-192	2.732E-02	3.971E-02	7.157E-02	0.000E+00	FAIL ABUN
HG-203	7.874E-03	5.237E-02	8.091E-02	0.000E+00	NOT IDENT.
BI-207	-1.333E-02	5.424E-02	9.101E-02	0.000E+00	FAIL ABUN
PB-210	2.118E+00	3.987E+00	7.132E+00	0.000E+00	NOT IDENT.
PB-211	-2.220E-01	9.386E-01	1.375E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.987E-01	1.303E+00	0.000E+00	FAIL ABUN
RN-219	2.250E-01	4.558E-01	7.882E-01	0.000E+00	FAIL ABUN
RA-223	3.481E-01	8.003E-01	1.250E+00	0.000E+00	FAIL ABUN
AC-227	1.130E-02	3.168E-01	5.257E-01	0.000E+00	NOT IDENT.
TH-227	1.130E-02	3.168E-01	5.257E-01	0.000E+00	NOT IDENT.
PA-231	6.844E-01	1.625E+00	2.901E+00	0.000E+00	NOT IDENT.
TH-231	3.481E-01	8.003E-01	1.250E+00	0.000E+00	FAIL ABUN
PA-233	-6.545E-03	7.135E-02	1.243E-01	0.000E+00	NOT IDENT.
PA-234	6.286E-02	3.275E-01	5.499E-01	0.000E+00	FAIL ABUN
NP-239	9.276E-02	5.720E-01	8.676E-01	0.000E+00	FAIL ABUN
AM-241	1.619E-01	2.391E-01	3.768E-01	0.000E+00	NOT IDENT.
CM-247	1.735E-02	4.365E-02	7.301E-02	0.000E+00	FAIL ABUN
CF-249	-1.266E-02	4.532E-02	7.733E-02	0.000E+00	NOT IDENT.

CF-251	5.751E-02	1.607E-01	2.757E-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]G247911017.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 9-MAR-2010 11:48:26.
Sample ID          : G247911017 Sample quantity   : 1.24990E+02 GRAM
Detector name      : GAM19 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.81 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity        : 5.00000
Batch ID           : 957714 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	1460.82	1310	10.66*	1.168E+00	3.158E+01	3.158E+01	9.41
CD-109	88.03	359	3.70*	6.097E+00	4.776E+00	4.914E+00	37.19
SN-126	64.28	1097	9.60	3.609E+00	9.512E+00	9.512E+00	20.18
	86.94	359	8.90	6.097E+00	1.985E+00	1.985E+00	54.95
	87.57	359	37.00*	6.097E+00	4.776E-01	4.776E-01	37.19
BA-137M	661.66	410	89.90*	2.301E+00	5.953E-01	5.960E-01	14.26
CS-137	661.66	410	85.10*	2.301E+00	6.289E-01	6.297E-01	14.27
TL-208	277.37	67	6.60	4.513E+00	6.757E-01	6.757E-01	63.41
	583.19	413	85.00*	2.555E+00	5.706E-01	5.706E-01	17.62
	860.56	-----	12.50	1.836E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	4.857E+00	-----	Line Not Found	-----
	351.06	750	12.92*	3.788E+00	4.605E+00	4.605E+00	12.29
PB-212	74.82	436	10.28	5.063E+00	2.518E+00	2.518E+00	34.13
	77.11	661	17.10	5.306E+00	2.189E+00	2.189E+00	17.99
	238.63	1390	43.60*	5.017E+00	1.908E+00	1.908E+00	9.81
	300.09	-----	3.30	4.261E+00	-----	Line Not Found	-----
BI-214	609.32	506	45.49*	2.465E+00	1.355E+00	1.355E+00	17.32
	1120.29	111	14.92	1.455E+00	1.536E+00	1.536E+00	38.38
	1764.49	98	15.30	1.030E+00	1.869E+00	1.869E+00	24.80
PB-214	74.82	436	5.80	5.063E+00	4.462E+00	4.462E+00	33.66
	77.11	661	9.70	5.306E+00	3.859E+00	3.859E+00	19.79
	242.00	370	7.25	4.975E+00	3.083E+00	3.083E+00	22.17
	295.22	399	18.42	4.315E+00	1.509E+00	1.509E+00	20.03
	351.93	750	35.60*	3.788E+00	1.671E+00	1.671E+00	13.47
RA-224	240.99	370	4.10*	4.975E+00	5.452E+00	5.452E+00	21.40
RA-226	609.32	506	45.49*	2.465E+00	1.355E+00	1.355E+00	17.32
	1120.29	111	14.92	1.455E+00	1.536E+00	1.536E+00	38.38
	1764.49	98	15.30	1.030E+00	1.869E+00	1.869E+00	24.80
AC-228	338.32	256	11.27	3.902E+00	1.746E+00	1.746E+00	47.94
	911.20	285	25.80*	1.746E+00	1.903E+00	1.903E+00	21.26
	968.97	116	15.80	1.653E+00	1.337E+00	1.337E+00	50.41
RA-228	338.32	256	11.27	3.902E+00	1.746E+00	1.746E+00	47.94

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	285	25.80*	1.746E+00	1.903E+00	1.903E+00	21.26
	968.97	116	15.80	1.653E+00	1.337E+00	1.337E+00	50.41
TH-228	74.82	436	10.28	5.063E+00	2.518E+00	2.518E+00	32.73
	77.11	661	17.10	5.306E+00	2.189E+00	2.189E+00	17.99
	238.63	1390	43.60*	5.017E+00	1.908E+00	1.908E+00	9.81
	300.09	-----	3.30	4.261E+00	-----	Line Not Found	-----
TH-229	85.43	211	14.70	5.900E+00	7.305E-01	7.305E-01	51.14
	88.47	359	24.00	6.097E+00	7.363E-01	7.363E-01	37.19
	193.51	-----	4.41*	5.746E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.447E+00	-----	Line Not Found	-----
TH-232	338.32	256	11.27	3.902E+00	1.746E+00	1.746E+00	25.14
	911.20	285	25.80*	1.746E+00	1.903E+00	1.903E+00	21.26
	968.97	116	15.80	1.653E+00	1.337E+00	1.337E+00	50.41
PA-234M	766.42	60	0.32	2.028E+00	2.755E+01	2.755E+01	111.59
	1001.03	140	0.84*	1.607E+00	3.115E+01	3.115E+01	33.15
TH-234	63.29	1097	3.70*	3.609E+00	2.468E+01	2.468E+01	22.67
	92.59	2652	4.23	6.381E+00	2.951E+01	2.951E+01	22.59
U-235	89.96	-----	3.47	6.249E+00	-----	Line Not Found	-----
	93.35	2652	5.60	6.381E+00	2.229E+01	2.229E+01	23.58
	143.76	105	10.96*	6.635E+00	4.320E-01	4.320E-01	82.12
	163.33	-----	5.08	6.300E+00	-----	Line Not Found	-----
	185.72	708	57.20	5.887E+00	6.316E-01	6.316E-01	15.87
	205.31	-----	5.01	5.540E+00	-----	Line Not Found	-----
NP-237	86.48	359	12.40*	6.097E+00	1.425E+00	1.425E+00	42.69
	95.86	-----	2.68	6.514E+00	-----	Line Not Found	-----
U-238	63.29	1097	3.70*	3.609E+00	2.468E+01	2.468E+01	22.67
	92.59	2652	4.23	6.381E+00	2.951E+01	2.951E+01	9.85
ANH-511	511.00	180	100.00*	2.842E+00	1.904E-01	1.904E-01	35.21

Flag: "*" = Keyline

Total number of lines in spectrum 39
Number of unidentified lines 5
Number of lines tentatively identified by NID 34 87.18%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.158E+01	3.158E+01	0.297E+01	9.41	
CD-109	461.40D	1.03	4.776E+00	4.914E+00	1.827E+00	37.19	
SN-126	2.30E+05Y	1.00	4.776E-01	4.776E-01	1.776E-01	37.19	
BA-137M	30.08Y	1.00	5.953E-01	5.960E-01	0.850E-01	14.26	
CS-137	30.08Y	1.00	6.289E-01	6.297E-01	0.898E-01	14.27	
TL-208	1.41E+10Y	1.00	5.706E-01	5.706E-01	1.006E-01	17.62	
BI-211	7.04E+08Y	1.00	4.605E+00	4.605E+00	0.566E+00	12.29	
PB-212	1.41E+10Y	1.00	1.908E+00	1.908E+00	0.187E+00	9.81	
BI-214	1600.00Y	1.00	1.355E+00	1.355E+00	0.235E+00	17.32	
PB-214	1600.00Y	1.00	1.671E+00	1.671E+00	0.225E+00	13.47	
RA-224	1.41E+10Y	1.00	5.452E+00	5.452E+00	1.167E+00	21.40	
RA-226	1600.00Y	1.00	1.355E+00	1.355E+00	0.235E+00	17.32	
AC-228	1.41E+10Y	1.00	1.903E+00	1.903E+00	0.405E+00	21.26	
RA-228	1.41E+10Y	1.00	1.903E+00	1.903E+00	0.405E+00	21.26	
TH-228	1.41E+10Y	1.00	1.908E+00	1.908E+00	0.187E+00	9.81	
TH-229	7340.00Y	1.00	7.363E-01	7.363E-01	2.738E-01	37.19	K
TH-232	1.41E+10Y	1.00	1.903E+00	1.903E+00	0.405E+00	21.26	
PA-234M	4.47E+09Y	1.00	3.115E+01	3.115E+01	1.033E+01	33.15	
TH-234	4.47E+09Y	1.00	2.468E+01	2.468E+01	0.560E+01	22.67	
U-235	7.04E+08Y	1.00	4.320E-01	4.320E-01	3.547E-01	82.12	
NP-237	2.14E+06Y	1.00	1.425E+00	1.425E+00	0.608E+00	42.69	
U-238	4.47E+09Y	1.00	2.468E+01	2.468E+01	0.560E+01	22.67	
ANH-511	1.00E+09Y	1.00	1.904E-01	1.904E-01	0.670E-01	35.21	
Total Activity :			1.459E+02	1.460E+02			

Grand Total Activity : 1.459E+02 1.460E+02

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	98.65	193	655	1.32	197.10	194	11	2.67E-02	53.5	6.61E+00	T
0	112.67	118	774	1.30	225.12	219	11	1.64E-02	93.2	6.85E+00	T
0	129.09	92	358	1.06	257.93	256	7	1.27E-02	71.7	6.82E+00	
1	209.27	165	336	1.61	418.19	404	20	2.30E-02	45.2	5.47E+00	
0	270.04	125	263	1.27	539.63	535	11	1.73E-02	54.3	4.60E+00	T
2	274.98	58	88	1.22	549.51	547	10	7.99E-03	55.0	4.54E+00	T
0	327.90	155	242	2.80	655.30	647	15	2.15E-02	46.8	3.99E+00	T
0	409.23	54	151	1.49	817.86	813	10	7.51E-03	90.1	3.38E+00	
0	463.03	55	151	1.21	925.40	919	11	7.65E-03	90.6	3.07E+00	T
0	568.49	154	175	2.10	1136.23	1129	18	2.14E-02	43.7	2.61E+00	T
0	727.55	101	83	1.27	1454.27	1448	12	1.40E-02	41.3	2.12E+00	T
0	795.45	33	64	1.64	1590.05	1586	9	4.56E-03	95.2	1.97E+00	T
0	1588.27	31	17	1.07	3176.02	3171	11	4.36E-03	61.6	1.10E+00	
0	1729.29	20	6	0.87	3458.26	3454	9	2.72E-03	65.5	1.04E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247911017.CNF;1  *
* Acquisition date   : 9-MAR-2010 11:48:26.  Detector SN#      :              *
* Detector ID        : GAM19                      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 02:00:01.81             Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G247911017             Analyst initials: MXR1          *
* Batch Number       : 957714                 Sample Quantity : 1.24990E+02 GRAM  *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54.1MS 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	3.158E+01	2.973E+00	5.682E-01	4.232E-02	55.572
CD-109	4.914E+00	1.827E+00	1.808E+00	1.619E-01	2.718
SN-126	4.776E-01	1.776E-01	1.765E-01	1.574E-02	2.707
BA-137M	5.960E-01	8.497E-02	6.779E-02	3.947E-03	8.793
CS-137	6.297E-01	8.983E-02	7.161E-02	4.187E-03	8.793
TL-208	5.706E-01	1.006E-01	6.076E-02	4.122E-03	9.391
BI-211	4.605E+00	5.658E-01	3.891E-01	2.485E-02	11.835
PB-212	1.908E+00	1.871E-01	1.088E-01	7.923E-03	17.541
BI-214	1.355E+00	2.347E-01	1.233E-01	9.768E-03	10.989
PB-214	1.671E+00	2.251E-01	1.404E-01	1.185E-02	11.901
RA-224	5.452E+00	1.167E+00	1.165E+00	6.604E-02	4.678
RA-226	1.355E+00	2.347E-01	1.233E-01	9.768E-03	10.989
AC-228	1.903E+00	4.046E-01	2.233E-01	2.604E-02	8.520
RA-228	1.903E+00	4.046E-01	2.233E-01	2.604E-02	8.520
TH-228	1.908E+00	1.871E-01	1.088E-01	7.923E-03	17.541
TH-229	7.363E-01	2.738E-01	1.027E+00	5.540E-02	0.717
TH-232	1.903E+00	4.046E-01	2.233E-01	2.604E-02	8.520
PA-234M	3.115E+01	1.033E+01	8.109E+00	7.548E-01	3.841

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	2.468E+01	5.596E+00	2.982E+00	5.333E-01	8.276
U-235	4.320E-01	3.547E-01	4.058E-01	6.337E-02	1.065
NP-237	1.425E+00	6.084E-01	5.322E-01	1.210E-01	2.678
U-238	2.468E+01	5.596E+00	2.982E+00	5.333E-01	8.276
ANH-511	1.904E-01	6.703E-02	5.040E-02	2.974E-03	3.777

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.286E-02		3.832E-01	6.330E-01	4.295E-02	-0.020
NA-22	-2.930E-02		4.692E-02	7.302E-02	4.871E-03	-0.401
NA-24	-3.835E+01		2.438E+01	Half-Life too short		
SC-46	1.119E-04		4.604E-02	7.430E-02	6.456E-03	0.002
V-48	-1.597E-02		9.047E-02	1.426E-01	1.147E-02	-0.112
CR-51	-5.939E-02		5.091E-01	7.720E-01	4.988E-02	-0.077
MN-54	-2.486E-02		4.220E-02	6.475E-02	5.151E-03	-0.384
CO-56	-1.820E-02		4.246E-02	6.572E-02	5.332E-03	-0.277
CO-57	-4.078E-02		3.345E-02	5.203E-02	3.105E-03	-0.784
CO-58	-1.045E-03		4.434E-02	7.170E-02	5.494E-03	-0.015
FE-59	-3.942E-02		1.010E-01	1.628E-01	1.221E-02	-0.242
CO-60	3.019E-02		4.346E-02	7.710E-02	5.682E-03	0.392
ZN-65	7.406E-04		1.023E-01	1.475E-01	9.431E-03	0.005
SE-75	-2.967E-02		5.992E-02	8.535E-02	4.965E-03	-0.348
SR-85	8.609E-02		4.835E-02	7.939E-02	4.688E-03	1.084
Y-88	-1.222E-02		3.869E-02	5.926E-02	3.383E-03	-0.206
Y-91	1.341E+01		2.703E+01	4.661E+01	2.721E+00	0.288
NB-94	-1.684E-02		3.973E-02	6.275E-02	3.952E-03	-0.268
NB-95	1.451E-01		6.238E-02	1.136E-01	8.031E-03	1.277
NB-95M	3.859E-01		1.975E-01	3.001E-01	2.230E-02	1.286
ZR-95	-1.310E-02		8.405E-02	1.348E-01	1.085E-02	-0.097
MO-99	-2.508E+01		3.930E+01	6.045E+01	8.954E+00	-0.415
TC-99M	-5.302E+13		1.220E+15	Half-Life too short		
RU-103	-3.577E-02		4.323E-02	6.666E-02	8.308E-03	-0.537
RH-106	-1.042E-01		3.787E-01	6.084E-01	7.100E-02	-0.171
RU-106	-1.042E-01		3.786E-01	6.084E-01	3.587E-02	-0.171
AG-108M	-1.047E-03		3.537E-02	5.865E-02	3.599E-03	-0.018
AG-110M	2.918E-02		4.556E-02	6.870E-02	4.263E-03	0.425
SN-113	3.215E-02		5.239E-02	9.008E-02	5.375E-03	0.357
CD-115	1.860E-05		2.110E-05	Half-Life too short		
SN-117M	-2.718E-03		8.307E-02	1.342E-01	7.144E-03	-0.020
TE-123M	-3.487E-02		3.668E-02	5.717E-02	3.088E-03	-0.610
SB-124	-3.868E-02		9.433E-02	1.437E-01	9.882E-03	-0.269
SB-125	-4.413E-02		1.072E-01	1.739E-01	1.034E-02	-0.254
TE-125M	1.945E+00		1.634E+01	2.346E+01	2.118E+00	0.083
I-126	2.172E-02		3.278E-01	4.667E-01	2.742E-02	0.047
SB-126	-1.074E-01		2.262E-01	3.001E-01	1.955E-02	-0.358
SB-127	1.476E+00		2.947E+00	4.897E+00	5.390E-01	0.301

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	2.627E-02		1.882E-01	3.167E-01	2.034E-02	0.083
TE-132	8.606E-01		2.086E+00	3.394E+00	5.196E-01	0.254
BA-133	1.255E-02		5.328E-02	7.881E-02	8.858E-03	0.159
I-133	1.447E-02		7.421E-02	Half-Life	too short	
CS-134	6.629E-02	+	6.329E-02	9.731E-02	7.317E-03	0.681
CS-135	4.760E-01		2.128E-01	3.465E-01	2.644E-02	1.374
I-135	-6.616E+13		6.716E+13	Half-Life	too short	
CS-136	-8.453E-02		1.458E-01	2.319E-01	1.793E-02	-0.364
CE-139	-1.578E-02		3.891E-02	6.193E-02	3.233E-03	-0.255
BA-140	3.920E-01		4.173E-01	6.930E-01	2.310E-01	0.566
LA-140	-2.162E-02		1.210E-01	1.838E-01	1.244E-02	-0.118
CE-141	1.787E-01		1.031E-01	1.567E-01	9.026E-03	1.140
CE-143	8.772E-03		1.210E-03	Half-Life	too short	
CE-144	2.508E-01		2.950E-01	4.330E-01	6.000E-02	0.579
PM-144	2.274E-02		3.961E-02	6.726E-02	4.192E-03	0.338
PR-144	1.692E+00		2.970E+00	5.041E+00	3.138E-01	0.336
PM-146	3.903E-02		4.675E-02	8.123E-02	6.861E-03	0.480
ND-147	-6.048E-01		8.209E-01	1.278E+00	1.735E-01	-0.473
PM-149	1.271E-04		1.753E-04	Half-Life	too short	
EU-152	-3.014E-02		1.336E-01	1.914E-01	1.245E-02	-0.157
GD-153	3.186E-01	+	1.721E-01	2.036E-01	1.584E-02	1.565
EU-154	-6.188E-02		1.310E-01	2.071E-01	2.066E-02	-0.299
EU-155	-1.084E-01		1.766E-01	2.274E-01	1.635E-02	-0.477
TB-160	-5.551E-03		1.659E-01	2.670E-01	2.284E-02	-0.021
HO-166M	-1.080E-02		6.663E-02	1.072E-01	6.864E-03	-0.101
TA-182	1.021E-01		2.109E-01	3.646E-01	2.198E-02	0.280
IR-192	2.732E-02		4.052E-02	7.011E-02	4.096E-03	0.390
HG-203	7.874E-03		5.343E-02	7.912E-02	4.837E-03	0.100
BI-207	-1.333E-02		5.535E-02	9.067E-02	6.438E-03	-0.147
PB-210	2.118E+00		4.068E+00	6.808E+00	5.132E-01	0.311
PB-211	-2.220E-01		9.577E-01	1.351E+00	6.480E-01	-0.164
BI-212	2.143E+00	+	9.171E-01	1.291E+00	1.440E-01	1.660
RN-219	2.250E-01		4.652E-01	7.746E-01	1.034E-01	0.290
RA-223	3.481E-01		8.167E-01	1.224E+00	1.974E-01	0.284
AC-227	1.130E-02		3.233E-01	5.134E-01	5.229E-02	0.022
TH-227	1.130E-02		3.233E-01	5.134E-01	6.153E-02	0.022
PA-231	6.844E-01		1.659E+00	2.838E+00	3.722E-01	0.241
TH-231	3.481E-01		8.167E-01	1.224E+00	1.974E-01	0.284
PA-233	-6.545E-03		7.280E-02	1.217E-01	7.515E-03	-0.054
PA-234	6.286E-02		3.342E-01	5.470E-01	1.021E-01	0.115
NP-239	9.276E-02		5.837E-01	8.384E-01	5.231E-02	0.111
AM-241	1.619E-01		2.440E-01	3.609E-01	2.971E-02	0.449
CM-247	1.735E-02		4.454E-02	7.176E-02	4.024E-03	0.242
CF-249	-1.266E-02		4.624E-02	7.596E-02	4.241E-03	-0.167
CF-251	5.751E-02		1.639E-01	2.679E-01	1.417E-02	0.215

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]G247911017          *
* Acquisition date   : 9-MAR-2010 11:48:26 Detector SN#      :              *
* Detector ID        : GAM19                      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 02:00:01.81             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247911017              Analyst initials: MXR1         *
* Batch Number       : 957714                  Sample Quantity : 1.2499E+02 GRAM  *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 12-MAR-2009 10:24:54 MS Isotope       :              *
* MSD DPM           : 0.000                     MSD Isotope   :              *
* LCS DPM           : 0.000                     LCS Isotope   :              *
* LCSD DPM          : 0.000                     LCSD Isotope  :              *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.158E+01	2.914E+00	2.840E-01	1.487E+00
CD-109	4.914E+00	1.791E+00	9.396E-01	9.137E-01
SN-126	4.776E-01	1.740E-01	9.171E-02	8.880E-02
BA-137M	5.960E-01	8.327E-02	3.427E-02	4.249E-02
CS-137	6.297E-01	8.803E-02	3.620E-02	4.491E-02
TL-208	5.706E-01	9.854E-02	3.077E-02	5.028E-02
BI-211	4.605E+00	5.544E-01	1.984E-01	2.829E-01
PB-212	1.908E+00	1.834E-01	5.578E-02	9.356E-02
BI-214	1.355E+00	2.300E-01	6.239E-02	1.173E-01
PB-214	1.671E+00	2.206E-01	7.162E-02	1.125E-01
RA-224	5.452E+00	1.143E+00	5.975E-01	5.834E-01
RA-226	1.355E+00	2.300E-01	6.239E-02	1.173E-01
AC-228	1.903E+00	3.965E-01	1.124E-01	2.023E-01
RA-228	1.903E+00	3.965E-01	1.124E-01	2.023E-01
TH-228	1.908E+00	1.834E-01	5.578E-02	9.356E-02
TH-229	1.803E-02	6.246E-01	5.280E-01	3.187E-01
TH-232	1.903E+00	3.965E-01	1.124E-01	2.023E-01
PA-234M	3.115E+01	1.012E+01	4.075E+00	5.163E+00
TH-234	2.468E+01	5.484E+00	1.557E+00	2.798E+00
U-235	4.320E-01	3.477E-01	2.095E-01	1.774E-01
NP-237	1.425E+00	5.962E-01	2.766E-01	3.042E-01
U-238	2.468E+01	5.484E+00	1.557E+00	2.798E+00
ANH-511	1.904E-01	6.569E-02	2.557E-02	3.351E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.286E-02	3.756E-01	3.215E-01	1.916E-01 NOT IDENT.
NA-22	-2.930E-02	4.598E-02	3.657E-02	2.346E-02 NOT IDENT.
NA-24	-3.835E+07	4.778E+07	0.000E+00	2.438E+07 SHORT HLIF
SC-46	1.119E-04	4.512E-02	3.740E-02	2.302E-02 FAIL ABUN

V-48	-1.597E-02	8.866E-02	7.170E-02	4.524E-02	NOT IDENT.
CR-51	-5.939E-02	4.989E-01	3.943E-01	2.545E-01	NOT IDENT.
MN-54	-2.486E-02	4.135E-02	3.262E-02	2.110E-02	NOT IDENT.
CO-56	-1.820E-02	4.161E-02	3.311E-02	2.123E-02	NOT IDENT.
CO-57	-4.078E-02	3.278E-02	2.692E-02	1.673E-02	NOT IDENT.
CO-58	-1.045E-03	4.346E-02	3.614E-02	2.217E-02	NOT IDENT.
FE-59	-3.942E-02	9.898E-02	8.172E-02	5.050E-02	NOT IDENT.
CO-60	3.019E-02	4.259E-02	3.859E-02	2.173E-02	NOT IDENT.
ZN-65	7.406E-04	1.002E-01	7.402E-02	5.114E-02	NOT IDENT.
SE-75	-2.967E-02	5.872E-02	4.370E-02	2.996E-02	NOT IDENT.
SR-85	8.609E-02	4.738E-02	4.028E-02	2.418E-02	NOT IDENT.
Y-88	-1.222E-02	3.792E-02	2.952E-02	1.935E-02	NOT IDENT.
Y-91	1.341E+01	2.648E+01	2.336E+01	1.351E+01	NOT IDENT.
NB-94	-1.684E-02	3.893E-02	3.169E-02	1.986E-02	NOT IDENT.
NB-95	1.451E-01	6.113E-02	5.733E-02	3.119E-02	NOT IDENT.
NB-95M	3.859E-01	1.936E-01	1.539E-01	9.875E-02	NOT IDENT.
ZR-95	-1.310E-02	8.237E-02	6.802E-02	4.203E-02	NOT IDENT.
MO-99	-2.508E+01	3.852E+01	3.051E+01	1.965E+01	NOT IDENT.
TC-99M	-5.302E+19	2.391E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.577E-02	4.237E-02	3.383E-02	2.161E-02	FAIL ABUN
RH-106	-1.042E-01	3.712E-01	3.078E-01	1.894E-01	NOT IDENT.
RU-106	-1.042E-01	3.710E-01	3.078E-01	1.893E-01	NOT IDENT.
AG-108M	-1.047E-03	3.466E-02	2.983E-02	1.769E-02	NOT IDENT.
AG-110M	2.918E-02	4.464E-02	3.473E-02	2.278E-02	NOT IDENT.
SN-113	3.215E-02	5.134E-02	4.587E-02	2.619E-02	NOT IDENT.
CD-115	1.860E+01	4.135E+01	0.000E+00	2.110E+01	SHORT HLIF
SN-117M	-2.718E-03	8.141E-02	6.920E-02	4.154E-02	NOT IDENT.
TE-123M	-3.487E-02	3.595E-02	2.948E-02	1.834E-02	NOT IDENT.
SB-124	-3.868E-02	9.244E-02	7.168E-02	4.716E-02	NOT IDENT.
SB-125	-4.413E-02	1.050E-01	8.846E-02	5.359E-02	FAIL ABUN
TE-125M	1.945E+00	1.602E+01	1.215E+01	8.171E+00	NOT IDENT.
I-126	2.172E-02	3.212E-01	2.359E-01	1.639E-01	NOT IDENT.
SB-126	-1.074E-01	2.217E-01	1.515E-01	1.131E-01	NOT IDENT.
SB-127	1.476E+00	2.888E+00	2.474E+00	1.473E+00	NOT IDENT.
I-131	2.627E-02	1.844E-01	1.614E-01	9.411E-02	NOT IDENT.
TE-132	8.606E-01	2.044E+00	1.741E+00	1.043E+00	FAIL ABUN
BA-133	1.255E-02	5.221E-02	4.019E-02	2.664E-02	FAIL ABUN
I-133	1.447E+04	1.455E+05	0.000E+00	7.421E+04	SHORT HLIF
CS-134	6.629E-02	6.203E-02	4.906E-02	3.165E-02	FAIL ABUN
CS-135	4.760E-01	2.086E-01	1.774E-01	1.064E-01	NOT IDENT.
I-135	-6.616E+19	1.316E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.453E-02	1.429E-01	1.165E-01	7.292E-02	FAIL ABUN
CE-139	-1.578E-02	3.814E-02	3.191E-02	1.946E-02	NOT IDENT.
BA-140	3.920E-01	4.090E-01	3.514E-01	2.087E-01	NOT IDENT.
LA-140	-2.162E-02	1.186E-01	9.174E-02	6.050E-02	FAIL ABUN
CE-141	1.787E-01	1.010E-01	8.089E-02	5.153E-02	NOT IDENT.
CE-143	8.772E+03	2.372E+03	0.000E+00	1.210E+03	SHORT HLIF
CE-144	2.508E-01	2.891E-01	2.238E-01	1.475E-01	NOT IDENT.
PM-144	2.274E-02	3.882E-02	3.398E-02	1.981E-02	NOT IDENT.
PR-144	1.692E+00	2.910E+00	2.546E+00	1.485E+00	NOT IDENT.
PM-146	3.903E-02	4.582E-02	4.128E-02	2.338E-02	NOT IDENT.
ND-147	-6.048E-01	8.045E-01	6.482E-01	4.105E-01	NOT IDENT.
PM-149	1.271E+02	3.436E+02	0.000E+00	1.753E+02	SHORT HLIF
EU-152	-3.014E-02	1.309E-01	9.765E-02	6.678E-02	NOT IDENT.
GD-153	3.186E-01	1.686E-01	1.057E-01	8.603E-02	FAIL ABUN
EU-154	-6.188E-02	1.284E-01	1.037E-01	6.552E-02	NOT IDENT.
EU-155	-1.084E-01	1.730E-01	1.179E-01	8.829E-02	FAIL ABUN
TB-160	-5.551E-03	1.626E-01	1.344E-01	8.294E-02	FAIL ABUN
HO-166M	-1.080E-02	6.530E-02	5.412E-02	3.332E-02	FAIL ABUN
TA-182	1.021E-01	2.066E-01	1.827E-01	1.054E-01	FAIL ABUN
IR-192	2.732E-02	3.971E-02	3.581E-02	2.026E-02	FAIL ABUN
HG-203	7.874E-03	5.237E-02	4.048E-02	2.672E-02	NOT IDENT.
BI-207	-1.333E-02	5.424E-02	4.553E-02	2.767E-02	FAIL ABUN
PB-210	2.118E+00	3.987E+00	3.568E+00	2.034E+00	NOT IDENT.
PB-211	-2.220E-01	9.386E-01	6.879E-01	4.789E-01	NOT IDENT.
BI-212	2.143E+00	8.987E-01	6.519E-01	4.585E-01	FAIL ABUN
RN-219	2.250E-01	4.558E-01	3.943E-01	2.326E-01	FAIL ABUN
RA-223	3.481E-01	8.003E-01	6.251E-01	4.083E-01	FAIL ABUN
AC-227	1.130E-02	3.168E-01	2.630E-01	1.616E-01	NOT IDENT.
TH-227	1.130E-02	3.168E-01	2.630E-01	1.616E-01	NOT IDENT.
PA-231	6.844E-01	1.625E+00	1.451E+00	8.293E-01	NOT IDENT.
TH-231	3.481E-01	8.003E-01	6.251E-01	4.083E-01	FAIL ABUN
PA-233	-6.545E-03	7.135E-02	6.216E-02	3.640E-02	NOT IDENT.
PA-234	6.286E-02	3.275E-01	2.751E-01	1.671E-01	FAIL ABUN
NP-239	9.276E-02	5.720E-01	4.340E-01	2.918E-01	FAIL ABUN
AM-241	1.619E-01	2.391E-01	1.885E-01	1.220E-01	NOT IDENT.
CM-247	1.735E-02	4.365E-02	3.653E-02	2.227E-02	FAIL ABUN
CF-249	-1.266E-02	4.532E-02	3.869E-02	2.312E-02	NOT IDENT.

CF-251	5.751E-02	1.607E-01	1.379E-01	8.197E-02 NOT IDENT.
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 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON , SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	543.2734
49.72	649.7440
57.36	0.0000
59.54	752.8195
63.29	819.9583
63.29	819.9583
64.28	873.9255
67.75	856.2915
69.67	811.2737
70.83	943.4934
72.81	874.9129
72.87	849.3699
72.87	849.3699
74.82	878.3784
74.82	878.3784
74.82	878.3784
74.97	878.5021
77.11	892.8985
77.11	892.8985
77.11	892.8985
79.69	905.4657
79.80	905.5584
80.12	905.8193
80.19	905.8777
80.57	906.1867
81.00	801.7815
81.07	801.8301
81.07	801.8301
83.79	814.2720
83.79	814.2720
85.43	815.4378
86.48	816.1823
86.55	816.2314
86.79	816.3976
86.94	816.5052
87.57	816.9482
88.03	817.2681
88.47	817.5757
89.96	818.6094
91.11	819.3999
92.59	820.4120
92.59	820.4120
93.35	820.9288
94.67	821.8209
94.87	485.1825
94.87	485.1825
95.86	485.5747
97.43	486.1921
98.44	486.5879
99.53	453.4523
100.11	453.6619
103.18	543.4105
103.37	504.0841
105.31	583.7761
106.12	529.8378
109.28	595.4407
111.00	587.9519
111.76	546.3546
116.30	474.1920
117.23	459.5810
121.12	482.4932
121.78	516.0089
122.06	510.9083
123.07	475.8697
131.20	449.0178
133.52	434.6186
136.00	490.5937

136.47	473.9333
140.51	451.8018
140.51	0.0000
143.76	446.6266
144.24	456.2710
144.24	456.2710
145.44	443.0909
152.43	423.5966
153.25	439.7455
154.21	436.8161
154.21	436.8161
156.02	393.6783
158.56	406.0101
159.00	441.2932
162.66	381.3716
163.33	369.7685
165.86	430.2595
176.60	374.7839
177.52	381.4456
181.07	407.6877
184.41	398.0640
185.72	366.9586
193.51	345.6896
197.04	339.8075
205.31	322.6900
210.85	342.2593
215.65	329.2682
222.11	311.1032
227.38	296.4251
228.16	299.8570
228.18	299.8591
235.69	350.0285
235.96	350.0742
235.96	350.0742
238.63	290.2458
238.63	290.2458
240.99	290.5684
242.00	229.8915
244.70	231.9656
252.40	241.7459
252.80	257.4611
256.23	267.9532
256.23	267.9532
260.90	0.0000
264.66	250.5849
268.22	219.4218
269.46	240.5924
269.46	240.5924
271.23	171.5543
273.65	171.7352
276.40	217.1895
277.37	236.8958
277.60	236.9182
278.00	235.4504
279.20	237.0811
279.54	229.5648
280.46	220.5892
283.69	217.8691
284.31	213.3847
285.41	207.1260
285.90	0.0000
287.50	220.0392
293.27	0.0000
295.22	261.7982
295.96	323.9245
298.57	197.9146
299.98	190.4119
299.98	190.4119
300.09	190.4221
300.09	190.4221
300.13	190.4246
301.36	219.4805
302.85	233.3381
304.50	248.1476
304.50	248.1476
304.85	227.1204
308.46	194.4334
311.90	196.5394

316.51	176.6602
319.41	196.8981
320.08	196.1263
323.87	179.9418
323.87	179.9418
328.76	174.1210
333.37	148.1895
334.37	145.1576
334.37	145.1576
338.28	181.8742
338.28	181.8742
338.32	181.8766
338.32	181.8766
338.32	181.8766
340.48	212.0529
340.55	212.0585
344.28	206.1592
351.06	186.4795
351.93	183.7424
356.01	161.9139
364.49	168.6621
366.42	162.2171
383.85	165.1178
388.16	169.1454
388.63	165.3934
391.69	148.5405
400.66	139.5100
401.81	140.3023
402.40	146.0024
404.85	164.7365
410.95	177.7754
414.70	152.5703
423.72	141.5503
427.09	153.1973
427.87	157.0692
433.94	151.6217
453.88	111.0651
463.37	154.9863
468.07	130.9609
473.00	119.5016
476.78	130.3408
477.60	123.5630
487.02	121.9650
492.35	0.0000
497.08	103.7395
511.00	105.1492
514.00	95.0778
527.90	0.0000
529.87	0.0000
531.02	120.5852
537.26	106.9374
546.56	0.0000
563.25	98.0741
569.33	115.8867
569.50	115.8924
569.70	115.8980
583.19	89.2477
600.60	98.2236
602.73	95.7584
604.72	115.9799
609.32	97.9449
609.32	97.9449
610.33	97.9709
614.28	104.4736
618.01	93.6111
621.93	110.4210
621.93	110.4210
633.25	91.4370
635.95	84.3840
636.99	94.5757
645.85	102.9406
657.76	83.4830
661.66	100.6188
661.66	100.6188
664.57	0.0000
666.33	80.2458
666.50	80.2496
677.62	87.3159

685.70	71.0181
695.00	82.5244
696.49	87.7144
696.51	87.7144
697.00	87.7247
702.65	108.5120
706.68	96.2014
711.68	84.9229
720.70	86.4868
721.93	0.0000
722.78	79.6053
722.91	79.6090
723.31	79.6165
724.19	74.4381
727.33	73.7994
733.00	81.5290
735.93	78.1128
739.50	99.0240
747.24	97.1119
752.31	82.5874
753.82	67.9755
756.73	76.3916
763.94	87.3454
765.81	100.6641
766.42	100.6781
777.92	78.8562
778.90	70.4612
783.70	89.4866
785.37	74.7736
795.86	78.1137
801.95	84.5586
810.29	72.0043
810.76	67.7766
815.77	72.0890
818.51	58.3422
832.01	76.5949
834.85	85.1563
836.80	0.0000
846.77	64.0283
856.80	99.4505
860.56	62.0710
871.09	68.6422
873.19	55.7959
875.33	0.0000
879.36	67.6835
880.51	56.9543
883.24	62.3613
884.68	64.5308
889.28	65.6673
898.04	72.2540
911.20	51.9012
911.20	51.9012
911.20	51.9012
926.50	60.7346
937.49	77.1692
944.13	57.6789
946.00	58.7896
949.00	49.0199
962.29	69.1672
964.08	69.1904
966.15	81.9690
968.97	56.4978
968.97	56.4978
968.97	56.4978
983.53	57.0197
996.26	36.6390
1001.03	61.4248
1004.73	59.7633
1037.84	47.9989
1038.76	0.0000
1048.07	69.3573
1050.41	61.0586
1050.41	61.0586
1063.66	59.3516
1085.87	57.7239
1099.45	60.6624
1112.07	72.9536
1115.54	54.5480

1120.29	56.1987
1120.29	56.1987
1120.55	56.2012
1121.30	56.2085
1131.51	0.0000
1173.23	71.8283
1177.93	82.2882
1189.05	73.9121
1204.77	76.9559
1221.41	60.9688
1231.02	76.3314
1235.36	83.0670
1238.28	73.5535
1260.41	0.0000
1271.85	48.9808
1274.44	54.7642
1274.54	57.6489
1291.59	43.3521
1298.22	0.0000
1312.11	51.2230
1332.49	34.9014
1365.19	28.2554
1368.63	0.0000
1384.29	42.9938
1408.01	34.3193
1457.56	0.0000
1460.82	25.6911
1489.16	17.8579
1505.03	36.7907
1596.21	26.5815
1620.50	28.2837
1678.03	0.0000
1690.97	22.4297
1764.49	13.3787
1764.49	13.3787
1770.23	21.1858
1771.35	47.3795
1791.20	0.0000
1836.06	17.6502

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247911017

Total Uranium Activity	7.3624E+01	ug/g
Total Uranium Counting Unc.	1.6315E+01	ug/g
Total Uranium Tpu	8.3242E-06	ug/g
Total Uranium Mda	4.6319E+00	ug/g


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 957714          SAMPLE ID   : G247911017
*  ANALYST       : MXR1           DETECTOR    : GAM19
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 9-MAR-2010 11:48:26.12  SAMPLE ALQT: 124.990 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.354E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.827E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 5.830E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.858E+00

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VAX/VMS Nuclide Identification Report Generated 9-MAR-2010 13:50:14.41

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                             *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053647.CNF;1
Sample date        : 26-FEB-2010 00:00:00 Acquisition date : 9-MAR-2010 11:49:46.
Sample ID          : G1202053647          Sample quantity  : 1.40240E+02 GRAM
Detector name      : GAM14                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:00.50 0.0%
Energy tolerance   : 1.50000 keV          Analyst Initials : MXR1
Abundance limit    : 75.00000             Sensitivity       : 5.00000
Batch ID           : 957714               Detector SN#      :
Matrix Spike ID    :                     LCS ID           : 1032-A
*****
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	1461.31*	7	0	1.00	2921.59	2916	12	1.00E-03	66.6	

Flag: "*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053647.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 26-FEB-2010 00:00:00 Acquisition date : 9-MAR-2010 11:49:46
Sample ID        : G1202053647 Sample quantity : 140.24 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA14 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.50 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	+	1460.82	*	1.495E-01	1.994E-01	2.181E-01	1.584E-02	0.685

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	7.740E-02	1.382E-01	2.427E-01	1.635E-02	0.319
NA-22		1274.54	*	-8.705E-03	2.008E-02	3.006E-02	1.964E-03	-0.290
NA-24		1368.63	*	-1.513E-03	2.008E-02	Half-Life too short		
SC-46		889.28	*	1.739E-02	1.936E-02	3.473E-02	3.210E-03	0.501
		1120.55		3.589E-03	1.851E-02	3.184E-02	2.061E-03	0.113
V-48		944.13		2.863E-01	3.513E-01	6.604E-01	5.902E-02	0.433
		983.53	*	-5.443E-03	2.953E-02	4.767E-02	4.048E-03	-0.114
		1312.11		-1.866E-03	3.563E-02	5.797E-02	4.006E-03	-0.032
CR-51		320.08	*	-4.465E-02	1.818E-01	2.862E-01	1.847E-02	-0.156
MN-54		834.85	*	1.012E-02	1.761E-02	3.186E-02	2.672E-03	0.318
CO-56		846.77	*	3.705E-03	1.766E-02	3.057E-02	2.621E-03	0.121
		1037.84		1.138E-02	1.467E-01	2.469E-01	2.043E-02	0.046
		1238.28		-1.633E-02	2.745E-02	3.852E-02	2.502E-03	-0.424
		1771.35		-4.446E-02	1.416E-01	2.084E-01	1.243E-02	-0.213
CO-57		122.06	*	-1.441E-03	1.055E-02	1.678E-02	1.194E-03	-0.086
		136.47		5.221E-02	8.533E-02	1.441E-01	1.056E-02	0.362
CO-58		810.76	*	7.573E-03	1.683E-02	2.923E-02	2.351E-03	0.259
FE-59		1099.45	*	-7.316E-03	3.341E-02	5.274E-02	4.058E-03	-0.139
		1291.59		-1.917E-02	5.003E-02	7.496E-02	6.103E-03	-0.256
CO-60		1173.23		1.820E-02	1.712E-02	3.400E-02	1.873E-03	0.535
		1332.49	*	-3.266E-04	2.305E-02	3.705E-02	2.641E-03	-0.009
ZN-65		1115.54	*	1.894E-03	3.735E-02	6.243E-02	4.104E-03	0.030
SE-75		121.12		-6.212E-02	5.811E-02	8.448E-02	8.424E-03	-0.735
		136.00		1.337E-03	1.670E-02	2.701E-02	1.784E-03	0.049
		264.66	*	7.627E-03	1.903E-02	3.293E-02	1.934E-03	0.232
		279.54		-1.642E-02	4.957E-02	8.020E-02	5.057E-03	-0.205
		400.66		1.854E-01	1.159E-01	2.213E-01	1.963E-02	0.838
SR-85		514.00	*	-4.485E-02	2.977E-02	4.298E-02	2.528E-03	-1.043

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-88	898.04			1.648E-02	1.860E-02	3.527E-02	3.322E-03	0.467
	1836.06	*		2.344E-03	1.946E-02	3.257E-02	1.850E-03	0.072
Y-91	1204.77	*		-5.478E+00	8.221E+00	1.163E+01	6.762E-01	-0.471
NB-94	702.65	*		3.520E-03	1.723E-02	2.862E-02	1.856E-03	0.123
	871.09			-4.111E-03	1.597E-02	2.560E-02	2.292E-03	-0.161
NB-95	765.81	*		1.903E-03	1.725E-02	2.829E-02	2.083E-03	0.067
NB-95M	235.69	*		-2.737E-02	5.204E-02	8.349E-02	6.261E-03	-0.328
ZR-95	724.19			-4.750E-02	4.334E-02	5.696E-02	4.376E-03	-0.834
	756.73	*		-2.606E-02	3.482E-02	4.879E-02	4.044E-03	-0.534
MO-99	140.51			-3.258E+00	4.031E+00	5.916E+00	1.362E+00	-0.551
	181.07			-5.794E+00	3.389E+00	4.731E+00	8.308E-01	-1.225
	366.42			-6.353E+00	1.742E+01	2.757E+01	1.547E+00	-0.230
	739.50	*		-2.092E+00	2.387E+00	3.204E+00	4.784E-01	-0.653
	777.92			4.961E-02	7.130E+00	1.148E+01	8.652E-01	0.004
TC-99M	140.51	*		-6.259E+05	7.130E+00	Half-Life too short		
RU-103	497.08	*		1.496E-02	2.086E-02	3.665E-02	4.561E-03	0.408
	610.33			1.766E-01	3.676E-01	6.296E-01	9.522E-02	0.281
RH-106	621.93	*		-4.726E-02	1.582E-01	2.456E-01	2.876E-02	-0.192
	1050.41			-1.021E+00	1.192E+00	1.653E+00	1.256E-01	-0.618
RU-106	621.93	*		-4.726E-02	1.581E-01	2.456E-01	1.468E-02	-0.192
	1050.41			-1.021E+00	1.192E+00	1.653E+00	1.256E-01	-0.618
AG-108M	433.94	*		-2.804E-03	1.444E-02	2.321E-02	1.404E-03	-0.121
	614.28			-1.175E-02	1.942E-02	2.908E-02	1.856E-03	-0.404
	722.91			-1.088E-03	1.715E-02	2.737E-02	1.946E-03	-0.040
CD-109	88.03	*		-6.140E-01	3.341E-01	4.633E-01	4.051E-02	-1.325
AG-110M	657.76	*		-1.947E-02	1.836E-02	2.498E-02	1.578E-03	-0.779
	677.62			7.224E-02	1.544E-01	2.665E-01	1.731E-02	0.271
	706.68			-7.390E-02	1.138E-01	1.664E-01	1.142E-02	-0.444
	763.94			-3.051E-02	7.527E-02	1.128E-01	8.586E-03	-0.271
	884.68			-7.684E-03	2.397E-02	3.805E-02	3.587E-03	-0.202
	937.49			-2.100E-02	5.222E-02	8.123E-02	7.558E-03	-0.258
	1384.29			-4.318E-02	7.344E-02	1.017E-01	7.481E-03	-0.425
	1505.03			9.714E-02	1.288E-01	2.497E-01	1.716E-02	0.389
SN-113	391.69	*		9.968E-03	1.916E-02	3.350E-02	1.960E-03	0.298
CD-115	260.90			-3.866E+00	1.956E+01	3.208E+01	1.862E+00	-0.120
	492.35			-2.983E+00	6.702E+00	1.039E+01	6.059E-01	-0.287
	527.90	*		-1.027E+00	1.785E+00	2.678E+00	1.582E-01	-0.384
SN-117M	156.02			-1.837E-01	8.339E-01	1.309E+00	7.537E-02	-0.140
	158.56	*		2.652E-02	1.984E-02	3.521E-02	1.992E-03	0.753
TE-123M	159.00	*		4.890E-03	1.263E-02	2.086E-02	1.193E-03	0.234
SB-124	602.73			1.816E-02	2.031E-02	3.634E-02	2.175E-03	0.500
	645.85			4.126E-02	2.467E-01	4.090E-01	2.724E-02	0.101
	722.78			-7.258E-03	1.657E-01	2.653E-01	1.860E-02	-0.027
	1690.97	*		2.884E-02	4.355E-02	8.288E-02	5.626E-03	0.348
SB-125	427.87	*		2.222E-02	3.940E-02	6.933E-02	4.058E-03	0.320
	463.37			-2.657E-02	1.232E-01	1.967E-01	1.313E-02	-0.135
	600.60			-1.568E-03	9.764E-02	1.584E-01	1.088E-02	-0.010
	635.95			1.130E-01	1.550E-01	2.733E-01	1.898E-02	0.414
TE-125M	109.28	*		-2.597E+00	3.984E+00	6.070E+00	5.794E-01	-0.428

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-126	388.63			1.395E-02	6.219E-02	1.052E-01	5.749E-03	0.133
	666.33	*		-6.704E-02	1.001E-01	1.469E-01	8.824E-03	-0.456
	753.82			-6.454E-02	6.862E-01	1.086E+00	7.815E-02	-0.059
SB-126	414.70			-8.295E-03	3.032E-02	4.842E-02	2.687E-03	-0.171
	666.50			-2.351E-02	3.396E-02	4.965E-02	2.983E-03	-0.474
	695.00			1.584E-02	3.126E-02	5.415E-02	3.457E-03	0.292
	697.00			5.824E-02	1.105E-01	1.915E-01	1.228E-02	0.304
	720.70	*		3.094E-02	5.613E-02	9.812E-02	6.605E-03	0.315
	856.80			1.455E-02	1.844E-01	3.126E-01	2.729E-02	0.047
SN-126	64.28			-1.940E-02	1.798E-01	2.937E-01	4.186E-02	-0.066
	86.94			5.145E-02	1.251E-01	2.059E-01	8.515E-02	0.250
	87.57	*		-2.214E-02	3.058E-02	4.684E-02	4.076E-03	-0.473
SB-127	252.40			4.136E-01	1.006E+00	1.718E+00	7.005E-01	0.241
	473.00			-1.802E-02	4.030E-01	6.570E-01	6.599E-02	-0.027
	685.70	*		-1.181E-01	3.214E-01	4.874E-01	4.164E-02	-0.242
	783.70			4.950E-01	9.100E-01	1.582E+00	1.699E-01	0.313
I-131	80.19			-2.082E-01	1.083E+00	1.729E+00	1.384E-01	-0.120
	284.31			-1.307E-02	5.053E-01	8.402E-01	5.407E-02	-0.016
	364.49	*		-1.290E-02	3.838E-02	6.106E-02	3.835E-03	-0.211
	636.99			-2.567E-01	6.817E-01	1.052E+00	6.982E-02	-0.244
TE-132	49.72			1.331E-01	2.519E+00	4.137E+00	3.427E-01	0.032
	111.76			-3.700E+00	6.289E+00	9.617E+00	8.687E-01	-0.385
	116.30			3.460E+00	5.812E+00	9.792E+00	8.736E-01	0.353
	228.16	*		2.968E-02	1.483E-01	2.526E-01	3.470E-02	0.118
BA-133	81.00			-2.214E-02	3.160E-02	4.806E-02	7.307E-03	-0.461
	276.40			-1.798E-02	1.626E-01	2.687E-01	3.386E-02	-0.067
	302.85			4.405E-02	6.541E-02	1.150E-01	1.313E-02	0.383
	356.01	*		5.630E-03	2.063E-02	3.504E-02	3.927E-03	0.161
	383.85			-3.727E-02	1.349E-01	2.157E-01	2.266E-02	-0.173
I-133	529.87	*		4.930E-05	1.349E-01	Half-Life too short		
	875.33			1.124E-03	1.349E-01	Half-Life too short		
	1298.22			-4.965E-03	1.349E-01	Half-Life too short		
CS-134	563.25			-3.842E-03	1.781E-01	2.893E-01	1.759E-02	-0.013
	569.33			-3.316E-02	1.170E-01	1.717E-01	1.054E-02	-0.193
	604.72			1.637E-03	1.915E-02	3.142E-02	1.889E-03	0.052
	795.86	*		-4.889E-03	2.150E-02	3.314E-02	2.608E-03	-0.148
	801.95			-2.498E-02	2.022E-01	3.247E-01	2.580E-02	-0.077
	1365.19			-3.050E-01	7.686E-01	1.164E+00	8.822E-02	-0.262
CS-135	268.22	*		-1.892E-02	6.817E-02	1.109E-01	8.507E-03	-0.171
I-135	546.56			-3.833E+05	6.817E-02	Half-Life too short		
	836.80			5.896E+04	6.817E-02	Half-Life too short		
	1038.76			-1.063E+05	6.817E-02	Half-Life too short		
	1131.51			-1.248E+05	6.817E-02	Half-Life too short		
	1260.41	*		1.193E+05	6.817E-02	Half-Life too short		
	1457.56			-3.252E+05	6.817E-02	Half-Life too short		
	1678.03			6.219E+05	6.817E-02	Half-Life too short		
	1791.20			-6.493E+04	6.817E-02	Half-Life too short		
CS-136	153.25			-2.366E-01	2.989E-01	4.430E-01	3.583E-02	-0.534
	176.60			1.810E-02	2.040E-01	3.104E-01	2.093E-02	0.058

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	273.65			9.218E-02	1.894E-01	3.289E-01	2.255E-02	0.280
	340.55			-4.131E-02	5.091E-02	7.688E-02	4.777E-03	-0.537
	818.51			-7.190E-04	2.932E-02	4.904E-02	3.994E-03	-0.015
	1048.07	*		-2.783E-03	4.363E-02	7.170E-02	5.762E-03	-0.039
	1235.36			-1.400E-01	1.785E-01	2.439E-01	2.458E-02	-0.574
BA-137M	661.66	*		1.629E-02	1.831E-02	3.309E-02	1.967E-03	0.492
CS-137	661.66	*		1.721E-02	1.934E-02	3.496E-02	2.087E-03	0.492
CE-139	165.86	*		5.603E-03	1.292E-02	2.142E-02	1.150E-03	0.262
BA-140	162.66			-4.884E-02	3.118E-01	4.836E-01	3.079E-02	-0.101
	304.85			-3.100E-01	5.516E-01	8.591E-01	2.455E-01	-0.361
	423.72			-8.598E-03	7.025E-01	1.155E+00	3.722E-01	-0.007
	537.26	*		-2.084E-02	1.075E-01	1.704E-01	5.681E-02	-0.122
LA-140	328.76			3.665E-02	1.247E-01	2.122E-01	1.377E-02	0.173
	487.02			4.922E-02	5.889E-02	1.054E-01	6.935E-03	0.467
	815.77			7.814E-02	1.290E-01	2.351E-01	2.155E-02	0.332
	1596.21	*		-2.357E-02	3.978E-02	5.453E-02	3.615E-03	-0.432
CE-141	145.44	*		-1.522E-03	2.796E-02	4.377E-02	2.794E-03	-0.035
CE-143	57.36			-3.313E-05	2.796E-02	Half-Life	too short	
	293.27	*		1.504E-06	2.796E-02	Half-Life	too short	
	664.57			5.559E-05	2.796E-02	Half-Life	too short	
	721.93			1.602E-05	2.796E-02	Half-Life	too short	
CE-144	80.12			-1.526E-01	7.931E-01	1.267E+00	1.009E-01	-0.120
	133.52	*		-3.468E-02	8.442E-02	1.305E-01	1.861E-02	-0.266
PM-144	476.78			2.208E-02	2.710E-02	4.926E-02	3.371E-03	0.448
	618.01			-2.028E-03	1.599E-02	2.548E-02	1.611E-03	-0.080
	696.49	*		1.364E-02	1.679E-02	3.019E-02	1.934E-03	0.452
PR-144	696.51	*		1.022E+00	1.255E+00	2.257E+00	1.445E-01	0.453
	1489.16			-1.786E+00	5.301E+00	7.664E+00	5.293E-01	-0.233
PM-146	453.88	*		5.663E-03	2.047E-02	3.469E-02	2.912E-03	0.163
	633.25			1.815E-02	8.264E-01	1.344E+00	5.064E-01	0.014
	735.93			2.337E-02	6.984E-02	1.181E-01	3.255E-02	0.198
	747.24			-2.025E-02	4.370E-02	6.418E-02	8.819E-03	-0.316
ND-147	91.11			1.402E-01	9.494E-02	1.658E-01	1.525E-02	0.846
	319.41			1.186E-01	1.342E+00	2.246E+00	1.303E-01	0.053
	531.02	*		6.202E-02	2.130E-01	3.610E-01	4.900E-02	0.172
PM-149	285.90	*		-1.196E+00	1.344E+01	2.222E+01	3.149E+00	-0.054
EU-152	121.78			-1.952E-02	3.141E-02	4.776E-02	4.119E-03	-0.409
	244.70			1.317E-01	1.459E-01	2.614E-01	1.506E-02	0.504
	344.28	*		5.783E-02	4.543E-02	8.420E-02	5.443E-03	0.687
	778.90			-1.126E-02	1.296E-01	2.053E-01	1.551E-02	-0.055
	964.08			-8.659E-02	1.286E-01	1.904E-01	1.660E-02	-0.455
	1085.87			-1.333E-01	1.888E-01	2.723E-01	1.920E-02	-0.490
	1112.07			3.188E-02	1.288E-01	2.232E-01	1.478E-02	0.143
	1408.01			-1.660E-02	8.362E-02	1.300E-01	9.163E-03	-0.128
GD-153	69.67			-1.206E-01	5.431E-01	8.678E-01	6.206E-02	-0.139
	97.43	*		-1.694E-02	3.639E-02	5.673E-02	4.550E-03	-0.299
	103.18			-2.472E-02	4.322E-02	6.625E-02	5.111E-03	-0.373
EU-154	123.07			1.226E-02	2.152E-02	3.627E-02	3.706E-03	0.338
	723.31			-3.983E-02	8.034E-02	1.189E-01	9.335E-03	-0.335

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	Line Nuclide	Energy Ided (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		873.19	-7.015E-02	1.289E-01	1.950E-01	2.372E-02	-0.360
		996.26	-1.638E-02	1.656E-01	2.710E-01	4.696E-02	-0.060
		1004.73	6.288E-04	9.712E-02	1.618E-01	1.836E-02	0.004
		1274.44 *	-2.358E-02	5.723E-02	8.614E-02	8.514E-03	-0.274
EU-155		86.55	3.895E-02	3.557E-02	6.193E-02	5.376E-03	0.629
		105.31 *	2.116E-02	4.337E-02	7.275E-02	5.628E-03	0.291
TB-160		86.79	6.731E-02	9.154E-02	1.560E-01	1.344E-02	0.432
		197.04	1.013E-01	2.444E-01	4.233E-01	2.346E-02	0.239
		215.65	1.140E-01	3.204E-01	5.525E-01	3.117E-02	0.206
		298.57	-1.715E-02	4.837E-02	7.782E-02	4.538E-03	-0.220
		879.36 *	3.117E-02	7.099E-02	1.260E-01	1.145E-02	0.247
		962.29	1.708E-01	2.054E-01	3.881E-01	3.392E-02	0.440
		966.15	-1.314E-02	7.907E-02	1.280E-01	1.113E-02	-0.103
		1177.93	-8.740E-02	1.310E-01	1.828E-01	1.015E-02	-0.478
		1271.85	2.492E-01	3.070E-01	5.822E-01	3.780E-02	0.428
HO-166M		80.57	-5.734E-02	8.977E-02	1.379E-01	1.104E-02	-0.416
		184.41	6.644E-05	1.706E-02	2.875E-02	1.572E-03	0.002
		280.46	-4.737E-03	3.972E-02	6.553E-02	3.821E-03	-0.072
		410.95	-8.363E-02	1.171E-01	1.770E-01	9.794E-03	-0.472
		711.68 *	2.498E-02	2.950E-02	5.347E-02	3.533E-03	0.467
		752.31	2.515E-02	1.252E-01	2.085E-01	1.495E-02	0.121
		810.29	1.717E-03	2.723E-02	4.420E-02	3.543E-03	0.039
TA-182		67.75	-3.940E-02	3.652E-02	5.421E-02	3.812E-03	-0.727
		100.11	-5.866E-02	6.837E-02	1.019E-01	8.019E-03	-0.576
		152.43	-1.154E-01	1.443E-01	2.138E-01	1.261E-02	-0.540
		222.11	4.295E-02	1.476E-01	2.534E-01	1.438E-02	0.169
		1121.30	1.846E-03	5.218E-02	8.702E-02	5.623E-03	0.021
		1189.05	-7.277E-02	1.234E-01	1.785E-01	1.011E-02	-0.408
		1221.41 *	3.007E-02	7.631E-02	1.351E-01	8.084E-03	0.223
		1231.02	3.074E-01	1.872E-01	3.918E-01	2.381E-02	0.785
IR-192		295.96	-2.352E-04	4.437E-02	7.383E-02	4.375E-03	-0.003
		308.46	2.724E-02	4.518E-02	7.913E-02	4.659E-03	0.344
		316.51 *	5.775E-03	1.715E-02	2.933E-02	1.712E-03	0.197
		468.07	7.053E-03	2.612E-02	4.448E-02	2.962E-03	0.159
HG-203		70.83	1.689E-01	3.998E-01	6.705E-01	1.030E-01	0.252
		72.87	-3.424E-03	2.366E-01	3.842E-01	5.716E-02	-0.009
		279.20 *	-4.059E-03	1.699E-02	2.773E-02	1.706E-03	-0.146
BI-207		72.81	-3.275E-04	5.777E-02	9.390E-02	6.916E-03	-0.003
		74.97	5.588E-03	3.532E-02	5.577E-02	4.198E-03	0.100
		569.70	-1.925E-03	1.813E-02	2.723E-02	1.624E-03	-0.071
		1063.66 *	8.027E-03	2.302E-02	4.062E-02	3.006E-03	0.198
		1770.23	-1.403E-01	2.955E-01	4.130E-01	2.467E-02	-0.340
TL-208		277.37	-3.480E-02	1.793E-01	2.940E-01	3.174E-02	-0.118
		583.19 *	1.639E-02	2.076E-02	3.564E-02	2.432E-03	0.460
		860.56	2.407E-02	1.290E-01	2.224E-01	2.092E-02	0.108
PB-210		46.54 *	-7.622E-01	9.883E-01	1.611E+00	1.180E-01	-0.473
BI-211		72.87	-1.451E-02	1.003E+00	1.629E+00	1.200E-01	-0.009
		351.06 *	-5.362E-02	9.526E-02	1.484E-01	9.407E-03	-0.361
PB-211		404.85 *	-6.963E-02	3.423E-01	5.489E-01	2.631E-01	-0.127

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	427.09			-8.948E-02	6.781E-01	1.095E+00	5.016E-01	-0.082
	832.01			-6.278E-02	4.852E-01	7.969E-01	4.129E-01	-0.079
BI-212	727.33	*		1.494E-01	2.241E-01	3.994E-01	4.509E-02	0.374
	785.37			6.674E-01	1.500E+00	2.583E+00	1.975E-01	0.258
	1620.50			-1.136E+00	1.408E+00	1.784E+00	1.168E-01	-0.637
PB-212	74.82			2.715E-02	1.228E-01	1.948E-01	2.394E-02	0.139
	77.11			-1.986E-02	7.205E-02	1.073E-01	8.264E-03	-0.185
	238.63	*		-1.342E-03	2.949E-02	4.800E-02	3.527E-03	-0.028
	300.09			2.030E-02	3.619E-01	6.054E-01	5.091E-02	0.034
BI-214	609.32	*		5.533E-03	4.016E-02	6.625E-02	5.284E-03	0.084
	1120.29			6.374E-02	1.074E-01	1.988E-01	1.853E-02	0.321
	1764.49			-2.686E-02	1.572E-01	2.599E-01	1.559E-02	-0.103
PB-214	74.82			4.812E-02	2.177E-01	3.452E-01	3.772E-02	0.139
	77.11			-3.501E-02	1.270E-01	1.892E-01	2.135E-02	-0.185
	242.00			-3.017E-01	1.669E-01	2.353E-01	1.920E-02	-1.282
	295.22			2.586E-02	6.124E-02	1.059E-01	9.259E-03	0.244
	351.93	*		-5.666E-03	3.499E-02	5.700E-02	4.787E-03	-0.099
RN-219	271.23			1.162E-02	1.048E-01	1.766E-01	1.421E-02	0.066
	401.81	*		1.918E-01	1.976E-01	3.559E-01	4.735E-02	0.539
RA-223	81.07			-4.906E-02	7.142E-02	1.092E-01	8.793E-03	-0.449
	83.79			-1.344E-02	4.828E-02	7.302E-02	6.068E-03	-0.184
	94.87			3.732E-02	2.173E-01	3.554E-01	2.909E-02	0.105
	144.24			1.578E-04	3.265E-01	5.138E-01	3.875E-02	0.000
	154.21			-1.152E-01	1.694E-01	2.546E-01	1.779E-02	-0.453
	269.46			-4.403E-02	8.123E-02	1.290E-01	7.828E-03	-0.341
	323.87	*		-3.604E-01	3.157E-01	4.559E-01	7.347E-02	-0.791
	338.28			-4.057E-01	4.738E-01	6.495E-01	6.637E-02	-0.625
RA-224	240.99	*		-2.735E-01	2.848E-01	4.395E-01	2.526E-02	-0.622
RA-226	609.32	*		5.533E-03	4.016E-02	6.625E-02	5.284E-03	0.084
	1120.29			6.374E-02	1.074E-01	1.988E-01	1.853E-02	0.321
	1764.49			-2.686E-02	1.572E-01	2.599E-01	1.559E-02	-0.103
AC-227	79.69			-7.164E-02	3.919E-01	6.263E-01	1.058E-01	-0.114
	235.96			-1.304E-02	6.526E-02	1.076E-01	8.708E-03	-0.121
	256.23	*		-1.776E-02	1.063E-01	1.748E-01	1.787E-02	-0.102
	299.98			-4.829E-02	4.013E-01	6.606E-01	7.270E-02	-0.073
	304.50			-3.683E-01	8.088E-01	1.288E+00	1.965E-01	-0.286
	334.37			4.909E-02	8.576E-01	1.430E+00	2.031E-01	0.034
TH-227	79.80			-8.097E-02	5.178E-01	8.291E-01	1.784E-01	-0.098
	235.96			-1.304E-02	6.526E-02	1.076E-01	7.888E-03	-0.121
	256.23	*		-1.776E-02	1.063E-01	1.748E-01	2.100E-02	-0.102
	299.98			-4.829E-02	4.013E-01	6.606E-01	7.270E-02	-0.073
	304.50			-3.683E-01	8.088E-01	1.288E+00	1.965E-01	-0.286
	334.37			4.909E-02	8.576E-01	1.430E+00	2.031E-01	0.034
AC-228	338.32			-1.362E-01	1.339E-01	1.630E-01	6.717E-02	-0.836
	911.20	*		2.676E-02	7.862E-02	1.376E-01	1.662E-02	0.194
	968.97			-3.582E-02	1.230E-01	1.919E-01	4.678E-02	-0.187
RA-228	338.32			-1.362E-01	1.339E-01	1.630E-01	6.717E-02	-0.836
	911.20	*		2.676E-02	7.862E-02	1.376E-01	1.662E-02	0.194
	968.97			-3.582E-02	1.230E-01	1.919E-01	4.678E-02	-0.187

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TH-228	74.82			2.715E-02	1.228E-01	1.948E-01	1.481E-02	0.139
	77.11			-1.986E-02	7.205E-02	1.073E-01	8.264E-03	-0.185
	238.63	*		-1.342E-03	2.949E-02	4.800E-02	3.527E-03	-0.028
	300.09			2.030E-02	3.621E-01	6.054E-01	3.686E-01	0.034
TH-229	85.43			1.194E-01	7.711E-02	1.316E-01	1.115E-02	0.907
	88.47			-1.514E-01	5.472E-02	6.905E-02	6.009E-03	-2.192
	193.51	*		-9.242E-02	2.299E-01	3.752E-01	2.072E-02	-0.246
	210.85			-1.664E-01	3.882E-01	6.308E-01	3.543E-02	-0.264
PA-231	283.69	*		8.991E-02	6.811E-01	1.148E+00	1.508E-01	0.078
	301.36			1.159E-01	2.580E-01	4.458E-01	4.619E-02	0.260
TH-231	81.07			-4.906E-02	7.142E-02	1.092E-01	8.793E-03	-0.449
	83.79			-1.344E-02	4.828E-02	7.302E-02	6.068E-03	-0.184
	94.87			3.732E-02	2.173E-01	3.554E-01	2.909E-02	0.105
	144.24			1.578E-04	3.265E-01	5.138E-01	3.875E-02	0.000
	154.21			-1.152E-01	1.694E-01	2.546E-01	1.779E-02	-0.453
	269.46			-4.403E-02	8.123E-02	1.290E-01	7.828E-03	-0.341
	323.87	*		-3.604E-01	3.157E-01	4.559E-01	7.347E-02	-0.791
	338.28			-4.057E-01	4.738E-01	6.495E-01	6.637E-02	-0.625
TH-232	338.32			-1.362E-01	1.219E-01	1.630E-01	9.362E-03	-0.836
	911.20	*		2.676E-02	7.862E-02	1.376E-01	1.662E-02	0.194
	968.97			-3.582E-02	1.230E-01	1.919E-01	4.678E-02	-0.187
	300.13			1.284E-02	1.804E-01	3.022E-01	4.050E-02	0.042
PA-233	311.90	*		1.590E-03	3.176E-02	5.303E-02	3.276E-03	0.030
	340.48			-2.133E-01	2.672E-01	3.971E-01	9.209E-02	-0.537
PA-234	94.67			4.948E-02	8.113E-02	1.357E-01	1.644E-02	0.365
	98.44			-2.020E-02	3.955E-02	5.867E-02	3.267E-02	-0.344
	111.00			-3.872E-02	7.622E-02	1.174E-01	1.321E-02	-0.330
	131.20			3.784E-02	4.220E-02	7.297E-02	4.901E-03	0.519
	569.50			-2.400E-02	1.602E-01	2.391E-01	1.426E-02	-0.100
	733.00			8.946E-02	1.940E-01	3.314E-01	7.153E-02	0.270
	880.51			1.332E-01	1.463E-01	2.748E-01	2.501E-02	0.484
	883.24			2.978E-02	1.504E-01	2.567E-01	1.727E-01	0.116
	926.50			-9.417E-02	8.885E-02	1.150E-01	2.927E-02	-0.819
	946.00	*		8.107E-02	1.466E-01	2.643E-01	4.996E-02	0.307
	949.00			7.739E-03	2.191E-01	3.676E-01	3.266E-02	0.021
	766.42			-2.584E+00	5.259E+00	7.477E+00	3.779E+00	-0.346
PA-234M	1001.03	*		-1.012E+00	1.999E+00	3.006E+00	2.906E-01	-0.337
TH-234	63.29	*		-4.391E-01	5.082E-01	7.792E-01	1.370E-01	-0.564
	92.59			2.601E-01	3.264E-01	5.648E-01	1.241E-01	0.460
U-235	89.96			-7.325E-01	3.998E-01	4.969E-01	1.222E-01	-1.474
	93.35			1.024E-01	2.448E-01	4.198E-01	9.646E-02	0.244
	143.76	*		-3.900E-02	9.846E-02	1.499E-01	2.379E-02	-0.260
	163.33			7.119E-02	2.005E-01	3.240E-01	5.401E-02	0.220
	185.72			6.069E-03	2.172E-02	3.719E-02	2.037E-03	0.163
	205.31			1.496E-01	2.141E-01	3.758E-01	6.358E-02	0.398
NP-237	86.48	*		9.950E-02	9.041E-02	1.535E-01	3.477E-02	0.648
	95.86			-7.399E-01	4.928E-01	6.658E-01	1.586E-01	-1.111
U-238	63.29	*		-4.391E-01	5.082E-01	7.792E-01	1.370E-01	-0.564
	92.59			2.601E-01	3.221E-01	5.648E-01	4.716E-02	0.460

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.53		-5.051E-02	6.681E-02	1.010E-01	7.975E-03	-0.500
		103.37		-1.848E-02	4.005E-02	6.206E-02	4.783E-03	-0.298
		106.12		7.603E-03	3.523E-02	5.786E-02	4.390E-03	0.131
		117.23	*	3.550E-02	1.771E-01	2.900E-01	2.094E-02	0.122
		228.18		1.928E-02	9.630E-02	1.640E-01	9.348E-03	0.118
		277.60		-1.475E-02	8.147E-02	1.338E-01	7.797E-03	-0.110
AM-241		59.54	*	-8.123E-02	5.904E-02	8.174E-02	6.068E-03	-0.994
CM-247		278.00		-5.678E-02	3.470E-01	5.705E-01	3.326E-02	-0.100
		287.50		-1.523E-01	5.732E-01	9.316E-01	5.436E-02	-0.163
		402.40	*	-3.150E-03	1.827E-02	2.956E-02	1.623E-03	-0.107
CF-249		252.80		1.245E-01	4.113E-01	7.063E-01	4.086E-02	0.176
		333.37		2.002E-02	9.378E-02	1.584E-01	9.129E-03	0.126
		388.16	*	1.204E-02	1.804E-02	3.196E-02	1.747E-03	0.377
CF-251		177.52	*	4.271E-03	6.314E-02	9.564E-02	5.193E-03	0.045
		227.38		2.268E-02	1.555E-01	2.639E-01	1.503E-02	0.086
		285.41		-9.223E-02	9.908E-01	1.637E+00	9.550E-02	-0.056
ANH-511		511.00	*	-3.067E-02	2.965E-02	5.395E-02	3.170E-03	-0.569

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053647      *
* Acquisition date   : 9-MAR-2010 11:49:46 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 02:00:00.50             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 26-FEB-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202053647             Analyst initials: MXR1         *
* Batch Number       : 957714                  Sample Quantity : 1.4024E+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	1.495E-01	1.954E-01	2.189E-01	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	7.740E-02	1.354E-01	2.494E-01	0.000E+00 NOT IDENT.
NA-22	-8.705E-03	1.967E-02	3.027E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	7.288E+03	0.000E+00	0.000E+00 SHORT HLIF
SC-46	1.739E-02	1.897E-02	3.524E-02	0.000E+00 NOT IDENT.
V-48	-5.443E-03	2.894E-02	4.826E-02	0.000E+00 NOT IDENT.
CR-51	-4.465E-02	1.782E-01	2.965E-01	0.000E+00 NOT IDENT.
MN-54	1.012E-02	1.726E-02	3.236E-02	0.000E+00 NOT IDENT.
CO-56	3.705E-03	1.731E-02	3.105E-02	0.000E+00 NOT IDENT.
CO-57	-1.441E-03	1.034E-02	1.771E-02	0.000E+00 NOT IDENT.
CO-58	7.573E-03	1.649E-02	2.971E-02	0.000E+00 NOT IDENT.
FE-59	-7.316E-03	3.275E-02	5.326E-02	0.000E+00 NOT IDENT.
CO-60	-3.266E-04	2.259E-02	3.727E-02	0.000E+00 NOT IDENT.
ZN-65	1.894E-03	3.660E-02	6.303E-02	0.000E+00 NOT IDENT.
SE-75	7.627E-03	1.865E-02	3.424E-02	0.000E+00 NOT IDENT.
SR-85	-4.485E-02	2.918E-02	4.410E-02	0.000E+00 NOT IDENT.
Y-88	2.344E-03	1.908E-02	3.254E-02	0.000E+00 NOT IDENT.
Y-91	-5.478E+00	8.056E+00	1.172E+01	0.000E+00 NOT IDENT.
NB-94	3.520E-03	1.689E-02	2.918E-02	0.000E+00 NOT IDENT.
NB-95	1.903E-03	1.691E-02	2.879E-02	0.000E+00 NOT IDENT.
NB-95M	-2.737E-02	5.100E-02	8.703E-02	0.000E+00 NOT IDENT.
ZR-95	-2.606E-02	3.412E-02	4.967E-02	0.000E+00 NOT IDENT.
MO-99	-2.092E+00	2.339E+00	3.263E+00	0.000E+00 NOT IDENT.
TC-99M	0.000E+00	7.580E+11	0.000E+00	0.000E+00 SHORT HLIF
RU-103	1.496E-02	2.045E-02	3.763E-02	0.000E+00 NOT IDENT.
RH-106	-4.726E-02	1.550E-01	2.510E-01	0.000E+00 NOT IDENT.
RU-106	-4.726E-02	1.550E-01	2.510E-01	0.000E+00 NOT IDENT.

AG-108M	-2.804E-03	1.415E-02	2.389E-02	0.000E+00	NOT IDENT.
CD-109	-6.140E-01	3.274E-01	4.923E-01	0.000E+00	NOT IDENT.
AG-110M	-1.947E-02	1.799E-02	2.550E-02	0.000E+00	NOT IDENT.
SN-113	9.968E-03	1.878E-02	3.456E-02	0.000E+00	NOT IDENT.
CD-115	-1.027E+00	1.750E+00	2.746E+00	0.000E+00	NOT IDENT.
SN-117M	2.652E-02	1.945E-02	3.699E-02	0.000E+00	NOT IDENT.
TE-123M	4.890E-03	1.238E-02	2.191E-02	0.000E+00	NOT IDENT.
SB-124	2.884E-02	4.268E-02	8.294E-02	0.000E+00	NOT IDENT.
SB-125	2.222E-02	3.862E-02	7.140E-02	0.000E+00	NOT IDENT.
TE-125M	-2.597E+00	3.904E+00	6.423E+00	0.000E+00	NOT IDENT.
I-126	-6.704E-02	9.808E-02	1.499E-01	0.000E+00	NOT IDENT.
SB-126	3.094E-02	5.501E-02	9.998E-02	0.000E+00	NOT IDENT.
SN-126	-2.214E-02	2.997E-02	4.977E-02	0.000E+00	NOT IDENT.
SB-127	-1.181E-01	3.149E-01	4.971E-01	0.000E+00	NOT IDENT.
I-131	-1.290E-02	3.761E-02	6.309E-02	0.000E+00	NOT IDENT.
TE-132	2.968E-02	1.454E-01	2.634E-01	0.000E+00	NOT IDENT.
BA-133	5.630E-03	2.021E-02	3.622E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.569E+02	0.000E+00	0.000E+00	SHORT HLIF
CS-134	-4.889E-03	2.107E-02	3.370E-02	0.000E+00	NOT IDENT.
CS-135	-1.892E-02	6.680E-02	1.153E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.991E+11	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.783E-03	4.276E-02	7.249E-02	0.000E+00	NOT IDENT.
BA-137M	1.629E-02	1.794E-02	3.377E-02	0.000E+00	NOT IDENT.
CS-137	1.721E-02	1.895E-02	3.568E-02	0.000E+00	NOT IDENT.
CE-139	5.603E-03	1.266E-02	2.248E-02	0.000E+00	NOT IDENT.
BA-140	-2.084E-02	1.053E-01	1.747E-01	0.000E+00	NOT IDENT.
LA-140	-2.357E-02	3.898E-02	5.464E-02	0.000E+00	NOT IDENT.
CE-141	-1.522E-03	2.740E-02	4.606E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	8.647E+00	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.468E-02	8.273E-02	1.376E-01	0.000E+00	NOT IDENT.
PM-144	1.364E-02	1.645E-02	3.078E-02	0.000E+00	NOT IDENT.
PR-144	1.022E+00	1.230E+00	2.301E+00	0.000E+00	NOT IDENT.
PM-146	5.663E-03	2.006E-02	3.569E-02	0.000E+00	NOT IDENT.
ND-147	6.202E-02	2.087E-01	3.702E-01	0.000E+00	NOT IDENT.
PM-149	-1.196E+00	1.317E+01	2.307E+01	0.000E+00	NOT IDENT.
EU-152	5.783E-02	4.452E-02	8.710E-02	0.000E+00	NOT IDENT.
GD-153	-1.694E-02	3.566E-02	6.016E-02	0.000E+00	NOT IDENT.
EU-154	-2.358E-02	5.609E-02	8.672E-02	0.000E+00	NOT IDENT.
EU-155	2.116E-02	4.250E-02	7.703E-02	0.000E+00	NOT IDENT.
TB-160	3.117E-02	6.957E-02	1.279E-01	0.000E+00	NOT IDENT.
HO-166M	2.498E-02	2.891E-02	5.449E-02	0.000E+00	NOT IDENT.
TA-182	3.007E-02	7.478E-02	1.362E-01	0.000E+00	NOT IDENT.
IR-192	5.775E-03	1.681E-02	3.039E-02	0.000E+00	NOT IDENT.
HG-203	-4.059E-03	1.665E-02	2.881E-02	0.000E+00	NOT IDENT.
BI-207	8.027E-03	2.256E-02	4.105E-02	0.000E+00	NOT IDENT.
TL-208	1.639E-02	2.035E-02	3.648E-02	0.000E+00	NOT IDENT.
PB-210	-7.622E-01	9.686E-01	1.733E+00	0.000E+00	NOT IDENT.
BI-211	-5.362E-02	9.335E-02	1.535E-01	0.000E+00	NOT IDENT.
PB-211	-6.963E-02	3.355E-01	5.659E-01	0.000E+00	NOT IDENT.
BI-212	1.494E-01	2.196E-01	4.069E-01	0.000E+00	NOT IDENT.
PB-212	-1.342E-03	2.890E-02	5.002E-02	0.000E+00	NOT IDENT.
BI-214	5.533E-03	3.935E-02	6.774E-02	0.000E+00	NOT IDENT.
PB-214	-5.666E-03	3.429E-02	5.894E-02	0.000E+00	NOT IDENT.
RN-219	1.918E-01	1.937E-01	3.670E-01	0.000E+00	NOT IDENT.
RA-223	-3.604E-01	3.094E-01	4.722E-01	0.000E+00	NOT IDENT.
RA-224	-2.735E-01	2.791E-01	4.579E-01	0.000E+00	NOT IDENT.
RA-226	5.533E-03	3.935E-02	6.774E-02	0.000E+00	NOT IDENT.
AC-227	-1.776E-02	1.041E-01	1.819E-01	0.000E+00	NOT IDENT.
TH-227	-1.776E-02	1.041E-01	1.819E-01	0.000E+00	NOT IDENT.
AC-228	2.676E-02	7.705E-02	1.395E-01	0.000E+00	NOT IDENT.
RA-228	2.676E-02	7.705E-02	1.395E-01	0.000E+00	NOT IDENT.
TH-228	-1.342E-03	2.890E-02	5.002E-02	0.000E+00	NOT IDENT.
TH-229	-9.242E-02	2.253E-01	3.926E-01	0.000E+00	NOT IDENT.
PA-231	8.991E-02	6.675E-01	1.193E+00	0.000E+00	NOT IDENT.
TH-231	-3.604E-01	3.094E-01	4.722E-01	0.000E+00	NOT IDENT.
TH-232	2.676E-02	7.705E-02	1.395E-01	0.000E+00	NOT IDENT.
PA-233	1.590E-03	3.112E-02	5.497E-02	0.000E+00	NOT IDENT.
PA-234	8.107E-02	1.437E-01	2.678E-01	0.000E+00	NOT IDENT.
PA-234M	-1.012E+00	1.959E+00	3.042E+00	0.000E+00	NOT IDENT.
TH-234	-4.391E-01	4.980E-01	8.331E-01	0.000E+00	NOT IDENT.
U-235	-3.900E-02	9.649E-02	1.578E-01	0.000E+00	NOT IDENT.
NP-237	9.950E-02	8.860E-02	1.631E-01	0.000E+00	NOT IDENT.
U-238	-4.391E-01	4.980E-01	8.331E-01	0.000E+00	NOT IDENT.
NP-239	3.550E-02	1.736E-01	3.064E-01	0.000E+00	NOT IDENT.
AM-241	-8.123E-02	5.786E-02	8.750E-02	0.000E+00	NOT IDENT.
CM-247	-3.150E-03	1.790E-02	3.048E-02	0.000E+00	NOT IDENT.
CF-249	1.204E-02	1.768E-02	3.298E-02	0.000E+00	NOT IDENT.
CF-251	4.271E-03	6.188E-02	1.003E-01	0.000E+00	NOT IDENT.

ANH-511	-3.067E-02	2.906E-02	5.536E-02	0.000E+00 NOT IDENT.
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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053647.CNF;1
Sample date        : 26-FEB-2010 00:00:00 Acquisition date : 9-MAR-2010 11:49:46.
Sample ID          : G1202053647 Sample quantity : 1.40240E+02 GRAM
Detector name      : GAM14 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:00.50 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 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	1460.82	7	10.66*	1.211E+00	1.495E-01	1.495E-01	133.38

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202053647

Page : 2
Acquisition date : 9-MAR-2010 11:49:46

Total number of lines in spectrum 1
Number of unidentified lines 0
Number of lines tentatively identified by NID 1 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	1.495E-01	1.495E-01	1.994E-01	133.38	
Total Activity :			1.495E-01	1.495E-01			

Grand Total Activity : 1.495E-01 1.495E-01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202053647

Page : 3
Acquisition date : 9-MAR-2010 11:49:46

None

Flags: "T" = Tentatively associated


```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
*                               DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053647.CNF;1
* Acquisition date   : 9-MAR-2010 11:49:46.  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 02:00:00.50             Half life ratio : 8.00000
*****
*                               SAMPLE DATA                             *
*
* Sample date        : 26-FEB-2010 00:00:00   Nuclide Library : SOLID
* Sample ID          : G1202053647           Analyst initials: MXR1
* Batch Number       : 957714                Sample Quantity : 1.40240E+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	1.495E-01	1.994E-01	2.181E-01	1.584E-02	0.685

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	7.740E-02		1.382E-01	2.427E-01	1.635E-02	0.319
NA-22	-8.705E-03		2.008E-02	3.006E-02	1.964E-03	-0.290
NA-24	-1.513E-03		3.719E-03	Half-Life too short		
SC-46	1.739E-02		1.936E-02	3.473E-02	3.210E-03	0.501
V-48	-5.443E-03		2.953E-02	4.767E-02	4.048E-03	-0.114
CR-51	-4.465E-02		1.818E-01	2.862E-01	1.847E-02	-0.156
MN-54	1.012E-02		1.761E-02	3.186E-02	2.672E-03	0.318
CO-56	3.705E-03		1.766E-02	3.057E-02	2.621E-03	0.121
CO-57	-1.441E-03		1.055E-02	1.678E-02	1.194E-03	-0.086
CO-58	7.573E-03		1.683E-02	2.923E-02	2.351E-03	0.259
FE-59	-7.316E-03		3.341E-02	5.274E-02	4.058E-03	-0.139

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60	-3.266E-04		2.305E-02	3.705E-02	2.641E-03	-0.009
ZN-65	1.894E-03		3.735E-02	6.243E-02	4.104E-03	0.030
SE-75	7.627E-03		1.903E-02	3.293E-02	1.934E-03	0.232
SR-85	-4.485E-02		2.977E-02	4.298E-02	2.528E-03	-1.043
Y-88	2.344E-03		1.946E-02	3.257E-02	1.850E-03	0.072
Y-91	-5.478E+00		8.221E+00	1.163E+01	6.762E-01	-0.471
NB-94	3.520E-03		1.723E-02	2.862E-02	1.856E-03	0.123
NB-95	1.903E-03		1.725E-02	2.829E-02	2.083E-03	0.067
NB-95M	-2.737E-02		5.204E-02	8.349E-02	6.261E-03	-0.328
ZR-95	-2.606E-02		3.482E-02	4.879E-02	4.044E-03	-0.534
MO-99	-2.092E+00		2.387E+00	3.204E+00	4.784E-01	-0.653
TC-99M	-6.259E+05		3.867E+05	Half-Life	too short	
RU-103	1.496E-02		2.086E-02	3.665E-02	4.561E-03	0.408
RH-106	-4.726E-02		1.582E-01	2.456E-01	2.876E-02	-0.192
RU-106	-4.726E-02		1.581E-01	2.456E-01	1.468E-02	-0.192
AG-108M	-2.804E-03		1.444E-02	2.321E-02	1.404E-03	-0.121
CD-109	-6.140E-01		3.341E-01	4.633E-01	4.051E-02	-1.325
AG-110M	-1.947E-02		1.836E-02	2.498E-02	1.578E-03	-0.779
SN-113	9.968E-03		1.916E-02	3.350E-02	1.960E-03	0.298
CD-115	-1.027E+00		1.785E+00	2.678E+00	1.582E-01	-0.384
SN-117M	2.652E-02		1.984E-02	3.521E-02	1.992E-03	0.753
TE-123M	4.890E-03		1.263E-02	2.086E-02	1.193E-03	0.234
SB-124	2.884E-02		4.355E-02	8.288E-02	5.626E-03	0.348
SB-125	2.222E-02		3.940E-02	6.933E-02	4.058E-03	0.320
TE-125M	-2.597E+00		3.984E+00	6.070E+00	5.794E-01	-0.428
I-126	-6.704E-02		1.001E-01	1.469E-01	8.824E-03	-0.456
SB-126	3.094E-02		5.613E-02	9.812E-02	6.605E-03	0.315
SN-126	-2.214E-02		3.058E-02	4.684E-02	4.076E-03	-0.473
SB-127	-1.181E-01		3.214E-01	4.874E-01	4.164E-02	-0.242
I-131	-1.290E-02		3.838E-02	6.106E-02	3.835E-03	-0.211
TE-132	2.968E-02		1.483E-01	2.526E-01	3.470E-02	0.118
BA-133	5.630E-03		2.063E-02	3.504E-02	3.927E-03	0.161
I-133	4.930E-05		8.004E-05	Half-Life	too short	
CS-134	-4.889E-03		2.150E-02	3.314E-02	2.608E-03	-0.148
CS-135	-1.892E-02		6.817E-02	1.109E-01	8.507E-03	-0.171
I-135	1.193E+05		1.526E+05	Half-Life	too short	
CS-136	-2.783E-03		4.363E-02	7.170E-02	5.762E-03	-0.039
BA-137M	1.629E-02		1.831E-02	3.309E-02	1.967E-03	0.492
CS-137	1.721E-02		1.934E-02	3.496E-02	2.087E-03	0.492
CE-139	5.603E-03		1.292E-02	2.142E-02	1.150E-03	0.262
BA-140	-2.084E-02		1.075E-01	1.704E-01	5.681E-02	-0.122
LA-140	-2.357E-02		3.978E-02	5.453E-02	3.615E-03	-0.432
CE-141	-1.522E-03		2.796E-02	4.377E-02	2.794E-03	-0.035
CE-143	1.504E-06		4.412E-06	Half-Life	too short	
CE-144	-3.468E-02		8.442E-02	1.305E-01	1.861E-02	-0.266
PM-144	1.364E-02		1.679E-02	3.019E-02	1.934E-03	0.452
PR-144	1.022E+00		1.255E+00	2.257E+00	1.445E-01	0.453
PM-146	5.663E-03		2.047E-02	3.469E-02	2.912E-03	0.163

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	6.202E-02		2.130E-01	3.610E-01	4.900E-02	0.172
PM-149	-1.196E+00		1.344E+01	2.222E+01	3.149E+00	-0.054
EU-152	5.783E-02		4.543E-02	8.420E-02	5.443E-03	0.687
GD-153	-1.694E-02		3.639E-02	5.673E-02	4.550E-03	-0.299
EU-154	-2.358E-02		5.723E-02	8.614E-02	8.514E-03	-0.274
EU-155	2.116E-02		4.337E-02	7.275E-02	5.628E-03	0.291
TB-160	3.117E-02		7.099E-02	1.260E-01	1.145E-02	0.247
HO-166M	2.498E-02		2.950E-02	5.347E-02	3.533E-03	0.467
TA-182	3.007E-02		7.631E-02	1.351E-01	8.084E-03	0.223
IR-192	5.775E-03		1.715E-02	2.933E-02	1.712E-03	0.197
HG-203	-4.059E-03		1.699E-02	2.773E-02	1.706E-03	-0.146
BI-207	8.027E-03		2.302E-02	4.062E-02	3.006E-03	0.198
TL-208	1.639E-02		2.076E-02	3.564E-02	2.432E-03	0.460
PB-210	-7.622E-01		9.883E-01	1.611E+00	1.180E-01	-0.473
BI-211	-5.362E-02		9.526E-02	1.484E-01	9.407E-03	-0.361
PB-211	-6.963E-02		3.423E-01	5.489E-01	2.631E-01	-0.127
BI-212	1.494E-01		2.241E-01	3.994E-01	4.509E-02	0.374
PB-212	-1.342E-03		2.949E-02	4.800E-02	3.527E-03	-0.028
BI-214	5.533E-03		4.016E-02	6.625E-02	5.284E-03	0.084
PB-214	-5.666E-03		3.499E-02	5.700E-02	4.787E-03	-0.099
RN-219	1.918E-01		1.976E-01	3.559E-01	4.735E-02	0.539
RA-223	-3.604E-01		3.157E-01	4.559E-01	7.347E-02	-0.791
RA-224	-2.735E-01		2.848E-01	4.395E-01	2.526E-02	-0.622
RA-226	5.533E-03		4.016E-02	6.625E-02	5.284E-03	0.084
AC-227	-1.776E-02		1.063E-01	1.748E-01	1.787E-02	-0.102
TH-227	-1.776E-02		1.063E-01	1.748E-01	2.100E-02	-0.102
AC-228	2.676E-02		7.862E-02	1.376E-01	1.662E-02	0.194
RA-228	2.676E-02		7.862E-02	1.376E-01	1.662E-02	0.194
TH-228	-1.342E-03		2.949E-02	4.800E-02	3.527E-03	-0.028
TH-229	-9.242E-02		2.299E-01	3.752E-01	2.072E-02	-0.246
PA-231	8.991E-02		6.811E-01	1.148E+00	1.508E-01	0.078
TH-231	-3.604E-01		3.157E-01	4.559E-01	7.347E-02	-0.791
TH-232	2.676E-02		7.862E-02	1.376E-01	1.662E-02	0.194
PA-233	1.590E-03		3.176E-02	5.303E-02	3.276E-03	0.030
PA-234	8.107E-02		1.466E-01	2.643E-01	4.996E-02	0.307
PA-234M	-1.012E+00		1.999E+00	3.006E+00	2.906E-01	-0.337
TH-234	-4.391E-01		5.082E-01	7.792E-01	1.370E-01	-0.564
U-235	-3.900E-02		9.846E-02	1.499E-01	2.379E-02	-0.260
NP-237	9.950E-02		9.041E-02	1.535E-01	3.477E-02	0.648
U-238	-4.391E-01		5.082E-01	7.792E-01	1.370E-01	-0.564
NP-239	3.550E-02		1.771E-01	2.900E-01	2.094E-02	0.122
AM-241	-8.123E-02		5.904E-02	8.174E-02	6.068E-03	-0.994
CM-247	-3.150E-03		1.827E-02	2.956E-02	1.623E-03	-0.107
CF-249	1.204E-02		1.804E-02	3.196E-02	1.747E-03	0.377
CF-251	4.271E-03		6.314E-02	9.564E-02	5.193E-03	0.045
ANH-511	-3.067E-02		2.965E-02	5.395E-02	3.170E-03	-0.569

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]G1202053647
* Acquisition date   : 9-MAR-2010 11:49:46 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 02:00:00.50 Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 26-FEB-2010 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1202053647 Analyst initials: MXR1
* Batch Number       : 957714 Sample Quantity : 1.4024E+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	1.495E-01	1.954E-01	1.095E-01	9.970E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	7.740E-02	1.354E-01	1.248E-01	6.910E-02	NOT IDENT.
NA-22	-8.705E-03	1.967E-02	1.514E-02	1.004E-02	NOT IDENT.
NA-24	-1.513E+03	7.288E+03	0.000E+00	3.719E+03	SHORT HLIF
SC-46	1.739E-02	1.897E-02	1.763E-02	9.678E-03	NOT IDENT.
V-48	-5.443E-03	2.894E-02	2.414E-02	1.477E-02	NOT IDENT.
CR-51	-4.465E-02	1.782E-01	1.483E-01	9.091E-02	NOT IDENT.
MN-54	1.012E-02	1.726E-02	1.619E-02	8.805E-03	NOT IDENT.
CO-56	3.705E-03	1.731E-02	1.553E-02	8.832E-03	NOT IDENT.
CO-57	-1.441E-03	1.034E-02	8.862E-03	5.274E-03	NOT IDENT.
CO-58	7.573E-03	1.649E-02	1.486E-02	8.415E-03	NOT IDENT.
FE-59	-7.316E-03	3.275E-02	2.665E-02	1.671E-02	NOT IDENT.
CO-60	-3.266E-04	2.259E-02	1.865E-02	1.152E-02	NOT IDENT.
ZN-65	1.894E-03	3.660E-02	3.154E-02	1.867E-02	NOT IDENT.
SE-75	7.627E-03	1.865E-02	1.713E-02	9.514E-03	NOT IDENT.
SR-85	-4.485E-02	2.918E-02	2.206E-02	1.489E-02	NOT IDENT.
Y-88	2.344E-03	1.908E-02	1.628E-02	9.732E-03	NOT IDENT.
Y-91	-5.478E+00	8.056E+00	5.863E+00	4.110E+00	NOT IDENT.
NB-94	3.520E-03	1.689E-02	1.460E-02	8.616E-03	NOT IDENT.
NB-95	1.903E-03	1.691E-02	1.440E-02	8.627E-03	NOT IDENT.
NB-95M	-2.737E-02	5.100E-02	4.354E-02	2.602E-02	NOT IDENT.
ZR-95	-2.606E-02	3.412E-02	2.485E-02	1.741E-02	NOT IDENT.
MO-99	-2.092E+00	2.339E+00	1.633E+00	1.193E+00	NOT IDENT.
TC-99M	-6.259E+11	7.580E+11	0.000E+00	3.867E+11	SHORT HLIF
RU-103	1.496E-02	2.045E-02	1.883E-02	1.043E-02	NOT IDENT.
RH-106	-4.726E-02	1.550E-01	1.256E-01	7.911E-02	NOT IDENT.
RU-106	-4.726E-02	1.550E-01	1.256E-01	7.907E-02	NOT IDENT.

AG-108M	-2.804E-03	1.415E-02	1.195E-02	7.220E-03	NOT IDENT.
CD-109	-6.140E-01	3.274E-01	2.463E-01	1.670E-01	NOT IDENT.
AG-110M	-1.947E-02	1.799E-02	1.276E-02	9.181E-03	NOT IDENT.
SN-113	9.968E-03	1.878E-02	1.729E-02	9.580E-03	NOT IDENT.
CD-115	-1.027E+00	1.750E+00	1.374E+00	8.926E-01	NOT IDENT.
SN-117M	2.652E-02	1.945E-02	1.850E-02	9.921E-03	NOT IDENT.
TE-123M	4.890E-03	1.238E-02	1.096E-02	6.317E-03	NOT IDENT.
SB-124	2.884E-02	4.268E-02	4.150E-02	2.178E-02	NOT IDENT.
SE-125	2.222E-02	3.862E-02	3.572E-02	1.970E-02	NOT IDENT.
TE-125M	-2.597E+00	3.904E+00	3.213E+00	1.992E+00	NOT IDENT.
I-126	-6.704E-02	9.808E-02	7.502E-02	5.004E-02	NOT IDENT.
SB-126	3.094E-02	5.501E-02	5.002E-02	2.807E-02	NOT IDENT.
SN-126	-2.214E-02	2.997E-02	2.490E-02	1.529E-02	NOT IDENT.
SB-127	-1.181E-01	3.149E-01	2.487E-01	1.607E-01	NOT IDENT.
I-131	-1.290E-02	3.761E-02	3.156E-02	1.919E-02	NOT IDENT.
TE-132	2.968E-02	1.454E-01	1.318E-01	7.416E-02	NOT IDENT.
BA-133	5.630E-03	2.021E-02	1.812E-02	1.031E-02	NOT IDENT.
I-133	4.930E+01	1.569E+02	0.000E+00	8.004E+01	SHORT HLIF
CS-134	-4.889E-03	2.107E-02	1.686E-02	1.075E-02	NOT IDENT.
CS-135	-1.892E-02	6.680E-02	5.768E-02	3.408E-02	NOT IDENT.
I-135	1.193E+11	2.991E+11	0.000E+00	1.526E+11	SHORT HLIF
CS-136	-2.783E-03	4.276E-02	3.626E-02	2.182E-02	NOT IDENT.
BA-137M	1.629E-02	1.794E-02	1.690E-02	9.154E-03	NOT IDENT.
CS-137	1.721E-02	1.895E-02	1.785E-02	9.670E-03	NOT IDENT.
CE-139	5.603E-03	1.266E-02	1.125E-02	6.461E-03	NOT IDENT.
BA-140	-2.084E-02	1.053E-01	8.742E-02	5.374E-02	NOT IDENT.
LA-140	-2.357E-02	3.898E-02	2.733E-02	1.989E-02	NOT IDENT.
CE-141	-1.522E-03	2.740E-02	2.305E-02	1.398E-02	NOT IDENT.
CE-143	1.504E+00	8.647E+00	0.000E+00	4.412E+00	SHORT HLIF
CE-144	-3.468E-02	8.273E-02	6.884E-02	4.221E-02	NOT IDENT.
PM-144	1.364E-02	1.645E-02	1.540E-02	8.395E-03	NOT IDENT.
PR-144	1.022E+00	1.230E+00	1.151E+00	6.274E-01	NOT IDENT.
PM-146	5.663E-03	2.006E-02	1.785E-02	1.023E-02	NOT IDENT.
ND-147	6.202E-02	2.087E-01	1.852E-01	1.065E-01	NOT IDENT.
PM-149	-1.196E+00	1.317E+01	1.154E+01	6.721E+00	NOT IDENT.
EU-152	5.783E-02	4.452E-02	4.358E-02	2.272E-02	NOT IDENT.
GD-153	-1.694E-02	3.566E-02	3.010E-02	1.820E-02	NOT IDENT.
EU-154	-2.358E-02	5.609E-02	4.339E-02	2.862E-02	NOT IDENT.
EU-155	2.116E-02	4.250E-02	3.854E-02	2.168E-02	NOT IDENT.
TB-160	3.117E-02	6.957E-02	6.399E-02	3.550E-02	NOT IDENT.
HO-166M	2.498E-02	2.891E-02	2.726E-02	1.475E-02	NOT IDENT.
TA-182	3.007E-02	7.478E-02	6.813E-02	3.816E-02	NOT IDENT.
IR-192	5.775E-03	1.681E-02	1.520E-02	8.574E-03	NOT IDENT.
HG-203	-4.059E-03	1.665E-02	1.441E-02	8.494E-03	NOT IDENT.
BI-207	8.027E-03	2.256E-02	2.054E-02	1.151E-02	NOT IDENT.
TL-208	1.639E-02	2.035E-02	1.825E-02	1.038E-02	NOT IDENT.
PB-210	-7.622E-01	9.686E-01	8.670E-01	4.942E-01	NOT IDENT.
BI-211	-5.362E-02	9.335E-02	7.679E-02	4.763E-02	NOT IDENT.
PB-211	-6.963E-02	3.355E-01	2.831E-01	1.712E-01	NOT IDENT.
BI-212	1.494E-01	2.196E-01	2.036E-01	1.121E-01	NOT IDENT.
PB-212	-1.342E-03	2.890E-02	2.502E-02	1.475E-02	NOT IDENT.
BI-214	5.533E-03	3.935E-02	3.389E-02	2.008E-02	NOT IDENT.
PB-214	-5.666E-03	3.429E-02	2.949E-02	1.750E-02	NOT IDENT.
RN-219	1.918E-01	1.937E-01	1.836E-01	9.881E-02	NOT IDENT.
RA-223	-3.604E-01	3.094E-01	2.363E-01	1.578E-01	NOT IDENT.
RA-224	-2.735E-01	2.791E-01	2.291E-01	1.424E-01	NOT IDENT.
RA-226	5.533E-03	3.935E-02	3.389E-02	2.008E-02	NOT IDENT.
AC-227	-1.776E-02	1.041E-01	9.100E-02	5.313E-02	NOT IDENT.
TH-227	-1.776E-02	1.041E-01	9.100E-02	5.313E-02	NOT IDENT.
AC-228	2.676E-02	7.705E-02	6.981E-02	3.931E-02	NOT IDENT.
RA-228	2.676E-02	7.705E-02	6.981E-02	3.931E-02	NOT IDENT.
TH-228	-1.342E-03	2.890E-02	2.502E-02	1.475E-02	NOT IDENT.
TH-229	-9.242E-02	2.253E-01	1.964E-01	1.150E-01	NOT IDENT.
PA-231	8.991E-02	6.675E-01	5.967E-01	3.406E-01	NOT IDENT.
TH-231	-3.604E-01	3.094E-01	2.363E-01	1.578E-01	NOT IDENT.
TH-232	2.676E-02	7.705E-02	6.981E-02	3.931E-02	NOT IDENT.
PA-233	1.590E-03	3.112E-02	2.750E-02	1.588E-02	NOT IDENT.
PA-234	8.107E-02	1.437E-01	1.340E-01	7.331E-02	NOT IDENT.
PA-234M	-1.012E+00	1.959E+00	1.522E+00	9.996E-01	NOT IDENT.
TH-234	-4.391E-01	4.980E-01	4.168E-01	2.541E-01	NOT IDENT.
U-235	-3.900E-02	9.649E-02	7.894E-02	4.923E-02	NOT IDENT.
NP-237	9.950E-02	8.860E-02	8.160E-02	4.520E-02	NOT IDENT.
U-238	-4.391E-01	4.980E-01	4.168E-01	2.541E-01	NOT IDENT.
NP-239	3.550E-02	1.736E-01	1.533E-01	8.857E-02	NOT IDENT.
AM-241	-8.123E-02	5.786E-02	4.378E-02	2.952E-02	NOT IDENT.
CM-247	-3.150E-03	1.790E-02	1.525E-02	9.134E-03	NOT IDENT.
CF-249	1.204E-02	1.768E-02	1.650E-02	9.022E-03	NOT IDENT.
CF-251	4.271E-03	6.188E-02	5.016E-02	3.157E-02	NOT IDENT.

ANH-511	-3.067E-02	2.906E-02	2.770E-02	1.482E-02 NOT IDENT.
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 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON , SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	88.4026
49.72	92.8122
57.36	0.0000
59.54	117.5245
63.29	107.6269
63.29	107.6269
64.28	84.9438
67.75	107.0616
69.67	86.4322
70.83	78.1869
72.81	89.8206
72.87	89.8256
72.87	89.8256
74.82	82.6624
74.82	82.6624
74.82	82.6624
74.97	83.7204
77.11	81.7857
77.11	81.7857
77.11	81.7857
79.69	79.8718
79.80	79.8797
80.12	83.0560
80.19	83.0611
80.57	93.6064
81.00	94.6939
81.07	94.6997
81.07	94.6997
83.79	101.2507
83.79	101.2507
85.43	65.4826
86.48	82.4546
86.55	82.4593
86.79	88.8200
86.94	95.1766
87.57	118.5044
88.03	151.3625
88.47	186.3608
89.96	167.5073
91.11	117.7901
92.59	83.9336
92.59	83.9336
93.35	93.5530
94.67	138.3497
94.87	138.3720
94.87	138.3720
95.86	168.3078
97.43	104.5228
98.44	94.9988
99.53	92.9430
100.11	87.6408
103.18	82.4907
103.37	82.5028
105.31	75.1123
106.12	81.6000
109.28	94.7061
111.00	86.2048
111.76	87.3306
116.30	78.9621
117.23	83.3437
121.12	98.7651
121.78	86.8661
122.06	77.1086
123.07	67.3811
131.20	60.1017
133.52	83.1766
136.00	76.7334

136.47	65.7916
140.51	97.8435
140.51	0.0000
143.76	90.3331
144.24	82.6464
144.24	82.6464
145.44	80.5026
152.43	84.1710
153.25	84.2128
154.21	87.5876
154.21	87.5876
156.02	83.2432
158.56	58.9137
159.00	76.7190
162.66	77.9980
163.33	67.9963
165.86	70.3285
176.60	78.6181
177.52	75.2871
181.07	114.3891
184.41	65.8707
185.72	63.2081
193.51	81.6048
197.04	78.1217
205.31	69.3310
210.85	84.1606
215.65	68.7726
222.11	62.5501
227.38	65.4748
228.16	66.4216
228.18	66.4225
235.69	80.5440
235.96	76.8505
235.96	76.8505
238.63	55.6234
238.63	55.6234
240.99	87.2386
242.00	102.1347
244.70	55.7787
252.40	53.1738
252.80	51.3174
256.23	53.2644
256.23	53.2644
260.90	56.1833
264.66	48.7722
268.22	59.1802
269.46	65.7908
269.46	65.7908
271.23	58.3157
273.65	54.6101
276.40	62.2150
277.37	65.0691
277.60	64.1327
278.00	64.1435
279.20	63.2321
279.54	63.2411
280.46	61.3763
283.69	56.7319
284.31	56.7466
285.41	54.8798
285.90	54.8911
287.50	58.7153
293.27	0.0000
295.22	47.5006
295.96	53.2164
298.57	58.9810
299.98	59.0143
299.98	59.0143
300.09	56.1609
300.09	56.1609
300.13	56.1616
301.36	52.3802
302.85	48.5994
304.50	66.7495
304.50	66.7495
304.85	66.7585
308.46	48.7077
311.90	55.4682

316.51	55.5680
319.41	56.5894
320.08	51.8069
323.87	66.2946
323.87	66.2946
328.76	59.6803
333.37	60.7482
334.37	57.8774
334.37	57.8774
338.28	52.1655
338.28	52.1655
338.32	57.9631
338.32	57.9631
338.32	57.9631
340.48	52.2084
340.55	52.2097
344.28	33.8866
351.06	52.4120
351.93	49.5158
356.01	46.6717
364.49	41.9376
366.42	40.0140
383.85	41.2402
388.16	31.4676
388.63	35.4067
391.69	30.5209
400.66	23.7006
401.81	32.6008
402.40	44.4644
404.85	42.5234
410.95	47.5635
414.70	43.6536
423.72	31.8414
427.09	32.8723
427.87	25.9057
433.94	38.9343
453.88	33.1511
463.37	34.2552
468.07	22.1969
473.00	32.3344
476.78	19.2203
477.60	24.2845
487.02	29.4259
492.35	42.6839
497.08	34.6014
511.00	40.8718
514.00	124.7663
527.90	32.8547
529.87	0.0000
531.02	25.6897
537.26	30.8818
546.56	0.0000
563.25	30.0648
569.33	23.8833
569.50	21.8075
569.70	21.8085
583.19	21.8870
600.60	36.6440
602.73	29.3310
604.72	40.8748
609.32	38.8247
609.32	38.8247
610.33	31.4875
614.28	40.9748
618.01	28.3942
621.93	29.4745
621.93	29.4745
633.25	34.8369
635.95	27.4657
636.99	39.0957
645.85	26.4740
657.76	37.1713
661.66	21.2612
661.66	21.2612
664.57	0.0000
666.33	37.2490
666.50	37.2507
677.62	21.3428

685.70	23.5222
695.00	21.4307
696.49	19.2942
696.51	19.2942
697.00	22.5124
702.65	25.7625
706.68	34.3820
711.68	17.2109
720.70	18.3244
721.93	0.0000
722.78	21.5684
722.91	21.5693
723.31	25.8855
724.19	32.3635
727.33	15.1136
733.00	16.2140
735.93	18.3879
739.50	25.9805
747.24	20.6036
752.31	17.3699
753.82	19.5478
756.73	27.1674
763.94	23.9454
765.81	17.4219
766.42	23.9583
777.92	20.7432
778.90	21.8398
783.70	18.5830
785.37	17.4961
795.86	20.8239
801.95	12.0715
810.29	16.4905
810.76	13.1936
815.77	15.5923
818.51	19.2722
832.01	22.0874
834.85	17.4963
836.80	0.0000
846.77	16.6161
856.80	19.4252
860.56	16.6630
871.09	18.5539
873.19	19.4897
875.33	0.0000
879.36	18.5848
880.51	14.8711
883.24	19.5290
884.68	20.4648
889.28	10.2418
898.04	11.1924
911.20	14.0265
911.20	14.0265
911.20	14.0265
926.50	24.3851
937.49	19.7375
944.13	11.2927
946.00	14.1211
949.00	17.8968
962.29	10.3875
964.08	23.6155
966.15	17.0098
968.97	17.9644
968.97	17.9644
968.97	17.9644
983.53	18.0131
996.26	16.1550
1001.03	17.1204
1004.73	15.2285
1037.84	16.2771
1038.76	0.0000
1048.07	17.2661
1050.41	20.1523
1050.41	20.1523
1063.66	11.5425
1085.87	20.2780
1099.45	11.6147
1112.07	11.6396
1115.54	13.5876

1120.29	7.7705
1120.29	7.7705
1120.55	10.6853
1121.30	11.6582
1131.51	0.0000
1173.23	5.8796
1177.93	13.7300
1189.05	15.7201
1204.77	15.7598
1221.41	10.8639
1231.02	4.9457
1235.36	16.8271
1238.28	11.8833
1260.41	0.0000
1271.85	7.9642
1274.44	14.9390
1274.54	14.9390
1291.59	11.9824
1298.22	0.0000
1312.11	14.0234
1332.49	13.0619
1365.19	17.1646
1368.63	0.0000
1384.29	11.1379
1408.01	9.1443
1457.56	0.0000
1460.82	5.1186
1489.16	6.1667
1505.03	4.1203
1596.21	11.4709
1620.50	12.5537
1678.03	0.0000
1690.97	4.2228
1764.49	6.3928
1764.49	6.3928
1770.23	9.5958
1771.35	8.5309
1791.20	0.0000
1836.06	5.3739

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202053647

Total Uranium Activity	-1.3245E+00	ug/g
Total Uranium Counting Unc.	1.4822E+00	ug/g
Total Uranium Tpu	7.5624E-07	ug/g
Total Uranium Mda	1.2405E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 957714                          SAMPLE ID   : G1202053647
*  ANALYST       : MXR1                             DETECTOR    : GAM14
*  SAMPLE DATE   : 26-FEB-2010 00:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 9-MAR-2010 11:49:46.47           SAMPLE ALQT  : 140.240 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.594E-02
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.061E-02
GROSS GAMMA MDA     (pCi/GRAM ) : 1.026E-01
GROSS GAMMA DLC     (pCi/GRAM ) : 4.835E-02

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VAX/VMS Nuclide Identification Report Generated 9-MAR-2010 22:31:11.06

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053648.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 9-MAR-2010 11:50:32.
Sample ID          : G1202053648 Sample quantity : 1.26000E+02 GRAM
Detector name      : GAM17 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:10.33 0.1%
Energy tolerance   : 1.60000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 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	46.25*	268	539	1.02	92.14	87	10	3.72E-02	17.8	
2	0	63.19*	588	767	0.95	126.01	122	9	8.17E-02	9.6	
3	3	74.82*	666	495	1.01	149.28	143	14	9.25E-02	6.6	2.53E+00
4	3	77.01*	1067	434	0.95	153.67	143	14	1.48E-01	4.5	
5	0	84.01*	64	337	0.64	167.67	166	4	8.82E-03	44.0	
6	3	87.20*	235	417	0.83	174.06	171	20	3.27E-02	14.2	4.51E+00
7	3	89.89	158	380	0.89	179.43	171	20	2.20E-02	19.4	
8	3	92.62*	949	375	1.05	184.89	171	20	1.32E-01	4.9	
9	0	129.18	106	432	1.10	258.04	253	10	1.47E-02	38.0	
10	0	143.87*	93	424	1.15	287.44	282	11	1.29E-02	44.5	
11	0	185.80*	266	264	1.14	371.34	367	9	3.69E-02	13.0	
12	0	208.87*	127	221	0.97	417.50	414	9	1.76E-02	23.1	
13	3	238.41*	1118	139	1.05	476.59	471	17	1.55E-01	3.5	1.74E+00
14	3	241.44	274	197	1.50	482.66	471	17	3.81E-02	12.0	
15	0	269.87	104	222	1.92	539.54	533	12	1.44E-02	30.3	
16	0	294.97	260	173	1.17	589.76	586	9	3.62E-02	11.0	
17	0	300.01	82	185	1.06	599.85	596	9	1.14E-02	32.1	
18	0	327.53	79	206	1.11	654.91	648	12	1.10E-02	37.9	
19	0	338.01*	181	169	1.16	675.88	671	10	2.51E-02	15.7	
20	0	351.59*	541	220	1.28	703.05	696	14	7.51E-02	7.3	
21	0	462.89	83	90	0.96	925.75	921	10	1.16E-02	23.9	
22	0	510.44*	137	108	2.08	1020.91	1014	18	1.90E-02	22.0	
23	0	582.60*	310	86	1.51	1165.31	1160	13	4.30E-02	8.7	
24	0	608.78*	393	77	1.20	1217.69	1213	12	5.45E-02	6.8	
25	0	660.98*	174	94	1.03	1322.15	1316	11	2.42E-02	13.3	
26	0	726.62*	63	43	1.01	1453.51	1449	9	8.76E-03	23.1	
27	0	859.93*	27	49	1.06	1720.29	1714	10	3.72E-03	54.7	
28	0	910.31*	192	46	1.48	1821.13	1815	14	2.66E-02	10.6	
29	2	963.36	54	41	2.01	1927.30	1919	40	7.50E-03	27.1	1.15E+00
30	2	968.06	139	39	2.02	1936.70	1919	40	1.93E-02	12.6	
31	0	1119.61*	84	54	1.38	2240.03	2234	14	1.17E-02	21.7	
32	0	1376.08	32	14	2.10	2753.37	2746	12	4.48E-03	29.6	
33	0	1459.24*	876	20	1.61	2919.83	2912	16	1.22E-01	3.6	
34	0	1762.66*	48	9	1.82	3527.25	3521	12	6.72E-03	19.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 9-MAR-2010 22:31:13

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053648.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 9-MAR-2010 11:50:32
Sample ID        : G1202053648 Sample quantity : 126.00 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA17 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:10.33 0.1%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.60 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	+	1460.82	*	3.144E+01	3.587E+00	6.761E-01	6.003E-02	46.498
CD-109	+	88.03	*	2.918E+00	8.771E-01	1.095E+00	1.069E-01	2.664
SN-126	+	64.28	*	2.693E+00	6.740E-01	4.701E-01	7.504E-02	5.729
	+	86.94	*	1.179E+00	5.941E-01	4.410E-01	1.835E-01	2.673
	+	87.57	*	2.836E-01	8.524E-02	1.063E-01	1.037E-02	2.668
BA-137M	+	661.66	*	3.599E-01	1.006E-01	1.010E-01	8.510E-03	3.563
CS-137	+	661.66	*	3.802E-01	1.063E-01	1.067E-01	9.008E-03	3.563
CE-141	+	145.44	*	1.540E-01	1.380E-01	1.153E-01	1.176E-02	1.336
TL-208		277.37		6.475E-01	4.426E-01	7.916E-01	1.023E-01	0.818
	+	583.19	*	5.985E-01	1.181E-01	7.152E-02	6.757E-03	8.368
	+	860.56	*	5.118E-01	5.615E-01	5.519E-01	5.190E-02	0.927
PB-210	+	46.54	*	2.986E+00	1.111E+00	8.876E-01	9.569E-02	3.364
BI-211		72.87		4.511E+00	2.309E+00	4.040E+00	3.950E-01	1.117
	+	351.06	*	4.285E+00	7.447E-01	4.002E-01	3.735E-02	10.707
PB-212	+	74.82	*	2.839E+00	5.417E-01	4.303E-01	5.930E-02	6.598
	+	77.11	*	2.741E+00	3.630E-01	2.419E-01	2.359E-02	11.328
	+	238.63	*	1.898E+00	2.335E-01	1.042E-01	1.055E-02	18.220
	+	300.09	*	2.210E+00	1.437E+00	1.450E+00	1.595E-01	1.524
BI-214	+	609.32	*	1.480E+00	2.528E-01	1.473E-01	1.505E-02	10.052
	+	1120.29	*	1.714E+00	7.675E-01	6.078E-01	6.528E-02	2.821
		1764.49		1.240E+00	5.182E-01	1.009E+00	8.528E-02	1.230
PB-214	+	74.82	*	5.032E+00	9.173E-01	7.627E-01	9.592E-02	6.598
	+	77.11	*	4.832E+00	7.539E-01	4.265E-01	5.446E-02	11.328
	+	242.00	*	2.825E+00	7.450E-01	6.342E-01	6.815E-02	4.454
	+	295.22	*	1.243E+00	3.082E-01	2.691E-01	3.029E-02	4.618
	+	351.93	*	1.555E+00	2.835E-01	1.456E-01	1.578E-02	10.680
RA-224	+	240.99	*	4.995E+00	1.285E+00	1.117E+00	1.010E-01	4.471
RA-226	+	609.32	*	1.480E+00	2.528E-01	1.473E-01	1.505E-02	10.052
	+	1120.29	*	1.714E+00	7.675E-01	6.078E-01	6.528E-02	2.821
		1764.49		1.240E+00	5.182E-01	1.009E+00	8.528E-02	1.230
AC-228	+	338.32	*	1.586E+00	8.289E-01	4.383E-01	1.832E-01	3.618
	+	911.20	*	1.874E+00	4.552E-01	3.516E-01	4.110E-02	5.329
	+	968.97	*	2.342E+00	8.229E-01	4.910E-01	1.198E-01	4.770
RA-228	+	338.32	*	1.586E+00	8.289E-01	4.383E-01	1.832E-01	3.618

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	911.20	*	1.874E+00	4.552E-01	3.516E-01	4.110E-02	5.329
	+	968.97		2.342E+00	8.229E-01	4.910E-01	1.198E-01	4.770
	+	74.82		2.839E+00	4.672E-01	4.303E-01	4.230E-02	6.598
	+	77.11		2.741E+00	3.630E-01	2.419E-01	2.359E-02	11.328
	+	238.63	*	1.898E+00	2.335E-01	1.042E-01	1.055E-02	18.220
TH-229	+	300.09		2.210E+00	1.960E+00	1.450E+00	8.888E-01	1.524
	+	85.43		1.917E-01	1.697E-01	3.162E-01	3.083E-02	0.606
	+	88.47		4.372E-01	1.314E-01	1.643E-01	1.607E-02	2.661
		193.51	*	1.360E-01	5.841E-01	9.539E-01	8.249E-02	0.143
		210.85		8.234E-01	1.114E+00	1.671E+00	1.473E-01	0.493
TH-232	+	338.32		1.586E+00	5.177E-01	4.383E-01	3.950E-02	3.618
	+	911.20	*	1.874E+00	4.552E-01	3.516E-01	4.110E-02	5.329
	+	968.97		2.342E+00	8.229E-01	4.910E-01	1.198E-01	4.770
TH-234	+	63.29	*	6.988E+00	1.892E+00	1.215E+00	2.312E-01	5.752
	+	92.59		1.013E+01	2.499E+00	9.447E-01	2.140E-01	10.720
U-235	+	89.96		2.045E+00	9.455E-01	1.142E+00	2.863E-01	1.791
	+	93.35		7.650E+00	1.957E+00	7.154E-01	1.692E-01	10.693
	+	143.76	*	4.522E-01	4.105E-01	3.496E-01	6.225E-02	1.293
NP-237		163.33		3.567E-01	5.087E-01	8.486E-01	1.521E-01	0.420
	+	185.72		2.881E-01	7.908E-02	7.071E-02	6.055E-03	4.074
		205.31		2.586E-01	5.950E-01	8.762E-01	1.596E-01	0.295
	+	86.48	*	8.461E-01	3.101E-01	3.688E-01	8.529E-02	2.294
		95.86		-1.180E+00	1.036E+00	1.404E+00	3.451E-01	-0.840
U-238	+	63.29	*	6.988E+00	1.892E+00	1.215E+00	2.312E-01	5.752
	+	92.59		1.013E+01	1.415E+00	9.447E-01	9.426E-02	10.720
ANH-511	+	511.00	*	1.985E-01	8.905E-02	5.164E-02	4.612E-03	3.843

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-7.436E-02	4.303E-01	6.957E-01	6.618E-02	-0.107
NA-22		1274.54	*	-6.827E-02	6.613E-02	9.234E-02	7.779E-03	-0.739
NA-24		1368.63	*	1.409E+01	6.613E-02	Half-Life too short		
SC-46		889.28	*	4.801E-03	5.817E-02	9.704E-02	8.495E-03	0.049
	+	1120.55		2.994E-01	1.325E-01	1.882E-01	1.579E-02	1.591
V-48		944.13		2.252E-01	1.387E+00	2.325E+00	2.034E-01	0.097
		983.53	*	3.067E-02	1.144E-01	1.885E-01	1.645E-02	0.163
		1312.11		5.007E-02	1.236E-01	2.172E-01	1.843E-02	0.231
CR-51		320.08	*	-3.083E-02	4.635E-01	7.512E-01	7.169E-02	-0.041
MN-54		834.85	*	-3.821E-02	5.449E-02	8.488E-02	7.463E-03	-0.450
CO-56		846.77	*	-1.281E-02	5.391E-02	8.740E-02	7.683E-03	-0.147
		1037.84		1.683E-02	4.131E-01	6.786E-01	6.164E-02	0.025
		1238.28		9.689E-02	1.381E-01	2.361E-01	2.029E-02	0.410
		1771.35		6.164E-02	2.753E-01	4.749E-01	4.011E-02	0.130
CO-57		122.06	*	-2.015E-02	2.723E-02	4.337E-02	5.081E-03	-0.465
		136.47		2.038E-01	2.264E-01	3.853E-01	4.334E-02	0.529
CO-58		810.76	*	6.724E-03	4.997E-02	8.445E-02	7.437E-03	0.080
FE-59		1099.45	*	-9.482E-03	1.372E-01	2.215E-01	2.033E-02	-0.043

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60	1291.59			1.264E-01	1.797E-01	3.133E-01	3.019E-02	0.403
	1173.23			7.740E-02	6.474E-02	1.168E-01	9.539E-03	0.663
	1332.49	*		-1.217E-02	5.235E-02	8.508E-02	7.251E-03	-0.143
ZN-65	1115.54	*		-5.819E-02	1.522E-01	2.013E-01	1.695E-02	-0.289
SE-75	121.12			-1.154E-02	1.406E-01	2.316E-01	3.144E-02	-0.050
	136.00			3.648E-02	4.418E-02	7.503E-02	8.114E-03	0.486
	264.66	*		-1.281E-02	5.983E-02	8.249E-02	7.580E-03	-0.155
	279.54			4.551E-02	1.242E-01	2.146E-01	2.036E-02	0.212
	400.66			-5.597E-02	3.303E-01	5.417E-01	5.948E-02	-0.103
	514.00	*		3.132E-02	4.671E-02	7.222E-02	6.452E-03	0.434
SR-85	898.04			2.862E-02	5.725E-02	9.933E-02	8.725E-03	0.288
Y-88	1836.06	*		-1.287E-02	4.742E-02	7.234E-02	6.032E-03	-0.178
	1204.77	*		2.342E+01	3.681E+01	6.271E+01	5.176E+00	0.374
	702.65	*		2.907E-02	4.742E-02	8.338E-02	7.152E-03	0.349
NB-94	871.09			1.863E-02	4.678E-02	8.054E-02	7.068E-03	0.231
NB-95	765.81	*		9.762E-02	6.804E-02	1.243E-01	1.086E-02	0.785
NB-95M	235.69	*		1.191E-01	1.638E-01	2.440E-01	2.496E-02	0.488
ZR-95	724.19			-2.603E-02	1.509E-01	2.164E-01	2.028E-02	-0.120
	756.73	*		8.959E-02	9.630E-02	1.740E-01	1.672E-02	0.515
	140.51			-1.748E+01	7.269E+01	1.037E+02	2.537E+01	-0.169
MO-99	181.07			-2.574E+01	5.925E+01	8.279E+01	1.552E+01	-0.311
	366.42			-2.198E+02	3.186E+02	5.064E+02	4.432E+01	-0.434
	739.50	*		-2.116E+01	4.075E+01	6.474E+01	1.022E+01	-0.327
	777.92			-6.785E+01	1.293E+02	2.055E+02	1.799E+01	-0.330
TC-99M	140.51	*		-5.080E+14	1.293E+02	Half-Life too short		
RU-103	497.08	*		-4.477E-02	5.792E-02	8.829E-02	1.249E-02	-0.507
	610.33		+	1.636E+01	3.496E+00	3.906E+00	6.410E-01	4.189
	621.93	*		-1.710E-01	4.130E-01	6.360E-01	8.459E-02	-0.269
RH-106	1050.41			-1.272E+00	3.732E+00	5.870E+00	5.052E-01	-0.217
RU-106	621.93	*		-1.710E-01	4.127E-01	6.360E-01	5.525E-02	-0.269
	1050.41			-1.272E+00	3.732E+00	5.870E+00	5.052E-01	-0.217
	433.94	*		1.320E-02	3.680E-02	6.228E-02	5.582E-03	0.212
AG-108M	614.28			-2.546E-02	5.203E-02	6.826E-02	6.148E-03	-0.373
	722.91			-1.731E-02	5.453E-02	7.659E-02	6.828E-03	-0.226
	657.76	*		2.806E-02	5.410E-02	8.057E-02	7.022E-03	0.348
AG-110M	677.62			9.402E-02	4.300E-01	7.014E-01	6.130E-02	0.134
	706.68			6.094E-02	2.983E-01	5.101E-01	4.509E-02	0.119
	763.94			6.226E-02	2.461E-01	4.197E-01	3.763E-02	0.148
	884.68			-2.887E-02	7.159E-02	1.137E-01	1.027E-02	-0.254
	937.49			-7.896E-03	1.545E-01	2.532E-01	2.294E-02	-0.031
	1384.29			-8.824E-03	1.902E-01	3.155E-01	2.781E-02	-0.028
SN-113	1505.03			2.926E-01	3.571E-01	6.659E-01	5.759E-02	0.439
	391.69	*		7.326E-04	6.072E-02	1.010E-01	8.771E-03	0.007
	260.90			-2.790E-04	6.072E-02	Half-Life too short		
CD-115	492.35			1.186E-04	6.072E-02	Half-Life too short		
	527.90	*		3.982E-05	6.072E-02	Half-Life too short		
	156.02			-1.915E+00	3.123E+00	4.946E+00	4.553E-01	-0.387
SN-117M	158.56	*		5.314E-03	7.271E-02	1.191E-01	1.070E-02	0.045
TE-123M	159.00	*		-3.506E-03	3.175E-02	5.151E-02	4.637E-03	-0.068

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SB-124	602.73			6.182E-02	5.353E-02	8.937E-02	7.849E-03	0.692
	645.85			-4.811E-02	6.775E-01	1.079E+00	9.750E-02	-0.045
	722.78			-2.988E-01	5.854E-01	8.013E-01	7.080E-02	-0.373
SB-125	1690.97		*	-9.938E-02	1.224E-01	1.676E-01	1.494E-02	-0.593
	427.87		*	9.883E-03	1.103E-01	1.834E-01	1.617E-02	0.054
	463.37			1.056E+00	5.147E-01	7.251E-01	6.856E-02	1.456
	600.60			-1.130E-01	2.257E-01	3.462E-01	3.260E-02	-0.326
	635.95			-1.144E-01	3.772E-01	5.878E-01	5.470E-02	-0.195
TE-125M	109.28		*	-5.272E+00	1.072E+01	1.744E+01	2.167E+00	-0.302
I-126	388.63			9.439E-02	2.692E-01	4.569E-01	3.866E-02	0.207
	666.33		*	1.420E-01	4.646E-01	6.680E-01	5.640E-02	0.213
	753.82			8.468E-01	2.847E+00	4.898E+00	4.267E-01	0.173
SB-126	414.70			2.555E-02	1.159E-01	1.948E-01	1.670E-02	0.131
	666.50			6.445E-02	1.498E-01	2.292E-01	1.935E-02	0.281
	695.00			4.315E-02	1.287E-01	2.226E-01	1.904E-02	0.194
	697.00			-7.358E-02	4.564E-01	7.595E-01	6.500E-02	-0.097
	720.70		*	2.245E-01	2.540E-01	4.249E-01	3.668E-02	0.528
SB-127	856.80			3.506E-01	9.402E-01	1.420E+00	1.248E-01	0.247
	252.40			-3.411E+00	1.026E+01	1.579E+01	6.628E+00	-0.216
	473.00			-7.211E-02	3.981E+00	6.521E+00	9.130E-01	-0.011
	685.70		*	-1.353E+00	3.930E+00	6.064E+00	7.587E-01	-0.223
	783.70			1.549E+01	9.986E+00	1.839E+01	2.495E+00	0.842
I-131	80.19			3.284E-01	5.992E+00	8.332E+00	8.180E-01	0.039
	284.31			8.537E-01	2.269E+00	3.923E+00	3.777E-01	0.218
	364.49		*	3.860E-02	1.903E-01	3.218E-01	2.980E-02	0.120
TE-132	636.99			7.976E-01	3.086E+00	5.068E+00	4.624E-01	0.157
	49.72			-2.327E+00	1.009E+01	1.543E+01	2.037E+00	-0.151
	111.76			3.268E+01	8.561E+01	1.419E+02	1.985E+01	0.230
BA-133	116.30			-3.364E+01	6.917E+01	1.119E+02	1.591E+01	-0.301
	228.16		*	9.681E-01	1.913E+00	3.135E+00	5.276E-01	0.309
	81.00			-1.117E-02	8.988E-02	1.237E-01	2.000E-02	-0.090
	276.40			2.110E-01	4.006E-01	6.959E-01	1.006E-01	0.303
	302.85			6.554E-03	1.749E-01	2.613E-01	3.511E-02	0.025
I-133	356.01		*	9.060E-03	5.391E-02	8.057E-02	1.057E-02	0.112
	383.85			-1.854E-01	3.600E-01	5.769E-01	7.133E-02	-0.321
	529.87		*	-2.864E-02	3.600E-01	Half-Life	too short	
	875.33			2.906E+00	3.600E-01	Half-Life	too short	
	1298.22			-9.080E+00	3.600E-01	Half-Life	too short	
CS-134	563.25			2.764E-01	4.432E-01	7.573E-01	6.806E-02	0.365
	569.33			7.181E-02	2.504E-01	4.156E-01	3.743E-02	0.173
	604.72			-1.247E-02	5.036E-02	6.866E-02	6.038E-03	-0.182
	795.86		*	4.537E-02	6.230E-02	1.103E-01	9.746E-03	0.411
	801.95			-4.212E-01	5.339E-01	8.227E-01	7.263E-02	-0.512
CS-135	1365.19			-1.679E+00	1.783E+00	2.586E+00	2.318E-01	-0.649
I-135	268.22		*	2.126E-01	1.886E-01	3.168E-01	3.305E-02	0.671
	546.56			2.033E+14	1.886E-01	Half-Life	too short	
	836.80			4.655E+14	1.886E-01	Half-Life	too short	
	1038.76			1.352E+14	1.886E-01	Half-Life	too short	
	1131.51			-6.347E+13	1.886E-01	Half-Life	too short	

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CS-136	1260.41	*		6.769E+13	1.886E-01	Half-Life	too short	
	1457.56			2.815E+16	1.886E-01	Half-Life	too short	
	1678.03			-3.888E+14	1.886E-01	Half-Life	too short	
	1791.20			1.906E+14	1.886E-01	Half-Life	too short	
	153.25			1.113E+00	1.199E+00	2.029E+00	2.225E-01	0.549
	176.60			-2.427E-01	6.826E-01	1.087E+00	1.018E-01	-0.223
	273.65			-1.128E+00	8.758E-01	1.081E+00	1.067E-01	-1.043
	340.55			2.278E-01	2.108E-01	3.389E-01	3.156E-02	0.672
	818.51			-1.493E-02	1.067E-01	1.750E-01	1.540E-02	-0.085
	1048.07	*		2.006E-01	1.812E-01	3.290E-01	2.954E-02	0.610
CE-139	1235.36			1.849E+00	1.068E+00	1.945E+00	2.248E-01	0.951
	165.86	*		1.372E-02	3.495E-02	5.791E-02	4.829E-03	0.237
	162.66			3.458E-01	1.138E+00	1.880E+00	1.731E-01	0.184
BA-140	304.85			-1.263E-01	2.111E+00	3.128E+00	9.207E-01	-0.040
	423.72			-3.731E-01	2.870E+00	4.694E+00	1.544E+00	-0.079
	537.26	*		4.864E-02	4.305E-01	7.060E-01	2.400E-01	0.069
LA-140	328.76		+	1.059E+00	8.091E-01	8.418E-01	8.031E-02	1.258
	487.02			2.017E-02	2.196E-01	3.620E-01	3.406E-02	0.056
	815.77			2.343E-01	4.877E-01	8.523E-01	8.337E-02	0.275
CE-143	1596.21	*		-1.057E-01	1.252E-01	1.694E-01	1.462E-02	-0.624
	57.36			-8.944E-04	1.252E-01	Half-Life	too short	
	293.27	*		3.864E-03	1.252E-01	Half-Life	too short	
	664.57			1.125E-02	1.252E-01	Half-Life	too short	
CE-144	721.93			-7.826E-03	1.252E-01	Half-Life	too short	
	80.12			9.976E-02	2.337E+00	3.248E+00	3.163E-01	0.031
PM-144	133.52	*		-3.283E-03	2.431E-01	3.577E-01	5.976E-02	-0.009
	476.78			2.510E-02	8.186E-02	1.374E-01	1.318E-02	0.183
PR-144	618.01			7.851E-03	4.188E-02	6.856E-02	6.135E-03	0.115
	696.49	*		-7.101E-03	4.587E-02	7.635E-02	6.537E-03	-0.093
	696.51	*		-5.079E-01	3.442E+00	5.733E+00	4.906E-01	-0.089
PM-146	1489.16			-3.863E+00	1.770E+01	2.834E+01	2.450E+00	-0.136
	453.88	*		3.285E-02	5.475E-02	9.377E-02	1.005E-02	0.350
	633.25			-1.109E+00	2.070E+00	3.089E+00	1.180E+00	-0.359
ND-147	735.93			7.267E-02	1.927E-01	3.323E-01	9.318E-02	0.219
	747.24			5.180E-02	1.317E-01	2.279E-01	3.334E-02	0.227
	91.11		+	8.460E-01	3.403E-01	7.473E-01	7.874E-02	1.132
	319.41			-1.383E+00	4.747E+00	7.841E+00	7.152E-01	-0.176
	531.02	*		-6.453E-01	9.236E-01	1.400E+00	2.120E-01	-0.461
PM-149	285.90	*		2.361E-05	9.236E-01	Half-Life	too short	
EU-152	121.78			-2.534E-02	7.606E-02	1.238E-01	1.568E-02	-0.205
	244.70			-1.057E-01	4.134E-01	5.721E-01	5.186E-02	-0.185
	344.28	*		-5.634E-02	1.143E-01	1.785E-01	1.687E-02	-0.316
	778.90			-2.368E-01	3.513E-01	5.498E-01	4.813E-02	-0.431
GD-153	964.08		+	9.817E-01	5.389E-01	8.051E-01	7.036E-02	1.219
	1085.87			2.892E-01	5.052E-01	8.763E-01	7.457E-02	0.330
	1112.07			4.410E-02	4.854E-01	7.510E-01	6.325E-02	0.059
	1408.01			1.620E-01	1.920E-01	3.635E-01	3.127E-02	0.446
	69.67			-4.072E-01	1.304E+00	1.950E+00	1.914E-01	-0.209
	97.43	*		8.045E-02	9.391E-02	1.461E-01	1.494E-02	0.550

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		103.18		-9.371E-02	1.111E-01	1.781E-01	1.877E-02	-0.526
		123.07		2.772E-02	5.477E-02	9.228E-02	1.273E-02	0.300
		723.31		-1.432E-01	2.423E-01	3.265E-01	3.105E-02	-0.439
		873.19		-1.071E-02	4.035E-01	6.670E-01	8.009E-02	-0.016
		996.26		-5.871E-01	5.461E-01	7.793E-01	1.365E-01	-0.753
EU-155		1004.73		-3.235E-01	3.262E-01	4.770E-01	5.578E-02	-0.678
		1274.44	*	-1.389E-01	1.807E-01	2.613E-01	2.933E-02	-0.531
	+	86.55		3.444E-01	1.036E-01	1.827E-01	1.796E-02	1.885
		105.31	*	1.137E-01	1.107E-01	1.903E-01	2.044E-02	0.598
	+	86.79		9.468E-01	2.846E-01	4.987E-01	4.865E-02	1.898
TB-160		197.04		-2.705E-01	6.499E-01	1.024E+00	8.891E-02	-0.264
		215.65		-1.464E-01	8.979E-01	1.427E+00	1.264E-01	-0.103
	+	298.57		3.230E-01	2.092E-01	2.694E-01	2.473E-02	1.199
		879.36	*	8.338E-02	2.054E-01	3.532E-01	3.096E-02	0.236
	+	962.29		1.913E+00	1.050E+00	1.540E+00	1.346E-01	1.242
HO-166M		966.15		1.649E+00	4.028E-01	7.862E-01	6.870E-02	2.097
		1177.93		3.162E-02	5.382E-01	8.759E-01	7.166E-02	0.036
		1271.85		4.868E-01	9.141E-01	1.573E+00	1.323E-01	0.309
		80.57		8.745E-02	2.837E-01	3.492E-01	3.402E-02	0.250
	+	184.41		2.289E-01	6.283E-02	7.967E-02	6.811E-03	2.873
TA-182		280.46		-8.653E-02	9.624E-02	1.547E-01	1.421E-02	-0.559
		410.95		1.265E-02	3.023E-01	5.022E-01	4.294E-02	0.025
		711.68	*	-1.619E-02	7.853E-02	1.298E-01	1.117E-02	-0.125
		752.31		-3.124E-01	3.714E-01	5.736E-01	4.996E-02	-0.545
		810.29		-4.360E-02	7.918E-02	1.248E-01	1.096E-02	-0.349
IR-192		67.75		-1.146E-02	8.088E-02	1.227E-01	1.209E-02	-0.093
		100.11		-1.134E-02	1.796E-01	2.990E-01	3.099E-02	-0.038
		152.43		3.830E-01	4.133E-01	7.003E-01	6.657E-02	0.547
		222.11		5.479E-01	4.153E-01	7.081E-01	6.311E-02	0.774
		1121.30		6.979E-01	2.743E-01	4.852E-01	4.071E-02	1.438
HG-203		1189.05		3.167E-01	4.474E-01	7.745E-01	6.361E-02	0.409
		1221.41	*	3.491E-01	3.008E-01	5.355E-01	4.442E-02	0.652
		1231.02		-3.886E-01	7.355E-01	1.122E+00	9.337E-02	-0.346
	+	295.96		9.529E-01	2.283E-01	3.400E-01	3.142E-02	2.803
		308.46		2.055E-02	1.128E-01	1.922E-01	1.768E-02	0.107
BI-207		316.51	*	9.537E-03	4.095E-02	6.989E-02	6.394E-03	0.136
		468.07		-2.100E-02	8.908E-02	1.245E-01	1.176E-02	-0.169
		70.83		3.735E-01	1.069E+00	1.637E+00	2.738E-01	0.228
		72.87		1.190E+00	6.281E-01	1.066E+00	1.727E-01	1.117
		279.20	*	2.677E-02	4.584E-02	7.998E-02	7.508E-03	0.335
PB-211		72.81		2.334E-01	1.316E-01	2.299E-01	2.248E-02	1.015
	+	74.97		8.185E-01	1.343E-01	1.950E-01	1.903E-02	4.197
		569.70		7.585E-03	3.814E-02	6.284E-02	5.588E-03	0.121
		1063.66	*	7.090E-03	6.862E-02	1.133E-01	9.713E-03	0.063
		1770.23		-1.126E-01	5.638E-01	8.775E-01	7.412E-02	-0.128
BI-212		404.85	*	-2.871E-01	8.649E-01	1.382E+00	6.684E-01	-0.208
		427.09		-2.823E-01	1.831E+00	2.982E+00	1.380E+00	-0.095
		832.01		1.897E-01	1.353E+00	2.274E+00	1.180E+00	0.083
	+	727.33	*	1.924E+00	9.205E-01	1.535E+00	1.916E-01	1.253

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	785.37		-1.045E+00	4.329E+00	7.079E+00	6.203E-01	-0.148
		1620.50		2.547E+00	3.241E+00	6.013E+00	5.181E-01	0.424
		271.23		7.853E-01	4.836E-01	5.130E-01	5.498E-02	1.531
		401.81	*	-3.650E-01	5.132E-01	8.054E-01	1.192E-01	-0.453
RA-223	+	81.07		-3.688E-02	2.046E-01	2.809E-01	2.735E-02	-0.131
		83.79		1.141E-01	1.010E-01	1.943E-01	1.893E-02	0.587
		94.87		8.028E-01	4.703E-01	7.513E-01	7.581E-02	1.069
		144.24		1.516E+00	1.359E+00	1.376E+00	1.517E-01	1.101
AC-227	+	154.21		1.636E-01	4.433E-01	7.358E-01	7.448E-02	0.222
		269.46		6.102E-01	3.744E-01	4.167E-01	3.885E-02	1.464
		323.87	*	2.694E-01	8.551E-01	1.298E+00	2.281E-01	0.208
		338.28		6.294E+00	2.122E+00	2.882E+00	3.561E-01	2.184
	+	79.69		-3.725E-02	1.045E+00	1.580E+00	2.815E-01	-0.024
		235.96		3.146E-01	1.992E-01	3.089E-01	3.296E-02	1.019
		256.23	*	1.402E-03	3.085E-01	4.896E-01	6.078E-02	0.003
		299.98		2.431E+00	1.590E+00	2.087E+00	2.731E-01	1.165
TH-227	+	304.50		-1.001E+00	2.119E+00	3.026E+00	5.090E-01	-0.331
		334.37		-9.591E-01	2.291E+00	3.263E+00	5.162E-01	-0.294
		79.80		3.316E-02	1.380E+00	2.092E+00	4.654E-01	0.016
		235.96		3.146E-01	1.989E-01	3.089E-01	3.122E-02	1.019
PA-231	+	256.23	*	1.402E-03	3.085E-01	4.896E-01	6.819E-02	0.003
		299.98		2.431E+00	1.590E+00	2.087E+00	2.731E-01	1.165
		304.50		-1.001E+00	2.119E+00	3.026E+00	5.090E-01	-0.331
		334.37		-9.591E-01	2.291E+00	3.263E+00	5.162E-01	-0.294
TH-231	+	283.69	*	2.179E-01	1.535E+00	2.622E+00	3.914E-01	0.083
		301.36		1.562E+00	1.020E+00	1.256E+00	1.576E-01	1.243
		81.07		-3.688E-02	2.046E-01	2.809E-01	2.735E-02	-0.131
		83.79		1.141E-01	1.010E-01	1.943E-01	1.893E-02	0.587
PA-233	+	94.87		8.028E-01	4.703E-01	7.513E-01	7.581E-02	1.069
		144.24		1.516E+00	1.359E+00	1.376E+00	1.517E-01	1.101
		154.21		1.636E-01	4.433E-01	7.358E-01	7.448E-02	0.222
		269.46		6.102E-01	3.744E-01	4.167E-01	3.885E-02	1.464
	+	323.87	*	2.694E-01	8.551E-01	1.298E+00	2.281E-01	0.208
		338.28		6.294E+00	2.122E+00	2.882E+00	3.561E-01	2.184
		300.13		1.100E+00	7.246E-01	9.460E-01	1.434E-01	1.163
		311.90	*	-4.249E-02	7.458E-02	1.213E-01	1.138E-02	-0.350
PA-234	+	340.48		9.268E-01	7.712E-01	1.206E+00	2.920E-01	0.768
		94.67		4.981E-01	1.872E-01	2.950E-01	3.970E-02	1.689
		98.44		1.465E-01	1.227E-01	1.611E-01	9.032E-02	0.909
		111.00		-4.304E-02	1.978E-01	3.255E-01	4.519E-02	-0.132
	+	131.20		1.433E-01	1.297E-01	2.015E-01	2.238E-02	0.711
		569.50		2.254E-02	3.455E-01	5.626E-01	5.003E-02	0.040
		733.00		-1.511E-01	5.266E-01	8.374E-01	1.860E-01	-0.180
		880.51		-2.423E-01	4.122E-01	6.429E-01	5.636E-02	-0.377
PA-234M	+	883.24		1.757E-02	4.053E-01	6.738E-01	4.531E-01	0.026
		926.50		3.467E-03	2.331E-01	3.853E-01	9.756E-02	0.009
		946.00	*	-1.053E-01	4.137E-01	6.623E-01	1.247E-01	-0.159
		949.00		6.455E-02	6.328E-01	1.053E+00	9.208E-02	0.061
		766.42		1.551E+01	1.906E+01	3.086E+01	1.566E+01	0.502

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		1.136E+01	7.249E+00	1.345E+01	1.350E+00	0.844
	99.53			1.439E-01	1.643E-01	2.821E-01	2.915E-02	0.510
	103.37			-1.197E-01	1.021E-01	1.607E-01	1.695E-02	-0.745
	106.12			9.476E-02	8.798E-02	1.514E-01	1.621E-02	0.626
	117.23	*		-4.835E-01	4.156E-01	6.467E-01	7.365E-02	-0.748
	228.18			1.244E-01	2.441E-01	4.012E-01	3.594E-02	0.310
AM-241	277.60			3.530E-01	2.025E-01	3.683E-01	3.381E-02	0.958
	59.54	*		9.068E-02	7.936E-02	1.258E-01	1.336E-02	0.721
CM-247	278.00			1.616E+00	8.509E-01	1.557E+00	1.429E-01	1.038
	287.50			-6.986E-01	1.382E+00	2.271E+00	2.086E-01	-0.308
CF-249	402.40	*		-1.481E-05	4.558E-02	7.560E-02	6.421E-03	0.000
	252.80			-6.425E-01	1.148E+00	1.757E+00	1.600E-01	-0.366
	333.37			3.036E-02	2.517E-01	3.515E-01	3.179E-02	0.086
CF-251	388.16	*		2.810E-02	5.252E-02	9.006E-02	7.628E-03	0.312
	177.52	*		2.617E-02	1.454E-01	2.380E-01	2.016E-02	0.110
	227.38			2.383E-01	4.006E-01	6.613E-01	5.921E-02	0.360
	285.41			1.076E+00	2.350E+00	4.079E+00	3.747E-01	0.264

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]G1202053648      *
* Acquisition date   : 9-MAR-2010 11:50:32 Detector SN# :                   *
* Detector ID        : GAM17 Sensitivity : 5.000                            *
* Geometry           : CAN Energy tolerance: 1.600                          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000               *
* Elapsed real time  : 0 02:00:10.33 Half life ratio : 8.000                *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID        : G1202053648 Analyst initials: MXR1                    *
* Batch Number     : 957714 Sample Quantity : 1.2600E+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	3.144E+01	3.515E+00	6.757E-01	0.000E+00
CD-109	2.918E+00	8.596E-01	1.139E+00	0.000E+00
SN-126	2.836E-01	8.353E-02	1.106E-01	0.000E+00
BA-137M	3.599E-01	9.856E-02	1.021E-01	0.000E+00
CS-137	3.802E-01	1.041E-01	1.079E-01	0.000E+00
CE-141	1.540E-01	1.352E-01	1.191E-01	0.000E+00
TL-208	5.985E-01	1.157E-01	7.245E-02	0.000E+00
PB-210	2.986E+00	1.089E+00	9.315E-01	0.000E+00
BI-211	4.285E+00	7.298E-01	4.083E-01	0.000E+00
PB-212	1.898E+00	2.288E-01	1.069E-01	0.000E+00
BI-214	1.480E+00	2.478E-01	1.491E-01	0.000E+00
PB-214	1.555E+00	2.779E-01	1.486E-01	0.000E+00
RA-224	4.995E+00	1.259E+00	1.146E+00	0.000E+00
RA-226	1.480E+00	2.478E-01	1.491E-01	0.000E+00
AC-228	1.874E+00	4.461E-01	3.539E-01	0.000E+00
RA-228	1.874E+00	4.461E-01	3.539E-01	0.000E+00
TH-228	1.898E+00	2.288E-01	1.069E-01	0.000E+00
TH-229	1.360E-01	5.724E-01	9.816E-01	0.000E+00
TH-232	1.874E+00	4.461E-01	3.539E-01	0.000E+00
TH-234	6.988E+00	1.854E+00	1.270E+00	0.000E+00
U-235	4.522E-01	4.023E-01	3.613E-01	0.000E+00
NP-237	8.461E-01	3.039E-01	3.838E-01	0.000E+00
U-238	6.988E+00	1.854E+00	1.270E+00	0.000E+00
ANH-511	1.985E-01	8.727E-02	5.241E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-7.436E-02	4.217E-01	7.068E-01	0.000E+00 NOT IDENT.
NA-22	-6.827E-02	6.480E-02	9.248E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	7.602E+07	0.000E+00	0.000E+00 SHORT HLIF

SC-46	4.801E-03	5.700E-02	9.769E-02	0.000E+00	FAIL ABUN
V-48	3.067E-02	1.121E-01	1.895E-01	0.000E+00	NOT IDENT.
CR-51	-3.083E-02	4.542E-01	7.675E-01	0.000E+00	NOT IDENT.
MN-54	-3.821E-02	5.340E-02	8.554E-02	0.000E+00	NOT IDENT.
CO-56	-1.281E-02	5.283E-02	8.806E-02	0.000E+00	NOT IDENT.
CO-57	-2.015E-02	2.668E-02	4.491E-02	0.000E+00	NOT IDENT.
CO-58	6.724E-03	4.897E-02	8.513E-02	0.000E+00	NOT IDENT.
FE-59	-9.482E-03	1.344E-01	2.223E-01	0.000E+00	NOT IDENT.
CO-60	-1.217E-02	5.131E-02	8.515E-02	0.000E+00	NOT IDENT.
ZN-65	-5.819E-02	1.492E-01	2.020E-01	0.000E+00	NOT IDENT.
SE-75	-1.281E-02	5.863E-02	8.451E-02	0.000E+00	NOT IDENT.
SR-85	3.132E-02	4.577E-02	7.329E-02	0.000E+00	NOT IDENT.
Y-88	-1.287E-02	4.647E-02	7.205E-02	0.000E+00	NOT IDENT.
Y-91	2.342E+01	3.607E+01	6.285E+01	0.000E+00	NOT IDENT.
NB-94	2.907E-02	4.647E-02	8.423E-02	0.000E+00	NOT IDENT.
NB-95	9.762E-02	6.668E-02	1.254E-01	0.000E+00	NOT IDENT.
NB-95M	1.191E-01	1.605E-01	2.504E-01	0.000E+00	NOT IDENT.
ZR-95	8.959E-02	9.438E-02	1.756E-01	0.000E+00	NOT IDENT.
MO-99	-2.116E+01	3.994E+01	6.535E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.075E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.477E-02	5.676E-02	8.964E-02	0.000E+00	FAIL ABUN
RH-106	-1.710E-01	4.048E-01	6.437E-01	0.000E+00	NOT IDENT.
RU-106	-1.710E-01	4.044E-01	6.437E-01	0.000E+00	NOT IDENT.
AG-108M	1.320E-02	3.606E-02	6.335E-02	0.000E+00	NOT IDENT.
AG-110M	2.806E-02	5.301E-02	8.147E-02	0.000E+00	NOT IDENT.
SN-113	7.326E-04	5.950E-02	1.028E-01	0.000E+00	NOT IDENT.
CD-115	0.000E+00	4.514E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	5.314E-03	7.125E-02	1.229E-01	0.000E+00	NOT IDENT.
TE-123M	-3.506E-03	3.111E-02	5.316E-02	0.000E+00	NOT IDENT.
SB-124	-9.938E-02	1.200E-01	1.671E-01	0.000E+00	NOT IDENT.
SB-125	9.883E-03	1.081E-01	1.867E-01	0.000E+00	FAIL ABUN
TE-125M	-5.272E+00	1.051E+01	1.809E+01	0.000E+00	NOT IDENT.
I-126	1.420E-01	4.553E-01	6.753E-01	0.000E+00	NOT IDENT.
SB-126	2.245E-01	2.489E-01	4.291E-01	0.000E+00	NOT IDENT.
SB-127	-1.353E+00	3.852E+00	6.128E+00	0.000E+00	NOT IDENT.
I-131	3.860E-02	1.865E-01	3.282E-01	0.000E+00	NOT IDENT.
TE-132	9.681E-01	1.874E+00	3.219E+00	0.000E+00	NOT IDENT.
BA-133	9.060E-03	5.284E-02	8.219E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.663E+05	0.000E+00	0.000E+00	SHORT HLIF
CS-134	4.537E-02	6.106E-02	1.112E-01	0.000E+00	NOT IDENT.
CS-135	2.126E-01	1.849E-01	3.245E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.691E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.006E-01	1.776E-01	3.304E-01	0.000E+00	NOT IDENT.
CE-139	1.372E-02	3.425E-02	5.972E-02	0.000E+00	NOT IDENT.
BA-140	4.864E-02	4.219E-01	7.161E-01	0.000E+00	NOT IDENT.
LA-140	-1.057E-01	1.227E-01	1.691E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	1.587E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.283E-03	2.382E-01	3.700E-01	0.000E+00	NOT IDENT.
PM-144	-7.101E-03	4.496E-02	7.715E-02	0.000E+00	NOT IDENT.
PR-144	-5.079E-01	3.374E+00	5.793E+00	0.000E+00	NOT IDENT.
PM-146	3.285E-02	5.366E-02	9.533E-02	0.000E+00	NOT IDENT.
ND-147	-6.453E-01	9.051E-01	1.421E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	3.328E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-5.634E-02	1.120E-01	1.821E-01	0.000E+00	FAIL ABUN
GD-153	8.045E-02	9.203E-02	1.518E-01	0.000E+00	NOT IDENT.
EU-154	-1.389E-01	1.771E-01	2.617E-01	0.000E+00	NOT IDENT.
EU-155	1.137E-01	1.085E-01	1.975E-01	0.000E+00	FAIL ABUN
TB-160	8.338E-02	2.013E-01	3.557E-01	0.000E+00	FAIL ABUN
HO-166M	-1.619E-02	7.695E-02	1.311E-01	0.000E+00	FAIL ABUN
TA-182	3.491E-01	2.948E-01	5.366E-01	0.000E+00	NOT IDENT.
IR-192	9.537E-03	4.013E-02	7.142E-02	0.000E+00	FAIL ABUN
HG-203	2.677E-02	4.492E-02	8.188E-02	0.000E+00	NOT IDENT.
BI-207	7.090E-03	6.724E-02	1.138E-01	0.000E+00	FAIL ABUN
PB-211	-2.871E-01	8.476E-01	1.407E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.021E-01	1.550E+00	0.000E+00	FAIL ABUN
RN-219	-3.650E-01	5.029E-01	8.202E-01	0.000E+00	FAIL ABUN
RA-223	2.694E-01	8.380E-01	1.326E+00	0.000E+00	FAIL ABUN
AC-227	1.402E-03	3.024E-01	5.019E-01	0.000E+00	FAIL ABUN
TH-227	1.402E-03	3.024E-01	5.019E-01	0.000E+00	FAIL ABUN
PA-231	2.179E-01	1.505E+00	2.684E+00	0.000E+00	FAIL ABUN
TH-231	2.694E-01	8.380E-01	1.326E+00	0.000E+00	FAIL ABUN
PA-233	-4.249E-02	7.309E-02	1.240E-01	0.000E+00	FAIL ABUN
PA-234	-1.053E-01	4.055E-01	6.662E-01	0.000E+00	NOT IDENT.
PA-234M	1.136E+01	7.104E+00	1.352E+01	0.000E+00	NOT IDENT.
NP-239	-4.835E-01	4.073E-01	6.701E-01	0.000E+00	NOT IDENT.
AM-241	9.068E-02	7.777E-02	1.316E-01	0.000E+00	NOT IDENT.
CM-247	-1.481E-05	4.467E-02	7.699E-02	0.000E+00	NOT IDENT.
CF-249	2.810E-02	5.147E-02	9.177E-02	0.000E+00	NOT IDENT.

CF-251	2.617E-02	1.425E-01	2.452E-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]G1202053648.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 9-MAR-2010 11:50:32.
Sample ID        : G1202053648 Sample quantity   : 1.26000E+02 GRAM
Detector name    : GAM17 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:10.33 0.1%
Energy tolerance : 1.60000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity        : 5.00000
Batch ID        : 957714 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	1460.82	876	10.66*	7.785E-01	3.144E+01	3.144E+01	11.41
CD-109	88.03	235	3.70*	6.676E+00	2.836E+00	2.918E+00	30.06
SN-126	64.28	588	9.60	6.776E+00	2.693E+00	2.693E+00	25.03
	86.94	235	8.90	6.676E+00	1.179E+00	1.179E+00	50.40
	87.57	235	37.00*	6.676E+00	2.836E-01	2.836E-01	30.06
BA-137M	661.66	174	89.90*	1.605E+00	3.595E-01	3.599E-01	27.95
CS-137	661.66	174	85.10*	1.605E+00	3.797E-01	3.802E-01	27.95
CE-141	145.44	93	48.29*	5.590E+00	1.026E-01	1.540E-01	89.61
TL-208	277.37	-----	6.60	3.568E+00	-----	Line Not Found	-----
	583.19	310	85.00*	1.813E+00	5.985E-01	5.985E-01	19.73
	860.56	27	12.50	1.247E+00	5.118E-01	5.118E-01	109.71
PB-210	46.54	268	4.25*	6.299E+00	2.981E+00	2.986E+00	37.23
BI-211	72.87	-----	1.23	6.803E+00	-----	Line Not Found	-----
	351.06	541	12.92*	2.910E+00	4.285E+00	4.285E+00	17.38
PB-212	74.82	666	10.28	6.795E+00	2.839E+00	2.839E+00	19.08
	77.11	1067	17.10	6.782E+00	2.741E+00	2.741E+00	13.25
	238.63	1118	43.60*	4.025E+00	1.898E+00	1.898E+00	12.30
	300.09	82	3.30	3.341E+00	2.210E+00	2.210E+00	65.04
BI-214	609.32	393	45.49*	1.738E+00	1.480E+00	1.480E+00	17.08
	1120.29	84	14.92	9.774E-01	1.714E+00	1.714E+00	44.77
	1764.49	-----	15.30	6.714E-01	-----	Line Not Found	-----
PB-214	74.82	666	5.80	6.795E+00	5.032E+00	5.032E+00	18.23
	77.11	1067	9.70	6.782E+00	4.832E+00	4.832E+00	15.60
	242.00	274	7.25	3.986E+00	2.825E+00	2.825E+00	26.37
	295.22	260	18.42	3.389E+00	1.243E+00	1.243E+00	24.80
	351.93	541	35.60*	2.910E+00	1.555E+00	1.555E+00	18.23
RA-224	240.99	274	4.10*	3.986E+00	4.995E+00	4.995E+00	25.73
RA-226	609.32	393	45.49*	1.738E+00	1.480E+00	1.480E+00	17.08
	1120.29	84	14.92	9.774E-01	1.714E+00	1.714E+00	44.77
	1764.49	-----	15.30	6.714E-01	-----	Line Not Found	-----
AC-228	338.32	181	11.27	3.013E+00	1.586E+00	1.586E+00	52.26
	911.20	192	25.80*	1.182E+00	1.874E+00	1.874E+00	24.29

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	968.97	139	15.80	1.116E+00	2.342E+00	2.342E+00	35.13
	338.32	181	11.27	3.013E+00	1.586E+00	1.586E+00	52.26
	911.20	192	25.80*	1.182E+00	1.874E+00	1.874E+00	24.29
TH-228	968.97	139	15.80	1.116E+00	2.342E+00	2.342E+00	35.13
	74.82	666	10.28	6.795E+00	2.839E+00	2.839E+00	16.45
	77.11	1067	17.10	6.782E+00	2.741E+00	2.741E+00	13.25
	238.63	1118	43.60*	4.025E+00	1.898E+00	1.898E+00	12.30
TH-229	300.09	82	3.30	3.341E+00	2.210E+00	2.210E+00	88.69
	85.43	64	14.70	6.716E+00	1.917E-01	1.917E-01	88.55
	88.47	235	24.00	6.676E+00	4.372E-01	4.372E-01	30.06
	193.51	-----	4.41*	4.680E+00	-----	Line Not Found	-----
TH-232	210.85	-----	2.80	4.409E+00	-----	Line Not Found	-----
	338.32	181	11.27	3.013E+00	1.586E+00	1.586E+00	32.64
	911.20	192	25.80*	1.182E+00	1.874E+00	1.874E+00	24.29
	968.97	139	15.80	1.116E+00	2.342E+00	2.342E+00	35.13
TH-234	63.29	588	3.70*	6.776E+00	6.988E+00	6.988E+00	27.07
	92.59	949	4.23	6.596E+00	1.013E+01	1.013E+01	24.67
U-235	89.96	158	3.47	6.638E+00	2.045E+00	2.045E+00	46.23
	93.35	949	5.60	6.596E+00	7.650E+00	7.650E+00	25.58
	143.76	93	10.96*	5.590E+00	4.522E-01	4.522E-01	90.77
	163.33	-----	5.08	5.211E+00	-----	Line Not Found	-----
NP-237	185.72	266	57.20	4.808E+00	2.881E-01	2.881E-01	27.45
	205.31	-----	5.01	4.493E+00	-----	Line Not Found	-----
	86.48	235	12.40*	6.676E+00	8.461E-01	8.461E-01	36.65
	95.86	-----	2.68	6.543E+00	-----	Line Not Found	-----
U-238	63.29	588	3.70*	6.776E+00	6.988E+00	6.988E+00	27.07
	92.59	949	4.23	6.596E+00	1.013E+01	1.013E+01	13.98
ANH-511	511.00	137	100.00*	2.058E+00	1.985E-01	1.985E-01	44.87

Flag: "*" = Keyline

Total number of lines in spectrum 34
Number of unidentified lines 4
Number of lines tentatively identified by NID 30 88.24%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.144E+01	3.144E+01	0.359E+01	11.41	
CD-109	461.40D	1.03	2.836E+00	2.918E+00	0.877E+00	30.06	
SN-126	2.30E+05Y	1.00	2.836E-01	2.836E-01	0.852E-01	30.06	
BA-137M	30.08Y	1.00	3.595E-01	3.599E-01	1.006E-01	27.95	
CS-137	30.08Y	1.00	3.797E-01	3.802E-01	1.063E-01	27.95	
CE-141	32.51D	1.50	1.026E-01	1.540E-01	1.380E-01	89.61	
TL-208	1.41E+10Y	1.00	5.985E-01	5.985E-01	1.181E-01	19.73	
PB-210	22.20Y	1.00	2.981E+00	2.986E+00	1.111E+00	37.23	
BI-211	7.04E+08Y	1.00	4.285E+00	4.285E+00	0.745E+00	17.38	
PB-212	1.41E+10Y	1.00	1.898E+00	1.898E+00	0.233E+00	12.30	
BI-214	1600.00Y	1.00	1.480E+00	1.480E+00	0.253E+00	17.08	
PB-214	1600.00Y	1.00	1.555E+00	1.555E+00	0.284E+00	18.23	
RA-224	1.41E+10Y	1.00	4.995E+00	4.995E+00	1.285E+00	25.73	
RA-226	1600.00Y	1.00	1.480E+00	1.480E+00	0.253E+00	17.08	
AC-228	1.41E+10Y	1.00	1.874E+00	1.874E+00	0.455E+00	24.29	
RA-228	1.41E+10Y	1.00	1.874E+00	1.874E+00	0.455E+00	24.29	
TH-228	1.41E+10Y	1.00	1.898E+00	1.898E+00	0.233E+00	12.30	
TH-229	7340.00Y	1.00	4.372E-01	4.372E-01	1.314E-01	30.06	K
TH-232	1.41E+10Y	1.00	1.874E+00	1.874E+00	0.455E+00	24.29	
TH-234	4.47E+09Y	1.00	6.988E+00	6.988E+00	1.892E+00	27.07	
U-235	7.04E+08Y	1.00	4.522E-01	4.522E-01	4.105E-01	90.77	
NP-237	2.14E+06Y	1.00	8.461E-01	8.461E-01	3.101E-01	36.65	
U-238	4.47E+09Y	1.00	6.988E+00	6.988E+00	1.892E+00	27.07	
ANH-511	1.00E+09Y	1.00	1.985E-01	1.985E-01	0.891E-01	44.87	
Total Activity :			7.810E+01	7.824E+01			

Grand Total Activity : 7.810E+01 7.824E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.18	106	432	1.10	258.04	253	10	1.47E-02	75.9	5.89E+00	
0	208.87	127	221	0.97	417.50	414	9	1.76E-02	46.2	4.44E+00	
0	269.87	104	222	1.92	539.54	533	12	1.44E-02	60.6	3.65E+00	T
0	327.53	79	206	1.11	654.91	648	12	1.10E-02	75.8	3.10E+00	T
0	462.89	83	90	0.96	925.75	921	10	1.16E-02	47.8	2.26E+00	T
0	726.62	63	43	1.01	1453.51	1449	9	8.76E-03	46.2	1.46E+00	T
2	963.36	54	41	2.01	1927.30	1919	40	7.50E-03	54.2	1.12E+00	T
0	1376.08	32	14	2.10	2753.37	2746	12	4.48E-03	59.2	8.17E-01	
0	1762.66	48	9	1.82	3527.25	3521	12	6.72E-03	39.1	6.72E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053648.CNF;1 *
* Acquisition date   : 9-MAR-2010 11:50:32.  Detector SN#      :             *
* Detector ID        : GAM17                      Sensitivity   : 5.00000      *
* Geometry           : CAN                      Energy tolerance: 1.60000      *
* Elapsed live time  : 0 02:00:00.00           Abundance limit  : 75.00000      *
* Elapsed real time  : 0 02:00:10.33           Half life ratio : 8.00000      *
*****
*
*                               SAMPLE DATA                               *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G1202053648           Analyst initials: MXR1          *
* Batch Number       : 957714                Sample Quantity : 1.26000E+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	3.144E+01	3.587E+00	6.761E-01	6.003E-02	46.498
CD-109	2.918E+00	8.771E-01	1.095E+00	1.069E-01	2.664
SN-126	2.836E-01	8.524E-02	1.063E-01	1.037E-02	2.668
BA-137M	3.599E-01	1.006E-01	1.010E-01	8.510E-03	3.563
CS-137	3.802E-01	1.063E-01	1.067E-01	9.008E-03	3.563
CE-141	1.540E-01	1.380E-01	1.153E-01	1.176E-02	1.336
TL-208	5.985E-01	1.181E-01	7.152E-02	6.757E-03	8.368
PB-210	2.986E+00	1.111E+00	8.876E-01	9.569E-02	3.364
BI-211	4.285E+00	7.447E-01	4.002E-01	3.735E-02	10.707
PB-212	1.898E+00	2.335E-01	1.042E-01	1.055E-02	18.220
BI-214	1.480E+00	2.528E-01	1.473E-01	1.505E-02	10.052
PB-214	1.555E+00	2.835E-01	1.456E-01	1.578E-02	10.680
RA-224	4.995E+00	1.285E+00	1.117E+00	1.010E-01	4.471
RA-226	1.480E+00	2.528E-01	1.473E-01	1.505E-02	10.052
AC-228	1.874E+00	4.552E-01	3.516E-01	4.110E-02	5.329
RA-228	1.874E+00	4.552E-01	3.516E-01	4.110E-02	5.329
TH-228	1.898E+00	2.335E-01	1.042E-01	1.055E-02	18.220
TH-229	4.372E-01	1.314E-01	9.539E-01	8.249E-02	0.458

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.874E+00	4.552E-01	3.516E-01	4.110E-02	5.329
TH-234	6.988E+00	1.892E+00	1.215E+00	2.312E-01	5.752
U-235	4.522E-01	4.105E-01	3.496E-01	6.225E-02	1.293
NP-237	8.461E-01	3.101E-01	3.688E-01	8.529E-02	2.294
U-238	6.988E+00	1.892E+00	1.215E+00	2.312E-01	5.752
ANH-511	1.985E-01	8.905E-02	5.164E-02	4.612E-03	3.843

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-7.436E-02		4.303E-01	6.957E-01	6.618E-02	-0.107
NA-22	-6.827E-02		6.613E-02	9.234E-02	7.779E-03	-0.739
NA-24	1.409E+01		3.879E+01	Half-Life	too short	
SC-46	4.801E-03		5.817E-02	9.704E-02	8.495E-03	0.049
V-48	3.067E-02		1.144E-01	1.885E-01	1.645E-02	0.163
CR-51	-3.083E-02		4.635E-01	7.512E-01	7.169E-02	-0.041
MN-54	-3.821E-02		5.449E-02	8.488E-02	7.463E-03	-0.450
CO-56	-1.281E-02		5.391E-02	8.740E-02	7.683E-03	-0.147
CO-57	-2.015E-02		2.723E-02	4.337E-02	5.081E-03	-0.465
CO-58	6.724E-03		4.997E-02	8.445E-02	7.437E-03	0.080
FE-59	-9.482E-03		1.372E-01	2.215E-01	2.033E-02	-0.043
CO-60	-1.217E-02		5.235E-02	8.508E-02	7.251E-03	-0.143
ZN-65	-5.819E-02		1.522E-01	2.013E-01	1.695E-02	-0.289
SE-75	-1.281E-02		5.983E-02	8.249E-02	7.580E-03	-0.155
SR-85	3.132E-02		4.671E-02	7.222E-02	6.452E-03	0.434
Y-88	-1.287E-02		4.742E-02	7.234E-02	6.032E-03	-0.178
Y-91	2.342E+01		3.681E+01	6.271E+01	5.176E+00	0.374
NB-94	2.907E-02		4.742E-02	8.338E-02	7.152E-03	0.349
NB-95	9.762E-02		6.804E-02	1.243E-01	1.086E-02	0.785
NB-95M	1.191E-01		1.638E-01	2.440E-01	2.496E-02	0.488
ZR-95	8.959E-02		9.630E-02	1.740E-01	1.672E-02	0.515
MO-99	-2.116E+01		4.075E+01	6.474E+01	1.022E+01	-0.327
TC-99M	-5.080E+14		1.059E+15	Half-Life	too short	
RU-103	-4.477E-02		5.792E-02	8.829E-02	1.249E-02	-0.507
RH-106	-1.710E-01		4.130E-01	6.360E-01	8.459E-02	-0.269
RU-106	-1.710E-01		4.127E-01	6.360E-01	5.525E-02	-0.269
AG-108M	1.320E-02		3.680E-02	6.228E-02	5.582E-03	0.212
AG-110M	2.806E-02		5.410E-02	8.057E-02	7.022E-03	0.348
SN-113	7.326E-04		6.072E-02	1.010E-01	8.771E-03	0.007
CD-115	3.982E-05		2.303E-05	Half-Life	too short	
SN-117M	5.314E-03		7.271E-02	1.191E-01	1.070E-02	0.045
TE-123M	-3.506E-03		3.175E-02	5.151E-02	4.637E-03	-0.068
SB-124	-9.938E-02		1.224E-01	1.676E-01	1.494E-02	-0.593
SB-125	9.883E-03		1.103E-01	1.834E-01	1.617E-02	0.054
TE-125M	-5.272E+00		1.072E+01	1.744E+01	2.167E+00	-0.302
I-126	1.420E-01		4.646E-01	6.680E-01	5.640E-02	0.213
SB-126	2.245E-01		2.540E-01	4.249E-01	3.668E-02	0.528

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	-1.353E+00		3.930E+00	6.064E+00	7.587E-01	-0.223
I-131	3.860E-02		1.903E-01	3.218E-01	2.980E-02	0.120
TE-132	9.681E-01		1.913E+00	3.135E+00	5.276E-01	0.309
BA-133	9.060E-03		5.391E-02	8.057E-02	1.057E-02	0.112
I-133	-2.864E-02		8.487E-02	Half-Life too short		
CS-134	4.537E-02		6.230E-02	1.103E-01	9.746E-03	0.411
CS-135	2.126E-01		1.886E-01	3.168E-01	3.305E-02	0.671
I-135	6.769E+13		8.628E+13	Half-Life too short		
CS-136	2.006E-01		1.812E-01	3.290E-01	2.954E-02	0.610
CE-139	1.372E-02		3.495E-02	5.791E-02	4.829E-03	0.237
BA-140	4.864E-02		4.305E-01	7.060E-01	2.400E-01	0.069
LA-140	-1.057E-01		1.252E-01	1.694E-01	1.462E-02	-0.624
CE-143	3.864E-03		8.096E-04	Half-Life too short		
CE-144	-3.283E-03		2.431E-01	3.577E-01	5.976E-02	-0.009
PM-144	-7.101E-03		4.587E-02	7.635E-02	6.537E-03	-0.093
PR-144	-5.079E-01		3.442E+00	5.733E+00	4.906E-01	-0.089
PM-146	3.285E-02		5.475E-02	9.377E-02	1.005E-02	0.350
ND-147	-6.453E-01		9.236E-01	1.400E+00	2.120E-01	-0.461
PM-149	2.361E-05		1.698E-04	Half-Life too short		
EU-152	-5.634E-02		1.143E-01	1.785E-01	1.687E-02	-0.316
GD-153	8.045E-02		9.391E-02	1.461E-01	1.494E-02	0.550
EU-154	-1.389E-01		1.807E-01	2.613E-01	2.933E-02	-0.531
EU-155	1.137E-01		1.107E-01	1.903E-01	2.044E-02	0.598
TB-160	8.338E-02		2.054E-01	3.532E-01	3.096E-02	0.236
HO-166M	-1.619E-02		7.853E-02	1.298E-01	1.117E-02	-0.125
TA-182	3.491E-01		3.008E-01	5.355E-01	4.442E-02	0.652
IR-192	9.537E-03		4.095E-02	6.989E-02	6.394E-03	0.136
HG-203	2.677E-02		4.584E-02	7.998E-02	7.508E-03	0.335
BI-207	7.090E-03		6.862E-02	1.133E-01	9.713E-03	0.063
PB-211	-2.871E-01		8.649E-01	1.382E+00	6.684E-01	-0.208
BI-212	1.924E+00	+	9.205E-01	1.535E+00	1.916E-01	1.253
RN-219	-3.650E-01		5.132E-01	8.054E-01	1.192E-01	-0.453
RA-223	2.694E-01		8.551E-01	1.298E+00	2.281E-01	0.208
AC-227	1.402E-03		3.085E-01	4.896E-01	6.078E-02	0.003
TH-227	1.402E-03		3.085E-01	4.896E-01	6.819E-02	0.003
PA-231	2.179E-01		1.535E+00	2.622E+00	3.914E-01	0.083
TH-231	2.694E-01		8.551E-01	1.298E+00	2.281E-01	0.208
PA-233	-4.249E-02		7.458E-02	1.213E-01	1.138E-02	-0.350
PA-234	-1.053E-01		4.137E-01	6.623E-01	1.247E-01	-0.159
PA-234M	1.136E+01		7.249E+00	1.345E+01	1.350E+00	0.844
NP-239	-4.835E-01		4.156E-01	6.467E-01	7.365E-02	-0.748
AM-241	9.068E-02		7.936E-02	1.258E-01	1.336E-02	0.721
CM-247	-1.481E-05		4.558E-02	7.560E-02	6.421E-03	0.000
CF-249	2.810E-02		5.252E-02	9.006E-02	7.628E-03	0.312
CF-251	2.617E-02		1.454E-01	2.380E-01	2.016E-02	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]G1202053648          *
* Acquisition date   : 9-MAR-2010 11:50:32 Detector SN#      :              *
* Detector ID        : GAM17 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 1.600          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 02:00:10.33 Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202053648 Analyst initials: MXR1          *
* Batch Number       : 957714 Sample Quantity : 1.2600E+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	3.144E+01	3.515E+00	3.381E-01	1.793E+00
CD-109	2.918E+00	8.596E-01	5.700E-01	4.385E-01
SN-126	2.836E-01	8.353E-02	5.532E-02	4.262E-02
BA-137M	3.599E-01	9.856E-02	5.110E-02	5.029E-02
CS-137	3.802E-01	1.041E-01	5.398E-02	5.313E-02
CE-141	1.540E-01	1.352E-01	5.960E-02	6.900E-02
TL-208	5.985E-01	1.157E-01	3.624E-02	5.903E-02
PB-210	2.986E+00	1.089E+00	4.660E-01	5.557E-01
BI-211	4.285E+00	7.298E-01	2.043E-01	3.723E-01
PB-212	1.898E+00	2.288E-01	5.346E-02	1.167E-01
BI-214	1.480E+00	2.478E-01	7.458E-02	1.264E-01
PA-214	1.555E+00	2.779E-01	7.433E-02	1.418E-01
RA-224	4.995E+00	1.259E+00	5.734E-01	6.426E-01
RA-226	1.480E+00	2.478E-01	7.458E-02	1.264E-01
AC-228	1.874E+00	4.461E-01	1.771E-01	2.276E-01
RA-228	1.874E+00	4.461E-01	1.771E-01	2.276E-01
TH-228	1.898E+00	2.288E-01	5.346E-02	1.167E-01
TH-229	1.360E-01	5.724E-01	4.911E-01	2.920E-01
TH-232	1.874E+00	4.461E-01	1.771E-01	2.276E-01
TH-234	6.988E+00	1.854E+00	6.352E-01	9.460E-01
U-235	4.522E-01	4.023E-01	1.808E-01	2.052E-01
NP-237	8.461E-01	3.039E-01	1.920E-01	1.550E-01
U-238	6.988E+00	1.854E+00	6.352E-01	9.460E-01
ANH-511	1.985E-01	8.727E-02	2.622E-02	4.453E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-7.436E-02	4.217E-01	3.536E-01	2.151E-01 NOT IDENT.
NA-22	-6.827E-02	6.480E-02	4.627E-02	3.306E-02 NOT IDENT.
NA-24	1.409E+07	7.602E+07	0.000E+00	3.879E+07 SHORT HLIF

SC-46	4.801E-03	5.700E-02	4.888E-02	2.908E-02	FAIL ABUN
V-48	3.067E-02	1.121E-01	9.483E-02	5.718E-02	NOT IDENT.
CR-51	-3.083E-02	4.542E-01	3.840E-01	2.318E-01	NOT IDENT.
MN-54	-3.821E-02	5.340E-02	4.279E-02	2.725E-02	NOT IDENT.
CO-56	-1.281E-02	5.283E-02	4.405E-02	2.695E-02	NOT IDENT.
CO-57	-2.015E-02	2.668E-02	2.247E-02	1.361E-02	NOT IDENT.
CO-58	6.724E-03	4.897E-02	4.259E-02	2.499E-02	NOT IDENT.
FE-59	-9.482E-03	1.344E-01	1.112E-01	6.859E-02	NOT IDENT.
CO-60	-1.217E-02	5.131E-02	4.260E-02	2.618E-02	NOT IDENT.
ZN-65	-5.819E-02	1.492E-01	1.011E-01	7.611E-02	NOT IDENT.
SE-75	-1.281E-02	5.863E-02	4.228E-02	2.992E-02	NOT IDENT.
SR-85	3.132E-02	4.577E-02	3.667E-02	2.335E-02	NOT IDENT.
Y-88	-1.287E-02	4.647E-02	3.605E-02	2.371E-02	NOT IDENT.
Y-91	2.342E+01	3.607E+01	3.144E+01	1.840E+01	NOT IDENT.
NB-94	2.907E-02	4.647E-02	4.214E-02	2.371E-02	NOT IDENT.
NB-95	9.762E-02	6.668E-02	6.274E-02	3.402E-02	NOT IDENT.
NB-95M	1.191E-01	1.605E-01	1.253E-01	8.190E-02	NOT IDENT.
ZR-95	8.959E-02	9.438E-02	8.785E-02	4.815E-02	NOT IDENT.
MO-99	-2.116E+01	3.994E+01	3.270E+01	2.038E+01	NOT IDENT.
TC-99M	-5.080E+20	2.075E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.477E-02	5.676E-02	4.485E-02	2.896E-02	FAIL ABUN
RH-106	-1.710E-01	4.048E-01	3.220E-01	2.065E-01	NOT IDENT.
RU-106	-1.710E-01	4.044E-01	3.220E-01	2.063E-01	NOT IDENT.
AG-108M	1.320E-02	3.606E-02	3.170E-02	1.840E-02	NOT IDENT.
AG-110M	2.806E-02	5.301E-02	4.076E-02	2.705E-02	NOT IDENT.
SN-113	7.326E-04	5.950E-02	5.146E-02	3.036E-02	NOT IDENT.
CD-115	3.982E+01	4.514E+01	0.000E+00	2.303E+01	SHORT HLIF
SN-117M	5.314E-03	7.125E-02	6.146E-02	3.635E-02	NOT IDENT.
TE-123M	-3.506E-03	3.111E-02	2.659E-02	1.587E-02	NOT IDENT.
SB-124	-9.938E-02	1.200E-01	8.360E-02	6.121E-02	NOT IDENT.
SB-125	9.883E-03	1.081E-01	9.338E-02	5.517E-02	FAIL ABUN
TE-125M	-5.272E+00	1.051E+01	9.050E+00	5.361E+00	NOT IDENT.
I-126	1.420E-01	4.553E-01	3.379E-01	2.323E-01	NOT IDENT.
SB-126	2.245E-01	2.489E-01	2.147E-01	1.270E-01	NOT IDENT.
SB-127	-1.353E+00	3.852E+00	3.066E+00	1.965E+00	NOT IDENT.
I-131	3.860E-02	1.865E-01	1.642E-01	9.513E-02	NOT IDENT.
TE-132	9.681E-01	1.874E+00	1.610E+00	9.564E-01	NOT IDENT.
BA-133	9.060E-03	5.284E-02	4.112E-02	2.696E-02	NOT IDENT.
I-133	-2.864E+04	1.663E+05	0.000E+00	8.487E+04	SHORT HLIF
CS-134	4.537E-02	6.106E-02	5.565E-02	3.115E-02	NOT IDENT.
CS-135	2.126E-01	1.849E-01	1.623E-01	9.431E-02	NOT IDENT.
I-135	6.769E+19	1.691E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.006E-01	1.776E-01	1.653E-01	9.059E-02	NOT IDENT.
CE-139	1.372E-02	3.425E-02	2.988E-02	1.748E-02	NOT IDENT.
BA-140	4.864E-02	4.219E-01	3.582E-01	2.153E-01	NOT IDENT.
LA-140	-1.057E-01	1.227E-01	8.459E-02	6.259E-02	FAIL ABUN
CE-143	3.864E+03	1.587E+03	0.000E+00	8.096E+02	SHORT HLIF
CE-144	-3.283E-03	2.382E-01	1.851E-01	1.215E-01	NOT IDENT.
PM-144	-7.101E-03	4.496E-02	3.860E-02	2.294E-02	NOT IDENT.
PR-144	-5.079E-01	3.374E+00	2.898E+00	1.721E+00	NOT IDENT.
PM-146	3.285E-02	5.366E-02	4.769E-02	2.738E-02	NOT IDENT.
ND-147	-6.453E-01	9.051E-01	7.107E-01	4.618E-01	FAIL ABUN
PM-149	2.361E+01	3.328E+02	0.000E+00	1.698E+02	SHORT HLIF
EU-152	-5.634E-02	1.120E-01	9.113E-02	5.714E-02	FAIL ABUN
GD-153	8.045E-02	9.203E-02	7.596E-02	4.696E-02	NOT IDENT.
EU-154	-1.1389E-01	1.771E-01	1.309E-01	9.036E-02	NOT IDENT.
EU-155	1.137E-01	1.085E-01	9.882E-02	5.535E-02	FAIL ABUN
TB-160	8.338E-02	2.013E-01	1.779E-01	1.027E-01	FAIL ABUN
HO-166M	-1.619E-02	7.695E-02	6.559E-02	3.926E-02	FAIL ABUN
TA-182	3.491E-01	2.948E-01	2.685E-01	1.504E-01	NOT IDENT.
IR-192	9.537E-03	4.013E-02	3.573E-02	2.048E-02	FAIL ABUN
HG-203	2.677E-02	4.492E-02	4.096E-02	2.292E-02	NOT IDENT.
BI-207	7.090E-03	6.724E-02	5.691E-02	3.431E-02	FAIL ABUN
PB-211	-2.871E-01	8.476E-01	7.040E-01	4.325E-01	NOT IDENT.
BI-212	1.924E+00	9.021E-01	7.755E-01	4.603E-01	FAIL ABUN
RN-219	-3.650E-01	5.029E-01	4.104E-01	2.566E-01	FAIL ABUN
RA-223	2.694E-01	8.380E-01	6.634E-01	4.276E-01	FAIL ABUN
AC-227	1.402E-03	3.024E-01	2.511E-01	1.543E-01	FAIL ABUN
TH-227	1.402E-03	3.024E-01	2.511E-01	1.543E-01	FAIL ABUN
PA-231	2.179E-01	1.505E+00	1.343E+00	7.677E-01	FAIL ABUN
TH-231	2.694E-01	8.380E-01	6.634E-01	4.276E-01	FAIL ABUN
PA-233	-4.249E-02	7.309E-02	6.202E-02	3.729E-02	FAIL ABUN
PA-234	-1.053E-01	4.055E-01	3.333E-01	2.069E-01	NOT IDENT.
PA-234M	1.136E+01	7.104E+00	6.763E+00	3.624E+00	NOT IDENT.
NP-239	-4.835E-01	4.073E-01	3.533E-01	2.078E-01	NOT IDENT.
AM-241	9.068E-02	7.777E-02	6.584E-02	3.968E-02	NOT IDENT.
CM-247	-1.481E-05	4.467E-02	3.852E-02	2.279E-02	NOT IDENT.
CF-249	2.810E-02	5.147E-02	4.591E-02	2.626E-02	NOT IDENT.

CF-251	2.617E-02	1.425E-01	1.227E-01	7.272E-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
46.54	294.6516
49.72	317.6032
57.36	0.0000
59.54	398.7314
63.29	483.5551
63.29	483.5551
64.28	488.6661
67.75	499.3723
69.67	492.3438
70.83	465.7196
72.81	468.7149
72.87	468.7791
72.87	468.7791
74.82	470.8284
74.82	470.8284
74.82	470.8284
74.97	470.9863
77.11	410.2279
77.11	410.2279
77.11	410.2279
79.69	416.5810
79.80	415.3197
80.12	420.1295
80.19	420.1909
80.57	391.5264
81.00	428.1677
81.07	433.6737
81.07	433.6737
83.79	436.5891
83.79	436.5891
85.43	505.3402
86.48	487.1497
86.55	487.2173
86.79	487.4495
86.94	358.1229
87.57	358.5751
88.03	358.9044
88.47	359.2178
89.96	360.2731
91.11	361.0825
92.59	362.1179
92.59	362.1179
93.35	362.6456
94.67	309.0226
94.87	309.1390
94.87	309.1390
95.86	385.3949
97.43	307.8150
98.44	287.2672
99.53	297.2497
100.11	310.7480
103.18	311.5266
103.37	329.6290
105.31	285.1410
106.12	280.7878
109.28	312.9559
111.00	311.9559
111.76	298.9022
116.30	271.1517
117.23	279.3252
121.12	246.9275
121.78	253.0496
122.06	270.7558
123.07	239.8609
131.20	243.8854
133.52	252.2003
136.00	227.6660

136.47	223.8268
140.51	244.2434
140.51	0.0000
143.76	239.3241
144.24	239.4856
144.24	239.4856
145.44	221.6711
152.43	243.2440
153.25	236.3530
154.21	248.9549
154.21	248.9549
156.02	260.8575
158.56	219.4916
159.00	223.7437
162.66	232.0710
163.33	231.2346
165.86	228.8690
176.60	219.3179
177.52	209.0074
181.07	227.4022
184.41	186.8008
185.72	197.2174
193.51	192.5601
197.04	211.6973
205.31	183.1373
210.85	187.5357
215.65	197.3181
222.11	157.5963
227.38	160.6860
228.16	160.8135
228.18	160.8164
235.69	175.5381
235.96	175.5857
235.96	175.5857
238.63	173.7936
238.63	173.7936
240.99	174.1962
242.00	174.3685
244.70	163.4736
252.40	158.9626
252.80	169.3184
256.23	162.9792
256.23	162.9792
260.90	0.0000
264.66	144.0089
268.22	138.0949
269.46	138.2474
269.46	138.2474
271.23	136.1406
273.65	187.1618
276.40	146.4129
277.37	129.8658
277.60	126.3823
278.00	119.4026
279.20	138.8648
279.54	138.9058
280.46	164.5324
283.69	122.6431
284.31	125.3583
285.41	120.1756
285.90	0.0000
287.50	145.1791
293.27	0.0000
295.22	146.8454
295.96	156.9246
298.57	178.7140
299.98	133.1176
299.98	133.1176
300.09	133.1312
300.09	133.1312
300.13	133.1358
301.36	117.5066
302.85	129.1311
304.50	143.6743
304.50	143.6743
304.85	130.7814
308.46	120.7157
311.90	136.4106

316.51	116.9692
319.41	119.0566
320.08	113.2730
323.87	125.4958
323.87	125.4958
328.76	142.0875
333.37	123.1162
334.37	136.8185
334.37	136.8185
338.28	115.2782
338.28	115.2782
338.32	115.2821
338.32	115.2821
338.32	115.2821
340.48	93.1157
340.55	93.1203
344.28	117.5213
351.06	118.2486
351.93	118.3242
356.01	101.6713
364.49	100.6048
366.42	120.5176
383.85	114.3750
388.16	113.7578
388.63	115.7066
391.69	123.6145
400.66	112.7939
401.81	118.6702
402.40	102.3090
404.85	102.4740
410.95	103.8571
414.70	95.3547
423.72	90.0389
427.09	89.2518
427.87	87.3337
433.94	85.6977
453.88	84.7639
463.37	75.4203
468.07	70.8039
473.00	76.6587
476.78	76.8280
477.60	84.9562
487.02	80.3356
492.35	0.0000
497.08	97.1599
511.00	58.7512
514.00	52.8605
527.90	0.0000
529.87	0.0000
531.02	79.1937
537.26	72.1396
546.56	0.0000
563.25	56.1669
569.33	63.7830
569.50	66.9779
569.70	62.7325
583.19	63.1592
600.60	71.2610
602.73	50.4378
604.72	76.1621
609.32	70.4768
609.32	70.4768
610.33	64.2188
614.28	71.2976
618.01	59.8827
621.93	65.4492
621.93	65.4492
633.25	76.7633
635.95	69.1754
636.99	64.8139
645.85	59.5651
657.76	56.7828
661.66	110.2104
661.66	110.2104
664.57	0.0000
666.33	71.2539
666.50	66.8060
677.62	58.1858

685.70	74.1130
695.00	63.1401
696.49	68.5948
696.51	68.5967
697.00	73.1254
702.65	67.8735
706.68	68.8973
711.68	61.7761
720.70	49.5052
721.93	0.0000
722.78	66.9346
722.91	62.3742
723.31	62.3842
724.19	73.0625
727.33	67.0617
733.00	66.2025
735.93	52.3117
739.50	55.1470
747.24	54.4007
752.31	68.3723
753.82	49.9236
756.73	42.5781
763.94	76.1203
765.81	65.9575
766.42	75.2671
777.92	61.6091
778.90	63.5010
783.70	43.9741
785.37	63.6637
795.86	49.8234
801.95	53.7103
810.29	56.7188
810.76	41.6013
815.77	35.9970
818.51	38.8799
832.01	52.4219
834.85	72.5136
836.80	0.0000
846.77	49.8354
856.80	51.3021
860.56	38.5293
871.09	43.5114
873.19	52.2532
875.33	0.0000
879.36	46.5504
880.51	60.1518
883.24	49.5283
884.68	55.3830
889.28	50.6086
898.04	41.0023
911.20	59.8265
911.20	59.8265
911.20	59.8265
926.50	42.3964
937.49	47.5043
944.13	40.6677
946.00	47.6414
949.00	47.6895
962.29	38.9200
964.08	38.9438
966.15	38.9705
968.97	39.0067
968.97	39.0067
968.97	39.0067
983.53	37.9659
996.26	63.5752
1001.03	38.4063
1004.73	64.7609
1037.84	36.8121
1038.76	0.0000
1048.07	31.8007
1050.41	50.3016
1050.41	50.3016
1063.66	37.1074
1085.87	32.1701
1099.45	45.8477
1112.07	50.9875
1115.54	55.8385

1120.29	40.8891
1120.29	40.8891
1120.55	40.8910
1121.30	41.9492
1131.51	0.0000
1173.23	37.2593
1177.93	49.0345
1189.05	41.7022
1204.77	59.0686
1221.41	45.3120
1231.02	67.0647
1235.36	44.4013
1238.28	57.4434
1260.41	0.0000
1271.85	25.1529
1274.44	47.0564
1274.54	52.5305
1291.59	27.4817
1298.22	0.0000
1312.11	26.7072
1332.49	29.6237
1365.19	34.5354
1368.63	0.0000
1384.29	19.6943
1408.01	10.3761
1457.56	0.0000
1460.82	16.3756
1489.16	20.1934
1505.03	12.5461
1596.21	17.7297
1620.50	11.8818
1678.03	0.0000
1690.97	19.0959
1764.49	10.4937
1764.49	10.4937
1770.23	10.2140
1771.35	7.1512
1791.20	0.0000
1836.06	11.3818

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202053648

Total Uranium Activity	2.0999E+01	ug/g
Total Uranium Counting Unc.	5.5191E+00	ug/g
Total Uranium Tpu	2.8159E-06	ug/g
Total Uranium Mda	1.8917E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*   BATCH ID      : 957714                        SAMPLE ID   : G1202053648
*   ANALYST       : MXR1                          DETECTOR    : GAM17
*   SAMPLE DATE   : 18-FEB-2010 12:00:00.00      COUNT TIME   : 0 02:00:00.00
*   ANALYSIS DATE : 9-MAR-2010 11:50:32.86      SAMPLE ALQT  : 126.000 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.130E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.540E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.839E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.356E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 19:12:20.09

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053649.CNF;1
Sample date        : 26-FEB-2010 00:00:00 Acquisition date : 6-MAR-2010 18:11:46.
Sample ID          : G1202053649 Sample quantity : 1.55440E+02 GRAM
Detector name      : GAM07 Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00 Elapsed real time: 0 01:00:01.31 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	59.56	4290	939	0.99	118.79	115	10	1.19E+00	2.1	
2	1	75.07	198	399	1.11	149.80	143	17	5.50E-02	18.2	1.06E+00
3	1	77.16*	330	368	1.11	153.97	143	17	9.17E-02	11.5	
4	1	88.07*	1635	369	1.14	175.79	171	20	4.54E-01	3.1	6.85E+00
5	0	122.03	257	312	0.97	243.69	239	9	7.15E-02	13.9	
6	0	238.58*	357	588	1.20	476.75	471	13	9.92E-02	15.0	
7	0	295.24*	131	187	1.14	590.06	586	9	3.63E-02	21.0	
8	0	338.23*	133	177	1.40	676.02	672	11	3.71E-02	21.2	
9	0	352.16*	186	192	1.27	703.87	699	10	5.18E-02	15.9	
10	0	511.09*	46	110	1.70	1021.67	1017	9	1.27E-02	48.8	
11	0	583.51*	159	80	1.46	1166.49	1162	9	4.40E-02	13.2	
12	0	609.64*	144	123	1.19	1218.76	1213	13	3.99E-02	18.2	
13	0	661.83	2369	173	1.56	1323.13	1315	15	6.58E-01	2.4	
14	0	911.69*	85	120	1.95	1822.79	1816	12	2.37E-02	28.1	
15	0	969.18	64	111	1.65	1937.74	1933	11	1.77E-02	34.2	
16	0	1173.55	1808	43	1.94	2346.44	2339	16	5.02E-01	2.5	
17	0	1332.88	1642	13	2.11	2665.08	2658	18	4.56E-01	2.5	
18	0	1460.67*	22	7	3.25	2920.64	2913	14	6.07E-03	35.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 19:12:23

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053649.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 26-FEB-2010 00:00:00 Acquisition date : 6-MAR-2010 18:11:46
Sample ID : G1202053649 Sample quantity : 155.44 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA7 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.31 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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	+	1460.82	*	8.764E-01	6.319E-01	4.281E-01	3.676E-02	2.047
CO-57	+	122.06	*	2.099E-01	6.093E-02	5.861E-02	5.043E-03	3.581
		136.47		1.947E-01	3.214E-01	5.278E-01	4.747E-02	0.369
CO-60	+	1173.23		6.461E+00	6.165E-01	1.214E-01	9.882E-03	53.204
	+	1332.49	*	6.538E+00	6.290E-01	9.761E-02	7.996E-03	66.980
CD-109	+	88.03	*	3.149E+01	3.562E+00	1.670E+00	1.573E-01	18.856
SN-126		64.28		3.242E-01	5.940E-01	9.096E-01	1.319E-01	0.356
	+	86.94		1.292E+01	5.427E+00	8.079E-01	3.353E-01	15.993
	+	87.57	*	3.108E+00	3.516E-01	1.652E-01	1.548E-02	18.815
BA-137M	+	661.66	*	5.707E+00	5.737E-01	1.100E-01	9.735E-03	51.886
CS-137	+	661.66	*	6.029E+00	6.070E-01	1.162E-01	1.030E-02	51.886
TL-208		277.37		4.245E-01	6.622E-01	1.128E+00	1.403E-01	0.376
	+	583.19	*	3.639E-01	1.019E-01	1.024E-01	9.788E-03	3.552
		860.56		-2.872E-02	6.637E-01	1.077E+00	1.053E-01	-0.027
BI-211		72.87		-1.887E-01	4.205E+00	6.167E+00	4.867E-01	-0.031
	+	351.06	*	1.894E+00	6.242E-01	6.054E-01	5.432E-02	3.129
PB-212	+	74.82		1.525E+00	5.885E-01	6.912E-01	8.728E-02	2.206
	+	77.11		1.489E+00	3.638E-01	4.042E-01	3.336E-02	3.683
	+	238.63	*	8.060E-01	2.541E-01	1.694E-01	1.628E-02	4.759
		300.09		1.784E+00	1.550E+00	2.409E+00	2.525E-01	0.741
PB-214	+	74.82		2.703E+00	1.032E+00	1.225E+00	1.384E-01	2.206
	+	77.11		2.624E+00	6.768E-01	7.126E-01	8.314E-02	3.683
		242.00		1.052E+00	7.344E-01	1.153E+00	1.182E-01	0.913
	+	295.22		8.147E-01	3.539E-01	4.241E-01	4.556E-02	1.921
	+	351.93	*	6.875E-01	2.297E-01	2.171E-01	2.286E-02	3.168
AC-228	+	338.32		1.507E+00	8.973E-01	6.789E-01	2.831E-01	2.220
	+	911.20	*	9.421E-01	5.414E-01	5.148E-01	6.171E-02	1.830
	+	968.97		1.216E+00	8.835E-01	9.854E-01	2.416E-01	1.234
RA-228	+	338.32		1.507E+00	8.973E-01	6.789E-01	2.831E-01	2.220
	+	911.20	*	9.421E-01	5.414E-01	5.148E-01	6.171E-02	1.830
	+	968.97		1.216E+00	8.835E-01	9.854E-01	2.416E-01	1.234
TH-228	+	74.82		1.525E+00	5.698E-01	6.912E-01	5.623E-02	2.206
	+	77.11		1.489E+00	3.638E-01	4.042E-01	3.336E-02	3.683
	+	238.63	*	8.060E-01	2.541E-01	1.694E-01	1.628E-02	4.759

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		300.09		1.784E+00	1.887E+00	2.409E+00	1.474E+00	0.741
TH-232	+	338.32		1.507E+00	6.532E-01	6.789E-01	5.811E-02	2.220
	+	911.20	*	9.421E-01	5.414E-01	5.148E-01	6.171E-02	1.830
	+	968.97		1.216E+00	8.835E-01	9.854E-01	2.416E-01	1.234
AM-241	+	59.54	*	1.356E+01	1.214E+00	3.895E-01	3.088E-02	34.803
ANH-511	+	511.00	*	8.032E-02	7.871E-02	8.979E-02	7.978E-03	0.895

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	4.646E-01	6.196E-01	1.037E+00	9.786E-02	0.448
NA-22		1274.54	*	-6.933E-03	5.033E-02	8.143E-02	6.684E-03	-0.085
NA-24		1368.63	*	1.313E-04	5.033E-02	Half-Life too short		
SC-46		889.28	*	-5.474E-02	9.145E-02	1.420E-01	1.301E-02	-0.386
		1120.55		1.192E-01	9.966E-02	1.788E-01	1.511E-02	0.667
V-48		944.13		1.024E+00	1.758E+00	2.945E+00	2.678E-01	0.348
		983.53	*	-1.764E-02	1.308E-01	2.086E-01	1.878E-02	-0.085
		1312.11		-5.366E-02	7.020E-02	9.988E-02	8.188E-03	-0.537
CR-51		320.08	*	-3.607E-01	5.751E-01	9.120E-01	8.235E-02	-0.396
MN-54		834.85	*	-7.472E-04	7.629E-02	1.244E-01	1.141E-02	-0.006
CO-56		846.77	*	7.026E-03	8.151E-02	1.336E-01	1.227E-02	0.053
		1037.84		-2.696E-01	6.067E-01	9.837E-01	9.117E-02	-0.274
		1238.28		1.257E-01	1.045E-01	1.942E-01	1.641E-02	0.647
		1771.35		-5.260E-01	4.019E-01	5.064E-01	4.159E-02	-1.039
CO-58		810.76	*	2.296E-02	7.184E-02	1.216E-01	1.117E-02	0.189
FE-59		1099.45	*	-6.266E-02	1.870E-01	3.052E-01	2.828E-02	-0.205
		1291.59		6.020E-02	1.434E-01	2.501E-01	2.355E-02	0.241
ZN-65		1115.54	*	-2.136E-01	1.897E-01	2.898E-01	2.460E-02	-0.737
SE-75	+	121.12		1.075E+00	3.208E-01	4.204E-01	4.654E-02	2.556
		136.00		4.484E-02	5.932E-02	9.809E-02	8.248E-03	0.457
		264.66	*	-9.199E-03	6.994E-02	1.155E-01	9.863E-03	-0.080
		279.54		1.768E-01	1.834E-01	3.169E-01	2.796E-02	0.558
		400.66		2.213E-01	4.762E-01	7.923E-01	8.640E-02	0.279
SR-85		514.00	*	4.518E-02	6.992E-02	1.082E-01	9.626E-03	0.417
Y-88		898.04		-3.158E-03	9.470E-02	1.533E-01	1.409E-02	-0.021
		1836.06	*	-9.718E-03	5.064E-02	8.104E-02	6.577E-03	-0.120
Y-91		1204.77	*	9.815E+00	2.609E+01	4.512E+01	3.685E+00	0.218
NB-94		702.65	*	-2.296E-02	6.030E-02	9.669E-02	8.682E-03	-0.237
		871.09		-1.505E-02	7.620E-02	1.220E-01	1.120E-02	-0.123
NB-95		765.81	*	-5.331E-02	7.134E-02	1.100E-01	1.002E-02	-0.485
NB-95M		235.69	*	-1.111E-01	2.111E-01	3.004E-01	2.921E-02	-0.370
ZR-95		724.19		-7.041E-03	1.615E-01	2.653E-01	2.582E-02	-0.027
		756.73	*	7.857E-02	1.290E-01	2.213E-01	2.204E-02	0.355
MO-99		140.51		-7.831E-01	6.808E+00	1.081E+01	2.554E+00	-0.072
		181.07		3.418E+00	5.378E+00	9.289E+00	1.722E+00	0.368
		366.42		7.800E+00	3.810E+01	6.285E+01	5.323E+00	0.124
		739.50	*	2.338E+00	4.613E+00	7.861E+00	1.258E+00	0.297
		777.92		-3.377E+00	1.451E+01	2.337E+01	2.134E+00	-0.145

----- 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	*		-1.490E+02	1.451E+01	Half-Life too short		
RU-103	497.08	*		-5.632E-02	6.878E-02	1.025E-01	1.447E-02	-0.549
	610.33		+	5.894E+00	2.352E+00	2.946E+00	4.869E-01	2.000
RH-106	621.93	*		-2.397E-01	5.752E-01	9.286E-01	1.250E-01	-0.258
	1050.41			3.711E-01	5.427E+00	9.147E+00	8.031E-01	0.041
RU-106	621.93	*		-2.397E-01	5.747E-01	9.286E-01	8.299E-02	-0.258
	1050.41			3.711E-01	5.427E+00	9.147E+00	8.031E-01	0.041
AG-108M	433.94	*		3.720E-02	6.406E-02	1.066E-01	9.449E-03	0.349
	614.28			1.009E-03	6.956E-02	1.009E-01	9.308E-03	0.010
	722.91			3.999E-05	6.948E-02	1.145E-01	1.065E-02	0.000
AG-110M	657.76	*		5.893E-02	8.082E-02	1.238E-01	1.128E-02	0.476
	677.62			-1.455E-01	5.670E-01	9.209E-01	8.421E-02	-0.158
	706.68			-3.243E-02	3.777E-01	6.196E-01	5.717E-02	-0.052
	763.94			-1.147E-01	2.931E-01	4.665E-01	4.355E-02	-0.246
	884.68			1.796E-02	1.210E-01	1.984E-01	1.871E-02	0.091
	937.49			-4.232E-01	3.049E-01	4.444E-01	4.176E-02	-0.952
	1384.29			-3.574E-02	2.084E-01	3.324E-01	2.826E-02	-0.108
	1505.03			-1.712E-01	3.523E-01	5.169E-01	4.321E-02	-0.331
SN-113	391.69	*		1.548E-02	8.443E-02	1.386E-01	1.191E-02	0.112
CD-115	260.90			1.393E+01	3.068E+01	5.219E+01	4.435E+00	0.267
	492.35			6.763E+00	1.009E+01	1.687E+01	1.490E+00	0.401
	527.90	*		-2.999E+00	2.806E+00	4.362E+00	3.891E-01	-0.687
SN-117M	156.02			1.136E+00	2.433E+00	3.951E+00	3.183E-01	0.287
	158.56	*		-4.635E-02	5.983E-02	9.084E-02	7.284E-03	-0.510
TE-123M	159.00	*		-2.372E-02	4.129E-02	6.345E-02	5.119E-03	-0.374
SB-124	602.73			1.925E-03	6.444E-02	9.817E-02	8.797E-03	0.020
	645.85			-4.115E-01	8.760E-01	1.406E+00	1.318E-01	-0.293
	722.78			-1.214E-02	6.476E-01	1.066E+00	9.829E-02	-0.011
	1690.97	*		1.178E-01	1.092E-01	2.132E-01	1.851E-02	0.552
SB-125	427.87	*		-2.245E-01	1.941E-01	2.905E-01	2.531E-02	-0.773
	463.37			3.245E-01	5.933E-01	9.811E-01	9.191E-02	0.331
	600.60			-9.792E-02	3.042E-01	4.961E-01	4.751E-02	-0.197
	635.95			2.172E-01	5.080E-01	8.692E-01	8.337E-02	0.250
TE-125M	109.28	*		-5.233E+00	1.247E+01	1.972E+01	2.072E+00	-0.265
I-126	388.63			1.693E-01	2.297E-01	3.883E-01	3.239E-02	0.436
	666.33	*		-1.540E-01	3.241E-01	4.420E-01	3.918E-02	-0.348
	753.82			6.148E-01	2.466E+00	4.128E+00	3.755E-01	0.149
SB-126	414.70			9.093E-03	1.066E-01	1.734E-01	1.470E-02	0.052
	666.50			-5.460E-02	1.093E-01	1.486E-01	1.318E-02	-0.367
	695.00			-3.270E-02	9.831E-02	1.591E-01	1.425E-02	-0.206
	697.00			4.581E-01	3.367E-01	6.063E-01	5.434E-02	0.756
	720.70	*		5.800E-02	1.915E-01	3.226E-01	2.912E-02	0.180
	856.80			-1.108E-01	7.270E-01	1.170E+00	1.074E-01	-0.095
SB-127	252.40			3.922E-01	2.261E+00	3.790E+00	1.558E+00	0.103
	473.00			2.605E-02	1.142E+00	1.835E+00	2.109E-01	0.014
	685.70	*		-5.178E-01	7.627E-01	1.193E+00	1.201E-01	-0.434
	783.70			-7.459E-01	2.060E+00	3.275E+00	3.712E-01	-0.228
I-131	80.19			-8.546E-01	3.597E+00	5.197E+00	4.453E-01	-0.164
	284.31			-7.730E-01	1.463E+00	2.353E+00	2.098E-01	-0.329

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	364.49	*		-6.618E-02	1.296E-01	2.052E-01	1.829E-02	-0.323
	636.99			-6.754E-01	1.726E+00	2.791E+00	2.611E-01	-0.242
	49.72			4.317E+00	5.888E+00	9.973E+00	8.846E-01	0.433
	111.76			3.260E+00	1.157E+01	1.892E+01	1.799E+00	0.172
	116.30			1.231E+01	1.018E+01	1.725E+01	1.634E+00	0.714
BA-133	228.16	*		-2.851E-01	2.995E-01	4.749E-01	6.971E-02	-0.600
	81.00			-2.091E-01	1.387E-01	1.816E-01	2.819E-02	-1.151
	276.40			1.204E-01	6.217E-01	1.040E+00	1.460E-01	0.116
	302.85			-1.407E-01	2.470E-01	3.937E-01	5.129E-02	-0.357
	356.01	*		7.350E-03	8.364E-02	1.220E-01	1.572E-02	0.060
I-133	383.85			-1.047E-02	5.442E-01	8.840E-01	1.083E-01	-0.012
	529.87	*		1.056E-05	5.442E-01	Half-Life	too short	
	875.33			-3.951E-04	5.442E-01	Half-Life	too short	
	1298.22			-6.406E-04	5.442E-01	Half-Life	too short	
	563.25			4.437E-01	6.583E-01	1.149E+00	1.039E-01	0.386
CS-134	569.33			-2.924E-01	3.504E-01	5.519E-01	5.012E-02	-0.530
	604.72			2.165E-02	6.258E-02	9.435E-02	8.472E-03	0.229
	795.86	*		6.567E-02	9.413E-02	1.613E-01	1.486E-02	0.407
	801.95			5.571E-01	7.678E-01	1.330E+00	1.225E-01	0.419
	1365.19			-9.945E-01	1.441E+00	2.066E+00	1.788E-01	-0.481
CS-135	268.22	*		1.535E-01	2.644E-01	4.508E-01	4.445E-02	0.341
	546.56			-1.943E+03	2.644E-01	Half-Life	too short	
	836.80			-2.065E+02	2.644E-01	Half-Life	too short	
	1038.76			1.785E+03	2.644E-01	Half-Life	too short	
	1131.51			5.658E+01	2.644E-01	Half-Life	too short	
CS-136	1260.41	*		3.490E+02	2.644E-01	Half-Life	too short	
	1457.56			2.571E+03	2.644E-01	Half-Life	too short	
	1678.03			1.360E+03	2.644E-01	Half-Life	too short	
	1791.20			-4.244E+02	2.644E-01	Half-Life	too short	
	153.25			-2.187E-01	9.343E-01	1.468E+00	1.442E-01	-0.149
	176.60			-2.155E-01	5.185E-01	8.634E-01	7.732E-02	-0.250
	273.65			-6.453E-01	6.325E-01	9.927E-01	9.162E-02	-0.650
	340.55			1.786E-01	2.086E-01	3.174E-01	2.818E-02	0.563
	818.51			1.191E-02	1.151E-01	1.894E-01	1.738E-02	0.063
	1048.07	*		-9.895E-03	1.659E-01	2.771E-01	2.533E-02	-0.036
CE-139	1235.36			3.500E-02	5.138E-01	8.575E-01	9.817E-02	0.041
	165.86	*		9.454E-03	4.610E-02	7.376E-02	5.834E-03	0.128
BA-140	162.66			-8.907E-02	8.852E-01	1.396E+00	1.198E-01	-0.064
	304.85			-3.357E-01	1.581E+00	2.571E+00	7.521E-01	-0.131
	423.72			-5.928E-01	2.935E+00	4.678E+00	1.538E+00	-0.127
LA-140	537.26	*		-5.683E-02	3.664E-01	6.097E-01	2.073E-01	-0.093
	328.76			3.375E-01	3.685E-01	6.322E-01	5.733E-02	0.534
	487.02			-1.507E-01	1.968E-01	2.975E-01	2.777E-02	-0.507
	815.77			3.060E-01	4.744E-01	8.113E-01	8.216E-02	0.377
	1596.21	*		-1.323E-02	8.277E-02	1.300E-01	1.087E-02	-0.102
CE-141	145.44	*		-3.529E-02	8.282E-02	1.292E-01	1.081E-02	-0.273
CE-143	57.36			2.658E+02	9.022E+01	1.402E+02	1.264E+01	1.896
	293.27	*		1.511E+01	1.068E+01	1.621E+01	3.443E+00	0.932
	664.57			2.451E+03	7.617E+02	4.334E+02	1.299E+02	5.657

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-144		721.93		-1.856E+01	9.901E+01	1.608E+02	4.505E+01	-0.115
		80.12		-7.102E-01	3.323E+00	4.807E+00	4.106E-01	-0.148
		133.52	*	-2.701E-01	2.870E-01	4.326E-01	6.556E-02	-0.624
PM-144		476.78		2.913E-02	1.370E-01	2.225E-01	2.116E-02	0.131
		618.01		3.391E-02	5.643E-02	9.784E-02	8.975E-03	0.347
PR-144		696.49	*	5.364E-02	6.116E-02	1.072E-01	9.603E-03	0.501
		696.51	*	4.063E+00	4.567E+00	8.007E+00	7.175E-01	0.507
		1489.16		7.969E+00	1.679E+01	2.980E+01	2.489E+00	0.267
PM-146		453.88	*	-9.635E-03	8.833E-02	1.411E-01	1.502E-02	-0.068
		633.25		-7.921E-01	2.641E+00	4.271E+00	1.634E+00	-0.185
		735.93		-2.312E-01	2.831E-01	4.237E-01	1.193E-01	-0.546
ND-147		747.24		4.350E-02	1.909E-01	3.190E-01	4.742E-02	0.136
		91.11		9.736E-02	2.345E-01	3.877E-01	3.838E-02	0.251
		319.41		1.996E+00	3.906E+00	6.599E+00	5.660E-01	0.302
		531.02	*	3.470E-01	6.811E-01	1.180E+00	1.785E-01	0.294
PM-149		285.90	*	6.242E+00	2.138E+01	3.588E+01	5.549E+00	0.174
EU-152	+	121.78		6.136E-01	1.806E-01	2.443E-01	2.415E-02	2.512
		244.70		-4.960E-01	6.274E-01	8.726E-01	7.389E-02	-0.568
		344.28	*	5.190E-03	2.069E-01	2.974E-01	2.695E-02	0.017
		778.90		2.378E-02	5.153E-01	8.478E-01	7.744E-02	0.028
		964.08		-1.035E-01	7.445E-01	1.021E+00	9.239E-02	-0.101
GD-153		1085.87		1.722E-01	8.266E-01	1.404E+00	1.211E-01	0.123
		1112.07		-9.282E-02	6.557E-01	1.084E+00	9.208E-02	-0.086
		1408.01		1.053E-01	2.226E-01	3.944E-01	3.270E-02	0.267
		69.67		1.632E+00	2.270E+00	3.452E+00	2.644E-01	0.473
		97.43	*	2.505E-02	1.158E-01	1.702E-01	1.522E-02	0.147
EU-154	+	103.18		-5.698E-02	1.421E-01	2.256E-01	1.980E-02	-0.253
		123.07		4.336E-01	1.299E-01	1.703E-01	1.928E-02	2.546
		723.31		-6.974E-02	3.212E-01	5.210E-01	5.142E-02	-0.134
		873.19		-4.241E-01	6.417E-01	9.877E-01	1.215E-01	-0.429
EU-155		996.26		-1.476E-01	8.283E-01	1.314E+00	2.318E-01	-0.112
		1004.73		-4.026E-01	4.966E-01	7.435E-01	8.830E-02	-0.542
		1274.44	*	1.650E-02	1.388E-01	2.335E-01	2.584E-02	0.071
		86.55		1.892E+00	2.738E-01	3.882E-01	3.622E-02	4.874
		105.31	*	1.528E-01	1.407E-01	2.385E-01	2.106E-02	0.641
TB-160	+	86.79		9.405E+00	1.064E+00	1.090E+00	1.011E-01	8.632
		197.04		-3.966E-01	8.093E-01	1.333E+00	1.093E-01	-0.297
		215.65		-6.860E-01	1.115E+00	1.819E+00	1.516E-01	-0.377
		298.57		6.589E-02	2.038E-01	3.021E-01	2.583E-02	0.218
		879.36	*	2.473E-02	3.104E-01	5.071E-01	4.651E-02	0.049
HO-166M		962.29		4.644E-01	1.191E+00	1.864E+00	1.688E-01	0.249
		966.15		4.687E-01	4.735E-01	7.195E-01	6.508E-02	0.651
		1177.93		9.404E-01	7.135E-01	1.171E+00	9.536E-02	0.803
		1271.85		3.789E-01	7.438E-01	1.322E+00	1.084E-01	0.287
		80.57		-4.358E-01	3.827E-01	5.245E-01	4.504E-02	-0.831
		184.41		-1.722E-02	5.258E-02	8.878E-02	7.177E-03	-0.194
		280.46		-2.063E-02	1.505E-01	2.477E-01	2.104E-02	-0.083
		410.95		2.469E-01	4.858E-01	8.086E-01	6.833E-02	0.305
	711.68	*	-7.663E-02	1.129E-01	1.763E-01	1.587E-02	-0.435	

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TA-182		752.31		-2.105E-01	5.196E-01	8.265E-01	7.515E-02	-0.255
		810.29		7.409E-02	1.146E-01	1.984E-01	1.819E-02	0.373
		67.75		-2.986E-02	1.282E-01	2.094E-01	1.579E-02	-0.143
		100.11		6.438E-02	2.144E-01	3.529E-01	3.125E-02	0.182
		152.43		-8.702E-03	5.106E-01	8.116E-01	6.579E-02	-0.011
		222.11		-1.714E-01	5.350E-01	8.843E-01	7.403E-02	-0.194
		1121.30		4.069E-01	2.792E-01	5.079E-01	4.290E-02	0.801
		1189.05		-4.804E-01	4.277E-01	6.179E-01	5.038E-02	-0.777
IR-192	+	1221.41	*	1.692E-01	2.357E-01	4.219E-01	3.451E-02	0.401
		1231.02		-4.804E-02	5.193E-01	8.503E-01	6.959E-02	-0.056
		295.96		5.674E-01	2.438E-01	3.391E-01	2.919E-02	1.673
		308.46		1.179E-02	1.501E-01	2.485E-01	2.140E-02	0.047
		316.51	*	4.250E-03	5.954E-02	9.835E-02	8.453E-03	0.043
HG-203		468.07		-1.001E-01	1.426E-01	2.190E-01	2.051E-02	-0.457
		70.83		-2.281E-02	1.644E+00	2.417E+00	3.772E-01	-0.009
		72.87		-4.273E-02	9.522E-01	1.396E+00	2.114E-01	-0.031
		279.20	*	6.131E-02	6.168E-02	1.067E-01	9.291E-03	0.575
BI-207	+	72.81		-1.868E-02	2.418E-01	3.540E-01	2.792E-02	-0.053
		74.97		4.393E-01	1.641E-01	2.467E-01	1.989E-02	1.781
		569.70		-4.996E-02	5.542E-02	8.690E-02	7.793E-03	-0.575
		1063.66	*	5.335E-02	1.101E-01	1.908E-01	1.665E-02	0.280
PB-210		1770.23		-8.069E-01	8.165E-01	1.116E+00	9.165E-02	-0.723
		46.54	*	-3.817E+00	3.628E+00	5.881E+00	5.467E-01	-0.649
PB-211		404.85	*	6.482E-01	1.448E+00	2.351E+00	1.137E+00	0.276
		427.09		-4.981E-01	3.160E+00	5.043E+00	2.333E+00	-0.099
BI-212		832.01		-1.654E-01	2.120E+00	3.436E+00	1.785E+00	-0.048
		727.33	*	4.219E-01	1.024E+00	1.735E+00	2.213E-01	0.243
		785.37		7.913E-01	5.839E+00	9.669E+00	8.840E-01	0.082
		1620.50		1.556E-01	3.385E+00	5.533E+00	4.623E-01	0.028
BI-214	+	609.32	*	6.391E-01	2.415E-01	3.181E-01	3.305E-02	2.009
		1120.29		7.428E-01	6.230E-01	1.114E+00	1.202E-01	0.667
RN-219		1764.49		4.278E-01	3.983E-01	7.871E-01	6.472E-02	0.544
		271.23		3.518E-01	3.999E-01	6.889E-01	6.994E-02	0.511
RA-223		401.81	*	-1.232E-01	8.084E-01	1.299E+00	1.915E-01	-0.095
		81.07		-4.584E-01	3.091E-01	4.140E-01	3.577E-02	-1.107
		83.79		2.603E-01	1.841E-01	2.848E-01	2.543E-02	0.914
		94.87		5.345E-01	5.901E-01	9.018E-01	8.155E-02	0.593
		144.24		-2.738E-01	1.009E+00	1.589E+00	1.473E-01	-0.172
		154.21		-1.950E-01	5.921E-01	9.240E-01	8.275E-02	-0.211
		269.46		1.212E-01	3.127E-01	5.285E-01	4.583E-02	0.229
		323.87	*	1.539E-01	1.175E+00	1.944E+00	3.365E-01	0.079
RA-224	+	338.28		5.981E+00	2.641E+00	3.415E+00	4.108E-01	1.751
		240.99	*	4.453E+00	1.452E+00	2.378E+00	2.011E-01	1.873
RA-226	+	609.32	*	6.391E-01	2.415E-01	3.181E-01	3.305E-02	2.009
		1120.29		7.428E-01	6.230E-01	1.114E+00	1.202E-01	0.667
AC-227		1764.49		4.278E-01	3.983E-01	7.871E-01	6.472E-02	0.544
		79.69		1.059E-01	1.664E+00	2.443E+00	4.196E-01	0.043
		235.96		-1.402E-01	2.774E-01	3.956E-01	4.032E-02	-0.354
		256.23	*	-1.463E-01	4.140E-01	6.767E-01	8.093E-02	-0.216

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-227		299.98		2.238E+00	1.699E+00	2.654E+00	3.360E-01	0.843
		304.50		-1.032E+00	2.713E+00	4.363E+00	7.198E-01	-0.237
		334.37		9.059E-01	3.227E+00	4.741E+00	7.375E-01	0.191
		79.80		1.730E-01	2.195E+00	3.226E+00	7.011E-01	0.054
		235.96		-1.402E-01	2.774E-01	3.956E-01	3.797E-02	-0.354
		256.23	*	-1.463E-01	4.141E-01	6.767E-01	9.152E-02	-0.216
		299.98		2.238E+00	1.699E+00	2.654E+00	3.360E-01	0.843
TH-229		304.50		-1.032E+00	2.713E+00	4.363E+00	7.198E-01	-0.237
		334.37		9.059E-01	3.227E+00	4.741E+00	7.375E-01	0.191
		85.43		5.054E-01	3.202E-01	4.959E-01	4.521E-02	1.019
	+	88.47		4.791E+00	5.420E-01	5.973E-01	5.608E-02	8.022
PA-231		193.51	*	-4.659E-01	8.031E-01	1.321E+00	1.079E-01	-0.353
		210.85		1.152E+00	1.413E+00	2.451E+00	2.035E-01	0.470
		283.69	*	-1.686E+00	2.506E+00	3.985E+00	5.785E-01	-0.423
TH-231		301.36		6.390E-01	9.830E-01	1.620E+00	1.962E-01	0.394
		81.07		-4.584E-01	3.091E-01	4.140E-01	3.577E-02	-1.107
		83.79		2.603E-01	1.841E-01	2.848E-01	2.543E-02	0.914
		94.87		5.345E-01	5.901E-01	9.018E-01	8.155E-02	0.593
PA-233		144.24		-2.738E-01	1.009E+00	1.589E+00	1.473E-01	-0.172
		154.21		-1.950E-01	5.921E-01	9.240E-01	8.275E-02	-0.211
		269.46		1.212E-01	3.127E-01	5.285E-01	4.583E-02	0.229
		323.87	*	1.539E-01	1.175E+00	1.944E+00	3.365E-01	0.079
	+	338.28		5.981E+00	2.641E+00	3.415E+00	4.108E-01	1.751
		300.13		8.826E-01	7.766E-01	1.198E+00	1.772E-01	0.737
		311.90	*	6.223E-02	1.136E-01	1.924E-01	1.697E-02	0.324
PA-234		340.48		1.200E+00	1.281E+00	1.917E+00	4.609E-01	0.626
		94.67		2.133E-01	2.213E-01	3.375E-01	4.288E-02	0.632
		98.44		5.625E-02	1.237E-01	1.898E-01	1.060E-01	0.296
PA-234M		111.00		3.045E-01	2.526E-01	4.271E-01	5.171E-02	0.713
		131.20		-2.037E-01	1.535E-01	2.277E-01	1.918E-02	-0.895
		569.50		-3.936E-01	4.865E-01	7.682E-01	6.888E-02	-0.512
		733.00		-3.324E-01	7.302E-01	1.156E+00	2.585E-01	-0.288
		880.51		-1.983E-01	6.812E-01	1.084E+00	9.937E-02	-0.183
		883.24		8.427E-02	7.179E-01	1.172E+00	7.885E-01	0.072
		926.50		8.792E-02	4.510E-01	7.385E-01	1.880E-01	0.119
		946.00	*	-3.926E-01	7.997E-01	1.244E+00	2.361E-01	-0.316
		949.00		-6.604E-01	1.147E+00	1.776E+00	1.613E-01	-0.372
		766.42		-1.252E+01	2.159E+01	3.230E+01	1.641E+01	-0.388
TH-234		1001.03	*	-1.031E+00	1.029E+01	1.652E+01	1.694E+00	-0.062
U-235		63.29	*	-1.382E+00	1.643E+00	2.329E+00	4.143E-01	-0.593
		92.59		5.987E-02	9.093E-01	1.509E+00	3.365E-01	0.040
		89.96		4.857E+00	1.730E+00	2.269E+00	5.639E-01	2.141
		93.35		2.846E-02	6.850E-01	1.136E+00	2.645E-01	0.025
NP-237		143.76	*	-5.291E-02	2.998E-01	4.741E-01	7.946E-02	-0.112
		163.33		1.264E-01	6.834E-01	1.093E+00	1.928E-01	0.116
		185.72		7.696E-02	6.773E-02	1.201E-01	9.723E-03	0.641
		205.31		-1.930E-01	7.646E-01	1.273E+00	2.289E-01	-0.152
		86.48	*	4.098E+00	1.066E+00	9.204E-01	2.109E-01	4.453
		95.86		-9.341E-02	1.235E+00	1.782E+00	4.299E-01	-0.052

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	63.29	*		-1.382E+00	1.643E+00	2.329E+00	4.143E-01	-0.593
	92.59			5.987E-02	9.093E-01	1.509E+00	1.381E-01	0.040
NP-239	99.53			9.016E-02	2.063E-01	3.416E-01	3.031E-02	0.264
	103.37			-4.681E-02	1.332E-01	2.120E-01	1.860E-02	-0.221
	106.12			6.085E-02	1.137E-01	1.885E-01	1.643E-02	0.323
	117.23	*		-3.495E-01	6.618E-01	9.166E-01	7.885E-02	-0.381
	228.18			-3.340E-01	3.512E-01	5.607E-01	4.712E-02	-0.596
	277.60			2.629E-01	3.040E-01	5.234E-01	4.444E-02	0.502
CM-247	278.00			1.391E+00	1.305E+00	2.263E+00	1.921E-01	0.614
	287.50			-2.328E-01	2.147E+00	3.534E+00	3.010E-01	-0.066
	402.40	*		-3.125E-02	7.434E-02	1.175E-01	9.865E-03	-0.266
CF-249	252.80			7.772E-02	1.582E+00	2.643E+00	2.243E-01	0.029
	333.37			7.169E-02	3.471E-01	5.073E-01	4.346E-02	0.141
	388.16	*		1.905E-02	7.687E-02	1.267E-01	1.057E-02	0.150
CF-251	177.52	*		-9.863E-02	1.908E-01	3.162E-01	2.536E-02	-0.312
	227.38			-2.219E-01	5.684E-01	9.350E-01	7.854E-02	-0.237
	285.41			-7.599E-01	3.686E+00	6.036E+00	5.137E-01	-0.126

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]G1202053649 *
* Acquisition date   : 6-MAR-2010 18:11:46 Detector SN#      :          *
* Detector ID        : GAM07 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 1.500          *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 01:00:01.31 Half life ratio : 8.000   *
*****
*                               SAMPLE DATA                              *
*                               *                                         *
* Sample date       : 26-FEB-2010 00:00:00 Nuclide Library : SOLID *
* Sample ID         : G1202053649 Analyst initials: MXR1      *
* Batch Number      : 957714 Sample Quantity : 1.5544E+02 GRAM *
* Recovery          : 1.00000 Carrier Weight  : 0.00000       *
*****
*                               QC DATA                                 *
*                               *                                         *
* Standard Weight   : 0.00000                                          *
* CALIB. DATE/TIME  : 20-JUL-2009 15:29:58 MS Isotope           :          *
* MSD DPM           : 0.000 MSD Isotope                          :          *
* LCS DPM           : 0.000 LCS Isotope                          :          *
* LCSD DPM          : 0.000 LCSD Isotope                         :          *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	8.764E-01	6.192E-01	4.317E-01	0.000E+00
CO-57	2.099E-01	5.971E-02	6.313E-02	0.000E+00
CO-60	6.538E+00	6.164E-01	9.869E-02	0.000E+00
CD-109	3.149E+01	3.491E+00	1.813E+00	0.000E+00
SN-126	3.108E+00	3.446E-01	1.794E-01	0.000E+00
BA-137M	5.707E+00	5.623E-01	1.134E-01	0.000E+00
CS-137	6.029E+00	5.948E-01	1.198E-01	0.000E+00
TL-208	3.639E-01	9.988E-02	1.060E-01	0.000E+00
BI-211	1.894E+00	6.117E-01	6.348E-01	0.000E+00
PB-212	8.060E-01	2.490E-01	1.793E-01	0.000E+00
PB-214	6.875E-01	2.251E-01	2.275E-01	0.000E+00
AC-228	9.421E-01	5.306E-01	5.261E-01	0.000E+00
RA-228	9.421E-01	5.306E-01	5.261E-01	0.000E+00
TH-228	8.060E-01	2.490E-01	1.793E-01	0.000E+00
TH-232	9.421E-01	5.306E-01	5.261E-01	0.000E+00
AM-241	1.356E+01	1.190E+00	4.269E-01	0.000E+00
ANH-511	8.032E-02	7.713E-02	9.321E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	4.646E-01	6.072E-01	1.079E+00	0.000E+00 NOT IDENT.
NA-22	-6.933E-03	4.932E-02	8.244E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	7.118E+02	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-5.474E-02	8.962E-02	1.452E-01	0.000E+00 NOT IDENT.
V-48	-1.764E-02	1.282E-01	2.127E-01	0.000E+00 NOT IDENT.
CR-51	-3.607E-01	5.636E-01	9.584E-01	0.000E+00 NOT IDENT.
MN-54	-7.472E-04	7.476E-02	1.274E-01	0.000E+00 NOT IDENT.
CO-56	7.026E-03	7.988E-02	1.369E-01	0.000E+00 NOT IDENT.
CO-58	2.296E-02	7.040E-02	1.246E-01	0.000E+00 NOT IDENT.
FE-59	-6.266E-02	1.833E-01	3.103E-01	0.000E+00 NOT IDENT.

ZN-65	-2.136E-01	1.859E-01	2.945E-01	0.000E+00	NOT IDENT.
SE-75	-9.199E-03	6.854E-02	1.220E-01	0.000E+00	FAIL ABUN
SR-85	4.518E-02	6.852E-02	1.123E-01	0.000E+00	NOT IDENT.
Y-88	-9.718E-03	4.963E-02	8.120E-02	0.000E+00	NOT IDENT.
Y-91	9.815E+00	2.557E+01	4.575E+01	0.000E+00	NOT IDENT.
NB-94	-2.296E-02	5.910E-02	9.952E-02	0.000E+00	NOT IDENT.
NB-95	-5.331E-02	6.991E-02	1.129E-01	0.000E+00	NOT IDENT.
NB-95M	-1.111E-01	2.068E-01	3.182E-01	0.000E+00	NOT IDENT.
ZR-95	7.857E-02	1.265E-01	2.273E-01	0.000E+00	NOT IDENT.
MO-99	2.338E+00	4.521E+00	8.079E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.269E+09	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-5.632E-02	6.740E-02	1.065E-01	0.000E+00	FAIL ABUN
RH-106	-2.397E-01	5.637E-01	9.588E-01	0.000E+00	NOT IDENT.
RU-106	-2.397E-01	5.632E-01	9.588E-01	0.000E+00	NOT IDENT.
AG-108M	3.720E-02	6.277E-02	1.111E-01	0.000E+00	NOT IDENT.
AG-110M	5.893E-02	7.921E-02	1.277E-01	0.000E+00	NOT IDENT.
SN-113	1.548E-02	8.274E-02	1.449E-01	0.000E+00	NOT IDENT.
CD-115	-2.999E+00	2.750E+00	4.524E+00	0.000E+00	NOT IDENT.
SN-117M	-4.635E-02	5.863E-02	9.720E-02	0.000E+00	NOT IDENT.
TE-123M	-2.372E-02	4.046E-02	6.789E-02	0.000E+00	NOT IDENT.
SB-124	1.178E-01	1.070E-01	2.141E-01	0.000E+00	NOT IDENT.
SB-125	-2.245E-01	1.903E-01	3.030E-01	0.000E+00	NOT IDENT.
TE-125M	-5.233E+00	1.222E+01	2.130E+01	0.000E+00	NOT IDENT.
I-126	-1.540E-01	3.176E-01	4.555E-01	0.000E+00	NOT IDENT.
SB-126	5.800E-02	1.877E-01	3.318E-01	0.000E+00	NOT IDENT.
SB-127	-5.178E-01	7.475E-01	1.228E+00	0.000E+00	NOT IDENT.
I-131	-6.618E-02	1.270E-01	2.149E-01	0.000E+00	NOT IDENT.
TE-132	-2.851E-01	2.936E-01	5.035E-01	0.000E+00	NOT IDENT.
BA-133	7.350E-03	8.196E-02	1.279E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	6.188E+01	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.567E-02	9.224E-02	1.655E-01	0.000E+00	NOT IDENT.
CS-135	1.535E-01	2.591E-01	4.759E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.197E+08	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-9.895E-03	1.626E-01	2.821E-01	0.000E+00	NOT IDENT.
CE-139	9.454E-03	4.518E-02	7.884E-02	0.000E+00	NOT IDENT.
BA-140	-5.683E-02	3.591E-01	6.321E-01	0.000E+00	NOT IDENT.
LA-140	-1.323E-02	8.112E-02	1.307E-01	0.000E+00	NOT IDENT.
CE-141	-3.529E-02	8.116E-02	1.385E-01	0.000E+00	NOT IDENT.
CE-143	1.511E+01	1.047E+01	1.708E+01	0.000E+00	NOT IDENT.
CE-144	-2.701E-01	2.813E-01	4.649E-01	0.000E+00	NOT IDENT.
PM-144	5.364E-02	5.994E-02	1.103E-01	0.000E+00	NOT IDENT.
PR-144	4.063E+00	4.476E+00	8.243E+00	0.000E+00	NOT IDENT.
PM-146	-9.635E-03	8.656E-02	1.470E-01	0.000E+00	NOT IDENT.
ND-147	3.470E-01	6.674E-01	1.224E+00	0.000E+00	NOT IDENT.
PM-149	6.242E+00	2.095E+01	3.782E+01	0.000E+00	NOT IDENT.
EU-152	5.190E-03	2.028E-01	3.120E-01	0.000E+00	FAIL ABUN
GD-153	2.505E-02	1.135E-01	1.843E-01	0.000E+00	NOT IDENT.
EU-154	1.650E-02	1.360E-01	2.364E-01	0.000E+00	FAIL ABUN
EU-155	1.528E-01	1.379E-01	2.578E-01	0.000E+00	NOT IDENT.
TB-160	2.473E-02	3.042E-01	5.187E-01	0.000E+00	FAIL ABUN
HO-166M	-7.663E-02	1.106E-01	1.814E-01	0.000E+00	NOT IDENT.
TA-182	1.692E-01	2.309E-01	4.277E-01	0.000E+00	NOT IDENT.
IR-192	4.250E-03	5.835E-02	1.034E-01	0.000E+00	FAIL ABUN
HG-203	6.131E-02	6.044E-02	1.125E-01	0.000E+00	NOT IDENT.
BI-207	5.335E-02	1.079E-01	1.941E-01	0.000E+00	FAIL ABUN
PB-210	-3.817E+00	3.556E+00	6.483E+00	0.000E+00	NOT IDENT.
PB-211	6.482E-01	4.19E+00	2.456E+00	0.000E+00	NOT IDENT.
BI-212	4.219E-01	1.003E+00	1.784E+00	0.000E+00	NOT IDENT.
BI-214	0.000E+00	2.366E-01	3.286E-01	0.000E+00	FAIL ABUN
RN-219	-1.232E-01	7.922E-01	1.357E+00	0.000E+00	NOT IDENT.
RA-223	1.539E-01	1.151E+00	2.042E+00	0.000E+00	FAIL ABUN
RA-224	0.000E+00	1.423E+00	2.517E+00	0.000E+00	NOT IDENT.
RA-226	0.000E+00	2.366E-01	3.286E-01	0.000E+00	FAIL ABUN
AC-227	-1.463E-01	4.058E-01	7.152E-01	0.000E+00	NOT IDENT.
TH-227	-1.463E-01	4.059E-01	7.152E-01	0.000E+00	NOT IDENT.
TH-229	-4.659E-01	7.871E-01	1.407E+00	0.000E+00	FAIL ABUN
PA-231	-1.686E+00	2.456E+00	4.201E+00	0.000E+00	NOT IDENT.
TH-231	1.539E-01	1.151E+00	2.042E+00	0.000E+00	FAIL ABUN
PA-233	6.223E-02	1.113E-01	2.023E-01	0.000E+00	NOT IDENT.
PA-234	-3.926E-01	7.837E-01	1.270E+00	0.000E+00	NOT IDENT.
PA-234M	-1.031E+00	1.009E+01	1.684E+01	0.000E+00	NOT IDENT.
TH-234	-1.382E+00	1.610E+00	2.549E+00	0.000E+00	NOT IDENT.
U-235	-5.291E-02	2.938E-01	5.086E-01	0.000E+00	NOT IDENT.
NP-237	0.000E+00	1.044E+00	9.998E-01	0.000E+00	NOT IDENT.
U-238	-1.382E+00	1.610E+00	2.549E+00	0.000E+00	NOT IDENT.
NP-239	-3.495E-01	6.486E-01	9.882E-01	0.000E+00	NOT IDENT.
CM-247	-3.125E-02	7.285E-02	1.228E-01	0.000E+00	NOT IDENT.
CF-249	1.905E-02	7.533E-02	1.325E-01	0.000E+00	NOT IDENT.

CF-251	-9.863E-02	1.870E-01	3.374E-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]G1202053649.CNF;1
Sample date        : 26-FEB-2010 00:00:00 Acquisition date : 6-MAR-2010 18:11:46.
Sample ID          : G1202053649 Sample quantity : 1.55440E+02 GRAM
Detector name      : GAM07 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.31 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957714 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	1460.82	22	10.66*	1.129E+00	8.764E-01	8.764E-01	72.10
CO-57	122.06	257	85.60*	7.075E+00	2.053E-01	2.099E-01	29.03
	136.47	-----	10.68	6.835E+00	-----	Line Not Found	-----
CO-60	1173.23	1808	99.85	1.358E+00	6.441E+00	6.461E+00	9.54
	1332.49	1642	99.98*	1.217E+00	6.517E+00	6.538E+00	9.62
CD-109	88.03	1635	3.70*	6.869E+00	3.108E+01	3.149E+01	11.31
SN-126	64.28	-----	9.60	4.930E+00	-----	Line Not Found	-----
	86.94	1635	8.90	6.869E+00	1.292E+01	1.292E+01	42.00
	87.57	1635	37.00*	6.869E+00	3.108E+00	3.108E+00	11.31
BA-137M	661.66	2369	89.90*	2.231E+00	5.704E+00	5.707E+00	10.05
CS-137	661.66	2369	85.10*	2.231E+00	6.026E+00	6.029E+00	10.07
TL-208	277.37	-----	6.60	4.401E+00	-----	Line Not Found	-----
	583.19	159	85.00*	2.476E+00	3.639E-01	3.639E-01	28.01
	860.56	-----	12.50	1.783E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	5.899E+00	-----	Line Not Found	-----
	351.06	186	12.92*	3.679E+00	1.894E+00	1.894E+00	32.95
PB-212	74.82	198	10.28	6.095E+00	1.525E+00	1.525E+00	38.59
	77.11	330	17.10	6.261E+00	1.489E+00	1.489E+00	24.44
	238.63	357	43.60*	4.911E+00	8.060E-01	8.060E-01	31.53
	300.09	-----	3.30	4.151E+00	-----	Line Not Found	-----
PB-214	74.82	198	5.80	6.095E+00	2.703E+00	2.703E+00	38.18
	77.11	330	9.70	6.261E+00	2.624E+00	2.624E+00	25.79
	242.00	-----	7.25	4.861E+00	-----	Line Not Found	-----
	295.22	131	18.42	4.202E+00	8.147E-01	8.147E-01	43.44
	351.93	186	35.60*	3.679E+00	6.875E-01	6.875E-01	33.41
AC-228	338.32	133	11.27	3.794E+00	1.507E+00	1.507E+00	59.53
	911.20	85	25.80*	1.695E+00	9.421E-01	9.421E-01	57.46
	968.97	64	15.80	1.606E+00	1.216E+00	1.216E+00	72.67
RA-228	338.32	133	11.27	3.794E+00	1.507E+00	1.507E+00	59.53
	911.20	85	25.80*	1.695E+00	9.421E-01	9.421E-01	57.46
	968.97	64	15.80	1.606E+00	1.216E+00	1.216E+00	72.67
TH-228	74.82	198	10.28	6.095E+00	1.525E+00	1.525E+00	37.37

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	330	17.10	6.261E+00	1.489E+00	1.489E+00	24.44
	238.63	357	43.60*	4.911E+00	8.060E-01	8.060E-01	31.53
	300.09	-----	3.30	4.151E+00	-----	Line Not Found	-----
TH-232	338.32	133	11.27	3.794E+00	1.507E+00	1.507E+00	43.34
	911.20	85	25.80*	1.695E+00	9.421E-01	9.421E-01	57.46
	968.97	64	15.80	1.606E+00	1.216E+00	1.216E+00	72.67
AM-241	59.54	4290	35.90*	4.258E+00	1.356E+01	1.356E+01	8.95
ANH-511	511.00	46	100.00*	2.755E+00	8.032E-02	8.032E-02	97.99

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
K-40	1.25E+09Y	1.00	8.764E-01	8.764E-01	6.319E-01	72.10	
CO-57	271.74D	1.02	2.053E-01	2.099E-01	0.609E-01	29.03	
CO-60	5.27Y	1.00	6.517E+00	6.538E+00	0.629E+00	9.62	
CD-109	461.40D	1.01	3.108E+01	3.149E+01	0.356E+01	11.31	
SN-126	2.30E+05Y	1.00	3.108E+00	3.108E+00	0.352E+00	11.31	
BA-137M	30.08Y	1.00	5.704E+00	5.707E+00	0.574E+00	10.05	
CS-137	30.08Y	1.00	6.026E+00	6.029E+00	0.607E+00	10.07	
TL-208	1.41E+10Y	1.00	3.639E-01	3.639E-01	1.019E-01	28.01	
BI-211	7.04E+08Y	1.00	1.894E+00	1.894E+00	0.624E+00	32.95	
PB-212	1.41E+10Y	1.00	8.060E-01	8.060E-01	2.541E-01	31.53	
PB-214	1600.00Y	1.00	6.875E-01	6.875E-01	2.297E-01	33.41	
AC-228	1.41E+10Y	1.00	9.421E-01	9.421E-01	5.414E-01	57.46	
RA-228	1.41E+10Y	1.00	9.421E-01	9.421E-01	5.414E-01	57.46	
TH-228	1.41E+10Y	1.00	8.060E-01	8.060E-01	2.541E-01	31.53	
TH-232	1.41E+10Y	1.00	9.421E-01	9.421E-01	5.414E-01	57.46	
AM-241	432.60Y	1.00	1.356E+01	1.356E+01	0.121E+01	8.95	
ANH-511	1.00E+09Y	1.00	8.032E-02	8.032E-02	7.871E-02	97.99	

Total Activity : 7.453E+01 7.498E+01

Grand Total Activity : 7.453E+01 7.498E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202053649

Page : 4
Acquisition date : 6-MAR-2010 18:11:46

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	609.64	144	123	1.19	1218.76	1213	13	3.99E-02	36.3	2.39E+00	T

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053649.CNF;1
* Acquisition date   : 6-MAR-2010 18:11:46.  Detector SN#      :
* Detector ID        : GAM07                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 01:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 01:00:01.31             Half life ratio : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 26-FEB-2010 00:00:00  Nuclide Library : SOLID
* Sample ID          : G1202053649           Analyst initials: MXR1
* Batch Number       : 957714                Sample Quantity : 1.55440E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME  : 20-JUL-2009 15:29:58.0MS Isotope      :
* MSD ID            :                          MSD Isotope   :
* LCS ID            : 1032-A                    LCS Isotope   :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	8.764E-01	6.319E-01	4.281E-01	3.676E-02	2.047
CO-57	2.099E-01	6.093E-02	5.861E-02	5.043E-03	3.581
CO-60	6.538E+00	6.290E-01	9.761E-02	7.996E-03	66.980
CD-109	3.149E+01	3.562E+00	1.670E+00	1.573E-01	18.856
SN-126	3.108E+00	3.516E-01	1.652E-01	1.548E-02	18.815
BA-137M	5.707E+00	5.737E-01	1.100E-01	9.735E-03	51.886
CS-137	6.029E+00	6.070E-01	1.162E-01	1.030E-02	51.886
TL-208	3.639E-01	1.019E-01	1.024E-01	9.788E-03	3.552
BI-211	1.894E+00	6.242E-01	6.054E-01	5.432E-02	3.129
PB-212	8.060E-01	2.541E-01	1.694E-01	1.628E-02	4.759
PB-214	6.875E-01	2.297E-01	2.171E-01	2.286E-02	3.168
AC-228	9.421E-01	5.414E-01	5.148E-01	6.171E-02	1.830
RA-228	9.421E-01	5.414E-01	5.148E-01	6.171E-02	1.830
TH-228	8.060E-01	2.541E-01	1.694E-01	1.628E-02	4.759
TH-232	9.421E-01	5.414E-01	5.148E-01	6.171E-02	1.830
AM-241	1.356E+01	1.214E+00	3.895E-01	3.088E-02	34.803
ANH-511	8.032E-02	7.871E-02	8.979E-02	7.978E-03	0.895

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	4.646E-01		6.196E-01	1.037E+00	9.786E-02	0.448

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-6.933E-03		5.033E-02	8.143E-02	6.684E-03	-0.085
NA-24	1.313E-04		3.631E-04	Half-Life too short		
SC-46	-5.474E-02		9.145E-02	1.420E-01	1.301E-02	-0.386
V-48	-1.764E-02		1.308E-01	2.086E-01	1.878E-02	-0.085
CR-51	-3.607E-01		5.751E-01	9.120E-01	8.235E-02	-0.396
MN-54	-7.472E-04		7.629E-02	1.244E-01	1.141E-02	-0.006
CO-56	7.026E-03		8.151E-02	1.336E-01	1.227E-02	0.053
CO-58	2.296E-02		7.184E-02	1.216E-01	1.117E-02	0.189
FE-59	-6.266E-02		1.870E-01	3.052E-01	2.828E-02	-0.205
ZN-65	-2.136E-01		1.897E-01	2.898E-01	2.460E-02	-0.737
SE-75	-9.199E-03		6.994E-02	1.155E-01	9.863E-03	-0.080
SR-85	4.518E-02		6.992E-02	1.082E-01	9.626E-03	0.417
Y-88	-9.718E-03		5.064E-02	8.104E-02	6.577E-03	-0.120
Y-91	9.815E+00		2.609E+01	4.512E+01	3.685E+00	0.218
NB-94	-2.296E-02		6.030E-02	9.669E-02	8.682E-03	-0.237
NB-95	-5.331E-02		7.134E-02	1.100E-01	1.002E-02	-0.485
NB-95M	-1.111E-01		2.111E-01	3.004E-01	2.921E-02	-0.370
ZR-95	7.857E-02		1.290E-01	2.213E-01	2.204E-02	0.355
MO-99	2.338E+00		4.613E+00	7.861E+00	1.258E+00	0.297
TC-99M	-1.490E+02		6.473E+02	Half-Life too short		
RU-103	-5.632E-02		6.878E-02	1.025E-01	1.447E-02	-0.549
RH-106	-2.397E-01		5.752E-01	9.286E-01	1.250E-01	-0.258
RU-106	-2.397E-01		5.747E-01	9.286E-01	8.299E-02	-0.258
AG-108M	3.720E-02		6.406E-02	1.066E-01	9.449E-03	0.349
AG-110M	5.893E-02		8.082E-02	1.238E-01	1.128E-02	0.476
SN-113	1.548E-02		8.443E-02	1.386E-01	1.191E-02	0.112
CD-115	-2.999E+00		2.806E+00	4.362E+00	3.891E-01	-0.687
SN-117M	-4.635E-02		5.983E-02	9.084E-02	7.284E-03	-0.510
TE-123M	-2.372E-02		4.129E-02	6.345E-02	5.119E-03	-0.374
SB-124	1.178E-01		1.092E-01	2.132E-01	1.851E-02	0.552
SB-125	-2.245E-01		1.941E-01	2.905E-01	2.531E-02	-0.773
TE-125M	-5.233E+00		1.247E+01	1.972E+01	2.072E+00	-0.265
I-126	-1.540E-01		3.241E-01	4.420E-01	3.918E-02	-0.348
SB-126	5.800E-02		1.915E-01	3.226E-01	2.912E-02	0.180
SB-127	-5.178E-01		7.627E-01	1.193E+00	1.201E-01	-0.434
I-131	-6.618E-02		1.296E-01	2.052E-01	1.829E-02	-0.323
TE-132	-2.851E-01		2.995E-01	4.749E-01	6.971E-02	-0.600
BA-133	7.350E-03		8.364E-02	1.220E-01	1.572E-02	0.060
I-133	1.056E-05		3.157E-05	Half-Life too short		
CS-134	6.567E-02		9.413E-02	1.613E-01	1.486E-02	0.407
CS-135	1.535E-01		2.644E-01	4.508E-01	4.445E-02	0.341
I-135	3.490E+02		3.672E+02	Half-Life too short		
CS-136	-9.895E-03		1.659E-01	2.771E-01	2.533E-02	-0.036
CE-139	9.454E-03		4.610E-02	7.376E-02	5.834E-03	0.128
BA-140	-5.683E-02		3.664E-01	6.097E-01	2.073E-01	-0.093
LA-140	-1.323E-02		8.277E-02	1.300E-01	1.087E-02	-0.102
CE-141	-3.529E-02		8.282E-02	1.292E-01	1.081E-02	-0.273
CE-143	1.511E+01		1.068E+01	1.621E+01	3.443E+00	0.932

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-144	-2.701E-01		2.870E-01	4.326E-01	6.556E-02	-0.624
PM-144	5.364E-02		6.116E-02	1.072E-01	9.603E-03	0.501
PR-144	4.063E+00		4.567E+00	8.007E+00	7.175E-01	0.507
PM-146	-9.635E-03		8.833E-02	1.411E-01	1.502E-02	-0.068
ND-147	3.470E-01		6.811E-01	1.180E+00	1.785E-01	0.294
PM-149	6.242E+00		2.138E+01	3.588E+01	5.549E+00	0.174
EU-152	5.190E-03		2.069E-01	2.974E-01	2.695E-02	0.017
GD-153	2.505E-02		1.158E-01	1.702E-01	1.522E-02	0.147
EU-154	1.650E-02		1.388E-01	2.335E-01	2.584E-02	0.071
EU-155	1.528E-01		1.407E-01	2.385E-01	2.106E-02	0.641
TB-160	2.473E-02		3.104E-01	5.071E-01	4.651E-02	0.049
HO-166M	-7.663E-02		1.129E-01	1.763E-01	1.587E-02	-0.435
TA-182	1.692E-01		2.357E-01	4.219E-01	3.451E-02	0.401
IR-192	4.250E-03		5.954E-02	9.835E-02	8.453E-03	0.043
HG-203	6.131E-02		6.168E-02	1.067E-01	9.291E-03	0.575
BI-207	5.335E-02		1.101E-01	1.908E-01	1.665E-02	0.280
PB-210	-3.817E+00		3.628E+00	5.881E+00	5.467E-01	-0.649
PB-211	6.482E-01		1.448E+00	2.351E+00	1.137E+00	0.276
BI-212	4.219E-01		1.024E+00	1.735E+00	2.213E-01	0.243
BI-214	6.391E-01	+	2.415E-01	3.181E-01	3.305E-02	2.009
RN-219	-1.232E-01		8.084E-01	1.299E+00	1.915E-01	-0.095
RA-223	1.539E-01		1.175E+00	1.944E+00	3.365E-01	0.079
RA-224	4.453E+00		1.452E+00	2.378E+00	2.011E-01	1.873
RA-226	6.391E-01	+	2.415E-01	3.181E-01	3.305E-02	2.009
AC-227	-1.463E-01		4.140E-01	6.767E-01	8.093E-02	-0.216
TH-227	-1.463E-01		4.141E-01	6.767E-01	9.152E-02	-0.216
TH-229	-4.659E-01		8.031E-01	1.321E+00	1.079E-01	-0.353
PA-231	-1.686E+00		2.506E+00	3.985E+00	5.785E-01	-0.423
TH-231	1.539E-01		1.175E+00	1.944E+00	3.365E-01	0.079
PA-233	6.223E-02		1.136E-01	1.924E-01	1.697E-02	0.324
PA-234	-3.926E-01		7.997E-01	1.244E+00	2.361E-01	-0.316
PA-234M	-1.031E+00		1.029E+01	1.652E+01	1.694E+00	-0.062
TH-234	-1.382E+00		1.643E+00	2.329E+00	4.143E-01	-0.593
U-235	-5.291E-02		2.998E-01	4.741E-01	7.946E-02	-0.112
NP-237	4.098E+00		1.066E+00	9.204E-01	2.109E-01	4.453
U-238	-1.382E+00		1.643E+00	2.329E+00	4.143E-01	-0.593
NP-239	-3.495E-01		6.618E-01	9.166E-01	7.885E-02	-0.381
CM-247	-3.125E-02		7.434E-02	1.175E-01	9.865E-03	-0.266
CF-249	1.905E-02		7.687E-02	1.267E-01	1.057E-02	0.150
CF-251	-9.863E-02		1.908E-01	3.162E-01	2.536E-02	-0.312

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]G1202053649          *
* Acquisition date   : 6-MAR-2010 18:11:46 Detector SN#      :                *
* Detector ID        : GAM07                                           Sensitivity   : 5.000      *
* Geometry           : CAN                                           Energy tolerance: 1.500    *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 01:00:01.31 Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 26-FEB-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202053649 Analyst initials: MXR1             *
* Batch Number       : 957714 Sample Quantity : 1.5544E+02 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000              *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58 MS Isotope           :          *
* MSD DPM             : 0.000 MSD Isotope                        :          *
* LCS DPM             : 0.000 LCS Isotope                        :          *
* LCSD DPM            : 0.000 LCSD Isotope                       :          *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	8.764E-01	6.192E-01	2.160E-01	3.159E-01
CO-57	2.099E-01	5.971E-02	3.158E-02	3.047E-02
CO-60	6.538E+00	6.164E-01	4.938E-02	3.145E-01
CD-109	3.149E+01	3.491E+00	9.071E-01	1.781E+00
SN-126	3.108E+00	3.446E-01	8.973E-02	1.758E-01
BA-137M	5.707E+00	5.623E-01	5.673E-02	2.869E-01
CS-137	6.029E+00	5.948E-01	5.993E-02	3.035E-01
TL-208	3.639E-01	9.988E-02	5.301E-02	5.096E-02
BI-211	1.894E+00	6.117E-01	3.176E-01	3.121E-01
PB-212	8.060E-01	2.490E-01	8.972E-02	1.270E-01
PB-214	6.875E-01	2.251E-01	1.138E-01	1.148E-01
AC-228	9.421E-01	5.306E-01	2.632E-01	2.707E-01
RA-228	9.421E-01	5.306E-01	2.632E-01	2.707E-01
TH-228	8.060E-01	2.490E-01	8.972E-02	1.270E-01
TH-232	9.421E-01	5.306E-01	2.632E-01	2.707E-01
AM-241	1.356E+01	1.190E+00	2.136E-01	6.069E-01
ANH-511	8.032E-02	7.713E-02	4.663E-02	3.935E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	4.646E-01	6.072E-01	5.396E-01	3.098E-01 NOT IDENT.
NA-22	-6.933E-03	4.932E-02	4.125E-02	2.516E-02 NOT IDENT.
NA-24	1.313E+02	7.118E+02	0.000E+00	3.631E+02 SHORT HLIF
SC-46	-5.474E-02	8.962E-02	7.263E-02	4.573E-02 NOT IDENT.
V-48	-1.764E-02	1.282E-01	1.064E-01	6.541E-02 NOT IDENT.
CR-51	-3.607E-01	5.636E-01	4.795E-01	2.875E-01 NOT IDENT.
MN-54	-7.472E-04	7.476E-02	6.373E-02	3.814E-02 NOT IDENT.
CO-56	7.026E-03	7.988E-02	6.847E-02	4.075E-02 NOT IDENT.
CO-58	2.296E-02	7.040E-02	6.236E-02	3.592E-02 NOT IDENT.
FE-59	-6.266E-02	1.833E-01	1.553E-01	9.351E-02 NOT IDENT.

ZN-65	-2.136E-01	1.859E-01	1.473E-01	9.485E-02	NOT IDENT.
SE-75	-9.199E-03	6.854E-02	6.102E-02	3.497E-02	FAIL ABUN
SR-85	4.518E-02	6.852E-02	5.621E-02	3.496E-02	NOT IDENT.
Y-88	-9.718E-03	4.963E-02	4.062E-02	2.532E-02	NOT IDENT.
Y-91	9.815E+00	2.557E+01	2.289E+01	1.305E+01	NOT IDENT.
NB-94	-2.296E-02	5.910E-02	4.979E-02	3.015E-02	NOT IDENT.
NB-95	-5.331E-02	6.991E-02	5.649E-02	3.567E-02	NOT IDENT.
NB-95M	-1.111E-01	2.068E-01	1.592E-01	1.055E-01	NOT IDENT.
ZR-95	7.857E-02	1.265E-01	1.137E-01	6.452E-02	NOT IDENT.
MO-99	2.338E+00	4.521E+00	4.042E+00	2.306E+00	NOT IDENT.
TC-99M	-1.490E+08	1.269E+09	0.000E+00	6.473E+08	SHORT HLIF
RU-103	-5.632E-02	6.740E-02	5.329E-02	3.439E-02	FAIL ABUN
RH-106	-2.397E-01	5.637E-01	4.797E-01	2.876E-01	NOT IDENT.
RU-106	-2.397E-01	5.632E-01	4.797E-01	2.874E-01	NOT IDENT.
AG-108M	3.720E-02	6.277E-02	5.560E-02	3.203E-02	NOT IDENT.
AG-110M	5.893E-02	7.921E-02	6.387E-02	4.041E-02	NOT IDENT.
SN-113	1.548E-02	8.274E-02	7.247E-02	4.222E-02	NOT IDENT.
CD-115	-2.999E+00	2.750E+00	2.263E+00	1.403E+00	NOT IDENT.
SN-117M	-4.635E-02	5.863E-02	4.863E-02	2.991E-02	NOT IDENT.
TE-123M	-2.372E-02	4.046E-02	3.397E-02	2.065E-02	NOT IDENT.
SB-124	1.178E-01	1.070E-01	1.071E-01	5.461E-02	NOT IDENT.
SB-125	-2.245E-01	1.903E-01	1.516E-01	9.707E-02	NOT IDENT.
TE-125M	-5.233E+00	1.222E+01	1.066E+01	6.233E+00	NOT IDENT.
I-126	-1.540E-01	3.176E-01	2.279E-01	1.620E-01	NOT IDENT.
SB-126	5.800E-02	1.877E-01	1.660E-01	9.577E-02	NOT IDENT.
SB-127	-5.178E-01	7.475E-01	6.146E-01	3.814E-01	NOT IDENT.
I-131	-6.618E-02	1.270E-01	1.075E-01	6.482E-02	NOT IDENT.
TE-132	-2.851E-01	2.936E-01	2.519E-01	1.498E-01	NOT IDENT.
BA-133	7.350E-03	8.196E-02	6.398E-02	4.182E-02	NOT IDENT.
I-133	1.056E+01	6.188E+01	0.000E+00	3.157E+01	SHORT HLIF
CS-134	6.567E-02	9.224E-02	8.278E-02	4.706E-02	NOT IDENT.
CS-135	1.535E-01	2.591E-01	2.381E-01	1.322E-01	NOT IDENT.
I-135	3.490E+08	7.197E+08	0.000E+00	3.672E+08	SHORT HLIF
CS-136	-9.895E-03	1.626E-01	1.411E-01	8.295E-02	NOT IDENT.
CE-139	9.454E-03	4.518E-02	3.944E-02	2.305E-02	NOT IDENT.
BA-140	-5.683E-02	3.591E-01	3.162E-01	1.832E-01	NOT IDENT.
LA-140	-1.323E-02	8.112E-02	6.541E-02	4.139E-02	NOT IDENT.
CE-141	-3.529E-02	8.116E-02	6.930E-02	4.141E-02	NOT IDENT.
CE-143	1.511E+01	1.047E+01	8.545E+00	5.340E+00	NOT IDENT.
CE-144	-2.701E-01	2.813E-01	2.326E-01	1.435E-01	NOT IDENT.
PM-144	5.364E-02	5.994E-02	5.519E-02	3.058E-02	NOT IDENT.
PR-144	4.063E+00	4.476E+00	4.124E+00	2.284E+00	NOT IDENT.
PM-146	-9.635E-03	8.656E-02	7.353E-02	4.417E-02	NOT IDENT.
ND-147	3.470E-01	6.674E-01	6.122E-01	3.405E-01	NOT IDENT.
PM-149	6.242E+00	2.095E+01	1.892E+01	1.069E+01	NOT IDENT.
EU-152	5.190E-03	2.028E-01	1.561E-01	1.034E-01	FAIL ABUN
GD-153	2.505E-02	1.135E-01	9.221E-02	5.791E-02	NOT IDENT.
EU-154	1.650E-02	1.360E-01	1.183E-01	6.941E-02	FAIL ABUN
EU-155	1.528E-01	1.379E-01	1.290E-01	7.036E-02	NOT IDENT.
TB-160	2.473E-02	3.042E-01	2.595E-01	1.552E-01	FAIL ABUN
HO-166M	-7.663E-02	1.106E-01	9.075E-02	5.644E-02	NOT IDENT.
TA-182	1.692E-01	2.309E-01	2.140E-01	1.178E-01	NOT IDENT.
IR-192	4.250E-03	5.835E-02	5.172E-02	2.977E-02	FAIL ABUN
HG-203	6.131E-02	6.044E-02	5.628E-02	3.084E-02	NOT IDENT.
BI-207	5.335E-02	1.079E-01	9.713E-02	5.505E-02	FAIL ABUN
PB-210	-3.817E+00	3.556E+00	3.244E+00	1.814E+00	NOT IDENT.
PB-211	6.482E-01	1.419E+00	1.229E+00	7.239E-01	NOT IDENT.
BI-212	4.219E-01	1.003E+00	8.925E-01	5.119E-01	NOT IDENT.
BI-214	6.391E-01	2.366E-01	1.644E-01	1.207E-01	FAIL ABUN
RN-219	-1.232E-01	7.922E-01	6.790E-01	4.042E-01	NOT IDENT.
RA-223	1.539E-01	1.151E+00	1.022E+00	5.875E-01	FAIL ABUN
RA-224	4.453E+00	1.423E+00	1.259E+00	7.262E-01	NOT IDENT.
RA-226	6.391E-01	2.366E-01	1.644E-01	1.207E-01	FAIL ABUN
AC-227	-1.463E-01	4.058E-01	3.578E-01	2.070E-01	NOT IDENT.
TH-227	-1.463E-01	4.059E-01	3.578E-01	2.071E-01	NOT IDENT.
TH-229	-4.659E-01	7.871E-01	7.037E-01	4.016E-01	FAIL ABUN
PA-231	-1.686E+00	2.456E+00	2.102E+00	1.253E+00	NOT IDENT.
TH-231	1.539E-01	1.151E+00	1.022E+00	5.875E-01	FAIL ABUN
PA-233	6.223E-02	1.113E-01	1.012E-01	5.679E-02	NOT IDENT.
PA-234	-3.926E-01	7.837E-01	6.353E-01	3.999E-01	NOT IDENT.
PA-234M	-1.031E+00	1.009E+01	8.423E+00	5.146E+00	NOT IDENT.
TH-234	-1.382E+00	1.610E+00	1.275E+00	8.216E-01	NOT IDENT.
U-235	-5.291E-02	2.938E-01	2.544E-01	1.499E-01	NOT IDENT.
NP-237	4.098E+00	1.044E+00	5.002E-01	5.328E-01	NOT IDENT.
U-238	-1.382E+00	1.610E+00	1.275E+00	8.216E-01	NOT IDENT.
NP-239	-3.495E-01	6.486E-01	4.944E-01	3.309E-01	NOT IDENT.
CM-247	-3.125E-02	7.285E-02	6.142E-02	3.717E-02	NOT IDENT.
CF-249	1.905E-02	7.533E-02	6.628E-02	3.843E-02	NOT IDENT.

CF-251	-9.863E-02	1.870E-01	1.688E-01	9.541E-02 NOT IDENT.
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 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON ,SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	577.1849
49.72	627.7177
57.36	879.9626
59.54	701.5895
63.29	371.0108
63.29	371.0108
64.28	317.2411
67.75	394.5040
69.67	359.8029
70.83	390.6139
72.81	399.7387
72.87	399.7895
72.87	399.7895
74.82	369.1933
74.82	369.1933
74.82	369.1933
74.97	369.3053
77.11	370.8920
77.11	370.8920
77.11	370.8920
79.69	338.2404
79.80	338.3132
80.12	352.2472
80.19	352.2947
80.57	399.8642
81.00	418.5256
81.07	418.5821
81.07	418.5821
83.79	348.5792
83.79	348.5792
85.43	374.2925
86.48	476.8787
86.55	476.9400
86.79	477.1475
86.94	477.2819
87.57	347.4198
88.03	347.7112
88.47	347.9906
89.96	348.9265
91.11	349.6447
92.59	350.5600
92.59	350.5600
93.35	351.0280
94.67	228.6418
94.87	216.1883
94.87	216.1883
95.86	230.6812
97.43	221.8605
98.44	213.0995
99.53	212.6482
100.11	212.8548
103.18	237.2389
103.37	241.5507
105.31	209.3676
106.12	227.7320
109.28	253.4784
111.00	205.9043
111.76	234.0632
116.30	204.3424
117.23	261.4702
121.12	238.4842
121.78	238.7159
122.06	238.8139
123.07	245.7184
131.20	265.1489
133.52	249.3759
136.00	239.1018

136.47	252.6086
140.51	262.9311
140.51	0.0000
143.76	240.4627
144.24	243.9881
144.24	243.9881
145.44	254.5029
152.43	239.7403
153.25	246.8115
154.21	242.5523
154.21	242.5523
156.02	210.0004
158.56	236.9896
159.00	231.3885
162.66	232.4159
163.33	232.6029
165.86	235.6135
176.60	228.0396
177.52	233.5455
181.07	228.3066
184.41	268.9664
185.72	240.9987
193.51	240.3519
197.04	239.4571
205.31	250.5579
210.85	231.9537
215.65	237.6305
222.11	221.6552
227.38	222.7750
228.16	237.7395
228.18	237.7454
235.69	248.9221
235.96	257.9288
235.96	257.9288
238.63	260.6174
238.63	260.6174
240.99	263.6133
242.00	250.3634
244.70	240.4531
252.40	187.2534
252.80	190.1581
256.23	191.6775
256.23	191.6775
260.90	165.7774
264.66	176.8221
268.22	186.9424
269.46	200.5744
269.46	200.5744
271.23	184.5322
273.65	230.1673
276.40	205.5962
277.37	187.4047
277.60	184.5416
278.00	183.6363
279.20	181.8812
279.54	177.0942
280.46	205.3103
283.69	196.1406
284.31	188.4674
285.41	178.9098
285.90	174.1164
287.50	186.0280
293.27	178.4673
295.22	213.6291
295.96	208.6535
298.57	180.7825
299.98	158.9492
299.98	158.9492
300.09	165.2571
300.09	165.2571
300.13	165.2622
301.36	168.7945
302.85	192.2269
304.50	163.8470
304.50	163.8470
304.85	163.8900
308.46	148.5031
311.90	156.8307

316.51	174.3057
319.41	151.7240
320.08	186.7518
323.87	178.2607
323.87	178.2607
328.76	154.7755
333.37	151.6622
334.37	143.6972
334.37	143.6972
338.28	166.9688
338.28	166.9688
338.32	166.9739
338.32	166.9739
338.32	166.9739
340.48	163.7823
340.55	163.7921
344.28	172.3509
351.06	164.9979
351.93	160.3970
356.01	139.3328
364.49	175.1698
366.42	160.9512
383.85	147.1511
388.16	152.7925
388.63	145.5114
391.69	159.4312
400.66	147.6776
401.81	166.7853
402.40	172.1280
404.85	154.4099
410.95	154.9936
414.70	159.6062
423.72	176.5260
427.09	162.9473
427.87	190.9067
433.94	159.3028
453.88	155.7102
463.37	165.3060
468.07	187.6914
473.00	160.6900
476.78	146.6864
477.60	130.2022
487.02	139.7428
492.35	103.4401
497.08	126.0025
511.00	121.3121
514.00	111.0007
527.90	116.9314
529.87	0.0000
531.02	97.1438
537.26	122.9502
546.56	0.0000
563.25	96.8558
569.33	112.8679
569.50	112.8768
569.70	116.5900
583.19	92.1937
600.60	97.6371
602.73	85.9174
604.72	81.5166
609.32	91.4277
609.32	91.4277
610.33	91.4703
614.28	91.3188
618.01	82.3250
621.93	101.4280
621.93	101.4280
633.25	97.1764
635.95	88.7065
636.99	103.0614
645.85	104.4202
657.76	104.3158
661.66	96.4502
661.66	96.4502
664.57	90.1318
666.33	95.0323
666.50	95.0396
677.62	92.2469

685.70	93.5320
695.00	89.9808
696.49	76.3337
696.51	76.3337
697.00	68.5183
702.65	93.2048
706.68	88.4443
711.68	97.4845
720.70	87.9549
721.93	97.8858
722.78	91.9828
722.91	91.9874
723.31	98.9282
724.19	97.9728
727.33	98.0936
733.00	98.3136
735.93	96.4387
739.50	75.6660
747.24	87.8775
752.31	90.0505
753.82	84.0964
756.73	78.1771
763.94	92.4627
765.81	96.5508
766.42	98.5862
777.92	94.9730
778.90	88.9432
783.70	86.0667
785.37	80.0396
795.86	89.5061
801.95	71.3569
810.29	68.5065
810.76	73.6312
815.77	77.8647
818.51	94.3494
832.01	99.9602
834.85	99.0281
836.80	0.0000
846.77	96.3376
856.80	104.9922
860.56	115.5365
871.09	97.1528
873.19	107.6772
875.33	0.0000
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883.24	115.3899
884.68	114.3968
889.28	121.9331
898.04	108.5875
911.20	100.5919
911.20	100.5919
911.20	100.5919
926.50	117.0630
937.49	167.6788
944.13	115.5911
946.00	134.9394
949.00	129.7087
962.29	110.3427
964.08	120.2789
966.15	97.0049
968.97	124.0602
968.97	124.0602
968.97	124.0602
983.53	105.1204
996.26	97.9189
1001.03	92.6139
1004.73	107.9912
1037.84	86.3044
1038.76	0.0000
1048.07	88.4102
1050.41	85.7041
1050.41	85.7041
1063.66	73.0885
1085.87	81.0067
1099.45	101.8859
1112.07	91.9308
1115.54	112.6807

1120.29	77.1019
1120.29	77.1019
1120.55	77.1052
1121.30	72.4193
1131.51	0.0000
1173.23	53.4251
1177.93	52.4018
1189.05	52.6949
1204.77	32.7106
1221.41	28.0229
1231.02	30.0300
1235.36	37.8225
1238.28	27.1751
1260.41	0.0000
1271.85	16.6410
1274.44	19.5907
1274.54	22.5293
1291.59	21.6419
1298.22	0.0000
1312.11	22.7408
1332.49	27.8234
1365.19	17.0256
1368.63	0.0000
1384.29	20.1213
1408.01	13.1513
1457.56	0.0000
1460.82	5.2659
1489.16	11.3348
1505.03	16.5449
1596.21	14.7622
1620.50	13.7771
1678.03	0.0000
1690.97	6.4502
1764.49	10.2830
1764.49	10.2830
1770.23	22.4598
1771.35	25.2729
1791.20	0.0000
1836.06	12.3181

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202053649

Total Uranium Activity	-4.1346E+00	ug/g
Total Uranium Counting Unc.	4.7924E+00	ug/g
Total Uranium Tpu	2.4451E-06	ug/g
Total Uranium Mda	3.7952E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 957714                          SAMPLE ID   : G1202053649
*  ANALYST       : MXR1                             DETECTOR    : GAM07
*  SAMPLE DATE   : 26-FEB-2010 00:00:00.00          COUNT TIME   : 0 01:00:00.00
*  ANALYSIS DATE : 6-MAR-2010 18:11:46.53           SAMPLE ALQT  : 155.440 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.680E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 2.072E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.293E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.601E+00

```

Radiochemistry Batch Checklist, Rev10

Batch#

961542

Product:

Tritium

Date:

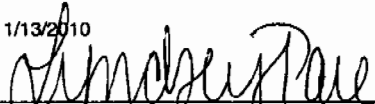
3/11/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NA
Samples have been blank corrected (if required)			NA
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.			NA
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs initialed and dated.	✓		
No transcription errors are apparent.			NA
Aux data is correct.			NA
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			NA
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			NA
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			NA
Aliquot Correction completed if required.			NA
Review sample historical results if available (If REMF, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

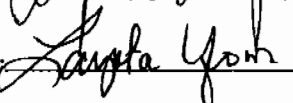
GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By:



Secondary Review Performed By:

 3/17/10

LANL 3/24/10

Tritium Que Sheet

Vaccum

95

05-MAR-10

Batch #: 961542

Analyst: KXK2

First Client Due Date 24-MAR-10

Internal Due Date: 13-MAR-10

Spike Isotope: Hydrogen-3

Spike Code: _____

Expiration Date: _____

Vol: _____

LCS Isotope: Hydrogen-3

LCS Code: 0124-K

Expiration Date: 3/27/10

Vol: 0.1

Prep Date: 3/10/10

Initials: KXK

Pipet ID: 2910968

Witness: gr 3/11/10Total
Initial
Sample
Aliquot
Final Wt
(g)
(mL)
3110.1

Sample ID	Client Samp ID	Type	Hazard Code	Min CRDL	Matrix	Client	Sample Date	Aliquot in vial (g/mL)	LSC Rack #	Dist Rig #	Vol added for Dist (mL)	Initial Sample Aliquot (g/mL)	Final Wt (g)
247911001-1	RE15-10-8019	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	22-2	1		450.37	376.96
247911002-1	RE15-10-8013	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	22-3	2		344.70	269.90
247911003-1	RE15-10-8026	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	22-4	3		357.99	325.41
247911004-1	RE15-10-8017	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	22-5	4		438.36	329.21
247911005-1	RE15-10-8025	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	22-6	5		309.59	209.90
247911006-1	RE15-10-8022	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	22-7	6		425.29	408.28
247911007-1	RE15-10-8014	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	22-8	7		406.15	381.78
247911008-1	RE15-10-8023	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	22-9	8		350.00	287.85
247911009-1	RE15-10-8020	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	22-10	9		506.78	475.87
247911010-1	RE15-10-8018	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	22-11	10		385.57	305.37
247911011-1	RE15-10-8015	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	22-12	11		136.70	85.11
247911012-1	RE15-10-8021	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	35-1	12		424.71	364.83
247911013-1	RE15-10-8024	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	35-2	13		352.26	306.47
247911014-1	RE15-10-8016	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	35-3	14		456.44	413.53
247911015-1	RE15-10-8065	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	35-4	15		335.07	304.24
247911016-1	RE15-10-8066	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	35-5	16		122.88	99.16
247911017-1	RE15-10-8033	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	35-6	17		320.61	242.25
248202001-1	RE36-10-8282	SAMPLE		.25 pCi/mL SOIL		LANL010	23-FEB-10	10	35-7	18		436.63	393.17
248202002-1	RE36-10-8281	SAMPLE		.25 pCi/mL SOIL		LANL010	23-FEB-10	10	35-8	19		368.91	269.67
1202062415-1	MB for batch 961542	MB		.25 pCi/mL SOIL		QC ACCOUNT		10	35-9	20		20.00	0.00
1202062416-1	RE15-10-8017(247911004DUP)	DUP		.25 pCi/mL SOIL		QC ACCOUNT	18-FEB-10	10	35-10	4		438.36	329.21
1202062417-1	LCS for batch 961542	LCS		.25 pCi/mL SOIL		QC ACCOUNT		10	46-1	21		20.00	0.00
											22	20.00	0.00

Bkg Rack #: 22-1

Comments:

Bkg prepared with dead water: ☒ Yes ☐ No

Instrument Used (circle as appropriate): LS6000 (Red) 7065155, LS6500 (Blue) 7067083, LS6500 (Gold) 7070506, LS6500 (Green) 7067404, Wallac (Yellow) 4140127, LS6000 (Brown) 7060653, Wallac (Pink) 2200082, Wallac (White) 4140299, Purple 7069123, Silver 7060656, Orange DG06095168

Calibration Used: Ecosint Ultra (10 mL sample/13 mL Ecosint Ultra)
Data Reviewed By: gr 3/11/10

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1

DATE	3/11/2010	INITIALS	KXK2	BATCH NUMBER	961542	
Sample #	Sample Wet (g)	% Moisture of Sample (Balance Interface using % Moisture Batch)	Total Moisture in Sample (mL)	Sample Dry (g)	mLs aliquoted into LSC vial	Collection Tube Number
247911001	450.37	0.163	73.41	376.96	10	
247911002	344.70	0.217	74.80	269.90	10	
247911003	357.99	0.091	32.58	325.41	10	
247911004	438.36	0.249	109.15	329.21	10	
247911005	309.59	0.322	99.69	209.90	10	
247911006	425.29	0.040	17.01	408.28	10	
247911007	406.15	0.060	24.37	381.78	10	
247911008	350.00	0.179	62.65	287.35	10	
247911009	506.78	0.061	30.91	475.87	10	
247911010	385.57	0.208	80.20	305.37	10	
247911011	136.70	0.373	50.99	85.71	10	
247911012	424.71	0.141	59.88	364.83	10	
247911013	352.26	0.130	45.79	306.47	10	
247911014	456.44	0.094	42.91	413.53	10	
247911015	335.07	0.092	30.83	304.24	10	
247911016	122.88	0.193	23.72	99.16	10	
247911017	320.01	0.243	77.76	242.25	10	
248202001	430.63	0.087	37.46	393.17	10	
248202002	368.91	0.269	99.24	269.67	10	
MB	20	1.000	20.00	0.00	10	
DUP	438.36	0.249	109.15	329.21	10	
LCS	20	1.000	20.00	0.00	10	

Tritium Solid

Filename: H3VAC.XLS
File type: Excel
Version #: 1.2.6

Spike SN :
Spike Exp Date :
Spike Activity (dpm/ml):
Spike Volume Added:

LCS SN : 0134-K
LCS Exp Date : 3/27/2010
LCS Activity (dpm/ml): 2457.96
LCS Volume Added: 0.10

Batch : 961542
Analyst : KKK2
Prep Date : 3/10/2010

Procedure Code : LSC_VH3S
Paramname : Tritium
Required MDC : 250 pCi/L
Half-life of Tritium : 12.32 years

H-3 Abundance : 1
Method Uncertainty : 0.0691
Geometry: 10mL DW/13mL
Eosclint Ultra

Sample Characteristics		Wet Sample Weight (g)	Total Moisture L	Sample Aliquot in Vial L	Sample Aliquot Stdev. L	Dry Sample Weight (g)	% Moisture of Sample	Rig number	Sample Date/Time
Pos.	Sample ID								
1	247911001.1	450.37	0.0734	0.0100	2.5729E-05	376.96	15.30%	1	2/18/2010 12:00
2	247911002.1	344.70	0.0748	0.0100	2.5729E-05	269.90	21.70%	2	2/18/2010 12:00
3	247911003.1	357.99	0.0326	0.0100	2.5729E-05	325.41	9.10%	3	2/18/2010 12:00
4	247911004.1	438.36	0.1092	0.0100	2.5729E-05	329.21	24.90%	4	2/18/2010 12:00
5	247911005.1	309.59	0.0997	0.0100	2.5729E-05	209.90	32.20%	5	2/18/2010 12:00
6	247911006.1	425.29	0.0170	0.0100	2.5729E-05	408.28	4.00%	6	2/18/2010 12:00
7	247911007.1	406.15	0.0244	0.0100	2.5729E-05	381.78	6.00%	7	2/18/2010 12:00
8	247911008.1	350.00	0.0627	0.0100	2.5729E-05	287.35	17.90%	8	2/18/2010 12:00
9	247911009.1	506.78	0.0309	0.0100	2.5729E-05	475.87	6.10%	9	2/18/2010 12:00
10	247911010.1	385.57	0.0802	0.0100	2.5729E-05	305.37	20.80%	10	2/18/2010 12:00
11	247911011.1	136.70	0.0510	0.0100	2.5729E-05	85.71	37.30%	11	2/18/2010 12:00
12	247911012.1	424.71	0.0599	0.0100	2.5729E-05	364.83	14.10%	12	2/18/2010 12:00
13	247911013.1	352.26	0.0458	0.0100	2.5729E-05	306.47	13.00%	13	2/18/2010 12:00
14	247911014.1	456.44	0.0429	0.0100	2.5729E-05	413.53	9.40%	14	2/18/2010 12:00
15	247911015.1	335.07	0.0308	0.0100	2.5729E-05	304.24	9.20%	15	2/18/2010 12:00
16	247911016.1	122.88	0.0237	0.0100	2.5729E-05	98.16	19.30%	16	2/18/2010 12:00
17	247911017.1	320.01	0.0778	0.0100	2.5729E-05	242.25	24.30%	17	2/18/2010 12:00
18	248202001.1	430.63	0.0375	0.0100	2.5729E-05	393.17	8.70%	18	2/23/2010 12:00
19	248202002.1	368.91	0.0992	0.0100	2.5729E-05	269.67	28.90%	19	2/23/2010 12:00
20	1202062415.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	20	3/10/2010 0:00
21	1202062416.1	438.36	0.1092	0.0100	2.5729E-05	329.21	24.90%	4	2/18/2010 12:00
22	1202062417.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	21	3/10/2010 0:00

Count raw Data				Background				Calibration Data				Detector				Backgrounds	
(Pos.	Rack Position #	Counting Time (min.)	Quench#	Gross cpm	cpm	Count Time (min.)	Count Start Date/Time	Sample Decay	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Error (cpm/dpm)	Rack Position #	Count Start Date/Time		
1	22-2	95	109.4	6.49	3.45	95	3/13/2010 8:11	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2369	0.00792	22-1	3/13/2010 6:33		
2	22-3	95	109.9	17.77	3.45	95	3/13/2010 9:49	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2366	0.00792	22-1	3/13/2010 6:33		
3	22-4	95	110	4.72	3.45	95	3/13/2010 11:27	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2366	0.00792	22-1	3/13/2010 6:33		
4	22-5	53	109.5	188.94	3.45	95	3/13/2010 13:04	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2368	0.00792	22-1	3/13/2010 6:33		
5	22-6	95	108.8	4.89	3.45	95	3/13/2010 14:00	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2372	0.00792	22-1	3/13/2010 6:33		
6	22-7	95	109.9	10.48	3.45	95	3/13/2010 15:38	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2366	0.00792	22-1	3/13/2010 6:33		
7	22-8	95	109.7	9	3.45	95	3/13/2010 17:16	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2367	0.00792	22-1	3/13/2010 6:33		
8	22-9	95	109.9	4.29	3.45	95	3/13/2010 18:54	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2366	0.00792	22-1	3/13/2010 6:33		
9	22-10	95	109	4.43	3.45	95	3/13/2010 20:32	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2371	0.00792	22-1	3/13/2010 6:33		
10	22-11	95	110.4	37.09	3.45	95	3/13/2010 22:11	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2364	0.00792	22-1	3/13/2010 6:33		
11	22-12	95	110.6	8.87	3.45	95	3/13/2010 23:49	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2362	0.00792	22-1	3/13/2010 6:33		
12	35-1	95	110.2	13.45	3.45	95	3/14/2010 1:27	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2365	0.00792	22-1	3/13/2010 6:33		
13	35-2	95	109.6	4.02	3.45	95	3/14/2010 3:05	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2368	0.00792	22-1	3/13/2010 6:33		
14	35-3	95	110.4	6.12	3.45	95	3/14/2010 4:43	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2364	0.00792	22-1	3/13/2010 6:33		
15	35-4	95	110.5	5.93	3.45	95	3/14/2010 6:21	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2363	0.00792	22-1	3/13/2010 6:33		
16	35-5	95	111.1	9.88	3.45	95	3/14/2010 7:59	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2360	0.00792	22-1	3/13/2010 6:33		
17	35-6	95	109.9	4.27	3.45	95	3/14/2010 9:37	0.996	LSCBROWN	9/9/2009	9/30/2010	0.2366	0.00792	22-1	3/13/2010 6:33		
18	35-7	95	109.9	11.96	3.45	95	3/14/2010 11:15	0.997	LSCBROWN	9/9/2009	9/30/2010	0.2366	0.00792	22-1	3/13/2010 6:33		
19	35-8	95	110.6	4.74	3.45	95	3/14/2010 12:53	0.997	LSCBROWN	9/9/2009	9/30/2010	0.2362	0.00792	22-1	3/13/2010 6:33		
20	35-9	95	109	3.35	3.45	95	3/14/2010 14:31	0.998	LSCBROWN	9/9/2009	9/30/2010	0.2371	0.00792	22-1	3/13/2010 6:33		
21	35-10	48.7	110.2	205.56	3.45	95	3/14/2010 16:08	0.998	LSCBROWN	9/9/2009	9/30/2010	0.2365	0.00792	22-1	3/13/2010 6:33		
22	46-1	15	109.2	33.07	3.45	95	3/14/2010 17:58	0.999	LSCBROWN	9/9/2009	9/30/2010	0.2370	0.00792	22-1	3/13/2010 6:33		

Notes:

- 1 - Results are decay corrected to Sample Date/Time
- 2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
- 3 - Spike Nominals are decay corrected to Sample Date/Time

Results		Decision Level	Critical Level	Required MDC	MDC	Sample Act. Conc.	Sample Act. Error	Net Count Rate	Net Count Rate Error	1 SIGMA Counting Uncertainty	1 SIGMA Total Prop. Uncertainty	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
Pos.	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	CPM	CPM	pCi/L	pCi/L						
1	119.8300	84.6010	250	175.2283	580.1237	0.107	3.040	0.323	61.7275	73.7752	SAMPLE						
2	119.9615	84.6939	250	175.4205	2735.6863	0.034	14.320	0.473	90.2889	210.8440	SAMPLE						
3	119.9896	84.7137	250	175.4616	242.6770	0.231	1.270	0.293	56.0389	58.5304	SAMPLE						
4	141.6279	99.9905	250	210.7853	35405.6614	0.013	185.490	1.888	362.2239	2492.3782	SAMPLE						
5	119.6866	84.4988	250	175.0185	274.4665	0.206	1.440	0.296	56.4738	59.6215	SAMPLE						
6	119.9660	84.6970	250	175.4271	1343.0582	0.055	7.030	0.383	73.1566	118.7507	SAMPLE						
7	119.9144	84.6606	250	175.3517	1059.8531	0.066	5.550	0.382	69.1314	101.1335	SAMPLE						
8	119.9685	84.6988	250	175.4308	180.4826	0.340	0.840	0.285	54.5327	55.6664	SAMPLE						
9	119.7399	84.5374	250	175.0985	186.8729	0.294	0.980	0.286	54.9189	56.4400	SAMPLE						
10	120.1075	84.7970	250	175.6341	6434.3937	0.021	33.640	0.653	124.9487	465.2324	SAMPLE						
11	120.1652	84.8376	250	175.7183	1037.1921	0.067	5.420	0.360	68.9134	99.8367	SAMPLE						
12	120.0547	84.7597	250	175.5588	1911.8796	0.043	10.000	0.422	80.6384	155.6712	SAMPLE						
13	119.8959	84.6475	250	175.3246	108.6330	0.492	0.570	0.280	53.5407	54.0746	SAMPLE						
14	120.1126	84.8005	250	175.6415	510.7179	0.119	2.670	0.317	60.7105	70.3634	SAMPLE						
15	120.1419	84.8212	250	175.6843	474.4905	0.127	2.480	0.314	60.1195	68.6037	SAMPLE						
16	120.3167	84.9446	250	175.9400	1232.0215	0.058	6.430	0.375	71.7729	111.8670	SAMPLE						
17	119.9798	84.7088	250	175.4473	156.6764	0.348	0.820	0.285	54.4674	55.5497	SAMPLE						
18	119.8887	84.6425	250	175.3141	1624.7600	0.048	8.510	0.403	76.8952	136.8144	SAMPLE						
19	120.0827	84.7794	250	175.5978	246.8900	0.228	1.290	0.294	56.1480	58.7189	SAMPLE						
20	119.3945	84.2936	250	174.5915	-19.0137	2.675	-0.100	0.268	50.8696	50.8698	SAMPLE						
21	145.8371	102.9622	250	217.7030	38644.5445	0.013	202.110	2.063	394.5168	2720.2567	247911004.1	DUP	8.7%	0.3107	5535.9403	101.8%	
22	228.7214	161.4793	250	361.0022	5634.2672	0.051	29.620	1.497	284.7552	484.8435	LCS						

13 MAR 2010 06:41

ID: TRITIUM

USER:13

COMMENT:BROWN

PRESET TIME : 95.00

DATA CALC : CPM H# : YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 : EDIT

TWO PHASE : NO AQC : NO CYCLE REPEATS : 1 DISK : OFF

SCINTILLATOR: LIQUID LUMEX: YES LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

CHAN: 0.0 - 240.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

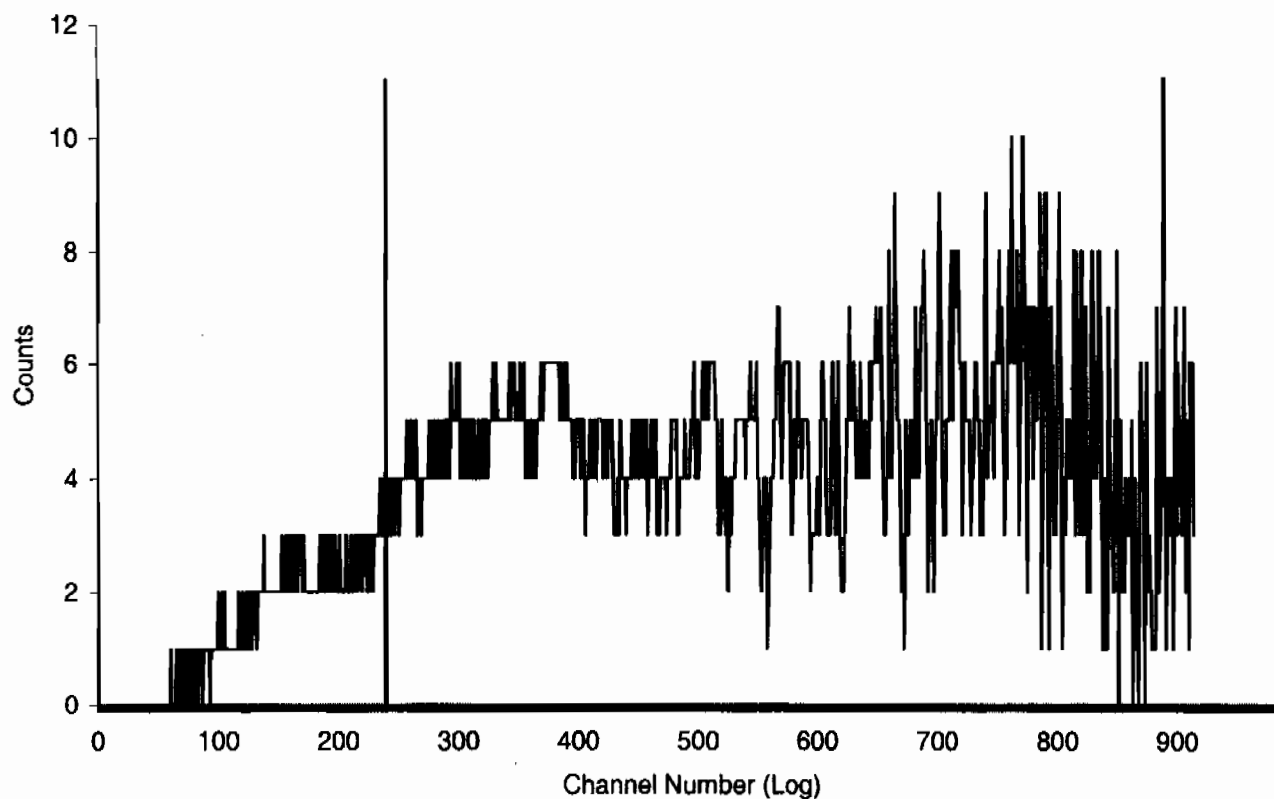
CHAN: 0.0 - 900.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

SAM NO	POS	TIME MIN	H#	WIND 1		LUMEX %	ELAPSED TIME
				CPM	%ERROR		
1	22-1	95.00	108.7	3.45	11.34	0.46	97.52
2	22-2	95.00	109.4	6.49	8.17	0.42	195.56
3	22-3	95.00	109.9	17.77	4.89	0.32	293.58
4	22-4	95.00	110.0	4.72	9.71	0.59	391.66
5	22-5	53.00	109.5	188.94	2.00	0.10	446.79
6	22-6	95.00	108.8	4.89	9.63	0.84	544.96
7	22-7	95.00	109.9	10.48	6.44	0.64	643.10
8	22-8	95.00	109.7	9.00	6.93	0.49	741.16
9	22-9	95.00	109.9	4.29	10.13	0.46	839.19
10	22-10	95.00	109.0	4.43	9.97	0.49	937.24
11	22-11	95.00	110.4	37.09	3.38	0.25	1035.28
12	22-12	95.00	110.6	8.87	6.96	0.39	1133.30
13	35-1	95.00	110.2	13.45	5.63	0.33	1231.41
14	35-2	95.00	109.6	4.02	10.43	0.37	1329.40
15	35-3	95.00	110.4	6.12	8.40	0.37	1427.40
16	35-4	95.00	110.5	5.93	8.53	0.34	1525.41
17	35-5	95.00	111.1	9.88	6.57	0.30	1623.41
18	35-6	95.00	109.9	4.27	10.06	0.32	1721.38
19	35-7	95.00	109.9	11.96	5.97	0.26	1819.38
20	35-8	95.00	110.6	4.74	9.57	0.35	1917.39
21	35-9	95.00	109.0	3.35	11.41	0.32	2015.36
22	35-10	48.70	110.2	205.56	2.00	0.08	2066.07

Sample Count Start Time:	13 Mar 2010 06:33:16		
Data Capture Date	13 Mar 2010 08:08:25		
User Filename	S13031322-1A.XLS		
	U13031322-1A.XLS		
Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	22-1	95.00
H#, Total Counts:	108.7	3466	
Win1: Tritium - Start, End, Counts:	0	240	332
Win2: - Start, End, Counts:	0	990	3466

SPECTRUM PLOT

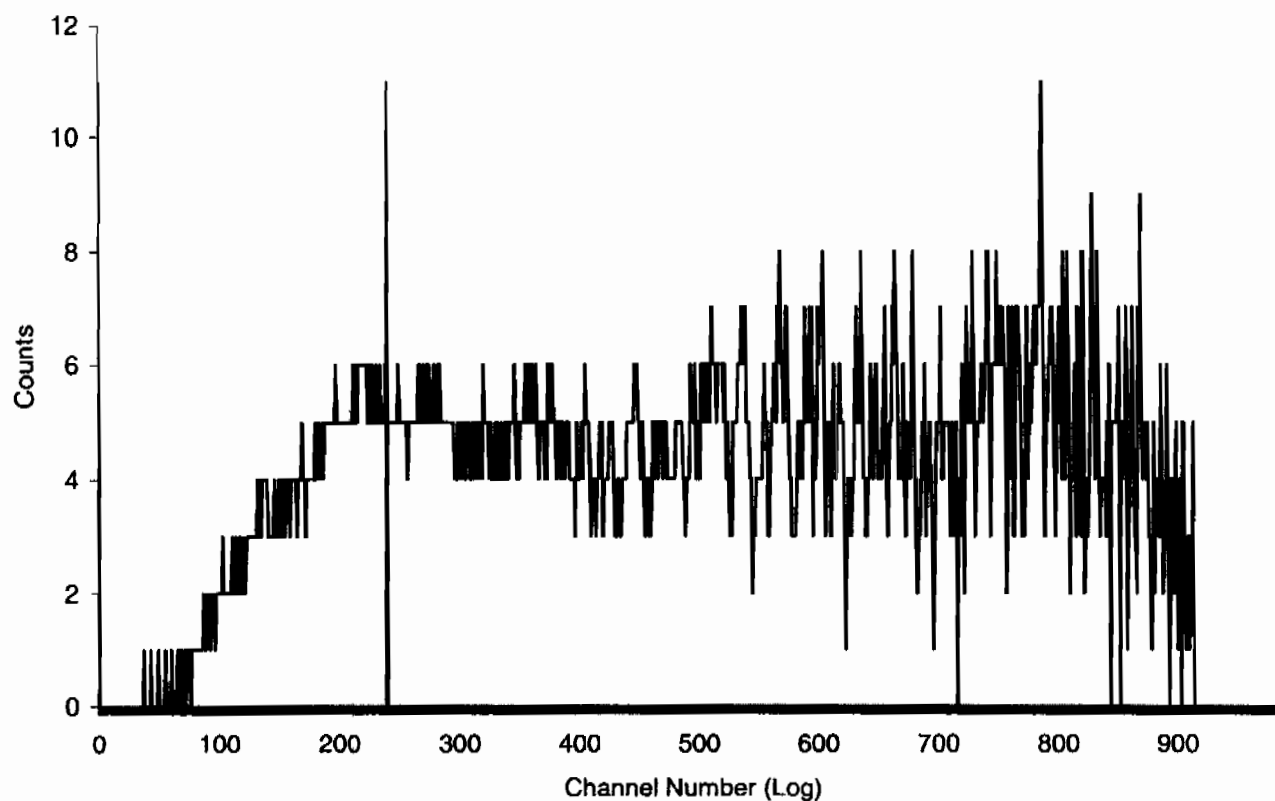
USER 13 - TRITIUM



Sample Count Start Time:	13 Mar 2010 08:11:19		
Data Capture Date	13 Mar 2010 09:46:27		
User Filename	S13031322-2A.XLS		
	U13031322-1A.XLS		
Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	22-2	95.00
H#, Total Counts:	109.4	3814	
Win1: Tritium - Start, End, Counts:	0	240	622
Win2: - Start, End, Counts:	0	990	3814

SPECTRUM PLOT

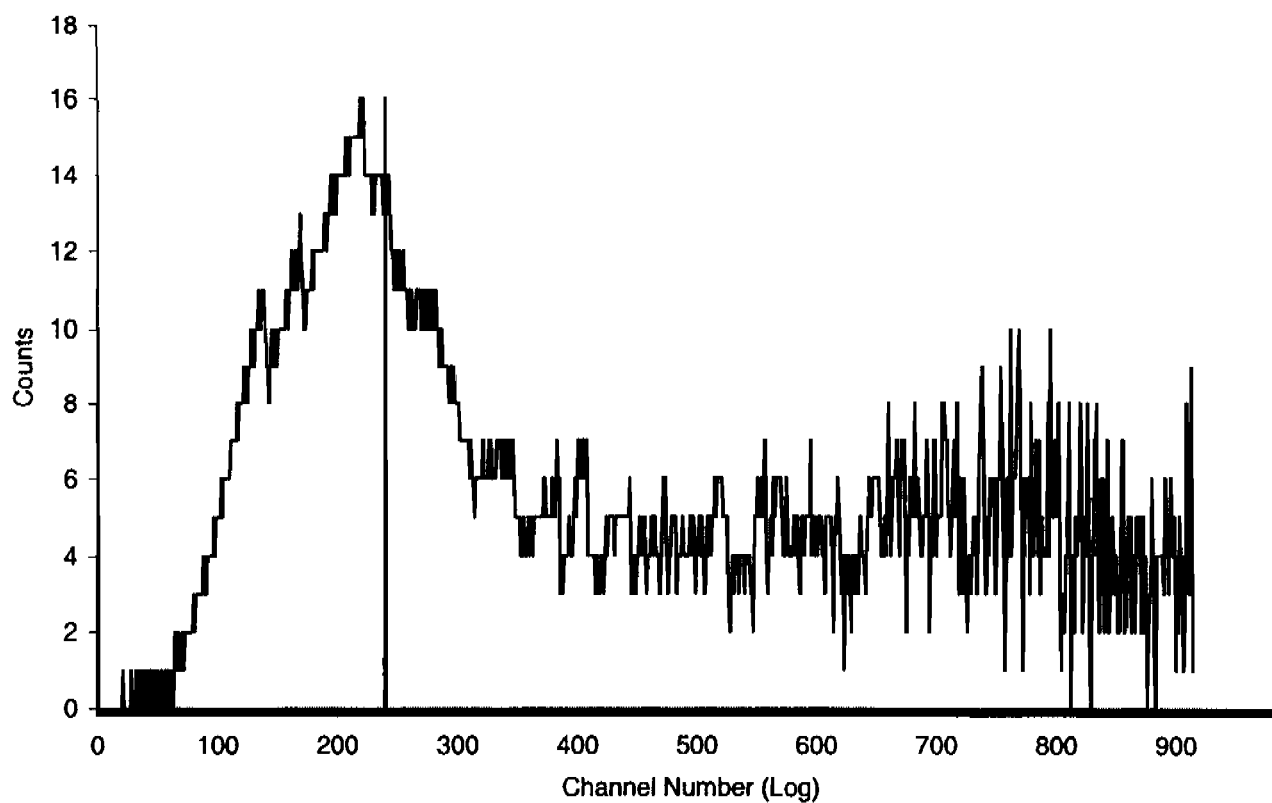
USER 13 - TRITIUM



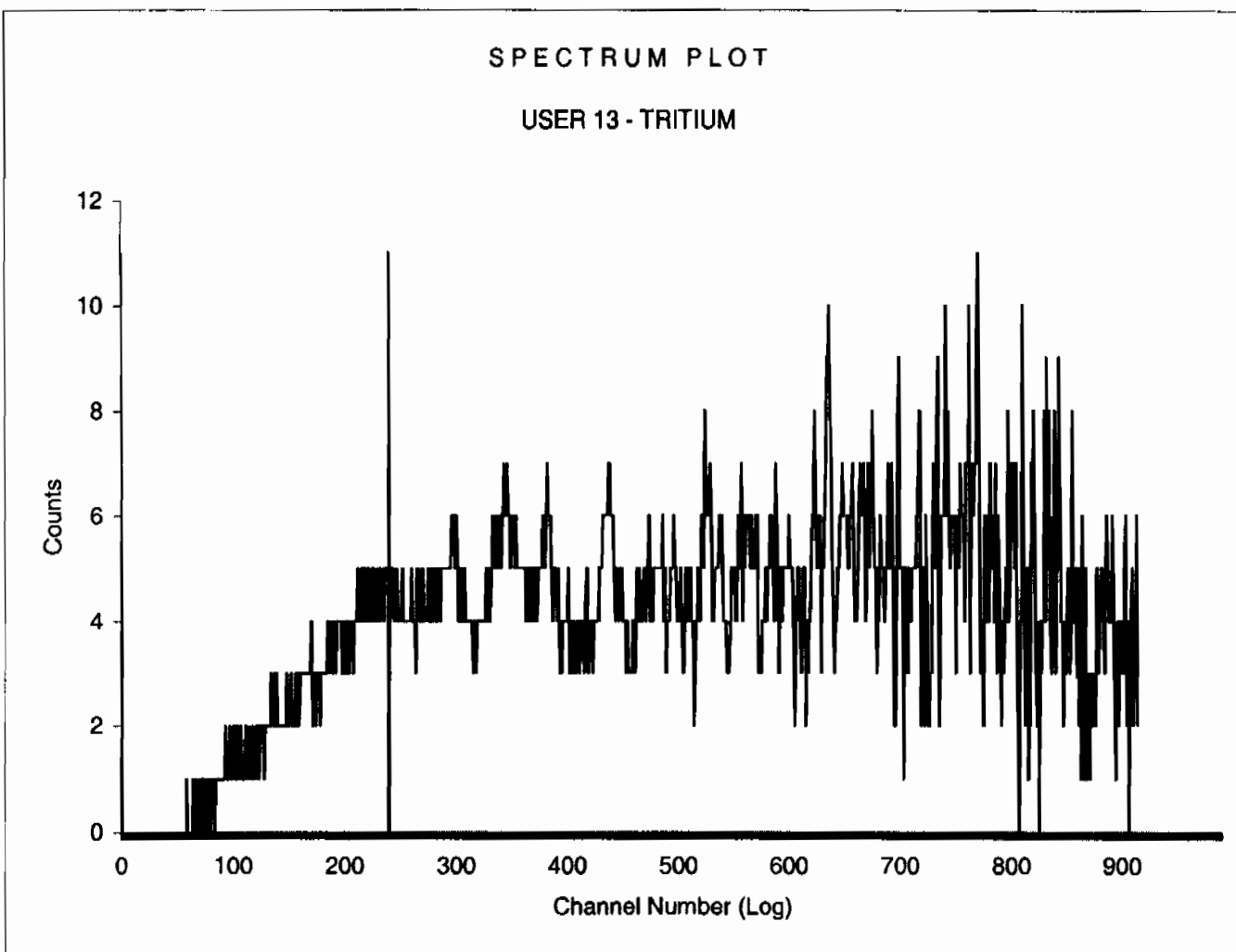
Sample Count Start Time:	13 Mar 2010 09:49:20		
Data Capture Date	13 Mar 2010 11:24:29		
User Filename	S13031322-3A.XLS		
	U13031322-1A.XLS		
Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	22-3	95.00
H#, Total Counts:	109.9	5252	
Win1: Tritium - Start, End, Counts:	0	240	1701
Win2: - Start, End, Counts:	0	990	5252

SPECTRUM PLOT

USER 13 - TRITIUM



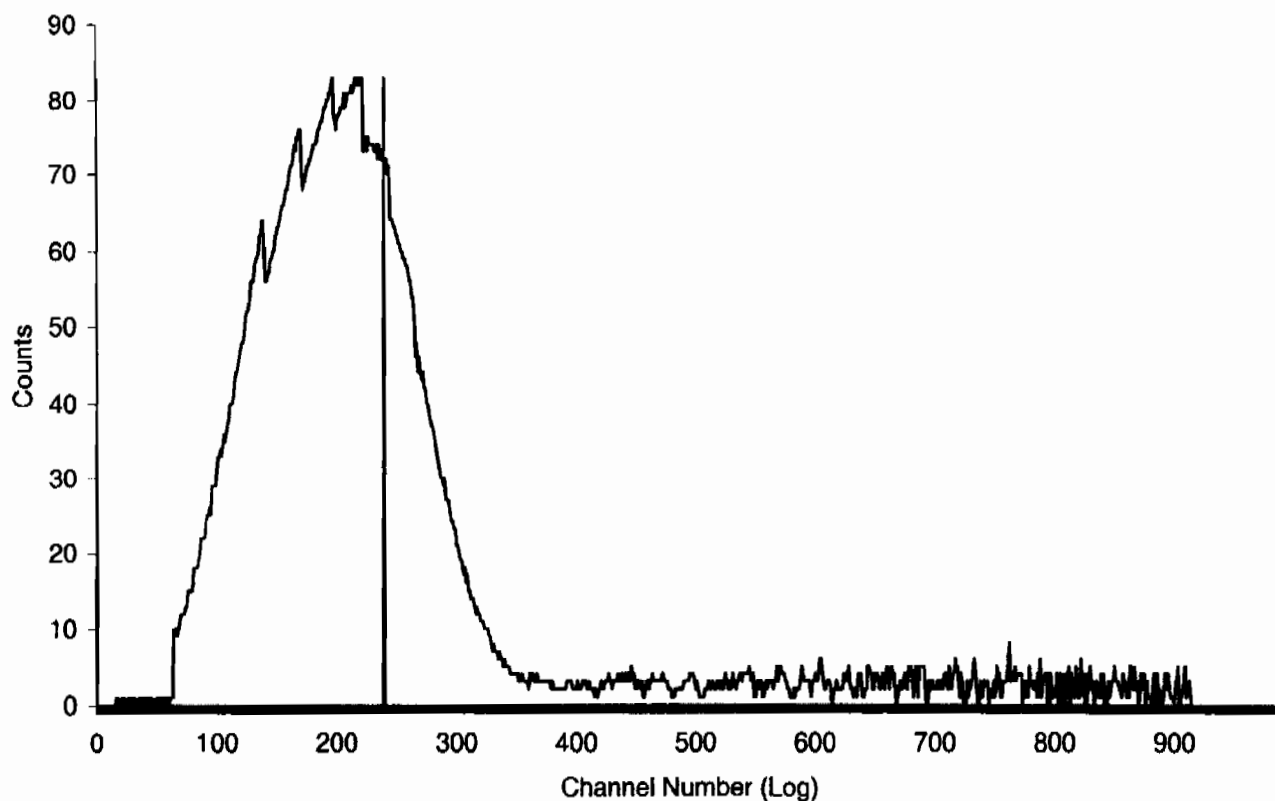
Sample Count Start Time:	13 Mar 2010 11:27:25		
Data Capture Date	13 Mar 2010 13:02:34		
User Filename	S13031322-4A.XLS		
	U13031322-1A.XLS		
Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	22-4	95.00
H#, Total Counts:	110.0	3661	
Win1: Tritium - Start, End, Counts:	0	240	452
Win2: - Start, End, Counts:	0	990	3661



Sample Count Start Time:	13 Mar 2010 13:04:32		
Data Capture Date	13 Mar 2010 13:57:41		
User Filename	S13031322-5A.XLS		
	U13031322-1A.XLS		
Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	22-5	53.00
H#, Total Counts:	109.5	14696	
Win1: Tritium - Start, End, Counts:	0	240	10022
Win2: - Start, End, Counts:	0	990	14696

SPECTRUM PLOT

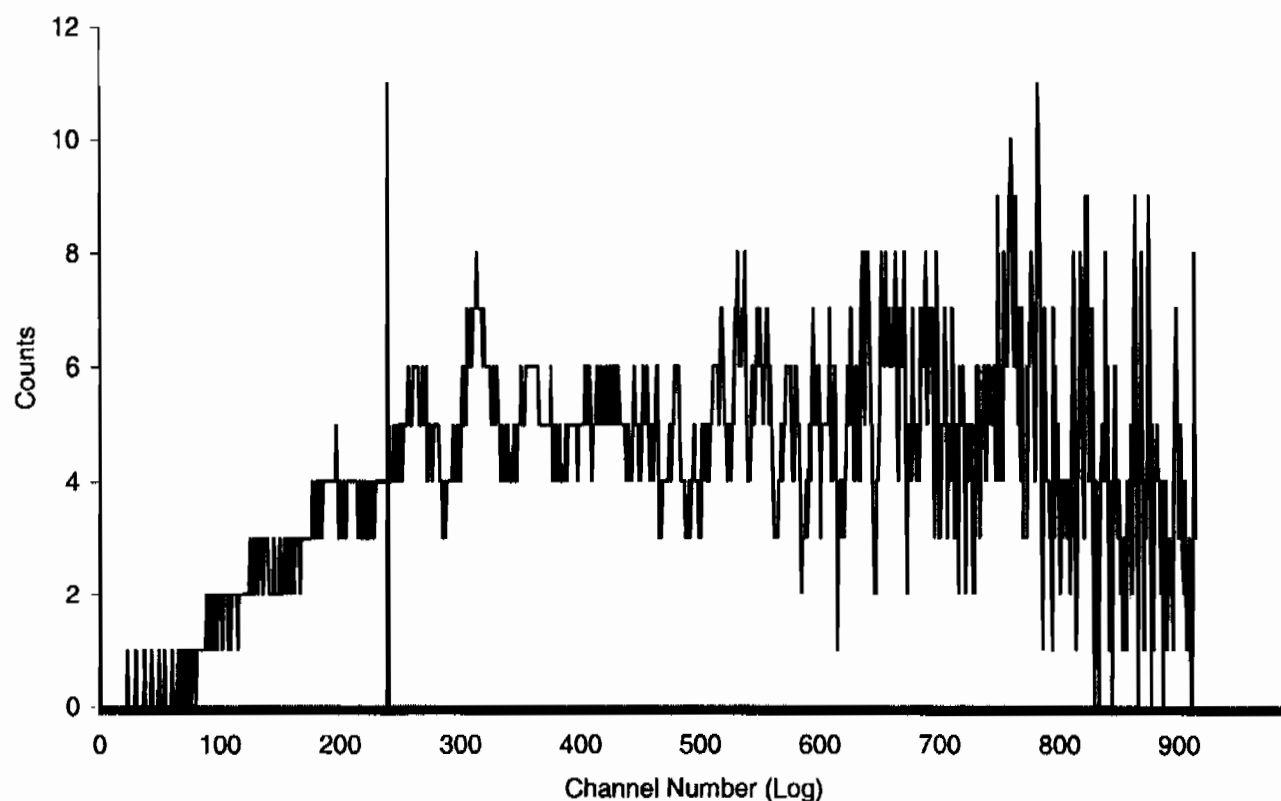
USER 13 - TRITIUM



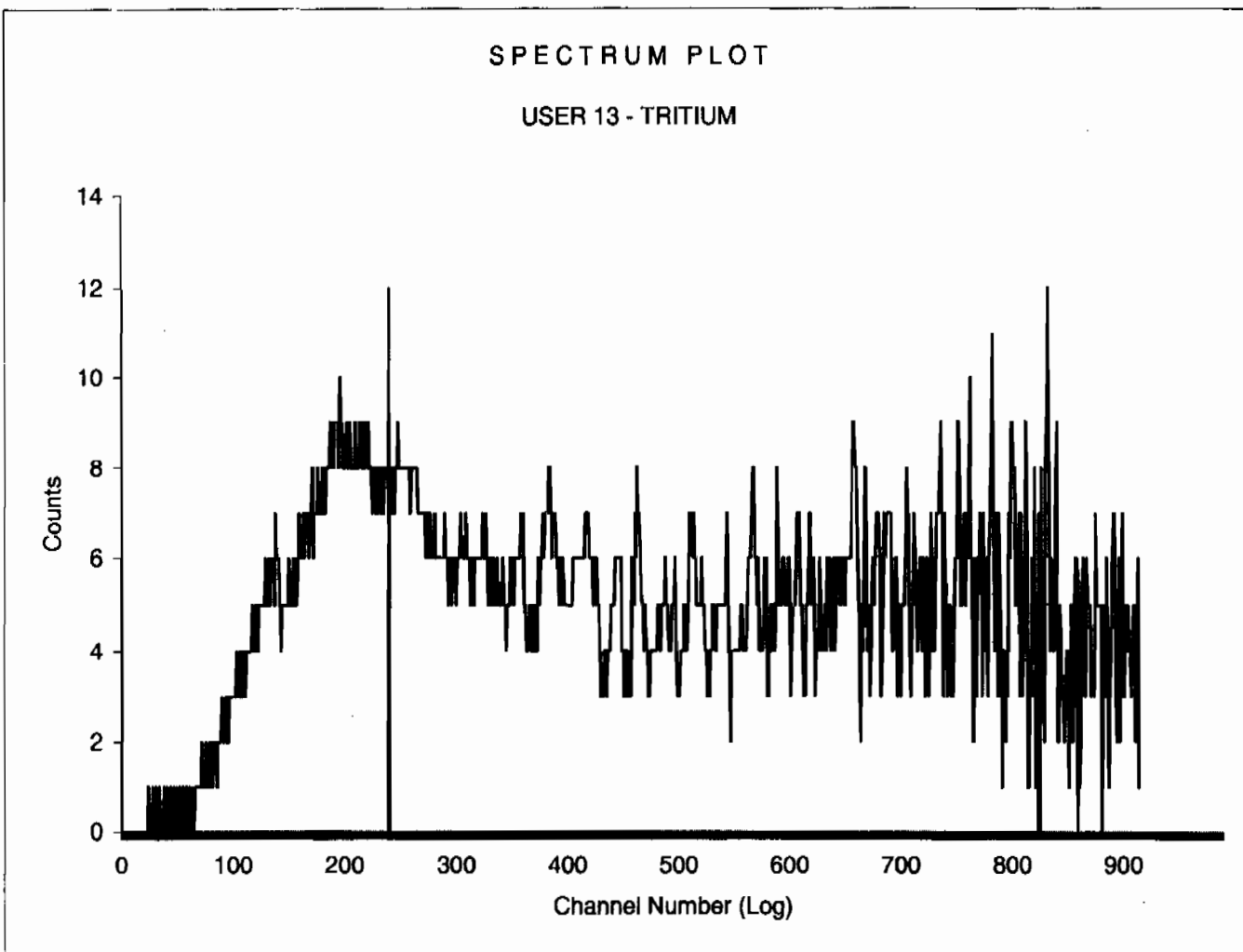
Sample Count Start Time:	13 Mar 2010 14:00:43		
Data Capture Date	13 Mar 2010 15:35:52		
User Filename	S13031322-6A.XLS		
	U13031322-1A.XLS		
Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	22-6	95.00
H#, Total Counts:	108.8	3761	
Win1: Tritium - Start, End, Counts:	0	240	470
Win2: - Start, End, Counts:	0	990	3761

SPECTRUM PLOT

USER 13 - TRITIUM



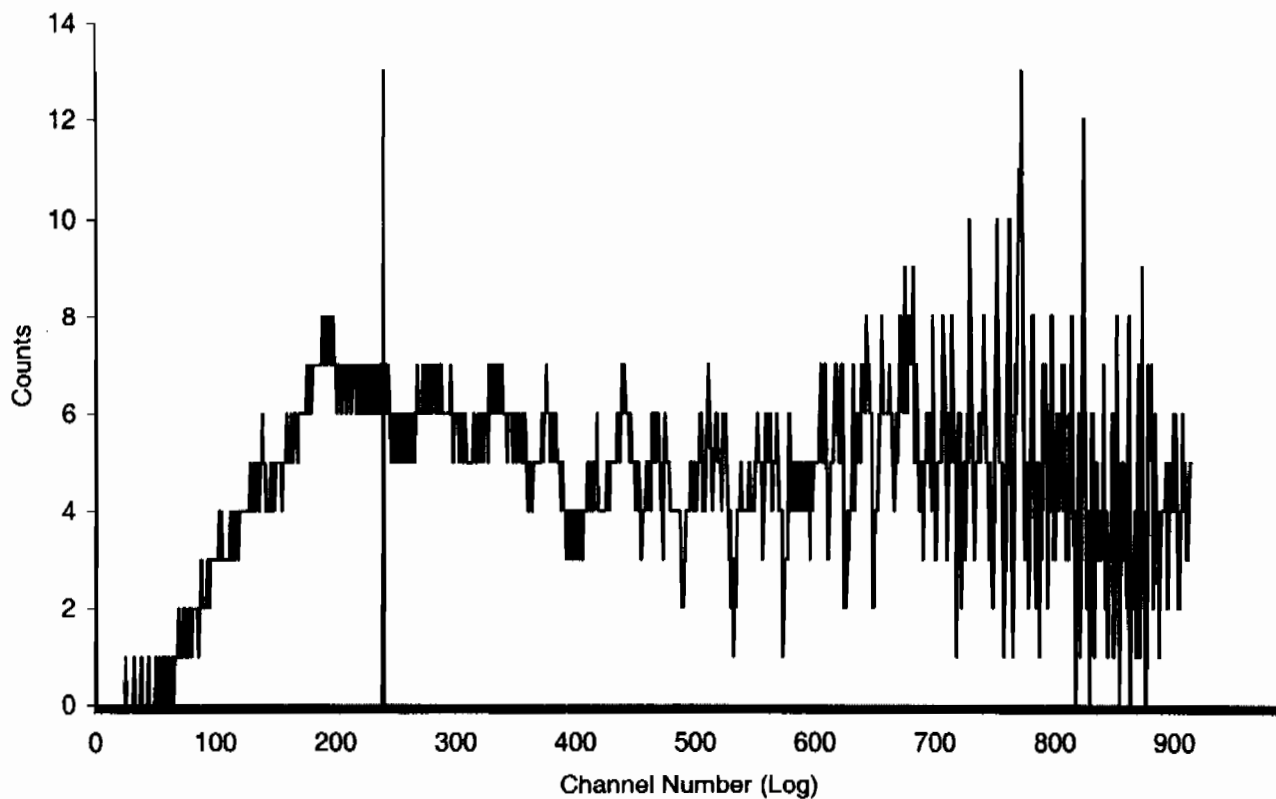
Sample Count Start Time:	13 Mar 2010 15:38:51		
Data Capture Date	13 Mar 2010 17:14:00		
User Filename	S13031322-7A.XLS		
	U13031322-1A.XLS		
Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	22-7	95.00
H#, Total Counts:	109.9	4559	
Win1: Tritium - Start, End, Counts:	0	240	1003
Win2: - Start, End, Counts:	0	990	4558



Sample Count Start Time:	13 Mar 2010 17:16:55		
Data Capture Date	13 Mar 2010 18:52:05		
User Filename	S13031322-8A.XLS		
	U13031322-1A.XLS		
Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	8	22-8	95.00
H#, Total Counts:	109.7	4209	
Win1: Tritium - Start, End, Counts:	0	240	862
Win2: - Start, End, Counts:	0	990	4209

SPECTRUM PLOT

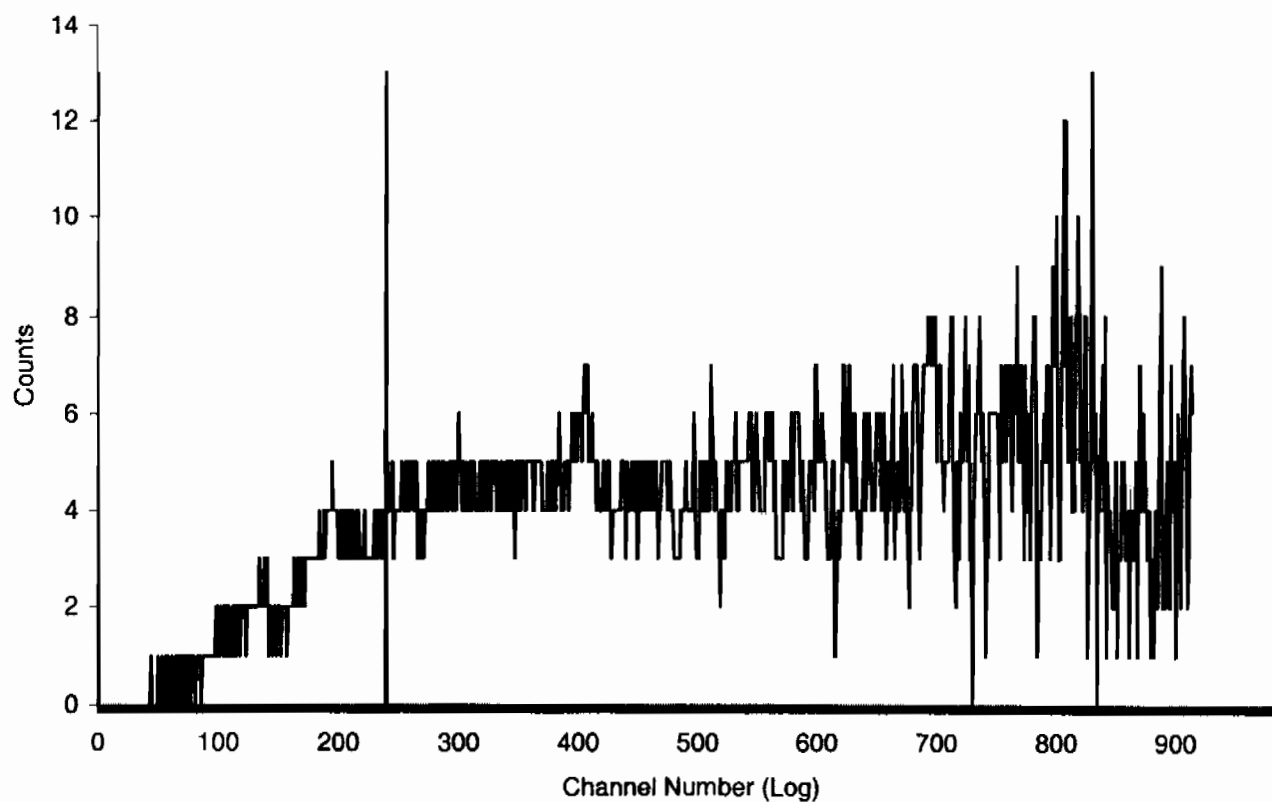
USER 13 - TRITIUM



Sample Count Start Time:	13 Mar 2010 18:54:56		
Data Capture Date	13 Mar 2010 20:30:07		
User Filename	S13031322-9A.XLS		
	U13031322-1A.XLS		
Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	9	22-9	95.00
H#, Total Counts:	109.9	3625	
Win1: Tritium - Start, End, Counts:	0	240	413
Win2: - Start, End, Counts:	0	990	3625

SPECTRUM PLOT

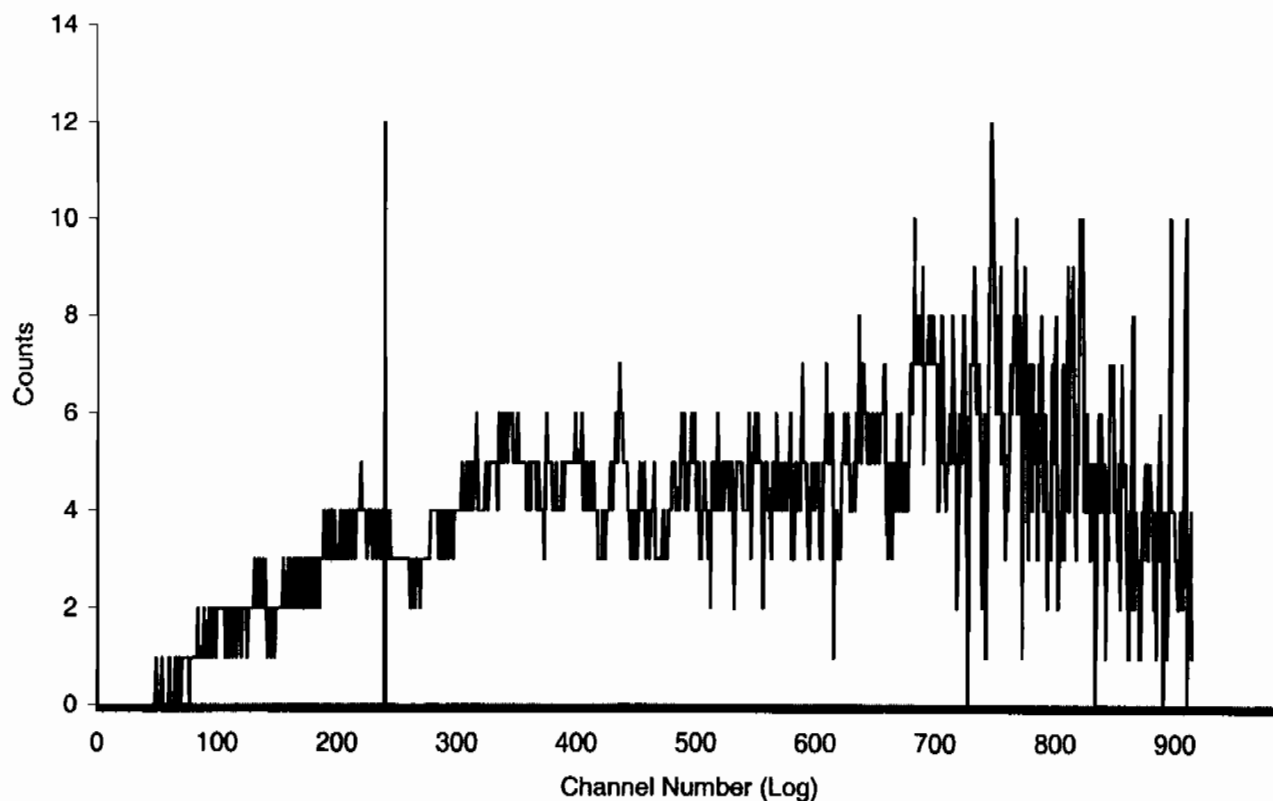
USER 13 - TRITIUM



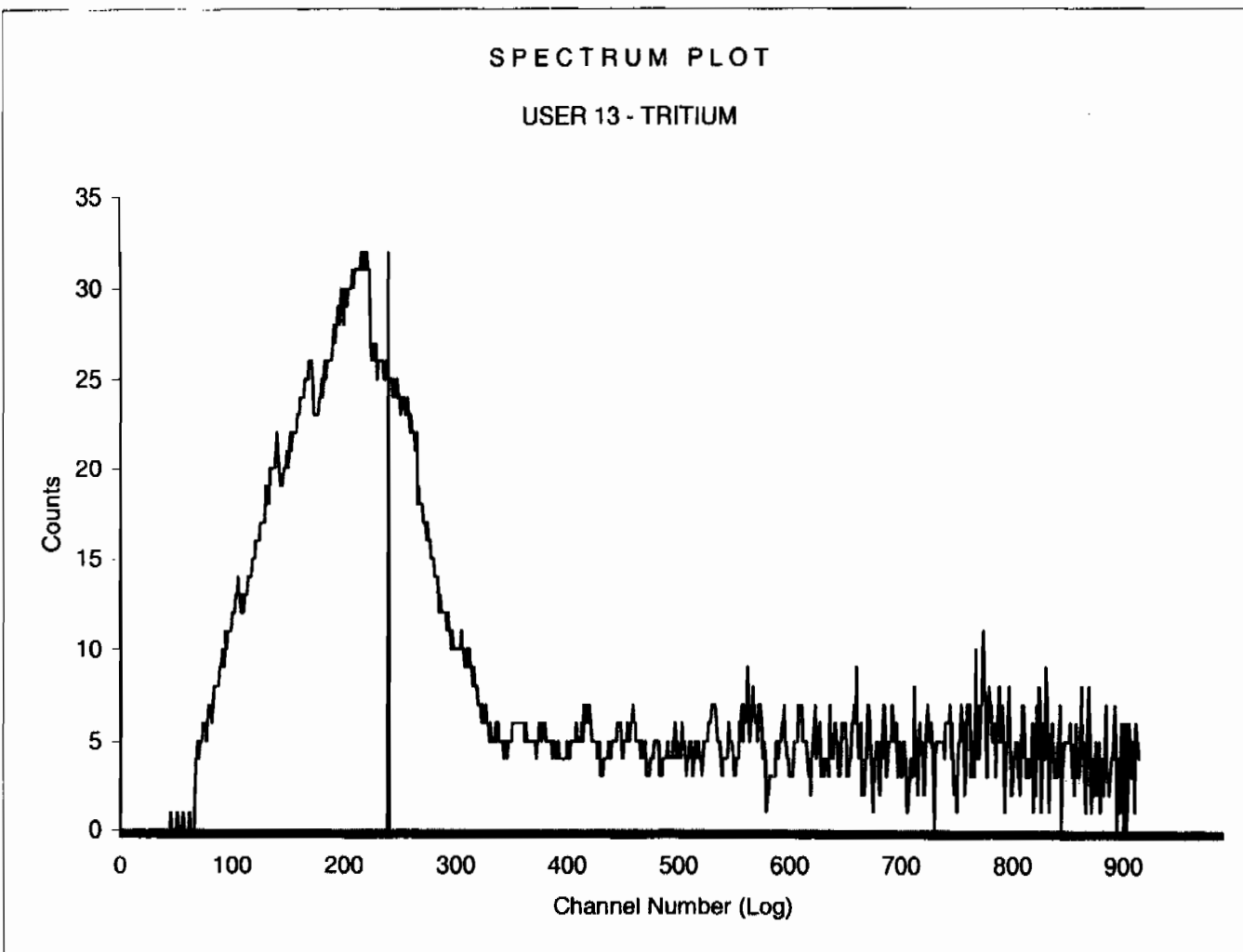
Sample Count Start Time:	13 Mar 2010 20:32:59		
Data Capture Date	13 Mar 2010 22:08:09		
User Filename	S13031322-10A.XLS		
	U13031322-1A.XLS		
Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	10	22-10	95.00
H#, Total Counts:	109.0	3593	
Win1: Tritium - Start, End, Counts:	0	240	424
Win2: - Start, End, Counts:	0	990	3593

SPECTRUM PLOT

USER 13 - TRITIUM



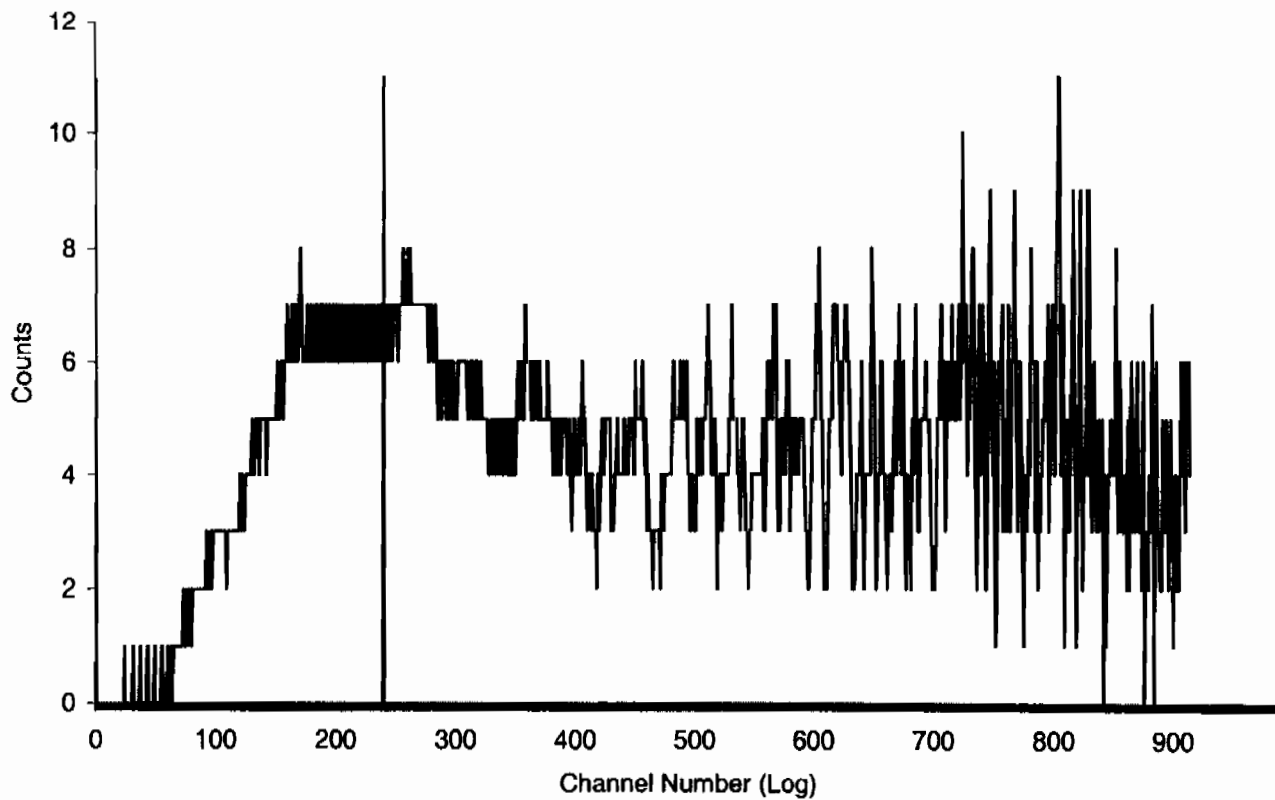
Sample Count Start Time:	13 Mar 2010 22:11:02		
Data Capture Date	13 Mar 2010 23:46:12		
User Filename	S13031322-11A.XLS		
	U13031322-1A.XLS		
Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	11	22-11	95.00
H#, Total Counts:	110.4	7574	
Win1: Tritium - Start, End, Counts:	0	240	3515
Win2: - Start, End, Counts:	0	990	7572



Sample Count Start Time:	13 Mar 2010 23:49:03		
Data Capture Date	14 Mar 2010 01:24:13		
User Filename	S13031422-12A.XLS		
	U13031322-1A.XLS		
Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	12	22-12	95.00
H#, Total Counts:	110.6	4036	
Win1: Tritium - Start, End, Counts:	0	240	850
Win2: - Start, End, Counts:	0	990	4036

SPECTRUM PLOT

USER 13 - TRITIUM

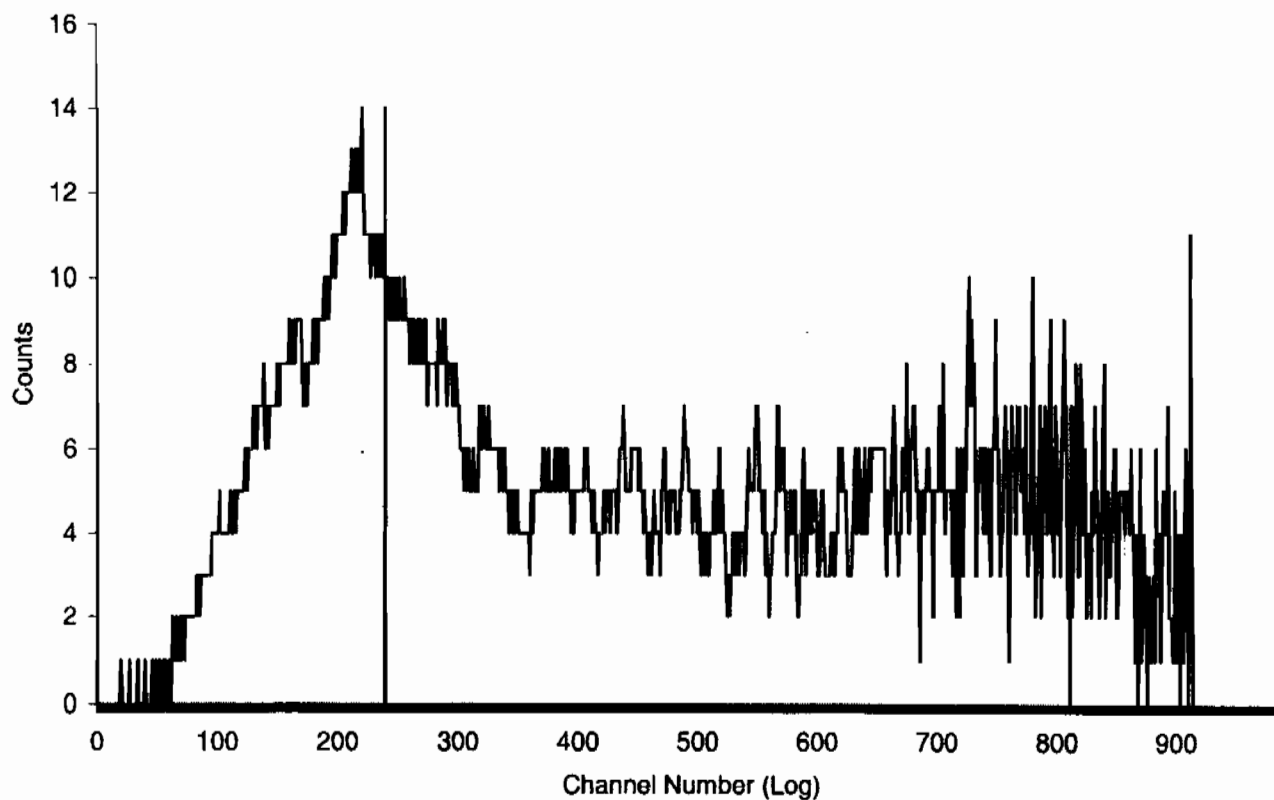


Sample Count Start Time: 14 Mar 2010 02:26:56
Data Capture Date 14 Mar 2010 04:02:20
User Filename S13031435-1A.XLS

Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	13	35-1	95.00
H#, Total Counts:	110.2	4684	
Win1: Tritium - Start, End, Counts:	0	240	1287
Win2: - Start, End, Counts:	0	990	4683

SPECTRUM PLOT

USER 13 - TRITIUM

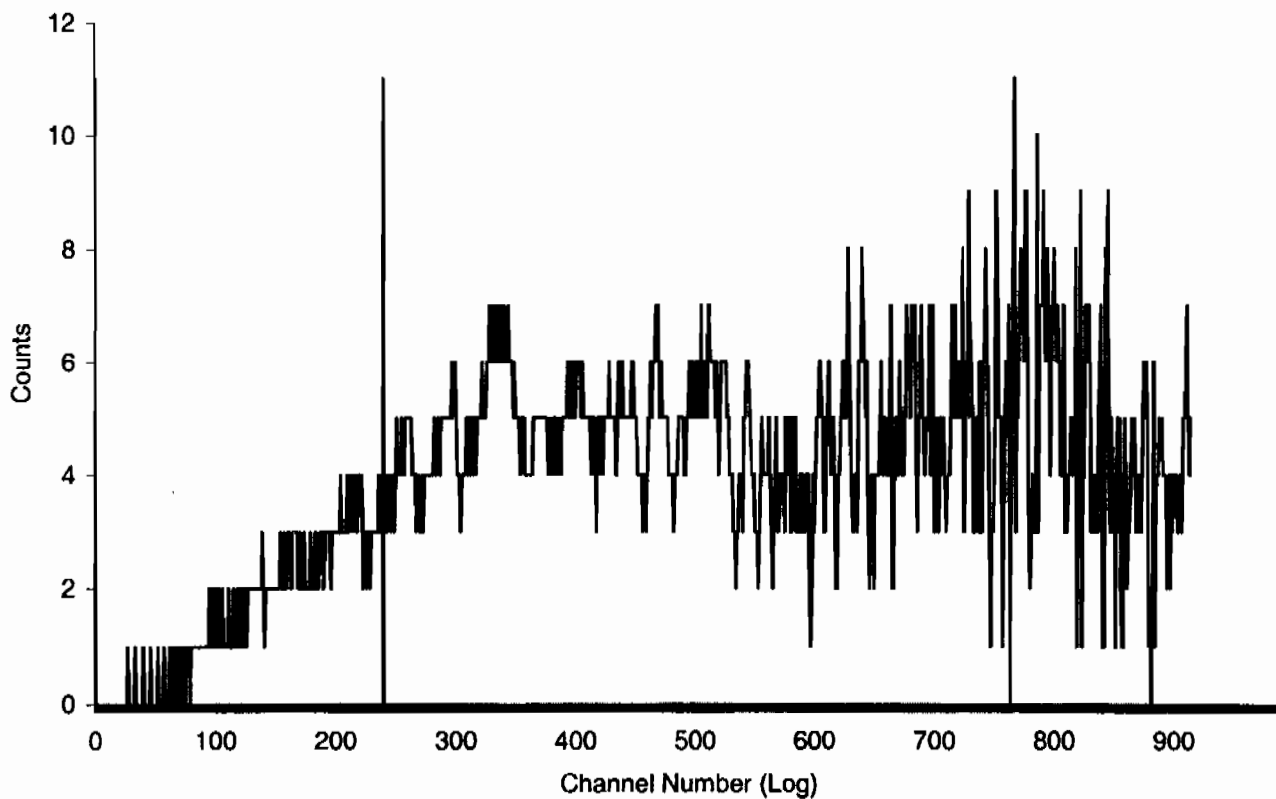


Sample Count Start Time: 14 Mar 2010 04:04:55
Data Capture Date 14 Mar 2010 05:40:19
User Filename S13031435-2A.XLS

Spectrum Type	Log Counts
User Number	13
User Id	TRITIUM
User Comment	BROWN
Scintillator	LIQUID
Sample, Rack-Pos, Time:	14 35-2 95.00
H#, Total Counts:	109.6 3557
Win1: Tritium - Start, End, Counts:	0 240 385
Win2: - Start, End, Counts:	0 990 3557

SPECTRUM PLOT

USER 13 - TRITIUM

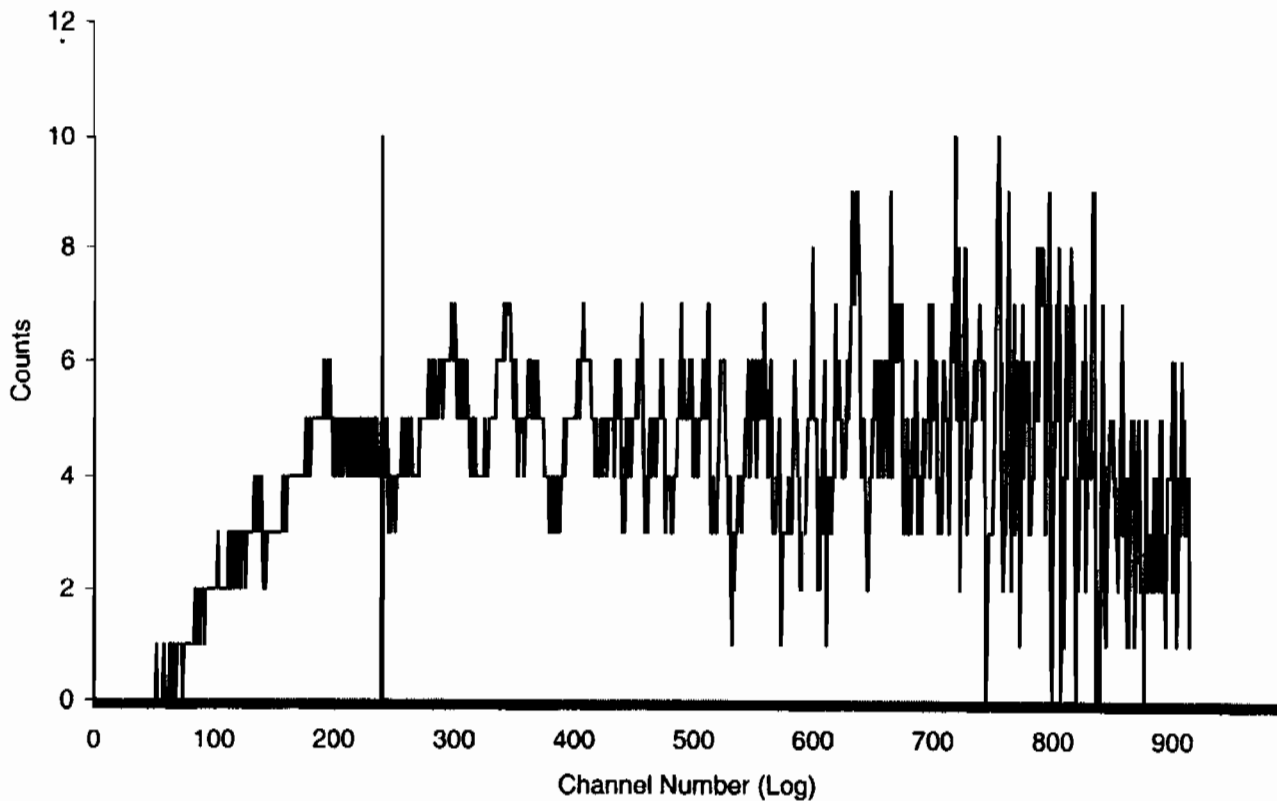


Sample Count Start Time: 14 Mar 2010 05:42:56
Data Capture Date 14 Mar 2010 07:18:20
User Filename S13031435-3A.XLS

Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	15	35-3	95.00
H#, Total Counts:	110.4	3727	
Win1: Tritium - Start, End, Counts:	0	240	586
Win2: - Start, End, Counts:	0	990	3727

SPECTRUM PLOT

USER 13 - TRITIUM

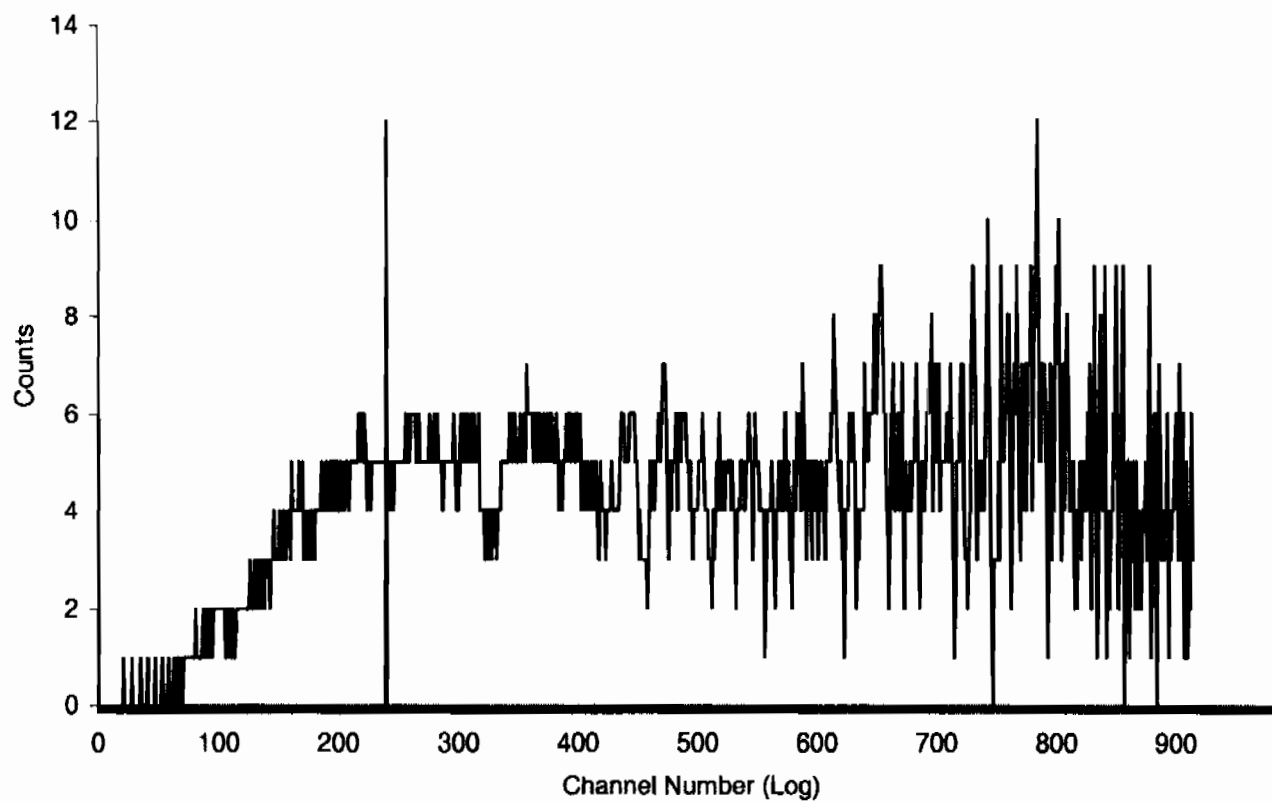


Sample Count Start Time: 14 Mar 2010 07:20:56
Data Capture Date 14 Mar 2010 08:56:20
User Filename S13031435-4A.XLS

Spectrum Type	Log Counts
User Number	13
User Id	TRITIUM
User Comment	BROWN
Scintillator	LIQUID
Sample, Rack-Pos, Time:	16 35-4 95.00
H#, Total Counts:	110.5 3826
Win1: Tritium - Start, End, Counts:	0 240 568
Win2: - Start, End, Counts:	0 990 3826

SPECTRUM PLOT

USER 13 - TRITIUM

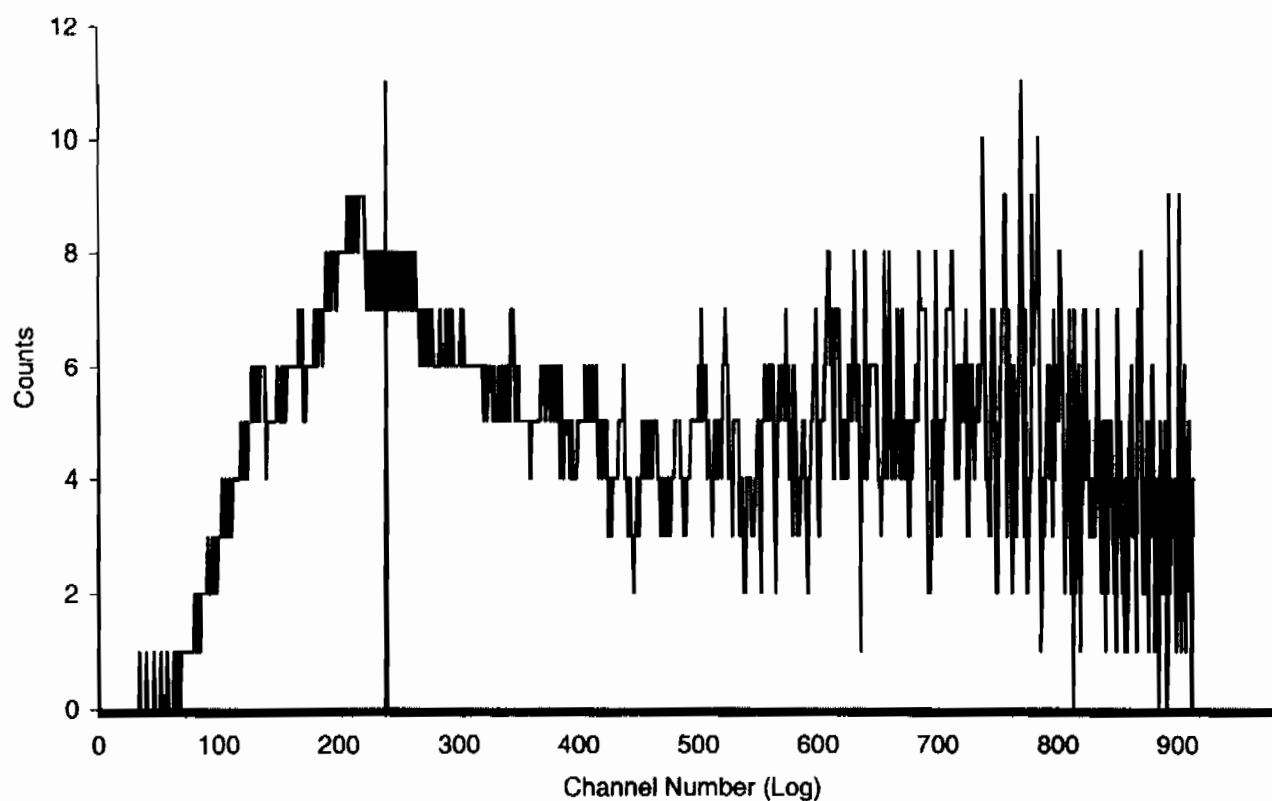


Sample Count Start Time: 14 Mar 2010 08:58:56
Data Capture Date: 14 Mar 2010 10:34:20
User Filename: S13031435-5A.XLS

Spectrum Type	Log Counts
User Number	13
User Id	TRITIUM
User Comment	BROWN
Scintillator	LIQUID
Sample, Rack-Pos, Time:	17 35-5 95.00
H#, Total Counts:	111.1 4279
Win1: Tritium - Start, End, Counts:	0 240 946
Win2: - Start, End, Counts:	0 990 4279

SPECTRUM PLOT

USER 13 - TRITIUM

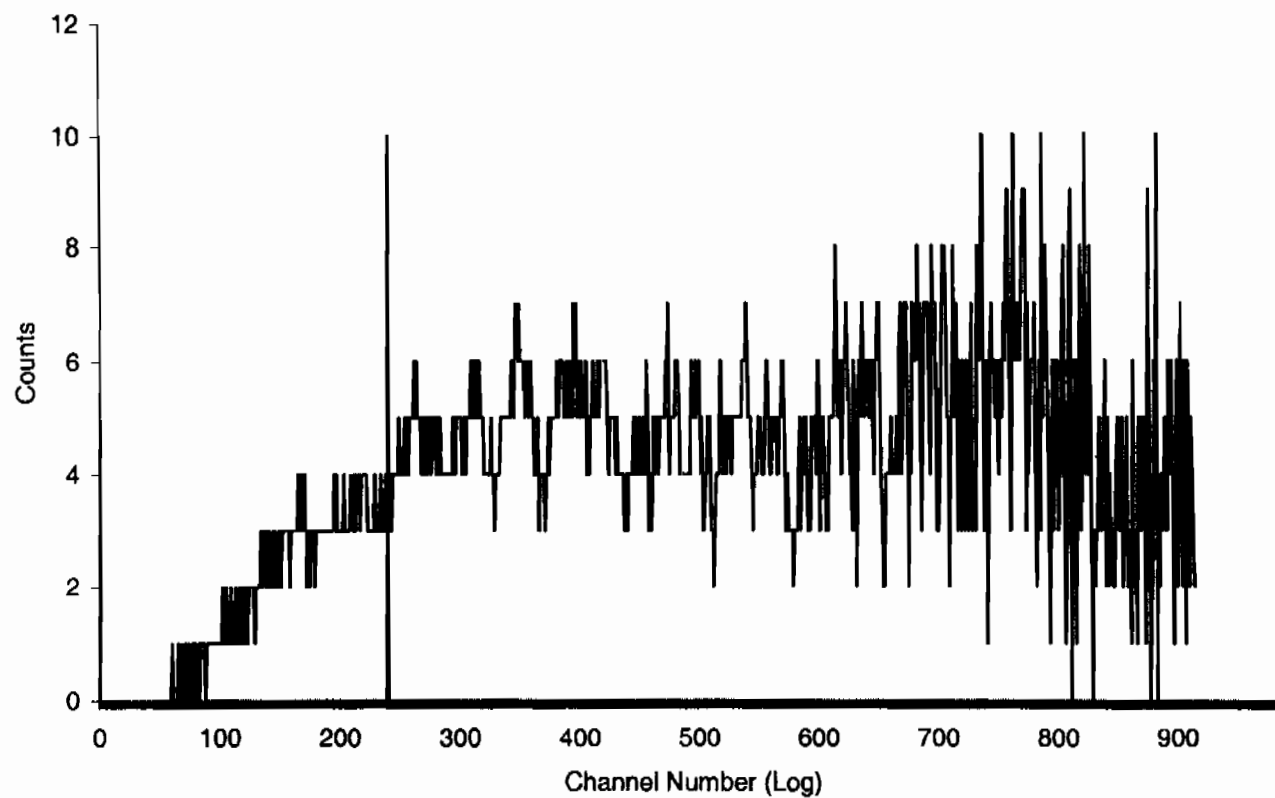


Sample Count Start Time: 14 Mar 2010 10:36:55
Data Capture Date 14 Mar 2010 12:12:19
User Filename S13031435-6A.XLS

Spectrum Type	Log Counts
User Number	13
User Id	TRITIUM
User Comment	BROWN
Scintillator	LIQUID
Sample, Rack-Pos, Time:	18 35-6 95.00
H#, Total Counts:	109.9 3627
Win1: Tritium - Start, End, Counts:	0 240 410
Win2: - Start, End, Counts:	0 990 3627

SPECTRUM PLOT

USER 13 - TRITIUM

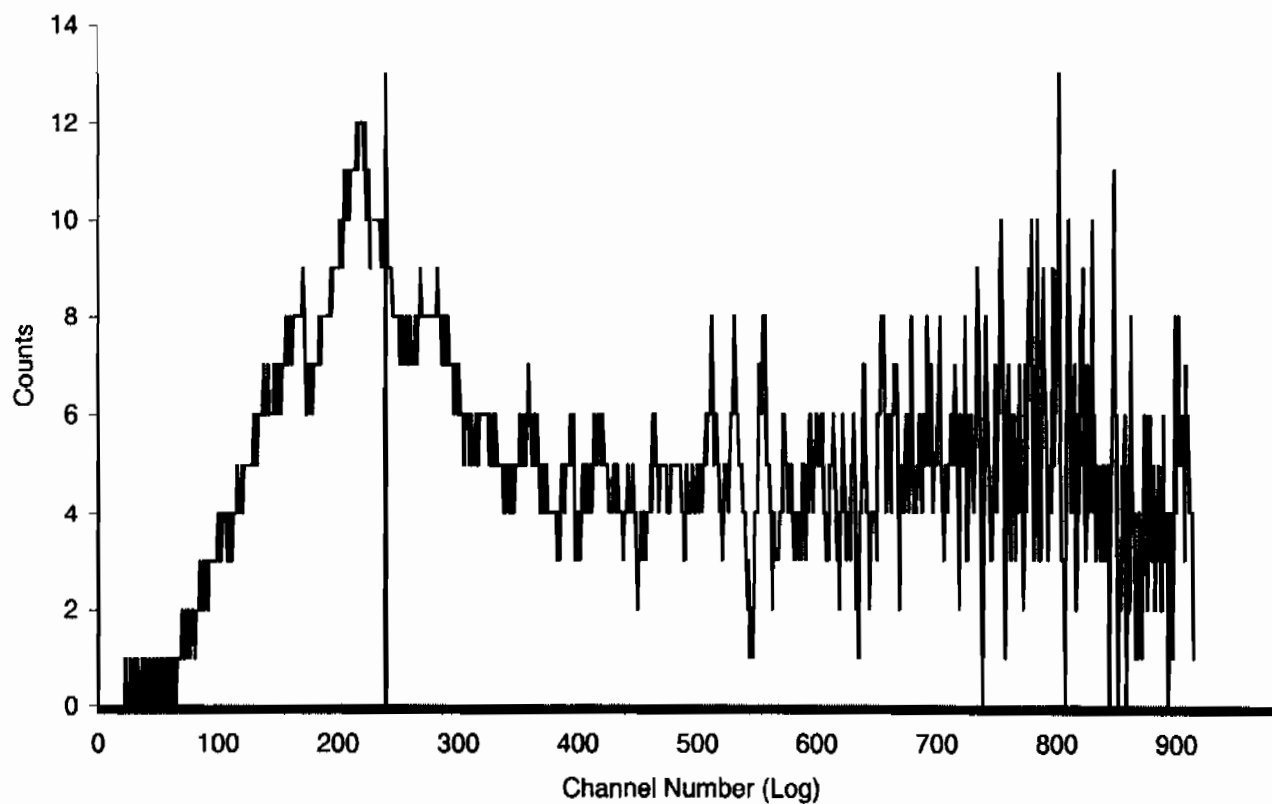


Sample Count Start Time: 14 Mar 2010 12:14:55
Data Capture Date 14 Mar 2010 13:50:19
User Filename S13031435-7A.XLS

Spectrum Type	Log Counts
User Number	13
User Id	TRITIUM
User Comment	BROWN
Scintillator	LIQUID
Sample, Rack-Pos, Time:	19 35-7 95.00
H#, Total Counts:	109.9 4540
Win1: Tritium - Start, End, Counts:	0 240 1146
Win2: - Start, End, Counts:	0 990 4540

SPECTRUM PLOT

USER 13 - TRITIUM

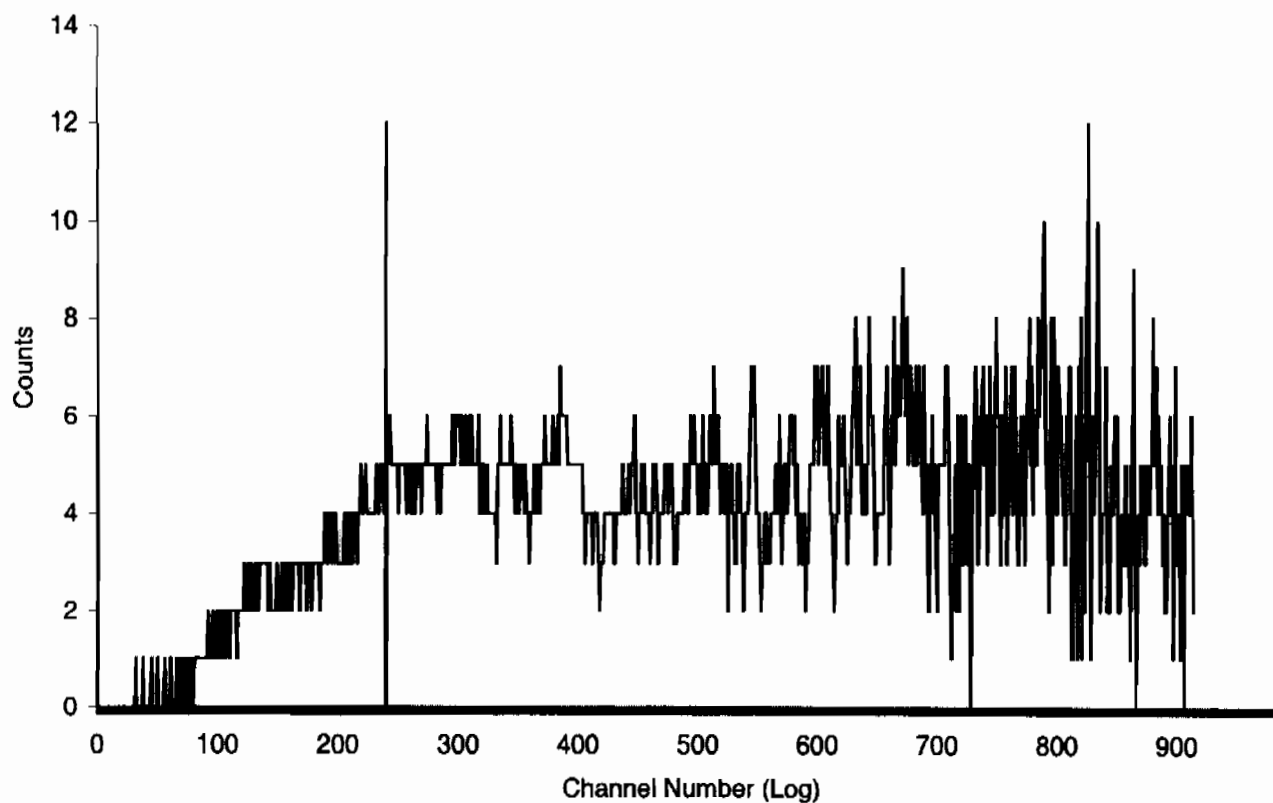


Sample Count Start Time: 14 Mar 2010 13:52:55
Data Capture Date 14 Mar 2010 15:28:19
User Filename S13031435-8A.XLS

Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	20	35-8	95.00
H#, Total Counts:	110.6	3648	
Win1: Tritium - Start, End, Counts:	0	240	456
Win2: - Start, End, Counts:	0	990	3648

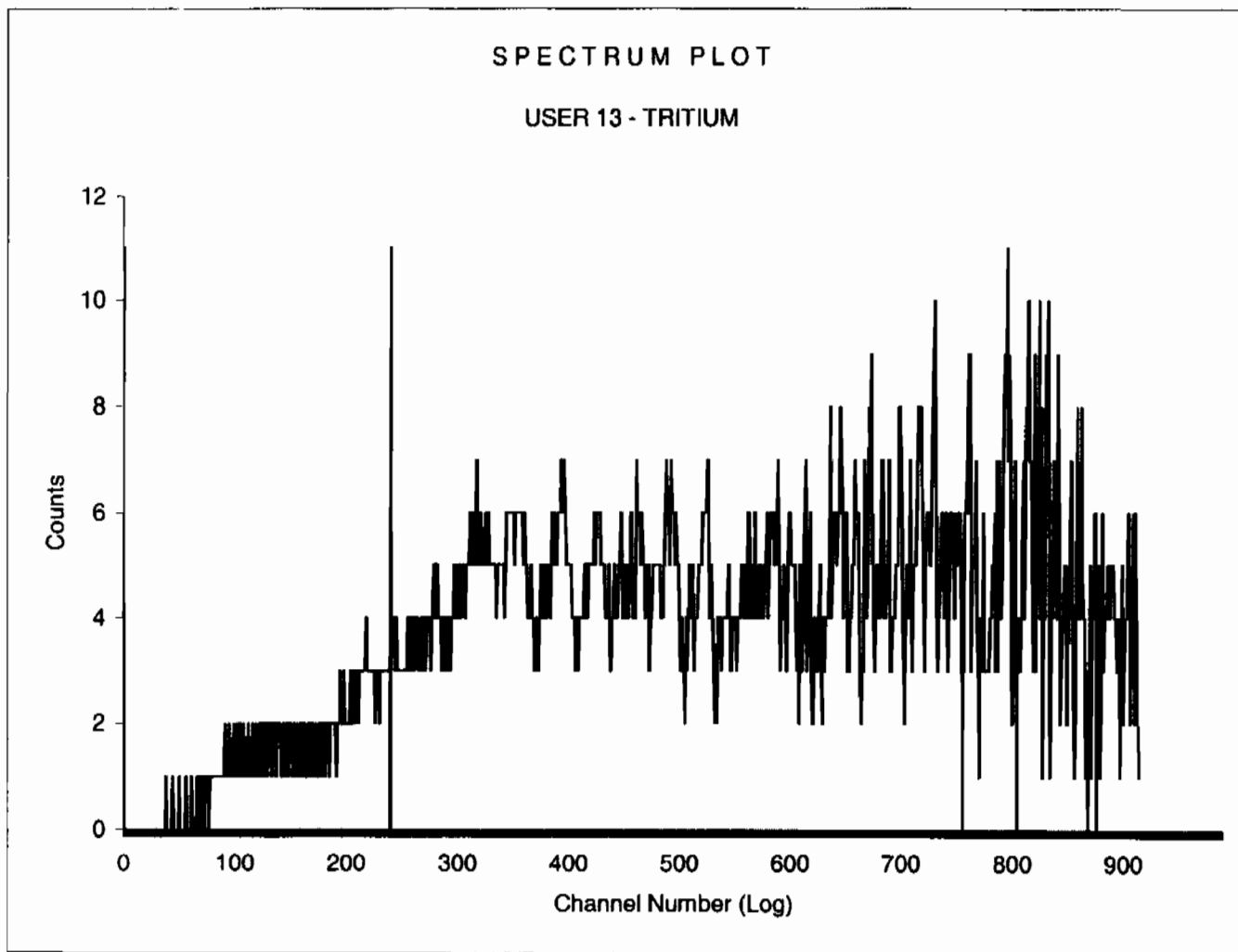
SPECTRUM PLOT

USER 13 - TRITIUM



Sample Count Start Time: 14 Mar 2010 15:30:54
Data Capture Date 14 Mar 2010 17:06:18
User Filename S13031435-9A.XLS

Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	21	35-9	95.00
H#, Total Counts:	109.0	3496	
Win1: Tritium - Start, End, Counts:	0	240	320
Win2: - Start, End, Counts:	0	990	3494

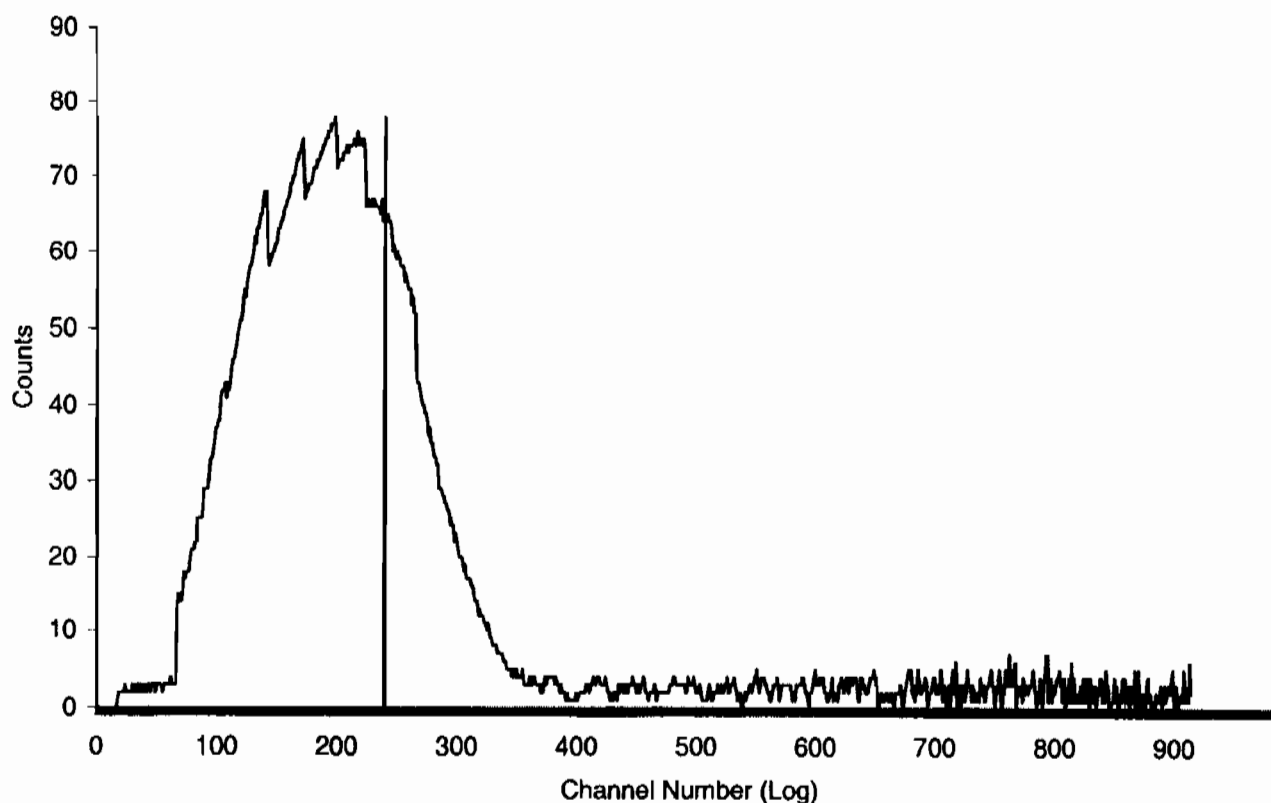


Sample Count Start Time: 14 Mar 2010 17:07:55
Data Capture Date 14 Mar 2010 17:57:01
User Filename S13031435-10A.XLS

Spectrum Type	Log Counts		
User Number	13		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	22	35-10	48.70
H#, Total Counts:	110.2	14565	
Win1: Tritium - Start, End, Counts:	0	240	10073
Win2: - Start, End, Counts:	0	990	14563

SPECTRUM PLOT

USER 13 - TRITIUM



PAGE: 1

14 MAR 2010 17:07

ID: TRITIUM

USER: 6

COMMENT: BROWN

PRESET TIME : 15.00

DATA CALC : CPM H# : YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 : EDIT

TWO PHASE : NO AQC : NO CYCLE REPEATS : 1 DISK : OFF

SCINTILLATOR: LIQUID LUMEX: YES LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

CHAN: 0.0 - 240.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 900.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

SAM	POS	TIME	H#	<u>WIND1</u>		LUMEX	ELAPSED
NO		MIN		CPM	%ERROR	%	TIME
1	46-1	15.00	109.2	33.07	8.98	0.16	15.77

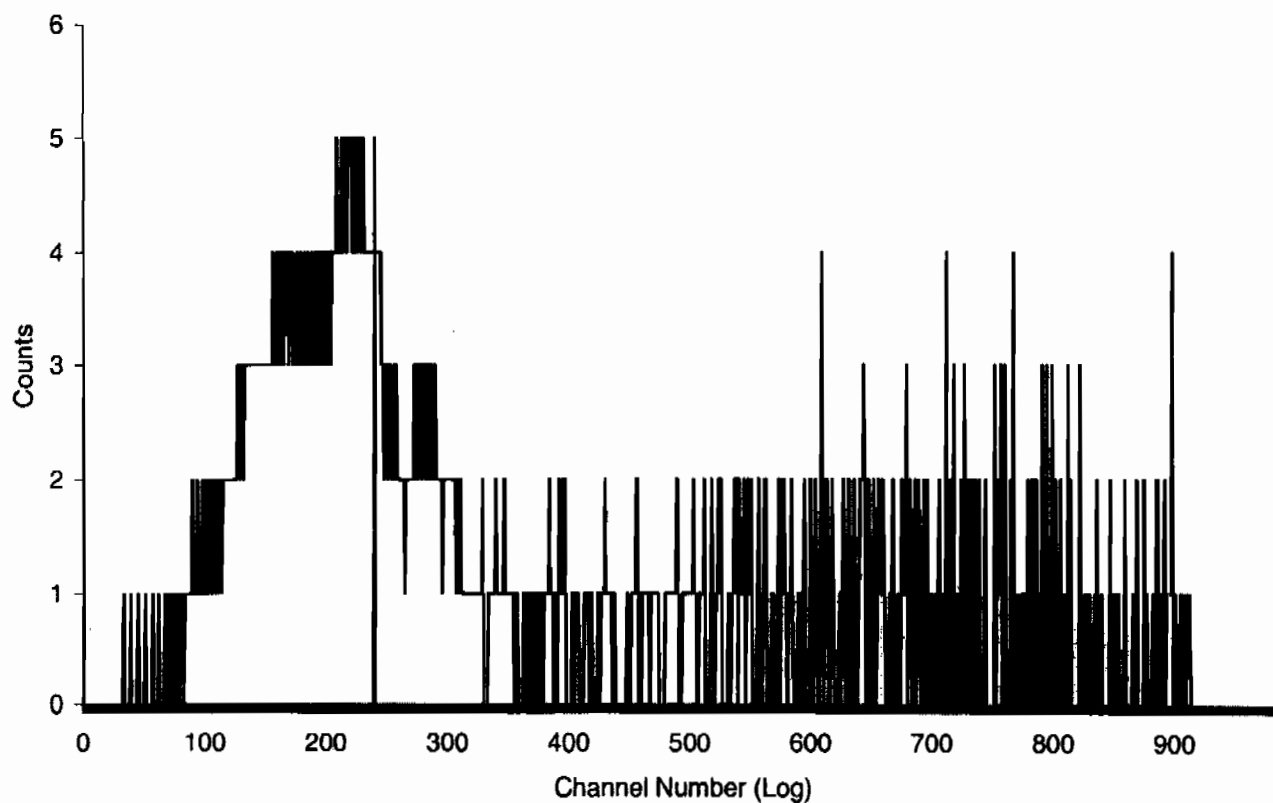
INSTRUMENT CALIBRATION: Mini 14 MAR 2010 18:37

Calibration successful

Sample Count Start Time:	14 Mar 2010 17:58:24		
Data Capture Date	14 Mar 2010 18:13:27		
User Filename	S06031446-1A.XLS		
	U06031446-1A.XLS		
Spectrum Type	Log Counts		
User Number	06		
User Id	TRITIUM		
User Comment	BROWN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	46-1	15.00
H#, Total Counts:	109.2	1115	
Win1: Tritium - Start, End, Counts:	0	240	500
Win2: - Start, End, Counts:	0	990	1115

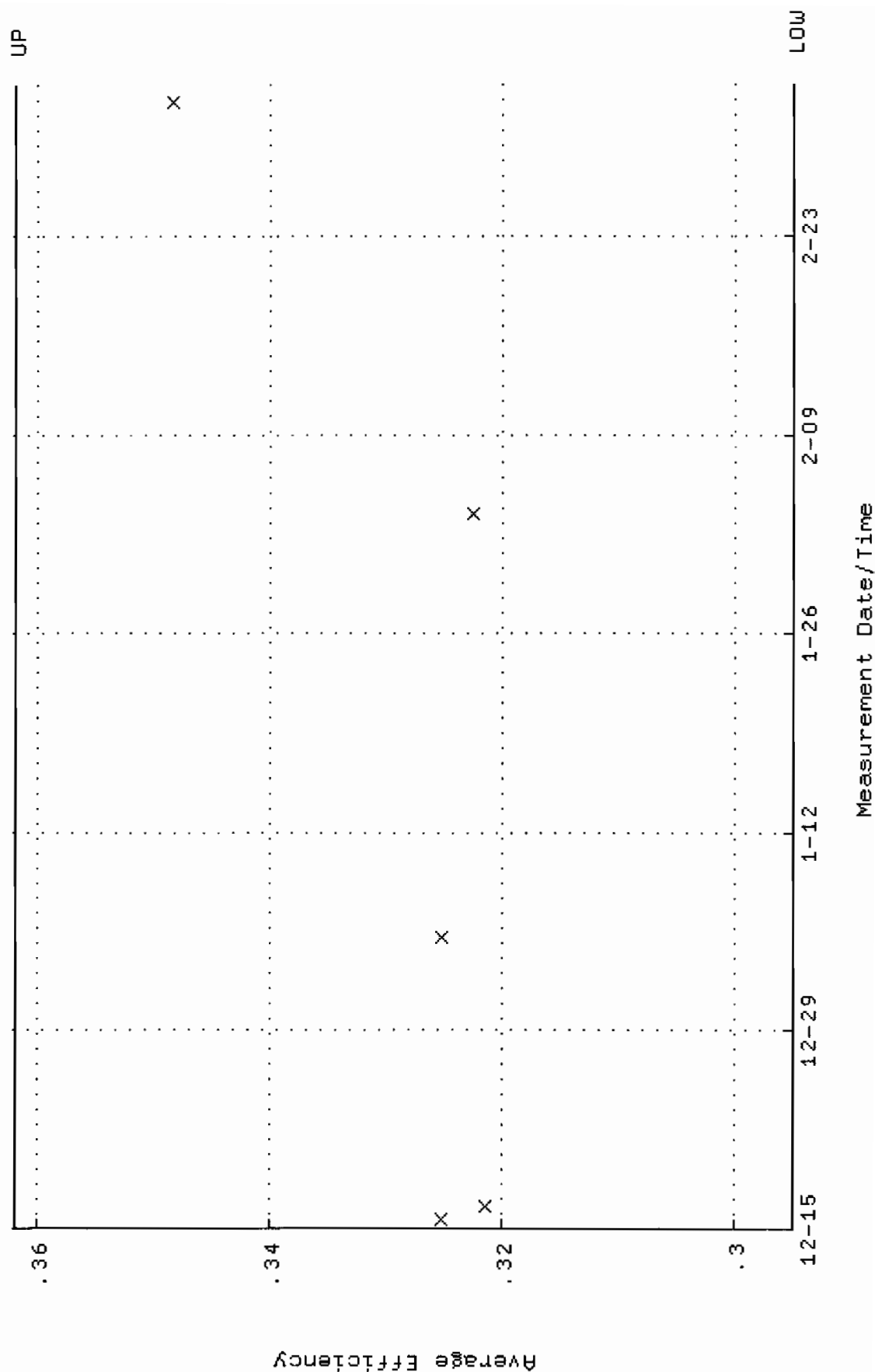
SPECTRUM PLOT

USER 06 - TRITIUM

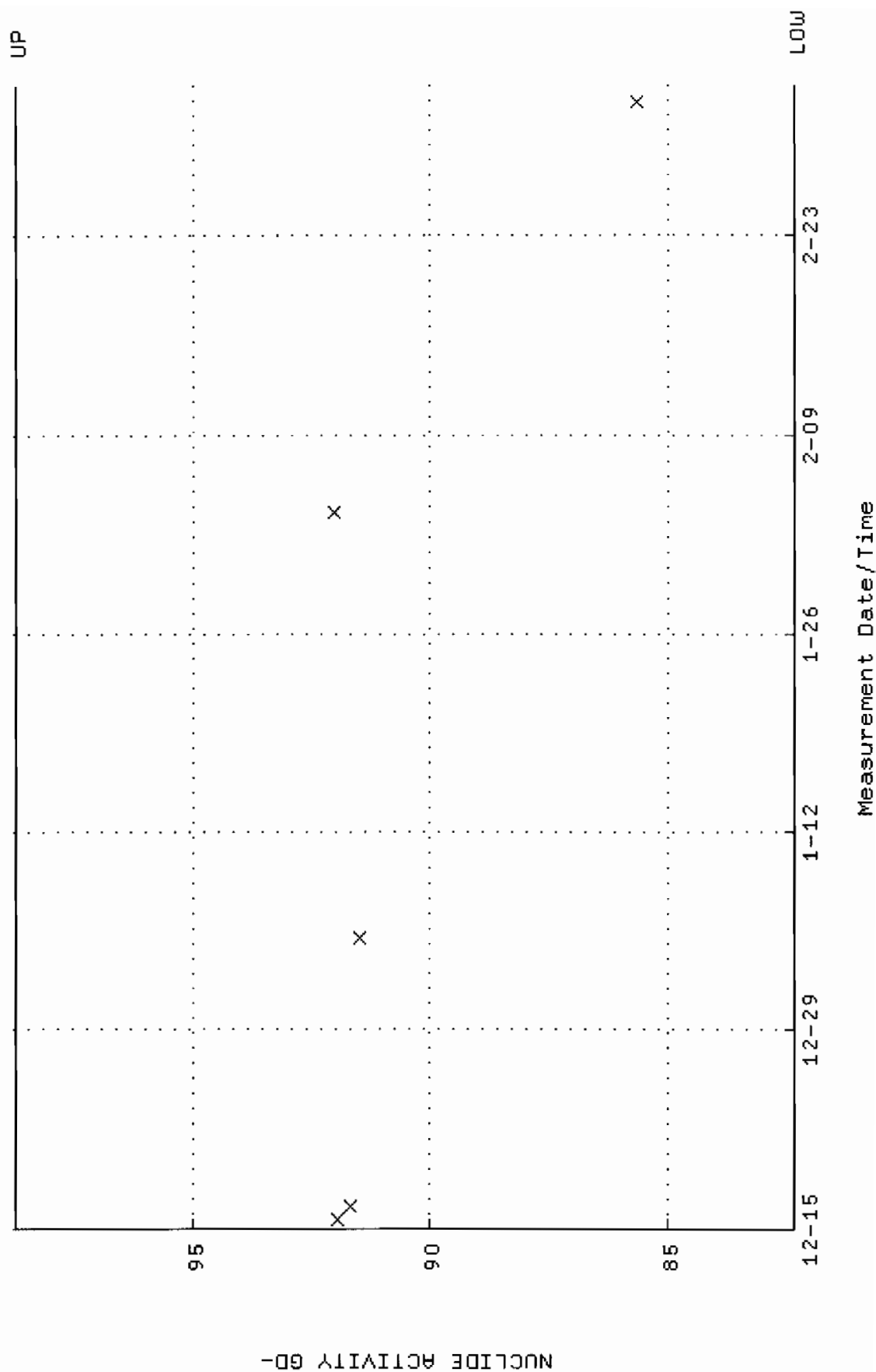


BACKGROUND AND EFFICIENCY DATA

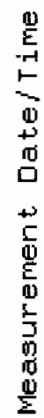
QA filename : DKA100:[ENV_ALPHA.QA.W]W001.QAF;7
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.294900 through 0.361886



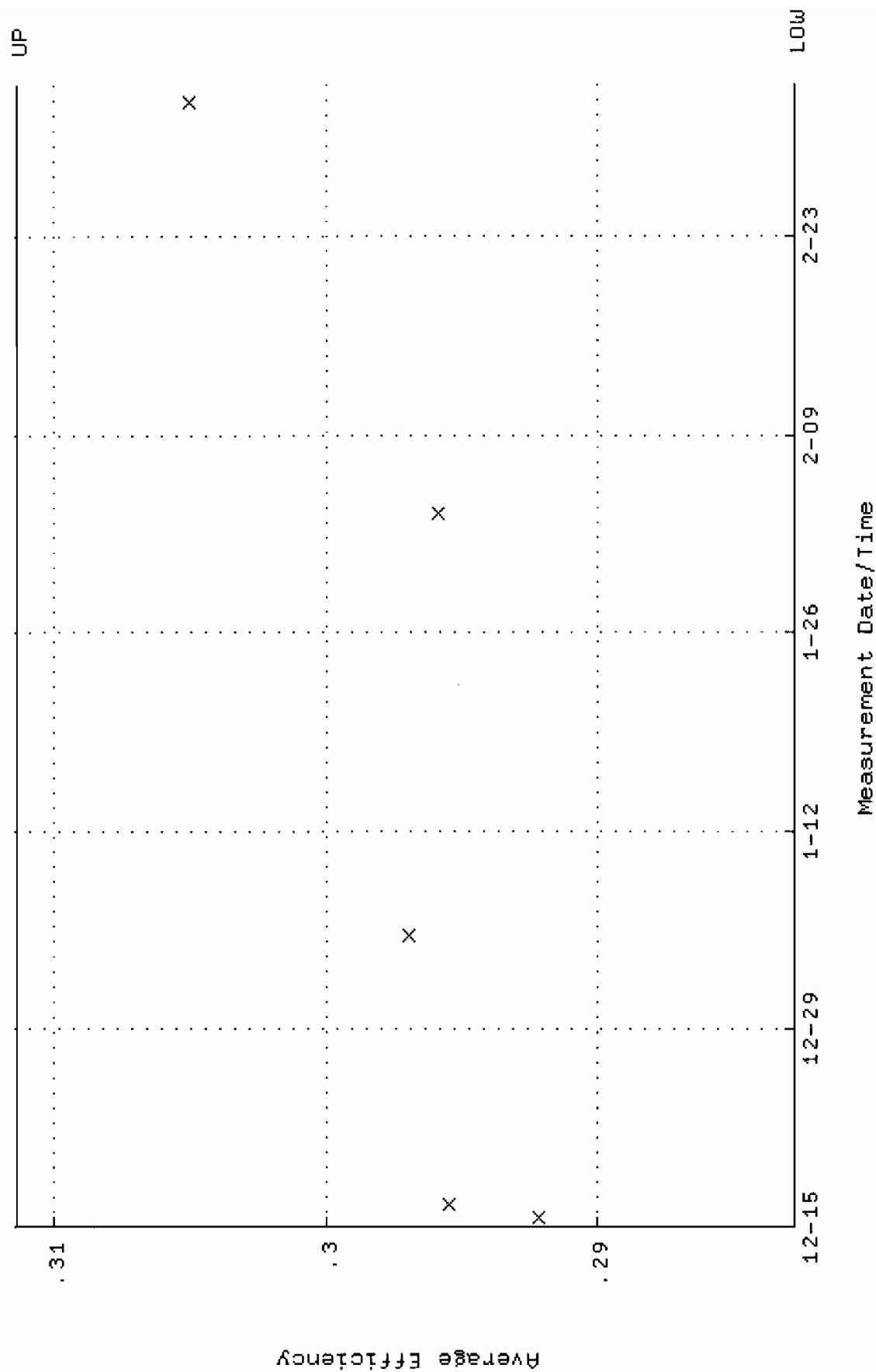
QA filename : DKA100:[ENV_ALPHA.QA.W]W001.QAF;7
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.3264 through 98.7414



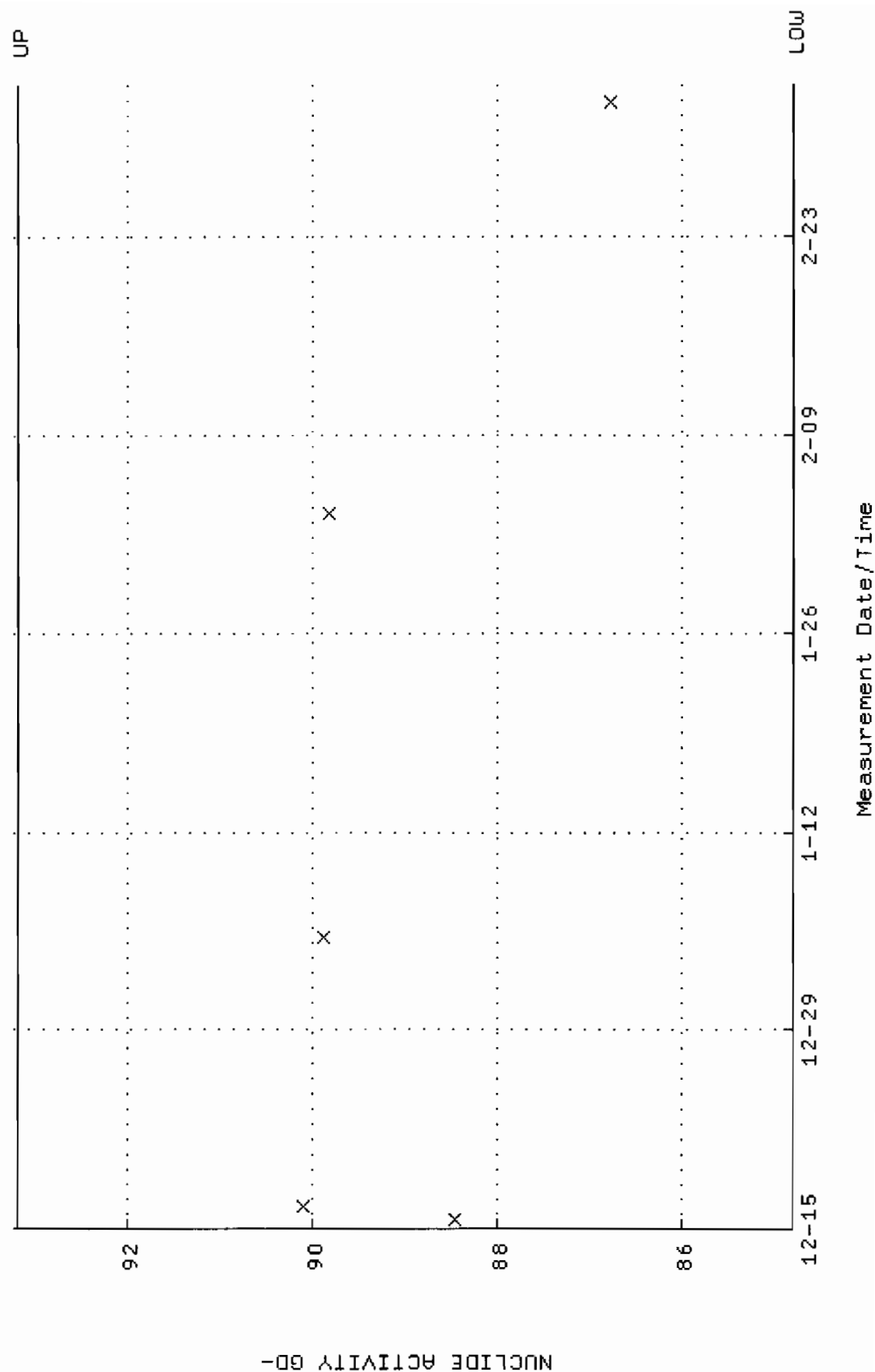
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



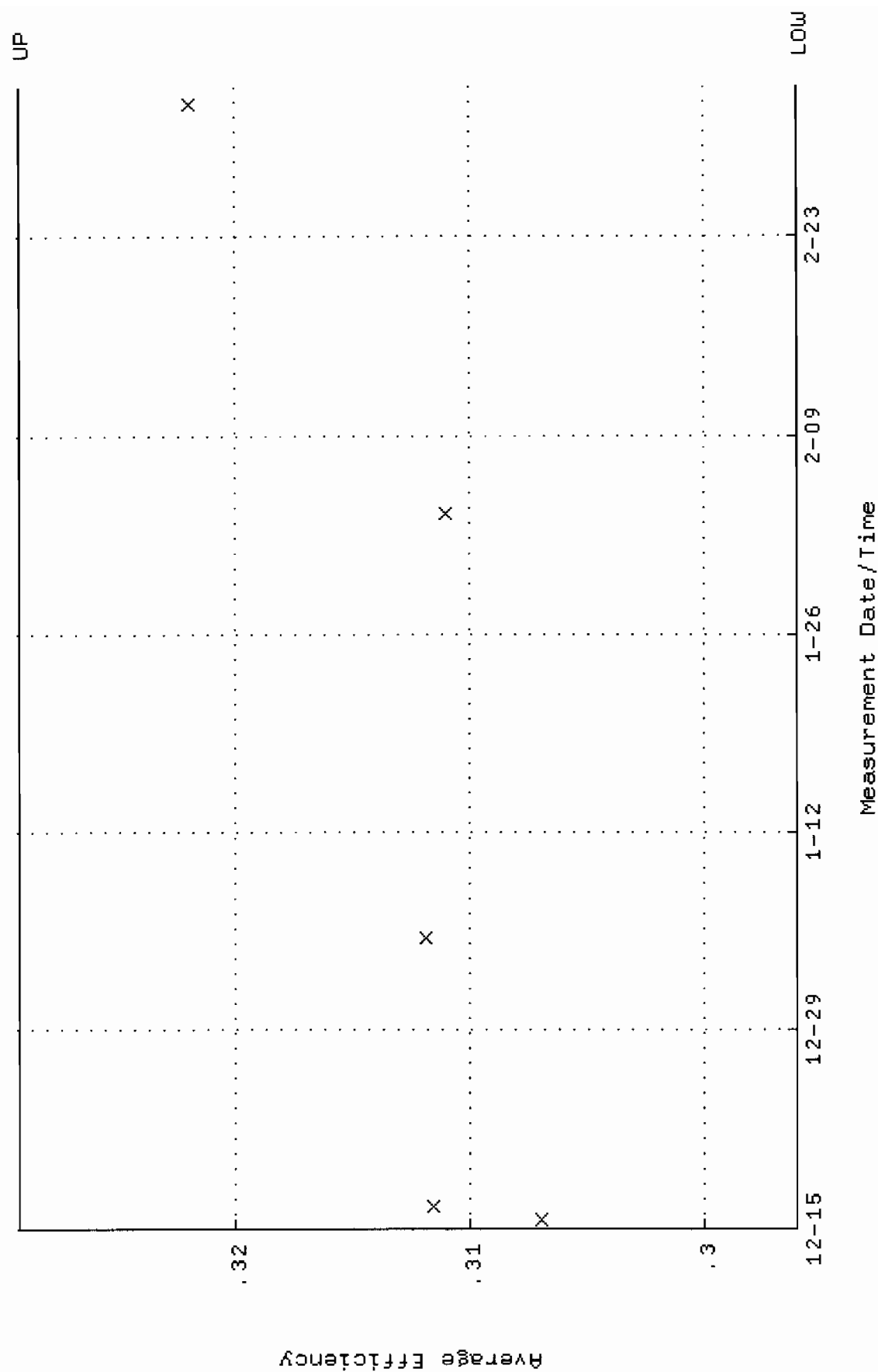
QA filename : DKA100:[ENV_ALPHA.QA.W]W002.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.282705 through 0.311367



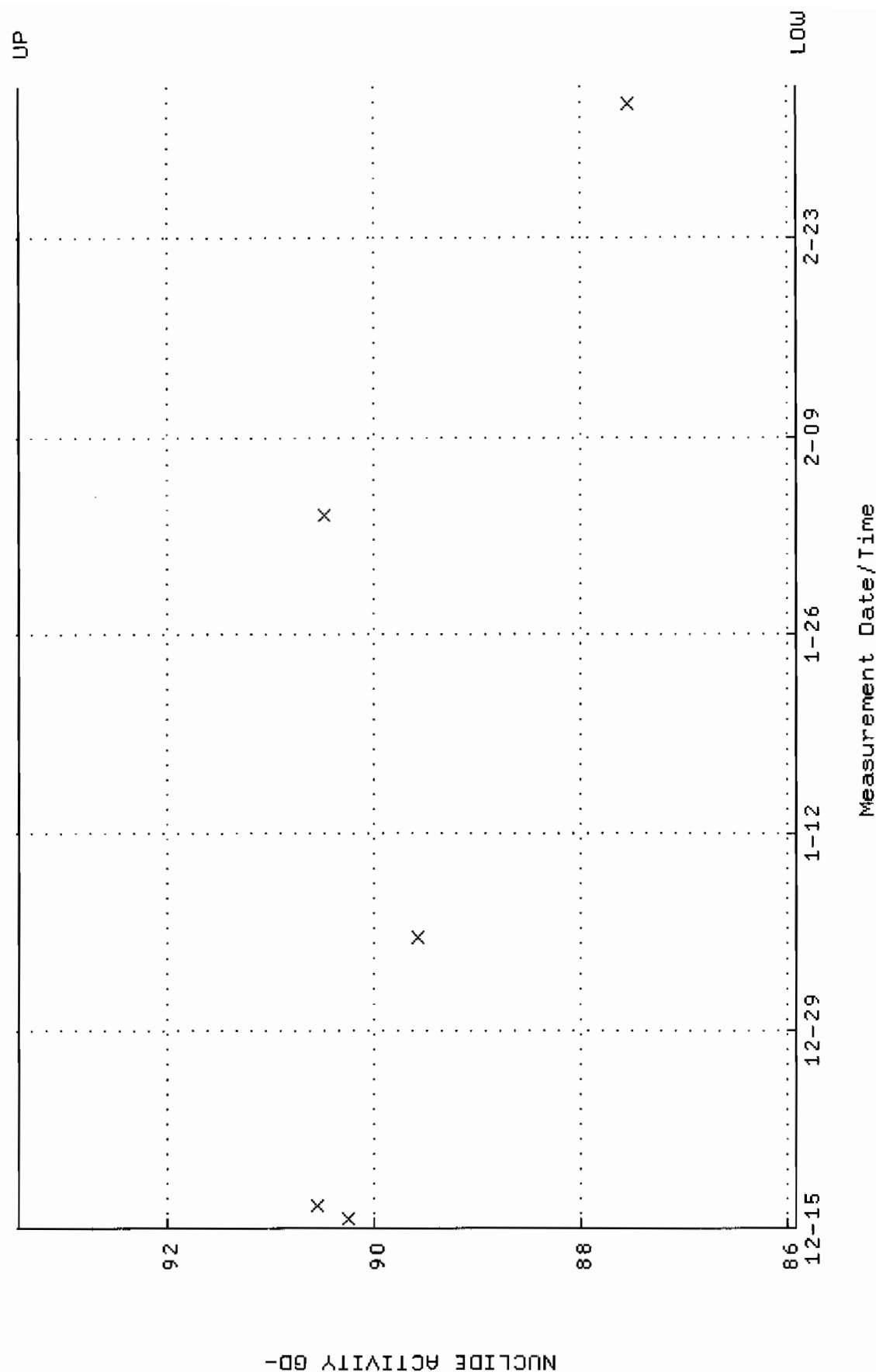
QA filename : DKA100:[ENV_ALPHA.QA.W]W002.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.7927 through 93.2014



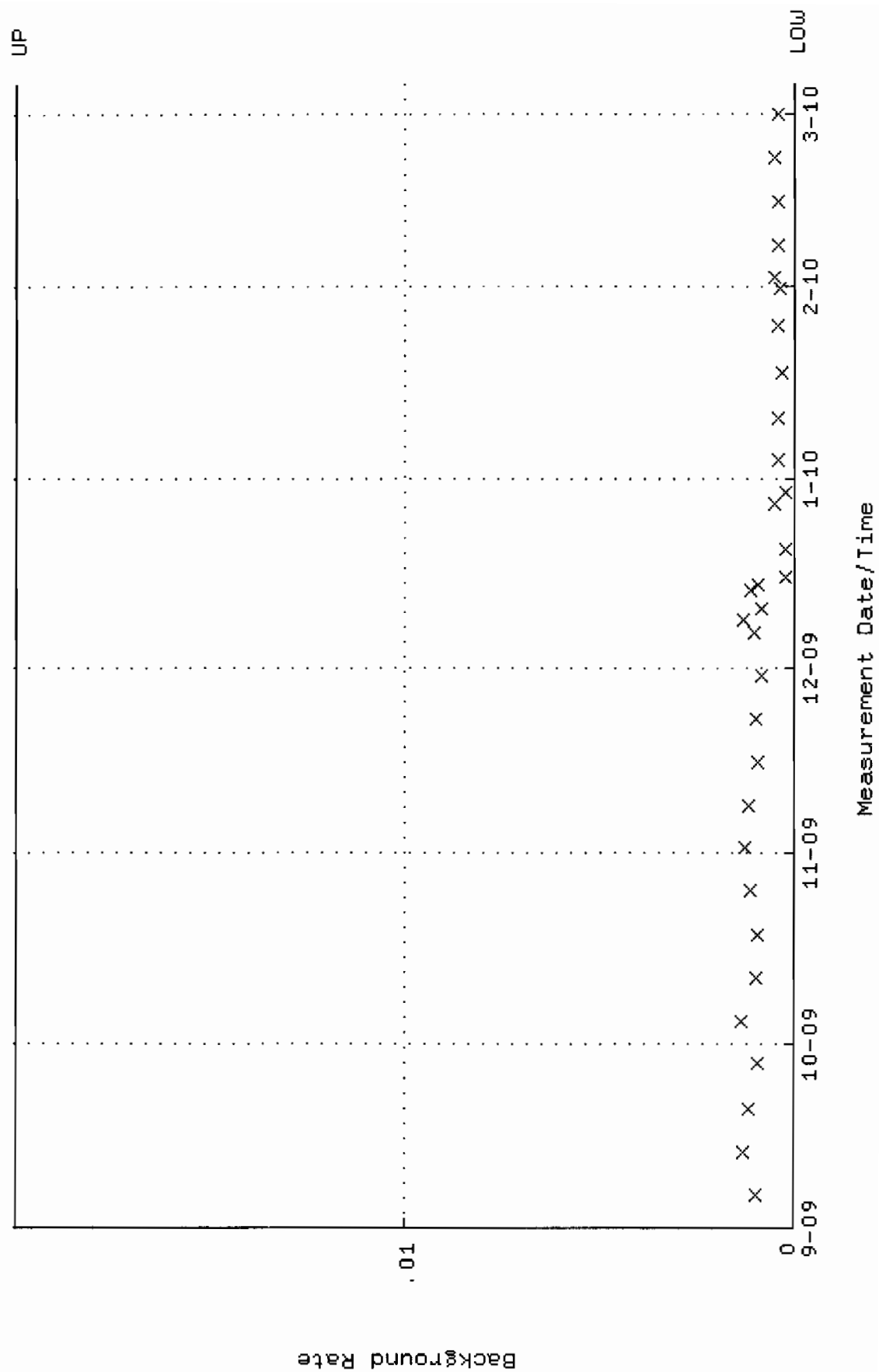
QA filename : DKA100:[ENV_ALPHA.QA.W]W003.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.295986 through 0.329192



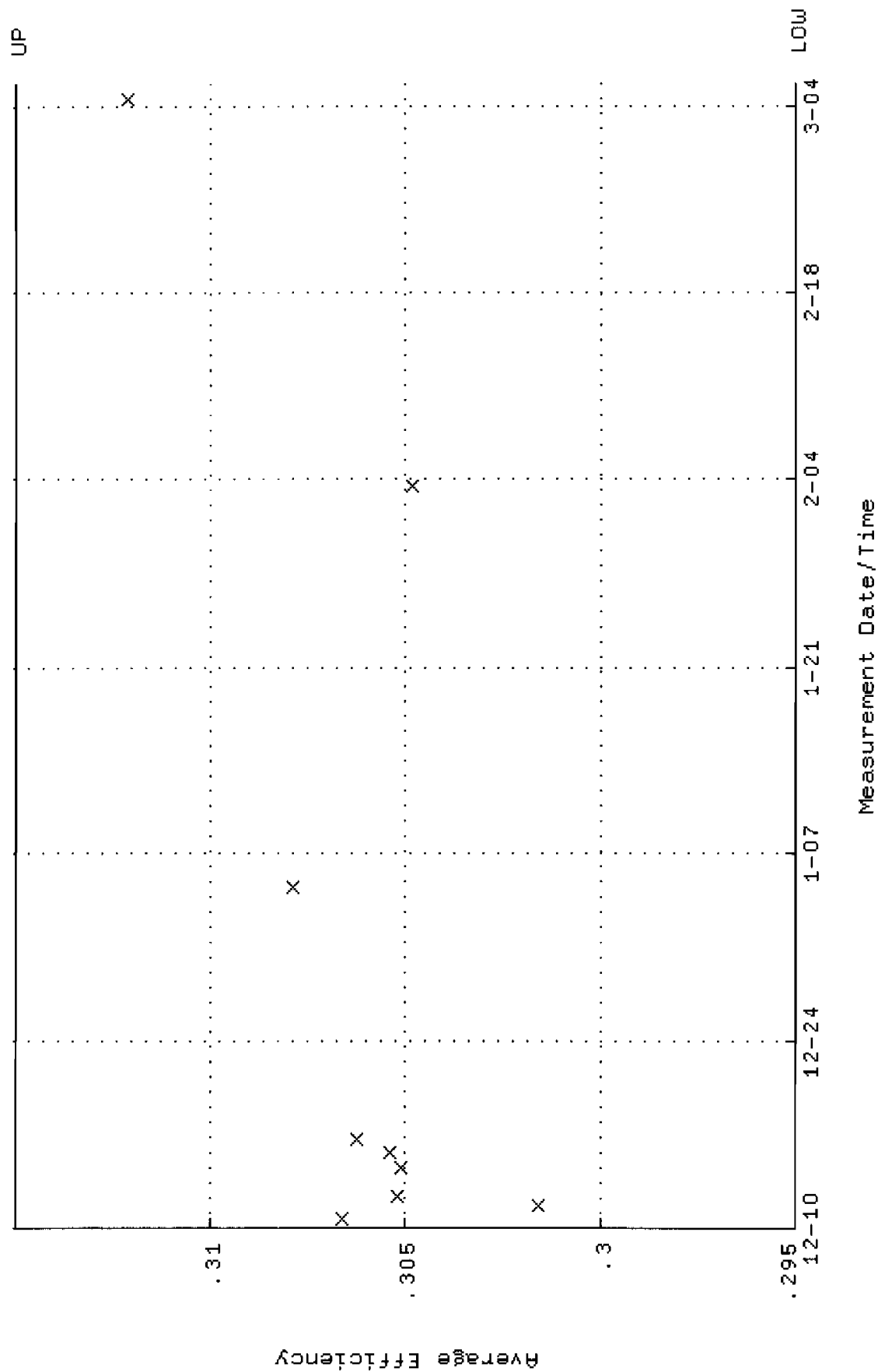
QA filename : DKA100:[ENV_ALPHA.QA.W]W003.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.9157 through 93.4313



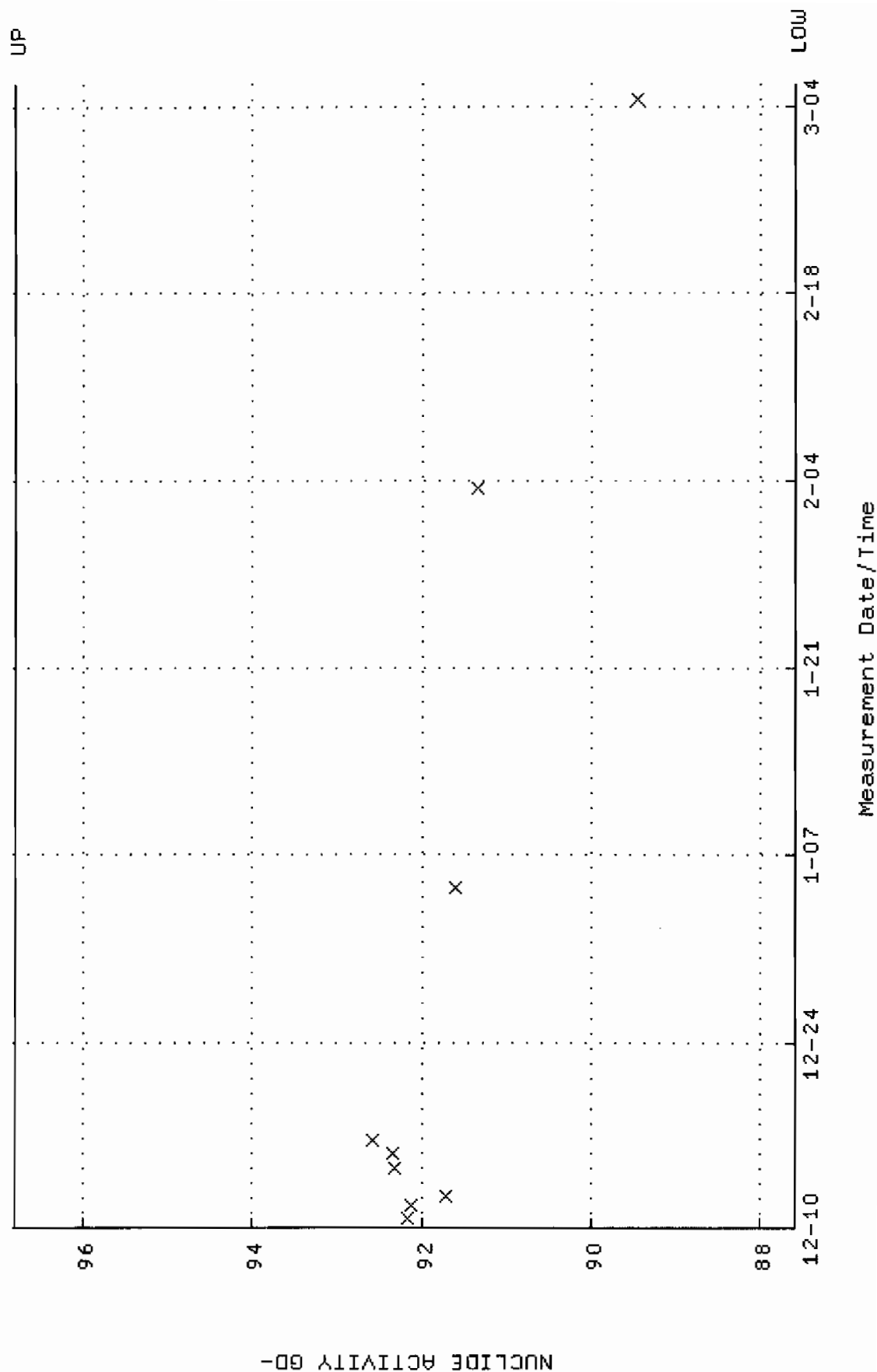
QA filename : DKA100:[ENV_ALPHA.QA.B]B003.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:00 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



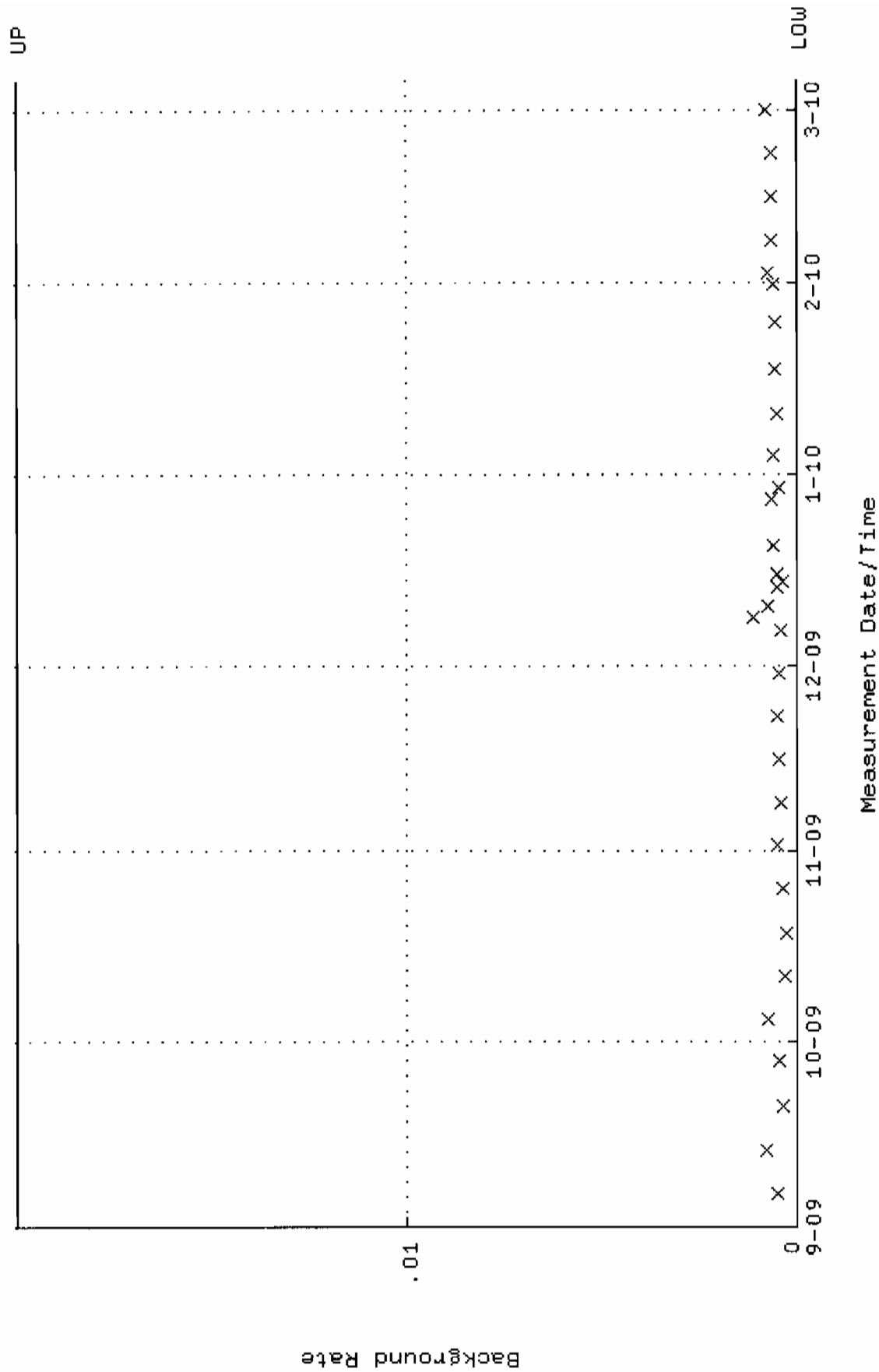
QA filename : DKA100:[ENV_ALPHA.QA.W]W004.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 10-DEC-2009 15:29:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.294995 through 0.314995



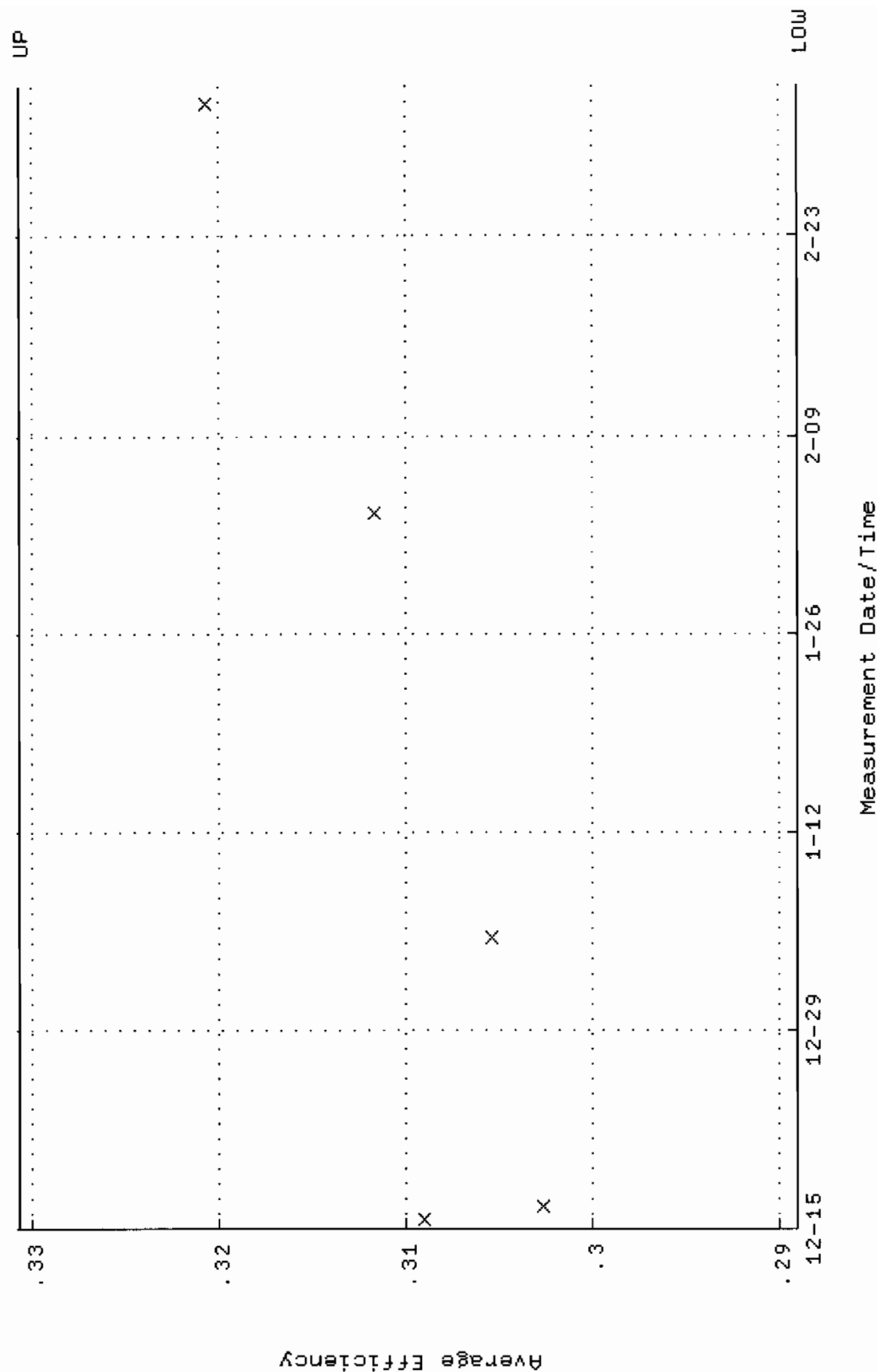
QA filename : DKA100:[ENV_ALPHA.QA.W]W004.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 10-DEC-2009 15:29:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.5863 through 96.8059



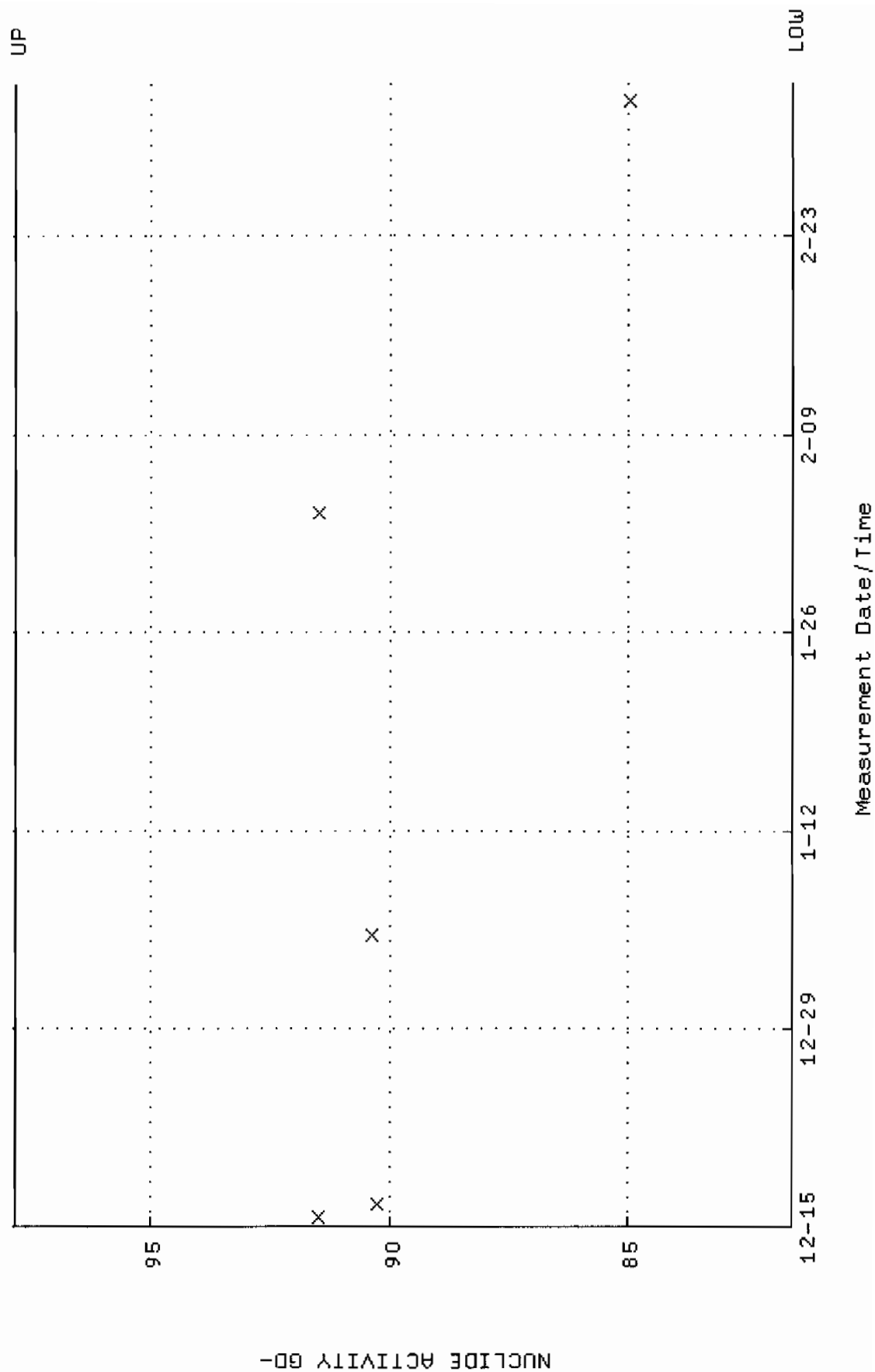
QA filename : DKA100:[ENV_ALPHA.QA.B]B004.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:00 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



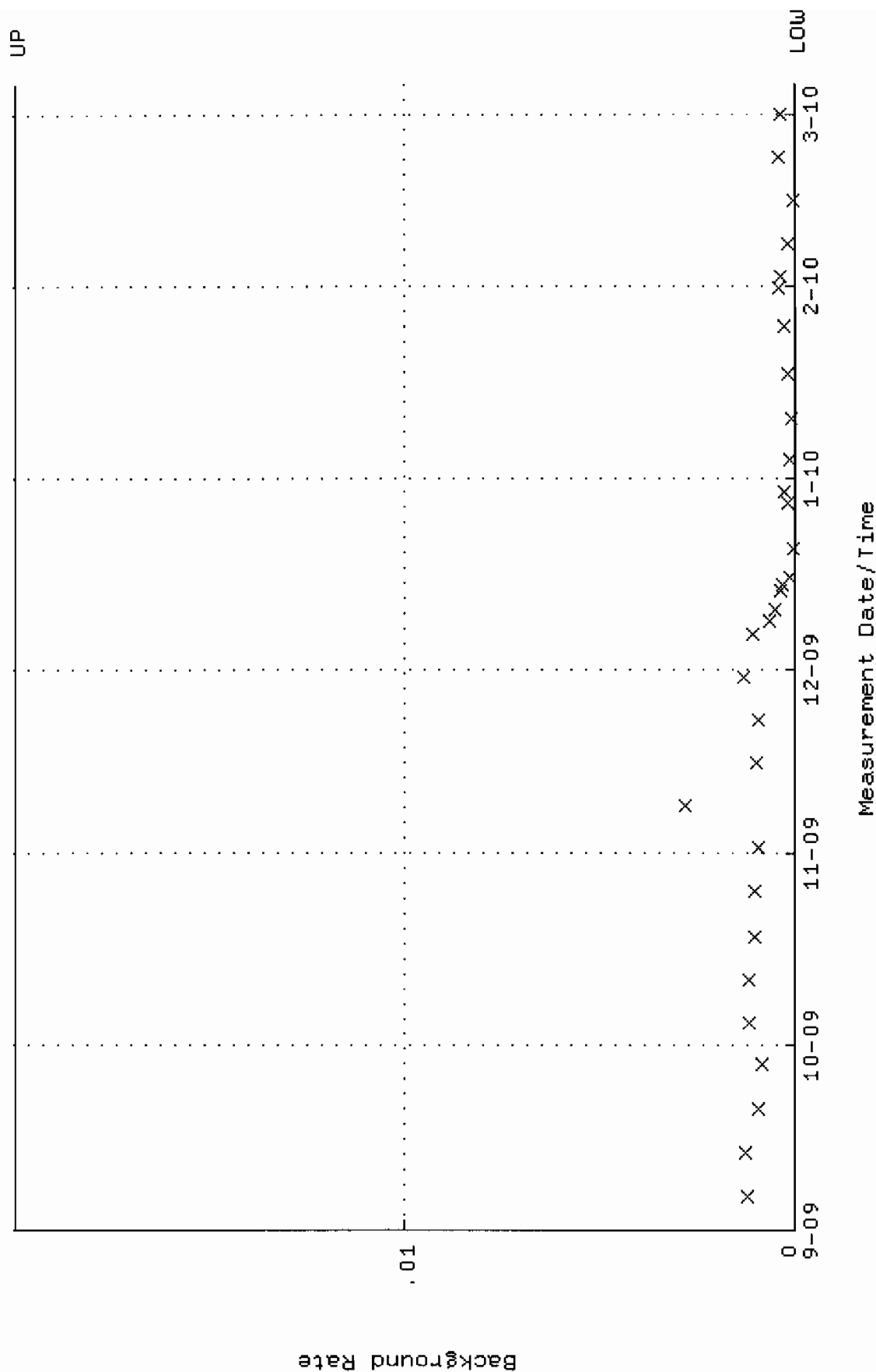
QA filename : DKA100:[ENV_ALPHA.QA.W]W006.QAF; 6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.288996 through 0.330714



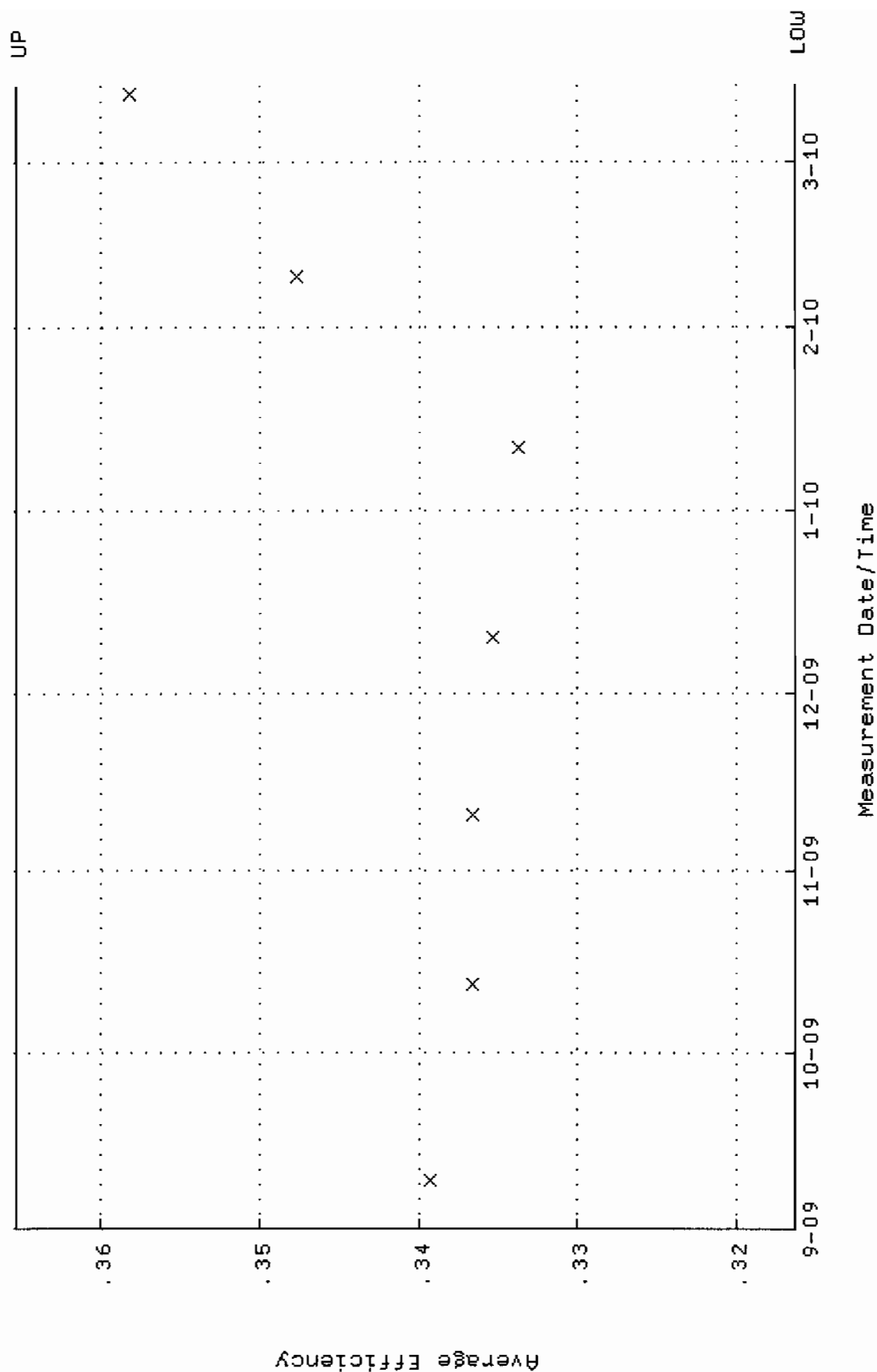
QA filename : DKA100:[ENV_ALPHA.QA.W]W0006.QAF;6
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.5567 through 97.8515



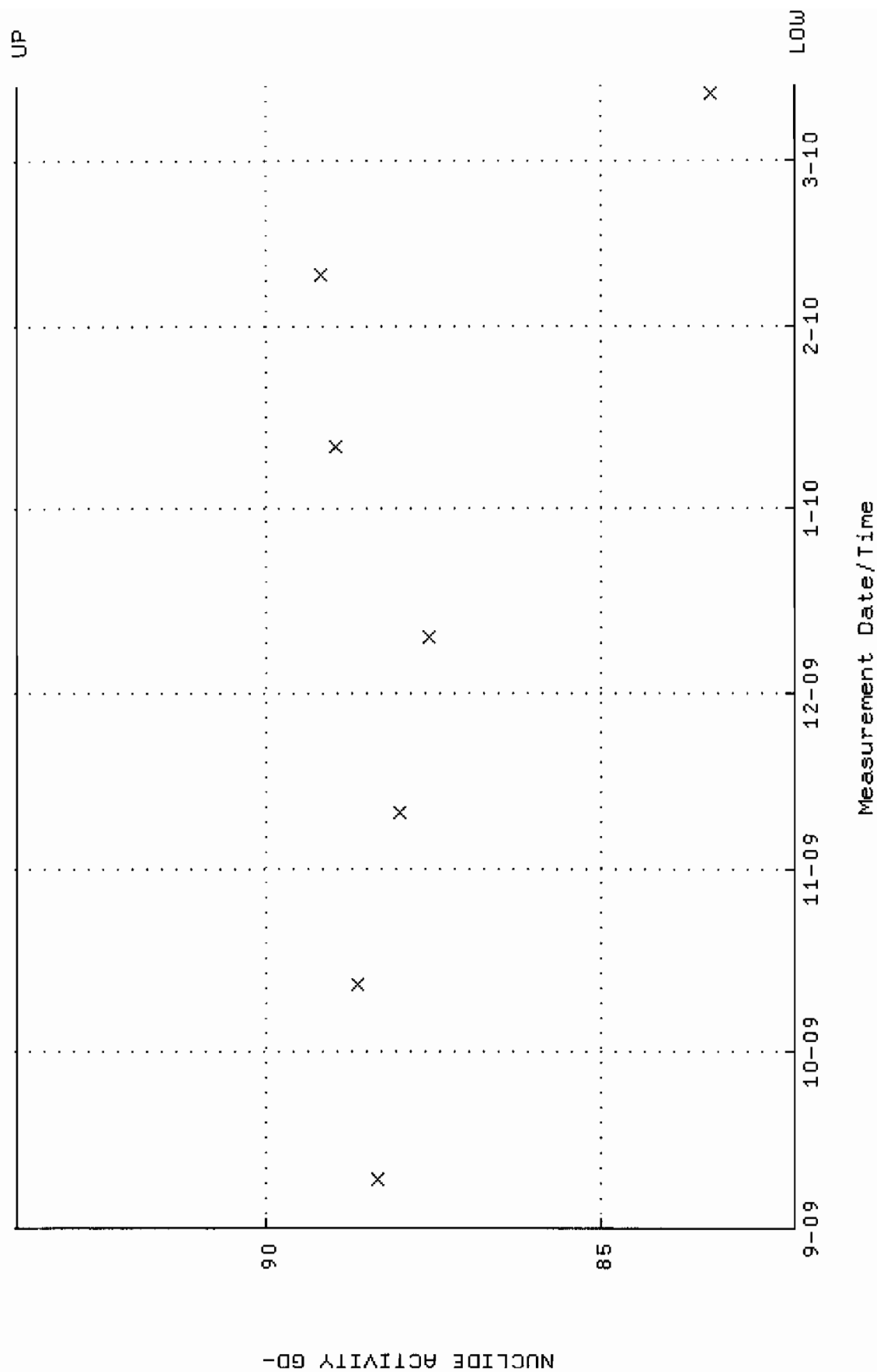
QA filename : DKA100:[ENV_ALPHA.QA.B]B006.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:00 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



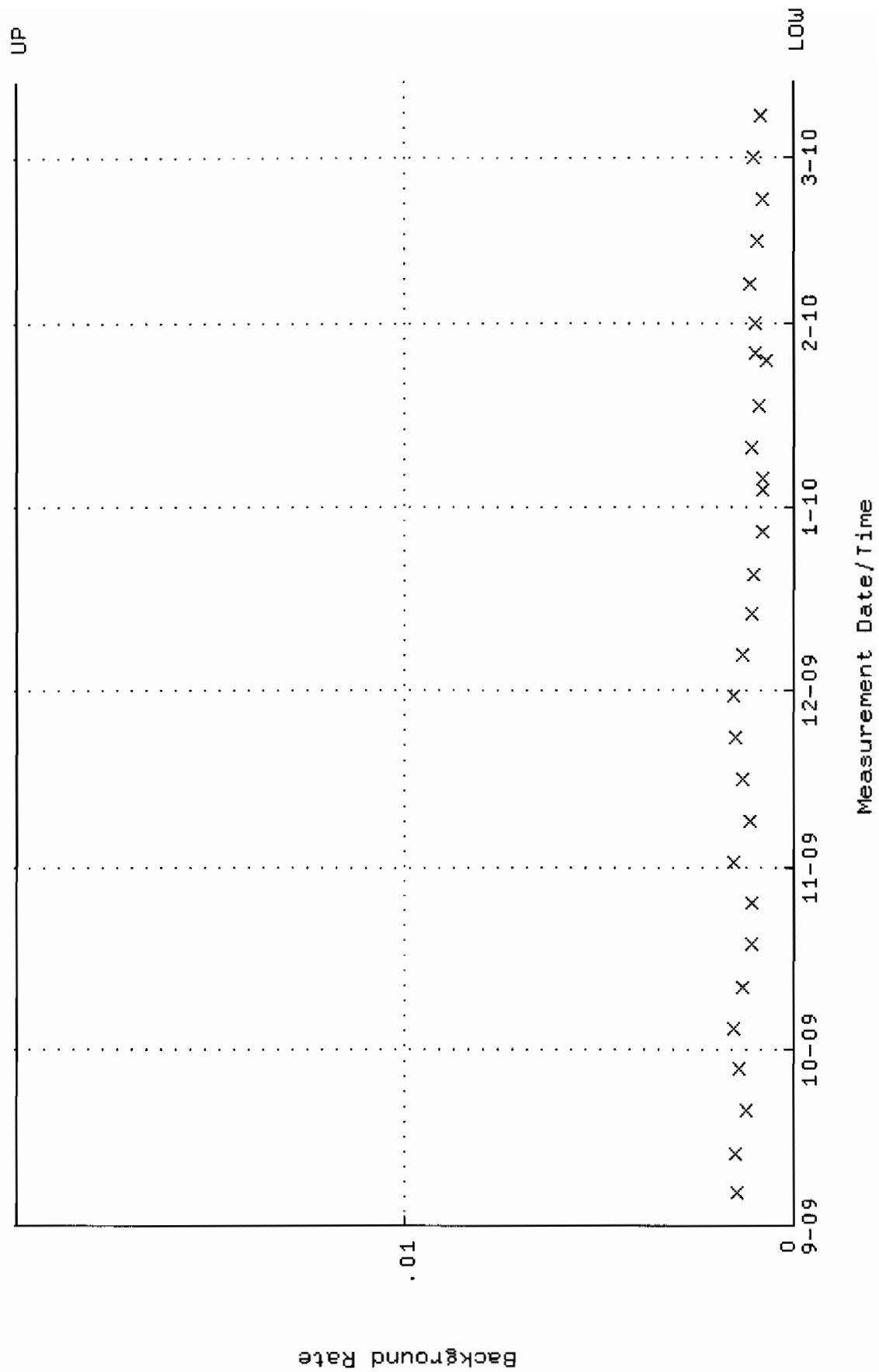
QA filename : DKA100:[ENV_ALPHA.QA.W]W083.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.316282 through 0.365366



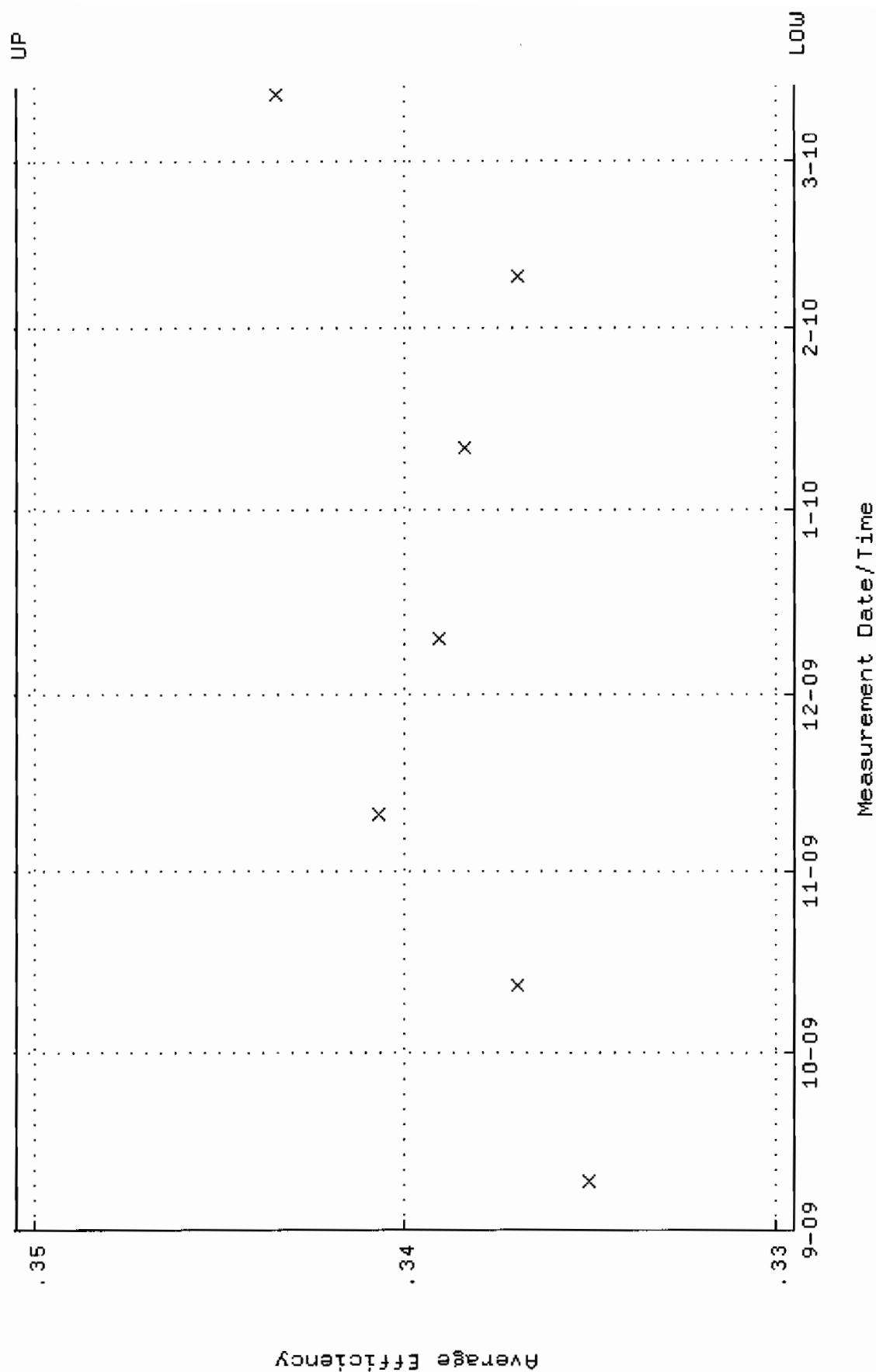
QA filename : DKA100:[ENV_ALPHA.QA.W]W083.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.1020 through 93.7348



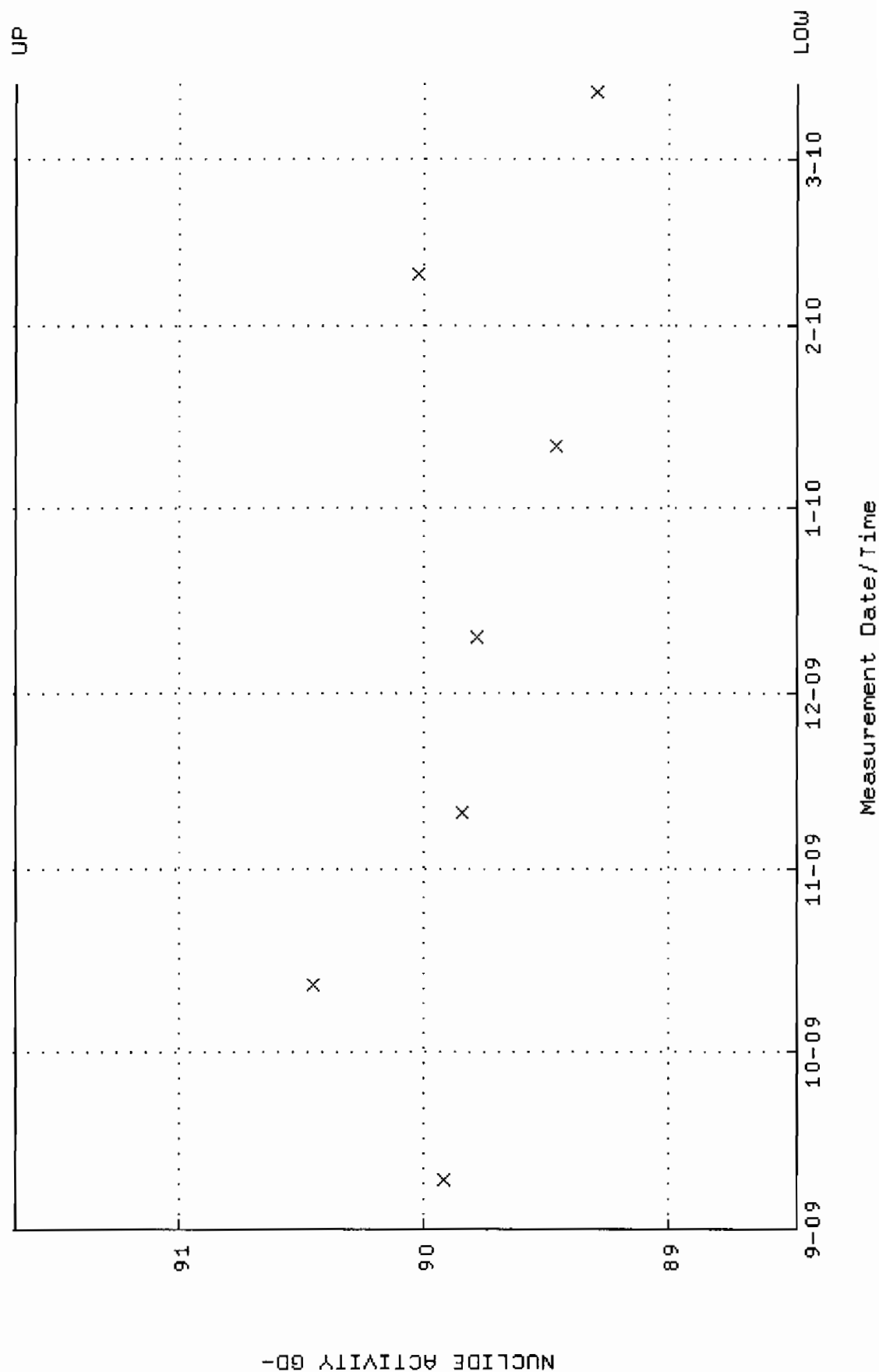
QA filename : DKA100:[ENV_ALPHA.QA.B]B083.QAF;3
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



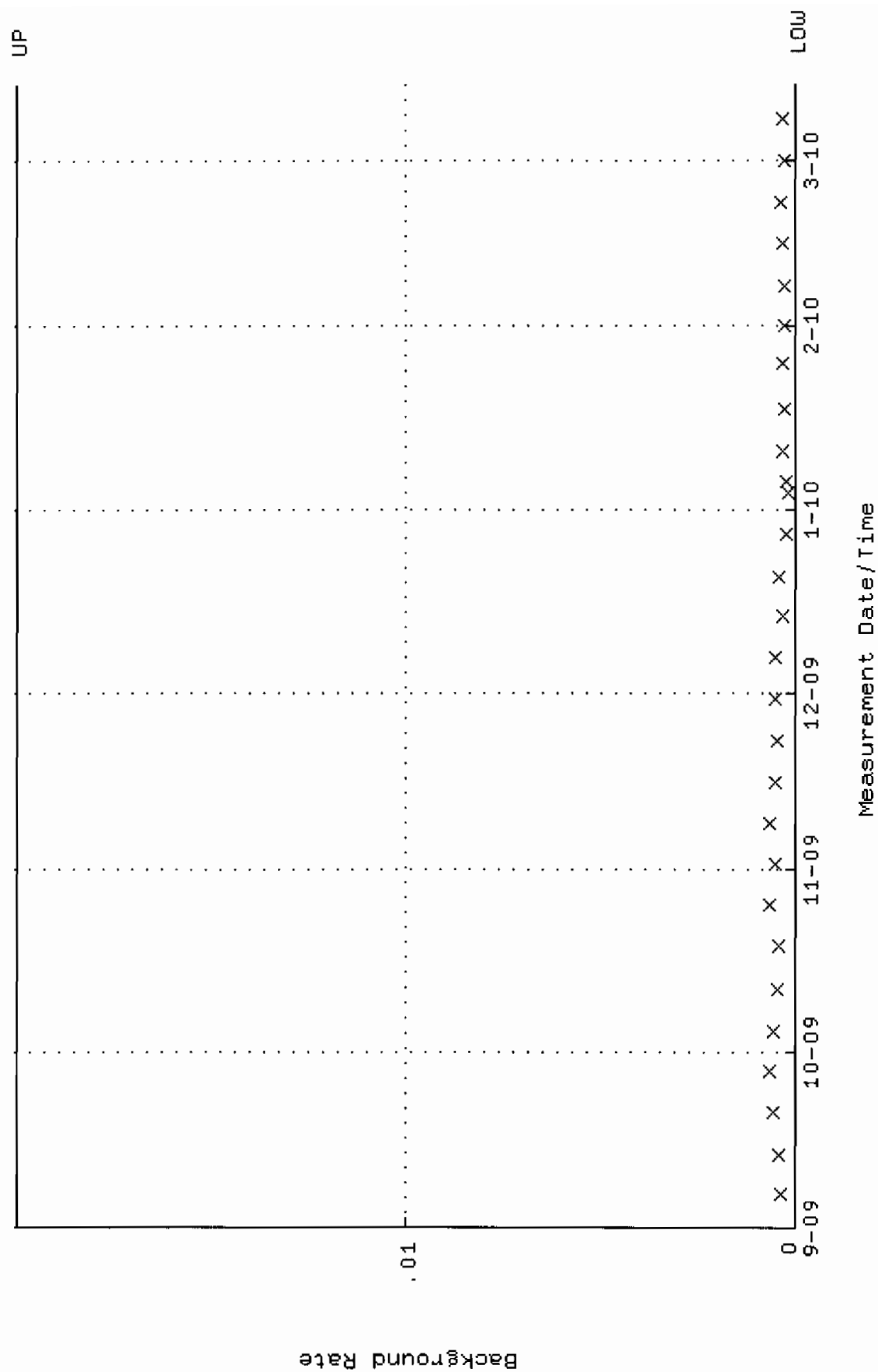
QA filename : DKA100:[ENV_ALPHA,QA.W]W084.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.329490 through 0.350492



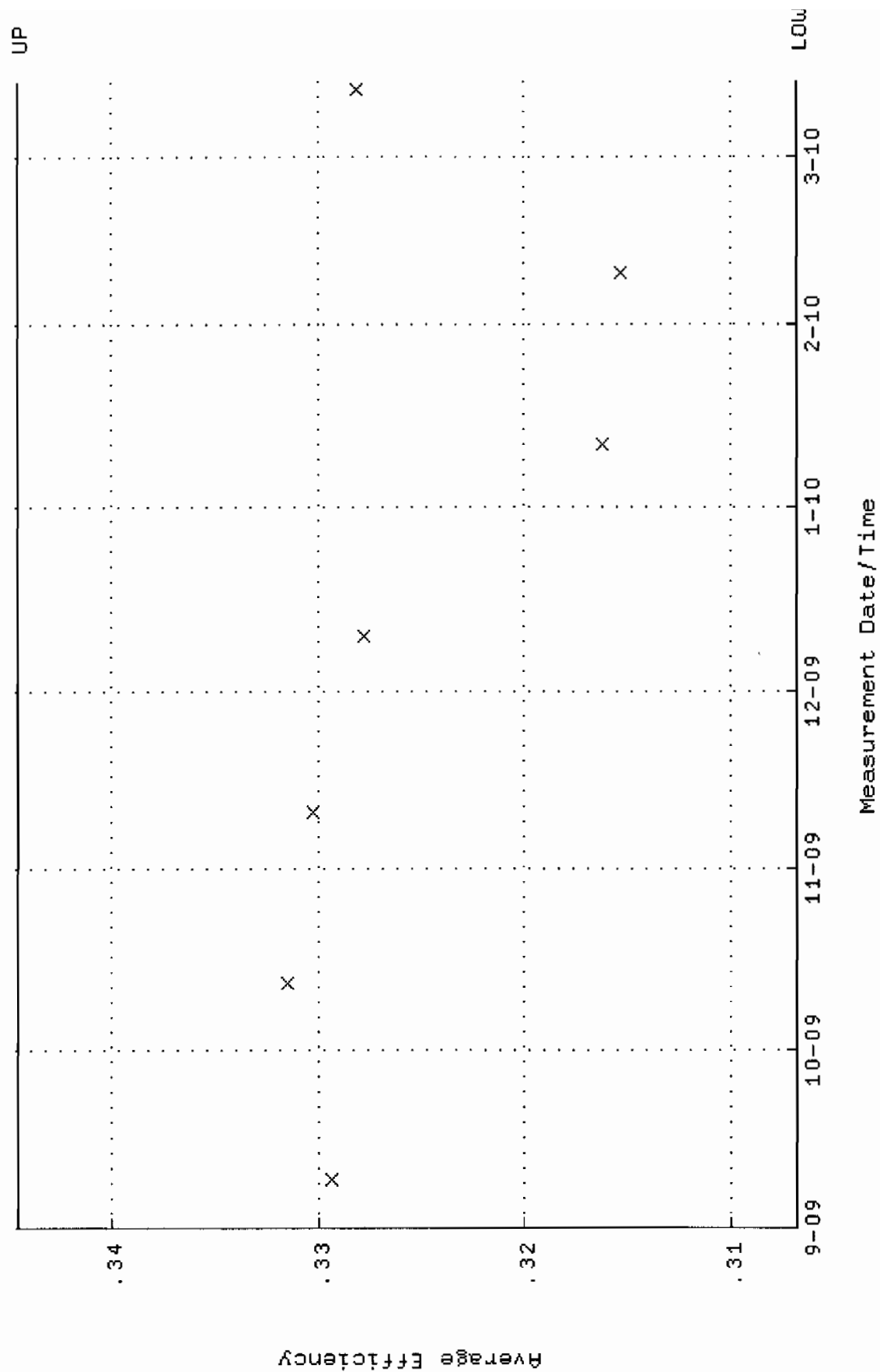
QA filename : DKA100:[ENV_ALPHA.QA.W]W084.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.4771 through 91.6651



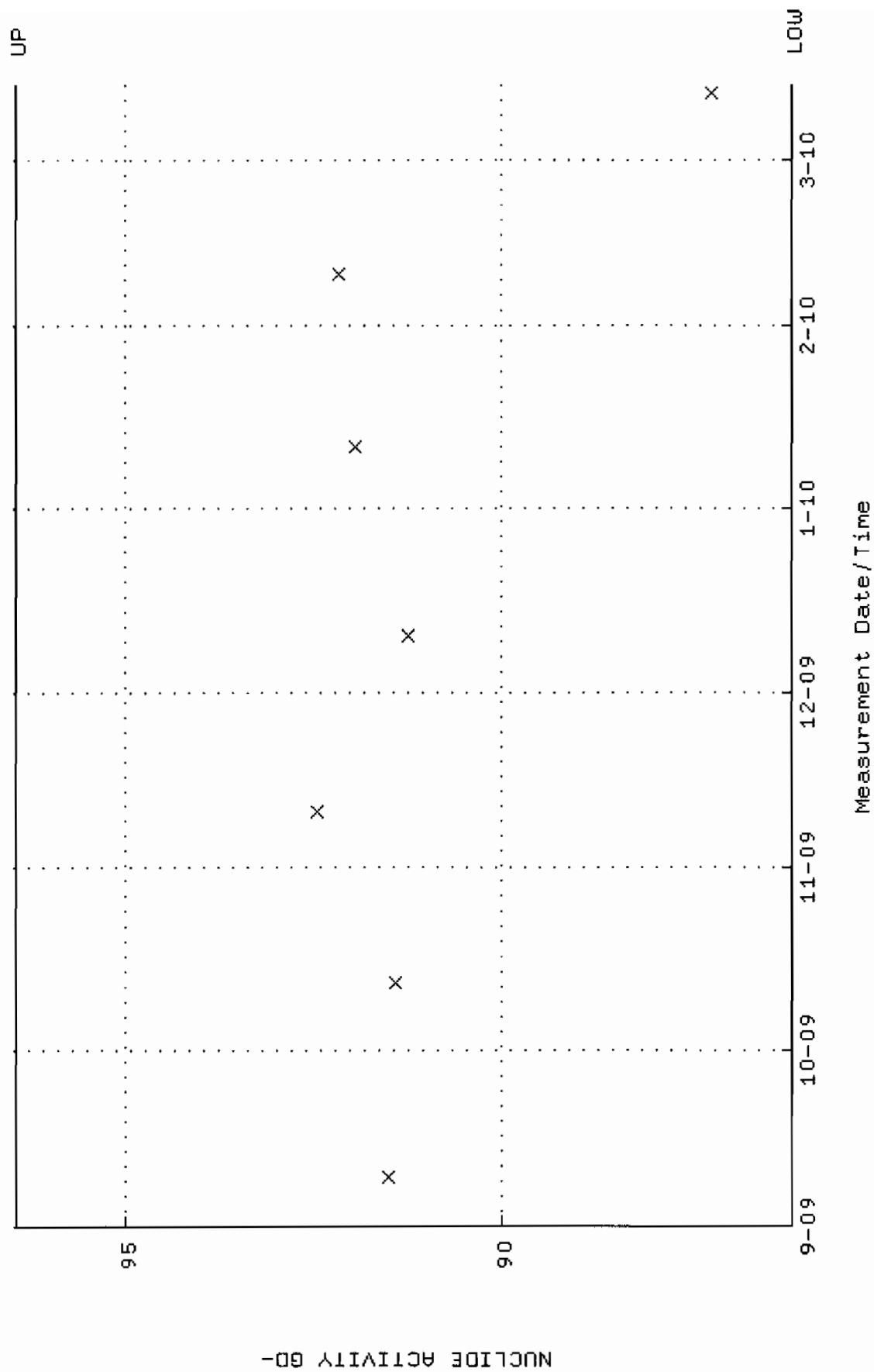
QA filename : DKA100:[ENVY_ALPHA.QA.B]B084.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



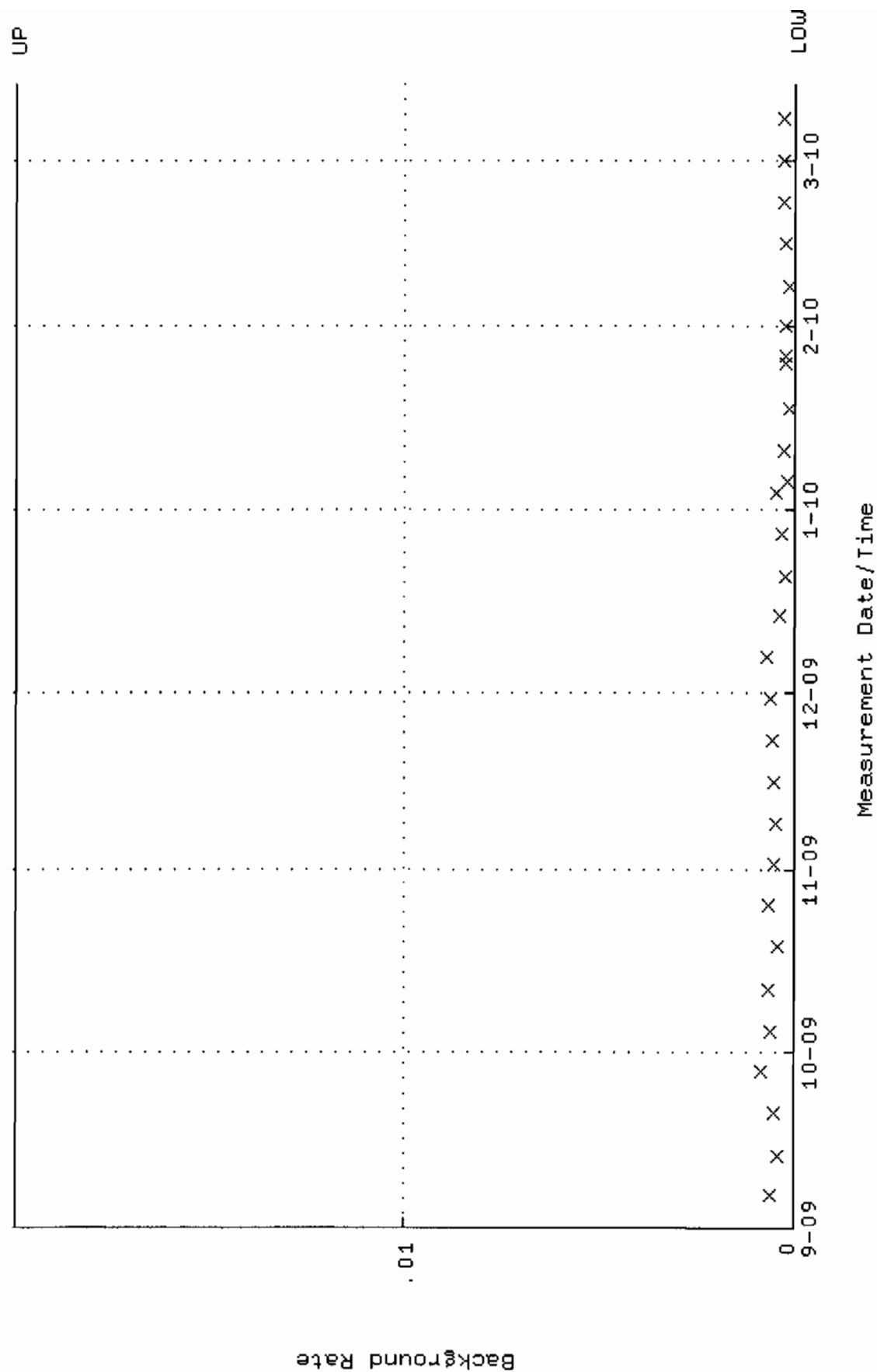
QA filename : DKA100:[ENV_ALPHA.QA.W]W085.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.306815 through 0.344543



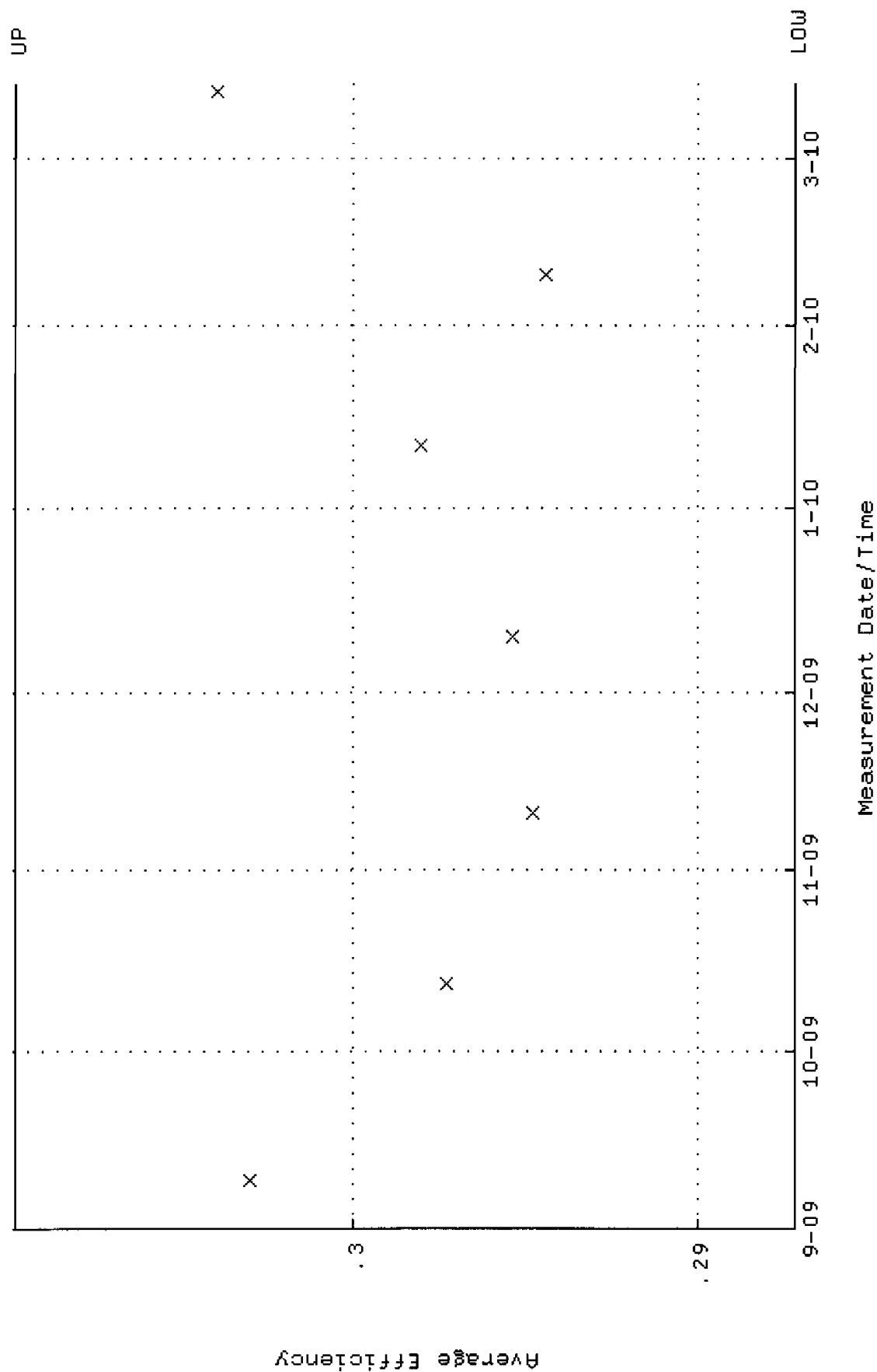
QA filename : DKA100:[ENV_ALPHA.QA.W]W085.QAF;6
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.1313 through 96.4525



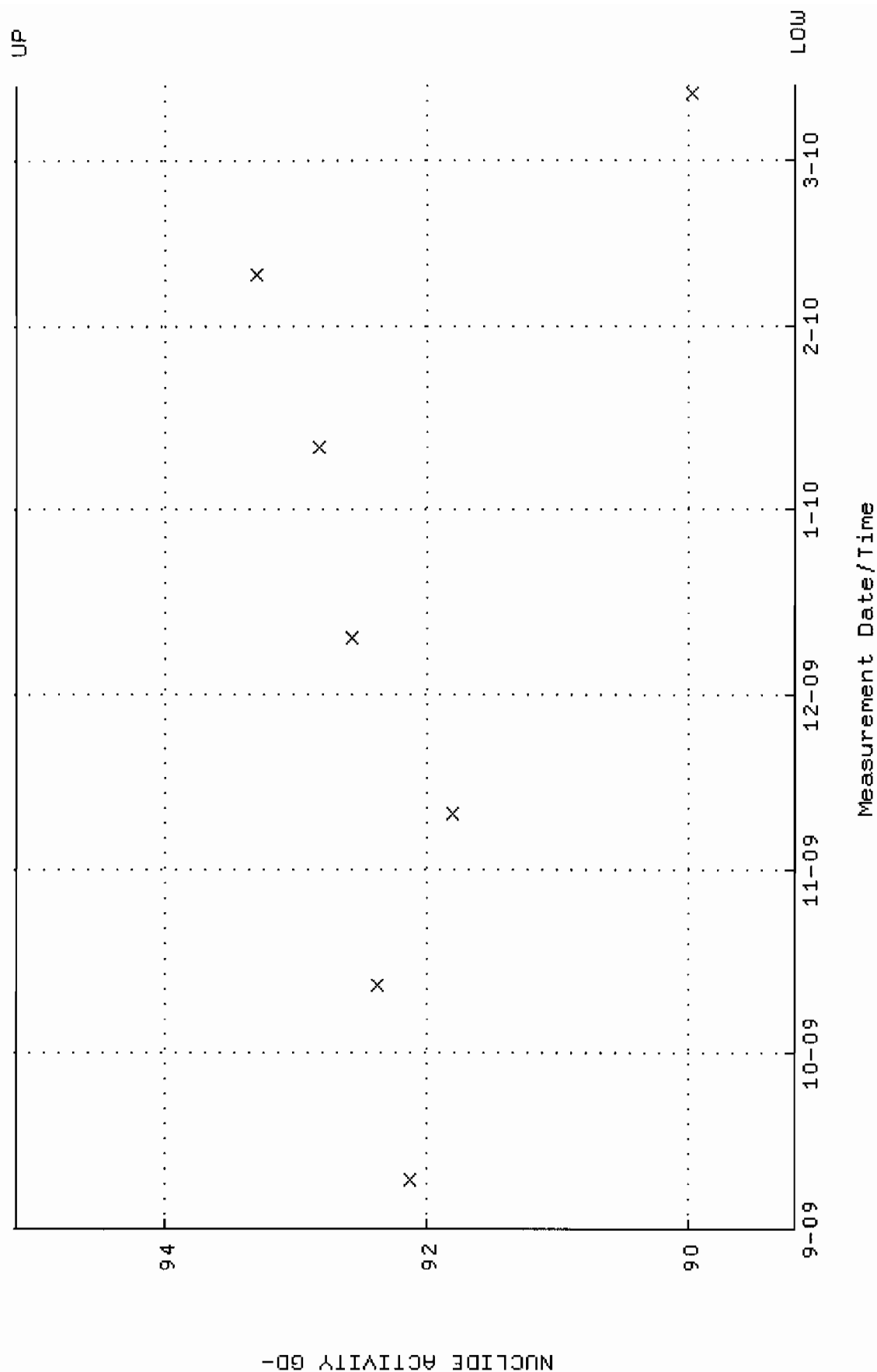
QA filename : DKA100:[ENV_ALPHA.QA.B]B085.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W086.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.287158 through 0.309794



QA filename : DKA100:[ENV_ALPHA.QA.W]W086.QAF;4
 Parameter Name : NLAIVITY-G0148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.1886 through 95.1274

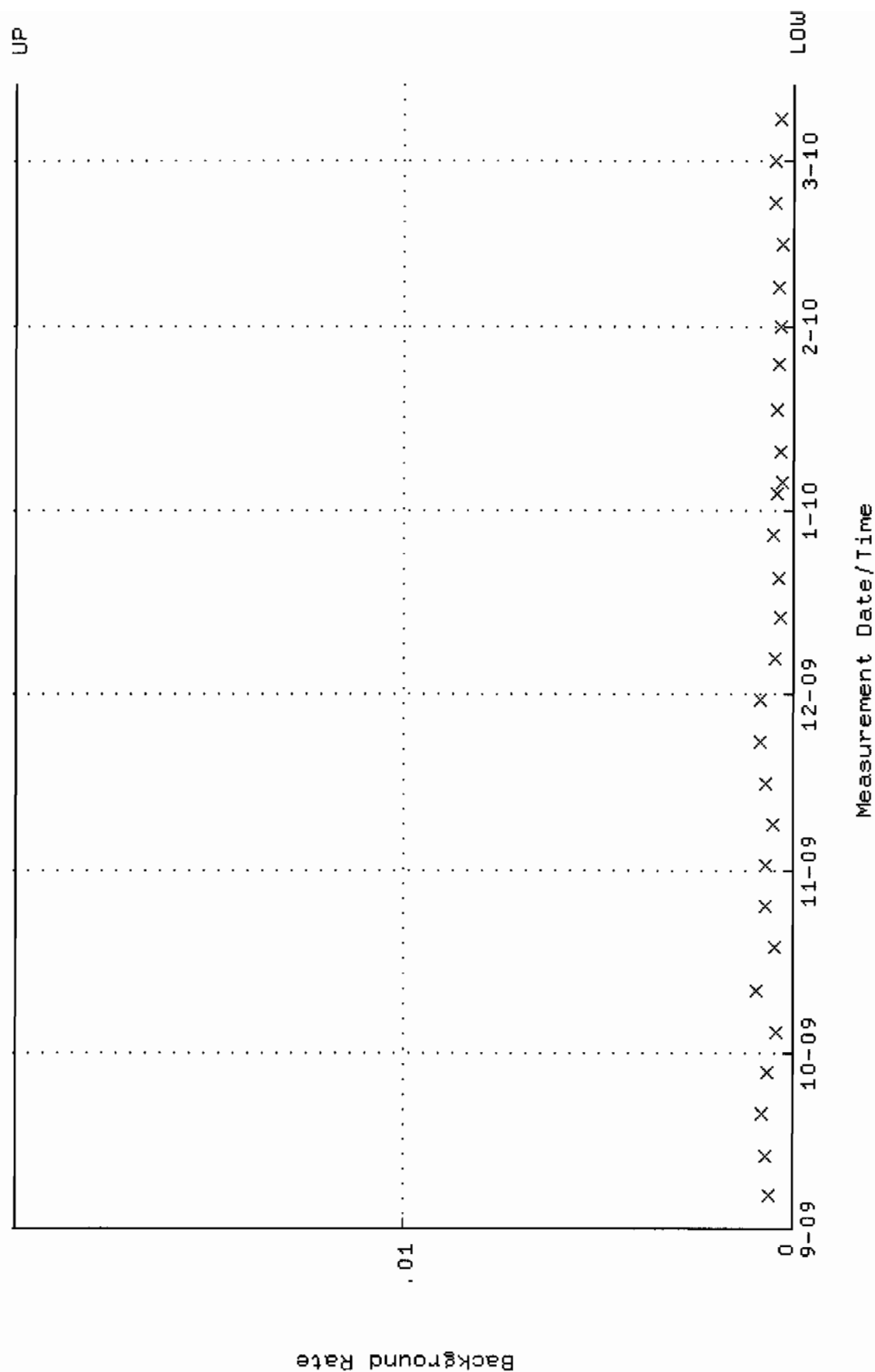


QA filename : DKA100:[ENV_ALPHA.QA.B]B086.QAF;1

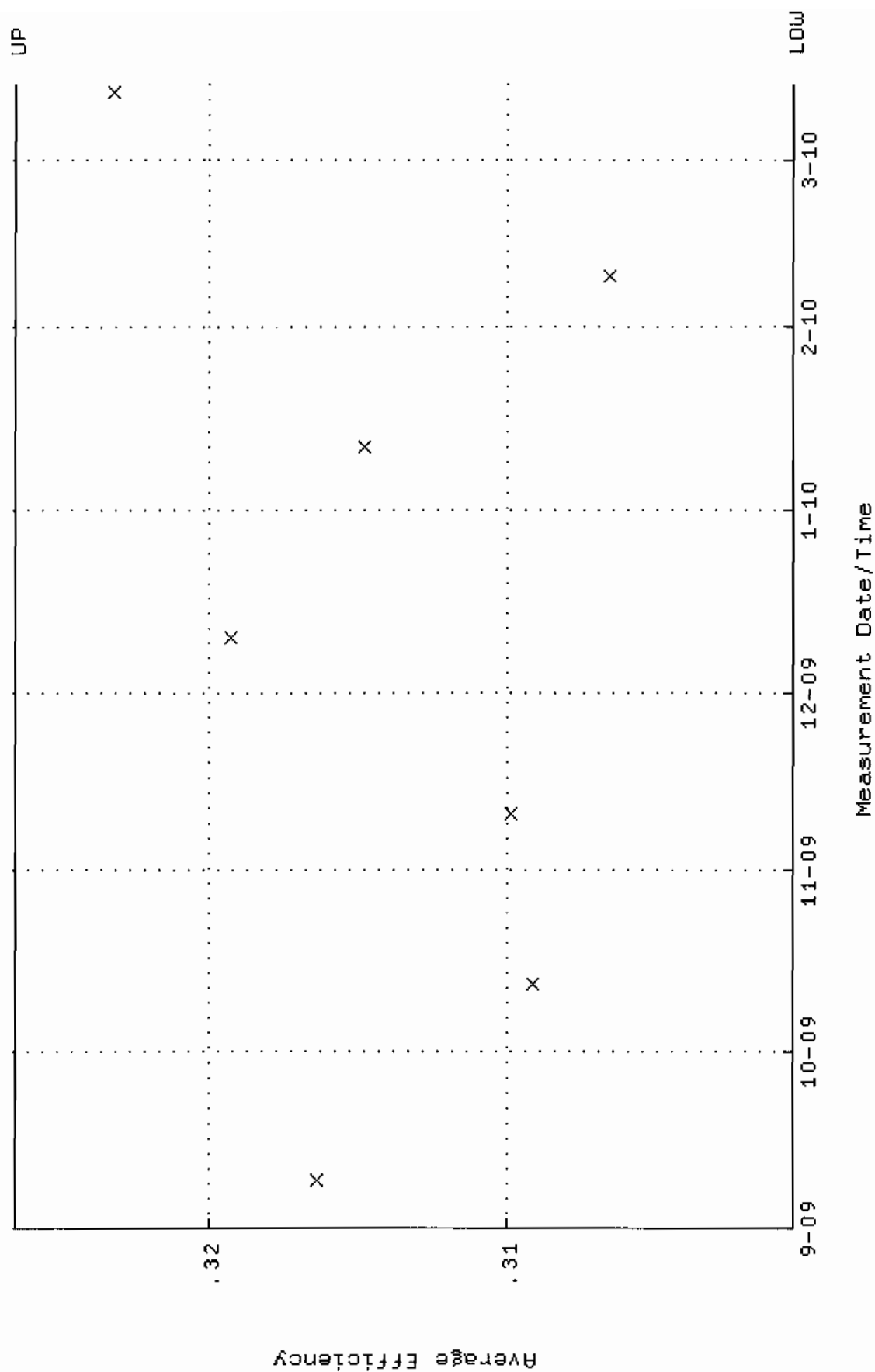
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00

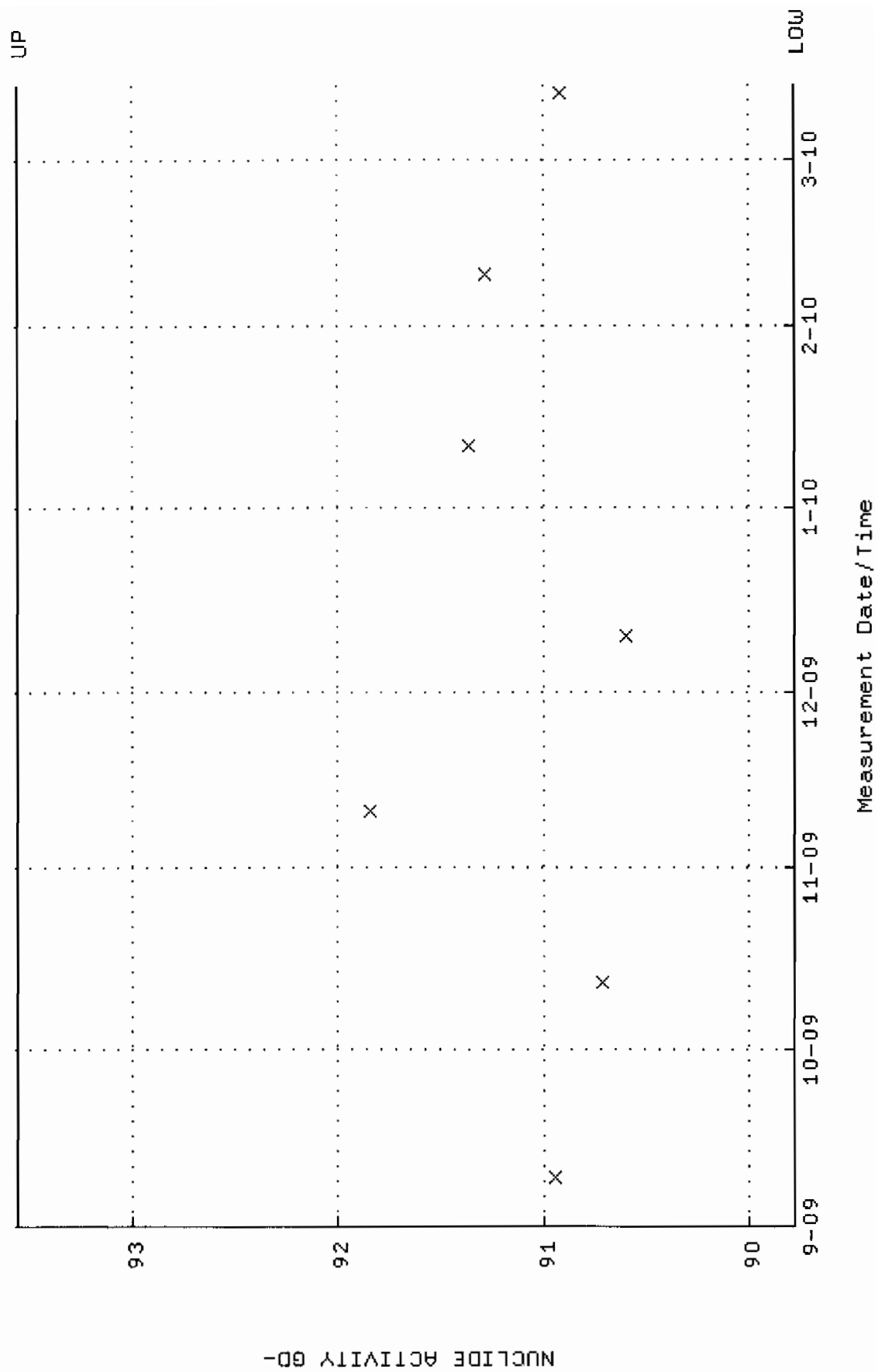
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



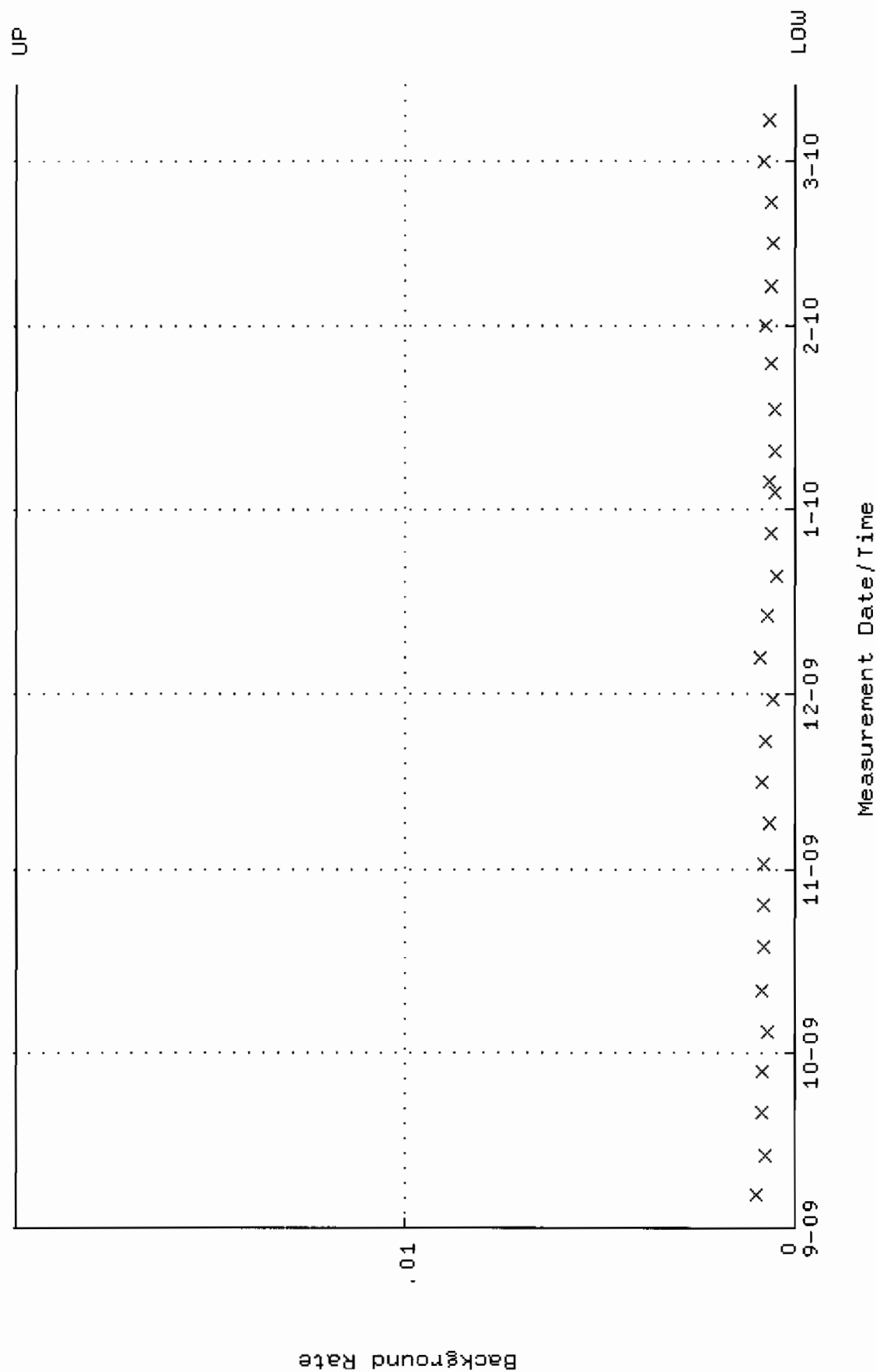
QA filename : DKA100:[ENV_ALPHA.QA.W]W087.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.300487 through 0.326465



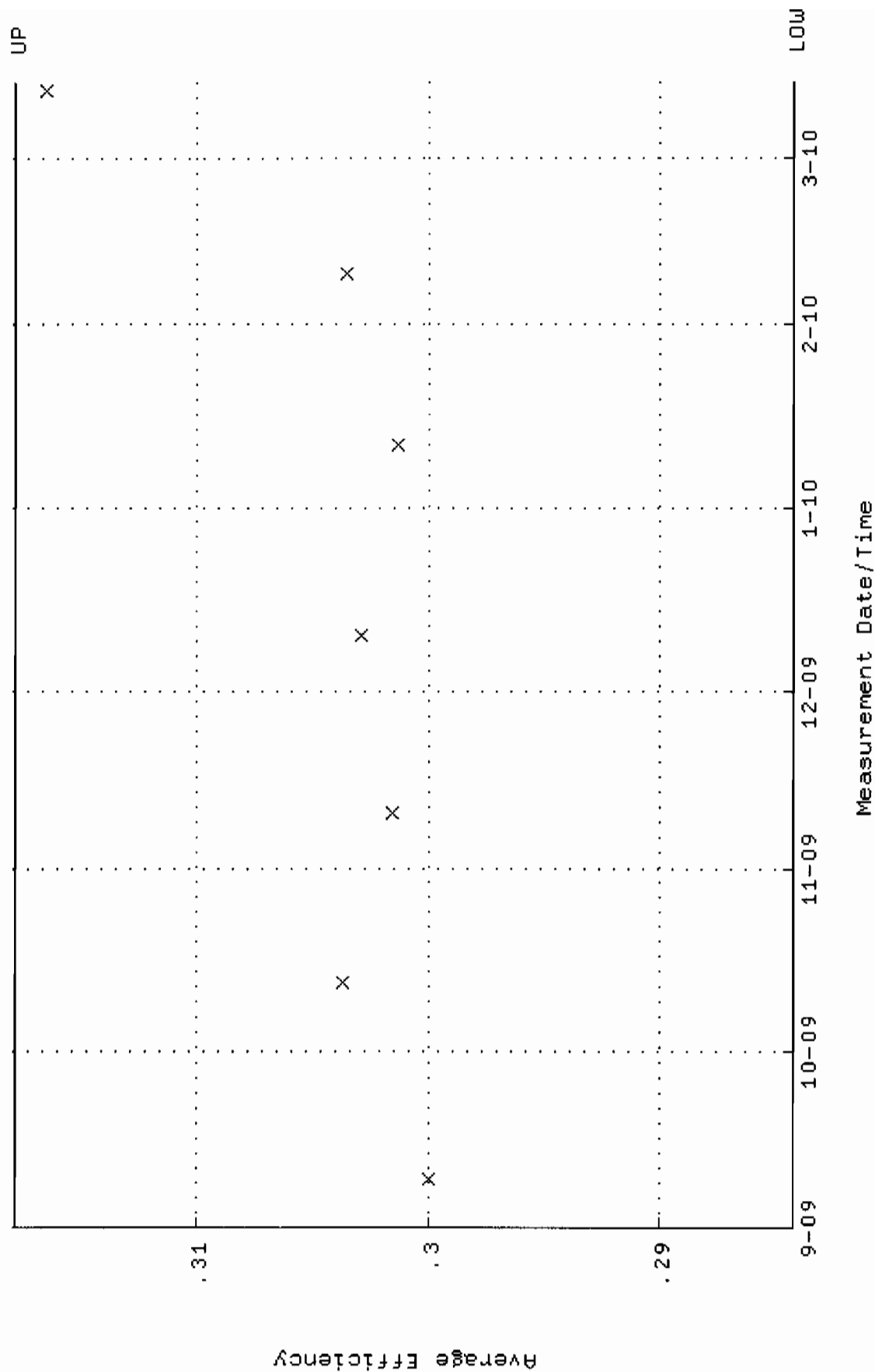
QA filename : DKA100:[ENV_ALPHA.QA.W]W087.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.7763 through 93.5625



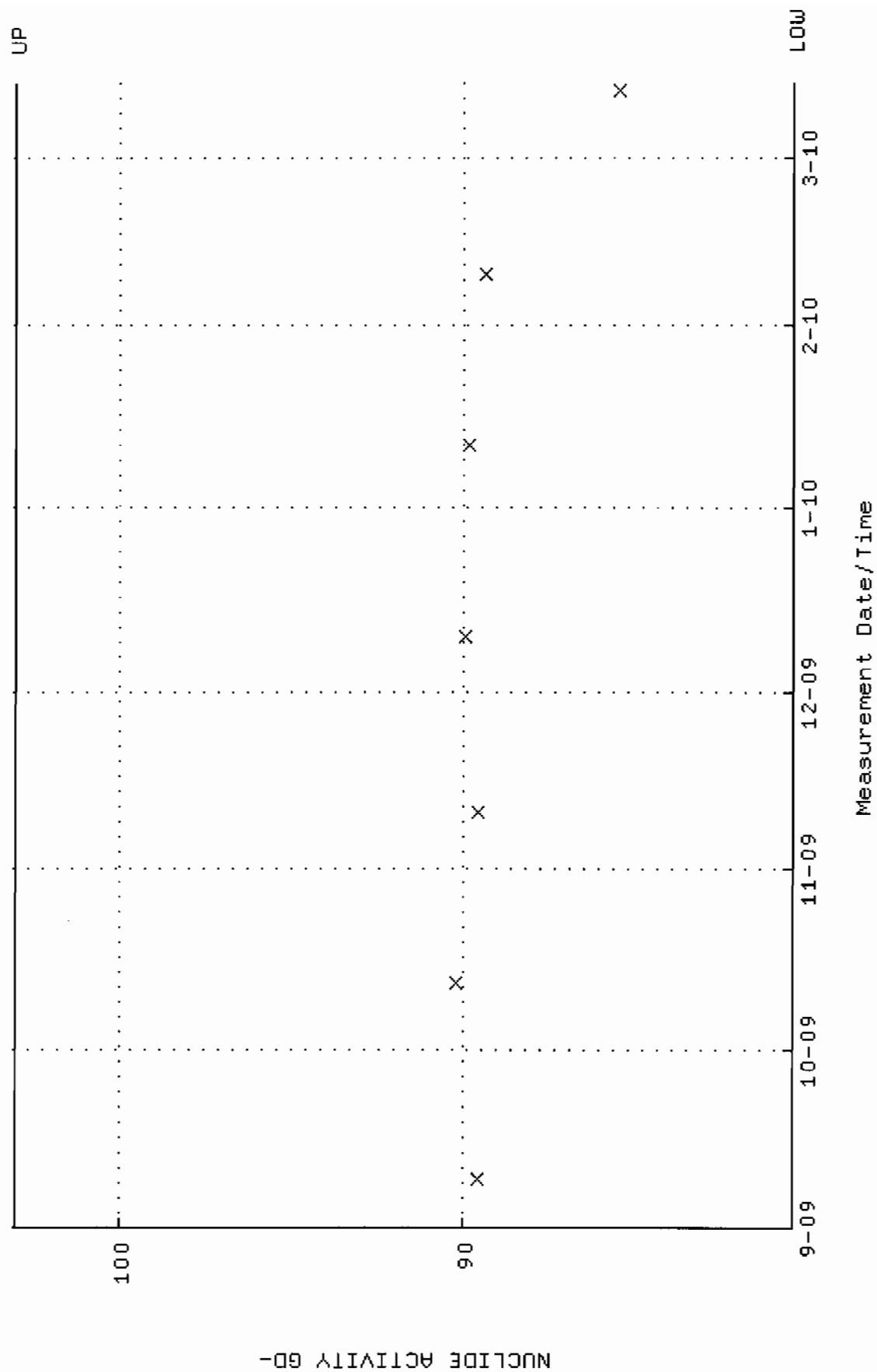
QA filename : DKA100:[ENV_ALPHA.QA.B]B087.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



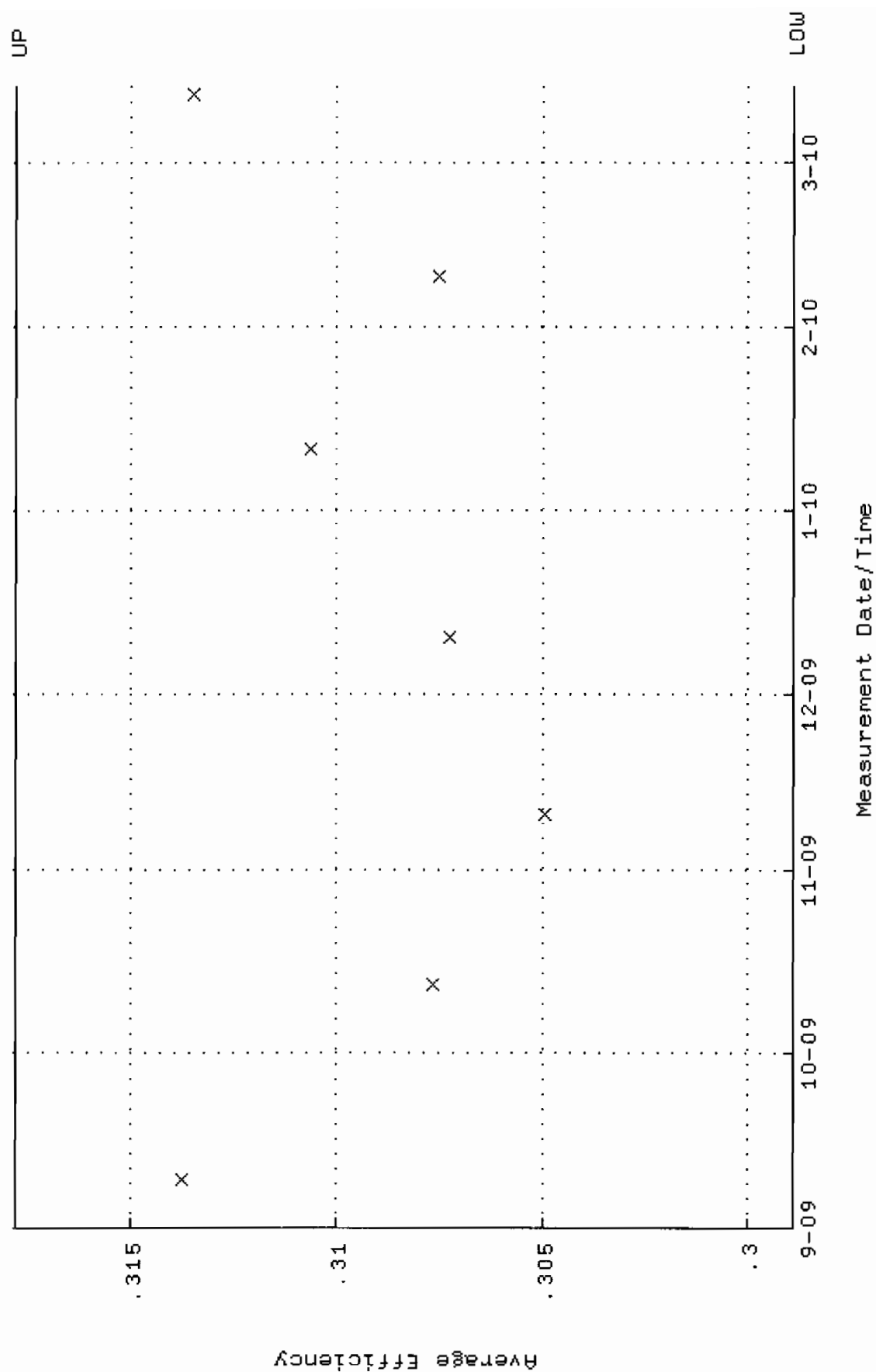
QA filename : DKA100:[ENV_ALPHA.QA.W]W088.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.284264 through 0.317864



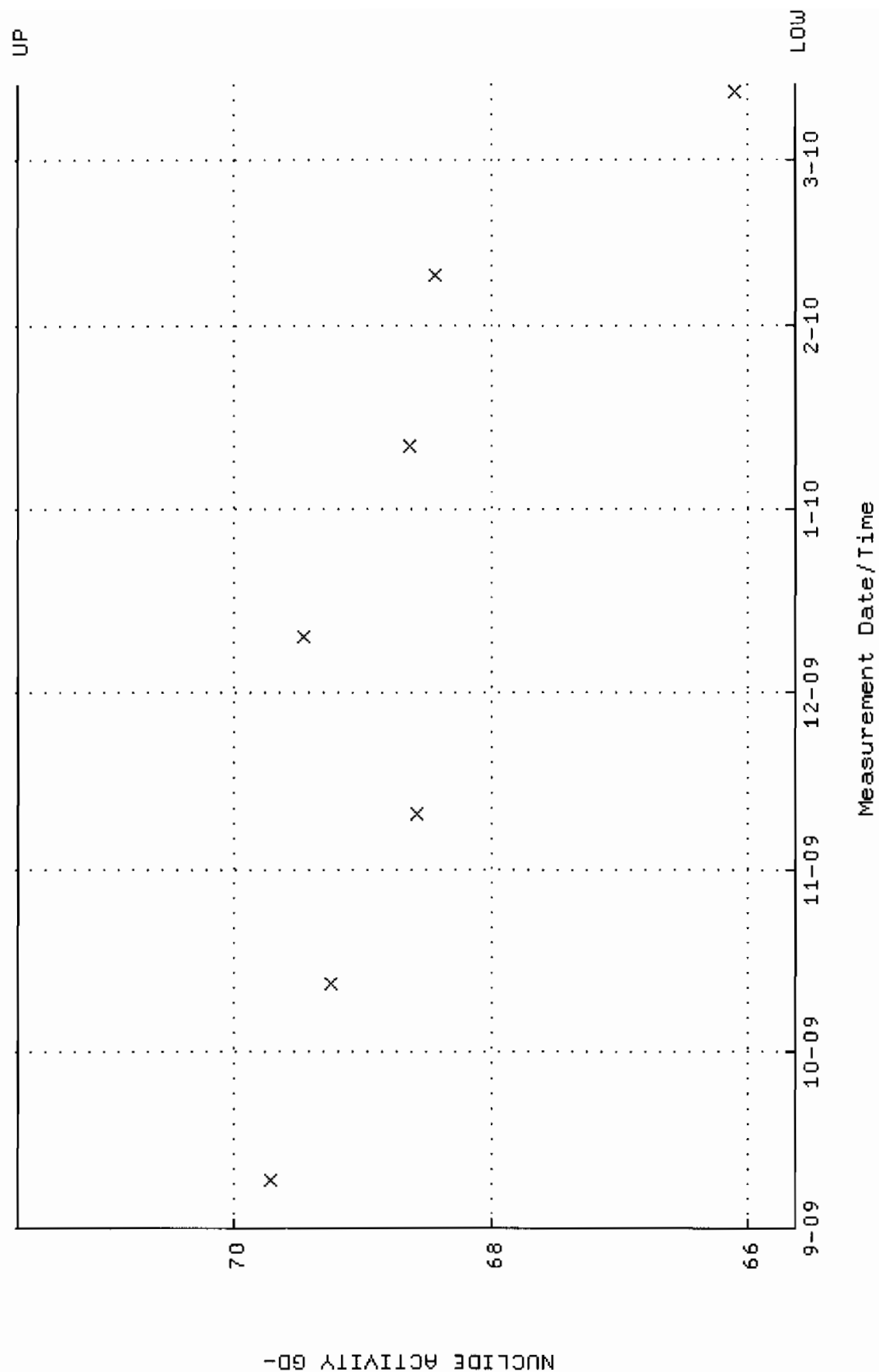
QA filename : DKA100:[ENV_ALPHA.QA.W]W088.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 80.4493 through 103.037



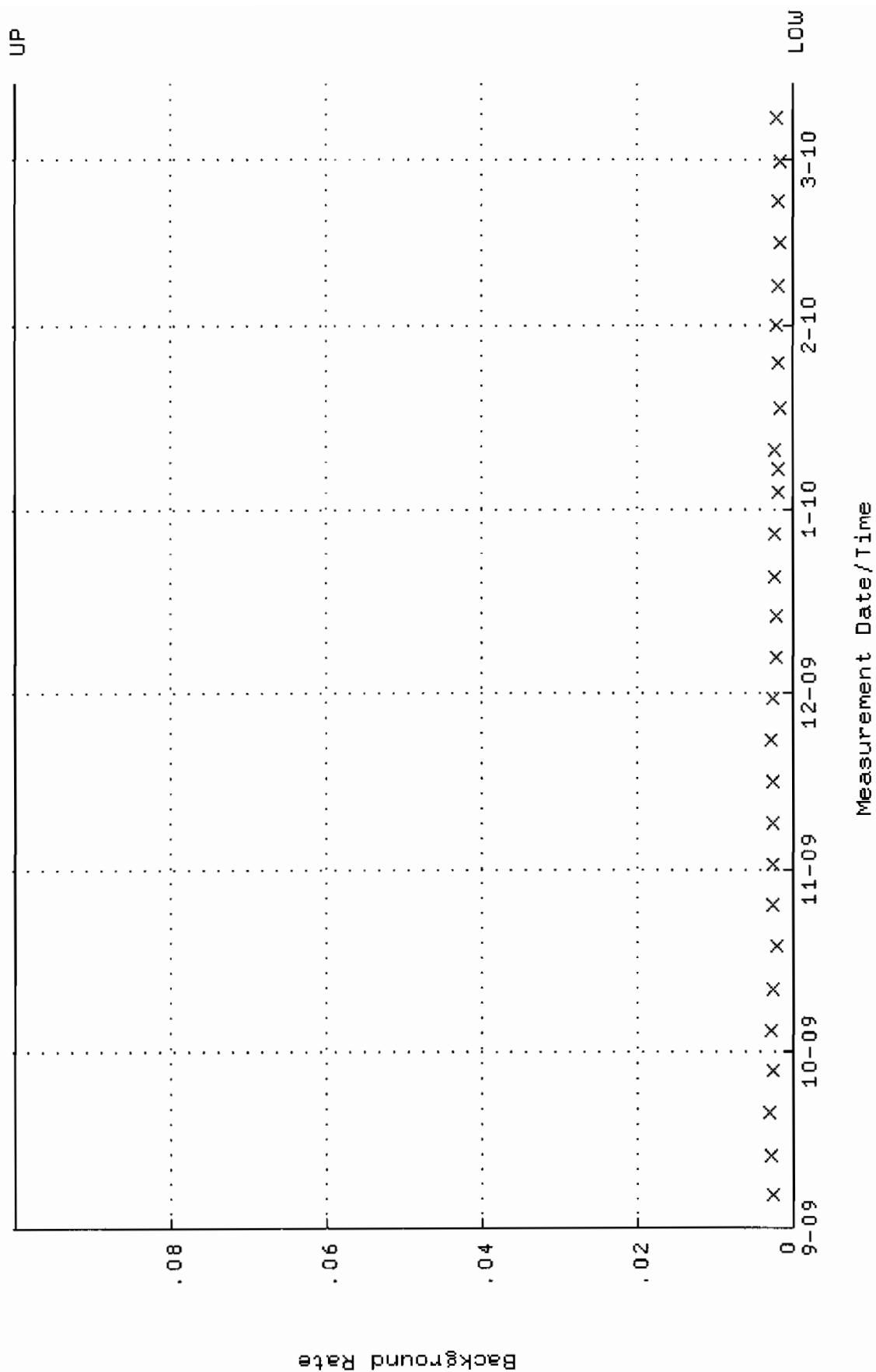
QA filename : DKA100:[ENV_ALPHA.QA.W]W095.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.298900 through 0.317790



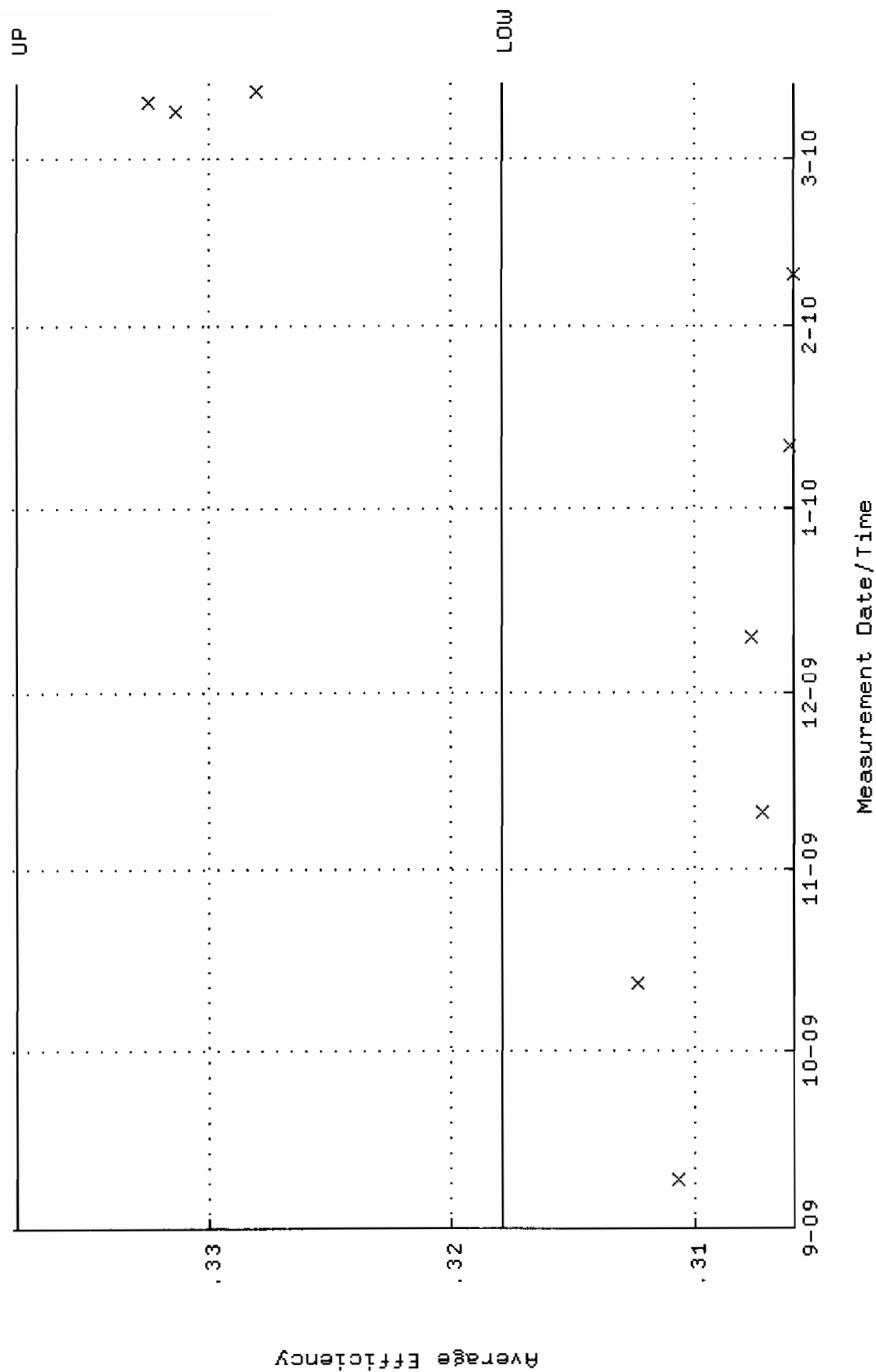
QA filename : DKA100:[ENV_ALPHA.QA.W]U095.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 65.6370 through 71.6700



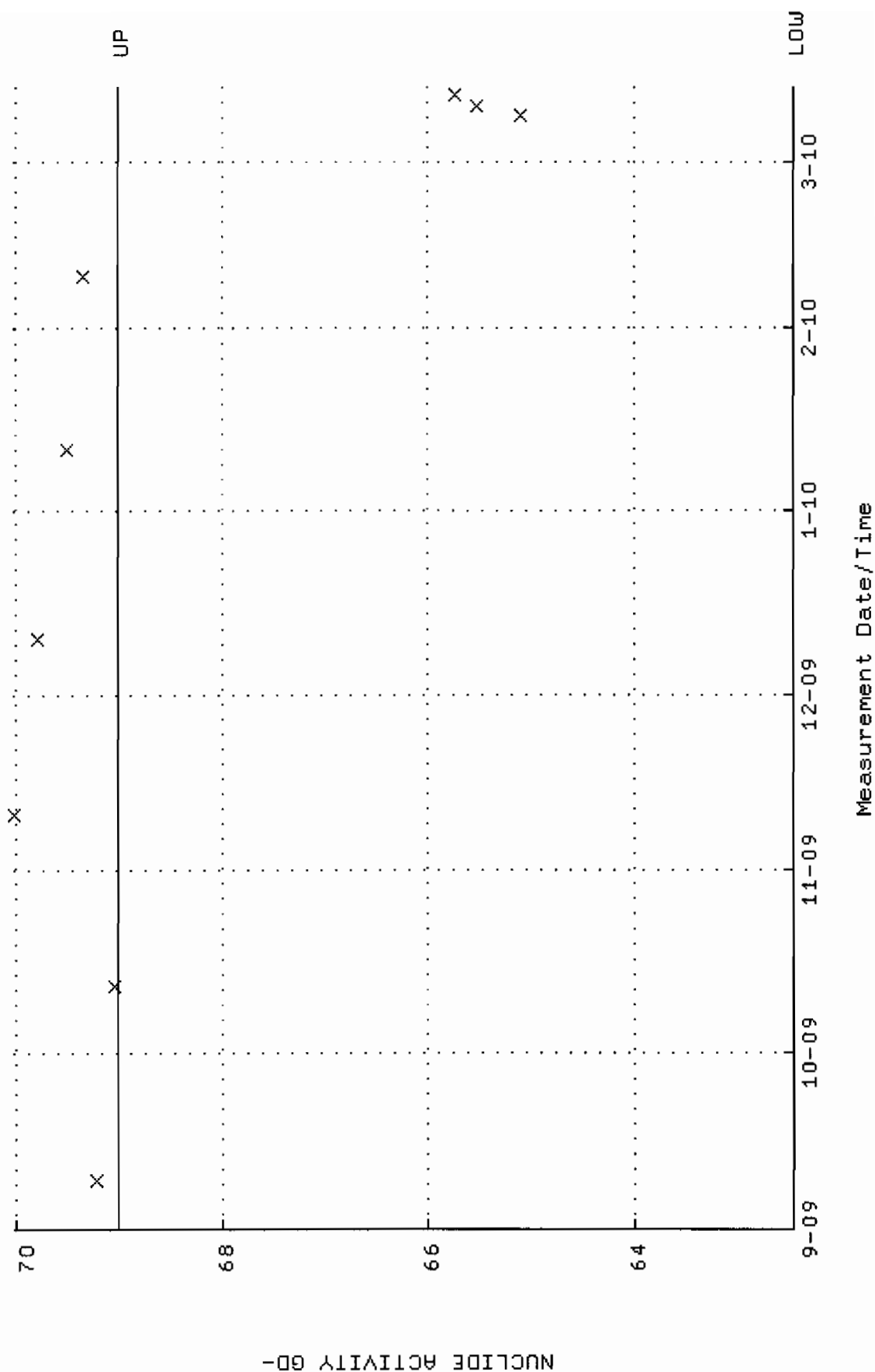
QA filename : DKA100:[ENV_ALPHA.QA.B]B095.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



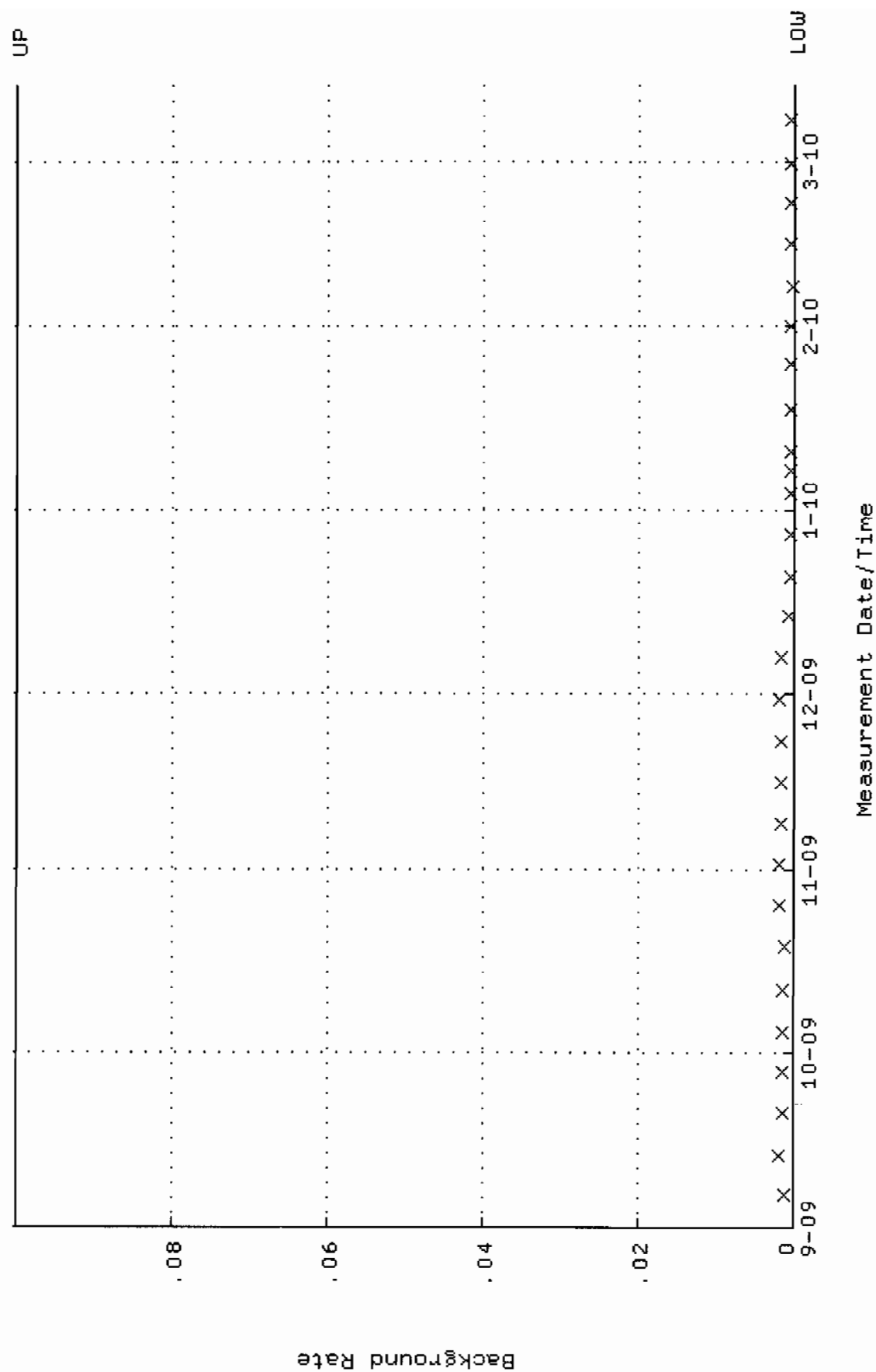
QA filename : OKA100:[ENV_ALPHA.QA.W]W096.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.317970 through 0.337970



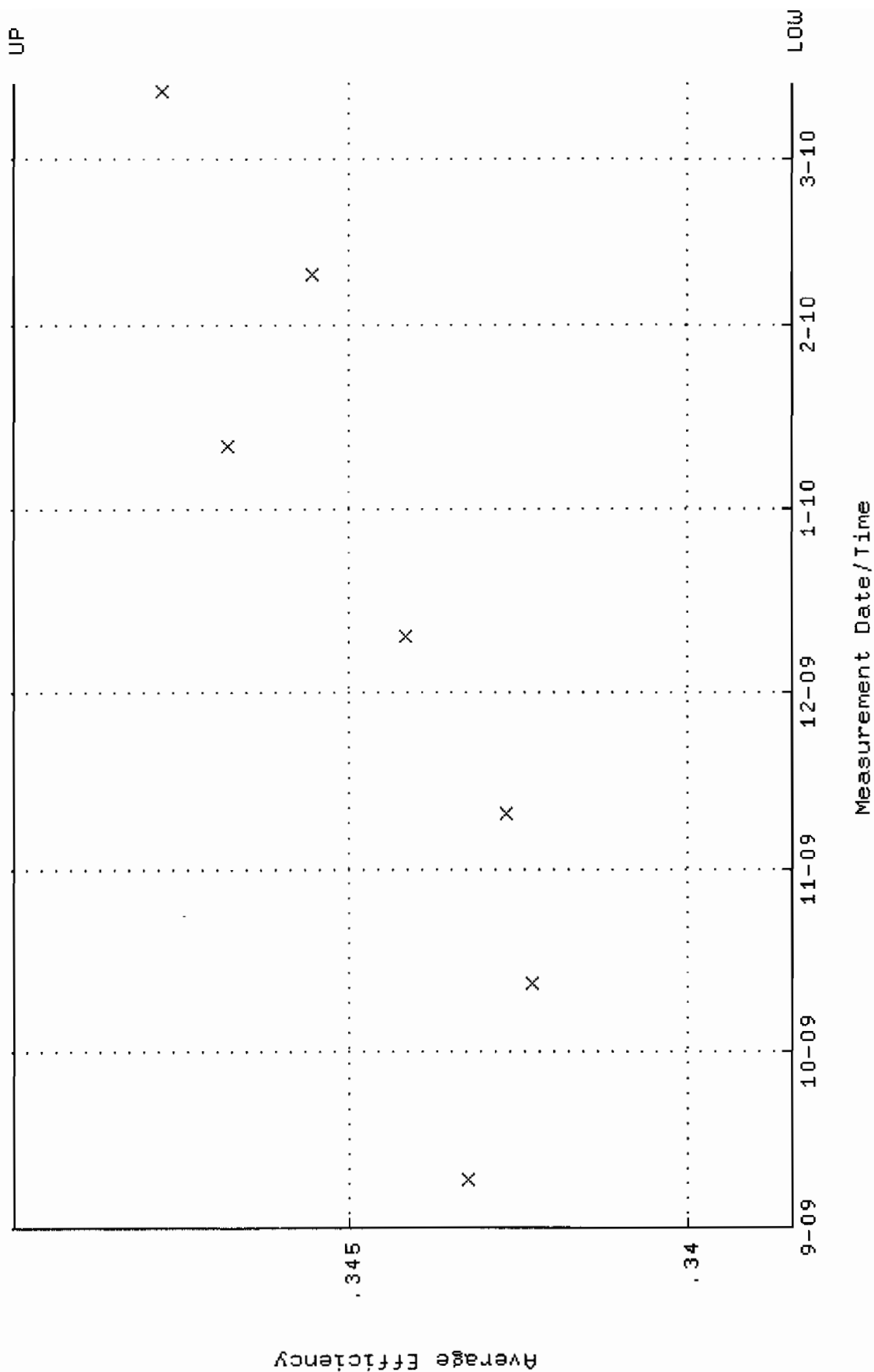
QA filename : DKA100:[ENV_ALPHA.QA.W]W096.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 62.4466 through 69.0200



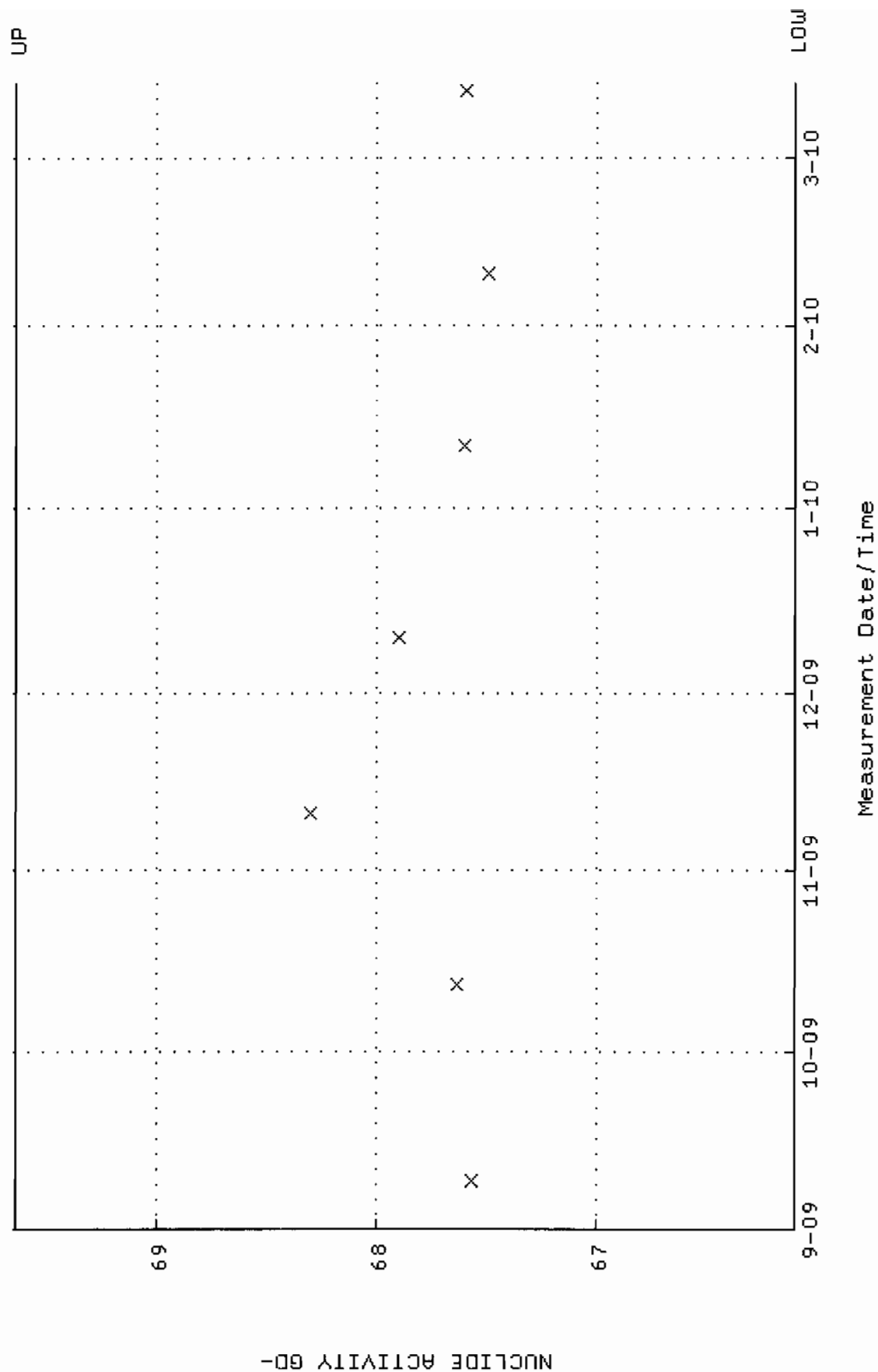
QA filename : DKA100:[ENV_ALPHA.QA.B]B096.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



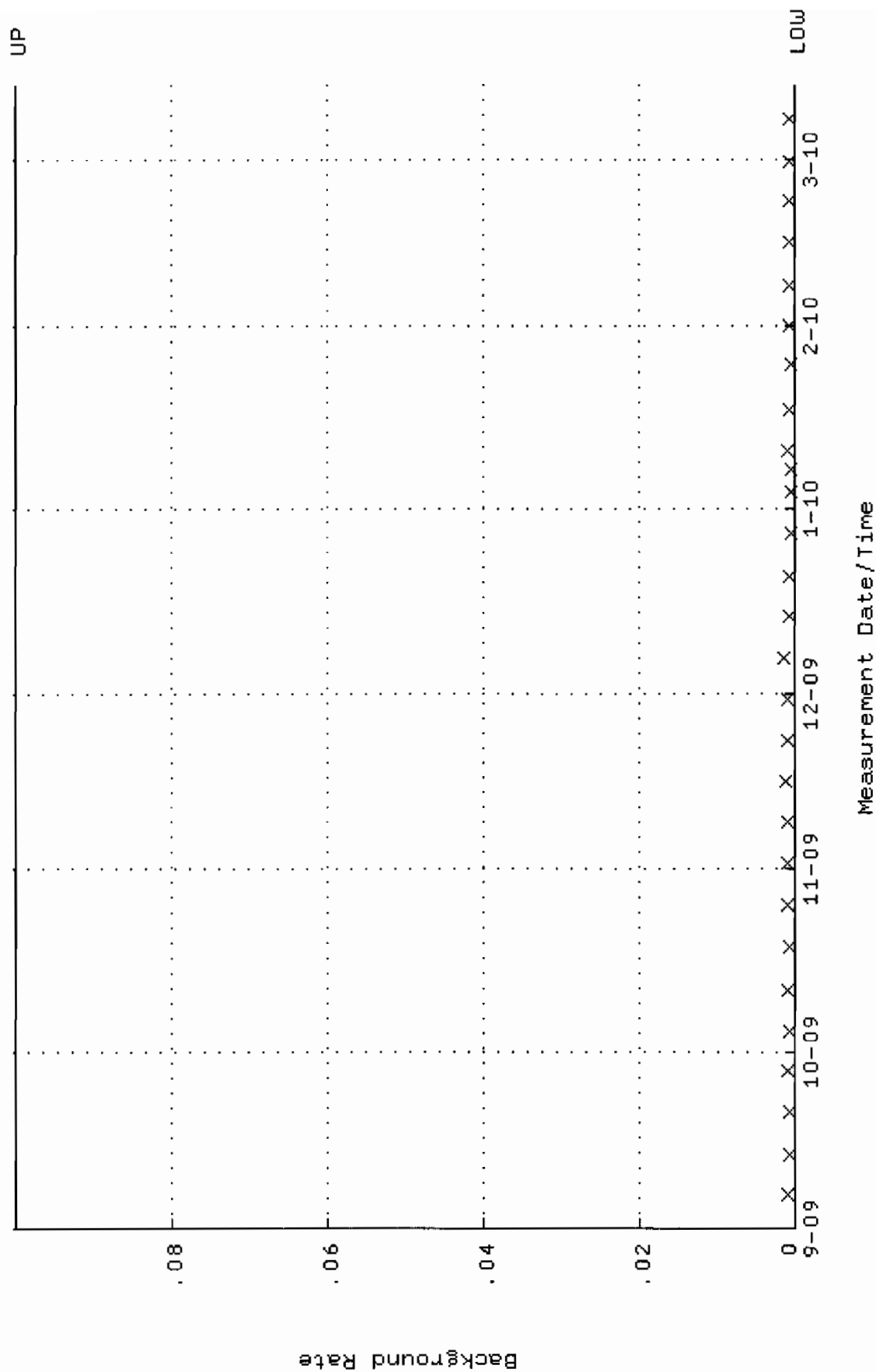
QA filename : DKA100:[ENV_ALPHA.QA.W]W097.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.338442 through 0.349972



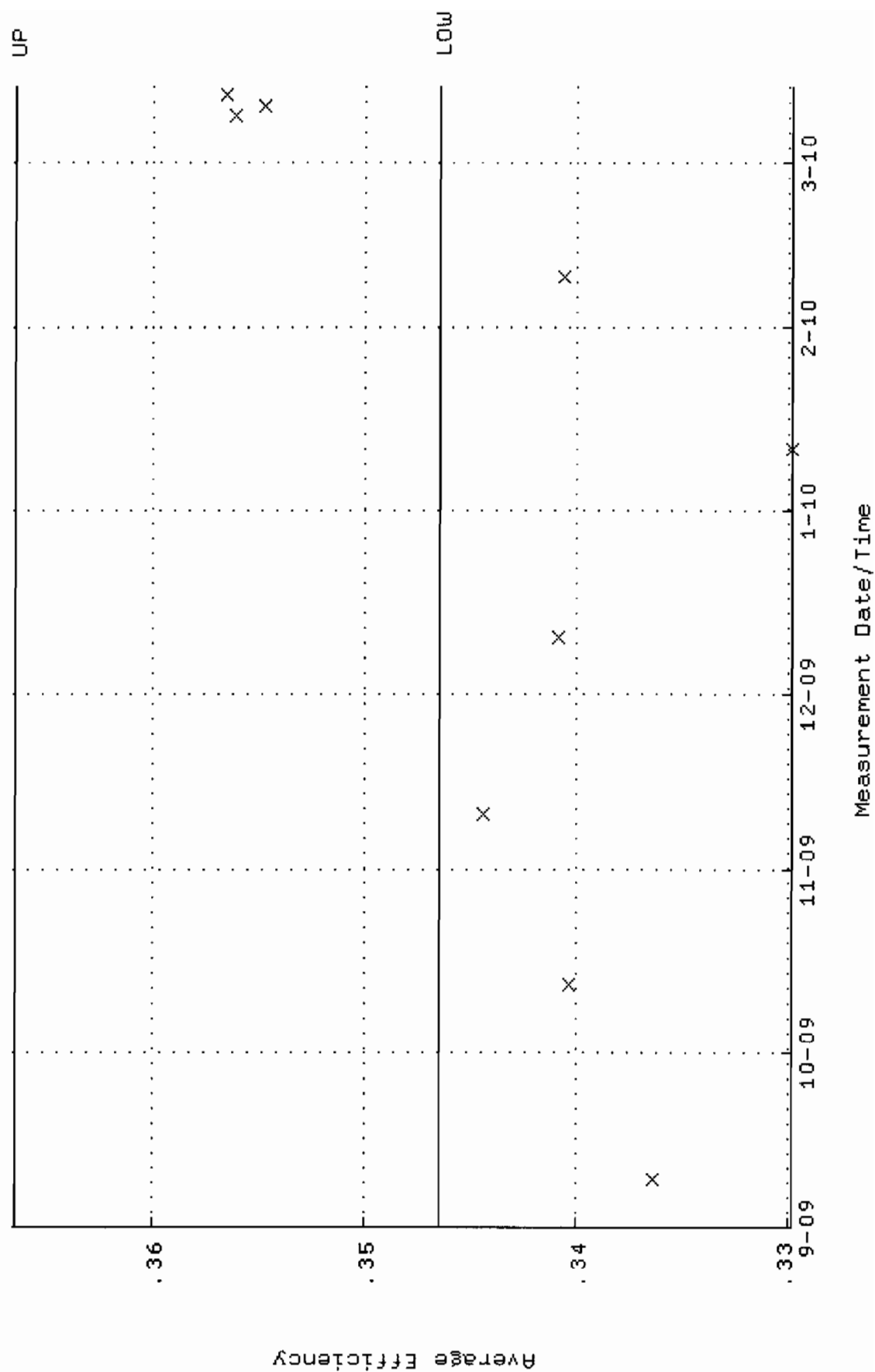
QA filename : DKA100:[ENV_ALPHA.QA.W]W097.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 66.0956 through 69.6464



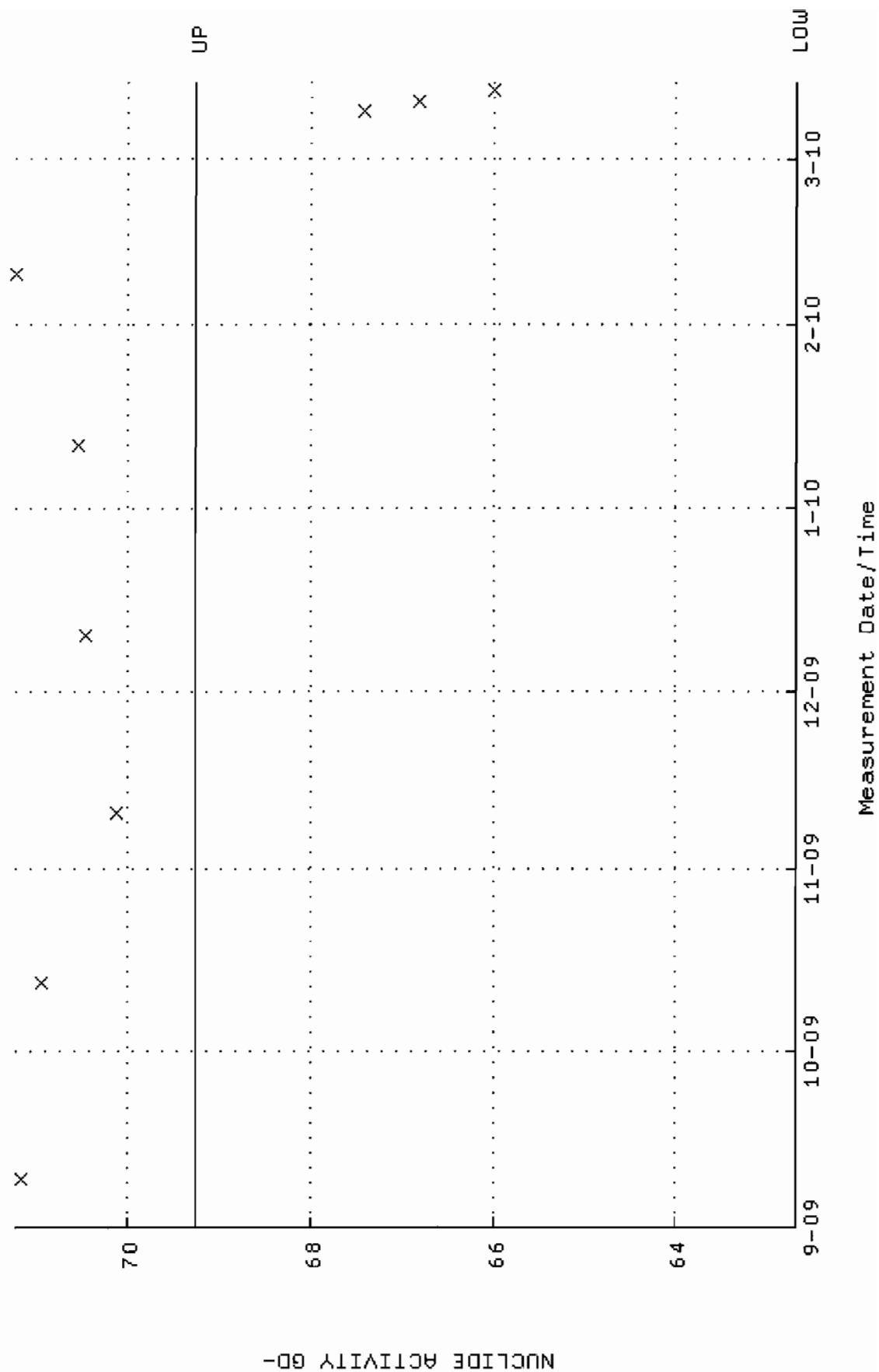
QA filename : DKA100:[ENV_ALPHA.QA.B]B097.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



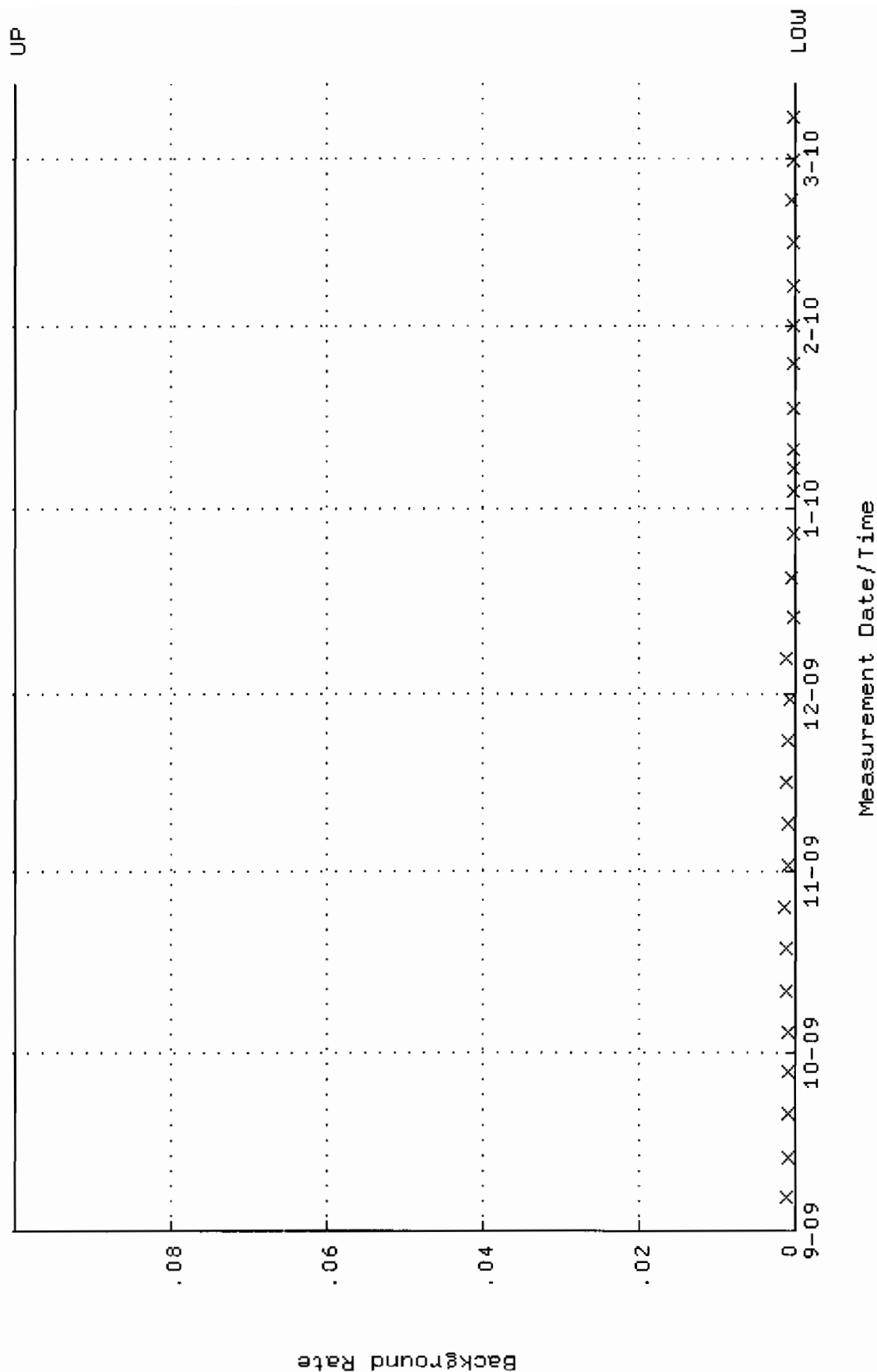
QA filename : DKA100:[ENV_ALPHA.QA.W]W098.QAF;3
 Parameter Name : AVREFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.346488 through 0.366488



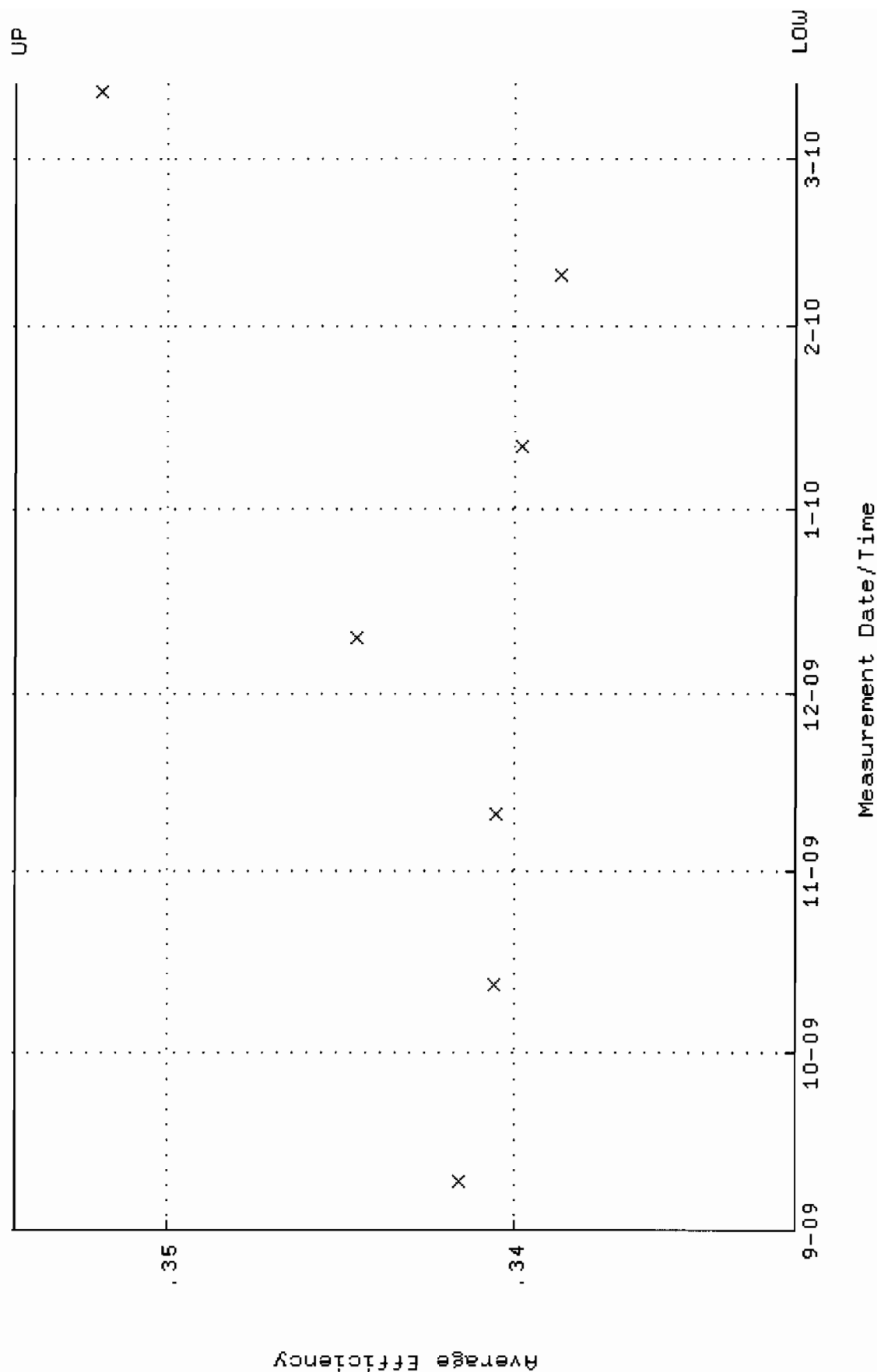
QA filename : DKA100:[ENV_ALPHA.QA.W]W098.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 62.6847 through 69.2831



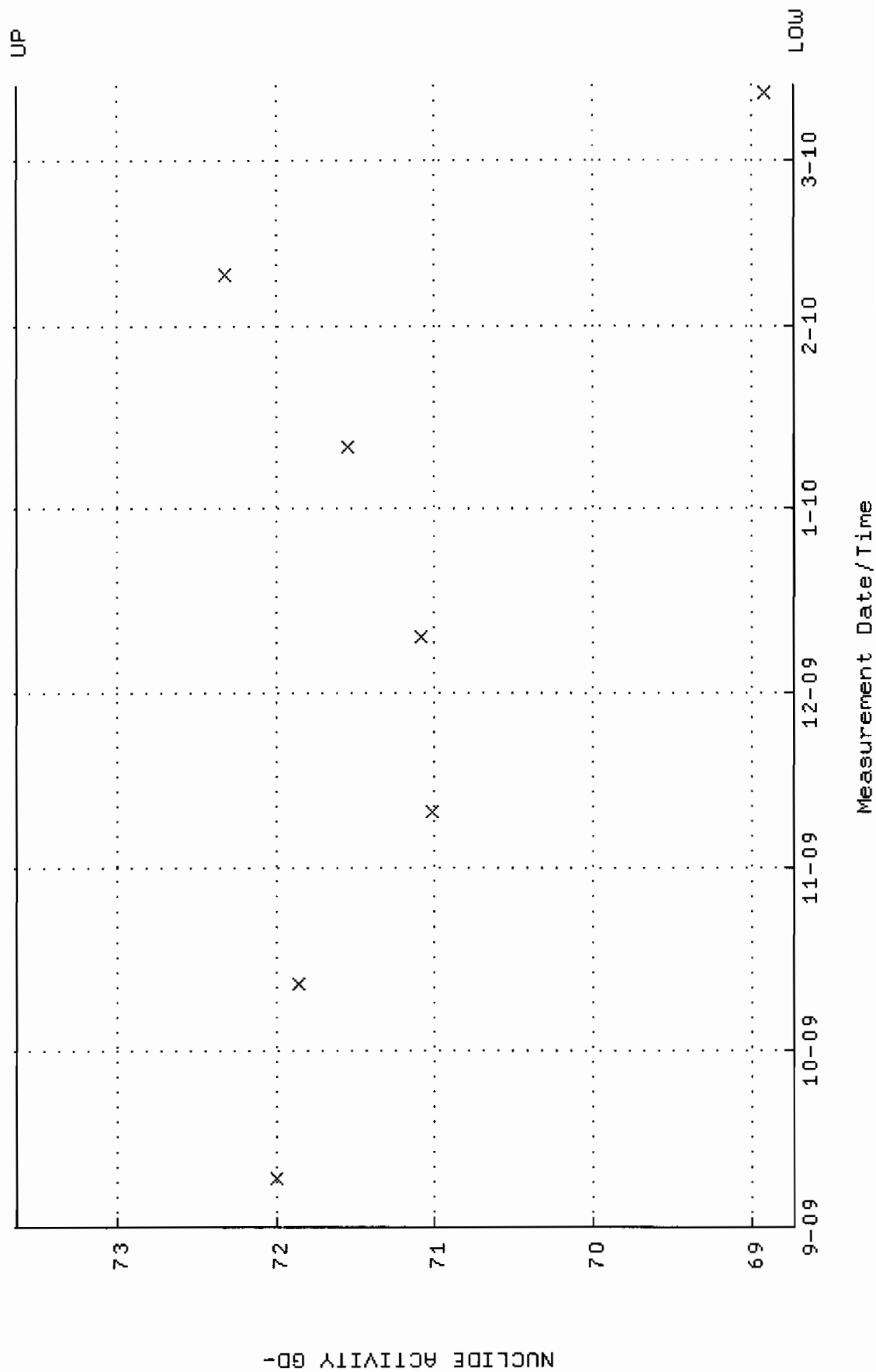
QA filename : DKA100:[ENV-ALPHA.QA.B]B098.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



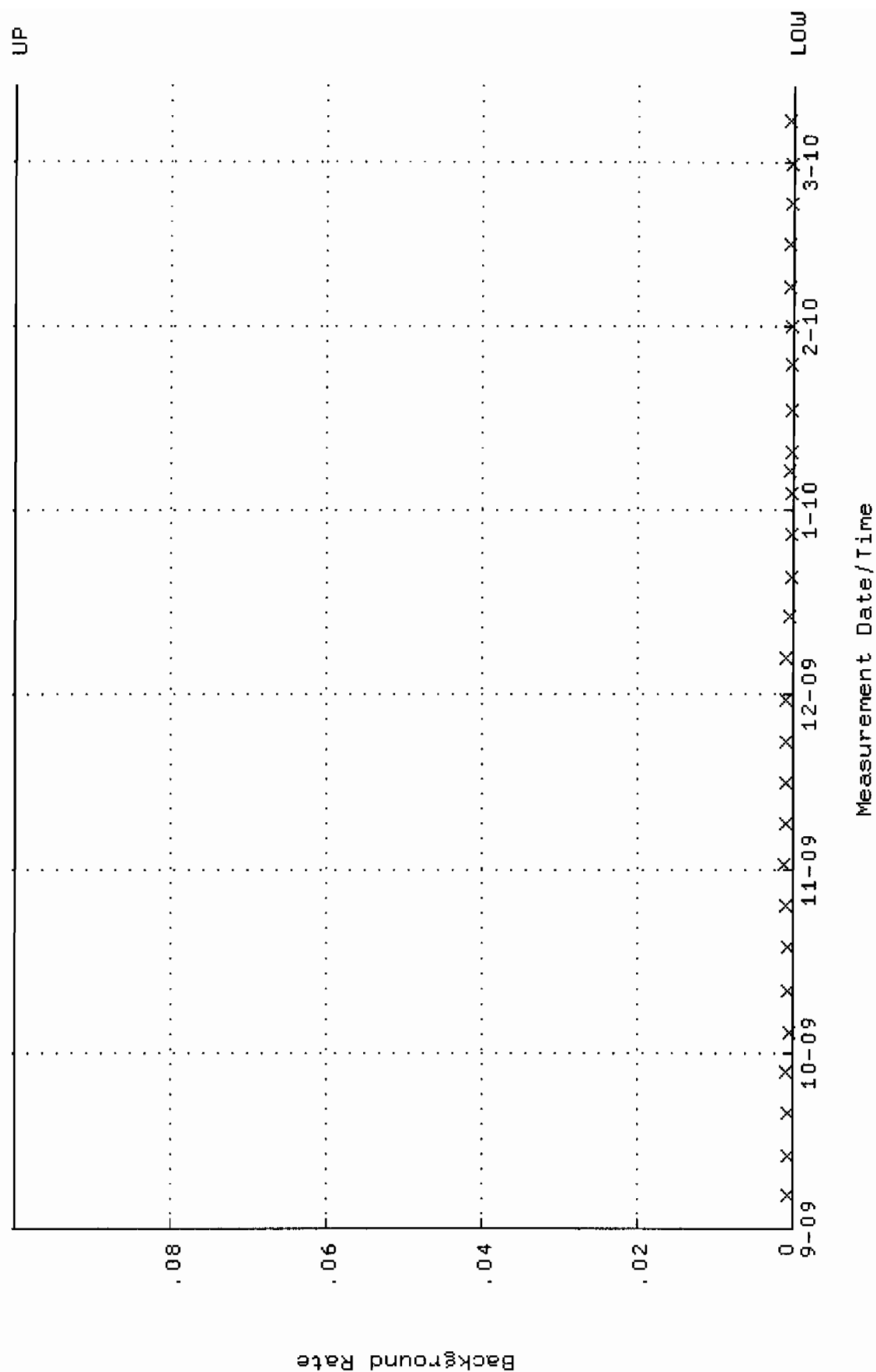
QA filename : DKA100:[ENV_ALPHA.QA.W]W099.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.331877 through 0.354429



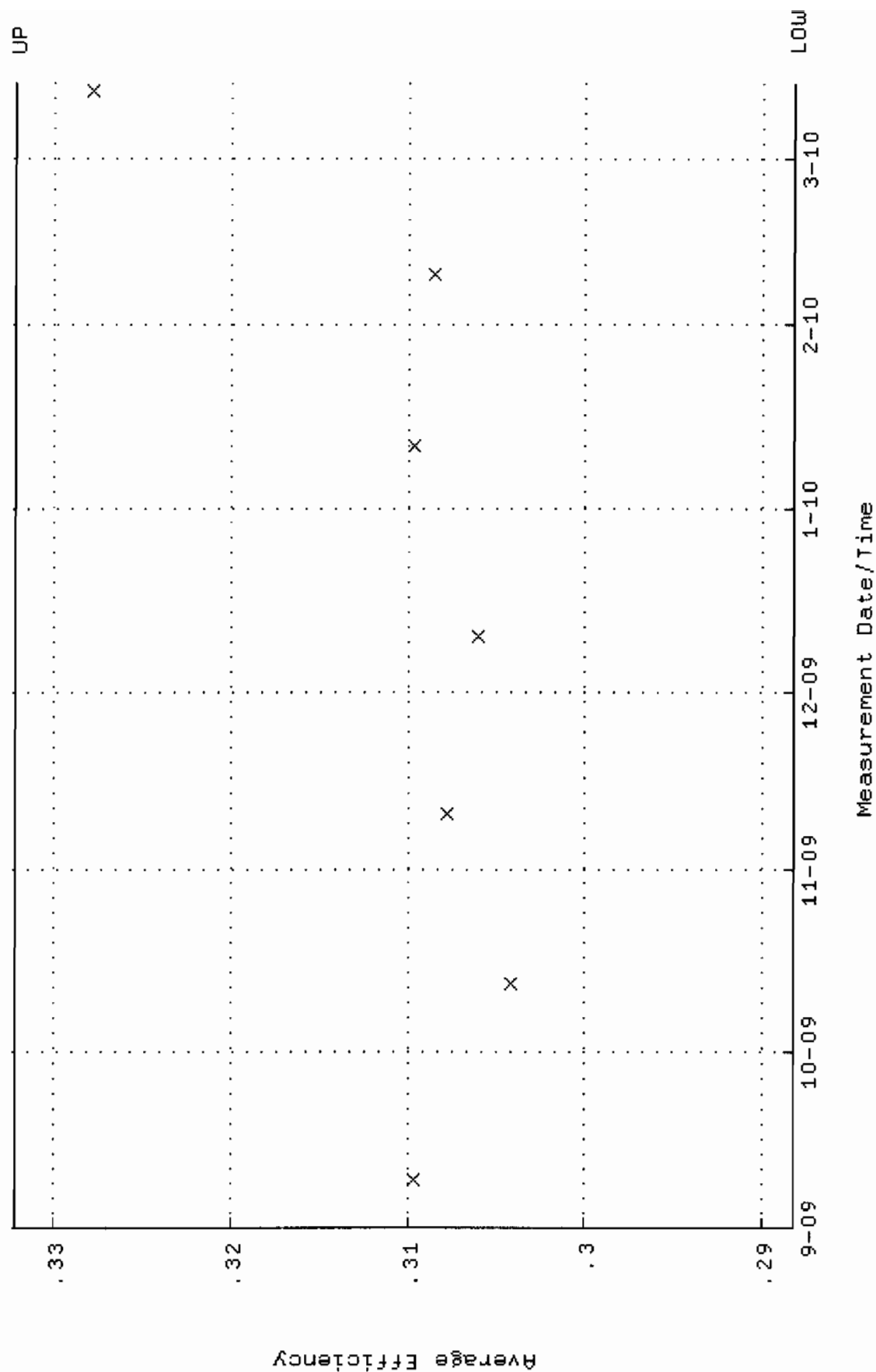
QA filename : DKA100:[ENV_ALPHA.QA.W]W099.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 68.7313 through 73.6359



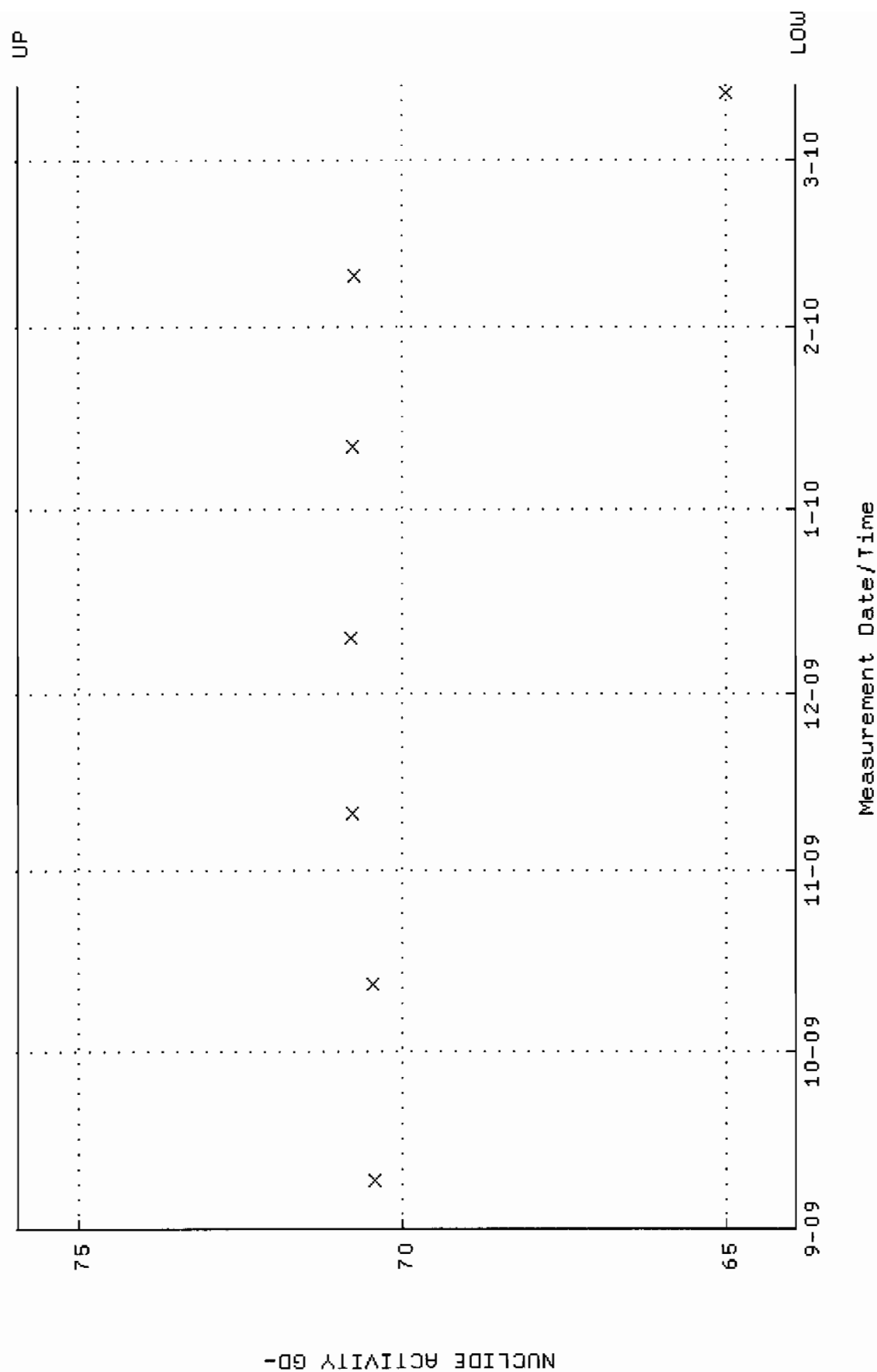
QA filename : DKA100:[ENV_ALPHA.QA.B]B099.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W107.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.288232 through 0.332218



QA filename : DKA100:[ENV_ALPHA.QA.W]U107.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 63.9135 through 75.9257

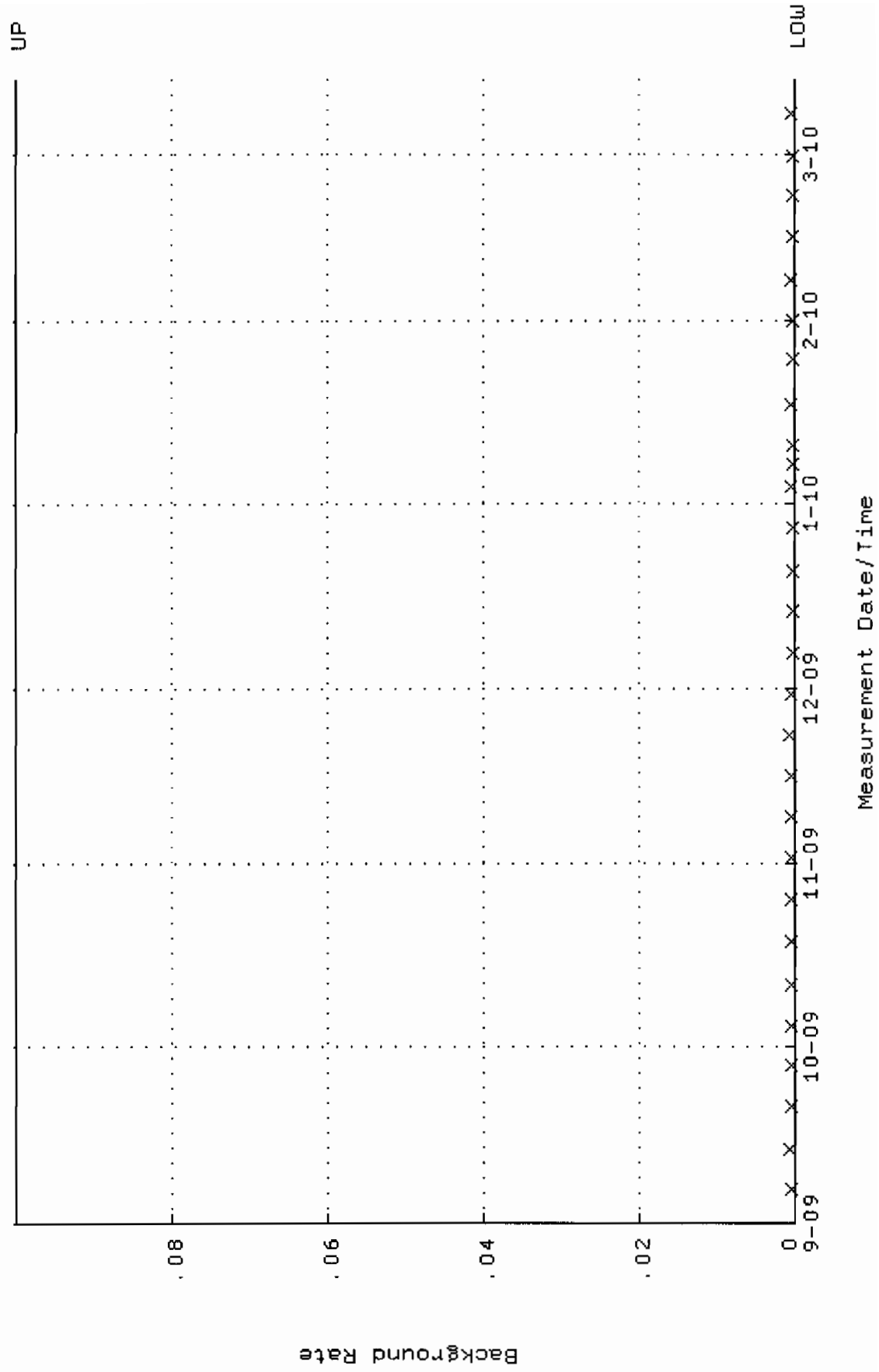


QA filename : DKA100:[ENV_ALPHA.QA.B]B107.QAF;2

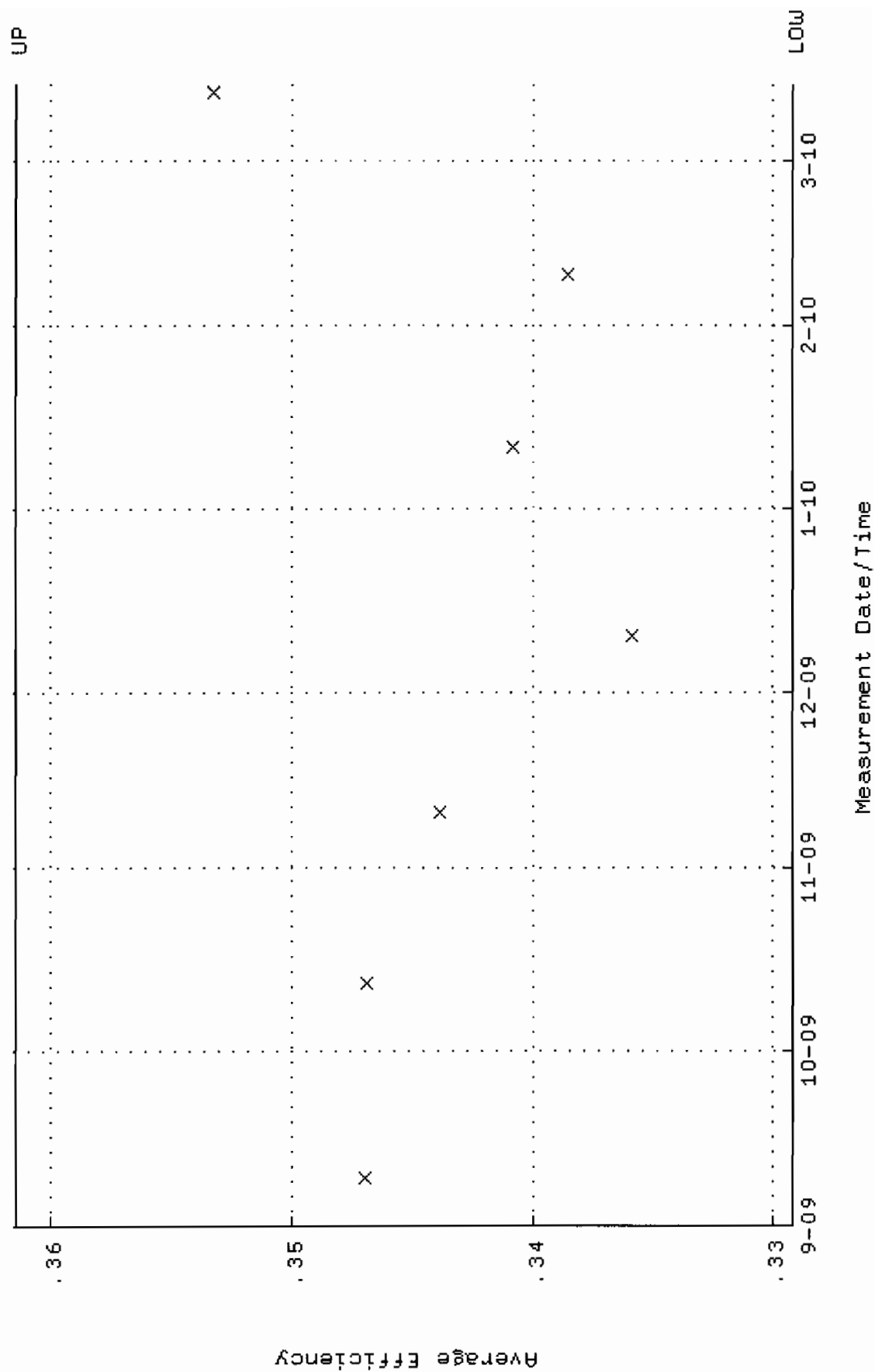
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:12 through 13-MAR-2010 12:00:00

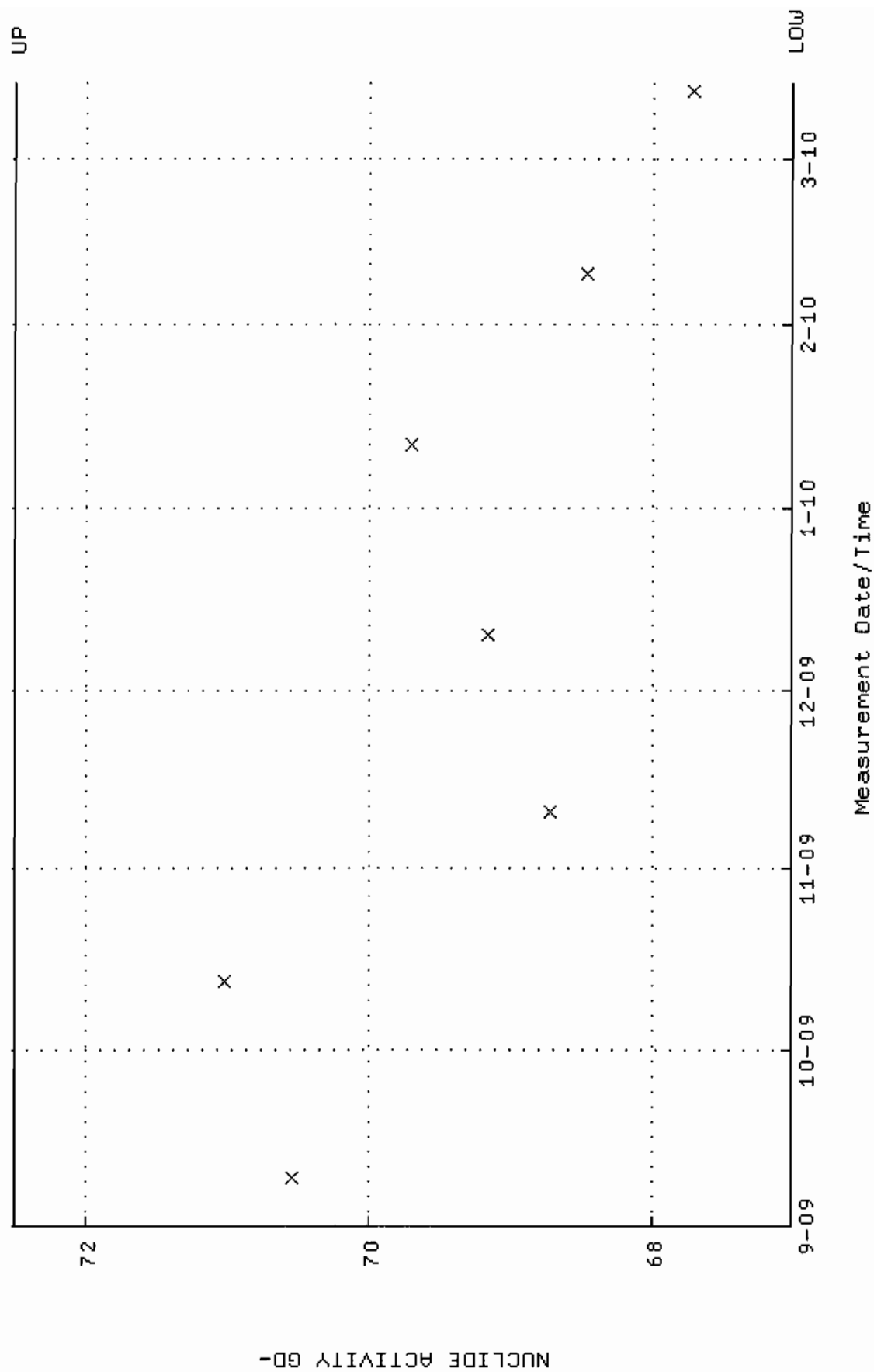
Lower/Upper Lmts: 0.000000E+00 through 0.100000



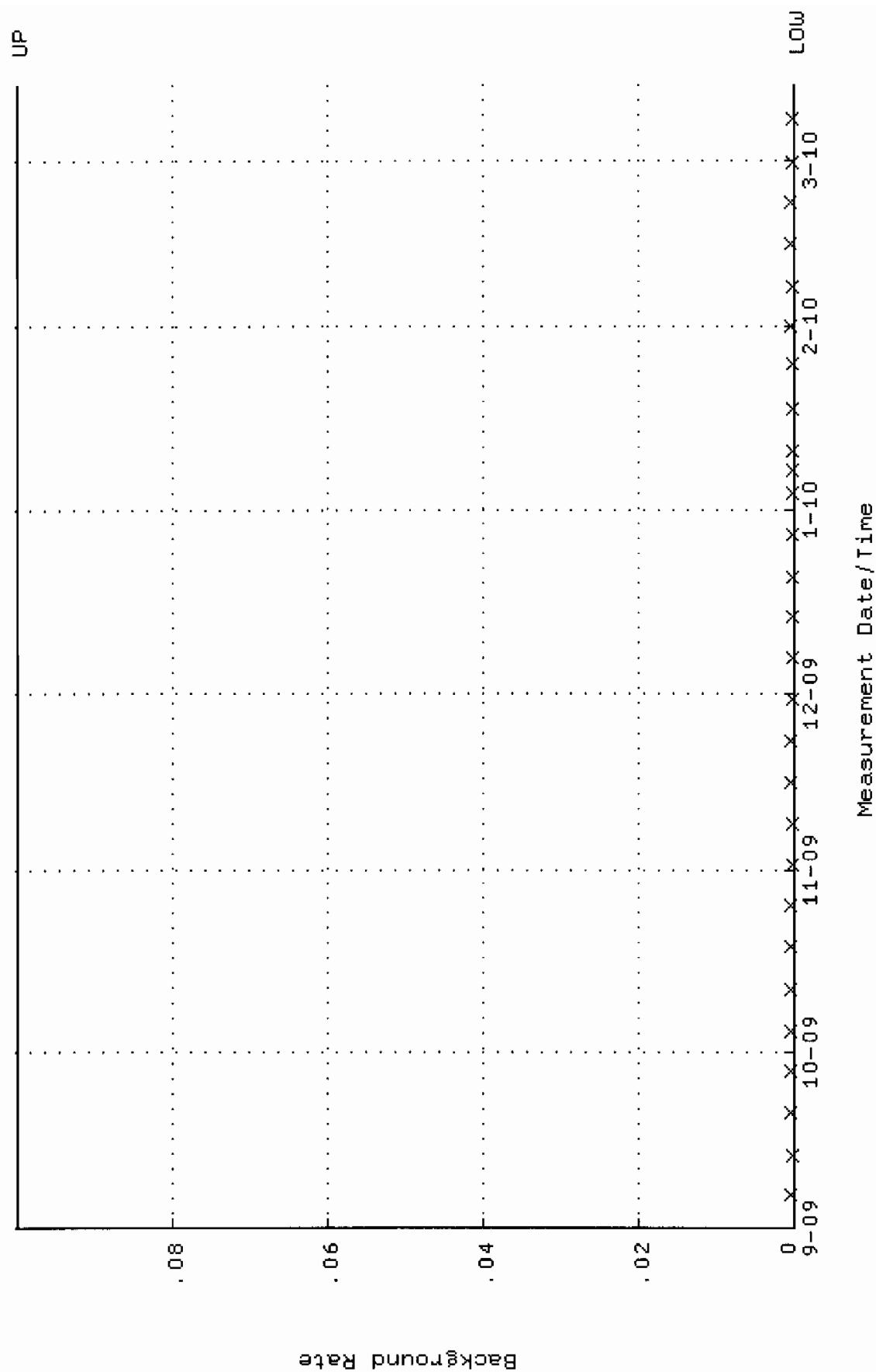
QA filename : DKA100:[ENV_ALPHA.QA.W]W108.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.329201 through 0.361417



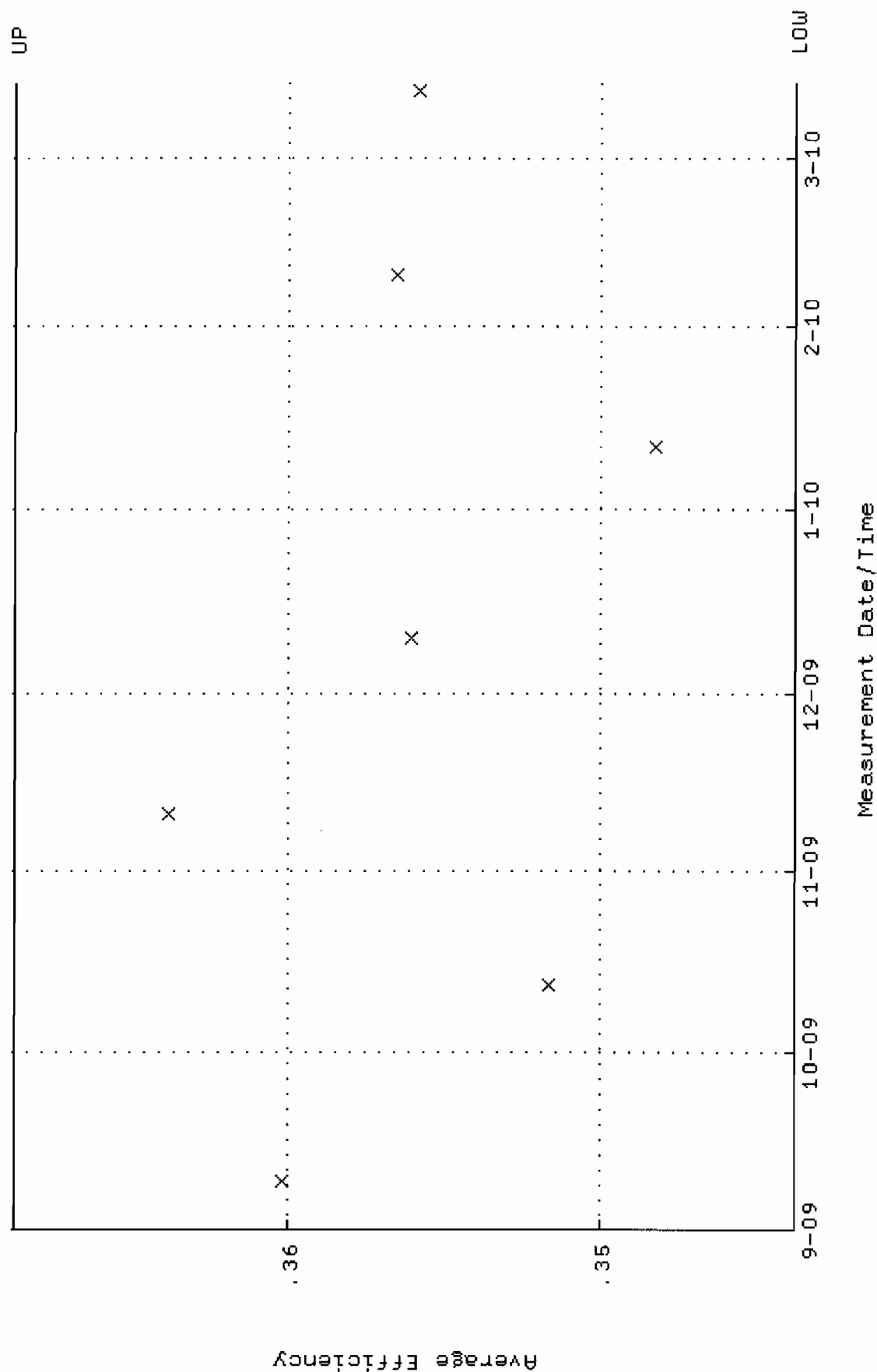
QA filename : DKA100:[ENV_ALPHA.QA.W]W108.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 67.0155 through 72.5031



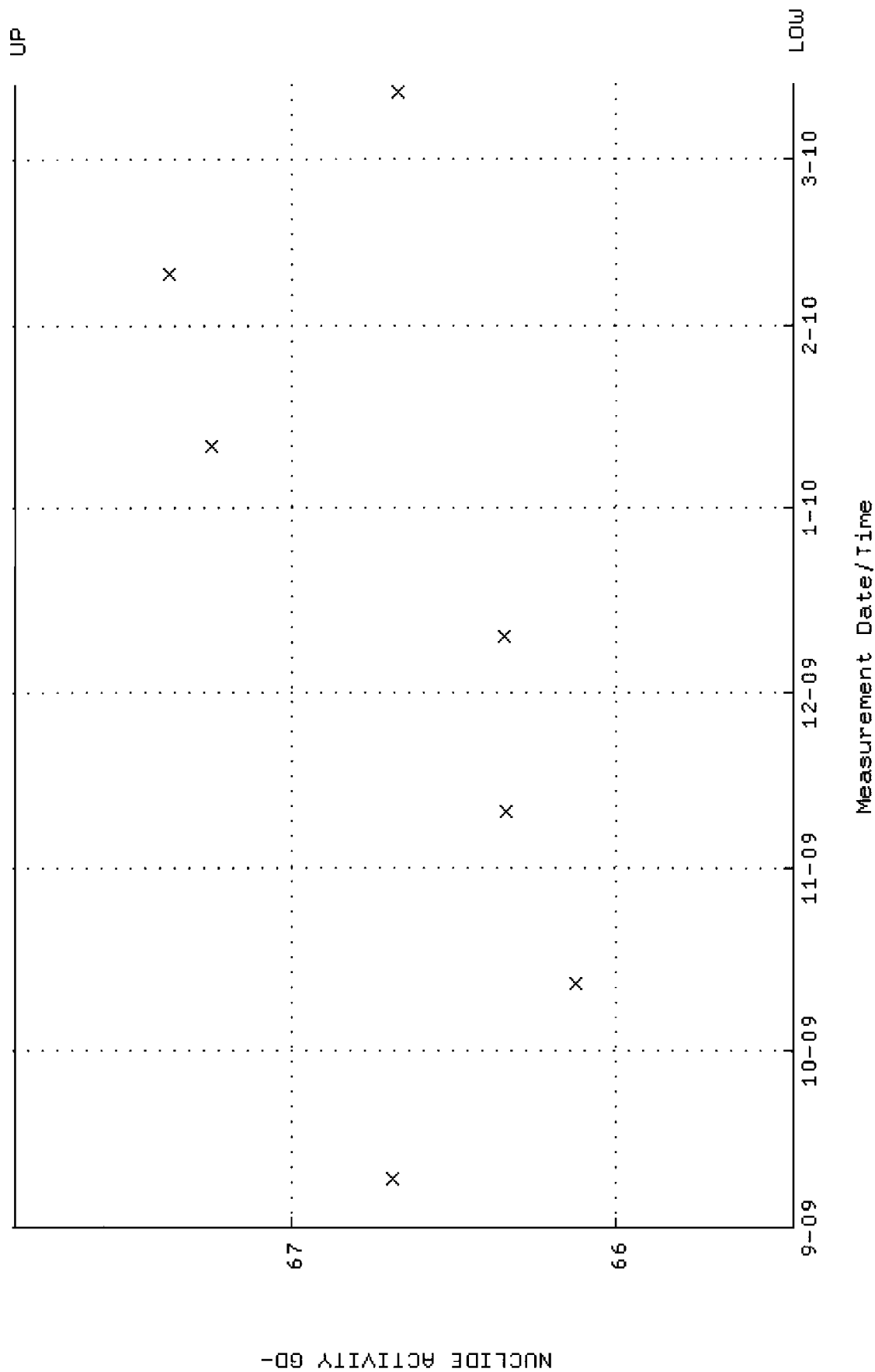
QA filename : DKA100:[ENV_ALPHA.QA.B]B108.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:12 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



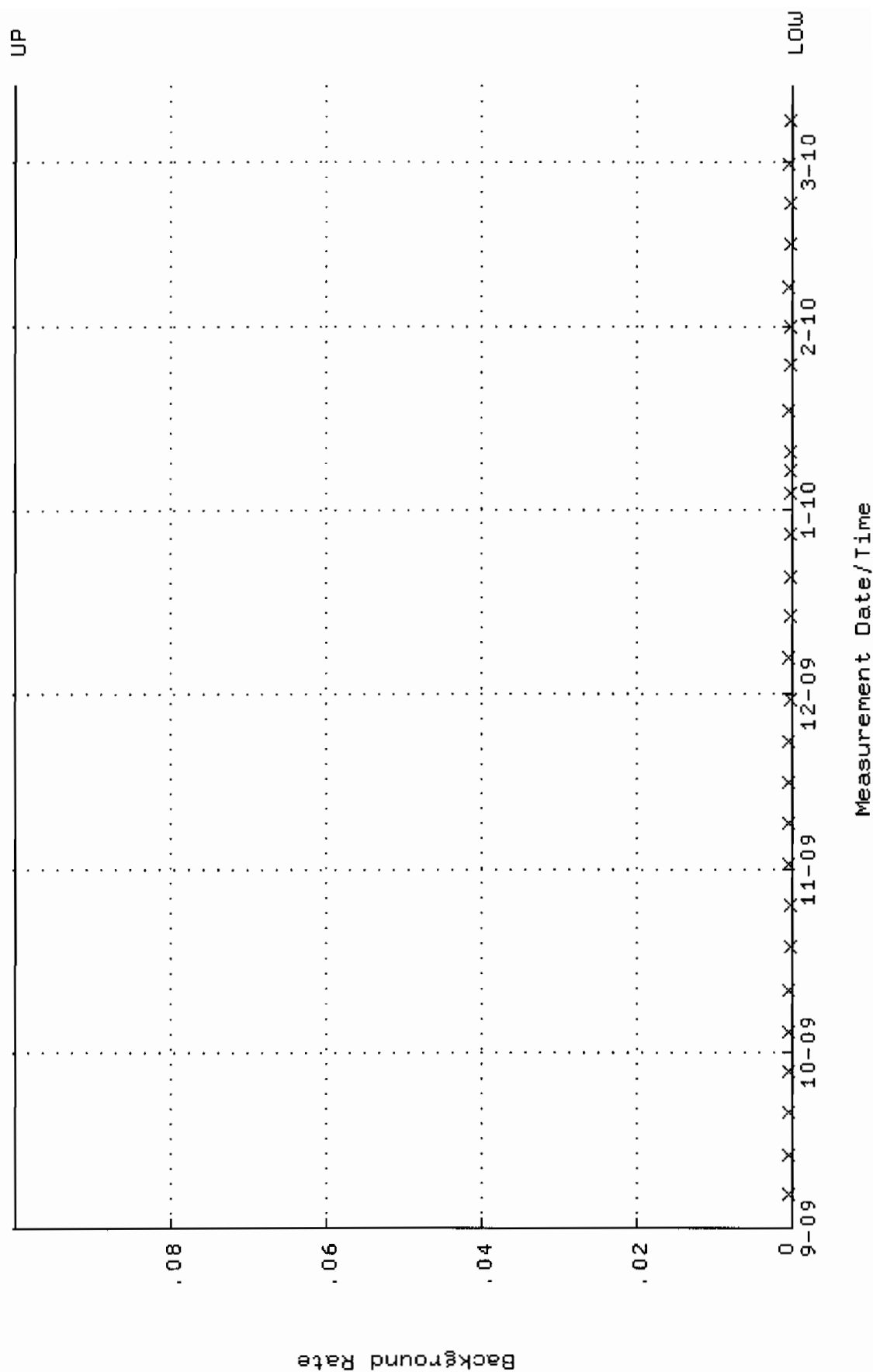
QA filename : DKA100:[ENV_ALPHA.QA.W]W109.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.343718 through 0.368808



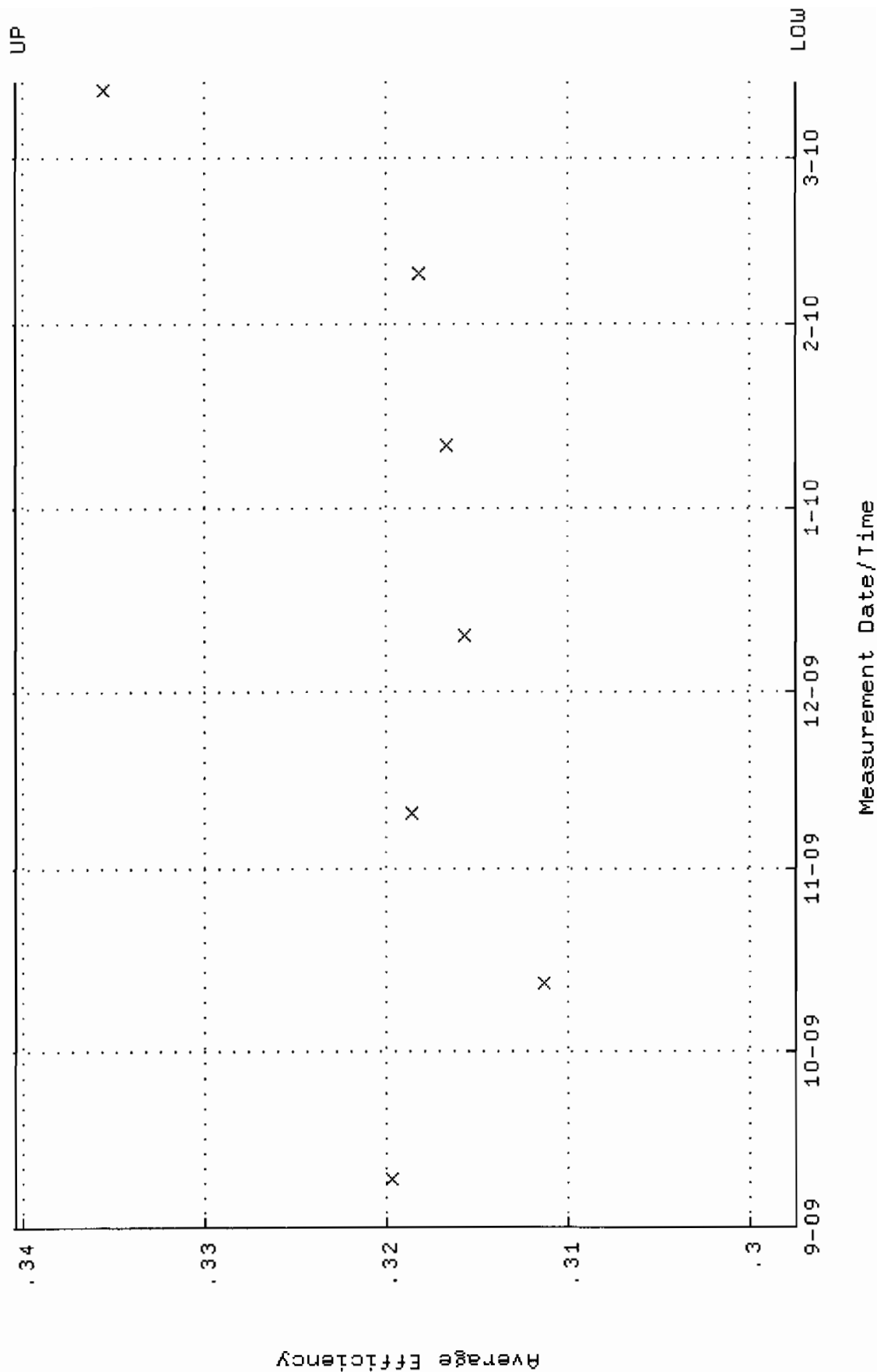
QA filename : DKA100:[ENV_ALPHA.QA.W]W109.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 65.4511 through 67.8527



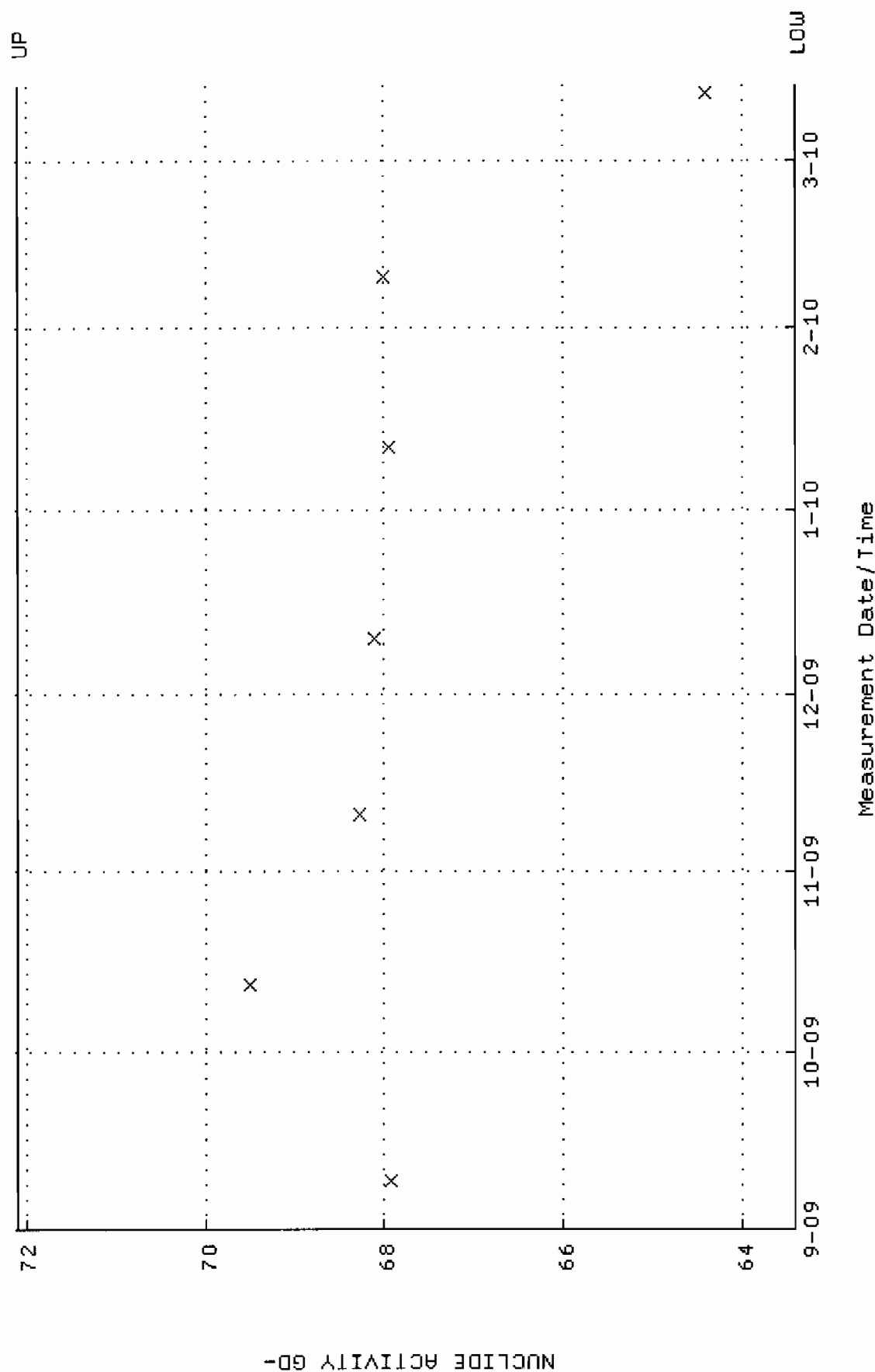
QA filename : DKA100:[ENV_ALPHA.QA.B]B109.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:12 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



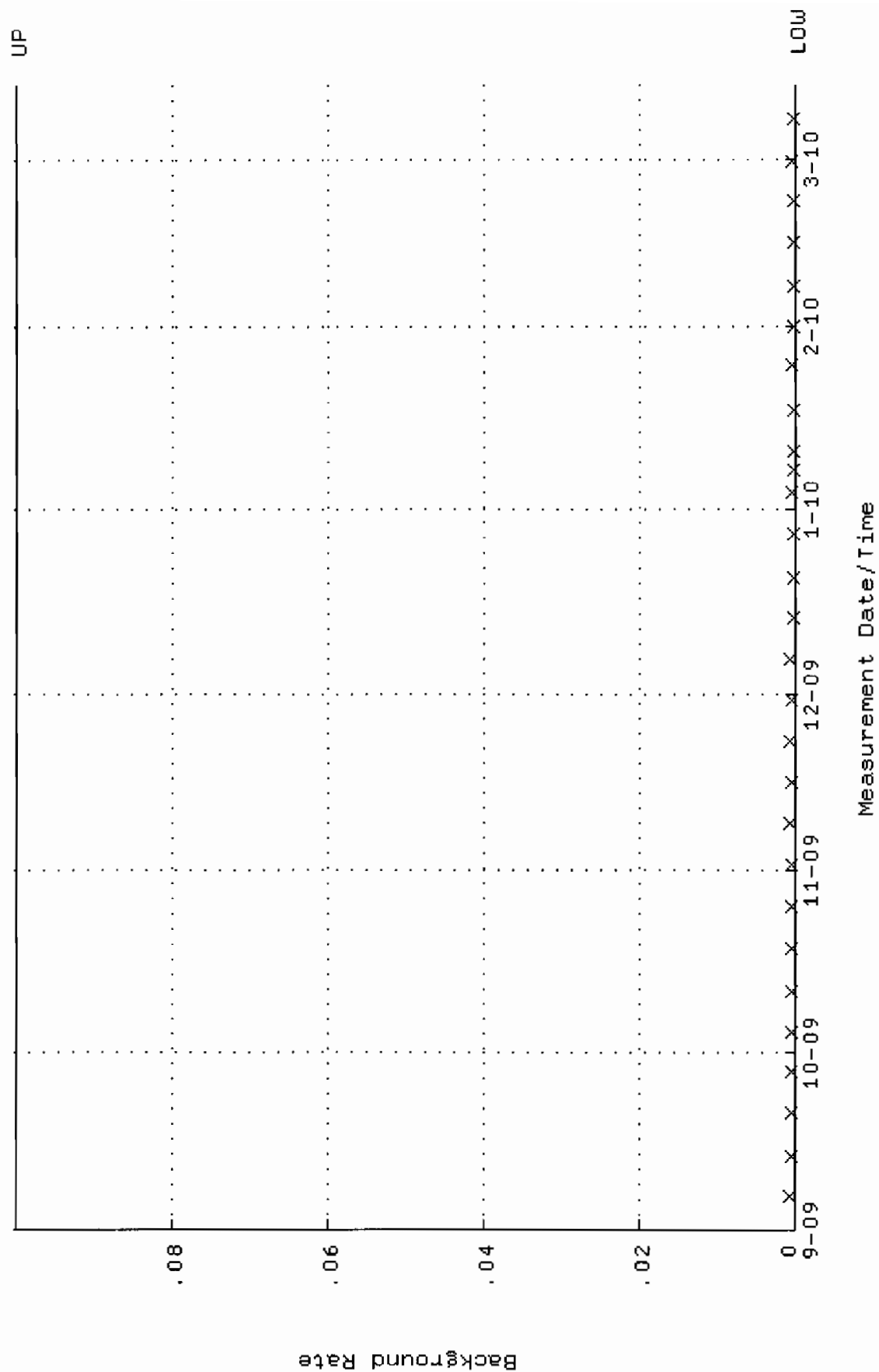
QA filename : DKA100:[ENV_ALPHA.QA.W]W112.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.297499 through 0.340389



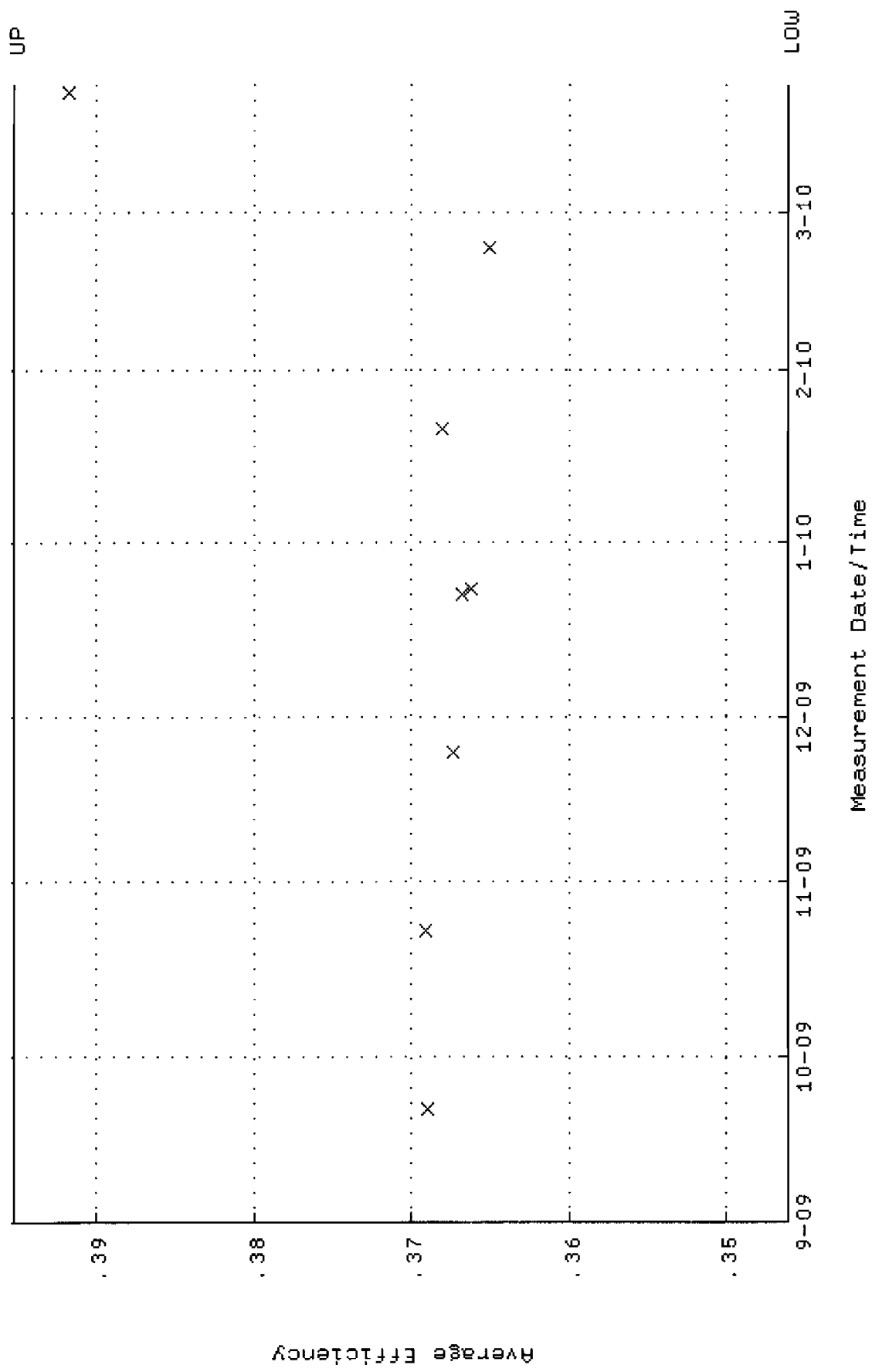
QA filename : DKA100:[ENV_ALPHA.QA.W]W112.QAF;3
 Parameter Name : NLACTVY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:52 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 63.4111 through 72.0947



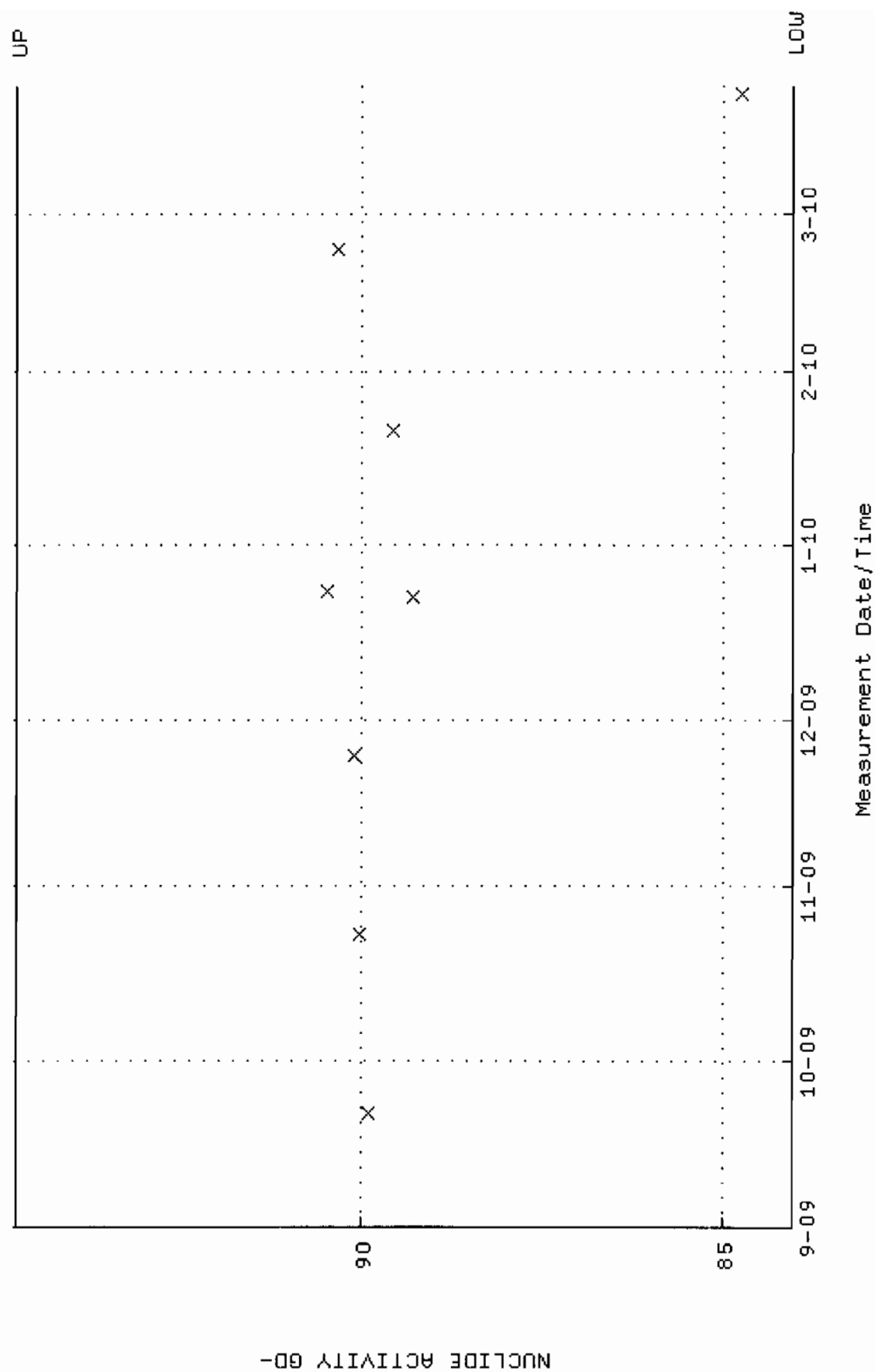
QA filename : DKA100:[ENV_ALPHA.QA.B]B112.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:12 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



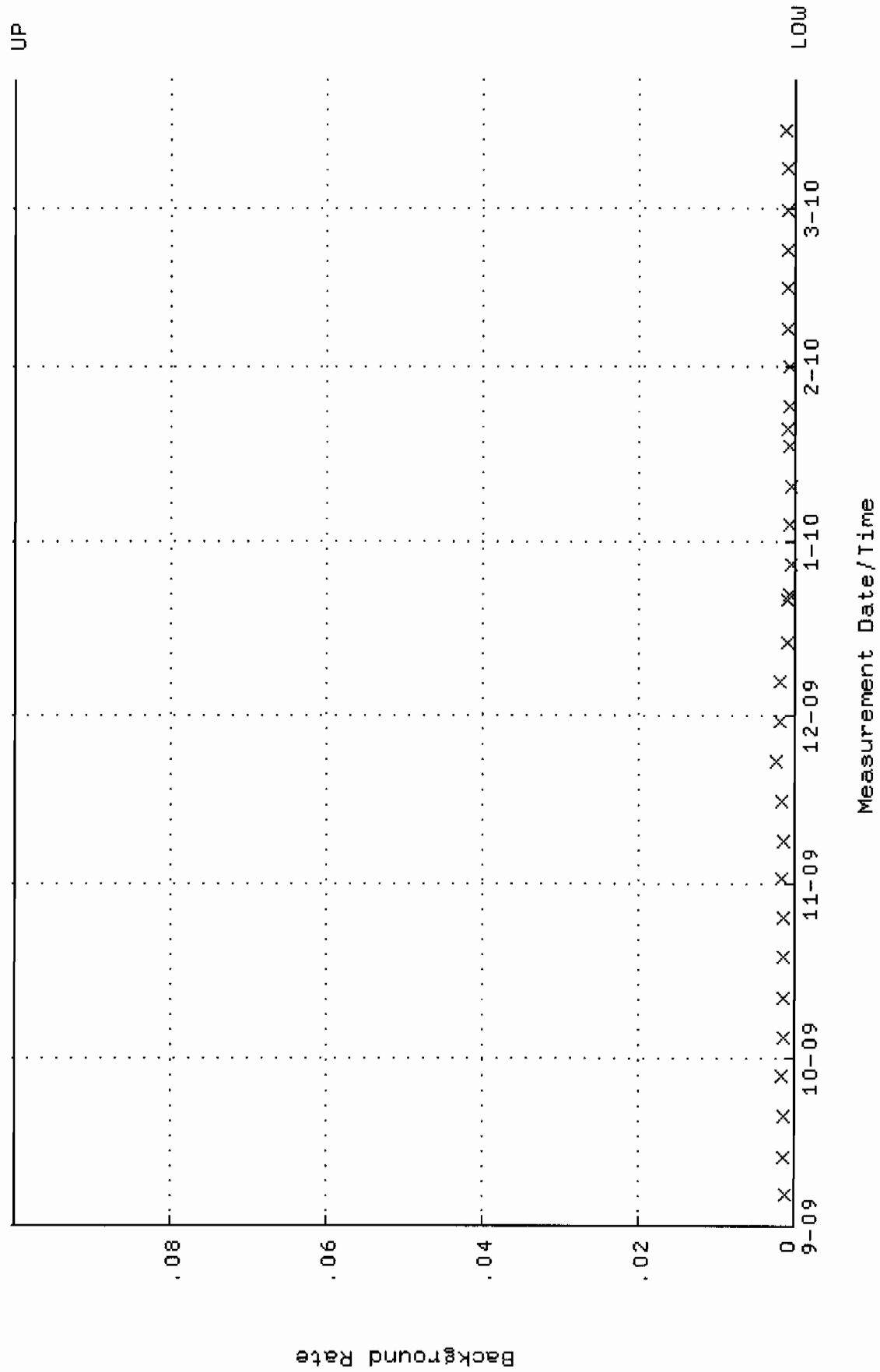
QA filename : DKA100:[ENV_ALPHA.QA.W]W161.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:18 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.346063 through 0.395257



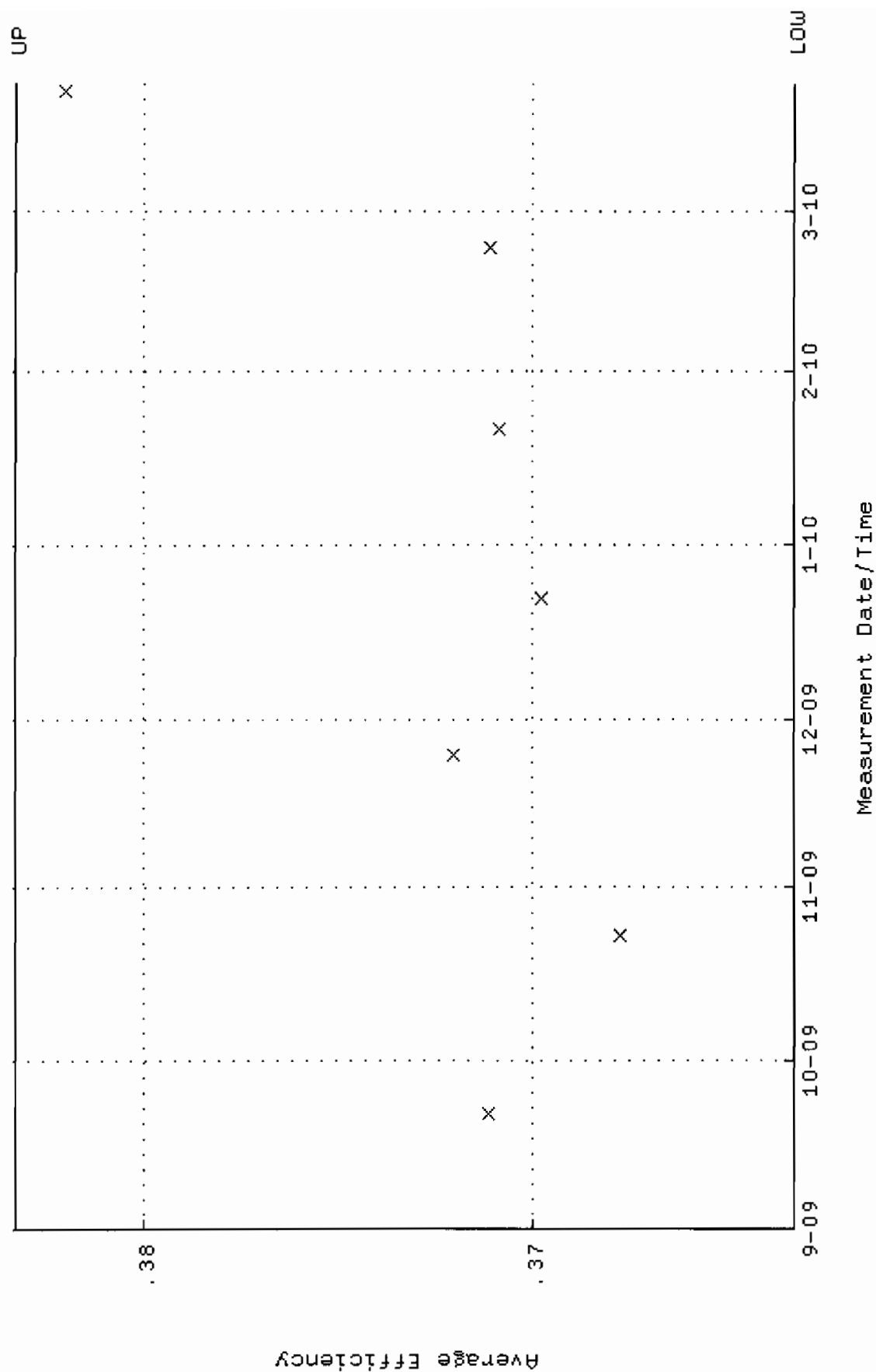
QA filename : DKA100:[ENV_ALPHA.QA.W]W161.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:18 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.0330 through 94.7716



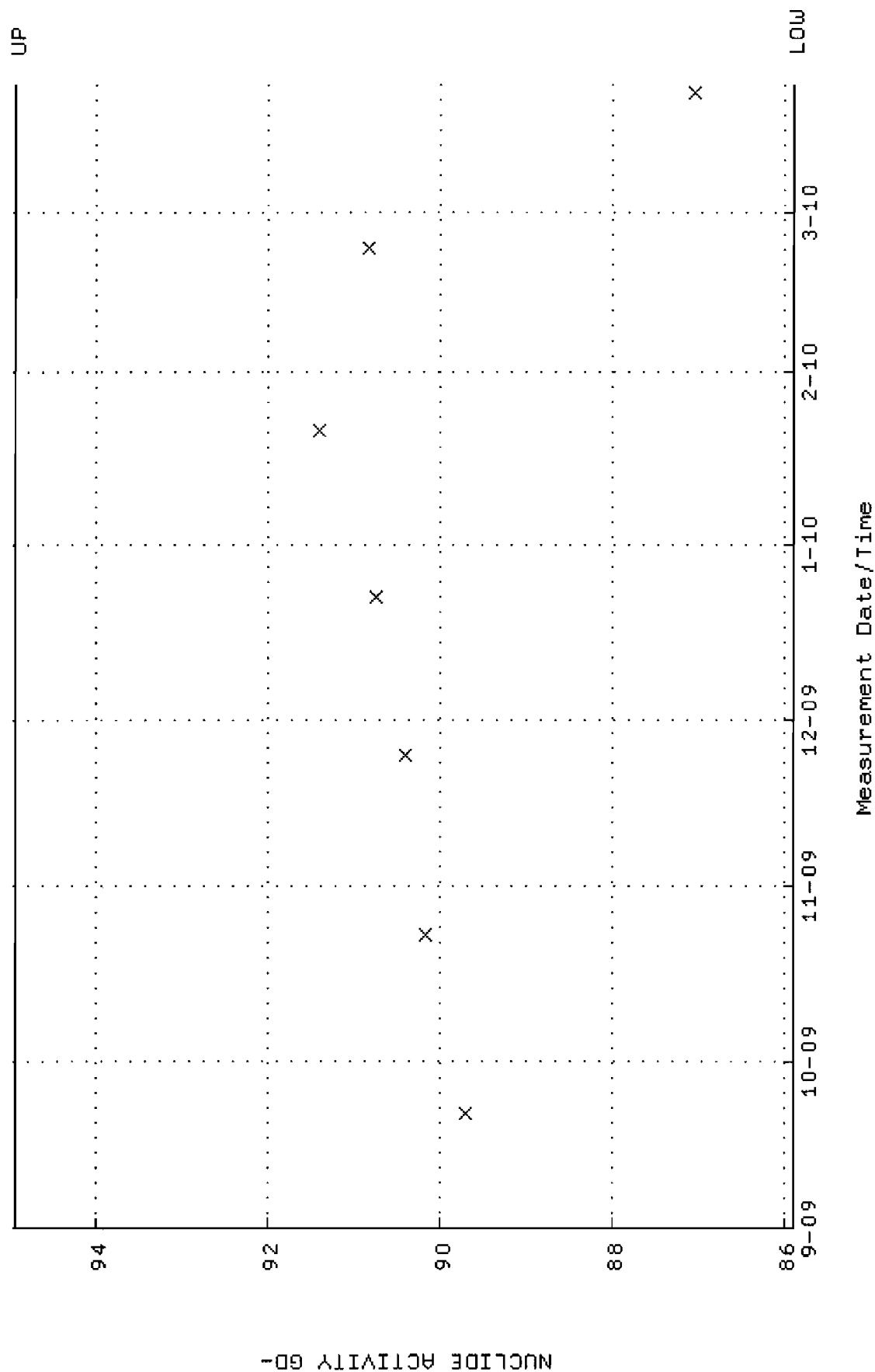
QA filename : DKA100:[ENV_ALPHA.QA.B]B161.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:12 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



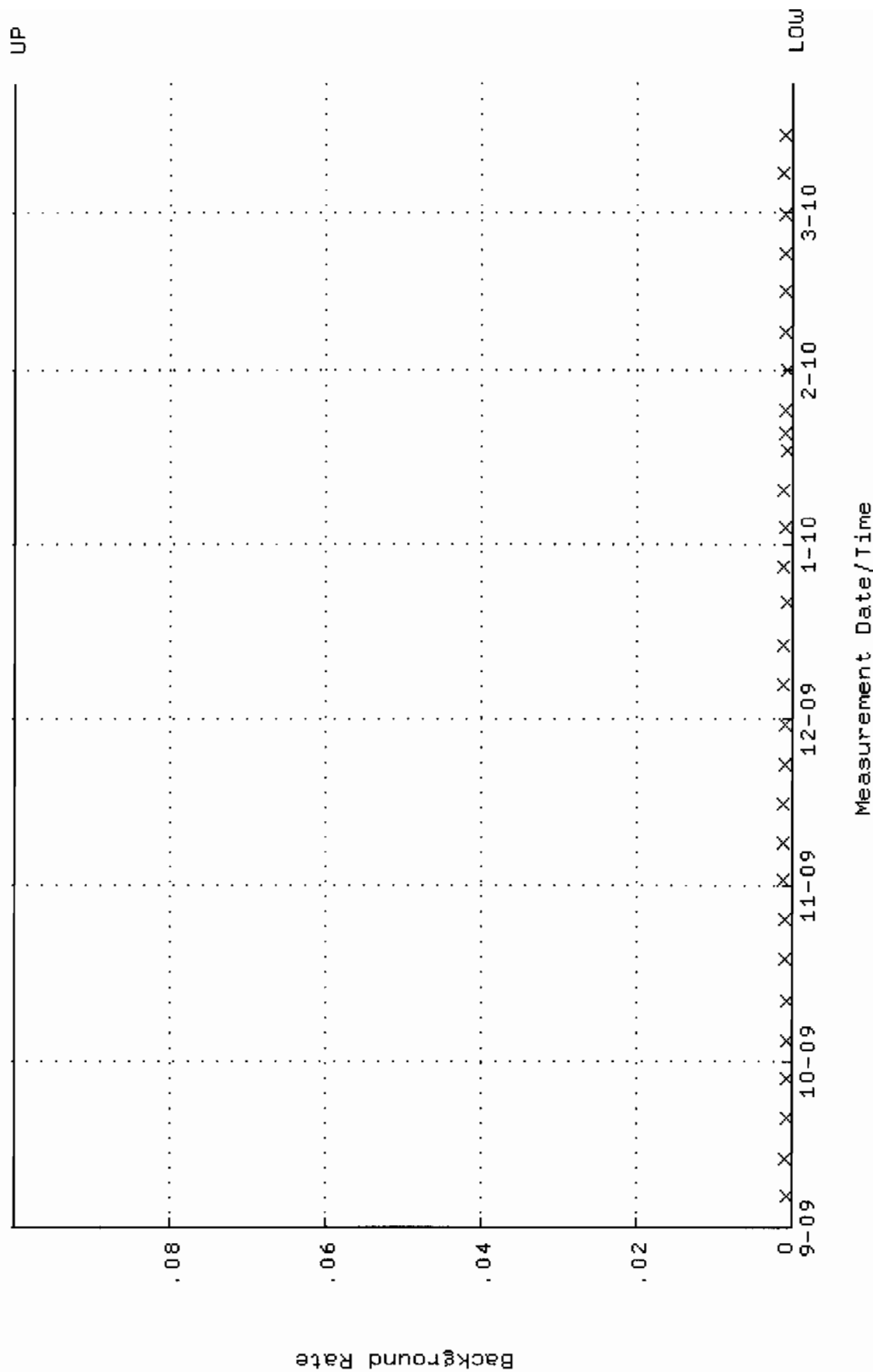
QA filename : DKA100:[ENV_ALPHA.QA.W]W162.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:25 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.363287 through 0.383287



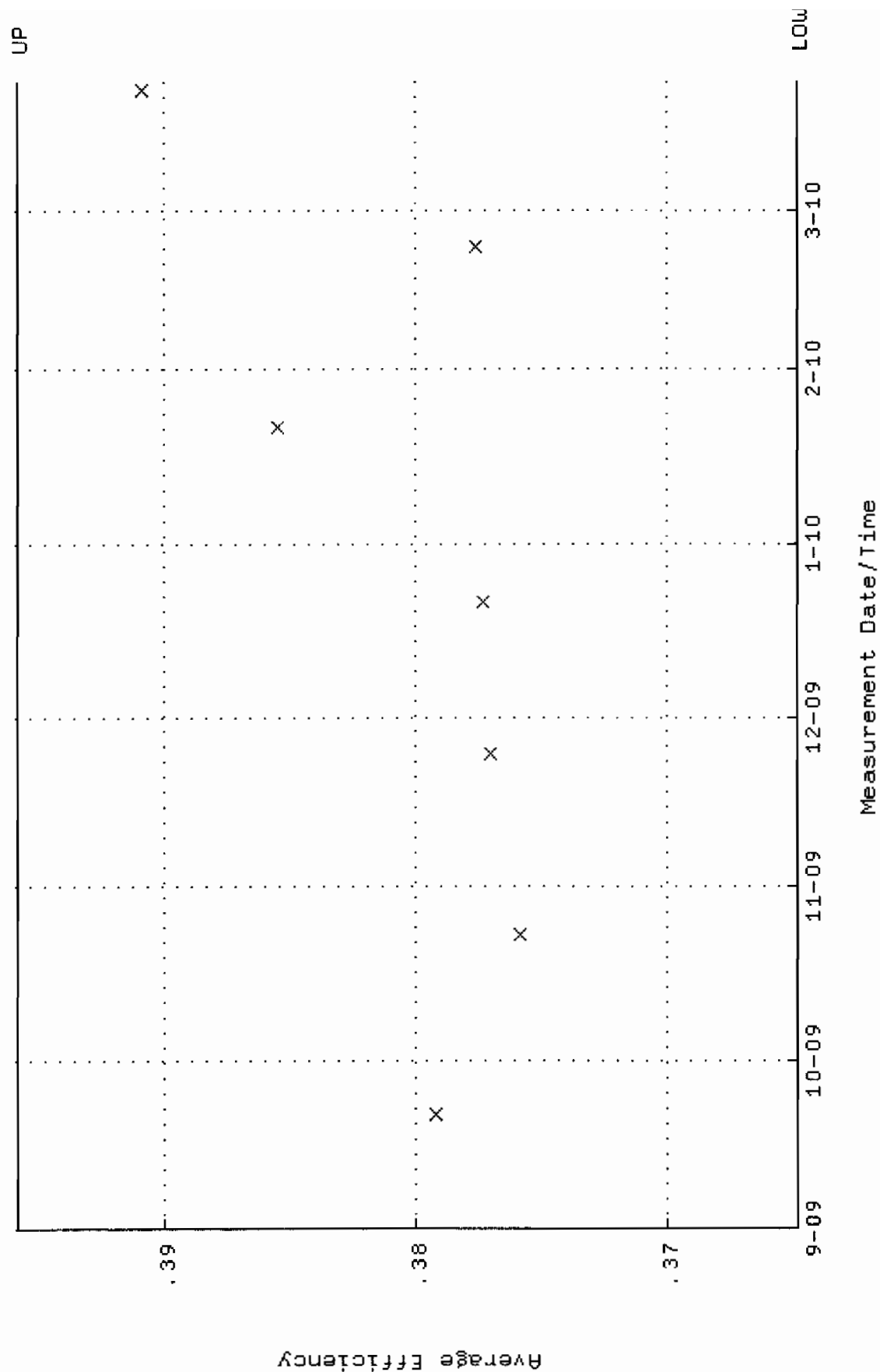
QA filename : DKA100:[ENV_ALPHA.QA.W]U162.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:25 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.8969 through 94.9387



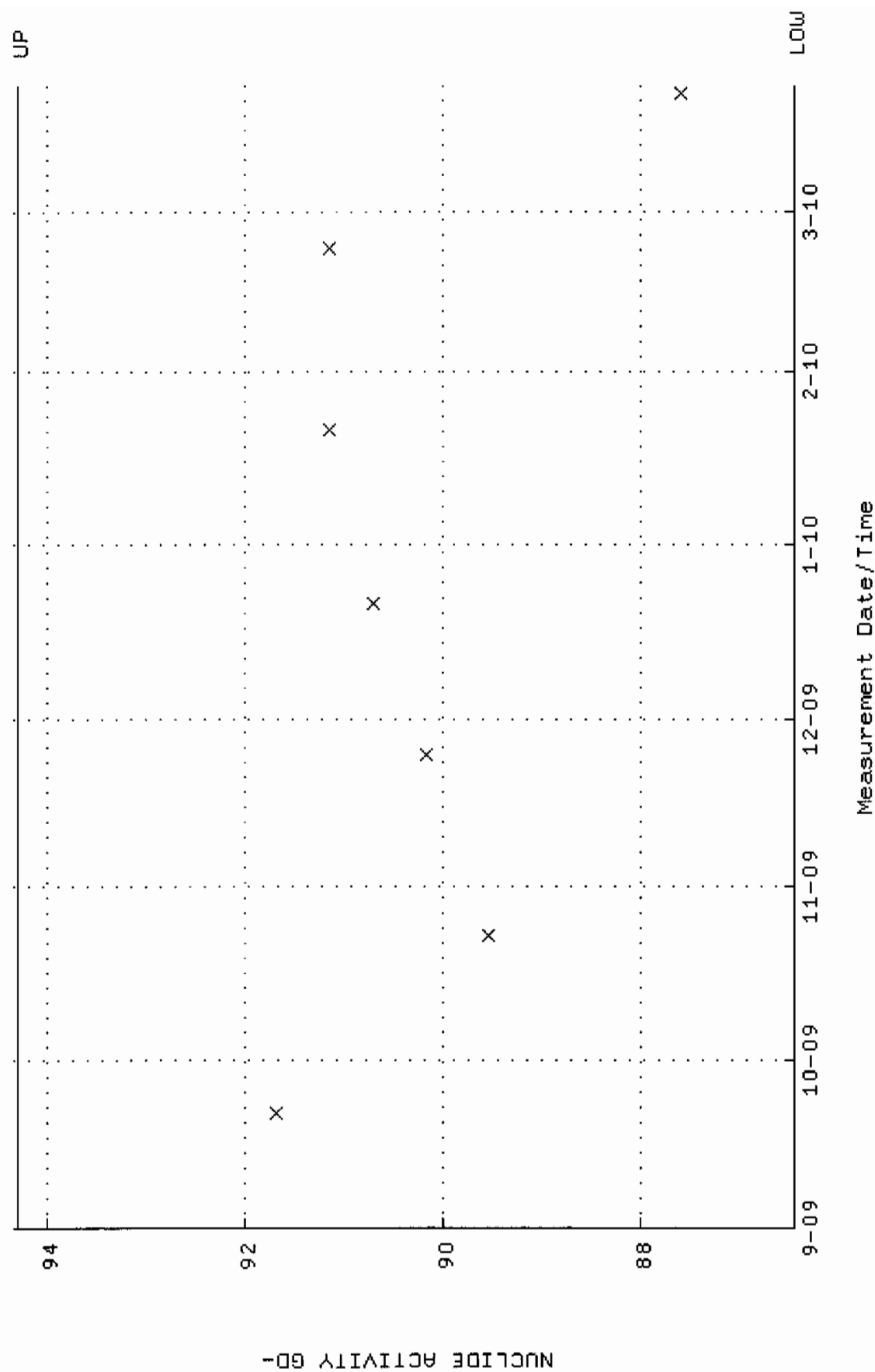
QA filename : DKA100:[ENV_ALPHA.QA.8]B162.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:17 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



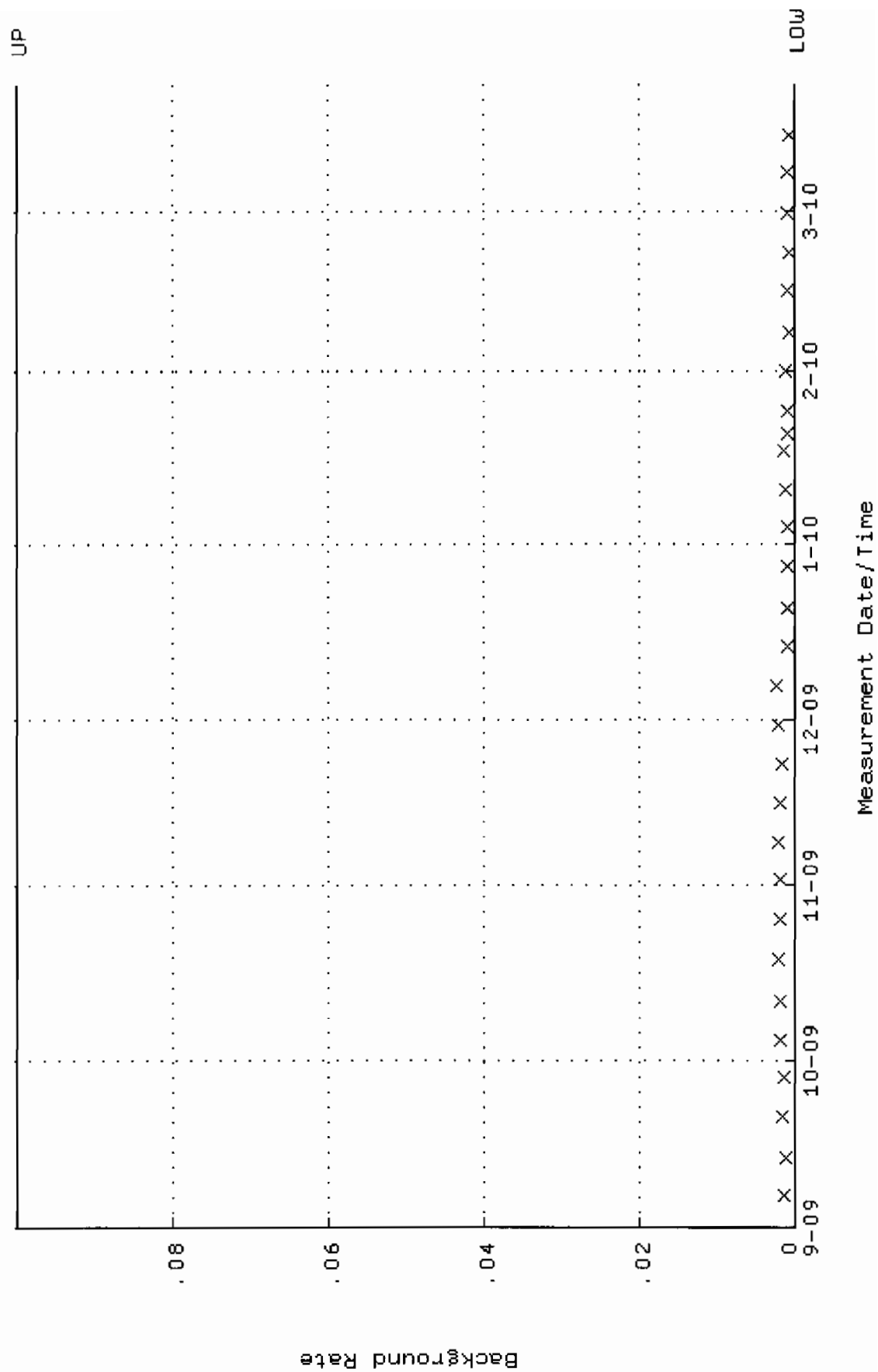
QA filename : DKA100: [ENV_ALPHA.QA.W]w164.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:39 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.364871 through 0.395783



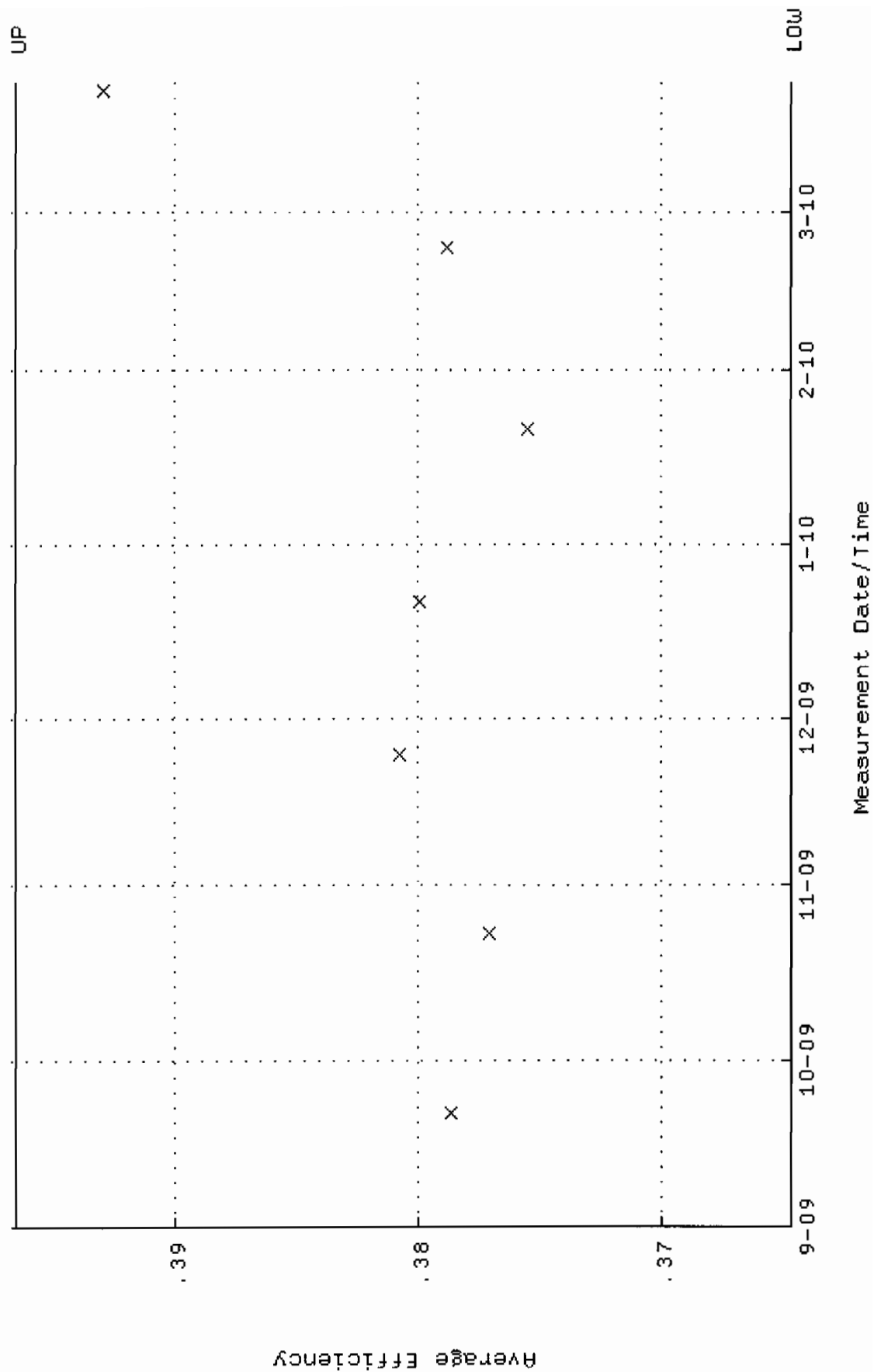
QA filename : DKA100:[ENV_ALPHA.QA.W]W164.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:39 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.4520 through 94.3102



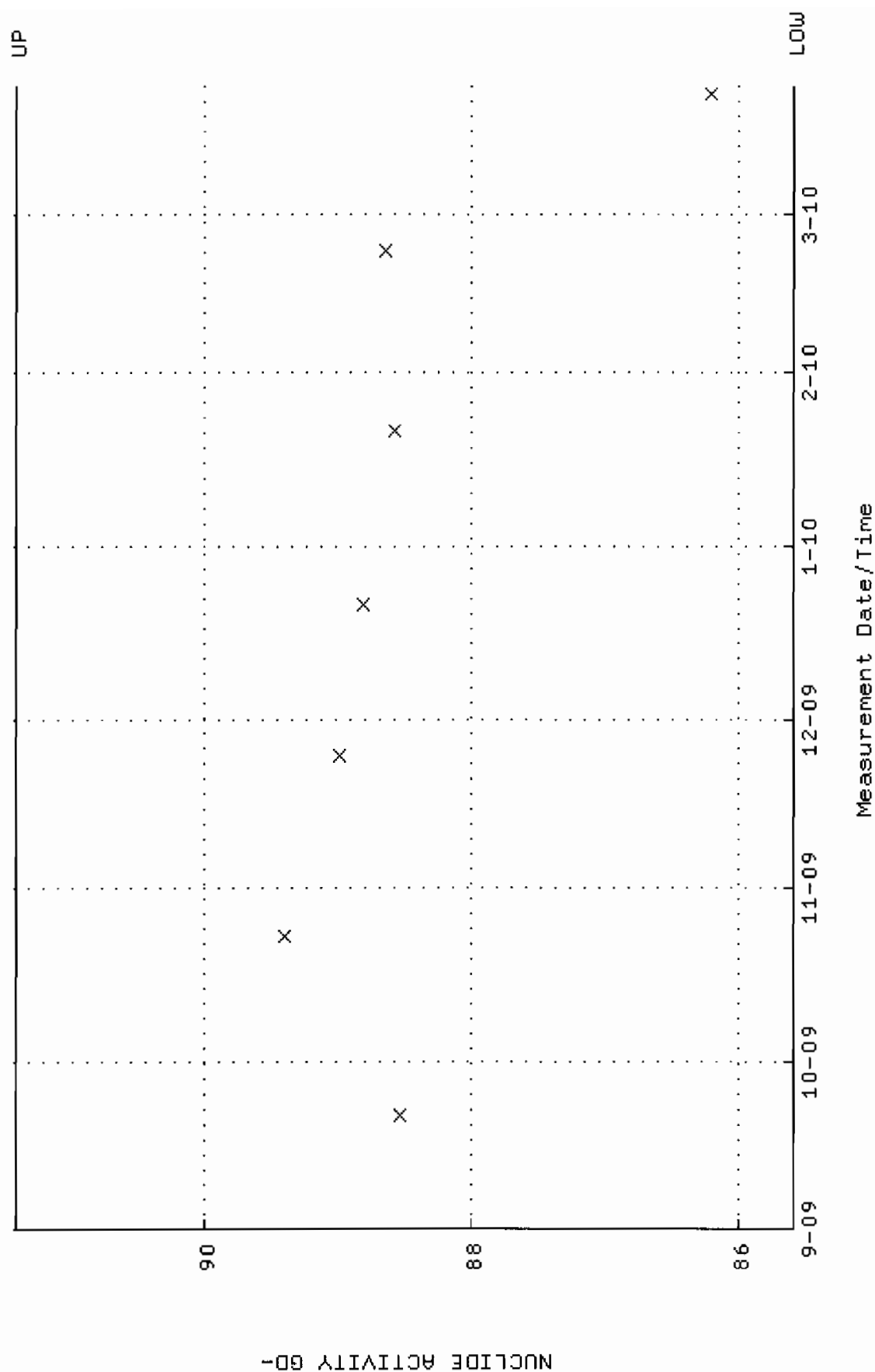
QA filename : DKA100:[ENV_ALPHA.QA.B]B164.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:26 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



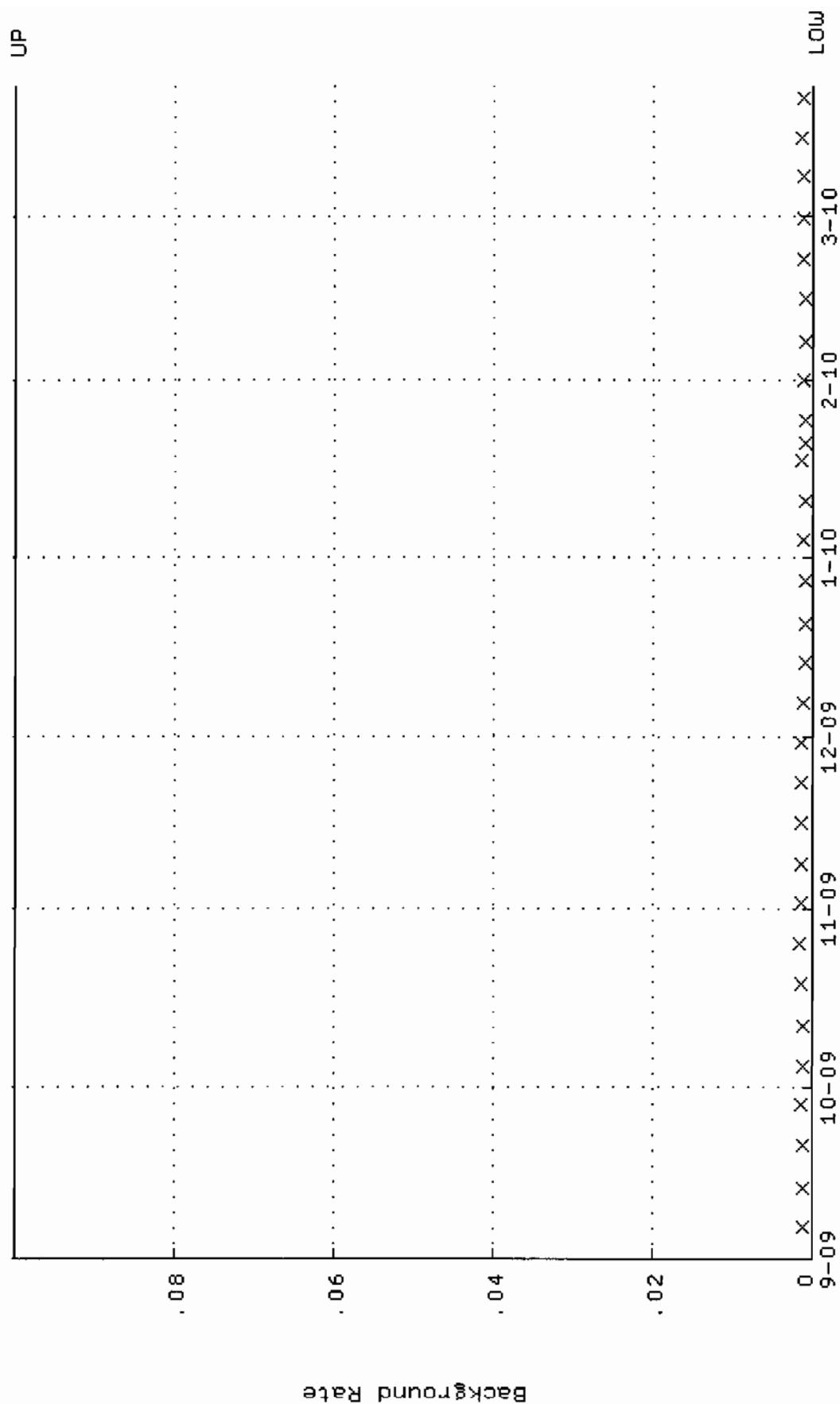
QA filename : DKA100:[ENV_ALPHA.QA.W]W165.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:46 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.364660 through 0.396652



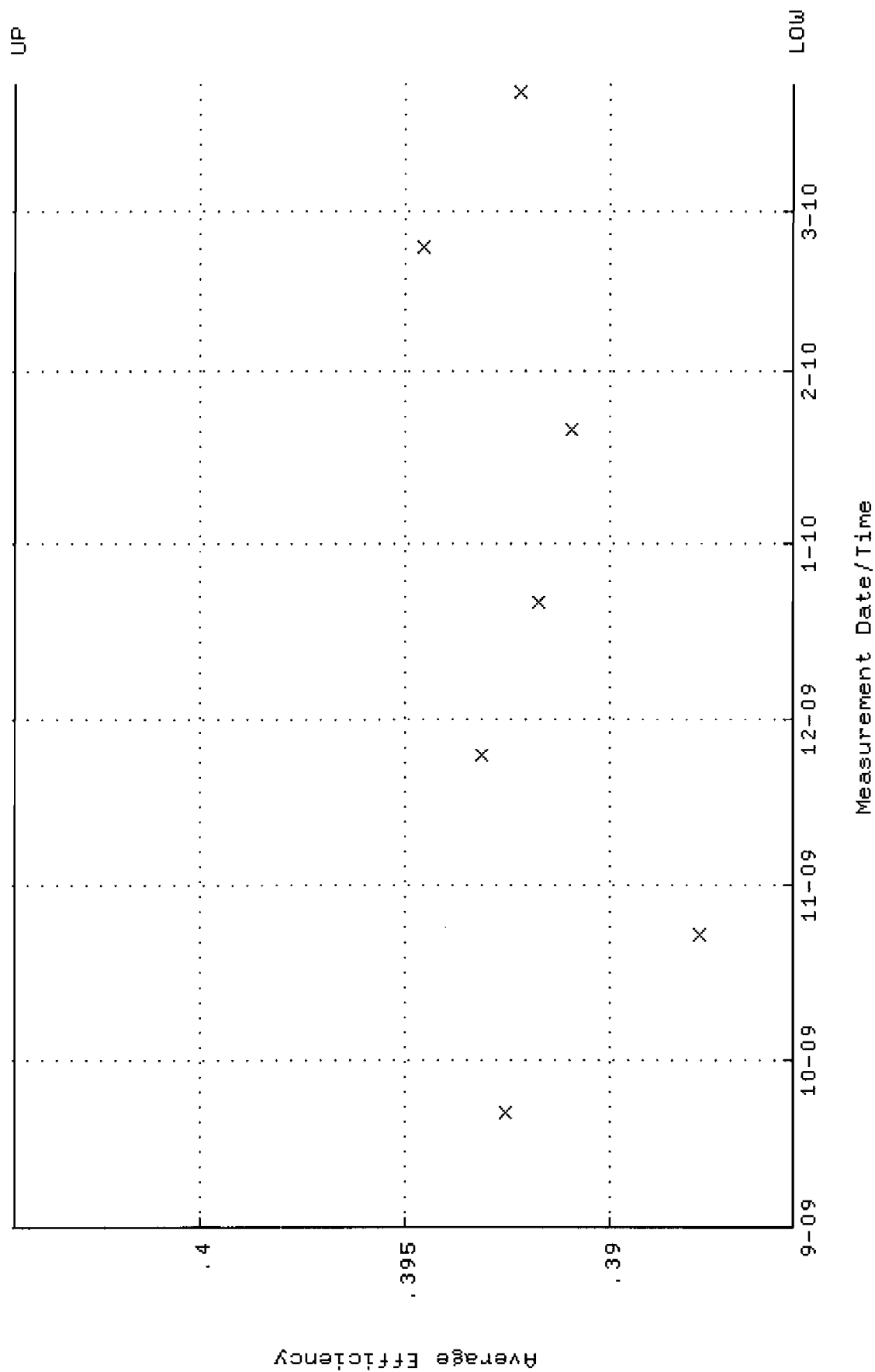
QA filename : DKA100:[ENV_ALPHA.QA.W]W165.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:46 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.5935 through 91.4009



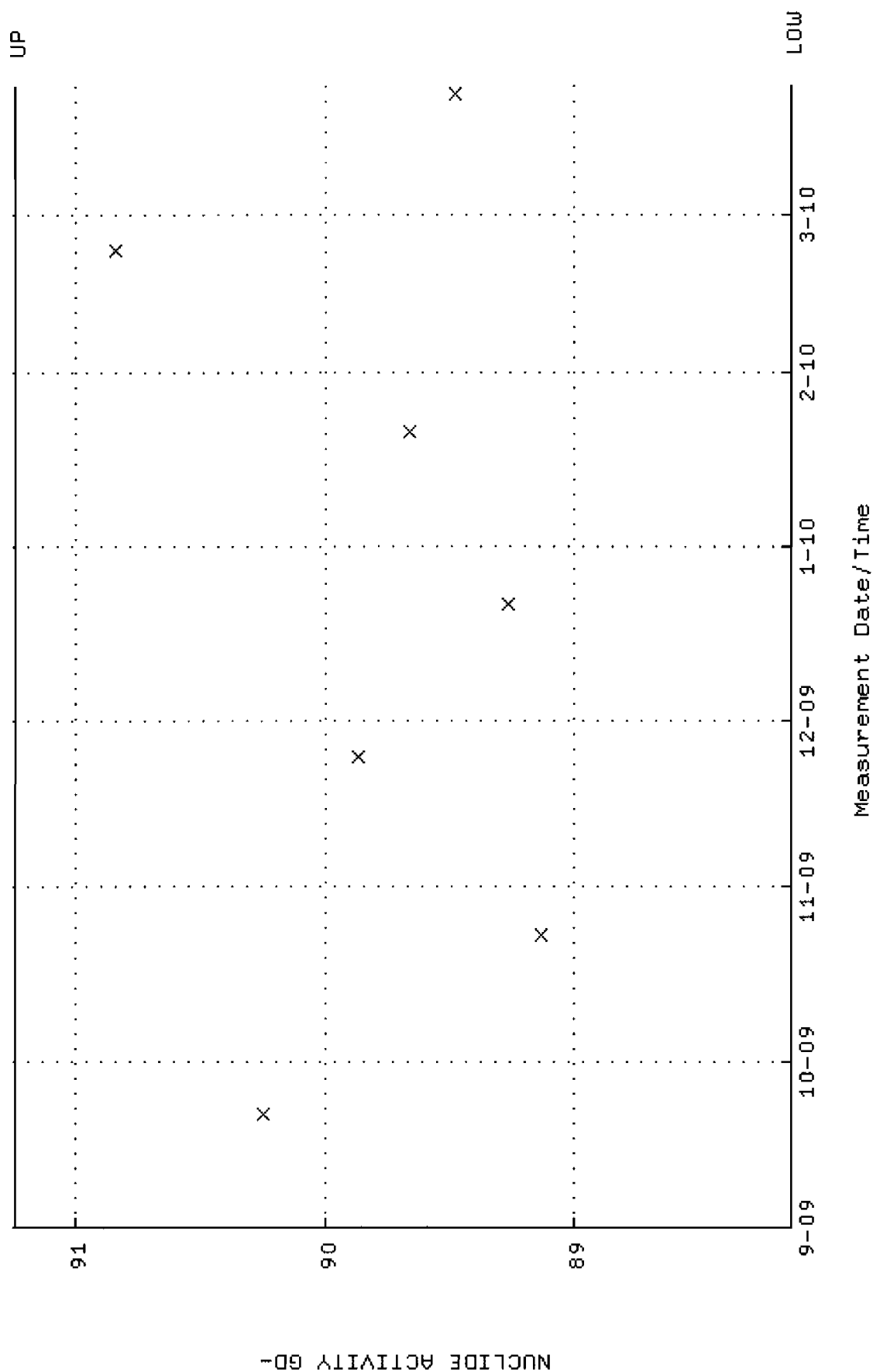
QA filename : DKA100:[ENV_ALPHA.QA.B]B165.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:31 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



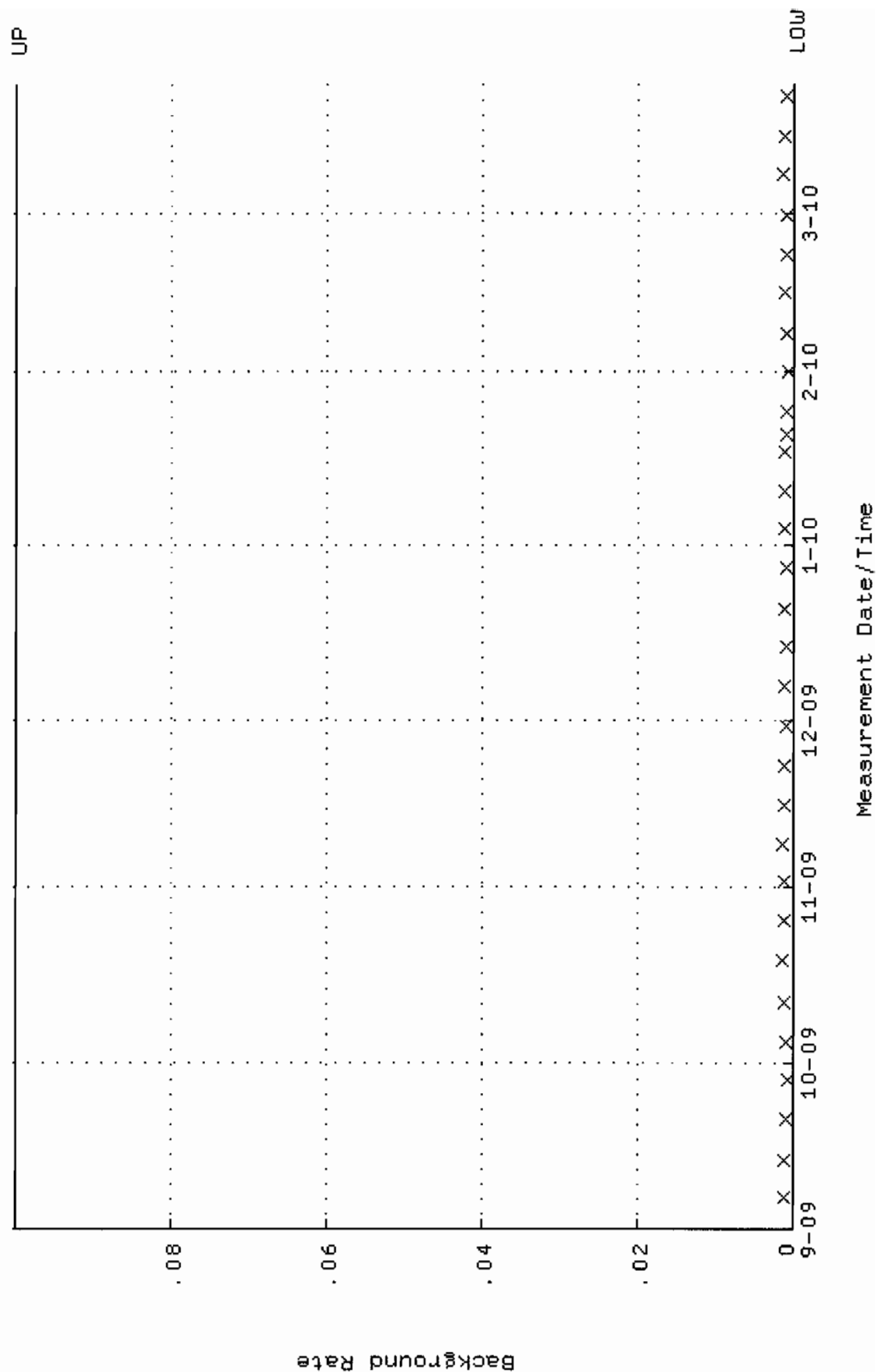
QA filename : DKA100:[ENV_ALPHA.QA.W]U166.QAF;1
 Parameter Name : AVREFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:52 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.385564 through 0.404504



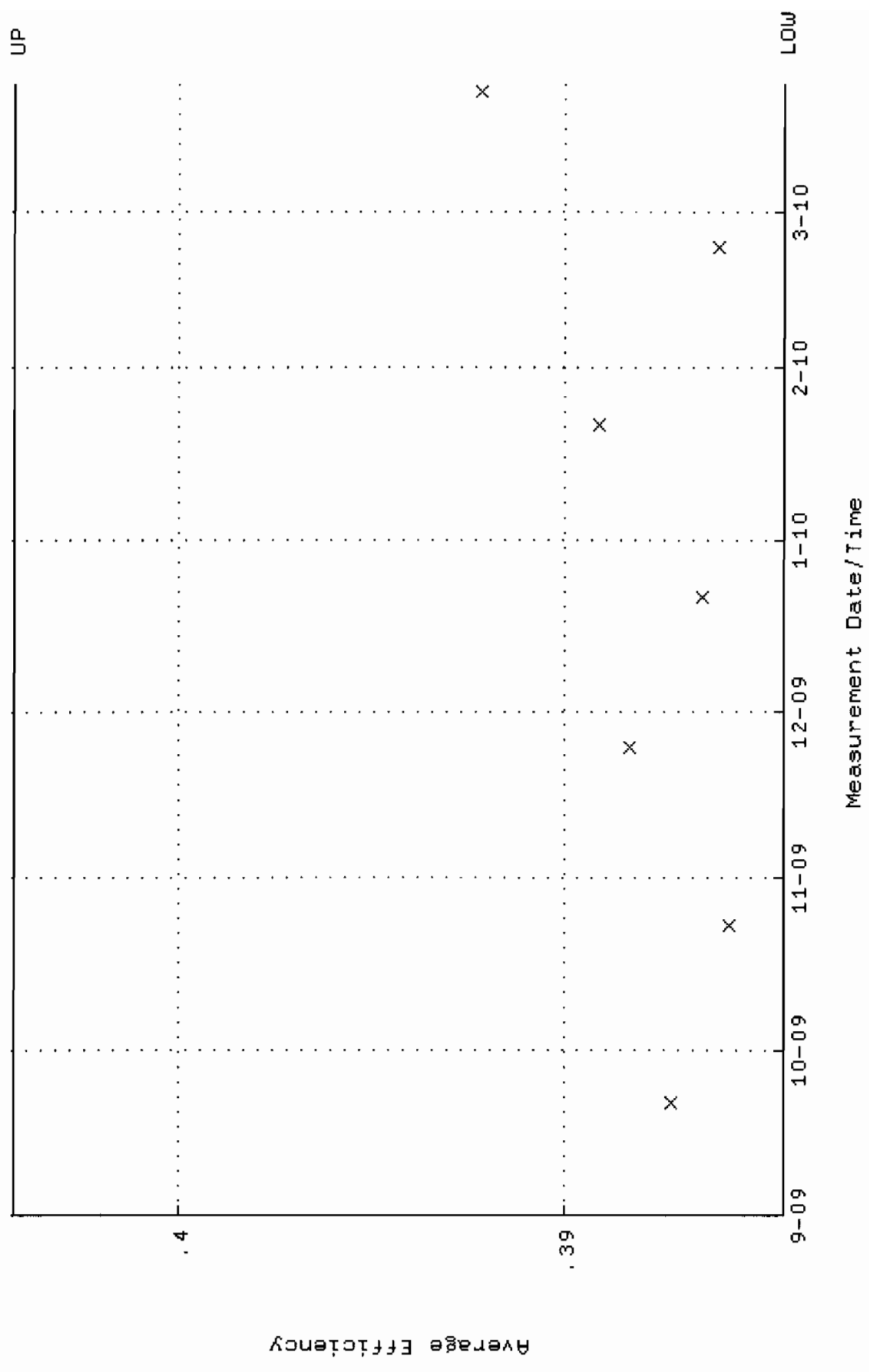
QA filename : DKA100:[ENV_ALPHA.QA.W]w166.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:52 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.1264 through 91.2442



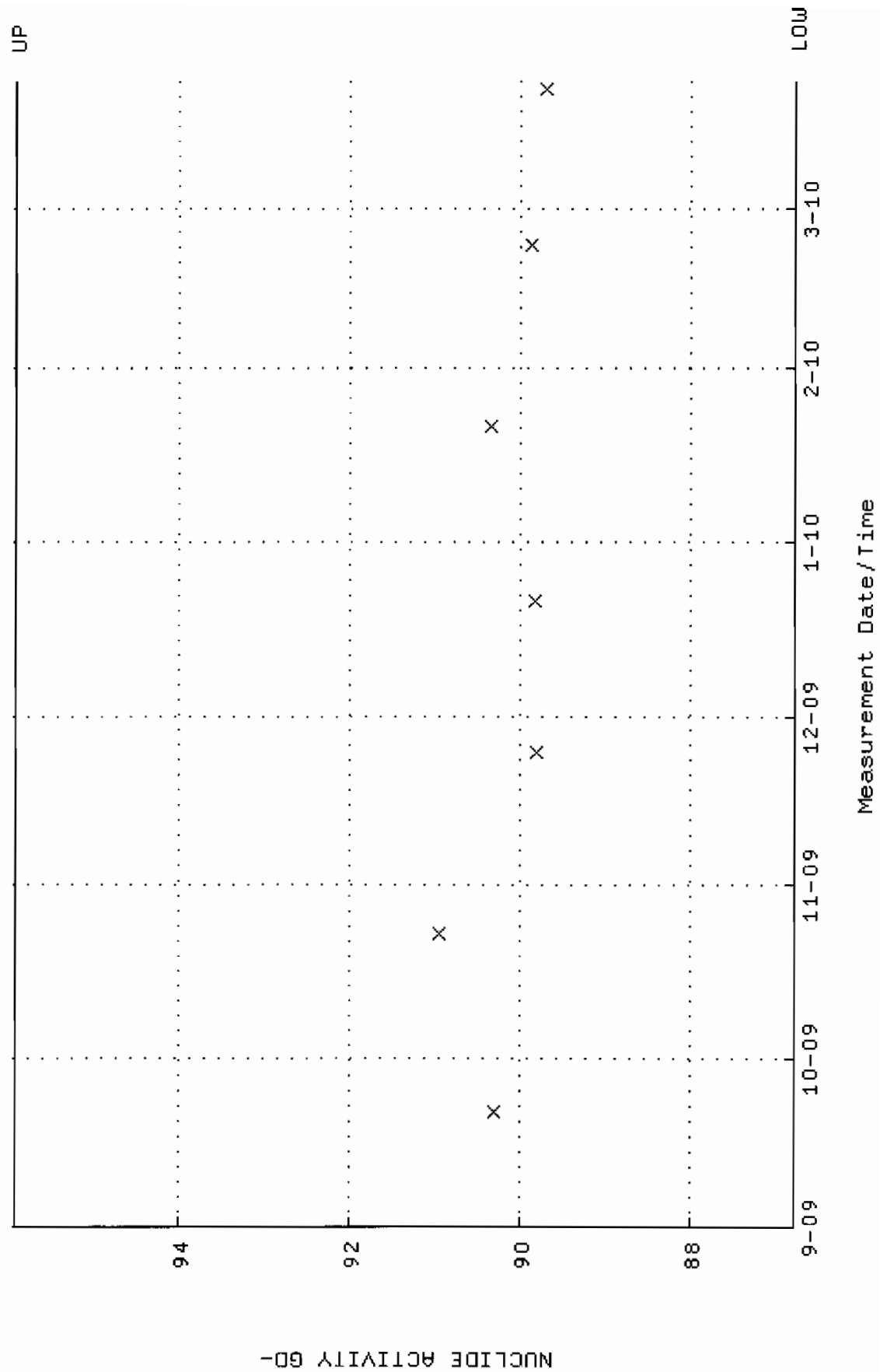
QA filename : DKA100:[ENV_ALPHA.QA.B]B166.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:35 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



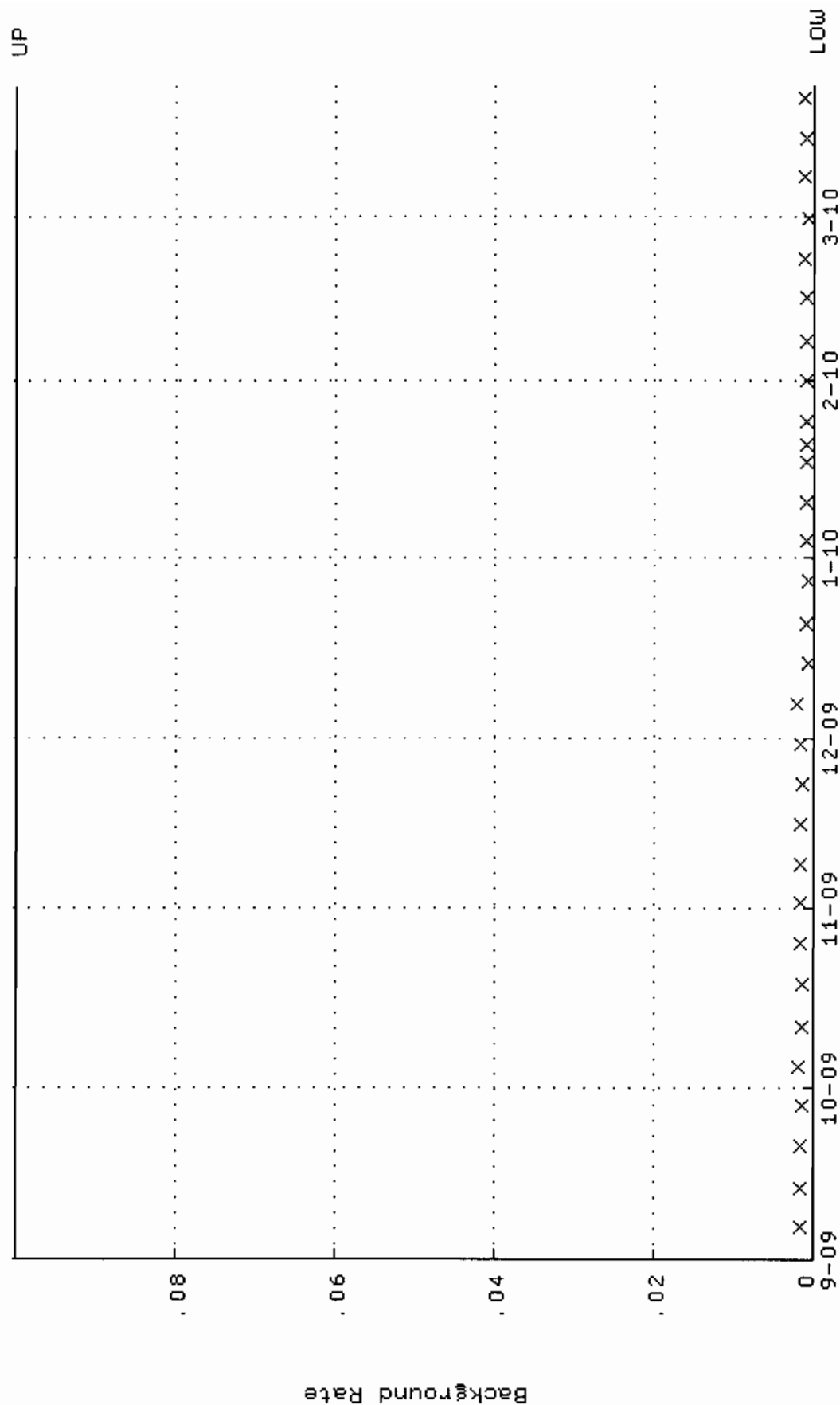
QA filename : DKA100:[ENV_ALPHA.QA.W]W167.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:59 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.384285 through 0.404285



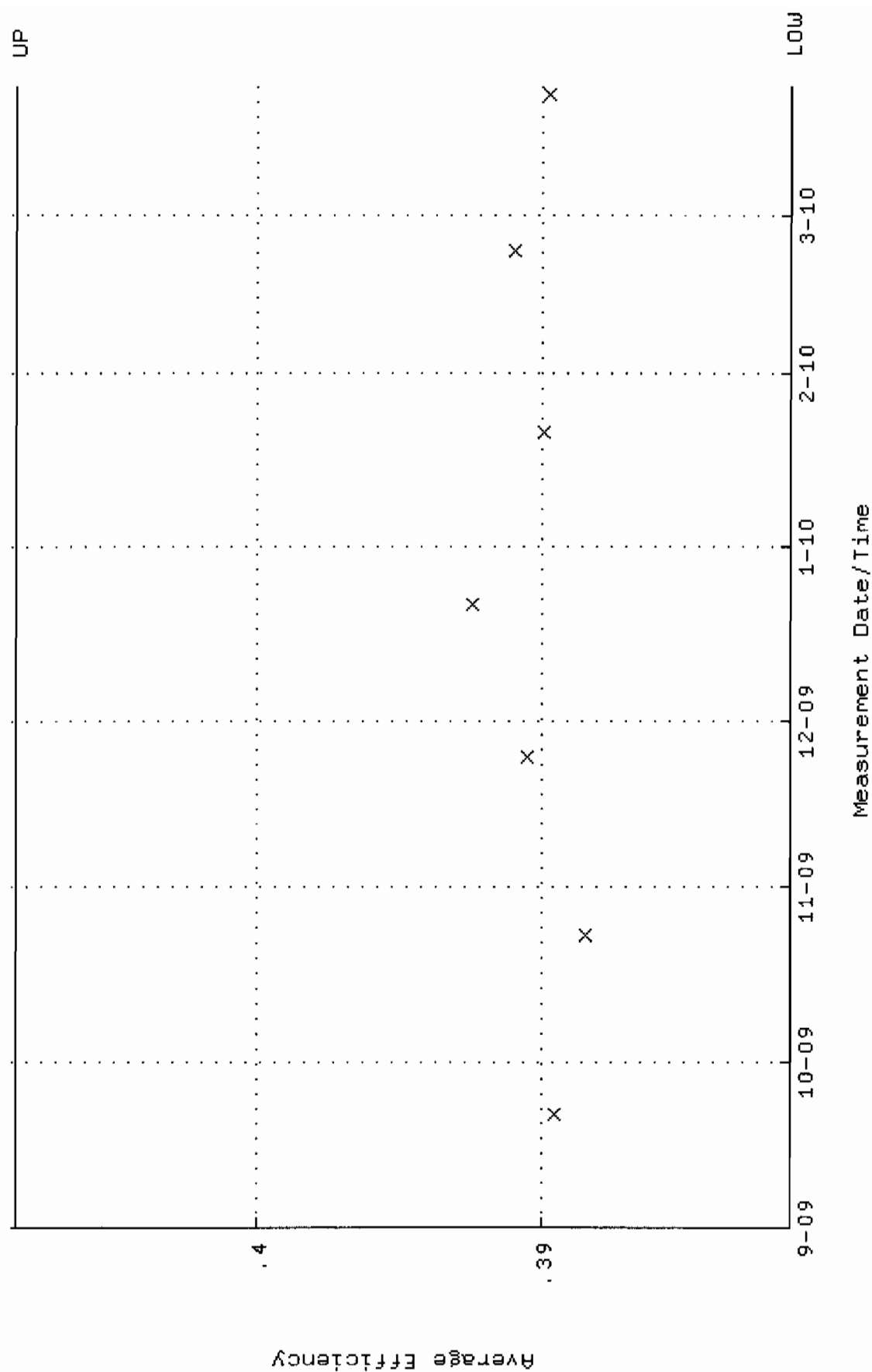
QA filename : DKA100:[ENV_ALPHA.QA.W]W167.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:59 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.7740 through 95.9082



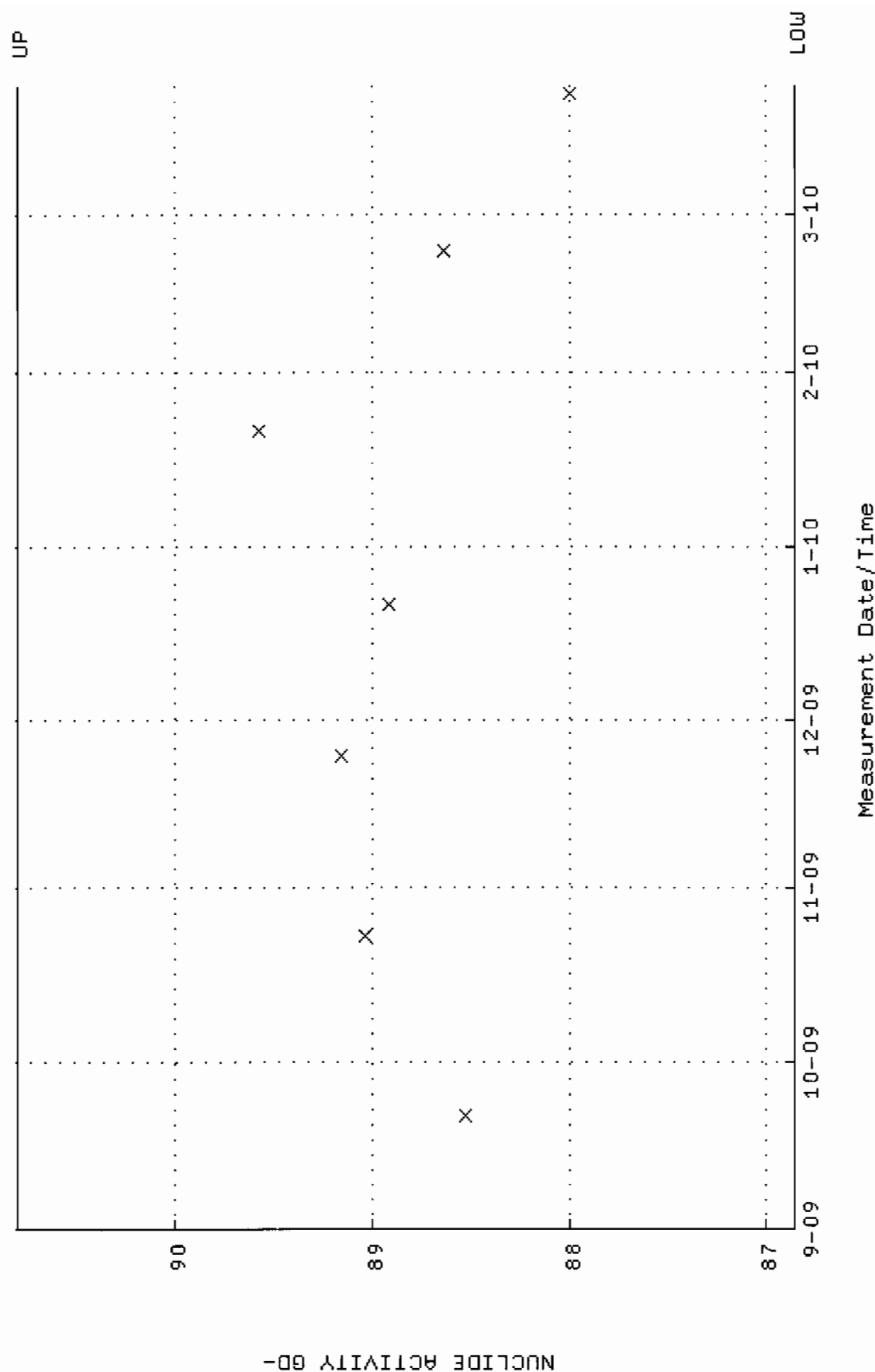
QA filename : DKA100:[ENV_ALPHA.QA.B]B167.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:40 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



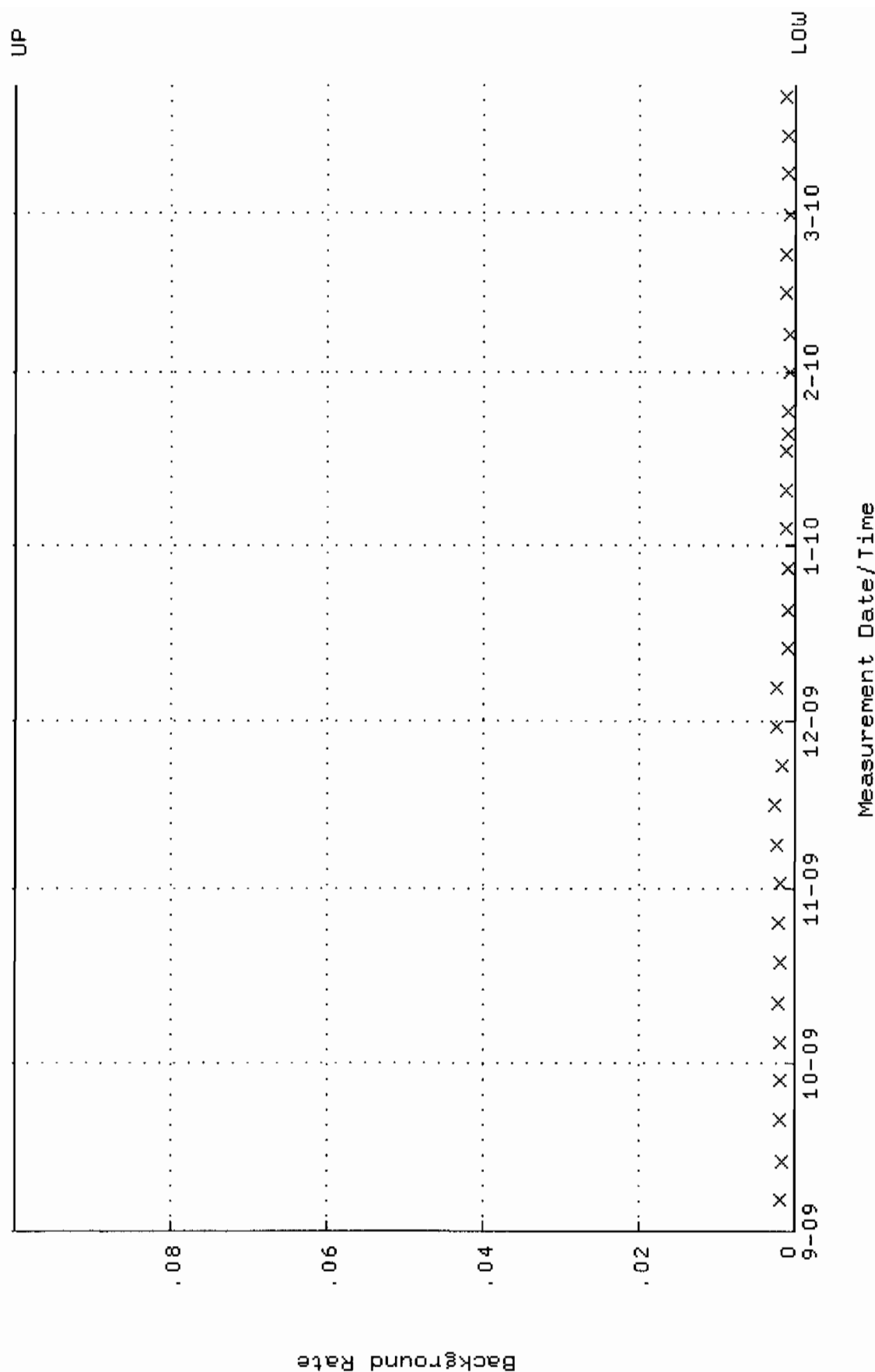
QA filename : DKA100:[ENV_ALPHA.QA.W]W168.QAF;1
 Parameter Name : AVREFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:07 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.381339 through 0.408495



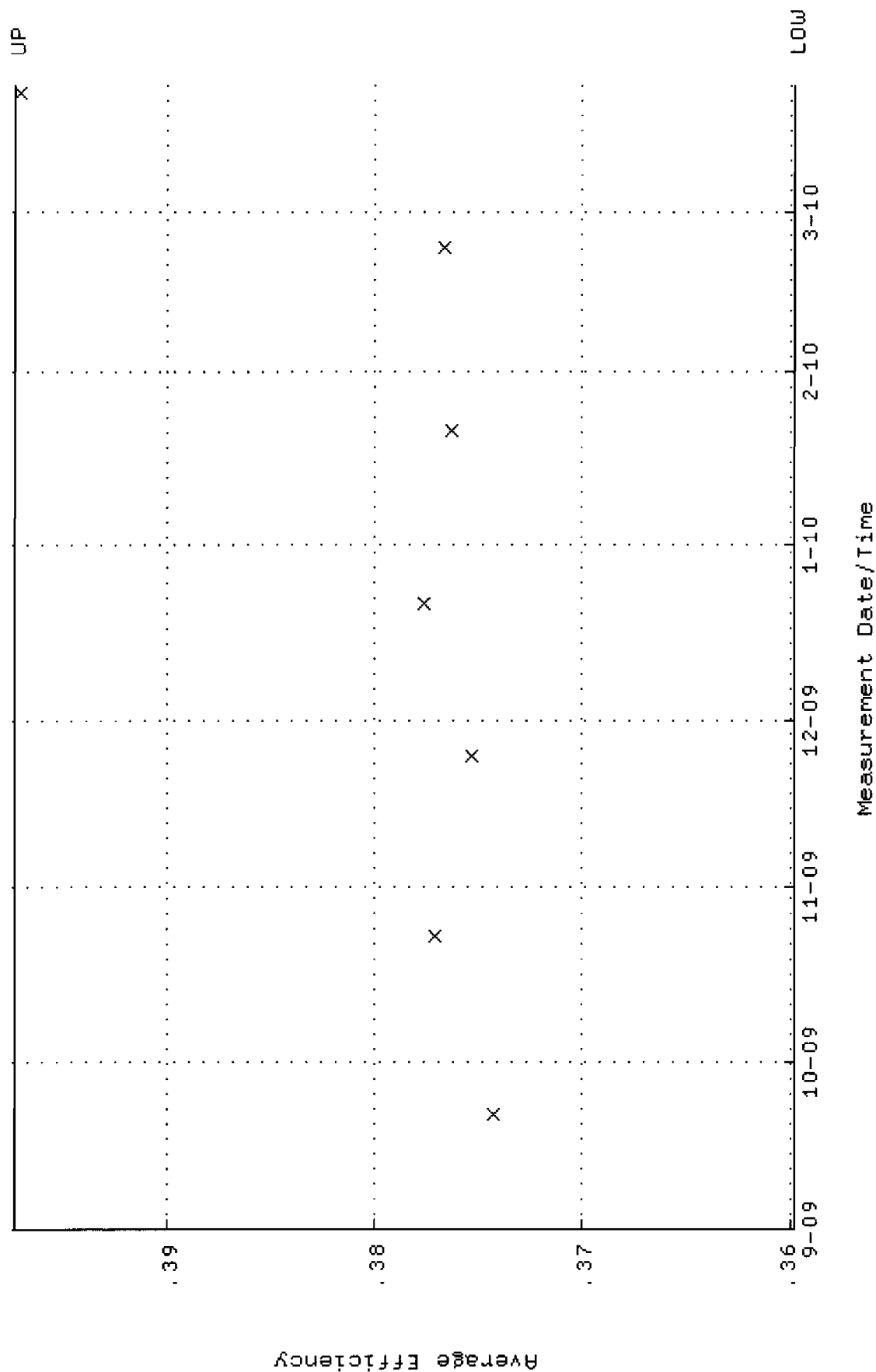
QA filename : DKA100:[ENV_ALPHA.QA.W]U168.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:07 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.8544 through 90.7976



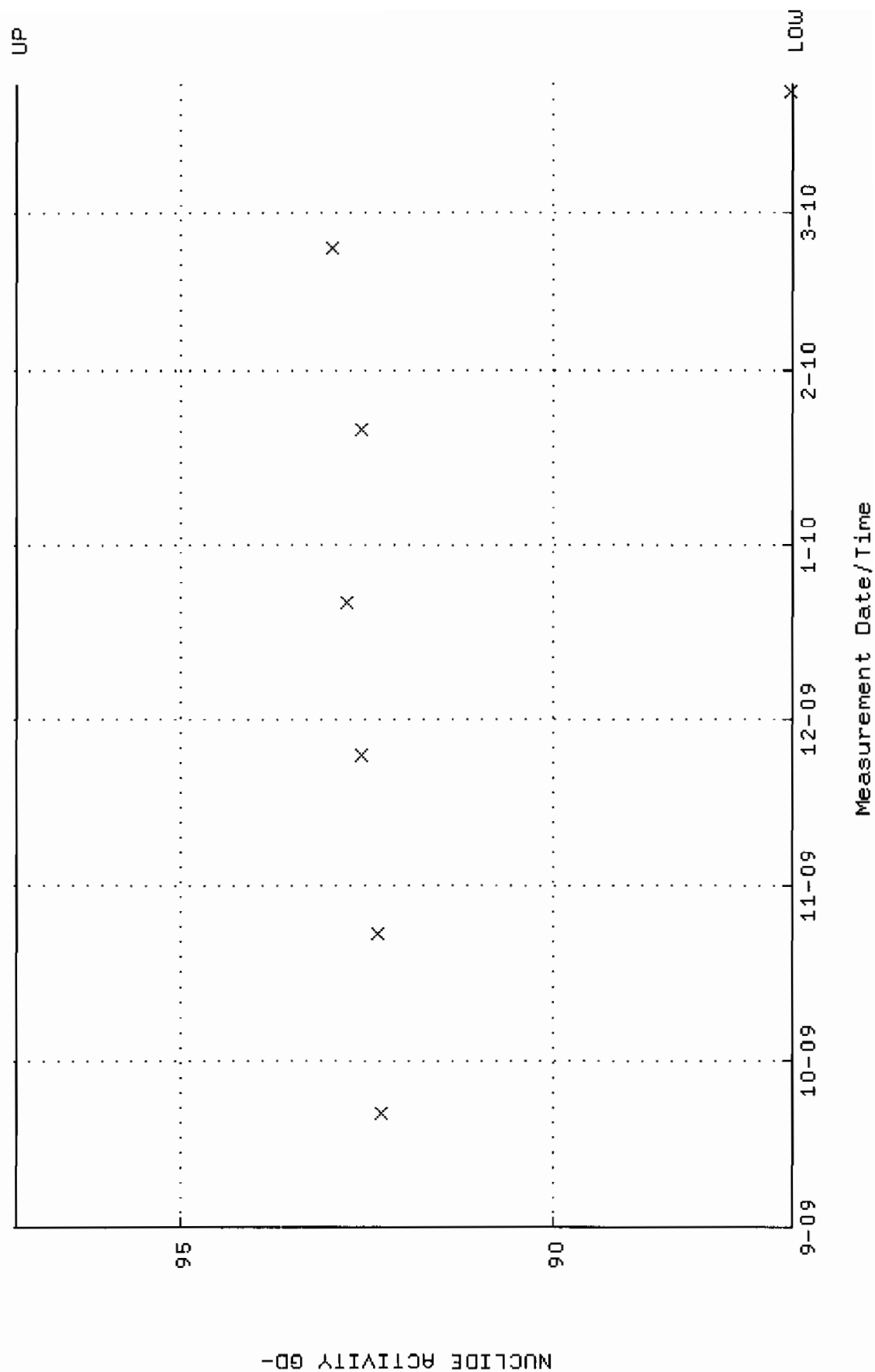
QA filename : DKA100:[ENV_ALPHA.QA.B]B168.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:44 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



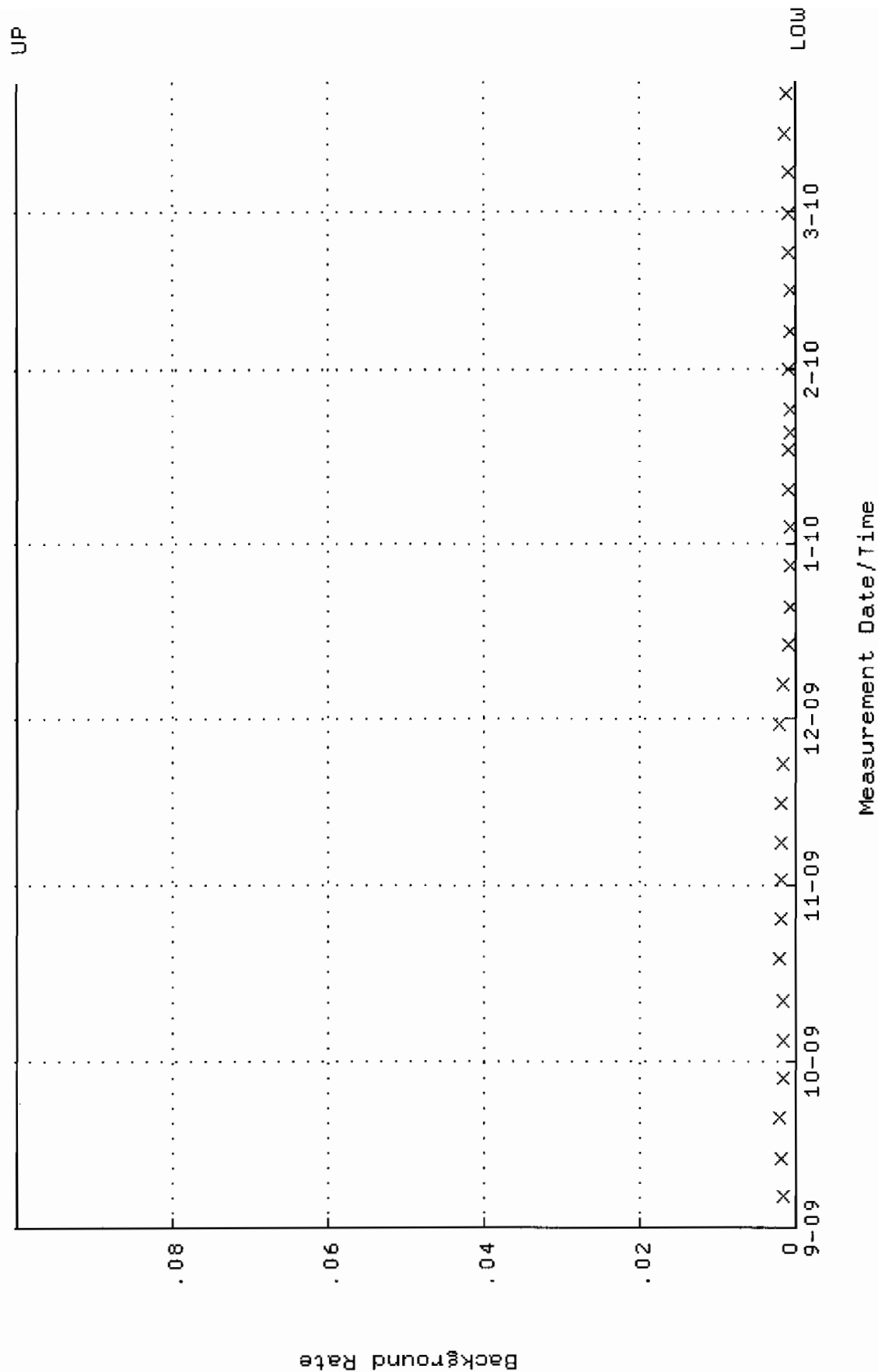
QA filename : DKA100:[ENV_ALPHA.QA.W]U169.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:13 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.359789 through 0.397279



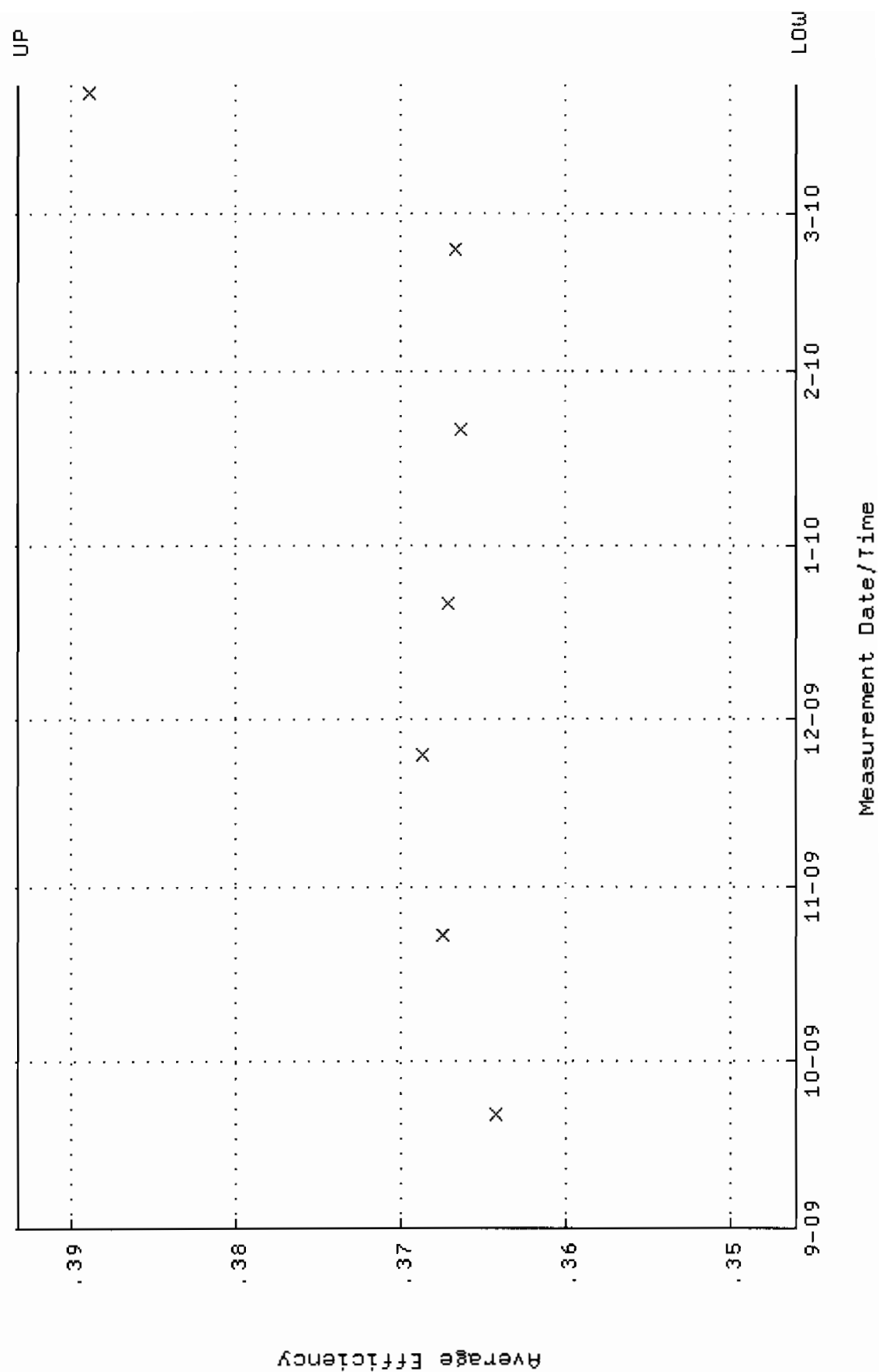
QA filename : DKA100:[ENV_ALPHA.QA.W]W169.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:13 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.7806 through 97.2228



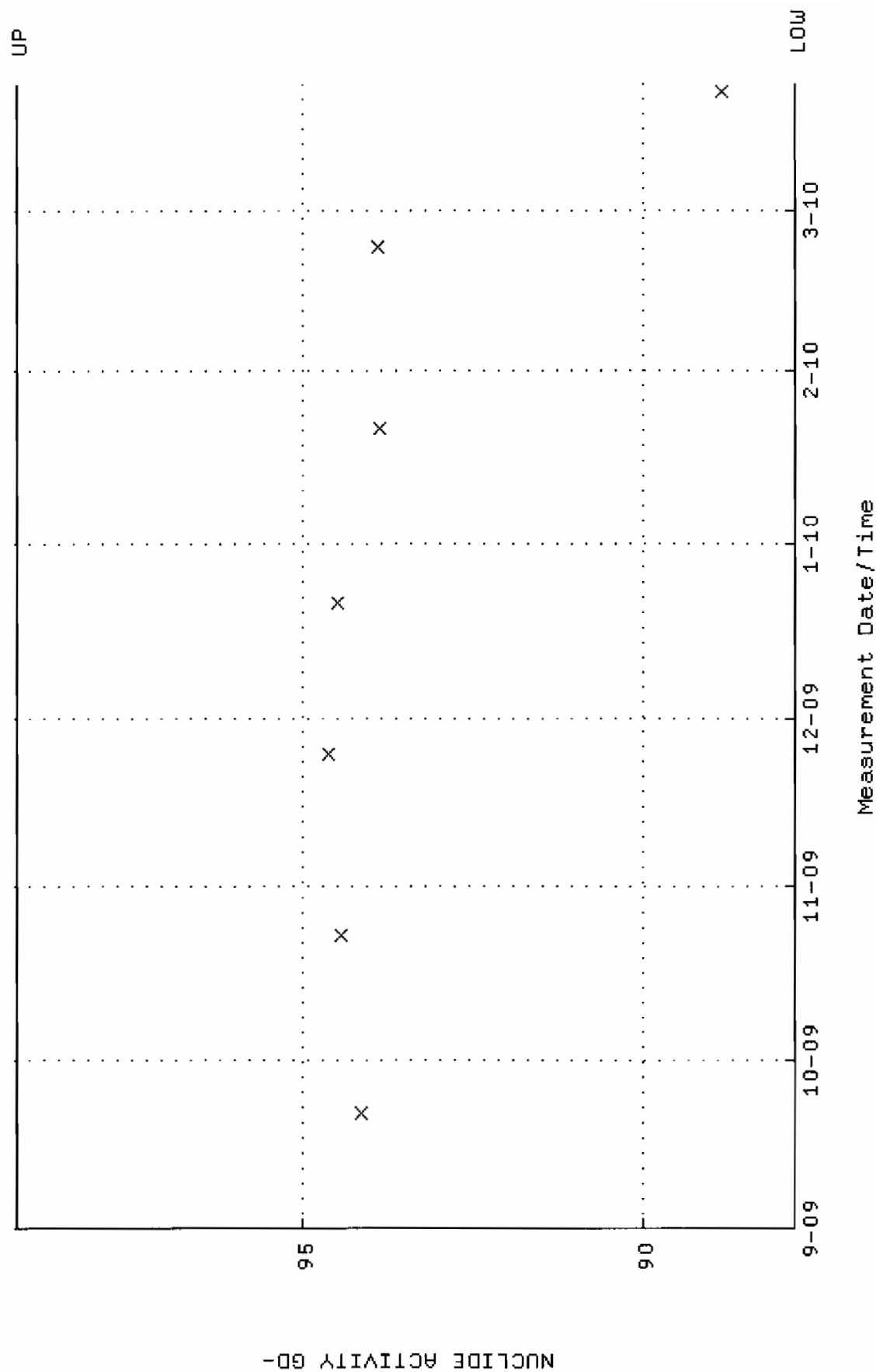
QA filename : DKA100:[ENV_ALPHA.QA.B]B169.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:48 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



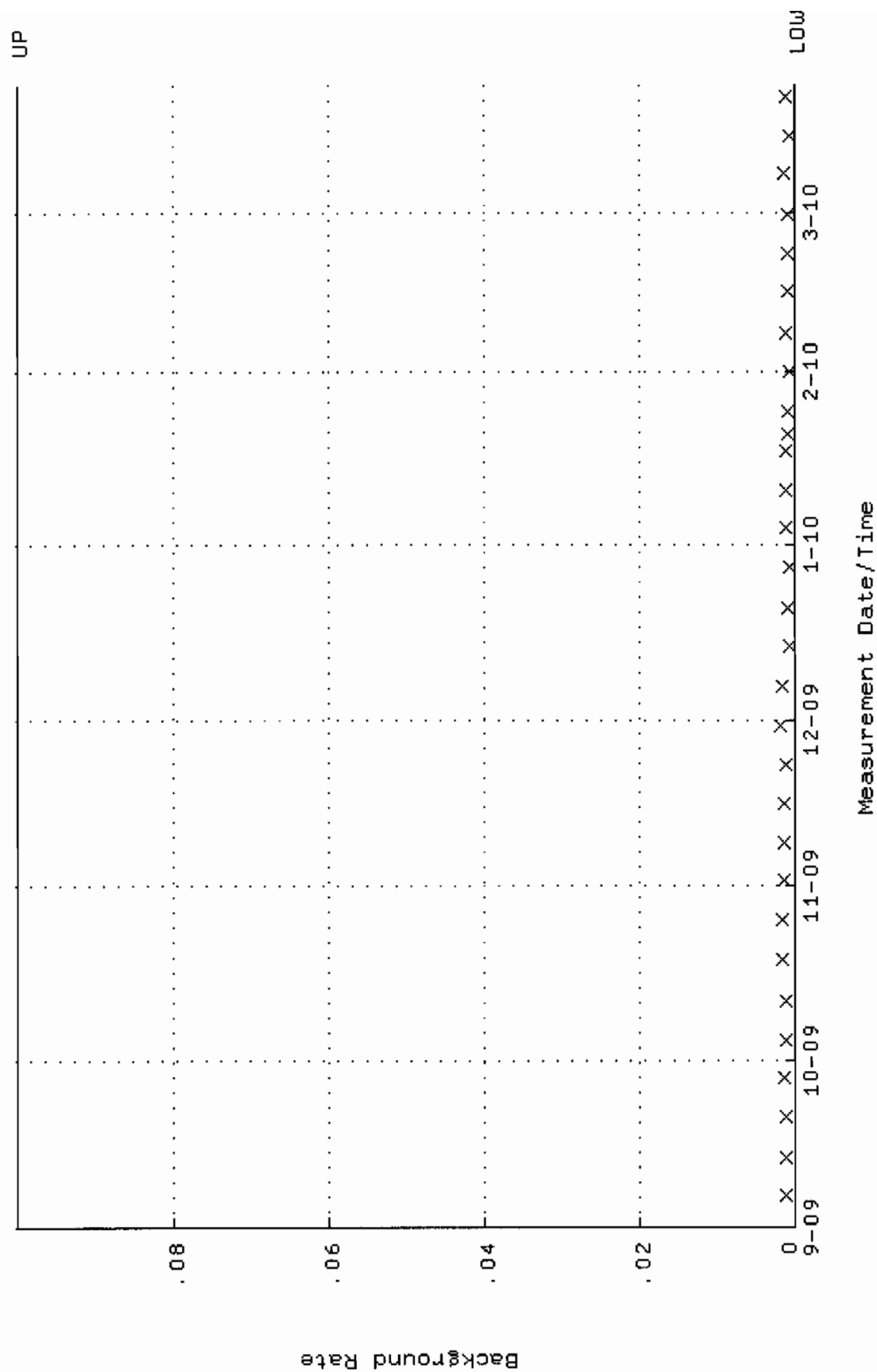
QA filename : DKA100:[ENV_ALPHA,QA,W]W170.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:20 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.345988 through 0.393202



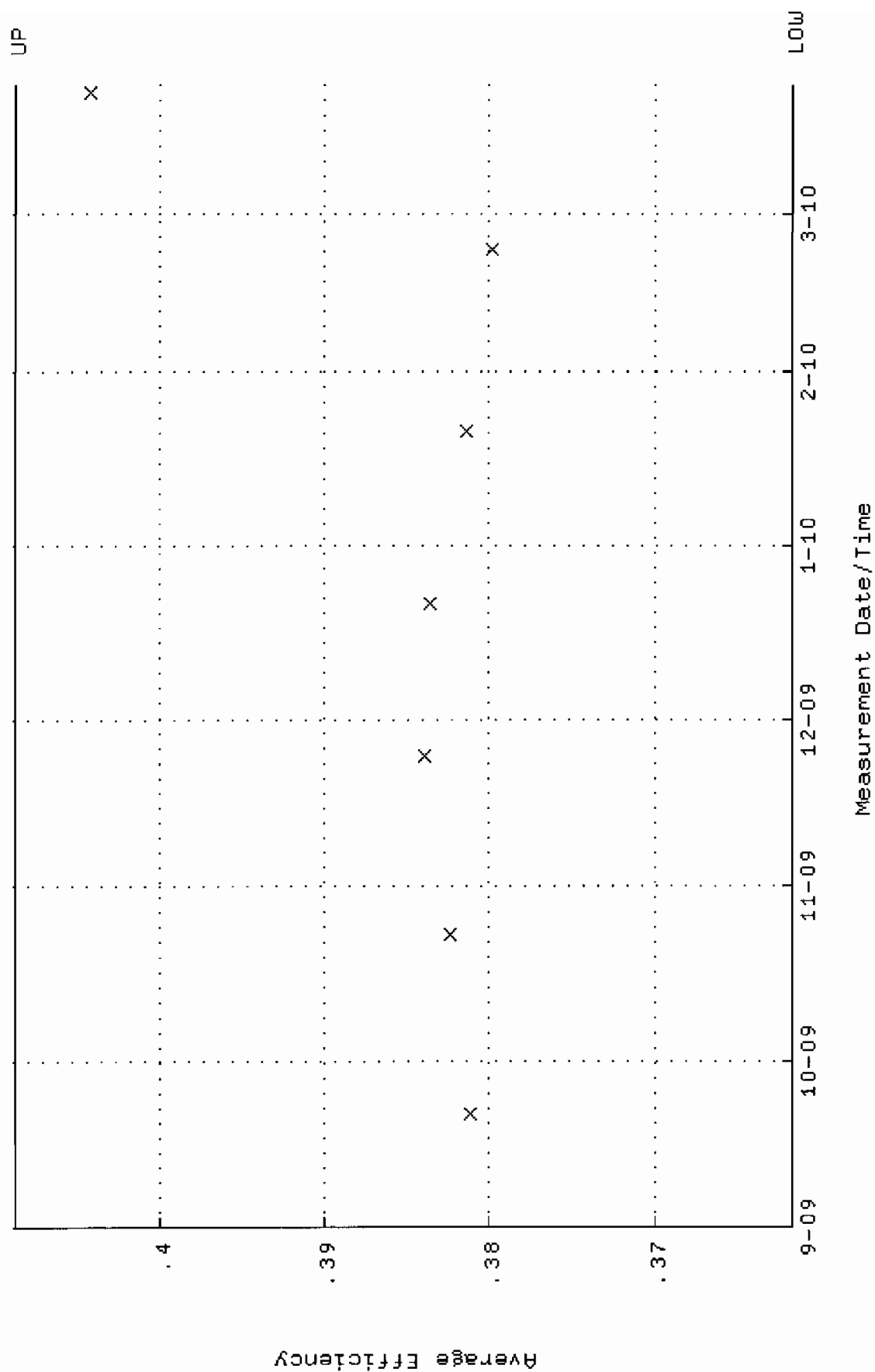
QA filename : DKA100:[ENV_ALPHA.QA.W]w170.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:20 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.7657 through 99.2031



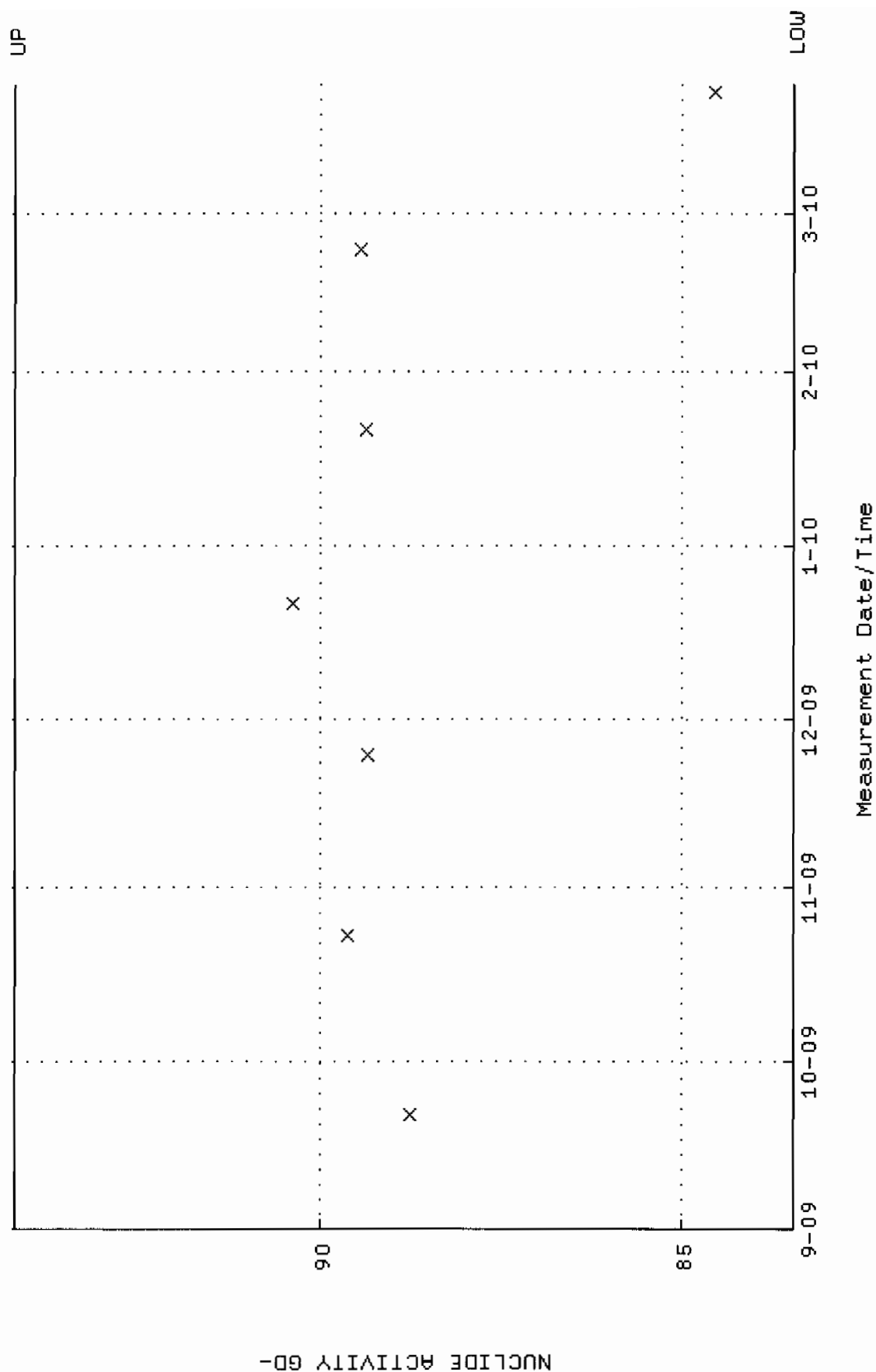
QA filename : DKA100:[ENV_ALPHA.QA.B]B170.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:53 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



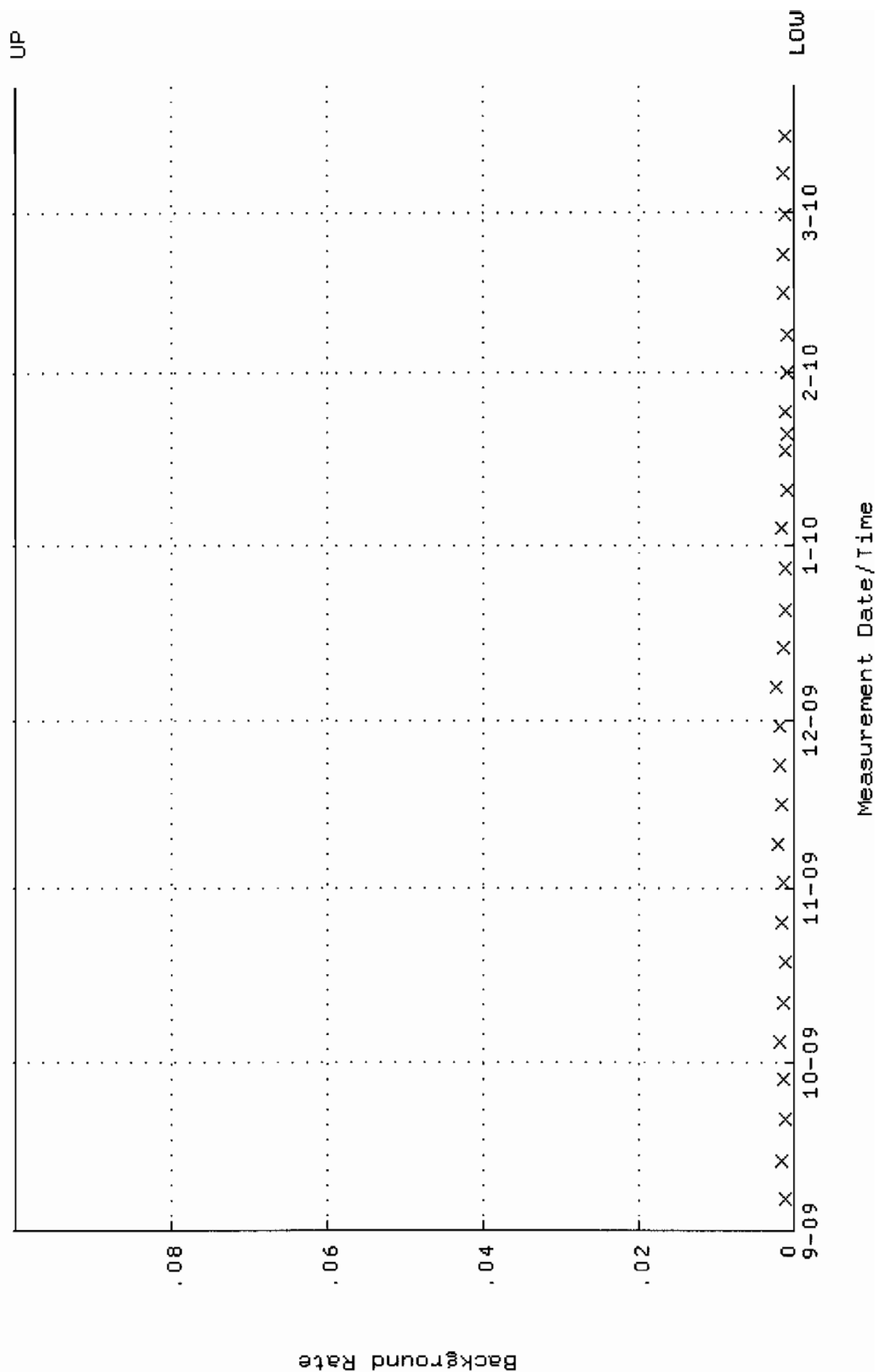
QA filename : DKA100:[ENV_ALPHA.QA.W]W171.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:26 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.361650 through 0.408748



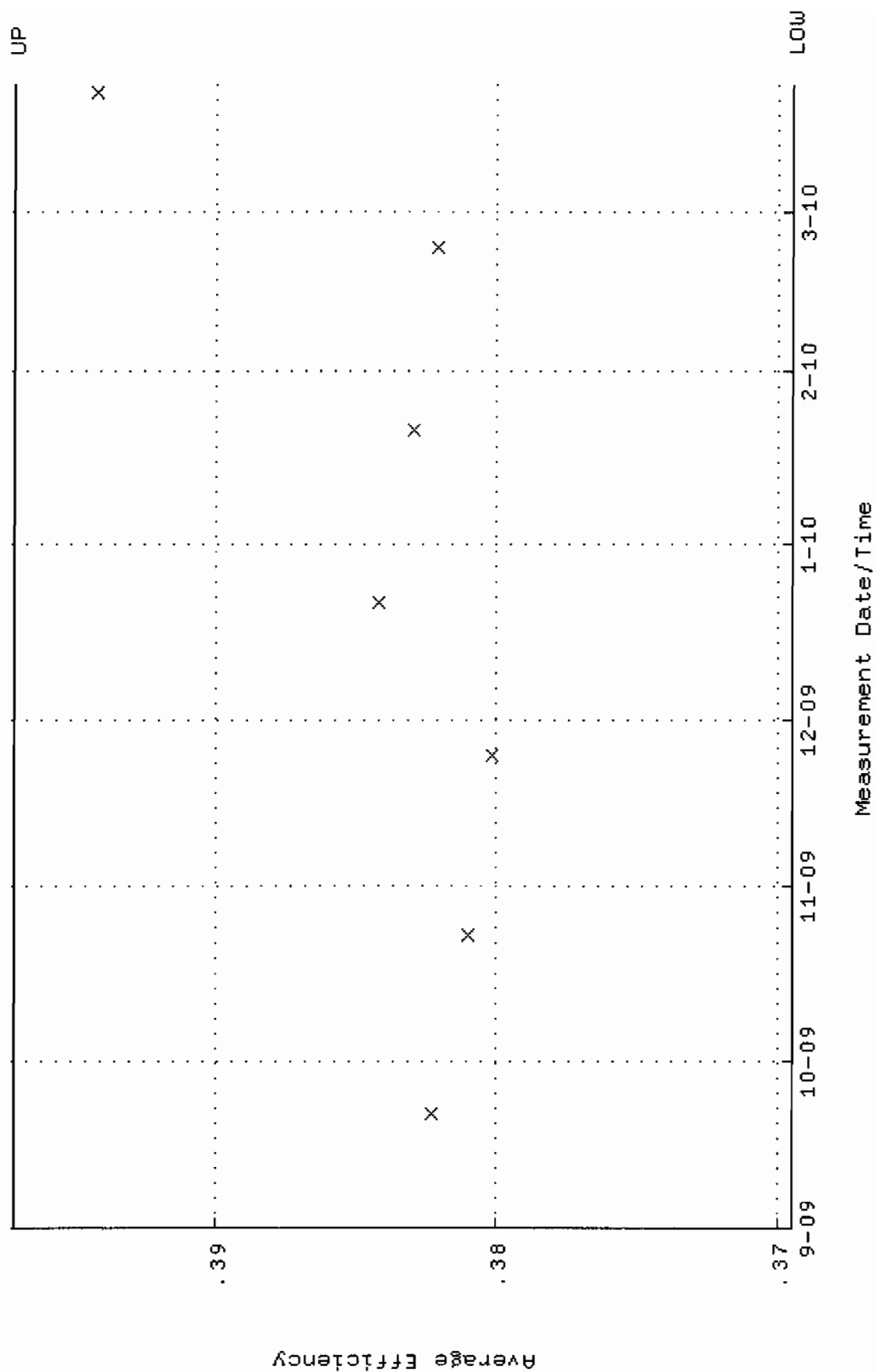
QA filename : DKA100:[ENV_ALPHA.QA.W]W171.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:26 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.4334 through 94.2602



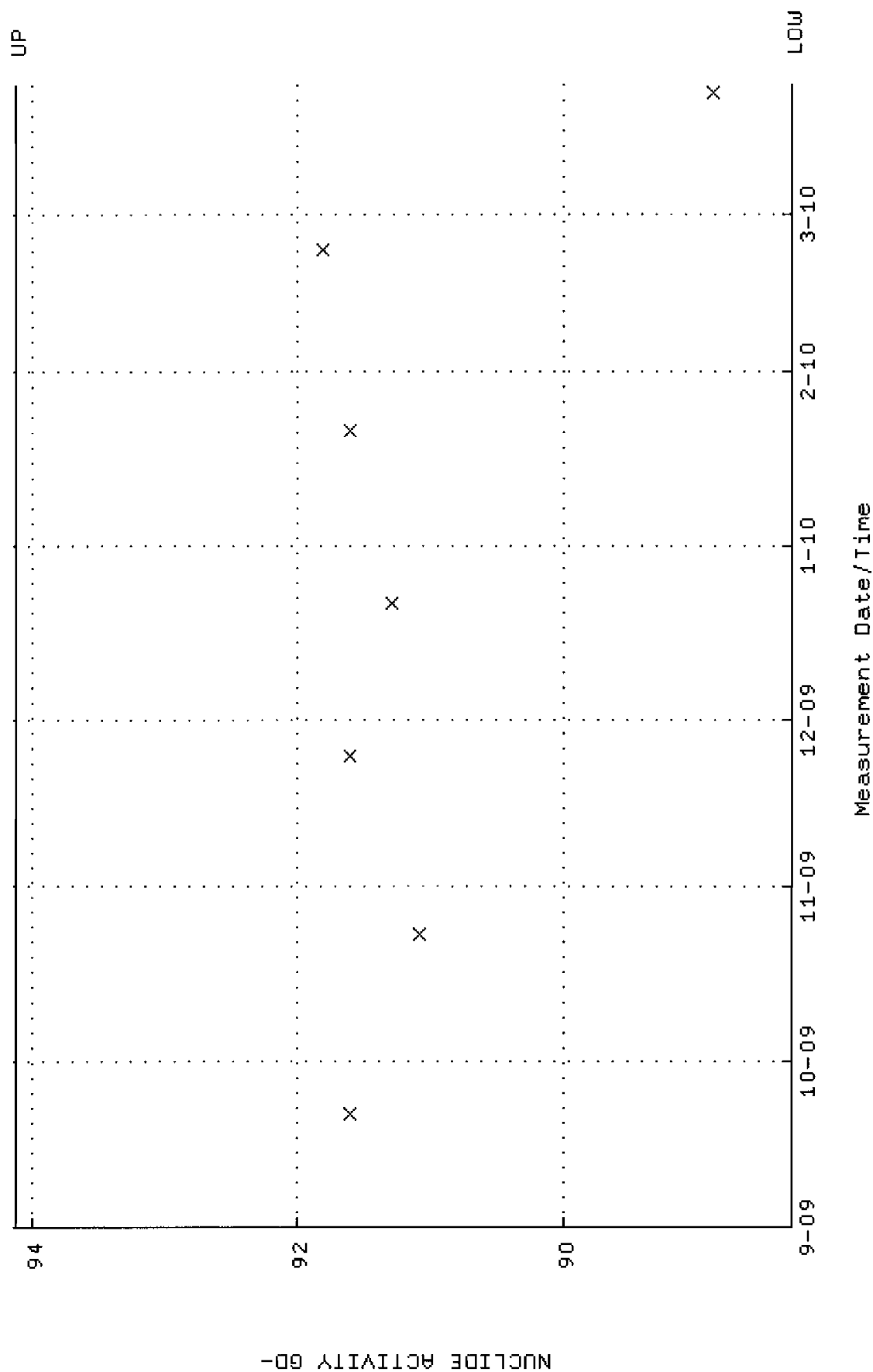
QA filename : DKA100:[ENV_ALPHA.QA.B]B171.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:58 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



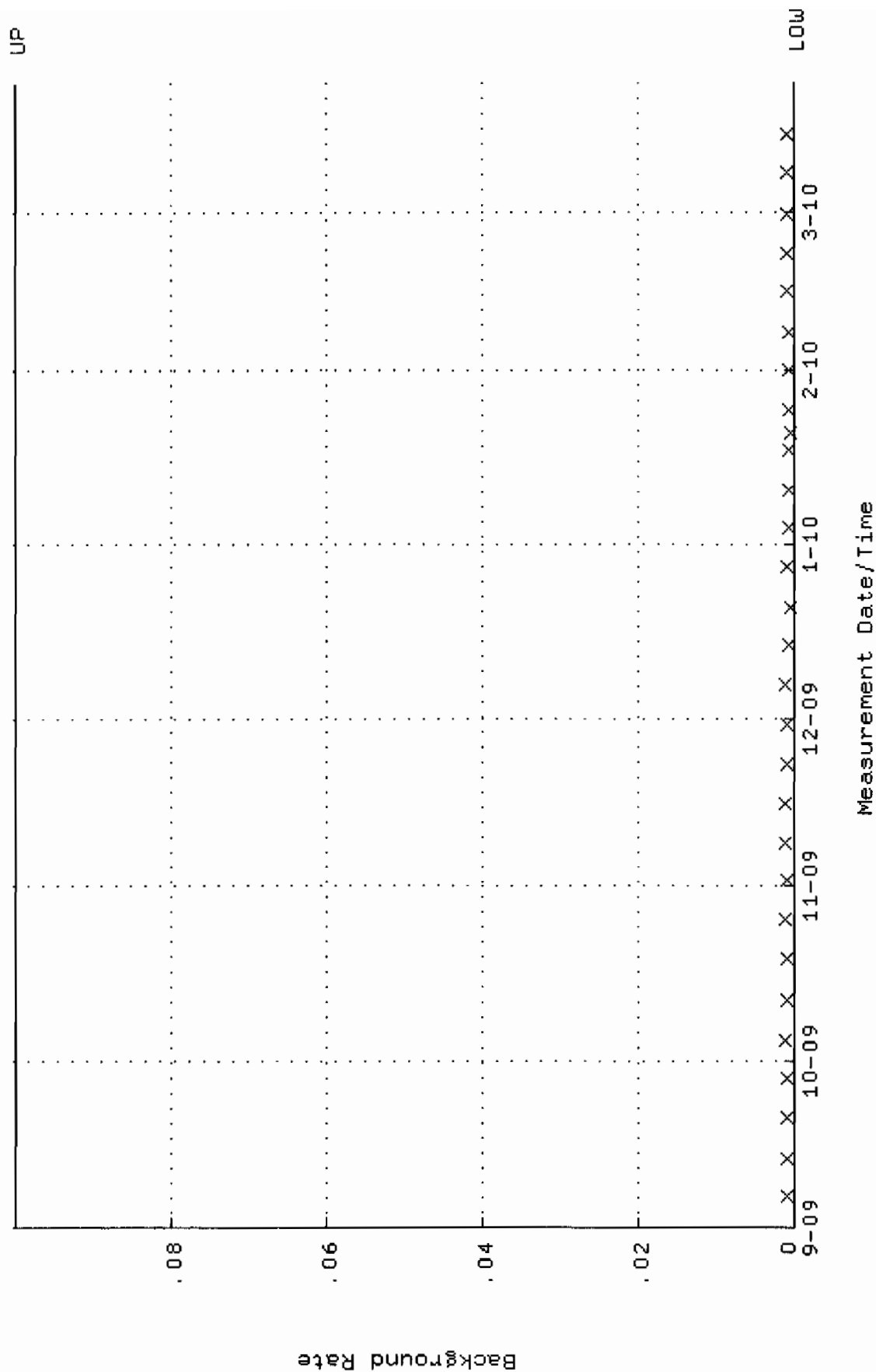
QA filename : DKA100:[ENV_ALPHA.QA.W]U172.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:32 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.369454 through 0.397138



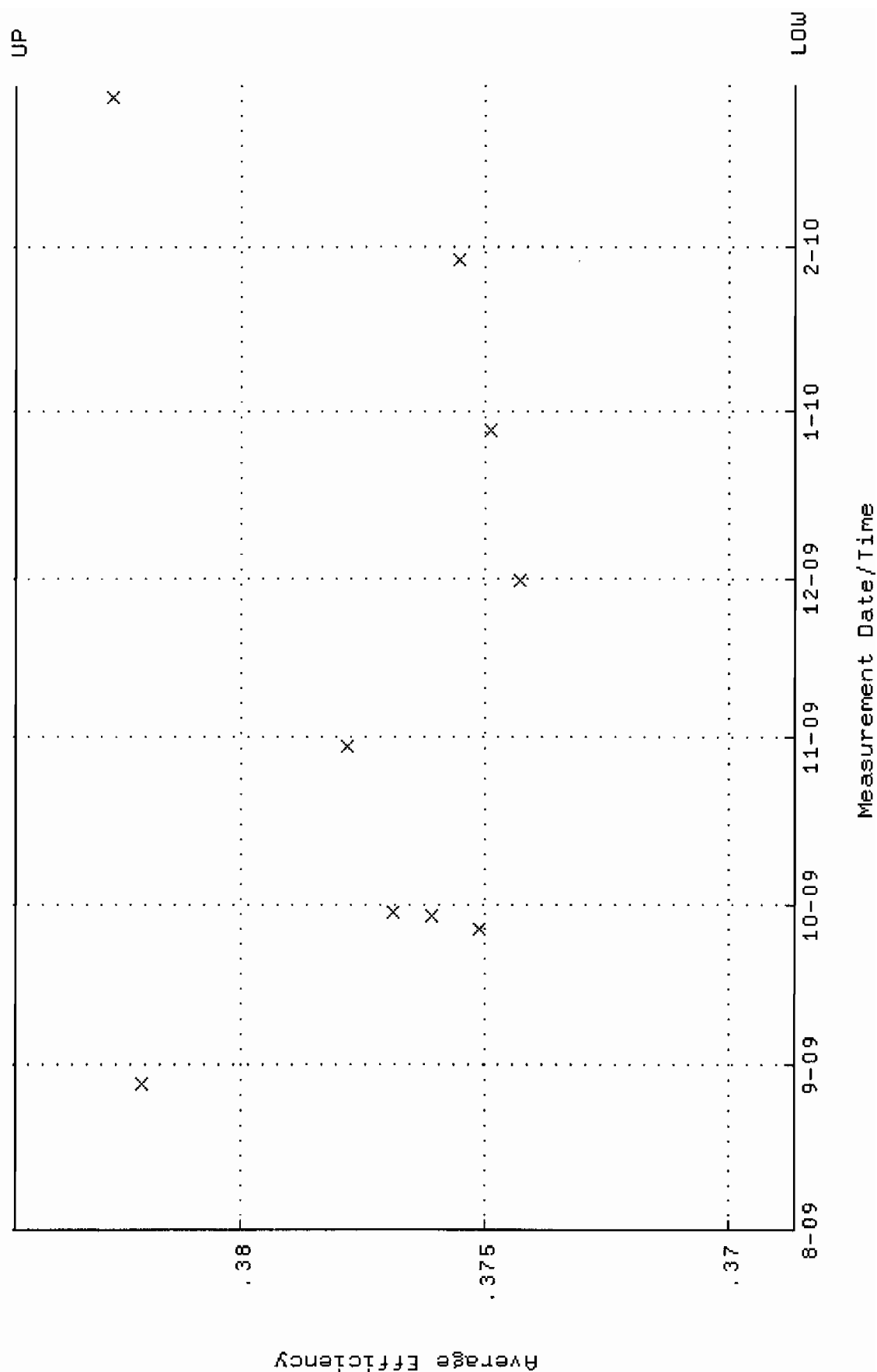
QA filename : DKA100:[ENV_ALPHA.QA.W]w172.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:32 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.2917 through 94.1169



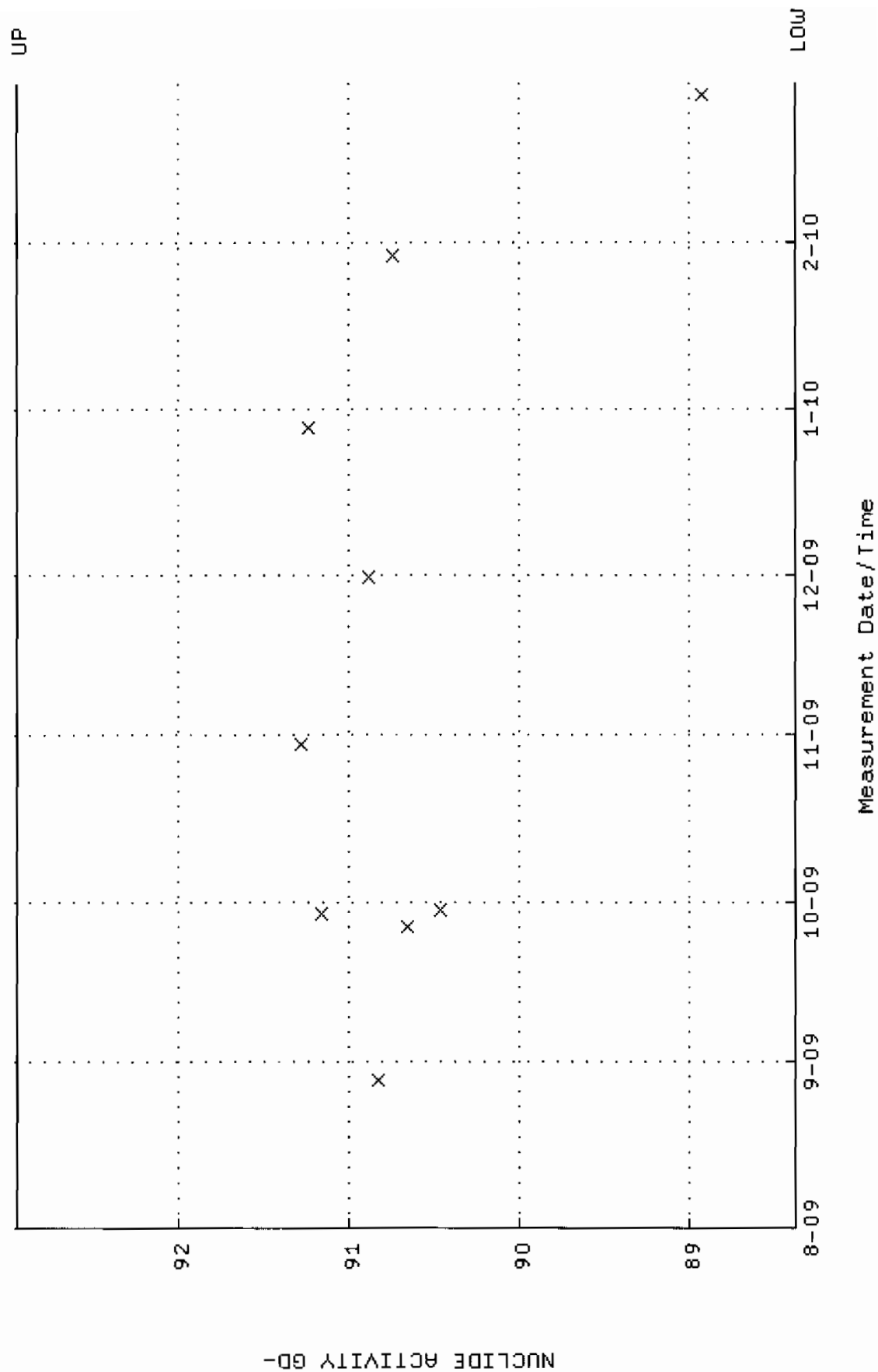
QA filename : DKA100:[ENV_ALPHA.QA.B]B172.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:45:02 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



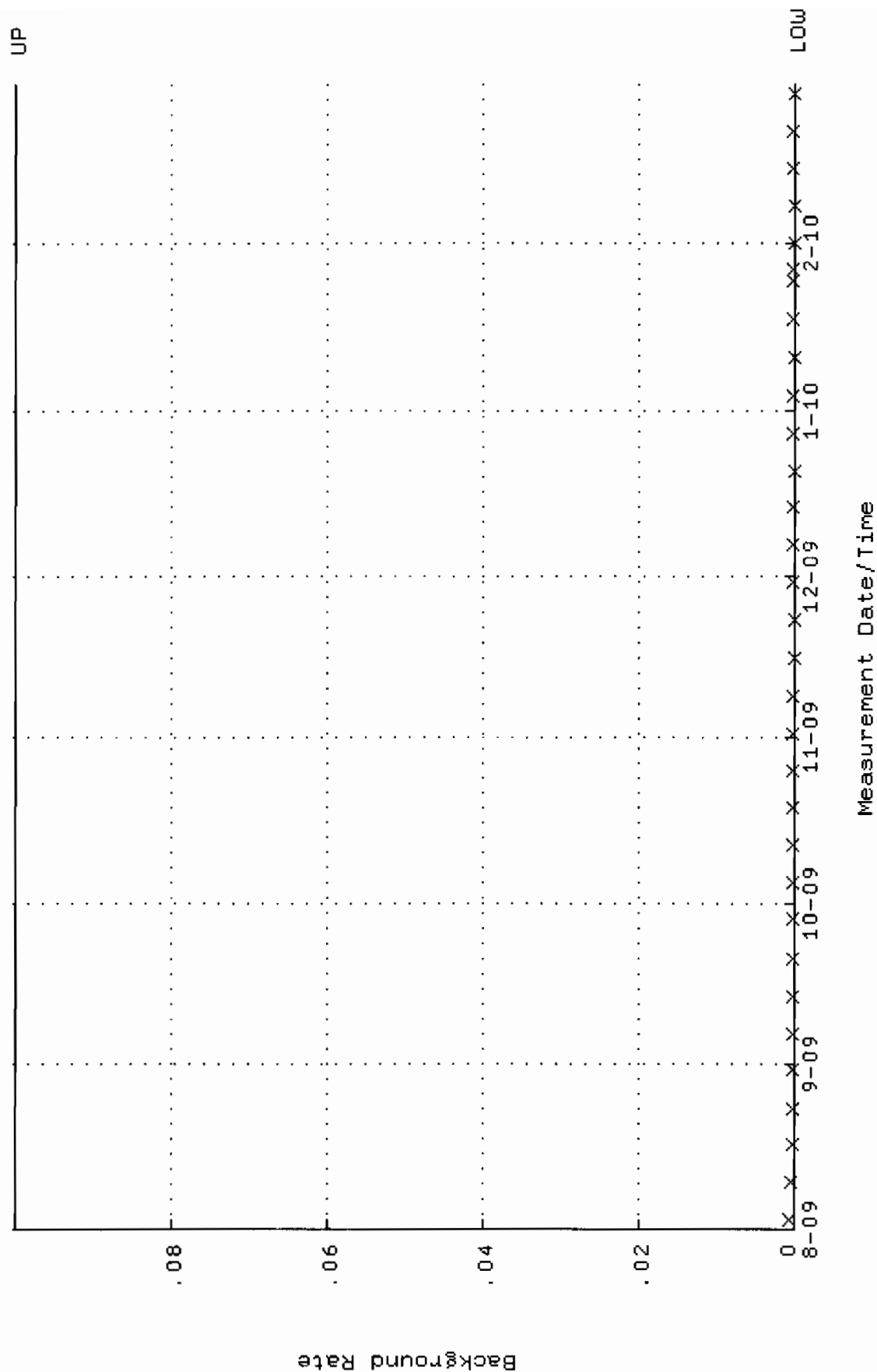
QA filename : DKA100:[ENV_ALPHA.QA.W]W215.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:06:59 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.368657 through 0.384643



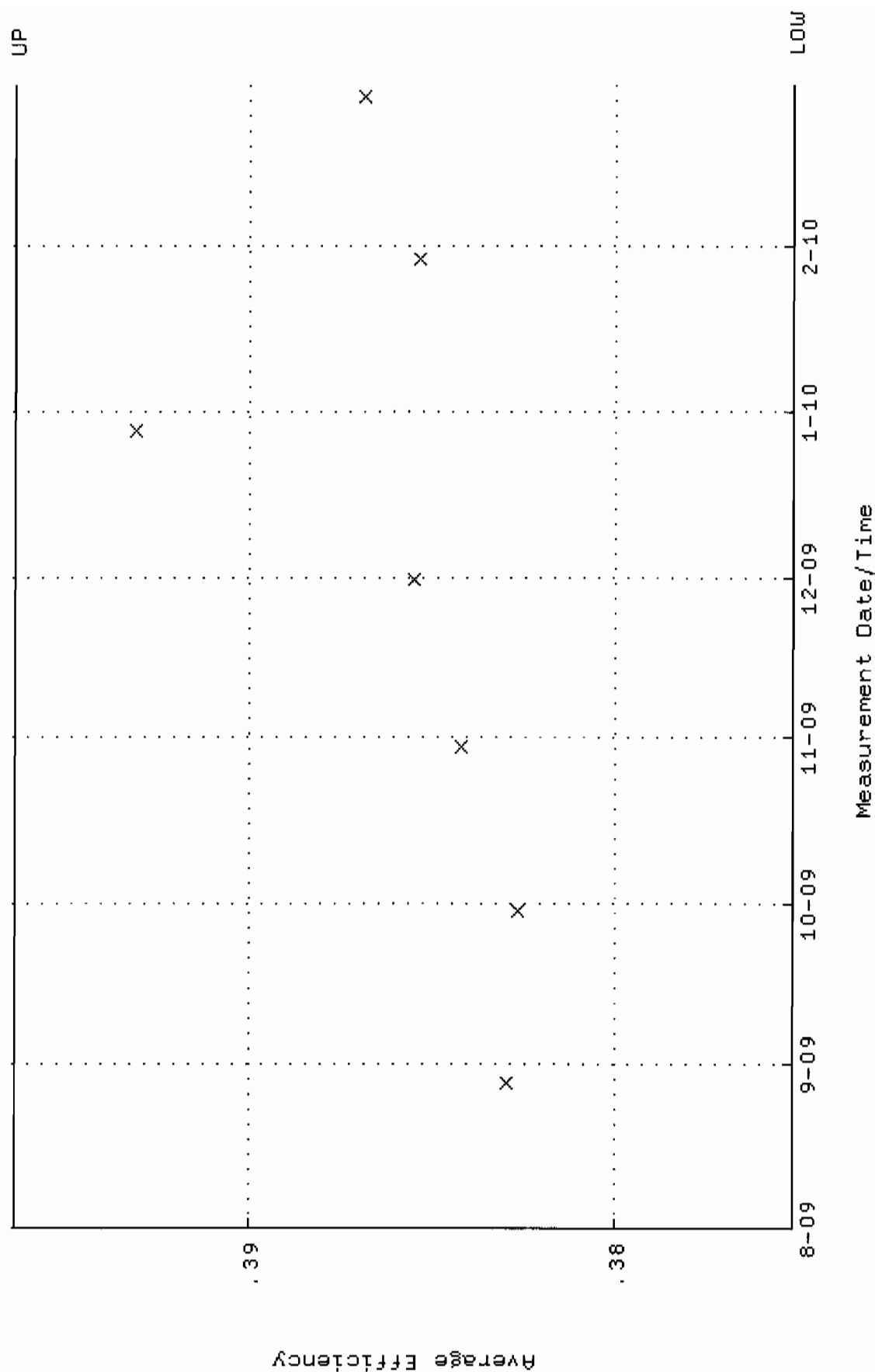
QA filename : DKA100:[ENV_ALPHA.QA.W]W215.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:06:59 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.3773 through 92.9481



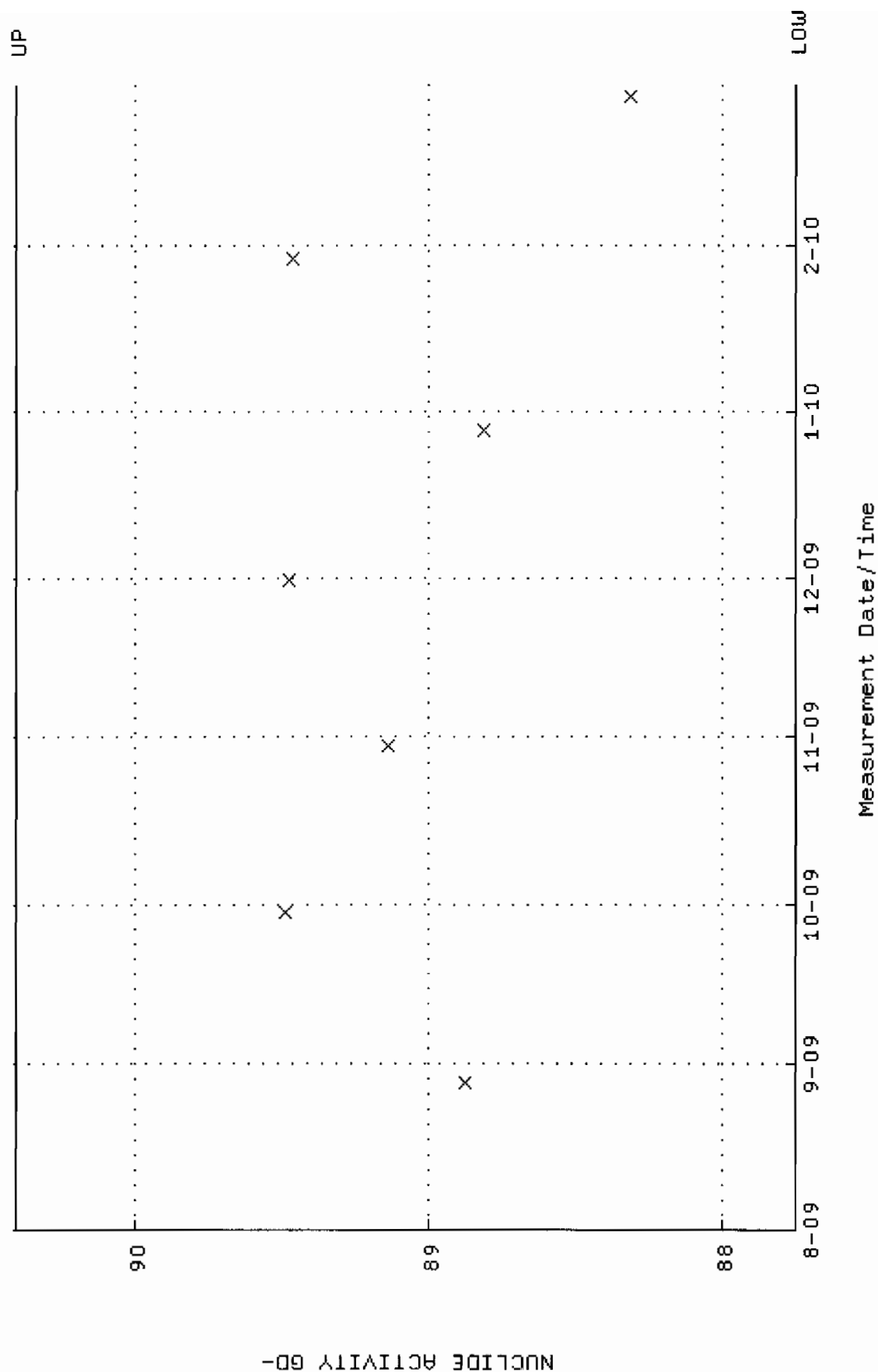
QA filename : DKA100:[ENV_ALPHA.QA.B]B215.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:25:35 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W216.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:04 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.375142 through 0.396434



QA filename : DKA100:[ENV_ALPHA.QA.W]U216.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:04 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.7466 through 90.4082

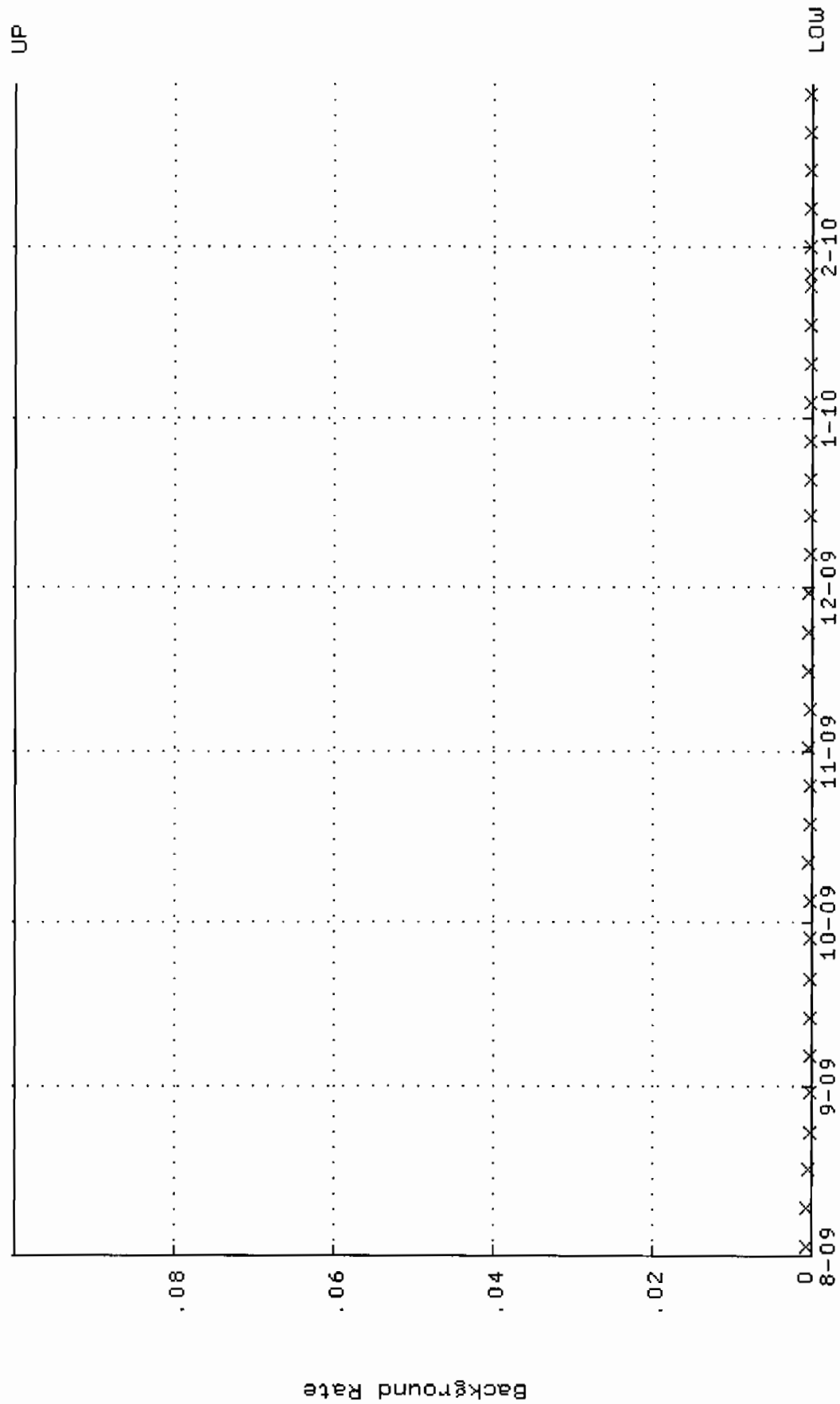


QA filename : DKA100:[ENV_ALPHA.QA.B]B216.QAF;1

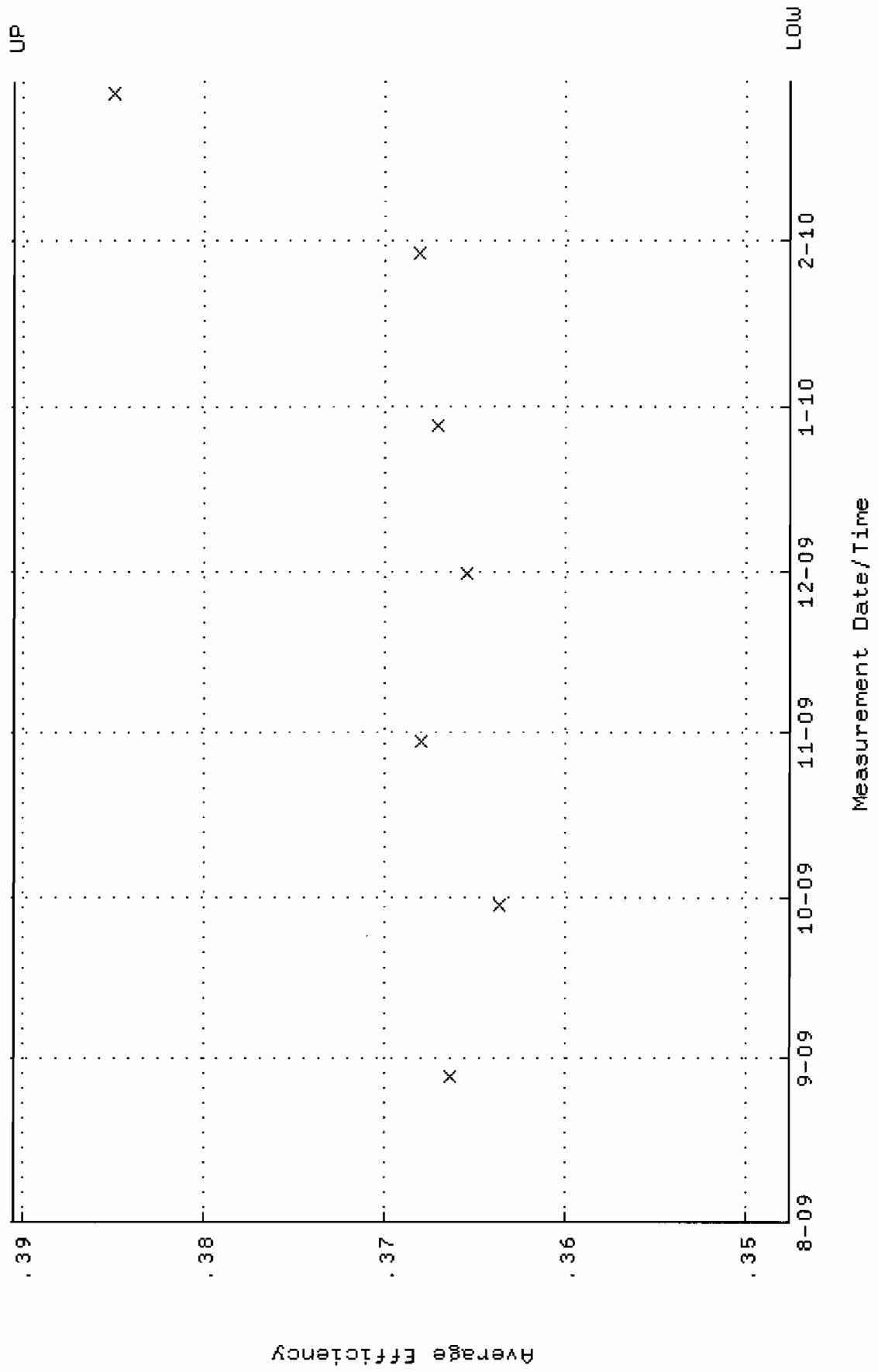
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:25:40 through 2-MAR-2010 12:00:00

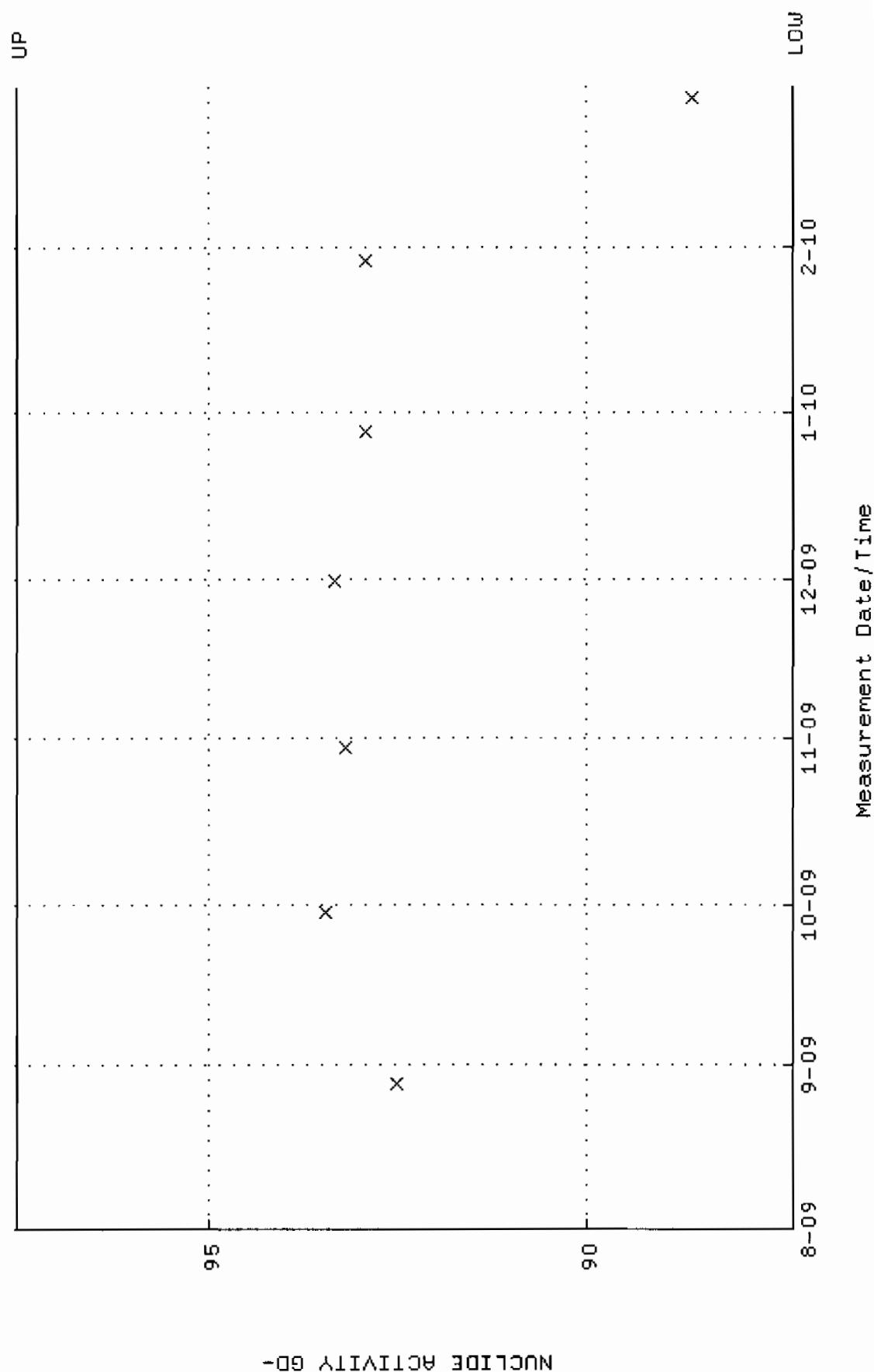
Lower/Upper Lmts: 0.000000E+00 through 0.100000



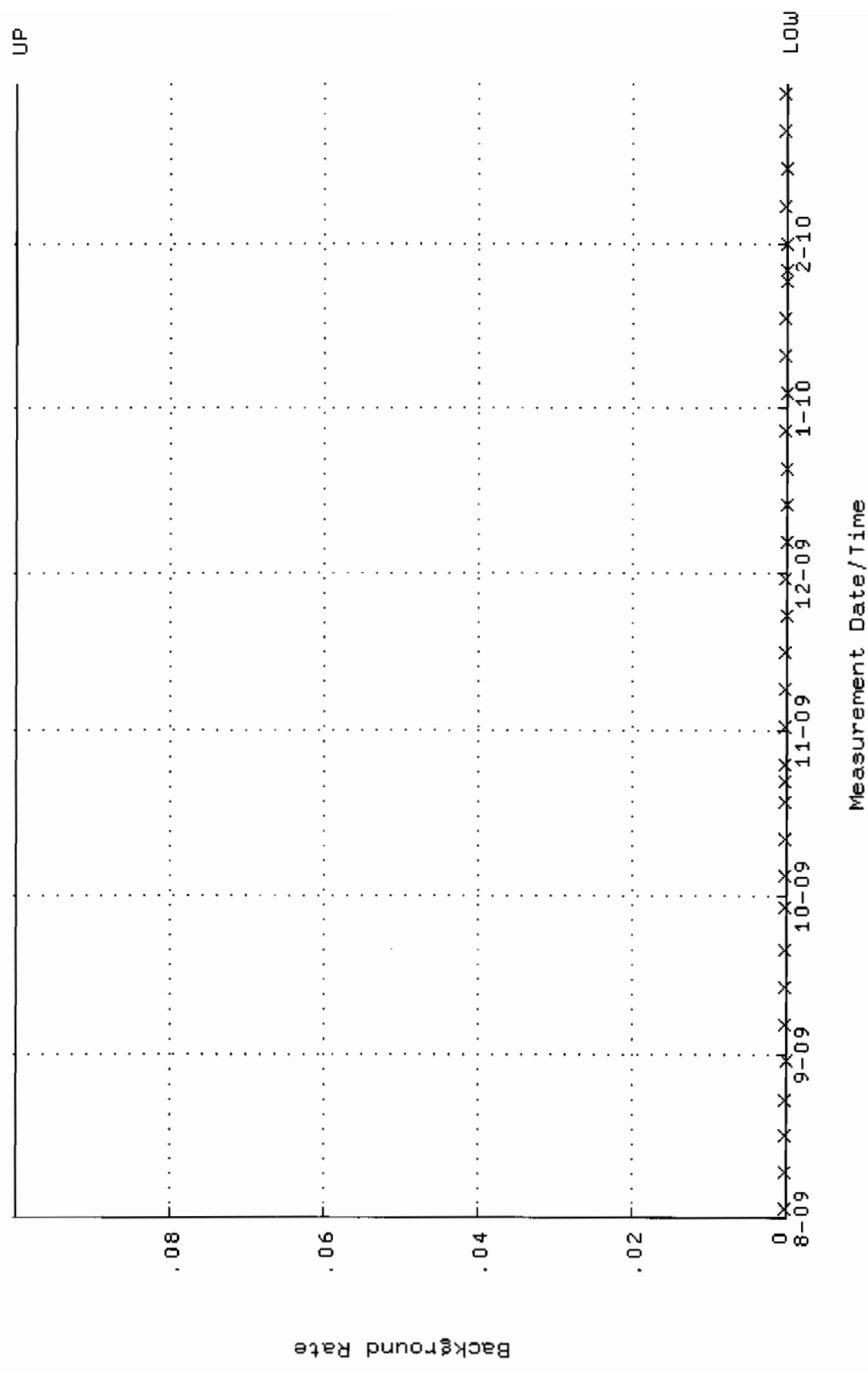
QA filename : DKA100:[ENV_ALPHA.QA.W]W217.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 28-AUG-2009 07:07:09 through 2-MAR-2010 12:00:00
Lower/Upper Lmts: 0.347554 through 0.390494



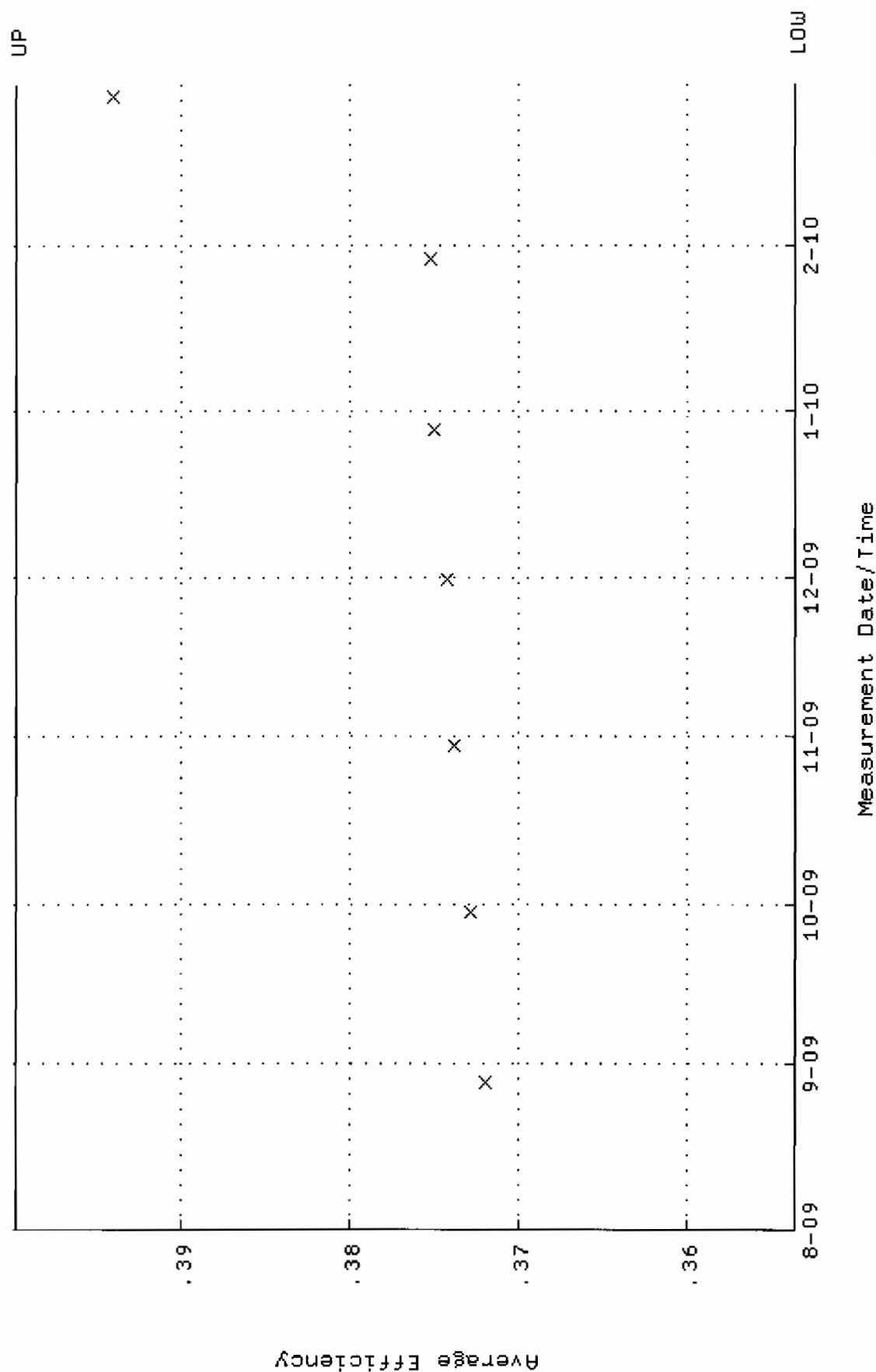
QA filename : DKA100:[ENV_ALPHA.QA.W]W217.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:09 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.2610 through 97.5406



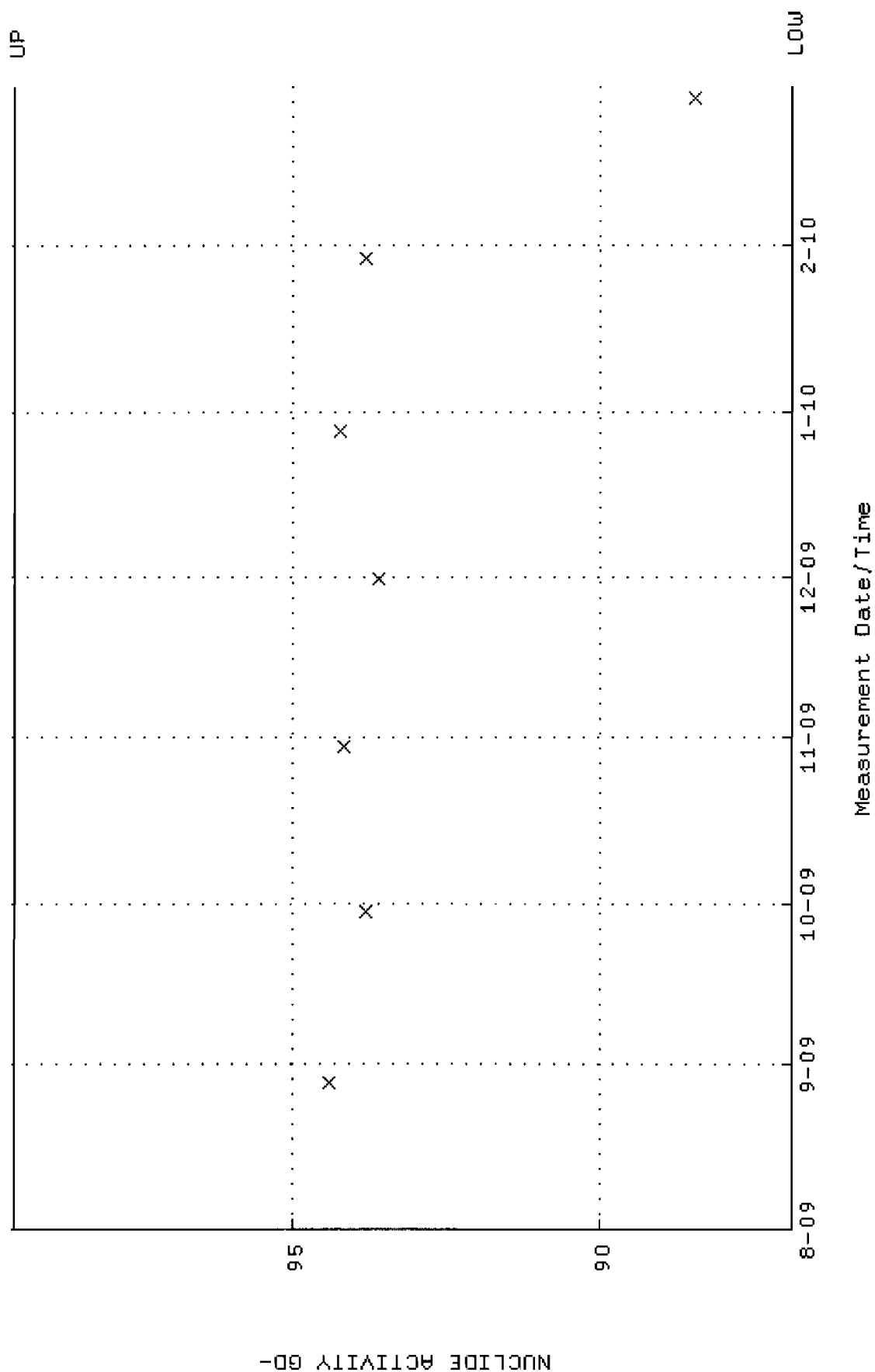
QA filename : DKA100:[ENV_ALPHA.QA.B]B217.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-AUG-2009 17:25:44 through 2-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W218.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:14 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.353641 through 0.399809



QA filename : DKA100:[ENV_ALPHA.QA.W]w218.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:14 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.8733 through 99.5183

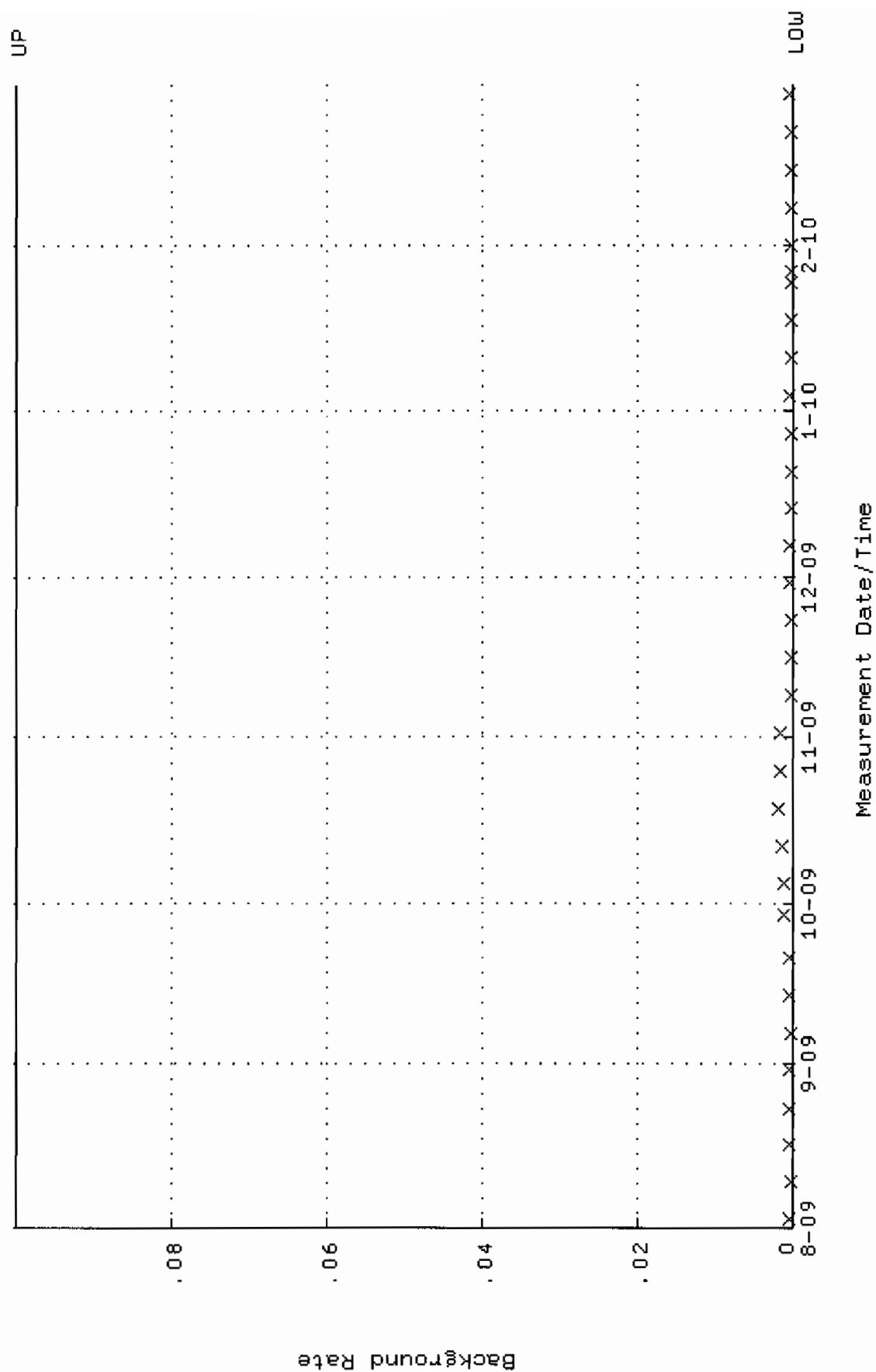


QA filename : DKA100:[ENV_ALPHA.QA.B]B218.QAF;1

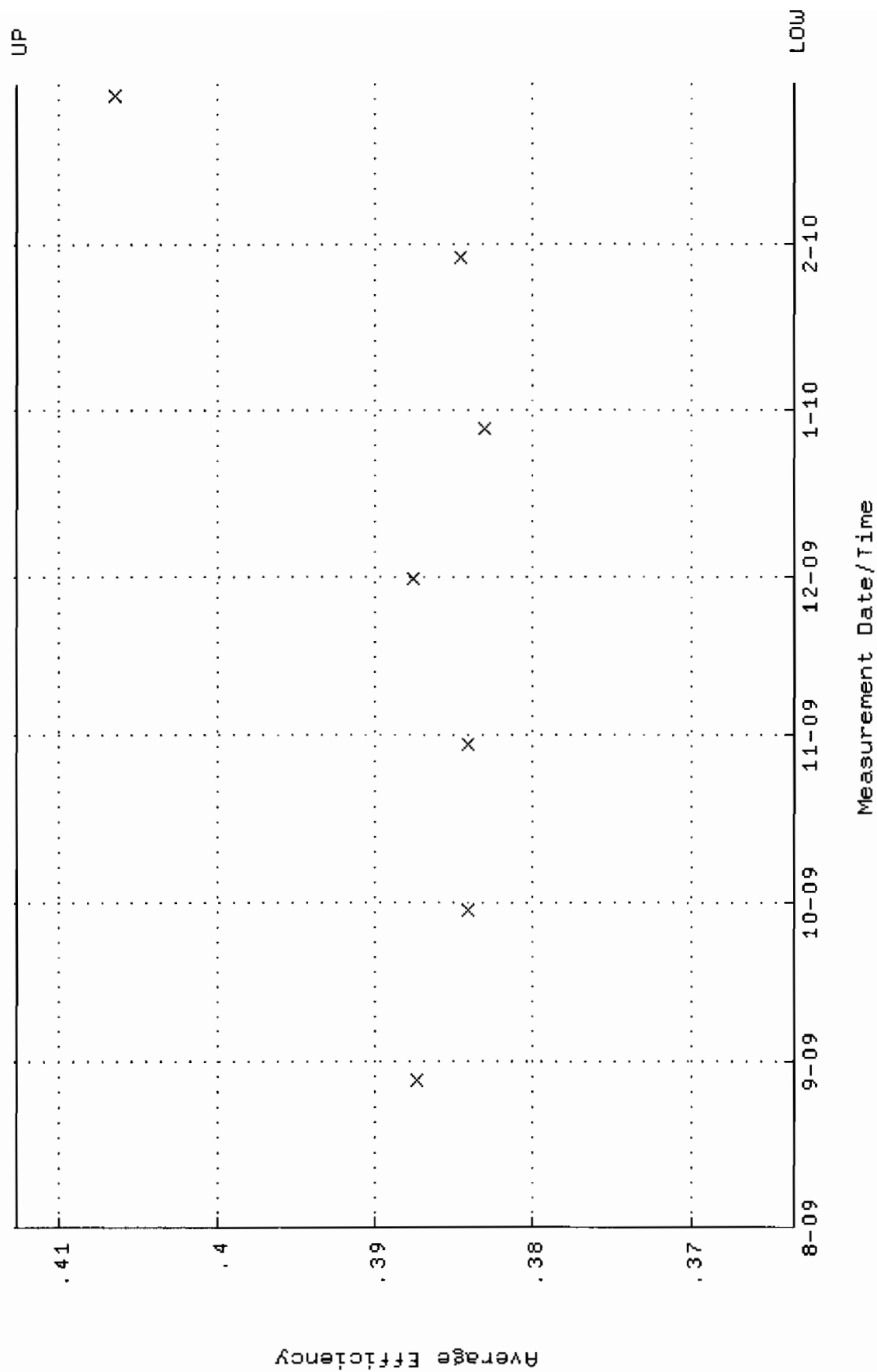
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:25:48 through 2-MAR-2010 12:00:00

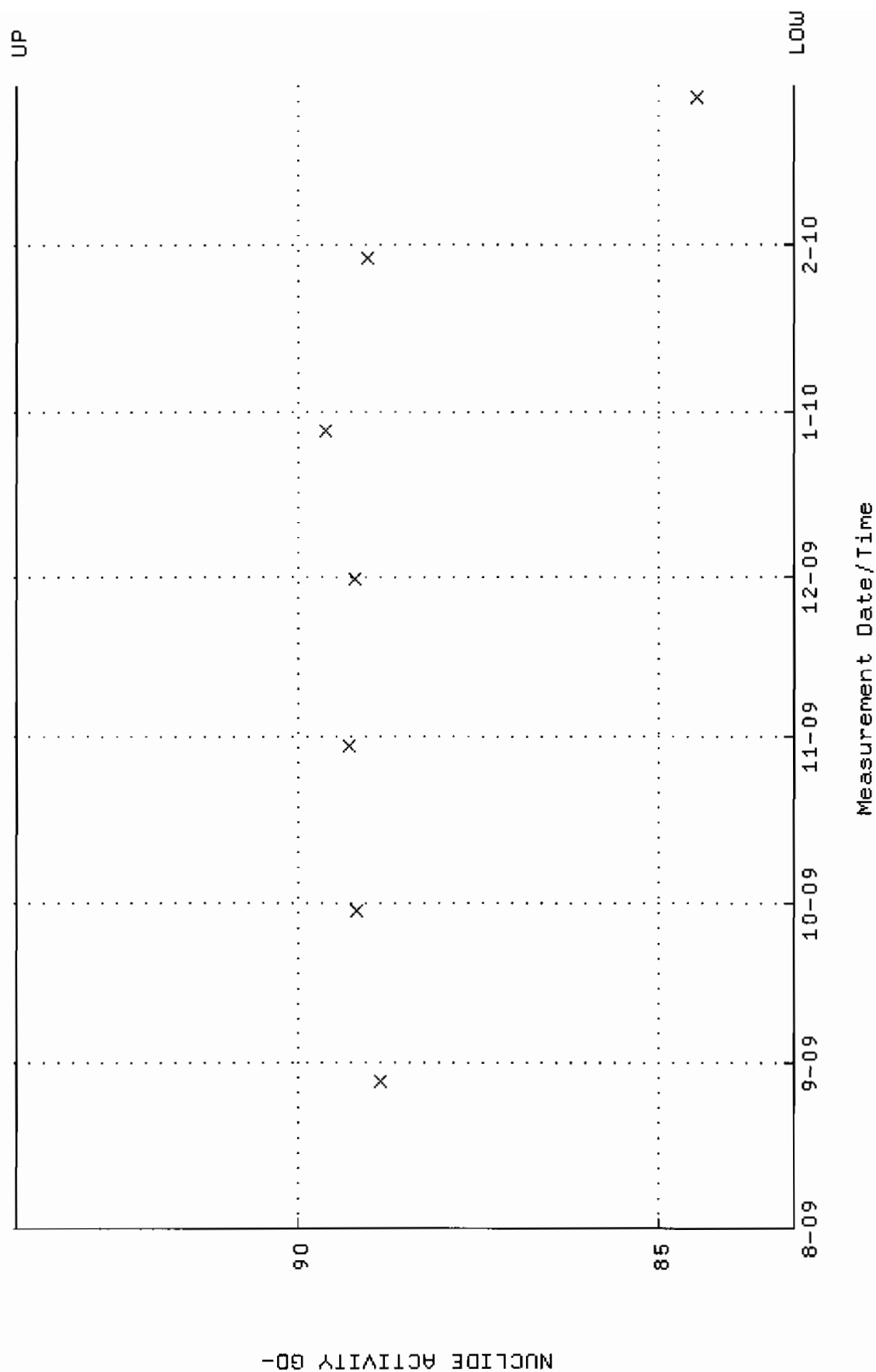
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W219.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:18 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.363471 through 0.412689



QA filename : DKA100:[ENV_ALPHA.QA.W]W219.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:18 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.1251 through 93.8923

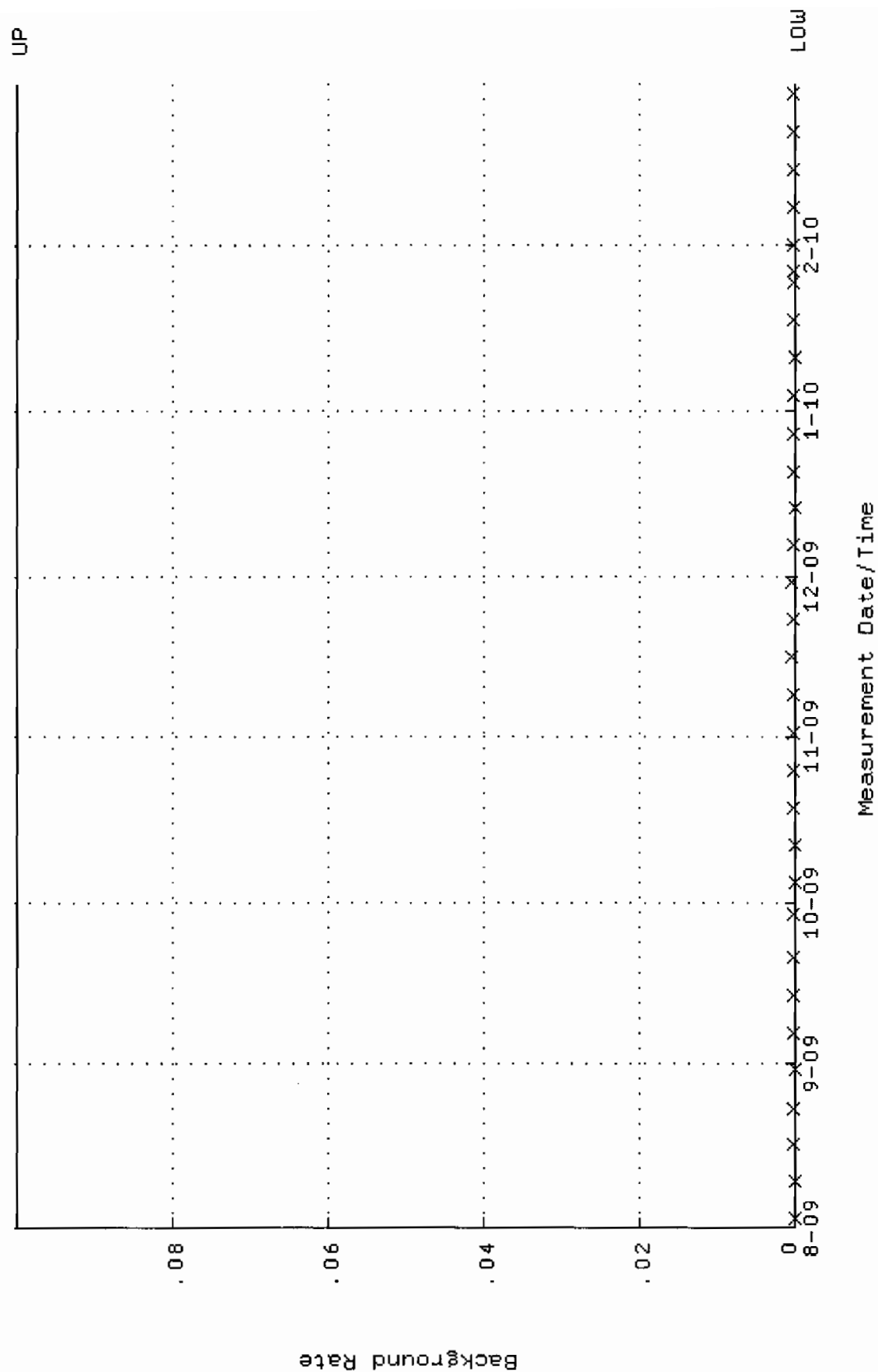


QA filename : DKA100:[ENV_ALPHA.QA.B]B219.QAF;1

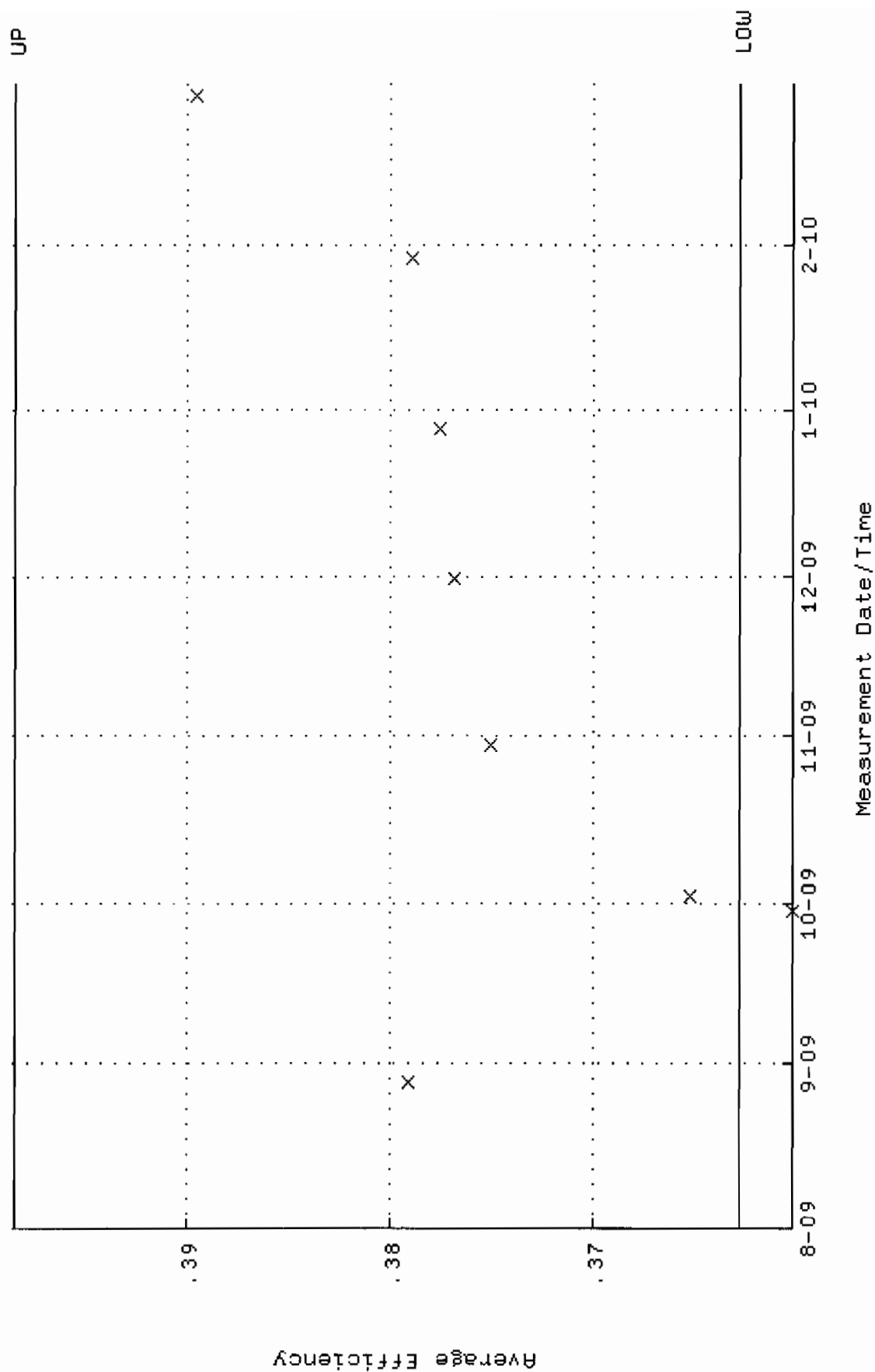
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:25:52 through 2-MAR-2010 12:00:00

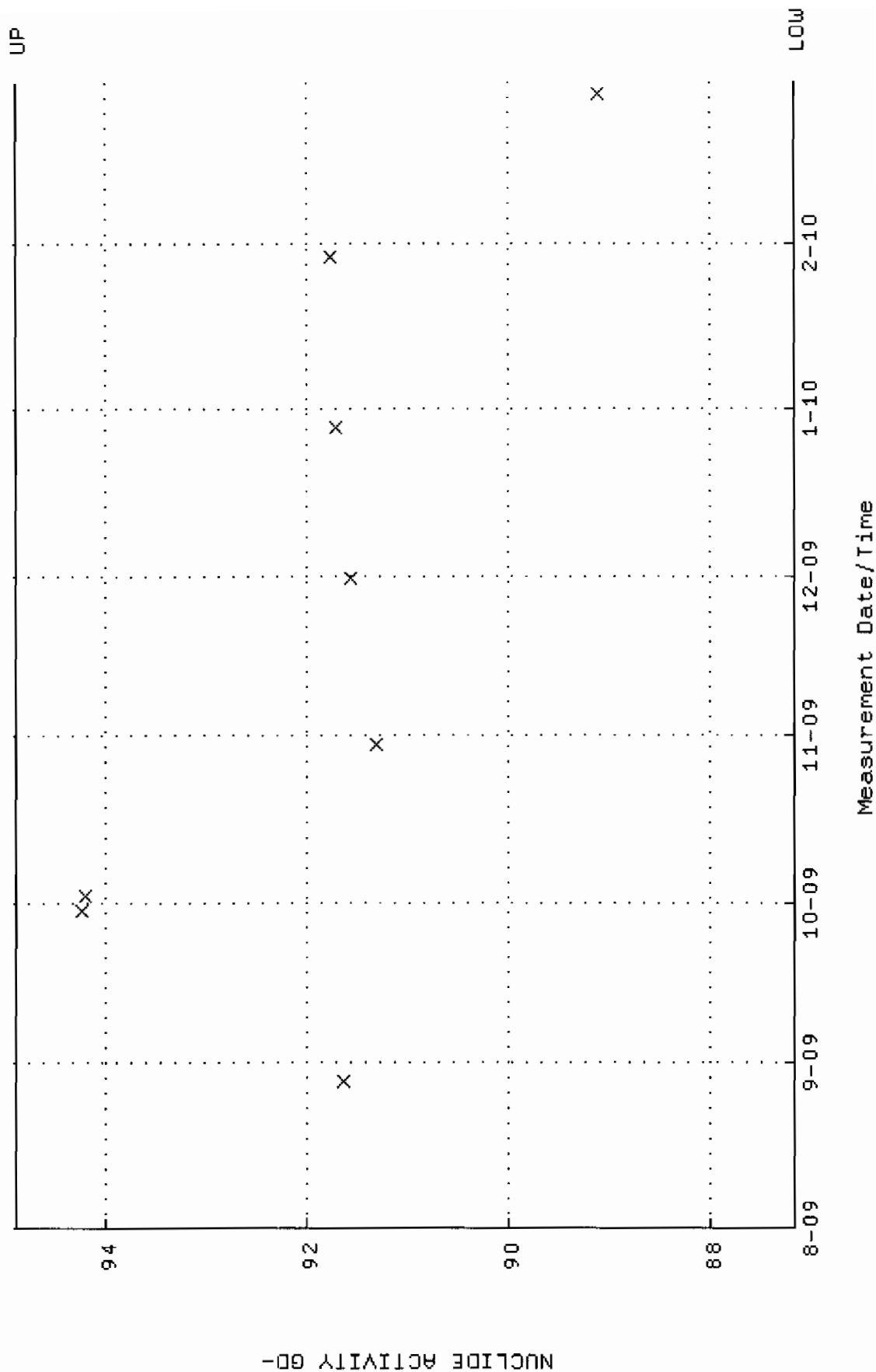
Lower/Upper Lmts: 0.000000E+00 through 0.100000



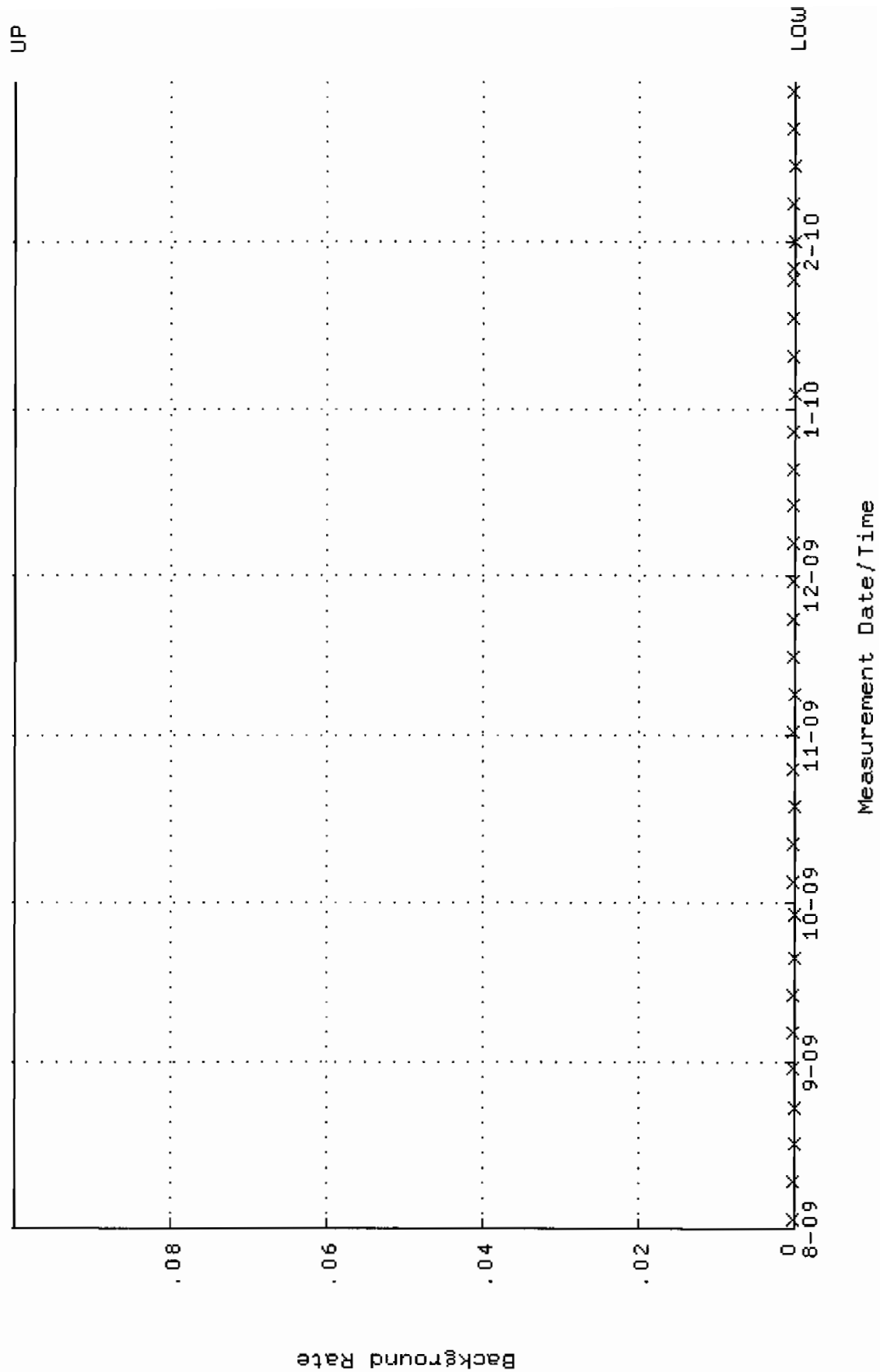
QA filename : DKA100:[ENV_ALPHA.QA.W]W220.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:23 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.362894 through 0.398402



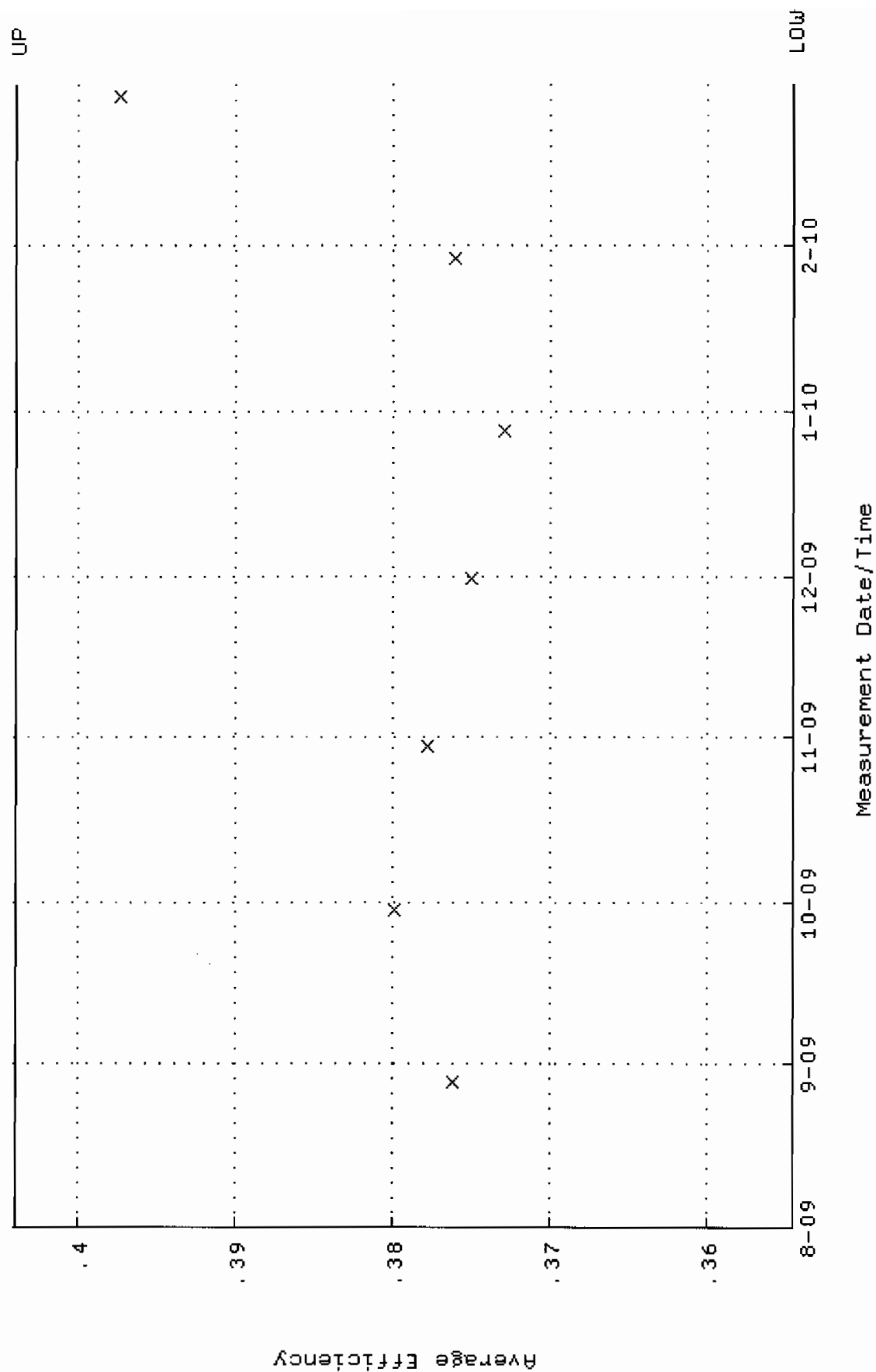
QA filename : DKA100:[ENV_ALPHA.QA.w]w220.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:23 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.1542 through 94.9022



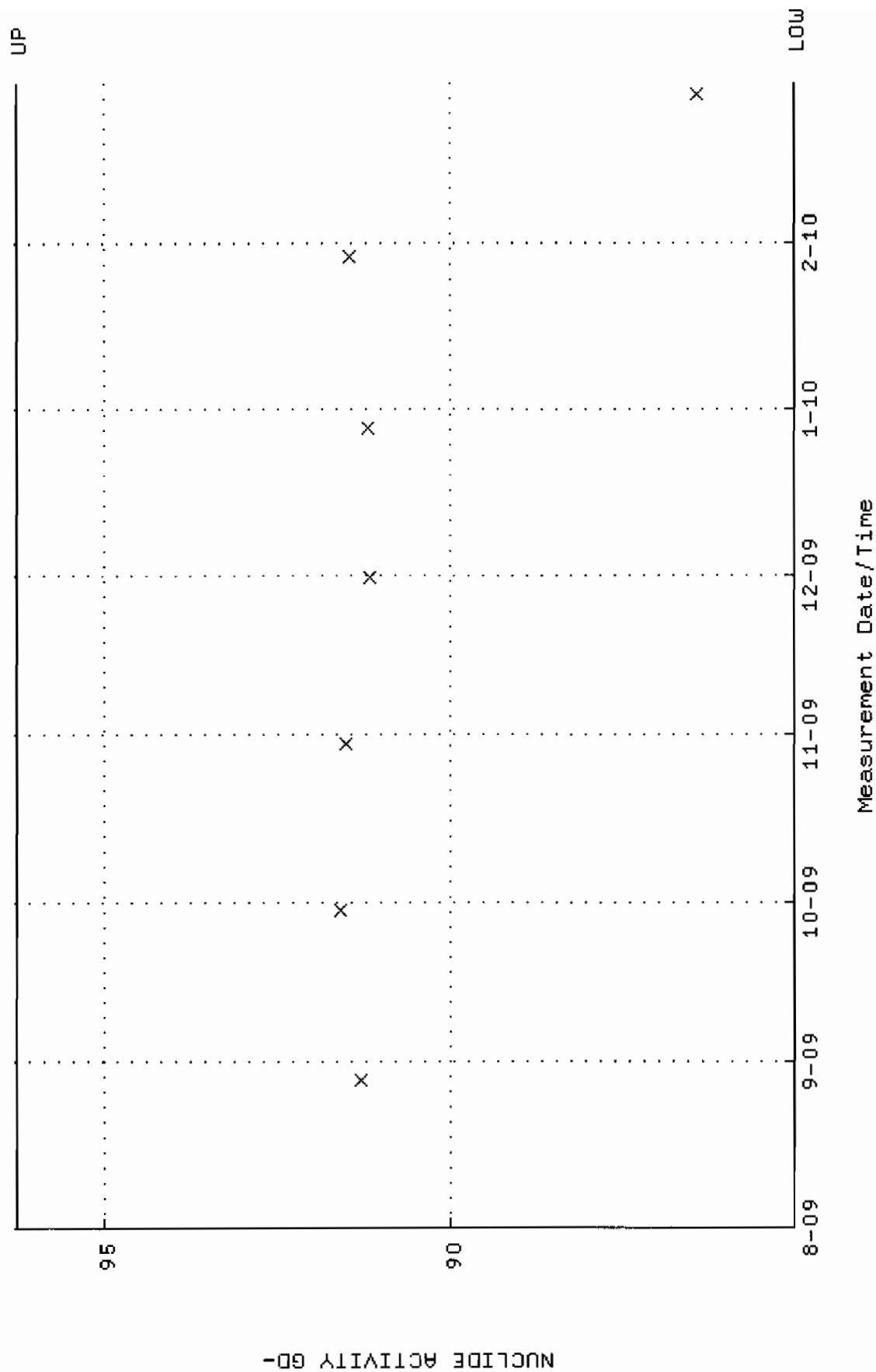
QA filename : DKA100:[ENV_ALPHA.QA.B]B220.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:25:56 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA,QA,W]W221.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:27 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.354487 through 0.403989



QA filename : DKA100:[ENV_ALPHA.QA.W]w221.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:27 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.0275 through 96.2669

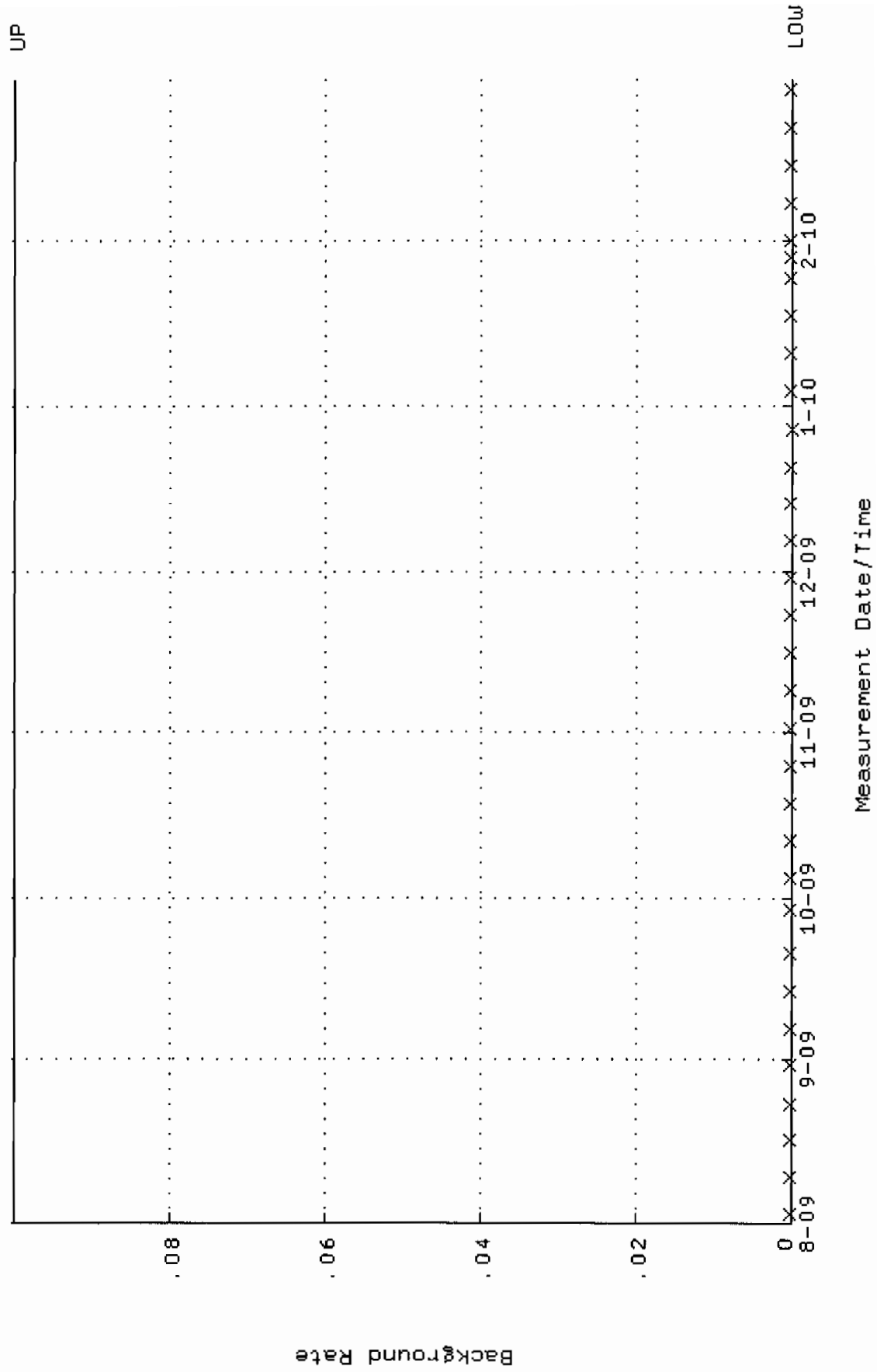


QA filename : DKA100:[ENV_ALPHA.QA.B]B221.QAF;1

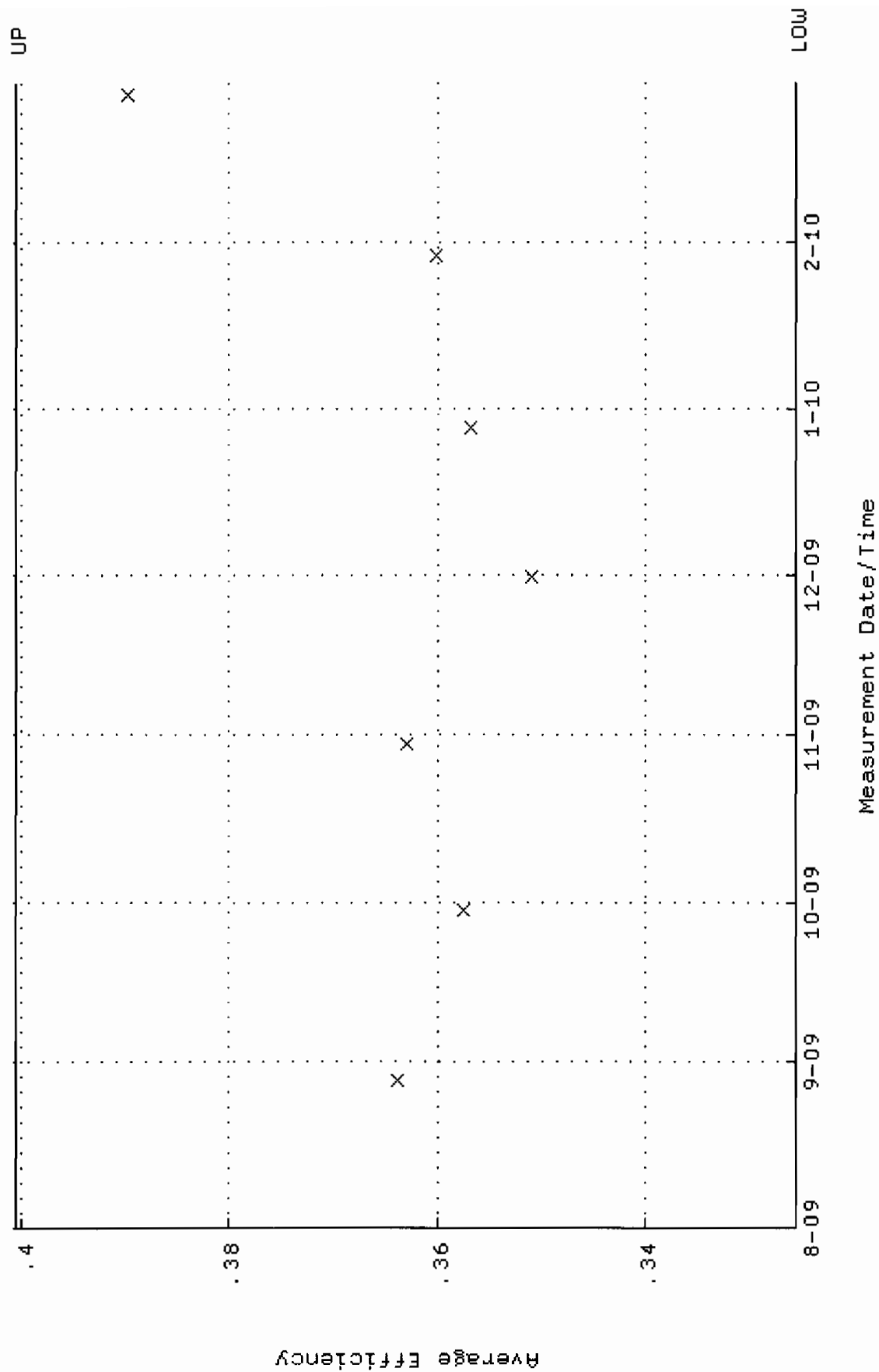
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:26:01 through 2-MAR-2010 12:00:00

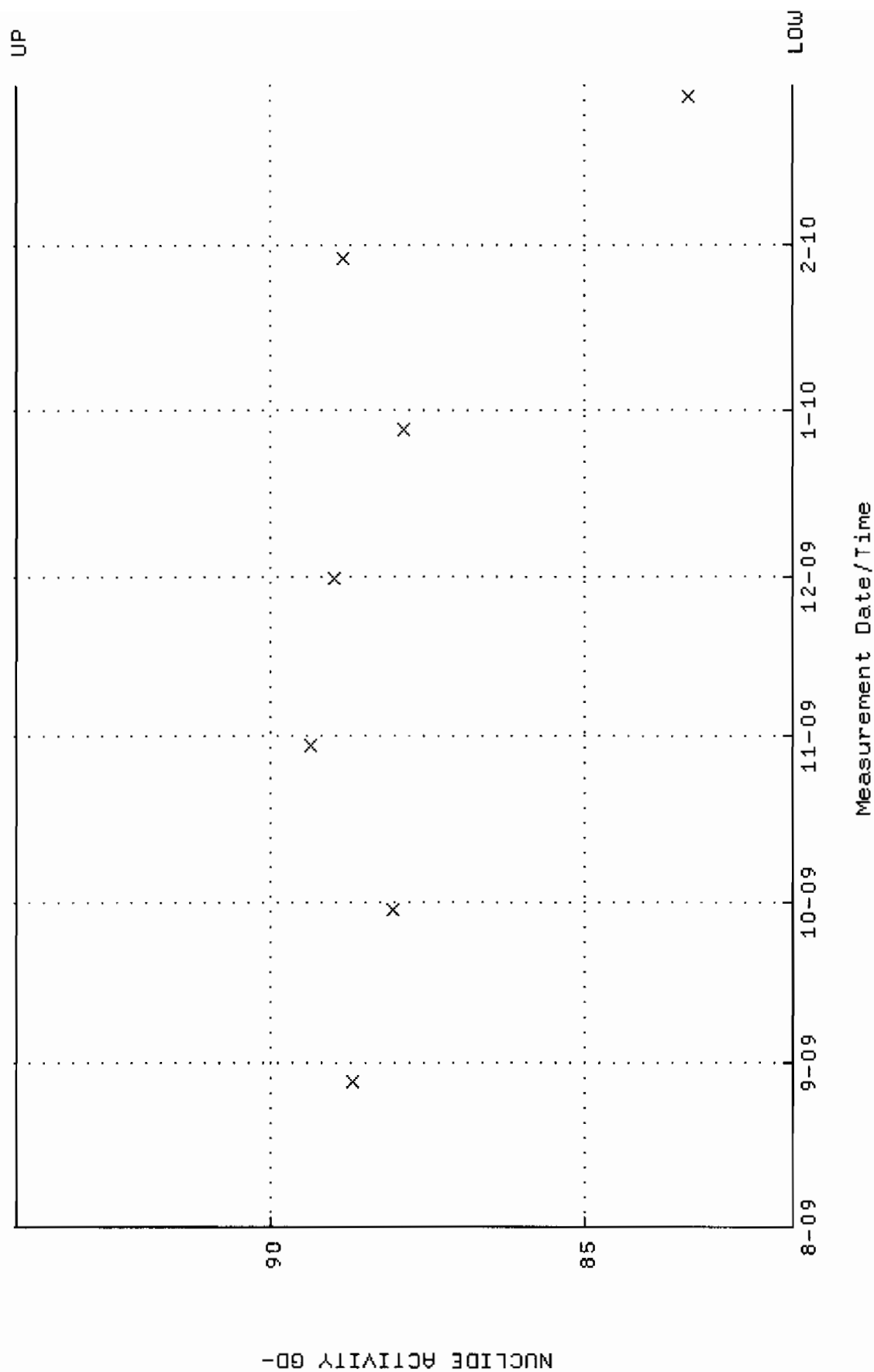
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W222.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:32 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.325585 through 0.400497



QA filename : DKA100:[ENV_ALPHA.QA.W]W222.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:32 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.6821 through 94.0551

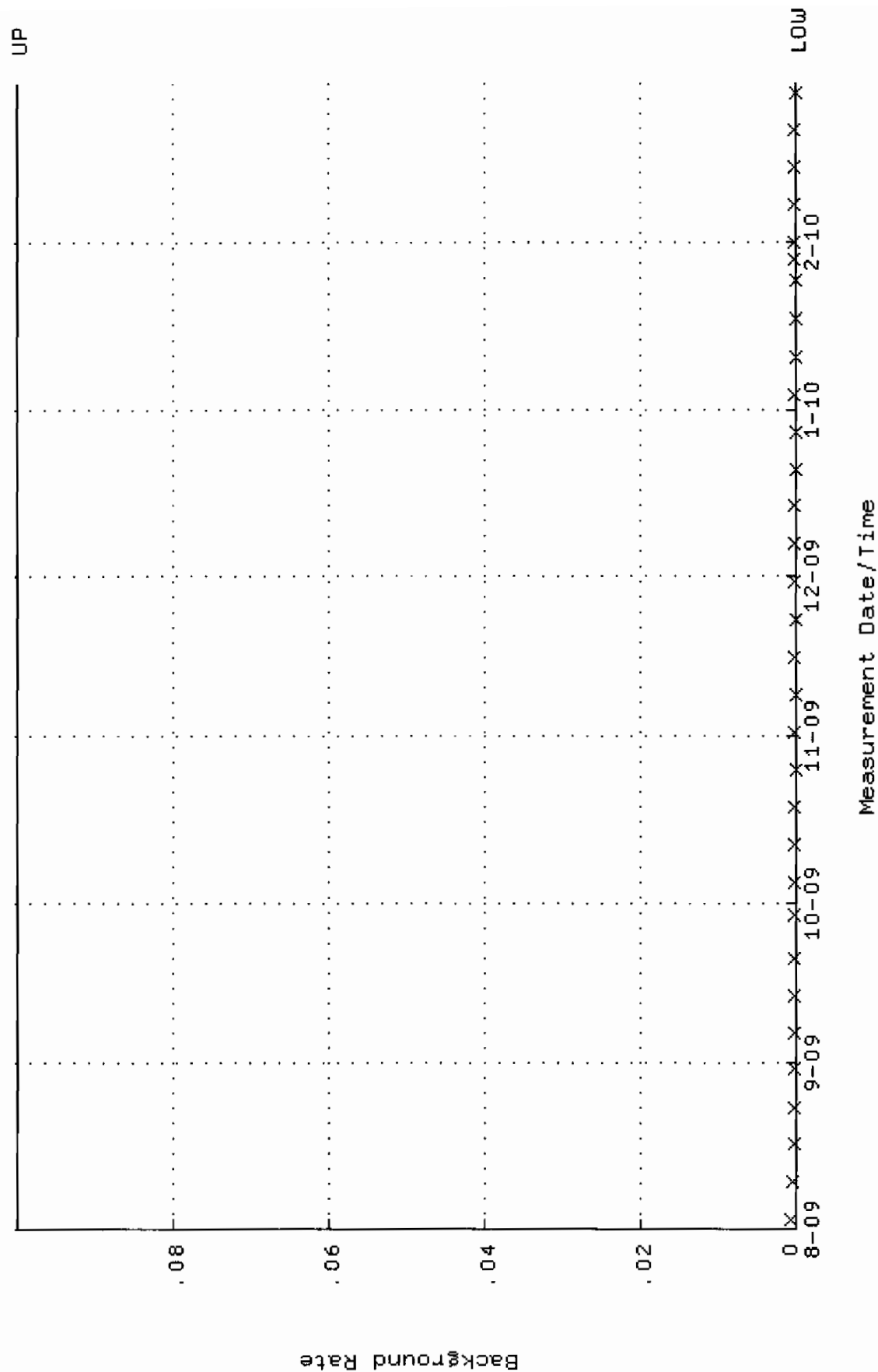


QA filename : DKA100:[ENV_ALPHA.QA.B]B222.QAF;1

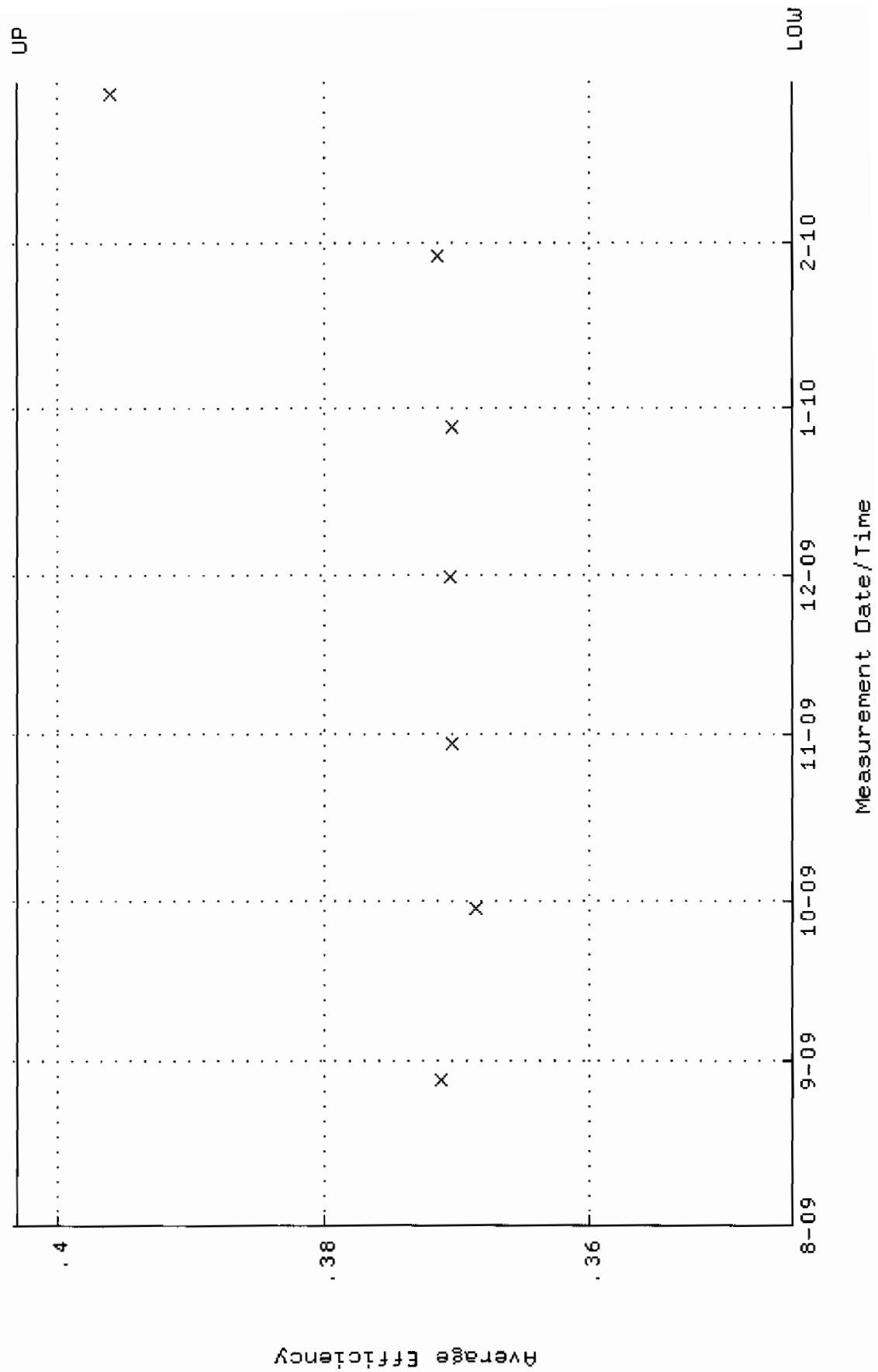
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:26:05 through 2-MAR-2010 12:00:00

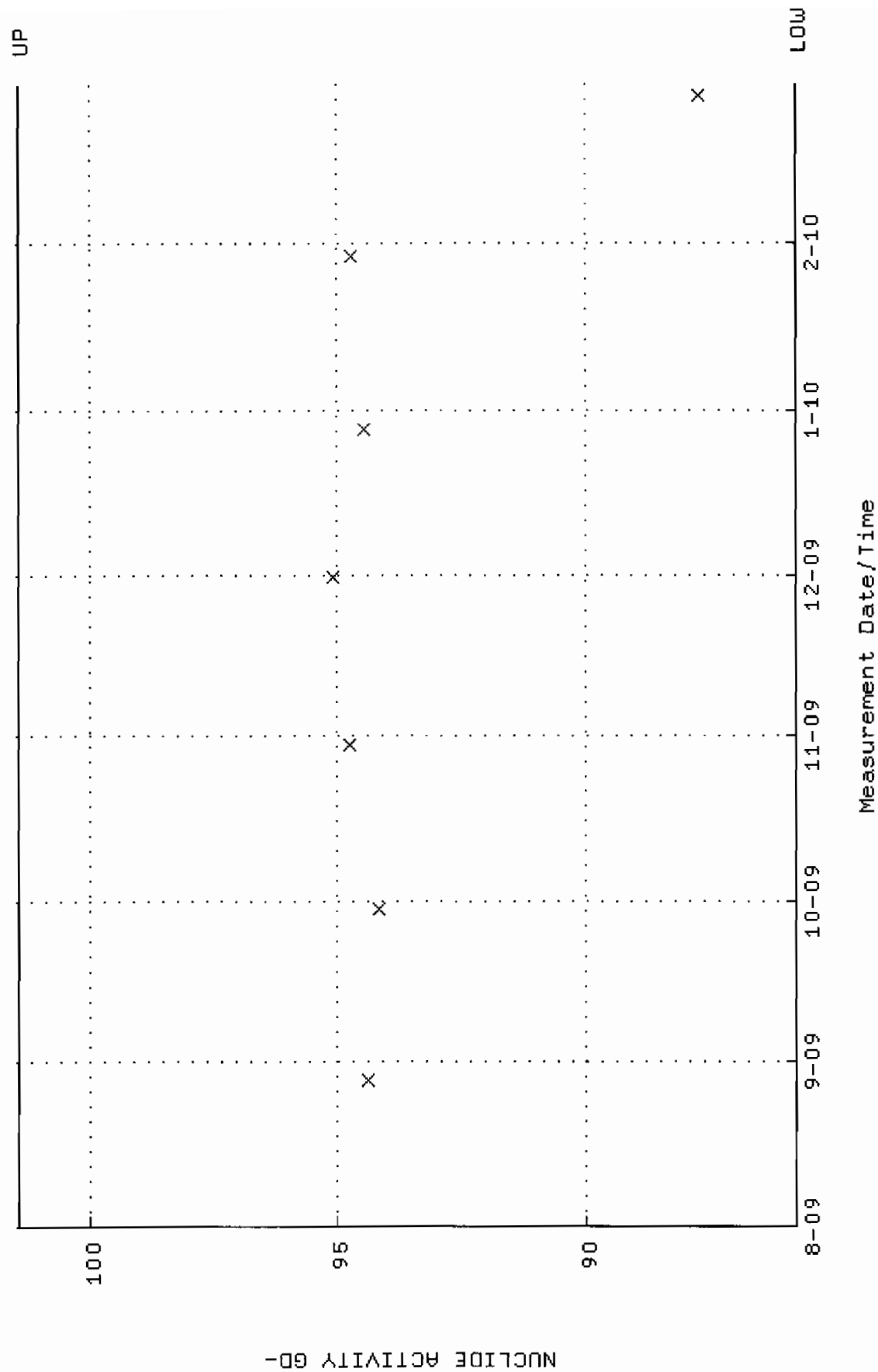
Lower/Upper Lmts: 0.000000E+00 through 0.100000



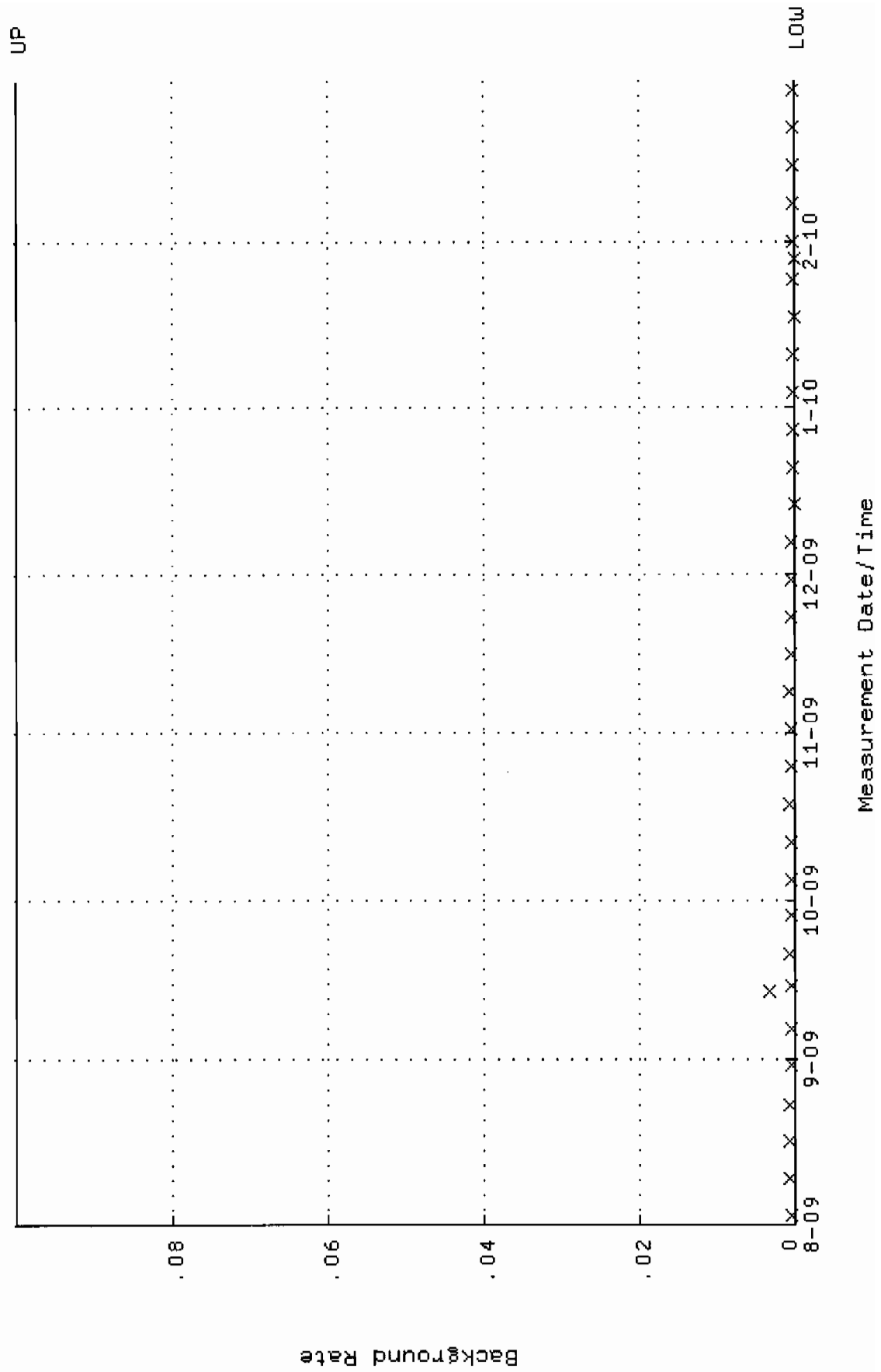
QA filename : DKA100:[ENV_ALPHA.QA.W]W223.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:38 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.344809 through 0.403131



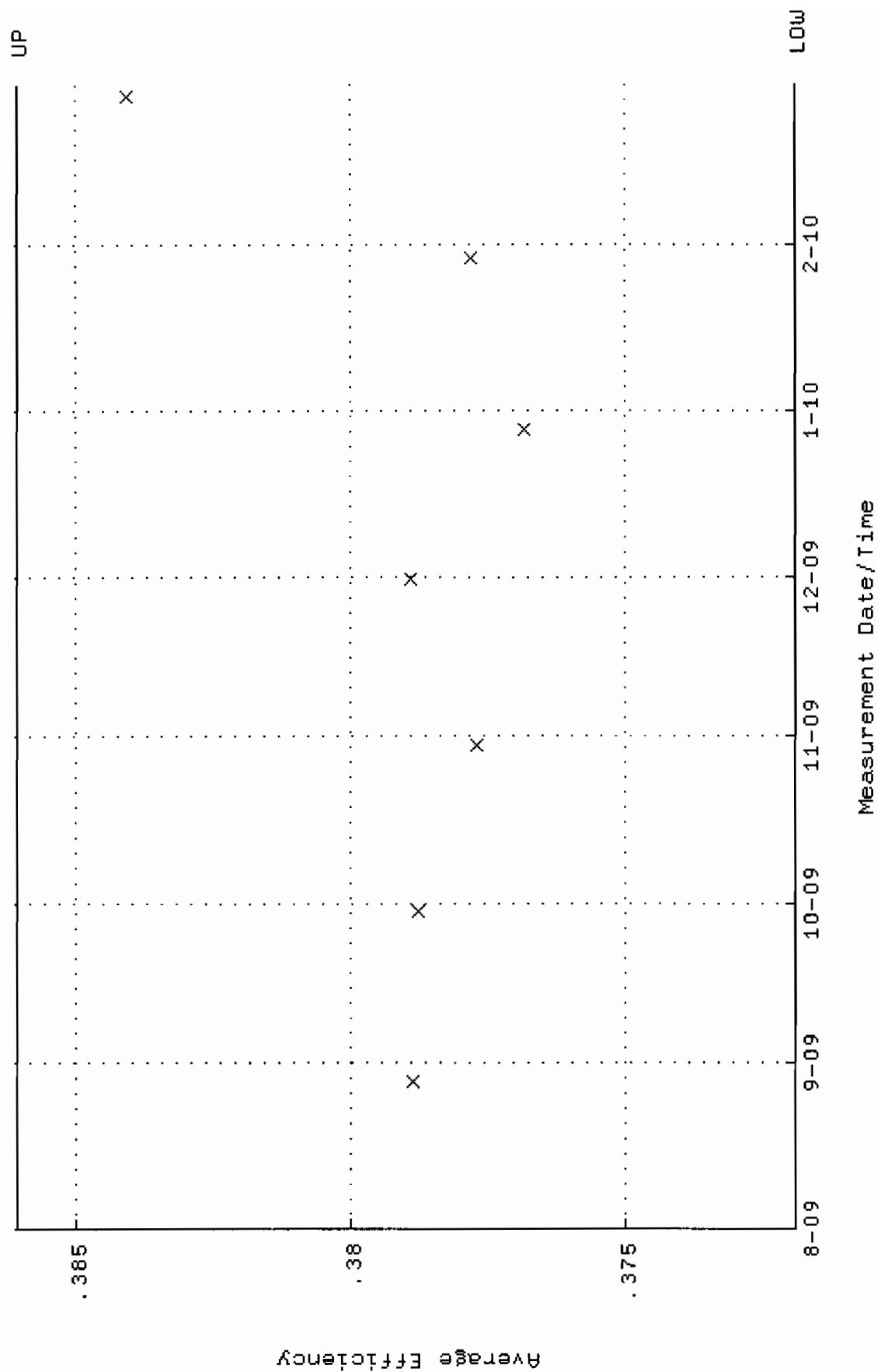
QA filename : DKA100:[ENV_ALPHA.QA.W]W223.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:38 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.7275 through 101.456



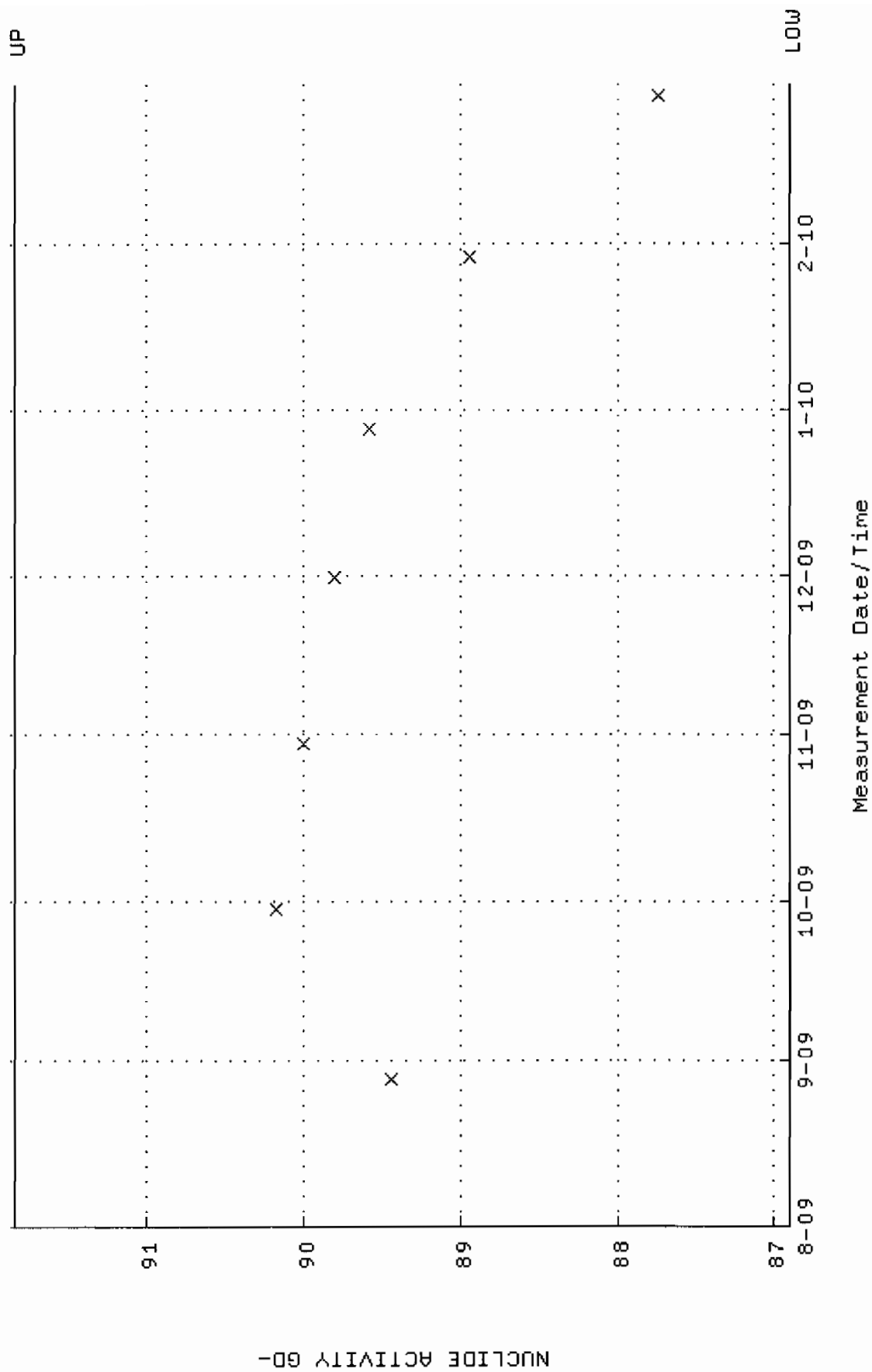
QA filename : OKA100:[ENV_ALPHA.QA.B]B223.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:08 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



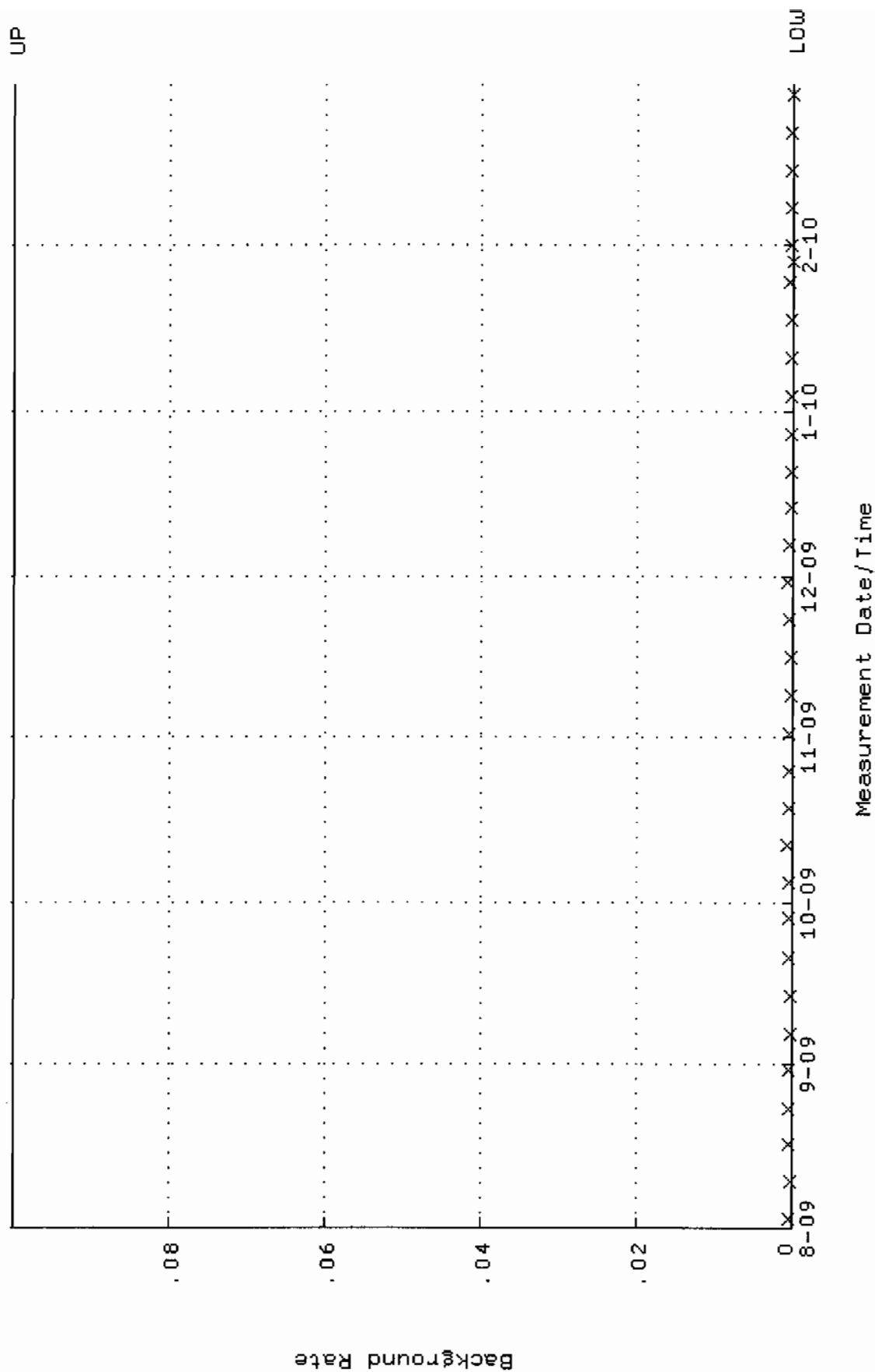
QA filename : DKA100:[ENV_ALPHA.QA.W]w224.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:44 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.371921 through 0.386057



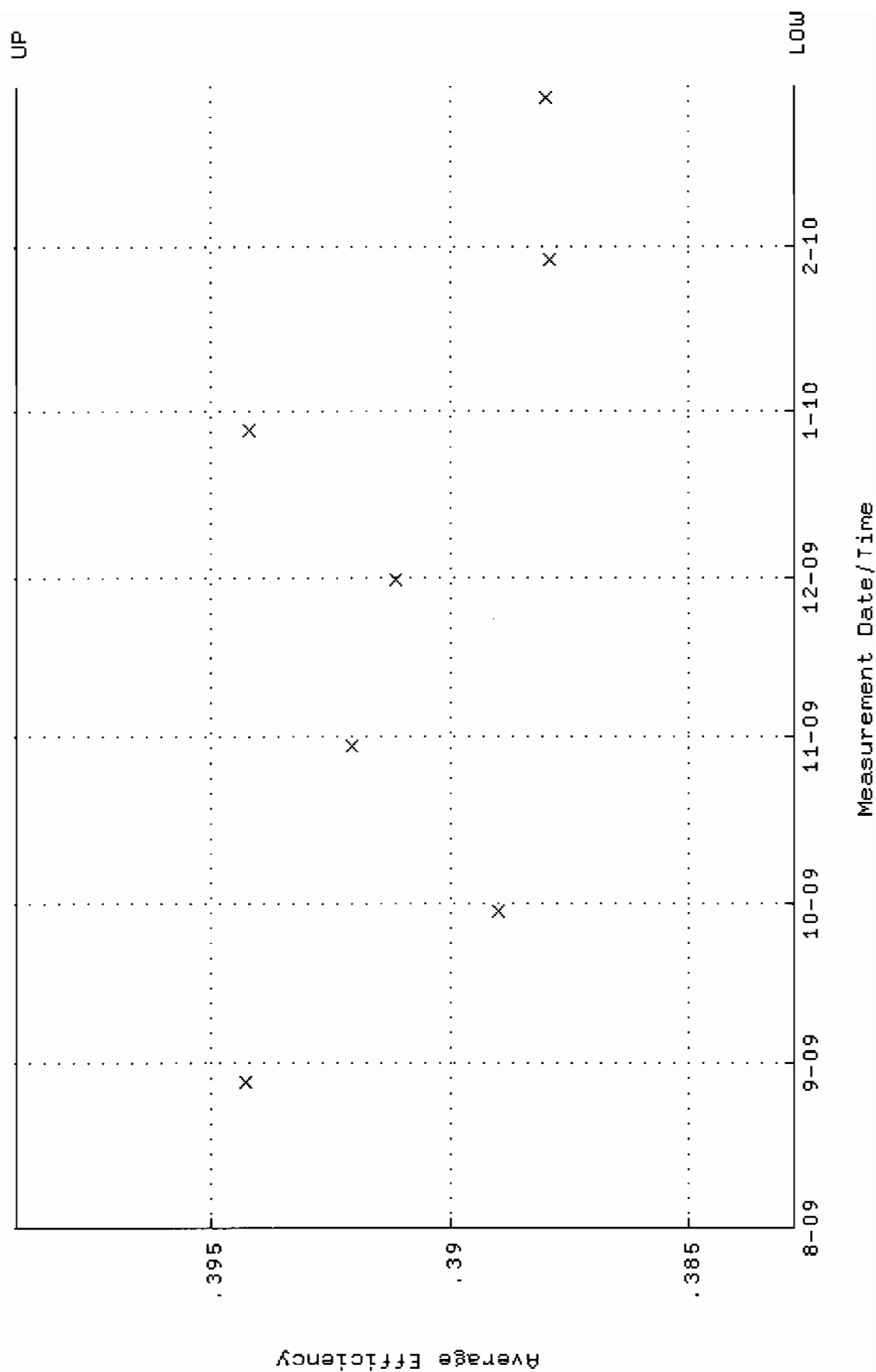
QA filename : DKA100:[ENV_ALPHA.QA.W]W224.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:44 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.9006 through 91.8482



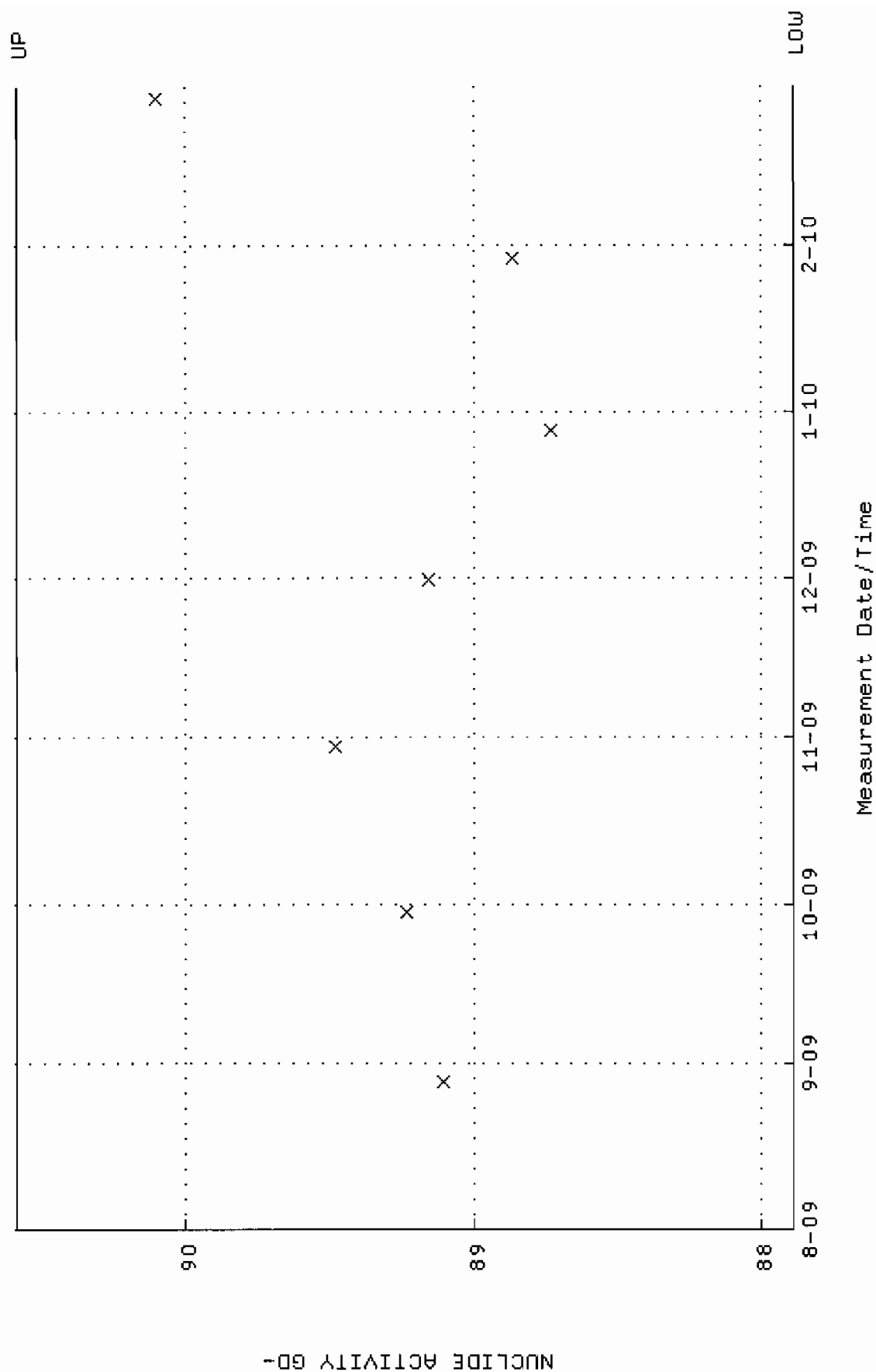
QA filename : DKA100:[ENV_ALPHA.QA.B]B224.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:12 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



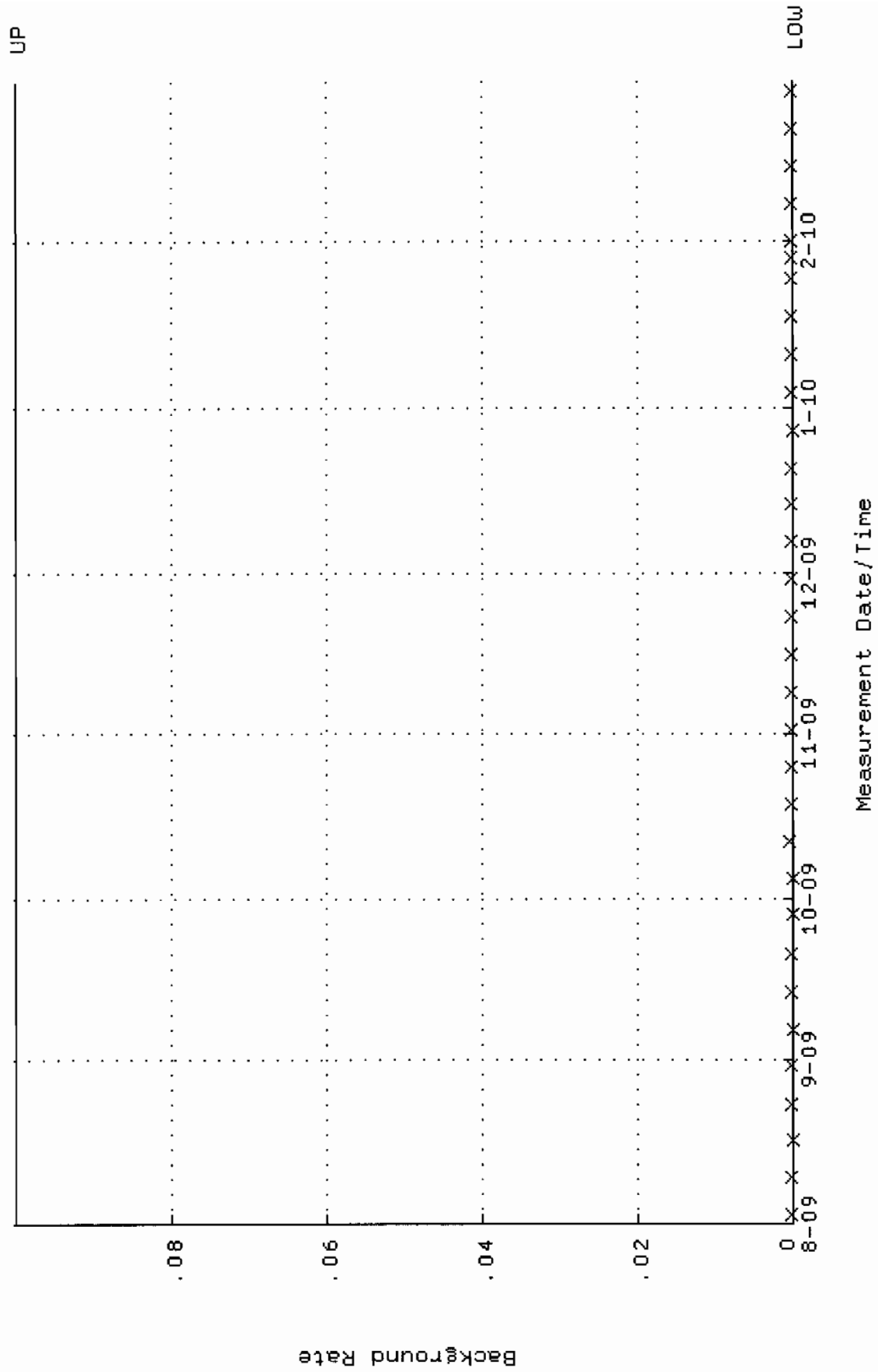
QA filename : DKA100:[ENV_ALPHA.QA.W]w225.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:50 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.382792 through 0.399070



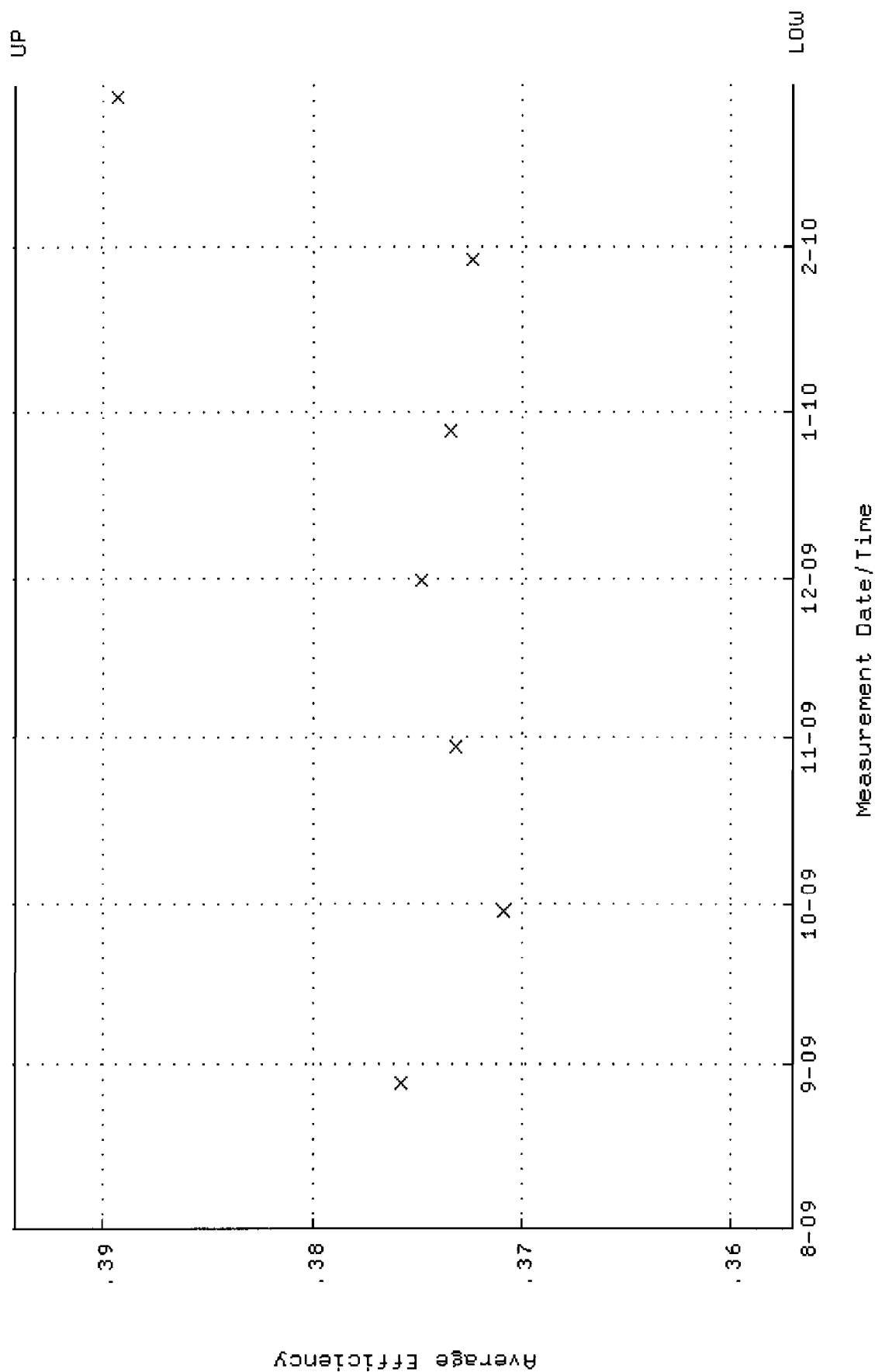
QA filename : DKA100:[ENV_ALPHA.QA.W]W225.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:50 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.8853 through 90.5875



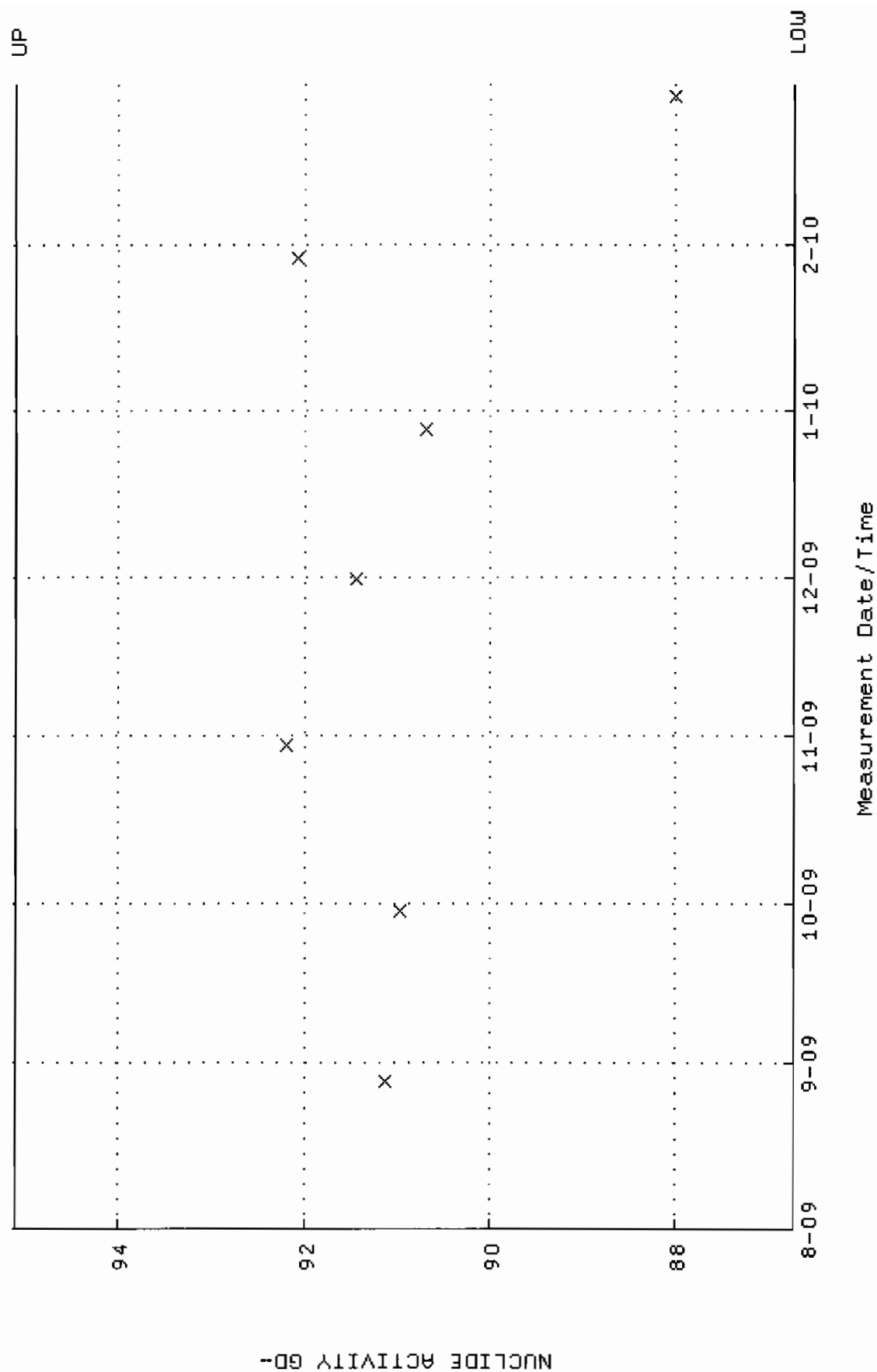
QA filename : DKA100:[ENV_ALPHA.QA.B]B225.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:16 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



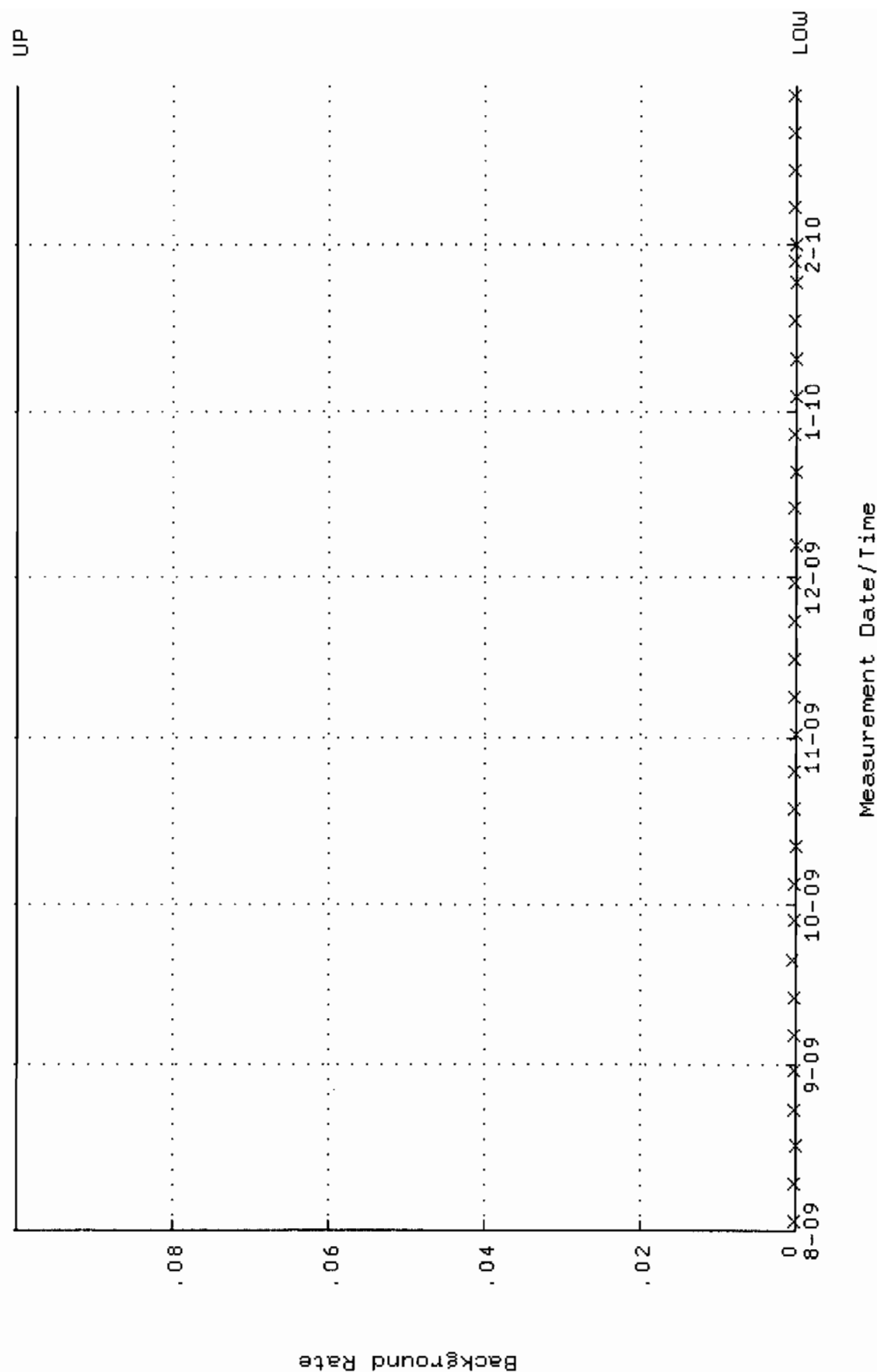
QA filename : DKA100:[ENV_ALPHA.QA.W]W226.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:57 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.357039 through 0.394215



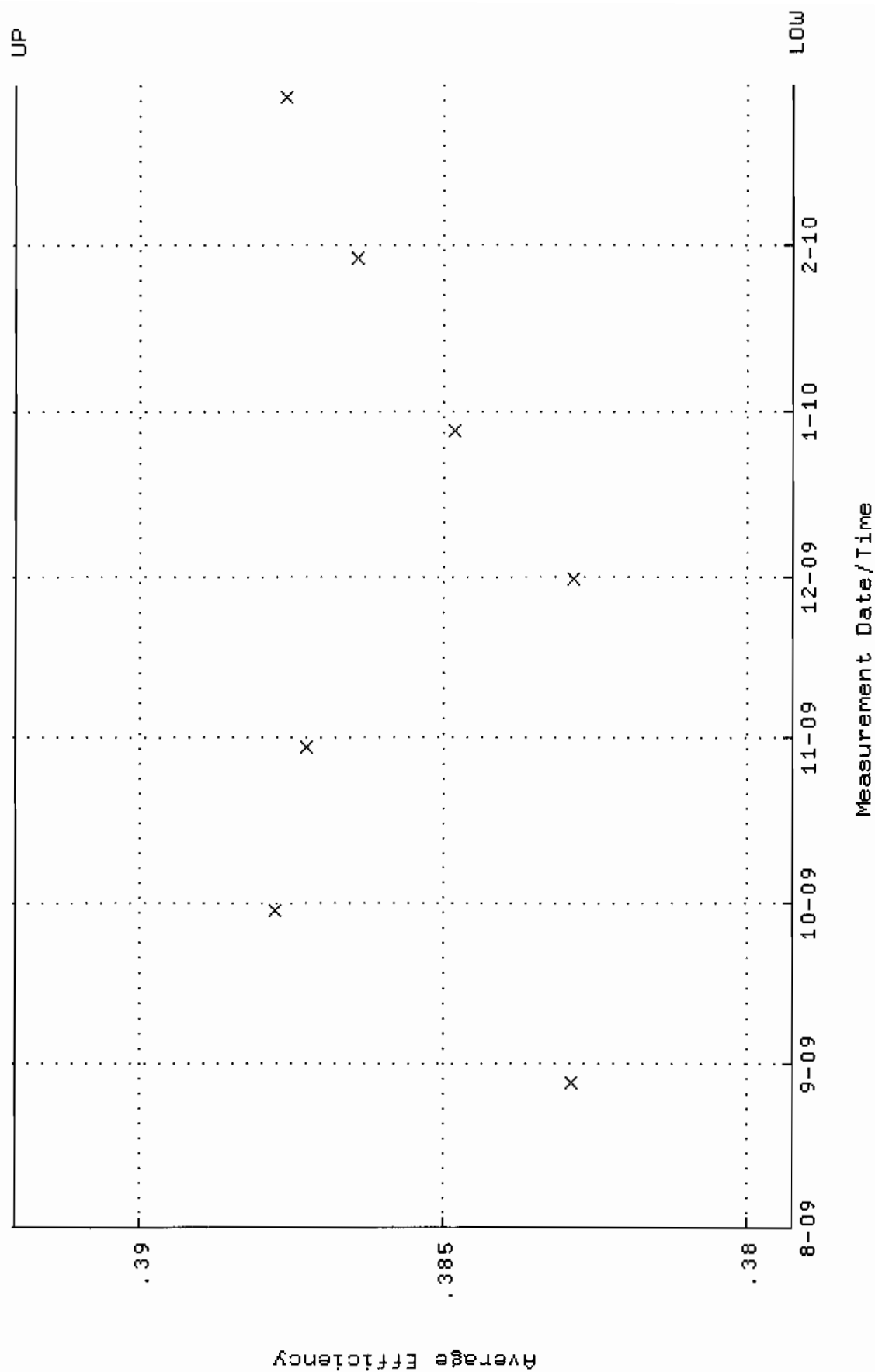
QA filename : DKA100:[ENV_ALPHA.QA.W]W226.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:57 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.7273 through 95.1093



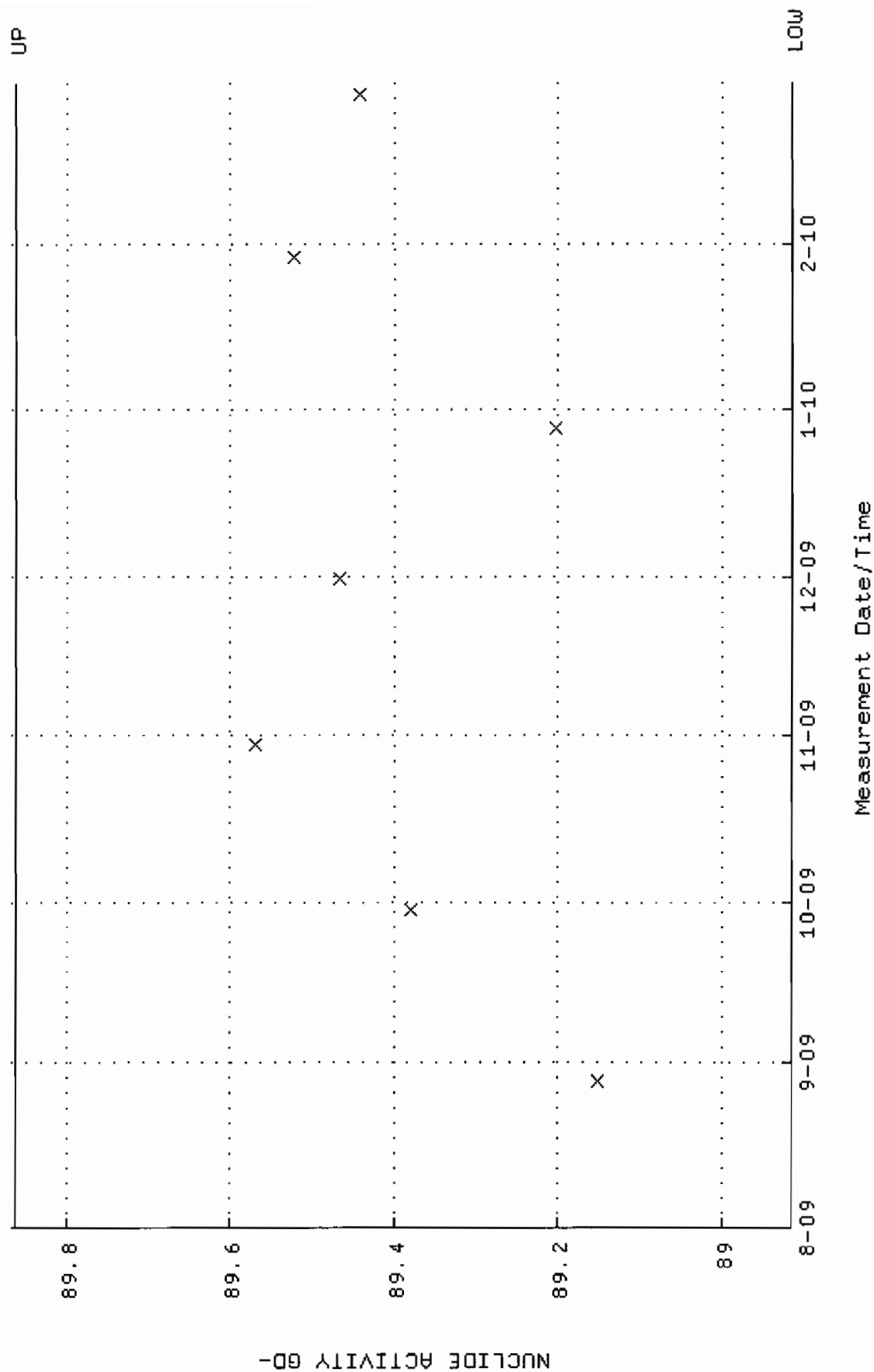
QA filename : DKA100:[ENV_ALPHA.QA.B]B226.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:20 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



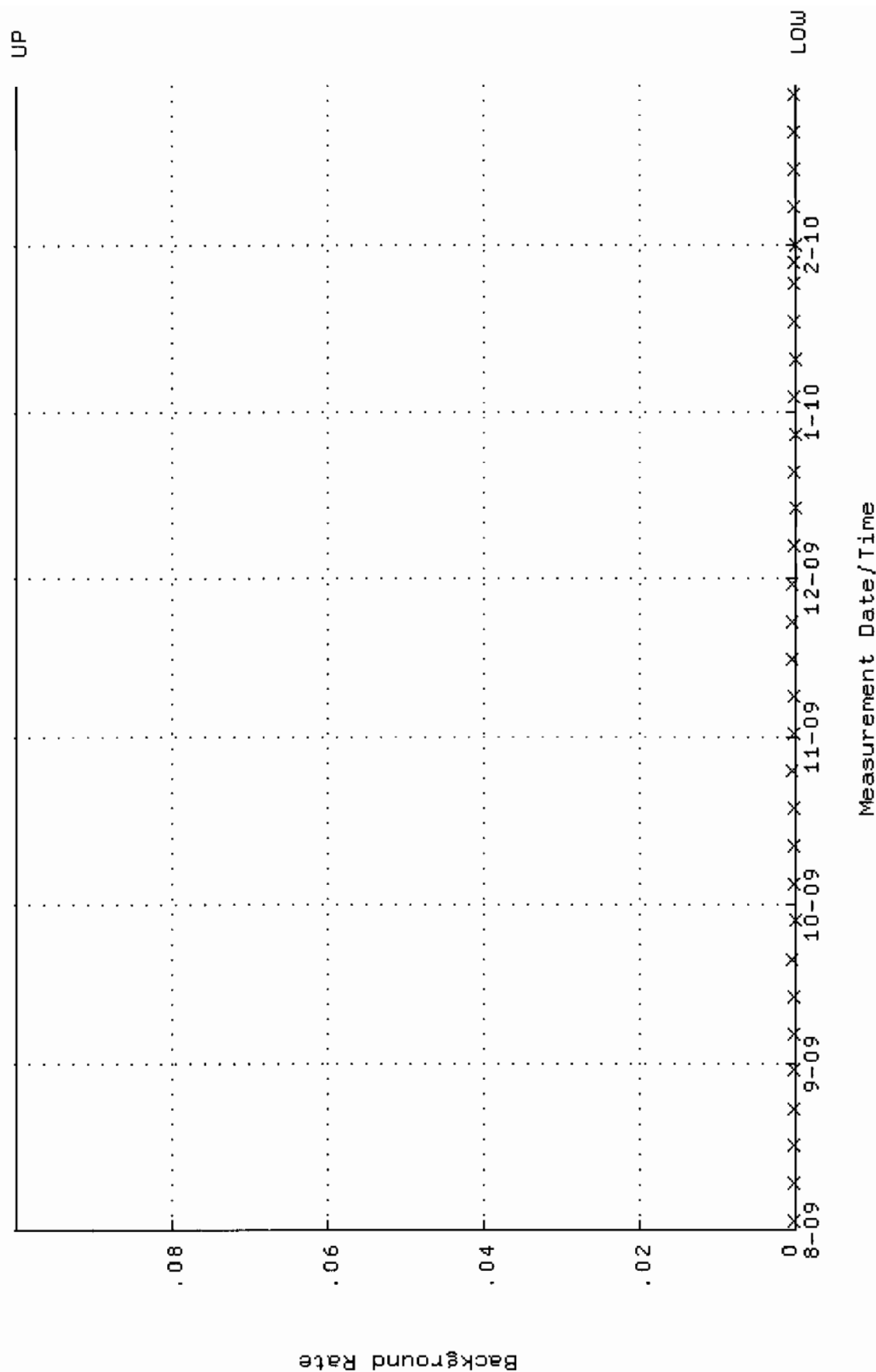
QA filename : DKA100:[ENV_ALPHA.QA.W]W227.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:03 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.379260 through 0.392050



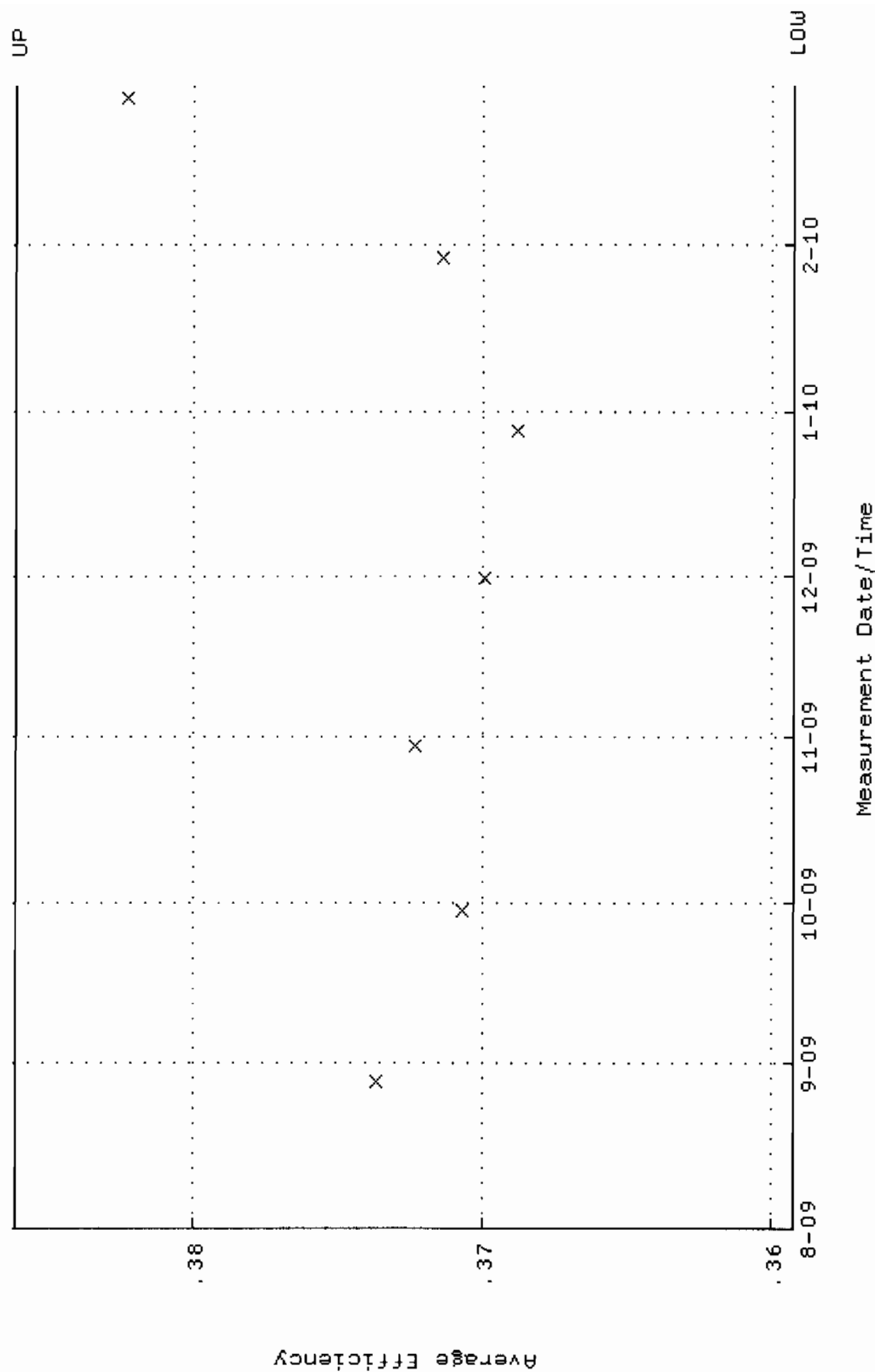
QA filename : DKA100:[ENV_ALPHA.QA.W]W227.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:03 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.9145 through 89.8637



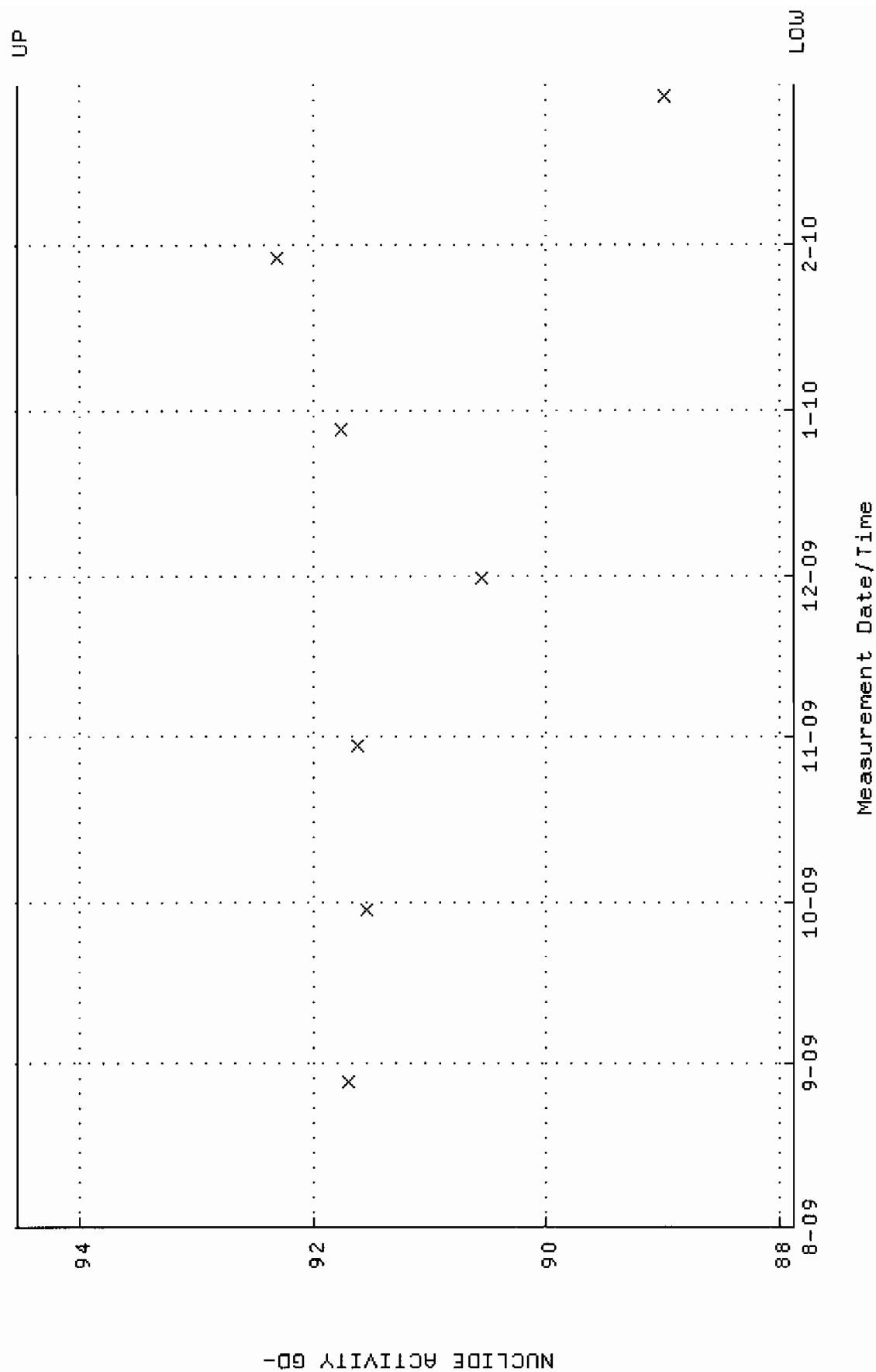
QA filename : DKA100:[ENV_ALPHA.QA.B]B227.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:24 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W228.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:10 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.359272 through 0.386096



QA filename : DKA100:[ENV_ALPHA.QA.W]W228.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:10 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.8750 through 94.5380

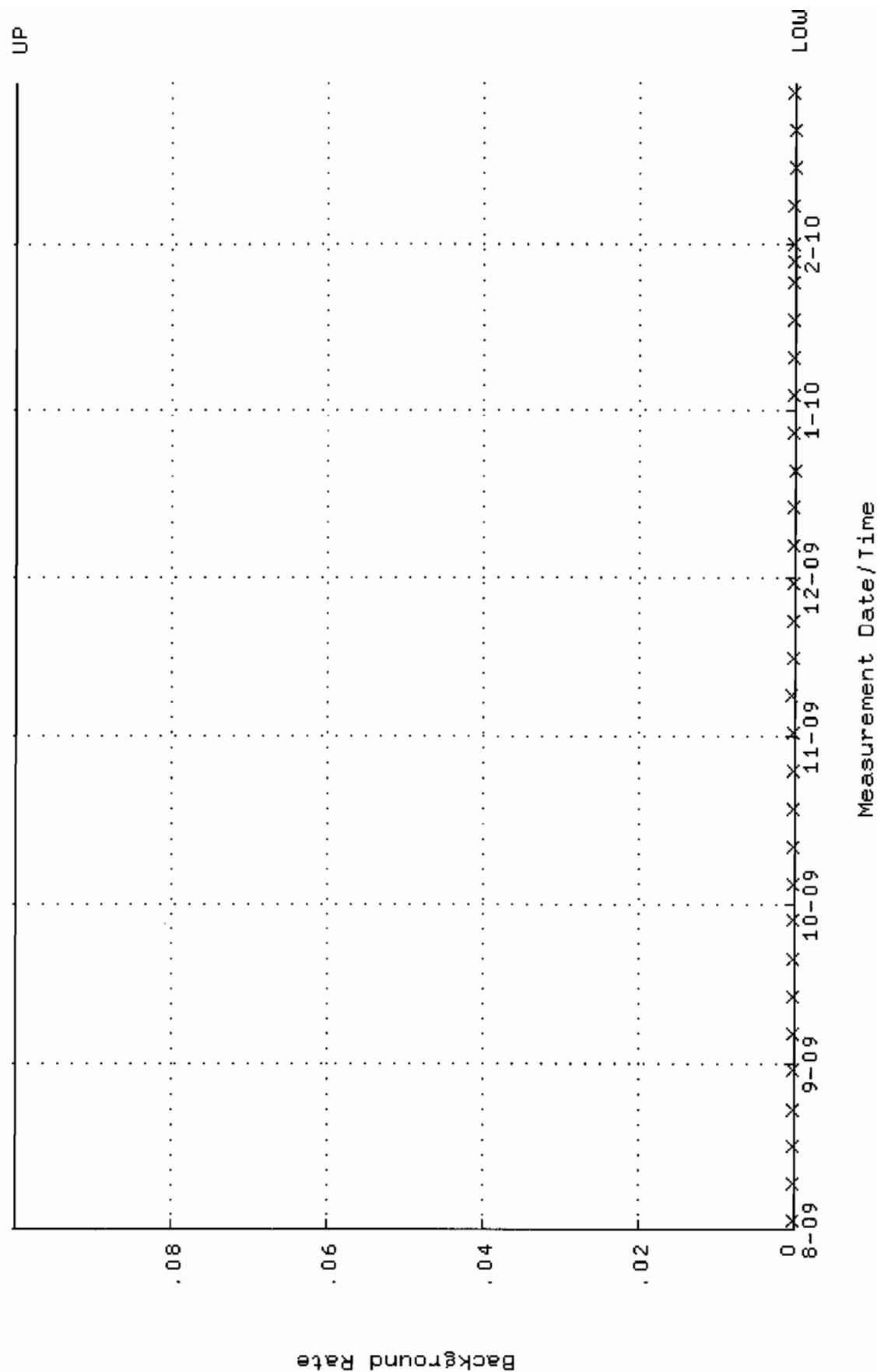


QA filename : DKA100:[ENV_ALPHA.QA.B]B228.QAF;1

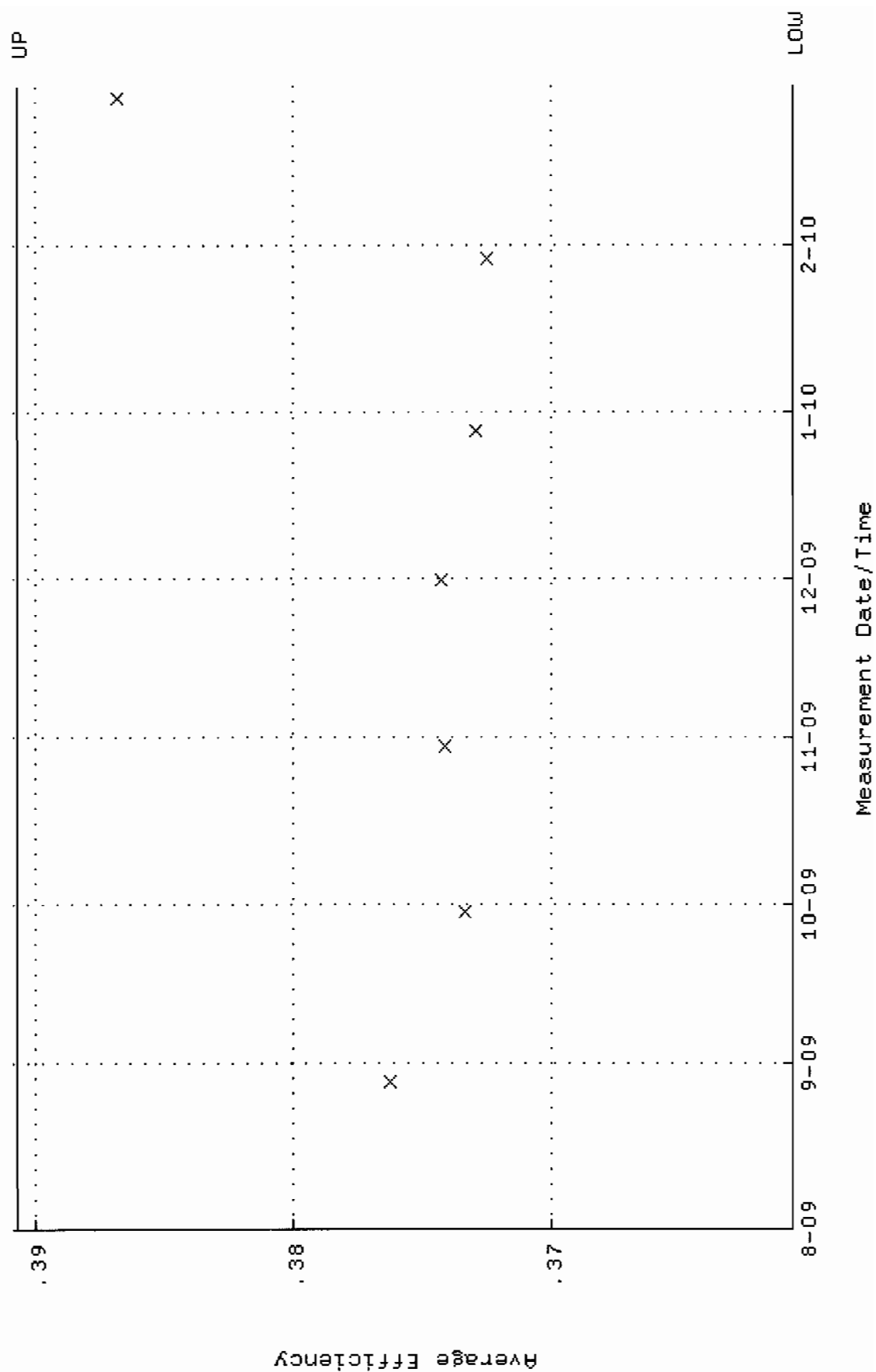
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:26:29 through 2-MAR-2010 12:00:00

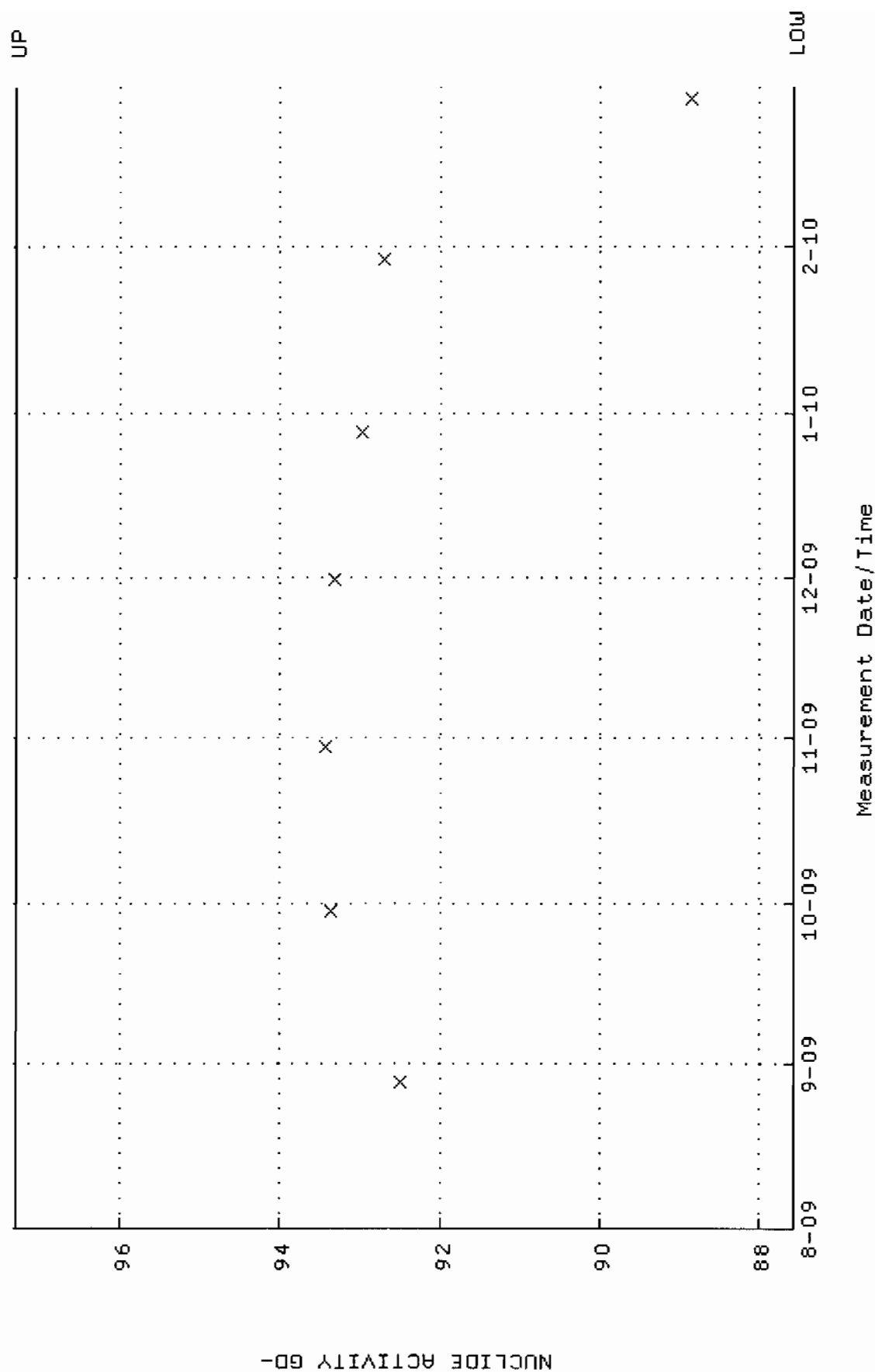
Lower/Upper Lmts: 0.000000E+00 through 0.100000



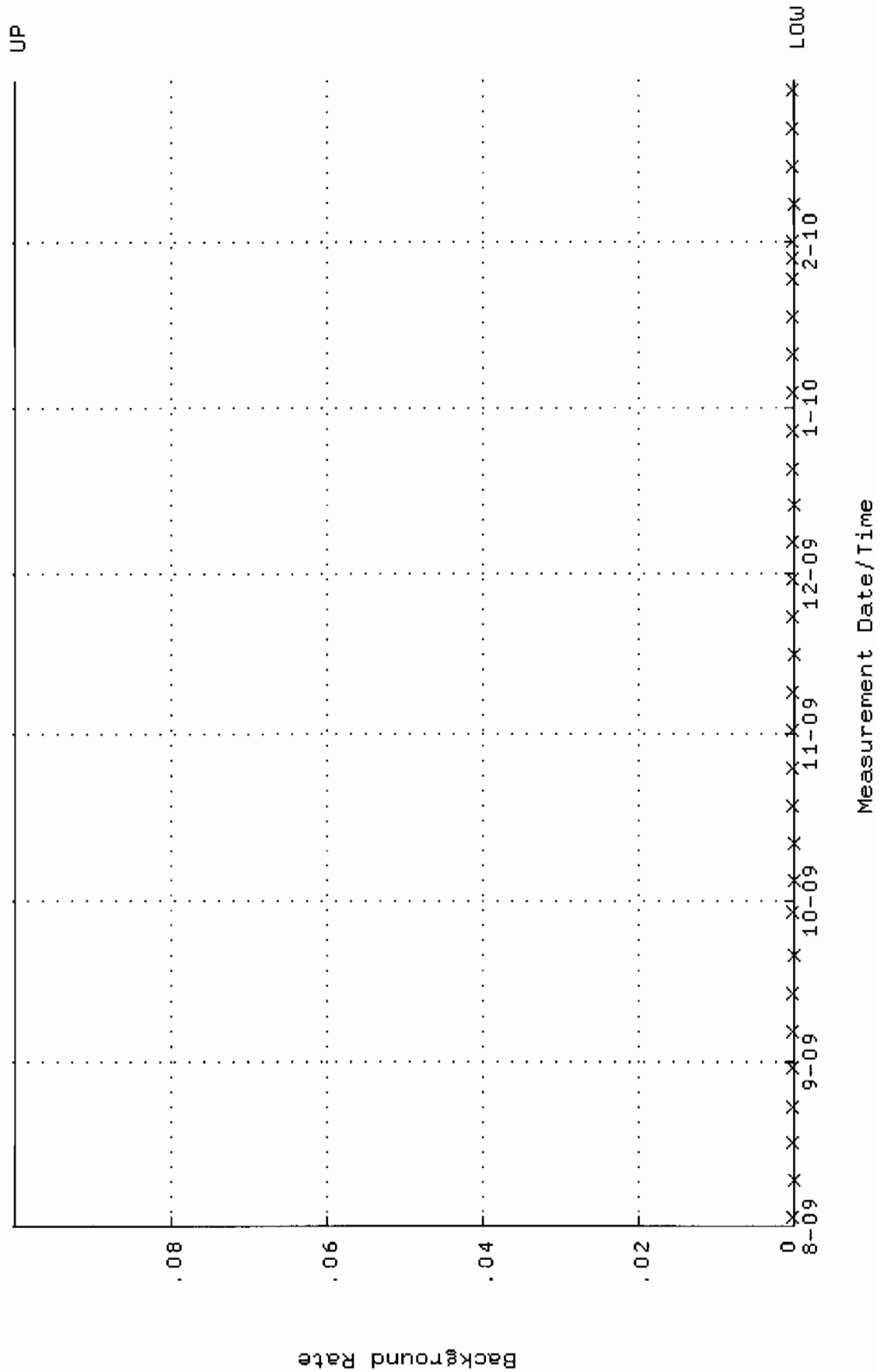
QA filename : DKA100:[ENV_ALPHA.QA.W]W229.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:15 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.360663 through 0.390815



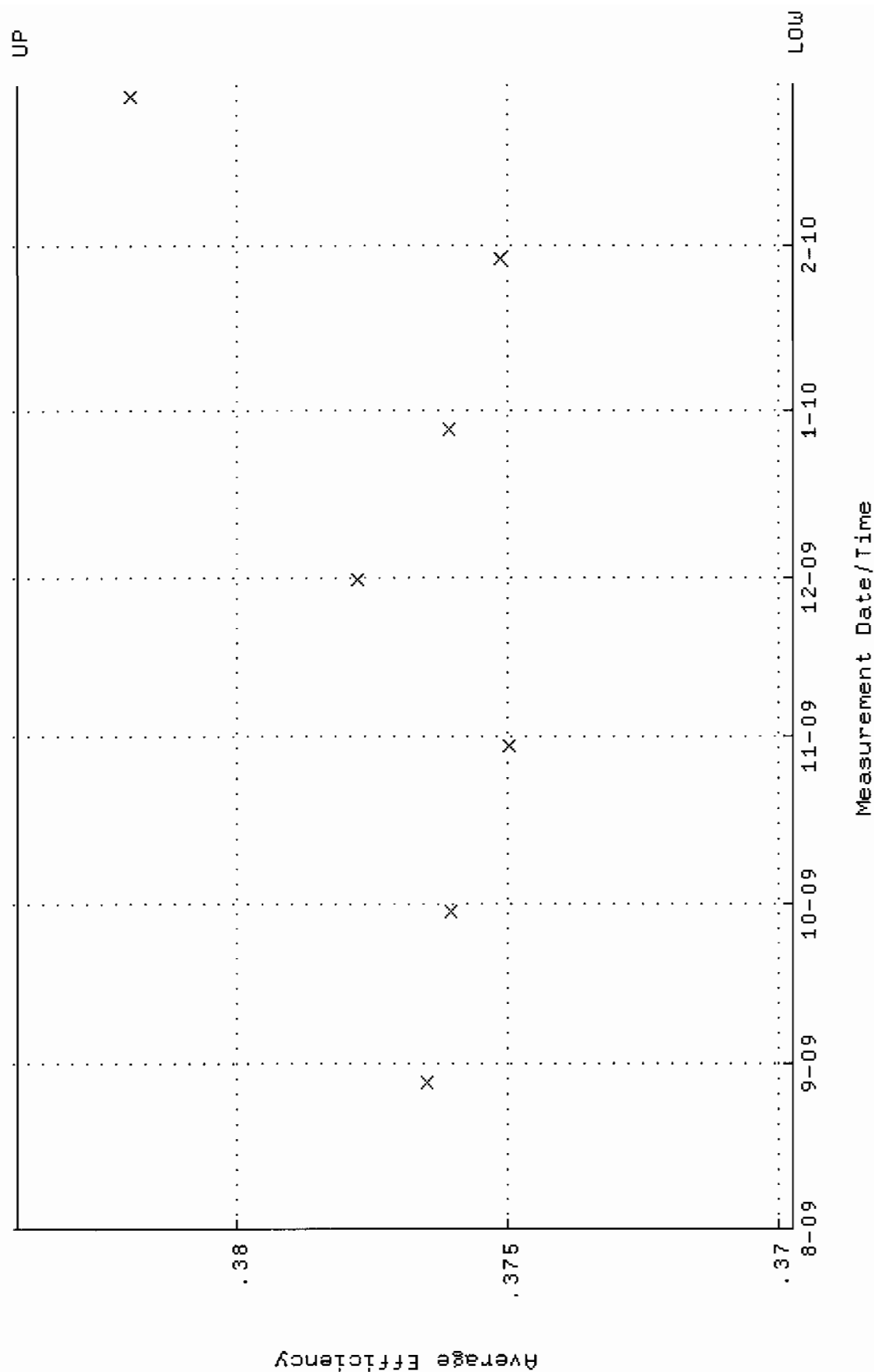
QA filename : DKA100:[ENV_ALPHA.QA.W]w229.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:15 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.5648 through 97.3078



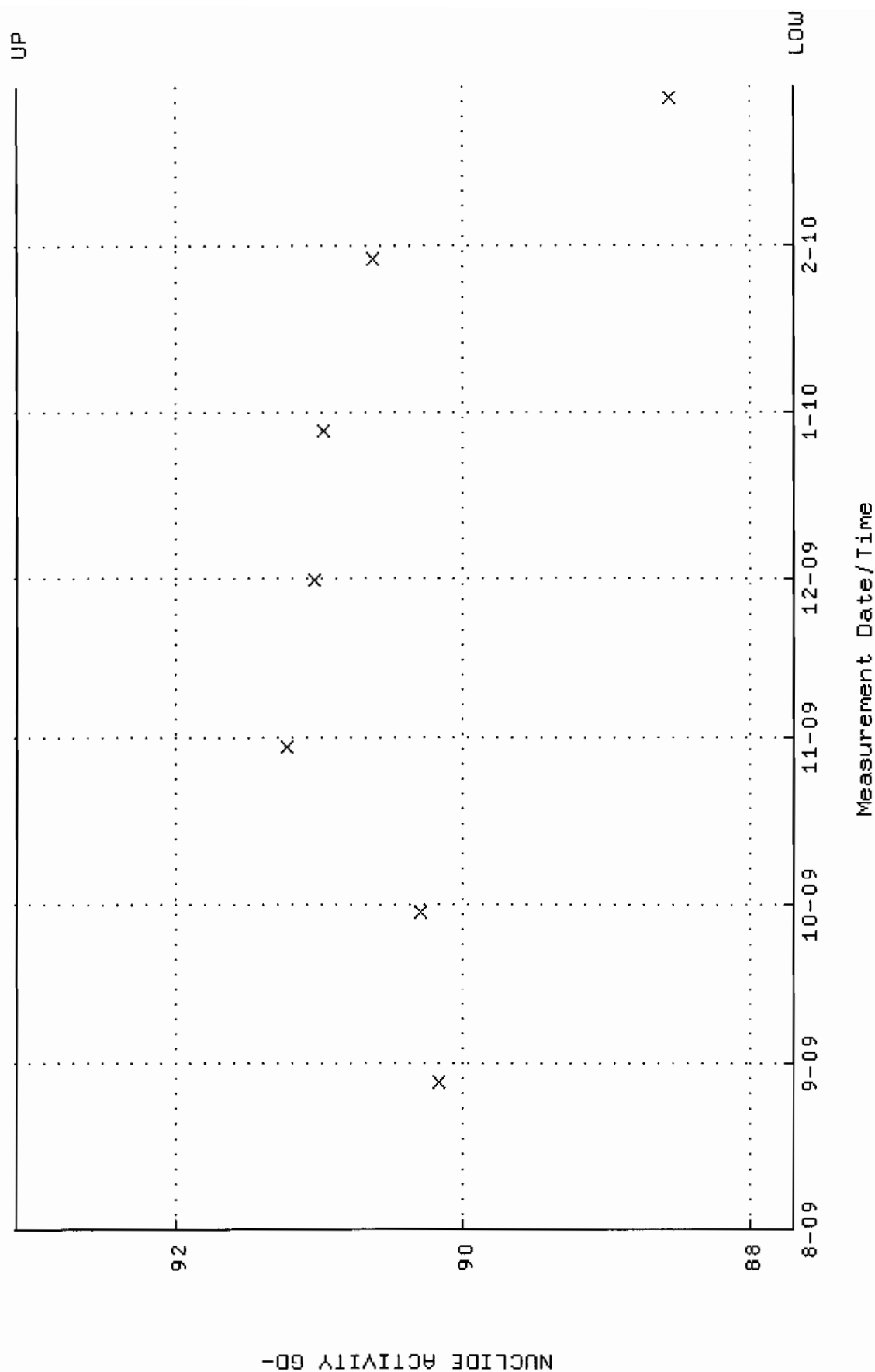
QA filename : DKA100:[ENV_ALPHA.QA.B]B229.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:34 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



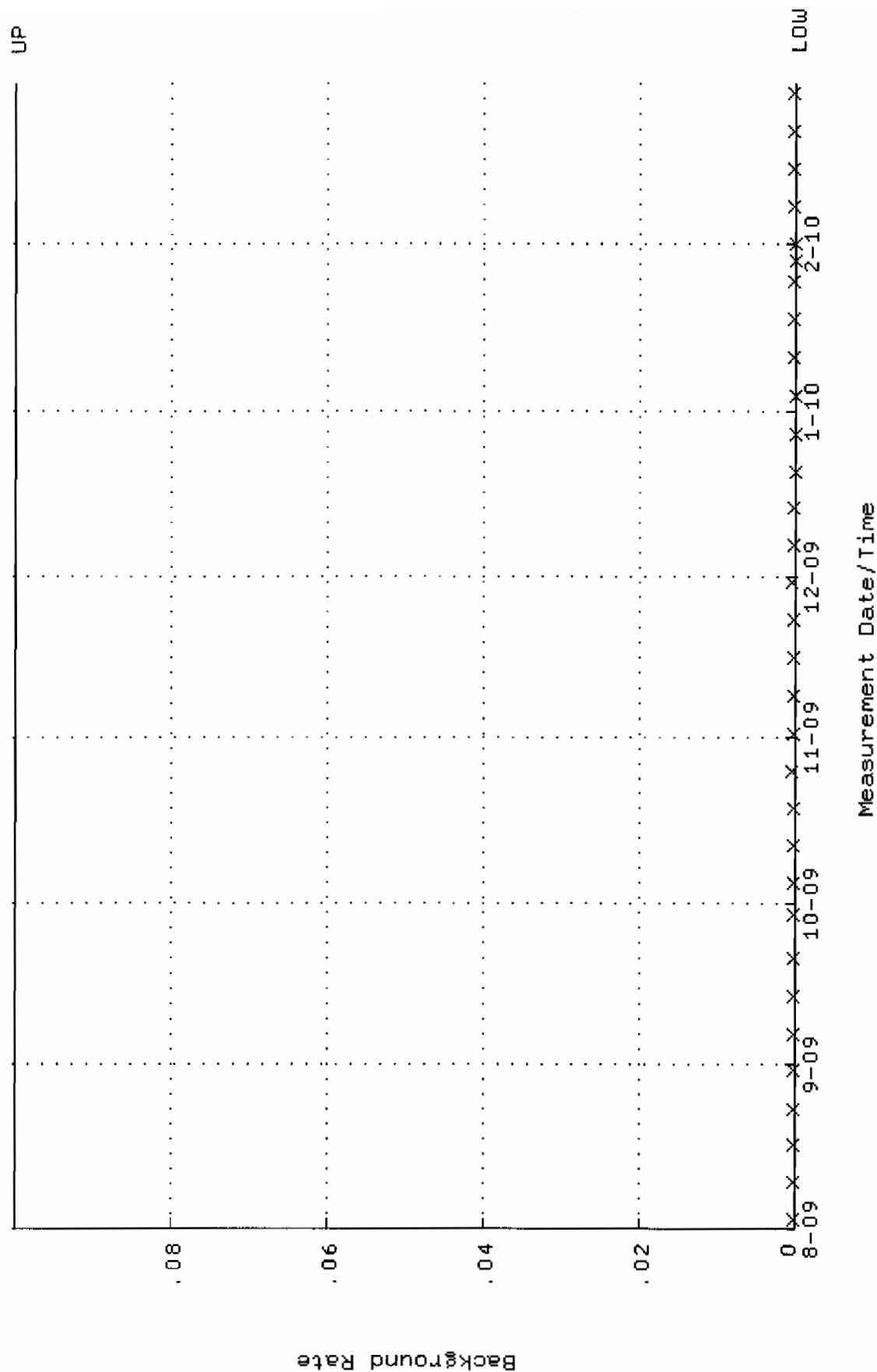
QA filename : DKA100:[ENV_ALPHA.QA.W]W230.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:19 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.369716 through 0.384082



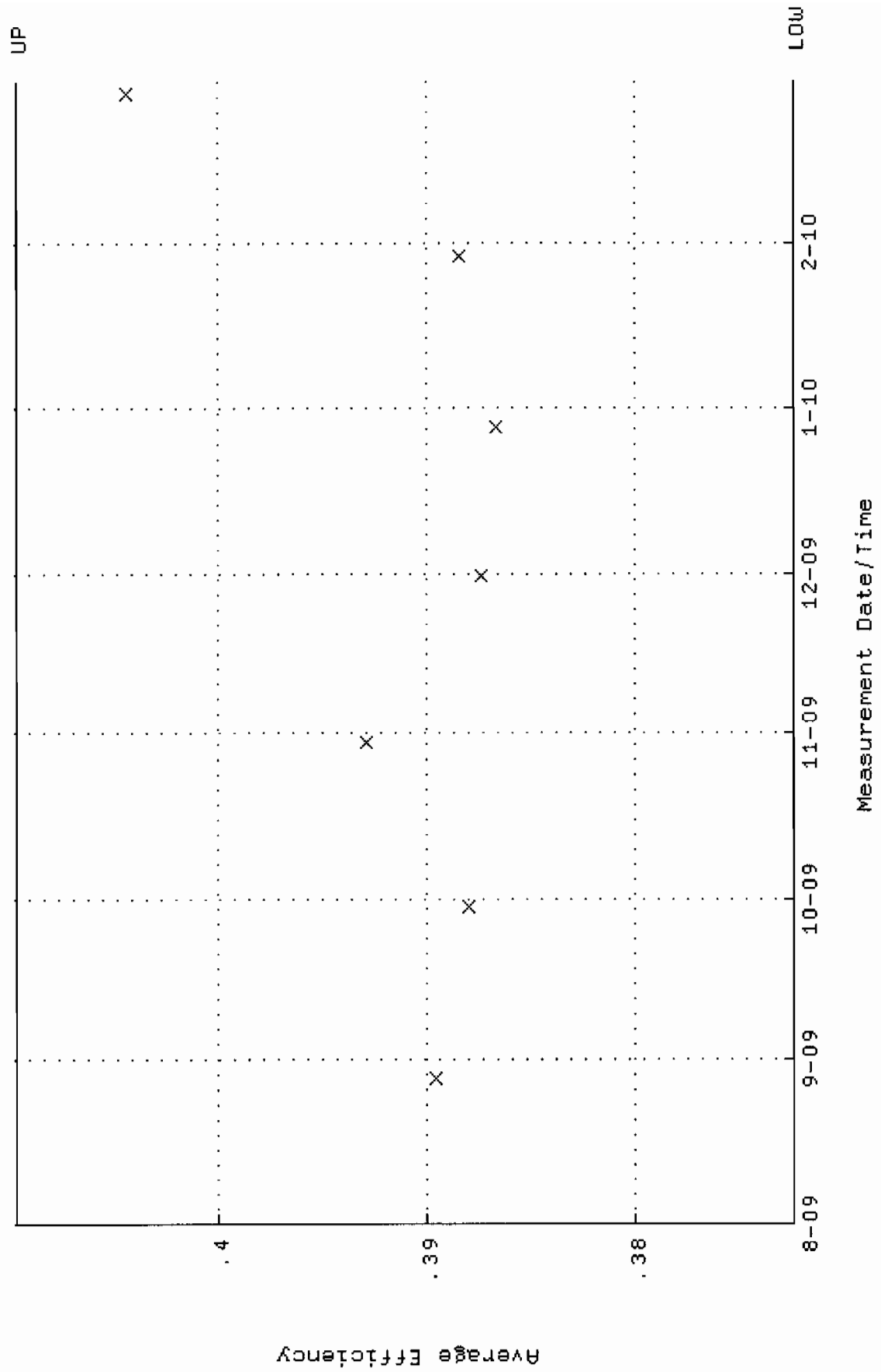
QA filename : DKA100:[ENV_ALPHA.QA.W]W230.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:19 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.6979 through 93.1141



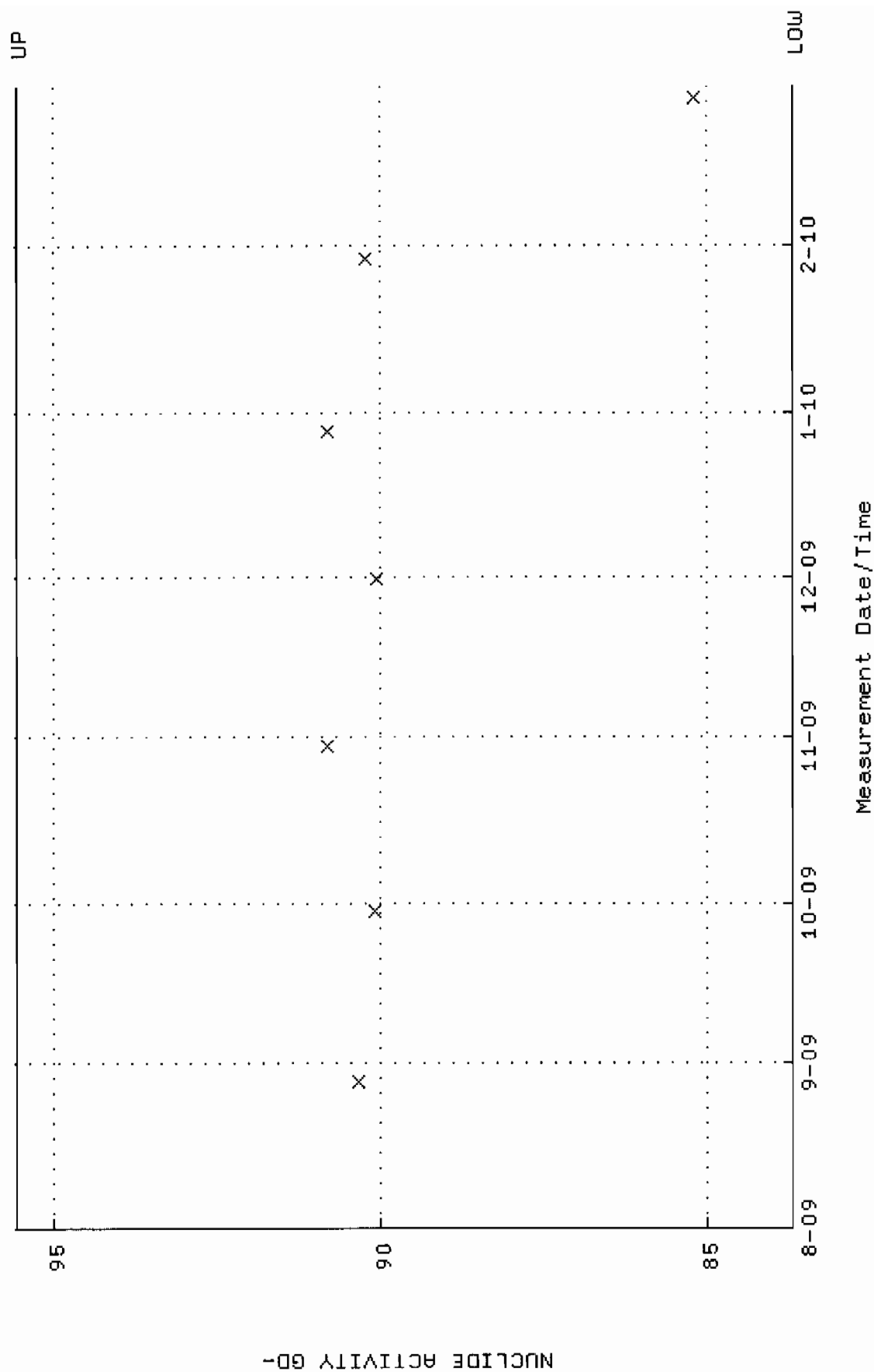
QA filename : DKA100:[ENV_ALPHA.QA.B]B230.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:38 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



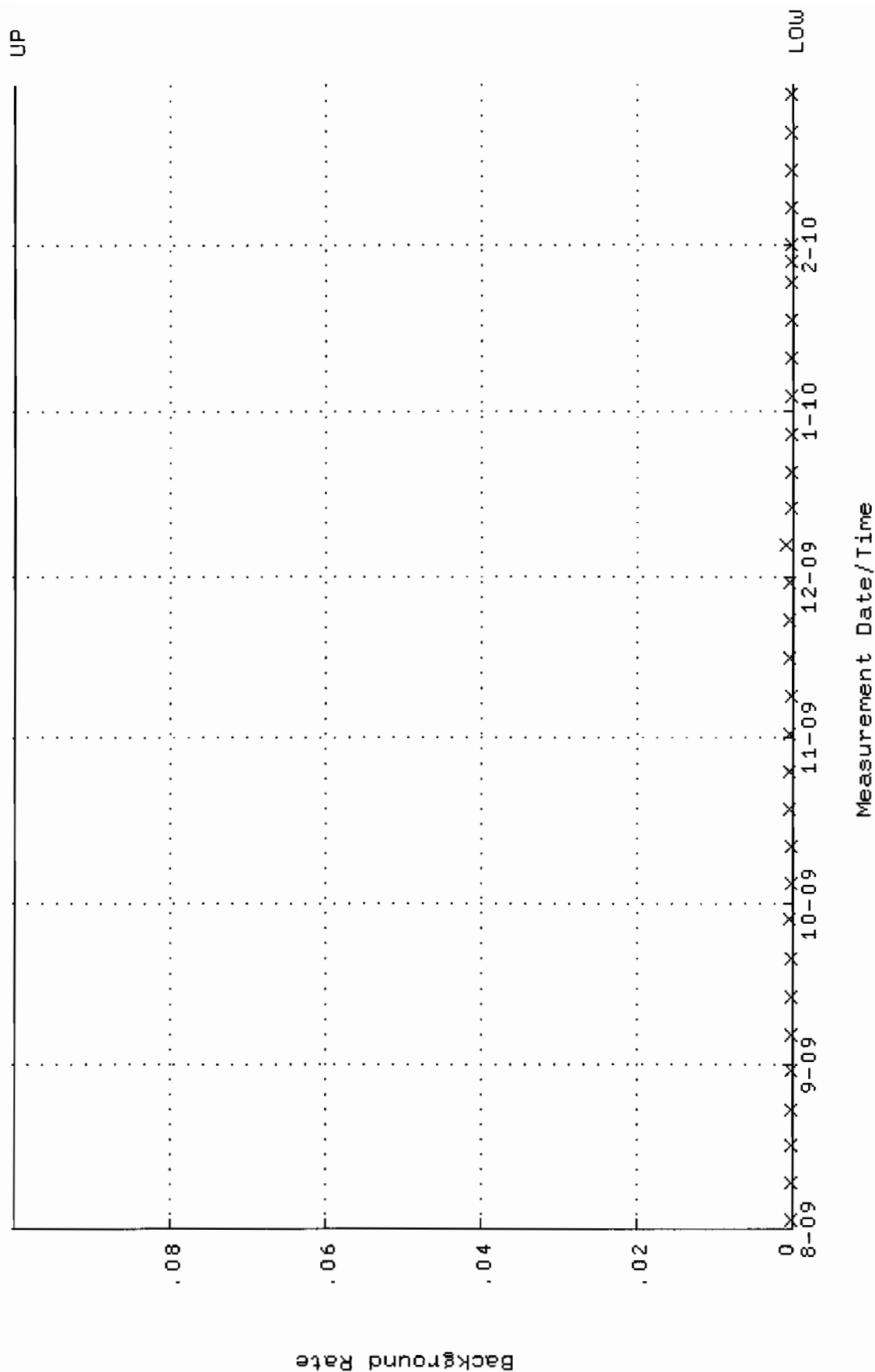
QA filename : DKA100:[ENV_ALPHA.QA.W]W231.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:24 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.372352 through 0.409678



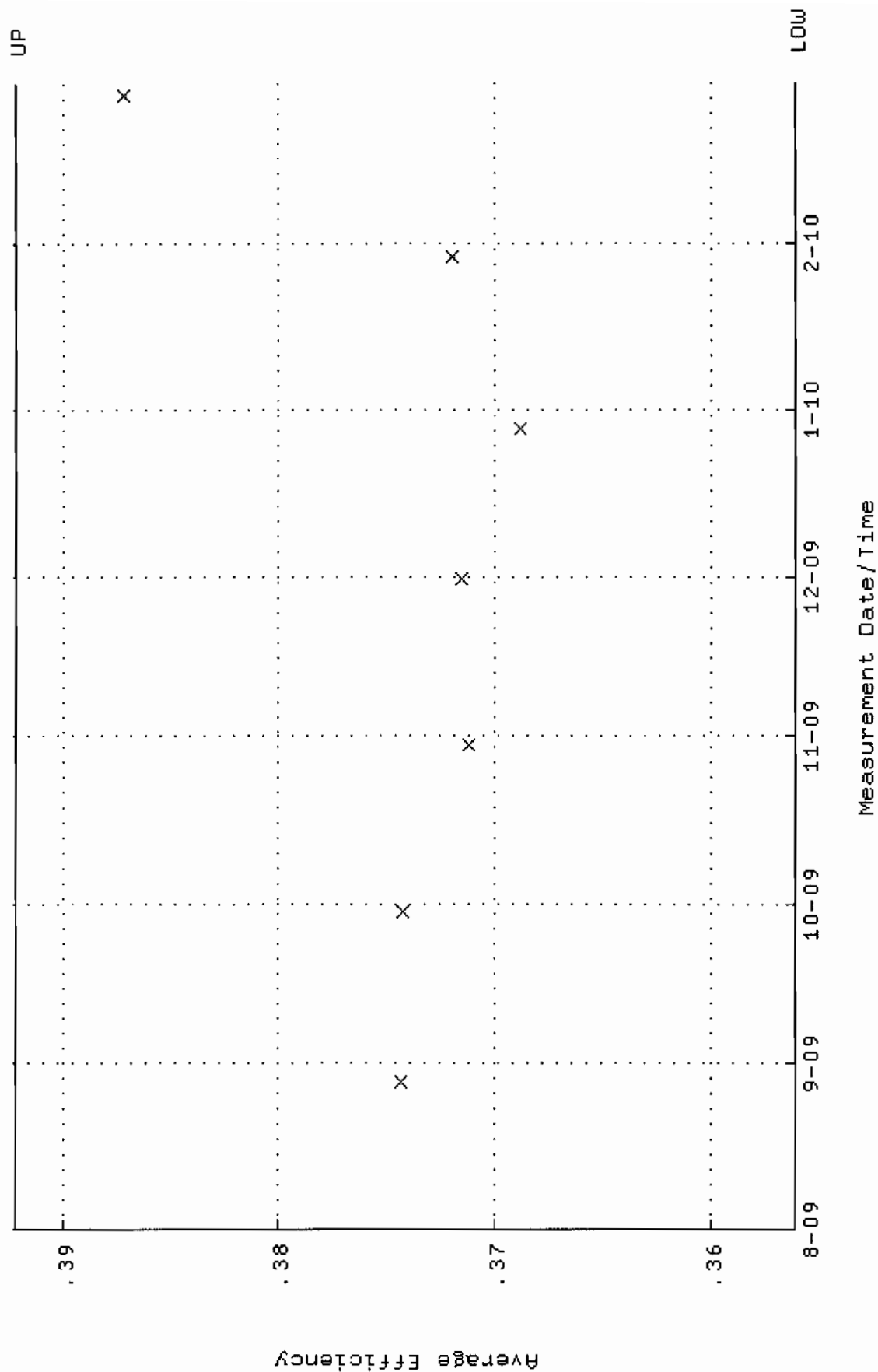
QA filename : DKA100:[ENV_ALPHA.QA.W]W231.QAF;1
 Parameter Name : NLACTIVITY-GO148 (NUCLIDE ACTIVITY GO-148)
 Start/End Dates : 28-AUG-2009 07:08:24 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.6949 through 95.5595



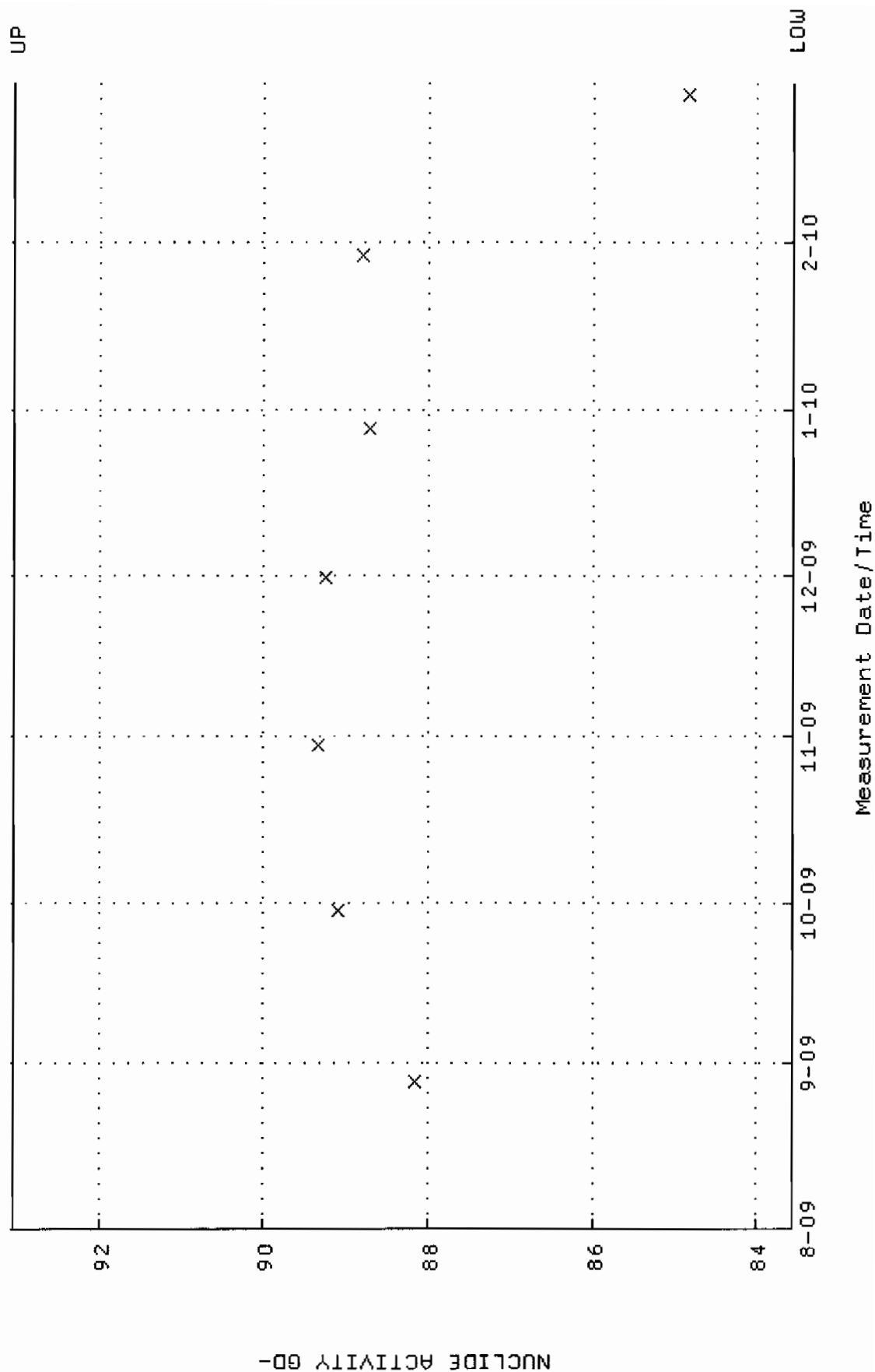
QA filename : DKA100:[ENV_ALPHA.QA.B]B231.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:43 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W232.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:30 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.356063 through 0.392181



QA filename : DKA100:[ENV_ALPHA.QA.W]W232.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:30 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.5615 through 93.0435

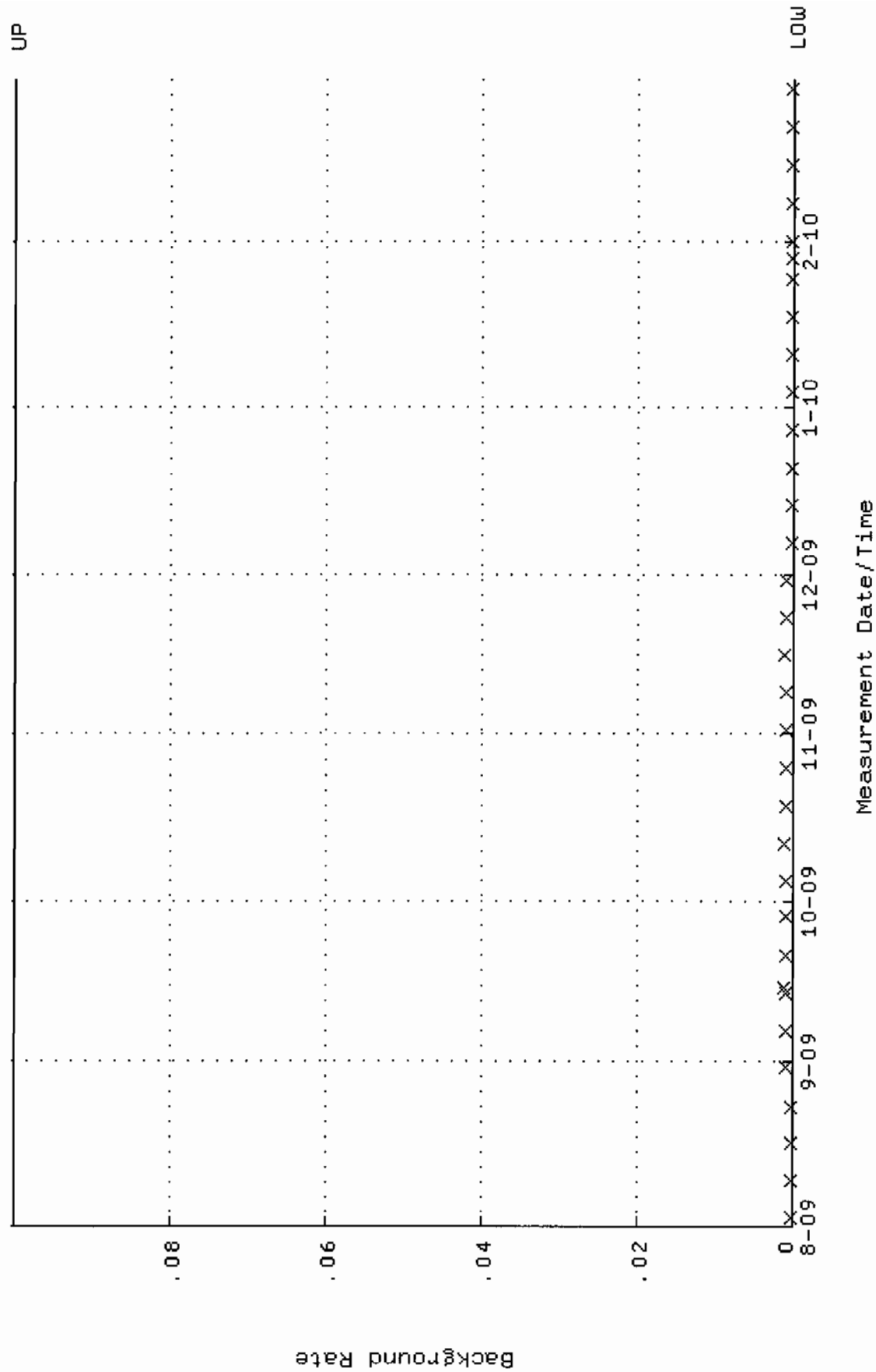


QA filename : DKA100:[ENV_ALPHA.QA.B]B232.QAF;1

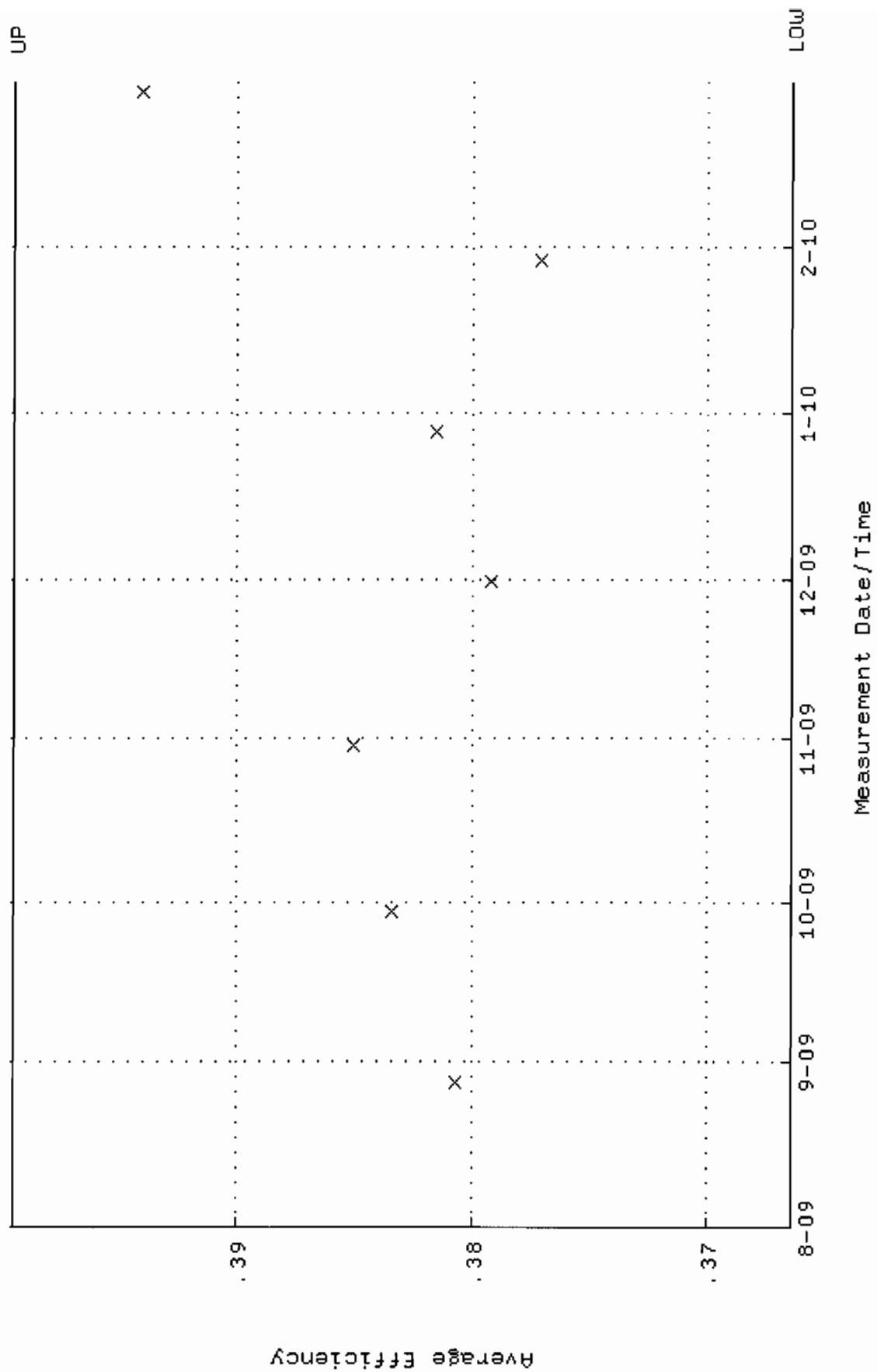
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:26:47 through 2-MAR-2010 12:00:00

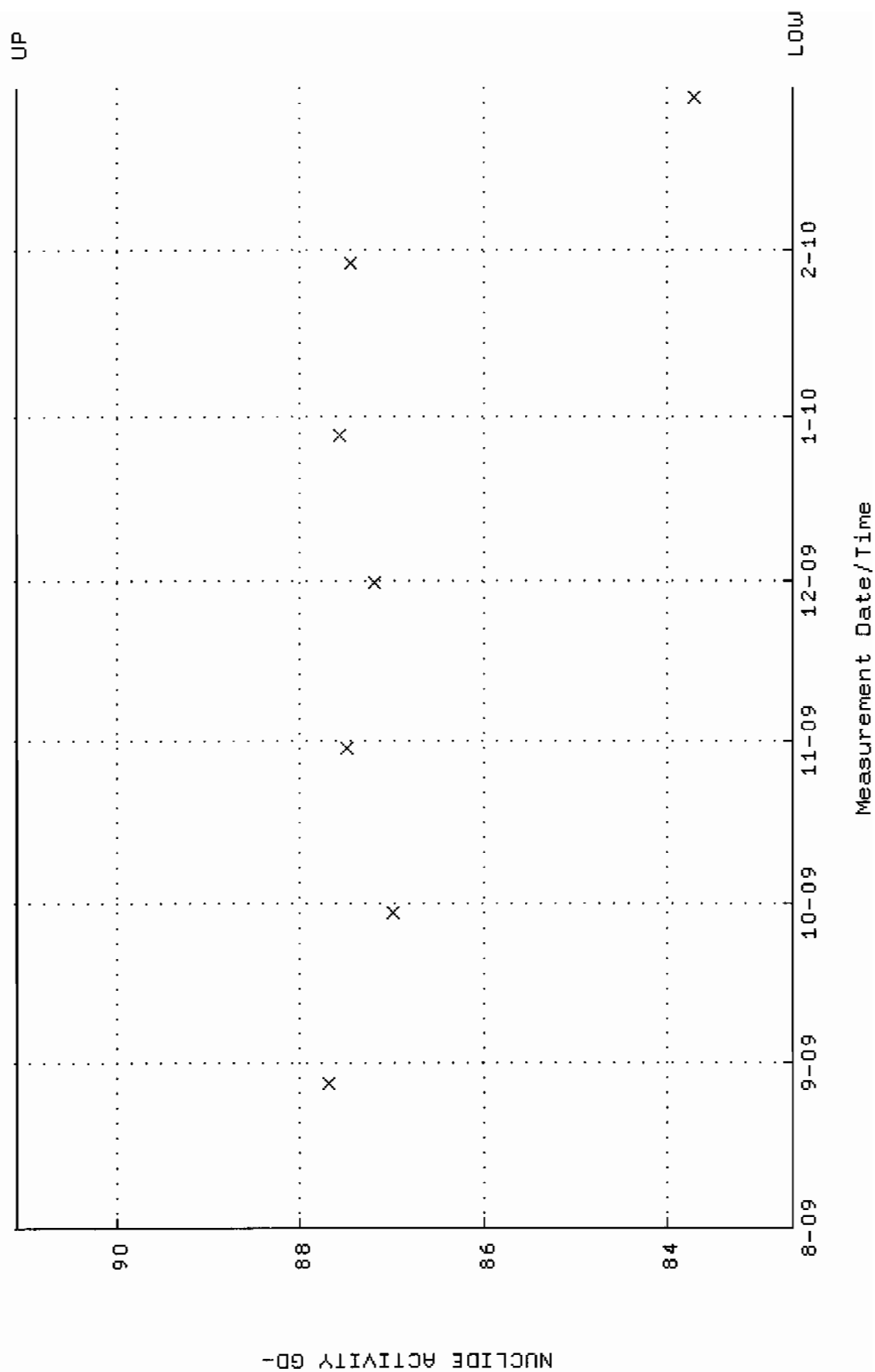
Lower/Upper Lmts: 0.000000E+00 through 0.100000



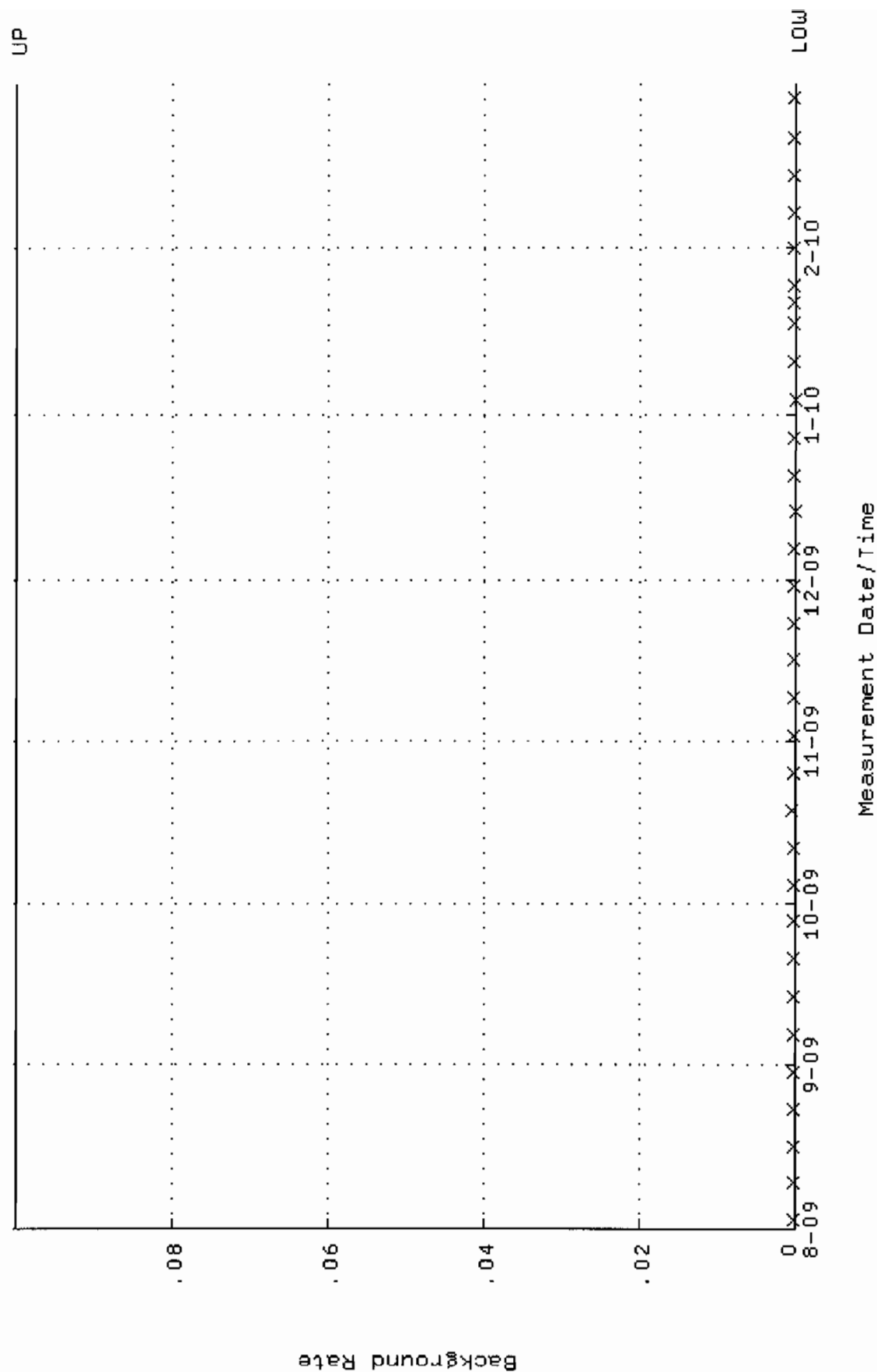
QA filename : DKA100:[ENV_ALPHA.QA.W]W233.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:35 through 3-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.366381 through 0.399563



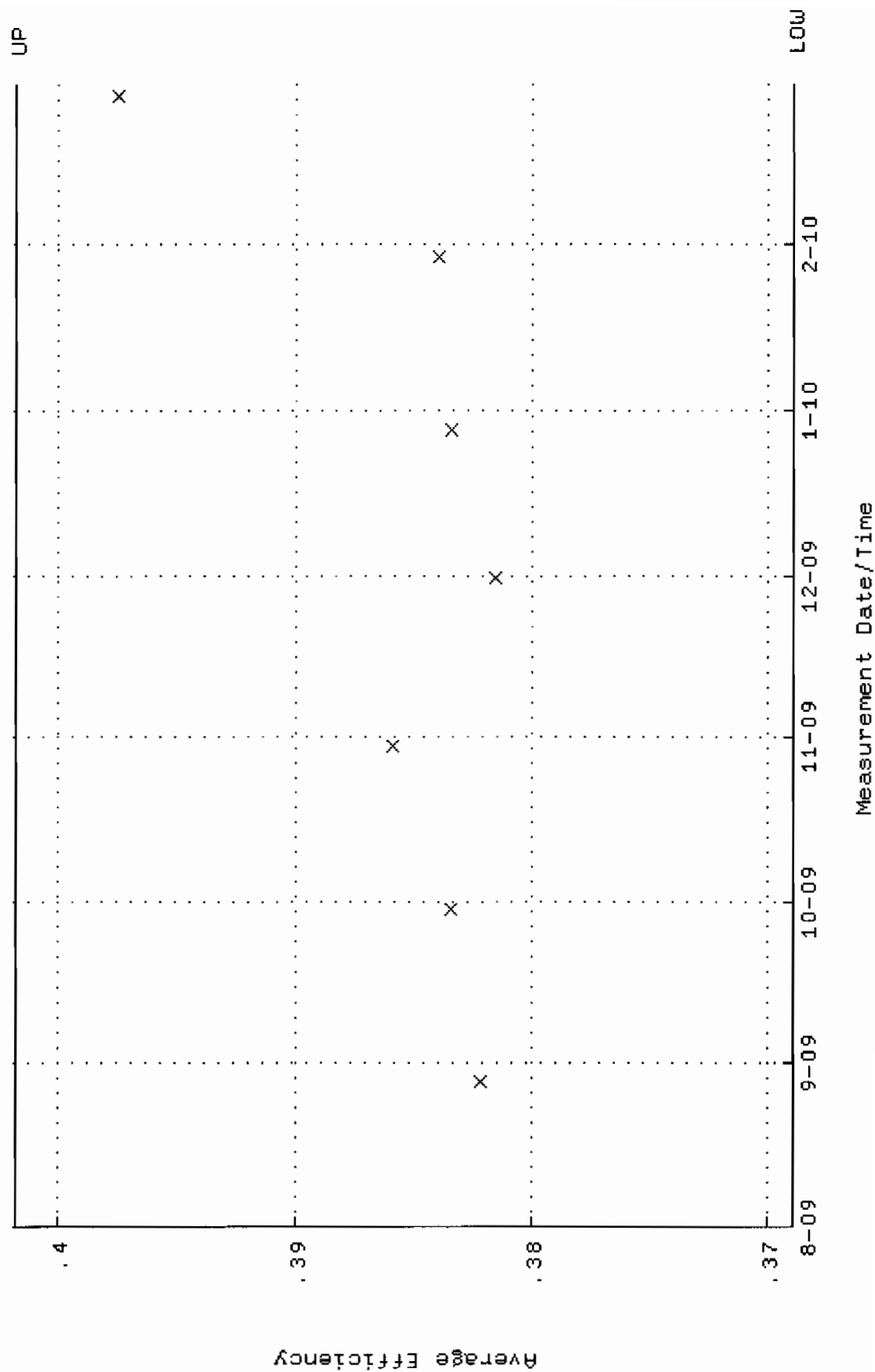
QA filename : DKA100:[ENV_ALPHA.QA.W]W233.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:35 through 3-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.6177 through 91.1049



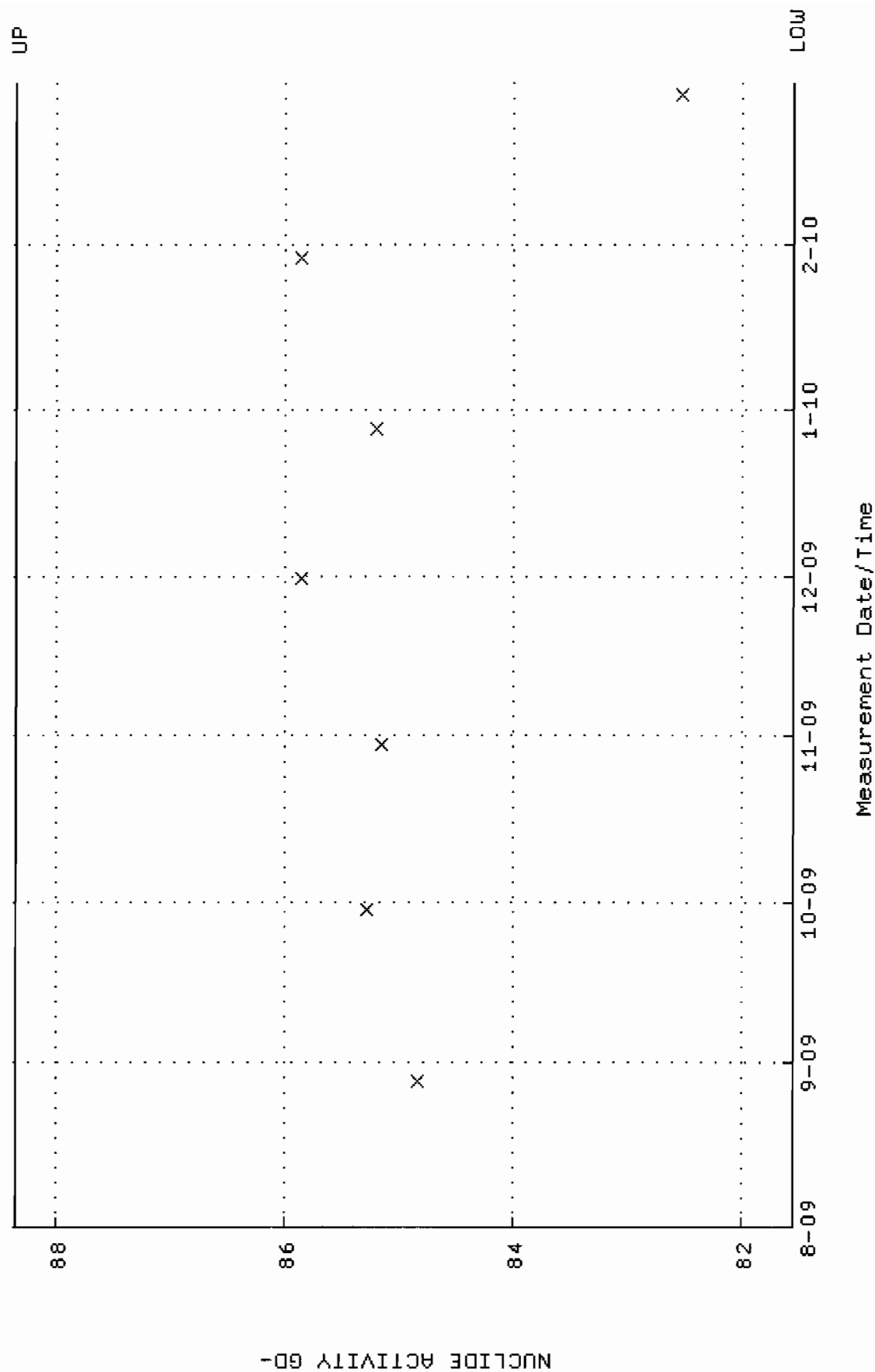
QA filename : DKA100:[ENV_ALPHA.QA.B]B233.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:52 through 3-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W234.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:41 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.368938 through 0.401788



QA filename : DKA100:[ENV_ALPHA.QA.W]w234.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:41 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.5490 through 88.3592

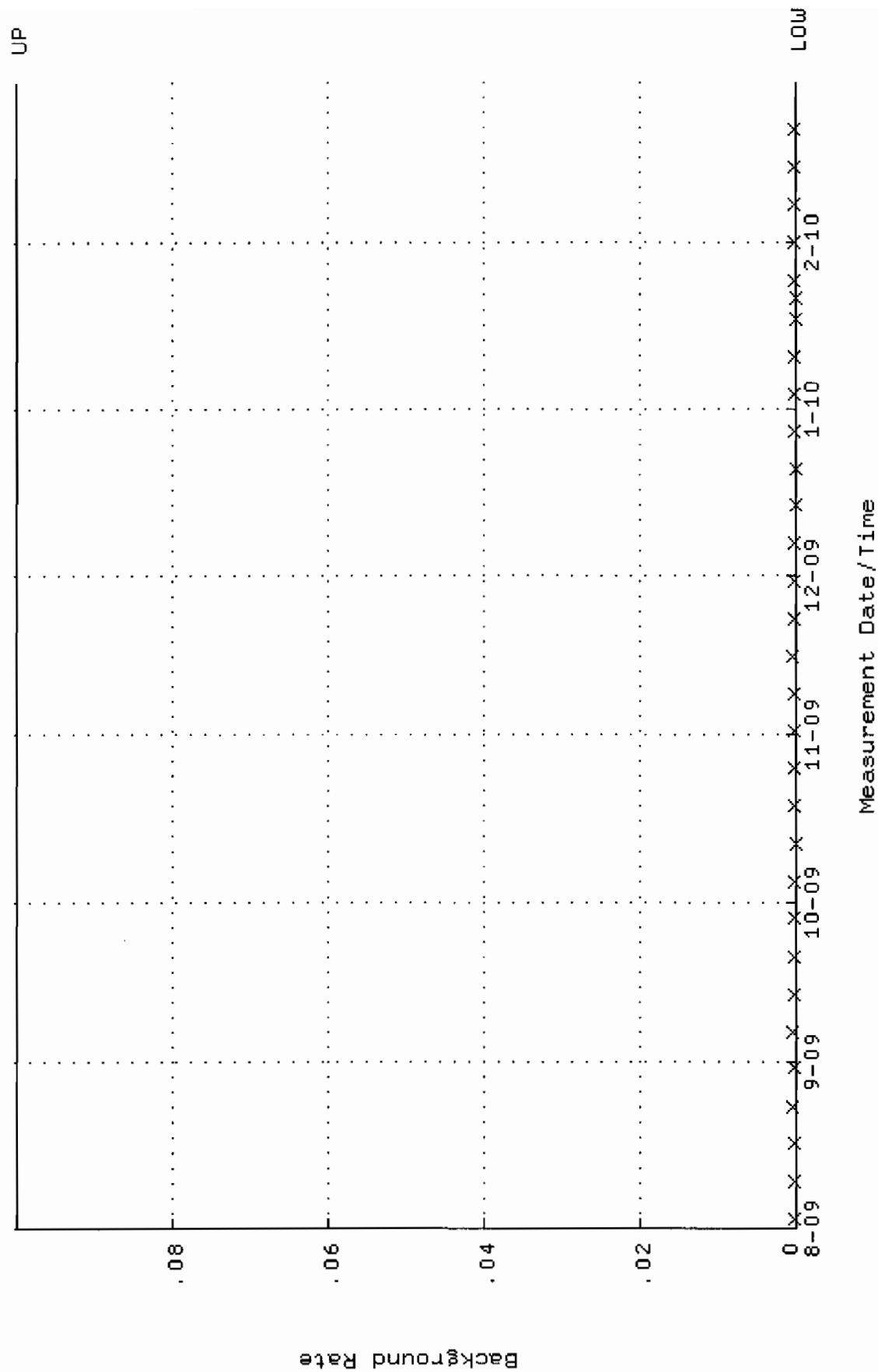


QA filename : DKA100:[ENV_ALPHA.QA.B]B234.QAF;1

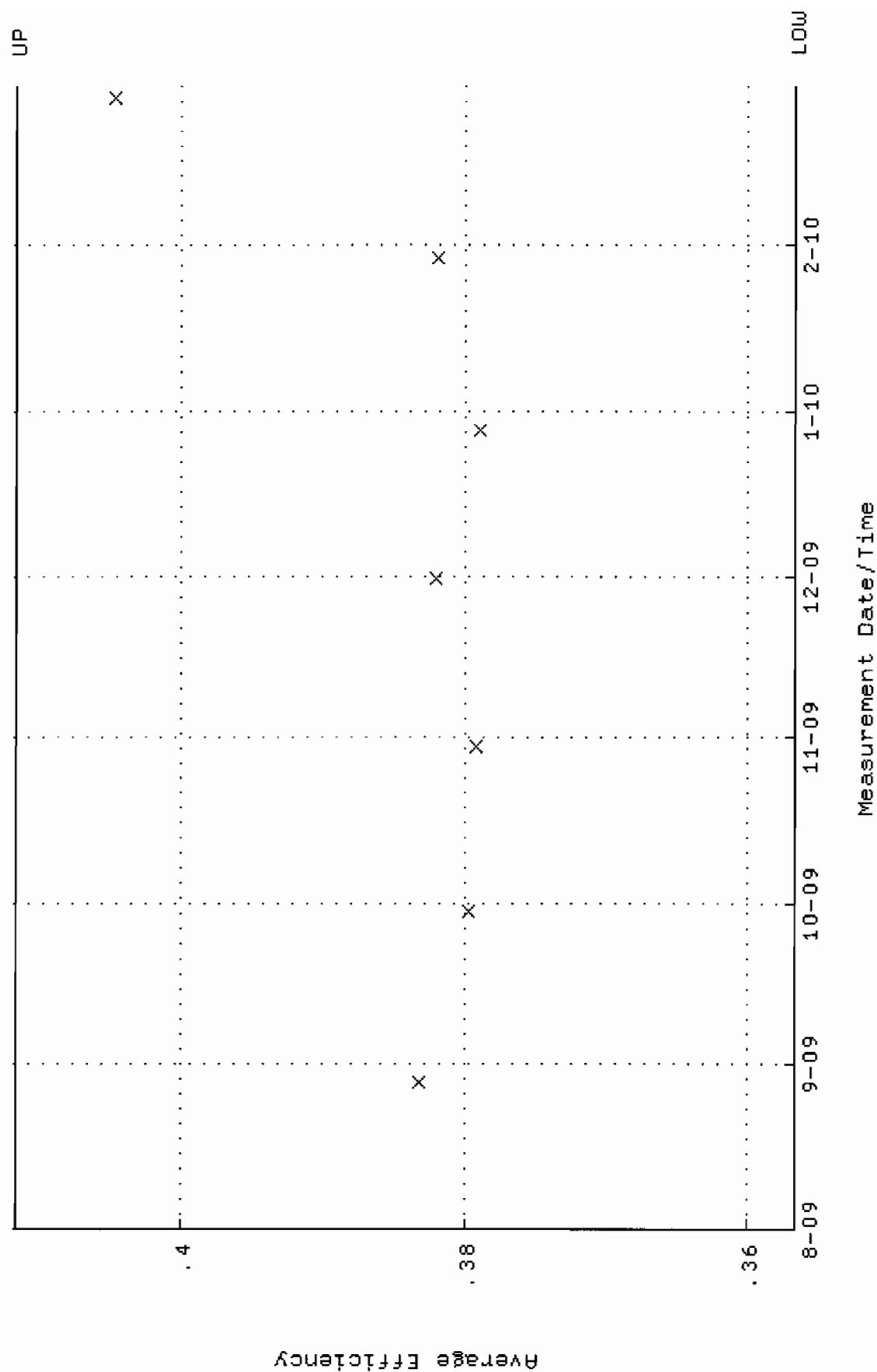
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:26:56 through 2-MAR-2010 12:00:00

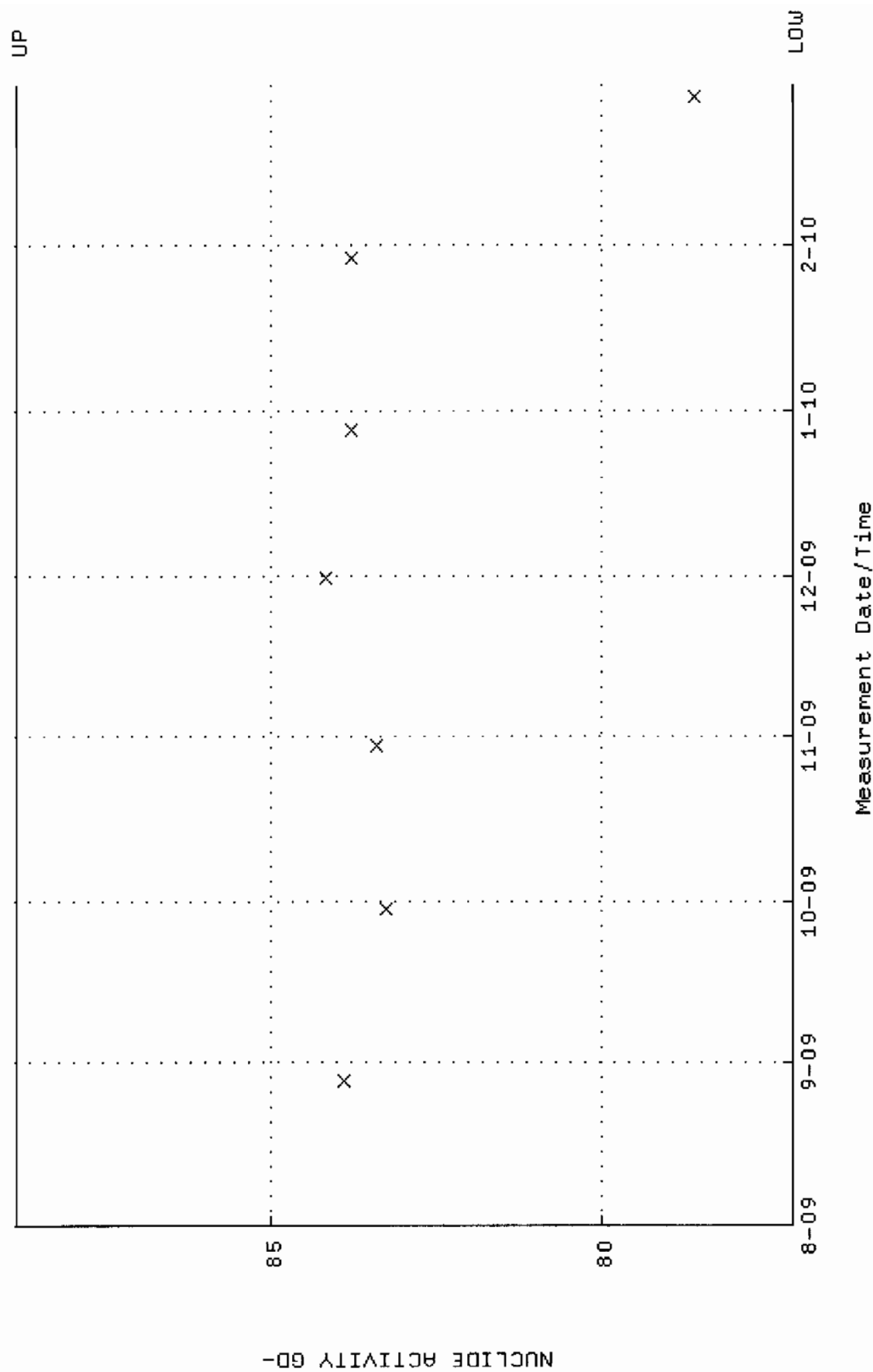
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]w255.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:10:32 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.356627 through 0.411721



QA filename : DKA100:[ENV_ALPHA.QA.W]U255.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:10:32 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 77.0853 through 88.8385

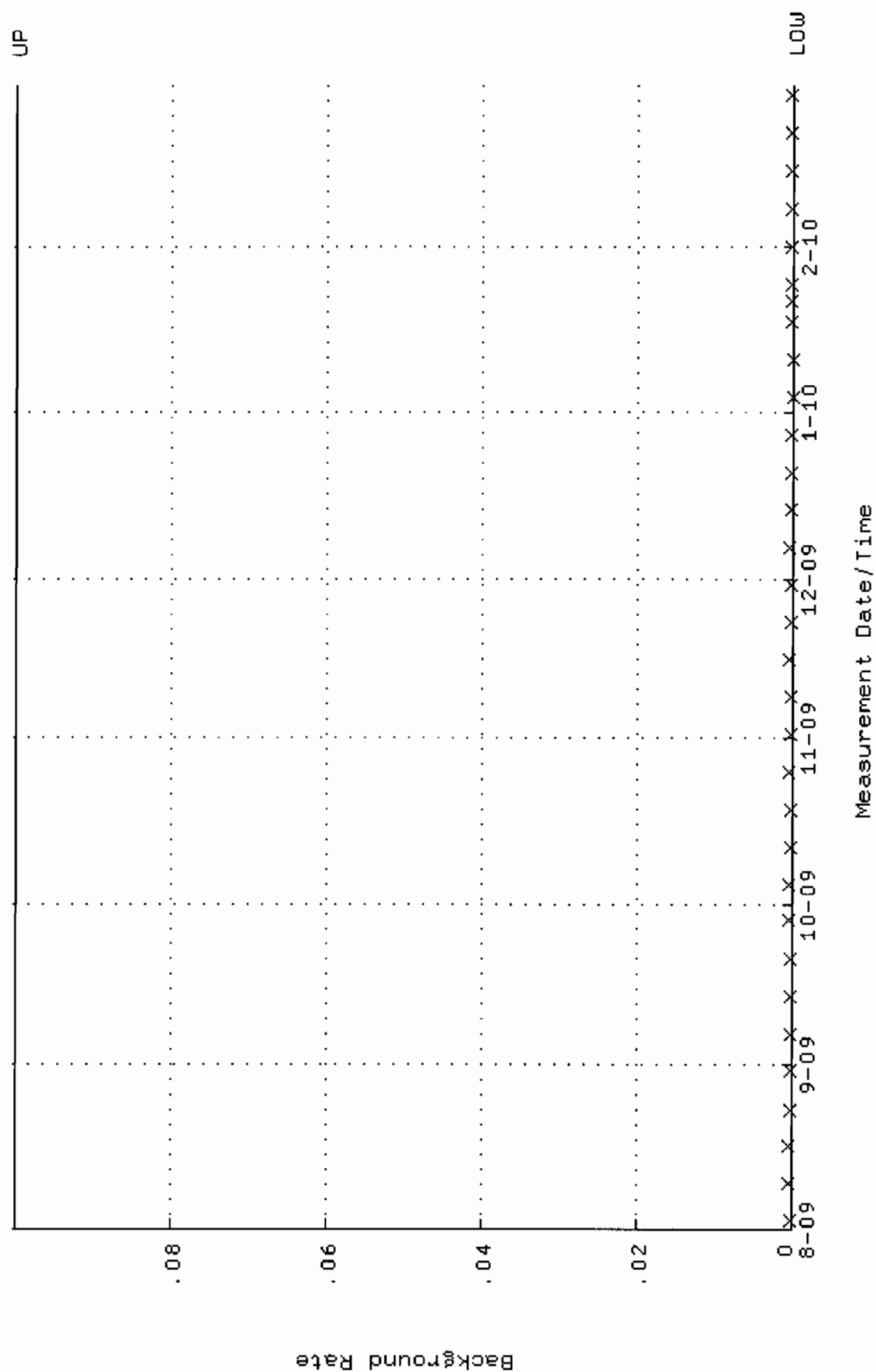


QA filename : OKA100:[ENV_ALPHA.QA.B]B255.QAF;1

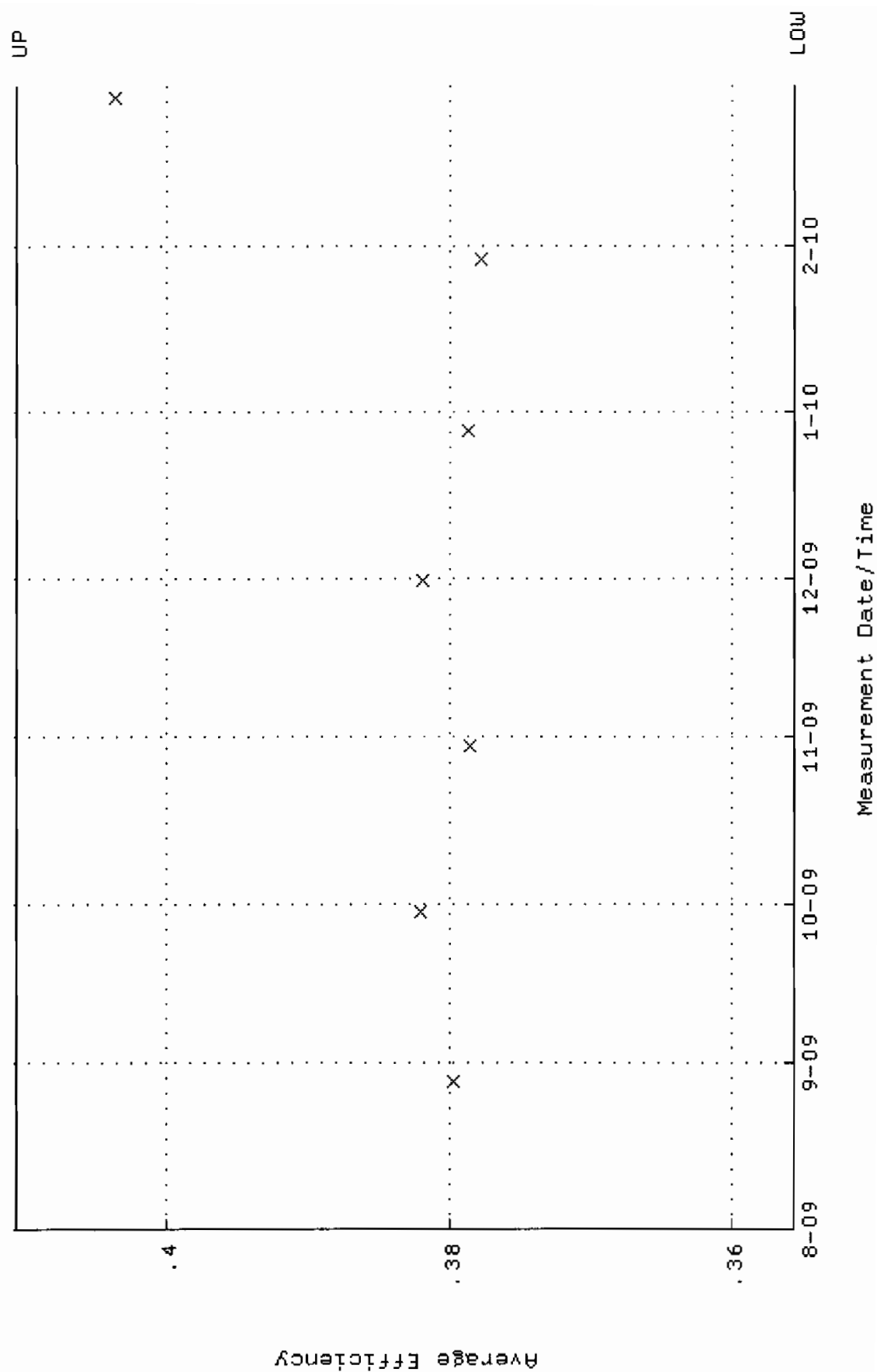
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:28:32 through 2-MAR-2010 12:00:00

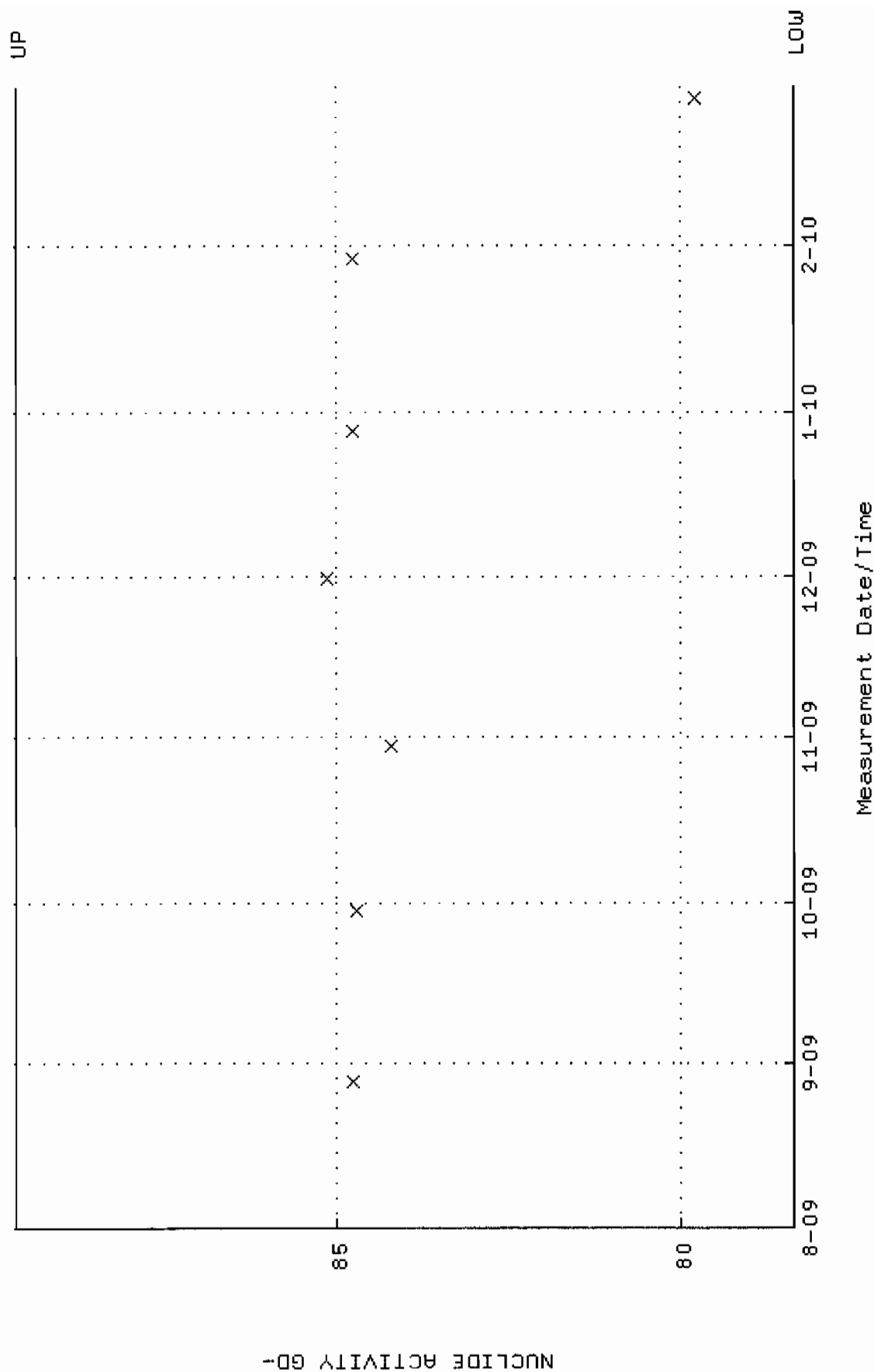
Lower/Upper Lmts: 0.000000E+00 through 0.100000



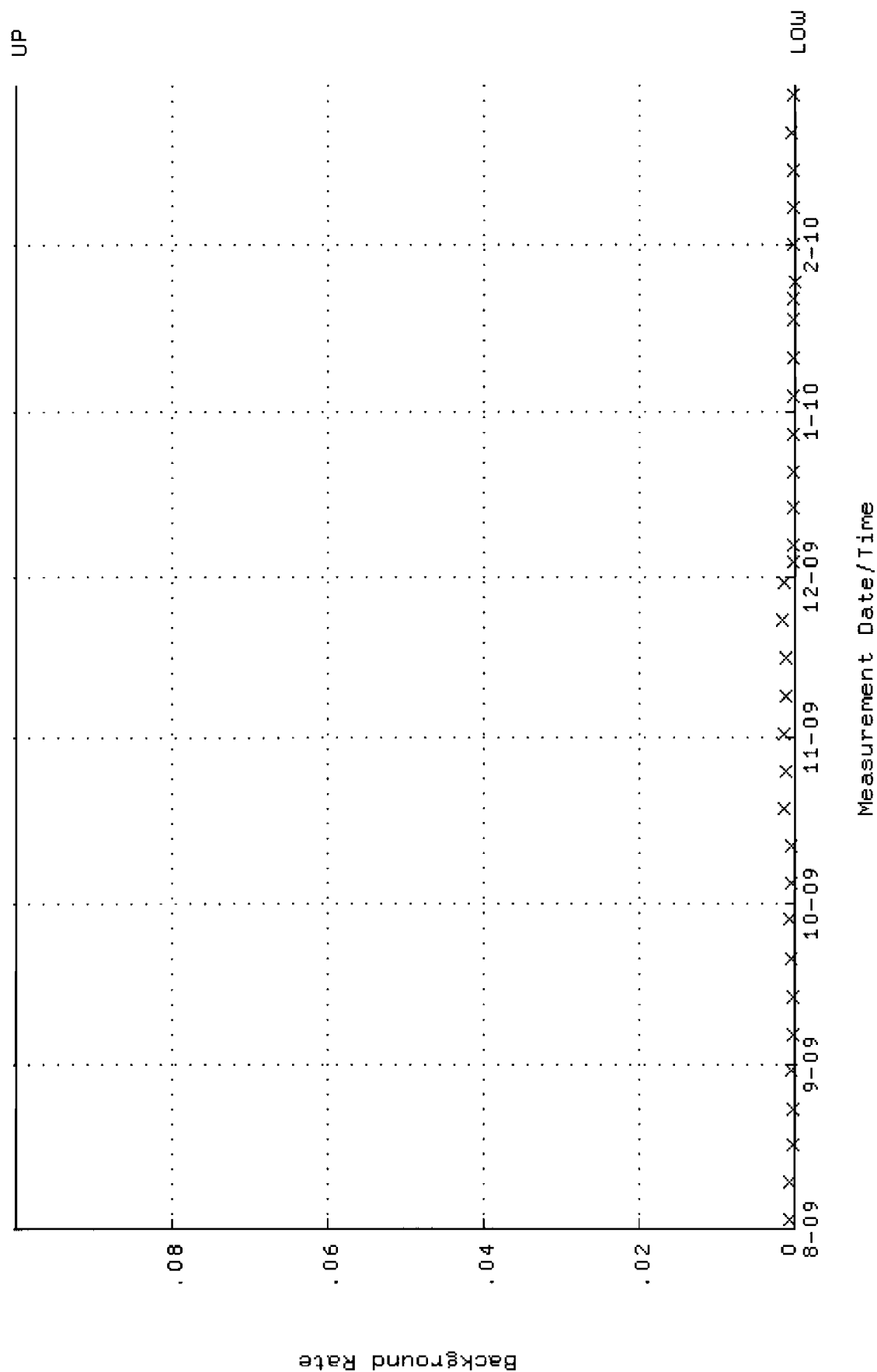
QA filename : DKA100:[ENV_ALPHA.QA.W]W256.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:10:37 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.355610 through 0.410626



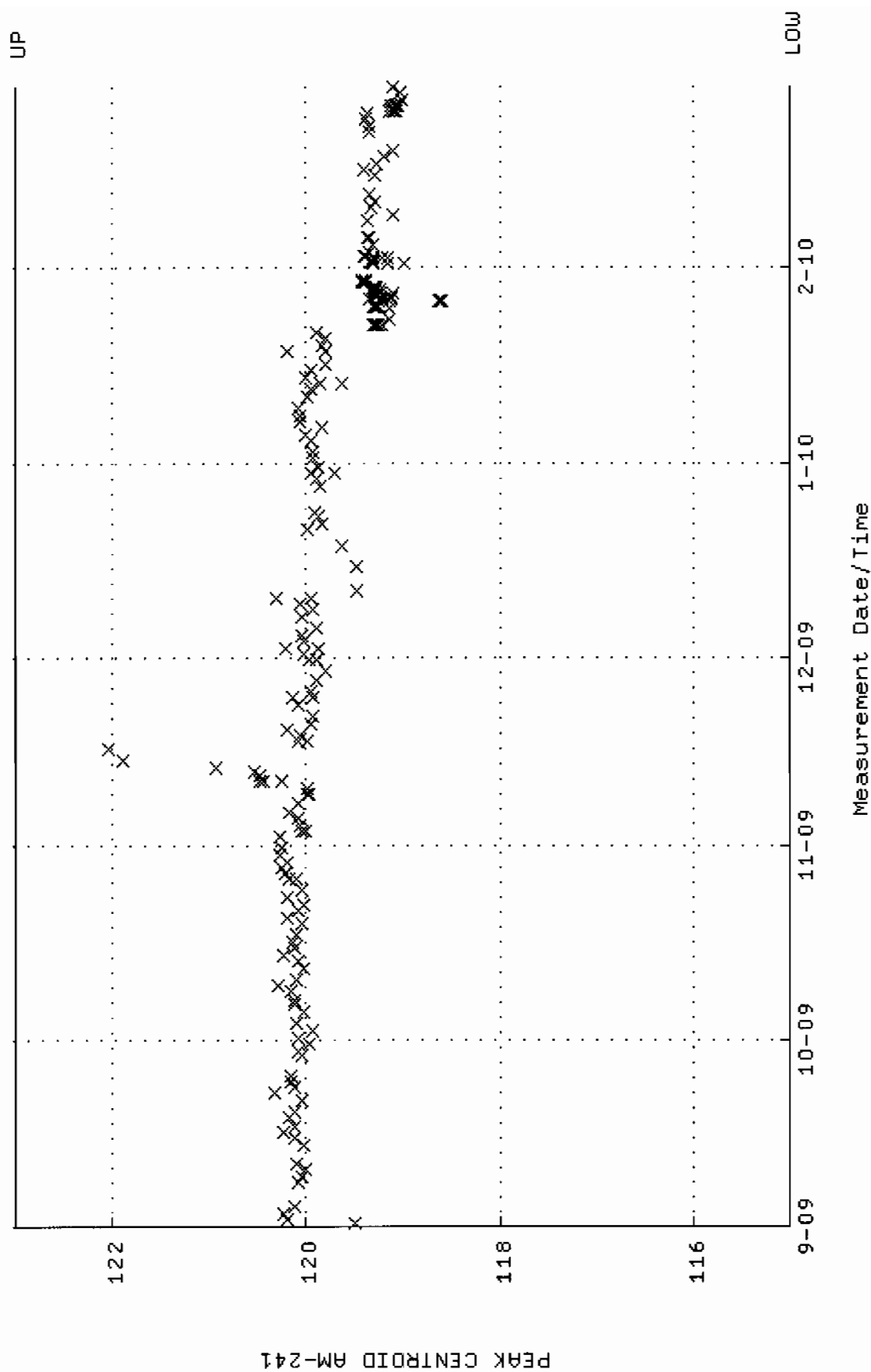
QA filename : DKA100:[ENV_ALPHA.QA.W]W256.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:10:37 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 78.3575 through 89.6335



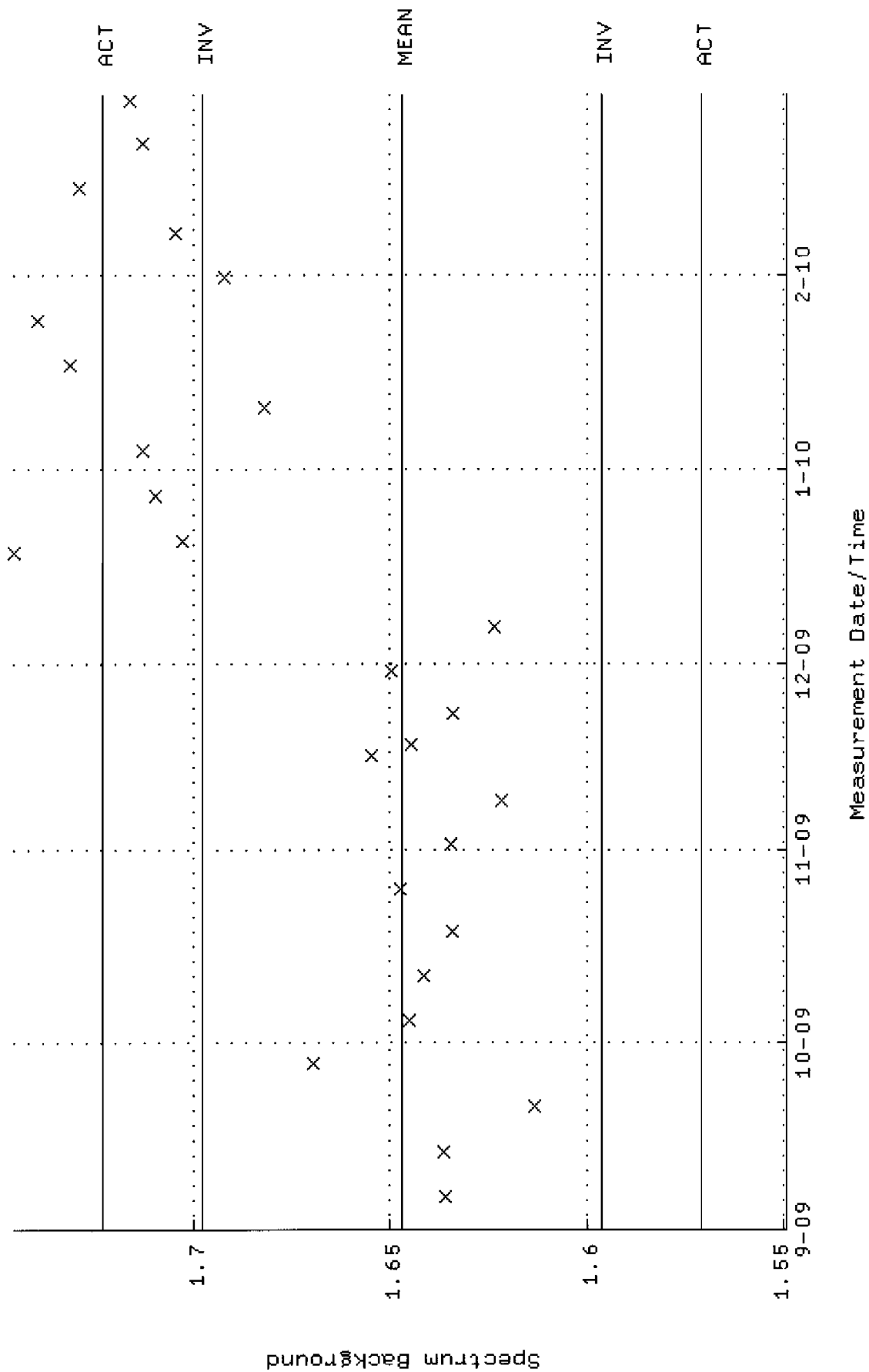
QA filename : DKA100:[ENV_ALPHA.QA.B]B256.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:28:37 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



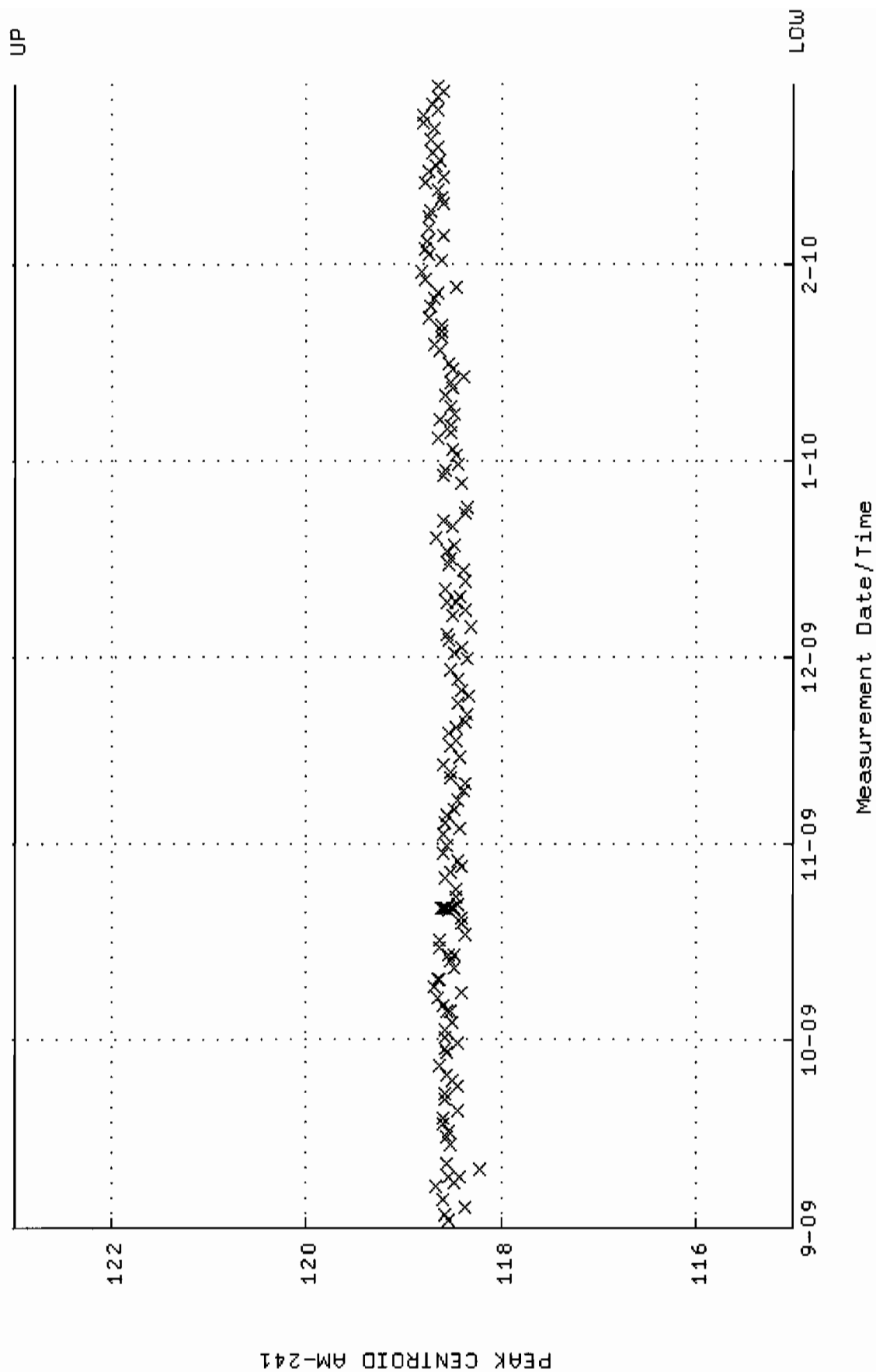
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM05-CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 1-SEP-2009 14:54:46 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



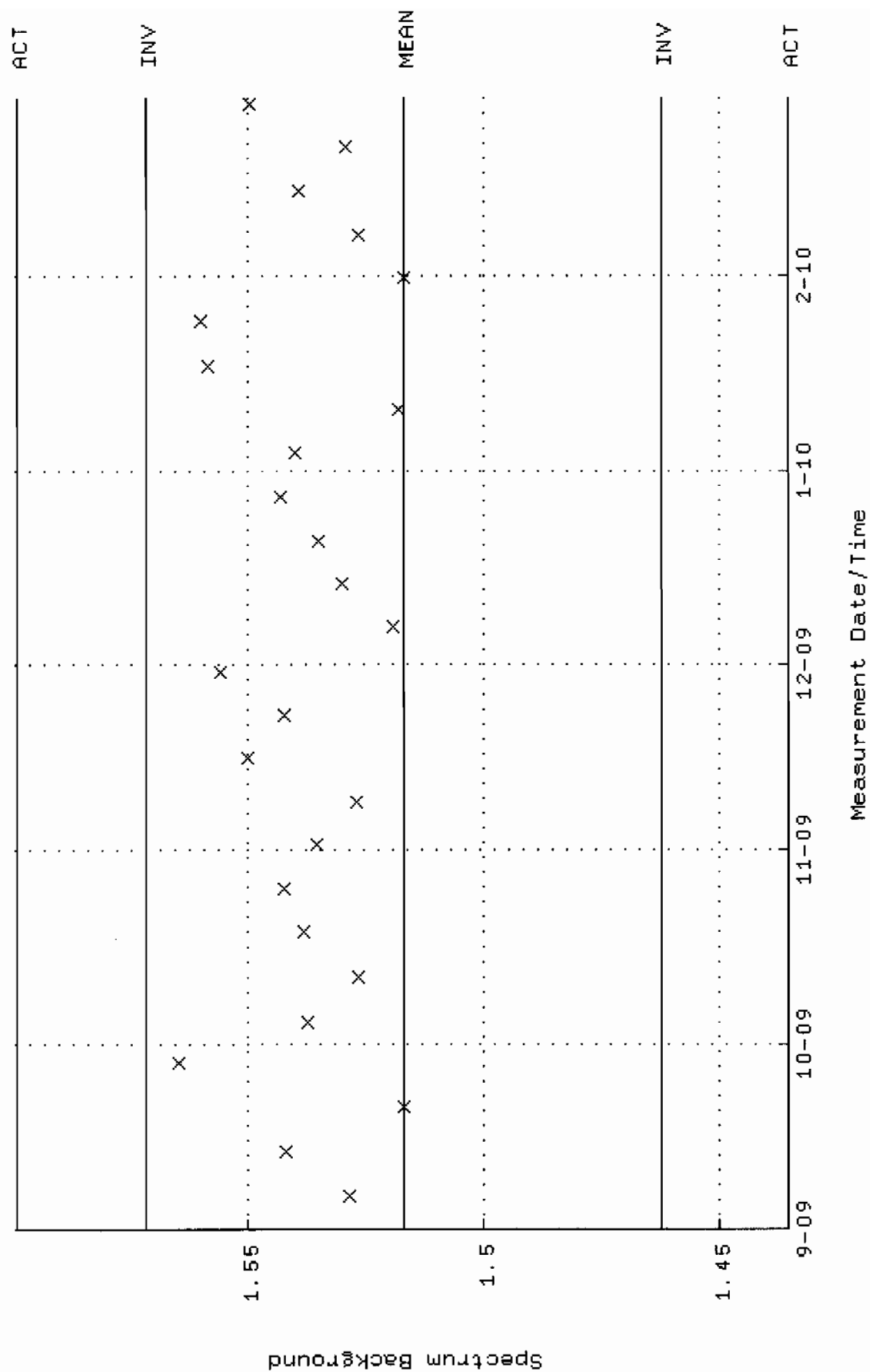
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM05.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:04 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.64719 +- 2.547087E-02 (1.55 %)



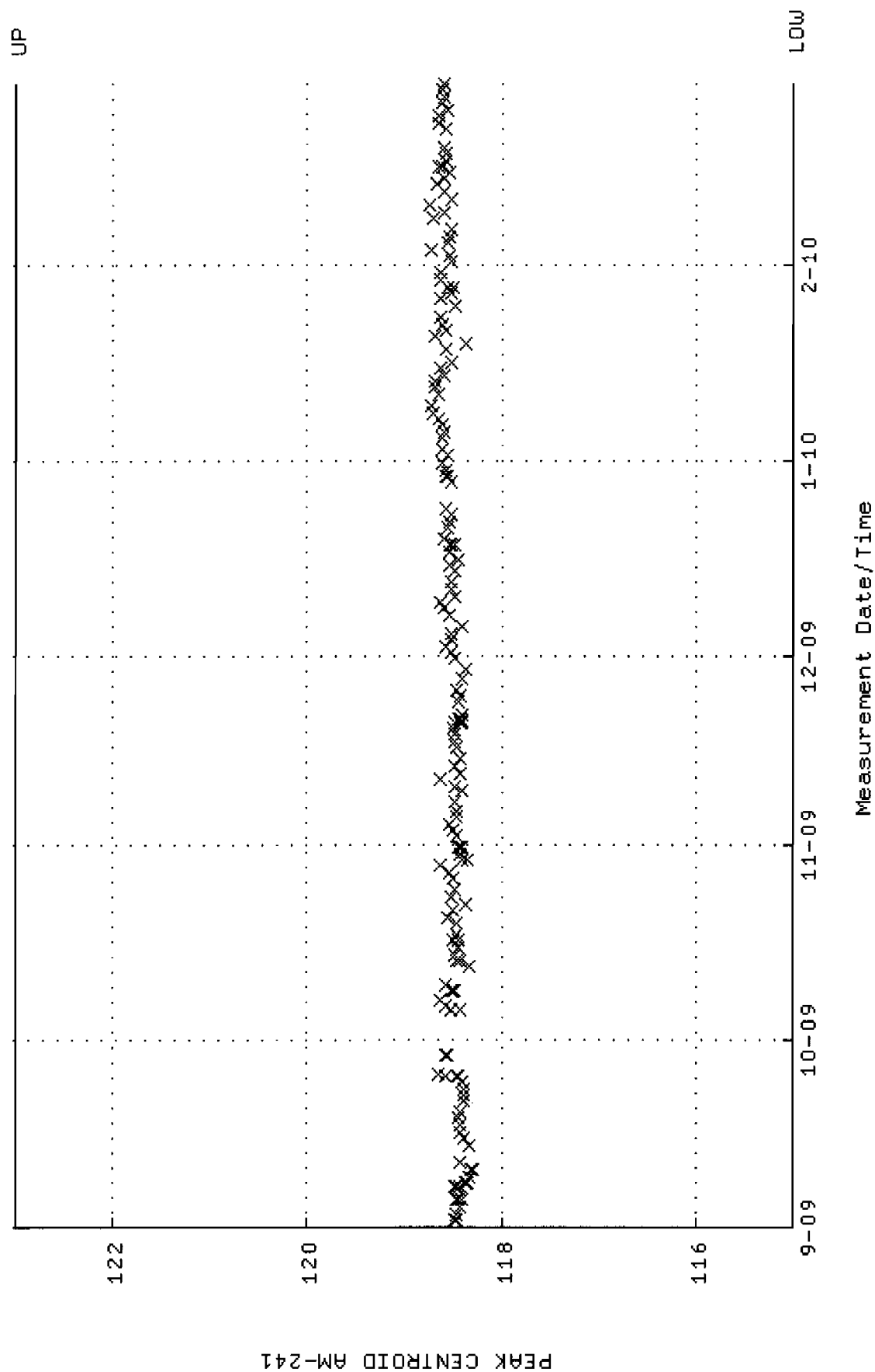
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM07_JAR.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:09:02 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



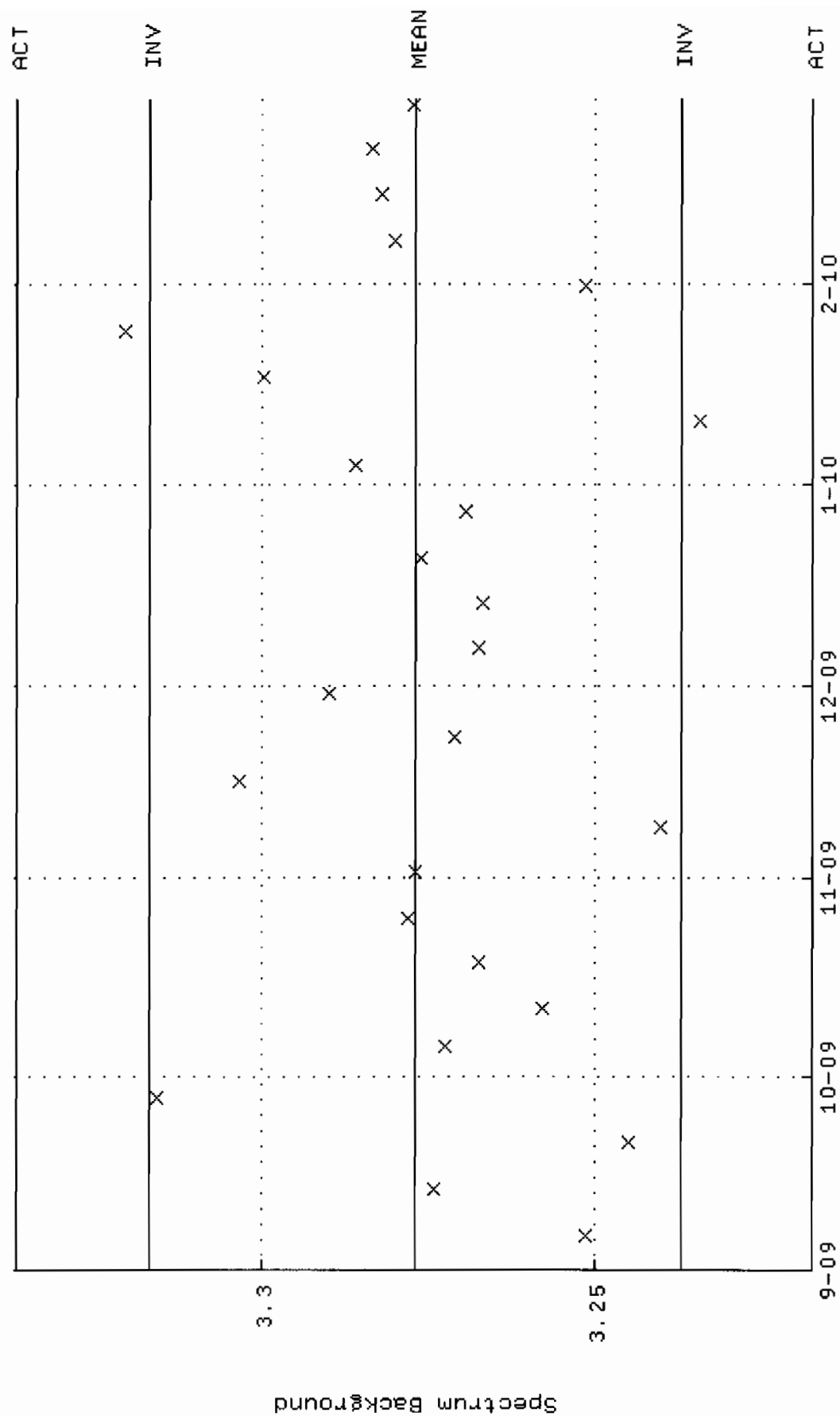
QA filename : DKA100: [CANBERRA.GAMMA.SCUSR.QA]LBC_GAM07.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:54 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.51715 +- 2.726376E-02 (1.80 %)



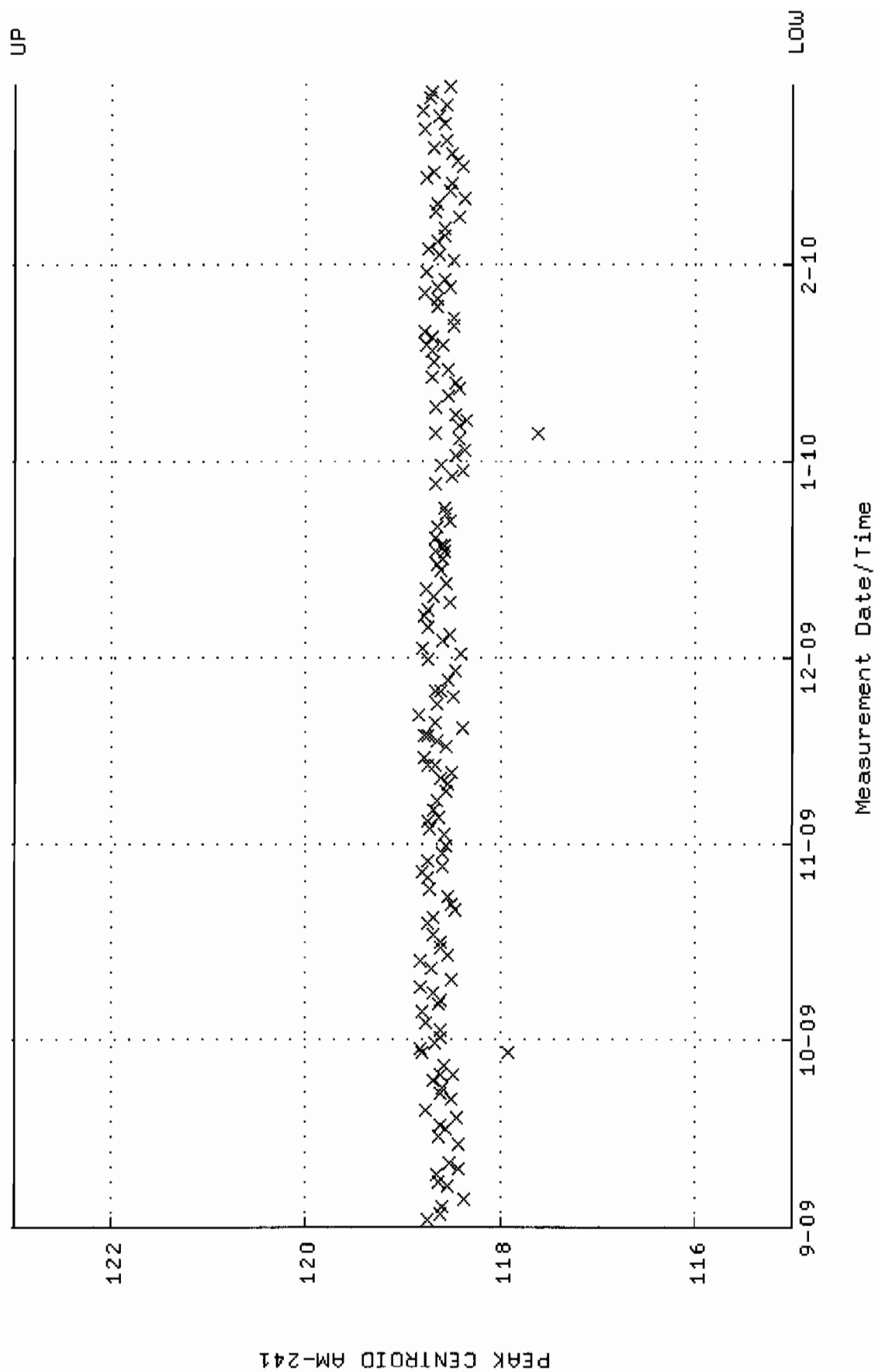
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM13_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:40:27 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



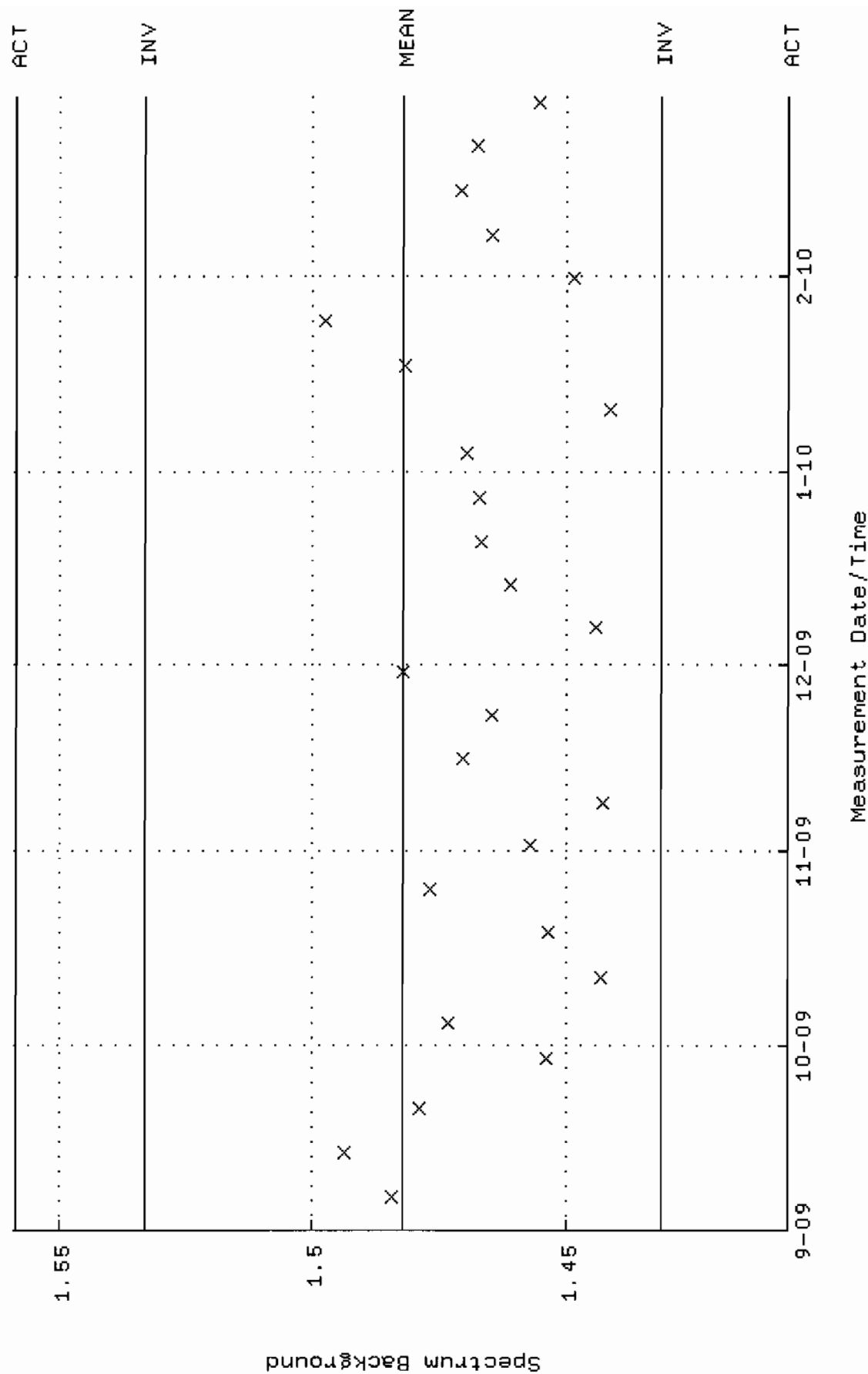
QA filename : OKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM13.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:42:44 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 3.27712 +- 1.999120E-02 (0.61 %)



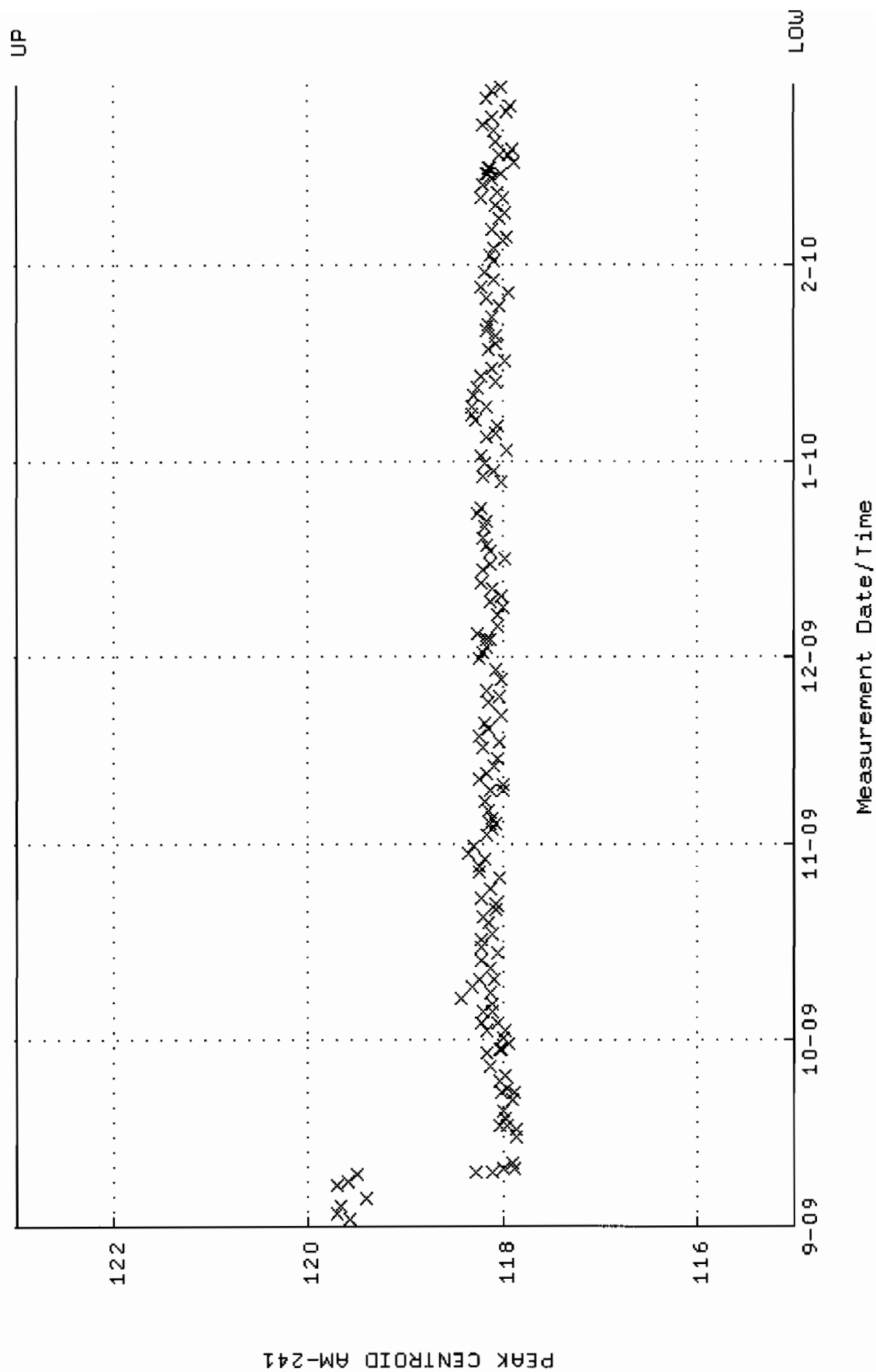
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM14_2LMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:40:36 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



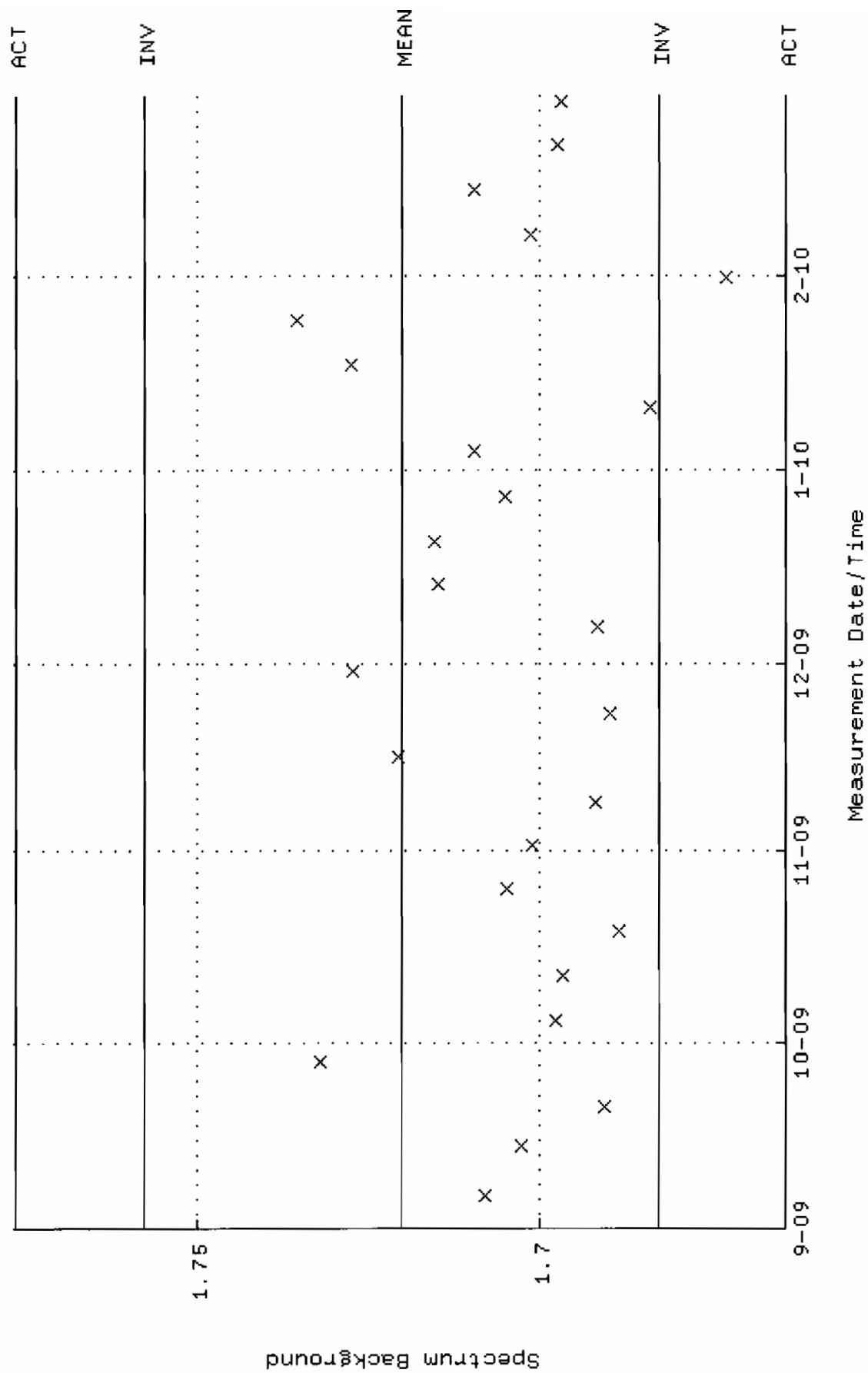
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM14.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:43:20 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.48240 +- 2.535500E-02 (1.71 %)



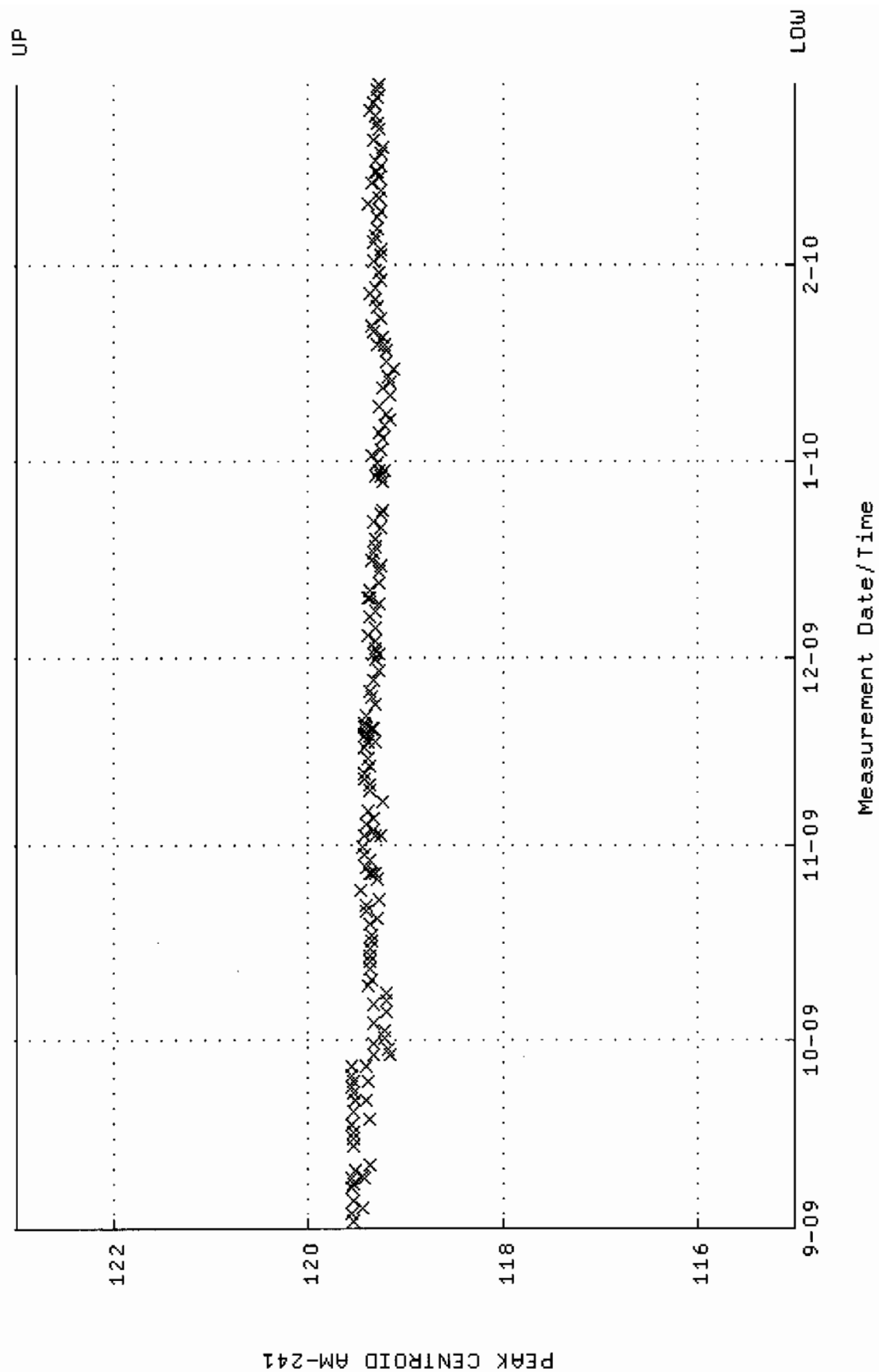
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM15-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:32:23 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



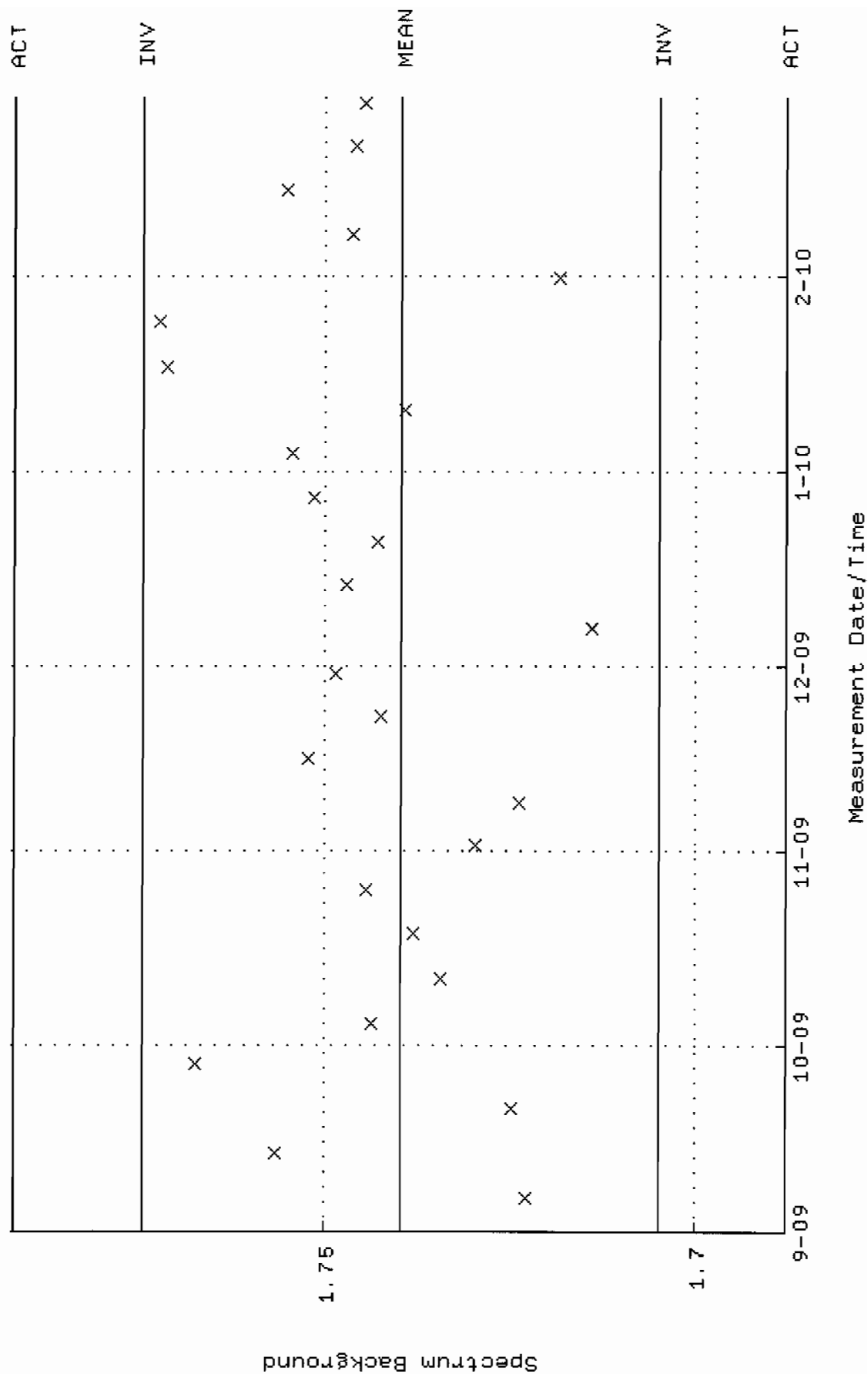
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM15.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:43:44 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.72024 +- 1.875820E-02 (1.09 %)



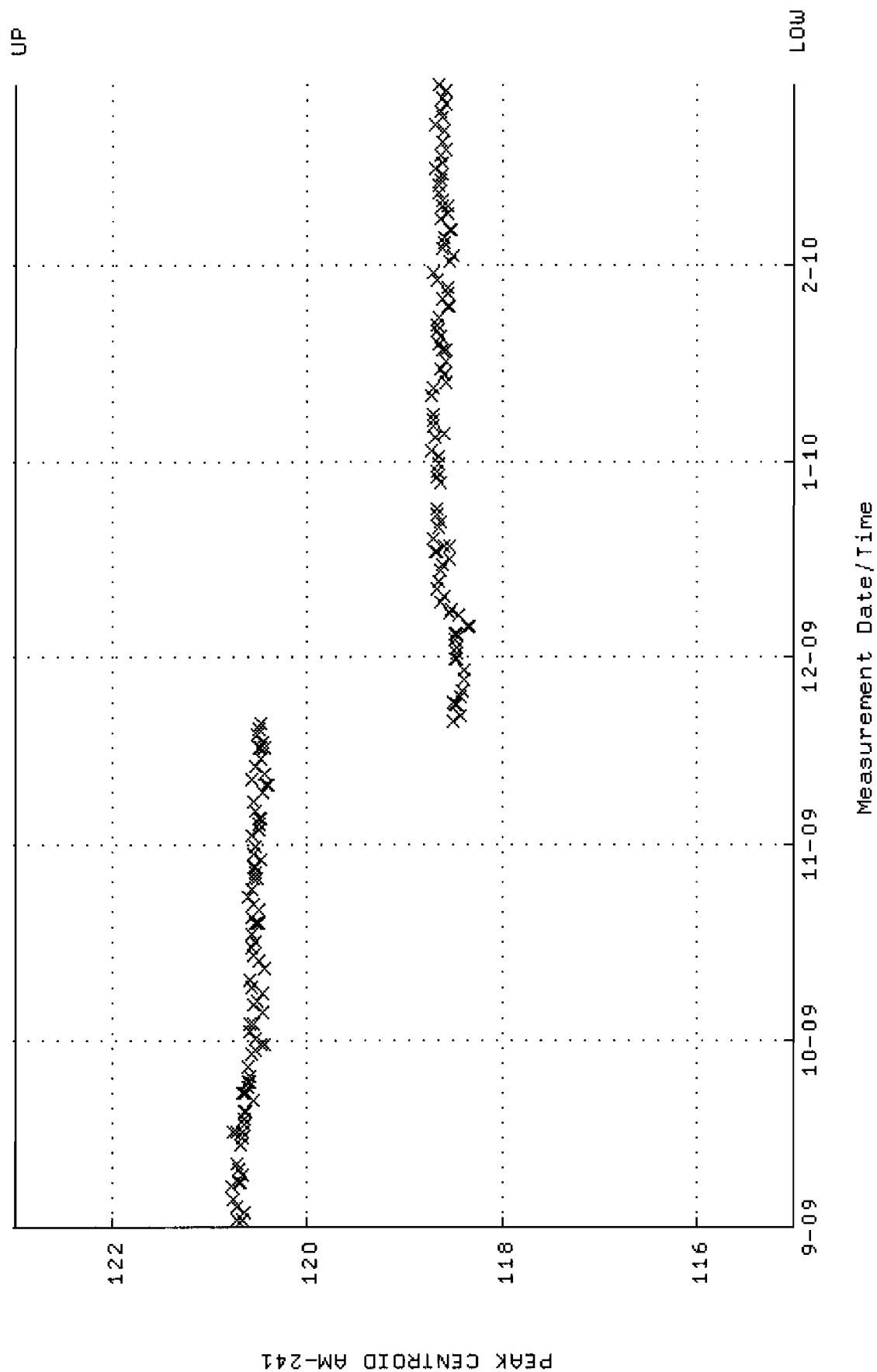
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM16-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:53:02 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



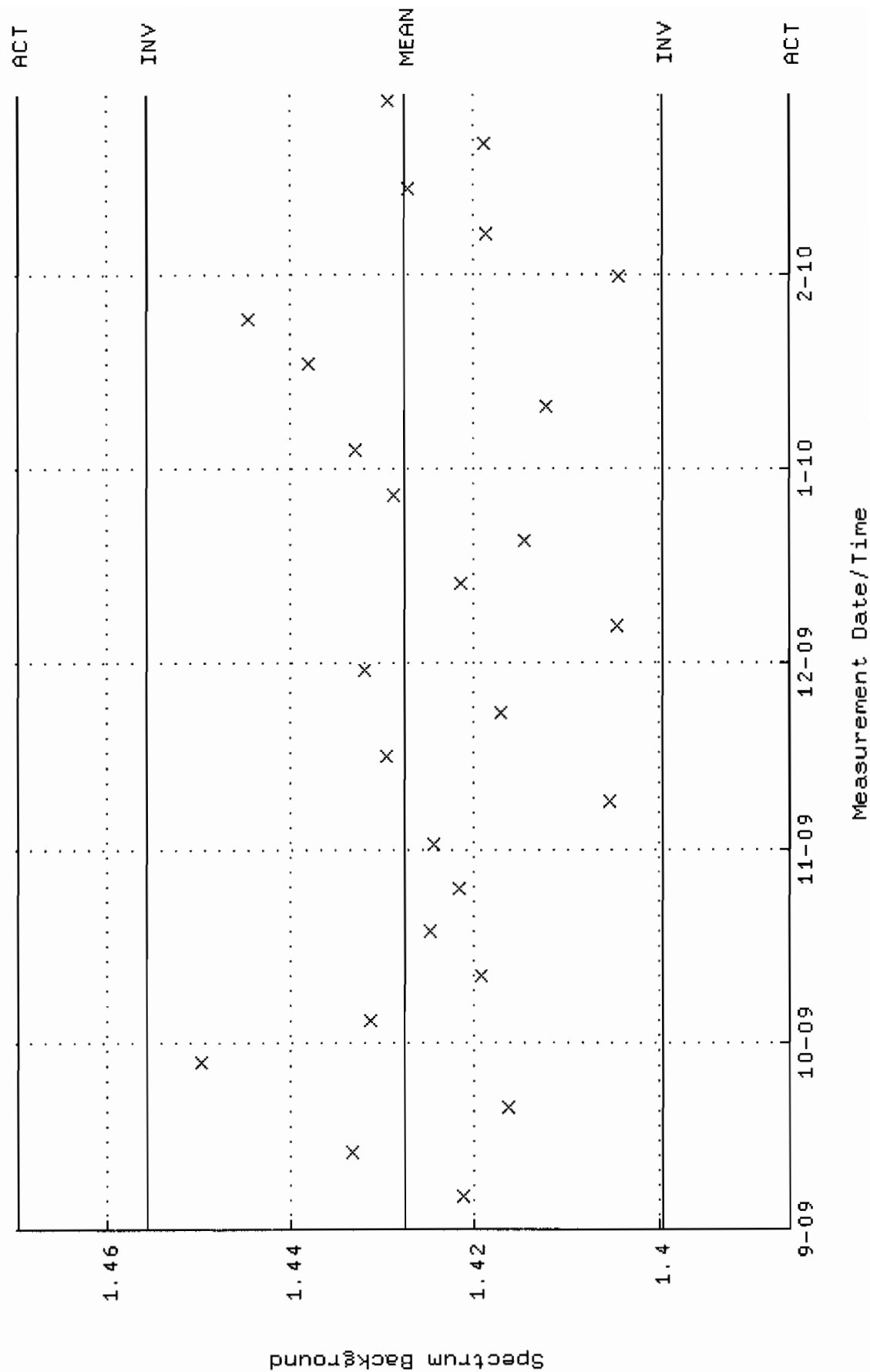
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM16.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:44:09 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.73980 +- 1.729897E-02 (0.99 %)



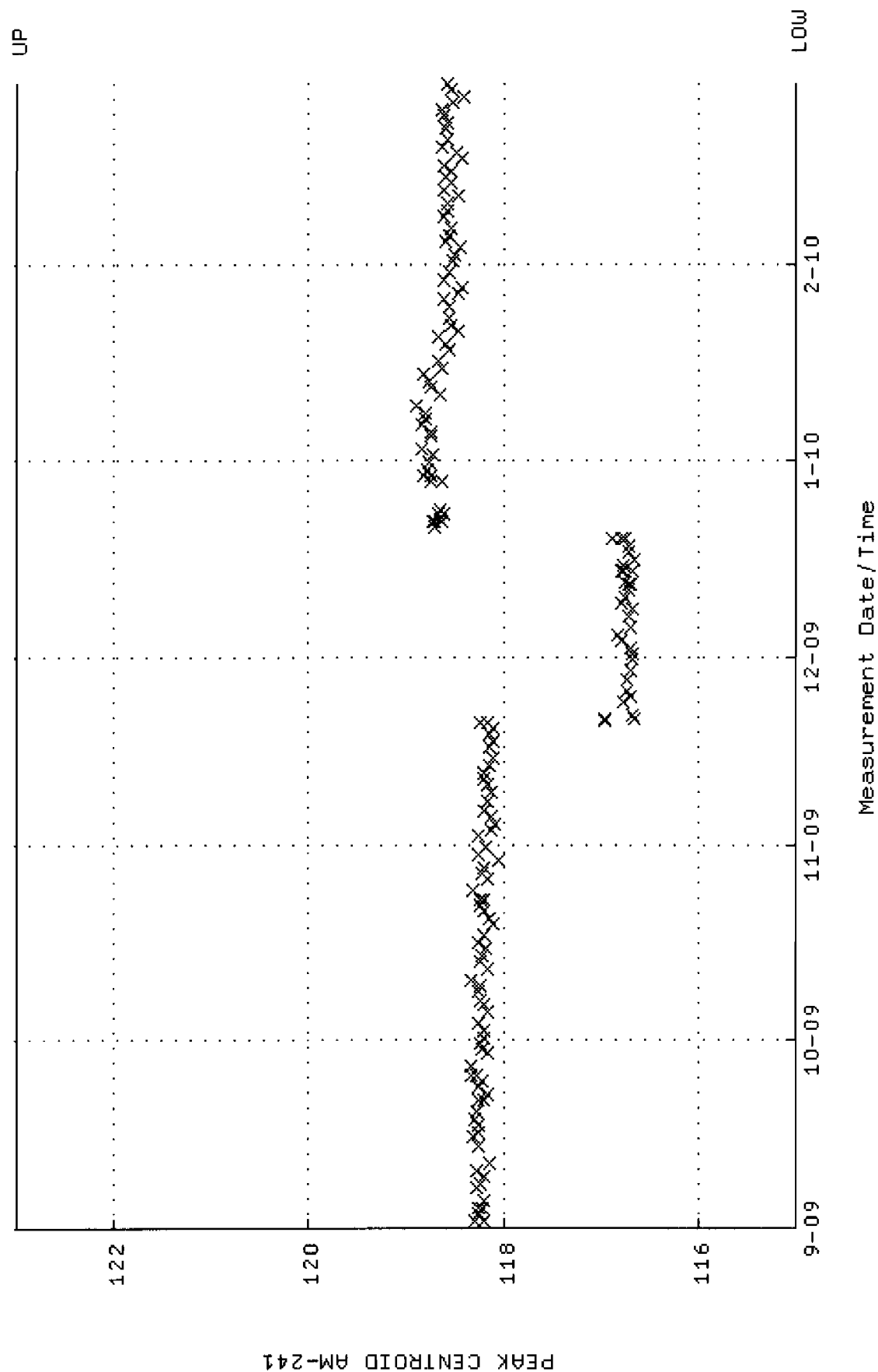
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM17_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:06:49 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



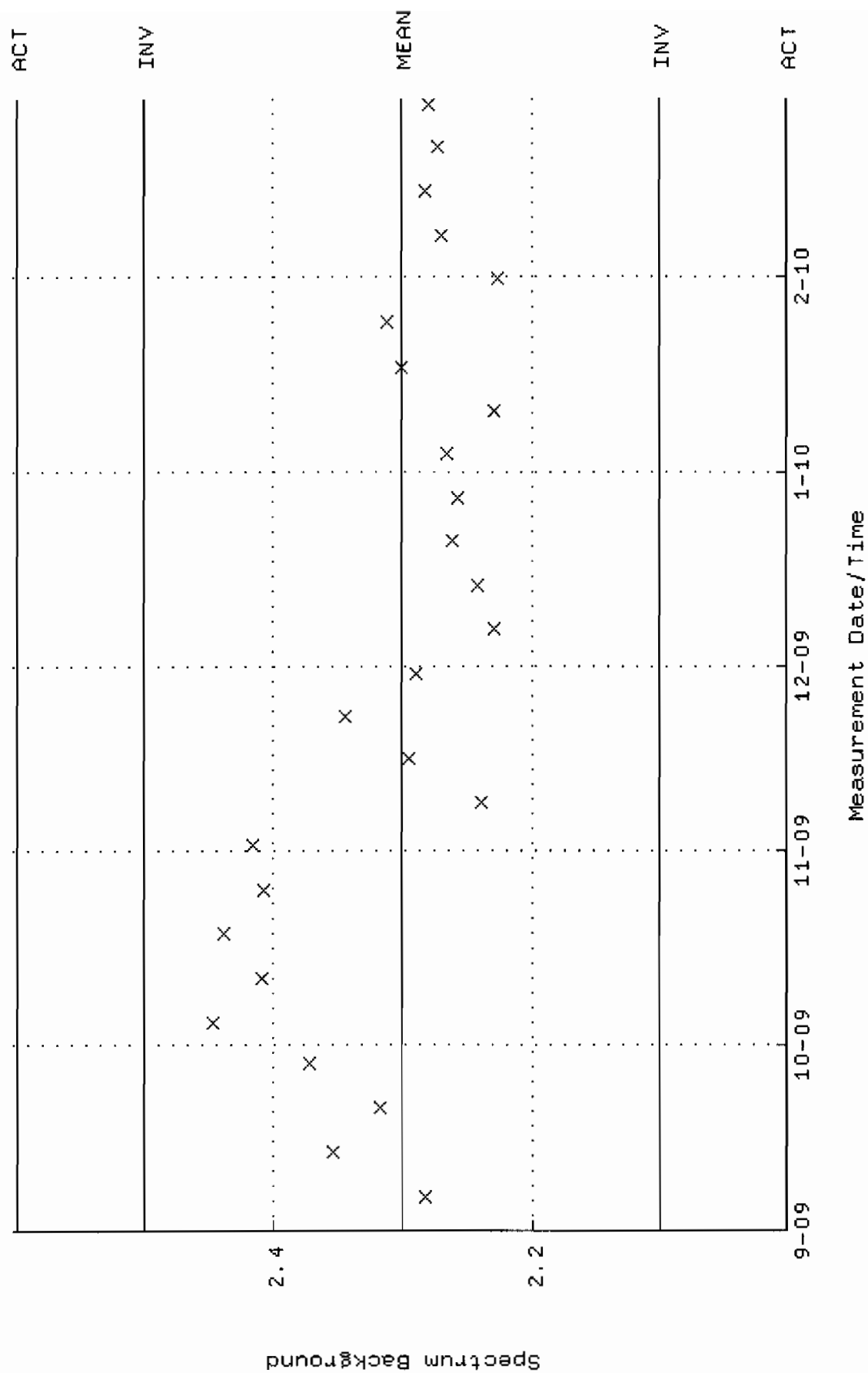
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM17.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:44:33 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.42766 +- 1.396974E-02 (0.98 %)



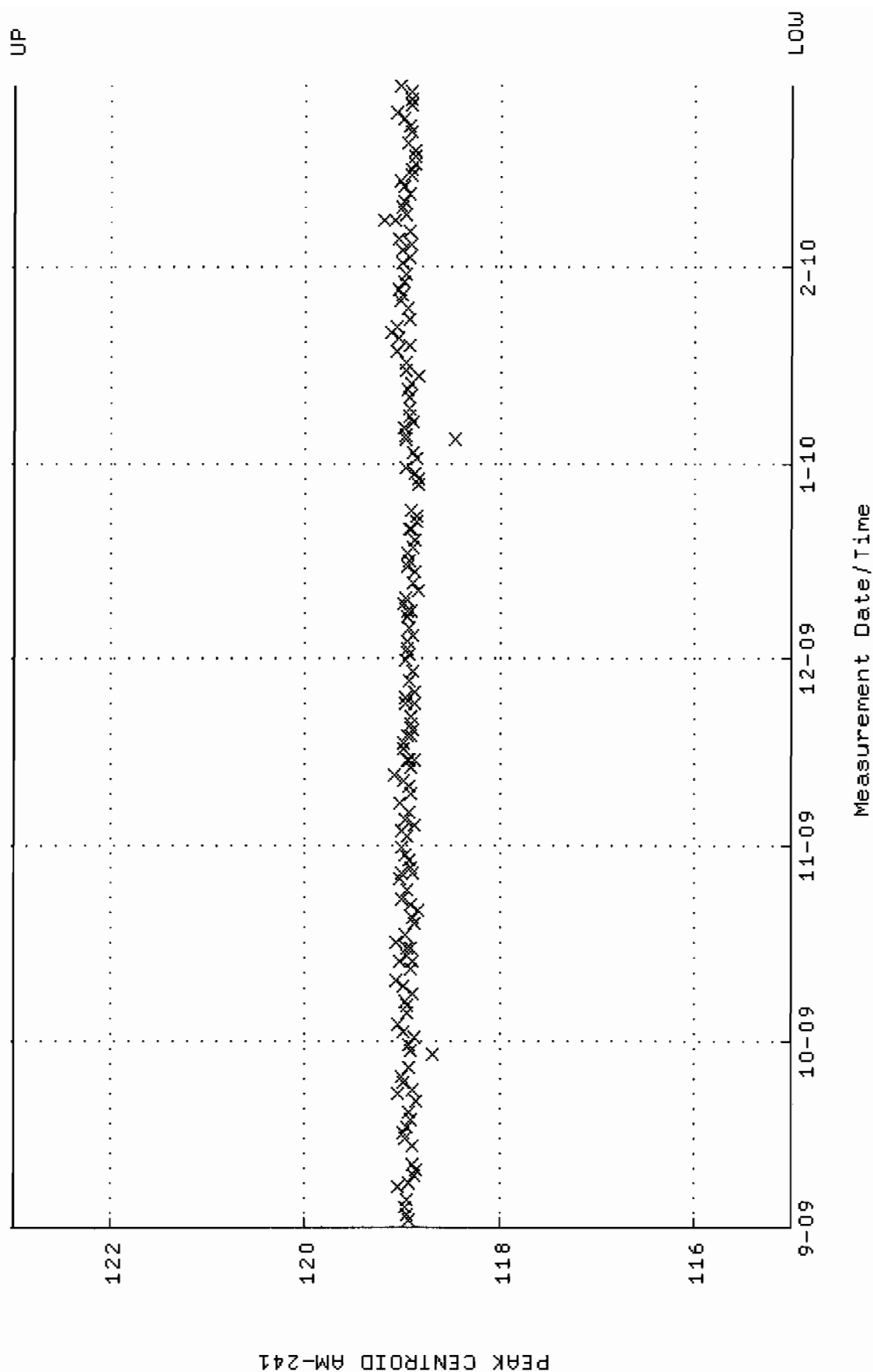
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM18_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:13:07 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



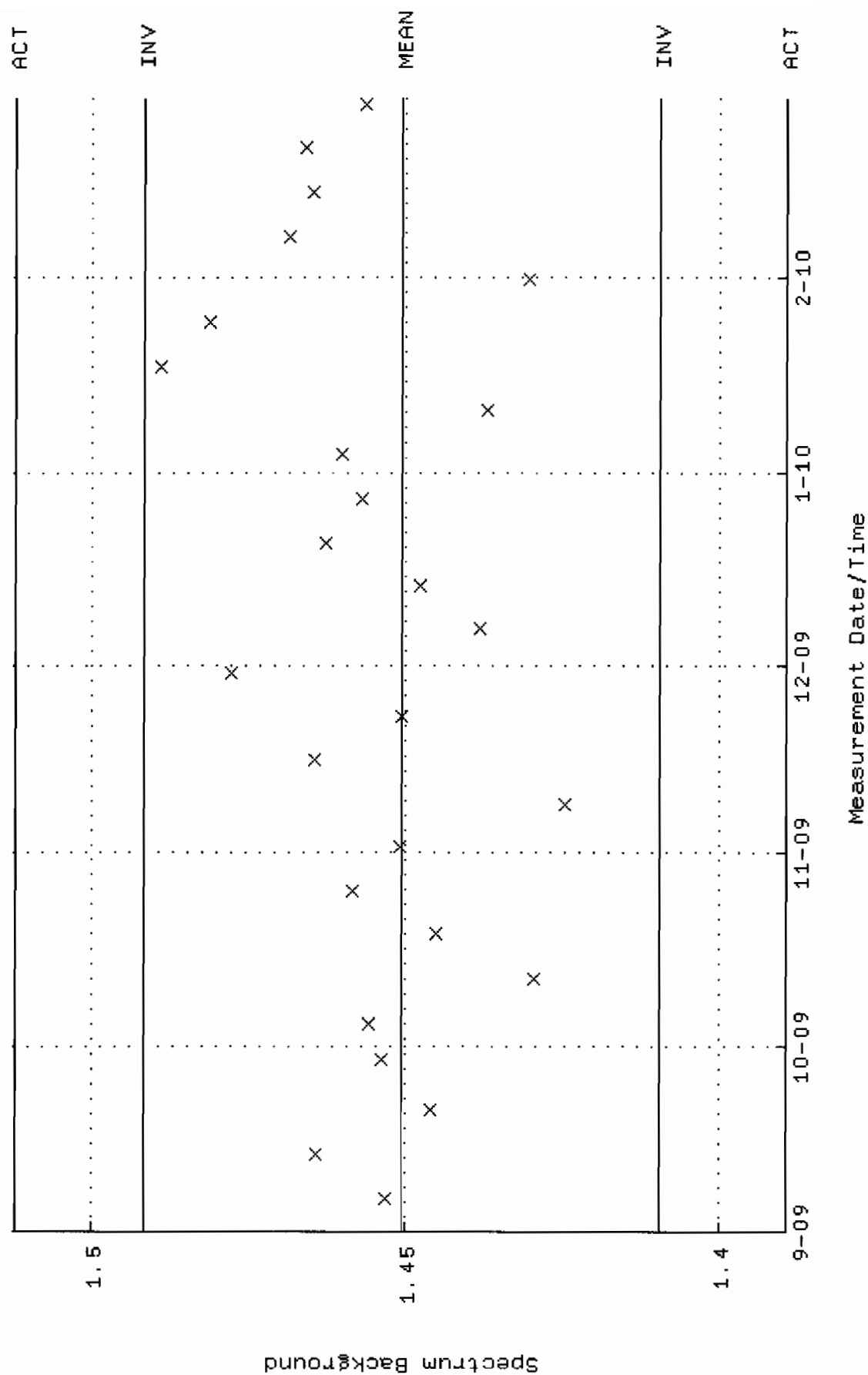
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM18.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:45:03 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 2.30164 +- 9.930626E-02 (4.31 %)



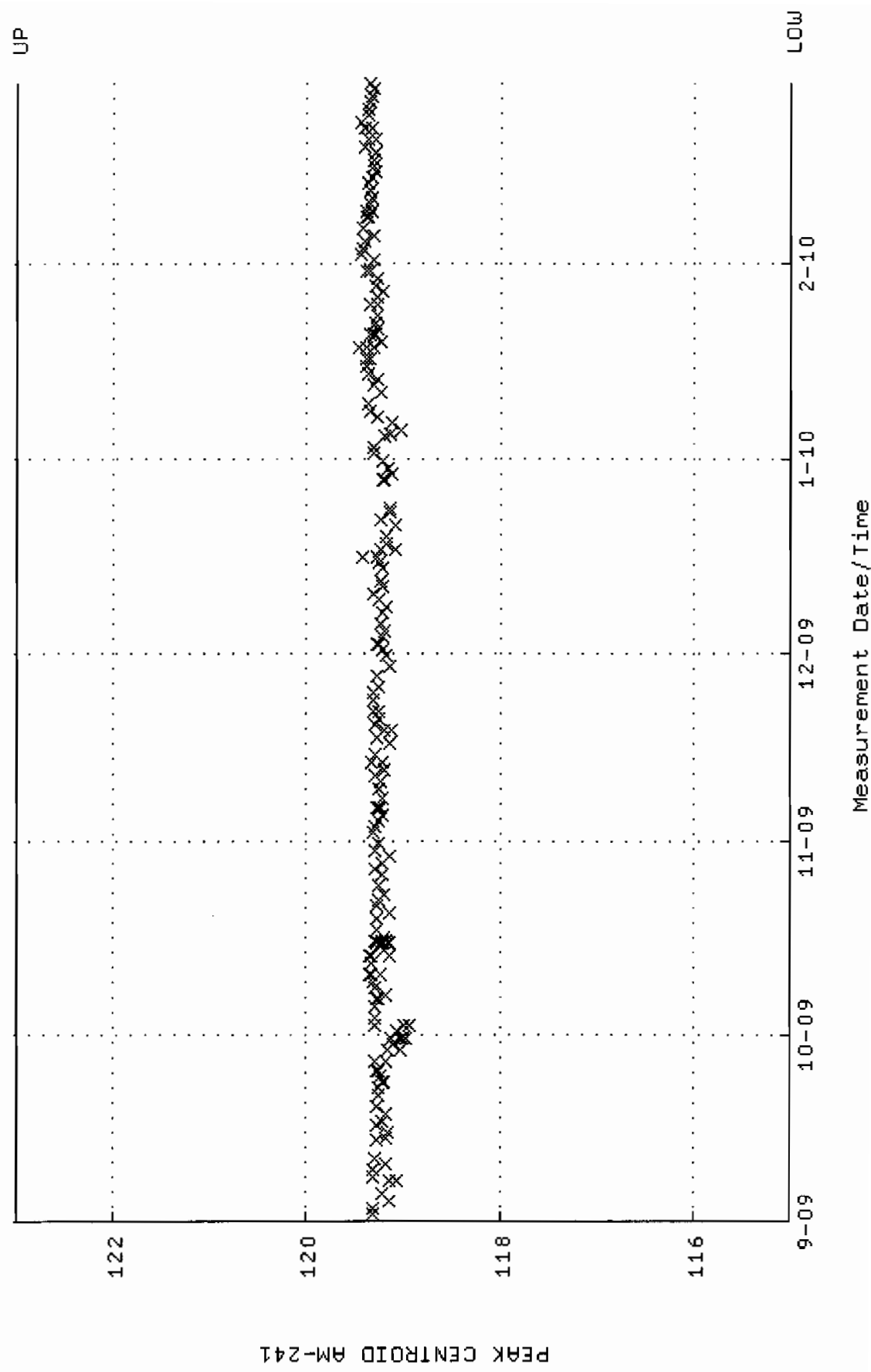
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM19_CAN.QAF;1
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:06:58 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



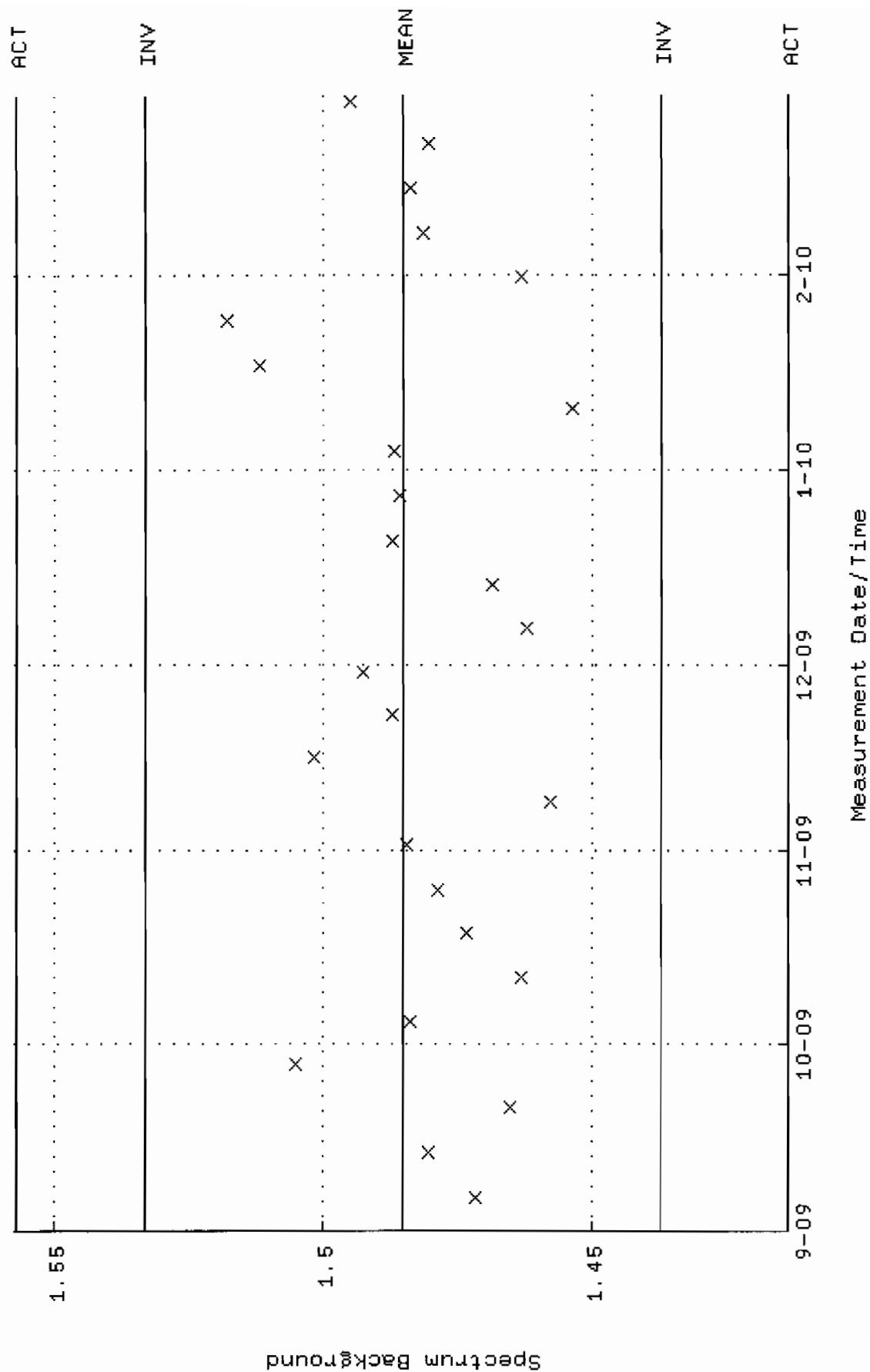
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM19.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:45:39 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.45067 +- 2.046038E-02 (1.41 %)



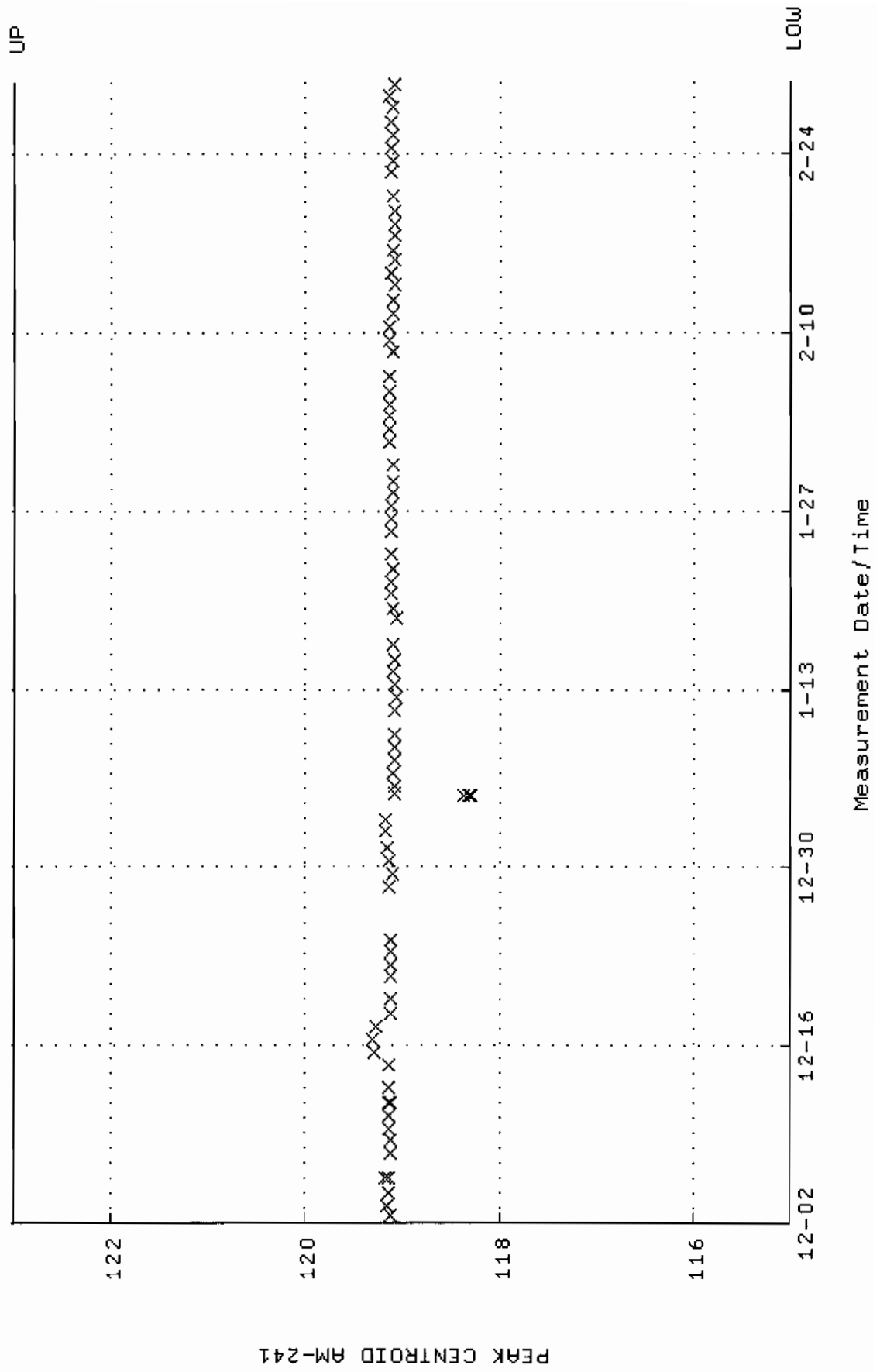
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM20_500MLMB.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 04:53:11 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



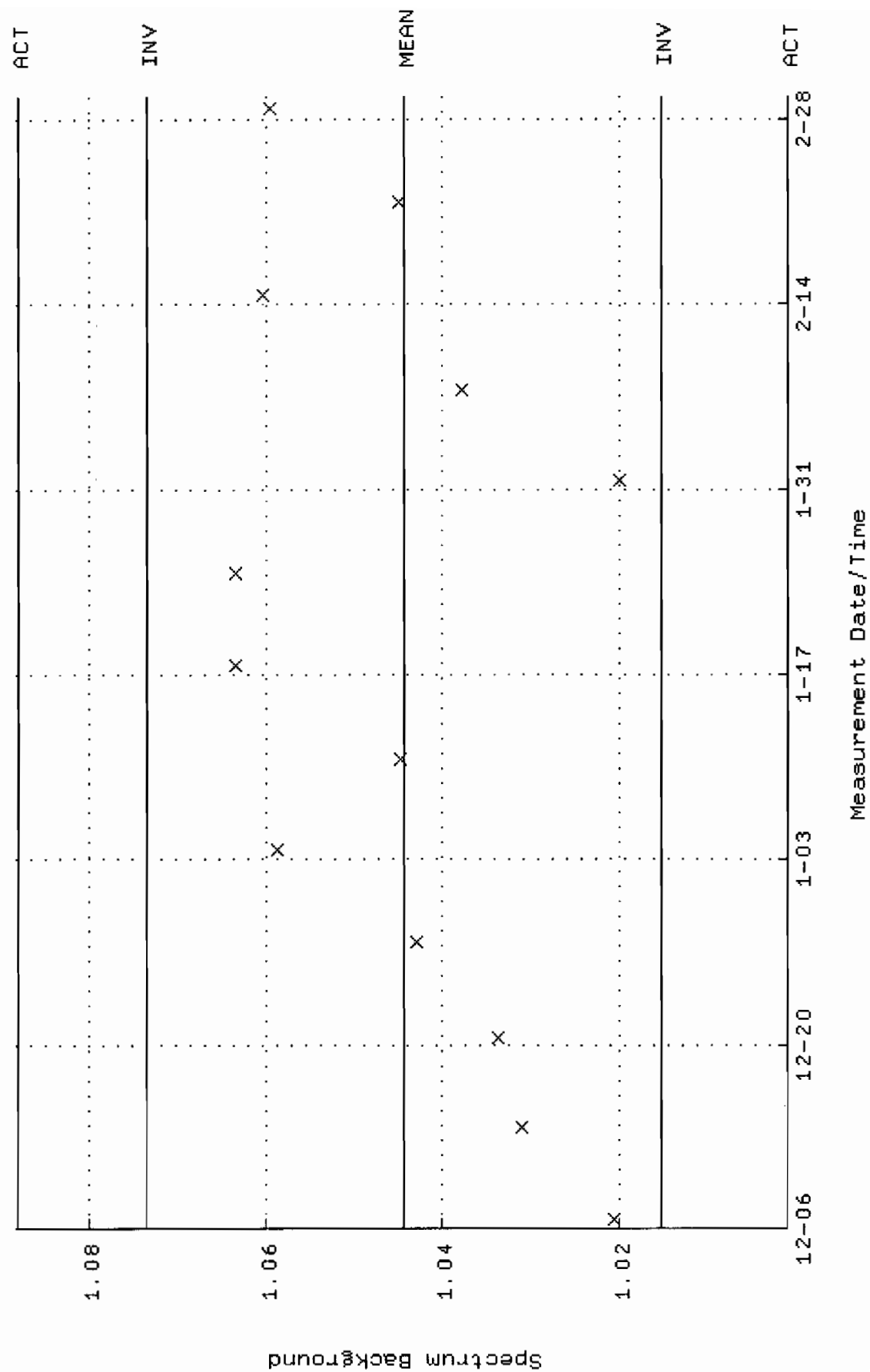
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM20.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:46:04 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.48527 +- 2.388665E-02 (1.61 %)



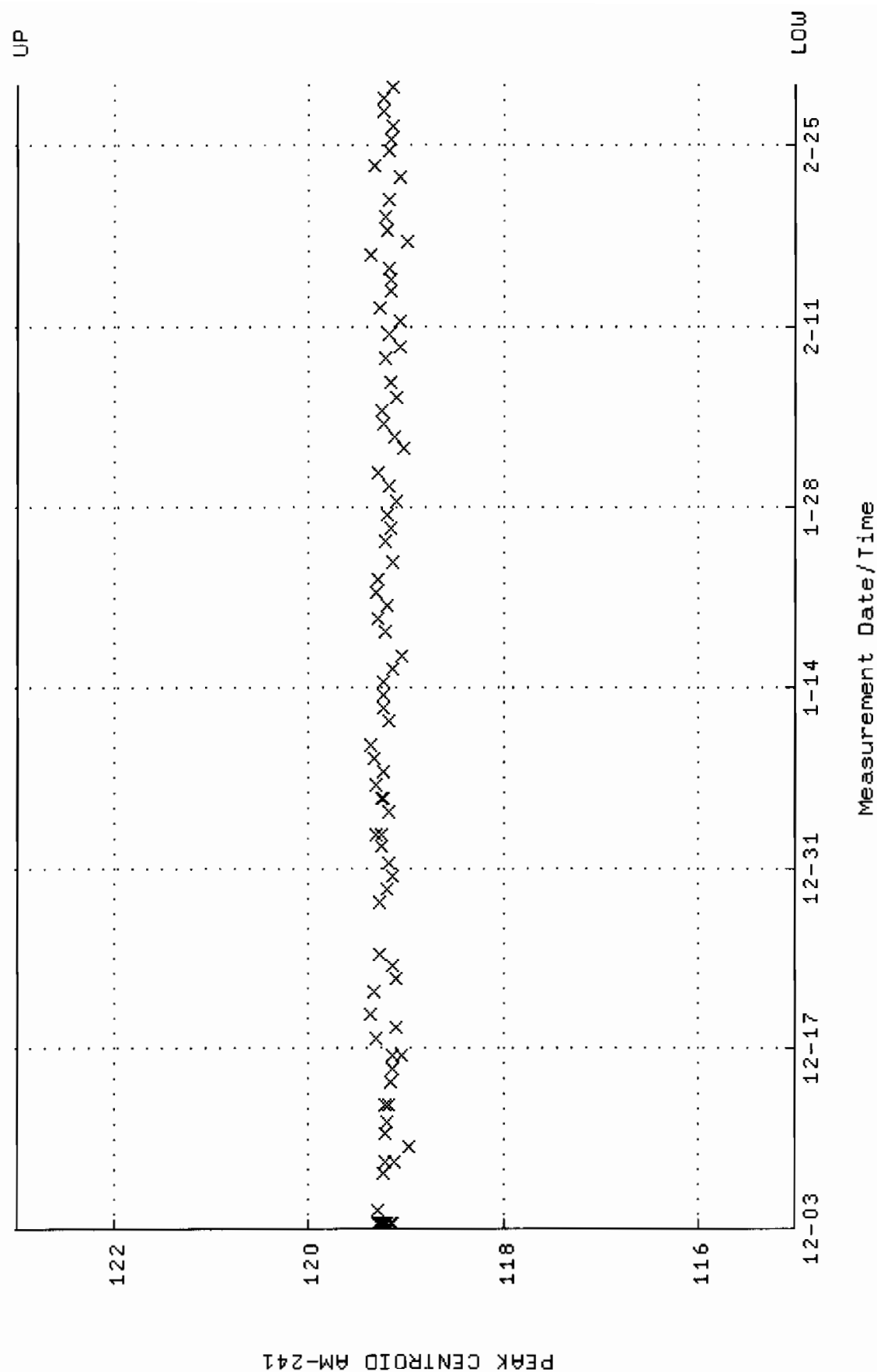
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM21_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-DEC-2009 13:07:42 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



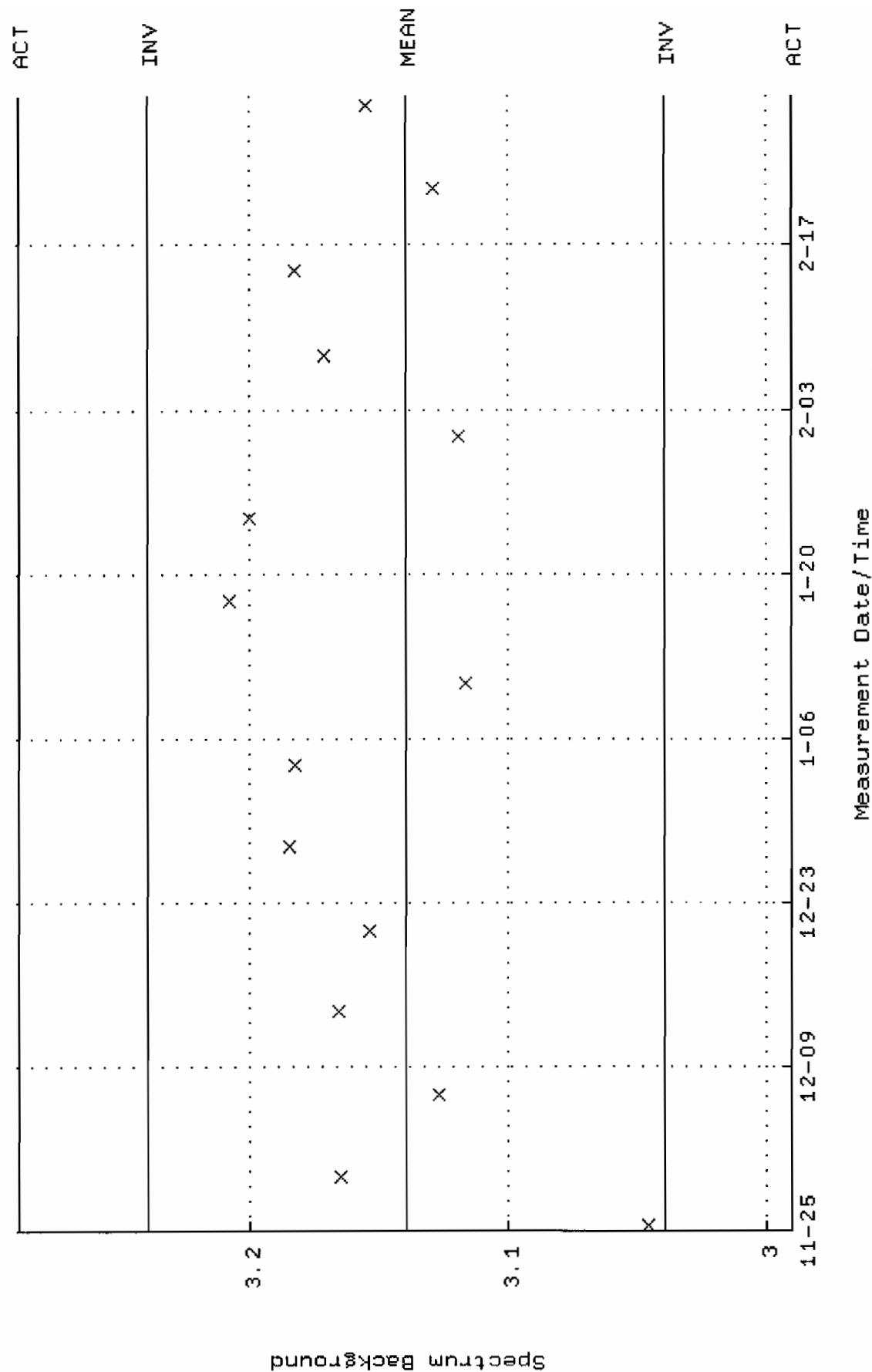
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM21.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-DEC-2009 15:25:38 through 1-MAR-2010 12:00:00
 Mean \pm Std Dev : 1.04443 \pm 1.452671E-02 (1.39 %)



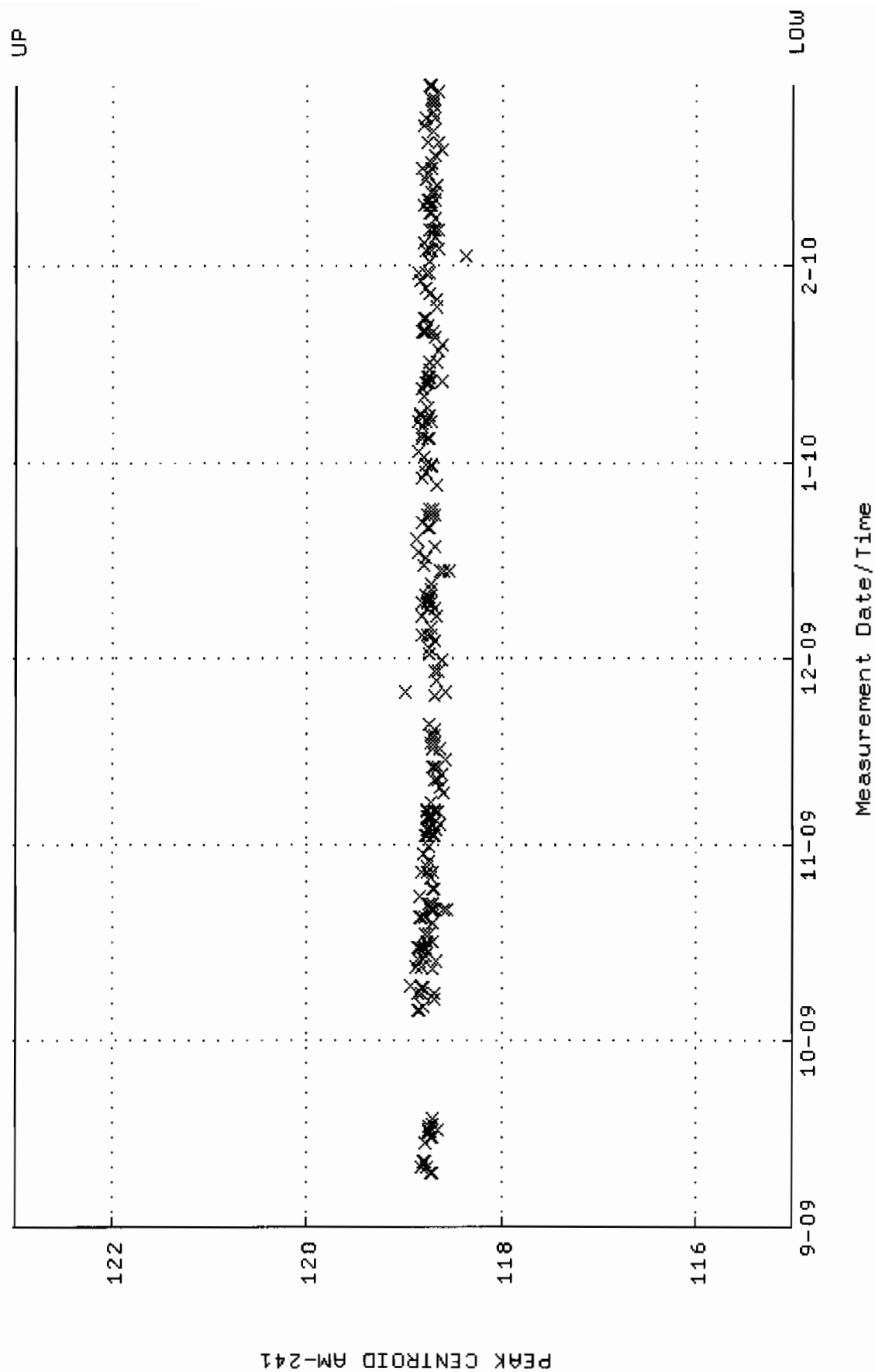
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM22_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-DEC-2009 09:11:39 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM22.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 25-NOV-2009 10:28:37 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 3.13961 +- 4.985064E-02 (1.59 %)



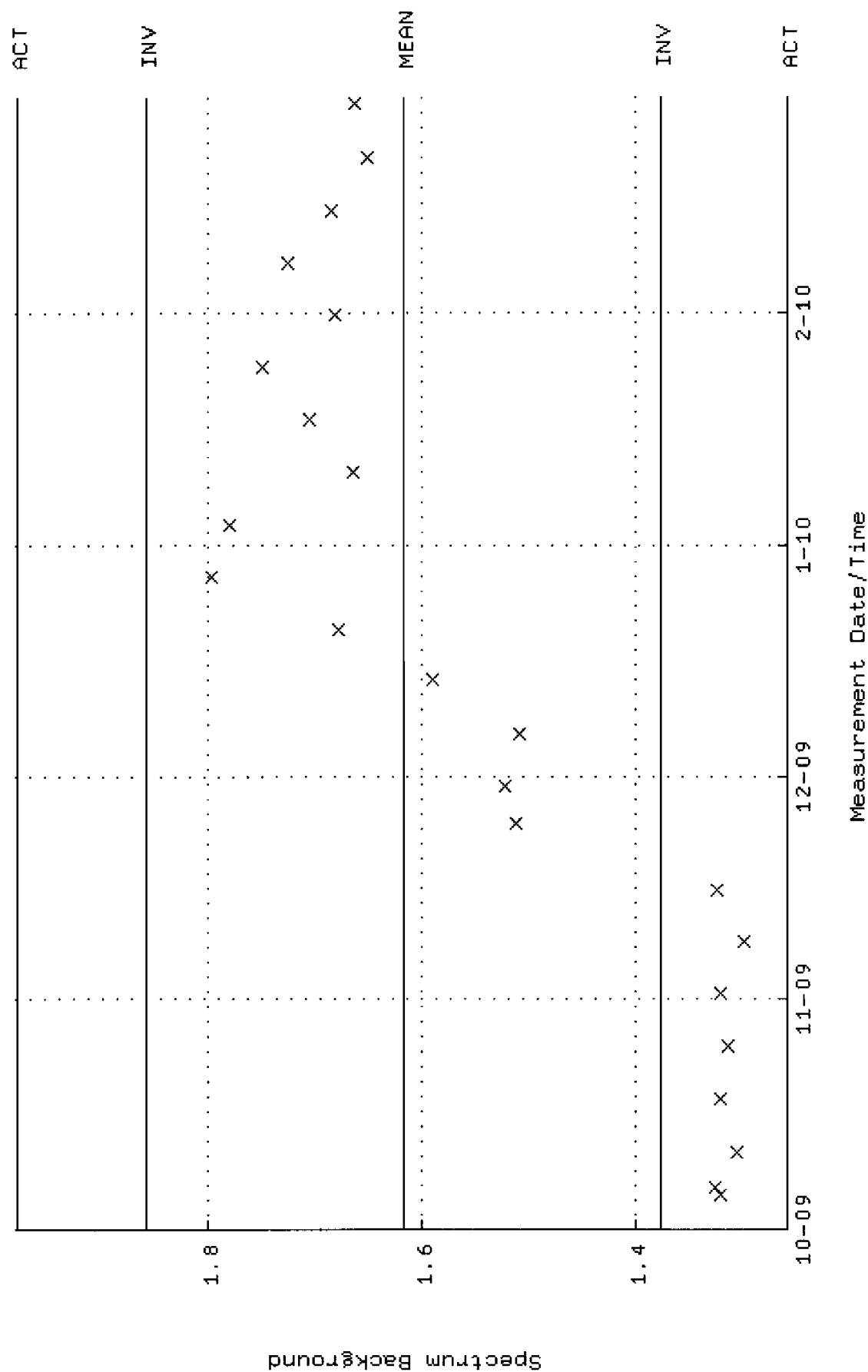
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM23_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 9-SEP-2009 16:19:12 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



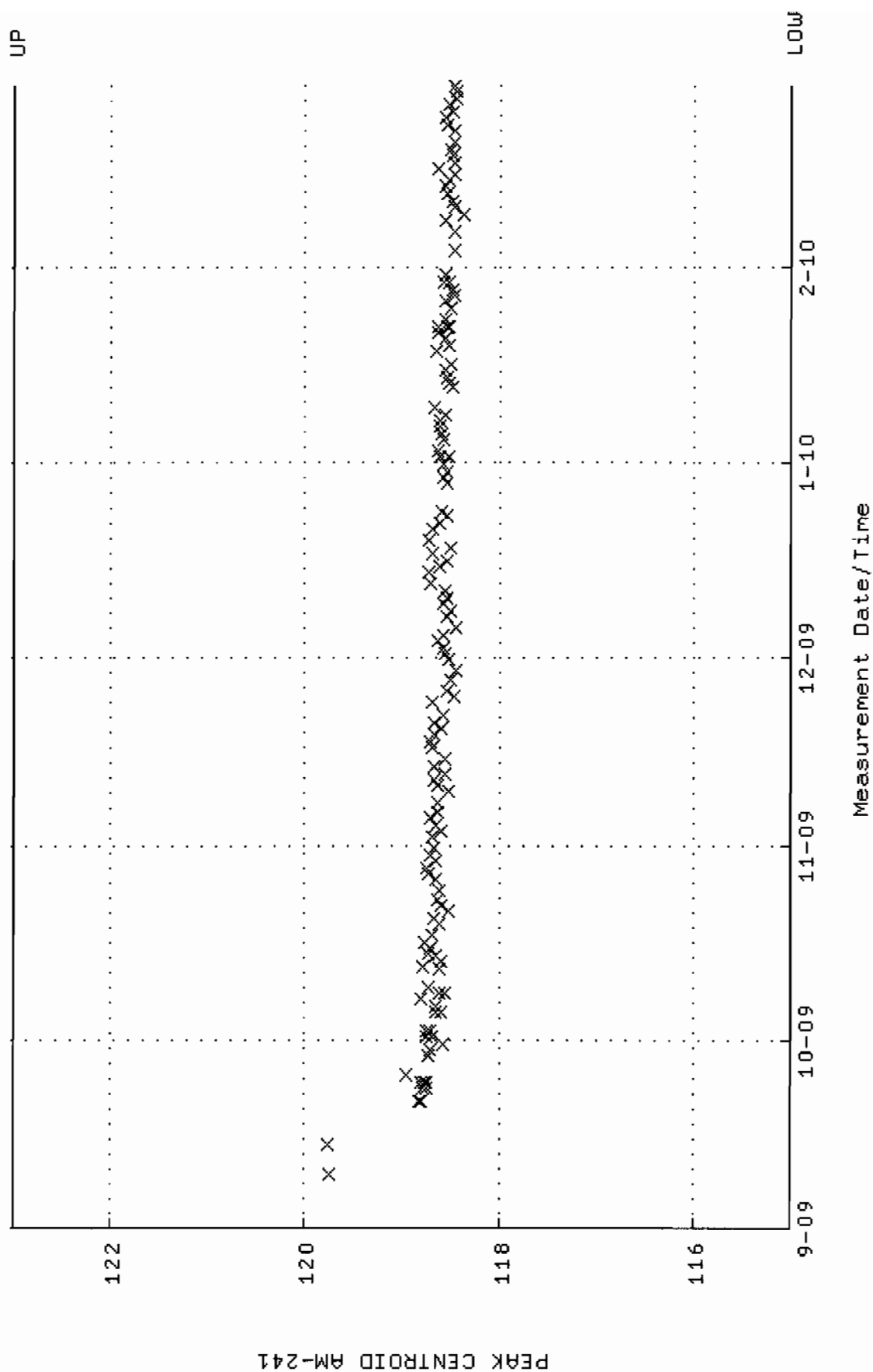
```

: DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM23.QAF;1
: BACKRATE (Spectrum Background Rate)
: 5-OCT-2009 15:13:53 through 1-MAR-2010 12:00:00
: 1.61827 +- 0.119991 (7.41 %)

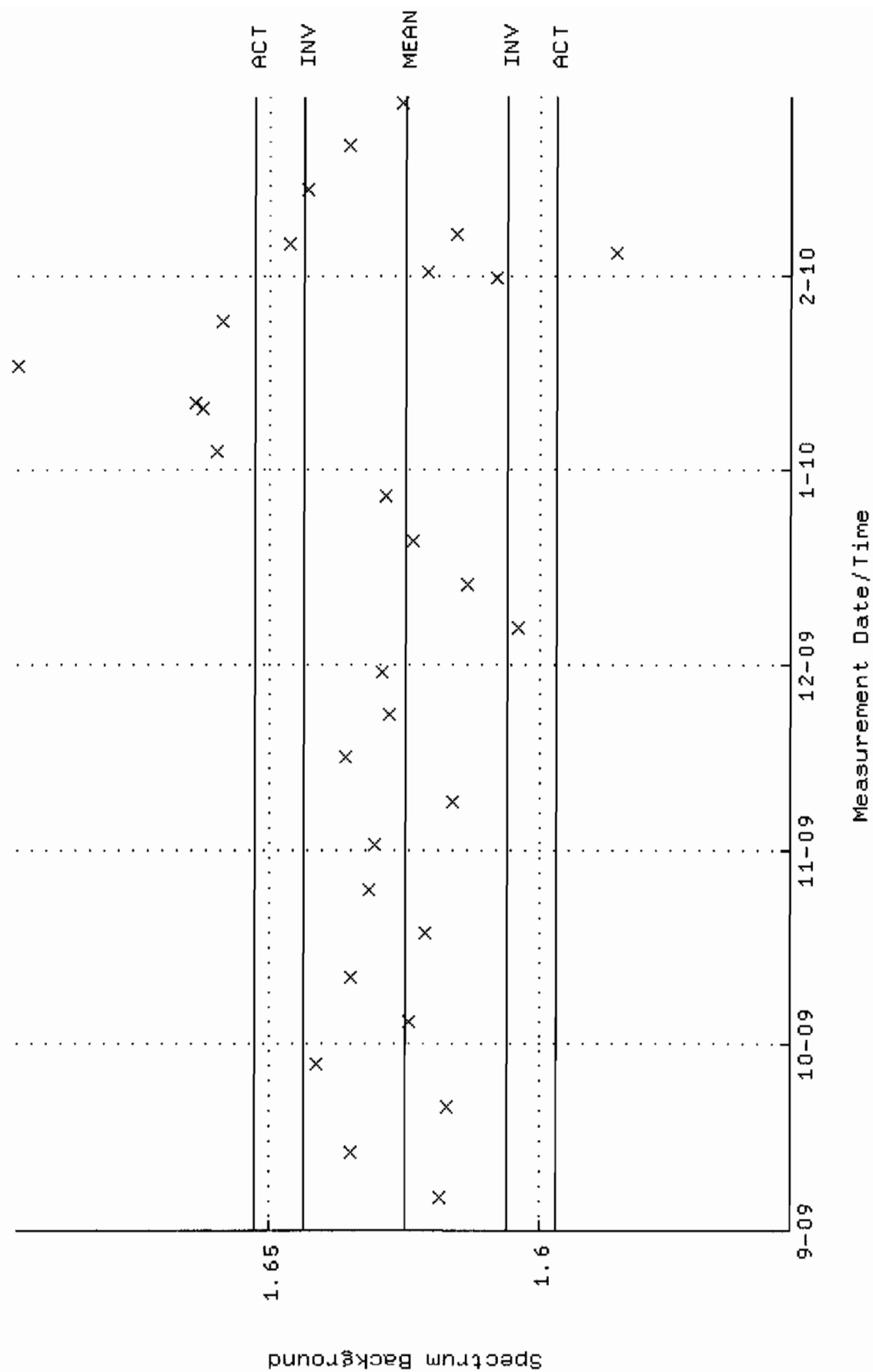
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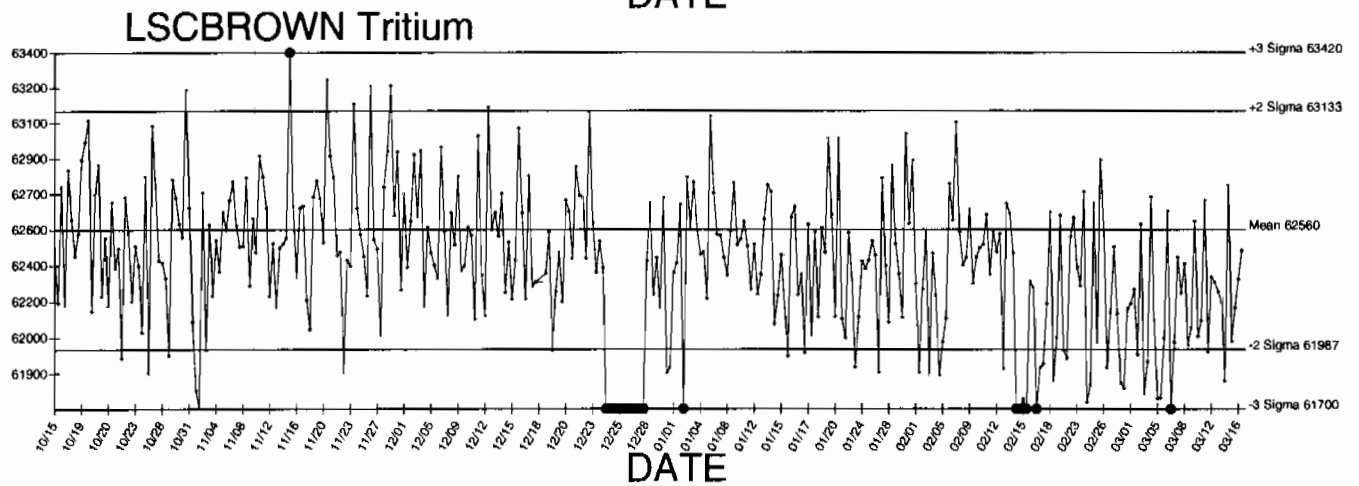
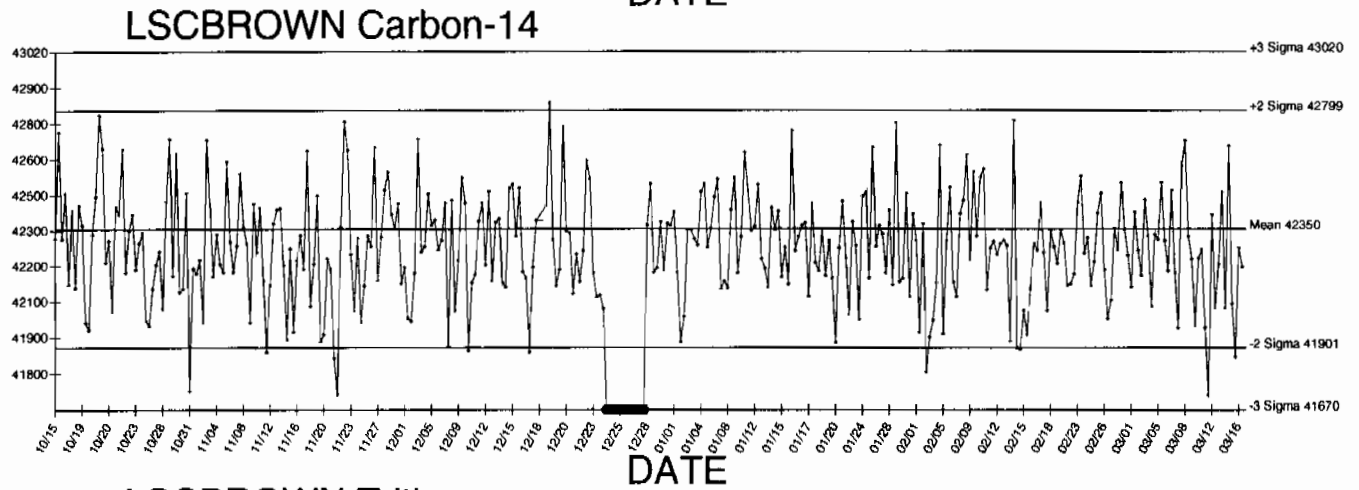
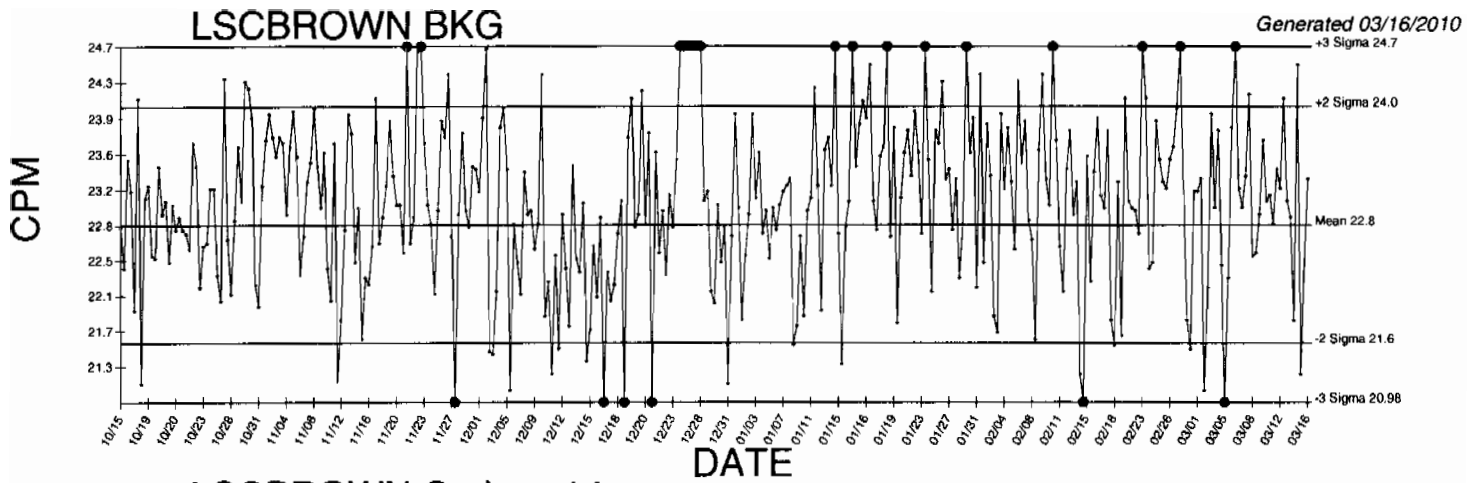


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM25_2LMB.QAF;1
 Parameter Name : PSCENTRD-59 (PEAK CENTROID AM-241)
 Start/End Dates : 9-SEP-2009 16:18:34 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM25.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:47:27 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.62502 +- 9.370414E-03 (0.58 %)





● Denotes Outlier

STANDARDS DATA

0134



CALIBRATION
No. 0146

Description Radionuclide: TRITIUM (HYDROGEN-3) Product code: TRY-64
Chemical form: water Batch: 111

Measurement Reference time: 1200 GMT on 1 March 1996
Radioactive concentration of tritium: 488.0 kilobecquerels per gram of water
which is equivalent to: 13.19 microcuries per gram of water
or: 2.93×10^7 disintegrations per minute per gram of water

Method of Measurement
This reference material was calibrated by direct comparison with a standard of tritium-labelled water obtained from the National Institute of Standards and Technology, USA.

Accuracy The OVERALL UNCERTAINTY of the result quoted above is estimated to be less than $\pm 2.5\%$

This estimate of uncertainty was calculated in accordance with the recommendations of the International Commission on Radiation Units and Measurements (ICRU Report 12). The limits of uncertainty were taken as the arithmetic sum of the uncertainty due to random variations, calculated at the 99.7% confidence level, and the estimated systematic uncertainties.

Purity No radioactive impurities were detected. (Impurities with total activity greater than 0.001% of the activity of the tritium would have been detected).

Physical Data Half-life of tritium: 12.43 ± 0.11 years
Maximum beta energy of tritium: 18.6 keV

Remarks: The S.I. unit of radioactivity is the becquerel.

1 becquerel (Bq) = 1 nuclear transformation per second, therefore
1 curie (Ci) = 3.7×10^{10} becquerels exactly.

Useful conversion factors are:

1 microcurie (μ Ci) = 3.7×10^4 Bq = 37 kilobecquerels (kBq)
1 kilobecquerel (kBq) = 27.027 nanocuries (nCi)

This product meets the quality assurance requirements of NRC Regulatory Guide 4.15 for achieving implicit NIST (NBS) traceability as defined in NCRP58 (1985).

Approved
signatory

W. F. Case
Page 989 of 1023
W.F. Case

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0134
Prepared By:	Angela Johnson
Carrier Conc:	DI WATER
Reference Date:	03/01/1996
Ampoule Mass (g):	5 g
Uncertainty:	+/- 2.5 %
LogBook No:	RC S 023 061

A Solution Material Info	
Isotope:	Tritium
Prepared By:	Angela Johnson
Prep Date:	02/21/2001
Verification Date:	09/10/2008
Expiration Date:	03/27/2010
Primary Code:	0134-A
Dilution(mL):	100 mL
Mass of Parent(g):	3.3659 g
Density(g/mL):	1.0004
Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (100 \text{ mL}) = 985535.5200 \text{ dpm/mL}$
$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (1.0004 \text{ g/mL}) / (100 \text{ mL}) = 985180.3116 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
07/20/2004	Amanda Fehr	5.86	1000	0134-H	5773.1566 dpm/mL	07/25/2006	07/25/2007
12/20/2005	Amanda Fehr	5.5451	1000	0134-I	5462.92 dpm/mL	12/20/2006	12/20/2007
07/11/2007	Daniel Roy	5.5863	1000	0134-J	5503.5128 dpm/ml	07/29/2008	07/29/2009
03/25/2009	Mary Aders	5.4917	1000	0134-K	5410.3147 dpm/ml	03/27/2009	03/27/2010

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for H-3 Standard 0134-K

M. Aders	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff Mass. Used (mL)	Source DPM/mL
4/9/2009	0134-K N1	1097.2000	54.0000	1043.2000	1.0000	2741.3099
	0134-K N2	1073.2000	54.0000	1019.2000	0.380548	2678.242955
	0134-K N3	1085.2000	54.0000	1031.2000	0.380548	2709.776428
					1.0000	2709.776428
					Average =	

Mean Value (Counting) = 2709.776428
 Stdev = 31.53347278

Certificate Value = 2581.86 dpm/mL
 Lower Limit = 2846.709482 dpm/mL
 Upper Limit = 2772.843373 dpm/mL
 Rule 1 Pass/Fail Fail
 Two sigma = 63.06694556 dpm/mL
 10 % of Mean = 270.9776428 dpm/mL
 Rule 2 (Pass/Fail) Pass

*exception taken due to full recovery of standard

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 10% of the certificate value.

The analyst prepared three standard verification sources for H-3 source 0134-K by transferring 0.1 mL portions of the standard into glass liquid scintillation vials. Ten mL of Ecosint Ultra liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1 mL of DI water and 10 mL of Ecosint Ultra liquid scintillation cocktail. The standard verification vials and Background source were dark adapted for two hours and counted on Silver for H-3 source standard verification. The H-3 efficiency calibration which was used for verification calculations was performed on 4/9/09 using 0020-A (H-3). Calibration data is recorded in this logbook under H-3 0020. Each verification source calculation was performed as follows:

$$\text{Source dpm/g} = (A - B)/(C)(D)$$

where:

- A = Ver. source cpm,
- B = BKG cpm,
- C = System efficiency, (cpm/dpm), and
- D = mass used for standard verification.

Reference RAD SOP M-001

Heather Higgins 4/9/09
 Amanda J. Lehn 4/9/09

1032

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

74047-278

5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytix maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: October 1, 2006 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE	GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432 y	3339	3.0
Cd-109	88	462.6 d	4815	3.3
Co-57	122	271.79 d	2409	3.0
Ce-139	166	137.6 d	3408	2.8
Hg-203	279	46.61 d	7522	2.7
Sn-113	392	115.1 d	4728	2.6
Cs-137	662	30.07 y	2973	3.0
Y-88	898	106.6 d	11600	2.6
Co-60	1173	5.2714 y	5780	2.7
Co-60	1332	5.2714 y	5783	2.6
Y-88	1836	106.6 d	12260	2.6

5.31725 grams 4M HCl solution.
P O NUMBER 2734RD, Item 1

SOURCE PREPARED BY:

M. Dimitrova
M. Dimitrova, Radiochemist

Q A APPROVED:

J.M. [Signature] 11-28-06

This standard will expire one year after the calibration date.

rec'd 11/30/06
RC-S-045-073-0

1380 Seaboard Industrial Blvd.
 Atlanta, Georgia 30318

Tel 404-352-8677

Fax 404-352-2837

www.analytiscinc.com

ANALYSIS OF UNCERTAINTY FOR MIXED GAMMA STANDARDS BATCH 127

CALIBRATION DATE: October 1, 2006 12:00 EST

Isotope	Energy (keV)	Calibration Method ¹	Statistics ²	Calibration ²	Peak Fitting ²	Geometry ²	Impurities ²	Weighing	Combined Standard Uncertainty	Relative Expanded Uncertainty (k=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	1.1	0.71	0.7	0	0.2	1.52	3.0
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

Optional Additional Isotopes

Pb-210	46.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

Calibration Methods:

4π LS (4 pi Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

²As Percent (%) from counting data

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

Standard Traceability Log Rad

Source Material Info	
Parent Code:	1032
Prepared By:	Daniel Roy
Carrier Conc:	4 M HCL
Reference Date:	10/01/2006
Ampoule Mass (g):	5.31725 g
Uncertainty:	+/- 2.81 %
LogBook No:	RC-S-045-073

A Solution Material Info	
Isotope:	Mixed Gamma
Prepared By:	Daniel Roy
Prep Date:	11/30/2006
Verification Date:	12/02/2009
Expiration Date:	12/02/2010
Primary Code:	1032-A
Dilution(mL):	100 mL
Mass of Parent(g):	5.2579 g
Density(g/mL):	1.0611
Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2163.7461 \text{ dpm/mL}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (1.0611 \text{ g/mL}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2039.2400 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
-----------	----------	--------------	---------------	------	-------------	-------------------	-----------------

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Am-241

Isotope	Result	pCi/L - Var-1AR-1
Mixed Gamma N1	2534	pCi/L - Var-1AR-3
Mixed Gamma N2	2510	pCi/L - Var-1AR-5
Mixed Gamma N3	2413	

Mean Value (Counting) = 2485.67 **Pass**
 Stdev = 64.065 **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 = 248.56666667
 Rule 2 (Pass/Fail) **Pass**

pCi/L
 pCi/L
 pCi/L

M. Stamps
12/2/09
independent
12/2/09

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Cs-137

Isotope	Result	pCi/L - YER-7AR-1
Mixed Gamma N1	854.2	pCi/L - VER-7AR-3
Mixed Gamma N2	907.6	pCi/L - VER-7AR-2
Mixed Gamma N3	898.9	

Mean Value (Counting) = 886.90
Stdev = 28.651
Rule 3 (Pass/Fail) Pass

Certificate Value = 933.44144
Lower Limit = 829.597644
Upper Limit = 944.202356
Rule 1 (Pass/Fail) Pass
Two sigma = 57.30235597
10 % of Mean = 88.69000000
Rule 2 (Pass/Fail) Pass

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

Handwritten notes:
12/2/09
M. Stamps
12/2/09

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - Ver-Int-5
Mixed Gamma N1	1572	pCi/L - Ver-Int-2
Mixed Gamma N2	1495	pCi/L - Ver-Int-3
Mixed Gamma N3	1501	

Mean Value (Counting) = 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

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.

U.S. Stamps issued 12/2/09
12/2/09

0244-A Characterization

Sample #	Uranium-233/234 Result (pCi/g)	Uranium-238 Result (pCi/g)	Thorium-230 Result (pCi/g)
0244-A 1	6.59	6.12	25.3
0244-A 2	6.36	6.07	28.5
0244-A 3	5.78	5.53	26.5
0244-A 4	6.48	5.97	25.5
0244-A 5	5.65	5.59	26.2
0244-A 6	6.96	5.78	27.0
0244-A 7	5.95	5.75	24.2
0244-A 8	5.29	5.67	27.2
0244-A 9	5.51	6.05	24.3
0244-A 10	6.37	5.57	25.6
0244-A 11	6.50	5.80	25.8
0244-A 12	6.13	5.42	22.4
0244-A 13	5.49	5.24	24.7
0244-A 14	6.19	5.21	26.9
0244-A 15	6.50	6.27	27.6
0244-A 16	6.50	5.24	24.9
0244-A 17	6.25	6.05	24.7
0244-A 18	6.14	6.00	25.4
0244-A 19	6.19	6.14	26.4
0244-A 20	5.67	5.61	23.2
Mean Value	6.13	5.75	25.62
1 sigma	0.439	0.325	1.493
2 sigma	0.878	0.650	2.986
75% Limit	4.60	4.31	19.22
125% Limit	7.66	7.19	32.03
Expected Result	6.2 +/- 4.0	6.0 +/- 4.0	24.5 +/- 0.6
Achieved Results	6.13 +/- 0.439	5.75 +/- 0.325	25.62 +/- 1.493

REFERENCE DATE 4/11/2000 *lett c held 12/1/04*

angela d. johnson 12/3/04

TRM

Invoice:

5 boxes of TRM-1
 10 " " TRM-2 and 3
 5 " each of NRM-1 through 6
 7 " baghouse dirt

use 1/4 gm x 10 samples with together
 for TRM-2

Table 7. Recommended Concentrations of Tailings Reference Materials (pCi/g)

	TRM-1	TRM-2	TRM-3	TRM-4
U-238	99 ± 6	6.0 ± 4.0	19.6 ± 1.4	44.9 ± 1.6
U-234	105 ± 6	6.2 ± 4.0	19.6 ± 1.9	44.6 ± 1.2
Th-230	471 ± 11	24.5 ± 0.6	58.5 ± 2.1	44.0 ± 1.6
Ra-226	489 ± 17	25.4 ± 0.9	60.3 ± 2.3	42.9 ± 1.2
Pb-210	425 ± 24	22.1 ± 1.2	56.0 ± 2.1	38.9 ± 2.0

9911627-01-001

SF 2001-COC (10-07)

Batch No.

Batch No.

SARAWR No. N/A

Press F1 for instructions for each field.

ANALYSIS REQUEST AND CHAIN OF CUSTODY

Page 1 of 1

AR/COC-602945

[illegible]3rd Copy Field Copy (Pink)2nd Copy SMO Suspense Copy

**1st Copy To Accompany Samples,
Return to SMO (Blue)**

Original / To Accompany Samples,
(Laboratory Copy (White))

0244-B Characterization

Sample #	Plutonium-239 Result (pCi/g)	Plutonium-238 Result (pCi/g)	Americium-241 Result (pCi/g)
0244-B 1	39.9	7.88	38.4
0244-B 2	44.1	7.97	40.6
0244-B 3	45.8	6.56	31.8
0244-B 4	43.6	7.69	31.5
0244-B 5	43	7.9	40.2
0244-B 6	43.5	7.84	29.4
0244-B 7	41.3	7.67	36
0244-B 8	44.3	6.95	33.2
0244-B 9	42.7	7.2	29.2
0244-B 10	44.9	7.69	30
0244-B 11	41.4	7.22	30.2
0244-B 12	41.3	7.74	36
0244-B 13	39.2	6.65	33.8
0244-B 14	39.6	7.78	31.1
0244-B 15	45.3	8.41	37.3
0244-B 16	38.1	6.74	33.6
0244-B 17	48.5	8.51	30.5
0244-B 18	36.5	7.23	38.6
0244-B 19	35.3	6.98	30.9
0244-B 20	37.4	8.55	31.3
Mean Value	41.79	7.56	33.68
1 sigma	3.418	0.596	3.724
2 sigma	6.835	1.193	7.448
75% Limit	30.75	6.02	24.38
125% Limit	51.25	10.04	40.63
Expected Result	41.0 +/- 3.0	8.03 +/- 0.37	32.5 +/- 1.1
Achieved Results	41.79 +/- 3.418	7.56 +/- .596	33.68 +/- 3.724

REFERENCE DATA 4/14/2000

Amanda L. Lehn 4/30/04
 Lott & Staley 5/1/04

PREPARATION AND CHARACTERIZATION OF THE PERFORMANCE EVALUATION SOIL SAMPLE PEM-1

INTRODUCTION

Rust Geotech (Rust) was contracted by Los Alamos National Laboratory (LANL) to prepare and characterize a soil performance evaluation sample designated PEM-1. This report describes sample preparation, homogeneity assessment, and determination of the concentrations of 28 elements and radioactive isotopes in the sample.

SAMPLE PREPARATION

Rust received nine five-gallon buckets of soil from LANL. The soils were dried overnight in ovens at 103 °C. The large pieces of leaves and sticks were removed and the soils were ground with ceramic-plate grinders to a particle size that passed through a 325 mesh screen. The samples were blended at the proportions specified by LANL for 48 hours in a 3-cubic-foot cross-flow blender. The sample identifications and the amounts used are listed in Table 1.

Table 1. Sample Identifications and Amounts Used to Prepare PEM-1

LANL Sample ID	Amount Used (kg)
AAA 1592	1.7
AAA 2505-1	10.9
AAA 2505-2	12.8
AAA 2750-1	8.4
AAA 2750-2	8.4
AAA 3205	12.6
AAA 8581	4.2
AAB 3417	12.8
AAB 3475	12.6

The blended sample was transferred to three five-gallon plastic containers. While the sample was being transferred, 10 samples were taken at pre-determined time intervals to be used for homogeneity assessment and sample characterization. These samples are believed to be representative of the bulk material.

9911627-01-20

Attention Nancy Slater At GEL
Not for Log In

ANALYSIS REQUEST AND CHAIN OF CUSTODY
Press F1 for instructions for each field.

DepL No./Mail Stop: 7132 / 1042
Project/Task Manager: PAM PUISSANT
Project Name:
Record Center Code: N/A
Logbook Ref. No.: N/A
Service Order No.:

Lab Contact: EDIE KENT
Lab Destination: G.E.L.
SMO Contact/Phone: Doug Salm / 844-3110
Send Report to SMO: Suzi Jensen/844-3184

Contract No.: AJ-2480A
Case No.: 10204 10
SMO Authorization: [Signature]
Bill to: Sandia National Laboratories
Supplier Services, Dept.
P.O. Box 5800 MS 0154

Date Samples Shipped: 11-16-99
Carrier/waybill No.: 726794
Lab Contact: EDIE KENT
Lab Destination: G.E.L.
SMO Contact/Phone: Doug Salm / 844-3110
Send Report to SMO: Suzi Jensen/844-3184

Location
Building N/A
Sample No. - Fraction
050484 - 001
050485 - 001
050486 - 001
-
-
-
-
-
-

Tech Area VI
Room N/A
ER Sample ID or Sample Location Detail
PEM-1
TRM-2
-NRM-2 N.B.H.D.
-
-
-
-
-
-

Sample Matrix
S
S
S
-
-
-
-
-
-

Date/Time Collected
11/15/99 1100
11/15/99 1100
11/15/99 1100
-
-
-
-
-
-

Container
Type
P
G
G
-
-
-
-
-
-

Volume
1 L
1 L
1 L
-
-
-
-
-
-

Preservative
4 C
4 C
4 C
-
-
-
-
-
-

Lab Sample ID
SA
SA
SA
-
-
-
-
-
-

Parameter & Method Requested
See Special Instructions
Below
-
-
-
-
-
-

LAB USE
Lab Sample ID
-
-
-
-
-
-

RMMA ☐ Yes ☒ No Ref. No.
Sample Disposal ☐ Return to Client ☒ Disposal by lab
Turnaround Time ☒ Normal ☐ Rush Required Report Date
Name Douglas E. Perry
Signature [Signature]
Sample Team Members
1. Relinquished by [Signature] Date 11-16-99 Time 0900
1. Received by [Signature] Date
2. Relinquished by [Signature] Date
2. Received by [Signature] Date
3. Relinquished by [Signature] Date
3. Received by [Signature] Date

Special Instructions/QC Requirements
EDD ☐ Yes ☒ No
Raw data package ☐ Yes ☒ No
These samples are going to be analyzed and materials being sent to GEL for help at Hack Hinton.
Please list as separate report.

Abnormal Conditions on Receipt Lab Use
[Signature]

Original To Accompany Samples, Laboratory Copy (White) 1st Copy To Accompany Samples, Return to SMO (Blue) 2nd Copy SMO Suspense Copy (Yellow) 3rd Copy Field Copy (Pink)

Page 1003 of 1023



NATIONAL PHYSICAL LABORATORY

Teddington Middlesex UK TW11 0LW Telephone +44 20 8977 3222

Certificate of Calibration



0478

PLUTONIUM-236 SOLUTION R37-02

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

FOR: GEL Laboratories LLC
2040 Savage Road
Charleston, SC 29407
USA

FOR THE ATTENTION OF: Mr Tim Winters

NPL PRODUCT CODE: R37-02

IDENTIFICATION: A09881

DESCRIPTION: An aqueous solution of ^{236}Pu also containing 2 mol dm^{-3} of nitric acid. The solution is contained in a flame sealed ampoule of type Q and nominal volume 5 ml (squat) as defined in BS 795:1983.

DATE(S) OF CALIBRATION: 26 June 2009 to 1 July 2009

INTENDED USE: Calibration of instruments for response to ^{236}Pu

STORAGE: The material may be stored at room temperature in a suitably sealed container. Flame-sealed glass ampoules are recommended for long-term storage. Regulatory conditions may apply to the manner in which this material is stored.

RECEIVED
11/11/09
JW

MEASUREMENTS

The samples were prepared by gravimetric dilution of a ^{236}Pu solution, which had been previously standardised using liquid scintillation counting. The accuracy of the dilution factor was checked using liquid scintillation counting.

Reference: 2009100356

Page 1 of 3

Date of Issue: 4 November 2009

Signed:

(Authorised Signatory)

Checked by:

Name: Dr Arvic Harms

for Managing Director

Page 1004 of 1023

RESULTS

Principal radionuclide:	^{236}Pu
Reference time:	2009-07-01 12:00 UTC
Activity concentration of principal radionuclide:	170.8 Bq g^{-1}
Expanded uncertainty:	$\pm 0.6 \text{ Bq g}^{-1} (\pm 0.36 \%)$
Contaminants present:	$^{226}\text{Ra}, ^{232}\text{U}, ^{228}\text{Th}, ^{237}\text{Np}$
Activity concentration of ^{226}Ra :	11.0 mBq g^{-1}
Expanded uncertainty:	$\pm 4.0 \text{ mBq g}^{-1} (\pm 36 \%)$
Activity concentration of ^{232}U :	0.67 Bq g^{-1}
Expanded uncertainty:	$\pm 0.12 \text{ Bq g}^{-1} (\pm 18 \%)$
Activity concentration of ^{228}Th :	11.38 mBq g^{-1}
Expanded uncertainty:	$\pm 0.46 \text{ mBq g}^{-1} (\pm 4 \%)$
Activity concentration of ^{237}Np :	5.00 mBq g^{-1}
Expanded uncertainty:	$\pm 0.34 \text{ mBq g}^{-1} (\pm 8 \%)$
Sample Mass:	$4.97 \text{ g} \pm 0.02 \text{ g}$

UNCERTAINTIES

The reported uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %. The uncertainty evaluations have been carried out in accordance with UKAS requirements.

NOTES

- [1]. The reported reference time is stated consistent with the format given in ISO 8601:2004. UTC is the abbreviation for Universal Time, Coordinated. The date is stated in the format YYYY-MM-DD such that 2008-09-01 represents 1 September 2008.
- [2]. The recommended half life of ^{236}Pu is 1044 (6) days and is taken from the evaluations published in *Nuclear Data Sheets*.
- [3]. The recommended half life of ^{226}Ra is $5.844 (50) \times 10^5$ days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [4]. The recommended half life of ^{232}U is 25800 (800) days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [5]. The recommended half life of ^{237}Np is $7.83 (6) \times 10^8$ days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [6]. The recommended half life of ^{228}Th is 698.60 (46) days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.

UNCERTAINTIES

The reported uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %. The uncertainty evaluations have been carried out in accordance with UKAS requirements.

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1430	Isotope:	Plutonium-236
Prepared By:	Ashley Drochter	Prepared By:	Ashley Drochter
Carrier Conc:	2 M HNO ₃	Prep Date:	01/27/2010
Reference Date:	07/01/2009	Verification Date:	01/27/2010
Ampoule Mass (g):	4.97 g	Expiration Date:	01/27/2011
Uncertainty:	+/- .36 %	Primary Code:	1430-A
LogBook No:	RC-S-051-149	Dilution(mL):	100 mL
		Mass of Parent(g):	4.8051 g
		Density(g/mL):	1.0610
		Balance ID:	38080204

Calculations Converting parent activity to dpm/mL/dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(4.8051 \text{ g}) * (170.8 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (100 \text{ mL}) = 492.4266 \text{ dpm/mL}$
$(4.8051 \text{ g}) * (170.8 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (1.0610 \text{ g/mL}) / (100 \text{ mL}) = 464.1156 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/27/2010	Bethany Fiem	33.0429	200	1430-B	76.6786262 dpm/mL	01/27/2010	01/27/2011
03/01/2010	Ashley Drochter	15.2331	200	1430-C	35.3496 dpm/mL	03/01/2010	03/01/2011

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Plutonium-236 Standard 1430-C

	Isotope	Value	Uncertainty
A. Drochter 3/4/2010	1430-C	2.760	0.4480
	1430-C	2.770	0.4520
	1430-C	2.950	0.4850
Mean Value (Counting) =	2.827	104.54659 % of Known Value	
Stdev =	0.106926766		
Target =	2.70		
Lower Limit =	2.612813134		
Upper Limit =	3.040520199		
Rule 1 Pass/Fail	Pass	Pass	Pass
Two sigma =	0.213853532		
10 % of Mean =	0.282666667		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for standard 1430-B using 0.1 mL for each source. Each standard was combined with 0.1 mL of Pu 239 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. After approximately ten minutes, 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-236 were calculated by comparison to Pu-239 certified values.

file 3/5/10
file 3/5/10



Eckert & Ziegler

Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404-352-8677
Fax 404-352-2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

78747-278

1283

U-232 5 mL Liquid in Flame Sealed Vial

Customer: GEL Laboratories, LLC
P.O. No.: 7319 RD, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

Isotope:	U-232
Activity (Bq):	3.754 E3
Half-Life:	68.9 years
Calibration Date:	December 9, 2008 12:00 EST
Relative Expanded Uncertainty (k=2):	5.0%

Comments:

Impurities: U-233 <0.3%, Am-241 <0.15%
5.20453 grams 1M HNO₃ solution.

Source Prepared By: 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 HNO ₃	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	12/02/2009	12/02/2010
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	01/08/2010	12/02/2010
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	Serial #	Value	Uncertainty		
Date: 12/10/09	1283-H N1	2.020	pCi/L	0.238	pCi/L
	1283-H N2	2.000	pCi/L	0.234	pCi/L
	1283-H N3	2.080	pCi/L	0.242	pCi/L
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

CERTIFICATE OF CALIBRATION

ALPHA STANDARD SOLUTION

Radionuclide	Am-243	Customer:	GENERAL ENGINEERING LABS
Half Life:	7380 \pm 40 years	P.O.No.:	9290-RAD
Catalog No.:	7243	Reference Date:	January 1 1994 12:00 PST.
Source No.:	445-96-2	Contained Radioactivity:	(Am-243) 101.2 μ Ci
		Contained Radioactivity:	(Am-243) 3750 kBq

Description of Solution

a. Mass of solution:	5.3739 g (in a 5 ml Flame Sealed Ampoule)
b. Chemical form:	Am(NO ₃) ₃ in 2N HNO ₃
c. Carrier content:	None added
d. Density:	1.0651 g/ml @ 20°C.

Radioimpurities

None detected

Radioactive Daughters

Np-239 (beta active) in equilibrium

Radionuclide Concentration

(Am-243) 18.84 μ Ci/g

Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry for Np-239:

Energy peak(s) intergrated under:	228, 278	keV.
Branching ratio(s) used:	0.108, 0.1420	gamma rays per decay.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	$\pm 3.0\%$
b. Random uncertainty in assay:	$\pm 0.4\%$
c. Random uncertainty in weighing(s):	$\pm 0.0\%$
d. Total uncertainty at the 99% confidence level:	$\pm 3.0\%$

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES
1800 North Keystone Street
Burbank, California 91504
(818) 843 - 7000

Anna H. 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 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



2. SOAK TEST

The source is immersed in distilled water and maintained at $50 \pm 10^\circ \text{C}$ for a minimum of four hours. After removal of the source, the liquid is a) checked for activity using a liquid scintillation counter, or b) evaporated in a planchet and the residue is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



3. SOAK TEST -- BERYLLIUM WINDOW

The source is immersed in distilled water and maintained at $50 \pm 10^\circ \text{C}$ for 20 minutes. The entire surface of the source is then wiped with a moistened cotton swab or filter paper disk. After drying, the swab or disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



4. GAS SOURCE TEST (Radioactive Gas)

The source is placed in a vacuum desiccator and maintained at a pressure of less than 1 mm Hg for not less than 12 hours. The activity is checked by introducing air into the desiccator and monitoring the air with an end-window G.M. tube. Activity levels exceeding 1000 cpm are cause for rejection of the source.



5. OTHER LEAK TEST

The ampoule is kept in an inverted position on a filter paper disk for a minimum of 16 hours. The filter paper disk is then checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



6. LEAK TEST NOT APPLICABLE

The active area of this source is uncovered or is protected by a very thin coating. Although the deposit is adherent, it is not designed or certified to pass a standard leak test. The inactive portions of the source have been checked using the standard wipe test. Levels of removable activity did not exceed 0.001 μCi beta-gamma or 0.0001 μCi alpha at the time of shipment.

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	445-96-2	Isotope:	Americium-243
Prepared By:	Genie Bost	Prepared By:	Angela Johnson
Carrier Conc:	2M HNO3	Prep Date:	01/05/1994
Reference Date:	01/01/1994	Verification Date:	03/09/2010
Ampoule Mass (g):	5.3739 g	Expiration Date:	03/09/2011
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	Tara Sides	.0025219	250	445-96-2-QQ	20.8977 dpm/mL	09/14/2009	09/14/2010
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
03/09/2010	Ashley Drochter	.011	1000	445-96-2-VV	22.7878 dpm/mL	03/09/2010	03/09/2011
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

Verification for Am-243 Standard 445-96-2-VV

A.Drochter 3/15/2010	Isotope	Value	Uncertainty
	445-96-2-VV #1	1.040	0.1630
	445-96-2-VV #2	0.964	0.1480
	445-96-2-VV #3	0.970	0.1550
Mean Value (Counting) =		0.991	96.72
Stdev =		0.042253205	Pass
			Rule 3 (Pass/Fail)
Target =		1.025	
Lower Limit =		0.906826923	
Upper Limit =		1.075839743	
Rule 1 Pass/Fail		Pass	
Two sigma =		0.08450641	
10 % of Mean =		0.099133333	
Rule 2 (Pass/Fail)		Pass	

The analyst prepared three standard verification sources for standard **445-96-2-VV** 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.

Handwritten signature 3/15/10
 3/16/10

RUNLOGS

Instrument Run Log

Instrument Type: GAMMA SPECTROMETER

Batch ID: 957714

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247911001	SAMPLE	MXR1	GAM05	06-MAR-10 17:22	DONE CAN		11-JUN-09 00:00
247911002	SAMPLE	MXR1	GAM13	06-MAR-10 17:23	DONE CAN		11-FEB-10 00:00
247911003	SAMPLE	MXR1	GAM15	06-MAR-10 17:23	DONE CAN		03-FEB-10 00:00
247911004	SAMPLE	MXR1	GAM17	06-MAR-10 17:24	DONE CAN		06-JAN-10 00:00
247911005	SAMPLE	MXR1	GAM18	06-MAR-10 17:24	DONE CAN		23-APR-09 00:00
247911006	SAMPLE	MXR1	GAM22	06-MAR-10 17:25	DONE CAN		02-DEC-09 00:00
247911007	SAMPLE	MXR1	GAM23	06-MAR-10 17:25	DONE CAN		02-JUN-09 00:00
247911008	SAMPLE	MXR1	GAM25	06-MAR-10 17:26	DONE CAN		07-OCT-09 00:00
247911009	SAMPLE	MXR1	GAM16	06-MAR-10 17:29	DONE CAN		16-NOV-09 00:00
1202053649	LCS	MXR1	GAM07	06-MAR-10 18:11	DONE CAN		20-JUL-09 00:00
247911010	SAMPLE	MXR1	GAM15	06-MAR-10 20:38	DONE CAN		03-FEB-10 00:00
247911011	SAMPLE	MXR1	GAM15	08-MAR-10 12:17	DONE CAN		03-FEB-10 00:00
247911012	SAMPLE	MXR1	GAM22	08-MAR-10 12:18	DONE CAN		02-DEC-09 00:00
247911013	SAMPLE	MXR1	GAM15	08-MAR-10 14:57	DONE CAN		03-FEB-10 00:00
247911014	SAMPLE	MXR1	GAM20	08-MAR-10 14:58	DONE CAN		26-AUG-09 00:00
247911015	SAMPLE	MXR1	GAM21	08-MAR-10 14:59	DONE CAN		28-JUL-09 00:00
247911016	SAMPLE	MXR1	GAM05	09-MAR-10 11:47	DONE CAN		11-JUN-09 00:00
247911017	SAMPLE	MXR1	GAM19	09-MAR-10 11:48	DONE CAN		12-MAR-09 00:00
1202053647	MB	MXR1	GAM14	09-MAR-10 11:49	DONE CAN		06-MAR-09 00:00
1202053648	DUP	MXR1	GAM17	09-MAR-10 11:50	DONE CAN		06-JAN-10 00:00

Instrument Run Log

Instrument Type: LSC

Batch ID: 961542

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247911001	SAMPLE	KXK2	LSCBROWN	13-MAR-10 08:11	DONE		
247911002	SAMPLE	KXK2	LSCBROWN	13-MAR-10 09:49	DONE		
247911003	SAMPLE	KXK2	LSCBROWN	13-MAR-10 11:27	DONE		
247911004	SAMPLE	KXK2	LSCBROWN	13-MAR-10 13:04	DONE		
247911005	SAMPLE	KXK2	LSCBROWN	13-MAR-10 14:00	DONE		
247911006	SAMPLE	KXK2	LSCBROWN	13-MAR-10 15:38	DONE		
247911007	SAMPLE	KXK2	LSCBROWN	13-MAR-10 17:16	DONE		
247911008	SAMPLE	KXK2	LSCBROWN	13-MAR-10 18:54	DONE		
247911009	SAMPLE	KXK2	LSCBROWN	13-MAR-10 20:32	DONE		
247911010	SAMPLE	KXK2	LSCBROWN	13-MAR-10 22:11	DONE		
247911011	SAMPLE	KXK2	LSCBROWN	13-MAR-10 23:49	DONE		
247911012	SAMPLE	KXK2	LSCBROWN	14-MAR-10 01:27	DONE		
247911013	SAMPLE	KXK2	LSCBROWN	14-MAR-10 03:05	DONE		
247911014	SAMPLE	KXK2	LSCBROWN	14-MAR-10 04:43	DONE		
247911015	SAMPLE	KXK2	LSCBROWN	14-MAR-10 06:21	DONE		
247911016	SAMPLE	KXK2	LSCBROWN	14-MAR-10 07:59	DONE		
247911017	SAMPLE	KXK2	LSCBROWN	14-MAR-10 09:37	DONE		
248202001	SAMPLE	KXK2	LSCBROWN	14-MAR-10 11:15	DONE		
248202002	SAMPLE	KXK2	LSCBROWN	14-MAR-10 12:53	DONE		
1202062415	MB	KXK2	LSCBROWN	14-MAR-10 14:31	DONE		
1202062416	DUP	KXK2	LSCBROWN	14-MAR-10 16:08	DONE		
1202062417	LCS	KXK2	LSCBROWN	14-MAR-10 17:58	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 961706

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247911001	SAMPLE	KXM4	1083	19-MAR-10 21:07	DONE		
247911002	SAMPLE	KXM4	1084	19-MAR-10 21:07	DONE		
247911003	SAMPLE	KXM4	1085	19-MAR-10 21:07	DONE		
247911004	SAMPLE	KXM4	1086	19-MAR-10 21:07	DONE		
247911005	SAMPLE	KXM4	1087	19-MAR-10 21:07	DONE		
247911006	SAMPLE	KXM4	1088	19-MAR-10 21:07	DONE		
247911007	SAMPLE	KXM4	1107	19-MAR-10 21:07	DONE		
247911008	SAMPLE	KXM4	1108	19-MAR-10 21:07	DONE		
247911009	SAMPLE	KXM4	1109	19-MAR-10 21:07	DONE		
247911010	SAMPLE	KXM4	1112	19-MAR-10 21:07	DONE		
1202062787	LCS	KXM4	1095	20-MAR-10 11:35	DONE		
247911011	SAMPLE	KXM4	1096	20-MAR-10 11:35	DONE		
247911012	SAMPLE	KXM4	1097	20-MAR-10 11:35	DONE		
247911013	SAMPLE	KXM4	1098	20-MAR-10 11:35	DONE		
247911014	SAMPLE	KXM4	1099	20-MAR-10 11:35	DONE		
247911015	SAMPLE	KXM4	1100	20-MAR-10 11:35	DUSE		
247911016	SAMPLE	KXM4	1107	20-MAR-10 11:35	DUSE		
247911017	SAMPLE	KXM4	1108	20-MAR-10 11:35	DONE		
1202062785	MB	KXM4	1109	20-MAR-10 11:35	DONE		
1202062786	DUP	KXM4	1112	20-MAR-10 11:35	DONE		
247911015	SAMPLE	KXM4	1255	22-MAR-10 03:07	DONE		
247911016	SAMPLE	KXM4	1256	22-MAR-10 03:07	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 961708

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247911009	SAMPLE	KXM4	1161	20-MAR-10 12:24	DONE		
247911010	SAMPLE	KXM4	1162	20-MAR-10 12:24	DONE		
247911011	SAMPLE	KXM4	1164	20-MAR-10 12:24	DONE		
247911012	SAMPLE	KXM4	1165	20-MAR-10 12:24	DONE		
247911013	SAMPLE	KXM4	1166	20-MAR-10 12:24	DONE		
247911014	SAMPLE	KXM4	1167	20-MAR-10 12:24	DONE		
247911015	SAMPLE	KXM4	1168	20-MAR-10 12:24	DONE		
247911016	SAMPLE	KXM4	1169	20-MAR-10 12:24	DONE		
247911017	SAMPLE	KXM4	1170	20-MAR-10 12:24	DONE		
1202062788	MB	KXM4	1171	20-MAR-10 12:24	DONE		
1202062789	DUP	KXM4	1172	20-MAR-10 12:24	DONE		
247911004	SAMPLE	KXM4	1001	20-MAR-10 12:43	DONE		
1202062790	LCS	KXM4	1002	20-MAR-10 12:43	DONE		
247911005	SAMPLE	KXM4	1003	20-MAR-10 12:43	DONE		
247911007	SAMPLE	KXM4	1004	20-MAR-10 12:43	DONE		
247911008	SAMPLE	KXM4	1006	20-MAR-10 12:43	DONE		
247911001	SAMPLE	KXM4	1161	21-MAR-10 08:58	DONE		
247911002	SAMPLE	KXM4	1162	21-MAR-10 08:58	DONE		
247911003	SAMPLE	KXM4	1164	21-MAR-10 08:58	DONE		
247911006	SAMPLE	KXM4	1171	21-MAR-10 08:58	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 967508

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247911001	SAMPLE	JXD2	1215	22-MAR-10 20:43	DONE		
247911002	SAMPLE	JXD2	1216	22-MAR-10 20:43	DONE		
247911003	SAMPLE	JXD2	1217	22-MAR-10 20:43	DONE		
247911004	SAMPLE	JXD2	1218	22-MAR-10 20:43	DONE		
247911005	SAMPLE	JXD2	1219	22-MAR-10 20:43	DONE		
247911006	SAMPLE	JXD2	1220	22-MAR-10 20:43	DONE		
247911007	SAMPLE	JXD2	1221	22-MAR-10 20:43	DONE		
247911008	SAMPLE	JXD2	1222	22-MAR-10 20:43	DONE		
247911009	SAMPLE	JXD2	1223	22-MAR-10 20:43	DONE		
247911010	SAMPLE	JXD2	1224	22-MAR-10 20:43	DONE		
247911011	SAMPLE	JXD2	1225	22-MAR-10 20:43	DONE		
247911012	SAMPLE	JXD2	1226	22-MAR-10 20:43	DONE		
247911013	SAMPLE	JXD2	1227	22-MAR-10 20:43	DONE		
247911014	SAMPLE	JXD2	1228	22-MAR-10 20:43	DONE		
247911015	SAMPLE	JXD2	1229	22-MAR-10 20:43	DONE		
247911016	SAMPLE	JXD2	1230	22-MAR-10 20:43	DONE		
247911017	SAMPLE	JXD2	1231	22-MAR-10 20:43	DONE		
1202076580	MB	JXD2	1232	22-MAR-10 20:43	DONE		
1202076581	DUP	JXD2	1233	22-MAR-10 20:44	DONE		
1202076582	LCS	JXD2	1234	22-MAR-10 20:44	DONE		