

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 5
REQUEST NUMBER: 10-2011

These Samples are on:
LANL Request Number: 10-2011
Per Agreement Number: 126310011
Project Cost Code: MR3A05529E00

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA 901.1		1	RE15-10-7893	R	2/18/2010	
		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	
		1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	

REQUEST NUMBER: 10-2011

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PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:901.1		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	
		1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	
		1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	
		1	RE15-10-7893	R	2/18/2010	
		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	
EPA:906.0		1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	
		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	
		1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	
		1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	
		1	RE15-10-7893	R	2/18/2010	

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REQUEST NUMBER: 10-2011

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA.906.0						
		1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	
HASL-300:AM-241						
		1	RE15-10-7893	R	2/18/2010	
		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	
		1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	
		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	
		1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	
		1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	
HASL-300:ISOPU						
		1	RE15-10-7893	R	2/18/2010	
		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	

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REQUEST NUMBER: 10-2011

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOPU						
		1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	
		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	
		1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	
		1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	
HASL-300:ISOU						
		1	RE15-10-7893	R	2/18/2010	
		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	
		1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	
		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	

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PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOU						
1		1	RE15-10-8006	R	2/18/2010	
1		1	RE15-10-8007	R	2/18/2010	
1		1	RE15-10-8008	R	2/18/2010	
1		1	RE15-10-8009	R	2/18/2010	
1		1	RE15-10-8010	R	2/18/2010	
1		1	RE15-10-8011	R	2/18/2010	
1		1	RE15-10-8012	R	2/18/2010	

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Tuesday, February 23, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2011

LOS ALAMOS

REQUEST NUMBER: 10-2011

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
RE15-10-7896	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7896	1	POLY	H3	Ice	R
RE15-10-7894	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7894	1	POLY	H3	Ice	R
RE15-10-7900	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7900	1	POLY	H3	Ice	R
RE15-10-7898	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7898	1	POLY	H3	Ice	R
RE15-10-7897	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7897	1	POLY	H3	Ice	R
RE15-10-7895	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7895	1	POLY	H3	Ice	R
RE15-10-7899	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7899	1	POLY	H3	Ice	R
RE15-10-7893	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7893	1	POLY	H3	Ice	R
RE15-10-8011	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8011	1	POLY	H3	Ice	R
RE15-10-8004	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8004	1	POLY	H3	Ice	R
RE15-10-8009	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8009	1	POLY	H3	Ice	R
RE15-10-8003	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8003	1	POLY	H3	Ice	R
RE15-10-8007	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8007	1	POLY	H3	Ice	R
RE15-10-8007	1	POLY	AM241+GS+ISOPU+ISO	None	R

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LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2011

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-8002	1	POLY	H3	Ice	R
RE15-10-8010	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8010	1	POLY	H3	Ice	R
RE15-10-8008	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8008	1	POLY	H3	Ice	R
RE15-10-8001	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8001	1	POLY	H3	Ice	R
RE15-10-8012	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8012	1	POLY	H3	Ice	R
RE15-10-8008	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8008	1	POLY	H3	Ice	R
RE15-10-8005	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8005	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: RE15-10-7893

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA: QBT3		13m AT SED	
TIME COLLECTED (HH:MM)		0916		SUB-MEDIA: TUFF 1		2/18/10 NA	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID:	15-610716	↓		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	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 IL RS 01-11-10	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown frozen silty sand, pine needles

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-6, drainage

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha \leq 11 dpm
Beta/Gamma \leq 1755 dpm

PID $\frac{\text{Ambient Reading}}{2.1} = \frac{0.0}{2.1}$ 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>Geoff Kelly</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: RE15-10-7894

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)		0930		SUB-MEDIA: TUFF 1		NA	
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE: HA		OK	
LOCATION ID:	15-610716	↓		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		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 L POLY 1L RS 01-11-10	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown moist sand, some tuff fragments

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-6 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

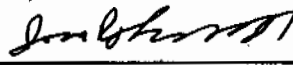
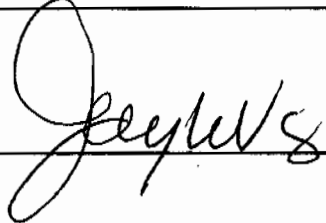
Alpha \leq 5 dpm
Beta/Gamma \leq 1617 dpm

PID $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{1.3} \text{ ppm}$

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT) Jon Roberson

RELINQUISHED BY (Printed Name) Jon Roberson (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: RE15-10-7895

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:	15-610717	↓	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		NA
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA	WATER FLOWING: YES/NO/NA		NA
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA	BOREHOLE DIRECTION: NA		NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	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 IL RS 01-11-10	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: Brown sand, roots

FD: RE15-10-8065

SAMPLE COMMENTS:

NA

LOCATION DESC: 8b-17, drainage

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

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

COLLECTED BY (PRINT)

TLMCFarland

REVIEWED BY (PRINT)

Lesley A Lopez

RELINQUISHED BY (Printed Name) TLMCFarland (Signature) Tracy Z...	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) Jeydel S (Signature) Jeydel S	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: RE15-10-7896

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		1315		SUB-MEDIA:		TUFF 1	
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610717	↓		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		YES/NO/NA	
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA		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 1L RS 01-11-10	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Gray tuff

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-17

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 27 dpm
Beta/Gamma = 2280 dpm

PID $\frac{\text{Ambient Reading}}{0.6} = 0.0$ ppm

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Lacey A. Lopez

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy Zait	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: RE15-10-7897

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		1334		SUB-MEDIA:		TUFF1	
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610718	↓		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		NA	
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA		NA	
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA		NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	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 L RS 01-11-10	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-11 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 44 dpm
Beta/Gamma \leq 2020 dpm

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

HE = NEG(-)

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Lorey A. Lopez

RELINQUISHED BY (Printed Name) TL McFarland (Signature) <i>TL McFarland</i>	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) (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: RE15-10-7898

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		1347		SUB-MEDIA:		TUFF 1	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610718	↓		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		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 IL RS 01-11-10	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

moist dark brown sand, roots

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b - 11 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 27 dpm
Beta/Gamma \leq 1997 dpm

PID $\frac{\text{Ambient Reading}}{1.0} = 0.0$ ppm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Larry A. Lopez

RELINQUISHED BY (Printed Name) TL McFarland (Signature) <i>Tracy McFarland</i>	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) <i>Jeff W</i> (Signature) <i>Jeff W</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: RE15-10-7899

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		1430		SUB-MEDIA:		TUFF 1	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610712	↓		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		NA	
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA		NA	
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA		NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	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 L POLY IL RS 01-11-10	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown sandy silt

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-1 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 16 dpm
Beta/Gamma \leq 1955 dpm

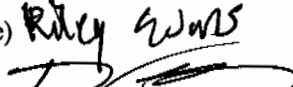
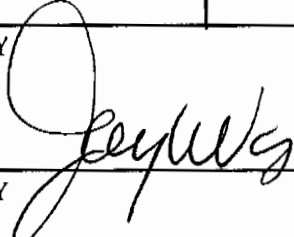
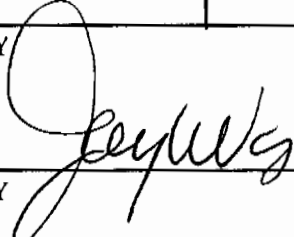
HE neg
PID $\frac{\text{Ambient Reading}}{0.1} = \frac{0.0}{0.1}$ ppm

COLLECTED BY (PRINT)

ThMcFarlane

REVIEWED BY (PRINT)

Riley Ewms

RELINQUISHED BY (Printed Name) Riley Ewms (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: RE15-10-7900

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		1445		SUB-MEDIA:		TUFF 1	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610719	↓		FIELD QC TYPE:		NA	
LOCATION TYPE:	GENERIC	↓		FIELD PREP:		NA	
TOP DEPTH:	0	1.0		SAMPLE USAGE:		INV	
BOTTOM DEPTH:	0	1.5		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	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 1L RS 01-11-10	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Gray, tuff

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-1

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 22 dpm
Beta/Gamma = 1817 dpm


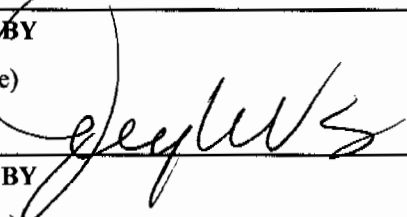
PID $\frac{\text{Ambient Reading}}{0.1} = 0.0$ ppm

COLLECTED BY (PRINT)

ThMcFarland

REVIEWED BY (PRINT)

Lorey A. Lopez

RELINQUISHED BY (Printed Name) Wiley Gourd (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: RE15-10-8001

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):	<i>73m</i> 2/18/10	02/18/2010	02/18/2010	MEDIA:	OBT3		SED
TIME COLLECTED (HH:MM)		0956		SUB-MEDIA:	TUFF 1		NA
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	15-610770	↓		FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC			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			
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:

73m 2/18/10
Brown frozen ~~sand~~ silty sand, tuff fragments

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-20, drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 22 dpm
Beta/Gamma \leq 2330 dpm

HE negative

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

COLLECTED BY (PRINT)

Th 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) (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: RE15-10-8002

WORK ORDER:

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>		<u>AS PLANNED</u>	<u>AS COLLECTED</u>
DATE COLLECTED(MM/DD/YYYY):		02/18/2010	MEDIA:	QBT3	ok
TIME COLLECTED (HH:MM)		1012	SUB-MEDIA:	TUFF 1	↓
PRS ID: 15-008(b)		ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID: 15-610770		↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE: <u>GENERIC</u>		↓	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: <u>NA</u>			COMPOSITE TIME INTERVAL: <u>NA</u>		WATER FLOWING: YES/NO/NA
BOREHOLE: YES/NO/NA			BOREHOLE DECLINATION: <u>NA</u>		BOREHOLE DIRECTION: <u>NA</u>

#	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 <i>LC</i>	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 and brown silty sand, some roots

SAMPLE COMMENTS:

Tuff at 1.5 ft

LOCATION DESC:

8b-20, drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 38 dpm
Beta/Gamma \leq 2020 dpm

PID $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{12.7}$ ppm

COLLECTED BY (PRINT)

TL McFarlane

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) <u>Jon Roberson</u> (Signature) <i>Jon Roberson</i>	Date/Time <u>2/18/10</u> <u>1650</u>	RECEIVED BY (Printed Name) <u>Sherrin Sherwood</u> (Signature) <i>Sherrin Sherwood</i>	Date/Time <u>2/18/10</u> <u>1650</u>
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: RE15-10-8003

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)		1002		SUB-MEDIA: TUFF 1		NA	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID:	15-610771	↓		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 11 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 silty sand, some loamy material, roots, leaves

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-5, drainage

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha \pm 36 dpm
Beta/Gamma \pm 2420 dpm

PID Ambient Reading $\frac{0.0}{0.0}$ 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) Sherri Sherwood (Signature) <i>Sherri Sherwood</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: RE15-10-8004

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		1624		SUB-MEDIA:		TUFF 1	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610771	↓		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 11 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:

Brown moist silty sand, roots

SAMPLE COMMENTS:

NA

FR: RE15-10-8089

LOCATION DESC:

8b-5 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 22 dpmBeta/Gamma \leq 1907 dpmPID $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{0.7} \text{ ppm}$

COLLECTED BY (PRINT)

T. M. C. Farlang

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: RE15-10-8005

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/18/2010	MEDIA:		QBT3
TIME COLLECTED (HH:MM)		1038	SUB-MEDIA:		TUFF 1
PRS ID:	15-008(b)	ok	SAMPLE TECH CODE:		HA
LOCATION ID:	15-610772	↓	FIELD QC TYPE:		NA
LOCATION TYPE:	GENERIC	↓	FIELD PREP:		NA
TOP DEPTH:	0	0.0 @ 13m	SAMPLE USAGE:		INV
BOTTOM DEPTH:	0	0.5	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	5	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 11 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:

Brownish black silty sand, moist

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b - 21

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha \leq 5 dpm
Beta/Gamma \leq 2500 dpm

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

COLLECTED BY (PRINT)

Th McFarland

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) <i>Gayle W</i> (Signature) <i>Gayle W</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: RE15-10-8006

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)		1045		SUB-MEDIA:	TUFF 1		NA
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	15-610772			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 Re	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:

Tannish brown silty sand,
tuff fragments

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-21

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 11 dpm
Beta/Gamma \leq 2220 dpm

HE neg

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

COLLECTED BY (PRINT)

Th McFarland

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>Jay W</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: RE15-10-8007

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)		1055		SUB-MEDIA: TUFF 1		NA	
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE: HA		OK	
LOCATION ID:	15-610773	↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE:	GENERIC	↓		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			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NR			

#	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 11 liter 1/11/10 AC	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 moist silty sand

FD: RE15-10-8033

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-10 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 22 dpm

Beta/Gamma = 2010 dpm

HE neg.

PID Ambient 0.0
Reading 80 ppm

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT)

Joe Roberson

RELINQUISHED BY: (Printed Name) J. Roberson (Signature) Joe Roberson	Date/Time 2/18/10 1650	RECEIVED BY: (Printed Name) (Signature) Jay Williams	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: RE15-10-8008

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		1135		SUB-MEDIA:		TUFF 1	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610773	↓		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:	B	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

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

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-10 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 11 dpm
Beta/Gamma \neq 2380 dpm

PID $\frac{\text{Ambient}}{\text{Reading}} = \frac{6.0}{0.7} \text{ ppm}$

COLLECTED BY (PRINT)

T. 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: RE15-10-8009

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		1059		SUB-MEDIA:		TUFF I	
PRS ID:	15-008(b)	ok		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610774	↓		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		NA	
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA		NA	
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA		NA	

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

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-22, drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 11 dpm
Beta/Gamma \leq 5100 dpm

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

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Jon Roberson (Signature) <i>[Signature]</i>	Date/Time 2/18/10 1050	RECEIVED BY (Printed Name) <i>[Signature]</i> (Signature) <i>[Signature]</i>	Date/Time 2/18/10 1050
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: RE15-10-8010

WORK ORDER:

AS PLANNED	AS COLLECTED	AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):	02/18/2010	MEDIA:	QBT3
TIME COLLECTED (HH:MM)	1105	SUB-MEDIA:	TUFF 1
PRS ID: 15-008(b)	OK	SAMPLE TECH CODE: HA	OK
LOCATION ID: 15-610774	↓	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	OK	EXCAVATED: YES/NO/NA	
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA	
		WATER FLOWING: YES/NO/NA	
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA	
		BOREHOLE DIRECTION: NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY	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, roots

SAMPLE COMMENTS:

Tuff at 1.0 ft

LOCATION DESC:

8b-22 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 27 dpm

Beta/Gamma = 2520 dpm

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

COLLECTED BY (PRINT)

TLMCFarlang

REVIEWED BY (PRINT)

Jon Robertson

RELINQUISHED BY (Printed Name) Jon Robertson (Signature) <i>Jon Robertson</i>	Date/Time 2/18/10 1650	RECEIVED BY (Printed Name) (Signature) <i>Jeyll W</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: RE15-10-8011

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)		1135		SUB-MEDIA: TUFF 1		NA	
PRS ID: 15-008(b)		ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID: 15-610775		↓		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 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:

Brown loamy silt, roots

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-16 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha \leq 11 dpmBeta/Gamma \leq 2070 dpmPID $\frac{\text{Ambient Reading}}{0.3} = \frac{0.0}{0.3} \text{ ppm}$

COLLECTED BY (PRINT)

JLMcFarland

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) <i>Jon Roberson</i> (Signature) <i>Jon Roberson</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: RE15-10-8012

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/18/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		1138		SUB-MEDIA:		TUFF 1	
PRS ID:	15-008(b)	OK		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610775	↓		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: <u>NR</u>		COMPOSITE TIME INTERVAL: <u>NA</u>		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: <u>NA</u>		BOREHOLE DIRECTION: <u>NA</u>			

#	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 11 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:

Gray weathered tuff, roots

SAMPLE COMMENTS:

NA

LOCATION DESC:

8b-16 drainage

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 22 dpm
Beta/Gamma = 2110 dpm

PID $\frac{\text{Ambient}}{\text{Reading}} = \frac{0.0}{46.0} \text{ ppm}$

COLLECTED BY (PRINT)

Th. McFarland

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>Jeff W &</i>	Date/Time 2/18/10 1650
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time



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

ARS Sample Delivery Group: ARS2-10-00061
Client Sample ID: RE15-10-7893
Sample Collection Date: 02/18/10 09:16
Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-10-00061-001
Date Received: 02/19/10 00:00
Report Date: 02/22/10 12:59

Analysis Description	Analysis Results	Analysis Error +/- 1 s	MDL	TRM	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Transfer/Chem Recovery
GROSS ALPHA	29.92	27.74	37.46	27.98		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	29.98	14.33	18.42	14.79		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	0.11	0.14	0.08	0.16		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	29.01	9.35	0.87	6.35		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.09	0.09		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.02	0.05	0.05	0.05		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.19	0.15	0.05	0.19		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	0.03	-0.04	0.21	-0.04		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	0.71	0.32	0.12	0.32		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-226	0.00	0.00	0.30	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.78	0.54	0.30	0.54		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	4.07	2.23	0.87	2.42		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.35	0.38	0.14	0.38		pCi/g	EPA 901.1M	2/22/2010	NP	N/A

NOTES: % Moisture: 3.80

Matthew J. Edger
Quality Assurance Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the test of the analysis itself. Reproduction of this report in full or in part 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: ARS2-10-00061

Request or PQ Number:

Client Sample ID: RE15-10-7894

ARS Sample ID: ARS2-10-00061-002

Sample Collection Date: 02/18/10 09:50

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 12:59

Analysis Description	Analysis Results	Analysis Error +/- 1 s	MDC	TPU	Unit	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	5.16	16.04	34.05	16.86		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	31.15	13.86	17.92	14.37		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	0.02	0.09	0.07	0.09		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	24.34	6.75	0.77	6.79		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.07	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.04	0.06	0.05	0.06		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.08	0.09	0.04	0.09		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.30	92.88	0.21	92.88		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	0.51	0.30	0.13	0.30		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	0.60	0.26	0.24	0.26		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.83	0.44	0.31	0.44		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	3.02	2.77	1.08	2.66		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	-0.02	21.16	0.05	21.16		pCi/g	EPA 901.1M	2/22/2010	NP	N/A

NOTES: % Moisture: 3.12

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.

LELAP Certificate# 30653

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-10-00061

Request or PO Number:

Client Sample ID: RE15-10-7895

ARS Sample ID: ARS2-10-00061-003

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

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 13:00

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	17.21	21.33	32.65	21.43		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	44.60	16.00	18.12	16.91		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.04	41.38	0.13	41.38		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	3.90	6.03	2.67	6.03		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	0.12	0.15	0.12	0.15		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.03	0.11	0.09	0.11		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.56	160.17	0.36	160.17		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.43	0.54	0.16	0.55		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	2.37	1.07	0.35	1.02		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	1.55	0.88	0.47	0.88		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	3.77	3.08	1.30	3.20		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.54	0.38	0.13	0.38		pCi/g	EPA 901.1M	2/22/2010	NP	N/A

NOTES: % Moisture: 0.91

Matthew A. Felder
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: ARS2-10-00061

Request or PO Number:

Client Sample ID: RE15-10-7896

ARS Sample ID: ARS2-10-00061-004

Sample Collection Date: 02/18/10 13:15

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 13:00

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	37.31	28.68	33.91	29.04		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	19.60	13.04	17.73	13.26		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	0.11	0.21	0.12	0.21		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	21.30	8.36	1.36	8.36		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.11	0.14	0.13	0.14		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.17	0.22	0.09	0.22		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.03	0.10	0.09	0.10		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	0.53	151.41	0.34	151.41		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.52	0.52	0.14	0.53		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	2.88	0.99	0.33	0.99		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.97	197.36	0.44	197.36		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	4.14	2.91	1.20	3.06		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.16	0.37	0.16	0.37		pCi/g	EPA 901.1M	2/22/2010	NP	N/A

NOTES: % Moisture: 0.31

[Signature]
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



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

ARS Sample Delivery Group: AR52-10-00061
Client Sample ID: RE15-10-789/
Sample Collection Date: 02/18/10 13:34
Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: AR52-10-00061-005

Date Received: 02/19/10 00:00

Report Date: 02/22/10 13:00

Analysis Description	Analysis Result	Analysis Error +/- 2σ	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	-0.19	14.25	37.39	14.25		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	26.81	13.32	18.23	13.72		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.03	31.73	0.10	31.73		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	1.22	7.01	3.33	7.01		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	0.24	0.10	0.13	0.19		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.28	0.29	0.09	0.29		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	-0.13	-0.27	0.49	-0.27		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.53	0.49	0.14	0.49		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	0.00	0.00	0.27	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	1.67	0.94	0.40	0.95		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	14.97	5.66	1.92	5.61		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	-0.01	-0.13	0.00	-0.13		pCi/g	EPA 901.1M	2/22/2010	NP	N/A

NOTES: % Moisture: 1.88

[Signature]
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: ARS2-10-00061

Request or PO Number:

Client Sample ID: RE15-10-7898

ARS Sample ID: ARS2-10-00061-006

Sample Collection Date: 02/18/10 13:47

Date Received: 02/19/10 00:00

Sample Matrix: Soil/Solid

Report Date: 02/22/10 13:00

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	28.23	25.82	34.06	26.05		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	30.98	14.28	17.92	14.77		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	0.04	0.15	0.13	0.15		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	26.99	9.40	1.37	9.43		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.00	0.00	0.13	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.40	0.29	0.09	0.29		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
SU-152	0.10	0.15	0.38	0.15		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	1.28	0.54	0.19	0.53		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	0.00	0.00	0.33	0.00		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	-0.04	-0.55	0.41	-0.55		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	7.47	4.39	1.98	4.71		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.13	0.31	0.15	0.31		pCi/g	EPA 901.1M	2/22/2010	NP	N/A

NOTES: % Moisture: 1.36

M. J. Eden
Quality Assurance Review

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

LELAP Certificate# 30653

NELAP Certificate # E87558



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

ARS Sample Delivery Group: AR52-10-00061
Client Sample ID: RE15-10-7899
Sample Collection Date: 02/18/10 14:30
Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: AR52-10-00061-007
Date Received: 02/19/10 00:00
Report Date: 02/22/10 13:00

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Transfer/Chem Recovery
GROSS ALPHA	17.26	21.39	32.79	21.50		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
GROSS BETA	40.42	15.65	18.31	16.41		pCi/g	EPA 900.0M	2/22/2010	NP	N/A
NA-22	-0.03	30.28	0.10	30.28		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
K-40	26.01	8.12	1.04	8.16		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CO-60	0.06	0.12	0.10	0.12		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-134	0.13	0.10	0.07	0.10		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
CS-137	0.49	0.26	0.06	0.27		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
EU-152	0.30	0.37	0.26	0.37		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
PB-212	0.89	0.39	0.14	0.39		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
RA-228	1.28	0.81	0.29	0.81		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-235	0.04	0.58	0.41	0.58		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
U-238	5.70	3.24	1.24	3.49		pCi/g	EPA 901.1M	2/22/2010	NP	N/A
AM-241	0.31	0.35	0.15	0.35		pCi/g	EPA 901.1M	2/22/2010	NP	N/A

NOTES: % Moisture: 2.47

Quality Assurance Review

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

LELAP Certificate # 30658

NELAP Certificate # E87558

DATA VALIDATION COVER SHEET

5119-1

Data Validation Cover Sheet

Records Use only



Section I.

REQUEST NUMBER: 10-2011 VALIDATION DATE: 04/05/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: David Schwent ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):


<input type="checkbox"/> TPH-GRO	<input type="checkbox"/> HIGH EXPLOSIVES	<input type="checkbox"/> DIOXIN FURANS	<input type="checkbox"/> LCMSMS PERCHLORATES
<input type="checkbox"/> TPH-DRO	<input type="checkbox"/> METALS	<input type="checkbox"/> PCB CONGENERS	<input type="checkbox"/> ORGANOCHLORINE 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 short half-life, 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 tracer U-232 for samples RE15-10-8009 and -8007 were < the laboratory LAL. All associated sample results were detects and, thus, were qualified J+,R3b. The %R of alpha spec tracer U-232 for sample -8004 was > the UAL but ≤125%. The associated U-235/236 sample result was an ND and, thus, was qualified UJ,R3a. All other associated sample results were detects and, thus, were qualified J-,R3a. Also, the %R of alpha spec tracer Am-243 for the LCS sample of batch 957586 and the %R of alpha spec tracer U-232 for the MB sample were > the UAL but ≤125%. Since these samples were QC samples, no sample data were qualified as a result.
3. It should be noted that no MS analysis was performed for the tritium analyses. However, an LCS analysis was performed


DATA VALIDATION COVER SHEET	
5119-1 Data Validation Cover Sheet	Records Use only  Los Alamos NATIONAL LABORATORY EST 1947
<p>and was within acceptance limits. No sample data were qualified as a result.</p> <p>4. It should be noted that the matrix QC analyses for isotopic-Am batch 957586 and the tritium analyses in this RN were performed on LANL samples from other RNs. No sample data were qualified as a result.</p> <p>Reviewed By: Charissa Lewis Level: I Date: 4/6/10</p>	
<p>VALIDATOR'S SIGNATURE: <u>David Schwartz</u> DATE: <u>04/05/10</u></p>	
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
<div style="display: flex; justify-content: space-between; align-items: center;"> <div>Rad Analytical Data Validation Checklist</div> <div>  </div> </div>	

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

RAD ANALYTICAL DATA VALIDATION CHECKLIST	
5119-2 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: RE15-10-7896
Sample ID: 247900001
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 5.93%

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	-0.00145		0.0192	+/-0.00162	0.050	pCi/g		KXM4	03/19/10	2103	961694	1
<i>ISOPU "Dry Weight Corrected"</i>													
Plutonium-238	U	0.0028		0.0244	+/-0.00655	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00757		0.0206	+/-0.00556	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>													
Uranium-233/234		0.912		0.0666	+/-0.0777	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.0613		0.0407	+/-0.0146	0.100	pCi/g						
Uranium-238		1.23		0.0468	+/-0.0996	0.100	pCi/g						
Rad Gamma Spec Analysis													
<i>GAMMA SPEC "Dry Weight Corrected"</i>													
Americium-241	U	0.158		0.392	+/-0.125	0.200	pCi/g		MXR1	03/05/10	2337	957711	4
Bismuth-211	UI	5.61	R,R5a	0.315	+/-0.359		pCi/g						
Bismuth-214		1.62		0.105	+/-0.107	0.200	pCi/g						
Cadmium-109	UI	2.81	R,R5a	1.73	+/-0.565		pCi/g						
Cerium-139	U	0.00823		0.0505	+/-0.015	0.050	pCi/g						
Cesium-134	UI	0.0883	R,R5a	0.0812	+/-0.0253	0.100	pCi/g						
Cesium-137	U	-0.0212		0.0541	+/-0.0164	0.100	pCi/g						
Cobalt-60	U	-0.000128		0.0565	+/-0.0175	0.100	pCi/g						
Europium-152	U	0.0184		0.157	+/-0.0669	0.200	pCi/g						
Lanthanum-140	U	-0.0476		0.126	+/-0.0423		pCi/g						
Lead-212		2.38		0.0928	+/-0.153	0.100	pCi/g						
Lead-214		2.04		0.115	+/-0.142	0.100	pCi/g						
Mercury-203	U	0.0405		0.0678	+/-0.022	0.100	pCi/g						
Potassium-40		34.8		0.506	+/-1.88	1.00	pCi/g						
Radium-223	U	0.190		1.06	+/-0.353		pCi/g						
Radium-224	UI	6.50	R,R5a	0.994	+/-0.764		pCi/g						
Radium-226		1.62		0.105	+/-0.107		pCi/g						
Radium-228		2.59		0.215	+/-0.212	0.500	pCi/g						
Ruthenium-106	U	-0.0751		0.480	+/-0.149	0.800	pCi/g						
Sodium-22	U	-0.0221		0.0615	+/-0.0198	0.080	pCi/g						
Strontium-85	UI	0.140	R,R5a	0.0693	+/-0.0211		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:

RE15-10-7896
247900001

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		0.729	0.0547	+/-0.0546	0.080	pCi/g						
Thorium-227	U	-0.109	0.411	+/-0.121		pCi/g						
Thorium-231	U	0.190	1.06	+/-0.353		pCi/g						
Thorium-234		5.08	3.06	+/-1.39	2.00	pCi/g						
Tin-113	U	-0.00517	0.0718	+/-0.0214	0.100	pCi/g						
Uranium-235	U	0.159	0.341	+/-0.103	0.500	pCi/g						
Yttrium-88	U	-0.00233	0.0484	+/-0.015	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		522	104	+/-59.7	250	pCi/L		KXK2	03/12/10	2220	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	93.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	83.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	103	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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: RE15-10-7894
Sample ID: 247900002
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 26.9%

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	-0.00102	0.0208	+/-0.00203	0.050	pCi/g		KXM4	03/19/10	2103	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00171	0.0236	+/-0.00552	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00682	0.0199	+/-0.0049	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.05	0.0667	+/-0.0874	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.108	0.0407	+/-0.0192	0.100	pCi/g						
Uranium-238		1.82	0.0469	+/-0.140	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0368	0.0769	+/-0.0237	0.200	pCi/g		MXR1	03/05/10	2338	957711	4
Bismuth-211	UI	3.55	R,R5a	0.250	+/-0.226	pCi/g						
Bismuth-214		1.23		0.100	+/-0.0968	pCi/g						
Cadmium-109	UI	3.25	R,R5a	0.713	+/-0.356	pCi/g						
Cerium-139	U	-0.0185	0.0356	+/-0.0109	0.050	pCi/g						
Cesium-134	UI	0.0815	R,R5a	0.0783	+/-0.0315	pCi/g						
Cesium-137	U	0.0364	0.0655	+/-0.0197	0.100	pCi/g						
Cobalt-60	U	-0.0111	0.0515	+/-0.0159	0.100	pCi/g						
Europium-152	U	-0.0115	0.124	+/-0.0376	0.200	pCi/g						
Lanthanum-140	U	-0.00335	0.112	+/-0.040		pCi/g						
Lead-212		1.61	0.0699	+/-0.0922	0.100	pCi/g						
Lead-214		1.29	0.0932	+/-0.0893	0.100	pCi/g						
Mercury-203	U	0.0275	0.0484	+/-0.015	0.100	pCi/g						
Potassium-40		24.4	0.559	+/-1.30	1.00	pCi/g						
Radium-223	U	-0.123	0.793	+/-0.265		pCi/g						
Radium-224	UI	3.78	R,R5a	0.750	+/-0.453	pCi/g						
Radium-226		1.23	0.100	+/-0.0968		pCi/g						
Radium-228		1.86	0.201	+/-0.185	0.500	pCi/g						
Ruthenium-106	U	-0.0499	0.422	+/-0.131	0.800	pCi/g						
Sodium-22	U	-0.0372	0.0582	+/-0.0199	0.080	pCi/g						
Strontium-85	U	0.0449	0.0508	+/-0.0157		pCi/g						
Thallium-208		0.514	0.0482	+/-0.0416	0.080	pCi/g						

DJS
04/05/10

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7894
Sample ID: 247900002

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	-0.025	0.321	+/-0.0989		pCi/g						
Thorium-231	U	-0.123	0.793	+/-0.265		pCi/g						
Thorium-234		2.08	0.775	+/-0.439	2.00	pCi/g						
Tin-113	U	-0.0163	0.0551	+/-0.0167	0.100	pCi/g						
Uranium-235	U	0.00341	0.245	+/-0.0754	0.500	pCi/g						
Yttrium-88	U	0.00471	0.0478	+/-0.0143	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		328	106	+/-48.0	250	pCi/L		KXK2	03/12/10	2358	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	84.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	100	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7900
Sample ID: 247900003
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 8.17%

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	0.00247	0.021	+/-0.00189	0.050	pCi/g		KXM4	03/19/10	2103	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.000327	0.0271	+/-0.00385	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.0113	0.0229	+/-0.00583	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.02	0.0631	+/-0.084	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.0884	0.0385	+/-0.0172	0.100	pCi/g						
Uranium-238		1.28	0.0443	+/-0.102	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0124	0.202	+/-0.0632	0.200	pCi/g		MXR1	03/05/10	2338	957711	4
Bismuth-211	UI	3.69	R,R5a	0.189	+/-0.173	pCi/g						
Bismuth-214		1.22		0.061	+/-0.0692	0.200	pCi/g					
Cadmium-109	UI	3.83	R,R5a	0.788	+/-0.387	pCi/g						
Cerium-139	U	0.0108		0.0306	+/-0.00846	0.050	pCi/g					
Cesium-134	UI	0.0976	R,R5a	0.0499	+/-0.0183	0.100	pCi/g					
Cesium-137	U	0.0139		0.036	+/-0.0102	0.100	pCi/g					
Cobalt-60	U	-0.0335		0.0323	+/-0.011	0.100	pCi/g					
Europium-152	U	-0.0507		0.0884	+/-0.030	0.200	pCi/g					
Lanthanum-140	U	0.00256		0.0776	+/-0.025	pCi/g						
Lead-212		1.69		0.0519	+/-0.0692	0.100	pCi/g					
Lead-214		1.34		0.0689	+/-0.0727	0.100	pCi/g					
Mercury-203	U	0.0274		0.0379	+/-0.0122	0.100	pCi/g					
Potassium-40		29.2		0.295	+/-1.20	1.00	pCi/g					
Radium-223	U	-0.0943		0.585	+/-0.203	pCi/g						
Radium-224	UI	4.17	R,R5a	0.555	+/-0.381	pCi/g						
Radium-226		1.22		0.061	+/-0.0692	pCi/g						
Radium-228		1.78		0.121	+/-0.146	0.500	pCi/g					
Ruthenium-106	U	0.029		0.276	+/-0.0829	0.800	pCi/g					
Sodium-22	U	-0.0295		0.0365	+/-0.0119	0.080	pCi/g					
Strontium-85	UI	0.0999	R,R5a	0.042	+/-0.0125	pCi/g						
Thallium-208		0.535		0.0318	+/-0.0294	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: RE15-10-7900
Sample ID: 247900003

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	-0.0461	0.234	+/-0.0691		pCi/g					
Thorium-231	U	-0.0943	0.585	+/-0.203		pCi/g					
Thorium-234	U	1.27	1.59	+/-0.693	2.00	pCi/g					
Tin-113	U	0.00405	0.0412	+/-0.0118	0.100	pCi/g					
Uranium-235	U	0.00731	0.204	+/-0.0633	0.500	pCi/g					
Yttrium-88	U	-0.00898	0.0276	+/-0.0103	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
H3 "As Received"											
Tritium		389	104	+/-51.2	250	pCi/L	KXK2	03/13/10	0136	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	81.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	104	(50%-105%)

Notes:

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

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- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7898
Sample ID: 247900004
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 15.4%

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	-0.000366	0.0214	+/-0.00146	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00109	0.0202	+/-0.00188	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00389	0.0171	+/-0.00342	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.23	0.0678	+/-0.169	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.205	0.0414	+/-0.0284	0.100	pCi/g						
Uranium-238		10.5	0.0477	+/-0.732	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.123	0.156	+/-0.0491	0.200	pCi/g		MXR1	03/05/10	2338	957711	4
Bismuth-211	UI	4.37	R,R5a	0.220	+/-0.267	pCi/g						
Bismuth-214		1.35		0.077	+/-0.0924	pCi/g						
Cadmium-109	UI	4.32	R,R5a	0.928	+/-0.424	pCi/g						
Cerium-139	U	-0.00147	0.0358	+/-0.011	0.050	pCi/g						
Cesium-134	UI	0.0899	R,R5a	0.0633	+/-0.0216	pCi/g						
Cesium-137		0.0444	0.042	+/-0.0154	0.100	pCi/g						
Cobalt-60	U	0.00883	0.0425	+/-0.0128	0.100	pCi/g						
Europium-152	U	0.0337	0.109	+/-0.0384	0.200	pCi/g						
Lanthanum-140	U	-0.0127	0.0953	+/-0.0301		pCi/g						
Lead-212		1.96	0.0661	+/-0.114	0.100	pCi/g						
Lead-214		1.59	0.080	+/-0.106	0.100	pCi/g						
Mercury-203	U	0.0381	0.0419	+/-0.0222	0.100	pCi/g						
Potassium-40		26.2	0.307	+/-1.29	1.00	pCi/g						
Radium-223	U	0.168	0.713	+/-0.236		pCi/g						
Radium-224	UI	4.47	R,R5a	0.708	+/-0.474	pCi/g						
Radium-226		1.35	0.077	+/-0.0924		pCi/g						
Radium-228		2.27	0.149	+/-0.183	0.500	pCi/g						
Ruthenium-106	U	-0.185	0.348	+/-0.114	0.800	pCi/g						
Sodium-22	U	-0.0023	0.0492	+/-0.0153	0.080	pCi/g						
Strontium-85	UI	0.0724	R,R5a	0.0513	+/-0.016	pCi/g						
Thallium-208		0.644	0.0378	+/-0.0438	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7898
Sample ID: 247900004

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	-0.104	0.282	+/-0.0845		pCi/g						
Thorium-231	U	0.168	0.713	+/-0.236		pCi/g						
Thorium-234		9.23	1.35	+/-1.16	2.00	pCi/g						
Tin-113	U	-0.00173	0.0518	+/-0.0156	0.100	pCi/g						
Uranium-235	U	0.199	0.239	+/-0.101	0.500	pCi/g						
Yttrium-88	U	-0.0145	0.0282	+/-0.00988	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		22800	102	+/-1610	250	pCi/L		KXK2	03/11/10	1359	961540	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	99.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.7	(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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- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7897
Sample ID: 247900005
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 16.2%

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	0.00392	0.021	+/-0.00239	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00786	0.0204	+/-0.00489	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.0102	0.0172	+/-0.00579	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		5.00	0.0759	+/-0.363	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.669	0.0464	+/-0.0658	0.100	pCi/g						
Uranium-238		30.0	0.0534	+/-2.08	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.235	0.303	+/-0.0908	0.200	pCi/g		MXR1	03/05/10	2339	957711	4
Bismuth-211	UI	3.14	R,R5a	0.231	+/-0.184	pCi/g						
Bismuth-214		0.955		0.0775	+/-0.0687	0.200	pCi/g					
Cadmium-109	UI	4.20	R,R5a	1.23	+/-0.573	pCi/g						
Cerium-139	U	0.00951		0.0396	+/-0.0128	0.050	pCi/g					
Cesium-134	UI	0.0629	R,R5a	0.0627	+/-0.0282	0.100	pCi/g					
Cesium-137		0.176		0.0461	+/-0.0304	0.100	pCi/g					
Cobalt-60	U	0.00559		0.0425	+/-0.0127	0.100	pCi/g					
Europium-152	U	-0.0294		0.114	+/-0.0405	0.200	pCi/g					
Lanthanum-140	U	-0.054		0.0894	+/-0.0295	pCi/g						
Lead-212		1.35		0.0672	+/-0.0604	0.100	pCi/g					
Lead-214		1.14		0.0841	+/-0.0738	0.100	pCi/g					
Mercury-203	U	0.0141		0.047	+/-0.0148	0.100	pCi/g					
Potassium-40		20.7		0.358	+/-0.958	1.00	pCi/g					
Radium-223	U	-0.296		0.760	+/-0.256	pCi/g						
Radium-224	UI	3.71	R,R5a	0.720	+/-0.426	pCi/g						
Radium-226		0.955		0.0775	+/-0.0687	pCi/g						
Radium-228		1.42		0.153	+/-0.137	0.500	pCi/g					
Ruthenium-106	U	0.0527		0.366	+/-0.108	0.800	pCi/g					
Sodium-22	U	-0.0232		0.0507	+/-0.0162	0.080	pCi/g					
Strontium-85	U	0.0443		0.0464	+/-0.0143	pCi/g						
Thallium-208		0.428		0.0388	+/-0.0313	0.080	pCi/g					

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7897
Sample ID: 247900005
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	UI	0.343	R,R5a	0.329	+/-0.124		pCi/g						
Thorium-231	U	-0.296		0.760	+/-0.256		pCi/g						
Thorium-234		29.7		2.36	+/-2.98	2.00	pCi/g						
Tin-113	U	-0.0139		0.0522	+/-0.0153	0.100	pCi/g						
Uranium-235		0.269		0.266	+/-0.100	0.500	pCi/g						
Yttrium-88	U	0.0051		0.0313	+/-0.0104	0.100	pCi/g						
Rad Liquid Scintillation Analysis													
<i>H3 "As Received"</i>													
Tritium		1.54E+05		221	+/-10800	250	pCi/L		KXX2	03/13/10	0314	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	85.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	84.3	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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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: RE15-10-7895
Sample ID: 247900006
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 9.86%

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	-0.00141	0.0217	+/-0.00183	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00497	0.0204	+/-0.00557	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00853	0.0172	+/-0.00438	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.24	0.0663	+/-0.100	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.0669	0.0405	+/-0.0158	0.100	pCi/g						
Uranium-238		2.27	0.0466	+/-0.171	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.00161	0.0619	+/-0.020	0.200	pCi/g		MXR1	03/05/10	2339	957711	4
Bismuth-211	UI	5.53	R,R5a	0.224	+/-0.342	pCi/g						
Bismuth-214		1.45		0.0849	+/-0.112	pCi/g						
Cadmium-109	UI	5.18	R,R5a	0.585	+/-0.390	pCi/g						
Cerium-139	U	-0.00608	0.0321	+/-0.00947	0.050	pCi/g						
Cesium-134	UI	0.141	R,R5a	0.0809	+/-0.0253	pCi/g						
Cesium-137		0.0567	0.0553	+/-0.0241	0.100	pCi/g						
Cobalt-60	U	0.00653	0.0543	+/-0.0163	0.100	pCi/g						
Europium-152	U	-0.00509	0.112	+/-0.0398	0.200	pCi/g						
Lanthanum-140	U	0.0293	0.0941	+/-0.0303	pCi/g							
Lead-212		2.38	0.0603	+/-0.143	0.100	pCi/g						
Lead-214		2.01	0.0817	+/-0.136	0.100	pCi/g						
Mercury-203	U	0.0326	0.0473	+/-0.0156	0.100	pCi/g						
Potassium-40		33.8	0.396	+/-1.59	1.00	pCi/g						
Radium-223	U	-0.0986	0.731	+/-0.243	pCi/g							
Radium-224	UI	6.15	R,R5a	0.647	+/-0.595	pCi/g						
Radium-226		1.45	0.0849	+/-0.112	pCi/g							
Radium-228		2.35	0.193	+/-0.189	0.500	pCi/g						
Ruthenium-106	U	-0.143	0.401	+/-0.121	0.800	pCi/g						
Sodium-22	U	-0.0268	0.0577	+/-0.0184	0.080	pCi/g						
Strontium-85	U	0.0309	0.0481	+/-0.0158	pCi/g							
Thallium-208		0.684	0.0461	+/-0.0502	0.080	pCi/g						

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-7895
Sample ID: 247900006

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	-0.0981	0.280	+/-0.0873		pCi/g						
Thorium-231	U	-0.0986	0.731	+/-0.243		pCi/g						
Thorium-234		4.23	0.598	+/-0.530	2.00	pCi/g						
Tin-113	U	-0.0361	0.0548	+/-0.017	0.100	pCi/g						
Uranium-235	U	0.0783	0.222	+/-0.0654	0.500	pCi/g						
Yttrium-88	U	0.0128	0.0464	+/-0.0133	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		875	101	+/-80.2	250	pCi/L		KXK2	03/11/10	1556	961540	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	97.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.5	(50%-105%)

Notes:

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

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- F Estimated Value
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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7899
Sample ID: 247900007
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 18.4%

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	0.0135	0.0203	+/-0.0044	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00196	0.0203	+/-0.00243	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240		0.0341	0.0172	+/-0.00767	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		3.26	0.0744	+/-0.242	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.245	0.0454	+/-0.0338	0.100	pCi/g						
Uranium-238		7.13	0.0523	+/-0.508	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0667	0.128	+/-0.0401	0.200	pCi/g		MXR1	03/06/10	1459	957711	4
Bismuth-211	UI	3.91	R,R5a	0.360	+/-0.287	pCi/g						
Bismuth-214		1.32		0.131	+/-0.103	pCi/g						
Cadmium-109	UI	4.54	R,R5a	1.14	+/-0.584	pCi/g						
Cerium-139	U	-0.00728	0.0554	+/-0.0166	0.050	pCi/g						
Cesium-134	U	0.0872	0.0945	+/-0.0308	0.100	pCi/g						
Cesium-137		0.567	0.0705	+/-0.0549	0.100	pCi/g						
Cobalt-60	U	0.038	0.0754	+/-0.0209	0.100	pCi/g						
Europium-152	U	-0.108	0.176	+/-0.0676	0.200	pCi/g						
Lanthanum-140	U	-0.0852	0.126	+/-0.0453		pCi/g						
Lead-212		1.62	0.103	+/-0.104	0.100	pCi/g						
Lead-214		1.42	0.135	+/-0.111	0.100	pCi/g						
Mercury-203	U	0.0155	0.0733	+/-0.0208	0.100	pCi/g						
Potassium-40		24.6	0.550	+/-1.13	1.00	pCi/g						
Radium-223	U	-0.682	1.24	+/-0.381		pCi/g						
Radium-224	UI	4.48	R,R5a	1.11	+/-0.607	pCi/g						
Radium-226		1.32	0.131	+/-0.103		pCi/g						
Radium-228		1.58	0.241	+/-0.201	0.500	pCi/g						
Ruthenium-106	U	-0.00811	0.597	+/-0.182	0.800	pCi/g						
Sodium-22	U	-0.0296	0.0762	+/-0.025	0.080	pCi/g						
Strontium-85	U	0.0463	0.0762	+/-0.0244		pCi/g						
Thallium-208		0.539	0.0685	+/-0.0487	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:

RE15-10-7899
247900007

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	0.267	0.489	+/-0.136		pCi/g					
Thorium-231	U	-0.682	1.24	+/-0.381		pCi/g					
Thorium-234		7.40	1.23	+/-0.918	2.00	pCi/g					
Tin-113	U	-0.0165	0.0868	+/-0.0261	0.100	pCi/g					
Uranium-235	U	0.244	0.405	+/-0.118	0.500	pCi/g					
Yttrium-88	U	0.011	0.0537	+/-0.0151	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium		651	104	+/-68.0	250	pCi/L		KXX2	03/13/10	0332 961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	93.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	98.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	87.0	(50%-105%)

Notes:

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

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- F Estimated Value
- H Analytical holding time was exceeded

DJS
04/05/10

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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: RE15-10-7893
Sample ID: 247900008
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 28%

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	0.00512	0.0237	+/-0.00341	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0059	0.022	+/-0.00409	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.0121	0.0186	+/-0.00488	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.96	0.0647	+/-0.149	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.113	0.0395	+/-0.0211	0.100	pCi/g						
Uranium-238		6.21	0.0455	+/-0.439	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0461	0.125	+/-0.0393	0.200	pCi/g		MXR1	03/06/10	1459	957711	4
Bismuth-211	UI	3.90	R,R5a	0.450	+/-0.306	pCi/g						
Bismuth-214		1.26		0.148	+/-0.120	pCi/g						
Cadmium-109	UI	3.10	R,R5a	1.19	+/-0.551	pCi/g						
Cerium-139	U	-0.021		0.0561	+/-0.0164	pCi/g						
Cesium-134	UI	0.148	R,R5a	0.125	+/-0.0333	pCi/g						
Cesium-137		0.236		0.083	+/-0.0406	pCi/g						
Cobalt-60	U	0.0359		0.0903	+/-0.0254	pCi/g						
Europium-152	U	-0.0309		0.202	+/-0.0619	pCi/g						
Lanthanum-140	U	0.0655		0.203	+/-0.0579	pCi/g						
Lead-212		1.55		0.105	+/-0.101	pCi/g						
Lead-214		1.41		0.157	+/-0.118	pCi/g						
Mercury-203	U	0.00179		0.0787	+/-0.0234	pCi/g						
Potassium-40		25.7		0.726	+/-1.45	pCi/g						
Radium-223	U	0.467		1.28	+/-0.428	pCi/g						
Radium-224	UI	3.16	R,R5a	1.12	+/-0.621	pCi/g						
Radium-226		1.26		0.148	+/-0.120	pCi/g						
Radium-228		1.76		0.300	+/-0.194	pCi/g						
Ruthenium-106	U	-0.193		0.660	+/-0.206	pCi/g						
Sodium-22	U	0.0135		0.0913	+/-0.0267	pCi/g						
Strontium-85	UI	0.108	R,R5a	0.0901	+/-0.027	pCi/g						
Thallium-208		0.522		0.0761	+/-0.0517	pCi/g						

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7893
247900008

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	-0.264	0.491	+/-0.152		pCi/g						
Thorium-231	U	0.467	1.28	+/-0.428		pCi/g						
Thorium-234		5.75	1.23	+/-0.818	2.00	pCi/g						
Tin-113	U	-0.0162	0.0893	+/-0.0263	0.100	pCi/g						
Uranium-235		0.715	0.358	+/-0.202	0.500	pCi/g						
Yttrium-88	U	-0.0156	0.0521	+/-0.0172	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		827	102	+/-77.4	250	pCi/L		KXX2	03/11/10	1759	961540	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	94.6	(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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 Contact: Ms. Joylene Valdez
 Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8011
 Sample ID: 247900009
 Matrix: R
 Collect Date: 18-FEB-10
 Receive Date: 24-FEB-10
 Collector: Client
 Moisture: 14.7%

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	0.00638	0.0216	+/-0.00387	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00338	0.0224	+/-0.0024	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00987	0.019	+/-0.00525	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.79	0.149	+/-0.247	0.100	pCi/g		KXM4	03/20/10	2113	961697	3
Uranium-235/236		0.355	0.0923	+/-0.0574	0.100	pCi/g						
Uranium-238		15.5	0.106	+/-1.21	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0983	0.594	+/-0.191	0.200	pCi/g		MXR1	03/06/10	1459	957711	5
Bismuth-211	UI	4.06	R,R5a	0.449	+/-0.335	pCi/g						
Bismuth-214		1.35		0.137	+/-0.121	0.200						
Cadmium-109	U	2.26		2.31	+/-0.744	pCi/g						
Cerium-139	U	0.0234	0.0701	+/-0.0205	0.050	pCi/g						
Cesium-134	U	0.0767	0.106	+/-0.0289	0.100	pCi/g						
Cesium-137	U	0.0613	0.0766	+/-0.0269	0.100	pCi/g						
Cobalt-60	U	0.0259	0.0807	+/-0.0234	0.100	pCi/g						
Europium-152	U	-0.0462	0.212	+/-0.078	0.200	pCi/g						
Lanthanum-140	U	-0.00596	0.183	+/-0.0592		pCi/g						
Lead-212		1.81	0.121	+/-0.129	0.100	pCi/g						
Lead-214		1.47	0.161	+/-0.128	0.100	pCi/g						
Mercury-203	U	0.0648	0.0892	+/-0.0279	0.100	pCi/g						
Potassium-40		31.6	0.666	+/-1.83	1.00	pCi/g						
Radium-223	U	-1.12	1.42	+/-0.454		pCi/g						
Radium-224	UI	4.07	R,R5a	1.30	+/-0.898	pCi/g						
Radium-226		1.35		0.137	+/-0.121	pCi/g						
Radium-228		1.79		0.308	+/-0.219	0.500						
Ruthenium-106	U	0.106	0.613	+/-0.183	0.800	pCi/g						
Sodium-22	U	-0.0398	0.0917	+/-0.0302	0.080	pCi/g						
Strontium-85	U	0.0799	0.0927	+/-0.0259		pCi/g						
Thallium-208		0.531	0.0736	+/-0.0602	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:
Sample ID:

RE15-10-8011
247900009

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	-0.224	0.548	+/-0.164		pCi/g						
Thorium-231	U	-1.12	1.42	+/-0.454		pCi/g						
Thorium-234		12.2	4.44	+/-2.56	2.00	pCi/g						
Tin-113	U	0.00337	0.0939	+/-0.0277	0.100	pCi/g						
Uranium-235	U	0.286	0.462	+/-0.154	0.500	pCi/g						
Yttrium-88	U	0.044	0.0828	+/-0.0219	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		28100	109	+/-1980	250	pCi/L		KXK2	03/13/10	0625	961541	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE 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"	87.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	91.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.1	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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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: RE15-10-8004
Sample ID: 247900010
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 11.8%

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	0.00137	0.0205	+/-0.00209	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00669	0.0222	+/-0.00337	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00261	0.0188	+/-0.00336	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.950	J-,R3a	0.133	+/-0.100	0.100	pCi/g	KXM4	03/20/10	2113	961697	3
Uranium-235/236	U	0.0579	UJ,R3a	0.082	+/-0.0198	0.100	pCi/g					
Uranium-238		2.48	J-,R3a	0.0937	+/-0.218	0.100	pCi/g					
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00484		0.112	+/-0.0335	0.200	pCi/g	MXR1	03/06/10	1500	957711	5
Bismuth-211	UI	4.27	R,R5a	0.334	+/-0.297		pCi/g					
Bismuth-214		1.57		0.132	+/-0.120	0.200	pCi/g					
Cadmium-109	UI	4.77	R,R5a	0.971	+/-0.513		pCi/g					
Cerium-139	U	-0.0368		0.0481	+/-0.0148	0.050	pCi/g					
Cesium-134	UI	0.117	R,R5a	0.114	+/-0.0564	0.100	pCi/g					
Cesium-137	U	0.0131		0.0837	+/-0.025	0.100	pCi/g					
Cobalt-60	U	-0.0195		0.0732	+/-0.0228	0.100	pCi/g					
Europium-152	U	0.0541		0.176	+/-0.0523	0.200	pCi/g					
Lanthanum-140	U	-0.05		0.175	+/-0.0566		pCi/g					
Lead-212		1.89		0.0926	+/-0.113	0.100	pCi/g					
Lead-214		1.55		0.122	+/-0.116	0.100	pCi/g					
Mercury-203	U	-0.0245		0.0663	+/-0.0192	0.100	pCi/g					
Potassium-40		31.5		0.669	+/-1.73	1.00	pCi/g					
Radium-223	U	-0.141		1.14	+/-0.372		pCi/g					
Radium-224	UI	5.60	R,R5a	0.993	+/-0.763		pCi/g					
Radium-226		1.57		0.132	+/-0.120		pCi/g					
Radium-228		2.04		0.278	+/-0.217	0.500	pCi/g					
Ruthenium-106	U	0.264		0.599	+/-0.169	0.800	pCi/g					
Sodium-22	U	-0.0292		0.0889	+/-0.029	0.080	pCi/g					
Strontium-85	U	0.0392		0.0734	+/-0.0229		pCi/g					
Thallium-208		0.577		0.0731	+/-0.0526	0.080	pCi/g					

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8004
Sample ID: 247900010

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	0.187	0.438	+/-0.126		pCi/g						
Thorium-231	U	-0.141	1.14	+/-0.372		pCi/g						
Thorium-234		2.77	1.09	+/-0.571	2.00	pCi/g						
Tin-113	U	-0.024	0.0796	+/-0.0238	0.100	pCi/g						
Uranium-235	U	0.146	0.350	+/-0.0993	0.500	pCi/g						
Yttrium-88	U	0.00735	0.0625	+/-0.0183	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		2060	112	+/-166	250	pCi/L		KXK2	03/13/10	0803	961541	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE 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"	92.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	95.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	106 *	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

** Analyte is a surrogate compound

< Result is less than value reported

> 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: RE15-10-8009
Sample ID: 247900011
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 23.5%

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	0.0196	0.0202	+/-0.00558	0.050	pCi/g		JXD2	03/22/10	2044	967505	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0035	0.0233	+/-0.00249	0.050	pCi/g		KXM4	03/19/10	2107	961696	3
Plutonium-239/240		0.0382	0.0197	+/-0.00913	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		18.1	J+,R3b	0.144	+/-1.35	0.100	pCi/g	KXM4	03/19/10	1624	961697	4
Uranium-235/236		1.94		0.0879	+/-0.180	0.100	pCi/g					
Uranium-238		92.0		0.101	+/-6.76	0.100	pCi/g					
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0886		0.578	+/-0.186	0.200	pCi/g	MXR1	03/06/10	1500	957711	5
Bismuth-211	UI	2.79	R,R5a	0.326	+/-0.215		pCi/g					
Bismuth-214		0.779		0.105	+/-0.0822	0.200	pCi/g					
Cadmium-109	U	-3.43		2.70	+/-1.21		pCi/g					
Cerium-139	U	0.0237		0.057	+/-0.0183	0.050	pCi/g					
Cesium-134	U	0.0615		0.0819	+/-0.0232	0.100	pCi/g					
Cesium-137		0.591		0.0615	+/-0.0427	0.100	pCi/g					
Cobalt-60	U	-0.00735		0.0515	+/-0.0162	0.100	pCi/g					
Europium-152	U	0.0206		0.159	+/-0.0556	0.200	pCi/g					
Lanthanum-140	U	0.0445		0.132	+/-0.0373		pCi/g					
Lead-212		1.18		0.092	+/-0.0642	0.100	pCi/g					
Lead-214		1.01		0.119	+/-0.0827	0.100	pCi/g					
Mercury-203	U	0.0234		0.0644	+/-0.019	0.100	pCi/g					
Potassium-40		23.3		0.479	+/-1.13	1.00	pCi/g					
Radium-223	U	-0.528		0.978	+/-0.317		pCi/g					
Radium-224	UI	3.05	R,R5a	0.985	+/-0.578		pCi/g					
Radium-226		0.779		0.105	+/-0.0822		pCi/g					
Radium-228		1.23		0.194	+/-0.146	0.500	pCi/g					
Ruthenium-106	U	0.0898		0.492	+/-0.149	0.800	pCi/g					
Sodium-22	U	0.00811		0.0597	+/-0.0179	0.080	pCi/g					
Strontium-85	UI	0.0745	R,R5a	0.0681	+/-0.0214		pCi/g					
Thallium-208		0.387		0.0542	+/-0.036	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:

RE15-10-8009
247900011

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	0.154	0.475	+/-0.160		pCi/g					
Thorium-231	U	-0.528	0.978	+/-0.317		pCi/g					
Thorium-234		123	4.31	+/-11.5	2.00	pCi/g					
Tin-113	U	0.00227	0.068	+/-0.0201	0.100	pCi/g					
Uranium-235		2.01	0.417	+/-0.252	0.500	pCi/g					
Yttrium-88	U	-0.0133	0.0546	+/-0.0176	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium		72900	161	+/-5130	250	pCi/L		KXX2	03/11/10	2002 961540	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"	90.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	92.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	45.1 *	(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: RE15-10-8003
Sample ID: 247900012
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 24.7%

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	0.00554	0.0293	+/-0.0039	0.050	pCi/g		KXM4	03/20/10	1113	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00332	0.022	+/-0.00235	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.0116	0.0186	+/-0.00444	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		4.37	0.109	+/-0.342	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236		0.488	0.0666	+/-0.0598	0.100	pCi/g						
Uranium-238		25.1	0.0767	+/-1.85	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.235	0.351	+/-0.109	0.200	pCi/g		MXR1	03/06/10	1501	957711	4
Bismuth-211	UI	3.75	R,R5a	0.359	+/-0.236	pCi/g						
Bismuth-214		1.23		0.112	+/-0.0921	pCi/g						
Cadmium-109	UI	4.43	R,R5a	1.66	+/-0.754	pCi/g						
Cerium-139	U	0.00224	0.0603	+/-0.0176	0.050	pCi/g						
Cesium-134	UI	0.168	R,R5a	0.0951	+/-0.0321	pCi/g						
Cesium-137		0.187		0.0649	+/-0.0361	pCi/g						
Cobalt-60	U	-0.0239		0.0533	+/-0.0174	pCi/g						
Europium-152	U	-0.0207		0.177	+/-0.0593	pCi/g						
Lanthanum-140	U	-0.0184		0.133	+/-0.0419	pCi/g						
Lead-212		1.97		0.0958	+/-0.0924	pCi/g						
Lead-214		1.36		0.122	+/-0.0933	pCi/g						
Mercury-203	U	0.0512		0.0747	+/-0.023	pCi/g						
Potassium-40		29.0		0.587	+/-1.37	pCi/g						
Radium-223	U	0.448		1.14	+/-0.363	pCi/g						
Radium-224	UI	4.20	R,R5a	1.03	+/-0.636	pCi/g						
Radium-226		1.23		0.112	+/-0.0921	pCi/g						
Radium-228		2.07		0.207	+/-0.195	pCi/g						
Ruthenium-106	U	-0.295		0.477	+/-0.154	pCi/g						
Sodium-22	U	-0.0115		0.0653	+/-0.0201	pCi/g						
Strontium-85	UI	0.0789	R,R5a	0.0703	+/-0.0207	pCi/g						
Thallium-208		0.517		0.0579	+/-0.0391	pCi/g						

DJS
04/05/10

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8003
247900012

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	-0.102	0.463	+/-0.141		pCi/g						
Thorium-231	U	0.448	1.14	+/-0.363		pCi/g						
Thorium-234		25.6	2.76	+/-2.82	2.00	pCi/g						
Tin-113	U	-0.00924	0.0793	+/-0.0232	0.100	pCi/g						
Uranium-235		0.474	0.378	+/-0.178	0.500	pCi/g						
Yttrium-88	U	0.0257	0.0535	+/-0.0154	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		5300	109	+/-390	250	pCi/L		KXK2	03/13/10	0941	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	85.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	86.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	83.3	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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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: RE15-10-8007
Sample ID: 247900013
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 24.6%

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	0.0187	0.030	+/-0.00675	0.050	pCi/g		KXM4	03/20/10	1113	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00301	0.020	+/-0.00214	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240		0.0391	0.0169	+/-0.00798	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		21.1	J+, R3b	+/-1.73	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236		1.72	↓	+/-0.191	0.100	pCi/g						
Uranium-238		87.6	↓	+/-7.02	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.188		+/-0.108	0.200	pCi/g		MXR1	03/06/10	1501	957711	4
Bismuth-211	UI	4.12	R, R5a	+/-0.350		pCi/g						
Bismuth-214		1.33		+/-0.117	0.200	pCi/g						
Cadmium-109	UI	4.95	R, R5a	+/-0.799		pCi/g						
Cerium-139	U	0.00466		+/-0.0196	0.050	pCi/g						
Cesium-134	UI	0.124	R, R5a	+/-0.0287	0.100	pCi/g						
Cesium-137		0.620		+/-0.0512	0.100	pCi/g						
Cobalt-60	U	0.00692		+/-0.019	0.100	pCi/g						
Europium-152	U	-0.0158		+/-0.0569	0.200	pCi/g						
Lanthanum-140	U	-0.0786		+/-0.0553		pCi/g						
Lead-212		1.90		+/-0.118	0.100	pCi/g						
Lead-214		1.50		+/-0.134	0.100	pCi/g						
Mercury-203	U	0.00944		+/-0.0216	0.100	pCi/g						
Potassium-40		31.1		+/-1.62	1.00	pCi/g						
Radium-223	U	-0.223		+/-0.361		pCi/g						
Radium-224	UI	4.60	R, R5a	+/-0.734		pCi/g						
Radium-226		1.33		+/-0.117		pCi/g						
Radium-228		2.12		+/-0.212	0.500	pCi/g						
Ruthenium-106	U	-0.156		+/-0.164	0.800	pCi/g						
Sodium-22	U	-0.0161		+/-0.0217	0.080	pCi/g						
Strontium-85	U	0.0537		+/-0.0235		pCi/g						
Thallium-208		0.583		+/-0.0521	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:
Sample ID:

RE15-10-8007
247900013

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	-0.0107	0.498	+/-0.146		pCi/g						
Thorium-231	U	-0.223	1.20	+/-0.361		pCi/g						
Thorium-234		46.4	2.73	+/-4.40	2.00	pCi/g						
Tin-113	U	-0.0428	0.0786	+/-0.0249	0.100	pCi/g						
Uranium-235		1.03	0.396	+/-0.204	0.500	pCi/g						
Yttrium-88	U	0.00665	0.059	+/-0.0175	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		1510	106	+/-126	250	pCi/L		KXK2	03/13/10	1118	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	94.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	40.7 *	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

** Analyte is a surrogate compound

< Result is less than value reported

> Result is greater than value reported

A The TIC is a suspected aldol-condensation product

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

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

C Analyte has been confirmed by GC/MS analysis

D Results are reported from a diluted aliquot of the sample

F Estimated Value

H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8002
Sample ID: 247900014
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 8.04%

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	-0.00182	0.0272	+/-0.00196	0.050	pCi/g		KXM4	03/20/10	1113	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00319	0.0212	+/-0.00226	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00478	0.0179	+/-0.00277	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.950	0.100	+/-0.0896	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236	U	0.0484	0.0613	+/-0.0174	0.100	pCi/g						
Uranium-238		1.41	0.0705	+/-0.124	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.122	0.247	+/-0.0784	0.200	pCi/g		MXR1	03/06/10	1502	957711	4
Bismuth-211	UI	5.14	R,R5a	0.322	+/-0.377	pCi/g						
Bismuth-214		1.52		0.113	+/-0.120	pCi/g						
Cadmium-109	UI	4.41	R,R5a	1.23	+/-0.540	pCi/g						
Cerium-139	U	-0.0257	0.0513	+/-0.0155	0.050	pCi/g						
Cesium-134	UI	0.0938	R,R5a	0.0819	+/-0.034	pCi/g						
Cesium-137	U	0.0484	0.0652	+/-0.0186	0.100	pCi/g						
Cobalt-60	U	0.0235	0.0647	+/-0.0188	0.100	pCi/g						
Europium-152	U	-0.0827	0.163	+/-0.0745	0.200	pCi/g						
Lanthanum-140	U	0.0891	0.136	+/-0.0411		pCi/g						
Lead-212		2.31	0.0966	+/-0.165	0.100	pCi/g						
Lead-214		1.87	0.117	+/-0.146	0.100	pCi/g						
Mercury-203	U	0.0391	0.0713	+/-0.0213	0.100	pCi/g						
Potassium-40		37.1	0.478	+/-1.89	1.00	pCi/g						
Radium-223	U	-0.0626	1.09	+/-0.369		pCi/g						
Radium-224	UI	5.37	R,R5a	1.04	+/-0.768	pCi/g						
Radium-226		1.52	0.113	+/-0.120		pCi/g						
Radium-228		2.07	0.221	+/-0.218	0.500	pCi/g						
Ruthenium-106	U	-0.127	0.492	+/-0.151	0.800	pCi/g						
Sodium-22	U	0.0134	0.0756	+/-0.0224	0.080	pCi/g						
Strontium-85	UI	0.141	R,R5a	0.0771	+/-0.0241	pCi/g						
Thallium-208		0.615	0.0539	+/-0.0513	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8002
247900014

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	0.188	0.455	+/-0.136		pCi/g						
Thorium-231	U	-0.0626	1.09	+/-0.369		pCi/g						
Thorium-234		2.82	2.06	+/-1.19	2.00	pCi/g						
Tin-113	U	-0.0305	0.0709	+/-0.022	0.100	pCi/g						
Uranium-235	U	-0.112	0.364	+/-0.111	0.500	pCi/g						
Yttrium-88	U	0.0301	0.0542	+/-0.0156	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		948	109	+/-89.1	250	pCi/L		KXK2	03/13/10	1256	961541	5

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	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"	93.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	94.5	(50%-105%)

Notes:

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

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- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8010
Sample ID: 247900015
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 10.6%

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	-0.00182	0.0266	+/-0.00192	0.050	pCi/g		KXM4	03/20/10	1113	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00491	0.0217	+/-0.00285	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.0119	0.0183	+/-0.00482	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		4.09	0.106	+/-0.320	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236		0.268	0.0645	+/-0.0402	0.100	pCi/g						
Uranium-238		11.2	0.0742	+/-0.833	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.118	0.425	+/-0.137	0.200	pCi/g		MXR1	03/06/10	1502	957711	4
Bismuth-211	UI	3.84	R,R5a	0.416	+/-0.299	pCi/g						
Bismuth-214		1.52		0.154	+/-0.116	pCi/g						
Cadmium-109	UI	5.05	R,R5a	1.88	+/-0.630	pCi/g						
Cerium-139	U	0.00523	0.0658	+/-0.0197	0.050	pCi/g						
Cesium-134	U	0.0927	0.113	+/-0.0357	0.100	pCi/g						
Cesium-137	U	0.0558	0.0926	+/-0.0265	0.100	pCi/g						
Cobalt-60	U	0.00213	0.0848	+/-0.026	0.100	pCi/g						
Europium-152	U	-0.0147	0.197	+/-0.0714	0.200	pCi/g						
Lanthanum-140	U	-0.0378	0.176	+/-0.0558		pCi/g						
Lead-212		2.13	0.113	+/-0.103	0.100	pCi/g						
Lead-214		1.39	0.150	+/-0.115	0.100	pCi/g						
Mercury-203	U	0.0294	0.0856	+/-0.0244	0.100	pCi/g						
Potassium-40		29.2	0.708	+/-1.51	1.00	pCi/g						
Radium-223	U	0.125	1.35	+/-0.452		pCi/g						
Radium-224	UI	5.48	R,R5a	1.21	+/-0.612	pCi/g						
Radium-226		1.52	0.154	+/-0.116		pCi/g						
Radium-228		2.19	0.284	+/-0.221	0.500	pCi/g						
Ruthenium-106	U	-0.169	0.589	+/-0.188	0.800	pCi/g						
Sodium-22	U	0.0379	0.107	+/-0.031	0.080	pCi/g						
Strontium-85	U	0.0406	0.0781	+/-0.0253		pCi/g						
Thallium-208		0.584	0.0726	+/-0.0517	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:

RE15-10-8010
247900015

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	0.148	0.545	+/-0.164		pCi/g						
Thorium-231	U	0.125	1.35	+/-0.452		pCi/g						
Thorium-234		13.3	3.28	+/-2.14	2.00	pCi/g						
Tin-113	U	0.0123	0.0957	+/-0.0281	0.100	pCi/g						
Uranium-235	U	0.253	0.413	+/-0.141	0.500	pCi/g						
Yttrium-88	U	-0.0282	0.0546	+/-0.0198	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		12200	108	+/-869	250	pCi/L		KXX2	03/13/10	1433	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	92.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	90.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.4	(50%-105%)

Notes:

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

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- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8006
Sample ID: 247900016
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 7.09%

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	-0.000892	0.0265	+/-0.00258	0.050	pCi/g		KXM4	03/20/10	1113	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00206	0.0244	+/-0.00918	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	-0.00162	0.0206	+/-0.00371	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.850	0.0975	+/-0.0816	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236		0.0641	0.0596	+/-0.0172	0.100	pCi/g						
Uranium-238		0.920	0.0686	+/-0.087	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0109	0.0863	+/-0.0281	0.200	pCi/g		MXR1	03/06/10	1502	957711	4
Bismuth-211	UI	5.31	R,R5a	0.340	+/-0.381	pCi/g						
Bismuth-214		1.70		0.136	+/-0.142	0.200	pCi/g					
Cadmium-109	UI	4.85	R,R5a	0.862	+/-0.452	pCi/g						
Cerium-139	U	-0.0275		0.0453	+/-0.0141	0.050	pCi/g					
Cesium-134	UI	0.161	R,R5a	0.110	+/-0.0381	0.100	pCi/g					
Cesium-137	U	-0.0292		0.0787	+/-0.0232	0.100	pCi/g					
Cobalt-60	U	0.0483		0.0866	+/-0.024	0.100	pCi/g					
Europium-152	U	-0.0518		0.165	+/-0.0502	0.200	pCi/g					
Lanthanum-140	U	-0.0364		0.171	+/-0.0563	pCi/g						
Lead-212		2.61		0.091	+/-0.164	0.100	pCi/g					
Lead-214		1.93		0.124	+/-0.148	0.100	pCi/g					
Mercury-203	U	-0.00267		0.0678	+/-0.0238	0.100	pCi/g					
Potassium-40		35.7		0.569	+/-1.85	1.00	pCi/g					
Radium-223	U	0.250		1.16	+/-0.375	pCi/g						
Radium-224	UI	6.47	R,R5a	0.977	+/-0.846	pCi/g						
Radium-226		1.70		0.136	+/-0.142	pCi/g						
Radium-228		2.43		0.294	+/-0.241	0.500	pCi/g					
Ruthenium-106	U	-0.156		0.584	+/-0.178	0.800	pCi/g					
Sodium-22	U	-0.0177		0.0943	+/-0.0295	0.080	pCi/g					
Strontium-85	U	0.0627		0.0743	+/-0.0232	pCi/g						
Thallium-208		0.788		0.0727	+/-0.0625	0.080	pCi/g					

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8006
247900016

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	-0.263	0.407	+/-0.134		pCi/g						
Thorium-231	U	0.250	1.16	+/-0.375		pCi/g						
Thorium-234		2.45	0.892	+/-0.502	2.00	pCi/g						
Tin-113	U	0.00923	0.0792	+/-0.0233	0.100	pCi/g						
Uranium-235	U	0.149	0.326	+/-0.0948	0.500	pCi/g						
Yttrium-88	U	-0.023	0.0475	+/-0.0173	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		492	105	+/-57.9	250	pCi/L		KXK2	03/13/10	1611	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	93.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	86.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.9	(50%-105%)

Notes:

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

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- BD Results are either below the MDC or tracer recovery is low
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- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

DJS
04/05/10

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8001
Sample ID: 247900017
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 29.4%

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	0.0186	0.0271	+/-0.00639	0.050	pCi/g		KXM4	03/20/10	1114	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00613	0.0228	+/-0.00424	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240		0.0479	0.0193	+/-0.0101	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		4.84	0.107	+/-0.375	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236		0.420	0.0651	+/-0.0541	0.100	pCi/g						
Uranium-238		20.3	0.0749	+/-1.49	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.107	0.300	+/-0.0982	0.200	pCi/g		MXR1	03/06/10	1522	957711	4
Bismuth-211	UI	4.61	R,R5a	+/-0.342		pCi/g						
Bismuth-214		1.42		+/-0.110	0.200	pCi/g						
Cadmium-109	UI	3.74	R,R5a	+/-0.594		pCi/g						
Cerium-139	U	-0.0355	0.0495	+/-0.0155	0.050	pCi/g						
Cesium-134	UI	0.117	R,R5a	+/-0.0363	0.100	pCi/g						
Cesium-137		0.626	0.0615	+/-0.0489	0.100	pCi/g						
Cobalt-60	U	-0.0137	0.0552	+/-0.0181	0.100	pCi/g						
Europium-152	U	-0.0652	0.148	+/-0.0466	0.200	pCi/g						
Lanthanum-140	U	-0.0193	0.134	+/-0.043		pCi/g						
Lead-212		1.87	0.0943	+/-0.126	0.100	pCi/g						
Lead-214		1.67	0.119	+/-0.132	0.100	pCi/g						
Mercury-203	U	0.0418	0.0665	+/-0.0215	0.100	pCi/g						
Potassium-40		31.2	0.474	+/-1.63	1.00	pCi/g						
Radium-223	U	0.451	1.09	+/-0.365		pCi/g						
Radium-224	UI	4.80	R,R5a	+/-0.659		pCi/g						
Radium-226		1.42	0.129	+/-0.110		pCi/g						
Radium-228		1.80	0.240	+/-0.230	0.500	pCi/g						
Ruthenium-106	U	0.107	0.522	+/-0.155	0.800	pCi/g						
Sodium-22	U	-0.0138	0.0798	+/-0.0253	0.080	pCi/g						
Strontium-85	U	0.043	0.0659	+/-0.0206		pCi/g						
Thallium-208		0.576	0.0599	+/-0.0491	0.080	pCi/g						

DJS
04/05/10

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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:
Sample ID:

RE15-10-8001
247900017

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	0.000693	0.428	+/-0.131		pCi/g						
Thorium-231	U	0.451	1.09	+/-0.365		pCi/g						
Thorium-234		20.2	2.46	+/-2.23	2.00	pCi/g						
Tin-113	U	-0.000576	0.0766	+/-0.0225	0.100	pCi/g						
Uranium-235		0.417	0.330	+/-0.186	0.500	pCi/g						
Yttrium-88	U	0.00646	0.0671	+/-0.0231	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		5260	104	+/-386	250	pCi/L		KXX2	03/13/10	1748	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	90.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	88.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	90.9	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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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: RE15-10-8012
Sample ID: 247900018
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 5.71%

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	-0.00184	0.0289	+/-0.00256	0.050	pCi/g		KXM4	03/20/10	1114	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00651	0.0196	+/-0.00483	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00337	0.0166	+/-0.00278	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.01	0.0989	+/-0.0936	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236	U	0.052	0.0604	+/-0.0155	0.100	pCi/g						
Uranium-238		1.08	0.0695	+/-0.0991	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0638	0.318	+/-0.0908	0.200	pCi/g		MXR1	03/06/10	1700	957711	4
Bismuth-211	UI	4.47	R,R5a	0.377	+/-0.327	pCi/g						
Bismuth-214		1.38		0.125	+/-0.115	pCi/g						
Cadmium-109	UI	3.68	R,R5a	1.82	+/-0.582	pCi/g						
Cerium-139	U	0.00563	0.0585	+/-0.0165	0.050	pCi/g						
Cesium-134	U	0.0558	0.0949	+/-0.0263	0.100	pCi/g						
Cesium-137	U	-0.0139	0.067	+/-0.0203	0.100	pCi/g						
Cobalt-60	U	-0.00975	0.0754	+/-0.0231	0.100	pCi/g						
Europium-152	U	0.00658	0.186	+/-0.0627	0.200	pCi/g						
Lanthanum-140	U	-0.0846	0.158	+/-0.0547		pCi/g						
Lead-212		1.97	0.103	+/-0.120	0.100	pCi/g						
Lead-214		1.62	0.137	+/-0.127	0.100	pCi/g						
Mercury-203	U	0.0511	0.0846	+/-0.0267	0.100	pCi/g						
Potassium-40		31.0	0.604	+/-1.68	1.00	pCi/g						
Radium-223	U	0.164	1.28	+/-0.426		pCi/g						
Radium-224	UI	4.08	R,R5a	1.10	+/-0.585	pCi/g						
Radium-226		1.38	0.125	+/-0.115		pCi/g						
Radium-228		2.00	0.255	+/-0.246	0.500	pCi/g						
Ruthenium-106	U	0.0683	0.557	+/-0.161	0.800	pCi/g						
Sodium-22	U	0.0196	0.085	+/-0.0244	0.080	pCi/g						
Strontium-85	UI	0.0937	R,R5a	0.0824	+/-0.0248	pCi/g						
Thallium-208		0.584	0.0672	+/-0.0565	0.080	pCi/g						

DJS
04/05/10

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Certificate of Analysis

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

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8012
247900018

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	-0.119	0.485	+/-0.144		pCi/g						
Thorium-231	U	0.164	1.28	+/-0.426		pCi/g						
Thorium-234	U	1.45	2.97	+/-0.848	2.00	pCi/g						
Tin-113	U	-0.0519	0.0794	+/-0.0256	0.100	pCi/g						
Uranium-235	U	0.0176	0.398	+/-0.114	0.500	pCi/g						
Yttrium-88	U	-0.00939	0.0502	+/-0.0167	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		8730	104	+/-627	250	pCi/L		KXX2	03/13/10	1926	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	97.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.9	(50%-105%)

Notes:

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

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- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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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: RE15-10-8008
Sample ID: 247900019
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 10.9%

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	-0.00182	0.0277	+/-0.002	0.050	pCi/g		KXM4	03/20/10	1114	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00513	0.0208	+/-0.00334	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00557	0.0176	+/-0.00385	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.17	0.0617	+/-0.0941	0.100	pCi/g		KXM4	03/18/10	0850	961697	3
Uranium-235/236		0.0541	0.0377	+/-0.0126	0.100	pCi/g						
Uranium-238		1.09	0.0434	+/-0.0884	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0153	0.327	+/-0.100	0.200	pCi/g		MXR1	03/06/10	1701	957711	4
Bismuth-211	UI	4.32	R,R5a	0.379	+/-0.375	pCi/g						
Bismuth-214		1.37		0.133	+/-0.116	pCi/g						
Cadmium-109	UI	3.87	R,R5a	1.35	+/-0.605	pCi/g						
Cerium-139	U	-0.00331		0.0575	+/-0.0171	pCi/g						
Cesium-134	UI	0.135	R,R5a	0.107	+/-0.0413	pCi/g						
Cesium-137	U	-0.013		0.0701	+/-0.0212	pCi/g						
Cobalt-60	U	0.0125		0.0807	+/-0.0239	pCi/g						
Europium-152	U	-0.113		0.173	+/-0.0563	pCi/g						
Lanthanum-140	U	0.070		0.148	+/-0.043	pCi/g						
Lead-212		2.18		0.107	+/-0.152	pCi/g						
Lead-214		1.57		0.138	+/-0.143	pCi/g						
Mercury-203	U	-0.0164		0.0713	+/-0.0209	pCi/g						
Potassium-40		30.7		0.546	+/-1.73	pCi/g						
Radium-223	U	0.0652		1.23	+/-0.406	pCi/g						
Radium-224	UI	5.46	R,R5a	1.15	+/-0.745	pCi/g						
Radium-226		1.37		0.133	+/-0.116	pCi/g						
Radium-228		2.24		0.252	+/-0.232	pCi/g						
Ruthenium-106	U	-0.267		0.552	+/-0.172	pCi/g						
Sodium-22	U	0.00257		0.0904	+/-0.0272	pCi/g						
Strontium-85	U	0.0338		0.0744	+/-0.0245	pCi/g						
Thallium-208		0.693		0.0709	+/-0.0575	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: RE15-10-8008
Sample ID: 247900019

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	-0.00173	0.478	+/-0.137		pCi/g						
Thorium-231	U	0.0652	1.23	+/-0.406		pCi/g						
Thorium-234		2.62	2.58	+/-1.22	2.00	pCi/g						
Tin-113	U	-0.00998	0.0828	+/-0.0249	0.100	pCi/g						
Uranium-235	U	0.0958	0.392	+/-0.114	0.500	pCi/g						
Yttrium-88	U	0.0236	0.0657	+/-0.0178	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		272	105	+/-44.4	250	pCi/L		KXK2	03/13/10	2103	961541	5

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	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"	89.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	100	(50%-105%)

Notes:

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

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- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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

Report Date: March 23, 2010

Client Sample ID: RE15-10-8005
 Sample ID: 247900020
 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	0.0146	0.0285	+/-0.00555	0.050	pCi/g		KXM4	03/20/10	1114	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00666	0.0206	+/-0.00367	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240		0.0266	0.0174	+/-0.00746	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		6.82	0.0838	+/-0.493	0.100	pCi/g		KXM4	03/18/10	0850	961697	3
Uranium-235/236		0.756	0.0512	+/-0.0746	0.100	pCi/g						
Uranium-238		32.8	0.0589	+/-2.29	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.218	0.450	+/-0.145	0.200	pCi/g		MXR1	03/09/10	1136	957711	4
Bismuth-211	UI	5.09 R,R5a	0.433	+/-0.351		pCi/g						
Bismuth-214		1.49	0.147	+/-0.141	0.200	pCi/g						
Cadmium-109	UI	4.70 R,R5a	2.00	+/-0.684		pCi/g						
Cerium-139	U	-0.0284	0.0677	+/-0.0218	0.050	pCi/g						
Cesium-134	UI	0.139 R,R5a	0.130	+/-0.0521	0.100	pCi/g						
Cesium-137		0.503	0.0737	+/-0.0521	0.100	pCi/g						
Cobalt-60	U	0.0151	0.0865	+/-0.0256	0.100	pCi/g						
Europium-152	U	-0.067	0.201	+/-0.0654	0.200	pCi/g						
Lanthanum-140	U	-0.0675	0.187	+/-0.0641		pCi/g						
Lead-212		2.09	0.117	+/-0.124	0.100	pCi/g						
Lead-214		1.85	0.155	+/-0.137	0.100	pCi/g						
Mercury-203	UI	0.0946 R,R5a	0.0915	+/-0.0283	0.100	pCi/g						
Potassium-40		30.5	0.708	+/-1.72	1.00	pCi/g						
Radium-223	U	0.463	1.34	+/-0.445		pCi/g						
Radium-224	UI	5.98 R,R5a	1.26	+/-0.824		pCi/g						
Radium-226		1.49	0.147	+/-0.141		pCi/g						
Radium-228		2.44	0.262	+/-0.247	0.500	pCi/g						
Ruthenium-106	U	-0.104	0.694	+/-0.212	0.800	pCi/g						
Sodium-22	U	0.0209	0.0906	+/-0.0266	0.080	pCi/g						
Strontium-85	U	0.0825	0.0953	+/-0.0293		pCi/g						
Thallium-208		0.607	0.0719	+/-0.0605	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: RE15-10-8005
Sample ID: 247900020

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	0.0894	0.568	+/-0.190		pCi/g						
Thorium-231	U	0.463	1.34	+/-0.445		pCi/g						
Thorium-234		42.4	3.53	+/-4.28	2.00	pCi/g						
Tin-113	U	0.0209	0.0991	+/-0.0298	0.100	pCi/g						
Uranium-235		0.859	0.419	+/-0.249	0.500	pCi/g						
Yttrium-88	U	-0.0188	0.0575	+/-0.0195	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		4590	106	+/-340	250	pCi/L		KXX2	03/13/10	2241	961541	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
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"	85.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	90.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	78.6	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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Tuesday, February 23, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2011

LOS ALAMOS

REQUEST NUMBER: 10-2011

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:

247900!

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-7896	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7896	1	POLY	H3	Ice	R
RE15-10-7894	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7894	1	POLY	H3	Ice	R
RE15-10-7900	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7900	1	POLY	H3	Ice	R
RE15-10-7898	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7898	1	POLY	H3	Ice	R
RE15-10-7897	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7897	1	POLY	H3	Ice	R
RE15-10-7895	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7895	1	POLY	H3	Ice	R
RE15-10-7899	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7899	1	POLY	H3	Ice	R
RE15-10-7893	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7893	1	POLY	H3	Ice	R
RE15-10-8011	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8011	1	POLY	H3	Ice	R
RE15-10-8004	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8004	1	POLY	H3	Ice	R
RE15-10-8009	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8009	1	POLY	H3	Ice	R
RE15-10-8003	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8003	1	POLY	H3	Ice	R
RE15-10-8007	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8007	1	POLY	H3	Ice	R
RE15-10-8007	1	POLY	AM241+GS+ISOPU+ISO U	None	R

Tuesday, February 23, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2011

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-8002	1	POLY	H3	Ice	R
RE15-10-8010	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8010	1	POLY	H3	Ice	R
RE15-10-8006	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8006	1	POLY	H3	Ice	R
RE15-10-8001	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8001	1	POLY	H3	Ice	R
RE15-10-8012	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8012	1	POLY	H3	Ice	R
RE15-10-8008	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8008	1	POLY	H3	Ice	R
RE15-10-8005	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8005	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

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: 10-2011
Per Agreement Number: 126310011
Project Cost Code: MR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/23/2010
TURNAROUND/REPORT DUE: 3/26/2010
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background
LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:
Signature: 

PRIORITY	METHOD CODE	QNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:901.1						
		1	RE15-10-7893	R	2/18/2010	
		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	
		1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	

Tuesday, February 23, 2010

Page 2 of 5

REQUEST NUMBER: 10-2011

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	
		1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	
		1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	
	EPA:906.0	1	RE15-10-7893	R	2/18/2010	
		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	
		1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	
		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	
		1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	

Tuesday, February 23, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-906.0	1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	
	HASL-300:AM-241	1	RE15-10-7893	R	2/18/2010	
		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	
		1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	
		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	
		1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	
		1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	
	HASL-300:ISOPU	1	RE15-10-7893	R	2/18/2010	
		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	

Tuesday, February 23, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOPU	1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	
		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	
		1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	
		1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	
	HASL-300:ISOU	1	RE15-10-7893	R	2/18/2010	
		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	
		1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	
		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	

REQUEST NUMBER: 10-2011

Tuesday, February 23, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	
		1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	

Final Page of REQUEST NUMBER 10-2011



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: 247900
SDG: 10-2011

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: 10-2011
Enclosures

Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Work Order #: 247900
SDG: 10-2011

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Case Narrative

**Case Narrative for
Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Workorder #: 247900
SDG # : 10-2011**

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:

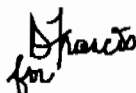
<u>Laboratory ID</u>	<u>Client ID</u>
247900001	RE15-10-7896
247900002	RE15-10-7894
247900003	RE15-10-7900
247900004	RE15-10-7898
247900005	RE15-10-7897
247900006	RE15-10-7895
247900007	RE15-10-7899
247900008	RE15-10-7893
247900009	RE15-10-8011
247900010	RE15-10-8004
247900011	RE15-10-8009
247900012	RE15-10-8003
247900013	RE15-10-8007
247900014	RE15-10-8002
247900015	RE15-10-8010
247900016	RE15-10-8006
247900017	RE15-10-8001
247900018	RE15-10-8012
247900019	RE15-10-8008
247900020	RE15-10-8005

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Radiochemistry.

I certify that this data report is in compliance with the terms and conditions of the subcontract and task order, both technically and for completeness, for other than the conditions detailed in the attached case narrative.



Valerie Davis

Project Manager

List of current GEL Certifications as of 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: 10-2011

LOS ALAMOS

REQUEST NUMBER: 10-2011

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:

247900%.

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-7896	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7896	1	POLY	H3	Ice	R
RE15-10-7894	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7894	1	POLY	H3	Ice	R
RE15-10-7900	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7900	1	POLY	H3	Ice	R
RE15-10-7898	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7898	1	POLY	H3	Ice	R
RE15-10-7897	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7897	1	POLY	H3	Ice	R
RE15-10-7895	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7895	1	POLY	H3	Ice	R
RE15-10-7899	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7899	1	POLY	H3	Ice	R
RE15-10-7893	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-7893	1	POLY	H3	Ice	R
RE15-10-8011	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8011	1	POLY	H3	Ice	R
RE15-10-8004	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8004	1	POLY	H3	Ice	R
RE15-10-8009	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8009	1	POLY	H3	Ice	R
RE15-10-8003	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8003	1	POLY	H3	Ice	R
RE15-10-8007	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8007	1	POLY	H3	Ice	R
RE15-10-8007	1	POLY	AM241+GS+ISOPU+ISO	None	R

Tuesday, February 23, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2011

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-8002	1	POLY	H3	Ice	R
RE15-10-8010	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8010	1	POLY	H3	Ice	R
RE15-10-8006	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8006	1	POLY	H3	Ice	R
RE15-10-8001	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8001	1	POLY	H3	Ice	R
RE15-10-8012	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8012	1	POLY	H3	Ice	R
RE15-10-8008	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8008	1	POLY	H3	Ice	R
RE15-10-8005	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8005	1	POLY	H3	Ice	R

Relinquished By:

Date

Time

Received By:

Date

Time

Printed Name

Signature

2/23/10

1400

Printed Name

Signature

Patricia Dwyer-Dent P.D. 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

REQUEST NUMBER: 10-2011

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: 10-2011

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

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:

PRIORITY	METHOD CODE	QNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1					
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		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	
		1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	

Tuesday, February 23, 2010

REQUEST NUMBER: 10-2011

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:901.1		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	
		1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	
		1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	
		1	RE15-10-7893	R	2/18/2010	
EPA:908.0		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	
		1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	
		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	
		1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	

Tuesday, February 23, 2010

REQUEST NUMBER: 10-2011

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:906.0	1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	
	HASL-300:AM-241	1	RE15-10-7893	R	2/18/2010	
		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	
		1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	
		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	
		1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	
		1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	
	HASL-300:ISOPU	1	RE15-10-7893	R	2/18/2010	
		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	

Tuesday, February 23, 2010

REQUEST NUMBER: 10-2011

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOPU	1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	
		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	
		1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	
		1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	
	HASL-300:ISOU	1	RE15-10-7893	R	2/18/2010	
		1	RE15-10-7894	R	2/18/2010	
		1	RE15-10-7895	R	2/18/2010	
		1	RE15-10-7896	R	2/18/2010	
		1	RE15-10-7897	R	2/18/2010	
		1	RE15-10-7898	R	2/18/2010	
		1	RE15-10-7899	R	2/18/2010	
		1	RE15-10-7900	R	2/18/2010	
		1	RE15-10-8001	R	2/18/2010	
		1	RE15-10-8002	R	2/18/2010	
		1	RE15-10-8003	R	2/18/2010	
		1	RE15-10-8004	R	2/18/2010	
		1	RE15-10-8005	R	2/18/2010	

REQUEST NUMBER: 10-2011

Tuesday, February 23, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE15-10-8006	R	2/18/2010	
		1	RE15-10-8007	R	2/18/2010	
		1	RE15-10-8008	R	2/18/2010	
		1	RE15-10-8009	R	2/18/2010	
		1	RE15-10-8010	R	2/18/2010	
		1	RE15-10-8011	R	2/18/2010	
		1	RE15-10-8012	R	2/18/2010	

Final Page of REQUEST NUMBER 10-2011



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL		SDG/ARCOC/Work Order: 10-2011	
Received By: Greg Tyler		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 ≤ 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

ORIGIN ID: SAFA (505) 655-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGS BLDG 1237 DPU 83
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 23FEB10
ACTWGT: 53.8 LB MAN
CAD: 0014176/CAFE2450
BILL SENDER

ORIGIN ID: SAFA (505) 655-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGS BLDG 1237 DPU 83
LOS ALAMOS, NM 87545
UNITED STATES US

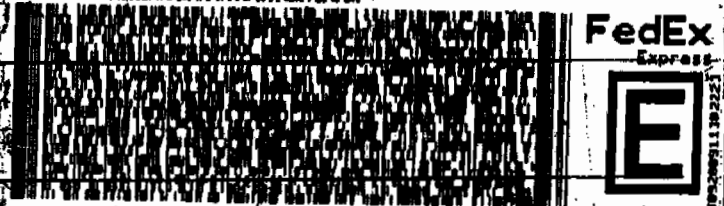
SHIP DATE: 23FEB10
ACTWGT: 55.8 LB MAN
CAD: 0014176/CAFE2450
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 68010AMR2A0515BYDO

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 68010AMR3A05529E00



2 of 2
MPSH 0263 7209 7850 1735
Matr# 7209 7850 1724 0201

WED - 24FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS

1 of 2
TRKH 0201 7209 7850 1746
NM MASTER NM

WED - 24FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS



LOS ALAMOS NATL LAB
TAGS BLDG 1237 DPU 83

ACTWGT: 53.8 LB MAN
CAD: 0014176/CAFE2450

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

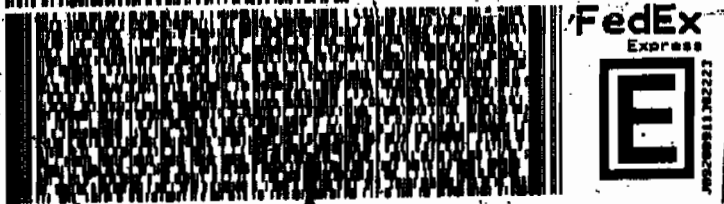
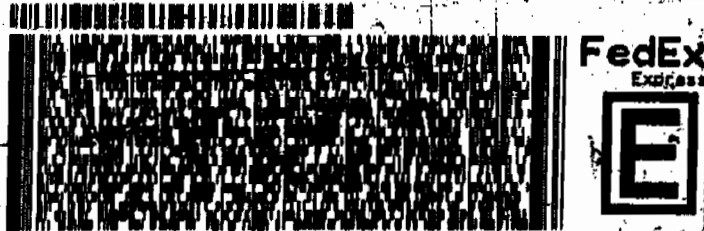
CHARLESTON SC 29407
(843) 556-8171
REF: 68010AMR3A05529E00

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGS BLDG 1237 DPU 83
LOS ALAMOS, NM 87545
UNITED STATES US

CAD: 0014176/CAFE2450
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 68010AMR3A05529E00



2 of 2
MPSH 0263 7209 7850 1779
Matr# 7209 7850 1768 0201

WED - 24FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS

1 of 2
TRKH 0201 7209 7850 1780
NM MASTER NM

WED - 24FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS



ORIGIN ID: SAFA (505) 665-8968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 23FEB10
ACTNGT: 57.8 LB MAN
CAD: 0014176/CAPE2450
BILL SENDER

ORIGIN ID: SAFA (505) 665-8968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 23FEB10
ACTNGT: 56.8 LB MAN
CAD: 0014176/CAPE2450
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

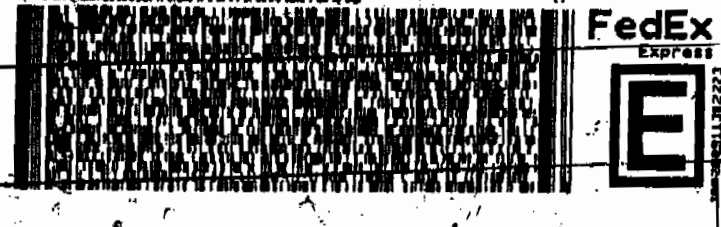
CHARLESTON SC 29407
(843) 566-8171
REF: 68010AMR01300M00

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 566-8171
REF: 68010AMR3A0223KY10

11°

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2 of 2
RPS# 7209 7850 1702
Matr# 7209 7850 1888 [0201]

WED - 24FEB A1
PRIORITY OVERNIGHT

TRK# 7209 7850 1713
[0201]

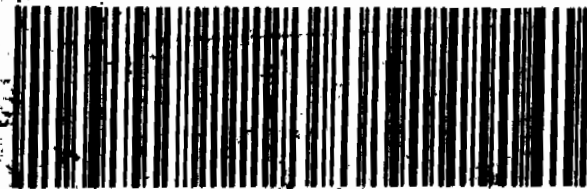
WED - 24FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS

XX CHSA

29407
SC-US
CHS



ORIGIN ID: SAFA (505) 665-8968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 23FEB10
ACTNGT: 49.8 LB MAN
CAD: 0014176/CAPE2450
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 566-8171
REF: 68010AMR2A0515BYD0

13°



1 of 2
TRK# 7209 7850 1724
[0201]
NM MASTER NM

WED - 24FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier Explanation

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

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Los Alamos National Laboratory (LANL)
SDG 10-2011**

Method/Analysis Information

Product: AM241
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 961694
Prep Batch Number: 957586

Sample ID	Client ID
247900001	RE15-10-7896
247900002	RE15-10-7894
247900003	RE15-10-7900
247900004	RE15-10-7898
247900005	RE15-10-7897
247900006	RE15-10-7895
247900007	RE15-10-7899
247900008	RE15-10-7893
247900009	RE15-10-8011
247900010	RE15-10-8004
247900012	RE15-10-8003
247900013	RE15-10-8007
247900014	RE15-10-8002
247900015	RE15-10-8010
247900016	RE15-10-8006
247900017	RE15-10-8001
247900018	RE15-10-8012
247900019	RE15-10-8008
247900020	RE15-10-8005
1202062741	Method Blank (MB)
1202062742	247900001(RE15-10-7896) Sample Duplicate (DUP)
1202062743	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 1202062741 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 247900001 (RE15-10-7896). The QC was from LANL work order 247900.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank result is less than 1.65 times the CSU.

Technical Information:**Holding Time**

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

Sample Re-prep/Re-analysis

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

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

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: AM241
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 967505
Prep Batch Number: 957586

Sample ID	Client ID
247900011	RE15-10-8009
1202076577	Method Blank (MB)
1202076578	248536015(RE11-10-1730) Sample Duplicate (DUP)
1202076579	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 1202076577 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248536015 (RE11-10-1730). The QC was from LANL work order 248536.

QC Information

Refer to Data Exception Report (DER).

CSU

The blank result is less than 1.65 times the CSU.

Technical Information:**Holding Time**

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

Sample Re-prep/Re-analysis

Sample 247900011 (RE15-10-8009) was 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. The following DER was generated for this SDG:

DER 808080 was generated due to Result is more negative than the three sigma TPU. 1. The Am241 result for sample 248536015 is more negative than three sigma TPU. 1. Sample 248536015 is the quality control sample and the duplicate confirms that there is no Am241 activity in the sample. Reporting results.

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population. Sample, 1202076579 (LCS), did not meet the client tracer yield requirements, however it is less than 110 percent and does meet the GEL standard tracer yield requirements.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	ISOPU
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	961696
Prep Batch Number:	957586

Sample ID	Client ID
247900001	RE15-10-7896
247900002	RE15-10-7894
247900003	RE15-10-7900
247900004	RE15-10-7898
247900005	RE15-10-7897
247900006	RE15-10-7895
247900007	RE15-10-7899
247900008	RE15-10-7893

247900009	RE15-10-8011
247900010	RE15-10-8004
247900011	RE15-10-8009
247900012	RE15-10-8003
247900013	RE15-10-8007
247900014	RE15-10-8002
247900015	RE15-10-8010
247900016	RE15-10-8006
247900017	RE15-10-8001
247900018	RE15-10-8012
247900019	RE15-10-8008
247900020	RE15-10-8005
1202062744	Method Blank (MB)
1202062745	247900001(RE15-10-7896) Sample Duplicate (DUP)
1202062746	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 1202062744 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 247900001 (RE15-10-7896). The QC was from LANL work order 247900.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The Pu-238 blank result is greater than 1.65 times the CSU but less than the MDC.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

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

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

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

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:	961697
Prep Batch Number:	957586

Sample ID	Client ID
247900001	RE15-10-7896
247900002	RE15-10-7894
247900003	RE15-10-7900
247900004	RE15-10-7898
247900005	RE15-10-7897
247900006	RE15-10-7895
247900007	RE15-10-7899
247900008	RE15-10-7893
247900009	RE15-10-8011
247900010	RE15-10-8004
247900011	RE15-10-8009
247900012	RE15-10-8003
247900013	RE15-10-8007
247900014	RE15-10-8002
247900015	RE15-10-8010
247900016	RE15-10-8006
247900017	RE15-10-8001

247900018	RE15-10-8012
247900019	RE15-10-8008
247900020	RE15-10-8005
1202062751	Method Blank (MB)
1202062752	247900001(RE15-10-7896) Sample Duplicate (DUP)
1202062753	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 1202062751 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 247900001 (RE15-10-7896). The QC was from LANL work order 247900.

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 1202062751 (MB), 247900009 (RE15-10-8011) and 247900010 (RE15-10-8004) were recounted due to high carrier/tracer yield.

Miscellaneous Information:

Data Exception (DER) Documentation

Data exception reports are generated to document any procedural anomalies that may deviate from referenced

SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population. Samples, 1202062751 (MB) and 247900010 (RE15-10-8004), did not meet the client tracer yield requirements, however it is less than 110 percent and does meet the GEL standard tracer yield requirements. Samples 247900011 (RE15-10-8009) and 247900013 (RE15-10-8007) 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:	GAMMA SPEC
Analytical Method:	DOE HASL 300, 4.5.2.3/Ga-01-R
Prep Method:	Dry Soil Prep
Analytical Batch Number:	957711
Prep Batch Number:	957586

Sample ID	Client ID
247900001	RE15-10-7896
247900002	RE15-10-7894
247900003	RE15-10-7900
247900004	RE15-10-7898
247900005	RE15-10-7897
247900006	RE15-10-7895
247900007	RE15-10-7899
247900008	RE15-10-7893
247900009	RE15-10-8011
247900010	RE15-10-8004
247900011	RE15-10-8009
247900012	RE15-10-8003
247900013	RE15-10-8007
247900014	RE15-10-8002
247900015	RE15-10-8010
247900016	RE15-10-8006
247900017	RE15-10-8001
247900018	RE15-10-8012
247900019	RE15-10-8008
247900020	RE15-10-8005

1202053644	Method Blank (MB)
1202053645	247900002(RE15-10-7894) Sample Duplicate (DUP)
1202053646	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, May 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: 247900002 (RE15-10-7894). The QC was from LANL work order 247900.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

Data Exception (DER) Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to a short half-life.	Bismuth-211	247900014	RE15-10-8002
		Cadmium-109	247900013	RE15-10-8007
UI	Data rejected due to interferencc.	Bismuth-211	247900001	RE15-10-7896
			247900002	RE15-10-7894
			247900003	RE15-10-7900
			247900004	RE15-10-7898
			247900005	RE15-10-7897
			247900006	RE15-10-7895
			247900007	RE15-10-7899
			247900008	RE15-10-7893
			247900009	RE15-10-8011
			247900010	RE15-10-8004
			247900011	RE15-10-8009
			247900012	RE15-10-8003
			247900013	RE15-10-8007
			247900015	RE15-10-8010
			247900016	RE15-10-8006
			247900017	RE15-10-8001
			247900018	RE15-10-8012
			247900019	RE15-10-8008
			247900020	RE15-10-8005
			1202053645	RE15-10-7894(247900002DUP)
		Cadmium-109	247900002	RE15-10-7894
			247900003	RE15-10-7900
			247900004	RE15-10-7898

	247900005	RE15-10-7897
	247900006	RE15-10-7895
	247900007	RE15-10-7899
	247900008	RE15-10-7893
	247900010	RE15-10-8004
	247900012	RE15-10-8003
	247900014	RE15-10-8002
	247900015	RE15-10-8010
	247900016	RE15-10-8006
	247900017	RE15-10-8001
	247900018	RE15-10-8012
	247900019	RE15-10-8008
	247900020	RE15-10-8005
	1202053645	RE15-10-7894(247900002DUP)
Radium-224	247900001	RE15-10-7896
	247900002	RE15-10-7894
	247900003	RE15-10-7900
	247900004	RE15-10-7898
	247900005	RE15-10-7897
	247900006	RE15-10-7895
	247900007	RE15-10-7899
	247900008	RE15-10-7893
	247900009	RE15-10-8011
	247900010	RE15-10-8004
	247900011	RE15-10-8009
	247900012	RE15-10-8003
	247900013	RE15-10-8007
	247900014	RE15-10-8002
	247900015	RE15-10-8010
	247900016	RE15-10-8006
	247900017	RE15-10-8001
	247900018	RE15-10-8012

UI	Data rejected due to low abundance.	Cadmium-109	247900019	RE15-10-8008
			247900020	RE15-10-8005
			1202053645	RE15-10-7894(247900002DUP)
		Cadmium-109	247900001	RE15-10-7896
		Cesium-134	247900001	RE15-10-7896
			247900002	RE15-10-7894
			247900003	RE15-10-7900
			247900004	RE15-10-7898
			247900005	RE15-10-7897
			247900006	RE15-10-7895
			247900008	RE15-10-7893
			247900010	RE15-10-8004
			247900012	RE15-10-8003
			247900013	RE15-10-8007
			247900014	RE15-10-8002
			247900016	RE15-10-8006
			247900017	RE15-10-8001
			247900019	RE15-10-8008
			247900020	RE15-10-8005
			1202053645	RE15-10-7894(247900002DUP)
		Mercury-203	247900020	RE15-10-8005
		Strontium-85	247900001	RE15-10-7896
			247900003	RE15-10-7900
			247900004	RE15-10-7898
			247900008	RE15-10-7893
			247900011	RE15-10-8009
			247900012	RE15-10-8003
			247900014	RE15-10-8002
			247900018	RE15-10-8012
			1202053645	RE15-10-7894(247900002DUP)
		Thorium-227	247900005	RE15-10-7897

Method/Analysis Information

Product: H3
Analytical Method: GL-RAD-A-002
Analytical Batch Number: 961540

Sample ID	Client ID
247900004	RE15-10-7898
247900006	RE15-10-7895
247900008	RE15-10-7893
247900011	RE15-10-8009
1202062409	Method Blank (MB)
1202062410	247920002(WSTPU-10-13410) Sample Duplicate (DUP)
1202062411	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. The initial Calibration was performed in August 2009.

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: 247920002 (WSTPU-10-13410). The QC was from LANL work order 247920.

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.

Method/Analysis Information

Product: H3
Analytical Method: GL-RAD-A-002
Analytical Batch Number: 961541

Sample ID	Client ID
247900001	RE15-10-7896
247900002	RE15-10-7894
247900003	RE15-10-7900
247900005	RE15-10-7897
247900007	RE15-10-7899
247900009	RE15-10-8011
247900010	RE15-10-8004
247900012	RE15-10-8003
247900013	RE15-10-8007
247900014	RE15-10-8002
247900015	RE15-10-8010
247900016	RE15-10-8006
247900017	RE15-10-8001
247900018	RE15-10-8012
247900019	RE15-10-8008
247900020	RE15-10-8005
1202062412	Method Blank (MB)

1202062413 248389003(WST16-10-13295) Sample Duplicate (DUP)
1202062414 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. The initial Calibration was performed in August 2009.

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: 248389003 (WST16-10-13295). The QC was from LANL work order 248389.

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:

Reviewer/Date: Shawn J. Amick 3/23/2010

DATA EXCEPTION REPORT

Mo. Day Yr. 23-MAR-10	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: ALPHA SPECTROMETER	Test / Method: DOE EML HASL-300, Am-05-RC Modified	Matrix Type: Solid	Client Code: LANL
Batch ID: 967505	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 247900(10-2011), 248536(10-2212)			
Application Issues: Result is more negative than the three sigma TPU			
Specification and Requirements Exception Description:		DER Disposition:	
1. The Am241 result for sample 248536015 is more negative than three sigma TPU.		1. Sample 248536015 is the quality control sample and the duplicate confirms that there is no Am241 activity in the sample. Reporting results.	

Originator's Name:

Joseph Moulden 23-MAR-10

Data Validator/Group Leader:

Kate Gellatly 23-MAR-10

SAMPLE DATA SUMMARY

GEL LABORATORIES LLC

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

Certificate of Analysis Report for

LANL010 Los Alamos National Laboratory (72733-001-09)

Client SDG: 10-2011 GEL Work Order: 247900

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: RE15-10-7896
Sample ID: 247900001
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 5.93%

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	-0.00145	0.0192	+/-0.00162	0.050	pCi/g		KXM4	03/19/10	2103	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0028	0.0244	+/-0.00655	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00757	0.0206	+/-0.00556	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.912	0.0666	+/-0.0777	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.0613	0.0407	+/-0.0146	0.100	pCi/g						
Uranium-238		1.23	0.0468	+/-0.0996	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.158	0.392	+/-0.125	0.200	pCi/g		MXR1	03/05/10	2337	957711	4
Bismuth-211	UI	5.61	0.315	+/-0.359		pCi/g						
Bismuth-214		1.62	0.105	+/-0.107	0.200	pCi/g						
Cadmium-109	UI	2.81	1.73	+/-0.565		pCi/g						
Cerium-139	U	0.00823	0.0505	+/-0.015	0.050	pCi/g						
Cesium-134	UI	0.0883	0.0812	+/-0.0253	0.100	pCi/g						
Cesium-137	U	-0.0212	0.0541	+/-0.0164	0.100	pCi/g						
Cobalt-60	U	-0.000128	0.0565	+/-0.0175	0.100	pCi/g						
Europium-152	U	0.0184	0.157	+/-0.0669	0.200	pCi/g						
Lanthanum-140	U	-0.0476	0.126	+/-0.0423		pCi/g						
Lead-212		2.38	0.0928	+/-0.153	0.100	pCi/g						
Lead-214		2.04	0.115	+/-0.142	0.100	pCi/g						
Mercury-203	U	0.0405	0.0678	+/-0.022	0.100	pCi/g						
Potassium-40		34.8	0.506	+/-1.88	1.00	pCi/g						
Radium-223	U	0.190	1.06	+/-0.353		pCi/g						
Radium-224	UI	6.50	0.994	+/-0.764		pCi/g						
Radium-226		1.62	0.105	+/-0.107		pCi/g						
Radium-228		2.59	0.215	+/-0.212	0.500	pCi/g						
Ruthenium-106	U	-0.0751	0.480	+/-0.149	0.800	pCi/g						
Sodium-22	U	-0.0221	0.0615	+/-0.0198	0.080	pCi/g						
Strontium-85	UI	0.140	0.0693	+/-0.0211		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: RE15-10-7896
Sample ID: 247900001
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"

Thallium-208		0.729	0.0547	+/-0.0546	0.080	pCi/g						
Thorium-227	U	-0.109	0.411	+/-0.121		pCi/g						
Thorium-231	U	0.190	1.06	+/-0.353		pCi/g						
Thorium-234		5.08	3.06	+/-1.39	2.00	pCi/g						
Tin-113	U	-0.00517	0.0718	+/-0.0214	0.100	pCi/g						
Uranium-235	U	0.159	0.341	+/-0.103	0.500	pCi/g						
Yttrium-88	U	-0.00233	0.0484	+/-0.015	0.100	pCi/g						

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium		522	104	+/-59.7	250	pCi/L	KXK2	03/12/10	2220	961541	5	
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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, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	GL-RAD-A-002

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	93.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	83.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	103	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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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:
Sample ID:

RE15-10-7896
247900001

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
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H Analytical holding time was exceeded

J Value is estimated

M M if above MDC and less than LLD

M Matrix Related Failure

N/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
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: RE15-10-7894
Sample ID: 247900002
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 26.9%

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	-0.00102	0.0208	+/-0.00203	0.050	pCi/g		KXM4	03/19/10	2103	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00171	0.0236	+/-0.00552	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00682	0.0199	+/-0.0049	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.05	0.0667	+/-0.0874	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.108	0.0407	+/-0.0192	0.100	pCi/g						
Uranium-238		1.82	0.0469	+/-0.140	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0368	0.0769	+/-0.0237	0.200	pCi/g		MXR1	03/05/10	2338	957711	4
Bismuth-211	UI	3.55	0.250	+/-0.226		pCi/g						
Bismuth-214		1.23	0.100	+/-0.0968	0.200	pCi/g						
Cadmium-109	UI	3.25	0.713	+/-0.356		pCi/g						
Cerium-139	U	-0.0185	0.0356	+/-0.0109	0.050	pCi/g						
Cesium-134	UI	0.0815	0.0783	+/-0.0315	0.100	pCi/g						
Cesium-137	U	0.0364	0.0655	+/-0.0197	0.100	pCi/g						
Cobalt-60	U	-0.0111	0.0515	+/-0.0159	0.100	pCi/g						
Europium-152	U	-0.0115	0.124	+/-0.0376	0.200	pCi/g						
Lanthanum-140	U	-0.00335	0.112	+/-0.040		pCi/g						
Lead-212		1.61	0.0699	+/-0.0922	0.100	pCi/g						
Lead-214		1.29	0.0932	+/-0.0893	0.100	pCi/g						
Mercury-203	U	0.0275	0.0484	+/-0.015	0.100	pCi/g						
Potassium-40		24.4	0.559	+/-1.30	1.00	pCi/g						
Radium-223	U	-0.123	0.793	+/-0.265		pCi/g						
Radium-224	UI	3.78	0.750	+/-0.453		pCi/g						
Radium-226		1.23	0.100	+/-0.0968		pCi/g						
Radium-228		1.86	0.201	+/-0.185	0.500	pCi/g						
Ruthenium-106	U	-0.0499	0.422	+/-0.131	0.800	pCi/g						
Sodium-22	U	-0.0372	0.0582	+/-0.0199	0.080	pCi/g						
Strontium-85	U	0.0449	0.0508	+/-0.0157		pCi/g						
Thallium-208		0.514	0.0482	+/-0.0416	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: RE15-10-7894
Sample ID: 247900002
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	-0.025	0.321	+/-0.0989		pCi/g						
Thorium-231	U	-0.123	0.793	+/-0.265		pCi/g						
Thorium-234		2.08	0.775	+/-0.439	2.00	pCi/g						
Tin-113	U	-0.0163	0.0551	+/-0.0167	0.100	pCi/g						
Uranium-235	U	0.00341	0.245	+/-0.0754	0.500	pCi/g						
Yttrium-88	U	0.00471	0.0478	+/-0.0143	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		328	106	+/-48.0	250	pCi/L		KXK2	03/12/10	2358	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	84.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	100	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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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: RE15-10-7894
Sample ID: 247900002

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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: RE15-10-7900
Sample ID: 247900003
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 8.17%

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	0.00247	0.021	+/-0.00189	0.050	pCi/g		KXM4	03/19/10	2103	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.000327	0.0271	+/-0.00385	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.0113	0.0229	+/-0.00583	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.02	0.0631	+/-0.084	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.0884	0.0385	+/-0.0172	0.100	pCi/g						
Uranium-238		1.28	0.0443	+/-0.102	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0124	0.202	+/-0.0632	0.200	pCi/g		MXR1	03/05/10	2338	957711	4
Bismuth-211	UI	3.69	0.189	+/-0.173		pCi/g						
Bismuth-214		1.22	0.061	+/-0.0692	0.200	pCi/g						
Cadmium-109	UI	3.83	0.788	+/-0.387		pCi/g						
Cerium-139	U	0.0108	0.0306	+/-0.00846	0.050	pCi/g						
Cesium-134	UI	0.0976	0.0499	+/-0.0183	0.100	pCi/g						
Cesium-137	U	0.0139	0.036	+/-0.0102	0.100	pCi/g						
Cobalt-60	U	-0.0335	0.0323	+/-0.011	0.100	pCi/g						
Europium-152	U	-0.0507	0.0884	+/-0.030	0.200	pCi/g						
Lanthanum-140	U	0.00256	0.0776	+/-0.025		pCi/g						
Lead-212		1.69	0.0519	+/-0.0692	0.100	pCi/g						
Lead-214		1.34	0.0689	+/-0.0727	0.100	pCi/g						
Mercury-203	U	0.0274	0.0379	+/-0.0122	0.100	pCi/g						
Potassium-40		29.2	0.295	+/-1.20	1.00	pCi/g						
Radium-223	U	-0.0943	0.585	+/-0.203		pCi/g						
Radium-224	UI	4.17	0.555	+/-0.381		pCi/g						
Radium-226		1.22	0.061	+/-0.0692		pCi/g						
Radium-228		1.78	0.121	+/-0.146	0.500	pCi/g						
Ruthenium-106	U	0.029	0.276	+/-0.0829	0.800	pCi/g						
Sodium-22	U	-0.0295	0.0365	+/-0.0119	0.080	pCi/g						
Strontium-85	UI	0.0999	0.042	+/-0.0125		pCi/g						
Thallium-208		0.535	0.0318	+/-0.0294	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7900
Sample ID: 247900003

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	-0.0461	0.234	+/-0.0691		pCi/g					
Thorium-231	U	-0.0943	0.585	+/-0.203		pCi/g					
Thorium-234	U	1.27	1.59	+/-0.693	2.00	pCi/g					
Tin-113	U	0.00405	0.0412	+/-0.0118	0.100	pCi/g					
Uranium-235	U	0.00731	0.204	+/-0.0633	0.500	pCi/g					
Yttrium-88	U	-0.00898	0.0276	+/-0.0103	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium		389	104	+/-51.2	250	pCi/L		KXK2	03/13/10	0136 961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	81.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	104	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7900
Sample ID: 247900003

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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.
UJ 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: RE15-10-7898
Sample ID: 247900004
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 15.4%

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	-0.000366	0.0214	+/-0.00146	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00109	0.0202	+/-0.00188	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00389	0.0171	+/-0.00342	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.23	0.0678	+/-0.169	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.205	0.0414	+/-0.0284	0.100	pCi/g						
Uranium-238		10.5	0.0477	+/-0.732	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.123	0.156	+/-0.0491	0.200	pCi/g		MXR1	03/05/10	2338	957711	4
Bismuth-211	UI	4.37	0.220	+/-0.267		pCi/g						
Bismuth-214		1.35	0.077	+/-0.0924	0.200	pCi/g						
Cadmium-109	UI	4.32	0.928	+/-0.424		pCi/g						
Cerium-139	U	-0.00147	0.0358	+/-0.011	0.050	pCi/g						
Cesium-134	UI	0.0899	0.0633	+/-0.0216	0.100	pCi/g						
Cesium-137		0.0444	0.042	+/-0.0154	0.100	pCi/g						
Cobalt-60	U	0.00883	0.0425	+/-0.0128	0.100	pCi/g						
Europium-152	U	0.0337	0.109	+/-0.0384	0.200	pCi/g						
Lanthanum-140	U	-0.0127	0.0953	+/-0.0301		pCi/g						
Lead-212		1.96	0.0661	+/-0.114	0.100	pCi/g						
Lead-214		1.59	0.080	+/-0.106	0.100	pCi/g						
Mercury-203	U	0.0381	0.0419	+/-0.0222	0.100	pCi/g						
Potassium-40		26.2	0.307	+/-1.29	1.00	pCi/g						
Radium-223	U	0.168	0.713	+/-0.236		pCi/g						
Radium-224	UI	4.47	0.708	+/-0.474		pCi/g						
Radium-226		1.35	0.077	+/-0.0924		pCi/g						
Radium-228		2.27	0.149	+/-0.183	0.500	pCi/g						
Ruthenium-106	U	-0.185	0.348	+/-0.114	0.800	pCi/g						
Sodium-22	U	-0.0023	0.0492	+/-0.0153	0.080	pCi/g						
Strontium-85	UI	0.0724	0.0513	+/-0.016		pCi/g						
Thallium-208		0.644	0.0378	+/-0.0438	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7898
Sample ID: 247900004

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	-0.104	0.282	+/-0.0845		pCi/g						
Thorium-231	U	0.168	0.713	+/-0.236		pCi/g						
Thorium-234		9.23	1.35	+/-1.16	2.00	pCi/g						
Tin-113	U	-0.00173	0.0518	+/-0.0156	0.100	pCi/g						
Uranium-235	U	0.199	0.239	+/-0.101	0.500	pCi/g						
Yttrium-88	U	-0.0145	0.0282	+/-0.00988	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		22800	102	+/-1610	250	pCi/L		KXK2	03/11/10	1359	961540	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	99.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.7	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7898
247900004

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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: RE15-10-7897
Sample ID: 247900005
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 16.2%

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	0.00392	0.021	+/-0.00239	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00786	0.0204	+/-0.00489	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.0102	0.0172	+/-0.00579	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		5.00	0.0759	+/-0.363	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.669	0.0464	+/-0.0658	0.100	pCi/g						
Uranium-238		30.0	0.0534	+/-2.08	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.235	0.303	+/-0.0908	0.200	pCi/g		MXR1	03/05/10	2339	957711	4
Bismuth-211	UI	3.14	0.231	+/-0.184		pCi/g						
Bismuth-214		0.955	0.0775	+/-0.0687	0.200	pCi/g						
Cadmium-109	UI	4.20	1.23	+/-0.573		pCi/g						
Cerium-139	U	0.00951	0.0396	+/-0.0128	0.050	pCi/g						
Cesium-134	UI	0.0629	0.0627	+/-0.0282	0.100	pCi/g						
Cesium-137		0.176	0.0461	+/-0.0304	0.100	pCi/g						
Cobalt-60	U	0.00559	0.0425	+/-0.0127	0.100	pCi/g						
Europium-152	U	-0.0294	0.114	+/-0.0405	0.200	pCi/g						
Lanthanum-140	U	-0.054	0.0894	+/-0.0295		pCi/g						
Lead-212		1.35	0.0672	+/-0.0604	0.100	pCi/g						
Lead-214		1.14	0.0841	+/-0.0738	0.100	pCi/g						
Mercury-203	U	0.0141	0.047	+/-0.0148	0.100	pCi/g						
Potassium-40		20.7	0.358	+/-0.958	1.00	pCi/g						
Radium-223	U	-0.296	0.760	+/-0.256		pCi/g						
Radium-224	UI	3.71	0.720	+/-0.426		pCi/g						
Radium-226		0.955	0.0775	+/-0.0687		pCi/g						
Radium-228		1.42	0.153	+/-0.137	0.500	pCi/g						
Ruthenium-106	U	0.0527	0.366	+/-0.108	0.800	pCi/g						
Sodium-22	U	-0.0232	0.0507	+/-0.0162	0.080	pCi/g						
Strontium-85	U	0.0443	0.0464	+/-0.0143		pCi/g						
Thallium-208		0.428	0.0388	+/-0.0313	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7897
Sample ID: 247900005

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	UI	0.343	0.329	+/-0.124		pCi/g						
Thorium-231	U	-0.296	0.760	+/-0.256		pCi/g						
Thorium-234		29.7	2.36	+/-2.98	2.00	pCi/g						
Tin-113	U	-0.0139	0.0522	+/-0.0153	0.100	pCi/g						
Uranium-235		0.269	0.266	+/-0.100	0.500	pCi/g						
Yttrium-88	U	0.0051	0.0313	+/-0.0104	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		1.54E+05	221	+/-10800	250	pCi/L		KXK2	03/13/10	0314	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	85.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	84.3	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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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: RE15-10-7897 Project: LANL01004
Sample ID: 247900005 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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: RE15-10-7895
Sample ID: 247900006
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 9.86%

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	-0.00141	0.0217	+/-0.00183	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00497	0.0204	+/-0.00557	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00853	0.0172	+/-0.00438	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.24	0.0663	+/-0.100	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.0669	0.0405	+/-0.0158	0.100	pCi/g						
Uranium-238		2.27	0.0466	+/-0.171	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.00161	0.0619	+/-0.020	0.200	pCi/g		MXR1	03/05/10	2339	957711	4
Bismuth-211	UI	5.53	0.224	+/-0.342		pCi/g						
Bismuth-214		1.45	0.0849	+/-0.112	0.200	pCi/g						
Cadmium-109	UI	5.18	0.585	+/-0.390		pCi/g						
Cerium-139	U	-0.00608	0.0321	+/-0.00947	0.050	pCi/g						
Cesium-134	UI	0.141	0.0809	+/-0.0253	0.100	pCi/g						
Cesium-137		0.0567	0.0553	+/-0.0241	0.100	pCi/g						
Cobalt-60	U	0.00653	0.0543	+/-0.0163	0.100	pCi/g						
Europium-152	U	-0.00509	0.112	+/-0.0398	0.200	pCi/g						
Lanthanum-140	U	0.0293	0.0941	+/-0.0303		pCi/g						
Lead-212		2.38	0.0603	+/-0.143	0.100	pCi/g						
Lead-214		2.01	0.0817	+/-0.136	0.100	pCi/g						
Mercury-203	U	0.0326	0.0473	+/-0.0156	0.100	pCi/g						
Potassium-40		33.8	0.396	+/-1.59	1.00	pCi/g						
Radium-223	U	-0.0986	0.731	+/-0.243		pCi/g						
Radium-224	UI	6.15	0.647	+/-0.595		pCi/g						
Radium-226		1.45	0.0849	+/-0.112		pCi/g						
Radium-228		2.35	0.193	+/-0.189	0.500	pCi/g						
Ruthenium-106	U	-0.143	0.401	+/-0.121	0.800	pCi/g						
Sodium-22	U	-0.0268	0.0577	+/-0.0184	0.080	pCi/g						
Strontium-85	U	0.0309	0.0481	+/-0.0158		pCi/g						
Thallium-208		0.684	0.0461	+/-0.0502	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7895
Sample ID: 247900006

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	-0.0981	0.280	+/-0.0873		pCi/g						
Thorium-231	U	-0.0986	0.731	+/-0.243		pCi/g						
Thorium-234		4.23	0.598	+/-0.530	2.00	pCi/g						
Tin-113	U	-0.0361	0.0548	+/-0.017	0.100	pCi/g						
Uranium-235	U	0.0783	0.222	+/-0.0654	0.500	pCi/g						
Yttrium-88	U	0.0128	0.0464	+/-0.0133	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		875	101	+/-80.2	250	pCi/L		KXX2	03/11/10	1556	961540	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	97.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	98.5	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7895
Sample ID: 247900006

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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: RE15-10-7899
Sample ID: 247900007
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 18.4%

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	0.0135	0.0203	+/-0.0044	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00196	0.0203	+/-0.00243	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240		0.0341	0.0172	+/-0.00767	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		3.26	0.0744	+/-0.242	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.245	0.0454	+/-0.0338	0.100	pCi/g						
Uranium-238		7.13	0.0523	+/-0.508	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0667	0.128	+/-0.0401	0.200	pCi/g		MXR1	03/06/10	1459	957711	4
Bismuth-211	UI	3.91	0.360	+/-0.287		pCi/g						
Bismuth-214		1.32	0.131	+/-0.103	0.200	pCi/g						
Cadmium-109	UI	4.54	1.14	+/-0.584		pCi/g						
Cerium-139	U	-0.00728	0.0554	+/-0.0166	0.050	pCi/g						
Cesium-134	U	0.0872	0.0945	+/-0.0308	0.100	pCi/g						
Cesium-137		0.567	0.0705	+/-0.0549	0.100	pCi/g						
Cobalt-60	U	0.038	0.0754	+/-0.0209	0.100	pCi/g						
Europium-152	U	-0.108	0.176	+/-0.0676	0.200	pCi/g						
Lanthanum-140	U	-0.0852	0.126	+/-0.0453		pCi/g						
Lead-212		1.62	0.103	+/-0.104	0.100	pCi/g						
Lead-214		1.42	0.135	+/-0.111	0.100	pCi/g						
Mercury-203	U	0.0155	0.0733	+/-0.0208	0.100	pCi/g						
Potassium-40		24.6	0.550	+/-1.13	1.00	pCi/g						
Radium-223	U	-0.682	1.24	+/-0.381		pCi/g						
Radium-224	UI	4.48	1.11	+/-0.607		pCi/g						
Radium-226		1.32	0.131	+/-0.103		pCi/g						
Radium-228		1.58	0.241	+/-0.201	0.500	pCi/g						
Ruthenium-106	U	-0.00811	0.597	+/-0.182	0.800	pCi/g						
Sodium-22	U	-0.0296	0.0762	+/-0.025	0.080	pCi/g						
Strontium-85	U	0.0463	0.0762	+/-0.0244		pCi/g						
Thallium-208		0.539	0.0685	+/-0.0487	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:

RE15-10-7899
247900007

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	0.267	0.489	+/-0.136		pCi/g						
Thorium-231	U	-0.682	1.24	+/-0.381		pCi/g						
Thorium-234		7.40	1.23	+/-0.918	2.00	pCi/g						
Tin-113	U	-0.0165	0.0868	+/-0.0261	0.100	pCi/g						
Uranium-235	U	0.244	0.405	+/-0.118	0.500	pCi/g						
Yttrium-88	U	0.011	0.0537	+/-0.0151	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		651	104	+/-68.0	250	pCi/L		KXK2	03/13/10	0332	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	93.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	98.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	87.0	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Report Date: March 23, 2010

Client Sample ID: RE15-10-7899
Sample ID: 247900007

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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: RE15-10-7893
Sample ID: 247900008
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 28%

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	0.00512	0.0237	+/-0.00341	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0059	0.022	+/-0.00409	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.0121	0.0186	+/-0.00488	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.96	0.0647	+/-0.149	0.100	pCi/g		KXM4	03/19/10	1624	961697	3
Uranium-235/236		0.113	0.0395	+/-0.0211	0.100	pCi/g						
Uranium-238		6.21	0.0455	+/-0.439	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0461	0.125	+/-0.0393	0.200	pCi/g		MXR1	03/06/10	1459	957711	4
Bismuth-211	UI	3.90	0.450	+/-0.306		pCi/g						
Bismuth-214		1.26	0.148	+/-0.120	0.200	pCi/g						
Cadmium-109	UI	3.10	1.19	+/-0.551		pCi/g						
Cerium-139	U	-0.021	0.0561	+/-0.0164	0.050	pCi/g						
Cesium-134	UI	0.148	0.125	+/-0.0333	0.100	pCi/g						
Cesium-137		0.236	0.083	+/-0.0406	0.100	pCi/g						
Cobalt-60	U	0.0359	0.0903	+/-0.0254	0.100	pCi/g						
Europium-152	U	-0.0309	0.202	+/-0.0619	0.200	pCi/g						
Lanthanum-140	U	0.0655	0.203	+/-0.0579		pCi/g						
Lead-212		1.55	0.105	+/-0.101	0.100	pCi/g						
Lead-214		1.41	0.157	+/-0.118	0.100	pCi/g						
Mercury-203	U	0.00179	0.0787	+/-0.0234	0.100	pCi/g						
Potassium-40		25.7	0.726	+/-1.45	1.00	pCi/g						
Radium-223	U	0.467	1.28	+/-0.428		pCi/g						
Radium-224	UI	3.16	1.12	+/-0.621		pCi/g						
Radium-226		1.26	0.148	+/-0.120		pCi/g						
Radium-228		1.76	0.300	+/-0.194	0.500	pCi/g						
Ruthenium-106	U	-0.193	0.660	+/-0.206	0.800	pCi/g						
Sodium-22	U	0.0135	0.0913	+/-0.0267	0.080	pCi/g						
Strontium-85	UI	0.108	0.0901	+/-0.027		pCi/g						
Thallium-208		0.522	0.0761	+/-0.0517	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7893
247900008

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	-0.264	0.491	+/-0.152		pCi/g						
Thorium-231	U	0.467	1.28	+/-0.428		pCi/g						
Thorium-234		5.75	1.23	+/-0.818	2.00	pCi/g						
Tin-113	U	-0.0162	0.0893	+/-0.0263	0.100	pCi/g						
Uranium-235		0.715	0.358	+/-0.202	0.500	pCi/g						
Yttrium-88	U	-0.0156	0.0521	+/-0.0172	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		827	102	+/-77.4	250	pCi/L		KXK2	03/11/10	1759	961540	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	80.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	94.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	104	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows:

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-7893 Project: LANL01004
Sample ID: 247900008 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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
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: RE15-10-8011
Sample ID: 247900009
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 14.7%

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	0.00638	0.0216	+/-0.00387	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00338	0.0224	+/-0.0024	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00987	0.019	+/-0.00525	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		2.79	0.149	+/-0.247	0.100	pCi/g		KXM4	03/20/10	2113	961697	3
Uranium-235/236		0.355	0.0923	+/-0.0574	0.100	pCi/g						
Uranium-238		15.5	0.106	+/-1.21	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0983	0.594	+/-0.191	0.200	pCi/g		MXR1	03/06/10	1459	957711	5
Bismuth-211	UI	4.06	0.449	+/-0.335		pCi/g						
Bismuth-214		1.35	0.137	+/-0.121	0.200	pCi/g						
Cadmium-109	U	2.26	2.31	+/-0.744		pCi/g						
Cerium-139	U	0.0234	0.0701	+/-0.0205	0.050	pCi/g						
Cesium-134	U	0.0767	0.106	+/-0.0289	0.100	pCi/g						
Cesium-137	U	0.0613	0.0766	+/-0.0269	0.100	pCi/g						
Cobalt-60	U	0.0259	0.0807	+/-0.0234	0.100	pCi/g						
Europium-152	U	-0.0462	0.212	+/-0.078	0.200	pCi/g						
Lanthanum-140	U	-0.00596	0.183	+/-0.0592		pCi/g						
Lead-212		1.81	0.121	+/-0.129	0.100	pCi/g						
Lead-214		1.47	0.161	+/-0.128	0.100	pCi/g						
Mercury-203	U	0.0648	0.0892	+/-0.0279	0.100	pCi/g						
Potassium-40		31.6	0.666	+/-1.83	1.00	pCi/g						
Radium-223	U	-1.12	1.42	+/-0.454		pCi/g						
Radium-224	UI	4.07	1.30	+/-0.898		pCi/g						
Radium-226		1.35	0.137	+/-0.121		pCi/g						
Radium-228		1.79	0.308	+/-0.219	0.500	pCi/g						
Ruthenium-106	U	0.106	0.613	+/-0.183	0.800	pCi/g						
Sodium-22	U	-0.0398	0.0917	+/-0.0302	0.080	pCi/g						
Strontium-85	U	0.0799	0.0927	+/-0.0259		pCi/g						
Thallium-208		0.531	0.0736	+/-0.0602	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8011
Sample ID: 247900009

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	-0.224	0.548	+/-0.164		pCi/g						
Thorium-231	U	-1.12	1.42	+/-0.454		pCi/g						
Thorium-234		12.2	4.44	+/-2.56	2.00	pCi/g						
Tin-113	U	0.00337	0.0939	+/-0.0277	0.100	pCi/g						
Uranium-235	U	0.286	0.462	+/-0.154	0.500	pCi/g						
Yttrium-88	U	0.044	0.0828	+/-0.0219	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		28100	109	+/-1980	250	pCi/L		KXK2	03/13/10	0625	961541	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE 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"	87.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	91.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.1	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8011
247900009

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: RE15-10-8004
Sample ID: 247900010
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 11.8%

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	0.00137	0.0205	+/-0.00209	0.050	pCi/g		KXM4	03/19/10	2128	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00669	0.0222	+/-0.00337	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00261	0.0188	+/-0.00336	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.950	0.133	+/-0.100	0.100	pCi/g		KXM4	03/20/10	2113	961697	3
Uranium-235/236	U	0.0579	0.082	+/-0.0198	0.100	pCi/g						
Uranium-238		2.48	0.0937	+/-0.218	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00484	0.112	+/-0.0335	0.200	pCi/g		MXR1	03/06/10	1500	957711	5
Bismuth-211	UI	4.27	0.334	+/-0.297		pCi/g						
Bismuth-214		1.57	0.132	+/-0.120	0.200	pCi/g						
Cadmium-109	UI	4.77	0.971	+/-0.513		pCi/g						
Cerium-139	U	-0.0368	0.0481	+/-0.0148	0.050	pCi/g						
Cesium-134	UI	0.117	0.114	+/-0.0564	0.100	pCi/g						
Cesium-137	U	0.0131	0.0837	+/-0.025	0.100	pCi/g						
Cobalt-60	U	-0.0195	0.0732	+/-0.0228	0.100	pCi/g						
Europium-152	U	0.0541	0.176	+/-0.0523	0.200	pCi/g						
Lanthanum-140	U	-0.05	0.175	+/-0.0566		pCi/g						
Lead-212		1.89	0.0926	+/-0.113	0.100	pCi/g						
Lead-214		1.55	0.122	+/-0.116	0.100	pCi/g						
Mercury-203	U	-0.0245	0.0663	+/-0.0192	0.100	pCi/g						
Potassium-40		31.5	0.669	+/-1.73	1.00	pCi/g						
Radium-223	U	-0.141	1.14	+/-0.372		pCi/g						
Radium-224	UI	5.60	0.993	+/-0.763		pCi/g						
Radium-226		1.57	0.132	+/-0.120		pCi/g						
Radium-228		2.04	0.278	+/-0.217	0.500	pCi/g						
Ruthenium-106	U	0.264	0.599	+/-0.169	0.800	pCi/g						
Sodium-22	U	-0.0292	0.0889	+/-0.029	0.080	pCi/g						
Strontium-85	U	0.0392	0.0734	+/-0.0229		pCi/g						
Thallium-208		0.577	0.0731	+/-0.0526	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8004
Sample ID: 247900010

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	0.187	0.438	+/-0.126		pCi/g						
Thorium-231	U	-0.141	1.14	+/-0.372		pCi/g						
Thorium-234		2.77	1.09	+/-0.571	2.00	pCi/g						
Tin-113	U	-0.024	0.0796	+/-0.0238	0.100	pCi/g						
Uranium-235	U	0.146	0.350	+/-0.0993	0.500	pCi/g						
Yttrium-88	U	0.00735	0.0625	+/-0.0183	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		2060	112	+/-166	250	pCi/L		KXX2	03/13/10	0803	961541	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE EML HASL-300, U-02-RC Modified
5	DOE 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"	92.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	95.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	106 *	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > 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: RE15-10-8004
Sample ID: 247900010

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: RE15-10-8009
Sample ID: 247900011
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 23.5%

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	0.0196	0.0202	+/-0.00558	0.050	pCi/g		JXD2	03/22/10	2044	967505	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0035	0.0233	+/-0.00249	0.050	pCi/g		KXM4	03/19/10	2107	961696	3
Plutonium-239/240		0.0382	0.0197	+/-0.00913	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		18.1	0.144	+/-1.35	0.100	pCi/g		KXM4	03/19/10	1624	961697	4
Uranium-235/236		1.94	0.0879	+/-0.180	0.100	pCi/g						
Uranium-238		92.0	0.101	+/-6.76	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0886	0.578	+/-0.186	0.200	pCi/g		MXR1	03/06/10	1500	957711	5
Bismuth-211	UI	2.79	0.326	+/-0.215		pCi/g						
Bismuth-214		0.779	0.105	+/-0.0822	0.200	pCi/g						
Cadmium-109	U	-3.43	2.70	+/-1.21		pCi/g						
Cerium-139	U	0.0237	0.057	+/-0.0183	0.050	pCi/g						
Cesium-134	U	0.0615	0.0819	+/-0.0232	0.100	pCi/g						
Cesium-137		0.591	0.0615	+/-0.0427	0.100	pCi/g						
Cobalt-60	U	-0.00735	0.0515	+/-0.0162	0.100	pCi/g						
Europium-152	U	0.0206	0.159	+/-0.0556	0.200	pCi/g						
Lanthanum-140	U	0.0445	0.132	+/-0.0373		pCi/g						
Lead-212		1.18	0.092	+/-0.0642	0.100	pCi/g						
Lead-214		1.01	0.119	+/-0.0827	0.100	pCi/g						
Mercury-203	U	0.0234	0.0644	+/-0.019	0.100	pCi/g						
Potassium-40		23.3	0.479	+/-1.13	1.00	pCi/g						
Radium-223	U	-0.528	0.978	+/-0.317		pCi/g						
Radium-224	UI	3.05	0.985	+/-0.578		pCi/g						
Radium-226		0.779	0.105	+/-0.0822		pCi/g						
Radium-228		1.23	0.194	+/-0.146	0.500	pCi/g						
Ruthenium-106	U	0.0898	0.492	+/-0.149	0.800	pCi/g						
Sodium-22	U	0.00811	0.0597	+/-0.0179	0.080	pCi/g						
Strontium-85	UI	0.0745	0.0681	+/-0.0214		pCi/g						
Thallium-208		0.387	0.0542	+/-0.036	0.080	pCi/g						

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Report Date: March 23, 2010

Client Sample ID: RE15-10-8009
Sample ID: 247900011
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	0.154	0.475	+/-0.160		pCi/g						
Thorium-231	U	-0.528	0.978	+/-0.317		pCi/g						
Thorium-234		123	4.31	+/-11.5	2.00	pCi/g						
Tin-113	U	0.00227	0.068	+/-0.0201	0.100	pCi/g						
Uranium-235		2.01	0.417	+/-0.252	0.500	pCi/g						
Yttrium-88	U	-0.0133	0.0546	+/-0.0176	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		72900	161	+/-5130	250	pCi/L		KXK2	03/11/10	2002	961540	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"	90.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	92.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	45.1 *	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8009
247900011

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: RE15-10-8003
Sample ID: 247900012
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 24.7%

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	0.00554	0.0293	+/-0.0039	0.050	pCi/g		KXM4	03/20/10	1113	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00332	0.022	+/-0.00235	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.0116	0.0186	+/-0.00444	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		4.37	0.109	+/-0.342	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236		0.488	0.0666	+/-0.0598	0.100	pCi/g						
Uranium-238		25.1	0.0767	+/-1.85	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.235	0.351	+/-0.109	0.200	pCi/g		MXR1	03/06/10	1501	957711	4
Bismuth-211	UI	3.75	0.359	+/-0.236		pCi/g						
Bismuth-214		1.23	0.112	+/-0.0921	0.200	pCi/g						
Cadmium-109	UI	4.43	1.66	+/-0.754		pCi/g						
Cerium-139	U	0.00224	0.0603	+/-0.0176	0.050	pCi/g						
Cesium-134	UI	0.168	0.0951	+/-0.0321	0.100	pCi/g						
Cesium-137		0.187	0.0649	+/-0.0361	0.100	pCi/g						
Cobalt-60	U	-0.0239	0.0533	+/-0.0174	0.100	pCi/g						
Europium-152	U	-0.0207	0.177	+/-0.0593	0.200	pCi/g						
Lanthanum-140	U	-0.0184	0.133	+/-0.0419		pCi/g						
Lead-212		1.97	0.0958	+/-0.0924	0.100	pCi/g						
Lead-214		1.36	0.122	+/-0.0933	0.100	pCi/g						
Mercury-203	U	0.0512	0.0747	+/-0.023	0.100	pCi/g						
Potassium-40		29.0	0.587	+/-1.37	1.00	pCi/g						
Radium-223	U	0.448	1.14	+/-0.363		pCi/g						
Radium-224	UI	4.20	1.03	+/-0.636		pCi/g						
Radium-226		1.23	0.112	+/-0.0921		pCi/g						
Radium-228		2.07	0.207	+/-0.195	0.500	pCi/g						
Ruthenium-106	U	-0.295	0.477	+/-0.154	0.800	pCi/g						
Sodium-22	U	-0.0115	0.0653	+/-0.0201	0.080	pCi/g						
Strontium-85	UI	0.0789	0.0703	+/-0.0207		pCi/g						
Thallium-208		0.517	0.0579	+/-0.0391	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:
Sample ID:

RE15-10-8003
247900012

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	-0.102	0.463	+/-0.141		pCi/g						
Thorium-231	U	0.448	1.14	+/-0.363		pCi/g						
Thorium-234		25.6	2.76	+/-2.82	2.00	pCi/g						
Tin-113	U	-0.00924	0.0793	+/-0.0232	0.100	pCi/g						
Uranium-235		0.474	0.378	+/-0.178	0.500	pCi/g						
Yttrium-88	U	0.0257	0.0535	+/-0.0154	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		5300	109	+/-390	250	pCi/L		KXX2	03/13/10	0941	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	85.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	86.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	83.3	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8003
Sample ID: 247900012

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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: RE15-10-8007
Sample ID: 247900013
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 24.6%

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	0.0187	0.030	+/-0.00675	0.050	pCi/g		KXM4	03/20/10	1113	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00301	0.020	+/-0.00214	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240		0.0391	0.0169	+/-0.00798	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		21.1	0.229	+/-1.73	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236		1.72	0.140	+/-0.191	0.100	pCi/g						
Uranium-238		87.6	0.161	+/-7.02	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.188	0.338	+/-0.108	0.200	pCi/g		MXR1	03/06/10	1501	957711	4
Bismuth-211	UI	4.12	0.355	+/-0.350		pCi/g						
Bismuth-214		1.33	0.125	+/-0.117	0.200	pCi/g						
Cadmium-109	UI	4.95	1.83	+/-0.799		pCi/g						
Cerium-139	U	0.00466	0.0573	+/-0.0196	0.050	pCi/g						
Cesium-134	UI	0.124	0.107	+/-0.0287	0.100	pCi/g						
Cesium-137		0.620	0.0675	+/-0.0512	0.100	pCi/g						
Cobalt-60	U	0.00692	0.0624	+/-0.019	0.100	pCi/g						
Europium-152	U	-0.0158	0.176	+/-0.0569	0.200	pCi/g						
Lanthanum-140	U	-0.0786	0.134	+/-0.0553		pCi/g						
Lead-212		1.90	0.0982	+/-0.118	0.100	pCi/g						
Lead-214		1.50	0.129	+/-0.134	0.100	pCi/g						
Mercury-203	U	0.00944	0.0741	+/-0.0216	0.100	pCi/g						
Potassium-40		31.1	0.571	+/-1.62	1.00	pCi/g						
Radium-223	U	-0.223	1.20	+/-0.361		pCi/g						
Radium-224	UI	4.60	1.05	+/-0.734		pCi/g						
Radium-226		1.33	0.125	+/-0.117		pCi/g						
Radium-228		2.12	0.214	+/-0.212	0.500	pCi/g						
Ruthenium-106	U	-0.156	0.505	+/-0.164	0.800	pCi/g						
Sodium-22	U	-0.0161	0.0669	+/-0.0217	0.080	pCi/g						
Strontium-85	U	0.0537	0.0735	+/-0.0235		pCi/g						
Thallium-208		0.583	0.0568	+/-0.0521	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:

RE15-10-8007
247900013

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	-0.0107	0.498	+/-0.146		pCi/g						
Thorium-231	U	-0.223	1.20	+/-0.361		pCi/g						
Thorium-234		46.4	2.73	+/-4.40	2.00	pCi/g						
Tin-113	U	-0.0428	0.0786	+/-0.0249	0.100	pCi/g						
Uranium-235		1.03	0.396	+/-0.204	0.500	pCi/g						
Yttrium-88	U	0.00665	0.059	+/-0.0175	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		1510	106	+/-126	250	pCi/L		KXK2	03/13/10	1118	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	94.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	40.7 *	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8007
Sample ID: 247900013

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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: RE15-10-8002
Sample ID: 247900014
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 8.04%

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	-0.00182	0.0272	+/-0.00196	0.050	pCi/g		KXM4	03/20/10	1113	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00319	0.0212	+/-0.00226	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00478	0.0179	+/-0.00277	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.950	0.100	+/-0.0896	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236	U	0.0484	0.0613	+/-0.0174	0.100	pCi/g						
Uranium-238		1.41	0.0705	+/-0.124	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.122	0.247	+/-0.0784	0.200	pCi/g		MXR1	03/06/10	1502	957711	4
Bismuth-211	UI	5.14	0.322	+/-0.377		pCi/g						
Bismuth-214		1.52	0.113	+/-0.120	0.200	pCi/g						
Cadmium-109	UI	4.41	1.23	+/-0.540		pCi/g						
Cerium-139	U	-0.0257	0.0513	+/-0.0155	0.050	pCi/g						
Cesium-134	UI	0.0938	0.0819	+/-0.034	0.100	pCi/g						
Cesium-137	U	0.0484	0.0652	+/-0.0186	0.100	pCi/g						
Cobalt-60	U	0.0235	0.0647	+/-0.0188	0.100	pCi/g						
Europium-152	U	-0.0827	0.163	+/-0.0745	0.200	pCi/g						
Lanthanum-140	U	0.0891	0.136	+/-0.0411		pCi/g						
Lead-212		2.31	0.0966	+/-0.165	0.100	pCi/g						
Lead-214		1.87	0.117	+/-0.146	0.100	pCi/g						
Mercury-203	U	0.0391	0.0713	+/-0.0213	0.100	pCi/g						
Potassium-40		37.1	0.478	+/-1.89	1.00	pCi/g						
Radium-223	U	-0.0626	1.09	+/-0.369		pCi/g						
Radium-224	UI	5.37	1.04	+/-0.768		pCi/g						
Radium-226		1.52	0.113	+/-0.120		pCi/g						
Radium-228		2.07	0.221	+/-0.218	0.500	pCi/g						
Ruthenium-106	U	-0.127	0.492	+/-0.151	0.800	pCi/g						
Sodium-22	U	0.0134	0.0756	+/-0.0224	0.080	pCi/g						
Strontium-85	UI	0.141	0.0771	+/-0.0241		pCi/g						
Thallium-208		0.615	0.0539	+/-0.0513	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8002
247900014

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	0.188	0.455	+/-0.136		pCi/g						
Thorium-231	U	-0.0626	1.09	+/-0.369		pCi/g						
Thorium-234		2.82	2.06	+/-1.19	2.00	pCi/g						
Tin-113	U	-0.0305	0.0709	+/-0.022	0.100	pCi/g						
Uranium-235	U	-0.112	0.364	+/-0.111	0.500	pCi/g						
Yttrium-88	U	0.0301	0.0542	+/-0.0156	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		948	109	+/-89.1	250	pCi/L		KXK2	03/13/10	1256	961541	5

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	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"	93.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	94.5	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8002
Sample ID: 247900014

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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: RE15-10-8010
Sample ID: 247900015
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 10.6%

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	-0.00182	0.0266	+/-0.00192	0.050	pCi/g		KXM4	03/20/10	1113	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00491	0.0217	+/-0.00285	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.0119	0.0183	+/-0.00482	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		4.09	0.106	+/-0.320	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236		0.268	0.0645	+/-0.0402	0.100	pCi/g						
Uranium-238		11.2	0.0742	+/-0.833	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.118	0.425	+/-0.137	0.200	pCi/g		MXR1	03/06/10	1502	957711	4
Bismuth-211	UI	3.84	0.416	+/-0.299		pCi/g						
Bismuth-214		1.52	0.154	+/-0.116	0.200	pCi/g						
Cadmium-109	UI	5.05	1.88	+/-0.630		pCi/g						
Cerium-139	U	0.00523	0.0658	+/-0.0197	0.050	pCi/g						
Cesium-134	U	0.0927	0.113	+/-0.0357	0.100	pCi/g						
Cesium-137	U	0.0558	0.0926	+/-0.0265	0.100	pCi/g						
Cobalt-60	U	0.00213	0.0848	+/-0.026	0.100	pCi/g						
Europium-152	U	-0.0147	0.197	+/-0.0714	0.200	pCi/g						
Lanthanum-140	U	-0.0378	0.176	+/-0.0558		pCi/g						
Lead-212		2.13	0.113	+/-0.103	0.100	pCi/g						
Lead-214		1.39	0.150	+/-0.115	0.100	pCi/g						
Mercury-203	U	0.0294	0.0856	+/-0.0244	0.100	pCi/g						
Potassium-40		29.2	0.708	+/-1.51	1.00	pCi/g						
Radium-223	U	0.125	1.35	+/-0.452		pCi/g						
Radium-224	UI	5.48	1.21	+/-0.612		pCi/g						
Radium-226		1.52	0.154	+/-0.116		pCi/g						
Radium-228		2.19	0.284	+/-0.221	0.500	pCi/g						
Ruthenium-106	U	-0.169	0.589	+/-0.188	0.800	pCi/g						
Sodium-22	U	0.0379	0.107	+/-0.031	0.080	pCi/g						
Strontium-85	U	0.0406	0.0781	+/-0.0253		pCi/g						
Thallium-208		0.584	0.0726	+/-0.0517	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:

RE15-10-8010
247900015

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	0.148	0.545	+/-0.164		pCi/g						
Thorium-231	U	0.125	1.35	+/-0.452		pCi/g						
Thorium-234		13.3	3.28	+/-2.14	2.00	pCi/g						
Tin-113	U	0.0123	0.0957	+/-0.0281	0.100	pCi/g						
Uranium-235	U	0.253	0.413	+/-0.141	0.500	pCi/g						
Yttrium-88	U	-0.0282	0.0546	+/-0.0198	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		12200	108	+/-869	250	pCi/L		KXK2	03/13/10	1433	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	92.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	90.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.4	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8010
Sample ID: 247900015

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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: RE15-10-8006
Sample ID: 247900016
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 7.09%

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	-0.000892	0.0265	+/-0.00258	0.050	pCi/g		KXM4	03/20/10	1113	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00206	0.0244	+/-0.00918	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	-0.00162	0.0206	+/-0.00371	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.850	0.0975	+/-0.0816	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236		0.0641	0.0596	+/-0.0172	0.100	pCi/g						
Uranium-238		0.920	0.0686	+/-0.087	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0109	0.0863	+/-0.0281	0.200	pCi/g		MXR1	03/06/10	1502	957711	4
Bismuth-211	UI	5.31	0.340	+/-0.381		pCi/g						
Bismuth-214		1.70	0.136	+/-0.142	0.200	pCi/g						
Cadmium-109	UI	4.85	0.862	+/-0.452		pCi/g						
Cerium-139	U	-0.0275	0.0453	+/-0.0141	0.050	pCi/g						
Cesium-134	UI	0.161	0.110	+/-0.0381	0.100	pCi/g						
Cesium-137	U	-0.0292	0.0787	+/-0.0232	0.100	pCi/g						
Cobalt-60	U	0.0483	0.0866	+/-0.024	0.100	pCi/g						
Europium-152	U	-0.0518	0.165	+/-0.0502	0.200	pCi/g						
Lanthanum-140	U	-0.0364	0.171	+/-0.0563		pCi/g						
Lead-212		2.61	0.091	+/-0.164	0.100	pCi/g						
Lead-214		1.93	0.124	+/-0.148	0.100	pCi/g						
Mercury-203	U	-0.00267	0.0678	+/-0.0238	0.100	pCi/g						
Potassium-40		35.7	0.569	+/-1.85	1.00	pCi/g						
Radium-223	U	0.250	1.16	+/-0.375		pCi/g						
Radium-224	UI	6.47	0.977	+/-0.846		pCi/g						
Radium-226		1.70	0.136	+/-0.142		pCi/g						
Radium-228		2.43	0.294	+/-0.241	0.500	pCi/g						
Ruthenium-106	U	-0.156	0.584	+/-0.178	0.800	pCi/g						
Sodium-22	U	-0.0177	0.0943	+/-0.0295	0.080	pCi/g						
Strontium-85	U	0.0627	0.0743	+/-0.0232		pCi/g						
Thallium-208		0.788	0.0727	+/-0.0625	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8006
247900016

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	-0.263	0.407	+/-0.134		pCi/g						
Thorium-231	U	0.250	1.16	+/-0.375		pCi/g						
Thorium-234		2.45	0.892	+/-0.502	2.00	pCi/g						
Tin-113	U	0.00923	0.0792	+/-0.0233	0.100	pCi/g						
Uranium-235	U	0.149	0.326	+/-0.0948	0.500	pCi/g						
Yttrium-88	U	-0.023	0.0475	+/-0.0173	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		492	105	+/-57.9	250	pCi/L		KXK2	03/13/10	1611	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	93.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	86.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.9	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8006
Sample ID: 247900016

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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: RE15-10-8001
Sample ID: 247900017
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 29.4%

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	0.0186	0.0271	+/-0.00639	0.050	pCi/g		KXM4	03/20/10	1114	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00613	0.0228	+/-0.00424	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240		0.0479	0.0193	+/-0.0101	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		4.84	0.107	+/-0.375	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236		0.420	0.0651	+/-0.0541	0.100	pCi/g						
Uranium-238		20.3	0.0749	+/-1.49	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.107	0.300	+/-0.0982	0.200	pCi/g		MXR1	03/06/10	1522	957711	4
Bismuth-211	UI	4.61	0.328	+/-0.342		pCi/g						
Bismuth-214		1.42	0.129	+/-0.110	0.200	pCi/g						
Cadmium-109	UI	3.74	1.79	+/-0.594		pCi/g						
Cerium-139	U	-0.0355	0.0495	+/-0.0155	0.050	pCi/g						
Cesium-134	UI	0.117	0.0957	+/-0.0363	0.100	pCi/g						
Cesium-137		0.626	0.0615	+/-0.0489	0.100	pCi/g						
Cobalt-60	U	-0.0137	0.0552	+/-0.0181	0.100	pCi/g						
Europium-152	U	-0.0652	0.148	+/-0.0466	0.200	pCi/g						
Lanthanum-140	U	-0.0193	0.134	+/-0.043		pCi/g						
Lead-212		1.87	0.0943	+/-0.126	0.100	pCi/g						
Lead-214		1.67	0.119	+/-0.132	0.100	pCi/g						
Mercury-203	U	0.0418	0.0665	+/-0.0215	0.100	pCi/g						
Potassium-40		31.2	0.474	+/-1.63	1.00	pCi/g						
Radium-223	U	0.451	1.09	+/-0.365		pCi/g						
Radium-224	UI	4.80	1.01	+/-0.659		pCi/g						
Radium-226		1.42	0.129	+/-0.110		pCi/g						
Radium-228		1.80	0.240	+/-0.230	0.500	pCi/g						
Ruthenium-106	U	0.107	0.522	+/-0.155	0.800	pCi/g						
Sodium-22	U	-0.0138	0.0798	+/-0.0253	0.080	pCi/g						
Strontium-85	U	0.043	0.0659	+/-0.0206		pCi/g						
Thallium-208		0.576	0.0599	+/-0.0491	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8001
Sample ID: 247900017

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	0.000693	0.428	+/-0.131		pCi/g						
Thorium-231	U	0.451	1.09	+/-0.365		pCi/g						
Thorium-234		20.2	2.46	+/-2.23	2.00	pCi/g						
Tin-113	U	-0.000576	0.0766	+/-0.0225	0.100	pCi/g						
Uranium-235		0.417	0.330	+/-0.186	0.500	pCi/g						
Yttrium-88	U	0.00646	0.0671	+/-0.0231	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		5260	104	+/-386	250	pCi/L		KXK2	03/13/10	1748	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	90.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	88.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	90.9	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8001
247900017

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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: RE15-10-8012
Sample ID: 247900018
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 5.71%

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	-0.00184	0.0289	+/-0.00256	0.050	pCi/g		KXM4	03/20/10	1114	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00651	0.0196	+/-0.00483	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00337	0.0166	+/-0.00278	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.01	0.0989	+/-0.0936	0.100	pCi/g		KXM4	03/19/10	1829	961697	3
Uranium-235/236	U	0.052	0.0604	+/-0.0155	0.100	pCi/g						
Uranium-238		1.08	0.0695	+/-0.0991	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0638	0.318	+/-0.0908	0.200	pCi/g		MXR1	03/06/10	1700	957711	4
Bismuth-211	UI	4.47	0.377	+/-0.327		pCi/g						
Bismuth-214		1.38	0.125	+/-0.115	0.200	pCi/g						
Cadmium-109	UI	3.68	1.82	+/-0.582		pCi/g						
Cerium-139	U	0.00563	0.0585	+/-0.0165	0.050	pCi/g						
Cesium-134	U	0.0558	0.0949	+/-0.0263	0.100	pCi/g						
Cesium-137	U	-0.0139	0.067	+/-0.0203	0.100	pCi/g						
Cobalt-60	U	-0.00975	0.0754	+/-0.0231	0.100	pCi/g						
Europium-152	U	0.00658	0.186	+/-0.0627	0.200	pCi/g						
Lanthanum-140	U	-0.0846	0.158	+/-0.0547		pCi/g						
Lead-212		1.97	0.103	+/-0.120	0.100	pCi/g						
Lead-214		1.62	0.137	+/-0.127	0.100	pCi/g						
Mercury-203	U	0.0511	0.0846	+/-0.0267	0.100	pCi/g						
Potassium-40		31.0	0.604	+/-1.68	1.00	pCi/g						
Radium-223	U	0.164	1.28	+/-0.426		pCi/g						
Radium-224	UI	4.08	1.10	+/-0.585		pCi/g						
Radium-226		1.38	0.125	+/-0.115		pCi/g						
Radium-228		2.00	0.255	+/-0.246	0.500	pCi/g						
Ruthenium-106	U	0.0683	0.557	+/-0.161	0.800	pCi/g						
Sodium-22	U	0.0196	0.085	+/-0.0244	0.080	pCi/g						
Strontium-85	UI	0.0937	0.0824	+/-0.0248		pCi/g						
Thallium-208		0.584	0.0672	+/-0.0565	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:
Sample ID:

RE15-10-8012
247900018

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	-0.119	0.485	+/-0.144		pCi/g						
Thorium-231	U	0.164	1.28	+/-0.426		pCi/g						
Thorium-234	U	1.45	2.97	+/-0.848	2.00	pCi/g						
Tin-113	U	-0.0519	0.0794	+/-0.0256	0.100	pCi/g						
Uranium-235	U	0.0176	0.398	+/-0.114	0.500	pCi/g						
Yttrium-88	U	-0.00939	0.0502	+/-0.0167	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		8730	104	+/-627	250	pCi/L		KXK2	03/13/10	1926	961541	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	97.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	96.9	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8012
Sample ID: 247900018

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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: RE15-10-8008
Sample ID: 247900019
Matrix: R
Collect Date: 18-FEB-10
Receive Date: 24-FEB-10
Collector: Client
Moisture: 10.9%

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	-0.00182	0.0277	+/-0.002	0.050	pCi/g		KXM4	03/20/10	1114	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00513	0.0208	+/-0.00334	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240	U	0.00557	0.0176	+/-0.00385	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.17	0.0617	+/-0.0941	0.100	pCi/g		KXM4	03/18/10	0850	961697	3
Uranium-235/236		0.0541	0.0377	+/-0.0126	0.100	pCi/g						
Uranium-238		1.09	0.0434	+/-0.0884	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0153	0.327	+/-0.100	0.200	pCi/g		MXR1	03/06/10	1701	957711	4
Bismuth-211	UI	4.32	0.379	+/-0.375		pCi/g						
Bismuth-214		1.37	0.133	+/-0.116	0.200	pCi/g						
Cadmium-109	UI	3.87	1.35	+/-0.605		pCi/g						
Cerium-139	U	-0.00331	0.0575	+/-0.0171	0.050	pCi/g						
Cesium-134	UI	0.135	0.107	+/-0.0413	0.100	pCi/g						
Cesium-137	U	-0.013	0.0701	+/-0.0212	0.100	pCi/g						
Cobalt-60	U	0.0125	0.0807	+/-0.0239	0.100	pCi/g						
Europium-152	U	-0.113	0.173	+/-0.0563	0.200	pCi/g						
Lanthanum-140	U	0.070	0.148	+/-0.043		pCi/g						
Lead-212		2.18	0.107	+/-0.152	0.100	pCi/g						
Lead-214		1.57	0.138	+/-0.143	0.100	pCi/g						
Mercury-203	U	-0.0164	0.0713	+/-0.0209	0.100	pCi/g						
Potassium-40		30.7	0.546	+/-1.73	1.00	pCi/g						
Radium-223	U	0.0652	1.23	+/-0.406		pCi/g						
Radium-224	UI	5.46	1.15	+/-0.745		pCi/g						
Radium-226		1.37	0.133	+/-0.116		pCi/g						
Radium-228		2.24	0.252	+/-0.232	0.500	pCi/g						
Ruthenium-106	U	-0.267	0.552	+/-0.172	0.800	pCi/g						
Sodium-22	U	0.00257	0.0904	+/-0.0272	0.080	pCi/g						
Strontium-85	U	0.0338	0.0744	+/-0.0245		pCi/g						
Thallium-208		0.693	0.0709	+/-0.0575	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:
Sample ID:

RE15-10-8008
247900019

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	-0.00173	0.478	+/-0.137		pCi/g						
Thorium-231	U	0.0652	1.23	+/-0.406		pCi/g						
Thorium-234		2.62	2.58	+/-1.22	2.00	pCi/g						
Tin-113	U	-0.00998	0.0828	+/-0.0249	0.100	pCi/g						
Uranium-235	U	0.0958	0.392	+/-0.114	0.500	pCi/g						
Yttrium-88	U	0.0236	0.0657	+/-0.0178	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		272	105	+/-44.4	250	pCi/L		KXK2	03/13/10	2103	961541	5

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
5	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"	89.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	100	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID:
Sample ID:

RE15-10-8008
247900019

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/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: RE15-10-8005
Sample ID: 247900020
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	0.0146	0.0285	+/-0.00555	0.050	pCi/g		KXM4	03/20/10	1114	961694	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00666	0.0206	+/-0.00367	0.050	pCi/g		KXM4	03/19/10	2107	961696	2
Plutonium-239/240		0.0266	0.0174	+/-0.00746	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		6.82	0.0838	+/-0.493	0.100	pCi/g		KXM4	03/18/10	0850	961697	3
Uranium-235/236		0.756	0.0512	+/-0.0746	0.100	pCi/g						
Uranium-238		32.8	0.0589	+/-2.29	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.218	0.450	+/-0.145	0.200	pCi/g		MXR1	03/09/10	1136	957711	4
Bismuth-211	UI	5.09	0.433	+/-0.351		pCi/g						
Bismuth-214		1.49	0.147	+/-0.141	0.200	pCi/g						
Cadmium-109	UI	4.70	2.00	+/-0.684		pCi/g						
Cerium-139	U	-0.0284	0.0677	+/-0.0218	0.050	pCi/g						
Cesium-134	UI	0.139	0.130	+/-0.0521	0.100	pCi/g						
Cesium-137		0.503	0.0737	+/-0.0521	0.100	pCi/g						
Cobalt-60	U	0.0151	0.0865	+/-0.0256	0.100	pCi/g						
Europium-152	U	-0.067	0.201	+/-0.0654	0.200	pCi/g						
Lanthanum-140	U	-0.0675	0.187	+/-0.0641		pCi/g						
Lead-212		2.09	0.117	+/-0.124	0.100	pCi/g						
Lead-214		1.85	0.155	+/-0.137	0.100	pCi/g						
Mercury-203	UI	0.0946	0.0915	+/-0.0283	0.100	pCi/g						
Potassium-40		30.5	0.708	+/-1.72	1.00	pCi/g						
Radium-223	U	0.463	1.34	+/-0.445		pCi/g						
Radium-224	UI	5.98	1.26	+/-0.824		pCi/g						
Radium-226		1.49	0.147	+/-0.141		pCi/g						
Radium-228		2.44	0.262	+/-0.247	0.500	pCi/g						
Ruthenium-106	U	-0.104	0.694	+/-0.212	0.800	pCi/g						
Sodium-22	U	0.0209	0.0906	+/-0.0266	0.080	pCi/g						
Strontium-85	U	0.0825	0.0953	+/-0.0293		pCi/g						
Thallium-208		0.607	0.0719	+/-0.0605	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:
Sample ID:

RE15-10-8005
247900020

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	0.0894	0.568	+/-0.190		pCi/g						
Thorium-231	U	0.463	1.34	+/-0.445		pCi/g						
Thorium-234		42.4	3.53	+/-4.28	2.00	pCi/g						
Tin-113	U	0.0209	0.0991	+/-0.0298	0.100	pCi/g						
Uranium-235		0.859	0.419	+/-0.249	0.500	pCi/g						
Yttrium-88	U	-0.0188	0.0575	+/-0.0195	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		4590	106	+/-340	250	pCi/L		KXK2	03/13/10	2241	961541	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	DOE HASL 300, 4.5.2.3/Ga-01-R
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"	85.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	90.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	78.6	(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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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 23, 2010

Client Sample ID: RE15-10-8005 Project: LANL01004
Sample ID: 247900020 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.

QUALITY CONTROL DATA

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QC Summary

Report Date: March 23, 2010

Page 1 of 7

Client : Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm
Los Alamos, New Mexico
Contact: Ms. Joylene Valdez
Workorder: 247900

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	961694										
QC1202062742	247900001	DUP									
Americium-241	U	-0.00145	U	-0.00491	pCi/g	0.298		(0-1)	KXM4	03/20/10	11:14
	TPU:	+/-0.00162		+/-0.00419							
	Yield:	93.9		89.1							
QC1202062743	LCS										
Americium-241	33.2			29.3	pCi/g		88.5	(75%-125%)		03/20/10	11:14
	TPU:			+/-2.22							
	Yield:			98.2							
QC1202062741	MB										
Americium-241			U	0.00631	pCi/g					03/20/10	11:14
	TPU:			+/-0.00427							
	Yield:			79.7							
Batch	961696										
QC1202062745	247900001	DUP									
Plutonium-238	U	0.0028	U	0.0119	pCi/g	0.411		(0-1)	KXM4	03/19/10	21:07
	TPU:	+/-0.00655		+/-0.00456							
	Yield:	83.8		84.7							
Plutonium-239/240	U	0.00757	U	0.00313	pCi/g	0.232		(0-1)			
	TPU:	+/-0.00556		+/-0.00401							
	Yield:	83.8		84.7							
QC1202062746	LCS										
Plutonium-238				3.93	pCi/g			(75%-125%)			
	TPU:			+/-0.358							
	Yield:			89.1							
Plutonium-239/240	41.8			38.3	pCi/g		91.6	(75%-125%)			
	TPU:			+/-2.54							
	Yield:			89.1							
QC1202062744	MB										
Plutonium-238			U	0.00782	pCi/g					03/19/10	21:07
	TPU:			+/-0.00394							
	Yield:			89.5							
Plutonium-239/240			U	0.00446	pCi/g						
	TPU:			+/-0.00368							
	Yield:			89.5							
Batch	961697										
QC1202062752	247900001	DUP									
Uranium-233/234		0.912		1.09	pCi/g	0.517		(0-1)	KXM4	03/18/10	08:50
	TPU:	+/-0.0777		+/-0.0903							
	Yield:	103		98.6							
Uranium-235/236		0.0613		0.0908	pCi/g	0.457		(0-1)			
	TPU:	+/-0.0146		+/-0.0177							
	Yield:	103		98.6							
Uranium-238		1.23		1.34	pCi/g	0.263		(0-1)			
	TPU:	+/-0.0996		+/-0.108							

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QC Summary

Workorder: 247900

Page 2 of 7

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	961697										
QC1202062753	LCS	Yield:	103	98.6							
Uranium-233/234				6.01	pCi/g					03/18/1008:50	
		TPU:		+/-0.502							
Uranium-235/236		Yield:		102							
				0.302	pCi/g						
		TPU:		+/-0.0709							
Uranium-238	5.75	Yield:		102							
				5.45	pCi/g		94.8	(75%-125%)			
		TPU:		+/-0.461							
		Yield:		102							
QC1202062751	MB										
Uranium-233/234			U	0.00624	pCi/g					03/20/1021:14	
		TPU:		+/-0.00418							
Uranium-235/236		Yield:		108							
			U	0.00342	pCi/g						
		TPU:		+/-0.00343							
Uranium-238		Yield:		108							
			U	0.00276	pCi/g						
		TPU:		+/-0.00277							
		Yield:		108							
Batch	967505										
QC1202076578	248536015	DUP									
Americium-241		U	-0.0211	U	-0.000117	pCi/g	1.72	(0-1)	JXD2	03/22/1020:44	
		TPU:	+/-0.00481		+/-0.00131						
		Yield:	88.9		99.0						
QC1202076579	LCS										
Americium-241	33.1			29.2	pCi/g		88	(75%-125%)		03/22/1020:44	
		TPU:		+/-2.14							
		Yield:		107							
QC1202076577	MB										
Americium-241			U	0.000818	pCi/g					03/22/1020:44	
		TPU:		+/-0.0026							
		Yield:		78.4							
Rad Gamma Spec											
Batch	957711										
QC1202053645	247900002	DUP									
Americium-241		U	0.0368	U	0.0379	pCi/g	0.00497	(0-1)	MXR1	03/06/1017:03	
		TPU:	+/-0.0237		+/-0.089						
Bismuth-211		UI	3.55	UI	4.00	pCi/g	0.419	(0-1)			
		TPU:	+/-0.226		+/-0.312						
Bismuth-214			1.23		1.31	pCi/g	0.180	(0-1)			
		TPU:	+/-0.0968		+/-0.117						
Cadmium-109		UI	3.25	UI	2.72	pCi/g	0.284	(0-1)			
		TPU:	+/-0.356		+/-0.581						
Cerium-139		U	-0.0185	U	-0.0158	pCi/g	0.0488	(0-1)			
		TPU:	+/-0.0109		+/-0.0171						
Cesium-134		UI	0.0815	UI	0.141	pCi/g	0.407	(0-1)			
		TPU:	+/-0.0315		+/-0.0411						

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	957711										
Cesium-137	U	0.0364	U	0.0345	pCi/g	0.0234		(0-1)			
	TPU:	+/-0.0197		+/-0.0224							
Cobalt-60	U	-0.0111	U	0.021	pCi/g	0.416		(0-1)			
	TPU:	+/-0.0159		+/-0.0228							
Europium-152	U	-0.0115	U	-0.0779	pCi/g	0.352		(0-1)			
	TPU:	+/-0.0376		+/-0.0566							
Lanthanum-140	U	-0.00335	U	-0.0462	pCi/g	0.234		(0-1)			
	TPU:	+/-0.040		+/-0.0517							
Lead-212		1.61		1.47	pCi/g	0.357		(0-1)			
	TPU:	+/-0.0922		+/-0.105							
Lead-214		1.29		1.45	pCi/g	0.389		(0-1)			
	TPU:	+/-0.0893		+/-0.120							
Mercury-203	U	0.0275	U	-0.0259	pCi/g	0.715		(0-1)			
	TPU:	+/-0.015		+/-0.0224							
Potassium-40		24.4		27.0	pCi/g	0.461		(0-1)			
	TPU:	+/-1.30		+/-1.58							
Radium-223	U	-0.123	U	-0.187	pCi/g	0.0479		(0-1)			
	TPU:	+/-0.265		+/-0.402							
Radium-224	UI	3.78	UI	2.86	pCi/g	0.474		(0-1)			
	TPU:	+/-0.453		+/-0.517							
Radium-226		1.23		1.31	pCi/g	0.180		(0-1)			
	TPU:	+/-0.0968		+/-0.117							
Radium-228		1.86		1.89	pCi/g	0.0486		(0-1)			
	TPU:	+/-0.185		+/-0.186							
Ruthenium-106	U	-0.0499	U	0.454	pCi/g	0.797		(0-1)			
	TPU:	+/-0.131		+/-0.185							
Sodium-22	U	-0.0372	U	0.0339	pCi/g	0.795		(0-1)			
	TPU:	+/-0.0199		+/-0.0247							
Strontium-85	U	0.0449	UI	0.120	pCi/g	0.962		(0-1)			
	TPU:	+/-0.0157		+/-0.0234							
Thallium-208		0.514		0.500	pCi/g	0.0731		(0-1)			
	TPU:	+/-0.0416		+/-0.0487							
Thorium-227	U	-0.025	U	-0.207	pCi/g	0.379		(0-1)			
	TPU:	+/-0.0989		+/-0.141							
Thorium-231	U	-0.123	U	-0.187	pCi/g	0.0479		(0-1)			
	TPU:	+/-0.265		+/-0.402							
Thorium-234		2.08	U	0.898	pCi/g	0.473		(0-1)			
	TPU:	+/-0.439		+/-0.810							
Tin-113	U	-0.0163	U	-0.00381	pCi/g	0.146		(0-1)			
	TPU:	+/-0.0167		+/-0.0261							
Uranium-235	U	0.00341	U	-0.0185	pCi/g	0.0569		(0-1)			
	TPU:	+/-0.0754		+/-0.117							
Yttrium-88	U	0.00471	U	-0.0234	pCi/g	0.425		(0-1)			
	TPU:	+/-0.0143		+/-0.0187							
QC1202053646 LCS											
Americium-241	15.9			13.6	pCi/g		85.3 (75%-125%)			03/06/10	17:03
	TPU:			+/-0.590							
Bismuth-211				2.06	pCi/g						
	TPU:			+/-0.331							
Bismuth-214				0.753	pCi/g						
	TPU:			+/-0.112							

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QC Summary

Workorder: 247900

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Parinname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch	957711								
Cadmium-109			34.7	pCi/g					
	TPU:		+/-2.06						
Cerium-139		U	0.00438	pCi/g					
	TPU:		+/-0.0213						
Cesium-134		U	0.143	pCi/g					
	TPU:		+/-0.0456						
Cesium-137	5.55		5.98	pCi/g		108	(75%-125%)		
	TPU:		+/-0.300						
Cobalt-60	6.36		6.48	pCi/g		102	(75%-125%)		
	TPU:		+/-0.314						
Europium-152		U	0.103	pCi/g					
	TPU:		+/-0.0961						
Lanthanum-140		U	-0.0202	pCi/g					
	TPU:		+/-0.0415						
Lead-212			1.06	pCi/g					
	TPU:		+/-0.0879						
Lead-214			0.749	pCi/g					
	TPU:		+/-0.122						
Mercury-203		U	-0.0292	pCi/g					
	TPU:		+/-0.0299						
Potassium-40		U	0.787	pCi/g					
	TPU:		+/-0.279						
Radium-223		U	-0.835	pCi/g					
	TPU:		+/-0.572						
Radium-224			4.00	pCi/g					
	TPU:		+/-0.976						
Radium-226			0.753	pCi/g					
	TPU:		+/-0.112						
Radium-228			1.85	pCi/g					
	TPU:		+/-0.293						
Ruthenium-106		U	-0.0935	pCi/g					
	TPU:		+/-0.280						
Sodium-22		U	-0.0187	pCi/g					
	TPU:		+/-0.0218						
Strontium-85		U	-0.119	pCi/g					
	TPU:		+/-0.0375						
Thallium-208			0.358	pCi/g					
	TPU:		+/-0.0659						
Thorium-227		U	-0.051	pCi/g					
	TPU:		+/-0.204						
Thorium-231		U	-0.835	pCi/g					
	TPU:		+/-0.572						
Thorium-234		U	-0.371	pCi/g					
	TPU:		+/-0.808						
Tin-113		U	0.00797	pCi/g					
	TPU:		+/-0.0429						
Uranium-235		U	0.150	pCi/g					
	TPU:		+/-0.150						
Yttrium-88		U	0.0186	pCi/g					
	TPU:		+/-0.023						
QC1202053644	MB								

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QC Summary

Workorder: 247900

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Parname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Analst	Date Time
Rad Gamma Spec									
Batch	957711								
Americium-241		U	0.00113	pCi/g					
	TPU:		+/-0.0355						
Bismuth-211		U	0.0402	pCi/g					
	TPU:		+/-0.049						
Bismuth-214		U	-0.0325	pCi/g					
	TPU:		+/-0.0194						
Cadmium-109		U	0.0557	pCi/g					
	TPU:		+/-0.132						
Cerium-139		U	-0.0117	pCi/g					
	TPU:		+/-0.00589						
Cesium-134		U	-0.000999	pCi/g					
	TPU:		+/-0.00876						
Cesium-137		U	-0.00628	pCi/g					
	TPU:		+/-0.00955						
Cobalt-60		U	0.0027	pCi/g					
	TPU:		+/-0.00607						
Europium-152		U	0.0142	pCi/g					
	TPU:		+/-0.0188						
Lanthanum-140		U	0.0199	pCi/g					
	TPU:		+/-0.0144						
Lead-212		U	0.000231	pCi/g					
	TPU:		+/-0.0145						
Lead-214		U	0.0166	pCi/g					
	TPU:		+/-0.0179						
Mercury-203		U	-0.00822	pCi/g					
	TPU:		+/-0.00691						
Potassium-40		U	-0.0398	pCi/g					
	TPU:		+/-0.113						
Radium-223		U	0.0338	pCi/g					
	TPU:		+/-0.132						
Radium-224		U	-0.205	pCi/g					
	TPU:		+/-0.145						
Radium-226		U	-0.0325	pCi/g					
	TPU:		+/-0.0194						
Radium-228		U	0.00434	pCi/g					
	TPU:		+/-0.0313						
Ruthenium-106		U	-0.116	pCi/g					
	TPU:		+/-0.0726						
Sodium-22		U	0.00111	pCi/g					
	TPU:		+/-0.00769						
Strontium-85		U	-0.0461	pCi/g					
	TPU:		+/-0.014						
Thallium-208		U	-0.00856	pCi/g					
	TPU:		+/-0.00904						
Thorium-227		U	-0.0514	pCi/g					
	TPU:		+/-0.0475						
Thorium-231		U	0.0338	pCi/g					
	TPU:		+/-0.132						
Thorium-234		U	-0.568	pCi/g					
	TPU:		+/-0.340						

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	957711										
Tin-113			U	-0.0078	pCi/g						
		TPU:		+/-0.00781							
Uranium-235			U	0.0426	pCi/g						
		TPU:		+/-0.036							
Yttrium-88			U	-0.00146	pCi/g						
		TPU:		+/-0.00663							
Rad Liquid Scintillation											
Batch	961540										
QC1202062410	247920002	DUP									
Tritium			109	108	pCi/L	0.00856		(0-1)	KXK2	03/12/10	18:22
		TPU:	+/-33.9	+/-33.6							
QC1202062411	LCS										
Tritium	5540			5240	pCi/L		94.7	(80%-120%)		03/12/10	20:24
		TPU:		+/-479							
QC1202062409	MB										
Tritium			U	-7.93	pCi/L					03/12/10	16:18
		TPU:		+/-28.7							
Batch	961541										
QC1202062413	248389003	DUP									
Tritium		U	68.8	78.0	pCi/L	0.0666		(0-1)	KXK2	03/14/10	05:12
		TPU:	+/-33.8	+/-34.8							
QC1202062414	LCS										
Tritium	5540			5780	pCi/L		104	(80%-120%)		03/14/10	06:49
		TPU:		+/-518							
QC1202062412	MB										
Tritium			U	38.6	pCi/L					03/14/10	03:34
		TPU:		+/-31.5							

Notes:

The Qualifiers in this report are defined as follows:

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

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QC Summary

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
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									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

** Indicates analyte is a surrogate compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

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

RAW DATA

Radiochemistry Batch Checklist, Rev10

Batch# 961694 Product: Am 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%.	✓		
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.			
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 REVW	✓		
Hit 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
Aliquot Correction completed if required.			MA
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By:

Debbie Green 3/21/10

Secondary Review Performed By:

John Kahl 3/21/103/24
LANC

Am/Cm Que Sheet

05-MAR-10

Batch #: 961694 Analyst: KXM4 First Client Due Date: 24-MAR-10 Internal Due Date: 13-MAR-10 Comments:
 Tracer(s): Am243/Cm244 Tracer Code: 445-96-2-SS Expiration Date: 5-11-16 Vol: 0.1ml
 LCS Isotope(s): Am243/Cm244 LCS Code(s): 24M0744B / NA Expiration Date: 4-30-20 / NA Vol(s): 0.1g / NA
 Spike Isotope(s): Am241/Cm244 Spike Code(s): NA / NA Expiration Date: NA / NA Vol(s): NA / NA
 Prep Date: 3-11-10 Initials: VM Pipet ID: 2971058 Balance ID: 50410272 Witness: MPA 3/11/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l/n)	Am/Cm Det #
247900001-1	RE15-10-7896	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	1	1	1.257		248
247900002-1	RE15-10-7894	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	2	2	1.256		249
247900003-1	RE15-10-7900	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	3	3	1.252		250
247900004-1	RE15-10-7898	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	4	4	1.252		249
247900005-1	RE15-10-7897	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	5	5	1.260		250
247900006-1	RE15-10-7895	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	6	6	1.250		250
247900007-1	RE15-10-7899	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	7	7	1.257		254
247900008-1	RE15-10-7893	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	8	8	1.260		245
247900009-1	RE15-10-8011	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	9	9	1.256		246
247900010-1	RE15-10-8004	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	10	10	1.256		247
247900011-1	RE15-10-8009	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	11	11	1.260		248
247900012-1	RE15-10-8003	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	12	12	1.252		242
247900013-1	RE15-10-8007	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	13	13	1.255		244
247900014-1	RE15-10-8002	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	14	14	1.254		245
247900015-1	RE15-10-8010	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	15	15	1.251		246
247900016-1	RE15-10-8006	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	16	16	1.255		247
247900017-1	RE15-10-8001	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	17	17	1.253		248
247900018-1	RE15-10-8012	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	18	18	1.254		249
247900019-1	RE15-10-8008	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	19	19	1.254		250
247900020-1	RE15-10-8005	SAMPLE	.05 pCi/g	SOIL	LANL010	18-FEB-10	20	20	1.259		251
1202062741-1	MB for batch 961694	MB	.05 pCi/g	SOIL	QC ACCOUNT		21	21	1.0		252
1202062742-1	RE15-10-7896(247900001DUP)	DUP	.05 pCi/g	SOIL	QC ACCOUNT	18-FEB-10	22	22	1.253		253
1202062743-1	LCS for batch 961694	LCS	.05 pCi/g	SOIL	QC ACCOUNT		23	23	0.120		254

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

Solid Sample Dissolution by: LEACH or DIGESTION

Circle One

Data Reviewed By: [Signature] 3/11/10 Page 1 of 1

GEL Laboratories LLC, Radiochemistry Division

Blank Correction Report

Batch ID 961694

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202062742	DUP	Americium-241	1.25 g	-0.00491	0.00419	0.0278	.005048	pCi/g	YES
1202062743	LCS	Americium-241	0.120 g	29.3	2.22	0.262	.052583333	pCi/g	NO
1202062741	MB	Americium-241	1.00 g	0.00631	0.00427	0.0398	.00631	pCi/g	YES
247900001	RE15-10-7896	Americium-241	1.26 g	-0.00145	0.00162	0.0192	.005007937	pCi/g	YES
247900002	RE15-10-7894	Americium-241	1.26 g	-0.00102	0.00203	0.0208	.005007937	pCi/g	YES
247900003	RE15-10-7900	Americium-241	1.25 g	0.00247	0.00189	0.021	.005048	pCi/g	YES
247900004	RE15-10-7898	Americium-241	1.25 g	-0.000366	0.00146	0.0214	.005048	pCi/g	YES
247900005	RE15-10-7897	Americium-241	1.26 g	0.00392	0.00239	0.021	.005007937	pCi/g	YES
247900006	RE15-10-7895	Americium-241	1.25 g	-0.00141	0.00183	0.0217	.005048	pCi/g	YES
247900007	RE15-10-7899	Americium-241	1.26 g	0.0135	0.0044	0.0203	.005007937	pCi/g	YES
247900008	RE15-10-7893	Americium-241	1.26 g	0.00512	0.00341	0.0237	.005007937	pCi/g	YES
247900009	RE15-10-8011	Americium-241	1.26 g	0.00638	0.00387	0.0216	.005007937	pCi/g	YES
247900010	RE15-10-8004	Americium-241	1.26 g	0.00137	0.00209	0.0205	.005007937	pCi/g	YES
247900012	RE15-10-8003	Americium-241	1.25 g	0.00554	0.0039	0.0293	.005048	pCi/g	YES
247900013	RE15-10-8007	Americium-241	1.26 g	0.0187	0.00675	0.030	.005007937	pCi/g	YES
247900014	RE15-10-8002	Americium-241	1.25 g	-0.00182	0.00196	0.0272	.005048	pCi/g	YES
247900015	RE15-10-8010	Americium-241	1.25 g	-0.00182	0.00192	0.0268	.005048	pCi/g	YES
247900016	RE15-10-8006	Americium-241	1.26 g	-0.000892	0.00258	0.0265	.005007937	pCi/g	YES
247900017	RE15-10-8001	Americium-241	1.25 g	0.0186	0.00639	0.0271	.005048	pCi/g	YES
247900018	RE15-10-8012	Americium-241	1.25 g	-0.00184	0.00256	0.0289	.005048	pCi/g	YES
247900019	RE15-10-8008	Americium-241	1.25 g	-0.00182	0.002	0.0277	.005048	pCi/g	YES
247900020	RE15-10-8005	Americium-241	1.26 g	0.0146	0.00555	0.0285	.005007937	pCi/g	YES

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER :	961694	CHAMBER :	248	LIB FILE :	ENV_ALPHA_AM
SAMPLE ID :	S0247900001_AM	DETECTOR S/N :	79441	BKG FILE :	B248.CNF;92
SAMPLE QTY :	1.257 G	AVERAGE %EFFICIENCY :	40.4154	BKG DATE :	14-MAR-2010
SAMPLE DATE :	18-FEB-2010 00:00:00	COUNT DATE :	19-MAR-2010 21:03:28	BKG LIVE TIME(SEC) :	60000.00
ANALYST :	KXM4	ELAPSED LIVE TIME(SEC) :	43200.00	EFF FILE :	W248.CNF;31
% YIELD :	93.947			CAL DATE :	28-FEB-2010

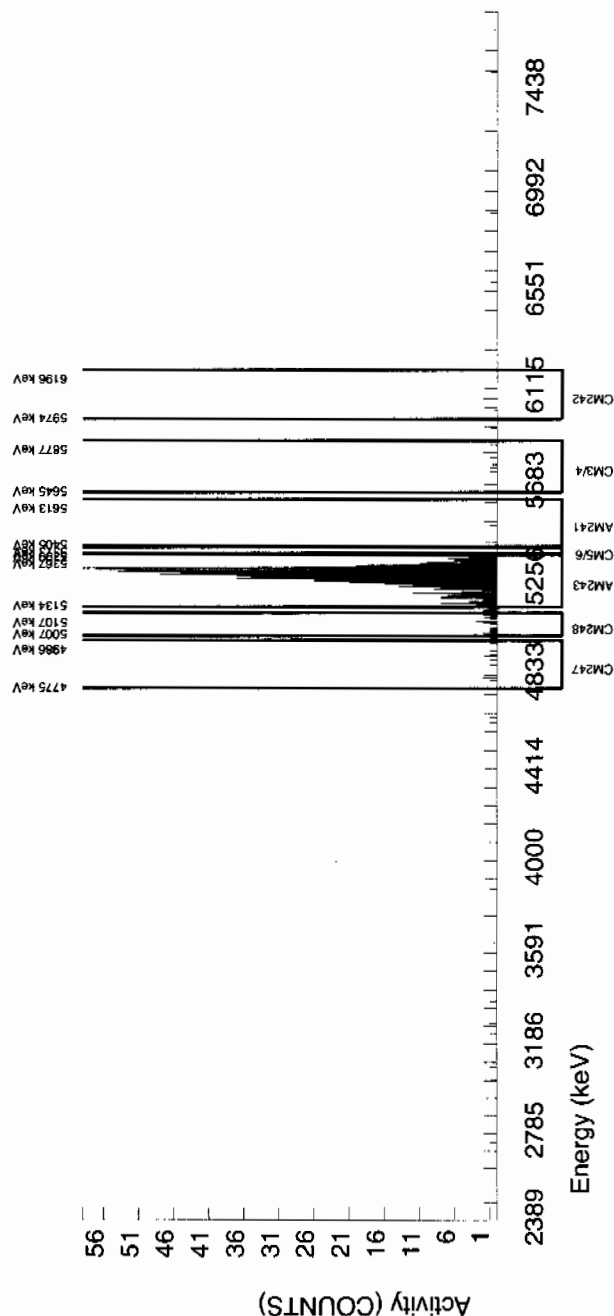
TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-SS	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.9166E+00 dpm	NOMINAL : 3.3153E+01 pCi/G	NOMINAL : 3.3153E+01 pCi/G

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	5500.860	4.922	1.000	-1.104	0.720	2.7707	99.94000	-1.45E-03	1.62E-03	7.84E-03	1.92E-02	1.62E-03
AM243	5270.000	5276.980	49.924	797.000	795.560	1.440	1.2000	99.78000	1.05E+00	7.49E-02	3.40E-03	1.04E-02	3.71E-02
CM-242	6102.000	6035.792	4.922	5.000	5.000	0.000	4.0092	100.0000	7.45E-03	3.36E-03	1.13E-02	2.62E-02	3.33E-03
CM-3/4	5795.020	5772.920	4.922	7.000	3.400	3.600	4.8510	100.0000	4.47E-03	4.08E-03	1.37E-02	3.10E-02	4.07E-03
CM-5/6	5386.000	5376.885	0.000	9.000	9.000	0.000	6.1294	86.09000	1.37E-02	4.65E-03	2.01E-02	4.44E-02	4.57E-03
CM-247	4946.000	4898.806	4.922	9.000	8.280	0.720	6.3427	79.30000	1.37E-02	5.17E-03	2.26E-02	4.97E-02	5.10E-03
CM-248	5078.600	5064.223	72.131	19.000	19.000	0.000	11.0244	91.00000	2.74E-02	6.51E-03	3.43E-02	7.24E-02	6.28E-03

NOTES:

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961694	CHAMBER : 249	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0247900002_AM	DETECTOR S/N : 79442	BKG FILE : B249.CNF;89
SAMPLE QTY : 1.256 G	AVERAGE %EFFICIENCY : 39.6696	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 21:03:30	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W249.CNF;33
% YIELD : 88.528		CAL DATE : 28-FEB-2010

TRACER ID : 445-96-2-SS	LCS/LCSD ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241
NOMINAL : 2.9166E+00 dpm	NOMINAL : 3.3153E+01 pCi/G
RESULTS : 2.5820E+00 dpm	

NUCLIDE ACTIVITY SUMMARY

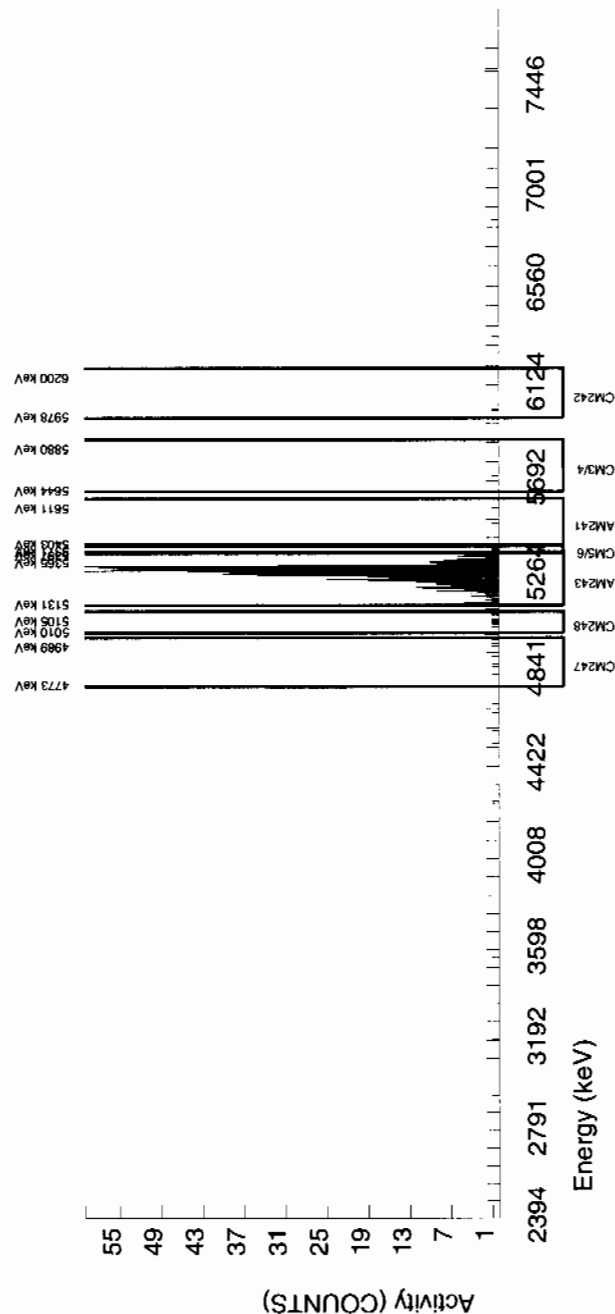
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5538.990	69.052	2.000	-0.720	1.440	2.7707	99.94000	-1.02E-03	2.03E-03	8.48E-03	2.08E-02	2.03E-03
AM243	5270.000	5279.765	46.153	738.000	735.840	2.160	1.4697	99.78000	1.05E+00	7.65E-02	4.51E-03	1.29E-02	3.87E-02
CM-242	6102.000	6018.147	9.248	2.000	2.000	0.000	4.0092	100.0000	3.22E-03	2.29E-03	1.23E-02	2.84E-02	2.28E-03
CM-3/4	5795.020	5753.668	69.052	2.000	1.280	0.720	4.8510	100.0000	1.82E-03	2.26E-03	1.48E-02	3.35E-02	2.26E-03
CM-5/6	5386.000	5381.370	0.000	7.000	6.280	0.720	6.1294	86.09000	1.03E-02	4.56E-03	2.18E-02	4.80E-02	4.52E-03
CM-247	4946.000	4913.226	147.969	7.000	6.280	0.720	6.3427	79.30000	1.12E-02	4.96E-03	2.45E-02	5.38E-02	4.90E-03
CM-248	5078.600	5060.867	0.000	12.000	12.000	0.000	11.0244	91.00000	1.87E-02	5.53E-03	3.71E-02	7.84E-02	5.40E-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

LIB FILE : ENV_ALPHA_AM
BKG FILE : B250.CNF:89
BKG DATE : 14-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W250.CNF:31
CAL DATE : 28-FEB-2010

CHAMBER : 250
DETECTOR S/N : 79443
AVERAGE %EFFICIENCY : 40.2400
COUNT DATE : 19-MAR-2010 21:03:32
ELAPSED LIVE TIME(SEC) : 43200.00

BATCH NUMBER : 961694
SAMPLE ID : S0247900003_AM
SAMPLE QTY : 1.252 G
SAMPLE DATE : 18-FEB-2010 00:00:00
ANALYST : KXM4
% YIELD : 86.818

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

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

TRACER	:	445-96-2-SS
ID	:	AM243
NUCLIDE	:	2.9166E+00 dpm
NOMINAL	:	2.5321E+00 dpm
RESULTS	:	

NUCLIDE ACTIVITY SUMMARY

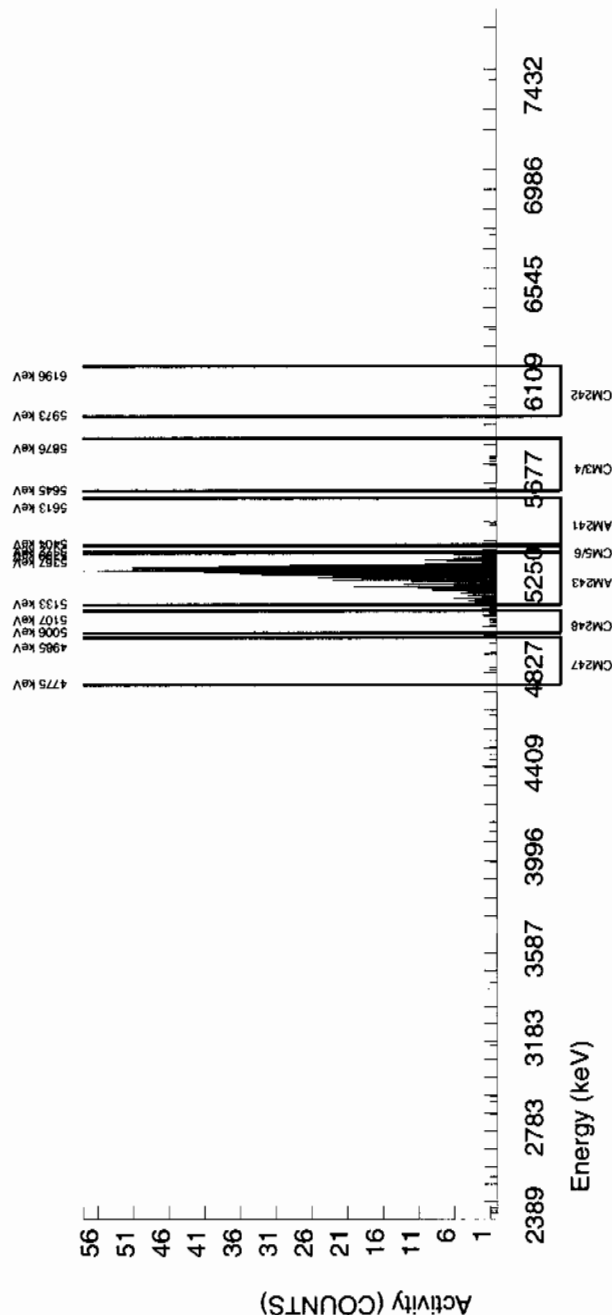
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLG pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5509.079	34.344	3.000	1.726	0.000	2.7707	99.94000	2.47E-03	1.89E-03	8.56E-03	2.10E-02	1.88E-03
AM243	5270.000	5275.201	45.518	732.000	732.000	0.000	0.0000	99.78000	1.05E+00	7.67E-02	0.00E+00	3.88E-03	3.88E-02
CM-242	6102.000	6054.562	4.906	4.000	4.000	0.000	4.0092	100.0000	6.50E-03	3.28E-03	1.24E-02	2.86E-02	3.25E-03
CM-3/4	5795.020	5764.747	132.471	6.000	6.000	0.000	4.8510	100.0000	8.61E-03	3.56E-03	1.50E-02	3.38E-02	3.51E-03
CM-5/6	5386.000	5380.750	0.000	8.000	8.000	0.000	6.1294	86.09000	1.33E-02	4.77E-03	2.20E-02	4.84E-02	4.70E-03
CM-247	4946.000	4880.371	185.828	8.000	7.280	0.720	6.3427	79.30000	1.31E-02	5.33E-03	2.47E-02	5.43E-02	5.26E-03
CM-248	5078.600	5060.056	78.297	15.000	15.000	0.000	11.0244	91.00000	2.36E-02	6.27E-03	3.74E-02	7.90E-02	6.09E-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

BATCH NUMBER : 961694 SAMPLE ID : S0247900004_AM SAMPLE QTY : 1.252 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 88.452		CHAMBER : 209 DETECTOR S/N : 79188 AVERAGE %EFFICIENCY : 38.7951 COUNT DATE : 19-MAR-2010 21:28:17 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B209.CNF:90 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W209.CNF:33 CAL DATE : 28-FEB-2010
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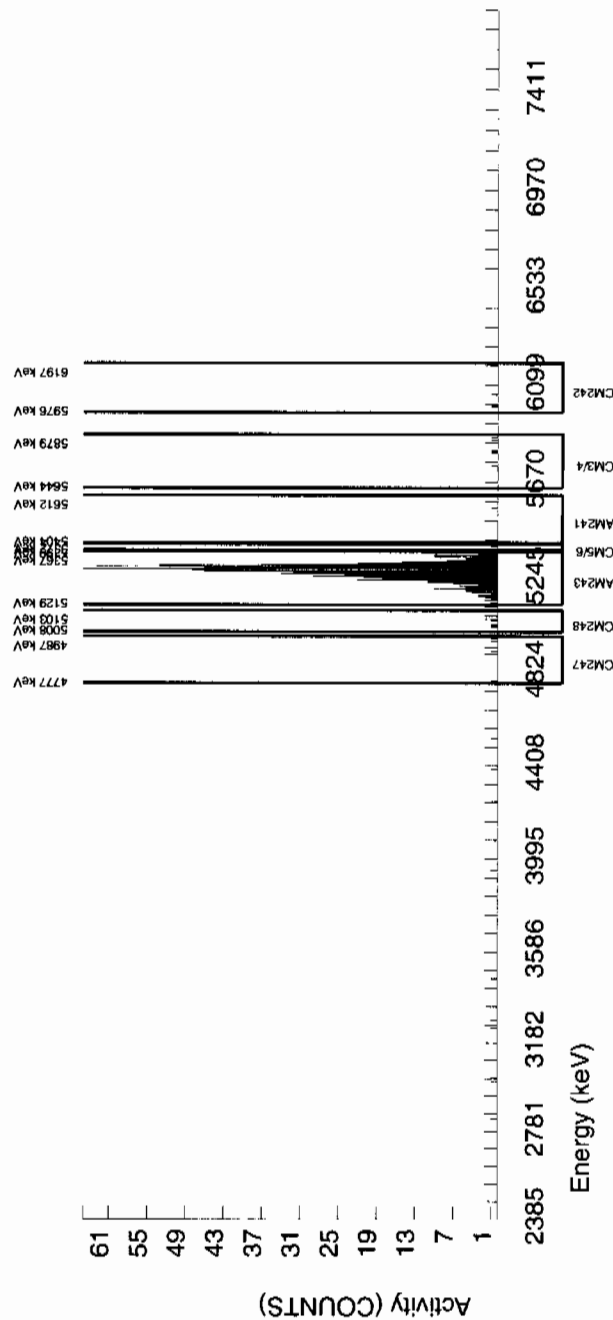
TRACER ID : 445-96-2-SS	MS/MSD ID : 0244-B	LCS/LCSD ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.9166E+00 dpm	NOMINAL : 3.3153E+01 pCi/G	NOMINAL : 3.3153E+01 pCi/G
RESULTS : 2.5798E+00 dpm		

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	5563.770	4.929	1.000	-0.251	0.000	2.7707	99.94000	-3.66E-04	1.46E-03	8.71E-03	2.14E-02	1.46E-03
AM243	5270.000	5281.989	41.644	719.000	5.000	0.000	0.0000	99.78000	1.05E+00	7.71E-02	0.00E+00	3.96E-03	3.91E-02
CM-242	6102.000	6051.018	93.034	5.000	5.000	0.000	4.0092	100.0000	8.28E-03	3.74E-03	1.26E-02	2.91E-02	3.70E-03
CM-3/4	5795.020	5808.645	118.294	7.000	6.280	0.720	4.8510	100.0000	9.17E-03	4.05E-03	1.52E-02	3.44E-02	4.01E-03
CM-5/6	5386.000	5377.773	0.000	6.000	6.000	0.000	6.1294	86.09000	1.01E-02	4.19E-03	2.24E-02	4.93E-02	4.14E-03
CM-247	4946.000	4924.952	4.929	6.000	6.000	0.000	6.3427	79.30000	1.10E-02	4.55E-03	2.51E-02	5.52E-02	4.50E-03
CM-248	5078.600	5065.021	0.000	16.000	16.000	0.000	11.0244	91.00000	2.56E-02	6.60E-03	3.81E-02	8.05E-02	6.40E-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 : 961694 SAMPLE ID : S0247900005_AM SAMPLE QTY : 1.260 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 87.776	CHAMBER : 210 DETECTOR S/N : 79189 AVERAGE %EFFICIENCY : 39.4745 COUNT DATE : 19-MAR-2010 21:28:18 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B210.CNF:89 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W210.CNF:31 CAL DATE : 28-FEB-2010
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TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.5600E+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	5509.352	143.045	4.000	2.737	0.000	2.7707	99.94000	3.92E-03	2.39E-03	8.57E-03	2.10E-02	2.37E-03
AM243	5270.000	5284.223	37.095	726.000	726.000	0.000	0.0000	99.78000	1.04E+00	7.64E-02	0.00E+00	3.89E-03	3.87E-02
CM-242	6102.000	6061.886	39.461	2.000	1.280	0.720	4.0092	100.0000	2.09E-03	2.59E-03	1.24E-02	2.87E-02	2.59E-03
CM-3/4	5795.020	5726.616	0.000	4.000	2.560	1.440	4.8510	100.0000	3.68E-03	3.23E-03	1.50E-02	3.39E-02	3.23E-03
CM-5/6	5386.000	5378.110	0.000	13.000	13.000	0.000	6.1294	86.09000	2.16E-02	6.16E-03	2.20E-02	4.85E-02	6.00E-03
CM-247	4946.000	4901.618	0.000	5.000	5.000	0.000	6.3427	79.30000	9.04E-03	4.08E-03	2.47E-02	5.44E-02	4.04E-03
CM-248	5078.600	5073.272	34.446	14.000	14.000	0.000	11.0244	91.00000	2.20E-02	6.05E-03	3.75E-02	7.92E-02	5.89E-03

NOTES:

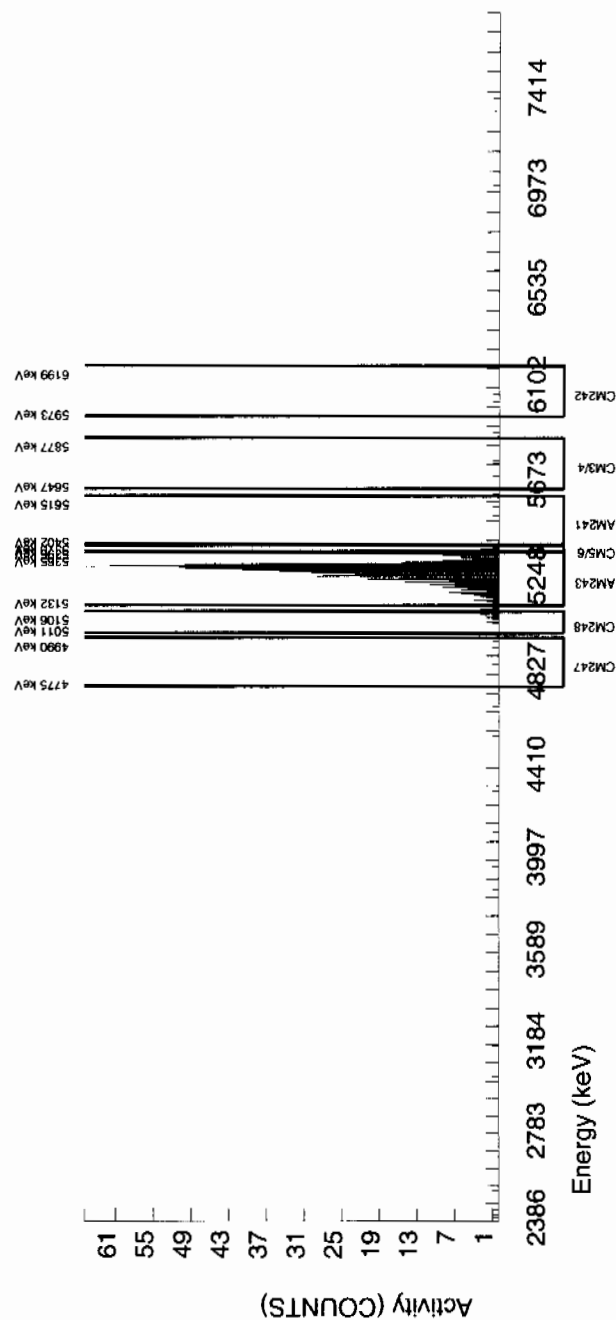
* BKG Sg calculated via blank population.

(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 : 961694
SAMPLE ID : S0247900006_AM
SAMPLE QTY : 1.250 G
SAMPLE DATE : 18-FEB-2010 00:00:00
ANALYST : KXM4
% YIELD : 88.507

CHAMBER : 213
DETECTOR S/N : 79192
AVERAGE %EFFICIENCY : 38.2471
COUNT DATE : 19-MAR-2010 21:28:22
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B213.CNF:89
BKG DATE : 14-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W213.CNF:30
CAL DATE : 28-FEB-2010

TRACER
ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9166E+00 dpm
RESULTS : 2.5813E+00 dpm

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

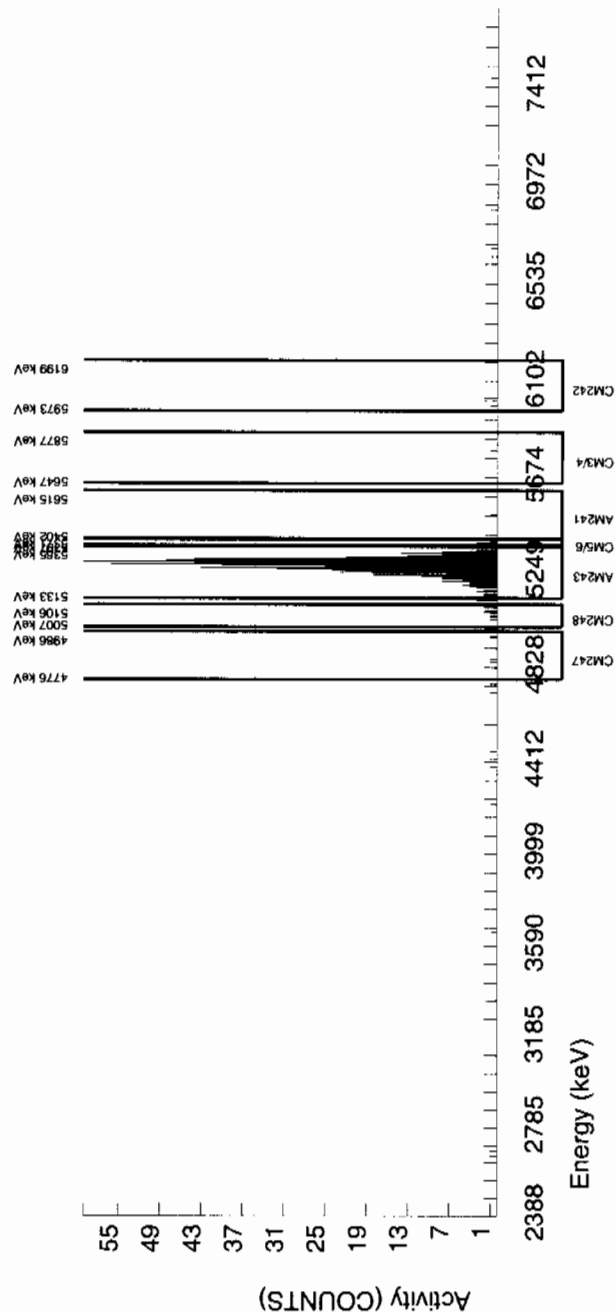
LCS/LCSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3153E+01 pCi/G

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	5513.874	4.933	1.000	-0.954	0.720	2.7707	99.94000	-1.41E-03	1.83E-03	8.84E-03	2.17E-02	1.82E-03
AM243	5270.000	5281.708	48.460	710.000	709.280	0.720	0.8485	99.78000	1.05E+00	7.75E-02	2.71E-03	9.44E-03	3.95E-02
CM-242	6102.000	6028.026	9.250	5.000	5.000	0.000	4.0092	100.0000	8.40E-03	3.80E-03	1.28E-02	2.96E-02	3.76E-03
CM-3/4	5795.020	5801.773	14.800	2.000	2.000	0.000	4.8510	100.0000	2.97E-03	2.11E-03	1.55E-02	3.50E-02	2.10E-03
CM-5/6	5386.000	5378.554	0.000	14.000	14.000	0.000	6.1294	86.09000	2.40E-02	6.60E-03	2.27E-02	5.01E-02	6.43E-03
CM-247	4946.000	4927.795	0.000	6.000	6.000	0.000	6.3427	79.30000	1.12E-02	4.62E-03	2.55E-02	5.61E-02	4.57E-03
CM-248	5078.600	5081.927	0.000	12.000	12.000	0.000	11.0244	91.00000	1.95E-02	5.76E-03	3.86E-02	8.17E-02	5.63E-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 : 961694	CHAMBER : 214	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0247900007_AM	DETECTOR S/N : 79193	BKG FILE : B214.CNF:89
SAMPLE QTY : 1.257 G	AVERAGE %EFFICIENCY : 38.2529	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 21:28:25	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W214.CNF:30
% YIELD : 93.823		CAL DATE : 28-FEB-2010

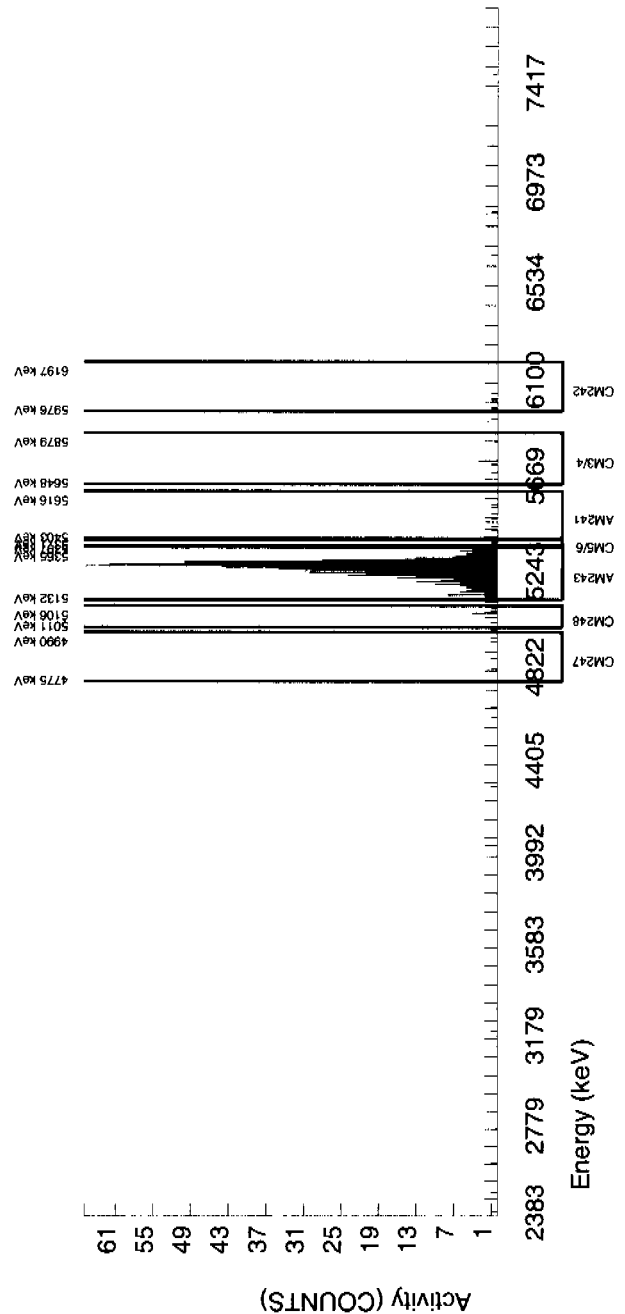
TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-SS	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.9166E+00 dpm	NOMINAL : 3.3153E+01 pCi/G	NOMINAL : 3.3153E+01 pCi/G
RESULTS : 2.7364E+00 dpm		

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	5491.698	36.719	11.000	9.692	0.000	2.7707	99.94000	1.34E-02	4.40E-03	8.29E-03	2.03E-02	4.32E-03
AM243	5270.000	5273.885	34.430	752.000	752.000	0.000	0.0000	99.78000	1.05E+00	7.59E-02	0.00E+00	3.77E-03	3.81E-02
CM-242	6102.000	6024.969	68.215	6.000	6.000	0.000	4.0092	100.0000	9.46E-03	3.91E-03	1.20E-02	2.77E-02	3.86E-03
CM-3/4	5795.020	5745.140	6.094	7.000	7.000	0.000	4.8510	100.0000	9.74E-03	3.73E-03	1.45E-02	3.28E-02	3.68E-03
CM-5/6	5386.000	5385.185	0.000	7.000	7.000	0.000	6.1294	86.09000	1.13E-02	4.32E-03	2.13E-02	4.70E-02	4.26E-03
CM-247	4946.000	4909.733	127.825	4.000	4.000	0.000	6.3427	79.30000	7.00E-03	3.52E-03	2.39E-02	5.26E-02	3.50E-03
CM-248	5078.600	5073.886	8.143	14.000	14.000	0.000	11.0244	91.00000	2.13E-02	5.86E-03	3.62E-02	7.66E-02	5.70E-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 : 961694	CHAMBER : 215	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0247900008_AM	DETECTOR S/N : 79468	BKG FILE : B215.CNF:89
SAMPLE QTY : 1.260 G	AVERAGE %EFFICIENCY : 38.2619	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 21:28:27	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W215.CNF:35
% YIELD : 80.240		CAL DATE : 28-FEB-2010

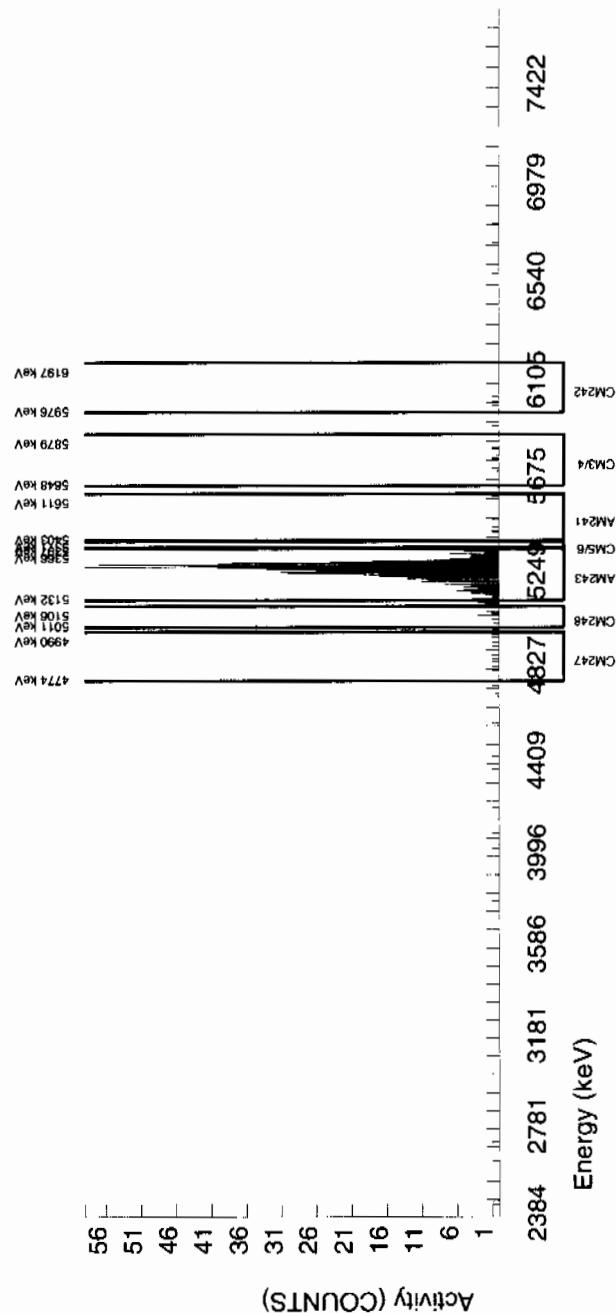
TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-SS	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.9166E+00 dpm	NOMINAL : 3.3153E+01 pCi/G	NOMINAL : 3.3153E+01 pCi/G
RESULTS : 2.3402E+00 dpm		

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	5494.424	152.187	5.000	3.161	0.720	2.7707	99.94000	5.12E-03	3.41E-03	9.67E-03	2.37E-02	3.39E-03
AM243	5270.000	5274.493	47.523	644.000	643.280	0.720	0.8485	99.78000	1.04E+00	7.89E-02	2.97E-03	1.03E-02	4.11E-02
CM-242	6102.000	6031.641	39.433	3.000	3.000	0.000	4.0092	100.00000	5.52E-03	3.20E-03	1.40E-02	3.24E-02	3.18E-03
CM-3/4	5795.020	5773.887	0.000	9.000	9.000	0.000	4.8510	100.00000	1.46E-02	4.96E-03	1.69E-02	3.82E-02	4.87E-03
CM-5/6	5386.000	5374.702	0.000	7.000	7.000	0.000	6.1294	86.09000	1.32E-02	5.04E-03	2.48E-02	5.48E-02	4.97E-03
CM-247	4946.000	4912.988	0.000	10.000	10.000	0.000	6.3427	79.30000	2.04E-02	6.58E-03	2.79E-02	6.13E-02	6.45E-03
CM-248	5078.600	5067.890	0.000	10.000	10.000	0.000	11.0244	91.00000	1.78E-02	5.74E-03	4.23E-02	8.94E-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 : 961694
 SAMPLE ID : S0247900009_AM
 SAMPLE QTY : 1.256 G
 SAMPLE DATE : 18-FEB-2010 00:00:00
 ANALYST : KXM4
 % YIELD : 87.421

CHAMBER : 216
 DETECTOR S/N : 79195
 AVERAGE %EFFICIENCY : 38.6826
 COUNT DATE : 19-MAR-2010 21:28:30
 ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
 BKG FILE : B216.CNF:89
 BKG DATE : 14-MAR-2010
 BKG LIVE TIME(SEC) : 60000.00
 EFF FILE : W216.CNF:30
 CAL DATE : 28-FEB-2010

TRACER ID : 445-96-2-SS
 NUCLIDE : AM243
 NOMINAL : 2.9166E+00 dpm
 RESULTS : 2.5497E+00 dpm

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

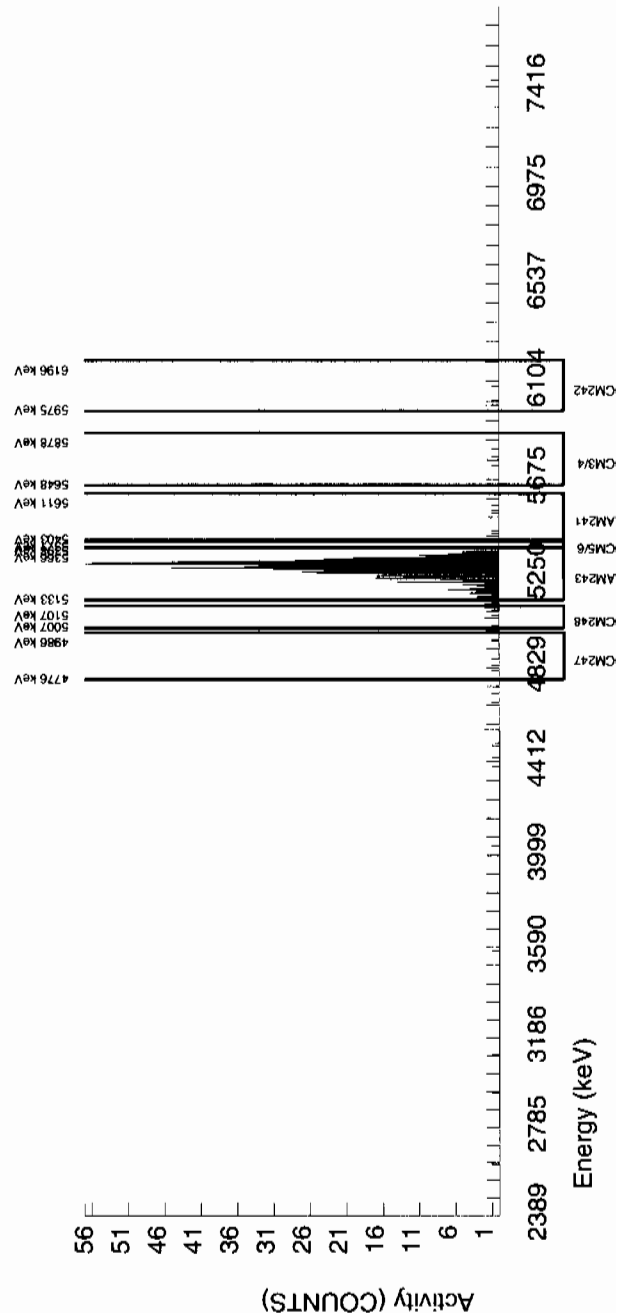
LCS/LCSD ID : 0244-B
 NUCLIDE : AM-241
 NOMINAL : 3.3153E+01 pCi/G

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	5495.831	122.597	7.000	4.327	1.440	2.7707	99.94000	6.38E-03	3.87E-03	8.81E-03	2.16E-02	3.84E-03
AM243	5270.000	5281.474	39.729	6.000	6.000	0.000	1.2000	99.78000	1.05E+00	7.72E-02	3.82E-03	1.16E-02	3.94E-02
CM-242	6102.000	6018.706	7.239	3.000	3.000	0.000	4.0092	100.0000	1.00E-02	4.15E-03	1.27E-02	2.95E-02	4.10E-03
CM-3/4	5795.020	5778.097	73.928	3.000	3.000	0.000	4.8510	100.0000	4.43E-03	2.57E-03	1.54E-02	3.48E-02	2.56E-03
CM-5/6	5386.000	5377.769	0.000	10.000	10.000	0.000	6.1294	86.09000	1.71E-02	5.52E-03	2.26E-02	4.99E-02	5.41E-03
CM-247	4946.000	4891.457	133.071	5.000	5.000	0.000	6.3427	79.30000	9.29E-03	4.20E-03	2.54E-02	5.59E-02	4.15E-03
CM-248	5078.600	5067.815	44.357	9.000	9.000	0.000	11.0244	91.00000	1.46E-02	4.94E-03	3.85E-02	8.14E-02	4.86E-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 : 961694	CHAMBER : 217	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0247900010_AM	DETECTOR S/N : 79410	BKG FILE : B217.CNF;91
SAMPLE QTY : 1.256 G	AVERAGE %EFFICIENCY : 38.4865	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 21:28:33	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W217.CNF;32
% YIELD : 92.544		CAL DATE : 28-FEB-2010

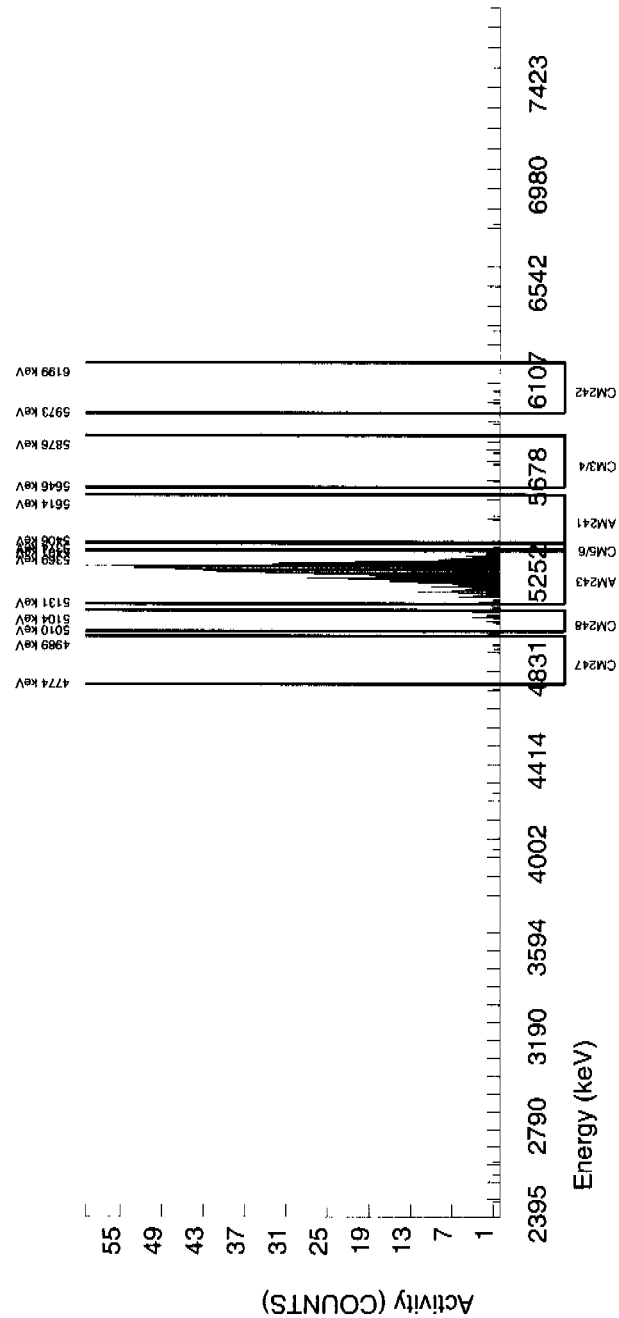
TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-SS	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.9166E+00 dpm	NOMINAL : 3.3153E+01 pCi/G	NOMINAL : 3.3153E+01 pCi/G
RESULTS : 2.6991E+00 dpm		

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	5483.934	108.067	3.000	0.982	0.720	2.7707	99.94000	1.37E-03	2.09E-03	8.36E-03	2.05E-02	2.09E-03
AM243	5270.000	5280.197	46.684	747.000	746.280	0.720	0.8485	99.78000	1.05E+00	7.61E-02	2.57E-03	8.93E-03	3.83E-02
CM-242	6102.000	6034.662	0.000	6.000	6.000	0.000	4.0092	100.0000	9.54E-03	3.94E-03	1.21E-02	2.80E-02	3.89E-03
CM-3/4	5795.020	5773.358	61.248	8.000	7.280	0.720	4.8510	100.0000	1.02E-02	4.14E-03	1.46E-02	3.31E-02	4.09E-03
CM-5/6	5386.000	5379.422	0.000	7.000	7.000	0.000	6.1294	86.09000	1.14E-02	4.36E-03	2.15E-02	4.74E-02	4.30E-03
CM-247	4946.000	4948.230	24.561	3.000	2.280	0.720	6.3427	79.30000	4.02E-03	3.32E-03	2.41E-02	5.30E-02	3.31E-03
CM-248	5078.600	5081.615	26.157	16.000	16.000	0.000	11.0244	91.00000	2.46E-02	6.34E-03	3.66E-02	7.73E-02	6.15E-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 : 961694 SAMPLE ID : S0247900012_AM SAMPLE QTY : 1.252 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 85.659	CHAMBER : 242 DETECTOR S/N : 79435 AVERAGE %EFFICIENCY : 39.5199 COUNT DATE : 20-MAR-2010 11:13:28 ELAPSED LIVE TIME(SEC) : 30300.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B242.CNF.89 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W242.CNF.30 CAL DATE : 28-FEB-2010
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TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.4983E+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

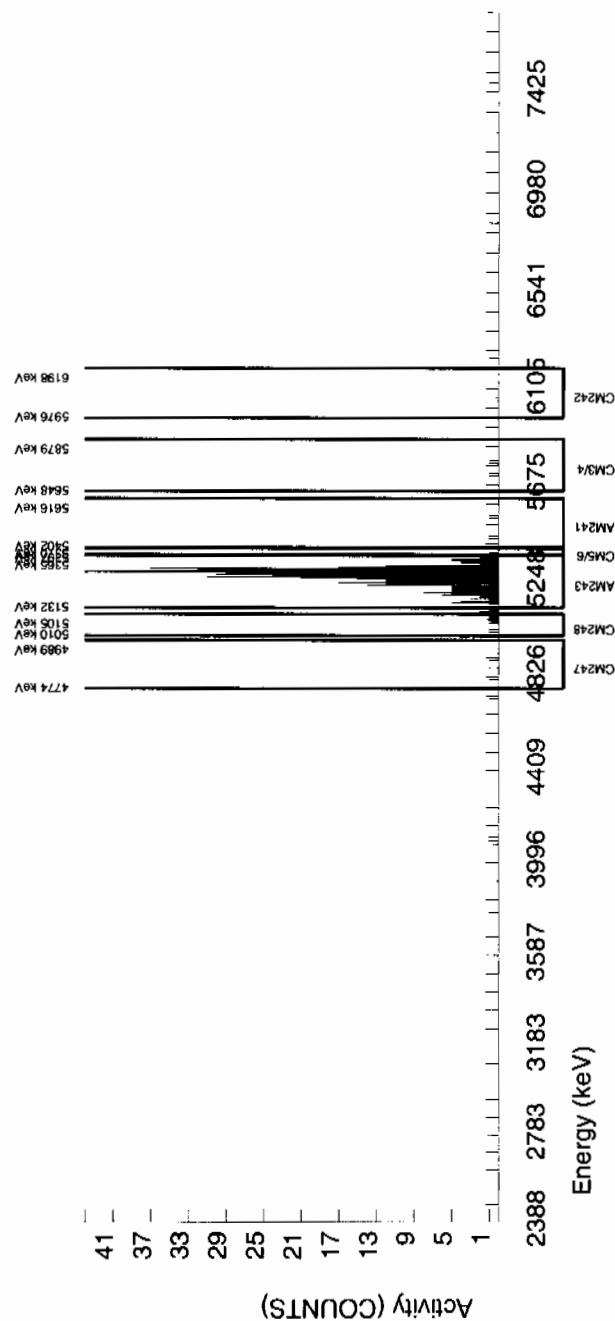
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5495.468	98.241	4.000	2.629	0.505	2.7707	99.94000	5.54E-03	3.90E-03	1.18E-02	2.93E-02	3.88E-03
AM243	5270.000	5277.290	41.798	498.000	497.495	0.505	0.7106	99.78000	1.05E+00	8.55E-02	3.02E-03	1.18E-02	4.71E-02
CM-242	6102.000	6053.103	44.208	3.000	3.000	0.000	4.0092	100.0000	7.19E-03	4.18E-03	1.70E-02	3.98E-02	4.15E-03
CM-3/4	5795.020	5736.755	127.713	5.000	4.495	0.505	4.8510	100.0000	9.49E-03	4.88E-03	2.06E-02	4.69E-02	4.84E-03
CM-5/6	5386.000	5375.620	0.000	5.000	5.000	0.000	6.1294	86.09000	1.22E-02	5.53E-03	3.02E-02	6.71E-02	5.47E-03
CM-247	4946.000	4883.983	112.977	4.000	4.000	0.000	6.3427	79.30000	1.06E-02	5.36E-03	3.40E-02	7.51E-02	5.31E-03
CM-248	5078.600	5076.514	7.215	9.000	9.000	0.000	11.0244	91.00000	2.08E-02	7.08E-03	5.15E-02	1.09E-01	6.94E-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



CHAMBER	:	244
DETECTOR S/N	:	79437
AVERAGE %EFFICIENCY	:	39.5742
COUNT DATE	:	20-MAR-2010 11:13:45
ELAPSED LIVE TIME(SEC)	:	30300.00

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LIB FILE : ENV_ALPHA_AM
BKG FILE : B244.CNF:89
BKG DATE : 14-MAR-2010
TIME(SEC) : 60000.00
EFF FILE : W244.CNF:30
CAL DATE : 28-FEB-2010
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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

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	5475.979	63.782	10.000	8.653	0.505	2.7707	99.94000	1.87E-02	6.75E-03	1.21E-02	3.00E-02	6.63E-03
AM-243	5270.000	5280.441	30.855	484.000	484.000	0.000	0.0000	99.78000	1.05E+00	8.60E-02	0.00E+00	5.86E-03	4.76E-02
CM-242	6102.000	6039.585	34.344	3.000	3.000	0.000	4.0092	100.0000	7.38E-03	4.29E-03	1.75E-02	4.08E-02	4.26E-03
CM-3/4	5795.020	5783.157	49.063	2.000	2.000	0.000	4.8510	100.0000	4.33E-03	3.08E-03	2.11E-02	4.81E-02	3.06E-03
CM-5/6	5386.000	5381.569	7.206	4.000	4.000	0.000	6.1294	86.09000	1.00E-02	5.06E-03	3.10E-02	6.88E-02	5.01E-03
CM-247	4946.000	4891.841	132.470	3.000	1.990	1.010	6.3427	79.30000	5.42E-03	5.11E-03	3.48E-02	7.70E-02	5.10E-03
CM-248	5078.600	5074.911	7.206	7.000	7.000	0.000	11.0244	91.00000	1.66E-02	6.38E-03	5.28E-02	1.12E-01	6.27E-03

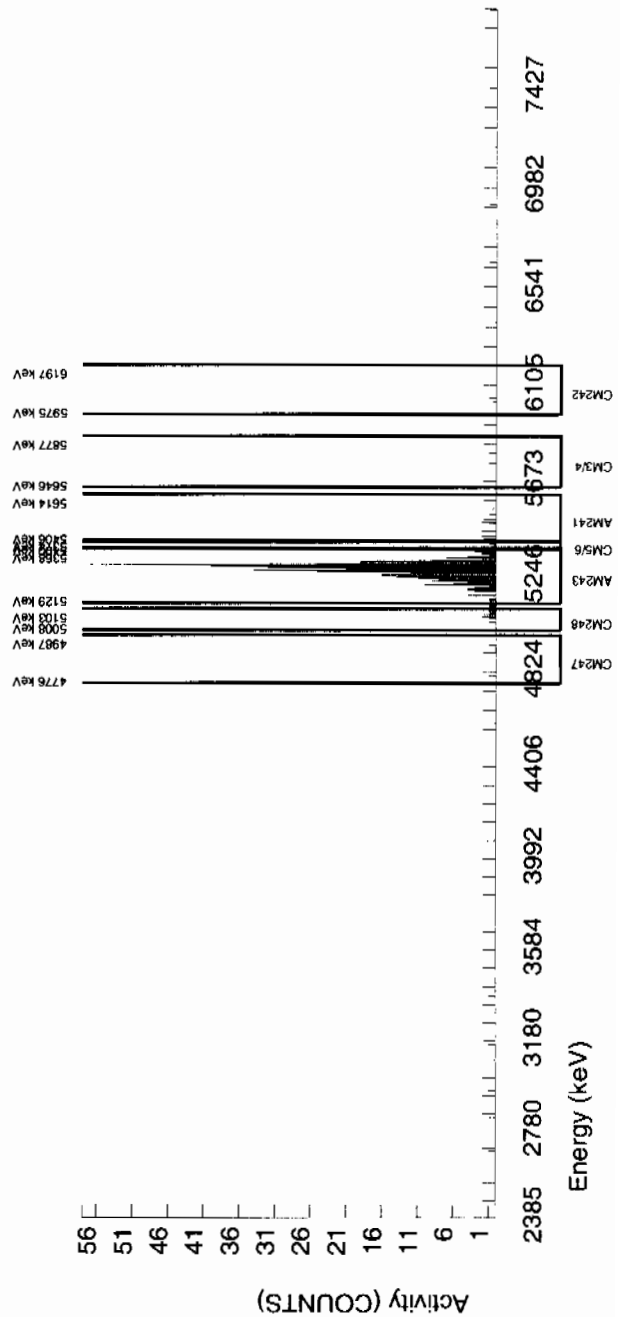
* BKG Sg calculated via blank population.

(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 : 961694 SAMPLE ID : S0247900014_AM SAMPLE QTY : 1.254 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 89.687	CHAMBER : 245 DETECTOR S/N : 79438 AVERAGE %EFFICIENCY : 40.5519 COUNT DATE : 20-MAR-2010 11:13:50 ELAPSED LIVE TIME(SEC) : 30300.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B245.CNF:89 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W245.CNF:31 CAL DATE : 28-FEB-2010
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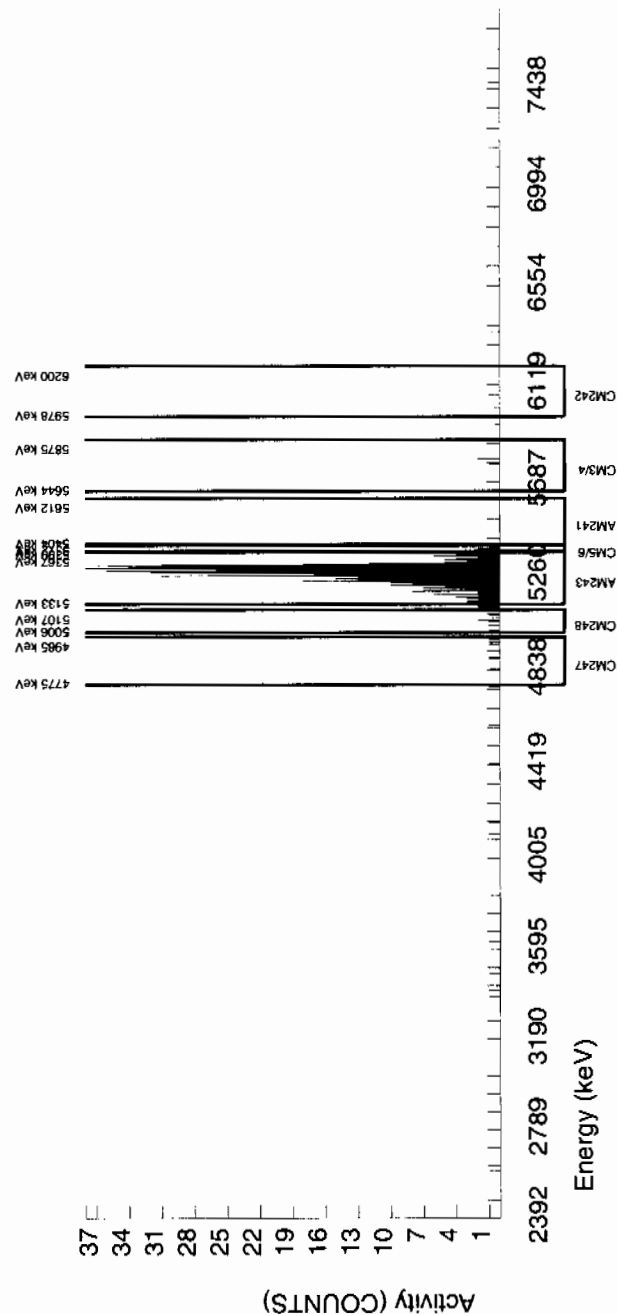
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.6158E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5508.033	0.000	0.000	-0.930	0.000	2.7707	99.94000	-1.82E-03	1.96E-03	1.09E-02	2.72E-02	1.96E-03
AM243	5270.000	5274.229	52.100	535.000	534.495	0.505	0.7106	99.78000	1.05E+00	8.36E-02	2.81E-03	1.09E-02	4.53E-02
CM-242	6102.000	6030.571	93.771	4.000	4.000	0.000	4.0092	100.00000	8.91E-03	4.50E-03	1.58E-02	3.69E-02	4.46E-03
CM-3/4	5795.020	5787.547	4.935	3.000	3.000	0.000	4.8510	100.00000	5.89E-03	3.42E-03	1.91E-02	4.36E-02	3.40E-03
CM-5/6	5386.000	5380.428	0.000	7.000	7.000	0.000	6.1294	86.09000	1.59E-02	6.10E-03	2.81E-02	6.24E-02	6.01E-03
CM-247	4946.000	4925.471	128.318	6.000	5.495	0.505	6.3427	79.30000	1.36E-02	6.23E-03	3.16E-02	6.98E-02	6.17E-03
CM-248	5078.600	5057.012	0.000	15.000	15.000	0.000	11.0244	91.00000	3.22E-02	8.60E-03	4.78E-02	1.01E-01	8.32E-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 : 961694 SAMPLE ID : S0247900015_AM SAMPLE QTY : 1.251 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 92.112		CHAMBER : 246 DETECTOR S/N : 78912 AVERAGE %EFFICIENCY : 40.4448 COUNT DATE : 20-MAR-2010 11:13:55 ELAPSED LIVE TIME(SEC) : 30300.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B246.CNF:89 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W246.CNF:32 CAL DATE : 28-FEB-2010
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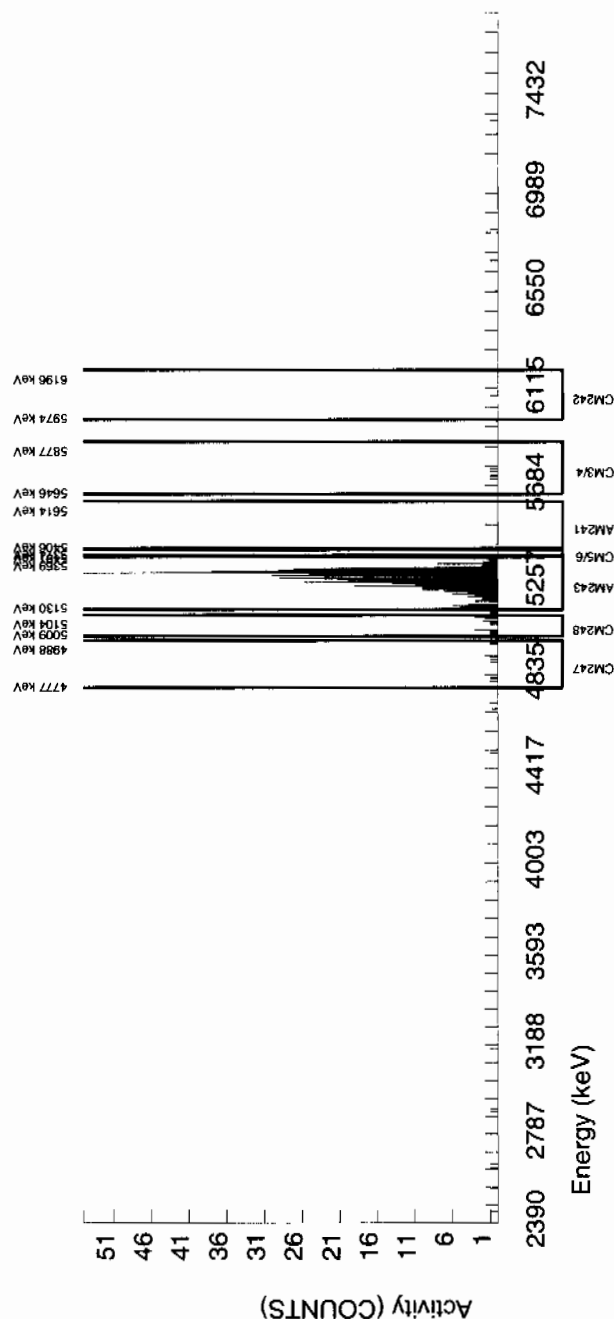
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.6865E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5510.119	0.000	0.000	-0.953	0.000	2.7707	99.94000	-1.82E-03	1.92E-03	1.07E-02	2.66E-02	1.92E-03
AM243	5270.000	5276.822	38.477	548.000	547.495	0.505	0.7106	99.78000	1.05E+00	8.32E-02	2.75E-03	1.07E-02	4.49E-02
CM-242	6102.000	6087.664	4.935	1.000	1.000	0.000	4.0092	100.0000	2.18E-03	2.19E-03	1.55E-02	3.62E-02	2.18E-03
CM-3/4	5795.020	5736.644	7.248	6.000	5.495	0.505	4.8510	100.0000	1.06E-02	4.85E-03	1.87E-02	4.27E-02	4.80E-03
CM-5/6	5386.000	5377.787	7.248	3.000	3.000	0.000	6.1294	86.09000	6.67E-03	3.88E-03	2.75E-02	6.10E-02	3.85E-03
CM-247	4946.000	4903.951	0.000	9.000	9.000	0.000	6.3427	79.30000	2.17E-02	7.38E-03	3.09E-02	6.83E-02	7.24E-03
CM-248	5078.600	5064.610	61.623	17.000	17.000	0.000	11.0244	91.00000	3.58E-02	8.99E-03	4.68E-02	9.93E-02	8.67E-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	: 961694
SAMPLE ID	: S0247900016_AM
SAMPLE QTY	: 1.255 G
SAMPLE DATE	: 18-FEB-2010 00:00:00
ANALYST	: KXM4
% YIELD	: 93.557

CHAMBER : 247
DETECTOR S/N : 79440
AVERAGE %EFFICIENCY : 39.7832
COUNT DATE : 20-MAR-2010 11:13:59
ELAPSED LIVE TIME(SEC) : 30300.00

LIB FILE	:	ENV_ALPHA_AM
BKG FILE	:	B247.CNF;90
BKG DATE	:	14-MAR-2010
BKG LIVE TIME(SEC)	:	60000.00
EFF FILE	:	W247.CNF;31
CAL DATE	:	28-FEB-2010

TRACER

TRACER	ID	: 445-96-2-SS	MS/MSD	ID	: 0244-B
	NUCLIDE	: AM243		NUCLIDE	: AM-241
	NOMINAL	: 2.9166E+00 dpm		NOMINAL	: 3.3153E+01 pCi/g
	RESULTS	: 2.7286E+00 dpm			

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

NUCLIDE ACTIVITY SUMMARY

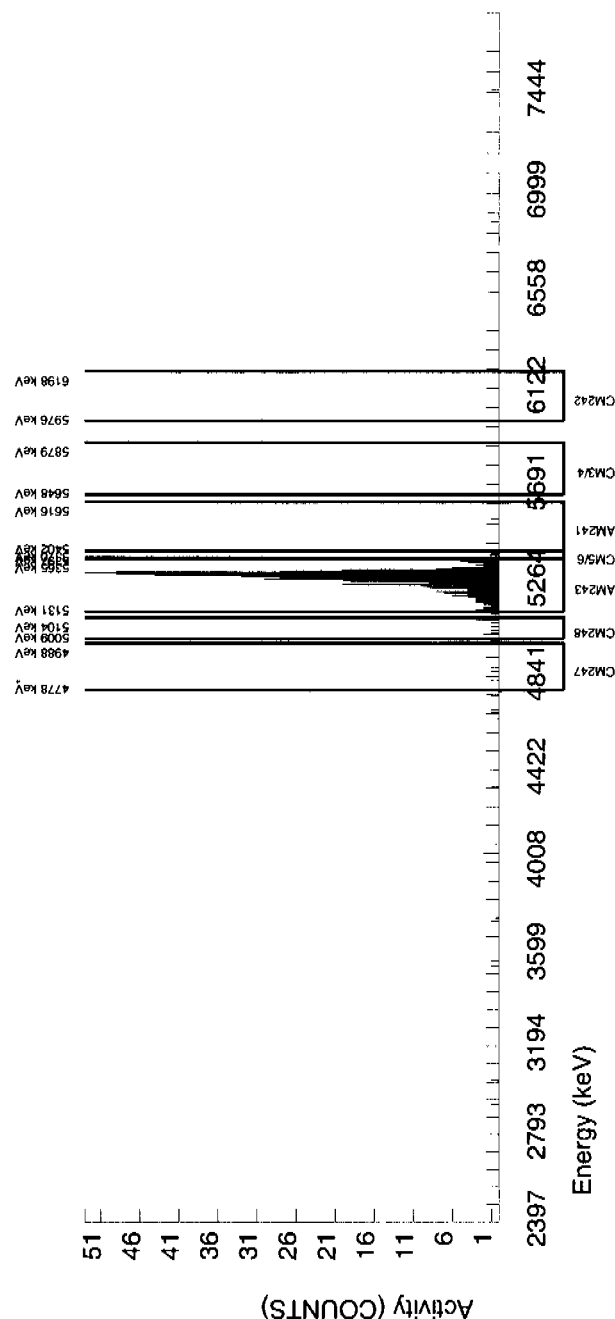
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5473.893	0.000	2.000	-0.467	1.515	2.7707	99.94000	-8.92E-04	2.58E-03	1.07E-02	2.65E-02	2.57E-03
AM243	5270.000	5282.799	37.121	548.000	546.990	1.010	1.0050	99.78000	1.05E+00	8.30E-02	3.88E-03	1.29E-02	4.48E-02
CM-242	6102.000	6087.076	0.000	0.000	0.000	0.000	4.0092	100.0000	0.00E+00	2.18E-03	1.54E-02	3.61E-02	2.18E-03
CM-3/4	5795.020	5782.052	4.925	1.000	-0.515	1.515	4.8510	100.0000	-9.87E-04	2.55E-03	1.87E-02	4.26E-02	2.55E-03
CM-5/6	5386.000	5377.895	0.000	18.000	18.000	0.000	6.1294	86.09000	3.99E-02	9.78E-03	2.74E-02	6.09E-02	9.41E-03
CM-247	4946.000	4856.532	54.174	4.000	1.980	2.020	6.3427	79.30000	4.77E-03	5.40E-03	3.08E-02	6.82E-02	5.40E-03
CM-248	5078.600	5064.273	62.792	10.000	10.000	0.000	11.0244	91.00000	2.10E-02	6.78E-03	4.67E-02	9.91E-02	6.64E-03

NOTES:

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

* BKG Sq 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 : 961694 SAMPLE ID : S0247900017_AM SAMPLE QTY : 1.253 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 90.410	CHAMBER : 248 DETECTOR S/N : 79441 AVERAGE %EFFICIENCY : 40.4154 COUNT DATE : 20-MAR-2010 11:14:05 ELAPSED LIVE TIME(SEC) : 30300.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B248.CNF:92 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W248.CNF:31 CAL DATE : 28-FEB-2010
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TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.6369E+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

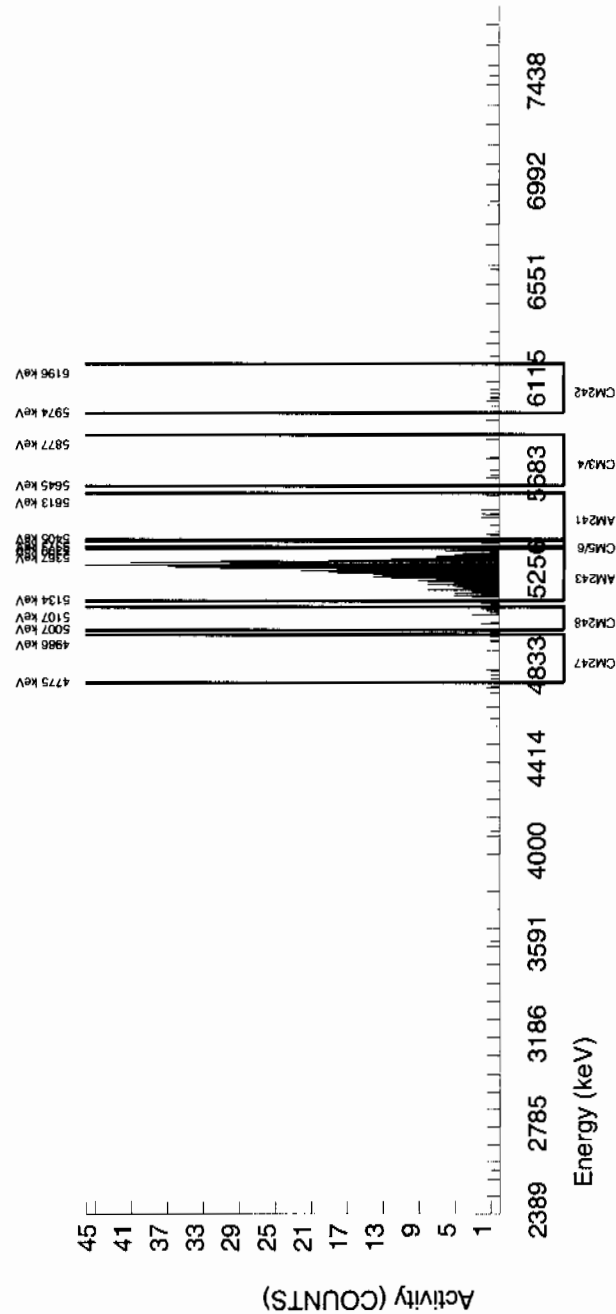
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5493.084	39.372	11.000	9.561	0.505	2.7707	99.94000	1.86E-02	6.39E-03	1.09E-02	2.71E-02	6.26E-03
AM243	5270.000	5276.923	35.742	538.000	536.990	1.010	1.0050	99.78000	1.05E+00	8.35E-02	3.96E-03	1.32E-02	4.53E-02
CM-242	6102.000	6039.042	7.229	7.000	7.000	0.000	4.0092	100.0000	1.55E-02	5.96E-03	1.58E-02	3.68E-02	5.87E-03
CM-3/4	5795.020	5720.667	93.509	4.000	1.475	2.525	4.8510	100.0000	2.88E-03	4.49E-03	1.91E-02	4.34E-02	4.49E-03
CM-5/6	5386.000	5378.736	0.000	8.000	8.000	0.000	6.1294	86.09000	1.81E-02	6.51E-03	2.80E-02	6.21E-02	6.40E-03
CM-247	4946.000	4883.091	177.175	7.000	6.495	0.505	6.3427	79.30000	1.60E-02	6.70E-03	3.14E-02	6.96E-02	6.62E-03
CM-248	5078.600	5077.284	0.000	11.000	11.000	0.000	11.0244	91.00000	2.36E-02	7.27E-03	4.76E-02	1.01E-01	7.10E-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 : 961694	CHAMBER : 249	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0247900018_AM	DETECTOR S/N : 79442	BKG FILE : B249.CNF:89
SAMPLE QTY : 1.254 G	AVERAGE %EFFICIENCY : 39.6696	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 20-MAR-2010 11:14:06	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 30300.00	EFF FILE : W249.CNF:33
% YIELD : 86.191		CAL DATE : 28-FEB-2010

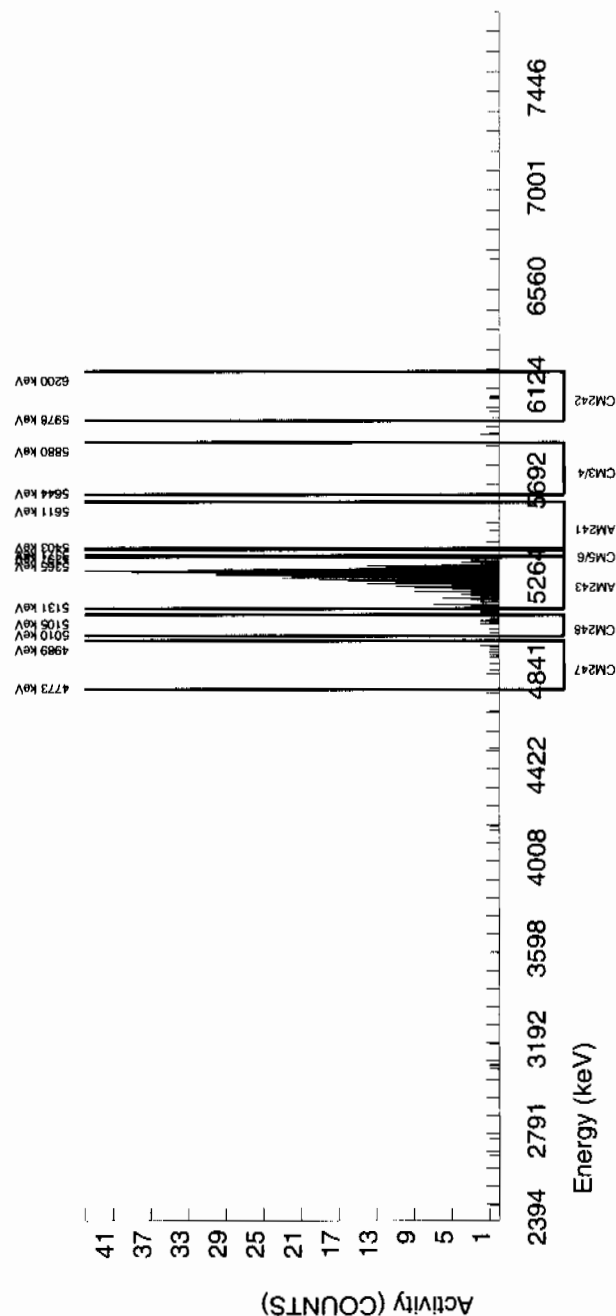
TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-SS	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.9166E+00 dpm	NOMINAL : 3.3153E+01 pCi/G	NOMINAL : 3.3153E+01 pCi/G
RESULTS : 2.5138E+00 dpm		

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	5488.166	4.932	1.000	-0.884	1.010	2.7707	99.94000	-1.84E-03	2.56E-03	1.16E-02	2.89E-02	2.56E-03
AM243	5270.000	5277.983	41.915	504.000	502.485	1.515	1.2309	99.78000	1.05E+00	8.52E-02	5.18E-03	1.60E-02	4.68E-02
CM-242	6102.000	6063.291	93.714	6.000	6.000	0.000	4.0092	100.0000	1.42E-02	5.89E-03	1.68E-03	3.93E-02	5.81E-03
CM-3/4	5795.020	5659.611	4.932	1.000	0.495	0.505	4.8510	100.0000	1.03E-03	2.34E-03	2.04E-02	4.64E-02	2.34E-03
CM-5/6	5386.000	5374.260	0.000	6.000	5.495	0.505	6.1294	86.09000	1.33E-02	6.11E-03	2.99E-02	6.63E-02	6.04E-03
CM-247	4946.000	4930.026	7.244	10.000	9.495	0.505	6.3427	79.30000	2.49E-02	8.57E-03	3.36E-02	7.43E-02	8.40E-03
CM-248	5078.600	5067.545	0.000	14.000	14.000	0.000	11.0244	91.00000	3.20E-02	8.83E-03	5.09E-02	1.08E-01	8.55E-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 : 961694 SAMPLE ID : S0247900019_AM SAMPLE QTY : 1.254 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 88.777</p>		<p>CHAMBER : 250 DETECTOR S/N : 79443 AVERAGE %EFFICIENCY : 40.2400 COUNT DATE : 20-MAR-2010 11:14:09 ELAPSED LIVE TIME(SEC) : 30300.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B250.CNF:89 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W250.CNF:31 CAL DATE : 28-FEB-2010</p>
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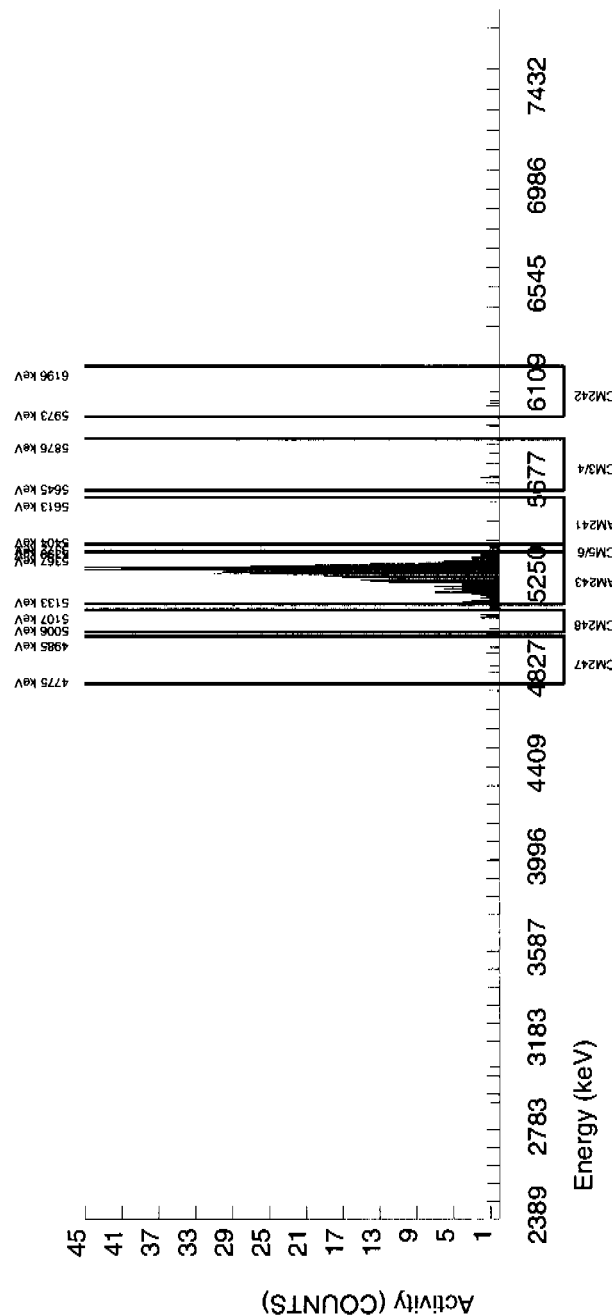
<p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.5892E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G</p>
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NUCLIDE ACTIVITY 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	5508.188	0.000	0.000	-0.913	0.000	2.7707	99.94000	-1.82E-03	2.00E-03	1.11E-02	2.77E-02	1.99E-03
AM243	5270.000	5274.320	42.251	525.000	525.000	0.000	0.0000	99.78000	1.05E+00	8.40E-02	0.00E+00	5.41E-03	4.57E-02
CM-242	6102.000	6039.660	98.127	4.000	4.000	0.000	4.0092	100.0000	9.07E-03	4.58E-03	1.61E-02	3.76E-02	4.54E-03
CM-3/4	5795.020	5737.404	7.206	4.000	4.000	0.000	4.8510	100.0000	7.99E-03	4.03E-03	1.95E-02	4.44E-02	4.00E-03
CM-5/6	5386.000	5382.748	0.000	5.000	5.000	0.000	6.1294	86.09000	1.16E-02	5.23E-03	2.86E-02	6.35E-02	5.17E-03
CM-247	4946.000	4928.846	0.000	3.000	2.495	0.505	6.3427	79.30000	6.26E-03	4.55E-03	3.21E-02	7.11E-02	4.53E-03
CM-248	5078.600	5064.284	23.918	12.000	12.000	0.000	11.0244	91.00000	2.63E-02	7.78E-03	4.87E-02	1.03E-01	7.58E-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 : 961694 SAMPLE ID : S0247900020_AM SAMPLE QTY : 1.259 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 85.560	CHAMBER : 251 DETECTOR S/N : 79444 AVERAGE %EFFICIENCY : 40.4400 COUNT DATE : 20-MAR-2010 11:14:12 ELAPSED LIVE TIME(SEC) : 30300.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B251.CNF;89 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W251.CNF;31 CAL DATE : 28-FEB-2010
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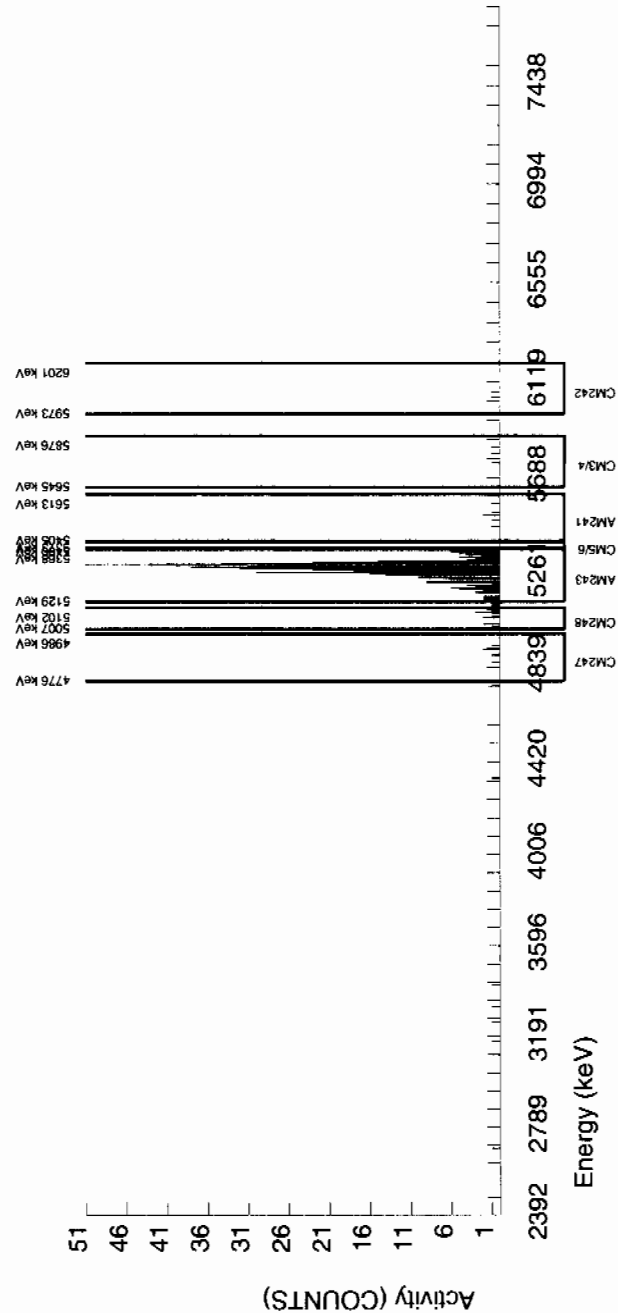
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.4954E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5523.713	9.261	8.000	7.115	0.000	2.7707	99.94000	1.46E-02	5.55E-03	1.15E-02	2.85E-02	5.47E-03
AM243	5270.000	5277.855	44.755	509.000	508.495	0.505	0.7106	99.78000	1.04E+00	8.45E-02	2.94E-03	1.14E-02	4.63E-02
CM-242	6102.000	6045.362	69.148	3.000	3.000	0.000	4.0092	100.00000	7.00E-03	4.07E-03	1.66E-02	3.87E-02	4.04E-03
CM-3/4	5795.020	5791.598	69.148	4.000	2.990	1.010	4.8510	100.00000	6.14E-03	4.38E-03	2.00E-02	4.56E-02	4.36E-03
CM-5/6	5386.000	5383.732	0.000	3.000	3.000	0.000	6.1294	86.09000	7.14E-03	4.15E-03	2.94E-02	6.53E-02	4.12E-03
CM-247	4946.000	4925.678	4.939	8.000	5.980	2.020	6.3427	79.30000	1.54E-02	7.83E-03	3.31E-02	7.31E-02	7.75E-03
CM-248	5078.600	5060.954	0.000	21.000	20.495	0.505	11.0244	91.00000	4.61E-02	1.08E-02	5.01E-02	1.06E-01	1.04E-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	961694
SAMPLE ID	S1202062741_AM
SAMPLE QTY	1.000 G
SAMPLE DATE	11-MAR-2010 00:00:00
ANALYST	KXM4
% YIELD	79.657

CHAMBER : 252
DETECTOR S/N : 79445
AVERAGE %EFFICIENCY : 39.1229
COUNT DATE : 20-MAR-2000
ELAPSED LIVE TIME(SEC) : 30300.00

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LIB FILE : ENV_ALPHA_AM
BKG FILE : B252.CNF:89
3KG DATE : 14-MAR-2010
TIME(SEC) : 60000.00
EFF FILE : W252.CNF:31
CAL DATE : 28-FEB-2010
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MS/MSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3150E+01 pCi/G

LCS/LCSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3150E+01 pCi/G

TRACER	:	445-96-2-SS
ID	:	AM243
NUCLIDE	:	2.9165E+00 dpm
NOMINAL	:	2.3232E+00 dpm
RESULTS	:	

NUCLIDE ACTIVITY SUMMARY

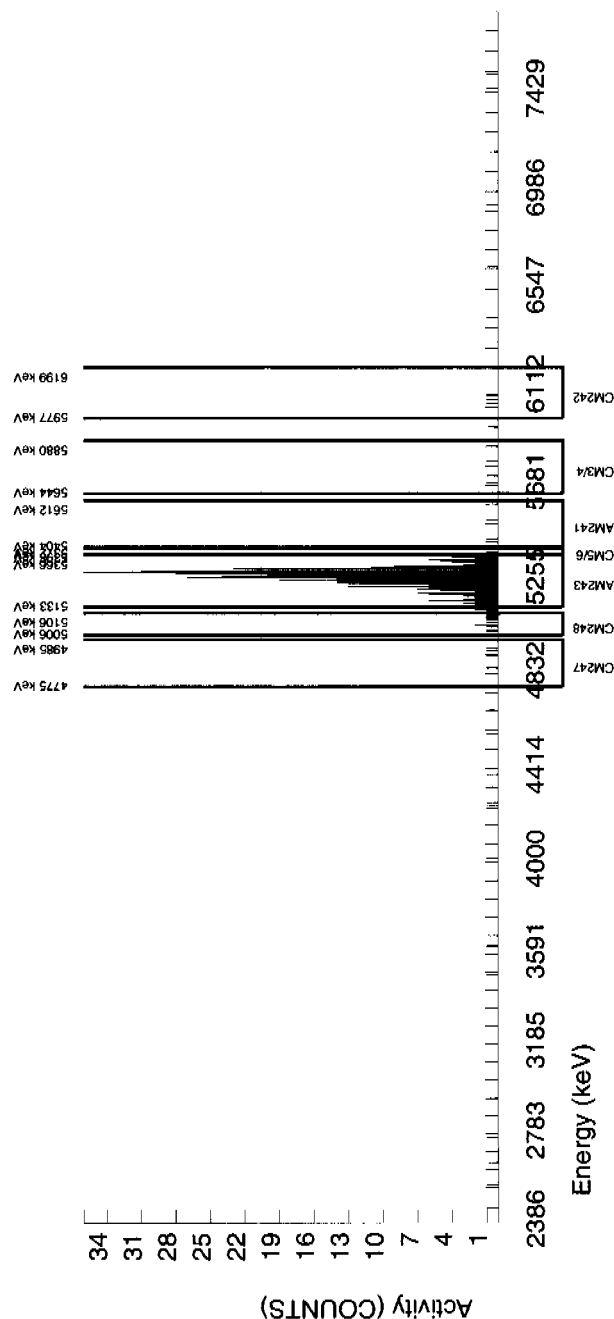
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5471.074	93.849	3.000	2.203	0.000	2.7707	99.94000	6.31E-03	4.27E-03	1.60E-02	3.98E-02	4.25E-03
AM243	5270.000	5272.061	52.380	459.000	457.990	1.010	1.0050	99.78000	1.31E+00	1.10E-01	5.82E-03	1.94E-02	6.15E-02
CM-242	6102.000	6050.344	0.000	5.000	4.495	0.505	4.0092	100.0000	1.34E-02	6.90E-03	2.32E-02	5.41E-02	6.84E-03
CM-3/4	5795.020	5771.121	158.062	4.000	4.000	0.000	4.8510	100.0000	1.15E-02	5.79E-03	2.80E-02	6.38E-02	5.73E-03
CM-5/6	5386.000	5380.528	4.939	3.000	3.000	0.000	6.1294	86.09000	9.97E-03	5.80E-03	4.11E-02	9.13E-02	5.76E-03
CM-247	4946.000	4896.594	0.000	10.000	9.495	0.505	6.3427	79.30000	3.43E-02	1.18E-02	4.62E-02	1.02E-01	1.16E-02
CM-248	5078.600	5063.092	4.939	14.000	14.000	0.000	11.0244	91.00000	4.40E-02	1.22E-02	7.00E-02	1.48E-01	1.18E-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 : 961694 SAMPLE ID : S1202062742_AM SAMPLE QTY : 1.253 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 89.066	CHAMBER : 253 DETECTOR S/N : 79446 AVERAGE %EFFICIENCY : 39.9556 COUNT DATE : 20-MAR-2010 11:14:18 ELAPSED LIVE TIME(SEC) : 30300.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B253.CNF:91 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W253.CNF:30 CAL DATE : 28-FEB-2010
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TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.5977E+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

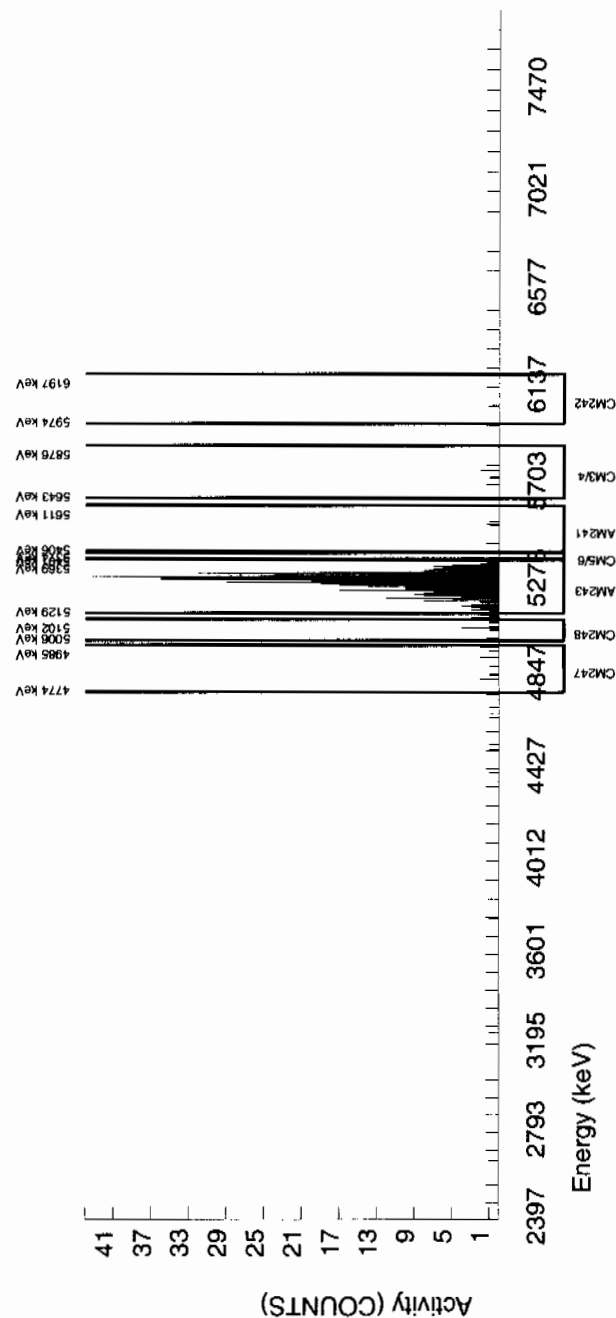
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5531.767	29.558	3.000	-2.455	4.545	2.7707	99.94000	-4.91E-03	4.19E-03	1.12E-02	2.78E-02	4.19E-03
AM243	5270.000	5273.898	42.777	524.000	522.990	1.010	1.0050	99.78000	1.05E+00	8.42E-02	4.07E-03	1.36E-02	4.59E-02
CM-242	6102.000	6060.743	4.926	1.000	1.000	0.000	4.0092	100.0000	2.28E-03	2.28E-03	1.62E-02	3.78E-02	2.28E-03
CM-3/4	5795.020	5745.751	4.926	5.000	-4.090	9.090	4.8510	100.0000	-8.21E-03	6.22E-03	1.96E-02	4.46E-02	6.21E-03
CM-5/6	5386.000	5379.638	4.926	1.000	1.000	0.000	6.1294	86.09000	2.32E-03	2.33E-03	2.87E-02	6.38E-02	2.32E-03
CM-247	4946.000	4915.188	137.938	10.000	0.405	9.595	6.3427	79.30000	1.02E-03	9.72E-03	3.23E-02	7.14E-02	9.72E-03
CM-248	5078.600	5062.836	6.569	11.000	11.000	0.000	11.0244	91.00000	2.42E-02	7.47E-03	4.89E-02	1.04E-01	7.29E-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 : 961694
 SAMPLE ID : S1202062743_AM
 SAMPLE QTY : 0.120 G
 SAMPLE DATE : 11-MAR-2010 00:00:00
 ANALYST : KXM4
 % YIELD : 98.175

CHAMBER : 254
 DETECTOR S/N : 79447
 AVERAGE %EFFICIENCY : 40.1306
 COUNT DATE : 20-MAR-2010 11:14:22
 ELAPSED LIVE TIME(SEC) : 30300.00

LIB FILE : ENV_ALPHA_AM
 BKG FILE : B254.CNF;89
 BKG DATE : 14-MAR-2010
 BKG LIVE TIME(SEC) : 60000.00
 EFF FILE : W254.CNF;30
 CAL DATE : 28-FEB-2010

TRACER ID : 445-96-2-SS
 NUCLEIDE : AM243
 NOMINAL : 2.9165E+00 dpm
 RESULTS : 2.8633E+00 dpm

MS/MSD ID : 0244-B
 NUCLEIDE : AM-241
 NOMINAL : 3.3150E+01 pCi/G

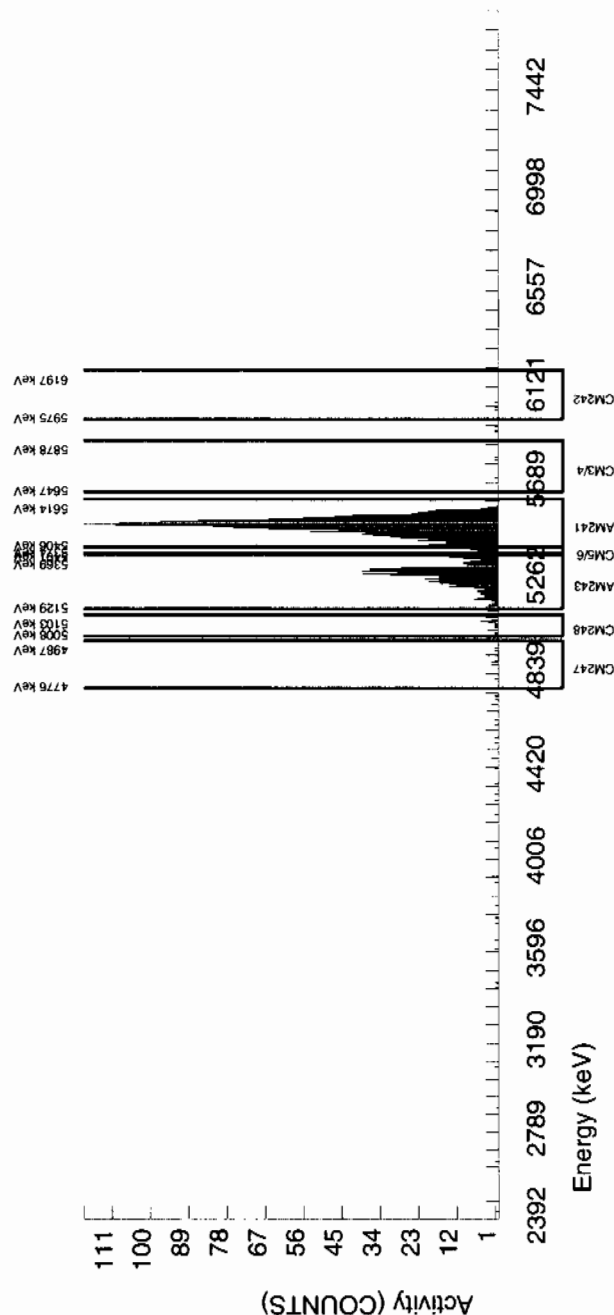
LCS/LCSD ID : 0244-B
 NUCLEIDE : AM-241
 NOMINAL : 3.3150E+01 pCi/G

NUCLEIDE ACTIVITY SUMMARY

NUCLEIDE	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	5501.981	49.023	1556.000	1554.488	0.505	2.7707	99.94000	2.93E+01	2.22E+00	1.06E-01	2.62E-01	7.45E-01
AM243	5270.000	5282.857	60.934	579.000	579.000	0.000	0.0000	99.78000	1.09E+01	9.02E-01	0.00E+00	5.12E-02	4.55E-01
CM-242	6102.000	6038.597	34.548	4.000	4.000	0.000	4.0092	100.0000	7.86E-02	3.97E-02	1.53E-01	3.56E-01	3.93E-02
CM-3/4	5795.020	5773.699	88.838	3.000	3.000	0.000	4.8510	100.0000	5.67E-02	3.30E-02	1.85E-01	4.21E-01	3.27E-02
CM-5/6	5386.000	5388.491	0.000	47.000	47.000	0.000	6.1294	86.09000	1.03E+00	1.67E-01	2.71E-01	6.02E-01	1.50E-01
CM-247	4946.000	4907.470	0.000	12.000	10.990	1.010	6.3427	79.30000	2.61E-01	8.62E-02	3.05E-01	6.74E-01	8.41E-02
CM-248	5078.600	5061.010	44.316	25.000	25.000	0.000	11.0244	91.00000	5.18E-01	1.10E-01	4.61E-01	9.79E-01	1.04E-01

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# 961696 Product: PU Date: 3/20/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NA
Samples have been blank corrected (if required)	/		
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)	/		case narrative
Sample was run within hold time.			
Sample was correctly preserved if required.			NA
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	/		
No blank spaces on data forms.	/		
All line outs initialed and dated.	/		
No transcription errors are apparent.			NA
Aux data is correct.	/		
Client Special requirements page has been checked.	/		
Raw Data and/ or spectrum are included and properly stasured.	/		
QC data entered into QC database and batch is in REVW	/		
Hit notification complete (if necessary)	/		NA
Batch entered into Case Narrative.	/		
Batch Data Exception Reports (DER) completed, if applicable.			NA
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			NA
Aliquot Correction completed if required.			NA
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	/		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: [Signature] 3/20/10

Secondary Review Performed By: [Signature] 3/21/10

3/13 (3/24)
CAM

Plutonium Que Sheet

05-MAR-10

Batch #: 961696

Tracer Isotope(s): Pu-239

LCS Isotope(s): Pu-239

Spike Isotope(s): Pu-239

First Client Due Date: 24-MAR-10

Expiration Date: 12-1-10

Expiration Date: 4-30-10

Expiration Date: N/A

Internal Due Date: 13-MAR-10

Vol: 0.15

Vol: N/A

Vol: N/A

Witness: MDA 3/11/10

Pipet ID: 2471058

Balance ID: 50410712

Initials: VM

Prep Date: 3-11-10

Matrix: SOIL

Matrix: SOIL

Matrix: SOIL

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Aliquot (g)	Pu Det #
247900001-1	RE15-10-7896	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	1	1	1.257	66
247900002-1	RE15-10-7894	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	2	2	1.256	67
247900003-1	RE15-10-7900	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	3	3	1.252	68
247900004-1	RE15-10-7898	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	4	4	1.252	69
247900005-1	RE15-10-7897	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	5	5	1.260	70
247900006-1	RE15-10-7895	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	6	6	1.250	72
247900007-1	RE15-10-7899	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	7	7	1.257	73
247900008-1	RE15-10-7893	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	8	8	1.260	74
247900009-1	RE15-10-8011	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	9	9	1.256	75
247900010-1	RE15-10-8004	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	10	10	1.256	76
247900011-1	RE15-10-8009	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	11	11	1.260	89
247900012-1	RE15-10-8003	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	12	12	1.252	96
247900013-1	RE15-10-8007	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	13	13	1.255	91
247900014-1	RE15-10-8002	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	14	14	1.254	93
247900015-1	RE15-10-8010	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	15	15	1.251	94
247900016-1	RE15-10-8006	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	16	16	1.25	95
247900017-1	RE15-10-8001	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	17	17	1.253	96
247900018-1	RE15-10-8012	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	18	18	1.254	97
247900019-1	RE15-10-8008	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	19	19	1.254	98
247900020-1	RE15-10-8005	SAMPLE	.05 pC/g		SOIL	LANL010	18-FEB-10	20	20	1.259	99
1202062744-1	MB for batch 961696	MB	.05 pC/g		SOIL	QC ACCOUNT		21	21	1.00	100
1202062745-1	RE15-10-7896(247900001DUP)	DUP	.05 pC/g		SOIL	QC ACCOUNT	18-FEB-10	22	22	1.253	101
1202062746-1	LCS for batch 961696	LCS	.05 pC/g		SOIL	QC ACCOUNT		23	23	0.120	102

Solid Sample Dissolution by: TEACH 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

Data Reviewed By:

Jan 3/2/10
Page: 1 of 1

Blank Correction Report

Batch ID 961696

GEL Sample ID	Client sample ID	Parameter	Allquot	Result	TPU	MDA	Allquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202062745	DUP	Plutonium-238	1.25 g	0.0119	0.00456	0.0226	.006256	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00313	0.00401	0.0191	.003568	pCi/g	YES
1202062746	LCS	Plutonium-238	0.120 g	3.93	0.358	0.224	.065166667	pCi/g	NO
		Plutonium-239/240	0.120 g	38.3	2.54	0.189	.037166667	pCi/g	NO
1202062744	MB	Plutonium-238	1.00 g	0.00782	0.00394	0.026	.00782	pCi/g	YES
		Plutonium-239/240	1.00 g	0.00446	0.00368	0.0219	.00446	pCi/g	YES
247900001	RE15-10-7896	Plutonium-238	1.26 g	0.0028	0.00655	0.0244	.006206349	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00757	0.00556	0.0206	.003539683	pCi/g	YES
247900002	RE15-10-7894	Plutonium-238	1.26 g	0.00171	0.00552	0.0236	.006206349	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00682	0.0049	0.0199	.003539683	pCi/g	YES
247900003	RE15-10-7900	Plutonium-238	1.25 g	-0.000327	0.00385	0.0271	.006256	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0113	0.00583	0.0229	.003568	pCi/g	YES
247900004	RE15-10-7898	Plutonium-238	1.25 g	-0.00109	0.00188	0.0202	.006256	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00389	0.00342	0.0171	.003568	pCi/g	YES
247900005	RE15-10-7897	Plutonium-238	1.26 g	0.00786	0.00489	0.0204	.006206349	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0102	0.00579	0.0172	.003539683	pCi/g	YES
247900006	RE15-10-7895	Plutonium-238	1.25 g	0.00497	0.00557	0.0204	.006256	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00853	0.00438	0.0172	.003568	pCi/g	YES
247900007	RE15-10-7899	Plutonium-238	1.26 g	0.00196	0.00243	0.0203	.006206349	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0341	0.00767	0.0172	.003539683	pCi/g	NO
247900008	RE15-10-7893	Plutonium-238	1.26 g	0.0059	0.00409	0.022	.006206349	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0121	0.00488	0.0186	.003539683	pCi/g	YES
247900009	RE15-10-8011	Plutonium-238	1.26 g	0.00338	0.0024	0.0224	.006206349	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00987	0.00525	0.019	.003539683	pCi/g	YES
247900010	RE15-10-8004	Plutonium-238	1.26 g	0.00669	0.00337	0.0222	.006206349	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00261	0.00336	0.0188	.003539683	pCi/g	YES
247900011	RE15-10-8009	Plutonium-238	1.26 g	0.0035	0.00249	0.0233	.006206349	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0382	0.00913	0.0197	.003539683	pCi/g	NO
247900012	RE15-10-8003	Plutonium-238	1.25 g	0.00332	0.00235	0.022	.006256	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0116	0.00444	0.0186	.003568	pCi/g	YES
247900013	RE15-10-8007	Plutonium-238	1.26 g	0.00301	0.00214	0.020	.006206349	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0391	0.00798	0.0169	.003539683	pCi/g	NO
247900014	RE15-10-8002	Plutonium-238	1.25 g	0.00319	0.00226	0.0212	.006256	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00478	0.00277	0.0179	.003568	pCi/g	YES
247900015	RE15-10-8010	Plutonium-238	1.25 g	0.00491	0.00285	0.0217	.006256	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0119	0.00482	0.0183	.003568	pCi/g	YES
247900016	RE15-10-8006	Plutonium-238	1.26 g	-0.00206	0.00918	0.0244	.006206349	pCi/g	YES
		Plutonium-239/240	1.26 g	-0.00162	0.00371	0.0206	.003539683	pCi/g	YES
247900017	RE15-10-8001	Plutonium-238	1.25 g	0.00613	0.00424	0.0228	.006256	pCi/g	YES

Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Allquot	Result	TPU	MDA	Allquot Corrected Blank Result	Units	Activity <5X Corrected Blank
247900017	RE15-10-8001	Plutonium-239/240	1.25 g	0.0479	0.0101	0.0193	.003568	pCi/g	NO
247900018	RE15-10-8012	Plutonium-238	1.25 g	0.00651	0.00483	0.0196	.006256	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00337	0.00278	0.0166	.003568	pCi/g	YES
247900019	RE15-10-8008	Plutonium-238	1.25 g	0.00513	0.00334	0.0208	.006256	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00557	0.00385	0.0176	.003568	pCi/g	YES
247900020	RE15-10-8005	Plutonium-238	1.26 g	0.00666	0.00367	0.0206	.006206349	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0266	0.00746	0.0174	.003539683	pCi/g	NO

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 961696 SAMPLE ID : S0247900001_PU SAMPLE QTY : 1.257 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 83.839</p>	<p>CHAMBER : 066 DETECTOR S/N : 46-089C1 AVERAGE %EFFICIENCY : 32.3245 COUNT DATE : 19-MAR-2010 21:07:03 ELAPSED LIVE TIME(SEC) : 43199.99</p>	<p>LIB FILE : ENV_ALPHA_PU BKG FILE : B066.CNF;1114 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W066.CNF;310 CAL DATE : 12-MAR-2010</p>
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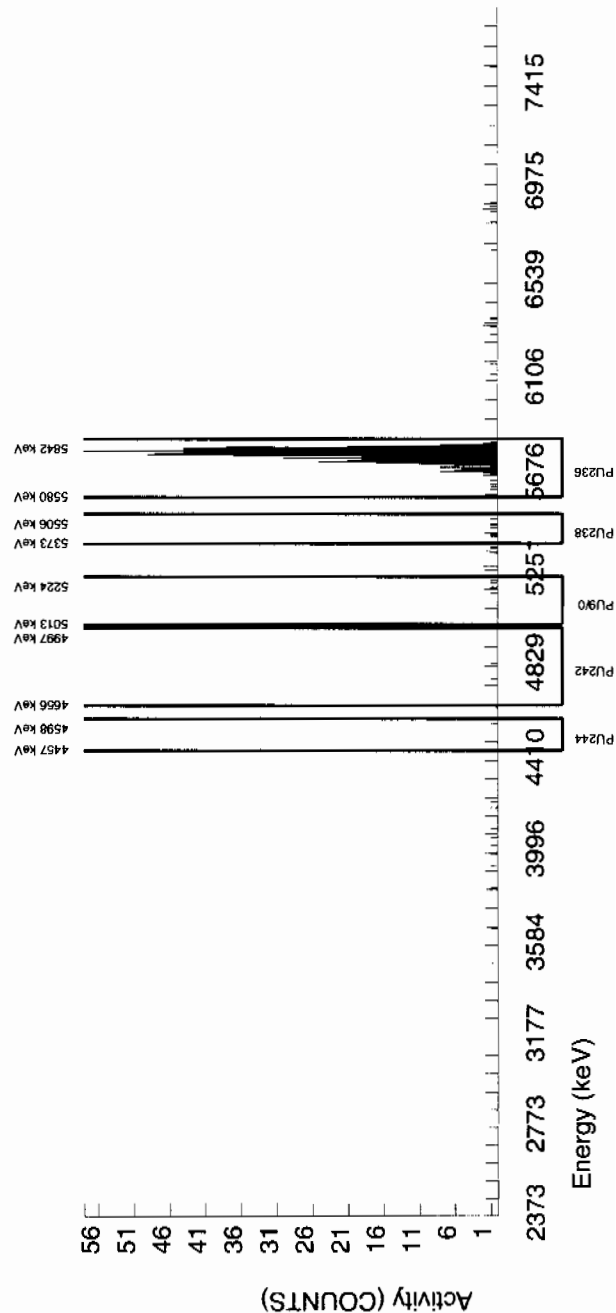
<p>TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.5403E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>
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NUCLIDE ACTIVITY 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	5775.375	47.914	586.000	579.520	6.480	2.5456	100.0000	1.09E+00	7.87E-02	1.01E-02	2.51E-02	4.55E-02
PU-238	5499.000	5446.522	79.065	8.000	1.520	6.480	2.4495	99.900000	2.80E-03	6.55E-03	9.72E-03	2.44E-02	6.55E-03
PU-9/0	5155.000	5160.780	7.315	7.000	4.120	2.880	1.9732	99.900000	7.57E-03	5.56E-03	7.83E-03	2.06E-02	5.54E-03
PU242	4890.000	4790.219	94.629	3.000	-0.600	3.600	*****	100.0000	-1.10E-03	4.34E-03	4.94E-01	9.93E-01	4.34E-03
PU-244	4589.000	4467.625	4.980	1.000	1.000	0.000	6.4609	99.900000	1.84E-03	1.84E-03	2.56E-02	5.62E-02	1.84E-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 : 961696	CHAMBER : 067	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0247900002_PU	DETECTOR S/N : 46-089B4	BKG FILE : B067.CNF;1112
SAMPLE QTY : 1.256 G	AVERAGE %EFFICIENCY : 33.1255	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 21:07:03	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43199.99	EFF FILE : W067.CNF;291
% YIELD : 84.703		CAL DATE : 12-MAR-2010

TRACER ID : 1430-C	MS/MSD ID : 0244-B	LCS/LCSD 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
RESULTS : 2.5665E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

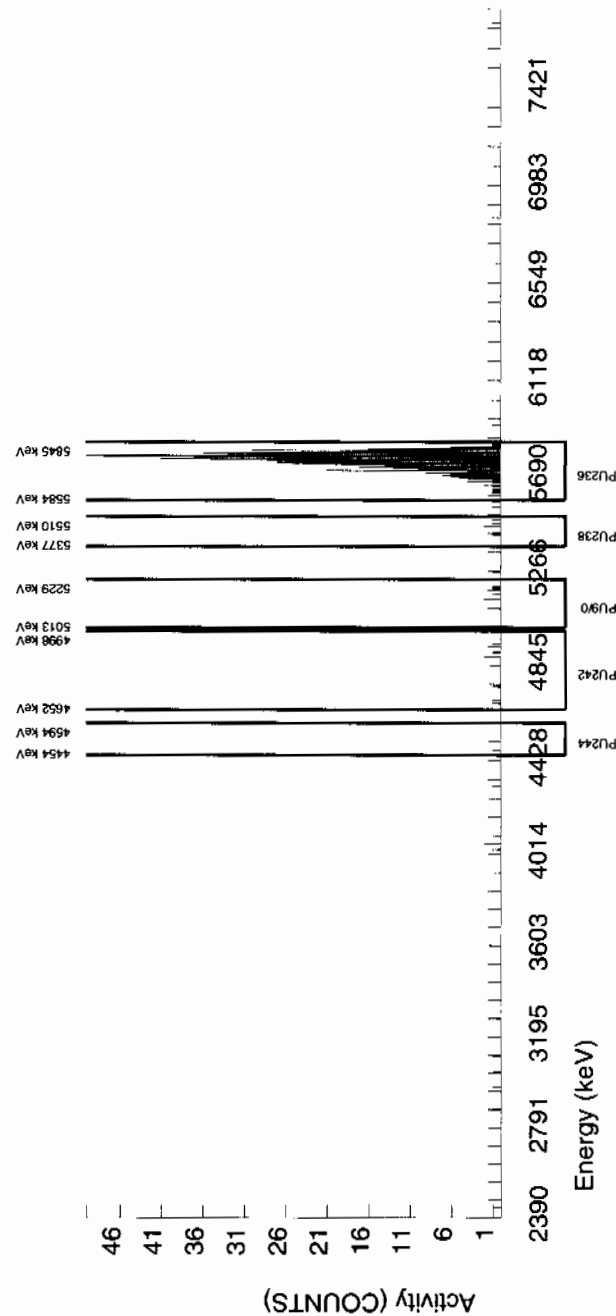
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5770.323	56.616	600.000	600.000	0.000	0.0000	100.0000	1.09E+00	7.74E-02	0.00E+00	4.81E-03	4.44E-02
PU-238	5499.000	5468.179	4.989	6.000	0.960	5.040	2.4495	99.900000	1.71E-03	5.52E-03	9.39E-03	2.36E-02	5.52E-03
PU-9/0	5155.000	5175.617	4.989	6.000	3.840	2.160	1.9732	99.900000	6.82E-03	4.90E-03	7.56E-03	1.99E-02	4.88E-03
PU242	4890.000	4835.441	4.989	9.000	6.120	2.880	*****	100.0000	1.09E-02	5.94E-03	4.77E-01	9.60E-01	5.91E-03
PU-244	4589.000	4500.629	44.904	2.000	1.280	0.720	6.4609	99.900000	2.27E-03	2.82E-03	2.48E-02	5.44E-02	2.82E-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 : 961696 SAMPLE ID : S0247900003_PU SAMPLE QTY : 1.252 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 81.883</p>	<p>CHAMBER : 068 DETECTOR S/N : 78794 AVERAGE %EFFICIENCY : 29.9395 COUNT DATE : 19-MAR-2010 21:07:03 ELAPSED LIVE TIME(SEC) : 43199.99</p>	<p>LIB FILE : ENV_ALPHA_PU BKG FILE : B068.CNF;1105 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W068.CNF;282 CAL DATE : 12-MAR-2010</p>
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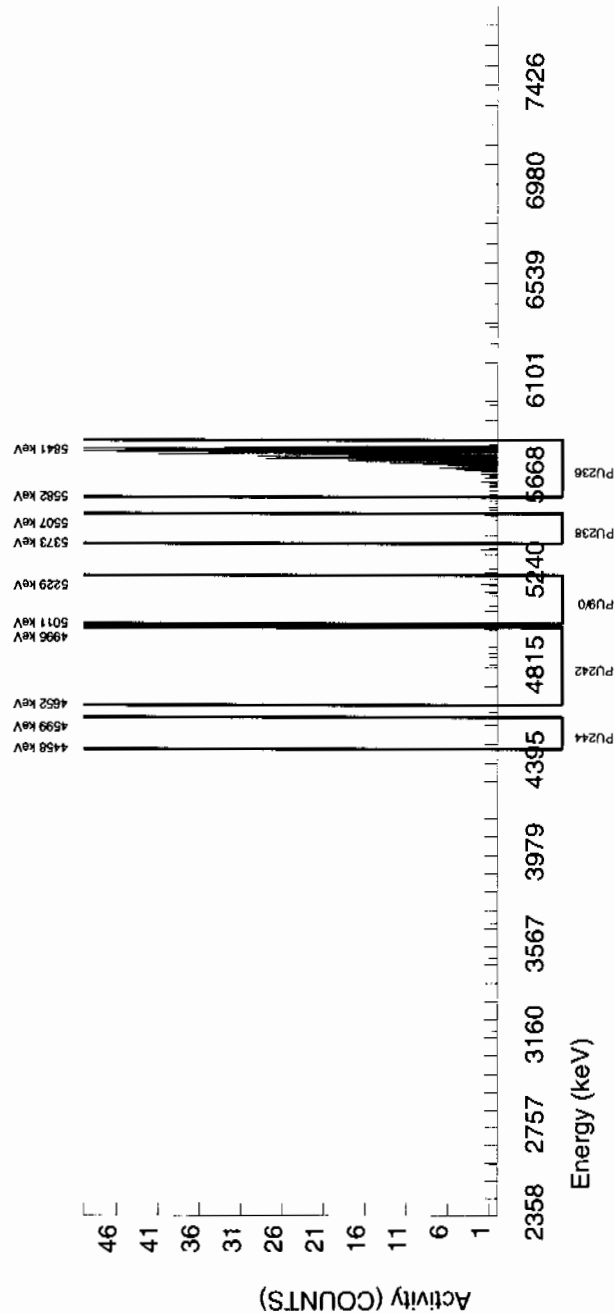
<p>TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.4811E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>
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NUCLIDE ACTIVITY 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	5778.164	53.264	530.000	524.240	5.760	2.4000	100.0000	1.09E+00	8.18E-02	1.06E-02	2.66E-02	4.81E-02
PU-238	5499.000	5429.385	0.000	2.000	-0.160	2.160	2.4495	99.900000	-3.27E-04	3.85E-03	1.08E-02	2.71E-02	3.85E-03
PU-9/0	5155.000	5168.851	7.283	7.000	5.560	1.440	1.9732	99.900000	1.13E-02	5.83E-03	8.69E-03	2.29E-02	5.78E-03
PU242	4890.000	4859.163	163.625	6.000	5.280	0.720	*****	100.0000	1.08E-02	5.24E-03	5.48E-01	1.10E+00	5.20E-03
PU-244	4589.000	4567.743	4.958	1.000	1.000	0.000	6.4609	99.900000	2.04E-03	2.04E-03	2.84E-02	6.24E-02	2.04E-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 : 961696
SAMPLE ID : S0247900004_PU
SAMPLE QTY : 1.252 G
SAMPLE DATE : 18-FEB-2010 00:00:00
ANALYST : KXM4
% YIELD : 99.408

CHAMBER : 069
DETECTOR S/N : 78795
AVERAGE %EFFICIENCY : 33.1235
COUNT DATE : 19-MAR-2010 21:07:03
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B069.CNF;1107
BKG DATE : 14-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W069.CNF;289
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0300E+00 dpm
RESULTS : 3.0121E+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

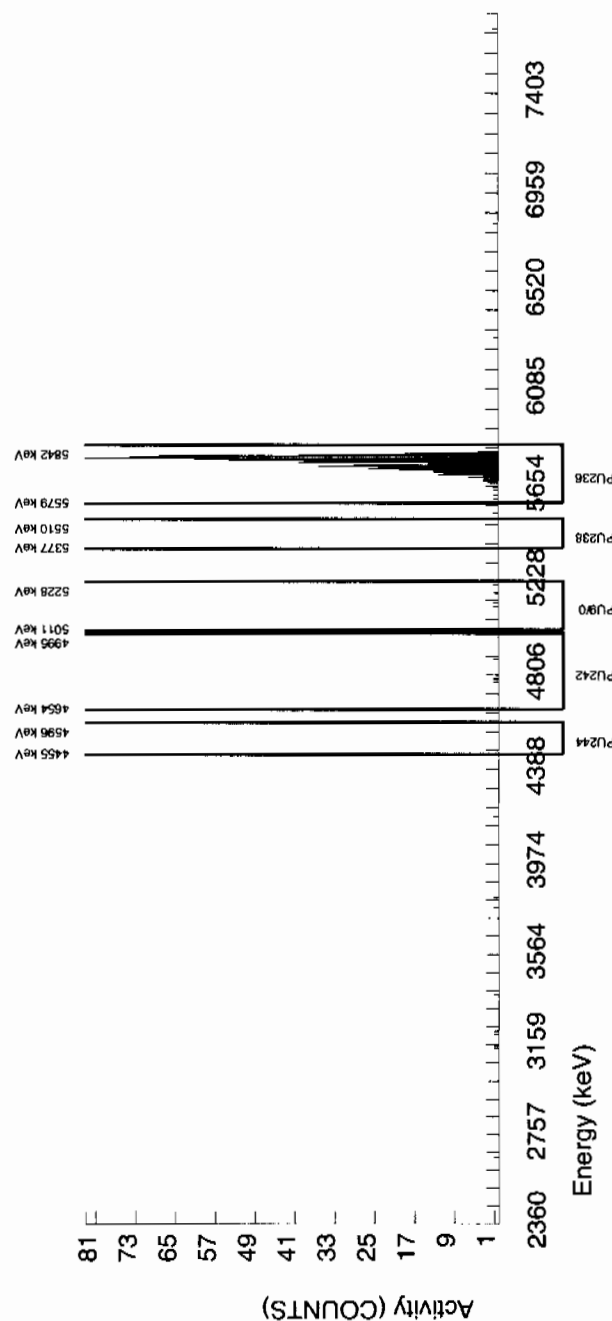
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5771.168	28.354	707.000	704.120	2.880	1.6971	100.0000	1.09E+00	7.39E-02	5.56E-03	1.52E-02	4.12E-02
PU-238	5499.000	5443.299	0.000	0.000	-0.720	0.720	2.4495	99.900000	-1.09E-03	1.88E-03	8.03E-03	2.02E-02	1.87E-03
PU-9/0	5155.000	5164.293	93.774	4.000	2.560	1.440	1.9732	99.900000	3.89E-03	3.42E-03	6.47E-03	1.71E-02	3.41E-03
PU242	4890.000	4812.179	103.645	4.000	3.280	0.720	*****	100.0000	4.98E-03	3.24E-03	4.08E-01	8.20E-01	3.23E-03
PU-244	4589.000	4525.556	0.000	0.000	-0.720	0.720	6.4609	99.900000	-1.09E-03	1.87E-03	2.12E-02	4.65E-02	1.87E-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 : 961696	CHAMBER : 070	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0247900005_PU	DETECTOR S/N : 46-089B2	BKG FILE : B070.CNF;1117
SAMPLE QTY : 1.260 G	AVERAGE %EFFICIENCY : 37.8580	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 21:07:03	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43199.99	EFF FILE : W070.CNF;294
% YIELD : 85.583		CAL DATE : 12-MAR-2010

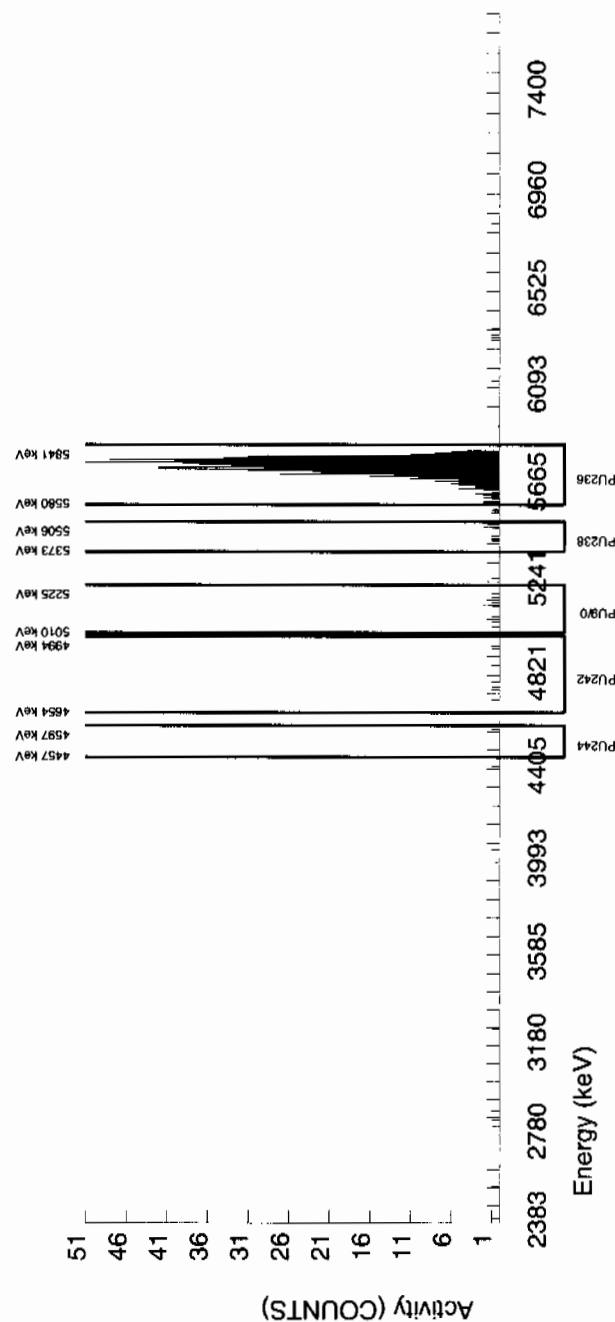
TRACER ID : 1430-C	MS/MSD ID : 0244-B	LCS/LCSD ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0300E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.5932E+00 dpm		

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
PU-236	5749.000	5750.216	75.471	695.000	692.840	2.160	1.4697	100.0000	1.08E+00	7.37E-02	4.86E-03	1.39E-02	4.13E-02
PU-238	5499.000	5463.235	7.244	8.000	5.120	2.880	2.4495	99.900000	7.86E-03	4.89E-03	8.11E-03	2.04E-02	4.87E-03
PU-9/0	5155.000	5140.098	7.244	11.000	6.680	4.320	1.9732	99.900000	1.02E-02	5.79E-03	6.53E-03	1.72E-02	5.76E-03
PU242	4890.000	4836.825	231.820	8.000	5.120	2.880	*****	100.0000	7.85E-03	4.88E-03	4.12E-01	8.28E-01	4.86E-03
PU-244	4589.000	4586.601	4.932	1.000	1.000	0.000	6.4609	99.900000	1.53E-03	1.54E-03	2.14E-02	4.69E-02	1.53E-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 : 961696	CHAMBER : 072	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0247900006_PU	DETECTOR S/N : 45-149AA3	BKG FILE : B072.CNF;1108
SAMPLE QTY : 1.250 G	AVERAGE %EFFICIENCY : 33.6853	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 21:07:04	BKG LIVE TIME(SEC) : 59999.99
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W072.CNF;279
% YIELD : 96.956		CAL DATE : 12-MAR-2010

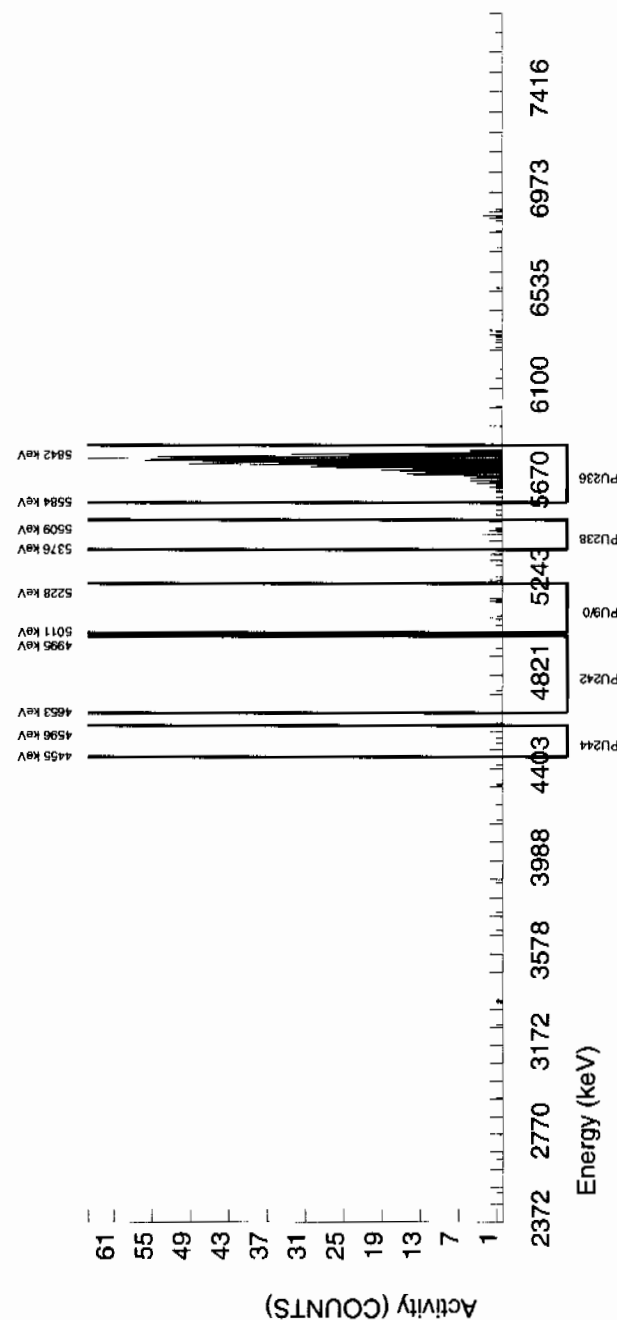
TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0300E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.9378E+00 dpm		

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
PU-236	5749.000	5768.581	48.754	702.000	698.400	3.600	1.8974	100.0000	1.09E+00	7.43E-02	6.27E-03	1.67E-02	4.15E-02
PU-238	5499.000	5460.891	4.951	9.000	3.240	5.760	2.4495	99.900000	4.97E-03	5.57E-03	8.11E-03	2.04E-02	5.57E-03
PU-9/0	5155.000	5117.836	9.903	7.000	5.560	1.440	1.9732	99.900000	8.53E-03	4.38E-03	6.53E-03	1.72E-02	4.35E-03
PU242	4890.000	4852.630	183.204	2.000	-4.480	6.480	*****	100.0000	-6.87E-03	3.96E-03	4.12E-01	8.28E-01	3.96E-03
PU-244	4589.000	4533.055	24.757	2.000	-0.160	2.160	6.4609	99.900000	-2.45E-04	2.89E-03	2.14E-02	4.69E-02	2.89E-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

BATCH NUMBER :	961696
SAMPLE ID :	S024790
SAMPLE QTY :	1.25
SAMPLE DATE :	18-FEB-2018
ANALYST :	KXM4
% YIELD :	98.105

ATCH NUMBER : 961696
SAMPLE ID : S024790007_PU
SAMPLE QTY : 1.257 G
SAMPLE DATE : 18-FEB-2010 00:00:00
ANALYST : KXM4
% YIELD : 98.105

CHAMBER : 073

DETECTOR S/N : 78775

AVERAGE %EFFICIENCY : 33.1763

COUNT DATE : 19-MAR-2003

COUNT DATE : 13-MAY-2
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE :	ENV_ALPHA.PU
BKG FILE :	B073.CNF;1110
BKG DATE :	14-MAR-2010
BKG LIVE TIME(SEC) :	59999.99
EFF FILE :	W073.CNF;287
CAL DATE :	12-MAR-2010

BKG DATE : 14-MAR-2010

END DATE : 14-MAY-2010
TIME(SEC) : 59999.99

TIME(SEC) : 39999.99
EFF FILE : W073.CNF:287

EFF FILE : W073-UNIT-287
 CAL DATE : 12-MAR-2010

TRACER

ID : 1430-C

NUCLIDE : PU-236

NOMINAL : 3.0300E+00 dpm

RESULTS : 2.9726E+00 dpm

MS/MSD

ID : 0244-B

NUCLIDE : PU-9/0

NOMINAL : 4.1778E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

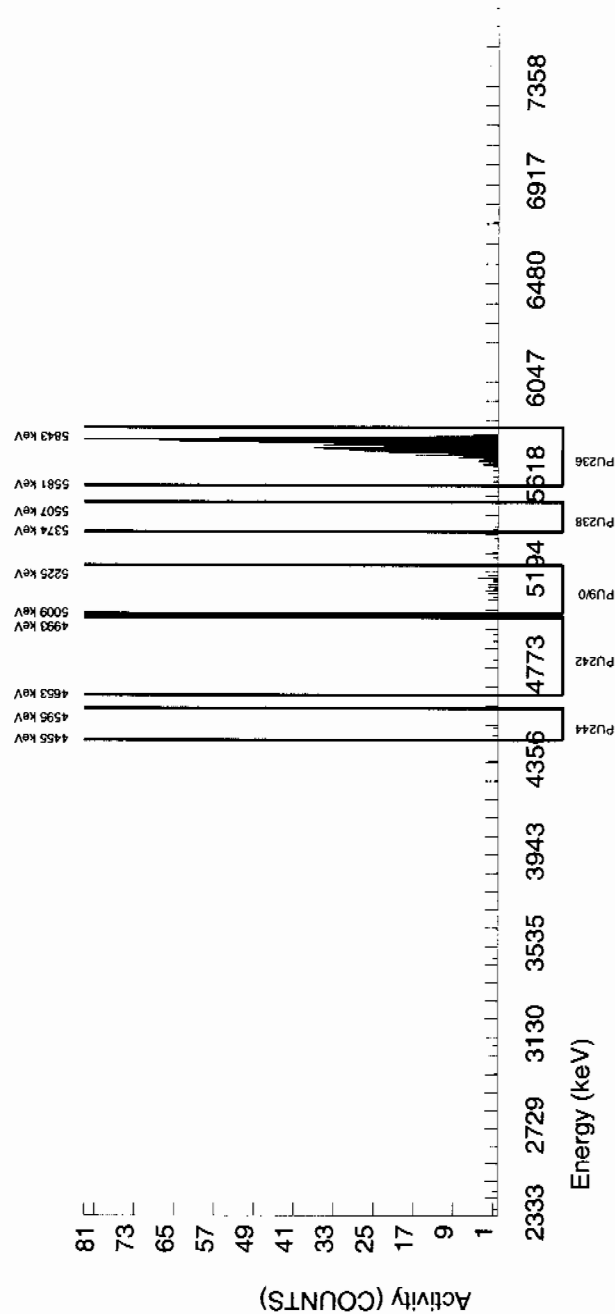
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
PU-236	5749.000	5771.034	27.246	696.000	696.000	0.000	0.0000	100.0000	1.09E+00	7.37E-02	0.00E+00	4.14E-03	4.12E-02
PU-238	5499.000	5394.887	14.794	2.000	1.280	0.720	2.4495	99.90000	1.96E-03	2.43E-03	8.09E-03	2.03E-02	2.43E-03
PU-9/0	5155.000	5141.629	5.727	23.000	22.280	0.720	1.9732	99.90000	3.41E-02	7.63E-03	6.52E-03	1.72E-02	7.42E-03
PU242	4890.000	4877.239	108.489	3.000	-1.320	4.320	*****	100.0000	-2.02E-03	3.78E-03	4.11E-01	8.27E-01	3.78E-03
PU-244	4589.000	4498.862	39.450	2.000	2.000	0.000	6.4609	99.90000	3.06E-03	2.17E-03	2.13E-02	4.68E-02	2.16E-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

BATCH NUMBER : 961696	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0247900008_PU	BKG FILE : B074.CNF:1132
SAMPLE QTY : 1.260 G	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	BKG LIVE TIME(SEC) : 59999.99
ANALYST : KXM4	EFF FILE : W074.CNF:334
% YIELD : 94.602	CAL DATE : 12-MAR-2010

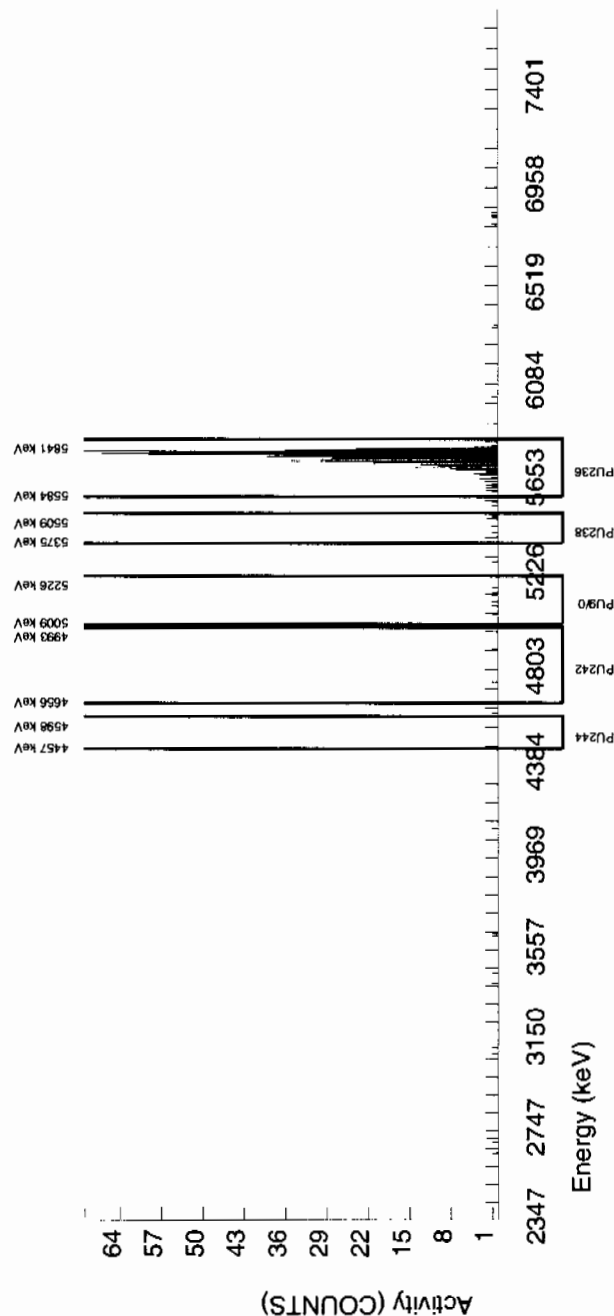
TRACER ID : 1430-C	LCS/LCSD ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0
NOMINAL : 3.0300E+00 dpm	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.8665E+00 dpm	

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
PU-236	5749.000	5764.063	31.391	643.000	641.560	1.440	1.2000	100.0000	1.08E+00	7.56E-02	4.28E-03	1.31E-02	4.28E-02
PU-238	5499.000	5458.435	94.387	5.000	3.560	1.440	2.4495	99.900000	5.90E-03	4.09E-03	8.75E-03	2.20E-02	4.07E-03
PU-9/0	5155.000	5112.764	0.000	8.000	7.280	0.720	1.9732	99.900000	1.21E-02	4.88E-03	7.05E-03	1.86E-02	4.84E-03
PU242	4890.000	4882.135	0.000	3.000	1.560	1.440	*****	100.0000	2.58E-03	3.33E-03	4.45E-01	8.95E-01	3.33E-03
PU-244	4589.000	4527.597	0.000	1.000	-1.160	2.160	6.4609	99.900000	-1.92E-03	2.65E-03	2.31E-02	5.07E-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 : 961696	CHAMBER : 075	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0247900009_PU	DETECTOR S/N : 80010	BKG FILE : B075.CNF;1113
SAMPLE QTY : 1.256 G	AVERAGE %EFFICIENCY : 32.1597	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 21:07:04	BKG LIVE TIME(SEC) : 59999.99
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W075.CNF;292
% YIELD : 91.754		CAL DATE : 12-MAR-2010

TRACER ID : 1430-C	MS/MSD ID : 0244-B	LCS/LCSD 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
RESULTS : 2.7802E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

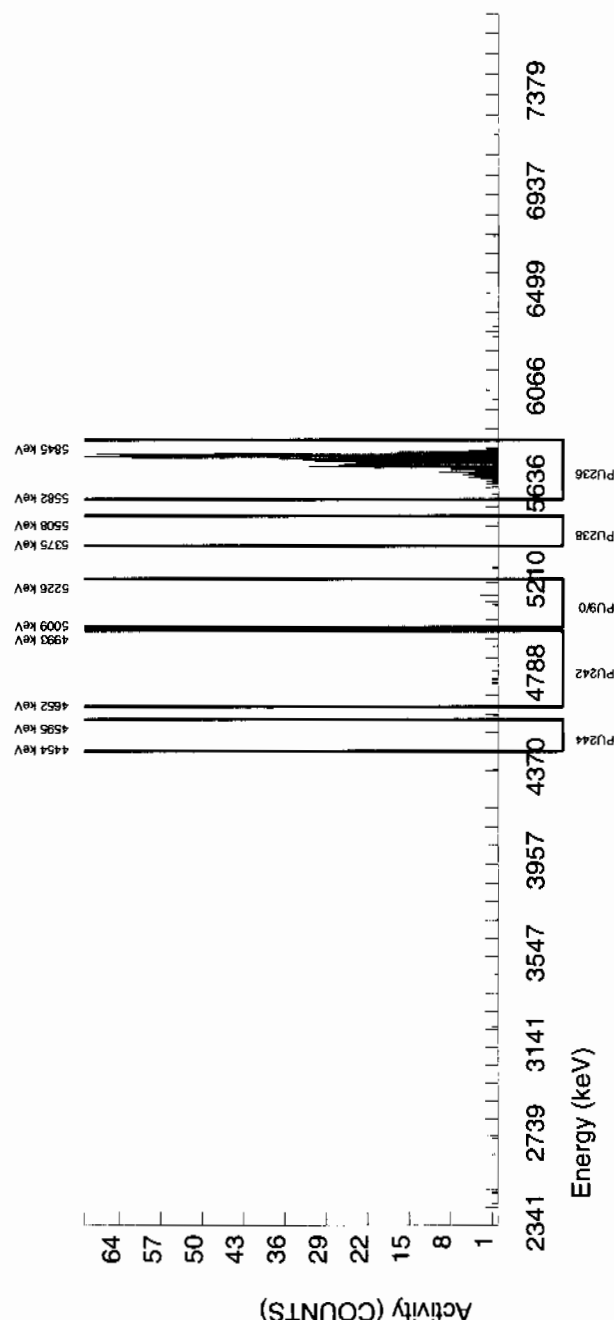
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5759.772	29.275	631.000	631.000	0.000	0.0000	100.0000	1.09E+00	7.61E-02	0.00E+00	4.57E-03	4.33E-02
PU-238	5499.000	5427.812	84.148	2.000	2.000	0.000	2.4495	99.900000	3.38E-03	2.40E-03	8.93E-03	2.24E-02	2.39E-03
PU-9/0	5155.000	5132.682	4.950	8.000	5.840	2.160	1.9732	99.900000	9.87E-03	5.25E-03	7.19E-03	1.90E-02	5.22E-03
PU242	4890.000	4833.278	0.000	7.000	4.120	2.880	*****	100.0000	6.95E-03	5.10E-03	4.54E-01	9.12E-01	5.08E-03
PU-244	4589.000	4542.303	4.950	1.000	0.280	0.720	6.4609	99.900000	4.73E-04	2.08E-03	2.36E-02	5.17E-02	2.08E-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 : 961696	CHAMBER : 076	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0247900010_PU	DETECTOR S/N : 78779	BKG FILE : B076.CNF;1116
SAMPLE QTY : 1.256 G	AVERAGE %EFFICIENCY : 31.3281	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 21:07:04	BKG LIVE TIME(SEC) : 59999.99
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W076.CNF;297
% YIELD : 95.235		CAL DATE : 12-MAR-2010

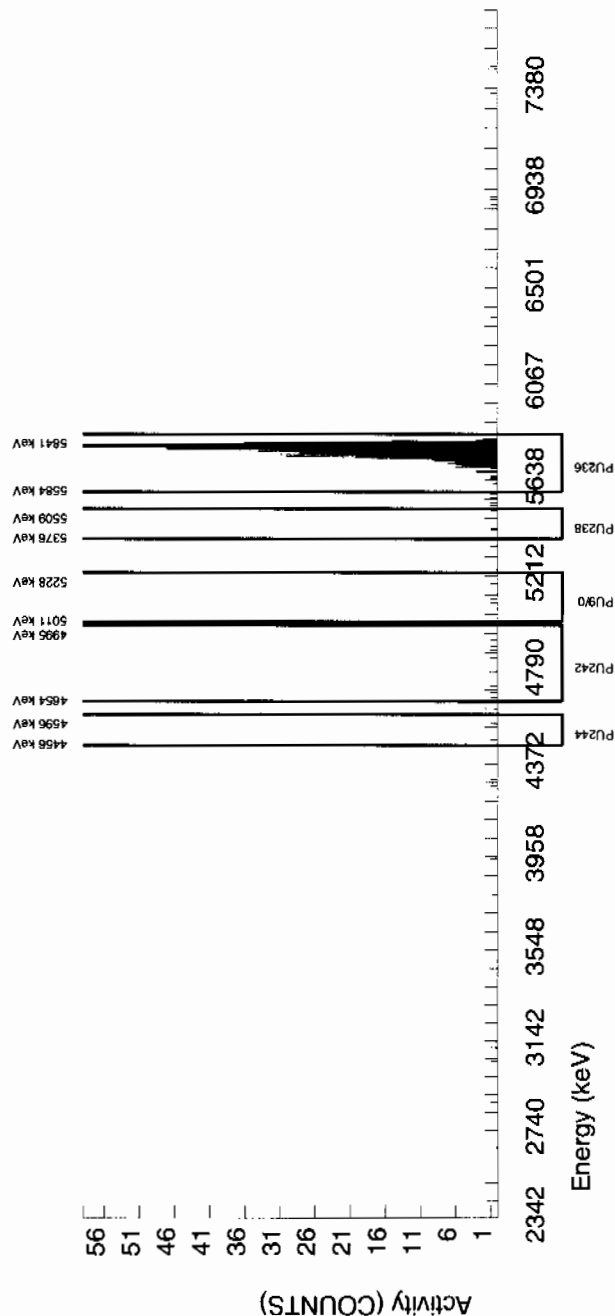
TRACER ID : 1430-C	MS/MSD ID : 0244-B	LCS/LCSD ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0300E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.8856E+00 dpm		

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
PU-236	5749.000	5773.877	51.210	638.000	638.000	0.000	0.0000	100.0000	1.09E+00	7.59E-02	0.00E+00	4.52E-03	4.30E-02
PU-238	5499.000	5432.234	0.000	4.000	4.000	0.000	2.4495	99.900000	6.69E-03	3.37E-03	8.83E-03	2.22E-02	3.34E-03
PU-9/0	5155.000	5134.275	84.178	3.000	1.560	1.440	1.9732	99.900000	2.61E-03	3.36E-03	7.11E-03	1.88E-02	3.36E-03
PU242	4890.000	4812.624	252.535	7.000	6.280	0.720	*****	100.0000	1.05E-02	4.62E-03	4.49E-01	9.02E-01	4.58E-03
PU-244	4589.000	4523.308	74.275	2.000	1.280	0.720	6.4609	99.900000	2.14E-03	2.65E-03	2.33E-02	5.11E-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 : 961696 SAMPLE ID : S0247900011_PU SAMPLE QTY : 1.260 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 92.777		CHAMBER : 089 DETECTOR S/N : 78262 AVERAGE %EFFICIENCY : 30.5954 COUNT DATE : 19-MAR-2010 21:07:05 ELAPSED LIVE TIME(SEC) : 43199.99		LIB FILE : ENV_ALPHA_PU BKG FILE : B089.CNF:727 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W089.CNF:197 CAL DATE : 12-MAR-2010	
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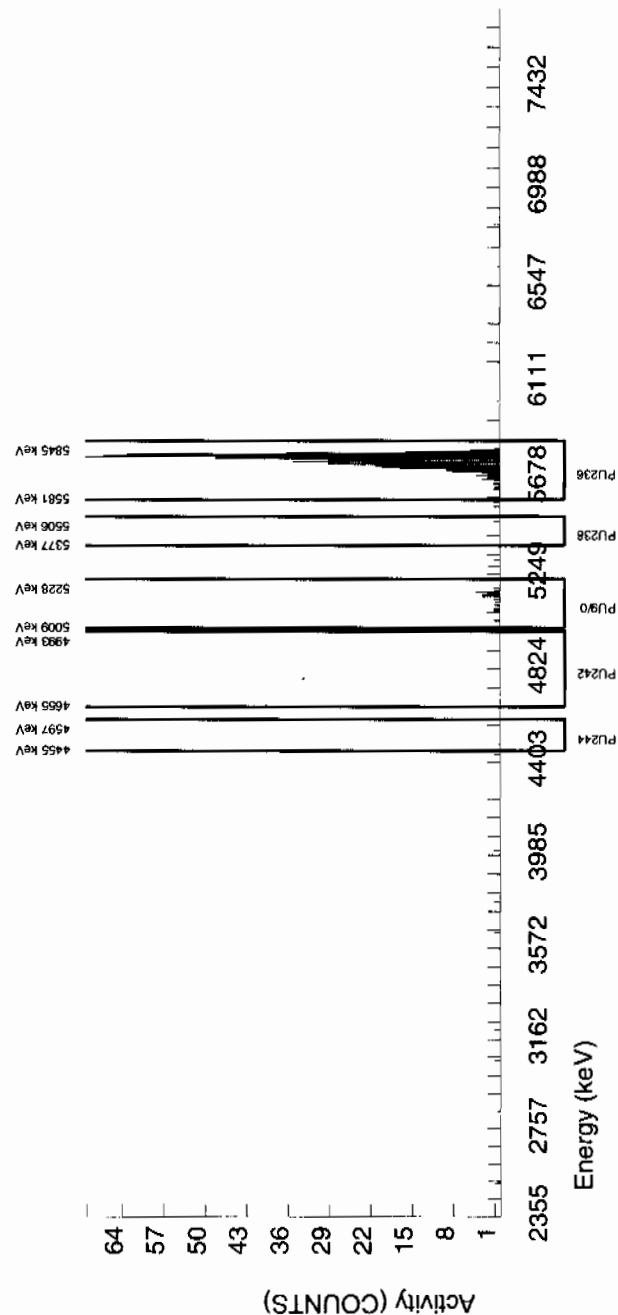
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.8112E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5764.815	28.200	607.000	607.000	0.000	0.0000	100.0000	1.08E+00	7.69E-02	0.00E+00	4.74E-03	4.40E-02
PU-238	5499.000	5497.821	0.000	2.000	2.000	0.000	2.4495	99.900000	3.50E-03	2.49E-03	9.25E-03	2.33E-02	2.48E-03
PU-9/0	5155.000	5144.355	24.992	24.000	21.840	2.160	1.9732	99.900000	3.82E-02	9.13E-03	7.45E-03	1.97E-02	8.85E-03
PU242	4890.000	4829.221	4.998	1.000	-1.160	2.160	*****	100.0000	-2.03E-03	2.80E-03	4.70E-01	9.45E-01	2.80E-03
PU-244	4589.000	4526.067	0.000	0.000	-0.720	0.720	6.4609	99.900000	-1.26E-03	2.16E-03	2.44E-02	5.36E-02	2.16E-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 : 961696 SAMPLE ID : S0247900012_PU SAMPLE QTY : 1.252 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 86.586	CHAMBER : 090 DETECTOR S/N : 78263 AVERAGE %EFFICIENCY : 34.8354 COUNT DATE : 19-MAR-2010 21:07:05 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B090.CNF:735 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W090.CNF:203 CAL DATE : 12-MAR-2010
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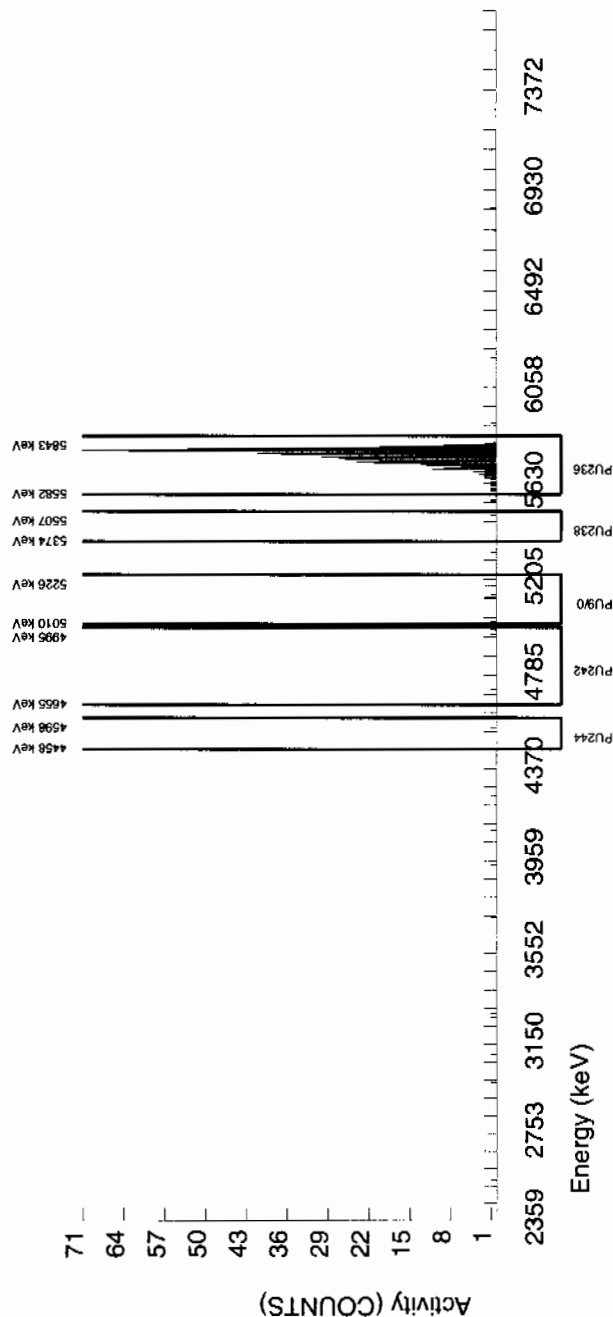
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.6236E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5760.137	32.275	645.000	645.000	0.000	0.0000	100.0000	1.09E+00	7.59E-02	0.00E+00	4.49E-03	4.29E-02
PU-238	5499.000	5501.783	0.000	2.000	2.000	0.000	2.4495	99.900000	3.32E-03	2.35E-03	8.76E-03	2.20E-02	2.35E-03
PU-9/0	5155.000	5115.550	53.737	7.000	7.000	0.000	1.9732	99.900000	1.16E-02	4.44E-03	7.06E-03	1.86E-02	4.39E-03
PU242	4890.000	4895.022	249.146	3.000	2.280	0.720	*****	100.0000	3.78E-03	3.12E-03	4.45E-01	8.95E-01	3.11E-03
PU-244	4589.000	4561.349	4.885	1.000	0.280	0.720	6.4609	99.900000	4.64E-04	2.05E-03	2.31E-02	5.07E-02	2.04E-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	: 961696	CHAMBER	: 091	LIB FILE	: ENV_ALPHA_PU
SAMPLE ID	: S0247900013_PU	DETECTOR S/N	: 78259	BKG FILE	: B091.CNF;733
SAMPLE QTY	: 1.255 G	AVERAGE %EFFICIENCY	: 35.1113	BKG DATE	: 14-MAR-2010
SAMPLE DATE	: 18-FEB-2010 00:00:00	COUNT DATE	: 19-MAR-2010 21:07:05	BKG LIVE TIME(SEC)	: 60000.00
ANALYST	: KXM4	ELAPSED LIVE TIME(SEC)	: 43199.99	EFF FILE	: W091.CNF;194
% YIELD	: 94.430			CAL DATE	: 12-MAR-2010

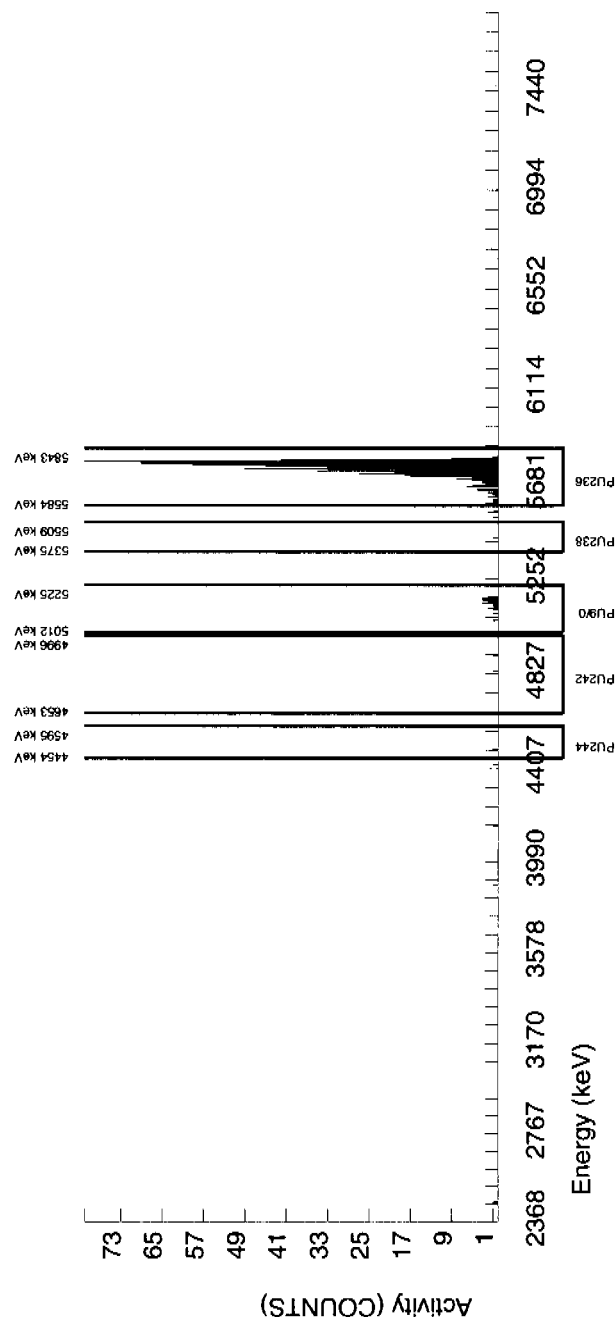
TRACER		MS/MSD		LCS/LCSD	
ID	: 1430-C	ID	: 0244-B	ID	: 0244-B
NUCLIDE	: PU-236	NUCLIDE	: PU-9/0	NUCLIDE	: PU-9/0
NOMINAL	: 3.0300E+00 dpm	NOMINAL	: 4.1778E+01 pCi/G	NOMINAL	: 4.1778E+01 pCi/G

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	5758.700	37.446	709.000	709.000	0.000	0.0000	100.0000	1.09E+00	7.35E-02	0.00E+00	4.07E-03	4.08E-02
PU-238	5499.000	5433.703	24.818	2.000	2.000	0.000	2.4495	99.90000	3.01E-03	2.14E-03	7.95E-03	2.00E-02	2.13E-03
PU-9/0	5155.000	5141.787	53.204	26.000	26.000	0.000	1.9732	99.90000	3.91E-02	7.98E-03	6.41E-03	1.69E-02	7.67E-03
PU242	4890.000	4820.013	198.547	3.000	1.560	1.440	*****	100.0000	2.35E-03	3.02E-03	4.04E-01	8.13E-01	3.02E-03
PU-244	4589.000	4540.092	79.419	2.000	2.000	0.000	6.4609	99.90000	3.01E-03	2.14E-03	2.10E-02	4.60E-02	2.13E-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

BATCH NUMBER : 961696 SAMPLE ID : S0247900014_PU SAMPLE QTY : 1.254 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 93.187		CHAMBER : 093 DETECTOR S/N : 33206 AVERAGE %EFFICIENCY : 33.6363 COUNT DATE : 19-MAR-2010 21:07:05 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B093.CNF:724 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W093.CNF:203 CAL DATE : 12-MAR-2010
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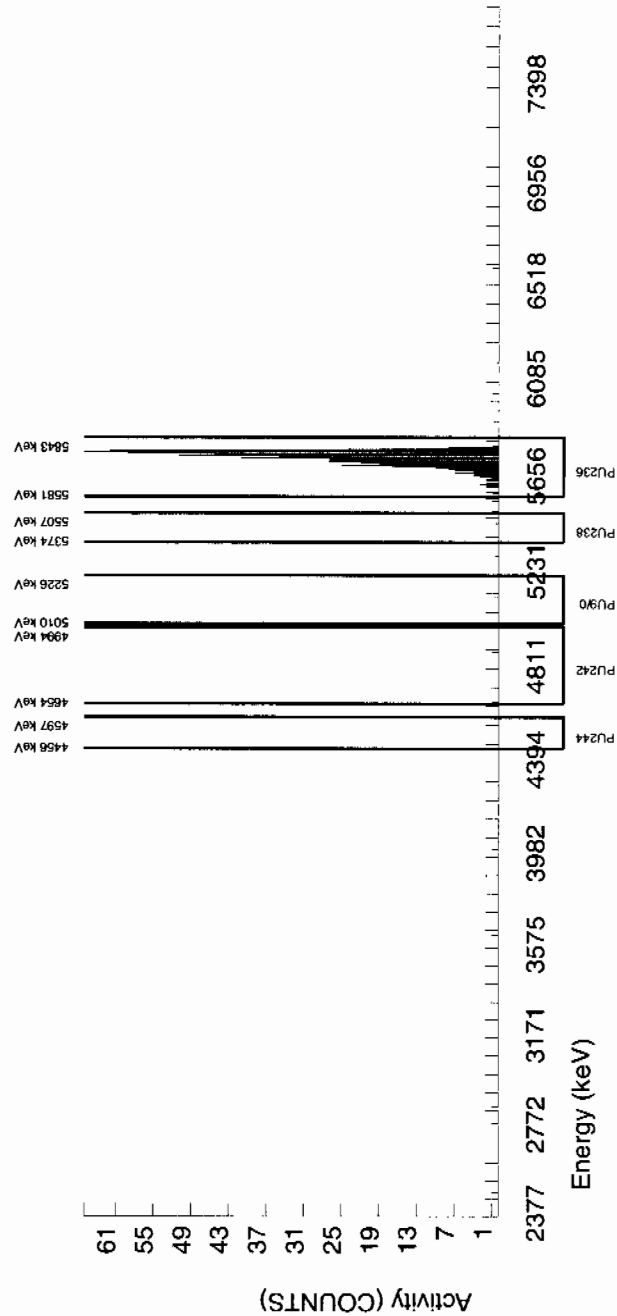
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.8236E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5759.695	40.282	671.000	670.280	0.720	0.8485	100.0000	1.09E+00	7.49E-02	2.91E-03	1.01E-02	4.21E-02
PU-238	5499.000	5464.111	4.909	2.000	2.000	0.000	2.4495	99.900000	3.19E-03	2.26E-03	8.42E-03	2.12E-02	2.25E-03
PU-9/0	5155.000	5136.030	4.909	3.000	3.000	0.000	1.9732	99.900000	4.78E-03	2.77E-03	6.78E-03	1.79E-02	2.76E-03
PU242	4890.000	4779.146	211.088	2.000	1.280	0.720	*****	100.0000	2.04E-03	2.53E-03	4.28E-01	8.60E-01	2.53E-03
PU-244	4589.000	4526.486	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	1.60E-03	2.22E-02	4.87E-02	1.59E-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 : 961696	CHAMBER : 094	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0247900015_PU	DETECTOR S/N : 78267	BKG FILE : B094.CNF;725
SAMPLE QTY : 1.251 G	AVERAGE %EFFICIENCY : 33.8294	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 21:07:05	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43199.99	EFF FILE : W094.CNF;195
% YIELD : 90.543		CAL DATE : 12-MAR-2010

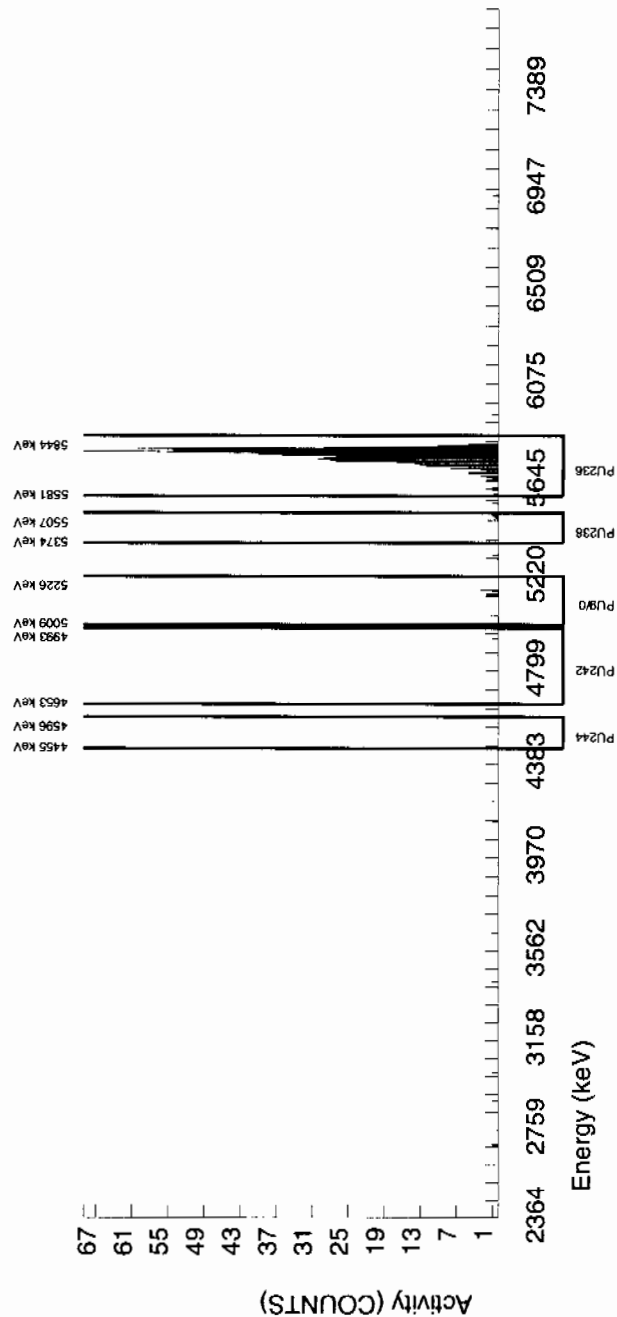
TRACER ID : 1430-C	LCS/LCSD ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0
NOMINAL : 3.0300E+00 dpm	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.7435E+00 dpm	

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
PU-236	5749.000	5763.271	34.246	655.000	655.000	0.000	0.0000	100.0000	1.09E+00	7.56E-02	0.00E+00	4.42E-03	4.26E-02
PU-238	5499.000	5499.716	0.000	3.000	3.000	0.000	2.4495	99.900000	4.91E-03	2.85E-03	8.64E-03	2.17E-02	2.83E-03
PU-9/0	5155.000	5157.499	23.288	8.000	7.280	0.720	1.9732	99.900000	1.19E-02	4.82E-03	6.96E-03	1.83E-02	4.77E-03
PU242	4890.000	4914.639	73.701	2.000	1.280	0.720	*****	100.0000	2.09E-03	2.59E-03	4.39E-01	8.83E-01	2.59E-03
PU-244	4589.000	4525.383	0.000	0.000	-0.720	0.720	6.4609	99.900000	-1.18E-03	2.02E-03	2.28E-02	5.00E-02	2.01E-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 : 961696 SAMPLE ID : S0247900016_PU SAMPLE QTY : 1.255 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 86.560		CHAMBER : 095 DETECTOR S/N : 64279 AVERAGE %EFFICIENCY : 31.3449 COUNT DATE : 19-MAR-2010 21:07:06 ELAPSED LIVE TIME(SEC) : 43200.00	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
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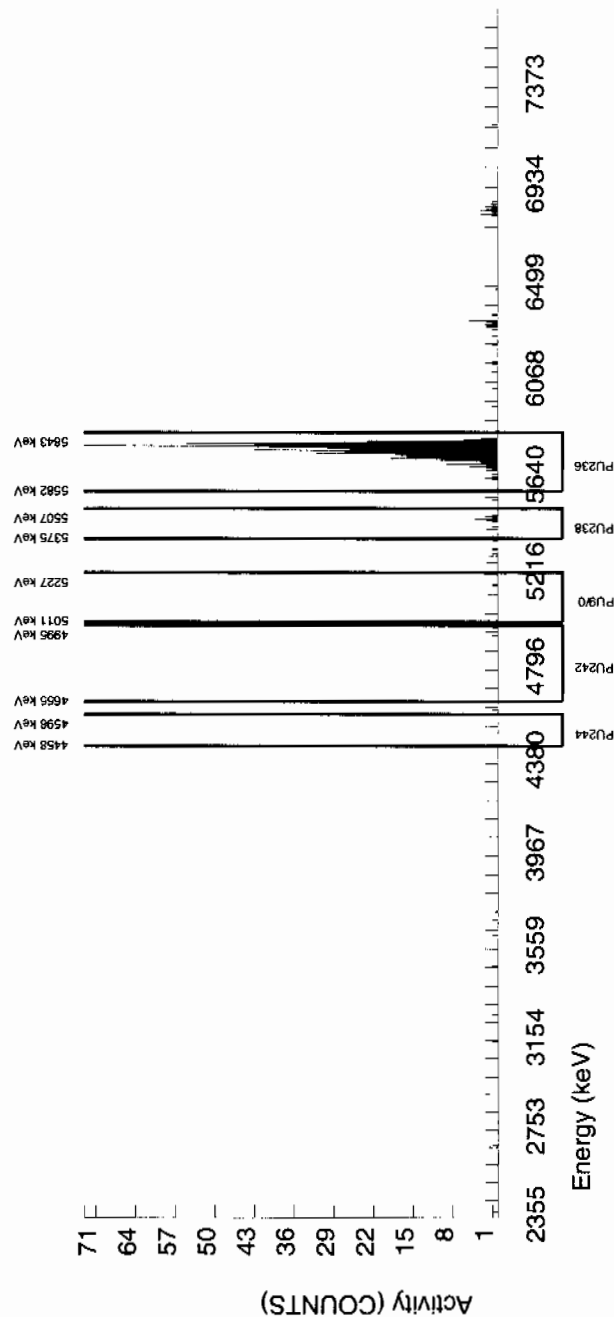
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.6228E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5771.196	35.268	591.000	580.200	10.800	3.2863	100.0000	1.09E+00	7.92E-02	1.30E-02	3.10E-02	4.59E-02
PU-238	5499.000	5445.810	8.189	14.000	-1.120	15.120	2.4495	99.900000	-2.06E-03	9.18E-03	9.72E-03	2.44E-02	9.18E-03
PU-9/0	5155.000	5176.693	9.270	2.000	-0.880	2.880	1.9732	99.900000	-1.62E-03	3.71E-03	7.83E-03	2.06E-02	3.71E-03
PU242	4890.000	4969.017	34.608	2.000	-0.160	2.160	*****	100.0000	-2.94E-04	3.47E-03	4.94E-01	9.93E-01	3.46E-03
PU-244	4589.000	4546.015	4.944	1.000	1.000	0.000	6.4609	99.900000	1.84E-03	1.84E-03	2.56E-02	5.63E-02	1.84E-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 : 961696 SAMPLE ID : S0247900017_PU SAMPLE QTY : 1.253 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 88.586	CHAMBER : 096 DETECTOR S/N : 80016 AVERAGE %EFFICIENCY : 32.7970 COUNT DATE : 19-MAR-2010 21:07:06 ELAPSED LIVE TIME(SEC) : 43200.00	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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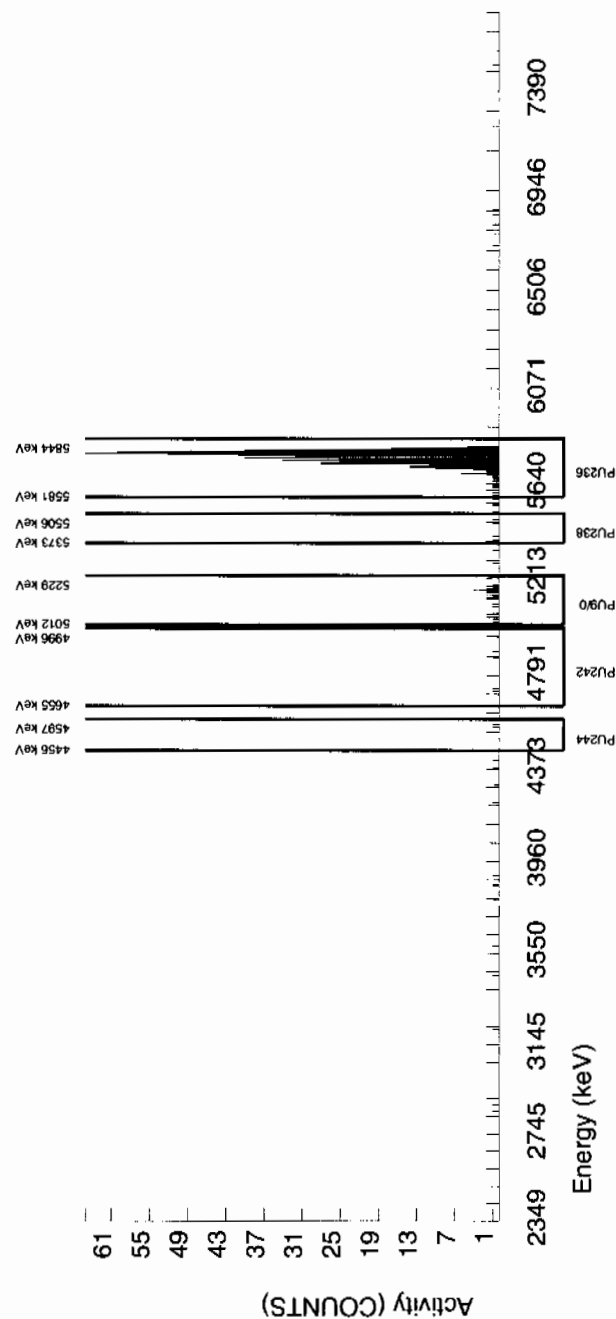
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.6842E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5765.837	46.581	622.000	621.280	0.720	0.8485	100.0000	1.09E+00	7.68E-02	3.15E-03	1.09E-02	4.37E-02
PU-238	5499.000	5452.906	0.000	5.000	3.560	1.440	2.4495	99.900000	6.13E-03	4.24E-03	9.09E-03	2.28E-02	4.23E-03
PU-9/0	5155.000	5135.352	8.208	30.000	27.840	2.160	1.9732	99.900000	4.79E-02	1.01E-02	7.32E-03	1.93E-02	9.66E-03
PU242	4890.000	4809.537	167.445	4.000	0.400	3.600	*****	100.0000	6.87E-04	4.41E-03	4.62E-01	9.29E-01	4.41E-03
PU-244	4589.000	4573.797	19.699	2.000	2.000	0.000	6.4609	99.900000	3.44E-03	2.44E-03	2.40E-02	5.26E-02	2.43E-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	: 961696
SAMPLE ID	: S02479
SAMPLE QTY	: 1.25
SAMPLE DATE	: 18-FEB-2018
ANALYST	: KXM4
% YIELD	: 97.185

CHAMBER	:	097
DETECTOR S/N	:	67599
AVERAGE %EFFICIENCY	:	34.7742
COUNT DATE	:	19-MAR-2010 21:07:06
ELAPSED LIVE TIME(SEC)	:	43200.00

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

TRACER

ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0300E+00 dpm
RESULTS : 2.9447E+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

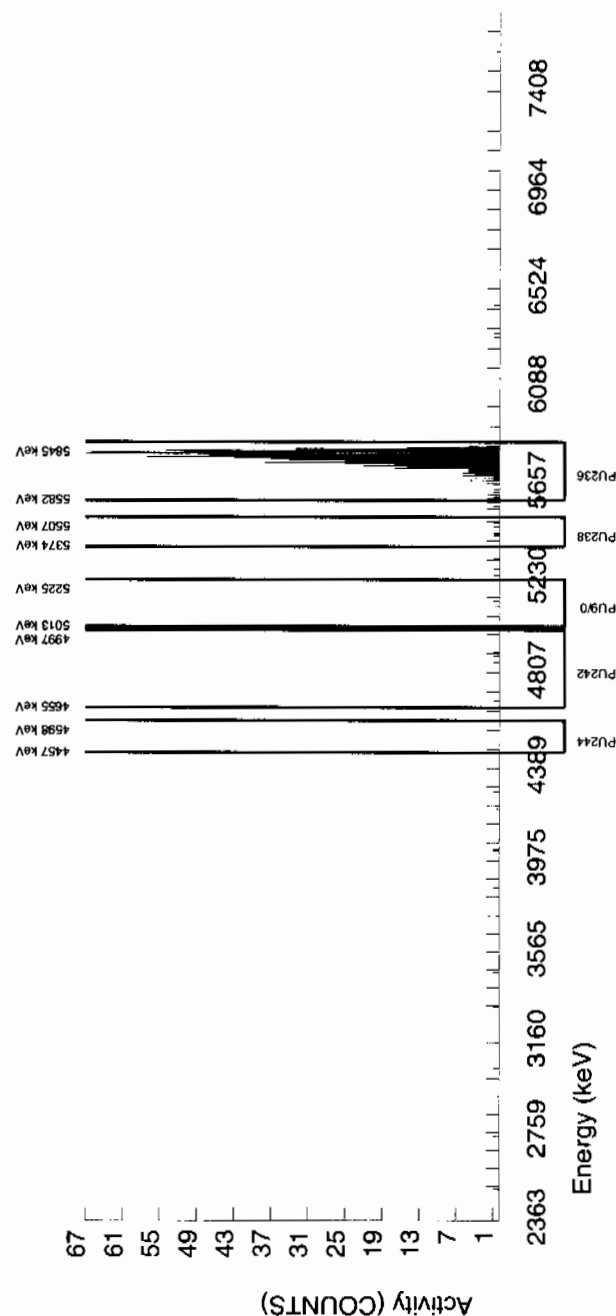
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5778.086	55.152	727.000	722.680	4.320	2.0785	100.0000	1.09E+00	7.33E-02	6.62E-03	1.72E-02	4.07E-02
PU-238	5499.000	5436.193	7.240	8.000	4.400	3.600	2.4495	99.900000	6.51E-03	4.83E-03	7.81E-03	1.96E-02	4.81E-03
PU-9/0	5155.000	5088.560	113.375	3.000	2.280	0.720	1.9732	99.900000	3.37E-03	2.78E-03	6.29E-03	1.66E-02	2.77E-03
PU242	4890.000	4836.205	207.032	4.000	1.840	2.160	*****	100.0000	2.72E-03	3.48E-03	3.97E-01	7.98E-01	3.48E-03
PU-244	4589.000	4477.522	4.929	1.000	-0.440	1.440	6.4609	99.900000	-6.50E-04	2.11E-03	2.06E-02	4.52E-02	2.11E-03

NOTES:

* BKG S_q 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

BATCH NUMBER :	961696
SAMPLE ID :	S0247900019_PU
SAMPLE QTY :	1.254 G
SAMPLE DATE :	18-FEB-2010 00:00:00
ANALYST :	KXM4
% YIELD :	89.595

CHAMBER : 098
DETECTOR S/N : 80017
AVERAGE %EFFICIENCY : 35.6488
COUNT DATE : 19-MAR-2010 21:07:06
ELAPSED LIVE TIME(SEC) : 43200.00

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

ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0300E+00 dpm
RESULTS : 2.7148E+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

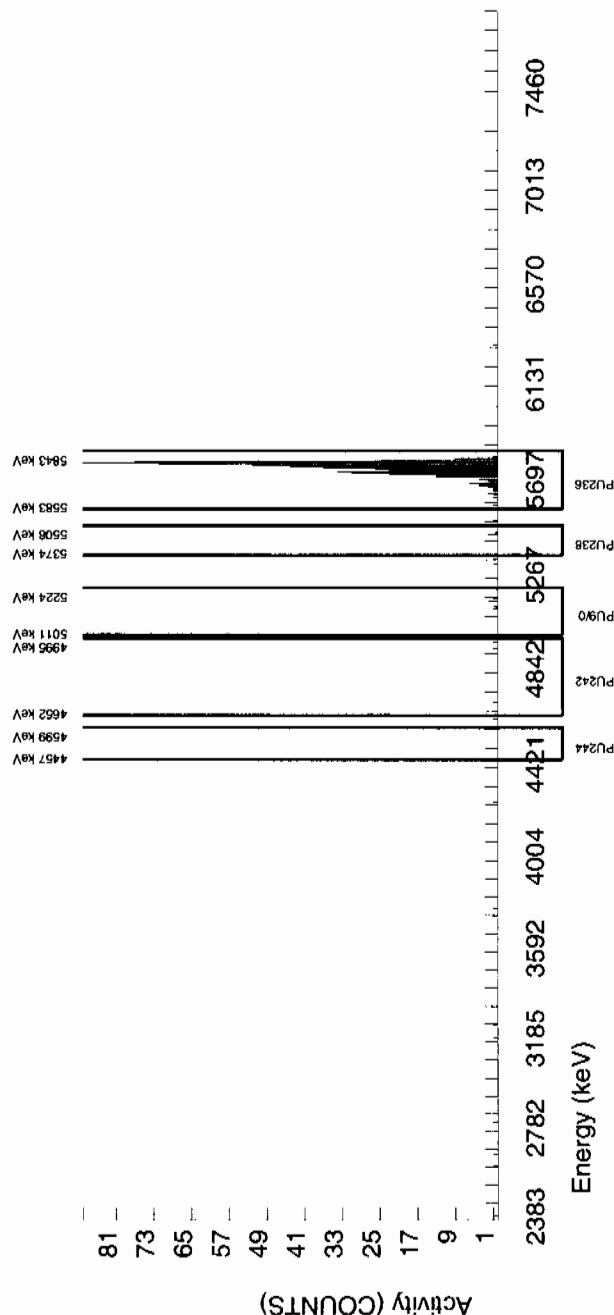
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
PU-236	5749.000	5775.283	26.800	683.000	683.000	0.000	0.0000	100.0000	1.09E+00	7.44E-02	0.00E+00	4.23E-03	4.16E-02
PU-238	5499.000	5450.396	4.954	4.000	3.280	0.720	2.4495	99.900000	5.13E-03	3.34E-03	8.26E-03	2.08E-02	3.33E-03
PU-9/0	5155.000	5160.194	4.954	5.000	3.560	1.440	1.9732	99.900000	5.57E-03	3.85E-03	6.66E-03	1.75E-02	3.84E-03
PU242	4890.000	4883.953	257.591	3.000	1.560	1.440	*****	100.0000	2.44E-03	3.14E-03	4.20E-01	8.44E-01	3.14E-03
PU-244	4589.000	4528.178	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	1.57E-03	2.18E-02	4.78E-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 : 961696 SAMPLE ID : S0247900020_PU SAMPLE QTY : 1.259 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 90.932</p>		<p>CHAMBER : 099 DETECTOR S/N : 70317 AVERAGE %EFFICIENCY : 35.1904 COUNT DATE : 19-MAR-2010 21:07:06 ELAPSED LIVE TIME(SEC) : 43200.00</p>	<p>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</p>
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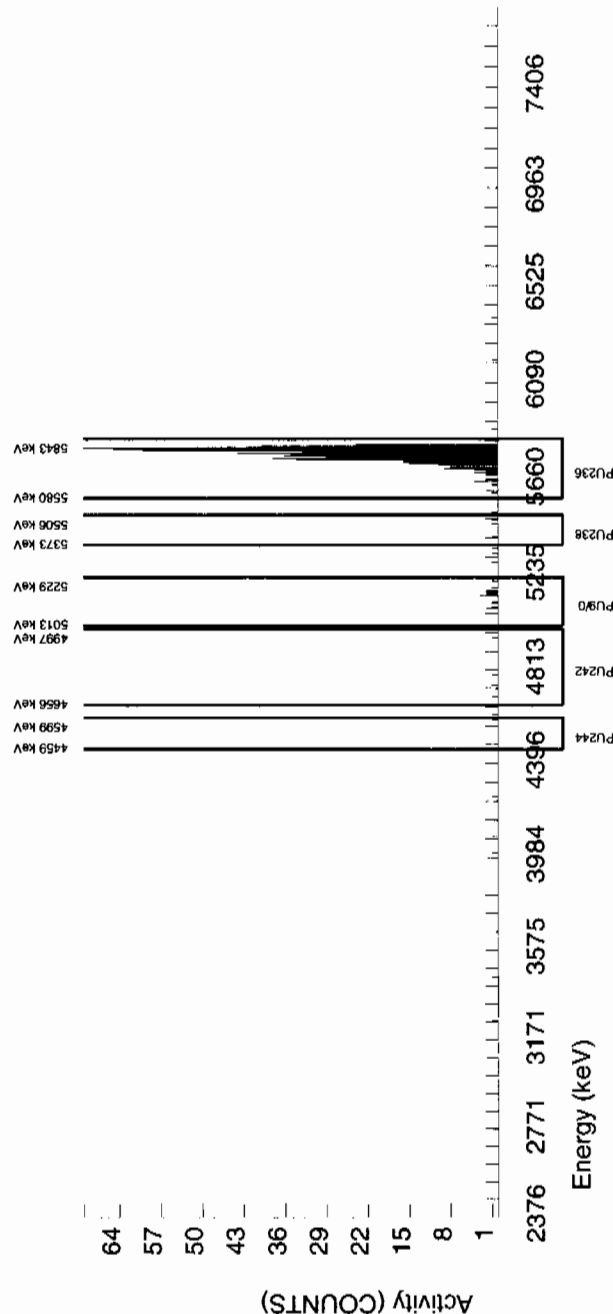
<p>TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0300E+00 dpm RESULTS : 2.7553E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>
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NUCLIDE ACTIVITY 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	5778.789	53.593	685.000	684.280	0.720	0.8485	100.0000	1.08E+00	7.41E-02	2.84E-03	9.89E-03	4.15E-02
PU-238	5499.000	5475.754	0.000	5.000	4.280	0.720	2.4495	99.900000	6.66E-03	3.67E-03	8.21E-03	2.06E-02	3.65E-03
PU-9/0	5155.000	5155.626	76.129	20.000	17.120	2.880	1.9732	99.900000	2.66E-02	7.46E-03	6.62E-03	1.74E-02	7.30E-03
PU242	4890.000	4775.608	285.097	5.000	3.560	1.440	*****	100.0000	5.53E-03	3.83E-03	4.18E-01	8.39E-01	3.82E-03
PU-244	4589.000	4593.826	4.915	1.000	0.280	0.720	6.4609	99.900000	4.35E-04	1.92E-03	2.17E-02	4.75E-02	1.92E-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 : 961696 SAMPLE ID : S1202062744_PU SAMPLE QTY : 1.000 G SAMPLE DATE : 11-MAR-2010 00:00:00 ANALYST : KXM4 % YIELD : 89.485		CHAMBER : 100 DETECTOR S/N : 79456 AVERAGE %EFFICIENCY : 35.7974 COUNT DATE : 19-MAR-2010 21:07:06 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_PU BKG FILE : B100.CNF:688 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W100.CNF:203 CAL DATE : 12-MAR-2010
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TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 2.9881E+00 dpm RESULTS : 2.6739E+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

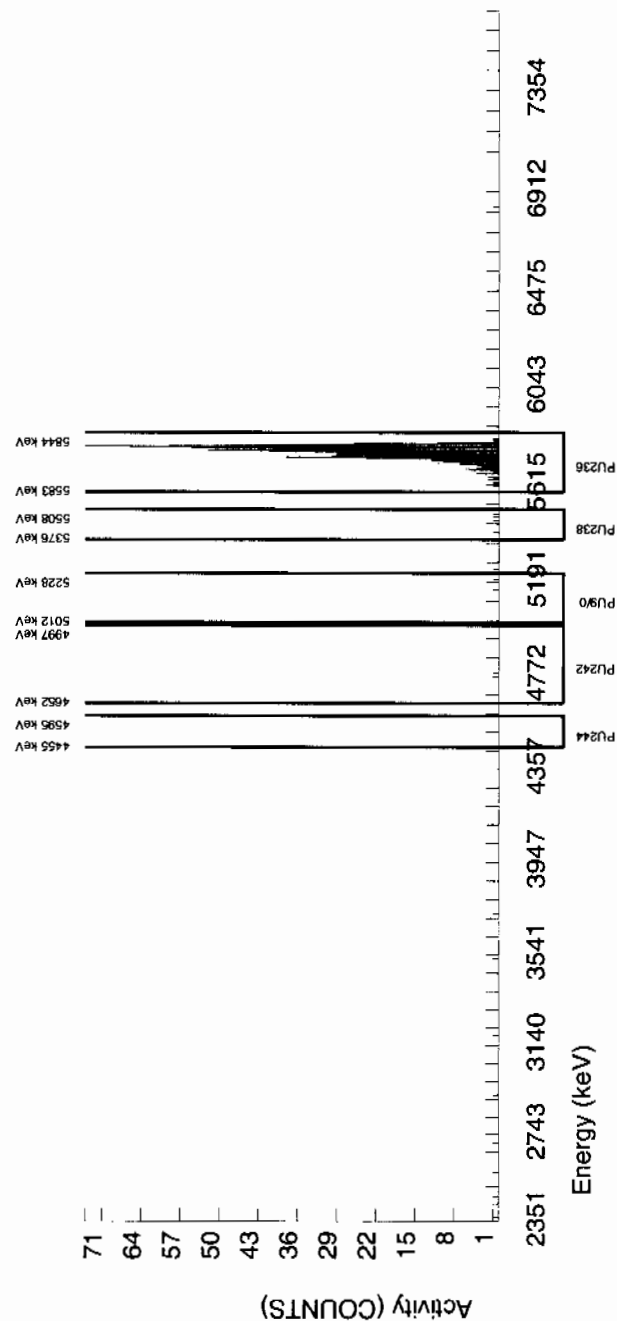
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5764.466	52.304	685.000	685.000	0.000	0.0000	100.0000	1.35E+00	9.19E-02	0.00E+00	5.29E-03	5.14E-02
PU-238	5499.000	5463.338	78.032	4.000	4.000	0.000	2.4495	99.900000	7.82E-03	3.94E-03	1.03E-02	2.60E-02	3.91E-03
PU-9/0	5155.000	5159.580	92.663	3.000	2.280	0.720	1.9732	99.900000	4.46E-03	3.68E-03	8.32E-03	2.19E-02	3.67E-03
PU242	4890.000	4808.534	87.786	3.000	-0.600	3.600	*****	100.0000	-1.17E-03	4.62E-03	5.25E-01	1.06E+00	4.62E-03
PU-244	4589.000	4525.283	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	1.96E-03	2.73E-02	5.98E-02	1.96E-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	: 961696
SAMPLE ID	: S12020
SAMPLE QTY	: 1.29
SAMPLE DATE	: 18-FEB
ANALYST	: KXM4
% YIELD	: 84.677

CHAMBER :	101
DETECTOR S/N :	64253
AVERAGE %EFFICIENCY :	34.6974
COUNT DATE :	19-MAR-
ELAPSED LIVE TIME(SEC) :	43199.9

LIB FILE : ENV_ALPHA_PU
BKG FILE : B101.CNF:692
BKG DATE : 14-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W101.CNF:182
CAL DATE : 12-MAR-2010

TRACER	ID	: 1430-C
	NUCLIDE	: PU-236
	NOMINAL	: 3.0300E+00 dpm
	RESULTS	: 2.5657E+00 dpm

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

LCS/LCSD ID	NUCLIDE	NOMINAL
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NUCLIDE ACTIVITY SUMMARY

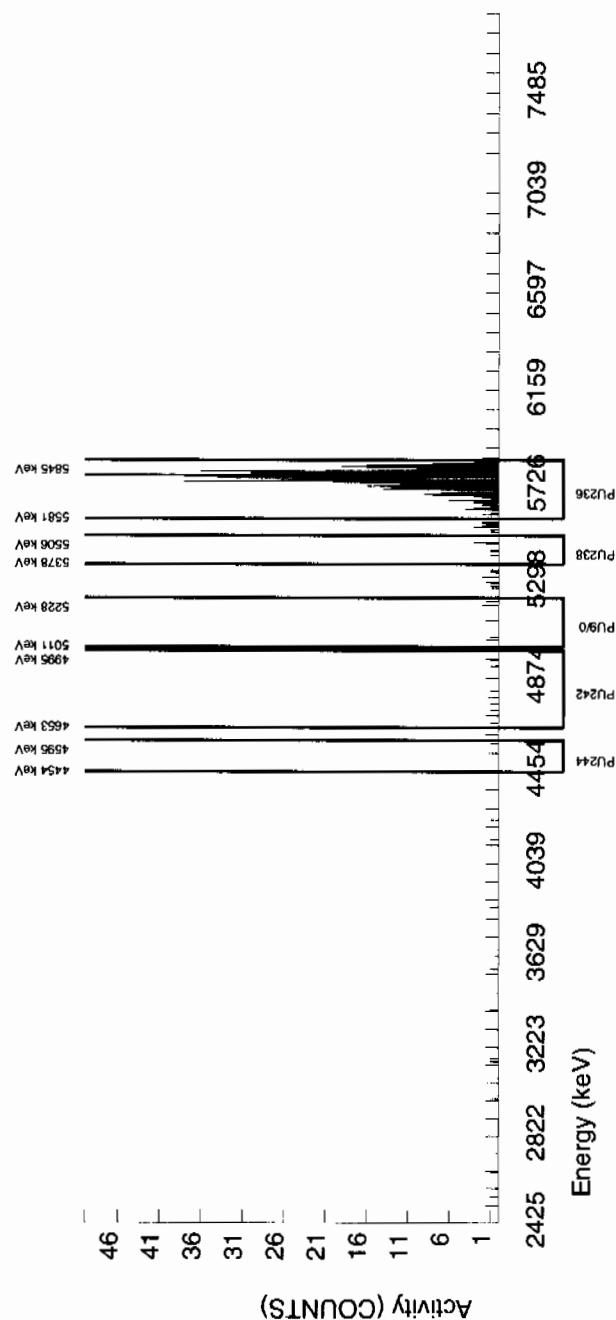
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5764.594	51.112	629.000	628.280	0.720	0.8485	100.0000	1.09E+00	7.65E-02	3.11E-03	1.08E-02	4.35E-02
PU-238	5499.000	5460.816	6.113	7.000	7.000	0.000	2.4495	99.90000	1.19E-02	4.56E-03	8.99E-03	2.26E-02	4.50E-03
PU-9/0	5155.000	5172.586	4.932	4.000	1.840	2.160	1.9732	99.90000	3.13E-03	4.01E-03	7.24E-03	1.91E-02	4.01E-03
PU242	4890.000	4785.155	286.039	10.000	5.680	4.320	*****	100.0000	9.65E-03	6.18E-03	4.57E-01	9.19E-01	6.15E-03
PU-244	4589.000	4519.398	0.000	2.000	1.280	0.720	6.4609	99.90000	2.18E-03	2.70E-03	2.37E-02	5.20E-02	2.70E-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 : 961696	CHAMBER : 102	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S1202062746_PU	DETECTOR S/N : 72525	BKG FILE : B102.CNF:690
SAMPLE QTY : 0.120 G	AVERAGE %EFFICIENCY : 34.7750	BKG DATE : 14-MAR-2010
SAMPLE DATE : 11-MAR-2010 00:00:00	COUNT DATE : 19-MAR-2010 21:07:07	BKG LIVE TIME(SEC) : 59999.99
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 43199.99	EFF FILE : W102.CNF:196
% YIELD : 89.060		CAL DATE : 12-MAR-2010

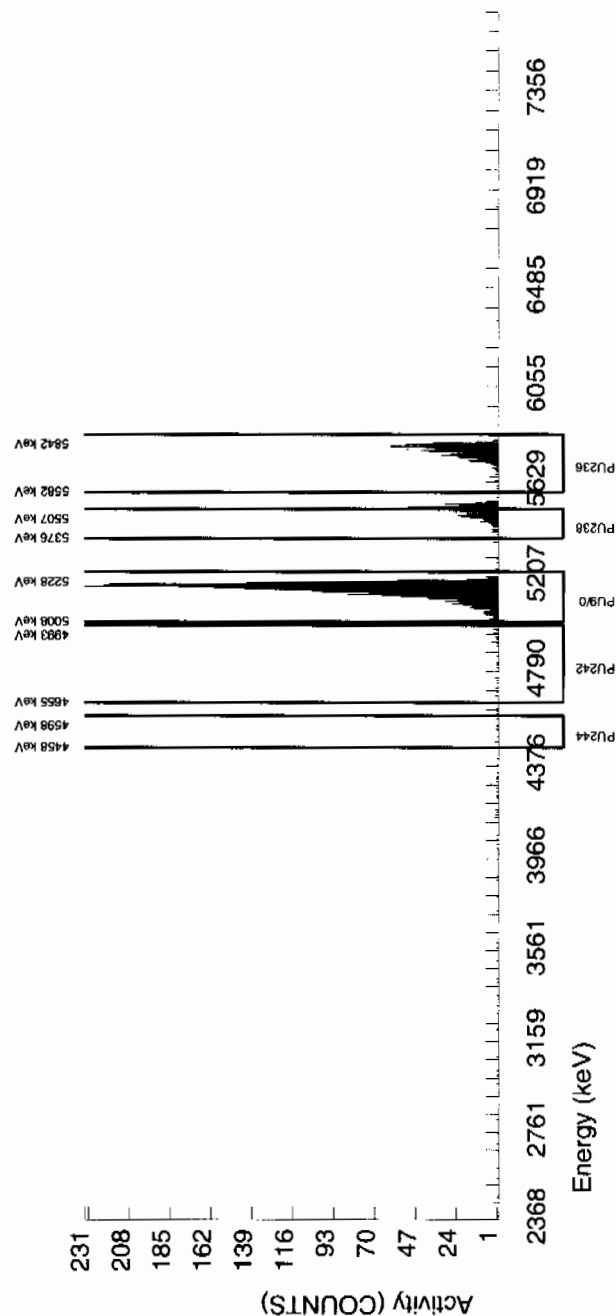
TRACER ID : 1430-C	MS/MSD ID : 0244-B	LCS/LCSD ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 2.9881E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.6612E+00 dpm		

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
PU-236	5749.000	5772.922	40.928	663.000	662.280	0.720	0.8485	100.0000	1.12E+01	8.31E-01	3.08E-02	1.07E-01	4.36E-01
PU-238	5499.000	5478.135	0.000	234.000	233.280	0.720	2.4495	99.900000	3.93E+00	3.58E-01	8.90E-02	2.24E-01	2.58E-01
PU-9/0	5155.000	5155.072	35.539	2272.000	2271.280	0.720	1.9732	99.900000	3.83E+01	2.54E+00	7.17E-02	1.89E-01	8.03E-01
PU242	4890.000	4866.660	0.000	45.000	44.280	0.720	*****	100.0000	7.45E-01	1.23E-01	4.53E+00	9.10E+00	1.14E-01
PU-244	4589.000	4533.600	4.894	7.000	7.000	0.000	6.4609	99.900000	1.18E-01	4.52E-02	2.35E-01	5.15E-01	4.46E-02

NOTES:

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



Radiochemistry Batch Checklist, Rev10

Batch# 941697 Product: U Date: 3/22/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NA
Samples have been blank corrected (if required)	/		
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	/		
Instrument source check is within limits.	/		
Instrument bkg check is within limits.	/		
Method RDL/ LLD has been met.	/		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	/		
Or meets the client's required RER acceptance criteria.	/		
Tracer yield is 15-125%. Carrier yield 25-125%.	/		
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)	/		
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: [Signature] 3/22/10

Secondary Review Performed By: [Signature] 3/22/10

3/13 (3/24)
CML

Uranium Que Sheet

05-MAR-10

Batch #: 961697 Analyst: KXM4 First Client Due Date: 24-MAR-10 Internal Due Date: 13-MAR-10
 Tracer Isotope: U-235 Tracer Code: 1283-H Expiration Date: 12-9-10 Vol: 0.1ml
 LCS Isotope: U-238 LCS Code: SAM 0244-A Expiration Date: 10-31-10 Vol: 0.1g
 Spike Isotope: U-238 Spike Code: NA Expiration Date: NA Vol: NA
 Prep Date: 3/1/10 Initials: KM Pipet ID: 297058 Balance ID: 5041072

Witness: MDA 3/1/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Alliquot (g/l/f)	U Det #
247900001-1	RE15-10-7896	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	1	1	0.507	161
247900002-1	RE15-10-7894	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	2	2	0.513	162
247900003-1	RE15-10-7900	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	3	3	0.511	164
247900004-1	RE15-10-7898	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	4	4	0.501	165
247900005-1	RE15-10-7897	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	5	5	0.503	166
247900006-1	RE15-10-7895	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	6	6	0.504	167
247900007-1	RE15-10-7899	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	7	7	0.502	168
247900008-1	RE15-10-7893	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	8	8	0.502	169
247900009-1	RE15-10-8011	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	9	9	0.511	123 170 314/10
247900010-1	RE15-10-8004	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	10	10	0.512	171
247900011-1	RE15-10-8009	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	11	11	0.512	172
247900012-1	RE15-10-8003	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	12	12	0.518	125
247900013-1	RE15-10-8007	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	13	13	0.511	126
247900014-1	RE15-10-8002	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	14	14	0.509	127
247900015-1	RE15-10-8010	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	15	15	0.507	128
247900016-1	RE15-10-8006	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	16	16	0.507	129
247900017-1	RE15-10-8001	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	17	17	0.507	130
247900018-1	RE15-10-8012	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	18	18	0.528	133
247900019-1	RE15-10-8008	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	19	19	0.522	166
247900020-1	RE15-10-8005	SAMPLE		.1 pCi/g	SOIL	LANL010	18-FEB-10	20	20	0.500	167 203/20/10
1202062751-1	MB for batch 961697	MB		.1 pCi/g	SOIL	QC ACCOUNT	18-FEB-10	21	21	1.00	168 133
1202062752-1	RE15-10-7896(247900001DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	18-FEB-10	22	22	0.509	170
1202062753-1	LCS for batch 961697	LCS		.1 pCi/g	SOIL	QC ACCOUNT	18-FEB-10	23	23	0.119	171

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION

Data Reviewed By:

Blank Correction Report

Batch ID 961697

GEL Sample ID	Client sample ID	Parameter	Allquot	Result	TPU	MDA	Allquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202062752	DUP	Uranium-233/234	0.509 g	1.09	0.0903	0.0691	.012259332	pCi/g	NO
		Uranium-235/236	0.509 g	0.0908	0.0177	0.0422	.006719057	pCi/g	NO
		Uranium-238	0.509 g	1.34	0.108	0.0486	.005422397	pCi/g	NO
1202062753	LCS	Uranium-233/234	0.119 g	6.01	0.502	0.276	.052436975	pCi/g	NO
		Uranium-235/236	0.119 g	0.302	0.0709	0.169	.028739496	pCi/g	NO
		Uranium-238	0.119 g	5.45	0.461	0.194	.023193277	pCi/g	NO
1202062751	MB	Uranium-233/234	1.00 g	0.00624	0.00418	0.0705	.00624	pCi/g	YES
		Uranium-235/236	1.00 g	0.00342	0.00343	0.0436	.00342	pCi/g	YES
		Uranium-238	1.00 g	0.00276	0.00277	0.0498	.00276	pCi/g	YES
247900001	RE15-10-7896	Uranium-233/234	0.507 g	0.912	0.0777	0.0666	.012307692	pCi/g	NO
		Uranium-235/236	0.507 g	0.0613	0.0146	0.0407	.006745562	pCi/g	NO
		Uranium-238	0.507 g	1.23	0.0996	0.0468	.005443787	pCi/g	NO
247900002	RE15-10-7894	Uranium-233/234	0.513 g	1.05	0.0874	0.0667	.012163743	pCi/g	NO
		Uranium-235/236	0.513 g	0.108	0.0192	0.0407	.006666667	pCi/g	NO
		Uranium-238	0.513 g	1.82	0.140	0.0469	.005380117	pCi/g	NO
247900003	RE15-10-7900	Uranium-233/234	0.511 g	1.02	0.084	0.0631	.012211350	pCi/g	NO
		Uranium-235/236	0.511 g	0.0884	0.0172	0.0385	.006692759	pCi/g	NO
		Uranium-238	0.511 g	1.28	0.102	0.0443	.005401174	pCi/g	NO
247900004	RE15-10-7898	Uranium-233/234	0.501 g	2.23	0.169	0.0678	.012455090	pCi/g	NO
		Uranium-235/236	0.501 g	0.205	0.0284	0.0414	.006826347	pCi/g	NO
		Uranium-238	0.501 g	10.5	0.732	0.0477	.005508982	pCi/g	NO
247900005	RE15-10-7897	Uranium-233/234	0.503 g	5.00	0.363	0.0759	.012405567	pCi/g	NO
		Uranium-235/236	0.503 g	0.669	0.0658	0.0464	.006799205	pCi/g	NO
		Uranium-238	0.503 g	30.0	2.08	0.0534	.005487078	pCi/g	NO
247900006	RE15-10-7895	Uranium-233/234	0.504 g	1.24	0.100	0.0663	.012380952	pCi/g	NO
		Uranium-235/236	0.504 g	0.0669	0.0158	0.0405	.006785714	pCi/g	NO
		Uranium-238	0.504 g	2.27	0.171	0.0466	.005476190	pCi/g	NO
247900007	RE15-10-7899	Uranium-233/234	0.502 g	3.26	0.242	0.0744	.012430279	pCi/g	NO
		Uranium-235/236	0.502 g	0.245	0.0338	0.0454	.006812749	pCi/g	NO
		Uranium-238	0.502 g	7.13	0.508	0.0523	.005498008	pCi/g	NO
247900008	RE15-10-7893	Uranium-233/234	0.502 g	1.96	0.149	0.0647	.012430279	pCi/g	NO
		Uranium-235/236	0.502 g	0.113	0.0211	0.0395	.006812749	pCi/g	NO
		Uranium-238	0.502 g	6.21	0.439	0.0455	.005498008	pCi/g	NO
247900009	RE15-10-8011	Uranium-233/234	0.511 g	2.79	0.247	0.149	.012211350	pCi/g	NO
		Uranium-235/236	0.511 g	0.355	0.0574	0.0923	.006692759	pCi/g	NO
		Uranium-238	0.511 g	15.5	1.21	0.106	.005401174	pCi/g	NO
247900010	RE15-10-8004	Uranium-233/234	0.512 g	0.950	0.100	0.133	.0121875	pCi/g	NO
		Uranium-235/236	0.512 g	0.0579	0.0198	0.082	.006679688	pCi/g	NO
		Uranium-238	0.512 g	2.48	0.218	0.0937	.005390625	pCi/g	NO
247900011	RE15-10-8009	Uranium-233/234	0.512 g	18.1	1.35	0.144	.0121875	pCi/g	NO
		Uranium-235/236	0.512 g	1.94	0.180	0.0879	.006679688	pCi/g	NO

Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
247900011	RE15-10-8009	Uranium-238	0.512 g	92.0	6.76	0.101	.005390625	pCi/g	NO
247900012	RE15-10-8003	Uranium-233/234	0.518 g	4.37	0.342	0.109	.012046332	pCi/g	NO
		Uranium-235/236	0.518 g	0.488	0.0598	0.0666	.006802317	pCi/g	NO
		Uranium-238	0.518 g	25.1	1.85	0.0767	.005328185	pCi/g	NO
247900013	RE15-10-8007	Uranium-233/234	0.511 g	21.1	1.73	0.229	.012211350	pCi/g	NO
		Uranium-235/236	0.511 g	1.72	0.191	0.140	.006692759	pCi/g	NO
		Uranium-238	0.511 g	87.6	7.02	0.161	.005401174	pCi/g	NO
247900014	RE15-10-8002	Uranium-233/234	0.509 g	0.950	0.0896	0.100	.012259332	pCi/g	NO
		Uranium-235/236	0.509 g	0.0484	0.0174	0.0613	.006719057	pCi/g	NO
		Uranium-238	0.509 g	1.41	0.124	0.0705	.005422397	pCi/g	NO
247900015	RE15-10-8010	Uranium-233/234	0.507 g	4.09	0.320	0.106	.012307692	pCi/g	NO
		Uranium-235/236	0.507 g	0.268	0.0402	0.0645	.006745562	pCi/g	NO
		Uranium-238	0.507 g	11.2	0.833	0.0742	.005443787	pCi/g	NO
247900016	RE15-10-8006	Uranium-233/234	0.507 g	0.850	0.0816	0.0975	.012307692	pCi/g	NO
		Uranium-235/236	0.507 g	0.0641	0.0172	0.0596	.006745562	pCi/g	NO
		Uranium-238	0.507 g	0.920	0.087	0.0686	.005443787	pCi/g	NO
247900017	RE15-10-8001	Uranium-233/234	0.507 g	4.84	0.375	0.107	.012307692	pCi/g	NO
		Uranium-235/236	0.507 g	0.420	0.0541	0.0651	.006745562	pCi/g	NO
		Uranium-238	0.507 g	20.3	1.49	0.0749	.005443787	pCi/g	NO
247900018	RE15-10-8012	Uranium-233/234	0.528 g	1.01	0.0936	0.0989	.011818182	pCi/g	NO
		Uranium-235/236	0.528 g	0.052	0.0155	0.0604	.006477273	pCi/g	NO
		Uranium-238	0.528 g	1.08	0.0991	0.0695	.005227273	pCi/g	NO
247900019	RE15-10-8008	Uranium-233/234	0.522 g	1.17	0.0941	0.0617	.011954023	pCi/g	NO
		Uranium-235/236	0.522 g	0.0541	0.0126	0.0377	.006551724	pCi/g	NO
		Uranium-238	0.522 g	1.09	0.0884	0.0434	.005287356	pCi/g	NO
247900020	RE15-10-8005	Uranium-233/234	0.500 g	6.82	0.493	0.0838	.01248	pCi/g	NO
		Uranium-235/236	0.500 g	0.756	0.0746	0.0512	.00684	pCi/g	NO
		Uranium-238	0.500 g	32.8	2.29	0.0589	.00552	pCi/g	NO

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961697	CHAMBER : 161	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0247900001_UU	DETECTOR S/N : 70321	BKG FILE : B161.CNF:180
SAMPLE QTY : 0.507 G	AVERAGE %EFFICIENCY : 36.5056	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 16:24:09	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W161.CNF:63
% YIELD : 103.063		CAL DATE : 22-FEB-2010

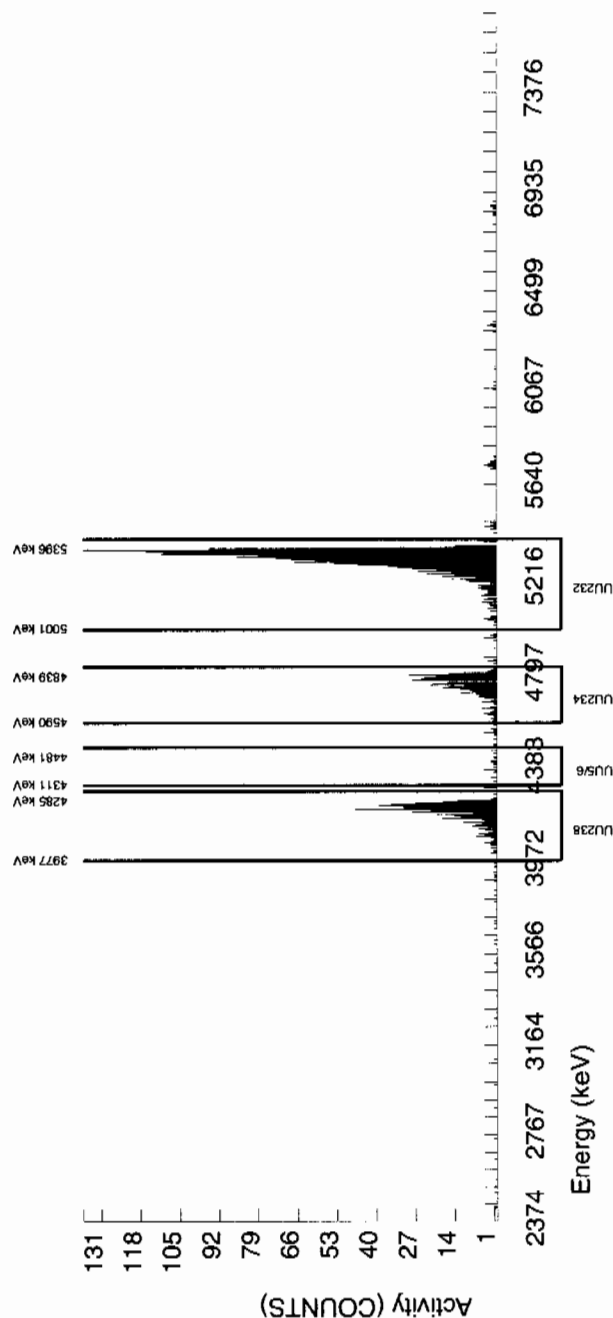
TRACER ID : 1283-H	MS/MSD ID : 0244-A	LCS/LCSD ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5036E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 4.6415E+00 dpm		

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	5309.616	43.418	1702.000	1693.000	9.000	3.0000	100.0000	4.00E+00	2.90E-01	1.65E-02	3.94E-02	9.78E-02
U-3/4	4763.020	4763.891	62.889	389.000	386.285	1.000	5.4790	100.0000	9.12E-01	7.77E-02	3.01E-02	6.66E-02	4.65E-02
U-235	4391.000	4405.067	0.000	22.000	21.000	1.000	2.4127	80.90000	6.13E-02	1.46E-02	1.64E-02	4.07E-02	1.40E-02
U-238	4184.730	4193.928	42.005	521.000	520.000	1.000	3.6781	100.0000	1.23E+00	9.96E-02	2.02E-02	4.68E-02	5.40E-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 : 961697	CHAMBER : 162	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0247900002_UU	DETECTOR S/N : 70323	BKG FILE : B162.CNF;180
SAMPLE QTY : 0.513 G	AVERAGE %EFFICIENCY : 37.1075	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 16:24:10	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W162.CNF;69
% YIELD : 100.073		CAL DATE : 22-FEB-2010

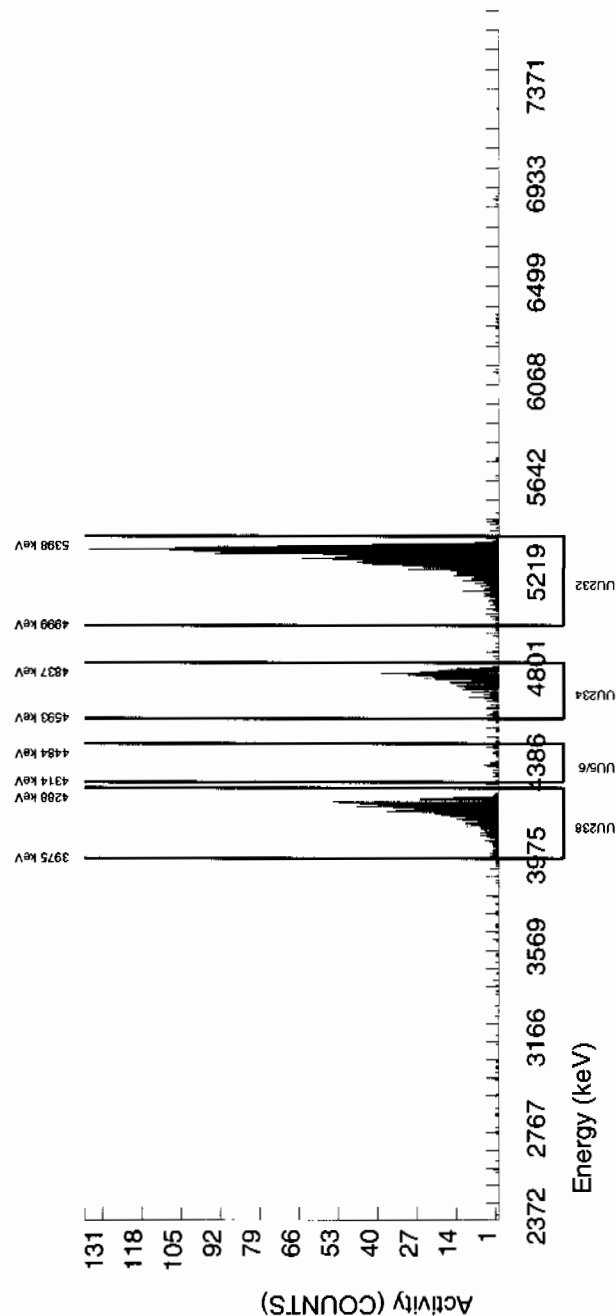
TRACER ID : 1283-H	MS/MSD ID : 0244-A	LCS/LCSD ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5036E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 4.5069E+00 dpm		

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	5304.569	38.581	1681.000	1671.000	10.000	3.1623	100.0000	3.95E+00	2.87E-01	1.74E-02	4.12E-02	9.73E-02
U-3/4	4763.020	4759.438	45.518	447.000	445.307	0.000	5.4790	100.0000	1.05E+00	8.74E-02	3.01E-02	6.67E-02	4.99E-02
U-235	4391.000	4407.713	33.247	37.000	37.000	0.000	2.4127	80.90000	1.08E-01	1.92E-02	1.64E-02	4.07E-02	1.78E-02
U-238	4184.730	4187.054	52.444	771.000	769.000	2.000	3.6781	100.0000	1.82E+00	1.40E-01	2.02E-02	4.69E-02	6.57E-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 : 961697 SAMPLE ID : S0247900003_UU SAMPLE QTY : 0.511 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 104.406</p>	<p>CHAMBER : 164 DETECTOR S/N : 70325 AVERAGE %EFFICIENCY : 37.7598 COUNT DATE : 19-MAR-2010 16:24:12 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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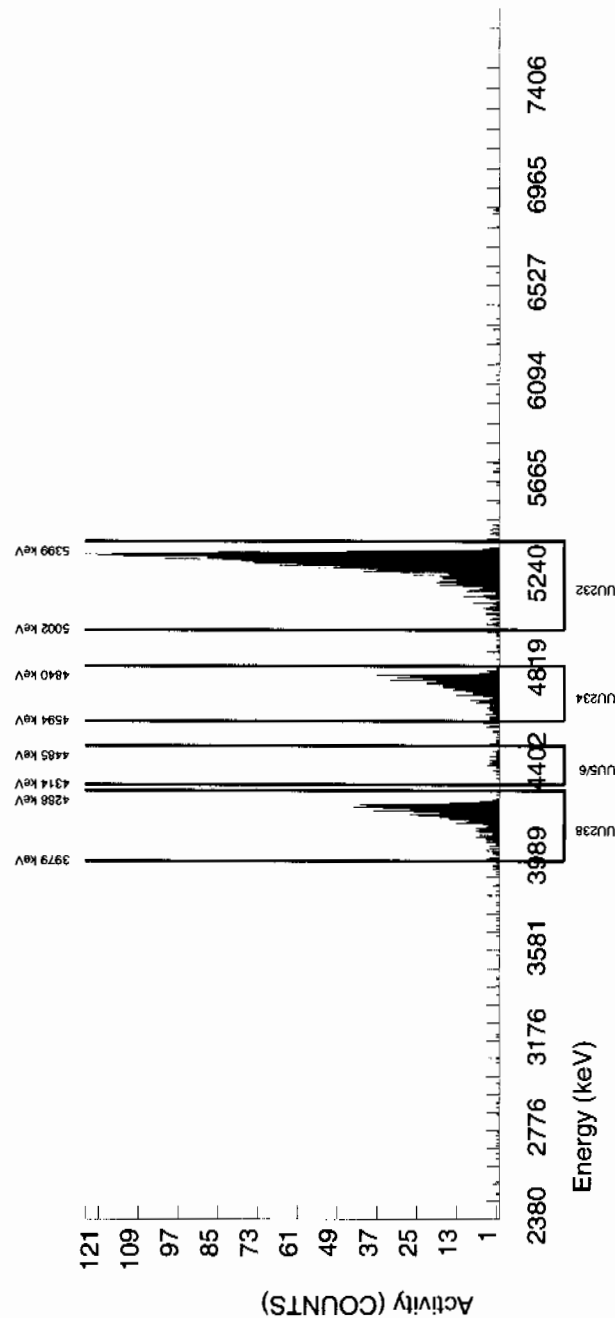
<p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 4.7020E+00 dpm</p>	<p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>	<p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>
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NUCLIDE ACTIVITY 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	5298.900	58.151	1783.000	1774.000	9.000	3.0000	100.0000	3.97E+00	2.86E-01	1.56E-02	3.73E-02	9.47E-02
U-3/4	4763.020	4754.765	51.670	457.000	455.203	0.000	5.4790	100.0000	1.02E+00	8.40E-02	2.85E-02	6.31E-02	4.77E-02
U-235	4391.000	4417.210	83.725	33.000	32.000	1.000	2.4127	80.90000	8.84E-02	1.72E-02	1.55E-02	3.85E-02	1.61E-02
U-238	4184.730	4185.163	53.864	573.000	573.000	0.000	3.6781	100.0000	1.28E+00	1.02E-01	1.91E-02	4.43E-02	5.35E-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 : 961697 SAMPLE ID : S0247900004_UU SAMPLE QTY : 0.501 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 98.683</p>		<p>CHAMBER : 165 DETECTOR S/N : 72544 AVERAGE %EFFICIENCY : 37.8780 COUNT DATE : 19-MAR-2010 16:24:15 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>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</p>
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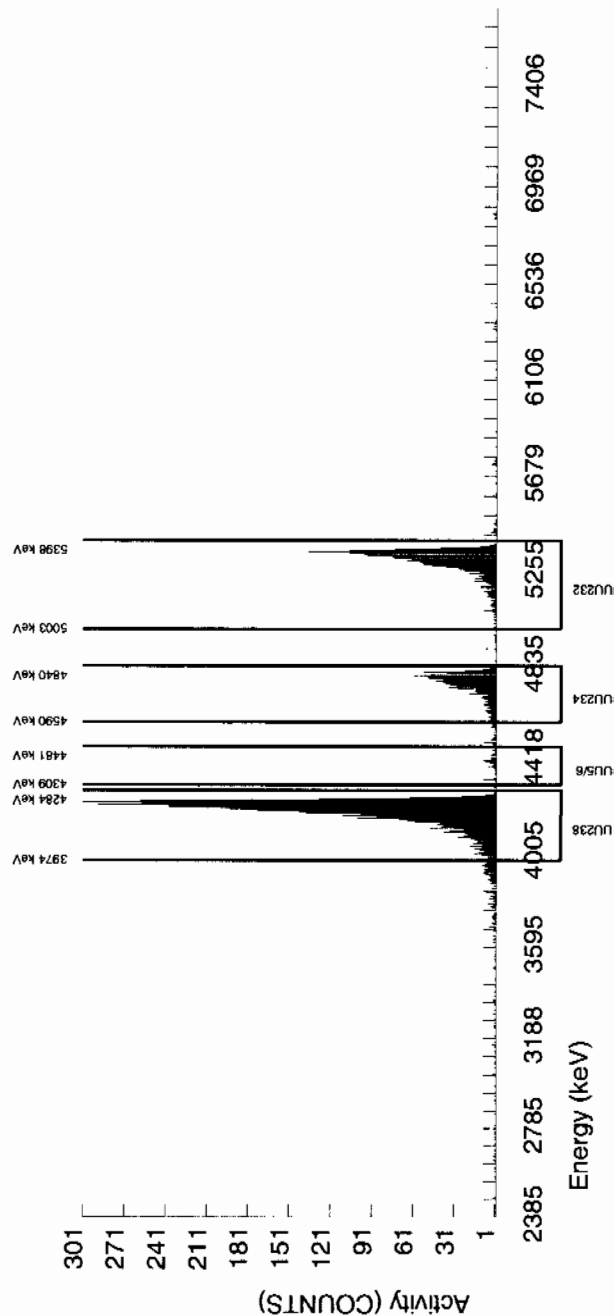
<p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 4.4443E+00 dpm</p>	<p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>	<p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>
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NUCLIDE ACTIVITY 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	5308.989	43.076	1691.000	1682.000	9.000	3.0000	100.0000	4.05E+00	2.93E-01	1.68E-02	4.01E-02	9.93E-02
U-3/4	4763.020	4764.008	50.515	931.000	928.296	1.000	5.4790	100.0000	2.23E+00	1.69E-01	3.07E-02	6.78E-02	7.34E-02
U-235	4391.000	4405.424	25.573	69.000	69.000	0.000	2.4127	80.900000	2.05E-01	2.84E-02	1.67E-02	4.14E-02	2.47E-02
U-238	4184.730	4193.421	57.258	4357.000	4355.000	2.000	3.6781	100.0000	1.05E+01	7.32E-01	2.06E-02	4.77E-02	1.59E-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 :	961697
SAMPLE ID :	S0247900005_UU
SAMPLE QTY :	0.503 G
SAMPLE DATE :	18-FEB-2010 00:00:00
ANALYST :	KXM4
% YIELD :	84.316

CHAMBER	:	166
DETECTOR S/N	:	74545
AVERAGE %EFFICIENCY	:	39.4562
COUNT DATE	:	19-MAR-2000
ELAPSED LIVE TIME(SEC)	:	60000.00

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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
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TRACER	:	1283-H
ID	:	U232
NUCLIDE	:	4.5036EE
NOMINAL	:	3.7972EE
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	5287.190	65.416	1503.000	1497.000	6.000	2.4495	100.0000	4.03E+00	2.96E-01	1.53E-02	3.80E-02	1.05E-01
U-3/4	4763.020	4748.053	56.924	1859.000	1857.484	0.000	5.4790	100.0000	5.00E+00	3.63E-01	3.43E-02	7.59E-02	1.16E-01
U-235	4391.000	4409.603	0.000	201.000	201.000	0.000	2.4127	80.900000	6.69E-01	6.58E-02	1.87E-02	4.64E-02	4.72E-01
U-238	4184.730	4172.236	68.304	11143.000	11142.000	1.000	3.6781	100.0000	3.00E+01	2.08E+00	2.30E-02	5.34E-02	2.84E-01

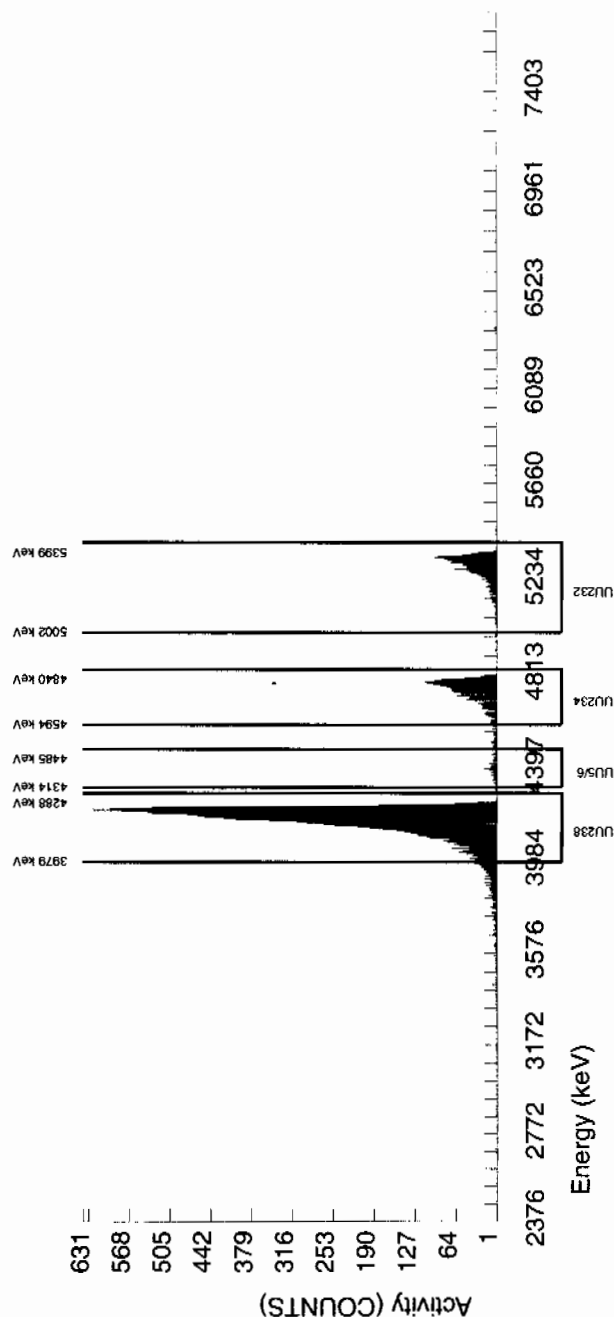
NOTES:

* 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 : 961697 SAMPLE ID : S0247900006_UU SAMPLE QTY : 0.504 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 98.454		CHAMBER : 167 DETECTOR S/N : 72546 AVERAGE %EFFICIENCY : 38.5981 COUNT DATE : 19-MAR-2010 16:24:20 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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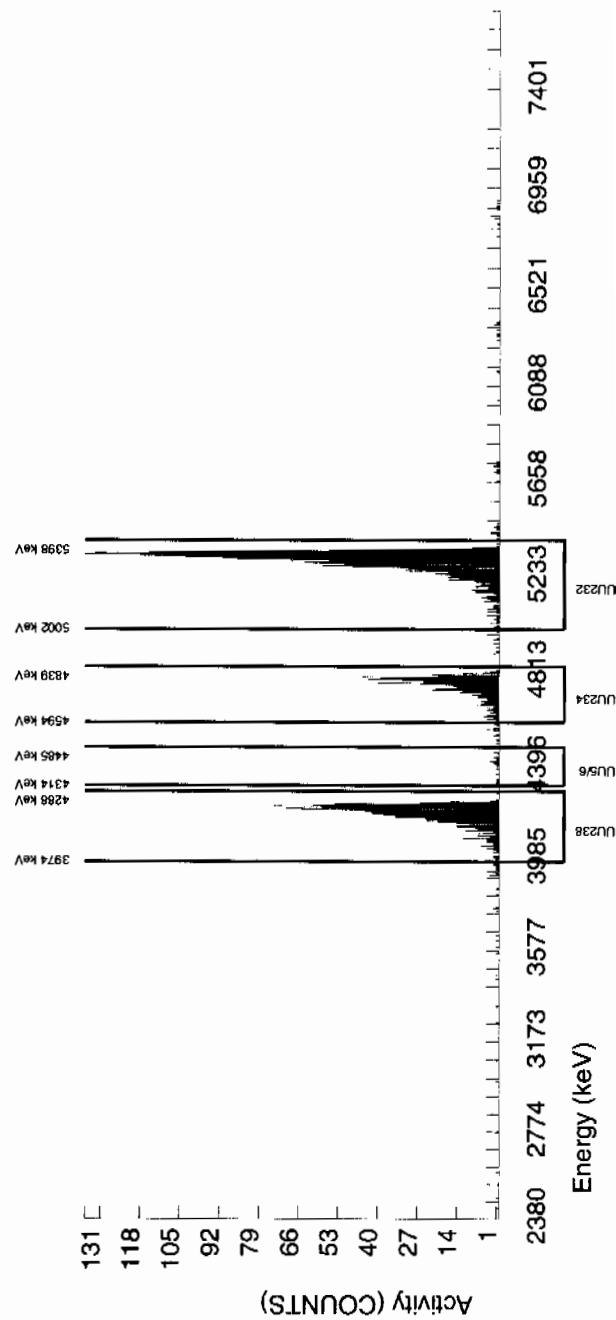
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 4.4339E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/g	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/g
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NUCLIDE ACTIVITY SUMMARY

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	5304.573	48.923	1714.000	1710.000	4.000	2.0000	100.0000	4.03E+00	2.91E-01	1.09E-02	2.83E-02	9.76E-02
U-3/4	4763.020	4757.402	34.949	529.000	525.268	2.000	5.4790	100.0000	1.24E+00	1.00E-01	3.00E-02	6.63E-02	5.41E-02
U-235	4391.000	4406.843	52.592	25.000	23.000	2.000	2.4127	80.90000	6.69E-02	1.58E-02	1.63E-02	4.05E-02	1.51E-02
U-238	4184.730	4187.858	53.244	967.000	965.000	2.000	3.6781	100.0000	2.27E+00	1.71E-01	2.01E-02	4.66E-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

BATCH NUMBER	: 961697
SAMPLE ID	: S0247900007_UU
SAMPLE QTY	: 0.502 G
SAMPLE DATE	: 18-FEB-2010 00:00:00
ANALYST	: KXM4
% YIELD	: 87.025

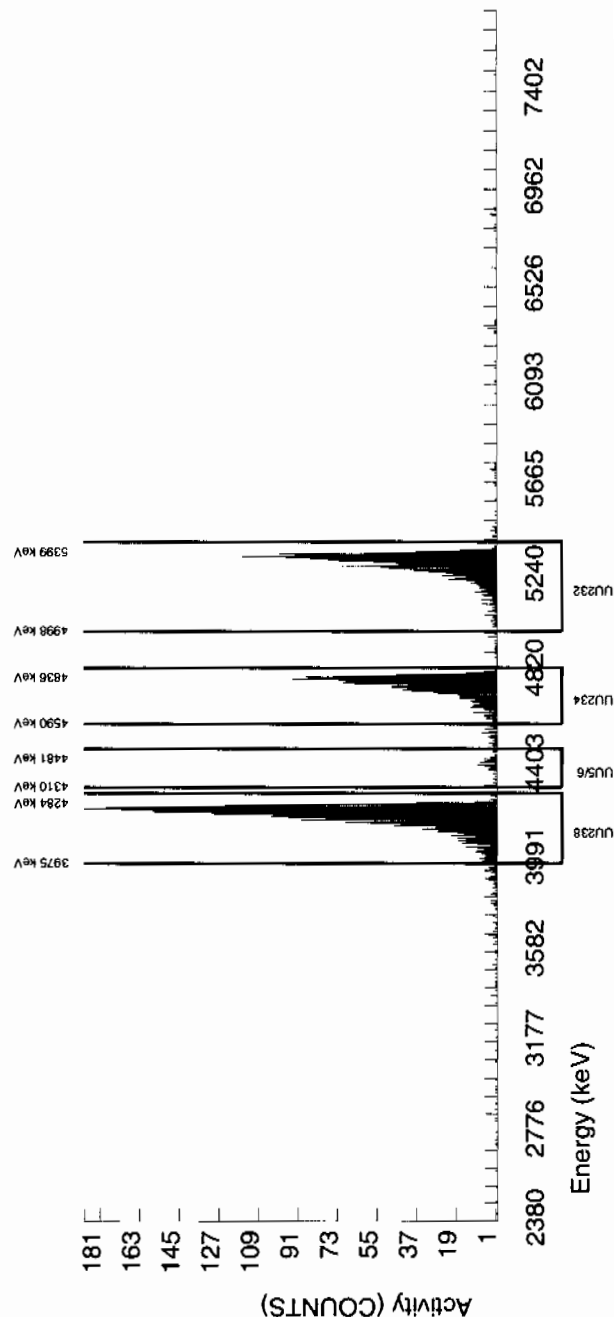
TRACER	
ID	: 1283-H
NUCLIDE	: U232
NOMINAL	: 4.5036E+00 dpm
RESULTS	: 3.9192E+00 dpm

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	5299.102	59.336	1541.000	1531.000	10.000	3.1623	100.0000	4.04E+00	2.96E-01	1.94E-02	4.60E-02	1.04E-01
U-3/4	4763.020	4758.392	54.875	1242.000	1236.449	4.000	5.4790	100.0000	3.26E+00	2.42E-01	3.36E-02	7.44E-02	9.30E-02
U-235	4391.000	4414.487	30.803	78.000	75.000	3.000	2.4127	80.90000	2.44E-01	3.38E-02	1.83E-02	4.54E-02	2.93E-02
U-238	4184.730	4185.239	57.385	2705.000	2703.000	2.000	3.6781	100.0000	7.13E+00	5.08E-01	2.26E-02	5.23E-02	1.37E-01

NOTES:

- * BKG Sg calculated via blank population.
(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:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 961697 SAMPLE ID : S0247900008_UU SAMPLE QTY : 0.502 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 103.917</p>	<p>CHAMBER : 169 DETECTOR S/N : 72548 AVERAGE %EFFICIENCY : 37.6596 COUNT DATE : 19-MAR-2010 16:24:25 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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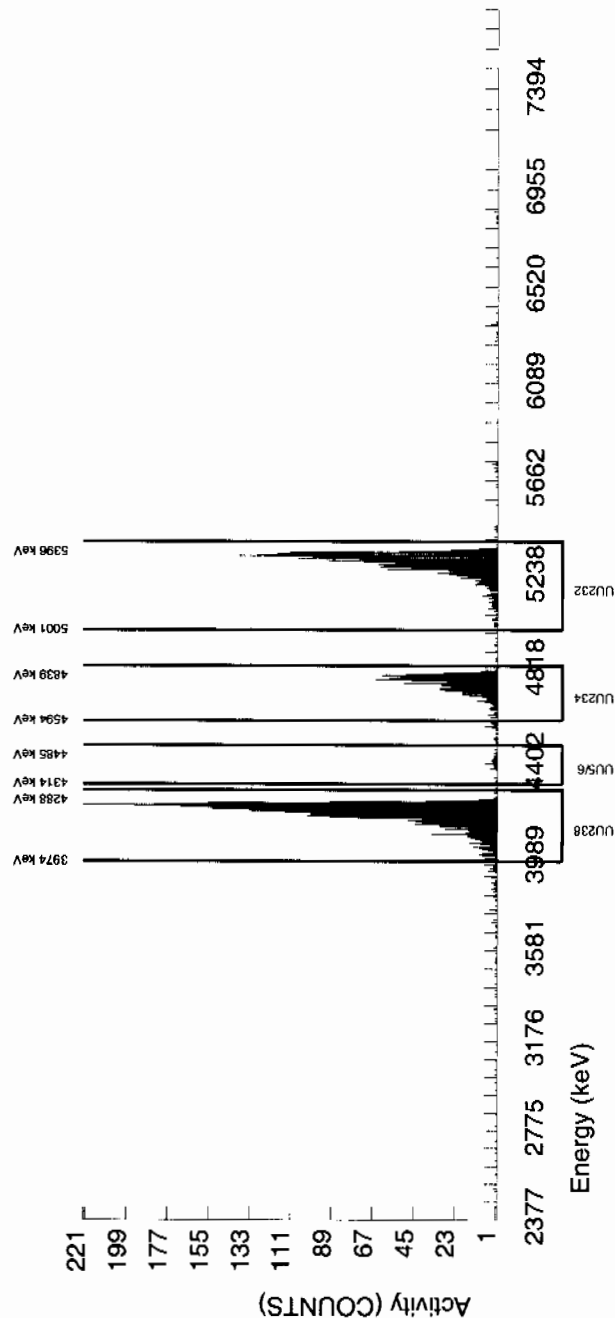
<p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 4.6800E+00 dpm</p>	<p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>	<p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>
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NUCLIDE ACTIVITY 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	5302.401	43.212	1773.000	1761.000	12.000	3.4641	100.0000	4.04E+00	2.91E-01	1.85E-02	4.32E-02	9.70E-02
U-3/4	4763.020	4761.474	47.775	857.000	853.216	2.000	5.4790	100.0000	1.96E+00	1.49E-01	2.92E-02	6.47E-02	6.71E-02
U-235	4391.000	4410.001	47.699	44.000	40.000	4.000	2.4127	80.90000	1.13E-01	2.11E-02	1.59E-02	3.95E-02	1.96E-02
U-238	4184.730	4187.125	43.907	2711.000	2709.000	2.000	3.6781	100.0000	6.21E+00	4.39E-01	1.96E-02	4.55E-02	1.19E-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 : 961697	CHAMBER : 123	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0247900009_UU	DETECTOR S/N : 45-142V3	BKG FILE : B123.CNF:455
SAMPLE QTY : 0.511 G	AVERAGE %EFFICIENCY : 27.2378	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 20-MAR-2010 21:13:50	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 36000.00	EFF FILE : W123.CNF:120
% YIELD : 92.116		CAL DATE : 19-MAR-2010

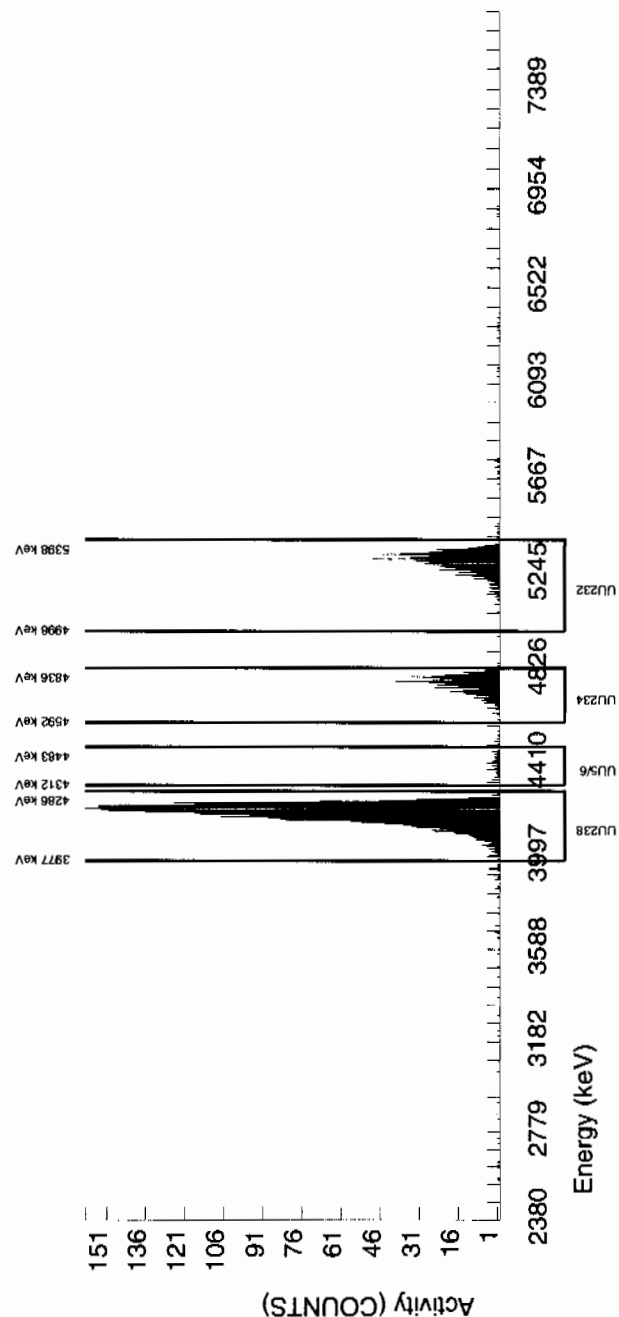
TRACER ID : 1283-H	MS/MSD ID : 0244-A	LCS/LCSD ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5036E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 4.1485E+00 dpm		

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	5304.259	54.315	681.000	677.400	3.600	1.8974	100.0000	3.97E+00	3.38E-01	2.31E-02	6.21E-02	1.53E-01
U-3/4	4763.020	4765.464	56.734	477.000	476.314	0.000	5.4790	100.0000	2.79E+00	2.47E-01	6.68E-02	1.49E-01	1.28E-01
U-235	4391.000	4407.882	121.426	49.000	49.000	0.000	2.4127	80.90000	3.55E-01	5.74E-02	3.63E-02	9.23E-02	5.07E-02
U-238	4184.730	4191.767	79.156	2641.000	2639.800	1.200	3.6781	100.0000	1.55E+01	1.21E+00	4.48E-02	1.05E-01	3.01E-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

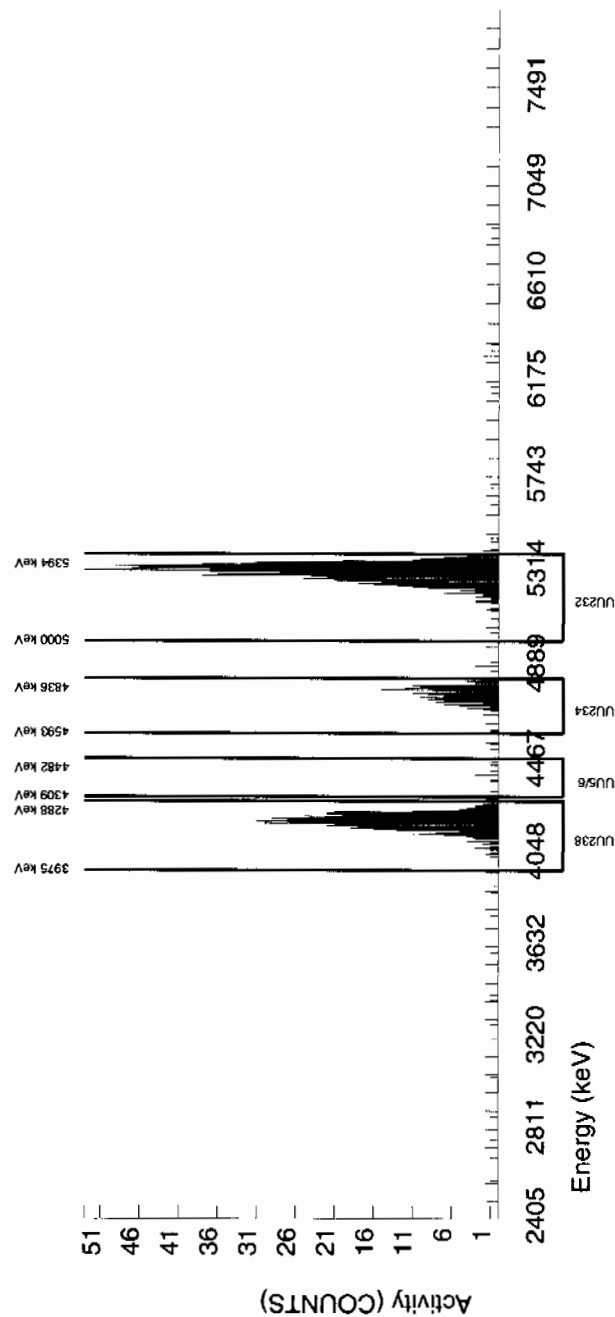
BATCH NUMBER : 961697		LIB FILE : ENV_ALPHA_UU	
SAMPLE ID : S0247900010_UU		BKG FILE : B124.CNF;451	
SAMPLE QTY : 0.512 G		BKG DATE : 14-MAR-2010	
SAMPLE DATE : 18-FEB-2010 00:00:00		BKG LIVE TIME(SEC) : 60000.00	
ANALYST : KXM4		EFF FILE : W124.CNF;116	
% YIELD : 105.670		CAL DATE : 19-MAR-2010	

TRACER ID : 1283-H		LCS/LCSD ID : 0244-A	
NUCLIDE : U232		NUCLIDE : U-238	
NOMINAL : 4.5036E+00 dpm		NOMINAL : 5.7500E+00 pCi/G	
RESULTS : 4.7589E+00 dpm			

NUCLIDE ACTIVITY SUMMARY									
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G
U232	5302.100	5315.085	61.777	765.000	760.800	4.200	2.0494	100.0000	3.96E+00
U-3/4	4763.020	4768.039	73.338	184.000	182.629	0.600	5.4790	100.0000	9.50E-01
U-235	4391.000	4411.766	5.051	9.000	9.000	0.000	2.4127	80.90000	5.79E-02
U-238	4184.730	4198.777	79.385	479.000	477.200	1.800	3.6781	100.0000	2.48E+00

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 : 961697	CHAMBER : 172	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0247900011_UU	DETECTOR S/N : 78772	BKG FILE : B172.CNF;183
SAMPLE QTY : 0.512 G	AVERAGE %EFFICIENCY : 38.2060	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 16:24:33	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W172.CNF;68
% YIELD : 45.137		CAL DATE : 22-FEB-2010

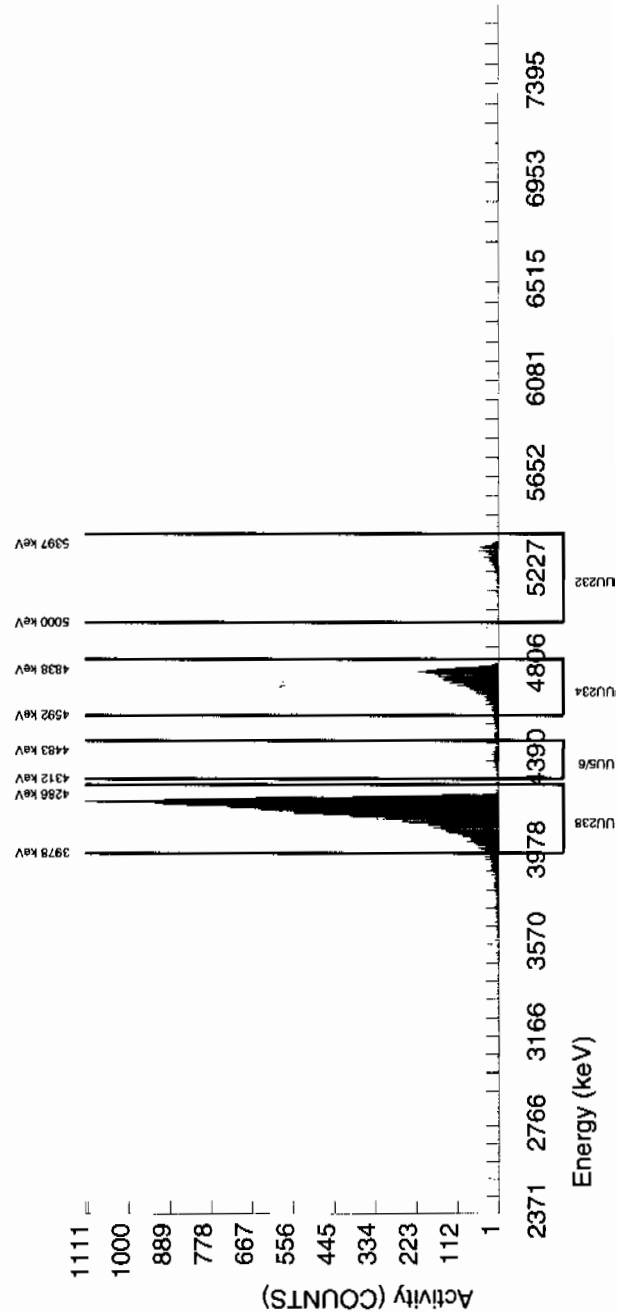
TRACER ID : 1283-H	MS/MSD ID : 0244-A	LCS/LCSD ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5036E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 2.0328E+00 dpm		

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	5285.607	71.249	780.000	776.000	4.000	2.0000	100.0000	3.96E+00	3.23E-01	2.37E-02	6.13E-02	1.43E-01
U-3/4	4763.020	4747.165	66.453	3540.000	3538.214	1.000	5.4790	100.0000	1.81E+01	1.35E+00	6.50E-02	1.44E-01	3.04E-01
U-235	4391.000	4406.420	108.810	307.000	307.000	0.000	2.4127	80.90000	1.94E+00	1.80E-01	3.54E-02	8.79E-02	1.10E-01
U-238	4184.730	4173.982	64.793	18031.000	18030.000	1.000	3.6781	100.0000	9.20E+01	6.76E+00	4.37E-02	1.01E-01	6.85E-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 : 961697 SAMPLE ID : S0247900012_UU SAMPLE QTY : 0.518 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 83.271		CHAMBER : 125 DETECTOR S/N : 75547 AVERAGE %EFFICIENCY : 27.0077 COUNT DATE : 19-MAR-2010 18:29:16 ELAPSED LIVE TIME(SEC) : 60000.00		LIB FILE : ENV_ALPHA_UU BKG FILE : B125.CNF:461 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W125.CNF:134 CAL DATE : 18-MAR-2010	
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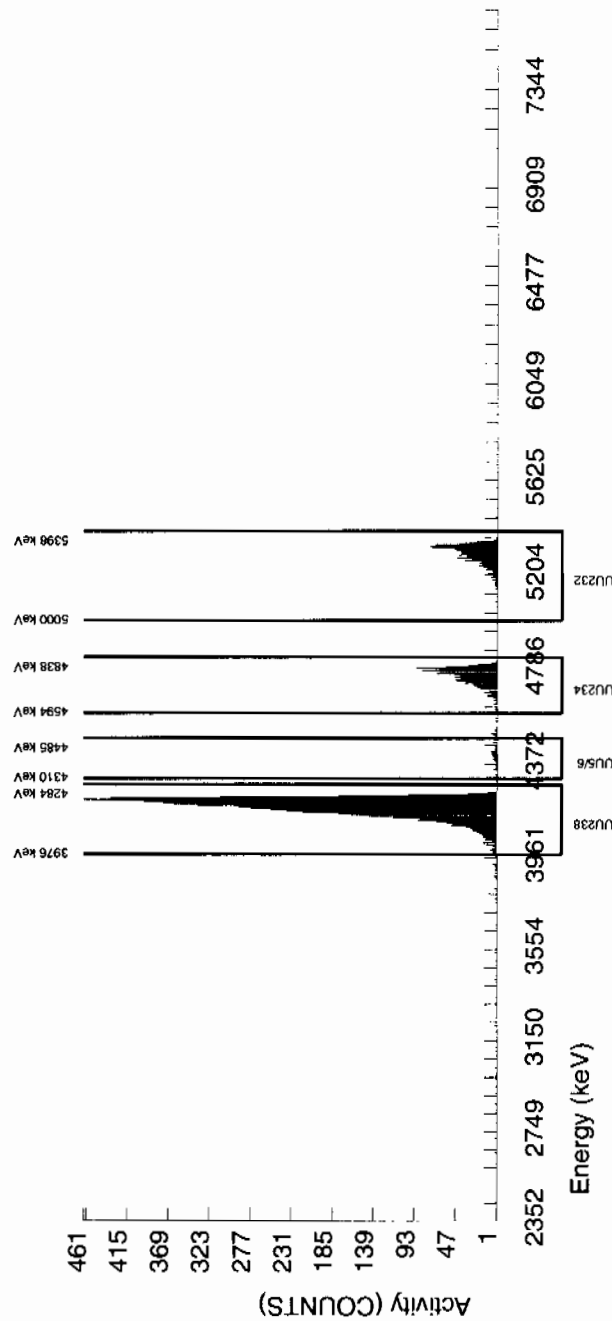
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 3.7502E+00 dpm		MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G		LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	
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NUCLIDE ACTIVITY SUMMARY

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	5300.628	67.776	1015.000	1012.000	3.000	1.7321	100.0000	3.92E+00	3.09E-01	1.56E-02	4.16E-02	1.23E-01
U-3/4	4763.020	4757.878	61.937	1131.000	1129.975	0.000	5.4790	100.0000	4.37E+00	3.42E-01	4.93E-02	1.09E-01	1.30E-01
U-235	4391.000	4410.929	91.482	102.000	102.000	0.000	2.4127	80.90000	4.88E-01	5.98E-02	2.68E-02	6.66E-02	4.83E-02
U-238	4184.730	4187.054	63.099	6503.000	6502.000	1.000	3.6781	100.0000	2.51E+01	1.85E+00	3.31E-02	7.66E-02	3.12E-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 : 961697		CHAMBER : 126		LIB FILE : ENV_ALPHA_UU	
SAMPLE ID : S0247900013_UU		DETECTOR S/N : 75548		BKG FILE : B126.CNF;460	
SAMPLE QTY : 0.511 G		AVERAGE %EFFICIENCY : 26.6612		BKG DATE : 14-MAR-2010	
SAMPLE DATE : 18-FEB-2010 00:00:00		COUNT DATE : 19-MAR-2010 18:29:17		BKG LIVE TIME(SEC) : 60000.00	
ANALYST : KXM4		ELAPSED LIVE TIME(SEC) : 60000.00		EFF FILE : W126.CNF;136	
% YIELD : 40.677				CAL DATE : 18-MAR-2010	

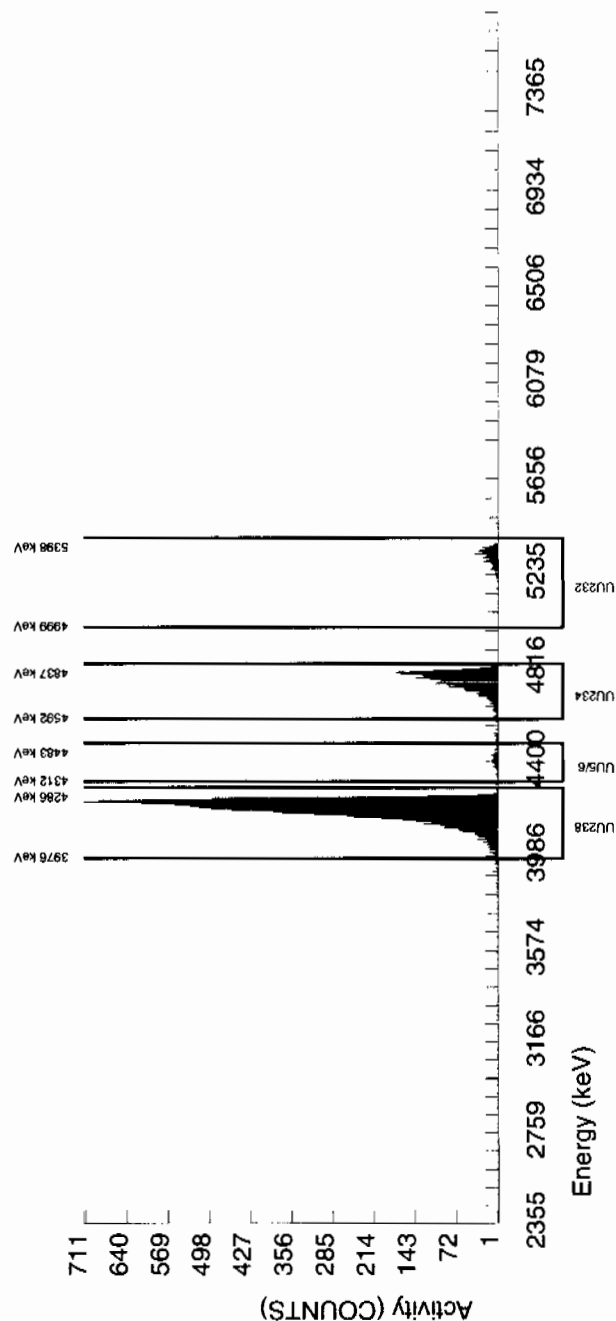
TRACER ID : 1283-H		MS/MSD ID : 0244-A		LCS/LCSD ID : 0244-A	
NUCLIDE : U232		NUCLIDE : U-238		NUCLIDE : U-238	
NOMINAL : 4.5036E+00 dpm		NOMINAL : 5.7500E+00 pCi/G		NOMINAL : 5.7500E+00 pCi/G	
RESULTS : 1.8319E+00 dpm					

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	5314.265	65.530	491.000	488.000	3.000	1.7321	100.0000	3.97E+00	3.64E-01	3.28E-02	8.75E-02	1.81E-01
U-3/4	4763.020	4765.801	67.424	2594.000	2593.506	0.000	5.4790	100.0000	2.11E+01	1.73E+00	1.04E-01	2.29E-01	4.14E-01
U-235	4391.000	4411.382	76.858	173.000	171.000	2.000	2.4127	80.90000	1.72E+00	1.91E-01	5.64E-02	1.40E-01	1.33E-01
U-238	4184.730	4194.192	70.496	10780.000	10778.000	2.000	3.6781	100.0000	8.76E+01	7.02E+00	6.96E-02	1.61E-01	8.44E-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 : 961697 SAMPLE ID : S0247900014_UU SAMPLE QTY : 0.509 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 94.508		CHAMBER : 127 DETECTOR S/N : 78770 AVERAGE %EFFICIENCY : 26.3126 COUNT DATE : 19-MAR-2010 18:29:20 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B127.CNF:464 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W127.CNF:127 CAL DATE : 18-MAR-2010
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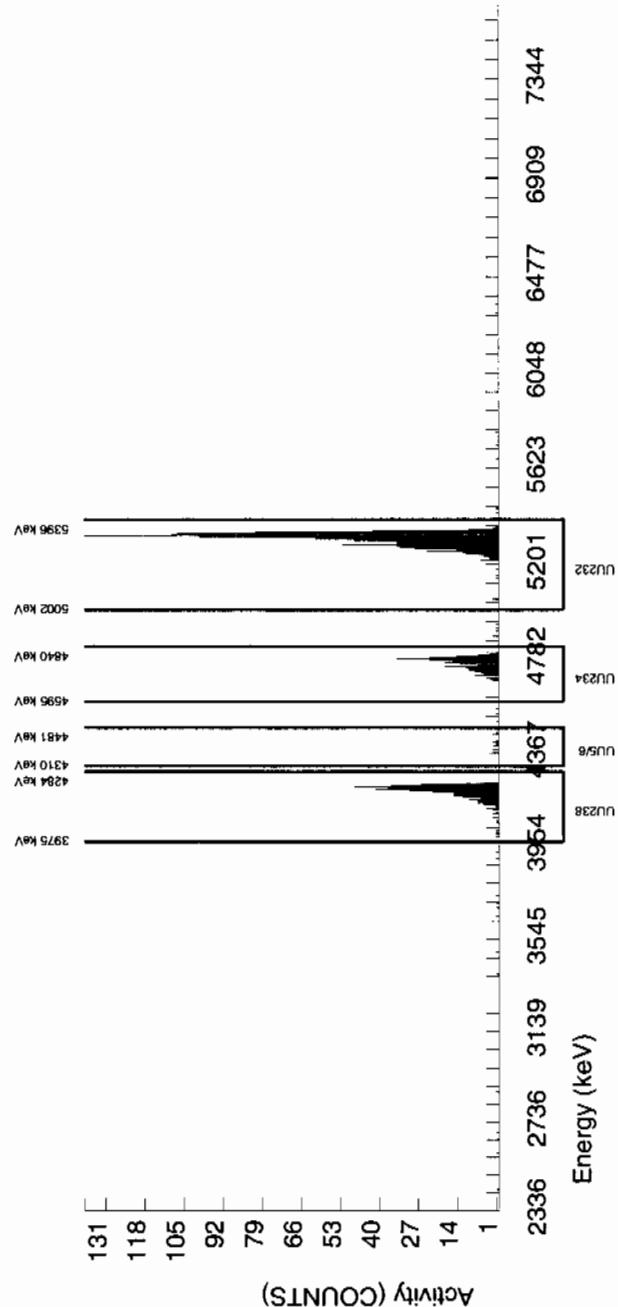
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 4.2562E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5316.406	26.080	1120.000	1119.000	1.000	1.0000	100.0000	3.99E+00	3.10E-01	8.28E-03	2.62E-02	1.19E-01
U-3/4	4763.020	4771.386	43.822	268.000	266.867	0.000	5.4790	100.0000	9.50E-01	8.96E-02	4.54E-02	1.00E-01	5.81E-02
U-235	4391.000	4412.739	52.231	13.000	11.000	2.000	2.4127	80.90000	4.84E-02	1.74E-02	2.47E-02	6.13E-02	1.70E-02
U-238	4184.730	4197.917	29.263	399.000	397.000	2.000	3.6781	100.0000	1.41E+00	1.24E-01	3.05E-02	7.05E-02	7.13E-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 : 961697	CHAMBER : 128	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0247900015_UU	DETECTOR S/N : 75549	BKG FILE : B128.CNF:470
SAMPLE QTY : 0.507 G	AVERAGE %EFFICIENCY : 25.9743	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 18:29:22	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W128.CNF:137
% YIELD : 91.376		CAL DATE : 18-MAR-2010

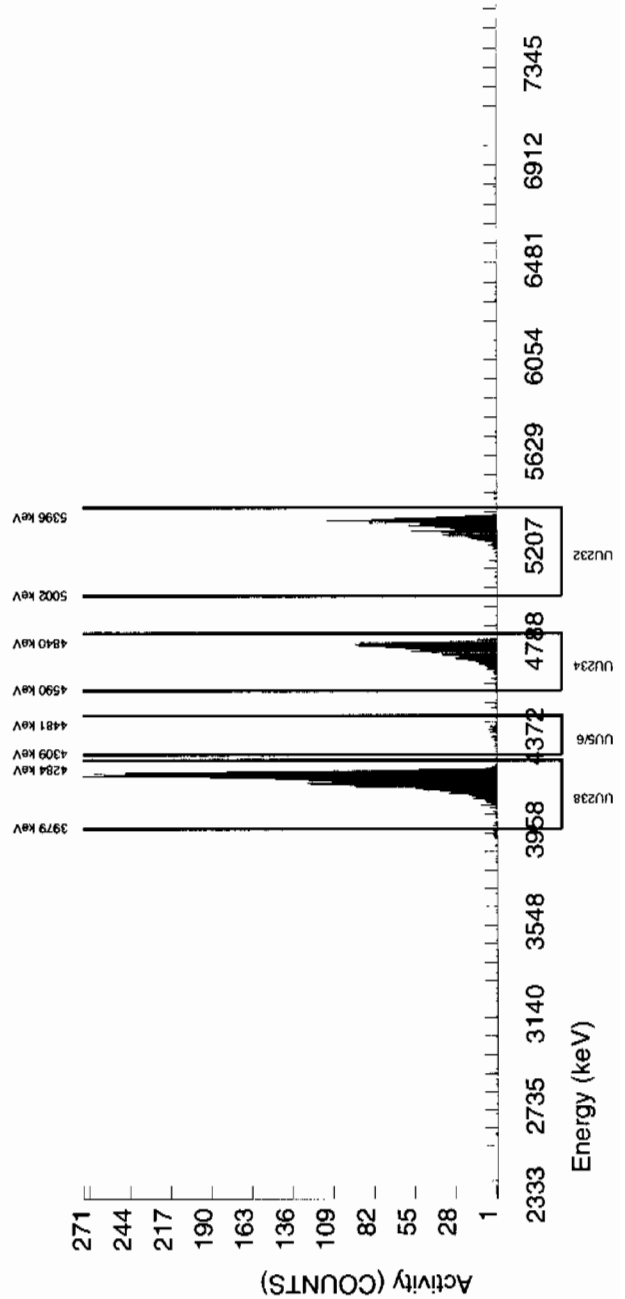
TRACER ID : 1283-H	MS/MSD ID : 0244-A	LCS/LCSD ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5036E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 4.1152E+00 dpm		

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	5315.891	57.204	1070.000	1068.000	2.000	1.4142	100.0000	4.00E+00	3.14E-01	1.23E-02	3.48E-02	1.23E-01
U-3/4	4763.020	4771.257	47.775	1093.000	1091.918	0.000	5.4790	100.0000	4.09E+00	3.20E-01	4.77E-02	1.06E-01	1.24E-01
U-235	4391.000	4408.522	65.907	58.000	58.000	0.000	2.4127	80.90000	2.68E-01	4.02E-02	2.60E-02	6.45E-02	3.52E-02
U-238	4184.730	4201.931	39.346	2992.000	2991.000	1.000	3.6781	100.0000	1.12E+01	8.33E-01	3.20E-02	7.42E-02	2.05E-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 : 961697	CHAMBER : 129	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0247900016_UU	DETECTOR S/N : 76227	BKG FILE : B129.CNF;459
SAMPLE QTY : 0.507 G	AVERAGE %EFFICIENCY : 26.5015	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 19-MAR-2010 18:29:25	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W129.CNF;132
% YIELD : 96.938		CAL DATE : 18-MAR-2010

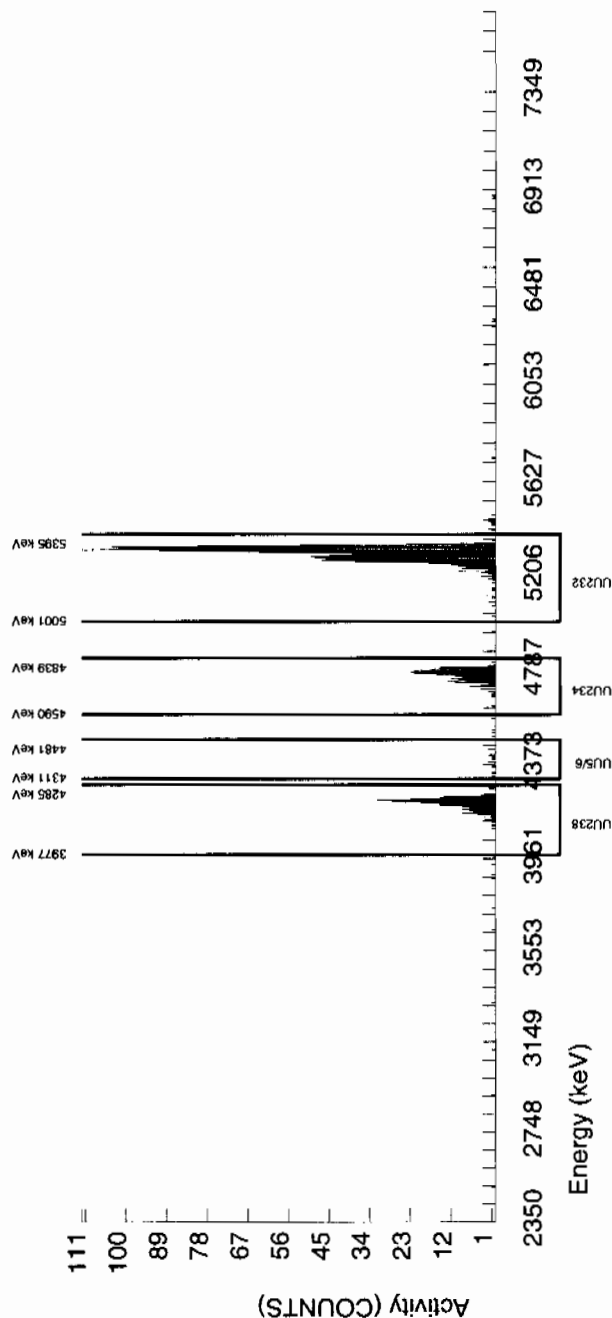
TRACER	MS/MSD	LCS/LCSD
ID : 1283-H	ID : 0244-A	ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5036E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 4.3656E+00 dpm		

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	5314.118	35.593	1156.000	1156.000	0.000	0.0000	100.0000	4.00E+00	3.10E-01	0.00E+00	9.37E-03	1.18E-01
U-3/4	4763.020	4769.452	59.983	248.000	245.829	1.000	5.4790	100.0000	8.50E-01	8.16E-02	4.41E-02	9.75E-02	5.44E-02
U-235	4391.000	4392.145	59.368	15.000	15.000	0.000	2.4127	80.90000	6.41E-02	1.72E-02	2.40E-02	5.96E-02	1.66E-02
U-238	4184.730	4205.331	27.883	268.000	266.000	2.000	3.6781	100.0000	9.20E-01	8.70E-02	2.96E-02	6.86E-02	5.68E-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	961697	CHAMBER	: 130	LIB FILE	: ENV_ALPHA_UU
SAMPLE ID	S0247900017_UU	DETECTOR S/N	: 76228	BKG FILE	: B130.CNF;459
SAMPLE QTY	0.507 G	AVERAGE %EFFICIENCY	: 25.8660	BKG DATE	: 14-MAR-2010
SAMPLE DATE	18-FEB-2010 00:00:00	COUNT DATE	: 19-MAR-2010 18:29:27	BKG LIVE TIME(SEC)	: 60000.00
ANALYST	KXM4	ELAPSED LIVE TIME(SEC)	: 60000.00	EFF FILE	: W130.CNF;134
% YIELD	90.899			CAL DATE	: 18-MAR-2010

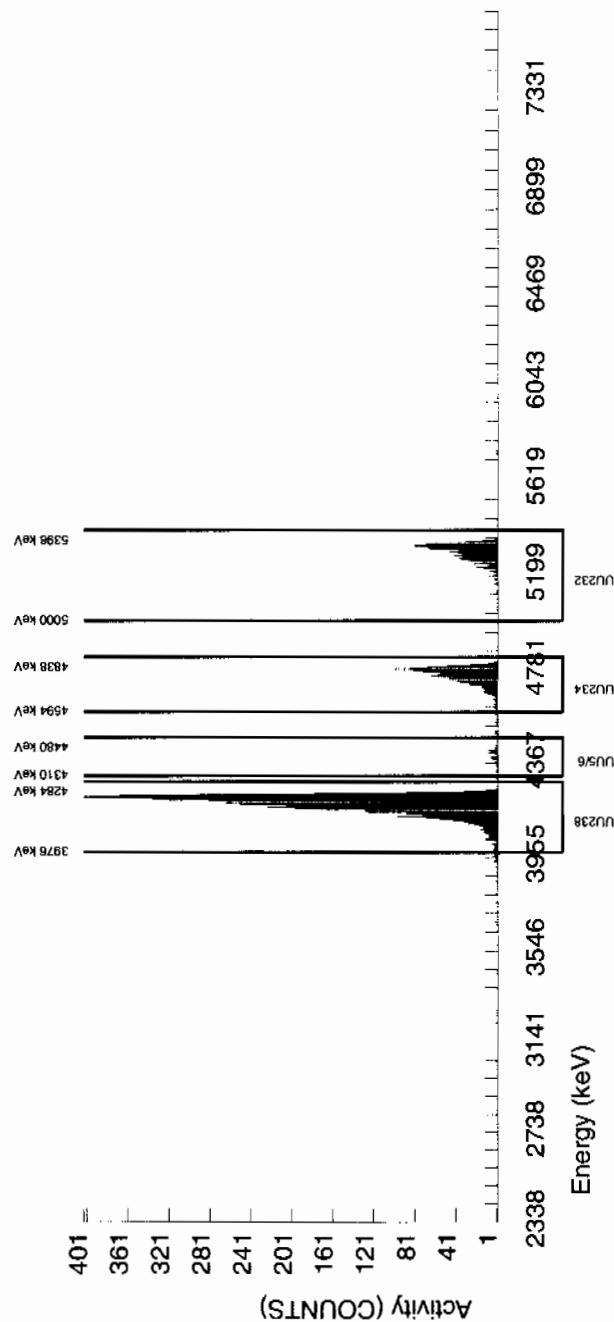
TTRACER		MS/MSD		LCS/LCSD	
ID	: 1283-H	ID	: 0244-A	ID	: 0244-A
NUCLIDE	: U232	NUCLIDE	: U-238	NUCLIDE	: U-238
NOMINAL	: 4.5036E+00 dpm	NOMINAL	: 5.7500E+00 pCi/G	NOMINAL	: 5.7500E+00 pCi/G

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	5305.944	59.300	1064.000	1058.000	6.000	2.4495	100.0000	4.00E+00	3.14E-01	2.15E-02	5.33E-02	1.24E-01
U-3/4	4763.020	4760.519	64.831	1285.000	1281.928	2.000	5.4790	100.0000	4.84E+00	3.75E-01	4.82E-02	1.07E-01	1.36E-01
U-235	4391.000	4402.321	44.814	91.000	90.000	1.000	2.4127	80.90000	4.20E-01	5.41E-02	2.62E-02	6.51E-02	4.48E-02
U-238	4184.730	4189.930	62.025	5378.000	5378.000	0.000	3.6781	100.0000	2.03E+01	1.49E+00	3.23E-02	7.49E-02	2.77E-01

NOTES:

- * BKG Sg calculated via blank population.
(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:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 961697 SAMPLE ID : S0247900018_UU SAMPLE QTY : 0.528 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 96.884	CHAMBER : 133 DETECTOR S/N : 76229 AVERAGE %EFFICIENCY : 25.1168 COUNT DATE : 19-MAR-2010 18:29:29 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B133.CNF:443 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W133.CNF:125 CAL DATE : 18-MAR-2010
		LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G

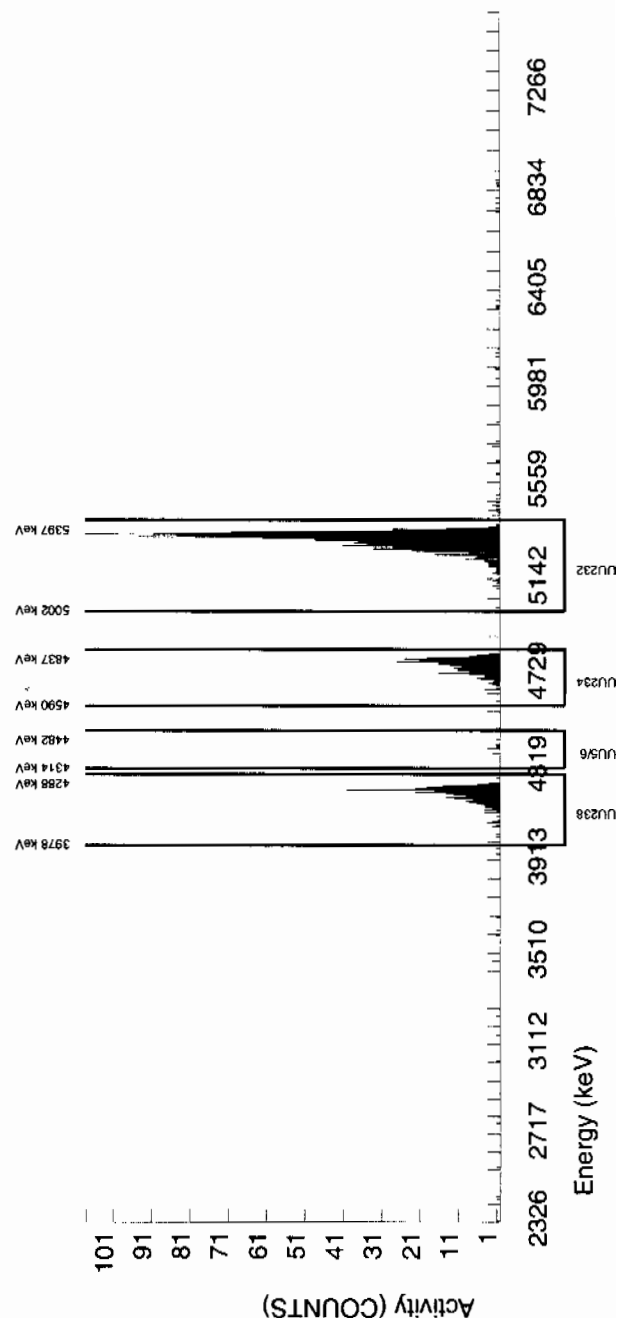
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 4.3633E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
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NUCLIDE ACTIVITY SUMMARY

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	5313.975	30.072	1096.000	1095.000	1.000	1.0000	100.0000	3.84E+00	3.00E-01	8.16E-03	2.58E-02	1.16E-01
U-3/4	4763.020	4767.382	67.164	288.000	286.891	0.000	5.4790	100.0000	1.01E+00	9.36E-02	4.47E-02	9.89E-02	5.94E-02
U-235	4391.000	4411.467	38.923	12.000	12.000	0.000	2.4127	80.90000	5.20E-02	1.55E-02	2.43E-02	6.04E-02	1.50E-02
U-238	4184.730	4202.117	23.331	308.000	308.000	0.000	3.6781	100.0000	1.08E+00	9.91E-02	3.00E-02	6.95E-02	6.15E-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

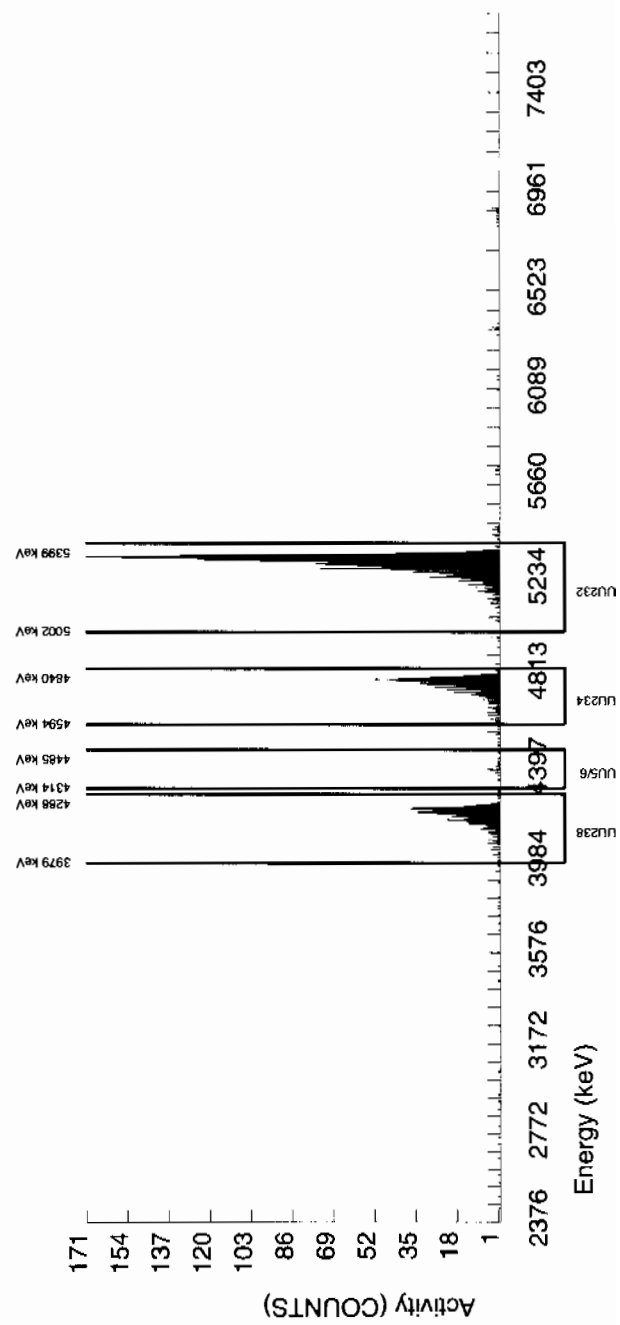
BATCH NUMBER : 961697 SAMPLE ID : S0247900019_UU SAMPLE QTY : 0.522 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 99.970	CHAMBER : 166 DETECTOR S/N : 74545 AVERAGE %EFFICIENCY : 39.4562 COUNT DATE : 18-MAR-2010 08:50:38 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B166.CNF;179 BKG DATE : 14-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W166.CNF;58 CAL DATE : 22-FEB-2010
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TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5036E+00 dpm RESULTS : 4.5022E+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
U232	5302.100	5310.729	32.164	1781.000	1775.000	6.000	2.4495	100.0000	3.89E+00
U-3/4	4763.020	4766.244	45.693	536.000	534.202	0.000	5.4790	100.0000	1.17E+00
U-235	4391.000	4411.069	5.712	20.000	20.000	0.000	2.4127	80.90000	5.41E-02
U-238	4184.730	4190.237	64.539	497.000	496.000	1.000	3.6781	100.0000	1.09E+00

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 : 961697 SAMPLE ID : S0247900020_UU SAMPLE QTY : 0.500 G SAMPLE DATE : 18-FEB-2010 00:00:00 ANALYST : KXM4 % YIELD : 78.588	CHAMBER : 167 DETECTOR S/N : 72546 AVERAGE %EFFICIENCY : 38.5981 COUNT DATE : 18-MAR-2010 08:50:41 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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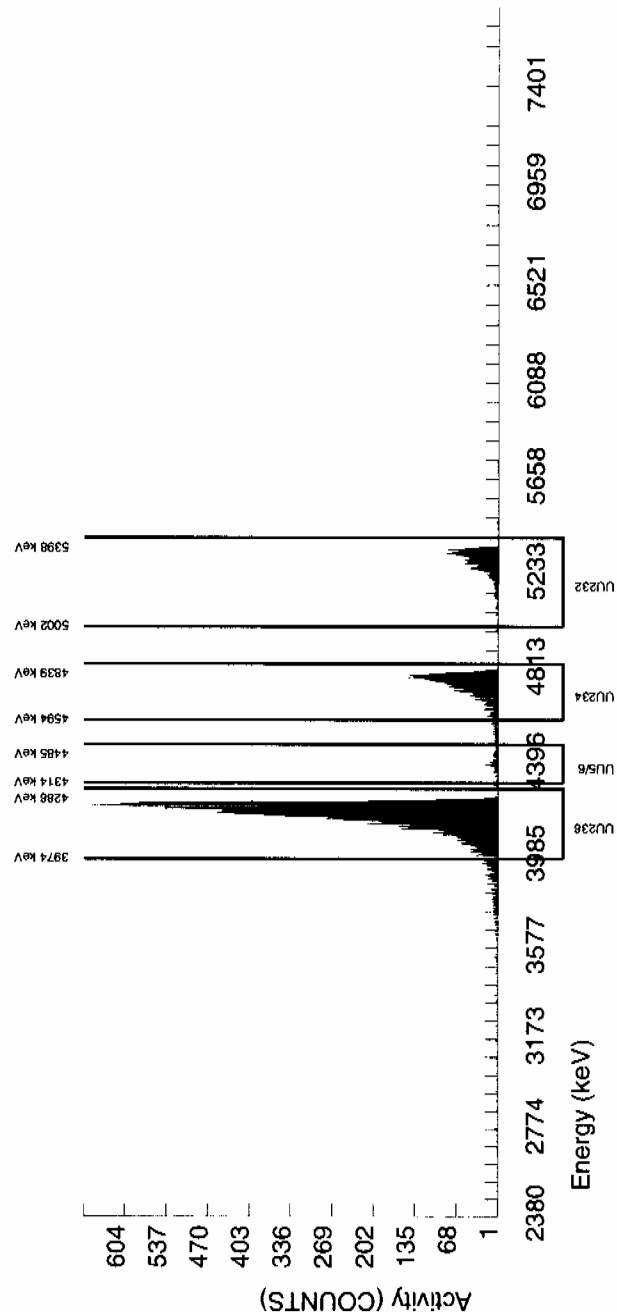
TRACER ID : 1283-H	MS/MSD ID : 0244-A	LCS/LCSD ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5036E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 3.5392E+00 dpm		

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	5288.184	87.659	1369.000	1365.000	4.000	2.0000	100.0000	4.06E+00	3.01E-01	1.38E-02	3.57E-02	1.10E-01
U-3/4	4763.020	4749.958	64.074	2300.000	2296.617	2.000	5.4790	100.0000	6.82E+00	4.93E-01	3.79E-02	8.38E-02	1.42E-01
U-235	4391.000	4407.764	0.000	208.000	206.000	2.000	2.4127	80.90000	7.56E-01	7.46E-02	2.06E-02	5.12E-02	5.32E-02
U-238	4184.730	4174.469	66.371	11054.000	11052.000	2.000	3.6781	100.0000	3.28E+01	2.29E+00	2.54E-02	5.89E-02	3.12E-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 : 961697	CHAMBER : 133	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S1202062751_UU	DETECTOR S/N : 76229	BKG FILE : B133.CNF:443
SAMPLE QTY : 1.000 G	AVERAGE %EFFICIENCY : 25.1168	BKG DATE : 14-MAR-2010
SAMPLE DATE : 11-MAR-2010 00:00:00	COUNT DATE : 20-MAR-2010 21:14:13	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 36000.00	EFF FILE : W133.CNF:125
% YIELD : 108.153		CAL DATE : 18-MAR-2010

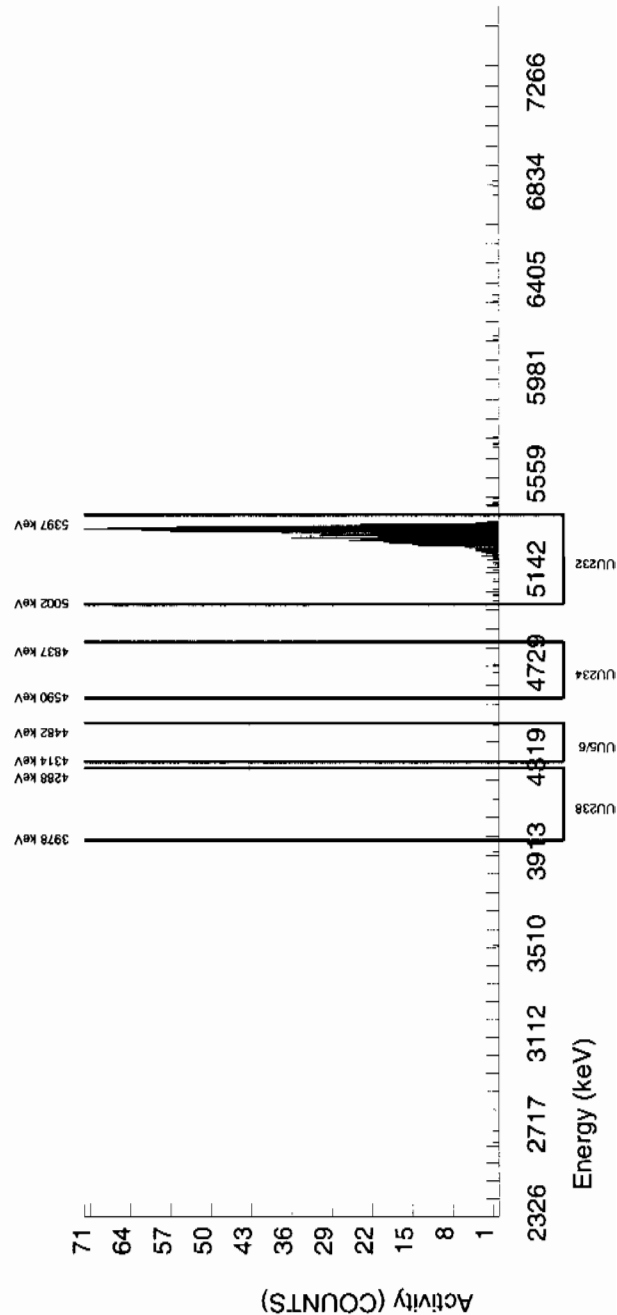
TRACER	MS/MSD	LCS/LCSD
ID : 1283-H	ID : 0244-A	ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5010E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 4.8680E+00 dpm		

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	5315.849	29.483	734.000	733.400	0.600	0.7746	100.0000	2.03E+00	1.69E-01	4.45E-03	1.64E-02	7.49E-02
U-3/4	4763.020	4762.894	0.000	3.000	2.257	0.000	5.4790	100.0000	6.24E-03	4.18E-03	3.15E-02	7.05E-02	4.15E-03
U-235	4391.000	4477.098	4.865	1.000	1.000	0.000	2.4127	80.90000	3.42E-03	3.43E-03	1.72E-02	4.36E-02	3.42E-03
U-238	4184.730	4155.836	4.865	1.000	1.000	0.000	3.6781	100.0000	2.76E-03	2.77E-03	2.12E-02	4.98E-02	2.76E-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

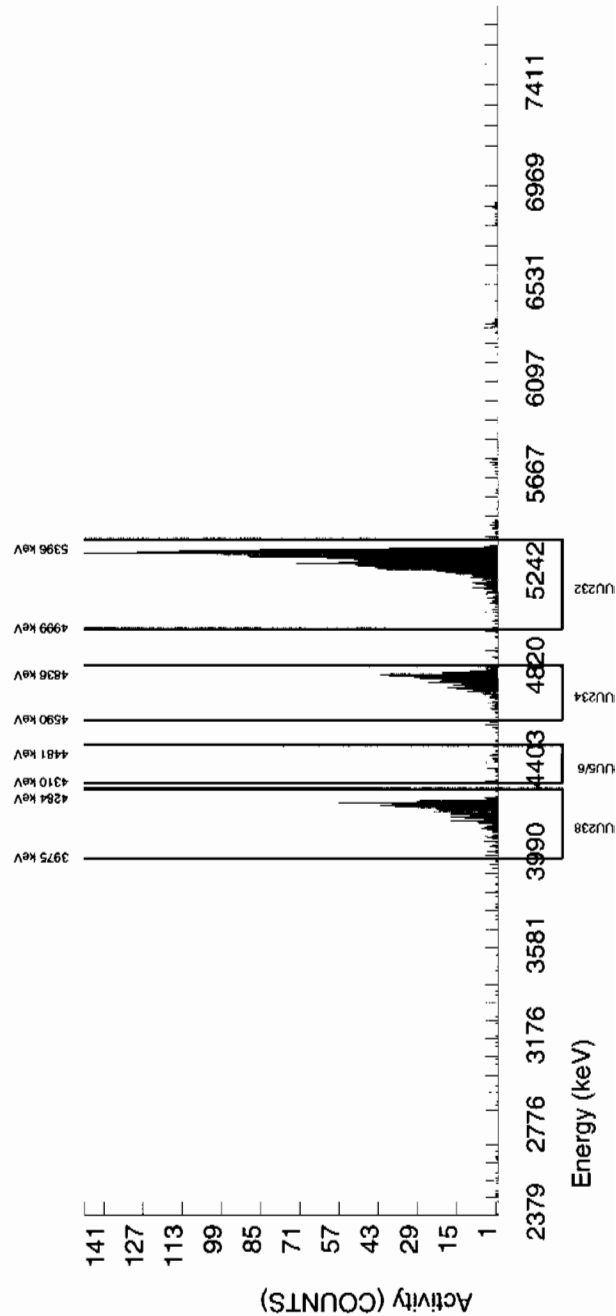
BATCH NUMBER : 961697	CHAMBER : 170	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S1202062752_UU	DETECTOR S/N : 72549	BKG FILE : B170.CNF:179
SAMPLE QTY : 0.509 G	AVERAGE %EFFICIENCY : 36.6577	BKG DATE : 14-MAR-2010
SAMPLE DATE : 18-FEB-2010 00:00:00	COUNT DATE : 18-MAR-2010 08:50:50	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W170.CNF:58
% YIELD : 98.570		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 : 4.4391E+00 dpm		

NUCLIDE ACTIVITY SUMMARY									
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G
U232	5302.100	5310.363	38.172	1630.000	1626.000	4.000	2.0000	100.0000	3.99E+00
U-3/4	4763.020	4768.622	45.748	445.000	443.353	0.000	5.4790	100.0000	1.09E+00
U-235	4391.000	4393.338	125.634	30.000	30.000	0.000	2.4127	80.90000	9.08E-02
U-238	4184.730	4191.004	26.796	548.000	546.000	2.000	3.6781	100.0000	1.34E+00

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 : 961697	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S1202062753_UU	BKG FILE : B171.CNF;185
SAMPLE QTY : 0.119 G	BKG DATE : 14-MAR-2010
SAMPLE DATE : 11-MAR-2010 00:00:00	BKG LIVE TIME(SEC) : 60000.00
ANALYST : KXM4	EFF FILE : W171.CNF;75
% YIELD : 101.874	CAL DATE : 22-FEB-2010

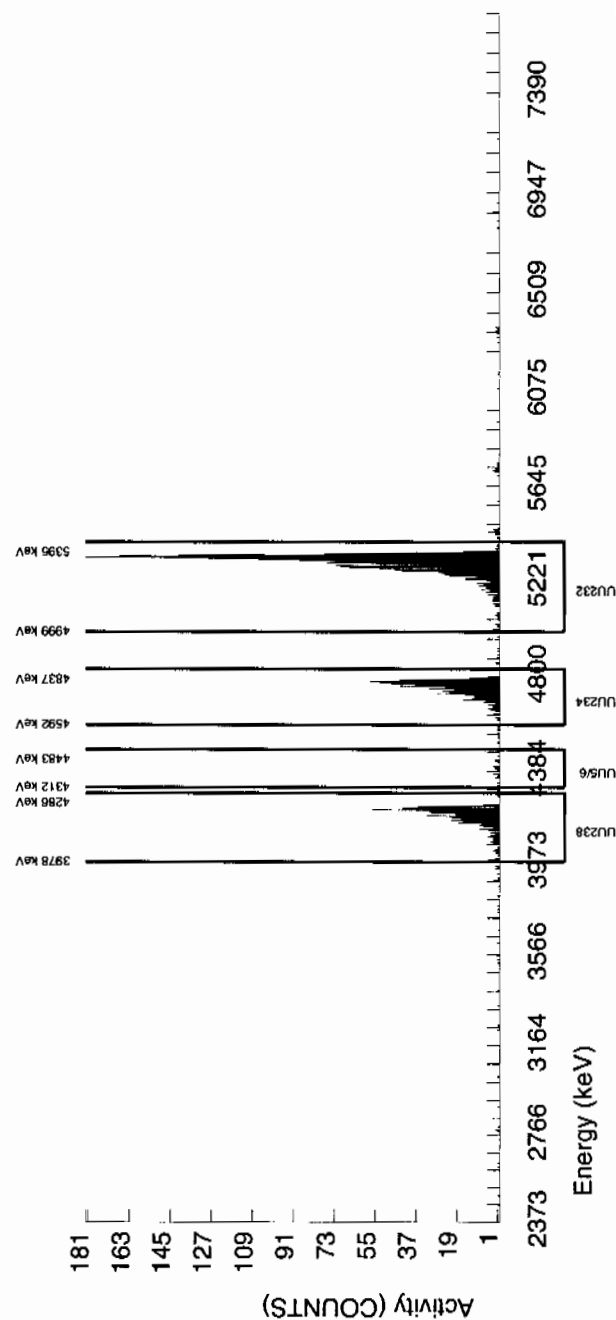
TRACER ID : 1283-H	LCS/LCSD ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238
NOMINAL : 4.5010E+00 dpm	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 4.5853E+00 dpm	

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	5302.669	26.953	1752.000	1741.000	11.000	3.3166	100.0000	1.70E+01	1.31E+00	7.55E-02	1.77E-01	4.11E-01
U-3/4	4763.020	4757.120	49.438	621.000	614.237	5.000	5.4790	100.0000	6.01E+00	5.02E-01	1.25E-01	2.76E-01	2.44E-01
U-235	4391.000	4401.618	80.618	28.000	25.000	3.000	2.4127	80.90000	3.02E-01	7.09E-02	6.79E-02	1.69E-01	6.73E-02
U-238	4184.730	4182.226	42.414	563.000	557.000	6.000	3.6781	100.0000	5.45E+00	4.61E-01	8.37E-02	1.94E-01	2.33E-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# 967505 Product: Am Date: 3/23/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NIA
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.			NIA
Smears Taken for Radioactive batches.			NIA
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.			NIA
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	✓		
Hil notification complete (if necessary)			NIA
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.	✓		DER 808080
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.	✓		DER 808080
Aliquot Correction completed if required.			NIA
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. M. 3/23/10

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

3/24
LANL

Am/Cm Que Sheet

21-MAR-10

Batch #: 967505 Analyst: JXD2 First Client Due Date: 24-MAR-10 Internal Due Date: 18-MAR-10 Comments:
 Tracer Code: 445-90-2-VV Expiration Date: 03/01/11 Vol: 0.1
 LCS Isotope(s): Am241/Cm244 Expiration Date: 03/01/11 Vol(s):
 Spike Isotope(s): Am241/Cm244 Expiration Date: 03/01/11 Vol(s):
 Prep Date: 03/21/10 Initials: JKD Pipet ID: 4417063 Balance ID: 19356203 Witness: JKD 3/22/10

Sample ID	Client Description	Type	Hazard	Min	Code	CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l/f)	Am/Cm Det #
247900011-2	RE15-10-8009	SAMPLE	.05	pCi/g			SOIL	LANL010	18-FEB-10	1		1.262	235
248536010-2	RE11-10-1737	SAMPLE	.05	pCi/g			SOIL	LANL010	25-FEB-10	2		1.253	236
248536014-2	RE11-10-1733	SAMPLE	.05	pCi/g			SOIL	LANL010	25-FEB-10	3		1.251	237
248536015-2	RE11-10-1730	SAMPLE	.05	pCi/g			SOIL	LANL010	25-FEB-10	4		1.255	238
1202076577-1	MB for batch 967505	MB	UCF	pCi/g to pCi/soil			QC ACCOUNT	QC ACCOUNT		5		1	239
1202076578-2	RE11-10-1730(248536015DUP)	DUP	.05	pCi/g			SOIL	QC ACCOUNT	25-FEB-10	6		1.253	240
1202076579-1	LCS for batch 967505	LCS	UCF	pCi/g to pCi/soil			QC ACCOUNT	QC ACCOUNT		7		0.112	241

* SEM 0244-B exp 04/30/20 0.112g 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: JKD ML 3/23/10

GEL Laboratories LLC, Radiochemistry Division

Blank Correction Report

Batch ID 967505

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202076578	DUP	Americium-241	1.25 g	-0.000117	0.00131	0.0191	.0006544	pCi/g	YES
1202076579	LCS	Americium-241	0.112 g	29.2	2.14	0.194	.007303571	pCi/g	NO
1202076577	MB	Americium-241	1.00 g	0.000818	0.0026	0.0298	.000818	pCi/g	YES
247900011	RE15-10-8009	Americium-241	1.26 g	0.0196	0.00558	0.0202	.000649206	pCi/g	NO
248536010	RE11-10-1737	Americium-241	1.25 g	0.000423	0.00185	0.027	.0006544	pCi/g	YES
248536014	RE11-10-1733	Americium-241	1.25 g	-0.0038	0.00283	0.0217	.0006544	pCi/g	YES
248536015	RE11-10-1730	Americium-241	1.26 g	-0.0211	0.00481	0.0205	.000649206	pCi/g	YES

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

```
LIB FILE : ENV_ALPHA_AM
BKG FILE : B235.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W235.CNF:30
CAL DATE : 28-FEB-2010
```

CHAMBER : 235
DETECTOR S/N : 79428
AVERAGE %EFFICIENCY : 39.7692
COUNT DATE : 22-MAR-2010 20:44:05
ELAPSED LIVE TIME(SEC) : 43200.00

BATCH NUMBER	967505
SAMPLE ID	S0247900011_AM
SAMPLE QTY	1.262 G
SAMPLE DATE	18-FEB-2010 00:00:00
ANALYST	JXD2
% YIELD	90.537

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

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

TRACER	:	445-96-2-VV
ID	:	AM243
NUCLIDE	:	2.2753E+00 dpm
NOMINAL	:	2.0600E+00 dpm
RESULTS	:	

NUCLIDE ACTIVITY SUMMARY

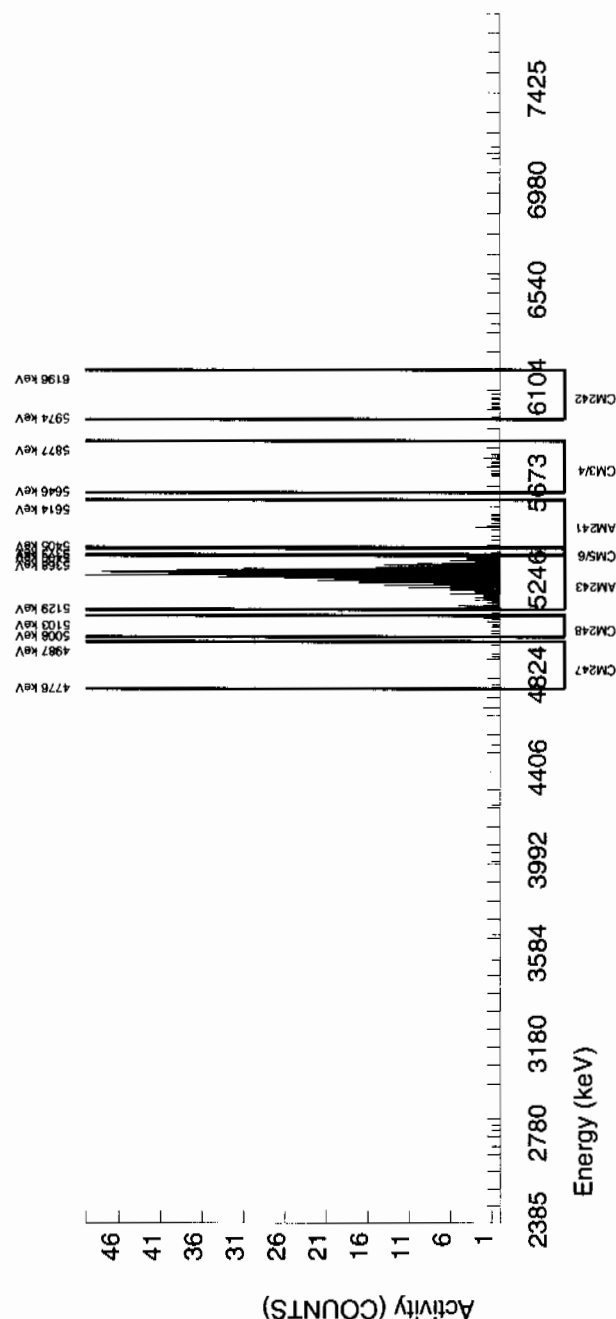
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5495.655	6.088	16.000	14.256	0.720	2.7707	99.94000	1.96E-02	5.58E-03	8.23E-03	2.02E-02	5.42E-03
AM243	5270.000	5282.283	41.822	590.000	588.560	1.440	1.2000	99.78000	8.12E-01	6.30E-02	3.57E-03	1.09E-02	3.35E-02
CM-242	6102.000	6038.421	7.213	11.000	11.000	0.000	4.0092	100.0000	1.74E-02	5.38E-03	1.19E-02	2.75E-02	5.26E-03
CM-3/4	5795.020	5769.688	4.911	12.000	7.680	4.320	4.8510	100.0000	1.06E-02	5.42E-03	1.44E-02	3.25E-02	5.37E-03
CM-5/6	5386.000	5380.457	0.000	9.000	9.000	0.000	6.1294	86.09000	1.44E-02	4.89E-03	2.11E-02	4.66E-02	4.80E-03
CM-247	4946.000	4902.346	0.000	6.000	6.000	0.000	6.3427	79.30000	1.04E-02	4.31E-03	2.38E-02	5.22E-02	4.25E-03
CM-248	5078.600	5072.377	9.822	8.000	8.000	0.000	11.0244	91.00000	1.21E-02	4.35E-03	3.60E-02	7.61E-02	4.28E-03

NOTES:

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

* BKG Sq of AM243 calculated as $\text{sqrt}(\text{BKG AREA})$.

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 967505 SAMPLE ID : S0248536015_AM SAMPLE QTY : 1.255 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 88.931	CHAMBER : 238 DETECTOR S/N : 79431 AVERAGE %EFFICIENCY : 40.1819 COUNT DATE : 22-MAR-2010 20:44:13 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B238.CNF:93 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W238.CNF:32 CAL DATE : 28-FEB-2010

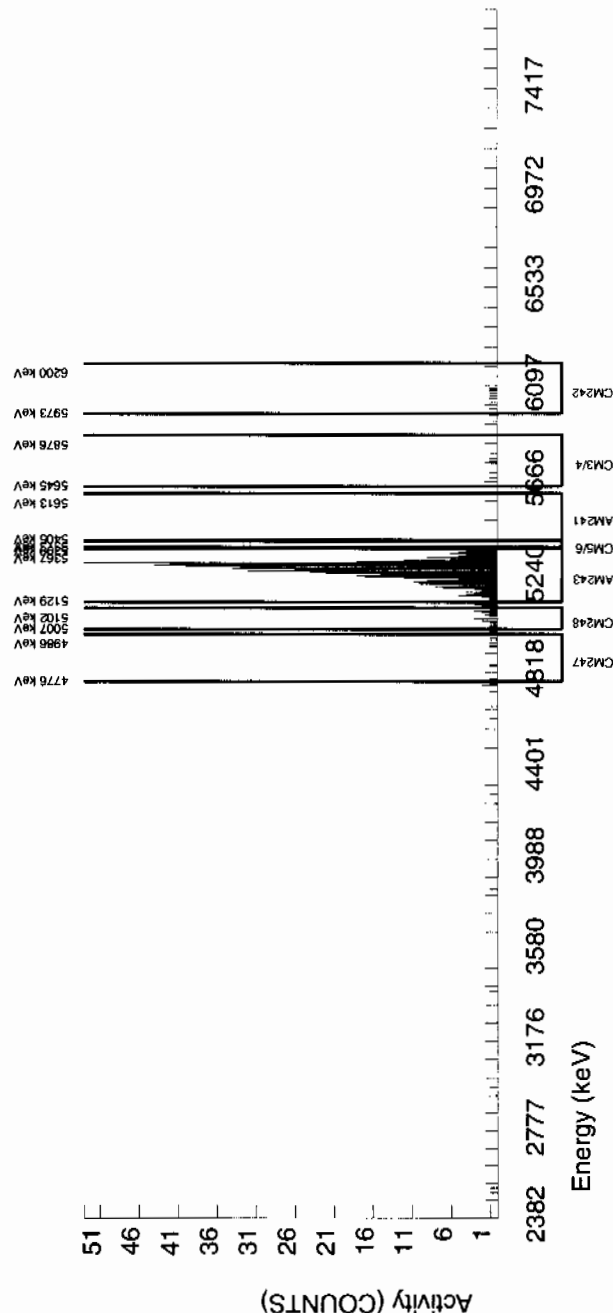
TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 2.0235E+00 dpm		

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	5508.446	0.000	1.000	-15.136	15.120	2.7707	99.94000	-2.11E-02	4.81E-03	8.34E-03	2.05E-02	4.81E-03
AM243	5270.000	5274.890	40.833	587.000	584.120	2.880	1.6971	99.78000	8.17E-01	6.36E-02	5.12E-03	1.40E-02	3.39E-02
CM-242	6102.000	6047.791	0.000	9.000	9.000	0.000	4.0092	100.0000	1.40E-02	4.77E-03	1.21E-02	2.79E-02	4.68E-03
CM-3/4	5795.020	5746.646	103.009	6.000	6.000	0.000	4.8510	100.0000	8.39E-03	3.47E-03	1.46E-02	3.30E-02	3.43E-03
CM-5/6	5386.000	5374.354	0.000	3.000	2.280	0.720	6.1294	86.09000	3.69E-03	3.05E-03	2.14E-02	4.72E-02	3.04E-03
CM-247	4946.000	4902.855	0.000	12.000	11.280	0.720	6.3427	79.30000	1.98E-02	6.36E-03	2.41E-02	5.29E-02	6.22E-03
CM-248	5078.600	5071.500	0.000	22.000	21.280	0.720	11.0244	91.00000	3.26E-02	7.59E-03	3.65E-02	7.71E-02	7.27E-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 : 967505 SAMPLE ID : S1202076577_AM SAMPLE QTY : 1.000 G SAMPLE DATE : 22-MAR-2010 00:00:00 ANALYST : JXD2 % YIELD : 78.371</p>		<p>CHAMBER : 239 DETECTOR S/N : 79432 AVERAGE %EFFICIENCY : 39.3422 COUNT DATE : 22-MAR-2010 20:44:15 ELAPSED LIVE TIME(SEC) : 43200.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B239.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W239.CNF:30 CAL DATE : 28-FEB-2010</p>
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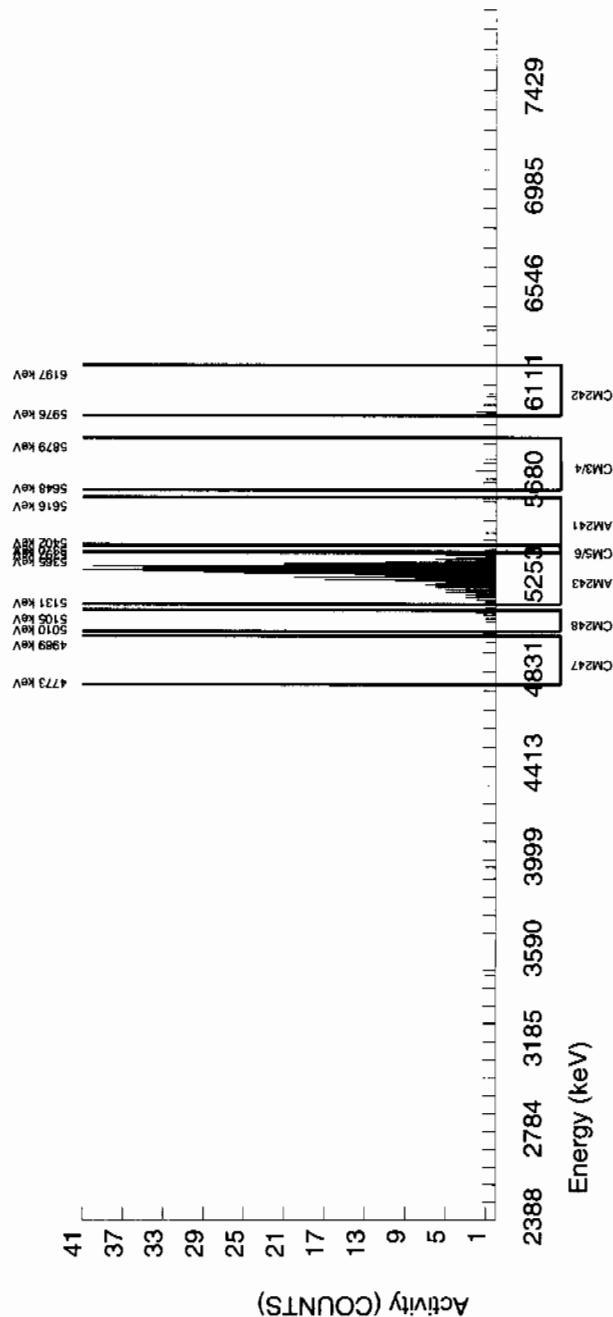
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 1.7832E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3148E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3148E+01 pCi/G</p>
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NUCLIDE ACTIVITY 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	5487.399	54.219	2.000	0.403	0.720	2.7707	99.94000	8.18E-04	2.60E-03	1.21E-02	2.98E-02	2.60E-03
AM243	5270.000	5281.458	46.619	504.000	504.000	0.000	0.0000	99.78000	1.02E+00	8.32E-02	0.00E+00	5.51E-03	4.57E-02
CM-242	6102.000	6029.619	7.239	8.000	8.000	0.000	4.0092	100.0000	1.63E-02	5.87E-03	1.76E-02	4.06E-02	5.77E-03
CM-3/4	5795.020	5741.551	4.929	4.000	4.000	0.000	4.8510	100.0000	8.12E-03	4.10E-03	2.12E-02	4.80E-02	4.06E-03
CM-5/6	5386.000	5375.519	0.000	6.000	6.000	0.000	6.1294	86.09000	1.41E-02	5.85E-03	3.12E-02	6.87E-02	5.77E-03
CM-247	4946.000	4967.822	4.929	1.000	0.280	0.720	6.3427	79.30000	7.16E-04	3.16E-03	3.50E-02	7.70E-02	3.15E-03
CM-248	5078.600	5089.186	0.000	9.000	7.560	1.440	11.0244	91.00000	1.69E-02	7.16E-03	5.30E-02	1.12E-01	7.06E-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 : 967505 SAMPLE ID : S1202076578_AM SAMPLE QTY : 1.253 G SAMPLE DATE : 25-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 98.989</p>		<p>CHAMBER : 240 DETECTOR S/N : 79433 AVERAGE %EFFICIENCY : 38.7048 COUNT DATE : 22-MAR-2010 20:44:18 ELAPSED LIVE TIME(SEC) : 43200.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B240.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W240.CNF:30 CAL DATE : 28-FEB-2010</p>
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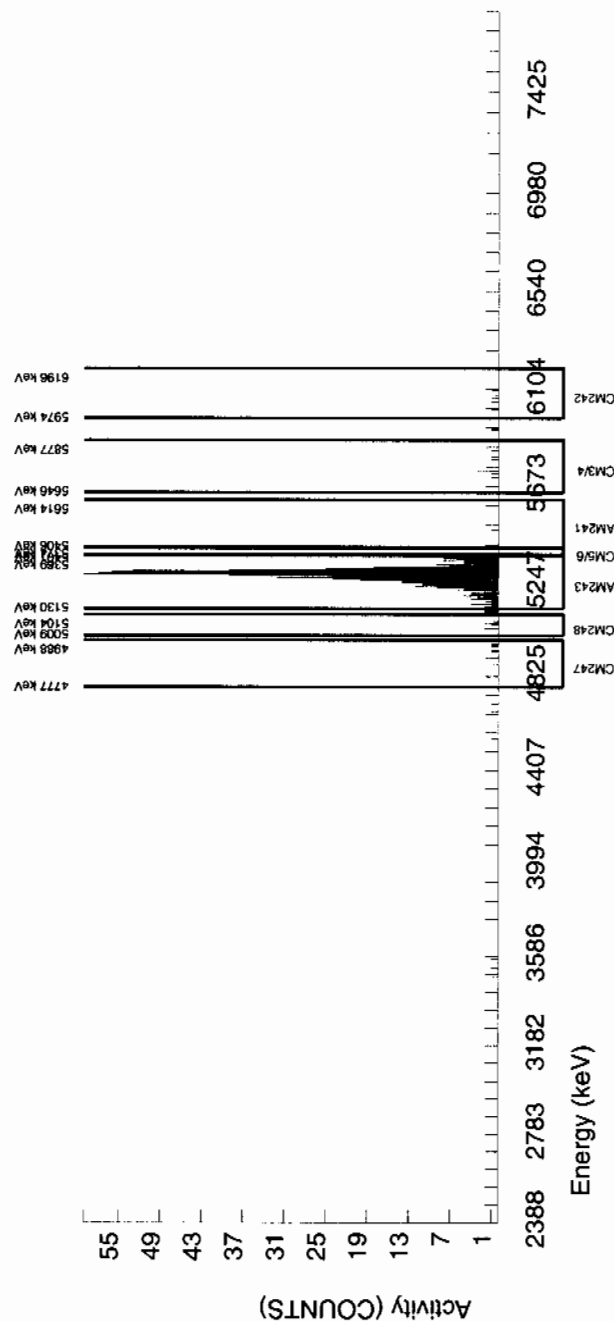
<p>TRACER ID : 445-96-2-VV NUCLIDE : AM243 NOMINAL : 2.2753E+00 dpm RESULTS : 2.2523E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>
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NUCLIDE ACTIVITY 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	5485.991	4.904	1.000	-0.090	0.000	2.7707	99.94000	-1.17E-04	1.31E-03	7.79E-03	1.91E-02	1.30E-03
AM243	5270.000	5283.690	37.762	627.000	626.280	0.720	0.8485	99.78000	8.18E-01	6.24E-02	2.39E-03	8.32E-03	3.27E-02
CM-242	6102.000	6065.261	83.370	5.000	5.000	0.000	4.0092	100.0000	7.28E-03	3.29E-03	1.13E-02	2.61E-02	3.26E-03
CM-3/4	5795.020	5763.847	6.079	10.000	10.000	0.000	4.8510	100.0000	1.31E-02	4.22E-03	1.36E-02	3.08E-02	4.13E-03
CM-5/6	5386.000	5380.020	0.000	9.000	9.000	0.000	6.1294	86.09000	1.36E-02	4.63E-03	2.00E-02	4.41E-02	4.54E-03
CM-247	4946.000	4946.377	93.178	6.000	4.560	1.440	6.3427	79.30000	7.49E-03	4.39E-03	2.25E-02	4.94E-02	4.36E-03
CM-248	5078.600	5068.048	26.973	8.000	7.280	0.720	11.0244	91.00000	1.04E-02	4.23E-03	3.41E-02	7.20E-02	4.18E-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 : 967505 SAMPLE ID : S1202076579_AM SAMPLE QTY : 0.112 G SAMPLE DATE : 22-MAR-2010 00:00:00 ANALYST : JXD2 % YIELD : 106.932		CHAMBER : 241 DETECTOR S/N : 79434 AVERAGE %EFFICIENCY : 39.4182 COUNT DATE : 22-MAR-2010 20:44:20 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B241.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W241.CNF:30 CAL DATE : 28-FEB-2010
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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 : 2.4330E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

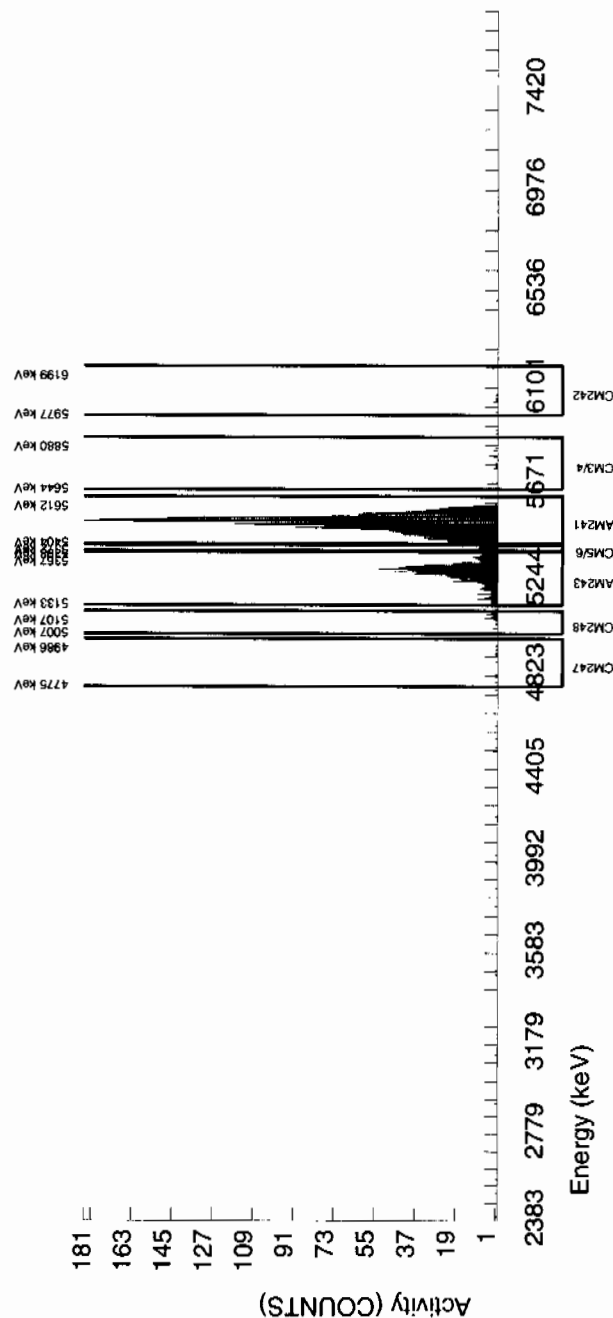
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5499.281	40.253	2206.000	2202.641	2.160	2.7707	99.94000	2.92E+01	2.14E+00	7.93E-02	1.94E-01	6.23E-01
AM-243	5270.000	5278.740	45.238	689.000	689.000	0.000	0.0000	99.78000	9.15E+00	7.29E-01	0.00E+00	3.60E-02	3.49E-01
CM-242	6102.000	6040.657	7.221	9.000	9.000	0.000	4.0092	100.0000	1.20E-01	4.08E-02	1.15E-01	2.65E-01	3.99E-02
CM-3/4	5795.020	5786.890	7.221	15.000	14.280	0.720	4.8510	100.0000	1.89E-01	5.39E-02	1.39E-01	3.13E-01	5.22E-02
CM-5/6	5386.000	5383.670	0.000	72.000	72.000	0.000	6.1294	86.09000	1.11E+00	1.52E-01	2.04E-01	4.49E-01	1.31E-01
CM-247	4946.000	4891.696	152.414	12.000	11.280	0.720	6.3427	79.30000	1.89E-01	6.06E-02	2.29E-01	5.03E-01	5.91E-02
CM-248	5078.600	5071.585	0.000	31.000	30.280	0.720	11.0244	91.00000	4.41E-01	8.74E-02	3.46E-01	7.32E-01	8.18E-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# 957711

Product: Gamma Solid

Date: 03/15/10

LANL

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

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: fi Kathy 3/15/10

Secondary Review Performed By: SEulan 3/16/10

3/24

I.G. - 3/5/10

Gamma Spec Que Sheet

02/26/2010

Batch #: 957711 Analyst: CR6 MARI First Client Due Date: 03/13/2010 Internal Due Date: 03/13/2010
 Gamma Spike Isotope: Mixed Gamma Spike Code: NA Expiration Date: NA Vol: NA Nominal Concentration: NA CS137-5.553
 Gamma LCS Isotope: Mixed Gamma LCS Code: 1032-A Expiration Date: 12/2/10 Vol: 10mL Nominal Concentration: Co60-6.356
 Initials: RF Prep Date: 2/26/10 Library: S0110 Witness: NA Am241-15.90

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry (1/2/F)	Detector	Sealing Date/Time (if Applicable)
24790001-1	RE15-10-7896	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00	CAN	130.67	15	2/26/10
24790002-1	RE15-10-7894	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		129.95	17	
24790003-1	RE15-10-7900	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		144.10	18	
24790004-1	RE15-10-7898	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		123.42	20	
24790005-1	RE15-10-7897	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		157.53	23	
24790006-1	RE15-10-7895	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		130.18	25	
24790007-1	RE15-10-7899	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		138.03	5	
24790008-1	RE15-10-7893	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		138.58	13	
24790009-1	RE15-10-8011	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		133.85	15	
24790010-1	RE15-10-8004	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		151.88	17	
24790011-1	RE15-10-8009	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		115.65	18	
24790012-1	RE15-10-8003	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		145.23	19	
24790013-1	RE15-10-8007	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		123.23	20	
24790014-1	RE15-10-8002	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		121.75	22	
24790015-1	RE15-10-8010	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		117.36	23	
24790016-1	RE15-10-8006	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		119.07	25	
24790017-1	RE15-10-8001	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		122.75	16	
24790018-1	RE15-10-8012	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		136.26	1	
24790019-1	RE15-10-8008	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		137.33	2	
24790020-1	RE15-10-8005	SAMPLE	LANL010	SOIL	18-FEB-10 12:00:00		111.47	12	3/15/10
120205344-1	MB	MB	QC ACCOUNT	SOIL	2/26/10		157.53	4	
120205345-1	DUP RE15-10-7894(247900002)	DUP	QC ACCOUNT	SOIL	18-FEB-10 12:00:00		129.36	6	
120205346-1	LCS	LCS	QC ACCOUNT	SOIL	2/26/10		155.44	7	

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: g. Euland 3/15/10 Page 1 of 1

initials

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
957711	247900001	SAMPLE	05-MAR-10		Americium-241	0.1583	0.3923	0.200
					Cerium-139	0.00823	0.05052	0.050
957711	247900002	SAMPLE	05-MAR-10					
957711	247900003	SAMPLE	05-MAR-10		Americium-241	0.01239	0.202	0.200
957711	247900004	SAMPLE	05-MAR-10					
957711	247900005	SAMPLE	05-MAR-10		Americium-241	0.2346	0.3025	0.200
957711	247900006	SAMPLE	05-MAR-10					
957711	247900007	SAMPLE	06-MAR-10		Cerium-139	-0.00728	0.0554	0.050
957711	247900008	SAMPLE	06-MAR-10		Cerium-139	-0.02103	0.05608	0.050
					Europium-152	-0.0309	0.2017	0.200
					Sodium-22	0.01347	0.09127	0.080
957711	247900009	SAMPLE	06-MAR-10		Americium-241	0.09832	0.5941	0.200
					Cerium-139	0.02342	0.07007	0.050
					Cesium-134	0.07666	0.1056	0.100
					Europium-152	-0.04621	0.2119	0.200
					Sodium-22	-0.03981	0.09173	0.080
957711	247900010	SAMPLE	06-MAR-10		Sodium-22	-0.02918	0.08893	0.080
957711	247900011	SAMPLE	06-MAR-10		Americium-241	0.0886	0.5775	0.200
					Cerium-139	0.02374	0.05697	0.050
957711	247900012	SAMPLE	06-MAR-10		Americium-241	0.2346	0.3506	0.200
					Cerium-139	0.00224	0.06031	0.050
957711	247900013	SAMPLE	06-MAR-10		Americium-241	0.1882	0.3382	0.200
					Cerium-139	0.00466	0.05728	0.050
957711	247900014	SAMPLE	06-MAR-10		Americium-241	0.1224	0.2474	0.200
					Cerium-139	-0.02571	0.0513	0.050
957711	247900015	SAMPLE	06-MAR-10		Americium-241	0.1175	0.4246	0.200
					Cerium-139	0.00523	0.06579	0.050
					Cesium-134	0.0927	0.1128	0.100
					Sodium-22	0.03793	0.1065	0.080
957711	247900016	SAMPLE	06-MAR-10		Sodium-22	-0.01766	0.09432	0.080
957711	247900017	SAMPLE	06-MAR-10		Americium-241	0.1071	0.3003	0.200
957711	247900018	SAMPLE	06-MAR-10		Americium-241	0.06381	0.3179	0.200
					Cerium-139	0.00563	0.05846	0.050
					Sodium-22	0.01964	0.08496	0.080
					Thorium-234	1.451	2.969	2.00
957711	247900019	SAMPLE	06-MAR-10		Americium-241	-0.01525	0.3273	0.200
					Cerium-139	-0.00331	0.05745	0.050
					Sodium-22	0.00257	0.09036	0.080
957711	247900020	SAMPLE	09-MAR-10		Americium-241	0.2181	0.4503	0.200
					Cerium-139	-0.02844	0.06768	0.050
					Europium-152	-0.06699	0.2006	0.200
					Sodium-22	0.02085	0.09058	0.080

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
957711	1202053644	MB	06-MAR-10					
957711	1202053645	DUP	06-MAR-10		Americium-241	0.03791	0.3135	0.200
					Cerium-139	-0.01576	0.05479	0.050
					Sodium-22	0.03385	0.08727	0.080
					Thorium-234	0.8975	2.847	2.00
957711	1202053646	LCS	06-MAR-10		Cerium-139	0.00438	0.07256	0.050
					Cesium-134	0.1428	0.1684	0.100
					Europium-152	0.1028	0.3282	0.200
					Mercury-203	-0.02918	0.1019	0.100
					Ruthenium-106	-0.09347	0.9503	0.800
					Thorium-234	-0.3707	2.616	2.00
					Tin-113	0.00797	0.1466	0.100
					Uranium-235	0.1498	0.5243	0.500

GEL QUALS

Batch ID: 957711

Report run on: March 15, 2010 10:59 AM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
247900001-1 05-MAR-2010 23:37	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.608			
	Cadmium-109	UI	UI	UI	Data rejected due to low abundance.		2.814			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.08825		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		6.504			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1403			
247900002-1 05-MAR-2010 23:38	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.548			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.252			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.0815		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.779			
247900003-1 05-MAR-2010 23:38	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.692			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.826			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.0976		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.17			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.09992			
247900004-1 05-MAR-2010 23:38	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.37			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.322			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.0899		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.465			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.07243			
247900005-1 05-MAR-2010 23:39	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.136			

GEL QUALS

Batch ID: 957711

Report run on: March 15, 2010 10:59 AM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
247900005-1 05-MAR-2010 23:39	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.203			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.0629		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.705			
	Thorium-227	UI	UI	UI	Data rejected due to low abundance.		.3433			
247900006-1 05-MAR-2010 23:39	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.533			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.176			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1406		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		6.152			
247900007-1 06-MAR-2010 14:59	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.906			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.537			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.484			
247900008-1 06-MAR-2010 14:59	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.895			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.097			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1483		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.161			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1084			
247900009-1 06-MAR-2010 14:59	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.062			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.073			
247900010-1 06-MAR-2010 15:00	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.274			

GEL QUALS

Batch ID: 957711

Report run on: March 15, 2010 10:59 AM

Samp Id	Parmname	Cofa	Edd	Qual Comments	Auto	Result	MDA	Uncert	SQL
247900010-1 06-MAR-2010 15:00	Cadmium-109	UI	UI	Data rejected due to interference.		4.772			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1171		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		5.602			
247900011-1 06-MAR-2010 15:00	Bismuth-211	UI	UI	Data rejected due to interference.		2.785			
	Radium-224	UI	UI	Data rejected due to interference.		3.047			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.07449			
247900012-1 06-MAR-2010 15:01	Bismuth-211	UI	UI	Data rejected due to interference.		3.749			
	Cadmium-109	UI	UI	Data rejected due to a short half-life. <i>interference</i>		4.427			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1675		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		4.195			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.07891			
247900013-1 06-MAR-2010 15:01	Bismuth-211	UI	UI	Data rejected due to interference.		4.12			
	Cadmium-109	UI	UI	Data rejected due to a short half-life.		4.954			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1242		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		4.6			
247900014-1 06-MAR-2010 15:02	Bismuth-211	UI	UI	Data rejected due to a short half-life.		5.142			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.409			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.09375		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		5.37			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.141			

GEL QUALS

Batch ID: 957711

Report run on: March 15, 2010 10:59 AM

Samp Id	Parmname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
247900015-1 06-MAR-2010 15:02	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.835			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.054			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.484			
247900016-1 06-MAR-2010 15:02	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.314			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.846			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1605		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		6.465			
247900017-1 06-MAR-2010 15:22	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.608			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.741			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1167		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.8			
247900018-1 06-MAR-2010 17:00	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.473			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.679			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.078			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.09371			
247900019-1 06-MAR-2010 17:01	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.324			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.872			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1352		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.464			

GEL QUALS

Batch ID: 957711

Report run on: March 15, 2010 10:59 AM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
1202053645-1 DUP 06-MAR-2010 17:03	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.998			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.719			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1406		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		2.86			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1199			
247900020-2 09-MAR-2010 11:36	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.089			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.704			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1385		.1	.1
	Mercury-203	UI	UI	UI	Data rejected due to low abundance.		.09461		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.975			

Gamma Review Report based on Result > MDA for Batch:957711

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
247900001	18-FEB-10 12:00	05-MAR-10 23:37	15.5	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.586	0.2124	pCi/g	0.2148	N	911.2	3 1.93	IDENTIFIED 5.547	□	
Annihilation Rad.	0.1827	0.03259	pCi/g	0.0405	N	510.9	1 2.388	IDENTIFIED 17.31	□	
Bismuth-211 int	5.608	0.3594	pCi/g	0.3149	Y	352	2 1.576	IDENTIFIED 4.048	□ ui	
Bismuth-212 HE	1.864	0.4853	pCi/g	1.051	N	0	11 0	FAIL_ABUND 0	□	
Bismuth-214 ✓	1.619	0.1071	pCi/g	0.1045	0.200	609.4	2 1.712	IDENTIFIED 4.354	□	
Cadmium-109 la	2.814	0.5648	pCi/g	1.727	Y	0	11 0	NOT_IDENTI 0	☒ UI	Data rejected due to low abundance.
Cerium-143	1433	195.1	pCi/g	0	N	0	11 0	SHORT_HLIF 0	□	
Cesium-134 la	0.08825	0.02533	pCi/g	0.08122	0.100	0	11 0	NOT_IDENTI 0	☒ UI	Data rejected due to low abundance.
Cesium-135 la nr	0.4667	0.08968	pCi/g	0.2837	N	0	11 0	NOT_IDENTI 0	□	
Gross Gamma	12.71	1.566	pCi/g	4.55	N	0			□	
Iodine-135 HE	2.94E+15	7.66E+15	pCi/g	0	N	0	11 0	SHORT_HLIF 0	□	
Lead-212 ✓	2.383	0.1529	pCi/g	0.09279	0.100	238.8	2 1.378	IDENTIFIED 2.336	□	
Lead-214 ✓	2.035	0.142	pCi/g	0.1145	0.100	352	2 1.576	IDENTIFIED 4.048	□	
Neptunium-237 int nr	1.122	0.2059	pCi/g	0.5098	N	0	11 0	NOT_IDENTI 0	□	
Niobium-95 HE	0.0948	0.02312	pCi/g	0.07498	N	0	11 0	NOT_IDENTI 0	□	
Niobium-95m la nr	0.5357	0.08054	pCi/g	0.2488	N	0	11 0	NOT_IDENTI 0	□	
Potassium-40 ✓	34.76	1.88	pCi/g	0.5061	1.00	1461	1 2.062	IDENTIFIED 2.262	□	
Radium-224 int	6.504	0.7635	pCi/g	0.9941	Y	241.7	1 2.04	IDENTIFIED 10.36	□ ui	
Radium-226 ✓	1.619	0.1071	pCi/g	0.1045	Y	609.4	2 1.712	IDENTIFIED 4.354	□	
Radium-228 ✓	2.586	0.2124	pCi/g	0.2148	0.500	911.2	3 1.93	IDENTIFIED 5.547	□	
Strontium-85 la	0.1403	0.02109	pCi/g	0.06928	Y	0	11 0	NOT_IDENTI 0	☒ UI	Data rejected due to low abundance.
Thallium-208 ✓	0.7294	0.05455	pCi/g	0.05465	0.080	583.1	1 1.571	IDENTIFIED 5.917	□	
Thorium-228 nr	2.383	0.1529	pCi/g	0.09279	N	238.8	2 1.378	IDENTIFIED 2.336	□	
Thorium-232 nr	2.586	0.2124	pCi/g	0.2148	N	911.2	3 1.93	IDENTIFIED 5.547	□	
Thorium-234 ✓	5.083	1.394	pCi/g	3.057	2.00	63.55	2 1.323	IDENTIFIED 25.56	□	
Tin-126 HE	0.2173	0.05425	pCi/g	0.1669	N	0	11 0	FAIL_ABUND 0	□	
Total Uranium	15.195	4.15E-06	ug/g	4.5514	N	0			□	
Uranium-238 HE	5.083	1.394	pCi/g	3.057	N	63.55	2 1.323	IDENTIFIED 25.56	□	

*** = 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
247900002	18-FEB-10 12:00	05-MAR-10 23:38	15.5	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.857	0.1846	pCi/g	0.2005	N	910.4	3 1.674	IDENTIFIED 8.04	□	
Annihilation Rad.	0.1462	0.03123	pCi/g	0.03525	N	510.3	1 1.697	IDENTIFIED 20.89	□	
Bismuth-211 int	3.548	0.2258	pCi/g	0.2503	Y	351.7	2 1.267	IDENTIFIED 4.33	□ ui	
Bismuth-212 la nr	1.883	0.3657	pCi/g	1.003	N	0	3 0	FAIL_ABUND 0	□	
Bismuth-214 ✓	1.23	0.09679	pCi/g	0.1001	0.200	608.9	2 1.387	IDENTIFIED 5.981	□	
Cadmium-109 int	3.252	0.3562	pCi/g	0.7125	Y	87.11	3 1.102	IDENTIFIED 9.807	□ ui	
Cerium-143	725.6	111.6	pCi/g	0	N	0	3 0	SHORT_HLIF 0	□	
Cesium-134 la	0.0815	0.0315	pCi/g	0.07825	0.100	0	3 0	FAIL_ABUND 0	☒ UI	Data rejected due to low abundance.

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

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.775	0.1464	pCi/g	0.1209	N	910.8	3 1.8	IDENTIFIED	4.707	□	
Annihilation Rad.	0.1168	0.02166	pCi/g	0.02505	N	510.7	1 1.912	IDENTIFIED	18.25	□	
Bismuth-211 int	3.692	0.1725	pCi/g	0.1894	Y	351.9	2 1.443	IDENTIFIED	3.395	□ ui	
Bismuth-212 la nr	2.156	0.2704	pCi/g	0.6625	N	0	6 0	FAIL_ABUND	0	□	
Bismuth-214 ✓	1.223	0.06921	pCi/g	0.06095	0.200	609.1	2 1.597	IDENTIFIED	3.444	□	
Cadmium-109 int	3.826	0.3866	pCi/g	0.7876	Y	87.26	3 1.375	IDENTIFIED	8.998	□ ui	
Cerium-143	914.9	114.7	pCi/g	0	N	0	6 0	SHORT_HLIF	0	□	
Cesium-134 la	0.0976	0.01825	pCi/g	0.04985	0.100	0	6 0	FAIL_ABUND	0	☒ UI	Data rejected due to low abundance.
Cesium-135 la nr	0.2621	0.04869	pCi/g	0.1586	N	0	6 0	NOT_IDENTI	0	□	
Gross Gamma	9.638	0.9612	pCi/g	1.955	N	0				□	
Lead-212 ✓	1.685	0.06917	pCi/g	0.05188	0.100	238.7	2 1.188	IDENTIFIED	1.966	□	
Lead-214 ✓	1.34	0.07271	pCi/g	0.06888	0.100	351.9	2 1.443	IDENTIFIED	3.395	□	
Neptunium-237 int nr	1.115	0.1624	pCi/g	0.2348	N	87.26	3 1.375	IDENTIFIED	8.998	□	
Niobium-95 HE	0.05092	0.01384	pCi/g	0.04378	N	0	6 0	NOT_IDENTI	0	□	
Potassium-40 ✓	29.19	1.204	pCi/g	0.2946	1.00	1460	1 2.112	IDENTIFIED	1.614	□	
Radium-224 int	4.17	0.3814	pCi/g	0.5552	Y	241.7	1 1.767	IDENTIFIED	8.712	□ ui	
Radium-226 ✓	1.223	0.06921	pCi/g	0.06095	Y	609.1	2 1.597	IDENTIFIED	3.444	□	
Radium-228 ✓	1.775	0.1464	pCi/g	0.1209	0.500	910.8	3 1.8	IDENTIFIED	4.707	□	
Strontium-85 la	0.09992	0.01245	pCi/g	0.042	Y	0	6 0	NOT_IDENTI	0	☒ UI	Data rejected due to low abundance.
Thallium-208 ✓	0.5345	0.02936	pCi/g	0.03179	0.080	583	1 1.609	IDENTIFIED	3.855	□	
Thorium-228 nr	1.685	0.06917	pCi/g	0.05188	N	238.7	2 1.188	IDENTIFIED	1.966	□	
Thorium-232 nr	1.775	0.1464	pCi/g	0.1209	N	910.8	3 1.8	IDENTIFIED	4.707	□	
Tin-126 int nr	0.3738	0.03776	pCi/g	0.07744	N	87.26	3 1.375	IDENTIFIED	8.998	□	
Total Uranium	3.7738	2.06E-06	ug/g	2.3653	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
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247900004	18-FEB-10 12:00	05-MAR-10 23:38	15.5	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.27	0.1834	pCi/g	0.1485	N	911.3	3	1.573 IDENTIFIED	5.076	☐
Annihilation Rad.	0.1757	0.02832	pCi/g	0.03001	N	510.9	1	1.697 IDENTIFIED	15.43	☐
Barium-137m HE	0.04201	0.01459	pCi/g	0.03974	N	661.8	2	1.449 IDENTIFIED	34.37	☐
Bismuth-211 int	4.37	0.2671	pCi/g	0.22	Y	352	2	1.211 IDENTIFIED	3.803	☐ ui
Bismuth-212 nr	2.346	0.3442	pCi/g	0.5701	N	727.5	1	1.498 IDENTIFIED	13.01	☐
Bismuth-214 ✓	1.353	0.0924	pCi/g	0.07696	0.200	609.5	2	1.517 IDENTIFIED	3.934	☐
Cadmium-109 int	4.322	0.4239	pCi/g	0.9283	Y	87.34	3	1.402 IDENTIFIED	8.615	☐ ui
Cerium-143	719.3	107.4	pCi/g	0	N	0	6	0 SHORT_HLIF	0	☐
Cesium-134 la	0.0899	0.02164	pCi/g	0.06327	0.100	0	6	0 FAIL_ABUND	0	☒ UI Data rejected due to low abundance.
Cesium-137 ✓	0.04438	0.01542	pCi/g	0.04198	0.100	661.8	2	1.449 IDENTIFIED	34.37	☐
Gross Gamma	11.22	1.25	pCi/g	3.682	N	0				☐
Iodine-133 HE	3287	2869	pCi/g	0	N	0	6	0 SHORT_HLIF	0	☐
Lead-212 ✓	1.961	0.1137	pCi/g	0.06606	0.100	238.6	2	1.119 IDENTIFIED	2.267	☐
Lead-214 ✓	1.586	0.1063	pCi/g	0.08	0.100	352	2	1.211 IDENTIFIED	3.803	☐
Neptunium-237 int nr	1.26	0.1809	pCi/g	0.2734	N	87.34	3	1.402 IDENTIFIED	8.615	☐
Niobium-95 HE	0.05844	0.0175	pCi/g	0.05651	N	0	6	0 NOT_IDENTI	0	☐
Potassium-40 ✓	26.17	1.288	pCi/g	0.3071	1.00	1461	1	1.896 IDENTIFIED	2.286	☐
Protactinium-234m HE	11.57	2.843	pCi/g	6.56	N	0	6	0 FAIL_ABUND	0	☐
Radium-224 int	4.465	0.4742	pCi/g	0.7078	Y	241.5	1	1.607 IDENTIFIED	9.454	☐ ui
Radium-226 ✓	1.353	0.0924	pCi/g	0.07696	Y	609.5	2	1.517 IDENTIFIED	3.934	☐
Radium-228 ✓	2.27	0.1834	pCi/g	0.1485	0.500	911.3	3	1.573 IDENTIFIED	5.076	☐
Strontium-85 la	0.07243	0.01597	pCi/g	0.05127	Y	0	6	0 NOT_IDENTI	0	☒ UI Data rejected due to low abundance.
Thallium-208 ✓	0.6437	0.04383	pCi/g	0.03778	0.080	583.5	1	1.323 IDENTIFIED	4.47	☐
Thorium-228 nr	1.961	0.1137	pCi/g	0.06606	N	238.6	2	1.119 IDENTIFIED	2.267	☐
Thorium-232 nr	2.27	0.1834	pCi/g	0.1485	N	911.3	3	1.573 IDENTIFIED	5.076	☐
Thorium-234 ✓	9.227	1.161	pCi/g	1.347	2.00	63.25	2	0.9742 IDENTIFIED	8.909	☐
Tin-126 int nr	0.4222	0.04141	pCi/g	0.09095	N	87.34	3	1.402 IDENTIFIED	8.615	☐
Total Uranium	27.542	3.45E-06	ug/g	2.0061	N	0				☐
Uranium-238 nr	9.227	1.161	pCi/g	1.347	N	63.25	2	0.9742 IDENTIFIED	8.909	☐

*** = 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
247900005	18-FEB-10 12:00	05-MAR-10 23:39	15.5	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-227 HE	0.3433	0.1234	pCi/g	0.3292	N	0	9	0 FAIL_ABUND	0	☐
Actinium-228 nr	1.422	0.1371	pCi/g	0.1533	N	910.5	3	1.918 IDENTIFIED	7.592	☐
Annihilation Rad.	0.1821	0.02531	pCi/g	0.03277	N	510.2	1	2.179 IDENTIFIED	13.59	☐
Barium-137m	0.1663	0.02875	pCi/g	0.04365	N	661.4	2	1.804 IDENTIFIED	17.09	☐
Bismuth-211 int	3.136	0.1841	pCi/g	0.2313	Y	351.4	2	1.278 IDENTIFIED	4.88	☐ ui
Bismuth-212 la nr	1.588	0.2717	pCi/g	0.7872	N	0	9	0 FAIL_ABUND	0	☐
Bismuth-214 ✓	0.9545	0.06872	pCi/g	0.0775	0.200	608.6	2	1.354 IDENTIFIED	6.12	☐
Cadmium-109 int	4.203	0.5725	pCi/g	1.225	Y	86.95	3	1.703 IDENTIFIED	12.73	☐ ui
Cerium-143	1125	139.9	pCi/g	0	N	0	9	0 SHORT_HLIF	0	☐
Cesium-134 la	0.0629	0.02821	pCi/g	0.0627	0.100	0	9	0 FAIL_ABUND	0	☒ UI Data rejected due to low abundance.
Cesium-135 HE	0.3704	0.09504	pCi/g	0.1836	N	269.7	1	0.7695 IDENTIFIED	25.37	☐
Cesium-137 ✓	0.1757	0.03038	pCi/g	0.04611	0.100	661.4	2	1.804 IDENTIFIED	17.09	☐

Gadolinium-153	la nr	0.4393	0.05128	pCi/g	0.1474	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>
Gross Gamma		10.9	1.199	pCi/g	3.699	N			0			<input type="checkbox"/>
Iodine-135	HE	3.77E+15	6.60E+15	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212	✓	1.351	0.06043	pCi/g	0.06721	0.100	238.3	2	1.158	IDENTIFIED	2.618	<input type="checkbox"/>
Lead-214	✓	1.138	0.07381	pCi/g	0.08414	0.100	351.4	2	1.278	IDENTIFIED	4.88	<input type="checkbox"/>
Neptunium-237	int nr	1.225	0.2106	pCi/g	0.3648	N	86.95	3	1.703	IDENTIFIED	12.73	<input type="checkbox"/>
Niobium-95	int nr	0.1673	0.02635	pCi/g	0.05062	N	766.1	1	1.592	IDENTIFIED	15.39	<input type="checkbox"/>
Niobium-95m	la nr	0.6158	0.06095	pCi/g	0.1998	N	0	9	0	NOT_IDENTI	0	<input type="checkbox"/>
Potassium-40	✓	20.65	0.9576	pCi/g	0.3575	1.00	1460	1	2.572	IDENTIFIED	2.739	<input type="checkbox"/>
Protactinium-234m	nr	30.56	3.75	pCi/g	5.209	N	1000	1	1.972	IDENTIFIED	11.3	<input type="checkbox"/>
Radium-224	int	3.705	0.4259	pCi/g	0.7203	Y	241.3	1	1.807	IDENTIFIED	11.15	<input type="checkbox"/> ui
Radium-226	✓	0.9545	0.06872	pCi/g	0.0775	Y	608.6	2	1.354	IDENTIFIED	6.12	<input type="checkbox"/>
Radium-228	✓	1.422	0.1371	pCi/g	0.1533	0.500	910.5	3	1.918	IDENTIFIED	7.592	<input type="checkbox"/>
Thallium-208	✓	0.4282	0.03126	pCi/g	0.03876	0.080	582.3	1	1.512	IDENTIFIED	6.542	<input type="checkbox"/>
Thorium-227	la	0.3433	0.1238	pCi/g	0.3292	Y	0	9	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI Date rejected due to low abundance.
Thorium-228	nr	1.351	0.06043	pCi/g	0.06721	N	238.3	2	1.158	IDENTIFIED	2.618	<input type="checkbox"/>
Thorium-232	nr	1.422	0.1371	pCi/g	0.1533	N	910.5	3	1.918	IDENTIFIED	7.592	<input type="checkbox"/>
Thorium-234	✓	29.66	2.978	pCi/g	2.357	2.00	63.14	2	1.015	IDENTIFIED	4.031	<input type="checkbox"/>
Tin-126	int nr	0.4106	0.05593	pCi/g	0.1204	N	86.95	3	1.703	IDENTIFIED	12.73	<input type="checkbox"/>
Total Uranium		88.363	8.86E-06	ug/g	3.5081	N			0			<input type="checkbox"/>
Uranium-235	✓	0.2689	0.1001	pCi/g	0.2656	0.500	143.5	1	1.055	IDENTIFIED	36.41	<input type="checkbox"/>
Uranium-238	nr	29.66	2.978	pCi/g	2.357	N	63.14	2	1.015	IDENTIFIED	4.031	<input type="checkbox"/>
Zinc-65	HE	0.157	0.0359	pCi/g	0.1213	N	0	9	0	NOT_IDENTI	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
247900006	18-FEB-10 12:00	05-MAR-10 23:39	15.5	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	nr	2.354	0.1886	pCi/g	0.193	N	910.9	3	1.793	IDENTIFIED	5.179 <input type="checkbox"/>
Annihilation Rad.		0.2034	0.02884	pCi/g	0.03398	N	510.3	1	1.525	IDENTIFIED	13.21 <input type="checkbox"/>
Barium-137m	HE	0.05364	0.02283	pCi/g	0.05232	N	661.4	2	1.602	IDENTIFIED	42.2 <input type="checkbox"/>
Bismuth-211	int	5.533	0.3423	pCi/g	0.2244	Y	351.7	2	1.152	IDENTIFIED	3.253 <input type="checkbox"/> ui
Bismuth-212	nr	2.545	0.3866	pCi/g	0.6106	N	727	1	1.036	IDENTIFIED	13.45 <input type="checkbox"/>
Bismuth-214	✓	1.446	0.1119	pCi/g	0.08489	0.200	609	2	1.358	IDENTIFIED	4.821 <input type="checkbox"/>
Cadmium-109	int	5.176	0.39	pCi/g	0.5851	Y	87.13	3	1.134	IDENTIFIED	5.306 <input type="checkbox"/> ui
Cerium-143		932.4	128.8	pCi/g	0	N	0	6	0	SHORT_HLIF	0 <input type="checkbox"/>
Cesium-134	la	0.1406	0.02534	pCi/g	0.08088	0.100	0	6	0	NOT_IDENTI	0 <input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Cesium-135	HE	0.1931	0.06264	pCi/g	0.1929	N	0	6	0	NOT_IDENTI	0 <input type="checkbox"/>
Cesium-137	✓	0.05666	0.02412	pCi/g	0.05528	0.100	661.4	2	1.602	IDENTIFIED	42.2 <input type="checkbox"/>
Europium-155	int nr	0.2008	0.04683	pCi/g	0.09307	N	105.5	1	2.217	IDENTIFIED	22.56 <input type="checkbox"/>
Gross Gamma		12.9	1.26	pCi/g	3.394	N			0		<input type="checkbox"/>
Iodine-133		6430	3168	pCi/g	0	N	0	6	0	SHORT_HLIF	0 <input type="checkbox"/>
Lead-210	nr	1.58	0.2723	pCi/g	0.4586	N	46.29	1	0.9425	IDENTIFIED	16.46 <input type="checkbox"/>
Lead-212	✓	2.379	0.1428	pCi/g	0.06025	0.100	238.5	2	0.9411	IDENTIFIED	1.851 <input type="checkbox"/>
Lead-214	✓	2.008	0.136	pCi/g	0.08165	0.100	351.7	2	1.152	IDENTIFIED	3.253 <input type="checkbox"/>
Neptunium-237	int nr	1.509	0.1948	pCi/g	0.1694	N	87.13	3	1.134	IDENTIFIED	5.306 <input type="checkbox"/>
Potassium-40	✓	33.76	1.592	pCi/g	0.3958	1.00	1460	1	2.149	IDENTIFIED	2.024 <input type="checkbox"/>
Protactinium-234m	HE	7.562	2.149	pCi/g	7.441	N	0	6	0	FAIL_ABUND	0 <input type="checkbox"/>

Radium-224	int	6.152	0.5952	pCi/g	0.6465	Y	241.4	1	1.769	IDENTIFIED	8.12	<input type="checkbox"/>	ui
Radium-226	✓	1.446	0.1119	pCi/g	0.08489	Y	609	2	1.358	IDENTIFIED	4.821	<input type="checkbox"/>	
Radium-228	✓	2.354	0.1886	pCi/g	0.193	0.500	910.9	3	1.793	IDENTIFIED	5.179	<input type="checkbox"/>	
Sodium-24	HE	7.68E+05	4.70E+05	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.6843	0.05024	pCi/g	0.04607	0.080	583.1	1	1.353	IDENTIFIED	4.71	<input type="checkbox"/>	
Thorium-228	nr	2.379	0.1428	pCi/g	0.06025	N	238.5	2	0.9411	IDENTIFIED	1.851	<input type="checkbox"/>	
Thorium-232	nr	2.354	0.1886	pCi/g	0.193	N	910.9	3	1.793	IDENTIFIED	5.179	<input type="checkbox"/>	
Thorium-234	✓	4.226	0.5297	pCi/g	0.5983	2.00	63.28	2	0.773	IDENTIFIED	8.187	<input type="checkbox"/>	
Tin-126	int nr	0.5056	0.0381	pCi/g	0.05705	N	87.13	3	1.134	IDENTIFIED	5.306	<input type="checkbox"/>	
Total Uranium		12.609	1.58E-06	ug/g	0.89202	N	0					<input type="checkbox"/>	
Uranium-238	nr	4.226	0.5297	pCi/g	0.5983	N	63.28	2	0.773	IDENTIFIED	8.187	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
247900007	18-FEB-10 12:00	06-MAR-10 14:59	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	nr	1.578	0.2007	pCi/g	0.2412	N	910.2	3	1.834	IDENTIFIED 11.02 <input type="checkbox"/>
Annihilation Rad.	HE	0.1055	0.03334	pCi/g	0.05494	N	510.2	1	2.658	IDENTIFIED 31.44 <input type="checkbox"/>
Barium-137m		0.5366	0.05198	pCi/g	0.06673	N	660.5	2	1.598	IDENTIFIED 9.111 <input type="checkbox"/>
Bismuth-211	int	3.906	0.2871	pCi/g	0.3599	Y	351.1	2	1.45	IDENTIFIED 6.193 <input type="checkbox"/> ui
Bismuth-212	HE	1.826	0.4438	pCi/g	1.013	N	726.2	1	1.705	IDENTIFIED 23.59 <input type="checkbox"/>
Bismuth-214	✓	1.322	0.1032	pCi/g	0.1312	0.200	608.5	2	1.527	IDENTIFIED 6.567 <input type="checkbox"/>
Cadmium-109	int	4.537	0.5838	pCi/g	1.137	Y	86.76	3	1.847	IDENTIFIED 12.29 <input type="checkbox"/> ui
Cerium-143		2076	304.6	pCi/g	0	N	0	7	0	SHORT_HLIF 0 <input type="checkbox"/>
Cesium-135	HE	0.3253	0.1136	pCi/g	0.2878	N	269.8	1	1.356	IDENTIFIED 34.5 <input type="checkbox"/>
Cesium-137	✓	0.5669	0.05493	pCi/g	0.07049	0.100	660.5	2	1.598	IDENTIFIED 9.111 <input type="checkbox"/>
Gadolinium-153	HE	0.1629	0.0462	pCi/g	0.1491	N	0	7	0	NOT_IDENTI 0 <input type="checkbox"/>
Gross Gamma		9.626	1.29	pCi/g	4.335	N	0			<input type="checkbox"/>
Iodine-133	HE	7429	7751	pCi/g	0	N	0	7	0	SHORT_HLIF 0 <input type="checkbox"/>
Iodine-135		1.62E+15	0	pCi/g	0	N	0	7	0	SHORT_HLIF 0 <input type="checkbox"/>
Lead-210	HE	1.493	0.4416	pCi/g	0.9449	N	45.99	1	1.222	IDENTIFIED 29.32 <input type="checkbox"/>
Lead-212	✓	1.62	0.1035	pCi/g	0.1034	0.100	238.1	2	1.249	IDENTIFIED 3.391 <input type="checkbox"/>
Lead-214	✓	1.417	0.1113	pCi/g	0.1354	0.100	351.1	2	1.45	IDENTIFIED 6.193 <input type="checkbox"/>
Neptunium-237	int nr	1.321	0.2193	pCi/g	0.3297	N	86.76	3	1.847	IDENTIFIED 12.29 <input type="checkbox"/>
Niobium-95	HE	0.1203	0.02844	pCi/g	0.1069	N	0	7	0	NOT_IDENTI 0 <input type="checkbox"/>
Niobium-95m	la nr	1.34	0.1197	pCi/g	0.3663	N	0	7	0	NOT_IDENTI 0 <input type="checkbox"/>
Potassium-40	✓	24.63	1.126	pCi/g	0.5496	1.00	1459	1	1.897	IDENTIFIED 3.353 <input type="checkbox"/>
Radium-224	int	4.484	0.6065	pCi/g	1.108	Y	241	1	1.964	IDENTIFIED 12.61 <input type="checkbox"/> ui
Radium-226	✓	1.322	0.1032	pCi/g	0.1312	Y	608.5	2	1.527	IDENTIFIED 6.567 <input type="checkbox"/>
Radium-228	✓	1.578	0.2007	pCi/g	0.2412	0.500	910.2	3	1.834	IDENTIFIED 11.02 <input type="checkbox"/>
Silver-110m	la nr	0.2256	0.03057	pCi/g	0.1087	N	0	7	0	NOT_IDENTI 0 <input type="checkbox"/>
Thallium-208	✓	0.539	0.04871	pCi/g	0.06854	0.080	582.3	1	1.504	IDENTIFIED 8.257 <input type="checkbox"/>
Thorium-228	nr	1.62	0.1035	pCi/g	0.1034	N	238.1	2	1.249	IDENTIFIED 3.391 <input type="checkbox"/>
Thorium-232	nr	1.578	0.2007	pCi/g	0.2412	N	910.2	3	1.834	IDENTIFIED 11.02 <input type="checkbox"/>
Thorium-234	✓	7.404	0.9181	pCi/g	1.231	2.00	62.7	2	1.155	IDENTIFIED 8.445 <input type="checkbox"/>
Tin-126	int nr	0.4428	0.05698	pCi/g	0.1108	N	86.76	3	1.847	IDENTIFIED 12.29 <input type="checkbox"/>
Total Uranium		22.141	2.73E-06	ug/g	1.834	N	0			<input type="checkbox"/>
Uranium-238	nr	7.404	0.9181	pCi/g	1.231	N	62.7	2	1.155	IDENTIFIED 8.445 <input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
247900008	18-FEB-10 12:00	06-MAR-10 14:59	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.763	0.1935	pCi/g	0.3004	N	911.1	3	1.09 IDENTIFIED	9.354	☐
Annihilation Rad. HE	0.1069	0.0401	pCi/g	0.06024	N	510.9	1	1.694 IDENTIFIED	37.22	☐
Barium-137m	0.2233	0.03846	pCi/g	0.07855	N	661.4	2	1.982 IDENTIFIED	16.67	☐
Bismuth-211 int	3.895	0.3064	pCi/g	0.4498	Y	351.8	2	1.336 IDENTIFIED	6.263	☐ ui
Bismuth-212 HE	2.839	0.7129	pCi/g	1.52	N	0	4	0 FAIL_ABUND	0	☐
Bismuth-214 ✓	1.26	0.1195	pCi/g	0.1478	0.200	609.3	2	1.58 IDENTIFIED	7.929	☐
Cadmium-109 int	3.097	0.5509	pCi/g	1.189	Y	87.14	3	1.464 IDENTIFIED	17.06	☐ ui
Cerium-143	1531	240.7	pCi/g	0	N	0	4	0 SHORT_HLIF	0	☐
Cesium-134 la	0.1483	0.03331	pCi/g	0.1252	0.100	0	4	0 NOT_IDENTI	0	☐ UI Data rejected due to low abundance.
Cesium-137 ✓	0.2359	0.04063	pCi/g	0.08299	0.100	661.4	2	1.982 IDENTIFIED	16.67	☐
Gross Gamma	9.145	1.233	pCi/g	3.979	N	0				☐
Lead-210 HE	1.478	0.38	pCi/g	0.9202	N	46.45	1	1.244 IDENTIFIED	25.13	☐
Lead-212 ✓	1.553	0.101	pCi/g	0.1046	0.100	238.6	2	1.357 IDENTIFIED	3.949	☐
Lead-214 ✓	1.414	0.1179	pCi/g	0.1574	0.100	351.8	2	1.336 IDENTIFIED	6.263	☐
Neptunium-237 int nr	0.902	0.1862	pCi/g	0.3449	N	87.14	3	1.464 IDENTIFIED	17.06	☐
Potassium-40 ✓	25.65	1.449	pCi/g	0.726	1.00	1460	1	2.374 IDENTIFIED	3.449	☐
Radium-224 int	3.161	0.6213	pCi/g	1.121	Y	241.5	1	1.647 IDENTIFIED	19.1	☐ ui
Radium-226 ✓	1.26	0.1195	pCi/g	0.1478	Y	609.3	2	1.58 IDENTIFIED	7.929	☐
Radium-228 ✓	1.763	0.1935	pCi/g	0.3004	0.500	911.1	3	1.09 IDENTIFIED	9.354	☐
Strontium-85 la	0.1084	0.02702	pCi/g	0.09008	Y	0	4	0 NOT_IDENTI	0	☐ UI Data rejected due to low abundance.
Thallium-208 ✓	0.5215	0.05172	pCi/g	0.07607	0.080	582.9	1	1.833 IDENTIFIED	8.667	☐
Thorium-228 nr	1.553	0.101	pCi/g	0.1046	N	238.6	2	1.357 IDENTIFIED	3.949	☐
Thorium-232 nr	1.763	0.1935	pCi/g	0.3004	N	911.1	3	1.09 IDENTIFIED	9.354	☐
Thorium-234 ✓	5.749	0.8183	pCi/g	1.23	2.00	63.22	2	1.326 IDENTIFIED	10.47	☐
Tin-126 int nr	0.3023	0.05377	pCi/g	0.1159	N	87.14	3	1.464 IDENTIFIED	17.06	☐
Total Uranium	17.433	2.44E-06	ug/g	1.8319	N	0				☐
Uranium-235 ✓	0.7152	0.2016	pCi/g	0.3576	0.500	143.9	1	1.625 IDENTIFIED	26.7	☐
Uranium-238 nr	5.749	0.8183	pCi/g	1.23	N	63.22	2	1.326 IDENTIFIED	10.47	☐

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
247900009	18-FEB-10 12:00	06-MAR-10 14:59	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.788	0.2191	pCi/g	0.3076	N	911.1	3	1.807 IDENTIFIED	10.66	☐
Annihilation Rad. HE	0.08869	0.0459	pCi/g	0.06223	N	511.3	1	1.97 IDENTIFIED	51.57	☐
Bismuth-211 int	4.062	0.3352	pCi/g	0.4493	Y	352	2	1.521 IDENTIFIED	6.588	☐ ui
Bismuth-212 HE	2.22	0.6617	pCi/g	1.42	N	0	7	0 FAIL_ABUND	0	☐
Bismuth-214 ✓	1.353	0.1208	pCi/g	0.1369	0.200	609.4	2	1.734 IDENTIFIED	7.411	☐
Cerium-143	1420	242.9	pCi/g	0	N	0	7	0 SHORT_HLIF	0	☐
Gadolinium-153 HE	0.2758	0.07094	pCi/g	0.2274	N	0	7	0 NOT_IDENTI	0	☐
Gross Gamma	11.32	1.863	pCi/g	5.199	N	0				☐
Iodine-133 HE	12980	8012	pCi/g	0	N	0	7	0 SHORT_HLIF	0	☐
Iodine-135	4.60E+15	0	pCi/g	0	N	0	7	0 SHORT_HLIF	0	☐

Lead-212 ✓		1.805	0.1285	pCi/g	0.1212	0.100	238.8	2	1.365	IDENTIFIED	3.874	□
Lead-214 ✓		1.474	0.1283	pCi/g	0.1608	0.100	352	2	1.521	IDENTIFIED	6.588	□
Neptunium-237	HE	0.6568	0.2273	pCi/g	0.6421	N	87.27	1	1.095	IDENTIFIED	32.4	□
Niobium-95	HE	0.1093	0.03208	pCi/g	0.1067	N	0	7	0	NOT_IDENTI	0	□
Potassium-40 ✓		31.58	1.834	pCi/g	0.6658	1.00	1461	1	2.125	IDENTIFIED	3.095	□
Protactinium-234m	HE	20.5	5.034	pCi/g	13.46	N	0	7	0	FAIL_ABUND	0	□
Radium-224	int	4.073	0.8975	pCi/g	1.298	Y	241.7	1	2.04	IDENTIFIED	21.33	□ ui
Radium-226 ✓		1.353	0.1208	pCi/g	0.1369	Y	609.4	2	1.734	IDENTIFIED	7.411	□
Radium-228 ✓		1.788	0.2191	pCi/g	0.3076	0.500	911.1	3	1.807	IDENTIFIED	10.66	□
Thallium-208 ✓		0.5313	0.06022	pCi/g	0.0736	0.080	583.4	1	1.951	IDENTIFIED	10.37	□
Thorium-228	nr	1.805	0.1285	pCi/g	0.1212	N	238.8	2	1.365	IDENTIFIED	3.874	□
Thorium-232	nr	1.788	0.2191	pCi/g	0.3076	N	911.1	3	1.807	IDENTIFIED	10.66	□
Thorium-234 ✓		12.21	2.559	pCi/g	4.437	2.00	63.51	2	1.206	IDENTIFIED	18.46	□
Total Uranium		36.458	7.61E-06	ug/g	6.6048	N	0					□
Uranium-238	nr	12.21	2.559	pCi/g	4.437	N	63.51	2	1.206	IDENTIFIED	18.46	□

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
247900010	18-FEB-10 12:00	06-MAR-10 15:00	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	nr	2.043	0.2171	pCi/g	0.2782	N	910.3	3	1.367	IDENTIFIED	8.878 □
Annihilation Rad.		0.1781	0.04092	pCi/g	0.05155	N	510.4	1	1.578	IDENTIFIED	22.54 □
Bismuth-211	int	4.274	0.297	pCi/g	0.3344	Y	351.7	2	1.102	IDENTIFIED	5.151 □ ui
Bismuth-212	HE	2.261	0.7361	pCi/g	0.9801	N	726.9	1	2.216	IDENTIFIED	31.96 □
Bismuth-214 ✓		1.566	0.1195	pCi/g	0.1316	0.200	608.8	2	1.269	IDENTIFIED	5.66 □
Cadmium-109	int	4.772	0.5125	pCi/g	0.9711	Y	87.18	3	1.345	IDENTIFIED	9.568 □ ui
Cerium-143		1047	180.4	pCi/g	0	N	0	3	0	SHORT_HLIF	0 □
Cesium-134	la	0.1171	0.05639	pCi/g	0.1143	0.100	0	3	0	FAIL_ABUND	0 □ UI Data rejected due to low abundance.
Gross Gamma		10.73	1.368	pCi/g	3.882	N	0				□
Lead-210	HE	1.529	0.4003	pCi/g	0.8001	N	46.7	1	1.031	IDENTIFIED	25.62 □
Lead-212 ✓		1.889	0.1129	pCi/g	0.09263	0.100	238.5	2	0.9974	IDENTIFIED	3.172 □
Lead-214 ✓		1.551	0.116	pCi/g	0.1217	0.100	351.7	2	1.102	IDENTIFIED	5.151 □
Neptunium-237	int nr	1.39	0.2086	pCi/g	0.2816	N	87.18	3	1.345	IDENTIFIED	9.568 □
Potassium-40 ✓		31.47	1.725	pCi/g	0.6686	1.00	1459	1	2.167	IDENTIFIED	3.216 □
Radium-224	int	5.602	0.7628	pCi/g	0.9934	Y	241.3	1	1.813	IDENTIFIED	12.84 □ ui
Radium-226 ✓		1.566	0.1195	pCi/g	0.1316	Y	608.8	2	1.269	IDENTIFIED	5.66 □
Radium-228 ✓		2.043	0.2171	pCi/g	0.2782	0.500	910.3	3	1.367	IDENTIFIED	8.878 □
Sodium-24	HE	3.04E+05	1.21E+06	pCi/g	0	N	0	3	0	SHORT_HLIF	0 □
Thallium-208 ✓		0.5773	0.05255	pCi/g	0.07305	0.080	582.8	1	1.401	IDENTIFIED	7.782 □
Thorium-228	nr	1.889	0.1129	pCi/g	0.09263	N	238.5	2	0.9974	IDENTIFIED	3.172 □
Thorium-232	nr	2.043	0.2171	pCi/g	0.2782	N	910.3	3	1.367	IDENTIFIED	8.878 □
Thorium-234 ✓		2.765	0.5705	pCi/g	1.088	2.00	63.29	2	1.059	IDENTIFIED	18.31 □
Tin-126	int nr	0.4657	0.05002	pCi/g	0.09465	N	87.18	3	1.345	IDENTIFIED	9.568 □
Total Uranium		8.2923	1.70E-06	ug/g	1.6218	N	0				□
Uranium-238	nr	2.765	0.5705	pCi/g	1.088	N	63.29	2	1.059	IDENTIFIED	18.31 □

*** = 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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247900011	18-FEB-10 12:00	06-MAR-10 15:00	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.233	0.1464	pCi/g	0.1939	N	910.8	3 2.151	IDENTIFIED 9.747	☐	
Annihilation Rad. HE	0.08787	0.03065	pCi/g	0.04607	N	510.6	1 1.895	IDENTIFIED 34.73	☐	
Barium-137m	0.5592	0.04042	pCi/g	0.05819	N	661.2	2 1.702	IDENTIFIED 6.143	☐	
Bismuth-211 int	2.785	0.2145	pCi/g	0.3262	Y	351.8	2 1.359	IDENTIFIED 7.002	☐	ui
Bismuth-212 nr	1.68	0.3696	pCi/g	0.8105	N	727	1 1.887	IDENTIFIED 21.1	☐	
Bismuth-214 ✓	0.7785	0.08221	pCi/g	0.1045	0.200	609	2 1.469	IDENTIFIED 9.558	☐	
Cerium-141 la nr	0.4087	0.05167	pCi/g	0.1661	N	0	7 0	NOT_IDENTI 0	☐	
Cerium-143	1107	175.6	pCi/g	0	N	0	7 0	SHORT_HLIF 0	☐	
Cesium-137 ✓	0.5907	0.04273	pCi/g	0.06148	0.100	661.2	2 1.702	IDENTIFIED 6.143	☐	
Gadolinium-153 la nr	1.222	0.1092	pCi/g	0.2947	N	0	7 0	FAIL_ABUND 0	☐	
Gross Gamma	21.41	1.969	pCi/g	5.012	N	0			☐	
Lead-212 ✓	1.179	0.0642	pCi/g	0.09204	0.100	238.6	2 1.128	IDENTIFIED 4.079	☐	
Lead-214 ✓	1.011	0.08268	pCi/g	0.1186	0.100	351.8	2 1.359	IDENTIFIED 7.002	☐	
Molybdenum-99 HE	34.05	9.669	pCi/g	30.51	N	0	7 0	NOT_IDENTI 0	☐	
Niobium-95 int nr	0.5315	0.04769	pCi/g	0.06707	N	766.1	1 2	IDENTIFIED 7.718	☐	
Potassium-40 ✓	23.3	1.128	pCi/g	0.479	1.00	1460	1 2.415	IDENTIFIED 3.002	☐	
Protactinium-234m nr	141.4	9.8	pCi/g	6.142	N	1000	1 1.876	IDENTIFIED 4.348	☐	
Radium-224 int	3.047	0.5783	pCi/g	0.9852	Y	241.8	1 1.767	IDENTIFIED 18.78	☐	ui
Radium-226 ✓	0.7785	0.08221	pCi/g	0.1045	Y	609	2 1.469	IDENTIFIED 9.558	☐	
Radium-228 ✓	1.233	0.1464	pCi/g	0.1939	0.500	910.8	3 2.151	IDENTIFIED 9.747	☐	
Sodium-24 HE	11250	9.06E+05	pCi/g	0	N	0	7 0	SHORT_HLIF 0	☐	
Strontium-85 la	0.07449	0.02138	pCi/g	0.06811	Y	0	7 0	NOT_IDENTI 0	☐	UI Data rejected due to low abundance.
Technetium-99m	7.60E+17	0	pCi/g	0	N	0	7 0	SHORT_HLIF 0	☐	
Thallium-208 ✓	0.3869	0.03598	pCi/g	0.05421	0.080	582.6	1 1.432	IDENTIFIED 8.435	☐	
Thorium-228 nr	1.179	0.0642	pCi/g	0.09204	N	238.6	2 1.128	IDENTIFIED 4.079	☐	
Thorium-232 nr	1.233	0.1464	pCi/g	0.1939	N	910.8	3 2.151	IDENTIFIED 9.747	☐	
Thorium-234 ✓	122.9	11.45	pCi/g	4.305	2.00	63.41	2 0.971	IDENTIFIED 2.365	☐	
Total Uranium	366.62	3.41E-05	ug/g	6.4086	N	0			☐	
Uranium-235 ✓	2.013	0.2515	pCi/g	0.4173	0.500	143.9	1 1.144	IDENTIFIED 9.757	☐	
Uranium-238 nr	122.9	11.45	pCi/g	4.305	N	63.41	2 0.971	IDENTIFIED 2.365	☐	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue
247900012	18-FEB-10 12:00	06-MAR-10 15:01	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N		RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.066	0.1954	pCi/g	0.2072	N	911.3	3 1.439	IDENTIFIED	7.454	☐	
Annihilation Rad.	0.2191	0.03474	pCi/g	0.04712	N	510.6	1 2.144	IDENTIFIED	15.58	☐	
Barium-137m	0.177	0.03419	pCi/g	0.06143	N	662	2 1.465	IDENTIFIED	19.1	☐	
Bismuth-211 int	3.749	0.2355	pCi/g	0.3593	Y	351.7	2 1.343	IDENTIFIED	5.41	☐ ui	
Bismuth-212 la nr	2.934	0.5155	pCi/g	1.263	N	0	10 0	FAIL_ABUND	0	☐	
Bismuth-214 ✓	1.232	0.0921	pCi/g	0.1124	0.200	609.2	2 1.724	IDENTIFIED	6.34	☐	
Cadmium-109 int	4.427	0.7536	pCi/g	1.66	Y	87.36	3 1.635	IDENTIFIED	16.43	☐ ui	
Cerium-143	1714	238.8	pCi/g	0	N	0	10 0	SHORT_HLIF	0	☐	
Cesium-134 la	0.1675	0.03214	pCi/g	0.0951	0.100	0	10 0	FAIL_ABUND	0	☐ UI	Data rejected due to low abundance.
Cesium-135 HE	0.3905	0.0972	pCi/g	0.3262	N	0	10 0	NOT_IDENTI	0	☐	
Cesium-137 ✓	0.187	0.03612	pCi/g	0.06489	0.100	662	2 1.465	IDENTIFIED	19.1	☐	

Gadolinium-153	HE	0.3068	0.07973	pCi/g	0.202	N	0	10	0	FAIL_ABUND	0	<input type="checkbox"/>
Gross Gamma		13.37	1.552	pCi/g	5.906	N		0				<input type="checkbox"/>
Iodine-133	HE	6939	6720	pCi/g	0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>
Iodine-135		1.66E+16		pCi/g	0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212	✓	1.967	0.09242	pCi/g	0.09581	0.100	238.5	2	1.326	IDENTIFIED	2.97	<input type="checkbox"/>
Lead-214	✓	1.361	0.09334	pCi/g	0.1217	0.100	351.7	2	1.343	IDENTIFIED	5.41	<input type="checkbox"/>
Neptunium-237	int nr	1.289	0.2578	pCi/g	0.4908	N	87.36	3	1.635	IDENTIFIED	16.43	<input type="checkbox"/>
Niobium-95	int nr	0.2145	0.03551	pCi/g	0.06598	N	766.9	1	2.738	IDENTIFIED	16.17	<input type="checkbox"/>
Niobium-95m	la nr	0.6442	0.08577	pCi/g	0.2864	N	0	10	0	NOT_IDENTI	0	<input type="checkbox"/>
Potassium-40	✓	28.98	1.367	pCi/g	0.5865	1.00	1461	1	2.304	IDENTIFIED	2.893	<input type="checkbox"/>
Protactinium-234m	nr	34.36	4.018	pCi/g	7.539	N	1001	1	1.663	IDENTIFIED	10.73	<input type="checkbox"/>
Radium-224	int	4.195	0.6357	pCi/g	1.026	Y	241.4	1	1.798	IDENTIFIED	14.89	<input type="checkbox"/> ui
Radium-226	✓	1.232	0.0921	pCi/g	0.1124	Y	609.2	2	1.724	IDENTIFIED	6.34	<input type="checkbox"/>
Radium-228	✓	2.066	0.1954	pCi/g	0.2072	0.500	911.3	3	1.439	IDENTIFIED	7.454	<input type="checkbox"/>
Strontium-85	la	0.07891	0.02067	pCi/g	0.07027	Y	0	10	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Technetium-99m		3.37E+17		pCi/g	0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208	✓	0.5168	0.03912	pCi/g	0.05786	0.080	583	1	1.521	IDENTIFIED	6.766	<input type="checkbox"/>
Thorium-228	nr	1.967	0.09242	pCi/g	0.09581	N	238.5	2	1.326	IDENTIFIED	2.97	<input type="checkbox"/>
Thorium-232	nr	2.066	0.1954	pCi/g	0.2072	N	911.3	3	1.439	IDENTIFIED	7.454	<input type="checkbox"/>
Thorium-234	✓	25.61	2.819	pCi/g	2.761	2.00	63.3	2	1.225	IDENTIFIED	6.42	<input type="checkbox"/>
Tin-126	int nr	0.4321	0.07355	pCi/g	0.1627	N	87.36	3	1.635	IDENTIFIED	16.43	<input type="checkbox"/>
Total Uranium		76.42	8.39E-06	ug/g	4.1098	N		0				<input type="checkbox"/>
Uranium-235	✓	0.4743	0.1775	pCi/g	0.3777	0.500	143.8	1	1.315	IDENTIFIED	36.59	<input type="checkbox"/>
Uranium-238	✓ nr	25.61	2.819	pCi/g	2.761	N	63.3	2	1.225	IDENTIFIED	6.42	<input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue		
247900013	18-FEB-10 12:00	06-MAR-10 15:01	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL		N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228 nr	2.12	0.212	pCi/g	0.2144	N	911.1	3	1.263	IDENTIFIED	7.777		□	
Annihilation Rad.	0.178	0.03679	pCi/g	0.05032	N	511.1	1	2.027	IDENTIFIED	20.14		□	
Barium-137m	0.5865	0.04841	pCi/g	0.06388	N	661.7	2	1.39	IDENTIFIED	6.554		□	
Bismuth-211 int	4.12	0.3504	pCi/g	0.3547	Y	351.9	2	1.349	IDENTIFIED	7.032		□ ui	
Bismuth-212 HE	1.843	0.6095	pCi/g	1.244	N	0	7	0	FAIL_ABUND	0		□	
Bismuth-214 ✓	1.325	0.1165	pCi/g	0.125	0.200	609.4	2	1.445	IDENTIFIED	6.793		□	
Cadmium-109 int	4.954	0.7987	pCi/g	1.827	Y	87.45	3	1.394	IDENTIFIED	15.42		□ ui	
Cerium-141 HE	0.166	0.04571	pCi/g	0.1429	N	0	7	0	NOT_IDENTI	0		□	
Cerium-143	1146	195.9	pCi/g	0	N	0	7	0	SHORT_HLIF	0		□	
Cesium-134 la	0.1242	0.0287	pCi/g	0.1065	0.100	0	7	0	NOT_IDENTI	0		☒ UI	Data rejected due to low abundance.
Cesium-137 ✓	0.6196	0.05117	pCi/g	0.06748	0.100	661.7	2	1.39	IDENTIFIED	6.554		□	
Gadolinium-153 la nr	0.7137	0.09027	pCi/g	0.2304	N	0	7	0	FAIL_ABUND	0		□	
Gross Gamma	16.73	1.958	pCi/g	6.586	N		0					□	
Iodine-133 HE	2614	7035	pCi/g	0	N	0	7	0	SHORT_HLIF	0		□	
Lead-212 ✓	1.895	0.1182	pCi/g	0.09823	0.100	238.6	2	1.129	IDENTIFIED	3.225		□	
Lead-214 ✓	1.495	0.1337	pCi/g	0.129	0.100	351.9	2	1.349	IDENTIFIED	7.032		□	
Neptunium-237 int nr	1.443	0.2775	pCi/g	0.5377	N	87.45	3	1.394	IDENTIFIED	15.42		□	
Niobium-95 int nr	0.22	0.05053	pCi/g	0.07893	N	766.9	1	1.423	IDENTIFIED	22.4		□	
Potassium-40 ✓	31.14	1.624	pCi/g	0.5708	1.00	1461	1	1.781	IDENTIFIED	2.859		□	

Protactinium-234m	nr	52.29	6.159	pCi/g	8.477	N	1001	1	1.4	IDENTIFIED	10.49	<input type="checkbox"/>
Radium-224	int	4.6	0.734	pCi/g	1.053	Y	241.5	1	1.794	IDENTIFIED	15.2	<input type="checkbox"/> ui
Radium-226	✓	1.325	0.1165	pCi/g	0.125	Y	609.4	2	1.445	IDENTIFIED	6.793	<input type="checkbox"/>
Radium-228	✓	2.12	0.212	pCi/g	0.2144	0.500	911.1	3	1.263	IDENTIFIED	7.777	<input type="checkbox"/>
Technetium-99m		3.87E+17	0	pCi/g	0	N	0	7	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208	✓	0.583	0.0521	pCi/g	0.05682	0.080	583.3	1	1.384	IDENTIFIED	7.312	<input type="checkbox"/>
Thorium-228	nr	1.895	0.1182	pCi/g	0.09823	N	238.6	2	1.129	IDENTIFIED	3.225	<input type="checkbox"/>
Thorium-232	nr	2.12	0.212	pCi/g	0.2144	N	911.1	3	1.263	IDENTIFIED	7.777	<input type="checkbox"/>
Thorium-234	✓	46.41	4.396	pCi/g	2.731	2.00	63.43	2	1.031	IDENTIFIED	3.288	<input type="checkbox"/>
Tin-126	int nr	0.4835	0.07796	pCi/g	0.1789	N	87.45	3	1.394	IDENTIFIED	15.42	<input type="checkbox"/>
Total Uranium		138.54	1.31E-05	ug/g	4.0655	N	0					<input type="checkbox"/>
Uranium-235	✓	1.031	0.2041	pCi/g	0.3959	0.500	143.8	1	1.054	IDENTIFIED	17.91	<input type="checkbox"/>
Uranium-238	nr	46.41	4.396	pCi/g	2.731	N	63.43	2	1.031	IDENTIFIED	3.288	<input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
247900014	18-FEB-10 12:00	06-MAR-10 15:02	16.1	SAMPLE	LOAD	1	LANL	LANL010041CEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDI	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	nr	2.068	0.2182	pCi/g	0.2208	N	911.3	3	1.717	IDENTIFIED	8.094		<input type="checkbox"/>	
Annihilation Rad.		0.1332	0.03497	pCi/g	0.04742	N	511	1	1.76	IDENTIFIED	25.77		<input type="checkbox"/>	
Bismuth-211	int	5.142	0.3773	pCi/g	0.3219	Y	351.9	2	1.367	IDENTIFIED	4.474		<input type="checkbox"/> ui	
Bismuth-212	la nr	2.3	0.4517	pCi/g	1.131	N	0	7	0	FAIL_ABUND	0		<input type="checkbox"/>	
Bismuth-214	✓	1.517	0.1198	pCi/g	0.1127	0.200	609.4	2	1.537	IDENTIFIED	5.321		<input type="checkbox"/>	
Cadmium-109	int	4.409	0.5399	pCi/g	1.228	Y	87.22	3	1.187	IDENTIFIED	11.31		<input type="checkbox"/> ui	
Cerium-143		1926	279.8	pCi/g	0	N	0	7	0	SHORT_HLIF	0		<input type="checkbox"/>	
Cesium-134	la	0.09375	0.03396	pCi/g	0.08188	0.100	0	7	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI	<input type="checkbox"/>	Data rejected due to low abundance.
Cesium-135	HE	0.4182	0.09742	pCi/g	0.2971	N	0	7	0	NOT_IDENTI	0		<input type="checkbox"/>	
Gross Gamma		12.06	1.542	pCi/g	3.19	N	0						<input type="checkbox"/>	
Iodine-133	HE	3431	6859	pCi/g	0	N	0	7	0	SHORT_HLIF	0		<input type="checkbox"/>	
Lead-212	✓	2.313	0.1645	pCi/g	0.09664	0.100	238.7	2	1.312	IDENTIFIED	2.58		<input type="checkbox"/>	
Lead-214	✓	1.866	0.1463	pCi/g	0.117	0.100	351.9	2	1.367	IDENTIFIED	4.474		<input type="checkbox"/>	
Neptunium-237	int nr	1.284	0.207	pCi/g	0.3629	N	87.22	3	1.187	IDENTIFIED	11.31		<input type="checkbox"/>	
Niobium-95m	HE	0.2499	0.07797	pCi/g	0.2378	N	0	7	0	NOT_IDENTI	0		<input type="checkbox"/>	
Potassium-40	✓	37.05	1.886	pCi/g	0.4784	1.00	1461	1	2.571	IDENTIFIED	2.223		<input type="checkbox"/>	
Radium-224	int	5.37	0.7675	pCi/g	1.035	Y	241.6	1	1.886	IDENTIFIED	12.84		<input type="checkbox"/> ui	
Radium-226	✓	1.517	0.1198	pCi/g	0.1127	Y	609.4	2	1.537	IDENTIFIED	5.321		<input type="checkbox"/>	
Radium-228	✓	2.068	0.2182	pCi/g	0.2208	0.500	911.3	3	1.717	IDENTIFIED	8.094		<input type="checkbox"/>	
Strontium-85	la	0.141	0.02408	pCi/g	0.07706	Y	0	7	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI	<input type="checkbox"/>	Data rejected due to low abundance.
Thallium-208	✓	0.6152	0.0513	pCi/g	0.05386	0.080	583.1	1	1.709	IDENTIFIED	6.34		<input type="checkbox"/>	
Thorium-228	nr	2.313	0.1645	pCi/g	0.09664	N	238.7	2	1.312	IDENTIFIED	2.58		<input type="checkbox"/>	
Thorium-232	nr	2.068	0.2182	pCi/g	0.2208	N	911.3	3	1.717	IDENTIFIED	8.094		<input type="checkbox"/>	
Thorium-234	✓	2.82	1.185	pCi/g	2.063	2.00	63.04	2	1.426	IDENTIFIED	41.07		<input type="checkbox"/>	
Tin-126	int nr	0.4303	0.05269	pCi/g	0.1204	N	87.22	3	1.187	IDENTIFIED	11.31		<input type="checkbox"/>	
Total Uranium		8.3388	3.53E-06	ug/g	3.0721	N	0						<input type="checkbox"/>	
Uranium-238	HE	2.82	1.185	pCi/g	2.063	N	63.04	2	1.426	IDENTIFIED	41.07		<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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247900015	18-FEB-10 12:00	06-MAR-10 15:02	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.192	0.221	pCi/g	0.2839	N	910.1	3	1.652	IDENTIFIED	8.146	□
Annihilation Rad. HE	0.07601	0.04075	pCi/g	0.05611	N	510.4	1	1.583	IDENTIFIED	53.53	□
Bismuth-211 int	3.835	0.2987	pCi/g	0.4163	Y	351.4	2	1.294	IDENTIFIED	7.074	□ ui
Bismuth-212 HE	2.622	0.6007	pCi/g	1.468	N	0	8	0	FAIL_ABUND	0	□
Bismuth-214 ✓	1.521	0.1161	pCi/g	0.1541	0.200	608.7	2	1.59	IDENTIFIED	6.626	□
Cadmium-109 int	5.054	0.6301	pCi/g	1.881	Y	87.08	3	1.307	IDENTIFIED	11.49	□ ui
Cerium-143	2464	352.6	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□
Cesium-135 HE	0.4189	0.1582	pCi/g	0.3074	N	269.7	1	1.625	IDENTIFIED	37.58	□
Gadolinium-153 HE	0.2242	0.06245	pCi/g	0.2003	N	0	8	0	NOT_IDENTI	0	□
Gross Gamma	11.47	1.549	pCi/g	4.548	N	0					□
Iodine-133 HE	11860	8121	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□
Lead-212 ✓	2.132	0.1029	pCi/g	0.1133	0.100	238.3	2	1.235	IDENTIFIED	3.186	□
Lead-214 ✓	1.392	0.115	pCi/g	0.1497	0.100	351.4	2	1.294	IDENTIFIED	7.074	□
Neptunium-237 int nr	1.472	0.2397	pCi/g	0.5954	N	87.08	3	1.307	IDENTIFIED	11.49	□
Niobium-95 HE	0.1224	0.02958	pCi/g	0.109	N	0	8	0	NOT_IDENTI	0	□
Niobium-95m la nr	0.9684	0.1084	pCi/g	0.3609	N	0	8	0	NOT_IDENTI	0	□
Potassium-40 ✓	29.23	1.51	pCi/g	0.7082	1.00	1459	1	2.446	IDENTIFIED	3.56	□
Protactinium-234m HE	16.71	4.827	pCi/g	12.86	N	0	8	0	FAIL_ABUND	0	□
Radium-224 int	5.484	0.6118	pCi/g	1.214	Y	241.3	1	1.774	IDENTIFIED	10.79	□ ui
Radium-226 ✓	1.521	0.1161	pCi/g	0.1541	Y	608.7	2	1.59	IDENTIFIED	6.626	□
Radium-228 ✓	2.192	0.221	pCi/g	0.2839	0.500	910.1	3	1.652	IDENTIFIED	8.146	□
Sodium-24 HE	2.06E+05	1.33E+06	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□
Thallium-208 ✓	0.5835	0.05171	pCi/g	0.07258	0.080	582.5	1	1.182	IDENTIFIED	8.249	□
Thorium-228 nr	2.132	0.1029	pCi/g	0.1133	N	238.3	2	1.235	IDENTIFIED	3.186	□
Thorium-232 nr	2.192	0.221	pCi/g	0.2839	N	910.1	3	1.652	IDENTIFIED	8.146	□
Thorium-234 ✓	13.29	2.143	pCi/g	3.28	2.00	63.02	2	1.311	IDENTIFIED	13.25	□
Tin-126 int nr	0.4933	0.06149	pCi/g	0.1847	N	87.08	3	1.307	IDENTIFIED	11.49	□
Total Uranium	39.643	6.38E-06	ug/g	4.883	N	0					□
Uranium-238 nr	13.29	2.143	pCi/g	3.28	N	63.02	2	1.311	IDENTIFIED	13.25	□
*** = 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	
247900016	18-FEB-10 12:00	06-MAR-10 15:02	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.428	0.2408	pCi/g	0.2935	N	911	3	1.63	IDENTIFIED	7.812	□
Annihilation Rad.	0.2092	0.03766	pCi/g	0.05376	N	510.5	1	1.527	IDENTIFIED	17.25	□
Bismuth-211 int	5.314	0.3812	pCi/g	0.3398	Y	351.8	2	1.19	IDENTIFIED	4.876	□ ui
Bismuth-212 la nr	3.213	0.5131	pCi/g	1.495	N	0	4	0	FAIL_ABUND	0	□
Bismuth-214 ✓	1.699	0.1424	pCi/g	0.1361	0.200	609.1	2	1.476	IDENTIFIED	5.798	□
Cadmium-109 int	4.846	0.4519	pCi/g	0.8619	Y	87.15	3	1.027	IDENTIFIED	7.639	□ ui
Cerium-143	903	175.6	pCi/g	0	N	0	4	0	SHORT_HLIF	0	□
Cesium-134 la	0.1605	0.03814	pCi/g	0.1095	0.100	0	4	0	FAIL_ABUND	0	□ UI Data rejected due to low abundance.
Gross Gamma	12.95	1.433	pCi/g	4.525	N	0					□
Iodine-135	5.09E+16	0	pCi/g	0	N	0	4	0	SHORT_HLIF	0	□
Lead-210 nr	1.232	0.2863	pCi/g	0.6366	N	46.31	1	0.9664	IDENTIFIED	22.67	□
Lead-212 ✓	2.614	0.1637	pCi/g	0.09103	0.100	238.6	2	0.9409	IDENTIFIED	2.565	□

Lead-214 ✓	1.928	0.1482	pCi/g	0.1236	0.100	351.8	2	1.19	IDENTIFIED	4.876	□
Neptunium-237 int nr	1.411	0.198	pCi/g	0.2627	N	87.15	3	1.027	IDENTIFIED	7.639	□
Potassium-40 ✓	35.67	1.847	pCi/g	0.5687	1.00	1460	1	2.043	IDENTIFIED	2.944	□
Radium-224 int	6.465	0.8455	pCi/g	0.9769	Y	241.6	1	1.771	IDENTIFIED	11.97	□ ui
Radium-226 ✓	1.699	0.1424	pCi/g	0.1361	Y	609.1	2	1.476	IDENTIFIED	5.798	□
Radium-228 ✓	2.428	0.2408	pCi/g	0.2935	0.500	911	3	1.63	IDENTIFIED	7.812	□
Thallium-208 ✓	0.7877	0.06249	pCi/g	0.07272	0.080	583.1	1	1.3	IDENTIFIED	5.586	□
Thorium-228 nr	2.614	0.1637	pCi/g	0.09103	N	238.6	2	0.9409	IDENTIFIED	2.565	□
Thorium-232 nr	2.428	0.2408	pCi/g	0.2935	N	911	3	1.63	IDENTIFIED	7.812	□
Thorium-234 ✓	2.45	0.5016	pCi/g	0.8922	2.00	63.25	2	0.8534	IDENTIFIED	18.14	□
Tin-126 int nr	0.473	0.04411	pCi/g	0.08395	N	87.15	3	1.027	IDENTIFIED	7.639	□
Total Uranium	7.3569	1.49E-06 ug/g		1.3301	N		0				□
Uranium-238 nr	2.45	0.5016	pCi/g	0.8922	N	63.25	2	0.8534	IDENTIFIED	18.14	□

*** = 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
247900017	18-FEB-10 12:00	06-MAR-10 15:22	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL		N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228 nr	1.797	0.2297	pCi/g	0.2396	N	911.2	3	1.531	IDENTIFIED	11.23	□
Annihilation Rad.	0.1487	0.03702	pCi/g	0.04681	N	510.8	1	1.466	IDENTIFIED	24.44	□
Barium-137m	0.5923	0.04623	pCi/g	0.05821	N	661.5	2	1.44	IDENTIFIED	6.421	□
Bismuth-211 int	4.608	0.3416	pCi/g	0.3277	Y	351.8	2	1.219	IDENTIFIED	5.016	□ ui
Bismuth-212 la nr	2.784	0.4867	pCi/g	1.267	N	0	8	0	FAIL_ABUND	0	□
Bismuth-214 ✓	1.42	0.1102	pCi/g	0.1294	0.200	609.2	2	1.252	IDENTIFIED	5.661	□
Cadmium-109 int	3.741	0.5943	pCi/g	1.791	Y	87.16	3	0.9998	IDENTIFIED	15.15	□ ui
Cerium-141 HE	0.1337	0.05891	pCi/g	0.105	N	144.1	2	0.9776	IDENTIFIED	43.83	□
Cerium-143	866.2	164.8	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□
Cesium-134 la	0.1167	0.03627	pCi/g	0.09567	0.100	0	8	0	FAIL_ABUND	0	□ ui Date rejected due to low abundance.
Cesium-137 ✓	0.6257	0.04887	pCi/g	0.0615	0.100	661.5	2	1.44	IDENTIFIED	6.421	□
Gadolinium-153 HE	0.285	0.06553	pCi/g	0.1605	N	0	8	0	FAIL_ABUND	0	□
Gross Gamma	13.44	1.651	pCi/g	5.617	N		0				□
Iodine-133 HE	2144	6720	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□
Iodine-135	4.07E+15	0	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□
Lead-212 ✓	1.868	0.1257	pCi/g	0.09429	0.100	238.6	2	1.023	IDENTIFIED	3.171	□
Lead-214 ✓	1.672	0.1323	pCi/g	0.1192	0.100	351.8	2	1.219	IDENTIFIED	5.016	□
Neptunium-237 int nr	1.089	0.2074	pCi/g	0.4892	N	87.16	3	0.9998	IDENTIFIED	15.15	□
Niobium-95 HE	0.1034	0.03107	pCi/g	0.06361	N	766.5	1	1.638	IDENTIFIED	29.68	□
Potassium-40 ✓	31.16	1.625	pCi/g	0.4736	1.00	1461	1	1.828	IDENTIFIED	2.804	□
Protactinium-234m nr	29.27	4.049	pCi/g	6.924	N	1001	1	1.877	IDENTIFIED	12.82	□
Radium-224 int	4.8	0.6592	pCi/g	1.011	Y	241.4	1	1.545	IDENTIFIED	12.58	□ ui
Radium-226 ✓	1.42	0.1102	pCi/g	0.1294	Y	609.2	2	1.252	IDENTIFIED	5.661	□
Radium-228 ✓	1.797	0.2297	pCi/g	0.2396	0.500	911.2	3	1.531	IDENTIFIED	11.23	□
Sodium-24 HE	31810	9.27E+05	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□
Technetium-99m	1.33E+17	0	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□
Thallium-208 ✓	0.5758	0.04907	pCi/g	0.05991	0.080	583.1	1	1.326	IDENTIFIED	6.937	□
Thorium-228 nr	1.868	0.1257	pCi/g	0.09429	N	238.6	2	1.023	IDENTIFIED	3.171	□
Thorium-232 nr	1.797	0.2297	pCi/g	0.2396	N	911.2	3	1.531	IDENTIFIED	11.23	□
Thorium-234 ✓	20.15	2.234	pCi/g	2.459	2.00	63.32	2	0.81	IDENTIFIED	6.591	□

Tin-126 int nr 0.3651 0.05801 pCi/g 0.1768 N 87.16 3 0.9998 IDENTIFIED 15.15 ☐
 Total Uranium 60.144 6.65E-06 ug/g 3.661 N 0 ☐
 Uranium-235 ✓ 0.4173 0.1863 pCi/g 0.3298 0.500 144.1 2 0.9776 IDENTIFIED 43.83 ☐
 Uranium-238 nr 20.15 2.234 pCi/g 2.459 N 63.32 2 0.81 IDENTIFIED 6.591 ☐

*** = 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
247900018	18-FEB-10 12:00	06-MAR-10 17:00	16.2	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228 nr	2.003	0.2455	pCi/g	0.2545	N	911.5	3	1.854	IDENTIFIED	10.71			<input type="checkbox"/>	
Annihilation Rad.	0.1386	0.03628	pCi/g	0.05465	N	511.3	1	2.462	IDENTIFIED	25.82			<input type="checkbox"/>	
Bismuth-211 int	4.473	0.3269	pCi/g	0.3765	Y	352.3	2	1.304	IDENTIFIED	5.728			<input type="checkbox"/>	ui
Bismuth-212 la nr	2.838	0.5514	pCi/g	1.403	N	0	6	0	FAIL_ABUND	0			<input type="checkbox"/>	
Bismuth-214 ✓	1.378	0.1154	pCi/g	0.1245	0.200	609.7	2	1.822	IDENTIFIED	6.75			<input type="checkbox"/>	
Cadmium-109 int	3.679	0.5822	pCi/g	1.823	Y	87.31	3	1.594	IDENTIFIED	15.11			<input type="checkbox"/>	ui
Cerium-143	512	163.1	pCi/g	0	N	0	6	0	SHORT_HLIF	0			<input type="checkbox"/>	
Gross Gamma	9.899	1.533	pCi/g	3.831	N	0							<input type="checkbox"/>	
Iodine-135	8.94E+15	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0			<input type="checkbox"/>	
Lead-212 ✓	1.973	0.1198	pCi/g	0.1025	0.100	239	2	1.372	IDENTIFIED	3.322			<input type="checkbox"/>	
Lead-214 ✓	1.623	0.1268	pCi/g	0.1366	0.100	352.3	2	1.304	IDENTIFIED	5.728			<input type="checkbox"/>	
Neptunium-237 int nr	1.071	0.2034	pCi/g	0.4789	N	87.31	3	1.594	IDENTIFIED	15.11			<input type="checkbox"/>	
Potassium-40 ✓	31.04	1.683	pCi/g	0.604	1.00	1461	1	2.091	IDENTIFIED	3.108			<input type="checkbox"/>	
Radium-224 int	4.078	0.585	pCi/g	1.099	Y	242	1	1.553	IDENTIFIED	13.61			<input type="checkbox"/>	ui
Radium-226 ✓	1.378	0.1154	pCi/g	0.1245	Y	609.7	2	1.822	IDENTIFIED	6.75			<input type="checkbox"/>	
Radium-228 ✓	2.003	0.2455	pCi/g	0.2545	0.500	911.5	3	1.854	IDENTIFIED	10.71			<input type="checkbox"/>	
Sodium-24 HE	4.95E+05	1.38E+06	pCi/g	0	N	0	6	0	SHORT_HLIF	0			<input type="checkbox"/>	
Strontium-85 la	0.09371	0.02476	pCi/g	0.0824	Y	0	6	0	NOT_IDENTI	0			<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Technetium-99m	2.43E+17	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0			<input type="checkbox"/>	
Thallium-208 ✓	0.5836	0.05649	pCi/g	0.06716	0.080	583.6	1	1.52	IDENTIFIED	8.551			<input type="checkbox"/>	
Thorium-228 nr	1.973	0.1198	pCi/g	0.1025	N	239	2	1.372	IDENTIFIED	3.322			<input type="checkbox"/>	
Thorium-232 nr	2.003	0.2455	pCi/g	0.2545	N	911.5	3	1.854	IDENTIFIED	10.71			<input type="checkbox"/>	
Tin-126 int nr	0.359	0.05681	pCi/g	0.1817	N	87.31	3	1.594	IDENTIFIED	15.11			<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
247900019	18-FEB-10 12:00	06-MAR-10 17:01	16.2	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228 nr	2.241	0.2323	pCi/g	0.2519	N	910.7	3	1.669	IDENTIFIED	8.158			<input type="checkbox"/>	
Annihilation Rad. HE	0.09187	0.03382	pCi/g	0.05983	N	510.5	1	1.702	IDENTIFIED	36.47			<input type="checkbox"/>	
Bismuth-211 int	4.324	0.3753	pCi/g	0.3786	Y	351.6	2	1.233	IDENTIFIED	6.49			<input type="checkbox"/>	ui
Bismuth-212 HE	2.253	0.4643	pCi/g	1.352	N	0	5	0	FAIL_ABUND	0			<input type="checkbox"/>	
Bismuth-214 ✓	1.369	0.1161	pCi/g	0.1326	0.200	608.9	2	1.537	IDENTIFIED	6.613			<input type="checkbox"/>	
Cadmium-109 int	3.872	0.6054	pCi/g	1.347	Y	86.93	3	1.118	IDENTIFIED	14.83			<input type="checkbox"/>	ui
Cerium-143	1523	248.6	pCi/g	0	N	0	5	0	SHORT_HLIF	0			<input type="checkbox"/>	
Cesium-134 la	0.1352	0.04127	pCi/g	0.107	0.100	0	5	0	FAIL_ABUND	0			<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-135 HE	0.3389	0.09685	pCi/g	0.3218	N	0	5	0	NOT_IDENTI	0			<input type="checkbox"/>	
Gross Gamma	10.9	1.532	pCi/g	3.565	N	0							<input type="checkbox"/>	
Iodine-135	4.75E+15	0	pCi/g	0	N	0	5	0	SHORT_HLIF	0			<input type="checkbox"/>	

Lead-212 ✓	2.176	0.1518	pCi/g	0.1071	0.100	238.4	2	1.037	IDENTIFIED	2.98	□
Lead-214 ✓	1.569	0.1429	pCi/g	0.1377	0.100	351.6	2	1.233	IDENTIFIED	6.49	□
Neptunium-237 int nr	1.128	0.2122	pCi/g	0.4001	N	86.93	3	1.118	IDENTIFIED	14.83	□
Potassium-40 ✓	30.71	1.732	pCi/g	0.5462	1.00	1460	1	2.187	IDENTIFIED	3.035	□
Radium-224 int	5.464	0.7445	pCi/g	1.148	Y	241.4	1	1.72	IDENTIFIED	12.28	□ ui
Radium-226 ✓	1.369	0.1161	pCi/g	0.1326	Y	608.9	2	1.537	IDENTIFIED	6.613	□
Radium-228 ✓	2.241	0.2323	pCi/g	0.2519	0.500	910.7	3	1.669	IDENTIFIED	8.158	□
Thallium-208 ✓	0.6931	0.0575	pCi/g	0.07085	0.080	582.8	1	1.354	IDENTIFIED	6.616	□
Thorium-228 nr	2.176	0.1518	pCi/g	0.1071	N	238.4	2	1.037	IDENTIFIED	2.98	□
Thorium-232 nr	2.241	0.2323	pCi/g	0.2519	N	910.7	3	1.669	IDENTIFIED	8.158	□
Thorium-234 ✓	2.615	1.217	pCi/g	2.577	2.00	62.99	2	0.8821	IDENTIFIED	45.66	□
Tin-126 int nr	0.3779	0.05908	pCi/g	0.1322	N	86.93	3	1.118	IDENTIFIED	14.83	□
Total Uranium	7.8241	3.62E-06	ug/g	3.836	N	0					□
Uranium-238 HE	2.615	1.217	pCi/g	2.577	N	62.99	2	0.8821	IDENTIFIED	45.66	□

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue
247900020	18-FEB-10 12:00	09-MAR-10 11:36	19	SAMPLE	LOAD	2	LANL	LANL010041GEL		N	RGSP
Name	Result	Uncert.	Units	MDA	MDL	Energy	*** FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.443	0.2472	pCi/g	0.2617	N	911.4	3	2.074	IDENTIFIED	7.823	□
Annihilation Rad.	0.1641	0.04075	pCi/g	0.06435	N	511.1	1	1.809	IDENTIFIED	24.44	□
Barium-137m	0.476	0.0493	pCi/g	0.06977	N	661.8	2	1.258	IDENTIFIED	9.347	□
Bismuth-211 int	5.089	0.3507	pCi/g	0.4325	Y	352	2	1.191	IDENTIFIED	5.262	□ ui
Bismuth-212 HE	2.073	0.5098	pCi/g	1.419	N	0	8	0	FAIL_ABUND	0	□
Bismuth-214 ✓	1.492	0.1408	pCi/g	0.147	0.200	609.4	2	1.577	IDENTIFIED	7.885	□
Cadmium-109 int	4.704	0.6835	pCi/g	1.999	Y	87.42	3	1.244	IDENTIFIED	13.76	□ ui
Cadmium-115 HE	15.59	24.05	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□
Cerium-141 HE	0.2926	0.08202	pCi/g	0.1491	N	144.1	2	1.066	IDENTIFIED	27.73	□
Cerium-143	5079	930.3	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□
Cesium-134 la	0.1385	0.05213	pCi/g	0.1304	0.100	0	8	0	FAIL_ABUND	0	□ UI Data rejected due to low abundance.
Cesium-137 ✓	0.5029	0.0521	pCi/g	0.07371	0.100	661.8	2	1.258	IDENTIFIED	9.347	□
Gadolinium-153 la nr	0.739	0.1038	pCi/g	0.2643	N	0	8	0	FAIL_ABUND	0	□
Gross Gamma	17.03	2.116	pCi/g	6.879	N	0					□
Iodine-133 HE	56600	82120	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□
Lead-212 ✓	2.085	0.1235	pCi/g	0.1171	0.100	238.7	2	1.16	IDENTIFIED	3.417	□
Lead-214 ✓	1.847	0.1371	pCi/g	0.1547	0.100	352	2	1.191	IDENTIFIED	5.262	□
Mercury-203 la	0.09461	0.02825	pCi/g	0.09145	0.100	0	8	0	NOT_IDENTI	0	□ UI Data rejected due to low abundance.
Neptunium-237 int nr	1.364	0.2444	pCi/g	0.6287	N	87.42	3	1.244	IDENTIFIED	13.76	□
Niobium-95 int nr	0.2853	0.0472	pCi/g	0.09179	N	767.1	1	1.26	IDENTIFIED	15.83	□
Potassium-40 ✓	30.48	1.719	pCi/g	0.708	1.00	1461	1	2.022	IDENTIFIED	3.355	□
Promethium-149 HE	15.72	192.7	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□
Protactinium-234m nr	57.65	6.262	pCi/g	9.646	N	1001	1	1.548	IDENTIFIED	9.39	□
Radium-224 int	5.975	0.8235	pCi/g	1.255	Y	241.5	1	1.657	IDENTIFIED	13.11	□ ui
Radium-226 ✓	1.492	0.1408	pCi/g	0.147	Y	609.4	2	1.577	IDENTIFIED	7.885	□
Radium-228 ✓	2.443	0.2472	pCi/g	0.2617	0.500	911.4	3	2.074	IDENTIFIED	7.823	□
Thallium-208 ✓	0.6068	0.06053	pCi/g	0.07192	0.080	583.2	1	1.517	IDENTIFIED	8.769	□
Thorium-228 nr	2.085	0.1235	pCi/g	0.1171	N	238.7	2	1.16	IDENTIFIED	3.417	□
Thorium-232 nr	2.443	0.2472	pCi/g	0.2617	N	911.4	3	2.074	IDENTIFIED	7.823	□

Thorium-234 ✓	42.4	4.277	pCi/g	3.532	2.00	63.31	2	0.915	IDENTIFIED	4.734	<input type="checkbox"/>
Tin-126 int nr	0.4572	0.06643	pCi/g	0.1951	N	87.42	3	1.244	IDENTIFIED	13.76	<input type="checkbox"/>
Total Uranium	126.53	1.27E-05	ug/g	5.2573	N		0				<input type="checkbox"/>
Uranium-235 ✓	0.8593	0.2488	pCi/g	0.4191	0.500	144.1	2	1.066	IDENTIFIED	27.73	<input type="checkbox"/>
Uranium-238 nr	42.4	4.277	pCi/g	3.532	N	63.31	2	0.915	IDENTIFIED	4.734	<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
1202053644		06-MAR-10 17:02	0	MB	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Iodine-133 HE	5.179	6.935	pCi/g	0	N	0	2	0	SHORT_HLIF	0	<input type="checkbox"/>
Technetium-99m HE	6.40E+07	1.36E+08	pCi/g	0	N	0	2	0	SHORT_HLIF	0	<input type="checkbox"/>

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202053645	18-FEB-10 12:00	06-MAR-10 17:03	16.2	DUP	LOAD	1		LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.893	0.1859	pCi/g	0.2607	N	911.2	3	1.809	IDENTIFIED	7.746	<input type="checkbox"/>
Annihilation Rad. HE	0.1101	0.03636	pCi/g	0.05364	N	510.8	1	1.716	IDENTIFIED	32.74	<input type="checkbox"/>
Bismuth-211 int	3.998	0.3117	pCi/g	0.4215	Y	352	2	1.223	IDENTIFIED	6.232	<input type="checkbox"/> ui
Bismuth-212 la nr	2.577	0.4607	pCi/g	1.419	N	0	7	0	FAIL_ABUND	0	<input type="checkbox"/>
Bismuth-214 ✓	1.307	0.1168	pCi/g	0.1215	0.200	609.5	2	1.434	IDENTIFIED	7.429	<input type="checkbox"/>
Cadmium-109 int	2.719	0.5807	pCi/g	1.257	Y	86.91	3	1.41	IDENTIFIED	20.64	<input type="checkbox"/> ui
Cerium-143	912.2	187.8	pCi/g	0	N	0	7	0	SHORT_HLIF	0	<input type="checkbox"/>
Cesium-134 la	0.1406	0.04108	pCi/g	0.09689	0.100	0	7	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Gross Gamma	9.141	1.505	pCi/g	4.354	N	0					<input type="checkbox"/>
Iodine-135	3.12E+16	0	pCi/g	0	N	0	7	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212 ✓	1.465	0.1051	pCi/g	0.128	0.100	238.6	2	1.193	IDENTIFIED	5.018	<input type="checkbox"/>
Lead-214 ✓	1.451	0.12	pCi/g	0.1482	0.100	352	2	1.223	IDENTIFIED	6.232	<input type="checkbox"/>
Neptunium-237 HE	0.7919	0.1884	pCi/g	0.4539	N	86.91	3	1.41	IDENTIFIED	20.64	<input type="checkbox"/>
Potassium-40 ✓	27.01	1.575	pCi/g	0.5593	1.00	1461	1	1.948	IDENTIFIED	3.434	<input type="checkbox"/>
Radium-224 int	2.86	0.517	pCi/g	1.55	Y	241.8	1	1.371	IDENTIFIED	17.48	<input type="checkbox"/> ui
Radium-226 ✓	1.307	0.1168	pCi/g	0.1215	Y	609.5	2	1.434	IDENTIFIED	7.429	<input type="checkbox"/>
Radium-228 ✓	1.893	0.1859	pCi/g	0.2607	0.500	911.2	3	1.809	IDENTIFIED	7.746	<input type="checkbox"/>
Sodium-24 HE	1.33E+06	1.49E+06	pCi/g	0	N	0	7	0	SHORT_HLIF	0	<input type="checkbox"/>
Strontium-85 la	0.1199	0.02335	pCi/g	0.08404	Y	0	7	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Technetium-99m	6.60E+16	0	pCi/g	0	N	0	7	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208 ✓	0.5004	0.04873	pCi/g	0.06453	0.080	583.4	1	1.675	IDENTIFIED	8.601	<input type="checkbox"/>
Thorium-228 nr	1.465	0.1051	pCi/g	0.128	N	238.6	2	1.193	IDENTIFIED	5.018	<input type="checkbox"/>
Thorium-232 nr	1.893	0.1859	pCi/g	0.2607	N	911.2	3	1.809	IDENTIFIED	7.746	<input type="checkbox"/>
Tin-126 int nr	0.2654	0.05667	pCi/g	0.1233	N	86.91	3	1.41	IDENTIFIED	20.64	<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
1202053646		06-MAR-10 17:03	0	LCS	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.845	0.2931	pCi/g	0.7754	N	0	6	0	FAIL_ABUND	0	<input type="checkbox"/>
Americium-241 ✓	13.56	0.5897	pCi/g	0.4094	0.200	59.56	1	0.9651	IDENTIFIED	1.792	<input type="checkbox"/>

Barium-137m	5.658	0.2839	pCi/g	0.1123	N	661.8	2	1.498	IDENTIFIED	2.364	<input type="checkbox"/>
Bismuth-211	2.063	0.3311	pCi/g	0.6316	Y	352.2	2	1.305	IDENTIFIED	15.41	<input type="checkbox"/>
Bismuth-214	0.7529	0.1122	pCi/g	0.2141	0.200	609.5	2	1.538	IDENTIFIED	13.96	<input type="checkbox"/>
Cadmium-109	34.74	2.06	pCi/g	1.928	Y	88.08	2	1.022	IDENTIFIED	3.602	<input type="checkbox"/>
Cesium-137 ✓	5.977	0.3003	pCi/g	0.1186	0.100	661.8	2	1.498	IDENTIFIED	2.364	<input type="checkbox"/>
Cobalt-57	0.1988	0.0331	pCi/g	0.06283	N	122.4	1	1.046	IDENTIFIED	16.08	<input type="checkbox"/>
Cobalt-60 ✓	6.48	0.3144	pCi/g	0.07224	0.100	1333	1	1.849	IDENTIFIED	2.6	<input type="checkbox"/>
Gross Gamma	27.55	2.418	pCi/g	4.107	N	0					<input type="checkbox"/>
Iodine-133 HE	13.68	31.52	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212	1.058	0.08791	pCi/g	0.1603	0.100	238.8	2	1.154	IDENTIFIED	6.778	<input type="checkbox"/>
Lead-214	0.7487	0.1219	pCi/g	0.2275	0.100	352.2	2	1.305	IDENTIFIED	15.41	<input type="checkbox"/>
Neptunium-237	4.578	0.5781	pCi/g	0.9993	N	0	6	0	NOT_IDENTI	0	<input type="checkbox"/>
Radium-224	4.002	0.9755	pCi/g	1.719	Y	242.1	1	2.013	IDENTIFIED	24.01	<input type="checkbox"/>
Radium-226	0.7529	0.1122	pCi/g	0.2141	Y	609.5	2	1.538	IDENTIFIED	13.96	<input type="checkbox"/>
Radium-228	1.845	0.2931	pCi/g	0.7754	0.500	0	6	0	FAIL_ABUND	0	<input type="checkbox"/>
Sodium-24 HE	125.1	305.4	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208	0.3578	0.06591	pCi/g	0.1102	0.080	583.2	1	1.298	IDENTIFIED	17.79	<input type="checkbox"/>
Thorium-228	1.058	0.08791	pCi/g	0.1603	N	238.8	2	1.154	IDENTIFIED	6.778	<input type="checkbox"/>
Thorium-232	1.845	0.2931	pCi/g	0.7754	N	0	6	0	FAIL_ABUND	0	<input type="checkbox"/>
Tin-126	3.429	0.2033	pCi/g	0.1907	N	88.08	2	1.022	IDENTIFIED	3.602	<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
957711	247900020	SAMPLE	09-MAR-10	Tellurium-125m	14.48	9.009	pCi/g	13.81	N
				Thallium-208	0.6068	0.06053	pCi/g	0.03598	0.080
				Thorium-234	42.4	4.277	pCi/g	1.767	2.00
				Uranium-235	0.8593	0.2488	pCi/g	0.2097	0.500
				Uranium-238	42.4	4.277	pCi/g	1.767	N
957711	1202053644	MB	06-MAR-10	Iodine-133	5.179	6.935	pCi/g	0	N
				Technetium-99m	6.40E+07	1.36E+08	pCi/g	0	N
957711	1202053645	DUP	06-MAR-10	Bismuth-211	3.998	0.3117	pCi/g	0.2109	Y
				Bismuth-214	1.307	0.1168	pCi/g	0.06081	0.200
				Cadmium-109	2.719	0.5807	pCi/g	0.629	Y
				Cerium-143	912.2	187.8	pCi/g	0	N
				Cesium-134	0.1406	0.04108	pCi/g	0.04847	0.100
				Gross Gamma	9.141	1.505	pCi/g	2.113	N
				Iodine-135	3.12E+16	0	pCi/g	0	N
				Lead-212	1.465	0.1051	pCi/g	0.06403	0.100
				Lead-214	1.451	0.12	pCi/g	0.07412	0.100
				Potassium-40	27.01	1.575	pCi/g	0.2798	1.00
				Radium-224	2.86	0.517	pCi/g	0.7756	Y
				Radium-226	1.307	0.1168	pCi/g	0.06081	Y
				Radium-228	1.893	0.1859	pCi/g	0.1304	0.500
				Ruthenium-106	0.4536	0.1846	pCi/g	0.3375	0.800
				Sodium-24	1.33E+06	1.49E+06	pCi/g	0	N
				Strontium-85	0.1199	0.02335	pCi/g	0.04204	Y
				Technetium-99m	6.60E+16	0	pCi/g	0	N
				Thallium-208	0.5004	0.04873	pCi/g	0.03228	0.080
957711	1202053646	LCS	06-MAR-10	Americium-241	13.56	0.5897	pCi/g	0.2048	0.200
				Barium-137m	5.658	0.2839	pCi/g	0.05616	N
				Bismuth-211	2.063	0.3311	pCi/g	0.316	Y
				Bismuth-214	0.7529	0.1122	pCi/g	0.1071	0.200
				Cadmium-109	34.74	2.06	pCi/g	0.9845	Y
				Cerium-143	14.93	5.313	pCi/g	8.489	N
				Cesium-134	0.1428	0.04556	pCi/g	0.08425	0.100
				Cesium-137	5.977	0.3003	pCi/g	0.05939	0.100
				Cobalt-60	6.48	0.3144	pCi/g	0.03614	0.100
				Gross Gamma	27.55	2.418	pCi/g	1.996	N
				Iodine-133	13.68	31.52	pCi/g	0	N
				Lead-212	1.058	0.08791	pCi/g	0.08022	0.100

18E
3/16/10

18E
3/16/10

VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 03:38:08.85

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900001.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 5-MAR-2010 23:37:34.
Sample ID          : G247900001 Sample quantity : 1.30670E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00 Elapsed real time: 0 04:00:03.00 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 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	63.55*	242	961	1.32	126.03	121	10	1.68E-02	25.6	
2	2	74.82*	695	1222	1.60	148.56	141	20	4.83E-02	11.1	6.87E+00
3	2	77.26*	1451	1172	1.59	153.44	141	20	1.01E-01	5.4	
4	4	90.07	233	390	0.89	179.05	177	15	1.62E-02	12.1	2.85E+00
5	4	93.03*	603	1131	1.62	184.98	177	15	4.19E-02	12.0	
6	0	105.34	88	769	1.41	209.60	207	8	6.12E-03	55.4	
7	0	129.81	178	949	1.14	258.53	252	10	1.23E-02	33.3	
8	0	186.25*	483	980	1.55	371.42	367	12	3.36E-02	14.5	
9	0	209.27	234	659	1.15	417.45	413	9	1.62E-02	20.8	
10	3	238.77*	2976	496	1.38	476.44	469	19	2.07E-01	2.3	1.27E+00
11	3	241.69*	757	631	2.04	482.27	469	19	5.26E-02	10.4	
12	0	270.52	267	599	1.52	539.95	535	12	1.86E-02	19.3	
13	0	277.23	138	599	0.99	553.35	547	12	9.57E-03	36.6	
14	0	295.35*	858	424	1.31	589.60	584	10	5.96E-02	5.8	
15	0	300.15	217	403	1.10	599.19	595	9	1.51E-02	18.0	
16	0	328.17	202	349	1.35	655.24	651	10	1.40E-02	18.8	
17	0	338.40	518	474	1.37	675.70	671	11	3.60E-02	9.2	
18	0	352.01*	1584	484	1.58	702.92	695	15	1.10E-01	4.0	
19	0	409.88	122	316	1.27	818.67	814	12	8.44E-03	30.7	
20	0	463.00	173	268	1.10	924.90	920	11	1.20E-02	19.8	
21	0	510.90*	308	341	2.39	1020.70	1013	19	2.14E-02	17.3	
22	0	583.14*	946	360	1.57	1165.20	1156	18	6.57E-02	5.9	
23	0	609.37*	1085	228	1.71	1217.66	1211	14	7.54E-02	4.4	
24	0	727.70*	158	271	1.47	1454.33	1446	16	1.10E-02	25.3	
25	0	768.73	172	229	1.91	1536.40	1528	18	1.19E-02	22.0	
26	0	794.36	113	151	1.18	1587.67	1582	13	7.84E-03	24.3	
27	0	835.70	60	89	1.63	1670.36	1667	8	4.15E-03	30.2	
28	0	860.35*	94	169	1.58	1719.68	1713	16	6.53E-03	33.1	
29	0	911.20*	694	153	1.93	1821.39	1814	15	4.82E-02	5.5	
30	0	934.52	56	108	1.70	1868.04	1863	11	3.92E-03	38.0	
31	1	964.91	107	209	2.20	1928.82	1922	22	7.41E-03	27.6	1.12E+00
32	1	969.01*	359	131	1.87	1937.02	1922	22	2.49E-02	8.6	
33	0	1120.54*	291	179	1.92	2240.14	2229	21	2.02E-02	13.1	
34	0	1238.07*	123	154	1.65	2475.26	2468	14	8.52E-03	23.6	
35	0	1377.83*	55	71	1.90	2754.87	2749	13	3.81E-03	36.8	
36	0	1460.70*	2492	105	2.06	2920.65	2910	21	1.73E-01	2.3	
37	0	1588.37	39	46	2.17	3176.08	3169	11	2.74E-03	34.3	
38	0	1730.02	40	12	2.04	3459.49	3455	12	2.76E-03	24.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1764.64	198	38	2.24	3528.77	3519	22	1.38E-02	10.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 03:38:12

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900001.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 : 5-MAR-2010 23:37:34
Sample ID         : G247900001 Sample quantity : 130.67 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA15 Detector geometry: CAN
Elapsed live time : 0 04:00:00.00 Elapsed real time: 0 04:00:03.00 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.476E+01	3.760E+00	5.057E-01	4.969E-02	68.740
MN-54	+	834.85	*	5.484E-02	3.350E-02	5.966E-02	5.415E-03	0.919
TL-208	+	277.37		8.088E-01	6.025E-01	5.958E-01	8.425E-02	1.358
	+	583.19	*	7.294E-01	1.091E-01	5.376E-02	4.917E-03	13.566
	+	860.56		6.860E-01	4.596E-01	4.002E-01	3.913E-02	1.714
BI-211		72.87		1.948E+01	4.369E+00	6.817E+00	7.808E-01	2.857
	+	351.06	*	5.608E+00	7.187E-01	3.073E-01	3.060E-02	18.250
PB-212	+	74.82		3.010E+00	8.098E-01	6.108E-01	9.202E-02	4.928
	+	77.11		3.482E+00	5.530E-01	3.407E-01	3.949E-02	10.221
	+	238.63	*	2.383E+00	3.057E-01	8.997E-02	1.075E-02	26.488
	+	300.09		2.697E+00	1.027E+00	1.198E+00	1.459E-01	2.251
BI-214	+	609.32	*	1.619E+00	2.142E-01	1.029E-01	1.025E-02	15.730
	+	1120.29		2.285E+00	6.468E-01	4.302E-01	4.659E-02	5.312
	+	1764.49		2.175E+00	5.021E-01	2.393E-01	2.098E-02	9.092
PB-214	+	74.82		5.335E+00	1.403E+00	1.083E+00	1.513E-01	4.928
	+	77.11		6.139E+00	1.099E+00	6.006E-01	8.545E-02	10.221
	+	242.00		3.678E+00	8.894E-01	5.470E-01	6.814E-02	6.725
	+	295.22		1.887E+00	3.210E-01	2.215E-01	2.761E-02	8.519
	+	351.93	*	2.035E+00	2.840E-01	1.117E-01	1.270E-02	18.215
RA-224	+	240.99	*	6.504E+00	1.527E+00	9.641E-01	1.063E-01	6.746
RA-226	+	609.32	*	1.619E+00	2.142E-01	1.029E-01	1.025E-02	15.730
	+	1120.29		2.285E+00	6.468E-01	4.302E-01	4.659E-02	5.312
	+	1764.49		2.175E+00	5.021E-01	2.393E-01	2.098E-02	9.092
AC-228	+	338.32		2.047E+00	9.391E-01	3.650E-01	1.532E-01	5.609
	+	911.20	*	2.586E+00	4.248E-01	2.129E-01	2.579E-02	12.146
	+	968.97		2.313E+00	6.940E-01	3.650E-01	8.968E-02	6.335
RA-228	+	338.32		2.047E+00	9.391E-01	3.650E-01	1.532E-01	5.609
	+	911.20	*	2.586E+00	4.248E-01	2.129E-01	2.579E-02	12.146
	+	968.97		2.313E+00	6.940E-01	3.650E-01	8.968E-02	6.335
TH-228	+	74.82		3.010E+00	7.558E-01	6.108E-01	7.063E-02	4.928
	+	77.11		3.482E+00	5.530E-01	3.407E-01	3.949E-02	10.221
	+	238.63	*	2.383E+00	3.057E-01	8.997E-02	1.075E-02	26.488
	+	300.09		2.697E+00	1.924E+00	1.198E+00	7.373E-01	2.251
TH-232	+	338.32		2.047E+00	4.287E-01	3.650E-01	3.598E-02	5.609

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	911.20	*	2.586E+00	4.248E-01	2.129E-01	2.579E-02	12.146
	+	968.97		2.313E+00	6.940E-01	3.650E-01	8.968E-02	6.335
TH-234	+	63.29	*	5.083E+00	2.787E+00	2.903E+00	5.757E-01	1.751
	+	92.59		4.227E+00	1.419E+00	1.192E+00	2.791E-01	3.547
U-235	+	89.96		2.075E+00	7.373E-01	1.733E+00	4.508E-01	1.198
	+	93.35		3.193E+00	1.094E+00	8.920E-01	2.170E-01	3.580
		143.76	*	1.588E-01	2.067E-01	3.277E-01	5.830E-02	0.485
		163.33		-5.861E-01	4.758E-01	6.897E-01	1.310E-01	-0.850
	+	185.72		2.501E-01	7.730E-02	6.947E-02	7.519E-03	3.600
		205.31		-5.730E-02	5.534E-01	7.663E-01	1.484E-01	-0.075
U-238	+	63.29	*	5.083E+00	2.787E+00	2.903E+00	5.757E-01	1.751
	+	92.59		4.227E+00	1.129E+00	1.192E+00	1.385E-01	3.547
ANH-511	+	511.00	*	1.827E-01	6.519E-02	3.976E-02	3.436E-03	4.594

---- 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	*	2.651E-01	3.094E-01	5.217E-01	4.849E-02	0.508
NA-22		1274.54	*	-2.212E-02	3.959E-02	6.125E-02	5.564E-03	-0.361
NA-24		1368.63	*	-1.445E+00	3.959E-02	Half-Life too short		
SC-46		889.28	*	5.951E-05	3.465E-02	5.723E-02	5.318E-03	0.001
	+	1120.55		3.879E-01	1.067E-01	1.241E-01	1.055E-02	3.125
V-48		944.13		-3.712E-02	7.576E-01	1.243E+00	1.149E-01	-0.030
		983.53	*	6.379E-02	6.438E-02	1.117E-01	1.022E-02	0.571
		1312.11		-2.538E-02	7.178E-02	1.123E-01	1.059E-02	-0.226
CR-51		320.08	*	-1.808E-01	3.626E-01	5.909E-01	6.271E-02	-0.306
CO-56		846.77	*	-1.771E-02	3.434E-02	5.507E-02	5.025E-03	-0.322
		1037.84		-6.730E-02	2.799E-01	4.510E-01	4.229E-02	-0.149
	+	1238.28		2.714E-01	1.305E-01	1.672E-01	1.503E-02	1.623
		1771.35		1.801E-02	1.844E-01	2.645E-01	2.311E-02	0.068
CO-57		122.06	*	4.543E-03	2.490E-02	4.064E-02	4.094E-03	0.112
		136.47		7.913E-03	2.027E-01	3.286E-01	3.492E-02	0.024
CO-58		810.76	*	-4.075E-02	3.612E-02	5.588E-02	5.024E-03	-0.729
FE-59		1099.45	*	-8.666E-02	8.802E-02	1.340E-01	1.251E-02	-0.647
		1291.59		-8.638E-02	1.223E-01	1.870E-01	1.932E-02	-0.462
CO-60		1173.23		-4.277E-02	4.240E-02	6.426E-02	5.231E-03	-0.666
		1332.49	*	-1.279E-04	3.501E-02	5.638E-02	5.420E-03	-0.002
ZN-65		1115.54	*	1.818E-04	9.447E-02	1.319E-01	1.127E-02	0.001
SE-75		121.12		3.038E-02	1.301E-01	2.127E-01	2.605E-02	0.143
		136.00		-4.027E-03	3.917E-02	6.326E-02	6.404E-03	-0.064
		264.66	*	-6.007E-02	4.958E-02	6.754E-02	7.406E-03	-0.889
		279.54		1.458E-01	1.223E-01	1.850E-01	2.048E-02	0.788
		400.66		1.493E-01	2.444E-01	4.104E-01	4.497E-02	0.364
SR-85		514.00	*	1.403E-01	4.217E-02	6.802E-02	5.876E-03	2.063
Y-88		898.04		-2.073E-02	3.714E-02	5.915E-02	5.539E-03	-0.350
		1836.06	*	-2.331E-03	2.991E-02	4.855E-02	4.089E-03	-0.048
Y-91		1204.77	*	6.549E+00	2.191E+01	3.612E+01	3.044E+00	0.181
NB-94		702.65	*	3.803E-02	3.038E-02	5.346E-02	4.513E-03	0.711

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	871.09			-1.462E-02	3.014E-02	4.831E-02	4.456E-03	-0.303
NB-95	765.81	*		9.480E-02	4.623E-02	7.410E-02	6.493E-03	1.279
NB-95M	235.69	*		5.357E-01	1.611E-01	2.412E-01	2.906E-02	2.221
ZR-95	724.19			1.551E-01	9.776E-02	1.540E-01	1.430E-02	1.007
	756.73	*		3.938E-02	6.485E-02	1.112E-01	1.069E-02	0.354
MO-99	140.51			-4.057E+01	2.657E+01	3.730E+01	9.076E+00	-1.088
	181.07			-2.001E+01	2.359E+01	3.146E+01	6.254E+00	-0.636
	366.42			-2.260E+01	9.831E+01	1.607E+02	1.473E+01	-0.141
	739.50	*		-1.667E+00	1.203E+01	1.993E+01	3.141E+00	-0.084
	777.92			-4.348E+01	3.705E+01	5.208E+01	4.593E+00	-0.835
TC-99M	140.51	*		-1.938E+11	3.705E+01	Half-Life	too short	
RU-103	497.08	*		1.069E-02	3.838E-02	6.320E-02	8.835E-03	0.169
+	610.33			1.683E+01	3.103E+00	2.579E+00	4.192E-01	6.526
RH-106	621.93	*		-7.512E-02	2.977E-01	4.723E-01	6.195E-02	-0.159
	1050.41			4.803E-01	2.363E+00	3.913E+00	3.477E-01	0.123
RU-106	621.93	*		-7.512E-02	2.976E-01	4.723E-01	3.969E-02	-0.159
	1050.41			4.803E-01	2.363E+00	3.913E+00	3.477E-01	0.123
AG-108M	433.94	*		-1.225E-02	2.746E-02	4.406E-02	3.894E-03	-0.278
	614.28			1.232E-02	3.684E-02	5.233E-02	4.564E-03	0.235
	722.91			-3.448E-03	3.790E-02	5.422E-02	4.786E-03	-0.064
CD-109	88.03	*		2.814E+00	1.130E+00	1.649E+00	2.046E-01	1.707
AG-110M	657.76	*		-1.288E-03	3.073E-02	5.148E-02	4.381E-03	-0.025
	677.62			-2.624E-02	2.750E-01	4.587E-01	3.929E-02	-0.057
	706.68			-6.419E-02	2.051E-01	3.277E-01	2.856E-02	-0.196
	763.94			2.401E-01	1.622E-01	2.556E-01	2.297E-02	0.939
	884.68			-4.309E-02	4.548E-02	7.058E-02	6.728E-03	-0.611
	937.49			9.041E-02	1.043E-01	1.591E-01	1.519E-02	0.568
	1384.29			-4.817E-02	1.533E-01	2.103E-01	2.070E-02	-0.229
	1505.03			-1.564E-01	2.499E-01	3.906E-01	3.733E-02	-0.400
SN-113	391.69	*		-5.166E-03	4.284E-02	7.017E-02	6.094E-03	-0.074
CD-115	260.90			1.532E+02	1.488E+02	2.552E+02	2.796E+01	0.600
	492.35			1.805E+00	4.098E+01	6.686E+01	5.776E+00	0.027
	527.90	*		7.657E+00	1.131E+01	1.896E+01	1.636E+00	0.404
SN-117M	156.02			6.947E-01	2.369E+00	3.846E+00	4.008E-01	0.181
	158.56	*		5.836E-02	5.748E-02	9.453E-02	9.910E-03	0.617
TE-123M	159.00	*		3.003E-02	2.898E-02	4.768E-02	5.025E-03	0.630
SB-124	602.73			4.151E-04	4.123E-02	5.729E-02	4.855E-03	0.007
	645.85			-2.765E-01	4.614E-01	7.150E-01	6.302E-02	-0.387
	722.78			-4.382E-02	3.821E-01	5.457E-01	4.773E-02	-0.080
	1690.97	*		-8.615E-02	7.126E-02	9.903E-02	9.327E-03	-0.870
SB-125	427.87	*		-2.051E-02	8.333E-02	1.351E-01	1.176E-02	-0.152
+	463.37			9.180E-01	3.739E-01	5.064E-01	4.692E-02	1.813
	600.60			5.309E-02	1.676E-01	2.671E-01	2.438E-02	0.199
	635.95			-7.845E-02	2.529E-01	3.992E-01	3.620E-02	-0.197
TE-125M	109.28	*		-4.768E+00	1.118E+01	1.569E+01	1.864E+00	-0.304
I-126	388.63			1.018E-01	1.665E-01	2.801E-01	2.383E-02	0.364
	666.33	*		-8.562E-02	2.004E-01	3.291E-01	2.714E-02	-0.260
	753.82			7.717E-01	1.643E+00	2.801E+00	2.438E-01	0.275
SB-126	414.70			1.352E-02	8.070E-02	1.158E-01	9.846E-03	0.117

---- Non-Identified Nuclides ----

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		666.50		-2.883E-02	6.889E-02	1.132E-01	9.336E-03	-0.255
		695.00		1.264E-02	7.293E-02	1.230E-01	1.034E-02	0.103
		697.00		-3.566E-01	2.548E-01	3.951E-01	3.324E-02	-0.903
		720.70	*	-8.838E-02	1.561E-01	2.153E-01	1.838E-02	-0.410
		856.80		-5.226E-02	4.949E-01	6.981E-01	6.399E-02	-0.075
SN-126	+	64.28		1.959E+00	1.055E+00	1.158E+00	1.961E-01	1.691
		86.94		9.298E-01	5.899E-01	6.676E-01	2.823E-01	1.393
		87.57	*	2.173E-01	1.085E-01	1.593E-01	1.971E-02	1.364
SB-127		252.40		1.124E+00	4.397E+00	7.380E+00	3.109E+00	0.152
		473.00		-1.473E-01	1.647E+00	2.676E+00	3.446E-01	-0.055
		685.70	*	-5.577E-01	1.317E+00	2.159E+00	2.438E-01	-0.258
		783.70		7.820E+00	3.545E+00	6.294E+00	7.944E-01	1.243
I-131		80.19		-8.993E+00	5.968E+00	8.070E+00	9.523E-01	-1.114
		284.31		-3.664E-01	1.515E+00	2.441E+00	2.714E-01	-0.150
		364.49	*	8.112E-03	1.094E-01	1.811E-01	1.749E-02	0.045
		636.99		-4.983E-01	1.547E+00	2.442E+00	2.162E-01	-0.204
TE-132		49.72		-4.027E+01	4.598E+01	7.397E+01	1.132E+01	-0.544
		111.76		-1.763E+01	3.790E+01	5.877E+01	7.277E+00	-0.300
		116.30		3.020E+00	3.133E+01	5.111E+01	6.290E+00	0.059
		228.16	*	4.092E-01	7.832E-01	1.330E+00	2.304E-01	0.308
BA-133		81.00		-3.436E-01	1.320E-01	1.540E-01	2.694E-02	-2.231
	+	276.40		7.477E-01	5.590E-01	6.184E-01	9.626E-02	1.209
		302.85		1.353E-01	1.546E-01	2.307E-01	3.319E-02	0.586
		356.01	*	1.438E-02	4.344E-02	6.334E-02	8.558E-03	0.227
		383.85		-2.798E-01	2.804E-01	4.400E-01	5.479E-02	-0.636
I-133		529.87	*	-1.293E-03	2.804E-01	Half-Life	too short	
		875.33		4.566E-02	2.804E-01	Half-Life	too short	
		1298.22		-2.745E-01	2.804E-01	Half-Life	too short	
CS-134		563.25		6.283E-01	3.369E-01	5.861E-01	5.077E-02	1.072
		569.33		-2.042E-01	2.068E-01	2.891E-01	2.511E-02	-0.706
		604.72		4.927E-04	3.428E-02	4.764E-02	4.044E-03	0.010
		795.86	*	8.825E-02	5.065E-02	8.032E-02	7.199E-03	1.099
		801.95		-2.878E-01	4.258E-01	5.953E-01	5.345E-02	-0.483
		1365.19		6.869E-01	1.071E+00	1.880E+00	1.878E-01	0.365
CS-135		268.22	*	4.667E-01	1.794E-01	2.756E-01	3.306E-02	1.694
I-135		546.56		1.658E+10	1.794E-01	Half-Life	too short	
	+	836.80		9.738E+10	1.794E-01	Half-Life	too short	
		1038.76		-1.863E+10	1.794E-01	Half-Life	too short	
		1131.51		5.206E+09	1.794E-01	Half-Life	too short	
		1260.41	*	2.940E+09	1.794E-01	Half-Life	too short	
		1457.56		3.031E+12	1.794E-01	Half-Life	too short	
		1678.03		-2.879E+08	1.794E-01	Half-Life	too short	
		1791.20		1.671E+10	1.794E-01	Half-Life	too short	
CS-136		153.25		1.076E+00	8.791E-01	1.448E+00	1.704E-01	0.743
		176.60		2.240E-01	5.109E-01	8.292E-01	9.518E-02	0.270
		273.65		4.002E-01	8.278E-01	8.400E-01	9.620E-02	0.476
		340.55		9.905E-01	2.047E-01	3.126E-01	3.156E-02	3.169
		818.51		-1.879E-03	6.623E-02	1.097E-01	9.888E-03	-0.017
		1048.07	*	-4.950E-02	1.019E-01	1.613E-01	1.492E-02	-0.307

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1235.36			1.556E+00	6.693E-01	1.054E+00	1.247E-01	1.477
BA-137M	661.66	*		-2.006E-02	3.111E-02	5.050E-02	4.152E-03	-0.397
CS-137	661.66	*		-2.119E-02	3.287E-02	5.335E-02	4.396E-03	-0.397
CE-139	165.86	*		8.233E-03	3.006E-02	4.871E-02	5.199E-03	0.169
BA-140	162.66			-1.040E+00	8.823E-01	1.307E+00	1.446E-01	-0.796
	304.85			1.321E+00	1.500E+00	2.183E+00	6.522E-01	0.605
	423.72			-1.511E-01	1.842E+00	3.010E+00	9.893E-01	-0.050
	537.26	*		3.101E-02	2.534E-01	4.129E-01	1.400E-01	0.075
LA-140	328.76	+		1.008E+00	3.933E-01	5.411E-01	5.674E-02	1.863
	487.02			3.300E-03	1.234E-01	2.012E-01	1.845E-02	0.016
	815.77			-9.963E-03	3.054E-01	5.059E-01	5.042E-02	-0.020
	1596.21	*		-4.760E-02	8.451E-02	1.262E-01	1.183E-02	-0.377
CE-141	145.44	*		8.599E-02	6.265E-02	1.038E-01	1.073E-02	0.829
CE-143	57.36			-2.147E-03	6.265E-02	Half-Life	too short	
	293.27	*		1.433E-03	6.265E-02	Half-Life	too short	
	664.57			-2.077E-04	6.265E-02	Half-Life	too short	
	721.93			-5.498E-04	6.265E-02	Half-Life	too short	
CE-144	80.12			-3.976E+00	3.119E+00	4.273E+00	5.022E-01	-0.931
	133.52	*		8.448E-02	2.226E-01	3.190E-01	5.148E-02	0.265
PM-144	476.78			6.047E-02	6.208E-02	1.051E-01	9.851E-03	0.575
	618.01			2.431E-02	3.139E-02	5.107E-02	4.426E-03	0.476
	696.49	*		-3.193E-02	3.167E-02	5.029E-02	4.231E-03	-0.635
PR-144	696.51	*		-2.351E+00	2.367E+00	3.762E+00	3.164E-01	-0.625
	1489.16			5.573E+00	1.031E+01	1.806E+01	1.730E+00	0.309
PM-146	453.88	*		4.987E-02	4.044E-02	6.895E-02	7.291E-03	0.723
	633.25			-9.661E-01	1.382E+00	2.055E+00	7.838E-01	-0.470
	735.93			3.282E-02	1.363E-01	2.138E-01	5.992E-02	0.153
	747.24			-1.562E-02	8.716E-02	1.440E-01	2.104E-02	-0.109
ND-147	91.11	+		6.896E-01	1.881E-01	5.541E-01	6.861E-02	1.245
	319.41			-2.028E+00	3.291E+00	5.336E+00	5.466E-01	-0.380
	531.02	*		-8.289E-02	5.228E-01	8.409E-01	1.258E-01	-0.099
PM-149	285.90	*		-1.314E+01	1.004E+02	1.667E+02	2.803E+01	-0.079
EU-152	121.78			8.722E-03	7.181E-02	1.171E-01	1.310E-02	0.075
	244.70			5.866E-01	3.561E-01	5.454E-01	6.011E-02	1.076
	344.28	*		1.840E-02	1.338E-01	1.527E-01	1.554E-02	0.121
	778.90			-1.076E-01	2.237E-01	3.533E-01	3.118E-02	-0.304
	964.08	+		7.409E-01	4.151E-01	5.395E-01	4.961E-02	1.373
	1085.87			1.676E-01	3.628E-01	6.088E-01	5.301E-02	0.275
	1112.07			1.872E-01	3.197E-01	4.698E-01	4.020E-02	0.399
	1408.01			1.476E-01	1.763E-01	3.109E-01	2.995E-02	0.475
GD-153	69.67			8.358E-01	2.477E+00	3.380E+00	3.859E-01	0.247
	97.43	*		4.859E-02	9.586E-02	1.396E-01	1.540E-02	0.348
	103.18			-7.851E-02	1.268E-01	1.770E-01	1.871E-02	-0.444
EU-154	123.07			-1.918E-02	5.537E-02	8.215E-02	1.025E-02	-0.233
	723.31			2.427E-02	1.729E-01	2.515E-01	2.371E-02	0.097
	873.19			-2.297E-02	2.565E-01	4.219E-01	5.209E-02	-0.054
	996.26			-4.480E-01	3.481E-01	5.108E-01	9.047E-02	-0.877
	1004.73			-4.279E-02	1.975E-01	3.195E-01	3.826E-02	-0.134
	1274.44	*		-3.351E-02	1.101E-01	1.737E-01	2.037E-02	-0.193

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155		86.55		4.533E-01	1.371E-01	1.973E-01	2.434E-02	2.298
	+	105.31	*	1.121E-01	1.247E-01	1.758E-01	1.852E-02	0.638
TB-160		86.79		9.855E-01	3.581E-01	5.219E-01	6.417E-02	1.888
		197.04		8.500E-01	5.783E-01	9.504E-01	1.036E-01	0.894
		215.65		-6.830E-01	7.415E-01	1.180E+00	1.298E-01	-0.579
		298.57		3.800E-01	1.942E-01	2.140E-01	2.264E-02	1.776
		879.36	*	3.772E-02	1.297E-01	2.178E-01	2.016E-02	0.173
		962.29		1.478E+00	5.911E-01	9.606E-01	8.839E-02	1.539
	+	966.15		5.196E-01	2.911E-01	4.964E-01	4.563E-02	1.047
		1177.93		1.746E-01	3.443E-01	5.755E-01	4.709E-02	0.303
		1271.85		3.615E-02	6.170E-01	1.002E+00	9.064E-02	0.036
HO-166M		80.57		-9.115E-01	3.534E-01	4.449E-01	5.241E-02	-2.049
		184.41		2.124E-01	4.746E-02	6.759E-02	7.309E-03	3.143
		280.46		1.132E-01	9.006E-02	1.369E-01	1.479E-02	0.827
	+	410.95		5.515E-01	3.417E-01	4.099E-01	3.479E-02	1.345
		711.68	*	3.698E-03	5.431E-02	9.111E-02	7.735E-03	0.041
		752.31		-1.588E-01	2.454E-01	3.945E-01	3.431E-02	-0.403
		810.29		-3.704E-02	5.326E-02	8.482E-02	7.607E-03	-0.437
TA-182		67.75		3.245E-02	1.843E-01	2.254E-01	2.573E-02	0.144
		100.11		1.008E-01	1.905E-01	2.922E-01	3.154E-02	0.345
		152.43		3.355E-01	3.467E-01	5.706E-01	5.901E-02	0.588
		222.11		1.410E-01	3.385E-01	5.755E-01	6.342E-02	0.245
	+	1121.30		1.074E+00	2.952E-01	3.408E-01	2.897E-02	3.150
		1189.05		-1.793E-01	2.897E-01	4.514E-01	3.740E-02	-0.397
		1221.41	*	3.444E-02	1.872E-01	3.065E-01	2.631E-02	0.112
		1231.02		-6.216E-03	5.102E-01	7.058E-01	6.120E-02	-0.009
IR-192	+	295.96		1.401E+00	2.206E-01	2.773E-01	2.958E-02	5.052
		308.46		-6.797E-02	9.015E-02	1.454E-01	1.522E-02	-0.467
		316.51	*	-4.584E-03	3.283E-02	5.425E-02	5.593E-03	-0.085
		468.07		2.401E-02	6.869E-02	9.912E-02	9.166E-03	0.242
HG-203		70.83		1.622E+00	1.806E+00	2.653E+00	4.702E-01	0.611
		72.87		4.879E+00	1.263E+00	1.708E+00	2.949E-01	2.857
		279.20	*	4.049E-02	4.394E-02	6.592E-02	7.244E-03	0.614
BI-207		72.81		1.050E+00	2.464E-01	3.886E-01	4.450E-02	2.703
	+	74.97		8.676E-01	2.176E-01	2.706E-01	3.114E-02	3.206
		569.70		-1.569E-02	2.882E-02	4.527E-02	3.878E-03	-0.347
		1063.66	*	-3.336E-02	5.069E-02	7.465E-02	6.586E-03	-0.447
		1770.23		2.853E-01	3.478E-01	5.769E-01	5.043E-02	0.494
PB-210		46.54	*	-8.112E+00	1.004E+01	1.569E+01	1.932E+00	-0.517
PB-211		404.85	*	-3.920E-01	8.227E-01	1.108E+00	5.358E-01	-0.354
		427.09		-2.015E-02	1.410E+00	2.309E+00	1.068E+00	-0.009
		832.01		1.227E+00	1.153E+00	1.514E+00	7.863E-01	0.810
BI-212	+	727.33	*	1.864E+00	9.705E-01	1.038E+00	1.290E-01	1.795
		785.37		3.919E+00	2.897E+00	5.102E+00	4.517E-01	0.768
		1620.50		2.657E+00	2.292E+00	4.159E+00	3.871E-01	0.639
RN-219	+	271.23		9.433E-01	3.815E-01	4.474E-01	5.467E-02	2.108
		401.81	*	-1.517E-01	3.962E-01	6.405E-01	9.466E-02	-0.237
RA-223		81.07		-7.780E-01	2.813E-01	3.485E-01	4.118E-02	-2.233
		83.79		-7.902E-01	1.996E-01	2.216E-01	2.664E-02	-3.566

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		94.87		2.451E+00	6.012E-01	8.676E-01	9.821E-02	2.825
		144.24		7.622E-01	6.908E-01	1.106E+00	1.222E-01	0.689
		154.21		-2.536E-02	3.931E-01	6.330E-01	7.010E-02	-0.040
	+	269.46		7.329E-01	2.939E-01	3.377E-01	3.727E-02	2.170
		323.87	*	1.895E-01	7.053E-01	1.028E+00	1.866E-01	0.184
	+	338.28		8.124E+00	1.834E+00	2.231E+00	2.897E-01	3.642
		79.69		2.844E+00	1.630E+00	2.339E+00	4.440E-01	1.216
		235.96		1.198E+00	2.405E-01	3.276E-01	4.071E-02	3.657
		256.23	*	-1.093E-01	2.422E-01	3.993E-01	5.526E-02	-0.274
	+	299.98		2.967E+00	1.149E+00	1.611E+00	2.271E-01	1.842
TH-227		304.50		1.512E+00	1.718E+00	2.559E+00	4.498E-01	0.591
		334.37		1.411E+00	2.367E+00	2.785E+00	4.556E-01	0.507
		79.80		-4.331E-01	2.079E+00	2.977E+00	6.902E-01	-0.145
		235.96		1.198E+00	2.370E-01	3.276E-01	3.913E-02	3.657
		256.23	*	-1.093E-01	2.423E-01	3.993E-01	6.074E-02	-0.274
	+	299.98		2.967E+00	1.149E+00	1.611E+00	2.271E-01	1.842
		304.50		1.512E+00	1.718E+00	2.559E+00	4.498E-01	0.591
		334.37		1.411E+00	2.367E+00	2.785E+00	4.556E-01	0.507
		85.43		9.137E-01	2.716E-01	4.093E-01	4.979E-02	2.233
		88.47		5.332E-01	1.727E-01	2.492E-01	3.071E-02	2.140
PA-231		193.51	*	-7.669E-01	6.029E-01	8.416E-01	9.157E-02	-0.911
		210.85		3.380E+00	1.035E+00	1.588E+00	1.744E-01	2.129
		283.69	*	3.264E-01	1.470E+00	2.333E+00	3.720E-01	0.140
	+	301.36		1.906E+00	7.348E-01	1.029E+00	1.397E-01	1.853
		81.07		-7.780E-01	2.813E-01	3.485E-01	4.118E-02	-2.233
		83.79		-7.902E-01	1.996E-01	2.216E-01	2.664E-02	-3.566
		94.87		2.451E+00	6.012E-01	8.676E-01	9.821E-02	2.825
		144.24		7.622E-01	6.908E-01	1.106E+00	1.222E-01	0.689
		154.21		-2.536E-02	3.931E-01	6.330E-01	7.010E-02	-0.040
	+	269.46		7.329E-01	2.939E-01	3.377E-01	3.727E-02	2.170
PA-233		323.87	*	1.895E-01	7.053E-01	1.028E+00	1.866E-01	0.184
	+	338.28		8.124E+00	1.834E+00	2.231E+00	2.897E-01	3.642
	+	300.13		1.343E+00	5.300E-01	7.276E-01	1.167E-01	1.845
		311.90	*	-4.768E-02	5.995E-02	9.646E-02	1.021E-02	-0.494
		340.48		4.357E+00	1.306E+00	1.324E+00	3.245E-01	3.292
		94.67		1.094E+00	2.514E-01	3.254E-01	4.696E-02	3.362
		98.44		7.362E-02	1.107E-01	1.507E-01	8.467E-02	0.489
		111.00		-1.677E-01	2.021E-01	2.949E-01	3.915E-02	-0.569
	+	131.20		2.224E-01	1.500E-01	1.788E-01	1.795E-02	1.244
		569.50		-1.781E-01	2.572E-01	4.007E-01	3.432E-02	-0.445
PA-234		733.00		2.183E-01	3.710E-01	5.534E-01	1.228E-01	0.394
		880.51		1.489E-01	2.607E-01	4.441E-01	4.112E-02	0.335
		883.24		-1.598E-01	2.810E-01	4.131E-01	2.781E-01	-0.387
		926.50		-5.686E-02	1.547E-01	2.352E-01	6.001E-02	-0.242
		946.00	*	7.486E-02	2.594E-01	4.341E-01	8.272E-02	0.172
		949.00		9.289E-02	3.920E-01	6.544E-01	6.043E-02	0.142
		766.42		2.059E+01	1.640E+01	1.998E+01	1.014E+01	1.030
		1001.03	*	1.457E+00	4.509E+00	7.097E+00	7.359E-01	0.205
		86.48	*	1.122E+00	4.117E-01	4.864E-01	1.182E-01	2.307
NP-237								

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		95.86		9.465E-01	1.066E+00	1.536E+00	3.844E-01	0.616
		99.53		1.908E-01	1.759E-01	2.729E-01	2.959E-02	0.699
		103.37		-3.817E-02	1.145E-01	1.617E-01	1.708E-02	-0.236
	+	106.12		8.938E-02	9.943E-02	1.407E-01	1.464E-02	0.635
		117.23	*	-2.327E-01	3.984E-01	6.373E-01	6.433E-02	-0.365
AM-241		228.18		1.123E-01	2.119E-01	3.606E-01	3.978E-02	0.311
	+	277.60		3.697E-01	2.733E-01	3.039E-01	3.291E-02	1.216
		59.54	*	1.583E-01	2.509E-01	3.722E-01	4.369E-02	0.425
CM-247	+	278.00		1.570E+00	1.161E+00	1.278E+00	1.383E-01	1.229
		287.50		-2.694E-01	1.200E+00	1.934E+00	2.073E-01	-0.139
CF-249		402.40	*	-1.160E-02	3.730E-02	5.887E-02	4.979E-03	-0.197
		252.80		3.611E-01	8.984E-01	1.522E+00	1.673E-01	0.237
		333.37		2.141E-01	2.815E-01	2.907E-01	2.897E-02	0.736
CF-251		388.16	*	3.238E-02	3.837E-02	6.503E-02	5.544E-03	0.498
		177.52	*	2.742E-02	1.310E-01	2.115E-01	2.275E-02	0.130
		227.38		1.624E-01	3.444E-01	5.856E-01	6.460E-02	0.277
		285.41		-7.789E-01	2.091E+00	3.443E+00	3.700E-01	-0.226

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]G247900001      *
* Acquisition date   : 5-MAR-2010 23:37:34 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 04:00:03.00 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G247900001 Analyst initials: MXR1                  *
* Batch Number      : 957711 Sample Quantity : 1.3067E+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	3.476E+01	3.685E+00	5.061E-01	0.000E+00
MN-54	5.484E-02	3.283E-02	6.028E-02	0.000E+00
TL-208	7.294E-01	1.069E-01	5.465E-02	0.000E+00
BI-211	5.608E+00	7.043E-01	3.149E-01	0.000E+00
PB-212	2.383E+00	2.996E-01	9.279E-02	0.000E+00
BI-214	1.619E+00	2.099E-01	1.045E-01	0.000E+00
PB-214	2.035E+00	2.783E-01	1.145E-01	0.000E+00
RA-224	6.504E+00	1.496E+00	9.941E-01	0.000E+00
RA-226	1.619E+00	2.099E-01	1.045E-01	0.000E+00
AC-228	2.586E+00	4.163E-01	2.148E-01	0.000E+00
RA-228	2.586E+00	4.163E-01	2.148E-01	0.000E+00
TH-228	2.383E+00	2.996E-01	9.279E-02	0.000E+00
TH-232	2.586E+00	4.163E-01	2.148E-01	0.000E+00
TH-234	5.083E+00	2.731E+00	3.057E+00	0.000E+00
U-235	1.588E-01	2.026E-01	3.407E-01	0.000E+00
U-238	5.083E+00	2.731E+00	3.057E+00	0.000E+00
ANH-511	1.827E-01	6.388E-02	4.050E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	2.651E-01	3.032E-01	5.320E-01	0.000E+00 NOT IDENT.
NA-22	-2.212E-02	3.880E-02	6.145E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.086E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	5.951E-05	3.395E-02	5.776E-02	0.000E+00 FAIL ABUN
V-48	6.379E-02	6.309E-02	1.126E-01	0.000E+00 NOT IDENT.
CR-51	-1.808E-01	3.554E-01	6.065E-01	0.000E+00 NOT IDENT.
CO-56	-1.771E-02	3.365E-02	5.563E-02	0.000E+00 FAIL ABUN
CO-57	4.543E-03	2.440E-02	4.236E-02	0.000E+00 NOT IDENT.
CO-58	-4.075E-02	3.540E-02	5.649E-02	0.000E+00 NOT IDENT.
FE-59	-8.666E-02	8.626E-02	1.348E-01	0.000E+00 NOT IDENT.

CO-60	-1.279E-04	3.431E-02	5.652E-02	0.000E+00	NOT IDENT.
ZN-65	1.818E-04	9.258E-02	1.326E-01	0.000E+00	NOT IDENT.
SE-75	-6.007E-02	4.859E-02	6.954E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.133E-02	6.928E-02	0.000E+00	NOT IDENT.
Y-88	-2.331E-03	2.931E-02	4.840E-02	0.000E+00	NOT IDENT.
Y-91	6.549E+00	2.147E+01	3.627E+01	0.000E+00	NOT IDENT.
NB-94	3.803E-02	2.978E-02	5.417E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	4.531E-02	7.498E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.579E-01	2.488E-01	0.000E+00	NOT IDENT.
ZR-95	3.938E-02	6.356E-02	1.126E-01	0.000E+00	NOT IDENT.
MO-99	-1.667E+00	1.179E+01	2.017E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.291E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.069E-02	3.761E-02	6.441E-02	0.000E+00	FAIL ABUN
RH-106	-7.512E-02	2.918E-01	4.795E-01	0.000E+00	NOT IDENT.
RU-106	-7.512E-02	2.917E-01	4.795E-01	0.000E+00	NOT IDENT.
AG-108M	-1.225E-02	2.691E-02	4.501E-02	0.000E+00	NOT IDENT.
CD-109	0.000E+00	1.107E+00	1.727E+00	0.000E+00	NOT IDENT.
AG-110M	-1.288E-03	3.012E-02	5.222E-02	0.000E+00	NOT IDENT.
SN-113	-5.166E-03	4.198E-02	7.179E-02	0.000E+00	NOT IDENT.
CD-115	7.657E+00	1.108E+01	1.930E+01	0.000E+00	NOT IDENT.
SN-117M	5.836E-02	5.633E-02	9.812E-02	0.000E+00	NOT IDENT.
TE-123M	3.003E-02	2.840E-02	4.950E-02	0.000E+00	NOT IDENT.
SB-124	-8.615E-02	6.983E-02	9.887E-02	0.000E+00	NOT IDENT.
SB-125	-2.051E-02	8.167E-02	1.380E-01	0.000E+00	FAIL ABUN
TE-125M	-4.768E+00	1.095E+01	1.638E+01	0.000E+00	NOT IDENT.
I-126	-8.562E-02	1.964E-01	3.338E-01	0.000E+00	NOT IDENT.
SB-126	-8.838E-02	1.530E-01	2.181E-01	0.000E+00	NOT IDENT.
SN-126	0.000E+00	1.063E-01	1.669E-01	0.000E+00	FAIL ABUN
SB-127	-5.577E-01	1.291E+00	2.189E+00	0.000E+00	NOT IDENT.
I-131	8.112E-03	1.072E-01	1.855E-01	0.000E+00	NOT IDENT.
TE-132	4.092E-01	7.675E-01	1.372E+00	0.000E+00	NOT IDENT.
BA-133	1.438E-02	4.257E-02	6.490E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	7.280E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.964E-02	8.122E-02	0.000E+00	NOT IDENT.
CS-135	0.000E+00	1.758E-01	2.837E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.501E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.950E-02	9.984E-02	1.624E-01	0.000E+00	NOT IDENT.
BA-137M	-2.006E-02	3.049E-02	5.123E-02	0.000E+00	NOT IDENT.
CS-137	-2.119E-02	3.221E-02	5.412E-02	0.000E+00	NOT IDENT.
CE-139	8.233E-03	2.946E-02	5.052E-02	0.000E+00	NOT IDENT.
BA-140	3.101E-02	2.484E-01	4.203E-01	0.000E+00	NOT IDENT.
LA-140	-4.760E-02	8.282E-02	1.261E-01	0.000E+00	FAIL ABUN
CE-141	8.599E-02	6.140E-02	1.079E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.824E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	8.448E-02	2.181E-01	3.321E-01	0.000E+00	NOT IDENT.
PM-144	-3.193E-02	3.104E-02	5.096E-02	0.000E+00	NOT IDENT.
PR-144	-2.351E+00	2.320E+00	3.812E+00	0.000E+00	NOT IDENT.
PM-146	4.987E-02	3.963E-02	7.037E-02	0.000E+00	NOT IDENT.
ND-147	-8.289E-02	5.124E-01	8.561E-01	0.000E+00	FAIL ABUN
PM-149	-1.314E+01	9.839E+01	1.714E+02	0.000E+00	NOT IDENT.
EU-152	1.840E-02	1.311E-01	1.565E-01	0.000E+00	FAIL ABUN
GD-153	4.859E-02	9.394E-02	1.460E-01	0.000E+00	NOT IDENT.
EU-154	-3.351E-02	1.079E-01	1.742E-01	0.000E+00	NOT IDENT.
EU-155	1.121E-01	1.222E-01	1.837E-01	0.000E+00	FAIL ABUN
TB-160	3.772E-02	1.271E-01	2.199E-01	0.000E+00	FAIL ABUN
HO-166M	3.698E-03	5.323E-02	9.230E-02	0.000E+00	FAIL ABUN
TA-182	3.444E-02	1.834E-01	3.077E-01	0.000E+00	FAIL ABUN
IR-192	-4.584E-03	3.217E-02	5.569E-02	0.000E+00	FAIL ABUN
HG-203	4.049E-02	4.306E-02	6.781E-02	0.000E+00	NOT IDENT.
BI-207	-3.336E-02	4.968E-02	7.512E-02	0.000E+00	FAIL ABUN
PB-210	-8.112E+00	9.839E+00	1.660E+01	0.000E+00	NOT IDENT.
PB-211	-3.920E-01	8.063E-01	1.133E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.511E-01	1.051E+00	0.000E+00	FAIL ABUN
RN-219	-1.517E-01	3.883E-01	6.551E-01	0.000E+00	FAIL ABUN
RA-223	1.895E-01	6.912E-01	1.055E+00	0.000E+00	FAIL ABUN
AC-227	-1.093E-01	2.373E-01	4.113E-01	0.000E+00	FAIL ABUN
TH-227	-1.093E-01	2.374E-01	4.113E-01	0.000E+00	FAIL ABUN
TH-229	-7.669E-01	5.908E-01	8.709E-01	0.000E+00	NOT IDENT.
PA-231	3.264E-01	1.440E+00	2.399E+00	0.000E+00	FAIL ABUN
TH-231	1.895E-01	6.912E-01	1.055E+00	0.000E+00	FAIL ABUN
PA-233	-4.768E-02	5.875E-02	9.905E-02	0.000E+00	FAIL ABUN
PA-234	7.486E-02	2.542E-01	4.377E-01	0.000E+00	FAIL ABUN
PA-234M	1.457E+00	4.419E+00	7.149E+00	0.000E+00	NOT IDENT.
NP-237	0.000E+00	4.035E-01	5.098E-01	0.000E+00	NOT IDENT.
NP-239	-2.327E-01	3.904E-01	6.648E-01	0.000E+00	FAIL ABUN
AM-241	1.583E-01	2.458E-01	3.923E-01	0.000E+00	NOT IDENT.
CM-247	-1.160E-02	3.655E-02	6.021E-02	0.000E+00	FAIL ABUN
CF-249	3.238E-02	3.761E-02	6.655E-02	0.000E+00	NOT IDENT.

CF-251	2.742E-02	1.284E-01	2.191E-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]G247900001.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 5-MAR-2010 23:37:34.
Sample ID          : G247900001 Sample quantity : 1.30670E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:03.00 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 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	2492	10.66*	9.662E-01	3.476E+01	3.476E+01	10.82
MN-54	834.85	60	99.98*	1.619E+00	5.298E-02	5.484E-02	61.08
TL-208	277.37	138	6.60	3.706E+00	8.088E-01	8.088E-01	74.49
	583.19	946	85.00*	2.191E+00	7.294E-01	7.294E-01	14.96
	860.56	94	12.50	1.576E+00	6.860E-01	6.860E-01	67.00
BI-211	72.87	-----	1.23	3.001E+00	-----	Line Not Found	-----
	351.06	1584	12.92*	3.140E+00	5.608E+00	5.608E+00	12.82
PB-212	74.82	695	10.28	3.228E+00	3.010E+00	3.010E+00	26.90
	77.11	1451	17.10	3.501E+00	3.482E+00	3.482E+00	15.88
	238.63	2976	43.60*	4.114E+00	2.383E+00	2.383E+00	12.83
	300.09	217	3.30	3.507E+00	2.697E+00	2.697E+00	38.07
BI-214	609.32	1085	45.49*	2.117E+00	1.619E+00	1.619E+00	13.23
	1120.29	291	14.92	1.226E+00	2.285E+00	2.285E+00	28.30
	1764.49	198	15.30	8.553E-01	2.175E+00	2.175E+00	23.08
PB-214	74.82	695	5.80	3.228E+00	5.335E+00	5.335E+00	26.31
	77.11	1451	9.70	3.501E+00	6.139E+00	6.139E+00	17.90
	242.00	757	7.25	4.079E+00	3.678E+00	3.678E+00	24.18
	295.22	858	18.42	3.546E+00	1.887E+00	1.887E+00	17.01
	351.93	1584	35.60*	3.140E+00	2.035E+00	2.035E+00	13.95
RA-224	240.99	757	4.10*	4.079E+00	6.504E+00	6.504E+00	23.48
RA-226	609.32	1085	45.49*	2.117E+00	1.619E+00	1.619E+00	13.23
	1120.29	291	14.92	1.226E+00	2.285E+00	2.285E+00	28.30
	1764.49	198	15.30	8.553E-01	2.175E+00	2.175E+00	23.08
AC-228	338.32	518	11.27	3.227E+00	2.047E+00	2.047E+00	45.87
	911.20	694	25.80*	1.494E+00	2.586E+00	2.586E+00	16.43
	968.97	359	15.80	1.410E+00	2.313E+00	2.313E+00	30.01
RA-228	338.32	518	11.27	3.227E+00	2.047E+00	2.047E+00	45.87
	911.20	694	25.80*	1.494E+00	2.586E+00	2.586E+00	16.43
	968.97	359	15.80	1.410E+00	2.313E+00	2.313E+00	30.01
TH-228	74.82	695	10.28	3.228E+00	3.010E+00	3.010E+00	25.11
	77.11	1451	17.10	3.501E+00	3.482E+00	3.482E+00	15.88
	238.63	2976	43.60*	4.114E+00	2.383E+00	2.383E+00	12.83

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-232	300.09	217	3.30	3.507E+00	2.697E+00	2.697E+00	71.32
	338.32	518	11.27	3.227E+00	2.047E+00	2.047E+00	20.94
	911.20	694	25.80*	1.494E+00	2.586E+00	2.586E+00	16.43
TH-234	968.97	359	15.80	1.410E+00	2.313E+00	2.313E+00	30.01
	63.29	242	3.70*	1.851E+00	5.083E+00	5.083E+00	54.83
	92.59	603	4.23	4.843E+00	4.227E+00	4.227E+00	33.57
U-235	89.96	233	3.47	4.649E+00	2.075E+00	2.075E+00	35.53
	93.35	603	5.60	4.843E+00	3.193E+00	3.193E+00	34.25
	143.76	-----	10.96*	5.506E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.224E+00	-----	Line Not Found	-----
	185.72	483	57.20	4.853E+00	2.501E-01	2.501E-01	30.91
	205.31	-----	5.01	4.560E+00	-----	Line Not Found	-----
U-238	63.29	242	3.70*	1.851E+00	5.083E+00	5.083E+00	54.83
	92.59	603	4.23	4.843E+00	4.227E+00	4.227E+00	26.72
ANH-511	511.00	308	100.00*	2.419E+00	1.827E-01	1.827E-01	35.68

Flag: "*" = Keyline

Total number of lines in spectrum 39
Number of unidentified lines 7
Number of lines tentatively identified by NID 32 82.05%

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	3.476E+01	3.476E+01	0.376E+01	10.82	
MN-54	312.05D	1.04	5.298E-02	5.484E-02	3.350E-02	61.08	
TL-208	1.41E+10Y	1.00	7.294E-01	7.294E-01	1.091E-01	14.96	
BI-211	7.04E+08Y	1.00	5.608E+00	5.608E+00	0.719E+00	12.82	
PB-212	1.41E+10Y	1.00	2.383E+00	2.383E+00	0.306E+00	12.83	
BI-214	1600.00Y	1.00	1.619E+00	1.619E+00	0.214E+00	13.23	
PB-214	1600.00Y	1.00	2.035E+00	2.035E+00	0.284E+00	13.95	
RA-224	1.41E+10Y	1.00	6.504E+00	6.504E+00	1.527E+00	23.48	
RA-226	1600.00Y	1.00	1.619E+00	1.619E+00	0.214E+00	13.23	
AC-228	1.41E+10Y	1.00	2.586E+00	2.586E+00	0.425E+00	16.43	
RA-228	1.41E+10Y	1.00	2.586E+00	2.586E+00	0.425E+00	16.43	
TH-228	1.41E+10Y	1.00	2.383E+00	2.383E+00	0.306E+00	12.83	
TH-232	1.41E+10Y	1.00	2.586E+00	2.586E+00	0.425E+00	16.43	
TH-234	4.47E+09Y	1.00	5.083E+00	5.083E+00	2.787E+00	54.83	
U-235	7.04E+08Y	1.00	2.501E-01	2.501E-01	0.773E-01	30.91	K
U-238	4.47E+09Y	1.00	5.083E+00	5.083E+00	2.787E+00	54.83	
ANH-511	1.00E+09Y	1.00	1.827E-01	1.827E-01	0.652E-01	35.68	

Total Activity : 7.605E+01 7.605E+01

Grand Total Activity : 7.605E+01 7.605E+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	105.34	88	769	1.41	209.60	207	8	6.12E-03	****	5.39E+00	T
0	129.81	178	949	1.14	258.53	252	10	1.23E-02	66.7	5.63E+00	T
0	209.27	234	659	1.15	417.45	413	9	1.62E-02	41.7	4.50E+00	
0	270.52	267	599	1.52	539.95	535	12	1.86E-02	38.6	3.77E+00	T
0	328.17	202	349	1.35	655.24	651	10	1.40E-02	37.6	3.30E+00	T
0	409.88	122	316	1.27	818.67	814	12	8.44E-03	61.4	2.83E+00	T
0	463.00	173	268	1.10	924.90	920	11	1.20E-02	39.7	2.60E+00	T
0	727.70	158	271	1.47	1454.33	1446	16	1.10E-02	50.6	1.83E+00	T
0	768.73	172	229	1.91	1536.40	1528	18	1.19E-02	44.1	1.74E+00	
0	794.36	113	151	1.18	1587.67	1582	13	7.84E-03	48.5	1.69E+00	
0	934.52	56	108	1.70	1868.04	1863	11	3.92E-03	76.0	1.46E+00	
1	964.91	107	209	2.20	1928.82	1922	22	7.41E-03	55.3	1.42E+00	T
0	1238.07	123	154	1.65	2475.26	2468	14	8.52E-03	47.2	1.12E+00	T
0	1377.83	55	71	1.90	2754.87	2749	13	3.81E-03	73.6	1.01E+00	
0	1588.37	39	46	2.17	3176.08	3169	11	2.74E-03	68.6	9.08E-01	
0	1730.02	40	12	2.04	3459.49	3455	12	2.76E-03	49.6	8.64E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900001.CNF;1  *
* Acquisition date   : 5-MAR-2010 23:37:34.  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 04:00:03.00      Half life ratio     : 8.00000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library    : SOLID          *
* Sample ID          : G247900001          Analyst initials   : MXR1           *
* Batch Number       : 957711              Sample Quantity    : 1.30670E+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	3.476E+01	3.760E+00	5.057E-01	4.969E-02	68.740
MN-54	5.484E-02	3.350E-02	5.966E-02	5.415E-03	0.919
TL-208	7.294E-01	1.091E-01	5.376E-02	4.917E-03	13.566
BI-211	5.608E+00	7.187E-01	3.073E-01	3.060E-02	18.250
PB-212	2.383E+00	3.057E-01	8.997E-02	1.075E-02	26.488
BI-214	1.619E+00	2.142E-01	1.029E-01	1.025E-02	15.730
PB-214	2.035E+00	2.840E-01	1.117E-01	1.270E-02	18.215
RA-224	6.504E+00	1.527E+00	9.641E-01	1.063E-01	6.746
RA-226	1.619E+00	2.142E-01	1.029E-01	1.025E-02	15.730
AC-228	2.586E+00	4.248E-01	2.129E-01	2.579E-02	12.146
RA-228	2.586E+00	4.248E-01	2.129E-01	2.579E-02	12.146
TH-228	2.383E+00	3.057E-01	8.997E-02	1.075E-02	26.488
TH-232	2.586E+00	4.248E-01	2.129E-01	2.579E-02	12.146
TH-234	5.083E+00	2.787E+00	2.903E+00	5.757E-01	1.751
U-235	2.501E-01	7.730E-02	3.277E-01	5.830E-02	0.763
U-238	5.083E+00	2.787E+00	2.903E+00	5.757E-01	1.751
ANH-511	1.827E-01	6.519E-02	3.976E-02	3.436E-03	4.594

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.651E-01		3.094E-01	5.217E-01	4.849E-02	0.508

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-2.212E-02		3.959E-02	6.125E-02	5.564E-03	-0.361
NA-24	-1.445E+00		5.542E-01	Half-Life too short		
SC-46	5.951E-05		3.465E-02	5.723E-02	5.318E-03	0.001
V-48	6.379E-02		6.438E-02	1.117E-01	1.022E-02	0.571
CR-51	-1.808E-01		3.626E-01	5.909E-01	6.271E-02	-0.306
CO-56	-1.771E-02		3.434E-02	5.507E-02	5.025E-03	-0.322
CO-57	4.543E-03		2.490E-02	4.064E-02	4.094E-03	0.112
CO-58	-4.075E-02		3.612E-02	5.588E-02	5.024E-03	-0.729
FE-59	-8.666E-02		8.802E-02	1.340E-01	1.251E-02	-0.647
CO-60	-1.279E-04		3.501E-02	5.638E-02	5.420E-03	-0.002
ZN-65	1.818E-04		9.447E-02	1.319E-01	1.127E-02	0.001
SE-75	-6.007E-02		4.958E-02	6.754E-02	7.406E-03	-0.889
SR-85	1.403E-01		4.217E-02	6.802E-02	5.876E-03	2.063
Y-88	-2.331E-03		2.991E-02	4.855E-02	4.089E-03	-0.048
Y-91	6.549E+00		2.191E+01	3.612E+01	3.044E+00	0.181
NB-94	3.803E-02		3.038E-02	5.346E-02	4.513E-03	0.711
NB-95	9.480E-02		4.623E-02	7.410E-02	6.493E-03	1.279
NB-95M	5.357E-01		1.611E-01	2.412E-01	2.906E-02	2.221
ZR-95	3.938E-02		6.485E-02	1.112E-01	1.069E-02	0.354
MO-99	-1.667E+00		1.203E+01	1.993E+01	3.141E+00	-0.084
TC-99M	-1.938E+11		6.584E+10	Half-Life too short		
RU-103	1.069E-02		3.838E-02	6.320E-02	8.835E-03	0.169
RH-106	-7.512E-02		2.977E-01	4.723E-01	6.195E-02	-0.159
RU-106	-7.512E-02		2.976E-01	4.723E-01	3.969E-02	-0.159
AG-108M	-1.225E-02		2.746E-02	4.406E-02	3.894E-03	-0.278
CD-109	2.814E+00		1.130E+00	1.649E+00	2.046E-01	1.707
AG-110M	-1.288E-03		3.073E-02	5.148E-02	4.381E-03	-0.025
SN-113	-5.166E-03		4.284E-02	7.017E-02	6.094E-03	-0.074
CD-115	7.657E+00		1.131E+01	1.896E+01	1.636E+00	0.404
SN-117M	5.836E-02		5.748E-02	9.453E-02	9.910E-03	0.617
TE-123M	3.003E-02		2.898E-02	4.768E-02	5.025E-03	0.630
SB-124	-8.615E-02		7.126E-02	9.903E-02	9.327E-03	-0.870
SB-125	-2.051E-02		8.333E-02	1.351E-01	1.176E-02	-0.152
TE-125M	-4.768E+00		1.118E+01	1.569E+01	1.864E+00	-0.304
I-126	-8.562E-02		2.004E-01	3.291E-01	2.714E-02	-0.260
SB-126	-8.838E-02		1.561E-01	2.153E-01	1.838E-02	-0.410
SN-126	2.173E-01		1.085E-01	1.593E-01	1.971E-02	1.364
SB-127	-5.577E-01		1.317E+00	2.159E+00	2.438E-01	-0.258
I-131	8.112E-03		1.094E-01	1.811E-01	1.749E-02	0.045
TE-132	4.092E-01		7.832E-01	1.330E+00	2.304E-01	0.308
BA-133	1.438E-02		4.344E-02	6.334E-02	8.558E-03	0.227
I-133	-1.293E-03		3.714E-03	Half-Life too short		
CS-134	8.825E-02		5.065E-02	8.032E-02	7.199E-03	1.099
CS-135	4.667E-01		1.794E-01	2.756E-01	3.306E-02	1.694
I-135	2.940E+09		7.656E+09	Half-Life too short		
CS-136	-4.950E-02		1.019E-01	1.613E-01	1.492E-02	-0.307
BA-137M	-2.006E-02		3.111E-02	5.050E-02	4.152E-03	-0.397
CS-137	-2.119E-02		3.287E-02	5.335E-02	4.396E-03	-0.397

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-139	8.233E-03		3.006E-02	4.871E-02	5.199E-03	0.169
BA-140	3.101E-02		2.534E-01	4.129E-01	1.400E-01	0.075
LA-140	-4.760E-02		8.451E-02	1.262E-01	1.183E-02	-0.377
CE-141	8.599E-02		6.265E-02	1.038E-01	1.073E-02	0.829
CE-143	1.433E-03		1.951E-04	Half-Life too short		
CE-144	8.448E-02		2.226E-01	3.190E-01	5.148E-02	0.265
PM-144	-3.193E-02		3.167E-02	5.029E-02	4.231E-03	-0.635
PR-144	-2.351E+00		2.367E+00	3.762E+00	3.164E-01	-0.625
PM-146	4.987E-02		4.044E-02	6.895E-02	7.291E-03	0.723
ND-147	-8.289E-02		5.228E-01	8.409E-01	1.258E-01	-0.099
PM-149	-1.314E+01		1.004E+02	1.667E+02	2.803E+01	-0.079
EU-152	1.840E-02		1.338E-01	1.527E-01	1.554E-02	0.121
GD-153	4.859E-02		9.586E-02	1.396E-01	1.540E-02	0.348
EU-154	-3.351E-02		1.101E-01	1.737E-01	2.037E-02	-0.193
EU-155	1.121E-01	+	1.247E-01	1.758E-01	1.852E-02	0.638
TB-160	3.772E-02		1.297E-01	2.178E-01	2.016E-02	0.173
HO-166M	3.698E-03		5.431E-02	9.111E-02	7.735E-03	0.041
TA-182	3.444E-02		1.872E-01	3.065E-01	2.631E-02	0.112
IR-192	-4.584E-03		3.283E-02	5.425E-02	5.593E-03	-0.085
HG-203	4.049E-02		4.394E-02	6.592E-02	7.244E-03	0.614
BI-207	-3.336E-02		5.069E-02	7.465E-02	6.586E-03	-0.447
PB-210	-8.112E+00		1.004E+01	1.569E+01	1.932E+00	-0.517
PB-211	-3.920E-01		8.227E-01	1.108E+00	5.358E-01	-0.354
BI-212	1.864E+00	+	9.705E-01	1.038E+00	1.290E-01	1.795
RN-219	-1.517E-01		3.962E-01	6.405E-01	9.466E-02	-0.237
RA-223	1.895E-01		7.053E-01	1.028E+00	1.866E-01	0.184
AC-227	-1.093E-01		2.422E-01	3.993E-01	5.526E-02	-0.274
TH-227	-1.093E-01		2.423E-01	3.993E-01	6.074E-02	-0.274
TH-229	-7.669E-01		6.029E-01	8.416E-01	9.157E-02	-0.911
PA-231	3.264E-01		1.470E+00	2.333E+00	3.720E-01	0.140
TH-231	1.895E-01		7.053E-01	1.028E+00	1.866E-01	0.184
PA-233	-4.768E-02		5.995E-02	9.646E-02	1.021E-02	-0.494
PA-234	7.486E-02		2.594E-01	4.341E-01	8.272E-02	0.172
PA-234M	1.457E+00		4.509E+00	7.097E+00	7.359E-01	0.205
NP-237	1.122E+00		4.117E-01	4.864E-01	1.182E-01	2.307
NP-239	-2.327E-01		3.984E-01	6.373E-01	6.433E-02	-0.365
AM-241	1.583E-01		2.509E-01	3.722E-01	4.369E-02	0.425
CM-247	-1.160E-02		3.730E-02	5.887E-02	4.979E-03	-0.197
CF-249	3.238E-02		3.837E-02	6.503E-02	5.544E-03	0.498
CF-251	2.742E-02		1.310E-01	2.115E-01	2.275E-02	0.130

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]G247900001
* Acquisition date   : 5-MAR-2010 23:37:34 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 04:00:03.00 Half life ratio        : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G247900001 Analyst initials: MXR1
* Batch Number       : 957711 Sample Quantity : 1.3067E+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	3.476E+01	3.685E+00	2.532E-01	1.880E+00
MN-54	5.484E-02	3.283E-02	3.016E-02	1.675E-02
TL-208	7.294E-01	1.069E-01	2.734E-02	5.455E-02
BI-211	5.608E+00	7.043E-01	1.576E-01	3.594E-01
PB-212	2.383E+00	2.996E-01	4.642E-02	1.529E-01
BI-214	1.619E+00	2.099E-01	5.229E-02	1.071E-01
PB-214	2.035E+00	2.783E-01	5.729E-02	1.420E-01
RA-224	6.504E+00	1.496E+00	4.973E-01	7.635E-01
RA-226	1.619E+00	2.099E-01	5.229E-02	1.071E-01
AC-228	2.586E+00	4.163E-01	1.075E-01	2.124E-01
RA-228	2.586E+00	4.163E-01	1.075E-01	2.124E-01
TH-228	2.383E+00	2.996E-01	4.642E-02	1.529E-01
TH-232	2.586E+00	4.163E-01	1.075E-01	2.124E-01
TH-234	5.083E+00	2.731E+00	1.530E+00	1.394E+00
U-235	1.588E-01	2.026E-01	1.704E-01	1.034E-01
U-238	5.083E+00	2.731E+00	1.530E+00	1.394E+00
ANH-511	1.827E-01	6.388E-02	2.026E-02	3.259E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	2.651E-01	3.032E-01	2.662E-01	1.547E-01 NOT IDENT.
NA-22	-2.212E-02	3.880E-02	3.074E-02	1.980E-02 NOT IDENT.
NA-24	-1.445E+06	1.086E+06	0.000E+00	5.542E+05 SHORT HLIF
SC-46	5.951E-05	3.395E-02	2.890E-02	1.732E-02 FAIL ABUN
V-48	6.379E-02	6.309E-02	5.633E-02	3.219E-02 NOT IDENT.
CR-51	-1.808E-01	3.554E-01	3.034E-01	1.813E-01 NOT IDENT.
CO-56	-1.771E-02	3.365E-02	2.783E-02	1.717E-02 FAIL ABUN
CO-57	4.543E-03	2.440E-02	2.119E-02	1.245E-02 NOT IDENT.
CO-58	-4.075E-02	3.540E-02	2.826E-02	1.806E-02 NOT IDENT.
FE-59	-8.666E-02	8.626E-02	6.744E-02	4.401E-02 NOT IDENT.

CO-60	-1.279E-04	3.431E-02	2.828E-02	1.750E-02	NOT IDENT.
ZN-65	1.818E-04	9.258E-02	6.633E-02	4.723E-02	NOT IDENT.
SE-75	-6.007E-02	4.859E-02	3.479E-02	2.479E-02	NOT IDENT.
SR-85	1.403E-01	4.133E-02	3.466E-02	2.109E-02	NOT IDENT.
Y-88	-2.331E-03	2.931E-02	2.422E-02	1.495E-02	NOT IDENT.
Y-91	6.549E+00	2.147E+01	1.814E+01	1.096E+01	NOT IDENT.
NB-94	3.803E-02	2.978E-02	2.710E-02	1.519E-02	NOT IDENT.
NB-95	9.480E-02	4.531E-02	3.751E-02	2.312E-02	NOT IDENT.
NB-95M	5.357E-01	1.579E-01	1.245E-01	8.054E-02	NOT IDENT.
ZR-95	3.938E-02	6.356E-02	5.632E-02	3.243E-02	NOT IDENT.
MO-99	-1.667E+00	1.179E+01	1.009E+01	6.017E+00	NOT IDENT.
TC-99M	-1.938E+17	1.291E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.069E-02	3.761E-02	3.222E-02	1.919E-02	FAIL ABUN
RH-106	-7.512E-02	2.918E-01	2.399E-01	1.489E-01	NOT IDENT.
RU-106	-7.512E-02	2.917E-01	2.399E-01	1.488E-01	NOT IDENT.
AG-108M	-1.225E-02	2.691E-02	2.252E-02	1.373E-02	NOT IDENT.
CD-109	2.814E+00	1.107E+00	8.641E-01	5.648E-01	NOT IDENT.
AG-110M	-1.288E-03	3.012E-02	2.613E-02	1.537E-02	NOT IDENT.
SN-113	-5.166E-03	4.198E-02	3.591E-02	2.142E-02	NOT IDENT.
CD-115	7.657E+00	1.108E+01	9.655E+00	5.654E+00	NOT IDENT.
SN-117M	5.836E-02	5.633E-02	4.909E-02	2.874E-02	NOT IDENT.
TE-123M	3.003E-02	2.840E-02	2.476E-02	1.449E-02	NOT IDENT.
SB-124	-8.615E-02	6.983E-02	4.946E-02	3.563E-02	NOT IDENT.
SB-125	-2.051E-02	8.167E-02	6.905E-02	4.167E-02	FAIL ABUN
TE-125M	-4.768E+00	1.095E+01	8.197E+00	5.588E+00	NOT IDENT.
I-126	-8.562E-02	1.964E-01	1.670E-01	1.002E-01	NOT IDENT.
SB-126	-8.838E-02	1.530E-01	1.091E-01	7.806E-02	NOT IDENT.
SN-126	2.173E-01	1.063E-01	8.349E-02	5.425E-02	FAIL ABUN
SB-127	-5.577E-01	1.291E+00	1.095E+00	6.586E-01	NOT IDENT.
I-131	8.112E-03	1.072E-01	9.282E-02	5.470E-02	NOT IDENT.
TE-132	4.092E-01	7.675E-01	6.865E-01	3.916E-01	NOT IDENT.
BA-133	1.438E-02	4.257E-02	3.247E-02	2.172E-02	FAIL ABUN
I-133	-1.293E+03	7.280E+03	0.000E+00	3.714E+03	SHORT HLIF
CS-134	8.825E-02	4.964E-02	4.063E-02	2.533E-02	NOT IDENT.
CS-135	4.667E-01	1.758E-01	1.419E-01	8.968E-02	NOT IDENT.
I-135	2.940E+15	1.501E+16	0.000E+00	7.656E+15	SHORT HLIF
CS-136	-4.950E-02	9.984E-02	8.125E-02	5.094E-02	NOT IDENT.
BA-137M	-2.006E-02	3.049E-02	2.563E-02	1.556E-02	NOT IDENT.
CS-137	-2.119E-02	3.221E-02	2.707E-02	1.643E-02	NOT IDENT.
CE-139	8.233E-03	2.946E-02	2.528E-02	1.503E-02	NOT IDENT.
BA-140	3.101E-02	2.484E-01	2.103E-01	1.267E-01	NOT IDENT.
LA-140	-4.760E-02	8.282E-02	6.307E-02	4.225E-02	FAIL ABUN
CE-141	8.599E-02	6.140E-02	5.397E-02	3.132E-02	NOT IDENT.
CE-143	1.433E+03	3.824E+02	0.000E+00	1.951E+02	SHORT HLIF
CE-144	8.448E-02	2.181E-01	1.661E-01	1.113E-01	NOT IDENT.
PM-144	-3.193E-02	3.104E-02	2.550E-02	1.583E-02	NOT IDENT.
PR-144	-2.351E+00	2.320E+00	1.907E+00	1.184E+00	NOT IDENT.
PM-146	4.987E-02	3.963E-02	3.521E-02	2.022E-02	NOT IDENT.
ND-147	-8.289E-02	5.124E-01	4.283E-01	2.614E-01	FAIL ABUN
PM-149	-1.314E+01	9.839E+01	8.575E+01	5.020E+01	NOT IDENT.
EU-152	1.840E-02	1.311E-01	7.831E-02	6.690E-02	FAIL ABUN
GD-153	4.859E-02	9.394E-02	7.303E-02	4.793E-02	NOT IDENT.
EU-154	-3.351E-02	1.079E-01	8.717E-02	5.503E-02	NOT IDENT.
EU-155	1.121E-01	1.222E-01	9.189E-02	6.236E-02	FAIL ABUN
TB-160	3.772E-02	1.271E-01	1.100E-01	6.484E-02	FAIL ABUN
HO-166M	3.698E-03	5.323E-02	4.618E-02	2.716E-02	FAIL ABUN
TA-182	3.444E-02	1.834E-01	1.539E-01	9.358E-02	FAIL ABUN
IR-192	-4.584E-03	3.217E-02	2.786E-02	1.641E-02	FAIL ABUN
HG-203	4.049E-02	4.306E-02	3.393E-02	2.197E-02	NOT IDENT.
BI-207	-3.336E-02	4.968E-02	3.758E-02	2.535E-02	FAIL ABUN
PB-210	-8.112E+00	9.839E+00	8.306E+00	5.020E+00	NOT IDENT.
PB-211	-3.920E-01	8.063E-01	5.667E-01	4.114E-01	NOT IDENT.
BI-212	1.864E+00	9.511E-01	5.259E-01	4.853E-01	FAIL ABUN
RN-219	-1.517E-01	3.883E-01	3.277E-01	1.981E-01	FAIL ABUN
RA-223	1.895E-01	6.912E-01	5.278E-01	3.527E-01	FAIL ABUN
AC-227	-1.093E-01	2.373E-01	2.058E-01	1.211E-01	FAIL ABUN
TH-227	-1.093E-01	2.374E-01	2.058E-01	1.211E-01	FAIL ABUN
TH-229	-7.669E-01	5.908E-01	4.357E-01	3.015E-01	NOT IDENT.
PA-231	3.264E-01	1.440E+00	1.200E+00	7.348E-01	FAIL ABUN
TH-231	1.895E-01	6.912E-01	5.278E-01	3.527E-01	FAIL ABUN
PA-233	-4.768E-02	5.875E-02	4.955E-02	2.997E-02	FAIL ABUN
PA-234	7.486E-02	2.542E-01	2.190E-01	1.297E-01	FAIL ABUN
PA-234M	1.457E+00	4.419E+00	3.577E+00	2.254E+00	NOT IDENT.
NP-237	1.122E+00	4.035E-01	2.550E-01	2.059E-01	NOT IDENT.
NP-239	-2.327E-01	3.904E-01	3.326E-01	1.992E-01	FAIL ABUN
AM-241	1.583E-01	2.458E-01	1.963E-01	1.254E-01	NOT IDENT.
CM-247	-1.160E-02	3.655E-02	3.012E-02	1.865E-02	FAIL ABUN
CF-249	3.238E-02	3.761E-02	3.329E-02	1.919E-02	NOT IDENT.

CF-251	2.742E-02	1.284E-01	1.096E-01	6.551E-02 NOT IDENT.
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*                                     *
*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD       *
*               CHARLESTON ,SC 29417   *
*               GAMMA SPECTROSCOPY BACKGROUNND REPORT *
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ENERGY	MDA COUNTS
46.54	724.8438
49.72	718.2792
57.36	0.0000
59.54	697.9191
63.29	855.7737
63.29	855.7737
64.28	911.0064
67.75	865.1724
69.67	901.0018
70.83	935.2111
72.81	918.7109
72.87	918.7835
72.87	918.7835
74.82	921.1677
74.82	921.1677
74.82	921.1677
74.97	921.3518
77.11	923.9290
77.11	923.9290
77.11	923.9290
79.69	1010.1006
79.80	1150.9102
80.12	1151.3760
80.19	1151.4771
80.57	1232.0330
81.00	1245.5076
81.07	1245.6168
81.07	1245.6168
83.79	1720.5421
83.79	1720.5421
85.43	1093.2618
86.48	1139.5153
86.55	1139.6145
86.79	1207.6573
86.94	1288.5143
87.57	1302.4006
88.03	1293.4312
88.47	1244.0266
89.96	1746.3350
91.11	1318.8174
92.59	1321.0922
92.59	1321.0922
93.35	1322.2544
94.67	836.4641
94.87	857.8160
94.87	857.8160
95.86	862.0434
97.43	819.4973
98.44	797.5452
99.53	781.3321
100.11	806.3936
103.18	867.4327
103.37	851.1811
105.31	820.2371
106.12	808.5865
109.28	873.0981
111.00	904.2064
111.76	886.9591
116.30	822.3752
117.23	839.8181
121.12	776.1246
121.78	788.1418
122.06	781.0314
123.07	817.4313
131.20	785.7830
133.52	782.3997
136.00	803.0708

136.47	791.7428
140.51	874.5298
140.51	0.0000
143.76	762.7596
144.24	744.9124
144.24	744.9124
145.44	758.5378
152.43	764.2175
153.25	770.1339
154.21	845.1423
154.21	845.1423
156.02	835.6380
158.56	774.6634
159.00	755.4602
162.66	813.1100
163.33	824.4177
165.86	759.7151
176.60	715.7117
177.52	731.5980
181.07	833.6163
184.41	745.6243
185.72	836.5610
193.51	804.9385
197.04	674.3660
205.31	696.0792
210.85	594.3223
215.65	687.6387
222.11	616.1395
227.38	611.0179
228.16	614.9776
228.18	614.9858
235.69	662.2535
235.96	662.3683
235.96	662.3683
238.63	584.3107
238.63	584.3107
240.99	585.1893
242.00	585.5665
244.70	503.3845
252.40	492.2331
252.80	482.1730
256.23	523.0684
256.23	523.0684
260.90	446.4258
264.66	520.4523
268.22	429.7002
269.46	439.3628
269.46	439.3628
271.23	478.8131
273.65	477.9320
276.40	475.5690
277.37	475.8350
277.60	474.3375
278.00	480.7056
279.20	487.3105
279.54	457.6283
280.46	404.5580
283.69	454.7881
284.31	466.2155
285.41	469.8598
285.90	463.3872
287.50	451.3169
293.27	0.0000
295.22	469.6095
295.96	474.5483
298.57	475.2380
299.98	431.2145
299.98	431.2145
300.09	431.2422
300.09	431.2422
300.13	431.2532
301.36	429.9545
302.85	423.9559
304.50	373.4794
304.50	373.4794
304.85	376.7303
308.46	410.9146
311.90	404.0166

316.51	392.5342
319.41	418.1299
320.08	425.0042
323.87	399.8377
323.87	399.8377
328.76	441.1025
333.37	358.2388
334.37	387.4854
334.37	387.4854
338.28	395.0513
338.28	395.0513
338.32	395.0613
338.32	395.0613
338.32	395.0613
340.48	369.2568
340.55	369.2684
344.28	363.4713
351.06	349.7230
351.93	349.8716
356.01	314.9954
364.49	308.7603
366.42	308.0635
383.85	353.2883
388.16	312.2330
388.63	329.2060
391.69	334.6506
400.66	311.0228
401.81	349.2045
402.40	346.9629
404.85	349.0179
410.95	286.3394
414.70	276.7523
423.72	286.9433
427.09	280.2799
427.87	279.3624
433.94	284.1528
453.88	249.7128
463.37	265.4192
468.07	231.6138
473.00	260.9587
476.78	243.7956
477.60	245.9401
487.02	215.7492
492.35	245.3081
497.08	247.8431
511.00	207.3018
514.00	206.1411
527.90	183.3414
529.87	0.0000
531.02	217.3159
537.26	222.0483
546.56	0.0000
563.25	182.5266
569.33	246.0371
569.50	247.1238
569.70	241.7913
583.19	224.6648
600.60	212.6842
602.73	223.6602
604.72	212.9819
609.32	220.1826
609.32	220.1826
610.33	217.0068
614.28	202.8086
618.01	198.2289
621.93	212.4053
621.93	212.4053
633.25	212.1117
635.95	199.1647
636.99	207.9934
645.85	204.2049
657.76	193.7859
661.66	205.9805
661.66	205.9805
664.57	0.0000
666.33	209.0486
666.50	209.0624
677.62	185.7672

685.70	209.4013
695.00	205.3575
696.49	231.4821
696.51	230.5524
697.00	241.7452
702.65	176.9653
706.68	205.1624
711.68	186.7920
720.70	203.8945
721.93	0.0000
722.78	187.9541
722.91	187.9622
723.31	186.3800
724.19	176.7857
727.33	182.0447
733.00	151.4681
735.93	159.3047
739.50	170.4608
747.24	176.5109
752.31	185.2813
753.82	162.6637
756.73	160.9106
763.94	147.9670
765.81	170.8228
766.42	200.1410
777.92	171.4124
778.90	155.8727
783.70	133.5400
785.37	155.5517
795.86	159.1575
801.95	175.4532
810.29	169.1322
810.76	181.6479
815.77	157.8373
818.51	142.5470
832.01	119.3178
834.85	195.4204
836.80	0.0000
846.77	148.4927
856.80	151.8105
860.56	139.2964
871.09	142.6138
873.19	145.6230
875.33	0.0000
879.36	142.9227
880.51	138.0682
883.24	150.9044
884.68	159.7832
889.28	132.4951
898.04	147.5464
911.20	151.0047
911.20	151.0047
911.20	151.0047
926.50	121.2694
937.49	98.7813
944.13	117.4238
946.00	117.4766
949.00	124.5397
962.29	137.0815
964.08	166.2857
966.15	148.0723
968.97	148.1746
968.97	148.1746
968.97	148.1746
983.53	108.5076
996.26	166.2790
1001.03	117.0313
1004.73	142.3770
1037.84	128.2148
1038.76	0.0000
1048.07	139.7371
1050.41	127.5686
1050.41	127.5686
1063.66	129.9972
1085.87	123.4473
1099.45	156.8366
1112.07	118.8437
1115.54	138.4587

1120.29	138.8963
1120.29	138.8963
1120.55	138.9072
1121.30	138.9290
1131.51	0.0000
1173.23	160.3960
1177.93	138.5205
1189.05	154.6204
1204.77	167.7859
1221.41	155.6552
1231.02	152.7773
1235.36	134.7083
1238.28	138.4286
1260.41	0.0000
1271.85	95.1999
1274.44	105.9489
1274.54	113.4445
1291.59	125.6360
1298.22	0.0000
1312.11	88.4063
1332.49	76.8473
1365.19	58.8098
1368.63	0.0000
1384.29	65.5762
1408.01	73.3916
1457.56	0.0000
1460.82	60.7969
1489.16	38.1892
1505.03	65.1018
1596.21	61.2598
1620.50	42.9565
1678.03	0.0000
1690.97	47.3990
1764.49	21.9770
1764.49	21.9770
1770.23	13.9976
1771.35	19.2500
1791.20	0.0000
1836.06	31.3060

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900001

Total Uranium Activity	1.5195E+01	ug/g
Total Uranium Counting Unc.	8.1263E+00	ug/g
Total Uranium Tpu	4.1461E-06	ug/g
Total Uranium Mda	4.5514E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 957711                          SAMPLE ID   : G247900001
*  ANALYST       : MXR1                             DETECTOR    : GAM15
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00          COUNT TIME   : 0 04:00:00.00
*  ANALYSIS DATE : 5-MAR-2010 23:37:34.09          SAMPLE ALQT  : 130.670 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.271E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.566E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 4.550E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 2.238E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 03:38:57.79

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900002.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 5-MAR-2010 23:38:00.
Sample ID          : G247900002      Sample quantity   : 1.29950E+02 GRAM
Detector name      : GAM17           Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00   Elapsed real time: 0 04:00:19.67  0.1%
Energy tolerance   : 1.50000 keV     Analyst Initials  : MXR1
Abundance limit    : 75.00000        Sensitivity       : 5.00000
Batch ID           : 957711          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	46.55*	147	768	0.94	92.74	89	8	1.02E-02	35.9	
2	0	63.14*	361	1220	1.09	125.92	122	9	2.51E-02	18.8	
3	2	74.83*	1110	922	0.95	149.30	145	20	7.71E-02	5.2	2.89E+00
4	2	77.07*	1714	754	0.95	153.79	145	20	1.19E-01	3.6	
5	4	84.06*	250	630	1.34	167.78	165	13	1.73E-02	18.1	2.22E+00
6	4	87.11*	543	825	1.10	173.87	165	13	3.77E-02	9.8	
7	0	89.83	301	709	1.04	179.31	177	6	2.09E-02	15.1	
8	0	92.84*	622	889	1.25	185.34	182	8	4.32E-02	9.9	
9	0	105.05	84	594	0.98	209.78	206	8	5.86E-03	51.1	
10	0	129.21	154	626	1.38	258.10	254	9	1.07E-02	30.5	
11	0	185.76*	427	555	1.29	371.25	366	11	2.96E-02	12.2	
12	0	209.27	175	389	1.08	418.29	415	8	1.22E-02	21.0	
13	3	238.52*	1950	275	1.08	476.81	472	16	1.35E-01	2.7	1.37E+00
14	3	241.40*	428	355	1.51	482.57	472	16	2.97E-02	11.1	
15	0	270.15	132	352	1.28	540.10	534	11	9.14E-03	29.0	
16	0	277.34	108	325	1.32	554.49	550	10	7.47E-03	32.9	
17	1	295.05*	613	206	1.19	589.92	585	21	4.26E-02	5.8	1.07E+00
18	1	300.19	135	201	1.31	600.20	585	21	9.40E-03	20.7	
19	0	327.78	54	231	0.99	655.41	651	8	3.75E-03	50.6	
20	0	338.05	409	334	1.04	675.97	670	12	2.84E-02	10.2	
21	0	351.67*	923	181	1.27	703.21	699	9	6.41E-02	4.3	
22	0	463.23	104	198	1.12	926.43	921	12	7.21E-03	29.1	
23	0	510.33*	208	230	1.70	1020.69	1012	18	1.45E-02	20.9	
24	0	582.66*	548	157	1.41	1165.43	1158	13	3.80E-02	6.6	
25	0	608.87*	673	189	1.39	1217.87	1212	14	4.68E-02	6.0	
26	0	726.58	127	112	0.99	1453.42	1448	11	8.85E-03	18.4	
27	0	768.01	92	74	1.55	1536.35	1532	10	6.39E-03	20.2	
28	0	794.56*	58	102	1.39	1589.47	1582	12	4.00E-03	38.4	
29	0	860.13	60	83	1.59	1720.70	1716	10	4.18E-03	31.1	
30	0	910.38*	392	112	1.67	1821.26	1813	16	2.72E-02	8.0	
31	1	964.05	100	59	1.83	1928.67	1921	22	6.95E-03	18.0	1.82E+00
32	1	968.09*	229	57	1.83	1936.75	1921	22	1.59E-02	9.5	
33	0	1119.40	154	69	1.45	2239.60	2235	12	1.07E-02	13.6	
34	0	1144.11	36	51	1.25	2289.06	2285	9	2.50E-03	39.1	
35	0	1236.95	77	69	1.17	2474.89	2469	11	5.37E-03	23.7	
36	0	1380.31	93	60	8.48	2761.85	2749	28	6.46E-03	26.2	
37	0	1459.60*	1399	58	1.84	2920.56	2914	15	9.72E-02	2.9	
38	0	1589.89	42	50	4.73	3181.38	3166	25	2.95E-03	47.4	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1728.29	34	16	0.74	3458.44	3451	16	2.33E-03	31.9	
40	0	1763.17	144	8	1.71	3528.27	3520	16	1.00E-02	9.4	

Flag: "*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900002.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 : 5-MAR-2010 23:38:00
Sample ID        : G247900002 Sample quantity : 129.95 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA17 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:19.67 0.1%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.436E+01	2.593E+00	5.582E-01	4.956E-02	43.642
CD-109	+	88.03	*	3.252E+00	7.124E-01	6.808E-01	6.646E-02	4.776
SN-126	+	64.28		8.014E-01	3.278E-01	2.912E-01	4.649E-02	2.752
	+	86.94		1.321E+00	6.075E-01	2.856E-01	1.188E-01	4.624
	+	87.57	*	3.177E-01	6.959E-02	6.642E-02	6.481E-03	4.783
EU-155	+	86.55		3.852E-01	8.453E-02	8.322E-02	8.182E-03	4.629
	+	105.31	*	9.108E-02	9.353E-02	1.031E-01	1.108E-02	0.883
TL-208	+	277.37		6.594E-01	4.423E-01	4.439E-01	5.734E-02	1.486
	+	583.19	*	5.136E-01	8.319E-02	4.743E-02	4.481E-03	10.829
	+	860.56		5.575E-01	3.503E-01	3.938E-01	3.704E-02	1.415
PB-210	+	46.54	*	7.939E-01	5.757E-01	5.430E-01	5.854E-02	1.462
BI-211		72.87		2.807E+00	1.605E+00	2.517E+00	2.461E-01	1.115
	+	351.06	*	3.548E+00	4.516E-01	2.444E-01	2.281E-02	14.516
PB-212	+	74.82		2.294E+00	3.974E-01	2.706E-01	3.729E-02	8.478
	+	77.11		2.135E+00	2.597E-01	1.634E-01	1.593E-02	13.063
	+	238.63	*	1.606E+00	1.845E-01	6.784E-02	6.871E-03	23.672
	+	300.09		1.774E+00	7.608E-01	9.310E-01	1.024E-01	1.906
BI-214	+	609.32	*	1.230E+00	1.936E-01	9.861E-02	1.008E-02	12.477
	+	1120.29		1.521E+00	4.460E-01	4.040E-01	4.340E-02	3.764
	+	1764.49		2.023E+00	4.179E-01	2.288E-01	1.934E-02	8.843
PB-214	+	74.82		4.066E+00	6.661E-01	4.796E-01	6.032E-02	8.478
	+	77.11		3.763E+00	5.531E-01	2.881E-01	3.678E-02	13.063
	+	242.00		2.137E+00	5.267E-01	4.131E-01	4.439E-02	5.173
	+	295.22		1.420E+00	2.298E-01	1.642E-01	1.848E-02	8.647
	+	351.93	*	1.288E+00	1.786E-01	9.098E-02	9.858E-03	14.153
RA-224	+	240.99	*	3.779E+00	9.052E-01	7.278E-01	6.581E-02	5.192
RA-226	+	609.32	*	1.230E+00	1.936E-01	9.861E-02	1.008E-02	12.477
	+	1120.29		1.521E+00	4.460E-01	4.040E-01	4.340E-02	3.764
	+	1764.49		2.023E+00	4.179E-01	2.288E-01	1.934E-02	8.843
AC-228	+	338.32		1.741E+00	8.099E-01	2.754E-01	1.151E-01	6.322
	+	911.20	*	1.857E+00	3.692E-01	1.989E-01	2.324E-02	9.339
	+	968.97		1.874E+00	5.803E-01	2.695E-01	6.577E-02	6.955
RA-228	+	338.32		1.741E+00	8.099E-01	2.754E-01	1.151E-01	6.322
	+	911.20	*	1.857E+00	3.692E-01	1.989E-01	2.324E-02	9.339

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		1.874E+00	5.803E-01	2.695E-01	6.577E-02	6.955
	+	74.82		2.294E+00	3.299E-01	2.706E-01	2.660E-02	8.478
	+	77.11		2.135E+00	2.597E-01	1.634E-01	1.593E-02	13.063
	+	238.63	*	1.606E+00	1.845E-01	6.784E-02	6.871E-03	23.672
TH-229	+	300.09		1.774E+00	1.313E+00	9.310E-01	5.707E-01	1.906
	+	85.43		3.654E-01	1.368E-01	1.722E-01	1.678E-02	2.122
	+	88.47		2.729E-01	8.666E-02	1.027E-01	1.004E-02	2.658
		193.51	*	6.167E-01	3.879E-01	6.578E-01	5.689E-02	0.937
TH-232		210.85		1.445E+00	7.077E-01	1.103E+00	9.730E-02	1.309
	+	338.32		1.741E+00	3.882E-01	2.754E-01	2.482E-02	6.322
	+	911.20	*	1.857E+00	3.692E-01	1.989E-01	2.324E-02	9.339
	+	968.97		1.874E+00	5.803E-01	2.695E-01	6.577E-02	6.955
TH-234	+	63.29	*	2.079E+00	8.772E-01	7.370E-01	1.402E-01	2.821
	+	92.59		3.222E+00	9.676E-01	5.709E-01	1.293E-01	5.644
U-235	+	89.96		1.887E+00	7.406E-01	7.933E-01	1.989E-01	2.379
	+	93.35		2.434E+00	7.492E-01	4.345E-01	1.028E-01	5.602
		143.76	*	3.413E-03	1.507E-01	2.357E-01	4.197E-02	0.014
		163.33		-1.145E-01	3.159E-01	5.068E-01	9.085E-02	-0.226
NP-237	+	185.72		2.241E-01	5.804E-02	4.599E-02	3.939E-03	4.872
		205.31		4.644E-01	4.065E-01	6.036E-01	1.099E-01	0.769
	+	86.48	*	9.479E-01	2.874E-01	2.047E-01	4.734E-02	4.630
		95.86		3.303E-01	5.622E-01	8.550E-01	2.101E-01	0.386
U-238	+	63.29	*	2.079E+00	8.772E-01	7.370E-01	1.402E-01	2.821
	+	92.59		3.222E+00	7.121E-01	5.709E-01	5.696E-02	5.644
ANH-511	+	511.00	*	1.462E-01	6.245E-02	3.462E-02	3.092E-03	4.222

---- 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	*	-1.495E-02	2.599E-01	4.246E-01	4.039E-02	-0.035
NA-22		1274.54	*	-3.719E-02	3.986E-02	5.806E-02	4.892E-03	-0.641
NA-24		1368.63	*	-6.878E-01	3.986E-02	Half-Life too short		
SC-46		889.28	*	-2.106E-02	3.395E-02	5.333E-02	4.668E-03	-0.395
V-48	+	1120.55		2.581E-01	7.369E-02	1.133E-01	9.508E-03	2.278
		944.13		4.425E-01	8.433E-01	1.441E+00	1.261E-01	0.307
		983.53	*	3.311E-03	6.540E-02	1.078E-01	9.403E-03	0.031
CR-51		1312.11		2.738E-02	7.096E-02	1.230E-01	1.044E-02	0.223
		320.08	*	8.990E-02	2.773E-01	4.730E-01	4.514E-02	0.190
		834.85	*	1.179E-02	3.538E-02	6.005E-02	5.280E-03	0.196
CO-56		846.77	*	-3.940E-03	3.496E-02	5.760E-02	5.064E-03	-0.068
		1037.84		2.058E-02	2.824E-01	4.643E-01	4.218E-02	0.044
	+	1238.28		2.144E-01	1.032E-01	1.597E-01	1.373E-02	1.342
CO-57		1771.35		3.001E-02	1.895E-01	3.183E-01	2.688E-02	0.094
		122.06	*	3.444E-04	1.688E-02	2.792E-02	3.272E-03	0.012
		136.47		1.663E-01	1.475E-01	2.496E-01	2.808E-02	0.666
CO-58		810.76	*	-2.329E-03	3.681E-02	6.110E-02	5.381E-03	-0.038
FE-59		1099.45	*	-2.450E-02	8.585E-02	1.364E-01	1.252E-02	-0.180
		1291.59		3.365E-02	1.182E-01	1.945E-01	1.874E-02	0.173

---- 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			3.637E-02	4.091E-02	7.063E-02	5.769E-03	0.515
	1332.49	*		-1.114E-02	3.182E-02	5.138E-02	4.379E-03	-0.217
ZN-65	1115.54	*		3.493E-02	9.735E-02	1.418E-01	1.194E-02	0.246
SE-75	121.12			1.798E-02	8.723E-02	1.452E-01	1.972E-02	0.124
	136.00			8.161E-03	2.810E-02	4.664E-02	5.045E-03	0.175
	264.66	*		1.479E-02	3.505E-02	5.070E-02	4.659E-03	0.292
	279.54			3.925E-02	8.300E-02	1.278E-01	1.213E-02	0.307
	400.66			-1.736E-02	2.024E-01	3.343E-01	3.671E-02	-0.052
SR-85	514.00	*		4.485E-02	3.129E-02	4.988E-02	4.457E-03	0.899
Y-88	898.04			6.216E-03	3.611E-02	6.051E-02	5.314E-03	0.103
	1836.06	*		4.708E-03	2.859E-02	4.795E-02	3.998E-03	0.098
Y-91	1204.77	*		6.508E+00	2.043E+01	3.377E+01	2.787E+00	0.193
NB-94	702.65	*		1.357E-02	2.976E-02	5.141E-02	4.410E-03	0.264
	871.09			2.765E-02	2.965E-02	5.240E-02	4.598E-03	0.528
NB-95	765.81	*		5.128E-02	3.981E-02	6.440E-02	5.625E-03	0.796
NB-95M	235.69	*		1.376E-02	1.022E-01	1.461E-01	1.494E-02	0.094
ZR-95	724.19			1.361E-01	9.494E-02	1.537E-01	1.440E-02	0.885
	756.73	*		-5.744E-03	6.514E-02	1.085E-01	1.043E-02	-0.053
MO-99	140.51			-1.011E+01	1.736E+01	2.766E+01	6.766E+00	-0.365
	181.07			8.764E+00	1.535E+01	2.270E+01	4.254E+00	0.386
	366.42			1.173E+01	7.974E+01	1.340E+02	1.173E+01	0.088
	739.50	*		2.973E+00	1.110E+01	1.896E+01	2.995E+00	0.157
	777.92			-6.228E+00	3.409E+01	5.628E+01	4.927E+00	-0.111
TC-99M	140.51	*		-4.834E+10	3.409E+01	Half-Life too short		
RU-103	497.08	*		-1.235E-02	3.225E-02	5.136E-02	7.267E-03	-0.240
	610.33	+		1.279E+01	2.598E+00	2.378E+00	3.903E-01	5.378
RH-106	621.93	*		-4.992E-02	2.625E-01	4.160E-01	5.532E-02	-0.120
	1050.41			1.368E+00	2.258E+00	3.866E+00	3.327E-01	0.354
RU-106	621.93	*		-4.992E-02	2.624E-01	4.160E-01	3.614E-02	-0.120
	1050.41			1.368E+00	2.258E+00	3.866E+00	3.327E-01	0.354
AG-108M	433.94	*		-6.601E-03	2.316E-02	3.758E-02	3.368E-03	-0.176
	614.28			-3.055E-03	3.243E-02	4.513E-02	4.065E-03	-0.068
	722.91			2.383E-02	3.690E-02	5.697E-02	5.079E-03	0.418
AG-110M	657.76	*		-3.580E-02	3.427E-02	5.081E-02	4.429E-03	-0.705
	677.62			5.992E-02	2.554E-01	4.155E-01	3.631E-02	0.144
	706.68			-3.726E-02	1.973E-01	3.287E-01	2.905E-02	-0.113
	763.94			-5.380E-02	1.459E-01	2.043E-01	1.832E-02	-0.263
	884.68			1.844E-02	4.170E-02	7.138E-02	6.448E-03	0.258
	937.49			-5.561E-02	1.009E-01	1.590E-01	1.440E-02	-0.350
	1384.29			1.208E-01	1.558E-01	2.700E-01	2.380E-02	0.447
	1505.03			-2.779E-02	2.512E-01	4.114E-01	3.558E-02	-0.068
SN-113	391.69	*		-1.630E-02	3.335E-02	5.390E-02	4.683E-03	-0.302
CD-115	260.90			-1.072E+02	1.196E+02	1.803E+02	1.648E+01	-0.594
	492.35			-2.444E+01	3.476E+01	5.416E+01	4.822E+00	-0.451
	527.90	*		-6.271E+00	1.039E+01	1.619E+01	1.447E+00	-0.387
SN-117M	156.02			-1.395E+00	1.708E+00	2.702E+00	2.488E-01	-0.516
	158.56	*		7.949E-03	4.052E-02	6.656E-02	5.983E-03	0.119
TE-123M	159.00	*		1.464E-02	2.041E-02	3.408E-02	3.068E-03	0.430
SB-124	602.73			-2.412E-02	4.014E-02	5.338E-02	4.688E-03	-0.452

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		645.85		-5.845E-02	4.476E-01	7.109E-01	6.427E-02	-0.082
		722.78		2.080E-01	3.728E-01	5.717E-01	5.051E-02	0.364
		1690.97	*	2.631E-02	7.060E-02	1.221E-01	1.089E-02	0.215
SB-125		427.87	*	6.064E-02	7.159E-02	1.233E-01	1.087E-02	0.492
	+	463.37		6.361E-01	3.752E-01	4.438E-01	4.196E-02	1.433
		600.60		6.232E-02	1.577E-01	2.604E-01	2.452E-02	0.239
		635.95		-1.543E-01	2.341E-01	3.566E-01	3.318E-02	-0.433
TE-125M		109.28	*	-1.136E+00	6.839E+00	1.011E+01	1.256E+00	-0.112
I-126		388.63		-2.755E-02	1.304E-01	2.144E-01	1.815E-02	-0.128
		666.33	*	2.855E-02	1.977E-01	3.194E-01	2.696E-02	0.089
		753.82		1.705E+00	1.690E+00	2.994E+00	2.609E-01	0.570
SB-126		414.70		-5.198E-02	5.846E-02	9.159E-02	7.854E-03	-0.568
		666.50		2.289E-02	6.713E-02	1.099E-01	9.283E-03	0.208
		695.00		3.496E-02	6.973E-02	1.209E-01	1.034E-02	0.289
		697.00		3.275E-03	2.403E-01	4.054E-01	3.470E-02	0.008
		720.70	*	2.495E-02	1.472E-01	2.188E-01	1.889E-02	0.114
		856.80		6.075E-02	4.885E-01	7.129E-01	6.264E-02	0.085
SB-127		252.40		1.081E+00	3.426E+00	5.477E+00	2.282E+00	0.197
		473.00		7.150E-01	1.390E+00	2.346E+00	3.057E-01	0.305
		685.70	*	6.608E-01	1.182E+00	1.965E+00	2.243E-01	0.336
		783.70		4.987E+00	3.453E+00	6.184E+00	7.769E-01	0.806
I-131		80.19		-2.455E+00	2.673E+00	3.911E+00	3.829E-01	-0.628
		284.31		2.685E-01	1.064E+00	1.823E+00	1.750E-01	0.147
		364.49	*	-1.384E-03	8.585E-02	1.432E-01	1.322E-02	-0.010
		636.99		-2.083E+00	1.422E+00	2.004E+00	1.823E-01	-1.039
TE-132		49.72		-2.366E+00	3.079E+00	4.492E+00	5.500E-01	-0.527
		111.76		-7.980E+00	2.463E+01	3.905E+01	5.111E+00	-0.204
		116.30		-3.716E+00	2.032E+01	3.345E+01	4.460E+00	-0.111
		228.16	*	-3.608E-01	5.982E-01	9.262E-01	1.490E-01	-0.390
BA-133		81.00		-8.549E-02	5.457E-02	7.558E-02	1.222E-02	-1.131
	+	276.40		6.095E-01	4.107E-01	4.758E-01	6.879E-02	1.281
		302.85		1.661E-02	1.047E-01	1.576E-01	2.117E-02	0.105
		356.01	*	8.963E-03	3.547E-02	5.307E-02	6.961E-03	0.169
		383.85		5.707E-02	2.280E-01	3.840E-01	4.747E-02	0.149
I-133		529.87	*	-4.305E-03	2.280E-01	Half-Life	too short	
		875.33		1.540E-02	2.280E-01	Half-Life	too short	
		1298.22		-3.065E-01	2.280E-01	Half-Life	too short	
CS-134		563.25		-1.134E-01	3.192E-01	5.052E-01	4.540E-02	-0.224
		569.33		5.343E-02	1.660E-01	2.743E-01	2.471E-02	0.195
		604.72		-3.983E-03	3.317E-02	4.616E-02	4.060E-03	-0.086
	+	795.86	*	8.150E-02	6.299E-02	7.742E-02	6.841E-03	1.053
		801.95		1.590E-02	3.641E-01	5.773E-01	5.096E-02	0.028
		1365.19		1.123E+00	1.062E+00	1.954E+00	1.752E-01	0.575
CS-135		268.22	*	1.067E-01	1.300E-01	1.916E-01	1.999E-02	0.557
I-135		546.56		-1.068E+10	1.300E-01	Half-Life	too short	
		836.80		8.691E+10	1.300E-01	Half-Life	too short	
		1038.76		1.105E+10	1.300E-01	Half-Life	too short	
		1131.51		-1.479E+10	1.300E-01	Half-Life	too short	
		1260.41	*	-3.047E+09	1.300E-01	Half-Life	too short	

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Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1457.56		3.130E+12	1.300E-01	Half-Life	too short	
		1678.03		7.091E+09	1.300E-01	Half-Life	too short	
		1791.20		-2.766E+10	1.300E-01	Half-Life	too short	
CS-136		153.25		4.581E-01	6.251E-01	1.044E+00	1.145E-01	0.439
		176.60		-6.634E-02	3.724E-01	6.000E-01	5.619E-02	-0.111
		273.65		2.096E-01	5.347E-01	6.099E-01	6.014E-02	0.344
		340.55		1.271E-01	1.240E-01	1.937E-01	1.803E-02	0.656
		818.51		-1.831E-02	6.776E-02	1.107E-01	9.736E-03	-0.165
		1048.07	*	-8.285E-02	9.687E-02	1.460E-01	1.310E-02	-0.568
		1235.36		7.313E-01	6.687E-01	1.017E+00	1.175E-01	0.719
BA-137M		661.66	*	3.448E-02	3.738E-02	6.116E-02	5.152E-03	0.564
CS-137		661.66	*	3.643E-02	3.949E-02	6.461E-02	5.453E-03	0.564
CE-139		165.86	*	-1.850E-02	2.184E-02	3.436E-02	2.865E-03	-0.538
BA-140		162.66		-2.333E-01	5.951E-01	9.552E-01	8.794E-02	-0.244
		304.85		1.536E-01	1.059E+00	1.590E+00	4.680E-01	0.097
		423.72		-1.112E+00	1.644E+00	2.550E+00	8.387E-01	-0.436
		537.26	*	-5.398E-02	2.329E-01	3.612E-01	1.228E-01	-0.149
LA-140	+	328.76		2.890E-01	2.938E-01	4.246E-01	4.051E-02	0.681
		487.02		5.751E-02	1.116E-01	1.883E-01	1.771E-02	0.305
		815.77		1.243E-01	3.088E-01	5.280E-01	5.165E-02	0.235
		1596.21	*	-3.354E-03	7.998E-02	1.124E-01	9.703E-03	-0.030
CE-141		145.44	*	1.470E-02	4.511E-02	7.470E-02	7.619E-03	0.197
CE-143		57.36		-2.498E-04	4.511E-02	Half-Life	too short	
		293.27	*	7.256E-04	4.511E-02	Half-Life	too short	
		664.57		-1.191E-03	4.511E-02	Half-Life	too short	
		721.93		4.466E-04	4.511E-02	Half-Life	too short	
CE-144		80.12		-1.283E+00	1.395E+00	2.040E+00	1.987E-01	-0.629
		133.52	*	-8.464E-02	1.560E-01	2.231E-01	3.727E-02	-0.379
PM-144		476.78		2.009E-03	5.118E-02	8.411E-02	8.065E-03	0.024
		618.01		-2.327E-03	2.604E-02	4.161E-02	3.723E-03	-0.056
		696.49	*	1.308E-02	3.028E-02	5.228E-02	4.475E-03	0.250
PR-144		696.51	*	9.557E-01	2.265E+00	3.909E+00	3.345E-01	0.245
		1489.16		-3.036E+00	9.933E+00	1.579E+01	1.365E+00	-0.192
PM-146		453.88	*	1.273E-02	3.298E-02	5.543E-02	5.943E-03	0.230
		633.25		1.042E+00	1.259E+00	2.039E+00	7.787E-01	0.511
		735.93		8.314E-02	1.204E-01	2.077E-01	5.824E-02	0.400
		747.24		-1.946E-02	7.790E-02	1.282E-01	1.876E-02	-0.152
ND-147	+	91.11		6.272E-01	2.004E-01	3.255E-01	3.429E-02	1.927
		319.41		5.087E-01	2.507E+00	4.256E+00	3.881E-01	0.120
		531.02	*	-6.271E-02	4.487E-01	7.228E-01	1.094E-01	-0.087
PM-149		285.90	*	2.058E+01	7.251E+01	1.242E+02	1.970E+01	0.166
EU-152		121.78		5.675E-03	4.847E-02	8.046E-02	1.019E-02	0.071
		244.70		3.087E-01	2.523E-01	3.822E-01	3.464E-02	0.808
		344.28	*	-1.150E-02	7.513E-02	1.208E-01	1.142E-02	-0.095
		778.90		-4.734E-02	2.242E-01	3.694E-01	3.234E-02	-0.128
	+	964.08		8.824E-01	3.275E-01	5.200E-01	4.545E-02	1.697
		1085.87		1.862E-01	3.577E-01	6.062E-01	5.159E-02	0.307
		1112.07		1.994E-01	2.964E-01	4.938E-01	4.159E-02	0.404
		1408.01		2.664E-01	1.766E-01	3.305E-01	2.844E-02	0.806

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	69.67			-7.467E-01	7.471E-01	1.172E+00	1.150E-01	-0.637
	97.43		*	-5.070E-02	5.422E-02	7.945E-02	8.122E-03	-0.638
	103.18			-3.519E-02	7.022E-02	1.024E-01	1.079E-02	-0.344
EU-154	123.07			-7.555E-03	3.480E-02	5.707E-02	7.873E-03	-0.132
	723.31			1.316E-01	1.688E-01	2.630E-01	2.502E-02	0.500
	873.19			-1.035E-01	2.438E-01	3.902E-01	4.685E-02	-0.265
	996.26			-5.863E-02	3.340E-01	5.402E-01	9.460E-02	-0.109
	1004.73			-5.871E-02	2.000E-01	3.202E-01	3.744E-02	-0.183
TB-160	1274.44		*	-7.986E-02	1.105E-01	1.643E-01	1.845E-02	-0.486
	86.79		+	1.026E+00	2.248E-01	3.033E-01	2.959E-02	3.382
	197.04			-4.718E-01	4.396E-01	6.454E-01	5.605E-02	-0.731
	215.65			2.201E-01	5.499E-01	8.959E-01	7.937E-02	0.246
	298.57			9.574E-02	8.242E-02	1.448E-01	1.329E-02	0.661
	879.36		*	9.304E-04	1.192E-01	1.976E-01	1.732E-02	0.005
	962.29			1.077E+00	5.781E-01	9.496E-01	8.300E-02	1.134
	966.15			1.351E+00	2.694E-01	4.990E-01	4.360E-02	2.707
	1177.93			-1.331E-01	3.209E-01	5.006E-01	4.096E-02	-0.266
	1271.85			-1.849E-01	6.269E-01	9.782E-01	8.226E-02	-0.189
HO-166M	80.57			-1.733E-01	1.524E-01	2.206E-01	2.149E-02	-0.786
	184.41		+	1.780E-01	4.611E-02	5.006E-02	4.279E-03	3.556
	280.46			-3.638E-03	6.445E-02	9.624E-02	8.836E-03	-0.038
	410.95			1.369E-01	1.883E-01	3.231E-01	2.763E-02	0.424
	711.68		*	2.883E-02	5.598E-02	9.689E-02	8.339E-03	0.298
	752.31			2.044E-01	2.443E-01	4.298E-01	3.743E-02	0.476
	810.29			-1.270E-02	5.482E-02	8.996E-02	7.903E-03	-0.141
TA-182	67.75			-4.760E-03	4.886E-02	7.310E-02	7.200E-03	-0.065
	100.11			1.611E-01	1.079E-01	1.790E-01	1.855E-02	0.900
	152.43			1.900E-02	2.448E-01	4.014E-01	3.816E-02	0.047
	222.11			-3.718E-02	2.533E-01	4.028E-01	3.590E-02	-0.092
	1121.30			4.647E-01	1.726E-01	2.922E-01	2.451E-02	1.590
	1189.05			-1.113E-01	2.819E-01	4.408E-01	3.620E-02	-0.253
	1221.41		*	-4.973E-02	1.821E-01	2.874E-01	2.384E-02	-0.173
	1231.02			2.016E-01	5.177E-01	7.481E-01	6.222E-02	0.270
IR-192	295.96		+	1.054E+00	1.566E-01	2.277E-01	2.104E-02	4.629
	308.46			-2.499E-03	6.957E-02	1.171E-01	1.078E-02	-0.021
	316.51		*	-1.698E-02	2.566E-02	4.182E-02	3.826E-03	-0.406
	468.07			-4.708E-04	5.696E-02	8.192E-02	7.740E-03	-0.006
HG-203	70.83			7.143E-02	6.209E-01	9.487E-01	1.587E-01	0.075
	72.87			7.030E-01	4.123E-01	6.305E-01	1.022E-01	1.115
BI-207	279.20		*	2.751E-02	2.993E-02	4.707E-02	4.419E-03	0.585
	72.81			1.441E-01	9.169E-02	1.435E-01	1.403E-02	1.004
	74.97		+	6.612E-01	9.478E-02	1.238E-01	1.209E-02	5.339
	569.70			1.102E-02	2.563E-02	4.262E-02	3.790E-03	0.258
	1063.66		*	2.670E-02	4.612E-02	7.876E-02	6.752E-03	0.339
PB-211	1770.23			-9.087E-01	5.084E-01	6.030E-01	5.093E-02	-1.507
	404.85		*	2.597E-01	5.958E-01	9.866E-01	4.772E-01	0.263
	427.09			1.642E+00	1.423E+00	2.131E+00	9.861E-01	0.771
BI-212	832.01			-6.905E-01	1.001E+00	1.478E+00	7.669E-01	-0.467
	727.33		*	1.883E+00	7.314E-01	9.906E-01	1.236E-01	1.901

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		785.37		2.158E+00	2.847E+00	4.970E+00	4.356E-01	0.434
		1620.50		1.671E+00	1.900E+00	3.494E+00	3.011E-01	0.478
RN-219	+	271.23		4.827E-01	2.843E-01	3.199E-01	3.429E-02	1.509
		401.81	*	-6.826E-02	3.247E-01	5.326E-01	7.882E-02	-0.128
RA-223		81.07		1.729E-01	1.330E-01	1.708E-01	1.664E-02	1.012
	+	83.79		2.174E-01	8.144E-02	1.178E-01	1.148E-02	1.846
		94.87		6.282E-01	2.779E-01	4.424E-01	4.464E-02	1.420
		144.24		8.114E-02	5.085E-01	7.992E-01	8.808E-02	0.102
		154.21		3.275E-01	2.809E-01	4.739E-01	4.797E-02	0.691
	+	269.46		3.751E-01	2.200E-01	2.513E-01	2.343E-02	1.493
		323.87	*	-1.234E-01	5.302E-01	7.737E-01	1.360E-01	-0.160
AC-227	+	338.28		6.910E+00	1.647E+00	1.950E+00	2.409E-01	3.543
		79.69		-6.750E-01	6.977E-01	1.008E+00	1.796E-01	-0.670
		235.96		1.783E-01	1.292E-01	1.943E-01	2.074E-02	0.917
		256.23	*	-2.499E-02	1.978E-01	3.120E-01	3.873E-02	-0.080
	+	299.98		1.952E+00	8.482E-01	1.192E+00	1.560E-01	1.637
		304.50		-4.981E-01	1.293E+00	1.875E+00	3.153E-01	-0.266
TH-227		334.37		-1.233E+00	1.424E+00	1.966E+00	3.110E-01	-0.627
		79.80		-9.137E-01	9.295E-01	1.328E+00	2.955E-01	-0.688
		235.96		1.783E-01	1.291E-01	1.943E-01	1.964E-02	0.917
		256.23	*	-2.499E-02	1.978E-01	3.120E-01	4.345E-02	-0.080
	+	299.98		1.952E+00	8.482E-01	1.192E+00	1.560E-01	1.637
		304.50		-4.981E-01	1.293E+00	1.875E+00	3.153E-01	-0.266
		334.37		-1.233E+00	1.424E+00	1.966E+00	3.110E-01	-0.627
PA-231		283.69	*	-1.138E-02	9.980E-01	1.690E+00	2.523E-01	-0.007
	+	301.36		1.254E+00	5.429E-01	7.328E-01	9.197E-02	1.711
TH-231		81.07		1.729E-01	1.330E-01	1.708E-01	1.664E-02	1.012
	+	83.79		2.174E-01	8.144E-02	1.178E-01	1.148E-02	1.846
		94.87		6.282E-01	2.779E-01	4.424E-01	4.464E-02	1.420
		144.24		8.114E-02	5.085E-01	7.992E-01	8.808E-02	0.102
		154.21		3.275E-01	2.809E-01	4.739E-01	4.797E-02	0.691
	+	269.46		3.751E-01	2.200E-01	2.513E-01	2.343E-02	1.493
		323.87	*	-1.234E-01	5.302E-01	7.737E-01	1.360E-01	-0.160
	+	338.28		6.910E+00	1.647E+00	1.950E+00	2.409E-01	3.543
PA-233	+	300.13		8.832E-01	3.897E-01	5.394E-01	8.176E-02	1.637
		311.90	*	-1.076E-02	4.820E-02	8.042E-02	7.543E-03	-0.134
		340.48		6.640E-01	5.453E-01	8.278E-01	2.004E-01	0.802
PA-234		94.67		3.423E-01	1.112E-01	1.707E-01	2.298E-02	2.005
		98.44		2.872E-03	5.623E-02	8.930E-02	5.007E-02	0.032
		111.00		-6.485E-02	1.176E-01	1.913E-01	2.656E-02	-0.339
		131.20		2.917E-02	7.888E-02	1.181E-01	1.312E-02	0.247
		569.50		5.087E-02	2.302E-01	3.779E-01	3.361E-02	0.135
		733.00		-2.976E-01	3.357E-01	4.838E-01	1.075E-01	-0.615
		880.51		1.268E-01	2.467E-01	4.239E-01	3.715E-02	0.299
		883.24		2.471E-03	2.512E-01	4.163E-01	2.799E-01	0.006
		926.50		2.436E-02	1.502E-01	2.508E-01	6.350E-02	0.097
		946.00	*	-4.642E-02	2.906E-01	4.729E-01	8.902E-02	-0.098
		949.00		1.636E-01	4.189E-01	7.090E-01	6.202E-02	0.231
PA-234M		766.42		2.211E+01	1.552E+01	1.839E+01	9.333E+00	1.202

---- 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	*		5.826E+00	4.169E+00	7.475E+00	7.501E-01	0.779
	99.53			1.232E-01	1.015E-01	1.658E-01	1.713E-02	0.743
	103.37			-1.597E-02	6.353E-02	9.381E-02	9.894E-03	-0.170
	106.12	+		7.262E-02	7.456E-02	9.224E-02	9.875E-03	0.787
	117.23	*		-2.130E-01	2.595E-01	4.160E-01	4.738E-02	-0.512
AM-241	228.18			-9.943E-02	1.616E-01	2.509E-01	2.248E-02	-0.396
	277.60	+		3.014E-01	2.003E-01	2.397E-01	2.200E-02	1.257
	59.54	*		3.679E-02	4.749E-02	7.300E-02	7.751E-03	0.504
CM-247	278.00	+		1.280E+00	8.506E-01	1.012E+00	9.290E-02	1.265
CF-249	287.50			-2.330E-01	8.745E-01	1.464E+00	1.344E-01	-0.159
	402.40	*		1.154E-02	3.005E-02	5.076E-02	4.312E-03	0.227
	252.80			3.534E-01	7.061E-01	1.147E+00	1.044E-01	0.308
	333.37			-1.199E-01	1.517E-01	2.124E-01	1.920E-02	-0.565
CF-251	388.16	*		-6.069E-03	3.060E-02	5.035E-02	4.264E-03	-0.121
	177.52	*		-3.407E-02	9.464E-02	1.513E-01	1.282E-02	-0.225
	227.38			5.072E-02	2.638E-01	4.251E-01	3.806E-02	0.119
	285.41			4.469E-01	1.507E+00	2.585E+00	2.374E-01	0.173

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]G247900002      *
* Acquisition date   : 5-MAR-2010 23:38:00 Detector SN# :                  *
* Detector ID        : GAM17 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 04:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 04:00:19.67 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G247900002 Analyst initials: MXR1                  *
* Batch Number       : 957711 Sample Quantity : 1.2995E+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	2.436E+01	2.541E+00	5.586E-01	0.000E+00
CD-109	3.252E+00	6.981E-01	7.125E-01	0.000E+00
SN-126	3.177E-01	6.820E-02	6.951E-02	0.000E+00
EU-155	9.108E-02	9.166E-02	1.076E-01	0.000E+00
TL-208	5.136E-01	8.153E-02	4.818E-02	0.000E+00
PB-210	7.939E-01	5.642E-01	5.738E-01	0.000E+00
BI-211	3.548E+00	4.426E-01	2.503E-01	0.000E+00
PB-212	1.606E+00	1.808E-01	6.991E-02	0.000E+00
BI-214	1.230E+00	1.897E-01	1.001E-01	0.000E+00
PB-214	1.288E+00	1.751E-01	9.318E-02	0.000E+00
RA-224	3.779E+00	8.871E-01	7.498E-01	0.000E+00
RA-226	1.230E+00	1.897E-01	1.001E-01	0.000E+00
AC-228	1.857E+00	3.618E-01	2.005E-01	0.000E+00
RA-228	1.857E+00	3.618E-01	2.005E-01	0.000E+00
TH-228	1.606E+00	1.808E-01	6.991E-02	0.000E+00
TH-229	6.167E-01	3.801E-01	6.801E-01	0.000E+00
TH-232	1.857E+00	3.618E-01	2.005E-01	0.000E+00
TH-234	2.079E+00	8.597E-01	7.752E-01	0.000E+00
U-235	3.413E-03	1.477E-01	2.448E-01	0.000E+00
NP-237	9.479E-01	2.817E-01	2.143E-01	0.000E+00
U-238	2.079E+00	8.597E-01	7.752E-01	0.000E+00
ANH-511	1.462E-01	6.121E-02	3.525E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.495E-02	2.547E-01	4.328E-01	0.000E+00 NOT IDENT.
NA-22	-3.719E-02	3.906E-02	5.824E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.085E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.106E-02	3.328E-02	5.380E-02	0.000E+00 FAIL ABUN
V-48	3.311E-03	6.409E-02	1.086E-01	0.000E+00 NOT IDENT.

CR-51	8.990E-02	2.717E-01	4.852E-01	0.000E+00	NOT IDENT.
MN-54	1.179E-02	3.468E-02	6.065E-02	0.000E+00	NOT IDENT.
CO-56	-3.940E-03	3.426E-02	5.816E-02	0.000E+00	FAIL ABUN
CO-57	3.444E-04	1.654E-02	2.908E-02	0.000E+00	NOT IDENT.
CO-58	-2.329E-03	3.607E-02	6.174E-02	0.000E+00	NOT IDENT.
FE-59	-2.450E-02	8.414E-02	1.372E-01	0.000E+00	NOT IDENT.
CO-60	-1.114E-02	3.118E-02	5.149E-02	0.000E+00	NOT IDENT.
ZN-65	3.493E-02	9.541E-02	1.425E-01	0.000E+00	NOT IDENT.
SE-75	1.479E-02	3.435E-02	5.216E-02	0.000E+00	NOT IDENT.
SR-85	4.485E-02	3.067E-02	5.078E-02	0.000E+00	NOT IDENT.
Y-88	4.708E-03	2.802E-02	4.780E-02	0.000E+00	NOT IDENT.
Y-91	6.508E+00	2.002E+01	3.390E+01	0.000E+00	NOT IDENT.
NB-94	1.357E-02	2.917E-02	5.207E-02	0.000E+00	NOT IDENT.
NB-95	5.128E-02	3.901E-02	6.513E-02	0.000E+00	NOT IDENT.
NB-95M	1.376E-02	1.002E-01	1.505E-01	0.000E+00	NOT IDENT.
ZR-95	-5.744E-03	6.384E-02	1.098E-01	0.000E+00	NOT IDENT.
MO-99	2.973E+00	1.088E+01	1.919E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	8.182E+16	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.235E-02	3.161E-02	5.231E-02	0.000E+00	FAIL ABUN
RH-106	-4.992E-02	2.572E-01	4.221E-01	0.000E+00	NOT IDENT.
RU-106	-4.992E-02	2.572E-01	4.221E-01	0.000E+00	NOT IDENT.
AG-108M	-6.601E-03	2.269E-02	3.836E-02	0.000E+00	NOT IDENT.
AG-110M	-3.580E-02	3.359E-02	5.152E-02	0.000E+00	NOT IDENT.
SN-113	-1.630E-02	3.268E-02	5.511E-02	0.000E+00	NOT IDENT.
CD-115	-6.271E+00	1.018E+01	1.647E+01	0.000E+00	NOT IDENT.
SN-117M	7.949E-03	3.971E-02	6.903E-02	0.000E+00	NOT IDENT.
TE-123M	1.464E-02	2.000E-02	3.534E-02	0.000E+00	NOT IDENT.
SB-124	2.631E-02	6.918E-02	1.219E-01	0.000E+00	NOT IDENT.
SB-125	6.064E-02	7.016E-02	1.259E-01	0.000E+00	FAIL ABUN
TE-125M	-1.136E+00	6.702E+00	1.055E+01	0.000E+00	NOT IDENT.
I-126	2.855E-02	1.937E-01	3.237E-01	0.000E+00	NOT IDENT.
SB-126	2.495E-02	1.442E-01	2.215E-01	0.000E+00	NOT IDENT.
SB-127	6.608E-01	1.159E+00	1.991E+00	0.000E+00	NOT IDENT.
I-131	-1.384E-03	8.414E-02	1.466E-01	0.000E+00	NOT IDENT.
TE-132	-3.608E-01	5.862E-01	9.551E-01	0.000E+00	NOT IDENT.
BA-133	8.963E-03	3.476E-02	5.434E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	6.386E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.173E-02	7.825E-02	0.000E+00	FAIL ABUN
CS-135	1.067E-01	1.274E-01	1.971E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.781E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.285E-02	9.494E-02	1.469E-01	0.000E+00	NOT IDENT.
BA-137M	3.448E-02	3.663E-02	6.200E-02	0.000E+00	NOT IDENT.
CS-137	3.643E-02	3.870E-02	6.550E-02	0.000E+00	NOT IDENT.
CE-139	-1.850E-02	2.140E-02	3.561E-02	0.000E+00	NOT IDENT.
BA-140	-5.398E-02	2.283E-01	3.674E-01	0.000E+00	NOT IDENT.
LA-140	-3.354E-03	7.838E-02	1.123E-01	0.000E+00	FAIL ABUN
CE-141	1.470E-02	4.420E-02	7.757E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.188E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-8.464E-02	1.528E-01	2.320E-01	0.000E+00	NOT IDENT.
PM-144	1.308E-02	2.967E-02	5.295E-02	0.000E+00	NOT IDENT.
PR-144	9.557E-01	2.220E+00	3.959E+00	0.000E+00	NOT IDENT.
PM-146	1.273E-02	3.232E-02	5.654E-02	0.000E+00	NOT IDENT.
ND-147	-6.271E-02	4.397E-01	7.354E-01	0.000E+00	FAIL ABUN
PM-149	2.058E+01	7.106E+01	1.276E+02	0.000E+00	NOT IDENT.
EU-152	-1.150E-02	7.363E-02	1.237E-01	0.000E+00	FAIL ABUN
GD-153	-5.070E-02	5.313E-02	8.302E-02	0.000E+00	NOT IDENT.
EU-154	-7.986E-02	1.083E-01	1.648E-01	0.000E+00	NOT IDENT.
TB-160	9.304E-04	1.168E-01	1.994E-01	0.000E+00	FAIL ABUN
HO-166M	2.883E-02	5.486E-02	9.811E-02	0.000E+00	FAIL ABUN
TA-182	-4.973E-02	1.785E-01	2.884E-01	0.000E+00	NOT IDENT.
IR-192	-1.698E-02	2.514E-02	4.290E-02	0.000E+00	FAIL ABUN
HG-203	2.751E-02	2.933E-02	4.839E-02	0.000E+00	NOT IDENT.
BI-207	2.670E-02	4.520E-02	7.923E-02	0.000E+00	FAIL ABUN
PB-211	2.597E-01	5.838E-01	1.008E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.168E-01	1.003E+00	0.000E+00	FAIL ABUN
RN-219	-6.826E-02	3.182E-01	5.443E-01	0.000E+00	FAIL ABUN
RA-223	-1.234E-01	5.196E-01	7.934E-01	0.000E+00	FAIL ABUN
AC-227	-2.499E-02	1.939E-01	3.211E-01	0.000E+00	FAIL ABUN
TH-227	-2.499E-02	1.939E-01	3.211E-01	0.000E+00	FAIL ABUN
PA-231	-1.138E-02	9.781E-01	1.737E+00	0.000E+00	FAIL ABUN
TH-231	-1.234E-01	5.196E-01	7.934E-01	0.000E+00	FAIL ABUN
PA-233	-1.076E-02	4.724E-02	8.252E-02	0.000E+00	FAIL ABUN
PA-234	-4.642E-02	2.848E-01	4.767E-01	0.000E+00	NOT IDENT.
PA-234M	5.826E+00	4.086E+00	7.527E+00	0.000E+00	NOT IDENT.
NP-239	-2.130E-01	2.543E-01	4.334E-01	0.000E+00	FAIL ABUN
AM-241	3.679E-02	4.654E-02	7.686E-02	0.000E+00	NOT IDENT.
CM-247	1.154E-02	2.945E-02	5.188E-02	0.000E+00	FAIL ABUN
CF-249	-6.069E-03	2.999E-02	5.149E-02	0.000E+00	NOT IDENT.

CF-251	-3.407E-02	9.274E-02	1.566E-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]G247900002.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 5-MAR-2010 23:38:00.
Sample ID          : G247900002          Sample quantity   : 1.29950E+02 GRAM
Detector name      : GAM17              Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00      Elapsed real time: 0 04:00:19.67 0.1%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 957711             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	1399	10.66*	7.783E-01	2.436E+01	2.436E+01	10.64
CD-109	88.03	543	3.70*	6.677E+00	3.177E+00	3.252E+00	21.91
SN-126	64.28	361	9.60	6.775E+00	8.014E-01	8.014E-01	40.90
	86.94	543	8.90	6.677E+00	1.321E+00	1.321E+00	46.00
	87.57	543	37.00*	6.677E+00	3.177E-01	3.177E-01	21.91
EU-155	86.55	543	30.70	6.677E+00	3.828E-01	3.852E-01	21.94
	105.31	84	21.10*	6.377E+00	9.051E-02	9.108E-02	102.69
TL-208	277.37	108	6.60	3.568E+00	6.594E-01	6.594E-01	67.07
	583.19	548	85.00*	1.813E+00	5.136E-01	5.136E-01	16.20
	860.56	60	12.50	1.247E+00	5.575E-01	5.575E-01	62.83
PB-210	46.54	147	4.25*	6.315E+00	7.929E-01	7.939E-01	72.51
BI-211	72.87	-----	1.23	6.803E+00	-----	Line Not Found	-----
	351.06	923	12.92*	2.909E+00	3.548E+00	3.548E+00	12.73
PB-212	74.82	1110	10.28	6.795E+00	2.294E+00	2.294E+00	17.32
	77.11	1714	17.10	6.782E+00	2.135E+00	2.135E+00	12.17
	238.63	1950	43.60*	4.023E+00	1.606E+00	1.606E+00	11.49
	300.09	135	3.30	3.339E+00	1.774E+00	1.774E+00	42.88
BI-214	609.32	673	45.49*	1.737E+00	1.230E+00	1.230E+00	15.73
	1120.29	154	14.92	9.776E-01	1.521E+00	1.521E+00	29.32
	1764.49	144	15.30	6.718E-01	2.023E+00	2.023E+00	20.66
PB-214	74.82	1110	5.80	6.795E+00	4.066E+00	4.066E+00	16.38
	77.11	1714	9.70	6.782E+00	3.763E+00	3.763E+00	14.70
	242.00	428	7.25	3.986E+00	2.137E+00	2.137E+00	24.65
	295.22	613	18.42	3.389E+00	1.420E+00	1.420E+00	16.19
	351.93	923	35.60*	2.909E+00	1.288E+00	1.288E+00	13.87
RA-224	240.99	428	4.10*	3.986E+00	3.779E+00	3.779E+00	23.96
RA-226	609.32	673	45.49*	1.737E+00	1.230E+00	1.230E+00	15.73
	1120.29	154	14.92	9.776E-01	1.521E+00	1.521E+00	29.32
	1764.49	144	15.30	6.718E-01	2.023E+00	2.023E+00	20.66
AC-228	338.32	409	11.27	3.013E+00	1.741E+00	1.741E+00	46.51
	911.20	392	25.80*	1.182E+00	1.857E+00	1.857E+00	19.88
	968.97	229	15.80	1.116E+00	1.874E+00	1.874E+00	30.96

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	409	11.27	3.013E+00	1.741E+00	1.741E+00	46.51
	911.20	392	25.80*	1.182E+00	1.857E+00	1.857E+00	19.88
	968.97	229	15.80	1.116E+00	1.874E+00	1.874E+00	30.96
TH-228	74.82	1110	10.28	6.795E+00	2.294E+00	2.294E+00	14.38
	77.11	1714	17.10	6.782E+00	2.135E+00	2.135E+00	12.17
	238.63	1950	43.60*	4.023E+00	1.606E+00	1.606E+00	11.49
TH-229	300.09	135	3.30	3.339E+00	1.774E+00	1.774E+00	73.99
	85.43	250	14.70	6.716E+00	3.654E-01	3.654E-01	37.46
	88.47	301	24.00	6.639E+00	2.729E-01	2.729E-01	31.76
TH-232	193.51	-----	4.41*	4.680E+00	-----	Line Not Found	-----
	210.85	-----	2.80	4.409E+00	-----	Line Not Found	-----
	338.32	409	11.27	3.013E+00	1.741E+00	1.741E+00	22.29
TH-234	911.20	392	25.80*	1.182E+00	1.857E+00	1.857E+00	19.88
	968.97	229	15.80	1.116E+00	1.874E+00	1.874E+00	30.96
	63.29	361	3.70*	6.775E+00	2.079E+00	2.079E+00	42.19
U-235	92.59	622	4.23	6.593E+00	3.222E+00	3.222E+00	30.03
	89.96	301	3.47	6.639E+00	1.887E+00	1.887E+00	39.24
	93.35	622	5.60	6.593E+00	2.434E+00	2.434E+00	30.78
NP-237	143.76	-----	10.96*	5.592E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.211E+00	-----	Line Not Found	-----
	185.72	427	57.20	4.809E+00	2.241E-01	2.241E-01	25.90
U-238	205.31	-----	5.01	4.493E+00	-----	Line Not Found	-----
	86.48	543	12.40*	6.677E+00	9.479E-01	9.479E-01	30.32
	95.86	-----	2.68	6.543E+00	-----	Line Not Found	-----
ANH-511	63.29	361	3.70*	6.775E+00	2.079E+00	2.079E+00	42.19
	92.59	622	4.23	6.593E+00	3.222E+00	3.222E+00	22.10
	511.00	208	100.00*	2.059E+00	1.462E-01	1.462E-01	42.73

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247900002

Page : 3
Acquisition date : 5-MAR-2010 23:38:00

Total number of lines in spectrum 40
Number of unidentified lines 7
Number of lines tentatively identified by NID 33 82.50%

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	2.436E+01	2.436E+01	0.259E+01	10.64	
CD-109	461.40D	1.02	3.177E+00	3.252E+00	0.712E+00	21.91	
SN-126	2.30E+05Y	1.00	3.177E-01	3.177E-01	0.696E-01	21.91	
EU-155	4.75Y	1.01	9.051E-02	9.108E-02	9.353E-02	102.69	
TL-208	1.41E+10Y	1.00	5.136E-01	5.136E-01	0.832E-01	16.20	
PB-210	22.20Y	1.00	7.929E-01	7.939E-01	5.757E-01	72.51	
BI-211	7.04E+08Y	1.00	3.548E+00	3.548E+00	0.452E+00	12.73	
PB-212	1.41E+10Y	1.00	1.606E+00	1.606E+00	0.184E+00	11.49	
BI-214	1600.00Y	1.00	1.230E+00	1.230E+00	0.194E+00	15.73	
PB-214	1600.00Y	1.00	1.288E+00	1.288E+00	0.179E+00	13.87	
RA-224	1.41E+10Y	1.00	3.779E+00	3.779E+00	0.905E+00	23.96	
RA-226	1600.00Y	1.00	1.230E+00	1.230E+00	0.194E+00	15.73	
AC-228	1.41E+10Y	1.00	1.857E+00	1.857E+00	0.369E+00	19.88	
RA-228	1.41E+10Y	1.00	1.857E+00	1.857E+00	0.369E+00	19.88	
TH-228	1.41E+10Y	1.00	1.606E+00	1.606E+00	0.184E+00	11.49	
TH-229	7340.00Y	1.00	2.729E-01	2.729E-01	0.867E-01	31.76	K
TH-232	1.41E+10Y	1.00	1.857E+00	1.857E+00	0.369E+00	19.88	
TH-234	4.47E+09Y	1.00	2.079E+00	2.079E+00	0.877E+00	42.19	
U-235	7.04E+08Y	1.00	2.241E-01	2.241E-01	0.580E-01	25.90	K
NP-237	2.14E+06Y	1.00	9.479E-01	9.479E-01	2.874E-01	30.32	
U-238	4.47E+09Y	1.00	2.079E+00	2.079E+00	0.877E+00	42.19	
ANH-511	1.00E+09Y	1.00	1.462E-01	1.462E-01	0.625E-01	42.73	
Total Activity :			5.486E+01	5.494E+01			

Grand Total Activity : 5.486E+01 5.494E+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	129.21	154	626	1.38	258.10	254	9	1.07E-02	61.0	5.89E+00	
0	209.27	175	389	1.08	418.29	415	8	1.22E-02	41.9	4.43E+00	
0	270.15	132	352	1.28	540.10	534	11	9.14E-03	57.9	3.65E+00	T
0	327.78	54	231	0.99	655.41	651	8	3.75E-03	***	3.10E+00	T
0	463.23	104	198	1.12	926.43	921	12	7.21E-03	58.2	2.26E+00	T
0	726.58	127	112	0.99	1453.42	1448	11	8.85E-03	36.8	1.47E+00	T
0	768.01	92	74	1.55	1536.35	1532	10	6.39E-03	40.5	1.39E+00	
0	794.56	58	102	1.39	1589.47	1582	12	4.00E-03	76.8	1.34E+00	T
1	964.05	100	59	1.83	1928.67	1921	22	6.95E-03	36.1	1.12E+00	T
0	1144.11	36	51	1.25	2289.06	2285	9	2.50E-03	78.2	9.59E-01	
0	1236.95	77	69	1.17	2474.89	2469	11	5.37E-03	47.4	8.95E-01	T
0	1380.31	93	60	8.48	2761.85	2749	28	6.46E-03	52.4	8.15E-01	
0	1589.89	42	50	4.73	3181.38	3166	25	2.95E-03	94.8	7.27E-01	
0	1728.29	34	16	0.74	3458.44	3451	16	2.33E-03	63.7	6.82E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900002.CNF;1  *
* Acquisition date   : 5-MAR-2010 23:38:00.  Detector SN#      :             *
* Detector ID        : GAM17                      Sensitivity    : 5.00000      *
* Geometry           : CAN                      Energy tolerance: 1.50000      *
* Elapsed live time  : 0 04:00:00.00           Abundance limit : 75.00000      *
* Elapsed real time  : 0 04:00:19.67           Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G247900002             Analyst initials: MXR1          *
* Batch Number       : 957711                 Sample Quantity : 1.29950E+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	2.436E+01	2.593E+00	5.582E-01	4.956E-02	43.642
CD-109	3.252E+00	7.124E-01	6.808E-01	6.646E-02	4.776
SN-126	3.177E-01	6.959E-02	6.642E-02	6.481E-03	4.783
EU-155	9.108E-02	9.353E-02	1.031E-01	1.108E-02	0.883
TL-208	5.136E-01	8.319E-02	4.743E-02	4.481E-03	10.829
PB-210	7.939E-01	5.757E-01	5.430E-01	5.854E-02	1.462
BI-211	3.548E+00	4.516E-01	2.444E-01	2.281E-02	14.516
PB-212	1.606E+00	1.845E-01	6.784E-02	6.871E-03	23.672
BI-214	1.230E+00	1.936E-01	9.861E-02	1.008E-02	12.477
PB-214	1.288E+00	1.786E-01	9.098E-02	9.858E-03	14.153
RA-224	3.779E+00	9.052E-01	7.278E-01	6.581E-02	5.192
RA-226	1.230E+00	1.936E-01	9.861E-02	1.008E-02	12.477
AC-228	1.857E+00	3.692E-01	1.989E-01	2.324E-02	9.339
RA-228	1.857E+00	3.692E-01	1.989E-01	2.324E-02	9.339
TH-228	1.606E+00	1.845E-01	6.784E-02	6.871E-03	23.672
TH-229	2.729E-01	8.666E-02	6.578E-01	5.689E-02	0.415
TH-232	1.857E+00	3.692E-01	1.989E-01	2.324E-02	9.339
TH-234	2.079E+00	8.772E-01	7.370E-01	1.402E-01	2.821

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	2.241E-01	5.804E-02	2.357E-01	4.197E-02	0.951
NP-237	9.479E-01	2.874E-01	2.047E-01	4.734E-02	4.630
U-238	2.079E+00	8.772E-01	7.370E-01	1.402E-01	2.821
ANH-511	1.462E-01	6.245E-02	3.462E-02	3.092E-03	4.222

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.495E-02		2.599E-01	4.246E-01	4.039E-02	-0.035
NA-22	-3.719E-02		3.986E-02	5.806E-02	4.892E-03	-0.641
NA-24	-6.878E-01		5.534E-01	Half-Life too short		
SC-46	-2.106E-02		3.395E-02	5.333E-02	4.668E-03	-0.395
V-48	3.311E-03		6.540E-02	1.078E-01	9.403E-03	0.031
CR-51	8.990E-02		2.773E-01	4.730E-01	4.514E-02	0.190
MN-54	1.179E-02		3.538E-02	6.005E-02	5.280E-03	0.196
CO-56	-3.940E-03		3.496E-02	5.760E-02	5.064E-03	-0.068
CO-57	3.444E-04		1.688E-02	2.792E-02	3.272E-03	0.012
CO-58	-2.329E-03		3.681E-02	6.110E-02	5.381E-03	-0.038
FE-59	-2.450E-02		8.585E-02	1.364E-01	1.252E-02	-0.180
CO-60	-1.114E-02		3.182E-02	5.138E-02	4.379E-03	-0.217
ZN-65	3.493E-02		9.735E-02	1.418E-01	1.194E-02	0.246
SE-75	1.479E-02		3.505E-02	5.070E-02	4.659E-03	0.292
SR-85	4.485E-02		3.129E-02	4.988E-02	4.457E-03	0.899
Y-88	4.708E-03		2.859E-02	4.795E-02	3.998E-03	0.098
Y-91	6.508E+00		2.043E+01	3.377E+01	2.787E+00	0.193
NB-94	1.357E-02		2.976E-02	5.141E-02	4.410E-03	0.264
NB-95	5.128E-02		3.981E-02	6.440E-02	5.625E-03	0.796
NB-95M	1.376E-02		1.022E-01	1.461E-01	1.494E-02	0.094
ZR-95	-5.744E-03		6.514E-02	1.085E-01	1.043E-02	-0.053
MO-99	2.973E+00		1.110E+01	1.896E+01	2.995E+00	0.157
TC-99M	-4.834E+10		4.174E+10	Half-Life too short		
RU-103	-1.235E-02		3.225E-02	5.136E-02	7.267E-03	-0.240
RH-106	-4.992E-02		2.625E-01	4.160E-01	5.532E-02	-0.120
RU-106	-4.992E-02		2.624E-01	4.160E-01	3.614E-02	-0.120
AG-108M	-6.601E-03		2.316E-02	3.758E-02	3.368E-03	-0.176
AG-110M	-3.580E-02		3.427E-02	5.081E-02	4.429E-03	-0.705
SN-113	-1.630E-02		3.335E-02	5.390E-02	4.683E-03	-0.302
CD-115	-6.271E+00		1.039E+01	1.619E+01	1.447E+00	-0.387
SN-117M	7.949E-03		4.052E-02	6.656E-02	5.983E-03	0.119
TE-123M	1.464E-02		2.041E-02	3.408E-02	3.068E-03	0.430
SB-124	2.631E-02		7.060E-02	1.221E-01	1.089E-02	0.215
SB-125	6.064E-02		7.159E-02	1.233E-01	1.087E-02	0.492
TE-125M	-1.136E+00		6.839E+00	1.011E+01	1.256E+00	-0.112
I-126	2.855E-02		1.977E-01	3.194E-01	2.696E-02	0.089
SB-126	2.495E-02		1.472E-01	2.188E-01	1.889E-02	0.114
SB-127	6.608E-01		1.182E+00	1.965E+00	2.243E-01	0.336
I-131	-1.384E-03		8.585E-02	1.432E-01	1.322E-02	-0.010

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	-3.608E-01		5.982E-01	9.262E-01	1.490E-01	-0.390
BA-133	8.963E-03		3.547E-02	5.307E-02	6.961E-03	0.169
I-133	-4.305E-03		3.258E-03	Half-Life too short		
CS-134	8.150E-02	+	6.299E-02	7.742E-02	6.841E-03	1.053
CS-135	1.067E-01		1.300E-01	1.916E-01	1.999E-02	0.557
I-135	-3.047E+09		9.085E+09	Half-Life too short		
CS-136	-8.285E-02		9.687E-02	1.460E-01	1.310E-02	-0.568
BA-137M	3.448E-02		3.738E-02	6.116E-02	5.152E-03	0.564
CS-137	3.643E-02		3.949E-02	6.461E-02	5.453E-03	0.564
CE-139	-1.850E-02		2.184E-02	3.436E-02	2.865E-03	-0.538
BA-140	-5.398E-02		2.329E-01	3.612E-01	1.228E-01	-0.149
LA-140	-3.354E-03		7.998E-02	1.124E-01	9.703E-03	-0.030
CE-141	1.470E-02		4.511E-02	7.470E-02	7.619E-03	0.197
CE-143	7.256E-04		1.116E-04	Half-Life too short		
CE-144	-8.464E-02		1.560E-01	2.231E-01	3.727E-02	-0.379
PM-144	1.308E-02		3.028E-02	5.228E-02	4.475E-03	0.250
PR-144	9.557E-01		2.265E+00	3.909E+00	3.345E-01	0.245
PM-146	1.273E-02		3.298E-02	5.543E-02	5.943E-03	0.230
ND-147	-6.271E-02		4.487E-01	7.228E-01	1.094E-01	-0.087
PM-149	2.058E+01		7.251E+01	1.242E+02	1.970E+01	0.166
EU-152	-1.150E-02		7.513E-02	1.208E-01	1.142E-02	-0.095
GD-153	-5.070E-02		5.422E-02	7.945E-02	8.122E-03	-0.638
EU-154	-7.986E-02		1.105E-01	1.643E-01	1.845E-02	-0.486
TB-160	9.304E-04		1.192E-01	1.976E-01	1.732E-02	0.005
HO-166M	2.883E-02		5.598E-02	9.689E-02	8.339E-03	0.298
TA-182	-4.973E-02		1.821E-01	2.874E-01	2.384E-02	-0.173
IR-192	-1.698E-02		2.566E-02	4.182E-02	3.826E-03	-0.406
HG-203	2.751E-02		2.993E-02	4.707E-02	4.419E-03	0.585
BI-207	2.670E-02		4.612E-02	7.876E-02	6.752E-03	0.339
PB-211	2.597E-01		5.958E-01	9.866E-01	4.772E-01	0.263
BI-212	1.883E+00	+	7.314E-01	9.906E-01	1.236E-01	1.901
RN-219	-6.826E-02		3.247E-01	5.326E-01	7.882E-02	-0.128
RA-223	-1.234E-01		5.302E-01	7.737E-01	1.360E-01	-0.160
AC-227	-2.499E-02		1.978E-01	3.120E-01	3.873E-02	-0.080
TH-227	-2.499E-02		1.978E-01	3.120E-01	4.345E-02	-0.080
PA-231	-1.138E-02		9.980E-01	1.690E+00	2.523E-01	-0.007
TH-231	-1.234E-01		5.302E-01	7.737E-01	1.360E-01	-0.160
PA-233	-1.076E-02		4.820E-02	8.042E-02	7.543E-03	-0.134
PA-234	-4.642E-02		2.906E-01	4.729E-01	8.902E-02	-0.098
PA-234M	5.826E+00		4.169E+00	7.475E+00	7.501E-01	0.779
NP-239	-2.130E-01		2.595E-01	4.160E-01	4.738E-02	-0.512
AM-241	3.679E-02		4.749E-02	7.300E-02	7.751E-03	0.504
CM-247	1.154E-02		3.005E-02	5.076E-02	4.312E-03	0.227
CF-249	-6.069E-03		3.060E-02	5.035E-02	4.264E-03	-0.121
CF-251	-3.407E-02		9.464E-02	1.513E-01	1.282E-02	-0.225

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]G247900002          *
* Acquisition date   : 5-MAR-2010 23:38:00 Detector SN# :                   *
* Detector ID        : GAM17 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 04:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 04:00:19.67 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G247900002 Analyst initials: MXR1                  *
* Batch Number      : 957711 Sample Quantity : 1.2995E+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	2.436E+01	2.541E+00	2.795E-01	1.297E+00
CD-109	3.252E+00	6.981E-01	3.565E-01	3.562E-01
SN-126	3.177E-01	6.820E-02	3.478E-02	3.479E-02
EU-155	9.108E-02	9.166E-02	5.386E-02	4.676E-02
TL-208	5.136E-01	8.153E-02	2.411E-02	4.160E-02
PB-210	7.939E-01	5.642E-01	2.871E-01	2.879E-01
BI-211	3.548E+00	4.426E-01	1.252E-01	2.258E-01
PB-212	1.606E+00	1.808E-01	3.498E-02	9.224E-02
BI-214	1.230E+00	1.897E-01	5.008E-02	9.679E-02
PB-214	1.288E+00	1.751E-01	4.662E-02	8.932E-02
RA-224	3.779E+00	8.871E-01	3.751E-01	4.526E-01
RA-226	1.230E+00	1.897E-01	5.008E-02	9.679E-02
AC-228	1.857E+00	3.618E-01	1.003E-01	1.846E-01
RA-228	1.857E+00	3.618E-01	1.003E-01	1.846E-01
TH-228	1.606E+00	1.808E-01	3.498E-02	9.224E-02
TH-229	6.167E-01	3.801E-01	3.403E-01	1.939E-01
TH-232	1.857E+00	3.618E-01	1.003E-01	1.846E-01
TH-234	2.079E+00	8.597E-01	3.878E-01	4.386E-01
U-235	3.413E-03	1.477E-01	1.225E-01	7.536E-02
NP-237	9.479E-01	2.817E-01	1.072E-01	1.437E-01
U-238	2.079E+00	8.597E-01	3.878E-01	4.386E-01
ANH-511	1.462E-01	6.121E-02	1.763E-02	3.123E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.495E-02	2.547E-01	2.165E-01	1.300E-01 NOT IDENT.
NA-22	-3.719E-02	3.906E-02	2.913E-02	1.993E-02 NOT IDENT.
NA-24	-6.878E+05	1.085E+06	0.000E+00	5.534E+05 SHORT HLIF
SC-46	-2.106E-02	3.328E-02	2.692E-02	1.698E-02 FAIL ABUN
V-48	3.311E-03	6.409E-02	5.433E-02	3.270E-02 NOT IDENT.

CR-51	8.990E-02	2.717E-01	2.427E-01	1.386E-01	NOT IDENT.
MN-54	1.179E-02	3.468E-02	3.034E-02	1.769E-02	NOT IDENT.
CO-56	-3.940E-03	3.426E-02	2.910E-02	1.748E-02	FAIL ABUN
CO-57	3.444E-04	1.654E-02	1.455E-02	8.439E-03	NOT IDENT.
CO-58	-2.329E-03	3.607E-02	3.089E-02	1.840E-02	NOT IDENT.
FE-59	-2.450E-02	8.414E-02	6.862E-02	4.293E-02	NOT IDENT.
CO-60	-1.114E-02	3.118E-02	2.576E-02	1.591E-02	NOT IDENT.
ZN-65	3.493E-02	9.541E-02	7.131E-02	4.868E-02	NOT IDENT.
SE-75	1.479E-02	3.435E-02	2.610E-02	1.752E-02	NOT IDENT.
SR-85	4.485E-02	3.067E-02	2.541E-02	1.565E-02	NOT IDENT.
Y-88	4.708E-03	2.802E-02	2.391E-02	1.429E-02	NOT IDENT.
Y-91	6.508E+00	2.002E+01	1.696E+01	1.022E+01	NOT IDENT.
NB-94	1.357E-02	2.917E-02	2.605E-02	1.488E-02	NOT IDENT.
NB-95	5.128E-02	3.901E-02	3.258E-02	1.990E-02	NOT IDENT.
NB-95M	1.376E-02	1.002E-01	7.532E-02	5.112E-02	NOT IDENT.
ZR-95	-5.744E-03	6.384E-02	5.492E-02	3.257E-02	NOT IDENT.
MO-99	2.973E+00	1.088E+01	9.601E+00	5.552E+00	NOT IDENT.
TC-99M	-4.834E+16	8.182E+16	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.235E-02	3.161E-02	2.617E-02	1.613E-02	FAIL ABUN
RH-106	-4.992E-02	2.572E-01	2.112E-01	1.312E-01	NOT IDENT.
RU-106	-4.992E-02	2.572E-01	2.112E-01	1.312E-01	NOT IDENT.
AG-108M	-6.601E-03	2.269E-02	1.919E-02	1.158E-02	NOT IDENT.
AG-110M	-3.580E-02	3.359E-02	2.577E-02	1.714E-02	NOT IDENT.
SN-113	-1.630E-02	3.268E-02	2.757E-02	1.667E-02	NOT IDENT.
CD-115	-6.271E+00	1.018E+01	8.241E+00	5.195E+00	NOT IDENT.
SN-117M	7.949E-03	3.971E-02	3.454E-02	2.026E-02	NOT IDENT.
TE-123M	1.464E-02	2.000E-02	1.768E-02	1.021E-02	NOT IDENT.
SB-124	2.631E-02	6.918E-02	6.099E-02	3.530E-02	NOT IDENT.
SB-125	6.064E-02	7.016E-02	6.300E-02	3.579E-02	FAIL ABUN
TE-125M	-1.136E+00	6.702E+00	5.278E+00	3.419E+00	NOT IDENT.
I-126	2.855E-02	1.937E-01	1.620E-01	9.883E-02	NOT IDENT.
SB-126	2.495E-02	1.442E-01	1.108E-01	7.359E-02	NOT IDENT.
SB-127	6.608E-01	1.159E+00	9.960E-01	5.912E-01	NOT IDENT.
I-131	-1.384E-03	8.414E-02	7.332E-02	4.293E-02	NOT IDENT.
TE-132	-3.608E-01	5.862E-01	4.778E-01	2.991E-01	NOT IDENT.
BA-133	8.963E-03	3.476E-02	2.719E-02	1.773E-02	FAIL ABUN
I-133	-4.305E+03	6.386E+03	0.000E+00	3.258E+03	SHORT HLIF
CS-134	8.150E-02	6.173E-02	3.915E-02	3.150E-02	FAIL ABUN
CS-135	1.067E-01	1.274E-01	9.859E-02	6.501E-02	NOT IDENT.
I-135	-3.047E+15	1.781E+16	0.000E+00	9.085E+15	SHORT HLIF
CS-136	-8.285E-02	9.494E-02	7.349E-02	4.844E-02	NOT IDENT.
BA-137M	3.448E-02	3.663E-02	3.102E-02	1.869E-02	NOT IDENT.
CS-137	3.643E-02	3.870E-02	3.277E-02	1.974E-02	NOT IDENT.
CE-139	-1.850E-02	2.140E-02	1.781E-02	1.092E-02	NOT IDENT.
BA-140	-5.398E-02	2.283E-01	1.838E-01	1.165E-01	NOT IDENT.
LA-140	-3.354E-03	7.838E-02	5.620E-02	3.999E-02	FAIL ABUN
CE-141	1.470E-02	4.420E-02	3.881E-02	2.255E-02	NOT IDENT.
CE-143	7.256E+02	2.188E+02	0.000E+00	1.116E+02	SHORT HLIF
CE-144	-8.464E-02	1.528E-01	1.161E-01	7.798E-02	NOT IDENT.
PM-144	1.308E-02	2.967E-02	2.649E-02	1.514E-02	NOT IDENT.
PR-144	9.557E-01	2.220E+00	1.981E+00	1.133E+00	NOT IDENT.
PM-146	1.273E-02	3.232E-02	2.828E-02	1.649E-02	NOT IDENT.
ND-147	-6.271E-02	4.397E-01	3.679E-01	2.244E-01	FAIL ABUN
PM-149	2.058E+01	7.106E+01	6.385E+01	3.626E+01	NOT IDENT.
EU-152	-1.150E-02	7.363E-02	6.190E-02	3.757E-02	FAIL ABUN
GD-153	-5.070E-02	5.313E-02	4.154E-02	2.711E-02	NOT IDENT.
EU-154	-7.986E-02	1.083E-01	8.245E-02	5.523E-02	NOT IDENT.
TB-160	9.304E-04	1.168E-01	9.974E-02	5.959E-02	FAIL ABUN
HO-166M	2.883E-02	5.486E-02	4.909E-02	2.799E-02	FAIL ABUN
TA-182	-4.973E-02	1.785E-01	1.443E-01	9.107E-02	NOT IDENT.
IR-192	-1.698E-02	2.514E-02	2.146E-02	1.283E-02	FAIL ABUN
HG-203	2.751E-02	2.933E-02	2.421E-02	1.496E-02	NOT IDENT.
BI-207	2.670E-02	4.520E-02	3.964E-02	2.306E-02	FAIL ABUN
PB-211	2.597E-01	5.838E-01	5.044E-01	2.979E-01	NOT IDENT.
BI-212	1.883E+00	7.168E-01	5.016E-01	3.657E-01	FAIL ABUN
RN-219	-6.826E-02	3.182E-01	2.723E-01	1.624E-01	FAIL ABUN
RA-223	-1.234E-01	5.196E-01	3.970E-01	2.651E-01	FAIL ABUN
AC-227	-2.499E-02	1.939E-01	1.607E-01	9.892E-02	FAIL ABUN
TH-227	-2.499E-02	1.939E-01	1.607E-01	9.892E-02	FAIL ABUN
PA-231	-1.138E-02	9.781E-01	8.691E-01	4.990E-01	FAIL ABUN
TH-231	-1.234E-01	5.196E-01	3.970E-01	2.651E-01	FAIL ABUN
PA-233	-1.076E-02	4.724E-02	4.128E-02	2.410E-02	FAIL ABUN
PA-234	-4.642E-02	2.848E-01	2.385E-01	1.453E-01	NOT IDENT.
PA-234M	5.826E+00	4.086E+00	3.766E+00	2.085E+00	NOT IDENT.
NP-239	-2.130E-01	2.543E-01	2.168E-01	1.297E-01	FAIL ABUN
AM-241	3.679E-02	4.654E-02	3.845E-02	2.374E-02	NOT IDENT.
CM-247	1.154E-02	2.945E-02	2.596E-02	1.503E-02	FAIL ABUN
CF-249	-6.069E-03	2.999E-02	2.576E-02	1.530E-02	NOT IDENT.

CF-251	-3.407E-02	9.274E-02	7.837E-02	4.732E-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	469.4449
49.72	534.3800
57.36	0.0000
59.54	611.0429
63.29	757.1340
63.29	757.1340
64.28	797.8489
67.75	758.3061
69.67	836.5863
70.83	782.4089
72.81	808.6669
72.87	808.7776
72.87	808.7776
74.82	792.1733
74.82	792.1733
74.82	792.1733
74.97	792.4389
77.11	796.1660
77.11	796.1660
77.11	796.1660
79.69	800.5953
79.80	800.7799
80.12	801.3245
80.19	801.4416
80.57	802.0853
81.00	802.8145
81.07	541.6385
81.07	541.6385
83.79	544.7100
83.79	544.7100
85.43	637.1681
86.48	638.5239
86.55	638.6124
86.79	638.9169
86.94	639.1116
87.57	595.7864
88.03	596.3335
88.47	596.8542
89.96	739.9456
91.11	522.1808
92.59	562.6755
92.59	562.6755
93.35	569.0746
94.67	441.8604
94.87	442.0268
94.87	442.0268
95.86	458.2695
97.43	503.7484
98.44	461.8806
99.53	407.3073
100.11	396.6274
103.18	420.4188
103.37	410.6154
105.31	421.0582
106.12	471.1523
109.28	460.8203
111.00	476.0927
111.76	480.5501
116.30	435.7796
117.23	447.1143
121.12	411.8711
121.78	422.0750
122.06	425.1941
123.07	440.5609
131.20	416.3898
133.52	459.6313
136.00	435.3613

136.47	411.6815
140.51	465.3690
140.51	0.0000
143.76	444.3148
144.24	444.6147
144.24	444.6147
145.44	439.2935
152.43	412.9016
153.25	409.2692
154.21	399.5572
154.21	399.5572
156.02	471.3920
158.56	410.1298
159.00	383.5607
162.66	415.4485
163.33	419.9551
165.86	430.6899
176.60	392.2416
177.52	392.6805
181.07	345.0789
184.41	368.8119
185.72	354.9913
193.51	320.5750
197.04	384.5114
205.31	336.8419
210.85	287.8838
215.65	320.7797
222.11	308.5335
227.38	312.4451
228.16	331.6778
228.18	331.6838
235.69	334.1975
235.96	334.2881
235.96	334.2881
238.63	313.7313
238.63	313.7313
240.99	314.4581
242.00	314.7692
244.70	226.4791
252.40	247.0210
252.80	245.9692
256.23	288.0829
256.23	288.0829
260.90	278.9607
264.66	206.4705
268.22	236.7341
269.46	246.2895
269.46	246.2895
271.23	246.1003
273.65	230.8912
276.40	259.5104
277.37	242.1823
277.60	242.2328
278.00	242.3170
279.20	215.1525
279.54	215.2160
280.46	223.8344
283.69	224.9927
284.31	218.9356
285.41	217.3764
285.90	218.3524
287.50	239.0144
293.27	0.0000
295.22	232.5646
295.96	232.7120
298.57	233.2218
299.98	233.4926
299.98	233.4926
300.09	233.5165
300.09	233.5165
300.13	233.5244
301.36	227.8482
302.85	195.1315
304.50	224.1319
304.50	224.1319
304.85	199.7650
308.46	214.4055
311.90	231.2656

316.51	228.4980
319.41	206.3041
320.08	210.0487
323.87	217.4287
323.87	217.4287
328.76	234.3711
333.37	235.2070
334.37	228.0309
334.37	228.0309
338.28	193.6674
338.28	193.6674
338.32	193.6739
338.32	193.6739
338.32	193.6739
340.48	208.4019
340.55	208.4122
344.28	206.4564
351.06	187.7080
351.93	196.5858
356.01	186.8958
364.49	163.6003
366.42	166.6532
383.85	178.2344
388.16	180.6741
388.63	179.7756
391.69	174.4019
400.66	185.0977
401.81	190.0652
402.40	181.4537
404.85	184.6465
410.95	158.2122
414.70	172.2223
423.72	183.9925
427.09	136.3297
427.87	143.2665
433.94	157.6050
453.88	137.6168
463.37	133.3896
468.07	127.1252
473.00	129.1094
476.78	135.4599
477.60	141.5936
487.02	122.0288
492.35	140.7606
497.08	137.0466
511.00	112.3489
514.00	100.7654
527.90	126.9146
529.87	0.0000
531.02	113.5805
537.26	120.2327
546.56	0.0000
563.25	146.2460
569.33	121.1876
569.50	124.3875
569.70	118.0222
583.19	118.1827
600.60	130.6451
602.73	153.9074
604.72	138.4766
609.32	134.4481
609.32	134.4481
610.33	134.5125
614.28	111.2938
618.01	104.5225
621.93	109.0820
621.93	109.0820
633.25	92.1160
635.95	117.4884
636.99	130.7264
645.85	120.2333
657.76	157.4836
661.66	123.3202
661.66	123.3202
664.57	0.0000
666.33	112.4476
666.50	106.8896
677.62	89.5166

685.70	86.4652
695.00	115.4563
696.49	118.2358
696.51	118.2390
697.00	123.6813
702.65	119.4574
706.68	138.7011
711.68	119.9183
720.70	110.9525
721.93	0.0000
722.78	108.0081
722.91	106.4925
723.31	106.5096
724.19	106.5495
727.33	86.8754
733.00	111.1439
735.93	81.6797
739.50	87.3160
747.24	91.2825
752.31	96.0908
753.82	98.9228
756.73	111.9989
763.94	95.9239
765.81	85.1565
766.42	80.5327
777.92	98.0145
778.90	100.8545
783.70	88.8839
785.37	100.1767
795.86	78.3386
801.95	92.3439
810.29	107.7656
810.76	106.8396
815.77	94.7290
818.51	96.7257
832.01	121.0469
834.85	112.5869
836.80	0.0000
846.77	92.0039
856.80	91.3818
860.56	83.4801
871.09	68.6512
873.19	86.1210
875.33	0.0000
879.36	77.5840
880.51	75.6749
883.24	81.5760
884.68	69.9574
889.28	86.6186
898.04	79.0759
911.20	81.4032
911.20	81.4032
911.20	81.4032
926.50	72.9612
937.49	94.0189
944.13	82.3272
946.00	97.2679
949.00	85.4436
962.29	86.4889
964.08	81.8819
966.15	81.9379
968.97	50.0085
968.97	50.0085
968.97	50.0085
983.53	79.3935
996.26	88.8035
1001.03	65.6951
1004.73	92.0820
1037.84	77.7145
1038.76	0.0000
1048.07	84.1181
1050.41	66.7266
1050.41	66.7266
1063.66	65.9688
1085.87	72.6421
1099.45	87.5273
1112.07	79.0234
1115.54	88.9927

1120.29	76.8854
1120.29	76.8854
1120.55	76.8890
1121.30	82.1506
1131.51	0.0000
1173.23	72.3895
1177.93	85.2773
1189.05	90.8894
1204.77	90.2139
1221.41	98.1760
1231.02	95.5492
1235.36	102.8811
1238.28	92.1262
1260.41	0.0000
1271.85	65.6162
1274.44	72.2262
1274.54	77.7013
1291.59	64.8568
1298.22	0.0000
1312.11	52.4935
1332.49	47.2128
1365.19	31.7353
1368.63	0.0000
1384.29	43.1400
1408.01	37.7311
1457.56	0.0000
1460.82	47.4891
1489.16	27.8861
1505.03	38.6035
1596.21	25.3282
1620.50	17.8228
1678.03	0.0000
1690.97	20.1009
1764.49	12.2427
1764.49	12.2427
1770.23	45.9631
1771.35	16.3457
1791.20	0.0000
1836.06	15.5206

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900002

Total Uranium Activity	6.1875E+00	ug/g
Total Uranium Counting Unc.	2.5585E+00	ug/g
Total Uranium Tpu	1.3053E-06	ug/g
Total Uranium Mda	1.1552E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 957711          SAMPLE ID   : G247900002
*  ANALYST       : MXR1            DETECTOR    : GAM17
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00  COUNT TIME : 0 04:00:00.00
*  ANALYSIS DATE : 5-MAR-2010 23:38:00.65  SAMPLE ALQT: 129.950 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.376E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.222E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.902E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.908E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 03:39:38.31

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900003.CNF;1
Sample date   : 18-FEB-2010 12:00:00 Acquisition date : 5-MAR-2010 23:38:27.
Sample ID     : G247900003 Sample quantity : 1.44100E+02 GRAM
Detector name : GAM18 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:03.79 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID       : 957711 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	63.72*	113	1136	0.79	126.56	123	8	7.88E-03	53.9	
2	4	74.97*	861	1034	0.97	149.05	142	15	5.98E-02	7.0	8.55E-01
3	4	77.21*	1364	990	0.98	153.54	142	15	9.47E-02	4.7	
4	5	84.28	250	992	1.16	167.68	162	30	1.74E-02	21.1	1.70E+00
5	5	87.26	684	1060	1.37	173.64	162	30	4.75E-02	9.0	
6	5	90.04	494	996	1.25	179.18	162	30	3.43E-02	12.3	
7	5	92.90*	728	1040	1.48	184.91	162	30	5.05E-02	9.7	
8	0	129.01	214	1242	1.20	257.10	252	11	1.49E-02	32.5	
9	0	186.00*	637	1015	1.36	371.05	366	11	4.42E-02	10.8	
10	0	209.49	345	841	1.08	418.00	413	10	2.40E-02	16.6	
11	3	238.68*	3831	572	1.19	476.36	471	20	2.66E-01	2.0	1.05E+00
12	3	241.66*	886	768	1.77	482.32	471	20	6.15E-02	8.7	
13	0	269.85	419	669	1.44	538.68	533	13	2.91E-02	13.6	
14	0	276.78	204	764	1.78	552.54	546	13	1.42E-02	28.8	
15	0	295.21*	1267	585	1.27	589.38	583	12	8.80E-02	4.9	
16	0	300.10	286	538	1.37	599.16	595	11	1.99E-02	16.8	
17	0	327.66	171	416	1.39	654.27	651	8	1.19E-02	22.0	
18	0	338.24*	757	538	1.31	675.42	670	11	5.26E-02	7.1	
19	0	351.90*	1997	583	1.44	702.73	697	12	1.39E-01	3.4	
20	0	409.37	81	413	0.76	817.64	813	11	5.59E-03	50.1	
21	0	462.78	245	258	1.83	924.43	920	9	1.70E-02	13.5	
22	0	510.66*	387	614	1.91	1020.16	1011	20	2.68E-02	18.3	
23	0	583.03*	1372	319	1.61	1164.87	1158	12	9.53E-02	3.9	
24	0	609.11*	1628	309	1.60	1217.00	1211	13	1.13E-01	3.4	
25	0	727.03*	368	233	1.91	1452.78	1447	15	2.56E-02	10.9	
26	0	767.77	140	227	1.81	1534.25	1528	11	9.69E-03	22.6	
27	0	794.38	177	198	1.42	1587.44	1581	13	1.23E-02	18.1	
28	0	860.68	241	251	2.06	1720.03	1711	19	1.67E-02	17.2	
29	0	910.82*	977	200	1.80	1820.28	1813	16	6.79E-02	4.7	
30	0	933.45	90	164	1.76	1865.54	1861	12	6.25E-03	30.2	
31	3	964.80*	138	185	2.29	1928.21	1923	18	9.58E-03	21.0	1.89E+00
32	3	968.62*	554	137	1.76	1935.86	1923	18	3.85E-02	6.0	
33	0	1119.95	427	251	2.19	2238.47	2229	19	2.97E-02	10.2	
34	0	1376.63	150	74	2.49	2751.76	2741	17	1.04E-02	15.3	
35	0	1460.06*	4523	109	2.11	2918.60	2907	23	3.14E-01	1.6	
36	0	1587.57	74	65	2.66	3173.61	3168	11	5.11E-03	24.3	
37	0	1728.87	123	38	2.88	3456.19	3447	17	8.51E-03	14.7	
38	0	1763.52*	288	38	2.16	3525.50	3514	19	2.00E-02	8.3	

Peak Search Report (continued)
Sample ID : G247900003

Page : 2
Acquisition date : 5-MAR-2010 23:38:27

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1846.86	96	22	3.71	3692.16	3682	24	6.68E-03	16.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 03:39:40

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900003.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 : 5-MAR-2010 23:38:27
Sample ID         : G247900003 Sample quantity : 144.10 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA18 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:03.79 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	*	2.919E+01	2.408E+00	2.931E-01	2.224E-02	99.590
CD-109	+	88.03	*	3.826E+00	7.731E-01	7.371E-01	6.814E-02	5.191
SN-126	+	64.28		4.885E-01	5.314E-01	5.603E-01	8.282E-02	0.872
	+	86.94		1.554E+00	7.026E-01	3.040E-01	1.261E-01	5.112
	+	87.57	*	3.738E-01	7.553E-02	7.247E-02	6.677E-03	5.158
TL-208	+	277.37		6.427E-01	3.764E-01	3.336E-01	3.579E-02	1.926
	+	583.19	*	5.345E-01	5.872E-02	3.097E-02	2.424E-03	17.257
	+	860.56		8.618E-01	3.111E-01	2.388E-01	2.671E-02	3.609
BI-211		72.87		2.729E+00	2.115E+00	3.576E+00	2.953E-01	0.763
	+	351.06	*	3.692E+00	3.450E-01	1.826E-01	1.172E-02	20.227
PB-212	+	74.82		2.212E+00	4.203E-01	3.820E-01	4.898E-02	5.790
	+	77.11		1.980E+00	2.499E-01	2.162E-01	1.832E-02	9.160
	+	238.63	*	1.685E+00	1.383E-01	4.958E-02	3.574E-03	33.981
	+	300.09		1.885E+00	6.517E-01	6.347E-01	5.301E-02	2.970
BI-214	+	609.32	*	1.223E+00	1.384E-01	5.945E-02	5.343E-03	20.566
	+	1120.29		1.597E+00	3.602E-01	2.529E-01	2.435E-02	6.316
	+	1764.49		1.448E+00	2.573E-01	1.676E-01	1.019E-02	8.641
PB-214	+	74.82		3.920E+00	7.115E-01	6.771E-01	7.799E-02	5.790
	+	77.11		3.491E+00	5.263E-01	3.811E-01	4.507E-02	9.160
	+	242.00		2.358E+00	4.525E-01	3.010E-01	2.420E-02	7.834
	+	295.22		1.483E+00	1.933E-01	1.141E-01	9.908E-03	12.995
	+	351.93	*	1.340E+00	1.454E-01	6.638E-02	5.618E-03	20.189
RA-224	+	240.99	*	4.170E+00	7.628E-01	5.307E-01	2.957E-02	7.857
RA-226	+	609.32	*	1.223E+00	1.384E-01	5.945E-02	5.343E-03	20.566
	+	1120.29		1.597E+00	3.602E-01	2.529E-01	2.435E-02	6.316
	+	1764.49		1.448E+00	2.573E-01	1.676E-01	1.019E-02	8.641
AC-228	+	338.32		1.568E+00	6.841E-01	2.070E-01	8.534E-02	7.576
	+	911.20	*	1.775E+00	2.928E-01	1.190E-01	1.611E-02	14.920
	+	968.97		1.729E+00	4.785E-01	2.032E-01	5.069E-02	8.511
RA-228	+	338.32		1.568E+00	6.841E-01	2.070E-01	8.534E-02	7.576
	+	911.20	*	1.775E+00	2.928E-01	1.190E-01	1.611E-02	14.920
	+	968.97		1.729E+00	4.785E-01	2.032E-01	5.069E-02	8.511
TH-228	+	74.82		2.212E+00	3.620E-01	3.820E-01	3.222E-02	5.790
	+	77.11		1.980E+00	2.499E-01	2.162E-01	1.832E-02	9.160

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229	+	238.63	*	1.685E+00	1.383E-01	4.958E-02	3.574E-03	33.981
	+	300.09		1.885E+00	1.310E+00	6.347E-01	3.864E-01	2.970
	+	85.43		3.620E-01	1.565E-01	1.883E-01	1.702E-02	1.923
	+	88.47		5.763E-01	1.164E-01	1.104E-01	1.011E-02	5.222
TH-232	+	193.51	*	-1.433E-01	2.926E-01	4.830E-01	2.586E-02	-0.297
	+	210.85		2.214E+00	7.449E-01	7.796E-01	4.238E-02	2.841
	+	338.32		1.568E+00	2.413E-01	2.070E-01	1.198E-02	7.576
	+	911.20	*	1.775E+00	2.928E-01	1.190E-01	1.611E-02	14.920
TH-234	+	968.97		1.729E+00	4.785E-01	2.032E-01	5.069E-02	8.511
	+	63.29	*	1.267E+00	1.385E+00	1.477E+00	2.661E-01	0.858
	+	92.59		3.222E+00	9.464E-01	5.962E-01	1.313E-01	5.405
	+	89.96		2.762E+00	9.641E-01	7.488E-01	1.850E-01	3.689
U-235	+	93.35		2.434E+00	7.336E-01	4.468E-01	1.028E-01	5.448
		143.76	*	7.313E-03	1.266E-01	1.933E-01	3.014E-02	0.038
		163.33		5.556E-02	2.514E-01	4.166E-01	6.918E-02	0.133
	+	185.72		1.897E-01	4.226E-02	3.716E-02	1.977E-03	5.105
NP-237		205.31		-8.214E-02	3.118E-01	4.447E-01	7.497E-02	-0.185
	+	86.48	*	1.115E+00	3.248E-01	2.197E-01	5.023E-02	5.077
		95.86		-5.780E-01	6.271E-01	8.607E-01	2.047E-01	-0.672
	+	63.29	*	1.267E+00	1.385E+00	1.477E+00	2.661E-01	0.858
U-238	+	92.59		3.222E+00	6.830E-01	5.962E-01	5.048E-02	5.405
	+	511.00	*	1.168E-01	4.332E-02	2.434E-02	1.608E-03	4.798

---- 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	*	-9.207E-03	1.671E-01	2.750E-01	1.992E-02	-0.033
NA-22		1274.54	*	-2.954E-02	2.378E-02	3.624E-02	2.466E-03	-0.815
NA-24		1368.63	*	-3.083E-01	2.378E-02	Half-Life too short		
SC-46		889.28	*	2.332E-03	2.085E-02	3.427E-02	3.822E-03	0.068
	+	1120.55		2.711E-01	5.838E-02	7.242E-02	5.002E-03	3.743
V-48		944.13		-3.166E-01	5.425E-01	8.127E-01	8.602E-02	-0.390
		983.53	*	1.964E-02	3.800E-02	6.316E-02	6.247E-03	0.311
		1312.11		4.542E-03	4.145E-02	6.833E-02	4.977E-03	0.066
CR-51		320.08	*	1.920E-03	2.093E-01	3.373E-01	2.168E-02	0.006
MN-54		834.85	*	1.245E-03	2.142E-02	3.530E-02	3.616E-03	0.035
CO-56		846.77	*	-1.016E-03	2.123E-02	3.478E-02	3.630E-03	-0.029
		1037.84		6.643E-02	1.551E-01	2.650E-01	2.452E-02	0.251
		1238.28		1.324E-01	5.299E-02	9.429E-02	6.285E-03	1.404
		1771.35		1.536E-02	1.260E-01	1.792E-01	1.083E-02	0.086
CO-57		122.06	*	1.436E-02	1.483E-02	2.441E-02	1.446E-03	0.588
		136.47		-1.393E-02	1.244E-01	1.975E-01	1.290E-02	-0.071
CO-58		810.76	*	-1.378E-02	2.116E-02	3.373E-02	3.330E-03	-0.409
FE-59		1099.45	*	-3.388E-02	5.035E-02	8.102E-02	6.665E-03	-0.418
		1291.59		3.891E-03	6.437E-02	1.059E-01	8.904E-03	0.037
CO-60		1173.23		8.831E-03	2.278E-02	3.842E-02	2.124E-03	0.230
		1332.49	*	-3.350E-02	2.190E-02	3.207E-02	2.423E-03	-1.045
ZN-65		1115.54	*	5.829E-02	5.641E-02	8.551E-02	6.023E-03	0.682

---- 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		-1.576E-03	7.835E-02	1.257E-01	1.153E-02	-0.013
		136.00		-7.683E-03	2.415E-02	3.812E-02	2.172E-03	-0.202
		264.66	*	-3.220E-02	2.766E-02	3.740E-02	2.140E-03	-0.861
		279.54		6.571E-02	6.885E-02	1.020E-01	6.308E-03	0.644
		400.66		1.772E-02	1.313E-01	2.207E-01	2.004E-02	0.080
SR-85		514.00	*	9.992E-02	2.490E-02	4.081E-02	2.704E-03	2.448
Y-88		898.04		-1.917E-03	2.541E-02	3.907E-02	4.428E-03	-0.049
		1836.06	*	-8.975E-03	2.053E-02	2.763E-02	1.574E-03	-0.325
Y-91		1204.77	*	1.170E+00	1.216E+01	2.017E+01	1.192E+00	0.058
NB-94		702.65	*	1.718E-02	1.783E-02	3.081E-02	2.527E-03	0.558
		871.09		8.397E-05	1.895E-02	3.035E-02	3.291E-03	0.003
NB-95		765.81	*	5.092E-02	2.767E-02	4.292E-02	3.926E-03	1.186
NB-95M		235.69	*	4.644E-02	8.005E-02	1.181E-01	8.698E-03	0.393
ZR-95		724.19		1.225E-01	6.185E-02	9.648E-02	8.929E-03	1.270
		756.73	*	1.196E-02	3.978E-02	6.678E-02	6.595E-03	0.179
MO-99		140.51		-3.983E+00	1.536E+01	2.347E+01	5.351E+00	-0.170
		181.07		4.546E+00	1.212E+01	1.814E+01	3.177E+00	0.251
		366.42		8.030E+00	5.692E+01	9.633E+01	5.565E+00	0.083
		739.50	*	-1.033E+00	7.092E+00	1.171E+01	1.853E+00	-0.088
		777.92		-4.254E+01	2.240E+01	3.328E+01	3.107E+00	-1.278
TC-99M		140.51	*	-1.906E+10	2.240E+01	Half-Life too short		
RU-103		497.08	*	-7.728E-03	2.049E-02	3.311E-02	4.229E-03	-0.233
	+	610.33		1.271E+01	2.177E+00	1.581E+00	2.480E-01	8.038
RH-106		621.93	*	2.898E-02	1.659E-01	2.695E-01	3.362E-02	0.108
		1050.41		-5.802E-01	1.316E+00	2.150E+00	1.837E-01	-0.270
RU-106		621.93	*	2.898E-02	1.659E-01	2.695E-01	1.984E-02	0.108
		1050.41		-5.802E-01	1.316E+00	2.150E+00	1.837E-01	-0.270
AG-108M		433.94	*	-1.147E-03	1.499E-02	2.484E-02	1.601E-03	-0.046
		614.28		-9.769E-03	2.042E-02	2.746E-02	2.098E-03	-0.356
		722.91		-2.381E-03	2.251E-02	3.207E-02	2.816E-03	-0.074
AG-110M		657.76	*	-8.919E-03	1.837E-02	3.020E-02	2.382E-03	-0.295
		677.62		-1.306E-01	1.652E-01	2.668E-01	2.166E-02	-0.490
		706.68		1.207E-02	1.149E-01	1.925E-01	1.640E-02	0.063
		763.94		9.172E-02	9.523E-02	1.435E-01	1.341E-02	0.639
		884.68		-1.188E-02	2.635E-02	4.202E-02	4.745E-03	-0.283
		937.49		4.915E-02	6.723E-02	9.850E-02	1.078E-02	0.499
		1384.29		2.201E-02	9.529E-02	1.400E-01	1.083E-02	0.157
		1505.03		5.501E-03	1.501E-01	2.513E-01	1.804E-02	0.022
SN-113		391.69	*	4.049E-03	2.361E-02	3.980E-02	2.441E-03	0.102
CD-115		260.90		2.506E+01	8.622E+01	1.424E+02	8.037E+00	0.176
		492.35		2.626E+00	2.222E+01	3.674E+01	2.378E+00	0.071
		527.90	*	-2.879E+00	6.744E+00	1.082E+01	7.272E-01	-0.266
SN-117M		156.02		5.203E-01	1.292E+00	2.210E+00	1.180E-01	0.235
		158.56	*	-6.871E-03	3.106E-02	5.235E-02	2.782E-03	-0.131
TE-123M		159.00	*	-5.154E-03	1.582E-02	2.658E-02	1.434E-03	-0.194
SB-124		602.73		1.539E-02	2.455E-02	3.546E-02	2.565E-03	0.434
		645.85		-2.988E-01	2.716E-01	4.117E-01	3.327E-02	-0.726
		722.78		-4.987E-02	2.262E-01	3.199E-01	2.783E-02	-0.156
		1690.97	*	-2.652E-02	3.734E-02	5.705E-02	3.951E-03	-0.465

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125	+	427.87	*	1.386E-02	4.661E-02	7.841E-02	4.893E-03	0.177
		463.37		6.633E-01	1.847E-01	2.902E-01	2.071E-02	2.286
		600.60		-3.110E-03	9.986E-02	1.613E-01	1.285E-02	-0.019
		635.95		-6.378E-02	1.510E-01	2.380E-01	1.964E-02	-0.268
TE-125M		109.28	*	4.720E+00	6.025E+00	9.911E+00	8.891E-01	0.476
I-126	*	388.63		-4.857E-02	9.043E-02	1.488E-01	8.554E-03	-0.326
		666.33		-1.047E-01	1.236E-01	1.999E-01	1.537E-02	-0.524
		753.82		1.692E+00	1.008E+00	1.771E+00	1.587E-01	0.956
		414.70		1.397E-02	4.366E-02	6.440E-02	3.809E-03	0.217
SB-126		666.50		-3.568E-02	4.246E-02	6.873E-02	5.285E-03	-0.519
		695.00		4.350E-02	4.082E-02	7.092E-02	5.740E-03	0.613
		697.00		-1.542E-01	1.430E-01	2.271E-01	1.845E-02	-0.679
		720.70	*	9.697E-02	8.693E-02	1.329E-01	1.125E-02	0.730
SB-127		856.80		2.182E-01	3.068E-01	4.509E-01	4.782E-02	0.484
		252.40		1.261E+00	2.543E+00	4.149E+00	1.703E+00	0.304
		473.00		3.646E-01	9.161E-01	1.534E+00	1.760E-01	0.238
		685.70	*	8.105E-01	7.638E-01	1.323E+00	1.456E-01	0.612
I-131		783.70		4.208E+00	2.109E+00	3.656E+00	4.766E-01	1.151
		80.19		8.534E-01	4.121E+00	4.849E+00	4.229E-01	0.176
		284.31		-7.463E-01	8.495E-01	1.339E+00	8.519E-02	-0.557
		364.49	*	-5.448E-03	6.076E-02	1.021E-01	6.589E-03	-0.053
TE-132		636.99		-2.209E-01	9.144E-01	1.454E+00	1.168E-01	-0.152
		49.72		-1.102E-01	1.725E+01	2.912E+01	3.053E+00	-0.004
		111.76		-2.824E+01	2.314E+01	3.489E+01	3.345E+00	-0.809
		116.30		1.688E+01	1.933E+01	3.173E+01	2.980E+00	0.532
BA-133	+	228.16	*	-3.316E-01	4.684E-01	7.203E-01	1.041E-01	-0.460
		81.00		-3.472E-02	8.330E-02	9.481E-02	1.476E-02	-0.366
		276.40		5.941E-01	3.500E-01	3.550E-01	4.452E-02	1.673
		302.85		-6.515E-03	8.645E-02	1.218E-01	1.386E-02	-0.054
I-133	*	356.01		2.324E-02	2.541E-02	3.691E-02	4.158E-03	0.630
		383.85		4.490E-02	1.552E-01	2.629E-01	2.798E-02	0.171
		529.87		-8.787E-04	1.552E-01	Half-Life	too short	
		875.33		-1.279E-02	1.552E-01	Half-Life	too short	
CS-134	+	1298.22		-3.333E-02	1.552E-01	Half-Life	too short	
		563.25		1.236E-01	1.828E-01	3.058E-01	2.161E-02	0.404
		569.33		4.694E-02	1.071E-01	1.695E-01	1.212E-02	0.277
		604.72		-3.367E-03	2.175E-02	3.004E-02	2.184E-03	-0.112
CS-135	*	795.86		9.760E-02	3.649E-02	4.891E-02	4.731E-03	1.995
		801.95		-2.677E-01	2.405E-01	3.332E-01	3.250E-02	-0.804
		1365.19		-4.148E-01	6.683E-01	9.639E-01	7.674E-02	-0.430
		268.22	*	2.621E-01	9.738E-02	1.520E-01	1.149E-02	1.725
I-135		546.56		2.393E+10	9.738E-02	Half-Life	too short	
		836.80		7.471E+10	9.738E-02	Half-Life	too short	
		1038.76		4.986E+09	9.738E-02	Half-Life	too short	
		1131.51		-2.370E+09	9.738E-02	Half-Life	too short	
		1260.41	*	-3.506E+08	9.738E-02	Half-Life	too short	
		1457.56		3.846E+12	9.738E-02	Half-Life	too short	
		1678.03		-7.509E+07	9.738E-02	Half-Life	too short	
		1791.20		-1.026E+10	9.738E-02	Half-Life	too short	

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	153.25			3.092E-01	4.852E-01	8.346E-01	6.463E-02	0.370
	176.60			-6.175E-02	2.820E-01	4.719E-01	3.131E-02	-0.131
	273.65			2.247E-01	4.256E-01	4.551E-01	3.068E-02	0.494
	340.55			5.252E-01	1.054E-01	1.695E-01	1.061E-02	3.099
	818.51			6.887E-03	3.874E-02	6.435E-02	6.425E-03	0.107
	1048.07	*		-1.429E-02	5.451E-02	8.990E-02	8.055E-03	-0.159
BA-137M	1235.36			9.660E-01	3.516E-01	6.170E-01	6.284E-02	1.566
	661.66	*		1.320E-02	1.939E-02	3.333E-02	2.540E-03	0.396
CS-137	661.66	*		1.394E-02	2.048E-02	3.521E-02	2.690E-03	0.396
CE-139	165.86	*		1.077E-02	1.692E-02	2.899E-02	1.522E-03	0.371
BA-140	162.66			2.844E-02	4.756E-01	7.858E-01	4.855E-02	0.036
	304.85			6.431E-01	8.220E-01	1.177E+00	3.362E-01	0.546
LA-140	423.72			-2.817E-01	1.017E+00	1.669E+00	5.392E-01	-0.169
	537.26	*		3.354E-02	1.439E-01	2.365E-01	7.923E-02	0.142
	328.76			4.490E-01	1.997E-01	3.106E-01	2.016E-02	1.446
	487.02			7.827E-02	7.327E-02	1.254E-01	8.948E-03	0.624
	815.77			-8.817E-02	1.712E-01	2.743E-01	2.969E-02	-0.321
	1596.21	*		2.559E-03	5.000E-02	7.736E-02	5.308E-03	0.033
CE-141	145.44	*		3.313E-02	3.820E-02	6.191E-02	3.535E-03	0.535
CE-143	57.36			1.090E-04	3.820E-02	Half-Life	too short	
	293.27	*		9.149E-04	3.820E-02	Half-Life	too short	
	664.57			4.936E-04	3.820E-02	Half-Life	too short	
	721.93			2.123E-04	3.820E-02	Half-Life	too short	
CE-144	80.12			-5.156E-01	2.203E+00	2.538E+00	2.197E-01	-0.203
	133.52	*		7.561E-02	1.329E-01	1.919E-01	2.654E-02	0.394
PM-144	476.78			1.355E-02	3.393E-02	5.682E-02	4.171E-03	0.239
	618.01			3.254E-03	1.669E-02	2.716E-02	2.069E-03	0.120
PR-144	696.49	*		-4.047E-03	1.761E-02	2.912E-02	2.364E-03	-0.139
	696.51	*		-3.205E-01	1.317E+00	2.178E+00	1.767E-01	-0.147
PM-146	1489.16			-2.341E+00	6.097E+00	9.506E+00	6.868E-01	-0.246
	453.88	*		2.821E-04	2.194E-02	3.636E-02	3.176E-03	0.008
	633.25			-5.566E-01	8.035E-01	1.206E+00	4.574E-01	-0.462
	735.93			2.256E-02	7.964E-02	1.243E-01	3.487E-02	0.181
ND-147	747.24			-2.134E-02	5.008E-02	8.136E-02	1.198E-02	-0.262
	91.11			9.180E-01	2.428E-01	3.248E-01	3.056E-02	2.827
	319.41			1.098E+00	1.906E+00	3.131E+00	1.808E-01	0.351
	531.02	*		-5.343E-02	3.031E-01	4.915E-01	6.858E-02	-0.109
PM-149	285.90	*		-2.972E+00	5.666E+01	9.192E+01	1.300E+01	-0.032
EU-152	121.78			1.736E-02	4.317E-02	7.003E-02	5.376E-03	0.248
	244.70			1.828E-01	1.903E-01	2.852E-01	1.593E-02	0.641
	344.28	*		-5.066E-02	6.003E-02	8.518E-02	5.554E-03	-0.595
	778.90			-2.134E-01	1.419E-01	2.163E-01	2.022E-02	-0.987
	964.08			4.641E-01	2.008E-01	3.143E-01	3.219E-02	1.477
	1085.87			-2.015E-01	2.113E-01	3.349E-01	2.595E-02	-0.602
GD-153	1112.07			-9.810E-02	1.945E-01	2.667E-01	1.898E-02	-0.368
	1408.01			1.400E-01	1.020E-01	1.792E-01	1.331E-02	0.781
	69.67			2.342E-03	1.323E+00	1.907E+00	1.547E-01	0.001
	97.43	*		-4.857E-02	5.979E-02	8.298E-02	6.488E-03	-0.585
	103.18			-1.432E-01	6.903E-02	1.044E-01	7.532E-03	-1.371

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EU-154		123.07		2.271E-02	3.211E-02	4.999E-02	4.720E-03	0.454
		723.31		2.539E-02	1.053E-01	1.531E-01	1.438E-02	0.166
		873.19		-4.080E-02	1.540E-01	2.487E-01	3.388E-02	-0.164
		996.26		-2.499E-01	2.090E-01	3.090E-01	5.563E-02	-0.808
		1004.73		-4.242E-02	1.215E-01	1.927E-01	2.368E-02	-0.220
EU-155	+	1274.44	*	-9.418E-02	6.799E-02	1.020E-01	1.027E-02	-0.923
		86.55		4.533E-01	9.176E-02	1.178E-01	1.085E-02	3.847
		105.31	*	1.051E-02	6.444E-02	1.048E-01	7.490E-03	0.100
TB-160	+	86.79		1.207E+00	2.439E-01	3.148E-01	2.880E-02	3.835
		197.04		3.825E-01	3.099E-01	5.322E-01	2.858E-02	0.719
		215.65		5.672E-02	4.261E-01	6.863E-01	3.746E-02	0.083
		298.57		2.374E-01	9.151E-02	1.109E-01	6.371E-03	2.140
		879.36	*	4.180E-02	7.517E-02	1.261E-01	1.386E-02	0.331
HO-166M	+	962.29		8.071E-01	3.689E-01	5.514E-01	5.665E-02	1.464
		966.15		3.255E-01	1.408E-01	3.206E-01	3.272E-02	1.015
		1177.93		-1.064E-02	1.886E-01	3.112E-01	1.738E-02	-0.034
		1271.85		-1.441E-01	3.724E-01	5.981E-01	4.042E-02	-0.241
		80.57		4.128E-02	2.334E-01	2.742E-01	2.382E-02	0.151
TA-182		184.41		1.145E-01	2.315E-02	3.793E-02	2.015E-03	3.019
		280.46		2.223E-02	5.172E-02	7.507E-02	4.282E-03	0.296
		410.95		2.223E-01	1.455E-01	2.261E-01	1.331E-02	0.983
		711.68	*	4.147E-03	3.388E-02	5.489E-02	4.575E-03	0.076
		752.31		1.261E-01	1.477E-01	2.532E-01	2.264E-02	0.498
IR-192	+	810.29		-2.579E-02	3.182E-02	5.025E-02	4.948E-03	-0.513
		67.75		-1.012E-01	8.639E-02	1.216E-01	9.774E-03	-0.832
		100.11		1.700E-01	1.109E-01	1.860E-01	1.398E-02	0.914
		152.43		2.016E-02	2.078E-01	3.292E-01	1.771E-02	0.061
		222.11		2.144E-01	1.964E-01	3.341E-01	1.833E-02	0.642
HG-203	+	1121.30		7.503E-01	1.616E-01	1.985E-01	1.368E-02	3.780
		1189.05		3.860E-02	1.712E-01	2.858E-01	1.634E-02	0.135
		1221.41	*	-6.555E-02	1.094E-01	1.755E-01	1.073E-02	-0.374
		1231.02		-7.287E-01	2.864E-01	4.143E-01	2.584E-02	-1.759
		295.96		1.101E+00	1.248E-01	1.661E-01	9.692E-03	6.627
BI-207	+	308.46		-9.259E-03	5.101E-02	8.185E-02	4.769E-03	-0.113
		316.51	*	6.620E-03	1.965E-02	3.204E-02	1.858E-03	0.207
		468.07		2.794E-03	3.970E-02	5.710E-02	4.074E-03	0.049
PB-210		70.83		1.022E+00	1.027E+00	1.507E+00	2.384E-01	0.678
		72.87		6.837E-01	5.372E-01	8.959E-01	1.374E-01	0.763
		279.20	*	2.743E-02	2.441E-02	3.638E-02	2.193E-03	0.754
PB-211	+	72.81		1.268E-01	1.210E-01	2.040E-01	1.684E-02	0.621
		74.97		6.374E-01	1.041E-01	1.530E-01	1.279E-02	4.165
		569.70		3.131E-03	1.676E-02	2.627E-02	1.841E-03	0.119
BI-212	+	1063.66	*	1.732E-02	2.806E-02	4.817E-02	3.976E-03	0.360
		1770.23		-7.880E-02	2.618E-01	3.480E-01	2.105E-02	-0.226
		46.54	*	6.790E-01	3.199E+00	5.443E+00	4.173E-01	0.125
BI-212	+	404.85	*	-2.904E-01	4.508E-01	6.018E-01	2.887E-01	-0.483
		427.09		-5.627E-02	7.852E-01	1.303E+00	5.973E-01	-0.043
		832.01		-1.949E-02	5.555E-01	9.119E-01	4.755E-01	-0.021
BI-212	+	727.33	*	2.156E+00	5.408E-01	6.487E-01	8.058E-02	3.323

---- 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		2.780E+00	1.743E+00	2.988E+00	2.824E-01	0.930
		1620.50		9.836E-01	1.298E+00	2.268E+00	1.534E-01	0.434
		271.23		7.950E-01	2.252E-01	2.472E-01	1.963E-02	3.216
		401.81	*	1.018E-01	2.096E-01	3.558E-01	4.784E-02	0.286
RA-223	+	81.07		-8.408E-02	1.882E-01	2.142E-01	1.868E-02	-0.392
		83.79		2.155E-01	9.311E-02	1.337E-01	1.192E-02	1.611
		94.87		8.103E-01	3.048E-01	4.711E-01	3.836E-02	1.720
		144.24		1.571E-01	4.237E-01	6.523E-01	4.536E-02	0.241
AC-227	+	154.21		1.489E-01	2.179E-01	3.752E-01	2.478E-02	0.397
		269.46		6.177E-01	1.719E-01	1.940E-01	1.150E-02	3.184
		323.87	*	-9.426E-02	4.053E-01	5.624E-01	9.059E-02	-0.168
		338.28		6.224E+00	1.093E+00	1.344E+00	1.377E-01	4.630
	+	79.69		3.973E-01	1.079E+00	1.278E+00	2.203E-01	0.311
		235.96		3.921E-01	1.055E-01	1.641E-01	1.307E-02	2.390
		256.23	*	-4.610E-02	1.382E-01	2.240E-01	2.269E-02	-0.206
		299.98		2.074E+00	7.319E-01	8.964E-01	9.825E-02	2.314
TH-227	+	304.50		1.149E-01	9.601E-01	1.365E+00	2.078E-01	0.084
		334.37		-5.482E-01	1.083E+00	1.474E+00	2.096E-01	-0.372
		79.80		-2.344E-01	1.454E+00	1.681E+00	3.661E-01	-0.139
		235.96		3.921E-01	1.046E-01	1.641E-01	1.180E-02	2.390
PA-231	+	256.23	*	-4.610E-02	1.382E-01	2.240E-01	2.674E-02	-0.206
		299.98		2.074E+00	7.319E-01	8.964E-01	9.825E-02	2.314
		304.50		1.149E-01	9.601E-01	1.365E+00	2.078E-01	0.084
		334.37		-5.482E-01	1.083E+00	1.474E+00	2.096E-01	-0.372
TH-231	+	283.69	*	-7.649E-02	8.120E-01	1.270E+00	1.661E-01	-0.060
		301.36		1.332E+00	4.675E-01	5.650E-01	5.828E-02	2.358
PA-233	+	81.07		-8.408E-02	1.882E-01	2.142E-01	1.868E-02	-0.392
		83.79		2.155E-01	9.311E-02	1.337E-01	1.192E-02	1.611
		94.87		8.103E-01	3.048E-01	4.711E-01	3.836E-02	1.720
		144.24		1.571E-01	4.237E-01	6.523E-01	4.536E-02	0.241
PA-234	+	154.21		1.489E-01	2.179E-01	3.752E-01	2.478E-02	0.397
		269.46		6.177E-01	1.719E-01	1.940E-01	1.150E-02	3.184
		323.87	*	-9.426E-02	4.053E-01	5.624E-01	9.059E-02	-0.168
		338.28		6.224E+00	1.093E+00	1.344E+00	1.377E-01	4.630
PA-234M	+	300.13		9.384E-01	3.388E-01	4.074E-01	5.446E-02	2.303
		311.90	*	-2.519E-03	3.428E-02	5.518E-02	3.381E-03	-0.046
		340.48		2.383E+00	6.961E-01	7.228E-01	1.677E-01	3.297
		94.67		4.012E-01	1.205E-01	1.788E-01	2.162E-02	2.244
PA-234M	+	98.44		6.601E-02	7.383E-02	9.485E-02	5.279E-02	0.696
		111.00		-1.785E-01	1.187E-01	1.766E-01	1.894E-02	-1.011
		131.20		3.252E-02	7.309E-02	1.054E-01	5.999E-03	0.309
		569.50		2.307E-02	1.486E-01	2.325E-01	1.629E-02	0.099
		733.00		-1.109E-02	2.149E-01	3.067E-01	6.811E-02	-0.036
		880.51		1.060E-01	1.503E-01	2.538E-01	2.793E-02	0.418
		883.24		-1.799E-01	1.976E-01	2.397E-01	1.620E-01	-0.750
		926.50		-6.223E-02	1.027E-01	1.407E-01	3.676E-02	-0.442
		946.00	*	9.394E-02	1.805E-01	2.852E-01	5.626E-02	0.329
		949.00		2.821E-01	2.507E-01	4.266E-01	4.481E-02	0.661
		766.42		1.777E+01	1.208E+01	1.162E+01	5.906E+00	1.529

---- 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	*		3.874E+00	2.794E+00	4.534E+00	4.891E-01	0.855
	99.53			2.097E-01	1.045E-01	1.730E-01	1.312E-02	1.212
	103.37			-9.332E-02	6.150E-02	9.505E-02	6.838E-03	-0.982
	106.12			-1.293E-02	5.221E-02	8.398E-02	5.838E-03	-0.154
	117.23	*		1.983E-01	2.423E-01	3.979E-01	2.458E-02	0.498
	228.18			-9.051E-02	1.264E-01	1.952E-01	1.077E-02	-0.464
AM-241	277.60	+		2.938E-01	1.699E-01	1.721E-01	9.805E-03	1.706
CM-247	59.54	*		1.239E-02	1.264E-01	1.876E-01	1.556E-02	0.066
	278.00	+		1.248E+00	7.217E-01	7.311E-01	4.165E-02	1.706
CF-249	287.50			3.951E-01	6.689E-01	1.107E+00	6.334E-02	0.357
	402.40	*		1.336E-02	1.952E-02	3.260E-02	1.898E-03	0.410
	252.80			2.240E-01	5.189E-01	8.623E-01	4.843E-02	0.260
	333.37			-4.242E-02	1.384E-01	1.589E-01	9.191E-03	-0.267
CF-251	388.16	*		-7.437E-03	2.112E-02	3.498E-02	2.011E-03	-0.213
	177.52	*		-5.575E-03	7.183E-02	1.206E-01	6.372E-03	-0.046
	227.38			-1.074E-01	1.953E-01	3.178E-01	1.752E-02	-0.338
	285.41			-1.326E+00	1.208E+00	1.889E+00	1.080E-01	-0.702

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]G247900003  *
* Acquisition date   : 5-MAR-2010 23:38:27 Detector SN#      :          *
* Detector ID        : GAM18 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 04:00:03.79 Half life ratio : 8.000   *
*****
*                               SAMPLE DATA                             *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID    *
* Sample ID          : G247900003 Analyst initials: MXR1          *
* Batch Number       : 957711 Sample Quantity : 1.4410E+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	2.919E+01	2.359E+00	2.946E-01	0.000E+00
CD-109	3.826E+00	7.577E-01	7.876E-01	0.000E+00
SN-126	3.738E-01	7.401E-02	7.744E-02	0.000E+00
TL-208	5.345E-01	5.754E-02	3.179E-02	0.000E+00
BI-211	3.692E+00	3.381E-01	1.894E-01	0.000E+00
PB-212	1.685E+00	1.356E-01	5.188E-02	0.000E+00
BI-214	1.223E+00	1.357E-01	6.095E-02	0.000E+00
PB-214	1.340E+00	1.425E-01	6.888E-02	0.000E+00
RA-224	4.170E+00	7.475E-01	5.552E-01	0.000E+00
RA-226	1.223E+00	1.357E-01	6.095E-02	0.000E+00
AC-228	1.775E+00	2.870E-01	1.209E-01	0.000E+00
RA-228	1.775E+00	2.870E-01	1.209E-01	0.000E+00
TH-228	1.685E+00	1.356E-01	5.188E-02	0.000E+00
TH-229	-1.433E-01	2.867E-01	5.077E-01	0.000E+00
TH-232	1.775E+00	2.870E-01	1.209E-01	0.000E+00
TH-234	1.267E+00	1.357E+00	1.589E+00	0.000E+00
U-235	7.313E-03	1.240E-01	2.044E-01	0.000E+00
NP-237	1.115E+00	3.183E-01	2.348E-01	0.000E+00
U-238	1.267E+00	1.357E+00	1.589E+00	0.000E+00
ANH-511	1.168E-01	4.246E-02	2.505E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-9.207E-03	1.638E-01	2.835E-01	0.000E+00 NOT IDENT.
NA-22	-2.954E-02	2.331E-02	3.653E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	6.711E+05	0.000E+00	0.000E+00 SHORT HLIF
SC-46	2.332E-03	2.043E-02	3.484E-02	0.000E+00 FAIL ABUN
V-48	1.964E-02	3.724E-02	6.406E-02	0.000E+00 NOT IDENT.
CR-51	1.920E-03	2.052E-01	3.507E-01	0.000E+00 NOT IDENT.
MN-54	1.245E-03	2.099E-02	3.593E-02	0.000E+00 NOT IDENT.

CO-56	-1.016E-03	2.081E-02	3.539E-02	0.000E+00	NOT IDENT.
CO-57	1.436E-02	1.453E-02	2.590E-02	0.000E+00	NOT IDENT.
CO-58	-1.378E-02	2.074E-02	3.436E-02	0.000E+00	NOT IDENT.
FE-59	-3.388E-02	4.934E-02	8.196E-02	0.000E+00	NOT IDENT.
CO-60	-3.350E-02	2.146E-02	3.230E-02	0.000E+00	NOT IDENT.
ZN-65	5.829E-02	5.528E-02	8.648E-02	0.000E+00	NOT IDENT.
SE-75	-3.220E-02	2.710E-02	3.905E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	2.440E-02	4.200E-02	0.000E+00	NOT IDENT.
Y-88	-8.975E-03	2.012E-02	2.762E-02	0.000E+00	NOT IDENT.
Y-91	1.170E+00	1.192E+01	2.036E+01	0.000E+00	NOT IDENT.
NB-94	1.718E-02	1.748E-02	3.148E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	2.712E-02	4.378E-02	0.000E+00	NOT IDENT.
NB-95M	4.644E-02	7.845E-02	1.237E-01	0.000E+00	NOT IDENT.
ZR-95	1.196E-02	3.899E-02	6.814E-02	0.000E+00	NOT IDENT.
MO-99	-1.033E+00	6.951E+00	1.195E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.211E+16	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-7.728E-03	2.008E-02	3.410E-02	0.000E+00	FAIL ABUN
RH-106	2.898E-02	1.626E-01	2.762E-01	0.000E+00	NOT IDENT.
RU-106	2.898E-02	1.626E-01	2.762E-01	0.000E+00	NOT IDENT.
AG-108M	-1.147E-03	1.469E-02	2.566E-02	0.000E+00	NOT IDENT.
AG-110M	-8.919E-03	1.800E-02	3.091E-02	0.000E+00	NOT IDENT.
SN-113	4.049E-03	2.314E-02	4.120E-02	0.000E+00	NOT IDENT.
CD-115	-2.879E+00	6.609E+00	1.113E+01	0.000E+00	NOT IDENT.
SN-117M	-6.871E-03	3.044E-02	5.526E-02	0.000E+00	NOT IDENT.
TE-123M	-5.154E-03	1.550E-02	2.805E-02	0.000E+00	NOT IDENT.
SB-124	-2.652E-02	3.659E-02	5.714E-02	0.000E+00	NOT IDENT.
SB-125	1.386E-02	4.567E-02	8.101E-02	0.000E+00	FAIL ABUN
TE-125M	4.720E+00	5.904E+00	1.054E+01	0.000E+00	NOT IDENT.
I-126	-1.047E-01	1.211E-01	2.045E-01	0.000E+00	NOT IDENT.
SB-126	9.697E-02	8.519E-02	1.357E-01	0.000E+00	NOT IDENT.
SB-127	8.105E-01	7.486E-01	1.353E+00	0.000E+00	NOT IDENT.
I-131	-5.448E-03	5.954E-02	1.058E-01	0.000E+00	NOT IDENT.
TE-132	-3.316E-01	4.591E-01	7.544E-01	0.000E+00	NOT IDENT.
BA-133	2.324E-02	2.491E-02	3.829E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	4.309E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	3.576E-02	4.985E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	9.544E-02	1.586E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	9.500E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.429E-02	5.342E-02	9.104E-02	0.000E+00	NOT IDENT.
BA-137M	1.320E-02	1.900E-02	3.410E-02	0.000E+00	NOT IDENT.
CS-137	1.394E-02	2.007E-02	3.603E-02	0.000E+00	NOT IDENT.
CE-139	1.077E-02	1.658E-02	3.058E-02	0.000E+00	NOT IDENT.
BA-140	3.354E-02	1.410E-01	2.432E-01	0.000E+00	NOT IDENT.
LA-140	2.559E-03	4.900E-02	7.759E-02	0.000E+00	FAIL ABUN
CE-141	3.313E-02	3.743E-02	6.547E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.249E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	7.561E-02	1.302E-01	2.033E-01	0.000E+00	NOT IDENT.
PM-144	-4.047E-03	1.725E-02	2.977E-02	0.000E+00	NOT IDENT.
PR-144	-3.205E-01	1.291E+00	2.226E+00	0.000E+00	NOT IDENT.
PM-146	2.821E-04	2.150E-02	3.752E-02	0.000E+00	NOT IDENT.
ND-147	-5.343E-02	2.970E-01	5.055E-01	0.000E+00	FAIL ABUN
PM-149	-2.972E+00	5.553E+01	9.581E+01	0.000E+00	NOT IDENT.
EU-152	-5.066E-02	5.883E-02	8.843E-02	0.000E+00	FAIL ABUN
GD-153	-4.857E-02	5.860E-02	8.847E-02	0.000E+00	NOT IDENT.
EU-154	-9.418E-02	6.663E-02	1.029E-01	0.000E+00	NOT IDENT.
EU-155	1.051E-02	6.315E-02	1.116E-01	0.000E+00	FAIL ABUN
TB-160	4.180E-02	7.366E-02	1.283E-01	0.000E+00	FAIL ABUN
HO-166M	4.147E-03	3.320E-02	5.607E-02	0.000E+00	NOT IDENT.
TA-182	-6.555E-02	1.072E-01	1.771E-01	0.000E+00	FAIL ABUN
IR-192	6.620E-03	1.926E-02	3.332E-02	0.000E+00	FAIL ABUN
HG-203	2.743E-02	2.392E-02	3.794E-02	0.000E+00	NOT IDENT.
BI-207	1.732E-02	2.750E-02	4.877E-02	0.000E+00	FAIL ABUN
PB-210	6.790E-01	3.135E+00	5.891E+00	0.000E+00	NOT IDENT.
PB-211	-2.904E-01	4.418E-01	6.225E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.300E-01	6.625E-01	0.000E+00	FAIL ABUN
RN-219	1.018E-01	2.055E-01	3.681E-01	0.000E+00	FAIL ABUN
RA-223	-9.426E-02	3.972E-01	5.846E-01	0.000E+00	FAIL ABUN
AC-227	-4.610E-02	1.354E-01	2.340E-01	0.000E+00	FAIL ABUN
TH-227	-4.610E-02	1.354E-01	2.340E-01	0.000E+00	FAIL ABUN
PA-231	-7.649E-02	7.958E-01	1.324E+00	0.000E+00	FAIL ABUN
TH-231	-9.426E-02	3.972E-01	5.846E-01	0.000E+00	FAIL ABUN
PA-233	-2.519E-03	3.359E-02	5.741E-02	0.000E+00	FAIL ABUN
PA-234	9.394E-02	1.769E-01	2.895E-01	0.000E+00	NOT IDENT.
PA-234M	3.874E+00	2.738E+00	4.596E+00	0.000E+00	FAIL ABUN
NP-239	1.983E-01	2.374E-01	4.227E-01	0.000E+00	FAIL ABUN
AM-241	1.239E-02	1.239E-01	2.020E-01	0.000E+00	NOT IDENT.
CM-247	1.336E-02	1.913E-02	3.373E-02	0.000E+00	FAIL ABUN
CF-249	-7.437E-03	2.069E-02	3.622E-02	0.000E+00	NOT IDENT.

CF-251	-5.575E-03	7.039E-02	1.270E-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]G247900003.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 5-MAR-2010 23:38:27.
Sample ID          : G247900003 Sample quantity : 1.44100E+02 GRAM
Detector name      : GAM18 Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00 Elapsed real time: 0 04:00:03.79 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 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	4523	10.66*	1.893E+00	2.919E+01	2.919E+01	8.25
CD-109	88.03	684	3.70*	6.444E+00	3.738E+00	3.826E+00	20.21
SN-126	64.28	113	9.60	3.151E+00	4.885E-01	4.885E-01	108.79
	86.94	684	8.90	6.444E+00	1.554E+00	1.554E+00	45.22
	87.57	684	37.00*	6.444E+00	3.738E-01	3.738E-01	20.21
TL-208	277.37	204	6.60	6.266E+00	6.427E-01	6.427E-01	58.56
	583.19	1372	85.00*	3.934E+00	5.345E-01	5.345E-01	10.99
	860.56	241	12.50	2.914E+00	8.618E-01	8.618E-01	36.10
BI-211	72.87	-----	1.23	4.622E+00	-----	Line Not Found	-----
	351.06	1997	12.92*	5.451E+00	3.692E+00	3.692E+00	9.34
PB-212	74.82	861	10.28	4.932E+00	2.212E+00	2.212E+00	19.00
	77.11	1364	17.10	5.247E+00	1.980E+00	1.980E+00	12.62
	238.63	3831	43.60*	6.793E+00	1.685E+00	1.685E+00	8.21
	300.09	286	3.30	5.984E+00	1.885E+00	1.885E+00	34.57
BI-214	609.32	1628	45.49*	3.813E+00	1.223E+00	1.223E+00	11.32
	1120.29	427	14.92	2.334E+00	1.597E+00	1.597E+00	22.55
	1764.49	288	15.30	1.695E+00	1.448E+00	1.448E+00	17.76
PB-214	74.82	861	5.80	4.932E+00	3.920E+00	3.920E+00	18.15
	77.11	1364	9.70	5.247E+00	3.491E+00	3.491E+00	15.08
	242.00	886	7.25	6.748E+00	2.358E+00	2.358E+00	19.19
	295.22	1267	18.42	6.041E+00	1.483E+00	1.483E+00	13.03
	351.93	1997	35.60*	5.451E+00	1.340E+00	1.340E+00	10.85
RA-224	240.99	886	4.10*	6.748E+00	4.170E+00	4.170E+00	18.29
RA-226	609.32	1628	45.49*	3.813E+00	1.223E+00	1.223E+00	11.32
	1120.29	427	14.92	2.334E+00	1.597E+00	1.597E+00	22.55
	1764.49	288	15.30	1.695E+00	1.448E+00	1.448E+00	17.76
AC-228	338.32	757	11.27	5.581E+00	1.568E+00	1.568E+00	43.62
	911.20	977	25.80*	2.780E+00	1.775E+00	1.775E+00	16.50
	968.97	554	15.80	2.640E+00	1.729E+00	1.729E+00	27.67
RA-228	338.32	757	11.27	5.581E+00	1.568E+00	1.568E+00	43.62
	911.20	977	25.80*	2.780E+00	1.775E+00	1.775E+00	16.50
	968.97	554	15.80	2.640E+00	1.729E+00	1.729E+00	27.67

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	861	10.28	4.932E+00	2.212E+00	2.212E+00	16.37
	77.11	1364	17.10	5.247E+00	1.980E+00	1.980E+00	12.62
	238.63	3831	43.60*	6.793E+00	1.685E+00	1.685E+00	8.21
	300.09	286	3.30	5.984E+00	1.885E+00	1.885E+00	69.51
TH-229	85.43	250	14.70	6.127E+00	3.620E-01	3.620E-01	43.21
	88.47	684	24.00	6.444E+00	5.763E-01	5.763E-01	20.21
	193.51	-----	4.41*	7.521E+00	-----	Line Not Found	-----
	210.85	345	2.80	7.254E+00	2.214E+00	2.214E+00	33.64
TH-232	338.32	757	11.27	5.581E+00	1.568E+00	1.568E+00	15.39
	911.20	977	25.80*	2.780E+00	1.775E+00	1.775E+00	16.50
	968.97	554	15.80	2.640E+00	1.729E+00	1.729E+00	27.67
TH-234	63.29	113	3.70*	3.151E+00	1.267E+00	1.267E+00	109.28
	92.59	728	4.23	6.954E+00	3.222E+00	3.222E+00	29.37
U-235	89.96	494	3.47	6.709E+00	2.762E+00	2.762E+00	34.90
	93.35	728	5.60	6.954E+00	2.434E+00	2.434E+00	30.14
	143.76	-----	10.96*	8.222E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.005E+00	-----	Line Not Found	-----
NP-237	185.72	637	57.20	7.647E+00	1.897E-01	1.897E-01	22.28
	205.31	-----	5.01	7.323E+00	-----	Line Not Found	-----
	86.48	684	12.40*	6.444E+00	1.115E+00	1.115E+00	29.12
	95.86	-----	2.68	7.180E+00	-----	Line Not Found	-----
U-238	63.29	113	3.70*	3.151E+00	1.267E+00	1.267E+00	109.28
	92.59	728	4.23	6.954E+00	3.222E+00	3.222E+00	21.20
ANH-511	511.00	387	100.00*	4.311E+00	1.168E-01	1.168E-01	37.09

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247900003

Page : 3
Acquisition date : 5-MAR-2010 23:38:27

Total number of lines in spectrum 39
Number of unidentified lines 7
Number of lines tentatively identified by NID 32 82.05%

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	2.919E+01	2.919E+01	0.241E+01	8.25	
CD-109	461.40D	1.02	3.738E+00	3.826E+00	0.773E+00	20.21	
SN-126	2.30E+05Y	1.00	3.738E-01	3.738E-01	0.755E-01	20.21	
TL-208	1.41E+10Y	1.00	5.345E-01	5.345E-01	0.587E-01	10.99	
BI-211	7.04E+08Y	1.00	3.692E+00	3.692E+00	0.345E+00	9.34	
PB-212	1.41E+10Y	1.00	1.685E+00	1.685E+00	0.138E+00	8.21	
BI-214	1600.00Y	1.00	1.223E+00	1.223E+00	0.138E+00	11.32	
PB-214	1600.00Y	1.00	1.340E+00	1.340E+00	0.145E+00	10.85	
RA-224	1.41E+10Y	1.00	4.170E+00	4.170E+00	0.763E+00	18.29	
RA-226	1600.00Y	1.00	1.223E+00	1.223E+00	0.138E+00	11.32	
AC-228	1.41E+10Y	1.00	1.775E+00	1.775E+00	0.293E+00	16.50	
RA-228	1.41E+10Y	1.00	1.775E+00	1.775E+00	0.293E+00	16.50	
TH-228	1.41E+10Y	1.00	1.685E+00	1.685E+00	0.138E+00	8.21	
TH-229	7340.00Y	1.00	5.763E-01	5.763E-01	1.164E-01	20.21	K
TH-232	1.41E+10Y	1.00	1.775E+00	1.775E+00	0.293E+00	16.50	
TH-234	4.47E+09Y	1.00	1.267E+00	1.267E+00	1.385E+00	109.28	
U-235	7.04E+08Y	1.00	1.897E-01	1.897E-01	0.423E-01	22.28	K
NP-237	2.14E+06Y	1.00	1.115E+00	1.115E+00	0.325E+00	29.12	
U-238	4.47E+09Y	1.00	1.267E+00	1.267E+00	1.385E+00	109.28	
ANH-511	1.00E+09Y	1.00	1.168E-01	1.168E-01	0.433E-01	37.09	

Total Activity : 5.871E+01 5.880E+01

Grand Total Activity : 5.871E+01 5.880E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900003

Page : 4
Acquisition date : 5-MAR-2010 23:38:27

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.01	214	1242	1.20	257.10	252	11	1.49E-02	65.0	8.25E+00	
0	269.85	419	669	1.44	538.68	533	13	2.91E-02	27.2	6.36E+00	T
0	327.66	171	416	1.39	654.27	651	8	1.19E-02	44.0	5.69E+00	T
0	409.37	81	413	0.76	817.64	813	11	5.59E-03	****	4.97E+00	
0	462.78	245	258	1.83	924.43	920	9	1.70E-02	26.9	4.60E+00	T
0	727.03	368	233	1.91	1452.78	1447	15	2.56E-02	21.8	3.34E+00	T
0	767.77	140	227	1.81	1534.25	1528	11	9.69E-03	45.2	3.20E+00	T
0	794.38	177	198	1.42	1587.44	1581	13	1.23E-02	36.1	3.11E+00	T
0	933.45	90	164	1.76	1865.54	1861	12	6.25E-03	60.5	2.72E+00	
3	964.80	138	185	2.29	1928.21	1923	18	9.58E-03	42.0	2.65E+00	T
0	1376.63	150	74	2.49	2751.76	2741	17	1.04E-02	30.7	1.98E+00	
0	1587.57	74	65	2.66	3173.61	3168	11	5.11E-03	48.7	1.79E+00	
0	1728.87	123	38	2.88	3456.19	3447	17	8.51E-03	29.3	1.71E+00	
0	1846.86	96	22	3.71	3692.16	3682	24	6.68E-03	33.7	1.66E+00	

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
*                               DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900003.CNF;1
* Acquisition date   : 5-MAR-2010 23:38:27.  Detector SN#      :
* Detector ID        : GAM18                      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 04:00:03.79             Half life ratio : 8.00000
*****
*                               SAMPLE DATA                             *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G247900003             Analyst initials: MXR1
* Batch Number       : 957711                 Sample Quantity : 1.44100E+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	2.919E+01	2.408E+00	2.931E-01	2.224E-02	99.590
CD-109	3.826E+00	7.731E-01	7.371E-01	6.814E-02	5.191
SN-126	3.738E-01	7.553E-02	7.247E-02	6.677E-03	5.158
TL-208	5.345E-01	5.872E-02	3.097E-02	2.424E-03	17.257
BI-211	3.692E+00	3.450E-01	1.826E-01	1.172E-02	20.227
PB-212	1.685E+00	1.383E-01	4.958E-02	3.574E-03	33.981
BI-214	1.223E+00	1.384E-01	5.945E-02	5.343E-03	20.566
PB-214	1.340E+00	1.454E-01	6.638E-02	5.618E-03	20.189
RA-224	4.170E+00	7.628E-01	5.307E-01	2.957E-02	7.857
RA-226	1.223E+00	1.384E-01	5.945E-02	5.343E-03	20.566
AC-228	1.775E+00	2.928E-01	1.190E-01	1.611E-02	14.920
RA-228	1.775E+00	2.928E-01	1.190E-01	1.611E-02	14.920
TH-228	1.685E+00	1.383E-01	4.958E-02	3.574E-03	33.981
TH-229	5.763E-01	1.164E-01	4.830E-01	2.586E-02	1.193
TH-232	1.775E+00	2.928E-01	1.190E-01	1.611E-02	14.920
TH-234	1.267E+00	1.385E+00	1.477E+00	2.661E-01	0.858
U-235	1.897E-01	4.226E-02	1.933E-01	3.014E-02	0.982
NP-237	1.115E+00	3.248E-01	2.197E-01	5.023E-02	5.077

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	1.267E+00	1.385E+00	1.477E+00	2.661E-01	0.858
ANH-511	1.168E-01	4.332E-02	2.434E-02	1.608E-03	4.798

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-9.207E-03		1.671E-01	2.750E-01	1.992E-02	-0.033
NA-22	-2.954E-02		2.378E-02	3.624E-02	2.466E-03	-0.815
NA-24	-3.083E-01		3.424E-01	Half-Life too short		
SC-46	2.332E-03		2.085E-02	3.427E-02	3.822E-03	0.068
V-48	1.964E-02		3.800E-02	6.316E-02	6.247E-03	0.311
CR-51	1.920E-03		2.093E-01	3.373E-01	2.168E-02	0.006
MN-54	1.245E-03		2.142E-02	3.530E-02	3.616E-03	0.035
CO-56	-1.016E-03		2.123E-02	3.478E-02	3.630E-03	-0.029
CO-57	1.436E-02		1.483E-02	2.441E-02	1.446E-03	0.588
CO-58	-1.378E-02		2.116E-02	3.373E-02	3.330E-03	-0.409
FE-59	-3.388E-02		5.035E-02	8.102E-02	6.665E-03	-0.418
CO-60	-3.350E-02		2.190E-02	3.207E-02	2.423E-03	-1.045
ZN-65	5.829E-02		5.641E-02	8.551E-02	6.023E-03	0.682
SE-75	-3.220E-02		2.766E-02	3.740E-02	2.140E-03	-0.861
SR-85	9.992E-02		2.490E-02	4.081E-02	2.704E-03	2.448
Y-88	-8.975E-03		2.053E-02	2.763E-02	1.574E-03	-0.325
Y-91	1.170E+00		1.216E+01	2.017E+01	1.192E+00	0.058
NB-94	1.718E-02		1.783E-02	3.081E-02	2.527E-03	0.558
NB-95	5.092E-02		2.767E-02	4.292E-02	3.926E-03	1.186
NB-95M	4.644E-02		8.005E-02	1.181E-01	8.698E-03	0.393
ZR-95	1.196E-02		3.978E-02	6.678E-02	6.595E-03	0.179
MO-99	-1.033E+00		7.092E+00	1.171E+01	1.853E+00	-0.088
TC-99M	-1.906E+10		3.679E+10	Half-Life too short		
RU-103	-7.728E-03		2.049E-02	3.311E-02	4.229E-03	-0.233
RH-106	2.898E-02		1.659E-01	2.695E-01	3.362E-02	0.108
RU-106	2.898E-02		1.659E-01	2.695E-01	1.984E-02	0.108
AG-108M	-1.147E-03		1.499E-02	2.484E-02	1.601E-03	-0.046
AG-110M	-8.919E-03		1.837E-02	3.020E-02	2.382E-03	-0.295
SN-113	4.049E-03		2.361E-02	3.980E-02	2.441E-03	0.102
CD-115	-2.879E+00		6.744E+00	1.082E+01	7.272E-01	-0.266
SN-117M	-6.871E-03		3.106E-02	5.235E-02	2.782E-03	-0.131
TE-123M	-5.154E-03		1.582E-02	2.658E-02	1.434E-03	-0.194
SB-124	-2.652E-02		3.734E-02	5.705E-02	3.951E-03	-0.465
SB-125	1.386E-02		4.661E-02	7.841E-02	4.893E-03	0.177
TE-125M	4.720E+00		6.025E+00	9.911E+00	8.891E-01	0.476
I-126	-1.047E-01		1.236E-01	1.999E-01	1.537E-02	-0.524
SB-126	9.697E-02		8.693E-02	1.329E-01	1.125E-02	0.730
SB-127	8.105E-01		7.638E-01	1.323E+00	1.456E-01	0.612
I-131	-5.448E-03		6.076E-02	1.021E-01	6.589E-03	-0.053
TE-132	-3.316E-01		4.684E-01	7.203E-01	1.041E-01	-0.460
BA-133	2.324E-02		2.541E-02	3.691E-02	4.158E-03	0.630

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	-8.787E-04		2.198E-03	Half-Life too short		
CS-134	9.760E-02	+	3.649E-02	4.891E-02	4.731E-03	1.995
CS-135	2.621E-01		9.738E-02	1.520E-01	1.149E-02	1.725
I-135	-3.506E+08		4.847E+09	Half-Life too short		
CS-136	-1.429E-02		5.451E-02	8.990E-02	8.055E-03	-0.159
BA-137M	1.320E-02		1.939E-02	3.333E-02	2.540E-03	0.396
CS-137	1.394E-02		2.048E-02	3.521E-02	2.690E-03	0.396
CE-139	1.077E-02		1.692E-02	2.899E-02	1.522E-03	0.371
BA-140	3.354E-02		1.439E-01	2.365E-01	7.923E-02	0.142
LA-140	2.559E-03		5.000E-02	7.736E-02	5.308E-03	0.033
CE-141	3.313E-02		3.820E-02	6.191E-02	3.535E-03	0.535
CE-143	9.149E-04		1.147E-04	Half-Life too short		
CE-144	7.561E-02		1.329E-01	1.919E-01	2.654E-02	0.394
PM-144	-4.047E-03		1.761E-02	2.912E-02	2.364E-03	-0.139
PR-144	-3.205E-01		1.317E+00	2.178E+00	1.767E-01	-0.147
PM-146	2.821E-04		2.194E-02	3.636E-02	3.176E-03	0.008
ND-147	-5.343E-02		3.031E-01	4.915E-01	6.858E-02	-0.109
PM-149	-2.972E+00		5.666E+01	9.192E+01	1.300E+01	-0.032
EU-152	-5.066E-02		6.003E-02	8.518E-02	5.554E-03	-0.595
GD-153	-4.857E-02		5.979E-02	8.298E-02	6.488E-03	-0.585
EU-154	-9.418E-02		6.799E-02	1.020E-01	1.027E-02	-0.923
EU-155	1.051E-02		6.444E-02	1.048E-01	7.490E-03	0.100
TB-160	4.180E-02		7.517E-02	1.261E-01	1.386E-02	0.331
HO-166M	4.147E-03		3.388E-02	5.489E-02	4.575E-03	0.076
TA-182	-6.555E-02		1.094E-01	1.755E-01	1.073E-02	-0.374
IR-192	6.620E-03		1.965E-02	3.204E-02	1.858E-03	0.207
HG-203	2.743E-02		2.441E-02	3.638E-02	2.193E-03	0.754
BI-207	1.732E-02		2.806E-02	4.817E-02	3.976E-03	0.360
PB-210	6.790E-01		3.199E+00	5.443E+00	4.173E-01	0.125
PB-211	-2.904E-01		4.508E-01	6.018E-01	2.887E-01	-0.483
BI-212	2.156E+00	+	5.408E-01	6.487E-01	8.058E-02	3.323
RN-219	1.018E-01		2.096E-01	3.558E-01	4.784E-02	0.286
RA-223	-9.426E-02		4.053E-01	5.624E-01	9.059E-02	-0.168
AC-227	-4.610E-02		1.382E-01	2.240E-01	2.269E-02	-0.206
TH-227	-4.610E-02		1.382E-01	2.240E-01	2.674E-02	-0.206
PA-231	-7.649E-02		8.120E-01	1.270E+00	1.661E-01	-0.060
TH-231	-9.426E-02		4.053E-01	5.624E-01	9.059E-02	-0.168
PA-233	-2.519E-03		3.428E-02	5.518E-02	3.381E-03	-0.046
PA-234	9.394E-02		1.805E-01	2.852E-01	5.626E-02	0.329
PA-234M	3.874E+00		2.794E+00	4.534E+00	4.891E-01	0.855
NP-239	1.983E-01		2.423E-01	3.979E-01	2.458E-02	0.498
AM-241	1.239E-02		1.264E-01	1.876E-01	1.556E-02	0.066
CM-247	1.336E-02		1.952E-02	3.260E-02	1.898E-03	0.410
CF-249	-7.437E-03		2.112E-02	3.498E-02	2.011E-03	-0.213
CF-251	-5.575E-03		7.183E-02	1.206E-01	6.372E-03	-0.046

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G247900003          *
* Acquisition date   : 5-MAR-2010 23:38:27 Detector SN#                   *
* Detector ID        : GAM18 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 04:00:03.79 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247900003 Analyst initials: MXR1                 *
* Batch Number       : 957711 Sample Quantity : 1.4410E+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	2.919E+01	2.359E+00	1.474E-01	1.204E+00
CD-109	3.826E+00	7.577E-01	3.940E-01	3.866E-01
SN-126	3.738E-01	7.401E-02	3.874E-02	3.776E-02
TL-208	5.345E-01	5.754E-02	1.590E-02	2.936E-02
BI-211	3.692E+00	3.381E-01	9.477E-02	1.725E-01
PB-212	1.685E+00	1.356E-01	2.595E-02	6.917E-02
BI-214	1.223E+00	1.357E-01	3.049E-02	6.921E-02
PB-214	1.340E+00	1.425E-01	3.446E-02	7.271E-02
RA-224	4.170E+00	7.475E-01	2.778E-01	3.814E-01
RA-226	1.223E+00	1.357E-01	3.049E-02	6.921E-02
AC-228	1.775E+00	2.870E-01	6.047E-02	1.464E-01
RA-228	1.775E+00	2.870E-01	6.047E-02	1.464E-01
TH-228	1.685E+00	1.356E-01	2.595E-02	6.917E-02
TH-229	-1.433E-01	2.867E-01	2.540E-01	1.463E-01
TH-232	1.775E+00	2.870E-01	6.047E-02	1.464E-01
TH-234	1.267E+00	1.357E+00	7.949E-01	6.925E-01
U-235	7.313E-03	1.240E-01	1.023E-01	6.328E-02
NP-237	1.115E+00	3.183E-01	1.175E-01	1.624E-01
U-238	1.267E+00	1.357E+00	7.949E-01	6.925E-01
ANH-511	1.168E-01	4.246E-02	1.253E-02	2.166E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-9.207E-03	1.638E-01	1.418E-01	8.357E-02 NOT IDENT.
NA-22	-2.954E-02	2.331E-02	1.828E-02	1.189E-02 NOT IDENT.
NA-24	-3.083E+05	6.711E+05	0.000E+00	3.424E+05 SHORT HLIF
SC-46	2.332E-03	2.043E-02	1.743E-02	1.043E-02 FAIL ABUN
V-48	1.964E-02	3.724E-02	3.205E-02	1.900E-02 NOT IDENT.
CR-51	1.920E-03	2.052E-01	1.755E-01	1.047E-01 NOT IDENT.
MN-54	1.245E-03	2.099E-02	1.798E-02	1.071E-02 NOT IDENT.

CO-56	-1.016E-03	2.081E-02	1.771E-02	1.062E-02	NOT IDENT.
CO-57	1.436E-02	1.453E-02	1.296E-02	7.414E-03	NOT IDENT.
CO-58	-1.378E-02	2.074E-02	1.719E-02	1.058E-02	NOT IDENT.
FE-59	-3.388E-02	4.934E-02	4.100E-02	2.517E-02	NOT IDENT.
CO-60	-3.350E-02	2.146E-02	1.616E-02	1.095E-02	NOT IDENT.
ZN-65	5.829E-02	5.528E-02	4.326E-02	2.821E-02	NOT IDENT.
SE-75	-3.220E-02	2.710E-02	1.954E-02	1.383E-02	NOT IDENT.
SR-85	9.992E-02	2.440E-02	2.101E-02	1.245E-02	NOT IDENT.
Y-88	-8.975E-03	2.012E-02	1.382E-02	1.027E-02	NOT IDENT.
Y-91	1.170E+00	1.192E+01	1.019E+01	6.082E+00	NOT IDENT.
NB-94	1.718E-02	1.748E-02	1.575E-02	8.916E-03	NOT IDENT.
NB-95	5.092E-02	2.712E-02	2.190E-02	1.384E-02	NOT IDENT.
NB-95M	4.644E-02	7.845E-02	6.187E-02	4.002E-02	NOT IDENT.
ZR-95	1.196E-02	3.899E-02	3.409E-02	1.989E-02	NOT IDENT.
MO-99	-1.033E+00	6.951E+00	5.978E+00	3.546E+00	NOT IDENT.
TC-99M	-1.906E+16	7.211E+16	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-7.728E-03	2.008E-02	1.706E-02	1.025E-02	FAIL ABUN
RH-106	2.898E-02	1.626E-01	1.382E-01	8.295E-02	NOT IDENT.
RU-106	2.898E-02	1.626E-01	1.382E-01	8.293E-02	NOT IDENT.
AG-108M	-1.147E-03	1.469E-02	1.284E-02	7.494E-03	NOT IDENT.
AG-110M	-8.919E-03	1.800E-02	1.547E-02	9.184E-03	NOT IDENT.
SN-113	4.049E-03	2.314E-02	2.061E-02	1.181E-02	NOT IDENT.
CD-115	-2.879E+00	6.609E+00	5.567E+00	3.372E+00	NOT IDENT.
SN-117M	-6.871E-03	3.044E-02	2.764E-02	1.553E-02	NOT IDENT.
TE-123M	-5.154E-03	1.550E-02	1.404E-02	7.908E-03	NOT IDENT.
SB-124	-2.652E-02	3.659E-02	2.859E-02	1.867E-02	NOT IDENT.
SB-125	1.386E-02	4.567E-02	4.053E-02	2.330E-02	FAIL ABUN
TE-125M	4.720E+00	5.904E+00	5.275E+00	3.012E+00	NOT IDENT.
I-126	-1.047E-01	1.211E-01	1.023E-01	6.178E-02	NOT IDENT.
SB-126	9.697E-02	8.519E-02	6.790E-02	4.347E-02	NOT IDENT.
SB-127	8.105E-01	7.486E-01	6.770E-01	3.819E-01	NOT IDENT.
I-131	-5.448E-03	5.954E-02	5.295E-02	3.038E-02	NOT IDENT.
TE-132	-3.316E-01	4.591E-01	3.774E-01	2.342E-01	NOT IDENT.
BA-133	2.324E-02	2.491E-02	1.916E-02	1.271E-02	FAIL ABUN
I-133	-8.787E+02	4.309E+03	0.000E+00	2.198E+03	SHORT HLIF
CS-134	9.760E-02	3.576E-02	2.494E-02	1.825E-02	FAIL ABUN
CS-135	2.621E-01	9.544E-02	7.936E-02	4.869E-02	NOT IDENT.
I-135	-3.506E+14	9.500E+15	0.000E+00	4.847E+15	SHORT HLIF
CS-136	-1.429E-02	5.342E-02	4.555E-02	2.725E-02	NOT IDENT.
BA-137M	1.320E-02	1.900E-02	1.706E-02	9.694E-03	NOT IDENT.
CS-137	1.394E-02	2.007E-02	1.802E-02	1.024E-02	NOT IDENT.
CE-139	1.077E-02	1.658E-02	1.530E-02	8.461E-03	NOT IDENT.
BA-140	3.354E-02	1.410E-01	1.217E-01	7.193E-02	NOT IDENT.
LA-140	2.559E-03	4.900E-02	3.882E-02	2.500E-02	FAIL ABUN
CE-141	3.313E-02	3.743E-02	3.275E-02	1.910E-02	NOT IDENT.
CE-143	9.149E+02	2.249E+02	0.000E+00	1.147E+02	SHORT HLIF
CE-144	7.561E-02	1.302E-01	1.017E-01	6.645E-02	NOT IDENT.
PM-144	-4.047E-03	1.725E-02	1.489E-02	8.803E-03	NOT IDENT.
PR-144	-3.205E-01	1.291E+00	1.114E+00	6.586E-01	NOT IDENT.
PM-146	2.821E-04	2.150E-02	1.877E-02	1.097E-02	NOT IDENT.
ND-147	-5.343E-02	2.970E-01	2.529E-01	1.516E-01	FAIL ABUN
PM-149	-2.972E+00	5.553E+01	4.793E+01	2.833E+01	NOT IDENT.
EU-152	-5.066E-02	5.883E-02	4.424E-02	3.002E-02	FAIL ABUN
GD-153	-4.857E-02	5.860E-02	4.426E-02	2.990E-02	NOT IDENT.
EU-154	-9.418E-02	6.663E-02	5.146E-02	3.400E-02	NOT IDENT.
EU-155	1.051E-02	6.315E-02	5.583E-02	3.222E-02	FAIL ABUN
TB-160	4.180E-02	7.366E-02	6.417E-02	3.758E-02	FAIL ABUN
HO-166M	4.147E-03	3.320E-02	2.805E-02	1.694E-02	NOT IDENT.
TA-182	-6.555E-02	1.072E-01	8.859E-02	5.471E-02	FAIL ABUN
IR-192	6.620E-03	1.926E-02	1.667E-02	9.825E-03	FAIL ABUN
HG-203	2.743E-02	2.392E-02	1.898E-02	1.220E-02	NOT IDENT.
BI-207	1.732E-02	2.750E-02	2.440E-02	1.403E-02	FAIL ABUN
PB-210	6.790E-01	3.135E+00	2.947E+00	1.599E+00	NOT IDENT.
PB-211	-2.904E-01	4.418E-01	3.115E-01	2.254E-01	NOT IDENT.
BI-212	2.156E+00	5.300E-01	3.314E-01	2.704E-01	FAIL ABUN
RN-219	1.018E-01	2.055E-01	1.842E-01	1.048E-01	FAIL ABUN
RA-223	-9.426E-02	3.972E-01	2.925E-01	2.027E-01	FAIL ABUN
AC-227	-4.610E-02	1.354E-01	1.171E-01	6.908E-02	FAIL ABUN
TH-227	-4.610E-02	1.354E-01	1.171E-01	6.910E-02	FAIL ABUN
PA-231	-7.649E-02	7.958E-01	6.626E-01	4.060E-01	FAIL ABUN
TH-231	-9.426E-02	3.972E-01	2.925E-01	2.027E-01	FAIL ABUN
PA-233	-2.519E-03	3.359E-02	2.872E-02	1.714E-02	FAIL ABUN
PA-234	9.394E-02	1.769E-01	1.448E-01	9.026E-02	NOT IDENT.
PA-234M	3.874E+00	2.738E+00	2.299E+00	1.397E+00	FAIL ABUN
NP-239	1.983E-01	2.374E-01	2.115E-01	1.211E-01	FAIL ABUN
AM-241	1.239E-02	1.239E-01	1.011E-01	6.322E-02	NOT IDENT.
CM-247	1.336E-02	1.913E-02	1.687E-02	9.759E-03	FAIL ABUN
CF-249	-7.437E-03	2.069E-02	1.812E-02	1.056E-02	NOT IDENT.

CF-251

-5.575E-03

7.039E-02

6.352E-02

3.591E-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	661.9857
49.72	648.1871
57.36	0.0000
59.54	720.8596
63.29	772.6655
63.29	772.6655
64.28	830.6030
67.75	890.3229
69.67	888.5482
70.83	871.4619
72.81	1007.5928
72.87	1007.7773
72.87	1007.7773
74.82	1013.7106
74.82	1013.7106
74.82	1013.7106
74.97	1014.1638
77.11	1020.5818
77.11	1020.5818
77.11	1020.5818
79.69	920.0266
79.80	982.8598
80.12	983.7561
80.19	927.2960
80.57	928.2972
81.00	986.2033
81.07	986.3997
81.07	986.3997
83.79	813.1805
83.79	813.1805
85.43	816.8267
86.48	819.1420
86.55	819.2986
86.79	819.8177
86.94	820.1514
87.57	821.5316
88.03	822.5368
88.47	823.4926
89.96	826.7184
91.11	829.1904
92.59	832.3503
92.59	832.3503
93.35	833.9612
94.67	737.5763
94.87	737.9467
94.87	737.9467
95.86	833.0222
97.43	831.5844
98.44	750.7471
99.53	703.6021
100.11	738.0899
103.18	872.1760
103.37	828.2531
105.31	772.6641
106.12	820.8367
109.28	769.0208
111.00	864.3367
111.76	843.2123
116.30	740.8297
117.23	719.4554
121.12	712.2336
121.78	701.1257
122.06	661.9495
123.07	691.5449
131.20	816.5506
133.52	729.1187
136.00	792.5328

136.47	772.8772
140.51	809.5837
140.51	0.0000
143.76	801.8548
144.24	785.3364
144.24	785.3364
145.44	773.2539
152.43	771.3165
153.25	756.9674
154.21	769.6299
154.21	769.6299
156.02	765.0135
158.56	759.5206
159.00	761.8525
162.66	744.3292
163.33	744.2755
165.86	747.3944
176.60	733.1002
177.52	725.0492
181.07	713.6583
184.41	711.4109
185.72	721.3060
193.51	736.2142
197.04	673.3989
205.31	734.8446
210.85	679.2842
215.65	661.0434
222.11	623.1816
227.38	656.7781
228.16	656.4560
228.18	656.4714
235.69	730.0976
235.96	689.2440
235.96	689.2440
238.63	587.8424
238.63	587.8424
240.99	589.5526
242.00	590.2809
244.70	503.3425
252.40	509.0108
252.80	521.3546
256.23	549.7817
256.23	549.7817
260.90	521.2109
264.66	541.4549
268.22	450.0263
269.46	480.2531
269.46	480.2531
271.23	482.0323
273.65	483.3320
276.40	517.1232
277.37	517.6717
277.60	517.8012
278.00	541.2746
279.20	502.0824
279.54	502.2667
280.46	481.1328
283.69	491.6425
284.31	530.7816
285.41	541.8702
285.90	487.7300
287.50	465.4968
293.27	0.0000
295.22	439.7021
295.96	401.9641
298.57	403.0542
299.98	428.2831
299.98	428.2831
300.09	428.3323
300.09	428.3323
300.13	428.3446
301.36	427.1841
302.85	484.0896
304.50	426.8494
304.50	426.8494
304.85	396.2578
308.46	427.4930
311.90	425.7411

316.51	460.0938
319.41	438.6614
320.08	463.8735
323.87	466.4613
323.87	466.4613
328.76	510.6293
333.37	491.7910
334.37	479.9495
334.37	479.9495
338.28	462.0789
338.28	462.0789
338.32	462.0981
338.32	462.0981
338.32	462.0981
340.48	419.0491
340.55	419.0723
344.28	482.0292
351.06	451.9233
351.93	452.2755
356.01	356.8737
364.49	370.4114
366.42	385.5165
383.85	384.8949
388.16	402.8807
388.63	409.4968
391.69	384.6476
400.66	363.2684
401.81	354.2855
402.40	342.0178
404.85	395.6554
410.95	334.9802
414.70	313.9974
423.72	342.4697
427.09	339.5597
427.87	325.4845
433.94	320.3069
453.88	326.0824
463.37	315.9604
468.07	312.1237
473.00	303.0522
476.78	303.8605
477.60	306.9986
487.02	271.2604
492.35	281.2324
497.08	293.1466
511.00	299.9385
514.00	285.0173
527.90	285.9131
529.87	0.0000
531.02	287.5105
537.26	278.3903
546.56	0.0000
563.25	248.4822
569.33	253.5978
569.50	265.1497
569.70	265.1867
583.19	292.3440
600.60	326.6565
602.73	301.0519
604.72	344.1975
609.32	289.6765
609.32	289.6765
610.33	221.8589
614.28	263.6023
618.01	250.1420
621.93	251.7776
621.93	251.7776
633.25	282.7310
635.95	283.1499
636.99	285.4943
645.85	289.0723
657.76	285.6148
661.66	281.6082
661.66	281.6082
664.57	0.0000
666.33	323.8209
666.50	323.8495
677.62	282.1302

685.70	241.3792
695.00	235.0470
696.49	267.0889
696.51	267.0947
697.00	294.3430
702.65	257.5886
706.68	282.6050
711.68	265.3698
720.70	217.9136
721.93	0.0000
722.78	265.3525
722.91	265.3696
723.31	275.1909
724.19	280.1959
727.33	226.5145
733.00	220.8770
735.93	217.9155
739.50	237.4396
747.24	238.3276
752.31	232.1645
753.82	215.9427
756.73	254.8584
763.94	222.5170
765.81	260.9402
766.42	256.0293
777.92	299.3362
778.90	279.9640
783.70	209.2151
785.37	216.6697
795.86	198.8698
801.95	236.5967
810.29	243.4225
810.76	239.5186
815.77	210.2963
818.51	193.6670
832.01	253.7726
834.85	280.0969
836.80	0.0000
846.77	219.2064
856.80	219.8625
860.56	206.3450
871.09	208.3747
873.19	217.6181
875.33	0.0000
879.36	191.6719
880.51	186.6636
883.24	230.7865
884.68	207.4233
889.28	194.5111
898.04	222.9557
911.20	198.3320
911.20	198.3320
911.20	198.3320
926.50	191.7596
937.49	175.3726
944.13	232.3475
946.00	204.2398
949.00	190.8497
962.29	204.1819
964.08	206.1320
966.15	229.0703
968.97	195.6521
968.97	195.6521
968.97	195.6521
983.53	171.0854
996.26	242.3790
1001.03	190.3997
1004.73	226.0077
1037.84	164.4868
1038.76	0.0000
1048.07	176.2910
1050.41	192.3059
1050.41	192.3059
1063.66	184.7768
1085.87	221.1949
1099.45	225.0806
1112.07	223.6714
1115.54	205.5505

1120.29	211.3806
1120.29	211.3806
1120.55	211.4037
1121.30	205.9559
1131.51	0.0000
1173.23	184.9438
1177.93	205.7014
1189.05	228.9400
1204.77	245.8235
1221.41	265.8946
1231.02	361.8684
1235.36	232.3106
1238.28	251.4029
1260.41	0.0000
1271.85	170.6700
1274.44	204.9605
1274.54	200.9487
1291.59	149.4660
1298.22	0.0000
1312.11	130.0536
1332.49	165.5822
1365.19	107.6760
1368.63	0.0000
1384.29	109.7253
1408.01	102.3306
1457.56	0.0000
1460.82	95.3331
1489.16	71.5053
1505.03	99.4009
1596.21	85.7292
1620.50	75.3007
1678.03	0.0000
1690.97	55.9615
1764.49	51.4800
1764.49	51.4800
1770.23	51.5461
1771.35	42.6706
1791.20	0.0000
1836.06	56.8118

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900003

Total Uranium Activity	3.7738E+00	ug/g
Total Uranium Counting Unc.	4.0384E+00	ug/g
Total Uranium Tpu	2.0604E-06	ug/g
Total Uranium Mda	2.3653E+00	ug/g

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*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
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*
*  BATCH ID      : 957711                          SAMPLE ID   : G247900003
*  ANALYST       : MXR1                             DETECTOR    : GAM18
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00          COUNT TIME   : 0 04:00:00.00
*  ANALYSIS DATE : 5-MAR-2010 23:38:27.00          SAMPLE ALQT  : 144.100 GRAM
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.638E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 9.612E-01
GROSS GAMMA MDA (pCi/GRAM )     : 1.955E+00
GROSS GAMMA DLC (pCi/GRAM )     : 9.588E-01

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 03:41:43.15

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900004.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 5-MAR-2010 23:38:51.
Sample ID          : G247900004 Sample quantity : 1.23420E+02 GRAM
Detector name      : GAM20 Detector geometry: CAN
Elapsed live time   : 0 04:00:00.00 Elapsed real time: 0 04:01:08.97 0.5%
Energy tolerance    : 1.50000 keV Analyst Initials : MXR1
Abundance limit     : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 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	63.25*	1039	1810	0.97	126.49	120	12	7.22E-02	8.9	
2	3	74.97*	931	1215	1.02	149.88	146	16	6.46E-02	6.8	2.95E+00
3	3	77.24*	1547	951	0.92	154.42	146	16	1.07E-01	4.0	
4	9	84.27*	303	989	1.53	168.45	165	28	2.10E-02	18.0	2.98E+00
5	9	87.34	713	1069	1.40	174.58	165	28	4.95E-02	8.6	
6	9	90.07*	515	876	1.24	180.05	165	28	3.57E-02	10.8	
7	9	92.72*	2238	771	1.17	185.32	165	28	1.55E-01	3.2	
8	0	99.04*	231	955	2.26	197.95	194	10	1.60E-02	26.5	
9	0	128.85	176	860	1.26	257.48	254	9	1.22E-02	30.9	
10	0	143.84*	101	737	0.78	287.42	284	8	7.02E-03	49.9	
11	0	154.32	116	640	1.29	308.34	305	8	8.06E-03	38.9	
12	0	185.81*	659	822	1.25	371.25	366	11	4.58E-02	9.6	
13	0	209.50	319	667	1.00	418.57	414	11	2.22E-02	16.7	
14	7	238.64*	2950	484	1.12	476.77	472	17	2.05E-01	2.3	2.48E+00
15	7	241.54	627	598	1.61	482.57	472	17	4.35E-02	9.5	
16	0	270.35	252	498	1.74	540.11	534	12	1.75E-02	18.9	
17	0	278.39	76	500	1.65	556.18	549	11	5.31E-03	57.9	
18	1	295.25	815	274	1.22	589.85	586	19	5.66E-02	4.8	1.00E+00
19	1	300.28	198	300	1.39	599.91	586	19	1.37E-02	16.9	
20	0	327.90	160	327	1.24	655.07	651	10	1.11E-02	22.4	
21	0	338.55	670	432	1.43	676.36	670	14	4.65E-02	7.7	
22	0	351.95*	1474	369	1.21	703.13	696	13	1.02E-01	3.8	
23	0	409.28	121	298	1.03	817.67	812	11	8.42E-03	29.0	
24	0	463.17	205	198	1.51	925.38	920	11	1.42E-02	15.0	
25	0	510.93*	346	338	1.70	1020.82	1012	18	2.40E-02	15.4	
26	0	583.46*	970	181	1.32	1165.78	1159	14	6.73E-02	4.5	
27	0	609.48*	1053	158	1.52	1217.78	1213	11	7.31E-02	3.9	
28	0	661.78	60	123	1.45	1322.34	1318	8	4.19E-03	34.4	
29	0	727.55*	232	153	1.50	1453.83	1449	12	1.61E-02	13.0	
30	0	767.94	155	159	3.10	1534.59	1529	12	1.08E-02	18.1	
31	0	786.81	68	147	1.15	1572.31	1565	14	4.72E-03	40.1	
32	0	795.44	94	110	1.61	1589.58	1584	10	6.50E-03	23.5	
33	0	860.75	121	114	1.30	1720.18	1714	13	8.40E-03	20.3	
34	0	911.35*	716	120	1.57	1821.37	1814	15	4.98E-02	5.1	
35	0	934.31	79	101	1.89	1867.30	1860	13	5.48E-03	28.6	
36	1	964.83	139	70	1.84	1928.33	1921	26	9.65E-03	14.3	1.32E+00
37	1	969.28*	409	59	1.72	1937.25	1921	26	2.84E-02	6.2	
38	0	1001.47	110	117	1.53	2001.64	1994	16	7.61E-03	24.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1120.87	188	108	1.59	2240.51	2235	11	1.31E-02	13.0	
40	0	1238.20	116	157	1.74	2475.29	2466	19	8.04E-03	27.5	
41	0	1378.38	82	39	2.15	2755.86	2750	15	5.72E-03	20.2	
42	0	1461.07*	2298	71	1.90	2921.42	2912	19	1.60E-01	2.3	
43	0	1588.36	52	25	1.67	3176.29	3171	10	3.61E-03	22.7	
44	0	1764.64*	172	40	1.88	3529.36	3522	17	1.19E-02	11.4	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 03:41:45

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900004.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 : 5-MAR-2010 23:38:51
Sample ID         : G247900004 Sample quantity : 123.42 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA20 Detector geometry: CAN
Elapsed live time : 0 04:00:00.00 Elapsed real time: 0 04:01:08.97 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	*	2.617E+01	2.576E+00	3.075E-01	2.682E-02	85.089
CD-109	+	88.03	*	4.322E+00	8.479E-01	8.958E-01	8.471E-02	4.825
SN-126	+	64.28		3.556E+00	8.159E-01	4.940E-01	7.152E-02	7.199
	+	86.94		1.755E+00	7.891E-01	3.663E-01	1.521E-01	4.792
	+	87.57	*	4.222E-01	8.283E-02	8.776E-02	8.255E-03	4.811
BA-137M	+	661.66	*	4.201E-02	2.918E-02	3.937E-02	3.951E-03	1.067
CS-137	+	661.66	*	4.438E-02	3.083E-02	4.159E-02	4.180E-03	1.067
HG-203		70.83		1.935E-02	9.770E-01	1.430E+00	2.231E-01	0.014
		72.87		1.088E+00	6.063E-01	8.956E-01	1.356E-01	1.215
	+	279.20	*	3.814E-02	4.437E-02	4.100E-02	4.160E-03	0.930
TL-208	+	277.37		3.739E-01	4.362E-01	4.144E-01	5.584E-02	0.902
	+	583.19	*	6.437E-01	8.766E-02	3.737E-02	3.838E-03	17.227
	+	860.56		7.536E-01	3.165E-01	2.911E-01	3.084E-02	2.589
BI-211		72.87		4.342E+00	2.354E+00	3.575E+00	2.823E-01	1.215
	+	351.06	*	4.370E+00	5.341E-01	2.161E-01	2.071E-02	20.221
BI-212	+	727.33	*	2.346E+00	6.884E-01	5.655E-01	7.668E-02	4.148
	+	785.37		4.459E+00	3.600E+00	3.289E+00	3.341E-01	1.355
		1620.50		1.513E+00	1.497E+00	2.748E+00	2.314E-01	0.551
PB-212	+	74.82		2.274E+00	4.209E-01	3.901E-01	4.928E-02	5.830
	+	77.11		2.197E+00	2.534E-01	2.270E-01	1.878E-02	9.677
	+	238.63	*	1.961E+00	2.275E-01	6.457E-02	6.895E-03	30.366
	+	300.09		2.044E+00	7.294E-01	8.672E-01	1.000E-01	2.357
BI-214	+	609.32	*	1.353E+00	1.848E-01	7.616E-02	8.508E-03	17.758
	+	1120.29		1.232E+00	3.472E-01	3.245E-01	3.527E-02	3.798
	+	1764.49		1.553E+00	3.777E-01	1.871E-01	1.537E-02	8.300
PB-214	+	74.82		4.031E+00	7.106E-01	6.914E-01	7.819E-02	5.830
	+	77.11		3.873E+00	5.492E-01	4.002E-01	4.675E-02	9.677
	+	242.00		2.525E+00	5.559E-01	3.926E-01	4.427E-02	6.433
	+	295.22		1.490E+00	2.277E-01	1.533E-01	1.811E-02	9.723
	+	351.93	*	1.586E+00	2.127E-01	7.860E-02	8.680E-03	20.179
RA-224	+	240.99	*	4.465E+00	9.484E-01	6.919E-01	6.688E-02	6.454
RA-226	+	609.32	*	1.353E+00	1.848E-01	7.616E-02	8.508E-03	17.758
	+	1120.29		1.232E+00	3.472E-01	3.245E-01	3.527E-02	3.798
	+	1764.49		1.553E+00	3.777E-01	1.871E-01	1.537E-02	8.300

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	+	338.32		2.213E+00	9.869E-01	2.569E-01	1.076E-01	8.615
	+	911.20	*	2.270E+00	3.668E-01	1.478E-01	1.857E-02	15.363
	+	968.97		2.234E+00	6.187E-01	2.383E-01	5.894E-02	9.378
RA-228	+	338.32		2.213E+00	9.869E-01	2.569E-01	1.076E-01	8.615
	+	911.20	*	2.270E+00	3.668E-01	1.478E-01	1.857E-02	15.363
	+	968.97		2.234E+00	6.187E-01	2.383E-01	5.894E-02	9.378
TH-228	+	74.82		2.274E+00	3.590E-01	3.901E-01	3.178E-02	5.830
	+	77.11		2.197E+00	2.534E-01	2.270E-01	1.878E-02	9.677
	+	238.63	*	1.961E+00	2.275E-01	6.457E-02	6.895E-03	30.366
	+	300.09		2.044E+00	1.432E+00	8.672E-01	5.324E-01	2.357
TH-229	+	85.43		4.627E-01	1.714E-01	2.242E-01	2.051E-02	2.064
	+	88.47		6.509E-01	1.277E-01	1.346E-01	1.268E-02	4.838
	+	193.51	*	-2.854E-01	3.518E-01	5.806E-01	5.286E-02	-0.492
	+	210.85		3.028E+00	1.049E+00	9.269E-01	8.649E-02	3.267
TH-232	+	338.32		2.213E+00	3.974E-01	2.569E-01	2.407E-02	8.615
	+	911.20	*	2.270E+00	3.668E-01	1.478E-01	1.857E-02	15.363
	+	968.97		2.234E+00	6.187E-01	2.383E-01	5.894E-02	9.378
TH-234	+	63.29	*	9.227E+00	2.322E+00	1.295E+00	2.300E-01	7.126
	+	92.59		1.123E+01	2.604E+00	7.481E-01	1.667E-01	15.014
U-235	+	89.96		3.192E+00	1.050E+00	9.231E-01	2.295E-01	3.458
	+	93.35		8.483E+00	2.049E+00	5.634E-01	1.311E-01	15.059
	+	143.76	*	1.993E-01	2.016E-01	2.324E-01	3.921E-02	0.857
	+	163.33		3.146E-01	3.363E-01	5.295E-01	9.525E-02	0.594
	+	185.72		2.839E-01	6.042E-02	4.709E-02	4.238E-03	6.029
	+	205.31		8.077E-02	3.890E-01	5.720E-01	1.056E-01	0.141
NP-237	+	86.48	*	1.260E+00	3.618E-01	2.637E-01	6.047E-02	4.777
	+	95.86		8.714E-01	8.592E-01	1.005E+00	2.424E-01	0.867
U-238	+	63.29	*	9.227E+00	2.322E+00	1.295E+00	2.300E-01	7.126
	+	92.59		1.123E+01	1.252E+00	7.481E-01	6.828E-02	15.014
ANH-511	+	511.00	*	1.757E-01	5.664E-02	2.963E-02	2.761E-03	5.930

---- 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	*	-1.757E-02	2.292E-01	3.703E-01	3.599E-02	-0.047
NA-22		1274.54	*	-2.302E-03	3.067E-02	4.913E-02	4.070E-03	-0.047
NA-24		1368.63	*	-5.481E-01	3.067E-02	Half-Life	too short	
SC-46		889.28	*	-2.053E-02	2.686E-02	4.192E-02	4.179E-03	-0.490
	+	1120.55		2.091E-01	5.724E-02	8.814E-02	7.539E-03	2.373
V-48		944.13		-3.287E-01	6.151E-01	9.733E-01	9.497E-02	-0.338
		983.53	*	-7.260E-03	5.068E-02	8.236E-02	7.872E-03	-0.088
		1312.11		-3.508E-02	5.486E-02	8.293E-02	6.919E-03	-0.423
CR-51		320.08	*	-1.233E-01	2.465E-01	3.995E-01	4.002E-02	-0.309
MN-54		834.85	*	4.527E-03	2.700E-02	4.521E-02	4.567E-03	0.100
CO-56		846.77	*	-1.391E-02	2.626E-02	4.194E-02	4.227E-03	-0.332
		1037.84		-1.101E-01	2.046E-01	3.205E-01	3.090E-02	-0.344
	+	1238.28		2.116E-01	1.179E-01	1.177E-01	9.957E-03	1.798
		1771.35		-1.253E-01	1.790E-01	2.152E-01	1.765E-02	-0.582

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	122.06	*		1.272E-03	1.758E-02	2.831E-02	2.363E-03	0.045
	136.47			-4.643E-02	1.488E-01	2.356E-01	2.131E-02	-0.197
CO-58	810.76	*		1.544E-03	2.564E-02	4.278E-02	4.344E-03	0.036
FE-59	1099.45	*		-5.050E-02	6.475E-02	9.929E-02	9.363E-03	-0.509
	1291.59			-1.303E-02	8.418E-02	1.337E-01	1.272E-02	-0.097
CO-60	1173.23			2.041E-02	3.082E-02	5.217E-02	4.194E-03	0.391
	1332.49	*		8.833E-03	2.561E-02	4.248E-02	3.558E-03	0.208
ZN-65	1115.54	*		-9.203E-02	7.942E-02	9.899E-02	8.521E-03	-0.930
SE-75	121.12			-4.013E-02	9.288E-02	1.471E-01	1.600E-02	-0.273
	136.00			-7.708E-03	2.842E-02	4.507E-02	3.809E-03	-0.171
	264.66	*		2.817E-03	3.411E-02	5.043E-02	4.994E-03	0.056
	279.54		+	1.081E-01	1.257E-01	1.273E-01	1.303E-02	0.849
	400.66			5.555E-02	1.699E-01	2.825E-01	3.093E-02	0.197
SR-85	514.00	*		7.243E-02	3.194E-02	5.062E-02	4.727E-03	1.431
Y-88	898.04			-2.457E-02	2.911E-02	4.519E-02	4.509E-03	-0.544
	1836.06	*		-1.448E-02	1.976E-02	2.833E-02	2.286E-03	-0.511
Y-91	1204.77	*		3.972E+00	1.519E+01	2.501E+01	2.031E+00	0.159
NB-94	702.65	*		9.771E-03	2.302E-02	3.941E-02	3.988E-03	0.248
	871.09			1.267E-02	2.267E-02	3.885E-02	3.893E-03	0.326
NB-95	765.81	*		5.844E-02	3.500E-02	5.610E-02	5.701E-03	1.042
NB-95M	235.69	*		6.032E-02	9.529E-02	1.446E-01	1.556E-02	0.417
ZR-95	724.19			3.852E-02	6.888E-02	1.046E-01	1.126E-02	0.368
	756.73	*		5.711E-02	5.041E-02	8.878E-02	9.711E-03	0.643
MO-99	140.51			-2.266E+00	2.020E+01	2.788E+01	6.601E+00	-0.081
	181.07			-3.082E-01	1.614E+01	2.263E+01	4.286E+00	-0.014
	366.42			-2.258E+01	7.407E+01	1.202E+02	1.069E+01	-0.188
	739.50	*		-5.361E+00	9.662E+00	1.557E+01	2.593E+00	-0.344
	777.92			-1.597E+01	2.640E+01	4.225E+01	4.293E+00	-0.378
TC-99M	140.51	*		-1.086E+10	2.640E+01	Half-Life too short		
RU-103	497.08	*		1.148E-02	2.736E-02	4.524E-02	6.491E-03	0.254
	610.33		+	1.406E+01	2.637E+00	2.143E+00	3.650E-01	6.560
RH-106	621.93	*		-1.849E-01	2.286E-01	3.443E-01	4.862E-02	-0.537
	1050.41			-1.902E+00	1.702E+00	2.527E+00	2.307E-01	-0.753
RU-106	621.93	*		-1.849E-01	2.279E-01	3.443E-01	3.408E-02	-0.537
	1050.41			-1.902E+00	1.702E+00	2.527E+00	2.307E-01	-0.753
AG-108M	433.94	*		-1.004E-02	1.970E-02	3.124E-02	2.815E-03	-0.321
	614.28			-1.680E-02	2.790E-02	3.677E-02	3.720E-03	-0.457
	722.91			3.765E-04	2.761E-02	4.025E-02	4.177E-03	0.009
AG-110M	657.76	*		1.230E-02	2.503E-02	3.813E-02	3.907E-03	0.323
	677.62			-3.031E-02	1.974E-01	3.287E-01	3.381E-02	-0.092
	706.68			4.674E-02	1.481E-01	2.521E-01	2.606E-02	0.185
	763.94			4.744E-02	1.230E-01	1.838E-01	1.905E-02	0.258
	884.68			2.665E-02	3.442E-02	5.953E-02	6.085E-03	0.448
	937.49			1.732E-02	8.281E-02	1.206E-01	1.214E-02	0.144
	1384.29			-2.788E-02	1.109E-01	1.547E-01	1.341E-02	-0.180
	1505.03			-2.622E-01	1.860E-01	2.617E-01	2.219E-02	-1.002
SN-113	391.69	*		-1.727E-03	3.113E-02	5.094E-02	4.394E-03	-0.034
CD-115	260.90			5.602E+00	1.068E+02	1.791E+02	1.762E+01	0.031
	492.35			-7.336E+00	2.920E+01	4.660E+01	4.283E+00	-0.157

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-117M		527.90	*	2.203E+00	9.064E+00	1.482E+01	1.397E+00	0.149
		156.02		1.922E+00	1.845E+00	2.714E+00	2.333E-01	0.708
		158.56	*	1.178E-02	4.455E-02	6.366E-02	5.494E-03	0.185
TE-123M		159.00	*	-6.212E-03	2.294E-02	3.201E-02	2.781E-03	-0.194
SB-124		602.73		-3.196E-03	2.769E-02	4.240E-02	4.163E-03	-0.075
		645.85		1.010E-02	3.126E-01	5.277E-01	5.496E-02	0.019
		722.78		3.807E-03	2.786E-01	4.062E-01	4.189E-02	0.009
SB-125		1690.97	*	3.402E-02	4.645E-02	8.426E-02	7.341E-03	0.404
		427.87	*	-9.164E-03	6.297E-02	1.021E-01	9.028E-03	-0.090
	+	463.37		9.231E-01	2.914E-01	3.947E-01	3.790E-02	2.339
		600.60		-1.640E-02	1.268E-01	2.013E-01	2.089E-02	-0.081
		635.95		-1.651E-01	1.997E-01	3.017E-01	3.187E-02	-0.547
TE-125M		109.28	*	-3.014E+00	7.179E+00	1.144E+01	1.187E+00	-0.264
I-126		388.63		2.162E-02	1.164E-01	1.926E-01	1.622E-02	0.112
		666.33	*	8.790E-02	1.672E-01	2.547E-01	2.559E-02	0.345
		753.82		1.180E+00	1.234E+00	2.164E+00	2.199E-01	0.545
SB-126		414.70		-2.280E-02	5.949E-02	8.017E-02	6.869E-03	-0.284
		666.50		2.561E-02	5.719E-02	8.667E-02	8.708E-03	0.295
		695.00		4.472E-02	5.524E-02	9.621E-02	9.722E-03	0.465
		697.00		-1.234E-01	1.921E-01	3.107E-01	3.141E-02	-0.397
		720.70	*	-2.275E-02	1.031E-01	1.607E-01	1.629E-02	-0.142
SB-127		856.80		-1.040E-02	3.496E-01	5.010E-01	5.038E-02	-0.021
		252.40		1.033E+00	3.079E+00	5.170E+00	2.162E+00	0.200
		473.00		8.864E-01	1.189E+00	1.998E+00	2.631E-01	0.444
		685.70	*	2.709E-01	9.443E-01	1.610E+00	2.033E-01	0.168
		783.70		1.155E+00	2.990E+00	4.458E+00	6.052E-01	0.259
I-131		80.19		-1.879E+00	4.622E+00	5.202E+00	4.491E-01	-0.361
		284.31		-5.645E-01	1.035E+00	1.687E+00	1.741E-01	-0.335
		364.49	*	-4.649E-02	7.984E-02	1.277E-01	1.198E-02	-0.364
TE-132		636.99		-5.895E-01	1.169E+00	1.800E+00	1.870E-01	-0.328
		49.72		2.731E+00	9.423E+00	1.568E+01	1.652E+00	0.174
		111.76		3.588E+01	2.733E+01	4.514E+01	4.960E+00	0.795
		116.30		-2.020E+01	2.301E+01	3.592E+01	3.929E+00	-0.562
BA-133		228.16	*	-1.913E-01	5.371E-01	8.923E-01	1.465E-01	-0.214
		81.00		-5.008E-02	9.222E-02	1.028E-01	1.597E-02	-0.487
		276.40		3.302E-01	3.201E-01	4.208E-01	6.294E-02	0.785
		302.85		8.725E-02	1.018E-01	1.548E-01	2.147E-02	0.563
		356.01	*	2.180E-02	3.049E-02	4.593E-02	6.093E-03	0.475
I-133		383.85		2.533E-03	1.953E-01	3.209E-01	3.967E-02	0.008
		529.87	*	3.287E-03	1.953E-01	Half-Life too short		
		875.33		-1.383E-01	1.953E-01	Half-Life too short		
CS-134		1298.22		-9.194E-02	1.953E-01	Half-Life too short		
		563.25		2.185E-01	2.613E-01	4.377E-01	4.247E-02	0.499
		569.33		6.385E-02	1.387E-01	2.284E-01	2.230E-02	0.280
		604.72		-1.030E-02	2.702E-02	3.615E-02	3.560E-03	-0.285
	+	795.86	*	8.990E-02	4.328E-02	6.283E-02	6.411E-03	1.431
CS-135		801.95		-1.978E-01	2.957E-01	4.142E-01	4.219E-02	-0.478
		1365.19		6.431E-01	7.598E-01	1.369E+00	1.208E-01	0.470
		268.22	*	1.776E-01	1.218E-01	1.892E-01	2.097E-02	0.938

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-135		546.56		-1.229E+10	1.218E-01	Half-Life	too short	
		836.80		-1.162E+10	1.218E-01	Half-Life	too short	
		1038.76		-2.156E+10	1.218E-01	Half-Life	too short	
		1131.51		-1.055E+10	1.218E-01	Half-Life	too short	
		1260.41	*	-4.135E+09	1.218E-01	Half-Life	too short	
		1457.56		7.839E+11	1.218E-01	Half-Life	too short	
		1678.03		-9.691E+09	1.218E-01	Half-Life	too short	
		1791.20		-6.584E+09	1.218E-01	Half-Life	too short	
CS-136	+	153.25		1.021E+00	8.008E-01	1.037E+00	1.060E-01	0.984
		176.60		-1.268E-01	3.710E-01	5.799E-01	5.649E-02	-0.219
		273.65		5.640E-02	5.159E-01	5.557E-01	5.871E-02	0.102
		340.55		4.288E-01	1.264E-01	2.036E-01	1.962E-02	2.107
		818.51		1.463E-02	4.899E-02	8.294E-02	8.405E-03	0.176
		1048.07	*	-1.931E-02	7.248E-02	1.161E-01	1.101E-02	-0.166
		1235.36		-5.786E-02	4.529E-01	6.231E-01	7.138E-02	-0.093
		165.86	*	-1.471E-03	2.197E-02	3.479E-02	3.037E-03	-0.042
CE-139		162.66		3.268E-01	6.314E-01	9.943E-01	9.208E-02	0.329
BA-140		304.85		2.901E-01	9.783E-01	1.448E+00	4.291E-01	0.200
		423.72		6.991E-01	1.382E+00	2.281E+00	7.504E-01	0.307
		537.26	*	2.521E-02	1.804E-01	2.928E-01	9.998E-02	0.086
	+	328.76		6.700E-01	3.077E-01	3.934E-01	3.915E-02	1.703
		487.02		-2.656E-02	9.165E-02	1.460E-01	1.410E-02	-0.182
		815.77		5.740E-02	2.209E-01	3.730E-01	4.104E-02	0.154
		1596.21	*	-1.271E-02	6.027E-02	9.556E-02	8.067E-03	-0.133
		145.44	*	7.876E-02	5.156E-02	7.701E-02	6.649E-03	1.023
CE-143		57.36		8.386E-04	5.156E-02	Half-Life	too short	
		293.27	*	7.193E-04	5.156E-02	Half-Life	too short	
		664.57		9.850E-04	5.156E-02	Half-Life	too short	
		721.93		1.656E-04	5.156E-02	Half-Life	too short	
CE-144		80.12		-1.039E+00	2.413E+00	2.713E+00	2.324E-01	-0.383
		133.52	*	5.870E-02	1.564E-01	2.259E-01	3.422E-02	0.260
PM-144		476.78		-1.506E-02	4.604E-02	7.340E-02	7.185E-03	-0.205
		618.01		-6.454E-03	2.324E-02	3.648E-02	3.682E-03	-0.177
		696.49	*	-1.245E-02	2.408E-02	3.924E-02	3.967E-03	-0.317
PR-144		696.51	*	-9.482E-01	1.801E+00	2.934E+00	2.966E-01	-0.323
		1489.16		2.552E-01	7.241E+00	1.213E+01	1.028E+00	0.021
PM-146		453.88	*	1.769E-02	2.902E-02	4.859E-02	5.258E-03	0.364
		633.25		1.125E+00	1.100E+00	1.722E+00	6.631E-01	0.654
		735.93		-3.688E-03	9.939E-02	1.658E-01	4.731E-02	-0.022
		747.24		-3.701E-02	6.444E-02	1.035E-01	1.608E-02	-0.358
ND-147	+	91.11		1.061E+00	2.517E-01	4.680E-01	4.632E-02	2.266
		319.41		-1.764E+00	2.272E+00	3.631E+00	3.494E-01	-0.486
		531.02	*	1.412E-01	3.924E-01	6.450E-01	9.958E-02	0.219
PM-149		285.90	*	-5.349E+00	7.034E+01	1.169E+02	1.905E+01	-0.046
EU-152		121.78		-1.529E-02	5.075E-02	8.075E-02	7.802E-03	-0.189
		244.70		4.020E-03	2.398E-01	3.549E-01	3.443E-02	0.011
		344.28	*	3.366E-02	7.673E-02	1.068E-01	1.041E-02	0.315
		778.90		-5.062E-02	1.783E-01	2.745E-01	2.789E-02	-0.184
	+	964.08		8.162E-01	2.466E-01	3.868E-01	3.737E-02	2.110

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153		1085.87		-8.545E-02	2.585E-01	4.107E-01	3.636E-02	-0.208
		1112.07		2.807E-01	2.191E-01	3.842E-01	3.315E-02	0.731
		1408.01		1.049E-01	1.244E-01	2.221E-01	1.876E-02	0.472
		69.67		-8.931E-01	1.132E+00	1.819E+00	1.391E-01	-0.491
		97.43	*	4.774E-02	8.176E-02	9.638E-02	8.548E-03	0.495
EU-154		103.18		-9.870E-02	8.919E-02	1.226E-01	1.061E-02	-0.805
		123.07		2.101E-02	3.579E-02	5.841E-02	6.507E-03	0.360
		723.31		5.403E-03	1.253E-01	1.832E-01	1.996E-02	0.029
		873.19		1.852E-01	1.823E-01	3.196E-01	4.137E-02	0.579
EU-155		996.26		-9.112E-02	2.647E-01	3.609E-01	6.465E-02	-0.252
		1004.73		1.057E-01	1.617E-01	2.437E-01	2.985E-02	0.434
		1274.44	*	-1.309E-02	8.692E-02	1.384E-01	1.539E-02	-0.095
	+	86.55		5.121E-01	1.006E-01	1.307E-01	1.224E-02	3.918
TB-160		105.31	*	9.193E-02	7.518E-02	1.249E-01	1.085E-02	0.736
	+	86.79		1.364E+00	2.675E-01	3.496E-01	3.255E-02	3.900
		197.04		2.474E-01	3.900E-01	6.664E-01	6.100E-02	0.371
		215.65		2.491E-01	5.517E-01	8.786E-01	8.250E-02	0.284
HO-166M		298.57		1.468E-01	8.033E-02	1.397E-01	1.373E-02	1.051
		879.36	*	1.376E-03	9.341E-02	1.546E-01	1.546E-02	0.009
		962.29		2.188E-01	3.891E-01	5.819E-01	5.627E-02	0.376
	+	966.15		5.724E-01	1.729E-01	3.193E-01	3.082E-02	1.792
		1177.93		-3.367E-01	2.593E-01	3.794E-01	3.055E-02	-0.887
		1271.85		-3.296E-01	5.045E-01	7.698E-01	6.365E-02	-0.428
		80.57		-3.547E-02	2.593E-01	2.957E-01	2.547E-02	-0.120
	+	184.41		2.255E-01	4.800E-02	5.321E-02	4.779E-03	4.239
		280.46		6.921E-02	6.194E-02	9.569E-02	9.522E-03	0.723
		410.95		5.257E-01	1.980E-01	3.217E-01	2.745E-02	1.634
TA-182		711.68	*	-6.460E-03	4.270E-02	7.094E-02	7.187E-03	-0.091
		752.31		-1.289E-01	1.822E-01	2.904E-01	2.951E-02	-0.444
		810.29		8.755E-03	3.906E-02	6.583E-02	6.673E-03	0.133
		67.75		2.216E-02	7.891E-02	1.165E-01	8.759E-03	0.190
	+	100.11		3.730E-01	2.001E-01	2.121E-01	1.857E-02	1.759
		152.43		1.709E-01	2.810E-01	4.075E-01	3.485E-02	0.419
		222.11		6.115E-02	2.386E-01	4.052E-01	3.835E-02	0.151
	+	1121.30		5.789E-01	1.584E-01	2.419E-01	2.067E-02	2.393
		1189.05		-1.083E-01	2.137E-01	3.304E-01	2.670E-02	-0.328
		1221.41	*	-3.242E-02	1.385E-01	2.203E-01	1.798E-02	-0.147
IR-192		1231.02		-2.368E-01	3.803E-01	4.967E-01	4.063E-02	-0.477
	+	295.96		1.106E+00	1.533E-01	2.106E-01	2.086E-02	5.253
		308.46		-2.697E-02	6.274E-02	1.022E-01	9.993E-03	-0.264
		316.51	*	-8.934E-03	2.371E-02	3.868E-02	3.741E-03	-0.231
BI-207		468.07		-1.734E-02	4.988E-02	6.890E-02	6.625E-03	-0.252
		72.81		2.056E-01	1.343E-01	2.030E-01	1.602E-02	1.013
	+	74.97		6.555E-01	1.032E-01	1.553E-01	1.254E-02	4.222
		569.70		2.287E-03	2.152E-02	3.477E-02	3.359E-03	0.066
PB-210		1063.66	*	8.000E-03	3.832E-02	6.342E-02	5.726E-03	0.126
		1770.23		-1.476E-01	3.287E-01	4.187E-01	3.435E-02	-0.353
		46.54	*	7.963E-01	1.564E+00	2.552E+00	2.345E-01	0.312
PB-211		404.85	*	-2.738E-01	5.529E-01	7.430E-01	3.594E-01	-0.368

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Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	427.09	-3.378E-01	1.076E+00	1.710E+00	7.915E-01	-0.197
		832.01	-1.192E-02	7.302E-01	1.211E+00	6.310E-01	-0.010
		271.23	7.370E-01	2.903E-01	3.138E-01	3.565E-02	2.348
RA-223	+	401.81 *	4.675E-02	2.672E-01	4.413E-01	6.520E-02	0.106
		81.07	-1.234E-01	2.083E-01	2.321E-01	2.011E-02	-0.532
		83.79	2.754E-01	1.020E-01	1.472E-01	1.319E-02	1.871
	+	94.87	2.134E+00	4.573E-01	5.941E-01	5.344E-02	3.592
		144.24	6.679E-01	6.694E-01	8.465E-01	8.028E-02	0.789
		154.21	4.534E-01	3.553E-01	4.675E-01	4.396E-02	0.970
	+	269.46	5.726E-01	2.235E-01	2.463E-01	2.475E-02	2.325
		323.87 *	1.679E-01	4.721E-01	7.001E-01	1.248E-01	0.240
		338.28	8.782E+00	1.743E+00	1.798E+00	2.269E-01	4.885
AC-227	+	79.69	-4.717E-01	1.045E+00	1.360E+00	2.338E-01	-0.347
		235.96	2.466E-01	1.234E-01	1.923E-01	2.151E-02	1.282
		256.23 *	-1.044E-01	1.689E-01	2.756E-01	3.562E-02	-0.379
	+	299.98	2.248E+00	8.180E-01	1.161E+00	1.572E-01	1.937
		304.50	3.646E-01	1.164E+00	1.729E+00	2.966E-01	0.211
		334.37	-4.108E-01	1.425E+00	1.889E+00	3.031E-01	-0.217
TH-227	+	79.80	-7.558E-01	1.591E+00	1.777E+00	3.864E-01	-0.425
		235.96	2.466E-01	1.231E-01	1.923E-01	2.048E-02	1.282
		256.23 *	-1.044E-01	1.690E-01	2.756E-01	3.964E-02	-0.379
	+	299.98	2.248E+00	8.180E-01	1.161E+00	1.572E-01	1.937
		304.50	3.646E-01	1.164E+00	1.729E+00	2.966E-01	0.211
		334.37	-4.108E-01	1.425E+00	1.889E+00	3.031E-01	-0.217
PA-231	+	283.69 *	-1.963E-01	1.005E+00	1.605E+00	2.472E-01	-0.122
		301.36	1.444E+00	5.228E-01	7.329E-01	9.541E-02	1.971
		81.07	-1.234E-01	2.083E-01	2.321E-01	2.011E-02	-0.532
TH-231	+	83.79	2.754E-01	1.020E-01	1.472E-01	1.319E-02	1.871
		94.87	2.134E+00	4.573E-01	5.941E-01	5.344E-02	3.592
		144.24	6.679E-01	6.694E-01	8.465E-01	8.028E-02	0.789
	+	154.21	4.534E-01	3.553E-01	4.675E-01	4.396E-02	0.970
		269.46	5.726E-01	2.235E-01	2.463E-01	2.475E-02	2.325
		323.87 *	1.679E-01	4.721E-01	7.001E-01	1.248E-01	0.240
	+	338.28	8.782E+00	1.743E+00	1.798E+00	2.269E-01	4.885
		300.13	1.017E+00	3.782E-01	5.251E-01	8.167E-02	1.938
		311.90 *	-8.223E-03	4.404E-02	7.253E-02	7.197E-03	-0.113
PA-234	+	340.48	2.052E+00	7.122E-01	8.776E-01	2.136E-01	2.339
		94.67	6.537E-01	1.717E-01	2.428E-01	3.077E-02	2.693
		98.44	1.884E-01	1.449E-01	1.108E-01	6.183E-02	1.701
	+	111.00	-7.160E-02	1.381E-01	2.191E-01	2.624E-02	-0.327
		131.20	1.281E-03	8.597E-02	1.227E-01	1.025E-02	0.010
		569.50	6.063E-02	1.896E-01	3.099E-01	2.994E-02	0.196
	+	733.00	2.258E-01	2.857E-01	4.360E-01	9.956E-02	0.518
		880.51	-1.438E-02	1.890E-01	3.109E-01	3.107E-02	-0.046
		883.24	3.904E-03	2.016E-01	3.336E-01	2.249E-01	0.012
	+	926.50	3.249E-02	1.294E-01	1.974E-01	5.078E-02	0.165
		946.00 *	-3.157E-02	2.117E-01	3.448E-01	6.657E-02	-0.092
		949.00	4.509E-01	3.099E-01	5.526E-01	5.379E-02	0.816
PA-234M		766.42	2.299E+01	1.510E+01	1.602E+01	8.174E+00	1.435

---- 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	*	1.157E+01	5.686E+00	6.535E+00	6.991E-01	1.771
	+	99.53		3.419E-01	1.834E-01	2.029E-01	1.782E-02	1.685
		103.37		-9.346E-02	8.152E-02	1.119E-01	9.669E-03	-0.836
		106.12		-1.183E-03	6.054E-02	9.772E-02	8.372E-03	-0.012
		117.23	*	-9.436E-03	2.786E-01	4.479E-01	3.752E-02	-0.021
		228.18		-2.646E-02	1.446E-01	2.419E-01	2.306E-02	-0.109
AM-241	+	277.60		1.709E-01	1.988E-01	2.132E-01	2.121E-02	0.802
		59.54	*	1.231E-01	9.827E-02	1.496E-01	1.170E-02	0.823
CM-247	+	278.00		7.258E-01	8.441E-01	9.158E-01	9.113E-02	0.792
		287.50		1.296E-01	8.441E-01	1.414E+00	1.401E-01	0.092
CF-249		402.40	*	2.175E-03	2.514E-02	3.996E-02	3.379E-03	0.054
		252.80		5.690E-02	6.315E-01	1.062E+00	1.037E-01	0.054
		333.37		3.877E-02	1.909E-01	2.045E-01	1.931E-02	0.190
CF-251		388.16	*	6.510E-04	2.666E-02	4.381E-02	3.694E-03	0.015
		177.52	*	4.758E-02	9.402E-02	1.512E-01	1.343E-02	0.315
		227.38		-9.770E-02	2.379E-01	3.950E-01	3.762E-02	-0.247
		285.41		-1.081E+00	1.483E+00	2.397E+00	2.379E-01	-0.451

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900004      *
* Acquisition date   : 5-MAR-2010 23:38:51 Detector SN#                   *
* Detector ID        : GAM20 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 04:01:08.97 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G247900004 Analyst initials: MXR1                 *
* Batch Number       : 957711 Sample Quantity : 1.2342E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                           *
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                             *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.617E+01	2.525E+00	3.071E-01	0.000E+00
CD-109	4.322E+00	8.309E-01	9.283E-01	0.000E+00
SN-126	4.222E-01	8.117E-02	9.095E-02	0.000E+00
BA-137M	4.201E-02	2.860E-02	3.974E-02	0.000E+00
CS-137	4.438E-02	3.021E-02	4.198E-02	0.000E+00
HG-203	3.814E-02	4.348E-02	4.186E-02	0.000E+00
TL-208	6.437E-01	8.591E-02	3.778E-02	0.000E+00
BI-211	4.370E+00	5.234E-01	2.200E-01	0.000E+00
BI-212	2.346E+00	6.746E-01	5.701E-01	0.000E+00
PB-212	1.961E+00	2.229E-01	6.606E-02	0.000E+00
BI-214	1.353E+00	1.811E-01	7.696E-02	0.000E+00
PB-214	1.586E+00	2.084E-01	8.000E-02	0.000E+00
RA-224	4.465E+00	9.294E-01	7.078E-01	0.000E+00
RA-226	1.353E+00	1.811E-01	7.696E-02	0.000E+00
AC-228	2.270E+00	3.595E-01	1.485E-01	0.000E+00
RA-228	2.270E+00	3.595E-01	1.485E-01	0.000E+00
TH-228	1.961E+00	2.229E-01	6.606E-02	0.000E+00
TH-229	-2.854E-01	3.448E-01	5.956E-01	0.000E+00
TH-232	2.270E+00	3.595E-01	1.485E-01	0.000E+00
TH-234	9.227E+00	2.275E+00	1.347E+00	0.000E+00
U-235	1.993E-01	1.976E-01	2.393E-01	0.000E+00
NP-237	1.260E+00	3.545E-01	2.734E-01	0.000E+00
U-238	9.227E+00	2.275E+00	1.347E+00	0.000E+00
ANH-511	1.757E-01	5.551E-02	3.001E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.757E-02	2.246E-01	3.754E-01	0.000E+00 NOT IDENT.
NA-22	-2.302E-03	3.005E-02	4.916E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	7.325E+05	0.000E+00	0.000E+00 SHORT HLIF

SC-46	-2.053E-02	2.632E-02	4.215E-02	0.000E+00	FAIL ABUN
V-48	-7.260E-03	4.967E-02	8.269E-02	0.000E+00	NOT IDENT.
CR-51	-1.233E-01	2.416E-01	4.071E-01	0.000E+00	NOT IDENT.
MN-54	4.527E-03	2.646E-02	4.549E-02	0.000E+00	NOT IDENT.
CO-56	-1.391E-02	2.574E-02	4.219E-02	0.000E+00	FAIL ABUN
CO-57	1.272E-03	1.723E-02	2.921E-02	0.000E+00	NOT IDENT.
CO-58	1.544E-03	2.513E-02	4.306E-02	0.000E+00	NOT IDENT.
FE-59	-5.050E-02	6.346E-02	9.954E-02	0.000E+00	NOT IDENT.
CO-60	8.833E-03	2.510E-02	4.247E-02	0.000E+00	NOT IDENT.
ZN-65	-9.203E-02	7.783E-02	9.922E-02	0.000E+00	NOT IDENT.
SE-75	2.817E-03	3.342E-02	5.153E-02	0.000E+00	FAIL ABUN
SR-85	0.000E+00	3.130E-02	5.127E-02	0.000E+00	NOT IDENT.
Y-88	-1.448E-02	1.937E-02	2.820E-02	0.000E+00	NOT IDENT.
Y-91	3.972E+00	1.489E+01	2.504E+01	0.000E+00	NOT IDENT.
NB-94	9.771E-03	2.256E-02	3.975E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	3.430E-02	5.651E-02	0.000E+00	NOT IDENT.
NB-95M	6.032E-02	9.338E-02	1.480E-01	0.000E+00	NOT IDENT.
ZR-95	5.711E-02	4.941E-02	8.945E-02	0.000E+00	NOT IDENT.
MO-99	-5.361E+00	9.468E+00	1.570E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	9.489E+16	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.148E-02	2.682E-02	4.584E-02	0.000E+00	FAIL ABUN
RH-106	-1.849E-01	2.241E-01	3.479E-01	0.000E+00	NOT IDENT.
RU-106	-1.849E-01	2.233E-01	3.479E-01	0.000E+00	NOT IDENT.
AG-108M	-1.004E-02	1.930E-02	3.171E-02	0.000E+00	NOT IDENT.
AG-110M	1.230E-02	2.453E-02	3.849E-02	0.000E+00	NOT IDENT.
SN-113	-1.727E-03	3.051E-02	5.178E-02	0.000E+00	NOT IDENT.
CD-115	2.203E+00	8.883E+00	1.500E+01	0.000E+00	NOT IDENT.
SN-117M	1.178E-02	4.365E-02	6.547E-02	0.000E+00	NOT IDENT.
TE-123M	-6.212E-03	2.248E-02	3.292E-02	0.000E+00	NOT IDENT.
SB-124	3.402E-02	4.552E-02	8.398E-02	0.000E+00	NOT IDENT.
SB-125	-9.164E-03	6.171E-02	1.036E-01	0.000E+00	FAIL ABUN
TE-125M	-3.014E+00	7.035E+00	1.182E+01	0.000E+00	NOT IDENT.
I-126	8.790E-02	1.639E-01	2.571E-01	0.000E+00	NOT IDENT.
SB-126	-2.275E-02	1.011E-01	1.620E-01	0.000E+00	NOT IDENT.
SB-127	2.709E-01	9.254E-01	1.624E+00	0.000E+00	NOT IDENT.
I-131	-4.649E-02	7.824E-02	1.299E-01	0.000E+00	NOT IDENT.
TE-132	-1.913E-01	5.264E-01	9.135E-01	0.000E+00	NOT IDENT.
BA-133	2.180E-02	2.988E-02	4.674E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	5.624E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.242E-02	6.327E-02	0.000E+00	FAIL ABUN
CS-135	1.776E-01	1.193E-01	1.933E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.241E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.931E-02	7.103E-02	1.164E-01	0.000E+00	FAIL ABUN
CE-139	-1.471E-03	2.153E-02	3.576E-02	0.000E+00	NOT IDENT.
BA-140	2.521E-02	1.768E-01	2.964E-01	0.000E+00	NOT IDENT.
LA-140	-1.271E-02	5.906E-02	9.531E-02	0.000E+00	FAIL ABUN
CE-141	7.876E-02	5.053E-02	7.929E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.104E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	5.870E-02	1.532E-01	2.329E-01	0.000E+00	NOT IDENT.
PM-144	-1.245E-02	2.360E-02	3.958E-02	0.000E+00	NOT IDENT.
PR-144	-9.482E-01	1.765E+00	2.960E+00	0.000E+00	NOT IDENT.
PM-146	1.769E-02	2.844E-02	4.929E-02	0.000E+00	NOT IDENT.
ND-147	1.412E-01	3.845E-01	6.529E-01	0.000E+00	FAIL ABUN
PM-149	-5.349E+00	6.893E+01	1.193E+02	0.000E+00	NOT IDENT.
EU-152	3.366E-02	7.520E-02	1.087E-01	0.000E+00	FAIL ABUN
GD-153	4.774E-02	8.012E-02	9.975E-02	0.000E+00	NOT IDENT.
EU-154	-1.309E-02	8.518E-02	1.385E-01	0.000E+00	NOT IDENT.
EU-155	9.193E-02	7.367E-02	1.291E-01	0.000E+00	FAIL ABUN
TB-160	1.376E-03	9.154E-02	1.555E-01	0.000E+00	FAIL ABUN
HO-166M	-6.460E-03	4.184E-02	7.154E-02	0.000E+00	FAIL ABUN
TA-182	-3.242E-02	1.357E-01	2.206E-01	0.000E+00	FAIL ABUN
IR-192	-8.934E-03	2.323E-02	3.943E-02	0.000E+00	FAIL ABUN
BI-207	8.000E-03	3.755E-02	6.361E-02	0.000E+00	FAIL ABUN
PB-210	7.963E-01	1.532E+00	2.666E+00	0.000E+00	NOT IDENT.
PB-211	-2.738E-01	5.418E-01	7.549E-01	0.000E+00	NOT IDENT.
RN-219	4.675E-02	2.618E-01	4.484E-01	0.000E+00	FAIL ABUN
RA-223	1.679E-01	4.627E-01	7.134E-01	0.000E+00	FAIL ABUN
AC-227	-1.044E-01	1.655E-01	2.817E-01	0.000E+00	FAIL ABUN
TH-227	-1.044E-01	1.656E-01	2.817E-01	0.000E+00	FAIL ABUN
PA-231	-1.963E-01	9.845E-01	1.639E+00	0.000E+00	FAIL ABUN
TH-231	1.679E-01	4.627E-01	7.134E-01	0.000E+00	FAIL ABUN
PA-233	-8.223E-03	4.316E-02	7.394E-02	0.000E+00	FAIL ABUN
PA-234	-3.157E-02	2.075E-01	3.463E-01	0.000E+00	FAIL ABUN
PA-234M	0.000E+00	5.573E+00	6.560E+00	0.000E+00	FAIL ABUN
NP-239	-9.436E-03	2.731E-01	4.625E-01	0.000E+00	FAIL ABUN
AM-241	1.231E-01	9.630E-02	1.557E-01	0.000E+00	NOT IDENT.
CM-247	2.175E-03	2.464E-02	4.061E-02	0.000E+00	FAIL ABUN
CF-249	6.510E-04	2.613E-02	4.453E-02	0.000E+00	NOT IDENT.

CF-251	4.758E-02	9.214E-02	1.552E-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]G247900004.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 5-MAR-2010 23:38:51.
Sample ID          : G247900004 Sample quantity : 1.23420E+02 GRAM
Detector name      : GAM20 Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00 Elapsed real time: 0 04:01:08.97 0.5%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 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	2298	10.66*	1.253E+00	2.617E+01	2.617E+01	9.85
CD-109	88.03	713	3.70*	6.941E+00	4.222E+00	4.322E+00	19.62
SN-126	64.28	1039	9.60	4.630E+00	3.556E+00	3.556E+00	22.94
	86.94	713	8.90	6.941E+00	1.755E+00	1.755E+00	44.96
	87.57	713	37.00*	6.941E+00	4.222E-01	4.222E-01	19.62
BA-137M	661.66	60	89.90*	2.435E+00	4.197E-02	4.201E-02	69.47
CS-137	661.66	60	85.10*	2.435E+00	4.433E-02	4.438E-02	69.48
HG-203	70.83	-----	3.69	5.621E+00	-----	Line Not Found	-----
	72.87	-----	6.19	5.845E+00	-----	Line Not Found	-----
	279.20	76	81.56*	4.709E+00	3.026E-02	3.814E-02	116.32
TL-208	277.37	76	6.60	4.709E+00	3.739E-01	3.739E-01	116.66
	583.19	970	85.00*	2.695E+00	6.437E-01	6.437E-01	13.62
	860.56	121	12.50	1.953E+00	7.536E-01	7.536E-01	42.00
BI-211	72.87	-----	1.23	5.845E+00	-----	Line Not Found	-----
	351.06	1474	12.92*	3.969E+00	4.370E+00	4.370E+00	12.22
BI-212	727.33	232	6.67*	2.251E+00	2.346E+00	2.346E+00	29.35
	785.37	68	1.10	2.108E+00	4.459E+00	4.459E+00	80.75
	1620.50	-----	1.47	1.162E+00	-----	Line Not Found	-----
PB-212	74.82	931	10.28	6.056E+00	2.274E+00	2.274E+00	18.51
	77.11	1547	17.10	6.263E+00	2.197E+00	2.197E+00	11.53
	238.63	2950	43.60*	5.249E+00	1.961E+00	1.961E+00	11.60
	300.09	198	3.30	4.459E+00	2.044E+00	2.044E+00	35.68
BI-214	609.32	1053	45.49*	2.603E+00	1.352E+00	1.353E+00	13.66
	1120.29	188	14.92	1.557E+00	1.232E+00	1.232E+00	28.18
	1764.49	172	15.30	1.100E+00	1.553E+00	1.553E+00	24.32
PB-214	74.82	931	5.80	6.056E+00	4.031E+00	4.031E+00	17.63
	77.11	1547	9.70	6.263E+00	3.873E+00	3.873E+00	14.18
	242.00	627	7.25	5.205E+00	2.525E+00	2.525E+00	22.01
	295.22	815	18.42	4.514E+00	1.490E+00	1.490E+00	15.28
	351.93	1474	35.60*	3.969E+00	1.586E+00	1.586E+00	13.41
RA-224	240.99	627	4.10*	5.205E+00	4.465E+00	4.465E+00	21.24
RA-226	609.32	1053	45.49*	2.603E+00	1.352E+00	1.353E+00	13.66

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	1120.29	188	14.92	1.557E+00	1.232E+00	1.232E+00	28.18
	1764.49	172	15.30	1.100E+00	1.553E+00	1.553E+00	24.32
AC-228	338.32	670	11.27	4.084E+00	2.213E+00	2.213E+00	44.59
	911.20	716	25.80*	1.860E+00	2.270E+00	2.270E+00	16.16
	968.97	409	15.80	1.764E+00	2.234E+00	2.234E+00	27.69
RA-228	338.32	670	11.27	4.084E+00	2.213E+00	2.213E+00	44.59
	911.20	716	25.80*	1.860E+00	2.270E+00	2.270E+00	16.16
	968.97	409	15.80	1.764E+00	2.234E+00	2.234E+00	27.69
TH-228	74.82	931	10.28	6.056E+00	2.274E+00	2.274E+00	15.79
	77.11	1547	17.10	6.263E+00	2.197E+00	2.197E+00	11.53
	238.63	2950	43.60*	5.249E+00	1.961E+00	1.961E+00	11.60
	300.09	198	3.30	4.459E+00	2.044E+00	2.044E+00	70.07
TH-229	85.43	303	14.70	6.774E+00	4.627E-01	4.627E-01	37.03
	88.47	713	24.00	6.941E+00	6.509E-01	6.509E-01	19.62
	193.51	-----	4.41*	6.026E+00	-----	Line Not Found	-----
	210.85	319	2.80	5.729E+00	3.028E+00	3.028E+00	34.64
TH-232	338.32	670	11.27	4.084E+00	2.213E+00	2.213E+00	17.96
	911.20	716	25.80*	1.860E+00	2.270E+00	2.270E+00	16.16
	968.97	409	15.80	1.764E+00	2.234E+00	2.234E+00	27.69
TH-234	63.29	1039	3.70*	4.630E+00	9.227E+00	9.227E+00	25.16
	92.59	2238	4.23	7.165E+00	1.123E+01	1.123E+01	23.18
U-235	89.96	515	3.47	7.066E+00	3.192E+00	3.192E+00	32.89
	93.35	2238	5.60	7.165E+00	8.483E+00	8.483E+00	24.15
	143.76	101	10.96*	7.035E+00	1.993E-01	1.993E-01	101.20
	163.33	-----	5.08	6.638E+00	-----	Line Not Found	-----
	185.72	659	57.20	6.176E+00	2.839E-01	2.839E-01	21.28
	205.31	-----	5.01	5.804E+00	-----	Line Not Found	-----
NP-237	86.48	713	12.40*	6.941E+00	1.260E+00	1.260E+00	28.71
	95.86	-----	2.68	7.260E+00	-----	Line Not Found	-----
U-238	63.29	1039	3.70*	4.630E+00	9.227E+00	9.227E+00	25.16
	92.59	2238	4.23	7.165E+00	1.123E+01	1.123E+01	11.14
ANH-511	511.00	346	100.00*	2.993E+00	1.757E-01	1.757E-01	32.23

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247900004

Page : 3
Acquisition date : 5-MAR-2010 23:38:51

Total number of lines in spectrum 44
Number of unidentified lines 6
Number of lines tentatively identified by NID 38 86.36%

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	2.617E+01	2.617E+01	0.258E+01	9.85	
CD-109	461.40D	1.02	4.222E+00	4.322E+00	0.848E+00	19.62	
SN-126	2.30E+05Y	1.00	4.222E-01	4.222E-01	0.828E-01	19.62	
BA-137M	30.08Y	1.00	4.197E-02	4.201E-02	2.918E-02	69.47	
CS-137	30.08Y	1.00	4.433E-02	4.438E-02	3.083E-02	69.48	
HG-203	46.59D	1.26	3.026E-02	3.814E-02	4.437E-02	116.32	
TL-208	1.41E+10Y	1.00	6.437E-01	6.437E-01	0.877E-01	13.62	
BI-211	7.04E+08Y	1.00	4.370E+00	4.370E+00	0.534E+00	12.22	
BI-212	1.41E+10Y	1.00	2.346E+00	2.346E+00	0.688E+00	29.35	
PB-212	1.41E+10Y	1.00	1.961E+00	1.961E+00	0.227E+00	11.60	
BI-214	1600.00Y	1.00	1.352E+00	1.353E+00	0.185E+00	13.66	
PB-214	1600.00Y	1.00	1.586E+00	1.586E+00	0.213E+00	13.41	
RA-224	1.41E+10Y	1.00	4.465E+00	4.465E+00	0.948E+00	21.24	
RA-226	1600.00Y	1.00	1.352E+00	1.353E+00	0.185E+00	13.66	
AC-228	1.41E+10Y	1.00	2.270E+00	2.270E+00	0.367E+00	16.16	
RA-228	1.41E+10Y	1.00	2.270E+00	2.270E+00	0.367E+00	16.16	
TH-228	1.41E+10Y	1.00	1.961E+00	1.961E+00	0.227E+00	11.60	
TH-229	7340.00Y	1.00	6.509E-01	6.509E-01	1.277E-01	19.62	K
TH-232	1.41E+10Y	1.00	2.270E+00	2.270E+00	0.367E+00	16.16	
TH-234	4.47E+09Y	1.00	9.227E+00	9.227E+00	2.322E+00	25.16	
U-235	7.04E+08Y	1.00	1.993E-01	1.993E-01	2.016E-01	101.20	
NP-237	2.14E+06Y	1.00	1.260E+00	1.260E+00	0.362E+00	28.71	
U-238	4.47E+09Y	1.00	9.227E+00	9.227E+00	2.322E+00	25.16	
ANH-511	1.00E+09Y	1.00	1.757E-01	1.757E-01	0.566E-01	32.23	
Total Activity :			7.852E+01	7.862E+01			

Grand Total Activity : 7.852E+01 7.862E+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	99.04	231	955	2.26	197.95	194	10	1.60E-02	52.9	7.33E+00	T
0	128.85	176	860	1.26	257.48	254	9	1.22E-02	61.8	7.29E+00	
0	154.32	116	640	1.29	308.34	305	8	8.06E-03	77.8	6.83E+00	T
0	270.35	252	498	1.74	540.11	534	12	1.75E-02	37.7	4.81E+00	T
0	327.90	160	327	1.24	655.07	651	10	1.11E-02	44.8	4.18E+00	T
0	409.28	121	298	1.03	817.67	812	11	8.42E-03	58.0	3.55E+00	
0	463.17	205	198	1.51	925.38	920	11	1.42E-02	30.1	3.23E+00	T
0	767.94	155	159	3.10	1534.59	1529	12	1.08E-02	36.2	2.15E+00	
0	795.44	94	110	1.61	1589.58	1584	10	6.50E-03	47.1	2.09E+00	T
0	934.31	79	101	1.89	1867.30	1860	13	5.48E-03	57.1	1.82E+00	
1	964.83	139	70	1.84	1928.33	1921	26	9.65E-03	28.6	1.77E+00	T
0	1001.47	110	117	1.53	2001.64	1994	16	7.61E-03	48.0	1.71E+00	T
0	1238.20	116	157	1.74	2475.29	2466	19	8.04E-03	55.1	1.43E+00	T
0	1378.38	82	39	2.15	2755.86	2750	15	5.72E-03	40.4	1.31E+00	
0	1588.36	52	25	1.67	3176.29	3171	10	3.61E-03	45.5	1.18E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900004.CNF;1
* Acquisition date   : 5-MAR-2010 23:38:51.  Detector SN#      :
* Detector ID        : GAM20              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 04:01:08.97      Half life ratio :    8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G247900004          Analyst initials: MXR1
* Batch Number       : 957711             Sample Quantity : 1.23420E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11.7MS Isotope       :
* MSD ID              :                      MSD Isotope       :
* LCS ID              : 1032-A             LCS Isotope        :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.617E+01	2.576E+00	3.075E-01	2.682E-02	85.089
CD-109	4.322E+00	8.479E-01	8.958E-01	8.471E-02	4.825
SN-126	4.222E-01	8.283E-02	8.776E-02	8.255E-03	4.811
BA-137M	4.201E-02	2.918E-02	3.937E-02	3.951E-03	1.067
CS-137	4.438E-02	3.083E-02	4.159E-02	4.180E-03	1.067
HG-203	3.814E-02	4.437E-02	4.100E-02	4.160E-03	0.930
TL-208	6.437E-01	8.766E-02	3.737E-02	3.838E-03	17.227
BI-211	4.370E+00	5.341E-01	2.161E-01	2.071E-02	20.221
BI-212	2.346E+00	6.884E-01	5.655E-01	7.668E-02	4.148
PB-212	1.961E+00	2.275E-01	6.457E-02	6.895E-03	30.366
BI-214	1.353E+00	1.848E-01	7.616E-02	8.508E-03	17.758
PB-214	1.586E+00	2.127E-01	7.860E-02	8.680E-03	20.179
RA-224	4.465E+00	9.484E-01	6.919E-01	6.688E-02	6.454
RA-226	1.353E+00	1.848E-01	7.616E-02	8.508E-03	17.758
AC-228	2.270E+00	3.668E-01	1.478E-01	1.857E-02	15.363
RA-228	2.270E+00	3.668E-01	1.478E-01	1.857E-02	15.363
TH-228	1.961E+00	2.275E-01	6.457E-02	6.895E-03	30.366
TH-229	6.509E-01	1.277E-01	5.806E-01	5.286E-02	1.121

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	2.270E+00	3.668E-01	1.478E-01	1.857E-02	15.363
TH-234	9.227E+00	2.322E+00	1.295E+00	2.300E-01	7.126
U-235	1.993E-01	2.016E-01	2.324E-01	3.921E-02	0.857
NP-237	1.260E+00	3.618E-01	2.637E-01	6.047E-02	4.777
U-238	9.227E+00	2.322E+00	1.295E+00	2.300E-01	7.126
ANH-511	1.757E-01	5.664E-02	2.963E-02	2.761E-03	5.930

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.757E-02		2.292E-01	3.703E-01	3.599E-02	-0.047
NA-22	-2.302E-03		3.067E-02	4.913E-02	4.070E-03	-0.047
NA-24	-5.481E-01		3.737E-01	Half-Life too short		
SC-46	-2.053E-02		2.686E-02	4.192E-02	4.179E-03	-0.490
V-48	-7.260E-03		5.068E-02	8.236E-02	7.872E-03	-0.088
CR-51	-1.233E-01		2.465E-01	3.995E-01	4.002E-02	-0.309
MN-54	4.527E-03		2.700E-02	4.521E-02	4.567E-03	0.100
CO-56	-1.391E-02		2.626E-02	4.194E-02	4.227E-03	-0.332
CO-57	1.272E-03		1.758E-02	2.831E-02	2.363E-03	0.045
CO-58	1.544E-03		2.564E-02	4.278E-02	4.344E-03	0.036
FE-59	-5.050E-02		6.475E-02	9.929E-02	9.363E-03	-0.509
CO-60	8.833E-03		2.561E-02	4.248E-02	3.558E-03	0.208
ZN-65	-9.203E-02		7.942E-02	9.899E-02	8.521E-03	-0.930
SE-75	2.817E-03		3.411E-02	5.043E-02	4.994E-03	0.056
SR-85	7.243E-02		3.194E-02	5.062E-02	4.727E-03	1.431
Y-88	-1.448E-02		1.976E-02	2.833E-02	2.286E-03	-0.511
Y-91	3.972E+00		1.519E+01	2.501E+01	2.031E+00	0.159
NB-94	9.771E-03		2.302E-02	3.941E-02	3.988E-03	0.248
NB-95	5.844E-02		3.500E-02	5.610E-02	5.701E-03	1.042
NB-95M	6.032E-02		9.529E-02	1.446E-01	1.556E-02	0.417
ZR-95	5.711E-02		5.041E-02	8.878E-02	9.711E-03	0.643
MO-99	-5.361E+00		9.662E+00	1.557E+01	2.593E+00	-0.344
TC-99M	-1.086E+10		4.841E+10	Half-Life too short		
RU-103	1.148E-02		2.736E-02	4.524E-02	6.491E-03	0.254
RH-106	-1.849E-01		2.286E-01	3.443E-01	4.862E-02	-0.537
RU-106	-1.849E-01		2.279E-01	3.443E-01	3.408E-02	-0.537
AG-108M	-1.004E-02		1.970E-02	3.124E-02	2.815E-03	-0.321
AG-110M	1.230E-02		2.503E-02	3.813E-02	3.907E-03	0.323
SN-113	-1.727E-03		3.113E-02	5.094E-02	4.394E-03	-0.034
CD-115	2.203E+00		9.064E+00	1.482E+01	1.397E+00	0.149
SN-117M	1.178E-02		4.455E-02	6.366E-02	5.494E-03	0.185
TE-123M	-6.212E-03		2.294E-02	3.201E-02	2.781E-03	-0.194
SB-124	3.402E-02		4.645E-02	8.426E-02	7.341E-03	0.404
SB-125	-9.164E-03		6.297E-02	1.021E-01	9.028E-03	-0.090
TE-125M	-3.014E+00		7.179E+00	1.144E+01	1.187E+00	-0.264
I-126	8.790E-02		1.672E-01	2.547E-01	2.559E-02	0.345
SB-126	-2.275E-02		1.031E-01	1.607E-01	1.629E-02	-0.142

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	2.709E-01		9.443E-01	1.610E+00	2.033E-01	0.168
I-131	-4.649E-02		7.984E-02	1.277E-01	1.198E-02	-0.364
TE-132	-1.913E-01		5.371E-01	8.923E-01	1.465E-01	-0.214
BA-133	2.180E-02		3.049E-02	4.593E-02	6.093E-03	0.475
I-133	3.287E-03		2.869E-03	Half-Life too short		
CS-134	8.990E-02	+	4.328E-02	6.283E-02	6.411E-03	1.431
CS-135	1.776E-01		1.218E-01	1.892E-01	2.097E-02	0.938
I-135	-4.135E+09		6.331E+09	Half-Life too short		
CS-136	-1.931E-02		7.248E-02	1.161E-01	1.101E-02	-0.166
CE-139	-1.471E-03		2.197E-02	3.479E-02	3.037E-03	-0.042
BA-140	2.521E-02		1.804E-01	2.928E-01	9.998E-02	0.086
LA-140	-1.271E-02		6.027E-02	9.556E-02	8.067E-03	-0.133
CE-141	7.876E-02		5.156E-02	7.701E-02	6.649E-03	1.023
CE-143	7.193E-04		1.074E-04	Half-Life too short		
CE-144	5.870E-02		1.564E-01	2.259E-01	3.422E-02	0.260
PM-144	-1.245E-02		2.408E-02	3.924E-02	3.967E-03	-0.317
PR-144	-9.482E-01		1.801E+00	2.934E+00	2.966E-01	-0.323
PM-146	1.769E-02		2.902E-02	4.859E-02	5.258E-03	0.364
ND-147	1.412E-01		3.924E-01	6.450E-01	9.958E-02	0.219
PM-149	-5.349E+00		7.034E+01	1.169E+02	1.905E+01	-0.046
EU-152	3.366E-02		7.673E-02	1.068E-01	1.041E-02	0.315
GD-153	4.774E-02		8.176E-02	9.638E-02	8.548E-03	0.495
EU-154	-1.309E-02		8.692E-02	1.384E-01	1.539E-02	-0.095
EU-155	9.193E-02		7.518E-02	1.249E-01	1.085E-02	0.736
TB-160	1.376E-03		9.341E-02	1.546E-01	1.546E-02	0.009
HO-166M	-6.460E-03		4.270E-02	7.094E-02	7.187E-03	-0.091
TA-182	-3.242E-02		1.385E-01	2.203E-01	1.798E-02	-0.147
IR-192	-8.934E-03		2.371E-02	3.868E-02	3.741E-03	-0.231
BI-207	8.000E-03		3.832E-02	6.342E-02	5.726E-03	0.126
PB-210	7.963E-01		1.564E+00	2.552E+00	2.345E-01	0.312
PB-211	-2.738E-01		5.529E-01	7.430E-01	3.594E-01	-0.368
RN-219	4.675E-02		2.672E-01	4.413E-01	6.520E-02	0.106
RA-223	1.679E-01		4.721E-01	7.001E-01	1.248E-01	0.240
AC-227	-1.044E-01		1.689E-01	2.756E-01	3.562E-02	-0.379
TH-227	-1.044E-01		1.690E-01	2.756E-01	3.964E-02	-0.379
PA-231	-1.963E-01		1.005E+00	1.605E+00	2.472E-01	-0.122
TH-231	1.679E-01		4.721E-01	7.001E-01	1.248E-01	0.240
PA-233	-8.223E-03		4.404E-02	7.253E-02	7.197E-03	-0.113
PA-234	-3.157E-02		2.117E-01	3.448E-01	6.657E-02	-0.092
PA-234M	1.157E+01	+	5.686E+00	6.535E+00	6.991E-01	1.771
NP-239	-9.436E-03		2.786E-01	4.479E-01	3.752E-02	-0.021
AM-241	1.231E-01		9.827E-02	1.496E-01	1.170E-02	0.823
CM-247	2.175E-03		2.514E-02	3.996E-02	3.379E-03	0.054
CF-249	6.510E-04		2.666E-02	4.381E-02	3.694E-03	0.015
CF-251	4.758E-02		9.402E-02	1.512E-01	1.343E-02	0.315

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G247900004          *
* Acquisition date   : 5-MAR-2010 23:38:51 Detector SN# :                  *
* Detector ID        : GAM20 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 04:01:08.97 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247900004 Analyst initials: MXR1                  *
* Batch Number       : 957711 Sample Quantity : 1.2342E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                              *
*
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                             *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.617E+01	2.525E+00	1.536E-01	1.288E+00
CD-109	4.322E+00	8.309E-01	4.644E-01	4.239E-01
SN-126	4.222E-01	8.117E-02	4.550E-02	4.141E-02
BA-137M	4.201E-02	2.860E-02	1.988E-02	1.459E-02
CS-137	4.438E-02	3.021E-02	2.100E-02	1.542E-02
HG-203	3.814E-02	4.348E-02	2.094E-02	2.218E-02
TL-208	6.437E-01	8.591E-02	1.890E-02	4.383E-02
BI-211	4.370E+00	5.234E-01	1.101E-01	2.671E-01
BI-212	2.346E+00	6.746E-01	2.852E-01	3.442E-01
PB-212	1.961E+00	2.229E-01	3.305E-02	1.137E-01
BI-214	1.353E+00	1.811E-01	3.850E-02	9.240E-02
PB-214	1.586E+00	2.084E-01	4.003E-02	1.063E-01
RA-224	4.465E+00	9.294E-01	3.541E-01	4.742E-01
RA-226	1.353E+00	1.811E-01	3.850E-02	9.240E-02
AC-228	2.270E+00	3.595E-01	7.431E-02	1.834E-01
RA-228	2.270E+00	3.595E-01	7.431E-02	1.834E-01
TH-228	1.961E+00	2.229E-01	3.305E-02	1.137E-01
TH-229	-2.854E-01	3.448E-01	2.980E-01	1.759E-01
TH-232	2.270E+00	3.595E-01	7.431E-02	1.834E-01
TH-234	9.227E+00	2.275E+00	6.741E-01	1.161E+00
U-235	1.993E-01	1.976E-01	1.197E-01	1.008E-01
NP-237	1.260E+00	3.545E-01	1.368E-01	1.809E-01
U-238	9.227E+00	2.275E+00	6.741E-01	1.161E+00
ANH-511	1.757E-01	5.551E-02	1.502E-02	2.832E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.757E-02	2.246E-01	1.878E-01	1.146E-01 NOT IDENT.
NA-22	-2.302E-03	3.005E-02	2.459E-02	1.533E-02 NOT IDENT.
NA-24	-5.481E+05	7.325E+05	0.000E+00	3.737E+05 SHORT HLIF

SC-46	-2.053E-02	2.632E-02	2.109E-02	1.343E-02	FAIL ABUN
V-48	-7.260E-03	4.967E-02	4.137E-02	2.534E-02	NOT IDENT.
CR-51	-1.233E-01	2.416E-01	2.037E-01	1.233E-01	NOT IDENT.
MN-54	4.527E-03	2.646E-02	2.276E-02	1.350E-02	NOT IDENT.
CO-56	-1.391E-02	2.574E-02	2.111E-02	1.313E-02	FAIL ABUN
CO-57	1.272E-03	1.723E-02	1.461E-02	8.789E-03	NOT IDENT.
CO-58	1.544E-03	2.513E-02	2.154E-02	1.282E-02	NOT IDENT.
FE-59	-5.050E-02	6.346E-02	4.980E-02	3.238E-02	NOT IDENT.
CO-60	8.833E-03	2.510E-02	2.125E-02	1.281E-02	NOT IDENT.
ZN-65	-9.203E-02	7.783E-02	4.964E-02	3.971E-02	NOT IDENT.
SE-75	2.817E-03	3.342E-02	2.578E-02	1.705E-02	FAIL ABUN
SR-85	7.243E-02	3.130E-02	2.565E-02	1.597E-02	NOT IDENT.
Y-88	-1.448E-02	1.937E-02	1.411E-02	9.882E-03	NOT IDENT.
Y-91	3.972E+00	1.489E+01	1.253E+01	7.596E+00	NOT IDENT.
NB-94	9.771E-03	2.256E-02	1.989E-02	1.151E-02	NOT IDENT.
NB-95	5.844E-02	3.430E-02	2.827E-02	1.750E-02	NOT IDENT.
NB-95M	6.032E-02	9.338E-02	7.403E-02	4.764E-02	NOT IDENT.
ZR-95	5.711E-02	4.941E-02	4.475E-02	2.521E-02	NOT IDENT.
MO-99	-5.361E+00	9.468E+00	7.853E+00	4.831E+00	NOT IDENT.
TC-99M	-1.086E+16	9.489E+16	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.148E-02	2.682E-02	2.293E-02	1.368E-02	FAIL ABUN
RH-106	-1.849E-01	2.241E-01	1.740E-01	1.143E-01	NOT IDENT.
RU-106	-1.849E-01	2.233E-01	1.740E-01	1.139E-01	NOT IDENT.
AG-108M	-1.004E-02	1.930E-02	1.586E-02	9.849E-03	NOT IDENT.
AG-110M	1.230E-02	2.453E-02	1.926E-02	1.251E-02	NOT IDENT.
SN-113	-1.727E-03	3.051E-02	2.590E-02	1.557E-02	NOT IDENT.
CD-115	2.203E+00	8.883E+00	7.506E+00	4.532E+00	NOT IDENT.
SN-117M	1.178E-02	4.365E-02	3.276E-02	2.227E-02	NOT IDENT.
TE-123M	-6.212E-03	2.248E-02	1.647E-02	1.147E-02	NOT IDENT.
SB-124	3.402E-02	4.552E-02	4.202E-02	2.322E-02	NOT IDENT.
SB-125	-9.164E-03	6.171E-02	5.184E-02	3.149E-02	FAIL ABUN
TE-125M	-3.014E+00	7.035E+00	5.913E+00	3.589E+00	NOT IDENT.
I-126	8.790E-02	1.639E-01	1.286E-01	8.361E-02	NOT IDENT.
SB-126	-2.275E-02	1.011E-01	8.104E-02	5.157E-02	NOT IDENT.
SB-127	2.709E-01	9.254E-01	8.125E-01	4.721E-01	NOT IDENT.
I-131	-4.649E-02	7.824E-02	6.499E-02	3.992E-02	NOT IDENT.
TE-132	-1.913E-01	5.264E-01	4.570E-01	2.686E-01	NOT IDENT.
BA-133	2.180E-02	2.988E-02	2.338E-02	1.525E-02	NOT IDENT.
I-133	3.287E+03	5.624E+03	0.000E+00	2.869E+03	SHORT HLIF
CS-134	8.990E-02	4.242E-02	3.165E-02	2.164E-02	FAIL ABUN
CS-135	1.776E-01	1.193E-01	9.669E-02	6.089E-02	NOT IDENT.
I-135	-4.135E+15	1.241E+16	0.000E+00	6.331E+15	SHORT HLIF
CS-136	-1.931E-02	7.103E-02	5.825E-02	3.624E-02	FAIL ABUN
CE-139	-1.471E-03	2.153E-02	1.789E-02	1.099E-02	NOT IDENT.
BA-140	2.521E-02	1.768E-01	1.483E-01	9.020E-02	NOT IDENT.
LA-140	-1.271E-02	5.906E-02	4.768E-02	3.013E-02	FAIL ABUN
CE-141	7.876E-02	5.053E-02	3.967E-02	2.578E-02	NOT IDENT.
CE-143	7.193E+02	2.104E+02	0.000E+00	1.074E+02	SHORT HLIF
CE-144	5.870E-02	1.532E-01	1.165E-01	7.818E-02	NOT IDENT.
PM-144	-1.245E-02	2.360E-02	1.980E-02	1.204E-02	NOT IDENT.
PR-144	-9.482E-01	1.765E+00	1.481E+00	9.007E-01	NOT IDENT.
PM-146	1.769E-02	2.844E-02	2.466E-02	1.451E-02	NOT IDENT.
ND-147	1.412E-01	3.845E-01	3.267E-01	1.962E-01	FAIL ABUN
PM-149	-5.349E+00	6.893E+01	5.968E+01	3.517E+01	NOT IDENT.
EU-152	3.366E-02	7.520E-02	5.439E-02	3.837E-02	FAIL ABUN
GD-153	4.774E-02	8.012E-02	4.990E-02	4.088E-02	NOT IDENT.
EU-154	-1.309E-02	8.518E-02	6.928E-02	4.346E-02	NOT IDENT.
EU-155	9.193E-02	7.367E-02	6.458E-02	3.759E-02	FAIL ABUN
TB-160	1.376E-03	9.154E-02	7.777E-02	4.670E-02	FAIL ABUN
HO-166M	-6.460E-03	4.184E-02	3.579E-02	2.135E-02	FAIL ABUN
TA-182	-3.242E-02	1.357E-01	1.103E-01	6.923E-02	FAIL ABUN
IR-192	-8.934E-03	2.323E-02	1.973E-02	1.185E-02	FAIL ABUN
BI-207	8.000E-03	3.755E-02	3.182E-02	1.916E-02	FAIL ABUN
PB-210	7.963E-01	1.532E+00	1.334E+00	7.818E-01	NOT IDENT.
PB-211	-2.738E-01	5.418E-01	3.777E-01	2.764E-01	NOT IDENT.
RN-219	4.675E-02	2.618E-01	2.243E-01	1.336E-01	FAIL ABUN
RA-223	1.679E-01	4.627E-01	3.569E-01	2.361E-01	FAIL ABUN
AC-227	-1.044E-01	1.655E-01	1.409E-01	8.443E-02	FAIL ABUN
TH-227	-1.044E-01	1.656E-01	1.409E-01	8.449E-02	FAIL ABUN
PA-231	-1.963E-01	9.845E-01	8.199E-01	5.023E-01	FAIL ABUN
TH-231	1.679E-01	4.627E-01	3.569E-01	2.361E-01	FAIL ABUN
PA-233	-8.223E-03	4.316E-02	3.699E-02	2.202E-02	FAIL ABUN
PA-234	-3.157E-02	2.075E-01	1.733E-01	1.059E-01	FAIL ABUN
PA-234M	1.157E+01	5.573E+00	3.282E+00	2.843E+00	FAIL ABUN
NP-239	-9.436E-03	2.731E-01	2.314E-01	1.393E-01	FAIL ABUN
AM-241	1.231E-01	9.630E-02	7.792E-02	4.913E-02	NOT IDENT.
CM-247	2.175E-03	2.464E-02	2.032E-02	1.257E-02	FAIL ABUN
CF-249	6.510E-04	2.613E-02	2.228E-02	1.333E-02	NOT IDENT.

CF-251

4.758E-02

9.214E-02

7.766E-02

4.701E-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	687.6320
49.72	718.7252
57.36	0.0000
59.54	831.0815
63.29	986.0720
63.29	986.0720
64.28	1027.0920
67.75	1022.7113
69.67	1140.4215
70.83	1104.4570
72.81	1115.7609
72.87	1115.8719
72.87	1115.8719
74.82	1173.7635
74.82	1173.7635
74.82	1173.7635
74.97	1174.0490
77.11	1178.0848
77.11	1178.0848
77.11	1178.0848
79.69	1130.1907
79.80	1122.1194
80.12	1122.6772
80.19	1122.7988
80.57	1086.2198
81.00	1124.2073
81.07	1124.3289
81.07	1124.3289
83.79	1137.3186
83.79	1137.3186
85.43	1016.1060
86.48	1017.6880
86.55	1017.7971
86.79	1018.1542
86.94	1018.3823
87.57	1019.3245
88.03	1020.0138
88.47	1020.6684
89.96	1022.8802
91.11	1024.5713
92.59	1026.7334
92.59	1026.7334
93.35	1027.8392
94.67	1029.7485
94.87	618.0217
94.87	618.0217
95.86	653.7834
97.43	655.2011
98.44	649.7364
99.53	650.7014
100.11	651.2119
103.18	766.0757
103.37	775.8874
105.31	660.0081
106.12	729.3516
109.28	757.0959
111.00	781.4150
111.76	698.9784
116.30	709.4493
117.23	613.4527
121.12	614.1530
121.78	602.6058
122.06	585.3032
123.07	565.1938
131.20	658.4399
133.52	577.0220
136.00	613.6384

136.47	623.9687
140.51	611.6490
140.51	0.0000
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144.24	637.6656
145.44	572.7798
152.43	573.5829
153.25	614.8245
154.21	600.6979
154.21	600.6979
156.02	536.5132
158.56	541.3030
159.00	567.1650
162.66	566.9458
163.33	550.1624
165.86	579.0414
176.60	551.4064
177.52	515.9345
181.07	561.8344
184.41	574.0500
185.72	553.7040
193.51	525.7971
197.04	514.1419
205.31	514.7643
210.85	438.3622
215.65	468.6201
222.11	448.1831
227.38	448.2453
228.16	445.7966
228.18	435.8167
235.69	470.5162
235.96	483.7642
235.96	483.7642
238.63	436.6083
238.63	436.6083
240.99	437.3907
242.00	437.7255
244.70	385.4681
252.40	344.0217
252.80	353.3745
256.23	374.6629
256.23	374.6629
260.90	361.0385
264.66	346.3348
268.22	338.2275
269.46	330.6026
269.46	330.6026
271.23	329.9409
273.65	326.7438
276.40	331.1279
277.37	333.4998
277.60	333.5538
278.00	333.6457
279.20	310.6496
279.54	310.7251
280.46	283.7510
283.69	331.6964
284.31	339.5370
285.41	351.1469
285.90	327.5955
287.50	330.7874
293.27	0.0000
295.22	324.8699
295.96	325.0260
298.57	325.5828
299.98	325.8846
299.98	325.8846
300.09	325.9054
300.09	325.9054
300.13	325.9158
301.36	298.4366
302.85	268.0841
304.50	266.8368
304.50	266.8368
304.85	260.7607
308.46	282.5067
311.90	302.3860

316.51	299.4043
319.41	291.2355
320.08	283.6158
323.87	259.2496
323.87	259.2496
328.76	291.1694
333.37	288.8638
334.37	304.6637
334.37	304.6637
338.28	279.9297
338.28	279.9297
338.32	279.9384
338.32	279.9384
338.32	279.9384
340.48	260.3071
340.55	260.3152
344.28	237.7129
351.06	246.5477
351.93	246.6736
356.01	215.2127
364.49	245.4811
366.42	248.7335
383.85	226.0403
388.16	226.5724
388.63	232.6743
391.69	246.1780
400.66	213.9073
401.81	212.0073
402.40	209.8999
404.85	225.9632
410.95	187.5460
414.70	196.0840
423.72	205.2032
427.09	227.1374
427.87	219.0030
433.94	204.2026
453.88	187.4762
463.37	168.4560
468.07	181.2059
473.00	168.1763
476.78	207.4338
477.60	201.1947
487.02	167.1638
492.35	173.9372
497.08	166.8724
511.00	157.2249
514.00	185.0660
527.90	165.9420
529.87	0.0000
531.02	155.3774
537.26	150.3854
546.56	0.0000
563.25	166.2686
569.33	163.3962
569.50	163.4053
569.70	169.9995
583.19	146.6783
600.60	178.7961
602.73	170.2153
604.72	172.6392
609.32	162.6950
609.32	162.6950
610.33	142.6953
614.28	171.4969
618.01	169.9563
621.93	174.6954
621.93	174.6954
633.25	132.7140
635.95	156.7189
636.99	143.2669
645.85	131.0876
657.76	124.1044
661.66	148.2321
661.66	148.2321
664.57	0.0000
666.33	135.1260
666.50	135.1333
677.62	130.8017

685.70	134.8553
695.00	146.3491
696.49	174.9753
696.51	174.9753
697.00	176.8453
702.65	151.3597
706.68	154.3445
711.68	160.1728
720.70	141.6359
721.93	0.0000
722.78	136.3148
722.91	136.3219
723.31	136.3398
724.19	134.8295
727.33	144.2870
733.00	118.1408
735.93	138.1755
739.50	155.1670
747.24	136.8322
752.31	140.8191
753.82	114.5895
756.73	120.3438
763.94	133.5112
765.81	138.3092
766.42	139.9099
777.92	132.5488
778.90	123.1191
783.70	134.3793
785.37	116.7359
795.86	114.2754
801.95	110.2574
810.29	111.9298
810.76	110.9901
815.77	108.2907
818.51	101.6705
832.01	147.3708
834.85	147.5016
836.80	0.0000
846.77	119.9827
856.80	105.1436
860.56	101.0521
871.09	96.5008
873.19	83.8815
875.33	0.0000
879.36	105.5347
880.51	108.5014
883.24	116.4172
884.68	101.7859
889.28	120.5436
898.04	129.6990
911.20	100.6055
911.20	100.6055
911.20	100.6055
926.50	99.0674
937.49	96.0649
944.13	114.5002
946.00	115.5554
949.00	87.7379
962.29	108.4127
964.08	88.1074
966.15	88.1568
968.97	88.2256
968.97	88.2256
968.97	88.2256
983.53	110.7251
996.26	95.9579
1001.03	98.1036
1004.73	89.4267
1037.84	101.1124
1038.76	0.0000
1048.07	98.3109
1050.41	110.6631
1050.41	110.6631
1063.66	112.0709
1085.87	99.2672
1099.45	120.3557
1112.07	95.7555
1115.54	157.9985

1120.29	113.6836
1120.29	113.6836
1120.55	117.8610
1121.30	123.4469
1131.51	0.0000
1173.23	100.3623
1177.93	139.6055
1189.05	116.6440
1204.77	117.0737
1221.41	130.3518
1231.02	133.8501
1235.36	128.6250
1238.28	111.5461
1260.41	0.0000
1271.85	102.6724
1274.44	95.1629
1274.54	94.0815
1291.59	82.4978
1298.22	0.0000
1312.11	79.5978
1332.49	56.9512
1365.19	41.3599
1368.63	0.0000
1384.29	52.2024
1408.01	53.7874
1457.56	0.0000
1460.82	33.7456
1489.16	32.0507
1505.03	62.4094
1596.21	46.1875
1620.50	27.0646
1678.03	0.0000
1690.97	18.6018
1764.49	19.8348
1764.49	19.8348
1770.23	27.2288
1771.35	32.3408
1791.20	0.0000
1836.06	24.0928

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900004

Total Uranium Activity	2.7542E+01	ug/g
Total Uranium Counting Unc.	6.7691E+00	ug/g
Total Uranium Tpu	3.4536E-06	ug/g
Total Uranium Mda	2.0061E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 957711          SAMPLE ID   : G247900004
*  ANALYST       : MXR1           DETECTOR    : GAM20
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00  COUNT TIME : 0 04:00:00.00
*  ANALYSIS DATE: 5-MAR-2010 23:38:51.17  SAMPLE ALQT: 123.420 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.122E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.250E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.682E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.809E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 03:40:20.93

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900005.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 5-MAR-2010 23:39:14.
Sample ID          : G247900005 Sample quantity : 1.57530E+02 GRAM
Detector name      : GAM23 Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00 Elapsed real time: 0 04:00:04.24 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.14*	2366	1845	1.01	126.27	121	10	1.64E-01	4.0	
2	2	74.58	920	1957	1.52	149.16	141	18	6.39E-02	9.5	3.69E+00
3	2	76.96	1150	1326	1.02	153.92	141	18	7.98E-02	5.8	
4	3	83.81	479	1981	1.69	167.62	161	32	3.32E-02	17.2	1.96E+01
5	3	86.95	664	1905	1.70	173.90	161	32	4.61E-02	12.7	
6	3	92.41*	7047	1143	1.20	184.83	161	32	4.89E-01	1.5	
7	0	98.41	600	1138	1.28	196.81	193	9	4.17E-02	11.0	
8	0	112.60	466	1682	1.06	225.20	219	12	3.24E-02	18.2	
9	0	143.53*	153	936	1.05	287.06	284	8	1.06E-02	36.4	
10	0	162.97	158	844	1.13	325.94	323	9	1.10E-02	34.0	
11	0	185.48*	1442	1090	1.07	370.95	365	12	1.00E-01	5.4	
12	0	204.87*	119	583	1.34	409.74	407	8	8.25E-03	37.4	
13	0	209.36	254	803	1.07	418.71	414	11	1.76E-02	22.5	
14	3	238.30*	2293	409	1.16	476.59	468	21	1.59E-01	2.6	2.52E+00
15	3	241.27*	586	591	1.81	482.54	468	21	4.07E-02	11.1	
16	0	257.51	120	486	1.48	515.02	511	10	8.32E-03	35.6	
17	0	269.69	210	621	0.77	539.39	532	13	1.46E-02	25.4	
18	0	276.93	64	435	1.44	553.87	551	9	4.47E-03	60.3	
19	2	294.83	779	308	1.37	589.66	582	23	5.41E-02	5.3	1.26E+00
20	2	299.83	229	360	1.75	599.67	582	23	1.59E-02	17.1	
21	0	327.68*	148	510	1.63	655.37	649	13	1.03E-02	33.1	
22	0	337.94	439	415	1.33	675.88	670	11	3.05E-02	10.2	
23	0	351.41*	1171	443	1.28	702.83	696	14	8.13E-02	4.9	
24	0	409.66	56	313	2.12	819.31	814	10	3.85E-03	61.2	
25	0	462.38	124	231	1.41	924.76	920	10	8.62E-03	24.7	
26	0	510.24*	389	307	2.18	1020.48	1012	20	2.70E-02	13.6	
27	0	582.34	696	274	1.51	1164.68	1156	16	4.83E-02	6.5	
28	0	608.59*	800	296	1.35	1217.18	1209	16	5.55E-02	6.1	
29	0	661.43	256	301	1.80	1322.86	1315	18	1.78E-02	17.1	
30	0	726.39	167	144	1.55	1452.79	1448	12	1.16E-02	16.2	
31	0	766.14	212	190	1.59	1532.28	1526	14	1.47E-02	15.4	
32	0	794.44	69	188	1.88	1588.88	1579	15	4.81E-03	44.7	
33	0	859.81	100	76	1.22	1719.62	1716	9	6.96E-03	18.7	
34	0	910.47	470	153	1.92	1820.94	1815	17	3.26E-02	7.6	
35	0	968.32	191	273	1.59	1936.65	1929	14	1.33E-02	20.0	
36	0	1000.16*	301	163	1.97	2000.33	1993	16	2.09E-02	11.3	
37	0	1119.04	205	111	2.01	2238.07	2231	15	1.42E-02	13.3	
38	0	1376.81	48	45	1.66	2753.62	2745	14	3.35E-03	32.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1459.51*	1843	94	2.57	2919.02	2909	24	1.28E-01	2.7	
40	0	1763.14*	129	35	2.76	3526.28	3518	23	8.98E-03	14.6	
41	0	1829.94	22	10	8.03	3659.89	3651	20	1.53E-03	41.2	

Flag: "*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900005.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 : 5-MAR-2010 23:39:14
Sample ID         : G247900005 Sample quantity : 157.53 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA23 Detector geometry: CAN
Elapsed live time : 0 04:00:00.00 Elapsed real time: 0 04:00:04.24 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	*	2.065E+01	1.915E+00	3.543E-01	2.650E-02	58.289
NB-95	+	765.81	*	1.673E-01	5.270E-02	4.924E-02	3.309E-03	3.398
CD-109	+	88.03	*	4.203E+00	1.145E+00	1.125E+00	1.098E-01	3.736
SN-126	+	64.28		1.143E+01	1.969E+00	7.838E-01	1.193E-01	14.585
	+	86.94		1.707E+00	8.324E-01	4.636E-01	1.928E-01	3.682
	+	87.57	*	4.106E-01	1.119E-01	1.106E-01	1.076E-02	3.714
CS-135	+	268.22	*	3.704E-01	1.901E-01	1.735E-01	1.326E-02	2.134
BA-137M	+	661.66	*	1.663E-01	5.750E-02	4.229E-02	2.160E-03	3.934
CS-137	+	661.66	*	1.757E-01	6.075E-02	4.467E-02	2.294E-03	3.934
TL-208	+	277.37		2.801E-01	3.389E-01	4.264E-01	4.601E-02	0.657
	+	583.19	*	4.282E-01	6.252E-02	3.742E-02	2.423E-03	11.443
	+	860.56		5.937E-01	2.289E-01	3.172E-01	2.867E-02	1.872
BI-211		72.87		1.632E+01	3.645E+00	5.643E+00	4.978E-01	2.891
	+	351.06	*	3.136E+00	3.681E-01	2.202E-01	1.435E-02	14.241
PB-212	+	74.82		2.646E+00	6.124E-01	5.415E-01	7.137E-02	4.887
	+	77.11		1.865E+00	2.746E-01	3.069E-01	2.761E-02	6.078
	+	238.63	*	1.351E+00	1.209E-01	6.333E-02	4.594E-03	21.331
	+	300.09		2.118E+00	7.461E-01	8.890E-01	7.506E-02	2.383
BI-214	+	609.32	*	9.545E-01	1.374E-01	7.490E-02	5.679E-03	12.743
	+	1120.29		1.299E+00	3.654E-01	3.022E-01	2.826E-02	4.297
	+	1764.49		1.152E+00	3.433E-01	1.956E-01	1.216E-02	5.889
PB-214	+	74.82		4.690E+00	1.053E+00	9.597E-01	1.144E-01	4.887
	+	77.11		3.288E+00	5.548E-01	5.410E-01	6.604E-02	6.078
	+	242.00		2.095E+00	4.968E-01	3.852E-01	3.115E-02	5.438
	+	295.22		1.276E+00	1.751E-01	1.573E-01	1.379E-02	8.111
	+	351.93	*	1.138E+00	1.476E-01	8.011E-02	6.839E-03	14.210
RA-224	+	240.99	*	3.705E+00	8.519E-01	6.789E-01	3.825E-02	5.457
RA-226	+	609.32	*	9.545E-01	1.374E-01	7.490E-02	5.679E-03	12.743
	+	1120.29		1.299E+00	3.654E-01	3.022E-01	2.826E-02	4.297
	+	1764.49		1.152E+00	3.433E-01	1.956E-01	1.216E-02	5.889
AC-228	+	338.32		1.307E+00	6.012E-01	2.658E-01	1.096E-01	4.918
	+	911.20	*	1.422E+00	2.741E-01	1.499E-01	1.780E-02	9.485
	+	968.97		9.995E-01	4.675E-01	2.641E-01	6.420E-02	3.784
RA-228	+	338.32		1.307E+00	6.012E-01	2.658E-01	1.096E-01	4.918

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	911.20	*	1.422E+00	2.741E-01	1.499E-01	1.780E-02	9.485
	+	968.97		9.995E-01	4.675E-01	2.641E-01	6.420E-02	3.784
	+	74.82		2.646E+00	5.565E-01	5.415E-01	4.857E-02	4.887
	+	77.11		1.865E+00	2.746E-01	3.069E-01	2.761E-02	6.078
TH-232	+	238.63	*	1.351E+00	1.209E-01	6.333E-02	4.594E-03	21.331
	+	300.09		2.118E+00	1.479E+00	8.890E-01	5.413E-01	2.383
	+	338.32		1.307E+00	2.771E-01	2.658E-01	1.570E-02	4.918
	+	911.20	*	1.422E+00	2.741E-01	1.499E-01	1.780E-02	9.485
PA-234M	+	968.97		9.995E-01	4.675E-01	2.641E-01	6.420E-02	3.784
	+	766.42		4.409E+01	2.606E+01	1.299E+01	6.552E+00	3.395
TH-234	+	1001.03	*	3.056E+01	7.499E+00	5.106E+00	4.871E-01	5.986
	+	63.29	*	2.966E+01	5.957E+00	2.147E+00	3.949E-01	13.817
U-235	+	92.59		3.563E+01	7.983E+00	9.127E-01	2.026E-01	39.036
	+	89.96		1.122E+01	2.992E+00	1.687E+00	4.199E-01	6.651
	+	93.35		2.691E+01	6.299E+00	6.844E-01	1.585E-01	39.321
	+	143.76	*	2.689E-01	2.003E-01	2.470E-01	3.847E-02	1.089
NP-237	+	163.33		6.294E-01	4.405E-01	5.314E-01	8.802E-02	1.184
	+	185.72		5.466E-01	6.573E-02	4.705E-02	2.463E-03	11.617
	+	205.31		5.475E-01	4.196E-01	5.716E-01	9.632E-02	0.958
	+	86.48	*	1.225E+00	4.212E-01	3.349E-01	7.727E-02	3.658
U-238	+	95.86		3.101E+00	1.379E+00	1.382E+00	3.304E-01	2.245
	+	63.29	*	2.966E+01	5.957E+00	2.147E+00	3.949E-01	13.817
ANH-511	+	92.59		3.563E+01	3.354E+00	9.127E-01	8.124E-02	39.036
	+	511.00	*	1.821E-01	5.062E-02	3.152E-02	1.831E-03	5.776

---- 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	*	-2.127E-02	2.189E-01	3.588E-01	2.437E-02	-0.059
NA-22		1274.54	*	-2.316E-02	3.238E-02	5.004E-02	3.360E-03	-0.463
NA-24		1368.63	*	-3.862E-01	3.238E-02	Half-Life too short		
SC-46		889.28	*	5.418E-03	2.725E-02	4.594E-02	4.105E-03	0.118
V-48		1120.55		1.737E-01	4.691E-02	8.174E-02	5.325E-03	2.125
		944.13		-6.329E-02	6.534E-01	1.079E+00	9.398E-02	-0.059
		983.53	*	2.086E-02	5.053E-02	8.581E-02	7.139E-03	0.243
CR-51		1312.11		-8.967E-04	5.741E-02	9.326E-02	6.635E-03	-0.010
		320.08	*	1.545E-01	2.740E-01	4.436E-01	2.904E-02	0.348
MN-54		834.85	*	-1.443E-03	2.477E-02	4.129E-02	3.269E-03	-0.035
CO-56		846.77	*	2.503E-03	2.803E-02	4.706E-02	3.829E-03	0.053
CO-57		1037.84		-1.167E-01	2.124E-01	3.373E-01	2.762E-02	-0.346
		1238.28		9.496E-02	6.659E-02	1.165E-01	7.750E-03	0.815
		1771.35		-3.348E-02	1.753E-01	2.387E-01	1.477E-02	-0.140
		122.06	*	2.221E-02	1.982E-02	3.335E-02	1.966E-03	0.666
CO-58		136.47		1.518E-02	1.605E-01	2.636E-01	1.711E-02	0.058
		810.76	*	2.545E-02	2.607E-02	4.597E-02	3.453E-03	0.554
FE-59		1099.45	*	-3.238E-02	6.396E-02	1.016E-01	7.822E-03	-0.319
CO-60		1291.59		4.270E-02	8.251E-02	1.397E-01	1.160E-02	0.306
		1173.23		-1.416E-02	3.078E-02	4.888E-02	2.757E-03	-0.290

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1332.49	*		5.586E-03	2.535E-02	4.200E-02	3.083E-03	0.133
ZN-65	1115.54	*		1.570E-01	7.180E-02	1.193E-01	7.877E-03	1.316
SE-75	121.12			1.159E-01	1.039E-01	1.744E-01	1.599E-02	0.665
	136.00			-6.392E-04	3.089E-02	5.061E-02	2.859E-03	-0.013
	264.66	*		1.952E-03	3.601E-02	5.030E-02	2.929E-03	0.039
	279.54			5.042E-03	8.371E-02	1.234E-01	7.769E-03	0.041
	400.66			5.071E-02	1.784E-01	2.995E-01	2.715E-02	0.169
SR-85	514.00	*		4.433E-02	2.867E-02	4.464E-02	2.590E-03	0.993
Y-88	898.04			-1.037E-02	2.845E-02	4.628E-02	4.231E-03	-0.224
	1836.06	*		5.104E-03	2.088E-02	3.125E-02	1.840E-03	0.163
Y-91	1204.77	*		3.555E+00	1.617E+01	2.644E+01	1.577E+00	0.134
NB-94	702.65	*		-1.008E-02	2.433E-02	3.835E-02	2.191E-03	-0.263
	871.09			-5.001E-03	2.375E-02	3.658E-02	3.141E-03	-0.137
NB-95M	235.69	*		6.158E-01	1.219E-01	1.882E-01	1.393E-02	3.272
ZR-95	724.19			1.959E-01	7.960E-02	1.282E-01	9.035E-03	1.527
	756.73	*		-2.489E-03	5.320E-02	8.522E-02	6.576E-03	-0.029
MO-99	140.51			-1.058E+01	2.212E+01	3.038E+01	6.923E+00	-0.348
	181.07			-2.287E+00	1.658E+01	2.340E+01	4.092E+00	-0.098
	366.42			-2.969E+01	7.307E+01	1.198E+02	7.022E+00	-0.248
	739.50	*		1.104E+01	1.059E+01	1.780E+01	2.601E+00	0.620
	777.92			-2.820E+00	2.744E+01	4.581E+01	3.172E+00	-0.062
TC-99M	140.51	*		-5.068E+10	2.744E+01	Half-Life too short		
RU-103	497.08	*		-1.127E-02	2.724E-02	4.380E-02	5.449E-03	-0.257
	610.33			9.123E+00	1.610E+00	1.738E+00	2.592E-01	5.250
RH-106	621.93	*		5.269E-02	2.150E-01	3.538E-01	4.038E-02	0.149
	1050.41			-1.352E+00	1.702E+00	2.646E+00	1.990E-01	-0.511
RU-106	621.93	*		5.269E-02	2.149E-01	3.538E-01	1.901E-02	0.149
	1050.41			-1.352E+00	1.702E+00	2.646E+00	1.990E-01	-0.511
AG-108M	433.94	*		-1.136E-02	2.035E-02	3.282E-02	2.051E-03	-0.346
	614.28			1.413E-02	2.515E-02	3.692E-02	2.162E-03	0.383
	722.91			2.083E-02	3.023E-02	4.426E-02	2.840E-03	0.471
AG-110M	657.76	*		4.124E-02	3.037E-02	4.644E-02	2.581E-03	0.888
	677.62			-6.983E-02	2.291E-01	3.640E-01	2.086E-02	-0.192
	706.68			4.172E-03	1.492E-01	2.410E-01	1.480E-02	0.017
	763.94			4.423E-01	1.533E-01	2.490E-01	1.741E-02	1.776
	884.68			4.891E-03	3.447E-02	5.793E-02	5.281E-03	0.084
	937.49			-8.515E-02	7.501E-02	1.147E-01	1.041E-02	-0.742
	1384.29			1.348E-01	1.127E-01	1.909E-01	1.445E-02	0.706
	1505.03			-1.262E-01	1.977E-01	2.965E-01	2.106E-02	-0.426
SN-113	391.69	*		-1.391E-02	3.057E-02	4.986E-02	3.071E-03	-0.279
CD-115	260.90			-3.815E+01	1.279E+02	1.755E+02	1.008E+01	-0.217
	492.35			1.438E+01	3.022E+01	5.078E+01	2.964E+00	0.283
	527.90	*		-5.670E+00	8.935E+00	1.415E+01	8.168E-01	-0.401
SN-117M	156.02			-4.679E-01	1.784E+00	2.892E+00	1.514E-01	-0.162
	158.56	*		-3.289E-02	4.876E-02	6.791E-02	3.529E-03	-0.484
TE-123M	159.00	*		-1.307E-02	2.453E-02	3.434E-02	1.812E-03	-0.381
SB-124	602.73			6.731E-04	3.083E-02	4.340E-02	2.379E-03	0.016
	645.85			-2.802E-01	3.560E-01	5.510E-01	3.308E-02	-0.509
	722.78			1.883E-01	3.040E-01	4.429E-01	2.793E-02	0.425

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125	1690.97	*	4.548E-02	5.206E-02	9.521E-02	6.663E-03	0.478
	427.87	*	-1.717E-02	6.178E-02	1.010E-01	6.138E-03	-0.170
	463.37		5.128E-01	2.559E-01	3.549E-01	2.405E-02	1.445
	600.60		-4.490E-02	1.380E-01	1.991E-01	1.283E-02	-0.226
TE-125M	635.95		9.331E-02	1.936E-01	3.221E-01	2.050E-02	0.290
	109.28	*	1.136E+01	9.483E+00	1.412E+01	1.284E+00	0.805
	388.63		-1.070E-01	1.170E-01	1.871E-01	1.082E-02	-0.572
	666.33	*	1.897E-01	1.850E-01	2.780E-01	1.439E-02	0.682
I-126	753.82		3.655E-01	1.348E+00	2.199E+00	1.435E-01	0.166
	414.70		-2.765E-02	6.171E-02	8.637E-02	5.027E-03	-0.320
	666.50		6.491E-02	6.356E-02	9.549E-02	4.944E-03	0.680
	695.00		-3.777E-03	5.793E-02	9.318E-02	5.217E-03	-0.041
SB-126	697.00		9.784E-02	2.001E-01	3.313E-01	1.865E-02	0.295
	720.70	*	3.193E-02	1.220E-01	1.729E-01	1.036E-02	0.185
	856.80		3.633E-01	3.930E-01	6.055E-01	5.038E-02	0.600
	252.40		1.615E-01	3.664E+00	5.128E+00	2.105E+00	0.031
SB-127	473.00		-1.562E-01	1.185E+00	1.940E+00	2.175E-01	-0.081
	685.70	*	7.956E-01	9.991E-01	1.682E+00	1.574E-01	0.473
	783.70		6.032E+00	2.872E+00	5.081E+00	5.802E-01	1.187
	80.19		-2.537E+00	6.803E+00	7.096E+00	6.547E-01	-0.358
I-131	284.31		-1.752E-01	1.059E+00	1.728E+00	1.119E-01	-0.101
	364.49	*	-1.767E-02	7.972E-02	1.318E-01	8.608E-03	-0.134
	636.99		7.467E-02	1.172E+00	1.907E+00	1.155E-01	0.039
	49.72		-1.705E+00	2.306E+01	3.875E+01	4.242E+00	-0.044
TE-132	111.76		1.487E+02	5.601E+01	5.860E+01	5.671E+00	2.537
	116.30		1.088E+01	2.874E+01	4.106E+01	3.873E+00	0.265
	228.16	*	1.387E-01	5.873E-01	9.507E-01	1.376E-01	0.146
	81.00		-2.221E-02	1.349E-01	1.419E-01	2.251E-02	-0.156
BA-133	276.40	+	2.589E-01	3.137E-01	4.363E-01	5.494E-02	0.593
	302.85		2.501E-02	1.079E-01	1.597E-01	1.828E-02	0.157
	356.01	*	-1.290E-03	3.208E-02	4.646E-02	5.259E-03	-0.028
	383.85		4.792E-02	2.030E-01	3.408E-01	3.635E-02	0.141
I-133	529.87	*	-1.789E-03	2.030E-01	Half-Life	too short	
	875.33		-5.295E-02	2.030E-01	Half-Life	too short	
	1298.22		-6.511E-02	2.030E-01	Half-Life	too short	
	563.25		-9.079E-03	2.575E-01	4.197E-01	2.428E-02	-0.022
CS-134	569.33		3.312E-02	1.409E-01	2.215E-01	1.288E-02	0.150
	604.72		2.285E-02	2.778E-02	4.120E-02	2.267E-03	0.555
	795.86	+	6.290E-02	5.642E-02	6.105E-02	4.459E-03	1.030
	801.95		-1.204E-02	2.931E-01	4.591E-01	3.393E-02	-0.026
I-135	1365.19		2.475E-02	8.083E-01	1.315E+00	1.024E-01	0.019
	546.56		5.886E+07	8.083E-01	Half-Life	too short	
	836.80		1.295E+09	8.083E-01	Half-Life	too short	
	1038.76		1.815E+09	8.083E-01	Half-Life	too short	
	1131.51		6.197E+09	8.083E-01	Half-Life	too short	
	1260.41	*	3.768E+09	8.083E-01	Half-Life	too short	
	1457.56		2.805E+12	8.083E-01	Half-Life	too short	
	1678.03		4.833E+09	8.083E-01	Half-Life	too short	
	1791.20		1.955E+10	8.083E-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		153.25		8.250E-01	6.806E-01	1.138E+00	8.732E-02	0.725
		176.60		2.380E-01	3.857E-01	6.359E-01	4.162E-02	0.374
		273.65		-1.872E-01	6.033E-01	5.822E-01	3.981E-02	-0.322
		340.55		2.803E-01	1.151E-01	1.846E-01	1.176E-02	1.518
		818.51		-1.663E-02	4.923E-02	8.067E-02	6.158E-03	-0.206
		1048.07	*	-4.026E-02	7.246E-02	1.148E-01	9.143E-03	-0.351
CE-139		1235.36		6.391E-01	4.642E-01	7.830E-01	7.971E-02	0.816
		165.86	*	9.506E-03	2.561E-02	3.696E-02	1.884E-03	0.257
		162.66		1.198E+00	8.180E-01	1.073E+00	6.507E-02	1.117
BA-140	+	304.85		1.248E+00	1.101E+00	1.612E+00	4.608E-01	0.774
		423.72		-2.713E-01	1.338E+00	2.191E+00	7.072E-01	-0.124
		537.26	*	2.196E-02	1.861E-01	3.062E-01	1.020E-01	0.072
LA-140	+	328.76		5.566E-01	3.702E-01	3.993E-01	2.638E-02	1.394
		487.02		-8.989E-02	1.015E-01	1.599E-01	1.056E-02	-0.562
		815.77		-1.425E-01	2.229E-01	3.582E-01	3.120E-02	-0.398
		1596.21	*	-5.398E-02	5.900E-02	8.878E-02	6.092E-03	-0.608
CE-141		145.44	*	9.046E-02	5.745E-02	8.600E-02	4.851E-03	1.052
CE-143		57.36		-3.130E-05	5.745E-02	Half-Life	too short	
		293.27	*	1.125E-03	5.745E-02	Half-Life	too short	
		664.57		1.654E-03	5.745E-02	Half-Life	too short	
		721.93		1.313E-04	5.745E-02	Half-Life	too short	
CE-144		80.12		-1.286E+00	3.555E+00	3.711E+00	3.402E-01	-0.347
		133.52	*	4.694E-02	1.558E-01	2.570E-01	3.550E-02	0.183
PM-144		476.78		1.081E-03	4.367E-02	7.201E-02	4.970E-03	0.015
		618.01		-8.503E-03	2.138E-02	3.394E-02	1.959E-03	-0.251
PR-144		696.49	*	4.309E-03	2.501E-02	4.074E-02	2.292E-03	0.106
		696.51	*	3.263E-01	1.872E+00	3.050E+00	1.715E-01	0.107
PM-146		1489.16		-5.392E+00	8.393E+00	1.247E+01	8.899E-01	-0.432
		453.88	*	2.307E-02	3.029E-02	5.150E-02	4.375E-03	0.448
		633.25		8.189E-03	1.017E+00	1.651E+00	6.204E-01	0.005
		735.93		-1.287E-01	1.147E-01	1.633E-01	4.472E-02	-0.788
ND-147	+	747.24		1.247E-02	7.194E-02	1.168E-01	1.565E-02	0.107
		91.11		1.443E+01	1.454E+00	8.735E-01	8.592E-02	16.525
		319.41		1.295E+00	2.403E+00	4.101E+00	2.423E-01	0.316
		531.02	*	-2.145E-01	4.141E-01	6.274E-01	8.474E-02	-0.342
PM-149		285.90	*	-1.151E+01	7.021E+01	1.176E+02	1.670E+01	-0.098
EU-152		121.78		6.498E-02	5.710E-02	9.599E-02	7.351E-03	0.677
		244.70		-1.516E-02	2.521E-01	3.516E-01	1.989E-02	-0.043
		344.28	*	-2.938E-02	8.097E-02	1.087E-01	7.201E-03	-0.270
		778.90		-1.298E-01	1.821E-01	2.936E-01	2.038E-02	-0.442
		964.08		5.494E-01	2.534E-01	4.098E-01	3.492E-02	1.340
		1085.87		1.105E-01	2.627E-01	4.446E-01	3.128E-02	0.249
		1112.07		-1.914E-01	2.560E-01	3.349E-01	2.226E-02	-0.571
GD-153		1408.01		1.381E-01	1.232E-01	2.190E-01	1.593E-02	0.630
	+	69.67		1.938E+00	1.863E+00	2.796E+00	2.443E-01	0.693
		97.43	*	4.393E-01	1.026E-01	1.357E-01	1.109E-02	3.237
EU-154		103.18		2.839E-02	1.016E-01	1.486E-01	1.111E-02	0.191
		123.07		8.366E-03	4.060E-02	6.706E-02	6.320E-03	0.125
		723.31		1.635E-01	1.369E-01	2.074E-01	1.499E-02	0.788

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		873.19		3.549E-02	1.983E-01	3.141E-01	3.738E-02	0.113
		996.26		6.364E-01	3.111E-01	4.912E-01	8.476E-02	1.296
		1004.73		2.061E-02	1.609E-01	2.317E-01	2.605E-02	0.089
		1274.44	*	-6.865E-02	9.168E-02	1.410E-01	1.411E-02	-0.487
EU-155	+	86.55		4.979E-01	1.358E-01	1.653E-01	1.607E-02	3.013
		105.31	*	-3.028E-02	9.074E-02	1.437E-01	1.059E-02	-0.211
TB-160	+	86.79		1.326E+00	3.613E-01	4.390E-01	4.242E-02	3.020
		197.04		-2.803E-01	4.253E-01	6.549E-01	3.487E-02	-0.428
		215.65		-1.117E-02	5.998E-01	8.921E-01	4.874E-02	-0.013
	+	298.57		2.994E-01	1.039E-01	1.405E-01	8.257E-03	2.131
		879.36	*	-4.064E-02	9.478E-02	1.537E-01	1.344E-02	-0.264
		962.29		4.137E-01	4.456E-01	6.789E-01	5.796E-02	0.609
		966.15		1.088E+00	2.322E-01	3.877E-01	3.296E-02	2.806
		1177.93		1.198E-01	2.520E-01	4.251E-01	2.419E-02	0.282
		1271.85		-2.192E-01	4.913E-01	7.734E-01	5.162E-02	-0.283
HO-166M		80.57		-1.246E-01	3.856E-01	4.031E-01	3.707E-02	-0.309
	+	184.41		4.342E-01	5.222E-02	6.625E-02	3.463E-03	6.554
		280.46		-1.407E-02	6.361E-02	9.252E-02	5.389E-03	-0.152
	+	410.95		1.938E-01	2.377E-01	3.019E-01	1.755E-02	0.642
		711.68	*	-8.744E-03	4.362E-02	6.950E-02	4.068E-03	-0.126
		752.31		-4.295E-02	2.049E-01	3.252E-01	2.113E-02	-0.132
		810.29		1.241E-02	3.960E-02	6.749E-02	5.048E-03	0.184
TA-182		67.75		4.387E-02	1.658E-01	1.791E-01	1.560E-02	0.245
		100.11		5.223E-01	1.727E-01	2.649E-01	2.073E-02	1.971
		152.43		1.995E-01	2.710E-01	4.498E-01	2.377E-02	0.443
		222.11		-5.376E-02	2.626E-01	4.202E-01	2.315E-02	-0.128
		1121.30		4.097E-01	1.249E-01	2.152E-01	1.399E-02	1.904
		1189.05		-2.576E-01	2.310E-01	3.511E-01	2.038E-02	-0.734
		1221.41	*	-3.417E-02	1.365E-01	2.196E-01	1.348E-02	-0.156
		1231.02		-3.905E-02	3.586E-01	5.820E-01	3.631E-02	-0.067
IR-192	+	295.96		9.469E-01	1.148E-01	1.872E-01	1.116E-02	5.059
		308.46		-4.216E-02	6.710E-02	1.102E-01	6.569E-03	-0.382
		316.51	*	-1.449E-02	2.451E-02	4.028E-02	2.390E-03	-0.360
		468.07		5.634E-03	5.240E-02	7.539E-02	5.086E-03	0.075
HG-203		70.83		1.733E+00	1.470E+00	2.180E+00	3.518E-01	0.795
		72.87		4.087E+00	1.055E+00	1.414E+00	2.212E-01	2.891
		279.20	*	1.409E-02	2.965E-02	4.449E-02	2.732E-03	0.317
BI-207		72.81		8.914E-01	2.077E-01	3.229E-01	2.847E-02	2.761
	+	74.97		7.626E-01	1.601E-01	2.074E-01	1.846E-02	3.677
		569.70		7.674E-03	2.194E-02	3.472E-02	1.956E-03	0.221
		1063.66	*	1.112E-02	3.687E-02	6.194E-02	4.550E-03	0.180
		1770.23		-1.809E-01	3.513E-01	4.451E-01	2.756E-02	-0.406
PB-210		46.54	*	-1.628E+00	4.272E+00	6.900E+00	5.330E-01	-0.236
PB-211		404.85	*	-1.722E-02	5.814E-01	8.362E-01	4.011E-01	-0.021
		427.09		-3.948E-01	1.040E+00	1.667E+00	7.639E-01	-0.237
		832.01		2.521E-01	6.445E-01	1.081E+00	5.592E-01	0.233
BI-212	+	727.33	*	1.588E+00	5.435E-01	7.646E-01	8.309E-02	2.077
		785.37		3.518E+00	2.504E+00	4.103E+00	2.892E-01	0.858
		1620.50		7.294E-01	1.381E+00	2.443E+00	1.657E-01	0.299

----- 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		3.027E-01	2.155E-01	2.972E-01	2.385E-02	1.018
		401.81	*	2.015E-01	2.853E-01	4.846E-01	6.510E-02	0.416
RA-223		81.07		-3.751E-02	3.054E-01	3.220E-01	2.971E-02	-0.116
	+	83.79		4.661E-01	1.667E-01	2.024E-01	1.906E-02	2.303
		94.87		6.037E+00	7.982E-01	8.903E-01	7.600E-02	6.780
	+	144.24		9.013E-01	6.594E-01	9.377E-01	6.470E-02	0.961
		154.21		4.864E-01	2.988E-01	5.035E-01	3.285E-02	0.966
	+	269.46		4.263E-01	2.179E-01	2.363E-01	1.426E-02	1.804
		323.87	*	-2.964E-01	5.117E-01	7.217E-01	1.166E-01	-0.411
	+	338.28		5.187E+00	1.184E+00	1.552E+00	1.600E-01	3.343
AC-227		79.69		-3.464E-01	1.782E+00	1.874E+00	3.280E-01	-0.185
		235.96		1.456E+00	1.776E-01	2.652E-01	2.122E-02	5.491
	+	256.23	*	3.433E-01	2.467E-01	3.108E-01	3.164E-02	1.105
	+	299.98		2.330E+00	8.372E-01	1.097E+00	1.210E-01	2.124
		304.50		8.116E-01	1.252E+00	1.880E+00	2.873E-01	0.432
		334.37		-1.136E+00	1.742E+00	1.889E+00	2.695E-01	-0.602
TH-227		79.80		-5.618E-01	2.348E+00	2.462E+00	5.414E-01	-0.228
		235.96		1.456E+00	1.705E-01	2.652E-01	1.918E-02	5.491
	+	256.23	*	3.433E-01	2.477E-01	3.108E-01	3.723E-02	1.105
	+	299.98		2.330E+00	8.372E-01	1.097E+00	1.210E-01	2.124
		304.50		8.116E-01	1.252E+00	1.880E+00	2.873E-01	0.432
		334.37		-1.136E+00	1.742E+00	1.889E+00	2.695E-01	-0.602
TH-229		85.43		1.182E+00	2.727E-01	3.507E-01	3.349E-02	3.370
		88.47		9.545E-01	1.755E-01	2.183E-01	2.111E-02	4.373
	+	193.51	*	2.904E-01	3.850E-01	6.357E-01	3.367E-02	0.457
		210.85		2.126E+00	9.647E-01	1.115E+00	6.050E-02	1.908
PA-231		283.69	*	-3.350E-01	1.032E+00	1.623E+00	2.132E-01	-0.206
		301.36		8.893E-01	4.575E-01	7.119E-01	7.397E-02	1.249
TH-231		81.07		-3.751E-02	3.054E-01	3.220E-01	2.971E-02	-0.116
	+	83.79		4.661E-01	1.667E-01	2.024E-01	1.906E-02	2.303
		94.87		6.037E+00	7.982E-01	8.903E-01	7.600E-02	6.780
	+	144.24		9.013E-01	6.594E-01	9.377E-01	6.470E-02	0.961
		154.21		4.864E-01	2.988E-01	5.035E-01	3.285E-02	0.966
	+	269.46		4.263E-01	2.179E-01	2.363E-01	1.426E-02	1.804
		323.87	*	-2.964E-01	5.117E-01	7.217E-01	1.166E-01	-0.411
	+	338.28		5.187E+00	1.184E+00	1.552E+00	1.600E-01	3.343
PA-233	+	300.13		1.054E+00	3.873E-01	4.973E-01	6.675E-02	2.120
		311.90	*	-3.801E-03	4.454E-02	7.456E-02	4.663E-03	-0.051
		340.48		1.342E+00	5.727E-01	7.889E-01	1.833E-01	1.701
PA-234		94.67		3.026E+00	4.398E-01	3.585E-01	4.433E-02	8.441
	+	98.44		4.795E-01	2.870E-01	1.477E-01	8.228E-02	3.246
		111.00		4.790E-01	1.940E-01	2.890E-01	3.126E-02	1.657
		131.20		-2.192E-02	8.342E-02	1.361E-01	7.690E-03	-0.161
		569.50		5.355E-02	1.945E-01	3.065E-01	1.727E-02	0.175
		733.00		9.949E-02	3.027E-01	4.306E-01	9.201E-02	0.231
		880.51		1.724E-01	1.903E-01	3.335E-01	2.924E-02	0.517
		883.24		-3.531E-02	2.014E-01	3.299E-01	2.218E-01	-0.107
		926.50		-7.793E-02	1.200E-01	1.884E-01	4.778E-02	-0.414
		946.00	*	2.554E-01	2.273E-01	3.929E-01	7.385E-02	0.650

---- 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		2.866E-01	3.245E-01	5.645E-01	4.892E-02	0.508
		99.53		8.700E-01	2.031E-01	2.575E-01	2.034E-02	3.378
		103.37		8.216E-02	9.142E-02	1.360E-01	1.013E-02	0.604
		106.12		1.546E-02	7.532E-02	1.158E-01	8.303E-03	0.133
		117.23	*	-1.723E-01	3.660E-01	5.084E-01	3.165E-02	-0.339
	+	228.18		3.563E-02	1.590E-01	2.575E-01	1.430E-02	0.138
		277.60		1.280E-01	1.545E-01	2.073E-01	1.205E-02	0.617
AM-241		59.54	*	2.346E-01	1.815E-01	2.751E-01	2.560E-02	0.853
CM-247	+	278.00		5.437E-01	6.560E-01	8.845E-01	5.144E-02	0.615
		287.50		-3.453E-01	9.665E-01	1.395E+00	8.156E-02	-0.248
CF-249	*	402.40		1.878E-02	2.757E-02	4.453E-02	2.581E-03	0.422
		252.80		3.122E-01	7.449E-01	1.062E+00	6.055E-02	0.294
		333.37		-3.748E-02	2.101E-01	2.019E-01	1.193E-02	-0.186
CF-251	*	388.16		-1.271E-02	2.745E-02	4.478E-02	2.591E-03	-0.284
		177.52		5.070E-02	9.797E-02	1.612E-01	8.340E-03	0.315
		227.38		1.860E-01	2.601E-01	4.271E-01	2.369E-02	0.436
		285.41		-2.035E-01	1.457E+00	2.443E+00	1.427E-01	-0.083

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
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*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900005      *
* Acquisition date   : 5-MAR-2010 23:39:14 Detector SN# :                   *
* Detector ID        : GAM23 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 04:00:04.24 Half life ratio : 8.000             *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G247900005 Analyst initials: MXR1                  *
* Batch Number      : 957711 Sample Quantity : 1.5753E+02 GRAM           *
* Recovery          : 1.00000 Carrier Weight : 0.00000                   *
*****
*
*                                     QC DATA                               *
*
* Standard Weight   : 0.00000                                             *
* CALIB. DATE/TIME  : 2-JUN-2009 11:17:00 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.065E+01	1.877E+00	3.575E-01	0.000E+00
NB-95	1.673E-01	5.165E-02	5.062E-02	0.000E+00
CD-109	4.203E+00	1.122E+00	1.225E+00	0.000E+00
SN-126	4.106E-01	1.096E-01	1.204E-01	0.000E+00
CS-135	3.704E-01	1.863E-01	1.836E-01	0.000E+00
BA-137M	1.663E-01	5.635E-02	4.365E-02	0.000E+00
CS-137	1.757E-01	5.954E-02	4.611E-02	0.000E+00
TL-208	4.282E-01	6.127E-02	3.876E-02	0.000E+00
BI-211	3.136E+00	3.608E-01	2.313E-01	0.000E+00
PB-212	1.351E+00	1.184E-01	6.721E-02	0.000E+00
BI-214	9.545E-01	1.347E-01	7.750E-02	0.000E+00
PB-214	1.138E+00	1.447E-01	8.414E-02	0.000E+00
RA-224	3.705E+00	8.349E-01	7.203E-01	0.000E+00
RA-226	9.545E-01	1.347E-01	7.750E-02	0.000E+00
AC-228	1.422E+00	2.686E-01	1.533E-01	0.000E+00
RA-228	1.422E+00	2.686E-01	1.533E-01	0.000E+00
TH-228	1.351E+00	1.184E-01	6.721E-02	0.000E+00
TH-232	1.422E+00	2.686E-01	1.533E-01	0.000E+00
PA-234M	3.056E+01	7.349E+00	5.209E+00	0.000E+00
TH-234	2.966E+01	5.838E+00	2.357E+00	0.000E+00
U-235	2.689E-01	1.963E-01	2.656E-01	0.000E+00
NP-237	1.225E+00	4.127E-01	3.648E-01	0.000E+00
U-238	2.966E+01	5.838E+00	2.357E+00	0.000E+00
ANH-511	1.821E-01	4.961E-02	3.277E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.127E-02	2.145E-01	3.737E-01	0.000E+00 NOT IDENT.
NA-22	-2.316E-02	3.174E-02	5.070E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	8.623E+05	0.000E+00	0.000E+00 SHORT HLIF

SC-46	5.418E-03	2.671E-02	4.703E-02	0.000E+00	NOT IDENT.
V-48	2.086E-02	4.952E-02	8.759E-02	0.000E+00	NOT IDENT.
CR-51	1.545E-01	2.685E-01	4.671E-01	0.000E+00	NOT IDENT.
MN-54	-1.443E-03	2.428E-02	4.234E-02	0.000E+00	NOT IDENT.
CO-56	2.503E-03	2.747E-02	4.824E-02	0.000E+00	NOT IDENT.
CO-57	2.221E-02	1.942E-02	3.602E-02	0.000E+00	NOT IDENT.
CO-58	2.545E-02	2.554E-02	4.718E-02	0.000E+00	NOT IDENT.
FE-59	-3.238E-02	6.268E-02	1.034E-01	0.000E+00	NOT IDENT.
CO-60	5.586E-03	2.484E-02	4.250E-02	0.000E+00	NOT IDENT.
ZN-65	0.000E+00	7.036E-02	1.213E-01	0.000E+00	NOT IDENT.
SE-75	1.952E-03	3.529E-02	5.324E-02	0.000E+00	NOT IDENT.
SR-85	4.433E-02	2.810E-02	4.640E-02	0.000E+00	NOT IDENT.
Y-88	5.104E-03	2.046E-02	3.132E-02	0.000E+00	NOT IDENT.
Y-91	3.555E+00	1.585E+01	2.683E+01	0.000E+00	NOT IDENT.
NB-94	-1.008E-02	2.385E-02	3.952E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.195E-01	1.998E-01	0.000E+00	NOT IDENT.
ZR-95	-2.489E-03	5.214E-02	8.764E-02	0.000E+00	NOT IDENT.
MO-99	1.104E+01	1.037E+01	1.832E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.043E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.127E-02	2.670E-02	4.557E-02	0.000E+00	NOT IDENT.
RH-106	5.269E-02	2.107E-01	3.659E-01	0.000E+00	NOT IDENT.
RU-106	5.269E-02	2.106E-01	3.659E-01	0.000E+00	NOT IDENT.
AG-108M	-1.136E-02	1.994E-02	3.428E-02	0.000E+00	NOT IDENT.
AG-110M	4.124E-02	2.976E-02	4.795E-02	0.000E+00	NOT IDENT.
SN-113	-1.391E-02	2.995E-02	5.221E-02	0.000E+00	NOT IDENT.
CD-115	-5.670E+00	8.756E+00	1.470E+01	0.000E+00	NOT IDENT.
SN-117M	-3.289E-02	4.779E-02	7.284E-02	0.000E+00	NOT IDENT.
TE-123M	-1.307E-02	2.404E-02	3.683E-02	0.000E+00	NOT IDENT.
SB-124	4.548E-02	5.102E-02	9.567E-02	0.000E+00	NOT IDENT.
SB-125	-1.717E-02	6.054E-02	1.055E-01	0.000E+00	FAIL ABUN
TE-125M	1.136E+01	9.293E+00	1.529E+01	0.000E+00	NOT IDENT.
I-126	1.897E-01	1.813E-01	2.869E-01	0.000E+00	NOT IDENT.
SB-126	3.193E-02	1.195E-01	1.781E-01	0.000E+00	NOT IDENT.
SB-127	7.956E-01	9.791E-01	1.735E+00	0.000E+00	NOT IDENT.
I-131	-1.767E-02	7.812E-02	1.383E-01	0.000E+00	NOT IDENT.
TE-132	1.387E-01	5.755E-01	1.010E+00	0.000E+00	FAIL ABUN
BA-133	-1.290E-03	3.144E-02	4.878E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	5.435E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.530E-02	6.270E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	1.294E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.026E-02	7.101E-02	1.170E-01	0.000E+00	NOT IDENT.
CE-139	9.506E-03	2.510E-02	3.960E-02	0.000E+00	NOT IDENT.
BA-140	2.196E-02	1.824E-01	3.179E-01	0.000E+00	FAIL ABUN
LA-140	-5.398E-02	5.782E-02	8.937E-02	0.000E+00	FAIL ABUN
CE-141	9.046E-02	5.630E-02	9.246E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.743E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	4.694E-02	1.527E-01	2.769E-01	0.000E+00	NOT IDENT.
PM-144	4.309E-03	2.451E-02	4.199E-02	0.000E+00	NOT IDENT.
PR-144	3.263E-01	1.835E+00	3.144E+00	0.000E+00	NOT IDENT.
PM-146	2.307E-02	2.968E-02	5.372E-02	0.000E+00	NOT IDENT.
ND-147	-2.145E-01	4.058E-01	6.516E-01	0.000E+00	FAIL ABUN
PM-149	-1.151E+01	6.880E+01	1.242E+02	0.000E+00	NOT IDENT.
EU-152	-2.938E-02	7.935E-02	1.143E-01	0.000E+00	NOT IDENT.
GD-153	0.000E+00	1.005E-01	1.474E-01	0.000E+00	FAIL ABUN
EU-154	-6.865E-02	8.985E-02	1.429E-01	0.000E+00	NOT IDENT.
EU-155	-3.028E-02	8.893E-02	1.558E-01	0.000E+00	FAIL ABUN
TB-160	-4.064E-02	9.288E-02	1.574E-01	0.000E+00	FAIL ABUN
HO-166M	-8.744E-03	4.274E-02	7.159E-02	0.000E+00	FAIL ABUN
TA-182	-3.417E-02	1.338E-01	2.227E-01	0.000E+00	NOT IDENT.
IR-192	-1.449E-02	2.402E-02	4.243E-02	0.000E+00	FAIL ABUN
HG-203	1.409E-02	2.905E-02	4.702E-02	0.000E+00	NOT IDENT.
BI-207	1.112E-02	3.613E-02	6.308E-02	0.000E+00	FAIL ABUN
PB-210	-1.628E+00	4.187E+00	7.632E+00	0.000E+00	NOT IDENT.
PB-211	-1.722E-02	5.697E-01	8.750E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.326E-01	7.872E-01	0.000E+00	FAIL ABUN
RN-219	2.015E-01	2.796E-01	5.071E-01	0.000E+00	NOT IDENT.
RA-223	-2.964E-01	5.015E-01	7.597E-01	0.000E+00	FAIL ABUN
AC-227	0.000E+00	2.418E-01	3.292E-01	0.000E+00	FAIL ABUN
TH-227	0.000E+00	2.427E-01	3.292E-01	0.000E+00	FAIL ABUN
TH-229	2.904E-01	3.773E-01	6.784E-01	0.000E+00	FAIL ABUN
PA-231	-3.350E-01	1.012E+00	1.715E+00	0.000E+00	NOT IDENT.
TH-231	-2.964E-01	5.015E-01	7.597E-01	0.000E+00	FAIL ABUN
PA-233	-3.801E-03	4.365E-02	7.856E-02	0.000E+00	FAIL ABUN
PA-234	2.554E-01	2.228E-01	4.015E-01	0.000E+00	FAIL ABUN
NP-239	-1.723E-01	3.587E-01	5.496E-01	0.000E+00	FAIL ABUN
AM-241	2.346E-01	1.779E-01	3.025E-01	0.000E+00	NOT IDENT.
CM-247	1.878E-02	2.702E-02	4.660E-02	0.000E+00	FAIL ABUN
CF-249	-1.271E-02	2.690E-02	4.691E-02	0.000E+00	NOT IDENT.

CF-251	5.070E-02	9.601E-02	1.724E-01	0.000E+00 NOT IDENT.
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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900005.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 5-MAR-2010 23:39:14.
Sample ID        : G247900005 Sample quantity : 1.57530E+02 GRAM
Detector name    : GAM23 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:04.24 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957711 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	1843	10.66*	9.974E-01	2.065E+01	2.065E+01	9.27
NB-95	765.81	212	99.81*	1.790E+00	1.414E-01	1.673E-01	31.50
CD-109	88.03	664	3.70*	5.206E+00	4.106E+00	4.203E+00	27.24
SN-126	64.28	2366	9.60	2.568E+00	1.143E+01	1.143E+01	17.22
	86.94	664	8.90	5.206E+00	1.707E+00	1.707E+00	48.77
	87.57	664	37.00*	5.206E+00	4.106E-01	4.106E-01	27.24
CS-135	268.22	210	16.00*	4.229E+00	3.704E-01	3.704E-01	51.32
BA-137M	661.66	256	89.90*	2.041E+00	1.662E-01	1.663E-01	34.57
CS-137	661.66	256	85.10*	2.041E+00	1.756E-01	1.757E-01	34.57
TL-208	277.37	64	6.60	4.144E+00	2.801E-01	2.801E-01	121.01
	583.19	696	85.00*	2.279E+00	4.282E-01	4.282E-01	14.60
	860.56	100	12.50	1.610E+00	5.937E-01	5.937E-01	38.55
BI-211	72.87	-----	1.23	3.829E+00	-----	Line Not Found	-----
	351.06	1171	12.92*	3.442E+00	3.136E+00	3.136E+00	11.74
PB-212	74.82	920	10.28	4.030E+00	2.646E+00	2.646E+00	23.14
	77.11	1150	17.10	4.294E+00	1.865E+00	1.865E+00	14.72
	238.63	2293	43.60*	4.639E+00	1.351E+00	1.351E+00	8.95
	300.09	229	3.30	3.898E+00	2.118E+00	2.118E+00	35.22
BI-214	609.32	800	45.49*	2.194E+00	9.545E-01	9.545E-01	14.40
	1120.29	205	14.92	1.259E+00	1.298E+00	1.299E+00	28.14
	1764.49	129	15.30	8.744E-01	1.152E+00	1.152E+00	29.81
PB-214	74.82	920	5.80	4.030E+00	4.690E+00	4.690E+00	22.45
	77.11	1150	9.70	4.294E+00	3.288E+00	3.288E+00	16.87
	242.00	586	7.25	4.597E+00	2.095E+00	2.095E+00	23.71
	295.22	779	18.42	3.949E+00	1.276E+00	1.276E+00	13.72
	351.93	1171	35.60*	3.442E+00	1.138E+00	1.138E+00	12.97
RA-224	240.99	586	4.10*	4.597E+00	3.705E+00	3.705E+00	23.00
RA-226	609.32	800	45.49*	2.194E+00	9.545E-01	9.545E-01	14.40
	1120.29	205	14.92	1.259E+00	1.298E+00	1.299E+00	28.14
	1764.49	129	15.30	8.744E-01	1.152E+00	1.152E+00	29.81
AC-228	338.32	439	11.27	3.550E+00	1.307E+00	1.307E+00	45.99
	911.20	470	25.80*	1.527E+00	1.422E+00	1.422E+00	19.28

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	968.97	191	15.80	1.441E+00	9.995E-01	9.995E-01	46.77
	338.32	439	11.27	3.550E+00	1.307E+00	1.307E+00	45.99
	911.20	470	25.80*	1.527E+00	1.422E+00	1.422E+00	19.28
TH-228	968.97	191	15.80	1.441E+00	9.995E-01	9.995E-01	46.77
	74.82	920	10.28	4.030E+00	2.646E+00	2.646E+00	21.03
	77.11	1150	17.10	4.294E+00	1.865E+00	1.865E+00	14.72
TH-232	238.63	2293	43.60*	4.639E+00	1.351E+00	1.351E+00	8.95
	300.09	229	3.30	3.898E+00	2.118E+00	2.118E+00	69.84
	338.32	439	11.27	3.550E+00	1.307E+00	1.307E+00	21.20
PA-234M	911.20	470	25.80*	1.527E+00	1.422E+00	1.422E+00	19.28
	968.97	191	15.80	1.441E+00	9.995E-01	9.995E-01	46.77
	766.42	212	0.32	1.790E+00	4.409E+01	4.409E+01	59.09
TH-234	1001.03	301	0.84*	1.398E+00	3.056E+01	3.056E+01	24.54
	63.29	2366	3.70*	2.568E+00	2.966E+01	2.966E+01	20.08
	92.59	7047	4.23	5.571E+00	3.563E+01	3.563E+01	22.40
U-235	89.96	-----	3.47	5.418E+00	-----	Line Not Found	-----
	93.35	7047	5.60	5.571E+00	2.691E+01	2.691E+01	23.41
	143.76	153	10.96*	6.192E+00	2.689E-01	2.689E-01	74.47
NP-237	163.33	158	5.08	5.893E+00	6.294E-01	6.294E-01	69.98
	185.72	1442	57.20	5.494E+00	5.466E-01	5.466E-01	12.03
	205.31	119	5.01	5.158E+00	5.475E-01	5.475E-01	76.65
U-238	86.48	664	12.40*	5.206E+00	1.225E+00	1.225E+00	34.38
	95.86	-----	2.68	5.757E+00	-----	Line Not Found	-----
	63.29	2366	3.70*	2.568E+00	2.966E+01	2.966E+01	20.08
ANH-511	92.59	7047	4.23	5.571E+00	3.563E+01	3.563E+01	9.41
	511.00	389	100.00*	2.547E+00	1.821E-01	1.821E-01	27.80

Flag: "*" = Keyline

Total number of lines in spectrum 41
Number of unidentified lines 2
Number of lines tentatively identified by NID 39 95.12%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.065E+01	2.065E+01	0.192E+01	9.27	
NB-95	64.03D	1.18	1.414E-01	1.673E-01	0.527E-01	31.50	
CD-109	461.40D	1.02	4.106E+00	4.203E+00	1.145E+00	27.24	
SN-126	2.30E+05Y	1.00	4.106E-01	4.106E-01	1.119E-01	27.24	
CS-135	2.30E+06Y	1.00	3.704E-01	3.704E-01	1.901E-01	51.32	
BA-137M	30.08Y	1.00	1.662E-01	1.663E-01	0.575E-01	34.57	
CS-137	30.08Y	1.00	1.756E-01	1.757E-01	0.608E-01	34.57	
TL-208	1.41E+10Y	1.00	4.282E-01	4.282E-01	0.625E-01	14.60	
BI-211	7.04E+08Y	1.00	3.136E+00	3.136E+00	0.368E+00	11.74	
PB-212	1.41E+10Y	1.00	1.351E+00	1.351E+00	0.121E+00	8.95	
BI-214	1600.00Y	1.00	9.545E-01	9.545E-01	1.374E-01	14.40	
PB-214	1600.00Y	1.00	1.138E+00	1.138E+00	0.148E+00	12.97	
RA-224	1.41E+10Y	1.00	3.705E+00	3.705E+00	0.852E+00	23.00	
RA-226	1600.00Y	1.00	9.545E-01	9.545E-01	1.374E-01	14.40	
AC-228	1.41E+10Y	1.00	1.422E+00	1.422E+00	0.274E+00	19.28	
RA-228	1.41E+10Y	1.00	1.422E+00	1.422E+00	0.274E+00	19.28	
TH-228	1.41E+10Y	1.00	1.351E+00	1.351E+00	0.121E+00	8.95	
TH-232	1.41E+10Y	1.00	1.422E+00	1.422E+00	0.274E+00	19.28	
PA-234M	4.47E+09Y	1.00	3.056E+01	3.056E+01	0.750E+01	24.54	
TH-234	4.47E+09Y	1.00	2.966E+01	2.966E+01	0.596E+01	20.08	
U-235	7.04E+08Y	1.00	2.689E-01	2.689E-01	2.003E-01	74.47	
NP-237	2.14E+06Y	1.00	1.225E+00	1.225E+00	0.421E+00	34.38	
U-238	4.47E+09Y	1.00	2.966E+01	2.966E+01	0.596E+01	20.08	
ANH-511	1.00E+09Y	1.00	1.821E-01	1.821E-01	0.506E-01	27.80	

Total Activity : 1.349E+02 1.350E+02

Grand Total Activity : 1.349E+02 1.350E+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
3	83.81	479	1981	1.69	167.62	161	32	3.32E-02	34.5	4.95E+00	T
0	98.41	600	1138	1.28	196.81	193	9	4.17E-02	21.9	5.87E+00	T
0	112.60	466	1682	1.06	225.20	219	12	3.24E-02	36.4	6.26E+00	T
0	209.36	254	803	1.07	418.71	414	11	1.76E-02	45.0	5.08E+00	T
0	257.51	120	486	1.48	515.02	511	10	8.32E-03	71.1	4.38E+00	T
0	327.68	148	510	1.63	655.37	649	13	1.03E-02	66.2	3.64E+00	T
0	409.66	56	313	2.12	819.31	814	10	3.85E-03	****	3.05E+00	T
0	462.38	124	231	1.41	924.76	920	10	8.62E-03	49.4	2.76E+00	T
0	726.39	167	144	1.55	1452.79	1448	12	1.16E-02	32.5	1.88E+00	T
0	794.44	69	188	1.88	1588.88	1579	15	4.81E-03	89.4	1.73E+00	T
0	1376.81	48	45	1.66	2753.62	2745	14	3.35E-03	65.9	1.05E+00	
0	1829.94	22	10	8.03	3659.89	3651	20	1.53E-03	82.3	8.57E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                                     DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900005.CNF;1
* Acquisition date   : 5-MAR-2010 23:39:14.   Detector SN#      :
* Detector ID        : GAM23                   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 04:00:04.24           Half life ratio     : 8.00000
*****
*
*                                     SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library    : SOLID
* Sample ID          : G247900005             Analyst initials   : MXR1
* Batch Number       : 957711                 Sample Quantity    : 1.57530E+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         :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.065E+01	1.915E+00	3.543E-01	2.650E-02	58.289
NB-95	1.673E-01	5.270E-02	4.924E-02	3.309E-03	3.398
CD-109	4.203E+00	1.145E+00	1.125E+00	1.098E-01	3.736
SN-126	4.106E-01	1.119E-01	1.106E-01	1.076E-02	3.714
CS-135	3.704E-01	1.901E-01	1.735E-01	1.326E-02	2.134
BA-137M	1.663E-01	5.750E-02	4.229E-02	2.160E-03	3.934
CS-137	1.757E-01	6.075E-02	4.467E-02	2.294E-03	3.934
TL-208	4.282E-01	6.252E-02	3.742E-02	2.423E-03	11.443
BI-211	3.136E+00	3.681E-01	2.202E-01	1.435E-02	14.241
PB-212	1.351E+00	1.209E-01	6.333E-02	4.594E-03	21.331
BI-214	9.545E-01	1.374E-01	7.490E-02	5.679E-03	12.743
PB-214	1.138E+00	1.476E-01	8.011E-02	6.839E-03	14.210
RA-224	3.705E+00	8.519E-01	6.789E-01	3.825E-02	5.457
RA-226	9.545E-01	1.374E-01	7.490E-02	5.679E-03	12.743
AC-228	1.422E+00	2.741E-01	1.499E-01	1.780E-02	9.485
RA-228	1.422E+00	2.741E-01	1.499E-01	1.780E-02	9.485
TH-228	1.351E+00	1.209E-01	6.333E-02	4.594E-03	21.331
TH-232	1.422E+00	2.741E-01	1.499E-01	1.780E-02	9.485

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234M	3.056E+01	7.499E+00	5.106E+00	4.871E-01	5.986
TH-234	2.966E+01	5.957E+00	2.147E+00	3.949E-01	13.817
U-235	2.689E-01	2.003E-01	2.470E-01	3.847E-02	1.089
NP-237	1.225E+00	4.212E-01	3.349E-01	7.727E-02	3.658
U-238	2.966E+01	5.957E+00	2.147E+00	3.949E-01	13.817
ANH-511	1.821E-01	5.062E-02	3.152E-02	1.831E-03	5.776

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.127E-02		2.189E-01	3.588E-01	2.437E-02	-0.059
NA-22	-2.316E-02		3.238E-02	5.004E-02	3.360E-03	-0.463
NA-24	-3.862E-01		4.400E-01	Half-Life	too short	
SC-46	5.418E-03		2.725E-02	4.594E-02	4.105E-03	0.118
V-48	2.086E-02		5.053E-02	8.581E-02	7.139E-03	0.243
CR-51	1.545E-01		2.740E-01	4.436E-01	2.904E-02	0.348
MN-54	-1.443E-03		2.477E-02	4.129E-02	3.269E-03	-0.035
CO-56	2.503E-03		2.803E-02	4.706E-02	3.829E-03	0.053
CO-57	2.221E-02		1.982E-02	3.335E-02	1.966E-03	0.666
CO-58	2.545E-02		2.607E-02	4.597E-02	3.453E-03	0.554
FE-59	-3.238E-02		6.396E-02	1.016E-01	7.822E-03	-0.319
CO-60	5.586E-03		2.535E-02	4.200E-02	3.083E-03	0.133
ZN-65	1.570E-01		7.180E-02	1.193E-01	7.877E-03	1.316
SE-75	1.952E-03		3.601E-02	5.030E-02	2.929E-03	0.039
SR-85	4.433E-02		2.867E-02	4.464E-02	2.590E-03	0.993
Y-88	5.104E-03		2.088E-02	3.125E-02	1.840E-03	0.163
Y-91	3.555E+00		1.617E+01	2.644E+01	1.577E+00	0.134
NB-94	-1.008E-02		2.433E-02	3.835E-02	2.191E-03	-0.263
NB-95M	6.158E-01		1.219E-01	1.882E-01	1.393E-02	3.272
ZR-95	-2.489E-03		5.320E-02	8.522E-02	6.576E-03	-0.029
MO-99	1.104E+01		1.059E+01	1.780E+01	2.601E+00	0.620
TC-99M	-5.068E+10		5.320E+10	Half-Life	too short	
RU-103	-1.127E-02		2.724E-02	4.380E-02	5.449E-03	-0.257
RH-106	5.269E-02		2.150E-01	3.538E-01	4.038E-02	0.149
RU-106	5.269E-02		2.149E-01	3.538E-01	1.901E-02	0.149
AG-108M	-1.136E-02		2.035E-02	3.282E-02	2.051E-03	-0.346
AG-110M	4.124E-02		3.037E-02	4.644E-02	2.581E-03	0.888
SN-113	-1.391E-02		3.057E-02	4.986E-02	3.071E-03	-0.279
CD-115	-5.670E+00		8.935E+00	1.415E+01	8.168E-01	-0.401
SN-117M	-3.289E-02		4.876E-02	6.791E-02	3.529E-03	-0.484
TE-123M	-1.307E-02		2.453E-02	3.434E-02	1.812E-03	-0.381
SB-124	4.548E-02		5.206E-02	9.521E-02	6.663E-03	0.478
SB-125	-1.717E-02		6.178E-02	1.010E-01	6.138E-03	-0.170
TE-125M	1.136E+01		9.483E+00	1.412E+01	1.284E+00	0.805
I-126	1.897E-01		1.850E-01	2.780E-01	1.439E-02	0.682
SB-126	3.193E-02		1.220E-01	1.729E-01	1.036E-02	0.185
SB-127	7.956E-01		9.991E-01	1.682E+00	1.574E-01	0.473

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	-1.767E-02		7.972E-02	1.318E-01	8.608E-03	-0.134
TE-132	1.387E-01		5.873E-01	9.507E-01	1.376E-01	0.146
BA-133	-1.290E-03		3.208E-02	4.646E-02	5.259E-03	-0.028
I-133	-1.789E-03		2.773E-03	Half-Life	too short	
CS-134	6.290E-02	+	5.642E-02	6.105E-02	4.459E-03	1.030
I-135	3.768E+09		6.604E+09	Half-Life	too short	
CS-136	-4.026E-02		7.246E-02	1.148E-01	9.143E-03	-0.351
CE-139	9.506E-03		2.561E-02	3.696E-02	1.884E-03	0.257
BA-140	2.196E-02		1.861E-01	3.062E-01	1.020E-01	0.072
LA-140	-5.398E-02		5.900E-02	8.878E-02	6.092E-03	-0.608
CE-141	9.046E-02		5.745E-02	8.600E-02	4.851E-03	1.052
CE-143	1.125E-03		1.399E-04	Half-Life	too short	
CE-144	4.694E-02		1.558E-01	2.570E-01	3.550E-02	0.183
PM-144	4.309E-03		2.501E-02	4.074E-02	2.292E-03	0.106
PR-144	3.263E-01		1.872E+00	3.050E+00	1.715E-01	0.107
PM-146	2.307E-02		3.029E-02	5.150E-02	4.375E-03	0.448
ND-147	-2.145E-01		4.141E-01	6.274E-01	8.474E-02	-0.342
PM-149	-1.151E+01		7.021E+01	1.176E+02	1.670E+01	-0.098
EU-152	-2.938E-02		8.097E-02	1.087E-01	7.201E-03	-0.270
GD-153	4.393E-01	+	1.026E-01	1.357E-01	1.109E-02	3.237
EU-154	-6.865E-02		9.168E-02	1.410E-01	1.411E-02	-0.487
EU-155	-3.028E-02		9.074E-02	1.437E-01	1.059E-02	-0.211
TB-160	-4.064E-02		9.478E-02	1.537E-01	1.344E-02	-0.264
HO-166M	-8.744E-03		4.362E-02	6.950E-02	4.068E-03	-0.126
TA-182	-3.417E-02		1.365E-01	2.196E-01	1.348E-02	-0.156
IR-192	-1.449E-02		2.451E-02	4.028E-02	2.390E-03	-0.360
HG-203	1.409E-02		2.965E-02	4.449E-02	2.732E-03	0.317
BI-207	1.112E-02		3.687E-02	6.194E-02	4.550E-03	0.180
PB-210	-1.628E+00		4.272E+00	6.900E+00	5.330E-01	-0.236
PB-211	-1.722E-02		5.814E-01	8.362E-01	4.011E-01	-0.021
BI-212	1.588E+00	+	5.435E-01	7.646E-01	8.309E-02	2.077
RN-219	2.015E-01		2.853E-01	4.846E-01	6.510E-02	0.416
RA-223	-2.964E-01		5.117E-01	7.217E-01	1.166E-01	-0.411
AC-227	3.433E-01	+	2.467E-01	3.108E-01	3.164E-02	1.105
TH-227	3.433E-01	+	2.477E-01	3.108E-01	3.723E-02	1.105
TH-229	2.904E-01		3.850E-01	6.357E-01	3.367E-02	0.457
PA-231	-3.350E-01		1.032E+00	1.623E+00	2.132E-01	-0.206
TH-231	-2.964E-01		5.117E-01	7.217E-01	1.166E-01	-0.411
PA-233	-3.801E-03		4.454E-02	7.456E-02	4.663E-03	-0.051
PA-234	2.554E-01		2.273E-01	3.929E-01	7.385E-02	0.650
NP-239	-1.723E-01		3.660E-01	5.084E-01	3.165E-02	-0.339
AM-241	2.346E-01		1.815E-01	2.751E-01	2.560E-02	0.853
CM-247	1.878E-02		2.757E-02	4.453E-02	2.581E-03	0.422
CF-249	-1.271E-02		2.745E-02	4.478E-02	2.591E-03	-0.284
CF-251	5.070E-02		9.797E-02	1.612E-01	8.340E-03	0.315

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G247900005           *
* Acquisition date   : 5-MAR-2010 23:39:14 Detector SN#      :              *
* Detector ID        : GAM23                                           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 04:00:04.24 Half life ratio        : 8.000          *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library   : SOLID          *
* Sample ID          : G247900005 Analyst initials: MXR1          *
* Batch Number       : 957711 Sample Quantity : 1.5753E+02 GRAM      *
* Recovery           : 1.00000 Carrier Weight  : 0.00000           *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-JUN-2009 11:17:00 MS Isotope        :              *
* MSD DPM             : 0.000 MSD Isotope                    :              *
* LCS DPM             : 0.000 LCS Isotope                     :              *
* LCSD DPM            : 0.000 LCSD Isotope                    :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.065E+01	1.877E+00	1.789E-01	9.576E-01
NB-95	1.673E-01	5.165E-02	2.533E-02	2.635E-02
CD-109	4.203E+00	1.122E+00	6.128E-01	5.725E-01
SN-126	4.106E-01	1.096E-01	6.023E-02	5.593E-02
CS-135	3.704E-01	1.863E-01	9.186E-02	9.504E-02
BA-137M	1.663E-01	5.635E-02	2.184E-02	2.875E-02
CS-137	1.757E-01	5.954E-02	2.307E-02	3.038E-02
TL-208	4.282E-01	6.127E-02	1.939E-02	3.126E-02
BI-211	3.136E+00	3.608E-01	1.157E-01	1.841E-01
PB-212	1.351E+00	1.184E-01	3.363E-02	6.043E-02
BI-214	9.545E-01	1.347E-01	3.877E-02	6.872E-02
PB-214	1.138E+00	1.447E-01	4.209E-02	7.381E-02
RA-224	3.705E+00	8.349E-01	3.604E-01	4.259E-01
RA-226	9.545E-01	1.347E-01	3.877E-02	6.872E-02
AC-228	1.422E+00	2.686E-01	7.672E-02	1.371E-01
RA-228	1.422E+00	2.686E-01	7.672E-02	1.371E-01
TH-228	1.351E+00	1.184E-01	3.363E-02	6.043E-02
TH-232	1.422E+00	2.686E-01	7.672E-02	1.371E-01
PA-234M	3.056E+01	7.349E+00	2.606E+00	3.750E+00
TH-234	2.966E+01	5.838E+00	1.179E+00	2.978E+00
U-235	2.689E-01	1.963E-01	1.329E-01	1.001E-01
NP-237	1.225E+00	4.127E-01	1.825E-01	2.106E-01
U-238	2.966E+01	5.838E+00	1.179E+00	2.978E+00
ANH-511	1.821E-01	4.961E-02	1.640E-02	2.531E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.127E-02	2.145E-01	1.870E-01	1.094E-01 NOT IDENT.
NA-22	-2.316E-02	3.174E-02	2.537E-02	1.619E-02 NOT IDENT.
NA-24	-3.862E+05	8.623E+05	0.000E+00	4.400E+05 SHORT HLIF

SC-46	5.418E-03	2.671E-02	2.353E-02	1.363E-02	NOT IDENT.
V-48	2.086E-02	4.952E-02	4.382E-02	2.527E-02	NOT IDENT.
CR-51	1.545E-01	2.685E-01	2.337E-01	1.370E-01	NOT IDENT.
MN-54	-1.443E-03	2.428E-02	2.118E-02	1.239E-02	NOT IDENT.
CO-56	2.503E-03	2.747E-02	2.414E-02	1.401E-02	NOT IDENT.
CO-57	2.221E-02	1.942E-02	1.802E-02	9.908E-03	NOT IDENT.
CO-58	2.545E-02	2.554E-02	2.360E-02	1.303E-02	NOT IDENT.
FE-59	-3.238E-02	6.268E-02	5.171E-02	3.198E-02	NOT IDENT.
CO-60	5.586E-03	2.484E-02	2.126E-02	1.267E-02	NOT IDENT.
ZN-65	1.570E-01	7.036E-02	6.069E-02	3.590E-02	NOT IDENT.
SE-75	1.952E-03	3.529E-02	2.663E-02	1.800E-02	NOT IDENT.
SR-85	4.433E-02	2.810E-02	2.322E-02	1.434E-02	NOT IDENT.
Y-88	5.104E-03	2.046E-02	1.567E-02	1.044E-02	NOT IDENT.
Y-91	3.555E+00	1.585E+01	1.342E+01	8.085E+00	NOT IDENT.
NB-94	-1.008E-02	2.385E-02	1.977E-02	1.217E-02	NOT IDENT.
NB-95M	6.158E-01	1.195E-01	9.995E-02	6.095E-02	NOT IDENT.
ZR-95	-2.489E-03	5.214E-02	4.385E-02	2.660E-02	NOT IDENT.
MO-99	1.104E+01	1.037E+01	9.164E+00	5.293E+00	NOT IDENT.
TC-99M	-5.068E+16	1.043E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.127E-02	2.670E-02	2.280E-02	1.362E-02	NOT IDENT.
RH-106	5.269E-02	2.107E-01	1.830E-01	1.075E-01	NOT IDENT.
RU-106	5.269E-02	2.106E-01	1.830E-01	1.075E-01	NOT IDENT.
AG-108M	-1.136E-02	1.994E-02	1.715E-02	1.017E-02	NOT IDENT.
AG-110M	4.124E-02	2.976E-02	2.399E-02	1.519E-02	NOT IDENT.
SN-113	-1.391E-02	2.995E-02	2.612E-02	1.528E-02	NOT IDENT.
CD-115	-5.670E+00	8.756E+00	7.355E+00	4.467E+00	NOT IDENT.
SN-117M	-3.289E-02	4.779E-02	3.644E-02	2.438E-02	NOT IDENT.
TE-123M	-1.307E-02	2.404E-02	1.843E-02	1.227E-02	NOT IDENT.
SB-124	4.548E-02	5.102E-02	4.786E-02	2.603E-02	NOT IDENT.
SB-125	-1.717E-02	6.054E-02	5.280E-02	3.089E-02	FAIL ABUN
TE-125M	1.136E+01	9.293E+00	7.650E+00	4.741E+00	NOT IDENT.
I-126	1.897E-01	1.813E-01	1.436E-01	9.250E-02	NOT IDENT.
SB-126	3.193E-02	1.195E-01	8.909E-02	6.098E-02	NOT IDENT.
SB-127	7.956E-01	9.791E-01	8.680E-01	4.995E-01	NOT IDENT.
I-131	-1.767E-02	7.812E-02	6.917E-02	3.986E-02	NOT IDENT.
TE-132	1.387E-01	5.755E-01	5.054E-01	2.936E-01	FAIL ABUN
BA-133	-1.290E-03	3.144E-02	2.440E-02	1.604E-02	FAIL ABUN
I-133	-1.789E+03	4.435E+03	0.000E+00	2.773E+03	SHORT HLIF
CS-134	6.290E-02	5.530E-02	3.137E-02	2.821E-02	FAIL ABUN
I-135	3.768E+15	1.294E+16	0.000E+00	6.604E+15	SHORT HLIF
CS-136	-4.026E-02	7.101E-02	5.851E-02	3.623E-02	NOT IDENT.
CE-139	9.506E-03	2.510E-02	1.981E-02	1.281E-02	NOT IDENT.
BA-140	2.196E-02	1.824E-01	1.591E-01	9.305E-02	FAIL ABUN
LA-140	-5.398E-02	5.782E-02	4.471E-02	2.950E-02	FAIL ABUN
CE-141	9.046E-02	5.630E-02	4.626E-02	2.872E-02	NOT IDENT.
CE-143	1.125E+03	2.743E+02	0.000E+00	1.399E+02	SHORT HLIF
CE-144	4.694E-02	1.527E-01	1.385E-01	7.790E-02	NOT IDENT.
PM-144	4.309E-03	2.451E-02	2.101E-02	1.250E-02	NOT IDENT.
PR-144	3.263E-01	1.835E+00	1.573E+00	9.361E-01	NOT IDENT.
PM-146	2.307E-02	2.968E-02	2.687E-02	1.514E-02	NOT IDENT.
ND-147	-2.145E-01	4.058E-01	3.260E-01	2.071E-01	FAIL ABUN
PM-149	-1.151E+01	6.880E+01	6.215E+01	3.510E+01	NOT IDENT.
EU-152	-2.938E-02	7.935E-02	5.716E-02	4.049E-02	NOT IDENT.
GD-153	4.393E-01	1.005E-01	7.374E-02	5.128E-02	FAIL ABUN
EU-154	-6.865E-02	8.985E-02	7.149E-02	4.584E-02	NOT IDENT.
EU-155	-3.028E-02	8.893E-02	7.793E-02	4.537E-02	FAIL ABUN
TB-160	-4.064E-02	9.288E-02	7.873E-02	4.739E-02	FAIL ABUN
HO-166M	-8.744E-03	4.274E-02	3.582E-02	2.181E-02	FAIL ABUN
TA-182	-3.417E-02	1.338E-01	1.114E-01	6.826E-02	NOT IDENT.
IR-192	-1.449E-02	2.402E-02	2.123E-02	1.226E-02	FAIL ABUN
HG-203	1.409E-02	2.905E-02	2.352E-02	1.482E-02	NOT IDENT.
BI-207	1.112E-02	3.613E-02	3.156E-02	1.843E-02	FAIL ABUN
PB-210	-1.628E+00	4.187E+00	3.819E+00	2.136E+00	NOT IDENT.
PB-211	-1.722E-02	5.697E-01	4.377E-01	2.907E-01	NOT IDENT.
BI-212	1.588E+00	5.326E-01	3.938E-01	2.717E-01	FAIL ABUN
RN-219	2.015E-01	2.796E-01	2.537E-01	1.426E-01	NOT IDENT.
RA-223	-2.964E-01	5.015E-01	3.801E-01	2.559E-01	FAIL ABUN
AC-227	3.433E-01	2.418E-01	1.647E-01	1.234E-01	FAIL ABUN
TH-227	3.433E-01	2.427E-01	1.647E-01	1.238E-01	FAIL ABUN
TH-229	2.904E-01	3.773E-01	3.394E-01	1.925E-01	FAIL ABUN
PA-231	-3.350E-01	1.012E+00	8.580E-01	5.162E-01	NOT IDENT.
TH-231	-2.964E-01	5.015E-01	3.801E-01	2.559E-01	FAIL ABUN
PA-233	-3.801E-03	4.365E-02	3.931E-02	2.227E-02	FAIL ABUN
PA-234	2.554E-01	2.228E-01	2.008E-01	1.137E-01	FAIL ABUN
NP-239	-1.723E-01	3.587E-01	2.750E-01	1.830E-01	FAIL ABUN
AM-241	2.346E-01	1.779E-01	1.513E-01	9.076E-02	NOT IDENT.
CM-247	1.878E-02	2.702E-02	2.331E-02	1.379E-02	FAIL ABUN
CF-249	-1.271E-02	2.690E-02	2.347E-02	1.372E-02	NOT IDENT.

CF-251

5.070E-02

9.601E-02

8.625E-02

4.898E-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	980.2929
49.72	1021.3263
57.36	0.0000
59.54	1228.0378
63.29	1377.7040
63.29	1377.7040
64.28	1368.0502
67.75	1447.6833
69.67	1479.4874
70.83	1548.0679
72.81	1656.6462
72.87	1656.7871
72.87	1656.7871
74.82	1661.2753
74.82	1661.2753
74.82	1661.2753
74.97	1661.6174
77.11	1666.4746
77.11	1666.4746
77.11	1666.4746
79.69	1703.9326
79.80	1704.1787
80.12	1704.9033
80.19	1705.0605
80.57	1705.9150
81.00	1706.8789
81.07	1707.0361
81.07	1707.0361
83.79	1496.3950
83.79	1496.3950
85.43	1499.5299
86.48	1501.5243
86.55	1501.6617
86.79	1502.1095
86.94	1502.3961
87.57	1503.5845
88.03	1504.4503
88.47	1505.2743
89.96	1508.0509
91.11	1510.1827
92.59	1512.8997
92.59	1512.8997
93.35	1514.2909
94.67	1077.4409
94.87	1077.6997
94.87	1077.6997
95.86	1078.9680
97.43	1080.9659
98.44	1013.7267
99.53	983.8270
100.11	995.4069
103.18	1042.7428
103.37	995.9859
105.31	1137.8394
106.12	1116.6123
109.28	1119.1947
111.00	1178.1464
111.76	1102.4536
116.30	932.2924
117.23	960.2288
121.12	884.8920
121.78	886.4858
122.06	886.7399
123.07	944.6287
131.20	1023.8445
133.52	946.3577
136.00	934.4361

136.47	929.7944
140.51	938.6252
140.51	0.0000
143.76	914.7385
144.24	938.6075
144.24	938.6075
145.44	938.0051
152.43	900.3475
153.25	884.5392
154.21	837.9346
154.21	837.9346
156.02	918.6602
158.56	881.2197
159.00	853.4345
162.66	822.9349
163.33	822.7786
165.86	796.8813
176.60	766.8217
177.52	763.1913
181.07	783.2571
184.41	710.3798
185.72	711.1089
193.51	676.0654
197.04	721.5696
205.31	708.6388
210.85	654.6418
215.65	658.3322
222.11	651.1963
227.38	581.6751
228.16	598.3326
228.18	598.3410
235.69	601.1669
235.96	532.4709
235.96	532.4709
238.63	533.4202
238.63	533.4202
240.99	534.2545
242.00	534.6104
244.70	484.8654
252.40	446.5279
252.80	423.6006
256.23	438.7371
256.23	438.7371
260.90	461.4070
264.66	435.7032
268.22	452.9893
269.46	453.3323
269.46	453.3323
271.23	479.5995
273.65	493.7714
276.40	469.8609
277.37	442.0171
277.60	455.5756
278.00	451.8613
279.20	426.3640
279.54	433.9586
280.46	419.1698
283.69	430.1365
284.31	418.6232
285.41	414.9770
285.90	418.7177
287.50	434.4961
293.27	0.0000
295.22	425.5418
295.96	425.7246
298.57	426.3587
299.98	425.4858
299.98	425.4858
300.09	425.5143
300.09	425.5143
300.13	425.5257
301.36	407.5724
302.85	400.3055
304.50	374.7806
304.50	374.7806
304.85	350.4749
308.46	413.1781
311.90	388.2698

316.51	409.5010
319.41	372.3635
320.08	364.2033
323.87	400.3731
323.87	400.3731
328.76	385.9863
333.37	380.7465
334.37	405.7237
334.37	405.7237
338.28	367.7714
338.28	367.7714
338.32	367.7762
338.32	367.7762
338.32	367.7762
340.48	323.1423
340.55	323.1550
344.28	354.9141
351.06	313.0435
351.93	313.1821
356.01	314.7740
364.49	296.3068
366.42	304.1469
383.85	298.1829
388.16	310.2536
388.63	318.9186
391.69	304.0836
400.66	294.8130
401.81	284.4014
402.40	284.7211
404.85	309.4982
410.95	299.1167
414.70	291.5767
423.72	260.0994
427.09	260.4919
427.87	262.5282
433.94	268.1149
453.88	248.8214
463.37	233.6997
468.07	230.8667
473.00	226.0573
476.78	220.4526
477.60	224.5020
487.02	261.2740
492.35	210.8738
497.08	219.2887
511.00	209.4333
514.00	198.2571
527.90	212.8506
529.87	0.0000
531.02	193.8258
537.26	194.2875
546.56	0.0000
563.25	214.6842
569.33	184.2791
569.50	184.2922
569.70	183.2757
583.19	170.7242
600.60	211.2022
602.73	199.7011
604.72	208.5254
609.32	181.7102
609.32	181.7102
610.33	168.8896
614.28	146.4565
618.01	173.8826
621.93	166.7753
621.93	166.7753
633.25	182.1611
635.95	169.6828
636.99	181.3391
645.85	195.6276
657.76	176.9409
661.66	195.5943
661.66	195.5943
664.57	0.0000
666.33	165.0205
666.50	165.0281
677.62	188.0656

685.70	149.9873
695.00	189.1184
696.49	184.9084
696.51	184.9084
697.00	179.5617
702.65	194.9595
706.68	170.4016
711.68	176.0726
720.70	164.2895
721.93	0.0000
722.78	157.1671
722.91	157.1742
723.31	148.1612
724.19	150.0086
727.33	177.2900
733.00	148.6017
735.93	194.8067
739.50	160.1532
747.24	163.8062
752.31	174.9922
753.82	158.6610
756.73	165.3701
763.94	160.9681
765.81	180.0917
766.42	180.1237
777.92	153.3687
778.90	170.8671
783.70	135.4794
785.37	146.3387
795.86	131.3520
801.95	136.4982
810.29	128.8504
810.76	114.0338
815.77	139.2639
818.51	126.3628
832.01	117.5175
834.85	143.7452
836.80	0.0000
846.77	142.3454
856.80	132.0059
860.56	132.5432
871.09	104.6406
873.19	101.8696
875.33	0.0000
879.36	128.4933
880.51	106.7973
883.24	131.4635
884.68	125.8375
889.28	123.1498
898.04	131.0315
911.20	113.3831
911.20	113.3831
911.20	113.3831
926.50	126.2690
937.49	136.2162
944.13	135.4865
946.00	119.2092
949.00	120.2621
962.29	150.5886
964.08	147.3442
966.15	168.9553
968.97	117.6879
968.97	117.6879
968.97	117.6879
983.53	112.5685
996.26	91.7824
1001.03	116.9507
1004.73	103.6779
1037.84	118.9715
1038.76	0.0000
1048.07	111.3723
1050.41	116.3675
1050.41	116.3675
1063.66	111.7815
1085.87	100.4246
1099.45	123.6720
1112.07	137.1708
1115.54	92.6618

1120.29	104.7884
1120.29	104.7884
1120.55	104.7927
1121.30	103.0915
1131.51	0.0000
1173.23	125.7104
1177.93	115.6885
1189.05	161.7432
1204.77	134.7231
1221.41	136.2200
1231.02	163.1794
1235.36	143.8110
1238.28	143.8965
1260.41	0.0000
1271.85	101.4254
1274.44	121.1514
1274.54	121.1561
1291.59	75.8516
1298.22	0.0000
1312.11	84.5101
1332.49	60.7589
1365.19	54.8205
1368.63	0.0000
1384.29	45.1458
1408.01	47.8290
1457.56	0.0000
1460.82	46.1529
1489.16	47.4697
1505.03	59.5050
1596.21	54.6501
1620.50	27.4383
1678.03	0.0000
1690.97	23.9319
1764.49	22.2788
1764.49	22.2788
1770.23	32.2365
1771.35	28.8483
1791.20	0.0000
1836.06	15.4270

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900005

Total Uranium Activity	8.8363E+01	ug/g
Total Uranium Counting Unc.	1.7368E+01	ug/g
Total Uranium Tpu	8.8611E-06	ug/g
Total Uranium Mda	3.5081E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 957711          SAMPLE ID   : G247900005
*  ANALYST       : MXR1            DETECTOR    : GAM23
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00  COUNT TIME : 0 04:00:00.00
*  ANALYSIS DATE: 5-MAR-2010 23:39:14.71  SAMPLE ALQT: 157.530 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.090E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.199E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.699E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.823E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 03:41:02.25

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900006.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 5-MAR-2010 23:39:39.
Sample ID          : G247900006      Sample quantity   : 1.30180E+02 GRAM
Detector name      : GAM25           Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00   Elapsed real time: 0 04:00:04.69  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials  : MXR1
Abundance limit    : 75.00000        Sensitivity       : 5.00000
Batch ID           : 957711          Detector SN#      :
Matrix Spike ID    :                 LCS ID            : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.29*	427	1268	0.94	92.15	88	9	2.96E-02	16.5	
2	0	63.28*	1061	1862	0.77	126.12	122	9	7.36E-02	8.2	
3	6	74.74*	2325	1248	1.05	149.04	143	14	1.61E-01	3.1	1.20E+01
4	6	77.01*	3391	1016	0.84	153.58	143	14	2.36E-01	2.3	
5	5	84.05*	397	647	1.07	167.66	165	26	2.76E-02	10.6	2.36E+00
6	5	87.13	1221	1091	1.13	173.82	165	26	8.48E-02	5.3	
7	5	89.84	737	901	0.97	179.24	165	26	5.12E-02	7.5	
8	5	92.66*	1743	1006	1.23	184.87	165	26	1.21E-01	4.2	
9	0	98.99	291	987	2.08	197.54	193	9	2.02E-02	20.4	
10	0	105.52	258	951	2.22	210.60	206	9	1.79E-02	22.6	
11	0	128.89	261	613	0.97	257.32	254	6	1.81E-02	16.3	
12	0	153.92	129	886	1.43	307.39	303	9	8.96E-03	42.5	
13	0	185.78*	580	903	1.01	371.11	366	10	4.03E-02	11.1	
14	0	209.13	316	655	0.86	417.80	414	9	2.20E-02	15.6	
15	5	238.53*	3842	407	0.94	476.59	472	17	2.67E-01	1.9	3.09E+00
16	5	241.41	926	573	1.77	482.34	472	17	6.43E-02	8.1	
17	0	269.99	312	573	1.48	539.50	534	11	2.17E-02	15.9	
18	0	277.48	139	482	1.17	554.49	551	9	9.62E-03	29.8	
19	0	295.09*	1053	487	1.10	589.70	585	10	7.31E-02	5.1	
20	0	299.94	214	417	1.08	599.40	595	9	1.49E-02	18.5	
21	0	327.96	208	393	1.18	655.43	651	10	1.45E-02	19.1	
22	0	338.22	711	481	1.20	675.96	671	12	4.94E-02	7.2	
23	0	351.74*	1927	427	1.15	703.00	696	14	1.34E-01	3.3	
24	0	409.14	84	270	0.85	817.78	815	8	5.86E-03	35.3	
25	0	462.80	230	289	1.31	925.11	919	12	1.60E-02	16.2	
26	0	510.33*	396	339	1.52	1020.17	1012	16	2.75E-02	13.2	
27	0	583.06*	1007	294	1.35	1165.62	1160	12	6.99E-02	4.7	
28	0	609.01*	1096	335	1.36	1217.52	1211	15	7.61E-02	4.8	
29	0	661.43*	75	205	1.60	1322.35	1316	11	5.18E-03	42.2	
30	0	727.02*	241	201	1.04	1453.53	1448	11	1.68E-02	13.4	
31	0	767.76	70	258	1.48	1535.01	1529	12	4.89E-03	47.4	
32	0	786.21	61	174	1.03	1571.90	1566	11	4.24E-03	44.2	
33	0	794.25	150	162	1.23	1587.99	1582	12	1.04E-02	18.8	
34	0	860.48	116	163	1.92	1720.44	1715	13	8.04E-03	24.5	
35	0	910.89*	707	138	1.79	1821.27	1816	12	4.91E-02	5.2	
36	0	933.99	54	148	0.91	1867.47	1861	13	3.72E-03	49.0	
37	3	964.32	162	123	2.39	1928.14	1921	22	1.13E-02	16.7	1.22E+00
38	3	968.68*	438	92	1.83	1936.84	1921	22	3.04E-02	6.6	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1120.02*	315	138	1.37	2239.52	2232	15	2.19E-02	10.0	
40	0	1237.81	80	156	1.85	2475.13	2468	12	5.58E-03	33.0	
41	0	1377.42*	54	58	2.05	2754.36	2749	12	3.77E-03	31.9	
42	0	1460.45*	2768	53	2.15	2920.42	2909	21	1.92E-01	2.0	
43	0	1590.94	121	51	6.05	3181.43	3170	28	8.43E-03	20.4	
44	0	1729.41	47	26	2.00	3458.40	3450	15	3.26E-03	27.9	
45	0	1764.22	206	35	2.35	3528.03	3519	22	1.43E-02	10.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 03:41:04

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900006.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 : 5-MAR-2010 23:39:39
Sample ID         : G247900006 Sample quantity : 130.18 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA25 Detector geometry: CAN
Elapsed live time : 0 04:00:00.00 Elapsed real time: 0 04:00:04.69 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	*	3.376E+01	3.184E+00	3.955E-01	3.368E-02	85.373
CD-109	+	88.03	*	5.176E+00	7.799E-01	5.589E-01	6.006E-02	9.260
SN-126	+	64.28		1.629E+00	3.721E-01	2.195E-01	3.497E-02	7.421
	+	86.94		2.102E+00	9.073E-01	2.259E-01	9.450E-02	9.305
	+	87.57	*	5.056E-01	7.619E-02	5.449E-02	5.842E-03	9.279
BA-137M	+	661.66	*	5.364E-02	4.566E-02	5.160E-02	5.716E-03	1.039
CS-137	+	661.66	*	5.666E-02	4.823E-02	5.451E-02	6.046E-03	1.039
EU-155	+	86.55		6.131E-01	9.271E-02	6.578E-02	7.066E-03	9.321
	+	105.31	*	2.008E-01	9.366E-02	8.914E-02	1.054E-02	2.252
TL-208	+	277.37		6.388E-01	3.916E-01	4.219E-01	6.064E-02	1.514
	+	583.19	*	6.843E-01	1.005E-01	4.534E-02	5.107E-03	15.093
	+	860.56		7.568E-01	3.796E-01	3.447E-01	3.601E-02	2.196
PB-210	+	46.54	*	1.580E+00	5.447E-01	4.338E-01	4.443E-02	3.642
BI-211		72.87		2.138E+00	1.227E+00	1.971E+00	1.990E-01	1.084
	+	351.06	*	5.533E+00	6.845E-01	2.191E-01	2.308E-02	25.257
BI-212	+	727.33	*	2.545E+00	7.732E-01	6.031E-01	8.517E-02	4.220
	+	785.37		4.179E+00	3.720E+00	4.077E+00	4.302E-01	1.025
		1620.50		1.537E+00	2.080E+00	3.681E+00	3.060E-01	0.418
PB-212	+	74.82		3.364E+00	5.184E-01	2.175E-01	3.060E-02	15.464
	+	77.11		2.962E+00	3.316E-01	1.318E-01	1.351E-02	22.468
	+	238.63	*	2.379E+00	2.856E-01	5.845E-02	6.679E-03	40.693
	+	300.09		2.106E+00	8.245E-01	8.251E-01	1.035E-01	2.552
BI-214	+	609.32	*	1.446E+00	2.238E-01	8.361E-02	1.012E-02	17.292
	+	1120.29		2.178E+00	4.975E-01	3.747E-01	4.085E-02	5.813
	+	1764.49		2.063E+00	4.453E-01	2.723E-01	2.244E-02	7.577
PB-214	+	74.82		5.962E+00	8.552E-01	3.855E-01	4.970E-02	15.464
	+	77.11		5.221E+00	7.261E-01	2.324E-01	3.057E-02	22.468
	+	242.00		3.479E+00	7.027E-01	3.562E-01	4.280E-02	9.768
	+	295.22		1.830E+00	2.997E-01	1.458E-01	1.868E-02	12.557
	+	351.93	*	2.008E+00	2.720E-01	7.970E-02	9.467E-03	25.194
RA-224	+	240.99	*	6.152E+00	1.190E+00	6.274E-01	6.593E-02	9.807
RA-226	+	609.32	*	1.446E+00	2.238E-01	8.361E-02	1.012E-02	17.292
	+	1120.29		2.178E+00	4.975E-01	3.747E-01	4.085E-02	5.813
	+	1764.49		2.063E+00	4.453E-01	2.723E-01	2.244E-02	7.577

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	+	338.32		2.264E+00	1.008E+00	2.560E-01	1.079E-01	8.842
	+	911.20	*	2.354E+00	3.772E-01	1.913E-01	2.338E-02	12.308
	+	968.97		2.515E+00	7.025E-01	3.037E-01	7.474E-02	8.284
RA-228	+	338.32		2.264E+00	1.008E+00	2.560E-01	1.079E-01	8.842
	+	911.20	*	2.354E+00	3.772E-01	1.913E-01	2.338E-02	12.308
	+	968.97		2.515E+00	7.025E-01	3.037E-01	7.474E-02	8.284
TH-228	+	74.82		3.364E+00	4.039E-01	2.175E-01	2.225E-02	15.464
	+	77.11		2.962E+00	3.316E-01	1.318E-01	1.351E-02	22.468
	+	238.63	*	2.379E+00	2.856E-01	5.845E-02	6.679E-03	40.693
	+	300.09		2.106E+00	1.514E+00	8.251E-01	5.082E-01	2.552
TH-229	+	85.43		4.106E-01	9.707E-02	1.359E-01	1.442E-02	3.023
	+	88.47		7.795E-01	1.175E-01	8.434E-02	9.082E-03	9.242
		193.51	*	-9.161E-02	3.367E-01	5.449E-01	5.196E-02	-0.168
		210.85		9.796E-01	6.356E-01	9.696E-01	9.609E-02	1.010
TH-232	+	338.32		2.264E+00	4.030E-01	2.560E-01	2.669E-02	8.842
	+	911.20	*	2.354E+00	3.772E-01	1.913E-01	2.338E-02	12.308
	+	968.97		2.515E+00	7.025E-01	3.037E-01	7.474E-02	8.284
TH-234	+	63.29	*	4.226E+00	1.059E+00	5.686E-01	1.079E-01	7.432
	+	92.59		6.429E+00	1.579E+00	4.942E-01	1.142E-01	13.009
U-235	+	89.96		3.284E+00	9.693E-01	5.873E-01	1.496E-01	5.591
	+	93.35		4.856E+00	1.237E+00	3.746E-01	9.029E-02	12.962
		143.76	*	7.829E-02	1.309E-01	2.132E-01	3.916E-02	0.367
		163.33		6.212E-02	2.839E-01	4.579E-01	8.350E-02	0.136
	+	185.72		2.276E-01	5.467E-02	4.255E-02	3.985E-03	5.347
		205.31		5.511E-02	3.526E-01	5.148E-01	9.642E-02	0.107
NP-237	+	86.48	*	1.509E+00	3.895E-01	1.618E-01	3.806E-02	9.324
		95.86		1.305E-01	5.683E-01	7.106E-01	1.778E-01	0.184
U-238	+	63.29	*	4.226E+00	1.059E+00	5.686E-01	1.079E-01	7.432
	+	92.59		6.429E+00	8.855E-01	4.942E-01	5.430E-02	13.009
ANH-511	+	511.00	*	2.034E-01	5.768E-02	3.337E-02	3.435E-03	6.095

---- 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	*	-6.456E-02	2.450E-01	3.940E-01	4.170E-02	-0.164
NA-22		1274.54	*	-2.678E-02	3.681E-02	5.754E-02	4.718E-03	-0.465
NA-24		1368.63	*	7.677E-01	3.681E-02	Half-Life too short		
SC-46		889.28	*	-2.984E-04	3.031E-02	4.928E-02	4.719E-03	-0.006
	+	1120.55		3.696E-01	8.072E-02	1.111E-01	9.550E-03	3.327
V-48		944.13		-3.883E-02	7.504E-01	1.210E+00	1.135E-01	-0.032
		983.53	*	-5.037E-03	5.743E-02	9.195E-02	8.520E-03	-0.055
		1312.11		4.208E-02	6.417E-02	1.101E-01	8.971E-03	0.382
CR-51		320.08	*	2.405E-01	2.469E-01	4.285E-01	4.756E-02	0.561
MN-54		834.85	*	-6.715E-03	3.157E-02	5.108E-02	5.183E-03	-0.131
CO-56		846.77	*	7.807E-03	3.053E-02	5.067E-02	5.084E-03	0.154
		1037.84		-1.889E-01	2.544E-01	4.072E-01	3.860E-02	-0.464
	+	1238.28		1.555E-01	1.035E-01	1.388E-01	1.176E-02	1.121
		1771.35		-4.564E-02	2.040E-01	2.753E-01	2.266E-02	-0.166

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	122.06	*		1.059E-02	1.408E-02	2.413E-02	3.112E-03	0.439
	136.47			4.698E-02	1.236E-01	2.089E-01	2.559E-02	0.225
CO-58	810.76	*		4.555E-03	3.056E-02	5.059E-02	5.249E-03	0.090
FE-59	1099.45	*		-7.397E-02	7.949E-02	1.252E-01	1.179E-02	-0.591
	1291.59			-4.051E-02	9.949E-02	1.585E-01	1.489E-02	-0.256
CO-60	1173.23			-1.963E-02	3.491E-02	5.581E-02	4.594E-03	-0.352
	1332.49	*		6.525E-03	3.259E-02	5.414E-02	4.397E-03	0.121
ZN-65	1115.54	*		6.588E-03	7.783E-02	1.125E-01	9.717E-03	0.059
SE-75	121.12			4.461E-03	7.338E-02	1.241E-01	1.811E-02	0.036
	136.00			-3.075E-03	2.373E-02	3.961E-02	4.700E-03	-0.078
	264.66	*		-1.174E-02	3.414E-02	4.738E-02	5.193E-03	-0.248
	279.54			5.344E-02	8.649E-02	1.254E-01	1.431E-02	0.426
	400.66			8.727E-02	1.881E-01	3.166E-01	3.654E-02	0.276
SR-85	514.00	*		3.086E-02	3.152E-02	4.727E-02	4.877E-03	0.653
Y-88	898.04			-2.978E-04	3.156E-02	5.126E-02	4.875E-03	-0.006
	1836.06	*		1.281E-02	2.667E-02	4.658E-02	3.806E-03	0.275
Y-91	1204.77	*		-1.912E+00	1.839E+01	3.023E+01	2.487E+00	-0.063
NB-94	702.65	*		-1.167E-02	2.705E-02	4.399E-02	4.831E-03	-0.265
	871.09			1.605E-03	2.548E-02	4.171E-02	4.080E-03	0.038
NB-95	765.81	*		5.501E-02	4.428E-02	6.698E-02	7.154E-03	0.821
NB-95M	235.69	*		-1.199E-02	9.000E-02	1.280E-01	1.470E-02	-0.094
ZR-95	724.19			1.212E-01	8.734E-02	1.358E-01	1.559E-02	0.892
	756.73	*		2.535E-02	6.165E-02	1.038E-01	1.191E-02	0.244
MO-99	140.51			-5.225E+00	1.541E+01	2.478E+01	6.171E+00	-0.211
	181.07			6.202E+00	1.328E+01	1.980E+01	3.779E+00	0.313
	366.42			7.938E+00	7.489E+01	1.254E+02	1.229E+01	0.063
	739.50	*		3.811E+00	1.077E+01	1.813E+01	3.094E+00	0.210
	777.92			-3.620E+01	3.190E+01	4.874E+01	5.169E+00	-0.743
TC-99M	140.51	*		-2.505E+10	3.190E+01	Half-Life too short		
RU-103	497.08	*		1.840E-02	2.961E-02	4.938E-02	7.397E-03	0.373
	610.33			1.503E+01	3.023E+00	2.294E+00	4.051E-01	6.551
RH-106	621.93	*		-1.432E-01	2.430E-01	3.953E-01	5.881E-02	-0.362
	1050.41			1.192E+00	2.096E+00	3.618E+00	3.253E-01	0.329
RU-106	621.93	*		-1.432E-01	2.425E-01	3.953E-01	4.329E-02	-0.362
	1050.41			1.192E+00	2.096E+00	3.618E+00	3.253E-01	0.329
AG-108M	433.94	*		4.364E-03	2.100E-02	3.483E-02	3.422E-03	0.125
	614.28			-3.173E-02	3.112E-02	4.217E-02	4.700E-03	-0.752
	722.91			1.670E-02	3.359E-02	5.004E-02	5.567E-03	0.334
AG-110M	657.76	*		3.032E-02	2.932E-02	4.562E-02	5.141E-03	0.665
	677.62			1.855E-01	2.470E-01	4.259E-01	4.788E-02	0.436
	706.68			7.340E-02	1.730E-01	2.931E-01	3.272E-02	0.250
	763.94			7.804E-02	1.588E-01	2.347E-01	2.554E-02	0.333
	884.68			-8.121E-03	3.961E-02	6.363E-02	6.285E-03	-0.128
	937.49			-8.591E-03	1.029E-01	1.425E-01	1.380E-02	-0.060
	1384.29			8.184E-02	1.370E-01	2.060E-01	1.737E-02	0.397
	1505.03			-1.681E-01	2.377E-01	3.575E-01	2.964E-02	-0.470
SN-113	391.69	*		-3.606E-02	3.393E-02	5.356E-02	5.002E-03	-0.673
CD-115	260.90			-2.679E+00	1.048E+02	1.669E+02	1.814E+01	-0.016
	492.35			-2.771E+01	3.167E+01	4.885E+01	4.952E+00	-0.567

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-117M	527.90	*		-7.406E+00	9.955E+00	1.538E+01	1.603E+00	-0.482
	156.02			-1.081E-01	1.613E+00	2.392E+00	2.386E-01	-0.045
	158.56	*		9.839E-03	3.651E-02	5.823E-02	5.654E-03	0.169
TE-123M	159.00	*		7.322E-03	1.778E-02	2.978E-02	2.891E-03	0.246
SB-124	602.73			-1.125E-02	3.290E-02	4.722E-02	5.133E-03	-0.238
	645.85			-2.828E-01	3.920E-01	6.039E-01	6.900E-02	-0.468
	722.78			1.605E-01	3.386E-01	5.037E-01	5.572E-02	0.319
SB-125	1690.97	*		-3.051E-02	5.556E-02	8.538E-02	7.398E-03	-0.357
	427.87	*		7.616E-03	6.468E-02	1.070E-01	1.033E-02	0.071
	+			463.37	1.036E+00	4.250E-01	4.439E-02	2.438
	600.60			2.496E-02	1.333E-01	2.267E-01	2.578E-02	0.110
	635.95			1.974E-01	2.105E-01	3.672E-01	4.244E-02	0.538
TE-125M	109.28	*		7.540E+00	5.891E+00	9.258E+00	1.241E+00	0.815
I-126	388.63			1.291E-01	1.287E-01	2.209E-01	2.028E-02	0.584
	666.33	*		2.440E-01	1.989E-01	3.110E-01	3.443E-02	0.785
	753.82			1.944E+00	1.552E+00	2.702E+00	2.905E-01	0.719
SB-126	414.70			-3.657E-02	6.523E-02	9.354E-02	8.755E-03	-0.391
	666.50			6.375E-02	6.889E-02	1.060E-01	1.173E-02	0.601
	695.00			-1.453E-02	6.241E-02	1.027E-01	1.130E-02	-0.142
	697.00			1.457E-01	2.155E-01	3.696E-01	4.066E-02	0.394
	720.70	*		3.029E-02	1.328E-01	1.946E-01	2.123E-02	0.156
SB-127	856.80			-4.598E-01	4.727E-01	6.095E-01	6.054E-02	-0.754
	252.40			4.802E-01	3.183E+00	5.108E+00	2.147E+00	0.094
	473.00			1.097E-01	1.308E+00	2.142E+00	2.958E-01	0.051
	685.70	*		8.286E-01	1.051E+00	1.815E+00	2.431E-01	0.456
	783.70			3.946E+00	3.684E+00	5.601E+00	7.775E-01	0.704
I-131	80.19			-6.517E-01	2.192E+00	3.122E+00	3.254E-01	-0.209
	284.31			-2.207E-01	1.127E+00	1.769E+00	2.030E-01	-0.125
	364.49	*		-7.600E-03	8.177E-02	1.358E-01	1.394E-02	-0.056
TE-132	636.99			1.066E+00	1.254E+00	2.181E+00	2.486E-01	0.489
	49.72			1.631E+00	2.463E+00	3.738E+00	4.425E-01	0.436
	111.76			-4.918E+00	2.067E+01	3.390E+01	4.763E+00	-0.145
BA-133	116.30			1.484E+01	1.733E+01	2.976E+01	4.262E+00	0.499
	228.16	*		6.932E-01	5.490E-01	9.028E-01	1.521E-01	0.768
	81.00			-1.214E-02	4.364E-02	6.209E-02	1.029E-02	-0.195
	+			276.40	5.905E-01	4.409E-01	6.950E-02	1.339
	302.85			4.959E-02	9.729E-02	1.488E-01	2.190E-02	0.333
I-133	356.01	*		3.853E-04	3.029E-02	4.459E-02	6.220E-03	0.009
	383.85			2.235E-02	2.065E-01	3.445E-01	4.452E-02	0.065
	529.87	*		6.430E-03	2.065E-01	Half-Life too short		
CS-134	875.33			-1.569E-02	2.065E-01	Half-Life too short		
	1298.22			1.030E-01	2.065E-01	Half-Life too short		
	563.25			2.704E-01	2.883E-01	4.824E-01	5.174E-02	0.560
CS-135	569.33			1.212E-02	1.697E-01	2.546E-01	2.747E-02	0.048
	604.72			-1.026E-02	2.793E-02	3.999E-02	4.357E-03	-0.257
	795.86	*		1.406E-01	5.067E-02	8.000E-02	8.422E-03	1.757
	801.95			-3.807E-01	3.447E-01	4.910E-01	5.140E-02	-0.775
	1365.19			6.148E-01	9.904E-01	1.699E+00	1.458E-01	0.362
CS-135	268.22	*		1.931E-01	1.253E-01	1.875E-01	2.263E-02	1.030

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-135		546.56		7.247E+09	1.253E-01	Half-Life	too short	
		836.80		3.014E+10	1.253E-01	Half-Life	too short	
		1038.76		-4.845E+10	1.253E-01	Half-Life	too short	
		1131.51		-1.107E+10	1.253E-01	Half-Life	too short	
		1260.41	*	-9.764E+09	1.253E-01	Half-Life	too short	
		1457.56		3.049E+12	1.253E-01	Half-Life	too short	
		1678.03		-2.043E+10	1.253E-01	Half-Life	too short	
		1791.20		-9.181E+09	1.253E-01	Half-Life	too short	
CS-136	+	153.25		1.011E+00	8.679E-01	9.453E-01	1.103E-01	1.069
		176.60		1.455E-01	3.168E-01	5.278E-01	5.277E-02	0.276
		273.65		-5.021E-02	5.026E-01	5.503E-01	6.412E-02	-0.091
		340.55		2.453E-01	1.185E-01	1.879E-01	2.002E-02	1.305
		818.51		1.033E-02	5.932E-02	9.829E-02	1.012E-02	0.105
		1048.07	*	-6.400E-02	9.254E-02	1.487E-01	1.390E-02	-0.430
		1235.36		5.933E-01	6.012E-01	9.050E-01	1.039E-01	0.656
		165.86	*	-6.082E-03	1.894E-02	3.098E-02	2.762E-03	-0.196
CE-139		162.66		3.723E-02	5.360E-01	8.613E-01	8.451E-02	0.043
BA-140		304.85		-5.497E-01	9.492E-01	1.430E+00	4.296E-01	-0.384
		423.72		9.133E-01	1.473E+00	2.439E+00	8.080E-01	0.374
		537.26	*	2.132E-01	2.247E-01	3.599E-01	1.239E-01	0.593
		328.76		8.359E-01	3.323E-01	4.092E-01	4.502E-02	2.042
LA-140	+	487.02		1.165E-01	1.030E-01	1.757E-01	1.854E-02	0.663
		815.77		7.686E-03	2.594E-01	4.263E-01	4.764E-02	0.018
		1596.21	*	2.930E-02	6.067E-02	9.418E-02	7.830E-03	0.311
		145.44	*	-4.730E-02	3.940E-02	6.295E-02	7.002E-03	-0.751
CE-141		57.36		1.350E-04	3.940E-02	Half-Life	too short	
CE-143		293.27	*	9.324E-04	3.940E-02	Half-Life	too short	
		664.57		2.151E-03	3.940E-02	Half-Life	too short	
		721.93		5.940E-04	3.940E-02	Half-Life	too short	
		80.12		9.372E-04	1.134E+00	1.632E+00	1.693E-01	0.001
CE-144		133.52	*	-3.062E-02	1.170E-01	1.947E-01	3.394E-02	-0.157
		476.78		-3.520E-03	4.900E-02	7.957E-02	8.473E-03	-0.044
PM-144		618.01		2.277E-02	2.515E-02	4.384E-02	4.878E-03	0.519
		696.49	*	1.964E-02	2.687E-02	4.619E-02	5.082E-03	0.425
PR-144		696.51	*	1.474E+00	2.012E+00	3.458E+00	3.804E-01	0.426
		1489.16		-1.229E+01	9.547E+00	1.299E+01	1.076E+00	-0.946
PM-146		453.88	*	2.591E-03	3.109E-02	5.108E-02	5.902E-03	0.051
		633.25		-2.426E-01	1.101E+00	1.821E+00	7.066E-01	-0.133
		735.93		-3.828E-02	1.136E-01	1.837E-01	5.289E-02	-0.208
		747.24		-2.757E-02	7.594E-02	1.229E-01	1.961E-02	-0.224
ND-147	+	91.11		1.091E+00	2.049E-01	2.823E-01	3.242E-02	3.866
		319.41		1.519E+00	2.243E+00	3.866E+00	4.154E-01	0.393
		531.02	*	3.217E-01	4.357E-01	7.256E-01	1.166E-01	0.443
		285.90	*	-9.311E+00	7.756E+01	1.221E+02	2.082E+01	-0.076
EU-152		121.78		3.834E-02	4.086E-02	7.010E-02	9.648E-03	0.547
		244.70		-2.545E-02	2.320E-01	3.290E-01	3.480E-02	-0.077
		344.28	*	-5.086E-03	7.958E-02	1.091E-01	1.172E-02	-0.047
		778.90		-9.917E-02	2.136E-01	3.210E-01	3.402E-02	-0.309
	+	964.08		1.003E+00	3.472E-01	4.742E-01	4.423E-02	2.114

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153		1085.87		-8.232E-02	3.228E-01	5.310E-01	4.676E-02	-0.155
		1112.07		-9.080E-02	2.677E-01	3.889E-01	3.364E-02	-0.233
		1408.01		2.140E-01	1.384E-01	2.531E-01	2.080E-02	0.845
		69.67		3.741E-01	6.719E-01	9.915E-01	9.913E-02	0.377
		97.43	*	2.549E-02	5.568E-02	7.034E-02	7.922E-03	0.362
EU-154		103.18		1.416E-02	7.394E-02	9.183E-02	1.066E-02	0.154
		123.07		6.617E-03	2.877E-02	4.878E-02	7.219E-03	0.136
		723.31		1.182E-01	1.512E-01	2.292E-01	2.661E-02	0.516
		873.19		6.589E-02	2.107E-01	3.503E-01	4.464E-02	0.188
		996.26		-3.103E-01	3.305E-01	4.938E-01	8.777E-02	-0.628
TB-160		1004.73		-2.653E-01	1.970E-01	2.861E-01	3.452E-02	-0.927
		1274.44	*	-3.756E-02	1.015E-01	1.627E-01	1.799E-02	-0.231
	+	86.79		1.633E+00	2.461E-01	2.769E-01	2.958E-02	5.898
		197.04		5.986E-02	3.686E-01	6.041E-01	5.808E-02	0.099
		215.65		5.074E-02	4.905E-01	7.971E-01	7.978E-02	0.064
	+	298.57		2.977E-01	1.152E-01	1.447E-01	1.592E-02	2.058
		879.36	*	-1.518E-02	1.103E-01	1.780E-01	1.725E-02	-0.085
		962.29		9.286E-01	5.298E-01	8.241E-01	7.691E-02	1.127
		966.15		1.513E+00	2.583E-01	4.422E-01	4.122E-02	3.421
		1177.93		-1.050E-01	2.889E-01	4.682E-01	3.854E-02	-0.224
HO-166M		1271.85		3.030E-01	5.748E-01	9.770E-01	8.003E-02	0.310
		80.57		-5.726E-02	1.427E-01	1.762E-01	1.831E-02	-0.325
	+	184.41		1.808E-01	4.344E-02	4.542E-02	4.239E-03	3.981
		280.46		-1.155E-02	6.754E-02	9.415E-02	1.050E-02	-0.123
		410.95		3.328E-01	2.149E-01	3.341E-01	3.113E-02	0.996
		711.68	*	7.823E-03	4.831E-02	8.091E-02	8.859E-03	0.097
		752.31		1.336E-01	2.305E-01	3.913E-01	4.211E-02	0.342
		810.29		-2.045E-02	4.717E-02	7.538E-02	7.810E-03	-0.271
TA-182		67.75		2.617E-02	3.810E-02	6.058E-02	6.028E-03	0.432
	+	100.11		3.621E-01	1.531E-01	1.537E-01	1.756E-02	2.355
	+	152.43		4.058E-01	3.478E-01	3.651E-01	3.772E-02	1.112
		222.11		8.087E-02	2.342E-01	3.825E-01	3.880E-02	0.211
	+	1121.30		1.023E+00	2.234E-01	3.029E-01	2.603E-02	3.378
		1189.05		-1.663E-01	2.565E-01	4.082E-01	3.360E-02	-0.407
		1221.41	*	-3.497E-02	1.730E-01	2.826E-01	2.324E-02	-0.124
		1231.02		1.146E-01	4.779E-01	6.895E-01	5.668E-02	0.166
IR-192	+	295.96		1.359E+00	2.046E-01	2.238E-01	2.480E-02	6.070
		308.46		3.389E-03	6.193E-02	1.049E-01	1.146E-02	0.032
		316.51	*	-1.128E-02	2.221E-02	3.667E-02	3.961E-03	-0.308
		468.07		-2.327E-02	5.572E-02	7.727E-02	8.089E-03	-0.301
HG-203		70.83		-9.885E-02	5.304E-01	7.656E-01	1.291E-01	-0.129
		72.87		5.355E-01	3.150E-01	4.938E-01	8.098E-02	1.084
		279.20	*	3.257E-02	3.119E-02	4.596E-02	5.208E-03	0.709
BI-207		72.81		8.395E-02	6.920E-02	1.108E-01	1.118E-02	0.758
	+	74.97		9.695E-01	1.159E-01	1.098E-01	1.117E-02	8.827
		569.70		5.964E-04	2.628E-02	3.931E-02	4.205E-03	0.015
		1063.66	*	1.842E-02	4.254E-02	7.288E-02	6.504E-03	0.253
PB-211		1770.23		-9.384E-03	3.968E-01	5.576E-01	4.591E-02	-0.017
		404.85	*	-1.391E-01	6.247E-01	8.669E-01	4.205E-01	-0.160

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	427.09		-1.093E+00	1.205E+00	1.716E+00	7.967E-01	-0.637
		832.01		-8.314E-02	8.146E-01	1.324E+00	6.904E-01	-0.063
		271.23		8.612E-01	2.933E-01	3.190E-01	3.941E-02	2.700
		401.81	*	6.720E-02	3.050E-01	5.087E-01	7.744E-02	0.132
RA-223	+	81.07		-2.697E-02	9.890E-02	1.408E-01	1.467E-02	-0.191
		83.79		2.444E-01	5.777E-02	9.956E-02	1.049E-02	2.455
		94.87		6.234E-01	2.789E-01	3.724E-01	4.139E-02	1.674
		144.24		4.030E-01	4.340E-01	7.126E-01	8.483E-02	0.566
AC-227	+	154.21		4.490E-01	3.851E-01	4.298E-01	4.670E-02	1.045
		269.46		6.692E-01	2.251E-01	2.518E-01	2.805E-02	2.657
		323.87	*	-9.862E-02	4.851E-01	7.122E-01	1.313E-01	-0.138
		338.28		8.983E+00	1.770E+00	1.853E+00	2.486E-01	4.849
TH-227	+	79.69		1.399E-01	5.634E-01	8.168E-01	1.484E-01	0.171
		235.96		9.766E-02	1.116E-01	1.651E-01	1.961E-02	0.591
		256.23	*	-9.812E-02	1.744E-01	2.715E-01	3.715E-02	-0.361
		299.98		2.316E+00	9.217E-01	1.163E+00	1.677E-01	1.991
PA-231	+	304.50		-3.418E-01	1.162E+00	1.706E+00	3.046E-01	-0.200
		334.37		-2.384E-01	1.294E+00	1.896E+00	3.166E-01	-0.126
		79.80		1.207E-01	7.445E-01	1.077E+00	2.425E-01	0.112
		235.96		9.766E-02	1.116E-01	1.651E-01	1.878E-02	0.591
TH-231	+	256.23	*	-9.812E-02	1.745E-01	2.715E-01	4.092E-02	-0.361
		299.98		2.316E+00	9.217E-01	1.163E+00	1.677E-01	1.991
		304.50		-3.418E-01	1.162E+00	1.706E+00	3.046E-01	-0.200
		334.37		-2.384E-01	1.294E+00	1.896E+00	3.166E-01	-0.126
PA-233	+	283.69	*	-3.282E-01	1.051E+00	1.641E+00	2.657E-01	-0.200
		301.36		1.488E+00	5.895E-01	7.176E-01	9.990E-02	2.074
		81.07		-2.697E-02	9.890E-02	1.408E-01	1.467E-02	-0.191
		83.79		2.444E-01	5.777E-02	9.956E-02	1.049E-02	2.455
PA-234	+	94.87		6.234E-01	2.789E-01	3.724E-01	4.139E-02	1.674
		144.24		4.030E-01	4.340E-01	7.126E-01	8.483E-02	0.566
		154.21		4.490E-01	3.851E-01	4.298E-01	4.670E-02	1.045
		269.46		6.692E-01	2.251E-01	2.518E-01	2.805E-02	2.657
PA-234M	+	323.87	*	-9.862E-02	4.851E-01	7.122E-01	1.313E-01	-0.138
		338.28		8.983E+00	1.770E+00	1.853E+00	2.486E-01	4.849
		300.13		1.048E+00	4.247E-01	5.259E-01	8.582E-02	1.993
		311.90	*	2.234E-03	4.155E-02	7.031E-02	7.766E-03	0.032
PA-234M	+	340.48		1.213E+00	5.739E-01	8.055E-01	1.994E-01	1.506
		94.67		2.886E-01	1.096E-01	1.425E-01	2.029E-02	2.025
		98.44		1.829E-01	1.271E-01	8.262E-02	4.649E-02	2.214
		111.00		-4.686E-02	1.011E-01	1.693E-01	2.503E-02	-0.277
PA-234M	+	131.20		-6.452E-03	6.652E-02	9.997E-02	1.220E-02	-0.065
		569.50		1.146E-02	2.335E-01	3.499E-01	3.743E-02	0.033
		733.00		4.612E-02	3.106E-01	4.723E-01	1.094E-01	0.098
		880.51		1.861E-02	2.209E-01	3.617E-01	3.500E-02	0.051
PA-234M	+	883.24		1.092E-01	2.388E-01	3.810E-01	2.566E-01	0.287
		926.50		-6.121E-02	1.580E-01	2.231E-01	5.703E-02	-0.274
		946.00	*	9.500E-02	2.454E-01	4.055E-01	7.755E-02	0.234
		949.00		1.283E-01	3.607E-01	5.961E-01	5.585E-02	0.215
PA-234M	+	766.42		1.623E+01	1.747E+01	1.856E+01	9.491E+00	0.874

----- 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	*	7.562E+00	4.298E+00	7.389E+00	7.739E-01	1.023
	+	99.53		3.318E-01	1.403E-01	1.473E-01	1.678E-02	2.252
		103.37		3.165E-02	5.911E-02	8.505E-02	9.884E-03	0.372
	+	106.12		1.601E-01	7.465E-02	7.790E-02	9.189E-03	2.055
		117.23	*	-7.881E-02	2.232E-01	3.736E-01	4.687E-02	-0.211
		228.18		1.862E-01	1.466E-01	2.445E-01	2.509E-02	0.762
AM-241	+	277.60		2.920E-01	1.770E-01	2.215E-01	2.466E-02	1.318
		59.54	*	-1.607E-03	4.003E-02	5.878E-02	6.107E-03	-0.027
CM-247	+	278.00		1.240E+00	7.518E-01	9.417E-01	1.049E-01	1.317
		287.50		1.508E+00	8.925E-01	1.482E+00	1.645E-01	1.018
CF-249		402.40	*	9.576E-04	2.744E-02	4.546E-02	4.189E-03	0.021
		252.80		2.590E-01	6.574E-01	1.066E+00	1.143E-01	0.243
		333.37		1.332E-01	1.545E-01	2.053E-01	2.159E-02	0.649
		388.16	*	2.517E-02	3.000E-02	5.124E-02	4.712E-03	0.491
CF-251		177.52	*	5.986E-03	8.091E-02	1.333E-01	1.223E-02	0.045
		227.38		2.155E-01	2.382E-01	3.944E-01	4.041E-02	0.546
		285.41		-4.000E-01	1.610E+00	2.521E+00	2.803E-01	-0.159

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]G247900006      *
* Acquisition date   : 5-MAR-2010 23:39:39 Detector SN#      :              *
* Detector ID        : GAM25          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 04:00:04.69 Half life ratio         : 8.000         *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library   : SOLID         *
* Sample ID          : G247900006      Analyst initials      : MXR1          *
* Batch Number       : 957711          Sample Quantity       : 1.3018E+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	3.376E+01	3.120E+00	3.958E-01	0.000E+00
CD-109	5.176E+00	7.643E-01	5.851E-01	0.000E+00
SN-126	5.056E-01	7.467E-02	5.705E-02	0.000E+00
BA-137M	5.364E-02	4.474E-02	5.232E-02	0.000E+00
CS-137	5.666E-02	4.727E-02	5.528E-02	0.000E+00
EU-155	2.008E-01	9.179E-02	9.307E-02	0.000E+00
TL-208	6.843E-01	9.847E-02	4.607E-02	0.000E+00
PB-210	1.580E+00	5.338E-01	4.586E-01	0.000E+00
BI-211	5.533E+00	6.708E-01	2.244E-01	0.000E+00
BI-212	2.545E+00	7.578E-01	6.106E-01	0.000E+00
PB-212	2.379E+00	2.799E-01	6.025E-02	0.000E+00
BI-214	1.446E+00	2.193E-01	8.489E-02	0.000E+00
PB-214	2.008E+00	2.666E-01	8.165E-02	0.000E+00
RA-224	6.152E+00	1.167E+00	6.465E-01	0.000E+00
RA-226	1.446E+00	2.193E-01	8.489E-02	0.000E+00
AC-228	2.354E+00	3.697E-01	1.930E-01	0.000E+00
RA-228	2.354E+00	3.697E-01	1.930E-01	0.000E+00
TH-228	2.379E+00	2.799E-01	6.025E-02	0.000E+00
TH-229	-9.161E-02	3.300E-01	5.635E-01	0.000E+00
TH-232	2.354E+00	3.697E-01	1.930E-01	0.000E+00
TH-234	4.226E+00	1.038E+00	5.983E-01	0.000E+00
U-235	7.829E-02	1.282E-01	2.215E-01	0.000E+00
NP-237	1.509E+00	3.818E-01	1.694E-01	0.000E+00
U-238	4.226E+00	1.038E+00	5.983E-01	0.000E+00
ANH-511	2.034E-01	5.653E-02	3.398E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-6.456E-02	2.401E-01	4.016E-01	0.000E+00 NOT IDENT.
NA-22	-2.678E-02	3.607E-02	5.771E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	9.217E+05	0.000E+00	0.000E+00	SHORT HLIF
SC-46	-2.984E-04	2.970E-02	4.972E-02	0.000E+00	FAIL ABUN
V-48	-5.037E-03	5.628E-02	9.262E-02	0.000E+00	NOT IDENT.
CR-51	2.405E-01	2.419E-01	4.397E-01	0.000E+00	NOT IDENT.
MN-54	-6.715E-03	3.094E-02	5.159E-02	0.000E+00	NOT IDENT.
CO-56	7.807E-03	2.992E-02	5.117E-02	0.000E+00	FAIL ABUN
CO-57	1.059E-02	1.380E-02	2.514E-02	0.000E+00	NOT IDENT.
CO-58	4.555E-03	2.994E-02	5.113E-02	0.000E+00	NOT IDENT.
FE-59	-7.397E-02	7.790E-02	1.259E-01	0.000E+00	NOT IDENT.
CO-60	6.525E-03	3.194E-02	5.426E-02	0.000E+00	NOT IDENT.
ZN-65	6.588E-03	7.628E-02	1.131E-01	0.000E+00	NOT IDENT.
SE-75	-1.174E-02	3.346E-02	4.876E-02	0.000E+00	NOT IDENT.
SR-85	3.086E-02	3.089E-02	4.813E-02	0.000E+00	NOT IDENT.
Y-88	1.281E-02	2.613E-02	4.643E-02	0.000E+00	NOT IDENT.
Y-91	-1.912E+00	1.802E+01	3.035E+01	0.000E+00	NOT IDENT.
NB-94	-1.167E-02	2.650E-02	4.456E-02	0.000E+00	NOT IDENT.
NB-95	5.501E-02	4.340E-02	6.775E-02	0.000E+00	NOT IDENT.
NB-95M	-1.199E-02	8.820E-02	1.320E-01	0.000E+00	NOT IDENT.
ZR-95	2.535E-02	6.042E-02	1.051E-01	0.000E+00	NOT IDENT.
MO-99	3.811E+00	1.055E+01	1.835E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.253E+16	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.840E-02	2.902E-02	5.031E-02	0.000E+00	FAIL ABUN
RH-106	-1.432E-01	2.381E-01	4.012E-01	0.000E+00	NOT IDENT.
RU-106	-1.432E-01	2.377E-01	4.012E-01	0.000E+00	NOT IDENT.
AG-108M	4.364E-03	2.058E-02	3.556E-02	0.000E+00	NOT IDENT.
AG-110M	3.032E-02	2.874E-02	4.626E-02	0.000E+00	NOT IDENT.
SN-113	-3.606E-02	3.325E-02	5.477E-02	0.000E+00	NOT IDENT.
CD-115	-7.406E+00	9.756E+00	1.565E+01	0.000E+00	NOT IDENT.
SN-117M	9.839E-03	3.578E-02	6.041E-02	0.000E+00	NOT IDENT.
TE-123M	7.322E-03	1.742E-02	3.089E-02	0.000E+00	NOT IDENT.
SB-124	-3.051E-02	5.445E-02	8.523E-02	0.000E+00	NOT IDENT.
SB-125	7.616E-03	6.338E-02	1.092E-01	0.000E+00	FAIL ABUN
TE-125M	7.540E+00	5.773E+00	9.660E+00	0.000E+00	NOT IDENT.
I-126	2.440E-01	1.950E-01	3.153E-01	0.000E+00	NOT IDENT.
SB-126	3.029E-02	1.302E-01	1.970E-01	0.000E+00	NOT IDENT.
SB-127	8.286E-01	1.030E+00	1.840E+00	0.000E+00	NOT IDENT.
I-131	-7.600E-03	8.014E-02	1.391E-01	0.000E+00	NOT IDENT.
TE-132	6.932E-01	5.380E-01	9.312E-01	0.000E+00	NOT IDENT.
BA-133	3.853E-04	2.969E-02	4.567E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	6.210E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.966E-02	8.088E-02	0.000E+00	NOT IDENT.
CS-135	0.000E+00	1.228E-01	1.929E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.568E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.400E-02	9.069E-02	1.496E-01	0.000E+00	FAIL ABUN
CE-139	-6.082E-03	1.856E-02	3.212E-02	0.000E+00	NOT IDENT.
BA-140	2.132E-01	2.202E-01	3.661E-01	0.000E+00	NOT IDENT.
LA-140	2.930E-02	5.945E-02	9.410E-02	0.000E+00	FAIL ABUN
CE-141	-4.730E-02	3.861E-02	6.540E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.524E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.062E-02	1.147E-01	2.025E-01	0.000E+00	NOT IDENT.
PM-144	1.964E-02	2.633E-02	4.679E-02	0.000E+00	NOT IDENT.
PR-144	1.474E+00	1.972E+00	3.503E+00	0.000E+00	NOT IDENT.
PM-146	2.591E-03	3.046E-02	5.211E-02	0.000E+00	NOT IDENT.
ND-147	3.217E-01	4.270E-01	7.383E-01	0.000E+00	FAIL ABUN
PM-149	-9.311E+00	7.601E+01	1.255E+02	0.000E+00	NOT IDENT.
EU-152	-5.086E-03	7.799E-02	1.118E-01	0.000E+00	FAIL ABUN
GD-153	2.549E-02	5.456E-02	7.353E-02	0.000E+00	NOT IDENT.
EU-154	-3.756E-02	9.948E-02	1.632E-01	0.000E+00	NOT IDENT.
TB-160	-1.518E-02	1.081E-01	1.796E-01	0.000E+00	FAIL ABUN
HO-166M	7.823E-03	4.734E-02	8.194E-02	0.000E+00	FAIL ABUN
TA-182	-3.497E-02	1.695E-01	2.836E-01	0.000E+00	FAIL ABUN
IR-192	-1.128E-02	2.177E-02	3.763E-02	0.000E+00	FAIL ABUN
HG-203	3.257E-02	3.057E-02	4.725E-02	0.000E+00	NOT IDENT.
BI-207	1.842E-02	4.168E-02	7.332E-02	0.000E+00	FAIL ABUN
PB-211	-1.391E-01	6.122E-01	8.861E-01	0.000E+00	NOT IDENT.
RN-219	6.720E-02	2.989E-01	5.200E-01	0.000E+00	FAIL ABUN
RA-223	-9.862E-02	4.754E-01	7.306E-01	0.000E+00	FAIL ABUN
AC-227	-9.812E-02	1.709E-01	2.796E-01	0.000E+00	FAIL ABUN
TH-227	-9.812E-02	1.711E-01	2.796E-01	0.000E+00	FAIL ABUN
PA-231	-3.282E-01	1.030E+00	1.686E+00	0.000E+00	FAIL ABUN
TH-231	-9.862E-02	4.754E-01	7.306E-01	0.000E+00	FAIL ABUN
PA-233	2.234E-03	4.072E-02	7.217E-02	0.000E+00	FAIL ABUN
PA-234	9.500E-02	2.405E-01	4.088E-01	0.000E+00	FAIL ABUN
PA-234M	0.000E+00	4.212E+00	7.441E+00	0.000E+00	FAIL ABUN
NP-239	-7.881E-02	2.187E-01	3.895E-01	0.000E+00	FAIL ABUN
AM-241	-1.607E-03	3.923E-02	6.191E-02	0.000E+00	NOT IDENT.
CM-247	9.576E-04	2.690E-02	4.647E-02	0.000E+00	FAIL ABUN
CF-249	2.517E-02	2.940E-02	5.240E-02	0.000E+00	NOT IDENT.

CF-251	5.986E-03	7.929E-02	1.380E-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]G247900006.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 5-MAR-2010 23:39:39.
Sample ID        : G247900006 Sample quantity : 1.30180E+02 GRAM
Detector name    : GAM25 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:04.69 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957711 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	2768	10.66*	1.109E+00	3.376E+01	3.376E+01	9.43
CD-109	88.03	1221	3.70*	9.407E+00	5.056E+00	5.176E+00	15.07
SN-126	64.28	1061	9.60	9.778E+00	1.629E+00	1.629E+00	22.84
	86.94	1221	8.90	9.407E+00	2.102E+00	2.102E+00	43.17
	87.57	1221	37.00*	9.407E+00	5.056E-01	5.056E-01	15.07
BA-137M	661.66	75	89.90*	2.231E+00	5.359E-02	5.364E-02	85.12
CS-137	661.66	75	85.10*	2.231E+00	5.661E-02	5.666E-02	85.12
EU-155	86.55	1221	30.70	9.407E+00	6.093E-01	6.131E-01	15.12
	105.31	258	21.10*	8.825E+00	1.995E-01	2.008E-01	46.65
TL-208	277.37	139	6.60	4.736E+00	6.388E-01	6.388E-01	61.31
	583.19	1007	85.00*	2.497E+00	6.843E-01	6.843E-01	14.68
	860.56	116	12.50	1.765E+00	7.568E-01	7.568E-01	50.16
PB-210	46.54	427	4.25*	9.172E+00	1.578E+00	1.580E+00	34.47
BI-211	72.87	-----	1.23	9.724E+00	-----	Line Not Found	-----
	351.06	1927	12.92*	3.887E+00	5.533E+00	5.533E+00	12.37
BI-212	727.33	241	6.67*	2.051E+00	2.545E+00	2.545E+00	30.38
	785.37	61	1.10	1.913E+00	4.179E+00	4.179E+00	89.02
	1620.50	-----	1.47	1.013E+00	-----	Line Not Found	-----
PB-212	74.82	2325	10.28	9.695E+00	3.364E+00	3.364E+00	15.41
	77.11	3391	17.10	9.654E+00	2.962E+00	2.962E+00	11.20
	238.63	3842	43.60*	5.340E+00	2.379E+00	2.379E+00	12.01
	300.09	214	3.30	4.444E+00	2.106E+00	2.106E+00	39.15
BI-214	609.32	1096	45.49*	2.402E+00	1.446E+00	1.446E+00	15.48
	1120.29	315	14.92	1.398E+00	2.178E+00	2.178E+00	22.84
	1764.49	206	15.30	9.414E-01	2.063E+00	2.063E+00	21.58
PB-214	74.82	2325	5.80	9.695E+00	5.962E+00	5.962E+00	14.34
	77.11	3391	9.70	9.654E+00	5.221E+00	5.221E+00	13.91
	242.00	926	7.25	5.291E+00	3.479E+00	3.479E+00	20.20
	295.22	1053	18.42	4.504E+00	1.830E+00	1.830E+00	16.37
	351.93	1927	35.60*	3.887E+00	2.008E+00	2.008E+00	13.55
RA-224	240.99	926	4.10*	5.291E+00	6.152E+00	6.152E+00	19.35
RA-226	609.32	1096	45.49*	2.402E+00	1.446E+00	1.446E+00	15.48

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	1120.29	315	14.92	1.398E+00	2.178E+00	2.178E+00	22.84
	1764.49	206	15.30	9.414E-01	2.063E+00	2.063E+00	21.58
AC-228	338.32	711	11.27	4.019E+00	2.264E+00	2.264E+00	44.53
	911.20	707	25.80*	1.678E+00	2.354E+00	2.354E+00	16.02
	968.97	438	15.80	1.589E+00	2.515E+00	2.515E+00	27.93
RA-228	338.32	711	11.27	4.019E+00	2.264E+00	2.264E+00	44.53
	911.20	707	25.80*	1.678E+00	2.354E+00	2.354E+00	16.02
	968.97	438	15.80	1.589E+00	2.515E+00	2.515E+00	27.93
TH-228	74.82	2325	10.28	9.695E+00	3.364E+00	3.364E+00	12.01
	77.11	3391	17.10	9.654E+00	2.962E+00	2.962E+00	11.20
	238.63	3842	43.60*	5.340E+00	2.379E+00	2.379E+00	12.01
	300.09	214	3.30	4.444E+00	2.106E+00	2.106E+00	71.90
TH-229	85.43	397	14.70	9.491E+00	4.106E-01	4.106E-01	23.64
	88.47	1221	24.00	9.407E+00	7.795E-01	7.795E-01	15.07
	193.51	-----	4.41*	6.239E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.863E+00	-----	Line Not Found	-----
TH-232	338.32	711	11.27	4.019E+00	2.264E+00	2.264E+00	17.80
	911.20	707	25.80*	1.678E+00	2.354E+00	2.354E+00	16.02
	968.97	438	15.80	1.589E+00	2.515E+00	2.515E+00	27.93
TH-234	63.29	1061	3.70*	9.778E+00	4.226E+00	4.226E+00	25.07
	92.59	1743	4.23	9.244E+00	6.429E+00	6.429E+00	24.56
U-235	89.96	737	3.47	9.329E+00	3.284E+00	3.284E+00	29.52
	93.35	1743	5.60	9.244E+00	4.856E+00	4.856E+00	25.47
	143.76	-----	10.96*	7.568E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.998E+00	-----	Line Not Found	-----
	185.72	580	57.20	6.420E+00	2.276E-01	2.276E-01	24.03
	205.31	-----	5.01	5.979E+00	-----	Line Not Found	-----
NP-237	86.48	1221	12.40*	9.407E+00	1.509E+00	1.509E+00	25.82
	95.86	-----	2.68	9.143E+00	-----	Line Not Found	-----
U-238	63.29	1061	3.70*	9.778E+00	4.226E+00	4.226E+00	25.07
	92.59	1743	4.23	9.244E+00	6.429E+00	6.429E+00	13.77
ANH-511	511.00	396	100.00*	2.810E+00	2.034E-01	2.034E-01	28.36

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	3.376E+01	3.376E+01	0.318E+01	9.43	
CD-109	461.40D	1.02	5.056E+00	5.176E+00	0.780E+00	15.07	
SN-126	2.30E+05Y	1.00	5.056E-01	5.056E-01	0.762E-01	15.07	
BA-137M	30.08Y	1.00	5.359E-02	5.364E-02	4.566E-02	85.12	
CS-137	30.08Y	1.00	5.661E-02	5.666E-02	4.823E-02	85.12	
EU-155	4.75Y	1.01	1.995E-01	2.008E-01	0.937E-01	46.65	
TL-208	1.41E+10Y	1.00	6.843E-01	6.843E-01	1.005E-01	14.68	
PB-210	22.20Y	1.00	1.578E+00	1.580E+00	0.545E+00	34.47	
BI-211	7.04E+08Y	1.00	5.533E+00	5.533E+00	0.685E+00	12.37	
BI-212	1.41E+10Y	1.00	2.545E+00	2.545E+00	0.773E+00	30.38	
PB-212	1.41E+10Y	1.00	2.379E+00	2.379E+00	0.286E+00	12.01	
BI-214	1600.00Y	1.00	1.446E+00	1.446E+00	0.224E+00	15.48	
PB-214	1600.00Y	1.00	2.008E+00	2.008E+00	0.272E+00	13.55	
RA-224	1.41E+10Y	1.00	6.152E+00	6.152E+00	1.190E+00	19.35	
RA-226	1600.00Y	1.00	1.446E+00	1.446E+00	0.224E+00	15.48	
AC-228	1.41E+10Y	1.00	2.354E+00	2.354E+00	0.377E+00	16.02	
RA-228	1.41E+10Y	1.00	2.354E+00	2.354E+00	0.377E+00	16.02	
TH-228	1.41E+10Y	1.00	2.379E+00	2.379E+00	0.286E+00	12.01	
TH-229	7340.00Y	1.00	7.795E-01	7.795E-01	1.175E-01	15.07	K
TH-232	1.41E+10Y	1.00	2.354E+00	2.354E+00	0.377E+00	16.02	
TH-234	4.47E+09Y	1.00	4.226E+00	4.226E+00	1.059E+00	25.07	
U-235	7.04E+08Y	1.00	2.276E-01	2.276E-01	0.547E-01	24.03	K
NP-237	2.14E+06Y	1.00	1.509E+00	1.509E+00	0.390E+00	25.82	
U-238	4.47E+09Y	1.00	4.226E+00	4.226E+00	1.059E+00	25.07	
ANH-511	1.00E+09Y	1.00	2.034E-01	2.034E-01	0.577E-01	28.36	
Total Activity :			8.402E+01	8.414E+01			

Grand Total Activity : 8.402E+01 8.414E+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	98.99	291	987	2.08	197.54	193	9	2.02E-02	40.7	9.04E+00	T
0	128.89	261	613	0.97	257.32	254	6	1.81E-02	32.5	8.04E+00	
0	153.92	129	886	1.43	307.39	303	9	8.96E-03	85.1	7.26E+00	T
0	209.13	316	655	0.86	417.80	414	9	2.20E-02	31.3	5.90E+00	
0	269.99	312	573	1.48	539.50	534	11	2.17E-02	31.7	4.84E+00	T
0	327.96	208	393	1.18	655.43	651	10	1.45E-02	38.2	4.12E+00	T
0	409.14	84	270	0.85	817.78	815	8	5.86E-03	70.6	3.41E+00	
0	462.80	230	289	1.31	925.11	919	12	1.60E-02	32.4	3.06E+00	T
0	767.76	70	258	1.48	1535.01	1529	12	4.89E-03	94.7	1.95E+00	T
0	794.25	150	162	1.23	1587.99	1582	12	1.04E-02	37.6	1.90E+00	
0	933.99	54	148	0.91	1867.47	1861	13	3.72E-03	97.9	1.64E+00	
3	964.32	162	123	2.39	1928.14	1921	22	1.13E-02	33.3	1.60E+00	T
0	1237.81	80	156	1.85	2475.13	2468	12	5.58E-03	66.0	1.28E+00	T
0	1377.42	54	58	2.05	2754.36	2749	12	3.77E-03	63.9	1.17E+00	
0	1590.94	121	51	6.05	3181.43	3170	28	8.43E-03	40.8	1.03E+00	
0	1729.41	47	26	2.00	3458.40	3450	15	3.26E-03	55.7	9.58E-01	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900006.CNF;1  *
* Acquisition date   : 5-MAR-2010 23:39:39.  Detector SN#      :              *
* Detector ID        : GAM25                      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 04:00:04.69             Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library : SOLID          *
* Sample ID          : G247900006             Analyst initials: MXR1          *
* Batch Number       : 957711                 Sample Quantity : 1.30180E+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	3.376E+01	3.184E+00	3.955E-01	3.368E-02	85.373
CD-109	5.176E+00	7.799E-01	5.589E-01	6.006E-02	9.260
SN-126	5.056E-01	7.619E-02	5.449E-02	5.842E-03	9.279
BA-137M	5.364E-02	4.566E-02	5.160E-02	5.716E-03	1.039
CS-137	5.666E-02	4.823E-02	5.451E-02	6.046E-03	1.039
EU-155	2.008E-01	9.366E-02	8.914E-02	1.054E-02	2.252
TL-208	6.843E-01	1.005E-01	4.534E-02	5.107E-03	15.093
PB-210	1.580E+00	5.447E-01	4.338E-01	4.443E-02	3.642
BI-211	5.533E+00	6.845E-01	2.191E-01	2.308E-02	25.257
BI-212	2.545E+00	7.732E-01	6.031E-01	8.517E-02	4.220
PB-212	2.379E+00	2.856E-01	5.845E-02	6.679E-03	40.693
BI-214	1.446E+00	2.238E-01	8.361E-02	1.012E-02	17.292
PB-214	2.008E+00	2.720E-01	7.970E-02	9.467E-03	25.194
RA-224	6.152E+00	1.190E+00	6.274E-01	6.593E-02	9.807
RA-226	1.446E+00	2.238E-01	8.361E-02	1.012E-02	17.292
AC-228	2.354E+00	3.772E-01	1.913E-01	2.338E-02	12.308
RA-228	2.354E+00	3.772E-01	1.913E-01	2.338E-02	12.308
TH-228	2.379E+00	2.856E-01	5.845E-02	6.679E-03	40.693

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229	7.795E-01	1.175E-01	5.449E-01	5.196E-02	1.431
TH-232	2.354E+00	3.772E-01	1.913E-01	2.338E-02	12.308
TH-234	4.226E+00	1.059E+00	5.686E-01	1.079E-01	7.432
U-235	2.276E-01	5.467E-02	2.132E-01	3.916E-02	1.067
NP-237	1.509E+00	3.895E-01	1.618E-01	3.806E-02	9.324
U-238	4.226E+00	1.059E+00	5.686E-01	1.079E-01	7.432
ANH-511	2.034E-01	5.768E-02	3.337E-02	3.435E-03	6.095

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-6.456E-02		2.450E-01	3.940E-01	4.170E-02	-0.164
NA-22	-2.678E-02		3.681E-02	5.754E-02	4.718E-03	-0.465
NA-24	7.677E-01		4.702E-01	Half-Life too short		
SC-46	-2.984E-04		3.031E-02	4.928E-02	4.719E-03	-0.006
V-48	-5.037E-03		5.743E-02	9.195E-02	8.520E-03	-0.055
CR-51	2.405E-01		2.469E-01	4.285E-01	4.756E-02	0.561
MN-54	-6.715E-03		3.157E-02	5.108E-02	5.183E-03	-0.131
CO-56	7.807E-03		3.053E-02	5.067E-02	5.084E-03	0.154
CO-57	1.059E-02		1.408E-02	2.413E-02	3.112E-03	0.439
CO-58	4.555E-03		3.056E-02	5.059E-02	5.249E-03	0.090
FE-59	-7.397E-02		7.949E-02	1.252E-01	1.179E-02	-0.591
CO-60	6.525E-03		3.259E-02	5.414E-02	4.397E-03	0.121
ZN-65	6.588E-03		7.783E-02	1.125E-01	9.717E-03	0.059
SE-75	-1.174E-02		3.414E-02	4.738E-02	5.193E-03	-0.248
SR-85	3.086E-02		3.152E-02	4.727E-02	4.877E-03	0.653
Y-88	1.281E-02		2.667E-02	4.658E-02	3.806E-03	0.275
Y-91	-1.912E+00		1.839E+01	3.023E+01	2.487E+00	-0.063
NB-94	-1.167E-02		2.705E-02	4.399E-02	4.831E-03	-0.265
NB-95	5.501E-02		4.428E-02	6.698E-02	7.154E-03	0.821
NB-95M	-1.199E-02		9.000E-02	1.280E-01	1.470E-02	-0.094
ZR-95	2.535E-02		6.165E-02	1.038E-01	1.191E-02	0.244
MO-99	3.811E+00		1.077E+01	1.813E+01	3.094E+00	0.210
TC-99M	-2.505E+10		3.700E+10	Half-Life too short		
RU-103	1.840E-02		2.961E-02	4.938E-02	7.397E-03	0.373
RH-106	-1.432E-01		2.430E-01	3.953E-01	5.881E-02	-0.362
RU-106	-1.432E-01		2.425E-01	3.953E-01	4.329E-02	-0.362
AG-108M	4.364E-03		2.100E-02	3.483E-02	3.422E-03	0.125
AG-110M	3.032E-02		2.932E-02	4.562E-02	5.141E-03	0.665
SN-113	-3.606E-02		3.393E-02	5.356E-02	5.002E-03	-0.673
CD-115	-7.406E+00		9.955E+00	1.538E+01	1.603E+00	-0.482
SN-117M	9.839E-03		3.651E-02	5.823E-02	5.654E-03	0.169
TE-123M	7.322E-03		1.778E-02	2.978E-02	2.891E-03	0.246
SB-124	-3.051E-02		5.556E-02	8.538E-02	7.398E-03	-0.357
SB-125	7.616E-03		6.468E-02	1.070E-01	1.033E-02	0.071
TE-125M	7.540E+00		5.891E+00	9.258E+00	1.241E+00	0.815
I-126	2.440E-01		1.989E-01	3.110E-01	3.443E-02	0.785

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	3.029E-02		1.328E-01	1.946E-01	2.123E-02	0.156
SB-127	8.286E-01		1.051E+00	1.815E+00	2.431E-01	0.456
I-131	-7.600E-03		8.177E-02	1.358E-01	1.394E-02	-0.056
TE-132	6.932E-01		5.490E-01	9.028E-01	1.521E-01	0.768
BA-133	3.853E-04		3.029E-02	4.459E-02	6.220E-03	0.009
I-133	6.430E-03		3.168E-03	Half-Life too short		
CS-134	1.406E-01		5.067E-02	8.000E-02	8.422E-03	1.757
CS-135	1.931E-01		1.253E-01	1.875E-01	2.263E-02	1.030
I-135	-9.764E+09		8.000E+09	Half-Life too short		
CS-136	-6.400E-02		9.254E-02	1.487E-01	1.390E-02	-0.430
CE-139	-6.082E-03		1.894E-02	3.098E-02	2.762E-03	-0.196
BA-140	2.132E-01		2.247E-01	3.599E-01	1.239E-01	0.593
LA-140	2.930E-02		6.067E-02	9.418E-02	7.830E-03	0.311
CE-141	-4.730E-02		3.940E-02	6.295E-02	7.002E-03	-0.751
CE-143	9.324E-04		1.288E-04	Half-Life too short		
CE-144	-3.062E-02		1.170E-01	1.947E-01	3.394E-02	-0.157
PM-144	1.964E-02		2.687E-02	4.619E-02	5.082E-03	0.425
PR-144	1.474E+00		2.012E+00	3.458E+00	3.804E-01	0.426
PM-146	2.591E-03		3.109E-02	5.108E-02	5.902E-03	0.051
ND-147	3.217E-01		4.357E-01	7.256E-01	1.166E-01	0.443
PM-149	-9.311E+00		7.756E+01	1.221E+02	2.082E+01	-0.076
EU-152	-5.086E-03		7.958E-02	1.091E-01	1.172E-02	-0.047
GD-153	2.549E-02		5.568E-02	7.034E-02	7.922E-03	0.362
EU-154	-3.756E-02		1.015E-01	1.627E-01	1.799E-02	-0.231
TB-160	-1.518E-02		1.103E-01	1.780E-01	1.725E-02	-0.085
HO-166M	7.823E-03		4.831E-02	8.091E-02	8.859E-03	0.097
TA-182	-3.497E-02		1.730E-01	2.826E-01	2.324E-02	-0.124
IR-192	-1.128E-02		2.221E-02	3.667E-02	3.961E-03	-0.308
HG-203	3.257E-02		3.119E-02	4.596E-02	5.208E-03	0.709
BI-207	1.842E-02		4.254E-02	7.288E-02	6.504E-03	0.253
PB-211	-1.391E-01		6.247E-01	8.669E-01	4.205E-01	-0.160
RN-219	6.720E-02		3.050E-01	5.087E-01	7.744E-02	0.132
RA-223	-9.862E-02		4.851E-01	7.122E-01	1.313E-01	-0.138
AC-227	-9.812E-02		1.744E-01	2.715E-01	3.715E-02	-0.361
TH-227	-9.812E-02		1.745E-01	2.715E-01	4.092E-02	-0.361
PA-231	-3.282E-01		1.051E+00	1.641E+00	2.657E-01	-0.200
TH-231	-9.862E-02		4.851E-01	7.122E-01	1.313E-01	-0.138
PA-233	2.234E-03		4.155E-02	7.031E-02	7.766E-03	0.032
PA-234	9.500E-02		2.454E-01	4.055E-01	7.755E-02	0.234
PA-234M	7.562E+00		4.298E+00	7.389E+00	7.739E-01	1.023
NP-239	-7.881E-02		2.232E-01	3.736E-01	4.687E-02	-0.211
AM-241	-1.607E-03		4.003E-02	5.878E-02	6.107E-03	-0.027
CM-247	9.576E-04		2.744E-02	4.546E-02	4.189E-03	0.021
CF-249	2.517E-02		3.000E-02	5.124E-02	4.712E-03	0.491
CF-251	5.986E-03		8.091E-02	1.333E-01	1.223E-02	0.045

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]G247900006            *
* Acquisition date   : 5-MAR-2010 23:39:39 Detector SN#      :                *
* Detector ID        : GAM25                                           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 04:00:04.69                               Half life ratio  : 8.000          *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID          : G247900006                               Analyst initials: MXR1           *
* Batch Number       : 957711                                   Sample Quantity : 1.3018E+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	3.376E+01	3.120E+00	1.980E-01	1.592E+00
CD-109	5.176E+00	7.643E-01	2.927E-01	3.900E-01
SN-126	5.056E-01	7.467E-02	2.854E-02	3.810E-02
BA-137M	5.364E-02	4.474E-02	2.618E-02	2.283E-02
CS-137	5.666E-02	4.727E-02	2.765E-02	2.412E-02
EU-155	2.008E-01	9.179E-02	4.656E-02	4.683E-02
TL-208	6.843E-01	9.847E-02	2.305E-02	5.024E-02
PB-210	1.580E+00	5.338E-01	2.294E-01	2.723E-01
BI-211	5.533E+00	6.708E-01	1.123E-01	3.423E-01
BI-212	2.545E+00	7.578E-01	3.055E-01	3.866E-01
PB-212	2.379E+00	2.799E-01	3.014E-02	1.428E-01
BI-214	1.446E+00	2.193E-01	4.247E-02	1.119E-01
PB-214	2.008E+00	2.666E-01	4.085E-02	1.360E-01
RA-224	6.152E+00	1.167E+00	3.235E-01	5.952E-01
RA-226	1.446E+00	2.193E-01	4.247E-02	1.119E-01
AC-228	2.354E+00	3.697E-01	9.653E-02	1.886E-01
RA-228	2.354E+00	3.697E-01	9.653E-02	1.886E-01
TH-228	2.379E+00	2.799E-01	3.014E-02	1.428E-01
TH-229	-9.161E-02	3.300E-01	2.819E-01	1.684E-01
TH-232	2.354E+00	3.697E-01	9.653E-02	1.886E-01
TH-234	4.226E+00	1.038E+00	2.993E-01	5.297E-01
U-235	7.829E-02	1.282E-01	1.108E-01	6.543E-02
NP-237	1.509E+00	3.818E-01	8.477E-02	1.948E-01
U-238	4.226E+00	1.038E+00	2.993E-01	5.297E-01
ANH-511	2.034E-01	5.653E-02	1.700E-02	2.884E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-6.456E-02	2.401E-01	2.009E-01	1.225E-01 NOT IDENT.
NA-22	-2.678E-02	3.607E-02	2.887E-02	1.840E-02 NOT IDENT.

NA-24	7.677E+05	9.217E+05	0.000E+00	4.702E+05	SHORT HLIF
SC-46	-2.984E-04	2.970E-02	2.488E-02	1.515E-02	FAIL ABUN
V-48	-5.037E-03	5.628E-02	4.634E-02	2.872E-02	NOT IDENT.
CR-51	2.405E-01	2.419E-01	2.200E-01	1.234E-01	NOT IDENT.
MN-54	-6.715E-03	3.094E-02	2.581E-02	1.579E-02	NOT IDENT.
CO-56	7.807E-03	2.992E-02	2.560E-02	1.526E-02	FAIL ABUN
CO-57	1.059E-02	1.380E-02	1.258E-02	7.042E-03	NOT IDENT.
CO-58	4.555E-03	2.994E-02	2.558E-02	1.528E-02	NOT IDENT.
FE-59	-7.397E-02	7.790E-02	6.297E-02	3.975E-02	NOT IDENT.
CO-60	6.525E-03	3.194E-02	2.715E-02	1.630E-02	NOT IDENT.
ZN-65	6.588E-03	7.628E-02	5.658E-02	3.892E-02	NOT IDENT.
SE-75	-1.174E-02	3.346E-02	2.439E-02	1.707E-02	NOT IDENT.
SR-85	3.086E-02	3.089E-02	2.408E-02	1.576E-02	NOT IDENT.
Y-88	1.281E-02	2.613E-02	2.323E-02	1.333E-02	NOT IDENT.
Y-91	-1.912E+00	1.802E+01	1.518E+01	9.194E+00	NOT IDENT.
NB-94	-1.167E-02	2.650E-02	2.229E-02	1.352E-02	NOT IDENT.
NB-95	5.501E-02	4.340E-02	3.390E-02	2.214E-02	NOT IDENT.
NB-95M	-1.199E-02	8.820E-02	6.604E-02	4.500E-02	NOT IDENT.
ZR-95	2.535E-02	6.042E-02	5.256E-02	3.083E-02	NOT IDENT.
MO-99	3.811E+00	1.055E+01	9.181E+00	5.383E+00	NOT IDENT.
TC-99M	-2.505E+16	7.253E+16	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.840E-02	2.902E-02	2.517E-02	1.480E-02	FAIL ABUN
RH-106	-1.432E-01	2.381E-01	2.007E-01	1.215E-01	NOT IDENT.
RU-106	-1.432E-01	2.377E-01	2.007E-01	1.213E-01	NOT IDENT.
AG-108M	4.364E-03	2.058E-02	1.779E-02	1.050E-02	NOT IDENT.
AG-110M	3.032E-02	2.874E-02	2.314E-02	1.466E-02	NOT IDENT.
SN-113	-3.606E-02	3.325E-02	2.740E-02	1.696E-02	NOT IDENT.
CD-115	-7.406E+00	9.756E+00	7.830E+00	4.977E+00	NOT IDENT.
SN-117M	9.839E-03	3.578E-02	3.022E-02	1.826E-02	NOT IDENT.
TE-123M	7.322E-03	1.742E-02	1.545E-02	8.888E-03	NOT IDENT.
SB-124	-3.051E-02	5.445E-02	4.264E-02	2.778E-02	NOT IDENT.
SB-125	7.616E-03	6.338E-02	5.465E-02	3.234E-02	FAIL ABUN
TE-125M	7.540E+00	5.773E+00	4.833E+00	2.945E+00	NOT IDENT.
I-126	2.440E-01	1.950E-01	1.578E-01	9.947E-02	NOT IDENT.
SB-126	3.029E-02	1.302E-01	9.856E-02	6.642E-02	NOT IDENT.
SB-127	8.286E-01	1.030E+00	9.203E-01	5.254E-01	NOT IDENT.
I-131	-7.600E-03	8.014E-02	6.958E-02	4.089E-02	NOT IDENT.
TE-132	6.932E-01	5.380E-01	4.659E-01	2.745E-01	NOT IDENT.
BA-133	3.853E-04	2.969E-02	2.285E-02	1.515E-02	FAIL ABUN
I-133	6.430E+03	6.210E+03	0.000E+00	3.168E+03	SHORT HLIF
CS-134	1.406E-01	4.966E-02	4.046E-02	2.534E-02	NOT IDENT.
CS-135	1.931E-01	1.228E-01	9.650E-02	6.264E-02	NOT IDENT.
I-135	-9.764E+15	1.568E+16	0.000E+00	8.000E+15	SHORT HLIF
CS-136	-6.400E-02	9.069E-02	7.485E-02	4.627E-02	FAIL ABUN
CE-139	-6.082E-03	1.856E-02	1.607E-02	9.470E-03	NOT IDENT.
BA-140	2.132E-01	2.202E-01	1.832E-01	1.124E-01	NOT IDENT.
LA-140	2.930E-02	5.945E-02	4.708E-02	3.033E-02	FAIL ABUN
CE-141	-4.730E-02	3.861E-02	3.272E-02	1.970E-02	NOT IDENT.
CE-143	9.324E+02	2.524E+02	0.000E+00	1.288E+02	SHORT HLIF
CE-144	-3.062E-02	1.147E-01	1.013E-01	5.852E-02	NOT IDENT.
PM-144	1.964E-02	2.633E-02	2.341E-02	1.344E-02	NOT IDENT.
PR-144	1.474E+00	1.972E+00	1.753E+00	1.006E+00	NOT IDENT.
PM-146	2.591E-03	3.046E-02	2.607E-02	1.554E-02	NOT IDENT.
ND-147	3.217E-01	4.270E-01	3.694E-01	2.178E-01	FAIL ABUN
PM-149	-9.311E+00	7.601E+01	6.277E+01	3.878E+01	NOT IDENT.
EU-152	-5.086E-03	7.799E-02	5.594E-02	3.979E-02	FAIL ABUN
GD-153	2.549E-02	5.456E-02	3.679E-02	2.784E-02	NOT IDENT.
EU-154	-3.756E-02	9.948E-02	8.163E-02	5.076E-02	NOT IDENT.
TB-160	-1.518E-02	1.081E-01	8.986E-02	5.513E-02	FAIL ABUN
HO-166M	7.823E-03	4.734E-02	4.100E-02	2.416E-02	FAIL ABUN
TA-182	-3.497E-02	1.695E-01	1.419E-01	8.649E-02	FAIL ABUN
IR-192	-1.128E-02	2.177E-02	1.883E-02	1.111E-02	FAIL ABUN
HG-203	3.257E-02	3.057E-02	2.364E-02	1.560E-02	NOT IDENT.
BI-207	1.842E-02	4.168E-02	3.668E-02	2.127E-02	FAIL ABUN
PB-211	-1.391E-01	6.122E-01	4.433E-01	3.123E-01	NOT IDENT.
RN-219	6.720E-02	2.989E-01	2.601E-01	1.525E-01	FAIL ABUN
RA-223	-9.862E-02	4.754E-01	3.655E-01	2.425E-01	FAIL ABUN
AC-227	-9.812E-02	1.709E-01	1.399E-01	8.722E-02	FAIL ABUN
TH-227	-9.812E-02	1.711E-01	1.399E-01	8.727E-02	FAIL ABUN
PA-231	-3.282E-01	1.030E+00	8.437E-01	5.256E-01	FAIL ABUN
TH-231	-9.862E-02	4.754E-01	3.655E-01	2.425E-01	FAIL ABUN
PA-233	2.234E-03	4.072E-02	3.610E-02	2.078E-02	FAIL ABUN
PA-234	9.500E-02	2.405E-01	2.045E-01	1.227E-01	FAIL ABUN
PA-234M	7.562E+00	4.212E+00	3.723E+00	2.149E+00	FAIL ABUN
NP-239	-7.881E-02	2.187E-01	1.948E-01	1.116E-01	FAIL ABUN
AM-241	-1.607E-03	3.923E-02	3.097E-02	2.001E-02	NOT IDENT.
CM-247	9.576E-04	2.690E-02	2.325E-02	1.372E-02	FAIL ABUN
CF-249	2.517E-02	2.940E-02	2.622E-02	1.500E-02	NOT IDENT.

CF-251

5.986E-03

7.929E-02

6.906E-02

4.046E-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	637.2091
49.72	673.0512
57.36	0.0000
59.54	943.8807
63.29	941.7222
63.29	941.7222
64.28	945.1447
67.75	1007.9769
69.67	1057.1593
70.83	1081.6654
72.81	1038.5278
72.87	1038.7360
72.87	1038.7360
74.82	1045.4230
74.82	1045.4230
74.82	1045.4230
74.97	1045.9332
77.11	1053.1708
77.11	1053.1708
77.11	1053.1708
79.69	928.2337
79.80	933.3785
80.12	934.3048
80.19	960.2849
80.57	953.3470
81.00	935.2266
81.07	935.4269
81.07	935.4269
83.79	789.2347
83.79	789.2347
85.43	793.0938
86.48	795.5433
86.55	795.7059
86.79	796.2579
86.94	796.6127
87.57	798.0716
88.03	799.1313
88.47	800.1465
89.96	803.5571
91.11	806.1742
92.59	831.0644
92.59	831.0644
93.35	832.8151
94.67	650.3225
94.87	615.3688
94.87	615.3688
95.86	652.4287
97.43	655.1884
98.44	587.6920
99.53	589.3859
100.11	569.0563
103.18	587.7708
103.37	584.6171
105.31	606.5090
106.12	607.7444
109.28	620.3675
111.00	695.6950
111.76	683.8042
116.30	579.3994
117.23	634.8967
121.12	578.6721
121.78	549.8842
122.06	549.3307
123.07	572.2003
131.20	594.3494
133.52	616.6187
136.00	613.3251

136.47	595.3769
140.51	632.0858
140.51	0.0000
143.76	617.3757
144.24	586.8763
144.24	586.8763
145.44	683.6329
152.43	591.4453
153.25	590.4398
154.21	591.5051
154.21	591.5051
156.02	606.9928
158.56	566.8651
159.00	560.9240
162.66	549.0544
163.33	549.7131
165.86	582.5978
176.60	501.5608
177.52	514.3451
181.07	484.6740
184.41	537.4279
185.72	543.6389
193.51	517.5505
197.04	537.9437
205.31	517.5435
210.85	452.2166
215.65	473.4077
222.11	459.5481
227.38	434.8574
228.16	424.5187
228.18	424.5307
235.69	474.6927
235.96	474.8608
235.96	474.8608
238.63	411.9117
238.63	411.9117
240.99	413.1892
242.00	413.7362
244.70	387.5804
252.40	393.6382
252.80	388.2609
256.23	410.0988
256.23	410.0988
260.90	359.5045
264.66	371.9084
268.22	370.1013
269.46	374.6364
269.46	374.6364
271.23	368.0090
273.65	377.6483
276.40	365.0931
277.37	387.3457
277.60	387.4485
278.00	387.6268
279.20	368.0113
279.54	364.6975
280.46	385.8537
283.69	392.4998
284.31	393.9343
285.41	401.3929
285.90	400.4504
287.50	317.4558
293.27	0.0000
295.22	325.1370
295.96	359.2163
298.57	360.2498
299.98	325.4309
299.98	325.4309
300.09	325.4702
300.09	325.4702
300.13	325.4871
301.36	277.7448
302.85	292.3882
304.50	319.9219
304.50	319.9219
304.85	327.1548
308.46	300.7628
311.90	299.1761

316.51	299.7285
319.41	282.5817
320.08	279.1637
323.87	323.6113
323.87	323.6113
328.76	329.6036
333.37	275.9479
334.37	322.6685
334.37	322.6685
338.28	299.0788
338.28	299.0788
338.32	299.0887
338.32	299.0887
338.32	299.0887
340.48	306.9219
340.55	306.9422
344.28	296.2158
351.06	270.2112
351.93	270.4369
356.01	250.1453
364.49	267.9964
366.42	265.6414
383.85	267.9568
388.16	283.4398
388.63	280.6674
391.69	332.6779
400.66	273.8695
401.81	290.7246
402.40	284.0376
404.85	284.8282
410.95	272.1455
414.70	269.5797
423.72	236.4893
427.09	263.0453
427.87	233.3002
433.94	223.4253
453.88	232.0496
463.37	225.5389
468.07	228.8104
473.00	222.0140
476.78	229.8894
477.60	234.1729
487.02	178.4103
492.35	213.6652
497.08	189.1681
511.00	195.2824
514.00	207.6025
527.90	213.6724
529.87	0.0000
531.02	177.5381
537.26	185.8522
546.56	0.0000
563.25	192.3409
569.33	205.2255
569.50	205.2482
569.70	205.2709
583.19	205.9062
600.60	201.6000
602.73	210.2734
604.72	209.0203
609.32	185.4760
609.32	185.4760
610.33	185.5861
614.28	228.3740
618.01	181.8896
621.93	202.3636
621.93	202.3636
633.25	189.9437
635.95	164.5087
636.99	164.6092
645.85	180.2369
657.76	147.3358
661.66	237.8049
661.66	237.8049
664.57	0.0000
666.33	162.0641
666.50	171.4319
677.62	168.4068

685.70	142.6906
695.00	193.7402
696.49	172.9844
696.51	172.9889
697.00	175.8855
702.65	208.8360
706.68	190.1674
711.68	180.1284
720.70	171.6720
721.93	0.0000
722.78	173.4653
722.91	173.4785
723.31	165.4806
724.19	178.4148
727.33	151.3348
733.00	153.6199
735.93	166.8770
739.50	157.4596
747.24	166.8586
752.31	175.1062
753.82	159.5776
756.73	182.3581
763.94	198.4221
765.81	193.6802
766.42	205.2307
777.92	179.3075
778.90	159.8210
783.70	167.2278
785.37	164.0493
795.86	149.8828
801.95	169.2476
810.29	156.9445
810.76	138.8659
815.77	137.1721
818.51	135.3282
832.01	163.6100
834.85	186.2079
836.80	0.0000
846.77	129.9238
856.80	181.5491
860.56	128.6682
871.09	115.8227
873.19	112.8240
875.33	0.0000
879.36	131.8121
880.51	127.7236
883.24	122.6756
884.68	136.2771
889.28	122.9983
898.04	121.3695
911.20	152.5615
911.20	152.5615
911.20	152.5615
926.50	137.6584
937.49	132.9651
944.13	139.7280
946.00	125.9569
949.00	126.1125
962.29	152.2225
964.08	131.1828
966.15	131.2930
968.97	129.2856
968.97	129.2856
968.97	129.2856
983.53	122.4489
996.26	178.6022
1001.03	124.3813
1004.73	187.9318
1037.84	149.3767
1038.76	0.0000
1048.07	157.3551
1050.41	127.8477
1050.41	127.8477
1063.66	126.6146
1085.87	143.5994
1099.45	170.7039
1112.07	136.4180
1115.54	126.8316

1120.29	135.8663
1120.29	135.8663
1120.55	135.8779
1121.30	161.3032
1131.51	0.0000
1173.23	141.2652
1177.93	146.3304
1189.05	164.3858
1204.77	167.2009
1221.41	187.7747
1231.02	179.2003
1235.36	186.2235
1238.28	155.8982
1260.41	0.0000
1271.85	104.9017
1274.44	122.9850
1274.54	134.9835
1291.59	109.5677
1298.22	0.0000
1312.11	81.9360
1332.49	87.5327
1365.19	63.7205
1368.63	0.0000
1384.29	56.6942
1408.01	46.8256
1457.56	0.0000
1460.82	48.5830
1489.16	57.4761
1505.03	72.6899
1596.21	26.2754
1620.50	50.9866
1678.03	0.0000
1690.97	32.6659
1764.49	34.2200
1764.49	34.2200
1770.23	29.1254
1771.35	30.8463
1791.20	0.0000
1836.06	24.8457

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900006

Total Uranium Activity	1.2609E+01	ug/g
Total Uranium Counting Unc.	3.0895E+00	ug/g
Total Uranium Tpu	1.5763E-06	ug/g
Total Uranium Mda	8.9202E-01	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 957711                          SAMPLE ID   : G247900006
*  ANALYST       : MXR1                             DETECTOR    : GAM25
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00          COUNT TIME   : 0 04:00:00.00
*  ANALYSIS DATE : 5-MAR-2010 23:39:39.37           SAMPLE ALQT  : 130.180 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.290E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.260E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.394E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.664E+00

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VAX/VMS Nuclide Identification Report Generated 8-MAR-2010 09:28:32.52

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900007.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 14:59:00.
Sample ID          : G247900007 Sample quantity : 1.38030E+02 GRAM
Detector name      : GAM05 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.93 0.0%
Energy tolerance   : 2.00000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	45.99*	177	630	1.22	92.96	88	10	2.46E-02	29.3	
2	0	62.70*	812	1012	1.15	126.38	121	11	1.13E-01	8.4	
3	3	74.34*	690	904	1.45	149.65	145	20	9.58E-02	8.9	7.43E-01
4	3	76.62*	973	638	1.10	154.23	145	20	1.35E-01	5.6	
5	7	86.76*	474	772	1.85	174.50	164	30	6.58E-02	12.3	3.13E+00
6	7	89.53	228	338	0.89	180.04	164	30	3.17E-02	14.0	
7	7	92.18*	1200	506	1.36	185.34	164	30	1.67E-01	4.6	
8	0	128.78	145	576	1.36	258.52	254	12	2.01E-02	34.1	
9	0	185.75*	340	631	1.47	372.44	364	16	4.73E-02	17.7	
10	0	209.38	191	398	1.74	419.69	414	15	2.65E-02	23.9	
11	3	238.10*	1241	178	1.25	477.13	470	18	1.72E-01	3.4	1.67E+00
12	3	241.04*	320	231	1.96	483.01	470	18	4.45E-02	12.6	
13	0	269.81	83	212	1.36	540.53	536	10	1.16E-02	34.5	
14	0	294.62*	387	222	1.45	590.15	583	11	5.38E-02	9.1	
15	0	299.68	74	215	1.57	600.25	596	10	1.02E-02	39.4	
16	0	337.51	241	181	1.45	675.89	671	10	3.35E-02	12.2	
17	0	351.10*	654	198	1.45	703.06	695	15	9.08E-02	6.2	
18	0	463.57	78	207	1.77	927.92	918	19	1.08E-02	45.9	
19	0	510.23*	99	143	2.66	1021.21	1014	14	1.37E-02	31.4	
20	0	582.31*	381	116	1.50	1165.31	1157	16	5.29E-02	8.3	
21	0	608.47*	481	115	1.53	1217.58	1212	13	6.68E-02	6.6	
22	0	660.54	358	144	1.60	1321.67	1315	16	4.97E-02	9.1	
23	0	726.24	83	75	1.70	1452.99	1446	12	1.15E-02	23.6	
24	0	785.87	40	92	5.36	1572.18	1560	21	5.56E-03	62.6	
25	0	794.29	41	46	2.29	1589.00	1584	10	5.76E-03	35.1	
26	0	910.19*	226	83	1.83	1820.64	1813	14	3.14E-02	11.0	
27	0	967.72*	113	52	1.20	1935.60	1931	10	1.56E-02	15.6	
28	0	1119.10	112	61	1.90	2238.10	2229	15	1.56E-02	17.8	
29	0	1237.33	39	76	0.64	2474.31	2468	17	5.46E-03	54.5	
30	0	1459.14*	970	14	1.90	2917.43	2908	18	1.35E-01	3.4	
31	0	1762.85*	65	11	1.97	3524.04	3516	13	9.04E-03	16.5	
32	0	1845.46	14	2	1.48	3689.00	3685	8	1.93E-03	32.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 8-MAR-2010 09:28:35

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900007.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 14:59:00
 Sample ID : G247900007 Sample quantity : 138.03 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA5 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.93 0.0%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 2.00 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	*	2.463E+01	2.253E+00	5.478E-01	3.407E-02	44.964
CD-109	+	88.03	*	4.537E+00	1.168E+00	1.073E+00	8.174E-02	4.227
SN-126	+	64.28		2.854E+00	6.434E-01	4.418E-01	6.584E-02	6.460
	+	86.94		1.841E+00	8.826E-01	4.342E-01	1.787E-01	4.240
	+	87.57	*	4.428E-01	1.140E-01	1.046E-01	7.968E-03	4.232
CS-135	+	268.22	*	3.253E-01	2.271E-01	2.775E-01	2.969E-02	1.172
BA-137M	+	661.66	*	5.366E-01	1.040E-01	6.547E-02	4.305E-03	8.196
CS-137	+	661.66	*	5.669E-01	1.099E-01	6.916E-02	4.563E-03	8.196
TL-208		277.37		2.450E-01	4.060E-01	6.946E-01	9.039E-02	0.353
	+	583.19	*	5.390E-01	9.742E-02	6.708E-02	4.926E-03	8.036
		860.56		6.002E-01	3.578E-01	6.548E-01	6.644E-02	0.917
PB-210	+	46.54	*	1.493E+00	8.832E-01	8.819E-01	6.802E-02	1.693
BI-211	+	72.87		1.896E+01	3.686E+00	3.586E+00	2.823E-01	5.289
	+	351.06	*	3.906E+00	5.743E-01	3.488E-01	2.764E-02	11.198
BI-212	+	727.33	*	1.826E+00	8.876E-01	9.957E-01	1.167E-01	1.834
	+	785.37		5.742E+00	7.201E+00	6.041E+00	5.066E-01	0.951
		1620.50		-4.889E-02	2.473E+00	4.084E+00	2.397E-01	-0.012
PB-212	+	74.82		2.269E+00	4.932E-01	4.257E-01	5.315E-02	5.331
	+	77.11		1.930E+00	2.639E-01	2.570E-01	2.001E-02	7.507
	+	238.63	*	1.620E+00	2.070E-01	9.944E-02	1.076E-02	16.289
	+	300.09		1.511E+00	1.202E+00	1.354E+00	1.454E-01	1.116
BI-214	+	609.32	*	1.322E+00	2.065E-01	1.285E-01	1.084E-02	10.293
	+	1120.29		1.621E+00	5.984E-01	4.986E-01	4.790E-02	3.251
	+	1764.49		1.343E+00	4.503E-01	3.097E-01	1.791E-02	4.335
PB-214	+	74.82		4.022E+00	8.442E-01	7.545E-01	8.408E-02	5.331
	+	77.11		3.402E+00	5.432E-01	4.532E-01	5.139E-02	7.507
	+	242.00		2.536E+00	7.015E-01	5.698E-01	6.474E-02	4.451
	+	295.22		1.408E+00	3.010E-01	2.412E-01	2.674E-02	5.838
	+	351.93	*	1.417E+00	2.226E-01	1.312E-01	1.264E-02	10.801
RA-224	+	240.99	*	4.484E+00	1.213E+00	1.066E+00	1.043E-01	4.207
RA-226	+	609.32	*	1.322E+00	2.065E-01	1.285E-01	1.084E-02	10.293
	+	1120.29		1.621E+00	5.984E-01	4.986E-01	4.790E-02	3.251
	+	1764.49		1.343E+00	4.503E-01	3.097E-01	1.791E-02	4.335
AC-228	+	338.32		1.599E+00	7.715E-01	4.538E-01	1.886E-01	3.524

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	911.20	*	1.578E+00	4.013E-01	2.381E-01	3.023E-02	6.625
	+	968.97		1.354E+00	5.385E-01	4.508E-01	1.110E-01	3.004
	+	338.32		1.599E+00	7.715E-01	4.538E-01	1.886E-01	3.524
	+	911.20	*	1.578E+00	4.013E-01	2.381E-01	3.023E-02	6.625
TH-228	+	968.97		1.354E+00	5.385E-01	4.508E-01	1.110E-01	3.004
	+	74.82		2.269E+00	4.418E-01	4.257E-01	3.370E-02	5.331
	+	77.11		1.930E+00	2.639E-01	2.570E-01	2.001E-02	7.507
	+	238.63	*	1.620E+00	2.070E-01	9.944E-02	1.076E-02	16.289
TH-229	+	300.09		1.511E+00	1.508E+00	1.354E+00	8.294E-01	1.116
	+	85.43		1.115E+00	2.868E-01	2.618E-01	2.001E-02	4.258
	+	88.47		3.309E-01	9.640E-02	1.617E-01	1.244E-02	2.046
	+	193.51	*	3.197E-01	5.998E-01	9.801E-01	9.789E-02	0.326
TH-232	+	210.85		3.535E+00	1.728E+00	1.495E+00	1.489E-01	2.365
	+	338.32		1.599E+00	4.112E-01	4.538E-01	3.558E-02	3.524
	+	911.20	*	1.578E+00	4.013E-01	2.381E-01	3.023E-02	6.625
	+	968.97		1.354E+00	5.385E-01	4.508E-01	1.110E-01	3.004
TH-234	+	63.29	*	7.404E+00	1.836E+00	1.155E+00	2.096E-01	6.411
	+	92.59		9.939E+00	2.367E+00	9.294E-01	2.045E-01	10.694
	+	89.96		2.289E+00	8.502E-01	1.124E+00	2.740E-01	2.037
	+	93.35		7.507E+00	1.859E+00	7.037E-01	1.623E-01	10.668
U-235	+	143.76	*	2.443E-01	2.364E-01	3.854E-01	7.351E-02	0.634
	+	163.33		1.034E-01	4.815E-01	7.816E-01	1.467E-01	0.132
	+	185.72		2.857E-01	1.048E-01	7.121E-02	7.107E-03	4.013
	+	205.31		-6.102E-03	6.196E-01	8.623E-01	1.624E-01	-0.007
NP-237	+	86.48	*	1.321E+00	4.386E-01	3.112E-01	6.944E-02	4.246
	+	95.86		6.996E-01	1.014E+00	1.478E+00	3.565E-01	0.473
	+	63.29	*	7.404E+00	1.836E+00	1.155E+00	2.096E-01	6.411
	+	92.59		9.939E+00	1.233E+00	9.294E-01	7.810E-02	10.694
ANH-511	+	511.00	*	1.055E-01	6.668E-02	5.363E-02	3.432E-03	1.968

---- 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	*	1.966E-01	3.753E-01	6.328E-01	4.531E-02	0.311
NA-22		1274.54	*	-2.955E-02	4.998E-02	7.571E-02	4.410E-03	-0.390
NA-24		1368.63	*	-4.107E-01	4.998E-02	Half-Life too short		
SC-46		889.28	*	-3.887E-02	4.828E-02	7.416E-02	7.449E-03	-0.524
V-48	+	1120.55		2.765E-01	1.004E-01	1.446E-01	9.948E-03	1.912
		944.13		1.064E-01	1.045E+00	1.739E+00	1.682E-01	0.061
		983.53	*	-7.793E-04	7.763E-02	1.275E-01	1.168E-02	-0.006
		1312.11		1.152E-03	8.851E-02	1.432E-01	8.304E-03	0.008
CR-51		320.08	*	1.035E-01	3.998E-01	6.730E-01	5.947E-02	0.154
MN-54		834.85	*	2.852E-02	4.744E-02	8.188E-02	7.501E-03	0.348
CO-56		846.77	*	-4.968E-03	4.580E-02	7.528E-02	7.040E-03	-0.066
		1037.84		1.748E-01	3.685E-01	6.290E-01	5.542E-02	0.278
	+	1238.28		1.600E-01	1.746E-01	1.830E-01	1.131E-02	0.874
		1771.35		5.520E-02	2.109E-01	3.557E-01	2.054E-02	0.155
CO-57		122.06	*	-2.319E-03	2.713E-02	4.398E-02	6.240E-03	-0.053

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.47		1.132E-01	2.296E-01	3.778E-01	5.059E-02	0.300
CO-58		810.76	*	-1.129E-02	4.549E-02	7.409E-02	6.521E-03	-0.152
FE-59		1099.45	*	-3.688E-04	1.099E-01	1.794E-01	1.452E-02	-0.002
		1291.59		7.107E-02	1.358E-01	2.323E-01	1.725E-02	0.306
CO-60		1173.23		-2.248E-02	5.347E-02	8.368E-02	4.854E-03	-0.269
		1332.49	*	3.796E-02	4.188E-02	7.503E-02	4.342E-03	0.506
ZN-65		1115.54	*	2.019E-01	1.226E-01	2.036E-01	1.422E-02	0.992
SE-75		121.12		5.820E-02	1.403E-01	2.311E-01	3.611E-02	0.252
		136.00		1.040E-02	4.576E-02	7.221E-02	9.417E-03	0.144
		264.66	*	3.383E-02	5.430E-02	8.212E-02	7.841E-03	0.412
		279.54		3.036E-03	1.166E-01	1.951E-01	1.869E-02	0.016
		400.66		2.715E-03	2.903E-01	4.781E-01	4.359E-02	0.006
SR-85		514.00	*	4.627E-02	4.878E-02	7.434E-02	4.765E-03	0.622
Y-88		898.04		-4.368E-02	5.072E-02	7.741E-02	7.914E-03	-0.564
		1836.06	*	1.101E-02	3.015E-02	5.374E-02	3.075E-03	0.205
Y-91		1204.77	*	-1.141E+01	2.778E+01	4.359E+01	2.533E+00	-0.262
NB-94		702.65	*	6.356E-03	3.880E-02	6.572E-02	4.702E-03	0.097
		871.09		4.638E-03	3.905E-02	6.532E-02	6.366E-03	0.071
NB-95		765.81	*	1.203E-01	5.689E-02	1.052E-01	8.506E-03	1.144
NB-95M		235.69	*	1.340E+00	2.394E-01	3.522E-01	3.859E-02	3.805
ZR-95		724.19		1.774E-01	1.341E-01	2.150E-01	1.784E-02	0.825
		756.73	*	-2.787E-02	8.772E-02	1.430E-01	1.275E-02	-0.195
MO-99		140.51		-2.963E+01	3.315E+01	5.055E+01	1.287E+01	-0.586
		181.07		-1.208E+01	2.907E+01	3.961E+01	7.702E+00	-0.305
		366.42		-4.545E+01	1.435E+02	2.329E+02	1.598E+01	-0.195
		739.50	*	6.282E+00	1.804E+01	3.088E+01	4.716E+00	0.203
		777.92		2.316E+01	6.098E+01	9.125E+01	7.550E+00	0.254
TC-99M		140.51	*	-6.400E+11	6.098E+01	Half-Life too short		
RU-103		497.08	*	-3.456E-02	4.631E-02	7.115E-02	9.031E-03	-0.486
	+	610.33		1.389E+01	2.809E+00	3.123E+00	4.801E-01	4.449
RH-106		621.93	*	-8.105E-03	3.641E-01	5.854E-01	7.047E-02	-0.014
		1050.41		1.742E+00	2.768E+00	4.803E+00	3.911E-01	0.363
RU-106		621.93	*	-8.105E-03	3.641E-01	5.854E-01	3.859E-02	-0.014
		1050.41		1.742E+00	2.768E+00	4.803E+00	3.911E-01	0.363
AG-108M		433.94	*	-3.363E-02	3.289E-02	5.023E-02	3.243E-03	-0.669
		614.28		2.640E-02	4.544E-02	6.703E-02	4.663E-03	0.394
		722.91		6.023E-04	5.086E-02	7.345E-02	5.706E-03	0.008
AG-110M		657.76	*	2.256E-01	6.114E-02	1.067E-01	7.373E-03	2.115
		677.62		1.890E-02	3.418E-01	5.760E-01	4.096E-02	0.033
		706.68		-6.636E-02	2.441E-01	4.008E-01	3.009E-02	-0.166
		763.94		1.957E-01	2.167E-01	3.737E-01	3.106E-02	0.524
		884.68		-1.016E-02	5.938E-02	9.682E-02	9.884E-03	-0.105
		937.49		-1.223E-01	1.349E-01	2.040E-01	2.046E-02	-0.600
		1384.29		8.631E-02	1.688E-01	2.991E-01	1.844E-02	0.289
		1505.03		1.532E-01	3.074E-01	5.441E-01	3.198E-02	0.282
SN-113		391.69	*	-1.654E-02	5.209E-02	8.430E-02	5.229E-03	-0.196
CD-115		260.90		-1.528E+02	2.039E+02	3.293E+02	3.148E+01	-0.464
		492.35		1.418E+01	5.982E+01	9.907E+01	6.275E+00	0.143
		527.90	*	2.094E+00	1.755E+01	2.876E+01	1.855E+00	0.073

----- Non-Identified Nuclides -----

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SN-117M		156.02		-3.721E+00	2.705E+00	4.083E+00	4.502E-01	-0.911
		158.56	*	4.693E-02	6.237E-02	1.032E-01	1.110E-02	0.455
TE-123M		159.00	*	1.839E-02	3.137E-02	5.164E-02	5.549E-03	0.356
SB-124		602.73		1.476E-02	5.297E-02	7.575E-02	4.989E-03	0.195
		645.85		7.876E-02	6.167E-01	1.001E+00	7.231E-02	0.079
		722.78		2.904E-02	5.053E-01	7.332E-01	5.628E-02	0.040
		1690.97	*	-3.121E-02	9.125E-02	1.419E-01	9.021E-03	-0.220
SB-125		427.87	*	1.004E-01	1.035E-01	1.792E-01	1.122E-02	0.560
	+	463.37		7.315E-01	6.734E-01	5.987E-01	4.243E-02	1.222
		600.60		-5.304E-02	2.176E-01	3.349E-01	2.478E-02	-0.158
		635.95		2.870E-01	3.109E-01	5.355E-01	4.007E-02	0.536
TE-125M		109.28	*	-2.114E-01	1.037E+01	1.691E+01	2.195E+00	-0.012
I-126		388.63		8.219E-02	2.037E-01	3.429E-01	2.041E-02	0.240
		666.33	*	2.264E-01	3.212E-01	4.770E-01	3.168E-02	0.475
		753.82		2.432E+00	2.316E+00	4.130E+00	3.266E-01	0.589
SB-126		414.70		1.578E-02	8.993E-02	1.493E-01	8.895E-03	0.106
		666.50		7.906E-02	1.106E-01	1.644E-01	1.092E-02	0.481
		695.00		-3.392E-02	1.034E-01	1.564E-01	1.102E-02	-0.217
		697.00		-2.431E-01	3.624E-01	5.351E-01	3.785E-02	-0.454
		720.70	*	1.430E-01	1.860E-01	2.908E-01	2.157E-02	0.492
		856.80		2.059E-01	5.907E-01	1.005E+00	9.561E-02	0.205
SB-127		252.40		-4.380E+00	5.891E+00	9.075E+00	3.797E+00	-0.483
		473.00		-1.849E-01	2.234E+00	3.629E+00	4.212E-01	-0.051
		685.70	*	7.743E-01	1.874E+00	3.228E+00	3.380E-01	0.240
		783.70		4.612E-01	5.254E+00	8.182E+00	1.019E+00	0.056
I-131		80.19		4.318E+00	5.793E+00	6.337E+00	4.941E-01	0.681
		284.31		2.420E-01	1.761E+00	2.958E+00	2.843E-01	0.082
		364.49	*	1.321E-02	1.406E-01	2.335E-01	1.755E-02	0.057
		636.99		1.374E+00	1.963E+00	3.330E+00	2.409E-01	0.413
TE-132		49.72		-9.642E+00	6.099E+00	8.232E+00	8.372E-01	-1.171
		111.76		3.666E+01	4.420E+01	7.355E+01	1.034E+01	0.498
		116.30		-4.595E+01	3.891E+01	5.974E+01	8.882E+00	-0.769
		228.16	*	-2.854E-01	9.741E-01	1.619E+00	2.709E-01	-0.176
BA-133		81.00		7.493E-02	1.111E-01	1.205E-01	1.812E-02	0.622
		276.40		2.840E-01	3.961E-01	6.452E-01	9.390E-02	0.440
		302.85		-1.641E-02	1.724E-01	2.478E-01	3.268E-02	-0.066
		356.01	*	3.382E-02	5.133E-02	7.722E-02	9.331E-03	0.438
		383.85		1.810E-01	3.357E-01	5.687E-01	6.178E-02	0.318
I-133		529.87	*	7.429E-03	3.357E-01	Half-Life	too short	
		875.33		-1.311E-01	3.357E-01	Half-Life	too short	
		1298.22		-8.131E-01	3.357E-01	Half-Life	too short	
CS-134		563.25		4.738E-02	4.296E-01	7.010E-01	4.656E-02	0.068
		569.33		1.512E-01	2.352E-01	3.972E-01	2.660E-02	0.381
		604.72		6.086E-02	4.631E-02	7.217E-02	4.773E-03	0.843
	+	795.86	*	8.715E-02	6.163E-02	9.302E-02	8.010E-03	0.937
		801.95		-2.151E-01	4.623E-01	7.114E-01	6.184E-02	-0.302
		1365.19		-1.651E-01	1.216E+00	1.918E+00	1.226E-01	-0.086
I-135		546.56		2.114E+10	1.216E+00	Half-Life	too short	
		836.80		3.574E+11	1.216E+00	Half-Life	too short	

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CS-136		1038.76		1.555E+11	1.216E+00	Half-Life	too short	
		1131.51		-1.178E+10	1.216E+00	Half-Life	too short	
		1260.41	*	1.618E+09	1.216E+00	Half-Life	too short	
	+	1457.56		1.694E+13	1.216E+00	Half-Life	too short	
		1678.03		1.225E+11	1.216E+00	Half-Life	too short	
		1791.20		2.710E+10	1.216E+00	Half-Life	too short	
		153.25		3.023E-01	1.012E+00	1.651E+00	2.083E-01	0.183
		176.60		-2.353E-01	5.711E-01	9.007E-01	9.673E-02	-0.261
		273.65		-6.287E-01	6.609E-01	8.973E-01	9.018E-02	-0.701
		340.55		3.846E-01	1.881E-01	3.043E-01	2.475E-02	1.264
CE-139		818.51		-5.594E-02	8.646E-02	1.353E-01	1.205E-02	-0.414
		1048.07	*	9.340E-02	1.156E-01	2.044E-01	1.750E-02	0.457
	+	1235.36		1.084E+00	1.187E+00	1.310E+00	1.297E-01	0.828
		165.86	*	-7.276E-03	3.317E-02	5.293E-02	5.254E-03	-0.137
BA-140		162.66		-1.544E-02	9.413E-01	1.516E+00	1.635E-01	-0.010
		304.85		3.029E+00	1.817E+00	2.610E+00	7.650E-01	1.161
		423.72		1.290E+00	2.376E+00	3.965E+00	1.281E+00	0.325
		537.26	*	-7.890E-02	3.393E-01	5.402E-01	1.806E-01	-0.146
LA-140		328.76		4.249E-01	3.717E-01	6.450E-01	5.579E-02	0.659
		487.02		2.194E-01	1.701E-01	2.990E-01	2.100E-02	0.734
		815.77		-4.064E-02	3.855E-01	6.350E-01	6.252E-02	-0.064
		1596.21	*	-8.524E-02	9.058E-02	1.258E-01	7.395E-03	-0.677
CE-141		145.44	*	-4.756E-02	7.394E-02	1.165E-01	1.424E-02	-0.408
CE-143		57.36		4.767E-04	7.394E-02	Half-Life	too short	
	+	293.27	*	2.076E-03	7.394E-02	Half-Life	too short	
		664.57		8.206E-04	7.394E-02	Half-Life	too short	
		721.93		-2.550E-05	7.394E-02	Half-Life	too short	
CE-144		80.12		2.157E+00	2.875E+00	3.146E+00	2.432E-01	0.686
		133.52	*	-5.874E-02	2.507E-01	3.510E-01	6.417E-02	-0.167
PM-144		476.78		3.560E-02	7.500E-02	1.261E-01	9.157E-03	0.282
		618.01		-7.949E-03	3.682E-02	5.830E-02	4.025E-03	-0.136
PR-144		696.49	*	-1.968E-02	4.352E-02	6.528E-02	4.616E-03	-0.301
		696.51	*	-1.483E+00	3.258E+00	4.886E+00	3.453E-01	-0.303
PM-146		1489.16		-8.932E+00	1.190E+01	1.720E+01	1.011E+00	-0.519
		453.88	*	-3.758E-02	4.983E-02	7.212E-02	6.284E-03	-0.521
		633.25		-1.125E+00	1.678E+00	2.460E+00	9.295E-01	-0.457
		735.93		-2.036E-01	1.797E-01	2.590E-01	7.186E-02	-0.786
ND-147		747.24		-7.107E-02	1.153E-01	1.829E-01	2.582E-02	-0.389
	+	91.11		4.181E+00	5.400E-01	7.115E-01	6.332E-02	5.877
		319.41		-1.594E-01	3.815E+00	6.327E+00	5.310E-01	-0.025
		531.02	*	1.606E-02	6.818E-01	1.109E+00	1.533E-01	0.014
PM-149		285.90	*	9.607E+01	1.386E+02	2.372E+02	3.759E+01	0.405
EU-152		121.78		3.161E-03	7.706E-02	1.255E-01	1.875E-02	0.025
		244.70		-1.454E-01	3.865E-01	5.517E-01	5.378E-02	-0.264
		344.28	*	-1.084E-01	1.351E-01	1.703E-01	1.399E-02	-0.637
		778.90		-1.180E-02	3.415E-01	4.882E-01	4.046E-02	-0.024
		964.08		8.335E-01	3.852E-01	6.569E-01	6.189E-02	1.269
		1085.87		-2.151E-01	4.104E-01	6.332E-01	4.767E-02	-0.340
		1112.07		1.050E-01	3.763E-01	5.474E-01	3.855E-02	0.192

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153		1408.01		1.135E-01	2.181E-01	3.842E-01	2.245E-02	0.295
		69.67		6.679E-02	1.303E+00	1.891E+00	1.504E-01	0.035
		97.43	*	1.629E-01	9.240E-02	1.410E-01	1.307E-02	1.155
EU-154		103.18		7.915E-02	1.116E-01	1.862E-01	1.925E-02	0.425
		123.07		-3.348E-02	6.139E-02	8.971E-02	1.429E-02	-0.373
		723.31		1.004E-01	2.350E-01	3.528E-01	2.981E-02	0.285
		873.19		1.485E-01	3.223E-01	5.535E-01	7.064E-02	0.268
		996.26		-2.531E-01	4.646E-01	7.257E-01	1.281E-01	-0.349
EU-155		1004.73		-5.902E-01	2.781E-01	3.538E-01	4.179E-02	-1.668
		1274.44	*	-8.367E-02	1.417E-01	2.144E-01	2.022E-02	-0.390
	+	86.55		5.371E-01	1.384E-01	1.677E-01	1.296E-02	3.203
		105.31	*	7.186E-02	1.095E-01	1.796E-01	1.945E-02	0.400
	+	86.79		1.438E+00	3.702E-01	4.470E-01	3.409E-02	3.218
TB-160		197.04		-5.971E-01	6.658E-01	1.004E+00	1.003E-01	-0.594
		215.65		-2.565E-01	8.935E-01	1.292E+00	1.285E-01	-0.199
	+	298.57		2.149E-01	1.704E-01	2.288E-01	2.036E-02	0.939
		879.36	*	-2.987E-02	1.691E-01	2.757E-01	2.724E-02	-0.108
		962.29		9.747E-01	7.132E-01	1.147E+00	1.083E-01	0.850
	+	966.15		1.033E+00	3.364E-01	6.026E-01	5.661E-02	1.714
		1177.93		7.836E-02	4.243E-01	7.016E-01	4.071E-02	0.112
		1271.85		-4.107E-01	7.665E-01	1.164E+00	6.763E-02	-0.353
		80.57		1.998E-01	3.137E-01	3.408E-01	2.631E-02	0.586
	+	184.41		2.270E-01	8.328E-02	8.335E-02	8.317E-03	2.723
HO-166M		280.46		-8.275E-02	9.150E-02	1.460E-01	1.351E-02	-0.567
		410.95		6.083E-02	2.819E-01	4.690E-01	2.784E-02	0.130
		711.68	*	1.037E-02	6.622E-02	1.121E-01	8.170E-03	0.093
		752.31		1.982E-01	3.278E-01	5.699E-01	4.494E-02	0.348
		810.29		-1.673E-02	6.961E-02	1.135E-01	9.958E-03	-0.147
		67.75		-1.741E-02	8.026E-02	1.155E-01	9.246E-03	-0.151
		100.11		-1.013E-01	1.840E-01	2.845E-01	2.777E-02	-0.356
		152.43		5.300E-01	3.952E-01	6.619E-01	7.550E-02	0.801
		222.11		1.911E-01	3.798E-01	6.512E-01	6.459E-02	0.293
		1121.30		6.218E-01	2.129E-01	3.791E-01	2.602E-02	1.640
TA-182		1189.05		4.914E-03	3.273E-01	5.329E-01	3.094E-02	0.009
		1221.41	*	-8.479E-02	2.577E-01	4.074E-01	2.369E-02	-0.208
		1231.02		-4.260E-01	7.073E-01	9.101E-01	5.292E-02	-0.468
	+	295.96		1.051E+00	2.143E-01	3.049E-01	2.749E-02	3.446
		308.46		-1.442E-01	1.040E-01	1.593E-01	1.388E-02	-0.905
		316.51	*	-2.404E-02	3.795E-02	6.096E-02	5.174E-03	-0.394
		468.07		-4.559E-03	8.949E-02	1.243E-01	8.796E-03	-0.037
		70.83		4.117E-01	1.051E+00	1.540E+00	2.418E-01	0.267
	+	72.87		4.793E+00	1.119E+00	1.198E+00	1.813E-01	4.000
		279.20	*	1.545E-02	4.163E-02	7.067E-02	6.703E-03	0.219
BI-207	+	72.81		1.091E+00	2.120E-01	2.714E-01	2.137E-02	4.021
	+	74.97		6.540E-01	1.271E-01	2.061E-01	1.613E-02	3.173
		569.70		2.097E-02	3.667E-02	6.164E-02	4.034E-03	0.340
PB-211		1063.66	*	-2.925E-02	6.301E-02	9.869E-02	7.815E-03	-0.296
		1770.23		2.728E-01	4.046E-01	7.266E-01	4.196E-02	0.375
		404.85	*	-9.901E-01	9.864E-01	1.333E+00	6.394E-01	-0.743

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	427.09		8.129E-01	1.807E+00	2.979E+00	1.366E+00	0.273
		832.01		4.774E-01	1.249E+00	2.090E+00	1.086E+00	0.228
		271.23		4.819E-01	3.367E-01	4.469E-01	4.885E-02	1.078
		401.81	*	7.562E-02	4.679E-01	7.767E-01	1.046E-01	0.097
RA-223		81.07		1.779E-01	2.511E-01	2.739E-01	2.113E-02	0.649
		83.79		2.963E-01	1.189E-01	1.831E-01	1.404E-02	1.618
		94.87		9.372E-01	5.225E-01	7.914E-01	6.970E-02	1.184
		144.24		7.951E-01	7.762E-01	1.279E+00	1.657E-01	0.622
		154.21		1.721E-01	4.320E-01	7.069E-01	8.388E-02	0.244
		269.46	+	3.744E-01	2.609E-01	3.490E-01	3.349E-02	1.073
		323.87	*	-6.819E-01	7.617E-01	1.197E+00	2.054E-01	-0.570
		338.28	+	6.346E+00	1.718E+00	2.503E+00	2.885E-01	2.536
AC-227		79.69		-1.192E+00	1.151E+00	1.572E+00	2.642E-01	-0.758
		235.96		2.448E+00	3.730E-01	4.852E-01	5.515E-02	5.045
		256.23	*	2.672E-01	2.718E-01	4.710E-01	6.022E-02	0.567
		299.98	+	1.662E+00	1.327E+00	1.746E+00	2.247E-01	0.952
		304.50		2.432E+00	1.907E+00	2.947E+00	4.894E-01	0.825
		334.37		1.845E+00	2.179E+00	3.296E+00	5.021E-01	0.560
		79.80		1.452E+00	1.901E+00	2.059E+00	4.416E-01	0.705
		235.96		2.448E+00	3.634E-01	4.852E-01	5.258E-02	5.045
		256.23	*	2.672E-01	2.723E-01	4.710E-01	6.716E-02	0.567
		299.98	+	1.662E+00	1.327E+00	1.746E+00	2.247E-01	0.952
		304.50		2.432E+00	1.907E+00	2.947E+00	4.894E-01	0.825
		334.37		1.845E+00	2.179E+00	3.296E+00	5.021E-01	0.560
PA-231	+	283.69	*	-7.459E-01	1.575E+00	2.566E+00	3.832E-01	-0.291
		301.36		1.068E+00	8.517E-01	1.108E+00	1.364E-01	0.964
TH-231		81.07		1.779E-01	2.511E-01	2.739E-01	2.113E-02	0.649
		83.79		2.963E-01	1.189E-01	1.831E-01	1.404E-02	1.618
		94.87		9.372E-01	5.225E-01	7.914E-01	6.970E-02	1.184
		144.24		7.951E-01	7.762E-01	1.279E+00	1.657E-01	0.622
		154.21		1.721E-01	4.320E-01	7.069E-01	8.388E-02	0.244
		269.46	+	3.744E-01	2.609E-01	3.490E-01	3.349E-02	1.073
		323.87	*	-6.819E-01	7.617E-01	1.197E+00	2.054E-01	-0.570
		338.28	+	6.346E+00	1.718E+00	2.503E+00	2.885E-01	2.536
PA-233	+	300.13		7.522E-01	6.033E-01	7.897E-01	1.182E-01	0.952
		311.90	*	3.471E-02	6.710E-02	1.145E-01	1.011E-02	0.303
PA-234		340.48		1.703E+00	8.585E-01	1.253E+00	2.979E-01	1.359
		94.67		6.510E-01	2.079E-01	3.082E-01	3.855E-02	2.112
		98.44		2.107E-01	1.526E-01	1.527E-01	8.539E-02	1.380
		111.00		1.775E-01	1.959E-01	3.262E-01	4.758E-02	0.544
		131.20		8.521E-02	1.307E-01	1.908E-01	2.561E-02	0.447
		569.50		2.046E-01	3.237E-01	5.462E-01	3.574E-02	0.375
		733.00		2.887E-01	4.587E-01	7.450E-01	1.626E-01	0.388
		880.51		5.862E-03	3.453E-01	5.723E-01	5.666E-02	0.010
		883.24		3.226E-01	3.974E-01	5.942E-01	4.005E-01	0.543
		926.50		-1.924E-01	2.228E-01	3.316E-01	8.534E-02	-0.580
		946.00	*	-2.927E-02	3.347E-01	5.472E-01	1.054E-01	-0.053
		949.00		-1.166E-01	5.038E-01	8.125E-01	7.811E-02	-0.143
PA-234M		766.42		2.985E+01	2.104E+01	2.732E+01	1.384E+01	1.092

---- 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	*		1.118E+01	6.041E+00	1.108E+01	1.132E+00	1.008
	99.53			1.396E-01	1.722E-01	2.682E-01	2.590E-02	0.521
	103.37			1.372E-01	1.020E-01	1.699E-01	1.763E-02	0.807
	106.12			7.669E-04	8.800E-02	1.417E-01	1.545E-02	0.005
	117.23	*		-3.796E-01	4.267E-01	6.679E-01	8.783E-02	-0.568
	228.18			-6.778E-02	2.318E-01	3.856E-01	3.811E-02	-0.176
AM-241	277.60			1.291E-01	1.860E-01	3.196E-01	2.975E-02	0.404
	59.54	*		6.666E-02	8.018E-02	1.199E-01	1.073E-02	0.556
CM-247	278.00			5.210E-01	7.910E-01	1.358E+00	1.263E-01	0.384
	287.50			1.553E-01	1.570E+00	2.293E+00	2.093E-01	0.068
CF-249	402.40	*		3.179E-02	4.222E-02	7.232E-02	4.255E-03	0.440
	252.80			-1.123E+00	1.054E+00	1.679E+00	1.622E-01	-0.669
	333.37			9.745E-02	2.325E-01	3.443E-01	2.752E-02	0.283
CF-251	388.16	*		3.052E-02	4.626E-02	7.888E-02	4.710E-03	0.387
	177.52	*		-3.948E-02	1.464E-01	2.239E-01	2.231E-02	-0.176
	227.38			-1.550E-01	3.746E-01	6.197E-01	6.128E-02	-0.250
	285.41			1.740E+00	2.368E+00	4.075E+00	3.736E-01	0.427

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]G247900007      *
* Acquisition date   : 6-MAR-2010 14:59:00 Detector SN#                   *
* Detector ID        : GAM05 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 2.000                        *
* 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         : G247900007 Analyst initials: MXR1                  *
* Batch Number      : 957711 Sample Quantity : 1.3803E+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	2.463E+01	2.208E+00	5.496E-01	0.000E+00
CD-109	4.537E+00	1.144E+00	1.137E+00	0.000E+00
SN-126	4.428E-01	1.117E-01	1.108E-01	0.000E+00
CS-135	3.253E-01	2.226E-01	2.878E-01	0.000E+00
BA-137M	5.366E-01	1.019E-01	6.673E-02	0.000E+00
CS-137	5.669E-01	1.077E-01	7.049E-02	0.000E+00
TL-208	5.390E-01	9.547E-02	6.854E-02	0.000E+00
PB-210	1.493E+00	8.655E-01	9.449E-01	0.000E+00
BI-211	3.906E+00	5.628E-01	3.599E-01	0.000E+00
BI-212	1.826E+00	8.699E-01	1.013E+00	0.000E+00
PB-212	1.620E+00	2.028E-01	1.034E-01	0.000E+00
BI-214	1.322E+00	2.023E-01	1.312E-01	0.000E+00
PB-214	1.417E+00	2.181E-01	1.354E-01	0.000E+00
RA-224	4.484E+00	1.189E+00	1.108E+00	0.000E+00
RA-226	1.322E+00	2.023E-01	1.312E-01	0.000E+00
AC-228	1.578E+00	3.933E-01	2.412E-01	0.000E+00
RA-228	1.578E+00	3.933E-01	2.412E-01	0.000E+00
TH-228	1.620E+00	2.028E-01	1.034E-01	0.000E+00
TH-229	3.197E-01	5.878E-01	1.023E+00	0.000E+00
TH-232	1.578E+00	3.933E-01	2.412E-01	0.000E+00
TH-234	7.404E+00	1.800E+00	1.231E+00	0.000E+00
U-235	2.443E-01	2.317E-01	4.045E-01	0.000E+00
NP-237	1.321E+00	4.299E-01	3.297E-01	0.000E+00
U-238	7.404E+00	1.800E+00	1.231E+00	0.000E+00
ANH-511	1.055E-01	6.535E-02	5.494E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.966E-01	3.678E-01	6.491E-01	0.000E+00 NOT IDENT.
NA-22	-2.955E-02	4.898E-02	7.616E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.207E+06	0.000E+00	0.000E+00	SHORT HLIF
SC-46	-3.887E-02	4.731E-02	7.514E-02	0.000E+00	FAIL ABUN
V-48	-7.793E-04	7.608E-02	1.290E-01	0.000E+00	NOT IDENT.
CR-51	1.035E-01	3.918E-01	6.958E-01	0.000E+00	NOT IDENT.
MN-54	2.852E-02	4.649E-02	8.307E-02	0.000E+00	NOT IDENT.
CO-56	-4.968E-03	4.488E-02	7.635E-02	0.000E+00	FAIL ABUN
CO-57	-2.319E-03	2.659E-02	4.630E-02	0.000E+00	NOT IDENT.
CO-58	-1.129E-02	4.458E-02	7.521E-02	0.000E+00	NOT IDENT.
FE-59	-3.688E-04	1.077E-01	1.810E-01	0.000E+00	NOT IDENT.
CO-60	3.796E-02	4.104E-02	7.541E-02	0.000E+00	NOT IDENT.
ZN-65	2.019E-01	1.202E-01	2.053E-01	0.000E+00	NOT IDENT.
SE-75	3.383E-02	5.321E-02	8.521E-02	0.000E+00	NOT IDENT.
SR-85	4.627E-02	4.781E-02	7.615E-02	0.000E+00	NOT IDENT.
Y-88	1.101E-02	2.955E-02	5.366E-02	0.000E+00	NOT IDENT.
Y-91	-1.141E+01	2.723E+01	4.390E+01	0.000E+00	NOT IDENT.
NB-94	6.356E-03	3.803E-02	6.690E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	5.575E-02	1.069E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.346E-01	3.663E-01	0.000E+00	NOT IDENT.
ZR-95	-2.787E-02	8.597E-02	1.453E-01	0.000E+00	NOT IDENT.
MO-99	6.282E+00	1.768E+01	3.141E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.126E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.456E-02	4.539E-02	7.293E-02	0.000E+00	FAIL ABUN
RH-106	-8.105E-03	3.568E-01	5.974E-01	0.000E+00	NOT IDENT.
RU-106	-8.105E-03	3.568E-01	5.974E-01	0.000E+00	NOT IDENT.
AG-108M	-3.363E-02	3.223E-02	5.162E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	5.992E-02	1.087E-01	0.000E+00	NOT IDENT.
SN-113	-1.654E-02	5.105E-02	8.681E-02	0.000E+00	NOT IDENT.
CD-115	2.094E+00	1.720E+01	2.944E+01	0.000E+00	NOT IDENT.
SN-117M	4.693E-02	6.112E-02	1.082E-01	0.000E+00	NOT IDENT.
TE-123M	1.839E-02	3.074E-02	5.410E-02	0.000E+00	NOT IDENT.
SB-124	-3.121E-02	8.942E-02	1.419E-01	0.000E+00	NOT IDENT.
SB-125	1.004E-01	1.014E-01	1.842E-01	0.000E+00	FAIL ABUN
TE-125M	-2.114E-01	1.017E+01	1.784E+01	0.000E+00	NOT IDENT.
I-126	2.264E-01	3.148E-01	4.862E-01	0.000E+00	NOT IDENT.
SB-126	1.430E-01	1.823E-01	2.959E-01	0.000E+00	NOT IDENT.
SB-127	7.743E-01	1.836E+00	3.288E+00	0.000E+00	NOT IDENT.
I-131	1.321E-02	1.378E-01	2.408E-01	0.000E+00	NOT IDENT.
TE-132	-2.854E-01	9.547E-01	1.685E+00	0.000E+00	NOT IDENT.
BA-133	3.382E-02	5.031E-02	7.967E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.519E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.715E-02	6.040E-02	9.446E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	9.794E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	9.340E-02	1.133E-01	2.064E-01	0.000E+00	FAIL ABUN
CE-139	-7.276E-03	3.250E-02	5.540E-02	0.000E+00	NOT IDENT.
BA-140	-7.890E-02	3.325E-01	5.528E-01	0.000E+00	NOT IDENT.
LA-140	-8.524E-02	8.876E-02	1.260E-01	0.000E+00	NOT IDENT.
CE-141	-4.756E-02	7.246E-02	1.222E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.971E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-5.874E-02	2.457E-01	3.689E-01	0.000E+00	NOT IDENT.
PM-144	-1.968E-02	4.265E-02	6.647E-02	0.000E+00	NOT IDENT.
PR-144	-1.483E+00	3.193E+00	4.975E+00	0.000E+00	NOT IDENT.
PM-146	-3.758E-02	4.883E-02	7.405E-02	0.000E+00	NOT IDENT.
ND-147	1.606E-02	6.682E-01	1.135E+00	0.000E+00	FAIL ABUN
PM-149	9.607E+01	1.358E+02	2.457E+02	0.000E+00	NOT IDENT.
EU-152	-1.084E-01	1.324E-01	1.758E-01	0.000E+00	NOT IDENT.
GD-153	0.000E+00	9.056E-02	1.491E-01	0.000E+00	NOT IDENT.
EU-154	-8.367E-02	1.388E-01	2.157E-01	0.000E+00	NOT IDENT.
EU-155	7.186E-02	1.073E-01	1.896E-01	0.000E+00	FAIL ABUN
TB-160	-2.987E-02	1.657E-01	2.794E-01	0.000E+00	FAIL ABUN
HO-166M	1.037E-02	6.489E-02	1.141E-01	0.000E+00	FAIL ABUN
TA-182	-8.479E-02	2.526E-01	4.102E-01	0.000E+00	NOT IDENT.
IR-192	-2.404E-02	3.719E-02	6.304E-02	0.000E+00	FAIL ABUN
HG-203	1.545E-02	4.080E-02	7.325E-02	0.000E+00	FAIL ABUN
BI-207	-2.925E-02	6.175E-02	9.964E-02	0.000E+00	FAIL ABUN
PB-211	-9.901E-01	9.666E-01	1.371E+00	0.000E+00	NOT IDENT.
RN-219	7.562E-02	4.585E-01	7.994E-01	0.000E+00	FAIL ABUN
RA-223	-6.819E-01	7.465E-01	1.237E+00	0.000E+00	FAIL ABUN
AC-227	2.672E-01	2.663E-01	4.889E-01	0.000E+00	FAIL ABUN
TH-227	2.672E-01	2.668E-01	4.889E-01	0.000E+00	FAIL ABUN
PA-231	-7.459E-01	1.544E+00	2.659E+00	0.000E+00	FAIL ABUN
TH-231	-6.819E-01	7.465E-01	1.237E+00	0.000E+00	FAIL ABUN
PA-233	3.471E-02	6.576E-02	1.184E-01	0.000E+00	FAIL ABUN
PA-234	-2.927E-02	3.280E-01	5.538E-01	0.000E+00	NOT IDENT.
PA-234M	1.118E+01	5.920E+00	1.120E+01	0.000E+00	NOT IDENT.
NP-239	-3.796E-01	4.182E-01	7.037E-01	0.000E+00	NOT IDENT.
AM-241	6.666E-02	7.858E-02	1.279E-01	0.000E+00	NOT IDENT.
CM-247	3.179E-02	4.138E-02	7.444E-02	0.000E+00	NOT IDENT.
CF-249	3.052E-02	4.533E-02	8.124E-02	0.000E+00	NOT IDENT.

CF-251	-3.948E-02	1.434E-01	2.341E-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]G247900007.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 14:59:00.
Sample ID        : G247900007 Sample quantity : 1.38030E+02 GRAM
Detector name    : GAM05 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.93 0.0%
Energy tolerance : 2.00000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957711 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	970	10.66*	1.004E+00	2.463E+01	2.463E+01	9.15
CD-109	88.03	474	3.70*	7.867E+00	4.428E+00	4.537E+00	25.74
SN-126	64.28	812	9.60	8.061E+00	2.854E+00	2.854E+00	22.55
	86.94	474	8.90	7.867E+00	1.841E+00	1.841E+00	47.94
	87.57	474	37.00*	7.867E+00	4.428E-01	4.428E-01	25.74
CS-135	268.22	83	16.00*	4.353E+00	3.253E-01	3.253E-01	69.83
BA-137M	661.66	358	89.90*	2.018E+00	5.360E-01	5.366E-01	19.37
CS-137	661.66	358	85.10*	2.018E+00	5.663E-01	5.669E-01	19.38
TL-208	277.37	-----	6.60	4.261E+00	-----	Line Not Found	-----
	583.19	381	85.00*	2.262E+00	5.390E-01	5.390E-01	18.07
	860.56	-----	12.50	1.589E+00	-----	Line Not Found	-----
PB-210	46.54	177	4.25*	7.604E+00	1.491E+00	1.493E+00	59.14
BI-211	72.87	690	1.23	8.040E+00	1.896E+01	1.896E+01	19.43
	351.06	654	12.92*	3.522E+00	3.906E+00	3.906E+00	14.70
BI-212	727.33	83	6.67*	1.852E+00	1.826E+00	1.826E+00	48.62
	785.37	40	1.10	1.725E+00	5.742E+00	5.742E+00	125.40
	1620.50	-----	1.47	9.217E-01	-----	Line Not Found	-----
PB-212	74.82	690	10.28	8.040E+00	2.269E+00	2.269E+00	21.73
	77.11	973	17.10	8.017E+00	1.930E+00	1.930E+00	13.68
	238.63	1241	43.60*	4.780E+00	1.620E+00	1.620E+00	12.78
	300.09	74	3.30	4.009E+00	1.511E+00	1.511E+00	79.52
BI-214	609.32	481	45.49*	2.174E+00	1.322E+00	1.322E+00	15.61
	1120.29	112	14.92	1.259E+00	1.621E+00	1.621E+00	36.91
	1764.49	65	15.30	8.618E-01	1.343E+00	1.343E+00	33.54
PB-214	74.82	690	5.80	8.040E+00	4.022E+00	4.022E+00	20.99
	77.11	973	9.70	8.017E+00	3.402E+00	3.402E+00	15.97
	242.00	320	7.25	4.738E+00	2.536E+00	2.536E+00	27.66
	295.22	387	18.42	4.064E+00	1.408E+00	1.408E+00	21.38
	351.93	654	35.60*	3.522E+00	1.417E+00	1.417E+00	15.70
RA-224	240.99	320	4.10*	4.738E+00	4.484E+00	4.484E+00	27.05
RA-226	609.32	481	45.49*	2.174E+00	1.322E+00	1.322E+00	15.61
	1120.29	112	14.92	1.259E+00	1.621E+00	1.621E+00	36.91

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AC-228	1764.49	65	15.30	8.618E-01	1.343E+00	1.343E+00	33.54
	338.32	241	11.27	3.640E+00	1.599E+00	1.599E+00	48.24
	911.20	226	25.80*	1.511E+00	1.578E+00	1.578E+00	25.44
RA-228	968.97	113	15.80	1.431E+00	1.354E+00	1.354E+00	39.75
	338.32	241	11.27	3.640E+00	1.599E+00	1.599E+00	48.24
	911.20	226	25.80*	1.511E+00	1.578E+00	1.578E+00	25.44
TH-228	968.97	113	15.80	1.431E+00	1.354E+00	1.354E+00	39.75
	74.82	690	10.28	8.040E+00	2.269E+00	2.269E+00	19.47
	77.11	973	17.10	8.017E+00	1.930E+00	1.930E+00	13.68
TH-229	238.63	1241	43.60*	4.780E+00	1.620E+00	1.620E+00	12.78
	300.09	74	3.30	4.009E+00	1.511E+00	1.511E+00	99.80
	85.43	474	14.70	7.867E+00	1.115E+00	1.115E+00	25.74
TH-232	88.47	228	24.00	7.816E+00	3.309E-01	3.309E-01	29.13
	193.51	-----	4.41*	5.516E+00	-----	Line Not Found	-----
	210.85	191	2.80	5.234E+00	3.535E+00	3.535E+00	48.89
TH-234	338.32	241	11.27	3.640E+00	1.599E+00	1.599E+00	25.71
	911.20	226	25.80*	1.511E+00	1.578E+00	1.578E+00	25.44
	968.97	113	15.80	1.431E+00	1.354E+00	1.354E+00	39.75
U-235	63.29	812	3.70*	8.061E+00	7.404E+00	7.404E+00	24.80
	92.59	1200	4.23	7.764E+00	9.939E+00	9.939E+00	23.82
	89.96	228	3.47	7.816E+00	2.289E+00	2.289E+00	37.15
NP-237	93.35	1200	5.60	7.764E+00	7.507E+00	7.507E+00	24.76
	143.76	-----	10.96*	6.557E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.119E+00	-----	Line Not Found	-----
U-238	185.72	340	57.20	5.662E+00	2.857E-01	2.857E-01	36.69
	205.31	-----	5.01	5.304E+00	-----	Line Not Found	-----
	86.48	474	12.40*	7.867E+00	1.321E+00	1.321E+00	33.20
ANH-511	95.86	-----	2.68	7.688E+00	-----	Line Not Found	-----
	63.29	812	3.70*	8.061E+00	7.404E+00	7.404E+00	24.80
	92.59	1200	4.23	7.764E+00	9.939E+00	9.939E+00	12.41
	511.00	99	100.00*	2.547E+00	1.055E-01	1.055E-01	63.19

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247900007

Page : 3
Acquisition date : 6-MAR-2010 14:59:00

Total number of lines in spectrum 32
Number of unidentified lines 2
Number of lines tentatively identified by NID 30 93.75%

Nuclide Type :

Nuclide	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	2.463E+01	2.463E+01	0.225E+01	9.15	
CD-109	461.40D	1.02	4.428E+00	4.537E+00	1.168E+00	25.74	
SN-126	2.30E+05Y	1.00	4.428E-01	4.428E-01	1.140E-01	25.74	
CS-135	2.30E+06Y	1.00	3.253E-01	3.253E-01	2.271E-01	69.83	
BA-137M	30.08Y	1.00	5.360E-01	5.366E-01	1.040E-01	19.37	
CS-137	30.08Y	1.00	5.663E-01	5.669E-01	1.099E-01	19.38	
TL-208	1.41E+10Y	1.00	5.390E-01	5.390E-01	0.974E-01	18.07	
PB-210	22.20Y	1.00	1.491E+00	1.493E+00	0.883E+00	59.14	
BI-211	7.04E+08Y	1.00	3.906E+00	3.906E+00	0.574E+00	14.70	
BI-212	1.41E+10Y	1.00	1.826E+00	1.826E+00	0.888E+00	48.62	
PB-212	1.41E+10Y	1.00	1.620E+00	1.620E+00	0.207E+00	12.78	
BI-214	1600.00Y	1.00	1.322E+00	1.322E+00	0.206E+00	15.61	
PB-214	1600.00Y	1.00	1.417E+00	1.417E+00	0.223E+00	15.70	
RA-224	1.41E+10Y	1.00	4.484E+00	4.484E+00	1.213E+00	27.05	
RA-226	1600.00Y	1.00	1.322E+00	1.322E+00	0.206E+00	15.61	
AC-228	1.41E+10Y	1.00	1.578E+00	1.578E+00	0.401E+00	25.44	
RA-228	1.41E+10Y	1.00	1.578E+00	1.578E+00	0.401E+00	25.44	
TH-228	1.41E+10Y	1.00	1.620E+00	1.620E+00	0.207E+00	12.78	
TH-229	7340.00Y	1.00	3.309E-01	3.309E-01	0.964E-01	29.13	K
TH-232	1.41E+10Y	1.00	1.578E+00	1.578E+00	0.401E+00	25.44	
TH-234	4.47E+09Y	1.00	7.404E+00	7.404E+00	1.836E+00	24.80	
U-235	7.04E+08Y	1.00	2.857E-01	2.857E-01	1.048E-01	36.69	K
NP-237	2.14E+06Y	1.00	1.321E+00	1.321E+00	0.439E+00	33.20	
U-238	4.47E+09Y	1.00	7.404E+00	7.404E+00	1.836E+00	24.80	
ANH-511	1.00E+09Y	1.00	1.055E-01	1.055E-01	0.667E-01	63.19	

Total Activity : 7.206E+01 7.218E+01

Grand Total Activity : 7.206E+01 7.218E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900007

Page : 4
Acquisition date : 6-MAR-2010 14:59:00

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.78	145	576	1.36	258.52	254	12	2.01E-02	68.3	6.91E+00	
0	463.57	78	207	1.77	927.92	918	19	1.08E-02	91.8	2.77E+00	T
0	794.29	41	46	2.29	1589.00	1584	10	5.76E-03	70.2	1.71E+00	T
0	1237.33	39	76	0.64	2474.31	2468	17	5.46E-03	****	1.15E+00	T
0	1845.46	14	2	1.48	3689.00	3685	8	1.93E-03	64.5	8.31E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900007.CNF;1
* Acquisition date   : 6-MAR-2010 14:59:00. Detector SN#      :
* Detector ID        : GAM05 Sensitivity      : 5.00000
* Geometry           : CAN Energy tolerance: 2.00000
* 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          : G247900007 Analyst initials: MXR1
* Batch Number       : 957711 Sample Quantity : 1.38030E+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	2.463E+01	2.253E+00	5.478E-01	3.407E-02	44.964
CD-109	4.537E+00	1.168E+00	1.073E+00	8.174E-02	4.227
SN-126	4.428E-01	1.140E-01	1.046E-01	7.968E-03	4.232
CS-135	3.253E-01	2.271E-01	2.775E-01	2.969E-02	1.172
BA-137M	5.366E-01	1.040E-01	6.547E-02	4.305E-03	8.196
CS-137	5.669E-01	1.099E-01	6.916E-02	4.563E-03	8.196
TL-208	5.390E-01	9.742E-02	6.708E-02	4.926E-03	8.036
PB-210	1.493E+00	8.832E-01	8.819E-01	6.802E-02	1.693
BI-211	3.906E+00	5.743E-01	3.488E-01	2.764E-02	11.198
BI-212	1.826E+00	8.876E-01	9.957E-01	1.167E-01	1.834
PB-212	1.620E+00	2.070E-01	9.944E-02	1.076E-02	16.289
BI-214	1.322E+00	2.065E-01	1.285E-01	1.084E-02	10.293
PB-214	1.417E+00	2.226E-01	1.312E-01	1.264E-02	10.801
RA-224	4.484E+00	1.213E+00	1.066E+00	1.043E-01	4.207
RA-226	1.322E+00	2.065E-01	1.285E-01	1.084E-02	10.293
AC-228	1.578E+00	4.013E-01	2.381E-01	3.023E-02	6.625
RA-228	1.578E+00	4.013E-01	2.381E-01	3.023E-02	6.625
TH-228	1.620E+00	2.070E-01	9.944E-02	1.076E-02	16.289

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229	3.309E-01	9.640E-02	9.801E-01	9.789E-02	0.338
TH-232	1.578E+00	4.013E-01	2.381E-01	3.023E-02	6.625
TH-234	7.404E+00	1.836E+00	1.155E+00	2.096E-01	6.411
U-235	2.857E-01	1.048E-01	3.854E-01	7.351E-02	0.741
NP-237	1.321E+00	4.386E-01	3.112E-01	6.944E-02	4.246
U-238	7.404E+00	1.836E+00	1.155E+00	2.096E-01	6.411
ANH-511	1.055E-01	6.668E-02	5.363E-02	3.432E-03	1.968

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.966E-01		3.753E-01	6.328E-01	4.531E-02	0.311
NA-22	-2.955E-02		4.998E-02	7.571E-02	4.410E-03	-0.390
NA-24	-4.107E-01		1.126E+00	Half-Life	too short	
SC-46	-3.887E-02		4.828E-02	7.416E-02	7.449E-03	-0.524
V-48	-7.793E-04		7.763E-02	1.275E-01	1.168E-02	-0.006
CR-51	1.035E-01		3.998E-01	6.730E-01	5.947E-02	0.154
MN-54	2.852E-02		4.744E-02	8.188E-02	7.501E-03	0.348
CO-56	-4.968E-03		4.580E-02	7.528E-02	7.040E-03	-0.066
CO-57	-2.319E-03		2.713E-02	4.398E-02	6.240E-03	-0.053
CO-58	-1.129E-02		4.549E-02	7.409E-02	6.521E-03	-0.152
FE-59	-3.688E-04		1.099E-01	1.794E-01	1.452E-02	-0.002
CO-60	3.796E-02		4.188E-02	7.503E-02	4.342E-03	0.506
ZN-65	2.019E-01		1.226E-01	2.036E-01	1.422E-02	0.992
SE-75	3.383E-02		5.430E-02	8.212E-02	7.841E-03	0.412
SR-85	4.627E-02		4.878E-02	7.434E-02	4.765E-03	0.622
Y-88	1.101E-02		3.015E-02	5.374E-02	3.075E-03	0.205
Y-91	-1.141E+01		2.778E+01	4.359E+01	2.533E+00	-0.262
NB-94	6.356E-03		3.880E-02	6.572E-02	4.702E-03	0.097
NB-95	1.203E-01		5.689E-02	1.052E-01	8.506E-03	1.144
NB-95M	1.340E+00		2.394E-01	3.522E-01	3.859E-02	3.805
ZR-95	-2.787E-02		8.772E-02	1.430E-01	1.275E-02	-0.195
MO-99	6.282E+00		1.804E+01	3.088E+01	4.716E+00	0.203
TC-99M	-6.400E+11		3.636E+11	Half-Life	too short	
RU-103	-3.456E-02		4.631E-02	7.115E-02	9.031E-03	-0.486
RH-106	-8.105E-03		3.641E-01	5.854E-01	7.047E-02	-0.014
RU-106	-8.105E-03		3.641E-01	5.854E-01	3.859E-02	-0.014
AG-108M	-3.363E-02		3.289E-02	5.023E-02	3.243E-03	-0.669
AG-110M	2.256E-01		6.114E-02	1.067E-01	7.373E-03	2.115
SN-113	-1.654E-02		5.209E-02	8.430E-02	5.229E-03	-0.196
CD-115	2.094E+00		1.755E+01	2.876E+01	1.855E+00	0.073
SN-117M	4.693E-02		6.237E-02	1.032E-01	1.110E-02	0.455
TE-123M	1.839E-02		3.137E-02	5.164E-02	5.549E-03	0.356
SB-124	-3.121E-02		9.125E-02	1.419E-01	9.021E-03	-0.220
SB-125	1.004E-01		1.035E-01	1.792E-01	1.122E-02	0.560
TE-125M	-2.114E-01		1.037E+01	1.691E+01	2.195E+00	-0.012
I-126	2.264E-01		3.212E-01	4.770E-01	3.168E-02	0.475

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	1.430E-01		1.860E-01	2.908E-01	2.157E-02	0.492
SB-127	7.743E-01		1.874E+00	3.228E+00	3.380E-01	0.240
I-131	1.321E-02		1.406E-01	2.335E-01	1.755E-02	0.057
TE-132	-2.854E-01		9.741E-01	1.619E+00	2.709E-01	-0.176
BA-133	3.382E-02		5.133E-02	7.722E-02	9.331E-03	0.438
I-133	7.429E-03		7.751E-03	Half-Life too short		
CS-134	8.715E-02	+	6.163E-02	9.302E-02	8.010E-03	0.937
I-135	1.618E+09		4.997E+10	Half-Life too short		
CS-136	9.340E-02		1.156E-01	2.044E-01	1.750E-02	0.457
CE-139	-7.276E-03		3.317E-02	5.293E-02	5.254E-03	-0.137
BA-140	-7.890E-02		3.393E-01	5.402E-01	1.806E-01	-0.146
LA-140	-8.524E-02		9.058E-02	1.258E-01	7.395E-03	-0.677
CE-141	-4.756E-02		7.394E-02	1.165E-01	1.424E-02	-0.408
CE-143	2.076E-03	+	3.046E-04	Half-Life too short		
CE-144	-5.874E-02		2.507E-01	3.510E-01	6.417E-02	-0.167
PM-144	-1.968E-02		4.352E-02	6.528E-02	4.616E-03	-0.301
PR-144	-1.483E+00		3.258E+00	4.886E+00	3.453E-01	-0.303
PM-146	-3.758E-02		4.983E-02	7.212E-02	6.284E-03	-0.521
ND-147	1.606E-02		6.818E-01	1.109E+00	1.533E-01	0.014
PM-149	9.607E+01		1.386E+02	2.372E+02	3.759E+01	0.405
EU-152	-1.084E-01		1.351E-01	1.703E-01	1.399E-02	-0.637
GD-153	1.629E-01		9.240E-02	1.410E-01	1.307E-02	1.155
EU-154	-8.367E-02		1.417E-01	2.144E-01	2.022E-02	-0.390
EU-155	7.186E-02		1.095E-01	1.796E-01	1.945E-02	0.400
TB-160	-2.987E-02		1.691E-01	2.757E-01	2.724E-02	-0.108
HO-166M	1.037E-02		6.622E-02	1.121E-01	8.170E-03	0.093
TA-182	-8.479E-02		2.577E-01	4.074E-01	2.369E-02	-0.208
IR-192	-2.404E-02		3.795E-02	6.096E-02	5.174E-03	-0.394
HG-203	1.545E-02		4.163E-02	7.067E-02	6.703E-03	0.219
BI-207	-2.925E-02		6.301E-02	9.869E-02	7.815E-03	-0.296
PB-211	-9.901E-01		9.864E-01	1.333E+00	6.394E-01	-0.743
RN-219	7.562E-02		4.679E-01	7.767E-01	1.046E-01	0.097
RA-223	-6.819E-01		7.617E-01	1.197E+00	2.054E-01	-0.570
AC-227	2.672E-01		2.718E-01	4.710E-01	6.022E-02	0.567
TH-227	2.672E-01		2.723E-01	4.710E-01	6.716E-02	0.567
PA-231	-7.459E-01		1.575E+00	2.566E+00	3.832E-01	-0.291
TH-231	-6.819E-01		7.617E-01	1.197E+00	2.054E-01	-0.570
PA-233	3.471E-02		6.710E-02	1.145E-01	1.011E-02	0.303
PA-234	-2.927E-02		3.347E-01	5.472E-01	1.054E-01	-0.053
PA-234M	1.118E+01		6.041E+00	1.108E+01	1.132E+00	1.008
NP-239	-3.796E-01		4.267E-01	6.679E-01	8.783E-02	-0.568
AM-241	6.666E-02		8.018E-02	1.199E-01	1.073E-02	0.556
CM-247	3.179E-02		4.222E-02	7.232E-02	4.255E-03	0.440
CF-249	3.052E-02		4.626E-02	7.888E-02	4.710E-03	0.387
CF-251	-3.948E-02		1.464E-01	2.239E-01	2.231E-02	-0.176

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]G247900007          *
* Acquisition date   : 6-MAR-2010 14:59:00 Detector SN#      :              *
* Detector ID        : GAM05                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 2.000        *
* 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          : G247900007              Analyst initials: MXR1         *
* Batch Number       : 957711                  Sample Quantity : 1.3803E+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	2.463E+01	2.208E+00	2.749E-01	1.126E+00
CD-109	4.537E+00	1.144E+00	5.688E-01	5.838E-01
SN-126	4.428E-01	1.117E-01	5.545E-02	5.698E-02
CS-135	3.253E-01	2.226E-01	1.440E-01	1.136E-01
BA-137M	5.366E-01	1.019E-01	3.338E-02	5.198E-02
CS-137	5.669E-01	1.077E-01	3.527E-02	5.493E-02
TL-208	5.390E-01	9.547E-02	3.429E-02	4.871E-02
PB-210	1.493E+00	8.655E-01	4.727E-01	4.416E-01
BI-211	3.906E+00	5.628E-01	1.801E-01	2.871E-01
BI-212	1.826E+00	8.699E-01	5.068E-01	4.438E-01
PB-212	1.620E+00	2.028E-01	5.172E-02	1.035E-01
BI-214	1.322E+00	2.023E-01	6.562E-02	1.032E-01
PB-214	1.417E+00	2.081E-01	6.775E-02	1.113E-01
RA-224	4.484E+00	1.189E+00	5.543E-01	6.065E-01
RA-226	1.322E+00	2.023E-01	6.562E-02	1.032E-01
AC-228	1.578E+00	3.933E-01	1.207E-01	2.007E-01
RA-228	1.578E+00	3.933E-01	1.207E-01	2.007E-01
TH-228	1.620E+00	2.028E-01	5.172E-02	1.035E-01
TH-229	3.197E-01	5.878E-01	5.118E-01	2.999E-01
TH-232	1.578E+00	3.933E-01	1.207E-01	2.007E-01
TH-234	7.404E+00	1.800E+00	6.157E-01	9.181E-01
U-235	2.443E-01	2.317E-01	2.024E-01	1.182E-01
NP-237	1.321E+00	4.299E-01	1.650E-01	2.193E-01
U-238	7.404E+00	1.800E+00	6.157E-01	9.181E-01
ANH-511	1.055E-01	6.535E-02	2.749E-02	3.334E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.966E-01	3.678E-01	3.248E-01	1.876E-01 NOT IDENT.
NA-22	-2.955E-02	4.898E-02	3.810E-02	2.499E-02 NOT IDENT.

NA-24	-4.107E+05	2.207E+06	0.000E+00	1.126E+06	SHORT HLIF
SC-46	-3.887E-02	4.731E-02	3.759E-02	2.414E-02	FAIL ABUN
V-48	-7.793E-04	7.608E-02	6.453E-02	3.882E-02	NOT IDENT.
CR-51	1.035E-01	3.918E-01	3.481E-01	1.999E-01	NOT IDENT.
MN-54	2.852E-02	4.649E-02	4.156E-02	2.372E-02	NOT IDENT.
CO-56	-4.968E-03	4.488E-02	3.820E-02	2.290E-02	FAIL ABUN
CO-57	-2.319E-03	2.659E-02	2.316E-02	1.356E-02	NOT IDENT.
CO-58	-1.129E-02	4.458E-02	3.763E-02	2.274E-02	NOT IDENT.
FE-59	-3.688E-04	1.077E-01	9.057E-02	5.493E-02	NOT IDENT.
CO-60	3.796E-02	4.104E-02	3.773E-02	2.094E-02	NOT IDENT.
ZN-65	2.019E-01	1.202E-01	1.027E-01	6.131E-02	NOT IDENT.
SE-75	3.383E-02	5.321E-02	4.263E-02	2.715E-02	NOT IDENT.
SR-85	4.627E-02	4.781E-02	3.810E-02	2.439E-02	NOT IDENT.
Y-88	1.101E-02	2.955E-02	2.685E-02	1.508E-02	NOT IDENT.
Y-91	-1.141E+01	2.723E+01	2.196E+01	1.389E+01	NOT IDENT.
NB-94	6.356E-03	3.803E-02	3.347E-02	1.940E-02	NOT IDENT.
NB-95	1.203E-01	5.575E-02	5.347E-02	2.844E-02	NOT IDENT.
NB-95M	1.340E+00	2.346E-01	1.832E-01	1.197E-01	NOT IDENT.
ZR-95	-2.787E-02	8.597E-02	7.270E-02	4.386E-02	NOT IDENT.
MO-99	6.282E+00	1.768E+01	1.571E+01	9.020E+00	NOT IDENT.
TC-99M	-6.400E+17	7.126E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.456E-02	4.539E-02	3.649E-02	2.316E-02	FAIL ABUN
RH-106	-8.105E-03	3.568E-01	2.989E-01	1.821E-01	NOT IDENT.
RU-106	-8.105E-03	3.568E-01	2.989E-01	1.821E-01	NOT IDENT.
AG-108M	-3.363E-02	3.223E-02	2.583E-02	1.645E-02	NOT IDENT.
AG-110M	2.256E-01	5.992E-02	5.440E-02	3.057E-02	NOT IDENT.
SN-113	-1.654E-02	5.105E-02	4.343E-02	2.605E-02	NOT IDENT.
CD-115	2.094E+00	1.720E+01	1.473E+01	8.776E+00	NOT IDENT.
SN-117M	4.693E-02	6.112E-02	5.411E-02	3.118E-02	NOT IDENT.
TE-123M	1.839E-02	3.074E-02	2.706E-02	1.568E-02	NOT IDENT.
SB-124	-3.121E-02	8.942E-02	7.100E-02	4.562E-02	NOT IDENT.
SB-125	1.004E-01	1.014E-01	9.214E-02	5.173E-02	FAIL ABUN
TE-125M	-2.114E-01	1.017E+01	8.927E+00	5.187E+00	NOT IDENT.
I-126	2.264E-01	3.148E-01	2.432E-01	1.606E-01	NOT IDENT.
SB-126	1.430E-01	1.823E-01	1.480E-01	9.301E-02	NOT IDENT.
SB-127	7.743E-01	1.836E+00	1.645E+00	9.370E-01	NOT IDENT.
I-131	1.321E-02	1.378E-01	1.205E-01	7.028E-02	NOT IDENT.
TE-132	-2.854E-01	9.547E-01	8.428E-01	4.871E-01	NOT IDENT.
BA-133	3.382E-02	5.031E-02	3.986E-02	2.567E-02	NOT IDENT.
I-133	7.429E+03	1.519E+04	0.000E+00	7.751E+03	SHORT HLIF
CS-134	8.715E-02	6.040E-02	4.726E-02	3.082E-02	FAIL ABUN
I-135	1.618E+15	9.794E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	9.340E-02	1.133E-01	1.033E-01	5.780E-02	FAIL ABUN
CE-139	-7.276E-03	3.250E-02	2.772E-02	1.658E-02	NOT IDENT.
BA-140	-7.890E-02	3.325E-01	2.766E-01	1.696E-01	NOT IDENT.
LA-140	-8.524E-02	8.876E-02	6.303E-02	4.529E-02	NOT IDENT.
CE-141	-4.756E-02	7.246E-02	6.114E-02	3.697E-02	NOT IDENT.
CE-143	2.076E+03	5.971E+02	0.000E+00	3.046E+02	SHORT HLIF
CE-144	-5.874E-02	2.457E-01	1.846E-01	1.254E-01	NOT IDENT.
PM-144	-1.968E-02	4.265E-02	3.326E-02	2.176E-02	NOT IDENT.
PR-144	-1.483E+00	3.193E+00	2.489E+00	1.629E+00	NOT IDENT.
PM-146	-3.758E-02	4.883E-02	3.705E-02	2.491E-02	NOT IDENT.
ND-147	1.606E-02	6.682E-01	5.680E-01	3.409E-01	FAIL ABUN
PM-149	9.607E+01	1.358E+02	1.229E+02	6.930E+01	NOT IDENT.
EU-152	-1.084E-01	1.324E-01	8.795E-02	6.755E-02	NOT IDENT.
GD-153	1.629E-01	9.056E-02	7.460E-02	4.620E-02	NOT IDENT.
EU-154	-8.367E-02	1.388E-01	1.079E-01	7.084E-02	NOT IDENT.
EU-155	7.186E-02	1.073E-01	9.484E-02	5.475E-02	FAIL ABUN
TB-160	-2.987E-02	1.657E-01	1.398E-01	8.454E-02	FAIL ABUN
HO-166M	1.037E-02	6.489E-02	5.710E-02	3.311E-02	FAIL ABUN
TA-182	-8.479E-02	2.526E-01	2.052E-01	1.289E-01	NOT IDENT.
IR-192	-2.404E-02	3.719E-02	3.154E-02	1.898E-02	FAIL ABUN
HG-203	1.545E-02	4.080E-02	3.665E-02	2.082E-02	FAIL ABUN
BI-207	-2.925E-02	6.175E-02	4.985E-02	3.151E-02	FAIL ABUN
PB-211	-9.901E-01	9.666E-01	6.861E-01	4.932E-01	NOT IDENT.
RN-219	7.562E-02	4.585E-01	4.000E-01	2.339E-01	FAIL ABUN
RA-223	-6.819E-01	7.465E-01	6.188E-01	3.809E-01	FAIL ABUN
AC-227	2.672E-01	2.663E-01	2.446E-01	1.359E-01	FAIL ABUN
TH-227	2.672E-01	2.668E-01	2.446E-01	1.361E-01	FAIL ABUN
PA-231	-7.459E-01	1.544E+00	1.330E+00	7.875E-01	FAIL ABUN
TH-231	-6.819E-01	7.465E-01	6.188E-01	3.809E-01	FAIL ABUN
PA-233	3.471E-02	6.576E-02	5.923E-02	3.355E-02	FAIL ABUN
PA-234	-2.927E-02	3.280E-01	2.770E-01	1.674E-01	NOT IDENT.
PA-234M	1.118E+01	5.920E+00	5.605E+00	3.020E+00	NOT IDENT.
NP-239	-3.796E-01	4.182E-01	3.520E-01	2.134E-01	NOT IDENT.
AM-241	6.666E-02	7.858E-02	6.398E-02	4.009E-02	NOT IDENT.
CM-247	3.179E-02	4.138E-02	3.724E-02	2.111E-02	NOT IDENT.
CF-249	3.052E-02	4.533E-02	4.064E-02	2.313E-02	NOT IDENT.

CF-251 -3.948E-02 1.434E-01 1.171E-01 7.319E-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	510.4200
49.72	649.1055
57.36	0.0000
59.54	676.2737
63.29	742.7803
63.29	742.7803
64.28	732.5127
67.75	778.4693
69.67	772.6597
70.83	777.0256
72.81	788.5656
72.87	788.6296
72.87	788.6296
74.82	773.2256
74.82	773.2256
74.82	773.2256
74.97	773.3746
77.11	775.5161
77.11	775.5161
77.11	775.5161
79.69	778.0598
79.80	590.0037
80.12	590.2408
80.19	590.2927
80.57	590.5728
81.00	590.8889
81.07	590.9409
81.07	590.9409
83.79	575.2962
83.79	575.2962
85.43	576.4400
86.48	577.1675
86.55	577.2157
86.79	577.3800
86.94	577.4852
87.57	577.9169
88.03	578.2324
88.47	578.5325
89.96	579.5449
91.11	580.3228
92.59	581.3132
92.59	581.3132
93.35	581.8193
94.67	581.0704
94.87	602.3066
94.87	602.3066
95.86	526.5910
97.43	431.4564
98.44	397.7108
99.53	455.5780
100.11	513.2157
103.18	453.6329
103.37	406.6121
105.31	441.3231
106.12	469.4368
109.28	482.3286
111.00	442.9201
111.76	447.3984
116.30	477.4827
117.23	451.9507
121.12	389.0202
121.78	401.7926
122.06	413.3857
123.07	444.4401
131.20	400.9742
133.52	420.4063
136.00	403.7105

136.47	395.7200
140.51	467.2415
140.51	0.0000
143.76	394.0340
144.24	384.6091
144.24	384.6091
145.44	460.7369
152.43	359.4288
153.25	395.1075
154.21	382.5305
154.21	382.5305
156.02	431.5357
158.56	329.9950
159.00	344.1385
162.66	361.3984
163.33	357.2642
165.86	362.3286
176.60	336.9502
177.52	332.8085
181.07	360.0538
184.41	332.3470
185.72	332.6719
193.51	326.8268
197.04	349.8737
205.31	328.9112
210.85	297.2031
215.65	292.5496
222.11	284.7785
227.38	290.3047
228.16	294.0838
228.18	294.0878
235.69	285.7866
235.96	285.8364
235.96	285.8364
238.63	267.7416
238.63	267.7416
240.99	268.1404
242.00	238.0911
244.70	259.8975
252.40	265.4350
252.80	277.4844
256.23	214.3203
256.23	214.3203
260.90	249.1993
264.66	207.3576
268.22	235.7064
269.46	234.3246
269.46	234.3246
271.23	198.8385
273.65	256.6745
276.40	210.3415
277.37	213.2657
277.60	212.3581
278.00	213.3409
279.20	215.3611
279.54	220.0859
280.46	242.6892
283.69	228.1151
284.31	214.1090
285.41	200.1477
285.90	203.9620
287.50	221.0784
293.27	0.0000
295.22	203.1320
295.96	203.2159
298.57	203.5073
299.98	200.2790
299.98	200.2790
300.09	200.2919
300.09	200.2919
300.13	200.2971
301.36	224.3566
302.85	207.1448
304.50	151.9355
304.50	151.9355
304.85	132.9692
308.46	211.2604
311.90	163.9795

316.51	196.8718
319.41	180.8997
320.08	169.4723
323.87	239.8407
323.87	239.8407
328.76	206.7853
333.37	194.4168
334.37	178.4396
334.37	178.4396
338.28	215.8389
338.28	215.8389
338.32	215.8444
338.32	215.8444
338.32	215.8444
340.48	153.1902
340.55	153.1960
344.28	201.6244
351.06	157.5624
351.93	168.6572
356.01	146.2427
364.49	158.5907
366.42	170.4954
383.85	152.1370
388.16	153.4277
388.63	157.4220
391.69	170.5303
400.66	154.2999
401.81	156.3733
402.40	140.4733
404.85	197.4755
410.95	156.0095
414.70	141.2410
423.72	132.7444
427.09	136.9662
427.87	121.9010
433.94	144.4384
453.88	133.6805
463.37	119.6308
468.07	122.9312
473.00	123.1758
476.78	116.1657
477.60	114.1463
487.02	100.1212
492.35	109.6399
497.08	123.3129
511.00	116.3326
514.00	109.5117
527.90	98.5508
529.87	0.0000
531.02	102.8641
537.26	117.8270
546.56	0.0000
563.25	109.3797
569.33	101.1022
569.50	101.1068
569.70	103.2425
583.19	103.7303
600.60	112.3594
602.73	104.0677
604.72	96.9565
609.32	100.7025
609.32	100.7025
610.33	107.9321
614.28	86.4609
618.01	94.1431
621.93	91.0137
621.93	91.0137
633.25	94.6167
635.95	72.9296
636.99	76.2207
645.85	97.1873
657.76	85.8664
661.66	87.8027
661.66	87.8027
664.57	0.0000
666.33	86.0997
666.50	86.1036
677.62	80.8896

685.70	88.4648
695.00	88.7168
696.49	92.4561
696.51	92.4561
697.00	98.0185
702.65	93.5553
706.68	95.5252
711.68	78.0220
720.70	65.4596
721.93	0.0000
722.78	91.0624
722.91	95.8573
723.31	94.2720
724.19	92.6984
727.33	94.3831
733.00	73.5323
735.93	101.0391
739.50	74.9219
747.24	93.8639
752.31	79.9019
753.82	76.1748
756.73	93.1811
763.94	99.0314
765.81	85.8735
766.42	86.8321
777.92	71.4248
778.90	76.3160
783.70	82.2004
785.37	82.2374
795.86	73.4154
801.95	72.7965
810.29	79.3053
810.76	75.4930
815.77	67.9406
818.51	71.8216
832.01	80.7341
834.85	87.5286
836.80	0.0000
846.77	71.4045
856.80	72.5616
860.56	61.9805
871.09	63.1222
873.19	59.2700
875.33	0.0000
879.36	72.9889
880.51	73.9837
883.24	54.5531
884.68	72.1151
889.28	81.9561
898.04	83.1168
911.20	53.8214
911.20	53.8214
911.20	53.8214
926.50	80.7605
937.49	81.9666
944.13	59.3506
946.00	59.3774
949.00	63.3828
962.29	59.6130
964.08	54.5268
966.15	85.2417
968.97	64.8274
968.97	64.8274
968.97	64.8274
983.53	49.9308
996.26	84.1384
1001.03	47.1300
1004.73	101.3678
1037.84	56.6357
1038.76	0.0000
1048.07	38.5211
1050.41	45.6409
1050.41	45.6409
1063.66	69.1759
1085.87	54.1840
1099.45	63.5742
1112.07	49.3555
1115.54	51.1566

1120.29	54.7409
1120.29	54.7409
1120.55	54.7430
1121.30	51.2193
1131.51	0.0000
1173.23	72.9195
1177.93	63.6062
1189.05	54.3465
1204.77	87.0257
1221.41	93.6354
1231.02	90.3530
1235.36	77.7725
1238.28	71.7852
1260.41	0.0000
1271.85	48.8862
1274.44	56.3535
1274.54	56.3535
1291.59	37.3399
1298.22	0.0000
1312.11	36.4169
1332.49	25.8057
1365.19	24.8830
1368.63	0.0000
1384.29	26.9882
1408.01	34.5830
1457.56	0.0000
1460.82	21.4662
1489.16	21.8104
1505.03	22.8214
1596.21	25.1077
1620.50	19.3910
1678.03	0.0000
1690.97	19.6122
1764.49	10.4150
1764.49	10.4150
1770.23	5.5596
1771.35	8.1091
1791.20	0.0000
1836.06	7.0188

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900007

Total Uranium Activity	2.2141E+01	ug/g
Total Uranium Counting Unc.	5.3547E+00	ug/g
Total Uranium Tpu	2.7320E-06	ug/g
Total Uranium Mda	1.8340E+00	ug/g

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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                          *
*                               GROSS GAMMA REPORT                            *
*
*****
*
*  BATCH ID      : 957711                SAMPLE ID   : G247900007                *
*  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 14:59:00.15  SAMPLE ALQT: 138.030 GRAM          *
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.626E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.290E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 4.335E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 2.120E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 17:00:26.48

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900008.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 14:59:28.
Sample ID        : G247900008 Sample quantity : 1.38580E+02 GRAM
Detector name    : GAM13 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.73 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957711 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	46.45*	160	453	1.24	92.44	89	7	2.22E-02	25.1	
2	0	63.22*	580	810	1.33	125.98	121	9	8.06E-02	10.5	
3	2	74.85*	695	767	1.30	149.23	142	18	9.65E-02	8.1	2.00E+00
4	2	77.13*	999	615	1.21	153.79	142	18	1.39E-01	5.6	
5	3	87.14	301	752	1.46	173.81	163	30	4.18E-02	17.1	4.51E+00
6	3	89.85	173	472	1.07	179.22	163	30	2.41E-02	21.2	
7	3	92.66*	1019	556	1.38	184.86	163	30	1.41E-01	5.8	
8	0	128.90	103	452	0.98	257.32	253	9	1.42E-02	38.6	
9	0	143.92*	179	490	1.63	287.38	282	12	2.49E-02	26.7	
10	0	185.86*	284	434	1.31	371.25	365	11	3.95E-02	16.6	
11	0	209.02	111	252	1.26	417.57	414	7	1.54E-02	25.6	
12	2	238.64*	1143	265	1.36	476.79	469	19	1.59E-01	3.9	2.54E+00
13	2	241.53*	217	323	1.65	482.58	469	19	3.01E-02	19.1	
14	0	269.96*	103	260	1.38	539.44	534	11	1.43E-02	33.7	
15	0	295.05*	392	303	1.25	589.62	583	12	5.44E-02	10.4	
16	0	326.99	62	222	1.09	653.50	649	11	8.55E-03	48.6	
17	0	338.46*	194	212	1.25	676.43	670	10	2.69E-02	16.1	
18	0	351.84*	631	227	1.34	703.19	698	11	8.77E-02	6.3	
19	0	510.92*	98	185	1.69	1021.36	1014	16	1.36E-02	37.2	
20	0	582.93*	361	137	1.83	1165.38	1158	13	5.01E-02	8.7	
21	0	609.34*	448	161	1.58	1218.22	1212	15	6.23E-02	7.9	
22	0	661.40	146	112	1.98	1322.34	1317	12	2.03E-02	16.7	
23	0	727.91	127	143	2.00	1455.36	1447	19	1.76E-02	24.3	
24	0	911.10*	249	61	1.09	1821.79	1815	13	3.46E-02	9.4	
25	0	968.80	132	64	1.37	1937.20	1932	10	1.83E-02	14.5	
26	0	1120.38*	89	98	2.45	2240.40	2234	12	1.23E-02	25.4	
27	0	1460.36*	1012	33	2.37	2920.52	2912	22	1.41E-01	3.4	
28	0	1764.22*	89	11	1.65	3528.39	3521	16	1.23E-02	14.4	
29	0	1847.07	18	3	1.67	3694.15	3690	10	2.52E-03	28.8	
30	0	1934.60	11	7	4.27	3869.28	3860	13	1.58E-03	54.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 17:00:30

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900008.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 14:59:28
Sample ID         : G247900008 Sample quantity : 138.58 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA13 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.73 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	*	2.565E+01	2.897E+00	7.236E-01	6.474E-02	35.445
CD-109	+	88.03	*	3.097E+00	1.102E+00	1.122E+00	1.134E-01	2.761
SN-126	+	64.28		2.216E+00	5.878E-01	4.468E-01	7.265E-02	4.959
	+	86.94		1.257E+00	6.770E-01	4.538E-01	1.892E-01	2.769
	+	87.57	*	3.023E-01	1.075E-01	1.093E-01	1.105E-02	2.764
BA-137M	+	661.66	*	2.233E-01	7.692E-02	7.704E-02	6.685E-03	2.899
CS-137	+	661.66	*	2.359E-01	8.127E-02	8.139E-02	7.075E-03	2.899
TL-208		277.37		3.688E-01	4.540E-01	7.595E-01	9.921E-02	0.486
	+	583.19	*	5.215E-01	1.034E-01	7.441E-02	7.173E-03	7.008
		860.56		2.224E-01	3.929E-01	6.746E-01	6.222E-02	0.330
PB-210	+	46.54	*	1.478E+00	7.600E-01	8.581E-01	9.392E-02	1.722
BI-211		72.87		6.885E+00	2.485E+00	4.141E+00	4.227E-01	1.662
	+	351.06	*	3.895E+00	6.129E-01	4.357E-01	4.151E-02	8.941
PB-212	+	74.82		2.472E+00	5.292E-01	4.283E-01	6.031E-02	5.773
	+	77.11		2.139E+00	3.228E-01	2.586E-01	2.626E-02	8.272
	+	238.63	*	1.553E+00	2.019E-01	1.006E-01	1.039E-02	15.440
		300.09		1.653E+00	1.154E+00	1.679E+00	1.873E-01	0.984
BI-214	+	609.32	*	1.260E+00	2.390E-01	1.447E-01	1.505E-02	8.711
	+	1120.29		1.298E+00	6.727E-01	6.320E-01	6.700E-02	2.053
	+	1764.49		1.808E+00	5.423E-01	4.571E-01	3.842E-02	3.957
PB-214	+	74.82		4.382E+00	9.049E-01	7.591E-01	9.797E-02	5.773
	+	77.11		3.771E+00	6.486E-01	4.559E-01	5.965E-02	8.272
	+	242.00		1.788E+00	7.104E-01	5.866E-01	6.413E-02	3.048
	+	295.22		1.474E+00	3.485E-01	2.664E-01	3.041E-02	5.532
	+	351.93	*	1.414E+00	2.357E-01	1.525E-01	1.678E-02	9.273
RA-224	+	240.99	*	3.161E+00	1.243E+00	1.078E+00	9.993E-02	2.932
RA-226	+	609.32	*	1.260E+00	2.390E-01	1.447E-01	1.505E-02	8.711
	+	1120.29		1.298E+00	6.727E-01	6.320E-01	6.700E-02	2.053
	+	1764.49		1.808E+00	5.423E-01	4.571E-01	3.842E-02	3.957
AC-228	+	338.32		1.329E+00	7.013E-01	4.289E-01	1.795E-01	3.098
	+	911.20	*	1.763E+00	3.869E-01	2.965E-01	3.403E-02	5.945
	+	968.97		1.603E+00	6.067E-01	6.177E-01	1.501E-01	2.595
RA-228	+	338.32		1.329E+00	7.013E-01	4.289E-01	1.795E-01	3.098
	+	911.20	*	1.763E+00	3.869E-01	2.965E-01	3.403E-02	5.945

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		1.603E+00	6.067E-01	6.177E-01	1.501E-01	2.595
	+	74.82		2.472E+00	4.723E-01	4.283E-01	4.389E-02	5.773
	+	77.11		2.139E+00	3.228E-01	2.586E-01	2.626E-02	8.272
	+	238.63	*	1.553E+00	2.019E-01	1.006E-01	1.039E-02	15.440
		300.09		1.653E+00	1.525E+00	1.679E+00	1.030E+00	0.984
TH-232	+	338.32		1.329E+00	4.446E-01	4.289E-01	3.949E-02	3.098
	+	911.20	*	1.763E+00	3.869E-01	2.965E-01	3.403E-02	5.945
	+	968.97		1.603E+00	6.067E-01	6.177E-01	1.501E-01	2.595
TH-234	+	63.29	*	5.749E+00	1.637E+00	1.153E+00	2.223E-01	4.986
	+	92.59		9.052E+00	2.317E+00	9.713E-01	2.217E-01	9.319
U-235	+	89.96		1.867E+00	9.201E-01	1.174E+00	2.961E-01	1.590
	+	93.35		6.837E+00	1.811E+00	7.355E-01	1.752E-01	9.296
	+	143.76	*	7.152E-01	4.032E-01	3.405E-01	6.166E-02	2.100
		163.33		-3.543E-02	5.067E-01	8.219E-01	1.486E-01	-0.043
	+	185.72		2.499E-01	8.565E-02	7.694E-02	6.803E-03	3.248
		205.31		2.447E-01	6.225E-01	9.101E-01	1.669E-01	0.269
NP-237	+	86.48	*	9.020E-01	3.725E-01	3.253E-01	7.571E-02	2.773
		95.86		-3.460E-01	1.037E+00	1.446E+00	3.580E-01	-0.239
U-238	+	63.29	*	5.749E+00	1.637E+00	1.153E+00	2.223E-01	4.986
	+	92.59		9.052E+00	1.408E+00	9.713E-01	1.008E-01	9.319
ANH-511	+	511.00	*	1.069E-01	8.019E-02	5.877E-02	5.365E-03	1.819

---- 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	*	-3.023E-02	3.785E-01	6.228E-01	6.043E-02	-0.049
NA-22		1274.54	*	1.347E-02	5.329E-02	9.071E-02	7.665E-03	0.148
NA-24		1368.63	*	-1.274E+00	5.329E-02	Half-Life too short		
SC-46		889.28	*	-4.236E-04	5.306E-02	8.760E-02	7.437E-03	-0.005
	+	1120.55		2.214E-01	1.138E-01	1.599E-01	1.313E-02	1.385
V-48		944.13		7.996E-01	1.340E+00	2.293E+00	1.942E-01	0.349
		983.53	*	7.657E-02	9.523E-02	1.659E-01	1.403E-02	0.462
		1312.11		1.538E-02	1.011E-01	1.705E-01	1.462E-02	0.090
CR-51		320.08	*	1.196E-02	4.532E-01	7.290E-01	7.092E-02	0.016
MN-54		834.85	*	4.713E-03	5.124E-02	8.558E-02	7.412E-03	0.055
CO-56		846.77	*	-2.236E-02	5.121E-02	8.205E-02	7.081E-03	-0.272
		1037.84		5.209E-02	4.189E-01	6.902E-01	6.114E-02	0.075
		1238.28		1.237E-01	1.240E-01	2.189E-01	1.874E-02	0.565
		1771.35		-1.273E-01	3.039E-01	3.643E-01	3.057E-02	-0.349
CO-57		122.06	*	1.859E-02	2.668E-02	4.611E-02	5.737E-03	0.403
		136.47		-1.839E-02	2.210E-01	3.718E-01	4.392E-02	-0.049
CO-58		810.76	*	-6.509E-03	5.349E-02	8.824E-02	7.704E-03	-0.074
FE-59		1099.45	*	-6.000E-02	1.261E-01	1.964E-01	1.767E-02	-0.305
		1291.59		-9.886E-02	1.714E-01	2.598E-01	2.515E-02	-0.381
CO-60		1173.23		-1.183E-02	5.882E-02	9.334E-02	7.505E-03	-0.127
		1332.49	*	3.586E-02	5.086E-02	8.980E-02	7.767E-03	0.399
ZN-65		1115.54	*	8.775E-02	1.432E-01	2.117E-01	1.744E-02	0.415
SE-75		121.12		9.298E-02	1.388E-01	2.396E-01	3.401E-02	0.388

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.00		-4.129E-03	4.250E-02	7.148E-02	8.153E-03	-0.058
		264.66	*	3.420E-02	5.638E-02	8.345E-02	7.841E-03	0.410
		279.54		-1.170E-02	1.302E-01	2.102E-01	2.035E-02	-0.056
		400.66		5.374E-02	3.076E-01	5.194E-01	5.801E-02	0.103
SR-85		514.00	*	1.084E-01	5.404E-02	8.790E-02	8.026E-03	1.233
Y-88		898.04		5.948E-03	5.799E-02	9.642E-02	8.193E-03	0.062
		1836.06	*	-1.558E-02	3.448E-02	5.215E-02	4.309E-03	-0.299
Y-91		1204.77	*	3.325E+00	2.808E+01	4.740E+01	3.872E+00	0.070
NB-94		702.65	*	4.533E-02	4.408E-02	7.564E-02	6.615E-03	0.599
		871.09		6.304E-03	4.644E-02	7.759E-02	6.638E-03	0.081
NB-95		765.81	*	9.778E-02	5.926E-02	1.073E-01	9.404E-03	0.911
NB-95M		235.69	*	2.563E-01	1.641E-01	2.524E-01	2.632E-02	1.016
ZR-95		724.19		1.077E-01	1.381E-01	2.134E-01	2.023E-02	0.505
		756.73	*	3.977E-02	9.455E-02	1.624E-01	1.568E-02	0.245
MO-99		140.51		-1.065E+01	3.415E+01	4.984E+01	1.231E+01	-0.214
		181.07		8.172E+00	2.878E+01	4.265E+01	8.047E+00	0.192
		366.42		8.569E+00	1.420E+02	2.399E+02	2.151E+01	0.036
		739.50	*	1.290E+00	2.162E+01	3.636E+01	5.759E+00	0.035
		777.92		-1.439E+01	6.334E+01	1.041E+02	9.116E+00	-0.138
TC-99M		140.51	*	-2.302E+11	6.334E+01	Half-Life too short		
RU-103		497.08	*	-3.051E-02	5.269E-02	8.361E-02	1.193E-02	-0.365
	+	610.33		1.324E+01	3.033E+00	3.282E+00	5.425E-01	4.035
RH-106		621.93	*	-1.931E-01	4.128E-01	6.464E-01	8.692E-02	-0.299
		1050.41		-4.277E-01	3.345E+00	5.391E+00	4.516E-01	-0.079
RU-106		621.93	*	-1.931E-01	4.124E-01	6.464E-01	5.759E-02	-0.299
		1050.41		-4.277E-01	3.345E+00	5.391E+00	4.516E-01	-0.079
AG-108M		433.94	*	1.249E-02	3.645E-02	6.178E-02	5.670E-03	0.202
		614.28		4.472E-02	4.990E-02	7.579E-02	6.987E-03	0.590
		722.91		-3.492E-02	5.282E-02	7.125E-02	6.438E-03	-0.490
AG-110M		657.76	*	2.248E-02	5.586E-02	8.074E-02	7.233E-03	0.278
		677.62		3.739E-01	4.103E-01	7.020E-01	6.286E-02	0.533
		706.68		-1.979E-01	2.775E-01	4.207E-01	3.784E-02	-0.471
		763.94		-4.632E-02	2.246E-01	3.706E-01	3.334E-02	-0.125
		884.68		-1.866E-02	6.879E-02	1.114E-01	9.786E-03	-0.168
		937.49		-2.013E-01	1.651E-01	2.459E-01	2.161E-02	-0.819
		1384.29		-1.125E-01	2.127E-01	3.325E-01	2.964E-02	-0.338
		1505.03		2.393E-01	3.499E-01	6.200E-01	5.393E-02	0.386
SN-113		391.69	*	-1.623E-02	5.259E-02	8.670E-02	7.741E-03	-0.187
CD-115		260.90		2.070E+00	2.192E+02	3.570E+02	3.337E+01	0.006
		492.35		-4.987E+01	6.485E+01	1.016E+02	9.247E+00	-0.491
		527.90	*	2.483E+01	1.951E+01	3.437E+01	3.139E+00	0.723
SN-117M		156.02		-1.044E+00	2.656E+00	4.388E+00	4.214E-01	-0.238
		158.56	*	6.167E-03	6.504E-02	1.093E-01	1.023E-02	0.056
TE-123M		159.00	*	3.301E-03	3.219E-02	5.408E-02	5.066E-03	0.061
SB-124		602.73		-1.440E-02	5.902E-02	8.100E-02	7.286E-03	-0.178
		645.85		3.459E-01	6.564E-01	1.100E+00	1.019E-01	0.315
		722.78		-3.679E-01	5.360E-01	7.208E-01	6.457E-02	-0.510
		1690.97	*	3.939E-02	1.010E-01	1.740E-01	1.548E-02	0.226
SB-125		427.87	*	1.197E-02	1.084E-01	1.817E-01	1.642E-02	0.066

---- 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		463.37		1.714E-01	3.410E-01	5.798E-01	5.595E-02	0.296
		600.60		1.425E-01	2.256E-01	3.814E-01	3.666E-02	0.374
		635.95		3.921E-02	3.526E-01	5.756E-01	5.480E-02	0.068
		109.28	*	4.812E+00	1.094E+01	1.762E+01	2.278E+00	0.273
		388.63		-2.030E-02	2.100E-01	3.504E-01	3.050E-02	-0.058
SB-126		666.33	*	1.115E-01	3.647E-01	5.222E-01	4.536E-02	0.214
		753.82		1.908E+00	2.507E+00	4.390E+00	3.849E-01	0.435
		414.70		-1.633E-02	9.722E-02	1.609E-01	1.417E-02	-0.101
		666.50		3.140E-02	1.251E-01	1.782E-01	1.549E-02	0.176
		695.00		-3.051E-02	1.070E-01	1.684E-01	1.471E-02	-0.181
SB-127		697.00		-3.327E-01	3.786E-01	5.677E-01	4.961E-02	-0.586
		720.70	*	-7.432E-04	2.149E-01	3.112E-01	2.727E-02	-0.002
		856.80		3.684E-04	6.589E-01	1.092E+00	9.390E-02	0.000
		252.40		8.604E+00	6.918E+00	1.027E+01	4.291E+00	0.837
		473.00		1.242E+00	2.436E+00	4.141E+00	5.519E-01	0.300
I-131		685.70	*	1.914E-01	2.080E+00	3.372E+00	3.961E-01	0.057
		783.70		-2.222E+00	5.493E+00	8.901E+00	1.132E+00	-0.250
		80.19		-4.344E+00	5.987E+00	6.458E+00	6.577E-01	-0.673
		284.31		5.686E-01	1.911E+00	3.137E+00	3.073E-01	0.181
		364.49	*	8.389E-02	1.403E-01	2.432E-01	2.297E-02	0.345
TE-132		636.99		5.966E-01	2.301E+00	3.727E+00	3.474E-01	0.160
		49.72		-5.922E+00	6.022E+00	8.275E+00	1.044E+00	-0.716
		111.76		2.151E+01	4.815E+01	7.573E+01	1.041E+01	0.284
		116.30		5.833E+00	3.847E+01	6.120E+01	8.590E+00	0.095
		228.16	*	1.577E-01	1.022E+00	1.688E+00	2.757E-01	0.093
BA-133		81.00		-1.173E-01	1.152E-01	1.202E-01	1.972E-02	-0.975
		276.40		3.273E-01	4.363E-01	7.048E-01	1.028E-01	0.464
		302.85		-9.658E-02	1.755E-01	2.746E-01	3.726E-02	-0.352
		356.01	*	-4.577E-03	5.563E-02	8.115E-02	1.076E-02	-0.056
		383.85		-7.061E-02	3.498E-01	5.809E-01	7.278E-02	-0.122
I-133		529.87	*	-1.750E-02	3.498E-01	Half-Life too short		
		875.33		-1.867E-01	3.498E-01	Half-Life too short		
		1298.22		-1.279E-01	3.498E-01	Half-Life too short		
		563.25		-6.536E-03	4.647E-01	7.589E-01	6.968E-02	-0.009
		569.33		-1.603E-02	2.713E-01	4.359E-01	4.012E-02	-0.037
CS-134		604.72		-2.243E-02	5.016E-02	6.742E-02	6.073E-03	-0.333
		795.86	*	1.483E-01	6.662E-02	1.232E-01	1.084E-02	1.203
		801.95		-5.192E-01	5.497E-01	8.302E-01	7.284E-02	-0.625
		1365.19		-2.371E-01	1.398E+00	2.269E+00	2.058E-01	-0.104
		268.22	*	2.548E-01	2.066E-01	3.141E-01	3.334E-02	0.811
I-135		546.56		-5.064E+10	2.066E-01	Half-Life too short		
		836.80		3.707E+11	2.066E-01	Half-Life too short		
		1038.76		-2.059E+10	2.066E-01	Half-Life too short		
		1131.51		-4.353E+10	2.066E-01	Half-Life too short		
		1260.41	*	-5.026E+10	2.066E-01	Half-Life too short		
CS-136		1457.56		1.247E+13	2.066E-01	Half-Life too short		
		1678.03		1.122E+11	2.066E-01	Half-Life too short		
		1791.20		-2.563E+11	2.066E-01	Half-Life too short		
		153.25		3.462E-01	9.931E-01	1.684E+00	1.909E-01	0.206

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		176.60		-4.732E-02	5.770E-01	9.578E-01	9.221E-02	-0.049
		273.65		-3.730E-01	7.392E-01	1.014E+00	1.019E-01	-0.368
		340.55		2.631E-01	2.277E-01	3.396E-01	3.227E-02	0.775
		818.51		4.189E-02	1.045E-01	1.785E-01	1.554E-02	0.235
		1048.07	*	-1.985E-02	1.489E-01	2.399E-01	2.100E-02	-0.083
		1235.36		4.683E-01	8.787E-01	1.469E+00	1.693E-01	0.319
CE-139		165.86	*	-2.103E-02	3.287E-02	5.354E-02	4.625E-03	-0.393
BA-140		162.66		1.090E-01	9.968E-01	1.628E+00	1.549E-01	0.067
		304.85		-6.069E-01	1.708E+00	2.687E+00	7.924E-01	-0.226
		423.72		-1.480E+00	2.515E+00	3.977E+00	1.311E+00	-0.372
		537.26	*	-2.756E-01	3.689E-01	5.555E-01	1.891E-01	-0.496
LA-140		328.76		4.956E-01	4.180E-01	6.312E-01	6.139E-02	0.785
		487.02		2.190E-01	1.761E-01	3.105E-01	2.980E-02	0.706
		815.77		1.545E-01	4.838E-01	8.214E-01	7.971E-02	0.188
		1596.21	*	6.548E-02	1.158E-01	2.025E-01	1.750E-02	0.323
CE-141		145.44	*	1.028E-01	8.106E-02	1.223E-01	1.308E-02	0.840
CE-143		57.36		1.299E-04	8.106E-02	Half-Life	too short	
		293.27	*	1.531E-03	8.106E-02	Half-Life	too short	
		664.57		4.319E-03	8.106E-02	Half-Life	too short	
		721.93		-1.696E-03	8.106E-02	Half-Life	too short	
CE-144		80.12		-2.069E+00	2.972E+00	3.213E+00	3.255E-01	-0.644
		133.52	*	-7.511E-02	2.418E-01	3.546E-01	6.070E-02	-0.212
PM-144		476.78		-1.144E-01	8.148E-02	1.219E-01	1.192E-02	-0.938
		618.01		-1.959E-03	4.396E-02	6.694E-02	6.133E-03	-0.029
		696.49	*	-4.139E-02	4.606E-02	6.896E-02	6.029E-03	-0.600
PR-144		696.51	*	-3.086E+00	3.450E+00	5.167E+00	4.515E-01	-0.597
		1489.16		-3.941E+00	1.680E+01	2.683E+01	2.335E+00	-0.147
PM-146		453.88	*	5.071E-02	5.315E-02	9.230E-02	1.006E-02	0.549
		633.25		-4.067E-01	1.807E+00	2.868E+00	1.097E+00	-0.142
		735.93		4.395E-02	2.218E-01	3.263E-01	9.161E-02	0.135
		747.24		1.351E-02	1.327E-01	2.236E-01	3.280E-02	0.060
ND-147	+	91.11		6.445E-01	2.816E-01	6.655E-01	7.250E-02	0.968
		319.41		-2.031E+00	4.343E+00	6.796E+00	6.329E-01	-0.299
		531.02	*	-6.456E-01	7.701E-01	1.185E+00	1.807E-01	-0.545
PM-149		285.90	*	-4.980E+01	1.515E+02	2.408E+02	3.849E+01	-0.207
EU-152		121.78		5.573E-02	7.669E-02	1.325E-01	1.768E-02	0.420
		244.70		2.689E-01	3.968E-01	5.916E-01	5.494E-02	0.455
		344.28	*	-3.090E-02	1.239E-01	1.953E-01	1.884E-02	-0.158
		778.90		1.455E-01	3.398E-01	5.830E-01	5.103E-02	0.250
		964.08		5.271E-01	4.261E-01	6.713E-01	5.684E-02	0.785
		1085.87		-2.462E-01	4.846E-01	7.500E-01	6.228E-02	-0.328
		1112.07		2.117E-02	4.569E-01	6.878E-01	5.665E-02	0.031
		1408.01		2.073E-01	2.354E-01	4.220E-01	3.670E-02	0.491
GD-153		69.67		6.734E-03	1.301E+00	1.880E+00	1.930E-01	0.004
		97.43	*	-2.562E-02	9.976E-02	1.383E-01	1.476E-02	-0.185
		103.18		-1.354E-01	1.191E-01	1.800E-01	1.988E-02	-0.753
EU-154		123.07		4.917E-02	5.568E-02	9.358E-02	1.348E-02	0.525
		723.31		-1.213E-01	2.416E-01	3.321E-01	3.196E-02	-0.365
		873.19		3.230E-02	3.790E-01	6.309E-01	7.471E-02	0.051

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EU-155	+	996.26		-8.793E-01	5.496E-01	7.527E-01	1.309E-01	-1.168
		1004.73		-3.865E-01	3.082E-01	4.493E-01	5.168E-02	-0.860
		1274.44	*	4.509E-02	1.516E-01	2.589E-01	2.911E-02	0.174
		86.55		3.667E-01	1.305E-01	1.645E-01	1.675E-02	2.230
		105.31	*	1.571E-02	1.124E-01	1.797E-01	2.025E-02	0.087
TB-160	+	86.79		9.819E-01	3.493E-01	4.414E-01	4.462E-02	2.224
		197.04		-3.568E-01	6.491E-01	1.020E+00	9.130E-02	-0.350
		215.65		-5.393E-01	8.214E-01	1.312E+00	1.195E-01	-0.411
		298.57		1.311E-01	1.582E-01	2.342E-01	2.194E-02	0.560
		879.36	*	7.677E-02	1.949E-01	3.311E-01	2.823E-02	0.232
HO-166M	+	962.29		1.849E-01	8.095E-01	1.167E+00	9.883E-02	0.158
		966.15		1.295E+00	3.598E-01	6.301E-01	5.335E-02	2.055
		1177.93		-3.021E-01	4.760E-01	7.255E-01	5.847E-02	-0.416
		1271.85		6.677E-01	9.178E-01	1.617E+00	1.363E-01	0.413
		80.57		-2.795E-01	3.246E-01	3.463E-01	3.508E-02	-0.807
TA-182	+	184.41		1.985E-01	6.804E-02	8.546E-02	7.546E-03	2.323
		280.46		-6.317E-02	1.006E-01	1.577E-01	1.479E-02	-0.401
		410.95		1.061E-01	3.048E-01	5.178E-01	4.550E-02	0.205
		711.68	*	2.694E-02	7.956E-02	1.309E-01	1.146E-02	0.206
		752.31		-1.500E-01	3.688E-01	6.003E-01	5.264E-02	-0.250
IR-192	+	810.29		-2.121E-02	8.011E-02	1.308E-01	1.140E-02	-0.162
		67.75		-1.284E-02	7.468E-02	1.147E-01	1.182E-02	-0.112
		100.11		2.376E-01	1.855E-01	3.064E-01	3.322E-02	0.775
		152.43		2.508E-01	3.842E-01	6.576E-01	6.537E-02	0.381
		222.11		1.952E-01	3.933E-01	6.593E-01	6.035E-02	0.296
HG-203	+	1121.30		6.119E-01	3.145E-01	4.444E-01	3.649E-02	1.377
		1189.05		-5.688E-02	4.262E-01	6.799E-01	5.511E-02	-0.084
		1221.41	*	2.511E-01	2.505E-01	4.465E-01	3.677E-02	0.562
		1231.02		-3.306E-01	6.472E-01	1.044E+00	8.635E-02	-0.317
		295.96		1.100E+00	2.504E-01	3.209E-01	3.027E-02	3.428
BI-207	+	308.46		-1.082E-01	1.167E-01	1.779E-01	1.671E-02	-0.608
		316.51	*	-8.216E-04	4.355E-02	6.994E-02	6.533E-03	-0.012
		468.07		-4.287E-02	8.342E-02	1.339E-01	1.291E-02	-0.320
		70.83		9.422E-01	1.050E+00	1.550E+00	2.633E-01	0.608
		72.87		1.740E+00	6.672E-01	1.047E+00	1.724E-01	1.662
PB-211	+	279.20	*	1.785E-03	4.674E-02	7.589E-02	7.272E-03	0.024
		72.81		3.689E-01	1.416E-01	2.361E-01	2.410E-02	1.562
		74.97		7.126E-01	1.359E-01	1.834E-01	1.867E-02	3.886
		569.70		-1.257E-02	4.272E-02	6.764E-02	6.149E-03	-0.186
		1063.66	*	3.966E-02	6.353E-02	1.090E-01	9.106E-03	0.364
RN-219	+	1770.23		1.244E-01	5.350E-01	7.878E-01	6.614E-02	0.158
		404.85	*	-7.773E-01	9.493E-01	1.390E+00	6.731E-01	-0.559
		427.09		3.941E-01	1.808E+00	3.035E+00	1.406E+00	0.130
		832.01		-1.411E+00	1.556E+00	2.118E+00	1.099E+00	-0.666
		727.33	*	2.839E+00	1.426E+00	1.494E+00	1.876E-01	1.901
RN-219	+	785.37		9.675E-01	4.089E+00	6.927E+00	6.059E-01	0.140
		1620.50		1.904E+00	2.676E+00	4.813E+00	4.149E-01	0.396
		271.23		6.193E-01	4.226E-01	5.021E-01	5.470E-02	1.233
		401.81	*	-1.515E-02	4.881E-01	8.154E-01	1.218E-01	-0.019

---- 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		-2.720E-01	2.590E-01	2.720E-01	2.754E-02	-1.000
		83.79		1.654E-01	1.127E-01	1.840E-01	1.862E-02	0.899
		94.87		2.047E+00	5.688E-01	8.627E-01	9.068E-02	2.372
	+	144.24		2.397E+00	1.309E+00	1.348E+00	1.549E-01	1.779
		154.21		1.762E-01	4.298E-01	7.302E-01	7.673E-02	0.241
AC-227	+	269.46		4.812E-01	3.274E-01	3.864E-01	3.680E-02	1.245
		323.87	*	4.670E-01	8.554E-01	1.242E+00	2.195E-01	0.376
	+	338.28		5.273E+00	1.820E+00	2.509E+00	3.135E-01	2.102
		79.69		1.439E+00	1.349E+00	1.609E+00	2.902E-01	0.895
		235.96		5.359E-01	2.090E-01	3.272E-01	3.555E-02	1.638
TH-227		256.23	*	-2.640E-01	3.042E-01	4.730E-01	5.946E-02	-0.558
		299.98		1.843E+00	1.277E+00	1.850E+00	2.446E-01	0.997
		304.50		-1.887E+00	2.030E+00	3.078E+00	5.210E-01	-0.613
		334.37		-2.096E+00	2.347E+00	3.015E+00	4.804E-01	-0.695
		79.80		1.954E+00	1.803E+00	2.129E+00	4.774E-01	0.918
TH-229		235.96		5.359E-01	2.081E-01	3.272E-01	3.373E-02	1.638
		256.23	*	-2.640E-01	3.046E-01	4.730E-01	6.655E-02	-0.558
		299.98		1.843E+00	1.277E+00	1.850E+00	2.446E-01	0.997
		304.50		-1.887E+00	2.030E+00	3.078E+00	5.210E-01	-0.613
		334.37		-2.096E+00	2.347E+00	3.015E+00	4.804E-01	-0.695
PA-231		85.43		5.289E-01	2.020E-01	3.317E-01	3.354E-02	1.594
	+	88.47		4.660E-01	1.658E-01	2.128E-01	2.157E-02	2.190
		193.51	*	-1.181E-01	5.928E-01	9.745E-01	8.691E-02	-0.121
		210.85		1.442E+00	1.109E+00	1.706E+00	1.547E-01	0.846
		283.69	*	5.604E-01	1.696E+00	2.788E+00	4.195E-01	0.201
TH-231		301.36		3.879E-01	7.675E-01	1.158E+00	1.470E-01	0.335
		81.07		-2.720E-01	2.590E-01	2.720E-01	2.754E-02	-1.000
		83.79		1.654E-01	1.127E-01	1.840E-01	1.862E-02	0.899
		94.87		2.047E+00	5.688E-01	8.627E-01	9.068E-02	2.372
	+	144.24		2.397E+00	1.309E+00	1.348E+00	1.549E-01	1.779
PA-233		154.21		1.762E-01	4.298E-01	7.302E-01	7.673E-02	0.241
	+	269.46		4.812E-01	3.274E-01	3.864E-01	3.680E-02	1.245
		323.87	*	4.670E-01	8.554E-01	1.242E+00	2.195E-01	0.376
	+	338.28		5.273E+00	1.820E+00	2.509E+00	3.135E-01	2.102
		300.13		8.185E-01	5.807E-01	8.351E-01	1.276E-01	0.980
PA-234		311.90	*	-2.142E-03	7.940E-02	1.276E-01	1.221E-02	-0.017
		340.48		1.279E+00	9.749E-01	1.403E+00	3.407E-01	0.912
		94.67		8.556E-01	2.220E-01	3.375E-01	4.649E-02	2.535
		98.44		6.452E-02	1.138E-01	1.557E-01	8.741E-02	0.414
		111.00		4.443E-02	2.057E-01	3.286E-01	4.720E-02	0.135
PA-234M		131.20		1.070E-01	1.258E-01	1.942E-01	2.281E-02	0.551
		569.50		-6.137E-02	3.767E-01	6.014E-01	5.468E-02	-0.102
		733.00		-1.642E-01	5.662E-01	7.944E-01	1.768E-01	-0.207
		880.51		2.375E-01	3.977E-01	6.841E-01	5.830E-02	0.347
		883.24		5.378E-02	3.921E-01	6.518E-01	4.381E-01	0.083
PA-234M		926.50		-1.419E-03	2.419E-01	3.981E-01	1.004E-01	-0.004
		946.00	*	-1.645E-01	4.381E-01	6.779E-01	1.267E-01	-0.243
		949.00		2.059E-01	5.848E-01	9.871E-01	8.361E-02	0.209
		766.42		2.751E+01	2.089E+01	2.855E+01	1.549E+01	0.963

---- 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	*		1.178E+01	7.076E+00	1.242E+01	1.219E+00	0.949
	99.53			2.492E-01	1.841E-01	2.871E-01	3.102E-02	0.868
	103.37			-5.249E-02	1.052E-01	1.640E-01	1.814E-02	-0.320
	106.12			-1.697E-02	9.168E-02	1.447E-01	1.627E-02	-0.117
	117.23	*		6.306E-02	4.255E-01	6.768E-01	8.162E-02	0.093
AM-241	228.18			3.961E-02	2.434E-01	4.022E-01	3.698E-02	0.098
	277.60			1.554E-01	2.069E-01	3.462E-01	3.247E-02	0.449
	59.54	*		4.612E-02	7.864E-02	1.170E-01	1.297E-02	0.394
CM-247	278.00			8.020E-01	8.720E-01	1.469E+00	1.378E-01	0.546
	287.50			1.105E+00	1.514E+00	2.450E+00	2.299E-01	0.451
CF-249	402.40	*		-6.495E-04	4.423E-02	7.395E-02	6.459E-03	-0.009
	252.80			1.005E+00	1.122E+00	1.897E+00	1.768E-01	0.530
	333.37			-2.307E-01	2.998E-01	3.208E-01	2.964E-02	-0.719
CF-251	388.16	*		1.249E-02	4.736E-02	8.047E-02	7.010E-03	0.155
	177.52	*		5.352E-02	1.416E-01	2.389E-01	2.093E-02	0.224
	227.38			8.391E-03	3.988E-01	6.551E-01	6.021E-02	0.013
	285.41			-5.051E-01	2.598E+00	4.165E+00	3.907E-01	-0.121

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900008      *
* Acquisition date   : 6-MAR-2010 14:59:28 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 02:00:01.73             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247900008              Analyst initials: MXR1         *
* Batch Number       : 957711                  Sample Quantity : 1.3858E+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	2.565E+01	2.840E+00	7.260E-01	0.000E+00
CD-109	3.097E+00	1.080E+00	1.189E+00	0.000E+00
SN-126	3.023E-01	1.054E-01	1.159E-01	0.000E+00
BA-137M	2.233E-01	7.538E-02	7.855E-02	0.000E+00
CS-137	2.359E-01	7.964E-02	8.299E-02	0.000E+00
TL-208	5.215E-01	1.014E-01	7.607E-02	0.000E+00
PB-210	1.478E+00	7.448E-01	9.202E-01	0.000E+00
BI-211	3.895E+00	6.006E-01	4.498E-01	0.000E+00
PB-212	1.553E+00	1.979E-01	1.046E-01	0.000E+00
BI-214	1.260E+00	2.342E-01	1.478E-01	0.000E+00
PB-214	1.414E+00	2.310E-01	1.574E-01	0.000E+00
RA-224	3.161E+00	1.218E+00	1.121E+00	0.000E+00
RA-226	1.260E+00	2.342E-01	1.478E-01	0.000E+00
AC-228	1.763E+00	3.792E-01	3.004E-01	0.000E+00
RA-228	1.763E+00	3.792E-01	3.004E-01	0.000E+00
TH-228	1.553E+00	1.979E-01	1.046E-01	0.000E+00
TH-232	1.763E+00	3.792E-01	3.004E-01	0.000E+00
TH-234	5.749E+00	1.604E+00	1.230E+00	0.000E+00
U-235	7.152E-01	3.951E-01	3.576E-01	0.000E+00
NP-237	9.020E-01	3.650E-01	3.449E-01	0.000E+00
U-238	5.749E+00	1.604E+00	1.230E+00	0.000E+00
ANH-511	1.069E-01	7.859E-02	6.024E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.023E-02	3.709E-01	6.392E-01	0.000E+00 NOT IDENT.
NA-22	1.347E-02	5.222E-02	9.127E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.324E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-4.236E-04	5.200E-02	8.879E-02	0.000E+00 FAIL ABUN
V-48	7.657E-02	9.333E-02	1.678E-01	0.000E+00 NOT IDENT.

CR-51	1.196E-02	4.441E-01	7.541E-01	0.000E+00	NOT IDENT.
MN-54	4.713E-03	5.022E-02	8.685E-02	0.000E+00	NOT IDENT.
CO-56	-2.236E-02	5.019E-02	8.325E-02	0.000E+00	NOT IDENT.
CO-57	1.859E-02	2.615E-02	4.858E-02	0.000E+00	NOT IDENT.
CO-58	-6.509E-03	5.242E-02	8.960E-02	0.000E+00	NOT IDENT.
FE-59	-6.000E-02	1.236E-01	1.983E-01	0.000E+00	NOT IDENT.
CO-60	3.586E-02	4.985E-02	9.027E-02	0.000E+00	NOT IDENT.
ZN-65	8.775E-02	1.403E-01	2.136E-01	0.000E+00	NOT IDENT.
SE-75	3.420E-02	5.525E-02	8.664E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.296E-02	9.008E-02	0.000E+00	NOT IDENT.
Y-88	-1.558E-02	3.379E-02	5.207E-02	0.000E+00	NOT IDENT.
Y-91	3.325E+00	2.752E+01	4.775E+01	0.000E+00	NOT IDENT.
NB-94	4.533E-02	4.320E-02	7.703E-02	0.000E+00	NOT IDENT.
NB-95	9.778E-02	5.808E-02	1.091E-01	0.000E+00	NOT IDENT.
NB-95M	2.563E-01	1.608E-01	2.626E-01	0.000E+00	NOT IDENT.
ZR-95	3.977E-02	9.266E-02	1.651E-01	0.000E+00	NOT IDENT.
MO-99	1.290E+00	2.119E+01	3.699E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.247E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.051E-02	5.164E-02	8.573E-02	0.000E+00	FAIL ABUN
RH-106	-1.931E-01	4.046E-01	6.599E-01	0.000E+00	NOT IDENT.
RU-106	-1.931E-01	4.041E-01	6.599E-01	0.000E+00	NOT IDENT.
AG-108M	1.249E-02	3.572E-02	6.352E-02	0.000E+00	NOT IDENT.
AG-110M	2.248E-02	5.474E-02	8.233E-02	0.000E+00	NOT IDENT.
SN-113	-1.623E-02	5.154E-02	8.932E-02	0.000E+00	NOT IDENT.
CD-115	2.483E+01	1.912E+01	3.520E+01	0.000E+00	NOT IDENT.
SN-117M	6.167E-03	6.373E-02	1.145E-01	0.000E+00	NOT IDENT.
TE-123M	3.301E-03	3.154E-02	5.670E-02	0.000E+00	NOT IDENT.
SB-124	3.939E-02	9.897E-02	1.740E-01	0.000E+00	NOT IDENT.
SB-125	1.197E-02	1.062E-01	1.869E-01	0.000E+00	NOT IDENT.
TE-125M	4.812E+00	1.072E+01	1.860E+01	0.000E+00	NOT IDENT.
I-126	1.115E-01	3.574E-01	5.324E-01	0.000E+00	NOT IDENT.
SB-126	-7.432E-04	2.106E-01	3.168E-01	0.000E+00	NOT IDENT.
SB-127	1.914E-01	2.039E+00	3.436E+00	0.000E+00	NOT IDENT.
I-131	8.389E-02	1.375E-01	2.509E-01	0.000E+00	NOT IDENT.
TE-132	1.577E-01	1.002E+00	1.757E+00	0.000E+00	NOT IDENT.
BA-133	-4.577E-03	5.452E-02	8.377E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.725E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.529E-02	1.252E-01	0.000E+00	NOT IDENT.
CS-135	2.548E-01	2.025E-01	3.260E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.091E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.985E-02	1.459E-01	2.424E-01	0.000E+00	NOT IDENT.
CE-139	-2.103E-02	3.221E-02	5.608E-02	0.000E+00	NOT IDENT.
BA-140	-2.756E-01	3.615E-01	5.687E-01	0.000E+00	NOT IDENT.
LA-140	6.548E-02	1.135E-01	2.028E-01	0.000E+00	NOT IDENT.
CE-141	1.028E-01	7.944E-02	1.284E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.718E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-7.511E-02	2.369E-01	3.730E-01	0.000E+00	NOT IDENT.
PM-144	-4.139E-02	4.514E-02	7.024E-02	0.000E+00	NOT IDENT.
PR-144	-3.086E+00	3.381E+00	5.263E+00	0.000E+00	NOT IDENT.
PM-146	5.071E-02	5.209E-02	9.482E-02	0.000E+00	NOT IDENT.
ND-147	-6.456E-01	7.547E-01	1.214E+00	0.000E+00	FAIL ABUN
PM-149	-4.980E+01	1.484E+02	2.497E+02	0.000E+00	NOT IDENT.
EU-152	-3.090E-02	1.214E-01	2.017E-01	0.000E+00	NOT IDENT.
GD-153	-2.562E-02	9.776E-02	1.463E-01	0.000E+00	NOT IDENT.
EU-154	4.509E-02	1.486E-01	2.605E-01	0.000E+00	NOT IDENT.
EU-155	1.571E-02	1.102E-01	1.898E-01	0.000E+00	FAIL ABUN
TB-160	7.677E-02	1.910E-01	3.357E-01	0.000E+00	FAIL ABUN
HO-166M	2.694E-02	7.797E-02	1.332E-01	0.000E+00	FAIL ABUN
TA-182	2.511E-01	2.455E-01	4.496E-01	0.000E+00	FAIL ABUN
IR-192	-8.216E-04	4.268E-02	7.236E-02	0.000E+00	FAIL ABUN
HG-203	1.785E-03	4.580E-02	7.870E-02	0.000E+00	NOT IDENT.
BI-207	3.966E-02	6.226E-02	1.101E-01	0.000E+00	FAIL ABUN
PB-211	-7.773E-01	9.304E-01	1.431E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.397E+00	1.520E+00	0.000E+00	FAIL ABUN
RN-219	-1.515E-02	4.783E-01	8.397E-01	0.000E+00	FAIL ABUN
RA-223	4.670E-01	8.383E-01	1.284E+00	0.000E+00	FAIL ABUN
AC-227	-2.640E-01	2.981E-01	4.914E-01	0.000E+00	NOT IDENT.
TH-227	-2.640E-01	2.986E-01	4.914E-01	0.000E+00	NOT IDENT.
TH-229	-1.181E-01	5.810E-01	1.018E+00	0.000E+00	FAIL ABUN
PA-231	5.604E-01	1.662E+00	2.890E+00	0.000E+00	NOT IDENT.
TH-231	4.670E-01	8.383E-01	1.284E+00	0.000E+00	FAIL ABUN
PA-233	-2.142E-03	7.781E-02	1.320E-01	0.000E+00	NOT IDENT.
PA-234	-1.645E-01	4.293E-01	6.862E-01	0.000E+00	NOT IDENT.
PA-234M	1.178E+01	6.935E+00	1.256E+01	0.000E+00	NOT IDENT.
NP-239	6.306E-02	4.170E-01	7.135E-01	0.000E+00	NOT IDENT.
AM-241	4.612E-02	7.707E-02	1.249E-01	0.000E+00	NOT IDENT.
CM-247	-6.495E-04	4.335E-02	7.615E-02	0.000E+00	NOT IDENT.
CF-249	1.249E-02	4.641E-02	8.292E-02	0.000E+00	NOT IDENT.

CF-251	5.352E-02	1.388E-01	2.500E-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]G247900008.CNF;1
Sample date     : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 14:59:28.
Sample ID      : G247900008 Sample quantity : 1.38580E+02 GRAM
Detector name   : GAM13 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.73 0.0%
Energy tolerance: 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID       : 957711 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	1012	10.66*	1.003E+00	2.565E+01	2.565E+01	11.30
CD-109	88.03	301	3.70*	7.288E+00	3.023E+00	3.097E+00	35.58
SN-126	64.28	580	9.60	7.387E+00	2.216E+00	2.216E+00	26.53
	86.94	301	8.90	7.288E+00	1.257E+00	1.257E+00	53.87
	87.57	301	37.00*	7.288E+00	3.023E-01	3.023E-01	35.58
BA-137M	661.66	146	89.90*	1.970E+00	2.231E-01	2.233E-01	34.45
CS-137	661.66	146	85.10*	1.970E+00	2.357E-01	2.359E-01	34.45
TL-208	277.37	-----	6.60	4.098E+00	-----	Line Not Found	-----
	583.19	361	85.00*	2.203E+00	5.215E-01	5.215E-01	19.83
	860.56	-----	12.50	1.561E+00	-----	Line Not Found	-----
PB-210	46.54	160	4.25*	6.910E+00	1.476E+00	1.478E+00	51.43
BI-211	72.87	-----	1.23	7.416E+00	-----	Line Not Found	-----
	351.06	631	12.92*	3.399E+00	3.895E+00	3.895E+00	15.73
PB-212	74.82	695	10.28	7.408E+00	2.472E+00	2.472E+00	21.40
	77.11	999	17.10	7.394E+00	2.139E+00	2.139E+00	15.09
	238.63	1143	43.60*	4.573E+00	1.553E+00	1.553E+00	13.00
	300.09	-----	3.30	3.858E+00	-----	Line Not Found	-----
BI-214	609.32	448	45.49*	2.119E+00	1.260E+00	1.260E+00	18.97
	1120.29	89	14.92	1.244E+00	1.298E+00	1.298E+00	51.83
	1764.49	89	15.30	8.701E-01	1.808E+00	1.808E+00	29.99
PB-214	74.82	695	5.80	7.408E+00	4.382E+00	4.382E+00	20.65
	77.11	999	9.70	7.394E+00	3.771E+00	3.771E+00	17.20
	242.00	217	7.25	4.534E+00	1.788E+00	1.788E+00	39.73
	295.22	392	18.42	3.909E+00	1.474E+00	1.474E+00	23.65
	351.93	631	35.60*	3.399E+00	1.414E+00	1.414E+00	16.67
RA-224	240.99	217	4.10*	4.534E+00	3.161E+00	3.161E+00	39.31
RA-226	609.32	448	45.49*	2.119E+00	1.260E+00	1.260E+00	18.97
	1120.29	89	14.92	1.244E+00	1.298E+00	1.298E+00	51.83
	1764.49	89	15.30	8.701E-01	1.808E+00	1.808E+00	29.99
AC-228	338.32	194	11.27	3.507E+00	1.329E+00	1.329E+00	52.78
	911.20	249	25.80*	1.485E+00	1.763E+00	1.763E+00	21.95
	968.97	132	15.80	1.408E+00	1.603E+00	1.603E+00	37.85

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	194	11.27	3.507E+00	1.329E+00	1.329E+00	52.78
	911.20	249	25.80*	1.485E+00	1.763E+00	1.763E+00	21.95
	968.97	132	15.80	1.408E+00	1.603E+00	1.603E+00	37.85
TH-228	74.82	695	10.28	7.408E+00	2.472E+00	2.472E+00	19.10
	77.11	999	17.10	7.394E+00	2.139E+00	2.139E+00	15.09
	238.63	1143	43.60*	4.573E+00	1.553E+00	1.553E+00	13.00
	300.09	-----	3.30	3.858E+00	-----	Line Not Found	-----
TH-232	338.32	194	11.27	3.507E+00	1.329E+00	1.329E+00	33.46
	911.20	249	25.80*	1.485E+00	1.763E+00	1.763E+00	21.95
	968.97	132	15.80	1.408E+00	1.603E+00	1.603E+00	37.85
TH-234	63.29	580	3.70*	7.387E+00	5.749E+00	5.749E+00	28.47
	92.59	1019	4.23	7.206E+00	9.052E+00	9.052E+00	25.60
U-235	89.96	173	3.47	7.249E+00	1.867E+00	1.867E+00	49.27
	93.35	1019	5.60	7.206E+00	6.837E+00	6.837E+00	26.48
	143.76	179	10.96*	6.185E+00	7.152E-01	7.152E-01	56.38
	163.33	-----	5.08	5.799E+00	-----	Line Not Found	-----
	185.72	284	57.20	5.385E+00	2.499E-01	2.499E-01	34.28
	205.31	-----	5.01	5.061E+00	-----	Line Not Found	-----
NP-237	86.48	301	12.40*	7.288E+00	9.020E-01	9.020E-01	41.30
	95.86	-----	2.68	7.153E+00	-----	Line Not Found	-----
U-238	63.29	580	3.70*	7.387E+00	5.749E+00	5.749E+00	28.47
	92.59	1019	4.23	7.206E+00	9.052E+00	9.052E+00	15.56
ANH-511	511.00	98	100.00*	2.475E+00	1.069E-01	1.069E-01	75.00

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247900008

Page : 3
Acquisition date : 6-MAR-2010 14:59:28

Total number of lines in spectrum 30
Number of unidentified lines 5
Number of lines tentatively identified by NID 25 83.33%

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	2.565E+01	2.565E+01	0.290E+01	11.30	
CD-109	461.40D	1.02	3.023E+00	3.097E+00	1.102E+00	35.58	
SN-126	2.30E+05Y	1.00	3.023E-01	3.023E-01	1.075E-01	35.58	
BA-137M	30.08Y	1.00	2.231E-01	2.233E-01	0.769E-01	34.45	
CS-137	30.08Y	1.00	2.357E-01	2.359E-01	0.813E-01	34.45	
TL-208	1.41E+10Y	1.00	5.215E-01	5.215E-01	1.034E-01	19.83	
PB-210	22.20Y	1.00	1.476E+00	1.478E+00	0.760E+00	51.43	
BI-211	7.04E+08Y	1.00	3.895E+00	3.895E+00	0.613E+00	15.73	
PB-212	1.41E+10Y	1.00	1.553E+00	1.553E+00	0.202E+00	13.00	
BI-214	1600.00Y	1.00	1.260E+00	1.260E+00	0.239E+00	18.97	
PB-214	1600.00Y	1.00	1.414E+00	1.414E+00	0.236E+00	16.67	
RA-224	1.41E+10Y	1.00	3.161E+00	3.161E+00	1.243E+00	39.31	
RA-226	1600.00Y	1.00	1.260E+00	1.260E+00	0.239E+00	18.97	
AC-228	1.41E+10Y	1.00	1.763E+00	1.763E+00	0.387E+00	21.95	
RA-228	1.41E+10Y	1.00	1.763E+00	1.763E+00	0.387E+00	21.95	
TH-228	1.41E+10Y	1.00	1.553E+00	1.553E+00	0.202E+00	13.00	
TH-232	1.41E+10Y	1.00	1.763E+00	1.763E+00	0.387E+00	21.95	
TH-234	4.47E+09Y	1.00	5.749E+00	5.749E+00	1.637E+00	28.47	
U-235	7.04E+08Y	1.00	7.152E-01	7.152E-01	4.032E-01	56.38	
NP-237	2.14E+06Y	1.00	9.020E-01	9.020E-01	3.725E-01	41.30	
U-238	4.47E+09Y	1.00	5.749E+00	5.749E+00	1.637E+00	28.47	
ANH-511	1.00E+09Y	1.00	1.069E-01	1.069E-01	0.802E-01	75.00	
Total Activity :			6.403E+01	6.411E+01			

Grand Total Activity : 6.403E+01 6.411E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900008

Page : 4
Acquisition date : 6-MAR-2010 14:59:28

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.90	103	452	0.98	257.32	253	9	1.42E-02	77.2	6.50E+00	
0	209.02	111	252	1.26	417.57	414	7	1.54E-02	51.2	5.00E+00	
0	269.96	103	260	1.38	539.44	534	11	1.43E-02	67.4	4.18E+00	T
0	326.99	62	222	1.09	653.50	649	11	8.55E-03	97.3	3.61E+00	
0	727.91	127	143	2.00	1455.36	1447	19	1.76E-02	48.6	1.81E+00	T
0	1847.07	18	3	1.67	3694.15	3690	10	2.52E-03	57.6	8.42E-01	
0	1934.60	11	7	4.27	3869.28	3860	13	1.58E-03	****	8.15E-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]G247900008.CNF;1
* Acquisition date   : 6-MAR-2010 14:59:28.   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 02:00:01.73           Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G247900008             Analyst initials: MXR1
* Batch Number       : 957711                 Sample Quantity : 1.38580E+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	2.565E+01	2.897E+00	7.236E-01	6.474E-02	35.445
CD-109	3.097E+00	1.102E+00	1.122E+00	1.134E-01	2.761
SN-126	3.023E-01	1.075E-01	1.093E-01	1.105E-02	2.764
BA-137M	2.233E-01	7.692E-02	7.704E-02	6.685E-03	2.899
CS-137	2.359E-01	8.127E-02	8.139E-02	7.075E-03	2.899
TL-208	5.215E-01	1.034E-01	7.441E-02	7.173E-03	7.008
PB-210	1.478E+00	7.600E-01	8.581E-01	9.392E-02	1.722
BI-211	3.895E+00	6.129E-01	4.357E-01	4.151E-02	8.941
PB-212	1.553E+00	2.019E-01	1.006E-01	1.039E-02	15.440
BI-214	1.260E+00	2.390E-01	1.447E-01	1.505E-02	8.711
PB-214	1.414E+00	2.357E-01	1.525E-01	1.678E-02	9.273
RA-224	3.161E+00	1.243E+00	1.078E+00	9.993E-02	2.932
RA-226	1.260E+00	2.390E-01	1.447E-01	1.505E-02	8.711
AC-228	1.763E+00	3.869E-01	2.965E-01	3.403E-02	5.945
RA-228	1.763E+00	3.869E-01	2.965E-01	3.403E-02	5.945
TH-228	1.553E+00	2.019E-01	1.006E-01	1.039E-02	15.440
TH-232	1.763E+00	3.869E-01	2.965E-01	3.403E-02	5.945
TH-234	5.749E+00	1.637E+00	1.153E+00	2.223E-01	4.986

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	7.152E-01	4.032E-01	3.405E-01	6.166E-02	2.100
NP-237	9.020E-01	3.725E-01	3.253E-01	7.571E-02	2.773
U-238	5.749E+00	1.637E+00	1.153E+00	2.223E-01	4.986
ANH-511	1.069E-01	8.019E-02	5.877E-02	5.365E-03	1.819

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.023E-02		3.785E-01	6.228E-01	6.043E-02	-0.049
NA-22	1.347E-02		5.329E-02	9.071E-02	7.665E-03	0.148
NA-24	-1.274E+00		1.186E+00	Half-Life	too short	
SC-46	-4.236E-04		5.306E-02	8.760E-02	7.437E-03	-0.005
V-48	7.657E-02		9.523E-02	1.659E-01	1.403E-02	0.462
CR-51	1.196E-02		4.532E-01	7.290E-01	7.092E-02	0.016
MN-54	4.713E-03		5.124E-02	8.558E-02	7.412E-03	0.055
CO-56	-2.236E-02		5.121E-02	8.205E-02	7.081E-03	-0.272
CO-57	1.859E-02		2.668E-02	4.611E-02	5.737E-03	0.403
CO-58	-6.509E-03		5.349E-02	8.824E-02	7.704E-03	-0.074
FE-59	-6.000E-02		1.261E-01	1.964E-01	1.767E-02	-0.305
CO-60	3.586E-02		5.086E-02	8.980E-02	7.767E-03	0.399
ZN-65	8.775E-02		1.432E-01	2.117E-01	1.744E-02	0.415
SE-75	3.420E-02		5.638E-02	8.345E-02	7.841E-03	0.410
SR-85	1.084E-01		5.404E-02	8.790E-02	8.026E-03	1.233
Y-88	-1.558E-02		3.448E-02	5.215E-02	4.309E-03	-0.299
Y-91	3.325E+00		2.808E+01	4.740E+01	3.872E+00	0.070
NB-94	4.533E-02		4.408E-02	7.564E-02	6.615E-03	0.599
NB-95	9.778E-02		5.926E-02	1.073E-01	9.404E-03	0.911
NB-95M	2.563E-01		1.641E-01	2.524E-01	2.632E-02	1.016
ZR-95	3.977E-02		9.455E-02	1.624E-01	1.568E-02	0.245
MO-99	1.290E+00		2.162E+01	3.636E+01	5.759E+00	0.035
TC-99M	-2.302E+11		3.697E+11	Half-Life	too short	
RU-103	-3.051E-02		5.269E-02	8.361E-02	1.193E-02	-0.365
RH-106	-1.931E-01		4.128E-01	6.464E-01	8.692E-02	-0.299
RU-106	-1.931E-01		4.124E-01	6.464E-01	5.759E-02	-0.299
AG-108M	1.249E-02		3.645E-02	6.178E-02	5.670E-03	0.202
AG-110M	2.248E-02		5.586E-02	8.074E-02	7.233E-03	0.278
SN-113	-1.623E-02		5.259E-02	8.670E-02	7.741E-03	-0.187
CD-115	2.483E+01		1.951E+01	3.437E+01	3.139E+00	0.723
SN-117M	6.167E-03		6.504E-02	1.093E-01	1.023E-02	0.056
TE-123M	3.301E-03		3.219E-02	5.408E-02	5.066E-03	0.061
SB-124	3.939E-02		1.010E-01	1.740E-01	1.548E-02	0.226
SB-125	1.197E-02		1.084E-01	1.817E-01	1.642E-02	0.066
TE-125M	4.812E+00		1.094E+01	1.762E+01	2.278E+00	0.273
I-126	1.115E-01		3.647E-01	5.222E-01	4.536E-02	0.214
SB-126	-7.432E-04		2.149E-01	3.112E-01	2.727E-02	-0.002
SB-127	1.914E-01		2.080E+00	3.372E+00	3.961E-01	0.057
I-131	8.389E-02		1.403E-01	2.432E-01	2.297E-02	0.345

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	1.577E-01		1.022E+00	1.688E+00	2.757E-01	0.093
BA-133	-4.577E-03		5.563E-02	8.115E-02	1.076E-02	-0.056
I-133	-1.750E-02		8.800E-03	Half-Life too short		
CS-134	1.483E-01		6.662E-02	1.232E-01	1.084E-02	1.203
CS-135	2.548E-01		2.066E-01	3.141E-01	3.334E-02	0.811
I-135	-5.026E+10		5.565E+10	Half-Life too short		
CS-136	-1.985E-02		1.489E-01	2.399E-01	2.100E-02	-0.083
CE-139	-2.103E-02		3.287E-02	5.354E-02	4.625E-03	-0.393
BA-140	-2.756E-01		3.689E-01	5.555E-01	1.891E-01	-0.496
LA-140	6.548E-02		1.158E-01	2.025E-01	1.750E-02	0.323
CE-141	1.028E-01		8.106E-02	1.223E-01	1.308E-02	0.840
CE-143	1.531E-03		2.407E-04	Half-Life too short		
CE-144	-7.511E-02		2.418E-01	3.546E-01	6.070E-02	-0.212
PM-144	-4.139E-02		4.606E-02	6.896E-02	6.029E-03	-0.600
PR-144	-3.086E+00		3.450E+00	5.167E+00	4.515E-01	-0.597
PM-146	5.071E-02		5.315E-02	9.230E-02	1.006E-02	0.549
ND-147	-6.456E-01		7.701E-01	1.185E+00	1.807E-01	-0.545
PM-149	-4.980E+01		1.515E+02	2.408E+02	3.849E+01	-0.207
EU-152	-3.090E-02		1.239E-01	1.953E-01	1.884E-02	-0.158
GD-153	-2.562E-02		9.976E-02	1.383E-01	1.476E-02	-0.185
EU-154	4.509E-02		1.516E-01	2.589E-01	2.911E-02	0.174
EU-155	1.571E-02		1.124E-01	1.797E-01	2.025E-02	0.087
TB-160	7.677E-02		1.949E-01	3.311E-01	2.823E-02	0.232
HO-166M	2.694E-02		7.956E-02	1.309E-01	1.146E-02	0.206
TA-182	2.511E-01		2.505E-01	4.465E-01	3.677E-02	0.562
IR-192	-8.216E-04		4.355E-02	6.994E-02	6.533E-03	-0.012
HG-203	1.785E-03		4.674E-02	7.589E-02	7.272E-03	0.024
BI-207	3.966E-02		6.353E-02	1.090E-01	9.106E-03	0.364
PB-211	-7.773E-01		9.493E-01	1.390E+00	6.731E-01	-0.559
BI-212	2.839E+00	+	1.426E+00	1.494E+00	1.876E-01	1.901
RN-219	-1.515E-02		4.881E-01	8.154E-01	1.218E-01	-0.019
RA-223	4.670E-01		8.554E-01	1.242E+00	2.195E-01	0.376
AC-227	-2.640E-01		3.042E-01	4.730E-01	5.946E-02	-0.558
TH-227	-2.640E-01		3.046E-01	4.730E-01	6.655E-02	-0.558
TH-229	-1.181E-01		5.928E-01	9.745E-01	8.691E-02	-0.121
PA-231	5.604E-01		1.696E+00	2.788E+00	4.195E-01	0.201
TH-231	4.670E-01		8.554E-01	1.242E+00	2.195E-01	0.376
PA-233	-2.142E-03		7.940E-02	1.276E-01	1.221E-02	-0.017
PA-234	-1.645E-01		4.381E-01	6.779E-01	1.267E-01	-0.243
PA-234M	1.178E+01		7.076E+00	1.242E+01	1.219E+00	0.949
NP-239	6.306E-02		4.255E-01	6.768E-01	8.162E-02	0.093
AM-241	4.612E-02		7.864E-02	1.170E-01	1.297E-02	0.394
CM-247	-6.495E-04		4.423E-02	7.395E-02	6.459E-03	-0.009
CF-249	1.249E-02		4.736E-02	8.047E-02	7.010E-03	0.155
CF-251	5.352E-02		1.416E-01	2.389E-01	2.093E-02	0.224

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]G247900008          *
* Acquisition date   : 6-MAR-2010 14:59:28 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 02:00:01.73 Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID      *
* Sample ID          : G247900008 Analyst initials: MXR1          *
* Batch Number       : 957711 Sample Quantity : 1.3858E+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	2.565E+01	2.840E+00	3.632E-01	1.449E+00
CD-109	3.097E+00	1.080E+00	5.949E-01	5.509E-01
SN-126	3.023E-01	1.054E-01	5.799E-02	5.377E-02
BA-137M	2.233E-01	7.538E-02	3.930E-02	3.846E-02
CS-137	2.359E-01	7.964E-02	4.152E-02	4.063E-02
TL-208	5.215E-01	1.014E-01	3.806E-02	5.172E-02
PB-210	1.478E+00	7.448E-01	4.604E-01	3.800E-01
BI-211	3.895E+00	6.006E-01	2.250E-01	3.064E-01
PB-212	1.553E+00	1.979E-01	5.234E-02	1.010E-01
BI-214	1.260E+00	2.342E-01	7.392E-02	1.195E-01
PB-214	1.414E+00	2.310E-01	7.875E-02	1.179E-01
RA-224	3.161E+00	1.218E+00	5.610E-01	6.213E-01
RA-226	1.260E+00	2.342E-01	7.392E-02	1.195E-01
AC-228	1.763E+00	3.792E-01	1.503E-01	1.935E-01
RA-228	1.763E+00	3.792E-01	1.503E-01	1.935E-01
TH-228	1.553E+00	1.979E-01	5.234E-02	1.010E-01
TH-232	1.763E+00	3.792E-01	1.503E-01	1.935E-01
TH-234	5.749E+00	1.604E+00	6.151E-01	8.183E-01
U-235	7.152E-01	3.951E-01	1.789E-01	2.016E-01
NP-237	9.020E-01	3.650E-01	1.725E-01	1.862E-01
U-238	5.749E+00	1.604E+00	6.151E-01	8.183E-01
ANH-511	1.069E-01	7.859E-02	3.014E-02	4.010E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.023E-02	3.709E-01	3.198E-01	1.892E-01 NOT IDENT.
NA-22	1.347E-02	5.222E-02	4.566E-02	2.665E-02 NOT IDENT.
NA-24	-1.274E+06	2.324E+06	0.000E+00	1.186E+06 SHORT HLIF
SC-46	-4.236E-04	5.200E-02	4.442E-02	2.653E-02 FAIL ABUN
V-48	7.657E-02	9.333E-02	8.394E-02	4.762E-02 NOT IDENT.

CR-51	1.196E-02	4.441E-01	3.773E-01	2.266E-01	NOT IDENT.
MN-54	4.713E-03	5.022E-02	4.345E-02	2.562E-02	NOT IDENT.
CO-56	-2.236E-02	5.019E-02	4.165E-02	2.561E-02	NOT IDENT.
CO-57	1.859E-02	2.615E-02	2.430E-02	1.334E-02	NOT IDENT.
CO-58	-6.509E-03	5.242E-02	4.483E-02	2.674E-02	NOT IDENT.
FE-59	-6.000E-02	1.236E-01	9.918E-02	6.305E-02	NOT IDENT.
CO-60	3.586E-02	4.985E-02	4.516E-02	2.543E-02	NOT IDENT.
ZN-65	8.775E-02	1.403E-01	1.069E-01	7.159E-02	NOT IDENT.
SE-75	3.420E-02	5.525E-02	4.334E-02	2.819E-02	NOT IDENT.
SR-85	1.084E-01	5.296E-02	4.507E-02	2.702E-02	NOT IDENT.
Y-88	-1.558E-02	3.379E-02	2.605E-02	1.724E-02	NOT IDENT.
Y-91	3.325E+00	2.752E+01	2.389E+01	1.404E+01	NOT IDENT.
NB-94	4.533E-02	4.320E-02	3.854E-02	2.204E-02	NOT IDENT.
NB-95	9.778E-02	5.808E-02	5.457E-02	2.963E-02	NOT IDENT.
NB-95M	2.563E-01	1.608E-01	1.314E-01	8.205E-02	NOT IDENT.
ZR-95	3.977E-02	9.266E-02	8.262E-02	4.727E-02	NOT IDENT.
MO-99	1.290E+00	2.119E+01	1.850E+01	1.081E+01	NOT IDENT.
TC-99M	-2.302E+17	7.247E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.051E-02	5.164E-02	4.289E-02	2.635E-02	FAIL ABUN
RH-106	-1.931E-01	4.046E-01	3.302E-01	2.064E-01	NOT IDENT.
RU-106	-1.931E-01	4.041E-01	3.302E-01	2.062E-01	NOT IDENT.
AG-108M	1.249E-02	3.572E-02	3.178E-02	1.822E-02	NOT IDENT.
AG-110M	2.248E-02	5.474E-02	4.119E-02	2.793E-02	NOT IDENT.
SN-113	-1.623E-02	5.154E-02	4.469E-02	2.630E-02	NOT IDENT.
CD-115	2.483E+01	1.912E+01	1.761E+01	9.753E+00	NOT IDENT.
SN-117M	6.167E-03	6.373E-02	5.731E-02	3.252E-02	NOT IDENT.
TE-123M	3.301E-03	3.154E-02	2.836E-02	1.609E-02	NOT IDENT.
SB-124	3.939E-02	9.897E-02	8.705E-02	5.050E-02	NOT IDENT.
SB-125	1.197E-02	1.062E-01	9.348E-02	5.418E-02	NOT IDENT.
TE-125M	4.812E+00	1.072E+01	9.304E+00	5.471E+00	NOT IDENT.
I-126	1.115E-01	3.574E-01	2.663E-01	1.823E-01	NOT IDENT.
SB-126	-7.432E-04	2.106E-01	1.585E-01	1.074E-01	NOT IDENT.
SB-127	1.914E-01	2.039E+00	1.719E+00	1.040E+00	NOT IDENT.
I-131	8.389E-02	1.375E-01	1.255E-01	7.015E-02	NOT IDENT.
TE-132	1.577E-01	1.002E+00	8.791E-01	5.110E-01	NOT IDENT.
BA-133	-4.577E-03	5.452E-02	4.191E-02	2.782E-02	NOT IDENT.
I-133	-1.750E+04	1.725E+04	0.000E+00	8.800E+03	SHORT HLIF
CS-134	1.483E-01	6.529E-02	6.263E-02	3.331E-02	NOT IDENT.
CS-135	2.548E-01	2.025E-01	1.631E-01	1.033E-01	NOT IDENT.
I-135	-5.026E+16	1.091E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.985E-02	1.459E-01	1.213E-01	7.444E-02	NOT IDENT.
CE-139	-2.103E-02	3.221E-02	2.806E-02	1.644E-02	NOT IDENT.
BA-140	-2.756E-01	3.615E-01	2.845E-01	1.844E-01	NOT IDENT.
LA-140	6.548E-02	1.135E-01	1.014E-01	5.792E-02	NOT IDENT.
CE-141	1.028E-01	7.944E-02	6.425E-02	4.053E-02	NOT IDENT.
CE-143	1.531E+03	4.718E+02	0.000E+00	2.407E+02	SHORT HLIF
CE-144	-7.511E-02	2.369E-01	1.866E-01	1.209E-01	NOT IDENT.
PM-144	-4.139E-02	4.514E-02	3.514E-02	2.303E-02	NOT IDENT.
PR-144	-3.086E+00	3.381E+00	2.633E+00	1.725E+00	NOT IDENT.
PM-146	5.071E-02	5.209E-02	4.744E-02	2.658E-02	NOT IDENT.
ND-147	-6.456E-01	7.547E-01	6.071E-01	3.851E-01	FAIL ABUN
PM-149	-4.980E+01	1.484E+02	1.249E+02	7.573E+01	NOT IDENT.
EU-152	-3.090E-02	1.214E-01	1.009E-01	6.194E-02	NOT IDENT.
GD-153	-2.562E-02	9.776E-02	7.321E-02	4.988E-02	NOT IDENT.
EU-154	4.509E-02	1.486E-01	1.303E-01	7.580E-02	NOT IDENT.
EU-155	1.571E-02	1.102E-01	9.496E-02	5.622E-02	FAIL ABUN
TB-160	7.677E-02	1.910E-01	1.680E-01	9.745E-02	FAIL ABUN
HO-166M	2.694E-02	7.797E-02	6.665E-02	3.978E-02	FAIL ABUN
TA-182	2.511E-01	2.455E-01	2.250E-01	1.253E-01	FAIL ABUN
IR-192	-8.216E-04	4.268E-02	3.620E-02	2.177E-02	FAIL ABUN
HG-203	1.785E-03	4.580E-02	3.937E-02	2.337E-02	NOT IDENT.
BI-207	3.966E-02	6.226E-02	5.509E-02	3.177E-02	FAIL ABUN
PB-211	-7.773E-01	9.304E-01	7.162E-01	4.747E-01	NOT IDENT.
BI-212	2.839E+00	1.397E+00	7.606E-01	7.129E-01	FAIL ABUN
RN-219	-1.515E-02	4.783E-01	4.201E-01	2.440E-01	FAIL ABUN
RA-223	4.670E-01	8.383E-01	6.424E-01	4.277E-01	FAIL ABUN
AC-227	-2.640E-01	2.981E-01	2.458E-01	1.521E-01	NOT IDENT.
TH-227	-2.640E-01	2.986E-01	2.458E-01	1.523E-01	NOT IDENT.
TH-229	-1.181E-01	5.810E-01	5.092E-01	2.964E-01	FAIL ABUN
PA-231	5.604E-01	1.662E+00	1.446E+00	8.481E-01	NOT IDENT.
TH-231	4.670E-01	8.383E-01	6.424E-01	4.277E-01	FAIL ABUN
PA-233	-2.142E-03	7.781E-02	6.606E-02	3.970E-02	NOT IDENT.
PA-234	-1.645E-01	4.293E-01	3.433E-01	2.190E-01	NOT IDENT.
PA-234M	1.178E+01	6.935E+00	6.282E+00	3.538E+00	NOT IDENT.
NP-239	6.306E-02	4.170E-01	3.570E-01	2.128E-01	NOT IDENT.
AM-241	4.612E-02	7.707E-02	6.249E-02	3.932E-02	NOT IDENT.
CM-247	-6.495E-04	4.335E-02	3.810E-02	2.212E-02	NOT IDENT.
CF-249	1.249E-02	4.641E-02	4.148E-02	2.368E-02	NOT IDENT.

CF-251

5.352E-02

1.388E-01

1.251E-01

7.080E-02 NOT IDENT.

 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON ,SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	399.6394
49.72	502.8895
57.36	0.0000
59.54	554.0510
63.29	626.1341
63.29	626.1341
64.28	634.4903
67.75	649.7438
69.67	654.0255
70.83	627.1680
72.81	667.3889
72.87	667.4812
72.87	667.4812
74.82	670.4694
74.82	670.4694
74.82	670.4694
74.97	670.6970
77.11	673.9288
77.11	673.9288
77.11	673.9288
79.69	487.2139
79.80	487.3306
80.12	650.2258
80.19	650.3235
80.57	650.8575
81.00	651.4618
81.07	651.5594
81.07	651.5594
83.79	542.8430
83.79	542.8430
85.43	544.7061
86.48	545.8916
86.55	545.9700
86.79	546.2354
86.94	546.4073
87.57	547.1125
88.03	547.6257
88.47	548.1161
89.96	549.7643
91.11	551.0283
92.59	552.6436
92.59	552.6436
93.35	553.4677
94.67	554.8908
94.87	472.4541
94.87	472.4541
95.86	508.6055
97.43	473.0941
98.44	440.2623
99.53	405.6683
100.11	404.9797
103.18	478.7531
103.37	441.4674
105.31	427.0782
106.12	453.9323
109.28	432.3953
111.00	433.6953
111.76	407.7730
116.30	367.9888
117.23	354.6109
121.12	358.0677
121.78	361.0878
122.06	361.2524
123.07	347.1298
131.20	359.5645
133.52	388.0540
136.00	371.0106

136.47	372.1711
140.51	377.6694
140.51	0.0000
143.76	336.2130
144.24	336.4473
144.24	336.4473
145.44	307.5160
152.43	354.1729
153.25	368.3899
154.21	367.9560
154.21	367.9560
156.02	388.2866
158.56	370.1478
159.00	367.5822
162.66	354.4612
163.33	357.5752
165.86	357.8307
176.60	328.5907
177.52	310.9035
181.07	336.1445
184.41	353.8174
185.72	354.3776
193.51	331.5004
197.04	318.2657
205.31	293.9612
210.85	281.5385
215.65	294.1459
222.11	268.1677
227.38	278.7097
228.16	273.9009
228.18	273.9071
235.69	279.2711
235.96	279.3467
235.96	279.3467
238.63	253.4321
238.63	253.4321
240.99	254.0324
242.00	233.6580
244.70	222.8146
252.40	210.4606
252.80	232.2149
256.23	280.6100
256.23	280.6100
260.90	237.1289
264.66	198.7207
268.22	217.8071
269.46	234.8281
269.46	234.8281
271.23	238.5676
273.65	276.1374
276.40	233.9002
277.37	229.1288
277.60	230.2312
278.00	221.8625
279.20	246.4248
279.54	243.3257
280.46	250.9373
283.69	215.5543
284.31	217.7969
285.41	232.8947
285.90	238.3145
287.50	208.2094
293.27	0.0000
295.22	231.6687
295.96	309.0850
298.57	235.7731
299.98	208.4857
299.98	208.4857
300.09	208.5049
300.09	208.5049
300.13	208.5123
301.36	245.1999
302.85	258.0001
304.50	252.9525
304.50	252.9525
304.85	224.9133
308.46	223.4202
311.90	214.2664

316.51	213.9832
319.41	213.3913
320.08	195.9861
323.87	179.2321
323.87	179.2321
328.76	174.6373
333.37	218.3506
334.37	212.6147
334.37	212.6147
338.28	181.2716
338.28	181.2716
338.32	181.2766
338.32	181.2766
338.32	181.2766
340.48	226.0823
340.55	226.0947
344.28	213.1293
351.06	231.4977
351.93	214.3650
356.01	157.6047
364.49	144.9980
366.42	157.0009
383.85	176.4234
388.16	164.9741
388.63	173.3263
391.69	169.9978
400.66	166.3966
401.81	170.2467
402.40	165.6625
404.85	192.0387
410.95	175.9746
414.70	167.9676
423.72	165.1883
427.09	142.8454
427.87	146.7032
433.94	148.2248
453.88	135.6574
463.37	149.9935
468.07	153.3306
473.00	132.3709
476.78	163.8861
477.60	122.9731
487.02	105.0094
492.35	141.7588
497.08	152.0167
511.00	133.3228
514.00	112.9508
527.90	99.4254
529.87	0.0000
531.02	139.8382
537.26	136.2722
546.56	0.0000
563.25	126.9032
569.33	124.2229
569.50	128.3417
569.70	132.4612
583.19	122.3490
600.60	110.5547
602.73	133.9886
604.72	137.6007
609.32	122.5501
609.32	122.5501
610.33	122.6101
614.28	97.9977
618.01	113.0745
621.93	120.1397
621.93	120.1397
633.25	105.9546
635.95	105.0304
636.99	102.9583
645.85	101.2552
657.76	116.1039
661.66	117.0286
661.66	117.0286
664.57	0.0000
666.33	114.7656
666.50	114.7760
677.62	90.8414

685.70	102.0230
695.00	111.1616
696.49	126.5012
696.51	126.5012
697.00	125.4387
702.65	94.0373
706.68	115.0155
711.68	97.7001
720.70	96.0316
721.93	0.0000
722.78	108.7222
722.91	108.7294
723.31	108.7462
724.19	104.0573
727.33	93.0149
733.00	109.1938
735.93	101.4063
739.50	110.1534
747.24	109.5807
752.31	114.4617
753.82	92.1861
756.73	94.1615
763.94	128.1003
765.81	100.1253
766.42	101.0852
777.92	110.0184
778.90	92.1880
783.70	108.3881
785.37	98.0861
795.86	84.2885
801.95	109.1719
810.29	101.9082
810.76	99.0700
815.77	97.3516
818.51	85.9900
832.01	120.0485
834.85	107.6797
836.80	0.0000
846.77	90.7795
856.80	93.0586
860.56	93.1875
871.09	86.7276
873.19	85.8193
875.33	0.0000
879.36	86.0127
880.51	87.0263
883.24	86.1344
884.68	94.9930
889.28	85.3415
898.04	91.5128
911.20	81.3482
911.20	81.3482
911.20	81.3482
926.50	87.4647
937.49	120.7218
944.13	87.9982
946.00	93.0587
949.00	75.1236
962.29	94.8679
964.08	81.1173
966.15	74.2662
968.97	118.9963
968.97	118.9963
968.97	118.9963
983.53	62.8275
996.26	121.0942
1001.03	68.2854
1004.73	110.2039
1037.84	76.3155
1038.76	0.0000
1048.07	76.5624
1050.41	75.5842
1050.41	75.5842
1063.66	56.1423
1085.87	72.2316
1099.45	87.2452
1112.07	85.8176
1115.54	83.2916

1120.29	86.7313
1120.29	86.7313
1120.55	86.7380
1121.30	87.0603
1131.51	0.0000
1173.23	82.7117
1177.93	88.1994
1189.05	91.7167
1204.77	86.3928
1221.41	74.6624
1231.02	112.2907
1235.36	109.6120
1238.28	102.1989
1260.41	0.0000
1271.85	57.7151
1274.44	57.7555
1274.54	57.7555
1291.59	68.4794
1298.22	0.0000
1312.11	48.7695
1332.49	44.2192
1365.19	34.8963
1368.63	0.0000
1384.29	53.5690
1408.01	36.2490
1457.56	0.0000
1460.82	37.7058
1489.16	35.9611
1505.03	28.0732
1596.21	26.6112
1620.50	17.4921
1678.03	0.0000
1690.97	18.8023
1764.49	23.3313
1764.49	23.3313
1770.23	11.1486
1771.35	16.7267
1791.20	0.0000
1836.06	14.1193

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900008

Total Uranium Activity	1.7433E+01	ug/g
Total Uranium Counting Unc.	4.7752E+00	ug/g
Total Uranium Tpu	2.4363E-06	ug/g
Total Uranium Mda	1.8319E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 957711          SAMPLE ID   : G247900008
*  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 14:59:28.30  SAMPLE ALQT: 138.580 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.145E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.233E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.979E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.944E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 17:01:29.38

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900009.CNF;1
Sample date     : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 14:59:51.
Sample ID       : G247900009 Sample quantity : 1.33850E+02 GRAM
Detector name   : GAM15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.45 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957711 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	63.51*	297	704	1.21	125.94	120	11	4.13E-02	18.5	
2	4	74.94*	332	740	1.94	148.81	141	16	4.61E-02	18.7	2.29E+00
3	4	77.31*	474	443	1.13	153.54	141	16	6.58E-02	9.1	
4	0	87.27	129	595	1.10	173.46	171	7	1.79E-02	32.4	
5	0	92.76*	1441	1026	1.39	184.44	177	14	2.00E-01	5.5	
6	0	129.50	131	425	1.04	257.92	254	10	1.82E-02	30.7	
7	0	144.09*	61	343	0.86	287.09	284	7	8.54E-03	53.2	
8	0	185.92*	409	517	1.49	370.76	364	13	5.69E-02	12.8	
9	0	209.64	122	393	1.15	418.18	412	11	1.70E-02	32.8	
10	3	238.76*	1155	232	1.36	476.43	468	21	1.60E-01	3.9	8.67E-01
11	3	241.73*	243	348	2.04	482.36	468	21	3.37E-02	21.3	
12	0	270.57	90	247	1.40	540.04	536	10	1.25E-02	34.7	
13	0	277.38	48	213	1.41	553.66	550	9	6.74E-03	56.4	
14	0	295.56*	282	340	1.30	590.01	582	14	3.92E-02	15.2	
15	0	300.46	110	167	1.68	599.81	596	9	1.52E-02	23.5	
16	0	338.27	235	248	1.29	675.45	669	13	3.27E-02	15.2	
17	0	351.99*	588	209	1.52	702.88	697	12	8.16E-02	6.6	
18	0	463.01	132	95	1.77	924.93	918	14	1.84E-02	17.9	
19	0	511.32*	76	201	1.97	1021.53	1013	20	1.06E-02	51.6	
20	0	583.39*	353	165	1.95	1165.70	1159	18	4.90E-02	10.4	
21	0	609.36*	465	137	1.73	1217.64	1211	16	6.45E-02	7.4	
22	0	662.27	37	73	0.86	1323.47	1319	8	5.11E-03	43.7	
23	0	727.82*	97	113	2.23	1454.57	1447	19	1.34E-02	29.2	
24	0	769.96	100	153	3.29	1538.86	1528	28	1.38E-02	37.3	
25	0	861.18*	72	53	2.39	1721.34	1714	15	1.01E-02	25.2	
26	0	911.06*	246	84	1.81	1821.10	1814	16	3.41E-02	10.7	
27	0	933.85	27	65	1.05	1866.69	1857	13	3.80E-03	63.6	
28	1	964.20	53	48	2.20	1927.40	1920	24	7.34E-03	32.3	2.20E+00
29	1	968.90*	93	54	2.20	1936.80	1920	24	1.29E-02	21.0	
30	0	1001.38*	84	57	1.82	2001.77	1996	16	1.17E-02	24.0	
31	0	1120.31*	86	59	1.37	2239.69	2235	13	1.19E-02	21.8	
32	0	1460.52*	1160	19	2.13	2920.29	2911	20	1.61E-01	3.1	
33	0	1587.65	42	8	2.77	3174.65	3166	15	5.84E-03	21.0	
34	0	1764.08	98	0	2.13	3527.65	3521	16	1.36E-02	10.1	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 17:01:35

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900009.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 14:59:51
Sample ID : G247900009 Sample quantity : 133.85 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.45 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.158E+01	3.668E+00	6.646E-01	6.531E-02	47.521
CD-109	+	88.03	*	2.255E+00	1.488E+00	2.194E+00	2.723E-01	1.028
SN-126	+	64.28		4.706E+00	1.911E+00	1.549E+00	2.623E-01	3.038
	+	86.94		9.151E-01	7.081E-01	8.949E-01	3.784E-01	1.023
	+	87.57	*	2.201E-01	1.452E-01	2.183E-01	2.702E-02	1.008
BA-137M	+	661.66	*	5.800E-02	5.088E-02	7.131E-02	5.863E-03	0.813
CS-137	+	661.66	*	6.127E-02	5.375E-02	7.533E-02	6.206E-03	0.813
CE-141	+	145.44	*	9.158E-02	9.784E-02	1.388E-01	1.434E-02	0.660
TL-208	+	277.37		5.562E-01	6.318E-01	7.816E-01	1.105E-01	0.712
	+	583.19	*	5.313E-01	1.204E-01	7.225E-02	6.608E-03	7.354
	+	860.56		1.032E+00	5.304E-01	5.145E-01	5.030E-02	2.005
BI-211		72.87		9.077E+00	5.364E+00	9.091E+00	1.041E+00	0.998
	+	351.06	*	4.062E+00	6.704E-01	4.371E-01	4.353E-02	9.295
PB-212	+	74.82		2.790E+00	1.124E+00	9.165E-01	1.381E-01	3.044
	+	77.11		2.216E+00	4.790E-01	5.384E-01	6.241E-02	4.116
	+	238.63	*	1.805E+00	2.571E-01	1.171E-01	1.399E-02	15.419
	+	300.09		2.656E+00	1.289E+00	1.593E+00	1.939E-01	1.668
BI-214	+	609.32	*	1.353E+00	2.416E-01	1.345E-01	1.340E-02	10.056
	+	1120.29		1.315E+00	5.903E-01	5.290E-01	5.728E-02	2.486
	+	1764.49		2.100E+00	4.625E-01	2.817E-01	2.470E-02	7.454
PB-214	+	74.82		4.944E+00	1.973E+00	1.624E+00	2.270E-01	3.044
	+	77.11		3.907E+00	9.038E-01	9.492E-01	1.350E-01	4.116
	+	242.00		2.303E+00	1.024E+00	7.118E-01	8.867E-02	3.236
	+	295.22		1.212E+00	3.992E-01	2.937E-01	3.661E-02	4.126
	+	351.93	*	1.474E+00	2.565E-01	1.564E-01	1.778E-02	9.427
RA-224	+	240.99	*	4.073E+00	1.795E+00	1.255E+00	1.384E-01	3.246
RA-226	+	609.32	*	1.353E+00	2.416E-01	1.345E-01	1.340E-02	10.056
	+	1120.29		1.315E+00	5.903E-01	5.290E-01	5.728E-02	2.486
	+	1764.49		2.100E+00	4.625E-01	2.817E-01	2.470E-02	7.454
AC-228	+	338.32		1.815E+00	9.416E-01	4.920E-01	2.066E-01	3.690
	+	911.20	*	1.788E+00	4.383E-01	3.043E-01	3.686E-02	5.875
	+	968.97		1.169E+00	5.684E-01	4.650E-01	1.142E-01	2.514
RA-228	+	338.32		1.815E+00	9.416E-01	4.920E-01	2.066E-01	3.690
	+	911.20	*	1.788E+00	4.383E-01	3.043E-01	3.686E-02	5.875

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		1.169E+00	5.684E-01	4.650E-01	1.142E-01	2.514
	+	74.82		2.790E+00	1.091E+00	9.165E-01	1.060E-01	3.044
	+	77.11		2.216E+00	4.790E-01	5.384E-01	6.241E-02	4.116
	+	238.63	*	1.805E+00	2.571E-01	1.171E-01	1.399E-02	15.419
	+	300.09		2.656E+00	2.056E+00	1.593E+00	9.797E-01	1.668
TH-232	+	338.32		1.815E+00	5.811E-01	4.920E-01	4.850E-02	3.690
	+	911.20	*	1.788E+00	4.383E-01	3.043E-01	3.686E-02	5.875
	+	968.97		1.169E+00	5.684E-01	4.650E-01	1.142E-01	2.514
TH-234	+	63.29	*	1.221E+01	5.117E+00	4.192E+00	8.312E-01	2.913
	+	92.59		1.980E+01	5.119E+00	1.473E+00	3.449E-01	13.442
U-235	+	89.96		4.618E+00	2.393E+00	2.446E+00	6.362E-01	1.888
	+	93.35		1.495E+01	3.997E+00	1.102E+00	2.682E-01	13.565
	+	143.76	*	2.859E-01	3.082E-01	4.428E-01	7.878E-02	0.646
		163.33		-2.494E-01	6.205E-01	9.654E-01	1.833E-01	-0.258
	+	185.72		4.131E-01	1.147E-01	8.997E-02	9.738E-03	4.592
		205.31		-1.308E-02	8.112E-01	1.127E+00	2.183E-01	-0.012
NP-237	+	86.48	*	6.568E-01	4.547E-01	6.098E-01	1.481E-01	1.077
		95.86		8.082E-01	1.632E+00	2.371E+00	5.935E-01	0.341
U-238	+	63.29	*	1.221E+01	5.117E+00	4.192E+00	8.312E-01	2.913
	+	92.59		1.980E+01	3.163E+00	1.473E+00	1.712E-01	13.442
ANH-511	+	511.00	*	8.869E-02	9.180E-02	6.094E-02	5.265E-03	1.455

---- 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	*	-3.351E-01	4.120E-01	6.329E-01	5.883E-02	-0.530
NA-22		1274.54	*	-3.981E-02	6.044E-02	9.133E-02	8.297E-03	-0.436
NA-24		1368.63	*	-3.946E-01	6.044E-02	Half-Life too short		
SC-46		889.28	*	1.286E-02	4.901E-02	8.270E-02	7.685E-03	0.155
	+	1120.55		2.243E-01	9.955E-02	1.498E-01	1.274E-02	1.497
V-48		944.13		-3.047E-01	1.058E+00	1.693E+00	1.566E-01	-0.180
		983.53	*	-4.333E-02	9.233E-02	1.450E-01	1.326E-02	-0.299
		1312.11		-5.132E-02	1.055E-01	1.604E-01	1.512E-02	-0.320
CR-51		320.08	*	-3.426E-01	4.933E-01	7.882E-01	8.364E-02	-0.435
MN-54		834.85	*	-2.596E-02	4.740E-02	7.524E-02	6.828E-03	-0.345
CO-56		846.77	*	-8.874E-03	4.549E-02	7.404E-02	6.757E-03	-0.120
		1037.84		2.415E-01	4.005E-01	6.885E-01	6.456E-02	0.351
		1238.28		1.981E-01	1.261E-01	2.238E-01	2.011E-02	0.885
		1771.35		-1.029E-01	2.441E-01	2.867E-01	2.505E-02	-0.359
CO-57		122.06	*	2.106E-02	3.479E-02	5.767E-02	5.809E-03	0.365
		136.47		-3.445E-04	2.893E-01	4.684E-01	4.977E-02	-0.001
CO-58		810.76	*	-1.581E-02	4.652E-02	7.502E-02	6.744E-03	-0.211
FE-59		1099.45	*	3.945E-02	1.145E-01	1.924E-01	1.795E-02	0.205
		1291.59		-9.789E-04	1.674E-01	2.700E-01	2.789E-02	-0.004
CO-60		1173.23		4.266E-02	5.396E-02	9.374E-02	7.630E-03	0.455
		1332.49	*	2.592E-02	4.687E-02	8.045E-02	7.734E-03	0.322
ZN-65		1115.54	*	-4.798E-02	1.255E-01	1.658E-01	1.417E-02	-0.289
SE-75		121.12		-8.150E-02	1.851E-01	2.957E-01	3.622E-02	-0.276

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.00		2.861E-02	5.728E-02	9.120E-02	9.233E-03	0.314
		264.66	*	-5.939E-02	6.216E-02	8.864E-02	9.721E-03	-0.670
		279.54		1.151E-01	1.550E-01	2.352E-01	2.604E-02	0.489
		400.66		7.594E-02	3.207E-01	5.343E-01	5.855E-02	0.142
SR-85		514.00	*	7.987E-02	5.183E-02	9.077E-02	7.842E-03	0.880
Y-88		898.04		1.580E-02	4.934E-02	8.367E-02	7.835E-03	0.189
		1836.06	*	4.401E-02	4.375E-02	8.304E-02	6.993E-03	0.530
Y-91		1204.77	*	2.312E+01	2.682E+01	4.664E+01	3.932E+00	0.496
NB-94		702.65	*	2.900E-02	3.712E-02	6.550E-02	5.530E-03	0.443
		871.09		2.093E-02	3.916E-02	6.773E-02	6.246E-03	0.309
NB-95		765.81	*	1.093E-01	6.415E-02	1.053E-01	9.222E-03	1.039
NB-95M		235.69	*	2.740E-01	1.948E-01	3.007E-01	3.624E-02	0.911
ZR-95		724.19		1.465E-01	1.388E-01	2.182E-01	2.026E-02	0.672
		756.73	*	-1.821E-02	8.904E-02	1.461E-01	1.404E-02	-0.125
MO-99		140.51		-2.975E+01	4.621E+01	6.226E+01	1.515E+01	-0.478
		181.07		9.985E-01	3.525E+01	4.939E+01	9.817E+00	0.020
		366.42		-9.163E+01	1.576E+02	2.510E+02	2.300E+01	-0.365
		739.50	*	-4.984E+00	1.893E+01	3.092E+01	4.874E+00	-0.161
		777.92		-9.615E+00	5.980E+01	8.397E+01	7.406E+00	-0.115
TC-99M		140.51	*	-6.435E+11	5.980E+01	Half-Life too short		
RU-103		497.08	*	8.597E-03	4.976E-02	8.192E-02	1.145E-02	0.105
	+	610.33		1.421E+01	3.127E+00	3.374E+00	5.485E-01	4.212
RH-106		621.93	*	1.061E-01	3.662E-01	6.026E-01	7.904E-02	0.176
		1050.41		-4.335E-01	3.251E+00	5.253E+00	4.668E-01	-0.083
RU-106		621.93	*	1.061E-01	3.660E-01	6.026E-01	5.064E-02	0.176
		1050.41		-4.335E-01	3.251E+00	5.253E+00	4.668E-01	-0.083
AG-108M		433.94	*	-1.352E-02	3.666E-02	5.860E-02	5.179E-03	-0.231
		614.28		1.323E-02	4.679E-02	6.694E-02	5.839E-03	0.198
		722.91		3.047E-02	5.387E-02	8.176E-02	7.217E-03	0.373
AG-110M		657.76	*	2.940E-02	4.570E-02	7.057E-02	6.005E-03	0.417
		677.62		-7.319E-02	3.518E-01	5.802E-01	4.970E-02	-0.126
		706.68		-3.140E-01	2.580E-01	3.868E-01	3.372E-02	-0.812
		763.94		1.983E-01	2.258E-01	3.520E-01	3.163E-02	0.563
		884.68		1.199E-03	6.221E-02	1.029E-01	9.814E-03	0.012
		937.49		-1.971E-03	1.538E-01	2.171E-01	2.073E-02	-0.009
		1384.29		-3.486E-02	1.674E-01	2.718E-01	2.676E-02	-0.128
		1505.03		7.717E-02	3.178E-01	5.454E-01	5.212E-02	0.142
SN-113		391.69	*	3.367E-03	5.541E-02	9.151E-02	7.948E-03	0.037
CD-115		260.90		7.404E+01	2.402E+02	4.072E+02	4.461E+01	0.182
		492.35		1.049E+01	6.899E+01	1.134E+02	9.799E+00	0.093
		527.90	*	-1.902E+01	2.015E+01	3.037E+01	2.621E+00	-0.626
SN-117M		156.02		-6.019E-01	3.189E+00	5.103E+00	5.318E-01	-0.118
		158.56	*	3.294E-02	7.843E-02	1.283E-01	1.345E-02	0.257
TE-123M		159.00	*	2.219E-02	3.879E-02	6.376E-02	6.718E-03	0.348
SB-124		602.73		1.575E-02	5.773E-02	8.232E-02	6.977E-03	0.191
		645.85		1.300E-01	5.942E-01	9.709E-01	8.558E-02	0.134
		722.78		2.919E-01	5.462E-01	8.269E-01	7.233E-02	0.353
		1690.97	*	-8.430E-03	7.367E-02	1.184E-01	1.115E-02	-0.071
SB-125		427.87	*	4.956E-03	1.149E-01	1.888E-01	1.643E-02	0.026

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	463.37		1.368E+00	5.048E-01	6.701E-01	6.209E-02	2.042
		600.60		6.191E-02	2.451E-01	3.910E-01	3.569E-02	0.158
		635.95		2.453E-01	3.408E-01	5.766E-01	5.228E-02	0.425
TE-125M		109.28	*	-2.219E+01	1.473E+01	2.241E+01	2.662E+00	-0.990
I-126		388.63		-2.295E-02	2.220E-01	3.633E-01	3.092E-02	-0.063
		666.33	*	2.529E-01	3.144E-01	4.906E-01	4.046E-02	0.516
		753.82		2.260E+00	2.372E+00	4.205E+00	3.659E-01	0.538
SB-126		414.70		-4.429E-02	1.059E-01	1.695E-01	1.441E-02	-0.261
		666.50		9.063E-02	1.084E-01	1.696E-01	1.399E-02	0.534
		695.00		1.099E-02	9.299E-02	1.570E-01	1.319E-02	0.070
		697.00		3.571E-03	3.247E-01	5.438E-01	4.575E-02	0.007
		720.70	*	1.155E-01	2.125E-01	3.229E-01	2.756E-02	0.358
		856.80		-3.342E-02	6.021E-01	8.504E-01	7.795E-02	-0.039
SB-127		252.40		1.932E+00	6.679E+00	1.125E+01	4.742E+00	0.172
		473.00		1.065E-01	2.503E+00	4.095E+00	5.340E-01	0.026
		685.70	*	-1.005E+00	1.850E+00	2.968E+00	3.406E-01	-0.338
		783.70		5.673E+00	5.529E+00	9.594E+00	1.227E+00	0.591
I-131		80.19		-3.038E+00	9.199E+00	1.308E+01	1.544E+00	-0.232
		284.31		1.414E-01	2.080E+00	3.391E+00	3.771E-01	0.042
		364.49	*	-7.277E-02	1.581E-01	2.539E-01	2.452E-02	-0.287
		636.99		2.227E+00	2.125E+00	3.675E+00	3.255E-01	0.606
TE-132		49.72		-3.380E+01	7.395E+01	1.206E+02	1.861E+01	-0.280
		111.76		5.921E+01	6.089E+01	1.016E+02	1.274E+01	0.583
		116.30		-1.589E+01	5.266E+01	8.477E+01	1.056E+01	-0.187
		228.16	*	2.303E-01	1.217E+00	2.059E+00	3.591E-01	0.112
BA-133		81.00		-1.533E-01	1.781E-01	2.452E-01	4.289E-02	-0.625
	+	276.40		5.142E-01	5.851E-01	8.275E-01	1.288E-01	0.621
		302.85		2.332E-01	2.015E-01	3.100E-01	4.461E-02	0.752
		356.01	*	-4.798E-02	6.338E-02	8.502E-02	1.149E-02	-0.564
		383.85		-1.425E-01	3.860E-01	6.221E-01	7.746E-02	-0.229
I-133		529.87	*	1.298E-02	3.860E-01	Half-Life	too short	
		875.33		-2.420E-01	3.860E-01	Half-Life	too short	
		1298.22		-3.044E-01	3.860E-01	Half-Life	too short	
CS-134		563.25		-3.057E-01	4.579E-01	7.033E-01	6.093E-02	-0.435
		569.33		4.784E-02	2.669E-01	4.205E-01	3.652E-02	0.114
		604.72		-9.835E-03	5.028E-02	6.843E-02	5.809E-03	-0.144
		795.86	*	7.666E-02	5.775E-02	1.042E-01	9.339E-03	0.736
		801.95		-1.719E-01	4.750E-01	7.645E-01	6.864E-02	-0.225
		1365.19		6.131E-01	1.418E+00	2.490E+00	2.487E-01	0.246
CS-135		268.22	*	3.051E-01	2.329E-01	3.611E-01	4.333E-02	0.845
I-135		546.56		2.179E+10	2.329E-01	Half-Life	too short	
		836.80		1.241E+11	2.329E-01	Half-Life	too short	
		1038.76		-4.333E+10	2.329E-01	Half-Life	too short	
		1131.51		1.553E+09	2.329E-01	Half-Life	too short	
		1260.41	*	4.600E+09	2.329E-01	Half-Life	too short	
		1457.56		1.387E+13	2.329E-01	Half-Life	too short	
		1678.03		1.289E+11	2.329E-01	Half-Life	too short	
		1791.20		-5.793E+10	2.329E-01	Half-Life	too short	
CS-136		153.25		-4.003E-01	1.208E+00	1.922E+00	2.262E-01	-0.208

----- Non-Identified Nuclides -----

	Line Nuclide	Energy Ided (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		176.60	-6.559E-02	7.110E-01	1.137E+00	1.305E-01	-0.058
		273.65	-3.117E-01	1.215E+00	1.147E+00	1.313E-01	-0.272
		340.55	8.764E-01	2.567E-01	4.202E-01	4.243E-02	2.086
		818.51	2.622E-02	9.029E-02	1.534E-01	1.383E-02	0.171
		1048.07	* 1.378E-01	1.444E-01	2.547E-01	2.355E-02	0.541
		1235.36	6.490E-01	8.559E-01	1.455E+00	1.722E-01	0.446
CE-139		165.86	* 2.342E-02	4.099E-02	6.728E-02	7.182E-03	0.348
BA-140		162.66	-5.596E-01	1.235E+00	1.923E+00	2.128E-01	-0.291
		304.85	2.206E-01	1.934E+00	2.816E+00	8.414E-01	0.078
		423.72	2.116E-01	2.565E+00	4.225E+00	1.389E+00	0.050
		537.26	* 1.205E-01	3.434E-01	5.669E-01	1.923E-01	0.213
LA-140		328.76	5.110E-01	4.227E-01	7.337E-01	7.693E-02	0.697
		487.02	-7.935E-02	1.831E-01	2.891E-01	2.651E-02	-0.274
		815.77	1.819E-02	4.133E-01	6.884E-01	6.860E-02	0.026
		1596.21	* -5.962E-03	1.185E-01	1.826E-01	1.712E-02	-0.033
CE-143		57.36	2.547E-03	1.185E-01	Half-Life	too short	
		293.27	* 1.420E-03	1.185E-01	Half-Life	too short	
		664.57	2.831E-03	1.185E-01	Half-Life	too short	
		721.93	1.300E-03	1.185E-01	Half-Life	too short	
CE-144		80.12	-1.030E+00	4.584E+00	6.550E+00	7.699E-01	-0.157
		133.52	* -2.387E-01	3.235E-01	4.380E-01	7.067E-02	-0.545
PM-144		476.78	-1.035E-01	8.304E-02	1.230E-01	1.153E-02	-0.842
		618.01	-2.809E-03	4.185E-02	6.045E-02	5.239E-03	-0.046
		696.49	* 2.532E-02	3.857E-02	6.752E-02	5.681E-03	0.375
PR-144		696.51	* 5.956E-01	2.976E+00	5.051E+00	4.248E-01	0.118
		1489.16	-1.453E+00	1.474E+01	2.417E+01	2.315E+00	-0.060
PM-146		453.88	* 3.747E-02	5.483E-02	9.309E-02	9.844E-03	0.402
		633.25	3.661E-01	1.750E+00	2.851E+00	1.087E+00	0.128
		735.93	-1.446E-01	2.069E-01	2.679E-01	7.508E-02	-0.540
		747.24	-2.960E-02	1.183E-01	1.934E-01	2.827E-02	-0.153
ND-147		91.11	7.075E+00	1.065E+00	1.146E+00	1.419E-01	6.173
		319.41	-3.510E+00	4.621E+00	7.353E+00	7.532E-01	-0.477
		531.02	* 6.960E-01	7.277E-01	1.249E+00	1.868E-01	0.557
PM-149		285.90	* 2.143E+01	1.586E+02	2.661E+02	4.475E+01	0.081
EU-152		121.78	2.170E-02	1.007E-01	1.649E-01	1.845E-02	0.132
		244.70	4.092E-01	4.888E-01	7.444E-01	8.205E-02	0.550
		344.28	* -4.621E-02	1.561E-01	2.061E-01	2.097E-02	-0.224
		778.90	2.218E-02	3.476E-01	5.018E-01	4.427E-02	0.044
	+	964.08	7.161E-01	4.669E-01	6.646E-01	6.112E-02	1.078
		1085.87	-1.933E-01	4.894E-01	7.690E-01	6.696E-02	-0.251
		1112.07	-2.611E-02	3.903E-01	6.179E-01	5.287E-02	-0.042
		1408.01	1.075E-01	2.157E-01	3.800E-01	3.661E-02	0.283
GD-153		69.67	5.521E-02	3.565E+00	4.813E+00	5.493E-01	0.011
		97.43	* 2.758E-01	1.419E-01	2.164E-01	2.388E-02	1.275
		103.18	-2.849E-01	1.623E-01	2.442E-01	2.582E-02	-1.167
EU-154		123.07	2.459E-02	7.052E-02	1.159E-01	1.446E-02	0.212
		723.31	1.174E-01	2.488E-01	3.742E-01	3.528E-02	0.314
		873.19	-2.167E-01	3.138E-01	4.826E-01	5.958E-02	-0.449
		996.26	6.841E-03	5.006E-01	7.061E-01	1.251E-01	0.010

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1004.73		6.307E-03	2.974E-01	4.196E-01	5.025E-02	0.015
		1274.44	*	-8.386E-02	1.694E-01	2.602E-01	3.052E-02	-0.322
		86.55		2.670E-01	1.762E-01	2.784E-01	3.433E-02	0.959
TB-160	+	105.31	*	1.267E-01	1.483E-01	2.481E-01	2.613E-02	0.511
		86.79		7.150E-01	4.717E-01	7.459E-01	9.171E-02	0.959
		197.04		-2.875E-01	7.625E-01	1.199E+00	1.307E-01	-0.240
HO-166M		215.65		-4.534E-01	1.025E+00	1.600E+00	1.760E-01	-0.283
		298.57		3.573E-01	2.485E-01	2.804E-01	2.966E-02	1.274
		879.36	*	5.596E-02	1.576E-01	2.688E-01	2.488E-02	0.208
		962.29		1.176E+00	7.321E-01	1.207E+00	1.110E-01	0.975
		966.15		1.206E+00	3.235E-01	6.120E-01	5.625E-02	1.971
		1177.93		2.088E-01	4.348E-01	7.367E-01	6.029E-02	0.283
		1271.85		4.165E-01	9.085E-01	1.534E+00	1.388E-01	0.272
		80.57		-2.943E-01	4.985E-01	7.002E-01	8.251E-02	-0.420
		184.41		3.202E-01	6.881E-02	1.022E-01	1.105E-02	3.135
		280.46		5.578E-02	1.164E-01	1.743E-01	1.882E-02	0.320
TA-182		410.95		2.854E-01	3.175E-01	5.455E-01	4.630E-02	0.523
		711.68	*	6.757E-02	7.436E-02	1.316E-01	1.117E-02	0.513
		752.31		3.655E-01	3.374E-01	6.029E-01	5.243E-02	0.606
		810.29		-4.893E-02	6.970E-02	1.086E-01	9.743E-03	-0.450
		67.75		4.086E-02	2.670E-01	3.293E-01	3.758E-02	0.124
		100.11		2.655E-01	2.588E-01	4.347E-01	4.692E-02	0.611
		152.43		2.345E-01	4.616E-01	7.582E-01	7.841E-02	0.309
		222.11		-4.089E-01	4.663E-01	7.552E-01	8.323E-02	-0.541
		1121.30	+	6.199E-01	2.752E-01	4.168E-01	3.543E-02	1.487
		1189.05		-5.745E-02	3.974E-01	6.368E-01	5.276E-02	-0.090
IR-192	+	1221.41	*	-1.020E-01	2.347E-01	3.646E-01	3.130E-02	-0.280
		1231.02		-1.983E-01	6.427E-01	1.015E+00	8.799E-02	-0.195
		295.96		9.048E-01	2.923E-01	3.484E-01	3.717E-02	2.597
		308.46		-5.548E-02	1.233E-01	2.002E-01	2.096E-02	-0.277
HG-203		316.51	*	-5.838E-03	4.522E-02	7.462E-02	7.694E-03	-0.078
		468.07		-1.831E-02	9.877E-02	1.369E-01	1.266E-02	-0.134
		70.83		2.625E+00	2.511E+00	3.739E+00	6.626E-01	0.702
		72.87		2.294E+00	1.388E+00	2.298E+00	3.968E-01	0.998
BI-207	+	279.20	*	6.482E-02	5.584E-02	8.646E-02	9.501E-03	0.750
		72.81		4.665E-01	3.065E-01	5.191E-01	5.945E-02	0.899
		74.97		8.040E-01	3.144E-01	3.521E-01	4.052E-02	2.284
		569.70		2.072E-02	3.879E-02	6.496E-02	5.564E-03	0.319
PB-210		1063.66	*	3.557E-03	6.827E-02	1.098E-01	9.686E-03	0.032
		1770.23		-2.990E-01	5.018E-01	5.448E-01	4.762E-02	-0.549
PB-211		46.54	*	-7.167E+00	1.374E+01	2.209E+01	2.719E+00	-0.325
BI-212	+	404.85	*	-1.276E+00	1.095E+00	1.360E+00	6.576E-01	-0.939
		427.09		5.323E-01	1.949E+00	3.222E+00	1.490E+00	0.165
		832.01		-1.323E-01	1.200E+00	1.969E+00	1.023E+00	-0.067
		727.33	*	2.220E+00	1.323E+00	1.399E+00	1.739E-01	1.586
RN-219	+	785.37		1.442E+00	4.074E+00	6.937E+00	6.142E-01	0.208
		1620.50		3.400E+00	2.745E+00	5.298E+00	4.931E-01	0.642
		271.23		6.178E-01	4.353E-01	5.754E-01	7.032E-02	1.074
		401.81	*	4.675E-02	4.902E-01	8.104E-01	1.198E-01	0.058

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-3.462E-01	4.006E-01	5.549E-01	6.556E-02	-0.624
		83.79		1.687E-01	2.231E-01	3.295E-01	3.961E-02	0.512
		94.87		5.845E+00	1.135E+00	1.590E+00	1.800E-01	3.676
	+	144.24		9.581E-01	1.024E+00	1.644E+00	1.816E-01	0.583
		154.21		-4.585E-01	5.267E-01	8.172E-01	9.051E-02	-0.561
	+	269.46		4.800E-01	3.372E-01	4.523E-01	4.991E-02	1.061
AC-227		323.87	*	-1.119E+00	9.083E-01	1.381E+00	2.506E-01	-0.810
	+	338.28		7.204E+00	2.385E+00	2.907E+00	3.774E-01	2.478
		79.69		2.572E+00	2.353E+00	3.462E+00	6.572E-01	0.743
		235.96		6.959E-01	2.558E-01	3.989E-01	4.957E-02	1.745
		256.23	*	-2.239E-01	3.280E-01	5.305E-01	7.341E-02	-0.422
	+	299.98		2.922E+00	1.433E+00	2.109E+00	2.973E-01	1.385
TH-227		304.50		6.068E-01	2.224E+00	3.275E+00	5.756E-01	0.185
		334.37		1.431E+00	2.391E+00	3.574E+00	5.847E-01	0.400
		79.80		7.697E-01	3.061E+00	4.451E+00	1.032E+00	0.173
		235.96		6.959E-01	2.547E-01	3.989E-01	4.764E-02	1.745
		256.23	*	-2.239E-01	3.283E-01	5.305E-01	8.070E-02	-0.422
	+	299.98		2.922E+00	1.433E+00	2.109E+00	2.973E-01	1.385
TH-229		304.50		6.068E-01	2.224E+00	3.275E+00	5.756E-01	0.185
		334.37		1.431E+00	2.391E+00	3.574E+00	5.847E-01	0.400
		85.43		6.530E-01	3.791E-01	5.687E-01	6.918E-02	1.148
	+	88.47		3.393E-01	2.239E-01	3.580E-01	4.412E-02	0.948
		193.51	*	2.012E-01	7.214E-01	1.167E+00	1.270E-01	0.172
	+	210.85		2.720E+00	1.809E+00	2.139E+00	2.348E-01	1.272
PA-231		283.69	*	-3.686E-01	1.912E+00	2.977E+00	4.748E-01	-0.124
	+	301.36		1.877E+00	9.179E-01	1.335E+00	1.814E-01	1.406
TH-231		81.07		-3.462E-01	4.006E-01	5.549E-01	6.556E-02	-0.624
		83.79		1.687E-01	2.231E-01	3.295E-01	3.961E-02	0.512
		94.87		5.845E+00	1.135E+00	1.590E+00	1.800E-01	3.676
	+	144.24		9.581E-01	1.024E+00	1.644E+00	1.816E-01	0.583
		154.21		-4.585E-01	5.267E-01	8.172E-01	9.051E-02	-0.561
	+	269.46		4.800E-01	3.372E-01	4.523E-01	4.991E-02	1.061
PA-233		323.87	*	-1.119E+00	9.083E-01	1.381E+00	2.506E-01	-0.810
	+	338.28		7.204E+00	2.385E+00	2.907E+00	3.774E-01	2.478
		300.13		1.322E+00	6.562E-01	9.503E-01	1.524E-01	1.391
	+	311.90	*	-8.365E-03	8.300E-02	1.372E-01	1.452E-02	-0.061
		340.48		3.741E+00	1.344E+00	1.724E+00	4.228E-01	2.169
		94.67		2.967E+00	5.487E-01	6.214E-01	8.968E-02	4.774
PA-234		98.44		3.594E-01	2.496E-01	2.335E-01	1.312E-01	1.539
		111.00		3.079E-01	2.710E-01	4.530E-01	6.014E-02	0.680
		131.20		1.286E-01	1.682E-01	2.466E-01	2.475E-02	0.521
		569.50		2.126E-01	3.447E-01	5.801E-01	4.969E-02	0.366
		733.00		1.368E-02	4.501E-01	6.500E-01	1.442E-01	0.021
		880.51		2.611E-01	3.241E-01	5.716E-01	5.293E-02	0.457
		883.24		1.167E-01	3.576E-01	5.927E-01	3.990E-01	0.197
		926.50		8.445E-02	2.185E-01	3.249E-01	8.289E-02	0.260
		946.00	*	-6.517E-02	3.420E-01	5.523E-01	1.053E-01	-0.118
		949.00		3.342E-01	4.873E-01	8.524E-01	7.872E-02	0.392
		766.42		3.779E+01	2.549E+01	2.887E+01	1.465E+01	1.309
PA-234M								

---- 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	*	2.050E+01	1.007E+01	1.334E+01	1.383E+00	1.537
		99.53		4.372E-01	2.486E-01	4.100E-01	4.446E-02	1.066
		103.37		-7.370E-02	1.397E-01	2.235E-01	2.360E-02	-0.330
		106.12		9.052E-02	1.176E-01	1.963E-01	2.043E-02	0.461
		117.23	*	-1.666E-01	5.773E-01	9.296E-01	9.382E-02	-0.179
AM-241		228.18		5.106E-02	2.895E-01	4.899E-01	5.404E-02	0.104
	+	277.60		2.542E-01	2.879E-01	4.008E-01	4.339E-02	0.634
CM-247	+	59.54	*	9.832E-02	3.811E-01	5.607E-01	6.582E-02	0.175
CF-249		278.00		1.080E+00	1.223E+00	1.694E+00	1.834E-01	0.637
		287.50		8.539E-01	1.723E+00	2.687E+00	2.881E-01	0.318
		402.40	*	1.334E-02	4.571E-02	7.640E-02	6.461E-03	0.175
CF-251		252.80		5.771E-01	1.217E+00	2.078E+00	2.285E-01	0.278
		333.37		-1.777E-01	2.677E-01	3.655E-01	3.643E-02	-0.486
CF-251		388.16	*	-1.331E-02	5.050E-02	8.186E-02	6.978E-03	-0.163
		177.52	*	3.145E-02	1.753E-01	2.834E-01	3.049E-02	0.111
		227.38		4.688E-01	4.707E-01	8.161E-01	9.002E-02	0.574
		285.41		-4.833E-01	2.740E+00	4.531E+00	4.869E-01	-0.107

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]G247900009      *
* Acquisition date   : 6-MAR-2010 14:59:51 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 02:00:01.45             Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID          : G247900009              Analyst initials: MXR1         *
* Batch Number       : 957711                  Sample Quantity : 1.3385E+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	3.158E+01	3.595E+00	6.658E-01	0.000E+00
CD-109	2.255E+00	1.458E+00	2.309E+00	0.000E+00
SN-126	2.201E-01	1.423E-01	2.298E-01	0.000E+00
BA-137M	5.800E-02	4.987E-02	7.248E-02	0.000E+00
CS-137	6.127E-02	5.268E-02	7.657E-02	0.000E+00
CE-141	9.158E-02	9.588E-02	1.448E-01	0.000E+00
TL-208	5.313E-01	1.180E-01	7.360E-02	0.000E+00
BI-211	4.062E+00	6.570E-01	4.493E-01	0.000E+00
PB-212	1.805E+00	2.520E-01	1.212E-01	0.000E+00
BI-214	1.353E+00	2.368E-01	1.369E-01	0.000E+00
PB-214	1.474E+00	2.514E-01	1.608E-01	0.000E+00
RA-224	4.073E+00	1.759E+00	1.298E+00	0.000E+00
RA-226	1.353E+00	2.368E-01	1.369E-01	0.000E+00
AC-228	1.788E+00	4.295E-01	3.076E-01	0.000E+00
RA-228	1.788E+00	4.295E-01	3.076E-01	0.000E+00
TH-228	1.805E+00	2.520E-01	1.212E-01	0.000E+00
TH-232	1.788E+00	4.295E-01	3.076E-01	0.000E+00
TH-234	1.221E+01	5.015E+00	4.437E+00	0.000E+00
U-235	2.859E-01	3.020E-01	4.622E-01	0.000E+00
NP-237	6.568E-01	4.456E-01	6.421E-01	0.000E+00
U-238	1.221E+01	5.015E+00	4.437E+00	0.000E+00
ANH-511	8.869E-02	8.996E-02	6.223E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.351E-01	4.038E-01	6.471E-01	0.000E+00 NOT IDENT.
NA-22	-3.981E-02	5.923E-02	9.173E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.685E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	1.286E-02	4.803E-02	8.361E-02	0.000E+00 FAIL ABUN
V-48	-4.333E-02	9.048E-02	1.464E-01	0.000E+00 NOT IDENT.

CR-51	-3.426E-01	4.835E-01	8.115E-01	0.000E+00	NOT IDENT.
MN-54	-2.596E-02	4.645E-02	7.616E-02	0.000E+00	NOT IDENT.
CO-56	-8.874E-03	4.458E-02	7.493E-02	0.000E+00	NOT IDENT.
CO-57	2.106E-02	3.410E-02	6.037E-02	0.000E+00	NOT IDENT.
CO-58	-1.581E-02	4.559E-02	7.597E-02	0.000E+00	NOT IDENT.
FE-59	3.945E-02	1.122E-01	1.938E-01	0.000E+00	NOT IDENT.
CO-60	2.592E-02	4.593E-02	8.074E-02	0.000E+00	NOT IDENT.
ZN-65	-4.798E-02	1.229E-01	1.670E-01	0.000E+00	NOT IDENT.
SE-75	-5.939E-02	6.092E-02	9.157E-02	0.000E+00	NOT IDENT.
SR-85	7.987E-02	5.079E-02	9.268E-02	0.000E+00	NOT IDENT.
Y-88	4.401E-02	4.287E-02	8.284E-02	0.000E+00	NOT IDENT.
Y-91	2.312E+01	2.629E+01	4.690E+01	0.000E+00	NOT IDENT.
NB-94	2.900E-02	3.638E-02	6.650E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	6.287E-02	1.067E-01	0.000E+00	NOT IDENT.
NB-95M	2.740E-01	1.909E-01	3.113E-01	0.000E+00	NOT IDENT.
ZR-95	-1.821E-02	8.726E-02	1.481E-01	0.000E+00	NOT IDENT.
MO-99	-4.984E+00	1.855E+01	3.136E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	9.874E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	8.597E-03	4.877E-02	8.370E-02	0.000E+00	FAIL ABUN
RH-106	1.061E-01	3.588E-01	6.132E-01	0.000E+00	NOT IDENT.
RU-106	1.061E-01	3.587E-01	6.132E-01	0.000E+00	NOT IDENT.
AG-108M	-1.352E-02	3.593E-02	6.001E-02	0.000E+00	NOT IDENT.
AG-110M	2.940E-02	4.479E-02	7.174E-02	0.000E+00	NOT IDENT.
SN-113	3.367E-03	5.430E-02	9.389E-02	0.000E+00	NOT IDENT.
CD-115	-1.902E+01	1.975E+01	3.099E+01	0.000E+00	NOT IDENT.
SN-117M	3.294E-02	7.686E-02	1.337E-01	0.000E+00	NOT IDENT.
TE-123M	2.219E-02	3.801E-02	6.644E-02	0.000E+00	NOT IDENT.
SB-124	-8.430E-03	7.220E-02	1.183E-01	0.000E+00	NOT IDENT.
SB-125	4.956E-03	1.126E-01	1.934E-01	0.000E+00	FAIL ABUN
TE-125M	-2.219E+01	1.444E+01	2.350E+01	0.000E+00	NOT IDENT.
I-126	2.529E-01	3.081E-01	4.986E-01	0.000E+00	NOT IDENT.
SB-126	1.155E-01	2.082E-01	3.277E-01	0.000E+00	NOT IDENT.
SB-127	-1.005E+00	1.813E+00	3.015E+00	0.000E+00	NOT IDENT.
I-131	-7.277E-02	1.549E-01	2.608E-01	0.000E+00	NOT IDENT.
TE-132	2.303E-01	1.192E+00	2.133E+00	0.000E+00	NOT IDENT.
BA-133	-4.798E-02	6.211E-02	8.737E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.570E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	7.666E-02	5.660E-02	1.056E-01	0.000E+00	NOT IDENT.
CS-135	3.051E-01	2.282E-01	3.730E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	9.030E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.378E-01	1.416E-01	2.567E-01	0.000E+00	NOT IDENT.
CE-139	2.342E-02	4.017E-02	7.007E-02	0.000E+00	NOT IDENT.
BA-140	1.205E-01	3.365E-01	5.784E-01	0.000E+00	NOT IDENT.
LA-140	-5.962E-03	1.161E-01	1.827E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.761E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.387E-01	3.170E-01	4.578E-01	0.000E+00	NOT IDENT.
PM-144	2.532E-02	3.780E-02	6.857E-02	0.000E+00	NOT IDENT.
PR-144	5.956E-01	2.916E+00	5.129E+00	0.000E+00	NOT IDENT.
PM-146	3.747E-02	5.373E-02	9.526E-02	0.000E+00	NOT IDENT.
ND-147	6.960E-01	7.131E-01	1.274E+00	0.000E+00	NOT IDENT.
PM-149	2.143E+01	1.555E+02	2.746E+02	0.000E+00	NOT IDENT.
EU-152	-4.621E-02	1.530E-01	2.119E-01	0.000E+00	FAIL ABUN
GD-153	0.000E+00	1.390E-01	2.274E-01	0.000E+00	NOT IDENT.
EU-154	-8.386E-02	1.660E-01	2.614E-01	0.000E+00	NOT IDENT.
EU-155	1.267E-01	1.453E-01	2.603E-01	0.000E+00	FAIL ABUN
TB-160	5.596E-02	1.545E-01	2.718E-01	0.000E+00	FAIL ABUN
HO-166M	6.757E-02	7.287E-02	1.336E-01	0.000E+00	NOT IDENT.
TA-182	-1.020E-01	2.300E-01	3.665E-01	0.000E+00	FAIL ABUN
IR-192	-5.838E-03	4.432E-02	7.685E-02	0.000E+00	FAIL ABUN
HG-203	6.482E-02	5.473E-02	8.923E-02	0.000E+00	NOT IDENT.
BI-207	3.557E-03	6.691E-02	1.106E-01	0.000E+00	FAIL ABUN
PB-210	-7.167E+00	1.346E+01	2.350E+01	0.000E+00	NOT IDENT.
PB-211	-1.276E+00	1.073E+00	1.394E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.297E+00	1.420E+00	0.000E+00	FAIL ABUN
RN-219	4.675E-02	4.804E-01	8.311E-01	0.000E+00	FAIL ABUN
RA-223	-1.119E+00	8.902E-01	1.422E+00	0.000E+00	FAIL ABUN
AC-227	-2.239E-01	3.214E-01	5.483E-01	0.000E+00	FAIL ABUN
TH-227	-2.239E-01	3.217E-01	5.483E-01	0.000E+00	FAIL ABUN
TH-229	2.012E-01	7.070E-01	1.212E+00	0.000E+00	FAIL ABUN
PA-231	-3.686E-01	1.873E+00	3.072E+00	0.000E+00	FAIL ABUN
TH-231	-1.119E+00	8.902E-01	1.422E+00	0.000E+00	FAIL ABUN
PA-233	-8.365E-03	8.134E-02	1.414E-01	0.000E+00	FAIL ABUN
PA-234	-6.517E-02	3.352E-01	5.578E-01	0.000E+00	NOT IDENT.
PA-234M	0.000E+00	9.867E+00	1.346E+01	0.000E+00	FAIL ABUN
NP-239	-1.666E-01	5.658E-01	9.738E-01	0.000E+00	FAIL ABUN
AM-241	9.832E-02	3.735E-01	5.941E-01	0.000E+00	NOT IDENT.
CM-247	1.334E-02	4.480E-02	7.835E-02	0.000E+00	FAIL ABUN
CF-249	-1.331E-02	4.949E-02	8.400E-02	0.000E+00	NOT IDENT.

CF-251	3.145E-02	1.718E-01	2.948E-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]G247900009.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 14:59:51.
Sample ID        : G247900009 Sample quantity   : 1.33850E+02 GRAM
Detector name    : GAM15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.45 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 957711 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	1160	10.66*	9.663E-01	3.158E+01	3.158E+01	11.61
CD-109	88.03	129	3.70*	4.442E+00	2.201E+00	2.255E+00	65.97
SN-126	64.28	297	9.60	1.846E+00	4.706E+00	4.706E+00	40.62
	86.94	129	8.90	4.442E+00	9.151E-01	9.151E-01	77.39
	87.57	129	37.00*	4.442E+00	2.201E-01	2.201E-01	65.97
BA-137M	661.66	37	89.90*	1.980E+00	5.794E-02	5.800E-02	87.74
CS-137	661.66	37	85.10*	1.980E+00	6.120E-02	6.127E-02	87.74
CE-141	145.44	61	48.29*	5.502E+00	6.488E-02	9.158E-02	106.84
TL-208	277.37	48	6.60	3.705E+00	5.562E-01	5.562E-01	113.60
	583.19	353	85.00*	2.190E+00	5.313E-01	5.313E-01	22.67
	860.56	72	12.50	1.575E+00	1.032E+00	1.032E+00	51.42
BI-211	72.87	-----	1.23	3.001E+00	-----	Line Not Found	-----
	351.06	588	12.92*	3.141E+00	4.062E+00	4.062E+00	16.50
PB-212	74.82	332	10.28	3.243E+00	2.790E+00	2.790E+00	40.30
	77.11	474	17.10	3.506E+00	2.216E+00	2.216E+00	21.61
	238.63	1155	43.60*	4.114E+00	1.805E+00	1.805E+00	14.24
	300.09	110	3.30	3.504E+00	2.656E+00	2.656E+00	48.52
BI-214	609.32	465	45.49*	2.117E+00	1.353E+00	1.353E+00	17.86
	1120.29	86	14.92	1.226E+00	1.315E+00	1.315E+00	44.89
	1764.49	98	15.30	8.554E-01	2.100E+00	2.100E+00	22.02
PB-214	74.82	332	5.80	3.243E+00	4.944E+00	4.944E+00	39.90
	77.11	474	9.70	3.506E+00	3.907E+00	3.907E+00	23.13
	242.00	243	7.25	4.079E+00	2.303E+00	2.303E+00	44.45
	295.22	282	18.42	3.544E+00	1.212E+00	1.212E+00	32.94
	351.93	588	35.60*	3.141E+00	1.474E+00	1.474E+00	17.40
RA-224	240.99	243	4.10*	4.079E+00	4.073E+00	4.073E+00	44.07
RA-226	609.32	465	45.49*	2.117E+00	1.353E+00	1.353E+00	17.86
	1120.29	86	14.92	1.226E+00	1.315E+00	1.315E+00	44.89
	1764.49	98	15.30	8.554E-01	2.100E+00	2.100E+00	22.02
AC-228	338.32	235	11.27	3.228E+00	1.815E+00	1.815E+00	51.87
	911.20	246	25.80*	1.494E+00	1.788E+00	1.788E+00	24.51
	968.97	93	15.80	1.410E+00	1.169E+00	1.169E+00	48.62

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	235	11.27	3.228E+00	1.815E+00	1.815E+00	51.87
	911.20	246	25.80*	1.494E+00	1.788E+00	1.788E+00	24.51
	968.97	93	15.80	1.410E+00	1.169E+00	1.169E+00	48.62
TH-228	74.82	332	10.28	3.243E+00	2.790E+00	2.790E+00	39.12
	77.11	474	17.10	3.506E+00	2.216E+00	2.216E+00	21.61
	238.63	1155	43.60*	4.114E+00	1.805E+00	1.805E+00	14.24
TH-232	300.09	110	3.30	3.504E+00	2.656E+00	2.656E+00	77.40
	338.32	235	11.27	3.228E+00	1.815E+00	1.815E+00	32.01
	911.20	246	25.80*	1.494E+00	1.788E+00	1.788E+00	24.51
TH-234	968.97	93	15.80	1.410E+00	1.169E+00	1.169E+00	48.62
	63.29	297	3.70*	1.846E+00	1.221E+01	1.221E+01	41.91
	92.59	1441	4.23	4.826E+00	1.980E+01	1.980E+01	25.86
U-235	89.96	-----	3.47	4.642E+00	-----	Line Not Found	-----
	93.35	1441	5.60	4.826E+00	1.495E+01	1.495E+01	26.73
	143.76	61	10.96*	5.502E+00	2.859E-01	2.859E-01	107.82
	163.33	-----	5.08	5.224E+00	-----	Line Not Found	-----
	185.72	409	57.20	4.858E+00	4.131E-01	4.131E-01	27.75
	205.31	-----	5.01	4.560E+00	-----	Line Not Found	-----
NP-237	86.48	129	12.40*	4.442E+00	6.568E-01	6.568E-01	69.22
	95.86	-----	2.68	5.004E+00	-----	Line Not Found	-----
U-238	63.29	297	3.70*	1.846E+00	1.221E+01	1.221E+01	41.91
	92.59	1441	4.23	4.826E+00	1.980E+01	1.980E+01	15.98
ANH-511	511.00	76	100.00*	2.417E+00	8.869E-02	8.869E-02	103.50

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	3.158E+01	3.158E+01	0.367E+01	11.61	
CD-109	461.40D	1.02	2.201E+00	2.255E+00	1.488E+00	65.97	
SN-126	2.30E+05Y	1.00	2.201E-01	2.201E-01	1.452E-01	65.97	
BA-137M	30.08Y	1.00	5.794E-02	5.800E-02	5.088E-02	87.74	
CS-137	30.08Y	1.00	6.120E-02	6.127E-02	5.375E-02	87.74	
CE-141	32.51D	1.41	6.488E-02	9.158E-02	9.784E-02	106.84	
TL-208	1.41E+10Y	1.00	5.313E-01	5.313E-01	1.204E-01	22.67	
BI-211	7.04E+08Y	1.00	4.062E+00	4.062E+00	0.670E+00	16.50	
PB-212	1.41E+10Y	1.00	1.805E+00	1.805E+00	0.257E+00	14.24	
BI-214	1600.00Y	1.00	1.353E+00	1.353E+00	0.242E+00	17.86	
PB-214	1600.00Y	1.00	1.474E+00	1.474E+00	0.257E+00	17.40	
RA-224	1.41E+10Y	1.00	4.073E+00	4.073E+00	1.795E+00	44.07	
RA-226	1600.00Y	1.00	1.353E+00	1.353E+00	0.242E+00	17.86	
AC-228	1.41E+10Y	1.00	1.788E+00	1.788E+00	0.438E+00	24.51	
RA-228	1.41E+10Y	1.00	1.788E+00	1.788E+00	0.438E+00	24.51	
TH-228	1.41E+10Y	1.00	1.805E+00	1.805E+00	0.257E+00	14.24	
TH-232	1.41E+10Y	1.00	1.788E+00	1.788E+00	0.438E+00	24.51	
TH-234	4.47E+09Y	1.00	1.221E+01	1.221E+01	0.512E+01	41.91	
U-235	7.04E+08Y	1.00	2.859E-01	2.859E-01	3.082E-01	107.82	
NP-237	2.14E+06Y	1.00	6.568E-01	6.568E-01	4.547E-01	69.22	
U-238	4.47E+09Y	1.00	1.221E+01	1.221E+01	0.512E+01	41.91	
ANH-511	1.00E+09Y	1.00	8.869E-02	8.869E-02	9.180E-02	103.50	
Total Activity :			8.146E+01	8.154E+01			

Grand Total Activity : 8.146E+01 8.154E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900009

Page : 4
Acquisition date : 6-MAR-2010 14:59:51

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.50	131	425	1.04	257.92	254	10	1.82E-02	61.3	5.63E+00	
0	209.64	122	393	1.15	418.18	412	11	1.70E-02	65.6	4.50E+00	T
0	270.57	90	247	1.40	540.04	536	10	1.25E-02	69.4	3.77E+00	T
0	463.01	132	95	1.77	924.93	918	14	1.84E-02	35.7	2.60E+00	T
0	727.82	97	113	2.23	1454.57	1447	19	1.34E-02	58.3	1.83E+00	T
0	769.96	100	153	3.29	1538.86	1528	28	1.38E-02	74.7	1.74E+00	
0	933.85	27	65	1.05	1866.69	1857	13	3.80E-03	****	1.46E+00	
1	964.20	53	48	2.20	1927.40	1920	24	7.34E-03	64.5	1.42E+00	T
0	1001.38	84	57	1.82	2001.77	1996	16	1.17E-02	48.0	1.37E+00	T
0	1587.65	42	8	2.77	3174.65	3166	15	5.84E-03	42.0	9.09E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900009.CNF;1
* Acquisition date   : 6-MAR-2010 14:59:51.  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 02:00:01.45              Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G247900009           Analyst initials: MXR1
* Batch Number       : 957711               Sample Quantity : 1.33850E+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	3.158E+01	3.668E+00	6.646E-01	6.531E-02	47.521
CD-109	2.255E+00	1.488E+00	2.194E+00	2.723E-01	1.028
SN-126	2.201E-01	1.452E-01	2.183E-01	2.702E-02	1.008
BA-137M	5.800E-02	5.088E-02	7.131E-02	5.863E-03	0.813
CS-137	6.127E-02	5.375E-02	7.533E-02	6.206E-03	0.813
CE-141	9.158E-02	9.784E-02	1.388E-01	1.434E-02	0.660
TL-208	5.313E-01	1.204E-01	7.225E-02	6.608E-03	7.354
BI-211	4.062E+00	6.704E-01	4.371E-01	4.353E-02	9.295
PB-212	1.805E+00	2.571E-01	1.171E-01	1.399E-02	15.419
BI-214	1.353E+00	2.416E-01	1.345E-01	1.340E-02	10.056
PB-214	1.474E+00	2.565E-01	1.564E-01	1.778E-02	9.427
RA-224	4.073E+00	1.795E+00	1.255E+00	1.384E-01	3.246
RA-226	1.353E+00	2.416E-01	1.345E-01	1.340E-02	10.056
AC-228	1.788E+00	4.383E-01	3.043E-01	3.686E-02	5.875
RA-228	1.788E+00	4.383E-01	3.043E-01	3.686E-02	5.875
TH-228	1.805E+00	2.571E-01	1.171E-01	1.399E-02	15.419
TH-232	1.788E+00	4.383E-01	3.043E-01	3.686E-02	5.875
TH-234	1.221E+01	5.117E+00	4.192E+00	8.312E-01	2.913

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	2.859E-01	3.082E-01	4.428E-01	7.878E-02	0.646
NP-237	6.568E-01	4.547E-01	6.098E-01	1.481E-01	1.077
U-238	1.221E+01	5.117E+00	4.192E+00	8.312E-01	2.913
ANH-511	8.869E-02	9.180E-02	6.094E-02	5.265E-03	1.455

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.351E-01		4.120E-01	6.329E-01	5.883E-02	-0.530
NA-22	-3.981E-02		6.044E-02	9.133E-02	8.297E-03	-0.436
NA-24	-3.946E-01		1.370E+00	Half-Life too short		
SC-46	1.286E-02		4.901E-02	8.270E-02	7.685E-03	0.155
V-48	-4.333E-02		9.233E-02	1.450E-01	1.326E-02	-0.299
CR-51	-3.426E-01		4.933E-01	7.882E-01	8.364E-02	-0.435
MN-54	-2.596E-02		4.740E-02	7.524E-02	6.828E-03	-0.345
CO-56	-8.874E-03		4.549E-02	7.404E-02	6.757E-03	-0.120
CO-57	2.106E-02		3.479E-02	5.767E-02	5.809E-03	0.365
CO-58	-1.581E-02		4.652E-02	7.502E-02	6.744E-03	-0.211
FE-59	3.945E-02		1.145E-01	1.924E-01	1.795E-02	0.205
CO-60	2.592E-02		4.687E-02	8.045E-02	7.734E-03	0.322
ZN-65	-4.798E-02		1.255E-01	1.658E-01	1.417E-02	-0.289
SE-75	-5.939E-02		6.216E-02	8.864E-02	9.721E-03	-0.670
SR-85	7.987E-02		5.183E-02	9.077E-02	7.842E-03	0.880
Y-88	4.401E-02		4.375E-02	8.304E-02	6.993E-03	0.530
Y-91	2.312E+01		2.682E+01	4.664E+01	3.932E+00	0.496
NB-94	2.900E-02		3.712E-02	6.550E-02	5.530E-03	0.443
NB-95	1.093E-01		6.415E-02	1.053E-01	9.222E-03	1.039
NB-95M	2.740E-01		1.948E-01	3.007E-01	3.624E-02	0.911
ZR-95	-1.821E-02		8.904E-02	1.461E-01	1.404E-02	-0.125
MO-99	-4.984E+00		1.893E+01	3.092E+01	4.874E+00	-0.161
TC-99M	-6.435E+11		5.038E+11	Half-Life too short		
RU-103	8.597E-03		4.976E-02	8.192E-02	1.145E-02	0.105
RH-106	1.061E-01		3.662E-01	6.026E-01	7.904E-02	0.176
RU-106	1.061E-01		3.660E-01	6.026E-01	5.064E-02	0.176
AG-108M	-1.352E-02		3.666E-02	5.860E-02	5.179E-03	-0.231
AG-110M	2.940E-02		4.570E-02	7.057E-02	6.005E-03	0.417
SN-113	3.367E-03		5.541E-02	9.151E-02	7.948E-03	0.037
CD-115	-1.902E+01		2.015E+01	3.037E+01	2.621E+00	-0.626
SN-117M	3.294E-02		7.843E-02	1.283E-01	1.345E-02	0.257
TE-123M	2.219E-02		3.879E-02	6.376E-02	6.718E-03	0.348
SB-124	-8.430E-03		7.367E-02	1.184E-01	1.115E-02	-0.071
SB-125	4.956E-03		1.149E-01	1.888E-01	1.643E-02	0.026
TE-125M	-2.219E+01		1.473E+01	2.241E+01	2.662E+00	-0.990
I-126	2.529E-01		3.144E-01	4.906E-01	4.046E-02	0.516
SB-126	1.155E-01		2.125E-01	3.229E-01	2.756E-02	0.358
SB-127	-1.005E+00		1.850E+00	2.968E+00	3.406E-01	-0.338
I-131	-7.277E-02		1.581E-01	2.539E-01	2.452E-02	-0.287

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	2.303E-01		1.217E+00	2.059E+00	3.591E-01	0.112
BA-133	-4.798E-02		6.338E-02	8.502E-02	1.149E-02	-0.564
I-133	1.298E-02		8.012E-03	Half-Life too short		
CS-134	7.666E-02		5.775E-02	1.042E-01	9.339E-03	0.736
CS-135	3.051E-01		2.329E-01	3.611E-01	4.333E-02	0.845
I-135	4.600E+09		4.607E+10	Half-Life too short		
CS-136	1.378E-01		1.444E-01	2.547E-01	2.355E-02	0.541
CE-139	2.342E-02		4.099E-02	6.728E-02	7.182E-03	0.348
BA-140	1.205E-01		3.434E-01	5.669E-01	1.923E-01	0.213
LA-140	-5.962E-03		1.185E-01	1.826E-01	1.712E-02	-0.033
CE-143	1.420E-03		2.429E-04	Half-Life too short		
CE-144	-2.387E-01		3.235E-01	4.380E-01	7.067E-02	-0.545
PM-144	2.532E-02		3.857E-02	6.752E-02	5.681E-03	0.375
PR-144	5.956E-01		2.976E+00	5.051E+00	4.248E-01	0.118
PM-146	3.747E-02		5.483E-02	9.309E-02	9.844E-03	0.402
ND-147	6.960E-01		7.277E-01	1.249E+00	1.868E-01	0.557
PM-149	2.143E+01		1.586E+02	2.661E+02	4.475E+01	0.081
EU-152	-4.621E-02		1.561E-01	2.061E-01	2.097E-02	-0.224
GD-153	2.758E-01		1.419E-01	2.164E-01	2.388E-02	1.275
EU-154	-8.386E-02		1.694E-01	2.602E-01	3.052E-02	-0.322
EU-155	1.267E-01		1.483E-01	2.481E-01	2.613E-02	0.511
TB-160	5.596E-02		1.576E-01	2.688E-01	2.488E-02	0.208
HO-166M	6.757E-02		7.436E-02	1.316E-01	1.117E-02	0.513
TA-182	-1.020E-01		2.347E-01	3.646E-01	3.130E-02	-0.280
IR-192	-5.838E-03		4.522E-02	7.462E-02	7.694E-03	-0.078
HG-203	6.482E-02		5.584E-02	8.646E-02	9.501E-03	0.750
BI-207	3.557E-03		6.827E-02	1.098E-01	9.686E-03	0.032
PB-210	-7.167E+00		1.374E+01	2.209E+01	2.719E+00	-0.325
PB-211	-1.276E+00		1.095E+00	1.360E+00	6.576E-01	-0.939
BI-212	2.220E+00	+	1.323E+00	1.399E+00	1.739E-01	1.586
RN-219	4.675E-02		4.902E-01	8.104E-01	1.198E-01	0.058
RA-223	-1.119E+00		9.083E-01	1.381E+00	2.506E-01	-0.810
AC-227	-2.239E-01		3.280E-01	5.305E-01	7.341E-02	-0.422
TH-227	-2.239E-01		3.283E-01	5.305E-01	8.070E-02	-0.422
TH-229	2.012E-01		7.214E-01	1.167E+00	1.270E-01	0.172
PA-231	-3.686E-01		1.912E+00	2.977E+00	4.748E-01	-0.124
TH-231	-1.119E+00		9.083E-01	1.381E+00	2.506E-01	-0.810
PA-233	-8.365E-03		8.300E-02	1.372E-01	1.452E-02	-0.061
PA-234	-6.517E-02		3.420E-01	5.523E-01	1.053E-01	-0.118
PA-234M	2.050E+01	+	1.007E+01	1.334E+01	1.383E+00	1.537
NP-239	-1.666E-01		5.773E-01	9.296E-01	9.382E-02	-0.179
AM-241	9.832E-02		3.811E-01	5.607E-01	6.582E-02	0.175
CM-247	1.334E-02		4.571E-02	7.640E-02	6.461E-03	0.175
CF-249	-1.331E-02		5.050E-02	8.186E-02	6.978E-03	-0.163
CF-251	3.145E-02		1.753E-01	2.834E-01	3.049E-02	0.111

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G247900009
* Acquisition date   : 6-MAR-2010 14:59:51 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 02:00:01.45 Half life ratio      : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G247900009 Analyst initials: MXR1
* Batch Number       : 957711 Sample Quantity : 1.3385E+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	3.158E+01	3.595E+00	3.331E-01	1.834E+00
CD-109	2.255E+00	1.458E+00	1.155E+00	7.439E-01
SN-126	2.201E-01	1.423E-01	1.150E-01	7.261E-02
BA-137M	5.800E-02	4.987E-02	3.626E-02	2.544E-02
CS-137	6.127E-02	5.268E-02	3.831E-02	2.688E-02
CE-141	9.158E-02	9.588E-02	7.247E-02	4.892E-02
TL-208	5.313E-01	1.180E-01	3.682E-02	6.022E-02
BI-211	4.062E+00	6.570E-01	2.248E-01	3.352E-01
PB-212	1.805E+00	2.520E-01	6.062E-02	1.285E-01
BI-214	1.353E+00	2.368E-01	6.851E-02	1.208E-01
PB-214	1.474E+00	2.514E-01	8.043E-02	1.283E-01
RA-224	4.073E+00	1.759E+00	6.495E-01	8.975E-01
RA-226	1.353E+00	2.368E-01	6.851E-02	1.208E-01
AC-228	1.788E+00	4.295E-01	1.539E-01	2.191E-01
RA-228	1.788E+00	4.295E-01	1.539E-01	2.191E-01
TH-228	1.805E+00	2.520E-01	6.062E-02	1.285E-01
TH-232	1.788E+00	4.295E-01	1.539E-01	2.191E-01
TH-234	1.221E+01	5.015E+00	2.220E+00	2.559E+00
U-235	2.859E-01	3.020E-01	2.312E-01	1.541E-01
NP-237	6.568E-01	4.456E-01	3.212E-01	2.273E-01
U-238	1.221E+01	5.015E+00	2.220E+00	2.559E+00
ANH-511	8.869E-02	8.996E-02	3.113E-02	4.590E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.351E-01	4.038E-01	3.237E-01	2.060E-01 NOT IDENT.
NA-22	-3.981E-02	5.923E-02	4.589E-02	3.022E-02 NOT IDENT.
NA-24	-3.946E+05	2.685E+06	0.000E+00	1.370E+06 SHORT HLIF
SC-46	1.286E-02	4.803E-02	4.183E-02	2.451E-02 FAIL ABUN
V-48	-4.333E-02	9.048E-02	7.322E-02	4.617E-02 NOT IDENT.

CR-51	-3.426E-01	4.835E-01	4.060E-01	2.467E-01	NOT IDENT.
MN-54	-2.596E-02	4.645E-02	3.810E-02	2.370E-02	NOT IDENT.
CO-56	-8.874E-03	4.458E-02	3.749E-02	2.274E-02	NOT IDENT.
CO-57	2.106E-02	3.410E-02	3.021E-02	1.740E-02	NOT IDENT.
CO-58	-1.581E-02	4.559E-02	3.801E-02	2.326E-02	NOT IDENT.
FE-59	3.945E-02	1.122E-01	9.696E-02	5.723E-02	NOT IDENT.
CO-60	2.592E-02	4.593E-02	4.039E-02	2.343E-02	NOT IDENT.
ZN-65	-4.798E-02	1.229E-01	8.353E-02	6.273E-02	NOT IDENT.
SE-75	-5.939E-02	6.092E-02	4.581E-02	3.108E-02	NOT IDENT.
SR-85	7.987E-02	5.079E-02	4.637E-02	2.592E-02	NOT IDENT.
Y-88	4.401E-02	4.287E-02	4.144E-02	2.187E-02	NOT IDENT.
Y-91	2.312E+01	2.629E+01	2.346E+01	1.341E+01	NOT IDENT.
NB-94	2.900E-02	3.638E-02	3.327E-02	1.856E-02	NOT IDENT.
NB-95	1.093E-01	6.287E-02	5.339E-02	3.208E-02	NOT IDENT.
NB-95M	2.740E-01	1.909E-01	1.557E-01	9.738E-02	NOT IDENT.
ZR-95	-1.821E-02	8.726E-02	7.411E-02	4.452E-02	NOT IDENT.
MO-99	-4.984E+00	1.855E+01	1.569E+01	9.463E+00	NOT IDENT.
TC-99M	-6.435E+17	9.874E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	8.597E-03	4.877E-02	4.187E-02	2.488E-02	FAIL ABUN
RH-106	1.061E-01	3.588E-01	3.068E-01	1.831E-01	NOT IDENT.
RU-106	1.061E-01	3.587E-01	3.068E-01	1.830E-01	NOT IDENT.
AG-108M	-1.352E-02	3.593E-02	3.003E-02	1.833E-02	NOT IDENT.
AG-110M	2.940E-02	4.479E-02	3.589E-02	2.285E-02	NOT IDENT.
SN-113	3.367E-03	5.430E-02	4.697E-02	2.770E-02	NOT IDENT.
CD-115	-1.902E+01	1.975E+01	1.551E+01	1.008E+01	NOT IDENT.
SN-117M	3.294E-02	7.686E-02	6.689E-02	3.922E-02	NOT IDENT.
TE-123M	2.219E-02	3.801E-02	3.324E-02	1.940E-02	NOT IDENT.
SB-124	-8.430E-03	7.220E-02	5.920E-02	3.684E-02	NOT IDENT.
SB-125	4.956E-03	1.126E-01	9.675E-02	5.744E-02	FAIL ABUN
TE-125M	-2.219E+01	1.444E+01	1.176E+01	7.365E+00	NOT IDENT.
I-126	2.529E-01	3.081E-01	2.495E-01	1.572E-01	NOT IDENT.
SB-126	1.155E-01	2.082E-01	1.639E-01	1.062E-01	NOT IDENT.
SB-127	-1.005E+00	1.813E+00	1.508E+00	9.252E-01	NOT IDENT.
I-131	-7.277E-02	1.549E-01	1.305E-01	7.905E-02	NOT IDENT.
TE-132	2.303E-01	1.192E+00	1.067E+00	6.083E-01	NOT IDENT.
BA-133	-4.798E-02	6.211E-02	4.371E-02	3.169E-02	FAIL ABUN
I-133	1.298E+04	1.570E+04	0.000E+00	8.012E+03	SHORT HLIF
CS-134	7.666E-02	5.660E-02	5.281E-02	2.888E-02	NOT IDENT.
CS-135	3.051E-01	2.282E-01	1.866E-01	1.165E-01	NOT IDENT.
I-135	4.600E+15	9.030E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.378E-01	1.416E-01	1.284E-01	7.222E-02	NOT IDENT.
CE-139	2.342E-02	4.017E-02	3.505E-02	2.050E-02	NOT IDENT.
BA-140	1.205E-01	3.365E-01	2.894E-01	1.717E-01	NOT IDENT.
LA-140	-5.962E-03	1.161E-01	9.138E-02	5.924E-02	NOT IDENT.
CE-143	1.420E+03	4.761E+02	0.000E+00	2.429E+02	SHORT HLIF
CE-144	-2.387E-01	3.170E-01	2.290E-01	1.617E-01	NOT IDENT.
PM-144	2.532E-02	3.780E-02	3.430E-02	1.929E-02	NOT IDENT.
PR-144	5.956E-01	2.916E+00	2.566E+00	1.488E+00	NOT IDENT.
PM-146	3.747E-02	5.373E-02	4.766E-02	2.742E-02	NOT IDENT.
ND-147	6.960E-01	7.131E-01	6.376E-01	3.638E-01	NOT IDENT.
PM-149	2.143E+01	1.555E+02	1.374E+02	7.931E+01	NOT IDENT.
EU-152	-4.621E-02	1.530E-01	1.060E-01	7.804E-02	FAIL ABUN
GD-153	2.758E-01	1.390E-01	1.137E-01	7.094E-02	NOT IDENT.
EU-154	-8.386E-02	1.660E-01	1.308E-01	8.468E-02	NOT IDENT.
EU-155	1.267E-01	1.453E-01	1.303E-01	7.414E-02	FAIL ABUN
TB-160	5.596E-02	1.545E-01	1.360E-01	7.881E-02	FAIL ABUN
HO-166M	6.757E-02	7.287E-02	6.685E-02	3.718E-02	NOT IDENT.
TA-182	-1.020E-01	2.300E-01	1.834E-01	1.174E-01	FAIL ABUN
IR-192	-5.838E-03	4.432E-02	3.845E-02	2.261E-02	FAIL ABUN
HG-203	6.482E-02	5.473E-02	4.464E-02	2.792E-02	NOT IDENT.
BI-207	3.557E-03	6.691E-02	5.535E-02	3.414E-02	FAIL ABUN
PB-210	-7.167E+00	1.346E+01	1.175E+01	6.869E+00	NOT IDENT.
PB-211	-1.276E+00	1.073E+00	6.975E-01	5.474E-01	NOT IDENT.
BI-212	2.220E+00	1.297E+00	7.104E-01	6.617E-01	FAIL ABUN
RN-219	4.675E-02	4.804E-01	4.158E-01	2.451E-01	FAIL ABUN
RA-223	-1.119E+00	8.902E-01	7.112E-01	4.542E-01	FAIL ABUN
AC-227	-2.239E-01	3.214E-01	2.743E-01	1.640E-01	FAIL ABUN
TH-227	-2.239E-01	3.217E-01	2.743E-01	1.641E-01	FAIL ABUN
TH-229	2.012E-01	7.070E-01	6.064E-01	3.607E-01	FAIL ABUN
PA-231	-3.686E-01	1.873E+00	1.537E+00	9.558E-01	FAIL ABUN
TH-231	-1.119E+00	8.902E-01	7.112E-01	4.542E-01	FAIL ABUN
PA-233	-8.365E-03	8.134E-02	7.073E-02	4.150E-02	FAIL ABUN
PA-234	-6.517E-02	3.352E-01	2.791E-01	1.710E-01	NOT IDENT.
PA-234M	2.050E+01	9.867E+00	6.734E+00	5.034E+00	FAIL ABUN
NP-239	-1.666E-01	5.658E-01	4.872E-01	2.887E-01	FAIL ABUN
AM-241	9.832E-02	3.735E-01	2.972E-01	1.905E-01	NOT IDENT.
CM-247	1.334E-02	4.480E-02	3.920E-02	2.285E-02	FAIL ABUN
CF-249	-1.331E-02	4.949E-02	4.202E-02	2.525E-02	NOT IDENT.

CF-251

3.145E-02

1.718E-01

1.475E-01

8.766E-02 NOT IDENT.

 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON , SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	372.8856
49.72	375.8772
57.36	0.0000
59.54	430.5648
63.29	467.9402
63.29	467.9402
64.28	489.9398
67.75	479.7774
69.67	494.8610
70.83	450.2283
72.81	542.5146
72.87	542.5575
72.87	542.5575
74.82	543.9655
74.82	543.9655
74.82	543.9655
74.97	544.0742
77.11	605.3328
77.11	605.3328
77.11	605.3328
79.69	602.5442
79.80	640.9930
80.12	641.2524
80.19	641.3087
80.57	659.2176
81.00	689.9919
81.07	690.0524
81.07	690.0524
83.79	608.8567
83.79	608.8567
85.43	610.0804
86.48	644.7046
86.55	644.7607
86.79	709.4382
86.94	727.3090
87.57	764.9789
88.03	747.6387
88.47	646.2476
89.96	647.3901
91.11	542.9233
92.59	529.2485
92.59	529.2485
93.35	529.7142
94.67	545.1663
94.87	592.4954
94.87	592.4954
95.86	555.6838
97.43	406.4837
98.44	377.5265
99.53	406.7368
100.11	428.7804
103.18	511.3417
103.37	441.6118
105.31	410.6331
106.12	413.0486
109.28	535.3514
111.00	441.0594
111.76	450.7327
116.30	480.9333
117.23	459.5034
121.12	425.7179
121.78	402.9676
122.06	384.2339
123.07	390.8999
131.20	417.3944
133.52	453.8596
136.00	400.0956

136.47	422.4044
140.51	443.1235
140.51	0.0000
143.76	419.8383
144.24	412.5340
144.24	412.5340
145.44	398.8475
152.43	359.5051
153.25	397.4537
154.21	417.1812
154.21	417.1812
156.02	384.3503
158.56	366.7750
159.00	359.3306
162.66	407.0978
163.33	392.1143
165.86	357.0008
176.60	352.3672
177.52	342.7306
181.07	357.7677
184.41	356.9102
185.72	368.0957
193.51	334.6498
197.04	346.6576
205.31	391.0960
210.85	301.6636
215.65	318.4720
222.11	332.1164
227.38	279.5566
228.16	307.0333
228.18	307.0374
235.69	312.8156
235.96	312.8698
235.96	312.8698
238.63	259.5917
238.63	259.5917
240.99	259.9821
242.00	260.1496
244.70	262.4352
252.40	236.8641
252.80	227.6671
256.23	258.7519
256.23	258.7519
260.90	221.3528
264.66	238.3649
268.22	216.4070
269.46	222.7975
269.46	222.7975
271.23	255.0031
273.65	262.3940
276.40	262.8145
277.37	214.8301
277.60	219.5572
278.00	226.5214
279.20	191.1636
279.54	194.3353
280.46	186.5984
283.69	208.5427
284.31	203.2490
285.41	210.3991
285.90	203.8526
287.50	199.7189
293.27	0.0000
295.22	216.6212
295.96	204.0558
298.57	204.3524
299.98	199.7538
299.98	199.7538
300.09	199.7666
300.09	199.7666
300.13	199.7717
301.36	190.3857
302.85	176.2513
304.50	173.2309
304.50	173.2309
304.85	173.2641
308.46	198.7680
311.90	195.3066

316.51	193.8677
319.41	206.6619
320.08	206.7328
323.87	250.5007
323.87	250.5007
328.76	193.1836
333.37	208.1658
334.37	163.0668
334.37	163.0668
338.28	188.3046
338.28	188.3046
338.32	188.3093
338.32	188.3093
338.32	188.3093
340.48	166.8134
340.55	166.8186
344.28	192.7696
351.06	185.6072
351.93	179.8223
356.01	190.9557
364.49	161.2633
366.42	160.4292
383.85	171.6822
388.16	157.1109
388.63	153.1653
391.69	143.4217
400.66	143.0105
401.81	135.0791
402.40	136.1162
404.85	175.3439
410.95	142.6674
414.70	165.0450
423.72	134.3784
427.09	133.5630
427.87	135.6325
433.94	133.9578
453.88	124.8564
463.37	116.0995
468.07	130.3900
473.00	125.8378
476.78	143.5915
477.60	134.3370
487.02	123.4334
492.35	123.6935
497.08	107.2598
511.00	127.7314
514.00	127.8774
527.90	126.4424
529.87	0.0000
531.02	85.4495
537.26	95.1636
546.56	0.0000
563.25	119.5496
569.33	104.8332
569.50	100.5612
569.70	101.6379
583.19	106.4202
600.60	118.9590
602.73	110.0264
604.72	122.7354
609.32	98.7026
609.32	98.7026
610.33	98.7381
614.28	85.1072
618.01	87.0273
621.93	78.4266
621.93	78.4266
633.25	86.3754
635.95	82.0734
636.99	75.5344
645.85	80.1450
657.76	75.5725
661.66	94.7142
661.66	94.7142
664.57	0.0000
666.33	80.5146
666.50	80.5200
677.62	81.3309

685.70	90.8023
695.00	81.7713
696.49	73.4421
696.51	84.5979
697.00	85.5406
702.65	69.8547
706.68	100.7161
711.68	79.3866
720.70	81.8789
721.93	0.0000
722.78	91.5674
722.91	91.5714
723.31	96.4035
724.19	94.8214
727.33	96.6526
733.00	62.8432
735.93	90.3145
739.50	83.8177
747.24	86.8396
752.31	70.8984
753.82	74.7118
756.73	87.0811
763.94	78.0486
765.81	82.9711
766.42	78.1038
777.92	68.5649
778.90	71.8499
783.70	79.0835
785.37	90.6590
795.86	69.8707
801.95	70.9483
810.29	78.8002
810.76	74.0047
815.77	70.2569
818.51	61.6419
832.01	77.3356
834.85	95.7753
836.80	0.0000
846.77	65.9967
856.80	55.0522
860.56	60.3942
871.09	53.7244
873.19	63.5268
875.33	0.0000
879.36	52.8618
880.51	50.9188
883.24	62.7135
884.68	70.5791
889.28	65.7568
898.04	60.0022
911.20	80.9306
911.20	80.9306
911.20	80.9306
926.50	45.8582
937.49	63.0156
944.13	59.7070
946.00	57.7428
949.00	44.8343
962.29	56.5461
964.08	63.0000
966.15	63.0308
968.97	63.0743
968.97	63.0743
968.97	63.0743
983.53	69.3243
996.26	60.4651
1001.03	67.4516
1004.73	60.5859
1037.84	59.0195
1038.76	0.0000
1048.07	54.0589
1050.41	66.3356
1050.41	66.3356
1063.66	60.3924
1085.87	66.8673
1099.45	57.7819
1112.07	65.4688
1115.54	67.4542

1120.29	55.0847
1120.29	55.0847
1120.55	53.3119
1121.30	57.0231
1131.51	0.0000
1173.23	52.4170
1177.93	55.6181
1189.05	72.5769
1204.77	56.9839
1221.41	69.8860
1231.02	90.1811
1235.36	91.3225
1238.28	74.3750
1260.41	0.0000
1271.85	49.2044
1274.44	68.4922
1274.54	71.7055
1291.59	55.8382
1298.22	0.0000
1312.11	49.5938
1332.49	31.3883
1365.19	27.0712
1368.63	0.0000
1384.29	28.1041
1408.01	29.1685
1457.56	0.0000
1460.82	27.5486
1489.16	23.8682
1505.03	22.9771
1596.21	25.9890
1620.50	12.6917
1678.03	0.0000
1690.97	10.8623
1764.49	7.9916
1764.49	7.9916
1770.23	12.2479
1771.35	10.5000
1791.20	0.0000
1836.06	11.1086

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900009

Total Uranium Activity	3.6458E+01	ug/g
Total Uranium Counting Unc.	1.4920E+01	ug/g
Total Uranium Tpu	7.6122E-06	ug/g
Total Uranium Mda	6.6048E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 957711                      SAMPLE ID   : G247900009
*  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 14:59:51.76    SAMPLE ALQT  : 133.850 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.132E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.863E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 5.199E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.540E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 17:02:28.59

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900010.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:00:15.
Sample ID         : G247900010      Sample quantity  : 1.51880E+02 GRAM
Detector name     : GAM17           Detector geometry: CAN
Elapsed live time : 0 02:00:00.00   Elapsed real time: 0 02:00:10.31 0.1%
Energy tolerance  : 1.50000 keV     Analyst Initials : MXR1
Abundance limit   : 75.00000        Sensitivity      : 5.00000
Batch ID          : 957711          Detector SN#     :
Matrix Spike ID   :                 LCS ID            : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.70*	166	466	1.03	93.03	89	9	2.31E-02	25.6	
2	0	63.29*	280	748	1.06	126.23	122	8	3.90E-02	18.3	
3	3	74.88*	632	493	0.88	149.40	145	13	8.78E-02	6.6	1.88E+00
4	3	77.13*	1107	538	0.98	153.91	145	13	1.54E-01	4.6	
5	4	87.18*	465	503	1.34	174.02	164	27	6.47E-02	9.6	3.18E+00
6	4	89.78	277	466	1.35	179.22	164	27	3.84E-02	15.5	
7	4	92.66*	640	369	1.25	184.97	164	27	8.89E-02	6.9	
8	0	129.16	107	400	0.99	258.01	255	9	1.49E-02	34.9	
9	0	185.57*	315	351	1.17	370.86	365	12	4.38E-02	13.5	
10	0	209.06	116	244	0.98	417.86	414	8	1.61E-02	25.1	
11	5	238.52*	1341	158	1.00	476.81	472	22	1.86E-01	3.2	2.72E+00
12	5	241.30*	371	225	1.81	482.38	472	22	5.15E-02	12.8	
13	0	270.26	131	173	1.88	540.31	536	10	1.82E-02	20.8	
14	3	295.05*	431	126	1.28	589.93	584	22	5.98E-02	6.6	3.61E+00
15	3	299.91	113	148	1.59	599.65	584	22	1.57E-02	22.5	
16	0	328.27	62	196	1.37	656.40	651	10	8.58E-03	44.6	
17	0	338.18	265	205	1.22	676.21	671	12	3.69E-02	12.4	
18	0	351.67*	650	118	1.10	703.21	698	11	9.03E-02	5.2	
19	0	462.88	85	80	1.47	925.74	921	9	1.18E-02	22.0	
20	0	510.38*	148	169	1.58	1020.78	1013	15	2.06E-02	22.5	
21	0	582.77*	360	100	1.40	1165.65	1161	11	5.00E-02	7.8	
22	0	608.76*	501	65	1.27	1217.64	1211	13	6.96E-02	5.7	
23	0	726.86	89	120	2.22	1454.00	1446	21	1.24E-02	32.0	
24	0	785.33	33	50	1.34	1571.00	1567	10	4.58E-03	43.7	
25	0	794.77*	48	97	1.38	1589.90	1582	16	6.70E-03	48.0	
26	0	860.70	44	82	1.55	1721.84	1715	16	6.08E-03	50.0	
27	0	910.32*	252	55	1.37	1821.14	1815	13	3.50E-02	8.9	
28	0	968.18*	168	43	1.79	1936.94	1932	11	2.34E-02	11.0	
29	0	1119.44	124	66	1.71	2239.68	2233	17	1.72E-02	17.3	
30	0	1459.34*	1057	15	2.17	2920.03	2910	20	1.47E-01	3.2	
31	0	1728.03	17	9	0.86	3457.93	3451	12	2.37E-03	42.7	
32	0	1762.62	81	3	2.72	3527.18	3521	13	1.12E-02	12.1	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 17:02:32

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900010.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 15:00:15
Sample ID         : G247900010 Sample quantity : 151.88 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA17 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:10.31 0.1%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.147E+01	3.450E+00	6.637E-01	5.893E-02	47.414
CD-109	+	88.03	*	4.772E+00	1.025E+00	8.988E-01	8.775E-02	5.309
SN-126	+	64.28		1.066E+00	4.257E-01	3.916E-01	6.251E-02	2.721
	+	86.94		1.936E+00	8.868E-01	3.635E-01	1.512E-01	5.327
	+	87.57	*	4.657E-01	1.000E-01	8.760E-02	8.549E-03	5.316
TL-208		277.37		2.499E-01	3.838E-01	6.690E-01	8.643E-02	0.374
	+	583.19	*	5.773E-01	1.051E-01	7.079E-02	6.688E-03	8.154
	+	860.56		6.943E-01	6.968E-01	5.016E-01	4.717E-02	1.384
PB-210	+	46.54	*	1.529E+00	8.007E-01	7.299E-01	7.869E-02	2.095
BI-211		72.87		1.560E+00	2.129E+00	3.316E+00	3.242E-01	0.471
	+	351.06	*	4.274E+00	5.940E-01	3.200E-01	2.987E-02	13.355
BI-212	+	727.33	*	2.261E+00	1.472E+00	9.553E-01	1.192E-01	2.367
	+	785.37		5.453E+00	4.790E+00	5.514E+00	4.832E-01	0.989
		1620.50		2.836E+00	2.490E+00	4.882E+00	4.206E-01	0.581
PB-212	+	74.82		2.237E+00	4.282E-01	3.687E-01	5.080E-02	6.069
	+	77.11		2.359E+00	3.152E-01	2.226E-01	2.170E-02	10.598
	+	238.63	*	1.889E+00	2.257E-01	8.780E-02	8.892E-03	21.514
	+	300.09		2.539E+00	1.175E+00	1.224E+00	1.346E-01	2.075
BI-214	+	609.32	*	1.566E+00	2.389E-01	1.277E-01	1.305E-02	12.268
	+	1120.29		2.100E+00	7.618E-01	5.822E-01	6.253E-02	3.607
		1764.49		1.218E+00	5.185E-01	9.635E-01	8.147E-02	1.264
PB-214	+	74.82		3.966E+00	7.254E-01	6.534E-01	8.218E-02	6.069
	+	77.11		4.159E+00	6.530E-01	3.925E-01	5.012E-02	10.598
	+	242.00		3.168E+00	8.821E-01	5.346E-01	5.744E-02	5.926
	+	295.22		1.705E+00	2.964E-01	2.158E-01	2.429E-02	7.901
	+	351.93	*	1.551E+00	2.319E-01	1.164E-01	1.262E-02	13.321
RA-224	+	240.99	*	5.602E+00	1.526E+00	9.418E-01	8.517E-02	5.949
RA-226	+	609.32	*	1.566E+00	2.389E-01	1.277E-01	1.305E-02	12.268
	+	1120.29		2.100E+00	7.618E-01	5.822E-01	6.253E-02	3.607
		1764.49		1.218E+00	5.185E-01	9.635E-01	8.147E-02	1.264
AC-228	+	338.32		1.932E+00	9.390E-01	3.593E-01	1.502E-01	5.378
	+	911.20	*	2.043E+00	4.342E-01	2.728E-01	3.188E-02	7.488
	+	968.97		2.360E+00	7.751E-01	5.052E-01	1.233E-01	4.670
RA-228	+	338.32		1.932E+00	9.390E-01	3.593E-01	1.502E-01	5.378

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	911.20	*	2.043E+00	4.342E-01	2.728E-01	3.188E-02	7.488
	+	968.97		2.360E+00	7.751E-01	5.052E-01	1.233E-01	4.670
	+	74.82		2.237E+00	3.697E-01	3.687E-01	3.624E-02	6.069
	+	77.11		2.359E+00	3.152E-01	2.226E-01	2.170E-02	10.598
	+	238.63	*	1.889E+00	2.257E-01	8.780E-02	8.892E-03	21.514
TH-232	+	300.09		2.539E+00	1.930E+00	1.224E+00	7.501E-01	2.075
	+	338.32		1.932E+00	5.097E-01	3.593E-01	3.237E-02	5.378
	+	911.20	*	2.043E+00	4.342E-01	2.728E-01	3.188E-02	7.488
TH-234	+	968.97		2.360E+00	7.751E-01	5.052E-01	1.233E-01	4.670
	+	63.29	*	2.765E+00	1.141E+00	9.997E-01	1.902E-01	2.765
	+	92.59		5.670E+00	1.506E+00	7.787E-01	1.764E-01	7.281
U-235	+	89.96		2.968E+00	1.181E+00	9.411E-01	2.359E-01	3.154
	+	93.35		4.283E+00	1.174E+00	5.897E-01	1.395E-01	7.263
NP-237		143.76	*	1.455E-01	1.986E-01	3.275E-01	5.832E-02	0.444
		163.33		3.646E-01	4.242E-01	7.096E-01	1.272E-01	0.514
	+	185.72		2.829E-01	7.988E-02	6.265E-02	5.365E-03	4.515
		205.31		1.509E-01	5.046E-01	7.370E-01	1.342E-01	0.205
	+	86.48	*	1.390E+00	4.172E-01	2.605E-01	6.025E-02	5.334
U-238		95.86		-2.216E-01	7.695E-01	1.134E+00	2.788E-01	-0.195
	+	63.29	*	2.765E+00	1.141E+00	9.997E-01	1.902E-01	2.765
ANH-511	+	92.59		5.670E+00	9.694E-01	7.787E-01	7.769E-02	7.281
	+	511.00	*	1.781E-01	8.184E-02	4.980E-02	4.447E-03	3.577

---- 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	*	-1.569E-01	3.344E-01	5.265E-01	5.008E-02	-0.298
NA-22		1274.54	*	-2.918E-02	5.805E-02	8.795E-02	7.409E-03	-0.332
NA-24		1368.63	*	3.035E-01	5.805E-02	Half-Life too short		
SC-46		889.28	*	-2.137E-02	4.458E-02	7.002E-02	6.130E-03	-0.305
V-48	+	1120.55		3.582E-01	1.277E-01	1.677E-01	1.407E-02	2.136
		944.13		5.107E-01	1.110E+00	1.909E+00	1.670E-01	0.267
		983.53	*	-3.870E-02	8.123E-02	1.259E-01	1.098E-02	-0.307
		1312.11		-3.447E-02	9.885E-02	1.592E-01	1.351E-02	-0.217
CR-51		320.08	*	-1.527E-01	3.763E-01	6.178E-01	5.895E-02	-0.247
MN-54		834.85	*	2.491E-02	4.526E-02	7.861E-02	6.912E-03	0.317
CO-56		846.77	*	-5.149E-02	4.607E-02	6.760E-02	5.943E-03	-0.762
		1037.84		1.812E-01	3.981E-01	6.790E-01	6.168E-02	0.267
		1238.28		1.355E-01	1.245E-01	2.171E-01	1.866E-02	0.624
		1771.35		1.608E-01	2.222E-01	4.243E-01	3.583E-02	0.379
CO-57		122.06	*	1.777E-03	2.380E-02	3.947E-02	4.624E-03	0.045
		136.47		7.658E-02	1.947E-01	3.251E-01	3.658E-02	0.236
CO-58		810.76	*	1.472E-03	4.494E-02	7.514E-02	6.617E-03	0.020
FE-59		1099.45	*	-1.594E-02	1.165E-01	1.868E-01	1.715E-02	-0.085
		1291.59		-1.002E-01	1.535E-01	2.253E-01	2.171E-02	-0.445
CO-60		1173.23		-2.570E-02	5.605E-02	8.633E-02	7.052E-03	-0.298
		1332.49	*	-1.947E-02	4.567E-02	7.245E-02	6.174E-03	-0.269
ZN-65		1115.54	*	3.962E-02	1.381E-01	2.010E-01	1.692E-02	0.197

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SE-75	121.12			-6.094E-02	1.241E-01	2.007E-01	2.724E-02	-0.304
	136.00			-1.761E-02	3.853E-02	6.207E-02	6.713E-03	-0.284
	264.66	*		3.444E-02	4.657E-02	7.365E-02	6.767E-03	0.468
	279.54			-1.190E-01	1.061E-01	1.683E-01	1.597E-02	-0.707
	400.66			-8.492E-02	2.853E-01	4.643E-01	5.098E-02	-0.183
SR-85	514.00	*		3.924E-02	4.574E-02	7.093E-02	6.336E-03	0.553
Y-88	898.04			1.675E-02	4.930E-02	8.414E-02	7.391E-03	0.199
	1836.06	*		7.352E-03	3.658E-02	6.243E-02	5.206E-03	0.118
Y-91	1204.77	*		2.495E+01	3.030E+01	5.228E+01	4.314E+00	0.477
NB-94	702.65	*		1.427E-02	4.035E-02	6.968E-02	5.977E-03	0.205
	871.09			1.740E-02	3.782E-02	6.555E-02	5.752E-03	0.265
NB-95	765.81	*		4.897E-02	5.683E-02	1.004E-01	8.770E-03	0.488
NB-95M	235.69	*		3.424E-02	1.357E-01	1.959E-01	2.003E-02	0.175
ZR-95	724.19			1.325E-01	1.191E-01	1.947E-01	1.824E-02	0.681
	756.73	*		2.620E-02	8.997E-02	1.541E-01	1.481E-02	0.170
MO-99	140.51			-2.149E+01	2.701E+01	4.195E+01	1.026E+01	-0.512
	181.07			5.883E+00	2.454E+01	3.596E+01	6.739E+00	0.164
	366.42			2.882E+00	1.351E+02	2.257E+02	1.975E+01	0.013
	739.50	*		-9.933E+00	1.840E+01	2.934E+01	4.634E+00	-0.339
	777.92			4.188E+01	5.266E+01	9.385E+01	8.216E+00	0.446
TC-99M	140.51	*		-4.651E+11	5.266E+01	Half-Life too short		
RU-103	497.08	*		-1.121E-02	4.347E-02	6.952E-02	9.836E-03	-0.161
	610.33			1.258E+01	2.642E+00	3.329E+00	5.465E-01	3.777
RH-106	621.93	*		2.635E-01	3.384E-01	5.810E-01	7.728E-02	0.453
	1050.41			5.047E-01	3.297E+00	5.465E+00	4.704E-01	0.092
RU-106	621.93	*		2.635E-01	3.373E-01	5.810E-01	5.048E-02	0.453
	1050.41			5.047E-01	3.297E+00	5.465E+00	4.704E-01	0.092
AG-108M	433.94	*		1.685E-02	3.163E-02	5.408E-02	4.847E-03	0.312
	614.28			1.078E-02	4.435E-02	6.416E-02	5.779E-03	0.168
	722.91			2.003E-02	4.399E-02	6.801E-02	6.063E-03	0.295
AG-110M	657.76	*		-4.999E-02	4.196E-02	5.915E-02	5.155E-03	-0.845
	677.62			1.341E-01	3.590E-01	5.936E-01	5.188E-02	0.226
	706.68			-4.364E-02	2.574E-01	4.279E-01	3.783E-02	-0.102
	763.94			-1.298E-01	2.128E-01	3.399E-01	3.047E-02	-0.382
	884.68			5.406E-02	5.788E-02	1.040E-01	9.390E-03	0.520
	937.49			-1.566E-01	1.374E-01	1.992E-01	1.804E-02	-0.786
	1384.29			4.380E-02	1.627E-01	2.782E-01	2.452E-02	0.157
	1505.03			8.366E-02	3.432E-01	5.883E-01	5.087E-02	0.142
SN-113	391.69	*		-2.398E-02	4.755E-02	7.633E-02	6.632E-03	-0.314
CD-115	260.90			-1.012E+02	1.893E+02	2.892E+02	2.643E+01	-0.350
	492.35			-4.018E+00	5.647E+01	9.184E+01	8.176E+00	-0.044
	527.90	*		4.106E+00	1.656E+01	2.753E+01	2.461E+00	0.149
SN-117M	156.02			-2.931E+00	2.350E+00	3.596E+00	3.311E-01	-0.815
	158.56	*		4.932E-02	5.532E-02	9.361E-02	8.414E-03	0.527
TE-123M	159.00	*		1.282E-02	2.786E-02	4.635E-02	4.172E-03	0.277
SB-124	602.73			-2.149E-03	4.812E-02	6.734E-02	5.915E-03	-0.032
	645.85			2.467E-01	5.837E-01	9.711E-01	8.779E-02	0.254
	722.78			6.460E-02	4.591E-01	6.838E-01	6.042E-02	0.094
	1690.97	*		6.343E-02	8.321E-02	1.574E-01	1.404E-02	0.403

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125		427.87	*	-5.294E-02	9.341E-02	1.476E-01	1.301E-02	-0.359
	+	463.37		8.868E-01	3.994E-01	6.119E-01	5.786E-02	1.449
		600.60		-8.093E-02	1.909E-01	2.955E-01	2.783E-02	-0.274
		635.95		4.290E-02	3.135E-01	5.096E-01	4.742E-02	0.084
TE-125M		109.28	*	-1.916E+00	8.511E+00	1.401E+01	1.740E+00	-0.137
I-126		388.63		3.108E-01	1.886E-01	3.418E-01	2.892E-02	0.909
		666.33	*	2.433E-01	2.872E-01	4.909E-01	4.144E-02	0.496
		753.82		2.068E+00	2.269E+00	4.064E+00	3.541E-01	0.509
SB-126		414.70		-2.047E-04	8.610E-02	1.425E-01	1.222E-02	-0.001
		666.50		2.658E-02	1.026E-01	1.675E-01	1.415E-02	0.159
		695.00		8.463E-02	1.003E-01	1.788E-01	1.529E-02	0.473
		697.00		-6.740E-02	3.542E-01	5.888E-01	5.040E-02	-0.114
		720.70	*	-9.900E-02	1.949E-01	2.672E-01	2.307E-02	-0.371
		856.80		4.305E-02	7.306E-01	1.060E+00	9.316E-02	0.041
SB-127		252.40		1.479E+00	5.256E+00	8.430E+00	3.517E+00	0.175
		473.00		1.147E+00	1.942E+00	3.328E+00	4.389E-01	0.345
		685.70	*	-1.328E-01	1.862E+00	2.950E+00	3.421E-01	-0.045
		783.70		3.920E+00	6.094E+00	9.450E+00	1.203E+00	0.415
I-131		80.19		3.444E-02	4.518E+00	5.451E+00	5.340E-01	0.006
		284.31		1.382E+00	1.587E+00	2.798E+00	2.688E-01	0.494
		364.49	*	5.237E-02	1.322E-01	2.258E-01	2.086E-02	0.232
		636.99		4.277E-01	1.908E+00	3.127E+00	2.846E-01	0.137
TE-132		49.72		-3.210E-01	4.624E+00	7.080E+00	8.779E-01	-0.045
		111.76		1.993E-01	3.804E+01	6.244E+01	8.265E+00	0.003
		116.30		8.964E+00	3.354E+01	5.613E+01	7.564E+00	0.160
		228.16	*	4.183E-01	9.184E-01	1.500E+00	2.430E-01	0.279
BA-133		81.00		-6.419E-02	8.843E-02	1.005E-01	1.625E-02	-0.638
		276.40		7.494E-02	3.698E-01	6.138E-01	8.874E-02	0.122
		302.85		5.597E-02	1.374E-01	2.114E-01	2.841E-02	0.265
		356.01	*	1.322E-02	4.379E-02	6.622E-02	8.685E-03	0.200
		383.85		-1.255E-01	3.015E-01	4.872E-01	6.023E-02	-0.258
I-133		529.87	*	-4.148E-03	3.015E-01	Half-Life	too short	
		875.33		4.007E-02	3.015E-01	Half-Life	too short	
		1298.22		1.839E-02	3.015E-01	Half-Life	too short	
CS-134		563.25		-1.444E-01	4.136E-01	6.501E-01	5.842E-02	-0.222
		569.33		1.665E-02	2.133E-01	3.475E-01	3.130E-02	0.048
		604.72		4.505E-02	3.932E-02	6.274E-02	5.517E-03	0.718
	+	795.86	*	1.171E-01	1.128E-01	1.117E-01	9.870E-03	1.048
		801.95		-7.431E-02	5.177E-01	7.614E-01	6.721E-02	-0.098
		1365.19		-7.790E-01	1.266E+00	1.910E+00	1.712E-01	-0.408
CS-135		268.22	*	1.683E-01	1.758E-01	2.648E-01	2.763E-02	0.636
I-135		546.56		-1.218E+11	1.758E-01	Half-Life	too short	
		836.80		2.660E+11	1.758E-01	Half-Life	too short	
		1038.76		2.476E+11	1.758E-01	Half-Life	too short	
		1131.51		2.963E+10	1.758E-01	Half-Life	too short	
		1260.41	*	-7.983E+10	1.758E-01	Half-Life	too short	
		1457.56		1.876E+13	1.758E-01	Half-Life	too short	
		1678.03		8.271E+10	1.758E-01	Half-Life	too short	
		1791.20		4.973E+10	1.758E-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		153.25		8.468E-02	8.466E-01	1.390E+00	1.524E-01	0.061
		176.60		7.195E-02	5.100E-01	8.327E-01	7.799E-02	0.086
		273.65		7.640E-02	6.378E-01	9.028E-01	8.903E-02	0.085
		340.55		1.280E-01	1.747E-01	2.717E-01	2.529E-02	0.471
		818.51		1.163E-01	9.503E-02	1.738E-01	1.529E-02	0.669
		1048.07	*	1.054E-01	1.429E-01	2.497E-01	2.241E-02	0.422
		1235.36		1.214E+00	8.669E-01	1.530E+00	1.768E-01	0.794
BA-137M		661.66	*	1.235E-02	4.732E-02	7.705E-02	6.491E-03	0.160
CS-137		661.66	*	1.305E-02	4.998E-02	8.140E-02	6.871E-03	0.160
CE-139		165.86	*	-3.680E-02	2.966E-02	4.519E-02	3.768E-03	-0.814
BA-140		162.66		5.841E-01	8.281E-01	1.389E+00	1.279E-01	0.420
		304.85		1.062E+00	1.393E+00	2.158E+00	6.352E-01	0.492
		423.72		-1.446E+00	2.260E+00	3.485E+00	1.147E+00	-0.415
		537.26	*	-9.246E-03	3.250E-01	5.250E-01	1.785E-01	-0.018
LA-140	+	328.76		5.856E-01	5.252E-01	6.282E-01	5.993E-02	0.932
		487.02		6.739E-02	1.533E-01	2.595E-01	2.441E-02	0.260
		815.77		-2.896E-02	4.210E-01	6.972E-01	6.820E-02	-0.042
		1596.21	*	-4.998E-02	1.131E-01	1.737E-01	1.499E-02	-0.288
CE-141		145.44	*	4.433E-02	6.053E-02	1.020E-01	1.041E-02	0.434
CE-143		57.36		3.980E-04	6.053E-02	Half-Life	too short	
		293.27	*	1.047E-03	6.053E-02	Half-Life	too short	
		664.57		1.478E-03	6.053E-02	Half-Life	too short	
		721.93		1.028E-04	6.053E-02	Half-Life	too short	
CE-144		80.12		9.358E-03	2.242E+00	2.704E+00	2.634E-01	0.003
		133.52	*	1.849E-02	2.109E-01	3.121E-01	5.215E-02	0.059
PM-144		476.78		-3.681E-02	6.732E-02	1.053E-01	1.010E-02	-0.350
		618.01		-1.461E-02	3.660E-02	5.668E-02	5.072E-03	-0.258
		696.49	*	2.191E-02	4.146E-02	7.247E-02	6.204E-03	0.302
PR-144		696.51	*	1.636E+00	3.104E+00	5.425E+00	4.643E-01	0.302
		1489.16		-2.677E+00	1.351E+01	2.165E+01	1.871E+00	-0.124
PM-146		453.88	*	2.298E-02	4.227E-02	7.233E-02	7.756E-03	0.318
		633.25		1.378E+00	1.702E+00	2.799E+00	1.069E+00	0.492
		735.93		3.752E-02	1.885E-01	2.818E-01	7.902E-02	0.133
		747.24		-5.723E-03	1.137E-01	1.898E-01	2.777E-02	-0.030
ND-147	+	91.11		1.024E+00	3.343E-01	4.719E-01	4.972E-02	2.170
		319.41		-2.184E+00	3.501E+00	5.665E+00	5.167E-01	-0.385
		531.02	*	-4.199E-01	6.728E-01	1.032E+00	1.562E-01	-0.407
PM-149		285.90	*	-1.075E+01	1.235E+02	2.083E+02	3.304E+01	-0.052
EU-152		121.78		1.960E-02	6.774E-02	1.133E-01	1.435E-02	0.173
		244.70		-2.995E-02	3.225E-01	5.103E-01	4.626E-02	-0.059
		344.28	*	5.406E-02	1.046E-01	1.687E-01	1.595E-02	0.321
		778.90		2.973E-02	3.101E-01	4.946E-01	4.330E-02	0.060
		964.08		4.671E-01	4.511E-01	7.105E-01	6.209E-02	0.657
		1085.87		-1.869E-01	4.665E-01	7.260E-01	6.178E-02	-0.257
		1112.07		5.079E-01	4.308E-01	7.206E-01	6.069E-02	0.705
		1408.01		1.862E-01	1.780E-01	3.407E-01	2.931E-02	0.546
GD-153		69.67		-2.930E-01	1.006E+00	1.613E+00	1.583E-01	-0.182
		97.43	*	-2.727E-02	7.927E-02	1.155E-01	1.181E-02	-0.236
		103.18		-1.201E-01	9.511E-02	1.492E-01	1.572E-02	-0.805

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error (pCi/GRAM)	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		123.07		-4.509E-03	4.804E-02	7.908E-02	-0.057
		723.31		1.781E-01	2.072E-01	3.330E-01	0.535
		873.19		4.587E-02	3.210E-01	5.395E-01	0.085
		996.26		-1.375E-01	4.536E-01	7.209E-01	-0.191
		1004.73		-2.971E-01	2.605E-01	3.709E-01	-0.801
EU-155		1274.44	*	-9.995E-02	1.666E-01	2.492E-01	-0.401
	+	86.55		5.650E-01	1.216E-01	1.589E-01	3.556
		105.31	*	9.415E-02	9.228E-02	1.586E-01	0.594
TB-160	+	86.79		1.513E+00	3.250E-01	4.265E-01	3.547
		197.04		-6.543E-03	5.774E-01	9.210E-01	-0.007
		215.65		-5.915E-01	7.657E-01	1.175E+00	-0.503
	+	298.57		3.611E-01	1.656E-01	2.152E-01	1.678
		879.36	*	-1.080E-01	1.658E-01	2.563E-01	-0.422
		962.29		1.503E+00	7.983E-01	1.356E+00	1.109
		966.15		1.116E+00	4.125E-01	6.976E-01	1.600
		1177.93		1.057E-01	4.860E-01	8.019E-01	0.132
		1271.85		-5.318E-01	9.163E-01	1.371E+00	-0.388
		80.57		4.594E-02	2.394E-01	2.924E-01	0.157
HO-166M	+	184.41		2.247E-01	6.346E-02	6.960E-02	3.229
		280.46		-1.152E-01	8.370E-02	1.306E-01	-0.883
		410.95		-6.521E-02	2.769E-01	4.518E-01	-0.144
		711.68	*	7.290E-03	7.172E-02	1.217E-01	0.060
		752.31		-1.984E-01	3.250E-01	5.159E-01	-0.384
		810.29		-1.010E-02	6.760E-02	1.111E-01	-0.091
TA-182		67.75		-2.242E-02	6.230E-02	9.917E-02	-0.226
		100.11		1.083E-01	1.509E-01	2.578E-01	0.420
		152.43		6.191E-02	3.234E-01	5.333E-01	0.116
		222.11		2.840E-01	3.617E-01	6.011E-01	0.472
		1121.30		6.170E-01	2.259E-01	4.269E-01	1.445
		1189.05		9.375E-02	3.909E-01	6.466E-01	0.145
		1221.41	*	-8.718E-03	2.493E-01	4.006E-01	-0.022
IR-192		1231.02		1.071E-01	6.153E-01	1.007E+00	0.106
	+	295.96		1.273E+00	2.056E-01	3.157E-01	4.032
		308.46		-5.004E-02	8.675E-02	1.408E-01	-0.355
		316.51	*	3.723E-03	3.415E-02	5.786E-02	0.064
HG-203		468.07		-1.073E-02	6.993E-02	1.046E-01	-0.103
		70.83		2.015E-01	8.714E-01	1.338E+00	0.151
		72.87		3.943E-01	5.405E-01	8.380E-01	0.471
BI-207		279.20	*	-2.447E-02	3.848E-02	6.306E-02	-0.388
	+	72.81		7.829E-02	1.221E-01	1.896E-01	0.413
		74.97		6.449E-01	1.063E-01	1.639E-01	3.933
		569.70		-8.473E-03	3.439E-02	5.448E-02	-0.156
		1063.66	*	-7.823E-03	6.277E-02	1.010E-01	-0.077
PB-211		1770.23		-1.667E-01	5.678E-01	8.739E-01	-0.191
		404.85	*	-8.528E-01	8.958E-01	1.227E+00	-0.695
		427.09		-2.613E-01	1.535E+00	2.496E+00	-0.105
RN-219		832.01		3.373E-01	1.188E+00	2.004E+00	0.168
	+	271.23		8.227E-01	3.532E-01	4.392E-01	1.873
		401.81	*	1.140E-01	4.424E-01	7.452E-01	0.153

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-1.516E-01	1.995E-01	2.272E-01	2.213E-02	-0.667
		83.79		2.075E-01	8.950E-02	1.559E-01	1.519E-02	1.331
		94.87		5.990E-01	3.822E-01	6.090E-01	6.145E-02	0.984
		144.24		1.421E-01	6.698E-01	1.090E+00	1.202E-01	0.130
		154.21		2.763E-01	3.637E-01	6.128E-01	6.204E-02	0.451
	+	269.46		6.392E-01	2.723E-01	3.480E-01	3.245E-02	1.837
		323.87	*	-1.405E-01	7.432E-01	1.085E+00	1.907E-01	-0.129
AC-227	+	338.28		7.667E+00	2.124E+00	2.630E+00	3.249E-01	2.915
		79.69		-4.075E-01	1.139E+00	1.338E+00	2.385E-01	-0.305
		235.96		1.858E-01	1.688E-01	2.556E-01	2.727E-02	0.727
		256.23	*	1.865E-01	2.516E-01	4.155E-01	5.158E-02	0.449
	+	299.98		2.793E+00	1.308E+00	1.648E+00	2.157E-01	1.695
		304.50		4.681E-01	1.597E+00	2.435E+00	4.096E-01	0.192
		334.37		-1.507E+00	1.977E+00	2.720E+00	4.304E-01	-0.554
TH-227		79.80		-5.824E-01	1.505E+00	1.762E+00	3.919E-01	-0.331
		235.96		1.858E-01	1.687E-01	2.556E-01	2.583E-02	0.727
		256.23	*	1.865E-01	2.518E-01	4.155E-01	5.787E-02	0.449
	+	299.98		2.793E+00	1.308E+00	1.648E+00	2.157E-01	1.695
		304.50		4.681E-01	1.597E+00	2.435E+00	4.096E-01	0.192
		334.37		-1.507E+00	1.977E+00	2.720E+00	4.304E-01	-0.554
		85.43		4.645E-01	1.577E-01	2.746E-01	2.677E-02	1.691
TH-229	+	88.47		7.180E-01	1.542E-01	1.948E-01	1.905E-02	3.686
		193.51	*	5.332E-02	5.149E-01	8.352E-01	7.223E-02	0.064
		210.85		7.785E-01	9.834E-01	1.475E+00	1.301E-01	0.528
PA-231		283.69	*	1.363E+00	1.409E+00	2.481E+00	3.703E-01	0.549
	+	301.36		1.794E+00	8.374E-01	9.781E-01	1.228E-01	1.835
TH-231		81.07		-1.516E-01	1.995E-01	2.272E-01	2.213E-02	-0.667
		83.79		2.075E-01	8.950E-02	1.559E-01	1.519E-02	1.331
		94.87		5.990E-01	3.822E-01	6.090E-01	6.145E-02	0.984
		144.24		1.421E-01	6.698E-01	1.090E+00	1.202E-01	0.130
		154.21		2.763E-01	3.637E-01	6.128E-01	6.204E-02	0.451
	+	269.46		6.392E-01	2.723E-01	3.480E-01	3.245E-02	1.837
		323.87	*	-1.405E-01	7.432E-01	1.085E+00	1.907E-01	-0.129
PA-233	+	338.28		7.667E+00	2.124E+00	2.630E+00	3.249E-01	2.915
	+	300.13		1.264E+00	5.995E-01	7.434E-01	1.127E-01	1.700
		311.90	*	4.674E-02	6.172E-02	1.082E-01	1.015E-02	0.432
PA-234		340.48		6.971E-01	7.342E-01	1.132E+00	2.739E-01	0.616
		94.67		3.586E-01	1.495E-01	2.366E-01	3.185E-02	1.515
		98.44		7.115E-02	8.704E-02	1.314E-01	7.368E-02	0.541
		111.00		3.248E-02	1.606E-01	2.688E-01	3.732E-02	0.121
		131.20		8.421E-03	1.124E-01	1.664E-01	1.848E-02	0.051
		569.50		-5.517E-02	3.025E-01	4.819E-01	4.285E-02	-0.114
		733.00		8.693E-02	4.759E-01	7.110E-01	1.579E-01	0.122
PA-234M		880.51		-1.468E-01	3.408E-01	5.407E-01	4.740E-02	-0.271
		883.24		3.664E-01	4.190E-01	6.173E-01	4.151E-01	0.593
		926.50		2.049E-01	2.124E-01	3.724E-01	9.430E-02	0.550
		946.00	*	-1.651E-01	3.759E-01	5.904E-01	1.111E-01	-0.280
		949.00		-1.001E-01	5.413E-01	8.749E-01	7.654E-02	-0.114
		766.42		1.421E+01	1.647E+01	2.639E+01	1.339E+01	0.539

---- 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	*		4.267E+00	5.802E+00	1.013E+01	1.017E+00	0.421
	99.53			7.398E-02	1.423E-01	2.379E-01	2.458E-02	0.311
	103.37			-1.138E-01	8.687E-02	1.359E-01	1.433E-02	-0.838
	106.12			1.042E-01	7.350E-02	1.274E-01	1.364E-02	0.818
	117.23	*		-2.583E-01	3.771E-01	6.056E-01	6.898E-02	-0.427
	228.18			9.833E-02	2.182E-01	3.569E-01	3.197E-02	0.276
AM-241	277.60			8.231E-02	1.764E-01	3.056E-01	2.805E-02	0.269
	59.54	*		4.841E-03	6.698E-02	1.026E-01	1.089E-02	0.047
CM-247	278.00			7.220E-01	7.377E-01	1.305E+00	1.198E-01	0.553
	287.50			-4.991E-01	1.180E+00	1.951E+00	1.792E-01	-0.256
CF-249	402.40	*		3.416E-02	4.026E-02	7.013E-02	5.957E-03	0.487
	252.80			5.061E-02	9.792E-01	1.560E+00	1.420E-01	0.032
	333.37			6.997E-02	2.339E-01	3.027E-01	2.737E-02	0.231
CF-251	388.16	*		6.062E-02	4.283E-02	7.680E-02	6.505E-03	0.789
	177.52	*		-7.261E-02	1.294E-01	2.040E-01	1.728E-02	-0.356
	227.38			2.950E-01	3.484E-01	5.811E-01	5.203E-02	0.508
	285.41			-5.537E-01	2.148E+00	3.588E+00	3.296E-01	-0.154

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]G247900010      *
* Acquisition date   : 6-MAR-2010 15:00:15 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 02:00:10.31              Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247900010              Analyst initials: MXR1         *
* Batch Number       : 957711                  Sample Quantity : 1.5188E+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	3.147E+01	3.381E+00	6.686E-01	0.000E+00
CD-109	4.772E+00	1.005E+00	9.711E-01	0.000E+00
SN-126	4.657E-01	9.804E-02	9.465E-02	0.000E+00
TL-208	5.773E-01	1.030E-01	7.305E-02	0.000E+00
PB-210	1.529E+00	7.847E-01	8.001E-01	0.000E+00
BI-211	4.274E+00	5.821E-01	3.344E-01	0.000E+00
BI-212	2.261E+00	1.443E+00	9.801E-01	0.000E+00
PB-212	1.889E+00	2.212E-01	9.263E-02	0.000E+00
BI-214	1.566E+00	2.341E-01	1.316E-01	0.000E+00
PB-214	1.551E+00	2.273E-01	1.217E-01	0.000E+00
RA-224	5.602E+00	1.495E+00	9.934E-01	0.000E+00
RA-226	1.566E+00	2.341E-01	1.316E-01	0.000E+00
AC-228	2.043E+00	4.255E-01	2.782E-01	0.000E+00
RA-228	2.043E+00	4.255E-01	2.782E-01	0.000E+00
TH-228	1.889E+00	2.212E-01	9.263E-02	0.000E+00
TH-232	2.043E+00	4.255E-01	2.782E-01	0.000E+00
TH-234	2.765E+00	1.118E+00	1.088E+00	0.000E+00
U-235	1.455E-01	1.946E-01	3.498E-01	0.000E+00
NP-237	1.390E+00	4.088E-01	2.816E-01	0.000E+00
U-238	2.765E+00	1.118E+00	1.088E+00	0.000E+00
ANH-511	1.781E-01	8.021E-02	5.155E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.569E-01	3.277E-01	5.460E-01	0.000E+00 NOT IDENT.
NA-22	-2.918E-02	5.689E-02	8.893E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.373E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.137E-02	4.369E-02	7.147E-02	0.000E+00 FAIL ABUN
V-48	-3.870E-02	7.960E-02	1.282E-01	0.000E+00 NOT IDENT.
CR-51	-1.527E-01	3.687E-01	6.471E-01	0.000E+00 NOT IDENT.

MN-54	2.491E-02	4.436E-02	8.037E-02	0.000E+00	NOT IDENT.
CO-56	-5.149E-02	4.515E-02	6.909E-02	0.000E+00	NOT IDENT.
CO-57	1.777E-03	2.332E-02	4.231E-02	0.000E+00	NOT IDENT.
CO-58	1.472E-03	4.404E-02	7.688E-02	0.000E+00	NOT IDENT.
FE-59	-1.594E-02	1.141E-01	1.896E-01	0.000E+00	NOT IDENT.
CO-60	-1.947E-02	4.476E-02	7.316E-02	0.000E+00	NOT IDENT.
ZN-65	3.962E-02	1.353E-01	2.039E-01	0.000E+00	NOT IDENT.
SE-75	3.444E-02	4.564E-02	7.750E-02	0.000E+00	NOT IDENT.
SR-85	3.924E-02	4.482E-02	7.342E-02	0.000E+00	NOT IDENT.
Y-88	7.352E-03	3.585E-02	6.251E-02	0.000E+00	NOT IDENT.
Y-91	2.495E+01	2.969E+01	5.294E+01	0.000E+00	NOT IDENT.
NB-94	1.427E-02	3.954E-02	7.156E-02	0.000E+00	NOT IDENT.
NB-95	4.897E-02	5.570E-02	1.029E-01	0.000E+00	NOT IDENT.
NB-95M	3.424E-02	1.330E-01	2.067E-01	0.000E+00	NOT IDENT.
ZR-95	2.620E-02	8.817E-02	1.580E-01	0.000E+00	NOT IDENT.
MO-99	-9.933E+00	1.803E+01	3.009E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.801E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.121E-02	4.260E-02	7.202E-02	0.000E+00	NOT IDENT.
RH-106	2.635E-01	3.316E-01	5.986E-01	0.000E+00	NOT IDENT.
RU-106	2.635E-01	3.306E-01	5.986E-01	0.000E+00	NOT IDENT.
AG-108M	1.685E-02	3.100E-02	5.622E-02	0.000E+00	NOT IDENT.
AG-110M	-4.999E-02	4.113E-02	6.085E-02	0.000E+00	NOT IDENT.
SN-113	-2.398E-02	4.660E-02	7.955E-02	0.000E+00	NOT IDENT.
CD-115	4.106E+00	1.623E+01	2.847E+01	0.000E+00	NOT IDENT.
SN-117M	4.932E-02	5.422E-02	9.973E-02	0.000E+00	NOT IDENT.
TE-123M	1.282E-02	2.730E-02	4.938E-02	0.000E+00	NOT IDENT.
SB-124	6.343E-02	8.154E-02	1.580E-01	0.000E+00	NOT IDENT.
SB-125	-5.294E-02	9.154E-02	1.535E-01	0.000E+00	FAIL ABUN
TE-125M	-1.916E+00	8.341E+00	1.506E+01	0.000E+00	NOT IDENT.
I-126	2.433E-01	2.814E-01	5.048E-01	0.000E+00	NOT IDENT.
SB-126	-9.900E-02	1.910E-01	2.742E-01	0.000E+00	NOT IDENT.
SB-127	-1.328E-01	1.824E+00	3.031E+00	0.000E+00	NOT IDENT.
I-131	5.237E-02	1.295E-01	2.358E-01	0.000E+00	NOT IDENT.
TE-132	4.183E-01	9.000E-01	1.584E+00	0.000E+00	NOT IDENT.
BA-133	1.322E-02	4.291E-02	6.918E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.458E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	1.105E-01	1.143E-01	0.000E+00	FAIL ABUN
CS-135	1.683E-01	1.723E-01	2.785E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.044E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.054E-01	1.401E-01	2.537E-01	0.000E+00	NOT IDENT.
BA-137M	1.235E-02	4.637E-02	7.925E-02	0.000E+00	NOT IDENT.
CS-137	1.305E-02	4.898E-02	8.372E-02	0.000E+00	NOT IDENT.
CE-139	-3.680E-02	2.907E-02	4.810E-02	0.000E+00	NOT IDENT.
BA-140	-9.246E-03	3.185E-01	5.428E-01	0.000E+00	NOT IDENT.
LA-140	-4.998E-02	1.108E-01	1.746E-01	0.000E+00	FAIL ABUN
CE-141	4.433E-02	5.932E-02	1.090E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.535E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.849E-02	2.067E-01	3.340E-01	0.000E+00	NOT IDENT.
PM-144	2.191E-02	4.063E-02	7.444E-02	0.000E+00	NOT IDENT.
PR-144	1.636E+00	3.042E+00	5.573E+00	0.000E+00	NOT IDENT.
PM-146	2.298E-02	4.142E-02	7.511E-02	0.000E+00	NOT IDENT.
ND-147	-4.199E-01	6.593E-01	1.067E+00	0.000E+00	FAIL ABUN
PM-149	-1.075E+01	1.210E+02	2.187E+02	0.000E+00	NOT IDENT.
EU-152	5.406E-02	1.025E-01	1.763E-01	0.000E+00	NOT IDENT.
GD-153	-2.727E-02	7.769E-02	1.245E-01	0.000E+00	NOT IDENT.
EU-154	-9.995E-02	1.632E-01	2.520E-01	0.000E+00	NOT IDENT.
EU-155	9.415E-02	9.044E-02	1.706E-01	0.000E+00	FAIL ABUN
TB-160	-1.080E-01	1.625E-01	2.617E-01	0.000E+00	FAIL ABUN
HO-166M	7.290E-03	7.029E-02	1.249E-01	0.000E+00	FAIL ABUN
TA-182	-8.718E-03	2.443E-01	4.055E-01	0.000E+00	NOT IDENT.
IR-192	3.723E-03	3.347E-02	6.062E-02	0.000E+00	FAIL ABUN
HG-203	-2.447E-02	3.771E-02	6.628E-02	0.000E+00	NOT IDENT.
BI-207	-7.823E-03	6.152E-02	1.027E-01	0.000E+00	FAIL ABUN
PB-211	-8.528E-01	8.779E-01	1.278E+00	0.000E+00	NOT IDENT.
RN-219	1.140E-01	4.336E-01	7.762E-01	0.000E+00	FAIL ABUN
RA-223	-1.405E-01	7.283E-01	1.136E+00	0.000E+00	FAIL ABUN
AC-227	1.865E-01	2.465E-01	4.376E-01	0.000E+00	FAIL ABUN
TH-227	1.865E-01	2.468E-01	4.376E-01	0.000E+00	FAIL ABUN
TH-229	5.332E-02	5.046E-01	8.857E-01	0.000E+00	FAIL ABUN
PA-231	1.363E+00	1.381E+00	2.607E+00	0.000E+00	FAIL ABUN
TH-231	-1.405E-01	7.283E-01	1.136E+00	0.000E+00	FAIL ABUN
PA-233	4.674E-02	6.049E-02	1.135E-01	0.000E+00	FAIL ABUN
PA-234	-1.651E-01	3.683E-01	6.016E-01	0.000E+00	NOT IDENT.
PA-234M	4.267E+00	5.686E+00	1.031E+01	0.000E+00	NOT IDENT.
NP-239	-2.583E-01	3.696E-01	6.499E-01	0.000E+00	NOT IDENT.
AM-241	4.841E-03	6.564E-02	1.118E-01	0.000E+00	NOT IDENT.
CM-247	3.416E-02	3.945E-02	7.305E-02	0.000E+00	NOT IDENT.
CF-249	6.062E-02	4.197E-02	8.007E-02	0.000E+00	NOT IDENT.

CF-251	-7.261E-02	1.269E-01	2.168E-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]G247900010.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:00:15.
Sample ID        : G247900010 Sample quantity   : 1.51880E+02 GRAM
Detector name    : GAM17 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:10.31 0.1%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 957711 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	1057	10.66*	7.784E-01	3.147E+01	3.147E+01	10.96
CD-109	88.03	465	3.70*	6.676E+00	4.657E+00	4.772E+00	21.48
SN-126	64.28	280	9.60	6.777E+00	1.066E+00	1.066E+00	39.95
	86.94	465	8.90	6.676E+00	1.936E+00	1.936E+00	45.80
	87.57	465	37.00*	6.676E+00	4.657E-01	4.657E-01	21.48
TL-208	277.37	-----	6.60	3.568E+00	-----	Line Not Found	-----
	583.19	360	85.00*	1.812E+00	5.773E-01	5.773E-01	18.21
	860.56	44	12.50	1.246E+00	6.943E-01	6.943E-01	100.36
PB-210	46.54	166	4.25*	6.322E+00	1.527E+00	1.529E+00	52.37
BI-211	72.87	-----	1.23	6.803E+00	-----	Line Not Found	-----
	351.06	650	12.92*	2.909E+00	4.274E+00	4.274E+00	13.90
BI-212	727.33	89	6.67*	1.464E+00	2.261E+00	2.261E+00	65.12
	785.37	33	1.10	1.360E+00	5.453E+00	5.453E+00	87.85
	1620.50	-----	1.47	7.161E-01	-----	Line Not Found	-----
PB-212	74.82	632	10.28	6.795E+00	2.237E+00	2.237E+00	19.14
	77.11	1107	17.10	6.782E+00	2.359E+00	2.359E+00	13.36
	238.63	1341	43.60*	4.023E+00	1.889E+00	1.889E+00	11.95
	300.09	113	3.30	3.342E+00	2.539E+00	2.539E+00	46.27
BI-214	609.32	501	45.49*	1.738E+00	1.566E+00	1.566E+00	15.25
	1120.29	124	14.92	9.776E-01	2.100E+00	2.100E+00	36.28
	1764.49	-----	15.30	6.714E-01	-----	Line Not Found	-----
PB-214	74.82	632	5.80	6.795E+00	3.966E+00	3.966E+00	18.29
	77.11	1107	9.70	6.782E+00	4.159E+00	4.159E+00	15.70
	242.00	371	7.25	3.987E+00	3.168E+00	3.168E+00	27.84
	295.22	431	18.42	3.389E+00	1.705E+00	1.705E+00	17.38
	351.93	650	35.60*	2.909E+00	1.551E+00	1.551E+00	14.95
RA-224	240.99	371	4.10*	3.987E+00	5.602E+00	5.602E+00	27.23
RA-226	609.32	501	45.49*	1.738E+00	1.566E+00	1.566E+00	15.25
	1120.29	124	14.92	9.776E-01	2.100E+00	2.100E+00	36.28
	1764.49	-----	15.30	6.714E-01	-----	Line Not Found	-----
AC-228	338.32	265	11.27	3.012E+00	1.932E+00	1.932E+00	48.60
	911.20	252	25.80*	1.182E+00	2.043E+00	2.043E+00	21.26

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	968.97	168	15.80	1.116E+00	2.360E+00	2.360E+00	32.85
	338.32	265	11.27	3.012E+00	1.932E+00	1.932E+00	48.60
	911.20	252	25.80*	1.182E+00	2.043E+00	2.043E+00	21.26
TH-228	968.97	168	15.80	1.116E+00	2.360E+00	2.360E+00	32.85
	74.82	632	10.28	6.795E+00	2.237E+00	2.237E+00	16.52
	77.11	1107	17.10	6.782E+00	2.359E+00	2.359E+00	13.36
	238.63	1341	43.60*	4.023E+00	1.889E+00	1.889E+00	11.95
TH-232	300.09	113	3.30	3.342E+00	2.539E+00	2.539E+00	76.01
	338.32	265	11.27	3.012E+00	1.932E+00	1.932E+00	26.38
	911.20	252	25.80*	1.182E+00	2.043E+00	2.043E+00	21.26
TH-234	968.97	168	15.80	1.116E+00	2.360E+00	2.360E+00	32.85
	63.29	280	3.70*	6.777E+00	2.765E+00	2.765E+00	41.27
	92.59	640	4.23	6.596E+00	5.670E+00	5.670E+00	26.56
U-235	89.96	277	3.47	6.640E+00	2.968E+00	2.968E+00	39.79
	93.35	640	5.60	6.596E+00	4.283E+00	4.283E+00	27.41
	143.76	-----	10.96*	5.592E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.211E+00	-----	Line Not Found	-----
	185.72	315	57.20	4.812E+00	2.829E-01	2.829E-01	28.24
	205.31	-----	5.01	4.493E+00	-----	Line Not Found	-----
NP-237	86.48	465	12.40*	6.676E+00	1.390E+00	1.390E+00	30.02
	95.86	-----	2.68	6.543E+00	-----	Line Not Found	-----
U-238	63.29	280	3.70*	6.777E+00	2.765E+00	2.765E+00	41.27
	92.59	640	4.23	6.596E+00	5.670E+00	5.670E+00	17.10
ANH-511	511.00	148	100.00*	2.059E+00	1.781E-01	1.781E-01	45.95

Flag: "*" = Keyline

Total number of lines in spectrum 32
Number of unidentified lines 4
Number of lines tentatively identified by NID 28 87.50%

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	3.147E+01	3.147E+01	0.345E+01	10.96	
CD-109	461.40D	1.02	4.657E+00	4.772E+00	1.025E+00	21.48	
SN-126	2.30E+05Y	1.00	4.657E-01	4.657E-01	1.000E-01	21.48	
TL-208	1.41E+10Y	1.00	5.773E-01	5.773E-01	1.051E-01	18.21	
PB-210	22.20Y	1.00	1.527E+00	1.529E+00	0.801E+00	52.37	
BI-211	7.04E+08Y	1.00	4.274E+00	4.274E+00	0.594E+00	13.90	
BI-212	1.41E+10Y	1.00	2.261E+00	2.261E+00	1.472E+00	65.12	
PB-212	1.41E+10Y	1.00	1.889E+00	1.889E+00	0.226E+00	11.95	
BI-214	1600.00Y	1.00	1.566E+00	1.566E+00	0.239E+00	15.25	
PB-214	1600.00Y	1.00	1.551E+00	1.551E+00	0.232E+00	14.95	
RA-224	1.41E+10Y	1.00	5.602E+00	5.602E+00	1.526E+00	27.23	
RA-226	1600.00Y	1.00	1.566E+00	1.566E+00	0.239E+00	15.25	
AC-228	1.41E+10Y	1.00	2.043E+00	2.043E+00	0.434E+00	21.26	
RA-228	1.41E+10Y	1.00	2.043E+00	2.043E+00	0.434E+00	21.26	
TH-228	1.41E+10Y	1.00	1.889E+00	1.889E+00	0.226E+00	11.95	
TH-232	1.41E+10Y	1.00	2.043E+00	2.043E+00	0.434E+00	21.26	
TH-234	4.47E+09Y	1.00	2.765E+00	2.765E+00	1.141E+00	41.27	
U-235	7.04E+08Y	1.00	2.829E-01	2.829E-01	0.799E-01	28.24	K
NP-237	2.14E+06Y	1.00	1.390E+00	1.390E+00	0.417E+00	30.02	
U-238	4.47E+09Y	1.00	2.765E+00	2.765E+00	1.141E+00	41.27	
ANH-511	1.00E+09Y	1.00	1.781E-01	1.781E-01	0.818E-01	45.95	

Total Activity : 7.280E+01 7.292E+01

Grand Total Activity : 7.280E+01 7.292E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900010

Page : 4
Acquisition date : 6-MAR-2010 15:00:15

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.16	107	400	0.99	258.01	255	9	1.49E-02	69.8	5.89E+00	
0	209.06	116	244	0.98	417.86	414	8	1.61E-02	50.2	4.44E+00	
0	270.26	131	173	1.88	540.31	536	10	1.82E-02	41.6	3.64E+00	T
0	328.27	62	196	1.37	656.40	651	10	8.58E-03	89.2	3.09E+00	T
0	462.88	85	80	1.47	925.74	921	9	1.18E-02	44.0	2.26E+00	T
0	794.77	48	97	1.38	1589.90	1582	16	6.70E-03	95.9	1.34E+00	T
0	1728.03	17	9	0.86	3457.93	3451	12	2.37E-03	85.4	6.82E-01	
0	1762.62	81	3	2.72	3527.18	3521	13	1.12E-02	24.1	6.72E-01	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900010.CNF;1
* Acquisition date   : 6-MAR-2010 15:00:15.  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 02:00:10.31        Half life ratio    : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G247900010           Analyst initials: MXR1
* Batch Number       : 957711              Sample Quantity  : 1.51880E+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	3.147E+01	3.450E+00	6.637E-01	5.893E-02	47.414
CD-109	4.772E+00	1.025E+00	8.988E-01	8.775E-02	5.309
SN-126	4.657E-01	1.000E-01	8.760E-02	8.549E-03	5.316
TL-208	5.773E-01	1.051E-01	7.079E-02	6.688E-03	8.154
PB-210	1.529E+00	8.007E-01	7.299E-01	7.869E-02	2.095
BI-211	4.274E+00	5.940E-01	3.200E-01	2.987E-02	13.355
BI-212	2.261E+00	1.472E+00	9.553E-01	1.192E-01	2.367
PB-212	1.889E+00	2.257E-01	8.780E-02	8.892E-03	21.514
BI-214	1.566E+00	2.389E-01	1.277E-01	1.305E-02	12.268
PB-214	1.551E+00	2.319E-01	1.164E-01	1.262E-02	13.321
RA-224	5.602E+00	1.526E+00	9.418E-01	8.517E-02	5.949
RA-226	1.566E+00	2.389E-01	1.277E-01	1.305E-02	12.268
AC-228	2.043E+00	4.342E-01	2.728E-01	3.188E-02	7.488
RA-228	2.043E+00	4.342E-01	2.728E-01	3.188E-02	7.488
TH-228	1.889E+00	2.257E-01	8.780E-02	8.892E-03	21.514
TH-232	2.043E+00	4.342E-01	2.728E-01	3.188E-02	7.488
TH-234	2.765E+00	1.141E+00	9.997E-01	1.902E-01	2.765
U-235	2.829E-01	7.988E-02	3.275E-01	5.832E-02	0.864

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.390E+00	4.172E-01	2.605E-01	6.025E-02	5.334
U-238	2.765E+00	1.141E+00	9.997E-01	1.902E-01	2.765
ANH-511	1.781E-01	8.184E-02	4.980E-02	4.447E-03	3.577

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.569E-01		3.344E-01	5.265E-01	5.008E-02	-0.298
NA-22	-2.918E-02		5.805E-02	8.795E-02	7.409E-03	-0.332
NA-24	3.035E-01		1.211E+00	Half-Life too short		
SC-46	-2.137E-02		4.458E-02	7.002E-02	6.130E-03	-0.305
V-48	-3.870E-02		8.123E-02	1.259E-01	1.098E-02	-0.307
CR-51	-1.527E-01		3.763E-01	6.178E-01	5.895E-02	-0.247
MN-54	2.491E-02		4.526E-02	7.861E-02	6.912E-03	0.317
CO-56	-5.149E-02		4.607E-02	6.760E-02	5.943E-03	-0.762
CO-57	1.777E-03		2.380E-02	3.947E-02	4.624E-03	0.045
CO-58	1.472E-03		4.494E-02	7.514E-02	6.617E-03	0.020
FE-59	-1.594E-02		1.165E-01	1.868E-01	1.715E-02	-0.085
CO-60	-1.947E-02		4.567E-02	7.245E-02	6.174E-03	-0.269
ZN-65	3.962E-02		1.381E-01	2.010E-01	1.692E-02	0.197
SE-75	3.444E-02		4.657E-02	7.365E-02	6.767E-03	0.468
SR-85	3.924E-02		4.574E-02	7.093E-02	6.336E-03	0.553
Y-88	7.352E-03		3.658E-02	6.243E-02	5.206E-03	0.118
Y-91	2.495E+01		3.030E+01	5.228E+01	4.314E+00	0.477
NB-94	1.427E-02		4.035E-02	6.968E-02	5.977E-03	0.205
NB-95	4.897E-02		5.683E-02	1.004E-01	8.770E-03	0.488
NB-95M	3.424E-02		1.357E-01	1.959E-01	2.003E-02	0.175
ZR-95	2.620E-02		8.997E-02	1.541E-01	1.481E-02	0.170
MO-99	-9.933E+00		1.840E+01	2.934E+01	4.634E+00	-0.339
TC-99M	-4.651E+11		2.960E+11	Half-Life too short		
RU-103	-1.121E-02		4.347E-02	6.952E-02	9.836E-03	-0.161
RH-106	2.635E-01		3.384E-01	5.810E-01	7.728E-02	0.453
RU-106	2.635E-01		3.373E-01	5.810E-01	5.048E-02	0.453
AG-108M	1.685E-02		3.163E-02	5.408E-02	4.847E-03	0.312
AG-110M	-4.999E-02		4.196E-02	5.915E-02	5.155E-03	-0.845
SN-113	-2.398E-02		4.755E-02	7.633E-02	6.632E-03	-0.314
CD-115	4.106E+00		1.656E+01	2.753E+01	2.461E+00	0.149
SN-117M	4.932E-02		5.532E-02	9.361E-02	8.414E-03	0.527
TE-123M	1.282E-02		2.786E-02	4.635E-02	4.172E-03	0.277
SB-124	6.343E-02		8.321E-02	1.574E-01	1.404E-02	0.403
SB-125	-5.294E-02		9.341E-02	1.476E-01	1.301E-02	-0.359
TE-125M	-1.916E+00		8.511E+00	1.401E+01	1.740E+00	-0.137
I-126	2.433E-01		2.872E-01	4.909E-01	4.144E-02	0.496
SB-126	-9.900E-02		1.949E-01	2.672E-01	2.307E-02	-0.371
SB-127	-1.328E-01		1.862E+00	2.950E+00	3.421E-01	-0.045
I-131	5.237E-02		1.322E-01	2.258E-01	2.086E-02	0.232
TE-132	4.183E-01		9.184E-01	1.500E+00	2.430E-01	0.279

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	1.322E-02		4.379E-02	6.622E-02	8.685E-03	0.200
I-133	-4.148E-03		7.441E-03	Half-Life too short		
CS-134	1.171E-01	+	1.128E-01	1.117E-01	9.870E-03	1.048
CS-135	1.683E-01		1.758E-01	2.648E-01	2.763E-02	0.636
I-135	-7.983E+10		5.329E+10	Half-Life too short		
CS-136	1.054E-01		1.429E-01	2.497E-01	2.241E-02	0.422
BA-137M	1.235E-02		4.732E-02	7.705E-02	6.491E-03	0.160
CS-137	1.305E-02		4.998E-02	8.140E-02	6.871E-03	0.160
CE-139	-3.680E-02		2.966E-02	4.519E-02	3.768E-03	-0.814
BA-140	-9.246E-03		3.250E-01	5.250E-01	1.785E-01	-0.018
LA-140	-4.998E-02		1.131E-01	1.737E-01	1.499E-02	-0.288
CE-141	4.433E-02		6.053E-02	1.020E-01	1.041E-02	0.434
CE-143	1.047E-03		1.804E-04	Half-Life too short		
CE-144	1.849E-02		2.109E-01	3.121E-01	5.215E-02	0.059
PM-144	2.191E-02		4.146E-02	7.247E-02	6.204E-03	0.302
PR-144	1.636E+00		3.104E+00	5.425E+00	4.643E-01	0.302
PM-146	2.298E-02		4.227E-02	7.233E-02	7.756E-03	0.318
ND-147	-4.199E-01		6.728E-01	1.032E+00	1.562E-01	-0.407
PM-149	-1.075E+01		1.235E+02	2.083E+02	3.304E+01	-0.052
EU-152	5.406E-02		1.046E-01	1.687E-01	1.595E-02	0.321
GD-153	-2.727E-02		7.927E-02	1.155E-01	1.181E-02	-0.236
EU-154	-9.995E-02		1.666E-01	2.492E-01	2.797E-02	-0.401
EU-155	9.415E-02		9.228E-02	1.586E-01	1.703E-02	0.594
TB-160	-1.080E-01		1.658E-01	2.563E-01	2.247E-02	-0.422
HO-166M	7.290E-03		7.172E-02	1.217E-01	1.047E-02	0.060
TA-182	-8.718E-03		2.493E-01	4.006E-01	3.323E-02	-0.022
IR-192	3.723E-03		3.415E-02	5.786E-02	5.293E-03	0.064
HG-203	-2.447E-02		3.848E-02	6.306E-02	5.920E-03	-0.388
BI-207	-7.823E-03		6.277E-02	1.010E-01	8.662E-03	-0.077
PB-211	-8.528E-01		8.958E-01	1.227E+00	5.937E-01	-0.695
RN-219	1.140E-01		4.424E-01	7.452E-01	1.103E-01	0.153
RA-223	-1.405E-01		7.432E-01	1.085E+00	1.907E-01	-0.129
AC-227	1.865E-01		2.516E-01	4.155E-01	5.158E-02	0.449
TH-227	1.865E-01		2.518E-01	4.155E-01	5.787E-02	0.449
TH-229	5.332E-02		5.149E-01	8.352E-01	7.223E-02	0.064
PA-231	1.363E+00		1.409E+00	2.481E+00	3.703E-01	0.549
TH-231	-1.405E-01		7.432E-01	1.085E+00	1.907E-01	-0.129
PA-233	4.674E-02		6.172E-02	1.082E-01	1.015E-02	0.432
PA-234	-1.651E-01		3.759E-01	5.904E-01	1.111E-01	-0.280
PA-234M	4.267E+00		5.802E+00	1.013E+01	1.017E+00	0.421
NP-239	-2.583E-01		3.771E-01	6.056E-01	6.898E-02	-0.427
AM-241	4.841E-03		6.698E-02	1.026E-01	1.089E-02	0.047
CM-247	3.416E-02		4.026E-02	7.013E-02	5.957E-03	0.487
CF-249	6.062E-02		4.283E-02	7.680E-02	6.505E-03	0.789
CF-251	-7.261E-02		1.294E-01	2.040E-01	1.728E-02	-0.356

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]G247900010            *
* Acquisition date   : 6-MAR-2010 15:00:15 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 02:00:10.31 Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247900010 Analyst initials: MXR1          *
* Batch Number       : 957711 Sample Quantity : 1.5188E+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	3.147E+01	3.381E+00	3.345E-01	1.725E+00
CD-109	4.772E+00	1.005E+00	4.858E-01	5.125E-01
SN-126	4.657E-01	9.804E-02	4.735E-02	5.002E-02
TL-208	5.773E-01	1.030E-01	3.655E-02	5.255E-02
PB-210	1.529E+00	7.847E-01	4.003E-01	4.003E-01
BI-211	4.274E+00	5.821E-01	1.673E-01	2.970E-01
BI-212	2.261E+00	1.443E+00	4.904E-01	7.361E-01
PB-212	1.889E+00	2.212E-01	4.634E-02	1.129E-01
BI-214	1.566E+00	2.341E-01	6.584E-02	1.195E-01
PB-214	1.551E+00	2.273E-01	6.087E-02	1.160E-01
RA-224	5.602E+00	1.495E+00	4.970E-01	7.628E-01
RA-226	1.566E+00	2.341E-01	6.584E-02	1.195E-01
AC-228	2.043E+00	4.255E-01	1.392E-01	2.171E-01
RA-228	2.043E+00	4.255E-01	1.392E-01	2.171E-01
TH-228	1.889E+00	2.212E-01	4.634E-02	1.129E-01
TH-232	2.043E+00	4.255E-01	1.392E-01	2.171E-01
TH-234	2.765E+00	1.118E+00	5.445E-01	5.705E-01
U-235	1.455E-01	1.946E-01	1.750E-01	9.929E-02
NP-237	1.390E+00	4.088E-01	1.409E-01	2.086E-01
U-238	2.765E+00	1.118E+00	5.445E-01	5.705E-01
ANH-511	1.781E-01	8.021E-02	2.579E-02	4.092E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.569E-01	3.277E-01	2.731E-01	1.672E-01 NOT IDENT.
NA-22	-2.918E-02	5.689E-02	4.449E-02	2.902E-02 NOT IDENT.
NA-24	3.035E+05	2.373E+06	0.000E+00	1.211E+06 SHORT HLIF
SC-46	-2.137E-02	4.369E-02	3.576E-02	2.229E-02 FAIL ABUN
V-48	-3.870E-02	7.960E-02	6.413E-02	4.061E-02 NOT IDENT.
CR-51	-1.527E-01	3.687E-01	3.237E-01	1.881E-01 NOT IDENT.

MN-54	2.491E-02	4.436E-02	4.021E-02	2.263E-02	NOT IDENT.
CO-56	-5.149E-02	4.515E-02	3.457E-02	2.303E-02	NOT IDENT.
CO-57	1.777E-03	2.332E-02	2.117E-02	1.190E-02	NOT IDENT.
CO-58	1.472E-03	4.404E-02	3.846E-02	2.247E-02	NOT IDENT.
FE-59	-1.594E-02	1.141E-01	9.488E-02	5.823E-02	NOT IDENT.
CO-60	-1.947E-02	4.476E-02	3.660E-02	2.284E-02	NOT IDENT.
ZN-65	3.962E-02	1.353E-01	1.020E-01	6.906E-02	NOT IDENT.
SE-75	3.444E-02	4.564E-02	3.878E-02	2.328E-02	NOT IDENT.
SR-85	3.924E-02	4.482E-02	3.673E-02	2.287E-02	NOT IDENT.
Y-88	7.352E-03	3.585E-02	3.127E-02	1.829E-02	NOT IDENT.
Y-91	2.495E+01	2.969E+01	2.648E+01	1.515E+01	NOT IDENT.
NB-94	1.427E-02	3.954E-02	3.580E-02	2.017E-02	NOT IDENT.
NB-95	4.897E-02	5.570E-02	5.147E-02	2.842E-02	NOT IDENT.
NB-95M	3.424E-02	1.330E-01	1.034E-01	6.784E-02	NOT IDENT.
ZR-95	2.620E-02	8.817E-02	7.903E-02	4.498E-02	NOT IDENT.
MO-99	-9.933E+00	1.803E+01	1.506E+01	9.201E+00	NOT IDENT.
TC-99M	-4.651E+17	5.801E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.121E-02	4.260E-02	3.603E-02	2.173E-02	NOT IDENT.
RH-106	2.635E-01	3.316E-01	2.995E-01	1.692E-01	NOT IDENT.
RU-106	2.635E-01	3.306E-01	2.995E-01	1.687E-01	NOT IDENT.
AG-108M	1.685E-02	3.100E-02	2.813E-02	1.582E-02	NOT IDENT.
AG-110M	-4.999E-02	4.113E-02	3.044E-02	2.098E-02	NOT IDENT.
SN-113	-2.398E-02	4.660E-02	3.980E-02	2.378E-02	NOT IDENT.
CD-115	4.106E+00	1.623E+01	1.425E+01	8.281E+00	NOT IDENT.
SN-117M	4.932E-02	5.422E-02	4.990E-02	2.766E-02	NOT IDENT.
TE-123M	1.282E-02	2.730E-02	2.470E-02	1.393E-02	NOT IDENT.
SB-124	6.343E-02	8.154E-02	7.904E-02	4.160E-02	NOT IDENT.
SB-125	-5.294E-02	9.154E-02	7.680E-02	4.671E-02	FAIL ABUN
TE-125M	-1.916E+00	8.341E+00	7.536E+00	4.256E+00	NOT IDENT.
I-126	2.433E-01	2.814E-01	2.525E-01	1.436E-01	NOT IDENT.
SB-126	-9.900E-02	1.910E-01	1.372E-01	9.746E-02	NOT IDENT.
SB-127	-1.328E-01	1.824E+00	1.517E+00	9.308E-01	NOT IDENT.
I-131	5.237E-02	1.295E-01	1.180E-01	6.609E-02	NOT IDENT.
TE-132	4.183E-01	9.000E-01	7.924E-01	4.592E-01	NOT IDENT.
BA-133	1.322E-02	4.291E-02	3.461E-02	2.189E-02	NOT IDENT.
I-133	-4.148E+03	1.458E+04	0.000E+00	7.441E+03	SHORT HLIF
CS-134	1.171E-01	1.105E-01	5.721E-02	5.639E-02	FAIL ABUN
CS-135	1.683E-01	1.723E-01	1.394E-01	8.791E-02	NOT IDENT.
I-135	-7.983E+16	1.044E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.054E-01	1.401E-01	1.269E-01	7.147E-02	NOT IDENT.
BA-137M	1.235E-02	4.637E-02	3.965E-02	2.366E-02	NOT IDENT.
CS-137	1.305E-02	4.898E-02	4.189E-02	2.499E-02	NOT IDENT.
CE-139	-3.680E-02	2.907E-02	2.406E-02	1.483E-02	NOT IDENT.
BA-140	-9.246E-03	3.185E-01	2.716E-01	1.625E-01	NOT IDENT.
LA-140	-4.998E-02	1.108E-01	8.734E-02	5.655E-02	FAIL ABUN
CE-141	4.433E-02	5.932E-02	5.451E-02	3.026E-02	NOT IDENT.
CE-143	1.047E+03	3.535E+02	0.000E+00	1.804E+02	SHORT HLIF
CE-144	1.849E-02	2.067E-01	1.671E-01	1.055E-01	NOT IDENT.
PM-144	2.191E-02	4.063E-02	3.724E-02	2.073E-02	NOT IDENT.
PR-144	1.636E+00	3.042E+00	2.788E+00	1.552E+00	NOT IDENT.
PM-146	2.298E-02	4.142E-02	3.758E-02	2.113E-02	NOT IDENT.
ND-147	-4.199E-01	6.593E-01	5.340E-01	3.364E-01	FAIL ABUN
PM-149	-1.075E+01	1.210E+02	1.094E+02	6.176E+01	NOT IDENT.
EU-152	5.406E-02	1.025E-01	8.822E-02	5.232E-02	NOT IDENT.
GD-153	-2.727E-02	7.769E-02	6.228E-02	3.964E-02	NOT IDENT.
EU-154	-9.995E-02	1.632E-01	1.261E-01	8.329E-02	NOT IDENT.
EU-155	9.415E-02	9.044E-02	8.536E-02	4.614E-02	FAIL ABUN
TB-160	-1.080E-01	1.625E-01	1.309E-01	8.292E-02	FAIL ABUN
HO-166M	7.290E-03	7.029E-02	6.248E-02	3.586E-02	FAIL ABUN
TA-182	-8.718E-03	2.443E-01	2.029E-01	1.246E-01	NOT IDENT.
IR-192	3.723E-03	3.347E-02	3.033E-02	1.708E-02	FAIL ABUN
HG-203	-2.447E-02	3.771E-02	3.316E-02	1.924E-02	NOT IDENT.
BI-207	-7.823E-03	6.152E-02	5.136E-02	3.139E-02	FAIL ABUN
PB-211	-8.528E-01	8.779E-01	6.395E-01	4.479E-01	NOT IDENT.
RN-219	1.140E-01	4.336E-01	3.883E-01	2.212E-01	FAIL ABUN
RA-223	-1.405E-01	7.283E-01	5.684E-01	3.716E-01	FAIL ABUN
AC-227	1.865E-01	2.465E-01	2.190E-01	1.258E-01	FAIL ABUN
TH-227	1.865E-01	2.468E-01	2.190E-01	1.259E-01	FAIL ABUN
TH-229	5.332E-02	5.046E-01	4.431E-01	2.575E-01	FAIL ABUN
PA-231	1.363E+00	1.381E+00	1.304E+00	7.045E-01	FAIL ABUN
TH-231	-1.405E-01	7.283E-01	5.684E-01	3.716E-01	FAIL ABUN
PA-233	4.674E-02	6.049E-02	5.676E-02	3.086E-02	FAIL ABUN
PA-234	-1.651E-01	3.683E-01	3.010E-01	1.879E-01	NOT IDENT.
PA-234M	4.267E+00	5.686E+00	5.157E+00	2.901E+00	NOT IDENT.
NP-239	-2.583E-01	3.696E-01	3.252E-01	1.886E-01	NOT IDENT.
AM-241	4.841E-03	6.564E-02	5.595E-02	3.349E-02	NOT IDENT.
CM-247	3.416E-02	3.945E-02	3.654E-02	2.013E-02	NOT IDENT.
CF-249	6.062E-02	4.197E-02	4.006E-02	2.142E-02	NOT IDENT.

CF-251	-7.261E-02	1.269E-01	1.085E-01	6.472E-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	289.6575
49.72	320.1239
57.36	0.0000
59.54	451.8092
63.29	475.7137
63.29	475.7137
64.28	492.5964
67.75	493.5595
69.67	505.3491
70.83	512.2916
72.81	523.9626
72.87	524.0344
72.87	524.0344
74.82	502.1573
74.82	502.1573
74.82	502.1573
74.97	502.3257
77.11	504.6883
77.11	504.6883
77.11	504.6883
79.69	461.3600
79.80	461.4664
80.12	431.9004
80.19	431.9634
80.57	407.8400
81.00	462.6389
81.07	462.7063
81.07	462.7063
83.79	351.2786
83.79	351.2786
85.43	352.4565
86.48	353.2065
86.55	353.2554
86.79	353.4238
86.94	353.5315
87.57	353.9780
88.03	354.3031
88.47	354.6125
89.96	355.6542
91.11	356.4532
92.59	357.4754
92.59	357.4754
93.35	357.9962
94.67	300.6329
94.87	300.7461
94.87	300.7461
95.86	315.3231
97.43	340.1426
98.44	300.4102
99.53	317.0037
100.11	307.9230
103.18	343.7208
103.37	348.5732
105.31	288.9429
106.12	273.1732
109.28	301.4713
111.00	288.9192
111.76	311.3965
116.30	302.1405
117.23	322.9698
121.12	297.6794
121.78	276.4982
122.06	286.3951
123.07	284.8961
131.20	294.4471
133.52	277.5696
136.00	293.5693

136.47	258.7998
140.51	287.4634
140.51	0.0000
143.76	260.5300
144.24	280.9156
144.24	280.9156
145.44	251.0248
152.43	241.1999
153.25	252.7237
154.21	233.5873
154.21	233.5873
156.02	298.8564
158.56	227.7354
159.00	245.3963
162.66	234.1430
163.33	228.1238
165.86	280.8847
176.60	229.8620
177.52	256.5091
181.07	228.9924
184.41	224.5867
185.72	224.9345
193.51	220.5297
197.04	226.8185
205.31	194.5834
210.85	212.2115
215.65	231.4905
222.11	194.2207
227.38	171.8448
228.16	188.7325
228.18	188.7359
235.69	195.7925
235.96	195.8456
235.96	195.8456
238.63	179.4362
238.63	179.4362
240.99	179.8519
242.00	180.0298
244.70	180.5021
252.40	160.1062
252.80	168.1743
256.23	143.4676
256.23	143.4676
260.90	162.5350
264.66	134.6396
268.22	142.7368
269.46	148.1223
269.46	148.1223
271.23	205.9562
273.65	174.9176
276.40	178.3508
277.37	164.0872
277.60	170.2651
278.00	153.6430
279.20	178.4149
279.54	178.4675
280.46	187.4085
283.69	132.3486
284.31	136.8348
285.41	159.9396
285.90	154.7031
287.50	152.2610
293.27	0.0000
295.22	137.2220
295.96	137.3090
298.57	137.6098
299.98	137.7696
299.98	137.7696
300.09	137.7837
300.09	137.7837
300.13	137.7884
301.36	130.4037
302.85	110.4788
304.50	109.1925
304.50	109.1925
304.85	96.2896
308.46	120.7157
311.90	113.8260

316.51	126.9434
319.41	139.9596
320.08	139.1232
323.87	145.9253
323.87	145.9253
328.76	155.2709
333.37	124.9537
334.37	151.5302
334.37	151.5302
338.28	112.5116
338.28	112.5116
338.32	112.5153
338.32	112.5153
338.32	112.5153
340.48	134.5005
340.55	134.5072
344.28	116.1097
351.06	109.8688
351.93	109.9390
356.01	95.6906
364.49	112.8278
366.42	122.4007
383.85	115.3281
388.16	94.6388
388.63	89.8878
391.69	121.6980
400.66	128.2187
401.81	113.8462
402.40	102.3090
404.85	140.1767
410.95	131.0346
414.70	108.9768
423.72	113.5273
427.09	91.2134
427.87	100.0903
433.94	89.6378
453.88	73.7945
463.37	77.0250
468.07	73.7541
473.00	66.5720
476.78	86.9370
477.60	83.9448
487.02	73.2173
492.35	81.6003
497.08	82.8416
511.00	79.3657
514.00	77.6389
527.90	67.6184
529.87	0.0000
531.02	86.4879
537.26	78.4126
546.56	0.0000
563.25	84.7803
569.33	70.1613
569.50	77.6093
569.70	79.7447
583.19	89.9216
600.60	73.4204
602.73	70.9012
604.72	53.6597
609.32	76.9824
609.32	76.9824
610.33	79.8396
614.28	67.8196
618.01	74.0367
621.93	51.2686
621.93	51.2686
633.25	55.9276
635.95	64.7833
636.99	59.3212
645.85	62.8743
657.76	85.3960
661.66	78.8805
661.66	78.8805
664.57	0.0000
666.33	66.8005
666.50	80.1672
677.62	58.1858

685.70	65.1296
695.00	70.3562
696.49	73.1076
696.51	73.1096
697.00	88.4728
702.65	75.1134
706.68	80.6823
711.68	70.8608
720.70	68.3954
721.93	0.0000
722.78	57.8071
722.91	51.7249
723.31	51.7332
724.19	56.3190
727.33	65.8424
733.00	58.0545
735.93	58.1241
739.50	68.9337
747.24	64.5432
752.31	72.9921
753.82	55.4707
756.73	67.5696
763.94	95.6145
765.81	80.8212
766.42	78.9840
777.92	48.5405
778.90	56.0303
783.70	67.0528
785.37	51.4927
795.86	43.2429
801.95	59.2294
810.29	55.7734
810.76	52.9471
815.77	60.6266
818.51	44.5697
832.01	56.2344
834.85	59.1558
836.80	0.0000
846.77	64.2111
856.80	65.7308
860.56	46.2352
871.09	40.6106
873.19	46.4473
875.33	0.0000
879.36	57.2182
880.51	58.2114
883.24	39.8168
884.68	39.8369
889.28	50.6086
898.04	47.8360
911.20	52.3073
911.20	52.3073
911.20	52.3073
926.50	38.4525
937.49	66.3081
944.13	45.6271
946.00	58.5592
949.00	53.6506
962.29	51.5607
964.08	71.5634
966.15	93.2627
968.97	60.0103
968.97	60.0103
968.97	60.0103
983.53	44.2191
996.26	57.5205
1001.03	48.5133
1004.73	61.7253
1037.84	48.0603
1038.76	0.0000
1048.07	44.1107
1050.41	52.3547
1050.41	52.3547
1063.66	47.4150
1085.87	49.8117
1099.45	53.1416
1112.07	43.3301
1115.54	61.0734

1120.29	54.5187
1120.29	54.5187
1120.55	54.5213
1121.30	54.5340
1131.51	0.0000
1173.23	58.5503
1177.93	59.6941
1189.05	53.4644
1204.77	60.1426
1221.41	60.4160
1231.02	62.7380
1235.36	66.0605
1238.28	67.1979
1260.41	0.0000
1271.85	50.3058
1274.44	55.8111
1274.54	53.6249
1291.59	43.9707
1298.22	0.0000
1312.11	38.6794
1332.49	34.2524
1365.19	24.2681
1368.63	0.0000
1384.29	17.8187
1408.01	12.2626
1457.56	0.0000
1460.82	22.9258
1489.16	17.3086
1505.03	22.1970
1596.21	24.6246
1620.50	7.9212
1678.03	0.0000
1690.97	7.0353
1764.49	19.2385
1764.49	19.2385
1770.23	15.3210
1771.35	5.1080
1791.20	0.0000
1836.06	8.2777

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900010

Total Uranium Activity	8.2923E+00	ug/g
Total Uranium Counting Unc.	3.3275E+00	ug/g
Total Uranium Tpu	1.6977E-06	ug/g
Total Uranium Mda	1.6218E+00	ug/g

```

*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 957711          SAMPLE ID   : G247900010
*  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 15:00:15.28  SAMPLE ALQT: 151.880 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.073E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.368E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.882E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.888E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 17:03:30.17

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                          *
*                                     Charleston, SC 29414                      *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900011.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:00:42.
Sample ID          : G247900011 Sample quantity : 1.15650E+02 GRAM
Detector name      : GAM18 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           : 957711 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	63.41*	4345	1770	0.97	125.95	120	10	6.03E-01	2.4	
2	1	74.93*	219	1138	0.88	148.99	145	14	3.04E-02	24.2	1.87E+00
3	1	77.34*	415	1327	1.03	153.80	145	14	5.77E-02	14.8	
4	0	84.02	353	2028	1.69	167.16	164	8	4.90E-02	22.7	
5	5	92.74*	11927	1879	1.13	184.59	180	14	1.66E+00	1.1	7.47E+00
6	5	94.78	619	1616	1.67	188.66	180	14	8.60E-02	22.5	
7	0	98.59*	767	1006	1.05	196.27	193	8	1.07E-01	8.1	
8	0	112.59*	864	1466	1.04	224.26	219	11	1.20E-01	9.3	
9	0	143.86*	559	727	1.14	286.78	283	9	7.76E-02	9.8	
10	0	163.16*	307	700	1.01	325.37	320	11	4.26E-02	17.8	
11	0	185.83*	2775	636	1.19	370.70	366	10	3.85E-01	2.6	
12	0	205.44*	182	521	0.78	409.90	405	9	2.52E-02	24.0	
13	0	209.83	74	352	0.71	418.69	415	7	1.03E-02	43.8	
14	3	238.64*	1076	275	1.13	476.29	470	19	1.49E-01	4.1	6.89E-01
15	3	241.76*	260	418	1.77	482.52	470	19	3.61E-02	18.8	
16	0	258.34	153	346	1.08	515.67	512	10	2.12E-02	24.5	
17	0	269.80	59	353	1.03	538.58	535	10	8.25E-03	60.4	
18	0	294.96*	388	338	1.21	588.88	582	13	5.39E-02	11.2	
19	0	338.15*	186	272	1.10	675.23	670	11	2.59E-02	19.0	
20	0	351.84*	604	277	1.36	702.62	696	12	8.39E-02	7.0	
21	0	409.06	81	149	0.88	817.01	813	9	1.13E-02	29.3	
22	0	510.62*	117	232	1.90	1020.08	1012	16	1.62E-02	34.7	
23	0	582.63*	399	141	1.43	1164.06	1156	15	5.54E-02	8.4	
24	0	609.00*	416	220	1.47	1216.79	1209	16	5.78E-02	9.6	
25	0	661.24	555	144	1.70	1321.23	1315	13	7.71E-02	6.1	
26	0	727.04*	115	106	1.89	1452.79	1447	12	1.60E-02	21.1	
27	0	742.29	139	102	1.36	1483.29	1477	12	1.94E-02	16.8	
28	0	766.05	439	177	2.00	1530.81	1524	15	6.10E-02	7.7	
29	0	785.65	74	120	1.09	1569.99	1565	11	1.03E-02	30.9	
30	0	910.75*	273	70	2.15	1820.14	1812	18	3.79E-02	9.7	
31	1	968.35*	175	59	2.33	1935.32	1917	39	2.43E-02	12.6	1.10E+00
32	0	1000.41*	940	125	1.88	1999.42	1989	19	1.31E-01	4.3	
33	0	1121.06	84	181	0.81	2240.69	2230	22	1.17E-02	41.7	
34	0	1459.77*	1449	59	2.42	2918.02	2907	24	2.01E-01	3.0	
35	0	1508.99	24	32	4.40	3016.46	3007	16	3.33E-03	56.5	
36	0	1763.32*	108	3	3.07	3525.09	3518	16	1.50E-02	11.4	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 17:03:35

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900011.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 15:00:42
Sample ID         : G247900011 Sample quantity : 115.65 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA18 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:02.29 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

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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	*	2.330E+01	2.255E+00	4.808E-01	3.649E-02	48.468
NB-95	+	765.81	*	5.315E-01	9.538E-02	6.690E-02	6.119E-03	7.945
BA-137M	+	661.66	*	5.592E-01	8.085E-02	5.796E-02	4.418E-03	9.649
CS-137	+	661.66	*	5.907E-01	8.547E-02	6.122E-02	4.678E-03	9.649
TL-208		277.37		3.155E-01	3.755E-01	6.312E-01	6.771E-02	0.500
	+	583.19	*	3.869E-01	7.195E-02	5.392E-02	4.220E-03	7.176
		860.56		2.319E-01	2.700E-01	4.654E-01	5.205E-02	0.498
BI-211		72.87		3.744E+00	6.374E+00	9.583E+00	7.913E-01	0.391
	+	351.06	*	2.785E+00	4.290E-01	3.229E-01	2.073E-02	8.624
BI-212	+	727.33	*	1.680E+00	7.391E-01	8.080E-01	1.004E-01	2.080
	+	785.37		6.989E+00	4.365E+00	5.004E+00	4.729E-01	1.397
		1620.50		2.245E+00	1.741E+00	3.354E+00	2.268E-01	0.669
PB-212	+	74.82		1.403E+00	7.035E-01	1.071E+00	1.374E-01	1.310
	+	77.11		1.496E+00	4.620E-01	6.063E-01	5.139E-02	2.468
	+	238.63	*	1.179E+00	1.284E-01	9.075E-02	6.542E-03	12.996
		300.09		1.115E+00	8.782E-01	1.333E+00	1.113E-01	0.837
BI-214	+	609.32	*	7.785E-01	1.644E-01	1.040E-01	9.345E-03	7.487
	+	1120.29		7.857E-01	6.593E-01	3.792E-01	3.651E-02	2.072
	+	1764.49		1.354E+00	3.193E-01	1.900E-01	1.155E-02	7.126
PB-214	+	74.82		2.487E+00	1.239E+00	1.899E+00	2.187E-01	1.310
	+	77.11		2.638E+00	8.430E-01	1.069E+00	1.264E-01	2.468
	+	242.00		1.723E+00	6.617E-01	5.510E-01	4.430E-02	3.127
	+	295.22		1.132E+00	2.713E-01	2.151E-01	1.868E-02	5.263
	+	351.93	*	1.011E+00	1.654E-01	1.174E-01	9.937E-03	8.608
RA-224	+	240.99	*	3.047E+00	1.157E+00	9.715E-01	5.412E-02	3.136
RA-226	+	609.32	*	7.785E-01	1.644E-01	1.040E-01	9.345E-03	7.487
	+	1120.29		7.857E-01	6.593E-01	3.792E-01	3.651E-02	2.072
	+	1764.49		1.354E+00	3.193E-01	1.900E-01	1.155E-02	7.126
AC-228	+	338.32		9.621E-01	5.392E-01	3.661E-01	1.509E-01	2.628
	+	911.20	*	1.233E+00	2.928E-01	1.937E-01	2.624E-02	6.366
	+	968.97		1.361E+00	4.827E-01	2.930E-01	7.309E-02	4.646
RA-228	+	338.32		9.621E-01	5.392E-01	3.661E-01	1.509E-01	2.628
	+	911.20	*	1.233E+00	2.928E-01	1.937E-01	2.624E-02	6.366
	+	968.97		1.361E+00	4.827E-01	2.930E-01	7.309E-02	4.646

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		1.403E+00	6.903E-01	1.071E+00	9.035E-02	1.310
	+	77.11		1.496E+00	4.620E-01	6.063E-01	5.139E-02	2.468
	+	238.63	*	1.179E+00	1.284E-01	9.075E-02	6.542E-03	12.996
		300.09		1.115E+00	1.106E+00	1.333E+00	8.114E-01	0.837
TH-232	+	338.32		9.621E-01	3.695E-01	3.661E-01	2.118E-02	2.628
	+	911.20	*	1.233E+00	2.928E-01	1.937E-01	2.624E-02	6.366
	+	968.97		1.361E+00	4.827E-01	2.930E-01	7.309E-02	4.646
PA-234M	+	766.42		1.392E+02	7.393E+01	1.753E+01	8.910E+00	7.939
	+	1001.03	*	1.414E+02	1.960E+01	6.142E+00	6.626E-01	23.014
TH-234	+	63.29	*	1.229E+02	2.290E+01	4.192E+00	7.550E-01	29.326
	+	92.59		1.318E+02	2.917E+01	2.060E+00	4.536E-01	64.007
U-235		89.96		5.439E-01	1.972E+00	2.893E+00	7.148E-01	0.188
	+	93.35		9.958E+01	2.304E+01	1.544E+00	3.550E-01	64.512
	+	143.76	*	2.013E+00	5.029E-01	4.095E-01	6.386E-02	4.917
	+	163.33		2.450E+00	9.610E-01	8.354E-01	1.387E-01	2.932
	+	185.72		2.059E+00	1.525E-01	7.457E-02	3.966E-03	27.607
	+	205.31		1.606E+00	8.175E-01	8.867E-01	1.495E-01	1.812
U-238	+	63.29	*	1.229E+02	2.290E+01	4.192E+00	7.550E-01	29.326
	+	92.59		1.318E+02	1.150E+01	2.060E+00	1.744E-01	64.007
ANH-511	+	511.00	*	8.787E-02	6.130E-02	4.576E-02	3.022E-03	1.920

---- 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	*	1.091E-02	3.250E-01	5.370E-01	3.890E-02	0.020
NA-22		1274.54	*	8.107E-03	3.572E-02	5.981E-02	4.070E-03	0.136
NA-24		1368.63	*	1.125E-02	3.572E-02	Half-Life too short		
SC-46		889.28	*	-6.905E-03	3.400E-02	5.466E-02	6.097E-03	-0.126
	+	1120.55		1.340E-01	1.121E-01	1.068E-01	7.377E-03	1.255
V-48		944.13		4.480E-01	8.655E-01	1.421E+00	1.504E-01	0.315
		983.53	*	-4.960E-02	6.611E-02	9.023E-02	8.924E-03	-0.550
		1312.11		-4.010E-02	6.520E-02	9.977E-02	7.267E-03	-0.402
CR-51		320.08	*	-2.007E-02	3.628E-01	5.826E-01	3.745E-02	-0.034
MN-54		834.85	*	-1.647E-02	3.387E-02	5.377E-02	5.508E-03	-0.306
CO-56		846.77	*	2.521E-02	3.653E-02	6.266E-02	6.541E-03	0.402
		1037.84		1.839E-02	2.400E-01	4.042E-01	3.741E-02	0.046
		1238.28		1.093E-01	7.319E-02	1.321E-01	8.807E-03	0.827
		1771.35		-3.630E-03	2.109E-01	2.930E-01	1.771E-02	-0.012
CO-57		122.06	*	-6.751E-04	3.501E-02	5.614E-02	3.325E-03	-0.012
		136.47		-1.171E-01	2.683E-01	4.209E-01	2.750E-02	-0.278
CO-58		810.76	*	-1.347E-03	3.601E-02	5.919E-02	5.843E-03	-0.023
FE-59		1099.45	*	2.644E-02	7.664E-02	1.309E-01	1.077E-02	0.202
		1291.59		-3.147E-02	1.042E-01	1.661E-01	1.396E-02	-0.190
CO-60		1173.23		-3.530E-03	3.649E-02	5.994E-02	3.313E-03	-0.059
		1332.49	*	-7.354E-03	3.237E-02	5.168E-02	3.905E-03	-0.142
ZN-65		1115.54	*	5.092E-02	8.573E-02	1.297E-01	9.136E-03	0.393
SE-75		121.12		1.922E-03	1.836E-01	2.948E-01	2.705E-02	0.007
		136.00		1.517E-02	5.143E-02	8.269E-02	4.711E-03	0.184

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	264.66	*		-4.105E-02	5.487E-02	6.909E-02	3.953E-03	-0.594
	279.54			-1.528E-02	1.087E-01	1.758E-01	1.088E-02	-0.087
	400.66			-4.710E-02	2.309E-01	3.823E-01	3.471E-02	-0.123
SR-85	514.00	*		7.449E-02	4.277E-02	6.766E-02	4.483E-03	1.101
Y-88	898.04			-3.042E-02	3.663E-02	5.374E-02	6.091E-03	-0.566
	1836.06	*		-1.327E-02	3.527E-02	5.497E-02	3.131E-03	-0.241
Y-91	1204.77	*		4.358E+00	1.775E+01	2.985E+01	1.764E+00	0.146
NB-94	702.65	*		7.421E-03	3.365E-02	5.681E-02	4.661E-03	0.131
	871.09			-1.559E-03	2.943E-02	4.799E-02	5.204E-03	-0.032
NB-95M	235.69	*		-4.219E-02	1.389E-01	1.978E-01	1.456E-02	-0.213
ZR-95	724.19			1.909E-01	1.006E-01	1.638E-01	1.516E-02	1.165
	756.73	*		3.965E-02	6.955E-02	1.169E-01	1.154E-02	0.339
MO-99	140.51			3.507E+01	4.171E+01	5.962E+01	1.360E+01	0.588
	181.07			5.284E+00	2.811E+01	4.194E+01	7.346E+00	0.126
	366.42			1.372E+01	1.176E+02	1.991E+02	1.150E+01	0.069
	739.50	*		3.405E+01	1.934E+01	3.042E+01	4.815E+00	1.119
	777.92			6.732E+00	4.859E+01	7.740E+01	7.226E+00	0.087
TC-99M	140.51	*		7.598E+11	4.859E+01	Half-Life too short		
RU-103	497.08	*		-2.719E-03	3.854E-02	6.310E-02	8.059E-03	-0.043
	610.33			8.179E+00	2.022E+00	2.211E+00	3.467E-01	3.699
RH-106	621.93	*		8.980E-02	2.979E-01	4.892E-01	6.101E-02	0.184
	1050.41			1.643E+00	2.178E+00	3.835E+00	3.277E-01	0.428
RU-106	621.93	*		8.980E-02	2.978E-01	4.892E-01	3.600E-02	0.184
	1050.41			1.643E+00	2.178E+00	3.835E+00	3.277E-01	0.428
AG-108M	433.94	*		4.005E-04	2.868E-02	4.770E-02	3.075E-03	0.008
	614.28			2.522E-02	3.685E-02	5.436E-02	4.153E-03	0.464
	722.91			1.356E-02	3.666E-02	5.435E-02	4.773E-03	0.249
CD-109	88.03	*		-3.429E+00	2.425E+00	2.637E+00	2.438E-01	-1.300
AG-110M	657.76	*		5.311E-02	4.204E-02	6.615E-02	5.218E-03	0.803
	677.62			1.394E-01	2.896E-01	4.980E-01	4.043E-02	0.280
	706.68			1.214E-01	2.054E-01	3.534E-01	3.011E-02	0.344
	763.94			1.799E+00	2.969E-01	4.850E-01	4.531E-02	3.709
	884.68			2.585E-03	4.660E-02	7.649E-02	8.638E-03	0.034
	937.49			-4.741E-02	8.888E-02	1.375E-01	1.505E-02	-0.345
	1384.29			-5.690E-02	1.398E-01	2.178E-01	1.686E-02	-0.261
	1505.03			9.128E-02	2.869E-01	4.282E-01	3.073E-02	0.213
SN-113	391.69	*		2.266E-03	4.009E-02	6.738E-02	4.133E-03	0.034
CD-115	260.90			8.382E+01	2.141E+02	3.140E+02	1.773E+01	0.267
	492.35			-1.699E+01	4.954E+01	7.988E+01	5.171E+00	-0.213
	527.90	*		-4.109E-01	1.546E+01	2.524E+01	1.696E+00	-0.016
SN-117M	156.02			-2.556E+00	2.750E+00	4.537E+00	2.423E-01	-0.563
	158.56	*		2.661E-02	7.472E-02	1.134E-01	6.028E-03	0.235
TE-123M	159.00	*		2.819E-02	3.698E-02	5.696E-02	3.073E-03	0.495
SB-124	602.73			2.311E-02	4.287E-02	6.244E-02	4.516E-03	0.370
	645.85			-1.148E-01	4.317E-01	6.796E-01	5.493E-02	-0.169
	722.78			1.180E-01	3.713E-01	5.482E-01	4.769E-02	0.215
	1690.97	*		-4.493E-03	5.705E-02	9.300E-02	6.441E-03	-0.048
SB-125	427.87	*		-1.428E-02	8.794E-02	1.452E-01	9.060E-03	-0.098
	463.37			5.000E-01	2.850E-01	5.048E-01	3.602E-02	0.991

----- 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		1.003E-01	1.823E-01	2.876E-01	2.292E-02	0.349
		635.95		2.013E-03	2.569E-01	4.134E-01	3.412E-02	0.005
		109.28	*	2.612E+01	1.787E+01	2.676E+01	2.401E+00	0.976
		388.63		-3.140E-02	1.610E-01	2.675E-01	1.537E-02	-0.117
		666.33	*	4.144E-02	2.430E-01	3.567E-01	2.742E-02	0.116
SB-126		753.82		1.500E+00	1.790E+00	3.111E+00	2.789E-01	0.482
		414.70		6.245E-02	8.154E-02	1.296E-01	7.668E-03	0.482
		666.50		1.655E-02	8.374E-02	1.232E-01	9.474E-03	0.134
		695.00		-4.743E-02	7.556E-02	1.214E-01	9.826E-03	-0.391
		697.00		-1.624E-02	2.663E-01	4.432E-01	3.600E-02	-0.037
SN-126		720.70	*	-1.049E-01	1.600E-01	2.151E-01	1.822E-02	-0.487
		856.80		1.244E-01	4.669E-01	7.791E-01	8.263E-02	0.160
	+	64.28		4.738E+01	7.343E+00	3.334E+00	4.928E-01	14.211
		86.94		-5.803E-01	7.897E-01	1.082E+00	4.488E-01	-0.536
		87.57	*	-2.663E-01	2.022E-01	2.582E-01	2.379E-02	-1.031
SB-127		252.40		-1.474E+00	5.553E+00	8.644E+00	3.552E+00	-0.171
		473.00		-4.648E-01	1.950E+00	3.177E+00	3.702E-01	-0.146
		685.70	*	-1.004E-01	1.457E+00	2.426E+00	2.715E-01	-0.041
I-131		783.70		9.367E+00	5.397E+00	8.467E+00	1.117E+00	1.106
		80.19		-7.987E+00	1.333E+01	1.513E+01	1.321E+00	-0.528
		284.31		3.167E-01	1.627E+00	2.668E+00	1.699E-01	0.119
TE-132		364.49	*	1.917E-03	1.143E-01	1.928E-01	1.246E-02	0.010
		636.99		-1.996E-01	1.621E+00	2.585E+00	2.077E-01	-0.077
		49.72		-5.292E+01	5.196E+01	8.498E+01	9.066E+00	-0.623
BA-133	+	111.76		6.697E+02	1.403E+02	1.447E+02	1.417E+01	4.627
		116.30		3.495E+01	5.693E+01	8.342E+01	8.004E+00	0.419
		228.16	*	2.745E-01	9.705E-01	1.591E+00	2.321E-01	0.173
I-133		81.00		-5.625E-02	2.515E-01	2.900E-01	4.515E-02	-0.194
		276.40		7.970E-02	3.653E-01	5.804E-01	7.278E-02	0.137
		302.85		-1.402E-01	1.424E-01	2.185E-01	2.487E-02	-0.642
CS-134		356.01	*	2.826E-02	4.453E-02	6.479E-02	7.300E-03	0.436
		383.85		-1.112E-01	2.718E-01	4.468E-01	4.754E-02	-0.249
		529.87	*	-1.542E-04	2.718E-01	Half-Life	too short	
I-135		875.33		-3.132E-01	2.718E-01	Half-Life	too short	
		1298.22		8.048E-02	2.718E-01	Half-Life	too short	
CS-135		563.25		-1.122E-01	3.491E-01	5.568E-01	3.935E-02	-0.201
		569.33		1.924E-01	1.936E-01	3.267E-01	2.336E-02	0.589
		604.72		-9.583E-03	3.780E-02	5.155E-02	3.748E-03	-0.186
I-135		795.86	*	6.147E-02	4.641E-02	8.174E-02	7.907E-03	0.752
		801.95		-2.752E-01	3.845E-01	6.005E-01	5.859E-02	-0.458
		1365.19		-3.451E-01	8.988E-01	1.393E+00	1.109E-01	-0.248
I-135		268.22	*	1.313E-01	1.749E-01	2.607E-01	1.971E-02	0.504
		546.56		6.286E+10	1.749E-01	Half-Life	too short	
		836.80		2.794E+11	1.749E-01	Half-Life	too short	
I-135		1038.76		-1.718E+11	1.749E-01	Half-Life	too short	
		1131.51		5.458E+09	1.749E-01	Half-Life	too short	
		1260.41	*	-3.379E+10	1.749E-01	Half-Life	too short	
I-135		1457.56		1.488E+13	1.749E-01	Half-Life	too short	
		1678.03		2.405E+10	1.749E-01	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	1791.20			-1.139E+11	1.749E-01	Half-Life too short		
	153.25			4.455E-01	1.035E+00	1.777E+00	1.376E-01	0.251
	176.60			-4.718E-01	5.902E-01	9.675E-01	6.420E-02	-0.488
	273.65			-6.764E-01	6.268E-01	8.351E-01	5.631E-02	-0.810
	340.55			2.209E-01	1.762E-01	2.649E-01	1.659E-02	0.834
	818.51			-2.770E-03	7.224E-02	1.187E-01	1.185E-02	-0.023
CE-139	1048.07	*		3.987E-02	9.856E-02	1.695E-01	1.519E-02	0.235
	1235.36			5.147E-01	4.917E-01	8.639E-01	8.799E-02	0.596
	165.86	*		2.374E-02	3.654E-02	5.598E-02	2.939E-03	0.424
	162.66			4.818E+00	1.738E+00	2.025E+00	1.251E-01	2.379
	304.85			-6.069E-01	1.437E+00	2.260E+00	6.455E-01	-0.268
	423.72			3.861E-01	1.976E+00	3.315E+00	1.071E+00	0.116
BA-140	537.26	*		-1.613E-01	2.782E-01	4.300E-01	1.440E-01	-0.375
	328.76			3.527E-01	3.159E-01	5.324E-01	3.457E-02	0.663
	487.02			1.090E-01	1.408E-01	2.411E-01	1.720E-02	0.452
	815.77			-1.559E-01	3.312E-01	5.277E-01	5.711E-02	-0.295
	1596.21	*		4.446E-02	7.466E-02	1.323E-01	9.080E-03	0.336
	145.44	*		4.087E-01	1.033E-01	1.630E-01	9.306E-03	2.507
CE-141	57.36			3.101E-03	1.033E-01	Half-Life too short		
	293.27	*		1.107E-03	1.033E-01	Half-Life too short		
	664.57			7.841E-03	1.033E-01	Half-Life too short		
	721.93			-9.634E-04	1.033E-01	Half-Life too short		
	80.12			-4.182E+00	6.622E+00	7.509E+00	6.502E-01	-0.557
	133.52	*		-1.045E-01	2.673E-01	4.205E-01	5.815E-02	-0.249
PM-144	476.78			1.007E-02	6.400E-02	1.064E-01	7.814E-03	0.095
	618.01			-7.645E-03	3.217E-02	4.962E-02	3.779E-03	-0.154
	696.49	*		-5.585E-03	3.206E-02	5.302E-02	4.305E-03	-0.105
	696.51	*		-3.861E-01	2.403E+00	3.977E+00	3.227E-01	-0.097
	1489.16			-1.357E+01	1.130E+01	1.529E+01	1.105E+00	-0.887
	453.88	*		1.895E-02	4.137E-02	7.004E-02	6.118E-03	0.271
PM-146	633.25			1.177E+00	1.422E+00	2.294E+00	8.706E-01	0.513
	735.93			-5.050E-02	1.631E-01	2.261E-01	6.343E-02	-0.223
	747.24			3.613E-02	9.743E-02	1.441E-01	2.122E-02	0.251
	91.11			2.567E+01	2.594E+00	1.870E+00	1.760E-01	13.729
	319.41			4.314E-01	3.437E+00	5.571E+00	3.218E-01	0.077
	531.02	*		3.736E-01	5.909E-01	9.963E-01	1.390E-01	0.375
ND-147	285.90	*		4.911E+01	1.280E+02	2.112E+02	2.988E+01	0.232
	121.78			2.276E-02	9.972E-02	1.611E-01	1.237E-02	0.141
	244.70			-3.693E-01	3.851E-01	5.258E-01	2.937E-02	-0.702
	344.28	*		2.055E-02	1.111E-01	1.571E-01	1.025E-02	0.131
	778.90			5.303E-02	2.859E-01	4.298E-01	4.018E-02	0.123
	964.08			6.708E-01	2.715E-01	4.853E-01	4.970E-02	1.382
EU-152	1085.87			9.054E-02	3.251E-01	5.534E-01	4.287E-02	0.164
	1112.07			2.086E-02	2.816E-01	4.043E-01	2.878E-02	0.052
	1408.01			1.220E-01	1.493E-01	2.634E-01	1.956E-02	0.463
	69.67			1.587E+00	3.243E+00	5.391E+00	4.375E-01	0.294
	97.43	*		1.222E+00	2.184E-01	2.881E-01	2.253E-02	4.241
	103.18			-2.022E-01	1.881E-01	2.608E-01	1.880E-02	-0.775
EU-154	123.07			-1.492E-02	7.079E-02	1.128E-01	1.065E-02	-0.132

---- 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		8.811E-02	1.725E-01	2.584E-01	2.427E-02	0.341
		873.19		-9.811E-02	2.377E-01	3.755E-01	5.116E-02	-0.261
		996.26		1.651E+00	5.603E-01	8.414E-01	1.514E-01	1.963
		1004.73		7.278E-01	2.539E-01	4.243E-01	5.216E-02	1.715
		1274.44	*	1.202E-02	1.018E-01	1.688E-01	1.699E-02	0.071
		86.55		1.488E-01	2.139E-01	3.180E-01	2.929E-02	0.468
		105.31	*	2.711E-02	1.577E-01	2.566E-01	1.833E-02	0.106
		86.79		-4.838E-01	5.901E-01	8.457E-01	7.737E-02	-0.572
		197.04		-1.995E-01	6.037E-01	9.973E-01	5.356E-02	-0.200
		215.65		-2.407E-01	7.563E-01	1.240E+00	6.771E-02	-0.194
TB-160		298.57		1.070E-01	1.247E-01	1.857E-01	1.067E-02	0.576
		879.36	*	7.444E-02	1.273E-01	2.167E-01	2.381E-02	0.343
		962.29		8.649E-01	4.790E-01	8.396E-01	8.625E-02	1.030
		966.15		1.241E+00	2.535E-01	4.566E-01	4.659E-02	2.718
		1177.93		-2.688E-01	2.979E-01	4.567E-01	2.550E-02	-0.588
		1271.85		1.478E-01	5.794E-01	9.728E-01	6.574E-02	0.152
		80.57		2.875E-01	6.973E-01	8.252E-01	7.169E-02	0.348
	+	184.41		1.636E+00	1.211E-01	1.449E-01	7.700E-03	11.285
		280.46		-7.455E-02	8.589E-02	1.343E-01	7.659E-03	-0.555
		410.95		1.671E-01	2.653E-01	4.012E-01	2.362E-02	0.416
HO-166M		711.68	*	-5.613E-02	5.868E-02	9.051E-02	7.544E-03	-0.620
		752.31		6.516E-02	2.561E-01	4.316E-01	3.859E-02	0.151
		810.29		-2.298E-02	5.457E-02	8.727E-02	8.593E-03	-0.263
		67.75		-9.425E-02	2.172E-01	3.402E-01	2.735E-02	-0.277
		100.11		1.558E+00	3.469E-01	5.425E-01	4.078E-02	2.872
		152.43		2.110E-01	4.329E-01	6.950E-01	3.739E-02	0.304
		222.11		-1.697E-01	3.618E-01	5.887E-01	3.231E-02	-0.288
	+	1121.30		3.705E-01	3.099E-01	2.912E-01	2.006E-02	1.272
		1189.05		-3.178E-01	2.754E-01	4.154E-01	2.375E-02	-0.765
		1221.41	*	1.259E-01	1.734E-01	2.998E-01	1.834E-02	0.420
TA-182		1231.02		-8.483E-01	4.176E-01	5.774E-01	3.602E-02	-1.469
	+	295.96		8.452E-01	1.951E-01	2.477E-01	1.445E-02	3.412
		308.46		-6.378E-03	9.455E-02	1.522E-01	8.870E-03	-0.042
		316.51	*	2.483E-02	3.414E-02	5.696E-02	3.303E-03	0.436
		468.07		-6.992E-02	7.011E-02	1.098E-01	7.833E-03	-0.637
		70.83		-4.684E-01	2.818E+00	4.145E+00	6.557E-01	-0.113
		72.87		9.463E-01	1.616E+00	2.422E+00	3.715E-01	0.391
		279.20	*	2.336E-02	3.803E-02	6.354E-02	3.831E-03	0.368
		72.81		1.790E-01	3.666E-01	5.500E-01	4.540E-02	0.325
	+	74.97		4.044E-01	1.989E-01	3.389E-01	2.833E-02	1.193
IR-192		569.70		2.700E-02	3.016E-02	5.065E-02	3.549E-03	0.533
		1063.66	*	1.595E-02	4.413E-02	7.567E-02	6.246E-03	0.211
		1770.23		-1.098E-01	4.158E-01	5.421E-01	3.280E-02	-0.203
		46.54	*	1.616E+00	8.095E+00	1.377E+01	1.056E+00	0.117
		404.85	*	1.748E-02	7.479E-01	1.089E+00	5.224E-01	0.016
		427.09		-2.965E-01	1.499E+00	2.460E+00	1.128E+00	-0.121
		832.01		-1.249E-01	8.936E-01	1.451E+00	7.567E-01	-0.086
	+	271.23		2.808E-01	3.400E-01	4.196E-01	3.333E-02	0.669
		401.81	*	3.465E-02	3.647E-01	6.128E-01	8.239E-02	0.057
HG-203								
BI-207								
PB-210								
PB-211								
RN-219								

---- 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		-1.216E-01	5.691E-01	6.567E-01	5.727E-02	-0.185
	+	83.79		7.606E-01	3.521E-01	4.382E-01	3.906E-02	1.736
	+	94.87		4.974E+00	2.275E+00	2.048E+00	1.668E-01	2.428
	+	144.24		6.748E+00	1.398E+00	1.883E+00	1.309E-01	3.584
		154.21		2.310E-01	4.433E-01	7.627E-01	5.038E-02	0.303
	+	269.46		2.182E-01	2.639E-01	3.228E-01	1.914E-02	0.676
	+	323.87	*	-5.283E-01	6.331E-01	9.667E-01	1.557E-01	-0.547
AC-227	+	338.28		3.818E+00	1.501E+00	1.971E+00	2.018E-01	1.937
		79.69		-3.326E+00	2.920E+00	3.713E+00	6.402E-01	-0.896
		235.96		1.326E-01	1.747E-01	2.617E-01	2.084E-02	0.507
		256.23	*	1.535E-01	3.189E-01	4.691E-01	4.752E-02	0.327
		299.98		1.215E+00	9.690E-01	1.464E+00	1.605E-01	0.830
		304.50		-6.622E-01	1.625E+00	2.572E+00	3.918E-01	-0.257
		334.37		-7.474E-01	1.984E+00	2.704E+00	3.844E-01	-0.276
TH-227		79.80		-3.385E+00	4.405E+00	4.902E+00	1.068E+00	-0.690
		235.96		1.326E-01	1.746E-01	2.617E-01	1.881E-02	0.507
		256.23	*	1.535E-01	3.191E-01	4.691E-01	5.600E-02	0.327
		299.98		1.215E+00	9.690E-01	1.464E+00	1.605E-01	0.830
		304.50		-6.622E-01	1.625E+00	2.572E+00	3.918E-01	-0.257
		334.37		-7.474E-01	1.984E+00	2.704E+00	3.844E-01	-0.276
	+	85.43		1.278E+00	5.915E-01	6.935E-01	6.269E-02	1.843
TH-229		88.47		-5.597E-01	3.703E-01	4.010E-01	3.673E-02	-1.396
		193.51	*	3.385E-01	5.623E-01	9.580E-01	5.129E-02	0.353
	+	210.85		1.186E+00	1.042E+00	1.562E+00	8.494E-02	0.759
PA-231		283.69	*	-1.663E-01	1.460E+00	2.362E+00	3.089E-01	-0.070
		301.36		8.717E-01	5.900E-01	9.427E-01	9.724E-02	0.925
TH-231		81.07		-1.216E-01	5.691E-01	6.567E-01	5.727E-02	-0.185
	+	83.79		7.606E-01	3.521E-01	4.382E-01	3.906E-02	1.736
	+	94.87		4.974E+00	2.275E+00	2.048E+00	1.668E-01	2.428
	+	144.24		6.748E+00	1.398E+00	1.883E+00	1.309E-01	3.584
		154.21		2.310E-01	4.433E-01	7.627E-01	5.038E-02	0.303
	+	269.46		2.182E-01	2.639E-01	3.228E-01	1.914E-02	0.676
	+	323.87	*	-5.283E-01	6.331E-01	9.667E-01	1.557E-01	-0.547
PA-233	+	338.28		3.818E+00	1.501E+00	1.971E+00	2.018E-01	1.937
		300.13		5.572E-01	4.411E-01	6.637E-01	8.870E-02	0.840
		311.90	*	-4.970E-02	6.325E-02	9.795E-02	6.002E-03	-0.507
		340.48		1.054E+00	7.572E-01	1.093E+00	2.536E-01	0.964
PA-234	+	94.67		1.803E+00	8.400E-01	8.738E-01	1.057E-01	2.063
	+	98.44		1.332E+00	7.716E-01	3.209E-01	1.786E-01	4.149
		111.00		1.171E+00	3.859E-01	5.727E-01	6.144E-02	2.044
		131.20		4.337E-02	1.428E-01	2.300E-01	1.309E-02	0.189
		569.50		2.397E-01	2.677E-01	4.496E-01	3.150E-02	0.533
		733.00		4.047E-01	4.006E-01	6.107E-01	1.356E-01	0.663
		880.51		2.542E-01	2.600E-01	4.523E-01	4.978E-02	0.562
		883.24		1.409E-01	2.850E-01	4.557E-01	3.079E-01	0.309
		926.50		1.226E-01	1.632E-01	2.753E-01	7.195E-02	0.445
		946.00	*	2.046E-01	2.945E-01	4.859E-01	9.586E-02	0.421
		949.00		1.247E-01	4.342E-01	7.193E-01	7.554E-02	0.173
	NP-237	86.48	*	3.904E-01	5.336E-01	7.844E-01	1.794E-01	0.498

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	95.86		1.056E+01	5.378E+00	2.838E+00	6.748E-01	3.721
	+	99.53		2.416E+00	4.319E-01	5.591E-01	4.238E-02	4.321
		103.37		-1.707E-01	1.589E-01	2.365E-01	1.701E-02	-0.722
		106.12		-9.139E-02	1.279E-01	2.029E-01	1.411E-02	-0.450
		117.23	*	-2.532E-01	6.389E-01	9.011E-01	5.565E-02	-0.281
		228.18		6.301E-02	2.308E-01	3.786E-01	2.088E-02	0.166
AM-241		277.60		1.641E-01	1.721E-01	2.913E-01	1.659E-02	0.563
		59.54	*	8.860E-02	3.723E-01	5.619E-01	4.660E-02	0.158
CM-247		278.00		6.337E-01	7.383E-01	1.245E+00	7.091E-02	0.509
		287.50		2.010E-01	1.285E+00	2.031E+00	1.162E-01	0.099
CF-249		402.40	*	2.049E-03	3.469E-02	5.670E-02	3.301E-03	0.036
		252.80		-6.106E-01	1.074E+00	1.583E+00	8.894E-02	-0.386
		333.37		-2.564E-02	2.054E-01	2.852E-01	1.649E-02	-0.090
CF-251		388.16	*	-5.585E-03	3.700E-02	6.160E-02	3.541E-03	-0.091
		177.52	*	-3.855E-02	1.461E-01	2.437E-01	1.288E-02	-0.158
		227.38		1.492E-01	3.706E-01	6.215E-01	3.426E-02	0.240
		285.41		1.078E+00	2.205E+00	3.659E+00	2.092E-01	0.295

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]G247900011      *
* Acquisition date   : 6-MAR-2010 15:00:42 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 02:00:02.29 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G247900011 Analyst initials: MXR1                  *
* Batch Number      : 957711 Sample Quantity : 1.1565E+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	2.330E+01	2.210E+00	4.790E-01	0.000E+00
NB-95	5.315E-01	9.347E-02	6.707E-02	0.000E+00
BA-137M	5.592E-01	7.923E-02	5.819E-02	0.000E+00
CS-137	5.907E-01	8.376E-02	6.148E-02	0.000E+00
TL-208	3.869E-01	7.051E-02	5.421E-02	0.000E+00
BI-211	2.785E+00	4.204E-01	3.262E-01	0.000E+00
BI-212	1.680E+00	7.243E-01	8.105E-01	0.000E+00
PB-212	1.179E+00	1.258E-01	9.204E-02	0.000E+00
BI-214	7.785E-01	1.611E-01	1.045E-01	0.000E+00
PB-214	1.011E+00	1.621E-01	1.186E-01	0.000E+00
RA-224	3.047E+00	1.134E+00	9.852E-01	0.000E+00
RA-226	7.785E-01	1.611E-01	1.045E-01	0.000E+00
AC-228	1.233E+00	2.870E-01	1.939E-01	0.000E+00
RA-228	1.233E+00	2.870E-01	1.939E-01	0.000E+00
TH-228	1.179E+00	1.258E-01	9.204E-02	0.000E+00
TH-232	1.233E+00	2.870E-01	1.939E-01	0.000E+00
PA-234M	1.414E+02	1.921E+01	6.142E+00	0.000E+00
TH-234	1.229E+02	2.244E+01	4.305E+00	0.000E+00
U-235	2.013E+00	4.929E-01	4.173E-01	0.000E+00
U-238	1.229E+02	2.244E+01	4.305E+00	0.000E+00
ANH-511	8.787E-02	6.008E-02	4.607E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.091E-02	3.185E-01	5.410E-01	0.000E+00 NOT IDENT.
NA-22	8.107E-03	3.501E-02	5.967E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.776E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-6.905E-03	3.332E-02	5.473E-02	0.000E+00 FAIL ABUN
V-48	-4.960E-02	6.478E-02	9.024E-02	0.000E+00 NOT IDENT.
CR-51	-2.007E-02	3.555E-01	5.892E-01	0.000E+00 NOT IDENT.

MN-54	-1.647E-02	3.319E-02	5.386E-02	0.000E+00	NOT IDENT.
CO-56	2.521E-02	3.580E-02	6.276E-02	0.000E+00	NOT IDENT.
CO-57	-6.751E-04	3.431E-02	5.730E-02	0.000E+00	NOT IDENT.
CO-58	-1.347E-03	3.529E-02	5.932E-02	0.000E+00	NOT IDENT.
FE-59	2.644E-02	7.511E-02	1.308E-01	0.000E+00	NOT IDENT.
CO-60	-7.354E-03	3.172E-02	5.153E-02	0.000E+00	NOT IDENT.
ZN-65	5.092E-02	8.402E-02	1.296E-01	0.000E+00	NOT IDENT.
SE-75	-4.105E-02	5.377E-02	7.000E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.191E-02	6.811E-02	0.000E+00	NOT IDENT.
Y-88	-1.327E-02	3.457E-02	5.464E-02	0.000E+00	NOT IDENT.
Y-91	4.358E+00	1.740E+01	2.979E+01	0.000E+00	NOT IDENT.
NB-94	7.421E-03	3.297E-02	5.701E-02	0.000E+00	NOT IDENT.
NB-95M	-4.219E-02	1.361E-01	2.007E-01	0.000E+00	NOT IDENT.
ZR-95	3.965E-02	6.816E-02	1.172E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.895E+01	3.051E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	8.976E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.719E-03	3.777E-02	6.354E-02	0.000E+00	FAIL ABUN
RH-106	8.980E-02	2.919E-01	4.915E-01	0.000E+00	NOT IDENT.
RU-106	8.980E-02	2.918E-01	4.915E-01	0.000E+00	NOT IDENT.
AG-108M	4.005E-04	2.810E-02	4.810E-02	0.000E+00	NOT IDENT.
CD-109	-3.429E+00	2.377E+00	2.700E+00	0.000E+00	NOT IDENT.
AG-110M	5.311E-02	4.120E-02	6.642E-02	0.000E+00	NOT IDENT.
SN-113	2.266E-03	3.929E-02	6.801E-02	0.000E+00	NOT IDENT.
CD-115	-4.109E-01	1.515E+01	2.540E+01	0.000E+00	NOT IDENT.
SN-117M	2.661E-02	7.323E-02	1.155E-01	0.000E+00	NOT IDENT.
TE-123M	2.819E-02	3.624E-02	5.799E-02	0.000E+00	NOT IDENT.
SB-124	-4.493E-03	5.591E-02	9.251E-02	0.000E+00	NOT IDENT.
SB-125	-1.428E-02	8.618E-02	1.464E-01	0.000E+00	NOT IDENT.
TE-125M	2.612E+01	1.752E+01	2.735E+01	0.000E+00	NOT IDENT.
I-126	4.144E-02	2.381E-01	3.581E-01	0.000E+00	NOT IDENT.
SB-126	-1.049E-01	1.568E-01	2.158E-01	0.000E+00	NOT IDENT.
SN-126	-2.663E-01	1.982E-01	2.644E-01	0.000E+00	FAIL ABUN
SB-127	-1.004E-01	1.427E+00	2.435E+00	0.000E+00	NOT IDENT.
I-131	1.917E-03	1.120E-01	1.947E-01	0.000E+00	NOT IDENT.
TE-132	2.745E-01	9.511E-01	1.615E+00	0.000E+00	FAIL ABUN
BA-133	2.826E-02	4.364E-02	6.545E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.312E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.147E-02	4.548E-02	8.193E-02	0.000E+00	NOT IDENT.
CS-135	1.313E-01	1.714E-01	2.641E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.333E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.987E-02	9.659E-02	1.694E-01	0.000E+00	NOT IDENT.
CE-139	2.374E-02	3.581E-02	5.697E-02	0.000E+00	NOT IDENT.
BA-140	-1.613E-01	2.726E-01	4.327E-01	0.000E+00	FAIL ABUN
LA-140	4.446E-02	7.317E-02	1.317E-01	0.000E+00	NOT IDENT.
CE-141	0.000E+00	1.013E-01	1.661E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.443E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.045E-01	2.620E-01	4.289E-01	0.000E+00	NOT IDENT.
PM-144	-5.585E-03	3.142E-02	5.321E-02	0.000E+00	NOT IDENT.
PR-144	-3.861E-01	2.355E+00	3.991E+00	0.000E+00	NOT IDENT.
PM-146	1.895E-02	4.054E-02	7.058E-02	0.000E+00	NOT IDENT.
ND-147	3.736E-01	5.791E-01	1.003E+00	0.000E+00	NOT IDENT.
PM-149	4.911E+01	1.255E+02	2.139E+02	0.000E+00	NOT IDENT.
EU-152	2.055E-02	1.089E-01	1.588E-01	0.000E+00	NOT IDENT.
GD-153	0.000E+00	2.141E-01	2.947E-01	0.000E+00	FAIL ABUN
EU-154	1.202E-02	9.973E-02	1.684E-01	0.000E+00	NOT IDENT.
EU-155	2.711E-02	1.545E-01	2.623E-01	0.000E+00	NOT IDENT.
TB-160	7.444E-02	1.247E-01	2.170E-01	0.000E+00	NOT IDENT.
HO-166M	-5.613E-02	5.751E-02	9.081E-02	0.000E+00	FAIL ABUN
TA-182	1.259E-01	1.700E-01	2.992E-01	0.000E+00	FAIL ABUN
IR-192	2.483E-02	3.346E-02	5.760E-02	0.000E+00	FAIL ABUN
HG-203	2.336E-02	3.727E-02	6.435E-02	0.000E+00	NOT IDENT.
BI-207	1.595E-02	4.325E-02	7.563E-02	0.000E+00	FAIL ABUN
PB-210	1.616E+00	7.933E+00	1.418E+01	0.000E+00	NOT IDENT.
PB-211	1.748E-02	7.329E-01	1.099E+00	0.000E+00	NOT IDENT.
RN-219	3.465E-02	3.574E-01	6.183E-01	0.000E+00	FAIL ABUN
RA-223	-5.283E-01	6.205E-01	9.775E-01	0.000E+00	FAIL ABUN
AC-227	1.535E-01	3.125E-01	4.754E-01	0.000E+00	NOT IDENT.
TH-227	1.535E-01	3.127E-01	4.754E-01	0.000E+00	NOT IDENT.
TH-229	3.385E-01	5.511E-01	9.736E-01	0.000E+00	FAIL ABUN
PA-231	-1.663E-01	1.431E+00	2.391E+00	0.000E+00	NOT IDENT.
TH-231	-5.283E-01	6.205E-01	9.775E-01	0.000E+00	FAIL ABUN
PA-233	-4.970E-02	6.198E-02	9.908E-02	0.000E+00	NOT IDENT.
PA-234	2.046E-01	2.886E-01	4.862E-01	0.000E+00	FAIL ABUN
NP-237	3.904E-01	5.229E-01	8.033E-01	0.000E+00	FAIL ABUN
NP-239	-2.532E-01	6.262E-01	9.201E-01	0.000E+00	FAIL ABUN
AM-241	8.860E-02	3.649E-01	5.775E-01	0.000E+00	NOT IDENT.
CM-247	2.049E-03	3.400E-02	5.721E-02	0.000E+00	NOT IDENT.
CF-249	-5.585E-03	3.626E-02	6.218E-02	0.000E+00	NOT IDENT.

CF-251	-3.855E-02	1.432E-01	2.479E-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]G247900011.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:00:42.
Sample ID          : G247900011 Sample quantity : 1.15650E+02 GRAM
Detector name      : GAM18 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           : 957711 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	1449	10.66*	1.894E+00	2.330E+01	2.330E+01	9.68
NB-95	765.81	439	99.81*	3.203E+00	4.462E-01	5.315E-01	17.95
BA-137M	661.66	555	89.90*	3.589E+00	5.586E-01	5.592E-01	14.46
CS-137	661.66	555	85.10*	3.589E+00	5.901E-01	5.907E-01	14.47
TL-208	277.37	-----	6.60	6.258E+00	-----	Line Not Found	-----
	583.19	399	85.00*	3.936E+00	3.869E-01	3.869E-01	18.60
	860.56	-----	12.50	2.914E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	4.622E+00	-----	Line Not Found	-----
	351.06	604	12.92*	5.452E+00	2.785E+00	2.785E+00	15.41
BI-212	727.33	115	6.67*	3.338E+00	1.680E+00	1.680E+00	43.99
	785.37	74	1.10	3.139E+00	6.989E+00	6.989E+00	62.46
	1620.50	-----	1.47	1.770E+00	-----	Line Not Found	-----
PB-212	74.82	219	10.28	4.927E+00	1.403E+00	1.403E+00	50.14
	77.11	415	17.10	5.266E+00	1.496E+00	1.496E+00	30.87
	238.63	1076	43.60*	6.793E+00	1.179E+00	1.179E+00	10.89
	300.09	-----	3.30	5.984E+00	-----	Line Not Found	-----
BI-214	609.32	416	45.49*	3.813E+00	7.784E-01	7.785E-01	21.12
	1120.29	84	14.92	2.333E+00	7.857E-01	7.857E-01	83.91
	1764.49	108	15.30	1.695E+00	1.354E+00	1.354E+00	23.58
PB-214	74.82	219	5.80	4.927E+00	2.487E+00	2.487E+00	49.82
	77.11	415	9.70	5.266E+00	2.638E+00	2.638E+00	31.95
	242.00	260	7.25	6.747E+00	1.723E+00	1.723E+00	38.40
	295.22	388	18.42	6.044E+00	1.132E+00	1.132E+00	23.96
	351.93	604	35.60*	5.452E+00	1.011E+00	1.011E+00	16.36
RA-224	240.99	260	4.10*	6.747E+00	3.047E+00	3.047E+00	37.96
RA-226	609.32	416	45.49*	3.813E+00	7.784E-01	7.785E-01	21.12
	1120.29	84	14.92	2.333E+00	7.857E-01	7.857E-01	83.91
	1764.49	108	15.30	1.695E+00	1.354E+00	1.354E+00	23.58
AC-228	338.32	186	11.27	5.582E+00	9.621E-01	9.621E-01	56.05
	911.20	273	25.80*	2.780E+00	1.233E+00	1.233E+00	23.74
	968.97	175	15.80	2.640E+00	1.361E+00	1.361E+00	35.46
RA-228	338.32	186	11.27	5.582E+00	9.621E-01	9.621E-01	56.05

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	273	25.80*	2.780E+00	1.233E+00	1.233E+00	23.74
	968.97	175	15.80	2.640E+00	1.361E+00	1.361E+00	35.46
TH-228	74.82	219	10.28	4.927E+00	1.403E+00	1.403E+00	49.20
	77.11	415	17.10	5.266E+00	1.496E+00	1.496E+00	30.87
	238.63	1076	43.60*	6.793E+00	1.179E+00	1.179E+00	10.89
	300.09	-----	3.30	5.984E+00	-----	Line Not Found	-----
TH-232	338.32	186	11.27	5.582E+00	9.621E-01	9.621E-01	38.41
	911.20	273	25.80*	2.780E+00	1.233E+00	1.233E+00	23.74
	968.97	175	15.80	2.640E+00	1.361E+00	1.361E+00	35.46
PA-234M	766.42	439	0.32	3.203E+00	1.392E+02	1.392E+02	53.12
	1001.03	940	0.84*	2.568E+00	1.414E+02	1.414E+02	13.86
TH-234	63.29	4345	3.70*	3.101E+00	1.229E+02	1.229E+02	18.63
	92.59	11927	4.23	6.942E+00	1.318E+02	1.318E+02	22.12
U-235	89.96	-----	3.47	6.702E+00	-----	Line Not Found	-----
	93.35	11927	5.60	6.942E+00	9.958E+01	9.958E+01	23.14
	143.76	559	10.96*	8.221E+00	2.013E+00	2.013E+00	24.98
	163.33	307	5.08	8.007E+00	2.450E+00	2.450E+00	39.23
	185.72	2775	57.20	7.650E+00	2.059E+00	2.059E+00	7.41
	205.31	182	5.01	7.321E+00	1.606E+00	1.606E+00	50.89
U-238	63.29	4345	3.70*	3.101E+00	1.229E+02	1.229E+02	18.63
	92.59	11927	4.23	6.942E+00	1.318E+02	1.318E+02	8.73
ANH-511	511.00	117	100.00*	4.311E+00	8.787E-02	8.787E-02	69.77

Flag: "*" = Keyline

Total number of lines in spectrum 36
Number of unidentified lines 4
Number of lines tentatively identified by NID 32 88.89%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.330E+01	2.330E+01	0.226E+01	9.68	
NB-95	64.03D	1.19	4.462E-01	5.315E-01	0.954E-01	17.95	
BA-137M	30.08Y	1.00	5.586E-01	5.592E-01	0.808E-01	14.46	
CS-137	30.08Y	1.00	5.901E-01	5.907E-01	0.855E-01	14.47	
TL-208	1.41E+10Y	1.00	3.869E-01	3.869E-01	0.720E-01	18.60	
BI-211	7.04E+08Y	1.00	2.785E+00	2.785E+00	0.429E+00	15.41	
BI-212	1.41E+10Y	1.00	1.680E+00	1.680E+00	0.739E+00	43.99	
PB-212	1.41E+10Y	1.00	1.179E+00	1.179E+00	0.128E+00	10.89	
BI-214	1600.00Y	1.00	7.784E-01	7.785E-01	1.644E-01	21.12	
PB-214	1600.00Y	1.00	1.011E+00	1.011E+00	0.165E+00	16.36	
RA-224	1.41E+10Y	1.00	3.047E+00	3.047E+00	1.157E+00	37.96	
RA-226	1600.00Y	1.00	7.784E-01	7.785E-01	1.644E-01	21.12	
AC-228	1.41E+10Y	1.00	1.233E+00	1.233E+00	0.293E+00	23.74	
RA-228	1.41E+10Y	1.00	1.233E+00	1.233E+00	0.293E+00	23.74	
TH-228	1.41E+10Y	1.00	1.179E+00	1.179E+00	0.128E+00	10.89	
TH-232	1.41E+10Y	1.00	1.233E+00	1.233E+00	0.293E+00	23.74	
PA-234M	4.47E+09Y	1.00	1.414E+02	1.414E+02	0.196E+02	13.86	
TH-234	4.47E+09Y	1.00	1.229E+02	1.229E+02	0.229E+02	18.63	
U-235	7.04E+08Y	1.00	2.013E+00	2.013E+00	0.503E+00	24.98	
U-238	4.47E+09Y	1.00	1.229E+02	1.229E+02	0.229E+02	18.63	
ANH-511	1.00E+09Y	1.00	8.787E-02	8.787E-02	6.130E-02	69.77	
Total Activity :			4.307E+02	4.308E+02			

Grand Total Activity : 4.307E+02 4.308E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900011

Page : 4
Acquisition date : 6-MAR-2010 15:00:42

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	84.02	353	2028	1.69	167.16	164	8	4.90E-02	45.4	6.10E+00	T
5	94.78	619	1616	1.67	188.66	180	14	8.60E-02	45.0	7.10E+00	T
0	98.59	767	1006	1.05	196.27	193	8	1.07E-01	16.1	7.36E+00	T
0	112.59	864	1466	1.04	224.26	219	11	1.20E-01	18.5	7.99E+00	T
0	209.83	74	352	0.71	418.69	415	7	1.03E-02	87.7	7.25E+00	T
0	258.34	153	346	1.08	515.67	512	10	2.12E-02	48.9	6.51E+00	
0	269.80	59	353	1.03	538.58	535	10	8.25E-03	****	6.36E+00	T
0	409.06	81	149	0.88	817.01	813	9	1.13E-02	58.6	4.97E+00	
0	742.29	139	102	1.36	1483.29	1477	12	1.94E-02	33.6	3.28E+00	
0	1508.99	24	32	4.40	3016.46	3007	16	3.33E-03	****	1.85E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900011.CNF;1
* Acquisition date   : 6-MAR-2010 15:00:42.  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 02:00:02.29             Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G247900011           Analyst initials: MXR1
* Batch Number       : 957711              Sample Quantity : 1.15650E+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	2.330E+01	2.255E+00	4.808E-01	3.649E-02	48.468
NB-95	5.315E-01	9.538E-02	6.690E-02	6.119E-03	7.945
BA-137M	5.592E-01	8.085E-02	5.796E-02	4.418E-03	9.649
CS-137	5.907E-01	8.547E-02	6.122E-02	4.678E-03	9.649
TL-208	3.869E-01	7.195E-02	5.392E-02	4.220E-03	7.176
BI-211	2.785E+00	4.290E-01	3.229E-01	2.073E-02	8.624
BI-212	1.680E+00	7.391E-01	8.080E-01	1.004E-01	2.080
PB-212	1.179E+00	1.284E-01	9.075E-02	6.542E-03	12.996
BI-214	7.785E-01	1.644E-01	1.040E-01	9.345E-03	7.487
PB-214	1.011E+00	1.654E-01	1.174E-01	9.937E-03	8.608
RA-224	3.047E+00	1.157E+00	9.715E-01	5.412E-02	3.136
RA-226	7.785E-01	1.644E-01	1.040E-01	9.345E-03	7.487
AC-228	1.233E+00	2.928E-01	1.937E-01	2.624E-02	6.366
RA-228	1.233E+00	2.928E-01	1.937E-01	2.624E-02	6.366
TH-228	1.179E+00	1.284E-01	9.075E-02	6.542E-03	12.996
TH-232	1.233E+00	2.928E-01	1.937E-01	2.624E-02	6.366
PA-234M	1.414E+02	1.960E+01	6.142E+00	6.626E-01	23.014
TH-234	1.229E+02	2.290E+01	4.192E+00	7.550E-01	29.326

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	2.013E+00	5.029E-01	4.095E-01	6.386E-02	4.917
U-238	1.229E+02	2.290E+01	4.192E+00	7.550E-01	29.326
ANH-511	8.787E-02	6.130E-02	4.576E-02	3.022E-03	1.920

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.091E-02		3.250E-01	5.370E-01	3.890E-02	0.020
NA-22	8.107E-03		3.572E-02	5.981E-02	4.070E-03	0.136
NA-24	1.125E-02		9.060E-01	Half-Life too short		
SC-46	-6.905E-03		3.400E-02	5.466E-02	6.097E-03	-0.126
V-48	-4.960E-02		6.611E-02	9.023E-02	8.924E-03	-0.550
CR-51	-2.007E-02		3.628E-01	5.826E-01	3.745E-02	-0.034
MN-54	-1.647E-02		3.387E-02	5.377E-02	5.508E-03	-0.306
CO-56	2.521E-02		3.653E-02	6.266E-02	6.541E-03	0.402
CO-57	-6.751E-04		3.501E-02	5.614E-02	3.325E-03	-0.012
CO-58	-1.347E-03		3.601E-02	5.919E-02	5.843E-03	-0.023
FE-59	2.644E-02		7.664E-02	1.309E-01	1.077E-02	0.202
CO-60	-7.354E-03		3.237E-02	5.168E-02	3.905E-03	-0.142
ZN-65	5.092E-02		8.573E-02	1.297E-01	9.136E-03	0.393
SE-75	-4.105E-02		5.487E-02	6.909E-02	3.953E-03	-0.594
SR-85	7.449E-02		4.277E-02	6.766E-02	4.483E-03	1.101
Y-88	-1.327E-02		3.527E-02	5.497E-02	3.131E-03	-0.241
Y-91	4.358E+00		1.775E+01	2.985E+01	1.764E+00	0.146
NB-94	7.421E-03		3.365E-02	5.681E-02	4.661E-03	0.131
NB-95M	-4.219E-02		1.389E-01	1.978E-01	1.456E-02	-0.213
ZR-95	3.965E-02		6.955E-02	1.169E-01	1.154E-02	0.339
MO-99	3.405E+01		1.934E+01	3.042E+01	4.815E+00	1.119
TC-99M	7.598E+11		4.580E+11	Half-Life too short		
RU-103	-2.719E-03		3.854E-02	6.310E-02	8.059E-03	-0.043
RH-106	8.980E-02		2.979E-01	4.892E-01	6.101E-02	0.184
RU-106	8.980E-02		2.978E-01	4.892E-01	3.600E-02	0.184
AG-108M	4.005E-04		2.868E-02	4.770E-02	3.075E-03	0.008
CD-109	-3.429E+00		2.425E+00	2.637E+00	2.438E-01	-1.300
AG-110M	5.311E-02		4.204E-02	6.615E-02	5.218E-03	0.803
SN-113	2.266E-03		4.009E-02	6.738E-02	4.133E-03	0.034
CD-115	-4.109E-01		1.546E+01	2.524E+01	1.696E+00	-0.016
SN-117M	2.661E-02		7.472E-02	1.134E-01	6.028E-03	0.235
TE-123M	2.819E-02		3.698E-02	5.696E-02	3.073E-03	0.495
SB-124	-4.493E-03		5.705E-02	9.300E-02	6.441E-03	-0.048
SB-125	-1.428E-02		8.794E-02	1.452E-01	9.060E-03	-0.098
TE-125M	2.612E+01		1.787E+01	2.676E+01	2.401E+00	0.976
I-126	4.144E-02		2.430E-01	3.567E-01	2.742E-02	0.116
SB-126	-1.049E-01		1.600E-01	2.151E-01	1.822E-02	-0.487
SN-126	-2.663E-01		2.022E-01	2.582E-01	2.379E-02	-1.031
SB-127	-1.004E-01		1.457E+00	2.426E+00	2.715E-01	-0.041
I-131	1.917E-03		1.143E-01	1.928E-01	1.246E-02	0.010

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	2.745E-01		9.705E-01	1.591E+00	2.321E-01	0.173
BA-133	2.826E-02		4.453E-02	6.479E-02	7.300E-03	0.436
I-133	-1.542E-04		6.696E-03	Half-Life too short		
CS-134	6.147E-02		4.641E-02	8.174E-02	7.907E-03	0.752
CS-135	1.313E-01		1.749E-01	2.607E-01	1.971E-02	0.504
I-135	-3.379E+10		3.231E+10	Half-Life too short		
CS-136	3.987E-02		9.856E-02	1.695E-01	1.519E-02	0.235
CE-139	2.374E-02		3.654E-02	5.598E-02	2.939E-03	0.424
BA-140	-1.613E-01		2.782E-01	4.300E-01	1.440E-01	-0.375
LA-140	4.446E-02		7.466E-02	1.323E-01	9.080E-03	0.336
CE-141	4.087E-01		1.033E-01	1.630E-01	9.306E-03	2.507
CE-143	1.107E-03		1.756E-04	Half-Life too short		
CE-144	-1.045E-01		2.673E-01	4.205E-01	5.815E-02	-0.249
PM-144	-5.585E-03		3.206E-02	5.302E-02	4.305E-03	-0.105
PR-144	-3.861E-01		2.403E+00	3.977E+00	3.227E-01	-0.097
PM-146	1.895E-02		4.137E-02	7.004E-02	6.118E-03	0.271
ND-147	3.736E-01		5.909E-01	9.963E-01	1.390E-01	0.375
PM-149	4.911E+01		1.280E+02	2.112E+02	2.988E+01	0.232
EU-152	2.055E-02		1.111E-01	1.571E-01	1.025E-02	0.131
GD-153	1.222E+00	+	2.184E-01	2.881E-01	2.253E-02	4.241
EU-154	1.202E-02		1.018E-01	1.688E-01	1.699E-02	0.071
EU-155	2.711E-02		1.577E-01	2.566E-01	1.833E-02	0.106
TB-160	7.444E-02		1.273E-01	2.167E-01	2.381E-02	0.343
HO-166M	-5.613E-02		5.868E-02	9.051E-02	7.544E-03	-0.620
TA-182	1.259E-01		1.734E-01	2.998E-01	1.834E-02	0.420
IR-192	2.483E-02		3.414E-02	5.696E-02	3.303E-03	0.436
HG-203	2.336E-02		3.803E-02	6.354E-02	3.831E-03	0.368
BI-207	1.595E-02		4.413E-02	7.567E-02	6.246E-03	0.211
PB-210	1.616E+00		8.095E+00	1.377E+01	1.056E+00	0.117
PB-211	1.748E-02		7.479E-01	1.089E+00	5.224E-01	0.016
RN-219	3.465E-02		3.647E-01	6.128E-01	8.239E-02	0.057
RA-223	-5.283E-01		6.331E-01	9.667E-01	1.557E-01	-0.547
AC-227	1.535E-01		3.189E-01	4.691E-01	4.752E-02	0.327
TH-227	1.535E-01		3.191E-01	4.691E-01	5.600E-02	0.327
TH-229	3.385E-01		5.623E-01	9.580E-01	5.129E-02	0.353
PA-231	-1.663E-01		1.460E+00	2.362E+00	3.089E-01	-0.070
TH-231	-5.283E-01		6.331E-01	9.667E-01	1.557E-01	-0.547
PA-233	-4.970E-02		6.325E-02	9.795E-02	6.002E-03	-0.507
PA-234	2.046E-01		2.945E-01	4.859E-01	9.586E-02	0.421
NP-237	3.904E-01		5.336E-01	7.844E-01	1.794E-01	0.498
NP-239	-2.532E-01		6.389E-01	9.011E-01	5.565E-02	-0.281
AM-241	8.860E-02		3.723E-01	5.619E-01	4.660E-02	0.158
CM-247	2.049E-03		3.469E-02	5.670E-02	3.301E-03	0.036
CF-249	-5.585E-03		3.700E-02	6.160E-02	3.541E-03	-0.091
CF-251	-3.855E-02		1.461E-01	2.437E-01	1.288E-02	-0.158

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G247900011          *
* Acquisition date   : 6-MAR-2010 15:00:42 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 02:00:02.29              Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247900011              Analyst initials: MXR1         *
* Batch Number       : 957711                  Sample Quantity : 1.1565E+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	2.330E+01	2.210E+00	2.396E-01	1.128E+00
NB-95	5.315E-01	9.347E-02	3.356E-02	4.769E-02
BA-137M	5.592E-01	7.923E-02	2.911E-02	4.042E-02
CS-137	5.907E-01	8.376E-02	3.076E-02	4.273E-02
TL-208	3.869E-01	7.051E-02	2.712E-02	3.598E-02
BI-211	2.785E+00	4.204E-01	1.632E-01	2.145E-01
BI-212	1.680E+00	7.243E-01	4.055E-01	3.696E-01
PB-212	1.179E+00	1.258E-01	4.605E-02	6.420E-02
BI-214	7.785E-01	1.611E-01	5.228E-02	8.221E-02
PB-214	1.011E+00	1.621E-01	5.934E-02	8.268E-02
RA-224	3.047E+00	1.134E+00	4.929E-01	5.783E-01
RA-226	7.785E-01	1.611E-01	5.228E-02	8.221E-02
AC-228	1.233E+00	2.870E-01	9.702E-02	1.464E-01
RA-228	1.233E+00	2.870E-01	9.702E-02	1.464E-01
TH-228	1.179E+00	1.258E-01	4.605E-02	6.420E-02
TH-232	1.233E+00	2.870E-01	9.702E-02	1.464E-01
PA-234M	1.414E+02	1.921E+01	3.073E+00	9.800E+00
TH-234	1.229E+02	2.244E+01	2.154E+00	1.145E+01
U-235	2.013E+00	4.929E-01	2.088E-01	2.515E-01
U-238	1.229E+02	2.244E+01	2.154E+00	1.145E+01
ANH-511	8.787E-02	6.008E-02	2.305E-02	3.065E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.091E-02	3.185E-01	2.706E-01	1.625E-01 NOT IDENT.
NA-22	8.107E-03	3.501E-02	2.985E-02	1.786E-02 NOT IDENT.
NA-24	1.125E+04	1.776E+06	0.000E+00	9.060E+05 SHORT HLIF
SC-46	-6.905E-03	3.332E-02	2.738E-02	1.700E-02 FAIL ABUN
V-48	-4.960E-02	6.478E-02	4.515E-02	3.305E-02 NOT IDENT.
CR-51	-2.007E-02	3.555E-01	2.948E-01	1.814E-01 NOT IDENT.

MN-54	-1.647E-02	3.319E-02	2.695E-02	1.693E-02	NOT IDENT.
CO-56	2.521E-02	3.580E-02	3.140E-02	1.827E-02	NOT IDENT.
CO-57	-6.751E-04	3.431E-02	2.867E-02	1.750E-02	NOT IDENT.
CO-58	-1.347E-03	3.529E-02	2.968E-02	1.800E-02	NOT IDENT.
FE-59	2.644E-02	7.511E-02	6.544E-02	3.832E-02	NOT IDENT.
CO-60	-7.354E-03	3.172E-02	2.578E-02	1.619E-02	NOT IDENT.
ZN-65	5.092E-02	8.402E-02	6.482E-02	4.287E-02	NOT IDENT.
SE-75	-4.105E-02	5.377E-02	3.502E-02	2.743E-02	NOT IDENT.
SR-85	7.449E-02	4.191E-02	3.407E-02	2.138E-02	NOT IDENT.
Y-88	-1.327E-02	3.457E-02	2.734E-02	1.764E-02	NOT IDENT.
Y-91	4.358E+00	1.740E+01	1.490E+01	8.875E+00	NOT IDENT.
NB-94	7.421E-03	3.297E-02	2.852E-02	1.682E-02	NOT IDENT.
NB-95M	-4.219E-02	1.361E-01	1.004E-01	6.946E-02	NOT IDENT.
ZR-95	3.965E-02	6.816E-02	5.864E-02	3.477E-02	NOT IDENT.
MO-99	3.405E+01	1.895E+01	1.527E+01	9.669E+00	NOT IDENT.
TC-99M	7.598E+17	8.976E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.719E-03	3.777E-02	3.179E-02	1.927E-02	FAIL ABUN
RH-106	8.980E-02	2.919E-01	2.459E-01	1.489E-01	NOT IDENT.
RU-106	8.980E-02	2.918E-01	2.459E-01	1.489E-01	NOT IDENT.
AG-108M	4.005E-04	2.810E-02	2.406E-02	1.434E-02	NOT IDENT.
CD-109	-3.429E+00	2.377E+00	1.351E+00	1.213E+00	NOT IDENT.
AG-110M	5.311E-02	4.120E-02	3.323E-02	2.102E-02	NOT IDENT.
SN-113	2.266E-03	3.929E-02	3.402E-02	2.005E-02	NOT IDENT.
CD-115	-4.109E-01	1.515E+01	1.271E+01	7.728E+00	NOT IDENT.
SN-117M	2.661E-02	7.323E-02	5.777E-02	3.736E-02	NOT IDENT.
TE-123M	2.819E-02	3.624E-02	2.901E-02	1.849E-02	NOT IDENT.
SB-124	-4.493E-03	5.591E-02	4.628E-02	2.853E-02	NOT IDENT.
SB-125	-1.428E-02	8.618E-02	7.324E-02	4.397E-02	NOT IDENT.
TE-125M	2.612E+01	1.752E+01	1.368E+01	8.937E+00	NOT IDENT.
I-126	4.144E-02	2.381E-01	1.792E-01	1.215E-01	NOT IDENT.
SB-126	-1.049E-01	1.568E-01	1.080E-01	7.999E-02	NOT IDENT.
SN-126	-2.663E-01	1.982E-01	1.323E-01	1.011E-01	FAIL ABUN
SB-127	-1.004E-01	1.427E+00	1.218E+00	7.283E-01	NOT IDENT.
I-131	1.917E-03	1.120E-01	9.742E-02	5.716E-02	NOT IDENT.
TE-132	2.745E-01	9.511E-01	8.078E-01	4.852E-01	FAIL ABUN
BA-133	2.826E-02	4.364E-02	3.274E-02	2.226E-02	NOT IDENT.
I-133	-1.542E+02	1.312E+04	0.000E+00	6.696E+03	SHORT HLIF
CS-134	6.147E-02	4.548E-02	4.099E-02	2.320E-02	NOT IDENT.
CS-135	1.313E-01	1.714E-01	1.321E-01	8.744E-02	NOT IDENT.
I-135	-3.379E+16	6.333E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.987E-02	9.659E-02	8.477E-02	4.928E-02	NOT IDENT.
CE-139	2.374E-02	3.581E-02	2.850E-02	1.827E-02	NOT IDENT.
BA-140	-1.613E-01	2.726E-01	2.165E-01	1.391E-01	FAIL ABUN
LA-140	4.446E-02	7.317E-02	6.589E-02	3.733E-02	NOT IDENT.
CE-141	4.087E-01	1.013E-01	8.309E-02	5.167E-02	NOT IDENT.
CE-143	1.107E+03	3.443E+02	0.000E+00	1.756E+02	SHORT HLIF
CE-144	-1.045E-01	2.620E-01	2.146E-01	1.337E-01	NOT IDENT.
PM-144	-5.585E-03	3.142E-02	2.662E-02	1.603E-02	NOT IDENT.
PR-144	-3.861E-01	2.355E+00	1.997E+00	1.201E+00	NOT IDENT.
PM-146	1.895E-02	4.054E-02	3.531E-02	2.068E-02	NOT IDENT.
ND-147	3.736E-01	5.791E-01	5.016E-01	2.955E-01	NOT IDENT.
PM-149	4.911E+01	1.255E+02	1.070E+02	6.401E+01	NOT IDENT.
EU-152	2.055E-02	1.089E-01	7.944E-02	5.557E-02	NOT IDENT.
GD-153	1.222E+00	2.141E-01	1.474E-01	1.092E-01	FAIL ABUN
EU-154	1.202E-02	9.973E-02	8.425E-02	5.088E-02	NOT IDENT.
EU-155	2.711E-02	1.545E-01	1.312E-01	7.883E-02	NOT IDENT.
TB-160	7.444E-02	1.247E-01	1.086E-01	6.364E-02	NOT IDENT.
HO-166M	-5.613E-02	5.751E-02	4.543E-02	2.934E-02	FAIL ABUN
TA-182	1.259E-01	1.700E-01	1.497E-01	8.672E-02	FAIL ABUN
IR-192	2.483E-02	3.346E-02	2.882E-02	1.707E-02	FAIL ABUN
HG-203	2.336E-02	3.727E-02	3.219E-02	1.901E-02	NOT IDENT.
BI-207	1.595E-02	4.325E-02	3.784E-02	2.207E-02	FAIL ABUN
PB-210	1.616E+00	7.933E+00	7.096E+00	4.047E+00	NOT IDENT.
PB-211	1.748E-02	7.329E-01	5.497E-01	3.739E-01	NOT IDENT.
RN-219	3.465E-02	3.574E-01	3.093E-01	1.823E-01	FAIL ABUN
RA-223	-5.283E-01	6.205E-01	4.890E-01	3.166E-01	FAIL ABUN
AC-227	1.535E-01	3.125E-01	2.379E-01	1.595E-01	NOT IDENT.
TH-227	1.535E-01	3.127E-01	2.379E-01	1.595E-01	NOT IDENT.
TH-229	3.385E-01	5.511E-01	4.871E-01	2.812E-01	FAIL ABUN
PA-231	-1.663E-01	1.431E+00	1.196E+00	7.300E-01	NOT IDENT.
TH-231	-5.283E-01	6.205E-01	4.890E-01	3.166E-01	FAIL ABUN
PA-233	-4.970E-02	6.198E-02	4.957E-02	3.162E-02	NOT IDENT.
PA-234	2.046E-01	2.886E-01	2.432E-01	1.472E-01	FAIL ABUN
NP-237	3.904E-01	5.229E-01	4.019E-01	2.668E-01	FAIL ABUN
NP-239	-2.532E-01	6.262E-01	4.603E-01	3.195E-01	FAIL ABUN
AM-241	8.860E-02	3.649E-01	2.889E-01	1.862E-01	NOT IDENT.
CM-247	2.049E-03	3.400E-02	2.862E-02	1.735E-02	NOT IDENT.
CF-249	-5.585E-03	3.626E-02	3.111E-02	1.850E-02	NOT IDENT.

CF-251	-3.855E-02	1.432E-01	1.240E-01	7.304E-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	683.2543
49.72	761.3057
57.36	0.0000
59.54	1047.7610
63.29	1001.9179
63.29	1001.9179
64.28	914.3732
67.75	1051.1554
69.67	1104.7856
70.83	1189.0162
72.81	1237.1217
72.87	1237.3481
72.87	1237.3481
74.82	1283.7725
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74.97	1284.3464
77.11	1292.4744
77.11	1292.4744
77.11	1292.4744
79.69	1462.9117
79.80	1435.5710
80.12	1436.8801
80.19	1437.1597
80.57	1325.2861
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81.07	1440.7413
81.07	1440.7413
83.79	1632.3846
83.79	1632.3846
85.43	1679.0325
86.48	1586.7084
86.55	1587.0116
86.79	1774.7534
86.94	1775.4758
87.57	1876.3375
88.03	1940.5775
88.47	2022.1318
89.96	1947.3812
91.11	1772.0105
92.59	1599.9623
92.59	1599.9623
93.35	1603.0587
94.67	1608.4122
94.87	1609.2200
94.87	1609.2200
95.86	820.5890
97.43	823.7834
98.44	757.0033
99.53	740.1936
100.11	716.1042
103.18	798.8796
103.37	793.8569
105.31	744.0469
106.12	810.2179
109.28	823.0341
111.00	921.2433
111.76	822.7773
116.30	645.2387
117.23	680.8160
121.12	624.4391
121.78	607.7155
122.06	626.7629
123.07	629.1780
131.20	636.2150
133.52	630.1025
136.00	556.2427

136.47	587.2961
140.51	542.1931
140.51	0.0000
143.76	597.6628
144.24	598.1876
144.24	598.1876
145.44	566.1323
152.43	521.9785
153.25	525.0641
154.21	514.5475
154.21	514.5475
156.02	567.1652
158.56	503.0499
159.00	487.8684
162.66	506.0016
163.33	506.5703
165.86	431.9868
176.60	503.8927
177.52	489.1349
181.07	461.6065
184.41	474.2739
185.72	467.6498
193.51	408.6969
197.04	447.3695
205.31	464.5918
210.85	338.1122
215.65	365.7187
222.11	373.7148
227.38	358.6868
228.16	352.1970
228.18	352.2052
235.69	366.6291
235.96	380.9812
235.96	380.9812
238.63	317.2168
238.63	317.2168
240.99	318.1396
242.00	318.5327
244.70	372.3136
252.40	319.0857
252.80	329.4181
256.23	343.4364
256.23	343.4364
260.90	270.3782
264.66	292.4020
268.22	269.3588
269.46	251.6394
269.46	251.6394
271.23	290.0434
273.65	335.4406
276.40	285.3175
277.37	258.2137
277.60	258.2782
278.00	265.6563
279.20	254.5741
279.54	279.6145
280.46	305.9106
283.69	275.6539
284.31	264.3459
285.41	261.5204
285.90	264.7976
287.50	264.8000
293.27	0.0000
295.22	251.5604
295.96	309.7239
298.57	247.7723
299.98	236.2355
299.98	236.2355
300.09	236.2627
300.09	236.2627
300.13	236.2695
301.36	228.3421
302.85	295.0987
304.50	267.8480
304.50	267.8480
304.85	270.0787
308.46	232.4962
311.90	248.3490

316.51	210.6063
319.41	218.7892
320.08	218.9309
323.87	251.2886
323.87	251.2886
328.76	232.7997
333.37	247.6519
334.37	260.1924
334.37	260.1924
338.28	232.6937
338.28	232.6937
338.32	232.7034
338.32	232.7034
338.32	232.7034
340.48	240.4670
340.55	240.4803
344.28	223.5670
351.06	227.6354
351.93	227.8129
356.01	177.5402
364.49	188.8195
366.42	195.4731
383.85	202.0928
388.16	197.2917
388.63	192.7586
391.69	178.4543
400.66	185.3600
401.81	178.0751
402.40	182.4095
404.85	185.3661
410.95	189.4047
414.70	170.9043
423.72	187.8365
427.09	200.6921
427.87	194.1486
433.94	187.4035
453.88	177.5984
463.37	183.7131
468.07	226.4939
473.00	188.9156
476.78	176.5943
477.60	182.6198
487.02	152.0251
492.35	162.5563
497.08	160.0801
511.00	170.6720
514.00	161.9033
527.90	161.3367
529.87	0.0000
531.02	148.3595
537.26	165.3905
546.56	0.0000
563.25	160.7826
569.33	129.9427
569.50	133.0988
569.70	133.1174
583.19	142.6498
600.60	145.4475
602.73	144.2911
604.72	169.4236
609.32	142.6925
609.32	142.6925
610.33	134.1888
614.28	123.7317
618.01	147.3538
621.93	127.5097
621.93	127.5097
633.25	116.3547
635.95	127.4175
636.99	129.6711
645.85	110.5920
657.76	149.5640
661.66	153.0308
661.66	153.0308
664.57	0.0000
666.33	129.6865
666.50	129.6980
677.62	122.5039

685.70	128.6113
695.00	145.1485
696.49	142.4474
696.51	142.4505
697.00	142.4845
702.65	157.9375
706.68	135.6504
711.68	150.1559
720.70	131.7239
721.93	0.0000
722.78	107.4434
722.91	107.4503
723.31	113.9844
724.19	109.1461
727.33	141.9454
733.00	103.0759
735.93	134.3539
739.50	114.8901
747.24	98.8456
752.31	118.4906
753.82	109.8994
756.73	112.6853
763.94	112.9191
765.81	141.5504
766.42	141.5920
777.92	132.2150
778.90	128.7639
783.70	135.7524
785.37	131.1047
795.86	117.9736
801.95	118.2983
810.29	113.7951
810.76	104.9131
815.77	120.0276
818.51	104.2822
832.01	106.9042
834.85	120.0415
836.80	0.0000
846.77	92.5091
856.80	107.0459
860.56	100.1380
871.09	85.3450
873.19	86.4371
875.33	0.0000
879.36	84.6211
880.51	82.6216
883.24	91.9061
884.68	99.1136
889.28	85.9944
898.04	85.2780
911.20	84.7043
911.20	84.7043
911.20	84.7043
926.50	81.0691
937.49	78.2913
944.13	81.6356
946.00	85.8855
949.00	100.6680
962.29	65.3503
964.08	65.3957
966.15	65.4486
968.97	65.5193
968.97	65.5193
968.97	65.5193
983.53	79.3440
996.26	89.6909
1001.03	77.0156
1004.73	62.4314
1037.84	65.0513
1038.76	0.0000
1048.07	79.2843
1050.41	70.9478
1050.41	70.9478
1063.66	74.0983
1085.87	73.7317
1099.45	73.1274
1112.07	71.7751
1115.54	76.8726

1120.29	76.5179
1120.29	76.5179
1120.55	76.5262
1121.30	76.5458
1131.51	0.0000
1173.23	80.7913
1177.93	92.6144
1189.05	112.5133
1204.77	80.6301
1221.41	90.9379
1231.02	131.8589
1235.36	81.4080
1238.28	76.5139
1260.41	0.0000
1271.85	60.2365
1274.44	64.3013
1274.54	62.2941
1291.59	65.6438
1298.22	0.0000
1312.11	55.8824
1332.49	52.1277
1365.19	36.1108
1368.63	0.0000
1384.29	53.9406
1408.01	35.5024
1457.56	0.0000
1460.82	41.3110
1489.16	46.9587
1505.03	40.0104
1596.21	28.7897
1620.50	15.4463
1678.03	0.0000
1690.97	18.6538
1764.49	10.6510
1764.49	10.6510
1770.23	21.3294
1771.35	19.5573
1791.20	0.0000
1836.06	35.5074

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900011

Total Uranium Activity	3.6662E+02	ug/g
Total Uranium Counting Unc.	6.6753E+01	ug/g
Total Uranium Tpu	3.4058E-05	ug/g
Total Uranium Mda	6.4086E+00	ug/g

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*****
*
*               GEL Laboratories LLC                      *
*               2040 SAVAGE ROAD                          *
*               CHARLESTON ,SC 29417                      *
*               GROSS GAMMA REPORT                        *
*
*****
*
*  BATCH ID      : 957711                                SAMPLE ID   : G247900011
*  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 15:00:42.18              SAMPLE ALQT  : 115.650 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.141E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.969E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 5.012E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 2.468E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 17:04:22.19

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900012.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:01:10.
Sample ID        : G247900012 Sample quantity : 1.45230E+02 GRAM
Detector name    : GAM19 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.94 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957711 Detector SN# :
Matrix Spike ID  : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.30*	1329	1378	1.22	126.46	120	13	1.85E-01	6.4	
2	3	74.85*	558	1019	1.28	149.55	142	18	7.75E-02	11.1	3.49E+00
3	3	77.25*	855	974	1.30	154.33	142	18	1.19E-01	7.5	
4	2	84.37	307	1025	1.60	168.57	163	31	4.27E-02	19.7	9.98E+00
5	2	87.36	377	975	1.64	174.55	163	31	5.24E-02	16.4	
6	2	92.63*	3099	659	1.41	185.07	163	31	4.30E-01	2.4	
7	0	98.56*	217	764	1.40	196.92	194	11	3.01E-02	25.7	
8	0	143.81*	133	591	1.31	287.35	282	11	1.85E-02	36.6	
9	0	185.83*	796	571	1.41	371.34	365	14	1.11E-01	7.5	
10	0	209.16	163	438	1.44	417.95	414	12	2.27E-02	26.8	
11	2	238.48*	1665	232	1.33	476.56	471	17	2.31E-01	3.0	2.28E+00
12	2	241.41	331	298	1.80	482.42	471	17	4.60E-02	14.9	
13	0	270.34	171	251	1.84	540.24	536	10	2.38E-02	19.0	
14	0	277.39	100	244	1.41	554.33	550	10	1.38E-02	31.2	
15	2	295.00	489	186	1.55	589.52	585	22	6.79E-02	6.7	1.26E+00
16	2	299.96	151	207	1.81	599.45	585	22	2.10E-02	20.6	
17	0	327.95	91	188	1.74	655.40	651	10	1.26E-02	30.2	
18	0	338.04	272	254	1.86	675.56	671	10	3.78E-02	12.5	
19	0	351.68*	710	211	1.34	702.83	698	10	9.86E-02	5.4	
20	0	462.52	90	174	1.27	924.39	918	12	1.25E-02	31.1	
21	0	510.56*	241	162	2.14	1020.43	1012	19	3.35E-02	15.6	
22	0	568.02*	201	253	2.55	1135.31	1125	20	2.80E-02	21.2	
23	0	582.99*	434	103	1.52	1165.24	1160	11	6.03E-02	6.8	
24	0	609.18*	534	145	1.72	1217.60	1211	12	7.42E-02	6.3	
25	0	661.97	142	125	1.46	1323.15	1316	15	1.97E-02	19.1	
26	0	727.20	161	106	1.51	1453.56	1445	17	2.23E-02	16.7	
27	0	766.90	141	86	2.74	1532.96	1527	14	1.96E-02	16.2	
28	0	795.02	97	54	1.52	1589.19	1583	13	1.34E-02	18.8	
29	0	860.97	52	55	1.15	1721.08	1718	9	7.19E-03	30.1	
30	0	911.25	360	72	1.44	1821.63	1814	16	5.00E-02	7.5	
31	2	964.63	85	42	2.10	1928.38	1918	25	1.18E-02	20.9	1.20E+00
32	2	968.91	201	46	1.65	1936.93	1918	25	2.79E-02	9.2	
33	0	1001.17*	179	41	1.66	2001.45	1995	13	2.49E-02	10.7	
34	0	1120.37	157	132	2.02	2239.88	2229	22	2.18E-02	20.3	
35	0	1378.21	50	48	1.13	2755.70	2746	21	6.94E-03	37.2	
36	0	1436.61	16	13	1.32	2872.55	2865	10	2.24E-03	48.1	
37	0	1460.86*	1397	39	2.30	2921.08	2913	18	1.94E-01	2.9	
38	0	1729.93	17	8	1.85	3459.53	3453	10	2.39E-03	38.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1765.06*	89	42	2.25	3529.84	3518	24	1.24E-02	22.2	
40	0	1838.46	17	0	0.64	3676.76	3672	9	2.36E-03	24.3	

Flag: "*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900012.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 15:01:10
Sample ID        : G247900012 Sample quantity : 145.23 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA19 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.94 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.898E+01	2.733E+00	5.834E-01	4.345E-02	49.679
NB-95	+	765.81	*	2.145E-01	7.102E-02	6.465E-02	4.568E-03	3.319
CD-109	+	88.03	*	4.427E+00	1.507E+00	1.551E+00	1.389E-01	2.855
SN-126	+	64.28		9.872E+00	1.919E+00	9.510E-01	1.389E-01	10.380
	+	86.94		1.796E+00	9.497E-01	6.358E-01	2.633E-01	2.825
	+	87.57	*	4.321E-01	1.471E-01	1.520E-01	1.356E-02	2.843
BA-137M	+	661.66	*	1.770E-01	6.839E-02	5.999E-02	3.493E-03	2.951
CS-137	+	661.66	*	1.870E-01	7.225E-02	6.337E-02	3.706E-03	2.951
TL-208	+	277.37		8.639E-01	5.467E-01	6.363E-01	6.857E-02	1.358
	+	583.19	*	5.168E-01	7.823E-02	5.634E-02	3.823E-03	9.172
	+	860.56		5.834E-01	3.556E-01	4.754E-01	4.256E-02	1.227
BI-211		72.87		1.569E+01	4.482E+00	7.348E+00	5.758E-01	2.136
	+	351.06	*	3.749E+00	4.710E-01	3.458E-01	2.209E-02	10.839
PB-212	+	74.82		2.764E+00	7.048E-01	7.182E-01	9.018E-02	3.849
	+	77.11		2.431E+00	4.146E-01	4.134E-01	3.340E-02	5.881
	+	238.63	*	1.967E+00	1.848E-01	9.146E-02	6.660E-03	21.506
	+	300.09		2.781E+00	1.172E+00	1.263E+00	1.061E-01	2.201
BI-214	+	609.32	*	1.232E+00	1.842E-01	1.095E-01	8.677E-03	11.250
	+	1120.29		1.865E+00	7.776E-01	4.079E-01	3.755E-02	4.572
	+	1764.49		1.468E+00	6.566E-01	3.712E-01	2.249E-02	3.956
PB-214	+	74.82		4.900E+00	1.218E+00	1.273E+00	1.429E-01	3.849
	+	77.11		4.286E+00	8.118E-01	7.288E-01	8.414E-02	5.881
	+	242.00		2.372E+00	7.321E-01	5.234E-01	4.243E-02	4.533
	+	295.22		1.591E+00	2.543E-01	2.234E-01	1.951E-02	7.119
	+	351.93	*	1.361E+00	1.867E-01	1.171E-01	9.882E-03	11.616
RA-224	+	240.99	*	4.195E+00	1.271E+00	9.797E-01	5.551E-02	4.282
RA-226	+	609.32	*	1.232E+00	1.842E-01	1.095E-01	8.677E-03	11.250
	+	1120.29		1.865E+00	7.776E-01	4.079E-01	3.755E-02	4.572
	+	1764.49		1.468E+00	6.566E-01	3.712E-01	2.249E-02	3.956
AC-228	+	338.32		1.599E+00	7.710E-01	4.012E-01	1.654E-01	3.986
	+	911.20	*	2.066E+00	3.909E-01	2.039E-01	2.377E-02	10.132
	+	968.97		1.990E+00	6.062E-01	3.976E-01	9.626E-02	5.004
RA-228	+	338.32		1.599E+00	7.710E-01	4.012E-01	1.654E-01	3.986
	+	911.20	*	2.066E+00	3.909E-01	2.039E-01	2.377E-02	10.132

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		1.990E+00	6.062E-01	3.976E-01	9.626E-02	5.004
	+	74.82		2.764E+00	6.523E-01	7.182E-01	5.763E-02	3.849
	+	77.11		2.431E+00	4.146E-01	4.134E-01	3.340E-02	5.881
	+	238.63	*	1.967E+00	1.848E-01	9.146E-02	6.660E-03	21.506
	+	300.09		2.781E+00	2.046E+00	1.263E+00	7.692E-01	2.201
TH-229	+	85.43		9.146E-01	3.692E-01	3.910E-01	3.410E-02	2.339
	+	88.47		6.662E-01	2.268E-01	2.324E-01	2.066E-02	2.866
		193.51	*	4.610E-02	5.785E-01	9.013E-01	4.862E-02	0.051
		210.85		1.868E+00	1.095E+00	1.663E+00	9.157E-02	1.123
TH-232	+	338.32		1.599E+00	4.104E-01	4.012E-01	2.320E-02	3.986
	+	911.20	*	2.066E+00	3.909E-01	2.039E-01	2.377E-02	10.132
	+	968.97		1.990E+00	6.062E-01	3.976E-01	9.626E-02	5.004
PA-234M	+	766.42		5.617E+01	3.368E+01	1.787E+01	9.022E+00	3.144
	+	1001.03	*	3.436E+01	8.036E+00	7.432E+00	6.919E-01	4.623
TH-234	+	63.29	*	2.561E+01	5.639E+00	2.562E+00	4.581E-01	9.998
	+	92.59		2.968E+01	6.669E+00	1.277E+00	2.806E-01	23.237
U-235		89.96		9.499E+00	2.709E+00	2.229E+00	5.490E-01	4.262
	+	93.35		2.242E+01	5.261E+00	9.598E-01	2.203E-01	23.354
	+	143.76	*	4.743E-01	3.549E-01	3.566E-01	5.568E-02	1.330
		163.33		3.152E-01	5.172E-01	8.442E-01	1.402E-01	0.373
	+	185.72		6.115E-01	9.682E-02	7.026E-02	3.755E-03	8.703
		205.31		-8.010E-02	6.106E-01	8.498E-01	1.434E-01	-0.094
NP-237	+	86.48	*	1.289E+00	5.155E-01	4.584E-01	1.043E-01	2.813
		95.86		3.972E+00	1.916E+00	1.995E+00	4.739E-01	1.991
U-238	+	63.29	*	2.561E+01	5.639E+00	2.562E+00	4.581E-01	9.998
	+	92.59		2.968E+01	2.841E+00	1.277E+00	1.063E-01	23.237
ANH-511	+	511.00	*	2.191E-01	6.948E-02	4.574E-02	2.699E-03	4.789

---- 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	*	-1.005E-01	3.413E-01	5.551E-01	3.766E-02	-0.181
NA-22		1274.54	*	-1.147E-02	4.012E-02	6.475E-02	4.319E-03	-0.177
NA-24		1368.63	*	-1.333E+00	4.012E-02	Half-Life too short		
SC-46		889.28	*	2.125E-02	4.020E-02	6.778E-02	5.890E-03	0.314
	+	1120.55		3.181E-01	1.309E-01	1.407E-01	8.877E-03	2.260
V-48		944.13		-8.385E-02	9.299E-01	1.484E+00	1.250E-01	-0.057
		983.53	*	2.124E-02	6.914E-02	1.144E-01	9.196E-03	0.186
		1312.11		-3.227E-02	7.274E-02	1.145E-01	8.146E-03	-0.282
CR-51		320.08	*	-1.439E-01	3.854E-01	6.350E-01	4.103E-02	-0.227
MN-54		834.85	*	-7.849E-03	3.919E-02	6.242E-02	4.965E-03	-0.126
CO-56		846.77	*	-3.816E-02	4.009E-02	5.910E-02	4.795E-03	-0.646
		1037.84		-9.347E-03	3.098E-01	5.181E-01	4.116E-02	-0.018
		1238.28		1.004E-01	9.170E-02	1.633E-01	1.073E-02	0.615
		1771.35		2.168E-01	2.258E-01	3.945E-01	2.378E-02	0.550
CO-57		122.06	*	3.929E-03	2.912E-02	4.760E-02	2.841E-03	0.083
		136.47		-5.641E-03	2.327E-01	3.774E-01	2.487E-02	-0.015
CO-58		810.76	*	-4.547E-02	4.139E-02	6.058E-02	4.643E-03	-0.751

---- 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	*	-1.517E-02	9.123E-02	1.505E-01	1.129E-02	-0.101
		1291.59		-1.153E-01	1.234E-01	1.847E-01	1.529E-02	-0.624
CO-60		1173.23		-3.300E-02	4.524E-02	7.040E-02	3.858E-03	-0.469
		1332.49	*	-2.385E-02	3.482E-02	5.286E-02	3.895E-03	-0.451
ZN-65		1115.54	*	-5.400E-02	9.986E-02	1.343E-01	8.587E-03	-0.402
SE-75		121.12		1.700E-02	1.539E-01	2.514E-01	2.315E-02	0.068
		136.00		8.017E-03	4.531E-02	7.399E-02	4.263E-03	0.108
		264.66	*	-4.928E-03	5.174E-02	7.918E-02	4.606E-03	-0.062
		279.54		1.802E-01	1.247E-01	1.979E-01	1.241E-02	0.910
		400.66		-9.906E-02	2.547E-01	4.150E-01	3.712E-02	-0.239
SR-85		514.00	*	7.891E-02	4.134E-02	6.822E-02	4.028E-03	1.157
Y-88		898.04		-1.927E-02	4.264E-02	6.455E-02	5.714E-03	-0.298
		1836.06	*	2.566E-02	3.082E-02	5.350E-02	3.054E-03	0.480
Y-91		1204.77	*	3.581E+00	2.009E+01	3.394E+01	1.981E+00	0.106
NB-94		702.65	*	2.691E-02	3.346E-02	5.761E-02	3.628E-03	0.467
		871.09		-7.407E-03	3.695E-02	5.867E-02	4.952E-03	-0.126
NB-95M		235.69	*	6.442E-01	1.715E-01	2.733E-01	2.031E-02	2.357
ZR-95		724.19		1.243E-01	1.085E-01	1.694E-01	1.268E-02	0.734
		756.73	*	1.614E-02	7.640E-02	1.246E-01	1.003E-02	0.130
MO-99		140.51		1.553E+01	3.538E+01	5.099E+01	1.164E+01	0.305
		181.07		1.351E+00	2.851E+01	4.023E+01	7.048E+00	0.034
		366.42		6.834E+01	1.287E+02	2.207E+02	1.256E+01	0.310
		739.50	*	-1.191E+01	1.716E+01	2.630E+01	3.897E+00	-0.453
		777.92		-5.542E+00	4.534E+01	7.285E+01	5.260E+00	-0.076
TC-99M		140.51	*	3.367E+11	4.534E+01	Half-Life too short		
RU-103		497.08	*	9.122E-03	3.776E-02	6.339E-02	7.900E-03	0.144
	+	610.33		1.294E+01	2.552E+00	2.846E+00	4.296E-01	4.548
RH-106		621.93	*	-2.947E-01	3.084E-01	4.655E-01	5.432E-02	-0.633
		1050.41		1.155E+00	2.403E+00	4.186E+00	3.043E-01	0.276
RU-106		621.93	*	-2.947E-01	3.069E-01	4.655E-01	2.745E-02	-0.633
		1050.41		1.155E+00	2.403E+00	4.186E+00	3.043E-01	0.276
AG-108M		433.94	*	1.794E-03	2.851E-02	4.752E-02	2.916E-03	0.038
		614.28		2.712E-02	3.816E-02	5.796E-02	3.659E-03	0.468
		722.91		-1.573E-02	4.241E-02	5.719E-02	3.947E-03	-0.275
AG-110M		657.76	*	-1.046E-02	3.952E-02	5.427E-02	3.368E-03	-0.193
		677.62		-1.391E-01	3.375E-01	5.350E-01	3.401E-02	-0.260
		706.68		-1.373E-01	2.157E-01	3.345E-01	2.234E-02	-0.411
		763.94		2.911E-01	1.854E-01	3.004E-01	2.202E-02	0.969
		884.68		-9.968E-03	4.994E-02	7.913E-02	7.044E-03	-0.126
		937.49		-1.531E-01	1.131E-01	1.570E-01	1.381E-02	-0.976
		1384.29		3.391E-02	1.638E-01	2.414E-01	1.829E-02	0.140
		1505.03		-1.383E-01	2.451E-01	3.696E-01	2.604E-02	-0.374
SN-113		391.69	*	-9.236E-03	4.637E-02	7.648E-02	4.563E-03	-0.121
CD-115		260.90		7.032E+01	2.122E+02	3.436E+02	1.973E+01	0.205
		492.35		-1.965E+01	5.064E+01	8.157E+01	4.790E+00	-0.241
		527.90	*	1.795E+00	1.607E+01	2.669E+01	1.580E+00	0.067
SN-117M		156.02		5.187E-01	2.761E+00	4.497E+00	2.410E-01	0.115
		158.56	*	-2.875E-02	6.699E-02	1.067E-01	5.682E-03	-0.269
TE-123M		159.00	*	-2.908E-02	3.359E-02	5.267E-02	2.844E-03	-0.552

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		602.73		-2.306E-02	4.769E-02	6.469E-02	3.830E-03	-0.357
		645.85		-1.230E-01	5.093E-01	8.186E-01	5.374E-02	-0.150
		722.78		-1.704E-01	4.303E-01	5.786E-01	3.933E-02	-0.294
	1690.97	*		5.957E-03	6.767E-02	1.125E-01	7.736E-03	0.053
SB-125		427.87	*	-8.846E-03	9.109E-02	1.505E-01	8.950E-03	-0.059
	+	463.37		7.252E-01	4.542E-01	5.778E-01	3.892E-02	1.255
		600.60		-7.988E-02	1.825E-01	2.907E-01	1.981E-02	-0.275
		635.95		2.641E-01	2.837E-01	4.929E-01	3.381E-02	0.536
TE-125M		109.28	*	-2.353E+01	1.312E+01	2.005E+01	1.808E+00	-1.174
I-126		388.63		9.584E-02	1.807E-01	3.092E-01	1.726E-02	0.310
		666.33	*	2.451E-01	2.803E-01	4.286E-01	2.519E-02	0.572
		753.82		3.026E+00	2.003E+00	3.591E+00	2.484E-01	0.843
SB-126		414.70		-3.512E-05	8.208E-02	1.365E-01	7.723E-03	0.000
		666.50		7.578E-02	9.592E-02	1.457E-01	8.565E-03	0.520
		695.00		6.012E-03	8.174E-02	1.341E-01	8.322E-03	0.045
		697.00		-2.125E-01	2.832E-01	4.353E-01	2.713E-02	-0.488
		720.70	*	-4.503E-02	1.714E-01	2.339E-01	1.524E-02	-0.193
		856.80		2.617E-01	5.789E-01	8.406E-01	6.933E-02	0.311
SB-127		252.40		1.766E+00	5.635E+00	9.054E+00	3.722E+00	0.195
		473.00		1.246E+00	2.034E+00	3.478E+00	3.960E-01	0.358
		685.70	*	-4.441E-02	1.650E+00	2.688E+00	2.675E-01	-0.017
		783.70		3.987E+00	4.564E+00	7.826E+00	9.207E-01	0.509
I-131		80.19		5.628E+00	9.536E+00	1.022E+01	8.544E-01	0.551
		284.31		-6.490E-01	1.707E+00	2.751E+00	1.773E-01	-0.236
		364.49	*	4.799E-02	1.275E-01	2.170E-01	1.387E-02	0.221
		636.99		2.193E+00	1.793E+00	3.167E+00	2.086E-01	0.693
TE-132		49.72		1.086E+01	2.598E+01	4.342E+01	4.435E+00	0.250
		111.76		1.264E+02	5.632E+01	9.500E+01	9.341E+00	1.331
		116.30		-8.099E+01	4.709E+01	7.182E+01	6.921E+00	-1.128
		228.16	*	-5.126E-01	1.003E+00	1.568E+00	2.293E-01	-0.327
BA-133		81.00		6.954E-02	1.795E-01	1.901E-01	2.922E-02	0.366
	+	276.40		7.986E-01	5.081E-01	6.688E-01	8.415E-02	1.194
		302.85		5.144E-02	1.564E-01	2.335E-01	2.665E-02	0.220
		356.01	*	-8.484E-03	4.575E-02	6.556E-02	7.370E-03	-0.129
		383.85		-1.271E-01	3.083E-01	5.030E-01	5.312E-02	-0.253
I-133		529.87	*	6.939E-03	3.083E-01	Half-Life too short		
		875.33		-3.274E-02	3.083E-01	Half-Life too short		
		1298.22		1.901E-02	3.083E-01	Half-Life too short		
CS-134		563.25		4.326E-01	4.600E-01	7.058E-01	4.274E-02	0.613
	+	569.33		1.316E+00	5.628E-01	5.090E-01	3.108E-02	2.586
		604.72		3.423E-02	3.909E-02	5.980E-02	3.557E-03	0.572
	+	795.86	*	1.675E-01	6.428E-02	9.326E-02	7.013E-03	1.796
		801.95		-3.554E-01	4.628E-01	6.232E-01	4.724E-02	-0.570
		1365.19		1.069E+00	1.095E+00	2.007E+00	1.564E-01	0.533
CS-135		268.22	*	3.905E-01	1.944E-01	3.121E-01	2.382E-02	1.251
I-135		546.56		2.357E+11	1.944E-01	Half-Life too short		
		836.80		4.189E+11	1.944E-01	Half-Life too short		
		1038.76		7.183E+10	1.944E-01	Half-Life too short		
		1131.51		5.237E+10	1.944E-01	Half-Life too short		

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CS-136	1260.41	*		1.657E+10	1.944E-01	Half-Life	too short	
	1457.56			7.256E+12	1.944E-01	Half-Life	too short	
	1678.03			-6.280E+10	1.944E-01	Half-Life	too short	
	1791.20			-9.958E+10	1.944E-01	Half-Life	too short	
	153.25			-2.262E-02	1.053E+00	1.704E+00	1.323E-01	-0.013
	176.60			3.389E-02	5.913E-01	9.559E-01	6.345E-02	0.035
	273.65			3.947E-01	8.407E-01	8.805E-01	6.006E-02	0.448
	340.55			4.402E-01	1.958E-01	3.180E-01	1.989E-02	1.384
	818.51			-3.874E-02	7.973E-02	1.236E-01	9.582E-03	-0.313
	1048.07	*		5.525E-02	1.067E-01	1.864E-01	1.440E-02	0.296
CE-139	1235.36			2.291E-01	6.263E-01	1.067E+00	1.080E-01	0.215
	165.86	*		2.235E-03	3.527E-02	5.711E-02	2.981E-03	0.039
	162.66			9.001E-02	1.016E+00	1.639E+00	1.011E-01	0.055
	304.85			8.779E-01	1.537E+00	2.305E+00	6.587E-01	0.381
BA-140	423.72			-2.071E-01	2.055E+00	3.395E+00	1.095E+00	-0.061
	537.26	*		1.401E-01	2.860E-01	4.800E-01	1.600E-01	0.292
	328.76			6.984E-01	4.244E-01	5.849E-01	3.807E-02	1.194
	487.02			1.081E-01	1.436E-01	2.482E-01	1.643E-02	0.435
LA-140	815.77			3.180E-01	3.361E-01	5.861E-01	5.170E-02	0.543
	1596.21	*		-1.843E-02	8.372E-02	1.330E-01	8.999E-03	-0.139
	145.44	*		4.691E-02	8.764E-02	1.272E-01	7.326E-03	0.369
	57.36			5.632E-04	8.764E-02	Half-Life	too short	
CE-143	293.27	*		1.714E-03	8.764E-02	Half-Life	too short	
	664.57			4.460E-03	8.764E-02	Half-Life	too short	
	721.93			-2.223E-03	8.764E-02	Half-Life	too short	
	80.12			2.960E+00	4.741E+00	5.092E+00	4.219E-01	0.581
CE-144	133.52	*		1.234E-01	2.327E-01	3.833E-01	5.311E-02	0.322
	476.78			-4.286E-02	6.864E-02	1.094E-01	7.539E-03	-0.392
	618.01			4.882E-03	3.157E-02	5.232E-02	3.270E-03	0.093
	696.49	*		-1.924E-02	3.477E-02	5.437E-02	3.388E-03	-0.354
PR-144	696.51	*		-1.426E+00	2.605E+00	4.075E+00	2.537E-01	-0.350
	1489.16			3.005E+00	1.044E+01	1.796E+01	1.273E+00	0.167
	453.88	*		2.917E-02	4.420E-02	7.400E-02	6.250E-03	0.394
	633.25			1.050E-01	1.398E+00	2.302E+00	8.670E-01	0.046
PM-144	735.93			-8.120E-02	1.520E-01	2.269E-01	6.240E-02	-0.358
	747.24			-1.975E-01	1.055E-01	1.396E-01	1.900E-02	-1.414
	91.11			1.068E+01	1.150E+00	1.125E+00	1.039E-01	9.498
	319.41			-8.411E-01	3.645E+00	6.049E+00	3.517E-01	-0.139
ND-147	531.02	*		-8.470E-03	6.097E-01	1.004E+00	1.363E-01	-0.008
	285.90	*		-1.178E+01	1.292E+02	2.166E+02	3.071E+01	-0.054
	121.78			-1.227E-02	8.400E-02	1.361E-01	1.049E-02	-0.090
	244.70			2.558E-01	3.766E-01	5.472E-01	3.110E-02	0.467
EU-152	344.28	*		-2.071E-02	1.186E-01	1.706E-01	1.110E-02	-0.121
	778.90			-1.199E-01	2.565E-01	3.998E-01	2.891E-02	-0.300
	964.08			9.024E-01	3.841E-01	5.622E-01	4.630E-02	1.605
	1085.87			1.319E-01	3.805E-01	6.544E-01	4.452E-02	0.202
GD-153	1112.07			-2.086E-02	3.526E-01	5.045E-01	3.245E-02	-0.041
	1408.01			-2.433E-02	1.775E-01	2.887E-01	2.096E-02	-0.084
	69.67			9.692E-01	2.936E+00	3.621E+00	2.786E-01	0.268

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EU-154	+	97.43	*	3.068E-01	1.595E-01	1.892E-01	1.471E-02	1.622
		103.18		-1.885E-02	1.495E-01	2.127E-01	1.540E-02	-0.089
		123.07		-1.189E-02	5.951E-02	9.619E-02	9.112E-03	-0.124
		723.31		3.801E-02	1.864E-01	2.682E-01	2.054E-02	0.142
		873.19		-3.675E-02	2.877E-01	4.592E-01	5.413E-02	-0.080
		996.26		7.331E-02	3.992E-01	5.653E-01	9.682E-02	0.130
		1004.73		2.690E-01	2.301E-01	3.762E-01	4.158E-02	0.715
EU-155	+	1274.44	*	-4.522E-02	1.146E-01	1.827E-01	1.823E-02	-0.247
		86.55		5.242E-01	1.786E-01	2.390E-01	2.129E-02	2.193
		105.31	*	-4.066E-02	1.467E-01	2.074E-01	1.491E-02	-0.196
TB-160	+	86.79		1.404E+00	4.778E-01	6.317E-01	5.588E-02	2.222
		197.04		-5.280E-01	6.209E-01	9.585E-01	5.194E-02	-0.551
		215.65		5.509E-01	8.952E-01	1.297E+00	7.180E-02	0.425
HO-166M	+	298.57		3.955E-01	1.649E-01	2.156E-01	1.254E-02	1.834
		879.36	*	9.571E-03	1.423E-01	2.310E-01	1.976E-02	0.041
		962.29		8.175E-01	5.572E-01	9.899E-01	8.169E-02	0.826
		966.15		1.129E+00	2.723E-01	5.149E-01	4.230E-02	2.192
		1177.93		2.879E-01	3.594E-01	6.353E-01	3.515E-02	0.453
		1271.85		-3.490E-01	6.687E-01	1.053E+00	6.979E-02	-0.331
		80.57		2.264E-01	5.128E-01	5.454E-01	4.538E-02	0.415
	+	184.41		4.858E-01	7.692E-02	9.481E-02	5.058E-03	5.124
		280.46		3.689E-02	9.572E-02	1.437E-01	8.326E-03	0.257
		410.95		8.494E-02	2.575E-01	4.355E-01	2.457E-02	0.195
TA-182		711.68	*	-1.924E-02	5.802E-02	9.202E-02	5.894E-03	-0.209
		752.31		2.642E-01	2.861E-01	4.956E-01	3.419E-02	0.533
		810.29		-6.970E-02	6.275E-02	9.190E-02	7.015E-03	-0.758
		67.75		-1.941E-01	1.917E-01	2.218E-01	1.692E-02	-0.875
		100.11		6.027E-01	2.529E-01	3.877E-01	2.913E-02	1.555
		152.43		1.056E-01	4.092E-01	6.681E-01	3.616E-02	0.158
		222.11		8.436E-02	3.815E-01	6.172E-01	3.438E-02	0.137
IR-192	+	1121.30		8.793E-01	3.619E-01	3.872E-01	2.438E-02	2.271
		1189.05		8.714E-02	3.088E-01	5.257E-01	2.974E-02	0.166
		1221.41	*	1.392E-01	1.985E-01	3.470E-01	2.092E-02	0.401
		1231.02		3.997E-01	4.751E-01	8.373E-01	5.142E-02	0.477
	+	295.96		1.187E+00	1.738E-01	2.912E-01	1.720E-02	4.078
HG-203		308.46		9.265E-04	9.466E-02	1.590E-01	9.355E-03	0.006
		316.51	*	2.461E-02	3.501E-02	6.059E-02	3.540E-03	0.406
		468.07		-5.012E-02	8.129E-02	1.107E-01	7.430E-03	-0.453
BI-207		70.83		3.241E+00	1.979E+00	2.907E+00	4.536E-01	1.115
		72.87		3.966E+00	1.243E+00	1.857E+00	2.807E-01	2.136
		279.20	*	5.118E-02	4.596E-02	7.159E-02	4.377E-03	0.715
PB-210	+	72.81		7.261E-01	2.780E-01	4.199E-01	3.289E-02	1.729
		74.97		7.968E-01	1.878E-01	2.859E-01	2.272E-02	2.787
		569.70		1.082E-01	4.222E-02	7.500E-02	4.452E-03	1.443
		1063.66	*	1.193E-02	4.753E-02	8.134E-02	5.775E-03	0.147
PB-211		1770.23		4.817E-01	4.500E-01	7.987E-01	4.818E-02	0.603
		46.54	*	-4.007E-01	3.796E+00	6.192E+00	4.668E-01	-0.065
		404.85	*	-2.756E-01	7.740E-01	1.246E+00	5.977E-01	-0.221
		427.09		-3.962E-01	1.544E+00	2.510E+00	1.150E+00	-0.158

---- 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	*	-6.143E-01	1.057E+00	1.548E+00	8.012E-01	-0.397
		727.33		2.934E+00	1.031E+00	1.236E+00	1.378E-01	2.374
		785.37		6.021E+00	3.478E+00	6.263E+00	4.581E-01	0.961
RN-219	+	1620.50	*	2.738E+00	2.331E+00	4.398E+00	2.937E-01	0.623
		271.23		8.928E-01	3.465E-01	4.781E-01	3.830E-02	1.868
		401.81		-6.198E-02	4.022E-01	6.640E-01	8.867E-02	-0.093
RA-223	+	81.07	*	1.609E-01	4.060E-01	4.307E-01	3.600E-02	0.374
		83.79		5.443E-01	2.197E-01	2.815E-01	2.415E-02	1.934
		94.87		9.304E+00	1.180E+00	1.421E+00	1.144E-01	6.549
	+	144.24	*	1.590E+00	1.169E+00	1.362E+00	9.532E-02	1.167
		154.21		2.923E-01	4.484E-01	7.408E-01	4.908E-02	0.395
		269.46		6.937E-01	2.667E-01	3.759E-01	2.263E-02	1.845
AC-227	+	323.87	*	4.482E-01	7.257E-01	1.098E+00	1.770E-01	0.408
		338.28		6.346E+00	1.715E+00	2.452E+00	2.511E-01	2.588
		79.69		3.345E+00	2.455E+00	2.675E+00	4.563E-01	1.250
	+	235.96	*	1.459E+00	2.455E-01	3.867E-01	3.106E-02	3.771
		256.23		-1.015E-01	2.823E-01	4.429E-01	4.511E-02	-0.229
		299.98		3.059E+00	1.307E+00	1.681E+00	1.848E-01	1.820
TH-227	+	304.50	*	1.606E+00	1.733E+00	2.669E+00	4.072E-01	0.602
		334.37		5.253E-01	2.265E+00	2.948E+00	4.191E-01	0.178
		79.80		2.945E+00	3.189E+00	3.419E+00	7.400E-01	0.861
	+	235.96	*	1.459E+00	2.403E-01	3.867E-01	2.809E-02	3.771
		256.23		-1.015E-01	2.824E-01	4.429E-01	5.308E-02	-0.229
		299.98		3.059E+00	1.307E+00	1.681E+00	1.848E-01	1.820
PA-231	+	304.50	*	1.606E+00	1.733E+00	2.669E+00	4.072E-01	0.602
		334.37		5.253E-01	2.265E+00	2.948E+00	4.191E-01	0.178
		283.69		-4.351E-01	1.634E+00	2.469E+00	3.238E-01	-0.176
TH-231	+	301.36	*	1.965E+00	8.365E-01	1.071E+00	1.109E-01	1.835
		81.07		1.609E-01	4.060E-01	4.307E-01	3.600E-02	0.374
		83.79		5.443E-01	2.197E-01	2.815E-01	2.415E-02	1.934
	+	94.87	*	9.304E+00	1.180E+00	1.421E+00	1.144E-01	6.549
		144.24		1.590E+00	1.169E+00	1.362E+00	9.532E-02	1.167
		154.21		2.923E-01	4.484E-01	7.408E-01	4.908E-02	0.395
PA-233	+	269.46	*	6.937E-01	2.667E-01	3.759E-01	2.263E-02	1.845
		323.87		4.482E-01	7.257E-01	1.098E+00	1.770E-01	0.408
		338.28		6.346E+00	1.715E+00	2.452E+00	2.511E-01	2.588
	+	300.13	*	1.384E+00	6.008E-01	7.658E-01	1.026E-01	1.808
		311.90		2.193E-02	6.232E-02	1.063E-01	6.567E-03	0.206
		340.48		1.938E+00	9.093E-01	1.306E+00	3.031E-01	1.484
PA-234	+	94.67	*	3.833E+00	5.626E-01	5.712E-01	6.873E-02	6.711
		98.44		3.343E-01	2.533E-01	2.040E-01	1.135E-01	1.639
		111.00		4.988E-01	2.453E-01	4.123E-01	4.439E-02	1.210
	+	131.20	*	2.484E-02	1.257E-01	2.054E-01	1.183E-02	0.121
		569.50		1.812E+00	7.743E-01	6.850E-01	4.066E-02	2.646
		733.00		4.188E-01	4.001E-01	6.167E-01	1.327E-01	0.679
	+	880.51	*	6.376E-02	2.792E-01	4.597E-01	3.940E-02	0.139
		883.24		-7.255E-02	3.003E-01	4.679E-01	3.145E-01	-0.155
		926.50		4.248E-03	1.677E-01	2.708E-01	6.840E-02	0.016
	+	946.00	*	-2.701E-01	3.181E-01	4.652E-01	8.684E-02	-0.581

---- 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		2.335E-02	4.663E-01	7.533E-01	6.312E-02	0.031
		99.53		6.066E-01	3.153E-01	3.658E-01	2.769E-02	1.658
		103.37		3.100E-02	1.343E-01	1.939E-01	1.401E-02	0.160
		106.12		3.938E-02	1.051E-01	1.676E-01	1.173E-02	0.235
		117.23	*	-6.071E-01	4.986E-01	7.797E-01	4.865E-02	-0.779
		228.18		-1.217E-01	2.383E-01	3.734E-01	2.093E-02	-0.326
AM-241	+	277.60		3.948E-01	2.473E-01	3.289E-01	1.903E-02	1.200
		59.54	*	2.346E-01	2.174E-01	3.250E-01	2.676E-02	0.722
CM-247	+	278.00		1.677E+00	1.050E+00	1.397E+00	8.086E-02	1.200
		287.50		5.192E-01	1.260E+00	2.155E+00	1.251E-01	0.241
CF-249	*	402.40		-8.500E-03	3.752E-02	6.171E-02	3.461E-03	-0.138
		252.80		-1.032E-01	1.043E+00	1.658E+00	9.476E-02	-0.062
		333.37		1.064E-02	3.147E-01	3.097E-01	1.794E-02	0.034
CF-251	*	388.16		5.413E-02	4.011E-02	7.127E-02	3.979E-03	0.760
		177.52		-6.136E-02	1.466E-01	2.328E-01	1.232E-02	-0.264
		227.38		-3.102E-01	3.951E-01	6.116E-01	3.425E-02	-0.507
		285.41		-2.638E-02	2.247E+00	3.780E+00	2.192E-01	-0.007

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]G247900012
* Acquisition date   : 6-MAR-2010 15:01:10 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 02:00:01.94 Half life ratio        : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G247900012 Analyst initials: MXR1
* Batch Number       : 957711 Sample Quantity: 1.4523E+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	2.898E+01	2.679E+00	5.865E-01	0.000E+00
NB-95	2.145E-01	6.960E-02	6.598E-02	0.000E+00
CD-109	4.427E+00	1.477E+00	1.660E+00	0.000E+00
SN-126	4.321E-01	1.442E-01	1.627E-01	0.000E+00
BA-137M	1.770E-01	6.702E-02	6.143E-02	0.000E+00
CS-137	1.870E-01	7.080E-02	6.489E-02	0.000E+00
TL-208	5.168E-01	7.667E-02	5.786E-02	0.000E+00
BI-211	3.749E+00	4.616E-01	3.593E-01	0.000E+00
PB-212	1.967E+00	1.811E-01	9.581E-02	0.000E+00
BI-214	1.232E+00	1.805E-01	1.124E-01	0.000E+00
PB-214	1.361E+00	1.829E-01	1.217E-01	0.000E+00
RA-224	4.195E+00	1.246E+00	1.026E+00	0.000E+00
RA-226	1.232E+00	1.805E-01	1.124E-01	0.000E+00
AC-228	2.066E+00	3.831E-01	2.072E-01	0.000E+00
RA-228	2.066E+00	3.831E-01	2.072E-01	0.000E+00
TH-228	1.967E+00	1.811E-01	9.581E-02	0.000E+00
TH-229	4.610E-02	5.669E-01	9.485E-01	0.000E+00
TH-232	2.066E+00	3.831E-01	2.072E-01	0.000E+00
PA-234M	3.436E+01	7.875E+00	7.539E+00	0.000E+00
TH-234	2.561E+01	5.526E+00	2.761E+00	0.000E+00
U-235	4.743E-01	3.478E-01	3.777E-01	0.000E+00
NP-237	1.289E+00	5.052E-01	4.908E-01	0.000E+00
U-238	2.561E+01	5.526E+00	2.761E+00	0.000E+00
ANH-511	2.191E-01	6.809E-02	4.712E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.005E-01	3.345E-01	5.727E-01	0.000E+00 NOT IDENT.
NA-22	-1.147E-02	3.932E-02	6.531E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.076E+06	0.000E+00	0.000E+00 SHORT HLIF

SC-46	2.125E-02	3.940E-02	6.894E-02	0.000E+00	FAIL ABUN
V-48	2.124E-02	6.776E-02	1.161E-01	0.000E+00	NOT IDENT.
CR-51	-1.439E-01	3.777E-01	6.610E-01	0.000E+00	NOT IDENT.
MN-54	-7.849E-03	3.841E-02	6.358E-02	0.000E+00	NOT IDENT.
CO-56	-3.816E-02	3.929E-02	6.019E-02	0.000E+00	NOT IDENT.
CO-57	3.929E-03	2.854E-02	5.060E-02	0.000E+00	NOT IDENT.
CO-58	-4.547E-02	4.056E-02	6.175E-02	0.000E+00	NOT IDENT.
FE-59	-1.517E-02	8.940E-02	1.523E-01	0.000E+00	NOT IDENT.
CO-60	-2.385E-02	3.412E-02	5.326E-02	0.000E+00	NOT IDENT.
ZN-65	-5.400E-02	9.786E-02	1.359E-01	0.000E+00	NOT IDENT.
SE-75	-4.928E-03	5.071E-02	8.276E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.051E-02	7.027E-02	0.000E+00	NOT IDENT.
Y-88	2.566E-02	3.020E-02	5.350E-02	0.000E+00	NOT IDENT.
Y-91	3.581E+00	1.969E+01	3.428E+01	0.000E+00	NOT IDENT.
NB-94	2.691E-02	3.279E-02	5.891E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.681E-01	2.864E-01	0.000E+00	NOT IDENT.
ZR-95	1.614E-02	7.487E-02	1.272E-01	0.000E+00	NOT IDENT.
MO-99	-1.191E+01	1.681E+01	2.687E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.544E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	9.122E-03	3.700E-02	6.534E-02	0.000E+00	FAIL ABUN
RH-106	-2.947E-01	3.022E-01	4.774E-01	0.000E+00	NOT IDENT.
RU-106	-2.947E-01	3.008E-01	4.774E-01	0.000E+00	NOT IDENT.
AG-108M	1.794E-03	2.794E-02	4.913E-02	0.000E+00	NOT IDENT.
AG-110M	-1.046E-02	3.873E-02	5.559E-02	0.000E+00	NOT IDENT.
SN-113	-9.236E-03	4.544E-02	7.926E-02	0.000E+00	NOT IDENT.
CD-115	1.795E+00	1.575E+01	2.747E+01	0.000E+00	NOT IDENT.
SN-117M	-2.875E-02	6.565E-02	1.128E-01	0.000E+00	NOT IDENT.
TE-123M	-2.908E-02	3.292E-02	5.566E-02	0.000E+00	NOT IDENT.
SB-124	5.957E-03	6.631E-02	1.127E-01	0.000E+00	NOT IDENT.
SB-125	-8.846E-03	8.927E-02	1.557E-01	0.000E+00	FAIL ABUN
TE-125M	-2.353E+01	1.285E+01	2.136E+01	0.000E+00	NOT IDENT.
I-126	2.451E-01	2.747E-01	4.389E-01	0.000E+00	NOT IDENT.
SB-126	-4.503E-02	1.679E-01	2.391E-01	0.000E+00	NOT IDENT.
SB-127	-4.441E-02	1.617E+00	2.750E+00	0.000E+00	NOT IDENT.
I-131	4.799E-02	1.249E-01	2.252E-01	0.000E+00	NOT IDENT.
TE-132	-5.126E-01	9.834E-01	1.645E+00	0.000E+00	NOT IDENT.
BA-133	-8.484E-03	4.483E-02	6.809E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.317E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.299E-02	9.510E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.905E-01	3.262E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.844E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.525E-02	1.046E-01	1.889E-01	0.000E+00	NOT IDENT.
CE-139	2.235E-03	3.456E-02	6.031E-02	0.000E+00	NOT IDENT.
BA-140	1.401E-01	2.803E-01	4.939E-01	0.000E+00	NOT IDENT.
LA-140	-1.843E-02	8.205E-02	1.334E-01	0.000E+00	FAIL ABUN
CE-141	4.691E-02	8.588E-02	1.347E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.680E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.234E-01	2.280E-01	4.066E-01	0.000E+00	NOT IDENT.
PM-144	-1.924E-02	3.408E-02	5.562E-02	0.000E+00	NOT IDENT.
PR-144	-1.426E+00	2.553E+00	4.168E+00	0.000E+00	NOT IDENT.
PM-146	2.917E-02	4.332E-02	7.643E-02	0.000E+00	NOT IDENT.
ND-147	-8.470E-03	5.975E-01	1.034E+00	0.000E+00	NOT IDENT.
PM-149	-1.178E+01	2.266E+02	2.260E+02	0.000E+00	NOT IDENT.
EU-152	-2.071E-02	1.162E-01	1.773E-01	0.000E+00	FAIL ABUN
GD-153	0.000E+00	1.563E-01	2.020E-01	0.000E+00	FAIL ABUN
EU-154	-4.522E-02	1.123E-01	1.843E-01	0.000E+00	NOT IDENT.
EU-155	-4.066E-02	1.438E-01	2.211E-01	0.000E+00	FAIL ABUN
TB-160	9.571E-03	1.394E-01	2.351E-01	0.000E+00	FAIL ABUN
HO-166M	-1.924E-02	5.686E-02	9.408E-02	0.000E+00	FAIL ABUN
TA-182	1.392E-01	1.946E-01	3.503E-01	0.000E+00	FAIL ABUN
IR-192	2.461E-02	3.431E-02	6.308E-02	0.000E+00	FAIL ABUN
HG-203	5.118E-02	4.504E-02	7.474E-02	0.000E+00	NOT IDENT.
BI-207	1.193E-02	4.658E-02	8.239E-02	0.000E+00	FAIL ABUN
PB-210	-4.007E-01	3.720E+00	6.715E+00	0.000E+00	NOT IDENT.
PB-211	-2.756E-01	7.585E-01	1.291E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.010E+00	1.263E+00	0.000E+00	FAIL ABUN
RN-219	-6.198E-02	3.941E-01	6.876E-01	0.000E+00	FAIL ABUN
RA-223	4.482E-01	7.112E-01	1.142E+00	0.000E+00	FAIL ABUN
AC-227	-1.015E-01	2.766E-01	4.633E-01	0.000E+00	FAIL ABUN
TH-227	-1.015E-01	2.767E-01	4.633E-01	0.000E+00	FAIL ABUN
PA-231	-4.351E-01	1.601E+00	2.576E+00	0.000E+00	FAIL ABUN
TH-231	4.482E-01	7.112E-01	1.142E+00	0.000E+00	FAIL ABUN
PA-233	2.193E-02	6.108E-02	1.108E-01	0.000E+00	FAIL ABUN
PA-234	-2.701E-01	3.117E-01	4.725E-01	0.000E+00	FAIL ABUN
NP-239	-6.071E-01	4.886E-01	8.295E-01	0.000E+00	FAIL ABUN
AM-241	2.346E-01	2.131E-01	3.506E-01	0.000E+00	NOT IDENT.
CM-247	-8.500E-03	3.677E-02	6.391E-02	0.000E+00	FAIL ABUN
CF-249	5.413E-02	3.931E-02	7.387E-02	0.000E+00	NOT IDENT.

CF-251	-6.136E-02	1.437E-01	2.455E-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]G247900012.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:01:10.
Sample ID          : G247900012 Sample quantity : 1.45230E+02 GRAM
Detector name      : GAM19 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.94 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 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	1397	10.66*	1.169E+00	2.898E+01	2.898E+01	9.43
NB-95	765.81	141	99.81*	2.030E+00	1.801E-01	2.145E-01	33.11
CD-109	88.03	377	3.70*	6.101E+00	4.321E+00	4.427E+00	34.04
SN-126	64.28	1329	9.60	3.625E+00	9.872E+00	9.872E+00	19.44
	86.94	377	8.90	6.101E+00	1.796E+00	1.796E+00	52.87
	87.57	377	37.00*	6.101E+00	4.321E-01	4.321E-01	34.04
BA-137M	661.66	142	89.90*	2.301E+00	1.768E-01	1.770E-01	38.63
CS-137	661.66	142	85.10*	2.301E+00	1.868E-01	1.870E-01	38.64
TL-208	277.37	100	6.60	4.511E+00	8.639E-01	8.639E-01	63.29
	583.19	434	85.00*	2.555E+00	5.168E-01	5.168E-01	15.14
	860.56	52	12.50	1.835E+00	5.834E-01	5.834E-01	60.96
BI-211	72.87	-----	1.23	4.857E+00	-----	Line Not Found	-----
	351.06	710	12.92*	3.788E+00	3.749E+00	3.749E+00	12.56
PB-212	74.82	558	10.28	5.072E+00	2.764E+00	2.764E+00	25.49
	77.11	855	17.10	5.312E+00	2.431E+00	2.431E+00	17.05
	238.63	1665	43.60*	5.018E+00	1.967E+00	1.967E+00	9.40
	300.09	151	3.30	4.262E+00	2.781E+00	2.781E+00	42.13
BI-214	609.32	534	45.49*	2.465E+00	1.232E+00	1.232E+00	14.95
	1120.29	157	14.92	1.455E+00	1.865E+00	1.865E+00	41.70
	1764.49	89	15.30	1.029E+00	1.468E+00	1.468E+00	44.72
PB-214	74.82	558	5.80	5.072E+00	4.900E+00	4.900E+00	24.86
	77.11	855	9.70	5.312E+00	4.286E+00	4.286E+00	18.94
	242.00	331	7.25	4.976E+00	2.372E+00	2.372E+00	30.86
	295.22	489	18.42	4.314E+00	1.591E+00	1.591E+00	15.98
	351.93	710	35.60*	3.788E+00	1.360E+00	1.361E+00	13.72
RA-224	240.99	331	4.10*	4.976E+00	4.195E+00	4.195E+00	30.31
RA-226	609.32	534	45.49*	2.465E+00	1.232E+00	1.232E+00	14.95
	1120.29	157	14.92	1.455E+00	1.865E+00	1.865E+00	41.70
	1764.49	89	15.30	1.029E+00	1.468E+00	1.468E+00	44.72
AC-228	338.32	272	11.27	3.902E+00	1.599E+00	1.599E+00	48.21
	911.20	360	25.80*	1.746E+00	2.066E+00	2.066E+00	18.92
	968.97	201	15.80	1.654E+00	1.990E+00	1.990E+00	30.47

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	272	11.27	3.902E+00	1.599E+00	1.599E+00	48.21
	911.20	360	25.80*	1.746E+00	2.066E+00	2.066E+00	18.92
	968.97	201	15.80	1.654E+00	1.990E+00	1.990E+00	30.47
TH-228	74.82	558	10.28	5.072E+00	2.764E+00	2.764E+00	23.59
	77.11	855	17.10	5.312E+00	2.431E+00	2.431E+00	17.05
	238.63	1665	43.60*	5.018E+00	1.967E+00	1.967E+00	9.40
	300.09	151	3.30	4.262E+00	2.781E+00	2.781E+00	73.56
TH-229	85.43	307	14.70	5.904E+00	9.146E-01	9.146E-01	40.37
	88.47	377	24.00	6.101E+00	6.662E-01	6.662E-01	34.04
	193.51	-----	4.41*	5.746E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.447E+00	-----	Line Not Found	-----
TH-232	338.32	272	11.27	3.902E+00	1.599E+00	1.599E+00	25.66
	911.20	360	25.80*	1.746E+00	2.066E+00	2.066E+00	18.92
	968.97	201	15.80	1.654E+00	1.990E+00	1.990E+00	30.47
PA-234M	766.42	141	0.32	2.030E+00	5.617E+01	5.617E+01	59.97
	1001.03	179	0.84*	1.607E+00	3.436E+01	3.436E+01	23.38
TH-234	63.29	1329	3.70*	3.625E+00	2.561E+01	2.561E+01	22.02
	92.59	3099	4.23	6.381E+00	2.968E+01	2.968E+01	22.47
U-235	89.96	-----	3.47	6.249E+00	-----	Line Not Found	-----
	93.35	3099	5.60	6.381E+00	2.242E+01	2.242E+01	23.47
	143.76	133	10.96*	6.635E+00	4.743E-01	4.743E-01	74.83
	163.33	-----	5.08	6.300E+00	-----	Line Not Found	-----
	185.72	796	57.20	5.885E+00	6.115E-01	6.115E-01	15.83
	205.31	-----	5.01	5.540E+00	-----	Line Not Found	-----
NP-237	86.48	377	12.40*	6.101E+00	1.289E+00	1.289E+00	39.98
	95.86	-----	2.68	6.514E+00	-----	Line Not Found	-----
U-238	63.29	1329	3.70*	3.625E+00	2.561E+01	2.561E+01	22.02
	92.59	3099	4.23	6.381E+00	2.968E+01	2.968E+01	9.57
ANH-511	511.00	241	100.00*	2.843E+00	2.191E-01	2.191E-01	31.72

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247900012

Page : 3
Acquisition date : 6-MAR-2010 15:01:10

Total number of lines in spectrum 40
Number of unidentified lines 5
Number of lines tentatively identified by NID 35 87.50%

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	2.898E+01	2.898E+01	0.273E+01	9.43	
NB-95	64.03D	1.19	1.801E-01	2.145E-01	0.710E-01	33.11	
CD-109	461.40D	1.02	4.321E+00	4.427E+00	1.507E+00	34.04	
SN-126	2.30E+05Y	1.00	4.321E-01	4.321E-01	1.471E-01	34.04	
BA-137M	30.08Y	1.00	1.768E-01	1.770E-01	0.684E-01	38.63	
CS-137	30.08Y	1.00	1.868E-01	1.870E-01	0.722E-01	38.64	
TL-208	1.41E+10Y	1.00	5.168E-01	5.168E-01	0.782E-01	15.14	
BI-211	7.04E+08Y	1.00	3.749E+00	3.749E+00	0.471E+00	12.56	
PB-212	1.41E+10Y	1.00	1.967E+00	1.967E+00	0.185E+00	9.40	
BI-214	1600.00Y	1.00	1.232E+00	1.232E+00	0.184E+00	14.95	
PB-214	1600.00Y	1.00	1.360E+00	1.361E+00	0.187E+00	13.72	
RA-224	1.41E+10Y	1.00	4.195E+00	4.195E+00	1.271E+00	30.31	
RA-226	1600.00Y	1.00	1.232E+00	1.232E+00	0.184E+00	14.95	
AC-228	1.41E+10Y	1.00	2.066E+00	2.066E+00	0.391E+00	18.92	
RA-228	1.41E+10Y	1.00	2.066E+00	2.066E+00	0.391E+00	18.92	
TH-228	1.41E+10Y	1.00	1.967E+00	1.967E+00	0.185E+00	9.40	
TH-229	7340.00Y	1.00	6.662E-01	6.662E-01	2.268E-01	34.04	K
TH-232	1.41E+10Y	1.00	2.066E+00	2.066E+00	0.391E+00	18.92	
PA-234M	4.47E+09Y	1.00	3.436E+01	3.436E+01	0.804E+01	23.38	
TH-234	4.47E+09Y	1.00	2.561E+01	2.561E+01	0.564E+01	22.02	
U-235	7.04E+08Y	1.00	4.743E-01	4.743E-01	3.549E-01	74.83	
NP-237	2.14E+06Y	1.00	1.289E+00	1.289E+00	0.516E+00	39.98	
U-238	4.47E+09Y	1.00	2.561E+01	2.561E+01	0.564E+01	22.02	
ANH-511	1.00E+09Y	1.00	2.191E-01	2.191E-01	0.695E-01	31.72	

Total Activity : 1.449E+02 1.451E+02

Grand Total Activity : 1.449E+02 1.451E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900012

Page : 4
Acquisition date : 6-MAR-2010 15:01:10

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	98.56	217	764	1.40	196.92	194	11	3.01E-02	51.4	6.61E+00	T
0	209.16	163	438	1.44	417.95	414	12	2.27E-02	53.7	5.48E+00	
0	270.34	171	251	1.84	540.24	536	10	2.38E-02	38.0	4.60E+00	T
0	327.95	91	188	1.74	655.40	651	10	1.26E-02	60.4	3.99E+00	T
0	462.52	90	174	1.27	924.39	918	12	1.25E-02	62.3	3.07E+00	T
0	568.02	201	253	2.55	1135.31	1125	20	2.80E-02	42.3	2.61E+00	T
0	727.20	161	106	1.51	1453.56	1445	17	2.23E-02	33.3	2.12E+00	T
0	795.02	97	54	1.52	1589.19	1583	13	1.34E-02	37.6	1.97E+00	T
2	964.63	85	42	2.10	1928.38	1918	25	1.18E-02	41.8	1.66E+00	T
0	1378.21	50	48	1.13	2755.70	2746	21	6.94E-03	74.4	1.22E+00	
0	1436.61	16	13	1.32	2872.55	2865	10	2.24E-03	96.2	1.18E+00	
0	1729.93	17	8	1.85	3459.53	3453	10	2.39E-03	76.9	1.04E+00	
0	1838.46	17	0	0.64	3676.76	3672	9	2.36E-03	48.5	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]G247900012.CNF;1
* Acquisition date   : 6-MAR-2010 15:01:10.   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 02:00:01.94           Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G247900012             Analyst initials: MXR1
* Batch Number       : 957711                 Sample Quantity : 1.45230E+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	2.898E+01	2.733E+00	5.834E-01	4.345E-02	49.679
NB-95	2.145E-01	7.102E-02	6.465E-02	4.568E-03	3.319
CD-109	4.427E+00	1.507E+00	1.551E+00	1.389E-01	2.855
SN-126	4.321E-01	1.471E-01	1.520E-01	1.356E-02	2.843
BA-137M	1.770E-01	6.839E-02	5.999E-02	3.493E-03	2.951
CS-137	1.870E-01	7.225E-02	6.337E-02	3.706E-03	2.951
TL-208	5.168E-01	7.823E-02	5.634E-02	3.823E-03	9.172
BI-211	3.749E+00	4.710E-01	3.458E-01	2.209E-02	10.839
PB-212	1.967E+00	1.848E-01	9.146E-02	6.660E-03	21.506
BI-214	1.232E+00	1.842E-01	1.095E-01	8.677E-03	11.250
PB-214	1.361E+00	1.867E-01	1.171E-01	9.882E-03	11.616
RA-224	4.195E+00	1.271E+00	9.797E-01	5.551E-02	4.282
RA-226	1.232E+00	1.842E-01	1.095E-01	8.677E-03	11.250
AC-228	2.066E+00	3.909E-01	2.039E-01	2.377E-02	10.132
RA-228	2.066E+00	3.909E-01	2.039E-01	2.377E-02	10.132
TH-228	1.967E+00	1.848E-01	9.146E-02	6.660E-03	21.506
TH-229	6.662E-01	2.268E-01	9.013E-01	4.862E-02	0.739
TH-232	2.066E+00	3.909E-01	2.039E-01	2.377E-02	10.132

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234M	3.436E+01	8.036E+00	7.432E+00	6.919E-01	4.623
TH-234	2.561E+01	5.639E+00	2.562E+00	4.581E-01	9.998
U-235	4.743E-01	3.549E-01	3.566E-01	5.568E-02	1.330
NP-237	1.289E+00	5.155E-01	4.584E-01	1.043E-01	2.813
U-238	2.561E+01	5.639E+00	2.562E+00	4.581E-01	9.998
ANH-511	2.191E-01	6.948E-02	4.574E-02	2.699E-03	4.789

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.005E-01		3.413E-01	5.551E-01	3.766E-02	-0.181
NA-22	-1.147E-02		4.012E-02	6.475E-02	4.319E-03	-0.177
NA-24	-1.333E+00		1.059E+00	Half-Life too short		
SC-46	2.125E-02		4.020E-02	6.778E-02	5.890E-03	0.314
V-48	2.124E-02		6.914E-02	1.144E-01	9.196E-03	0.186
CR-51	-1.439E-01		3.854E-01	6.350E-01	4.103E-02	-0.227
MN-54	-7.849E-03		3.919E-02	6.242E-02	4.965E-03	-0.126
CO-56	-3.816E-02		4.009E-02	5.910E-02	4.795E-03	-0.646
CO-57	3.929E-03		2.912E-02	4.760E-02	2.841E-03	0.083
CO-58	-4.547E-02		4.139E-02	6.058E-02	4.643E-03	-0.751
FE-59	-1.517E-02		9.123E-02	1.505E-01	1.129E-02	-0.101
CO-60	-2.385E-02		3.482E-02	5.286E-02	3.895E-03	-0.451
ZN-65	-5.400E-02		9.986E-02	1.343E-01	8.587E-03	-0.402
SE-75	-4.928E-03		5.174E-02	7.918E-02	4.606E-03	-0.062
SR-85	7.891E-02		4.134E-02	6.822E-02	4.028E-03	1.157
Y-88	2.566E-02		3.082E-02	5.350E-02	3.054E-03	0.480
Y-91	3.581E+00		2.009E+01	3.394E+01	1.981E+00	0.106
NB-94	2.691E-02		3.346E-02	5.761E-02	3.628E-03	0.467
NB-95M	6.442E-01		1.715E-01	2.733E-01	2.031E-02	2.357
ZR-95	1.614E-02		7.640E-02	1.246E-01	1.003E-02	0.130
MO-99	-1.191E+01		1.716E+01	2.630E+01	3.897E+00	-0.453
TC-99M	3.367E+11		3.849E+11	Half-Life too short		
RU-103	9.122E-03		3.776E-02	6.339E-02	7.900E-03	0.144
RH-106	-2.947E-01		3.084E-01	4.655E-01	5.432E-02	-0.633
RU-106	-2.947E-01		3.069E-01	4.655E-01	2.745E-02	-0.633
AG-108M	1.794E-03		2.851E-02	4.752E-02	2.916E-03	0.038
AG-110M	-1.046E-02		3.952E-02	5.427E-02	3.368E-03	-0.193
SN-113	-9.236E-03		4.637E-02	7.648E-02	4.563E-03	-0.121
CD-115	1.795E+00		1.607E+01	2.669E+01	1.580E+00	0.067
SN-117M	-2.875E-02		6.699E-02	1.067E-01	5.682E-03	-0.269
TE-123M	-2.908E-02		3.359E-02	5.267E-02	2.844E-03	-0.552
SB-124	5.957E-03		6.767E-02	1.125E-01	7.736E-03	0.053
SB-125	-8.846E-03		9.109E-02	1.505E-01	8.950E-03	-0.059
TE-125M	-2.353E+01		1.312E+01	2.005E+01	1.808E+00	-1.174
I-126	2.451E-01		2.803E-01	4.286E-01	2.519E-02	0.572
SB-126	-4.503E-02		1.714E-01	2.339E-01	1.524E-02	-0.193
SB-127	-4.441E-02		1.650E+00	2.688E+00	2.675E-01	-0.017

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	4.799E-02		1.275E-01	2.170E-01	1.387E-02	0.221
TE-132	-5.126E-01		1.003E+00	1.568E+00	2.293E-01	-0.327
BA-133	-8.484E-03		4.575E-02	6.556E-02	7.370E-03	-0.129
I-133	6.939E-03		6.720E-03	Half-Life	too short	
CS-134	1.675E-01	+	6.428E-02	9.326E-02	7.013E-03	1.796
CS-135	3.905E-01		1.944E-01	3.121E-01	2.382E-02	1.251
I-135	1.657E+10		4.002E+10	Half-Life	too short	
CS-136	5.525E-02		1.067E-01	1.864E-01	1.440E-02	0.296
CE-139	2.235E-03		3.527E-02	5.711E-02	2.981E-03	0.039
BA-140	1.401E-01		2.860E-01	4.800E-01	1.600E-01	0.292
LA-140	-1.843E-02		8.372E-02	1.330E-01	8.999E-03	-0.139
CE-141	4.691E-02		8.764E-02	1.272E-01	7.326E-03	0.369
CE-143	1.714E-03		2.388E-04	Half-Life	too short	
CE-144	1.234E-01		2.327E-01	3.833E-01	5.311E-02	0.322
PM-144	-1.924E-02		3.477E-02	5.437E-02	3.388E-03	-0.354
PR-144	-1.426E+00		2.605E+00	4.075E+00	2.537E-01	-0.350
PM-146	2.917E-02		4.420E-02	7.400E-02	6.250E-03	0.394
ND-147	-8.470E-03		6.097E-01	1.004E+00	1.363E-01	-0.008
PM-149	-1.178E+01		1.292E+02	2.166E+02	3.071E+01	-0.054
EU-152	-2.071E-02		1.186E-01	1.706E-01	1.110E-02	-0.121
GD-153	3.068E-01	+	1.595E-01	1.892E-01	1.471E-02	1.622
EU-154	-4.522E-02		1.146E-01	1.827E-01	1.823E-02	-0.247
EU-155	-4.066E-02		1.467E-01	2.074E-01	1.491E-02	-0.196
TB-160	9.571E-03		1.423E-01	2.310E-01	1.976E-02	0.041
HO-166M	-1.924E-02		5.802E-02	9.202E-02	5.894E-03	-0.209
TA-182	1.392E-01		1.985E-01	3.470E-01	2.092E-02	0.401
IR-192	2.461E-02		3.501E-02	6.059E-02	3.540E-03	0.406
HG-203	5.118E-02		4.596E-02	7.159E-02	4.377E-03	0.715
BI-207	1.193E-02		4.753E-02	8.134E-02	5.775E-03	0.147
PB-210	-4.007E-01		3.796E+00	6.192E+00	4.668E-01	-0.065
PB-211	-2.756E-01		7.740E-01	1.246E+00	5.977E-01	-0.221
BI-212	2.934E+00	+	1.031E+00	1.236E+00	1.378E-01	2.374
RN-219	-6.198E-02		4.022E-01	6.640E-01	8.867E-02	-0.093
RA-223	4.482E-01		7.257E-01	1.098E+00	1.770E-01	0.408
AC-227	-1.015E-01		2.823E-01	4.429E-01	4.511E-02	-0.229
TH-227	-1.015E-01		2.824E-01	4.429E-01	5.308E-02	-0.229
PA-231	-4.351E-01		1.634E+00	2.469E+00	3.238E-01	-0.176
TH-231	4.482E-01		7.257E-01	1.098E+00	1.770E-01	0.408
PA-233	2.193E-02		6.232E-02	1.063E-01	6.567E-03	0.206
PA-234	-2.701E-01		3.181E-01	4.652E-01	8.684E-02	-0.581
NP-239	-6.071E-01		4.986E-01	7.797E-01	4.865E-02	-0.779
AM-241	2.346E-01		2.174E-01	3.250E-01	2.676E-02	0.722
CM-247	-8.500E-03		3.752E-02	6.171E-02	3.461E-03	-0.138
CF-249	5.413E-02		4.011E-02	7.127E-02	3.979E-03	0.760
CF-251	-6.136E-02		1.466E-01	2.328E-01	1.232E-02	-0.264

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]G247900012          *
* Acquisition date   : 6-MAR-2010 15:01:10 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 02:00:01.94 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247900012 Analyst initials: MXR1                 *
* Batch Number       : 957711 Sample Quantity : 1.4523E+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	2.898E+01	2.679E+00	2.934E-01	1.367E+00
NB-95	2.145E-01	6.960E-02	3.301E-02	3.551E-02
CD-109	4.427E+00	1.477E+00	8.304E-01	7.536E-01
SN-126	4.321E-01	1.442E-01	8.140E-02	7.355E-02
BA-137M	1.770E-01	6.702E-02	3.073E-02	3.419E-02
CS-137	1.870E-01	7.080E-02	3.247E-02	3.612E-02
TL-208	5.168E-01	7.667E-02	2.895E-02	3.912E-02
BI-211	3.749E+00	4.616E-01	1.797E-01	2.355E-01
PB-212	1.967E+00	1.811E-01	4.794E-02	9.242E-02
BI-214	1.232E+00	1.805E-01	5.621E-02	9.210E-02
PB-214	1.361E+00	1.829E-01	6.087E-02	9.334E-02
RA-224	4.195E+00	1.246E+00	5.134E-01	6.357E-01
RA-226	1.232E+00	1.805E-01	5.621E-02	9.210E-02
AC-228	2.066E+00	3.831E-01	1.037E-01	1.954E-01
RA-228	2.066E+00	3.831E-01	1.037E-01	1.954E-01
TH-228	1.967E+00	1.811E-01	4.794E-02	9.242E-02
TH-229	4.610E-02	5.669E-01	4.745E-01	2.892E-01
TH-232	2.066E+00	3.831E-01	1.037E-01	1.954E-01
PA-234M	3.436E+01	7.875E+00	3.772E+00	4.018E+00
TH-234	2.561E+01	5.526E+00	1.381E+00	2.819E+00
U-235	4.743E-01	3.478E-01	1.890E-01	1.775E-01
NP-237	1.289E+00	5.052E-01	2.456E-01	2.578E-01
U-238	2.561E+01	5.526E+00	1.381E+00	2.819E+00
ANH-511	2.191E-01	6.809E-02	2.357E-02	3.474E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.005E-01	3.345E-01	2.865E-01	1.707E-01 NOT IDENT.
NA-22	-1.147E-02	3.932E-02	3.267E-02	2.006E-02 NOT IDENT.
NA-24	-1.333E+06	2.076E+06	0.000E+00	1.059E+06 SHORT HLIF

SC-46	2.125E-02	3.940E-02	3.449E-02	2.010E-02	FAIL ABUN
V-48	2.124E-02	6.776E-02	5.807E-02	3.457E-02	NOT IDENT.
CR-51	-1.439E-01	3.777E-01	3.307E-01	1.927E-01	NOT IDENT.
MN-54	-7.849E-03	3.841E-02	3.181E-02	1.959E-02	NOT IDENT.
CO-56	-3.816E-02	3.929E-02	3.011E-02	2.004E-02	NOT IDENT.
CO-57	3.929E-03	2.854E-02	2.531E-02	1.456E-02	NOT IDENT.
CO-58	-4.547E-02	4.056E-02	3.090E-02	2.070E-02	NOT IDENT.
FE-59	-1.517E-02	8.940E-02	7.619E-02	4.561E-02	NOT IDENT.
CO-60	-2.385E-02	3.412E-02	2.664E-02	1.741E-02	NOT IDENT.
ZN-65	-5.400E-02	9.786E-02	6.799E-02	4.993E-02	NOT IDENT.
SE-75	-4.928E-03	5.071E-02	4.141E-02	2.587E-02	NOT IDENT.
SR-85	7.891E-02	4.051E-02	3.515E-02	2.067E-02	NOT IDENT.
Y-88	2.566E-02	3.020E-02	2.676E-02	1.541E-02	NOT IDENT.
Y-91	3.581E+00	1.969E+01	1.715E+01	1.005E+01	NOT IDENT.
NB-94	2.691E-02	3.279E-02	2.947E-02	1.673E-02	NOT IDENT.
NB-95M	6.442E-01	1.681E-01	1.433E-01	8.577E-02	NOT IDENT.
ZR-95	1.614E-02	7.487E-02	6.366E-02	3.820E-02	NOT IDENT.
MO-99	-1.191E+01	1.681E+01	1.344E+01	8.579E+00	NOT IDENT.
TC-99M	3.367E+17	7.544E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	9.122E-03	3.700E-02	3.269E-02	1.888E-02	FAIL ABUN
RH-106	-2.947E-01	3.022E-01	2.388E-01	1.542E-01	NOT IDENT.
RU-106	-2.947E-01	3.008E-01	2.388E-01	1.535E-01	NOT IDENT.
AG-108M	1.794E-03	2.794E-02	2.458E-02	1.425E-02	NOT IDENT.
AG-110M	-1.046E-02	3.873E-02	2.781E-02	1.976E-02	NOT IDENT.
SN-113	-9.236E-03	4.544E-02	3.965E-02	2.319E-02	NOT IDENT.
CD-115	1.795E+00	1.575E+01	1.374E+01	8.034E+00	NOT IDENT.
SN-117M	-2.875E-02	6.565E-02	5.645E-02	3.349E-02	NOT IDENT.
TE-123M	-2.908E-02	3.292E-02	2.785E-02	1.679E-02	NOT IDENT.
SB-124	5.957E-03	6.631E-02	5.640E-02	3.383E-02	NOT IDENT.
SB-125	-8.846E-03	8.927E-02	7.788E-02	4.554E-02	FAIL ABUN
TE-125M	-2.353E+01	1.285E+01	1.068E+01	6.558E+00	NOT IDENT.
I-126	2.451E-01	2.747E-01	2.196E-01	1.401E-01	NOT IDENT.
SB-126	-4.503E-02	1.679E-01	1.196E-01	8.569E-02	NOT IDENT.
SB-127	-4.441E-02	1.617E+00	1.376E+00	8.250E-01	NOT IDENT.
I-131	4.799E-02	1.249E-01	1.127E-01	6.374E-02	NOT IDENT.
TE-132	-5.126E-01	9.834E-01	8.228E-01	5.017E-01	NOT IDENT.
BA-133	-8.484E-03	4.483E-02	3.406E-02	2.287E-02	FAIL ABUN
I-133	6.939E+03	1.317E+04	0.000E+00	6.720E+03	SHORT HLIF
CS-134	1.675E-01	6.299E-02	4.758E-02	3.214E-02	FAIL ABUN
CS-135	3.905E-01	1.905E-01	1.632E-01	9.720E-02	NOT IDENT.
I-135	1.657E+16	7.844E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.525E-02	1.046E-01	9.449E-02	5.335E-02	NOT IDENT.
CE-139	2.235E-03	3.456E-02	3.017E-02	1.763E-02	NOT IDENT.
BA-140	1.401E-01	2.803E-01	2.471E-01	1.430E-01	NOT IDENT.
LA-140	-1.843E-02	8.205E-02	6.675E-02	4.186E-02	FAIL ABUN
CE-141	4.691E-02	8.588E-02	6.738E-02	4.382E-02	NOT IDENT.
CE-143	1.714E+03	4.680E+02	0.000E+00	2.388E+02	SHORT HLIF
CE-144	1.234E-01	2.280E-01	2.034E-01	1.163E-01	NOT IDENT.
PM-144	-1.924E-02	3.408E-02	2.783E-02	1.739E-02	NOT IDENT.
PR-144	-1.426E+00	2.553E+00	2.085E+00	1.302E+00	NOT IDENT.
PM-146	2.917E-02	4.332E-02	3.824E-02	2.210E-02	NOT IDENT.
ND-147	-8.470E-03	5.975E-01	5.172E-01	3.049E-01	NOT IDENT.
PM-149	-1.178E+01	1.266E+02	1.131E+02	6.460E+01	NOT IDENT.
EU-152	-2.071E-02	1.162E-01	8.872E-02	5.929E-02	FAIL ABUN
GD-153	3.068E-01	1.563E-01	1.011E-01	7.973E-02	FAIL ABUN
EU-154	-4.522E-02	1.123E-01	9.222E-02	5.728E-02	NOT IDENT.
EU-155	-4.066E-02	1.438E-01	1.106E-01	7.337E-02	FAIL ABUN
TB-160	9.571E-03	1.394E-01	1.176E-01	7.114E-02	FAIL ABUN
HO-166M	-1.924E-02	5.686E-02	4.707E-02	2.901E-02	FAIL ABUN
TA-182	1.392E-01	1.946E-01	1.753E-01	9.926E-02	FAIL ABUN
IR-192	2.461E-02	3.431E-02	3.156E-02	1.750E-02	FAIL ABUN
HG-203	5.118E-02	4.504E-02	3.739E-02	2.298E-02	NOT IDENT.
BI-207	1.193E-02	4.658E-02	4.122E-02	2.376E-02	FAIL ABUN
PB-210	-4.007E-01	3.720E+00	3.359E+00	1.898E+00	NOT IDENT.
PB-211	-2.756E-01	7.585E-01	6.457E-01	3.870E-01	NOT IDENT.
BI-212	2.934E+00	1.010E+00	6.317E-01	5.155E-01	FAIL ABUN
RN-219	-6.198E-02	3.941E-01	3.440E-01	2.011E-01	FAIL ABUN
RA-223	4.482E-01	7.112E-01	5.715E-01	3.629E-01	FAIL ABUN
AC-227	-1.015E-01	2.766E-01	2.318E-01	1.411E-01	FAIL ABUN
TH-227	-1.015E-01	2.767E-01	2.318E-01	1.412E-01	FAIL ABUN
PA-231	-4.351E-01	1.601E+00	1.289E+00	8.170E-01	FAIL ABUN
TH-231	4.482E-01	7.112E-01	5.715E-01	3.629E-01	FAIL ABUN
PA-233	2.193E-02	6.108E-02	5.541E-02	3.116E-02	FAIL ABUN
PA-234	-2.701E-01	3.117E-01	2.364E-01	1.590E-01	FAIL ABUN
NP-239	-6.071E-01	4.886E-01	4.150E-01	2.493E-01	FAIL ABUN
AM-241	2.346E-01	2.131E-01	1.754E-01	1.087E-01	NOT IDENT.
CM-247	-8.500E-03	3.677E-02	3.197E-02	1.876E-02	FAIL ABUN
CF-249	5.413E-02	3.931E-02	3.696E-02	2.006E-02	NOT IDENT.

CF-251

-6.136E-02

1.437E-01

1.228E-01

7.332E-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	647.2632
49.72	654.6220
57.36	0.0000
59.54	789.1190
63.29	816.9874
63.29	816.9874
64.28	817.8182
67.75	960.2773
69.67	932.8651
70.83	882.8289
72.81	1017.2661
72.87	967.7379
72.87	967.7379
74.82	969.5214
74.82	969.5214
74.82	969.5214
74.97	969.6580
77.11	971.5892
77.11	971.5892
77.11	971.5892
79.69	869.2471
79.80	869.3361
80.12	869.5865
80.19	869.6426
80.57	869.9392
81.00	870.2754
81.07	870.3281
81.07	870.3281
83.79	815.8876
83.79	815.8876
85.43	817.0557
86.48	817.8016
86.55	817.8510
86.79	818.0174
86.94	818.1253
87.57	818.5692
88.03	818.8897
88.47	819.1979
89.96	820.2336
91.11	821.0257
92.59	822.0398
92.59	822.0398
93.35	822.5576
94.67	823.4515
94.87	570.8029
94.87	570.8029
95.86	571.2643
97.43	571.9907
98.44	572.4564
99.53	548.3989
100.11	548.6525
103.18	584.4536
103.37	563.1949
105.31	621.5982
106.12	591.1899
109.28	777.2892
111.00	611.0736
111.76	630.0119
116.30	715.0185
117.23	634.6199
121.12	499.1309
121.78	503.5248
122.06	490.0974
123.07	506.0671
131.20	548.7064
133.52	496.0777
136.00	474.8359

136.47	471.8316
140.51	440.0010
140.51	0.0000
143.76	465.6320
144.24	465.7766
144.24	465.7766
145.44	517.5031
152.43	497.9117
153.25	509.8499
154.21	474.0145
154.21	474.0145
156.02	484.1179
158.56	489.1303
159.00	511.6443
162.66	480.7205
163.33	458.4702
165.86	476.2823
176.60	418.9395
177.52	434.2446
181.07	407.6877
184.41	430.9475
185.72	387.5256
193.51	356.5604
197.04	390.9965
205.31	393.7912
210.85	335.2386
215.65	302.6251
222.11	325.4448
227.38	363.8950
228.16	347.4358
228.18	347.4382
235.69	310.9390
235.96	310.9796
235.96	310.9796
238.63	276.9012
238.63	276.9012
240.99	277.2089
242.00	245.9304
244.70	253.3778
252.40	267.4874
252.80	280.9684
256.23	297.1030
256.23	297.1030
260.90	275.2586
264.66	276.5223
268.22	256.9940
269.46	270.6665
269.46	270.6665
271.23	246.7975
273.65	216.9287
276.40	235.2886
277.37	248.4640
277.60	248.4875
278.00	244.5062
279.20	237.0811
279.54	211.4413
280.46	228.1436
283.69	252.8838
284.31	253.2367
285.41	247.0977
285.90	245.3302
287.50	230.9502
293.27	0.0000
295.22	218.0131
295.96	218.0788
298.57	218.3151
299.98	218.4405
299.98	218.4405
300.09	218.4522
300.09	218.4522
300.13	218.4551
301.36	217.9563
302.85	210.4618
304.50	172.4519
304.50	172.4519
304.85	181.6353
308.46	198.1020
311.90	185.5185

316.51	187.7014
319.41	216.4728
320.08	216.5287
323.87	187.6316
323.87	187.6316
328.76	217.2660
333.37	217.6533
334.37	208.4711
334.37	208.4711
338.28	215.2797
338.28	215.2797
338.32	215.2825
338.32	215.2825
338.32	215.2825
340.48	222.8877
340.55	222.8936
344.28	218.5598
351.06	198.9115
351.93	172.5500
356.01	168.1414
364.49	166.7881
366.42	165.0301
383.85	190.5931
388.16	140.7970
388.63	163.5032
391.69	178.8163
400.66	167.0324
401.81	161.4004
402.40	168.0809
404.85	191.9814
410.95	174.2834
414.70	163.0595
423.72	151.1145
427.09	153.1973
427.87	148.4496
433.94	131.4695
453.88	128.4492
463.37	137.2275
468.07	156.8297
473.00	130.1887
476.78	155.6309
477.60	146.9135
487.02	109.2807
492.35	120.2058
497.08	102.7608
511.00	116.9416
514.00	98.3563
527.90	118.5029
529.87	0.0000
531.02	118.6084
537.26	106.9374
546.56	0.0000
563.25	124.6704
569.33	127.8750
569.50	127.8812
569.70	127.8875
583.19	103.6209
600.60	125.9277
602.73	136.0778
604.72	109.2564
609.32	104.3399
609.32	104.3399
610.33	109.4177
614.28	89.3081
618.01	97.1531
621.93	108.3950
621.93	108.3950
633.25	93.4689
635.95	91.5007
636.99	87.4571
645.85	103.9598
657.76	97.1129
661.66	106.4172
661.66	106.4172
664.57	0.0000
666.33	97.3193
666.50	97.3240
677.62	115.0516

685.70	100.8663
695.00	95.9346
696.49	108.3530
696.51	108.3530
697.00	108.3658
702.65	86.8096
706.68	107.5801
711.68	89.0654
720.70	89.9463
721.93	0.0000
722.78	96.9108
722.91	96.9154
723.31	84.8089
724.19	86.5560
727.33	86.2726
733.00	60.7131
735.93	93.7354
739.50	108.4053
747.24	120.0846
752.31	80.4966
753.82	73.2043
756.73	83.7168
763.94	71.6232
765.81	83.8867
766.42	93.3370
777.92	79.9076
778.90	86.2361
783.70	88.4338
785.37	78.9862
795.86	61.5761
801.95	98.1484
810.29	100.5942
810.76	97.4288
815.77	59.3674
818.51	82.7398
832.01	89.3607
834.85	94.7363
836.80	0.0000
846.77	86.4382
856.80	69.5084
860.56	82.4047
871.09	83.6577
873.19	74.0369
875.33	0.0000
879.36	69.8322
880.51	65.5512
883.24	76.3389
884.68	72.0593
889.28	64.5908
898.04	70.0972
911.20	58.3888
911.20	58.3888
911.20	58.3888
926.50	60.7346
937.49	85.8643
944.13	68.5617
946.00	82.7409
949.00	72.9852
962.29	66.6190
964.08	66.6413
966.15	66.6681
968.97	74.7229
968.97	74.7229
968.97	74.7229
983.53	52.6336
996.26	58.6224
1001.03	69.6759
1004.73	50.3270
1037.84	68.3061
1038.76	0.0000
1048.07	55.4858
1050.41	55.5078
1050.41	55.5078
1063.66	53.7874
1085.87	61.4480
1099.45	69.9951
1112.07	72.1519
1115.54	77.0089

1120.29	54.3254
1120.29	54.3254
1120.55	54.3278
1121.30	54.3349
1131.51	0.0000
1173.23	80.3343
1177.93	63.3714
1189.05	72.0169
1204.77	64.6050
1221.41	73.3530
1231.02	72.5148
1235.36	92.6149
1238.28	80.2402
1260.41	0.0000
1271.85	57.6245
1274.44	55.7249
1274.54	53.8057
1291.59	61.6563
1298.22	0.0000
1312.11	42.5247
1332.49	41.6877
1365.19	19.4865
1368.63	0.0000
1384.29	30.1515
1408.01	39.2220
1457.56	0.0000
1460.82	36.5604
1489.16	17.8579
1505.03	28.8360
1596.21	26.1788
1620.50	17.1722
1678.03	0.0000
1690.97	14.2734
1764.49	23.6701
1764.49	23.6701
1770.23	8.8274
1771.35	8.8285
1791.20	0.0000
1836.06	7.1194

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900012

Total Uranium Activity	7.6420E+01	ug/g
Total Uranium Counting Unc.	1.6441E+01	ug/g
Total Uranium Tpu	8.3884E-06	ug/g
Total Uranium Mda	4.1098E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 957711                          SAMPLE ID   : G247900012
*  ANALYST       : MXR1                             DETECTOR    : GAM19
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 6-MAR-2010 15:01:10.50           SAMPLE ALQT  : 145.230 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.337E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.552E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 5.906E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 2.896E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 17:05:53.94

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900013.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:01:35.
Sample ID          : G247900013 Sample quantity : 1.23230E+02 GRAM
Detector name      : GAM20 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:36.08 0.5%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 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	63.43*	2624	1446	1.03	126.83	122	9	3.64E-01	3.3	
2	4	74.88*	530	1048	1.06	149.70	143	15	7.36E-02	10.6	1.95E+00
3	4	77.21*	819	1026	0.97	154.35	143	15	1.14E-01	7.2	
4	3	87.45	408	1255	1.39	174.81	164	30	5.67E-02	15.4	7.69E+00
5	3	90.09*	411	1199	1.29	180.08	164	30	5.71E-02	15.6	
6	3	92.69*	6050	878	1.17	185.27	164	30	8.40E-01	1.6	
7	3	94.71	338	865	1.41	189.30	164	30	4.69E-02	27.0	
8	0	98.75*	475	803	1.26	197.38	194	9	6.60E-02	11.9	
9	0	105.41	76	500	1.37	210.68	208	6	1.05E-02	47.9	
10	0	112.31	251	1127	1.07	224.45	220	10	3.48E-02	25.8	
11	0	129.05	123	510	1.11	257.89	254	8	1.71E-02	33.0	
12	0	143.77*	261	571	1.05	287.29	283	9	3.62E-02	17.9	
13	0	163.20*	158	535	1.39	326.08	321	11	2.20E-02	29.6	
14	0	185.73*	1527	564	1.04	371.09	365	12	2.12E-01	4.1	
15	0	205.35*	72	328	1.20	410.27	407	7	9.98E-03	44.4	
16	0	209.10	143	384	1.02	417.77	414	9	1.98E-02	26.2	
17	4	238.59*	1424	227	1.13	476.68	472	20	1.98E-01	3.2	1.73E+00
18	4	241.54	322	300	1.79	482.56	472	20	4.48E-02	15.2	
19	0	270.11	163	284	1.49	539.64	532	13	2.26E-02	22.8	
20	0	295.18	431	235	1.17	589.72	585	10	5.99E-02	8.2	
21	0	300.00	83	204	1.15	599.35	595	9	1.15E-02	33.0	
22	0	338.18	254	171	1.18	675.62	671	9	3.53E-02	11.2	
23	0	351.95*	694	331	1.35	703.13	695	16	9.63E-02	7.0	
24	0	409.75	49	101	1.16	818.62	816	7	6.86E-03	36.5	
25	0	463.04	84	155	0.90	925.10	920	10	1.17E-02	29.8	
26	0	511.07*	175	161	2.03	1021.10	1014	16	2.43E-02	20.1	
27	0	583.28*	439	132	1.38	1165.42	1159	13	6.09E-02	7.3	
28	0	609.43*	515	146	1.45	1217.69	1212	14	7.15E-02	6.8	
29	0	661.69	421	91	1.39	1322.15	1317	11	5.85E-02	6.6	
30	0	727.49*	91	147	1.82	1453.70	1447	17	1.26E-02	32.4	
31	0	743.11	31	72	0.97	1484.94	1480	9	4.26E-03	53.0	
32	0	766.90	130	159	1.42	1532.51	1526	14	1.81E-02	22.4	
33	0	787.41	39	109	1.46	1573.51	1567	14	5.43E-03	58.8	
34	0	861.16	46	78	1.59	1720.99	1714	12	6.35E-03	41.4	
35	0	911.09*	334	73	1.26	1820.86	1814	14	4.64E-02	7.8	
36	1	965.06	43	41	1.84	1928.80	1925	23	5.93E-03	28.4	1.51E+00
37	1	969.03*	148	54	1.62	1936.74	1925	23	2.06E-02	13.0	
38	0	1001.40	247	89	1.40	2001.49	1994	15	3.44E-02	10.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1120.55	101	67	2.00	2239.87	2234	12	1.41E-02	18.9	
40	0	1238.24	33	58	1.97	2475.36	2471	10	4.60E-03	45.6	
41	0	1460.79*	1366	30	1.78	2920.85	2913	15	1.90E-01	2.9	
42	0	1589.58	33	35	2.06	3178.73	3170	19	4.61E-03	45.3	
43	0	1764.64*	94	8	2.14	3529.37	3523	16	1.31E-02	12.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 17:05:57

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900013.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 15:01:35
Sample ID         : G247900013 Sample quantity : 123.23 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA20 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:36.08 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	*	3.114E+01	3.247E+00	5.716E-01	4.985E-02	54.478
NB-95	+	765.81	*	2.200E-01	1.011E-01	7.836E-02	7.964E-03	2.807
CD-109	+	88.03	*	4.954E+00	1.597E+00	1.764E+00	1.668E-01	2.809
SN-126	+	64.28		1.789E+01	2.840E+00	9.147E-01	1.324E-01	19.555
	+	86.94		2.010E+00	1.040E+00	7.207E-01	2.992E-01	2.789
	+	87.57	*	4.835E-01	1.559E-01	1.727E-01	1.624E-02	2.801
BA-137M	+	661.66	*	5.865E-01	9.683E-02	6.329E-02	6.352E-03	9.267
CS-137	+	661.66	*	6.196E-01	1.023E-01	6.686E-02	6.720E-03	9.267
EU-155	+	86.55		5.866E-01	1.893E-01	2.108E-01	1.974E-02	2.782
	+	105.31	*	1.486E-01	1.430E-01	2.237E-01	1.944E-02	0.664
TL-208		277.37		7.463E-01	4.304E-01	7.512E-01	1.012E-01	0.993
	+	583.19	*	5.830E-01	1.042E-01	5.621E-02	5.773E-03	10.373
	+	860.56		5.708E-01	4.761E-01	4.465E-01	4.731E-02	1.278
BI-211		72.87		6.561E+00	4.100E+00	6.875E+00	5.429E-01	0.954
	+	351.06	*	4.120E+00	7.009E-01	3.485E-01	3.339E-02	11.823
PB-212	+	74.82		2.598E+00	6.428E-01	7.447E-01	9.408E-02	3.489
	+	77.11		2.332E+00	3.892E-01	4.334E-01	3.585E-02	5.380
	+	238.63	*	1.895E+00	2.364E-01	9.603E-02	1.025E-02	19.735
	+	300.09		1.715E+00	1.149E+00	1.237E+00	1.426E-01	1.387
BI-214	+	609.32	*	1.325E+00	2.331E-01	1.237E-01	1.382E-02	10.712
	+	1120.29		1.329E+00	5.221E-01	4.862E-01	5.285E-02	2.734
	+	1764.49		1.702E+00	4.478E-01	2.650E-01	2.177E-02	6.422
PB-214	+	74.82		4.605E+00	1.109E+00	1.320E+00	1.493E-01	3.489
	+	77.11		4.111E+00	7.653E-01	7.641E-01	8.925E-02	5.380
	+	242.00		2.602E+00	8.437E-01	5.839E-01	6.585E-02	4.456
	+	295.22		1.579E+00	3.195E-01	2.524E-01	2.982E-02	6.256
	+	351.93	*	1.495E+00	2.674E-01	1.267E-01	1.400E-02	11.799
RA-224	+	240.99	*	4.600E+00	1.468E+00	1.029E+00	9.947E-02	4.470
RA-226	+	609.32	*	1.325E+00	2.331E-01	1.237E-01	1.382E-02	10.712
	+	1120.29		1.329E+00	5.221E-01	4.862E-01	5.285E-02	2.734
	+	1764.49		1.702E+00	4.478E-01	2.650E-01	2.177E-02	6.422
AC-228	+	338.32		1.678E+00	7.972E-01	4.163E-01	1.743E-01	4.031
	+	911.20	*	2.120E+00	4.239E-01	2.134E-01	2.682E-02	9.935
	+	968.97		1.622E+00	5.819E-01	4.102E-01	1.015E-01	3.955

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.678E+00	7.972E-01	4.163E-01	1.743E-01	4.031
	+	911.20	*	2.120E+00	4.239E-01	2.134E-01	2.682E-02	9.935
	+	968.97		1.622E+00	5.819E-01	4.102E-01	1.015E-01	3.955
TH-228	+	74.82		2.598E+00	5.918E-01	7.447E-01	6.066E-02	3.489
	+	77.11		2.332E+00	3.892E-01	4.334E-01	3.585E-02	5.380
	+	238.63	*	1.895E+00	2.364E-01	9.603E-02	1.025E-02	19.735
	+	300.09		1.715E+00	1.546E+00	1.237E+00	7.592E-01	1.387
TH-232	+	338.32		1.678E+00	4.079E-01	4.163E-01	3.901E-02	4.031
	+	911.20	*	2.120E+00	4.239E-01	2.134E-01	2.682E-02	9.935
	+	968.97		1.622E+00	5.819E-01	4.102E-01	1.015E-01	3.955
PA-234M	+	766.42		5.759E+01	3.911E+01	2.053E+01	1.048E+01	2.805
	+	1001.03	*	5.229E+01	1.232E+01	8.446E+00	9.034E-01	6.192
TH-234	+	63.29	*	4.641E+01	8.792E+00	2.625E+00	4.663E-01	17.679
	+	92.59		6.082E+01	1.368E+01	1.472E+00	3.280E-01	41.324
U-235	+	89.96		5.105E+00	2.038E+00	1.816E+00	4.515E-01	2.811
	+	93.35		4.594E+01	1.079E+01	1.108E+00	2.579E-01	41.448
	+	143.76	*	1.031E+00	4.081E-01	3.845E-01	6.487E-02	2.680
	+	163.33		1.429E+00	8.847E-01	8.271E-01	1.488E-01	1.727
	+	185.72		1.316E+00	1.600E-01	7.707E-02	6.936E-03	17.074
	+	205.31		7.529E-01	6.823E-01	9.252E-01	1.708E-01	0.814
NP-237	+	86.48	*	1.443E+00	5.549E-01	5.189E-01	1.190E-01	2.781
	+	95.86		5.309E+00	3.138E+00	1.852E+00	4.466E-01	2.866
U-238	+	63.29	*	4.641E+01	8.792E+00	2.625E+00	4.663E-01	17.679
	+	92.59		6.082E+01	5.862E+00	1.472E+00	1.343E-01	41.324
ANH-511	+	511.00	*	1.780E-01	7.359E-02	4.968E-02	4.630E-03	3.583

---- 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	*	-2.470E-01	3.779E-01	5.858E-01	5.693E-02	-0.422
NA-22		1274.54	*	-1.612E-02	4.333E-02	6.688E-02	5.540E-03	-0.241
NA-24		1368.63	*	-2.276E-01	4.333E-02	Half-Life too short		
SC-46		889.28	*	-3.925E-02	4.135E-02	6.210E-02	6.191E-03	-0.632
	+	1120.55		2.267E-01	8.775E-02	1.323E-01	1.131E-02	1.714
V-48		944.13		-1.942E-01	9.510E-01	1.536E+00	1.498E-01	-0.126
		983.53	*	-1.498E-02	7.296E-02	1.173E-01	1.121E-02	-0.128
		1312.11		1.115E-02	8.433E-02	1.377E-01	1.149E-02	0.081
CR-51		320.08	*	7.427E-02	3.937E-01	6.589E-01	6.602E-02	0.113
MN-54		834.85	*	7.797E-03	4.217E-02	7.088E-02	7.159E-03	0.110
CO-56		846.77	*	-8.992E-03	3.969E-02	6.447E-02	6.498E-03	-0.139
		1037.84		2.416E-01	3.358E-01	5.827E-01	5.617E-02	0.415
	+	1238.28		1.219E-01	1.117E-01	1.667E-01	1.410E-02	0.731
		1771.35		-5.605E-02	2.423E-01	3.187E-01	2.614E-02	-0.176
CO-57		122.06	*	-2.691E-02	3.162E-02	4.914E-02	4.102E-03	-0.548
		136.47		8.633E-03	2.557E-01	4.095E-01	3.703E-02	0.021
CO-58		810.76	*	-2.812E-02	4.185E-02	6.554E-02	6.655E-03	-0.429
FE-59		1099.45	*	-5.572E-02	9.801E-02	1.507E-01	1.421E-02	-0.370
		1291.59		-1.529E-02	1.201E-01	1.904E-01	1.811E-02	-0.080

---- 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			-1.111E-02	4.622E-02	7.321E-02	5.886E-03	-0.152
	1332.49	*		6.915E-03	3.796E-02	6.240E-02	5.227E-03	0.111
ZN-65	1115.54	*		-1.062E-01	1.122E-01	1.372E-01	1.181E-02	-0.774
SE-75	121.12			-7.904E-02	1.618E-01	2.551E-01	2.775E-02	-0.310
	136.00			1.713E-02	4.961E-02	8.032E-02	6.788E-03	0.213
	264.66	*		7.028E-03	5.341E-02	7.932E-02	7.854E-03	0.089
	279.54			-5.271E-02	1.214E-01	1.983E-01	2.031E-02	-0.266
	400.66			-3.190E-02	2.795E-01	4.549E-01	4.979E-02	-0.070
SR-85	514.00	*		5.368E-02	4.696E-02	7.261E-02	6.780E-03	0.739
Y-88	898.04			-4.784E-03	4.066E-02	6.640E-02	6.625E-03	-0.072
	1836.06	*		6.654E-03	3.491E-02	5.929E-02	4.784E-03	0.112
Y-91	1204.77	*		-1.369E+01	2.533E+01	3.910E+01	3.175E+00	-0.350
NB-94	702.65	*		-1.752E-02	3.642E-02	5.900E-02	5.969E-03	-0.297
	871.09			-1.062E-02	3.543E-02	5.705E-02	5.718E-03	-0.186
NB-95M	235.69	*		-8.833E-02	1.445E-01	2.062E-01	2.219E-02	-0.428
ZR-95	724.19			3.899E-02	1.048E-01	1.584E-01	1.706E-02	0.246
	756.73	*		8.681E-02	7.929E-02	1.416E-01	1.549E-02	0.613
MO-99	140.51			1.785E+01	3.798E+01	5.459E+01	1.292E+01	0.327
	181.07			-1.927E+01	3.205E+01	4.324E+01	8.188E+00	-0.446
	366.42			-2.810E+01	1.292E+02	2.098E+02	1.866E+01	-0.134
	739.50	*		-1.542E+00	1.817E+01	2.616E+01	4.354E+00	-0.059
	777.92			-3.975E+00	4.907E+01	8.125E+01	8.256E+00	-0.049
TC-99M	140.51	*		3.873E+11	4.907E+01	Half-Life too short		
RU-103	497.08	*		-6.615E-03	4.585E-02	7.348E-02	1.054E-02	-0.090
	610.33	+		1.392E+01	3.033E+00	3.078E+00	5.241E-01	4.524
RH-106	621.93	*		-1.559E-01	3.273E-01	5.000E-01	7.060E-02	-0.312
	1050.41			3.250E-01	2.547E+00	4.213E+00	3.846E-01	0.077
RU-106	621.93	*		-1.559E-01	3.269E-01	5.000E-01	4.949E-02	-0.312
	1050.41			3.250E-01	2.547E+00	4.213E+00	3.846E-01	0.077
AG-108M	433.94	*		-9.883E-03	3.031E-02	4.832E-02	4.355E-03	-0.205
	614.28			2.260E-03	4.153E-02	5.820E-02	5.887E-03	0.039
	722.91			-1.193E-02	4.207E-02	5.931E-02	6.156E-03	-0.201
AG-110M	657.76	*		-3.681E-03	3.782E-02	5.486E-02	5.621E-03	-0.067
	677.62			-1.012E-04	2.953E-01	4.962E-01	5.104E-02	0.000
	706.68			1.197E-02	2.331E-01	3.921E-01	4.052E-02	0.031
	763.94			5.164E-01	2.204E-01	3.749E-01	3.886E-02	1.377
	884.68			2.780E-02	5.132E-02	8.863E-02	9.060E-03	0.314
	937.49			-1.009E-01	1.231E-01	1.876E-01	1.888E-02	-0.538
	1384.29			-9.348E-02	1.398E-01	2.127E-01	1.844E-02	-0.439
	1505.03			-2.442E-01	2.552E-01	3.616E-01	3.065E-02	-0.675
SN-113	391.69	*		-4.282E-02	4.983E-02	7.738E-02	6.675E-03	-0.553
CD-115	260.90			-2.136E+02	2.128E+02	3.387E+02	3.332E+01	-0.631
	492.35			-2.462E+01	5.984E+01	9.414E+01	8.653E+00	-0.262
	527.90	*		-6.845E+00	1.676E+01	2.618E+01	2.468E+00	-0.261
SN-117M	156.02			-6.138E-01	2.891E+00	4.562E+00	3.922E-01	-0.135
	158.56	*		3.601E-03	7.620E-02	1.079E-01	9.316E-03	0.033
TE-123M	159.00	*		-3.556E-02	3.950E-02	5.299E-02	4.604E-03	-0.671
SB-124	602.73			-1.555E-02	4.654E-02	6.652E-02	6.532E-03	-0.234
	645.85			-2.213E-01	4.922E-01	8.007E-01	8.340E-02	-0.276

---- 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		-9.772E-02	4.291E-01	6.091E-01	6.281E-02	-0.160
		1690.97	*	-1.108E-02	5.755E-02	9.075E-02	7.906E-03	-0.122
		427.87	*	1.101E-01	9.367E-02	1.636E-01	1.447E-02	0.673
	+	463.37		7.588E-01	4.580E-01	6.104E-01	5.862E-02	1.243
		600.60		-1.884E-02	1.845E-01	2.928E-01	3.037E-02	-0.064
TE-125M		635.95		-1.062E-02	2.926E-01	4.849E-01	5.122E-02	-0.022
		109.28	*	9.782E+00	1.997E+01	2.319E+01	2.407E+00	0.422
	I-126	388.63		-3.676E-03	1.902E-01	3.117E-01	2.626E-02	-0.012
SB-126		666.33	*	1.844E-01	2.746E-01	4.278E-01	4.299E-02	0.431
		753.82		8.719E-01	2.126E+00	3.647E+00	3.706E-01	0.239
		414.70		3.118E-02	9.506E-02	1.394E-01	1.195E-02	0.224
		666.50		6.452E-02	9.459E-02	1.475E-01	1.482E-02	0.438
		695.00		-3.840E-02	9.058E-02	1.475E-01	1.491E-02	-0.260
SB-127		697.00		-1.389E-02	3.046E-01	5.093E-01	5.148E-02	-0.027
		720.70	*	5.955E-02	1.796E-01	2.706E-01	2.744E-02	0.220
		856.80		1.603E-02	5.775E-01	8.327E-01	8.374E-02	0.019
		252.40		3.768E-01	5.770E+00	9.692E+00	4.057E+00	0.039
		473.00		-1.086E-01	2.172E+00	3.514E+00	4.682E-01	-0.031
I-131		685.70	*	-8.913E-01	1.550E+00	2.479E+00	3.171E-01	-0.360
		783.70		1.477E+00	5.351E+00	7.956E+00	1.092E+00	0.186
		80.19		2.558E+00	9.484E+00	1.102E+01	9.521E-01	0.232
		284.31		1.001E+00	1.737E+00	2.968E+00	3.063E-01	0.337
		364.49	*	-4.463E-02	1.292E-01	2.082E-01	1.954E-02	-0.214
TE-132		636.99		1.480E-01	1.835E+00	3.065E+00	3.185E-01	0.048
		49.72		1.104E+00	2.158E+01	3.570E+01	3.827E+00	0.031
	+	111.76		1.957E+02	1.034E+02	1.148E+02	1.282E+01	1.704
BA-133		116.30		2.943E+01	5.374E+01	7.867E+01	8.745E+00	0.374
		228.16	*	3.316E-01	9.660E-01	1.646E+00	2.720E-01	0.201
		81.00		-5.854E-02	1.839E-01	2.076E-01	3.227E-02	-0.282
		276.40		6.451E-01	4.083E-01	6.894E-01	1.031E-01	0.936
		302.85		-7.004E-02	1.620E-01	2.289E-01	3.175E-02	-0.306
I-133		356.01	*	3.675E-03	4.897E-02	7.127E-02	9.455E-03	0.052
		383.85		3.509E-02	3.083E-01	5.097E-01	6.301E-02	0.069
		529.87	*	2.614E-03	3.083E-01	Half-Life	too short	
		875.33		2.987E-01	3.083E-01	Half-Life	too short	
		1298.22		-6.441E-01	3.083E-01	Half-Life	too short	
CS-134		563.25		3.016E-01	3.953E-01	6.684E-01	6.485E-02	0.451
		569.33		1.370E-01	2.203E-01	3.687E-01	3.601E-02	0.371
		604.72		1.811E-02	4.255E-02	6.202E-02	6.107E-03	0.292
		795.86	*	1.242E-01	5.739E-02	1.058E-01	1.080E-02	1.173
		801.95		-4.280E-01	4.536E-01	6.789E-01	6.916E-02	-0.630
CS-135		1365.19		-4.748E-01	9.992E-01	1.558E+00	1.374E-01	-0.305
		268.22	*	1.562E-01	1.647E-01	2.852E-01	3.160E-02	0.548
	I-135	546.56		5.669E+09	1.647E-01	Half-Life	too short	
I-135		836.80		2.772E+11	1.647E-01	Half-Life	too short	
		1038.76		-1.095E+10	1.647E-01	Half-Life	too short	
		1131.51		1.076E+10	1.647E-01	Half-Life	too short	
		1260.41	*	-3.716E+10	1.647E-01	Half-Life	too short	
		1457.56		6.588E+12	1.647E-01	Half-Life	too short	

---- Non-Identified Nuclides ----

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	1678.03			6.007E+10	1.647E-01	Half-Life	too short	
	1791.20			8.025E+10	1.647E-01	Half-Life	too short	
CS-136	153.25			2.840E-01	1.132E+00	1.818E+00	1.858E-01	0.156
	176.60			1.799E-01	6.314E-01	1.010E+00	9.843E-02	0.178
	273.65			-7.638E-01	6.519E-01	8.776E-01	9.273E-02	-0.870
	340.55			1.715E-01	1.912E-01	2.929E-01	2.824E-02	0.585
	818.51			1.920E-02	7.454E-02	1.266E-01	1.283E-02	0.152
	1048.07	*		4.628E-02	1.158E-01	1.962E-01	1.861E-02	0.236
	1235.36			2.371E-01	6.935E-01	1.007E+00	1.153E-01	0.236
CE-139	165.86	*		4.659E-03	3.928E-02	5.574E-02	4.866E-03	0.084
BA-140	162.66	+		2.810E+00	1.685E+00	1.849E+00	1.713E-01	1.520
	304.85			-6.559E-01	1.684E+00	2.374E+00	7.033E-01	-0.276
	423.72			-1.459E+00	2.281E+00	3.492E+00	1.149E+00	-0.418
	537.26	*		-1.415E-01	3.096E-01	4.756E-01	1.624E-01	-0.298
LA-140	328.76			5.637E-01	3.530E-01	6.203E-01	6.174E-02	0.909
	487.02			1.289E-01	1.629E-01	2.770E-01	2.675E-02	0.465
	815.77			6.670E-03	3.384E-01	5.632E-01	6.197E-02	0.012
	1596.21	*		-7.858E-02	1.106E-01	1.339E-01	1.131E-02	-0.587
CE-141	145.44	*		1.660E-01	9.143E-02	1.389E-01	1.199E-02	1.196
CE-143	57.36			-5.648E-04	9.143E-02	Half-Life	too short	
	293.27	*		1.146E-03	9.143E-02	Half-Life	too short	
	664.57			6.635E-03	9.143E-02	Half-Life	too short	
	721.93			1.497E-03	9.143E-02	Half-Life	too short	
CE-144	80.12			1.160E+00	4.708E+00	5.467E+00	4.684E-01	0.212
	133.52	*		1.297E-02	2.780E-01	3.969E-01	6.013E-02	0.033
PM-144	476.78			-2.479E-02	7.351E-02	1.166E-01	1.141E-02	-0.213
	618.01			1.808E-02	3.372E-02	5.612E-02	5.665E-03	0.322
	696.49	*		8.002E-03	3.676E-02	6.256E-02	6.325E-03	0.128
PR-144	696.51	*		5.992E-01	2.753E+00	4.685E+00	4.735E-01	0.128
	1489.16			-1.410E+00	1.027E+01	1.674E+01	1.419E+00	-0.084
PM-146	453.88	*		3.400E-02	4.722E-02	8.004E-02	8.663E-03	0.425
	633.25			-6.511E-02	1.586E+00	2.521E+00	9.708E-01	-0.026
	735.93			-1.389E-02	1.712E-01	2.467E-01	7.039E-02	-0.056
	747.24			2.713E-02	1.131E-01	1.686E-01	2.620E-02	0.161
ND-147	91.11	+		1.762E+00	5.779E-01	1.312E+00	1.299E-01	1.343
	319.41			-3.949E-01	3.733E+00	6.153E+00	5.920E-01	-0.064
	531.02	*		-3.776E-01	6.426E-01	9.852E-01	1.521E-01	-0.383
PM-149	285.90	*		1.687E+01	1.359E+02	2.277E+02	3.713E+01	0.074
EU-152	121.78			-7.363E-02	9.037E-02	1.405E-01	1.358E-02	-0.524
	244.70			-9.010E-02	3.877E-01	5.654E-01	5.485E-02	-0.159
	344.28	*		-1.584E-02	1.138E-01	1.725E-01	1.682E-02	-0.092
	778.90			-1.565E-02	2.695E-01	4.470E-01	4.542E-02	-0.035
	964.08	+		5.023E-01	2.889E-01	5.462E-01	5.277E-02	0.920
	1085.87			1.447E-04	4.118E-01	6.713E-01	5.943E-02	0.000
	1112.07			3.324E-01	3.145E-01	5.585E-01	4.819E-02	0.595
	1408.01			7.998E-02	1.591E-01	2.832E-01	2.393E-02	0.282
GD-153	69.67			2.743E+00	2.419E+00	3.646E+00	2.789E-01	0.752
	97.43	+	*	7.137E-01	1.805E-01	2.226E-01	1.975E-02	3.206
	103.18			4.043E-02	1.932E-01	2.221E-01	1.921E-02	0.182

---- 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		-3.295E-02	6.454E-02	1.016E-01	1.132E-02	-0.324
		723.31		-9.466E-02	1.937E-01	2.663E-01	2.902E-02	-0.355
		873.19		-4.303E-02	2.935E-01	4.793E-01	6.204E-02	-0.090
		996.26		-5.606E-02	4.315E-01	6.017E-01	1.078E-01	-0.093
		1004.73		2.806E-01	2.473E-01	3.984E-01	4.881E-02	0.704
TB-160		1274.44	*	-9.354E-02	1.281E-01	1.892E-01	2.104E-02	-0.494
	+	86.79		1.571E+00	5.065E-01	6.783E-01	6.316E-02	2.316
		197.04		5.083E-02	5.983E-01	1.015E+00	9.286E-02	0.050
		215.65		-4.757E-02	8.174E-01	1.376E+00	1.292E-01	-0.035
	+	298.57		2.439E-01	1.626E-01	2.129E-01	2.092E-02	1.146
		879.36	*	-2.314E-02	1.438E-01	2.343E-01	2.343E-02	-0.099
		962.29		6.558E-01	5.642E-01	9.133E-01	8.832E-02	0.718
	+	966.15		3.542E-01	2.038E-01	4.751E-01	4.585E-02	0.746
		1177.93		5.491E-02	3.540E-01	5.824E-01	4.690E-02	0.094
		1271.85		6.955E-01	6.783E-01	1.213E+00	1.003E-01	0.574
HO-166M		80.57		4.397E-02	5.152E-01	5.937E-01	5.114E-02	0.074
	+	184.41		1.045E+00	1.271E-01	1.279E-01	1.149E-02	8.175
		280.46		-1.113E-01	9.273E-02	1.449E-01	1.442E-02	-0.769
	+	410.95		3.791E-01	2.785E-01	4.588E-01	3.915E-02	0.826
		711.68	*	-1.480E-02	6.677E-02	1.101E-01	1.116E-02	-0.134
		752.31		-1.093E-01	3.038E-01	4.939E-01	5.018E-02	-0.221
		810.29		-5.293E-02	6.157E-02	9.453E-02	9.582E-03	-0.560
TA-182		67.75		2.815E-02	1.563E-01	2.302E-01	1.730E-02	0.122
	+	100.11		1.545E+00	3.909E-01	4.326E-01	3.788E-02	3.572
		152.43		2.634E-01	4.323E-01	7.029E-01	6.013E-02	0.375
		222.11		2.159E-01	3.886E-01	6.675E-01	6.319E-02	0.323
	+	1121.30		6.267E-01	2.425E-01	3.715E-01	3.175E-02	1.687
		1189.05		-3.598E-01	3.370E-01	4.889E-01	3.951E-02	-0.736
		1221.41	*	1.126E-01	2.287E-01	3.838E-01	3.131E-02	0.294
IR-192		1231.02		4.471E-01	4.741E-01	8.117E-01	6.641E-02	0.551
	+	295.96		1.179E+00	2.261E-01	3.148E-01	3.118E-02	3.744
		308.46		5.486E-02	1.048E-01	1.783E-01	1.743E-02	0.308
		316.51	*	-3.002E-02	3.634E-02	5.736E-02	5.547E-03	-0.523
		468.07		7.252E-02	8.415E-02	1.283E-01	1.234E-02	0.565
HG-203		70.83		-1.324E+00	1.981E+00	2.825E+00	4.408E-01	-0.468
		72.87		1.658E+00	1.058E+00	1.738E+00	2.632E-01	0.954
		279.20	*	9.442E-03	4.310E-02	7.258E-02	7.365E-03	0.130
BI-207		72.81		3.312E-01	2.347E-01	3.928E-01	3.100E-02	0.843
	+	74.97		7.489E-01	1.703E-01	2.691E-01	2.173E-02	2.783
		569.70		2.710E-02	3.355E-02	5.686E-02	5.493E-03	0.477
		1063.66	*	2.747E-02	5.394E-02	9.217E-02	8.322E-03	0.298
		1770.23		-4.042E-02	4.515E-01	6.209E-01	5.094E-02	-0.065
PB-210		46.54	*	7.882E-01	2.954E+00	4.917E+00	4.518E-01	0.160
PB-211		404.85	*	4.996E-01	8.404E-01	1.276E+00	6.170E-01	0.392
		427.09		9.298E-01	1.663E+00	2.719E+00	1.258E+00	0.342
		832.01		-1.218E+00	1.263E+00	1.650E+00	8.602E-01	-0.738
BI-212	+	727.33	*	1.843E+00	1.219E+00	1.234E+00	1.673E-01	1.494
		785.37		3.035E+00	4.002E+00	6.213E+00	6.311E-01	0.489
		1620.50		6.600E-01	2.356E+00	4.062E+00	3.421E-01	0.162

---- 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		9.549E-01	4.483E-01	4.618E-01	5.247E-02	2.068
		401.81	*	-1.956E-01	4.345E-01	6.906E-01	1.020E-01	-0.283
RA-223		81.07		-1.296E-01	4.163E-01	4.705E-01	4.078E-02	-0.275
		83.79		6.965E-01	2.077E-01	3.156E-01	2.829E-02	2.207
	+	94.87		2.500E+00	1.368E+00	1.417E+00	1.275E-01	1.765
	+	144.24		3.454E+00	1.280E+00	1.634E+00	1.550E-01	2.113
		154.21		3.271E-01	4.769E-01	7.768E-01	7.305E-02	0.421
	+	269.46		7.419E-01	3.461E-01	3.618E-01	3.635E-02	2.051
		323.87	*	-2.234E-01	7.218E-01	1.176E+00	2.095E-01	-0.190
	+	338.28		6.660E+00	1.714E+00	2.462E+00	3.106E-01	2.705
AC-227		79.69		-7.648E-01	2.400E+00	2.712E+00	4.660E-01	-0.282
		235.96		1.260E-01	1.804E-01	2.764E-01	3.091E-02	0.456
		256.23	*	-1.070E-02	2.913E-01	4.872E-01	6.295E-02	-0.022
	+	299.98		1.887E+00	1.270E+00	1.688E+00	2.287E-01	1.117
		304.50		-1.693E+00	1.957E+00	2.648E+00	4.544E-01	-0.639
		334.37		1.700E-01	1.967E+00	2.875E+00	4.614E-01	0.059
TH-227		79.80		4.902E-01	3.085E+00	3.567E+00	7.757E-01	0.137
		235.96		1.260E-01	1.804E-01	2.764E-01	2.943E-02	0.456
		256.23	*	-1.070E-02	2.913E-01	4.872E-01	7.007E-02	-0.022
	+	299.98		1.887E+00	1.270E+00	1.688E+00	2.287E-01	1.117
		304.50		-1.693E+00	1.957E+00	2.648E+00	4.544E-01	-0.639
		334.37		1.700E-01	1.967E+00	2.875E+00	4.614E-01	0.059
TH-229		85.43		1.248E+00	3.497E-01	5.292E-01	4.842E-02	2.358
	+	88.47		7.455E-01	2.404E-01	3.314E-01	3.122E-02	2.250
		193.51	*	-1.653E-01	5.763E-01	9.665E-01	8.801E-02	-0.171
		210.85		2.128E+00	1.079E+00	1.737E+00	1.621E-01	1.225
PA-231		283.69	*	1.406E-01	1.541E+00	2.580E+00	3.972E-01	0.055
	+	301.36		1.212E+00	8.149E-01	1.056E+00	1.374E-01	1.148
TH-231		81.07		-1.296E-01	4.163E-01	4.705E-01	4.078E-02	-0.275
		83.79		6.965E-01	2.077E-01	3.156E-01	2.829E-02	2.207
	+	94.87		2.500E+00	1.368E+00	1.417E+00	1.275E-01	1.765
	+	144.24		3.454E+00	1.280E+00	1.634E+00	1.550E-01	2.113
		154.21		3.271E-01	4.769E-01	7.768E-01	7.305E-02	0.421
	+	269.46		7.419E-01	3.461E-01	3.618E-01	3.635E-02	2.051
		323.87	*	-2.234E-01	7.218E-01	1.176E+00	2.095E-01	-0.190
	+	338.28		6.660E+00	1.714E+00	2.462E+00	3.106E-01	2.705
PA-233	+	300.13		8.537E-01	5.786E-01	7.634E-01	1.187E-01	1.118
		311.90	*	2.417E-02	6.973E-02	1.176E-01	1.167E-02	0.205
		340.48		9.196E-01	8.121E-01	1.219E+00	2.967E-01	0.754
PA-234	+	94.67		9.062E-01	5.024E-01	6.182E-01	7.835E-02	1.466
	+	98.44		7.778E-01	4.717E-01	2.472E-01	1.380E-01	3.146
	+	111.00		8.697E-01	4.612E-01	4.722E-01	5.656E-02	1.842
		131.20		-1.822E-02	1.451E-01	2.057E-01	1.719E-02	-0.089
		569.50		1.886E-01	3.033E-01	5.078E-01	4.905E-02	0.371
		733.00		2.248E-01	4.461E-01	6.792E-01	1.551E-01	0.331
		880.51		-2.340E-01	2.892E-01	4.411E-01	4.409E-02	-0.531
		883.24		2.628E-01	3.371E-01	5.120E-01	3.452E-01	0.513
		926.50		1.038E-01	1.800E-01	3.086E-01	7.936E-02	0.336
		946.00	*	4.294E-02	3.042E-01	5.069E-01	9.787E-02	0.085

Sample ID : G247900013

Acquisition date : 6-MAR-2010 15:01:35

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	949.00		-1.072E-02	4.533E-01	7.441E-01	7.244E-02	-0.014
		99.53		1.411E+00	3.569E-01	4.362E-01	3.829E-02	3.235
	+	103.37		6.202E-02	1.758E-01	2.040E-01	1.763E-02	0.304
		106.12		1.184E-01	1.139E-01	1.811E-01	1.552E-02	0.654
		117.23	*	-7.508E-02	5.694E-01	8.111E-01	6.794E-02	-0.093
AM-241	*	228.18		1.700E-01	2.265E-01	3.916E-01	3.734E-02	0.434
		277.60		2.943E-01	1.941E-01	3.411E-01	3.393E-02	0.863
		59.54		1.882E-01	2.159E-01	3.248E-01	2.542E-02	0.579
CM-247		278.00		1.091E+00	8.238E-01	1.440E+00	1.433E-01	0.758
		287.50		2.441E-01	1.340E+00	2.252E+00	2.231E-01	0.108
CF-249	*	402.40		-1.152E-02	3.976E-02	6.396E-02	5.407E-03	-0.180
		252.80		1.474E-01	1.071E+00	1.804E+00	1.763E-01	0.082
		333.37		-6.286E-02	2.138E-01	3.036E-01	2.866E-02	-0.207
CF-251	*	388.16		8.159E-03	4.152E-02	6.893E-02	5.813E-03	0.118
		177.52		-1.432E-02	1.579E-01	2.488E-01	2.211E-02	-0.058
		227.38		4.302E-02	3.751E-01	6.343E-01	6.042E-02	0.068
		285.41		1.382E+00	2.339E+00	3.999E+00	3.968E-01	0.346

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                               DETECTOR DATA                               *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900013      *
* Acquisition date   : 6-MAR-2010 15:01:35 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 02:00:36.08           Half life ratio  : 8.000      *
*****
*
*                               SAMPLE DATA                               *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247900013           Analyst initials: MXR1          *
* Batch Number       : 957711              Sample Quantity  : 1.2323E+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	3.114E+01	3.182E+00	5.708E-01	0.000E+00
NB-95	2.200E-01	9.903E-02	7.893E-02	0.000E+00
CD-109	4.954E+00	1.566E+00	1.827E+00	0.000E+00
SN-126	4.835E-01	1.528E-01	1.789E-01	0.000E+00
BA-137M	5.865E-01	9.489E-02	6.388E-02	0.000E+00
CS-137	6.196E-01	1.003E-01	6.748E-02	0.000E+00
EU-155	1.486E-01	1.401E-01	2.313E-01	0.000E+00
TL-208	5.830E-01	1.021E-01	5.682E-02	0.000E+00
BI-211	4.120E+00	6.868E-01	3.547E-01	0.000E+00
PB-212	1.895E+00	2.317E-01	9.823E-02	0.000E+00
BI-214	1.325E+00	2.284E-01	1.250E-01	0.000E+00
PB-214	1.495E+00	2.621E-01	1.290E-01	0.000E+00
RA-224	4.600E+00	1.439E+00	1.053E+00	0.000E+00
RA-226	1.325E+00	2.284E-01	1.250E-01	0.000E+00
AC-228	2.120E+00	4.155E-01	2.144E-01	0.000E+00
RA-228	2.120E+00	4.155E-01	2.144E-01	0.000E+00
TH-228	1.895E+00	2.317E-01	9.823E-02	0.000E+00
TH-232	2.120E+00	4.155E-01	2.144E-01	0.000E+00
PA-234M	5.229E+01	1.207E+01	8.477E+00	0.000E+00
TH-234	4.641E+01	8.616E+00	2.731E+00	0.000E+00
U-235	1.031E+00	3.999E-01	3.959E-01	0.000E+00
NP-237	1.443E+00	5.438E-01	5.377E-01	0.000E+00
U-238	4.641E+01	8.616E+00	2.731E+00	0.000E+00
ANH-511	1.780E-01	7.212E-02	5.032E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.470E-01	3.704E-01	5.938E-01	0.000E+00 NOT IDENT.
NA-22	-1.612E-02	4.247E-02	6.691E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.771E+06	0.000E+00	0.000E+00 SHORT HLIF

SC-46	-3.925E-02	4.053E-02	6.243E-02	0.000E+00	FAIL ABUN
V-48	-1.498E-02	7.150E-02	1.178E-01	0.000E+00	NOT IDENT.
CR-51	7.427E-02	3.858E-01	6.714E-01	0.000E+00	NOT IDENT.
MN-54	7.797E-03	4.133E-02	7.131E-02	0.000E+00	NOT IDENT.
CO-56	-8.992E-03	3.890E-02	6.485E-02	0.000E+00	FAIL ABUN
CO-57	-2.691E-02	3.098E-02	5.070E-02	0.000E+00	NOT IDENT.
CO-58	-2.812E-02	4.101E-02	6.597E-02	0.000E+00	NOT IDENT.
FE-59	-5.572E-02	9.605E-02	1.511E-01	0.000E+00	NOT IDENT.
CO-60	6.915E-03	3.720E-02	6.239E-02	0.000E+00	NOT IDENT.
ZN-65	-1.062E-01	1.099E-01	1.375E-01	0.000E+00	NOT IDENT.
SE-75	7.028E-03	5.235E-02	8.102E-02	0.000E+00	NOT IDENT.
SR-85	5.368E-02	4.603E-02	7.353E-02	0.000E+00	NOT IDENT.
Y-88	6.654E-03	3.421E-02	5.902E-02	0.000E+00	NOT IDENT.
Y-91	-1.369E+01	2.482E+01	3.914E+01	0.000E+00	NOT IDENT.
NB-94	-1.752E-02	3.569E-02	5.950E-02	0.000E+00	NOT IDENT.
NB-95M	-8.833E-02	1.416E-01	2.109E-01	0.000E+00	NOT IDENT.
ZR-95	8.681E-02	7.771E-02	1.427E-01	0.000E+00	NOT IDENT.
MO-99	-1.542E+00	1.781E+01	2.636E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	8.113E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-6.615E-03	4.494E-02	7.444E-02	0.000E+00	FAIL ABUN
RU-106	-1.559E-01	3.208E-01	5.050E-01	0.000E+00	NOT IDENT.
RU-106	-1.559E-01	3.204E-01	5.050E-01	0.000E+00	NOT IDENT.
AG-108M	-9.883E-03	2.970E-02	4.904E-02	0.000E+00	NOT IDENT.
AG-110M	-3.681E-03	3.706E-02	5.537E-02	0.000E+00	NOT IDENT.
SN-113	-4.282E-02	4.883E-02	7.864E-02	0.000E+00	NOT IDENT.
CD-115	-6.845E+00	1.643E+01	2.651E+01	0.000E+00	NOT IDENT.
SN-117M	3.601E-03	7.468E-02	1.110E-01	0.000E+00	NOT IDENT.
TE-123M	-3.556E-02	3.871E-02	5.449E-02	0.000E+00	NOT IDENT.
SB-124	-1.108E-02	5.640E-02	9.044E-02	0.000E+00	NOT IDENT.
SB-125	1.101E-01	9.179E-02	1.661E-01	0.000E+00	FAIL ABUN
TE-125M	9.782E+00	1.957E+01	2.396E+01	0.000E+00	NOT IDENT.
I-126	1.844E-01	2.691E-01	4.318E-01	0.000E+00	NOT IDENT.
SB-126	5.955E-02	1.760E-01	2.728E-01	0.000E+00	NOT IDENT.
SB-127	-8.913E-01	1.519E+00	2.501E+00	0.000E+00	NOT IDENT.
I-131	-4.463E-02	1.266E-01	2.118E-01	0.000E+00	NOT IDENT.
TE-132	3.316E-01	9.467E-01	1.684E+00	0.000E+00	FAIL ABUN
BA-133	3.675E-03	4.799E-02	7.252E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.379E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.625E-02	1.065E-01	0.000E+00	NOT IDENT.
CS-135	1.562E-01	1.614E-01	2.913E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.566E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	4.628E-02	1.134E-01	1.968E-01	0.000E+00	NOT IDENT.
CE-139	4.659E-03	3.850E-02	5.728E-02	0.000E+00	NOT IDENT.
BA-140	-1.415E-01	3.034E-01	4.814E-01	0.000E+00	FAIL ABUN
LA-140	-7.858E-02	1.084E-01	1.336E-01	0.000E+00	NOT IDENT.
CE-141	0.000E+00	8.960E-02	1.429E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.839E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.297E-02	2.724E-01	4.091E-01	0.000E+00	NOT IDENT.
PM-144	8.002E-03	3.603E-02	6.310E-02	0.000E+00	NOT IDENT.
PR-144	5.992E-01	2.698E+00	4.725E+00	0.000E+00	NOT IDENT.
PM-146	3.400E-02	4.628E-02	8.119E-02	0.000E+00	NOT IDENT.
ND-147	-3.776E-01	6.297E-01	9.972E-01	0.000E+00	FAIL ABUN
PM-149	1.687E+01	1.332E+02	2.324E+02	0.000E+00	NOT IDENT.
EU-152	-1.584E-02	1.115E-01	1.756E-01	0.000E+00	FAIL ABUN
GD-153	0.000E+00	1.769E-01	2.304E-01	0.000E+00	FAIL ABUN
EU-154	-9.354E-02	1.256E-01	1.893E-01	0.000E+00	NOT IDENT.
TB-160	-2.314E-02	1.409E-01	2.356E-01	0.000E+00	FAIL ABUN
HO-166M	-1.480E-02	6.543E-02	1.110E-01	0.000E+00	FAIL ABUN
TA-182	1.126E-01	2.241E-01	3.842E-01	0.000E+00	FAIL ABUN
IR-192	-3.002E-02	3.562E-02	5.846E-02	0.000E+00	FAIL ABUN
HG-203	9.442E-03	4.224E-02	7.408E-02	0.000E+00	NOT IDENT.
BI-207	2.747E-02	5.286E-02	9.243E-02	0.000E+00	FAIL ABUN
PB-210	7.882E-01	2.895E+00	5.135E+00	0.000E+00	NOT IDENT.
PB-211	4.996E-01	8.236E-01	1.296E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.195E+00	1.244E+00	0.000E+00	FAIL ABUN
RN-219	-1.956E-01	4.258E-01	7.016E-01	0.000E+00	FAIL ABUN
RA-223	-2.234E-01	7.074E-01	1.198E+00	0.000E+00	FAIL ABUN
AC-227	-1.070E-02	2.855E-01	4.978E-01	0.000E+00	FAIL ABUN
TH-227	-1.070E-02	2.855E-01	4.978E-01	0.000E+00	FAIL ABUN
TH-229	-1.653E-01	5.648E-01	9.913E-01	0.000E+00	FAIL ABUN
PA-231	1.406E-01	1.510E+00	2.633E+00	0.000E+00	FAIL ABUN
TH-231	-2.234E-01	7.074E-01	1.198E+00	0.000E+00	FAIL ABUN
PA-233	2.417E-02	6.833E-02	1.199E-01	0.000E+00	FAIL ABUN
PA-234	4.294E-02	2.981E-01	5.091E-01	0.000E+00	FAIL ABUN
NP-239	-7.508E-02	5.580E-01	8.373E-01	0.000E+00	FAIL ABUN
AM-241	1.882E-01	2.116E-01	3.382E-01	0.000E+00	NOT IDENT.
CM-247	-1.152E-02	3.896E-02	6.497E-02	0.000E+00	NOT IDENT.
CF-249	8.159E-03	4.069E-02	7.006E-02	0.000E+00	NOT IDENT.

CF-251	-1.432E-02	1.547E-01	2.555E-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]G247900013.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:01:35.
Sample ID          : G247900013 Sample quantity : 1.23230E+02 GRAM
Detector name      : GAM20 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:36.08 0.5%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 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	1366	10.66*	1.253E+00	3.114E+01	3.114E+01	10.43
NB-95	765.81	130	99.81*	2.154E+00	1.847E-01	2.200E-01	45.94
CD-109	88.03	408	3.70*	6.947E+00	4.835E+00	4.954E+00	32.24
SN-126	64.28	2624	9.60	4.655E+00	1.789E+01	1.789E+01	15.88
	86.94	408	8.90	6.947E+00	2.010E+00	2.010E+00	51.73
	87.57	408	37.00*	6.947E+00	4.835E-01	4.835E-01	32.24
BA-137M	661.66	421	89.90*	2.435E+00	5.859E-01	5.865E-01	16.51
CS-137	661.66	421	85.10*	2.435E+00	6.190E-01	6.196E-01	16.52
EU-155	86.55	408	30.70	6.947E+00	5.828E-01	5.866E-01	32.27
	105.31	76	21.10*	7.418E+00	1.476E-01	1.486E-01	96.23
TL-208	277.37	-----	6.60	4.721E+00	-----	Line Not Found	-----
	583.19	439	85.00*	2.696E+00	5.830E-01	5.830E-01	17.87
	860.56	46	12.50	1.953E+00	5.708E-01	5.708E-01	83.42
BI-211	72.87	-----	1.23	5.845E+00	-----	Line Not Found	-----
	351.06	694	12.92*	3.969E+00	4.120E+00	4.120E+00	17.01
PB-212	74.82	530	10.28	6.047E+00	2.598E+00	2.598E+00	24.74
	77.11	819	17.10	6.260E+00	2.332E+00	2.332E+00	16.69
	238.63	1424	43.60*	5.249E+00	1.895E+00	1.895E+00	12.48
	300.09	83	3.30	4.462E+00	1.715E+00	1.715E+00	66.96
BI-214	609.32	515	45.49*	2.603E+00	1.325E+00	1.325E+00	17.59
	1120.29	101	14.92	1.557E+00	1.329E+00	1.329E+00	39.28
	1764.49	94	15.30	1.100E+00	1.702E+00	1.702E+00	26.31
PB-214	74.82	530	5.80	6.047E+00	4.605E+00	4.605E+00	24.09
	77.11	819	9.70	6.260E+00	4.111E+00	4.111E+00	18.62
	242.00	322	7.25	5.205E+00	2.602E+00	2.602E+00	32.43
	295.22	431	18.42	4.515E+00	1.579E+00	1.579E+00	20.24
	351.93	694	35.60*	3.969E+00	1.495E+00	1.495E+00	17.88
RA-224	240.99	322	4.10*	5.205E+00	4.600E+00	4.600E+00	31.91
RA-226	609.32	515	45.49*	2.603E+00	1.325E+00	1.325E+00	17.59
	1120.29	101	14.92	1.557E+00	1.329E+00	1.329E+00	39.28
	1764.49	94	15.30	1.100E+00	1.702E+00	1.702E+00	26.31
AC-228	338.32	254	11.27	4.088E+00	1.678E+00	1.678E+00	47.50

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	334	25.80*	1.861E+00	2.120E+00	2.120E+00	20.00
	968.97	148	15.80	1.764E+00	1.622E+00	1.622E+00	35.87
	338.32	254	11.27	4.088E+00	1.678E+00	1.678E+00	47.50
TH-228	911.20	334	25.80*	1.861E+00	2.120E+00	2.120E+00	20.00
	968.97	148	15.80	1.764E+00	1.622E+00	1.622E+00	35.87
	74.82	530	10.28	6.047E+00	2.598E+00	2.598E+00	22.78
TH-232	77.11	819	17.10	6.260E+00	2.332E+00	2.332E+00	16.69
	238.63	1424	43.60*	5.249E+00	1.895E+00	1.895E+00	12.48
	300.09	83	3.30	4.462E+00	1.715E+00	1.715E+00	90.11
PA-234M	338.32	254	11.27	4.088E+00	1.678E+00	1.678E+00	24.30
	911.20	334	25.80*	1.861E+00	2.120E+00	2.120E+00	20.00
	968.97	148	15.80	1.764E+00	1.622E+00	1.622E+00	35.87
TH-234	766.42	130	0.32	2.154E+00	5.759E+01	5.759E+01	67.90
	1001.03	247	0.84*	1.715E+00	5.229E+01	5.229E+01	23.55
	63.29	2624	3.70*	4.655E+00	4.641E+01	4.641E+01	18.95
U-235	92.59	6050	4.23	7.164E+00	6.082E+01	6.082E+01	22.50
	89.96	411	3.47	7.066E+00	5.105E+00	5.105E+00	39.93
	93.35	6050	5.60	7.164E+00	4.594E+01	4.594E+01	23.50
NP-237	143.76	261	10.96*	7.037E+00	1.031E+00	1.031E+00	39.60
	163.33	158	5.08	6.641E+00	1.429E+00	1.429E+00	61.92
	185.72	1527	57.20	6.178E+00	1.316E+00	1.316E+00	12.16
U-238	205.31	72	5.01	5.804E+00	7.529E-01	7.529E-01	90.63
	86.48	408	12.40*	6.947E+00	1.443E+00	1.443E+00	38.46
	95.86	338	2.68	7.228E+00	5.309E+00	5.309E+00	59.12
ANH-511	63.29	2624	3.70*	4.655E+00	4.641E+01	4.641E+01	18.95
	92.59	6050	4.23	7.164E+00	6.082E+01	6.082E+01	9.64
	511.00	175	100.00*	2.992E+00	1.780E-01	1.780E-01	41.34

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247900013

Page : 3
Acquisition date : 6-MAR-2010 15:01:35

Total number of lines in spectrum 43
Number of unidentified lines 5
Number of lines tentatively identified by NID 38 88.37%

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	3.114E+01	3.114E+01	0.325E+01	10.43	
NB-95	64.03D	1.19	1.847E-01	2.200E-01	1.011E-01	45.94	
CD-109	461.40D	1.02	4.835E+00	4.954E+00	1.597E+00	32.24	
SN-126	2.30E+05Y	1.00	4.835E-01	4.835E-01	1.559E-01	32.24	
BA-137M	30.08Y	1.00	5.859E-01	5.865E-01	0.968E-01	16.51	
CS-137	30.08Y	1.00	6.190E-01	6.196E-01	1.023E-01	16.52	
EU-155	4.75Y	1.01	1.476E-01	1.486E-01	1.430E-01	96.23	
TL-208	1.41E+10Y	1.00	5.830E-01	5.830E-01	1.042E-01	17.87	
BI-211	7.04E+08Y	1.00	4.120E+00	4.120E+00	0.701E+00	17.01	
PB-212	1.41E+10Y	1.00	1.895E+00	1.895E+00	0.236E+00	12.48	
BI-214	1600.00Y	1.00	1.325E+00	1.325E+00	0.233E+00	17.59	
PB-214	1600.00Y	1.00	1.495E+00	1.495E+00	0.267E+00	17.88	
RA-224	1.41E+10Y	1.00	4.600E+00	4.600E+00	1.468E+00	31.91	
RA-226	1600.00Y	1.00	1.325E+00	1.325E+00	0.233E+00	17.59	
AC-228	1.41E+10Y	1.00	2.120E+00	2.120E+00	0.424E+00	20.00	
RA-228	1.41E+10Y	1.00	2.120E+00	2.120E+00	0.424E+00	20.00	
TH-228	1.41E+10Y	1.00	1.895E+00	1.895E+00	0.236E+00	12.48	
TH-232	1.41E+10Y	1.00	2.120E+00	2.120E+00	0.424E+00	20.00	
PA-234M	4.47E+09Y	1.00	5.229E+01	5.229E+01	1.232E+01	23.55	
TH-234	4.47E+09Y	1.00	4.641E+01	4.641E+01	0.879E+01	18.95	
U-235	7.04E+08Y	1.00	1.031E+00	1.031E+00	0.408E+00	39.60	
NP-237	2.14E+06Y	1.00	1.443E+00	1.443E+00	0.555E+00	38.46	
U-238	4.47E+09Y	1.00	4.641E+01	4.641E+01	0.879E+01	18.95	
ANH-511	1.00E+09Y	1.00	1.780E-01	1.780E-01	0.736E-01	41.34	
Total Activity :			2.094E+02	2.095E+02			

Grand Total Activity : 2.094E+02 2.095E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900013

Page : 4
Acquisition date : 6-MAR-2010 15:01:35

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	98.75	475	803	1.26	197.38	194	9	6.60E-02	23.7	7.33E+00	T
0	112.31	251	1127	1.07	224.45	220	10	3.48E-02	51.7	7.44E+00	T
0	129.05	123	510	1.11	257.89	254	8	1.71E-02	66.0	7.29E+00	
0	209.10	143	384	1.02	417.77	414	9	1.98E-02	52.4	5.74E+00	
0	270.11	163	284	1.49	539.64	532	13	2.26E-02	45.6	4.81E+00	T
0	409.75	49	101	1.16	818.62	816	7	6.86E-03	73.0	3.54E+00	T
0	463.04	84	155	0.90	925.10	920	10	1.17E-02	59.6	3.23E+00	T
0	727.49	91	147	1.82	1453.70	1447	17	1.26E-02	64.7	2.25E+00	T
0	743.11	31	72	0.97	1484.94	1480	9	4.26E-03	****	2.21E+00	
0	787.41	39	109	1.46	1573.51	1567	14	5.43E-03	****	2.11E+00	
1	965.06	43	41	1.84	1928.80	1925	23	5.93E-03	56.7	1.77E+00	T
0	1238.24	33	58	1.97	2475.36	2471	10	4.60E-03	91.2	1.43E+00	T
0	1589.58	33	35	2.06	3178.73	3170	19	4.61E-03	90.5	1.18E+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]G247900013.CNF;1
* Acquisition date   : 6-MAR-2010 15:01:35.  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 02:00:36.08           Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G247900013           Analyst initials: MXR1
* Batch Number       : 957711              Sample Quantity : 1.23230E+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	3.114E+01	3.247E+00	5.716E-01	4.985E-02	54.478
NB-95	2.200E-01	1.011E-01	7.836E-02	7.964E-03	2.807
CD-109	4.954E+00	1.597E+00	1.764E+00	1.668E-01	2.809
SN-126	4.835E-01	1.559E-01	1.727E-01	1.624E-02	2.801
BA-137M	5.865E-01	9.683E-02	6.329E-02	6.352E-03	9.267
CS-137	6.196E-01	1.023E-01	6.686E-02	6.720E-03	9.267
EU-155	1.486E-01	1.430E-01	2.237E-01	1.944E-02	0.664
TL-208	5.830E-01	1.042E-01	5.621E-02	5.773E-03	10.373
BI-211	4.120E+00	7.009E-01	3.485E-01	3.339E-02	11.823
PB-212	1.895E+00	2.364E-01	9.603E-02	1.025E-02	19.735
BI-214	1.325E+00	2.331E-01	1.237E-01	1.382E-02	10.712
PB-214	1.495E+00	2.674E-01	1.267E-01	1.400E-02	11.799
RA-224	4.600E+00	1.468E+00	1.029E+00	9.947E-02	4.470
RA-226	1.325E+00	2.331E-01	1.237E-01	1.382E-02	10.712
AC-228	2.120E+00	4.239E-01	2.134E-01	2.682E-02	9.935
RA-228	2.120E+00	4.239E-01	2.134E-01	2.682E-02	9.935
TH-228	1.895E+00	2.364E-01	9.603E-02	1.025E-02	19.735
TH-232	2.120E+00	4.239E-01	2.134E-01	2.682E-02	9.935

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234M	5.229E+01	1.232E+01	8.446E+00	9.034E-01	6.192
TH-234	4.641E+01	8.792E+00	2.625E+00	4.663E-01	17.679
U-235	1.031E+00	4.081E-01	3.845E-01	6.487E-02	2.680
NP-237	1.443E+00	5.549E-01	5.189E-01	1.190E-01	2.781
U-238	4.641E+01	8.792E+00	2.625E+00	4.663E-01	17.679
ANH-511	1.780E-01	7.359E-02	4.968E-02	4.630E-03	3.583

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.470E-01		3.779E-01	5.858E-01	5.693E-02	-0.422
NA-22	-1.612E-02		4.333E-02	6.688E-02	5.540E-03	-0.241
NA-24	-2.276E-01		9.037E-01	Half-Life too short		
SC-46	-3.925E-02		4.135E-02	6.210E-02	6.191E-03	-0.632
V-48	-1.498E-02		7.296E-02	1.173E-01	1.121E-02	-0.128
CR-51	7.427E-02		3.937E-01	6.589E-01	6.602E-02	0.113
MN-54	7.797E-03		4.217E-02	7.088E-02	7.159E-03	0.110
CO-56	-8.992E-03		3.969E-02	6.447E-02	6.498E-03	-0.139
CO-57	-2.691E-02		3.162E-02	4.914E-02	4.102E-03	-0.548
CO-58	-2.812E-02		4.185E-02	6.554E-02	6.655E-03	-0.429
FE-59	-5.572E-02		9.801E-02	1.507E-01	1.421E-02	-0.370
CO-60	6.915E-03		3.796E-02	6.240E-02	5.227E-03	0.111
ZN-65	-1.062E-01		1.122E-01	1.372E-01	1.181E-02	-0.774
SE-75	7.028E-03		5.341E-02	7.932E-02	7.854E-03	0.089
SR-85	5.368E-02		4.696E-02	7.261E-02	6.780E-03	0.739
Y-88	6.654E-03		3.491E-02	5.929E-02	4.784E-03	0.112
Y-91	-1.369E+01		2.533E+01	3.910E+01	3.175E+00	-0.350
NB-94	-1.752E-02		3.642E-02	5.900E-02	5.969E-03	-0.297
NB-95M	-8.833E-02		1.445E-01	2.062E-01	2.219E-02	-0.428
ZR-95	8.681E-02		7.929E-02	1.416E-01	1.549E-02	0.613
MO-99	-1.542E+00		1.817E+01	2.616E+01	4.354E+00	-0.059
TC-99M	3.873E+11		4.140E+11	Half-Life too short		
RU-103	-6.615E-03		4.585E-02	7.348E-02	1.054E-02	-0.090
RH-106	-1.559E-01		3.273E-01	5.000E-01	7.060E-02	-0.312
RU-106	-1.559E-01		3.269E-01	5.000E-01	4.949E-02	-0.312
AG-108M	-9.883E-03		3.031E-02	4.832E-02	4.355E-03	-0.205
AG-110M	-3.681E-03		3.782E-02	5.486E-02	5.621E-03	-0.067
SN-113	-4.282E-02		4.983E-02	7.738E-02	6.675E-03	-0.553
CD-115	-6.845E+00		1.676E+01	2.618E+01	2.468E+00	-0.261
SN-117M	3.601E-03		7.620E-02	1.079E-01	9.316E-03	0.033
TE-123M	-3.556E-02		3.950E-02	5.299E-02	4.604E-03	-0.671
SB-124	-1.108E-02		5.755E-02	9.075E-02	7.906E-03	-0.122
SB-125	1.101E-01		9.367E-02	1.636E-01	1.447E-02	0.673
TE-125M	9.782E+00		1.997E+01	2.319E+01	2.407E+00	0.422
I-126	1.844E-01		2.746E-01	4.278E-01	4.299E-02	0.431
SB-126	5.955E-02		1.796E-01	2.706E-01	2.744E-02	0.220
SB-127	-8.913E-01		1.550E+00	2.479E+00	3.171E-01	-0.360

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	-4.463E-02		1.292E-01	2.082E-01	1.954E-02	-0.214
TE-132	3.316E-01		9.660E-01	1.646E+00	2.720E-01	0.201
BA-133	3.675E-03		4.897E-02	7.127E-02	9.455E-03	0.052
I-133	2.614E-03		7.035E-03	Half-Life	too short	
CS-134	1.242E-01		5.739E-02	1.058E-01	1.080E-02	1.173
CS-135	1.562E-01		1.647E-01	2.852E-01	3.160E-02	0.548
I-135	-3.716E+10		4.370E+10	Half-Life	too short	
CS-136	4.628E-02		1.158E-01	1.962E-01	1.861E-02	0.236
CE-139	4.659E-03		3.928E-02	5.574E-02	4.866E-03	0.084
BA-140	-1.415E-01		3.096E-01	4.756E-01	1.624E-01	-0.298
LA-140	-7.858E-02		1.106E-01	1.339E-01	1.131E-02	-0.587
CE-141	1.660E-01		9.143E-02	1.389E-01	1.199E-02	1.196
CE-143	1.146E-03		1.959E-04	Half-Life	too short	
CE-144	1.297E-02		2.780E-01	3.969E-01	6.013E-02	0.033
PM-144	8.002E-03		3.676E-02	6.256E-02	6.325E-03	0.128
PR-144	5.992E-01		2.753E+00	4.685E+00	4.735E-01	0.128
PM-146	3.400E-02		4.722E-02	8.004E-02	8.663E-03	0.425
ND-147	-3.776E-01		6.426E-01	9.852E-01	1.521E-01	-0.383
PM-149	1.687E+01		1.359E+02	2.277E+02	3.713E+01	0.074
EU-152	-1.584E-02		1.138E-01	1.725E-01	1.682E-02	-0.092
GD-153	7.137E-01	+	1.805E-01	2.226E-01	1.975E-02	3.206
EU-154	-9.354E-02		1.281E-01	1.892E-01	2.104E-02	-0.494
TB-160	-2.314E-02		1.438E-01	2.343E-01	2.343E-02	-0.099
HO-166M	-1.480E-02		6.677E-02	1.101E-01	1.116E-02	-0.134
TA-182	1.126E-01		2.287E-01	3.838E-01	3.131E-02	0.294
IR-192	-3.002E-02		3.634E-02	5.736E-02	5.547E-03	-0.523
HG-203	9.442E-03		4.310E-02	7.258E-02	7.365E-03	0.130
BI-207	2.747E-02		5.394E-02	9.217E-02	8.322E-03	0.298
PB-210	7.882E-01		2.954E+00	4.917E+00	4.518E-01	0.160
PB-211	4.996E-01		8.404E-01	1.276E+00	6.170E-01	0.392
BI-212	1.843E+00	+	1.219E+00	1.234E+00	1.673E-01	1.494
RN-219	-1.956E-01		4.345E-01	6.906E-01	1.020E-01	-0.283
RA-223	-2.234E-01		7.218E-01	1.176E+00	2.095E-01	-0.190
AC-227	-1.070E-02		2.913E-01	4.872E-01	6.295E-02	-0.022
TH-227	-1.070E-02		2.913E-01	4.872E-01	7.007E-02	-0.022
TH-229	-1.653E-01		5.763E-01	9.665E-01	8.801E-02	-0.171
PA-231	1.406E-01		1.541E+00	2.580E+00	3.972E-01	0.055
TH-231	-2.234E-01		7.218E-01	1.176E+00	2.095E-01	-0.190
PA-233	2.417E-02		6.973E-02	1.176E-01	1.167E-02	0.205
PA-234	4.294E-02		3.042E-01	5.069E-01	9.787E-02	0.085
NP-239	-7.508E-02		5.694E-01	8.111E-01	6.794E-02	-0.093
AM-241	1.882E-01		2.159E-01	3.248E-01	2.542E-02	0.579
CM-247	-1.152E-02		3.976E-02	6.396E-02	5.407E-03	-0.180
CF-249	8.159E-03		4.152E-02	6.893E-02	5.813E-03	0.118
CF-251	-1.432E-02		1.579E-01	2.488E-01	2.211E-02	-0.058

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G247900013            *
* Acquisition date   : 6-MAR-2010 15:01:35 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 02:00:36.08 Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247900013 Analyst initials: MXR1          *
* Batch Number       : 957711 Sample Quantity : 1.2323E+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	3.114E+01	3.182E+00	2.856E-01	1.624E+00
NB-95	2.200E-01	9.903E-02	3.949E-02	5.053E-02
CD-109	4.954E+00	1.566E+00	9.143E-01	7.987E-01
SN-126	4.835E-01	1.528E-01	8.949E-02	7.796E-02
BA-137M	5.865E-01	9.489E-02	3.196E-02	4.841E-02
CS-137	6.196E-01	1.003E-01	3.376E-02	5.117E-02
EU-155	1.486E-01	1.401E-01	1.157E-01	7.148E-02
TL-208	5.830E-01	1.021E-01	2.843E-02	5.210E-02
BI-211	4.120E+00	6.868E-01	1.774E-01	3.504E-01
PB-212	1.895E+00	2.317E-01	4.914E-02	1.182E-01
BI-214	1.325E+00	2.284E-01	6.253E-02	1.165E-01
PB-214	1.495E+00	2.621E-01	6.453E-02	1.337E-01
RA-224	4.600E+00	1.439E+00	5.266E-01	7.340E-01
RA-226	1.325E+00	2.284E-01	6.253E-02	1.165E-01
AC-228	2.120E+00	4.155E-01	1.073E-01	2.120E-01
RA-228	2.120E+00	4.155E-01	1.073E-01	2.120E-01
TH-228	1.895E+00	2.317E-01	4.914E-02	1.182E-01
TH-232	2.120E+00	4.155E-01	1.073E-01	2.120E-01
PA-234M	5.229E+01	1.207E+01	4.241E+00	6.159E+00
TH-234	4.641E+01	8.616E+00	1.366E+00	4.396E+00
U-235	1.031E+00	3.999E-01	1.981E-01	2.041E-01
NP-237	1.443E+00	5.438E-01	2.690E-01	2.775E-01
U-238	4.641E+01	8.616E+00	1.366E+00	4.396E+00
ANH-511	1.780E-01	7.212E-02	2.517E-02	3.679E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.470E-01	3.704E-01	2.971E-01	1.890E-01 NOT IDENT.
NA-22	-1.612E-02	4.247E-02	3.347E-02	2.167E-02 NOT IDENT.
NA-24	-2.276E+05	1.771E+06	0.000E+00	9.037E+05 SHORT HLIF

SC-46	-3.925E-02	4.053E-02	3.123E-02	2.068E-02	FAIL ABUN
V-48	-1.498E-02	7.150E-02	5.892E-02	3.648E-02	NOT IDENT.
CR-51	7.427E-02	3.858E-01	3.359E-01	1.969E-01	NOT IDENT.
MN-54	7.797E-03	4.133E-02	3.568E-02	2.109E-02	NOT IDENT.
CO-56	-8.992E-03	3.890E-02	3.245E-02	1.985E-02	FAIL ABUN
CO-57	-2.691E-02	3.098E-02	2.536E-02	1.581E-02	NOT IDENT.
CO-58	-2.812E-02	4.101E-02	3.301E-02	2.092E-02	NOT IDENT.
FE-59	-5.572E-02	9.605E-02	7.560E-02	4.901E-02	NOT IDENT.
CO-60	6.915E-03	3.720E-02	3.121E-02	1.898E-02	NOT IDENT.
ZN-65	-1.062E-01	1.099E-01	6.879E-02	5.609E-02	NOT IDENT.
SE-75	7.028E-03	5.235E-02	4.054E-02	2.671E-02	NOT IDENT.
SR-85	5.368E-02	4.603E-02	3.678E-02	2.348E-02	NOT IDENT.
Y-88	6.654E-03	3.421E-02	2.953E-02	1.745E-02	NOT IDENT.
Y-91	-1.369E+01	2.482E+01	1.958E+01	1.266E+01	NOT IDENT.
NB-94	-1.752E-02	3.569E-02	2.977E-02	1.821E-02	NOT IDENT.
NB-95M	-8.833E-02	1.416E-01	1.055E-01	7.224E-02	NOT IDENT.
ZR-95	8.681E-02	7.771E-02	7.137E-02	3.965E-02	NOT IDENT.
MO-99	-1.542E+00	1.781E+01	1.319E+01	9.086E+00	NOT IDENT.
TC-99M	3.873E+17	8.113E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-6.615E-03	4.494E-02	3.724E-02	2.293E-02	FAIL ABUN
RH-106	-1.559E-01	3.208E-01	2.527E-01	1.637E-01	NOT IDENT.
RU-106	-1.559E-01	3.204E-01	2.527E-01	1.635E-01	NOT IDENT.
AG-108M	-9.883E-03	2.970E-02	2.453E-02	1.515E-02	NOT IDENT.
AG-110M	-3.681E-03	3.706E-02	2.770E-02	1.891E-02	NOT IDENT.
SN-113	-4.282E-02	4.883E-02	3.934E-02	2.491E-02	NOT IDENT.
CD-115	-6.845E+00	1.643E+01	1.326E+01	8.382E+00	NOT IDENT.
SN-117M	3.601E-03	7.468E-02	5.553E-02	3.810E-02	NOT IDENT.
TE-123M	-3.556E-02	3.871E-02	2.726E-02	1.975E-02	NOT IDENT.
SB-124	-1.108E-02	5.640E-02	4.525E-02	2.878E-02	NOT IDENT.
SE-125	1.101E-01	9.179E-02	8.309E-02	4.683E-02	FAIL ABUN
TE-125M	9.782E+00	1.957E+01	1.199E+01	9.983E+00	NOT IDENT.
I-126	1.844E-01	2.691E-01	2.160E-01	1.373E-01	NOT IDENT.
SB-126	5.955E-02	1.760E-01	1.365E-01	8.981E-02	NOT IDENT.
SB-127	-8.913E-01	1.519E+00	1.251E+00	7.750E-01	NOT IDENT.
I-131	-4.463E-02	1.266E-01	1.060E-01	6.461E-02	NOT IDENT.
TE-132	3.316E-01	9.467E-01	8.426E-01	4.830E-01	FAIL ABUN
BA-133	3.675E-03	4.799E-02	3.628E-02	2.448E-02	NOT IDENT.
I-133	2.614E+03	1.379E+04	0.000E+00	7.035E+03	SHORT HLIF
CS-134	1.242E-01	5.625E-02	5.330E-02	2.870E-02	NOT IDENT.
CS-135	1.562E-01	1.614E-01	1.457E-01	8.233E-02	NOT IDENT.
I-135	-3.716E+16	8.566E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	4.628E-02	1.134E-01	9.844E-02	5.788E-02	NOT IDENT.
CE-139	4.659E-03	3.850E-02	2.866E-02	1.964E-02	NOT IDENT.
BA-140	-1.415E-01	3.034E-01	2.408E-01	1.548E-01	FAIL ABUN
LA-140	-7.858E-02	1.084E-01	6.682E-02	5.529E-02	NOT IDENT.
CE-141	1.660E-01	8.960E-02	7.151E-02	4.571E-02	NOT IDENT.
CE-143	1.146E+03	3.839E+02	0.000E+00	1.959E+02	SHORT HLIF
CE-144	1.297E-02	2.724E-01	2.046E-01	1.390E-01	NOT IDENT.
PM-144	8.002E-03	3.603E-02	3.157E-02	1.838E-02	NOT IDENT.
PR-144	5.992E-01	2.698E+00	2.364E+00	1.376E+00	NOT IDENT.
PM-146	3.400E-02	4.628E-02	4.062E-02	2.361E-02	NOT IDENT.
ND-147	-3.776E-01	6.297E-01	4.989E-01	3.213E-01	FAIL ABUN
PM-149	1.687E+01	1.332E+02	1.163E+02	6.795E+01	NOT IDENT.
EU-152	-1.584E-02	1.115E-01	8.783E-02	5.689E-02	FAIL ABUN
GD-153	7.137E-01	1.769E-01	1.152E-01	9.027E-02	FAIL ABUN
EU-154	-9.354E-02	1.256E-01	9.469E-02	6.407E-02	NOT IDENT.
TB-160	-2.314E-02	1.409E-01	1.179E-01	7.189E-02	FAIL ABUN
HO-166M	-1.480E-02	6.543E-02	5.556E-02	3.338E-02	FAIL ABUN
TA-182	1.126E-01	2.241E-01	1.922E-01	1.143E-01	FAIL ABUN
IR-192	-3.002E-02	3.562E-02	2.925E-02	1.817E-02	FAIL ABUN
HG-203	9.442E-03	4.224E-02	3.706E-02	2.155E-02	NOT IDENT.
BI-207	2.747E-02	5.286E-02	4.624E-02	2.697E-02	FAIL ABUN
PB-210	7.882E-01	2.895E+00	2.569E+00	1.477E+00	NOT IDENT.
PB-211	4.996E-01	8.236E-01	6.483E-01	4.202E-01	NOT IDENT.
BI-212	1.843E+00	1.195E+00	6.222E-01	6.095E-01	FAIL ABUN
RN-219	-1.956E-01	4.258E-01	3.510E-01	2.172E-01	FAIL ABUN
RA-223	-2.234E-01	7.074E-01	5.993E-01	3.609E-01	FAIL ABUN
AC-227	-1.070E-02	2.855E-01	2.491E-01	1.457E-01	FAIL ABUN
TH-227	-1.070E-02	2.855E-01	2.491E-01	1.457E-01	FAIL ABUN
TH-229	-1.653E-01	5.648E-01	4.959E-01	2.882E-01	FAIL ABUN
PA-231	1.406E-01	1.510E+00	1.317E+00	7.706E-01	FAIL ABUN
TH-231	-2.234E-01	7.074E-01	5.993E-01	3.609E-01	FAIL ABUN
PA-233	2.417E-02	6.833E-02	5.999E-02	3.486E-02	FAIL ABUN
PA-234	4.294E-02	2.981E-01	2.547E-01	1.521E-01	FAIL ABUN
NP-239	-7.508E-02	5.580E-01	4.189E-01	2.847E-01	FAIL ABUN
AM-241	1.882E-01	2.116E-01	1.692E-01	1.079E-01	NOT IDENT.
CM-247	-1.152E-02	3.896E-02	3.251E-02	1.988E-02	NOT IDENT.
CF-249	8.159E-03	4.069E-02	3.505E-02	2.076E-02	NOT IDENT.

CF-251	-1.432E-02	1.547E-01	1.278E-01	7.893E-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	684.7142
49.72	734.3922
57.36	0.0000
59.54	1025.7493
63.29	1010.1960
63.29	1010.1960
64.28	877.5594
67.75	996.8776
69.67	949.8431
70.83	1128.8987
72.81	1062.6294
72.87	1062.7351
72.87	1062.7351
74.82	1066.1259
74.82	1066.1259
74.82	1066.1259
74.97	1066.3850
77.11	1070.0508
77.11	1070.0508
77.11	1070.0508
79.69	1109.5291
79.80	1041.5251
80.12	1042.0430
80.19	1042.1558
80.57	1061.3920
81.00	1111.7852
81.07	1111.9053
81.07	1111.9053
83.79	977.7405
83.79	977.7405
85.43	980.1515
86.48	981.6775
86.55	981.7827
86.79	982.1271
86.94	982.3472
87.57	983.2561
88.03	983.9210
88.47	984.5524
89.96	986.6860
91.11	988.3172
92.59	990.4028
92.59	990.4028
93.35	991.4696
94.67	993.3113
94.87	993.5887
94.87	993.5887
95.86	647.4360
97.43	648.8399
98.44	584.4443
99.53	585.3123
100.11	561.8298
103.18	525.6754
103.37	525.8080
105.31	603.2217
106.12	699.8558
109.28	678.4786
111.00	736.6240
111.76	724.9065
116.30	550.8282
117.23	509.0352
121.12	464.4395
121.78	489.9590
122.06	495.5932
123.07	489.6156
131.20	471.0250
133.52	462.2827
136.00	445.7772

136.47	449.3465
140.51	397.1529
140.51	0.0000
143.76	438.3437
144.24	427.3538
144.24	427.3538
145.44	421.1617
152.43	420.8538
153.25	449.5125
154.21	413.6882
154.21	413.6882
156.02	422.3977
158.56	375.6677
159.00	430.4987
162.66	387.4892
163.33	387.7444
165.86	357.7444
176.60	359.1092
177.52	376.8062
181.07	417.0137
184.41	369.2822
185.72	369.7201
193.51	343.1796
197.04	313.2638
205.31	360.7628
210.85	272.1857
215.65	303.8240
222.11	284.6324
227.38	267.6768
228.16	262.3935
228.18	244.2389
235.69	289.3236
235.96	287.9201
235.96	287.9201
238.63	240.7295
238.63	240.7295
240.99	241.1609
242.00	241.3455
244.70	255.9979
252.40	252.4675
252.80	251.6174
256.23	268.0138
256.23	268.0138
260.90	267.0568
264.66	208.9951
268.22	202.9739
269.46	203.1494
269.46	203.1494
271.23	202.4637
273.65	252.3814
276.40	198.8918
277.37	196.7380
277.60	203.3602
278.00	208.1250
279.20	229.0287
279.54	242.2826
280.46	248.0935
283.69	203.2586
284.31	193.8860
285.41	194.0299
285.90	205.4573
287.50	206.6237
293.27	0.0000
295.22	219.5016
295.96	179.1932
298.57	179.5002
299.98	165.1403
299.98	165.1403
300.09	165.1509
300.09	165.1509
300.13	165.1562
301.36	179.0620
302.85	189.9567
304.50	203.9615
304.50	203.9615
304.85	190.2020
308.46	176.8069
311.90	179.1204

316.51	182.5400
319.41	173.1932
320.08	164.5552
323.87	207.6325
323.87	207.6325
328.76	172.2493
333.37	179.5640
334.37	162.4873
334.37	162.4873
338.28	183.2267
338.28	183.2267
338.32	183.2324
338.32	183.2324
338.32	183.2324
340.48	188.1738
340.55	188.1797
344.28	175.5015
351.06	159.7629
351.93	159.8445
356.01	147.1675
364.49	143.1145
366.42	139.2908
383.85	138.6380
388.16	133.9295
388.63	148.0654
391.69	169.4996
400.66	150.0392
401.81	149.1152
402.40	146.1182
404.85	125.9867
410.95	136.9901
414.70	116.0164
423.72	145.6943
427.09	116.1381
427.87	99.7337
433.94	119.6339
453.88	119.7765
463.37	135.6018
468.07	110.7369
473.00	124.0300
476.78	132.6734
477.60	143.2590
487.02	106.8579
492.35	128.3317
497.08	122.2314
511.00	110.1644
514.00	109.6688
527.90	105.5994
529.87	0.0000
531.02	107.9010
537.26	109.2728
546.56	0.0000
563.25	92.9791
569.33	98.6957
569.50	98.7012
569.70	92.1288
583.19	82.7133
600.60	94.3954
602.73	111.1481
604.72	101.4478
609.32	106.9775
609.32	106.9775
610.33	107.0215
614.28	89.3213
618.01	79.3875
621.93	88.4676
621.93	88.4676
633.25	93.3497
635.95	84.6643
636.99	81.9955
645.85	85.8850
657.76	75.6734
661.66	95.4869
661.66	95.4869
664.57	0.0000
666.33	81.9866
666.50	81.9910
677.62	71.3464

685.70	82.5645
695.00	107.6908
696.49	93.0132
696.51	93.0132
697.00	97.6334
702.65	106.1364
706.68	97.9672
711.68	99.0664
720.70	78.9446
721.93	0.0000
722.78	82.0987
722.91	82.1030
723.31	86.7617
724.19	77.4882
727.33	85.6413
733.00	74.6152
735.93	77.8015
739.50	73.2214
747.24	71.8525
752.31	94.8182
753.82	85.4725
756.73	70.5139
763.94	73.8238
765.81	99.9599
766.42	99.9806
777.92	79.5293
778.90	76.7127
783.70	86.9513
785.37	80.6711
795.86	75.2313
801.95	86.8277
810.29	81.3165
810.76	81.3290
815.77	61.3328
818.51	54.6718
832.01	96.3208
834.85	88.6937
836.80	0.0000
846.77	65.7970
856.80	66.3214
860.56	59.2710
871.09	67.2582
873.19	66.3249
875.33	0.0000
879.36	63.5162
880.51	71.3568
883.24	48.9148
884.68	56.7652
889.28	74.4822
898.04	57.9715
911.20	52.2754
911.20	52.2754
911.20	52.2754
926.50	52.5057
937.49	81.4895
944.13	62.7262
946.00	56.7815
949.00	59.8213
962.29	48.3687
964.08	66.7480
966.15	65.1158
968.97	65.1666
968.97	65.1666
968.97	65.1666
983.53	55.3625
996.26	62.2885
1001.03	73.8305
1004.73	45.5570
1037.84	54.1309
1038.76	0.0000
1048.07	52.2277
1050.41	52.2576
1050.41	52.2576
1063.66	51.4087
1085.87	59.9739
1099.45	67.4407
1112.07	47.8777
1115.54	79.8673

1120.29	63.6211
1120.29	63.6211
1120.55	63.6241
1121.30	76.5023
1131.51	0.0000
1173.23	64.4432
1177.93	53.9385
1189.05	80.5904
1204.77	89.4018
1221.41	79.0658
1231.02	51.1605
1235.36	66.0990
1238.28	63.2810
1260.41	0.0000
1271.85	32.4229
1274.44	57.3140
1274.54	49.7442
1291.59	41.2489
1298.22	0.0000
1312.11	39.2537
1332.49	31.7612
1365.19	24.8159
1368.63	0.0000
1384.29	31.3742
1408.01	22.2568
1457.56	0.0000
1460.82	29.0587
1489.16	16.9680
1505.03	29.3135
1596.21	31.3415
1620.50	20.2985
1678.03	0.0000
1690.97	9.7904
1764.49	9.9174
1764.49	9.9174
1770.23	11.9126
1771.35	13.6172
1791.20	0.0000
1836.06	14.0541

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900013

Total Uranium Activity	1.3854E+02	ug/g
Total Uranium Counting Unc.	2.5634E+01	ug/g
Total Uranium Tpu	1.3078E-05	ug/g
Total Uranium Mda	4.0655E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 957711          SAMPLE ID   : G247900013
*  ANALYST       : MXR1            DETECTOR    : GAM20
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 6-MAR-2010 15:01:35.10  SAMPLE ALQT: 123.230 GRAM
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.673E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.958E+00
GROSS GAMMA MDA (pCi/GRAM ) : 6.586E+00
GROSS GAMMA DLC (pCi/GRAM ) : 3.235E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 17:05:08.76

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900014.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:02:03.
Sample ID          : G247900014 Sample quantity : 1.21750E+02 GRAM
Detector name      : GAM22 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.38 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 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*	145	873	1.43	126.34	121	11	2.02E-02	41.1	
2	2	74.83	513	665	0.96	149.89	146	16	7.12E-02	8.9	1.72E+00
3	2	77.09*	928	584	1.02	154.41	146	16	1.29E-01	5.5	
4	5	87.22	386	544	1.19	174.64	165	27	5.36E-02	11.3	1.72E+00
5	5	89.86	246	540	1.17	179.92	165	27	3.42E-02	17.2	
6	5	92.71*	444	612	1.37	185.62	165	27	6.17E-02	11.5	
7	0	129.15	163	567	1.61	258.42	254	9	2.26E-02	27.5	
8	0	185.86*	271	546	1.34	371.73	368	9	3.76E-02	17.4	
9	0	209.48*	238	462	1.41	418.93	415	9	3.30E-02	17.9	
10	3	238.69*	2195	289	1.31	477.30	469	20	3.05E-01	2.6	4.02E+00
11	3	241.57*	476	377	1.89	483.06	469	20	6.61E-02	12.8	
12	0	270.63	228	471	1.92	541.12	534	14	3.17E-02	21.2	
13	0	295.32*	673	332	1.35	590.47	586	11	9.35E-02	6.6	
14	0	300.30	134	313	1.49	600.41	596	10	1.86E-02	26.3	
15	0	328.36	157	245	1.30	656.48	652	10	2.17E-02	20.4	
16	0	338.23*	395	357	1.45	676.21	671	12	5.48E-02	11.0	
17	0	351.95*	1164	346	1.37	703.63	696	13	1.62E-01	4.5	
18	0	409.26	66	182	1.22	818.16	814	9	9.14E-03	39.1	
19	0	463.42	124	303	1.51	926.41	920	16	1.72E-02	32.7	
20	0	511.02*	186	305	1.76	1021.54	1012	18	2.58E-02	25.8	
21	0	583.14*	667	203	1.71	1165.70	1158	16	9.26E-02	6.3	
22	0	609.44*	853	210	1.54	1218.26	1210	17	1.18E-01	5.3	
23	0	726.96*	166	154	1.61	1453.17	1446	15	2.31E-02	18.3	
24	0	770.00	153	162	1.96	1539.23	1530	20	2.12E-02	22.1	
25	0	795.72	72	124	1.31	1590.64	1584	15	9.97E-03	35.8	
26	0	862.11	69	207	1.19	1723.37	1713	21	9.62E-03	54.1	
27	0	911.28*	482	174	1.72	1821.67	1814	18	6.70E-02	8.1	
28	0	969.28*	299	161	2.05	1937.65	1931	15	4.15E-02	11.4	
29	0	1119.94*	191	145	2.18	2238.90	2231	17	2.65E-02	16.4	
30	0	1381.91	85	91	9.74	2762.84	2748	28	1.18E-02	35.6	
31	0	1460.72*	2446	64	2.57	2920.47	2907	25	3.40E-01	2.2	
32	0	1591.28	104	65	4.20	3181.64	3167	31	1.44E-02	27.8	
33	0	1731.03*	61	14	1.24	3461.23	3451	22	8.47E-03	22.0	
34	0	1764.30*	192	12	3.00	3527.79	3515	24	2.67E-02	9.4	
35	0	1847.82	38	13	0.93	3694.90	3685	15	5.21E-03	24.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 17:05:11

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900014.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 15:02:03
 Sample ID : G247900014 Sample quantity : 121.75 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA22 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.38 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	*	3.705E+01	3.773E+00	4.794E-01	4.391E-02	77.293
CD-109	+	88.03	*	4.409E+00	1.080E+00	1.188E+00	1.128E-01	3.710
SN-126	+	64.28		1.087E+00	9.068E-01	7.451E-01	1.082E-01	1.459
	+	86.94		1.789E+00	8.459E-01	4.869E-01	2.022E-01	3.674
	+	87.57	*	4.303E-01	1.054E-01	1.165E-01	1.100E-02	3.695
TL-208		277.37		7.132E-01	4.536E-01	6.981E-01	1.161E-01	1.022
	+	583.19	*	6.152E-01	1.026E-01	5.333E-02	5.778E-03	11.534
		860.56		6.096E-01	3.167E-01	5.639E-01	6.570E-02	1.081
BI-211		72.87		6.964E+00	3.439E+00	5.357E+00	4.288E-01	1.300
	+	351.06	*	5.142E+00	7.545E-01	3.167E-01	3.695E-02	16.237
PB-212	+	74.82		2.493E+00	5.438E-01	5.441E-01	6.910E-02	4.581
	+	77.11		2.591E+00	3.574E-01	3.134E-01	2.621E-02	8.269
	+	238.63	*	2.313E+00	3.289E-01	9.464E-02	1.254E-02	24.442
	+	300.09		2.114E+00	1.155E+00	1.231E+00	1.805E-01	1.717
BI-214	+	609.32	*	1.517E+00	2.395E-01	1.117E-01	1.303E-02	13.581
	+	1120.29		1.679E+00	5.829E-01	4.555E-01	5.054E-02	3.687
	+	1764.49		2.260E+00	4.654E-01	2.659E-01	2.215E-02	8.499
PB-214	+	74.82		4.418E+00	9.312E-01	9.645E-01	1.098E-01	4.581
	+	77.11		4.568E+00	7.342E-01	5.525E-01	6.489E-02	8.269
	+	242.00		3.037E+00	8.858E-01	5.747E-01	7.948E-02	5.284
	+	295.22		1.888E+00	3.774E-01	2.272E-01	3.408E-02	8.311
	+	351.93	*	1.866E+00	2.926E-01	1.152E-01	1.482E-02	16.206
RA-224	+	240.99	*	5.370E+00	1.535E+00	1.013E+00	1.269E-01	5.300
RA-226	+	609.32	*	1.517E+00	2.395E-01	1.117E-01	1.303E-02	13.581
	+	1120.29		1.679E+00	5.829E-01	4.555E-01	5.054E-02	3.687
	+	1764.49		2.260E+00	4.654E-01	2.659E-01	2.215E-02	8.499
AC-228	+	338.32		1.955E+00	9.356E-01	3.929E-01	1.670E-01	4.975
	+	911.20	*	2.068E+00	4.364E-01	2.199E-01	2.978E-02	9.403
	+	968.97		2.204E+00	7.470E-01	4.896E-01	1.231E-01	4.501
RA-228	+	338.32		1.955E+00	9.356E-01	3.929E-01	1.670E-01	4.975
	+	911.20	*	2.068E+00	4.364E-01	2.199E-01	2.978E-02	9.403
	+	968.97		2.204E+00	7.470E-01	4.896E-01	1.231E-01	4.501
TH-228	+	74.82		2.493E+00	4.876E-01	5.441E-01	4.487E-02	4.581
	+	77.11		2.591E+00	3.574E-01	3.134E-01	2.621E-02	8.269

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	2.313E+00	3.289E-01	9.464E-02	1.254E-02	24.442
	+	300.09		2.114E+00	1.720E+00	1.231E+00	7.639E-01	1.717
TH-232	+	338.32		1.955E+00	4.886E-01	3.929E-01	4.673E-02	4.975
	+	911.20	*	2.068E+00	4.364E-01	2.199E-01	2.978E-02	9.403
	+	968.97		2.204E+00	7.470E-01	4.896E-01	1.231E-01	4.501
TH-234	+	63.29	*	2.820E+00	2.371E+00	1.988E+00	3.538E-01	1.419
	+	92.59		4.116E+00	1.318E+00	9.810E-01	2.185E-01	4.196
U-235	+	89.96		2.846E+00	1.210E+00	1.218E+00	3.027E-01	2.337
	+	93.35		3.109E+00	1.018E+00	7.376E-01	1.715E-01	4.215
		143.76	*	-1.122E-01	2.215E-01	3.546E-01	6.061E-02	-0.316
		163.33		4.103E-01	4.650E-01	7.716E-01	1.427E-01	0.532
	+	185.72		1.919E-01	6.982E-02	6.996E-02	7.326E-03	2.743
		205.31		5.818E-01	5.856E-01	8.655E-01	1.687E-01	0.672
NP-237	+	86.48	*	1.284E+00	4.140E-01	3.510E-01	8.054E-02	3.658
		95.86		3.211E-01	1.010E+00	1.469E+00	3.537E-01	0.219
U-238	+	63.29	*	2.820E+00	2.371E+00	1.988E+00	3.538E-01	1.419
	+	92.59		4.116E+00	1.018E+00	9.810E-01	8.923E-02	4.196
ANH-511	+	511.00	*	1.332E-01	6.993E-02	4.688E-02	4.697E-03	2.841

---- 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	*	-3.292E-01	3.177E-01	4.802E-01	5.011E-02	-0.686
NA-22		1274.54	*	1.342E-02	4.484E-02	7.561E-02	6.516E-03	0.178
NA-24		1368.63	*	-9.363E-01	4.484E-02	Half-Life too short		
SC-46		889.28	*	-2.329E-02	3.732E-02	5.922E-02	6.629E-03	-0.393
	+	1120.55		2.864E-01	9.755E-02	1.279E-01	1.131E-02	2.239
V-48		944.13		-2.813E-02	8.829E-01	1.453E+00	1.576E-01	-0.019
		983.53	*	3.990E-02	7.379E-02	1.252E-01	1.313E-02	0.319
		1312.11		-9.392E-03	8.021E-02	1.312E-01	1.156E-02	-0.072
CR-51		320.08	*	2.515E-01	3.806E-01	6.511E-01	8.427E-02	0.386
MN-54		834.85	*	8.535E-03	3.789E-02	6.395E-02	7.104E-03	0.133
CO-56		846.77	*	1.794E-03	3.852E-02	6.437E-02	7.165E-03	0.028
		1037.84		1.449E-01	3.138E-01	5.275E-01	5.435E-02	0.275
		1238.28		1.628E-01	9.773E-02	1.711E-01	1.483E-02	0.952
		1771.35		1.150E-01	2.053E-01	3.211E-01	2.668E-02	0.358
CO-57		122.06	*	-1.214E-02	2.688E-02	4.185E-02	3.452E-03	-0.290
		136.47		-1.383E-01	2.103E-01	3.477E-01	3.223E-02	-0.398
CO-58		810.76	*	-1.191E-02	3.655E-02	5.989E-02	6.632E-03	-0.199
FE-59		1099.45	*	-6.738E-02	9.844E-02	1.525E-01	1.494E-02	-0.442
		1291.59		6.189E-02	1.320E-01	2.245E-01	2.212E-02	0.276
CO-60		1173.23		2.466E-02	4.418E-02	7.603E-02	6.114E-03	0.324
		1332.49	*	2.350E-02	3.749E-02	6.472E-02	5.771E-03	0.363
ZN-65		1115.54	*	1.373E-01	1.051E-01	1.610E-01	1.436E-02	0.853
SE-75		121.12		-1.135E-01	1.401E-01	2.144E-01	2.315E-02	-0.530
		136.00		-1.260E-02	4.044E-02	6.772E-02	5.878E-03	-0.186
		264.66	*	-1.751E-02	5.214E-02	7.155E-02	9.630E-03	-0.245
		279.54		7.437E-02	1.180E-01	1.929E-01	2.739E-02	0.386

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		400.66		2.051E-01	2.532E-01	4.293E-01	5.014E-02	0.478
SR-85		514.00	*	1.410E-01	4.817E-02	7.619E-02	7.645E-03	1.850
Y-88		898.04		3.774E-02	4.151E-02	7.212E-02	8.103E-03	0.523
		1836.06	*	3.013E-02	3.120E-02	5.441E-02	4.399E-03	0.554
Y-91		1204.77	*	-2.258E+01	2.292E+01	3.593E+01	2.954E+00	-0.628
NB-94		702.65	*	6.378E-03	3.435E-02	5.662E-02	6.067E-03	0.113
		871.09		-1.061E-02	3.906E-02	5.410E-02	6.044E-03	-0.196
NB-95		765.81	*	5.826E-02	5.129E-02	7.678E-02	8.396E-03	0.759
NB-95M		235.69	*	2.499E-01	1.559E-01	2.328E-01	3.081E-02	1.073
ZR-95		724.19		2.215E-01	1.120E-01	1.753E-01	1.996E-02	1.264
		756.73	*	1.862E-02	7.513E-02	1.235E-01	1.436E-02	0.151
MO-99		140.51		-1.575E+00	3.007E+01	4.981E+01	1.185E+01	-0.032
		181.07		-5.872E+00	2.670E+01	3.844E+01	7.543E+00	-0.153
		366.42		-2.611E+01	1.212E+02	1.984E+02	2.105E+01	-0.132
		739.50	*	-2.402E+00	1.577E+01	2.536E+01	4.332E+00	-0.095
		777.92		-7.444E+01	5.362E+01	6.288E+01	6.899E+00	-1.184
TC-99M		140.51	*	-3.420E+10	5.362E+01	Half-Life	too short	
RU-103		497.08	*	-2.998E-02	3.888E-02	5.931E-02	8.793E-03	-0.505
	+	610.33		1.593E+01	3.244E+00	2.784E+00	4.833E-01	5.723
RH-106		621.93	*	-1.265E-01	3.027E-01	4.872E-01	7.068E-02	-0.260
		1050.41		5.114E-01	2.552E+00	4.218E+00	4.118E-01	0.121
RU-106		621.93	*	-1.265E-01	3.024E-01	4.872E-01	5.089E-02	-0.260
		1050.41		5.114E-01	2.552E+00	4.218E+00	4.118E-01	0.121
AG-108M		433.94	*	1.924E-03	2.898E-02	4.739E-02	4.665E-03	0.041
		614.28		3.568E-02	3.657E-02	5.577E-02	5.944E-03	0.640
		722.91		2.323E-02	4.151E-02	6.050E-02	6.664E-03	0.384
AG-110M		657.76	*	-2.120E-02	3.439E-02	5.441E-02	5.848E-03	-0.390
		677.62		7.682E-02	3.087E-01	5.126E-01	5.544E-02	0.150
		706.68		8.645E-02	2.177E-01	3.625E-01	3.963E-02	0.238
		763.94		1.400E-01	1.793E-01	2.643E-01	2.938E-02	0.530
		884.68		4.011E-02	4.513E-02	7.882E-02	8.988E-03	0.509
		937.49		-8.155E-02	1.082E-01	1.692E-01	1.886E-02	-0.482
		1384.29		1.542E-01	1.624E-01	2.543E-01	2.330E-02	0.606
		1505.03		-6.786E-02	2.677E-01	4.245E-01	3.775E-02	-0.160
SN-113		391.69	*	-3.054E-02	4.401E-02	6.984E-02	6.670E-03	-0.437
CD-115		260.90		-3.144E+01	1.998E+02	3.193E+02	4.243E+01	-0.098
		492.35		2.805E+01	5.083E+01	8.431E+01	8.369E+00	0.333
		527.90	*	6.645E-02	1.571E+01	2.633E+01	2.659E+00	0.003
SN-117M		156.02		-2.493E-01	2.457E+00	4.102E+00	3.846E-01	-0.061
		158.56	*	-4.837E-03	5.927E-02	9.890E-02	9.379E-03	-0.049
TE-123M		159.00	*	1.314E-03	2.934E-02	4.914E-02	4.693E-03	0.027
SB-124		602.73		-2.364E-02	4.581E-02	6.268E-02	6.512E-03	-0.377
		645.85		-8.616E-01	5.057E-01	7.356E-01	8.033E-02	-1.171
		722.78		2.200E-01	4.210E-01	6.120E-01	6.702E-02	0.359
		1690.97	*	1.126E-02	6.335E-02	1.074E-01	9.577E-03	0.105
SB-125		427.87	*	-2.523E-02	8.773E-02	1.410E-01	1.368E-02	-0.179
	+	463.37		7.991E-01	5.295E-01	5.362E-01	5.548E-02	1.490
		600.60		-2.099E-02	1.925E-01	2.936E-01	3.204E-02	-0.072
		635.95		-1.590E-01	2.752E-01	4.382E-01	4.849E-02	-0.363

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M	109.28		*	4.610E+00	1.032E+01	1.673E+01	1.721E+00	0.276
I-126	388.63			6.395E-02	1.718E-01	2.875E-01	2.722E-02	0.222
	666.33		*	-2.687E-01	2.359E-01	3.597E-01	3.801E-02	-0.747
	753.82			1.591E+00	2.025E+00	3.415E+00	3.722E-01	0.466
SB-126	414.70			-7.374E-02	8.849E-02	1.171E-01	1.109E-02	-0.630
	666.50			-9.321E-02	8.115E-02	1.237E-01	1.307E-02	-0.754
	695.00			3.095E-02	8.250E-02	1.375E-01	1.469E-02	0.225
	697.00			2.266E-02	2.863E-01	4.697E-01	5.023E-02	0.048
	720.70		*	-1.733E-01	1.836E-01	2.340E-01	2.524E-02	-0.740
	856.80			8.458E-01	5.615E-01	8.892E-01	9.914E-02	0.951
SB-127	252.40			-2.619E+00	5.524E+00	8.555E+00	3.655E+00	-0.306
	473.00			5.715E-01	1.883E+00	3.013E+00	4.176E-01	0.190
	685.70		*	-8.774E-01	1.512E+00	2.379E+00	3.149E-01	-0.369
	783.70			9.531E+00	4.458E+00	7.723E+00	1.108E+00	1.234
I-131	80.19			-1.769E+00	6.508E+00	7.349E+00	6.404E-01	-0.241
	284.31			-9.703E-02	1.675E+00	2.668E+00	3.771E-01	-0.036
	364.49		*	-2.175E-02	1.214E-01	1.992E-01	2.208E-02	-0.109
	636.99			-1.203E+00	1.716E+00	2.708E+00	2.952E-01	-0.444
TE-132	49.72			-2.204E+01	2.006E+01	3.214E+01	3.482E+00	-0.686
	111.76			-1.486E+01	4.324E+01	6.809E+01	7.540E+00	-0.218
	116.30			-8.231E+00	3.786E+01	5.973E+01	6.588E+00	-0.138
	228.16		*	4.971E-01	9.609E-01	1.586E+00	2.869E-01	0.313
BA-133	81.00			-6.578E-02	1.237E-01	1.366E-01	2.128E-02	-0.482
	276.40			6.845E-01	4.412E-01	6.453E-01	1.150E-01	1.061
	302.85			3.936E-02	1.601E-01	2.373E-01	3.915E-02	0.166
	356.01		*	-5.297E-03	4.401E-02	6.282E-02	9.249E-03	-0.084
	383.85			8.503E-02	2.863E-01	4.779E-01	6.314E-02	0.178
I-133	529.87		*	3.431E-03	2.863E-01	Half-Life too short		
	875.33			8.342E-02	2.863E-01	Half-Life too short		
	1298.22			-4.921E-01	2.863E-01	Half-Life too short		
CS-134	563.25			9.589E-02	3.459E-01	5.842E-01	6.027E-02	0.164
	569.33			2.932E-02	1.947E-01	3.218E-01	3.337E-02	0.091
	604.72			1.370E-02	3.781E-02	5.521E-02	5.748E-03	0.248
	795.86		*	9.375E-02	6.793E-02	8.140E-02	9.010E-03	1.152
	801.95			2.056E-02	4.550E-01	6.297E-01	6.973E-02	0.033
	1365.19			-9.795E-01	1.183E+00	1.786E+00	1.664E-01	-0.548
CS-135	268.22		*	4.182E-01	1.948E-01	2.914E-01	4.215E-02	1.435
I-135	546.56			5.673E+10	1.948E-01	Half-Life too short		
	836.80			2.825E+11	1.948E-01	Half-Life too short		
	1038.76			7.756E+10	1.948E-01	Half-Life too short		
	1131.51			-3.710E+10	1.948E-01	Half-Life too short		
	1260.41		*	-3.869E+08	1.948E-01	Half-Life too short		
	1457.56			2.024E+13	1.948E-01	Half-Life too short		
	1678.03			1.052E+11	1.948E-01	Half-Life too short		
	1791.20			1.251E+10	1.948E-01	Half-Life too short		
CS-136	153.25			1.405E+00	9.550E-01	1.650E+00	1.784E-01	0.852
	176.60			8.660E-02	5.393E-01	8.999E-01	9.830E-02	0.096
	273.65			-5.097E-01	6.880E-01	9.169E-01	1.307E-01	-0.556
	340.55			7.312E-01	2.130E-01	3.299E-01	3.972E-02	2.216

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	818.51			-1.667E-02	6.929E-02	1.140E-01	1.263E-02	-0.146
	1048.07	*		-8.348E-02	1.146E-01	1.774E-01	1.794E-02	-0.470
	1235.36			8.017E-01	6.359E-01	1.110E+00	1.288E-01	0.722
BA-137M	661.66	*		4.578E-02	3.519E-02	6.124E-02	6.458E-03	0.748
CS-137	661.66	*		4.836E-02	3.718E-02	6.469E-02	6.831E-03	0.748
CE-139	165.86	*		-2.571E-02	3.093E-02	5.001E-02	4.905E-03	-0.514
BA-140	162.66			4.663E-01	9.064E-01	1.505E+00	1.533E-01	0.310
	304.85			-1.096E+00	1.680E+00	2.317E+00	7.167E-01	-0.473
	423.72			-6.756E-01	1.991E+00	3.176E+00	1.053E+00	-0.213
	537.26	*		-4.940E-02	2.714E-01	4.490E-01	1.542E-01	-0.110
LA-140	328.76	+		1.019E+00	4.353E-01	5.946E-01	7.516E-02	1.713
	487.02			4.563E-02	1.473E-01	2.414E-01	2.502E-02	0.189
	815.77			-8.812E-02	3.093E-01	5.076E-01	6.026E-02	-0.174
	1596.21	*		8.910E-02	8.219E-02	1.364E-01	1.196E-02	0.653
CE-141	145.44	*		3.802E-02	6.951E-02	1.149E-01	1.046E-02	0.331
CE-143	57.36			-1.480E-04	6.951E-02	Half-Life	too short	
	293.27	*		1.926E-03	6.951E-02	Half-Life	too short	
	664.57			6.290E-04	6.951E-02	Half-Life	too short	
	721.93			-4.713E-06	6.951E-02	Half-Life	too short	
CE-144	80.12			-8.009E-01	3.234E+00	3.659E+00	3.163E-01	-0.219
	133.52	*		4.276E-02	2.268E-01	3.418E-01	5.209E-02	0.125
PM-144	476.78			-3.570E-02	6.168E-02	9.620E-02	1.010E-02	-0.371
	618.01			-8.382E-04	3.226E-02	4.930E-02	5.242E-03	-0.017
	696.49	*		-1.296E-03	3.489E-02	5.690E-02	6.085E-03	-0.023
PR-144	696.51	*		-9.706E-02	2.613E+00	4.260E+00	4.555E-01	-0.023
	1489.16			-1.429E+01	1.177E+01	1.636E+01	1.457E+00	-0.874
PM-146	453.88	*		-6.669E-03	4.305E-02	6.933E-02	7.972E-03	-0.096
	633.25			7.478E-01	1.471E+00	2.443E+00	9.444E-01	0.306
	735.93			-3.598E-02	1.531E-01	2.326E-01	6.696E-02	-0.155
	747.24			-3.677E-02	1.015E-01	1.609E-01	2.578E-02	-0.229
ND-147	91.11	+		9.823E-01	3.527E-01	5.690E-01	5.625E-02	1.726
	319.41			7.431E-01	3.653E+00	6.159E+00	7.797E-01	0.121
	531.02	*		4.735E-01	6.113E-01	1.053E+00	1.670E-01	0.450
PM-149	285.90	*		3.415E+01	1.309E+02	2.111E+02	3.995E+01	0.162
EU-152	121.78			-5.346E-02	7.717E-02	1.189E-01	1.138E-02	-0.450
	244.70			2.940E-01	3.691E-01	5.423E-01	6.866E-02	0.542
	344.28	*		-8.269E-02	1.490E-01	1.602E-01	1.926E-02	-0.516
	778.90			-4.427E-01	3.158E-01	3.729E-01	4.093E-02	-1.187
	964.08			8.738E-01	3.330E-01	5.447E-01	5.812E-02	1.604
	1085.87			-4.072E-02	4.018E-01	6.492E-01	6.048E-02	-0.063
	1112.07			1.739E-01	3.465E-01	5.011E-01	4.490E-02	0.347
	1408.01			1.208E-01	1.817E-01	3.133E-01	2.801E-02	0.386
GD-153	69.67			-8.012E-01	1.765E+00	2.728E+00	2.117E-01	-0.294
	97.43	*		-5.792E-02	9.972E-02	1.382E-01	1.216E-02	-0.419
	103.18			-4.304E-02	1.158E-01	1.833E-01	1.567E-02	-0.235
EU-154	123.07			3.323E-02	5.413E-02	8.755E-02	9.701E-03	0.380
	723.31			1.791E-01	1.881E-01	2.816E-01	3.240E-02	0.636
	873.19			9.072E-02	2.815E-01	4.594E-01	6.366E-02	0.197
	996.26			-3.638E-01	3.577E-01	5.361E-01	9.860E-02	-0.679

---- 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		2.730E-02	2.254E-01	3.721E-01	4.804E-02	0.073
		1274.44	*	3.801E-02	1.270E-01	2.141E-01	2.434E-02	0.178
		86.55		5.220E-01	1.280E-01	1.922E-01	1.808E-02	2.716
		105.31	*	1.186E-01	1.119E-01	1.850E-01	1.588E-02	0.641
		86.79		1.398E+00	3.423E-01	5.096E-01	4.766E-02	2.743
TB-160	+	197.04		-1.808E-01	6.437E-01	1.018E+00	1.107E-01	-0.178
		215.65		-3.252E-01	8.107E-01	1.258E+00	1.454E-01	-0.259
		298.57		4.275E-01	1.856E-01	2.175E-01	2.916E-02	1.965
		879.36	*	9.460E-03	1.296E-01	2.161E-01	2.417E-02	0.044
		962.29		8.058E-01	5.903E-01	9.158E-01	9.787E-02	0.880
HO-166M	+	966.15		1.616E+00	3.366E-01	5.379E-01	5.729E-02	3.005
		1177.93		-3.190E-01	3.750E-01	5.796E-01	4.677E-02	-0.550
		1271.85		4.548E-01	7.410E-01	1.272E+00	1.093E-01	0.358
		80.57		-1.182E-01	3.506E-01	3.939E-01	3.423E-02	-0.300
		184.41		1.525E-01	5.547E-02	7.244E-02	7.553E-03	2.105
		280.46		-5.995E-02	9.230E-02	1.430E-01	1.997E-02	-0.419
		410.95		4.315E-01	2.706E-01	4.201E-01	3.966E-02	1.027
		711.68	*	-3.922E-02	6.295E-02	9.881E-02	1.062E-02	-0.397
		752.31		2.963E-01	2.920E-01	4.973E-01	5.417E-02	0.596
		810.29		-1.823E-02	5.385E-02	8.816E-02	9.746E-03	-0.207
TA-182	+	67.75		6.059E-02	1.188E-01	1.781E-01	1.358E-02	0.340
		100.11		4.663E-02	1.805E-01	2.929E-01	2.538E-02	0.159
		152.43		4.870E-01	3.649E-01	6.318E-01	5.829E-02	0.771
		222.11		3.612E-01	3.783E-01	6.337E-01	7.478E-02	0.570
		1121.30		7.917E-01	2.696E-01	3.571E-01	3.153E-02	2.217
		1189.05		-1.280E-01	3.017E-01	4.897E-01	3.982E-02	-0.261
		1221.41	*	-2.751E-02	2.011E-01	3.316E-01	2.758E-02	-0.083
		1231.02		-8.217E-01	5.086E-01	7.625E-01	6.381E-02	-1.078
		295.96		1.409E+00	2.667E-01	3.007E-01	4.069E-02	4.686
		308.46		7.778E-03	9.870E-02	1.661E-01	2.175E-02	0.047
IR-192	+	316.51	*	-1.016E-02	3.570E-02	5.907E-02	7.550E-03	-0.172
		468.07		7.159E-02	7.346E-02	1.098E-01	1.136E-02	0.652
		70.83		-1.337E+00	1.488E+00	2.091E+00	3.274E-01	-0.639
		72.87		1.760E+00	8.985E-01	1.354E+00	2.058E-01	1.300
		279.20	*	3.909E-02	4.251E-02	6.996E-02	9.892E-03	0.559
BI-207	+	72.81		3.529E-01	1.963E-01	3.044E-01	2.435E-02	1.159
		74.97		7.185E-01	1.403E-01	2.303E-01	1.883E-02	3.119
		569.70		2.184E-02	2.957E-02	5.018E-02	5.154E-03	0.435
		1063.66	*	-1.286E-02	5.872E-02	9.226E-02	8.857E-03	-0.139
		1770.23		9.761E-01	5.218E-01	9.331E-01	7.756E-02	1.046
PB-210		46.54	*	-6.962E-01	3.011E+00	4.941E+00	4.551E-01	-0.141
PB-211		404.85	*	-3.586E-01	8.462E-01	1.141E+00	5.538E-01	-0.314
BI-212	+	427.09		-4.974E-01	1.495E+00	2.370E+00	1.101E+00	-0.210
		832.01		-8.573E-01	1.101E+00	1.598E+00	8.360E-01	-0.537
		727.33	*	2.300E+00	9.033E-01	1.123E+00	1.579E-01	2.048
		785.37		7.755E+00	3.291E+00	5.837E+00	6.416E-01	1.328
		1620.50		2.425E+00	2.253E+00	4.113E+00	3.586E-01	0.589
RN-219	+	271.23		1.040E+00	4.678E-01	4.788E-01	7.074E-02	2.173
		401.81	*	-8.698E-02	4.064E-01	6.600E-01	1.011E-01	-0.132

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RA-223		81.07		-1.535E-01	2.794E-01	3.088E-01	2.699E-02	-0.497
		83.79		2.346E-01	1.241E-01	2.067E-01	1.864E-02	1.135
		94.87		1.048E+00	5.128E-01	7.881E-01	7.047E-02	1.329
		144.24		-2.408E-01	7.356E-01	1.187E+00	1.173E-01	-0.203
		154.21		2.864E-01	4.085E-01	6.973E-01	7.021E-02	0.411
+ AC-227		269.46		8.083E-01	3.610E-01	3.625E-01	4.976E-02	2.230
		323.87	*	-6.262E-02	7.385E-01	1.068E+00	2.088E-01	-0.059
		338.28		7.758E+00	2.047E+00	2.427E+00	3.541E-01	3.197
		79.69		-4.344E-01	1.626E+00	1.836E+00	3.163E-01	-0.237
		235.96		8.002E-01	2.241E-01	3.251E-01	4.417E-02	2.461
+ TH-227		256.23	*	1.881E-01	2.708E-01	4.459E-01	6.946E-02	0.422
		299.98		2.325E+00	1.282E+00	1.670E+00	2.721E-01	1.392
		304.50		-9.521E-01	1.878E+00	2.657E+00	5.132E-01	-0.358
		334.37		7.797E-01	2.509E+00	2.938E+00	5.208E-01	0.265
		79.80		-6.122E-01	2.144E+00	2.416E+00	5.261E-01	-0.253
+ TH-229		235.96		8.002E-01	2.225E-01	3.251E-01	4.274E-02	2.461
		256.23	*	1.881E-01	2.710E-01	4.459E-01	7.495E-02	0.422
		299.98		2.325E+00	1.282E+00	1.670E+00	2.721E-01	1.392
		304.50		-9.521E-01	1.878E+00	2.657E+00	5.132E-01	-0.358
		334.37		7.797E-01	2.509E+00	2.938E+00	5.208E-01	0.265
+ TH-229		85.43		7.368E-01	2.223E-01	3.714E-01	3.417E-02	1.984
		88.47		6.634E-01	1.625E-01	2.390E-01	2.258E-02	2.776
		193.51	*	7.535E-02	5.611E-01	9.290E-01	9.984E-02	0.081
		210.85		3.647E+00	1.367E+00	1.807E+00	2.056E-01	2.019
		283.69	*	-2.209E-01	1.508E+00	2.393E+00	4.352E-01	-0.092
+ PA-231		301.36		1.494E+00	8.214E-01	1.057E+00	1.673E-01	1.414
		81.07		-1.535E-01	2.794E-01	3.088E-01	2.699E-02	-0.497
+ TH-231		83.79		2.346E-01	1.241E-01	2.067E-01	1.864E-02	1.135
		94.87		1.048E+00	5.128E-01	7.881E-01	7.047E-02	1.329
		144.24		-2.408E-01	7.356E-01	1.187E+00	1.173E-01	-0.203
		154.21		2.864E-01	4.085E-01	6.973E-01	7.021E-02	0.411
		269.46		8.083E-01	3.610E-01	3.625E-01	4.976E-02	2.230
+ PA-233		323.87	*	-6.262E-02	7.385E-01	1.068E+00	2.088E-01	-0.059
		338.28		7.758E+00	2.047E+00	2.427E+00	3.541E-01	3.197
		300.13		1.052E+00	5.855E-01	7.534E-01	1.356E-01	1.397
		311.90	*	-1.865E-02	6.511E-02	1.078E-01	1.413E-02	-0.173
		340.48		3.300E+00	1.151E+00	1.361E+00	3.455E-01	2.424
+ PA-234		94.67		5.271E-01	1.983E-01	2.993E-01	3.782E-02	1.761
		98.44		5.131E-03	9.930E-02	1.509E-01	8.421E-02	0.034
		111.00		-3.562E-02	1.934E-01	3.067E-01	3.647E-02	-0.116
		131.20		8.513E-02	1.232E-01	1.893E-01	1.603E-02	0.450
		569.50		7.767E-02	2.667E-01	4.438E-01	4.558E-02	0.175
+ PA-234M		733.00		3.215E-01	4.156E-01	6.026E-01	1.395E-01	0.534
		880.51		-1.276E-01	2.648E-01	4.253E-01	4.756E-02	-0.300
		883.24		-1.797E-01	2.937E-01	4.241E-01	2.867E-01	-0.424
		926.50		-3.303E-01	1.879E-01	2.374E-01	6.215E-02	-1.391
		946.00	*	-7.113E-02	2.852E-01	4.618E-01	9.179E-02	-0.154
+ PA-234M		949.00		2.835E-01	4.307E-01	7.377E-01	7.970E-02	0.384
		766.42		2.806E+01	1.952E+01	2.127E+01	1.088E+01	1.320

---- 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		*	3.143E+00	4.818E+00	8.048E+00	9.223E-01	0.390
	99.53			2.087E-02	1.696E-01	2.705E-01	2.351E-02	0.077
	103.37			3.792E-03	1.045E-01	1.679E-01	1.433E-02	0.023
	106.12			8.201E-02	8.882E-02	1.463E-01	1.237E-02	0.560
	117.23		*	8.458E-02	4.082E-01	6.541E-01	5.405E-02	0.129
	228.18			1.159E-01	2.281E-01	3.773E-01	4.539E-02	0.307
AM-241	277.60			2.844E-01	1.979E-01	3.186E-01	4.441E-02	0.893
	59.54		*	1.224E-01	1.568E-01	2.383E-01	1.862E-02	0.514
	278.00			8.383E-01	8.391E-01	1.339E+00	1.869E-01	0.626
CM-247	287.50			-2.487E-01	1.289E+00	2.038E+00	2.804E-01	-0.122
	402.40		*	-1.026E-02	3.794E-02	5.974E-02	5.603E-03	-0.172
CF-249	252.80			-7.511E-01	1.013E+00	1.577E+00	2.046E-01	-0.476
	333.37			8.499E-02	3.099E-01	3.105E-01	3.757E-02	0.274
	388.16		*	1.628E-02	3.892E-02	6.526E-02	6.195E-03	0.250
CF-251	177.52		*	2.468E-03	1.334E-01	2.215E-01	2.257E-02	0.011
	227.38			2.948E-01	3.754E-01	6.256E-01	7.507E-02	0.471
	285.41			2.583E-01	2.256E+00	3.621E+00	5.004E-01	0.071

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]G247900014      *
* Acquisition date   : 6-MAR-2010 15:02:03 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 02:00:02.38             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247900014             Analyst initials: MXR1          *
* Batch Number       : 957711                 Sample Quantity : 1.2175E+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	3.705E+01	3.698E+00	4.784E-01	0.000E+00
CD-109	4.409E+00	1.058E+00	1.228E+00	0.000E+00
SN-126	4.303E-01	1.033E-01	1.204E-01	0.000E+00
TL-208	6.152E-01	1.005E-01	5.386E-02	0.000E+00
BI-211	5.142E+00	7.395E-01	3.219E-01	0.000E+00
PB-212	2.313E+00	3.223E-01	9.664E-02	0.000E+00
BI-214	1.517E+00	2.347E-01	1.127E-01	0.000E+00
PB-214	1.866E+00	2.867E-01	1.170E-01	0.000E+00
RA-224	5.370E+00	1.504E+00	1.035E+00	0.000E+00
RA-226	1.517E+00	2.347E-01	1.127E-01	0.000E+00
AC-228	2.068E+00	4.277E-01	2.208E-01	0.000E+00
RA-228	2.068E+00	4.277E-01	2.208E-01	0.000E+00
TH-228	2.313E+00	3.223E-01	9.664E-02	0.000E+00
TH-232	2.068E+00	4.277E-01	2.208E-01	0.000E+00
TH-234	2.820E+00	2.323E+00	2.063E+00	0.000E+00
U-235	-1.122E-01	2.170E-01	3.644E-01	0.000E+00
NP-237	1.284E+00	4.057E-01	3.629E-01	0.000E+00
U-238	2.820E+00	2.323E+00	2.063E+00	0.000E+00
ANH-511	1.332E-01	6.853E-02	4.742E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.292E-01	3.114E-01	4.862E-01	0.000E+00 NOT IDENT.
NA-22	1.342E-02	4.395E-02	7.560E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.306E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.329E-02	3.657E-02	5.948E-02	0.000E+00 FAIL ABUN
V-48	3.990E-02	7.231E-02	1.256E-01	0.000E+00 NOT IDENT.
CR-51	2.515E-01	3.730E-01	6.624E-01	0.000E+00 NOT IDENT.
MN-54	8.535E-03	3.713E-02	6.429E-02	0.000E+00 NOT IDENT.
CO-56	1.794E-03	3.775E-02	6.470E-02	0.000E+00 NOT IDENT.

CO-57	-1.214E-02	2.634E-02	4.309E-02	0.000E+00	NOT IDENT.
CO-58	-1.191E-02	3.581E-02	6.023E-02	0.000E+00	NOT IDENT.
FE-59	-6.738E-02	9.647E-02	1.528E-01	0.000E+00	NOT IDENT.
CO-60	2.350E-02	3.674E-02	6.467E-02	0.000E+00	NOT IDENT.
ZN-65	1.373E-01	1.030E-01	1.613E-01	0.000E+00	NOT IDENT.
SE-75	-1.751E-02	5.110E-02	7.297E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.720E-02	7.706E-02	0.000E+00	NOT IDENT.
Y-88	3.013E-02	3.057E-02	5.415E-02	0.000E+00	NOT IDENT.
Y-91	-2.258E+01	2.246E+01	3.595E+01	0.000E+00	NOT IDENT.
NB-94	6.378E-03	3.366E-02	5.704E-02	0.000E+00	NOT IDENT.
NB-95	5.826E-02	5.027E-02	7.727E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.528E-01	2.378E-01	0.000E+00	NOT IDENT.
ZR-95	1.862E-02	7.362E-02	1.243E-01	0.000E+00	NOT IDENT.
MO-99	-2.402E+00	1.545E+01	2.554E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.399E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.998E-02	3.810E-02	6.002E-02	0.000E+00	FAIL ABUN
RH-106	-1.265E-01	2.966E-01	4.916E-01	0.000E+00	NOT IDENT.
RU-106	-1.265E-01	2.964E-01	4.916E-01	0.000E+00	NOT IDENT.
AG-108M	1.924E-03	2.840E-02	4.804E-02	0.000E+00	NOT IDENT.
AG-110M	-2.120E-02	3.371E-02	5.486E-02	0.000E+00	NOT IDENT.
SN-113	-3.054E-02	4.313E-02	7.088E-02	0.000E+00	NOT IDENT.
CD-115	6.645E-02	1.540E+01	2.663E+01	0.000E+00	NOT IDENT.
SN-117M	-4.837E-03	5.808E-02	1.015E-01	0.000E+00	NOT IDENT.
TE-123M	1.314E-03	2.875E-02	5.043E-02	0.000E+00	NOT IDENT.
SB-124	1.126E-02	6.208E-02	1.070E-01	0.000E+00	NOT IDENT.
SB-125	-2.523E-02	8.598E-02	1.430E-01	0.000E+00	FAIL ABUN
TE-125M	4.610E+00	1.011E+01	1.725E+01	0.000E+00	NOT IDENT.
I-126	-2.687E-01	2.312E-01	3.627E-01	0.000E+00	NOT IDENT.
SB-126	-1.733E-01	1.800E-01	2.357E-01	0.000E+00	NOT IDENT.
SB-127	-8.774E-01	1.481E+00	2.397E+00	0.000E+00	NOT IDENT.
I-131	-2.175E-02	1.189E-01	2.023E-01	0.000E+00	NOT IDENT.
TE-132	4.971E-01	9.417E-01	1.621E+00	0.000E+00	NOT IDENT.
BA-133	-5.297E-03	4.313E-02	6.383E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.344E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.657E-02	8.188E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.909E-01	2.971E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.257E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.348E-02	1.123E-01	1.779E-01	0.000E+00	NOT IDENT.
BA-137M	4.578E-02	3.449E-02	6.174E-02	0.000E+00	NOT IDENT.
CS-137	4.836E-02	3.644E-02	6.523E-02	0.000E+00	NOT IDENT.
CE-139	-2.571E-02	3.031E-02	5.130E-02	0.000E+00	NOT IDENT.
BA-140	-4.940E-02	2.660E-01	4.539E-01	0.000E+00	NOT IDENT.
LA-140	8.910E-02	8.055E-02	1.360E-01	0.000E+00	FAIL ABUN
CE-141	3.802E-02	6.812E-02	1.181E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.485E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	4.276E-02	2.223E-01	3.515E-01	0.000E+00	NOT IDENT.
PM-144	-1.296E-03	3.420E-02	5.733E-02	0.000E+00	NOT IDENT.
PR-144	-9.706E-02	2.561E+00	4.293E+00	0.000E+00	NOT IDENT.
PM-146	-6.669E-03	4.219E-02	7.024E-02	0.000E+00	NOT IDENT.
ND-147	4.735E-01	5.991E-01	1.065E+00	0.000E+00	FAIL ABUN
PM-149	3.415E+01	1.283E+02	2.151E+02	0.000E+00	NOT IDENT.
EU-152	-8.269E-02	1.460E-01	1.629E-01	0.000E+00	NOT IDENT.
GD-153	-5.792E-02	9.772E-02	1.427E-01	0.000E+00	NOT IDENT.
EU-154	3.801E-02	1.245E-01	2.141E-01	0.000E+00	NOT IDENT.
EU-155	1.186E-01	1.096E-01	1.909E-01	0.000E+00	FAIL ABUN
TB-160	9.460E-03	1.270E-01	2.171E-01	0.000E+00	FAIL ABUN
HO-166M	-3.922E-02	6.169E-02	9.954E-02	0.000E+00	FAIL ABUN
TA-182	-2.751E-02	1.970E-01	3.318E-01	0.000E+00	FAIL ABUN
IR-192	-1.016E-02	3.499E-02	6.011E-02	0.000E+00	FAIL ABUN
HG-203	3.909E-02	4.166E-02	7.131E-02	0.000E+00	NOT IDENT.
BI-207	-1.286E-02	5.754E-02	9.247E-02	0.000E+00	FAIL ABUN
PB-210	-6.962E-01	2.951E+00	5.147E+00	0.000E+00	NOT IDENT.
PB-211	-3.586E-01	8.292E-01	1.158E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.853E-01	1.131E+00	0.000E+00	FAIL ABUN
RN-219	-8.698E-02	3.983E-01	6.696E-01	0.000E+00	FAIL ABUN
RA-223	-6.262E-02	7.238E-01	1.087E+00	0.000E+00	FAIL ABUN
AC-227	1.881E-01	2.653E-01	4.549E-01	0.000E+00	FAIL ABUN
TH-227	1.881E-01	2.656E-01	4.549E-01	0.000E+00	FAIL ABUN
TH-229	7.535E-02	5.499E-01	9.511E-01	0.000E+00	FAIL ABUN
PA-231	-2.209E-01	1.478E+00	2.438E+00	0.000E+00	FAIL ABUN
TH-231	-6.262E-02	7.238E-01	1.087E+00	0.000E+00	FAIL ABUN
PA-233	-1.865E-02	6.380E-02	1.098E-01	0.000E+00	FAIL ABUN
PA-234	-7.113E-02	2.795E-01	4.635E-01	0.000E+00	NOT IDENT.
PA-234M	3.143E+00	4.722E+00	8.072E+00	0.000E+00	NOT IDENT.
NP-239	8.458E-02	4.001E-01	6.738E-01	0.000E+00	NOT IDENT.
AM-241	1.224E-01	1.537E-01	2.474E-01	0.000E+00	NOT IDENT.
CM-247	-1.026E-02	3.718E-02	6.061E-02	0.000E+00	NOT IDENT.
CF-249	1.628E-02	3.814E-02	6.624E-02	0.000E+00	NOT IDENT.

CF-251	2.468E-03	1.307E-01	2.270E-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]G247900014.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:02:03.
Sample ID          : G247900014 Sample quantity : 1.21750E+02 GRAM
Detector name      : GAM22 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.38 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 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	2446	10.66*	1.909E+00	3.705E+01	3.705E+01	10.18
CD-109	88.03	386	3.70*	7.480E+00	4.303E+00	4.409E+00	24.49
SN-126	64.28	145	9.60	4.290E+00	1.087E+00	1.087E+00	83.42
	86.94	386	8.90	7.480E+00	1.789E+00	1.789E+00	47.28
	87.57	386	37.00*	7.480E+00	4.303E-01	4.303E-01	24.49
TL-208	277.37	-----	6.60	6.182E+00	-----	Line Not Found	-----
	583.19	667	85.00*	3.931E+00	6.152E-01	6.152E-01	16.68
	860.56	-----	12.50	2.923E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	5.897E+00	-----	Line Not Found	-----
	351.06	1164	12.92*	5.401E+00	5.142E+00	5.142E+00	14.67
PB-212	74.82	513	10.28	6.168E+00	2.493E+00	2.493E+00	21.82
	77.11	928	17.10	6.459E+00	2.591E+00	2.591E+00	13.79
	238.63	2195	43.60*	6.709E+00	2.313E+00	2.313E+00	14.22
	300.09	134	3.30	5.913E+00	2.114E+00	2.114E+00	54.65
BI-214	609.32	853	45.49*	3.810E+00	1.517E+00	1.517E+00	15.79
	1120.29	191	14.92	2.346E+00	1.679E+00	1.679E+00	34.71
	1764.49	192	15.30	1.716E+00	2.260E+00	2.260E+00	20.59
PB-214	74.82	513	5.80	6.168E+00	4.418E+00	4.418E+00	21.08
	77.11	928	9.70	6.459E+00	4.568E+00	4.568E+00	16.07
	242.00	476	7.25	6.666E+00	3.037E+00	3.037E+00	29.17
	295.22	673	18.42	5.969E+00	1.888E+00	1.888E+00	19.99
	351.93	1164	35.60*	5.401E+00	1.866E+00	1.866E+00	15.68
RA-224	240.99	476	4.10*	6.666E+00	5.370E+00	5.370E+00	28.58
RA-226	609.32	853	45.49*	3.810E+00	1.517E+00	1.517E+00	15.79
	1120.29	191	14.92	2.346E+00	1.679E+00	1.679E+00	34.71
	1764.49	192	15.30	1.716E+00	2.260E+00	2.260E+00	20.59
AC-228	338.32	395	11.27	5.527E+00	1.955E+00	1.955E+00	47.86
	911.20	482	25.80*	2.788E+00	2.068E+00	2.068E+00	21.11
	968.97	299	15.80	2.648E+00	2.204E+00	2.204E+00	33.90
RA-228	338.32	395	11.27	5.527E+00	1.955E+00	1.955E+00	47.86
	911.20	482	25.80*	2.788E+00	2.068E+00	2.068E+00	21.11
	968.97	299	15.80	2.648E+00	2.204E+00	2.204E+00	33.90

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	513	10.28	6.168E+00	2.493E+00	2.493E+00	19.56
	77.11	928	17.10	6.459E+00	2.591E+00	2.591E+00	13.79
	238.63	2195	43.60*	6.709E+00	2.313E+00	2.313E+00	14.22
	300.09	134	3.30	5.913E+00	2.114E+00	2.114E+00	81.38
TH-232	338.32	395	11.27	5.527E+00	1.955E+00	1.955E+00	25.00
	911.20	482	25.80*	2.788E+00	2.068E+00	2.068E+00	21.11
	968.97	299	15.80	2.648E+00	2.204E+00	2.204E+00	33.90
TH-234	63.29	145	3.70*	4.290E+00	2.820E+00	2.820E+00	84.05
	92.59	444	4.23	7.861E+00	4.116E+00	4.116E+00	32.02
U-235	89.96	246	3.47	7.677E+00	2.846E+00	2.846E+00	42.52
	93.35	444	5.60	7.861E+00	3.109E+00	3.109E+00	32.73
	143.76	-----	10.96*	8.364E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.031E+00	-----	Line Not Found	-----
NP-237	185.72	271	57.20	7.607E+00	1.919E-01	1.919E-01	36.38
	205.31	-----	5.01	7.253E+00	-----	Line Not Found	-----
	86.48	386	12.40*	7.480E+00	1.284E+00	1.284E+00	32.24
	95.86	-----	2.68	8.032E+00	-----	Line Not Found	-----
U-238	63.29	145	3.70*	4.290E+00	2.820E+00	2.820E+00	84.05
	92.59	444	4.23	7.861E+00	4.116E+00	4.116E+00	24.74
ANH-511	511.00	186	100.00*	4.298E+00	1.332E-01	1.332E-01	52.51

Flag: "*" = Keyline

Total number of lines in spectrum 35
Number of unidentified lines 8
Number of lines tentatively identified by NID 27 77.14%

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	3.705E+01	3.705E+01	0.377E+01	10.18	
CD-109	461.40D	1.02	4.303E+00	4.409E+00	1.080E+00	24.49	
SN-126	2.30E+05Y	1.00	4.303E-01	4.303E-01	1.054E-01	24.49	
TL-208	1.41E+10Y	1.00	6.152E-01	6.152E-01	1.026E-01	16.68	
BI-211	7.04E+08Y	1.00	5.142E+00	5.142E+00	0.755E+00	14.67	
PB-212	1.41E+10Y	1.00	2.313E+00	2.313E+00	0.329E+00	14.22	
BI-214	1600.00Y	1.00	1.517E+00	1.517E+00	0.240E+00	15.79	
PB-214	1600.00Y	1.00	1.866E+00	1.866E+00	0.293E+00	15.68	
RA-224	1.41E+10Y	1.00	5.370E+00	5.370E+00	1.535E+00	28.58	
RA-226	1600.00Y	1.00	1.517E+00	1.517E+00	0.240E+00	15.79	
AC-228	1.41E+10Y	1.00	2.068E+00	2.068E+00	0.436E+00	21.11	
RA-228	1.41E+10Y	1.00	2.068E+00	2.068E+00	0.436E+00	21.11	
TH-228	1.41E+10Y	1.00	2.313E+00	2.313E+00	0.329E+00	14.22	
TH-232	1.41E+10Y	1.00	2.068E+00	2.068E+00	0.436E+00	21.11	
TH-234	4.47E+09Y	1.00	2.820E+00	2.820E+00	2.371E+00	84.05	
U-235	7.04E+08Y	1.00	1.919E-01	1.919E-01	0.698E-01	36.38	K
NP-237	2.14E+06Y	1.00	1.284E+00	1.284E+00	0.414E+00	32.24	
U-238	4.47E+09Y	1.00	2.820E+00	2.820E+00	2.371E+00	84.05	
ANH-511	1.00E+09Y	1.00	1.332E-01	1.332E-01	0.699E-01	52.51	

Total Activity : 7.589E+01 7.600E+01

Grand Total Activity : 7.589E+01 7.600E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900014

Page : 4
Acquisition date : 6-MAR-2010 15:02:03

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.15	163	567	1.61	258.42	254	9	2.26E-02	55.0	8.53E+00	
0	209.48	238	462	1.41	418.93	415	9	3.30E-02	35.7	7.18E+00	T
0	270.63	228	471	1.92	541.12	534	14	3.17E-02	42.5	6.27E+00	T
0	328.36	157	245	1.30	656.48	652	10	2.17E-02	40.8	5.62E+00	T
0	409.26	66	182	1.22	818.16	814	9	9.14E-03	78.3	4.94E+00	
0	463.42	124	303	1.51	926.41	920	16	1.72E-02	65.4	4.58E+00	T
0	726.96	166	154	1.61	1453.17	1446	15	2.31E-02	36.7	3.34E+00	T
0	770.00	153	162	1.96	1539.23	1530	20	2.12E-02	44.3	3.20E+00	
0	795.72	72	124	1.31	1590.64	1584	15	9.97E-03	71.6	3.11E+00	T
0	862.11	69	207	1.19	1723.37	1713	21	9.62E-03	****	2.92E+00	
0	1381.91	85	91	9.74	2762.84	2748	28	1.18E-02	71.2	1.99E+00	
0	1591.28	104	65	4.20	3181.64	3167	31	1.44E-02	55.5	1.81E+00	
0	1731.03	61	14	1.24	3461.23	3451	22	8.47E-03	43.9	1.73E+00	
0	1847.82	38	13	0.93	3694.90	3685	15	5.21E-03	48.3	1.69E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900014.CNF;1
* Acquisition date   : 6-MAR-2010 15:02:03.   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 02:00:02.38           Half life ratio   : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library   : SOLID
* Sample ID          : G247900014             Analyst initials  : MXR1
* Batch Number       : 957711                 Sample Quantity   : 1.21750E+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	3.705E+01	3.773E+00	4.794E-01	4.391E-02	77.293
CD-109	4.409E+00	1.080E+00	1.188E+00	1.128E-01	3.710
SN-126	4.303E-01	1.054E-01	1.165E-01	1.100E-02	3.695
TL-208	6.152E-01	1.026E-01	5.333E-02	5.778E-03	11.534
BI-211	5.142E+00	7.545E-01	3.167E-01	3.695E-02	16.237
PB-212	2.313E+00	3.289E-01	9.464E-02	1.254E-02	24.442
BI-214	1.517E+00	2.395E-01	1.117E-01	1.303E-02	13.581
PB-214	1.866E+00	2.926E-01	1.152E-01	1.482E-02	16.206
RA-224	5.370E+00	1.535E+00	1.013E+00	1.269E-01	5.300
RA-226	1.517E+00	2.395E-01	1.117E-01	1.303E-02	13.581
AC-228	2.068E+00	4.364E-01	2.199E-01	2.978E-02	9.403
RA-228	2.068E+00	4.364E-01	2.199E-01	2.978E-02	9.403
TH-228	2.313E+00	3.289E-01	9.464E-02	1.254E-02	24.442
TH-232	2.068E+00	4.364E-01	2.199E-01	2.978E-02	9.403
TH-234	2.820E+00	2.371E+00	1.988E+00	3.538E-01	1.419
U-235	1.919E-01	6.982E-02	3.546E-01	6.061E-02	0.541
NP-237	1.284E+00	4.140E-01	3.510E-01	8.054E-02	3.658
U-238	2.820E+00	2.371E+00	1.988E+00	3.538E-01	1.419

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.332E-01	6.993E-02	4.688E-02	4.697E-03	2.841

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.292E-01		3.177E-01	4.802E-01	5.011E-02	-0.686
NA-22	1.342E-02		4.484E-02	7.561E-02	6.516E-03	0.178
NA-24	-9.363E-01		1.177E+00	Half-Life too short		
SC-46	-2.329E-02		3.732E-02	5.922E-02	6.629E-03	-0.393
V-48	3.990E-02		7.379E-02	1.252E-01	1.313E-02	0.319
CR-51	2.515E-01		3.806E-01	6.511E-01	8.427E-02	0.386
MN-54	8.535E-03		3.789E-02	6.395E-02	7.104E-03	0.133
CO-56	1.794E-03		3.852E-02	6.437E-02	7.165E-03	0.028
CO-57	-1.214E-02		2.688E-02	4.185E-02	3.452E-03	-0.290
CO-58	-1.191E-02		3.655E-02	5.989E-02	6.632E-03	-0.199
FE-59	-6.738E-02		9.844E-02	1.525E-01	1.494E-02	-0.442
CO-60	2.350E-02		3.749E-02	6.472E-02	5.771E-03	0.363
ZN-65	1.373E-01		1.051E-01	1.610E-01	1.436E-02	0.853
SE-75	-1.751E-02		5.214E-02	7.155E-02	9.630E-03	-0.245
SR-85	1.410E-01		4.817E-02	7.619E-02	7.645E-03	1.850
Y-88	3.013E-02		3.120E-02	5.441E-02	4.399E-03	0.554
Y-91	-2.258E+01		2.292E+01	3.593E+01	2.954E+00	-0.628
NB-94	6.378E-03		3.435E-02	5.662E-02	6.067E-03	0.113
NB-95	5.826E-02		5.129E-02	7.678E-02	8.396E-03	0.759
NB-95M	2.499E-01		1.559E-01	2.328E-01	3.081E-02	1.073
ZR-95	1.862E-02		7.513E-02	1.235E-01	1.436E-02	0.151
MO-99	-2.402E+00		1.577E+01	2.536E+01	4.332E+00	-0.095
TC-99M	-3.420E+10		3.265E+11	Half-Life too short		
RU-103	-2.998E-02		3.888E-02	5.931E-02	8.793E-03	-0.505
RH-106	-1.265E-01		3.027E-01	4.872E-01	7.068E-02	-0.260
RU-106	-1.265E-01		3.024E-01	4.872E-01	5.089E-02	-0.260
AG-108M	1.924E-03		2.898E-02	4.739E-02	4.665E-03	0.041
AG-110M	-2.120E-02		3.439E-02	5.441E-02	5.848E-03	-0.390
SN-113	-3.054E-02		4.401E-02	6.984E-02	6.670E-03	-0.437
CD-115	6.645E-02		1.571E+01	2.633E+01	2.659E+00	0.003
SN-117M	-4.837E-03		5.927E-02	9.890E-02	9.379E-03	-0.049
TE-123M	1.314E-03		2.934E-02	4.914E-02	4.693E-03	0.027
SB-124	1.126E-02		6.335E-02	1.074E-01	9.577E-03	0.105
SB-125	-2.523E-02		8.773E-02	1.410E-01	1.368E-02	-0.179
TE-125M	4.610E+00		1.032E+01	1.673E+01	1.721E+00	0.276
I-126	-2.687E-01		2.359E-01	3.597E-01	3.801E-02	-0.747
SB-126	-1.733E-01		1.836E-01	2.340E-01	2.524E-02	-0.740
SB-127	-8.774E-01		1.512E+00	2.379E+00	3.149E-01	-0.369
I-131	-2.175E-02		1.214E-01	1.992E-01	2.208E-02	-0.109
TE-132	4.971E-01		9.609E-01	1.586E+00	2.869E-01	0.313
BA-133	-5.297E-03		4.401E-02	6.282E-02	9.249E-03	-0.084
I-133	3.431E-03		6.859E-03	Half-Life too short		

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	9.375E-02	+	6.793E-02	8.140E-02	9.010E-03	1.152
CS-135	4.182E-01		1.948E-01	2.914E-01	4.215E-02	1.435
I-135	-3.869E+08		4.213E+10	Half-Life	too short	
CS-136	-8.348E-02		1.146E-01	1.774E-01	1.794E-02	-0.470
BA-137M	4.578E-02		3.519E-02	6.124E-02	6.458E-03	0.748
CS-137	4.836E-02		3.718E-02	6.469E-02	6.831E-03	0.748
CE-139	-2.571E-02		3.093E-02	5.001E-02	4.905E-03	-0.514
BA-140	-4.940E-02		2.714E-01	4.490E-01	1.542E-01	-0.110
LA-140	8.910E-02		8.219E-02	1.364E-01	1.196E-02	0.653
CE-141	3.802E-02		6.951E-02	1.149E-01	1.046E-02	0.331
CE-143	1.926E-03		2.798E-04	Half-Life	too short	
CE-144	4.276E-02		2.268E-01	3.418E-01	5.209E-02	0.125
PM-144	-1.296E-03		3.489E-02	5.690E-02	6.085E-03	-0.023
PR-144	-9.706E-02		2.613E+00	4.260E+00	4.555E-01	-0.023
PM-146	-6.669E-03		4.305E-02	6.933E-02	7.972E-03	-0.096
ND-147	4.735E-01		6.113E-01	1.053E+00	1.670E-01	0.450
PM-149	3.415E+01		1.309E+02	2.111E+02	3.995E+01	0.162
EU-152	-8.269E-02		1.490E-01	1.602E-01	1.926E-02	-0.516
GD-153	-5.792E-02		9.972E-02	1.382E-01	1.216E-02	-0.419
EU-154	3.801E-02		1.270E-01	2.141E-01	2.434E-02	0.178
EU-155	1.186E-01		1.119E-01	1.850E-01	1.588E-02	0.641
TB-160	9.460E-03		1.296E-01	2.161E-01	2.417E-02	0.044
HO-166M	-3.922E-02		6.295E-02	9.881E-02	1.062E-02	-0.397
TA-182	-2.751E-02		2.011E-01	3.316E-01	2.758E-02	-0.083
IR-192	-1.016E-02		3.570E-02	5.907E-02	7.550E-03	-0.172
HG-203	3.909E-02		4.251E-02	6.996E-02	9.892E-03	0.559
BI-207	-1.286E-02		5.872E-02	9.226E-02	8.857E-03	-0.139
PB-210	-6.962E-01		3.011E+00	4.941E+00	4.551E-01	-0.141
PB-211	-3.586E-01		8.462E-01	1.141E+00	5.538E-01	-0.314
BI-212	2.300E+00	+	9.033E-01	1.123E+00	1.579E-01	2.048
RN-219	-8.698E-02		4.064E-01	6.600E-01	1.011E-01	-0.132
RA-223	-6.262E-02		7.385E-01	1.068E+00	2.088E-01	-0.059
AC-227	1.881E-01		2.708E-01	4.459E-01	6.946E-02	0.422
TH-227	1.881E-01		2.710E-01	4.459E-01	7.495E-02	0.422
TH-229	7.535E-02		5.611E-01	9.290E-01	9.984E-02	0.081
PA-231	-2.209E-01		1.508E+00	2.393E+00	4.352E-01	-0.092
TH-231	-6.262E-02		7.385E-01	1.068E+00	2.088E-01	-0.059
PA-233	-1.865E-02		6.511E-02	1.078E-01	1.413E-02	-0.173
PA-234	-7.113E-02		2.852E-01	4.618E-01	9.179E-02	-0.154
PA-234M	3.143E+00		4.818E+00	8.048E+00	9.223E-01	0.390
NP-239	8.458E-02		4.082E-01	6.541E-01	5.405E-02	0.129
AM-241	1.224E-01		1.568E-01	2.383E-01	1.862E-02	0.514
CM-247	-1.026E-02		3.794E-02	5.974E-02	5.603E-03	-0.172
CF-249	1.628E-02		3.892E-02	6.526E-02	6.195E-03	0.250
CF-251	2.468E-03		1.334E-01	2.215E-01	2.257E-02	0.011

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G247900014          *
* Acquisition date   : 6-MAR-2010 15:02:03 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 02:00:02.38 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247900014 Analyst initials: MXR1                 *
* Batch Number       : 957711 Sample Quantity : 1.2175E+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	3.705E+01	3.698E+00	2.394E-01	1.886E+00
CD-109	4.409E+00	1.058E+00	6.145E-01	5.399E-01
SN-126	4.303E-01	1.033E-01	6.023E-02	5.269E-02
TL-208	6.152E-01	1.005E-01	2.695E-02	5.130E-02
BI-211	5.142E+00	7.395E-01	1.610E-01	3.773E-01
PB-212	2.313E+00	3.223E-01	4.835E-02	1.645E-01
BI-214	1.517E+00	2.347E-01	5.639E-02	1.198E-01
PB-214	1.866E+00	2.867E-01	5.855E-02	1.463E-01
RA-224	5.370E+00	1.504E+00	5.176E-01	7.675E-01
RA-226	1.517E+00	2.347E-01	5.639E-02	1.198E-01
AC-228	2.068E+00	4.277E-01	1.105E-01	2.182E-01
RA-228	2.068E+00	4.277E-01	1.105E-01	2.182E-01
TH-228	2.313E+00	3.223E-01	4.835E-02	1.645E-01
TH-232	2.068E+00	4.277E-01	1.105E-01	2.182E-01
TH-234	2.820E+00	2.323E+00	1.032E+00	1.185E+00
U-235	-1.122E-01	2.170E-01	1.823E-01	1.107E-01
NP-237	1.284E+00	4.057E-01	1.816E-01	2.070E-01
U-238	2.820E+00	2.323E+00	1.032E+00	1.185E+00
ANH-511	1.332E-01	6.853E-02	2.372E-02	3.497E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.292E-01	3.114E-01	2.432E-01	1.589E-01 NOT IDENT.
NA-22	1.342E-02	4.395E-02	3.782E-02	2.242E-02 NOT IDENT.
NA-24	-9.363E+05	2.306E+06	0.000E+00	1.177E+06 SHORT HLIF
SC-46	-2.329E-02	3.657E-02	2.976E-02	1.866E-02 FAIL ABUN
V-48	3.990E-02	7.231E-02	6.283E-02	3.689E-02 NOT IDENT.
CR-51	2.515E-01	3.730E-01	3.314E-01	1.903E-01 NOT IDENT.
MN-54	8.535E-03	3.713E-02	3.216E-02	1.894E-02 NOT IDENT.
CO-56	1.794E-03	3.775E-02	3.237E-02	1.926E-02 NOT IDENT.

CO-57	-1.214E-02	2.634E-02	2.156E-02	1.344E-02	NOT IDENT.
CO-58	-1.191E-02	3.581E-02	3.013E-02	1.827E-02	NOT IDENT.
FE-59	-6.738E-02	9.647E-02	7.644E-02	4.922E-02	NOT IDENT.
CO-60	2.350E-02	3.674E-02	3.236E-02	1.875E-02	NOT IDENT.
ZN-65	1.373E-01	1.030E-01	8.068E-02	5.256E-02	NOT IDENT.
SE-75	-1.751E-02	5.110E-02	3.651E-02	2.607E-02	NOT IDENT.
SR-85	1.410E-01	4.720E-02	3.855E-02	2.408E-02	NOT IDENT.
Y-88	3.013E-02	3.057E-02	2.709E-02	1.560E-02	NOT IDENT.
Y-91	-2.258E+01	2.246E+01	1.799E+01	1.146E+01	NOT IDENT.
NB-94	6.378E-03	3.366E-02	2.854E-02	1.717E-02	NOT IDENT.
NB-95	5.826E-02	5.027E-02	3.866E-02	2.565E-02	NOT IDENT.
NB-95M	2.499E-01	1.528E-01	1.190E-01	7.797E-02	NOT IDENT.
ZR-95	1.862E-02	7.362E-02	6.218E-02	3.756E-02	NOT IDENT.
MO-99	-2.402E+00	1.545E+01	1.278E+01	7.883E+00	NOT IDENT.
TC-99M	-3.420E+16	6.399E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.998E-02	3.810E-02	3.003E-02	1.944E-02	FAIL ABUN
RH-106	-1.265E-01	2.966E-01	2.459E-01	1.513E-01	NOT IDENT.
RU-106	-1.265E-01	2.964E-01	2.459E-01	1.512E-01	NOT IDENT.
AG-108M	1.924E-03	2.840E-02	2.403E-02	1.449E-02	NOT IDENT.
AG-110M	-2.120E-02	3.371E-02	2.745E-02	1.720E-02	NOT IDENT.
SN-113	-3.054E-02	4.313E-02	3.546E-02	2.201E-02	NOT IDENT.
CD-115	6.645E-02	1.540E+01	1.332E+01	7.855E+00	NOT IDENT.
SN-117M	-4.837E-03	5.808E-02	5.078E-02	2.963E-02	NOT IDENT.
TE-123M	1.314E-03	2.875E-02	2.523E-02	1.467E-02	NOT IDENT.
SB-124	1.126E-02	6.208E-02	5.354E-02	3.167E-02	NOT IDENT.
SB-125	-2.523E-02	8.598E-02	7.152E-02	4.387E-02	FAIL ABUN
TE-125M	4.610E+00	1.011E+01	8.631E+00	5.159E+00	NOT IDENT.
I-126	-2.687E-01	2.312E-01	1.814E-01	1.179E-01	NOT IDENT.
SB-126	-1.733E-01	1.800E-01	1.179E-01	9.182E-02	NOT IDENT.
SB-127	-8.774E-01	1.481E+00	1.199E+00	7.558E-01	NOT IDENT.
I-131	-2.175E-02	1.189E-01	1.012E-01	6.069E-02	NOT IDENT.
TE-132	4.971E-01	9.417E-01	8.108E-01	4.804E-01	NOT IDENT.
BA-133	-5.297E-03	4.313E-02	3.193E-02	2.201E-02	NOT IDENT.
I-133	3.431E+03	1.344E+04	0.000E+00	6.859E+03	SHORT HLIF
CS-134	9.375E-02	6.657E-02	4.097E-02	3.396E-02	FAIL ABUN
CS-135	4.182E-01	1.909E-01	1.487E-01	9.742E-02	NOT IDENT.
I-135	-3.869E+14	8.257E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.348E-02	1.123E-01	8.898E-02	5.731E-02	NOT IDENT.
BA-137M	4.578E-02	3.449E-02	3.089E-02	1.760E-02	NOT IDENT.
CS-137	4.836E-02	3.644E-02	3.263E-02	1.859E-02	NOT IDENT.
CE-139	-2.571E-02	3.031E-02	2.566E-02	1.546E-02	NOT IDENT.
BA-140	-4.940E-02	2.660E-01	2.271E-01	1.357E-01	NOT IDENT.
LA-140	8.910E-02	8.055E-02	6.804E-02	4.110E-02	FAIL ABUN
CE-141	3.802E-02	6.812E-02	5.906E-02	3.475E-02	NOT IDENT.
CE-143	1.926E+03	5.485E+02	0.000E+00	2.798E+02	SHORT HLIF
CE-144	4.276E-02	2.223E-01	1.759E-01	1.134E-01	NOT IDENT.
PM-144	-1.296E-03	3.420E-02	2.868E-02	1.745E-02	NOT IDENT.
PR-144	-9.706E-02	2.561E+00	2.148E+00	1.306E+00	NOT IDENT.
PM-146	-6.669E-03	4.219E-02	3.514E-02	2.153E-02	NOT IDENT.
ND-147	4.735E-01	5.991E-01	5.328E-01	3.057E-01	FAIL ABUN
PM-149	3.415E+01	1.283E+02	1.076E+02	6.545E+01	NOT IDENT.
EU-152	-8.269E-02	1.460E-01	8.150E-02	7.450E-02	NOT IDENT.
GD-153	-5.792E-02	9.772E-02	7.140E-02	4.986E-02	NOT IDENT.
EU-154	3.801E-02	1.245E-01	1.071E-01	6.351E-02	NOT IDENT.
EU-155	1.186E-01	1.096E-01	9.549E-02	5.594E-02	FAIL ABUN
TB-160	9.460E-03	1.270E-01	1.086E-01	6.478E-02	FAIL ABUN
HO-166M	-3.922E-02	6.169E-02	4.980E-02	3.147E-02	FAIL ABUN
TA-182	-2.751E-02	1.970E-01	1.660E-01	1.005E-01	FAIL ABUN
IR-192	-1.016E-02	3.499E-02	3.007E-02	1.785E-02	FAIL ABUN
HG-203	3.909E-02	4.166E-02	3.567E-02	2.126E-02	NOT IDENT.
BI-207	-1.286E-02	5.754E-02	4.626E-02	2.936E-02	FAIL ABUN
PB-210	-6.962E-01	2.951E+00	2.575E+00	1.506E+00	NOT IDENT.
PB-211	-3.586E-01	8.292E-01	5.791E-01	4.231E-01	NOT IDENT.
BI-212	2.300E+00	8.853E-01	5.658E-01	4.517E-01	FAIL ABUN
RN-219	-8.698E-02	3.983E-01	3.350E-01	2.032E-01	FAIL ABUN
RA-223	-6.262E-02	7.238E-01	5.436E-01	3.693E-01	FAIL ABUN
AC-227	1.881E-01	2.653E-01	2.276E-01	1.354E-01	FAIL ABUN
TH-227	1.881E-01	2.656E-01	2.276E-01	1.355E-01	FAIL ABUN
TH-229	7.535E-02	5.499E-01	4.758E-01	2.806E-01	FAIL ABUN
PA-231	-2.209E-01	1.478E+00	1.220E+00	7.540E-01	FAIL ABUN
TH-231	-6.262E-02	7.238E-01	5.436E-01	3.693E-01	FAIL ABUN
PA-233	-1.865E-02	6.380E-02	5.491E-02	3.255E-02	FAIL ABUN
PA-234	-7.113E-02	2.795E-01	2.319E-01	1.426E-01	NOT IDENT.
PA-234M	3.143E+00	4.722E+00	4.038E+00	2.409E+00	NOT IDENT.
NP-239	8.458E-02	4.001E-01	3.371E-01	2.041E-01	NOT IDENT.
AM-241	1.224E-01	1.537E-01	1.238E-01	7.839E-02	NOT IDENT.
CM-247	-1.026E-02	3.718E-02	3.032E-02	1.897E-02	NOT IDENT.
CF-249	1.628E-02	3.814E-02	3.314E-02	1.946E-02	NOT IDENT.

CF-251

2.468E-03

1.307E-01

1.136E-01

6.671E-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	360.4350
49.72	398.7987
57.36	0.0000
59.54	410.0144
63.29	494.5819
63.29	494.5819
64.28	506.6541
67.75	508.7301
69.67	599.1975
70.83	630.9459
72.81	570.5472
72.87	570.6658
72.87	570.6658
74.82	578.9921
74.82	578.9921
74.82	578.9921
74.97	579.2835
77.11	583.4016
77.11	583.4016
77.11	583.4016
79.69	548.2539
79.80	548.4468
80.12	539.7534
80.19	539.8735
80.57	540.5251
81.00	550.5408
81.07	550.6631
81.07	550.6631
83.79	503.3518
83.79	503.3518
85.43	505.8800
86.48	507.4851
86.55	507.5909
86.79	507.9553
86.94	508.1867
87.57	509.1418
88.03	509.8385
88.47	510.5032
89.96	512.7397
91.11	514.4543
92.59	516.6428
92.59	516.6428
93.35	517.7604
94.67	468.6900
94.87	468.9520
94.87	468.9520
95.86	463.7847
97.43	493.3900
98.44	454.3923
99.53	443.9839
100.11	444.6770
103.18	482.3802
103.37	466.1308
105.31	446.3916
106.12	449.5389
109.28	453.1610
111.00	470.8038
111.76	469.4442
116.30	455.3490
117.23	408.5604
121.12	451.3579
121.78	454.3481
122.06	448.8864
123.07	409.5515
131.20	477.9064
133.52	453.3906
136.00	469.1463

136.47	481.1971
140.51	484.3730
140.51	0.0000
143.76	507.5031
144.24	493.5071
144.24	493.5071
145.44	447.5034
152.43	437.1405
153.25	446.1284
154.21	472.8086
154.21	472.8086
156.02	473.5187
158.56	455.3111
159.00	449.1611
162.66	435.3292
163.33	418.9553
165.86	470.9038
176.60	425.0885
177.52	429.6125
181.07	452.7533
184.41	438.1398
185.72	451.2036
193.51	447.0549
197.04	465.4792
205.31	412.6406
210.85	390.0908
215.65	412.7423
222.11	382.0932
227.38	372.4651
228.16	377.0382
228.18	377.0493
235.69	407.4917
235.96	411.0113
235.96	411.0113
238.63	372.9807
238.63	372.9807
240.99	374.1630
242.00	374.6666
244.70	313.5906
252.40	348.5981
252.80	359.5408
256.23	326.5211
256.23	326.5211
260.90	333.8887
264.66	307.6992
268.22	282.7091
269.46	315.4521
269.46	315.4521
271.23	316.1309
273.65	404.7698
276.40	297.9293
277.37	300.3452
277.60	310.7831
278.00	327.4311
279.20	321.3855
279.54	321.5134
280.46	358.6141
283.69	307.4322
284.31	298.7046
285.41	295.7271
285.90	292.5338
287.50	306.5501
293.27	0.0000
295.22	303.5978
295.96	303.8514
298.57	245.6136
299.98	245.9993
299.98	245.9993
300.09	280.9627
300.09	280.9627
300.13	280.9740
301.36	293.5248
302.85	303.1479
304.50	315.9117
304.50	315.9117
304.85	322.1407
308.46	292.4536
311.90	294.4675

316.51	295.9239
319.41	287.5337
320.08	262.5919
323.87	288.2608
323.87	288.2608
328.76	310.0880
333.37	287.9554
334.37	286.6707
334.37	286.6707
338.28	291.2865
338.28	291.2865
338.32	291.3015
338.32	291.3015
338.32	291.3015
340.48	278.9352
340.55	285.2966
344.28	302.2675
351.06	238.3095
351.93	238.5123
356.01	217.2491
364.49	227.7758
366.42	225.2673
383.85	220.0028
388.16	216.8797
388.63	217.9654
391.69	241.5155
400.66	210.2374
401.81	239.6502
402.40	236.1902
404.85	245.6681
410.95	184.3744
414.70	220.5996
423.72	210.3077
427.09	209.8695
427.87	205.8862
433.94	200.7066
453.88	216.5490
463.37	203.3273
468.07	161.1958
473.00	165.9500
476.78	186.1579
477.60	202.3306
487.02	186.5072
492.35	163.4291
497.08	182.4559
511.00	197.4507
514.00	179.5480
527.90	192.3975
529.87	0.0000
531.02	180.7614
537.26	180.6001
546.56	0.0000
563.25	171.4367
569.33	157.8506
569.50	153.1125
569.70	137.9140
583.19	154.4587
600.60	196.5560
602.73	209.7598
604.72	185.0168
609.32	182.3318
609.32	182.3318
610.33	182.4460
614.28	135.8004
618.01	152.9087
621.93	166.0396
621.93	166.0396
633.25	163.2007
635.95	180.3041
636.99	178.4290
645.85	196.2906
657.76	174.5629
661.66	141.7717
661.66	141.7717
664.57	0.0000
666.33	196.5829
666.50	196.6028
677.62	153.1904

685.70	154.8914
695.00	163.8737
696.49	176.3077
696.51	176.3112
697.00	172.2554
702.65	175.8671
706.68	166.9702
711.68	183.9500
720.70	183.3466
721.93	0.0000
722.78	142.5614
722.91	142.5698
723.31	135.4704
724.19	142.6646
727.33	138.5822
733.00	116.4478
735.93	153.2268
739.50	148.8960
747.24	167.3815
752.31	148.8171
753.82	153.1539
756.73	153.3810
763.94	132.8548
765.81	156.6609
766.42	138.4842
777.92	155.7671
778.90	172.3454
783.70	114.7063
785.37	111.5812
795.86	120.7773
801.95	122.3666
810.29	125.6467
810.76	128.4677
815.77	117.5735
818.51	113.0535
832.01	168.2995
834.85	158.1650
836.80	0.0000
846.77	130.6336
856.80	109.8342
860.56	134.3095
871.09	128.9623
873.19	116.2298
875.33	0.0000
879.36	109.5031
880.51	123.0134
883.24	123.1607
884.68	93.3919
889.28	124.4513
898.04	114.2734
911.20	121.7390
911.20	121.7390
911.20	121.7390
926.50	144.0981
937.49	133.9296
944.13	115.5371
946.00	116.6151
949.00	107.8538
962.29	118.3920
964.08	108.0232
966.15	137.7582
968.97	204.2537
968.97	204.2537
968.97	204.2537
983.53	111.3813
996.26	135.1403
1001.03	113.1660
1004.73	137.6151
1037.84	112.7393
1038.76	0.0000
1048.07	132.7253
1050.41	115.3359
1050.41	115.3359
1063.66	142.8130
1085.87	127.2933
1099.45	146.7969
1112.07	108.7560
1115.54	112.5804

1120.29	123.5984
1120.29	123.5984
1120.55	120.1770
1121.30	120.2087
1131.51	0.0000
1173.23	123.3402
1177.93	152.7748
1189.05	139.1494
1204.77	176.0458
1221.41	157.8799
1231.02	203.4858
1235.36	156.6776
1238.28	143.3570
1260.41	0.0000
1271.85	107.9513
1274.44	111.9327
1274.54	111.9362
1291.59	106.6682
1298.22	0.0000
1312.11	87.6501
1332.49	68.3788
1365.19	71.0563
1368.63	0.0000
1384.29	46.5199
1408.01	64.8594
1457.56	0.0000
1460.82	46.2936
1489.16	57.0259
1505.03	57.2743
1596.21	25.6033
1620.50	36.2590
1678.03	0.0000
1690.97	24.2771
1764.49	23.7207
1764.49	23.7207
1770.23	21.3773
1771.35	17.8193
1791.20	0.0000
1836.06	18.0874

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900014

Total Uranium Activity	8.3388E+00	ug/g
Total Uranium Counting Unc.	6.9124E+00	ug/g
Total Uranium Tpu	3.5267E-06	ug/g
Total Uranium Mda	3.0721E+00	ug/g

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*   BATCH ID      : 957711                      SAMPLE ID   : G247900014
*   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 15:02:03.69    SAMPLE ALQT  : 121.750 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.206E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.542E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.190E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.556E+00

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VAX/VMS Nuclide Identification Report Generated 8-MAR-2010 09:30:26.52

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900015.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:02:28.
Sample ID          : G247900015 Sample quantity : 1.17360E+02 GRAM
Detector name      : GAM23 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.84 0.0%
Energy tolerance   : 2.00000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 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	63.02*	392	599	1.31	126.04	119	11	5.45E-02	13.2	
2	2	74.67	454	591	1.41	149.34	144	17	6.31E-02	10.2	2.00E+00
3	2	77.00	662	398	1.04	153.99	144	17	9.20E-02	6.3	
4	2	87.08	298	370	1.31	174.16	171	22	4.13E-02	11.5	2.90E+00
5	2	89.75	214	417	1.24	179.50	171	22	2.97E-02	17.4	
6	2	92.46*	940	449	1.26	184.92	171	22	1.31E-01	5.4	
7	0	143.59*	54	281	0.87	287.18	284	7	7.45E-03	55.3	
8	0	185.50*	419	469	1.34	371.00	363	15	5.82E-02	12.5	
9	0	209.14	109	256	0.91	418.28	414	9	1.52E-02	28.0	
10	2	238.29*	1348	163	1.24	476.58	469	18	1.87E-01	3.2	2.79E+00
11	2	241.28*	323	182	1.77	482.55	469	18	4.49E-02	10.8	
12	0	269.69	89	255	1.63	539.39	535	12	1.23E-02	37.6	
13	0	294.67	380	209	1.12	589.33	582	12	5.27E-02	9.2	
14	0	299.37	75	193	0.98	598.74	596	10	1.05E-02	36.0	
15	0	327.63*	55	160	0.82	655.26	652	9	7.62E-03	44.7	
16	0	337.87	309	268	1.53	675.73	667	18	4.29E-02	13.7	
17	0	351.44*	533	212	1.29	702.88	698	12	7.41E-02	7.1	
18	0	462.17	38	105	1.03	924.34	919	9	5.29E-03	49.5	
19	0	510.42*	61	164	1.58	1020.84	1013	15	8.40E-03	53.5	
20	0	582.49	353	116	1.18	1164.98	1159	13	4.91E-02	8.2	
21	0	608.65*	475	100	1.59	1217.30	1211	15	6.59E-02	6.6	
22	0	726.57	103	83	1.49	1453.15	1445	16	1.43E-02	22.3	
23	0	794.31	38	50	0.98	1588.62	1582	10	5.28E-03	38.4	
24	0	859.56	71	29	1.64	1719.13	1713	14	9.91E-03	19.7	
25	0	910.13	270	45	1.65	1820.26	1814	15	3.75E-02	8.1	
26	1	963.69	53	39	2.12	1927.39	1920	23	7.32E-03	30.0	1.13E+00
27	1	967.69	125	36	2.05	1935.39	1920	23	1.74E-02	13.6	
28	0	1000.48*	61	48	1.99	2000.95	1993	15	8.52E-03	28.5	
29	0	1118.93	121	49	3.09	2237.86	2230	15	1.69E-02	15.5	
30	0	1459.28*	972	31	2.45	2918.55	2910	22	1.35E-01	3.6	
31	0	1762.84*	84	4	2.87	3525.69	3518	17	1.17E-02	12.7	

Flag: "*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900015.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 15:02:28
Sample ID         : G247900015 Sample quantity : 117.36 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA23 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.84 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.00 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	*	2.923E+01	3.020E+00	7.105E-01	5.315E-02	41.141
CD-109	+	88.03	*	5.054E+00	1.260E+00	1.832E+00	1.788E-01	2.759
SN-126	+	64.28		5.121E+00	1.565E+00	1.247E+00	1.899E-01	4.105
	+	86.94		2.051E+00	9.744E-01	8.125E-01	3.379E-01	2.524
	+	87.57	*	4.933E-01	1.230E-01	1.799E-01	1.750E-02	2.742
CS-135	+	268.22	*	4.189E-01	3.165E-01	3.029E-01	2.314E-02	1.383
CE-141	+	145.44	*	8.096E-02	8.973E-02	1.312E-01	7.402E-03	0.617
TL-208		277.37		7.927E-01	5.303E-01	8.722E-01	9.411E-02	0.909
	+	583.19	*	5.835E-01	1.034E-01	7.210E-02	4.669E-03	8.093
	+	860.56		1.134E+00	4.587E-01	4.600E-01	4.157E-02	2.465
BI-211	+	72.87		2.922E+01	6.500E+00	7.366E+00	6.497E-01	3.967
	+	351.06	*	3.835E+00	5.974E-01	4.113E-01	2.681E-02	9.323
PB-212	+	74.82		3.497E+00	8.488E-01	8.297E-01	1.094E-01	4.214
	+	77.11		2.883E+00	4.454E-01	4.703E-01	4.231E-02	6.130
	+	238.63	*	2.132E+00	2.059E-01	1.115E-01	8.088E-03	19.124
	+	300.09		1.874E+00	1.357E+00	1.612E+00	1.361E-01	1.163
BI-214	+	609.32	*	1.521E+00	2.323E-01	1.532E-01	1.161E-02	9.928
	+	1120.29		2.068E+00	6.682E-01	5.876E-01	5.494E-02	3.519
	+	1764.49		2.018E+00	5.269E-01	3.547E-01	2.205E-02	5.688
PB-214	+	74.82		6.198E+00	1.463E+00	1.471E+00	1.752E-01	4.214
	+	77.11		5.082E+00	8.901E-01	8.291E-01	1.012E-01	6.130
	+	242.00		3.102E+00	7.149E-01	6.473E-01	5.234E-02	4.791
	+	295.22		1.669E+00	3.400E-01	2.862E-01	2.509E-02	5.832
	+	351.93	*	1.392E+00	2.300E-01	1.479E-01	1.263E-02	9.410
RA-224	+	240.99	*	5.484E+00	1.224E+00	1.195E+00	6.734E-02	4.589
RA-226	+	609.32	*	1.521E+00	2.323E-01	1.532E-01	1.161E-02	9.928
	+	1120.29		2.068E+00	6.682E-01	5.876E-01	5.494E-02	3.519
	+	1764.49		2.018E+00	5.269E-01	3.547E-01	2.205E-02	5.688
AC-228	+	338.32		2.467E+00	1.222E+00	4.681E-01	1.931E-01	5.270
	+	911.20	*	2.192E+00	4.420E-01	2.833E-01	3.365E-02	7.736
	+	968.97		1.755E+00	6.402E-01	4.372E-01	1.063E-01	4.013
RA-228	+	338.32		2.467E+00	1.222E+00	4.681E-01	1.931E-01	5.270
	+	911.20	*	2.192E+00	4.420E-01	2.833E-01	3.365E-02	7.736
	+	968.97		1.755E+00	6.402E-01	4.372E-01	1.063E-01	4.013

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		3.497E+00	7.788E-01	8.297E-01	7.442E-02	4.214
	+	77.11		2.883E+00	4.454E-01	4.703E-01	4.231E-02	6.130
	+	238.63	*	2.132E+00	2.059E-01	1.115E-01	8.088E-03	19.124
	+	300.09		1.874E+00	1.766E+00	1.612E+00	9.814E-01	1.163
TH-229	+	85.43		1.242E+00	3.096E-01	4.520E-01	4.316E-02	2.747
	+	88.47		5.272E-01	1.896E-01	2.741E-01	2.651E-02	1.924
		193.51	*	2.591E-01	6.785E-01	1.116E+00	5.909E-02	0.232
	+	210.85		2.454E+00	1.381E+00	1.677E+00	9.102E-02	1.464
TH-232	+	338.32		2.467E+00	6.923E-01	4.681E-01	2.765E-02	5.270
	+	911.20	*	2.192E+00	4.420E-01	2.833E-01	3.365E-02	7.736
	+	968.97		1.755E+00	6.402E-01	4.372E-01	1.063E-01	4.013
TH-234	+	63.29	*	1.329E+01	4.286E+00	3.184E+00	5.857E-01	4.173
	+	92.59		1.275E+01	3.148E+00	1.485E+00	3.296E-01	8.587
U-235	+	89.96		3.647E+00	1.558E+00	1.862E+00	4.634E-01	1.959
	+	93.35		9.633E+00	2.466E+00	1.114E+00	2.579E-01	8.650
	+	143.76	*	2.527E-01	2.825E-01	4.041E-01	6.292E-02	0.625
		163.33		6.135E-01	5.817E-01	9.709E-01	1.608E-01	0.632
	+	185.72		4.269E-01	1.089E-01	8.233E-02	4.311E-03	5.184
		205.31		1.465E-02	6.902E-01	9.668E-01	1.629E-01	0.015
NP-237	+	86.48	*	1.472E+00	4.795E-01	5.798E-01	1.338E-01	2.538
		95.86		1.046E+00	1.413E+00	2.093E+00	5.003E-01	0.500
U-238	+	63.29	*	1.329E+01	4.286E+00	3.184E+00	5.857E-01	4.173
	+	92.59		1.275E+01	1.785E+00	1.485E+00	1.322E-01	8.587
ANH-511	+	511.00	*	7.601E-02	8.150E-02	5.566E-02	3.233E-03	1.366

---- 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	*	-3.272E-02	3.954E-01	6.473E-01	4.397E-02	-0.051
NA-22		1274.54	*	3.793E-02	6.195E-02	1.067E-01	7.164E-03	0.356
NA-24		1368.63	*	2.059E-01	6.195E-02	Half-Life too short		
SC-46		889.28	*	1.848E-02	5.026E-02	8.638E-02	7.718E-03	0.214
	+	1120.55		3.527E-01	1.115E-01	1.590E-01	1.036E-02	2.219
V-48		944.13		1.791E-01	1.139E+00	1.918E+00	1.671E-01	0.093
		983.53	*	-4.797E-02	8.848E-02	1.383E-01	1.150E-02	-0.347
		1312.11		2.764E-02	1.058E-01	1.773E-01	1.262E-02	0.156
CR-51		320.08	*	-2.801E-01	4.454E-01	7.205E-01	4.717E-02	-0.389
MN-54		834.85	*	7.256E-02	5.114E-02	9.348E-02	7.402E-03	0.776
CO-56		846.77	*	-2.629E-03	4.702E-02	7.816E-02	6.359E-03	-0.034
		1037.84		-1.738E-02	3.949E-01	6.491E-01	5.315E-02	-0.027
		1238.28		6.839E-02	1.244E-01	2.095E-01	1.394E-02	0.326
		1771.35		-2.708E-01	2.719E-01	3.508E-01	2.170E-02	-0.772
CO-57		122.06	*	-3.438E-02	3.316E-02	5.229E-02	3.083E-03	-0.658
		136.47		-2.314E-01	2.735E-01	4.333E-01	2.812E-02	-0.534
CO-58		810.76	*	-3.390E-02	5.418E-02	8.623E-02	6.478E-03	-0.393
FE-59		1099.45	*	1.158E-02	1.265E-01	2.098E-01	1.615E-02	0.055
		1291.59		-3.560E-02	1.567E-01	2.485E-01	2.062E-02	-0.143
CO-60		1173.23		4.575E-03	5.958E-02	9.829E-02	5.545E-03	0.047

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1332.49	*		2.128E-03	5.207E-02	8.502E-02	6.241E-03	0.025
ZN-65	1115.54	*		1.068E-01	1.559E-01	2.365E-01	1.562E-02	0.452
SE-75	121.12			-5.392E-02	1.711E-01	2.779E-01	2.547E-02	-0.194
	136.00			-3.683E-02	5.248E-02	8.368E-02	4.728E-03	-0.440
	264.66	*		-4.768E-03	6.512E-02	9.021E-02	5.253E-03	-0.053
	279.54			-2.837E-02	1.374E-01	2.295E-01	1.445E-02	-0.124
	400.66			-7.209E-02	3.354E-01	5.500E-01	4.986E-02	-0.131
SR-85	514.00	*		4.057E-02	5.052E-02	7.744E-02	4.494E-03	0.524
Y-88	898.04			-8.542E-03	5.362E-02	8.834E-02	8.078E-03	-0.097
	1836.06	*		-2.821E-02	3.961E-02	5.490E-02	3.232E-03	-0.514
Y-91	1204.77	*		-2.450E+01	3.012E+01	4.551E+01	2.714E+00	-0.538
NB-94	702.65	*		-8.869E-03	4.281E-02	6.785E-02	3.877E-03	-0.131
	871.09			-4.283E-03	4.422E-02	7.165E-02	6.153E-03	-0.060
NB-95	765.81	*		1.224E-01	5.916E-02	1.086E-01	7.299E-03	1.127
NB-95M	235.69	*		9.684E-01	2.169E-01	3.551E-01	2.628E-02	2.727
ZR-95	724.19			2.192E-01	1.582E-01	2.483E-01	1.750E-02	0.883
	756.73	*		2.793E-02	9.613E-02	1.583E-01	1.221E-02	0.176
MO-99	140.51			-7.901E+00	4.276E+01	6.029E+01	1.374E+01	-0.131
	181.07			4.650E+00	3.230E+01	4.620E+01	8.080E+00	0.101
	366.42			-1.673E+02	1.543E+02	2.399E+02	1.406E+01	-0.697
	739.50	*		1.553E+01	2.157E+01	3.658E+01	5.345E+00	0.424
	777.92			-1.713E+01	6.229E+01	1.024E+02	7.089E+00	-0.167
TC-99M	140.51	*		-1.717E+11	6.229E+01	Half-Life too short		
RU-103	497.08	*		3.234E-02	5.153E-02	8.808E-02	1.096E-02	0.367
	610.33			1.598E+01	3.189E+00	3.479E+00	5.189E-01	4.594
RH-106	621.93	*		-1.690E-01	3.757E-01	5.852E-01	6.680E-02	-0.289
	1050.41			1.444E+00	3.422E+00	5.857E+00	4.406E-01	0.247
RU-106	621.93	*		-1.690E-01	3.753E-01	5.852E-01	3.144E-02	-0.289
	1050.41			1.444E+00	3.422E+00	5.857E+00	4.406E-01	0.247
AG-108M	433.94	*		-4.874E-03	3.648E-02	5.982E-02	3.738E-03	-0.081
	614.28			3.476E-02	4.986E-02	7.532E-02	4.411E-03	0.461
	722.91			3.002E-02	5.719E-02	8.410E-02	5.397E-03	0.357
AG-110M	657.76	*		1.570E-03	4.894E-02	7.943E-02	4.414E-03	0.020
	677.62			1.577E-01	4.178E-01	6.957E-01	3.987E-02	0.227
	706.68			-1.440E-01	2.550E-01	3.896E-01	2.392E-02	-0.370
	763.94			-6.519E-02	2.259E-01	3.541E-01	2.476E-02	-0.184
	884.68			3.394E-03	6.046E-02	1.013E-01	9.233E-03	0.034
	937.49			-9.278E-02	1.360E-01	2.106E-01	1.912E-02	-0.441
	1384.29			1.900E-02	1.966E-01	3.229E-01	2.445E-02	0.059
	1505.03			8.514E-02	3.676E-01	6.124E-01	4.349E-02	0.139
SN-113	391.69	*		1.228E-02	5.621E-02	9.462E-02	5.829E-03	0.130
CD-115	260.90			-2.904E+01	2.395E+02	3.806E+02	2.186E+01	-0.076
	492.35			6.981E+00	6.424E+01	1.065E+02	6.215E+00	0.066
	527.90	*		-1.587E+01	1.965E+01	3.017E+01	1.741E+00	-0.526
SN-117M	156.02			-2.400E+00	3.139E+00	4.967E+00	2.599E-01	-0.483
	158.56	*		-1.934E-02	7.566E-02	1.221E-01	6.347E-03	-0.158
TE-123M	159.00	*		6.549E-03	3.717E-02	6.101E-02	3.219E-03	0.107
SB-124	602.73			-1.460E-02	6.462E-02	8.883E-02	4.870E-03	-0.164
	645.85			-3.194E-01	5.980E-01	9.220E-01	5.536E-02	-0.346

---- 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		2.458E-01	5.772E-01	8.403E-01	5.299E-02	0.293
		1690.97	*	-8.064E-02	9.347E-02	1.278E-01	8.946E-03	-0.631
		427.87	*	9.758E-02	1.148E-01	1.996E-01	1.213E-02	0.489
	+	463.37		4.226E-01	4.191E-01	6.502E-01	4.407E-02	0.650
		600.60		2.884E-01	2.573E-01	4.387E-01	2.828E-02	0.657
TE-125M		635.95		3.983E-04	3.636E-01	5.900E-01	3.754E-02	0.001
		109.28	*	-2.114E+01	1.334E+01	2.053E+01	1.868E+00	-1.030
	I-126	388.63		-1.332E-02	2.175E-01	3.603E-01	2.084E-02	-0.037
SB-126		666.33	*	-3.114E-01	3.223E-01	4.814E-01	2.491E-02	-0.647
		753.82		1.552E+00	2.480E+00	4.197E+00	2.738E-01	0.370
		414.70		1.001E-01	9.808E-02	1.723E-01	1.003E-02	0.581
		666.50		-6.890E-02	1.080E-01	1.658E-01	8.585E-03	-0.416
		695.00		-2.739E-02	1.121E-01	1.775E-01	9.939E-03	-0.154
SB-127		697.00		-2.136E-01	3.892E-01	6.005E-01	3.380E-02	-0.356
		720.70	*	-6.183E-02	2.337E-01	3.139E-01	1.881E-02	-0.197
		856.80		6.815E-01	7.051E-01	1.130E+00	9.401E-02	0.603
		252.40		1.436E+00	6.894E+00	1.112E+01	4.569E+00	0.129
		473.00		-4.295E-03	2.289E+00	3.771E+00	4.298E-01	-0.001
I-131		685.70	*	-7.247E-01	2.014E+00	3.149E+00	3.016E-01	-0.230
		783.70		5.567E+00	5.882E+00	1.044E+01	1.211E+00	0.533
		80.19		-1.178E+01	8.112E+00	1.105E+01	1.020E+00	-1.066
TE-132		284.31		-1.108E+00	1.946E+00	3.185E+00	2.064E-01	-0.348
		364.49	*	9.490E-02	1.525E-01	2.632E-01	1.721E-02	0.361
		636.99		6.670E-01	2.246E+00	3.729E+00	2.261E-01	0.179
		49.72		3.135E+00	4.177E+01	7.048E+01	7.839E+00	0.044
		111.76		7.584E+01	5.601E+01	9.579E+01	9.460E+00	0.792
BA-133		116.30		-3.578E+01	4.858E+01	7.626E+01	7.348E+00	-0.469
		228.16	*	7.440E-01	1.146E+00	1.892E+00	2.762E-01	0.393
		81.00		-2.379E-01	1.570E-01	2.087E-01	3.309E-02	-1.140
		276.40		7.965E-01	5.327E-01	8.051E-01	1.014E-01	0.989
		302.85		8.270E-02	1.967E-01	2.960E-01	3.388E-02	0.279
I-133		356.01	*	1.353E-02	5.519E-02	8.174E-02	9.252E-03	0.166
		383.85		-1.410E-01	3.550E-01	5.759E-01	6.142E-02	-0.245
		529.87	*	1.186E-02	3.550E-01	Half-Life	too short	
		875.33		1.785E-01	3.550E-01	Half-Life	too short	
		1298.22		4.461E-01	3.550E-01	Half-Life	too short	
CS-134		563.25		1.019E-01	4.863E-01	8.056E-01	4.660E-02	0.126
		569.33		-1.291E-01	2.740E-01	4.229E-01	2.458E-02	-0.305
		604.72		-1.322E-03	5.494E-02	7.702E-02	4.239E-03	-0.017
	+	795.86	*	9.270E-02	7.146E-02	1.124E-01	8.211E-03	0.825
		801.95		-5.069E-01	5.224E-01	8.030E-01	5.936E-02	-0.631
I-135		1365.19		-4.681E-01	1.405E+00	2.159E+00	1.680E-01	-0.217
		546.56		8.109E+10	1.405E+00	Half-Life	too short	
		836.80		3.813E+11	1.405E+00	Half-Life	too short	
		1038.76		2.484E+11	1.405E+00	Half-Life	too short	
		1131.51		-9.238E+10	1.405E+00	Half-Life	too short	
		1260.41	*	-4.884E+10	1.405E+00	Half-Life	too short	
	+	1457.56		2.022E+13	1.405E+00	Half-Life	too short	
		1678.03		-2.446E+10	1.405E+00	Half-Life	too short	

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	1791.20			-1.659E+11	1.405E+00	Half-Life	too short	
	153.25			1.297E+00	1.173E+00	1.986E+00	1.525E-01	0.653
	176.60			3.232E-01	6.640E-01	1.100E+00	7.199E-02	0.294
	273.65			-1.730E+00	8.721E-01	1.028E+00	7.027E-02	-1.684
	340.55			3.058E-01	2.162E-01	3.441E-01	2.193E-02	0.889
	818.51			7.331E-02	9.735E-02	1.728E-01	1.320E-02	0.424
BA-137M	1048.07	*		1.097E-01	1.468E-01	2.583E-01	2.058E-02	0.425
	1235.36			9.268E-01	8.506E-01	1.481E+00	1.508E-01	0.626
	661.66	*		5.286E-02	5.015E-02	8.717E-02	4.453E-03	0.606
	661.66	*		5.584E-02	5.298E-02	9.208E-02	4.730E-03	0.606
CE-139	165.86	*		5.232E-03	3.942E-02	6.450E-02	3.288E-03	0.081
BA-140	162.66			6.665E-01	1.151E+00	1.914E+00	1.160E-01	0.348
	304.85			5.306E-01	2.010E+00	2.988E+00	8.542E-01	0.178
	423.72			-3.612E-01	2.551E+00	4.182E+00	1.350E+00	-0.086
	537.26	*		1.454E-02	3.309E-01	5.435E-01	1.810E-01	0.027
LA-140	328.76	+		5.727E-01	5.131E-01	7.345E-01	4.853E-02	0.780
	487.02			-6.118E-02	1.715E-01	2.745E-01	1.813E-02	-0.223
	815.77			-1.651E-01	4.697E-01	7.644E-01	6.657E-02	-0.216
	1596.21	*		-3.781E-02	1.115E-01	1.765E-01	1.211E-02	-0.214
CE-143	57.36			1.728E-03	1.115E-01	Half-Life	too short	
	293.27	*		2.464E-03	1.115E-01	Half-Life	too short	
	664.57			-1.860E-03	1.115E-01	Half-Life	too short	
	721.93			-1.764E-05	1.115E-01	Half-Life	too short	
CE-144	80.12			-5.815E+00	4.032E+00	5.496E+00	5.038E-01	-1.058
	133.52	*		-9.209E-02	2.613E-01	4.224E-01	5.834E-02	-0.218
PM-144	476.78			-2.698E-02	7.914E-02	1.271E-01	8.777E-03	-0.212
	618.01			-7.431E-03	4.067E-02	6.511E-02	3.759E-03	-0.114
PR-144	696.49	*		-6.435E-03	4.692E-02	7.491E-02	4.214E-03	-0.086
	696.51	*		-5.430E-01	3.509E+00	5.594E+00	3.145E-01	-0.097
	1489.16			1.264E+01	1.568E+01	2.845E+01	2.030E+00	0.444
PM-146	453.88	*		-2.756E-02	5.081E-02	8.061E-02	6.849E-03	-0.342
	633.25			3.416E-01	1.863E+00	3.060E+00	1.150E+00	0.112
	735.93			-1.257E-01	2.077E-01	3.126E-01	8.560E-02	-0.402
	747.24			2.860E-02	1.254E-01	2.056E-01	2.755E-02	0.139
ND-147	91.11	+		5.365E+00	7.754E-01	1.038E+00	1.021E-01	5.171
	319.41			-4.226E+00	4.196E+00	6.631E+00	3.918E-01	-0.637
	531.02	*		2.206E-01	7.269E-01	1.197E+00	1.616E-01	0.184
	285.90	*		3.416E+01	1.519E+02	2.585E+02	3.669E+01	0.132
EU-152	121.78			-9.082E-02	9.556E-02	1.511E-01	1.157E-02	-0.601
	244.70			-7.781E-02	4.483E-01	6.191E-01	3.502E-02	-0.126
	344.28	*		-1.474E-02	1.428E-01	1.942E-01	1.286E-02	-0.076
	778.90			-8.763E-02	3.563E-01	5.872E-01	4.075E-02	-0.149
GD-153	964.08	+		7.965E-01	4.826E-01	7.789E-01	6.637E-02	1.023
	1085.87			5.070E-02	4.416E-01	7.361E-01	5.179E-02	0.069
	1112.07			1.772E-01	4.658E-01	6.903E-01	4.588E-02	0.257
	1408.01			2.893E-01	2.064E-01	3.978E-01	2.893E-02	0.727
	69.67			3.590E+00	2.888E+00	4.437E+00	3.877E-01	0.809
	97.43	*		2.242E-01	1.249E-01	1.953E-01	1.595E-02	1.148
	103.18			-9.688E-03	1.428E-01	2.355E-01	1.760E-02	-0.041

----- 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		-1.438E-02	6.708E-02	1.094E-01	1.031E-02	-0.131
		723.31		2.346E-01	2.633E-01	4.007E-01	2.896E-02	0.585
		873.19		1.302E-01	3.631E-01	6.116E-01	7.278E-02	0.213
		996.26		1.916E-01	5.276E-01	7.860E-01	1.356E-01	0.244
		1004.73		2.816E-02	3.102E-01	4.468E-01	5.024E-02	0.063
EU-155		1274.44	*	1.025E-01	1.751E-01	3.007E-01	3.008E-02	0.341
	+	86.55		5.983E-01	1.494E-01	2.623E-01	2.550E-02	2.281
		105.31	*	1.624E-01	1.373E-01	2.354E-01	1.735E-02	0.690
TB-160	+	86.79		1.602E+00	3.995E-01	7.008E-01	6.771E-02	2.286
		197.04		-2.819E-01	7.271E-01	1.142E+00	6.080E-02	-0.247
		215.65		9.811E-01	9.158E-01	1.547E+00	8.455E-02	0.634
	+	298.57		2.664E-01	1.923E-01	2.538E-01	1.491E-02	1.050
		879.36	*	-6.957E-02	1.753E-01	2.814E-01	2.461E-02	-0.247
	+	962.29		1.510E+00	9.151E-01	1.338E+00	1.142E-01	1.129
	+	966.15		1.338E+00	3.812E-01	7.029E-01	5.975E-02	1.903
		1177.93		6.196E-02	4.956E-01	8.207E-01	4.669E-02	0.075
		1271.85		2.496E-02	9.295E-01	1.519E+00	1.014E-01	0.016
	HO-166M	80.57		-6.848E-01	4.415E-01	5.983E-01	5.501E-02	-1.145
TA-182	+	184.41		3.391E-01	8.655E-02	9.791E-02	5.117E-03	3.464
		280.46		-8.255E-02	1.062E-01	1.724E-01	1.004E-02	-0.479
		410.95		-7.154E-02	3.170E-01	5.189E-01	3.017E-02	-0.138
		711.68	*	2.389E-03	7.773E-02	1.256E-01	7.353E-03	0.019
		752.31		1.885E-01	3.538E-01	5.947E-01	3.864E-02	0.317
		810.29		-4.883E-02	8.045E-02	1.282E-01	9.591E-03	-0.381
		67.75		-7.357E-02	1.828E-01	2.791E-01	2.430E-02	-0.264
IR-192		100.11		5.823E-02	2.362E-01	3.813E-01	2.984E-02	0.153
		152.43		6.571E-01	4.544E-01	7.795E-01	4.119E-02	0.843
		222.11		9.812E-02	4.362E-01	7.097E-01	3.911E-02	0.138
		1121.30		5.957E-01	2.411E-01	4.220E-01	2.744E-02	1.412
		1189.05		-8.135E-03	3.948E-01	6.450E-01	3.743E-02	-0.013
		1221.41	*	-6.328E-02	2.472E-01	3.942E-01	2.419E-02	-0.161
		1231.02		-9.281E-02	6.734E-01	1.087E+00	6.784E-02	-0.085
	+	295.96		1.246E+00	2.408E-01	3.481E-01	2.076E-02	3.578
		308.46		-4.710E-02	1.182E-01	1.944E-01	1.159E-02	-0.242
		316.51	*	-5.873E-03	4.116E-02	6.853E-02	4.065E-03	-0.086
HG-203		468.07		-3.015E-02	8.694E-02	1.313E-01	8.855E-03	-0.230
		70.83		4.363E-01	2.307E+00	3.415E+00	5.511E-01	0.128
	+	72.87		7.386E+00	1.900E+00	2.280E+00	3.568E-01	3.239
BI-207		279.20	*	2.942E-02	4.874E-02	8.434E-02	5.180E-03	0.349
	+	72.81		1.681E+00	3.739E-01	5.151E-01	4.542E-02	3.264
	+	74.97		1.008E+00	2.241E-01	3.559E-01	3.167E-02	2.832
		569.70		-6.775E-03	4.120E-02	6.497E-02	3.660E-03	-0.104
		1063.66	*	7.775E-02	6.485E-02	1.186E-01	8.710E-03	0.656
PB-210		1770.23		1.020E-01	4.225E-01	6.572E-01	4.069E-02	0.155
		46.54	*	-3.837E+00	6.815E+00	1.103E+01	8.523E-01	-0.348
	PB-211	404.85	*	-5.221E-01	9.972E-01	1.554E+00	7.454E-01	-0.336
BI-212		427.09		1.808E+00	2.070E+00	3.324E+00	1.524E+00	0.544
		832.01		3.539E-01	1.356E+00	2.292E+00	1.186E+00	0.154
	+	727.33	*	2.622E+00	1.201E+00	1.462E+00	1.589E-01	1.794

---- 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		1.936E+00	4.469E+00	7.570E+00	5.336E-01	0.256
		1620.50		2.662E+00	3.084E+00	5.739E+00	3.892E-01	0.464
		271.23		6.206E-01	4.691E-01	5.358E-01	4.299E-02	1.158
		401.81	*	3.247E-02	5.268E-01	8.778E-01	1.179E-01	0.037
RA-223		81.07		-5.386E-01	3.486E-01	4.723E-01	4.358E-02	-1.140
		83.79		2.028E-01	2.070E-01	2.939E-01	2.768E-02	0.690
		94.87		2.512E+00	7.791E-01	1.231E+00	1.050E-01	2.041
		144.24		8.469E-01	9.394E-01	1.497E+00	1.033E-01	0.566
	+	154.21		2.585E-01	5.081E-01	8.446E-01	5.509E-02	0.306
		269.46		4.822E-01	3.636E-01	4.252E-01	2.566E-02	1.134
		323.87	*	1.245E-01	9.040E-01	1.332E+00	2.152E-01	0.094
		338.28		9.790E+00	2.869E+00	3.047E+00	3.142E-01	3.213
AC-227		79.69		-6.196E-01	1.949E+00	2.812E+00	4.920E-01	-0.220
		235.96		2.090E+00	3.208E-01	5.096E-01	4.079E-02	4.101
		256.23	*	1.482E-01	3.280E-01	5.366E-01	5.462E-02	0.276
		299.98		2.061E+00	1.500E+00	2.022E+00	2.230E-01	1.020
	+	304.50		6.579E-01	2.291E+00	3.417E+00	5.223E-01	0.193
		334.37		-2.913E-01	2.780E+00	3.509E+00	5.007E-01	-0.083
		79.80		-1.108E+00	2.567E+00	3.673E+00	8.078E-01	-0.302
		235.96		2.090E+00	3.127E-01	5.096E-01	3.685E-02	4.101
	+	256.23	*	1.482E-01	3.281E-01	5.366E-01	6.428E-02	0.276
		299.98		2.061E+00	1.500E+00	2.022E+00	2.230E-01	1.020
		304.50		6.579E-01	2.291E+00	3.417E+00	5.223E-01	0.193
		334.37		-2.913E-01	2.780E+00	3.509E+00	5.007E-01	-0.083
PA-231		283.69	*	-7.287E-01	1.755E+00	2.894E+00	3.801E-01	-0.252
		301.36		1.324E+00	9.625E-01	1.313E+00	1.364E-01	1.008
TH-231	+	81.07		-5.386E-01	3.486E-01	4.723E-01	4.358E-02	-1.140
		83.79		2.028E-01	2.070E-01	2.939E-01	2.768E-02	0.690
		94.87		2.512E+00	7.791E-01	1.231E+00	1.050E-01	2.041
		144.24		8.469E-01	9.394E-01	1.497E+00	1.033E-01	0.566
	+	154.21		2.585E-01	5.081E-01	8.446E-01	5.509E-02	0.306
		269.46		4.822E-01	3.636E-01	4.252E-01	2.566E-02	1.134
		323.87	*	1.245E-01	9.040E-01	1.332E+00	2.152E-01	0.094
		338.28		9.790E+00	2.869E+00	3.047E+00	3.142E-01	3.213
PA-233	+	300.13		9.327E-01	6.826E-01	9.154E-01	1.229E-01	1.019
		311.90	*	-1.498E-02	7.585E-02	1.260E-01	7.879E-03	-0.119
PA-234		340.48		1.468E+00	9.456E-01	1.428E+00	3.319E-01	1.028
		94.67		1.208E+00	3.201E-01	4.762E-01	5.888E-02	2.536
		98.44		1.678E-01	1.643E-01	2.082E-01	1.160E-01	0.806
		111.00		3.121E-01	2.484E-01	4.235E-01	4.580E-02	0.737
	+	131.20		2.185E-02	1.376E-01	2.271E-01	1.284E-02	0.096
		569.50		-1.905E-01	3.765E-01	5.793E-01	3.264E-02	-0.329
		733.00		9.037E-02	5.841E-01	8.244E-01	1.762E-01	0.110
		880.51		-5.385E-02	3.404E-01	5.591E-01	4.902E-02	-0.096
	+	883.24		2.934E-02	3.450E-01	5.786E-01	3.891E-01	0.051
		926.50		-2.494E-01	2.238E-01	3.154E-01	8.000E-02	-0.791
		946.00	*	8.488E-02	3.672E-01	6.222E-01	1.170E-01	0.136
		949.00		-2.386E-01	5.650E-01	9.004E-01	7.804E-02	-0.265
PA-234M		766.42		3.434E+01	2.313E+01	2.868E+01	1.447E+01	1.197

---- 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	*	1.671E+01	9.654E+00	1.285E+01	1.226E+00	1.300
		99.53		1.401E-01	2.295E-01	3.607E-01	2.848E-02	0.388
		103.37		5.175E-02	1.287E-01	2.156E-01	1.607E-02	0.240
		106.12		1.212E-01	1.092E-01	1.868E-01	1.339E-02	0.649
		117.23	*	-2.437E-01	5.319E-01	8.444E-01	5.256E-02	-0.289
AM-241		228.18		1.778E-01	2.718E-01	4.504E-01	2.501E-02	0.395
		277.60		3.992E-01	2.313E-01	3.990E-01	2.320E-02	1.000
		59.54	*	1.175E-01	2.737E-01	4.120E-01	3.833E-02	0.285
CM-247		278.00		1.616E+00	9.522E-01	1.681E+00	9.773E-02	0.962
		287.50		8.330E-01	1.690E+00	2.565E+00	1.500E-01	0.325
CF-249		402.40	*	1.843E-02	4.800E-02	8.141E-02	4.719E-03	0.226
		252.80		9.665E-02	1.277E+00	2.054E+00	1.171E-01	0.047
		333.37		-8.429E-03	3.695E-01	3.604E-01	2.130E-02	-0.023
CF-251		388.16	*	-1.232E-02	4.920E-02	8.060E-02	4.663E-03	-0.153
		177.52	*	-3.055E-02	1.717E-01	2.669E-01	1.381E-02	-0.114
		227.38		2.053E-01	4.528E-01	7.435E-01	4.124E-02	0.276
		285.41		-6.049E-01	2.620E+00	4.364E+00	2.549E-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]G247900015
* Acquisition date   : 6-MAR-2010 15:02:28 Detector SN#      :
* Detector ID        : GAM23 Sensitivity                    : 5.000
* Geometry           : CAN Energy tolerance                : 2.000
* Elapsed live time  : 0 02:00:00.00 Abundance limit       : 75.000
* Elapsed real time  : 0 02:00:01.84 Half life ratio       : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G247900015 Analyst initials: MXR1
* Batch Number       : 957711 Sample Quantity : 1.1736E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*
*                               QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 2-JUN-2009 11:17:00 MS Isotope      :
* MSD DPM            : 0.000 MSD Isotope                   :
* LCS DPM            : 0.000 LCS Isotope                   :
* LCSD DPM           : 0.000 LCSD Isotope                  :
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.923E+01	2.959E+00	7.082E-01	0.000E+00
CD-109	5.054E+00	1.235E+00	1.881E+00	0.000E+00
SN-126	4.933E-01	1.205E-01	1.847E-01	0.000E+00
CS-135	4.189E-01	3.101E-01	3.074E-01	0.000E+00
CE-141	8.096E-02	8.794E-02	1.340E-01	0.000E+00
TL-208	5.835E-01	1.014E-01	7.258E-02	0.000E+00
BI-211	3.835E+00	5.854E-01	4.163E-01	0.000E+00
PB-212	2.132E+00	2.017E-01	1.133E-01	0.000E+00
BI-214	1.521E+00	2.276E-01	1.541E-01	0.000E+00
PB-214	1.392E+00	2.254E-01	1.497E-01	0.000E+00
RA-224	5.484E+00	1.199E+00	1.214E+00	0.000E+00
RA-226	1.521E+00	2.276E-01	1.541E-01	0.000E+00
AC-228	2.192E+00	4.332E-01	2.839E-01	0.000E+00
RA-228	2.192E+00	4.332E-01	2.839E-01	0.000E+00
TH-228	2.132E+00	2.017E-01	1.133E-01	0.000E+00
TH-229	2.591E-01	6.649E-01	1.136E+00	0.000E+00
TH-232	2.192E+00	4.332E-01	2.839E-01	0.000E+00
TH-234	1.329E+01	4.200E+00	3.280E+00	0.000E+00
U-235	2.527E-01	2.768E-01	4.127E-01	0.000E+00
NP-237	1.472E+00	4.699E-01	5.954E-01	0.000E+00
U-238	1.329E+01	4.200E+00	3.280E+00	0.000E+00
ANH-511	7.601E-02	7.987E-02	5.611E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.272E-02	3.875E-01	6.530E-01	0.000E+00 NOT IDENT.
NA-22	3.793E-02	6.071E-02	1.065E-01	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.608E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	1.848E-02	4.926E-02	8.656E-02	0.000E+00 FAIL ABUN
V-48	-4.797E-02	8.671E-02	1.384E-01	0.000E+00 NOT IDENT.

CR-51	-2.801E-01	4.365E-01	7.299E-01	0.000E+00	NOT IDENT.
MN-54	7.256E-02	5.012E-02	9.374E-02	0.000E+00	NOT IDENT.
CO-56	-2.629E-03	4.608E-02	7.837E-02	0.000E+00	NOT IDENT.
CO-57	-3.438E-02	3.249E-02	5.350E-02	0.000E+00	NOT IDENT.
CO-58	-3.390E-02	5.310E-02	8.650E-02	0.000E+00	NOT IDENT.
FE-59	1.158E-02	1.240E-01	2.098E-01	0.000E+00	NOT IDENT.
CO-60	2.128E-03	5.103E-02	8.483E-02	0.000E+00	NOT IDENT.
ZN-65	1.068E-01	1.528E-01	2.364E-01	0.000E+00	NOT IDENT.
SE-75	-4.768E-03	6.382E-02	9.157E-02	0.000E+00	NOT IDENT.
SR-85	4.057E-02	4.951E-02	7.806E-02	0.000E+00	NOT IDENT.
Y-88	-2.821E-02	3.882E-02	5.458E-02	0.000E+00	NOT IDENT.
Y-91	-2.450E+01	2.952E+01	4.546E+01	0.000E+00	NOT IDENT.
NB-94	-8.869E-03	4.195E-02	6.816E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	5.797E-02	1.090E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.125E-01	3.609E-01	0.000E+00	NOT IDENT.
ZR-95	2.793E-02	9.420E-02	1.589E-01	0.000E+00	NOT IDENT.
MO-99	1.553E+01	2.114E+01	3.673E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	9.112E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.234E-02	5.050E-02	8.881E-02	0.000E+00	FAIL ABUN
RH-106	-1.690E-01	3.681E-01	5.887E-01	0.000E+00	NOT IDENT.
RU-106	-1.690E-01	3.678E-01	5.887E-01	0.000E+00	NOT IDENT.
AG-108M	-4.874E-03	3.575E-02	6.040E-02	0.000E+00	NOT IDENT.
AG-110M	1.570E-03	4.796E-02	7.985E-02	0.000E+00	NOT IDENT.
SN-113	1.228E-02	5.509E-02	9.565E-02	0.000E+00	NOT IDENT.
CD-115	-1.587E+01	1.926E+01	3.040E+01	0.000E+00	NOT IDENT.
SN-117M	-1.934E-02	7.415E-02	1.246E-01	0.000E+00	NOT IDENT.
TE-123M	6.549E-03	3.642E-02	6.225E-02	0.000E+00	NOT IDENT.
SB-124	-8.064E-02	9.160E-02	1.272E-01	0.000E+00	NOT IDENT.
SB-125	9.758E-02	1.125E-01	2.016E-01	0.000E+00	FAIL ABUN
TE-125M	-2.114E+01	1.307E+01	2.104E+01	0.000E+00	NOT IDENT.
I-126	-3.114E-01	3.159E-01	4.839E-01	0.000E+00	NOT IDENT.
SB-126	-6.183E-02	2.291E-01	3.153E-01	0.000E+00	NOT IDENT.
SB-127	-7.247E-01	1.974E+00	3.165E+00	0.000E+00	NOT IDENT.
I-131	9.490E-02	1.494E-01	2.663E-01	0.000E+00	NOT IDENT.
TE-132	7.440E-01	1.123E+00	1.923E+00	0.000E+00	NOT IDENT.
BA-133	1.353E-02	5.408E-02	8.271E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.592E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	9.270E-02	7.003E-02	1.128E-01	0.000E+00	FAIL ABUN
I-135	0.000E+00	1.084E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.097E-01	1.439E-01	2.584E-01	0.000E+00	NOT IDENT.
BA-137M	5.286E-02	4.914E-02	8.763E-02	0.000E+00	NOT IDENT.
CS-137	5.584E-02	5.192E-02	9.257E-02	0.000E+00	NOT IDENT.
CE-139	5.232E-03	3.863E-02	6.579E-02	0.000E+00	NOT IDENT.
BA-140	1.454E-02	3.243E-01	5.476E-01	0.000E+00	NOT IDENT.
LA-140	-3.781E-02	1.093E-01	1.757E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	6.912E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-9.209E-02	2.561E-01	4.318E-01	0.000E+00	NOT IDENT.
PM-144	-6.435E-03	4.598E-02	7.526E-02	0.000E+00	NOT IDENT.
PR-144	-5.430E-01	3.439E+00	5.621E+00	0.000E+00	NOT IDENT.
PM-146	-2.756E-02	4.979E-02	8.136E-02	0.000E+00	NOT IDENT.
ND-147	2.206E-01	7.124E-01	1.206E+00	0.000E+00	FAIL ABUN
PM-149	3.416E+01	1.488E+02	2.621E+02	0.000E+00	NOT IDENT.
EU-152	-1.474E-02	1.400E-01	1.966E-01	0.000E+00	FAIL ABUN
GD-153	0.000E+00	1.224E-01	2.003E-01	0.000E+00	NOT IDENT.
EU-154	1.025E-01	1.716E-01	3.001E-01	0.000E+00	NOT IDENT.
EU-155	1.624E-01	1.346E-01	2.412E-01	0.000E+00	FAIL ABUN
TB-160	-6.957E-02	1.718E-01	2.821E-01	0.000E+00	FAIL ABUN
HO-166M	2.389E-03	7.617E-02	1.262E-01	0.000E+00	FAIL ABUN
TA-182	-6.328E-02	2.423E-01	3.937E-01	0.000E+00	NOT IDENT.
IR-192	-5.873E-03	4.034E-02	6.943E-02	0.000E+00	FAIL ABUN
HG-203	2.942E-02	4.777E-02	8.556E-02	0.000E+00	FAIL ABUN
BI-207	7.775E-02	6.355E-02	1.186E-01	0.000E+00	FAIL ABUN
PB-210	-3.837E+00	6.678E+00	1.140E+01	0.000E+00	NOT IDENT.
PB-211	-5.221E-01	9.773E-01	1.570E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.177E+00	1.468E+00	0.000E+00	FAIL ABUN
RN-219	3.247E-02	5.163E-01	8.871E-01	0.000E+00	FAIL ABUN
RA-223	1.245E-01	8.859E-01	1.349E+00	0.000E+00	FAIL ABUN
AC-227	1.482E-01	3.214E-01	5.448E-01	0.000E+00	FAIL ABUN
TH-227	1.482E-01	3.215E-01	5.448E-01	0.000E+00	FAIL ABUN
PA-231	-7.287E-01	1.720E+00	2.936E+00	0.000E+00	FAIL ABUN
TH-231	1.245E-01	8.859E-01	1.349E+00	0.000E+00	FAIL ABUN
PA-233	-1.498E-02	7.433E-02	1.277E-01	0.000E+00	FAIL ABUN
PA-234	8.488E-02	3.598E-01	6.231E-01	0.000E+00	NOT IDENT.
PA-234M	0.000E+00	9.460E+00	1.286E+01	0.000E+00	FAIL ABUN
NP-239	-2.437E-01	5.213E-01	8.644E-01	0.000E+00	NOT IDENT.
AM-241	1.175E-01	2.683E-01	4.246E-01	0.000E+00	NOT IDENT.
CM-247	1.843E-02	4.704E-02	8.228E-02	0.000E+00	NOT IDENT.
CF-249	-1.232E-02	4.822E-02	8.148E-02	0.000E+00	NOT IDENT.

CF-251	-3.055E-02	1.683E-01	2.721E-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]G247900015.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:02:28.
Sample ID        : G247900015 Sample quantity : 1.17360E+02 GRAM
Detector name    : GAM23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.84 0.0%
Energy tolerance : 2.00000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957711 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	972	10.66*	9.975E-01	2.923E+01	2.923E+01	10.33
CD-109	88.03	298	3.70*	5.216E+00	4.933E+00	5.054E+00	24.93
SN-126	64.28	392	9.60	2.553E+00	5.121E+00	5.121E+00	30.56
	86.94	298	8.90	5.216E+00	2.051E+00	2.051E+00	47.52
	87.57	298	37.00*	5.216E+00	4.933E-01	4.933E-01	24.93
CS-135	268.22	89	16.00*	4.229E+00	4.189E-01	4.189E-01	75.55
CE-141	145.44	54	48.29*	6.191E+00	5.735E-02	8.096E-02	110.84
TL-208	277.37	-----	6.60	4.139E+00	-----	Line Not Found	-----
	583.19	353	85.00*	2.278E+00	5.835E-01	5.835E-01	17.72
	860.56	71	12.50	1.610E+00	1.134E+00	1.134E+00	40.45
BI-211	72.87	454	1.23	4.040E+00	2.922E+01	2.922E+01	22.24
	351.06	533	12.92*	3.442E+00	3.835E+00	3.835E+00	15.58
PB-212	74.82	454	10.28	4.040E+00	3.497E+00	3.497E+00	24.28
	77.11	662	17.10	4.297E+00	2.883E+00	2.883E+00	15.45
	238.63	1348	43.60*	4.639E+00	2.132E+00	2.132E+00	9.65
	300.09	75	3.30	3.903E+00	1.874E+00	1.874E+00	72.44
BI-214	609.32	475	45.49*	2.194E+00	1.521E+00	1.521E+00	15.27
	1120.29	121	14.92	1.259E+00	2.068E+00	2.068E+00	32.32
	1764.49	84	15.30	8.744E-01	2.018E+00	2.018E+00	26.12
PB-214	74.82	454	5.80	4.040E+00	6.198E+00	6.198E+00	23.61
	77.11	662	9.70	4.297E+00	5.082E+00	5.082E+00	17.51
	242.00	323	7.25	4.597E+00	3.102E+00	3.102E+00	23.05
	295.22	380	18.42	3.951E+00	1.669E+00	1.669E+00	20.37
	351.93	533	35.60*	3.442E+00	1.392E+00	1.392E+00	16.52
RA-224	240.99	323	4.10*	4.597E+00	5.484E+00	5.484E+00	22.31
RA-226	609.32	475	45.49*	2.194E+00	1.521E+00	1.521E+00	15.27
	1120.29	121	14.92	1.259E+00	2.068E+00	2.068E+00	32.32
	1764.49	84	15.30	8.744E-01	2.018E+00	2.018E+00	26.12
AC-228	338.32	309	11.27	3.551E+00	2.467E+00	2.467E+00	49.53
	911.20	270	25.80*	1.527E+00	2.192E+00	2.192E+00	20.17
	968.97	125	15.80	1.442E+00	1.755E+00	1.755E+00	36.48
RA-228	338.32	309	11.27	3.551E+00	2.467E+00	2.467E+00	49.53

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	270	25.80*	1.527E+00	2.192E+00	2.192E+00	20.17
	968.97	125	15.80	1.442E+00	1.755E+00	1.755E+00	36.48
TH-228	74.82	454	10.28	4.040E+00	3.497E+00	3.497E+00	22.27
	77.11	662	17.10	4.297E+00	2.883E+00	2.883E+00	15.45
	238.63	1348	43.60*	4.639E+00	2.132E+00	2.132E+00	9.65
	300.09	75	3.30	3.903E+00	1.874E+00	1.874E+00	94.25
TH-229	85.43	298	14.70	5.216E+00	1.242E+00	1.242E+00	24.93
	88.47	214	24.00	5.404E+00	5.272E-01	5.272E-01	35.96
	193.51	-----	4.41*	5.353E+00	-----	Line Not Found	-----
	210.85	109	2.80	5.087E+00	2.454E+00	2.454E+00	56.28
TH-232	338.32	309	11.27	3.551E+00	2.467E+00	2.467E+00	28.06
	911.20	270	25.80*	1.527E+00	2.192E+00	2.192E+00	20.17
	968.97	125	15.80	1.442E+00	1.755E+00	1.755E+00	36.48
TH-234	63.29	392	3.70*	2.553E+00	1.329E+01	1.329E+01	32.26
	92.59	940	4.23	5.574E+00	1.275E+01	1.275E+01	24.68
U-235	89.96	214	3.47	5.404E+00	3.647E+00	3.647E+00	42.72
	93.35	940	5.60	5.574E+00	9.633E+00	9.633E+00	25.60
	143.76	54	10.96*	6.191E+00	2.527E-01	2.527E-01	111.79
	163.33	-----	5.08	5.887E+00	-----	Line Not Found	-----
	185.72	419	57.20	5.494E+00	4.269E-01	4.269E-01	25.52
	205.31	-----	5.01	5.150E+00	-----	Line Not Found	-----
NP-237	86.48	298	12.40*	5.216E+00	1.472E+00	1.472E+00	32.58
	95.86	-----	2.68	5.757E+00	-----	Line Not Found	-----
U-238	63.29	392	3.70*	2.553E+00	1.329E+01	1.329E+01	32.26
	92.59	940	4.23	5.574E+00	1.275E+01	1.275E+01	14.00
ANH-511	511.00	61	100.00*	2.546E+00	7.601E-02	7.601E-02	107.21

Flag: "*" = Keyline

Total number of lines in spectrum 31
Number of unidentified lines 0
Number of lines tentatively identified by NID 31 100.00%

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	2.923E+01	2.923E+01	0.302E+01	10.33	
CD-109	461.40D	1.02	4.933E+00	5.054E+00	1.260E+00	24.93	
SN-126	2.30E+05Y	1.00	4.933E-01	4.933E-01	1.230E-01	24.93	
CS-135	2.30E+06Y	1.00	4.189E-01	4.189E-01	3.165E-01	75.55	
CE-141	32.51D	1.41	5.735E-02	8.096E-02	8.973E-02	110.84	
TL-208	1.41E+10Y	1.00	5.835E-01	5.835E-01	1.034E-01	17.72	
BI-211	7.04E+08Y	1.00	3.835E+00	3.835E+00	0.597E+00	15.58	
PB-212	1.41E+10Y	1.00	2.132E+00	2.132E+00	0.206E+00	9.65	
BI-214	1600.00Y	1.00	1.521E+00	1.521E+00	0.232E+00	15.27	
PB-214	1600.00Y	1.00	1.392E+00	1.392E+00	0.230E+00	16.52	
RA-224	1.41E+10Y	1.00	5.484E+00	5.484E+00	1.224E+00	22.31	
RA-226	1600.00Y	1.00	1.521E+00	1.521E+00	0.232E+00	15.27	
AC-228	1.41E+10Y	1.00	2.192E+00	2.192E+00	0.442E+00	20.17	
RA-228	1.41E+10Y	1.00	2.192E+00	2.192E+00	0.442E+00	20.17	
TH-228	1.41E+10Y	1.00	2.132E+00	2.132E+00	0.206E+00	9.65	
TH-229	7340.00Y	1.00	5.272E-01	5.272E-01	1.896E-01	35.96	K
TH-232	1.41E+10Y	1.00	2.192E+00	2.192E+00	0.442E+00	20.17	
TH-234	4.47E+09Y	1.00	1.329E+01	1.329E+01	0.429E+01	32.26	
U-235	7.04E+08Y	1.00	2.527E-01	2.527E-01	2.825E-01	111.79	
NP-237	2.14E+06Y	1.00	1.472E+00	1.472E+00	0.479E+00	32.58	
U-238	4.47E+09Y	1.00	1.329E+01	1.329E+01	0.429E+01	32.26	
ANH-511	1.00E+09Y	1.00	7.601E-02	7.601E-02	8.150E-02	107.21	
Total Activity :			8.921E+01	8.935E+01			

Grand Total Activity : 8.921E+01 8.935E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900015

Page : 4
Acquisition date : 6-MAR-2010 15:02:28

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	327.63	55	160	0.82	655.26	652	9	7.62E-03	89.3	3.64E+00	T
0	462.17	38	105	1.03	924.34	919	9	5.29E-03	98.9	2.76E+00	T
0	726.57	103	83	1.49	1453.15	1445	16	1.43E-02	44.5	1.88E+00	T
0	794.31	38	50	0.98	1588.62	1582	10	5.28E-03	76.7	1.73E+00	T
1	963.69	53	39	2.12	1927.39	1920	23	7.32E-03	60.0	1.45E+00	T
0	1000.48	61	48	1.99	2000.95	1993	15	8.52E-03	57.0	1.40E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900015.CNF;1  *
* Acquisition date   : 6-MAR-2010 15:02:28.  Detector SN#      :              *
* Detector ID        : GAM23                      Sensitivity    : 5.00000      *
* Geometry           : CAN                      Energy tolerance: 2.00000      *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000      *
* Elapsed real time  : 0 02:00:01.84             Half life ratio : 8.00000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G247900015           Analyst initials: MXR1           *
* Batch Number       : 957711              Sample Quantity : 1.17360E+02 GRAM  *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-JUN-2009 11:17:00.62MS Isotope       :              *
* MSD ID             :                      MSD Isotope       :              *
* LCS ID             : 1032-A              LCS Isotope       :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.923E+01	3.020E+00	7.105E-01	5.315E-02	41.141
CD-109	5.054E+00	1.260E+00	1.832E+00	1.788E-01	2.759
SN-126	4.933E-01	1.230E-01	1.799E-01	1.750E-02	2.742
CS-135	4.189E-01	3.165E-01	3.029E-01	2.314E-02	1.383
CE-141	8.096E-02	8.973E-02	1.312E-01	7.402E-03	0.617
TL-208	5.835E-01	1.034E-01	7.210E-02	4.669E-03	8.093
BI-211	3.835E+00	5.974E-01	4.113E-01	2.681E-02	9.323
PB-212	2.132E+00	2.059E-01	1.115E-01	8.088E-03	19.124
BI-214	1.521E+00	2.323E-01	1.532E-01	1.161E-02	9.928
PB-214	1.392E+00	2.300E-01	1.479E-01	1.263E-02	9.410
RA-224	5.484E+00	1.224E+00	1.195E+00	6.734E-02	4.589
RA-226	1.521E+00	2.323E-01	1.532E-01	1.161E-02	9.928
AC-228	2.192E+00	4.420E-01	2.833E-01	3.365E-02	7.736
RA-228	2.192E+00	4.420E-01	2.833E-01	3.365E-02	7.736
TH-228	2.132E+00	2.059E-01	1.115E-01	8.088E-03	19.124
TH-229	5.272E-01	1.896E-01	1.116E+00	5.909E-02	0.473
TH-232	2.192E+00	4.420E-01	2.833E-01	3.365E-02	7.736
TH-234	1.329E+01	4.286E+00	3.184E+00	5.857E-01	4.172

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	2.527E-01	2.825E-01	4.041E-01	6.292E-02	0.625
NP-237	1.472E+00	4.795E-01	5.798E-01	1.338E-01	2.538
U-238	1.329E+01	4.286E+00	3.184E+00	5.857E-01	4.172
ANH-511	7.601E-02	8.150E-02	5.566E-02	3.233E-03	1.366

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.272E-02		3.954E-01	6.473E-01	4.397E-02	-0.051
NA-22	3.793E-02		6.195E-02	1.067E-01	7.164E-03	0.356
NA-24	2.059E-01		1.331E+00	Half-Life too short		
SC-46	1.848E-02		5.026E-02	8.638E-02	7.718E-03	0.214
V-48	-4.797E-02		8.848E-02	1.383E-01	1.150E-02	-0.347
CR-51	-2.801E-01		4.454E-01	7.205E-01	4.717E-02	-0.389
MN-54	7.256E-02		5.114E-02	9.348E-02	7.402E-03	0.776
CO-56	-2.629E-03		4.702E-02	7.816E-02	6.359E-03	-0.034
CO-57	-3.438E-02		3.316E-02	5.229E-02	3.083E-03	-0.658
CO-58	-3.390E-02		5.418E-02	8.623E-02	6.478E-03	-0.393
FE-59	1.158E-02		1.265E-01	2.098E-01	1.615E-02	0.055
CO-60	2.128E-03		5.207E-02	8.502E-02	6.241E-03	0.025
ZN-65	1.068E-01		1.559E-01	2.365E-01	1.562E-02	0.452
SE-75	-4.768E-03		6.512E-02	9.021E-02	5.253E-03	-0.053
SR-85	4.057E-02		5.052E-02	7.744E-02	4.494E-03	0.524
Y-88	-2.821E-02		3.961E-02	5.490E-02	3.232E-03	-0.514
Y-91	-2.450E+01		3.012E+01	4.551E+01	2.714E+00	-0.538
NB-94	-8.869E-03		4.281E-02	6.785E-02	3.877E-03	-0.131
NB-95	1.224E-01		5.916E-02	1.086E-01	7.299E-03	1.127
NB-95M	9.684E-01		2.169E-01	3.551E-01	2.628E-02	2.727
ZR-95	2.793E-02		9.613E-02	1.583E-01	1.221E-02	0.176
MO-99	1.553E+01		2.157E+01	3.658E+01	5.345E+00	0.424
TC-99M	-1.717E+11		4.649E+11	Half-Life too short		
RU-103	3.234E-02		5.153E-02	8.808E-02	1.096E-02	0.367
RH-106	-1.690E-01		3.757E-01	5.852E-01	6.680E-02	-0.289
RU-106	-1.690E-01		3.753E-01	5.852E-01	3.144E-02	-0.289
AG-108M	-4.874E-03		3.648E-02	5.982E-02	3.738E-03	-0.081
AG-110M	1.570E-03		4.894E-02	7.943E-02	4.414E-03	0.020
SN-113	1.228E-02		5.621E-02	9.462E-02	5.829E-03	0.130
CD-115	-1.587E+01		1.965E+01	3.017E+01	1.741E+00	-0.526
SN-117M	-1.934E-02		7.566E-02	1.221E-01	6.347E-03	-0.158
TE-123M	6.549E-03		3.717E-02	6.101E-02	3.219E-03	0.107
SB-124	-8.064E-02		9.347E-02	1.278E-01	8.946E-03	-0.631
SB-125	9.758E-02		1.148E-01	1.996E-01	1.213E-02	0.489
TE-125M	-2.114E+01		1.334E+01	2.053E+01	1.868E+00	-1.030
I-126	-3.114E-01		3.223E-01	4.814E-01	2.491E-02	-0.647
SB-126	-6.183E-02		2.337E-01	3.139E-01	1.881E-02	-0.197
SB-127	-7.247E-01		2.014E+00	3.149E+00	3.016E-01	-0.230
I-131	9.490E-02		1.525E-01	2.632E-01	1.721E-02	0.361

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	7.440E-01		1.146E+00	1.892E+00	2.762E-01	0.393
BA-133	1.353E-02		5.519E-02	8.174E-02	9.252E-03	0.166
I-133	1.186E-02		8.121E-03	Half-Life too short		
CS-134	9.270E-02	+	7.146E-02	1.124E-01	8.211E-03	0.825
I-135	-4.884E+10		5.533E+10	Half-Life too short		
CS-136	1.097E-01		1.468E-01	2.583E-01	2.058E-02	0.425
BA-137M	5.286E-02		5.015E-02	8.717E-02	4.453E-03	0.606
CS-137	5.584E-02		5.298E-02	9.208E-02	4.730E-03	0.606
CE-139	5.232E-03		3.942E-02	6.450E-02	3.288E-03	0.081
BA-140	1.454E-02		3.309E-01	5.435E-01	1.810E-01	0.027
LA-140	-3.781E-02		1.115E-01	1.765E-01	1.211E-02	-0.214
CE-143	2.464E-03	+	3.526E-04	Half-Life too short		
CE-144	-9.209E-02		2.613E-01	4.224E-01	5.834E-02	-0.218
PM-144	-6.435E-03		4.692E-02	7.491E-02	4.214E-03	-0.086
PR-144	-5.430E-01		3.509E+00	5.594E+00	3.145E-01	-0.097
PM-146	-2.756E-02		5.081E-02	8.061E-02	6.849E-03	-0.342
ND-147	2.206E-01		7.269E-01	1.197E+00	1.616E-01	0.184
PM-149	3.416E+01		1.519E+02	2.585E+02	3.669E+01	0.132
EU-152	-1.474E-02		1.428E-01	1.942E-01	1.286E-02	-0.076
GD-153	2.242E-01		1.249E-01	1.953E-01	1.595E-02	1.148
EU-154	1.025E-01		1.751E-01	3.007E-01	3.008E-02	0.341
EU-155	1.624E-01		1.373E-01	2.354E-01	1.735E-02	0.690
TB-160	-6.957E-02		1.753E-01	2.814E-01	2.461E-02	-0.247
HO-166M	2.389E-03		7.773E-02	1.256E-01	7.353E-03	0.019
TA-182	-6.328E-02		2.472E-01	3.942E-01	2.419E-02	-0.161
IR-192	-5.873E-03		4.116E-02	6.853E-02	4.065E-03	-0.086
HG-203	2.942E-02		4.874E-02	8.434E-02	5.180E-03	0.349
BI-207	7.775E-02		6.485E-02	1.186E-01	8.710E-03	0.656
PB-210	-3.837E+00		6.815E+00	1.103E+01	8.523E-01	-0.348
PB-211	-5.221E-01		9.972E-01	1.554E+00	7.454E-01	-0.336
BI-212	2.622E+00	+	1.201E+00	1.462E+00	1.589E-01	1.794
RN-219	3.247E-02		5.268E-01	8.778E-01	1.179E-01	0.037
RA-223	1.245E-01		9.040E-01	1.332E+00	2.152E-01	0.094
AC-227	1.482E-01		3.280E-01	5.366E-01	5.462E-02	0.276
TH-227	1.482E-01		3.281E-01	5.366E-01	6.428E-02	0.276
PA-231	-7.287E-01		1.755E+00	2.894E+00	3.801E-01	-0.252
TH-231	1.245E-01		9.040E-01	1.332E+00	2.152E-01	0.094
PA-233	-1.498E-02		7.585E-02	1.260E-01	7.879E-03	-0.119
PA-234	8.488E-02		3.672E-01	6.222E-01	1.170E-01	0.136
PA-234M	1.671E+01	+	9.654E+00	1.285E+01	1.226E+00	1.300
NP-239	-2.437E-01		5.319E-01	8.444E-01	5.256E-02	-0.289
AM-241	1.175E-01		2.737E-01	4.120E-01	3.833E-02	0.285
CM-247	1.843E-02		4.800E-02	8.141E-02	4.719E-03	0.226
CF-249	-1.232E-02		4.920E-02	8.060E-02	4.663E-03	-0.153
CF-251	-3.055E-02		1.717E-01	2.669E-01	1.381E-02	-0.114

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]G247900015             *
* Acquisition date   : 6-MAR-2010 15:02:28 Detector SN#      :                 *
* Detector ID        : GAM23 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 2.000          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 02:00:01.84 Half life ratio : 8.000   *
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID             *
* Sample ID          : G247900015 Analyst initials: MXR1       *
* Batch Number       : 957711 Sample Quantity : 1.1736E+02 GRAM *
* Recovery           : 1.00000 Carrier Weight  : 0.00000      *
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 2-JUN-2009 11:17:00 MS Isotope        :                 *
* MSD DPM             : 0.000 MSD Isotope                    :                 *
* LCS DPM             : 0.000 LCS Isotope                     :                 *
* LCSD DPM            : 0.000 LCSD Isotope                    :                 *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.923E+01	2.959E+00	3.543E-01	1.510E+00
CD-109	5.054E+00	1.235E+00	9.409E-01	6.301E-01
SN-126	4.933E-01	1.205E-01	9.240E-02	6.149E-02
CS-135	4.189E-01	3.101E-01	1.538E-01	1.582E-01
CE-141	8.096E-02	8.794E-02	6.705E-02	4.487E-02
TL-208	5.835E-01	1.014E-01	3.631E-02	5.171E-02
BI-211	3.835E+00	5.854E-01	2.083E-01	2.987E-01
PB-212	2.132E+00	2.017E-01	5.668E-02	1.029E-01
BI-214	1.521E+00	2.276E-01	7.712E-02	1.161E-01
PB-214	1.392E+00	2.254E-01	7.489E-02	1.150E-01
RA-224	5.484E+00	1.199E+00	6.075E-01	6.118E-01
RA-226	1.521E+00	2.276E-01	7.712E-02	1.161E-01
AC-228	2.192E+00	4.332E-01	1.420E-01	2.210E-01
RA-228	2.192E+00	4.332E-01	1.420E-01	2.210E-01
TH-228	2.132E+00	2.017E-01	5.668E-02	1.029E-01
TH-229	2.591E-01	6.649E-01	5.685E-01	3.393E-01
TH-232	2.192E+00	4.332E-01	1.420E-01	2.210E-01
TH-234	1.329E+01	4.200E+00	1.641E+00	2.143E+00
U-235	2.527E-01	2.768E-01	2.065E-01	1.412E-01
NP-237	1.472E+00	4.699E-01	2.979E-01	2.397E-01
U-238	1.329E+01	4.200E+00	1.641E+00	2.143E+00
ANH-511	7.601E-02	7.987E-02	2.807E-02	4.075E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.272E-02	3.875E-01	3.267E-01	1.977E-01 NOT IDENT.
NA-22	3.793E-02	6.071E-02	5.328E-02	3.097E-02 NOT IDENT.
NA-24	2.059E+05	2.608E+06	0.000E+00	1.331E+06 SHORT HLIF
SC-46	1.848E-02	4.926E-02	4.330E-02	2.513E-02 FAIL ABUN
V-48	-4.797E-02	8.671E-02	6.924E-02	4.424E-02 NOT IDENT.

CR-51	-2.801E-01	4.365E-01	3.652E-01	2.227E-01	NOT IDENT.
MN-54	7.256E-02	5.012E-02	4.690E-02	2.557E-02	NOT IDENT.
CO-56	-2.629E-03	4.608E-02	3.921E-02	2.351E-02	NOT IDENT.
CO-57	-3.438E-02	3.249E-02	2.677E-02	1.658E-02	NOT IDENT.
CO-58	-3.390E-02	5.310E-02	4.327E-02	2.709E-02	NOT IDENT.
FE-59	1.158E-02	1.240E-01	1.049E-01	6.325E-02	NOT IDENT.
CO-60	2.128E-03	5.103E-02	4.244E-02	2.604E-02	NOT IDENT.
ZN-65	1.068E-01	1.528E-01	1.183E-01	7.796E-02	NOT IDENT.
SE-75	-4.768E-03	6.382E-02	4.581E-02	3.256E-02	NOT IDENT.
SR-85	4.057E-02	4.951E-02	3.905E-02	2.526E-02	NOT IDENT.
Y-88	-2.821E-02	3.882E-02	2.731E-02	1.981E-02	NOT IDENT.
Y-91	-2.450E+01	2.952E+01	2.274E+01	1.506E+01	NOT IDENT.
NB-94	-8.869E-03	4.195E-02	3.410E-02	2.140E-02	NOT IDENT.
NB-95	1.224E-01	5.797E-02	5.454E-02	2.958E-02	NOT IDENT.
NB-95M	9.684E-01	2.125E-01	1.805E-01	1.084E-01	NOT IDENT.
ZR-95	2.793E-02	9.420E-02	7.949E-02	4.806E-02	NOT IDENT.
MO-99	1.553E+01	2.114E+01	1.837E+01	1.078E+01	NOT IDENT.
TC-99M	-1.717E+17	9.112E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.234E-02	5.050E-02	4.443E-02	2.577E-02	FAIL ABUN
RH-106	-1.690E-01	3.681E-01	2.945E-01	1.878E-01	NOT IDENT.
RU-106	-1.690E-01	3.678E-01	2.945E-01	1.876E-01	NOT IDENT.
AG-108M	-4.874E-03	3.575E-02	3.022E-02	1.824E-02	NOT IDENT.
AG-110M	1.570E-03	4.796E-02	3.995E-02	2.447E-02	NOT IDENT.
SN-113	1.228E-02	5.509E-02	4.785E-02	2.811E-02	NOT IDENT.
CD-115	-1.587E+01	1.926E+01	1.521E+01	9.825E+00	NOT IDENT.
SN-117M	-1.934E-02	7.415E-02	6.235E-02	3.783E-02	NOT IDENT.
TE-123M	6.549E-03	3.642E-02	3.115E-02	1.858E-02	NOT IDENT.
SB-124	-8.064E-02	9.160E-02	6.364E-02	4.674E-02	NOT IDENT.
SB-125	9.758E-02	1.125E-01	1.009E-01	5.739E-02	FAIL ABUN
TE-125M	-2.114E+01	1.307E+01	1.052E+01	6.669E+00	NOT IDENT.
I-126	-3.114E-01	3.159E-01	2.421E-01	1.612E-01	NOT IDENT.
SB-126	-6.183E-02	2.291E-01	1.577E-01	1.169E-01	NOT IDENT.
SB-127	-7.247E-01	1.974E+00	1.583E+00	1.007E+00	NOT IDENT.
I-131	9.490E-02	1.494E-01	1.332E-01	7.625E-02	NOT IDENT.
TE-132	7.440E-01	1.123E+00	9.621E-01	5.730E-01	NOT IDENT.
BA-133	1.353E-02	5.408E-02	4.138E-02	2.759E-02	NOT IDENT.
I-133	1.186E+04	1.592E+04	0.000E+00	8.121E+03	SHORT HLIF
CS-134	9.270E-02	7.003E-02	5.643E-02	3.573E-02	FAIL ABUN
I-135	-4.884E+16	1.084E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.097E-01	1.439E-01	1.293E-01	7.342E-02	NOT IDENT.
BA-137M	5.286E-02	4.914E-02	4.384E-02	2.507E-02	NOT IDENT.
CS-137	5.584E-02	5.192E-02	4.631E-02	2.649E-02	NOT IDENT.
CE-139	5.232E-03	3.863E-02	3.291E-02	1.971E-02	NOT IDENT.
BA-140	1.454E-02	3.243E-01	2.739E-01	1.654E-01	NOT IDENT.
LA-140	-3.781E-02	1.093E-01	8.792E-02	5.575E-02	FAIL ABUN
CE-143	2.464E+03	6.912E+02	0.000E+00	3.526E+02	SHORT HLIF
CE-144	-9.209E-02	2.561E-01	2.160E-01	1.306E-01	NOT IDENT.
PM-144	-6.435E-03	4.598E-02	3.765E-02	2.346E-02	NOT IDENT.
PR-144	-5.430E-01	3.439E+00	2.812E+00	1.754E+00	NOT IDENT.
PM-146	-2.756E-02	4.979E-02	4.071E-02	2.540E-02	NOT IDENT.
ND-147	2.206E-01	7.124E-01	6.033E-01	3.635E-01	FAIL ABUN
PM-149	3.416E+01	1.488E+02	1.312E+02	7.593E+01	NOT IDENT.
EU-152	-1.474E-02	1.400E-01	9.837E-02	7.141E-02	FAIL ABUN
GD-153	2.242E-01	1.224E-01	1.002E-01	6.245E-02	NOT IDENT.
EU-154	1.025E-01	1.716E-01	1.502E-01	8.756E-02	NOT IDENT.
EU-155	1.624E-01	1.346E-01	1.207E-01	6.866E-02	FAIL ABUN
TB-160	-6.957E-02	1.718E-01	1.411E-01	8.764E-02	FAIL ABUN
HO-166M	2.389E-03	7.617E-02	6.313E-02	3.886E-02	FAIL ABUN
TA-182	-6.328E-02	2.423E-01	1.969E-01	1.236E-01	NOT IDENT.
IR-192	-5.873E-03	4.034E-02	3.473E-02	2.058E-02	FAIL ABUN
HG-203	2.942E-02	4.777E-02	4.281E-02	2.437E-02	FAIL ABUN
BI-207	7.775E-02	6.355E-02	5.933E-02	3.243E-02	FAIL ABUN
PB-210	-3.837E+00	6.678E+00	5.704E+00	3.407E+00	NOT IDENT.
PB-211	-5.221E-01	9.773E-01	7.856E-01	4.986E-01	NOT IDENT.
BI-212	2.622E+00	1.177E+00	7.345E-01	6.007E-01	FAIL ABUN
RN-219	3.247E-02	5.163E-01	4.438E-01	2.634E-01	FAIL ABUN
RA-223	1.245E-01	8.859E-01	6.749E-01	4.520E-01	FAIL ABUN
AC-227	1.482E-01	3.214E-01	2.726E-01	1.640E-01	FAIL ABUN
TH-227	1.482E-01	3.215E-01	2.726E-01	1.641E-01	FAIL ABUN
PA-231	-7.287E-01	1.720E+00	1.469E+00	8.775E-01	FAIL ABUN
TH-231	1.245E-01	8.859E-01	6.749E-01	4.520E-01	FAIL ABUN
PA-233	-1.498E-02	7.433E-02	6.387E-02	3.792E-02	FAIL ABUN
PA-234	8.488E-02	3.598E-01	3.117E-01	1.836E-01	NOT IDENT.
PA-234M	1.671E+01	9.460E+00	6.434E+00	4.827E+00	FAIL ABUN
NP-239	-2.437E-01	5.213E-01	4.324E-01	2.659E-01	NOT IDENT.
AM-241	1.175E-01	2.683E-01	2.124E-01	1.369E-01	NOT IDENT.
CM-247	1.843E-02	4.704E-02	4.116E-02	2.400E-02	NOT IDENT.
CF-249	-1.232E-02	4.822E-02	4.077E-02	2.460E-02	NOT IDENT.

CF-251	-3.055E-02	1.683E-01	1.361E-01	8.585E-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	361.3983
49.72	355.2834
57.36	0.0000
59.54	400.4792
63.29	420.6503
63.29	420.6503
64.28	480.8272
67.75	526.2036
69.67	471.1552
70.83	554.5991
72.81	544.0933
72.87	544.1396
72.87	544.1396
74.82	541.2684
74.82	541.2684
74.82	541.2684
74.97	541.3799
77.11	542.9625
77.11	542.9625
77.11	542.9625
79.69	544.6499
79.80	544.7285
80.12	607.3718
80.19	607.4279
80.57	622.9636
81.00	621.7916
81.07	621.8489
81.07	621.8489
83.79	506.6584
83.79	506.6584
85.43	516.5331
86.48	624.6546
86.55	624.7117
86.79	640.2518
86.94	640.3740
87.57	552.3175
88.03	552.6356
88.47	552.9383
89.96	553.9583
91.11	554.7413
92.59	555.7393
92.59	555.7393
93.35	556.2504
94.67	482.1354
94.87	466.7448
94.87	466.7448
95.86	420.7199
97.43	335.9549
98.44	358.1523
99.53	367.7008
100.11	365.5323
103.18	375.7632
103.37	358.2261
105.31	346.2563
106.12	349.5140
109.28	453.1950
111.00	367.1837
111.76	367.4845
116.30	398.0508
117.23	372.6053
121.12	360.1421
121.78	390.3333
122.06	390.4452
123.07	366.8558
131.20	377.8954
133.52	382.7850
136.00	389.7702

136.47	397.0364
140.51	367.6418
140.51	0.0000
143.76	339.5852
144.24	337.6946
144.24	337.6946
145.44	346.4409
152.43	320.6717
153.25	333.2450
154.21	354.1149
154.21	354.1149
156.02	386.6415
158.56	358.5638
159.00	340.0920
162.66	352.5679
163.33	323.7162
165.86	342.0850
176.60	293.7210
177.52	315.5344
181.07	299.8274
184.41	301.8850
185.72	302.1949
193.51	294.4499
197.04	296.3019
205.31	272.8174
210.85	254.9658
215.65	222.5652
222.11	239.8573
227.38	245.0878
228.16	231.0501
228.18	231.0533
235.69	245.3743
235.96	250.6777
235.96	250.6777
238.63	229.3926
238.63	229.3926
240.99	229.7514
242.00	209.4441
244.70	215.1039
252.40	227.0293
252.80	231.5181
256.23	207.6008
256.23	207.6008
260.90	202.6450
264.66	198.2093
268.22	191.4859
269.46	209.5403
269.46	209.5403
271.23	188.2540
273.65	294.4673
276.40	183.4481
277.37	188.9539
277.60	182.2302
278.00	181.0246
279.20	199.9707
279.54	217.1295
280.46	226.2616
283.69	196.8919
284.31	195.1567
285.41	188.9547
285.90	179.9672
287.50	171.9880
293.27	0.0000
295.22	195.4946
295.96	163.7402
298.57	163.9841
299.98	208.1841
299.98	208.1841
300.09	194.0866
300.09	194.0866
300.13	194.0918
301.36	184.0159
302.85	179.6048
304.50	178.2493
304.50	178.2493
304.85	178.2850
308.46	175.8984
311.90	158.7959

316.51	154.5981
319.41	169.5913
320.08	162.2779
323.87	166.3088
323.87	166.3088
328.76	155.6297
333.37	162.5137
334.37	174.2134
334.37	174.2134
338.28	158.2814
338.28	158.2814
338.32	158.2834
338.32	158.2834
338.32	158.2834
340.48	155.3568
340.55	155.3629
344.28	151.3055
351.06	151.5230
351.93	148.1520
356.01	125.2832
364.49	122.6748
366.42	152.0735
383.85	135.2779
388.16	137.4662
388.63	134.6333
391.69	132.9171
400.66	150.7675
401.81	143.1615
402.40	135.5128
404.85	166.4555
410.95	148.5935
414.70	106.3208
423.72	123.2560
427.09	104.9744
427.87	108.9006
433.94	116.0206
453.88	112.1172
463.37	103.6837
468.07	108.8372
473.00	93.1991
476.78	105.2612
477.60	100.3305
487.02	94.7368
492.35	93.9438
497.08	93.1226
511.00	90.6202
514.00	87.3676
527.90	103.3846
529.87	0.0000
531.02	72.0504
537.26	80.3597
546.56	0.0000
563.25	102.7197
569.33	112.2146
569.50	112.2226
569.70	100.9046
583.19	87.9489
600.60	97.1729
602.73	123.2937
604.72	121.6398
609.32	105.4755
609.32	105.4755
610.33	113.1734
614.28	76.7153
618.01	85.8938
621.93	77.6187
621.93	77.6187
633.25	82.1304
635.95	87.4762
636.99	80.1266
645.85	76.1361
657.76	96.6097
661.66	85.0410
661.66	85.0410
664.57	0.0000
666.33	109.6588
666.50	100.0815
677.62	79.0731

685.70	79.2790
695.00	94.5592
696.49	93.5292
696.51	93.5292
697.00	99.9954
702.65	82.9385
706.68	75.4944
711.68	75.6140
720.70	83.0474
721.93	0.0000
722.78	77.6803
722.91	77.6838
723.31	75.8875
724.19	88.5593
727.33	86.8359
733.00	77.9252
735.93	92.5060
739.50	68.6371
747.24	67.7065
752.31	64.5284
753.82	64.5586
756.73	70.0906
763.94	93.2883
765.81	62.5928
766.42	60.4073
777.92	83.5722
778.90	87.2708
783.70	77.2734
785.37	84.3393
795.86	68.0498
801.95	79.5314
810.29	84.3553
810.76	85.2935
815.77	78.9162
818.51	52.9609
832.01	74.6143
834.85	64.4053
836.80	0.0000
846.77	56.1890
856.80	51.5145
860.56	38.6752
871.09	54.6771
873.19	49.0483
875.33	0.0000
879.36	61.4123
880.51	55.7614
883.24	52.0179
884.68	53.9304
889.28	54.9438
898.04	56.9702
911.20	56.2152
911.20	56.2152
911.20	56.2152
926.50	65.0477
937.49	61.3932
944.13	51.8884
946.00	49.9910
949.00	61.5742
962.29	52.9542
964.08	54.0814
966.15	54.1099
968.97	44.7545
968.97	44.7545
968.97	44.7545
983.53	53.3730
996.26	51.7319
1001.03	46.7803
1004.73	53.5112
1037.84	53.0947
1038.76	0.0000
1048.07	47.3086
1050.41	54.2391
1050.41	54.2391
1063.66	37.5903
1085.87	40.7664
1099.45	60.8387
1112.07	54.8683
1115.54	73.7863

1120.29	54.9710
1120.29	54.9710
1120.55	54.9732
1121.30	53.2639
1131.51	0.0000
1173.23	60.8276
1177.93	63.9331
1189.05	57.9834
1204.77	76.5472
1221.41	62.4768
1231.02	80.0503
1235.36	63.6877
1238.28	69.8926
1260.41	0.0000
1271.85	46.5729
1274.44	49.7031
1274.54	49.7051
1291.59	42.6016
1298.22	0.0000
1312.11	35.4734
1332.49	36.6648
1365.19	25.3018
1368.63	0.0000
1384.29	27.5107
1408.01	13.8173
1457.56	0.0000
1460.82	25.7598
1489.16	15.1040
1505.03	23.8020
1596.21	23.5561
1620.50	16.0845
1678.03	0.0000
1690.97	18.1882
1764.49	10.1708
1764.49	10.1708
1770.23	5.0900
1771.35	17.4545
1791.20	0.0000
1836.06	14.6924

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900015

Total Uranium Activity	3.9643E+01	ug/g
Total Uranium Counting Unc.	1.2495E+01	ug/g
Total Uranium Tpu	6.3752E-06	ug/g
Total Uranium Mda	4.8830E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 957711          SAMPLE ID   : G247900015
*  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 15:02:28.45  SAMPLE ALQT: 117.360 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.147E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.549E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.548E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.219E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 17:07:30.74

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900016.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:02:51.
Sample ID          : G247900016      Sample quantity   : 1.19070E+02 GRAM
Detector name      : GAM25           Detector geometry: CAN
Elapsed live time   : 0 02:00:00.00 Elapsed real time: 0 02:00:02.25 0.0%
Energy tolerance    : 1.50000 keV    Analyst Initials  : MXR1
Abundance limit     : 75.00000        Sensitivity       : 5.00000
Batch ID           : 957711          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	46.31*	152	354	0.97	92.18	89	6	2.11E-02	22.7	
2	0	63.25*	281	723	0.85	126.06	122	8	3.90E-02	18.1	
3	2	74.83*	997	587	0.82	149.21	145	21	1.38E-01	4.8	1.64E+00
4	2	77.07*	1637	523	0.81	153.69	145	21	2.27E-01	3.3	
5	0	84.17*	200	491	1.29	167.90	165	6	2.78E-02	19.3	
6	5	87.15	522	470	1.03	173.86	171	24	7.25E-02	7.6	2.66E+00
7	5	89.90	320	423	0.96	179.36	171	24	4.44E-02	11.5	
8	5	92.79*	513	424	1.21	185.12	171	24	7.13E-02	8.8	
9	0	129.40	233	433	1.02	258.35	254	10	3.23E-02	18.1	
10	0	186.09*	212	430	1.08	371.73	367	10	2.95E-02	20.3	
11	0	209.05	208	373	1.11	417.62	412	11	2.89E-02	19.3	
12	5	238.59*	1930	182	0.94	476.70	472	19	2.68E-01	2.6	1.61E+00
13	5	241.57	445	283	1.77	482.67	472	19	6.18E-02	12.0	
14	0	269.74	189	240	1.18	539.01	533	12	2.62E-02	18.0	
15	0	276.90	95	257	1.04	553.32	548	11	1.33E-02	34.0	
16	0	295.11*	495	187	1.12	589.75	585	9	6.87E-02	6.8	
17	0	299.94	92	183	1.14	599.41	596	8	1.28E-02	27.4	
18	0	327.96	84	134	0.93	655.44	652	7	1.16E-02	25.4	
19	0	338.12	389	163	1.15	675.76	670	10	5.41E-02	8.0	
20	0	351.82*	846	210	1.19	703.16	698	12	1.18E-01	4.9	
21	0	463.00	128	74	1.04	925.51	922	8	1.78E-02	14.6	
22	0	510.49*	186	128	1.53	1020.47	1013	15	2.59E-02	17.3	
23	0	562.79	59	82	1.56	1125.08	1119	11	8.19E-03	32.5	
24	0	583.07*	530	88	1.30	1165.63	1160	11	7.37E-02	5.6	
25	0	609.09*	589	122	1.48	1217.66	1212	14	8.18E-02	5.8	
26	0	727.40*	139	59	1.19	1454.29	1449	12	1.94E-02	14.3	
27	0	795.14*	73	49	1.54	1589.77	1585	12	1.01E-02	23.2	
28	0	860.83	53	98	2.10	1721.15	1712	14	7.40E-03	41.7	
29	0	910.99*	333	75	1.63	1821.46	1815	13	4.63E-02	7.8	
30	2	964.33	76	63	1.71	1928.15	1923	21	1.06E-02	21.8	4.04E+00
31	2	968.73*	241	55	1.65	1936.95	1923	21	3.34E-02	8.7	
32	0	1120.43*	96	116	1.79	2240.35	2233	17	1.33E-02	28.2	
33	0	1460.42*	1337	37	2.04	2920.36	2911	18	1.86E-01	2.9	
34	0	1588.24	27	12	2.07	3176.04	3170	10	3.70E-03	31.5	
35	0	1630.83	18	13	1.38	3261.22	3253	13	2.50E-03	47.5	
36	0	1659.81	17	7	3.96	3319.18	3312	13	2.29E-03	40.3	
37	0	1764.50	93	10	2.08	3528.57	3523	14	1.30E-02	12.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 17:07:33

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900016.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 15:02:51
Sample ID        : G247900016 Sample quantity : 119.07 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA25 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.25 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.567E+01	3.693E+00	5.702E-01	4.856E-02	62.561
CD-109	+	88.03	*	4.846E+00	9.039E-01	8.373E-01	8.998E-02	5.788
SN-126	+	64.28		9.442E-01	3.742E-01	3.331E-01	5.307E-02	2.835
	+	86.94		1.966E+00	8.758E-01	3.381E-01	1.414E-01	5.816
	+	87.57	*	4.730E-01	8.822E-02	8.155E-02	8.744E-03	5.800
TL-208	+	277.37		9.606E-01	6.685E-01	5.968E-01	8.577E-02	1.610
	+	583.19	*	7.877E-01	1.250E-01	7.215E-02	8.128E-03	10.917
	+	860.56		7.610E-01	6.403E-01	5.966E-01	6.234E-02	1.276
PB-210	+	46.54	*	1.232E+00	5.726E-01	6.142E-01	6.290E-02	2.005
BI-211		72.87		1.800E+00	1.977E+00	2.966E+00	2.994E-01	0.607
	+	351.06	*	5.314E+00	7.623E-01	3.352E-01	3.532E-02	15.853
PB-212	+	74.82		3.154E+00	5.367E-01	3.389E-01	4.767E-02	9.308
	+	77.11		3.127E+00	3.810E-01	2.054E-01	2.104E-02	15.225
	+	238.63	*	2.614E+00	3.274E-01	8.941E-02	1.022E-02	29.237
	+	300.09		1.983E+00	1.115E+00	1.334E+00	1.675E-01	1.486
BI-214	+	609.32	*	1.699E+00	2.848E-01	1.351E-01	1.636E-02	12.573
	+	1120.29		1.446E+00	8.296E-01	5.650E-01	6.159E-02	2.560
	+	1764.49		2.041E+00	5.442E-01	4.801E-01	3.955E-02	4.252
PB-214	+	74.82		5.591E+00	8.977E-01	6.006E-01	7.742E-02	9.308
	+	77.11		5.512E+00	8.111E-01	3.620E-01	4.762E-02	15.225
	+	242.00		3.656E+00	9.795E-01	5.448E-01	6.547E-02	6.711
	+	295.22		1.880E+00	3.518E-01	2.313E-01	2.964E-02	8.129
	+	351.93	*	1.928E+00	2.964E-01	1.220E-01	1.449E-02	15.813
RA-224	+	240.99	*	6.465E+00	1.691E+00	9.596E-01	1.008E-01	6.737
RA-226	+	609.32	*	1.699E+00	2.848E-01	1.351E-01	1.636E-02	12.573
	+	1120.29		1.446E+00	8.296E-01	5.650E-01	6.159E-02	2.560
	+	1764.49		2.041E+00	5.442E-01	4.801E-01	3.955E-02	4.252
AC-228	+	338.32		2.710E+00	1.221E+00	4.082E-01	1.720E-01	6.638
	+	911.20	*	2.428E+00	4.816E-01	2.927E-01	3.578E-02	8.294
	+	968.97		3.023E+00	9.112E-01	4.243E-01	1.044E-01	7.126
RA-228	+	338.32		2.710E+00	1.221E+00	4.082E-01	1.720E-01	6.638
	+	911.20	*	2.428E+00	4.816E-01	2.927E-01	3.578E-02	8.294
	+	968.97		3.023E+00	9.112E-01	4.243E-01	1.044E-01	7.126
TH-228	+	74.82		3.154E+00	4.419E-01	3.389E-01	3.466E-02	9.308

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	77.11		3.127E+00	3.810E-01	2.054E-01	2.104E-02	15.225
	+	238.63	*	2.614E+00	3.274E-01	8.941E-02	1.022E-02	29.237
	+	300.09		1.983E+00	1.635E+00	1.334E+00	8.219E-01	1.486
TH-229	+	85.43		4.519E-01	1.810E-01	2.142E-01	2.274E-02	2.110
	+	88.47		7.292E-01	1.360E-01	1.262E-01	1.359E-02	5.776
		193.51	*	-3.987E-01	5.096E-01	7.992E-01	7.622E-02	-0.499
		210.85		1.518E+00	9.757E-01	1.527E+00	1.513E-01	0.994
TH-232	+	338.32		2.710E+00	5.164E-01	4.082E-01	4.255E-02	6.638
	+	911.20	*	2.428E+00	4.816E-01	2.927E-01	3.578E-02	8.294
	+	968.97		3.023E+00	9.112E-01	4.243E-01	1.044E-01	7.126
TH-234	+	63.29	*	2.450E+00	1.003E+00	8.636E-01	1.639E-01	2.837
	+	92.59		4.138E+00	1.200E+00	7.121E-01	1.646E-01	5.811
U-235	+	89.96		3.114E+00	1.070E+00	8.790E-01	2.240E-01	3.542
	+	93.35		3.126E+00	9.307E-01	5.398E-01	1.301E-01	5.791
		143.76	*	1.493E-01	1.896E-01	3.187E-01	5.854E-02	0.468
		163.33		-6.344E-02	4.163E-01	6.760E-01	1.233E-01	-0.094
	+	185.72		1.825E-01	7.611E-02	6.530E-02	6.115E-03	2.794
		205.31		-1.910E-01	5.330E-01	7.542E-01	1.413E-01	-0.253
NP-237	+	86.48	*	1.411E+00	3.961E-01	2.551E-01	6.002E-02	5.531
		95.86		-4.679E-01	7.318E-01	1.083E+00	2.710E-01	-0.432
U-238	+	63.29	*	2.450E+00	1.003E+00	8.636E-01	1.639E-01	2.837
	+	92.59		4.138E+00	8.555E-01	7.121E-01	7.824E-02	5.811
ANH-511	+	511.00	*	2.092E-01	7.532E-02	5.326E-02	5.482E-03	3.928

---- 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	*	1.211E-01	3.665E-01	6.106E-01	6.463E-02	0.198
NA-22		1274.54	*	-1.766E-02	5.901E-02	9.443E-02	7.743E-03	-0.187
NA-24		1368.63	*	-1.253E+00	5.901E-02	Half-Life too short		
SC-46		889.28	*	-3.279E-02	4.944E-02	7.538E-02	7.218E-03	-0.435
	+	1120.55		2.467E-01	1.405E-01	1.604E-01	1.379E-02	1.538
V-48		944.13		-6.503E-01	1.155E+00	1.766E+00	1.657E-01	-0.368
		983.53	*	-1.015E-01	9.639E-02	1.387E-01	1.286E-02	-0.731
		1312.11		-8.239E-03	9.749E-02	1.583E-01	1.290E-02	-0.052
CR-51		320.08	*	2.887E-02	3.809E-01	6.445E-01	7.154E-02	0.045
MN-54		834.85	*	-2.976E-02	4.331E-02	6.645E-02	6.743E-03	-0.448
CO-56		846.77	*	-4.308E-03	4.688E-02	7.599E-02	7.625E-03	-0.057
		1037.84		1.254E-01	3.553E-01	6.140E-01	5.821E-02	0.204
		1238.28		2.480E-01	1.278E-01	2.336E-01	1.980E-02	1.062
		1771.35		-9.149E-02	3.106E-01	4.009E-01	3.300E-02	-0.228
CO-57		122.06	*	-1.572E-02	2.122E-02	3.458E-02	4.459E-03	-0.455
		136.47		-4.824E-02	1.810E-01	2.998E-01	3.673E-02	-0.161
CO-58		810.76	*	-2.116E-02	4.496E-02	7.054E-02	7.319E-03	-0.300
FE-59		1099.45	*	-1.451E-02	1.054E-01	1.736E-01	1.635E-02	-0.084
		1291.59		-1.235E-01	1.605E-01	2.428E-01	2.281E-02	-0.509
CO-60		1173.23		-1.613E-02	5.820E-02	9.431E-02	7.763E-03	-0.171
		1332.49	*	4.834E-02	4.799E-02	8.672E-02	7.043E-03	0.557

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZN-65	1115.54	*		4.078E-03	1.306E-01	1.881E-01	1.624E-02	0.022
SE-75	121.12			-4.740E-02	1.083E-01	1.791E-01	2.615E-02	-0.265
	136.00			1.141E-02	3.386E-02	5.746E-02	6.818E-03	0.199
	264.66	*		8.679E-03	4.948E-02	7.102E-02	7.784E-03	0.122
	279.54			-7.527E-02	1.334E-01	1.791E-01	2.045E-02	-0.420
	400.66			-5.290E-02	2.714E-01	4.435E-01	5.118E-02	-0.119
SR-85	514.00	*		6.271E-02	4.640E-02	7.361E-02	7.594E-03	0.852
Y-88	898.04			-3.204E-02	4.961E-02	7.548E-02	7.178E-03	-0.425
	1836.06	*		-2.298E-02	3.463E-02	4.775E-02	3.902E-03	-0.481
Y-91	1204.77	*		1.418E+00	2.865E+01	4.755E+01	3.913E+00	0.030
NB-94	702.65	*		2.814E-02	4.132E-02	7.171E-02	7.875E-03	0.392
	871.09			5.455E-02	4.398E-02	7.842E-02	7.671E-03	0.696
NB-95	765.81	*		5.373E-02	5.473E-02	9.520E-02	1.017E-02	0.564
NB-95M	235.69	*		1.120E-03	1.421E-01	2.035E-01	2.336E-02	0.006
ZR-95	724.19			7.981E-02	1.228E-01	1.883E-01	2.162E-02	0.424
	756.73	*		5.470E-02	8.616E-02	1.490E-01	1.709E-02	0.367
MO-99	140.51			-9.511E+00	2.528E+01	4.104E+01	1.022E+01	-0.232
	181.07			-2.078E+01	2.527E+01	3.483E+01	6.649E+00	-0.597
	366.42			5.139E+01	1.352E+02	2.302E+02	2.256E+01	0.223
	739.50	*		-1.169E+00	1.920E+01	3.164E+01	5.400E+00	-0.037
	777.92			-4.799E+01	5.791E+01	8.869E+01	9.405E+00	-0.541
TC-99M	140.51	*		-2.068E+11	5.791E+01	Half-Life too short		
RU-103	497.08	*		1.070E-02	4.710E-02	7.765E-02	1.163E-02	0.138
	610.33	+		1.785E+01	3.770E+00	3.580E+00	6.321E-01	4.986
RH-106	621.93	*		-1.563E-01	3.570E-01	5.802E-01	8.632E-02	-0.269
	1050.41			-1.718E+00	3.132E+00	4.994E+00	4.490E-01	-0.344
RU-106	621.93	*		-1.563E-01	3.567E-01	5.802E-01	6.353E-02	-0.269
	1050.41			-1.718E+00	3.132E+00	4.994E+00	4.490E-01	-0.344
AG-108M	433.94	*		-1.628E-03	3.225E-02	5.281E-02	5.189E-03	-0.031
	614.28			1.059E-02	4.733E-02	7.086E-02	7.896E-03	0.149
	722.91			1.021E-03	4.733E-02	6.833E-02	7.602E-03	0.015
AG-110M	657.76	*		-4.919E-02	4.205E-02	6.376E-02	7.185E-03	-0.772
	677.62			3.054E-01	3.445E-01	6.108E-01	6.868E-02	0.500
	706.68			1.417E-03	2.586E-01	4.301E-01	4.801E-02	0.003
	763.94			-9.242E-02	2.095E-01	3.346E-01	3.641E-02	-0.276
	884.68			2.662E-02	5.987E-02	1.012E-01	1.000E-02	0.263
	937.49			-5.078E-02	1.354E-01	2.113E-01	2.046E-02	-0.240
	1384.29			-1.217E-01	2.065E-01	3.127E-01	2.637E-02	-0.389
	1505.03			-1.058E-01	3.331E-01	5.129E-01	4.252E-02	-0.206
SN-113	391.69	*		9.231E-03	4.661E-02	7.821E-02	7.305E-03	0.118
CD-115	260.90			-8.957E+01	2.024E+02	3.142E+02	3.414E+01	-0.285
	492.35			-6.327E+00	5.965E+01	9.617E+01	9.750E+00	-0.066
	527.90	*		-3.215E+00	1.694E+01	2.692E+01	2.806E+00	-0.119
SN-117M	156.02			-2.968E+00	2.316E+00	3.610E+00	3.600E-01	-0.822
	158.56	*		4.263E-02	5.367E-02	9.162E-02	8.895E-03	0.465
TE-123M	159.00	*		3.086E-02	2.679E-02	4.622E-02	4.487E-03	0.668
SB-124	602.73			1.304E-02	4.787E-02	7.527E-02	8.182E-03	0.173
	645.85			-2.089E-01	6.137E-01	9.895E-01	1.131E-01	-0.211
	722.78			1.038E-02	4.810E-01	6.944E-01	7.682E-02	0.015

----- 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	*		-2.345E-02	8.832E-02	1.395E-01	1.209E-02	-0.168
	427.87	*		5.320E-02	9.971E-02	1.694E-01	1.636E-02	0.314
	463.37		+	1.265E+00	3.917E-01	6.599E-01	6.893E-02	1.917
	600.60			8.496E-02	1.986E-01	3.441E-01	3.913E-02	0.247
TE-125M	635.95			1.672E-01	3.063E-01	5.333E-01	6.165E-02	0.313
	109.28	*		-2.084E+00	7.631E+00	1.282E+01	1.719E+00	-0.163
	388.63			2.114E-02	1.831E-01	3.059E-01	2.809E-02	0.069
	666.33	*		-5.325E-02	2.837E-01	4.681E-01	5.182E-02	-0.114
I-126	753.82			7.325E-01	2.284E+00	3.866E+00	4.156E-01	0.189
	414.70			-2.485E-03	9.104E-02	1.482E-01	1.387E-02	-0.017
	666.50			1.184E-02	9.657E-02	1.627E-01	1.802E-02	0.073
	695.00			1.220E-02	9.098E-02	1.530E-01	1.684E-02	0.080
SB-126	697.00			-2.237E-01	3.304E-01	5.206E-01	5.727E-02	-0.430
	720.70	*		5.410E-02	1.873E-01	2.907E-01	3.173E-02	0.186
	856.80			-2.701E-01	7.223E-01	9.725E-01	9.660E-02	-0.278
	252.40			4.370E+00	5.648E+00	8.917E+00	3.754E+00	0.490
SB-127	473.00			2.559E-02	2.123E+00	3.465E+00	4.837E-01	0.007
	685.70	*		1.113E+00	1.831E+00	3.178E+00	4.306E-01	0.350
	783.70			-1.388E-01	5.269E+00	8.660E+00	1.215E+00	-0.016
	80.19			-4.830E+00	3.709E+00	4.969E+00	5.180E-01	-0.972
I-131	284.31			-1.593E+00	1.732E+00	2.569E+00	2.948E-01	-0.620
	364.49	*		-1.867E-03	1.364E-01	2.272E-01	2.333E-02	-0.008
	636.99			1.367E+00	1.927E+00	3.389E+00	3.864E-01	0.403
	49.72			2.485E+00	3.661E+00	6.055E+00	7.266E-01	0.410
TE-132	111.76			2.425E+01	3.434E+01	5.868E+01	8.324E+00	0.413
	116.30			2.261E+01	3.000E+01	5.188E+01	7.499E+00	0.436
	228.16	*		5.413E-01	9.353E-01	1.543E+00	2.618E-01	0.351
	81.00			-1.227E-01	7.249E-02	9.175E-02	1.521E-02	-1.338
BA-133	276.40		+	8.880E-01	6.207E-01	6.872E-01	1.083E-01	1.292
	302.85			6.474E-02	1.563E-01	2.401E-01	3.532E-02	0.270
	356.01	*		1.261E-02	4.824E-02	7.243E-02	1.010E-02	0.174
	383.85			-2.285E-01	3.205E-01	5.070E-01	6.552E-02	-0.451
I-133	529.87	*		-1.358E-03	3.205E-01	Half-Life	too short	
	875.33			-3.948E-01	3.205E-01	Half-Life	too short	
	1298.22			4.309E-01	3.205E-01	Half-Life	too short	
	563.25		+	8.783E-01	5.789E-01	7.584E-01	8.134E-02	1.158
CS-134	569.33			-1.945E-01	2.487E-01	3.599E-01	3.884E-02	-0.540
	604.72			-3.910E-03	4.118E-02	5.994E-02	6.530E-03	-0.065
	795.86	*	+	1.605E-01	7.629E-02	1.090E-01	1.148E-02	1.472
	801.95			-1.199E-02	5.512E-01	7.838E-01	8.206E-02	-0.015
CS-135	1365.19			-5.978E-02	1.618E+00	2.631E+00	2.259E-01	-0.023
	268.22	*		2.363E-01	1.636E-01	2.769E-01	3.342E-02	0.853
	546.56			5.282E+10	1.636E-01	Half-Life	too short	
	836.80			2.449E+11	1.636E-01	Half-Life	too short	
I-135	1038.76			-5.749E+10	1.636E-01	Half-Life	too short	
	1131.51			5.944E+10	1.636E-01	Half-Life	too short	
	1260.41	*		5.087E+10	1.636E-01	Half-Life	too short	
	1457.56			1.561E+13	1.636E-01	Half-Life	too short	
	1678.03			4.711E+10	1.636E-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	1791.20			-1.797E+11	1.636E-01	Half-Life	too short	
	153.25			1.086E+00	8.895E-01	1.530E+00	1.786E-01	0.709
	176.60			-1.192E-01	4.975E-01	8.090E-01	8.090E-02	-0.147
	273.65			-2.583E-02	7.580E-01	8.334E-01	9.710E-02	-0.031
	340.55			3.328E-01	1.867E-01	3.036E-01	3.235E-02	1.096
	818.51			4.085E-02	8.341E-02	1.430E-01	1.473E-02	0.286
BA-137M	1048.07	*		8.907E-02	1.394E-01	2.453E-01	2.293E-02	0.363
	1235.36			8.439E-01	8.514E-01	1.486E+00	1.705E-01	0.568
	661.66	*		-2.768E-02	4.383E-02	7.402E-02	8.199E-03	-0.374
CS-137	661.66	*		-2.924E-02	4.631E-02	7.819E-02	8.672E-03	-0.374
CE-139	165.86	*		-2.749E-02	2.816E-02	4.434E-02	3.954E-03	-0.620
BA-140	162.66			7.114E-02	8.039E-01	1.319E+00	1.295E-01	0.054
	304.85			2.226E-01	1.501E+00	2.380E+00	7.148E-01	0.094
	423.72			-1.990E+00	2.422E+00	3.627E+00	1.202E+00	-0.549
LA-140	537.26	*		-8.843E-02	3.342E-01	5.255E-01	1.810E-01	-0.168
	328.76			7.598E-01	3.953E-01	6.387E-01	7.025E-02	1.190
	487.02			4.729E-02	1.713E-01	2.838E-01	2.994E-02	0.167
	815.77			-6.235E-02	3.763E-01	6.074E-01	6.788E-02	-0.103
CE-141	1596.21	*		-3.642E-02	1.126E-01	1.717E-01	1.428E-02	-0.212
CE-143	145.44	*		-5.253E-03	5.875E-02	9.761E-02	1.086E-02	-0.054
	57.36			-2.417E-05	5.875E-02	Half-Life	too short	
	293.27	*		9.030E-04	5.875E-02	Half-Life	too short	
CE-144	664.57			-1.315E-03	5.875E-02	Half-Life	too short	
	721.93			1.790E-03	5.875E-02	Half-Life	too short	
	80.12			-2.433E+00	1.839E+00	2.461E+00	2.552E-01	-0.988
PM-144	133.52	*		5.526E-02	1.799E-01	2.754E-01	4.801E-02	0.201
	476.78			1.813E-02	7.169E-02	1.189E-01	1.266E-02	0.152
PR-144	618.01			1.639E-02	3.886E-02	6.709E-02	7.465E-03	0.244
	696.49	*		-7.492E-03	3.927E-02	6.442E-02	7.088E-03	-0.116
	696.51	*		-5.702E-01	2.940E+00	4.822E+00	5.304E-01	-0.118
PM-146	1489.16			-3.915E+00	1.327E+01	2.034E+01	1.685E+00	-0.192
	453.88	*		2.002E-02	4.736E-02	7.960E-02	9.197E-03	0.252
	633.25			-3.540E-01	1.622E+00	2.670E+00	1.036E+00	-0.133
ND-147	735.93			-7.798E-02	1.701E-01	2.688E-01	7.739E-02	-0.290
	747.24			-1.714E-02	1.136E-01	1.856E-01	2.963E-02	-0.092
	91.11			1.075E+00	2.767E-01	3.946E-01	4.531E-02	2.723
	319.41			1.918E+00	3.495E+00	6.055E+00	6.506E-01	0.317
PM-149	531.02	*		4.338E-02	6.490E-01	1.053E+00	1.692E-01	0.041
	285.90	*		3.242E+01	1.290E+02	2.070E+02	3.531E+01	0.157
EU-152	121.78			-6.371E-02	6.186E-02	9.904E-02	1.363E-02	-0.643
	244.70			2.781E-01	3.323E-01	5.027E-01	5.317E-02	0.553
	344.28	*		-5.180E-02	1.003E-01	1.629E-01	1.749E-02	-0.318
	778.90			-9.939E-02	3.139E-01	5.036E-01	5.336E-02	-0.197
GD-153	964.08	+		1.033E+00	4.615E-01	7.430E-01	6.931E-02	1.390
	1085.87			1.525E-01	4.633E-01	7.952E-01	7.002E-02	0.192
	1112.07			3.110E-02	4.064E-01	6.329E-01	5.475E-02	0.049
	1408.01			7.649E-02	2.284E-01	3.862E-01	3.173E-02	0.198
GD-153	69.67			-1.170E+00	9.094E-01	1.356E+00	1.355E-01	-0.863
	97.43	*		-7.094E-02	6.856E-02	9.984E-02	1.124E-02	-0.711

---- 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		-1.396E-01	8.417E-02	1.318E-01	1.531E-02	-1.059
		123.07		5.164E-03	4.392E-02	7.439E-02	1.101E-02	0.069
		723.31		-2.566E-02	2.192E-01	3.115E-01	3.615E-02	-0.082
		873.19		7.669E-02	3.627E-01	6.015E-01	7.666E-02	0.127
		996.26		-5.687E-01	4.753E-01	6.587E-01	1.171E-01	-0.863
EU-155		1004.73		-3.908E-01	2.925E-01	4.056E-01	4.894E-02	-0.963
		1274.44	*	-3.955E-02	1.655E-01	2.662E-01	2.944E-02	-0.149
	+	86.55		5.737E-01	1.072E-01	1.499E-01	1.610E-02	3.828
		105.31	*	7.161E-02	8.278E-02	1.445E-01	1.708E-02	0.496
	+	86.79		1.536E+00	2.866E-01	4.095E-01	4.374E-02	3.752
TB-160		197.04		-2.879E-02	5.664E-01	9.216E-01	8.861E-02	-0.031
		215.65		5.279E-01	7.397E-01	1.236E+00	1.238E-01	0.427
	+	298.57		2.820E-01	1.576E-01	2.171E-01	2.389E-02	1.299
		879.36	*	-5.198E-03	1.704E-01	2.767E-01	2.682E-02	-0.019
		962.29		1.847E+00	7.819E-01	1.335E+00	1.246E-01	1.384
HO-166M		966.15		2.112E+00	3.992E-01	7.349E-01	6.851E-02	2.874
		1177.93		1.519E-01	4.610E-01	7.835E-01	6.449E-02	0.194
		1271.85		-3.236E-01	9.144E-01	1.453E+00	1.191E-01	-0.223
		80.57		-3.047E-01	2.009E-01	2.651E-01	2.754E-02	-1.150
		184.41		5.468E-02	4.017E-02	6.429E-02	6.000E-03	0.851
TA-182		280.46		3.478E-02	9.502E-02	1.376E-01	1.535E-02	0.253
		410.95		-1.358E-01	2.822E-01	4.522E-01	4.213E-02	-0.300
		711.68	*	3.998E-03	7.236E-02	1.207E-01	1.322E-02	0.033
		752.31		-2.037E-01	3.245E-01	5.079E-01	5.465E-02	-0.401
		810.29		-1.756E-02	6.663E-02	1.067E-01	1.106E-02	-0.165
IR-192		67.75		5.231E-02	5.493E-02	8.933E-02	8.888E-03	0.586
		100.11		1.444E-01	1.387E-01	2.345E-01	2.678E-02	0.616
		152.43		2.684E-01	3.424E-01	5.841E-01	6.036E-02	0.459
		222.11		-3.341E-02	3.512E-01	5.647E-01	5.727E-02	-0.059
	+	1121.30		6.818E-01	3.885E-01	4.430E-01	3.806E-02	1.539
HG-203		1189.05		1.147E-01	3.464E-01	5.902E-01	4.858E-02	0.194
		1221.41	*	-3.305E-02	2.724E-01	4.457E-01	3.665E-02	-0.074
		1231.02		-4.875E-01	6.605E-01	1.029E+00	8.460E-02	-0.474
	+	295.96		1.404E+00	2.466E-01	3.308E-01	3.665E-02	4.243
		308.46		-5.271E-02	9.639E-02	1.578E-01	1.725E-02	-0.334
BI-207		316.51	*	-2.824E-02	3.415E-02	5.468E-02	5.906E-03	-0.516
		468.07		1.086E-02	7.869E-02	1.202E-01	1.259E-02	0.090
		70.83		-2.698E-01	7.944E-01	1.134E+00	1.912E-01	-0.238
		72.87		4.549E-01	5.031E-01	7.496E-01	1.229E-01	0.607
	*	279.20		-2.672E-03	4.761E-02	6.673E-02	7.561E-03	-0.040
PB-211		72.81		7.686E-02	1.128E-01	1.680E-01	1.696E-02	0.458
	+	74.97		9.091E-01	1.269E-01	1.690E-01	1.718E-02	5.380
		569.70		-2.831E-02	3.870E-02	5.630E-02	6.023E-03	-0.503
		1063.66	*	-3.020E-02	5.713E-02	9.058E-02	8.085E-03	-0.333
		1770.23		-1.032E-01	6.169E-01	8.302E-01	6.835E-02	-0.124
BI-212		404.85	*	-3.549E-01	8.420E-01	1.307E+00	6.339E-01	-0.272
		427.09		1.040E+00	1.749E+00	2.874E+00	1.335E+00	0.362
		832.01		-4.865E-01	1.157E+00	1.777E+00	9.265E-01	-0.274
	+	727.33	*	3.213E+00	1.026E+00	1.487E+00	2.100E-01	2.160

---- 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		-1.610E+00	4.038E+00	6.443E+00	6.799E-01	-0.250
		1620.50		9.442E-01	2.572E+00	4.389E+00	3.648E-01	0.215
		271.23		1.136E+00	4.317E-01	4.748E-01	5.867E-02	2.391
		401.81	*	8.969E-03	4.368E-01	7.234E-01	1.101E-01	0.012
RA-223	+	81.07		-2.832E-01	1.604E-01	2.075E-01	2.160E-02	-1.365
		83.79		2.690E-01	1.077E-01	1.550E-01	1.633E-02	1.736
		94.87		2.676E-01	3.566E-01	5.668E-01	6.300E-02	0.472
		144.24		7.123E-01	6.324E-01	1.078E+00	1.283E-01	0.661
AC-227	+	154.21		3.657E-01	3.777E-01	6.469E-01	7.029E-02	0.565
		269.46		8.823E-01	3.322E-01	3.787E-01	4.219E-02	2.330
		323.87	*	2.496E-01	7.502E-01	1.139E+00	2.100E-01	0.219
		338.28		1.075E+01	2.242E+00	2.874E+00	3.857E-01	3.741
	+	79.69		-1.321E+00	9.287E-01	1.204E+00	2.186E-01	-1.098
		235.96		8.578E-02	1.728E-01	2.546E-01	3.025E-02	0.337
		256.23	*	-2.634E-01	2.683E-01	4.005E-01	5.479E-02	-0.658
		299.98		2.181E+00	1.236E+00	1.766E+00	2.546E-01	1.235
TH-227	+	304.50		4.225E-01	1.799E+00	2.731E+00	4.875E-01	0.155
		334.37		2.601E-01	1.904E+00	2.848E+00	4.756E-01	0.091
		79.80		-1.734E+00	1.248E+00	1.591E+00	3.583E-01	-1.090
		235.96		8.578E-02	1.728E-01	2.546E-01	2.896E-02	0.337
PA-231	+	256.23	*	-2.634E-01	2.688E-01	4.005E-01	6.035E-02	-0.658
		299.98		2.181E+00	1.236E+00	1.766E+00	2.546E-01	1.235
		304.50		4.225E-01	1.799E+00	2.731E+00	4.875E-01	0.155
		334.37		2.601E-01	1.904E+00	2.848E+00	4.756E-01	0.091
TH-231	+	283.69	*	-1.531E-01	1.483E+00	2.332E+00	3.777E-01	-0.066
		301.36		1.401E+00	7.924E-01	1.100E+00	1.531E-01	1.274
		81.07		-2.832E-01	1.604E-01	2.075E-01	2.160E-02	-1.365
		83.79		2.690E-01	1.077E-01	1.550E-01	1.633E-02	1.736
PA-233	+	94.87		2.676E-01	3.566E-01	5.668E-01	6.300E-02	0.472
		144.24		7.123E-01	6.324E-01	1.078E+00	1.283E-01	0.661
		154.21		3.657E-01	3.777E-01	6.469E-01	7.029E-02	0.565
		269.46		8.823E-01	3.322E-01	3.787E-01	4.219E-02	2.330
PA-234	+	323.87	*	2.496E-01	7.502E-01	1.139E+00	2.100E-01	0.219
		338.28		1.075E+01	2.242E+00	2.874E+00	3.857E-01	3.741
		300.13		9.871E-01	5.644E-01	7.990E-01	1.304E-01	1.235
		311.90	*	6.128E-02	6.578E-02	1.157E-01	1.278E-02	0.529
PA-234M	+	340.48		1.557E+00	8.447E-01	1.261E+00	3.121E-01	1.235
		94.67		1.949E-01	1.348E-01	2.162E-01	3.079E-02	0.901
		98.44		6.076E-02	8.102E-02	1.176E-01	6.619E-02	0.517
		111.00		-7.159E-02	1.483E-01	2.465E-01	3.645E-02	-0.290
PA-234M	+	131.20		1.258E-01	9.402E-02	1.504E-01	1.837E-02	0.836
		569.50		-2.602E-01	3.429E-01	4.976E-01	5.322E-02	-0.523
		733.00		4.584E-01	4.534E-01	7.138E-01	1.653E-01	0.642
		880.51		2.505E-02	3.515E-01	5.759E-01	5.573E-02	0.043
	+	883.24		2.696E-02	3.576E-01	5.854E-01	3.943E-01	0.046
		926.50		2.749E-02	2.112E-01	3.462E-01	8.851E-02	0.079
		946.00	*	1.041E-01	3.728E-01	6.174E-01	1.181E-01	0.169
		949.00		4.407E-01	5.797E-01	9.956E-01	9.329E-02	0.443
PA-234M	+	766.42		1.949E+01	1.754E+01	2.579E+01	1.318E+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	*		5.919E+00	5.888E+00	1.028E+01	1.076E+00	0.576
	99.53			1.900E-01	1.331E-01	2.161E-01	2.460E-02	0.879
	103.37			-9.578E-02	7.563E-02	1.214E-01	1.411E-02	-0.789
	106.12			7.391E-02	6.629E-02	1.163E-01	1.372E-02	0.636
	117.23	*		-1.305E-01	3.291E-01	5.475E-01	6.868E-02	-0.238
	228.18			1.288E-01	2.219E-01	3.674E-01	3.770E-02	0.351
AM-241	+	277.60		4.390E-01	3.029E-01	3.397E-01	3.783E-02	1.292
CM-247	+	59.54	*	1.093E-02	5.625E-02	8.345E-02	8.671E-03	0.131
CF-249	278.00			1.865E+00	1.287E+00	1.429E+00	1.592E-01	1.305
	287.50			7.047E-02	1.352E+00	2.144E+00	2.380E-01	0.033
	402.40	*		-1.053E-03	4.014E-02	6.628E-02	6.108E-03	-0.016
	252.80			3.279E-01	9.838E-01	1.601E+00	1.716E-01	0.205
CF-251	333.37			7.229E-02	1.986E-01	3.022E-01	3.177E-02	0.239
	388.16	*		2.173E-02	4.096E-02	7.011E-02	6.447E-03	0.310
	177.52	*		2.088E-03	1.247E-01	2.051E-01	1.882E-02	0.010
	227.38			2.961E-02	3.646E-01	5.903E-01	6.049E-02	0.050
	285.41			-2.911E+00	2.403E+00	3.486E+00	3.876E-01	-0.835

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]G247900016      *
* Acquisition date   : 6-MAR-2010 15:02:51 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 02:00:02.25             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247900016                      Analyst initials: MXR1      *
* Batch Number       : 957711                          Sample Quantity : 1.1907E+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	3.567E+01	3.620E+00	5.687E-01	0.000E+00
CD-109	4.846E+00	8.858E-01	8.619E-01	0.000E+00
SN-126	4.730E-01	8.646E-02	8.395E-02	0.000E+00
TL-208	7.877E-01	1.225E-01	7.272E-02	0.000E+00
PB-210	1.232E+00	5.612E-01	6.366E-01	0.000E+00
BI-211	5.314E+00	7.471E-01	3.398E-01	0.000E+00
PB-212	2.614E+00	3.208E-01	9.103E-02	0.000E+00
BI-214	1.699E+00	2.791E-01	1.361E-01	0.000E+00
PB-214	1.928E+00	2.905E-01	1.236E-01	0.000E+00
RA-224	6.465E+00	1.657E+00	9.769E-01	0.000E+00
RA-226	1.699E+00	2.791E-01	1.361E-01	0.000E+00
AC-228	2.428E+00	4.720E-01	2.935E-01	0.000E+00
RA-228	2.428E+00	4.720E-01	2.935E-01	0.000E+00
TH-228	2.614E+00	3.208E-01	9.103E-02	0.000E+00
TH-229	-3.987E-01	4.994E-01	8.156E-01	0.000E+00
TH-232	2.428E+00	4.720E-01	2.935E-01	0.000E+00
TH-234	2.450E+00	9.832E-01	8.922E-01	0.000E+00
U-235	1.493E-01	1.858E-01	3.263E-01	0.000E+00
NP-237	1.411E+00	3.881E-01	2.627E-01	0.000E+00
U-238	2.450E+00	9.832E-01	8.922E-01	0.000E+00
ANH-511	2.092E-01	7.382E-02	5.376E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.211E-01	3.591E-01	6.168E-01	0.000E+00 NOT IDENT.
NA-22	-1.766E-02	5.783E-02	9.432E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.738E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-3.279E-02	4.845E-02	7.561E-02	0.000E+00 FAIL ABUN
V-48	-1.015E-01	9.446E-02	1.390E-01	0.000E+00 NOT IDENT.
CR-51	2.887E-02	3.733E-01	6.540E-01	0.000E+00 NOT IDENT.

MN-54	-2.976E-02	4.244E-02	6.670E-02	0.000E+00	NOT IDENT.
CO-56	-4.308E-03	4.594E-02	7.626E-02	0.000E+00	NOT IDENT.
CO-57	-1.572E-02	2.080E-02	3.547E-02	0.000E+00	NOT IDENT.
CO-58	-2.116E-02	4.406E-02	7.083E-02	0.000E+00	NOT IDENT.
FE-59	-1.451E-02	1.033E-01	1.737E-01	0.000E+00	NOT IDENT.
CO-60	4.834E-02	4.703E-02	8.658E-02	0.000E+00	NOT IDENT.
ZN-65	4.078E-03	1.280E-01	1.881E-01	0.000E+00	NOT IDENT.
SE-75	8.679E-03	4.849E-02	7.222E-02	0.000E+00	NOT IDENT.
SR-85	6.271E-02	4.547E-02	7.429E-02	0.000E+00	NOT IDENT.
Y-88	-2.298E-02	3.394E-02	4.749E-02	0.000E+00	NOT IDENT.
Y-91	1.418E+00	2.808E+01	4.753E+01	0.000E+00	NOT IDENT.
NB-94	2.814E-02	4.050E-02	7.212E-02	0.000E+00	NOT IDENT.
NB-95	5.373E-02	5.363E-02	9.565E-02	0.000E+00	NOT IDENT.
NB-95M	1.120E-03	1.392E-01	2.072E-01	0.000E+00	NOT IDENT.
ZR-95	5.470E-02	8.443E-02	1.497E-01	0.000E+00	NOT IDENT.
MO-99	-1.169E+00	1.882E+01	3.180E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.401E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.070E-02	4.615E-02	7.840E-02	0.000E+00	FAIL ABUN
RH-106	-1.563E-01	3.499E-01	5.843E-01	0.000E+00	NOT IDENT.
RU-106	-1.563E-01	3.496E-01	5.843E-01	0.000E+00	NOT IDENT.
AG-108M	-1.628E-03	3.160E-02	5.341E-02	0.000E+00	NOT IDENT.
AG-110M	-4.919E-02	4.121E-02	6.417E-02	0.000E+00	NOT IDENT.
SN-113	9.231E-03	4.568E-02	7.918E-02	0.000E+00	NOT IDENT.
CD-115	-3.215E+00	1.660E+01	2.716E+01	0.000E+00	NOT IDENT.
SN-117M	4.263E-02	5.260E-02	9.370E-02	0.000E+00	NOT IDENT.
TE-123M	3.086E-02	2.625E-02	4.727E-02	0.000E+00	NOT IDENT.
SB-124	-2.345E-02	8.655E-02	1.389E-01	0.000E+00	NOT IDENT.
SB-125	5.320E-02	9.772E-02	1.714E-01	0.000E+00	FAIL ABUN
TE-125M	-2.084E+00	7.478E+00	1.317E+01	0.000E+00	NOT IDENT.
I-126	-5.325E-02	2.781E-01	4.710E-01	0.000E+00	NOT IDENT.
SB-126	5.410E-02	1.836E-01	2.923E-01	0.000E+00	NOT IDENT.
SB-127	1.113E+00	1.794E+00	3.198E+00	0.000E+00	NOT IDENT.
I-131	-1.867E-03	1.336E-01	2.303E-01	0.000E+00	NOT IDENT.
TE-132	5.413E-01	9.166E-01	1.572E+00	0.000E+00	NOT IDENT.
BA-133	1.261E-02	4.728E-02	7.341E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.459E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.476E-02	1.095E-01	0.000E+00	FAIL ABUN
CS-135	2.363E-01	1.603E-01	2.815E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.067E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.907E-02	1.366E-01	2.455E-01	0.000E+00	NOT IDENT.
BA-137M	-2.768E-02	4.296E-02	7.449E-02	0.000E+00	NOT IDENT.
CS-137	-2.924E-02	4.538E-02	7.870E-02	0.000E+00	NOT IDENT.
CE-139	-2.749E-02	2.760E-02	4.533E-02	0.000E+00	NOT IDENT.
BA-140	-8.843E-02	3.275E-01	5.302E-01	0.000E+00	NOT IDENT.
LA-140	-3.642E-02	1.103E-01	1.711E-01	0.000E+00	FAIL ABUN
CE-141	-5.253E-03	5.757E-02	9.992E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.442E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	5.526E-02	1.763E-01	2.822E-01	0.000E+00	NOT IDENT.
PM-144	-7.492E-03	3.848E-02	6.480E-02	0.000E+00	NOT IDENT.
PR-144	-5.702E-01	2.881E+00	4.850E+00	0.000E+00	NOT IDENT.
PM-146	2.002E-02	4.641E-02	8.045E-02	0.000E+00	NOT IDENT.
ND-147	4.338E-02	6.360E-01	1.062E+00	0.000E+00	FAIL ABUN
PM-149	3.242E+01	1.264E+02	2.103E+02	0.000E+00	NOT IDENT.
EU-152	-5.180E-02	9.832E-02	1.652E-01	0.000E+00	FAIL ABUN
GD-153	-7.094E-02	6.719E-02	1.027E-01	0.000E+00	NOT IDENT.
EU-154	-3.955E-02	1.622E-01	2.659E-01	0.000E+00	NOT IDENT.
EU-155	7.161E-02	8.112E-02	1.485E-01	0.000E+00	FAIL ABUN
TB-160	-5.198E-03	1.670E-01	2.776E-01	0.000E+00	FAIL ABUN
HO-166M	3.998E-03	7.091E-02	1.214E-01	0.000E+00	NOT IDENT.
TA-182	-3.305E-02	2.669E-01	4.454E-01	0.000E+00	FAIL ABUN
IR-192	-2.824E-02	3.347E-02	5.549E-02	0.000E+00	FAIL ABUN
HG-203	-2.672E-03	4.665E-02	6.782E-02	0.000E+00	NOT IDENT.
BI-207	-3.020E-02	5.598E-02	9.067E-02	0.000E+00	FAIL ABUN
PB-211	-3.549E-01	8.251E-01	1.323E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.006E+00	1.495E+00	0.000E+00	FAIL ABUN
RN-219	8.969E-03	4.280E-01	7.322E-01	0.000E+00	FAIL ABUN
RA-223	2.496E-01	7.352E-01	1.156E+00	0.000E+00	FAIL ABUN
AC-227	-2.634E-01	2.629E-01	4.074E-01	0.000E+00	FAIL ABUN
TH-227	-2.634E-01	2.634E-01	4.074E-01	0.000E+00	FAIL ABUN
PA-231	-1.531E-01	1.453E+00	2.369E+00	0.000E+00	FAIL ABUN
TH-231	2.496E-01	7.352E-01	1.156E+00	0.000E+00	FAIL ABUN
PA-233	6.128E-02	6.446E-02	1.175E-01	0.000E+00	FAIL ABUN
PA-234	1.041E-01	3.653E-01	6.188E-01	0.000E+00	NOT IDENT.
PA-234M	5.919E+00	5.770E+00	1.029E+01	0.000E+00	NOT IDENT.
NP-239	-1.305E-01	3.225E-01	5.618E-01	0.000E+00	FAIL ABUN
AM-241	1.093E-02	5.512E-02	8.627E-02	0.000E+00	NOT IDENT.
CM-247	-1.053E-03	3.934E-02	6.708E-02	0.000E+00	FAIL ABUN
CF-249	2.173E-02	4.014E-02	7.099E-02	0.000E+00	NOT IDENT.

CF-251	2.088E-03	1.222E-01	2.095E-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]G247900016.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:02:51.
Sample ID          : G247900016 Sample quantity      : 1.19070E+02 GRAM
Detector name      : GAM25 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.25 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials    : MXR1
Abundance limit    : 75.00000 Sensitivity           : 5.00000
Batch ID           : 957711 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	1337	10.66*	1.109E+00	3.567E+01	3.567E+01	10.35
CD-109	88.03	522	3.70*	9.406E+00	4.730E+00	4.846E+00	18.65
SN-126	64.28	281	9.60	9.778E+00	9.442E-01	9.442E-01	39.63
	86.94	522	8.90	9.406E+00	1.966E+00	1.966E+00	44.54
	87.57	522	37.00*	9.406E+00	4.730E-01	4.730E-01	18.65
TL-208	277.37	95	6.60	4.745E+00	9.606E-01	9.606E-01	69.59
	583.19	530	85.00*	2.497E+00	7.877E-01	7.877E-01	15.86
	860.56	53	12.50	1.765E+00	7.610E-01	7.610E-01	84.14
PB-210	46.54	152	4.25*	9.173E+00	1.230E+00	1.232E+00	46.49
BI-211	72.87	-----	1.23	9.724E+00	-----	Line Not Found	-----
	351.06	846	12.92*	3.887E+00	5.314E+00	5.314E+00	14.35
PB-212	74.82	997	10.28	9.694E+00	3.154E+00	3.154E+00	17.02
	77.11	1637	17.10	9.653E+00	3.127E+00	3.127E+00	12.19
	238.63	1930	43.60*	5.340E+00	2.614E+00	2.614E+00	12.52
	300.09	92	3.30	4.444E+00	1.983E+00	1.983E+00	56.22
BI-214	609.32	589	45.49*	2.402E+00	1.699E+00	1.699E+00	16.76
	1120.29	96	14.92	1.398E+00	1.446E+00	1.446E+00	57.37
	1764.49	93	15.30	9.412E-01	2.041E+00	2.041E+00	26.66
PB-214	74.82	997	5.80	9.694E+00	5.591E+00	5.591E+00	16.06
	77.11	1637	9.70	9.653E+00	5.512E+00	5.512E+00	14.71
	242.00	445	7.25	5.288E+00	3.656E+00	3.656E+00	26.79
	295.22	495	18.42	4.504E+00	1.880E+00	1.880E+00	18.71
	351.93	846	35.60*	3.887E+00	1.928E+00	1.928E+00	15.37
RA-224	240.99	445	4.10*	5.288E+00	6.465E+00	6.465E+00	26.16
RA-226	609.32	589	45.49*	2.402E+00	1.699E+00	1.699E+00	16.76
	1120.29	96	14.92	1.398E+00	1.446E+00	1.446E+00	57.37
	1764.49	93	15.30	9.412E-01	2.041E+00	2.041E+00	26.66
AC-228	338.32	389	11.27	4.020E+00	2.710E+00	2.710E+00	45.05
	911.20	333	25.80*	1.678E+00	2.428E+00	2.428E+00	19.84
	968.97	241	15.80	1.589E+00	3.023E+00	3.023E+00	30.14
RA-228	338.32	389	11.27	4.020E+00	2.710E+00	2.710E+00	45.05
	911.20	333	25.80*	1.678E+00	2.428E+00	2.428E+00	19.84

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	968.97	241	15.80	1.589E+00	3.023E+00	3.023E+00	30.14
	74.82	997	10.28	9.694E+00	3.154E+00	3.154E+00	14.01
	77.11	1637	17.10	9.653E+00	3.127E+00	3.127E+00	12.19
	238.63	1930	43.60*	5.340E+00	2.614E+00	2.614E+00	12.52
TH-229	300.09	92	3.30	4.444E+00	1.983E+00	1.983E+00	82.45
	85.43	200	14.70	9.488E+00	4.519E-01	4.519E-01	40.05
	88.47	522	24.00	9.406E+00	7.292E-01	7.292E-01	18.65
	193.51	-----	4.41*	6.239E+00	-----	Line Not Found	-----
TH-232	210.85	-----	2.80	5.863E+00	-----	Line Not Found	-----
	338.32	389	11.27	4.020E+00	2.710E+00	2.710E+00	19.06
	911.20	333	25.80*	1.678E+00	2.428E+00	2.428E+00	19.84
	968.97	241	15.80	1.589E+00	3.023E+00	3.023E+00	30.14
TH-234	63.29	281	3.70*	9.778E+00	2.450E+00	2.450E+00	40.95
	92.59	513	4.23	9.240E+00	4.138E+00	4.138E+00	29.00
U-235	89.96	320	3.47	9.327E+00	3.114E+00	3.114E+00	34.37
	93.35	513	5.60	9.240E+00	3.126E+00	3.126E+00	29.77
	143.76	-----	10.96*	7.568E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.998E+00	-----	Line Not Found	-----
NP-237	185.72	212	57.20	6.413E+00	1.825E-01	1.825E-01	41.71
	205.31	-----	5.01	5.979E+00	-----	Line Not Found	-----
	86.48	522	12.40*	9.406E+00	1.411E+00	1.411E+00	28.06
	95.86	-----	2.68	9.143E+00	-----	Line Not Found	-----
U-238	63.29	281	3.70*	9.778E+00	2.450E+00	2.450E+00	40.95
	92.59	513	4.23	9.240E+00	4.138E+00	4.138E+00	20.67
ANH-511	511.00	186	100.00*	2.810E+00	2.092E-01	2.092E-01	36.01

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247900016

Page : 3
Acquisition date : 6-MAR-2010 15:02:51

Total number of lines in spectrum 37
Number of unidentified lines 5
Number of lines tentatively identified by NID 32 86.49%

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	0.369E+01	10.35	
CD-109	461.40D	1.02	4.730E+00	4.846E+00	0.904E+00	18.65	
SN-126	2.30E+05Y	1.00	4.730E-01	4.730E-01	0.882E-01	18.65	
TL-208	1.41E+10Y	1.00	7.877E-01	7.877E-01	1.250E-01	15.86	
PB-210	22.20Y	1.00	1.230E+00	1.232E+00	0.573E+00	46.49	
BI-211	7.04E+08Y	1.00	5.314E+00	5.314E+00	0.762E+00	14.35	
PB-212	1.41E+10Y	1.00	2.614E+00	2.614E+00	0.327E+00	12.52	
BI-214	1600.00Y	1.00	1.699E+00	1.699E+00	0.285E+00	16.76	
PB-214	1600.00Y	1.00	1.928E+00	1.928E+00	0.296E+00	15.37	
RA-224	1.41E+10Y	1.00	6.465E+00	6.465E+00	1.691E+00	26.16	
RA-226	1600.00Y	1.00	1.699E+00	1.699E+00	0.285E+00	16.76	
AC-228	1.41E+10Y	1.00	2.428E+00	2.428E+00	0.482E+00	19.84	
RA-228	1.41E+10Y	1.00	2.428E+00	2.428E+00	0.482E+00	19.84	
TH-228	1.41E+10Y	1.00	2.614E+00	2.614E+00	0.327E+00	12.52	
TH-229	7340.00Y	1.00	7.292E-01	7.292E-01	1.360E-01	18.65	K
TH-232	1.41E+10Y	1.00	2.428E+00	2.428E+00	0.482E+00	19.84	
TH-234	4.47E+09Y	1.00	2.450E+00	2.450E+00	1.003E+00	40.95	
U-235	7.04E+08Y	1.00	1.825E-01	1.825E-01	0.761E-01	41.71	K
NP-237	2.14E+06Y	1.00	1.411E+00	1.411E+00	0.396E+00	28.06	
U-238	4.47E+09Y	1.00	2.450E+00	2.450E+00	1.003E+00	40.95	
ANH-511	1.00E+09Y	1.00	2.092E-01	2.092E-01	0.753E-01	36.01	

Total Activity : 7.994E+01 8.006E+01

Grand Total Activity : 7.994E+01 8.006E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900016

Page : 4
Acquisition date : 6-MAR-2010 15:02:51

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.40	233	433	1.02	258.35	254	10	3.23E-02	36.2	8.02E+00	
0	209.05	208	373	1.11	417.62	412	11	2.89E-02	38.6	5.90E+00	
0	269.74	189	240	1.18	539.01	533	12	2.62E-02	36.0	4.85E+00	T
0	327.96	84	134	0.93	655.44	652	7	1.16E-02	50.8	4.12E+00	T
0	463.00	128	74	1.04	925.51	922	8	1.78E-02	29.2	3.06E+00	T
0	562.79	59	82	1.56	1125.08	1119	11	8.19E-03	65.0	2.58E+00	T
0	727.40	139	59	1.19	1454.29	1449	12	1.94E-02	28.6	2.05E+00	T
0	795.14	73	49	1.54	1589.77	1585	12	1.01E-02	46.4	1.89E+00	T
2	964.33	76	63	1.71	1928.15	1923	21	1.06E-02	43.7	1.60E+00	T
0	1588.24	27	12	2.07	3176.04	3170	10	3.70E-03	63.0	1.03E+00	
0	1630.83	18	13	1.38	3261.22	3253	13	2.50E-03	95.1	1.01E+00	
0	1659.81	17	7	3.96	3319.18	3312	13	2.29E-03	80.5	9.92E-01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900016.CNF;1
* Acquisition date   : 6-MAR-2010 15:02:51.   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 02:00:02.25          Half life ratio    : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library   : SOLID
* Sample ID          : G247900016             Analyst initials  : MXR1
* Batch Number       : 957711                 Sample Quantity   : 1.19070E+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       :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.567E+01	3.693E+00	5.702E-01	4.856E-02	62.561
CD-109	4.846E+00	9.039E-01	8.373E-01	8.998E-02	5.788
SN-126	4.730E-01	8.822E-02	8.155E-02	8.744E-03	5.800
TL-208	7.877E-01	1.250E-01	7.215E-02	8.128E-03	10.917
PB-210	1.232E+00	5.726E-01	6.142E-01	6.290E-02	2.005
BI-211	5.314E+00	7.623E-01	3.352E-01	3.532E-02	15.853
PB-212	2.614E+00	3.274E-01	8.941E-02	1.022E-02	29.237
BI-214	1.699E+00	2.848E-01	1.351E-01	1.636E-02	12.573
PB-214	1.928E+00	2.964E-01	1.220E-01	1.449E-02	15.813
RA-224	6.465E+00	1.691E+00	9.596E-01	1.008E-01	6.737
RA-226	1.699E+00	2.848E-01	1.351E-01	1.636E-02	12.573
AC-228	2.428E+00	4.816E-01	2.927E-01	3.578E-02	8.294
RA-228	2.428E+00	4.816E-01	2.927E-01	3.578E-02	8.294
TH-228	2.614E+00	3.274E-01	8.941E-02	1.022E-02	29.237
TH-229	7.292E-01	1.360E-01	7.992E-01	7.622E-02	0.912
TH-232	2.428E+00	4.816E-01	2.927E-01	3.578E-02	8.294
TH-234	2.450E+00	1.003E+00	8.636E-01	1.639E-01	2.837
U-235	1.825E-01	7.611E-02	3.187E-01	5.854E-02	0.573

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.411E+00	3.961E-01	2.551E-01	6.002E-02	5.531
U-238	2.450E+00	1.003E+00	8.636E-01	1.639E-01	2.837
ANH-511	2.092E-01	7.532E-02	5.326E-02	5.482E-03	3.928

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.211E-01		3.665E-01	6.106E-01	6.463E-02	0.198
NA-22	-1.766E-02		5.901E-02	9.443E-02	7.743E-03	-0.187
NA-24	-1.253E+00		1.397E+00	Half-Life too short		
SC-46	-3.279E-02		4.944E-02	7.538E-02	7.218E-03	-0.435
V-48	-1.015E-01		9.639E-02	1.387E-01	1.286E-02	-0.731
CR-51	2.887E-02		3.809E-01	6.445E-01	7.154E-02	0.045
MN-54	-2.976E-02		4.331E-02	6.645E-02	6.743E-03	-0.448
CO-56	-4.308E-03		4.688E-02	7.599E-02	7.625E-03	-0.057
CO-57	-1.572E-02		2.122E-02	3.458E-02	4.459E-03	-0.455
CO-58	-2.116E-02		4.496E-02	7.054E-02	7.319E-03	-0.300
FE-59	-1.451E-02		1.054E-01	1.736E-01	1.635E-02	-0.084
CO-60	4.834E-02		4.799E-02	8.672E-02	7.043E-03	0.557
ZN-65	4.078E-03		1.306E-01	1.881E-01	1.624E-02	0.022
SE-75	8.679E-03		4.948E-02	7.102E-02	7.784E-03	0.122
SR-85	6.271E-02		4.640E-02	7.361E-02	7.594E-03	0.852
Y-88	-2.298E-02		3.463E-02	4.775E-02	3.902E-03	-0.481
Y-91	1.418E+00		2.865E+01	4.755E+01	3.913E+00	0.030
NB-94	2.814E-02		4.132E-02	7.171E-02	7.875E-03	0.392
NB-95	5.373E-02		5.473E-02	9.520E-02	1.017E-02	0.564
NB-95M	1.120E-03		1.421E-01	2.035E-01	2.336E-02	0.006
ZR-95	5.470E-02		8.616E-02	1.490E-01	1.709E-02	0.367
MO-99	-1.169E+00		1.920E+01	3.164E+01	5.400E+00	-0.037
TC-99M	-2.068E+11		2.756E+11	Half-Life too short		
RU-103	1.070E-02		4.710E-02	7.765E-02	1.163E-02	0.138
RH-106	-1.563E-01		3.570E-01	5.802E-01	8.632E-02	-0.269
RU-106	-1.563E-01		3.567E-01	5.802E-01	6.353E-02	-0.269
AG-108M	-1.628E-03		3.225E-02	5.281E-02	5.189E-03	-0.031
AG-110M	-4.919E-02		4.205E-02	6.376E-02	7.185E-03	-0.772
SN-113	9.231E-03		4.661E-02	7.821E-02	7.305E-03	0.118
CD-115	-3.215E+00		1.694E+01	2.692E+01	2.806E+00	-0.119
SN-117M	4.263E-02		5.367E-02	9.162E-02	8.895E-03	0.465
TE-123M	3.086E-02		2.679E-02	4.622E-02	4.487E-03	0.668
SB-124	-2.345E-02		8.832E-02	1.395E-01	1.209E-02	-0.168
SB-125	5.320E-02		9.971E-02	1.694E-01	1.636E-02	0.314
TE-125M	-2.084E+00		7.631E+00	1.282E+01	1.719E+00	-0.163
I-126	-5.325E-02		2.837E-01	4.681E-01	5.182E-02	-0.114
SB-126	5.410E-02		1.873E-01	2.907E-01	3.173E-02	0.186
SB-127	1.113E+00		1.831E+00	3.178E+00	4.306E-01	0.350
I-131	-1.867E-03		1.364E-01	2.272E-01	2.333E-02	-0.008
TE-132	5.413E-01		9.353E-01	1.543E+00	2.618E-01	0.351

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	1.261E-02		4.824E-02	7.243E-02	1.010E-02	0.174
I-133	-1.358E-03		7.443E-03	Half-Life too short		
CS-134	1.605E-01	+	7.629E-02	1.090E-01	1.148E-02	1.472
CS-135	2.363E-01		1.636E-01	2.769E-01	3.342E-02	0.853
I-135	5.087E+10		5.443E+10	Half-Life too short		
CS-136	8.907E-02		1.394E-01	2.453E-01	2.293E-02	0.363
BA-137M	-2.768E-02		4.383E-02	7.402E-02	8.199E-03	-0.374
CS-137	-2.924E-02		4.631E-02	7.819E-02	8.672E-03	-0.374
CE-139	-2.749E-02		2.816E-02	4.434E-02	3.954E-03	-0.620
BA-140	-8.843E-02		3.342E-01	5.255E-01	1.810E-01	-0.168
LA-140	-3.642E-02		1.126E-01	1.717E-01	1.428E-02	-0.212
CE-141	-5.253E-03		5.875E-02	9.761E-02	1.086E-02	-0.054
CE-143	9.030E-04		1.756E-04	Half-Life too short		
CE-144	5.526E-02		1.799E-01	2.754E-01	4.801E-02	0.201
PM-144	-7.492E-03		3.927E-02	6.442E-02	7.088E-03	-0.116
PR-144	-5.702E-01		2.940E+00	4.822E+00	5.304E-01	-0.118
PM-146	2.002E-02		4.736E-02	7.960E-02	9.197E-03	0.252
ND-147	4.338E-02		6.490E-01	1.053E+00	1.692E-01	0.041
PM-149	3.242E+01		1.290E+02	2.070E+02	3.531E+01	0.157
EU-152	-5.180E-02		1.003E-01	1.629E-01	1.749E-02	-0.318
GD-153	-7.094E-02		6.856E-02	9.984E-02	1.124E-02	-0.711
EU-154	-3.955E-02		1.655E-01	2.662E-01	2.944E-02	-0.149
EU-155	7.161E-02		8.278E-02	1.445E-01	1.708E-02	0.496
TB-160	-5.198E-03		1.704E-01	2.767E-01	2.682E-02	-0.019
HO-166M	3.998E-03		7.236E-02	1.207E-01	1.322E-02	0.033
TA-182	-3.305E-02		2.724E-01	4.457E-01	3.665E-02	-0.074
IR-192	-2.824E-02		3.415E-02	5.468E-02	5.906E-03	-0.516
HG-203	-2.672E-03		4.761E-02	6.673E-02	7.561E-03	-0.040
BI-207	-3.020E-02		5.713E-02	9.058E-02	8.085E-03	-0.333
PB-211	-3.549E-01		8.420E-01	1.307E+00	6.339E-01	-0.272
BI-212	3.213E+00	+	1.026E+00	1.487E+00	2.100E-01	2.161
RN-219	8.969E-03		4.368E-01	7.234E-01	1.101E-01	0.012
RA-223	2.496E-01		7.502E-01	1.139E+00	2.100E-01	0.219
AC-227	-2.634E-01		2.683E-01	4.005E-01	5.479E-02	-0.658
TH-227	-2.634E-01		2.688E-01	4.005E-01	6.035E-02	-0.658
PA-231	-1.531E-01		1.483E+00	2.332E+00	3.777E-01	-0.066
TH-231	2.496E-01		7.502E-01	1.139E+00	2.100E-01	0.219
PA-233	6.128E-02		6.578E-02	1.157E-01	1.278E-02	0.529
PA-234	1.041E-01		3.728E-01	6.174E-01	1.181E-01	0.169
PA-234M	5.919E+00		5.888E+00	1.028E+01	1.076E+00	0.576
NP-239	-1.305E-01		3.291E-01	5.475E-01	6.868E-02	-0.238
AM-241	1.093E-02		5.625E-02	8.345E-02	8.671E-03	0.131
CM-247	-1.053E-03		4.014E-02	6.628E-02	6.108E-03	-0.016
CF-249	2.173E-02		4.096E-02	7.011E-02	6.447E-03	0.310
CF-251	2.088E-03		1.247E-01	2.051E-01	1.882E-02	0.010

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]G247900016
* Acquisition date   : 6-MAR-2010 15:02:51 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 02:00:02.25 Half life ratio       : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G247900016 Analyst initials       : MXR1
* Batch Number       : 957711 Sample Quantity           : 1.1907E+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	3.567E+01	3.620E+00	2.845E-01	1.847E+00
CD-109	4.846E+00	8.858E-01	4.312E-01	4.519E-01
SN-126	4.730E-01	8.646E-02	4.200E-02	4.411E-02
TL-208	7.877E-01	1.225E-01	3.638E-02	6.249E-02
PB-210	1.232E+00	5.612E-01	3.185E-01	2.863E-01
BI-211	5.314E+00	7.471E-01	1.700E-01	3.812E-01
PB-212	2.614E+00	3.208E-01	4.554E-02	1.637E-01
BI-214	1.699E+00	2.791E-01	6.810E-02	1.424E-01
PB-214	1.928E+00	2.905E-01	6.185E-02	1.482E-01
RA-224	6.465E+00	1.657E+00	4.887E-01	8.455E-01
RA-226	1.699E+00	2.791E-01	6.810E-02	1.424E-01
AC-228	2.428E+00	4.720E-01	1.468E-01	2.408E-01
RA-228	2.428E+00	4.720E-01	1.468E-01	2.408E-01
TH-228	2.614E+00	3.208E-01	4.554E-02	1.637E-01
TH-229	-3.987E-01	4.994E-01	4.080E-01	2.548E-01
TH-232	2.428E+00	4.720E-01	1.468E-01	2.408E-01
TH-234	2.450E+00	9.832E-01	4.464E-01	5.016E-01
U-235	1.493E-01	1.858E-01	1.632E-01	9.481E-02
NP-237	1.411E+00	3.881E-01	1.314E-01	1.980E-01
U-238	2.450E+00	9.832E-01	4.464E-01	5.016E-01
ANH-511	2.092E-01	7.382E-02	2.690E-02	3.766E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.211E-01	3.591E-01	3.086E-01	1.832E-01 NOT IDENT.
NA-22	-1.766E-02	5.783E-02	4.719E-02	2.950E-02 NOT IDENT.
NA-24	-1.253E+06	2.738E+06	0.000E+00	1.397E+06 SHORT HLIF
SC-46	-3.279E-02	4.845E-02	3.783E-02	2.472E-02 FAIL ABUN
V-48	-1.015E-01	9.446E-02	6.954E-02	4.820E-02 NOT IDENT.
CR-51	2.887E-02	3.733E-01	3.272E-01	1.905E-01 NOT IDENT.

MN-54	-2.976E-02	4.244E-02	3.337E-02	2.165E-02	NOT IDENT.
CO-56	-4.308E-03	4.594E-02	3.816E-02	2.344E-02	NOT IDENT.
CO-57	-1.572E-02	2.080E-02	1.774E-02	1.061E-02	NOT IDENT.
CO-58	-2.116E-02	4.406E-02	3.544E-02	2.248E-02	NOT IDENT.
FE-59	-1.451E-02	1.033E-01	8.691E-02	5.271E-02	NOT IDENT.
CO-60	4.834E-02	4.703E-02	4.331E-02	2.399E-02	NOT IDENT.
ZN-65	4.078E-03	1.280E-01	9.412E-02	6.530E-02	NOT IDENT.
SE-75	8.679E-03	4.849E-02	3.613E-02	2.474E-02	NOT IDENT.
SR-85	6.271E-02	4.547E-02	3.717E-02	2.320E-02	NOT IDENT.
Y-88	-2.298E-02	3.394E-02	2.376E-02	1.731E-02	NOT IDENT.
Y-91	1.418E+00	2.808E+01	2.378E+01	1.433E+01	NOT IDENT.
NB-94	2.814E-02	4.050E-02	3.608E-02	2.066E-02	NOT IDENT.
NB-95	5.373E-02	5.363E-02	4.785E-02	2.736E-02	NOT IDENT.
NB-95M	1.120E-03	1.392E-01	1.037E-01	7.103E-02	NOT IDENT.
ZR-95	5.470E-02	8.443E-02	7.490E-02	4.308E-02	NOT IDENT.
MO-99	-1.169E+00	1.882E+01	1.591E+01	9.601E+00	NOT IDENT.
TC-99M	-2.068E+17	5.401E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.070E-02	4.615E-02	3.922E-02	2.355E-02	FAIL ABUN
RH-106	-1.563E-01	3.499E-01	2.923E-01	1.785E-01	NOT IDENT.
RU-106	-1.563E-01	3.496E-01	2.923E-01	1.784E-01	NOT IDENT.
AG-108M	-1.628E-03	3.160E-02	2.672E-02	1.612E-02	NOT IDENT.
AG-110M	-4.919E-02	4.121E-02	3.210E-02	2.102E-02	NOT IDENT.
SN-113	9.231E-03	4.568E-02	3.962E-02	2.331E-02	NOT IDENT.
CD-115	-3.215E+00	1.660E+01	1.359E+01	8.471E+00	NOT IDENT.
SN-117M	4.263E-02	5.260E-02	4.688E-02	2.684E-02	NOT IDENT.
TE-123M	3.086E-02	2.625E-02	2.365E-02	1.339E-02	NOT IDENT.
SB-124	-2.345E-02	8.655E-02	6.948E-02	4.416E-02	NOT IDENT.
SB-125	5.320E-02	9.772E-02	8.574E-02	4.985E-02	FAIL ABUN
TE-125M	-2.084E+00	7.478E+00	6.588E+00	3.815E+00	NOT IDENT.
I-126	-5.325E-02	2.781E-01	2.357E-01	1.419E-01	NOT IDENT.
SB-126	5.410E-02	1.836E-01	1.462E-01	9.365E-02	NOT IDENT.
SB-127	1.113E+00	1.794E+00	1.600E+00	9.153E-01	NOT IDENT.
I-131	-1.867E-03	1.336E-01	1.152E-01	6.818E-02	NOT IDENT.
TE-132	5.413E-01	9.166E-01	7.865E-01	4.676E-01	NOT IDENT.
BA-133	1.261E-02	4.728E-02	3.673E-02	2.412E-02	FAIL ABUN
I-133	-1.358E+03	1.459E+04	0.000E+00	7.443E+03	SHORT HLIF
CS-134	1.605E-01	7.476E-02	5.478E-02	3.814E-02	FAIL ABUN
CS-135	2.363E-01	1.603E-01	1.408E-01	8.181E-02	NOT IDENT.
I-135	5.087E+16	1.067E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.907E-02	1.366E-01	1.228E-01	6.972E-02	NOT IDENT.
BA-137M	-2.768E-02	4.296E-02	3.727E-02	2.192E-02	NOT IDENT.
CS-137	-2.924E-02	4.538E-02	3.937E-02	2.315E-02	NOT IDENT.
CE-139	-2.749E-02	2.760E-02	2.268E-02	1.408E-02	NOT IDENT.
BA-140	-8.843E-02	3.275E-01	2.652E-01	1.671E-01	NOT IDENT.
LA-140	-3.642E-02	1.103E-01	8.558E-02	5.628E-02	FAIL ABUN
CE-141	-5.253E-03	5.757E-02	4.999E-02	2.937E-02	NOT IDENT.
CE-143	9.030E+02	3.442E+02	0.000E+00	1.756E+02	SHORT HLIF
CE-144	5.526E-02	1.763E-01	1.412E-01	8.997E-02	NOT IDENT.
PM-144	-7.492E-03	3.848E-02	3.242E-02	1.963E-02	NOT IDENT.
PR-144	-5.702E-01	2.881E+00	2.426E+00	1.470E+00	NOT IDENT.
PM-146	2.002E-02	4.641E-02	4.025E-02	2.368E-02	NOT IDENT.
ND-147	4.338E-02	6.360E-01	5.315E-01	3.245E-01	FAIL ABUN
PM-149	3.242E+01	1.264E+02	1.052E+02	6.449E+01	NOT IDENT.
EU-152	-5.180E-02	9.832E-02	8.266E-02	5.016E-02	FAIL ABUN
GD-153	-7.094E-02	6.719E-02	5.136E-02	3.428E-02	NOT IDENT.
EU-154	-3.955E-02	1.622E-01	1.330E-01	8.275E-02	NOT IDENT.
EU-155	7.161E-02	8.112E-02	7.428E-02	4.139E-02	FAIL ABUN
TB-160	-5.198E-03	1.670E-01	1.389E-01	8.519E-02	FAIL ABUN
HO-166M	3.998E-03	7.091E-02	6.073E-02	3.618E-02	NOT IDENT.
TA-182	-3.305E-02	2.669E-01	2.228E-01	1.362E-01	FAIL ABUN
IR-192	-2.824E-02	3.347E-02	2.776E-02	1.707E-02	FAIL ABUN
HG-203	-2.672E-03	4.665E-02	3.393E-02	2.380E-02	NOT IDENT.
BI-207	-3.020E-02	5.598E-02	4.536E-02	2.856E-02	FAIL ABUN
PB-211	-3.549E-01	8.251E-01	6.617E-01	4.210E-01	NOT IDENT.
BI-212	3.213E+00	1.006E+00	7.480E-01	5.131E-01	FAIL ABUN
RN-219	8.969E-03	4.280E-01	3.663E-01	2.184E-01	FAIL ABUN
RA-223	2.496E-01	7.352E-01	5.781E-01	3.751E-01	FAIL ABUN
AC-227	-2.634E-01	2.629E-01	2.038E-01	1.341E-01	FAIL ABUN
TH-227	-2.634E-01	2.634E-01	2.038E-01	1.344E-01	FAIL ABUN
PA-231	-1.531E-01	1.453E+00	1.185E+00	7.415E-01	FAIL ABUN
TH-231	2.496E-01	7.352E-01	5.781E-01	3.751E-01	FAIL ABUN
PA-233	6.128E-02	6.446E-02	5.878E-02	3.289E-02	FAIL ABUN
PA-234	1.041E-01	3.653E-01	3.096E-01	1.864E-01	NOT IDENT.
PA-234M	5.919E+00	5.770E+00	5.150E+00	2.944E+00	NOT IDENT.
NP-239	-1.305E-01	3.225E-01	2.811E-01	1.646E-01	FAIL ABUN
AM-241	1.093E-02	5.512E-02	4.316E-02	2.812E-02	NOT IDENT.
CM-247	-1.053E-03	3.934E-02	3.356E-02	2.007E-02	FAIL ABUN
CF-249	2.173E-02	4.014E-02	3.552E-02	2.048E-02	NOT IDENT.

CF-251

2.088E-03

1.222E-01

1.048E-01

6.233E-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	267.1021
49.72	274.5530
57.36	0.0000
59.54	384.1550
63.29	454.3096
63.29	454.3096
64.28	455.1970
67.75	423.3735
69.67	518.4596
70.83	503.3183
72.81	506.6757
72.87	506.7773
72.87	506.7773
74.82	530.6313
74.82	530.6313
74.82	530.6313
74.97	530.8903
77.11	534.5640
77.11	534.5640
77.11	534.5640
79.69	538.9225
79.80	539.1065
80.12	539.6415
80.19	539.7574
80.57	540.3913
81.00	541.1069
81.07	541.2228
81.07	541.2228
83.79	442.2646
83.79	442.2646
85.43	412.5070
86.48	413.7810
86.55	413.8656
86.79	373.0661
86.94	373.2324
87.57	373.9159
88.03	374.4124
88.47	374.8881
89.96	376.4860
91.11	377.7122
92.59	360.8965
92.59	360.8965
93.35	361.6567
94.67	362.9707
94.87	363.1685
94.87	363.1685
95.86	364.1462
97.43	350.4496
98.44	296.6469
99.53	270.6885
100.11	286.4463
103.18	339.4290
103.37	327.5575
105.31	291.1589
106.12	283.0946
109.28	298.4046
111.00	317.1808
111.76	287.0398
116.30	276.8340
117.23	292.5504
121.12	271.8413
121.78	303.6942
122.06	290.3990
123.07	280.2429
131.20	213.2504
133.52	235.0340
136.00	249.2212

136.47	279.1409
140.51	273.0312
140.51	0.0000
143.76	269.1607
144.24	257.1705
144.24	257.1705
145.44	297.4370
152.43	295.7227
153.25	286.5934
154.21	285.1900
154.21	285.1900
156.02	332.4008
158.56	248.7779
159.00	241.2263
162.66	249.6589
163.33	263.6279
165.86	283.4525
176.60	255.7760
177.52	256.1719
181.07	291.4083
184.41	258.0869
185.72	267.7625
193.51	259.8022
197.04	266.3906
205.31	255.6351
210.85	213.4589
215.65	208.0446
222.11	221.7400
227.38	226.6006
228.16	212.7994
228.18	212.8054
235.69	242.2570
235.96	242.3428
235.96	242.3428
238.63	201.5738
238.63	201.5738
240.99	202.1990
242.00	202.4666
244.70	150.7257
252.40	173.9591
252.80	180.7421
256.23	211.7723
256.23	211.7723
260.90	200.6013
264.66	156.2355
268.22	158.0463
269.46	158.2810
269.46	158.2810
271.23	162.0381
273.65	168.2252
276.40	161.8809
277.37	162.0645
277.60	162.1075
278.00	155.2808
279.20	191.7805
279.54	197.0403
280.46	152.2651
283.69	162.0943
284.31	187.6981
285.41	203.0167
285.90	153.2158
287.50	179.0776
293.27	0.0000
295.22	171.2482
295.96	151.4343
298.57	173.0612
299.98	178.0437
299.98	178.0437
300.09	178.0652
300.09	178.0652
300.13	178.0744
301.36	194.1380
302.85	157.5490
304.50	153.5625
304.50	153.5625
304.85	155.2800
308.46	160.6448
311.90	138.8392

316.51	153.9146
319.41	131.8112
320.08	147.2611
323.87	153.8242
323.87	153.8242
328.76	164.8018
333.37	136.2645
334.37	142.2675
334.37	142.2675
338.28	159.0179
338.28	159.0179
338.32	159.0231
338.32	159.0231
338.32	159.0231
340.48	146.0830
340.55	146.0927
344.28	153.6620
351.06	132.3103
351.93	132.4208
356.01	128.8173
364.49	139.6601
366.42	128.5667
383.85	146.9441
388.16	110.8693
388.63	120.5616
391.69	117.9846
400.66	126.7012
401.81	126.8262
402.40	127.8657
404.85	143.7835
410.95	154.3600
414.70	118.3521
423.72	142.0923
427.09	109.6022
427.87	108.6740
433.94	113.2155
453.88	106.8649
463.37	115.8450
468.07	100.1389
473.00	99.1318
476.78	98.3761
477.60	100.5078
487.02	106.4202
492.35	102.6431
497.08	101.9406
511.00	104.0091
514.00	83.3813
527.90	85.8984
529.87	0.0000
531.02	82.8511
537.26	102.6509
546.56	0.0000
563.25	100.2371
569.33	110.3363
569.50	110.3485
569.70	110.3607
583.19	109.0746
600.60	89.1000
602.73	93.9794
604.72	93.2321
609.32	101.3332
609.32	101.3332
610.33	101.3934
614.28	99.8191
618.01	94.5826
621.93	92.0663
621.93	92.0663
633.25	87.1722
635.95	74.4425
636.99	71.7291
645.85	94.2778
657.76	108.8734
661.66	80.2009
661.66	80.2009
664.57	0.0000
666.33	100.9784
666.50	94.4434
677.62	63.0350

685.70	72.7627
695.00	76.9263
696.49	86.4922
696.51	86.4944
697.00	96.0240
702.65	87.7302
706.68	92.6947
711.68	85.2736
720.70	71.5109
721.93	0.0000
722.78	75.4895
722.91	75.4953
723.31	80.3304
724.19	77.1523
727.33	80.1752
733.00	50.0533
735.93	80.5278
739.50	81.6457
747.24	77.0867
752.31	85.1075
753.82	75.3833
756.73	68.6294
763.94	106.2624
765.81	77.8003
766.42	74.8682
777.92	92.1304
778.90	81.2733
783.70	87.4221
785.37	96.4411
795.86	58.9539
801.95	68.4785
810.29	65.3936
810.76	68.4267
815.77	58.4999
818.51	48.4758
832.01	70.1186
834.85	79.3673
836.80	0.0000
846.77	66.4965
856.80	80.4982
860.56	80.6321
871.09	56.8772
873.19	70.3856
875.33	0.0000
879.36	64.3492
880.51	67.4962
883.24	66.5359
884.68	58.2559
889.28	75.0498
898.04	69.0551
911.20	74.7025
911.20	74.7025
911.20	74.7025
926.50	59.2990
937.49	68.0781
944.13	71.4639
946.00	60.8436
949.00	61.9875
962.29	53.7256
964.08	57.3477
966.15	52.7324
968.97	52.7916
968.97	52.7916
968.97	52.7916
983.53	79.1041
996.26	82.7669
1001.03	52.3711
1004.73	91.7807
1037.84	51.6364
1038.76	0.0000
1048.07	57.3883
1050.41	70.4089
1050.41	70.4089
1063.66	55.8594
1085.87	56.3135
1099.45	57.5300
1112.07	66.9459
1115.54	74.7981

1120.29	64.6077
1120.29	64.6077
1120.55	64.6133
1121.30	64.6299
1131.51	0.0000
1173.23	80.3083
1177.93	69.7734
1189.05	54.4710
1204.77	82.1338
1221.41	96.3451
1231.02	108.4782
1235.36	93.8171
1238.28	81.0557
1260.41	0.0000
1271.85	62.9410
1274.44	67.9917
1274.54	69.9915
1291.59	63.3281
1298.22	0.0000
1312.11	42.4854
1332.49	31.5525
1365.19	40.0823
1368.63	0.0000
1384.29	45.4735
1408.01	34.3387
1457.56	0.0000
1460.82	21.1230
1489.16	20.2231
1505.03	28.8622
1596.21	27.3702
1620.50	15.4219
1678.03	0.0000
1690.97	16.3330
1764.49	22.2430
1764.49	22.2430
1770.23	15.4193
1771.35	15.4232
1791.20	0.0000
1836.06	12.9197

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900016

Total Uranium Activity	7.3569E+00	ug/g
Total Uranium Counting Unc.	2.9262E+00	ug/g
Total Uranium Tpu	1.4929E-06	ug/g
Total Uranium Mda	1.3301E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 957711                        SAMPLE ID   : G247900016
*  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 15:02:51.63      SAMPLE ALQT  : 119.070 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.295E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.433E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.525E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.203E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 17:22:43.03

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900017.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:22:15.
Sample ID          : G247900017 Sample quantity   : 1.22750E+02 GRAM
Detector name      : GAM16 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.26 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity         : 5.00000
Batch ID           : 957711 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	63.32*	862	758	0.81	126.84	123	8	1.20E-01	6.6	
2	2	74.84	510	576	0.95	149.87	144	14	7.08E-02	8.6	1.75E+00
3	2	77.07*	746	528	0.95	154.33	144	14	1.04E-01	6.3	
4	6	84.07*	226	664	1.46	168.33	165	13	3.14E-02	20.3	3.05E+00
5	6	87.16	276	612	1.00	174.51	165	13	3.84E-02	15.2	
6	0	92.62*	2230	771	1.08	185.43	183	8	3.10E-01	3.1	
7	0	98.77*	177	462	0.98	197.73	194	8	2.46E-02	22.6	
8	0	105.43	86	325	1.12	211.06	209	6	1.19E-02	34.8	
9	0	112.29	142	463	1.11	224.76	221	8	1.97E-02	27.5	
10	0	144.07*	104	541	0.98	288.34	284	10	1.44E-02	43.8	
11	0	185.71*	631	353	1.21	371.61	367	9	8.77E-02	6.9	
12	0	209.22	162	307	0.97	418.63	415	9	2.26E-02	21.0	
13	4	238.55*	1391	187	1.02	477.29	472	19	1.93E-01	3.2	1.53E+00
14	4	241.40	333	246	1.54	483.00	472	19	4.63E-02	12.6	
15	0	270.03*	150	223	1.37	540.25	536	10	2.08E-02	20.5	
16	0	277.60	80	180	1.18	555.39	552	8	1.11E-02	31.4	
17	4	295.20	470	146	1.39	590.60	586	20	6.53E-02	6.3	2.38E+00
18	4	300.08	152	158	1.67	600.35	586	20	2.11E-02	18.2	
19	0	327.87	81	198	1.04	655.93	651	9	1.12E-02	33.4	
20	0	338.25*	240	188	1.12	676.69	673	9	3.33E-02	12.4	
21	0	351.83*	767	180	1.22	703.85	699	11	1.07E-01	5.0	
22	0	462.64	100	153	1.38	925.46	919	13	1.39E-02	27.4	
23	0	510.85*	144	175	1.47	1021.85	1014	16	2.00E-02	24.4	
24	0	583.14*	427	102	1.33	1166.41	1161	12	5.93E-02	6.9	
25	0	609.22*	544	99	1.25	1218.57	1214	11	7.56E-02	5.7	
26	0	661.53	418	79	1.44	1323.17	1318	12	5.81E-02	6.4	
27	0	726.98	135	77	1.15	1454.05	1447	14	1.87E-02	16.3	
28	1	766.52*	60	66	1.64	1533.11	1527	22	8.35E-03	29.7	1.01E+00
29	1	768.96	42	61	1.49	1538.00	1527	22	5.77E-03	38.1	
30	0	794.65	60	63	1.25	1589.36	1582	13	8.27E-03	30.7	
31	0	861.03	79	50	1.27	1722.09	1717	12	1.10E-02	21.2	
32	0	911.17*	277	122	1.53	1822.35	1813	18	3.84E-02	11.2	
33	0	935.13	75	34	3.70	1870.24	1861	17	1.05E-02	21.1	
34	1	964.35	50	56	1.76	1928.68	1924	24	7.01E-03	28.3	1.82E+00
35	1	968.93*	166	40	1.64	1937.84	1924	24	2.30E-02	11.3	
36	0	1000.87*	135	36	1.88	2001.69	1995	13	1.87E-02	12.8	
37	0	1120.84*	100	97	1.77	2241.56	2233	17	1.39E-02	25.0	
38	0	1378.74	21	27	1.65	2757.15	2749	11	2.90E-03	53.3	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1460.64*	1312	4	1.83	2920.87	2913	16	1.82E-01	2.8	
40	0	1588.58	24	14	1.20	3176.63	3171	10	3.35E-03	36.0	
41	0	1764.72*	92	16	1.69	3528.72	3522	13	1.28E-02	14.4	
42	0	1838.82	17	6	1.31	3676.83	3669	13	2.29E-03	40.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 17:22:47

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900017.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 15:22:15
Sample ID         : G247900017 Sample quantity : 122.75 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA16 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:02.26 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.116E+01	3.249E+00	4.744E-01	4.170E-02	65.690
NB-95	+	765.81	*	1.034E-01	6.214E-02	6.317E-02	5.839E-03	1.637
CD-109	+	88.03	*	3.741E+00	1.189E+00	1.730E+00	1.667E-01	2.163
SN-126	+	64.28		7.767E+00	1.524E+00	8.645E-01	1.259E-01	8.984
	+	86.94		1.518E+00	7.808E-01	6.551E-01	2.722E-01	2.317
	+	87.57	*	3.651E-01	1.160E-01	1.707E-01	1.637E-02	2.138
BA-137M	+	661.66	*	5.923E-01	9.247E-02	5.770E-02	5.121E-03	10.266
CS-137	+	661.66	*	6.257E-01	9.774E-02	6.095E-02	5.419E-03	10.266
CE-141	+	145.44	*	1.337E-01	1.178E-01	1.021E-01	8.930E-03	1.310
EU-155	+	86.55		4.429E-01	1.408E-01	1.919E-01	1.833E-02	2.308
	+	105.31	*	1.776E-01	1.247E-01	1.770E-01	1.530E-02	1.003
TL-208	+	277.37		7.912E-01	5.106E-01	6.228E-01	9.359E-02	1.270
	+	583.19	*	5.758E-01	9.814E-02	5.928E-02	5.870E-03	9.712
	+	860.56		1.012E+00	4.402E-01	4.232E-01	4.236E-02	2.392
BI-211		72.87		1.855E+00	3.588E+00	5.643E+00	4.587E-01	0.329
	+	351.06	*	4.608E+00	6.831E-01	3.222E-01	3.523E-02	14.303
PB-212	+	74.82		2.968E+00	6.378E-01	6.046E-01	7.728E-02	4.909
	+	77.11		2.490E+00	3.801E-01	3.470E-01	2.947E-02	7.177
	+	238.63	*	1.868E+00	2.515E-01	9.223E-02	1.096E-02	20.249
	+	300.09		3.178E+00	1.227E+00	1.236E+00	1.631E-01	2.571
BI-214	+	609.32	*	1.420E+00	2.205E-01	1.281E-01	1.361E-02	11.085
	+	1120.29		1.351E+00	6.915E-01	4.729E-01	5.101E-02	2.857
	+	1764.49		1.738E+00	5.198E-01	2.764E-01	2.288E-02	6.288
PB-214	+	74.82		5.261E+00	1.091E+00	1.072E+00	1.230E-01	4.910
	+	77.11		4.390E+00	7.616E-01	6.117E-01	7.242E-02	7.177
	+	242.00		2.714E+00	7.620E-01	5.611E-01	6.999E-02	4.838
	+	295.22		1.740E+00	3.205E-01	2.184E-01	2.942E-02	7.970
	+	351.93	*	1.672E+00	2.645E-01	1.172E-01	1.433E-02	14.272
RA-224	+	240.99	*	4.800E+00	1.318E+00	9.888E-01	1.090E-01	4.854
RA-226	+	609.32	*	1.420E+00	2.205E-01	1.281E-01	1.361E-02	11.085
	+	1120.29		1.351E+00	6.915E-01	4.729E-01	5.101E-02	2.857
	+	1764.49		1.738E+00	5.198E-01	2.764E-01	2.288E-02	6.288
AC-228	+	338.32		1.604E+00	7.861E-01	3.928E-01	1.660E-01	4.085
	+	911.20	*	1.797E+00	4.594E-01	2.385E-01	2.911E-02	7.535

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	968.97		1.856E+00	6.191E-01	3.862E-01	9.498E-02	4.805
	+	338.32		1.604E+00	7.861E-01	3.928E-01	1.660E-01	4.085
	+	911.20	*	1.797E+00	4.594E-01	2.385E-01	2.911E-02	7.535
TH-228	+	968.97		1.856E+00	6.191E-01	3.862E-01	9.498E-02	4.805
	+	74.82		2.968E+00	5.698E-01	6.046E-01	5.062E-02	4.909
	+	77.11		2.490E+00	3.801E-01	3.470E-01	2.947E-02	7.177
	+	238.63	*	1.868E+00	2.515E-01	9.223E-02	1.096E-02	20.249
TH-229	+	300.09		3.178E+00	2.276E+00	1.236E+00	7.631E-01	2.571
	+	85.43		7.811E-01	3.244E-01	4.032E-01	3.766E-02	1.938
	+	88.47		5.629E-01	1.789E-01	2.432E-01	2.332E-02	2.314
	+	193.51	*	2.089E-01	5.386E-01	8.946E-01	8.727E-02	0.233
TH-232		210.85		6.295E-01	9.591E-01	1.445E+00	1.476E-01	0.436
	+	338.32		1.604E+00	4.350E-01	3.928E-01	4.287E-02	4.085
	+	911.20	*	1.797E+00	4.594E-01	2.385E-01	2.911E-02	7.535
	+	968.97		1.856E+00	6.191E-01	3.862E-01	9.498E-02	4.805
PA-234M	+	766.42		2.707E+01	2.116E+01	1.655E+01	8.415E+00	1.636
	+	1001.03	*	2.927E+01	8.098E+00	6.900E+00	7.184E-01	4.242
TH-234	+	63.29	*	2.015E+01	4.468E+00	2.366E+00	4.218E-01	8.518
	+	92.59		2.447E+01	5.668E+00	1.253E+00	2.797E-01	19.527
U-235		89.96		1.679E+00	1.398E+00	1.737E+00	4.326E-01	0.967
	+	93.35		1.848E+01	4.461E+00	9.417E-01	2.194E-01	19.628
	+	143.76	*	4.173E-01	3.726E-01	3.206E-01	5.424E-02	1.302
		163.33		3.328E-01	4.479E-01	7.544E-01	1.368E-01	0.441
NP-237	+	185.72		5.489E-01	9.246E-02	6.360E-02	6.075E-03	8.631
		205.31		4.891E-01	5.690E-01	8.572E-01	1.618E-01	0.571
	+	86.48	*	1.089E+00	4.148E-01	4.724E-01	1.087E-01	2.306
		95.86		3.082E-01	1.266E+00	1.564E+00	3.772E-01	0.197
U-238	+	63.29	*	2.015E+01	4.468E+00	2.366E+00	4.218E-01	8.518
	+	92.59		2.447E+01	2.717E+00	1.253E+00	1.154E-01	19.527
ANH-511	+	511.00	*	1.487E-01	7.403E-02	4.624E-02	4.398E-03	3.215

---- 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	*	4.284E-02	3.517E-01	5.872E-01	5.939E-02	0.073
NA-22		1274.54	*	-1.376E-02	5.057E-02	7.982E-02	6.642E-03	-0.172
NA-24		1368.63	*	3.181E-02	5.057E-02	Half-Life too short		
SC-46		889.28	*	-2.568E-02	3.736E-02	5.811E-02	5.493E-03	-0.442
V-48	+	1120.55		2.305E-01	1.169E-01	1.366E-01	1.154E-02	1.687
		944.13		1.024E+00	8.827E-01	1.615E+00	1.509E-01	0.634
		983.53	*	2.042E-03	7.504E-02	1.247E-01	1.148E-02	0.016
CR-51		1312.11		4.597E-02	8.537E-02	1.465E-01	1.230E-02	0.314
		320.08	*	-1.399E-01	3.916E-01	6.048E-01	7.067E-02	-0.231
MN-54		834.85	*	-1.451E-02	3.841E-02	6.254E-02	5.874E-03	-0.232
CO-56		846.77	*	2.585E-02	3.940E-02	6.954E-02	6.544E-03	0.372
		1037.84		8.238E-03	3.018E-01	4.993E-01	4.689E-02	0.016
		1238.28		2.605E-01	1.091E-01	2.021E-01	1.715E-02	1.289
		1771.35		-4.836E-02	3.005E-01	4.086E-01	3.376E-02	-0.118

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57		122.06	*	-1.045E-02	2.505E-02	4.126E-02	3.428E-03	-0.253
		136.47		4.944E-02	1.964E-01	3.305E-01	3.001E-02	0.150
CO-58		810.76	*	-2.343E-02	3.861E-02	6.146E-02	5.758E-03	-0.381
FE-59		1099.45	*	-2.355E-02	8.828E-02	1.409E-01	1.310E-02	-0.167
		1291.59		-8.943E-02	1.211E-01	1.774E-01	1.694E-02	-0.504
CO-60		1173.23		-1.238E-03	4.599E-02	7.493E-02	6.024E-03	-0.017
		1332.49	*	-1.373E-02	3.618E-02	5.521E-02	4.657E-03	-0.249
ZN-65		1115.54	*	-1.237E-02	1.020E-01	1.424E-01	1.209E-02	-0.087
SE-75		121.12		2.472E-02	1.279E-01	2.160E-01	2.342E-02	0.114
		136.00		9.060E-03	3.861E-02	6.492E-02	5.511E-03	0.140
		264.66	*	-4.931E-02	4.999E-02	7.087E-02	8.271E-03	-0.696
		279.54		7.401E-02	1.203E-01	1.788E-01	2.189E-02	0.414
		400.66		-3.117E-01	2.500E-01	3.815E-01	4.432E-02	-0.817
SR-85		514.00	*	4.303E-02	4.116E-02	6.513E-02	6.192E-03	0.661
Y-88		898.04		2.537E-02	4.010E-02	7.061E-02	6.706E-03	0.359
		1836.06	*	6.457E-03	4.625E-02	6.745E-02	5.476E-03	0.096
Y-91		1204.77	*	7.518E+00	2.446E+01	4.087E+01	3.324E+00	0.184
NB-94		702.65	*	1.173E-02	3.675E-02	6.060E-02	5.478E-03	0.194
		871.09		-2.764E-02	3.258E-02	4.989E-02	4.709E-03	-0.554
NB-95M		235.69	*	9.816E-02	1.415E-01	2.118E-01	2.521E-02	0.464
ZR-95		724.19		6.816E-02	1.014E-01	1.535E-01	1.505E-02	0.444
		756.73	*	6.255E-02	7.771E-02	1.326E-01	1.335E-02	0.472
MO-99		140.51		5.908E+00	3.087E+01	4.599E+01	1.090E+01	0.128
		181.07		4.819E+00	2.543E+01	3.769E+01	7.227E+00	0.128
		366.42		-1.243E+02	1.190E+02	1.864E+02	1.886E+01	-0.667
		739.50	*	-1.941E+00	1.714E+01	2.719E+01	4.367E+00	-0.071
		777.92		-4.643E+01	5.215E+01	6.804E+01	6.311E+00	-0.682
TC-99M		140.51	*	1.329E+11	5.215E+01	Half-Life too short		
RU-103		497.08	*	-8.254E-03	4.200E-02	6.842E-02	9.945E-03	-0.121
	+	610.33		1.493E+01	3.008E+00	3.159E+00	5.264E-01	4.725
RH-106		621.93	*	1.071E-01	3.097E-01	5.172E-01	7.035E-02	0.207
		1050.41		1.945E+00	2.596E+00	4.567E+00	4.060E-01	0.426
RU-106		621.93	*	1.071E-01	3.095E-01	5.172E-01	4.729E-02	0.207
		1050.41		1.945E+00	2.596E+00	4.567E+00	4.060E-01	0.426
AG-108M		433.94	*	3.465E-02	3.081E-02	5.455E-02	5.278E-03	0.635
		614.28		1.687E-02	3.810E-02	5.690E-02	5.380E-03	0.296
		722.91		-1.315E-02	4.310E-02	5.805E-02	5.442E-03	-0.227
AG-110M		657.76	*	4.658E-03	3.651E-02	5.247E-02	4.803E-03	0.089
		677.62		-1.641E-01	3.150E-01	4.841E-01	4.445E-02	-0.339
		706.68		3.648E-02	2.231E-01	3.638E-01	3.380E-02	0.100
		763.94		1.388E-01	1.762E-01	2.696E-01	2.550E-02	0.515
		884.68		-1.629E-02	4.946E-02	8.016E-02	7.778E-03	-0.203
		937.49		2.752E-02	1.154E-01	1.724E-01	1.663E-02	0.160
		1384.29		1.652E-01	1.325E-01	2.464E-01	2.151E-02	0.671
		1505.03		-4.216E-01	2.493E-01	2.873E-01	2.457E-02	-1.467
SN-113		391.69	*	-5.763E-04	4.491E-02	7.537E-02	7.154E-03	-0.008
CD-115		260.90		8.155E+01	2.061E+02	3.373E+02	3.893E+01	0.242
		492.35		1.569E+01	5.015E+01	8.480E+01	8.069E+00	0.185
		527.90	*	2.747E+00	1.562E+01	2.603E+01	2.471E+00	0.106

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-117M		156.02		-1.688E+00	2.297E+00	3.673E+00	3.239E-01	-0.460
		158.56	*	-2.351E-03	5.508E-02	9.087E-02	8.071E-03	-0.026
TE-123M		159.00	*	-9.137E-03	2.745E-02	4.470E-02	3.997E-03	-0.204
SB-124		602.73		-3.393E-02	4.187E-02	6.112E-02	5.653E-03	-0.555
		645.85		-2.844E-01	5.098E-01	7.850E-01	7.432E-02	-0.362
		722.78		-2.158E-01	4.430E-01	5.821E-01	5.413E-02	-0.371
		1690.97	*	8.207E-02	7.429E-02	1.457E-01	1.279E-02	0.563
SB-125		427.87	*	-2.075E-02	9.223E-02	1.518E-01	1.449E-02	-0.137
	+	463.37		9.137E-01	5.091E-01	5.780E-01	5.829E-02	1.581
		600.60		-1.546E-01	1.848E-01	2.805E-01	2.764E-02	-0.551
		635.95		1.012E-01	2.661E-01	4.455E-01	4.333E-02	0.227
TE-125M		109.28	*	5.517E+00	1.350E+01	1.677E+01	1.733E+00	0.329
I-126		388.63		-1.587E-02	1.821E-01	3.045E-01	2.849E-02	-0.052
		666.33	*	8.775E-02	2.647E-01	3.881E-01	3.452E-02	0.226
		753.82		1.345E+00	2.062E+00	3.477E+00	3.202E-01	0.387
SB-126		414.70		-6.335E-02	8.393E-02	1.338E-01	1.251E-02	-0.474
		666.50		2.909E-02	9.101E-02	1.333E-01	1.186E-02	0.218
		695.00		-4.658E-02	7.986E-02	1.215E-01	1.095E-02	-0.383
		697.00		-1.998E-02	2.736E-01	4.378E-01	3.948E-02	-0.046
		720.70	*	7.790E-02	1.742E-01	2.573E-01	2.343E-02	0.303
		856.80		1.332E-01	4.649E-01	7.058E-01	6.651E-02	0.189
SB-127		252.40		-1.138E+00	5.219E+00	8.255E+00	3.488E+00	-0.138
		473.00		-1.063E+00	2.010E+00	3.204E+00	4.370E-01	-0.332
		685.70	*	2.860E-01	1.583E+00	2.593E+00	3.095E-01	0.110
		783.70		2.271E+00	4.717E+00	7.813E+00	1.024E+00	0.291
I-131		80.19		3.896E+00	6.743E+00	8.588E+00	7.599E-01	0.454
		284.31		1.402E+00	1.674E+00	2.786E+00	3.419E-01	0.503
		364.49	*	-4.486E-02	1.143E-01	1.880E-01	1.988E-02	-0.239
		636.99		-1.259E+00	1.797E+00	2.736E+00	2.607E-01	-0.460
TE-132		49.72		-5.954E+00	2.635E+01	4.101E+01	4.469E+00	-0.145
	+	111.76		1.162E+02	6.532E+01	8.055E+01	8.961E+00	1.443
		116.30		1.480E-01	3.878E+01	5.850E+01	6.481E+00	0.003
		228.16	*	9.113E-02	9.086E-01	1.478E+00	2.544E-01	0.062
BA-133		81.00		-5.049E-03	1.152E-01	1.622E-01	2.539E-02	-0.031
	+	276.40		7.315E-01	4.744E-01	6.407E-01	1.048E-01	1.142
		302.85		1.619E-01	1.413E-01	2.168E-01	3.306E-02	0.747
		356.01	*	-1.521E-02	4.686E-02	6.806E-02	9.680E-03	-0.223
		383.85		1.645E-01	2.994E-01	5.177E-01	6.767E-02	0.318
I-133		529.87	*	2.144E-03	2.994E-01	Half-Life	too short	
		875.33		-5.551E-02	2.994E-01	Half-Life	too short	
		1298.22		1.579E-01	2.994E-01	Half-Life	too short	
CS-134		563.25		2.763E-01	3.631E-01	6.265E-01	5.943E-02	0.441
		569.33		-1.136E-02	1.932E-01	3.134E-01	2.977E-02	-0.036
		604.72		3.051E-02	3.683E-02	5.697E-02	5.274E-03	0.536
	+	795.86	*	1.167E-01	7.253E-02	9.505E-02	8.911E-03	1.228
		801.95		-9.801E-02	4.157E-01	6.571E-01	6.161E-02	-0.149
		1365.19		-6.551E-01	1.037E+00	1.481E+00	1.315E-01	-0.442
CS-135		268.22	*	2.485E-01	1.801E-01	2.752E-01	3.509E-02	0.903
I-135		546.56		1.155E+11	1.801E-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		836.80		9.341E+10	1.801E-01	Half-Life	too short	
		1038.76		-1.771E+11	1.801E-01	Half-Life	too short	
		1131.51		2.645E+10	1.801E-01	Half-Life	too short	
		1260.41	*	4.074E+09	1.801E-01	Half-Life	too short	
		1457.56		7.733E+12	1.801E-01	Half-Life	too short	
		1678.03		-2.655E+09	1.801E-01	Half-Life	too short	
		1791.20		1.433E+09	1.801E-01	Half-Life	too short	
		153.25		1.220E+00	9.022E-01	1.558E+00	1.617E-01	0.783
		176.60		-6.645E-02	5.150E-01	8.413E-01	8.541E-02	-0.079
		273.65		2.506E-01	7.285E-01	8.469E-01	1.051E-01	0.296
CE-139		340.55		1.748E-01	1.590E-01	2.553E-01	2.839E-02	0.685
		818.51		1.990E-02	7.412E-02	1.275E-01	1.195E-02	0.156
		1048.07	*	-6.775E-02	1.219E-01	1.904E-01	1.763E-02	-0.356
BA-140		1235.36		4.780E-01	6.917E-01	1.180E+00	1.354E-01	0.405
		165.86	*	-3.554E-02	3.089E-02	4.821E-02	4.372E-03	-0.737
		162.66		5.763E-01	8.613E-01	1.457E+00	1.391E-01	0.395
LA-140		304.85		9.265E-01	1.483E+00	2.172E+00	6.582E-01	0.426
		423.72		1.465E+00	2.064E+00	3.504E+00	1.160E+00	0.418
		537.26	*	-2.099E-01	2.752E-01	4.081E-01	1.393E-01	-0.514
CE-143		328.76		7.043E-01	4.777E-01	6.405E-01	7.387E-02	1.100
		487.02		6.992E-02	1.402E-01	2.400E-01	2.400E-02	0.291
		815.77		-2.447E-02	3.521E-01	5.776E-01	5.948E-02	-0.042
CE-144		1596.21	*	-1.931E-02	8.603E-02	1.348E-01	1.148E-02	-0.143
		57.36		2.049E-04	8.603E-02	Half-Life	too short	
		293.27	*	8.662E-04	8.603E-02	Half-Life	too short	
PM-144		664.57		3.862E-03	8.603E-02	Half-Life	too short	
		721.93		-1.466E-03	8.603E-02	Half-Life	too short	
		80.12		1.829E+00	3.343E+00	4.251E+00	3.732E-01	0.430
PR-144		133.52	*	-2.859E-02	1.981E-01	3.284E-01	4.978E-02	-0.087
		476.78		-7.383E-03	6.944E-02	1.143E-01	1.164E-02	-0.065
		618.01		-7.236E-03	3.080E-02	4.904E-02	4.607E-03	-0.148
PM-146		696.49	*	1.152E-03	3.318E-02	5.361E-02	4.836E-03	0.021
		696.51	*	1.111E-01	2.487E+00	4.021E+00	3.626E-01	0.028
		1489.16		-4.262E+00	1.070E+01	1.668E+01	1.426E+00	-0.256
ND-147		453.88	*	2.413E-02	4.577E-02	7.838E-02	8.853E-03	0.308
		633.25		-1.453E+00	1.556E+00	2.153E+00	8.247E-01	-0.675
		735.93		-3.720E-02	1.413E-01	2.201E-01	6.205E-02	-0.169
PM-149		747.24		-8.431E-02	9.473E-02	1.364E-01	2.037E-02	-0.618
		91.11		4.232E+00	6.419E-01	8.546E-01	8.546E-02	4.951
		319.41		3.524E-02	3.549E+00	5.621E+00	6.383E-01	0.006
EU-152		531.02	*	1.622E-01	5.937E-01	9.954E-01	1.540E-01	0.163
		285.90	*	-8.134E+01	1.343E+02	2.054E+02	3.614E+01	-0.396
		121.78		-2.479E-02	7.178E-02	1.186E-01	1.142E-02	-0.209
		244.70		-3.797E-01	3.566E-01	4.675E-01	5.198E-02	-0.812
		344.28	*	-6.522E-02	9.312E-02	1.453E-01	1.624E-02	-0.449
		778.90		-2.382E-01	2.668E-01	3.863E-01	3.584E-02	-0.617
		964.08		6.089E-01	3.494E-01	5.966E-01	5.535E-02	1.021
		1085.87		2.387E-01	3.535E-01	6.213E-01	5.394E-02	0.384
		1112.07		1.337E-02	3.025E-01	4.703E-01	4.001E-02	0.028

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GD-153		1408.01		1.265E-01	2.057E-01	3.545E-01	3.018E-02	0.357
		69.67		1.479E-01	1.994E+00	3.096E+00	2.440E-01	0.048
	+	97.43	*	2.850E-01	1.311E-01	1.552E-01	1.379E-02	1.836
EU-154		103.18		7.333E-02	1.249E-01	1.798E-01	1.550E-02	0.408
		123.07		1.502E-02	5.025E-02	8.507E-02	9.455E-03	0.177
		723.31		-2.406E-02	1.978E-01	2.730E-01	2.715E-02	-0.088
		873.19		1.293E-01	2.608E-01	4.555E-01	5.695E-02	0.284
		996.26		2.539E-01	3.763E-01	5.888E-01	1.045E-01	0.431
TB-160		1004.73		1.158E-02	2.170E-01	3.139E-01	3.770E-02	0.037
		1274.44	*	-5.156E-03	1.385E-01	2.238E-01	2.494E-02	-0.023
	+	86.79		1.186E+00	3.769E-01	5.679E-01	5.393E-02	2.089
		197.04		-4.662E-01	5.913E-01	9.171E-01	9.031E-02	-0.508
		215.65		3.719E-02	7.864E-01	1.280E+00	1.324E-01	0.029
		298.57		1.922E-01	1.221E-01	2.072E-01	2.433E-02	0.927
		879.36	*	1.227E-01	1.437E-01	2.568E-01	2.425E-02	0.478
		962.29		5.006E-01	6.820E-01	1.056E+00	9.799E-02	0.474
		966.15		8.306E-01	2.560E-01	4.891E-01	4.534E-02	1.698
		1177.93		1.802E-01	3.733E-01	6.362E-01	5.124E-02	0.283
HO-166M		1271.85		4.993E-01	7.699E-01	1.328E+00	1.103E-01	0.376
		80.57		2.658E-01	3.627E-01	4.657E-01	4.110E-02	0.571
	+	184.41		4.361E-01	7.346E-02	8.455E-02	8.048E-03	5.158
		280.46		7.009E-03	9.232E-02	1.319E-01	1.583E-02	0.053
		410.95		4.612E-01	2.694E-01	4.816E-01	4.496E-02	0.958
		711.68	*	-2.148E-02	6.006E-02	9.332E-02	8.467E-03	-0.230
		752.31		-2.560E-02	2.870E-01	4.556E-01	4.194E-02	-0.056
		810.29		-5.143E-02	5.828E-02	9.024E-02	8.436E-03	-0.570
TA-182		67.75		-4.165E-02	1.278E-01	1.957E-01	1.514E-02	-0.213
	+	100.11		6.170E-01	2.838E-01	3.133E-01	2.740E-02	1.969
		152.43		-1.184E-01	3.520E-01	5.750E-01	5.024E-02	-0.206
		222.11		-4.482E-02	3.536E-01	5.696E-01	5.990E-02	-0.079
	+	1121.30		6.372E-01	3.233E-01	3.818E-01	3.223E-02	1.669
		1189.05		-4.412E-02	3.445E-01	5.556E-01	4.493E-02	-0.079
IR-192		1221.41	*	-1.617E-01	2.285E-01	3.493E-01	2.857E-02	-0.463
		1231.02		-3.884E-01	4.886E-01	7.337E-01	6.018E-02	-0.529
	+	295.96		1.299E+00	2.242E-01	3.011E-01	3.561E-02	4.316
		308.46		1.691E-02	9.747E-02	1.564E-01	1.814E-02	0.108
		316.51	*	-1.505E-02	3.636E-02	5.598E-02	6.397E-03	-0.269
HG-203		468.07		2.205E-02	7.628E-02	1.142E-01	1.150E-02	0.193
		70.83		3.926E-01	1.549E+00	2.418E+00	3.801E-01	0.162
		72.87		4.689E-01	9.090E-01	1.426E+00	2.178E-01	0.329
BI-207		279.20	*	4.183E-02	4.294E-02	6.519E-02	7.933E-03	0.642
		72.81		1.040E-01	2.066E-01	3.248E-01	2.639E-02	0.320
	+	74.97		8.555E-01	1.639E-01	2.476E-01	2.057E-02	3.454
		569.70		-5.657E-03	3.059E-02	4.913E-02	4.612E-03	-0.115
PB-210		1063.66	*	-1.323E-02	5.413E-02	8.703E-02	7.672E-03	-0.152
		1770.23		3.279E-02	5.161E-01	7.439E-01	6.148E-02	0.044
PB-211		46.54	*	3.004E+00	4.030E+00	6.507E+00	6.016E-01	0.462
		404.85	*	6.039E-01	7.581E-01	1.231E+00	5.974E-01	0.490
		427.09		-4.407E-01	1.585E+00	2.579E+00	1.197E+00	-0.171

---- 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	*	-1.228E-01	1.079E+00	1.793E+00	9.321E-01	-0.069
		727.33		2.784E+00	9.733E-01	1.257E+00	1.611E-01	2.214
		785.37		3.744E+00	3.232E+00	5.873E+00	5.458E-01	0.637
RN-219	+	1620.50	*	3.350E-01	2.383E+00	4.088E+00	3.473E-01	0.082
		271.23		8.875E-01	3.824E-01	4.449E-01	5.806E-02	1.995
		401.81		-2.414E-01	3.958E-01	6.355E-01	9.707E-02	-0.380
RA-223	+	81.07	*	-1.296E-02	2.607E-01	3.670E-01	3.257E-02	-0.035
		83.79		4.649E-01	1.931E-01	2.491E-01	2.281E-02	1.866
		94.87		1.210E+00	6.297E-01	8.499E-01	7.685E-02	1.424
	+	144.24	*	1.399E+00	1.233E+00	1.292E+00	1.237E-01	1.083
		154.21		1.310E-01	3.864E-01	6.479E-01	6.213E-02	0.202
		269.46		6.896E-01	2.949E-01	3.600E-01	4.280E-02	1.915
	+	323.87	*	4.514E-01	7.297E-01	1.072E+00	2.013E-01	0.421
		338.28		6.367E+00	1.808E+00	2.507E+00	3.461E-01	2.539
		79.69		-8.124E-01	1.514E+00	2.075E+00	3.589E-01	-0.391
AC-227	+	235.96	*	1.670E-01	1.672E-01	2.539E-01	3.122E-02	0.658
		256.23		6.927E-04	2.610E-01	4.193E-01	5.950E-02	0.002
		299.98		3.496E+00	1.373E+00	1.730E+00	2.591E-01	2.021
	+	304.50	*	7.430E-01	1.649E+00	2.414E+00	4.415E-01	0.308
		334.37		5.660E-01	1.826E+00	2.797E+00	4.762E-01	0.202
		79.80		-9.156E-01	2.001E+00	2.751E+00	6.005E-01	-0.333
TH-227	+	235.96	*	1.670E-01	1.671E-01	2.539E-01	2.998E-02	0.658
		256.23		6.927E-04	2.610E-01	4.193E-01	6.513E-02	0.002
		299.98		3.496E+00	1.373E+00	1.730E+00	2.591E-01	2.021
	+	304.50	*	7.430E-01	1.649E+00	2.414E+00	4.415E-01	0.308
		334.37		5.660E-01	1.826E+00	2.797E+00	4.762E-01	0.202
		283.69		7.076E-01	1.514E+00	2.474E+00	4.149E-01	0.286
PA-231	+	301.36	*	2.246E+00	8.779E-01	1.040E+00	1.507E-01	2.160
TH-231	+	81.07	*	-1.296E-02	2.607E-01	3.670E-01	3.257E-02	-0.035
		83.79		4.649E-01	1.931E-01	2.491E-01	2.281E-02	1.866
		94.87		1.210E+00	6.297E-01	8.499E-01	7.685E-02	1.424
	+	144.24	*	1.399E+00	1.233E+00	1.292E+00	1.237E-01	1.083
		154.21		1.310E-01	3.864E-01	6.479E-01	6.213E-02	0.202
		269.46		6.896E-01	2.949E-01	3.600E-01	4.280E-02	1.915
	+	323.87	*	4.514E-01	7.297E-01	1.072E+00	2.013E-01	0.421
		338.28		6.367E+00	1.808E+00	2.507E+00	3.461E-01	2.539
		300.13		1.582E+00	6.328E-01	7.830E-01	1.317E-01	2.020
PA-233	+	311.90	*	-5.693E-02	7.168E-02	1.077E-01	1.259E-02	-0.529
	+	340.48	*	7.949E-01	6.728E-01	1.048E+00	2.615E-01	0.759
		94.67		6.601E-01	2.474E-01	3.324E-01	4.224E-02	1.986
		98.44		3.105E-01	2.229E-01	1.806E-01	1.008E-01	1.719
PA-234	+	111.00	*	5.149E-01	2.902E-01	3.280E-01	3.915E-02	1.570
		131.20		-1.021E-01	1.137E-01	1.832E-01	1.532E-02	-0.557
		569.50		-8.733E-03	2.666E-01	4.333E-01	4.069E-02	-0.020
	+	733.00	*	-3.368E-01	4.272E-01	5.223E-01	1.170E-01	-0.645
		880.51		2.582E-01	2.910E-01	5.149E-01	4.864E-02	0.501
		883.24		-2.331E-01	3.412E-01	4.661E-01	3.139E-01	-0.500
	+	926.50	*	7.781E-02	1.864E-01	2.949E-01	7.535E-02	0.264
		946.00		9.571E-03	2.912E-01	4.856E-01	9.277E-02	0.020

----- 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		-5.378E-02	4.108E-01	6.738E-01	6.284E-02	-0.080
		99.53		5.634E-01	2.591E-01	3.196E-01	2.804E-02	1.763
		103.37		5.401E-02	1.128E-01	1.614E-01	1.390E-02	0.335
	+	106.12		1.416E-01	9.937E-02	1.497E-01	1.276E-02	0.945
		117.23	*	-1.799E-01	3.922E-01	6.462E-01	5.378E-02	-0.278
AM-241	+	228.18		2.183E-02	2.156E-01	3.507E-01	3.745E-02	0.062
		277.60		3.616E-01	2.311E-01	3.190E-01	3.818E-02	1.134
		59.54	*	1.071E-01	1.964E-01	2.886E-01	2.265E-02	0.371
CM-247	+	278.00		1.536E+00	9.813E-01	1.337E+00	1.602E-01	1.148
		287.50		-1.625E-01	1.259E+00	1.991E+00	2.371E-01	-0.082
		402.40	*	-1.453E-02	3.572E-02	5.832E-02	5.422E-03	-0.249
CF-249		252.80		9.983E-02	9.539E-01	1.543E+00	1.748E-01	0.065
		333.37		-2.048E-01	2.027E-01	2.792E-01	3.082E-02	-0.733
		388.16	*	1.336E-02	4.091E-02	6.997E-02	6.559E-03	0.191
CF-251		177.52	*	-2.146E-02	1.328E-01	2.166E-01	2.024E-02	-0.099
		227.38		-9.645E-03	3.560E-01	5.756E-01	6.134E-02	-0.017
		285.41		6.719E-01	2.272E+00	3.684E+00	4.396E-01	0.182

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]G247900017      *
* Acquisition date   : 6-MAR-2010 15:22:15 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 02:00:02.26 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G247900017 Analyst initials: MXR1                 *
* Batch Number       : 957711 Sample Quantity : 1.2275E+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	3.116E+01	3.184E+00	4.736E-01	0.000E+00
NB-95	1.034E-01	6.089E-02	6.361E-02	0.000E+00
CD-109	3.741E+00	1.165E+00	1.791E+00	0.000E+00
SN-126	3.651E-01	1.137E-01	1.768E-01	0.000E+00
BA-137M	5.923E-01	9.062E-02	5.821E-02	0.000E+00
CS-137	6.257E-01	9.578E-02	6.150E-02	0.000E+00
CE-141	1.337E-01	1.155E-01	1.050E-01	0.000E+00
EU-155	1.776E-01	1.222E-01	1.828E-01	0.000E+00
TL-208	5.758E-01	9.618E-02	5.991E-02	0.000E+00
BI-211	4.608E+00	6.695E-01	3.277E-01	0.000E+00
PB-212	1.868E+00	2.464E-01	9.429E-02	0.000E+00
BI-214	1.420E+00	2.161E-01	1.294E-01	0.000E+00
PB-214	1.672E+00	2.592E-01	1.192E-01	0.000E+00
RA-224	4.800E+00	1.292E+00	1.011E+00	0.000E+00
RA-226	1.420E+00	2.161E-01	1.294E-01	0.000E+00
AC-228	1.797E+00	4.502E-01	2.396E-01	0.000E+00
RA-228	1.797E+00	4.502E-01	2.396E-01	0.000E+00
TH-228	1.868E+00	2.464E-01	9.429E-02	0.000E+00
TH-229	2.089E-01	5.279E-01	9.170E-01	0.000E+00
TH-232	1.797E+00	4.502E-01	2.396E-01	0.000E+00
PA-234M	2.927E+01	7.936E+00	6.924E+00	0.000E+00
TH-234	2.015E+01	4.379E+00	2.459E+00	0.000E+00
U-235	4.173E-01	3.651E-01	3.298E-01	0.000E+00
NP-237	1.089E+00	4.065E-01	4.892E-01	0.000E+00
U-238	2.015E+01	4.379E+00	2.459E+00	0.000E+00
ANH-511	1.487E-01	7.255E-02	4.681E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	4.284E-02	3.446E-01	5.949E-01	0.000E+00 NOT IDENT.

NA-22	-1.376E-02	4.956E-02	7.984E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.817E+06	0.000E+00	0.000E+00	SHORT HLIF
SC-46	-2.568E-02	3.662E-02	5.840E-02	0.000E+00	FAIL ABUN
V-48	2.042E-03	7.354E-02	1.252E-01	0.000E+00	NOT IDENT.
CR-51	-1.399E-01	3.838E-01	6.159E-01	0.000E+00	NOT IDENT.
MN-54	-1.451E-02	3.764E-02	6.291E-02	0.000E+00	NOT IDENT.
CO-56	2.585E-02	3.861E-02	6.994E-02	0.000E+00	NOT IDENT.
CO-57	-1.045E-02	2.455E-02	4.254E-02	0.000E+00	NOT IDENT.
CO-58	-2.343E-02	3.784E-02	6.184E-02	0.000E+00	NOT IDENT.
FE-59	-2.355E-02	8.651E-02	1.412E-01	0.000E+00	NOT IDENT.
CO-60	-1.373E-02	3.546E-02	5.519E-02	0.000E+00	NOT IDENT.
ZN-65	-1.237E-02	9.995E-02	1.426E-01	0.000E+00	NOT IDENT.
SE-75	-4.931E-02	4.899E-02	7.236E-02	0.000E+00	NOT IDENT.
SR-85	4.303E-02	4.033E-02	6.592E-02	0.000E+00	NOT IDENT.
Y-88	6.457E-03	4.532E-02	6.714E-02	0.000E+00	NOT IDENT.
Y-91	7.518E+00	2.397E+01	4.091E+01	0.000E+00	NOT IDENT.
NB-94	1.173E-02	3.601E-02	6.109E-02	0.000E+00	NOT IDENT.
NB-95M	9.816E-02	1.386E-01	2.165E-01	0.000E+00	NOT IDENT.
ZR-95	6.255E-02	7.615E-02	1.335E-01	0.000E+00	NOT IDENT.
MO-99	-1.941E+00	1.679E+01	2.739E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.808E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-8.254E-03	4.116E-02	6.928E-02	0.000E+00	FAIL ABUN
RH-106	1.071E-01	3.035E-01	5.222E-01	0.000E+00	NOT IDENT.
RU-106	1.071E-01	3.033E-01	5.222E-01	0.000E+00	NOT IDENT.
AG-108M	3.465E-02	3.020E-02	5.534E-02	0.000E+00	NOT IDENT.
AG-110M	4.658E-03	3.578E-02	5.295E-02	0.000E+00	NOT IDENT.
SN-113	-5.763E-04	4.401E-02	7.656E-02	0.000E+00	NOT IDENT.
CD-115	2.747E+00	1.531E+01	2.634E+01	0.000E+00	NOT IDENT.
SN-117M	-2.351E-03	5.398E-02	9.338E-02	0.000E+00	NOT IDENT.
TE-123M	-9.137E-03	2.690E-02	4.593E-02	0.000E+00	NOT IDENT.
SB-124	8.207E-02	7.281E-02	1.452E-01	0.000E+00	NOT IDENT.
SB-125	-2.075E-02	9.039E-02	1.540E-01	0.000E+00	FAIL ABUN
TE-125M	5.517E+00	1.323E+01	1.731E+01	0.000E+00	NOT IDENT.
I-126	8.775E-02	2.594E-01	3.916E-01	0.000E+00	NOT IDENT.
SB-126	7.790E-02	1.707E-01	2.593E-01	0.000E+00	NOT IDENT.
SB-127	2.860E-01	1.551E+00	2.615E+00	0.000E+00	NOT IDENT.
I-131	-4.486E-02	1.120E-01	1.911E-01	0.000E+00	NOT IDENT.
TE-132	9.113E-02	8.904E-01	1.511E+00	0.000E+00	FAIL ABUN
BA-133	-1.521E-02	4.593E-02	6.922E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.317E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.108E-02	9.567E-02	0.000E+00	FAIL ABUN
CS-135	2.485E-01	1.765E-01	2.809E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.749E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.775E-02	1.195E-01	1.910E-01	0.000E+00	NOT IDENT.
CE-139	-3.554E-02	3.028E-02	4.951E-02	0.000E+00	NOT IDENT.
BA-140	-2.099E-01	2.697E-01	4.128E-01	0.000E+00	NOT IDENT.
LA-140	-1.931E-02	8.431E-02	1.344E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	3.229E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.859E-02	1.941E-01	3.382E-01	0.000E+00	NOT IDENT.
PM-144	1.152E-03	3.252E-02	5.405E-02	0.000E+00	NOT IDENT.
PR-144	1.111E-01	2.437E+00	4.054E+00	0.000E+00	NOT IDENT.
PM-146	2.413E-02	4.485E-02	7.947E-02	0.000E+00	NOT IDENT.
ND-147	1.622E-01	5.818E-01	1.007E+00	0.000E+00	NOT IDENT.
PM-149	-8.134E+01	1.316E+02	2.095E+02	0.000E+00	NOT IDENT.
EU-152	-6.522E-02	9.126E-02	1.479E-01	0.000E+00	FAIL ABUN
GD-153	0.000E+00	1.284E-01	1.605E-01	0.000E+00	FAIL ABUN
EU-154	-5.156E-03	1.357E-01	2.238E-01	0.000E+00	NOT IDENT.
TB-160	1.227E-01	1.409E-01	2.581E-01	0.000E+00	FAIL ABUN
HO-166M	-2.148E-02	5.886E-02	9.406E-02	0.000E+00	FAIL ABUN
TA-182	-1.617E-01	2.240E-01	3.496E-01	0.000E+00	FAIL ABUN
IR-192	-1.505E-02	3.563E-02	5.702E-02	0.000E+00	FAIL ABUN
HG-203	4.183E-02	4.208E-02	6.651E-02	0.000E+00	NOT IDENT.
BI-207	-1.323E-02	5.305E-02	8.726E-02	0.000E+00	FAIL ABUN
PB-210	3.004E+00	3.949E+00	6.789E+00	0.000E+00	NOT IDENT.
PB-211	6.039E-01	7.430E-01	1.250E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.539E-01	1.267E+00	0.000E+00	FAIL ABUN
RN-219	-2.414E-01	3.878E-01	6.454E-01	0.000E+00	FAIL ABUN
RA-223	4.514E-01	7.151E-01	1.091E+00	0.000E+00	FAIL ABUN
AC-227	6.927E-04	2.557E-01	4.283E-01	0.000E+00	FAIL ABUN
TH-227	6.927E-04	2.557E-01	4.283E-01	0.000E+00	FAIL ABUN
PA-231	7.076E-01	1.484E+00	2.523E+00	0.000E+00	FAIL ABUN
TH-231	4.514E-01	7.151E-01	1.091E+00	0.000E+00	FAIL ABUN
PA-233	-5.693E-02	7.024E-02	1.097E-01	0.000E+00	FAIL ABUN
PA-234	9.571E-03	2.854E-01	4.876E-01	0.000E+00	FAIL ABUN
NP-239	-1.799E-01	3.844E-01	6.665E-01	0.000E+00	FAIL ABUN
AM-241	1.071E-01	1.924E-01	3.003E-01	0.000E+00	NOT IDENT.
CM-247	-1.453E-02	3.501E-02	5.922E-02	0.000E+00	FAIL ABUN
CF-249	1.336E-02	4.009E-02	7.109E-02	0.000E+00	NOT IDENT.

CF-251	-2.146E-02	1.301E-01	2.223E-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]G247900017.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 15:22:15.
Sample ID          : G247900017 Sample quantity      : 1.22750E+02 GRAM
Detector name      : GAM16 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.26 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials    : MXR1
Abundance limit    : 75.00000 Sensitivity           : 5.00000
Batch ID           : 957711 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	1312	10.66*	1.208E+00	3.116E+01	3.116E+01	10.43
NB-95	765.81	60	99.81*	2.123E+00	8.680E-02	1.034E-01	60.08
CD-109	88.03	276	3.70*	6.252E+00	3.651E+00	3.741E+00	31.77
SN-126	64.28	862	9.60	3.536E+00	7.767E+00	7.767E+00	19.62
	86.94	276	8.90	6.252E+00	1.518E+00	1.518E+00	51.44
	87.57	276	37.00*	6.252E+00	3.651E-01	3.651E-01	31.77
BA-137M	661.66	418	89.90*	2.406E+00	5.917E-01	5.923E-01	15.61
CS-137	661.66	418	85.10*	2.406E+00	6.251E-01	6.257E-01	15.62
CE-141	145.44	104	48.29*	6.938E+00	9.472E-02	1.337E-01	88.09
EU-155	86.55	276	30.70	6.252E+00	4.400E-01	4.429E-01	31.80
	105.31	86	21.10*	7.044E+00	1.765E-01	1.776E-01	70.21
TL-208	277.37	80	6.60	4.691E+00	7.912E-01	7.912E-01	64.53
	583.19	427	85.00*	2.668E+00	5.758E-01	5.758E-01	17.05
	860.56	79	12.50	1.918E+00	1.012E+00	1.012E+00	43.49
BI-211	72.87	-----	1.23	4.872E+00	-----	Line Not Found	-----
	351.06	767	12.92*	3.940E+00	4.608E+00	4.608E+00	14.82
PB-212	74.82	510	10.28	5.109E+00	2.968E+00	2.968E+00	21.49
	77.11	746	17.10	5.359E+00	2.490E+00	2.490E+00	15.26
	238.63	1391	43.60*	5.226E+00	1.868E+00	1.868E+00	13.46
	300.09	152	3.30	4.433E+00	3.178E+00	3.178E+00	38.62
BI-214	609.32	544	45.49*	2.575E+00	1.420E+00	1.420E+00	15.52
	1120.29	100	14.92	1.516E+00	1.351E+00	1.351E+00	51.17
	1764.49	92	15.30	1.056E+00	1.738E+00	1.738E+00	29.90
PB-214	74.82	510	5.80	5.109E+00	5.261E+00	5.261E+00	20.74
	77.11	746	9.70	5.359E+00	4.390E+00	4.390E+00	17.35
	242.00	333	7.25	5.183E+00	2.714E+00	2.714E+00	28.07
	295.22	470	18.42	4.486E+00	1.740E+00	1.740E+00	18.41
	351.93	767	35.60*	3.940E+00	1.672E+00	1.672E+00	15.82
RA-224	240.99	333	4.10*	5.183E+00	4.800E+00	4.800E+00	27.47
RA-226	609.32	544	45.49*	2.575E+00	1.420E+00	1.420E+00	15.52
	1120.29	100	14.92	1.516E+00	1.351E+00	1.351E+00	51.17
	1764.49	92	15.30	1.056E+00	1.738E+00	1.738E+00	29.90

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AC-228	338.32	240	11.27	4.058E+00	1.604E+00	1.604E+00	49.00
	911.20	277	25.80*	1.824E+00	1.797E+00	1.797E+00	25.56
	968.97	166	15.80	1.727E+00	1.856E+00	1.856E+00	33.36
RA-228	338.32	240	11.27	4.058E+00	1.604E+00	1.604E+00	49.00
	911.20	277	25.80*	1.824E+00	1.797E+00	1.797E+00	25.56
	968.97	166	15.80	1.727E+00	1.856E+00	1.856E+00	33.36
TH-228	74.82	510	10.28	5.109E+00	2.968E+00	2.968E+00	19.20
	77.11	746	17.10	5.359E+00	2.490E+00	2.490E+00	15.26
	238.63	1391	43.60*	5.226E+00	1.868E+00	1.868E+00	13.46
	300.09	152	3.30	4.433E+00	3.178E+00	3.178E+00	71.61
TH-229	85.43	226	14.70	6.019E+00	7.811E-01	7.811E-01	41.53
	88.47	276	24.00	6.252E+00	5.629E-01	5.629E-01	31.77
	193.51	-----	4.41*	5.998E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.681E+00	-----	Line Not Found	-----
TH-232	338.32	240	11.27	4.058E+00	1.604E+00	1.604E+00	27.11
	911.20	277	25.80*	1.824E+00	1.797E+00	1.797E+00	25.56
	968.97	166	15.80	1.727E+00	1.856E+00	1.856E+00	33.36
PA-234M	766.42	60	0.32	2.123E+00	2.707E+01	2.707E+01	78.17
	1001.03	135	0.84*	1.677E+00	2.927E+01	2.927E+01	27.67
TH-234	63.29	862	3.70*	3.536E+00	2.015E+01	2.015E+01	22.17
	92.59	2230	4.23	6.587E+00	2.447E+01	2.447E+01	23.16
U-235	89.96	-----	3.47	6.436E+00	-----	Line Not Found	-----
	93.35	2230	5.60	6.587E+00	1.848E+01	1.848E+01	24.13
	143.76	104	10.96*	6.938E+00	4.173E-01	4.173E-01	89.28
	163.33	-----	5.08	6.588E+00	-----	Line Not Found	-----
	185.72	631	57.20	6.148E+00	5.489E-01	5.489E-01	16.85
	205.31	-----	5.01	5.780E+00	-----	Line Not Found	-----
NP-237	86.48	276	12.40*	6.252E+00	1.089E+00	1.089E+00	38.07
	95.86	-----	2.68	6.742E+00	-----	Line Not Found	-----
U-238	63.29	862	3.70*	3.536E+00	2.015E+01	2.015E+01	22.17
	92.59	2230	4.23	6.587E+00	2.447E+01	2.447E+01	11.10
ANH-511	511.00	144	100.00*	2.964E+00	1.487E-01	1.487E-01	49.80

Flag: "*" = Keyline

Total number of lines in spectrum 42
Number of unidentified lines 6
Number of lines tentatively identified by NID 36 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	3.116E+01	3.116E+01	0.325E+01	10.43	
NB-95	64.03D	1.19	8.680E-02	1.034E-01	0.621E-01	60.08	
CD-109	461.40D	1.02	3.651E+00	3.741E+00	1.189E+00	31.77	
SN-126	2.30E+05Y	1.00	3.651E-01	3.651E-01	1.160E-01	31.77	
BA-137M	30.08Y	1.00	5.917E-01	5.923E-01	0.925E-01	15.61	
CS-137	30.08Y	1.00	6.251E-01	6.257E-01	0.977E-01	15.62	
CE-141	32.51D	1.41	9.472E-02	1.337E-01	1.178E-01	88.09	
EU-155	4.75Y	1.01	1.765E-01	1.776E-01	1.247E-01	70.21	
TL-208	1.41E+10Y	1.00	5.758E-01	5.758E-01	0.981E-01	17.05	
BI-211	7.04E+08Y	1.00	4.608E+00	4.608E+00	0.683E+00	14.82	
PB-212	1.41E+10Y	1.00	1.868E+00	1.868E+00	0.251E+00	13.46	
BI-214	1600.00Y	1.00	1.420E+00	1.420E+00	0.220E+00	15.52	
PB-214	1600.00Y	1.00	1.672E+00	1.672E+00	0.265E+00	15.82	
RA-224	1.41E+10Y	1.00	4.800E+00	4.800E+00	1.318E+00	27.47	
RA-226	1600.00Y	1.00	1.420E+00	1.420E+00	0.220E+00	15.52	
AC-228	1.41E+10Y	1.00	1.797E+00	1.797E+00	0.459E+00	25.56	
RA-228	1.41E+10Y	1.00	1.797E+00	1.797E+00	0.459E+00	25.56	
TH-228	1.41E+10Y	1.00	1.868E+00	1.868E+00	0.251E+00	13.46	
TH-229	7340.00Y	1.00	5.629E-01	5.629E-01	1.789E-01	31.77	K
TH-232	1.41E+10Y	1.00	1.797E+00	1.797E+00	0.459E+00	25.56	
PA-234M	4.47E+09Y	1.00	2.927E+01	2.927E+01	0.810E+01	27.67	
TH-234	4.47E+09Y	1.00	2.015E+01	2.015E+01	0.447E+01	22.17	
U-235	7.04E+08Y	1.00	4.173E-01	4.173E-01	3.726E-01	89.28	
NP-237	2.14E+06Y	1.00	1.089E+00	1.089E+00	0.415E+00	38.07	
U-238	4.47E+09Y	1.00	2.015E+01	2.015E+01	0.447E+01	22.17	
ANH-511	1.00E+09Y	1.00	1.487E-01	1.487E-01	0.740E-01	49.80	
Total Activity :			1.322E+02	1.323E+02			

Grand Total Activity : 1.322E+02 1.323E+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	98.77	177	462	0.98	197.73	194	8	2.46E-02	45.1	6.86E+00	T
0	112.29	142	463	1.11	224.76	221	8	1.97E-02	55.1	7.15E+00	T
0	209.22	162	307	0.97	418.63	415	9	2.26E-02	42.0	5.71E+00	
0	270.03	150	223	1.37	540.25	536	10	2.08E-02	41.1	4.79E+00	T
0	327.87	81	198	1.04	655.93	651	9	1.12E-02	66.8	4.15E+00	T
0	462.64	100	153	1.38	925.46	919	13	1.39E-02	54.8	3.20E+00	T
0	726.98	135	77	1.15	1454.05	1447	14	1.87E-02	32.5	2.22E+00	T
1	768.96	42	61	1.49	1538.00	1527	22	5.77E-03	76.2	2.12E+00	
0	794.65	60	63	1.25	1589.36	1582	13	8.27E-03	61.4	2.06E+00	T
0	935.13	75	34	3.70	1870.24	1861	17	1.05E-02	42.2	1.78E+00	
1	964.35	50	56	1.76	1928.68	1924	24	7.01E-03	56.6	1.73E+00	T
0	1378.74	21	27	1.65	2757.15	2749	11	2.90E-03	****	1.27E+00	
0	1588.58	24	14	1.20	3176.63	3171	10	3.35E-03	72.1	1.13E+00	
0	1838.82	17	6	1.31	3676.83	3669	13	2.29E-03	80.4	1.03E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900017.CNF;1
* Acquisition date   : 6-MAR-2010 15:22:15.   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 02:00:02.26           Half life ratio     : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library      : SOLID
* Sample ID          : G247900017             Analyst initials     : MXR1
* Batch Number       : 957711                 Sample Quantity      : 1.22750E+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	3.116E+01	3.249E+00	4.744E-01	4.170E-02	65.690
NB-95	1.034E-01	6.214E-02	6.317E-02	5.839E-03	1.637
CD-109	3.741E+00	1.189E+00	1.730E+00	1.667E-01	2.163
SN-126	3.651E-01	1.160E-01	1.707E-01	1.637E-02	2.138
BA-137M	5.923E-01	9.247E-02	5.770E-02	5.121E-03	10.266
CS-137	6.257E-01	9.774E-02	6.095E-02	5.419E-03	10.266
CE-141	1.337E-01	1.178E-01	1.021E-01	8.930E-03	1.310
EU-155	1.776E-01	1.247E-01	1.770E-01	1.530E-02	1.003
TL-208	5.758E-01	9.814E-02	5.928E-02	5.870E-03	9.712
BI-211	4.608E+00	6.831E-01	3.222E-01	3.523E-02	14.303
PB-212	1.868E+00	2.515E-01	9.223E-02	1.096E-02	20.249
BI-214	1.420E+00	2.205E-01	1.281E-01	1.361E-02	11.085
PB-214	1.672E+00	2.645E-01	1.172E-01	1.433E-02	14.272
RA-224	4.800E+00	1.318E+00	9.888E-01	1.090E-01	4.854
RA-226	1.420E+00	2.205E-01	1.281E-01	1.361E-02	11.085
AC-228	1.797E+00	4.594E-01	2.385E-01	2.911E-02	7.535
RA-228	1.797E+00	4.594E-01	2.385E-01	2.911E-02	7.535
TH-228	1.868E+00	2.515E-01	9.223E-02	1.096E-02	20.249

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229	5.629E-01	1.789E-01	8.946E-01	8.727E-02	0.629
TH-232	1.797E+00	4.594E-01	2.385E-01	2.911E-02	7.535
PA-234M	2.927E+01	8.098E+00	6.900E+00	7.184E-01	4.242
TH-234	2.015E+01	4.468E+00	2.366E+00	4.218E-01	8.518
U-235	4.173E-01	3.726E-01	3.206E-01	5.424E-02	1.302
NP-237	1.089E+00	4.148E-01	4.724E-01	1.087E-01	2.306
U-238	2.015E+01	4.468E+00	2.366E+00	4.218E-01	8.518
ANH-511	1.487E-01	7.403E-02	4.624E-02	4.398E-03	3.215

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	4.284E-02		3.517E-01	5.872E-01	5.939E-02	0.073
NA-22	-1.376E-02		5.057E-02	7.982E-02	6.642E-03	-0.172
NA-24	3.181E-02		9.271E-01	Half-Life too short		
SC-46	-2.568E-02		3.736E-02	5.811E-02	5.493E-03	-0.442
V-48	2.042E-03		7.504E-02	1.247E-01	1.148E-02	0.016
CR-51	-1.399E-01		3.916E-01	6.048E-01	7.067E-02	-0.231
MN-54	-1.451E-02		3.841E-02	6.254E-02	5.874E-03	-0.232
CO-56	2.585E-02		3.940E-02	6.954E-02	6.544E-03	0.372
CO-57	-1.045E-02		2.505E-02	4.126E-02	3.428E-03	-0.253
CO-58	-2.343E-02		3.861E-02	6.146E-02	5.758E-03	-0.381
FE-59	-2.355E-02		8.828E-02	1.409E-01	1.310E-02	-0.167
CO-60	-1.373E-02		3.618E-02	5.521E-02	4.657E-03	-0.249
ZN-65	-1.237E-02		1.020E-01	1.424E-01	1.209E-02	-0.087
SE-75	-4.931E-02		4.999E-02	7.087E-02	8.271E-03	-0.696
SR-85	4.303E-02		4.116E-02	6.512E-02	6.192E-03	0.661
Y-88	6.457E-03		4.625E-02	6.745E-02	5.476E-03	0.096
Y-91	7.518E+00		2.446E+01	4.087E+01	3.324E+00	0.184
NB-94	1.173E-02		3.675E-02	6.060E-02	5.478E-03	0.194
NB-95M	9.816E-02		1.415E-01	2.118E-01	2.521E-02	0.464
ZR-95	6.255E-02		7.771E-02	1.326E-01	1.335E-02	0.472
MO-99	-1.941E+00		1.714E+01	2.719E+01	4.367E+00	-0.071
TC-99M	1.329E+11		3.474E+11	Half-Life too short		
RU-103	-8.254E-03		4.200E-02	6.842E-02	9.945E-03	-0.121
RH-106	1.071E-01		3.097E-01	5.172E-01	7.035E-02	0.207
RU-106	1.071E-01		3.095E-01	5.172E-01	4.729E-02	0.207
AG-108M	3.465E-02		3.081E-02	5.455E-02	5.278E-03	0.635
AG-110M	4.658E-03		3.651E-02	5.247E-02	4.803E-03	0.089
SN-113	-5.763E-04		4.491E-02	7.537E-02	7.154E-03	-0.008
CD-115	2.747E+00		1.562E+01	2.603E+01	2.471E+00	0.106
SN-117M	-2.351E-03		5.508E-02	9.087E-02	8.071E-03	-0.026
TE-123M	-9.137E-03		2.745E-02	4.470E-02	3.997E-03	-0.204
SB-124	8.207E-02		7.429E-02	1.457E-01	1.279E-02	0.563
SB-125	-2.075E-02		9.223E-02	1.518E-01	1.449E-02	-0.137
TE-125M	5.517E+00		1.350E+01	1.677E+01	1.733E+00	0.329
I-126	8.775E-02		2.647E-01	3.881E-01	3.452E-02	0.226

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	7.790E-02		1.742E-01	2.573E-01	2.343E-02	0.303
SB-127	2.860E-01		1.583E+00	2.593E+00	3.095E-01	0.110
I-131	-4.486E-02		1.143E-01	1.880E-01	1.988E-02	-0.239
TE-132	9.113E-02		9.086E-01	1.478E+00	2.544E-01	0.062
BA-133	-1.521E-02		4.686E-02	6.806E-02	9.680E-03	-0.223
I-133	2.144E-03		6.720E-03	Half-Life too short		
CS-134	1.167E-01	+	7.253E-02	9.505E-02	8.911E-03	1.228
CS-135	2.485E-01		1.801E-01	2.752E-01	3.509E-02	0.903
I-135	4.074E+09		4.464E+10	Half-Life too short		
CS-136	-6.775E-02		1.219E-01	1.904E-01	1.763E-02	-0.356
CE-139	-3.554E-02		3.089E-02	4.821E-02	4.372E-03	-0.737
BA-140	-2.099E-01		2.752E-01	4.081E-01	1.393E-01	-0.514
LA-140	-1.931E-02		8.603E-02	1.348E-01	1.148E-02	-0.143
CE-143	8.662E-04		1.648E-04	Half-Life too short		
CE-144	-2.859E-02		1.981E-01	3.284E-01	4.978E-02	-0.087
PM-144	1.152E-03		3.318E-02	5.361E-02	4.836E-03	0.021
PR-144	1.111E-01		2.487E+00	4.021E+00	3.626E-01	0.028
PM-146	2.413E-02		4.577E-02	7.838E-02	8.853E-03	0.308
ND-147	1.622E-01		5.937E-01	9.954E-01	1.540E-01	0.163
PM-149	-8.134E+01		1.343E+02	2.054E+02	3.614E+01	-0.396
EU-152	-6.522E-02		9.312E-02	1.453E-01	1.624E-02	-0.449
GD-153	2.850E-01	+	1.311E-01	1.552E-01	1.379E-02	1.836
EU-154	-5.156E-03		1.385E-01	2.238E-01	2.494E-02	-0.023
TB-160	1.227E-01		1.437E-01	2.568E-01	2.425E-02	0.478
HO-166M	-2.148E-02		6.006E-02	9.332E-02	8.467E-03	-0.230
TA-182	-1.617E-01		2.285E-01	3.493E-01	2.857E-02	-0.463
IR-192	-1.505E-02		3.636E-02	5.598E-02	6.397E-03	-0.269
HG-203	4.183E-02		4.294E-02	6.519E-02	7.933E-03	0.642
BI-207	-1.323E-02		5.413E-02	8.703E-02	7.672E-03	-0.152
PB-210	3.004E+00		4.030E+00	6.507E+00	6.016E-01	0.462
PB-211	6.039E-01		7.581E-01	1.231E+00	5.974E-01	0.490
BI-212	2.784E+00	+	9.733E-01	1.257E+00	1.611E-01	2.214
RN-219	-2.414E-01		3.958E-01	6.355E-01	9.707E-02	-0.380
RA-223	4.514E-01		7.297E-01	1.072E+00	2.013E-01	0.421
AC-227	6.927E-04		2.610E-01	4.193E-01	5.950E-02	0.002
TH-227	6.927E-04		2.610E-01	4.193E-01	6.513E-02	0.002
PA-231	7.076E-01		1.514E+00	2.474E+00	4.149E-01	0.286
TH-231	4.514E-01		7.297E-01	1.072E+00	2.013E-01	0.421
PA-233	-5.693E-02		7.168E-02	1.077E-01	1.259E-02	-0.529
PA-234	9.571E-03		2.912E-01	4.856E-01	9.277E-02	0.020
NP-239	-1.799E-01		3.922E-01	6.462E-01	5.378E-02	-0.278
AM-241	1.071E-01		1.964E-01	2.886E-01	2.265E-02	0.371
CM-247	-1.453E-02		3.572E-02	5.832E-02	5.422E-03	-0.249
CF-249	1.336E-02		4.091E-02	6.997E-02	6.559E-03	0.191
CF-251	-2.146E-02		1.328E-01	2.166E-01	2.024E-02	-0.099

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]G247900017
* Acquisition date   : 6-MAR-2010 15:22:15 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 02:00:02.26 Half life ratio      : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G247900017 Analyst initials       : MXR1
* Batch Number       : 957711 Sample Quantity           : 1.2275E+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	3.116E+01	3.184E+00	2.370E-01	1.625E+00
NB-95	1.034E-01	6.089E-02	3.182E-02	3.107E-02
CD-109	3.741E+00	1.165E+00	8.959E-01	5.943E-01
SN-126	3.651E-01	1.137E-01	8.843E-02	5.801E-02
BA-137M	5.923E-01	9.062E-02	2.912E-02	4.623E-02
CS-137	6.257E-01	9.578E-02	3.077E-02	4.887E-02
CE-141	1.337E-01	1.155E-01	5.254E-02	5.891E-02
EU-155	1.776E-01	1.222E-01	9.146E-02	6.234E-02
TL-208	5.758E-01	9.618E-02	2.997E-02	4.907E-02
BI-211	4.608E+00	6.695E-01	1.640E-01	3.416E-01
PB-212	1.868E+00	2.464E-01	4.717E-02	1.257E-01
BI-214	1.420E+00	2.161E-01	6.475E-02	1.102E-01
PB-214	1.672E+00	2.592E-01	5.964E-02	1.323E-01
RA-224	4.800E+00	1.292E+00	5.056E-01	6.592E-01
RA-226	1.420E+00	2.161E-01	6.475E-02	1.102E-01
AC-228	1.797E+00	4.502E-01	1.199E-01	2.297E-01
RA-228	1.797E+00	4.502E-01	1.199E-01	2.297E-01
TH-228	1.868E+00	2.464E-01	4.717E-02	1.257E-01
TH-229	2.089E-01	5.279E-01	4.588E-01	2.693E-01
TH-232	1.797E+00	4.502E-01	1.199E-01	2.297E-01
PA-234M	2.927E+01	7.936E+00	3.464E+00	4.049E+00
TH-234	2.015E+01	4.379E+00	1.230E+00	2.234E+00
U-235	4.173E-01	3.651E-01	1.650E-01	1.863E-01
NP-237	1.089E+00	4.065E-01	2.447E-01	2.074E-01
U-238	2.015E+01	4.379E+00	1.230E+00	2.234E+00
ANH-511	1.487E-01	7.255E-02	2.342E-02	3.702E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	4.284E-02	3.446E-01	2.977E-01	1.758E-01 NOT IDENT.

NA-22	-1.376E-02	4.956E-02	3.994E-02	2.528E-02	NOT IDENT.
NA-24	3.181E+04	1.817E+06	0.000E+00	9.271E+05	SHORT HLIF
SC-46	-2.568E-02	3.662E-02	2.922E-02	1.868E-02	FAIL ABUN
V-48	2.042E-03	7.354E-02	6.261E-02	3.752E-02	NOT IDENT.
CR-51	-1.399E-01	3.838E-01	3.081E-01	1.958E-01	NOT IDENT.
MN-54	-1.451E-02	3.764E-02	3.147E-02	1.921E-02	NOT IDENT.
CO-56	2.585E-02	3.861E-02	3.499E-02	1.970E-02	NOT IDENT.
CO-57	-1.045E-02	2.455E-02	2.128E-02	1.252E-02	NOT IDENT.
CO-58	-2.343E-02	3.784E-02	3.094E-02	1.931E-02	NOT IDENT.
FE-59	-2.355E-02	8.651E-02	7.065E-02	4.414E-02	NOT IDENT.
CO-60	-1.373E-02	3.546E-02	2.761E-02	1.809E-02	NOT IDENT.
ZN-65	-1.237E-02	9.995E-02	7.136E-02	5.100E-02	NOT IDENT.
SE-75	-4.931E-02	4.899E-02	3.620E-02	2.499E-02	NOT IDENT.
SR-85	4.303E-02	4.033E-02	3.298E-02	2.058E-02	NOT IDENT.
Y-88	6.457E-03	4.532E-02	3.359E-02	2.312E-02	NOT IDENT.
Y-91	7.518E+00	2.397E+01	2.047E+01	1.223E+01	NOT IDENT.
NB-94	1.173E-02	3.601E-02	3.056E-02	1.837E-02	NOT IDENT.
NB-95M	9.816E-02	1.386E-01	1.083E-01	7.073E-02	NOT IDENT.
ZR-95	6.255E-02	7.615E-02	6.680E-02	3.885E-02	NOT IDENT.
MO-99	-1.941E+00	1.679E+01	1.370E+01	8.568E+00	NOT IDENT.
TC-99M	1.329E+17	6.808E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-8.254E-03	4.116E-02	3.466E-02	2.100E-02	FAIL ABUN
RH-106	1.071E-01	3.035E-01	2.613E-01	1.548E-01	NOT IDENT.
RU-106	1.071E-01	3.033E-01	2.613E-01	1.547E-01	NOT IDENT.
AG-108M	3.465E-02	3.020E-02	2.769E-02	1.541E-02	NOT IDENT.
AG-110M	4.658E-03	3.578E-02	2.649E-02	1.826E-02	NOT IDENT.
SN-113	-5.763E-04	4.401E-02	3.830E-02	2.246E-02	NOT IDENT.
CD-115	2.747E+00	1.531E+01	1.318E+01	7.809E+00	NOT IDENT.
SN-117M	-2.351E-03	5.398E-02	4.672E-02	2.754E-02	NOT IDENT.
TE-123M	-9.137E-03	2.690E-02	2.298E-02	1.373E-02	NOT IDENT.
SB-124	8.207E-02	7.281E-02	7.264E-02	3.715E-02	NOT IDENT.
SB-125	-2.075E-02	9.039E-02	7.705E-02	4.612E-02	FAIL ABUN
TE-125M	5.517E+00	1.323E+01	8.661E+00	6.748E+00	NOT IDENT.
I-126	8.775E-02	2.594E-01	1.959E-01	1.323E-01	NOT IDENT.
SB-126	7.790E-02	1.707E-01	1.297E-01	8.708E-02	NOT IDENT.
SB-127	2.860E-01	1.551E+00	1.308E+00	7.914E-01	NOT IDENT.
I-131	-4.486E-02	1.120E-01	9.562E-02	5.717E-02	NOT IDENT.
TE-132	9.113E-02	8.904E-01	7.562E-01	4.543E-01	FAIL ABUN
BA-133	-1.521E-02	4.593E-02	3.463E-02	2.343E-02	FAIL ABUN
I-133	2.144E+03	1.317E+04	0.000E+00	6.720E+03	SHORT HLIF
CS-134	1.167E-01	7.108E-02	4.786E-02	3.627E-02	FAIL ABUN
CS-135	2.485E-01	1.765E-01	1.405E-01	9.007E-02	NOT IDENT.
I-135	4.074E+15	8.749E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.775E-02	1.195E-01	9.554E-02	6.097E-02	NOT IDENT.
CE-139	-3.554E-02	3.028E-02	2.477E-02	1.545E-02	NOT IDENT.
BA-140	-2.099E-01	2.697E-01	2.065E-01	1.376E-01	NOT IDENT.
LA-140	-1.931E-02	8.431E-02	6.725E-02	4.302E-02	FAIL ABUN
CE-143	8.662E+02	3.229E+02	0.000E+00	1.648E+02	SHORT HLIF
CE-144	-2.859E-02	1.941E-01	1.692E-01	9.903E-02	NOT IDENT.
PM-144	1.152E-03	3.252E-02	2.704E-02	1.659E-02	NOT IDENT.
PR-144	1.111E-01	2.437E+00	2.028E+00	1.243E+00	NOT IDENT.
PM-146	2.413E-02	4.485E-02	3.976E-02	2.288E-02	NOT IDENT.
ND-147	1.622E-01	5.818E-01	5.039E-01	2.968E-01	NOT IDENT.
PM-149	-8.134E+01	1.316E+02	1.048E+02	6.715E+01	NOT IDENT.
EU-152	-6.522E-02	9.126E-02	7.398E-02	4.656E-02	FAIL ABUN
GD-153	2.850E-01	1.284E-01	8.028E-02	6.553E-02	FAIL ABUN
EU-154	-5.156E-03	1.357E-01	1.120E-01	6.926E-02	NOT IDENT.
TB-160	1.227E-01	1.409E-01	1.291E-01	7.187E-02	FAIL ABUN
HO-166M	-2.148E-02	5.886E-02	4.706E-02	3.003E-02	FAIL ABUN
TA-182	-1.617E-01	2.240E-01	1.749E-01	1.143E-01	FAIL ABUN
IR-192	-1.505E-02	3.563E-02	2.853E-02	1.818E-02	FAIL ABUN
HG-203	4.183E-02	4.208E-02	3.328E-02	2.147E-02	NOT IDENT.
BI-207	-1.323E-02	5.305E-02	4.366E-02	2.707E-02	FAIL ABUN
PB-210	3.004E+00	3.949E+00	3.397E+00	2.015E+00	NOT IDENT.
PB-211	6.039E-01	7.430E-01	6.255E-01	3.791E-01	NOT IDENT.
BI-212	2.784E+00	9.539E-01	6.338E-01	4.867E-01	FAIL ABUN
RN-219	-2.414E-01	3.878E-01	3.229E-01	1.979E-01	FAIL ABUN
RA-223	4.514E-01	7.151E-01	5.461E-01	3.649E-01	FAIL ABUN
AC-227	6.927E-04	2.557E-01	2.143E-01	1.305E-01	FAIL ABUN
TH-227	6.927E-04	2.557E-01	2.143E-01	1.305E-01	FAIL ABUN
PA-231	7.076E-01	1.484E+00	1.262E+00	7.572E-01	FAIL ABUN
TH-231	4.514E-01	7.151E-01	5.461E-01	3.649E-01	FAIL ABUN
PA-233	-5.693E-02	7.024E-02	5.488E-02	3.584E-02	FAIL ABUN
PA-234	9.571E-03	2.854E-01	2.440E-01	1.456E-01	FAIL ABUN
NP-239	-1.799E-01	3.844E-01	3.335E-01	1.961E-01	FAIL ABUN
AM-241	1.071E-01	1.924E-01	1.502E-01	9.818E-02	NOT IDENT.
CM-247	-1.453E-02	3.501E-02	2.963E-02	1.786E-02	FAIL ABUN
CF-249	1.336E-02	4.009E-02	3.557E-02	2.046E-02	NOT IDENT.

CF-251

-2.146E-02

1.301E-01

1.112E-01

6.640E-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	336.2287
49.72	363.2980
57.36	0.0000
59.54	423.2683
63.29	472.2769
63.29	472.2769
64.28	461.5291
67.75	485.1074
69.67	497.4192
70.83	500.0659
72.81	528.9351
72.87	529.0086
72.87	529.0086
74.82	498.0203
74.82	498.0203
74.82	498.0203
74.97	498.1940
77.11	500.6356
77.11	500.6356
77.11	500.6356
79.69	509.5229
79.80	509.6472
80.12	446.6821
80.19	446.7512
80.57	441.9861
81.00	500.7047
81.07	500.7819
81.07	500.7819
83.79	649.5146
83.79	649.5146
85.43	651.7819
86.48	653.2220
86.55	653.3177
86.79	653.6433
86.94	653.8539
87.57	778.6115
88.03	768.9103
88.47	677.7109
89.96	621.2426
91.11	637.5814
92.59	602.5878
92.59	602.5878
93.35	603.5020
94.67	375.7509
94.87	367.9568
94.87	367.9568
95.86	376.6285
97.43	377.7790
98.44	354.5233
99.53	324.5438
100.11	346.2943
103.18	283.2955
103.37	283.3968
105.31	337.5130
106.12	355.5894
109.28	318.1866
111.00	354.6198
111.76	348.7204
116.30	301.4592
117.23	316.1837
121.12	282.1740
121.78	309.3418
122.06	312.2660
123.07	286.7972
131.20	397.7630
133.52	311.4362
136.00	281.3651

136.47	270.1881
140.51	277.5666
140.51	0.0000
143.76	294.2427
144.24	294.4488
144.24	294.4488
145.44	288.2416
152.43	314.4386
153.25	265.2491
154.21	291.8732
154.21	291.8732
156.02	292.6117
158.56	263.2973
159.00	272.2677
162.66	272.6409
163.33	278.7969
165.86	323.2345
176.60	260.6136
177.52	283.9990
181.07	269.1375
184.41	253.5528
185.72	247.3707
193.51	258.9142
197.04	286.7112
205.31	258.3365
210.85	228.6329
215.65	253.9887
222.11	228.2959
227.38	222.1390
228.16	214.8757
228.18	214.8798
235.69	231.5720
235.96	220.3778
235.96	220.3778
238.63	218.2915
238.63	218.2915
240.99	218.8139
242.00	219.0370
244.70	212.5972
252.40	189.6912
252.80	181.0407
256.23	193.6802
256.23	193.6802
260.90	198.9446
264.66	210.4654
268.22	156.0518
269.46	169.5289
269.46	169.5289
271.23	181.4593
273.65	160.1748
276.40	194.0331
277.37	184.1580
277.60	184.1983
278.00	169.1892
279.20	147.5708
279.54	152.6488
280.46	157.8132
283.69	168.3746
284.31	154.9889
285.41	169.7552
285.90	190.0769
287.50	168.9453
293.27	0.0000
295.22	161.0211
295.96	161.1252
298.57	161.4863
299.98	161.6827
299.98	161.6827
300.09	161.6972
300.09	161.6972
300.13	161.7030
301.36	152.1838
302.85	107.8621
304.50	118.3011
304.50	118.3011
304.85	118.3369
308.46	142.2069
311.90	188.6207

316.51	157.0148
319.41	137.7148
320.08	154.0004
323.87	134.1508
323.87	134.1508
328.76	153.9194
333.37	178.3581
334.37	141.9573
334.37	141.9573
338.28	159.4880
338.28	159.4880
338.32	159.4935
338.32	159.4935
338.32	159.4935
340.48	128.5153
340.55	128.5220
344.28	140.6313
351.06	133.4816
351.93	133.5686
356.01	145.7721
364.49	115.9555
366.42	132.3238
383.85	125.7953
388.16	130.7502
388.63	139.9403
391.69	129.2421
400.66	138.3476
401.81	129.2270
402.40	122.8143
404.85	108.2218
410.95	113.3139
414.70	145.2574
423.72	100.2292
427.09	126.7376
427.87	121.1658
433.94	101.8416
453.88	117.4615
463.37	105.6645
468.07	100.1882
473.00	114.0154
476.78	117.1800
477.60	115.2994
487.02	82.8197
492.35	82.1017
497.08	104.8710
511.00	92.8683
514.00	85.5035
527.90	84.7743
529.87	0.0000
531.02	82.9240
537.26	88.2202
546.56	0.0000
563.25	78.2736
569.33	78.5227
569.50	78.5298
569.70	83.6391
583.19	89.3577
600.60	104.6525
602.73	105.5044
604.72	74.7576
609.32	111.3528
609.32	111.3528
610.33	96.6204
614.28	71.7730
618.01	75.2476
621.93	70.1570
621.93	70.1570
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635.95	66.4146
636.99	89.6510
645.85	83.6723
657.76	61.3477
661.66	76.8230
661.66	76.8230
664.57	0.0000
666.33	71.8553
666.50	71.8614
677.62	78.4603

685.70	67.9603
695.00	76.9087
696.49	69.3711
696.51	69.3730
697.00	70.4709
702.65	85.8638
706.68	78.3940
711.68	73.1095
720.70	64.8512
721.93	0.0000
722.78	80.6977
722.91	77.1934
723.31	77.2063
724.19	61.4380
727.33	69.2100
733.00	72.2425
735.93	63.9526
739.50	76.1952
747.24	69.7964
752.31	72.1649
753.82	67.7668
756.73	63.3996
763.94	55.3323
765.81	62.5198
766.42	62.5369
777.92	74.7986
778.90	75.2012
783.70	75.3464
785.37	61.2183
795.86	58.7634
801.95	69.4792
810.29	72.7383
810.76	68.2050
815.77	61.0492
818.51	52.9038
832.01	79.7719
834.85	78.9390
836.80	0.0000
846.77	53.4801
856.80	40.1077
860.56	50.9771
871.09	61.4125
873.19	44.6977
875.33	0.0000
879.36	50.3996
880.51	45.7521
883.24	67.2943
884.68	60.7836
889.28	58.0766
898.04	46.9836
911.20	62.3117
911.20	62.3117
911.20	62.3117
926.50	47.4622
937.49	44.4678
944.13	38.2031
946.00	51.6072
949.00	48.7912
962.29	76.8828
964.08	70.5189
966.15	54.8514
968.97	54.9042
968.97	54.9042
968.97	54.9042
983.53	54.2049
996.26	38.8818
1001.03	46.7320
1004.73	42.2405
1037.84	48.2774
1038.76	0.0000
1048.07	66.2279
1050.41	45.5036
1050.41	45.5036
1063.66	57.6148
1085.87	36.0088
1099.45	50.2197
1112.07	46.6317
1115.54	57.1924

1120.29	56.6016
1120.29	56.6016
1120.55	56.6043
1121.30	56.6180
1131.51	0.0000
1173.23	58.5168
1177.93	53.4549
1189.05	71.1563
1204.77	69.4045
1221.41	89.5022
1231.02	74.0889
1235.36	78.3545
1238.28	58.5539
1260.41	0.0000
1271.85	44.3174
1274.44	55.9657
1274.54	62.3015
1291.59	44.5532
1298.22	0.0000
1312.11	34.1297
1332.49	31.0943
1365.19	23.7875
1368.63	0.0000
1384.29	10.8647
1408.01	31.6947
1457.56	0.0000
1460.82	18.4513
1489.16	18.5758
1505.03	30.7643
1596.21	20.7670
1620.50	17.2251
1678.03	0.0000
1690.97	7.7728
1764.49	9.8653
1764.49	9.8653
1770.23	13.5452
1771.35	18.6293
1791.20	0.0000
1836.06	17.1561

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900017

Total Uranium Activity	6.0144E+01	ug/g
Total Uranium Counting Unc.	1.3029E+01	ug/g
Total Uranium Tpu	6.6473E-06	ug/g
Total Uranium Mda	3.6610E+00	ug/g

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*****
*
*               GEL Laboratories LLC                      *
*               2040 SAVAGE ROAD                          *
*               CHARLESTON ,SC 29417                      *
*               GROSS GAMMA REPORT                        *
*
*****
*
*  BATCH ID      : 957711                                SAMPLE ID   : G247900017
*  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 15:22:15.15              SAMPLE ALQT  : 122.750 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.344E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.651E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 5.617E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.743E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 19:01:19.03

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900018.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:00:52.
Sample ID        : G247900018 Sample quantity : 1.36260E+02 GRAM
Detector name    : GAM01 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.27 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957711 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	74.81	458	569	1.30	150.34	144	15	6.36E-02	10.2	2.14E+00
2	2	77.17*	586	428	1.01	155.06	144	15	8.14E-02	7.1	
3	0	87.31	250	432	1.59	175.31	172	7	3.48E-02	15.1	
4	0	93.59*	102	739	1.34	187.87	182	9	1.41E-02	51.5	
5	0	129.12	156	407	1.33	258.89	254	10	2.17E-02	25.5	
6	0	186.19*	156	359	1.25	372.96	369	9	2.17E-02	24.4	
7	0	209.85	101	415	0.99	420.27	415	11	1.41E-02	40.2	
8	2	238.96*	1357	200	1.37	478.45	471	21	1.88E-01	3.3	2.66E+00
9	2	241.97	261	249	1.55	484.46	471	21	3.63E-02	13.6	
10	0	270.56	73	199	1.02	541.62	538	8	1.01E-02	35.8	
11	0	277.53	50	200	1.10	555.54	553	8	6.94E-03	51.0	
12	0	295.47*	384	254	1.42	591.40	584	13	5.34E-02	10.1	
13	0	300.18	72	212	1.51	600.81	597	10	1.00E-02	39.4	
14	0	328.27	91	211	0.99	656.98	652	11	1.27E-02	32.4	
15	0	338.76*	209	258	1.14	677.94	672	13	2.90E-02	17.5	
16	0	352.29*	677	191	1.30	704.98	699	12	9.40E-02	5.7	
17	0	409.75	48	127	1.01	819.84	815	10	6.70E-03	46.1	
18	0	463.49	62	100	1.06	927.24	923	9	8.66E-03	31.5	
19	0	511.28*	120	136	2.46	1022.78	1014	15	1.67E-02	25.8	
20	0	583.64*	386	138	1.52	1167.40	1162	14	5.36E-02	8.6	
21	0	609.70*	470	101	1.82	1219.48	1214	15	6.52E-02	6.8	
22	0	727.57	122	76	1.66	1455.07	1448	16	1.69E-02	18.4	
23	0	861.03	64	59	2.37	1721.82	1716	13	8.88E-03	27.7	
24	0	911.54*	271	93	1.85	1822.77	1813	19	3.76E-02	10.7	
25	0	969.26*	171	58	1.69	1938.13	1934	13	2.37E-02	12.1	
26	0	1120.69*	108	48	1.24	2240.77	2234	12	1.51E-02	16.4	
27	0	1378.36	29	29	1.45	2755.74	2749	13	4.03E-03	42.6	
28	0	1461.09*	1136	18	2.09	2921.07	2914	17	1.58E-01	3.1	
29	0	1729.73	26	0	1.14	3457.92	3453	10	3.61E-03	19.6	
30	0	1764.91*	86	0	2.47	3528.22	3521	14	1.19E-02	11.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 19:01:22

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900018.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 17:00:52
Sample ID         : G247900018 Sample quantity : 136.26 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA1 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.27 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	*	3.104E+01	3.367E+00	6.024E-01	5.355E-02	51.525
CD-109	+	88.03	*	3.679E+00	1.164E+00	1.726E+00	1.633E-01	2.131
SN-126		64.28		7.899E-01	6.218E-01	1.032E+00	1.519E-01	0.765
	+	86.94		1.493E+00	7.666E-01	6.878E-01	2.855E-01	2.170
	+	87.57	*	3.590E-01	1.136E-01	1.720E-01	1.620E-02	2.087
TL-208	+	277.37		5.374E-01	5.525E-01	6.701E-01	8.642E-02	0.802
	+	583.19	*	5.836E-01	1.130E-01	6.581E-02	5.969E-03	8.868
	+	860.56		9.261E-01	5.203E-01	5.075E-01	4.862E-02	1.825
BI-211		72.87		9.184E+00	4.122E+00	6.399E+00	5.249E-01	1.435
	+	351.06	*	4.473E+00	6.539E-01	3.654E-01	3.324E-02	12.240
PB-212	+	74.82		2.955E+00	7.125E-01	6.485E-01	8.303E-02	4.558
	+	77.11		2.152E+00	3.570E-01	3.701E-01	3.141E-02	5.814
	+	238.63	*	1.973E+00	2.396E-01	9.879E-02	1.005E-02	19.967
	+	300.09		1.651E+00	1.312E+00	1.364E+00	1.489E-01	1.210
BI-214	+	609.32	*	1.378E+00	2.308E-01	1.221E-01	1.210E-02	11.289
	+	1120.29		1.678E+00	5.806E-01	5.616E-01	6.036E-02	2.989
	+	1764.49		1.867E+00	4.652E-01	2.061E-01	1.729E-02	9.057
PB-214	+	74.82		5.238E+00	1.228E+00	1.149E+00	1.322E-01	4.558
	+	77.11		3.793E+00	7.029E-01	6.525E-01	7.721E-02	5.814
	+	242.00		2.306E+00	6.750E-01	6.010E-01	6.479E-02	3.837
	+	295.22		1.554E+00	3.578E-01	2.556E-01	2.862E-02	6.078
	+	351.93	*	1.623E+00	2.536E-01	1.326E-01	1.410E-02	12.240
RA-224	+	240.99	*	4.078E+00	1.170E+00	1.059E+00	9.625E-02	3.850
RA-226	+	609.32	*	1.378E+00	2.308E-01	1.221E-01	1.210E-02	11.289
	+	1120.29		1.678E+00	5.806E-01	5.616E-01	6.036E-02	2.989
	+	1764.49		1.867E+00	4.652E-01	2.061E-01	1.729E-02	9.057
AC-228	+	338.32		1.534E+00	8.361E-01	4.358E-01	1.820E-01	3.519
	+	911.20	*	2.003E+00	4.910E-01	2.515E-01	2.997E-02	7.964
	+	968.97		2.182E+00	7.509E-01	6.658E-01	1.630E-01	3.277
RA-228	+	338.32		1.534E+00	8.361E-01	4.358E-01	1.820E-01	3.519
	+	911.20	*	2.003E+00	4.910E-01	2.515E-01	2.997E-02	7.964
	+	968.97		2.182E+00	7.509E-01	6.658E-01	1.630E-01	3.277
TH-228	+	74.82		2.955E+00	6.528E-01	6.485E-01	5.452E-02	4.558
	+	77.11		2.152E+00	3.570E-01	3.701E-01	3.141E-02	5.814

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	1.973E+00	2.396E-01	9.879E-02	1.005E-02	19.967
	+	300.09		1.651E+00	1.647E+00	1.364E+00	8.357E-01	1.210
TH-232	+	338.32		1.534E+00	5.543E-01	4.358E-01	3.836E-02	3.519
	+	911.20	*	2.003E+00	4.910E-01	2.515E-01	2.997E-02	7.964
	+	968.97		2.182E+00	7.509E-01	6.658E-01	1.630E-01	3.277
NP-237	+	86.48	*	1.071E+00	4.067E-01	4.532E-01	1.040E-01	2.364
		95.86		-8.955E-02	1.141E+00	1.617E+00	3.899E-01	-0.055
ANH-511	+	511.00	*	1.386E-01	7.255E-02	5.341E-02	4.527E-03	2.595

---- 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	*	5.459E-02	3.280E-01	5.334E-01	4.852E-02	0.102
NA-22		1274.54	*	1.964E-02	4.870E-02	8.451E-02	7.097E-03	0.232
NA-24		1368.63	*	4.947E-01	4.870E-02	Half-Life too short		
SC-46		889.28	*	1.754E-02	4.718E-02	7.969E-02	7.203E-03	0.220
	+	1120.55		2.865E-01	9.723E-02	1.557E-01	1.308E-02	1.839
V-48		944.13		-2.627E-01	1.018E+00	1.612E+00	1.452E-01	-0.163
		983.53	*	1.640E-02	8.148E-02	1.351E-01	1.206E-02	0.121
		1312.11		-8.334E-03	8.839E-02	1.456E-01	1.235E-02	-0.057
CR-51		320.08	*	1.134E-01	4.430E-01	7.357E-01	6.915E-02	0.154
MN-54		834.85	*	-3.601E-03	4.152E-02	6.763E-02	6.019E-03	-0.053
CO-56		846.77	*	-1.346E-02	4.196E-02	6.654E-02	5.946E-03	-0.202
		1037.84		-2.509E-01	3.366E-01	4.959E-01	4.568E-02	-0.506
		1238.28		2.061E-01	1.097E-01	2.055E-01	1.757E-02	1.003
		1771.35		-8.406E-01	4.102E-01	4.505E-01	3.771E-02	-1.866
CO-57		122.06	*	1.027E-02	2.973E-02	4.783E-02	4.210E-03	0.215
		136.47		-2.027E-01	2.226E-01	3.641E-01	3.360E-02	-0.557
CO-58		810.76	*	-3.604E-02	4.584E-02	6.976E-02	6.172E-03	-0.517
FE-59		1099.45	*	2.193E-03	1.143E-01	1.845E-01	1.701E-02	0.012
		1291.59		5.158E-02	1.400E-01	2.422E-01	2.330E-02	0.213
CO-60		1173.23		-1.097E-02	5.088E-02	8.377E-02	6.780E-03	-0.131
		1332.49	*	-9.750E-03	4.623E-02	7.509E-02	6.400E-03	-0.130
ZN-65		1115.54	*	-2.365E-02	1.307E-01	1.768E-01	1.492E-02	-0.134
SE-75		121.12		2.647E-02	1.542E-01	2.464E-01	2.762E-02	0.107
		136.00		-3.406E-02	4.297E-02	7.069E-02	6.120E-03	-0.482
		264.66	*	-2.140E-02	5.030E-02	7.835E-02	7.198E-03	-0.273
		279.54		1.404E-01	1.456E-01	2.233E-01	2.111E-02	0.629
		400.66		3.805E-02	2.970E-01	4.850E-01	5.184E-02	0.078
SR-85		514.00	*	9.371E-02	4.951E-02	8.056E-02	6.830E-03	1.163
Y-88		898.04		-1.060E-02	5.057E-02	8.101E-02	7.370E-03	-0.131
		1836.06	*	-9.390E-03	3.329E-02	5.031E-02	4.137E-03	-0.187
Y-91		1204.77	*	-1.154E+00	2.539E+01	4.239E+01	3.473E+00	-0.027
NB-94		702.65	*	-1.396E-02	3.886E-02	6.267E-02	5.261E-03	-0.223
		871.09		3.937E-02	4.198E-02	7.399E-02	6.658E-03	0.532
NB-95		765.81	*	-1.550E-02	5.410E-02	8.544E-02	7.404E-03	-0.181
NB-95M		235.69	*	9.688E-02	1.470E-01	2.230E-01	2.291E-02	0.434
ZR-95		724.19		-4.674E-02	1.208E-01	1.658E-01	1.530E-02	-0.282

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
MO-99	756.73	*		-4.149E-03	8.514E-02	1.393E-01	1.327E-02	-0.030
	140.51			9.098E+00	3.255E+01	5.465E+01	1.296E+01	0.166
	181.07			2.688E+01	2.753E+01	4.419E+01	8.308E+00	0.608
	366.42			1.093E+01	1.434E+02	2.344E+02	1.983E+01	0.047
	739.50	*		-8.021E+00	1.718E+01	2.712E+01	4.265E+00	-0.296
TC-99M	777.92			-2.816E+01	4.997E+01	7.786E+01	6.783E+00	-0.362
	140.51	*		2.430E+11	4.997E+01	Half-Life too short		
RU-103	497.08	*		-2.051E-02	5.024E-02	7.782E-02	1.079E-02	-0.264
	610.33			1.450E+01	3.060E+00	3.351E+00	5.438E-01	4.326
RH-106	621.93	*		6.825E-02	3.214E-01	5.460E-01	7.144E-02	0.125
	1050.41			-5.423E-01	3.032E+00	4.811E+00	4.196E-01	-0.113
RU-106	621.93	*		6.825E-02	3.213E-01	5.460E-01	4.561E-02	0.125
	1050.41			-5.423E-01	3.032E+00	4.811E+00	4.196E-01	-0.113
AG-108M	433.94	*		1.320E-02	3.259E-02	5.407E-02	4.627E-03	0.244
	614.28			3.939E-03	3.942E-02	5.800E-02	5.028E-03	0.068
	722.91			-2.883E-02	4.713E-02	6.258E-02	5.487E-03	-0.461
AG-110M	657.76	*		2.910E-03	3.771E-02	6.319E-02	5.358E-03	0.046
	677.62			4.694E-02	3.536E-01	5.939E-01	5.066E-02	0.079
	706.68			1.322E-01	2.354E-01	4.071E-01	3.528E-02	0.325
	763.94			-2.816E-01	1.973E-01	2.858E-01	2.542E-02	-0.986
	884.68			5.170E-03	5.743E-02	9.471E-02	8.802E-03	0.055
	937.49			1.111E-01	1.221E-01	2.158E-01	2.010E-02	0.515
	1384.29			-6.159E-02	1.946E-01	2.598E-01	2.292E-02	-0.237
SN-113	1505.03			-2.258E-01	2.728E-01	3.821E-01	3.308E-02	-0.591
	391.69	*		-5.185E-02	5.129E-02	7.719E-02	6.429E-03	-0.672
CD-115	260.90			6.841E+01	2.128E+02	3.575E+02	3.269E+01	0.191
	492.35			-2.675E+01	6.336E+01	9.803E+01	8.282E+00	-0.273
	527.90	*		-5.406E+00	1.728E+01	2.847E+01	2.417E+00	-0.190
SN-117M	156.02			1.439E+00	2.638E+00	4.538E+00	3.865E-01	0.317
	158.56	*		-5.271E-02	6.405E-02	1.046E-01	8.905E-03	-0.504
TE-123M	159.00	*		-2.035E-02	3.144E-02	5.173E-02	4.431E-03	-0.393
SB-124	602.73			1.038E-02	4.489E-02	7.235E-02	6.085E-03	0.143
	645.85			3.143E-01	5.267E-01	9.188E-01	8.066E-02	0.342
	722.78			-3.129E-01	4.781E-01	6.308E-01	5.480E-02	-0.496
	1690.97	*		-8.563E-03	7.281E-02	1.158E-01	1.029E-02	-0.074
SB-125	427.87	*		4.900E-02	9.625E-02	1.611E-01	1.354E-02	0.304
	463.37			6.346E-01	4.035E-01	5.987E-01	5.414E-02	1.060
	600.60			-6.718E-02	1.957E-01	3.194E-01	2.896E-02	-0.210
TE-125M	635.95			-7.894E-02	3.026E-01	4.945E-01	4.464E-02	-0.160
	109.28	*		7.735E+00	1.192E+01	1.916E+01	2.015E+00	0.404
I-126	388.63			1.220E-01	2.034E-01	3.421E-01	2.771E-02	0.357
	666.33	*		4.170E-02	2.440E-01	4.116E-01	3.381E-02	0.101
SB-126	753.82			5.217E-01	2.171E+00	3.657E+00	3.152E-01	0.143
	414.70			-1.937E-02	1.058E-01	1.468E-01	1.201E-02	-0.132
	666.50			8.713E-03	8.463E-02	1.420E-01	1.167E-02	0.061
	695.00			-6.736E-03	9.007E-02	1.486E-01	1.242E-02	-0.045
	697.00			-9.076E-02	3.284E-01	5.334E-01	4.463E-02	-0.170
	720.70	*		1.815E-02	1.984E-01	2.881E-01	2.442E-02	0.063
	856.80			-1.529E-01	6.401E-01	8.778E-01	7.867E-02	-0.174

---- 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		1.187E+00	5.906E+00	9.844E+00	4.108E+00	0.121
		473.00		-3.557E-01	2.043E+00	3.229E+00	4.170E-01	-0.110
		685.70	*	-2.825E-01	1.800E+00	2.952E+00	3.386E-01	-0.096
		783.70		-1.741E-01	4.299E+00	7.057E+00	8.985E-01	-0.025
I-131		80.19		3.419E-01	6.310E+00	9.069E+00	7.971E-01	0.038
		284.31		-1.131E+00	1.872E+00	2.984E+00	2.853E-01	-0.379
		364.49	*	8.020E-02	1.420E-01	2.391E-01	2.143E-02	0.335
		636.99		2.525E-01	1.852E+00	3.124E+00	2.755E-01	0.081
TE-132		49.72		4.681E+00	2.814E+01	4.624E+01	5.185E+00	0.101
		111.76		-3.402E+01	4.998E+01	7.707E+01	8.750E+00	-0.441
		116.30		2.194E+01	4.268E+01	6.915E+01	7.869E+00	0.317
		228.16	*	-3.602E-01	1.035E+00	1.694E+00	2.754E-01	-0.213
BA-133		81.00		-1.190E-01	1.217E-01	1.642E-01	2.564E-02	-0.725
	+	276.40		4.969E-01	5.118E-01	7.242E-01	1.046E-01	0.686
		302.85		8.296E-02	1.766E-01	2.628E-01	3.513E-02	0.316
		356.01	*	1.525E-02	5.145E-02	7.527E-02	9.739E-03	0.203
		383.85		-6.924E-02	3.394E-01	5.436E-01	6.591E-02	-0.127
I-133		529.87	*	-3.663E-03	3.394E-01	Half-Life too short		
		875.33		1.292E-01	3.394E-01	Half-Life too short		
		1298.22		7.698E-02	3.394E-01	Half-Life too short		
CS-134		563.25		9.175E-03	4.068E-01	6.846E-01	5.862E-02	0.013
		569.33		-1.264E-01	2.234E-01	3.599E-01	3.092E-02	-0.351
		604.72		5.852E-03	4.067E-02	6.010E-02	5.064E-03	0.097
		795.86	*	5.580E-02	5.253E-02	9.356E-02	8.268E-03	0.596
		801.95		-2.289E-01	4.827E-01	7.493E-01	6.627E-02	-0.305
		1365.19		-9.174E-01	1.361E+00	2.049E+00	1.837E-01	-0.448
CS-135		268.22	*	7.030E-02	1.909E-01	2.839E-01	2.960E-02	0.248
I-135		546.56		-7.609E+10	1.909E-01	Half-Life too short		
		836.80		1.740E+10	1.909E-01	Half-Life too short		
		1038.76		-3.403E+10	1.909E-01	Half-Life too short		
		1131.51		1.078E+11	1.909E-01	Half-Life too short		
		1260.41	*	8.941E+09	1.909E-01	Half-Life too short		
		1457.56		6.999E+12	1.909E-01	Half-Life too short		
		1678.03		1.415E+11	1.909E-01	Half-Life too short		
		1791.20		9.293E+10	1.909E-01	Half-Life too short		
CS-136		153.25		8.288E-01	1.004E+00	1.739E+00	1.771E-01	0.477
		176.60		2.181E-01	5.639E-01	9.620E-01	9.138E-02	0.227
		273.65		-5.057E-01	9.673E-01	9.447E-01	9.297E-02	-0.535
		340.55		7.895E-01	2.390E-01	3.944E-01	3.590E-02	2.002
		818.51		-5.851E-02	8.731E-02	1.339E-01	1.186E-02	-0.437
		1048.07	*	-3.531E-02	1.295E-01	2.032E-01	1.847E-02	-0.174
		1235.36		1.916E-01	7.241E-01	1.235E+00	1.423E-01	0.155
BA-137M		661.66	*	-1.317E-02	3.848E-02	6.229E-02	5.102E-03	-0.211
CS-137		661.66	*	-1.391E-02	4.065E-02	6.581E-02	5.402E-03	-0.211
CE-139		165.86	*	5.629E-03	3.300E-02	5.597E-02	4.767E-03	0.101
BA-140		162.66		2.695E-01	9.515E-01	1.621E+00	1.475E-01	0.166
		304.85		-1.519E+00	1.904E+00	2.497E+00	7.342E-01	-0.608
		423.72		3.688E-02	2.314E+00	3.740E+00	1.227E+00	0.010
		537.26	*	1.617E-01	3.172E-01	5.447E-01	1.845E-01	0.297

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LA-140	+	328.76		8.801E-01	5.762E-01	7.002E-01	6.563E-02	1.257
		487.02		1.289E-01	1.712E-01	2.890E-01	2.595E-02	0.446
		815.77		1.995E-01	3.818E-01	6.569E-01	6.458E-02	0.304
		1596.21	*	-8.461E-02	1.093E-01	1.577E-01	1.361E-02	-0.537
CE-141		145.44	*	-4.693E-04	7.210E-02	1.198E-01	1.042E-02	-0.004
CE-143		57.36		-2.982E-03	7.210E-02	Half-Life	too short	
		293.27	*	5.120E-04	7.210E-02	Half-Life	too short	
		664.57		7.844E-04	7.210E-02	Half-Life	too short	
		721.93		-1.327E-03	7.210E-02	Half-Life	too short	
CE-144		80.12		9.926E-02	3.112E+00	4.468E+00	3.896E-01	0.022
		133.52	*	2.349E-01	2.521E-01	3.695E-01	5.648E-02	0.636
PM-144		476.78		-2.756E-02	6.450E-02	9.942E-02	9.122E-03	-0.277
		618.01		-2.263E-03	3.705E-02	5.602E-02	4.825E-03	-0.040
		696.49	*	-9.475E-03	3.858E-02	6.280E-02	5.255E-03	-0.151
PR-144		696.51	*	-7.188E-01	2.888E+00	4.700E+00	3.932E-01	-0.153
		1489.16		-1.552E+01	1.263E+01	1.572E+01	1.361E+00	-0.987
PM-146		453.88	*	6.446E-02	5.127E-02	8.866E-02	9.193E-03	0.727
		633.25		1.991E+00	1.715E+00	2.816E+00	1.074E+00	0.707
		735.93		7.895E-02	1.534E-01	2.505E-01	7.013E-02	0.315
		747.24		7.605E-02	1.136E-01	1.969E-01	2.869E-02	0.386
ND-147		91.11		3.050E-01	5.463E-01	6.314E-01	6.244E-02	0.483
		319.41		7.659E-01	4.169E+00	6.899E+00	6.190E-01	0.111
		531.02	*	-6.285E-02	6.450E-01	1.080E+00	1.606E-01	-0.058
PM-149		285.90	*	-1.047E+02	1.491E+02	2.352E+02	3.725E+01	-0.445
EU-152		121.78		9.029E-03	8.453E-02	1.347E-01	1.354E-02	0.067
		244.70		4.014E-01	4.082E-01	6.295E-01	5.730E-02	0.638
		344.28	*	6.579E-03	1.255E-01	1.801E-01	1.665E-02	0.037
		778.90		1.712E-02	2.554E-01	4.238E-01	3.694E-02	0.040
		964.08		6.180E-01	3.906E-01	6.414E-01	5.754E-02	0.963
		1085.87		2.067E-01	4.424E-01	7.477E-01	6.410E-02	0.276
		1112.07		2.419E-01	3.933E-01	6.526E-01	5.512E-02	0.371
		1408.01		-2.340E-02	2.377E-01	3.895E-01	3.355E-02	-0.060
GD-153		69.67		-2.087E-01	2.220E+00	3.184E+00	2.554E-01	-0.066
		97.43	*	-1.498E-02	1.078E-01	1.522E-01	1.351E-02	-0.098
		103.18		-1.501E-01	1.273E-01	1.920E-01	1.675E-02	-0.782
EU-154		123.07		6.037E-02	5.968E-02	9.807E-02	1.125E-02	0.616
		723.31		-1.125E-01	2.173E-01	2.926E-01	2.743E-02	-0.384
		873.19		-8.218E-02	3.578E-01	5.737E-01	6.985E-02	-0.143
		996.26		5.390E-02	3.953E-01	6.502E-01	1.145E-01	0.083
		1004.73		4.546E-02	2.645E-01	4.355E-01	5.150E-02	0.104
		1274.44	*	6.026E-02	1.370E-01	2.385E-01	2.672E-02	0.253
EU-155	+	86.55		4.355E-01	1.379E-01	2.066E-01	1.941E-02	2.109
		105.31	*	-5.867E-02	1.239E-01	1.936E-01	1.702E-02	-0.303
TB-160	+	86.79		1.167E+00	3.694E-01	5.586E-01	5.216E-02	2.090
		197.04		-4.259E-01	6.301E-01	1.025E+00	9.012E-02	-0.416
		215.65		4.261E-01	8.953E-01	1.418E+00	1.268E-01	0.300
		298.57		1.903E-01	1.883E-01	2.206E-01	2.005E-02	0.863
		879.36	*	7.940E-02	1.615E-01	2.760E-01	2.489E-02	0.288
		962.29		-7.198E-02	6.783E-01	1.055E+00	9.468E-02	-0.068

---- 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		1.006E+00	3.040E-01	5.482E-01	4.915E-02	1.835
		1177.93		-3.925E-01	4.265E-01	6.556E-01	5.316E-02	-0.599
		1271.85		-4.504E-01	8.114E-01	1.276E+00	1.069E-01	-0.353
		80.57		9.779E-02	3.344E-01	4.857E-01	4.254E-02	0.201
		184.41		5.933E-02	4.516E-02	7.050E-02	6.117E-03	0.842
		280.46		6.114E-02	1.107E-01	1.660E-01	1.518E-02	0.368
	+	410.95		4.146E-01	3.836E-01	4.943E-01	4.032E-02	0.839
		711.68	*	-1.152E-02	6.733E-02	1.100E-01	9.284E-03	-0.105
TA-182		752.31		-2.323E-01	3.203E-01	4.960E-01	4.272E-02	-0.468
		810.29		-5.417E-02	6.879E-02	1.047E-01	9.243E-03	-0.517
		67.75		6.072E-02	1.289E-01	2.119E-01	1.679E-02	0.287
		100.11		-3.243E-03	2.018E-01	3.221E-01	2.832E-02	-0.010
		152.43		1.131E-01	3.818E-01	6.521E-01	5.556E-02	0.173
		222.11		-2.932E-01	3.889E-01	6.249E-01	5.615E-02	-0.469
	+	1121.30		7.917E-01	2.687E-01	4.324E-01	3.631E-02	1.831
		1189.05		1.916E-01	3.740E-01	6.525E-01	5.314E-02	0.294
IR-192		1221.41	*	-2.766E-02	2.389E-01	3.962E-01	3.266E-02	-0.070
		1231.02		-2.949E-01	5.416E-01	8.632E-01	7.139E-02	-0.342
	+	295.96		1.161E+00	2.567E-01	3.251E-01	2.979E-02	3.570
		308.46		-8.324E-03	1.105E-01	1.806E-01	1.641E-02	-0.046
		316.51	*	-2.397E-03	3.940E-02	6.437E-02	5.799E-03	-0.037
		468.07		4.599E-02	8.420E-02	1.246E-01	1.126E-02	0.369
		70.83		-7.290E-02	1.741E+00	2.503E+00	3.949E-01	-0.029
		72.87		2.324E+00	1.085E+00	1.619E+00	2.479E-01	1.435
HG-203		279.20	*	5.110E-02	5.343E-02	8.178E-02	7.648E-03	0.625
		72.81		4.698E-01	2.350E-01	3.630E-01	2.976E-02	1.294
	+	74.97		8.518E-01	1.879E-01	2.694E-01	2.246E-02	3.162
		569.70		-7.312E-03	3.453E-02	5.712E-02	4.839E-03	-0.128
		1063.66	*	2.012E-02	6.356E-02	1.058E-01	9.171E-03	0.190
		1770.23		1.913E-01	5.634E-01	8.643E-01	7.238E-02	0.221
		46.54	*	5.037E-01	4.222E+00	6.936E+00	6.496E-01	0.073
		404.85	*	-5.504E-01	9.693E-01	1.245E+00	6.013E-01	-0.442
PB-210		427.09		1.872E+00	1.836E+00	2.831E+00	1.308E+00	0.661
PB-211		832.01		-2.142E-01	1.092E+00	1.751E+00	9.090E-01	-0.122
BI-212		727.33	*	2.838E+00	1.103E+00	1.381E+00	1.709E-01	2.055
	+	785.37		5.690E-02	3.218E+00	5.311E+00	4.641E-01	0.011
		1620.50		2.815E+00	2.335E+00	4.591E+00	3.951E-01	0.613
	+	271.23		4.674E-01	3.387E-01	4.915E-01	5.262E-02	0.951
		401.81	*	1.031E-01	4.624E-01	7.593E-01	1.107E-01	0.136
		81.07		-4.721E-01	2.832E-01	3.697E-01	3.253E-02	-1.277
		83.79		7.771E-02	1.570E-01	2.284E-01	2.066E-02	0.340
	+	94.87		8.898E-01	9.205E-01	9.085E-01	8.170E-02	0.979
RN-219		144.24		-1.105E-01	7.652E-01	1.267E+00	1.210E-01	-0.087
		154.21		4.833E-01	4.278E-01	7.476E-01	6.990E-02	0.647
	+	269.46		3.632E-01	2.625E-01	3.830E-01	3.566E-02	0.948
		323.87	*	1.641E-01	8.527E-01	1.241E+00	2.170E-01	0.132
	+	338.28		6.086E+00	2.259E+00	2.682E+00	3.272E-01	2.269
		79.69		6.316E-01	1.531E+00	2.233E+00	3.855E-01	0.283
		235.96		1.872E-01	1.791E-01	2.764E-01	2.962E-02	0.677
AC-227								

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-227		256.23	*	-1.185E-01	2.885E-01	4.676E-01	5.810E-02	-0.253
	+	299.98		1.816E+00	1.449E+00	1.853E+00	2.413E-01	0.980
		304.50		-1.807E+00	2.110E+00	2.806E+00	4.703E-01	-0.644
		334.37		3.251E-01	2.485E+00	3.038E+00	4.773E-01	0.107
		79.80		8.346E-02	2.046E+00	2.939E+00	6.410E-01	0.028
TH-229		235.96		1.872E-01	1.790E-01	2.764E-01	2.806E-02	0.677
		256.23	*	-1.185E-01	2.886E-01	4.676E-01	6.517E-02	-0.253
	+	299.98		1.816E+00	1.449E+00	1.853E+00	2.413E-01	0.980
		304.50		-1.807E+00	2.110E+00	2.806E+00	4.703E-01	-0.644
		334.37		3.251E-01	2.485E+00	3.038E+00	4.773E-01	0.107
PA-231		85.43		4.334E-01	2.637E-01	3.987E-01	3.668E-02	1.087
	+	88.47		5.535E-01	1.752E-01	2.674E-01	2.520E-02	2.070
		193.51	*	3.751E-01	5.888E-01	1.009E+00	8.842E-02	0.372
	+	210.85		2.093E+00	1.694E+00	1.856E+00	1.653E-01	1.127
		283.69	*	-2.718E-01	1.727E+00	2.724E+00	4.058E-01	-0.100
TH-231	+	301.36		1.166E+00	9.295E-01	1.192E+00	1.488E-01	0.979
		81.07		-4.721E-01	2.832E-01	3.697E-01	3.253E-02	-1.277
		83.79		7.771E-02	1.570E-01	2.284E-01	2.066E-02	0.340
	+	94.87		8.898E-01	9.205E-01	9.085E-01	8.170E-02	0.979
		144.24		-1.105E-01	7.652E-01	1.267E+00	1.210E-01	-0.087
PA-233		154.21		4.833E-01	4.278E-01	7.476E-01	6.990E-02	0.647
	+	269.46		3.632E-01	2.625E-01	3.830E-01	3.566E-02	0.948
		323.87	*	1.641E-01	8.527E-01	1.241E+00	2.170E-01	0.132
	+	338.28		6.086E+00	2.259E+00	2.682E+00	3.272E-01	2.269
	+	300.13		8.216E-01	6.584E-01	8.382E-01	1.266E-01	0.980
PA-234		311.90	*	-1.737E-02	7.459E-02	1.208E-01	1.118E-02	-0.144
		340.48		3.386E+00	1.233E+00	1.611E+00	3.887E-01	2.102
	+	94.67		3.225E-01	3.348E-01	3.458E-01	4.382E-02	0.933
		98.44		1.711E-02	1.036E-01	1.660E-01	9.266E-02	0.103
		111.00		-1.428E-01	2.213E-01	3.367E-01	4.081E-02	-0.424
PA-234M		131.20		1.263E-01	1.371E-01	2.019E-01	1.745E-02	0.625
		569.50		-9.240E-02	3.045E-01	5.003E-01	4.238E-02	-0.185
		733.00		2.796E-02	4.245E-01	6.147E-01	1.362E-01	0.045
		880.51		9.049E-03	3.254E-01	5.336E-01	4.813E-02	0.017
		883.24		7.953E-02	3.320E-01	5.482E-01	3.688E-01	0.145
TH-234		926.50		2.792E-02	2.033E-01	3.357E-01	8.534E-02	0.083
		946.00	*	-1.544E-02	3.163E-01	5.122E-01	9.702E-02	-0.030
		949.00		1.915E-01	4.889E-01	8.268E-01	7.440E-02	0.232
		766.42		1.334E+01	1.533E+01	2.377E+01	1.206E+01	0.561
		1001.03	*	-2.970E-01	5.896E+00	9.662E+00	9.849E-01	-0.031
U-235		63.29	*	1.451E+00	1.696E+00	2.794E+00	5.018E-01	0.519
	+	92.59		1.197E+00	1.262E+00	1.555E+00	3.465E-01	0.770
		89.96		-1.165E+00	1.576E+00	1.651E+00	4.104E-01	-0.706
	+	93.35		9.041E-01	9.551E-01	1.160E+00	2.699E-01	0.780
		143.76	*	1.758E-02	2.277E-01	3.798E-01	6.425E-02	0.046
U-238		163.33		1.266E-01	4.875E-01	8.289E-01	1.484E-01	0.153
	+	185.72		1.457E-01	7.223E-02	1.000E-01	8.692E-03	1.457
		205.31		-2.979E-01	6.276E-01	8.961E-01	1.637E-01	-0.332
		63.29	*	1.451E+00	1.696E+00	2.794E+00	5.018E-01	0.519

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		1.197E+00	1.238E+00	1.555E+00	1.418E-01	0.770
		99.53		1.191E-01	1.829E-01	2.996E-01	2.639E-02	0.398
		103.37		-8.155E-02	1.139E-01	1.759E-01	1.533E-02	-0.464
		106.12		-8.062E-04	9.924E-02	1.582E-01	1.373E-02	-0.005
		117.23	*	2.589E-01	4.618E-01	7.501E-01	6.535E-02	0.345
AM-241		228.18		-8.642E-02	2.418E-01	3.958E-01	3.572E-02	-0.218
	+	277.60		2.456E-01	2.515E-01	3.579E-01	3.274E-02	0.686
		59.54	*	6.381E-02	1.817E-01	2.989E-01	2.463E-02	0.213
CM-247	+	278.00		1.043E+00	1.068E+00	1.528E+00	1.397E-01	0.683
CF-249		287.50		-4.451E-01	1.406E+00	2.276E+00	2.078E-01	-0.196
		402.40	*	-1.914E-03	4.208E-02	6.792E-02	5.507E-03	-0.028
		252.80		2.615E-01	1.082E+00	1.813E+00	1.655E-01	0.144
		333.37		-1.304E-01	3.309E-01	3.217E-01	2.848E-02	-0.406
CF-251		388.16	*	3.701E-02	4.538E-02	7.726E-02	6.264E-03	0.479
		177.52	*	-3.704E-02	1.416E-01	2.355E-01	2.029E-02	-0.157
		227.38		3.655E-02	3.967E-01	6.629E-01	5.978E-02	0.055
		285.41		-1.619E+00	2.491E+00	3.958E+00	3.615E-01	-0.409

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]G247900018      *
* Acquisition date   : 6-MAR-2010 17:00:52 Detector SN#                   *
* Detector ID        : GAM01 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                       *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000            *
* Elapsed real time  : 0 02:00:01.27 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G247900018 Analyst initials: MXR1                  *
* Batch Number      : 957711 Sample Quantity : 1.3626E+02 GRAM           *
* Recovery          : 1.00000 Carrier Weight : 0.00000                   *
*****
*
*                                     QC DATA                                *
*
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME : 12-JAN-2010 15:15:52 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.104E+01	3.299E+00	6.040E-01	0.000E+00
CD-109	3.679E+00	1.141E+00	1.823E+00	0.000E+00
SN-126	3.590E-01	1.114E-01	1.817E-01	0.000E+00
TL-208	5.836E-01	1.107E-01	6.716E-02	0.000E+00
BI-211	4.473E+00	6.408E-01	3.765E-01	0.000E+00
PB-212	1.973E+00	2.349E-01	1.025E-01	0.000E+00
BI-214	1.378E+00	2.262E-01	1.245E-01	0.000E+00
PB-214	1.623E+00	2.486E-01	1.366E-01	0.000E+00
RA-224	4.078E+00	1.147E+00	1.099E+00	0.000E+00
RA-226	1.378E+00	2.262E-01	1.245E-01	0.000E+00
AC-228	2.003E+00	4.811E-01	2.545E-01	0.000E+00
RA-228	2.003E+00	4.811E-01	2.545E-01	0.000E+00
TH-228	1.973E+00	2.349E-01	1.025E-01	0.000E+00
TH-232	2.003E+00	4.811E-01	2.545E-01	0.000E+00
NP-237	1.071E+00	3.986E-01	4.789E-01	0.000E+00
ANH-511	1.386E-01	7.110E-02	5.465E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	5.459E-02	3.214E-01	5.464E-01	0.000E+00 NOT IDENT.
NA-22	1.964E-02	4.772E-02	8.496E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.700E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	1.754E-02	4.623E-02	8.067E-02	0.000E+00 FAIL ABUN
V-48	1.640E-02	7.985E-02	1.365E-01	0.000E+00 NOT IDENT.
CR-51	1.134E-01	4.341E-01	7.593E-01	0.000E+00 NOT IDENT.
MN-54	-3.601E-03	4.069E-02	6.854E-02	0.000E+00 NOT IDENT.
CO-56	-1.346E-02	4.112E-02	6.743E-02	0.000E+00 NOT IDENT.
CO-57	1.027E-02	2.914E-02	5.023E-02	0.000E+00 NOT IDENT.
CO-58	-3.604E-02	4.492E-02	7.075E-02	0.000E+00 NOT IDENT.
FE-59	2.193E-03	1.120E-01	1.861E-01	0.000E+00 NOT IDENT.

CO-60	-9.750E-03	4.530E-02	7.542E-02	0.000E+00	NOT IDENT.
ZN-65	-2.365E-02	1.281E-01	1.782E-01	0.000E+00	NOT IDENT.
SE-75	-2.140E-02	4.930E-02	8.114E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.852E-02	8.240E-02	0.000E+00	NOT IDENT.
Y-88	-9.390E-03	3.263E-02	5.021E-02	0.000E+00	NOT IDENT.
Y-91	-1.154E+00	2.488E+01	4.266E+01	0.000E+00	NOT IDENT.
NB-94	-1.396E-02	3.808E-02	6.373E-02	0.000E+00	NOT IDENT.
NB-95	-1.550E-02	5.302E-02	8.674E-02	0.000E+00	NOT IDENT.
NB-95M	9.688E-02	1.440E-01	2.314E-01	0.000E+00	NOT IDENT.
ZR-95	-4.149E-03	8.344E-02	1.414E-01	0.000E+00	NOT IDENT.
MO-99	-8.021E+00	1.684E+01	2.756E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	8.533E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.051E-02	4.924E-02	7.966E-02	0.000E+00	FAIL ABUN
RH-106	6.825E-02	3.149E-01	5.565E-01	0.000E+00	NOT IDENT.
RU-106	6.825E-02	3.149E-01	5.565E-01	0.000E+00	NOT IDENT.
AG-108M	1.320E-02	3.194E-02	5.549E-02	0.000E+00	NOT IDENT.
AG-110M	2.910E-03	3.696E-02	6.434E-02	0.000E+00	NOT IDENT.
SN-113	-5.185E-02	5.026E-02	7.936E-02	0.000E+00	NOT IDENT.
CD-115	-5.406E+00	1.693E+01	2.911E+01	0.000E+00	NOT IDENT.
SN-117M	-5.271E-02	6.276E-02	1.093E-01	0.000E+00	NOT IDENT.
TE-123M	-2.035E-02	3.081E-02	5.407E-02	0.000E+00	NOT IDENT.
SB-124	-8.563E-03	7.136E-02	1.158E-01	0.000E+00	NOT IDENT.
SB-125	4.900E-02	9.433E-02	1.653E-01	0.000E+00	FAIL ABUN
TE-125M	7.735E+00	1.168E+01	2.016E+01	0.000E+00	NOT IDENT.
I-126	4.170E-02	2.391E-01	4.190E-01	0.000E+00	NOT IDENT.
SB-126	1.815E-02	1.944E-01	2.928E-01	0.000E+00	NOT IDENT.
SB-127	-2.825E-01	1.764E+00	3.003E+00	0.000E+00	NOT IDENT.
I-131	8.020E-02	1.392E-01	2.462E-01	0.000E+00	NOT IDENT.
TE-132	-3.602E-01	1.015E+00	1.759E+00	0.000E+00	NOT IDENT.
BA-133	1.525E-02	5.042E-02	7.752E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.501E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	5.580E-02	5.148E-02	9.491E-02	0.000E+00	NOT IDENT.
CS-135	7.030E-02	1.871E-01	2.940E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.111E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.531E-02	1.269E-01	2.051E-01	0.000E+00	NOT IDENT.
BA-137M	-1.317E-02	3.771E-02	6.342E-02	0.000E+00	NOT IDENT.
CS-137	-1.391E-02	3.984E-02	6.700E-02	0.000E+00	NOT IDENT.
CE-139	5.629E-03	3.234E-02	5.846E-02	0.000E+00	NOT IDENT.
BA-140	1.617E-01	3.108E-01	5.567E-01	0.000E+00	NOT IDENT.
LA-140	-8.461E-02	1.071E-01	1.578E-01	0.000E+00	FAIL ABUN
CE-141	-4.693E-04	7.065E-02	1.254E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.196E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	2.349E-01	2.471E-01	3.875E-01	0.000E+00	NOT IDENT.
PM-144	-9.475E-03	3.781E-02	6.387E-02	0.000E+00	NOT IDENT.
PR-144	-7.188E-01	2.831E+00	4.780E+00	0.000E+00	NOT IDENT.
PM-146	6.446E-02	5.025E-02	9.090E-02	0.000E+00	NOT IDENT.
ND-147	-6.285E-02	6.321E-01	1.104E+00	0.000E+00	NOT IDENT.
PM-149	-1.047E+02	1.461E+02	2.432E+02	0.000E+00	NOT IDENT.
EU-152	6.579E-03	1.229E-01	1.856E-01	0.000E+00	NOT IDENT.
GD-153	-1.498E-02	1.056E-01	1.605E-01	0.000E+00	NOT IDENT.
EU-154	6.026E-02	1.343E-01	2.398E-01	0.000E+00	NOT IDENT.
EU-155	-5.867E-02	1.214E-01	2.039E-01	0.000E+00	FAIL ABUN
TB-160	7.940E-02	1.582E-01	2.795E-01	0.000E+00	FAIL ABUN
HO-166M	-1.152E-02	6.599E-02	1.119E-01	0.000E+00	FAIL ABUN
TA-182	-2.766E-02	2.341E-01	3.987E-01	0.000E+00	FAIL ABUN
IR-192	-2.397E-03	3.861E-02	6.644E-02	0.000E+00	FAIL ABUN
HG-203	5.110E-02	5.236E-02	8.461E-02	0.000E+00	NOT IDENT.
BI-207	2.012E-02	6.229E-02	1.067E-01	0.000E+00	FAIL ABUN
PB-210	5.037E-01	4.138E+00	7.409E+00	0.000E+00	NOT IDENT.
PB-211	-5.504E-01	9.499E-01	1.279E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.081E+00	1.403E+00	0.000E+00	FAIL ABUN
RN-219	1.031E-01	4.532E-01	7.803E-01	0.000E+00	FAIL ABUN
RA-223	1.641E-01	8.356E-01	1.280E+00	0.000E+00	FAIL ABUN
AC-227	-1.185E-01	2.827E-01	4.846E-01	0.000E+00	FAIL ABUN
TH-227	-1.185E-01	2.828E-01	4.846E-01	0.000E+00	FAIL ABUN
TH-229	3.751E-01	5.770E-01	1.051E+00	0.000E+00	FAIL ABUN
PA-231	-2.718E-01	1.692E+00	2.818E+00	0.000E+00	FAIL ABUN
TH-231	1.641E-01	8.356E-01	1.280E+00	0.000E+00	FAIL ABUN
PA-233	-1.737E-02	7.310E-02	1.247E-01	0.000E+00	FAIL ABUN
PA-234	-1.544E-02	3.100E-01	5.179E-01	0.000E+00	FAIL ABUN
PA-234M	-2.970E-01	5.778E+00	9.759E+00	0.000E+00	NOT IDENT.
TH-234	1.451E+00	1.662E+00	2.969E+00	0.000E+00	FAIL ABUN
U-235	1.758E-02	2.232E-01	3.978E-01	0.000E+00	FAIL ABUN
U-238	1.451E+00	1.662E+00	2.969E+00	0.000E+00	FAIL ABUN
NP-239	2.589E-01	4.526E-01	7.883E-01	0.000E+00	FAIL ABUN
AM-241	6.381E-02	1.781E-01	3.179E-01	0.000E+00	NOT IDENT.
CM-247	-1.914E-03	4.123E-02	6.980E-02	0.000E+00	FAIL ABUN
CF-249	3.701E-02	4.447E-02	7.945E-02	0.000E+00	NOT IDENT.

CF-251	-3.704E-02	1.387E-01	2.457E-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]G247900018.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:00:52.
Sample ID          : G247900018 Sample quantity : 1.36260E+02 GRAM
Detector name      : GAM01 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.27 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 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	1136	10.66*	9.455E-01	3.104E+01	3.104E+01	10.85
CD-109	88.03	250	3.70*	5.194E+00	3.590E+00	3.679E+00	31.65
SN-126	64.28	-----	9.60	2.906E+00	-----	Line Not Found	-----
	86.94	250	8.90	5.194E+00	1.493E+00	1.493E+00	51.36
	87.57	250	37.00*	5.194E+00	3.590E-01	3.590E-01	31.65
TL-208	277.37	50	6.60	3.883E+00	5.374E-01	5.374E-01	102.79
	583.19	386	85.00*	2.142E+00	5.836E-01	5.836E-01	19.36
	860.56	64	12.50	1.521E+00	9.261E-01	9.261E-01	56.18
BI-211	72.87	-----	1.23	3.944E+00	-----	Line Not Found	-----
	351.06	677	12.92*	3.225E+00	4.473E+00	4.473E+00	14.62
PB-212	74.82	458	10.28	4.151E+00	2.955E+00	2.955E+00	24.11
	77.11	586	17.10	4.387E+00	2.152E+00	2.152E+00	16.59
	238.63	1357	43.60*	4.346E+00	1.973E+00	1.973E+00	12.15
	300.09	72	3.30	3.655E+00	1.651E+00	1.651E+00	79.46
BI-214	609.32	470	45.49*	2.064E+00	1.378E+00	1.378E+00	16.75
	1120.29	108	14.92	1.193E+00	1.678E+00	1.678E+00	34.60
	1764.49	86	15.30	8.256E-01	1.867E+00	1.867E+00	24.92
PB-214	74.82	458	5.80	4.151E+00	5.238E+00	5.238E+00	23.44
	77.11	586	9.70	4.387E+00	3.793E+00	3.793E+00	18.53
	242.00	261	7.25	4.306E+00	2.306E+00	2.306E+00	29.27
	295.22	384	18.42	3.700E+00	1.554E+00	1.554E+00	23.03
	351.93	677	35.60*	3.225E+00	1.623E+00	1.623E+00	15.63
RA-224	240.99	261	4.10*	4.306E+00	4.078E+00	4.078E+00	28.69
RA-226	609.32	470	45.49*	2.064E+00	1.378E+00	1.378E+00	16.75
	1120.29	108	14.92	1.193E+00	1.678E+00	1.678E+00	34.60
	1764.49	86	15.30	8.256E-01	1.867E+00	1.867E+00	24.92
AC-228	338.32	209	11.27	3.326E+00	1.534E+00	1.534E+00	54.52
	911.20	271	25.80*	1.444E+00	2.003E+00	2.003E+00	24.51
	968.97	171	15.80	1.364E+00	2.182E+00	2.182E+00	34.42
RA-228	338.32	209	11.27	3.326E+00	1.534E+00	1.534E+00	54.52
	911.20	271	25.80*	1.444E+00	2.003E+00	2.003E+00	24.51
	968.97	171	15.80	1.364E+00	2.182E+00	2.182E+00	34.42

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	458	10.28	4.151E+00	2.955E+00	2.955E+00	22.09
	77.11	586	17.10	4.387E+00	2.152E+00	2.152E+00	16.59
	238.63	1357	43.60*	4.346E+00	1.973E+00	1.973E+00	12.15
	300.09	72	3.30	3.655E+00	1.651E+00	1.651E+00	99.75
TH-232	338.32	209	11.27	3.326E+00	1.534E+00	1.534E+00	36.14
	911.20	271	25.80*	1.444E+00	2.003E+00	2.003E+00	24.51
	968.97	171	15.80	1.364E+00	2.182E+00	2.182E+00	34.42
NP-237	86.48	250	12.40*	5.194E+00	1.071E+00	1.071E+00	37.96
	95.86	-----	2.68	5.636E+00	-----	Line Not Found	-----
ANH-511	511.00	120	100.00*	2.392E+00	1.386E-01	1.386E-01	52.34

Flag: "*" = Keyline

Total number of lines in spectrum 30
Number of unidentified lines 3
Number of lines tentatively identified by NID 27 90.00%

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	3.104E+01	3.104E+01	0.337E+01	10.85	
CD-109	461.40D	1.02	3.590E+00	3.679E+00	1.164E+00	31.65	
SN-126	2.30E+05Y	1.00	3.590E-01	3.590E-01	1.136E-01	31.65	
TL-208	1.41E+10Y	1.00	5.836E-01	5.836E-01	1.130E-01	19.36	
BI-211	7.04E+08Y	1.00	4.473E+00	4.473E+00	0.654E+00	14.62	
PB-212	1.41E+10Y	1.00	1.973E+00	1.973E+00	0.240E+00	12.15	
BI-214	1600.00Y	1.00	1.378E+00	1.378E+00	0.231E+00	16.75	
PB-214	1600.00Y	1.00	1.623E+00	1.623E+00	0.254E+00	15.63	
RA-224	1.41E+10Y	1.00	4.078E+00	4.078E+00	1.170E+00	28.69	
RA-226	1600.00Y	1.00	1.378E+00	1.378E+00	0.231E+00	16.75	
AC-228	1.41E+10Y	1.00	2.003E+00	2.003E+00	0.491E+00	24.51	
RA-228	1.41E+10Y	1.00	2.003E+00	2.003E+00	0.491E+00	24.51	
TH-228	1.41E+10Y	1.00	1.973E+00	1.973E+00	0.240E+00	12.15	
TH-232	1.41E+10Y	1.00	2.003E+00	2.003E+00	0.491E+00	24.51	
NP-237	2.14E+06Y	1.00	1.071E+00	1.071E+00	0.407E+00	37.96	
ANH-511	1.00E+09Y	1.00	1.386E-01	1.386E-01	0.726E-01	52.34	

Total Activity : 5.966E+01 5.975E+01

Grand Total Activity : 5.966E+01 5.975E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900018

Page : 4
Acquisition date : 6-MAR-2010 17:00:52

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	93.59	102	739	1.34	187.87	182	9	1.41E-02	****	5.54E+00	T
0	129.12	156	407	1.33	258.89	254	10	2.17E-02	50.9	6.02E+00	
0	186.19	156	359	1.25	372.96	369	9	2.17E-02	48.8	5.16E+00	T
0	209.85	101	415	0.99	420.27	415	11	1.41E-02	80.5	4.77E+00	T
0	270.56	73	199	1.02	541.62	538	8	1.01E-02	71.7	3.96E+00	T
0	328.27	91	211	0.99	656.98	652	11	1.27E-02	64.8	3.41E+00	T
0	409.75	48	127	1.01	819.84	815	10	6.70E-03	92.1	2.86E+00	T
0	463.49	62	100	1.06	927.24	923	9	8.66E-03	62.9	2.59E+00	T
0	727.57	122	76	1.66	1455.07	1448	16	1.69E-02	36.8	1.77E+00	T
0	1378.36	29	29	1.45	2755.74	2749	13	4.03E-03	85.2	9.92E-01	
0	1729.73	26	0	1.14	3457.92	3453	10	3.61E-03	39.2	8.36E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900018.CNF;1
* Acquisition date   : 6-MAR-2010 17:00:52.   Detector SN#      :
* Detector ID        : GAM01                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance    : 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit     : 75.00000
* Elapsed real time  : 0 02:00:01.27           Half life ratio     : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G247900018             Analyst initials: MXR1
* Batch Number       : 957711                 Sample Quantity  : 1.36260E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52.7MS Isotope      :
* MSD ID             :                          MSD Isotope   :
* LCS ID             : 1032-A                   LCS Isotope        :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.104E+01	3.367E+00	6.024E-01	5.355E-02	51.525
CD-109	3.679E+00	1.164E+00	1.726E+00	1.633E-01	2.131
SN-126	3.590E-01	1.136E-01	1.720E-01	1.620E-02	2.087
TL-208	5.836E-01	1.130E-01	6.581E-02	5.969E-03	8.868
BI-211	4.473E+00	6.539E-01	3.654E-01	3.324E-02	12.240
PB-212	1.973E+00	2.396E-01	9.879E-02	1.005E-02	19.967
BI-214	1.378E+00	2.308E-01	1.221E-01	1.210E-02	11.289
PB-214	1.623E+00	2.536E-01	1.326E-01	1.410E-02	12.240
RA-224	4.078E+00	1.170E+00	1.059E+00	9.625E-02	3.850
RA-226	1.378E+00	2.308E-01	1.221E-01	1.210E-02	11.289
AC-228	2.003E+00	4.910E-01	2.515E-01	2.997E-02	7.964
RA-228	2.003E+00	4.910E-01	2.515E-01	2.997E-02	7.964
TH-228	1.973E+00	2.396E-01	9.879E-02	1.005E-02	19.967
TH-232	2.003E+00	4.910E-01	2.515E-01	2.997E-02	7.964
NP-237	1.071E+00	4.067E-01	4.532E-01	1.040E-01	2.364
ANH-511	1.386E-01	7.255E-02	5.341E-02	4.527E-03	2.595

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	5.459E-02		3.280E-01	5.334E-01	4.852E-02	0.102

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	1.964E-02		4.870E-02	8.451E-02	7.097E-03	0.232
NA-24	4.947E-01		1.377E+00	Half-Life too short		
SC-46	1.754E-02		4.718E-02	7.969E-02	7.203E-03	0.220
V-48	1.640E-02		8.148E-02	1.351E-01	1.206E-02	0.121
CR-51	1.134E-01		4.430E-01	7.357E-01	6.915E-02	0.154
MN-54	-3.601E-03		4.152E-02	6.763E-02	6.019E-03	-0.053
CO-56	-1.346E-02		4.196E-02	6.654E-02	5.946E-03	-0.202
CO-57	1.027E-02		2.973E-02	4.783E-02	4.210E-03	0.215
CO-58	-3.604E-02		4.584E-02	6.976E-02	6.172E-03	-0.517
FE-59	2.193E-03		1.143E-01	1.845E-01	1.701E-02	0.012
CO-60	-9.750E-03		4.623E-02	7.509E-02	6.400E-03	-0.130
ZN-65	-2.365E-02		1.307E-01	1.768E-01	1.492E-02	-0.134
SE-75	-2.140E-02		5.030E-02	7.835E-02	7.198E-03	-0.273
SR-85	9.371E-02		4.951E-02	8.056E-02	6.830E-03	1.163
Y-88	-9.390E-03		3.329E-02	5.031E-02	4.137E-03	-0.187
Y-91	-1.154E+00		2.539E+01	4.239E+01	3.473E+00	-0.027
NB-94	-1.396E-02		3.886E-02	6.267E-02	5.261E-03	-0.223
NB-95	-1.550E-02		5.410E-02	8.544E-02	7.404E-03	-0.181
NB-95M	9.688E-02		1.470E-01	2.230E-01	2.291E-02	0.434
ZR-95	-4.149E-03		8.514E-02	1.393E-01	1.327E-02	-0.030
MO-99	-8.021E+00		1.718E+01	2.712E+01	4.265E+00	-0.296
TC-99M	2.430E+11		4.354E+11	Half-Life too short		
RU-103	-2.051E-02		5.024E-02	7.782E-02	1.079E-02	-0.264
RH-106	6.825E-02		3.214E-01	5.460E-01	7.144E-02	0.125
RU-106	6.825E-02		3.213E-01	5.460E-01	4.561E-02	0.125
AG-108M	1.320E-02		3.259E-02	5.407E-02	4.627E-03	0.244
AG-110M	2.910E-03		3.771E-02	6.319E-02	5.358E-03	0.046
SN-113	-5.185E-02		5.129E-02	7.719E-02	6.429E-03	-0.672
CD-115	-5.406E+00		1.728E+01	2.847E+01	2.417E+00	-0.190
SN-117M	-5.271E-02		6.405E-02	1.046E-01	8.905E-03	-0.504
TE-123M	-2.035E-02		3.144E-02	5.173E-02	4.431E-03	-0.393
SB-124	-8.563E-03		7.281E-02	1.158E-01	1.029E-02	-0.074
SB-125	4.900E-02		9.625E-02	1.611E-01	1.354E-02	0.304
TE-125M	7.735E+00		1.192E+01	1.916E+01	2.015E+00	0.404
I-126	4.170E-02		2.440E-01	4.116E-01	3.381E-02	0.101
SB-126	1.815E-02		1.984E-01	2.881E-01	2.442E-02	0.063
SB-127	-2.825E-01		1.800E+00	2.952E+00	3.386E-01	-0.096
I-131	8.020E-02		1.420E-01	2.391E-01	2.143E-02	0.335
TE-132	-3.602E-01		1.035E+00	1.694E+00	2.754E-01	-0.213
BA-133	1.525E-02		5.145E-02	7.527E-02	9.739E-03	0.203
I-133	-3.663E-03		7.661E-03	Half-Life too short		
CS-134	5.580E-02		5.253E-02	9.356E-02	8.268E-03	0.596
CS-135	7.030E-02		1.909E-01	2.839E-01	2.960E-02	0.248
I-135	8.941E+09		5.671E+10	Half-Life too short		
CS-136	-3.531E-02		1.295E-01	2.032E-01	1.847E-02	-0.174
BA-137M	-1.317E-02		3.848E-02	6.229E-02	5.102E-03	-0.211
CS-137	-1.391E-02		4.065E-02	6.581E-02	5.402E-03	-0.211
CD-139	5.629E-03		3.300E-02	5.597E-02	4.767E-03	0.101

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-140	1.617E-01		3.172E-01	5.447E-01	1.845E-01	0.297
LA-140	-8.461E-02		1.093E-01	1.577E-01	1.361E-02	-0.537
CE-141	-4.693E-04		7.210E-02	1.198E-01	1.042E-02	-0.004
CE-143	5.120E-04		1.631E-04	Half-Life	too short	
CE-144	2.349E-01		2.521E-01	3.695E-01	5.648E-02	0.636
PM-144	-9.475E-03		3.858E-02	6.280E-02	5.255E-03	-0.151
PR-144	-7.188E-01		2.888E+00	4.700E+00	3.932E-01	-0.153
PM-146	6.446E-02		5.127E-02	8.866E-02	9.193E-03	0.727
ND-147	-6.285E-02		6.450E-01	1.080E+00	1.606E-01	-0.058
PM-149	-1.047E+02		1.491E+02	2.352E+02	3.725E+01	-0.445
EU-152	6.579E-03		1.255E-01	1.801E-01	1.665E-02	0.037
GD-153	-1.498E-02		1.078E-01	1.522E-01	1.351E-02	-0.098
EU-154	6.026E-02		1.370E-01	2.385E-01	2.672E-02	0.253
EU-155	-5.867E-02		1.239E-01	1.936E-01	1.702E-02	-0.303
TB-160	7.940E-02		1.615E-01	2.760E-01	2.489E-02	0.288
HO-166M	-1.152E-02		6.733E-02	1.100E-01	9.284E-03	-0.105
TA-182	-2.766E-02		2.389E-01	3.962E-01	3.266E-02	-0.070
IR-192	-2.397E-03		3.940E-02	6.437E-02	5.799E-03	-0.037
HG-203	5.110E-02		5.343E-02	8.178E-02	7.648E-03	0.625
BI-207	2.012E-02		6.356E-02	1.058E-01	9.171E-03	0.190
PB-210	5.037E-01		4.222E+00	6.936E+00	6.496E-01	0.073
PB-211	-5.504E-01		9.693E-01	1.245E+00	6.013E-01	-0.442
BI-212	2.838E+00	+	1.103E+00	1.381E+00	1.709E-01	2.055
RN-219	1.031E-01		4.624E-01	7.593E-01	1.107E-01	0.136
RA-223	1.641E-01		8.527E-01	1.241E+00	2.170E-01	0.132
AC-227	-1.185E-01		2.885E-01	4.676E-01	5.810E-02	-0.253
TH-227	-1.185E-01		2.886E-01	4.676E-01	6.517E-02	-0.253
TH-229	3.751E-01		5.888E-01	1.009E+00	8.842E-02	0.372
PA-231	-2.718E-01		1.727E+00	2.724E+00	4.058E-01	-0.100
TH-231	1.641E-01		8.527E-01	1.241E+00	2.170E-01	0.132
PA-233	-1.737E-02		7.459E-02	1.208E-01	1.118E-02	-0.144
PA-234	-1.544E-02		3.163E-01	5.122E-01	9.702E-02	-0.030
PA-234M	-2.970E-01		5.896E+00	9.662E+00	9.849E-01	-0.031
TH-234	1.451E+00		1.696E+00	2.794E+00	5.018E-01	0.519
U-235	1.758E-02		2.277E-01	3.798E-01	6.425E-02	0.046
U-238	1.451E+00		1.696E+00	2.794E+00	5.018E-01	0.519
NP-239	2.589E-01		4.618E-01	7.501E-01	6.535E-02	0.345
AM-241	6.381E-02		1.817E-01	2.989E-01	2.463E-02	0.213
CM-247	-1.914E-03		4.208E-02	6.792E-02	5.507E-03	-0.028
CF-249	3.701E-02		4.538E-02	7.726E-02	6.264E-03	0.479
CF-251	-3.704E-02		1.416E-01	2.355E-01	2.029E-02	-0.157

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G247900018            *
* Acquisition date   : 6-MAR-2010 17:00:52 Detector SN#      :              *
* Detector ID        : GAM01 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 02:00:01.27 Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G247900018 Analyst initials: MXR1          *
* Batch Number       : 957711 Sample Quantity : 1.3626E+02 GRAM      *
* Recovery           : 1.00000 Carrier Weight : 0.00000            *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 MS Isotope      :              *
* MSD DPM             : 0.000 MSD Isotope      :              *
* LCS DPM             : 0.000 LCS Isotope      :              *
* LCSD DPM            : 0.000 LCSD Isotope     :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.104E+01	3.299E+00	3.022E-01	1.683E+00
CD-109	3.679E+00	1.141E+00	9.123E-01	5.822E-01
SN-126	3.590E-01	1.114E-01	9.092E-02	5.681E-02
TL-208	5.836E-01	1.107E-01	3.360E-02	5.649E-02
BI-211	4.473E+00	6.408E-01	1.883E-01	3.269E-01
PB-212	1.973E+00	2.349E-01	5.128E-02	1.198E-01
BI-214	1.378E+00	2.262E-01	6.227E-02	1.154E-01
PB-214	1.623E+00	2.486E-01	6.835E-02	1.268E-01
RA-224	4.078E+00	1.147E+00	5.497E-01	5.850E-01
RA-226	1.378E+00	2.262E-01	6.227E-02	1.154E-01
AC-228	2.003E+00	4.811E-01	1.273E-01	2.455E-01
RA-228	2.003E+00	4.811E-01	1.273E-01	2.455E-01
TH-228	1.973E+00	2.349E-01	5.128E-02	1.198E-01
TH-232	2.003E+00	4.811E-01	1.273E-01	2.455E-01
NP-237	1.071E+00	3.986E-01	2.396E-01	2.034E-01
ANH-511	1.386E-01	7.110E-02	2.734E-02	3.628E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	5.459E-02	3.214E-01	2.734E-01	1.640E-01 NOT IDENT.
NA-22	1.964E-02	4.772E-02	4.250E-02	2.435E-02 NOT IDENT.
NA-24	4.947E+05	2.700E+06	0.000E+00	1.377E+06 SHORT HLIF
SC-46	1.754E-02	4.623E-02	4.036E-02	2.359E-02 FAIL ABUN
V-48	1.640E-02	7.985E-02	6.828E-02	4.074E-02 NOT IDENT.
CR-51	1.134E-01	4.341E-01	3.799E-01	2.215E-01 NOT IDENT.
MN-54	-3.601E-03	4.069E-02	3.429E-02	2.076E-02 NOT IDENT.
CO-56	-1.346E-02	4.112E-02	3.373E-02	2.098E-02 NOT IDENT.
CO-57	1.027E-02	2.914E-02	2.513E-02	1.487E-02 NOT IDENT.
CO-58	-3.604E-02	4.492E-02	3.539E-02	2.292E-02 NOT IDENT.
FE-59	2.193E-03	1.120E-01	9.308E-02	5.716E-02 NOT IDENT.

CO-60	-9.750E-03	4.530E-02	3.773E-02	2.311E-02	NOT IDENT.
ZN-65	-2.365E-02	1.281E-01	8.917E-02	6.535E-02	NOT IDENT.
SE-75	-2.140E-02	4.930E-02	4.059E-02	2.515E-02	NOT IDENT.
SR-85	9.371E-02	4.852E-02	4.123E-02	2.476E-02	NOT IDENT.
Y-88	-9.390E-03	3.263E-02	2.512E-02	1.665E-02	NOT IDENT.
Y-91	-1.154E+00	2.488E+01	2.134E+01	1.270E+01	NOT IDENT.
NB-94	-1.396E-02	3.808E-02	3.188E-02	1.943E-02	NOT IDENT.
NB-95	-1.550E-02	5.302E-02	4.340E-02	2.705E-02	NOT IDENT.
NB-95M	9.688E-02	1.440E-01	1.158E-01	7.348E-02	NOT IDENT.
ZR-95	-4.149E-03	8.344E-02	7.076E-02	4.257E-02	NOT IDENT.
MO-99	-8.021E+00	1.684E+01	1.379E+01	8.590E+00	NOT IDENT.
TC-99M	2.430E+17	8.533E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.051E-02	4.924E-02	3.985E-02	2.512E-02	FAIL ABUN
RH-106	6.825E-02	3.149E-01	2.784E-01	1.607E-01	NOT IDENT.
RU-106	6.825E-02	3.149E-01	2.784E-01	1.606E-01	NOT IDENT.
AG-108M	1.320E-02	3.194E-02	2.776E-02	1.630E-02	NOT IDENT.
AG-110M	2.910E-03	3.696E-02	3.219E-02	1.886E-02	NOT IDENT.
SN-113	-5.185E-02	5.026E-02	3.970E-02	2.564E-02	NOT IDENT.
CD-115	-5.406E+00	1.693E+01	1.456E+01	8.638E+00	NOT IDENT.
SN-117M	-5.271E-02	6.276E-02	5.470E-02	3.202E-02	NOT IDENT.
TE-123M	-2.035E-02	3.081E-02	2.705E-02	1.572E-02	NOT IDENT.
SB-124	-8.563E-03	7.136E-02	5.794E-02	3.641E-02	NOT IDENT.
SB-125	4.900E-02	9.433E-02	8.271E-02	4.813E-02	FAIL ABUN
TE-125M	7.735E+00	1.168E+01	1.008E+01	5.960E+00	NOT IDENT.
I-126	4.170E-02	2.391E-01	2.096E-01	1.220E-01	NOT IDENT.
SB-126	1.815E-02	1.944E-01	1.465E-01	9.919E-02	NOT IDENT.
SB-127	-2.825E-01	1.764E+00	1.502E+00	8.999E-01	NOT IDENT.
I-131	8.020E-02	1.392E-01	1.232E-01	7.101E-02	NOT IDENT.
TE-132	-3.602E-01	1.015E+00	8.802E-01	5.177E-01	NOT IDENT.
BA-133	1.525E-02	5.042E-02	3.879E-02	2.573E-02	FAIL ABUN
I-133	-3.663E+03	1.501E+04	0.000E+00	7.661E+03	SHORT HLIF
CS-134	5.580E-02	5.148E-02	4.748E-02	2.627E-02	NOT IDENT.
CS-135	7.030E-02	1.871E-01	1.471E-01	9.545E-02	NOT IDENT.
I-135	8.941E+15	1.111E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.531E-02	1.269E-01	1.026E-01	6.476E-02	NOT IDENT.
BA-137M	-1.317E-02	3.771E-02	3.173E-02	1.924E-02	NOT IDENT.
CS-137	-1.391E-02	3.984E-02	3.352E-02	2.033E-02	NOT IDENT.
CE-139	5.629E-03	3.234E-02	2.925E-02	1.650E-02	NOT IDENT.
BA-140	1.617E-01	3.108E-01	2.785E-01	1.586E-01	NOT IDENT.
LA-140	-8.461E-02	1.071E-01	7.896E-02	5.466E-02	FAIL ABUN
CE-141	-4.693E-04	7.065E-02	6.275E-02	3.605E-02	NOT IDENT.
CE-143	5.120E+02	3.196E+02	0.000E+00	1.631E+02	SHORT HLIF
CE-144	2.349E-01	2.471E-01	1.939E-01	1.261E-01	NOT IDENT.
PM-144	-9.475E-03	3.781E-02	3.195E-02	1.929E-02	NOT IDENT.
PR-144	-7.188E-01	2.831E+00	2.392E+00	1.444E+00	NOT IDENT.
PM-146	6.446E-02	5.025E-02	4.548E-02	2.564E-02	NOT IDENT.
ND-147	-6.285E-02	6.321E-01	5.521E-01	3.225E-01	NOT IDENT.
PM-149	-1.047E+02	1.461E+02	1.217E+02	7.456E+01	NOT IDENT.
EU-152	6.579E-03	1.229E-01	9.287E-02	6.273E-02	NOT IDENT.
GD-153	-1.498E-02	1.056E-01	8.028E-02	5.390E-02	NOT IDENT.
EU-154	6.026E-02	1.343E-01	1.200E-01	6.851E-02	NOT IDENT.
EU-155	-5.867E-02	1.214E-01	1.020E-01	6.196E-02	FAIL ABUN
TB-160	7.940E-02	1.582E-01	1.398E-01	8.073E-02	FAIL ABUN
HO-166M	-1.152E-02	6.599E-02	5.597E-02	3.367E-02	FAIL ABUN
TA-182	-2.766E-02	2.341E-01	1.995E-01	1.194E-01	FAIL ABUN
IR-192	-2.397E-03	3.861E-02	3.324E-02	1.970E-02	FAIL ABUN
HG-203	5.110E-02	5.236E-02	4.233E-02	2.672E-02	NOT IDENT.
BI-207	2.012E-02	6.229E-02	5.340E-02	3.178E-02	FAIL ABUN
PB-210	5.037E-01	4.138E+00	3.707E+00	2.111E+00	NOT IDENT.
PB-211	-5.504E-01	9.499E-01	6.399E-01	4.846E-01	NOT IDENT.
BI-212	2.838E+00	1.081E+00	7.020E-01	5.514E-01	FAIL ABUN
RN-219	1.031E-01	4.532E-01	3.904E-01	2.312E-01	FAIL ABUN
RA-223	1.641E-01	8.356E-01	6.404E-01	4.263E-01	FAIL ABUN
AC-227	-1.185E-01	2.827E-01	2.424E-01	1.442E-01	FAIL ABUN
TH-227	-1.185E-01	2.828E-01	2.424E-01	1.443E-01	FAIL ABUN
TH-229	3.751E-01	5.770E-01	5.260E-01	2.944E-01	FAIL ABUN
PA-231	-2.718E-01	1.692E+00	1.410E+00	8.633E-01	FAIL ABUN
TH-231	1.641E-01	8.356E-01	6.404E-01	4.263E-01	FAIL ABUN
PA-233	-1.737E-02	7.310E-02	6.239E-02	3.730E-02	FAIL ABUN
PA-234	-1.544E-02	3.100E-01	2.591E-01	1.582E-01	FAIL ABUN
PA-234M	-2.970E-01	5.778E+00	4.882E+00	2.948E+00	NOT IDENT.
TH-234	1.451E+00	1.662E+00	1.485E+00	8.480E-01	FAIL ABUN
U-235	1.758E-02	2.232E-01	1.990E-01	1.139E-01	FAIL ABUN
U-238	1.451E+00	1.662E+00	1.485E+00	8.480E-01	FAIL ABUN
NP-239	2.589E-01	4.526E-01	3.944E-01	2.309E-01	FAIL ABUN
AM-241	6.381E-02	1.781E-01	1.591E-01	9.084E-02	NOT IDENT.
CM-247	-1.914E-03	4.123E-02	3.492E-02	2.104E-02	FAIL ABUN
CF-249	3.701E-02	4.447E-02	3.975E-02	2.269E-02	NOT IDENT.

CF-251	-3.704E-02	1.387E-01	1.229E-01	7.078E-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	273.3318
49.72	275.1448
57.36	0.0000
59.54	345.5179
63.29	400.7145
63.29	400.7145
64.28	378.1100
67.75	399.5457
69.67	428.0918
70.83	444.9748
72.81	425.4631
72.87	425.5034
72.87	425.5034
74.82	466.7158
74.82	466.7158
74.82	466.7158
74.97	466.8259
77.11	468.4006
77.11	468.4006
77.11	468.4006
79.69	423.5692
79.80	448.0814
80.12	448.2996
80.19	448.3479
80.57	433.9243
81.00	494.6035
81.07	542.0001
81.07	542.0001
83.79	434.3835
83.79	434.3835
85.43	414.0739
86.48	508.5114
86.55	516.7901
86.79	610.2657
86.94	610.3987
87.57	670.2932
88.03	649.8451
88.47	518.2227
89.96	651.6367
91.11	652.6948
92.59	526.7769
92.59	526.7769
93.35	355.6180
94.67	336.2870
94.87	358.0277
94.87	358.0277
95.86	368.5166
97.43	359.2743
98.44	346.9344
99.53	321.7441
100.11	346.5883
103.18	378.2937
103.37	359.3001
105.31	378.2102
106.12	371.8425
109.28	345.0471
111.00	371.8645
111.76	385.8307
116.30	330.9184
117.23	317.5787
121.12	323.6371
121.78	326.1844
122.06	326.2906
123.07	297.9182
131.20	316.9393
133.52	284.5810
136.00	344.0009

136.47	345.9294
140.51	328.0853
140.51	0.0000
143.76	338.0412
144.24	345.2751
144.24	345.2751
145.44	327.1403
152.43	321.4798
153.25	318.1819
154.21	303.3235
154.21	303.3235
156.02	316.3832
158.56	342.2676
159.00	333.4525
162.66	313.9541
163.33	320.4603
165.86	306.8021
176.60	270.7084
177.52	297.3924
181.07	272.1170
184.41	342.2074
185.72	317.6086
193.51	275.7373
197.04	310.9111
205.31	314.0182
210.85	270.3867
215.65	247.5606
222.11	263.3611
227.38	247.3245
228.16	255.0879
228.18	255.0919
235.69	220.5650
235.96	222.1428
235.96	222.1428
238.63	213.9539
238.63	213.9539
240.99	214.3316
242.00	214.4932
244.70	206.6335
252.40	205.4704
252.80	207.4692
256.23	221.5856
256.23	221.5856
260.90	184.2935
264.66	191.0659
268.22	183.4752
269.46	169.5067
269.46	169.5067
271.23	193.2836
273.65	220.3633
276.40	183.3208
277.37	179.8923
277.60	210.1041
278.00	202.2661
279.20	203.8143
279.54	189.6387
280.46	189.7559
283.69	196.9577
284.31	202.1323
285.41	201.2902
285.90	203.3390
287.50	192.6324
293.27	0.0000
295.22	185.2233
295.96	185.3111
298.57	156.0214
299.98	156.1619
299.98	156.1619
300.09	164.9836
300.09	164.9836
300.13	164.9861
301.36	168.3230
302.85	165.2728
304.50	189.5404
304.50	189.5404
304.85	191.1902
308.46	168.0753
311.90	174.4888

316.51	158.8063
319.41	165.1688
320.08	164.2223
323.87	169.0736
323.87	169.0736
328.76	169.1662
333.37	175.7662
334.37	144.5121
334.37	144.5121
338.28	162.9546
338.28	162.9546
338.32	162.9570
338.32	162.9570
338.32	162.9570
340.48	162.5500
340.55	164.1968
344.28	148.1001
351.06	142.0743
351.93	141.5258
356.01	124.2517
364.49	119.6466
366.42	124.9823
383.85	136.6988
388.16	114.8811
388.63	121.2364
391.69	143.6077
400.66	128.3760
401.81	122.0822
402.40	124.2447
404.85	134.3984
410.95	133.1142
414.70	124.8218
423.72	111.6521
427.09	82.8053
427.87	90.3677
433.94	97.1150
453.88	99.1508
463.37	116.0168
468.07	87.7527
473.00	83.5576
476.78	80.3996
477.60	74.9208
487.02	89.6307
492.35	105.3761
497.08	115.6051
511.00	99.5444
514.00	80.6358
527.90	90.1367
529.87	0.0000
531.02	86.6461
537.26	83.2582
546.56	0.0000
563.25	93.3116
569.33	101.7970
569.50	96.3021
569.70	96.3098
583.19	87.6106
600.60	92.8589
602.73	84.8028
604.72	83.7070
609.32	80.1295
609.32	80.1295
610.33	80.1610
614.28	66.9023
618.01	73.4535
621.93	64.6016
621.93	64.6016
633.25	57.3558
635.95	80.0029
636.99	69.6767
645.85	61.4056
657.76	72.1128
661.66	78.8662
661.66	78.8662
664.57	0.0000
666.33	67.5783
666.50	69.4855
677.62	74.5418

685.70	75.7154
695.00	75.0026
696.49	81.7751
696.51	81.7772
697.00	86.6008
702.65	88.7005
706.68	67.5835
711.68	74.4716
720.70	72.7606
721.93	0.0000
722.78	79.2861
722.91	79.2880
723.31	80.9184
724.19	84.1805
727.33	51.5340
733.00	53.5820
735.93	47.5396
739.50	65.4150
747.24	64.6046
752.31	82.3635
753.82	66.7084
756.73	68.7354
763.94	104.3308
765.81	94.5469
766.42	71.9093
777.92	63.2797
778.90	49.4519
783.70	55.4723
785.37	56.4935
795.86	56.6813
801.95	68.7473
810.29	73.9223
810.76	72.9341
815.77	51.0336
818.51	64.0969
832.01	61.3470
834.85	65.4253
836.80	0.0000
846.77	54.5511
856.80	60.7954
860.56	56.8066
871.09	53.9316
873.19	72.2931
875.33	0.0000
879.36	51.0034
880.51	57.1430
883.24	53.1045
884.68	56.1910
889.28	56.2662
898.04	65.6406
911.20	53.5349
911.20	53.5349
911.20	53.5349
926.50	53.7685
937.49	41.4883
944.13	51.9568
946.00	45.7456
949.00	45.7843
962.29	76.5864
964.08	55.7266
966.15	43.5608
968.97	125.5518
968.97	125.5518
968.97	125.5518
983.53	45.1679
996.26	47.4302
1001.03	62.2655
1004.73	60.2146
1037.84	51.1477
1038.76	0.0000
1048.07	52.3520
1050.41	55.5902
1050.41	55.5902
1063.66	52.5602
1085.87	44.2271
1099.45	58.4481
1112.07	55.4935
1115.54	68.8224

1120.29	60.9219
1120.29	60.9219
1120.55	54.3994
1121.30	52.5955
1131.51	0.0000
1173.23	59.6812
1177.93	71.6968
1189.05	59.9034
1204.77	63.8199
1221.41	72.4204
1231.02	70.7181
1235.36	73.5835
1238.28	54.9908
1260.41	0.0000
1271.85	50.7085
1274.44	39.4639
1274.54	40.4035
1291.59	37.7262
1298.22	0.0000
1312.11	34.1045
1332.49	39.0114
1365.19	32.5750
1368.63	0.0000
1384.29	28.0329
1408.01	38.6654
1457.56	0.0000
1460.82	22.4703
1489.16	23.5781
1505.03	22.6659
1596.21	29.0755
1620.50	8.0566
1678.03	0.0000
1690.97	10.1990
1764.49	4.1320
1764.49	4.1320
1770.23	10.6356
1771.35	48.6084
1791.20	0.0000
1836.06	10.4549

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900018

Total Uranium Activity	4.3244E+00	ug/g
Total Uranium Counting Unc.	4.9459E+00	ug/g
Total Uranium Tpu	2.5234E-06	ug/g
Total Uranium Mda	4.4193E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 957711                          SAMPLE ID   : G247900018
*  ANALYST       : MXR1                             DETECTOR    : GAM01
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 6-MAR-2010 17:00:52.38          SAMPLE ALQT  : 136.260 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.899E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.533E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.831E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.865E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 19:02:09.27

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900019.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:01:22.
Sample ID          : G247900019 Sample quantity : 1.37330E+02 GRAM
Detector name      : GAM02 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:03.81 0.1%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.99*	90	481	0.88	125.17	122	8	1.25E-02	45.7	
2	2	74.56*	483	482	1.08	148.32	143	17	6.71E-02	9.0	1.87E+00
3	2	76.84	710	404	1.06	152.90	143	17	9.86E-02	5.9	
4	2	86.93	267	482	1.12	173.08	163	27	3.71E-02	14.8	1.08E+00
5	2	89.69	167	405	1.05	178.61	163	27	2.33E-02	20.7	
6	2	92.50*	243	458	1.13	184.23	163	27	3.37E-02	17.7	
7	0	128.52	93	516	1.08	256.31	252	10	1.30E-02	46.6	
8	0	185.53*	265	439	1.27	370.38	365	11	3.68E-02	17.4	
9	0	209.14	142	394	1.25	417.62	412	10	1.98E-02	27.4	
10	4	238.35*	1547	220	1.04	476.08	470	17	2.15E-01	3.0	2.52E+00
11	4	241.36	362	274	1.72	482.10	470	17	5.03E-02	12.3	
12	0	269.99	97	242	1.20	539.39	535	9	1.35E-02	30.6	
13	0	294.80*	420	247	1.28	589.04	583	11	5.83E-02	8.8	
14	0	299.54	101	222	0.81	598.51	595	9	1.40E-02	28.3	
15	0	327.36	91	131	1.07	654.19	651	7	1.27E-02	23.2	
16	0	337.88	292	264	1.10	675.24	669	12	4.06E-02	12.6	
17	0	351.62*	685	281	1.23	702.74	697	13	9.51E-02	6.5	
18	0	462.79	75	164	1.40	925.21	918	14	1.04E-02	38.2	
19	0	510.53*	85	166	1.70	1020.73	1016	12	1.19E-02	36.5	
20	0	582.78*	494	121	1.35	1165.33	1157	14	6.86E-02	6.6	
21	0	608.92*	505	124	1.54	1217.65	1211	14	7.01E-02	6.6	
22	0	727.02	105	85	1.59	1453.98	1448	11	1.46E-02	19.6	
23	0	795.40*	66	74	1.33	1590.84	1585	13	9.22E-03	30.1	
24	0	804.94	52	36	3.14	1609.93	1604	11	7.26E-03	26.1	
25	0	861.02	66	83	1.15	1722.16	1715	14	9.12E-03	32.5	
26	0	910.71*	332	81	1.67	1821.61	1815	15	4.61E-02	8.2	
27	0	967.58	294	96	1.76	1935.43	1925	19	4.09E-02	9.9	
28	0	1119.32*	138	55	2.33	2239.12	2232	13	1.92E-02	14.2	
29	0	1460.13*	1231	28	2.19	2921.27	2914	16	1.71E-01	3.0	
30	0	1589.50	56	33	5.27	3180.21	3170	23	7.81E-03	30.2	
31	0	1728.13	20	6	1.69	3457.72	3452	12	2.76E-03	33.4	
32	0	1764.07*	74	22	2.42	3529.66	3519	17	1.03E-02	19.4	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 19:02:12

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900019.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 17:01:22
 Sample ID : G247900019 Sample quantity : 137.33 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA2 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:03.81 0.1%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 1.50 keV Half life ratio : 8.00
 Errors propagated: Yes Systematic Error : 0.00 %
 Efficiency type : Empirical Efficiencies at : Peak Energy
 Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.071E+01	3.464E+00	5.446E-01	5.178E-02	56.386
CD-109	+	88.03	*	3.872E+00	1.211E+00	1.273E+00	1.278E-01	3.042
SN-126	+	64.28		1.008E+00	9.323E-01	9.324E-01	1.383E-01	1.081
	+	86.94		1.571E+00	8.032E-01	5.235E-01	2.180E-01	3.001
	+	87.57	*	3.779E-01	1.182E-01	1.249E-01	1.249E-02	3.025
TL-208		277.37		2.835E-01	4.271E-01	7.346E-01	1.128E-01	0.386
	+	583.19	*	6.931E-01	1.150E-01	6.938E-02	6.942E-03	9.990
	+	860.56		8.696E-01	5.727E-01	4.446E-01	4.685E-02	1.956
BI-211		72.87		7.913E+00	3.800E+00	6.162E+00	5.304E-01	1.284
	+	351.06	*	4.324E+00	7.506E-01	3.671E-01	4.236E-02	11.778
PB-212	+	74.82		3.174E+00	7.084E-01	6.090E-01	7.970E-02	5.212
	+	77.11		2.635E+00	3.895E-01	3.455E-01	3.090E-02	7.625
	+	238.63	*	2.176E+00	3.036E-01	1.031E-01	1.301E-02	21.105
	+	300.09		2.218E+00	1.289E+00	1.422E+00	1.934E-01	1.559
BI-214	+	609.32	*	1.369E+00	2.323E-01	1.300E-01	1.379E-02	10.537
	+	1120.29		1.952E+00	5.944E-01	5.239E-01	5.730E-02	3.725
	+	1764.49		1.465E+00	5.822E-01	3.392E-01	2.875E-02	4.319
PB-214	+	74.82		5.626E+00	1.215E+00	1.079E+00	1.275E-01	5.212
	+	77.11		4.645E+00	7.863E-01	6.092E-01	7.411E-02	7.625
	+	242.00		3.090E+00	8.609E-01	5.847E-01	7.696E-02	5.285
	+	295.22		1.633E+00	3.668E-01	2.212E-01	3.066E-02	7.383
	+	351.93	*	1.569E+00	2.858E-01	1.335E-01	1.705E-02	11.752
RA-224	+	240.99	*	5.464E+00	1.489E+00	1.106E+00	1.305E-01	4.942
RA-226	+	609.32	*	1.369E+00	2.323E-01	1.300E-01	1.379E-02	10.537
	+	1120.29		1.952E+00	5.944E-01	5.239E-01	5.730E-02	3.725
	+	1764.49		1.465E+00	5.822E-01	3.392E-01	2.875E-02	4.319
AC-228	+	338.32		2.052E+00	1.012E+00	4.273E-01	1.812E-01	4.802
	+	911.20	*	2.241E+00	4.646E-01	2.488E-01	3.180E-02	9.010
	+	968.97		3.427E+00	1.087E+00	3.997E-01	9.926E-02	8.573
RA-228	+	338.32		2.052E+00	1.012E+00	4.273E-01	1.812E-01	4.802
	+	911.20	*	2.241E+00	4.646E-01	2.488E-01	3.180E-02	9.010
	+	968.97		3.427E+00	1.087E+00	3.997E-01	9.926E-02	8.573
TH-228	+	74.82		3.174E+00	6.386E-01	6.090E-01	5.379E-02	5.212
	+	77.11		2.635E+00	3.895E-01	3.455E-01	3.090E-02	7.625

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229	+	238.63	*	2.176E+00	3.036E-01	1.031E-01	1.301E-02	21.105
	+	300.09		2.218E+00	1.858E+00	1.422E+00	8.792E-01	1.559
	+	85.43		9.511E-01	2.974E-01	3.235E-01	3.155E-02	2.940
	+	88.47		3.523E-01	1.500E-01	1.905E-01	1.902E-02	1.849
TH-232		193.51	*	9.981E-02	5.833E-01	9.407E-01	1.020E-01	0.106
		210.85		1.485E+00	1.149E+00	1.729E+00	1.939E-01	0.859
	+	338.32		2.052E+00	5.675E-01	4.273E-01	4.913E-02	4.802
	+	911.20	*	2.241E+00	4.646E-01	2.488E-01	3.180E-02	9.010
TH-234	+	968.97		3.427E+00	1.087E+00	3.997E-01	9.926E-02	8.573
	+	63.29	*	2.615E+00	2.434E+00	2.421E+00	4.367E-01	1.080
U-235	+	92.59		2.810E+00	1.176E+00	1.037E+00	2.326E-01	2.711
	+	89.96		2.436E+00	1.180E+00	1.296E+00	3.246E-01	1.880
	+	93.35		2.123E+00	9.001E-01	7.779E-01	1.821E-01	2.729
		143.76	*	9.576E-02	2.283E-01	3.740E-01	6.437E-02	0.256
NP-237		163.33		8.556E-03	5.052E-01	8.103E-01	1.517E-01	0.011
	+	185.72		2.394E-01	8.727E-02	7.211E-02	7.696E-03	3.320
		205.31		5.942E-02	6.237E-01	8.702E-01	1.692E-01	0.068
	+	86.48	*	1.128E+00	4.245E-01	3.780E-01	8.761E-02	2.983
U-238		95.86		-1.991E-01	1.024E+00	1.516E+00	3.669E-01	-0.131
	+	63.29	*	2.615E+00	2.434E+00	2.421E+00	4.367E-01	1.080
ANH-511	+	92.59		2.810E+00	1.028E+00	1.037E+00	9.847E-02	2.711
	+	511.00	*	9.187E-02	6.763E-02	5.843E-02	5.792E-03	1.572

---- 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	*	1.970E-01	3.482E-01	5.843E-01	6.195E-02	0.337
NA-22		1274.54	*	2.573E-03	5.440E-02	8.985E-02	7.966E-03	0.029
NA-24		1368.63	*	-9.879E-01	5.440E-02	Half-Life too short		
SC-46		889.28	*	2.092E-02	4.586E-02	7.527E-02	7.653E-03	0.278
	+	1120.55		3.331E-01	9.896E-02	1.521E-01	1.314E-02	2.190
V-48		944.13		8.407E-01	1.068E+00	1.840E+00	1.842E-01	0.457
		983.53	*	-1.537E-02	8.266E-02	1.304E-01	1.275E-02	-0.118
		1312.11		-7.480E-02	9.864E-02	1.483E-01	1.358E-02	-0.504
CR-51		320.08	*	-3.346E-03	4.177E-01	6.945E-01	8.469E-02	-0.005
MN-54		834.85	*	2.063E-02	4.302E-02	7.274E-02	7.146E-03	0.284
CO-56		846.77	*	-2.095E-02	4.354E-02	6.770E-02	6.703E-03	-0.309
		1037.84		9.111E-02	3.540E-01	6.053E-01	5.938E-02	0.151
		1238.28		1.885E-01	1.204E-01	2.174E-01	1.918E-02	0.867
CO-57		1771.35		-8.907E-01	3.810E-01	4.098E-01	3.461E-02	-2.173
		122.06	*	-4.541E-03	2.713E-02	4.437E-02	3.709E-03	-0.102
		136.47		-1.197E-02	2.231E-01	3.641E-01	3.435E-02	-0.033
CO-58		810.76	*	2.985E-03	4.981E-02	7.097E-02	6.874E-03	0.042
FE-59		1099.45	*	-3.473E-02	1.057E-01	1.711E-01	1.631E-02	-0.203
		1291.59		8.018E-02	1.370E-01	2.380E-01	2.408E-02	0.337
CO-60		1173.23		4.347E-02	5.210E-02	9.189E-02	7.400E-03	0.473
		1332.49	*	1.246E-02	4.777E-02	8.034E-02	7.486E-03	0.155
ZN-65		1115.54	*	3.725E-02	1.234E-01	1.828E-01	1.590E-02	0.204

---- 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			-5.058E-02	1.414E-01	2.294E-01	2.496E-02	-0.221
	136.00			1.746E-02	4.218E-02	7.011E-02	6.206E-03	0.249
	264.66	*		-6.942E-02	5.163E-02	7.308E-02	8.934E-03	-0.950
	279.54			-1.334E-01	1.199E-01	1.885E-01	2.380E-02	-0.708
	400.66			1.197E-01	2.836E-01	4.753E-01	5.806E-02	0.252
SR-85	514.00	*		3.377E-02	4.891E-02	7.272E-02	7.198E-03	0.464
Y-88	898.04			-1.343E-02	4.650E-02	7.165E-02	7.348E-03	-0.187
	1836.06	*		2.362E-02	3.562E-02	6.582E-02	5.369E-03	0.359
Y-91	1204.77	*		1.702E+01	2.589E+01	4.491E+01	3.729E+00	0.379
NB-94	702.65	*		1.166E-03	3.865E-02	6.410E-02	5.715E-03	0.018
	871.09			1.814E-02	3.899E-02	6.589E-02	6.625E-03	0.275
NB-95	765.81	*		-7.166E-04	5.574E-02	8.938E-02	8.368E-03	-0.008
NB-95M	235.69	*		7.187E-02	1.553E-01	2.381E-01	3.016E-02	0.302
ZR-95	724.19			1.255E-01	1.217E-01	1.910E-01	1.865E-02	0.657
	756.73	*		-2.568E-02	7.775E-02	1.243E-01	1.260E-02	-0.207
MO-99	140.51			-2.484E+01	3.175E+01	4.854E+01	1.159E+01	-0.512
	181.07			-1.265E+01	3.033E+01	4.225E+01	8.350E+00	-0.299
	366.42			-1.873E+02	1.416E+02	2.115E+02	2.281E+01	-0.886
	739.50	*		1.818E+01	1.740E+01	3.066E+01	4.928E+00	0.593
	777.92			-2.313E+01	5.275E+01	8.332E+01	7.870E+00	-0.278
TC-99M	140.51	*		-6.642E+11	5.275E+01	Half-Life too short		
RU-103	497.08	*		-5.254E-02	4.558E-02	6.561E-02	9.735E-03	-0.801
	610.33			1.441E+01	3.066E+00	3.130E+00	5.214E-01	4.604
RH-106	621.93	*		-2.674E-01	3.450E-01	5.407E-01	7.332E-02	-0.495
	1050.41			-3.228E-01	2.806E+00	4.648E+00	4.319E-01	-0.069
RU-106	621.93	*		-2.674E-01	3.440E-01	5.407E-01	4.910E-02	-0.495
	1050.41			-3.228E-01	2.806E+00	4.648E+00	4.318E-01	-0.069
AG-108M	433.94	*		1.335E-02	3.256E-02	5.435E-02	5.605E-03	0.246
	614.28			-5.891E-03	4.269E-02	6.124E-02	5.773E-03	-0.096
	722.91			1.261E-02	4.459E-02	6.586E-02	6.141E-03	0.192
AG-110M	657.76	*		-2.938E-02	3.744E-02	5.839E-02	5.209E-03	-0.503
	677.62			3.240E-01	3.269E-01	5.813E-01	5.219E-02	0.557
	706.68			-2.189E-01	2.405E-01	3.691E-01	3.390E-02	-0.593
	763.94			-5.846E-02	2.018E-01	3.248E-01	3.108E-02	-0.180
	884.68			-2.300E-02	5.548E-02	8.642E-02	8.966E-03	-0.266
	937.49			-1.418E-01	1.318E-01	1.898E-01	1.957E-02	-0.747
	1384.29			3.093E-02	1.525E-01	2.561E-01	2.443E-02	0.121
	1505.03			-2.495E-01	2.885E-01	3.985E-01	3.676E-02	-0.626
SN-113	391.69	*		-9.979E-03	4.969E-02	8.042E-02	8.229E-03	-0.124
CD-115	260.90			2.064E+02	2.092E+02	3.658E+02	4.440E+01	0.564
	492.35			5.652E+01	6.039E+01	1.033E+02	1.032E+01	0.547
	527.90	*		-1.219E+01	1.842E+01	2.790E+01	2.743E+00	-0.437
SN-117M	156.02			-1.409E+00	2.698E+00	4.280E+00	4.158E-01	-0.329
	158.56	*		3.253E-03	6.495E-02	1.055E-01	1.039E-02	0.031
TE-123M	159.00	*		-6.805E-03	3.223E-02	5.177E-02	5.137E-03	-0.131
SB-124	602.73			2.341E-02	4.789E-02	7.300E-02	6.770E-03	0.321
	645.85			9.086E-02	5.371E-01	9.061E-01	8.423E-02	0.100
	722.78			1.394E-01	4.544E-01	6.728E-01	6.223E-02	0.207
	1690.97	*		-2.025E-02	8.793E-02	1.408E-01	1.283E-02	-0.144

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125		427.87	*	6.661E-03	1.016E-01	1.661E-01	1.696E-02	0.040
	+	463.37		7.144E-01	5.515E-01	5.989E-01	6.358E-02	1.193
		600.60		-2.609E-02	1.937E-01	3.131E-01	3.096E-02	-0.083
		635.95		-3.388E-02	2.946E-01	4.873E-01	4.680E-02	-0.070
TE-125M		109.28	*	-5.534E+00	9.987E+00	1.615E+01	1.682E+00	-0.343
I-126		388.63		1.186E-02	1.951E-01	3.211E-01	3.245E-02	0.037
		666.33	*	1.226E-01	2.626E-01	4.503E-01	3.895E-02	0.272
		753.82		1.244E+00	1.954E+00	3.382E+00	3.139E-01	0.368
SB-126		414.70		4.461E-02	8.757E-02	1.474E-01	1.482E-02	0.303
		666.50		3.154E-02	9.096E-02	1.547E-01	1.339E-02	0.204
		695.00		3.982E-02	9.517E-02	1.621E-01	1.436E-02	0.246
		697.00		1.307E-01	3.355E-01	5.699E-01	5.058E-02	0.229
		720.70	*	1.136E-01	1.791E-01	2.749E-01	2.487E-02	0.413
		856.80		2.184E-01	6.741E-01	9.834E-01	9.799E-02	0.222
SB-127		252.40		1.366E+00	5.535E+00	9.406E+00	3.993E+00	0.145
		473.00		-2.474E+00	2.367E+00	3.324E+00	4.664E-01	-0.744
		685.70	*	4.943E-01	1.655E+00	2.807E+00	3.319E-01	0.176
		783.70		5.113E+00	4.856E+00	8.523E+00	1.130E+00	0.600
I-131		80.19		2.711E+00	6.888E+00	8.521E+00	7.905E-01	0.318
		284.31		2.802E-01	1.783E+00	3.011E+00	3.816E-01	0.093
		364.49	*	4.528E-03	1.367E-01	2.256E-01	2.532E-02	0.020
		636.99		2.666E-01	1.867E+00	3.147E+00	2.958E-01	0.085
TE-132		49.72		3.367E+00	3.756E+01	5.849E+01	6.691E+00	0.058
		111.76		-5.422E+01	4.673E+01	7.196E+01	8.063E+00	-0.753
		116.30		-1.744E+01	3.961E+01	6.422E+01	7.158E+00	-0.272
		228.16	*	-6.473E-01	1.076E+00	1.642E+00	2.921E-01	-0.394
BA-133		81.00		-8.437E-03	1.302E-01	1.559E-01	2.479E-02	-0.054
		276.40		5.244E-01	4.025E-01	6.982E-01	1.164E-01	0.751
		302.85		-8.182E-02	1.750E-01	2.480E-01	3.872E-02	-0.330
		356.01	*	-3.595E-03	4.949E-02	7.126E-02	1.047E-02	-0.050
		383.85		-1.257E-01	3.339E-01	5.351E-01	7.285E-02	-0.235
I-133		529.87	*	-2.071E-02	3.339E-01	Half-Life	too short	
		875.33		-8.731E-02	3.339E-01	Half-Life	too short	
		1298.22		-4.463E-01	3.339E-01	Half-Life	too short	
CS-134		563.25		6.787E-01	4.117E-01	7.531E-01	7.290E-02	0.901
		569.33		-9.561E-02	2.078E-01	3.383E-01	3.270E-02	-0.283
		604.72		3.469E-02	4.060E-02	6.373E-02	5.911E-03	0.544
	+	795.86	*	1.352E-01	8.254E-02	1.055E-01	1.015E-02	1.283
		801.95		2.233E-01	6.111E-01	6.609E-01	6.379E-02	0.338
		1365.19		-6.623E-02	1.472E+00	2.393E+00	2.319E-01	-0.028
CS-135		268.22	*	3.389E-01	1.937E-01	3.104E-01	4.107E-02	1.091
I-135		546.56		-2.182E+11	1.937E-01	Half-Life	too short	
		836.80		1.813E+11	1.937E-01	Half-Life	too short	
		1038.76		1.330E+11	1.937E-01	Half-Life	too short	
		1131.51		7.634E+10	1.937E-01	Half-Life	too short	
		1260.41	*	4.746E+09	1.937E-01	Half-Life	too short	
		1457.56		1.912E+13	1.937E-01	Half-Life	too short	
		1678.03		-3.755E+10	1.937E-01	Half-Life	too short	
		1791.20		1.677E+10	1.937E-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	153.25			6.380E-01	1.019E+00	1.691E+00	1.874E-01	0.377
	176.60			-1.833E-02	6.027E-01	9.691E-01	1.087E-01	-0.019
	273.65			-7.737E-01	7.056E-01	9.638E-01	1.238E-01	-0.803
	340.55			1.676E-01	1.863E-01	2.871E-01	3.358E-02	0.584
	818.51			-8.592E-02	8.849E-02	1.312E-01	1.275E-02	-0.655
	1048.07	*		-1.505E-02	1.246E-01	2.062E-01	1.990E-02	-0.073
BA-137M	1235.36			1.160E+00	8.033E-01	1.429E+00	1.674E-01	0.812
	661.66	*		-1.234E-02	4.008E-02	6.513E-02	5.612E-03	-0.190
	661.66	*		-1.304E-02	4.234E-02	6.881E-02	5.940E-03	-0.190
CS-137	661.66	*		-1.304E-02	4.234E-02	6.881E-02	5.940E-03	-0.190
CE-139	165.86	*		-3.306E-03	3.412E-02	5.493E-02	5.635E-03	-0.060
BA-140	162.66			-2.033E-02	9.986E-01	1.600E+00	1.692E-01	-0.013
	304.85			-6.863E-01	1.822E+00	2.588E+00	7.889E-01	-0.265
LA-140	423.72			-7.435E-01	2.283E+00	3.617E+00	1.205E+00	-0.206
	537.26	*		-8.914E-02	3.115E-01	4.839E-01	1.656E-01	-0.184
	328.76			8.430E-01	4.037E-01	6.616E-01	7.983E-02	1.274
	487.02			-4.395E-02	1.636E-01	2.584E-01	2.703E-02	-0.170
	815.77			1.073E-01	3.784E-01	6.336E-01	6.721E-02	0.169
	1596.21	*		6.996E-02	8.603E-02	1.480E-01	1.339E-02	0.473
CE-141	145.44	*		-1.399E-05	7.158E-02	1.166E-01	1.090E-02	0.000
CE-143	57.36			8.872E-04	7.158E-02	Half-Life	too short	
	293.27	*		1.523E-03	7.158E-02	Half-Life	too short	
	664.57			1.336E-03	7.158E-02	Half-Life	too short	
	721.93			9.439E-04	7.158E-02	Half-Life	too short	
CE-144	80.12			1.419E+00	3.401E+00	4.215E+00	3.882E-01	0.337
	133.52	*		-1.532E-01	2.449E-01	3.450E-01	5.289E-02	-0.444
PM-144	476.78			3.191E-02	6.936E-02	1.156E-01	1.234E-02	0.276
	618.01			1.844E-02	3.408E-02	5.909E-02	5.525E-03	0.312
PR-144	696.49	*		1.423E-02	4.076E-02	6.905E-02	6.128E-03	0.206
	696.51	*		1.061E+00	3.052E+00	5.170E+00	4.586E-01	0.205
	1489.16			-1.159E+01	1.503E+01	2.149E+01	1.987E+00	-0.539
PM-146	453.88	*		5.747E-03	4.852E-02	7.824E-02	9.231E-03	0.073
	633.25			-3.158E-01	1.567E+00	2.570E+00	9.834E-01	-0.123
	735.93			-1.137E-01	1.590E-01	2.409E-01	6.791E-02	-0.472
	747.24			-3.689E-03	9.937E-02	1.631E-01	2.439E-02	-0.023
ND-147	91.11			1.188E+00	4.370E-01	6.032E-01	6.215E-02	1.970
	319.41			5.814E-01	3.892E+00	6.523E+00	7.747E-01	0.089
	531.02	*		-3.006E-01	6.788E-01	1.045E+00	1.638E-01	-0.288
PM-149	285.90	*		1.660E+01	1.432E+02	2.412E+02	4.312E+01	0.069
EU-152	121.78			-1.731E-02	7.770E-02	1.268E-01	1.226E-02	-0.137
	244.70			8.812E-02	3.634E-01	5.516E-01	6.546E-02	0.160
	344.28	*		-1.129E-01	1.127E-01	1.677E-01	1.970E-02	-0.674
	778.90			2.678E-02	2.833E-01	4.685E-01	4.428E-02	0.057
	964.08			8.177E-01	4.265E-01	6.931E-01	6.861E-02	1.180
	1085.87			4.442E-01	4.151E-01	7.540E-01	6.771E-02	0.589
GD-153	1112.07			1.978E-01	4.113E-01	6.227E-01	5.434E-02	0.318
	1408.01			1.267E-01	2.171E-01	3.721E-01	3.467E-02	0.341
	69.67			4.272E-01	2.064E+00	3.144E+00	2.634E-01	0.136
	97.43	*		-4.138E-03	9.715E-02	1.441E-01	1.309E-02	-0.029
	103.18			-1.225E-01	1.134E-01	1.796E-01	1.572E-02	-0.682

---- 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		3.880E-02	5.528E-02	9.316E-02	1.040E-02	0.417
		723.31		-7.206E-03	2.083E-01	2.970E-01	2.940E-02	-0.024
		873.19		1.139E-02	3.218E-01	5.244E-01	6.808E-02	0.022
		996.26		3.543E-03	3.710E-01	5.963E-01	1.075E-01	0.006
		1004.73		-3.080E-02	2.236E-01	3.708E-01	4.602E-02	-0.083
EU-155		1274.44	*	7.297E-03	1.540E-01	2.544E-01	2.941E-02	0.029
	+	86.55		4.584E-01	1.434E-01	2.011E-01	2.002E-02	2.279
		105.31	*	1.800E-01	1.101E-01	1.918E-01	1.681E-02	0.938
TB-160	+	86.79		1.228E+00	3.841E-01	5.409E-01	5.358E-02	2.271
		197.04		2.726E-01	6.341E-01	1.032E+00	1.127E-01	0.264
		215.65		-3.687E-01	8.954E-01	1.394E+00	1.576E-01	-0.265
	+	298.57		3.156E-01	1.824E-01	2.435E-01	2.970E-02	1.296
		879.36	*	1.940E-03	1.535E-01	2.495E-01	2.522E-02	0.008
		962.29		1.617E+00	7.620E-01	1.267E+00	1.255E-01	1.277
	+	966.15		2.615E+00	5.766E-01	6.817E-01	6.740E-02	3.835
		1177.93		-1.792E-01	4.449E-01	7.131E-01	5.769E-02	-0.251
		1271.85		-1.667E-01	8.620E-01	1.393E+00	1.230E-01	-0.120
		80.57		-7.710E-03	3.730E-01	4.484E-01	4.149E-02	-0.017
HO-166M	+	184.41		1.902E-01	6.933E-02	8.236E-02	8.767E-03	2.309
		280.46		-1.580E-01	9.390E-02	1.411E-01	1.748E-02	-1.120
		410.95		7.057E-02	2.801E-01	4.641E-01	4.664E-02	0.152
		711.68	*	4.541E-02	6.548E-02	1.137E-01	1.021E-02	0.399
		752.31		3.051E-02	2.749E-01	4.567E-01	4.234E-02	0.067
		810.29		-2.101E-02	7.701E-02	1.052E-01	1.016E-02	-0.200
		67.75		1.380E-02	1.263E-01	2.056E-01	1.694E-02	0.067
TA-182		100.11		8.569E-02	1.772E-01	3.001E-01	2.676E-02	0.285
		152.43		2.267E-01	3.866E-01	6.418E-01	6.118E-02	0.353
		222.11		-1.159E-02	3.968E-01	6.281E-01	7.186E-02	-0.018
		1121.30		7.214E-01	2.354E-01	4.135E-01	3.569E-02	1.745
		1189.05		8.732E-02	3.733E-01	6.291E-01	5.145E-02	0.139
		1221.41	*	1.042E-01	2.189E-01	3.753E-01	3.165E-02	0.278
		1231.02		-8.903E-01	6.099E-01	8.863E-01	7.544E-02	-1.004
	+	295.96		1.220E+00	2.625E-01	3.222E-01	3.955E-02	3.785
IR-192		308.46		-2.686E-02	1.060E-01	1.744E-01	2.108E-02	-0.154
		316.51	*	-1.413E-02	3.620E-02	5.886E-02	7.027E-03	-0.240
		468.07		2.279E-02	8.524E-02	1.235E-01	1.308E-02	0.185
HG-203		70.83		7.377E-01	1.574E+00	2.417E+00	3.861E-01	0.305
		72.87		2.002E+00	9.959E-01	1.559E+00	2.421E-01	1.284
		279.20	*	-1.642E-02	4.182E-02	6.879E-02	8.637E-03	-0.239
BI-207		72.81		3.715E-01	2.152E-01	3.465E-01	2.981E-02	1.072
	+	74.97		9.149E-01	1.838E-01	2.693E-01	2.361E-02	3.397
		569.70		5.808E-03	3.126E-02	5.326E-02	5.091E-03	0.109
		1063.66	*	1.839E-02	6.058E-02	1.037E-01	9.523E-03	0.177
		1770.23		-2.067E-01	5.668E-01	7.213E-01	6.095E-02	-0.287
PB-210		46.54	*	-4.326E+00	6.121E+00	9.025E+00	8.586E-01	-0.479
PB-211		404.85	*	-5.257E-01	8.379E-01	1.251E+00	6.086E-01	-0.420
		427.09		-4.889E-01	1.690E+00	2.673E+00	1.244E+00	-0.183
		832.01		-6.690E-01	1.217E+00	1.812E+00	9.436E-01	-0.369
BI-212	+	727.33	*	2.253E+00	9.285E-01	1.329E+00	1.700E-01	1.695

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		785.37		1.695E+00	3.454E+00	5.879E+00	5.583E-01	0.288
		1620.50		2.077E+00	2.683E+00	4.926E+00	4.423E-01	0.422
RN-219	+	271.23		6.054E-01	3.790E-01	4.843E-01	6.532E-02	1.250
		401.81	*	2.566E-01	4.414E-01	7.451E-01	1.172E-01	0.344
RA-223		81.07		-1.508E-02	2.948E-01	3.534E-01	3.287E-02	-0.043
		83.79		2.915E-01	1.349E-01	2.330E-01	2.231E-02	1.251
		94.87		2.994E-01	4.933E-01	7.587E-01	7.046E-02	0.395
		144.24		4.709E-01	7.650E-01	1.263E+00	1.275E-01	0.373
		154.21		1.813E-01	4.348E-01	7.170E-01	7.434E-02	0.253
	+	269.46		4.704E-01	2.934E-01	3.852E-01	4.771E-02	1.221
		323.87	*	6.517E-02	8.125E-01	1.194E+00	2.281E-01	0.055
	+	338.28		8.143E+00	2.355E+00	2.790E+00	3.981E-01	2.919
AC-227		79.69		3.674E-01	1.731E+00	2.115E+00	3.705E-01	0.174
		235.96		4.889E-01	2.074E-01	3.303E-01	4.304E-02	1.480
		256.23	*	-1.731E-03	2.731E-01	4.609E-01	6.781E-02	-0.004
	+	299.98		2.440E+00	1.429E+00	1.939E+00	2.974E-01	1.258
		304.50		-4.561E-01	2.015E+00	2.909E+00	5.409E-01	-0.157
		334.37		-6.573E-01	2.178E+00	3.092E+00	5.381E-01	-0.213
TH-227		79.80		1.057E+00	2.251E+00	2.787E+00	6.133E-01	0.379
		235.96		4.889E-01	2.068E-01	3.303E-01	4.152E-02	1.480
		256.23	*	-1.731E-03	2.731E-01	4.609E-01	7.379E-02	-0.004
	+	299.98		2.440E+00	1.429E+00	1.939E+00	2.974E-01	1.258
		304.50		-4.561E-01	2.015E+00	2.909E+00	5.409E-01	-0.157
		334.37		-6.573E-01	2.178E+00	3.092E+00	5.381E-01	-0.213
PA-231		283.69	*	-9.668E-01	1.566E+00	2.531E+00	4.319E-01	-0.382
		301.36		1.186E+00	7.589E-01	1.191E+00	1.771E-01	0.996
TH-231		81.07		-1.508E-02	2.948E-01	3.534E-01	3.287E-02	-0.043
		83.79		2.915E-01	1.349E-01	2.330E-01	2.231E-02	1.251
		94.87		2.994E-01	4.933E-01	7.587E-01	7.046E-02	0.395
		144.24		4.709E-01	7.650E-01	1.263E+00	1.275E-01	0.373
		154.21		1.813E-01	4.348E-01	7.170E-01	7.434E-02	0.253
	+	269.46		4.704E-01	2.934E-01	3.852E-01	4.771E-02	1.221
		323.87	*	6.517E-02	8.125E-01	1.194E+00	2.281E-01	0.055
	+	338.28		8.143E+00	2.355E+00	2.790E+00	3.981E-01	2.919
PA-233	+	300.13		1.104E+00	6.519E-01	8.754E-01	1.501E-01	1.261
		311.90	*	3.074E-04	6.790E-02	1.132E-01	1.378E-02	0.003
		340.48		7.602E-01	7.745E-01	1.171E+00	2.953E-01	0.649
PA-234		94.67		1.996E-01	1.819E-01	2.836E-01	3.655E-02	0.704
		98.44		5.470E-02	9.926E-02	1.588E-01	8.867E-02	0.345
		111.00		-1.287E-02	1.894E-01	3.127E-01	3.750E-02	-0.041
		131.20		-6.205E-02	1.278E-01	1.824E-01	1.571E-02	-0.340
		569.50		-1.172E-01	2.872E-01	4.694E-01	4.487E-02	-0.250
		733.00		9.629E-02	4.215E-01	6.460E-01	1.447E-01	0.149
		880.51		1.180E-01	2.980E-01	5.017E-01	5.074E-02	0.235
		883.24		-1.392E-01	3.333E-01	4.977E-01	3.356E-01	-0.280
		926.50		-3.783E-02	2.005E-01	3.179E-01	8.207E-02	-0.119
		946.00	*	1.688E-01	3.555E-01	5.954E-01	1.157E-01	0.283
		949.00		6.184E-02	5.193E-01	8.466E-01	8.451E-02	0.073
PA-234M		766.42		2.853E+00	1.486E+01	2.405E+01	1.223E+01	0.119

---- 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	*		-3.050E+00	5.228E+00	8.047E+00	8.757E-01	-0.379
	99.53			1.304E-01	1.628E-01	2.786E-01	2.493E-02	0.468
	103.37			-5.937E-02	1.020E-01	1.655E-01	1.447E-02	-0.359
	106.12			1.044E-01	8.853E-02	1.524E-01	1.316E-02	0.685
	117.23	*		-1.487E-01	4.284E-01	6.971E-01	5.844E-02	-0.213
	228.18			-1.520E-01	2.508E-01	3.837E-01	4.437E-02	-0.396
AM-241	277.60			9.919E-02	1.945E-01	3.333E-01	4.127E-02	0.298
	59.54	*		-1.525E-02	2.006E-01	3.071E-01	2.516E-02	-0.050
CM-247	278.00			5.269E-01	8.158E-01	1.405E+00	1.740E-01	0.375
	287.50			8.410E-01	1.373E+00	2.359E+00	2.907E-01	0.357
CF-249	402.40	*		-1.466E-02	4.104E-02	6.557E-02	6.578E-03	-0.224
	252.80			3.301E-01	1.017E+00	1.741E+00	2.091E-01	0.190
	333.37			-9.317E-02	2.259E-01	3.180E-01	3.690E-02	-0.293
	388.16	*		2.120E-03	4.444E-02	7.310E-02	7.398E-03	0.029
CF-251	177.52	*		1.373E-01	1.463E-01	2.438E-01	2.559E-02	0.563
	227.38			-3.685E-02	4.101E-01	6.462E-01	7.460E-02	-0.057
	285.41			3.901E-01	2.384E+00	4.027E+00	4.971E-01	0.097

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]G247900019      *
* Acquisition date   : 6-MAR-2010 17:01:22 Detector SN#      :              *
* Detector ID        : GAM02          Sensitivity             : 5.000         *
* Geometry           : CAN            Energy tolerance        : 1.500         *
* Elapsed live time  : 0 02:00:00.00  Abundance limit         : 75.000        *
* Elapsed real time  : 0 02:00:03.81  Half life ratio         : 8.000         *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library   : SOLID         *
* Sample ID          : G247900019    Analyst initials       : MXR1           *
* Batch Number       : 957711        Sample Quantity        : 1.3733E+02 GRAM  *
* Recovery           : 1.00000        Carrier Weight         : 0.00000        *
*****
*
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                              *
* CALIB. DATE/TIME   : 29-OCT-2009 10:28:07 MS Isotope        :              *
* MSD DPM             : 0.000          MSD Isotope             :              *
* LCS DPM             : 0.000          LCS Isotope              :              *
* LCSD DPM            : 0.000          LCSD Isotope             :              *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.071E+01	3.395E+00	5.462E-01	0.000E+00
CD-109	3.872E+00	1.187E+00	1.347E+00	0.000E+00
SN-126	3.779E-01	1.158E-01	1.322E-01	0.000E+00
TL-208	6.931E-01	1.127E-01	7.085E-02	0.000E+00
BI-211	4.324E+00	7.356E-01	3.786E-01	0.000E+00
PB-212	2.176E+00	2.976E-01	1.071E-01	0.000E+00
BI-214	1.369E+00	2.276E-01	1.326E-01	0.000E+00
PB-214	1.569E+00	2.801E-01	1.377E-01	0.000E+00
RA-224	5.464E+00	1.459E+00	1.148E+00	0.000E+00
RA-226	1.369E+00	2.276E-01	1.326E-01	0.000E+00
AC-228	2.241E+00	4.553E-01	2.519E-01	0.000E+00
RA-228	2.241E+00	4.553E-01	2.519E-01	0.000E+00
TH-228	2.176E+00	2.976E-01	1.071E-01	0.000E+00
TH-229	9.981E-02	5.717E-01	9.810E-01	0.000E+00
TH-232	2.241E+00	4.553E-01	2.519E-01	0.000E+00
TH-234	2.615E+00	2.385E+00	2.577E+00	0.000E+00
U-235	9.576E-02	2.237E-01	3.922E-01	0.000E+00
NP-237	1.128E+00	4.160E-01	4.001E-01	0.000E+00
U-238	2.615E+00	2.385E+00	2.577E+00	0.000E+00
ANH-511	9.187E-02	6.628E-02	5.983E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.970E-01	3.412E-01	5.990E-01	0.000E+00 NOT IDENT.
NA-22	2.573E-03	5.331E-02	9.036E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.876E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	2.092E-02	4.495E-02	7.624E-02	0.000E+00 FAIL ABUN
V-48	-1.537E-02	8.101E-02	1.318E-01	0.000E+00 NOT IDENT.
CR-51	-3.346E-03	4.094E-01	7.174E-01	0.000E+00 NOT IDENT.
MN-54	2.063E-02	4.216E-02	7.377E-02	0.000E+00 NOT IDENT.

CO-56	-2.095E-02	4.267E-02	6.864E-02	0.000E+00	NOT IDENT.
CO-57	-4.541E-03	2.659E-02	4.667E-02	0.000E+00	NOT IDENT.
CO-58	2.985E-03	4.881E-02	7.202E-02	0.000E+00	NOT IDENT.
FE-59	-3.473E-02	1.036E-01	1.726E-01	0.000E+00	NOT IDENT.
CO-60	1.246E-02	4.681E-02	8.073E-02	0.000E+00	NOT IDENT.
ZN-65	3.725E-02	1.209E-01	1.843E-01	0.000E+00	NOT IDENT.
SE-75	-6.942E-02	5.060E-02	7.577E-02	0.000E+00	NOT IDENT.
SR-85	3.377E-02	4.793E-02	7.444E-02	0.000E+00	NOT IDENT.
Y-88	2.362E-02	3.491E-02	6.571E-02	0.000E+00	NOT IDENT.
Y-91	1.702E+01	2.537E+01	4.522E+01	0.000E+00	NOT IDENT.
NB-94	1.166E-03	3.787E-02	6.522E-02	0.000E+00	NOT IDENT.
NB-95	-7.166E-04	5.462E-02	9.080E-02	0.000E+00	NOT IDENT.
NB-95M	7.187E-02	1.522E-01	2.474E-01	0.000E+00	NOT IDENT.
ZR-95	-2.568E-02	7.620E-02	1.263E-01	0.000E+00	NOT IDENT.
MO-99	1.818E+01	1.705E+01	3.117E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	8.419E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-5.254E-02	4.467E-02	6.722E-02	0.000E+00	FAIL ABUN
RH-106	-2.674E-01	3.381E-01	5.515E-01	0.000E+00	NOT IDENT.
RU-106	-2.674E-01	3.371E-01	5.515E-01	0.000E+00	NOT IDENT.
AG-108M	1.335E-02	3.191E-02	5.583E-02	0.000E+00	NOT IDENT.
AG-110M	-2.938E-02	3.669E-02	5.949E-02	0.000E+00	NOT IDENT.
SN-113	-9.979E-03	4.870E-02	8.276E-02	0.000E+00	NOT IDENT.
CD-115	-1.219E+01	1.805E+01	2.855E+01	0.000E+00	NOT IDENT.
SN-117M	3.253E-03	6.365E-02	1.104E-01	0.000E+00	NOT IDENT.
TE-123M	-6.805E-03	3.158E-02	5.419E-02	0.000E+00	NOT IDENT.
SB-124	-2.025E-02	8.617E-02	1.408E-01	0.000E+00	NOT IDENT.
SB-125	6.661E-03	9.957E-02	1.707E-01	0.000E+00	FAIL ABUN
TE-125M	-5.534E+00	9.787E+00	1.702E+01	0.000E+00	NOT IDENT.
I-126	1.226E-01	2.574E-01	4.587E-01	0.000E+00	NOT IDENT.
SB-126	1.136E-01	1.755E-01	2.796E-01	0.000E+00	NOT IDENT.
SB-127	4.943E-01	1.622E+00	2.858E+00	0.000E+00	NOT IDENT.
I-131	4.528E-03	1.339E-01	2.325E-01	0.000E+00	NOT IDENT.
TE-132	-6.473E-01	1.055E+00	1.707E+00	0.000E+00	NOT IDENT.
BA-133	-3.595E-03	4.850E-02	7.347E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.633E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	8.089E-02	1.070E-01	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.898E-01	3.218E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.249E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.505E-02	1.221E-01	2.082E-01	0.000E+00	NOT IDENT.
BA-137M	-1.234E-02	3.928E-02	6.636E-02	0.000E+00	NOT IDENT.
CS-137	-1.304E-02	4.150E-02	7.010E-02	0.000E+00	NOT IDENT.
CE-139	-3.306E-03	3.344E-02	5.745E-02	0.000E+00	NOT IDENT.
BA-140	-8.914E-02	3.052E-01	4.950E-01	0.000E+00	NOT IDENT.
LA-140	6.996E-02	8.431E-02	1.482E-01	0.000E+00	FAIL ABUN
CE-141	-1.399E-05	7.015E-02	1.223E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.873E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.532E-01	2.400E-01	3.623E-01	0.000E+00	NOT IDENT.
PM-144	1.423E-02	3.994E-02	7.028E-02	0.000E+00	NOT IDENT.
PR-144	1.061E+00	2.990E+00	5.262E+00	0.000E+00	NOT IDENT.
PM-146	5.747E-03	4.755E-02	8.029E-02	0.000E+00	NOT IDENT.
ND-147	-3.006E-01	6.652E-01	1.070E+00	0.000E+00	FAIL ABUN
PM-149	1.660E+01	1.403E+02	2.497E+02	0.000E+00	NOT IDENT.
EU-152	-1.129E-01	1.104E-01	1.730E-01	0.000E+00	NOT IDENT.
GD-153	-4.138E-03	9.520E-02	1.521E-01	0.000E+00	NOT IDENT.
EU-154	7.297E-03	1.510E-01	2.559E-01	0.000E+00	NOT IDENT.
EU-155	1.800E-01	1.079E-01	2.023E-01	0.000E+00	FAIL ABUN
TB-160	1.940E-03	1.504E-01	2.528E-01	0.000E+00	FAIL ABUN
HO-166M	4.541E-02	6.417E-02	1.157E-01	0.000E+00	FAIL ABUN
TA-182	1.042E-01	2.145E-01	3.777E-01	0.000E+00	NOT IDENT.
IR-192	-1.413E-02	3.548E-02	6.082E-02	0.000E+00	FAIL ABUN
HG-203	-1.642E-02	4.098E-02	7.125E-02	0.000E+00	NOT IDENT.
BI-207	1.839E-02	5.937E-02	1.047E-01	0.000E+00	FAIL ABUN
PB-210	-4.326E+00	5.999E+00	9.658E+00	0.000E+00	NOT IDENT.
PB-211	-5.257E-01	8.211E-01	1.286E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.100E-01	1.352E+00	0.000E+00	FAIL ABUN
RN-219	2.566E-01	4.326E-01	7.664E-01	0.000E+00	FAIL ABUN
RA-223	6.517E-02	7.962E-01	1.233E+00	0.000E+00	FAIL ABUN
AC-227	-1.731E-03	2.677E-01	4.782E-01	0.000E+00	FAIL ABUN
TH-227	-1.731E-03	2.677E-01	4.782E-01	0.000E+00	FAIL ABUN
PA-231	-9.668E-01	1.534E+00	2.621E+00	0.000E+00	NOT IDENT.
TH-231	6.517E-02	7.962E-01	1.233E+00	0.000E+00	FAIL ABUN
PA-233	3.074E-04	6.654E-02	1.170E-01	0.000E+00	FAIL ABUN
PA-234	1.688E-01	3.484E-01	6.024E-01	0.000E+00	NOT IDENT.
PA-234M	-3.050E+00	5.123E+00	8.132E+00	0.000E+00	NOT IDENT.
NP-239	-1.487E-01	4.198E-01	7.338E-01	0.000E+00	NOT IDENT.
AM-241	-1.525E-02	1.966E-01	3.273E-01	0.000E+00	NOT IDENT.
CM-247	-1.466E-02	4.022E-02	6.745E-02	0.000E+00	NOT IDENT.
CF-249	2.120E-03	4.355E-02	7.524E-02	0.000E+00	NOT IDENT.

CF-251	1.373E-01	1.434E-01	2.547E-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]G247900019.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:01:22.
Sample ID        : G247900019 Sample quantity   : 1.37330E+02 GRAM
Detector name    : GAM02 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:03.81 0.1%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity       : 5.00000
Batch ID        : 957711 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	1231	10.66*	1.028E+00	3.071E+01	3.071E+01	11.28
CD-109	88.03	267	3.70*	5.225E+00	3.779E+00	3.872E+00	31.27
SN-126	64.28	90	9.60	2.536E+00	1.008E+00	1.008E+00	92.50
	86.94	267	8.90	5.225E+00	1.571E+00	1.571E+00	51.13
	87.57	267	37.00*	5.225E+00	3.779E-01	3.779E-01	31.27
TL-208	277.37	-----	6.60	3.991E+00	-----	Line Not Found	-----
	583.19	494	85.00*	2.292E+00	6.931E-01	6.931E-01	16.59
	860.56	66	12.50	1.651E+00	8.696E-01	8.696E-01	65.86
BI-211	72.87	-----	1.23	3.848E+00	-----	Line Not Found	-----
	351.06	685	12.92*	3.352E+00	4.324E+00	4.324E+00	17.36
PB-212	74.82	483	10.28	4.048E+00	3.174E+00	3.174E+00	22.32
	77.11	710	17.10	4.306E+00	2.635E+00	2.635E+00	14.78
	238.63	1547	43.60*	4.458E+00	2.176E+00	2.176E+00	13.95
	300.09	101	3.30	3.771E+00	2.218E+00	2.218E+00	58.13
BI-214	609.32	505	45.49*	2.214E+00	1.369E+00	1.369E+00	16.96
	1120.29	138	14.92	1.299E+00	1.952E+00	1.952E+00	30.45
	1764.49	74	15.30	9.005E-01	1.465E+00	1.465E+00	39.74
PB-214	74.82	483	5.80	4.048E+00	5.626E+00	5.626E+00	21.59
	77.11	710	9.70	4.306E+00	4.645E+00	4.645E+00	16.93
	242.00	362	7.25	4.417E+00	3.090E+00	3.090E+00	27.86
	295.22	420	18.42	3.816E+00	1.633E+00	1.633E+00	22.46
	351.93	685	35.60*	3.352E+00	1.569E+00	1.569E+00	18.21
RA-224	240.99	362	4.10*	4.417E+00	5.464E+00	5.464E+00	27.25
RA-226	609.32	505	45.49*	2.214E+00	1.369E+00	1.369E+00	16.96
	1120.29	138	14.92	1.299E+00	1.952E+00	1.952E+00	30.45
	1764.49	74	15.30	9.005E-01	1.465E+00	1.465E+00	39.74
AC-228	338.32	292	11.27	3.451E+00	2.052E+00	2.052E+00	49.30
	911.20	332	25.80*	1.569E+00	2.241E+00	2.241E+00	20.73
	968.97	294	15.80	1.485E+00	3.427E+00	3.427E+00	31.71
RA-228	338.32	292	11.27	3.451E+00	2.052E+00	2.052E+00	49.30
	911.20	332	25.80*	1.569E+00	2.241E+00	2.241E+00	20.73
	968.97	294	15.80	1.485E+00	3.427E+00	3.427E+00	31.71

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	483	10.28	4.048E+00	3.174E+00	3.174E+00	20.12
	77.11	710	17.10	4.306E+00	2.635E+00	2.635E+00	14.78
	238.63	1547	43.60*	4.458E+00	2.176E+00	2.176E+00	13.95
	300.09	101	3.30	3.771E+00	2.218E+00	2.218E+00	83.76
TH-229	85.43	267	14.70	5.225E+00	9.511E-01	9.511E-01	31.27
	88.47	167	24.00	5.416E+00	3.523E-01	3.523E-01	42.59
	193.51	-----	4.41*	5.151E+00	-----	Line Not Found	-----
	210.85	-----	2.80	4.862E+00	-----	Line Not Found	-----
TH-232	338.32	292	11.27	3.451E+00	2.052E+00	2.052E+00	27.66
	911.20	332	25.80*	1.569E+00	2.241E+00	2.241E+00	20.73
	968.97	294	15.80	1.485E+00	3.427E+00	3.427E+00	31.71
TH-234	63.29	90	3.70*	2.536E+00	2.615E+00	2.615E+00	93.07
	92.59	243	4.23	5.584E+00	2.810E+00	2.810E+00	41.86
U-235	89.96	167	3.47	5.416E+00	2.436E+00	2.436E+00	48.43
	93.35	243	5.60	5.584E+00	2.123E+00	2.123E+00	42.40
	143.76	-----	10.96*	6.030E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.697E+00	-----	Line Not Found	-----
NP-237	185.72	265	57.20	5.292E+00	2.394E-01	2.394E-01	36.45
	205.31	-----	5.01	4.952E+00	-----	Line Not Found	-----
	86.48	267	12.40*	5.225E+00	1.128E+00	1.128E+00	37.65
	95.86	-----	2.68	5.755E+00	-----	Line Not Found	-----
U-238	63.29	90	3.70*	2.536E+00	2.615E+00	2.615E+00	93.07
	92.59	243	4.23	5.584E+00	2.810E+00	2.810E+00	36.59
ANH-511	511.00	85	100.00*	2.540E+00	9.187E-02	9.187E-02	73.62

Flag: "*" = Keyline

Total number of lines in spectrum 32
Number of unidentified lines 5
Number of lines tentatively identified by NID 27 84.38%

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	3.071E+01	3.071E+01	0.346E+01	11.28	
CD-109	461.40D	1.02	3.779E+00	3.872E+00	1.211E+00	31.27	
SN-126	2.30E+05Y	1.00	3.779E-01	3.779E-01	1.182E-01	31.27	
TL-208	1.41E+10Y	1.00	6.931E-01	6.931E-01	1.150E-01	16.59	
BI-211	7.04E+08Y	1.00	4.324E+00	4.324E+00	0.751E+00	17.36	
PB-212	1.41E+10Y	1.00	2.176E+00	2.176E+00	0.304E+00	13.95	
BI-214	1600.00Y	1.00	1.369E+00	1.369E+00	0.232E+00	16.96	
PB-214	1600.00Y	1.00	1.569E+00	1.569E+00	0.286E+00	18.21	
RA-224	1.41E+10Y	1.00	5.464E+00	5.464E+00	1.489E+00	27.25	
RA-226	1600.00Y	1.00	1.369E+00	1.369E+00	0.232E+00	16.96	
AC-228	1.41E+10Y	1.00	2.241E+00	2.241E+00	0.465E+00	20.73	
RA-228	1.41E+10Y	1.00	2.241E+00	2.241E+00	0.465E+00	20.73	
TH-228	1.41E+10Y	1.00	2.176E+00	2.176E+00	0.304E+00	13.95	
TH-229	7340.00Y	1.00	3.523E-01	3.523E-01	1.500E-01	42.59	K
TH-232	1.41E+10Y	1.00	2.241E+00	2.241E+00	0.465E+00	20.73	
TH-234	4.47E+09Y	1.00	2.615E+00	2.615E+00	2.434E+00	93.07	
U-235	7.04E+08Y	1.00	2.394E-01	2.394E-01	0.873E-01	36.45	K
NP-237	2.14E+06Y	1.00	1.128E+00	1.128E+00	0.424E+00	37.65	
U-238	4.47E+09Y	1.00	2.615E+00	2.615E+00	2.434E+00	93.07	
ANH-511	1.00E+09Y	1.00	9.187E-02	9.187E-02	6.763E-02	73.62	

Total Activity : 6.777E+01 6.787E+01

Grand Total Activity : 6.777E+01 6.787E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900019

Page : 4
Acquisition date : 6-MAR-2010 17:01:22

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.52	93	516	1.08	256.31	252	10	1.30E-02	93.2	6.21E+00	
0	209.14	142	394	1.25	417.62	412	10	1.98E-02	54.8	4.89E+00	
0	269.99	97	242	1.20	539.39	535	9	1.35E-02	61.1	4.07E+00	T
0	327.36	91	131	1.07	654.19	651	7	1.27E-02	46.3	3.53E+00	T
0	462.79	75	164	1.40	925.21	918	14	1.04E-02	76.5	2.74E+00	T
0	727.02	105	85	1.59	1453.98	1448	11	1.46E-02	39.2	1.91E+00	T
0	795.40	66	74	1.33	1590.84	1585	13	9.22E-03	60.3	1.77E+00	T
0	804.94	52	36	3.14	1609.93	1604	11	7.26E-03	52.2	1.75E+00	
0	1589.50	56	33	5.27	3180.21	3170	23	7.81E-03	60.3	9.63E-01	
0	1728.13	20	6	1.69	3457.72	3452	12	2.76E-03	66.8	9.11E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900019.CNF;1
* Acquisition date   : 6-MAR-2010 17:01:22.   Detector SN#      :
* Detector ID        : GAM02                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:03.81           Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G247900019             Analyst initials: MXR1
* Batch Number       : 957711                 Sample Quantity  : 1.37330E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 29-OCT-2009 10:28:07.3MS Isotope      :
* MSD ID             :                          MSD Isotope   :
* LCS ID             : 1032-A                   LCS Isotope       :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.071E+01	3.464E+00	5.446E-01	5.178E-02	56.386
CD-109	3.872E+00	1.211E+00	1.273E+00	1.278E-01	3.042
SN-126	3.779E-01	1.182E-01	1.249E-01	1.249E-02	3.025
TL-208	6.931E-01	1.150E-01	6.938E-02	6.942E-03	9.990
BI-211	4.324E+00	7.506E-01	3.671E-01	4.236E-02	11.778
PB-212	2.176E+00	3.036E-01	1.031E-01	1.301E-02	21.105
BI-214	1.369E+00	2.323E-01	1.300E-01	1.379E-02	10.537
PB-214	1.569E+00	2.858E-01	1.335E-01	1.705E-02	11.752
RA-224	5.464E+00	1.489E+00	1.106E+00	1.305E-01	4.942
RA-226	1.369E+00	2.323E-01	1.300E-01	1.379E-02	10.537
AC-228	2.241E+00	4.646E-01	2.488E-01	3.180E-02	9.010
RA-228	2.241E+00	4.646E-01	2.488E-01	3.180E-02	9.010
TH-228	2.176E+00	3.036E-01	1.031E-01	1.301E-02	21.105
TH-229	3.523E-01	1.500E-01	9.407E-01	1.020E-01	0.374
TH-232	2.241E+00	4.646E-01	2.488E-01	3.180E-02	9.010
TH-234	2.615E+00	2.434E+00	2.421E+00	4.367E-01	1.080
U-235	2.394E-01	8.727E-02	3.740E-01	6.437E-02	0.640
NP-237	1.128E+00	4.245E-01	3.780E-01	8.761E-02	2.983

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	2.615E+00	2.434E+00	2.421E+00	4.367E-01	1.080
ANH-511	9.187E-02	6.763E-02	5.843E-02	5.792E-03	1.572

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.970E-01		3.482E-01	5.843E-01	6.195E-02	0.337
NA-22	2.573E-03		5.440E-02	8.985E-02	7.966E-03	0.029
NA-24	-9.879E-01		1.467E+00	Half-Life too short		
SC-46	2.092E-02		4.586E-02	7.527E-02	7.653E-03	0.278
V-48	-1.537E-02		8.266E-02	1.304E-01	1.275E-02	-0.118
CR-51	-3.346E-03		4.177E-01	6.945E-01	8.469E-02	-0.005
MN-54	2.063E-02		4.302E-02	7.274E-02	7.146E-03	0.284
CO-56	-2.095E-02		4.354E-02	6.770E-02	6.703E-03	-0.309
CO-57	-4.541E-03		2.713E-02	4.437E-02	3.709E-03	-0.102
CO-58	2.985E-03		4.981E-02	7.097E-02	6.874E-03	0.042
FE-59	-3.473E-02		1.057E-01	1.711E-01	1.631E-02	-0.203
CO-60	1.246E-02		4.777E-02	8.034E-02	7.486E-03	0.155
ZN-65	3.725E-02		1.234E-01	1.828E-01	1.590E-02	0.204
SE-75	-6.942E-02		5.163E-02	7.308E-02	8.934E-03	-0.950
SR-85	3.377E-02		4.891E-02	7.272E-02	7.198E-03	0.464
Y-88	2.362E-02		3.562E-02	6.582E-02	5.369E-03	0.359
Y-91	1.702E+01		2.589E+01	4.491E+01	3.729E+00	0.379
NB-94	1.166E-03		3.865E-02	6.410E-02	5.715E-03	0.018
NB-95	-7.166E-04		5.574E-02	8.938E-02	8.368E-03	-0.008
NB-95M	7.187E-02		1.553E-01	2.381E-01	3.016E-02	0.302
ZR-95	-2.568E-02		7.775E-02	1.243E-01	1.260E-02	-0.207
MO-99	1.818E+01		1.740E+01	3.066E+01	4.928E+00	0.593
TC-99M	-6.642E+11		4.295E+11	Half-Life too short		
RU-103	-5.254E-02		4.558E-02	6.561E-02	9.735E-03	-0.801
RH-106	-2.674E-01		3.450E-01	5.407E-01	7.332E-02	-0.495
RU-106	-2.674E-01		3.440E-01	5.407E-01	4.910E-02	-0.495
AG-108M	1.335E-02		3.256E-02	5.435E-02	5.605E-03	0.246
AG-110M	-2.938E-02		3.744E-02	5.839E-02	5.209E-03	-0.503
SN-113	-9.979E-03		4.969E-02	8.042E-02	8.229E-03	-0.124
CD-115	-1.219E+01		1.842E+01	2.790E+01	2.743E+00	-0.437
SN-117M	3.253E-03		6.495E-02	1.055E-01	1.039E-02	0.031
TE-123M	-6.805E-03		3.223E-02	5.177E-02	5.137E-03	-0.131
SB-124	-2.025E-02		8.793E-02	1.408E-01	1.283E-02	-0.144
SB-125	6.661E-03		1.016E-01	1.661E-01	1.696E-02	0.040
TE-125M	-5.534E+00		9.987E+00	1.615E+01	1.682E+00	-0.343
I-126	1.226E-01		2.626E-01	4.503E-01	3.895E-02	0.272
SB-126	1.136E-01		1.791E-01	2.749E-01	2.487E-02	0.413
SB-127	4.943E-01		1.655E+00	2.807E+00	3.319E-01	0.176
I-131	4.528E-03		1.367E-01	2.256E-01	2.532E-02	0.020
TE-132	-6.473E-01		1.076E+00	1.642E+00	2.921E-01	-0.394
BA-133	-3.595E-03		4.949E-02	7.126E-02	1.047E-02	-0.050

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	-2.071E-02		8.331E-03	Half-Life too short		
CS-134	1.352E-01	+	8.254E-02	1.055E-01	1.015E-02	1.283
CS-135	3.389E-01		1.937E-01	3.104E-01	4.107E-02	1.091
I-135	4.746E+09		6.373E+10	Half-Life too short		
CS-136	-1.505E-02		1.246E-01	2.062E-01	1.990E-02	-0.073
BA-137M	-1.234E-02		4.008E-02	6.513E-02	5.612E-03	-0.190
CS-137	-1.304E-02		4.234E-02	6.881E-02	5.940E-03	-0.190
CE-139	-3.306E-03		3.412E-02	5.493E-02	5.635E-03	-0.060
BA-140	-8.914E-02		3.115E-01	4.839E-01	1.656E-01	-0.184
LA-140	6.996E-02		8.603E-02	1.480E-01	1.339E-02	0.473
CE-141	-1.399E-05		7.158E-02	1.166E-01	1.090E-02	0.000
CE-143	1.523E-03		2.486E-04	Half-Life too short		
CE-144	-1.532E-01		2.449E-01	3.450E-01	5.289E-02	-0.444
PM-144	1.423E-02		4.076E-02	6.905E-02	6.128E-03	0.206
PR-144	1.061E+00		3.052E+00	5.170E+00	4.586E-01	0.205
PM-146	5.747E-03		4.852E-02	7.824E-02	9.231E-03	0.073
ND-147	-3.006E-01		6.788E-01	1.045E+00	1.638E-01	-0.288
PM-149	1.660E+01		1.432E+02	2.412E+02	4.312E+01	0.069
EU-152	-1.129E-01		1.127E-01	1.677E-01	1.970E-02	-0.674
GD-153	-4.138E-03		9.715E-02	1.441E-01	1.309E-02	-0.029
EU-154	7.297E-03		1.540E-01	2.544E-01	2.941E-02	0.029
EU-155	1.800E-01		1.101E-01	1.918E-01	1.681E-02	0.938
TB-160	1.940E-03		1.535E-01	2.495E-01	2.522E-02	0.008
HO-166M	4.541E-02		6.548E-02	1.137E-01	1.021E-02	0.399
TA-182	1.042E-01		2.189E-01	3.753E-01	3.165E-02	0.278
IR-192	-1.413E-02		3.620E-02	5.886E-02	7.027E-03	-0.240
HG-203	-1.642E-02		4.182E-02	6.879E-02	8.637E-03	-0.239
BI-207	1.839E-02		6.058E-02	1.037E-01	9.523E-03	0.177
PB-210	-4.326E+00		6.121E+00	9.025E+00	8.586E-01	-0.479
PB-211	-5.257E-01		8.379E-01	1.251E+00	6.086E-01	-0.420
BI-212	2.253E+00	+	9.285E-01	1.329E+00	1.700E-01	1.695
RN-219	2.566E-01		4.414E-01	7.451E-01	1.172E-01	0.344
RA-223	6.517E-02		8.125E-01	1.194E+00	2.281E-01	0.055
AC-227	-1.731E-03		2.731E-01	4.609E-01	6.781E-02	-0.004
TH-227	-1.731E-03		2.731E-01	4.609E-01	7.379E-02	-0.004
PA-231	-9.668E-01		1.566E+00	2.531E+00	4.319E-01	-0.382
TH-231	6.517E-02		8.125E-01	1.194E+00	2.281E-01	0.055
PA-233	3.074E-04		6.790E-02	1.132E-01	1.378E-02	0.003
PA-234	1.688E-01		3.555E-01	5.954E-01	1.157E-01	0.283
PA-234M	-3.050E+00		5.228E+00	8.047E+00	8.757E-01	-0.379
NP-239	-1.487E-01		4.284E-01	6.971E-01	5.844E-02	-0.213
AM-241	-1.525E-02		2.006E-01	3.071E-01	2.516E-02	-0.050
CM-247	-1.466E-02		4.104E-02	6.557E-02	6.578E-03	-0.224
CF-249	2.120E-03		4.444E-02	7.310E-02	7.398E-03	0.029
CF-251	1.373E-01		1.463E-01	2.438E-01	2.559E-02	0.563

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]G247900019
* Acquisition date   : 6-MAR-2010 17:01:22 Detector SN#      :
* Detector ID        : GAM02                               Sensitivity : 5.000
* Geometry           : CAN                                 Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00                      Abundance limit : 75.000
* Elapsed real time  : 0 02:00:03.81                      Half life ratio : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G247900019                      Analyst initials: MXR1
* Batch Number       : 957711                          Sample Quantity : 1.3733E+02 GRAM
* Recovery           : 1.00000                          Carrier Weight  : 0.00000
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 29-OCT-2009 10:28:07 MS Isotope      :
* MSD DPM             : 0.000                            MSD Isotope      :
* LCS DPM             : 0.000                            LCS Isotope      :
* LCSD DPM            : 0.000                            LCSD Isotope     :
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.071E+01	3.395E+00	2.733E-01	1.732E+00
CD-109	3.872E+00	1.187E+00	6.738E-01	6.054E-01
SN-126	3.779E-01	1.158E-01	6.614E-02	5.908E-02
TL-208	6.931E-01	1.127E-01	3.545E-02	5.750E-02
BI-211	4.324E+00	7.356E-01	1.894E-01	3.753E-01
PB-212	2.176E+00	2.976E-01	5.358E-02	1.518E-01
BI-214	1.369E+00	2.276E-01	6.635E-02	1.161E-01
PB-214	1.569E+00	2.801E-01	6.889E-02	1.429E-01
RA-224	5.464E+00	1.459E+00	5.745E-01	7.445E-01
RA-226	1.369E+00	2.276E-01	6.635E-02	1.161E-01
AC-228	2.241E+00	4.553E-01	1.260E-01	2.323E-01
RA-228	2.241E+00	4.553E-01	1.260E-01	2.323E-01
TH-228	2.176E+00	2.976E-01	5.358E-02	1.518E-01
TH-229	9.981E-02	5.717E-01	4.908E-01	2.917E-01
TH-232	2.241E+00	4.553E-01	1.260E-01	2.323E-01
TH-234	2.615E+00	2.385E+00	1.289E+00	1.217E+00
U-235	9.576E-02	2.237E-01	1.962E-01	1.141E-01
NP-237	1.128E+00	4.160E-01	2.002E-01	2.122E-01
U-238	2.615E+00	2.385E+00	1.289E+00	1.217E+00
ANH-511	9.187E-02	6.628E-02	2.993E-02	3.382E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.970E-01	3.412E-01	2.997E-01	1.741E-01 NOT IDENT.
NA-22	2.573E-03	5.331E-02	4.521E-02	2.720E-02 NOT IDENT.
NA-24	-9.879E+05	2.876E+06	0.000E+00	1.467E+06 SHORT HLIF
SC-46	2.092E-02	4.495E-02	3.814E-02	2.293E-02 FAIL ABUN
V-48	-1.537E-02	8.101E-02	6.593E-02	4.133E-02 NOT IDENT.
CR-51	-3.346E-03	4.094E-01	3.589E-01	2.089E-01 NOT IDENT.
MN-54	2.063E-02	4.216E-02	3.691E-02	2.151E-02 NOT IDENT.

CO-56	-2.095E-02	4.267E-02	3.434E-02	2.177E-02	NOT IDENT.
CO-57	-4.541E-03	2.659E-02	2.335E-02	1.357E-02	NOT IDENT.
CO-58	2.985E-03	4.881E-02	3.603E-02	2.490E-02	NOT IDENT.
FE-59	-3.473E-02	1.036E-01	8.634E-02	5.285E-02	NOT IDENT.
CO-60	1.246E-02	4.681E-02	4.039E-02	2.388E-02	NOT IDENT.
ZN-65	3.725E-02	1.209E-01	9.222E-02	6.169E-02	NOT IDENT.
SE-75	-6.942E-02	5.060E-02	3.791E-02	2.582E-02	NOT IDENT.
SR-85	3.377E-02	4.793E-02	3.724E-02	2.446E-02	NOT IDENT.
Y-88	2.362E-02	3.491E-02	3.288E-02	1.781E-02	NOT IDENT.
Y-91	1.702E+01	2.537E+01	2.262E+01	1.294E+01	NOT IDENT.
NB-94	1.166E-03	3.787E-02	3.263E-02	1.932E-02	NOT IDENT.
NB-95	-7.166E-04	5.462E-02	4.543E-02	2.787E-02	NOT IDENT.
NB-95M	7.187E-02	1.522E-01	1.238E-01	7.763E-02	NOT IDENT.
ZR-95	-2.568E-02	7.620E-02	6.316E-02	3.888E-02	NOT IDENT.
MO-99	1.818E+01	1.705E+01	1.559E+01	8.701E+00	NOT IDENT.
TC-99M	-6.642E+17	8.419E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-5.254E-02	4.467E-02	3.363E-02	2.279E-02	FAIL ABUN
RH-106	-2.674E-01	3.381E-01	2.759E-01	1.725E-01	NOT IDENT.
RU-106	-2.674E-01	3.371E-01	2.759E-01	1.720E-01	NOT IDENT.
AG-108M	1.335E-02	3.191E-02	2.793E-02	1.628E-02	NOT IDENT.
AG-110M	-2.938E-02	3.669E-02	2.976E-02	1.872E-02	NOT IDENT.
SN-113	-9.979E-03	4.870E-02	4.141E-02	2.485E-02	NOT IDENT.
CD-115	-1.219E+01	1.805E+01	1.428E+01	9.210E+00	NOT IDENT.
SN-117M	3.253E-03	6.365E-02	5.524E-02	3.247E-02	NOT IDENT.
TE-123M	-6.805E-03	3.158E-02	2.711E-02	1.611E-02	NOT IDENT.
SB-124	-2.025E-02	8.617E-02	7.044E-02	4.397E-02	NOT IDENT.
SB-125	6.661E-03	9.957E-02	8.538E-02	5.080E-02	FAIL ABUN
TE-125M	-5.534E+00	9.787E+00	8.517E+00	4.993E+00	NOT IDENT.
I-126	1.226E-01	2.574E-01	2.295E-01	1.313E-01	NOT IDENT.
SB-126	1.136E-01	1.755E-01	1.399E-01	8.955E-02	NOT IDENT.
SB-127	4.943E-01	1.622E+00	1.430E+00	8.273E-01	NOT IDENT.
I-131	4.528E-03	1.339E-01	1.163E-01	6.833E-02	NOT IDENT.
TE-132	-6.473E-01	1.055E+00	8.539E-01	5.381E-01	NOT IDENT.
BA-133	-3.595E-03	4.850E-02	3.676E-02	2.474E-02	NOT IDENT.
I-133	-2.071E+04	1.633E+04	0.000E+00	8.331E+03	SHORT HLIF
CS-134	1.352E-01	8.089E-02	5.355E-02	4.127E-02	FAIL ABUN
CS-135	3.389E-01	1.898E-01	1.610E-01	9.685E-02	NOT IDENT.
I-135	4.746E+15	1.249E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.505E-02	1.221E-01	1.042E-01	6.228E-02	NOT IDENT.
BA-137M	-1.234E-02	3.928E-02	3.320E-02	2.004E-02	NOT IDENT.
CS-137	-1.304E-02	4.150E-02	3.507E-02	2.117E-02	NOT IDENT.
CE-139	-3.306E-03	3.344E-02	2.874E-02	1.706E-02	NOT IDENT.
BA-140	-8.914E-02	3.052E-01	2.477E-01	1.557E-01	NOT IDENT.
LA-140	6.996E-02	8.431E-02	7.414E-02	4.301E-02	FAIL ABUN
CE-141	-1.399E-05	7.015E-02	6.118E-02	3.579E-02	NOT IDENT.
CE-143	1.523E+03	4.873E+02	0.000E+00	2.486E+02	SHORT HLIF
CE-144	-1.532E-01	2.400E-01	1.812E-01	1.224E-01	NOT IDENT.
PM-144	1.423E-02	3.994E-02	3.516E-02	2.038E-02	NOT IDENT.
PR-144	1.061E+00	2.990E+00	2.632E+00	1.526E+00	NOT IDENT.
PM-146	5.747E-03	4.755E-02	4.017E-02	2.426E-02	NOT IDENT.
ND-147	-3.006E-01	6.652E-01	5.352E-01	3.394E-01	FAIL ABUN
PM-149	1.660E+01	1.403E+02	1.249E+02	7.158E+01	NOT IDENT.
EU-152	-1.129E-01	1.104E-01	8.653E-02	5.633E-02	NOT IDENT.
GD-153	-4.138E-03	9.520E-02	7.612E-02	4.857E-02	NOT IDENT.
EU-154	7.297E-03	1.510E-01	1.280E-01	7.702E-02	NOT IDENT.
EU-155	1.800E-01	1.079E-01	1.012E-01	5.505E-02	FAIL ABUN
TE-160	1.940E-03	1.504E-01	1.265E-01	7.675E-02	FAIL ABUN
HO-166M	4.541E-02	6.417E-02	5.788E-02	3.274E-02	FAIL ABUN
TA-182	1.042E-01	2.145E-01	1.890E-01	1.095E-01	NOT IDENT.
IR-192	-1.413E-02	3.548E-02	3.043E-02	1.810E-02	FAIL ABUN
HG-203	-1.642E-02	4.098E-02	3.565E-02	2.091E-02	NOT IDENT.
BI-207	1.839E-02	5.937E-02	5.238E-02	3.029E-02	FAIL ABUN
PB-210	-4.326E+00	5.999E+00	4.832E+00	3.061E+00	NOT IDENT.
PB-211	-5.257E-01	8.211E-01	6.435E-01	4.190E-01	NOT IDENT.
BI-212	2.253E+00	9.100E-01	6.762E-01	4.643E-01	FAIL ABUN
RN-219	2.566E-01	4.326E-01	3.834E-01	2.207E-01	FAIL ABUN
RA-223	6.517E-02	7.962E-01	6.169E-01	4.062E-01	FAIL ABUN
AC-227	-1.731E-03	2.677E-01	2.392E-01	1.366E-01	FAIL ABUN
TH-227	-1.731E-03	2.677E-01	2.392E-01	1.366E-01	FAIL ABUN
PA-231	-9.668E-01	1.534E+00	1.311E+00	7.829E-01	NOT IDENT.
TH-231	6.517E-02	7.962E-01	6.169E-01	4.062E-01	FAIL ABUN
PA-233	3.074E-04	6.654E-02	5.851E-02	3.395E-02	FAIL ABUN
PA-234	1.688E-01	3.484E-01	3.014E-01	1.778E-01	NOT IDENT.
PA-234M	-3.050E+00	5.123E+00	4.068E+00	2.614E+00	NOT IDENT.
NP-239	-1.487E-01	4.198E-01	3.671E-01	2.142E-01	NOT IDENT.
AM-241	-1.525E-02	1.966E-01	1.637E-01	1.003E-01	NOT IDENT.
CM-247	-1.466E-02	4.022E-02	3.374E-02	2.052E-02	NOT IDENT.
CF-249	2.120E-03	4.355E-02	3.764E-02	2.222E-02	NOT IDENT.

CF-251	1.373E-01	1.434E-01	1.274E-01	7.317E-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	296.1328
49.72	289.5035
57.36	0.0000
59.54	322.1006
63.29	330.0903
63.29	330.0903
64.28	365.8952
67.75	365.3168
69.67	362.2324
70.83	351.4025
72.81	389.4128
72.87	389.4749
72.87	389.4749
74.82	403.5965
74.82	403.5965
74.82	403.5965
74.97	403.7544
77.11	405.9998
77.11	405.9998
77.11	405.9998
79.69	392.3174
79.80	373.3488
80.12	373.6478
80.19	373.7147
80.57	393.1809
81.00	393.6006
81.07	393.6687
81.07	393.6687
83.79	364.1913
83.79	364.1913
85.43	365.6310
86.48	366.5437
86.55	366.6043
86.79	366.8102
86.94	366.9415
87.57	367.4867
88.03	367.8824
88.47	368.2600
89.96	369.5332
91.11	370.5075
92.59	371.7534
92.59	371.7534
93.35	372.3894
94.67	333.0345
94.87	340.2411
94.87	340.2411
95.86	349.4751
97.43	322.2833
98.44	302.5947
99.53	289.0434
100.11	296.0659
103.18	347.8141
103.37	332.6158
105.31	285.8350
106.12	308.4831
109.28	328.8977
111.00	325.1577
111.76	368.5465
116.30	356.0749
117.23	340.9422
121.12	328.5589
121.78	327.9674
122.06	328.1369
123.07	305.8367
131.20	356.3297
133.52	354.7299
136.00	301.7150

136.47	326.4388
140.51	335.8616
140.51	0.0000
143.76	322.1848
144.24	316.2349
144.24	316.2349
145.44	354.1348
152.43	318.3242
153.25	331.3172
154.21	332.8622
154.21	332.8622
156.02	354.8606
158.56	325.5894
159.00	334.2713
162.66	323.3587
163.33	320.4892
165.86	329.1769
176.60	313.6919
177.52	278.2318
181.07	339.1388
184.41	294.0656
185.72	294.5890
193.51	274.3448
197.04	278.9612
205.31	275.7216
210.85	269.1130
215.65	298.1093
222.11	248.6272
227.38	258.2770
228.16	267.7846
228.18	267.7917
235.69	282.0331
235.96	276.5046
235.96	276.5046
238.63	248.1270
238.63	248.1270
240.99	248.7810
242.00	216.2059
244.70	197.0094
252.40	198.3065
252.80	201.0738
256.23	212.5735
256.23	212.5735
260.90	181.1748
264.66	218.3806
268.22	174.3779
269.46	184.6037
269.46	184.6037
271.23	223.0154
273.65	261.5559
276.40	191.3962
277.37	204.4178
277.60	207.2126
278.00	198.1230
279.20	204.7887
279.54	223.2333
280.46	233.5478
283.69	200.1661
284.31	189.2096
285.41	189.4129
285.90	194.1257
287.50	184.2457
293.27	0.0000
295.22	149.2407
295.96	201.6167
298.57	202.1144
299.98	193.3866
299.98	193.3866
300.09	193.4087
300.09	193.4087
300.13	193.4150
301.36	193.6386
302.85	198.4157
304.50	186.6781
304.50	186.6781
304.85	197.2804
308.46	175.6522
311.90	157.2588

316.51	155.0634
319.41	161.1890
320.08	167.9648
323.87	174.6627
323.87	174.6627
328.76	167.7206
333.37	173.0285
334.37	176.2714
334.37	176.2714
338.28	170.6584
338.28	170.6584
338.32	170.6638
338.32	170.6638
338.32	170.6638
340.48	155.4346
340.55	155.4443
344.28	179.3253
351.06	156.8213
351.93	156.9360
356.01	135.4185
364.49	133.7805
366.42	157.8063
383.85	151.9378
388.16	138.3107
388.63	135.3301
391.69	139.6951
400.66	127.3937
401.81	119.3441
402.40	138.7849
404.85	148.2391
410.95	140.6907
414.70	116.3623
423.72	127.4856
427.09	124.6747
427.87	122.6652
433.94	110.6631
453.88	112.1915
463.37	104.3867
468.07	107.7029
473.00	120.0587
476.78	93.4902
477.60	91.3890
487.02	109.2528
492.35	90.0860
497.08	117.5713
511.00	136.1605
514.00	110.8891
527.90	109.8281
529.87	0.0000
531.02	103.3649
537.26	95.9364
546.56	0.0000
563.25	83.3480
569.33	100.9054
569.50	100.9162
569.70	86.3790
583.19	112.9873
600.60	97.6208
602.73	92.5903
604.72	88.0536
609.32	105.9231
609.32	105.9231
610.33	89.8674
614.28	94.7118
618.01	79.3420
621.93	100.0826
621.93	100.0826
633.25	91.2643
635.95	86.6790
636.99	82.9555
645.85	81.4376
657.76	94.3110
661.66	93.5378
661.66	93.5378
664.57	0.0000
666.33	88.0154
666.50	90.8925
677.62	63.4928

685.70	69.5355
695.00	91.1887
696.49	98.0484
696.51	98.0484
697.00	96.1310
702.65	97.3608
706.68	103.3992
711.68	71.3764
720.70	63.8209
721.93	0.0000
722.78	73.7109
722.91	73.7146
723.31	81.9214
724.19	81.9539
727.33	78.7891
733.00	66.2987
735.93	82.0658
739.50	58.4310
747.24	66.5862
752.31	62.7524
753.82	58.8084
756.73	75.8497
763.94	111.1355
765.81	103.2112
766.42	103.2389
777.92	80.5898
778.90	71.5530
783.70	67.6625
785.37	70.7434
795.86	68.0158
801.95	40.7119
810.29	74.8999
810.76	66.4012
815.77	62.4461
818.51	79.9405
832.01	87.6023
834.85	75.3222
836.80	0.0000
846.77	70.5035
856.80	72.8711
860.56	52.1289
871.09	60.7230
873.19	66.0116
875.33	0.0000
879.36	59.8695
880.51	52.5415
883.24	67.3250
884.68	67.3625
889.28	53.7754
898.04	59.2471
911.20	62.7365
911.20	62.7365
911.20	62.7365
926.50	65.2384
937.49	81.6146
944.13	54.9022
946.00	61.4030
949.00	64.7065
962.29	63.2153
964.08	75.9063
966.15	70.5383
968.97	54.3152
968.97	54.3152
968.97	54.3152
983.53	58.9676
996.26	50.4585
1001.03	58.2340
1004.73	58.6758
1037.84	60.2763
1038.76	0.0000
1048.07	60.4879
1050.41	60.5355
1050.41	60.5355
1063.66	61.7380
1085.87	43.3477
1099.45	68.1475
1112.07	63.5382
1115.54	73.3950

1120.29	63.7042
1120.29	63.7042
1120.55	63.7096
1121.30	63.7259
1131.51	0.0000
1173.23	60.0625
1177.93	83.4315
1189.05	73.9806
1204.77	68.4619
1221.41	63.8892
1231.02	114.3385
1235.36	85.8636
1238.28	81.9868
1260.41	0.0000
1271.85	61.8385
1274.44	63.8802
1274.54	63.8828
1291.59	40.1204
1298.22	0.0000
1312.11	55.4834
1332.49	43.6229
1365.19	37.8702
1368.63	0.0000
1384.29	23.6617
1408.01	30.0207
1457.56	0.0000
1460.82	22.0374
1489.16	32.7634
1505.03	28.6479
1596.21	9.7614
1620.50	18.6984
1678.03	0.0000
1690.97	18.9997
1764.49	13.5156
1764.49	13.5156
1770.23	16.9153
1771.35	54.1426
1791.20	0.0000
1836.06	9.8009

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900019

Total Uranium Activity	7.8241E+00	ug/g
Total Uranium Counting Unc.	7.0969E+00	ug/g
Total Uranium Tpu	3.6209E-06	ug/g
Total Uranium Mda	3.8360E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 957711          SAMPLE ID   : G247900019
*  ANALYST       : MXR1            DETECTOR    : GAM02
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 6-MAR-2010 17:01:22.88  SAMPLE ALQT: 137.330 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.090E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.532E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.565E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.730E+00

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VAX/VMS Nuclide Identification Report Generated 9-MAR-2010 13:37:19.59

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900020.CNF;2
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 9-MAR-2010 11:36:48.
Sample ID          : G247900020 Sample quantity : 1.11470E+02 GRAM
Detector name      : GAM12 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.88 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.31*	1493	1051	0.92	125.83	121	9	2.07E-01	4.7	
2	3	74.79*	498	968	1.33	148.81	143	15	6.91E-02	11.9	2.63E+00
3	3	77.10	645	729	0.99	153.43	143	15	8.96E-02	7.8	
4	0	84.00*	183	832	1.55	167.22	164	7	2.55E-02	27.3	
5	2	87.42*	279	577	1.24	174.07	171	22	3.88E-02	13.8	5.25E+00
6	2	90.28	244	776	1.14	179.79	171	22	3.39E-02	20.2	
7	2	92.59*	3931	688	1.13	184.41	171	22	5.46E-01	2.0	
8	2	94.67	223	700	1.26	188.56	171	22	3.10E-02	29.4	
9	0	98.75*	365	590	1.01	196.73	193	9	5.07E-02	13.4	
10	0	112.30*	222	750	1.17	223.85	218	10	3.08E-02	24.3	
11	0	144.05*	172	551	1.07	287.36	282	11	2.39E-02	27.7	
12	0	185.86*	875	430	1.18	370.99	366	11	1.21E-01	5.8	
13	0	209.53	115	299	1.17	418.33	414	9	1.60E-02	28.8	
14	3	238.67*	1262	194	1.16	476.62	470	17	1.75E-01	3.4	2.70E+00
15	3	241.53	337	241	1.66	482.35	470	17	4.68E-02	13.1	
16	0	257.86	55	192	1.15	515.01	512	8	7.59E-03	46.3	
17	0	270.40	98	237	0.87	540.09	536	9	1.36E-02	30.1	
18	0	277.32	131	243	0.76	553.92	548	12	1.81E-02	25.5	
19	0	295.24*	416	206	1.23	589.77	584	11	5.78E-02	8.4	
20	0	299.68	83	211	1.22	598.66	595	10	1.15E-02	34.3	
21	0	328.38	72	191	1.24	656.06	652	10	1.01E-02	37.5	
22	0	338.40	285	164	1.09	676.10	670	11	3.95E-02	10.6	
23	0	351.96*	687	167	1.19	703.22	698	10	9.55E-02	5.3	
24	0	409.15	45	138	0.96	817.61	814	9	6.23E-03	49.7	
25	0	463.50	54	79	1.31	926.31	923	8	7.43E-03	32.4	
26	0	511.14*	128	141	1.81	1021.61	1015	15	1.78E-02	24.4	
27	0	583.23*	362	144	1.52	1165.78	1161	13	5.03E-02	8.8	
28	0	609.38*	459	158	1.58	1218.08	1210	17	6.38E-02	7.9	
29	0	661.83*	270	82	1.26	1322.97	1317	13	3.75E-02	9.3	
30	0	727.59	81	68	1.61	1454.47	1451	12	1.12E-02	23.7	
31	0	767.05	129	72	1.26	1533.38	1528	12	1.79E-02	15.8	
32	0	795.49*	56	86	1.84	1590.26	1583	13	7.84E-03	37.3	
33	0	860.96	57	38	1.54	1721.16	1715	13	7.90E-03	26.2	
34	0	911.40*	301	45	2.07	1822.03	1815	18	4.19E-02	7.8	
35	5	964.78	55	30	2.22	1928.75	1924	19	7.63E-03	22.2	9.01E-01
36	5	969.13*	184	28	1.94	1937.44	1924	19	2.56E-02	9.4	
37	0	1001.31*	213	43	1.55	2001.80	1996	12	2.96E-02	9.4	
38	0	1120.53	82	66	1.17	2240.15	2234	12	1.14E-02	22.7	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1238.68	41	72	1.55	2476.37	2470	12	5.69E-03	44.2	
40	0	1401.44	25	6	0.62	2801.74	2794	14	3.42E-03	30.2	
41	0	1461.16*	1037	30	2.02	2921.11	2912	17	1.44E-01	3.4	
42	0	1765.32*	65	13	2.52	3529.05	3520	18	9.04E-03	18.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 9-MAR-2010 13:37:22

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900020.CNF;2
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 11:36:48
Sample ID         : G247900020 Sample quantity : 111.47 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA12 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.88 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	*	3.048E+01	3.438E+00	7.116E-01	6.454E-02	42.829
NB-95	+	765.81	*	2.853E-01	9.440E-02	9.178E-02	8.808E-03	3.109
CD-109	+	88.03	*	4.704E+00	1.367E+00	1.965E+00	1.850E-01	2.394
SN-126	+	64.28		1.634E+01	2.832E+00	1.243E+00	1.808E-01	13.148
	+	86.94		1.901E+00	9.466E-01	8.569E-01	3.557E-01	2.218
	+	87.57	*	4.572E-01	1.329E-01	1.918E-01	1.797E-02	2.384
BA-137M	+	661.66	*	4.760E-01	9.860E-02	6.968E-02	6.217E-03	6.831
CS-137	+	661.66	*	5.029E-01	1.042E-01	7.361E-02	6.579E-03	6.831
CE-141	+	145.44	*	2.926E-01	1.640E-01	1.471E-01	1.205E-02	1.988
TL-208	+	277.37		1.586E+00	8.338E-01	7.643E-01	9.599E-02	2.075
	+	583.19	*	6.068E-01	1.211E-01	7.176E-02	6.824E-03	8.456
	+	860.56		9.042E-01	4.834E-01	5.634E-01	6.002E-02	1.605
BI-211		72.87		6.268E+00	5.598E+00	8.515E+00	6.818E-01	0.736
	+	351.06	*	5.089E+00	7.015E-01	4.298E-01	3.830E-02	11.841
PB-212	+	74.82		3.579E+00	9.665E-01	9.198E-01	1.168E-01	3.891
	+	77.11		2.661E+00	4.731E-01	5.288E-01	4.412E-02	5.032
	+	238.63	*	2.085E+00	2.471E-01	1.160E-01	1.123E-02	17.970
	+	300.09		2.134E+00	1.483E+00	1.586E+00	1.678E-01	1.345
BI-214	+	609.32	*	1.492E+00	2.817E-01	1.467E-01	1.524E-02	10.167
	+	1120.29		1.380E+00	6.442E-01	5.570E-01	6.102E-02	2.478
	+	1764.49		1.516E+00	5.845E-01	3.506E-01	2.967E-02	4.324
PB-214	+	74.82		6.343E+00	1.675E+00	1.630E+00	1.855E-01	3.891
	+	77.11		4.691E+00	9.194E-01	9.322E-01	1.094E-01	5.032
	+	242.00		3.379E+00	9.518E-01	6.578E-01	6.791E-02	5.136
	+	295.22		1.895E+00	3.774E-01	2.739E-01	2.971E-02	6.918
	+	351.93	*	1.847E+00	2.742E-01	1.537E-01	1.610E-02	12.014
RA-224	+	240.99	*	5.975E+00	1.647E+00	1.244E+00	1.062E-01	4.805
RA-226	+	609.32	*	1.492E+00	2.817E-01	1.467E-01	1.524E-02	10.167
	+	1120.29		1.380E+00	6.442E-01	5.570E-01	6.102E-02	2.478
	+	1764.49		1.516E+00	5.845E-01	3.506E-01	2.967E-02	4.324
AC-228	+	338.32		2.344E+00	1.096E+00	4.706E-01	1.962E-01	4.981
	+	911.20	*	2.443E+00	4.944E-01	2.620E-01	3.363E-02	9.323
	+	968.97		2.572E+00	8.005E-01	5.413E-01	1.345E-01	4.752
RA-228	+	338.32		2.344E+00	1.096E+00	4.706E-01	1.962E-01	4.981

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	911.20	*	2.443E+00	4.944E-01	2.620E-01	3.363E-02	9.323
	+	968.97		2.572E+00	8.005E-01	5.413E-01	1.345E-01	4.752
	+	74.82		3.579E+00	9.027E-01	9.198E-01	7.579E-02	3.891
	+	77.11		2.661E+00	4.731E-01	5.288E-01	4.412E-02	5.032
	+	238.63	*	2.085E+00	2.471E-01	1.160E-01	1.123E-02	17.970
TH-229	+	300.09		2.134E+00	1.963E+00	1.586E+00	9.712E-01	1.345
	+	85.43		7.875E-01	4.362E-01	5.272E-01	4.817E-02	1.494
	+	88.47		7.048E-01	2.048E-01	2.932E-01	2.748E-02	2.404
		193.51	*	-1.526E-01	6.864E-01	1.149E+00	9.412E-02	-0.133
	+	210.85		2.721E+00	1.586E+00	1.657E+00	1.381E-01	1.642
TH-232	+	338.32		2.344E+00	5.341E-01	4.706E-01	4.021E-02	4.981
	+	911.20	*	2.443E+00	4.944E-01	2.620E-01	3.363E-02	9.323
	+	968.97		2.572E+00	8.005E-01	5.413E-01	1.345E-01	4.752
PA-234M	+	766.42		7.243E+01	4.343E+01	2.357E+01	1.200E+01	3.074
TH-234	+	1001.03	*	5.765E+01	1.252E+01	9.666E+00	1.056E+00	5.964
	+	63.29	*	4.240E+01	8.554E+00	3.463E+00	6.170E-01	12.243
	+	92.59		5.372E+01	1.214E+01	1.610E+00	3.581E-01	33.370
U-235	+	89.96		4.147E+00	1.967E+00	2.002E+00	4.972E-01	2.072
	+	93.35		4.057E+01	9.572E+00	1.210E+00	2.811E-01	33.541
	+	143.76	*	8.593E-01	4.976E-01	4.136E-01	6.890E-02	2.078
NP-237		163.33		3.627E-01	6.185E-01	9.986E-01	1.762E-01	0.363
	+	185.72		9.391E-01	1.338E-01	8.674E-02	7.047E-03	10.826
		205.31		5.848E-01	7.340E-01	1.123E+00	2.020E-01	0.521
	+	86.48	*	1.364E+00	4.888E-01	6.180E-01	1.416E-01	2.207
	+	95.86		4.740E+00	3.015E+00	2.269E+00	5.460E-01	2.089
U-238	+	63.29	*	4.240E+01	8.554E+00	3.463E+00	6.170E-01	12.243
	+	92.59		5.372E+01	5.301E+00	1.610E+00	1.454E-01	33.370
ANH-511	+	511.00	*	1.641E-01	8.150E-02	6.414E-02	5.612E-03	2.559

---- 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	*	2.273E-01	4.696E-01	7.753E-01	7.193E-02	0.293
NA-22		1274.54	*	2.085E-02	5.311E-02	9.094E-02	7.755E-03	0.229
NA-24		1368.63	*	-2.441E+01	5.311E-02	Half-Life too short		
SC-46		889.28	*	2.663E-02	5.039E-02	8.564E-02	8.773E-03	0.311
	+	1120.55		2.411E-01	1.114E-01	1.647E-01	1.427E-02	1.464
V-48		944.13		-5.213E-01	1.284E+00	1.975E+00	1.988E-01	-0.264
		983.53	*	-7.679E-03	1.068E-01	1.783E-01	1.753E-02	-0.043
		1312.11		5.603E-02	1.190E-01	2.053E-01	1.780E-02	0.273
CR-51		320.08	*	-1.127E-02	5.143E-01	8.432E-01	7.653E-02	-0.013
MN-54		834.85	*	1.466E-02	4.959E-02	8.257E-02	8.241E-03	0.178
CO-56		846.77	*	1.166E-02	5.348E-02	8.852E-02	8.888E-03	0.132
		1037.84		-4.787E-01	3.887E-01	5.641E-01	5.555E-02	-0.849
	+	1238.28		1.992E-01	1.770E-01	2.391E-01	2.061E-02	0.833
CO-57		1771.35		-1.621E-01	3.356E-01	4.205E-01	3.552E-02	-0.385
		122.06	*	2.450E-04	3.639E-02	5.853E-02	4.854E-03	0.004
		136.47		-1.879E-03	3.002E-01	4.770E-01	4.177E-02	-0.004

---- 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	*		-5.715E-02	5.668E-02	8.370E-02	8.261E-03	-0.683
FE-59	1099.45	*		-1.174E-01	1.184E-01	1.767E-01	1.689E-02	-0.664
	1291.59			-1.457E-02	1.565E-01	2.545E-01	2.484E-02	-0.057
CO-60	1173.23			2.363E-02	5.681E-02	9.752E-02	7.870E-03	0.242
	1332.49	*		1.509E-02	5.126E-02	8.683E-02	7.600E-03	0.174
ZN-65	1115.54	*		-7.278E-02	1.351E-01	1.796E-01	1.567E-02	-0.405
SE-75	121.12			-4.105E-02	1.926E-01	3.071E-01	3.325E-02	-0.134
	136.00			-1.609E-02	5.957E-02	9.369E-02	7.637E-03	-0.172
	264.66	*		5.258E-02	6.157E-02	1.025E-01	8.899E-03	0.513
	279.54			1.622E-01	1.496E-01	2.335E-01	2.101E-02	0.695
	400.66			-4.986E-02	3.208E-01	5.136E-01	5.511E-02	-0.097
SR-85	514.00	*		8.250E-02	5.855E-02	9.496E-02	8.318E-03	0.869
Y-88	898.04			1.390E-02	5.062E-02	8.410E-02	8.679E-03	0.165
	1836.06	*		-1.880E-02	3.906E-02	5.795E-02	4.798E-03	-0.324
Y-91	1204.77	*		-3.235E-01	2.752E+01	4.544E+01	3.732E+00	-0.007
NB-94	702.65	*		2.584E-02	4.435E-02	7.604E-02	6.996E-03	0.340
	871.09			-6.403E-03	4.226E-02	6.739E-02	6.847E-03	-0.095
NB-95M	235.69	*		2.326E-01	1.812E-01	2.840E-01	2.779E-02	0.819
ZR-95	724.19			8.899E-02	1.290E-01	1.981E-01	1.984E-02	0.449
	756.73	*		4.521E-03	9.781E-02	1.608E-01	1.666E-02	0.028
MO-99	140.51			-6.562E+01	9.340E+01	1.254E+02	2.953E+01	-0.523
	181.07			3.021E+01	6.861E+01	1.046E+02	1.940E+01	0.289
	366.42			-3.681E+01	3.362E+02	5.434E+02	4.535E+01	-0.068
	739.50	*		-5.011E+01	4.617E+01	6.789E+01	1.101E+01	-0.738
	777.92			-2.803E+01	1.199E+02	1.918E+02	1.854E+01	-0.146
TC-99M	140.51	*		-1.862E+15	1.199E+02	Half-Life	too short	
RU-103	497.08	*		2.720E-02	5.491E-02	9.522E-02	1.335E-02	0.286
	610.33			1.649E+01	3.765E+00	3.952E+00	6.529E-01	4.171
RH-106	621.93	*		-1.037E-01	4.247E-01	6.927E-01	9.331E-02	-0.150
	1050.41			1.432E+00	2.912E+00	5.097E+00	4.756E-01	0.281
RU-106	621.93	*		-1.037E-01	4.246E-01	6.927E-01	6.197E-02	-0.150
	1050.41			1.432E+00	2.912E+00	5.097E+00	4.756E-01	0.281
AG-108M	433.94	*		1.322E-02	4.128E-02	6.779E-02	5.874E-03	0.195
	614.28			-1.263E-02	5.352E-02	7.544E-02	6.954E-03	-0.167
	722.91			-5.192E-02	5.513E-02	6.916E-02	6.632E-03	-0.751
AG-110M	657.76	*		-4.191E-03	4.903E-02	6.965E-02	6.390E-03	-0.060
	677.62			-1.623E-01	4.052E-01	6.472E-01	5.999E-02	-0.251
	706.68			-1.504E-01	2.910E-01	4.596E-01	4.347E-02	-0.327
	763.94			3.570E-01	2.583E-01	4.145E-01	4.061E-02	0.861
	884.68			-6.277E-03	6.319E-02	1.012E-01	1.058E-02	-0.062
	937.49			-2.182E-02	1.468E-01	2.329E-01	2.415E-02	-0.094
	1384.29			-4.245E-03	1.861E-01	3.032E-01	2.737E-02	-0.014
	1505.03			-1.788E-01	2.987E-01	4.301E-01	3.796E-02	-0.416
SN-113	391.69	*		2.093E-02	5.949E-02	9.852E-02	8.247E-03	0.212
CD-115	260.90			-6.252E-04	5.949E-02	Half-Life	too short	
	492.35			-2.694E-05	5.949E-02	Half-Life	too short	
	527.90	*		1.559E-05	5.949E-02	Half-Life	too short	
SN-117M	156.02			-8.600E-01	3.828E+00	6.020E+00	4.804E-01	-0.143
	158.56	*		7.105E-02	8.966E-02	1.469E-01	1.171E-02	0.484

---- 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	*	2.407E-02	3.940E-02	6.409E-02	5.145E-03	0.376
SB-124		602.73		-1.128E-02	5.771E-02	8.176E-02	7.310E-03	-0.138
		645.85		-7.995E-02	6.529E-01	1.071E+00	1.009E-01	-0.075
		722.78		-5.658E-01	5.778E-01	7.203E-01	6.854E-02	-0.786
		1690.97	*	3.469E-02	8.882E-02	1.589E-01	1.428E-02	0.218
SB-125		427.87	*	5.912E-03	1.267E-01	2.048E-01	1.742E-02	0.029
	+	463.37		6.077E-01	3.980E-01	6.431E-01	5.915E-02	0.945
		600.60		-1.540E-01	2.324E-01	3.566E-01	3.408E-02	-0.432
		635.95		7.267E-02	3.339E-01	5.631E-01	5.417E-02	0.129
TE-125M		109.28	*	1.448E+01	1.802E+01	2.679E+01	2.755E+00	0.541
I-126		388.63		7.933E-03	2.746E-01	4.461E-01	3.624E-02	0.018
		666.33	*	-6.567E-02	3.927E-01	5.522E-01	4.944E-02	-0.119
		753.82		2.557E+00	3.008E+00	5.235E+00	4.986E-01	0.489
SB-126		414.70		-5.489E-02	1.360E-01	1.841E-01	1.520E-02	-0.298
		666.50		-2.276E-02	1.361E-01	1.914E-01	1.714E-02	-0.119
		695.00		6.800E-02	1.214E-01	2.084E-01	1.907E-02	0.326
		697.00		-2.810E-01	4.393E-01	6.870E-01	6.295E-02	-0.409
		720.70	*	-1.870E-01	2.271E-01	3.341E-01	3.113E-02	-0.560
		856.80		-3.342E-01	8.015E-01	1.052E+00	1.061E-01	-0.318
SB-127		252.40		2.237E+00	1.115E+01	1.807E+01	7.568E+00	0.124
		473.00		-2.138E+00	4.326E+00	6.649E+00	9.199E-01	-0.322
		685.70	*	2.443E+00	3.188E+00	5.565E+00	7.179E-01	0.439
		783.70		6.023E+00	9.757E+00	1.663E+01	2.360E+00	0.362
I-131		80.19		1.476E+00	1.454E+01	1.690E+01	1.471E+00	0.087
		284.31		1.671E-01	2.529E+00	4.195E+00	3.835E-01	0.040
		364.49	*	8.438E-02	2.039E-01	3.405E-01	3.020E-02	0.248
		636.99		1.766E+00	2.756E+00	4.784E+00	4.520E-01	0.369
TE-132		49.72		-5.449E+00	6.490E+01	1.079E+02	1.271E+01	-0.050
	+	111.76		4.183E+02	2.094E+02	2.335E+02	2.793E+01	1.792
		116.30		-3.680E+01	1.097E+02	1.548E+02	1.848E+01	-0.238
		228.16	*	1.517E-01	2.199E+00	3.691E+00	6.115E-01	0.041
BA-133		81.00		7.009E-02	2.117E-01	2.488E-01	3.871E-02	0.282
	+	276.40		1.467E+00	7.771E-01	8.584E-01	1.214E-01	1.709
		302.85		5.505E-02	2.025E-01	2.983E-01	3.907E-02	0.185
		356.01	*	-2.651E-02	6.314E-02	8.686E-02	1.114E-02	-0.305
		383.85		2.708E-01	3.843E-01	6.485E-01	7.861E-02	0.418
I-133		529.87	*	5.660E-02	3.843E-01	Half-Life	too short	
		875.33		-1.497E+00	3.843E-01	Half-Life	too short	
		1298.22		-1.402E+00	3.843E-01	Half-Life	too short	
CS-134		563.25		1.922E-01	4.681E-01	8.036E-01	7.209E-02	0.239
		569.33		-4.030E-03	2.596E-01	4.333E-01	3.907E-02	-0.009
		604.72		1.719E-03	4.482E-02	6.506E-02	5.831E-03	0.026
	+	795.86	*	1.385E-01	1.043E-01	1.304E-01	1.281E-02	1.062
		801.95		-6.910E-01	6.372E-01	8.254E-01	8.128E-02	-0.837
		1365.19		1.527E+00	1.426E+00	2.657E+00	2.438E-01	0.575
CS-135		268.22	*	1.653E-01	2.319E-01	3.526E-01	3.521E-02	0.469
I-135		546.56		3.594E+14	2.319E-01	Half-Life	too short	
		836.80		7.952E+13	2.319E-01	Half-Life	too short	
		1038.76		-5.450E+14	2.319E-01	Half-Life	too short	

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CS-136		1131.51		-5.421E+13	2.319E-01	Half-Life	too short	
		1260.41	*	-4.560E+13	2.319E-01	Half-Life	too short	
		1457.56		8.710E+15	2.319E-01	Half-Life	too short	
		1678.03		6.179E+13	2.319E-01	Half-Life	too short	
		1791.20		2.209E+14	2.319E-01	Half-Life	too short	
		153.25		1.827E+00	1.481E+00	2.453E+00	2.391E-01	0.745
		176.60		1.762E-01	7.986E-01	1.365E+00	1.228E-01	0.129
		273.65		1.030E-01	1.236E+00	1.314E+00	1.234E-01	0.078
		340.55		6.922E-01	2.757E-01	4.519E-01	4.006E-02	1.532
		818.51		-8.259E-02	1.151E-01	1.737E-01	1.721E-02	-0.475
CE-139		1048.07	*	-9.674E-02	1.588E-01	2.490E-01	2.413E-02	-0.388
		1235.36		7.992E-01	1.089E+00	1.665E+00	1.927E-01	0.480
BA-140		165.86	*	-2.844E-02	4.352E-02	6.686E-02	5.323E-03	-0.425
		162.66		6.044E-01	1.410E+00	2.272E+00	1.952E-01	0.266
LA-140		304.85		1.859E+00	2.294E+00	3.428E+00	1.004E+00	0.542
		423.72		-1.318E-01	3.333E+00	5.360E+00	1.759E+00	-0.025
		537.26	*	-9.245E-03	4.100E-01	6.868E-01	2.333E-01	-0.013
	+	328.76		9.110E-01	6.885E-01	8.884E-01	8.072E-02	1.025
		487.02		2.227E-01	2.152E-01	3.692E-01	3.391E-02	0.603
		815.77		7.522E-02	5.359E-01	8.833E-01	9.516E-02	0.085
CE-143		1596.21	*	-6.752E-02	1.282E-01	1.878E-01	1.646E-02	-0.360
		57.36		2.686E-03	1.282E-01	Half-Life	too short	
		293.27	*	5.079E-03	1.282E-01	Half-Life	too short	
		664.57		2.835E-02	1.282E-01	Half-Life	too short	
CE-144		721.93		-8.986E-03	1.282E-01	Half-Life	too short	
		80.12		5.977E-01	5.683E+00	6.610E+00	5.692E-01	0.090
PM-144		133.52	*	-3.097E-01	2.995E-01	4.544E-01	6.818E-02	-0.682
		476.78		7.270E-02	8.900E-02	1.500E-01	1.404E-02	0.485
PR-144		618.01		1.507E-02	4.482E-02	7.431E-02	6.822E-03	0.203
		696.49	*	-2.488E-02	4.514E-02	7.111E-02	6.517E-03	-0.350
		696.51	*	-1.876E+00	3.385E+00	5.330E+00	4.882E-01	-0.352
PM-146		1489.16		1.908E+00	1.384E+01	2.303E+01	2.034E+00	0.083
		453.88	*	1.723E-02	5.594E-02	9.165E-02	9.613E-03	0.188
		633.25		-1.019E+00	1.752E+00	2.693E+00	1.031E+00	-0.378
		735.93		1.005E-01	1.953E-01	3.142E-01	8.886E-02	0.320
ND-147		747.24		-1.781E-01	1.364E-01	1.948E-01	2.944E-02	-0.914
	+	91.11		1.714E+00	7.130E-01	1.828E+00	1.796E-01	0.938
		319.41		-4.532E-01	5.419E+00	8.855E+00	7.641E-01	-0.051
PM-149		531.02	*	-1.647E-01	9.287E-01	1.540E+00	2.320E-01	-0.107
		285.90	*	1.572E-05	9.287E-01	Half-Life	too short	
EU-152		121.78		1.303E-02	1.033E-01	1.669E-01	1.605E-02	0.078
		244.70		-1.858E-01	4.404E-01	6.274E-01	5.369E-02	-0.296
		344.28	*	-6.699E-02	1.308E-01	1.993E-01	1.799E-02	-0.336
		778.90		-1.369E-01	3.206E-01	5.029E-01	4.865E-02	-0.272
	+	964.08		8.275E-01	3.763E-01	6.820E-01	6.788E-02	1.213
		1085.87		-1.662E-01	4.368E-01	6.983E-01	6.293E-02	-0.238
GD-153		1112.07		2.152E-01	3.878E-01	6.509E-01	5.697E-02	0.331
		1408.01		9.471E-02	2.743E-01	4.073E-01	3.591E-02	0.233
		69.67		7.780E-01	3.129E+00	4.648E+00	3.616E-01	0.167

----- 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	*	7.390E-01	2.077E-01	2.601E-01	2.274E-02	2.841
		103.18		-3.698E-02	1.859E-01	2.662E-01	2.266E-02	-0.139
		123.07		1.471E-02	7.264E-02	1.176E-01	1.304E-02	0.125
		723.31		-9.069E-02	2.354E-01	3.186E-01	3.233E-02	-0.285
		873.19		3.166E-02	3.426E-01	5.600E-01	7.315E-02	0.057
		996.26		2.221E-01	4.983E-01	7.620E-01	1.376E-01	0.291
EU-155		1004.73		5.918E-01	3.404E-01	5.757E-01	7.166E-02	1.028
		1274.44	*	6.379E-02	1.508E-01	2.588E-01	2.925E-02	0.246
	+	86.55		5.552E-01	1.615E-01	2.901E-01	2.709E-02	1.914
TB-160		105.31	*	1.815E-01	1.615E-01	2.702E-01	2.312E-02	0.672
	+	86.79		1.526E+00	4.435E-01	7.950E-01	7.380E-02	1.920
		197.04		-2.554E-01	7.558E-01	1.258E+00	1.035E-01	-0.203
HO-166M		215.65		-3.423E-01	9.617E-01	1.590E+00	1.331E-01	-0.215
	+	298.57		3.118E-01	2.158E-01	2.663E-01	2.309E-02	1.171
		879.36	*	-8.652E-02	1.813E-01	2.787E-01	2.843E-02	-0.310
		962.29		7.459E-01	7.541E-01	1.181E+00	1.177E-01	0.631
	+	966.15		5.996E-01	2.727E-01	6.461E-01	6.423E-02	0.928
		1177.93		-1.819E-01	4.753E-01	7.593E-01	6.144E-02	-0.240
		1271.85		-5.356E-02	9.027E-01	1.476E+00	1.256E-01	-0.036
		80.57		4.517E-02	6.122E-01	7.106E-01	6.149E-02	0.064
	+	184.41		7.461E-01	1.063E-01	1.253E-01	1.017E-02	5.954
		280.46		5.011E-02	1.130E-01	1.696E-01	1.470E-02	0.295
TA-182		410.95		3.170E-01	3.722E-01	5.624E-01	4.627E-02	0.564
		711.68	*	1.330E-02	7.671E-02	1.279E-01	1.185E-02	0.104
		752.31		2.380E-01	3.669E-01	6.307E-01	6.001E-02	0.377
		810.29		-8.076E-02	8.178E-02	1.210E-01	1.192E-02	-0.667
		67.75		-5.201E-02	1.895E-01	2.954E-01	2.261E-02	-0.176
	+	100.11		1.614E+00	4.537E-01	4.885E-01	4.212E-02	3.305
		152.43		3.671E-01	4.998E-01	8.170E-01	6.528E-02	0.449
		222.11		2.504E-01	4.653E-01	7.961E-01	6.704E-02	0.315
	+	1121.30		6.622E-01	3.058E-01	4.492E-01	3.889E-02	1.474
		1189.05		-2.840E-01	3.807E-01	5.831E-01	4.748E-02	-0.487
IR-192		1221.41	*	6.175E-02	2.450E-01	4.135E-01	3.427E-02	0.149
		1231.02		6.861E-02	6.763E-01	1.011E+00	8.420E-02	0.068
	+	295.96		1.453E+00	2.739E-01	3.822E-01	3.339E-02	3.801
		308.46		-2.462E-02	1.208E-01	1.964E-01	1.709E-02	-0.125
HG-203		316.51	*	9.564E-03	4.589E-02	7.625E-02	6.600E-03	0.125
		468.07		3.140E-02	1.027E-01	1.477E-01	1.359E-02	0.213
		70.83		1.524E+00	2.490E+00	3.732E+00	5.847E-01	0.408
		72.87		1.653E+00	1.492E+00	2.246E+00	3.414E-01	0.736
BI-207		279.20	*	9.461E-02	5.650E-02	9.072E-02	8.062E-03	1.043
		72.81		3.106E-01	3.211E-01	4.866E-01	3.894E-02	0.638
	+	74.97		1.032E+00	2.599E-01	3.399E-01	2.777E-02	3.035
		569.70		1.283E-02	4.041E-02	6.890E-02	6.134E-03	0.186
PB-210		1063.66	*	5.357E-02	6.815E-02	1.212E-01	1.117E-02	0.442
		1770.23		-2.797E-01	6.517E-01	8.137E-01	6.876E-02	-0.344
PB-211		46.54	*	5.235E+00	5.272E+00	8.851E+00	8.177E-01	0.591
		404.85	*	2.390E-01	1.095E+00	1.569E+00	7.579E-01	0.152
		427.09		5.322E-01	2.112E+00	3.435E+00	1.588E+00	0.155

---- 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	*	3.094E-01	1.258E+00	2.075E+00	1.081E+00	0.149
		727.33		2.073E+00	1.020E+00	1.418E+00	1.841E-01	1.462
		785.37		6.115E+00	4.492E+00	8.002E+00	7.771E-01	0.764
RN-219	+	1620.50	*	-1.162E+00	2.735E+00	4.051E+00	3.538E-01	-0.287
		271.23		7.117E-01	4.351E-01	5.890E-01	6.057E-02	1.208
		401.81		9.732E-02	5.032E-01	8.244E-01	1.205E-01	0.118
RA-223	+	81.07	*	1.593E-01	4.787E-01	5.632E-01	4.899E-02	0.283
		83.79		4.687E-01	2.596E-01	3.617E-01	3.244E-02	1.296
		94.87		2.233E+00	1.329E+00	1.475E+00	1.310E-01	1.514
	+	144.24	*	2.880E+00	1.619E+00	1.782E+00	1.621E-01	1.616
		154.21		4.408E-01	5.451E-01	8.924E-01	7.914E-02	0.494
		269.46		5.530E-01	3.368E-01	4.404E-01	3.884E-02	1.256
AC-227	+	323.87	*	4.630E-01	8.903E-01	1.329E+00	2.302E-01	0.349
		338.28		9.302E+00	2.261E+00	3.074E+00	3.694E-01	3.026
		79.69		6.860E-01	2.783E+00	3.260E+00	5.611E-01	0.210
	+	235.96	*	4.803E-01	2.213E-01	3.552E-01	3.641E-02	1.352
		256.23		8.938E-02	3.795E-01	5.632E-01	6.783E-02	0.159
		299.98		2.347E+00	1.639E+00	2.086E+00	2.657E-01	1.125
TH-227	+	304.50	*	5.738E-01	2.295E+00	3.376E+00	5.588E-01	0.170
		334.37		-1.388E+00	2.863E+00	3.249E+00	5.055E-01	-0.427
		79.80		9.557E-01	3.671E+00	4.300E+00	9.359E-01	0.222
	+	235.96	*	4.803E-01	2.207E-01	3.552E-01	3.431E-02	1.352
		256.23		8.938E-02	3.796E-01	5.632E-01	7.659E-02	0.159
		299.98		2.347E+00	1.639E+00	2.086E+00	2.657E-01	1.125
PA-231	+	304.50	*	5.738E-01	2.295E+00	3.376E+00	5.588E-01	0.170
		334.37		-1.388E+00	2.863E+00	3.249E+00	5.055E-01	-0.427
		283.69		-1.421E-01	1.809E+00	2.877E+00	4.205E-01	-0.049
TH-231	+	301.36	*	1.499E+00	8.394E-01	1.329E+00	1.619E-01	1.128
		81.07		1.593E-01	4.787E-01	5.632E-01	4.899E-02	0.283
		83.79		4.687E-01	2.596E-01	3.617E-01	3.244E-02	1.296
	+	94.87	*	2.233E+00	1.329E+00	1.475E+00	1.310E-01	1.514
		144.24		2.880E+00	1.619E+00	1.782E+00	1.621E-01	1.616
		154.21		4.408E-01	5.451E-01	8.924E-01	7.914E-02	0.494
	+	269.46	*	5.530E-01	3.368E-01	4.404E-01	3.884E-02	1.256
		323.87		4.630E-01	8.903E-01	1.329E+00	2.302E-01	0.349
		338.28		9.302E+00	2.261E+00	3.074E+00	3.694E-01	3.026
PA-233	+	300.13	*	1.062E+00	7.462E-01	9.431E-01	1.401E-01	1.126
		311.90		6.713E-02	7.979E-02	1.370E-01	1.218E-02	0.490
		340.48		2.746E+00	1.157E+00	1.621E+00	3.896E-01	1.694
PA-234	+	94.67	*	8.091E-01	4.871E-01	5.909E-01	7.443E-02	1.369
		98.44		7.987E-01	4.941E-01	2.842E-01	1.586E-01	2.810
		111.00		1.001E+00	5.008E-01	5.278E-01	6.276E-02	1.896
	+	131.20	*	-4.554E-03	1.565E-01	2.504E-01	2.038E-02	-0.018
		569.50		6.814E-02	3.553E-01	6.011E-01	5.351E-02	0.113
		733.00		1.279E-01	5.299E-01	7.742E-01	1.743E-01	0.165
	+	880.51	*	7.066E-02	3.435E-01	5.675E-01	5.791E-02	0.125
		883.24		-1.300E-01	3.779E-01	5.737E-01	3.869E-01	-0.227
		926.50		-2.704E-02	2.269E-01	3.612E-01	9.334E-02	-0.075
	+	946.00	*	4.346E-02	3.879E-01	6.311E-01	1.228E-01	0.069

----- 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		3.179E-01	5.631E-01	9.556E-01	9.594E-02	0.333
		99.53		1.449E+00	4.072E-01	4.932E-01	4.265E-02	2.938
		103.37		-2.020E-02	1.688E-01	2.425E-01	2.063E-02	-0.083
		106.12		2.258E-02	1.356E-01	2.103E-01	1.773E-02	0.107
		117.23	*	-5.258E-01	6.101E-01	8.976E-01	7.438E-02	-0.586
AM-241	+	228.18		2.020E-02	2.819E-01	4.733E-01	4.005E-02	0.043
		277.60		7.248E-01	3.753E-01	4.228E-01	3.663E-02	1.715
CM-247	+	59.54	*	2.181E-01	2.903E-01	4.414E-01	3.478E-02	0.494
		278.00		3.078E+00	1.594E+00	1.786E+00	1.548E-01	1.723
CF-249	*	287.50		5.278E-01	1.549E+00	2.604E+00	2.259E-01	0.203
		402.40		-1.112E-02	4.816E-02	7.672E-02	6.266E-03	-0.145
		252.80		3.195E-01	1.286E+00	2.014E+00	1.731E-01	0.159
		333.37		8.191E-02	3.359E-01	3.596E-01	3.082E-02	0.228
CF-251	*	388.16		-5.253E-03	5.376E-02	8.665E-02	7.043E-03	-0.061
		177.52		-5.723E-02	1.716E-01	2.874E-01	2.314E-02	-0.199
		227.38		-3.837E-02	4.573E-01	7.629E-01	6.451E-02	-0.050
		285.41		7.177E-01	2.705E+00	4.532E+00	3.931E-01	0.158

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]G247900020
* Acquisition date   : 9-MAR-2010 11:36:48 Detector SN#      :
* Detector ID        : GAM12 Sensitivity      : 5.000
* Geometry           : CAN Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 02:00:01.88 Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G247900020 Analyst initials: MXR1
* Batch Number       : 957711 Sample Quantity : 1.1147E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 25-FEB-2010 20:55:17 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	3.048E+01	3.370E+00	7.080E-01	0.000E+00
NB-95	2.853E-01	9.251E-02	9.179E-02	0.000E+00
CD-109	4.704E+00	1.340E+00	1.999E+00	0.000E+00
SN-126	4.572E-01	1.302E-01	1.951E-01	0.000E+00
BA-137M	4.760E-01	9.663E-02	6.977E-02	0.000E+00
CS-137	5.029E-01	1.021E-01	7.371E-02	0.000E+00
CE-141	2.926E-01	1.608E-01	1.491E-01	0.000E+00
TL-208	6.068E-01	1.186E-01	7.192E-02	0.000E+00
BI-211	5.089E+00	6.875E-01	4.325E-01	0.000E+00
PB-212	2.085E+00	2.421E-01	1.171E-01	0.000E+00
BI-214	1.492E+00	2.760E-01	1.470E-01	0.000E+00
PB-214	1.847E+00	2.687E-01	1.547E-01	0.000E+00
RA-224	5.975E+00	1.614E+00	1.255E+00	0.000E+00
RA-226	1.492E+00	2.760E-01	1.470E-01	0.000E+00
AC-228	2.443E+00	4.845E-01	2.617E-01	0.000E+00
RA-228	2.443E+00	4.845E-01	2.617E-01	0.000E+00
TH-228	2.085E+00	2.421E-01	1.171E-01	0.000E+00
TH-229	-1.526E-01	6.727E-01	1.162E+00	0.000E+00
TH-232	2.443E+00	4.845E-01	2.617E-01	0.000E+00
PA-234M	5.765E+01	1.227E+01	9.646E+00	0.000E+00
TH-234	4.240E+01	8.383E+00	3.532E+00	0.000E+00
U-235	8.593E-01	4.877E-01	4.191E-01	0.000E+00
NP-237	1.364E+00	4.791E-01	6.287E-01	0.000E+00
U-238	4.240E+01	8.383E+00	3.532E+00	0.000E+00
ANH-511	1.641E-01	7.987E-02	6.435E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	2.273E-01	4.602E-01	7.782E-01	0.000E+00 NOT IDENT.
NA-22	2.085E-02	5.205E-02	9.058E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	6.263E+07	0.000E+00	0.000E+00	SHORT HLIF
SC-46	2.663E-02	4.938E-02	8.554E-02	0.000E+00	FAIL ABUN
V-48	-7.679E-03	1.047E-01	1.779E-01	0.000E+00	NOT IDENT.
CR-51	-1.127E-02	5.040E-01	8.492E-01	0.000E+00	NOT IDENT.
MN-54	1.466E-02	4.860E-02	8.252E-02	0.000E+00	NOT IDENT.
CO-56	1.166E-02	5.241E-02	8.846E-02	0.000E+00	FAIL ABUN
CO-57	2.450E-04	3.566E-02	5.939E-02	0.000E+00	NOT IDENT.
CO-58	-5.715E-02	5.555E-02	8.367E-02	0.000E+00	NOT IDENT.
FE-59	-1.174E-01	1.160E-01	1.762E-01	0.000E+00	NOT IDENT.
CO-60	1.509E-02	5.023E-02	8.645E-02	0.000E+00	NOT IDENT.
ZN-65	-7.278E-02	1.324E-01	1.791E-01	0.000E+00	NOT IDENT.
SE-75	5.258E-02	6.034E-02	1.034E-01	0.000E+00	NOT IDENT.
SR-85	8.250E-02	5.738E-02	9.527E-02	0.000E+00	NOT IDENT.
Y-88	-1.880E-02	3.828E-02	5.754E-02	0.000E+00	NOT IDENT.
Y-91	-3.235E-01	2.697E+01	4.528E+01	0.000E+00	NOT IDENT.
NB-94	2.584E-02	4.346E-02	7.610E-02	0.000E+00	NOT IDENT.
NB-95M	2.326E-01	1.776E-01	2.866E-01	0.000E+00	NOT IDENT.
ZR-95	4.521E-03	9.586E-02	1.608E-01	0.000E+00	NOT IDENT.
MO-99	-5.011E+01	4.525E+01	6.792E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	2.644E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.720E-02	5.381E-02	9.556E-02	0.000E+00	FAIL ABUN
RH-106	-1.037E-01	4.162E-01	6.939E-01	0.000E+00	NOT IDENT.
RU-106	-1.037E-01	4.161E-01	6.939E-01	0.000E+00	NOT IDENT.
AG-108M	1.322E-02	4.045E-02	6.810E-02	0.000E+00	NOT IDENT.
AG-110M	-4.191E-03	4.805E-02	6.974E-02	0.000E+00	NOT IDENT.
SN-113	2.093E-02	5.830E-02	9.905E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	4.714E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	7.105E-02	8.787E-02	1.487E-01	0.000E+00	NOT IDENT.
TE-123M	2.407E-02	3.861E-02	6.489E-02	0.000E+00	NOT IDENT.
SB-124	3.469E-02	8.704E-02	1.580E-01	0.000E+00	NOT IDENT.
SB-125	5.912E-03	1.242E-01	2.058E-01	0.000E+00	FAIL ABUN
TE-125M	1.448E+01	1.766E+01	2.720E+01	0.000E+00	NOT IDENT.
I-126	-6.567E-02	3.848E-01	5.528E-01	0.000E+00	NOT IDENT.
SB-126	-1.870E-01	2.226E-01	3.343E-01	0.000E+00	NOT IDENT.
SB-127	2.443E+00	3.125E+00	5.570E+00	0.000E+00	NOT IDENT.
I-131	8.438E-02	1.999E-01	3.425E-01	0.000E+00	NOT IDENT.
TE-132	1.517E-01	2.155E+00	3.727E+00	0.000E+00	FAIL ABUN
BA-133	-2.651E-02	6.188E-02	8.739E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.610E+05	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	1.022E-01	1.304E-01	0.000E+00	FAIL ABUN
CS-135	1.653E-01	2.272E-01	3.555E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.404E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-9.674E-02	1.556E-01	2.484E-01	0.000E+00	NOT IDENT.
CE-139	-2.844E-02	4.265E-02	6.768E-02	0.000E+00	NOT IDENT.
BA-140	-9.245E-03	4.018E-01	6.888E-01	0.000E+00	NOT IDENT.
LA-140	-6.752E-02	1.256E-01	1.867E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	1.823E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.097E-01	2.935E-01	4.607E-01	0.000E+00	NOT IDENT.
PM-144	-2.488E-02	4.424E-02	7.117E-02	0.000E+00	NOT IDENT.
PR-144	-1.876E+00	3.317E+00	5.334E+00	0.000E+00	NOT IDENT.
PM-146	1.723E-02	5.482E-02	9.204E-02	0.000E+00	NOT IDENT.
ND-147	-1.647E-01	9.101E-01	1.545E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	3.778E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-6.699E-02	1.282E-01	2.006E-01	0.000E+00	FAIL ABUN
GD-153	0.000E+00	2.035E-01	2.643E-01	0.000E+00	FAIL ABUN
EU-154	6.379E-02	1.478E-01	2.578E-01	0.000E+00	NOT IDENT.
EU-155	1.815E-01	1.583E-01	2.744E-01	0.000E+00	FAIL ABUN
TB-160	-8.652E-02	1.777E-01	2.785E-01	0.000E+00	FAIL ABUN
HO-166M	1.330E-02	7.517E-02	1.280E-01	0.000E+00	FAIL ABUN
TA-182	6.175E-02	2.401E-01	4.120E-01	0.000E+00	FAIL ABUN
IR-192	9.564E-03	4.497E-02	7.679E-02	0.000E+00	FAIL ABUN
HG-203	0.000E+00	5.537E-02	9.145E-02	0.000E+00	NOT IDENT.
BI-207	5.357E-02	6.679E-02	1.209E-01	0.000E+00	FAIL ABUN
PB-210	5.235E+00	5.167E+00	9.047E+00	0.000E+00	NOT IDENT.
PB-211	2.390E-01	1.073E+00	1.577E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.991E-01	1.419E+00	0.000E+00	FAIL ABUN
RN-219	9.732E-02	4.931E-01	8.287E-01	0.000E+00	FAIL ABUN
RA-223	4.630E-01	8.725E-01	1.338E+00	0.000E+00	FAIL ABUN
AC-227	8.938E-02	3.719E-01	5.682E-01	0.000E+00	FAIL ABUN
TH-227	8.938E-02	3.720E-01	5.682E-01	0.000E+00	FAIL ABUN
PA-231	-1.421E-01	1.773E+00	2.900E+00	0.000E+00	NOT IDENT.
TH-231	4.630E-01	8.725E-01	1.338E+00	0.000E+00	FAIL ABUN
PA-233	6.713E-02	7.819E-02	1.380E-01	0.000E+00	FAIL ABUN
PA-234	4.346E-02	3.801E-01	6.301E-01	0.000E+00	FAIL ABUN
NP-239	-5.258E-01	5.978E-01	9.111E-01	0.000E+00	FAIL ABUN
AM-241	2.181E-01	2.845E-01	4.503E-01	0.000E+00	NOT IDENT.
CM-247	-1.112E-02	4.720E-02	7.712E-02	0.000E+00	FAIL ABUN
CF-249	-5.253E-03	5.268E-02	8.713E-02	0.000E+00	NOT IDENT.

CF-251	-5.723E-02	1.682E-01	2.907E-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]G247900020.CNF;2
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 9-MAR-2010 11:36:48.
Sample ID          : G247900020 Sample quantity : 1.11470E+02 GRAM
Detector name      : GAM12 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.88 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 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	1037	10.66*	1.075E+00	3.048E+01	3.048E+01	11.28
NB-95	765.81	129	99.81*	1.874E+00	2.322E-01	2.853E-01	33.08
CD-109	88.03	279	3.70*	5.555E+00	4.572E+00	4.704E+00	29.06
SN-126	64.28	1493	9.60	3.206E+00	1.634E+01	1.634E+01	17.33
	86.94	279	8.90	5.555E+00	1.901E+00	1.901E+00	49.81
	87.57	279	37.00*	5.555E+00	4.572E-01	4.572E-01	29.06
BA-137M	661.66	270	89.90*	2.127E+00	4.754E-01	4.760E-01	20.71
CS-137	661.66	270	85.10*	2.127E+00	5.023E-01	5.029E-01	20.72
CE-141	145.44	172	48.29*	6.161E+00	1.950E-01	2.926E-01	56.07
TL-208	277.37	131	6.60	4.203E+00	1.586E+00	1.586E+00	52.58
	583.19	362	85.00*	2.364E+00	6.068E-01	6.068E-01	19.95
	860.56	57	12.50	1.694E+00	9.042E-01	9.042E-01	53.46
BI-211	72.87	-----	1.23	4.356E+00	-----	Line Not Found	-----
	351.06	687	12.92*	3.520E+00	5.089E+00	5.089E+00	13.79
PB-212	74.82	498	10.28	4.555E+00	3.579E+00	3.579E+00	27.01
	77.11	645	17.10	4.776E+00	2.661E+00	2.661E+00	17.78
	238.63	1262	43.60*	4.675E+00	2.085E+00	2.085E+00	11.85
	300.09	83	3.30	3.971E+00	2.134E+00	2.134E+00	69.48
BI-214	609.32	459	45.49*	2.280E+00	1.492E+00	1.492E+00	18.88
	1120.29	82	14.92	1.341E+00	1.380E+00	1.380E+00	46.67
	1764.49	65	15.30	9.449E-01	1.516E+00	1.516E+00	38.56
PB-214	74.82	498	5.80	4.555E+00	6.343E+00	6.343E+00	26.42
	77.11	645	9.70	4.776E+00	4.691E+00	4.691E+00	19.60
	242.00	337	7.25	4.637E+00	3.379E+00	3.379E+00	28.17
	295.22	416	18.42	4.015E+00	1.895E+00	1.895E+00	19.92
	351.93	687	35.60*	3.520E+00	1.847E+00	1.847E+00	14.85
RA-224	240.99	337	4.10*	4.637E+00	5.975E+00	5.975E+00	27.57
RA-226	609.32	459	45.49*	2.280E+00	1.492E+00	1.492E+00	18.88
	1120.29	82	14.92	1.341E+00	1.380E+00	1.380E+00	46.67
	1764.49	65	15.30	9.449E-01	1.516E+00	1.516E+00	38.56
AC-228	338.32	285	11.27	3.626E+00	2.344E+00	2.344E+00	46.74
	911.20	301	25.80*	1.610E+00	2.443E+00	2.443E+00	20.24

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	968.97	184	15.80	1.525E+00	2.572E+00	2.572E+00	31.12
	338.32	285	11.27	3.626E+00	2.344E+00	2.344E+00	46.74
	911.20	301	25.80*	1.610E+00	2.443E+00	2.443E+00	20.24
TH-228	968.97	184	15.80	1.525E+00	2.572E+00	2.572E+00	31.12
	74.82	498	10.28	4.555E+00	3.579E+00	3.579E+00	25.22
	77.11	645	17.10	4.776E+00	2.661E+00	2.661E+00	17.78
	238.63	1262	43.60*	4.675E+00	2.085E+00	2.085E+00	11.85
TH-229	300.09	83	3.30	3.971E+00	2.134E+00	2.134E+00	92.00
	85.43	183	14.70	5.334E+00	7.875E-01	7.875E-01	55.38
	88.47	279	24.00	5.555E+00	7.048E-01	7.048E-01	29.06
	193.51	-----	4.41*	5.357E+00	-----	Line Not Found	-----
TH-232	210.85	115	2.80	5.099E+00	2.721E+00	2.721E+00	58.28
	338.32	285	11.27	3.626E+00	2.344E+00	2.344E+00	22.78
	911.20	301	25.80*	1.610E+00	2.443E+00	2.443E+00	20.24
	968.97	184	15.80	1.525E+00	2.572E+00	2.572E+00	31.12
PA-234M	766.42	129	0.32	1.874E+00	7.243E+01	7.243E+01	59.95
	1001.03	213	0.84*	1.481E+00	5.765E+01	5.765E+01	21.73
TH-234	63.29	1493	3.70*	3.206E+00	4.240E+01	4.240E+01	20.18
	92.59	3931	4.23	5.826E+00	5.372E+01	5.372E+01	22.60
U-235	89.96	244	3.47	5.714E+00	4.147E+00	4.147E+00	47.42
	93.35	3931	5.60	5.826E+00	4.057E+01	4.057E+01	23.59
	143.76	172	10.96*	6.161E+00	8.593E-01	8.593E-01	57.91
	163.33	-----	5.08	5.865E+00	-----	Line Not Found	-----
	185.72	875	57.20	5.484E+00	9.391E-01	9.391E-01	14.24
NP-237	205.31	-----	5.01	5.165E+00	-----	Line Not Found	-----
	86.48	279	12.40*	5.555E+00	1.364E+00	1.364E+00	35.84
	95.86	223	2.68	5.915E+00	4.740E+00	4.740E+00	63.61
U-238	63.29	1493	3.70*	3.206E+00	4.240E+01	4.240E+01	20.18
	92.59	3931	4.23	5.826E+00	5.372E+01	5.372E+01	9.87
ANH-511	511.00	128	100.00*	2.632E+00	1.641E-01	1.641E-01	49.66

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G247900020

Page : 3
Acquisition date : 9-MAR-2010 11:36:48

Total number of lines in spectrum 42
Number of unidentified lines 3
Number of lines tentatively identified by NID 39 92.86%

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	3.048E+01	3.048E+01	0.344E+01	11.28	
NB-95	64.03D	1.23	2.322E-01	2.853E-01	0.944E-01	33.08	
CD-109	461.40D	1.03	4.572E+00	4.704E+00	1.367E+00	29.06	
SN-126	2.30E+05Y	1.00	4.572E-01	4.572E-01	1.329E-01	29.06	
BA-137M	30.08Y	1.00	4.754E-01	4.760E-01	0.986E-01	20.71	
CS-137	30.08Y	1.00	5.023E-01	5.029E-01	1.042E-01	20.72	
CE-141	32.51D	1.50	1.950E-01	2.926E-01	1.640E-01	56.07	
TL-208	1.41E+10Y	1.00	6.068E-01	6.068E-01	1.211E-01	19.95	
BI-211	7.04E+08Y	1.00	5.089E+00	5.089E+00	0.701E+00	13.79	
PB-212	1.41E+10Y	1.00	2.085E+00	2.085E+00	0.247E+00	11.85	
BI-214	1600.00Y	1.00	1.492E+00	1.492E+00	0.282E+00	18.88	
PB-214	1600.00Y	1.00	1.847E+00	1.847E+00	0.274E+00	14.85	
RA-224	1.41E+10Y	1.00	5.975E+00	5.975E+00	1.647E+00	27.57	
RA-226	1600.00Y	1.00	1.492E+00	1.492E+00	0.282E+00	18.88	
AC-228	1.41E+10Y	1.00	2.443E+00	2.443E+00	0.494E+00	20.24	
RA-228	1.41E+10Y	1.00	2.443E+00	2.443E+00	0.494E+00	20.24	
TH-228	1.41E+10Y	1.00	2.085E+00	2.085E+00	0.247E+00	11.85	
TH-229	7340.00Y	1.00	7.048E-01	7.048E-01	2.048E-01	29.06	K
TH-232	1.41E+10Y	1.00	2.443E+00	2.443E+00	0.494E+00	20.24	
PA-234M	4.47E+09Y	1.00	5.765E+01	5.765E+01	1.252E+01	21.73	
TH-234	4.47E+09Y	1.00	4.240E+01	4.240E+01	0.855E+01	20.18	
U-235	7.04E+08Y	1.00	8.593E-01	8.593E-01	4.976E-01	57.91	
NP-237	2.14E+06Y	1.00	1.364E+00	1.364E+00	0.489E+00	35.84	
U-238	4.47E+09Y	1.00	4.240E+01	4.240E+01	0.855E+01	20.18	
ANH-511	1.00E+09Y	1.00	1.641E-01	1.641E-01	0.815E-01	49.66	
Total Activity :			2.104E+02	2.107E+02			

Grand Total Activity : 2.104E+02 2.107E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G247900020

Page : 4
Acquisition date : 9-MAR-2010 11:36:48

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	98.75	365	590	1.01	196.73	193	9	5.07E-02	26.7	6.06E+00	T
0	112.30	222	750	1.17	223.85	218	10	3.08E-02	48.6	6.32E+00	T
0	257.86	55	192	1.15	515.01	512	8	7.59E-03	92.6	4.43E+00	
0	270.40	98	237	0.87	540.09	536	9	1.36E-02	60.3	4.28E+00	T
0	328.38	72	191	1.24	656.06	652	10	1.01E-02	75.0	3.71E+00	T
0	409.15	45	138	0.96	817.61	814	9	6.23E-03	99.4	3.14E+00	
0	463.50	54	79	1.31	926.31	923	8	7.43E-03	64.8	2.84E+00	T
0	727.59	81	68	1.61	1454.47	1451	12	1.12E-02	47.4	1.96E+00	T
0	795.49	56	86	1.84	1590.26	1583	13	7.84E-03	74.6	1.82E+00	T
5	964.78	55	30	2.22	1928.75	1924	19	7.63E-03	44.4	1.53E+00	T
0	1238.68	41	72	1.55	2476.37	2470	12	5.69E-03	88.5	1.23E+00	T
0	1401.44	25	6	0.62	2801.74	2794	14	3.42E-03	60.5	1.11E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G247900020.CNF;2
* Acquisition date   : 9-MAR-2010 11:36:48.   Detector SN#      :
* Detector ID        : GAM12                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.88           Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G247900020             Analyst initials: MXR1
* Batch Number       : 957711                 Sample Quantity  : 1.11470E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME  : 25-FEB-2010 20:55:17.3MS Isotope      :
* MSD ID            :                          MSD Isotope    :
* LCS ID            : 1032-A                   LCS Isotope       :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.048E+01	3.438E+00	7.116E-01	6.454E-02	42.829
NB-95	2.853E-01	9.440E-02	9.178E-02	8.808E-03	3.109
CD-109	4.704E+00	1.367E+00	1.965E+00	1.850E-01	2.394
SN-126	4.572E-01	1.329E-01	1.918E-01	1.797E-02	2.384
BA-137M	4.760E-01	9.860E-02	6.968E-02	6.217E-03	6.831
CS-137	5.029E-01	1.042E-01	7.361E-02	6.579E-03	6.831
CE-141	2.926E-01	1.640E-01	1.471E-01	1.205E-02	1.988
TL-208	6.068E-01	1.211E-01	7.176E-02	6.824E-03	8.456
BI-211	5.089E+00	7.015E-01	4.298E-01	3.830E-02	11.841
PB-212	2.085E+00	2.471E-01	1.160E-01	1.123E-02	17.970
BI-214	1.492E+00	2.817E-01	1.467E-01	1.524E-02	10.167
PB-214	1.847E+00	2.742E-01	1.537E-01	1.610E-02	12.014
RA-224	5.975E+00	1.647E+00	1.244E+00	1.062E-01	4.805
RA-226	1.492E+00	2.817E-01	1.467E-01	1.524E-02	10.167
AC-228	2.443E+00	4.944E-01	2.620E-01	3.363E-02	9.323
RA-228	2.443E+00	4.944E-01	2.620E-01	3.363E-02	9.323
TH-228	2.085E+00	2.471E-01	1.160E-01	1.123E-02	17.970
TH-229	7.048E-01	2.048E-01	1.149E+00	9.412E-02	0.613

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	2.443E+00	4.944E-01	2.620E-01	3.363E-02	9.323
PA-234M	5.765E+01	1.252E+01	9.666E+00	1.056E+00	5.964
TH-234	4.240E+01	8.554E+00	3.463E+00	6.170E-01	12.243
U-235	8.593E-01	4.976E-01	4.136E-01	6.890E-02	2.078
NP-237	1.364E+00	4.888E-01	6.180E-01	1.416E-01	2.207
U-238	4.240E+01	8.554E+00	3.463E+00	6.170E-01	12.243
ANH-511	1.641E-01	8.150E-02	6.414E-02	5.612E-03	2.559

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.273E-01		4.696E-01	7.753E-01	7.193E-02	0.293
NA-22	2.085E-02		5.311E-02	9.094E-02	7.755E-03	0.229
NA-24	-2.441E+01		3.196E+01	Half-Life	too short	
SC-46	2.663E-02		5.039E-02	8.564E-02	8.773E-03	0.311
V-48	-7.679E-03		1.068E-01	1.783E-01	1.753E-02	-0.043
CR-51	-1.127E-02		5.143E-01	8.432E-01	7.653E-02	-0.013
MN-54	1.466E-02		4.959E-02	8.257E-02	8.241E-03	0.178
CO-56	1.166E-02		5.348E-02	8.852E-02	8.888E-03	0.132
CO-57	2.450E-04		3.639E-02	5.853E-02	4.854E-03	0.004
CO-58	-5.715E-02		5.668E-02	8.370E-02	8.261E-03	-0.683
FE-59	-1.174E-01		1.184E-01	1.767E-01	1.689E-02	-0.664
CO-60	1.509E-02		5.126E-02	8.683E-02	7.600E-03	0.174
ZN-65	-7.278E-02		1.351E-01	1.796E-01	1.567E-02	-0.405
SE-75	5.258E-02		6.157E-02	1.025E-01	8.899E-03	0.513
SR-85	8.250E-02		5.855E-02	9.496E-02	8.318E-03	0.869
Y-88	-1.880E-02		3.906E-02	5.795E-02	4.798E-03	-0.324
Y-91	-3.235E-01		2.752E+01	4.544E+01	3.732E+00	-0.007
NB-94	2.584E-02		4.435E-02	7.604E-02	6.996E-03	0.340
NB-95M	2.326E-01		1.812E-01	2.840E-01	2.779E-02	0.819
ZR-95	4.521E-03		9.781E-02	1.608E-01	1.666E-02	0.028
MO-99	-5.011E+01		4.617E+01	6.789E+01	1.101E+01	-0.738
TC-99M	-1.862E+15		1.349E+15	Half-Life	too short	
RU-103	2.720E-02		5.491E-02	9.522E-02	1.335E-02	0.286
RH-106	-1.037E-01		4.247E-01	6.927E-01	9.331E-02	-0.150
RU-106	-1.037E-01		4.246E-01	6.927E-01	6.197E-02	-0.150
AG-108M	1.322E-02		4.128E-02	6.779E-02	5.874E-03	0.195
AG-110M	-4.191E-03		4.903E-02	6.965E-02	6.390E-03	-0.060
SN-113	2.093E-02		5.949E-02	9.852E-02	8.247E-03	0.212
CD-115	1.559E-05		2.405E-05	Half-Life	too short	
SN-117M	7.105E-02		8.966E-02	1.469E-01	1.171E-02	0.484
TE-123M	2.407E-02		3.940E-02	6.409E-02	5.145E-03	0.376
SB-124	3.469E-02		8.882E-02	1.589E-01	1.428E-02	0.218
SB-125	5.912E-03		1.267E-01	2.048E-01	1.742E-02	0.029
TE-125M	1.448E+01		1.802E+01	2.679E+01	2.755E+00	0.541
I-126	-6.567E-02		3.927E-01	5.522E-01	4.944E-02	-0.119
SB-126	-1.870E-01		2.271E-01	3.341E-01	3.113E-02	-0.560

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	2.443E+00		3.188E+00	5.565E+00	7.179E-01	0.439
I-131	8.438E-02		2.039E-01	3.405E-01	3.020E-02	0.248
TE-132	1.517E-01		2.199E+00	3.691E+00	6.115E-01	0.041
BA-133	-2.651E-02		6.314E-02	8.686E-02	1.114E-02	-0.305
I-133	5.660E-02		8.212E-02	Half-Life too short		
CS-134	1.385E-01	+	1.043E-01	1.304E-01	1.281E-02	1.062
CS-135	1.653E-01		2.319E-01	3.526E-01	3.521E-02	0.469
I-135	-4.560E+13		7.161E+13	Half-Life too short		
CS-136	-9.674E-02		1.588E-01	2.490E-01	2.413E-02	-0.388
CE-139	-2.844E-02		4.352E-02	6.686E-02	5.323E-03	-0.425
BA-140	-9.245E-03		4.100E-01	6.868E-01	2.333E-01	-0.013
LA-140	-6.752E-02		1.282E-01	1.878E-01	1.646E-02	-0.360
CE-143	5.079E-03		9.303E-04	Half-Life too short		
CE-144	-3.097E-01		2.995E-01	4.544E-01	6.818E-02	-0.682
PM-144	-2.488E-02		4.514E-02	7.111E-02	6.517E-03	-0.350
PR-144	-1.876E+00		3.385E+00	5.330E+00	4.882E-01	-0.352
PM-146	1.723E-02		5.594E-02	9.165E-02	9.613E-03	0.188
ND-147	-1.647E-01		9.287E-01	1.540E+00	2.320E-01	-0.107
PM-149	1.572E-05		1.927E-04	Half-Life too short		
EU-152	-6.699E-02		1.308E-01	1.993E-01	1.799E-02	-0.336
GD-153	7.390E-01	+	2.077E-01	2.601E-01	2.274E-02	2.841
EU-154	6.379E-02		1.508E-01	2.588E-01	2.925E-02	0.246
EU-155	1.815E-01		1.615E-01	2.702E-01	2.312E-02	0.672
TB-160	-8.652E-02		1.813E-01	2.787E-01	2.843E-02	-0.310
HO-166M	1.330E-02		7.671E-02	1.279E-01	1.185E-02	0.104
TA-182	6.175E-02		2.450E-01	4.135E-01	3.427E-02	0.149
IR-192	9.564E-03		4.589E-02	7.625E-02	6.600E-03	0.125
HG-203	9.461E-02		5.650E-02	9.072E-02	8.062E-03	1.043
BI-207	5.357E-02		6.815E-02	1.212E-01	1.117E-02	0.442
PB-210	5.235E+00		5.272E+00	8.851E+00	8.177E-01	0.591
PB-211	2.390E-01		1.095E+00	1.569E+00	7.579E-01	0.152
BI-212	2.073E+00	+	1.020E+00	1.418E+00	1.841E-01	1.462
RN-219	9.732E-02		5.032E-01	8.244E-01	1.205E-01	0.118
RA-223	4.630E-01		8.903E-01	1.329E+00	2.302E-01	0.349
AC-227	8.938E-02		3.795E-01	5.632E-01	6.783E-02	0.159
TH-227	8.938E-02		3.796E-01	5.632E-01	7.659E-02	0.159
PA-231	-1.421E-01		1.809E+00	2.877E+00	4.205E-01	-0.049
TH-231	4.630E-01		8.903E-01	1.329E+00	2.302E-01	0.349
PA-233	6.713E-02		7.979E-02	1.370E-01	1.218E-02	0.490
PA-234	4.346E-02		3.879E-01	6.311E-01	1.228E-01	0.069
NP-239	-5.258E-01		6.101E-01	8.976E-01	7.438E-02	-0.586
AM-241	2.181E-01		2.903E-01	4.414E-01	3.478E-02	0.494
CM-247	-1.112E-02		4.816E-02	7.672E-02	6.266E-03	-0.145
CF-249	-5.253E-03		5.376E-02	8.665E-02	7.043E-03	-0.061
CF-251	-5.723E-02		1.716E-01	2.874E-01	2.314E-02	-0.199

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]G247900020            *
* Acquisition date   : 9-MAR-2010 11:36:48 Detector SN#      :                *
* Detector ID        : GAM12          Sensitivity             : 5.000          *
* Geometry           : CAN            Energy tolerance        : 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit         : 75.000         *
* Elapsed real time  : 0 02:00:01.88 Half life ratio         : 8.000          *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library   : SOLID          *
* Sample ID          : G247900020    Analyst initials       : MXR1            *
* Batch Number       : 957711        Sample Quantity        : 1.1147E+02 GRAM  *
* Recovery           : 1.00000        Carrier Weight         : 0.00000         *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 25-FEB-2010 20:55:17 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	3.048E+01	3.370E+00	3.542E-01	1.719E+00
NB-95	2.853E-01	9.251E-02	4.592E-02	4.720E-02
CD-109	4.704E+00	1.340E+00	1.000E+00	6.835E-01
SN-126	4.572E-01	1.302E-01	9.761E-02	6.643E-02
BA-137M	4.760E-01	9.663E-02	3.491E-02	4.930E-02
CS-137	5.029E-01	1.021E-01	3.687E-02	5.210E-02
CE-141	2.926E-01	1.608E-01	7.459E-02	8.202E-02
TL-208	6.068E-01	1.186E-01	3.598E-02	6.053E-02
BI-211	5.089E+00	6.875E-01	2.164E-01	3.507E-01
PB-212	2.085E+00	2.421E-01	5.858E-02	1.235E-01
BI-214	1.492E+00	2.760E-01	7.355E-02	1.408E-01
PB-214	1.847E+00	2.687E-01	7.739E-02	1.371E-01
RA-224	5.975E+00	1.614E+00	6.279E-01	8.235E-01
RA-226	1.492E+00	2.760E-01	7.355E-02	1.408E-01
AC-228	2.443E+00	4.845E-01	1.309E-01	2.472E-01
RA-228	2.443E+00	4.845E-01	1.309E-01	2.472E-01
TH-228	2.085E+00	2.421E-01	5.858E-02	1.235E-01
TH-229	-1.526E-01	6.727E-01	5.812E-01	3.432E-01
TH-232	2.443E+00	4.845E-01	1.309E-01	2.472E-01
PA-234M	5.765E+01	1.227E+01	4.826E+00	6.262E+00
TH-234	4.240E+01	8.383E+00	1.767E+00	4.277E+00
U-235	8.593E-01	4.877E-01	2.097E-01	2.488E-01
NP-237	1.364E+00	4.791E-01	3.145E-01	2.444E-01
U-238	4.240E+01	8.383E+00	1.767E+00	4.277E+00
ANH-511	1.641E-01	7.987E-02	3.219E-02	4.075E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	2.273E-01	4.602E-01	3.893E-01	2.348E-01 NOT IDENT.
NA-22	2.085E-02	5.205E-02	4.532E-02	2.656E-02 NOT IDENT.

NA-24	-2.441E+07	6.263E+07	0.000E+00	3.196E+07	SHORT HLIF
SC-46	2.663E-02	4.938E-02	4.280E-02	2.519E-02	FAIL ABUN
V-48	-7.679E-03	1.047E-01	8.902E-02	5.342E-02	NOT IDENT.
CR-51	-1.127E-02	5.040E-01	4.248E-01	2.572E-01	NOT IDENT.
MN-54	1.466E-02	4.860E-02	4.129E-02	2.480E-02	NOT IDENT.
CO-56	1.166E-02	5.241E-02	4.425E-02	2.674E-02	FAIL ABUN
CO-57	2.450E-04	3.566E-02	2.971E-02	1.819E-02	NOT IDENT.
CO-58	-5.715E-02	5.555E-02	4.186E-02	2.834E-02	NOT IDENT.
FE-59	-1.174E-01	1.160E-01	8.816E-02	5.919E-02	NOT IDENT.
CO-60	1.509E-02	5.023E-02	4.325E-02	2.563E-02	NOT IDENT.
ZN-65	-7.278E-02	1.324E-01	8.958E-02	6.755E-02	NOT IDENT.
SE-75	5.258E-02	6.034E-02	5.174E-02	3.079E-02	NOT IDENT.
SR-85	8.250E-02	5.738E-02	4.766E-02	2.928E-02	NOT IDENT.
Y-88	-1.880E-02	3.828E-02	2.879E-02	1.953E-02	NOT IDENT.
Y-91	-3.235E-01	2.697E+01	2.265E+01	1.376E+01	NOT IDENT.
NB-94	2.584E-02	4.346E-02	3.807E-02	2.217E-02	NOT IDENT.
NB-95M	2.326E-01	1.776E-01	1.434E-01	9.062E-02	NOT IDENT.
ZR-95	4.521E-03	9.586E-02	8.045E-02	4.891E-02	NOT IDENT.
MO-99	-5.011E+01	4.525E+01	3.398E+01	2.308E+01	NOT IDENT.
TC-99M	-1.862E+21	2.644E+21	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.720E-02	5.381E-02	4.781E-02	2.746E-02	FAIL ABUN
RH-106	-1.037E-01	4.162E-01	3.472E-01	2.123E-01	NOT IDENT.
RU-106	-1.037E-01	4.161E-01	3.472E-01	2.123E-01	NOT IDENT.
AG-108M	1.322E-02	4.045E-02	3.407E-02	2.064E-02	NOT IDENT.
AG-110M	-4.191E-03	4.805E-02	3.489E-02	2.451E-02	NOT IDENT.
SN-113	2.093E-02	5.830E-02	4.956E-02	2.975E-02	NOT IDENT.
CD-115	1.559E+01	4.714E+01	0.000E+00	2.405E+01	SHORT HLIF
SN-117M	7.105E-02	8.787E-02	7.441E-02	4.483E-02	NOT IDENT.
TE-123M	2.407E-02	3.861E-02	3.247E-02	1.970E-02	NOT IDENT.
SB-124	3.469E-02	8.704E-02	7.902E-02	4.441E-02	NOT IDENT.
SB-125	5.912E-03	1.242E-01	1.029E-01	6.337E-02	FAIL ABUN
TE-125M	1.448E+01	1.766E+01	1.361E+01	9.009E+00	NOT IDENT.
I-126	-6.567E-02	3.848E-01	2.766E-01	1.963E-01	NOT IDENT.
SB-126	-1.870E-01	2.226E-01	1.672E-01	1.136E-01	NOT IDENT.
SB-127	2.443E+00	3.125E+00	2.787E+00	1.594E+00	NOT IDENT.
I-131	8.438E-02	1.999E-01	1.714E-01	1.020E-01	NOT IDENT.
TE-132	1.517E-01	2.155E+00	1.865E+00	1.099E+00	FAIL ABUN
BA-133	-2.651E-02	6.188E-02	4.372E-02	3.157E-02	FAIL ABUN
I-133	5.660E+04	1.610E+05	0.000E+00	8.212E+04	SHORT HLIF
CS-134	1.385E-01	1.022E-01	6.522E-02	5.213E-02	FAIL ABUN
CS-135	1.653E-01	2.272E-01	1.779E-01	1.159E-01	NOT IDENT.
I-135	-4.560E+19	1.404E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-9.674E-02	1.556E-01	1.243E-01	7.939E-02	NOT IDENT.
CE-139	-2.844E-02	2.65E-02	3.386E-02	2.176E-02	NOT IDENT.
BA-140	-9.245E-03	4.018E-01	3.446E-01	2.050E-01	NOT IDENT.
LA-140	-6.752E-02	1.256E-01	9.340E-02	6.408E-02	FAIL ABUN
CE-143	5.079E+03	1.823E+03	0.000E+00	9.303E+02	SHORT HLIF
CE-144	-3.097E-01	2.935E-01	2.305E-01	1.497E-01	NOT IDENT.
PM-144	-2.488E-02	4.424E-02	3.561E-02	2.257E-02	NOT IDENT.
PR-144	-1.876E+00	3.317E+00	2.669E+00	1.692E+00	NOT IDENT.
PM-146	1.723E-02	5.482E-02	4.605E-02	2.797E-02	NOT IDENT.
ND-147	-1.647E-01	9.101E-01	7.728E-01	4.643E-01	FAIL ABUN
PM-149	1.572E+01	3.778E+02	0.000E+00	1.927E+02	SHORT HLIF
EU-152	-6.699E-02	1.282E-01	1.004E-01	6.539E-02	FAIL ABUN
GD-153	7.390E-01	2.035E-01	1.323E-01	1.038E-01	FAIL ABUN
EU-154	6.379E-02	1.478E-01	1.290E-01	7.540E-02	NOT IDENT.
EU-155	1.815E-01	1.583E-01	1.373E-01	8.076E-02	FAIL ABUN
TB-160	-8.652E-02	1.777E-01	1.393E-01	9.065E-02	FAIL ABUN
HO-166M	1.330E-02	7.517E-02	6.404E-02	3.835E-02	FAIL ABUN
TA-182	6.175E-02	2.401E-01	2.061E-01	1.225E-01	FAIL ABUN
IR-192	9.564E-03	4.497E-02	3.842E-02	2.295E-02	FAIL ABUN
HG-203	9.461E-02	5.537E-02	4.575E-02	2.825E-02	NOT IDENT.
BI-207	5.357E-02	6.679E-02	6.046E-02	3.407E-02	FAIL ABUN
PB-210	5.235E+00	5.167E+00	4.526E+00	2.636E+00	NOT IDENT.
PB-211	2.390E-01	1.073E+00	7.888E-01	5.476E-01	NOT IDENT.
BI-212	2.073E+00	9.991E-01	7.097E-01	5.098E-01	FAIL ABUN
RN-219	9.732E-02	4.931E-01	4.146E-01	2.516E-01	FAIL ABUN
RA-223	4.630E-01	8.725E-01	6.693E-01	4.451E-01	FAIL ABUN
AC-227	8.938E-02	3.719E-01	2.843E-01	1.898E-01	FAIL ABUN
TH-227	8.938E-02	3.720E-01	2.843E-01	1.898E-01	FAIL ABUN
PA-231	-1.421E-01	1.773E+00	1.451E+00	9.045E-01	NOT IDENT.
TH-231	4.630E-01	8.725E-01	6.693E-01	4.451E-01	FAIL ABUN
PA-233	6.713E-02	7.819E-02	6.902E-02	3.989E-02	FAIL ABUN
PA-234	4.346E-02	3.801E-01	3.152E-01	1.939E-01	FAIL ABUN
NP-239	-5.258E-01	5.978E-01	4.558E-01	3.050E-01	FAIL ABUN
AM-241	2.181E-01	2.845E-01	2.253E-01	1.452E-01	NOT IDENT.
CM-247	-1.112E-02	4.720E-02	3.858E-02	2.408E-02	FAIL ABUN
CF-249	-5.253E-03	5.268E-02	4.359E-02	2.688E-02	NOT IDENT.

CF-251	-5.723E-02	1.682E-01	1.454E-01	8.580E-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	493.3120
49.72	534.5661
57.36	0.0000
59.54	681.5496
63.29	687.2198
63.29	687.2198
64.28	645.2125
67.75	703.9865
69.67	708.2040
70.83	690.6144
72.81	741.5219
72.87	741.6163
72.87	741.6163
74.82	757.2350
74.82	757.2350
74.82	757.2350
74.97	757.4769
77.11	760.8677
77.11	760.8677
77.11	760.8677
79.69	729.4336
79.80	729.5947
80.12	751.3608
80.19	751.4663
80.57	752.0392
81.00	725.2652
81.07	725.3669
81.07	725.3669
83.79	741.5349
83.79	741.5349
85.43	722.3876
86.48	723.8470
86.55	723.9438
86.79	724.2737
86.94	724.4854
87.57	635.8414
88.03	636.3978
88.47	636.9259
89.96	638.7113
91.11	640.0786
92.59	641.8232
92.59	641.8232
93.35	642.7159
94.67	644.2561
94.87	644.4855
94.87	644.4855
95.86	535.9379
97.43	537.4383
98.44	414.0296
99.53	414.8201
100.11	396.2932
103.18	453.9425
103.37	460.4396
105.31	435.4040
106.12	474.7019
109.28	474.6226
111.00	510.2580
111.76	510.8851
116.30	419.9937
117.23	418.3327
121.12	380.1176
121.78	367.4162
122.06	374.1174
123.07	360.4893
131.20	424.5430
133.52	433.7258
136.00	391.8392

136.47	369.8221
140.51	366.3049
140.51	0.0000
143.76	318.4297
144.24	318.6370
144.24	318.6370
145.44	345.0905
152.43	338.0526
153.25	328.1572
154.21	336.5534
154.21	336.5534
156.02	351.0588
158.56	292.5429
159.00	301.8866
162.66	332.1035
163.33	328.9195
165.86	362.3616
176.60	314.8779
177.52	335.4679
181.07	311.2146
184.41	345.0677
185.72	302.2081
193.51	311.1224
197.04	318.6276
205.31	299.3010
210.85	226.5096
215.65	262.5063
222.11	253.1352
227.38	260.0284
228.16	260.2271
228.18	260.2313
235.69	232.1689
235.96	232.2294
235.96	232.2294
238.63	228.1258
238.63	228.1258
240.99	228.6338
242.00	198.9023
244.70	214.5098
252.40	197.7755
252.80	197.8485
256.23	219.8338
256.23	219.8338
260.90	0.0000
264.66	184.5732
268.22	206.7480
269.46	223.9606
269.46	223.9606
271.23	204.9642
273.65	205.3912
276.40	183.1217
277.37	183.2742
277.60	183.3087
278.00	183.3720
279.20	149.5172
279.54	149.5594
280.46	157.4698
283.69	169.7330
284.31	169.1222
285.41	171.2349
285.90	0.0000
287.50	172.5115
293.27	0.0000
295.22	167.2916
295.96	138.1757
298.57	138.4683
299.98	175.8548
299.98	175.8548
300.09	175.8710
300.09	175.8710
300.13	175.8765
301.36	163.3591
302.85	176.2586
304.50	163.7690
304.50	163.7690
304.85	138.3674
308.46	153.5136
311.90	138.9342

316.51	157.4863
319.41	160.8521
320.08	157.9151
323.87	140.4171
323.87	140.4171
328.76	168.0669
333.37	138.1665
334.37	159.9573
334.37	159.9573
338.28	150.9019
338.28	150.9019
338.32	150.9064
338.32	150.9064
338.32	150.9064
340.48	145.4246
340.55	145.4333
344.28	165.0204
351.06	156.4160
351.93	151.3650
356.01	160.2702
364.49	124.6545
366.42	138.3435
383.85	124.1992
388.16	145.6648
388.63	141.4876
391.69	128.0178
400.66	120.2522
401.81	116.0819
402.40	133.1711
404.85	134.8748
410.95	125.1141
414.70	123.6920
423.72	138.2109
427.09	128.7581
427.87	134.2324
433.94	127.1243
453.88	109.9533
463.37	121.6167
468.07	102.8778
473.00	114.5061
476.78	101.3822
477.60	110.3463
487.02	79.5554
492.35	0.0000
497.08	99.1517
511.00	116.2477
514.00	104.6083
527.90	0.0000
529.87	0.0000
531.02	102.7961
537.26	92.9984
546.56	0.0000
563.25	93.2935
569.33	101.9959
569.50	98.2606
569.70	98.2709
583.19	84.7881
600.60	103.4391
602.73	95.0903
604.72	82.4878
609.32	94.4295
609.32	94.4295
610.33	94.4730
614.28	103.5699
618.01	92.5767
621.93	96.8993
621.93	96.8993
633.25	80.0435
635.95	72.4164
636.99	70.5174
645.85	81.4673
657.76	74.7463
661.66	72.2710
661.66	72.2710
664.57	0.0000
666.33	83.1821
666.50	83.1884
677.62	84.5723

685.70	59.2075
695.00	72.3192
696.49	93.1830
696.51	93.1830
697.00	96.1759
702.65	80.5017
706.68	97.5622
711.68	73.8211
720.70	81.2161
721.93	0.0000
722.78	90.1934
722.91	90.1978
723.31	75.1758
724.19	61.8338
727.33	71.9536
733.00	65.4094
735.93	62.9684
739.50	98.8757
747.24	99.1795
752.31	69.9720
753.82	68.9978
756.73	73.1408
763.94	71.3091
765.81	79.8575
766.42	81.5762
777.92	68.6243
778.90	68.6505
783.70	75.9620
785.37	69.8478
795.86	68.7500
801.95	97.4554
810.29	86.0578
810.76	87.1110
815.77	65.4548
818.51	67.6010
832.01	60.6196
834.85	70.0981
836.80	0.0000
846.77	61.9947
856.80	57.9998
860.56	58.0776
871.09	55.1129
873.19	50.9109
875.33	0.0000
879.36	59.5246
880.51	49.9788
883.24	60.6697
884.68	56.4406
889.28	47.9971
898.04	47.0723
911.20	48.3585
911.20	48.3585
911.20	48.3585
926.50	57.2493
937.49	60.7113
944.13	54.3250
946.00	54.3579
949.00	47.8822
962.29	45.5393
964.08	43.7432
966.15	48.1497
968.97	69.3698
968.97	69.3698
968.97	69.3698
983.53	57.7731
996.26	47.3511
1001.03	59.0143
1004.73	47.4777
1037.84	62.4881
1038.76	0.0000
1048.07	56.1328
1050.41	39.3203
1050.41	39.3203
1063.66	48.8770
1085.87	46.3602
1099.45	61.7442
1112.07	46.9058
1115.54	68.7100

1120.29	50.6472
1120.29	50.6472
1120.55	45.8730
1121.30	55.7148
1131.51	0.0000
1173.23	54.3161
1177.93	64.0986
1189.05	62.3438
1204.77	57.7180
1221.41	56.9946
1231.02	63.5447
1235.36	71.0127
1238.28	72.0554
1260.41	0.0000
1271.85	44.8077
1274.44	39.8551
1274.54	39.8568
1291.59	40.0309
1298.22	0.0000
1312.11	35.2094
1332.49	35.3888
1365.19	17.3272
1368.63	0.0000
1384.29	26.6231
1408.01	30.0109
1457.56	0.0000
1460.82	27.1056
1489.16	15.7391
1505.03	21.0604
1596.21	23.6328
1620.50	19.4355
1678.03	0.0000
1690.97	10.3298
1764.49	10.4825
1764.49	10.4825
1770.23	16.6956
1771.35	15.0293
1791.20	0.0000
1836.06	13.5264

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G247900020

Total Uranium Activity	1.2653E+02	ug/g
Total Uranium Counting Unc.	2.4940E+01	ug/g
Total Uranium Tpu	1.2724E-05	ug/g
Total Uranium Mda	5.2573E+00	ug/g

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*****
*
*          GEL Laboratories LLC                      *
*          2040 SAVAGE ROAD                          *
*          CHARLESTON ,SC 29417                      *
*          GROSS GAMMA REPORT                        *
*
*****
*
*  BATCH ID      : 957711                          SAMPLE ID   : G247900020
*  ANALYST       : MXR1                             DETECTOR    : GAM12
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 9-MAR-2010 11:36:48.81          SAMPLE ALQT  : 111.470 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.703E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 2.116E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 6.879E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 3.366E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 19:03:45.75

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053644.CNF;1
Sample date        : 26-FEB-2010 00:00:00 Acquisition date : 6-MAR-2010 17:02:37.
Sample ID          : G1202053644      Sample quantity   : 1.57530E+02 GRAM
Detector name      : GAM04             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:00.42  0.0%
Energy tolerance  : 1.50000 keV        Analyst Initials : MXR1
Abundance limit   : 75.00000           Sensitivity      : 5.00000
Batch ID          : 957711             Detector SN#     :
Matrix Spike ID   :                    LCS ID          : 1032-A
*****
No peaks were found
```

VMS Nuclide Identification Report V3.1 Generated 6-MAR-2010 19:03:48

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053644.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 17:02:37
Sample ID         : G1202053644 Sample quantity : 157.53 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA4 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.42 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	477.60	*	-2.305E-02	1.175E-01	1.855E-01	1.228E-02	-0.124	
NA-22	1274.54	*	1.106E-03	1.539E-02	2.619E-02	1.712E-03	0.042	
NA-24	1368.63	*	-7.551E-05	1.539E-02	Half-Life	too short		
K-40	1460.82	*	-3.984E-02	2.255E-01	3.488E-01	2.479E-02	-0.114	
SC-46	889.28	*	-1.418E-03	1.317E-02	2.114E-02	1.710E-03	-0.067	
	1120.55		0.000E+00	1.777E-02	2.871E-02	1.881E-03	0.000	
V-48	944.13		4.720E-02	3.047E-01	5.134E-01	4.104E-02	0.092	
	983.53	*	-2.326E-03	2.119E-02	3.377E-02	2.616E-03	-0.069	
	1312.11		-4.947E-03	1.842E-02	2.809E-02	1.893E-03	-0.176	
CR-51	320.08	*	9.777E-03	1.265E-01	2.136E-01	1.502E-02	0.046	
MN-54	834.85	*	5.722E-03	1.465E-02	2.589E-02	1.874E-03	0.221	
CO-56	846.77	*	-9.775E-03	1.254E-02	1.661E-02	1.232E-03	-0.588	
	1037.84		-6.875E-02	1.118E-01	1.534E-01	1.205E-02	-0.448	
	1238.28		-9.810E-03	2.518E-02	3.829E-02	2.549E-03	-0.256	
	1771.35		-4.594E-02	1.227E-01	1.760E-01	1.069E-02	-0.261	
CO-57	122.06	*	-3.363E-03	8.889E-03	1.405E-02	9.751E-04	-0.239	
	136.47		2.678E-02	7.505E-02	1.268E-01	9.416E-03	0.211	
CO-58	810.76	*	-7.959E-03	1.658E-02	2.521E-02	1.741E-03	-0.316	
FE-59	1099.45	*	-2.353E-03	3.055E-02	4.851E-02	3.706E-03	-0.049	
	1291.59		8.189E-03	3.454E-02	6.153E-02	4.972E-03	0.133	
CO-60	1173.23		-2.875E-03	1.781E-02	2.760E-02	1.641E-03	-0.104	
	1332.49	*	2.701E-03	1.214E-02	2.164E-02	1.483E-03	0.125	
ZN-65	1115.54	*	2.222E-02	3.134E-02	5.866E-02	3.880E-03	0.379	
SE-75	121.12		6.748E-03	4.519E-02	7.539E-02	7.454E-03	0.090	
	136.00		7.371E-04	1.449E-02	2.380E-02	1.596E-03	0.031	
	264.66	*	1.353E-02	1.716E-02	3.117E-02	2.097E-03	0.434	
	279.54		-2.218E-02	4.156E-02	6.618E-02	4.677E-03	-0.335	
	400.66		-1.143E-03	9.990E-02	1.646E-01	1.476E-02	-0.007	
SR-85	514.00	*	-4.606E-02	2.795E-02	3.906E-02	2.182E-03	-1.179	
Y-88	898.04		-7.214E-03	1.847E-02	2.694E-02	2.229E-03	-0.268	
	1836.06	*	-1.462E-03	1.325E-02	2.045E-02	1.193E-03	-0.072	
Y-91	1204.77	*	-4.161E+00	7.586E+00	1.051E+01	6.443E-01	-0.396	
NB-94	702.65	*	-3.560E-03	1.557E-02	2.527E-02	1.361E-03	-0.141	
	871.09		7.106E-04	1.301E-02	2.170E-02	1.692E-03	0.033	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95	765.81	*		7.279E-03	1.215E-02	2.265E-02	1.411E-03	0.321
NB-95M	235.69	*		-2.372E-02	5.095E-02	7.693E-02	6.331E-03	-0.308
ZR-95	724.19			-1.347E-03	3.186E-02	5.290E-02	3.556E-03	-0.025
	756.73	*		2.346E-02	2.766E-02	5.219E-02	3.823E-03	0.450
MO-99	140.51			3.606E-01	1.530E+00	2.552E+00	5.890E-01	0.141
	181.07			-5.858E-01	1.372E+00	2.107E+00	3.769E-01	-0.278
	366.42			-2.777E+00	8.793E+00	1.406E+01	8.402E-01	-0.198
	739.50	*		5.513E-01	9.167E-01	1.685E+00	2.433E-01	0.327
	777.92			1.591E+00	2.924E+00	5.300E+00	3.394E-01	0.300
TC-99M	140.51	*		6.395E+01	2.924E+00	Half-Life too short		
RU-103	497.08	*		1.056E-04	1.434E-02	2.334E-02	2.881E-03	0.005
	610.33			-1.305E-01	3.664E-01	5.515E-01	8.180E-02	-0.237
RH-106	621.93	*		-1.156E-01	1.456E-01	1.999E-01	2.260E-02	-0.578
	1050.41			2.418E-01	1.094E+00	1.856E+00	1.342E-01	0.130
RU-106	621.93	*		-1.156E-01	1.451E-01	1.999E-01	1.027E-02	-0.578
	1050.41			2.418E-01	1.094E+00	1.856E+00	1.342E-01	0.130
AG-108M	433.94	*		-1.412E-02	1.365E-02	1.923E-02	1.170E-03	-0.734
	614.28			-1.081E-02	1.912E-02	2.711E-02	1.529E-03	-0.399
	722.91			-1.958E-03	1.385E-02	2.260E-02	1.370E-03	-0.087
CD-109	88.03	*		5.568E-02	2.631E-01	4.472E-01	5.374E-02	0.125
AG-110M	657.76	*		-8.611E-03	1.526E-02	2.358E-02	1.260E-03	-0.365
	677.62			-6.623E-02	1.399E-01	2.189E-01	1.200E-02	-0.303
	706.68			1.885E-02	7.772E-02	1.355E-01	7.891E-03	0.139
	763.94			-4.320E-02	5.605E-02	7.857E-02	5.131E-03	-0.550
	884.68			1.210E-02	1.769E-02	3.322E-02	2.761E-03	0.364
	937.49			-2.751E-03	4.507E-02	7.300E-02	6.107E-03	-0.038
	1384.29			-1.861E-02	6.707E-02	1.034E-01	7.384E-03	-0.180
	1505.03			2.683E-02	1.246E-01	2.173E-01	1.466E-02	0.123
SN-113	391.69	*		-7.803E-03	1.561E-02	2.385E-02	1.437E-03	-0.327
CD-115	260.90			-5.133E+00	7.672E+00	1.212E+01	8.096E-01	-0.423
	492.35			-5.014E-01	2.178E+00	3.415E+00	1.923E-01	-0.147
	527.90	*		-3.164E-01	6.422E-01	9.513E-01	5.278E-02	-0.333
SN-117M	156.02			-8.705E-02	5.919E-01	9.465E-01	6.071E-02	-0.092
	158.56	*		-5.053E-03	1.489E-02	2.332E-02	1.492E-03	-0.217
TE-123M	159.00	*		1.155E-03	9.974E-03	1.637E-02	1.058E-03	0.071
SB-124	602.73			1.135E-02	1.831E-02	3.171E-02	1.664E-03	0.358
	645.85			9.660E-02	1.872E-01	3.394E-01	1.969E-02	0.285
	722.78			-4.812E-03	1.277E-01	2.122E-01	1.262E-02	-0.023
	1690.97	*		-4.240E-03	3.129E-02	4.846E-02	3.306E-03	-0.087
SB-125	427.87	*		-5.499E-02	4.218E-02	5.696E-02	3.367E-03	-0.965
	463.37			9.060E-02	1.104E-01	2.002E-01	1.324E-02	0.452
	600.60			5.168E-02	8.744E-02	1.514E-01	9.458E-03	0.341
	635.95			2.752E-02	8.722E-02	1.493E-01	9.214E-03	0.184
TE-125M	109.28	*		-1.711E+00	3.414E+00	5.007E+00	5.041E-01	-0.342
I-126	388.63			7.743E-03	4.075E-02	6.930E-02	3.930E-03	0.112
	666.33	*		-4.999E-02	6.309E-02	9.237E-02	4.557E-03	-0.541
	753.82			-5.204E-01	5.786E-01	8.206E-01	4.978E-02	-0.634
SB-126	414.70			1.449E-03	2.342E-02	3.884E-02	2.198E-03	0.037
	666.50			-1.896E-02	2.096E-02	2.989E-02	1.475E-03	-0.635

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	695.00			-2.291E-02	2.955E-02	3.665E-02	1.939E-03	-0.625
	697.00			9.776E-03	8.100E-02	1.382E-01	7.345E-03	0.071
	720.70	*		-2.575E-02	3.786E-02	5.530E-02	3.109E-03	-0.466
	856.80			4.725E-02	1.218E-01	2.164E-01	1.639E-02	0.218
SN-126	64.28			-1.589E-01	2.520E-01	3.777E-01	6.505E-02	-0.421
	86.94			7.536E-02	1.165E-01	1.980E-01	8.352E-02	0.381
	87.57	*		1.820E-02	2.634E-02	4.649E-02	5.575E-03	0.392
SB-127	252.40			1.343E-01	5.429E-01	9.379E-01	3.823E-01	0.143
	473.00			-1.540E-02	2.018E-01	3.253E-01	3.038E-02	-0.047
	685.70	*		-2.575E-02	1.599E-01	2.611E-01	1.813E-02	-0.099
	783.70			-2.619E-01	4.326E-01	6.362E-01	5.930E-02	-0.412
I-131	80.19			-2.942E-01	8.652E-01	1.399E+00	1.619E-01	-0.210
	284.31			2.112E-01	3.630E-01	6.450E-01	4.613E-02	0.327
	364.49	*		2.213E-03	2.930E-02	4.906E-02	3.240E-03	0.045
	636.99			1.667E-01	2.756E-01	5.024E-01	2.911E-02	0.332
TE-132	49.72			1.040E+00	3.493E+00	6.118E+00	7.919E-01	0.170
	111.76			-1.247E+00	3.078E+00	4.885E+00	4.298E-01	-0.255
	116.30			6.428E-02	2.679E+00	4.424E+00	3.719E-01	0.015
	228.16	*		9.132E-03	7.255E-02	1.169E-01	1.606E-02	0.078
BA-133	81.00			-1.500E-02	2.966E-02	4.687E-02	8.129E-03	-0.320
	276.40			1.861E-02	1.351E-01	2.313E-01	3.007E-02	0.080
	302.85			1.203E-02	5.971E-02	1.022E-01	1.207E-02	0.118
	356.01	*		-5.521E-03	1.737E-02	2.776E-02	3.174E-03	-0.199
	383.85			7.202E-02	1.130E-01	2.021E-01	2.149E-02	0.356
I-133	529.87	*		5.179E-06	1.130E-01	Half-Life	too short	
	875.33			-4.338E-05	1.130E-01	Half-Life	too short	
	1298.22			3.590E-04	1.130E-01	Half-Life	too short	
CS-134	563.25			-3.923E-02	1.432E-01	2.195E-01	1.220E-02	-0.179
	569.33			-5.593E-02	1.078E-01	1.485E-01	8.300E-03	-0.377
	604.72			3.169E-03	1.586E-02	2.613E-02	1.377E-03	0.121
	795.86	*		-9.993E-04	1.751E-02	2.878E-02	1.940E-03	-0.035
	801.95			-2.167E-01	1.986E-01	2.811E-01	1.915E-02	-0.771
	1365.19			5.319E-02	4.444E-01	7.655E-01	5.624E-02	0.069
CS-135	268.22	*		-1.974E-02	5.816E-02	9.481E-02	7.904E-03	-0.208
I-135	546.56			-2.692E+02	5.816E-02	Half-Life	too short	
	836.80			2.021E+02	5.816E-02	Half-Life	too short	
	1038.76			-2.288E+02	5.816E-02	Half-Life	too short	
	1131.51			7.017E+00	5.816E-02	Half-Life	too short	
	1260.41	*		-1.640E+02	5.816E-02	Half-Life	too short	
	1457.56			9.518E+01	5.816E-02	Half-Life	too short	
	1678.03			4.053E+02	5.816E-02	Half-Life	too short	
	1791.20			-1.220E+01	5.816E-02	Half-Life	too short	
CS-136	153.25			2.908E-02	2.111E-01	3.479E-01	2.961E-02	0.084
	176.60			1.911E-02	1.369E-01	2.238E-01	1.690E-02	0.085
	273.65			-1.750E-02	1.371E-01	2.285E-01	1.731E-02	-0.077
	340.55			-3.045E-02	3.930E-02	5.926E-02	3.971E-03	-0.514
	818.51			1.547E-03	2.016E-02	3.392E-02	2.373E-03	0.046
	1048.07	*		1.075E-03	3.468E-02	5.669E-02	4.349E-03	0.019
	1235.36			7.336E-02	1.390E-01	2.565E-01	2.613E-02	0.286

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-137M	661.66	*		-5.946E-03	1.807E-02	3.062E-02	1.493E-03	-0.194
CS-137	661.66	*		-6.281E-03	1.909E-02	3.235E-02	1.587E-03	-0.194
CE-139	165.86	*		-1.173E-02	1.179E-02	1.717E-02	1.091E-03	-0.683
BA-140	162.66			7.649E-02	2.221E-01	3.713E-01	2.649E-02	0.206
	304.85			-6.795E-02	4.091E-01	6.745E-01	1.937E-01	-0.101
	423.72			1.158E+00	7.461E-01	1.269E+00	4.093E-01	0.912
	537.26	*		1.268E-02	8.167E-02	1.350E-01	4.492E-02	0.094
LA-140	328.76			-7.131E-02	9.160E-02	1.402E-01	9.849E-03	-0.509
	487.02			4.139E-02	4.299E-02	7.897E-02	5.073E-03	0.524
	815.77			-6.885E-02	9.614E-02	1.369E-01	1.118E-02	-0.503
	1596.21	*		1.986E-02	2.882E-02	5.561E-02	3.663E-03	0.357
CE-141	145.44	*		1.032E-02	1.996E-02	3.409E-02	2.289E-03	0.303
CE-143	57.36			-1.032E+01	2.125E+01	3.405E+01	4.647E+00	-0.303
	293.27	*		1.029E-01	1.956E+00	3.308E+00	6.790E-01	0.031
	664.57			-1.192E+01	2.027E+01	3.063E+01	8.895E+00	-0.389
	721.93			-3.508E+00	1.709E+01	2.739E+01	7.426E+00	-0.128
CE-144	80.12			-4.438E-01	8.155E-01	1.290E+00	1.491E-01	-0.344
	133.52	*		2.653E-04	7.455E-02	1.220E-01	1.742E-02	0.002
PM-144	476.78			-1.987E-02	2.676E-02	3.847E-02	2.589E-03	-0.517
	618.01			1.068E-02	1.531E-02	2.697E-02	1.497E-03	0.396
	696.49	*		-8.495E-03	1.839E-02	2.426E-02	1.288E-03	-0.350
PR-144	696.51	*		-7.954E-01	1.390E+00	1.808E+00	9.599E-02	-0.440
	1489.16			7.584E-01	6.664E+00	1.131E+01	7.654E-01	0.067
PM-146	453.88	*		5.713E-03	1.874E-02	3.188E-02	2.668E-03	0.179
	633.25			-1.014E-01	4.530E-01	6.807E-01	2.556E-01	-0.149
	735.93			-5.812E-02	5.898E-02	7.612E-02	2.078E-02	-0.764
	747.24			2.792E-03	4.112E-02	6.937E-02	9.154E-03	0.040
ND-147	91.11			-2.411E-02	6.603E-02	1.066E-01	1.251E-02	-0.226
	319.41			-5.719E-04	8.993E-01	1.505E+00	9.703E-02	0.000
	531.02	*		-9.753E-03	1.528E-01	2.445E-01	3.280E-02	-0.040
PM-149	285.90	*		-4.565E-01	5.026E+00	8.389E+00	1.218E+00	-0.054
EU-152	121.78			-1.127E-02	2.585E-02	4.058E-02	3.447E-03	-0.278
	244.70			2.753E-02	1.385E-01	2.238E-01	1.493E-02	0.123
	344.28	*		1.421E-02	3.750E-02	6.530E-02	4.516E-03	0.218
	778.90			5.461E-02	1.126E-01	1.904E-01	1.221E-02	0.287
	964.08			2.120E-02	8.947E-02	1.544E-01	1.215E-02	0.137
	1085.87			5.824E-03	1.644E-01	2.684E-01	1.853E-02	0.022
	1112.07			-4.393E-02	1.224E-01	1.814E-01	1.204E-02	-0.242
	1408.01			-3.275E-02	7.624E-02	1.259E-01	8.612E-03	-0.260
GD-153	69.67			-4.958E-01	7.034E-01	1.020E+00	1.178E-01	-0.486
	97.43	*		-1.587E-03	2.927E-02	4.836E-02	4.747E-03	-0.033
	103.18			1.211E-02	3.636E-02	6.221E-02	5.535E-03	0.195
EU-154	123.07			-2.506E-02	1.958E-02	2.778E-02	2.808E-03	-0.902
	723.31			-5.695E-03	6.329E-02	1.042E-01	7.206E-03	-0.055
	873.19			-5.532E-02	1.036E-01	1.495E-01	1.694E-02	-0.370
	996.26			4.645E-02	1.588E-01	2.732E-01	4.648E-02	0.170
	1004.73			-4.656E-02	8.327E-02	1.176E-01	1.282E-02	-0.396
	1274.44	*		8.411E-03	4.245E-02	7.444E-02	7.360E-03	0.113
EU-155	86.55			3.206E-02	3.207E-02	5.790E-02	6.936E-03	0.554

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	105.31	*		1.230E-02	3.449E-02	5.913E-02	5.152E-03	0.208
	86.79			6.008E-02	8.188E-02	1.449E-01	1.729E-02	0.415
	197.04			1.777E-02	2.525E-01	3.850E-01	2.505E-02	0.046
	215.65			-8.917E-02	2.842E-01	4.375E-01	2.884E-02	-0.204
	298.57			-3.062E-02	4.169E-02	6.449E-02	4.239E-03	-0.475
	879.36	*		-1.981E-02	4.982E-02	7.484E-02	5.934E-03	-0.265
	962.29			1.994E-02	1.537E-01	2.593E-01	2.045E-02	0.077
HO-166M	966.15			-2.795E-02	6.822E-02	1.017E-01	7.998E-03	-0.275
	1177.93			-4.138E-02	1.369E-01	2.051E-01	1.225E-02	-0.202
	1271.85			2.259E-01	2.195E-01	4.544E-01	2.959E-02	0.497
	80.57			-3.232E-02	8.876E-02	1.432E-01	1.657E-02	-0.226
	184.41			1.817E-02	1.420E-02	2.523E-02	1.625E-03	0.720
	280.46			-3.349E-02	3.421E-02	5.165E-02	3.432E-03	-0.648
	410.95			7.210E-02	1.025E-01	1.832E-01	1.036E-02	0.393
TA-182	711.68	*		-1.671E-02	2.174E-02	3.088E-02	1.700E-03	-0.541
	752.31			1.352E-02	1.201E-01	2.039E-01	1.232E-02	0.066
	810.29			-9.121E-03	2.647E-02	4.130E-02	2.837E-03	-0.221
	67.75			-5.872E-02	4.780E-02	6.481E-02	7.540E-03	-0.906
	100.11			2.429E-02	5.939E-02	1.023E-01	9.576E-03	0.237
	152.43			1.892E-02	1.189E-01	1.963E-01	1.265E-02	0.096
	222.11			3.627E-02	1.415E-01	2.312E-01	1.530E-02	0.157
IR-192	1121.30			-5.681E-03	5.125E-02	8.074E-02	5.282E-03	-0.070
	1189.05			2.783E-03	1.039E-01	1.681E-01	1.015E-02	0.017
	1221.41	*		-2.403E-04	5.906E-02	9.908E-02	6.166E-03	-0.002
	1231.02			8.395E-02	1.536E-01	2.858E-01	1.794E-02	0.294
	295.96			7.383E-03	3.780E-02	6.485E-02	4.324E-03	0.114
	308.46			6.593E-03	4.005E-02	6.828E-02	4.491E-03	0.097
	316.51	*		-8.486E-03	1.350E-02	2.097E-02	1.361E-03	-0.405
HG-203	468.07			-1.408E-02	2.693E-02	4.055E-02	2.667E-03	-0.347
	70.83			4.398E-01	4.507E-01	8.155E-01	1.450E-01	0.539
	72.87			1.982E-02	2.584E-01	4.373E-01	7.555E-02	0.045
BI-207	279.20	*		-8.224E-03	1.382E-02	2.186E-02	1.515E-03	-0.376
	72.81			5.662E-03	6.586E-02	1.116E-01	1.279E-02	0.051
	74.97			-2.553E-02	3.701E-02	5.792E-02	6.634E-03	-0.441
	569.70			-4.479E-03	1.681E-02	2.414E-02	1.304E-03	-0.186
TL-208	1063.66	*		-4.966E-05	2.532E-02	3.905E-02	2.777E-03	-0.001
	1770.23			1.033E-01	2.457E-01	4.487E-01	2.726E-02	0.230
	277.37			8.703E-02	1.434E-01	2.563E-01	2.888E-02	0.339
	583.19	*		-8.561E-03	1.808E-02	2.687E-02	1.686E-03	-0.319
PB-210	860.56			-9.284E-02	1.089E-01	1.458E-01	1.216E-02	-0.637
	46.54	*		-6.246E-01	3.207E+00	5.375E+00	4.690E-01	-0.116
BI-211	72.87			8.758E-02	1.142E+00	1.932E+00	2.215E-01	0.045
PB-211	351.06	*		4.015E-02	9.802E-02	1.596E-01	1.078E-02	0.252
	404.85	*		2.286E-03	3.159E-01	5.213E-01	2.500E-01	0.004
BI-212	427.09			-1.006E+00	8.788E-01	1.020E+00	4.674E-01	-0.986
	832.01			-3.367E-01	4.314E-01	5.404E-01	2.790E-01	-0.623
	727.33	*		3.325E-02	1.951E-01	3.353E-01	3.572E-02	0.099
	785.37			1.086E-01	1.307E+00	2.202E+00	1.433E-01	0.049
	1620.50			-1.030E+00	1.215E+00	1.463E+00	9.551E-02	-0.704

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PB-212	74.82			-6.319E-02	1.272E-01	2.029E-01	3.049E-02	-0.311
	77.11			-1.741E-03	7.533E-02	1.205E-01	1.383E-02	-0.014
	238.63	*		2.309E-04	2.892E-02	4.556E-02	3.686E-03	0.005
	300.09			-9.090E-02	3.265E-01	5.122E-01	4.576E-02	-0.177
BI-214	609.32	*		-3.249E-02	3.880E-02	5.409E-02	4.010E-03	-0.601
	1120.29			-1.560E-02	1.129E-01	1.768E-01	1.657E-02	-0.088
	1764.49			-8.882E-02	1.210E-01	1.507E-01	9.185E-03	-0.589
	74.82			-1.120E-01	2.253E-01	3.597E-01	5.011E-02	-0.311
PB-214	77.11			-3.070E-03	1.328E-01	2.125E-01	3.002E-02	-0.014
	242.00			-9.861E-02	1.560E-01	2.300E-01	2.032E-02	-0.429
	295.22			-1.128E-03	5.406E-02	9.072E-02	8.406E-03	-0.012
	351.93	*		1.656E-02	3.587E-02	5.870E-02	5.117E-03	0.282
RN-219	271.23			3.187E-02	8.632E-02	1.513E-01	1.313E-02	0.211
	401.81	*		-5.589E-02	1.850E-01	2.817E-01	3.766E-02	-0.198
RA-223	81.07			-3.652E-02	6.682E-02	1.053E-01	1.220E-02	-0.347
	83.79			-7.793E-03	4.070E-02	6.676E-02	7.832E-03	-0.117
	94.87			-2.348E-01	1.830E-01	2.693E-01	2.776E-02	-0.872
	144.24			3.333E-01	2.327E-01	4.288E-01	3.344E-02	0.777
RA-224	154.21			7.127E-05	1.386E-01	2.251E-01	1.688E-02	0.000
	269.46			-1.518E-02	7.029E-02	1.163E-01	8.008E-03	-0.131
	323.87	*		3.380E-02	2.637E-01	4.470E-01	7.307E-02	0.076
	338.28			1.621E-01	4.673E-01	7.505E-01	7.904E-02	0.216
RA-226	240.99	*		-2.050E-01	2.903E-01	4.264E-01	2.843E-02	-0.481
	609.32	*		-3.249E-02	3.880E-02	5.409E-02	4.010E-03	-0.601
AC-227	1120.29			-1.560E-02	1.129E-01	1.768E-01	1.657E-02	-0.088
	1764.49			-8.882E-02	1.210E-01	1.507E-01	9.185E-03	-0.589
	79.69			-1.517E-01	4.196E-01	6.768E-01	1.277E-01	-0.224
	235.96			-2.841E-02	6.474E-02	9.796E-02	8.594E-03	-0.290
TH-227	256.23	*		-5.143E-02	9.496E-02	1.516E-01	1.629E-02	-0.339
	299.98			-1.772E-01	3.586E-01	5.474E-01	6.247E-02	-0.324
	304.50			-2.833E-01	6.879E-01	1.103E+00	1.715E-01	-0.257
	334.37			-9.268E-01	8.084E-01	1.171E+00	1.692E-01	-0.791
AC-228	79.80			-2.182E-01	5.515E-01	8.845E-01	2.042E-01	-0.247
	235.96			-2.841E-02	6.474E-02	9.796E-02	7.911E-03	-0.290
	256.23	*		-5.143E-02	9.502E-02	1.516E-01	1.890E-02	-0.339
	299.98			-1.772E-01	3.586E-01	5.474E-01	6.247E-02	-0.324
RA-228	304.50			-2.833E-01	6.879E-01	1.103E+00	1.715E-01	-0.257
	334.37			-9.268E-01	8.084E-01	1.171E+00	1.692E-01	-0.791
	338.32			3.949E-02	1.187E-01	1.887E-01	7.793E-02	0.209
	911.20	*		4.335E-03	6.254E-02	1.007E-01	1.133E-02	0.043
TH-228	968.97			-5.457E-02	1.209E-01	1.766E-01	4.255E-02	-0.309
	338.32			3.949E-02	1.187E-01	1.887E-01	7.793E-02	0.209
	911.20	*		4.335E-03	6.254E-02	1.007E-01	1.133E-02	0.043
	968.97			-5.457E-02	1.209E-01	1.766E-01	4.255E-02	-0.309
TH-229	74.82			-6.319E-02	1.270E-01	2.029E-01	2.336E-02	-0.311
	77.11			-1.741E-03	7.533E-02	1.205E-01	1.383E-02	-0.014
	238.63	*		2.309E-04	2.892E-02	4.556E-02	3.686E-03	0.005
	300.09			-9.090E-02	3.311E-01	5.122E-01	3.122E-01	-0.177

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		88.47		-2.305E-03	3.868E-02	6.415E-02	7.625E-03	-0.036
		193.51	*	5.122E-02	2.011E-01	3.312E-01	2.149E-02	0.155
		210.85		-3.778E-01	3.512E-01	4.927E-01	3.239E-02	-0.767
PA-231		283.69	*	3.256E-01	6.166E-01	1.088E+00	1.470E-01	0.299
		301.36		1.659E-01	2.449E-01	4.229E-01	4.562E-02	0.392
TH-231		81.07		-3.652E-02	6.682E-02	1.053E-01	1.220E-02	-0.347
		83.79		-7.793E-03	4.070E-02	6.676E-02	7.832E-03	-0.117
		94.87		-2.348E-01	1.830E-01	2.693E-01	2.776E-02	-0.872
		144.24		3.333E-01	2.327E-01	4.288E-01	3.344E-02	0.777
		154.21		7.127E-05	1.386E-01	2.251E-01	1.688E-02	0.000
		269.46		-1.518E-02	7.029E-02	1.163E-01	8.008E-03	-0.131
		323.87	*	3.380E-02	2.637E-01	4.470E-01	7.307E-02	0.076
		338.28		1.621E-01	4.673E-01	7.505E-01	7.904E-02	0.216
TH-232		338.32		3.949E-02	1.176E-01	1.887E-01	1.186E-02	0.209
		911.20	*	4.335E-03	6.254E-02	1.007E-01	1.133E-02	0.043
		968.97		-5.457E-02	1.209E-01	1.766E-01	4.255E-02	-0.309
PA-233		300.13		-3.608E-02	1.636E-01	2.584E-01	3.549E-02	-0.140
		311.90	*	-4.651E-03	2.801E-02	4.614E-02	3.147E-03	-0.101
		340.48		-1.659E-01	2.398E-01	3.614E-01	8.431E-02	-0.459
PA-234		94.67		-9.021E-02	6.826E-02	9.940E-02	1.358E-02	-0.907
		98.44		6.932E-03	3.280E-02	5.515E-02	3.086E-02	0.126
		111.00		-1.225E-02	6.375E-02	1.032E-01	1.199E-02	-0.119
		131.20		1.723E-03	3.898E-02	6.410E-02	4.300E-03	0.027
		569.50		-6.654E-02	1.507E-01	2.109E-01	1.139E-02	-0.316
		733.00		2.627E-02	1.449E-01	2.495E-01	5.303E-02	0.105
		880.51		6.391E-02	1.056E-01	1.951E-01	1.550E-02	0.328
		883.24		4.769E-02	1.137E-01	1.957E-01	1.314E-01	0.244
		926.50		2.988E-02	7.191E-02	1.270E-01	3.188E-02	0.235
		946.00	*	-2.936E-02	1.417E-01	2.232E-01	4.125E-02	-0.132
		949.00		3.595E-02	1.962E-01	3.323E-01	2.647E-02	0.108
PA-234M		766.42		8.519E-01	3.672E+00	6.351E+00	3.200E+00	0.134
		1001.03	*	-7.747E-01	1.887E+00	2.804E+00	2.556E-01	-0.276
TH-234		63.29	*	-5.682E-01	6.799E-01	9.817E-01	1.976E-01	-0.579
		92.59		1.407E-01	2.861E-01	4.839E-01	1.114E-01	0.291
U-235		89.96		-7.225E-01	3.594E-01	4.040E-01	1.040E-01	-1.789
		93.35		1.411E-01	2.159E-01	3.669E-01	8.777E-02	0.385
		143.76	*	4.257E-02	7.203E-02	1.235E-01	1.975E-02	0.345
		163.33		-3.436E-02	1.747E-01	2.774E-01	4.712E-02	-0.124
		185.72		1.059E-02	2.001E-02	3.284E-02	2.117E-03	0.322
		205.31		-8.778E-02	2.081E-01	3.181E-01	5.491E-02	-0.276
NP-237		86.48	*	7.918E-02	8.093E-02	1.430E-01	3.449E-02	0.554
		95.86		-3.058E-01	3.526E-01	5.264E-01	1.293E-01	-0.581
U-238		63.29	*	-5.682E-01	6.799E-01	9.817E-01	1.976E-01	-0.579
		92.59		1.407E-01	2.847E-01	4.839E-01	5.231E-02	0.291
NP-239		99.53		-8.207E-03	5.817E-02	9.519E-02	8.999E-03	-0.086
		103.37		4.646E-03	3.437E-02	5.768E-02	5.117E-03	0.081
		106.12		-8.764E-03	2.760E-02	4.411E-02	3.752E-03	-0.199
		117.23	*	-4.141E-02	1.509E-01	2.420E-01	1.776E-02	-0.171
		228.18		1.135E-02	8.614E-02	1.389E-01	9.216E-03	0.082

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	277.60			1.151E-02	6.667E-02	1.145E-01	7.616E-03	0.101
AM-241	59.54	*		1.132E-03	7.093E-02	1.203E-01	1.519E-02	0.009
CM-247	278.00			1.343E-03	2.747E-01	4.639E-01	3.085E-02	0.003
	287.50			-2.747E-01	4.838E-01	7.638E-01	5.057E-02	-0.360
	402.40	*		5.316E-04	1.694E-02	2.696E-02	1.521E-03	0.020
CF-249	252.80			6.563E-02	3.698E-01	6.383E-01	4.263E-02	0.103
	333.37			-5.397E-02	8.189E-02	1.273E-01	8.063E-03	-0.424
	388.16	*		5.720E-03	1.390E-02	2.436E-02	1.383E-03	0.235
CF-251	177.52	*		2.280E-02	5.108E-02	8.589E-02	5.501E-03	0.265
	227.38			-4.315E-02	1.464E-01	2.249E-01	1.493E-02	-0.192
	285.41			4.938E-02	9.008E-01	1.526E+00	1.012E-01	0.032
ANH-511	511.00	*		-1.845E-02	2.823E-02	5.229E-02	2.924E-03	-0.353

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]G1202053644      *
* Acquisition date   : 6-MAR-2010 17:02:37 Detector SN#      :              *
* Detector ID        : GAM04                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:00.42             Half life ratio : 8.000        *
*****
*
*                               SAMPLE DATA                               *
*
* Sample date        : 26-FEB-2010 00:00:00 Nuclide Library : SOLID           *
* Sample ID          : G1202053644             Analyst initials: MXR1          *
* Batch Number       : 957711                  Sample Quantity : 1.5753E+02 GRAM  *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000        *
*****
*
*                               QC DATA                                   *
*
* Standard Weight    : 0.00000                                                         *
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41 MS Isotope      :                *
* MSD DPM             : 0.000                      MSD Isotope :                *
* LCS DPM             : 0.000                      LCS Isotope  :                *
* LCSD DPM            : 0.000                      LCSD Isotope :                *
*****

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Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)
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---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.305E-02	1.151E-01	1.932E-01	0.000E+00 NOT IDENT.
NA-22	1.106E-03	1.508E-02	2.653E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.413E+02	0.000E+00	0.000E+00 SHORT HLIF
K-40	-3.984E-02	2.210E-01	3.520E-01	0.000E+00 NOT IDENT.
SC-46	-1.418E-03	1.290E-02	2.164E-02	0.000E+00 NOT IDENT.
V-48	-2.326E-03	2.077E-02	3.447E-02	0.000E+00 NOT IDENT.
CR-51	9.777E-03	1.240E-01	2.250E-01	0.000E+00 NOT IDENT.
MN-54	5.722E-03	1.436E-02	2.655E-02	0.000E+00 NOT IDENT.
CO-56	-9.775E-03	1.229E-02	1.703E-02	0.000E+00 NOT IDENT.
CO-57	-3.363E-03	8.711E-03	1.517E-02	0.000E+00 NOT IDENT.
CO-58	-7.959E-03	1.625E-02	2.588E-02	0.000E+00 NOT IDENT.
FE-59	-2.353E-03	2.994E-02	4.936E-02	0.000E+00 NOT IDENT.
CO-60	2.701E-03	1.190E-02	2.189E-02	0.000E+00 NOT IDENT.
ZN-65	2.222E-02	3.072E-02	5.966E-02	0.000E+00 NOT IDENT.
SE-75	1.353E-02	1.681E-02	3.299E-02	0.000E+00 NOT IDENT.
SR-85	-4.606E-02	2.740E-02	4.060E-02	0.000E+00 NOT IDENT.
Y-88	-1.462E-03	1.299E-02	2.049E-02	0.000E+00 NOT IDENT.
Y-91	-4.161E+00	7.434E+00	1.067E+01	0.000E+00 NOT IDENT.
NB-94	-3.560E-03	1.525E-02	2.604E-02	0.000E+00 NOT IDENT.
NB-95	7.279E-03	1.191E-02	2.328E-02	0.000E+00 NOT IDENT.
NB-95M	-2.372E-02	4.993E-02	8.167E-02	0.000E+00 NOT IDENT.
ZR-95	2.346E-02	2.711E-02	5.367E-02	0.000E+00 NOT IDENT.
MO-99	5.513E-01	8.983E-01	1.734E+00	0.000E+00 NOT IDENT.
TC-99M	0.000E+00	2.658E+08	0.000E+00	0.000E+00 SHORT HLIF
RU-103	1.056E-04	1.405E-02	2.429E-02	0.000E+00 NOT IDENT.
RH-106	-1.156E-01	1.427E-01	2.067E-01	0.000E+00 NOT IDENT.

RU-106	-1.156E-01	1.422E-01	2.067E-01	0.000E+00	NOT IDENT.
AG-108M	-1.412E-02	1.338E-02	2.008E-02	0.000E+00	NOT IDENT.
CD-109	5.568E-02	2.578E-01	4.869E-01	0.000E+00	NOT IDENT.
AG-110M	-8.611E-03	1.495E-02	2.435E-02	0.000E+00	NOT IDENT.
SN-113	-7.803E-03	1.530E-02	2.498E-02	0.000E+00	NOT IDENT.
CD-115	-3.164E-01	6.293E-01	9.881E-01	0.000E+00	NOT IDENT.
SN-117M	-5.053E-03	1.459E-02	2.501E-02	0.000E+00	NOT IDENT.
TE-123M	1.155E-03	9.775E-03	1.755E-02	0.000E+00	NOT IDENT.
SB-124	-4.240E-03	3.066E-02	4.870E-02	0.000E+00	NOT IDENT.
SB-125	-5.499E-02	4.134E-02	5.950E-02	0.000E+00	NOT IDENT.
TE-125M	-1.711E+00	3.346E+00	5.422E+00	0.000E+00	NOT IDENT.
I-126	-4.999E-02	6.183E-02	9.533E-02	0.000E+00	NOT IDENT.
SB-126	-2.575E-02	3.710E-02	5.694E-02	0.000E+00	NOT IDENT.
SN-126	1.820E-02	2.581E-02	5.063E-02	0.000E+00	NOT IDENT.
SB-127	-2.575E-02	1.567E-01	2.693E-01	0.000E+00	NOT IDENT.
I-131	2.213E-03	2.871E-02	5.148E-02	0.000E+00	NOT IDENT.
TE-132	9.132E-03	7.110E-02	1.242E-01	0.000E+00	NOT IDENT.
BA-133	-5.521E-03	1.703E-02	2.915E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.359E+01	0.000E+00	0.000E+00	SHORT HLIF
CS-134	-9.993E-04	1.716E-02	2.956E-02	0.000E+00	NOT IDENT.
CS-135	-1.974E-02	5.700E-02	1.003E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.017E+08	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.075E-03	3.398E-02	5.777E-02	0.000E+00	NOT IDENT.
BA-137M	-5.946E-03	1.771E-02	3.161E-02	0.000E+00	NOT IDENT.
CS-137	-6.281E-03	1.871E-02	3.339E-02	0.000E+00	NOT IDENT.
CE-139	-1.173E-02	1.155E-02	1.840E-02	0.000E+00	NOT IDENT.
BA-140	1.268E-02	8.004E-02	1.402E-01	0.000E+00	NOT IDENT.
LA-140	1.986E-02	2.824E-02	5.598E-02	0.000E+00	NOT IDENT.
CE-141	1.032E-02	1.956E-02	3.665E-02	0.000E+00	NOT IDENT.
CE-143	1.029E-01	1.917E+00	3.491E+00	0.000E+00	NOT IDENT.
CE-144	2.653E-04	7.305E-02	1.315E-01	0.000E+00	NOT IDENT.
PM-144	-8.495E-03	1.802E-02	2.501E-02	0.000E+00	NOT IDENT.
PR-144	-7.954E-01	1.362E+00	1.864E+00	0.000E+00	NOT IDENT.
PM-146	5.713E-03	1.837E-02	3.325E-02	0.000E+00	NOT IDENT.
ND-147	-9.753E-03	1.497E-01	2.540E-01	0.000E+00	NOT IDENT.
PM-149	-4.565E-01	4.925E+00	8.860E+00	0.000E+00	NOT IDENT.
EU-152	1.421E-02	3.675E-02	6.863E-02	0.000E+00	NOT IDENT.
GD-153	-1.587E-03	2.869E-02	5.252E-02	0.000E+00	NOT IDENT.
EU-154	8.411E-03	4.160E-02	7.542E-02	0.000E+00	NOT IDENT.
EU-155	1.230E-02	3.380E-02	6.410E-02	0.000E+00	NOT IDENT.
TB-160	-1.981E-02	4.882E-02	7.664E-02	0.000E+00	NOT IDENT.
HO-166M	-1.671E-02	2.131E-02	3.181E-02	0.000E+00	NOT IDENT.
TA-182	-2.403E-04	5.788E-02	1.005E-01	0.000E+00	NOT IDENT.
IR-192	-8.486E-03	1.323E-02	2.209E-02	0.000E+00	NOT IDENT.
HG-203	-8.224E-03	1.355E-02	2.311E-02	0.000E+00	NOT IDENT.
BI-207	-4.966E-05	2.482E-02	3.977E-02	0.000E+00	NOT IDENT.
TL-208	-8.561E-03	1.772E-02	2.783E-02	0.000E+00	NOT IDENT.
PB-210	-6.246E-01	3.143E+00	5.945E+00	0.000E+00	NOT IDENT.
BI-211	4.015E-02	9.606E-02	1.676E-01	0.000E+00	NOT IDENT.
PB-211	2.286E-03	3.096E-01	5.455E-01	0.000E+00	NOT IDENT.
BI-212	3.325E-02	1.912E-01	3.452E-01	0.000E+00	NOT IDENT.
PB-212	2.309E-04	2.834E-02	4.836E-02	0.000E+00	NOT IDENT.
BI-214	-3.249E-02	3.802E-02	5.597E-02	0.000E+00	NOT IDENT.
PB-214	1.656E-02	3.515E-02	6.166E-02	0.000E+00	NOT IDENT.
RN-219	-5.589E-02	1.813E-01	2.948E-01	0.000E+00	NOT IDENT.
RA-223	3.380E-02	2.584E-01	4.706E-01	0.000E+00	NOT IDENT.
RA-224	-2.050E-01	2.845E-01	4.524E-01	0.000E+00	NOT IDENT.
RA-226	-3.249E-02	3.802E-02	5.597E-02	0.000E+00	NOT IDENT.
AC-227	-5.143E-02	9.306E-02	1.606E-01	0.000E+00	NOT IDENT.
TH-227	-5.143E-02	9.311E-02	1.606E-01	0.000E+00	NOT IDENT.
AC-228	4.335E-03	6.129E-02	1.030E-01	0.000E+00	NOT IDENT.
RA-228	4.335E-03	6.129E-02	1.030E-01	0.000E+00	NOT IDENT.
TH-228	2.309E-04	2.834E-02	4.836E-02	0.000E+00	NOT IDENT.
TH-229	5.122E-02	1.971E-01	3.534E-01	0.000E+00	NOT IDENT.
PA-231	3.256E-01	6.043E-01	1.150E+00	0.000E+00	NOT IDENT.
TH-231	3.380E-02	2.584E-01	4.706E-01	0.000E+00	NOT IDENT.
TH-232	4.335E-03	6.129E-02	1.030E-01	0.000E+00	NOT IDENT.
PA-233	-4.651E-03	2.745E-02	4.862E-02	0.000E+00	NOT IDENT.
PA-234	-2.936E-02	1.388E-01	2.281E-01	0.000E+00	NOT IDENT.
PA-234M	-7.747E-01	1.849E+00	2.861E+00	0.000E+00	NOT IDENT.
TH-234	-5.682E-01	6.663E-01	1.078E+00	0.000E+00	NOT IDENT.
U-235	4.257E-02	7.059E-02	1.328E-01	0.000E+00	NOT IDENT.
NP-237	7.918E-02	7.931E-02	1.558E-01	0.000E+00	NOT IDENT.
U-238	-5.682E-01	6.663E-01	1.078E+00	0.000E+00	NOT IDENT.
NP-239	-4.141E-02	1.478E-01	2.616E-01	0.000E+00	NOT IDENT.
AM-241	1.132E-03	6.951E-02	1.323E-01	0.000E+00	NOT IDENT.
CM-247	5.316E-04	1.660E-02	2.821E-02	0.000E+00	NOT IDENT.
CF-249	5.720E-03	1.362E-02	2.552E-02	0.000E+00	NOT IDENT.

CF-251	2.280E-02	5.006E-02	9.186E-02	0.000E+00 NOT IDENT.
ANH-511	-1.845E-02	2.767E-02	5.436E-02	0.000E+00 NOT IDENT.

```
*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                          *
*                                     Charleston, SC 29414                      *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053644.CNF;1
Sample date        : 26-FEB-2010 00:00:00 Acquisition date : 6-MAR-2010 17:02:37.
Sample ID          : G1202053644      Sample quantity   : 1.57530E+02 GRAM
Detector name      : GAM04             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:00.42  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 957711            Detector SN#      :
Matrix Spike ID    :                   LCS ID            : 1032-A
*****
```

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202053644

Page : 2
Acquisition date : 6-MAR-2010 17:02:37

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202053644

Page : 3
Acquisition date : 6-MAR-2010 17:02:37

None

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053644.CNF;1
* Acquisition date   : 6-MAR-2010 17:02:37.  Detector SN#      :
* Detector ID        : GAM04                      Sensitivity    : 5.00000
* Geometry           : CAN                        Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:00.42             Half life ratio : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 26-FEB-2010 00:00:00  Nuclide Library : SOLID
* Sample ID          : G1202053644           Analyst initials: MXR1
* Batch Number       : 957711                Sample Quantity : 1.57530E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41.36MS Isotope      :
* MSD ID             :                               MSD Isotope :
* LCS ID             : 1032-A                       LCS Isotope  :
*****

```

Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.305E-02		1.175E-01	1.855E-01	1.228E-02	-0.124
NA-22	1.106E-03		1.539E-02	2.619E-02	1.712E-03	0.042
NA-24	-7.551E-05		1.231E-04	Half-Life too short		
K-40	-3.984E-02		2.255E-01	3.488E-01	2.479E-02	-0.114
SC-46	-1.418E-03		1.317E-02	2.114E-02	1.710E-03	-0.067
V-48	-2.326E-03		2.119E-02	3.377E-02	2.616E-03	-0.069
CR-51	9.777E-03		1.265E-01	2.136E-01	1.502E-02	0.046
MN-54	5.722E-03		1.465E-02	2.589E-02	1.874E-03	0.221
CO-56	-9.775E-03		1.254E-02	1.661E-02	1.232E-03	-0.588
CO-57	-3.363E-03		8.889E-03	1.405E-02	9.751E-04	-0.239
CO-58	-7.959E-03		1.658E-02	2.521E-02	1.741E-03	-0.316
FE-59	-2.353E-03		3.055E-02	4.851E-02	3.706E-03	-0.049
CO-60	2.701E-03		1.214E-02	2.164E-02	1.483E-03	0.125
ZN-65	2.222E-02		3.134E-02	5.866E-02	3.880E-03	0.379
SE-75	1.353E-02		1.716E-02	3.117E-02	2.097E-03	0.434
SR-85	-4.606E-02		2.795E-02	3.906E-02	2.182E-03	-1.179
Y-88	-1.462E-03		1.325E-02	2.045E-02	1.193E-03	-0.072

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	-4.161E+00		7.586E+00	1.051E+01	6.443E-01	-0.396
NB-94	-3.560E-03		1.557E-02	2.527E-02	1.361E-03	-0.141
NB-95	7.279E-03		1.215E-02	2.265E-02	1.411E-03	0.321
NB-95M	-2.372E-02		5.095E-02	7.693E-02	6.331E-03	-0.308
ZR-95	2.346E-02		2.766E-02	5.219E-02	3.823E-03	0.450
MO-99	5.513E-01		9.167E-01	1.685E+00	2.433E-01	0.327
TC-99M	6.395E+01		1.356E+02	Half-Life too short		
RU-103	1.056E-04		1.434E-02	2.334E-02	2.881E-03	0.005
RH-106	-1.156E-01		1.456E-01	1.999E-01	2.260E-02	-0.578
RU-106	-1.156E-01		1.451E-01	1.999E-01	1.027E-02	-0.578
AG-108M	-1.412E-02		1.365E-02	1.923E-02	1.170E-03	-0.734
CD-109	5.568E-02		2.631E-01	4.472E-01	5.374E-02	0.125
AG-110M	-8.611E-03		1.526E-02	2.358E-02	1.260E-03	-0.365
SN-113	-7.803E-03		1.561E-02	2.385E-02	1.437E-03	-0.327
CD-115	-3.164E-01		6.422E-01	9.513E-01	5.278E-02	-0.333
SN-117M	-5.053E-03		1.489E-02	2.332E-02	1.492E-03	-0.217
TE-123M	1.155E-03		9.974E-03	1.637E-02	1.058E-03	0.071
SB-124	-4.240E-03		3.129E-02	4.846E-02	3.306E-03	-0.087
SB-125	-5.499E-02		4.218E-02	5.696E-02	3.367E-03	-0.965
TE-125M	-1.711E+00		3.414E+00	5.007E+00	5.041E-01	-0.342
I-126	-4.999E-02		6.309E-02	9.237E-02	4.557E-03	-0.541
SB-126	-2.575E-02		3.786E-02	5.530E-02	3.109E-03	-0.466
SN-126	1.820E-02		2.634E-02	4.649E-02	5.575E-03	0.392
SB-127	-2.575E-02		1.599E-01	2.611E-01	1.813E-02	-0.099
I-131	2.213E-03		2.930E-02	4.906E-02	3.240E-03	0.045
TE-132	9.132E-03		7.255E-02	1.169E-01	1.606E-02	0.078
BA-133	-5.521E-03		1.737E-02	2.776E-02	3.174E-03	-0.199
I-133	5.179E-06		6.935E-06	Half-Life too short		
CS-134	-9.993E-04		1.751E-02	2.878E-02	1.940E-03	-0.035
CS-135	-1.974E-02		5.816E-02	9.481E-02	7.904E-03	-0.208
I-135	-1.640E+02		1.029E+02	Half-Life too short		
CS-136	1.075E-03		3.468E-02	5.669E-02	4.349E-03	0.019
BA-137M	-5.946E-03		1.807E-02	3.062E-02	1.493E-03	-0.194
CS-137	-6.281E-03		1.909E-02	3.235E-02	1.587E-03	-0.194
CE-139	-1.173E-02		1.179E-02	1.717E-02	1.091E-03	-0.683
BA-140	1.268E-02		8.167E-02	1.350E-01	4.492E-02	0.094
LA-140	1.986E-02		2.882E-02	5.561E-02	3.663E-03	0.357
CE-141	1.032E-02		1.996E-02	3.409E-02	2.289E-03	0.303
CE-143	1.029E-01		1.956E+00	3.308E+00	6.790E-01	0.031
CE-144	2.653E-04		7.455E-02	1.220E-01	1.742E-02	0.002
PM-144	-8.495E-03		1.839E-02	2.426E-02	1.288E-03	-0.350
PR-144	-7.954E-01		1.390E+00	1.808E+00	9.599E-02	-0.440
PM-146	5.713E-03		1.874E-02	3.188E-02	2.668E-03	0.179
ND-147	-9.753E-03		1.528E-01	2.445E-01	3.280E-02	-0.040
PM-149	-4.565E-01		5.026E+00	8.389E+00	1.218E+00	-0.054
EU-152	1.421E-02		3.750E-02	6.530E-02	4.516E-03	0.218
GD-153	-1.587E-03		2.927E-02	4.836E-02	4.747E-03	-0.033
EU-154	8.411E-03		4.245E-02	7.444E-02	7.360E-03	0.113

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	1.230E-02		3.449E-02	5.913E-02	5.152E-03	0.208
TB-160	-1.981E-02		4.982E-02	7.484E-02	5.934E-03	-0.265
HO-166M	-1.671E-02		2.174E-02	3.088E-02	1.700E-03	-0.541
TA-182	-2.403E-04		5.906E-02	9.908E-02	6.166E-03	-0.002
IR-192	-8.486E-03		1.350E-02	2.097E-02	1.361E-03	-0.405
HG-203	-8.224E-03		1.382E-02	2.186E-02	1.515E-03	-0.376
BI-207	-4.966E-05		2.532E-02	3.905E-02	2.777E-03	-0.001
TL-208	-8.561E-03		1.808E-02	2.687E-02	1.686E-03	-0.319
PB-210	-6.246E-01		3.207E+00	5.375E+00	4.690E-01	-0.116
BI-211	4.015E-02		9.802E-02	1.596E-01	1.078E-02	0.252
PB-211	2.286E-03		3.159E-01	5.213E-01	2.500E-01	0.004
BI-212	3.325E-02		1.951E-01	3.353E-01	3.572E-02	0.099
PB-212	2.309E-04		2.892E-02	4.556E-02	3.686E-03	0.005
BI-214	-3.249E-02		3.880E-02	5.409E-02	4.010E-03	-0.601
PB-214	1.656E-02		3.587E-02	5.870E-02	5.117E-03	0.282
RN-219	-5.589E-02		1.850E-01	2.817E-01	3.766E-02	-0.198
RA-223	3.380E-02		2.637E-01	4.470E-01	7.307E-02	0.076
RA-224	-2.050E-01		2.903E-01	4.264E-01	2.843E-02	-0.481
RA-226	-3.249E-02		3.880E-02	5.409E-02	4.010E-03	-0.601
AC-227	-5.143E-02		9.496E-02	1.516E-01	1.629E-02	-0.339
TH-227	-5.143E-02		9.502E-02	1.516E-01	1.890E-02	-0.339
AC-228	4.335E-03		6.254E-02	1.007E-01	1.133E-02	0.043
RA-228	4.335E-03		6.254E-02	1.007E-01	1.133E-02	0.043
TH-228	2.309E-04		2.892E-02	4.556E-02	3.686E-03	0.005
TH-229	5.122E-02		2.011E-01	3.312E-01	2.149E-02	0.155
PA-231	3.256E-01		6.166E-01	1.088E+00	1.470E-01	0.299
TH-231	3.380E-02		2.637E-01	4.470E-01	7.307E-02	0.076
TH-232	4.335E-03		6.254E-02	1.007E-01	1.133E-02	0.043
PA-233	-4.651E-03		2.801E-02	4.614E-02	3.147E-03	-0.101
PA-234	-2.936E-02		1.417E-01	2.232E-01	4.125E-02	-0.132
PA-234M	-7.747E-01		1.887E+00	2.804E+00	2.556E-01	-0.276
TH-234	-5.682E-01		6.799E-01	9.817E-01	1.976E-01	-0.579
U-235	4.257E-02		7.203E-02	1.235E-01	1.975E-02	0.345
NP-237	7.918E-02		8.093E-02	1.430E-01	3.449E-02	0.554
U-238	-5.682E-01		6.799E-01	9.817E-01	1.976E-01	-0.579
NP-239	-4.141E-02		1.509E-01	2.420E-01	1.776E-02	-0.171
AM-241	1.132E-03		7.093E-02	1.203E-01	1.519E-02	0.009
CM-247	5.316E-04		1.694E-02	2.696E-02	1.521E-03	0.020
CF-249	5.720E-03		1.390E-02	2.436E-02	1.383E-03	0.235
CF-251	2.280E-02		5.108E-02	8.589E-02	5.501E-03	0.265
ANH-511	-1.845E-02		2.823E-02	5.229E-02	2.924E-03	-0.353

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]G1202053644 *
* Acquisition date   : 6-MAR-2010 17:02:37 Detector SN#      : *
* Detector ID        : GAM04          Sensitivity            : 5.000 *
* Geometry           : CAN             Energy tolerance:     1.500 *
* Elapsed live time  : 0 02:00:00.00   Abundance limit :     75.000 *
* Elapsed real time  : 0 02:00:00.42   Half life ratio :     8.000 *
*****
*                                     *
*               SAMPLE DATA          *
*                                     *
* Sample date        : 26-FEB-2010 00:00:00 Nuclide Library : SOLID *
* Sample ID          : G1202053644    Analyst initials: MXR1 *
* Batch Number       : 957711          Sample Quantity : 1.5753E+02 GRAM *
* Recovery           : 1.00000         Carrier Weight : 0.00000 *
*****
*                                     *
*               QC DATA              *
*                                     *
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41 MS Isotope       : *
* MSD DPM            : 0.000           MSD Isotope          : *
* LCS DPM            : 0.000           LCS Isotope          : *
* LCSD DPM           : 0.000           LCSD Isotope         : *
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Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act Error	DLC (pCi/GRAM)	TPU	
---- Non-Identified Nuclides ----					
Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-2.305E-02	1.151E-01	9.667E-02	5.873E-02	NOT IDENT.
NA-22	1.106E-03	1.508E-02	1.327E-02	7.693E-03	NOT IDENT.
NA-24	-7.551E+01	2.413E+02	0.000E+00	1.231E+02	SHORT HLIF
K-40	-3.984E-02	2.210E-01	1.761E-01	1.128E-01	NOT IDENT.
SC-46	-1.418E-03	1.290E-02	1.083E-02	6.583E-03	NOT IDENT.
V-48	-2.326E-03	2.077E-02	1.725E-02	1.060E-02	NOT IDENT.
CR-51	9.777E-03	1.240E-01	1.125E-01	6.327E-02	NOT IDENT.
MN-54	5.722E-03	1.436E-02	1.328E-02	7.327E-03	NOT IDENT.
CO-56	-9.775E-03	1.229E-02	8.520E-03	6.270E-03	NOT IDENT.
CO-57	-3.363E-03	8.711E-03	7.589E-03	4.444E-03	NOT IDENT.
CO-58	-7.959E-03	1.625E-02	1.295E-02	8.291E-03	NOT IDENT.
FE-59	-2.353E-03	2.994E-02	2.470E-02	1.528E-02	NOT IDENT.
CO-60	2.701E-03	1.190E-02	1.095E-02	6.070E-03	NOT IDENT.
ZN-65	2.222E-02	3.072E-02	2.985E-02	1.567E-02	NOT IDENT.
SE-75	1.353E-02	1.681E-02	1.650E-02	8.578E-03	NOT IDENT.
SR-85	-4.606E-02	2.740E-02	2.031E-02	1.398E-02	NOT IDENT.
Y-88	-1.462E-03	1.299E-02	1.025E-02	6.627E-03	NOT IDENT.
Y-91	-4.161E+00	7.434E+00	5.338E+00	3.793E+00	NOT IDENT.
NB-94	-3.560E-03	1.525E-02	1.303E-02	7.783E-03	NOT IDENT.
NB-95	7.279E-03	1.191E-02	1.165E-02	6.077E-03	NOT IDENT.
NB-95M	-2.372E-02	4.993E-02	4.086E-02	2.548E-02	NOT IDENT.
ZR-95	2.346E-02	2.711E-02	2.685E-02	1.383E-02	NOT IDENT.
MO-99	5.513E-01	8.983E-01	8.677E-01	4.583E-01	NOT IDENT.
TC-99M	6.395E+07	2.658E+08	0.000E+00	1.356E+08	SHORT HLIF
RU-103	1.056E-04	1.405E-02	1.215E-02	7.170E-03	NOT IDENT.
RH-106	-1.156E-01	1.427E-01	1.034E-01	7.281E-02	NOT IDENT.

RU-106	-1.156E-01	1.422E-01	1.034E-01	7.257E-02	NOT IDENT.
AG-108M	-1.412E-02	1.338E-02	1.005E-02	6.824E-03	NOT IDENT.
CD-109	5.568E-02	2.578E-01	2.436E-01	1.315E-01	NOT IDENT.
AG-110M	-8.611E-03	1.495E-02	1.218E-02	7.628E-03	NOT IDENT.
SN-113	-7.803E-03	1.530E-02	1.250E-02	7.807E-03	NOT IDENT.
CD-115	-3.164E-01	6.293E-01	4.944E-01	3.211E-01	NOT IDENT.
SN-117M	-5.053E-03	1.459E-02	1.251E-02	7.444E-03	NOT IDENT.
TE-123M	1.155E-03	9.775E-03	8.782E-03	4.987E-03	NOT IDENT.
SB-124	-4.240E-03	3.066E-02	2.436E-02	1.564E-02	NOT IDENT.
SB-125	-5.499E-02	4.134E-02	2.977E-02	2.109E-02	NOT IDENT.
TE-125M	-1.711E+00	3.346E+00	2.713E+00	1.707E+00	NOT IDENT.
I-126	-4.999E-02	6.183E-02	4.770E-02	3.154E-02	NOT IDENT.
SB-126	-2.575E-02	3.710E-02	2.849E-02	1.893E-02	NOT IDENT.
SN-126	1.820E-02	2.581E-02	2.533E-02	1.317E-02	NOT IDENT.
SB-127	-2.575E-02	1.567E-01	1.347E-01	7.996E-02	NOT IDENT.
I-131	2.213E-03	2.871E-02	2.575E-02	1.465E-02	NOT IDENT.
TE-132	9.132E-03	7.110E-02	6.212E-02	3.628E-02	NOT IDENT.
BA-133	-5.521E-03	1.703E-02	1.458E-02	8.686E-03	NOT IDENT.
I-133	5.179E+00	1.359E+01	0.000E+00	6.935E+00	SHORT HLIF
CS-134	-9.993E-04	1.716E-02	1.479E-02	8.757E-03	NOT IDENT.
CS-135	-1.974E-02	5.700E-02	5.019E-02	2.908E-02	NOT IDENT.
I-135	-1.640E+08	2.017E+08	0.000E+00	1.029E+08	SHORT HLIF
CS-136	1.075E-03	3.398E-02	2.890E-02	1.734E-02	NOT IDENT.
BA-137M	-5.946E-03	1.771E-02	1.581E-02	9.036E-03	NOT IDENT.
CS-137	-6.281E-03	1.871E-02	1.671E-02	9.545E-03	NOT IDENT.
CE-139	-1.173E-02	1.155E-02	9.206E-03	5.893E-03	NOT IDENT.
BA-140	1.268E-02	8.004E-02	7.014E-02	4.083E-02	NOT IDENT.
LA-140	1.986E-02	2.824E-02	2.801E-02	1.441E-02	NOT IDENT.
CE-141	1.032E-02	1.956E-02	1.834E-02	9.981E-03	NOT IDENT.
CE-143	1.029E-01	1.917E+00	1.747E+00	9.779E-01	NOT IDENT.
CE-144	2.653E-04	7.305E-02	6.578E-02	3.727E-02	NOT IDENT.
PM-144	-8.495E-03	1.802E-02	1.251E-02	9.196E-03	NOT IDENT.
PR-144	-7.954E-01	1.362E+00	9.324E-01	6.950E-01	NOT IDENT.
PM-146	5.713E-03	1.837E-02	1.664E-02	9.371E-03	NOT IDENT.
ND-147	-9.753E-03	1.497E-01	1.271E-01	7.638E-02	NOT IDENT.
PM-149	-4.565E-01	4.925E+00	4.433E+00	2.513E+00	NOT IDENT.
EU-152	1.421E-02	3.675E-02	3.434E-02	1.875E-02	NOT IDENT.
GD-153	-1.587E-03	2.869E-02	2.628E-02	1.464E-02	NOT IDENT.
EU-154	8.411E-03	4.160E-02	3.773E-02	2.123E-02	NOT IDENT.
EU-155	1.230E-02	3.380E-02	3.207E-02	1.724E-02	NOT IDENT.
TB-160	-1.981E-02	4.882E-02	3.834E-02	2.491E-02	NOT IDENT.
HO-166M	-1.671E-02	2.131E-02	1.592E-02	1.087E-02	NOT IDENT.
TA-182	-2.403E-04	5.788E-02	5.028E-02	2.953E-02	NOT IDENT.
IR-192	-8.486E-03	1.323E-02	1.105E-02	6.748E-03	NOT IDENT.
HG-203	-8.224E-03	1.355E-02	1.156E-02	6.912E-03	NOT IDENT.
BI-207	-4.966E-05	2.482E-02	1.990E-02	1.266E-02	NOT IDENT.
TL-208	-8.561E-03	1.772E-02	1.392E-02	9.039E-03	NOT IDENT.
PB-210	-6.246E-01	3.143E+00	2.974E+00	1.603E+00	NOT IDENT.
BI-211	4.015E-02	9.606E-02	8.386E-02	4.901E-02	NOT IDENT.
PB-211	2.286E-03	3.096E-01	2.729E-01	1.579E-01	NOT IDENT.
BI-212	3.325E-02	1.912E-01	1.727E-01	9.753E-02	NOT IDENT.
PB-212	2.309E-04	2.834E-02	2.419E-02	1.446E-02	NOT IDENT.
BI-214	-3.249E-02	3.802E-02	2.800E-02	1.940E-02	NOT IDENT.
PB-214	1.656E-02	3.515E-02	3.085E-02	1.793E-02	NOT IDENT.
RN-219	-5.589E-02	1.813E-01	1.475E-01	9.251E-02	NOT IDENT.
RA-223	3.380E-02	2.584E-01	2.354E-01	1.318E-01	NOT IDENT.
RA-224	-2.050E-01	2.845E-01	2.263E-01	1.451E-01	NOT IDENT.
RA-226	-3.249E-02	3.802E-02	2.800E-02	1.940E-02	NOT IDENT.
AC-227	-5.143E-02	9.306E-02	8.034E-02	4.748E-02	NOT IDENT.
TH-227	-5.143E-02	9.311E-02	8.034E-02	4.751E-02	NOT IDENT.
AC-228	4.335E-03	6.129E-02	5.152E-02	3.127E-02	NOT IDENT.
RA-228	4.335E-03	6.129E-02	5.152E-02	3.127E-02	NOT IDENT.
TH-228	2.309E-04	2.834E-02	2.419E-02	1.446E-02	NOT IDENT.
TH-229	5.122E-02	1.971E-01	1.768E-01	1.006E-01	NOT IDENT.
PA-231	3.256E-01	6.043E-01	5.753E-01	3.083E-01	NOT IDENT.
TH-231	3.380E-02	2.584E-01	2.354E-01	1.318E-01	NOT IDENT.
TH-232	4.335E-03	6.129E-02	5.152E-02	3.127E-02	NOT IDENT.
PA-233	-4.651E-03	2.745E-02	2.432E-02	1.400E-02	NOT IDENT.
PA-234	-2.936E-02	1.388E-01	1.141E-01	7.084E-02	NOT IDENT.
PA-234M	-7.747E-01	1.849E+00	1.431E+00	9.433E-01	NOT IDENT.
TH-234	-5.682E-01	6.663E-01	5.392E-01	3.400E-01	NOT IDENT.
U-235	4.257E-02	7.059E-02	6.646E-02	3.602E-02	NOT IDENT.
NP-237	7.918E-02	7.931E-02	7.795E-02	4.047E-02	NOT IDENT.
U-238	-5.682E-01	6.663E-01	5.392E-01	3.400E-01	NOT IDENT.
NP-239	-4.141E-02	1.478E-01	1.309E-01	7.543E-02	NOT IDENT.
AM-241	1.132E-03	6.951E-02	6.619E-02	3.547E-02	NOT IDENT.
CM-247	5.316E-04	1.660E-02	1.412E-02	8.468E-03	NOT IDENT.
CF-249	5.720E-03	1.362E-02	1.277E-02	6.950E-03	NOT IDENT.

CF-251	2.280E-02	5.006E-02	4.596E-02	2.554E-02 NOT IDENT.
ANH-511	-1.845E-02	2.767E-02	2.720E-02	1.412E-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	46.9464
49.72	38.7706
57.36	40.4705
59.54	37.1603
63.29	49.1215
63.29	49.1215
64.28	51.0309
67.75	54.1638
69.67	46.2457
70.83	36.3674
72.81	51.1428
72.87	51.1496
72.87	51.1496
74.82	56.8753
74.82	56.8753
74.82	56.8753
74.97	60.5645
77.11	46.0963
77.11	46.0963
77.11	46.0963
79.69	53.7667
79.80	53.7791
80.12	54.7431
80.19	51.0391
80.57	52.0087
81.00	49.2667
81.07	49.2737
81.07	49.2737
83.79	52.3556
83.79	52.3556
85.43	48.7775
86.48	42.3003
86.55	42.3063
86.79	47.9697
86.94	48.9251
87.57	47.1024
88.03	51.8596
88.47	51.9046
89.96	99.3796
91.11	76.8348
92.59	47.5637
92.59	47.5637
93.35	45.7271
94.67	95.5022
94.87	91.7168
94.87	91.7168
95.86	71.7861
97.43	51.8365
98.44	50.0092
99.53	52.9995
100.11	45.3381
103.18	42.6778
103.37	46.5732
105.31	40.8909
106.12	47.7733
109.28	47.0532
111.00	52.1064
111.76	62.0166
116.30	56.5332
117.23	60.5920
121.12	48.9768
121.78	55.0313
122.06	55.0557
123.07	71.1849
131.20	57.8657
133.52	60.1037
136.00	58.2785

136.47	52.1797
140.51	49.3979
140.51	0.0000
143.76	48.5921
144.24	36.2102
144.24	36.2102
145.44	50.7795
152.43	50.2227
153.25	48.1834
154.21	52.4404
154.21	52.4404
156.02	54.6702
158.56	59.0733
159.00	50.6636
162.66	55.1474
163.33	64.7480
165.86	74.5416
176.60	52.8810
177.52	51.8594
181.07	61.8468
184.41	56.6460
185.72	60.0063
193.51	48.4392
197.04	55.2648
205.31	69.1590
210.85	66.2081
215.65	55.2671
222.11	51.0983
227.38	53.6577
228.16	45.7023
228.18	45.7031
235.69	69.0710
235.96	66.7864
235.96	66.7864
238.63	53.1075
238.63	53.1075
240.99	74.0586
242.00	66.0234
244.70	48.7757
252.40	42.9916
252.80	41.2523
256.23	44.9067
256.23	44.9067
260.90	52.1751
264.66	35.4944
268.22	42.7302
269.46	45.4514
269.46	45.4514
271.23	35.7043
273.65	42.0430
276.40	39.4547
277.37	33.2061
277.60	38.5987
278.00	37.7139
279.20	47.6414
279.54	46.7560
280.46	52.1935
283.69	40.6082
284.31	39.7266
285.41	42.4754
285.90	42.4933
287.50	43.4568
293.27	40.9399
295.22	39.1846
295.96	37.3852
298.57	48.4316
299.98	42.0841
299.98	42.0841
300.09	40.2584
300.09	40.2584
300.13	40.2597
301.36	35.7204
302.85	43.1008
304.50	46.8320
304.50	46.8320
304.85	45.9267
308.46	42.3768
311.90	43.4185

316.51	42.6512
319.41	35.3142
320.08	34.4030
323.87	36.3703
323.87	36.3703
328.76	51.4861
333.37	52.6085
334.37	60.1699
334.37	60.1699
338.28	33.9456
338.28	33.9456
338.32	33.9467
338.32	33.9467
338.32	33.9467
340.48	40.6137
340.55	40.6156
344.28	27.4685
351.06	27.6066
351.93	27.6238
356.01	36.3046
364.49	34.6042
366.42	39.4648
383.85	21.4354
388.16	18.5669
388.63	19.5502
391.69	26.4475
400.66	28.5774
401.81	28.5995
402.40	25.6509
404.85	33.5974
410.95	24.8028
414.70	31.8252
423.72	20.0058
427.09	49.1196
427.87	44.1289
433.94	40.2704
453.88	26.4975
463.37	19.4737
468.07	29.8058
473.00	21.6460
476.78	28.9246
477.60	22.7375
487.02	18.7042
492.35	23.9725
497.08	20.9012
511.00	41.0739
514.00	116.0400
527.90	23.3831
529.87	0.0000
531.02	20.2281
537.26	21.3635
546.56	0.0000
563.25	20.5708
569.33	27.1507
569.50	27.1530
569.70	24.9829
583.19	27.3392
600.60	24.2646
602.73	26.4976
604.72	26.5232
609.32	28.7969
609.32	28.7969
610.33	26.5950
614.28	34.4162
618.01	20.0193
621.93	27.8557
621.93	27.8557
633.25	11.2015
635.95	8.9724
636.99	6.7324
645.85	15.3224
657.76	26.2798
661.66	14.5246
661.66	14.5246
664.57	25.4516
666.33	23.6520
666.50	23.6539
677.62	25.5992

685.70	16.5151
695.00	22.1086
696.49	19.3576
696.51	21.2014
697.00	20.2839
702.65	25.8781
706.68	13.8871
711.68	17.6279
720.70	18.6260
721.93	13.0450
722.78	14.9141
722.91	15.8470
723.31	15.8495
724.19	15.8553
727.33	14.9422
733.00	14.0413
735.93	20.6186
739.50	10.3246
747.24	16.9479
752.31	17.9266
753.82	25.4898
756.73	11.3423
763.94	17.0626
765.81	7.5891
766.42	10.4374
777.92	12.3916
778.90	9.5356
783.70	18.1516
785.37	16.2517
795.86	14.3983
801.95	23.0912
810.29	19.3042
810.76	20.2730
815.77	18.3775
818.51	11.6188
832.01	18.4897
834.85	12.6642
836.80	0.0000
846.77	12.7204
856.80	9.8208
860.56	16.7182
871.09	10.8587
873.19	12.8429
875.33	0.0000
879.36	12.8711
880.51	7.9240
883.24	8.9231
884.68	6.9438
889.28	9.9358
898.04	12.9565
911.20	9.0110
911.20	9.0110
911.20	9.0110
926.50	10.0652
937.49	13.1336
944.13	14.1757
946.00	17.2241
949.00	13.1847
962.29	8.1496
964.08	8.1545
966.15	14.2799
968.97	12.2514
968.97	12.2514
968.97	12.2514
983.53	11.2841
996.26	12.3609
1001.03	14.4430
1004.73	13.4272
1037.84	12.5244
1038.76	0.0000
1048.07	13.6113
1050.41	11.5258
1050.41	11.5258
1063.66	10.5205
1085.87	11.6504
1099.45	9.5708
1112.07	12.8092
1115.54	6.4110

1120.29	11.7697
1120.29	11.7697
1120.55	10.7007
1121.30	11.7734
1131.51	0.0000
1173.23	11.9501
1177.93	13.0535
1189.05	8.7293
1204.77	13.1514
1221.41	8.2570
1231.02	7.3587
1235.36	8.2881
1238.28	10.1379
1260.41	0.0000
1271.85	2.7897
1274.44	6.5138
1274.54	7.4443
1291.59	4.6735
1298.22	0.0000
1312.11	5.6379
1332.49	3.7782
1365.19	4.7616
1368.63	0.0000
1384.29	8.6115
1408.01	5.7742
1457.56	0.0000
1460.82	8.7708
1489.16	7.8477
1505.03	5.9072
1596.21	4.0189
1620.50	10.1001
1678.03	0.0000
1690.97	4.1004
1764.49	9.3651
1764.49	9.3651
1770.23	4.1670
1771.35	7.2937
1791.20	0.0000
1836.06	3.1658

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202053644

Total Uranium Activity	-1.6708E+00	ug/g
Total Uranium Counting Unc.	1.9826E+00	ug/g
Total Uranium Tpu	1.0115E-06	ug/g
Total Uranium Mda	1.6044E+00	ug/g

THERE ARE NO PEAKS !

VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 19:04:31.59

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKAl00:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053645.CNF;1
Sample date        : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:03:16.
Sample ID          : G1202053645 Sample quantity : 1.29360E+02 GRAM
Detector name      : GAM06 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.22 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 957711 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	74.81	335	390	1.10	149.20	143	22	4.66E-02	11.2	2.13E+00
2	1	77.15*	622	299	1.02	153.86	143	22	8.64E-02	6.1	
3	0	86.91	174	412	1.41	173.39	171	7	2.42E-02	20.6	
4	4	89.84	127	204	1.03	179.23	177	13	1.77E-02	17.9	9.20E-01
5	4	92.76*	297	382	1.29	185.07	177	13	4.13E-02	13.3	
6	0	128.80	84	351	1.08	257.12	254	9	1.17E-02	41.7	
7	0	185.99*	119	386	1.28	371.44	366	11	1.66E-02	34.3	
8	0	209.41	70	285	1.04	418.25	414	9	9.73E-03	45.0	
9	0	238.61*	923	352	1.19	476.62	472	9	1.28E-01	5.0	
10	0	241.78	168	236	1.37	482.96	481	7	2.33E-02	17.5	
11	0	270.85	102	233	2.05	541.09	536	11	1.41E-02	30.9	
12	0	295.29*	326	143	1.31	589.96	586	9	4.53E-02	8.8	
13	0	299.84	75	172	1.13	599.05	595	10	1.04E-02	34.5	
14	0	328.16	44	185	1.74	655.67	650	11	6.13E-03	61.5	
15	0	338.47*	177	140	1.10	676.27	671	9	2.45E-02	14.5	
16	0	352.02*	560	161	1.22	703.37	698	11	7.77E-02	6.2	
17	0	463.86	81	119	1.47	926.98	920	14	1.12E-02	30.8	
18	0	510.84*	90	132	1.72	1020.92	1015	14	1.25E-02	32.7	
19	0	583.38*	312	89	1.67	1165.98	1161	14	4.33E-02	8.6	
20	0	609.55*	420	108	1.43	1218.30	1211	15	5.83E-02	7.4	
21	0	727.49	104	49	1.48	1454.17	1448	12	1.45E-02	16.8	
22	0	769.07	40	82	1.45	1537.32	1531	13	5.52E-03	49.5	
23	0	796.57	60	44	0.64	1592.31	1586	16	8.28E-03	28.9	
24	0	861.02*	42	60	0.98	1721.22	1714	16	5.86E-03	45.2	
25	0	911.24	241	27	1.81	1821.67	1816	12	3.35E-02	7.7	
26	2	964.85	42	44	1.94	1928.90	1925	24	5.87E-03	28.5	1.74E+00
27	2	969.27*	130	43	1.75	1937.74	1925	24	1.80E-02	13.7	
28	0	1120.83*	91	54	1.92	2240.92	2235	16	1.26E-02	20.4	
29	0	1378.72	39	19	3.43	2756.87	2747	15	5.39E-03	29.2	
30	0	1460.76*	927	13	1.95	2921.03	2911	18	1.29E-01	3.4	
31	0	1588.53	27	20	1.03	3176.70	3169	14	3.70E-03	41.2	
32	0	1630.52	16	2	1.35	3260.72	3256	10	2.20E-03	31.1	
33	0	1764.79*	77	4	2.69	3529.46	3522	14	1.07E-02	12.9	

Flag: "*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053645.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 17:03:16
Sample ID        : G1202053645 Sample quantity : 129.36 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA6 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.22 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	*	2.701E+01	3.151E+00	5.590E-01	5.270E-02	48.323
CD-109	+	88.03	*	2.719E+00	1.161E+00	1.202E+00	1.338E-01	2.262
SN-126		64.28		1.562E-01	5.972E-01	9.930E-01	1.537E-01	0.157
	+	86.94		1.103E+00	6.490E-01	6.145E-01	2.576E-01	1.795
	+	87.57	*	2.654E-01	1.133E-01	1.179E-01	1.306E-02	2.250
TL-208		277.37		6.455E-01	4.479E-01	7.621E-01	9.917E-02	0.847
	+	583.19	*	5.004E-01	9.746E-02	6.355E-02	5.802E-03	7.875
	+	860.56		6.481E-01	5.888E-01	4.792E-01	4.659E-02	1.353
BI-211		72.87		4.961E+00	3.851E+00	5.965E+00	5.733E-01	0.832
	+	351.06	*	3.998E+00	6.235E-01	4.117E-01	3.864E-02	9.710
PB-212	+	74.82		2.294E+00	6.048E-01	6.015E-01	8.287E-02	3.813
	+	77.11		2.419E+00	3.803E-01	3.431E-01	3.412E-02	7.049
	+	238.63	*	1.465E+00	2.103E-01	1.243E-01	1.276E-02	11.787
	+	300.09		1.863E+00	1.303E+00	1.254E+00	1.391E-01	1.485
BI-214	+	609.32	*	1.307E+00	2.335E-01	1.198E-01	1.188E-02	10.911
	+	1120.29		1.499E+00	6.334E-01	5.513E-01	5.954E-02	2.719
	+	1764.49		1.779E+00	4.834E-01	2.792E-01	2.406E-02	6.374
PB-214	+	74.82		4.065E+00	1.047E+00	1.066E+00	1.340E-01	3.813
	+	77.11		4.264E+00	7.570E-01	6.048E-01	7.814E-02	7.049
	+	242.00		1.617E+00	5.922E-01	7.042E-01	7.657E-02	2.297
	+	295.22		1.435E+00	2.998E-01	2.562E-01	2.909E-02	5.601
	+	351.93	*	1.451E+00	2.400E-01	1.447E-01	1.575E-02	10.024
RA-224	+	240.99	*	2.860E+00	1.034E+00	1.506E+00	1.385E-01	1.899
RA-226	+	609.32	*	1.307E+00	2.335E-01	1.198E-01	1.188E-02	10.911
	+	1120.29		1.499E+00	6.334E-01	5.513E-01	5.954E-02	2.719
	+	1764.49		1.779E+00	4.834E-01	2.792E-01	2.406E-02	6.374
AC-228	+	338.32		1.405E+00	7.150E-01	4.445E-01	1.859E-01	3.161
	+	911.20	*	1.893E+00	3.719E-01	2.586E-01	3.123E-02	7.321
	+	968.97		1.765E+00	6.498E-01	4.827E-01	1.185E-01	3.657
RA-228	+	338.32		1.405E+00	7.150E-01	4.445E-01	1.859E-01	3.161
	+	911.20	*	1.893E+00	3.719E-01	2.586E-01	3.123E-02	7.321
	+	968.97		1.765E+00	6.498E-01	4.827E-01	1.185E-01	3.657
TH-228	+	74.82		2.294E+00	5.628E-01	6.015E-01	5.910E-02	3.813
	+	77.11		2.419E+00	3.803E-01	3.431E-01	3.412E-02	7.049

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229	+	238.63	*	1.465E+00	2.103E-01	1.243E-01	1.276E-02	11.787
	+	300.09		1.863E+00	1.721E+00	1.254E+00	7.689E-01	1.485
	+	85.43		6.680E-01	2.853E-01	3.349E-01	3.620E-02	1.995
	+	88.47		2.885E-01	1.079E-01	1.801E-01	1.990E-02	1.602
TH-232	+	193.51	*	-8.948E-02	5.914E-01	9.916E-01	8.703E-02	-0.090
	+	210.85		1.578E+00	1.426E+00	1.523E+00	1.365E-01	1.036
	+	338.32		1.405E+00	4.270E-01	4.445E-01	4.035E-02	3.161
	+	911.20	*	1.893E+00	3.719E-01	2.586E-01	3.123E-02	7.321
U-235	+	968.97		1.765E+00	6.498E-01	4.827E-01	1.185E-01	3.657
	+	89.96		1.995E+00	8.764E-01	1.629E+00	4.147E-01	1.225
	+	93.35		2.812E+00	1.005E+00	7.295E-01	1.735E-01	3.855
	+	143.76	*	-1.848E-02	2.338E-01	3.637E-01	6.113E-02	-0.051
NP-237	+	163.33		-3.250E-02	4.730E-01	7.466E-01	1.334E-01	-0.044
	+	185.72		1.215E-01	8.401E-02	7.494E-02	6.510E-03	1.621
	+	205.31		2.492E-01	5.970E-01	9.052E-01	1.655E-01	0.275
	+	86.48	*	7.919E-01	3.768E-01	4.340E-01	1.026E-01	1.825
ANH-511	+	95.86		-3.862E-01	1.007E+00	1.423E+00	3.491E-01	-0.271
	+	511.00	*	1.101E-01	7.272E-02	5.271E-02	4.574E-03	2.089

---- 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	*	-3.657E-02	3.718E-01	6.230E-01	5.818E-02	-0.059
NA-22		1274.54	*	3.385E-02	4.947E-02	8.704E-02	7.647E-03	0.389
NA-24		1368.63	*	1.325E+00	4.947E-02	Half-Life too short		
SC-46		889.28	*	-5.986E-03	4.504E-02	7.150E-02	6.607E-03	-0.084
V-48	+	1120.55		2.558E-01	1.068E-01	1.503E-01	1.273E-02	1.702
		944.13		-4.056E-01	1.040E+00	1.678E+00	1.544E-01	-0.242
		983.53	*	2.456E-03	8.304E-02	1.393E-01	1.268E-02	0.018
		1312.11		2.131E-02	9.362E-02	1.573E-01	1.419E-02	0.135
CR-51		320.08	*	-1.272E-01	4.447E-01	6.794E-01	6.540E-02	-0.187
MN-54		834.85	*	1.913E-02	4.459E-02	7.496E-02	6.755E-03	0.255
CO-56		846.77	*	5.488E-02	4.407E-02	7.974E-02	7.228E-03	0.688
		1037.84		3.228E-01	3.860E-01	6.888E-01	6.433E-02	0.469
		1238.28		4.521E-02	1.185E-01	2.002E-01	1.760E-02	0.226
		1771.35		-1.204E+00	4.283E-01	3.659E-01	3.145E-02	-3.292
CO-57		122.06	*	9.701E-03	2.714E-02	4.438E-02	3.737E-03	0.219
		136.47		-5.437E-02	2.340E-01	3.702E-01	3.325E-02	-0.147
CO-58		810.76	*	-4.523E-03	4.177E-02	6.700E-02	5.976E-03	-0.068
FE-59		1099.45	*	-7.669E-02	9.476E-02	1.416E-01	1.316E-02	-0.542
		1291.59		3.548E-02	1.537E-01	2.578E-01	2.583E-02	0.138
CO-60		1173.23		-1.367E-02	5.149E-02	8.091E-02	6.561E-03	-0.169
		1332.49	*	2.102E-02	4.553E-02	7.861E-02	7.190E-03	0.267
ZN-65		1115.54	*	-2.889E-02	1.165E-01	1.598E-01	1.360E-02	-0.181
SE-75		121.12		5.278E-02	1.407E-01	2.303E-01	2.523E-02	0.229
		136.00		4.985E-03	4.602E-02	7.398E-02	6.205E-03	0.067
		264.66	*	-2.594E-02	5.192E-02	7.691E-02	7.178E-03	-0.337
		279.54		-9.040E-02	1.241E-01	1.964E-01	1.889E-02	-0.460

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	400.66			-2.871E-01	3.033E-01	4.539E-01	4.988E-02	-0.633
SR-85	514.00	*		1.199E-01	4.670E-02	8.259E-02	7.166E-03	1.452
Y-88	898.04			9.025E-03	4.551E-02	7.487E-02	6.974E-03	0.121
	1836.06	*		-2.335E-02	3.742E-02	5.283E-02	4.416E-03	-0.442
Y-91	1204.77	*		1.021E+01	2.572E+01	4.388E+01	3.650E+00	0.233
NB-94	702.65	*		2.120E-02	3.989E-02	6.815E-02	5.680E-03	0.311
	871.09			-2.328E-02	3.710E-02	5.537E-02	5.076E-03	-0.420
NB-95	765.81	*		3.292E-02	5.396E-02	8.181E-02	7.099E-03	0.402
NB-95M	235.69	*		8.091E-02	1.603E-01	2.425E-01	2.513E-02	0.334
ZR-95	724.19			-3.261E-02	1.328E-01	1.828E-01	1.680E-02	-0.178
	756.73	*		3.645E-02	8.576E-02	1.451E-01	1.383E-02	0.251
MO-99	140.51			2.462E+00	3.156E+01	5.058E+01	1.196E+01	0.049
	181.07			-7.362E+00	2.764E+01	4.063E+01	7.637E+00	-0.181
	366.42			5.023E+01	1.475E+02	2.451E+02	2.156E+01	0.205
	739.50	*		-1.066E+01	1.828E+01	2.808E+01	4.412E+00	-0.380
	777.92			-1.514E+00	5.289E+01	8.588E+01	7.506E+00	-0.018
TC-99M	140.51	*		6.603E+10	5.289E+01	Half-Life too short		
RU-103	497.08	*		3.462E-02	4.385E-02	7.746E-02	1.085E-02	0.447
	610.33	+		1.375E+01	3.026E+00	3.416E+00	5.545E-01	4.025
RH-106	621.93	*		4.536E-01	3.720E-01	6.649E-01	8.694E-02	0.682
	1050.41			3.004E-02	2.575E+00	4.291E+00	3.796E-01	0.007
RU-106	621.93	*		4.536E-01	3.692E-01	6.649E-01	5.545E-02	0.682
	1050.41			3.004E-02	2.575E+00	4.291E+00	3.796E-01	0.007
AG-108M	433.94	*		-6.631E-03	3.370E-02	5.328E-02	4.734E-03	-0.124
	614.28			-2.957E-03	4.445E-02	6.345E-02	5.501E-03	-0.047
	722.91			-1.691E-02	5.171E-02	7.034E-02	6.141E-03	-0.240
AG-110M	657.76	*		-5.479E-02	4.126E-02	5.989E-02	5.026E-03	-0.915
	677.62			7.348E-02	3.308E-01	5.554E-01	4.692E-02	0.132
	706.68			-1.668E-01	2.559E-01	3.962E-01	3.412E-02	-0.421
	763.94			1.030E-01	1.945E-01	2.936E-01	2.614E-02	0.351
	884.68			-5.260E-05	5.767E-02	9.294E-02	8.813E-03	-0.001
	937.49			-9.550E-02	1.336E-01	2.100E-01	1.996E-02	-0.455
	1384.29			1.129E-01	2.078E-01	3.210E-01	3.019E-02	0.352
	1505.03			-2.638E-01	3.204E-01	4.402E-01	4.039E-02	-0.599
SN-113	391.69	*		-3.814E-03	5.216E-02	8.393E-02	7.321E-03	-0.045
CD-115	260.90			2.865E+01	2.045E+02	3.421E+02	3.176E+01	0.084
	492.35			-3.872E+01	6.039E+01	9.680E+01	8.407E+00	-0.400
	527.90	*		1.003E+01	1.773E+01	3.090E+01	2.676E+00	0.325
SN-117M	156.02			1.640E+00	2.725E+00	4.446E+00	3.729E-01	0.369
	158.56	*		-3.333E-02	6.332E-02	9.763E-02	8.205E-03	-0.341
TE-123M	159.00	*		-2.385E-02	3.126E-02	4.751E-02	4.020E-03	-0.502
SB-124	602.73			-2.571E-02	4.769E-02	6.419E-02	5.415E-03	-0.401
	645.85			4.645E-02	5.558E-01	9.244E-01	8.059E-02	0.050
	722.78			-1.481E-01	5.276E-01	7.221E-01	6.246E-02	-0.205
	1690.97	*		5.302E-02	7.277E-02	1.394E-01	1.283E-02	0.380
SB-125	427.87	*		8.019E-02	9.938E-02	1.693E-01	1.482E-02	0.474
	463.37	+		8.772E-01	5.471E-01	6.291E-01	5.857E-02	1.394
	600.60			4.603E-02	1.869E-01	3.163E-01	2.877E-02	0.146
	635.95			3.100E-01	2.964E-01	5.306E-01	4.769E-02	0.584

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M	109.28	*		-3.079E+00	1.124E+01	1.779E+01	1.916E+00	-0.173
I-126	388.63			3.832E-02	2.091E-01	3.424E-01	2.910E-02	0.112
	666.33	*		-3.760E-01	2.730E-01	3.937E-01	3.197E-02	-0.955
	753.82			4.639E-01	2.270E+00	3.771E+00	3.249E-01	0.123
SB-126	414.70			4.108E-02	8.991E-02	1.467E-01	1.254E-02	0.280
	666.50			-1.230E-01	9.445E-02	1.375E-01	1.116E-02	-0.895
	695.00			-2.745E-02	9.298E-02	1.488E-01	1.233E-02	-0.184
	697.00			7.262E-02	3.275E-01	5.475E-01	4.545E-02	0.133
	720.70	*		1.234E-01	2.034E-01	3.091E-01	2.607E-02	0.399
	856.80			-2.141E-02	5.370E-01	7.429E-01	6.766E-02	-0.029
SB-127	252.40			1.012E+00	5.871E+00	9.824E+00	4.102E+00	0.103
	473.00			4.853E-01	2.312E+00	3.697E+00	4.841E-01	0.131
	685.70	*		-4.892E-01	1.850E+00	2.970E+00	3.390E-01	-0.165
	783.70			4.375E+00	5.006E+00	8.721E+00	1.112E+00	0.502
I-131	80.19			-3.619E+00	5.104E+00	8.120E+00	8.353E-01	-0.446
	284.31			1.109E+00	1.833E+00	3.122E+00	3.037E-01	0.355
	364.49	*		-1.196E-02	1.417E-01	2.289E-01	2.124E-02	-0.052
	636.99			5.822E-01	1.881E+00	3.191E+00	2.800E-01	0.182
TE-132	49.72			1.352E+01	3.159E+01	5.364E+01	6.432E+00	0.252
	111.76			9.498E-01	4.690E+01	7.585E+01	8.709E+00	0.013
	116.30			2.565E+01	3.856E+01	6.393E+01	7.239E+00	0.401
	228.16	*		-3.393E-02	1.021E+00	1.704E+00	2.779E-01	-0.020
BA-133	81.00			-1.551E-01	1.118E-01	1.477E-01	2.440E-02	-1.050
	276.40			5.007E-01	4.621E-01	7.147E-01	1.040E-01	0.701
	302.85			-6.371E-02	1.809E-01	2.533E-01	3.422E-02	-0.252
	356.01	*		6.421E-02	4.884E-02	7.746E-02	1.019E-02	0.829
	383.85			1.455E-02	3.261E-01	5.299E-01	6.564E-02	0.027
I-133	529.87	*		-4.290E-03	3.261E-01	Half-Life	too short	
	875.33			1.455E-01	3.261E-01	Half-Life	too short	
	1298.22			-2.202E-01	3.261E-01	Half-Life	too short	
CS-134	563.25			-1.856E-01	4.004E-01	6.433E-01	5.575E-02	-0.289
	569.33			1.634E-01	2.293E-01	4.009E-01	3.481E-02	0.408
	604.72			-1.857E-02	3.969E-02	5.387E-02	4.550E-03	-0.345
	795.86	*		1.406E-01	8.216E-02	9.589E-02	8.524E-03	1.467
	801.95			4.861E-01	4.789E-01	7.668E-01	6.829E-02	0.634
	1365.19			-5.349E-01	1.333E+00	2.030E+00	1.939E-01	-0.264
CS-135	268.22	*		2.796E-01	2.014E-01	3.185E-01	3.364E-02	0.878
I-135	546.56			1.138E+11	2.014E-01	Half-Life	too short	
	836.80			6.678E+11	2.014E-01	Half-Life	too short	
	1038.76			4.091E+11	2.014E-01	Half-Life	too short	
	1131.51			6.890E+10	2.014E-01	Half-Life	too short	
	1260.41	*		3.115E+10	2.014E-01	Half-Life	too short	
	1457.56			1.055E+13	2.014E-01	Half-Life	too short	
	1678.03			9.735E+10	2.014E-01	Half-Life	too short	
	1791.20			2.822E+11	2.014E-01	Half-Life	too short	
CS-136	153.25			1.415E-01	1.047E+00	1.675E+00	1.686E-01	0.084
	176.60			1.778E-01	5.626E-01	9.659E-01	9.151E-02	0.184
	273.65			-5.318E-01	7.343E-01	1.010E+00	1.009E-01	-0.527
	340.55			5.261E-01	2.038E-01	3.398E-01	3.185E-02	1.548

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		818.51		-1.302E-02	9.158E-02	1.464E-01	1.310E-02	-0.089
		1048.07	*	-3.737E-02	1.216E-01	1.956E-01	1.801E-02	-0.191
		1235.36		2.476E-04	7.840E-01	1.288E+00	1.506E-01	0.000
BA-137M		661.66	*	3.262E-02	4.243E-02	7.394E-02	5.983E-03	0.441
CS-137		661.66	*	3.446E-02	4.482E-02	7.811E-02	6.334E-03	0.441
CE-139		165.86	*	-1.576E-02	3.425E-02	5.291E-02	4.474E-03	-0.298
BA-140		162.66		2.692E-01	9.192E-01	1.478E+00	1.334E-01	0.182
		304.85		-1.498E-01	1.822E+00	2.609E+00	7.689E-01	-0.057
		423.72		-1.413E+00	2.359E+00	3.541E+00	1.164E+00	-0.399
		537.26	*	7.542E-02	3.073E-01	5.221E-01	1.771E-01	0.144
LA-140	+	328.76		4.608E-01	5.681E-01	6.738E-01	6.478E-02	0.684
		487.02		1.050E-01	1.592E-01	2.800E-01	2.580E-02	0.375
		815.77		-9.646E-02	3.819E-01	6.027E-01	5.969E-02	-0.160
		1596.21	*	-4.618E-02	1.033E-01	1.357E-01	1.230E-02	-0.340
CE-141		145.44	*	1.070E-01	7.254E-02	1.199E-01	1.020E-02	0.892
CE-143		57.36		-8.321E-04	7.254E-02	Half-Life	too short	
		293.27	*	9.122E-04	7.254E-02	Half-Life	too short	
		664.57		5.498E-04	7.254E-02	Half-Life	too short	
		721.93		1.224E-03	7.254E-02	Half-Life	too short	
CE-144		80.12		-1.819E+00	2.517E+00	4.002E+00	4.093E-01	-0.454
		133.52	*	3.523E-02	2.538E-01	3.647E-01	5.515E-02	0.097
PM-144		476.78		-1.105E-02	7.323E-02	1.222E-01	1.151E-02	-0.090
		618.01		-1.946E-02	3.836E-02	5.911E-02	5.088E-03	-0.329
		696.49	*	1.486E-03	3.973E-02	6.545E-02	5.433E-03	0.023
PR-144		696.51	*	1.113E-01	2.975E+00	4.901E+00	4.067E-01	0.023
		1489.16		-7.605E+00	1.400E+01	2.027E+01	1.862E+00	-0.375
PM-146		453.88	*	1.512E-02	4.850E-02	7.948E-02	8.437E-03	0.190
		633.25		-6.740E-03	1.566E+00	2.589E+00	9.868E-01	-0.003
		735.93		2.882E-02	1.629E-01	2.704E-01	7.571E-02	0.107
		747.24		-6.894E-02	1.085E-01	1.655E-01	2.410E-02	-0.416
ND-147	+	91.11		6.923E-01	2.600E-01	5.855E-01	6.573E-02	1.182
		319.41		-1.330E+00	4.226E+00	6.452E+00	5.941E-01	-0.206
		531.02	*	-3.298E-01	6.707E-01	1.078E+00	1.614E-01	-0.306
PM-149		285.90	*	6.372E+01	1.463E+02	2.467E+02	3.932E+01	0.258
EU-152		121.78		4.018E-02	7.678E-02	1.265E-01	1.231E-02	0.318
		244.70		2.395E-01	3.942E-01	6.015E-01	5.544E-02	0.398
		344.28	*	-7.786E-02	1.132E-01	1.762E-01	1.676E-02	-0.442
		778.90		-9.681E-02	2.863E-01	4.502E-01	3.937E-02	-0.215
	+	964.08		6.184E-01	3.567E-01	6.714E-01	6.146E-02	0.921
		1085.87		-4.612E-01	4.212E-01	6.083E-01	5.274E-02	-0.758
		1112.07		-5.700E-02	3.524E-01	5.611E-01	4.781E-02	-0.102
		1408.01		-2.205E-02	2.032E-01	3.246E-01	2.985E-02	-0.068
GD-153		69.67		-7.550E-01	2.130E+00	3.088E+00	2.905E-01	-0.244
		97.43	*	-9.386E-02	9.971E-02	1.359E-01	1.341E-02	-0.690
		103.18		-1.828E-01	1.190E-01	1.774E-01	1.662E-02	-1.030
EU-154		123.07		-6.103E-03	5.679E-02	9.088E-02	1.016E-02	-0.067
		723.31		-1.051E-01	2.352E-01	3.148E-01	2.940E-02	-0.334
		873.19		-1.305E-01	2.969E-01	4.532E-01	5.577E-02	-0.288
		996.26		-3.632E-01	4.257E-01	6.441E-01	1.139E-01	-0.564

---- 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		-5.394E-02	2.548E-01	4.171E-01	4.981E-02	-0.129
		1274.44	*	1.053E-01	1.396E-01	2.470E-01	2.840E-02	0.426
		86.55		3.219E-01	1.376E-01	2.017E-01	2.222E-02	1.596
TB-160	+	105.31	*	5.696E-02	1.124E-01	1.860E-01	1.731E-02	0.306
		86.79		8.628E-01	3.685E-01	5.389E-01	5.916E-02	1.601
		197.04		-3.669E-01	6.530E-01	1.043E+00	9.197E-02	-0.352
	+	215.65		-1.718E-01	8.146E-01	1.353E+00	1.218E-01	-0.127
		298.57		2.651E-01	1.848E-01	2.221E-01	2.064E-02	1.193
		879.36	*	-1.035E-01	1.697E-01	2.532E-01	2.330E-02	-0.409
	+	962.29		9.345E-01	7.422E-01	1.216E+00	1.114E-01	0.768
		966.15		4.365E-01	2.517E-01	5.618E-01	5.139E-02	0.777
		1177.93		-8.078E-02	3.981E-01	6.423E-01	5.228E-02	-0.126
HO-166M		1271.85		-1.475E-01	8.594E-01	1.381E+00	1.210E-01	-0.107
		80.57		-1.988E-01	2.728E-01	4.335E-01	4.452E-02	-0.459
		184.41		5.412E-02	4.422E-02	7.009E-02	6.077E-03	0.772
		280.46		-1.374E-01	9.871E-02	1.492E-01	1.390E-02	-0.921
		410.95		5.202E-03	2.848E-01	4.597E-01	3.922E-02	0.011
		711.68	*	6.719E-02	7.053E-02	1.244E-01	1.043E-02	0.540
TA-182		752.31		1.709E-01	3.139E-01	5.370E-01	4.622E-02	0.318
		810.29		2.758E-02	6.011E-02	1.024E-01	9.109E-03	0.269
		67.75		6.118E-02	1.248E-01	2.097E-01	1.951E-02	0.292
		100.11		2.727E-01	1.899E-01	3.244E-01	3.119E-02	0.841
		152.43		2.339E-02	3.998E-01	6.374E-01	5.334E-02	0.037
		222.11		8.643E-02	4.060E-01	6.863E-01	6.218E-02	0.126
	+	1121.30		7.070E-01	2.950E-01	4.164E-01	3.525E-02	1.698
		1189.05		-5.557E-02	3.673E-01	5.962E-01	4.898E-02	-0.093
		1221.41	*	-2.585E-02	2.323E-01	3.779E-01	3.185E-02	-0.068
IR-192	+	1231.02		8.005E-02	5.422E-01	9.031E-01	7.670E-02	0.089
		295.96		1.072E+00	2.131E-01	3.271E-01	3.060E-02	3.278
		308.46		4.279E-02	1.088E-01	1.828E-01	1.700E-02	0.234
		316.51	*	7.115E-03	3.899E-02	6.467E-02	5.976E-03	0.110
		468.07		7.473E-03	8.514E-02	1.197E-01	1.113E-02	0.062
		70.83		-1.210E-01	1.647E+00	2.422E+00	4.006E-01	-0.050
HG-203		72.87		1.256E+00	9.878E-01	1.510E+00	2.431E-01	0.832
		279.20	*	-2.586E-02	4.471E-02	7.149E-02	6.804E-03	-0.362
		72.81		2.700E-01	2.212E-01	3.420E-01	3.286E-02	0.790
BI-207	+	74.97		6.611E-01	1.620E-01	2.429E-01	2.373E-02	2.722
		569.70		3.071E-02	3.583E-02	6.315E-02	5.407E-03	0.486
		1063.66	*	7.311E-03	5.655E-02	9.529E-02	8.370E-03	0.077
PB-210		1770.23		-9.343E-03	4.390E-01	6.153E-01	5.292E-02	-0.015
		46.54	*	-2.520E-01	4.997E+00	8.190E+00	7.879E-01	-0.031
		404.85	*	2.981E-01	8.468E-01	1.380E+00	6.674E-01	0.216
PB-211		427.09		-2.480E-01	1.726E+00	2.738E+00	1.266E+00	-0.091
		832.01		-1.084E+00	1.323E+00	1.766E+00	9.170E-01	-0.614
		727.33	*	2.577E+00	9.214E-01	1.403E+00	1.733E-01	1.837
BI-212	+	785.37		5.022E+00	3.644E+00	6.598E+00	5.791E-01	0.761
		1620.50		-2.763E-01	2.255E+00	3.672E+00	3.310E-01	-0.075
		271.23		7.153E-01	4.483E-01	5.356E-01	5.805E-02	1.335
RN-219	+	401.81	*	-2.273E-01	4.654E-01	7.228E-01	1.070E-01	-0.315

---- 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		-3.597E-01	2.490E-01	3.333E-01	3.440E-02	-1.079
		83.79		2.524E-01	1.713E-01	2.192E-01	2.327E-02	1.152
		94.87		8.354E-01	4.986E-01	7.817E-01	7.931E-02	1.069
		144.24		5.462E-01	7.784E-01	1.251E+00	1.172E-01	0.436
		154.21		1.402E-01	4.495E-01	7.244E-01	6.682E-02	0.194
+ 269.46				5.558E-01	3.471E-01	4.055E-01	3.837E-02	1.370
		323.87	*	-1.873E-01	8.035E-01	1.128E+00	1.988E-01	-0.166
		338.28		5.575E+00	1.759E+00	2.591E+00	3.213E-01	2.152
		79.69		-8.271E-01	1.264E+00	2.008E+00	3.627E-01	-0.412
		235.96		2.174E-01	2.032E-01	3.146E-01	3.398E-02	0.691
AC-227		256.23	*	-2.067E-01	2.807E-01	4.459E-01	5.584E-02	-0.463
		299.98		2.049E+00	1.441E+00	1.828E+00	2.406E-01	1.121
		304.50		-8.170E-01	2.119E+00	2.953E+00	4.983E-01	-0.277
		334.37		3.738E-01	2.395E+00	3.237E+00	5.135E-01	0.115
		79.80		-1.145E+00	1.672E+00	2.638E+00	5.921E-01	-0.434
TH-227		235.96		2.174E-01	2.030E-01	3.146E-01	3.222E-02	0.691
		256.23	*	-2.067E-01	2.810E-01	4.459E-01	6.253E-02	-0.463
		299.98		2.049E+00	1.441E+00	1.828E+00	2.406E-01	1.121
		304.50		-8.170E-01	2.119E+00	2.953E+00	4.983E-01	-0.277
		334.37		3.738E-01	2.395E+00	3.237E+00	5.135E-01	0.115
PA-231		283.69	*	8.062E-01	1.631E+00	2.760E+00	4.141E-01	0.292
		301.36		1.145E+00	7.437E-01	1.173E+00	1.482E-01	0.976
TH-231		81.07		-3.597E-01	2.490E-01	3.333E-01	3.440E-02	-1.079
		83.79		2.524E-01	1.713E-01	2.192E-01	2.327E-02	1.152
		94.87		8.354E-01	4.986E-01	7.817E-01	7.931E-02	1.069
		144.24		5.462E-01	7.784E-01	1.251E+00	1.172E-01	0.436
		154.21		1.402E-01	4.495E-01	7.244E-01	6.682E-02	0.194
+ 269.46				5.558E-01	3.471E-01	4.055E-01	3.837E-02	1.370
		323.87	*	-1.873E-01	8.035E-01	1.128E+00	1.988E-01	-0.166
		338.28		5.575E+00	1.759E+00	2.591E+00	3.213E-01	2.152
		300.13		9.271E-01	6.559E-01	8.268E-01	1.259E-01	1.121
		311.90	*	-2.985E-02	7.268E-02	1.162E-01	1.101E-02	-0.257
PA-233		340.48		2.428E+00	9.958E-01	1.407E+00	3.409E-01	1.726
		94.67		4.145E-01	1.908E-01	2.974E-01	4.023E-02	1.393
		98.44		3.325E-02	9.714E-02	1.574E-01	8.808E-02	0.211
		111.00		1.151E-01	2.047E-01	3.347E-01	4.106E-02	0.344
		131.20		-6.932E-03	1.291E-01	1.836E-01	1.530E-02	-0.038
PA-234		569.50		2.416E-01	3.172E-01	5.559E-01	4.761E-02	0.435
		733.00		1.226E-01	4.608E-01	6.747E-01	1.495E-01	0.182
		880.51		-4.107E-02	3.252E-01	5.172E-01	4.761E-02	-0.079
		883.24		1.745E-01	3.456E-01	5.538E-01	3.727E-01	0.315
		926.50		8.798E-03	2.011E-01	3.244E-01	8.271E-02	0.027
+ 946.00			*	-5.893E-02	3.389E-01	5.588E-01	1.064E-01	-0.105
		949.00		2.347E-01	5.006E-01	8.755E-01	8.046E-02	0.268
		766.42		1.266E+01	1.662E+01	2.367E+01	1.201E+01	0.535
		1001.03	*	3.563E-01	5.609E+00	9.541E+00	9.859E-01	0.037
		63.29	*	8.975E-01	1.620E+00	2.710E+00	5.036E-01	0.331
TH-234		92.59		3.723E+00	1.307E+00	1.490E+00	3.405E-01	2.499
		63.29	*	8.975E-01	1.620E+00	2.710E+00	5.036E-01	0.331
U-238		63.29	*	8.975E-01	1.620E+00	2.710E+00	5.036E-01	0.331

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		3.723E+00	1.065E+00	1.490E+00	1.554E-01	2.499
		99.53		2.254E-01	1.721E-01	2.932E-01	2.834E-02	0.769
		103.37		-1.588E-01	1.081E-01	1.619E-01	1.514E-02	-0.981
		106.12		1.044E-01	9.147E-02	1.546E-01	1.416E-02	0.675
		117.23	*	-2.259E-02	4.291E-01	6.901E-01	5.926E-02	-0.033
		228.18		-1.227E-02	2.389E-01	3.986E-01	3.631E-02	-0.031
		277.60		2.076E-01	1.996E-01	3.462E-01	3.224E-02	0.600
AM-241		59.54	*	3.791E-02	1.781E-01	2.981E-01	2.830E-02	0.127
CM-247		278.00		9.319E-01	8.449E-01	1.469E+00	1.368E-01	0.634
		287.50		-4.068E-01	1.439E+00	2.336E+00	2.175E-01	-0.174
CF-249		402.40	*	-2.607E-04	4.251E-02	6.860E-02	5.830E-03	-0.004
		252.80		4.079E-01	1.067E+00	1.808E+00	1.673E-01	0.226
		333.37		-1.113E-01	3.511E-01	3.451E-01	3.145E-02	-0.322
		388.16	*	2.167E-02	4.608E-02	7.692E-02	6.542E-03	0.282
CF-251		177.52	*	6.003E-02	1.380E-01	2.379E-01	2.044E-02	0.252
		227.38		-3.264E-01	3.946E-01	6.323E-01	5.756E-02	-0.516
		285.41		9.863E-01	2.496E+00	4.206E+00	3.917E-01	0.235

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]G1202053645
* Acquisition date   : 6-MAR-2010 17:03:16 Detector SN#      :
* Detector ID        : GAM06 Sensitivity                    : 5.000
* Geometry           : CAN Energy tolerance                : 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit       : 75.000
* Elapsed real time  : 0 02:00:01.22 Half life ratio      : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G1202053645 Analyst initials      : MXR1
* Batch Number       : 957711 Sample Quantity          : 1.2936E+02 GRAM
* Recovery           : 1.00000 Carrier Weight           : 0.00000
*****
*
*                               QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 16-FEB-2010 15:10:04 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	2.701E+01	3.088E+00	5.593E-01	0.000E+00
CD-109	2.719E+00	1.138E+00	1.257E+00	0.000E+00
SN-126	2.654E-01	1.111E-01	1.233E-01	0.000E+00
TL-208	5.004E-01	9.551E-02	6.453E-02	0.000E+00
BI-211	3.998E+00	6.110E-01	4.215E-01	0.000E+00
PB-212	1.465E+00	2.061E-01	1.280E-01	0.000E+00
BI-214	1.307E+00	2.288E-01	1.215E-01	0.000E+00
PB-214	1.451E+00	2.352E-01	1.482E-01	0.000E+00
RA-224	2.860E+00	1.013E+00	1.550E+00	0.000E+00
RA-226	1.307E+00	2.288E-01	1.215E-01	0.000E+00
AC-228	1.893E+00	3.644E-01	2.607E-01	0.000E+00
RA-228	1.893E+00	3.644E-01	2.607E-01	0.000E+00
TH-228	1.465E+00	2.061E-01	1.280E-01	0.000E+00
TH-229	-8.948E-02	5.795E-01	1.025E+00	0.000E+00
TH-232	1.893E+00	3.644E-01	2.607E-01	0.000E+00
U-235	-1.848E-02	2.291E-01	3.774E-01	0.000E+00
NP-237	7.919E-01	3.692E-01	4.539E-01	0.000E+00
ANH-511	1.101E-01	7.126E-02	5.364E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.657E-02	3.644E-01	6.346E-01	0.000E+00 NOT IDENT.
NA-22	3.385E-02	4.848E-02	8.727E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.919E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-5.986E-03	4.414E-02	7.211E-02	0.000E+00 FAIL ABUN
V-48	2.456E-03	8.138E-02	1.403E-01	0.000E+00 NOT IDENT.
CR-51	-1.272E-01	4.358E-01	6.964E-01	0.000E+00 NOT IDENT.
MN-54	1.913E-02	4.370E-02	7.568E-02	0.000E+00 NOT IDENT.
CO-56	5.488E-02	4.319E-02	8.049E-02	0.000E+00 NOT IDENT.
CO-57	9.701E-03	2.660E-02	4.618E-02	0.000E+00 NOT IDENT.

CO-58	-4.523E-03	4.094E-02	6.767E-02	0.000E+00	NOT IDENT.
FE-59	-7.669E-02	9.286E-02	1.423E-01	0.000E+00	NOT IDENT.
CO-60	2.102E-02	4.462E-02	7.876E-02	0.000E+00	NOT IDENT.
ZN-65	-2.889E-02	1.141E-01	1.606E-01	0.000E+00	NOT IDENT.
SE-75	-2.594E-02	5.088E-02	7.908E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.577E-02	8.404E-02	0.000E+00	NOT IDENT.
Y-88	-2.335E-02	3.667E-02	5.266E-02	0.000E+00	NOT IDENT.
Y-91	1.021E+01	2.521E+01	4.404E+01	0.000E+00	NOT IDENT.
NB-94	2.120E-02	3.909E-02	6.900E-02	0.000E+00	NOT IDENT.
NB-95	3.292E-02	5.288E-02	8.271E-02	0.000E+00	NOT IDENT.
NB-95M	8.091E-02	1.571E-01	2.498E-01	0.000E+00	NOT IDENT.
ZR-95	3.645E-02	8.405E-02	1.467E-01	0.000E+00	NOT IDENT.
MO-99	-1.066E+01	1.791E+01	2.840E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	8.296E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.462E-02	4.297E-02	7.886E-02	0.000E+00	FAIL ABUN
RH-106	4.536E-01	3.646E-01	6.745E-01	0.000E+00	NOT IDENT.
RU-106	4.536E-01	3.618E-01	6.745E-01	0.000E+00	NOT IDENT.
AG-108M	-6.631E-03	3.303E-02	5.436E-02	0.000E+00	NOT IDENT.
AG-110M	-5.479E-02	4.043E-02	6.069E-02	0.000E+00	NOT IDENT.
SN-113	-3.814E-03	5.112E-02	8.577E-02	0.000E+00	NOT IDENT.
CD-115	1.003E+01	1.737E+01	3.143E+01	0.000E+00	NOT IDENT.
SN-117M	-3.333E-02	6.205E-02	1.012E-01	0.000E+00	NOT IDENT.
TE-123M	-2.385E-02	3.063E-02	4.924E-02	0.000E+00	NOT IDENT.
SB-124	5.302E-02	7.132E-02	1.392E-01	0.000E+00	NOT IDENT.
SB-125	8.019E-02	9.740E-02	1.728E-01	0.000E+00	FAIL ABUN
TE-125M	-3.079E+00	1.102E+01	1.854E+01	0.000E+00	NOT IDENT.
I-126	-3.760E-01	2.676E-01	3.989E-01	0.000E+00	NOT IDENT.
SB-126	1.234E-01	1.993E-01	3.128E-01	0.000E+00	NOT IDENT.
SB-127	-4.892E-01	1.813E+00	3.008E+00	0.000E+00	NOT IDENT.
I-131	-1.196E-02	1.388E-01	2.342E-01	0.000E+00	NOT IDENT.
TE-132	-3.393E-02	1.000E+00	1.757E+00	0.000E+00	NOT IDENT.
BA-133	6.421E-02	4.786E-02	7.927E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.525E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	8.052E-02	9.689E-02	0.000E+00	FAIL ABUN
CS-135	2.796E-01	1.974E-01	3.274E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.184E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.737E-02	1.192E-01	1.967E-01	0.000E+00	NOT IDENT.
BA-137M	3.262E-02	4.158E-02	7.493E-02	0.000E+00	NOT IDENT.
CS-137	3.446E-02	4.393E-02	7.915E-02	0.000E+00	NOT IDENT.
CE-139	-1.576E-02	3.357E-02	5.479E-02	0.000E+00	NOT IDENT.
BA-140	7.542E-02	3.012E-01	5.308E-01	0.000E+00	NOT IDENT.
LA-140	-4.618E-02	1.012E-01	1.356E-01	0.000E+00	FAIL ABUN
CE-141	1.070E-01	7.109E-02	1.245E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.682E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	3.523E-02	2.487E-01	3.789E-01	0.000E+00	NOT IDENT.
PM-144	1.486E-03	3.894E-02	6.627E-02	0.000E+00	NOT IDENT.
PR-144	1.113E-01	2.916E+00	4.963E+00	0.000E+00	NOT IDENT.
PM-146	1.512E-02	4.753E-02	8.103E-02	0.000E+00	NOT IDENT.
ND-147	-3.298E-01	6.573E-01	1.096E+00	0.000E+00	FAIL ABUN
PM-149	6.372E+01	1.433E+02	2.533E+02	0.000E+00	NOT IDENT.
EU-152	-7.786E-02	1.109E-01	1.804E-01	0.000E+00	FAIL ABUN
GD-153	-9.386E-02	9.771E-02	1.419E-01	0.000E+00	NOT IDENT.
EU-154	1.053E-01	1.368E-01	2.476E-01	0.000E+00	NOT IDENT.
EU-155	5.696E-02	1.101E-01	1.939E-01	0.000E+00	FAIL ABUN
TB-160	-1.035E-01	1.663E-01	2.555E-01	0.000E+00	FAIL ABUN
HO-166M	6.719E-02	6.912E-02	1.259E-01	0.000E+00	NOT IDENT.
TA-182	-2.585E-02	2.277E-01	3.792E-01	0.000E+00	FAIL ABUN
IR-192	7.115E-03	3.821E-02	6.630E-02	0.000E+00	FAIL ABUN
HG-203	-2.586E-02	4.382E-02	7.344E-02	0.000E+00	NOT IDENT.
BI-207	7.311E-03	5.542E-02	9.583E-02	0.000E+00	FAIL ABUN
PB-210	-2.520E-01	4.897E+00	8.646E+00	0.000E+00	NOT IDENT.
PB-211	2.981E-01	8.299E-01	1.409E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.030E-01	1.419E+00	0.000E+00	FAIL ABUN
RN-219	-2.273E-01	4.561E-01	7.383E-01	0.000E+00	FAIL ABUN
RA-223	-1.873E-01	7.874E-01	1.156E+00	0.000E+00	FAIL ABUN
AC-227	-2.067E-01	2.750E-01	4.587E-01	0.000E+00	FAIL ABUN
TH-227	-2.067E-01	2.753E-01	4.587E-01	0.000E+00	FAIL ABUN
PA-231	8.062E-01	1.599E+00	2.835E+00	0.000E+00	NOT IDENT.
TH-231	-1.873E-01	7.874E-01	1.156E+00	0.000E+00	FAIL ABUN
PA-233	-2.985E-02	7.123E-02	1.192E-01	0.000E+00	FAIL ABUN
PA-234	-5.893E-02	3.321E-01	5.630E-01	0.000E+00	NOT IDENT.
PA-234M	3.563E-01	5.497E+00	9.604E+00	0.000E+00	NOT IDENT.
TH-234	8.975E-01	1.587E+00	2.847E+00	0.000E+00	FAIL ABUN
U-238	8.975E-01	1.587E+00	2.847E+00	0.000E+00	FAIL ABUN
NP-239	-2.259E-02	4.206E-01	7.185E-01	0.000E+00	NOT IDENT.
AM-241	3.791E-02	1.745E-01	3.135E-01	0.000E+00	NOT IDENT.
CM-247	-2.607E-04	4.166E-02	7.007E-02	0.000E+00	NOT IDENT.
CF-249	2.167E-02	4.516E-02	7.862E-02	0.000E+00	NOT IDENT.

CF-251	6.003E-02	1.352E-01	2.461E-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]G1202053645.CNF;1
Sample date       : 18-FEB-2010 12:00:00 Acquisition date : 6-MAR-2010 17:03:16.
Sample ID        : G1202053645 Sample quantity : 1.29360E+02 GRAM
Detector name    : GAM06 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.22 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 957711 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	927	10.66*	9.338E-01	2.701E+01	2.701E+01	11.66
CD-109	88.03	174	3.70*	5.156E+00	2.654E+00	2.719E+00	42.71
SN-126	64.28	-----	9.60	2.842E+00	-----	Line Not Found	-----
	86.94	174	8.90	5.156E+00	1.103E+00	1.103E+00	58.82
	87.57	174	37.00*	5.156E+00	2.654E-01	2.654E-01	42.71
TL-208	277.37	-----	6.60	3.754E+00	-----	Line Not Found	-----
	583.19	312	85.00*	2.125E+00	5.004E-01	5.004E-01	19.48
	860.56	42	12.50	1.511E+00	6.481E-01	6.481E-01	90.84
BI-211	72.87	-----	1.23	3.914E+00	-----	Line Not Found	-----
	351.06	560	12.92*	3.143E+00	3.998E+00	3.998E+00	15.60
PB-212	74.82	335	10.28	4.127E+00	2.294E+00	2.294E+00	26.37
	77.11	622	17.10	4.365E+00	2.419E+00	2.419E+00	15.72
	238.63	923	43.60*	4.192E+00	1.465E+00	1.465E+00	14.35
	300.09	75	3.30	3.543E+00	1.863E+00	1.863E+00	69.98
BI-214	609.32	420	45.49*	2.050E+00	1.307E+00	1.307E+00	17.87
	1120.29	91	14.92	1.179E+00	1.499E+00	1.499E+00	42.26
	1764.49	77	15.30	8.243E-01	1.779E+00	1.779E+00	27.17
PB-214	74.82	335	5.80	4.127E+00	4.065E+00	4.065E+00	25.76
	77.11	622	9.70	4.365E+00	4.264E+00	4.264E+00	17.76
	242.00	168	7.25	4.152E+00	1.617E+00	1.617E+00	36.61
	295.22	326	18.42	3.583E+00	1.435E+00	1.435E+00	20.89
	351.93	560	35.60*	3.143E+00	1.451E+00	1.451E+00	16.54
RA-224	240.99	168	4.10*	4.152E+00	2.860E+00	2.860E+00	36.15
RA-226	609.32	420	45.49*	2.050E+00	1.307E+00	1.307E+00	17.87
	1120.29	91	14.92	1.179E+00	1.499E+00	1.499E+00	42.26
	1764.49	77	15.30	8.243E-01	1.779E+00	1.779E+00	27.17
AC-228	338.32	177	11.27	3.237E+00	1.405E+00	1.405E+00	50.89
	911.20	241	25.80*	1.433E+00	1.893E+00	1.893E+00	19.64
	968.97	130	15.80	1.352E+00	1.765E+00	1.765E+00	36.81
RA-228	338.32	177	11.27	3.237E+00	1.405E+00	1.405E+00	50.89
	911.20	241	25.80*	1.433E+00	1.893E+00	1.893E+00	19.64
	968.97	130	15.80	1.352E+00	1.765E+00	1.765E+00	36.81

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	335	10.28	4.127E+00	2.294E+00	2.294E+00	24.54
	77.11	622	17.10	4.365E+00	2.419E+00	2.419E+00	15.72
	238.63	923	43.60*	4.192E+00	1.465E+00	1.465E+00	14.35
	300.09	75	3.30	3.543E+00	1.863E+00	1.863E+00	92.37
TH-229	85.43	174	14.70	5.156E+00	6.680E-01	6.680E-01	42.71
	88.47	127	24.00	5.331E+00	2.885E-01	2.885E-01	37.39
	193.51	-----	4.41*	4.855E+00	-----	Line Not Found	-----
	210.85	70	2.80	4.601E+00	1.578E+00	1.578E+00	90.42
TH-232	338.32	177	11.27	3.237E+00	1.405E+00	1.405E+00	30.40
	911.20	241	25.80*	1.433E+00	1.893E+00	1.893E+00	19.64
	968.97	130	15.80	1.352E+00	1.765E+00	1.765E+00	36.81
	89.96	127	3.47	5.331E+00	1.995E+00	1.995E+00	43.93
U-235	93.35	297	5.60	5.480E+00	2.812E+00	2.812E+00	35.74
	143.76	-----	10.96*	5.718E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.383E+00	-----	Line Not Found	-----
	185.72	119	57.20	4.982E+00	1.215E-01	1.215E-01	69.16
	205.31	-----	5.01	4.664E+00	-----	Line Not Found	-----
	86.48	174	12.40*	5.156E+00	7.919E-01	7.919E-01	47.58
NP-237	95.86	-----	2.68	5.611E+00	-----	Line Not Found	-----
ANH-511	511.00	90	100.00*	2.365E+00	1.101E-01	1.101E-01	66.05

Flag: "*" = Keyline

Total number of lines in spectrum 33
Number of unidentified lines 5
Number of lines tentatively identified by NID 28 84.85%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.701E+01	2.701E+01	0.315E+01	11.66	
CD-109	461.40D	1.02	2.654E+00	2.719E+00	1.161E+00	42.71	
SN-126	2.30E+05Y	1.00	2.654E-01	2.654E-01	1.133E-01	42.71	
TL-208	1.41E+10Y	1.00	5.004E-01	5.004E-01	0.975E-01	19.48	
BI-211	7.04E+08Y	1.00	3.998E+00	3.998E+00	0.623E+00	15.60	
PB-212	1.41E+10Y	1.00	1.465E+00	1.465E+00	0.210E+00	14.35	
BI-214	1600.00Y	1.00	1.307E+00	1.307E+00	0.234E+00	17.87	
PB-214	1600.00Y	1.00	1.451E+00	1.451E+00	0.240E+00	16.54	
RA-224	1.41E+10Y	1.00	2.860E+00	2.860E+00	1.034E+00	36.15	
RA-226	1600.00Y	1.00	1.307E+00	1.307E+00	0.234E+00	17.87	
AC-228	1.41E+10Y	1.00	1.893E+00	1.893E+00	0.372E+00	19.64	
RA-228	1.41E+10Y	1.00	1.893E+00	1.893E+00	0.372E+00	19.64	
TH-228	1.41E+10Y	1.00	1.465E+00	1.465E+00	0.210E+00	14.35	
TH-229	7340.00Y	1.00	2.885E-01	2.885E-01	1.079E-01	37.39	K
TH-232	1.41E+10Y	1.00	1.893E+00	1.893E+00	0.372E+00	19.64	
U-235	7.04E+08Y	1.00	1.215E-01	1.215E-01	0.840E-01	69.16	K
NP-237	2.14E+06Y	1.00	7.919E-01	7.919E-01	3.768E-01	47.58	
ANH-511	1.00E+09Y	1.00	1.101E-01	1.101E-01	0.727E-01	66.05	
Total Activity :			5.128E+01	5.134E+01			

Grand Total Activity : 5.128E+01 5.134E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202053645

Page : 4
Acquisition date : 6-MAR-2010 17:03:16

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.80	84	351	1.08	257.12	254	9	1.17E-02	83.3	5.91E+00	
0	270.85	102	233	2.05	541.09	536	11	1.41E-02	61.7	3.82E+00	T
0	328.16	44	185	1.74	655.67	650	11	6.13E-03	****	3.31E+00	T
0	463.86	81	119	1.47	926.98	920	14	1.12E-02	61.7	2.55E+00	T
0	727.49	104	49	1.48	1454.17	1448	12	1.45E-02	33.6	1.76E+00	T
0	769.07	40	82	1.45	1537.32	1531	13	5.52E-03	98.9	1.68E+00	
0	796.57	60	44	0.64	1592.31	1586	16	8.28E-03	57.7	1.62E+00	T
2	964.85	42	44	1.94	1928.90	1925	24	5.87E-03	56.9	1.36E+00	T
0	1378.72	39	19	3.43	2756.87	2747	15	5.39E-03	58.4	9.79E-01	
0	1588.53	27	20	1.03	3176.70	3169	14	3.70E-03	82.4	8.78E-01	
0	1630.52	16	2	1.35	3260.72	3256	10	2.20E-03	62.2	8.63E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                                     DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053645.CNF;1
* Acquisition date   : 6-MAR-2010 17:03:16. Detector SN#      :
* Detector ID        : GAM06 Sensitivity      : 5.00000
* Geometry           : CAN Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:01.22 Half life ratio : 8.00000
*****
*
*                                     SAMPLE DATA
*
* Sample date        : 18-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G1202053645 Analyst initials: MXR1
* Batch Number       : 957711 Sample Quantity : 1.29360E+02 GRAM
*****
*
*                                     QC DATA
*
* CALIB. DATE/TIME   : 16-FEB-2010 15:10:04.7MS 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	2.701E+01	3.151E+00	5.590E-01	5.270E-02	48.323
CD-109	2.719E+00	1.161E+00	1.202E+00	1.338E-01	2.262
SN-126	2.654E-01	1.133E-01	1.179E-01	1.306E-02	2.250
TL-208	5.004E-01	9.746E-02	6.355E-02	5.802E-03	7.875
BI-211	3.998E+00	6.235E-01	4.117E-01	3.864E-02	9.710
PB-212	1.465E+00	2.103E-01	1.243E-01	1.276E-02	11.787
BI-214	1.307E+00	2.335E-01	1.198E-01	1.188E-02	10.911
PB-214	1.451E+00	2.400E-01	1.447E-01	1.575E-02	10.024
RA-224	2.860E+00	1.034E+00	1.506E+00	1.385E-01	1.899
RA-226	1.307E+00	2.335E-01	1.198E-01	1.188E-02	10.911
AC-228	1.893E+00	3.719E-01	2.586E-01	3.123E-02	7.321
RA-228	1.893E+00	3.719E-01	2.586E-01	3.123E-02	7.321
TH-228	1.465E+00	2.103E-01	1.243E-01	1.276E-02	11.787
TH-229	2.885E-01	1.079E-01	9.916E-01	8.703E-02	0.291
TH-232	1.893E+00	3.719E-01	2.586E-01	3.123E-02	7.321
U-235	1.215E-01	8.401E-02	3.637E-01	6.113E-02	0.334
NP-237	7.919E-01	3.768E-01	4.340E-01	1.026E-01	1.825
ANH-511	1.101E-01	7.272E-02	5.271E-02	4.574E-03	2.089

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.657E-02		3.718E-01	6.230E-01	5.818E-02	-0.059
NA-22	3.385E-02		4.947E-02	8.704E-02	7.647E-03	0.389
NA-24	1.325E+00		1.489E+00	Half-Life too short		
SC-46	-5.986E-03		4.504E-02	7.150E-02	6.607E-03	-0.084
V-48	2.456E-03		8.304E-02	1.393E-01	1.268E-02	0.018
CR-51	-1.272E-01		4.447E-01	6.794E-01	6.540E-02	-0.187
MN-54	1.913E-02		4.459E-02	7.496E-02	6.755E-03	0.255
CO-56	5.488E-02		4.407E-02	7.974E-02	7.228E-03	0.688
CO-57	9.701E-03		2.714E-02	4.438E-02	3.737E-03	0.219
CO-58	-4.523E-03		4.177E-02	6.700E-02	5.976E-03	-0.068
FE-59	-7.669E-02		9.476E-02	1.416E-01	1.316E-02	-0.542
CO-60	2.102E-02		4.553E-02	7.861E-02	7.190E-03	0.267
ZN-65	-2.889E-02		1.165E-01	1.598E-01	1.360E-02	-0.181
SE-75	-2.594E-02		5.192E-02	7.691E-02	7.178E-03	-0.337
SR-85	1.199E-01		4.670E-02	8.259E-02	7.166E-03	1.452
Y-88	-2.335E-02		3.742E-02	5.283E-02	4.416E-03	-0.442
Y-91	1.021E+01		2.572E+01	4.388E+01	3.650E+00	0.233
NB-94	2.120E-02		3.989E-02	6.815E-02	5.680E-03	0.311
NB-95	3.292E-02		5.396E-02	8.181E-02	7.099E-03	0.402
NB-95M	8.091E-02		1.603E-01	2.425E-01	2.513E-02	0.334
ZR-95	3.645E-02		8.576E-02	1.451E-01	1.383E-02	0.251
MO-99	-1.066E+01		1.828E+01	2.808E+01	4.412E+00	-0.380
TC-99M	6.603E+10		4.233E+11	Half-Life too short		
RU-103	3.462E-02		4.385E-02	7.746E-02	1.085E-02	0.447
RH-106	4.536E-01		3.720E-01	6.649E-01	8.694E-02	0.682
RU-106	4.536E-01		3.692E-01	6.649E-01	5.545E-02	0.682
AG-108M	-6.631E-03		3.370E-02	5.328E-02	4.734E-03	-0.124
AG-110M	-5.479E-02		4.126E-02	5.989E-02	5.026E-03	-0.915
SN-113	-3.814E-03		5.216E-02	8.393E-02	7.321E-03	-0.045
CD-115	1.003E+01		1.773E+01	3.090E+01	2.676E+00	0.325
SN-117M	-3.333E-02		6.332E-02	9.763E-02	8.205E-03	-0.341
TE-123M	-2.385E-02		3.126E-02	4.751E-02	4.020E-03	-0.502
SB-124	5.302E-02		7.277E-02	1.394E-01	1.283E-02	0.380
SB-125	8.019E-02		9.938E-02	1.693E-01	1.482E-02	0.474
TE-125M	-3.079E+00		1.124E+01	1.779E+01	1.916E+00	-0.173
I-126	-3.760E-01		2.730E-01	3.937E-01	3.197E-02	-0.955
SB-126	1.234E-01		2.034E-01	3.091E-01	2.607E-02	0.399
SB-127	-4.892E-01		1.850E+00	2.970E+00	3.390E-01	-0.165
I-131	-1.196E-02		1.417E-01	2.289E-01	2.124E-02	-0.052
TE-132	-3.393E-02		1.021E+00	1.704E+00	2.779E-01	-0.020
BA-133	6.421E-02		4.884E-02	7.746E-02	1.019E-02	0.829
I-133	-4.290E-03		7.778E-03	Half-Life too short		
CS-134	1.406E-01	+	8.216E-02	9.589E-02	8.524E-03	1.467
CS-135	2.796E-01		2.014E-01	3.185E-01	3.364E-02	0.878
I-135	3.115E+10		6.042E+10	Half-Life too short		
CS-136	-3.737E-02		1.216E-01	1.956E-01	1.801E-02	-0.191
BA-137M	3.262E-02		4.243E-02	7.394E-02	5.983E-03	0.441
CS-137	3.446E-02		4.482E-02	7.811E-02	6.334E-03	0.441

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-139	-1.576E-02		3.425E-02	5.291E-02	4.474E-03	-0.298
BA-140	7.542E-02		3.073E-01	5.221E-01	1.771E-01	0.144
LA-140	-4.618E-02		1.033E-01	1.357E-01	1.230E-02	-0.340
CE-141	1.070E-01		7.254E-02	1.199E-01	1.020E-02	0.892
CE-143	9.122E-04		1.878E-04	Half-Life too short		
CE-144	3.523E-02		2.538E-01	3.647E-01	5.515E-02	0.097
PM-144	1.486E-03		3.973E-02	6.545E-02	5.433E-03	0.023
PR-144	1.113E-01		2.975E+00	4.901E+00	4.067E-01	0.023
PM-146	1.512E-02		4.850E-02	7.948E-02	8.437E-03	0.190
ND-147	-3.298E-01		6.707E-01	1.078E+00	1.614E-01	-0.306
PM-149	6.372E+01		1.463E+02	2.467E+02	3.932E+01	0.258
EU-152	-7.786E-02		1.132E-01	1.762E-01	1.676E-02	-0.442
GD-153	-9.386E-02		9.971E-02	1.359E-01	1.341E-02	-0.690
EU-154	1.053E-01		1.396E-01	2.470E-01	2.840E-02	0.426
EU-155	5.696E-02		1.124E-01	1.860E-01	1.731E-02	0.306
TB-160	-1.035E-01		1.697E-01	2.532E-01	2.330E-02	-0.409
HO-166M	6.719E-02		7.053E-02	1.244E-01	1.043E-02	0.540
TA-182	-2.585E-02		2.323E-01	3.779E-01	3.185E-02	-0.068
IR-192	7.115E-03		3.899E-02	6.467E-02	5.976E-03	0.110
HG-203	-2.586E-02		4.471E-02	7.149E-02	6.804E-03	-0.362
BI-207	7.311E-03		5.655E-02	9.529E-02	8.370E-03	0.077
PB-210	-2.520E-01		4.997E+00	8.190E+00	7.879E-01	-0.031
PB-211	2.981E-01		8.468E-01	1.380E+00	6.674E-01	0.216
BI-212	2.577E+00	+	9.214E-01	1.403E+00	1.733E-01	1.837
RN-219	-2.273E-01		4.654E-01	7.228E-01	1.070E-01	-0.315
RA-223	-1.873E-01		8.035E-01	1.128E+00	1.988E-01	-0.166
AC-227	-2.067E-01		2.807E-01	4.459E-01	5.584E-02	-0.463
TH-227	-2.067E-01		2.810E-01	4.459E-01	6.253E-02	-0.463
PA-231	8.062E-01		1.631E+00	2.760E+00	4.141E-01	0.292
TH-231	-1.873E-01		8.035E-01	1.128E+00	1.988E-01	-0.166
PA-233	-2.985E-02		7.268E-02	1.162E-01	1.101E-02	-0.257
PA-234	-5.893E-02		3.389E-01	5.588E-01	1.064E-01	-0.105
PA-234M	3.563E-01		5.609E+00	9.541E+00	9.859E-01	0.037
TH-234	8.975E-01		1.620E+00	2.710E+00	5.036E-01	0.331
U-238	8.975E-01		1.620E+00	2.710E+00	5.036E-01	0.331
NP-239	-2.259E-02		4.291E-01	6.901E-01	5.926E-02	-0.033
AM-241	3.791E-02		1.781E-01	2.981E-01	2.830E-02	0.127
CM-247	-2.607E-04		4.251E-02	6.860E-02	5.830E-03	-0.004
CF-249	2.167E-02		4.608E-02	7.692E-02	6.542E-03	0.282
CF-251	6.003E-02		1.380E-01	2.379E-01	2.044E-02	0.252

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]G1202053645          *
* Acquisition date   : 6-MAR-2010 17:03:16 Detector SN#      :              *
* Detector ID        : GAM06 Sensitivity      : 5.000           *
* Geometry           : CAN Energy tolerance: 1.500           *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000  *
* Elapsed real time  : 0 02:00:01.22 Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 18-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G1202053645 Analyst initials: MXR1          *
* Batch Number      : 957711 Sample Quantity : 1.2936E+02 GRAM      *
* Recovery          : 1.00000 Carrier Weight : 0.00000           *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 16-FEB-2010 15:10:04 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	2.701E+01	3.088E+00	2.798E-01	1.575E+00
CD-109	2.719E+00	1.138E+00	6.290E-01	5.807E-01
SN-126	2.654E-01	1.111E-01	6.170E-02	5.667E-02
TL-208	5.004E-01	9.551E-02	3.228E-02	4.873E-02
BI-211	3.998E+00	6.110E-01	2.109E-01	3.117E-01
PB-212	1.465E+00	2.061E-01	6.403E-02	1.051E-01
BI-214	1.307E+00	2.288E-01	6.081E-02	1.168E-01
PB-214	1.451E+00	2.352E-01	7.412E-02	1.200E-01
RA-224	2.860E+00	1.013E+00	7.756E-01	5.170E-01
RA-226	1.307E+00	2.288E-01	6.081E-02	1.168E-01
AC-228	1.893E+00	3.644E-01	1.304E-01	1.859E-01
RA-228	1.893E+00	3.644E-01	1.304E-01	1.859E-01
TH-228	1.465E+00	2.061E-01	6.403E-02	1.051E-01
TH-229	-8.948E-02	5.795E-01	5.126E-01	2.957E-01
TH-232	1.893E+00	3.644E-01	1.304E-01	1.859E-01
U-235	-1.848E-02	2.291E-01	1.888E-01	1.169E-01
NP-237	7.919E-01	3.692E-01	2.271E-01	1.884E-01
ANH-511	1.101E-01	7.126E-02	2.684E-02	3.636E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.657E-02	3.644E-01	3.175E-01	1.859E-01 NOT IDENT.
NA-22	3.385E-02	4.848E-02	4.366E-02	2.473E-02 NOT IDENT.
NA-24	1.325E+06	2.919E+06	0.000E+00	1.489E+06 SHORT HLIF
SC-46	-5.986E-03	4.414E-02	3.608E-02	2.252E-02 FAIL ABUN
V-48	2.456E-03	8.138E-02	7.019E-02	4.152E-02 NOT IDENT.
CR-51	-1.272E-01	4.358E-01	3.484E-01	2.223E-01 NOT IDENT.
MN-54	1.913E-02	4.370E-02	3.786E-02	2.230E-02 NOT IDENT.
CO-56	5.488E-02	4.319E-02	4.027E-02	2.204E-02 NOT IDENT.
CO-57	9.701E-03	2.660E-02	2.310E-02	1.357E-02 NOT IDENT.

CO-58	-4.523E-03	4.094E-02	3.386E-02	2.089E-02	NOT IDENT.
FE-59	-7.669E-02	9.286E-02	7.122E-02	4.738E-02	NOT IDENT.
CO-60	2.102E-02	4.462E-02	3.940E-02	2.277E-02	NOT IDENT.
ZN-65	-2.889E-02	1.141E-01	8.034E-02	5.824E-02	NOT IDENT.
SE-75	-2.594E-02	5.088E-02	3.956E-02	2.596E-02	NOT IDENT.
SR-85	1.199E-01	4.577E-02	4.204E-02	2.335E-02	NOT IDENT.
Y-88	-2.335E-02	3.667E-02	2.634E-02	1.871E-02	NOT IDENT.
Y-91	1.021E+01	2.521E+01	2.203E+01	1.286E+01	NOT IDENT.
NB-94	2.120E-02	3.909E-02	3.452E-02	1.994E-02	NOT IDENT.
NB-95	3.292E-02	5.288E-02	4.138E-02	2.698E-02	NOT IDENT.
NB-95M	8.091E-02	1.571E-01	1.250E-01	8.014E-02	NOT IDENT.
ZR-95	3.645E-02	8.405E-02	7.340E-02	4.288E-02	NOT IDENT.
MO-99	-1.066E+01	1.791E+01	1.421E+01	9.138E+00	NOT IDENT.
TC-99M	6.603E+16	8.296E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.462E-02	4.297E-02	3.945E-02	2.192E-02	FAIL ABUN
RH-106	4.536E-01	3.646E-01	3.375E-01	1.860E-01	NOT IDENT.
RU-106	4.536E-01	3.618E-01	3.375E-01	1.846E-01	NOT IDENT.
AG-108M	-6.631E-03	3.303E-02	2.719E-02	1.685E-02	NOT IDENT.
AG-110M	-5.479E-02	4.043E-02	3.037E-02	2.063E-02	NOT IDENT.
SN-113	-3.814E-03	5.112E-02	4.291E-02	2.608E-02	NOT IDENT.
CD-115	1.003E+01	1.737E+01	1.572E+01	8.863E+00	NOT IDENT.
SN-117M	-3.333E-02	6.205E-02	5.062E-02	3.166E-02	NOT IDENT.
TE-123M	-2.385E-02	3.063E-02	2.463E-02	1.563E-02	NOT IDENT.
SB-124	5.302E-02	7.132E-02	6.962E-02	3.639E-02	NOT IDENT.
SB-125	8.019E-02	9.740E-02	8.646E-02	4.969E-02	FAIL ABUN
TE-125M	-3.079E+00	1.102E+01	9.275E+00	5.622E+00	NOT IDENT.
I-126	-3.760E-01	2.676E-01	1.996E-01	1.365E-01	NOT IDENT.
SB-126	1.234E-01	1.993E-01	1.565E-01	1.017E-01	NOT IDENT.
SB-127	-4.892E-01	1.813E+00	1.505E+00	9.248E-01	NOT IDENT.
I-131	-1.196E-02	1.388E-01	1.172E-01	7.084E-02	NOT IDENT.
TE-132	-3.393E-02	1.000E+00	8.788E-01	5.103E-01	NOT IDENT.
BA-133	6.421E-02	4.786E-02	3.966E-02	2.442E-02	NOT IDENT.
I-133	-4.290E+03	1.525E+04	0.000E+00	7.778E+03	SHORT HLIF
CS-134	1.406E-01	8.052E-02	4.847E-02	4.108E-02	FAIL ABUN
CS-135	2.796E-01	1.974E-01	1.638E-01	1.007E-01	NOT IDENT.
I-135	3.115E+16	1.184E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.737E-02	1.192E-01	9.843E-02	6.080E-02	NOT IDENT.
BA-137M	3.262E-02	4.158E-02	3.749E-02	2.122E-02	NOT IDENT.
CS-137	3.446E-02	4.393E-02	3.960E-02	2.241E-02	NOT IDENT.
CE-139	-1.576E-02	3.357E-02	2.741E-02	1.713E-02	NOT IDENT.
BA-140	7.542E-02	3.012E-01	2.656E-01	1.537E-01	NOT IDENT.
LA-140	-4.618E-02	1.012E-01	6.783E-02	5.166E-02	FAIL ABUN
CE-141	1.070E-01	7.109E-02	6.227E-02	3.627E-02	NOT IDENT.
CE-143	9.122E+02	3.682E+02	0.000E+00	1.878E+02	SHORT HLIF
CE-144	3.523E-02	2.487E-01	1.896E-01	1.269E-01	NOT IDENT.
PM-144	1.486E-03	3.894E-02	3.316E-02	1.986E-02	NOT IDENT.
PR-144	1.113E-01	2.916E+00	2.483E+00	1.488E+00	NOT IDENT.
PM-146	1.512E-02	4.753E-02	4.054E-02	2.425E-02	NOT IDENT.
ND-147	-3.298E-01	6.573E-01	5.485E-01	3.353E-01	FAIL ABUN
PM-149	6.372E+01	1.433E+02	1.267E+02	7.314E+01	NOT IDENT.
EU-152	-7.786E-02	1.109E-01	9.024E-02	5.660E-02	FAIL ABUN
GD-153	-9.386E-02	9.771E-02	7.101E-02	4.985E-02	NOT IDENT.
EU-154	1.053E-01	1.368E-01	1.239E-01	6.979E-02	NOT IDENT.
EU-155	5.696E-02	1.101E-01	9.703E-02	5.619E-02	FAIL ABUN
TB-160	-1.035E-01	1.663E-01	1.278E-01	8.483E-02	FAIL ABUN
HO-166M	6.719E-02	6.912E-02	6.299E-02	3.527E-02	NOT IDENT.
TA-182	-2.585E-02	2.277E-01	1.897E-01	1.162E-01	FAIL ABUN
IR-192	7.115E-03	3.821E-02	3.317E-02	1.950E-02	FAIL ABUN
HG-203	-2.586E-02	4.382E-02	3.674E-02	2.236E-02	NOT IDENT.
BI-207	7.311E-03	5.542E-02	4.794E-02	2.827E-02	FAIL ABUN
PB-210	-2.520E-01	4.897E+00	4.325E+00	2.498E+00	NOT IDENT.
PB-211	2.981E-01	8.299E-01	7.050E-01	4.234E-01	NOT IDENT.
BI-212	2.577E+00	9.030E-01	7.102E-01	4.607E-01	FAIL ABUN
RN-219	-2.273E-01	4.561E-01	3.694E-01	2.327E-01	FAIL ABUN
RA-223	-1.873E-01	7.874E-01	5.786E-01	4.017E-01	FAIL ABUN
AC-227	-2.067E-01	2.750E-01	2.295E-01	1.403E-01	FAIL ABUN
TH-227	-2.067E-01	2.753E-01	2.295E-01	1.405E-01	FAIL ABUN
PA-231	8.062E-01	1.599E+00	1.418E+00	8.156E-01	NOT IDENT.
TH-231	-1.873E-01	7.874E-01	5.786E-01	4.017E-01	FAIL ABUN
PA-233	-2.985E-02	7.123E-02	5.963E-02	3.634E-02	FAIL ABUN
PA-234	-5.893E-02	3.321E-01	2.817E-01	1.694E-01	NOT IDENT.
PA-234M	3.563E-01	5.497E+00	4.805E+00	2.804E+00	NOT IDENT.
TH-234	8.975E-01	1.587E+00	1.424E+00	8.098E-01	FAIL ABUN
U-238	8.975E-01	1.587E+00	1.424E+00	8.098E-01	FAIL ABUN
NP-239	-2.259E-02	4.206E-01	3.595E-01	2.146E-01	NOT IDENT.
AM-241	3.791E-02	1.745E-01	1.568E-01	8.903E-02	NOT IDENT.
CM-247	-2.607E-04	4.166E-02	3.506E-02	2.126E-02	NOT IDENT.
CF-249	2.167E-02	4.516E-02	3.933E-02	2.304E-02	NOT IDENT.

CF-251	6.003E-02	1.352E-01	1.231E-01	6.898E-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	266.0014
49.72	262.8994
57.36	0.0000
59.54	293.0968
63.29	353.1198
63.29	353.1198
64.28	367.5953
67.75	340.2774
69.67	370.8738
70.83	370.3842
72.81	370.5687
72.87	370.6200
72.87	370.6200
74.82	357.7857
74.82	357.7857
74.82	357.7857
74.97	357.9044
77.11	359.5861
77.11	359.5861
77.11	359.5861
79.69	361.5837
79.80	361.6677
80.12	361.9142
80.19	361.9672
80.57	362.2575
81.00	393.8959
81.07	393.9534
81.07	393.9534
83.79	286.4708
83.79	286.4708
85.43	340.4317
86.48	418.2708
86.55	436.7194
86.79	436.9281
86.94	437.0607
87.57	282.5277
88.03	282.7860
88.47	283.0331
89.96	499.8477
91.11	276.7704
92.59	277.5612
92.59	277.5612
93.35	277.9654
94.67	245.9709
94.87	246.0637
94.87	246.0637
95.86	271.4874
97.43	300.4497
98.44	268.6103
99.53	241.9186
100.11	243.2231
103.18	312.0399
103.37	312.1453
105.31	263.4847
106.12	258.5612
109.28	307.9268
111.00	268.2233
111.76	295.3178
116.30	238.2622
117.23	260.2204
121.12	236.8685
121.78	231.6795
122.06	242.6643
123.07	268.1216
131.20	269.8519
133.52	277.4398
136.00	282.3497

136.47	279.2089
140.51	258.4745
140.51	0.0000
143.76	284.4088
144.24	259.8539
144.24	259.8539
145.44	221.9817
152.43	270.7836
153.25	277.9178
154.21	272.5778
154.21	272.5778
156.02	251.5171
158.56	246.6341
159.00	250.2197
162.66	217.9756
163.33	232.0157
165.86	259.4079
176.60	231.5215
177.52	226.4926
181.07	242.1616
184.41	234.5993
185.72	250.9820
193.51	254.1650
197.04	247.9746
205.31	225.6979
210.85	209.4831
215.65	214.4254
222.11	223.2935
227.38	224.5070
228.16	204.1747
228.18	205.1103
235.69	225.4523
235.96	242.0503
235.96	242.0503
238.63	283.3884
238.63	283.3884
240.99	362.6104
242.00	246.5156
244.70	168.3130
252.40	171.8454
252.80	167.1360
256.23	183.0043
256.23	183.0043
260.90	146.2689
264.66	159.6495
268.22	151.8976
269.46	158.2743
269.46	158.2743
271.23	180.6728
273.65	211.8260
276.40	156.1328
277.37	140.6404
277.60	154.3451
278.00	151.4689
279.20	181.9528
279.54	179.0712
280.46	197.8235
283.69	147.3106
284.31	143.4603
285.41	153.4316
285.90	147.5922
287.50	170.4579
293.27	0.0000
295.22	157.0972
295.96	119.0881
298.57	119.3481
299.98	117.8941
299.98	117.8941
300.09	117.9050
300.09	117.9050
300.13	117.9086
301.36	140.3596
302.85	159.6948
304.50	158.3130
304.50	158.3130
304.85	147.1618
308.46	130.3491
311.90	143.7855

316.51	128.1705
319.41	133.5227
320.08	130.5570
323.87	133.1819
323.87	133.1819
328.76	174.4497
333.37	167.7061
334.37	139.1813
334.37	139.1813
338.28	144.5232
338.28	144.5232
338.32	144.5275
338.32	144.5275
338.32	144.5275
340.48	103.6378
340.55	106.9326
344.28	145.3826
351.06	154.2015
351.93	144.1370
356.01	79.8773
364.49	110.9251
366.42	108.9829
383.85	105.0183
388.16	106.3934
388.63	116.0054
391.69	115.1818
400.66	129.8254
401.81	115.9662
402.40	108.4930
404.85	108.6687
410.95	113.4274
414.70	82.3005
423.72	104.5635
427.09	98.2397
427.87	78.6302
433.94	97.5678
453.88	88.7854
463.37	85.9447
468.07	82.3800
473.00	83.0682
476.78	96.3026
477.60	97.2488
487.02	75.1448
492.35	96.2605
497.08	70.1130
511.00	85.3427
514.00	56.6822
527.90	71.3134
529.87	0.0000
531.02	86.2770
537.26	72.6013
546.56	0.0000
563.25	84.9133
569.33	76.6593
569.50	76.6672
569.70	75.7266
583.19	72.4301
600.60	67.2861
602.73	78.5822
604.72	75.4475
609.32	68.5351
609.32	68.5351
610.33	68.5680
614.28	75.7936
618.01	84.0070
621.93	61.1804
621.93	61.1804
633.25	66.3880
635.95	51.8083
636.99	60.6347
645.85	65.7928
657.76	91.8216
661.66	69.2344
661.66	69.2344
664.57	0.0000
666.33	92.1758
666.50	92.1849
677.62	55.7840

685.70	70.9775
695.00	72.2689
696.49	72.3155
696.51	72.3164
697.00	69.3184
702.65	70.4939
706.68	84.7383
711.68	57.6234
720.70	60.8877
721.93	0.0000
722.78	79.5630
722.91	79.5669
723.31	81.2734
724.19	86.3842
727.33	66.1458
733.00	52.7010
735.93	57.1908
739.50	65.4578
747.24	64.6396
752.31	55.5201
753.82	63.7831
756.73	59.7389
763.94	49.9275
765.81	56.8571
766.42	65.4872
777.92	56.0922
778.90	58.1930
783.70	54.1379
785.37	46.8809
795.86	59.6259
801.95	38.4463
810.29	38.9205
810.76	47.3445
815.77	51.6510
818.51	55.9256
832.01	72.1205
834.85	59.4562
836.80	0.0000
846.77	36.2586
856.80	35.6787
860.56	45.0167
871.09	49.4927
873.19	45.2228
875.33	0.0000
879.36	56.1145
880.51	50.7396
883.24	42.1440
884.68	49.7341
889.28	48.7332
898.04	42.3658
911.20	50.2002
911.20	50.2002
911.20	50.2002
926.50	46.0780
937.49	58.7318
944.13	52.4263
946.00	50.6181
949.00	44.2207
962.29	55.5225
964.08	61.9046
966.15	58.3729
968.97	58.4268
968.97	58.4268
968.97	58.4268
983.53	45.6614
996.26	60.8224
1001.03	53.4189
1004.73	56.2964
1037.84	45.5117
1038.76	0.0000
1048.07	43.7558
1050.41	36.1724
1050.41	36.1724
1063.66	40.1423
1085.87	50.9987
1099.45	44.4427
1112.07	48.6647
1115.54	51.5903

1120.29	51.6616
1120.29	51.6616
1120.55	46.6660
1121.30	46.6758
1131.51	0.0000
1173.23	49.3530
1177.93	47.4414
1189.05	55.5215
1204.77	50.7842
1221.41	58.0212
1231.02	53.1574
1235.36	76.3154
1238.28	75.3693
1260.41	0.0000
1271.85	44.6159
1274.44	31.4554
1274.54	32.4701
1291.59	39.7506
1298.22	0.0000
1312.11	29.7151
1332.49	26.7808
1365.19	24.9248
1368.63	0.0000
1384.29	21.4654
1408.01	25.1875
1457.56	0.0000
1460.82	17.0052
1489.16	20.3274
1505.03	25.7705
1596.21	17.5339
1620.50	13.2197
1678.03	0.0000
1690.97	5.7506
1764.49	6.8103
1764.49	6.8103
1770.23	6.8181
1771.35	54.5586
1791.20	0.0000
1836.06	13.8140

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202053645

Total Uranium Activity	2.6616E+00	ug/g
Total Uranium Counting Unc.	4.7231E+00	ug/g
Total Uranium Tpu	2.4098E-06	ug/g
Total Uranium Mda	4.2387E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 957711                          SAMPLE ID   : G1202053645
*  ANALYST       : MXR1                             DETECTOR    : GAM06
*  SAMPLE DATE   : 18-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 6-MAR-2010 17:03:16.10          SAMPLE ALQT  : 129.360 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.141E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.505E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.354E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.113E+00

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VAX/VMS Nuclide Identification Report Generated 6-MAR-2010 18:04:35.05

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053646.CNF;1
Sample date        : 26-FEB-2010 00:00:00 Acquisition date : 6-MAR-2010 17:03:59.
Sample ID          : G1202053646 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           : 957711 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	6	57.76	189	750	1.56	115.18	113	12	5.26E-02	22.4	1.46E+00
2	6	59.56	4290	573	0.97	118.78	113	12	1.19E+00	1.8	
3	3	74.90	241	395	1.19	149.46	143	18	6.70E-02	15.1	2.63E+00
4	3	77.22*	342	422	1.35	154.08	143	18	9.51E-02	12.4	
5	0	88.08*	1805	594	1.02	175.80	170	12	5.01E-01	3.6	
6	0	92.82*	83	316	0.93	185.27	182	8	2.30E-02	39.8	
7	0	122.42	244	366	1.05	244.48	240	10	6.77E-02	16.1	
8	5	238.77*	469	189	1.15	477.12	471	20	1.30E-01	6.8	1.88E+00
9	5	242.09	165	280	2.01	483.77	471	20	4.59E-02	24.0	
10	0	270.63	62	173	2.04	540.84	537	8	1.73E-02	38.8	
11	0	295.09*	134	250	1.14	589.75	584	11	3.72E-02	24.5	
12	0	338.26*	75	212	1.05	676.08	672	9	2.08E-02	37.3	
13	0	352.24*	203	202	1.31	704.03	699	11	5.64E-02	15.4	
14	0	583.21*	156	133	1.30	1165.89	1159	14	4.33E-02	17.8	
15	0	609.47*	169	97	1.54	1218.41	1214	12	4.71E-02	14.0	
16	0	661.83	2348	159	1.50	1323.12	1317	14	6.52E-01	2.4	
17	0	911.69*	167	90	1.97	1822.78	1817	15	4.64E-02	14.7	
18	0	1173.51	1790	62	1.86	2346.36	2340	15	4.97E-01	2.5	
19	0	1332.86	1628	28	1.85	2665.04	2656	19	4.52E-01	2.6	
20	0	1461.22*	20	5	3.40	2921.74	2916	11	5.45E-03	35.2	
21	0	1588.19*	16	3	2.84	3175.66	3170	11	4.54E-03	33.6	
22	0	1765.13*	23	17	1.52	3529.52	3522	17	6.34E-03	47.4	

Flag: "*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053646.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 17:03:59
Sample ID        : G1202053646 Sample quantity : 155.44 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA7 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.31 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	7.874E-01	5.588E-01	8.228E-01	7.066E-02	0.957
CO-57	+	122.06	*	1.988E-01	6.620E-02	5.834E-02	5.019E-03	3.408
		136.47		4.667E-01	3.059E-01	5.205E-01	4.681E-02	0.897
CO-60	+	1173.23		6.396E+00	6.140E-01	1.214E-01	9.882E-03	52.670
	+	1332.49	*	6.480E+00	6.288E-01	7.144E-02	5.852E-03	90.705
CD-109	+	88.03	*	3.474E+01	4.119E+00	1.776E+00	1.673E-01	19.567
SN-126		64.28		5.688E-01	6.061E-01	9.388E-01	1.362E-01	0.606
	+	86.94		1.426E+01	6.009E+00	7.324E-01	3.040E-01	19.463
	+	87.57	*	3.429E+00	4.066E-01	1.756E-01	1.646E-02	19.525
BA-137M	+	661.66	*	5.658E+00	5.677E-01	1.089E-01	9.637E-03	51.958
CS-137	+	661.66	*	5.977E+00	6.006E-01	1.150E-01	1.020E-02	51.958
TL-208		277.37		2.019E-01	6.444E-01	1.084E+00	1.349E-01	0.186
	+	583.19	*	3.578E-01	1.318E-01	1.065E-01	1.018E-02	3.359
		860.56		1.953E-01	6.484E-01	1.077E+00	1.052E-01	0.181
BI-211		72.87		1.237E+00	4.298E+00	6.399E+00	5.050E-01	0.193
	+	351.06	*	2.063E+00	6.623E-01	6.024E-01	5.405E-02	3.424
PB-212	+	74.82		1.864E+00	6.105E-01	6.996E-01	8.834E-02	2.664
	+	77.11		1.543E+00	4.020E-01	4.091E-01	3.377E-02	3.771
	+	238.63	*	1.058E+00	1.758E-01	1.514E-01	1.456E-02	6.987
		300.09		1.590E+00	1.539E+00	2.378E+00	2.493E-01	0.669
BI-214	+	609.32	*	7.529E-01	2.243E-01	2.072E-01	2.153E-02	3.634
		1120.29		6.185E-01	6.306E-01	1.115E+00	1.203E-01	0.555
	+	1764.49		7.324E-01	6.973E-01	5.000E-01	4.111E-02	1.465
PB-214	+	74.82		3.303E+00	1.066E+00	1.240E+00	1.401E-01	2.664
	+	77.11		2.720E+00	7.433E-01	7.213E-01	8.416E-02	3.771
	+	242.00		2.263E+00	1.111E+00	9.212E-01	9.445E-02	2.457
	+	295.22		8.351E-01	4.195E-01	4.123E-01	4.429E-02	2.026
	+	351.93	*	7.487E-01	2.439E-01	2.171E-01	2.286E-02	3.449
RA-224	+	240.99	*	4.002E+00	1.951E+00	1.623E+00	1.373E-01	2.465
RA-226	+	609.32	*	7.529E-01	2.243E-01	2.072E-01	2.153E-02	3.634
		1120.29		6.185E-01	6.306E-01	1.115E+00	1.203E-01	0.555
	+	1764.49		7.324E-01	6.973E-01	5.000E-01	4.111E-02	1.465
TH-228	+	74.82		1.864E+00	5.834E-01	6.996E-01	5.691E-02	2.664
	+	77.11		1.543E+00	4.020E-01	4.091E-01	3.377E-02	3.771

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	1.058E+00	1.758E-01	1.514E-01	1.456E-02	6.987
		300.09		1.590E+00	1.813E+00	2.378E+00	1.455E+00	0.669
AM-241	+	59.54	*	1.356E+01	1.179E+00	3.735E-01	2.961E-02	36.295

---- 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	*	8.372E-01	6.483E-01	1.111E+00	1.048E-01	0.754
NA-22		1274.54	*	-1.868E-02	4.353E-02	6.633E-02	5.445E-03	-0.282
NA-24		1368.63	*	1.251E-04	4.353E-02	Half-Life too short		
SC-46		889.28	*	-3.640E-02	8.557E-02	1.344E-01	1.231E-02	-0.271
		1120.55		8.770E-02	1.015E-01	1.787E-01	1.510E-02	0.491
V-48		944.13		-2.665E-01	1.814E+00	2.903E+00	2.639E-01	-0.092
		983.53	*	-6.342E-02	1.247E-01	1.925E-01	1.733E-02	-0.329
		1312.11		2.322E-02	6.937E-02	1.205E-01	9.880E-03	0.193
CR-51		320.08	*	2.455E-01	5.346E-01	9.013E-01	8.138E-02	0.272
MN-54		834.85	*	2.356E-02	7.878E-02	1.311E-01	1.204E-02	0.180
CO-56		846.77	*	2.557E-02	7.569E-02	1.265E-01	1.162E-02	0.202
		1037.84		2.499E-01	6.691E-01	1.150E+00	1.066E-01	0.217
		1238.28		8.599E-02	9.666E-02	1.761E-01	1.488E-02	0.488
		1771.35		-8.081E-02	3.637E-01	4.834E-01	3.970E-02	-0.167
CO-58		810.76	*	-1.502E-02	7.771E-02	1.264E-01	1.161E-02	-0.119
FE-59		1099.45	*	-1.436E-01	1.813E-01	2.848E-01	2.638E-02	-0.504
		1291.59		3.276E-02	1.269E-01	2.178E-01	2.051E-02	0.150
ZN-65		1115.54	*	-5.284E-02	1.887E-01	3.088E-01	2.621E-02	-0.171
SE-75	+	121.12		1.018E+00	3.462E-01	4.106E-01	4.545E-02	2.479
		136.00		6.262E-02	5.772E-02	9.677E-02	8.137E-03	0.647
		264.66	*	-7.021E-03	7.384E-02	1.180E-01	1.008E-02	-0.059
		279.54		-1.538E-01	1.830E-01	2.897E-01	2.555E-02	-0.531
		400.66		1.448E-01	4.682E-01	7.729E-01	8.429E-02	0.187
SR-85		514.00	*	-1.193E-01	7.495E-02	1.149E-01	1.022E-02	-1.038
Y-88		898.04		4.340E-02	9.372E-02	1.568E-01	1.442E-02	0.277
		1836.06	*	1.860E-02	4.591E-02	8.304E-02	6.739E-03	0.224
Y-91		1204.77	*	-5.507E+00	2.302E+01	3.700E+01	3.022E+00	-0.149
NB-94		702.65	*	4.141E-02	5.747E-02	9.993E-02	8.973E-03	0.414
		871.09		-3.429E-02	7.739E-02	1.215E-01	1.115E-02	-0.282
NB-95		765.81	*	-3.771E-02	6.949E-02	1.090E-01	9.936E-03	-0.346
NB-95M		235.69	*	9.145E-02	1.998E-01	3.026E-01	2.944E-02	0.302
ZR-95		724.19		-2.853E-01	1.643E-01	2.311E-01	2.249E-02	-1.234
		756.73	*	9.829E-04	1.227E-01	2.017E-01	2.009E-02	0.005
MO-99		140.51		-4.725E+00	6.605E+00	1.002E+01	2.367E+00	-0.472
		181.07		-4.394E+00	5.168E+00	8.326E+00	1.543E+00	-0.528
		366.42		-2.333E+01	3.471E+01	5.414E+01	4.585E+00	-0.431
		739.50	*	-4.583E+00	4.641E+00	6.937E+00	1.110E+00	-0.661
		777.92		-4.626E+00	1.471E+01	2.356E+01	2.152E+00	-0.196
TC-99M		140.51	*	-7.985E+02	1.471E+01	Half-Life too short		
RU-103		497.08	*	-2.317E-02	7.298E-02	1.140E-01	1.609E-02	-0.203
	+	610.33		6.937E+00	2.251E+00	3.033E+00	5.012E-01	2.287

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RH-106	621.93	*	-9.347E-02	5.593E-01	9.203E-01	1.239E-01	-0.102	
	1050.41		2.994E+00	5.198E+00	9.075E+00	7.968E-01	0.330	
RU-106	621.93	*	-9.347E-02	5.592E-01	9.203E-01	8.225E-02	-0.102	
	1050.41		2.994E+00	5.198E+00	9.075E+00	7.968E-01	0.330	
AG-108M	433.94	*	3.665E-02	6.176E-02	1.030E-01	9.127E-03	0.356	
	614.28		-4.963E-03	7.383E-02	1.063E-01	9.800E-03	-0.047	
AG-110M	722.91		-5.745E-02	6.841E-02	1.051E-01	9.774E-03	-0.546	
	657.76	*	1.408E-02	8.421E-02	1.231E-01	1.121E-02	0.114	
	677.62		-1.776E-01	5.424E-01	8.749E-01	8.000E-02	-0.203	
	706.68		-2.850E-01	3.827E-01	5.946E-01	5.487E-02	-0.479	
	763.94		-3.061E-01	2.899E-01	4.332E-01	4.045E-02	-0.707	
	884.68		-4.447E-03	1.097E-01	1.777E-01	1.675E-02	-0.025	
	937.49		-2.144E-01	2.890E-01	4.430E-01	4.163E-02	-0.484	
	1384.29		-1.554E-01	2.114E-01	3.025E-01	2.573E-02	-0.514	
SN-113	1505.03		-3.335E-01	4.201E-01	5.882E-01	4.917E-02	-0.567	
	391.69	*	7.967E-03	8.588E-02	1.402E-01	1.205E-02	0.057	
CD-115	260.90		-9.553E+00	3.101E+01	5.078E+01	4.314E+00	-0.188	
	492.35		1.076E+01	1.047E+01	1.781E+01	1.573E+00	0.604	
SN-117M	527.90	*	2.289E+00	2.768E+00	4.893E+00	4.365E-01	0.468	
	156.02		-1.256E+00	2.405E+00	3.706E+00	2.985E-01	-0.339	
TE-123M	158.56	*	6.525E-02	5.812E-02	9.733E-02	7.804E-03	0.670	
	159.00	*	1.518E-02	4.111E-02	6.649E-02	5.364E-03	0.228	
SB-124	602.73		4.473E-02	6.598E-02	1.094E-01	9.802E-03	0.409	
	645.85		-4.285E-02	9.092E-01	1.506E+00	1.412E-01	-0.028	
	722.78		-5.111E-01	6.399E-01	9.875E-01	9.104E-02	-0.518	
	1690.97	*	-7.062E-02	1.333E-01	1.934E-01	1.680E-02	-0.365	
SB-125	427.87	*	6.857E-03	1.890E-01	3.058E-01	2.665E-02	0.022	
	463.37		3.541E-01	5.913E-01	9.804E-01	9.184E-02	0.361	
	600.60		-6.158E-02	3.113E-01	5.126E-01	4.909E-02	-0.120	
	635.95		2.095E-01	5.022E-01	8.591E-01	8.239E-02	0.244	
TE-125M	109.28	*	-4.477E+00	1.252E+01	1.987E+01	2.087E+00	-0.225	
I-126	388.63		2.949E-02	2.353E-01	3.850E-01	3.212E-02	0.077	
	666.33	*	-1.864E-02	3.172E-01	4.536E-01	4.021E-02	-0.041	
SB-126	753.82		-3.269E-01	2.373E+00	3.857E+00	3.508E-01	-0.085	
	414.70		1.108E-02	1.068E-01	1.739E-01	1.474E-02	0.064	
	666.50		-1.353E-02	1.067E-01	1.514E-01	1.342E-02	-0.089	
	695.00		4.918E-02	9.224E-02	1.593E-01	1.426E-02	0.309	
SB-127	697.00		-2.079E-01	3.125E-01	4.874E-01	4.369E-02	-0.427	
	720.70	*	6.268E-02	1.820E-01	3.077E-01	2.777E-02	0.204	
	856.80		-7.505E-01	7.809E-01	1.182E+00	1.085E-01	-0.635	
	252.40		2.059E-01	2.125E+00	3.557E+00	1.462E+00	0.058	
	473.00		-6.310E-01	1.165E+00	1.805E+00	2.073E-01	-0.350	
	685.70	*	1.283E-01	7.072E-01	1.187E+00	1.194E-01	0.108	
I-131	783.70		3.663E-01	2.198E+00	3.645E+00	4.128E-01	0.101	
	80.19		1.368E-01	3.576E+00	5.242E+00	4.492E-01	0.026	
	284.31		4.451E-01	1.446E+00	2.431E+00	2.168E-01	0.183	
TE-132	364.49	*	3.194E-02	1.192E-01	1.975E-01	1.761E-02	0.162	
	636.99		9.648E-01	1.670E+00	2.886E+00	2.700E-01	0.334	
	49.72		1.200E+01	6.029E+00	1.039E+01	9.205E-01	1.155	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133		111.76		2.213E-01	1.159E+01	1.874E+01	1.779E+00	0.012
		116.30		-1.029E+00	9.804E+00	1.572E+01	1.488E+00	-0.065
		228.16	*	-2.583E-01	2.960E-01	4.719E-01	6.924E-02	-0.547
		81.00		-7.161E-02	1.333E-01	1.889E-01	2.933E-02	-0.379
		276.40		2.966E-01	5.967E-01	1.011E+00	1.419E-01	0.293
		302.85		-4.033E-01	2.474E-01	3.618E-01	4.713E-02	-1.115
I-133		356.01	*	-1.104E-02	8.597E-02	1.232E-01	1.587E-02	-0.090
		383.85		-2.514E-01	5.485E-01	8.659E-01	1.061E-01	-0.290
		529.87	*	1.368E-05	5.485E-01	Half-Life too short		
CS-134		875.33		2.233E-03	5.485E-01	Half-Life too short		
		1298.22		-5.030E-04	5.485E-01	Half-Life too short		
		563.25		-1.057E-01	6.500E-01	1.078E+00	9.751E-02	-0.098
		569.33		3.532E-01	3.393E-01	6.053E-01	5.497E-02	0.584
		604.72		8.790E-03	6.603E-02	9.743E-02	8.748E-03	0.090
CS-135		795.86	*	1.428E-01	9.112E-02	1.642E-01	1.513E-02	0.870
		801.95		-6.257E-01	7.661E-01	1.175E+00	1.081E-01	-0.533
		1365.19		-4.780E-01	1.382E+00	2.143E+00	1.855E-01	-0.223
		268.22	*	-9.169E-03	2.886E-01	4.206E-01	4.147E-02	-0.022
		546.56		3.154E+02	2.886E-01	Half-Life too short		
I-135		836.80		2.888E+03	2.886E-01	Half-Life too short		
		1038.76		1.006E+03	2.886E-01	Half-Life too short		
		1131.51		-8.657E+02	2.886E-01	Half-Life too short		
		1260.41	*	-5.268E+02	2.886E-01	Half-Life too short		
		1457.56		2.348E+03	2.886E-01	Half-Life too short		
		1678.03		1.083E+02	2.886E-01	Half-Life too short		
		1791.20		5.367E+02	2.886E-01	Half-Life too short		
		153.25		4.210E-01	8.943E-01	1.455E+00	1.430E-01	0.289
		176.60		-1.897E-01	5.235E-01	8.741E-01	7.828E-02	-0.217
		273.65		-3.930E-01	6.992E-01	9.785E-01	9.031E-02	-0.402
CS-136		340.55		1.264E-01	2.192E-01	3.271E-01	2.904E-02	0.386
		818.51		2.292E-02	1.112E-01	1.845E-01	1.693E-02	0.124
		1048.07	*	-7.915E-02	1.611E-01	2.601E-01	2.378E-02	-0.304
		1235.36		1.391E-01	4.783E-01	8.189E-01	9.375E-02	0.170
		165.86	*	4.375E-03	4.263E-02	6.789E-02	5.370E-03	0.064
BA-140		162.66		-1.703E-01	8.524E-01	1.337E+00	1.147E-01	-0.127
		304.85		8.815E-02	1.588E+00	2.626E+00	7.683E-01	0.034
		423.72		1.350E-01	2.679E+00	4.341E+00	1.427E+00	0.031
LA-140		537.26	*	7.784E-02	3.394E-01	5.776E-01	1.964E-01	0.135
		328.76		2.789E-01	3.725E-01	6.343E-01	5.751E-02	0.440
		487.02		6.260E-02	1.927E-01	3.151E-01	2.942E-02	0.199
		815.77		-6.665E-01	4.900E-01	7.061E-01	7.151E-02	-0.944
CE-141		1596.21	*	-2.015E-02	8.300E-02	1.206E-01	1.009E-02	-0.167
		145.44	*	2.915E-02	8.135E-02	1.320E-01	1.105E-02	0.221
CE-143	+	57.36		1.594E+02	7.278E+01	1.383E+02	1.245E+01	1.153
		293.27	*	1.493E+01	1.063E+01	1.611E+01	3.419E+00	0.927
		664.57		2.226E+03	6.927E+02	4.064E+02	1.217E+02	5.477
CE-144		721.93		-4.118E+01	9.195E+01	1.452E+02	4.066E+01	-0.284
		80.12		2.754E-01	3.318E+00	4.876E+00	4.166E-01	0.056
		133.52	*	-3.305E-01	2.898E-01	4.297E-01	6.512E-02	-0.769

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-144		476.78		1.109E-01	1.424E-01	2.380E-01	2.264E-02	0.466
		618.01		1.921E-02	5.930E-02	1.009E-01	9.259E-03	0.190
		696.49	*	-3.449E-02	5.658E-02	8.871E-02	7.950E-03	-0.389
PR-144		696.51	*	-2.594E+00	4.219E+00	6.611E+00	5.924E-01	-0.392
		1489.16		1.266E+01	1.707E+01	3.151E+01	2.631E+00	0.402
PM-146		453.88	*	5.876E-03	9.459E-02	1.527E-01	1.625E-02	0.038
		633.25		3.519E-01	2.658E+00	4.458E+00	1.706E+00	0.079
		735.93		2.615E-02	2.745E-01	4.550E-01	1.282E-01	0.057
		747.24		-8.152E-03	1.869E-01	3.064E-01	4.554E-02	-0.027
ND-147		91.11		5.126E-01	2.876E-01	3.761E-01	3.724E-02	1.363
		319.41		-1.552E+00	3.840E+00	6.167E+00	5.289E-01	-0.252
		531.02	*	-2.201E-01	6.611E-01	1.087E+00	1.644E-01	-0.203
PM-149		285.90	*	-2.206E+01	2.124E+01	3.276E+01	5.067E+00	-0.674
EU-152	+	121.78		5.813E-01	1.956E-01	2.407E-01	2.379E-02	2.415
		244.70		4.995E-01	5.867E-01	9.083E-01	7.691E-02	0.550
		344.28	*	1.028E-01	1.921E-01	3.128E-01	2.835E-02	0.328
		778.90		-1.748E-01	5.268E-01	8.419E-01	7.691E-02	-0.208
		964.08		-8.235E-01	7.381E-01	1.102E+00	9.972E-02	-0.747
		1085.87		-6.646E-01	8.847E-01	1.399E+00	1.207E-01	-0.475
		1112.07		1.165E-01	6.406E-01	1.084E+00	9.207E-02	0.107
		1408.01		1.016E-01	2.072E-01	3.701E-01	3.068E-02	0.275
GD-153		69.67		1.638E+00	2.270E+00	3.452E+00	2.644E-01	0.475
		97.43	*	-1.410E-02	1.221E-01	1.756E-01	1.570E-02	-0.080
		103.18		-8.409E-02	1.475E-01	2.321E-01	2.037E-02	-0.362
EU-154	+	123.07		4.108E-01	1.401E-01	1.740E-01	1.969E-02	2.361
		723.31		-4.991E-01	3.252E-01	4.674E-01	4.612E-02	-1.068
		873.19		6.204E-01	6.294E-01	1.089E+00	1.340E-01	0.570
		996.26		-9.338E-02	8.458E-01	1.349E+00	2.381E-01	-0.069
		1004.73		-9.047E-02	4.885E-01	7.739E-01	9.191E-02	-0.117
		1274.44	*	-9.594E-02	1.313E-01	1.886E-01	2.086E-02	-0.509
EU-155		86.55		2.100E+00	2.820E-01	3.889E-01	3.629E-02	5.401
		105.31	*	1.014E-01	1.450E-01	2.418E-01	2.136E-02	0.419
TB-160	+	86.79		1.037E+01	1.230E+00	1.098E+00	1.018E-01	9.450
		197.04		-1.352E-01	8.160E-01	1.365E+00	1.119E-01	-0.099
		215.65		5.803E-03	1.117E+00	1.877E+00	1.564E-01	0.003
		298.57		2.926E-01	2.000E-01	3.174E-01	2.714E-02	0.922
		879.36	*	-3.987E-01	2.890E-01	4.130E-01	3.787E-02	-0.965
		962.29		-6.629E-01	1.198E+00	1.859E+00	1.683E-01	-0.357
		966.15		1.897E-01	4.830E-01	7.967E-01	7.206E-02	0.238
		1177.93		1.310E+00	6.252E-01	1.119E+00	9.110E-02	1.171
		1271.85		-2.063E-01	7.035E-01	1.105E+00	9.058E-02	-0.187
HO-166M		80.57		5.790E-02	3.622E-01	5.342E-01	4.588E-02	0.108
		184.41		2.799E-02	5.131E-02	8.956E-02	7.240E-03	0.313
		280.46		-5.080E-02	1.454E-01	2.365E-01	2.008E-02	-0.215
		410.95		4.422E-01	4.879E-01	8.280E-01	6.996E-02	0.534
		711.68	*	1.905E-02	1.085E-01	1.815E-01	1.634E-02	0.105
		752.31		-1.199E-01	5.140E-01	8.293E-01	7.541E-02	-0.145
		810.29		-7.134E-03	1.238E-01	2.034E-01	1.865E-02	-0.035
TA-182		67.75		-6.368E-02	1.277E-01	2.064E-01	1.556E-02	-0.309

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		100.11		2.276E-02	2.240E-01	3.651E-01	3.233E-02	0.062
		152.43		1.300E-01	4.959E-01	7.993E-01	6.480E-02	0.163
		222.11		-7.019E-02	5.520E-01	9.210E-01	7.710E-02	-0.076
		1121.30		3.778E-01	2.767E-01	5.014E-01	4.235E-02	0.754
		1189.05		2.418E-01	3.548E-01	6.375E-01	5.198E-02	0.379
		1221.41	*	1.811E-01	2.199E-01	4.000E-01	3.272E-02	0.453
		1231.02		-5.260E-02	4.642E-01	7.567E-01	6.192E-02	-0.070
IR-192	+	295.96		5.813E-01	2.896E-01	3.553E-01	3.059E-02	1.636
		308.46		-1.075E-01	1.576E-01	2.494E-01	2.148E-02	-0.431
		316.51	*	-4.681E-03	5.783E-02	9.474E-02	8.143E-03	-0.049
		468.07		-3.154E-02	1.423E-01	2.254E-01	2.111E-02	-0.140
HG-203		70.83		3.486E-01	1.630E+00	2.422E+00	3.780E-01	0.144
		72.87		2.798E-01	9.732E-01	1.448E+00	2.193E-01	0.193
		279.20	*	-2.918E-02	5.984E-02	9.666E-02	8.419E-03	-0.302
BI-207		72.81		6.059E-02	2.470E-01	3.671E-01	2.896E-02	0.165
	+	74.97		5.369E-01	1.680E-01	2.519E-01	2.031E-02	2.132
		569.70		5.405E-02	5.263E-02	9.386E-02	8.417E-03	0.576
		1063.66	*	-4.190E-02	1.048E-01	1.701E-01	1.484E-02	-0.246
		1770.23		2.486E-01	7.181E-01	1.138E+00	9.349E-02	0.218
PB-210		46.54	*	-5.912E+00	3.674E+00	5.815E+00	5.406E-01	-1.017
PB-211		404.85	*	-5.411E-01	1.367E+00	2.121E+00	1.026E+00	-0.255
		427.09		-8.341E-01	3.157E+00	4.981E+00	2.304E+00	-0.167
		832.01		-1.443E+00	2.255E+00	3.296E+00	1.712E+00	-0.438
BI-212		727.33	*	1.730E+00	1.012E+00	1.821E+00	2.322E-01	0.950
		785.37		2.263E+00	6.130E+00	1.031E+01	9.431E-01	0.219
		1620.50		2.665E+00	3.347E+00	6.214E+00	5.192E-01	0.429
RN-219	+	271.23		6.205E-01	4.860E-01	7.171E-01	7.280E-02	0.865
		401.81	*	1.791E-01	7.723E-01	1.269E+00	1.871E-01	0.141
RA-223		81.07		-1.625E-01	3.016E-01	4.286E-01	3.703E-02	-0.379
		83.79		-2.221E-02	1.835E-01	2.663E-01	2.378E-02	-0.083
		94.87		4.420E-01	6.052E-01	9.154E-01	8.278E-02	0.483
		144.24		5.426E-01	1.005E+00	1.643E+00	1.523E-01	0.330
		154.21		-1.817E-01	5.726E-01	8.936E-01	8.002E-02	-0.203
	+	269.46		4.821E-01	3.767E-01	5.389E-01	4.673E-02	0.895
		323.87	*	-8.353E-01	1.144E+00	1.789E+00	3.097E-01	-0.467
	+	338.28		3.352E+00	2.535E+00	3.455E+00	4.156E-01	0.970
AC-227		79.69		-9.175E-03	1.711E+00	2.504E+00	4.300E-01	-0.004
		235.96		1.350E-01	2.614E-01	3.970E-01	4.046E-02	0.340
		256.23	*	-5.102E-02	4.081E-01	6.752E-01	8.075E-02	-0.076
		299.98		1.536E+00	1.719E+00	2.630E+00	3.329E-01	0.584
		304.50		-4.500E-02	2.746E+00	4.517E+00	7.452E-01	-0.010
		334.37		-4.025E-01	3.416E+00	4.865E+00	7.570E-01	-0.083
TH-227		79.80		-6.110E-02	2.255E+00	3.296E+00	7.164E-01	-0.019
		235.96		1.350E-01	2.613E-01	3.970E-01	3.810E-02	0.340
		256.23	*	-5.102E-02	4.081E-01	6.752E-01	9.132E-02	-0.076
		299.98		1.536E+00	1.719E+00	2.630E+00	3.329E-01	0.584
		304.50		-4.500E-02	2.746E+00	4.517E+00	7.452E-01	-0.010
		334.37		-4.025E-01	3.416E+00	4.865E+00	7.570E-01	-0.083
AC-228	+	338.32		8.447E-01	7.223E-01	8.709E-01	3.632E-01	0.970

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	911.20	*	1.845E+00	5.862E-01	7.588E-01	9.094E-02	2.431
		968.97		7.791E-01	7.106E-01	1.177E+00	2.884E-01	0.662
	+	338.32		8.447E-01	7.223E-01	8.709E-01	3.632E-01	0.970
	+	911.20	*	1.845E+00	5.862E-01	7.588E-01	9.094E-02	2.431
TH-229		968.97		7.791E-01	7.106E-01	1.177E+00	2.884E-01	0.662
		85.43		4.720E-01	3.200E-01	4.940E-01	4.504E-02	0.956
	+	88.47		5.287E+00	6.268E-01	6.070E-01	5.700E-02	8.710
		193.51	*	4.865E-05	8.058E-01	1.361E+00	1.112E-01	0.000
PA-231		210.85		9.937E-01	1.423E+00	2.458E+00	2.040E-01	0.404
		283.69	*	1.647E+00	2.476E+00	4.220E+00	6.126E-01	0.390
		301.36		-2.001E-01	1.001E+00	1.578E+00	1.911E-01	-0.127
	TH-231	81.07		-1.625E-01	3.016E-01	4.286E-01	3.703E-02	-0.379
		83.79		-2.221E-02	1.835E-01	2.663E-01	2.378E-02	-0.083
		94.87		4.420E-01	6.052E-01	9.154E-01	8.278E-02	0.483
		144.24		5.426E-01	1.005E+00	1.643E+00	1.523E-01	0.330
		154.21		-1.817E-01	5.726E-01	8.936E-01	8.002E-02	-0.203
	+	269.46		4.821E-01	3.767E-01	5.389E-01	4.673E-02	0.895
		323.87	*	-8.353E-01	1.144E+00	1.789E+00	3.097E-01	-0.467
	+	338.28		3.352E+00	2.535E+00	3.455E+00	4.156E-01	0.970
	+	338.32		8.447E-01	6.347E-01	8.709E-01	7.455E-02	0.970
TH-232	+	911.20	*	1.845E+00	5.862E-01	7.588E-01	9.094E-02	2.431
		968.97		7.791E-01	7.106E-01	1.177E+00	2.884E-01	0.662
	PA-233	300.13		7.776E-01	7.694E-01	1.181E+00	1.747E-01	0.658
		311.90	*	1.562E-02	1.156E-01	1.918E-01	1.691E-02	0.081
PA-234		340.48		8.901E-01	1.334E+00	1.979E+00	4.758E-01	0.450
		94.67		1.627E-01	2.255E-01	3.399E-01	4.319E-02	0.479
		98.44		7.869E-02	1.258E-01	1.974E-01	1.102E-01	0.399
		111.00		7.295E-02	2.557E-01	4.183E-01	5.064E-02	0.174
		131.20		-8.895E-02	1.471E-01	2.279E-01	1.920E-02	-0.390
		569.50		4.780E-01	4.694E-01	8.367E-01	7.503E-02	0.571
		733.00		7.950E-02	7.677E-01	1.273E+00	2.847E-01	0.062
		880.51		-5.664E-01	6.098E-01	9.125E-01	8.368E-02	-0.621
		883.24		4.517E-01	6.814E-01	1.047E+00	7.047E-01	0.431
		926.50		1.317E-01	4.525E-01	7.444E-01	1.895E-01	0.177
		946.00	*	5.531E-01	8.044E-01	1.346E+00	2.555E-01	0.411
		949.00		-4.246E-02	1.183E+00	1.907E+00	1.732E-01	-0.022
PA-234M		766.42		-4.109E+00	1.986E+01	3.188E+01	1.620E+01	-0.129
		1001.03	*	-1.270E+00	1.069E+01	1.713E+01	1.756E+00	-0.074
	TH-234	63.29	*	-3.707E-01	1.617E+00	2.390E+00	4.251E-01	-0.155
	+	92.59		1.348E+00	1.114E+00	1.455E+00	3.245E-01	0.926
U-235		89.96		7.957E+00	2.468E+00	2.341E+00	5.820E-01	3.399
	+	93.35		1.018E+00	8.444E-01	1.105E+00	2.573E-01	0.921
		143.76	*	1.498E-01	3.000E-01	4.888E-01	8.191E-02	0.307
		163.33		1.641E-01	6.373E-01	1.023E+00	1.805E-01	0.160
		185.72		1.132E-01	6.785E-02	1.220E-01	9.873E-03	0.928
		205.31		-2.789E-02	7.357E-01	1.237E+00	2.224E-01	-0.023
	NP-237	86.48	*	4.578E+00	1.156E+00	9.200E-01	2.108E-01	4.976
		95.86		-8.053E-02	1.301E+00	1.879E+00	4.535E-01	-0.043
U-238		63.29	*	-3.707E-01	1.617E+00	2.390E+00	4.251E-01	-0.155

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		1.348E+00	1.080E+00	1.455E+00	1.332E-01	0.926
		99.53		5.422E-02	2.169E-01	3.560E-01	3.159E-02	0.152
		103.37		-2.580E-02	1.350E-01	2.167E-01	1.901E-02	-0.119
		106.12		8.709E-02	1.160E-01	1.939E-01	1.690E-02	0.449
	*	117.23		-6.404E-01	5.970E-01	8.544E-01	7.350E-02	-0.750
CM-247		228.18		-3.058E-01	3.509E-01	5.627E-01	4.729E-02	-0.543
		277.60		6.007E-02	2.929E-01	4.905E-01	4.164E-02	0.122
		278.00		-8.707E-02	1.237E+00	2.044E+00	1.735E-01	-0.043
		287.50		2.197E-01	2.061E+00	3.430E+00	2.922E-01	0.064
	*	402.40		-3.507E-03	7.021E-02	1.135E-01	9.528E-03	-0.031
CF-249		252.80		-3.913E-01	1.514E+00	2.488E+00	2.112E-01	-0.157
		333.37		-4.594E-02	3.556E-01	5.061E-01	4.336E-02	-0.091
	*	388.16		1.952E-03	7.968E-02	1.297E-01	1.082E-02	0.015
CF-251	*	177.52		8.264E-02	1.936E-01	3.342E-01	2.680E-02	0.247
		227.38		-2.792E-01	5.827E-01	9.548E-01	8.020E-02	-0.292
		285.41		-4.217E+00	3.742E+00	5.794E+00	4.931E-01	-0.728
ANH-511		511.00	*	1.043E-01	7.186E-02	1.310E-01	1.164E-02	0.796

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]G1202053646      *
* Acquisition date   : 6-MAR-2010 17:03:59 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          : G1202053646           Analyst initials: MXR1          *
* Batch Number       : 957711                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	7.874E-01	5.476E-01	8.298E-01	0.000E+00
CO-57	1.988E-01	6.487E-02	6.283E-02	0.000E+00
CO-60	6.480E+00	6.162E-01	7.224E-02	0.000E+00
CD-109	3.474E+01	4.037E+00	1.928E+00	0.000E+00
SN-126	3.429E+00	3.984E-01	1.907E-01	0.000E+00
BA-137M	5.658E+00	5.564E-01	1.123E-01	0.000E+00
CS-137	5.977E+00	5.886E-01	1.186E-01	0.000E+00
TL-208	3.578E-01	1.292E-01	1.102E-01	0.000E+00
BI-211	2.063E+00	6.490E-01	6.316E-01	0.000E+00
PB-212	1.058E+00	1.723E-01	1.603E-01	0.000E+00
BI-214	7.529E-01	2.198E-01	2.141E-01	0.000E+00
PB-214	7.487E-01	2.390E-01	2.275E-01	0.000E+00
RA-224	4.002E+00	1.912E+00	1.719E+00	0.000E+00
RA-226	7.529E-01	2.198E-01	2.141E-01	0.000E+00
TH-228	1.058E+00	1.723E-01	1.603E-01	0.000E+00
AM-241	1.356E+01	1.156E+00	4.094E-01	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	8.372E-01	6.353E-01	1.155E+00	0.000E+00 NOT IDENT.
NA-22	-1.868E-02	4.266E-02	6.716E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.987E+02	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-3.640E-02	8.386E-02	1.374E-01	0.000E+00 NOT IDENT.
V-48	-6.342E-02	1.222E-01	1.963E-01	0.000E+00 NOT IDENT.
CR-51	2.455E-01	5.239E-01	9.472E-01	0.000E+00 NOT IDENT.
MN-54	2.356E-02	7.720E-02	1.343E-01	0.000E+00 NOT IDENT.
CO-56	2.557E-02	7.418E-02	1.296E-01	0.000E+00 NOT IDENT.
CO-58	-1.502E-02	7.615E-02	1.295E-01	0.000E+00 NOT IDENT.
FE-59	-1.436E-01	1.777E-01	2.895E-01	0.000E+00 NOT IDENT.
ZN-65	-5.284E-02	1.849E-01	3.138E-01	0.000E+00 NOT IDENT.

SE-75	-7.021E-03	7.236E-02	1.247E-01	0.000E+00	FAIL ABUN
SR-85	-1.193E-01	7.345E-02	1.193E-01	0.000E+00	NOT IDENT.
Y-88	1.860E-02	4.499E-02	8.320E-02	0.000E+00	NOT IDENT.
Y-91	-5.507E+00	2.256E+01	3.752E+01	0.000E+00	NOT IDENT.
NB-94	4.141E-02	5.632E-02	1.028E-01	0.000E+00	NOT IDENT.
NB-95	-3.771E-02	6.810E-02	1.119E-01	0.000E+00	NOT IDENT.
NB-95M	9.145E-02	1.958E-01	3.206E-01	0.000E+00	NOT IDENT.
ZR-95	9.829E-04	1.202E-01	2.072E-01	0.000E+00	NOT IDENT.
MO-99	-4.583E+00	4.548E+00	7.130E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.087E+09	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.317E-02	7.152E-02	1.185E-01	0.000E+00	FAIL ABUN
RH-106	-9.347E-02	5.481E-01	9.503E-01	0.000E+00	NOT IDENT.
RU-106	-9.347E-02	5.480E-01	9.503E-01	0.000E+00	NOT IDENT.
AG-108M	3.665E-02	6.052E-02	1.073E-01	0.000E+00	NOT IDENT.
AG-110M	1.408E-02	8.252E-02	1.269E-01	0.000E+00	NOT IDENT.
SN-113	7.967E-03	8.416E-02	1.466E-01	0.000E+00	NOT IDENT.
CD-115	2.289E+00	2.713E+00	5.075E+00	0.000E+00	NOT IDENT.
SN-117M	6.525E-02	5.695E-02	1.041E-01	0.000E+00	NOT IDENT.
TE-123M	1.518E-02	4.029E-02	7.114E-02	0.000E+00	NOT IDENT.
SB-124	-7.062E-02	1.306E-01	1.943E-01	0.000E+00	NOT IDENT.
SB-125	6.857E-03	1.852E-01	3.190E-01	0.000E+00	NOT IDENT.
TE-125M	-4.477E+00	1.227E+01	2.146E+01	0.000E+00	NOT IDENT.
I-126	-1.864E-02	3.109E-01	4.675E-01	0.000E+00	NOT IDENT.
SB-126	6.268E-02	1.783E-01	3.165E-01	0.000E+00	NOT IDENT.
SB-127	1.283E-01	6.931E-01	1.222E+00	0.000E+00	NOT IDENT.
I-131	3.194E-02	1.168E-01	2.069E-01	0.000E+00	NOT IDENT.
TE-132	-2.583E-01	2.900E-01	5.003E-01	0.000E+00	NOT IDENT.
BA-133	-1.104E-02	8.426E-02	1.291E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	6.177E+01	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.428E-01	8.930E-02	1.684E-01	0.000E+00	NOT IDENT.
CS-135	-9.169E-03	2.828E-01	4.440E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.048E+08	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.915E-02	1.579E-01	2.648E-01	0.000E+00	NOT IDENT.
CE-139	4.375E-03	4.177E-02	7.256E-02	0.000E+00	NOT IDENT.
BA-140	7.784E-02	3.327E-01	5.988E-01	0.000E+00	NOT IDENT.
LA-140	-2.015E-02	8.134E-02	1.214E-01	0.000E+00	NOT IDENT.
CE-141	2.915E-02	7.973E-02	1.415E-01	0.000E+00	NOT IDENT.
CE-143	1.493E+01	1.041E+01	1.697E+01	0.000E+00	FAIL ABUN
CE-144	-3.305E-01	2.840E-01	4.618E-01	0.000E+00	NOT IDENT.
PM-144	-3.449E-02	5.545E-02	9.132E-02	0.000E+00	NOT IDENT.
PR-144	-2.594E+00	4.134E+00	6.805E+00	0.000E+00	NOT IDENT.
PM-146	5.876E-03	9.270E-02	1.590E-01	0.000E+00	NOT IDENT.
ND-147	-2.201E-01	6.479E-01	1.127E+00	0.000E+00	NOT IDENT.
PM-149	-2.206E+01	2.082E+01	3.453E+01	0.000E+00	NOT IDENT.
EU-152	1.028E-01	1.883E-01	3.282E-01	0.000E+00	FAIL ABUN
GD-153	-1.410E-02	1.196E-01	1.902E-01	0.000E+00	NOT IDENT.
EU-154	-9.594E-02	1.287E-01	1.909E-01	0.000E+00	FAIL ABUN
EU-155	1.014E-01	1.421E-01	2.614E-01	0.000E+00	NOT IDENT.
TB-160	-3.987E-01	2.832E-01	4.224E-01	0.000E+00	FAIL ABUN
HO-166M	1.905E-02	1.064E-01	1.868E-01	0.000E+00	NOT IDENT.
TA-182	1.811E-01	2.155E-01	4.055E-01	0.000E+00	NOT IDENT.
IR-192	-4.681E-03	5.667E-02	9.960E-02	0.000E+00	FAIL ABUN
HG-203	-2.918E-02	5.864E-02	1.019E-01	0.000E+00	NOT IDENT.
BI-207	-4.190E-02	1.027E-01	1.730E-01	0.000E+00	FAIL ABUN
PB-210	-5.912E+00	3.600E+00	6.411E+00	0.000E+00	NOT IDENT.
PB-211	-5.411E-01	1.340E+00	2.216E+00	0.000E+00	NOT IDENT.
BI-212	1.730E+00	9.920E-01	1.872E+00	0.000E+00	NOT IDENT.
RN-219	1.791E-01	7.568E-01	1.326E+00	0.000E+00	FAIL ABUN
RA-223	-8.353E-01	1.121E+00	1.879E+00	0.000E+00	FAIL ABUN
AC-227	-5.102E-02	3.999E-01	7.137E-01	0.000E+00	NOT IDENT.
TH-227	-5.102E-02	3.999E-01	7.137E-01	0.000E+00	NOT IDENT.
AC-228	0.000E+00	5.745E-01	7.754E-01	0.000E+00	FAIL ABUN
RA-228	0.000E+00	5.745E-01	7.754E-01	0.000E+00	FAIL ABUN
TH-229	4.865E-05	7.897E-01	1.449E+00	0.000E+00	FAIL ABUN
PA-231	1.647E+00	2.426E+00	4.448E+00	0.000E+00	NOT IDENT.
TH-231	-8.353E-01	1.121E+00	1.879E+00	0.000E+00	FAIL ABUN
TH-232	0.000E+00	5.745E-01	7.754E-01	0.000E+00	FAIL ABUN
PA-233	1.562E-02	1.133E-01	2.017E-01	0.000E+00	NOT IDENT.
PA-234	5.531E-01	7.883E-01	1.374E+00	0.000E+00	NOT IDENT.
PA-234M	-1.270E+00	1.047E+01	1.746E+01	0.000E+00	NOT IDENT.
TH-234	-3.707E-01	1.584E+00	2.616E+00	0.000E+00	FAIL ABUN
U-235	1.498E-01	2.940E-01	5.243E-01	0.000E+00	FAIL ABUN
NP-237	0.000E+00	1.133E+00	9.993E-01	0.000E+00	NOT IDENT.
U-238	-3.707E-01	1.584E+00	2.616E+00	0.000E+00	FAIL ABUN
NP-239	-6.404E-01	5.851E-01	9.211E-01	0.000E+00	NOT IDENT.
CM-247	-3.507E-03	6.881E-02	1.186E-01	0.000E+00	NOT IDENT.
CF-249	1.952E-03	7.809E-02	1.356E-01	0.000E+00	NOT IDENT.
CF-251	8.264E-02	1.897E-01	3.565E-01	0.000E+00	NOT IDENT.

ANH-511	1.043E-01	7.043E-02	1.360E-01	0.000E+00 NOT IDENT.
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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053646.CNF;1
Sample date        : 26-FEB-2010 00:00:00 Acquisition date : 6-MAR-2010 17:03:59.
Sample ID          : G1202053646 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           : 957711 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	20	10.66*	1.129E+00	7.874E-01	7.874E-01	70.97
CO-57	122.06	244	85.60*	7.069E+00	1.944E-01	1.988E-01	33.29
	136.47	-----	10.68	6.835E+00	-----	Line Not Found	-----
CO-60	1173.23	1790	99.85	1.358E+00	6.376E+00	6.396E+00	9.60
	1332.49	1628	99.98*	1.218E+00	6.460E+00	6.480E+00	9.70
CD-109	88.03	1805	3.70*	6.869E+00	3.429E+01	3.474E+01	11.86
SN-126	64.28	-----	9.60	4.930E+00	-----	Line Not Found	-----
	86.94	1805	8.90	6.869E+00	1.426E+01	1.426E+01	42.15
	87.57	1805	37.00*	6.869E+00	3.429E+00	3.429E+00	11.86
BA-137M	661.66	2348	89.90*	2.231E+00	5.655E+00	5.658E+00	10.03
CS-137	661.66	2348	85.10*	2.231E+00	5.974E+00	5.977E+00	10.05
TL-208	277.37	-----	6.60	4.401E+00	-----	Line Not Found	-----
	583.19	156	85.00*	2.477E+00	3.578E-01	3.578E-01	36.85
	860.56	-----	12.50	1.783E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	5.899E+00	-----	Line Not Found	-----
	351.06	203	12.92*	3.679E+00	2.063E+00	2.063E+00	32.10
PB-212	74.82	241	10.28	6.081E+00	1.864E+00	1.864E+00	32.76
	77.11	342	17.10	6.265E+00	1.543E+00	1.543E+00	26.06
	238.63	469	43.60*	4.908E+00	1.058E+00	1.058E+00	16.62
	300.09	-----	3.30	4.151E+00	-----	Line Not Found	-----
BI-214	609.32	169	45.49*	2.389E+00	7.528E-01	7.529E-01	29.79
	1120.29	-----	14.92	1.414E+00	-----	Line Not Found	-----
	1764.49	23	15.30	9.831E-01	7.324E-01	7.324E-01	95.20
PB-214	74.82	241	5.80	6.081E+00	3.303E+00	3.303E+00	32.27
	77.11	342	9.70	6.265E+00	2.720E+00	2.720E+00	27.33
	242.00	165	7.25	4.860E+00	2.263E+00	2.263E+00	49.10
	295.22	134	18.42	4.204E+00	8.351E-01	8.351E-01	50.23
	351.93	203	35.60*	3.679E+00	7.487E-01	7.487E-01	32.57
RA-224	240.99	165	4.10*	4.860E+00	4.002E+00	4.002E+00	48.75
RA-226	609.32	169	45.49*	2.389E+00	7.528E-01	7.529E-01	29.79
	1120.29	-----	14.92	1.414E+00	-----	Line Not Found	-----
	1764.49	23	15.30	9.831E-01	7.324E-01	7.324E-01	95.20

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	241	10.28	6.081E+00	1.864E+00	1.864E+00	31.30
	77.11	342	17.10	6.265E+00	1.543E+00	1.543E+00	26.06
	238.63	469	43.60*	4.908E+00	1.058E+00	1.058E+00	16.62
	300.09	-----	3.30	4.151E+00	-----	Line Not Found	-----
AM-241	59.54	4290	35.90*	4.258E+00	1.356E+01	1.356E+01	8.70

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202053646

Page : 3
Acquisition date : 6-MAR-2010 17:03:59

Total number of lines in spectrum 22
Number of unidentified lines 1
Number of lines tentatively identified by NID 21 95.45%

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	7.874E-01	7.874E-01	5.588E-01	70.97	
CO-57	271.74D	1.02	1.944E-01	1.988E-01	0.662E-01	33.29	
CO-60	5.27Y	1.00	6.460E+00	6.480E+00	0.629E+00	9.70	
CD-109	461.40D	1.01	3.429E+01	3.474E+01	0.412E+01	11.86	
SN-126	2.30E+05Y	1.00	3.429E+00	3.429E+00	0.407E+00	11.86	
BA-137M	30.08Y	1.00	5.655E+00	5.658E+00	0.568E+00	10.03	
CS-137	30.08Y	1.00	5.974E+00	5.977E+00	0.601E+00	10.05	
TL-208	1.41E+10Y	1.00	3.578E-01	3.578E-01	1.318E-01	36.85	
BI-211	7.04E+08Y	1.00	2.063E+00	2.063E+00	0.662E+00	32.10	
PB-212	1.41E+10Y	1.00	1.058E+00	1.058E+00	0.176E+00	16.62	
BI-214	1600.00Y	1.00	7.528E-01	7.529E-01	2.243E-01	29.79	
PB-214	1600.00Y	1.00	7.487E-01	7.487E-01	2.439E-01	32.57	
RA-224	1.41E+10Y	1.00	4.002E+00	4.002E+00	1.951E+00	48.75	
RA-226	1600.00Y	1.00	7.528E-01	7.529E-01	2.243E-01	29.79	
TH-228	1.41E+10Y	1.00	1.058E+00	1.058E+00	0.176E+00	16.62	
AM-241	432.60Y	1.00	1.356E+01	1.356E+01	0.118E+01	8.70	

Total Activity : 8.114E+01 8.162E+01

Grand Total Activity : 8.114E+01 8.162E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202053646

Page : 4
Acquisition date : 6-MAR-2010 17:03:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
6	57.76	189	750	1.56	115.18	113	12	5.26E-02	44.8	3.98E+00	T
0	92.82	83	316	0.93	185.27	182	8	2.30E-02	79.6	7.02E+00	T
0	270.63	62	173	2.04	540.84	537	8	1.73E-02	77.7	4.48E+00	T
0	338.26	75	212	1.05	676.08	672	9	2.08E-02	74.6	3.79E+00	T
0	911.69	167	90	1.97	1822.78	1817	15	4.64E-02	29.4	1.70E+00	T
0	1588.19	16	3	2.84	3175.66	3170	11	4.54E-03	67.3	1.06E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202053646.CNF;1
* Acquisition date   : 6-MAR-2010 17:03:59. 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          : G1202053646 Analyst initials: MXR1
* Batch Number       : 957711 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 :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	7.874E-01	5.588E-01	8.228E-01	7.066E-02	0.957
CO-57	1.988E-01	6.620E-02	5.834E-02	5.019E-03	3.408
CO-60	6.480E+00	6.288E-01	7.144E-02	5.852E-03	90.705
CD-109	3.474E+01	4.119E+00	1.776E+00	1.673E-01	19.567
SN-126	3.429E+00	4.066E-01	1.756E-01	1.646E-02	19.525
BA-137M	5.658E+00	5.677E-01	1.089E-01	9.637E-03	51.958
CS-137	5.977E+00	6.006E-01	1.150E-01	1.020E-02	51.958
TL-208	3.578E-01	1.318E-01	1.065E-01	1.018E-02	3.359
BI-211	2.063E+00	6.623E-01	6.024E-01	5.405E-02	3.424
PB-212	1.058E+00	1.758E-01	1.514E-01	1.456E-02	6.987
BI-214	7.529E-01	2.243E-01	2.072E-01	2.153E-02	3.634
PB-214	7.487E-01	2.439E-01	2.171E-01	2.286E-02	3.449
RA-224	4.002E+00	1.951E+00	1.623E+00	1.373E-01	2.465
RA-226	7.529E-01	2.243E-01	2.072E-01	2.153E-02	3.634
TH-228	1.058E+00	1.758E-01	1.514E-01	1.456E-02	6.987
AM-241	1.356E+01	1.179E+00	3.735E-01	2.961E-02	36.295

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	8.372E-01		6.483E-01	1.111E+00	1.048E-01	0.754

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-1.868E-02		4.353E-02	6.633E-02	5.445E-03	-0.282
NA-24	1.251E-04		3.054E-04	Half-Life too short		
SC-46	-3.640E-02		8.557E-02	1.344E-01	1.231E-02	-0.271
V-48	-6.342E-02		1.247E-01	1.925E-01	1.733E-02	-0.329
CR-51	2.455E-01		5.346E-01	9.013E-01	8.138E-02	0.272
MN-54	2.356E-02		7.878E-02	1.311E-01	1.204E-02	0.180
CO-56	2.557E-02		7.569E-02	1.265E-01	1.162E-02	0.202
CO-58	-1.502E-02		7.771E-02	1.264E-01	1.161E-02	-0.119
FE-59	-1.436E-01		1.813E-01	2.848E-01	2.638E-02	-0.504
ZN-65	-5.284E-02		1.887E-01	3.088E-01	2.621E-02	-0.171
SE-75	-7.021E-03		7.384E-02	1.180E-01	1.008E-02	-0.059
SR-85	-1.193E-01		7.495E-02	1.149E-01	1.022E-02	-1.038
Y-88	1.860E-02		4.591E-02	8.304E-02	6.739E-03	0.224
Y-91	-5.507E+00		2.302E+01	3.700E+01	3.022E+00	-0.149
NB-94	4.141E-02		5.747E-02	9.993E-02	8.973E-03	0.414
NB-95	-3.771E-02		6.949E-02	1.090E-01	9.936E-03	-0.346
NB-95M	9.145E-02		1.998E-01	3.026E-01	2.944E-02	0.302
ZR-95	9.829E-04		1.227E-01	2.017E-01	2.009E-02	0.005
MO-99	-4.583E+00		4.641E+00	6.937E+00	1.110E+00	-0.661
TC-99M	-7.985E+02		5.548E+02	Half-Life too short		
RU-103	-2.317E-02		7.298E-02	1.140E-01	1.609E-02	-0.203
RH-106	-9.347E-02		5.593E-01	9.203E-01	1.239E-01	-0.102
RU-106	-9.347E-02		5.592E-01	9.203E-01	8.225E-02	-0.102
AG-108M	3.665E-02		6.176E-02	1.030E-01	9.127E-03	0.356
AG-110M	1.408E-02		8.421E-02	1.231E-01	1.121E-02	0.114
SN-113	7.967E-03		8.588E-02	1.402E-01	1.205E-02	0.057
CD-115	2.289E+00		2.768E+00	4.893E+00	4.365E-01	0.468
SN-117M	6.525E-02		5.812E-02	9.733E-02	7.804E-03	0.670
TE-123M	1.518E-02		4.111E-02	6.649E-02	5.364E-03	0.228
SB-124	-7.062E-02		1.333E-01	1.934E-01	1.680E-02	-0.365
SB-125	6.857E-03		1.890E-01	3.058E-01	2.665E-02	0.022
TE-125M	-4.477E+00		1.252E+01	1.987E+01	2.087E+00	-0.225
I-126	-1.864E-02		3.172E-01	4.536E-01	4.021E-02	-0.041
SB-126	6.268E-02		1.820E-01	3.077E-01	2.777E-02	0.204
SB-127	1.283E-01		7.072E-01	1.187E+00	1.194E-01	0.108
I-131	3.194E-02		1.192E-01	1.975E-01	1.761E-02	0.162
TE-132	-2.583E-01		2.960E-01	4.719E-01	6.924E-02	-0.547
BA-133	-1.104E-02		8.597E-02	1.232E-01	1.587E-02	-0.090
I-133	1.368E-05		3.152E-05	Half-Life too short		
CS-134	1.428E-01		9.112E-02	1.642E-01	1.513E-02	0.870
CS-135	-9.169E-03		2.886E-01	4.206E-01	4.147E-02	-0.022
I-135	-5.268E+02		3.596E+02	Half-Life too short		
CS-136	-7.915E-02		1.611E-01	2.601E-01	2.378E-02	-0.304
CE-139	4.375E-03		4.263E-02	6.789E-02	5.370E-03	0.064
BA-140	7.784E-02		3.394E-01	5.776E-01	1.964E-01	0.135
LA-140	-2.015E-02		8.300E-02	1.206E-01	1.009E-02	-0.167
CE-141	2.915E-02		8.135E-02	1.320E-01	1.105E-02	0.221
CE-143	1.493E+01		1.063E+01	1.611E+01	3.419E+00	0.927

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-144	-3.305E-01		2.898E-01	4.297E-01	6.512E-02	-0.769
PM-144	-3.449E-02		5.658E-02	8.871E-02	7.950E-03	-0.389
PR-144	-2.594E+00		4.219E+00	6.611E+00	5.924E-01	-0.392
PM-146	5.876E-03		9.459E-02	1.527E-01	1.625E-02	0.038
ND-147	-2.201E-01		6.611E-01	1.087E+00	1.644E-01	-0.203
PM-149	-2.206E+01		2.124E+01	3.276E+01	5.067E+00	-0.674
EU-152	1.028E-01		1.921E-01	3.128E-01	2.835E-02	0.328
GD-153	-1.410E-02		1.221E-01	1.756E-01	1.570E-02	-0.080
EU-154	-9.594E-02		1.313E-01	1.886E-01	2.086E-02	-0.509
EU-155	1.014E-01		1.450E-01	2.418E-01	2.136E-02	0.419
TB-160	-3.987E-01		2.890E-01	4.130E-01	3.787E-02	-0.965
HO-166M	1.905E-02		1.085E-01	1.815E-01	1.634E-02	0.105
TA-182	1.811E-01		2.199E-01	4.000E-01	3.272E-02	0.453
IR-192	-4.681E-03		5.783E-02	9.474E-02	8.143E-03	-0.049
HG-203	-2.918E-02		5.984E-02	9.666E-02	8.419E-03	-0.302
BI-207	-4.190E-02		1.048E-01	1.701E-01	1.484E-02	-0.246
PB-210	-5.912E+00		3.674E+00	5.815E+00	5.406E-01	-1.017
PB-211	-5.411E-01		1.367E+00	2.121E+00	1.026E+00	-0.255
BI-212	1.730E+00		1.012E+00	1.821E+00	2.322E-01	0.950
RN-219	1.791E-01		7.723E-01	1.269E+00	1.871E-01	0.141
RA-223	-8.353E-01		1.144E+00	1.789E+00	3.097E-01	-0.467
AC-227	-5.102E-02		4.081E-01	6.752E-01	8.075E-02	-0.076
TH-227	-5.102E-02		4.081E-01	6.752E-01	9.132E-02	-0.076
AC-228	1.845E+00	+	5.862E-01	7.588E-01	9.094E-02	2.431
RA-228	1.845E+00	+	5.862E-01	7.588E-01	9.094E-02	2.431
TH-229	4.865E-05		8.058E-01	1.361E+00	1.112E-01	0.000
PA-231	1.647E+00		2.476E+00	4.220E+00	6.126E-01	0.390
TH-231	-8.353E-01		1.144E+00	1.789E+00	3.097E-01	-0.467
TH-232	1.845E+00	+	5.862E-01	7.588E-01	9.094E-02	2.431
PA-233	1.562E-02		1.156E-01	1.918E-01	1.691E-02	0.081
PA-234	5.531E-01		8.044E-01	1.346E+00	2.555E-01	0.411
PA-234M	-1.270E+00		1.069E+01	1.713E+01	1.756E+00	-0.074
TH-234	-3.707E-01		1.617E+00	2.390E+00	4.251E-01	-0.155
U-235	1.498E-01		3.000E-01	4.888E-01	8.191E-02	0.307
NP-237	4.578E+00		1.156E+00	9.200E-01	2.108E-01	4.976
U-238	-3.707E-01		1.617E+00	2.390E+00	4.251E-01	-0.155
NP-239	-6.404E-01		5.970E-01	8.544E-01	7.350E-02	-0.750
CM-247	-3.507E-03		7.021E-02	1.135E-01	9.528E-03	-0.031
CF-249	1.952E-03		7.968E-02	1.297E-01	1.082E-02	0.015
CF-251	8.264E-02		1.936E-01	3.342E-01	2.680E-02	0.247
ANH-511	1.043E-01		7.186E-02	1.310E-01	1.164E-02	0.796

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202053646
* Acquisition date   : 6-MAR-2010 17:03:59 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          : G1202053646 Analyst initials      : MXR1
* Batch Number       : 957711 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	7.874E-01	5.476E-01	4.152E-01	2.794E-01
CO-57	1.988E-01	6.487E-02	3.143E-02	3.310E-02
CO-60	6.480E+00	6.162E-01	3.614E-02	3.144E-01
CD-109	3.474E+01	4.037E+00	9.645E-01	2.060E+00
SN-126	3.429E+00	3.984E-01	9.541E-02	2.033E-01
BA-137M	5.658E+00	5.564E-01	5.616E-02	2.839E-01
CS-137	5.977E+00	5.886E-01	5.933E-02	3.003E-01
TL-208	3.578E-01	1.292E-01	5.511E-02	6.591E-02
BI-211	2.063E+00	6.490E-01	3.160E-01	3.311E-01
PB-212	1.058E+00	1.723E-01	8.022E-02	8.791E-02
BI-214	7.529E-01	2.198E-01	1.071E-01	1.122E-01
PB-214	7.487E-01	2.390E-01	1.138E-01	1.219E-01
RA-224	4.002E+00	1.912E+00	8.598E-01	9.755E-01
RA-226	7.529E-01	2.198E-01	1.071E-01	1.122E-01
TH-228	1.058E+00	1.723E-01	8.022E-02	8.791E-02
AM-241	1.356E+01	1.156E+00	2.048E-01	5.897E-01

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	8.372E-01	6.353E-01	5.778E-01	3.241E-01	NOT IDENT.
NA-22	-1.868E-02	4.266E-02	3.360E-02	2.177E-02	NOT IDENT.
NA-24	1.251E+02	5.987E+02	0.000E+00	3.054E+02	SHORT HLIF
SC-46	-3.640E-02	8.386E-02	6.875E-02	4.279E-02	NOT IDENT.
V-48	-6.342E-02	1.222E-01	9.822E-02	6.233E-02	NOT IDENT.
CR-51	2.455E-01	5.239E-01	4.739E-01	2.673E-01	NOT IDENT.
MN-54	2.356E-02	7.720E-02	6.721E-02	3.939E-02	NOT IDENT.
CO-56	2.557E-02	7.418E-02	6.482E-02	3.785E-02	NOT IDENT.
CO-58	-1.502E-02	7.615E-02	6.481E-02	3.885E-02	NOT IDENT.
FE-59	-1.436E-01	1.777E-01	1.449E-01	9.064E-02	NOT IDENT.
ZN-65	-5.284E-02	1.849E-01	1.570E-01	9.434E-02	NOT IDENT.

SE-75	-7.021E-03	7.236E-02	6.237E-02	3.692E-02	FAIL ABUN
SR-85	-1.193E-01	7.345E-02	5.966E-02	3.748E-02	NOT IDENT.
Y-88	1.860E-02	4.499E-02	4.163E-02	2.295E-02	NOT IDENT.
Y-91	-5.507E+00	2.256E+01	1.877E+01	1.151E+01	NOT IDENT.
NB-94	4.141E-02	5.632E-02	5.146E-02	2.874E-02	NOT IDENT.
NB-95	-3.771E-02	6.810E-02	5.599E-02	3.475E-02	NOT IDENT.
NB-95M	9.145E-02	1.958E-01	1.604E-01	9.990E-02	NOT IDENT.
ZR-95	9.829E-04	1.202E-01	1.037E-01	6.135E-02	NOT IDENT.
MO-99	-4.583E+00	4.548E+00	3.567E+00	2.321E+00	NOT IDENT.
TC-99M	-7.985E+08	1.087E+09	0.000E+00	5.548E+08	SHORT HLIF
RU-103	-2.317E-02	7.152E-02	5.927E-02	3.649E-02	FAIL ABUN
RH-106	-9.347E-02	5.481E-01	4.754E-01	2.796E-01	NOT IDENT.
RU-106	-9.347E-02	5.480E-01	4.754E-01	2.796E-01	NOT IDENT.
AG-108M	3.665E-02	6.052E-02	5.371E-02	3.088E-02	NOT IDENT.
AG-110M	1.408E-02	8.252E-02	6.349E-02	4.210E-02	NOT IDENT.
SN-113	7.967E-03	8.416E-02	7.334E-02	4.294E-02	NOT IDENT.
CD-115	2.289E+00	2.713E+00	2.539E+00	1.384E+00	NOT IDENT.
SN-117M	6.525E-02	5.695E-02	5.210E-02	2.906E-02	NOT IDENT.
TE-123M	1.518E-02	4.029E-02	3.559E-02	2.055E-02	NOT IDENT.
SB-124	-7.062E-02	1.306E-01	9.720E-02	6.665E-02	NOT IDENT.
SB-125	6.857E-03	1.852E-01	1.596E-01	9.449E-02	NOT IDENT.
TE-125M	-4.477E+00	1.227E+01	1.074E+01	6.258E+00	NOT IDENT.
I-126	-1.864E-02	3.109E-01	2.339E-01	1.586E-01	NOT IDENT.
SB-126	6.268E-02	1.783E-01	1.583E-01	9.098E-02	NOT IDENT.
SB-127	1.283E-01	6.931E-01	6.116E-01	3.536E-01	NOT IDENT.
I-131	3.194E-02	1.168E-01	1.035E-01	5.958E-02	NOT IDENT.
TE-132	-2.583E-01	2.900E-01	2.503E-01	1.480E-01	NOT IDENT.
BA-133	-1.104E-02	8.426E-02	6.458E-02	4.299E-02	NOT IDENT.
I-133	1.368E+01	6.177E+01	0.000E+00	3.152E+01	SHORT HLIF
CS-134	1.428E-01	8.930E-02	8.425E-02	4.556E-02	NOT IDENT.
CS-135	-9.169E-03	2.828E-01	2.221E-01	1.443E-01	NOT IDENT.
I-135	-5.268E+08	7.048E+08	0.000E+00	3.596E+08	SHORT HLIF
CS-136	-7.915E-02	1.579E-01	1.325E-01	8.056E-02	NOT IDENT.
CE-139	4.375E-03	4.177E-02	3.630E-02	2.131E-02	NOT IDENT.
BA-140	7.784E-02	3.327E-01	2.996E-01	1.697E-01	NOT IDENT.
LA-140	-2.015E-02	8.134E-02	6.072E-02	4.150E-02	NOT IDENT.
CE-141	2.915E-02	7.973E-02	7.080E-02	4.068E-02	NOT IDENT.
CE-143	1.493E+01	1.041E+01	8.489E+00	5.313E+00	FAIL ABUN
CE-144	-3.305E-01	2.840E-01	2.310E-01	1.449E-01	NOT IDENT.
PM-144	-3.449E-02	5.545E-02	4.569E-02	2.829E-02	NOT IDENT.
PR-144	-2.594E+00	4.134E+00	3.405E+00	2.109E+00	NOT IDENT.
PM-146	5.876E-03	9.270E-02	7.956E-02	4.730E-02	NOT IDENT.
ND-147	-2.201E-01	6.479E-01	5.638E-01	3.305E-01	NOT IDENT.
PM-149	-2.206E+01	2.082E+01	1.727E+01	1.062E+01	NOT IDENT.
EU-152	1.028E-01	1.883E-01	1.642E-01	9.605E-02	FAIL ABUN
GD-153	-1.410E-02	1.196E-01	9.516E-02	6.103E-02	NOT IDENT.
EU-154	-9.594E-02	1.287E-01	9.551E-02	6.566E-02	FAIL ABUN
EU-155	1.014E-01	1.421E-01	1.308E-01	7.249E-02	NOT IDENT.
TB-160	-3.987E-01	2.832E-01	2.113E-01	1.445E-01	FAIL ABUN
HO-166M	1.905E-02	1.064E-01	9.343E-02	5.427E-02	NOT IDENT.
TA-182	1.811E-01	2.155E-01	2.029E-01	1.100E-01	NOT IDENT.
IR-192	-4.681E-03	5.667E-02	4.983E-02	2.891E-02	FAIL ABUN
HG-203	-2.918E-02	5.864E-02	5.100E-02	2.992E-02	NOT IDENT.
BI-207	-4.190E-02	1.027E-01	8.657E-02	5.242E-02	FAIL ABUN
PB-210	-5.912E+00	3.600E+00	3.207E+00	1.837E+00	NOT IDENT.
PB-211	-5.411E-01	1.340E+00	1.108E+00	6.837E-01	NOT IDENT.
BI-212	1.730E+00	9.920E-01	9.367E-01	5.061E-01	NOT IDENT.
RN-219	1.791E-01	7.568E-01	6.632E-01	3.861E-01	FAIL ABUN
RA-223	-8.353E-01	1.121E+00	9.403E-01	5.721E-01	FAIL ABUN
AC-227	-5.102E-02	3.999E-01	3.571E-01	2.040E-01	NOT IDENT.
TH-227	-5.102E-02	3.999E-01	3.571E-01	2.040E-01	NOT IDENT.
AC-228	1.845E+00	5.745E-01	3.879E-01	2.931E-01	FAIL ABUN
RA-228	1.845E+00	5.745E-01	3.879E-01	2.931E-01	FAIL ABUN
TH-229	4.865E-05	7.897E-01	7.252E-01	4.029E-01	FAIL ABUN
PA-231	1.647E+00	2.426E+00	2.226E+00	1.238E+00	NOT IDENT.
TH-231	-8.353E-01	1.121E+00	9.403E-01	5.721E-01	FAIL ABUN
TH-232	1.845E+00	5.745E-01	3.879E-01	2.931E-01	FAIL ABUN
PA-233	1.562E-02	1.133E-01	1.009E-01	5.780E-02	NOT IDENT.
PA-234	5.531E-01	7.883E-01	6.875E-01	4.022E-01	NOT IDENT.
PA-234M	-1.270E+00	1.047E+01	8.733E+00	5.344E+00	NOT IDENT.
TH-234	-3.707E-01	1.584E+00	1.309E+00	8.083E-01	FAIL ABUN
U-235	1.498E-01	2.940E-01	2.623E-01	1.500E-01	FAIL ABUN
NP-237	4.578E+00	1.133E+00	5.000E-01	5.781E-01	NOT IDENT.
U-238	-3.707E-01	1.584E+00	1.309E+00	8.083E-01	FAIL ABUN
NP-239	-6.404E-01	5.851E-01	4.608E-01	2.985E-01	NOT IDENT.
CM-247	-3.507E-03	6.881E-02	5.932E-02	3.511E-02	NOT IDENT.
CF-249	1.952E-03	7.809E-02	6.784E-02	3.984E-02	NOT IDENT.
CF-251	8.264E-02	1.897E-01	1.784E-01	9.680E-02	NOT IDENT.

ANH-511	1.043E-01	7.043E-02	6.805E-02	3.593E-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	603.5490
49.72	605.8758
57.36	840.7564
59.54	645.1510
63.29	351.8714
63.29	351.8714
64.28	317.2411
67.75	398.4688
69.67	359.8029
70.83	378.6411
72.81	408.7554
72.87	408.8073
72.87	408.8073
74.82	378.2471
74.82	378.2471
74.82	378.2471
74.97	378.3619
77.11	379.9874
77.11	379.9874
77.11	379.9874
79.69	359.5709
79.80	359.6483
80.12	344.6228
80.19	344.6693
80.57	332.7115
81.00	381.8665
81.07	381.9180
81.07	381.9180
83.79	390.0402
83.79	390.0402
85.43	377.3731
86.48	391.9974
86.55	392.0478
86.79	392.2183
86.94	392.3288
87.57	392.7803
88.03	393.1097
88.47	393.4256
89.96	232.9628
91.11	233.4423
92.59	241.8552
92.59	241.8552
93.35	242.1780
94.67	244.3022
94.87	231.8541
94.87	231.8541
95.86	255.7893
97.43	253.3301
98.44	223.8175
99.53	240.0188
100.11	237.0907
103.18	258.4210
103.37	244.7290
105.31	232.7488
106.12	231.9887
109.28	254.5480
111.00	235.9320
111.76	245.8738
116.30	222.7224
117.23	253.3500
121.12	238.4842
121.78	236.5358
122.06	236.6330
123.07	236.9817
131.20	232.0053
133.52	256.0259
136.00	217.9718

136.47	204.7576
140.51	259.5746
140.51	0.0000
143.76	224.7314
144.24	223.7495
144.24	223.7495
145.44	229.7283
152.43	220.4248
153.25	212.6900
154.21	226.6099
154.21	226.6099
156.02	225.9787
158.56	186.6150
159.00	210.7697
162.66	218.6090
163.33	200.3609
165.86	203.2744
176.60	232.4249
177.52	219.4977
181.07	245.9364
184.41	234.4609
185.72	225.9362
193.51	229.6298
197.04	236.7665
205.31	227.9443
210.85	238.3210
215.65	225.7489
222.11	231.7722
227.38	235.7162
228.16	235.8894
228.18	235.8952
235.69	205.6962
235.96	210.2194
235.96	210.2194
238.63	208.3071
238.63	208.3071
240.99	208.7563
242.00	208.9485
244.70	181.8427
252.40	170.2304
252.80	179.7514
256.23	182.1885
256.23	182.1885
260.90	189.5960
264.66	183.5127
268.22	184.0664
269.46	184.2598
269.46	184.2598
271.23	195.2966
273.65	209.5582
276.40	182.4305
277.37	184.5067
277.60	184.5416
278.00	187.5023
279.20	201.2302
279.54	212.9001
280.46	195.6259
283.69	166.0398
284.31	170.0092
285.41	200.3012
285.90	198.4343
287.50	167.5226
293.27	186.2948
295.22	201.8697
295.96	219.6353
298.57	152.4861
299.98	173.1130
299.98	173.1130
300.09	165.2571
300.09	165.2571
300.13	165.2622
301.36	192.4257
302.85	206.0278
304.50	161.8729
304.50	161.8729
304.85	161.9155
308.46	177.2137
311.90	170.7271

316.51	167.3335
319.41	163.7022
320.08	143.8088
323.87	182.2666
323.87	182.2666
328.76	162.8157
333.37	164.5696
334.37	167.9158
334.37	167.9158
338.28	178.1001
338.28	178.1001
338.32	178.1055
338.32	178.1055
338.32	178.1055
340.48	188.1064
340.55	188.1177
344.28	170.7250
351.06	163.3643
351.93	160.3970
356.01	150.8072
364.49	137.0446
366.42	150.6338
383.85	156.5437
388.16	168.4904
388.63	165.4014
391.69	166.7734
400.66	145.5679
401.81	145.6732
402.40	147.8400
404.85	153.3523
410.95	148.6240
414.70	160.6702
423.72	144.4304
427.09	162.9473
427.87	161.9490
433.94	147.4627
453.88	175.3101
463.37	163.1165
468.07	178.9105
473.00	179.4005
476.78	147.7893
477.60	132.4091
487.02	118.6705
492.35	109.0014
497.08	134.9230
511.00	121.3121
514.00	209.7014
527.90	89.7381
529.87	0.0000
531.02	104.4069
537.26	100.1816
546.56	0.0000
563.25	107.0026
569.33	79.5626
569.50	79.5689
569.70	78.6520
583.19	99.6437
600.60	100.4536
602.73	88.0989
604.72	94.0576
609.32	100.5391
609.32	100.5391
610.33	103.7292
614.28	103.9146
618.01	95.5727
621.93	92.8966
621.93	92.8966
633.25	93.3656
635.95	86.7988
636.99	83.9760
645.85	106.3362
657.76	121.9692
661.66	94.5212
661.66	94.5212
664.57	77.2559
666.33	86.9788
666.50	86.9854
677.62	85.4498

685.70	72.0976
695.00	68.4636
696.49	83.1842
696.51	83.1842
697.00	84.1796
702.65	70.6395
706.68	99.2542
711.68	79.7601
720.70	79.0605
721.93	90.9645
722.78	99.8953
722.91	99.9002
723.31	117.7246
724.19	122.7134
727.33	72.3317
733.00	101.2928
735.93	83.5140
739.50	96.5737
747.24	87.8775
752.31	86.0483
753.82	83.0952
756.73	78.1771
763.94	98.4929
765.81	89.5106
766.42	85.5084
777.92	101.0352
778.90	98.0396
783.70	92.1419
785.37	85.1054
795.86	70.1809
801.95	90.7252
810.29	91.0012
810.76	94.0844
815.77	109.6254
818.51	87.1707
832.01	109.2349
834.85	101.0912
836.80	0.0000
846.77	79.7634
856.80	133.0594
860.56	105.1278
871.09	103.4207
873.19	80.4966
875.33	0.0000
879.36	108.9512
880.51	100.6102
883.24	75.5279
884.68	96.5551
889.28	105.1147
898.04	99.0993
911.20	100.5919
911.20	100.5919
911.20	100.5919
926.50	115.9988
937.49	143.1143
944.13	135.9266
946.00	116.7332
949.00	129.7087
962.29	141.0233
964.08	174.4941
966.15	147.6630
968.97	135.9268
968.97	135.9268
968.97	135.9268
983.53	100.7856
996.26	101.1829
1001.03	100.2409
1004.73	97.0830
1037.84	92.7313
1038.76	0.0000
1048.07	89.3311
1050.41	71.8809
1050.41	71.8809
1063.66	76.7892
1085.87	106.1467
1099.45	101.8859
1112.07	83.4882
1115.54	100.4736

1120.29	82.7435
1120.29	82.7435
1120.55	85.5680
1121.30	72.4193
1131.51	0.0000
1173.23	53.4251
1177.93	31.1136
1189.05	23.9522
1204.77	29.8244
1221.41	23.1914
1231.02	24.2177
1235.36	31.0339
1238.28	25.2341
1260.41	0.0000
1271.85	19.5776
1274.44	22.5293
1274.54	18.6111
1291.59	17.7070
1298.22	0.0000
1312.11	15.8197
1332.49	14.9054
1365.19	14.0211
1368.63	0.0000
1384.29	24.1455
1408.01	11.1280
1457.56	0.0000
1460.82	19.4546
1489.16	10.3044
1505.03	24.8174
1596.21	13.9187
1620.50	9.5380
1678.03	0.0000
1690.97	20.4256
1764.49	11.2178
1764.49	11.2178
1770.23	8.1885
1771.35	11.4664
1791.20	0.0000
1836.06	7.5804

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202053646

Total Uranium Activity	-1.0335E+00	ug/g
Total Uranium Counting Unc.	4.7154E+00	ug/g
Total Uranium Tpu	2.4058E-06	ug/g
Total Uranium Mda	3.8948E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 957711                          SAMPLE ID   : G1202053646
*  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 17:03:59.06          SAMPLE ALQT  : 155.440 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.755E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 2.418E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.107E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.996E+00

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Radiochemistry Batch Checklist, Rev10

Batch# 961540 Product: H3 Date: 3/14/10

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

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: [Signature] 3/14/10

Secondary Review Performed By: [Signature] 3/16/10

LANL

317-317

Tritium Que Sheet

05-MAR-10

Pink

Vacuum

Batch #: 961540

Analyst: KXK2

First Client Due Date 17-MAR-10

Internal Due Date: 07-MAR-10

Spike Isotope: Hydrogen-3

LCS Isotope: Hydrogen-3

Expiration Date: 3/27/10

Vol: 0.1

Expiration Date: 3/27/10

Vol: 0.1

Prep Date: 3/8/10

Initials: KXK2

Pipet ID: 2970968

Witness: 3/8/10

total moisture
Dist. 5/8/10

Initial Sample Aliquot (g/mL) Final Wt (g)

Vol added for Dist (mL)

Aliquot in vial (g/mL)

LSC Rack #

Dist Rig #

Sample Date

Client

Matrix

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)	Total Moisture Dist. (mL)
247797001-1	RE15-10-8317	SAMPLE		25 pCi/mL SOIL	LANL010		17-FEB-10	10	22	1		568.72	532.89	35.83
247797002-1	RE15-10-8319	SAMPLE		25 pCi/mL SOIL	LANL010		17-FEB-10	5	23	2		575.23	556.82	18.41
247797003-1	RE15-10-8316	SAMPLE		25 pCi/mL SOIL	LANL010		17-FEB-10	9	24	3		512.26	491.77	20.49
247797004-1	RE15-10-8326	SAMPLE		25 pCi/mL SOIL	LANL010		17-FEB-10	5	25	4		530.34	509.13	21.21
247797005-1	RE15-10-8318	SAMPLE		25 pCi/mL SOIL	LANL010		17-FEB-10	8.5	26	5		551.54	526.72	24.82
247900004-1	RE15-10-7898	SAMPLE		25 pCi/mL SOIL	LANL010		18-FEB-10	10	27	6		484.06	483.06	71.00
247900006-1	RE15-10-7895	SAMPLE		25 pCi/mL SOIL	LANL010		18-FEB-10	10	28	7		531.10	479.05	52.05
247900008-1	RE15-10-7893	SAMPLE		25 pCi/mL SOIL	LANL010		18-FEB-10	10	29	8		390.46	281.52	108.94
247900011-1	RE15-10-8009	SAMPLE		25 pCi/mL SOIL	LANL010		18-FEB-10	10	30	9		360.92	276.16	84.82
247920002-1	WSTPU-10-13410	SAMPLE		25 pCi/mL SOIL	LANL010		23-FEB-10	10	31	10		444.47	404.71	56.76
248385001-1	WST16-10-13294	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	32	11		372.16	311.87	60.29
248385002-1	WST16-10-13289	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	33	12		609.00	548.71	60.29
248385003-1	WST16-10-13293	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	34	13		521.23	468.59	52.64
248385004-1	WST16-10-13292	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	35	14		555.21	511.35	43.86
248385005-1	WST16-10-13291	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	36	15		623.72	553.24	70.48
248385006-1	WST16-10-13290	SAMPLE		25 pCi/mL SOIL	LANL010		24-FEB-10	10	37	16		527.87	456.41	71.26
248386003-1	WSTPU-10-13500	SAMPLE		25 pCi/mL SOIL	LANL010		26-FEB-10	10	38	17		481.42	441.94	39.48
248386004-1	WSTPU-10-13501	SAMPLE		25 pCi/mL SOIL	LANL010		26-FEB-10	10	39	18		556.61	473.48	82.93
1202062409-1	MB for batch 961540	MB		25 pCi/mL SOIL	QC ACCOUNT			10	40	19		20.00	0.00	20.00
1202062410-1	WSTPU-10-13410(247920002DUP)	DUP		25 pCi/mL SOIL	QC ACCOUNT		23-FEB-10	10	41	10		444.47	404.71	56.76
1202062411-1	LCS for batch 961540	LCS		25 pCi/mL SOIL	QC ACCOUNT			10	42	20		20.00	0.00	20.00

Bkg Rack #: 21

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) 7060655, Wallac

Data Reviewed By: 3/14/10

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1

DATE	3/8/2010	INITIALS	KXK2	BATCH NUMBER	961540				
Sample #	Flask (g)	Sample Wet (g)	Sample Wet & Flask (g)	% Moisture of Sample (Balance Interface using % Moisture Batch)	Total Moisture in Sample (mL)	Sample Dry (g)	Sample Dry & Flask (g)	mLs aliquoted into LSC vial	Collection Tube Number
247797001	200	568.72	768.72	0.063	35.83	532.89	732.89	10	
247797002	200	575.23	775.23	0.032	18.41	556.82	756.82	5	
247797003	200	512.26	712.26	0.040	20.49	491.77	691.77	9	
247797004	200	530.34	730.34	0.040	21.21	509.13	709.13	5	
247797005	200	551.54	751.54	0.045	24.82	526.72	726.72	8.5	
247900004	200	464.06	664.06	0.153	71.00	393.06	593.06	10	
247900006	200	531.10	731.10	0.098	52.05	479.05	679.05	10	
247900008	200	390.46	590.46	0.279	108.94	281.52	481.52	10	
247900011	200	360.92	560.92	0.235	84.82	276.10	476.10	10	
247920002	200	461.47	661.47	0.123	56.76	404.71	604.71	10	
248385001	200	372.16	572.16	0.162	60.29	311.87	511.87	10	
348385002	200	609.00	809.00	0.099	60.29	548.71	748.71	10	
448385003	200	521.23	721.23	0.101	52.64	468.59	668.59	10	
548385004	200	555.21	755.21	0.079	43.86	511.35	711.35	10	
648385005	200	623.72	823.72	0.113	70.48	553.24	753.24	10	
748385006	200	527.87	727.87	0.135	71.26	456.61	656.61	10	
248386003	200	481.42	681.42	0.082	39.48	441.94	641.94	10	
248385004	200	556.61	756.61	0.149	82.93	473.68	673.68	10	
MB	200	20.00	220.00	1.000	20.00	0.00	200.00	10	
DUP	200	461.47	661.47	0.123	56.76	404.71	604.71	10	
LCS	200	20.00	220.00	1.000	20.00	0.00	200.00	10	

T961540

Tritium Solid

Filename : H3VAC.XLS

File type : Excel

Version # : 1.2.6

Batch : 961540

Analyst : KKK2

Prep Date : 3/8/2010

H-3 Abundance : 1

Method Uncertainty : 0.0691

Geometry: 10mL DW/13mL

Eoscent Ultra

Spike S/N :

Spike Exp Date :

Spike Activity (dpm/ml):

Spike Volume Added:

LCS S/N :

LCS Exp Date :

LCS Activity (dpm/ml):

LCS Volume Added:

Procedure Code : LSC_VHSS

Paramname :

Required MDC :

Half-life of Tritium :

Pipet, 0.1 ml Stdev : +/-

Pipet, 0.5 ml Stdev : +/-

Pipet, 1.0 ml Stdev : +/-

Pipet, 5.0 ml Stdev : +/-

Sample Characteristics									
Pos.	Sample ID	Wet Sample Weight (g)	Total Moisture L	Sample Alquot in Vial L	Sample Alquot Stdev. L	Dry Sample Weight (g)	% Moisture of Sample	Rig number	Sample Date/Time
1	247797001.1	568.72	0.0358	0.0100	2.5729E-05	532.89	6.30%	1	2/17/2010 12:00
2	247797002.1	575.23	0.0184	0.0050	2.5729E-05	556.82	3.20%	2	2/17/2010 12:00
3	247797003.1	512.26	0.0205	0.0090	2.5729E-05	491.77	4.00%	3	2/17/2010 12:00
4	247797004.1	530.34	0.0212	0.0050	2.5729E-05	508.13	4.00%	4	2/17/2010 12:00
5	247797005.1	551.54	0.0248	0.0085	2.5729E-05	526.72	4.50%	5	2/17/2010 12:00
6	247900004.1	484.06	0.0710	0.0100	2.5729E-05	393.06	15.30%	6	2/18/2010 12:00
7	247900008.1	531.10	0.0521	0.0100	2.5729E-05	479.05	9.80%	7	2/18/2010 12:00
8	247900008.1	390.46	0.1089	0.0100	2.5729E-05	281.52	27.90%	8	2/18/2010 12:00
9	247900011.1	360.92	0.0848	0.0100	2.5729E-05	276.10	23.50%	9	2/18/2010 12:00
10	247920002.1	461.47	0.0568	0.0100	2.5729E-05	404.71	12.30%	10	2/23/2010 12:00
11	248385001.1	372.16	0.0603	0.0100	2.5729E-05	311.87	16.20%	11	2/24/2010 12:00
12	248385002.1	608.00	0.0603	0.0100	2.5729E-05	548.71	9.90%	12	2/24/2010 12:00
13	248385003.1	521.23	0.0526	0.0100	2.5729E-05	468.59	10.10%	13	2/24/2010 12:00
14	248385004.1	555.21	0.0439	0.0100	2.5729E-05	511.35	7.90%	14	2/24/2010 12:00
15	248385005.1	623.72	0.0705	0.0100	2.5729E-05	553.24	11.30%	15	2/24/2010 12:00
16	248385006.1	527.87	0.0713	0.0100	2.5729E-05	456.61	13.50%	16	2/24/2010 12:00
17	248386003.1	481.42	0.0395	0.0100	2.5729E-05	441.94	8.20%	17	2/26/2010 12:00
18	248386004.1	556.61	0.0829	0.0100	2.5729E-05	473.68	14.90%	18	2/26/2010 12:00
19	1202062408.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	19	3/8/2010 0:00
20	1202062410.1	461.47	0.0568	0.0100	2.5729E-05	404.71	12.30%	10	2/23/2010 12:00
21	1202062411.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	20	3/8/2010 0:00

Count raw Data				Calibration Data										Backgrounds		
Pos.	Rack	Position #	Counting Time (min.)	Quench#	Gross cpm	Background cpm	Count Time (min.)	Count Start Date/Time	Sample Decay	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Rack Position #	Count Start Date/Time
1	22		120.03	806.3	15.34	0.72	120	3/11/2010 3:45	0.997	LSCPINK	8/21/2009	8/31/2010	0.1700	0.00792	21	3/11/2010 1:43
2	23		120.03	807.92	2.46	0.72	120	3/11/2010 5:48	0.997	LSCPINK	8/21/2009	8/31/2010	0.1716	0.00792	21	3/11/2010 1:43
3	24		120.03	806.73	16.15	0.72	120	3/11/2010 7:50	0.997	LSCPINK	8/21/2009	8/31/2010	0.1705	0.00792	21	3/11/2010 1:43
4	25		120.03	807.41	9	0.72	120	3/11/2010 9:53	0.997	LSCPINK	8/21/2009	8/31/2010	0.1711	0.00792	21	3/11/2010 1:43
5	26		120.03	805.3	7.83	0.72	120	3/11/2010 11:56	0.997	LSCPINK	8/21/2009	8/31/2010	0.1690	0.00792	21	3/11/2010 1:43
6	27		115.48	808.45	87.71	0.72	120	3/11/2010 13:59	0.997	LSCPINK	8/21/2009	8/31/2010	0.1722	0.00792	21	3/11/2010 1:43
7	28		120.03	809.31	4.07	0.72	120	3/11/2010 15:56	0.997	LSCPINK	8/21/2009	8/31/2010	0.1730	0.00792	21	3/11/2010 1:43
8	29		120.03	806.32	3.83	0.72	120	3/11/2010 17:59	0.997	LSCPINK	8/21/2009	8/31/2010	0.1701	0.00792	21	3/11/2010 1:43
9	30		36.5797	807.55	276.98	0.72	120	3/11/2010 20:02	0.997	LSCPINK	8/21/2009	8/31/2010	0.1713	0.00792	21	3/11/2010 1:43
10	31		120.03	805.88	1.13	0.72	120	3/11/2010 20:40	0.997	LSCPINK	8/21/2009	8/31/2010	0.1696	0.00792	21	3/11/2010 1:43
11	32		120.03	805.85	1.29	0.72	120	3/11/2010 22:43	0.998	LSCPINK	8/21/2009	8/31/2010	0.1686	0.00792	21	3/11/2010 1:43
12	33		120.03	804.82	1.16	0.72	120	3/12/2010 2:01	0.998	LSCPINK	8/21/2009	8/31/2010	0.1685	0.00792	21	3/11/2010 1:43
13	34		120.03	806.81	1.01	0.72	120	3/12/2010 4:03	0.998	LSCPINK	8/21/2009	8/31/2010	0.1705	0.00792	21	3/11/2010 1:43
14	35		120.03	804.34	0.96	0.72	120	3/12/2010 6:06	0.998	LSCPINK	8/21/2009	8/31/2010	0.1680	0.00792	21	3/11/2010 1:43
15	36		120.03	805.21	0.91	0.72	120	3/12/2010 8:08	0.998	LSCPINK	8/21/2009	8/31/2010	0.1689	0.00792	21	3/11/2010 1:43
16	37		120.03	805.6	0.92	0.72	120	3/12/2010 10:11	0.998	LSCPINK	8/21/2009	8/31/2010	0.1693	0.00792	21	3/11/2010 1:43
17	38		120.03	804.48	1.19	0.72	120	3/12/2010 12:13	0.998	LSCPINK	8/21/2009	8/31/2010	0.1682	0.00792	21	3/11/2010 1:43
18	39		120.03	808.23	0.95	0.72	120	3/12/2010 14:16	0.998	LSCPINK	8/21/2009	8/31/2010	0.1719	0.00792	21	3/11/2010 1:43
19	40		120.03	806.79	0.89	0.72	120	3/12/2010 16:18	0.999	LSCPINK	8/21/2009	8/31/2010	0.1705	0.00792	21	3/11/2010 1:43
20	41		120.03	807.73	1.13	0.72	120	3/12/2010 18:22	0.997	LSCPINK	8/21/2009	8/31/2010	0.1715	0.00792	21	3/11/2010 1:43
21	42		15.0297	806.71	20.55	0.72	120	3/12/2010 20:24	0.999	LSCPINK	8/21/2009	8/31/2010	0.1704	0.00792	21	3/11/2010 1:43

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	Counting Uncertainty	1 SIGMA	1 SIGMA	Total Prop. Uncertainty	Sample QC	Sample Type	RPD	RER	Nominal pC/L	Recovery
Pos.	pC/L	pC/L	pC/L	pC/L	pC/L	pC/L	pC/L	CPM	CPM	pC/L	pC/L	pC/L	pC/L						
1	67.8352	47.8923	250	102.4280	3886.0636	0.026	14.820	0.366	0.163	97.2278	287.5886			SAMPLE					
2	134.4056	94.8915	250	202.9461	916.3764	0.094	1.740	0.163		85.7223	107.0284			SAMPLE					
3	75.1846	53.0810	250	113.5251	4545.7112	0.026	15.430	0.375		110.4458	335.4048			SAMPLE					
4	134.8017	95.1712	250	203.5442	4373.5391	0.036	8.280	0.285		150.3112	340.7904			SAMPLE					
5	80.2872	56.6834	250	121.2298	2236.7784	0.039	7.110	0.267		83.9638	177.0442			SAMPLE					
6	67.6517	47.7627	250	102.3451	2283.9475	0.013	86.990	0.875		229.6835	1606.9660			SAMPLE					
7	66.6763	47.0740	250	100.6780	875.2325	0.060	3.350	0.200		52.1918	80.2486			SAMPLE					
8	67.6230	47.8836	250	102.4095	826.5032	0.063	3.110	0.195		51.7423	77.4007			SAMPLE					
9	98.5257	69.5600	250	160.7603	72895.5407	0.013	276.260	2.753		726.3716	5128.6813			SAMPLE					
10	67.9487	47.9723	250	102.5993	109.1621	0.303	0.410	0.124		33.0544	33.9175			SAMPLE					
11	67.9512	47.9741	250	102.6031	151.7677	0.227	0.570	0.129		34.4555	36.0404			SAMPLE					
12	68.3750	48.2733	250	103.2430	117.8846	0.285	0.440	0.125		33.5304	34.5210			SAMPLE					
13	67.5704	47.7053	250	102.0281	76.7824	0.414	0.290	0.120		31.7865	32.2332			SAMPLE					
14	68.5776	48.4163	250	103.5489	64.4912	0.493	0.240	0.118		31.7907	32.1064			SAMPLE					
15	68.2164	48.1613	250	103.0035	50.7866	0.613	0.190	0.117		31.1491	31.3493			SAMPLE					
16	68.0577	48.0493	250	102.7638	53.3352	0.585	0.200	0.117		31.1718	31.3923			SAMPLE					
17	68.5003	48.3618	250	103.4322	126.1530	0.269	0.470	0.126		33.8588	34.9803			SAMPLE					
18	67.0059	47.3068	250	101.1758	60.3877	0.513	0.230	0.118		30.9695	31.2538			SAMPLE					
19	67.4640	47.6302	250	101.8675	-7.9305	3.613	-0.030	0.108		28.6513	28.6517			MB					
20	67.2292	47.4644	250	101.5130	106.0063	0.303	0.410	0.124		32.7045	33.5584			DUP		1.1%	0.0086		
21	143.0723	101.0103	250	254.8117	5244.6164	0.060	19.830	1.172		309.9359	479.0467			LCS				5537.8461	94.7%

REGISTRY

THU 11 MAR 2010 1:41

*** DIRECTORY PATH :S:\LSC\Q\DA\961540A0 ***

PARAMETER GROUP: 8
ID: H-3(3)

00A PROGRAM MODE 6 ->

ORDER	POS	ID	CTIME	COUNTS	CUCNTS	MCW	REP	STD	STMS	STIME
1	21	BKG	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
2	22	247797001	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
3	23	247797002	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
4	24	247797003	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
5	25	247797004	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
6	26	247797005	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
7	27	247900004	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
8	28	247000006	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
9	29	247900008	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
10	30	247900011	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
11	31	247920002	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
12	32	248385001	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00

NUMBER OF CYCLES 1
COINCIDENCE BIAS (L/H) L

MCA INPUT	TRIGG.	INHIBIT	MEMORY SPLIT
1 LRSUM	DCOS	G	L*R
2 GSUM	G		L*R

WINDOW	CHANNELS	MCA	HALF
1	1- 174	1	2
2	1- 174	1	2
3	60- 220	1	2
4	50- 320	1	1
5	50- 270	1	1
6	60- 220	1	1
7	1- 1024	2	1
8	1- 1024	2	2

SELECTED PRINTOUT FOR TERMINAL 1 (A)

SELECTED PRINTOUT FOR TERMINAL 2 (B)

1.	2.	3.	4.	5.	6.	7.
POS	ID	CTIME	SQP	CPM1	CPM2	CPM3
SEND SPECTRA	12					
RESOLUTION OF SPECTRA	1024					
LISTING	Y					
INSTRUMENT NUMBER	1					

POS	ID	CTIME	SQP	CPM1	CPM2	CPM3
Q012101N.001	11 MAR 2010	3:44				
21	BKG	120:01.785	808.36	.72	.72	1.06
Q022201N.001	11 MAR 2010	5:46				

Page 1

			REGISTRY			
22	247797001	120:01.785	806.30	15.34	15.34	16.53
Q032301N.001	11 MAR 2010	7:49				
23	247797002	120:01.785	807.92	2.46	2.46	2.82
Q042401N.001	11 MAR 2010	9:51				
24	247797003	120:01.785	806.73	16.15	16.15	17.73
Q052501N.001	11 MAR 2010	11:54				
25	247797004	120:01.785	807.41	9.00	9.00	9.99
Q062601N.001	11 MAR 2010	13:57				
26	247797005	120:01.785	805.30	7.83	7.83	9.23
Q072701N.001	11 MAR 2010	15:55				
27	247900004	115:28.778	808.45	87.71	87.71	94.38
Q082801N.001	11 MAR 2010	17:57				
28	247000006	120:01.784	809.31	4.07	4.07	4.42
Q092901N.001	11 MAR 2010	20:00				
29	247900008	120:01.784	806.32	3.83	3.83	4.31
Q103001N.001	11 MAR 2010	20:39				
30	247900011	36:34.784	807.55	276.98	276.98	298.99
Q113101N.001	11 MAR 2010	22:41				
31	247920002	120:01.784	805.88	1.13	1.13	1.53
Q123201N.001	12 MAR 2010	0:44				
32	248385001	120:01.784	805.85	1.29	1.29	1.62

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
THU 11 MAR 2010 1:41
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s:\sc\files\pink\961540A0\U961540A0.xls

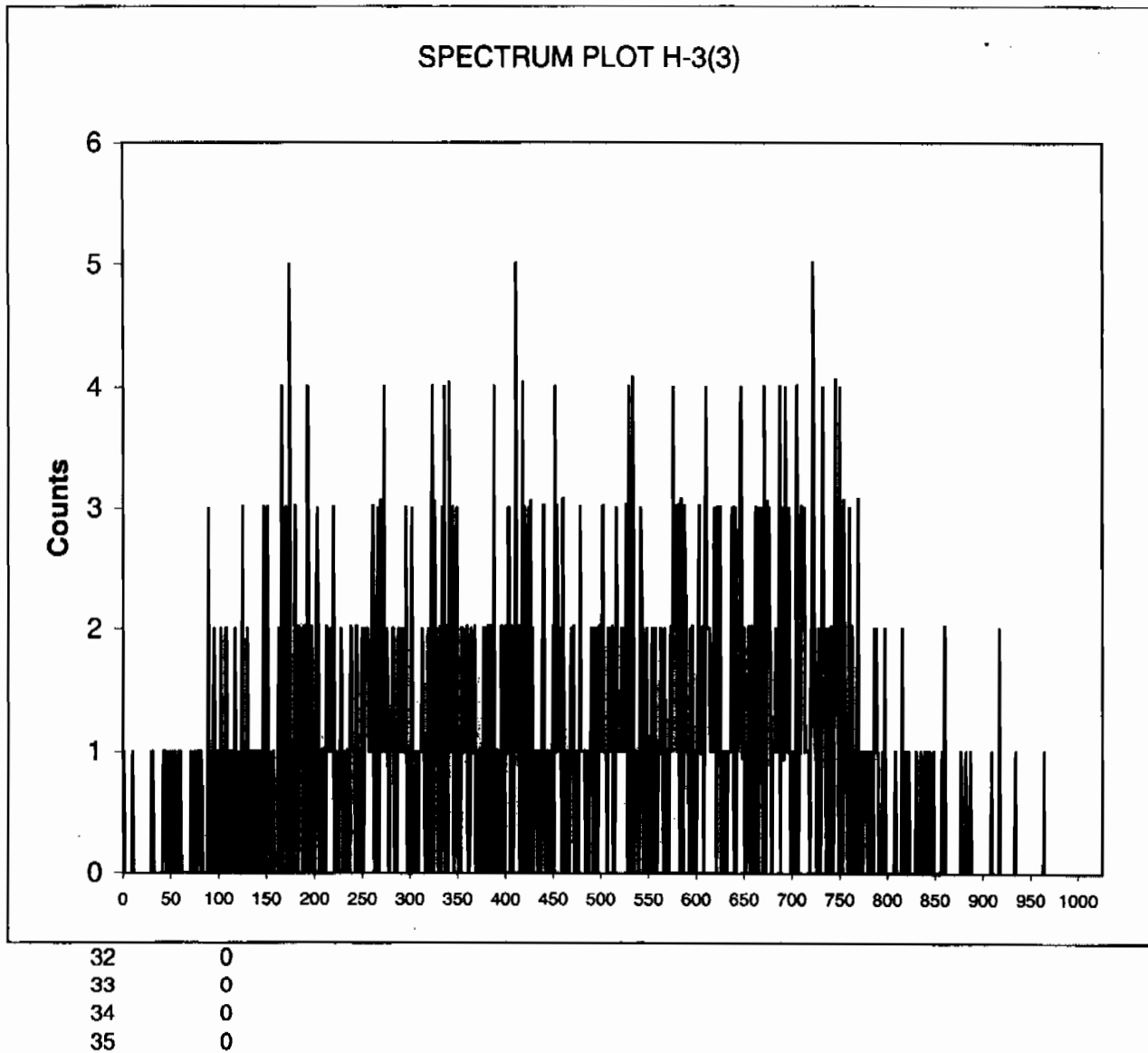
ID:
Comments:

H-3(3)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

1, BKG, 120.0297:
808.36
1-174

Channel Counts

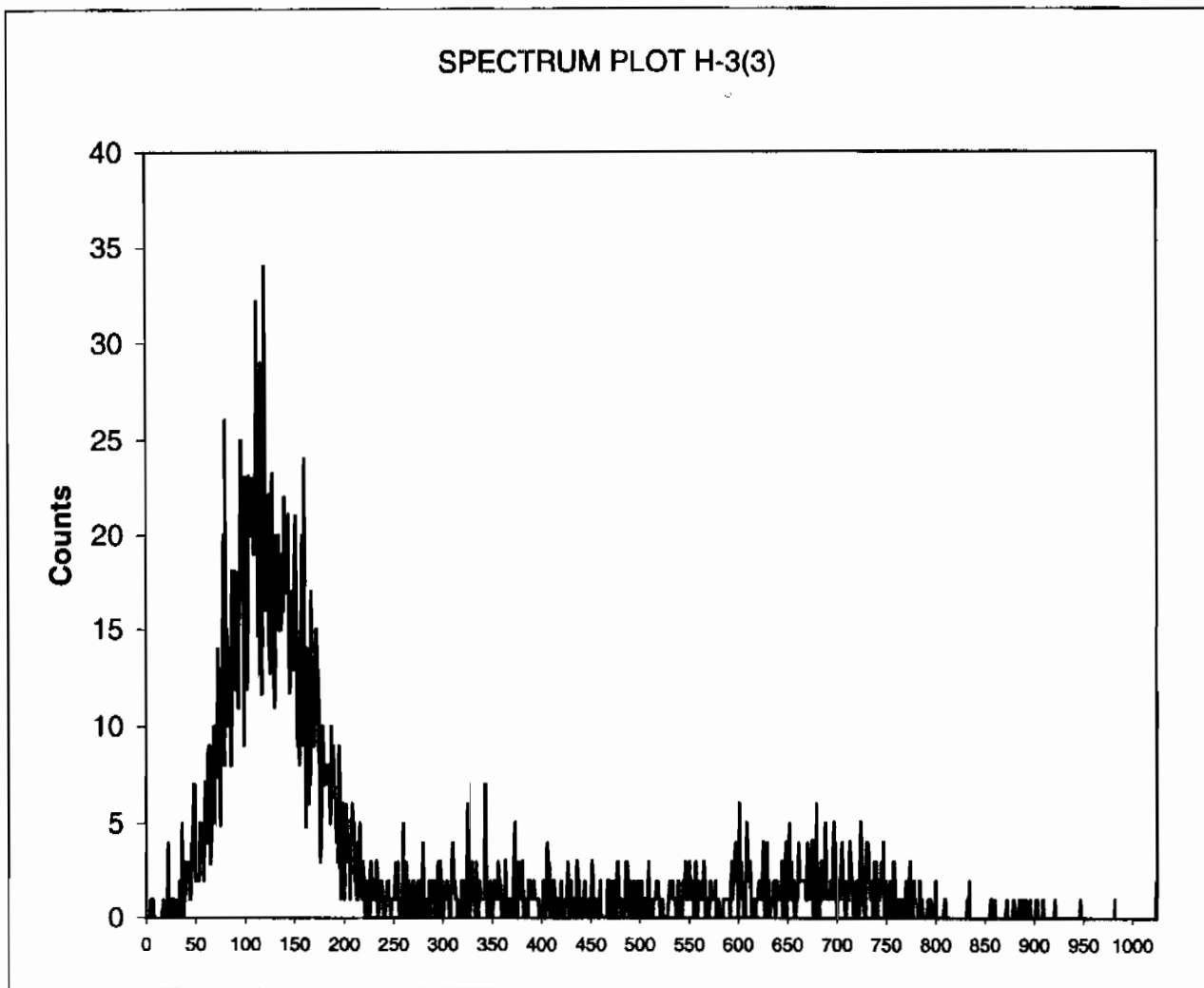


Instrument Type: Quantulus
Data Capture Date: THU 11 MAR 2010 1:41
FileName: s:\sc\files\pink\961540A0\SQ022201N.001.xls
File Info: s:\sc\files\pink\961540A0\U961540A0.xls

ID: H-3(3)
Comments: PINK

Sample, Rack-Pos, Time: 2, 247797001, 120.0297:
Quench: 806.3
Start, End, X-Axis 1-174

Channel Counts



32	0
33	0
34	2
35	0

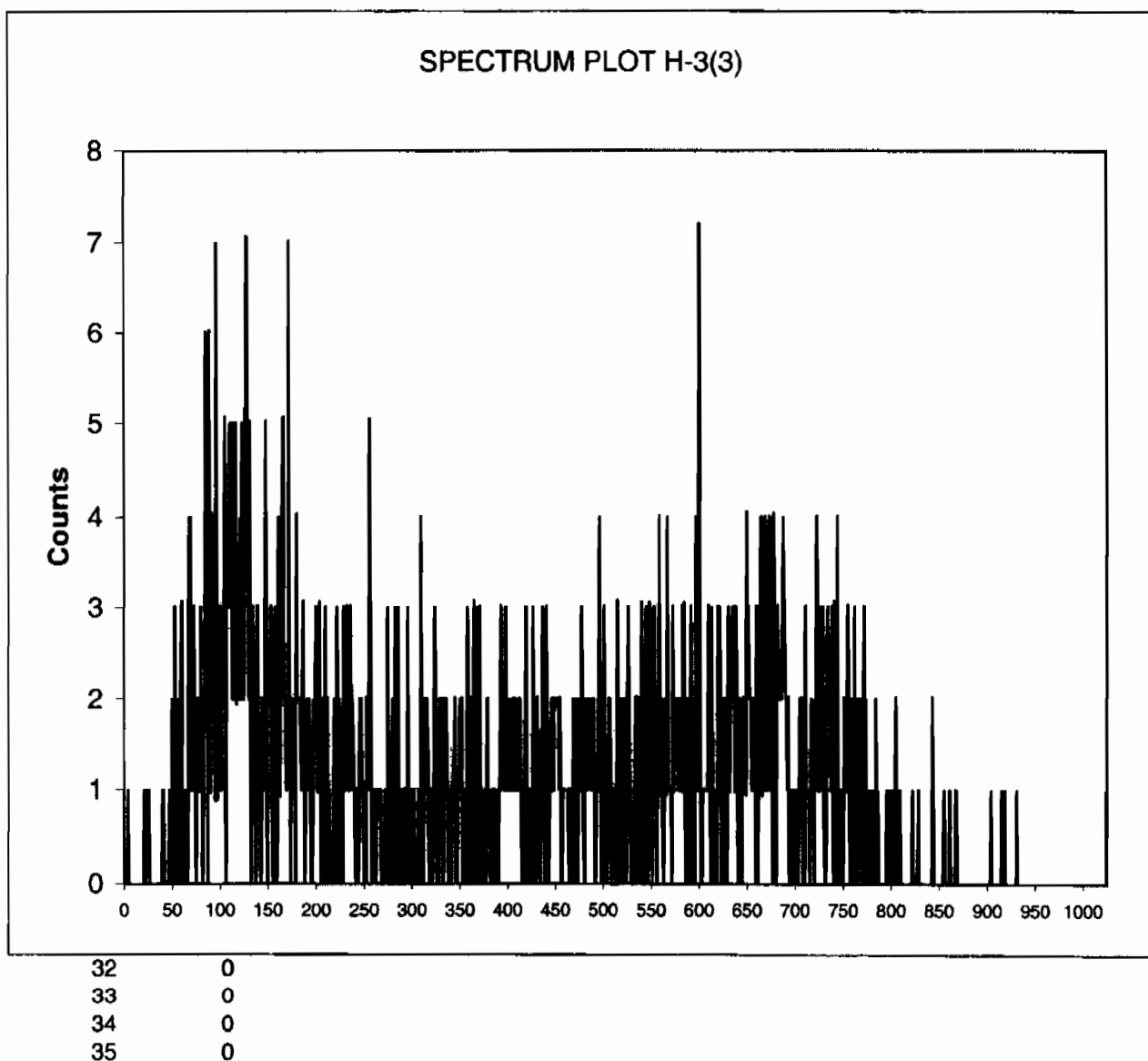
Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
THU 11 MAR 2010 1:41
s:\sc\files\pink\961540A0\SQ032301N.001.xls
s:\sc\files\pink\961540A0\U961540A0.xls

ID: H-3(3)
Comments: PINK

Sample, Rack-Pos, Time: 3, 247797002, 120.0297:
Quench: 807.92
Start, End, X-Axis 1-174

Channel Counts



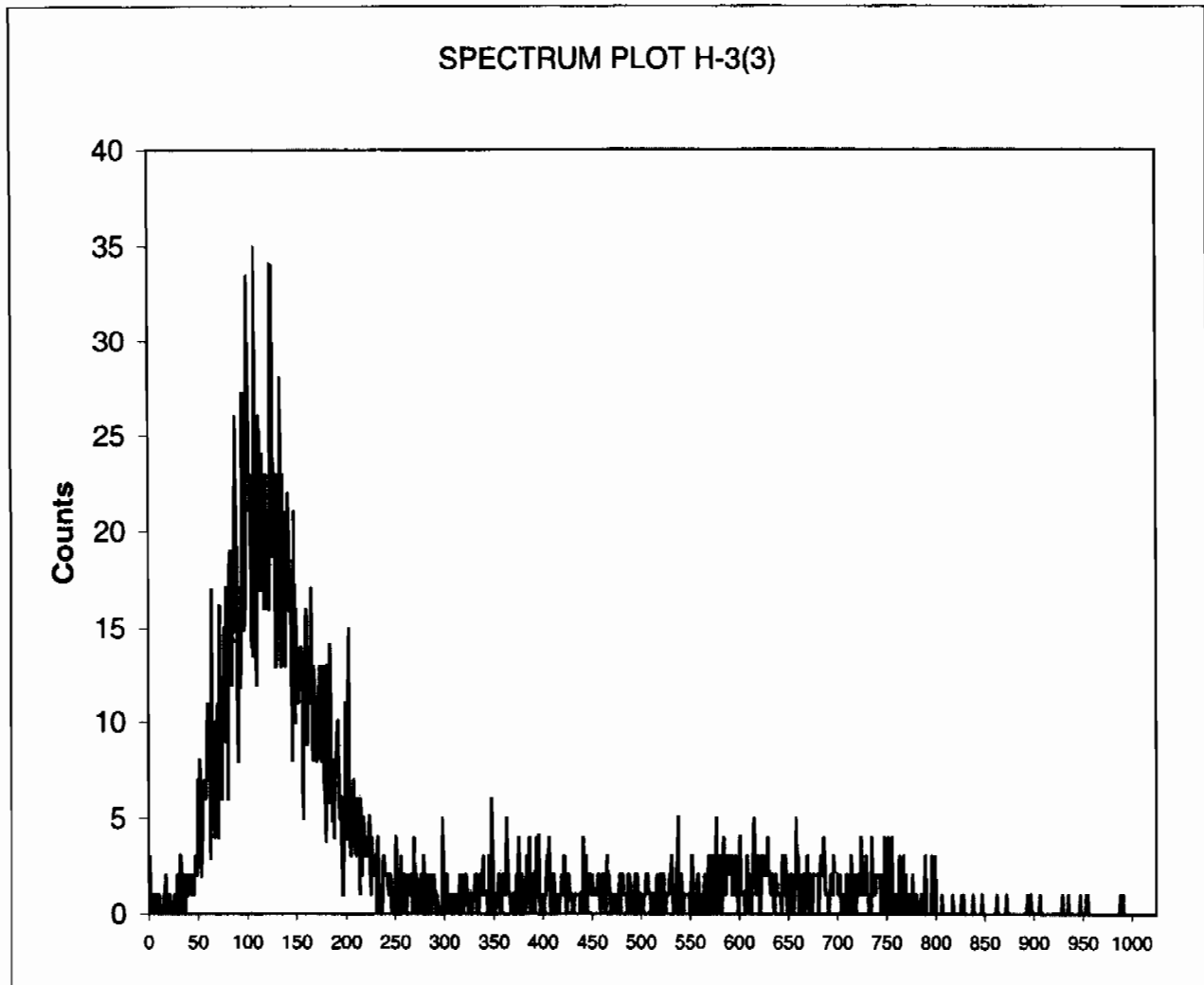
Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
THU 11 MAR 2010 1:41
s:\sc\files\pink\961540A0\SQ042401N.001.xls
s:\sc\files\pink\961540A0\U961540A0.xls

ID: H-3(3)
Comments: PINK

Sample, Rack-Pos, Time: 4, 247797003, 120.0297:
Quench: 806.73
Start, End, X-Axis 1-174

Channel Counts



32	3
33	2
34	0
35	1

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
THU 11 MAR 2010 1:41
s:\sc\files\pink\961540A0\SQ052501N.001.xls
s:\sc\files\pink\961540A0\U961540A0.xls

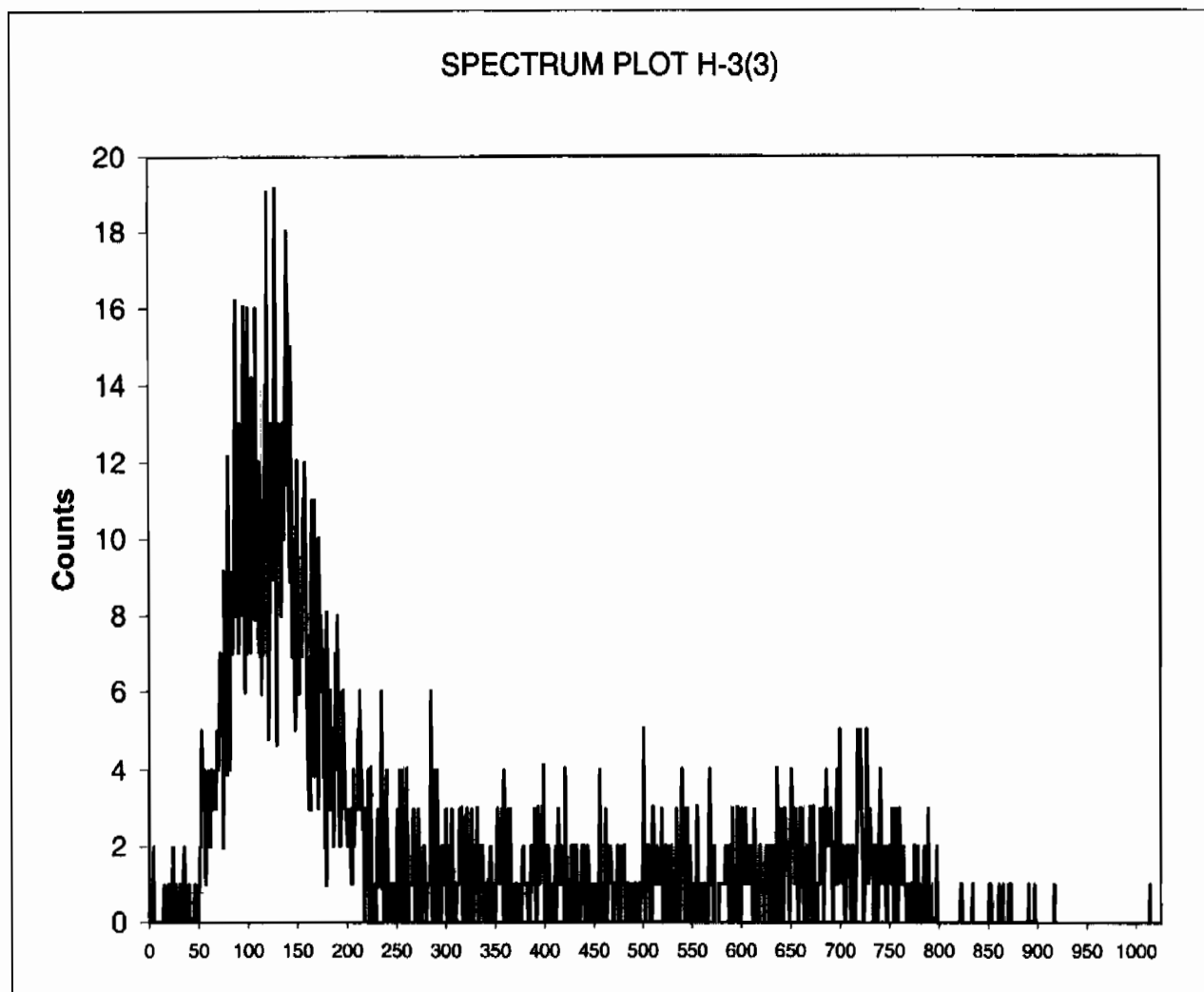
ID:
Comments:

H-3(3)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

5, 247797004, 120.0297:
807.41
1-174

Channel Counts



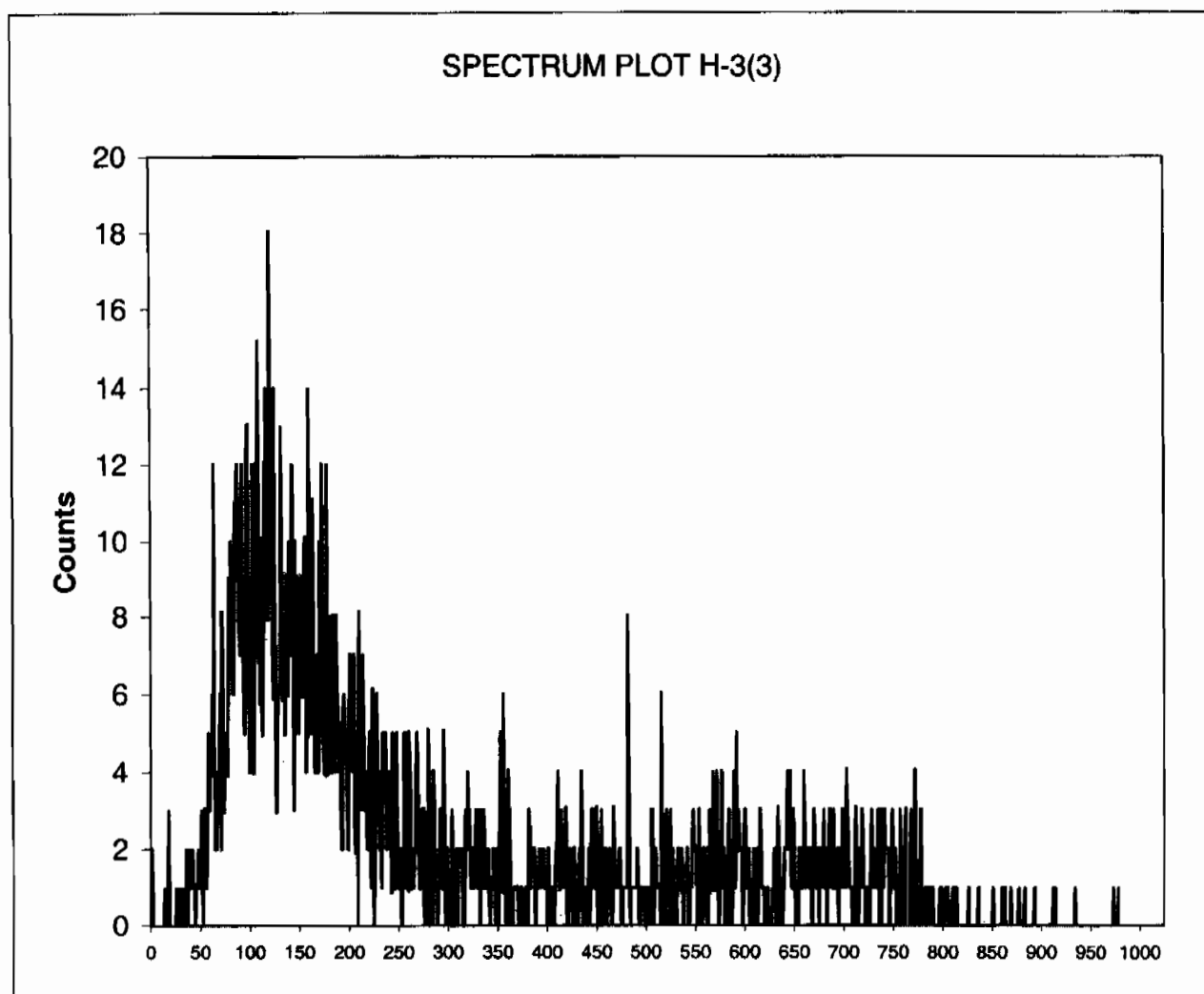
32	1
33	0
34	1
35	2

Instrument Type: Quantulus
Data Capture Date: THU 11 MAR 2010 1:41
FileName: s:\lsc\files\pink\961540A0\SQ062601N.001.xls
File Info: s:\lsc\files\pink\961540A0\U961540A0.xls

ID: H-3(3)
Comments: PINK

Sample, Rack-Pos, Time: 6, 247797005, 120.0297:
Quench: 805.3
Start, End, X-Axis 1-174

Channel Counts



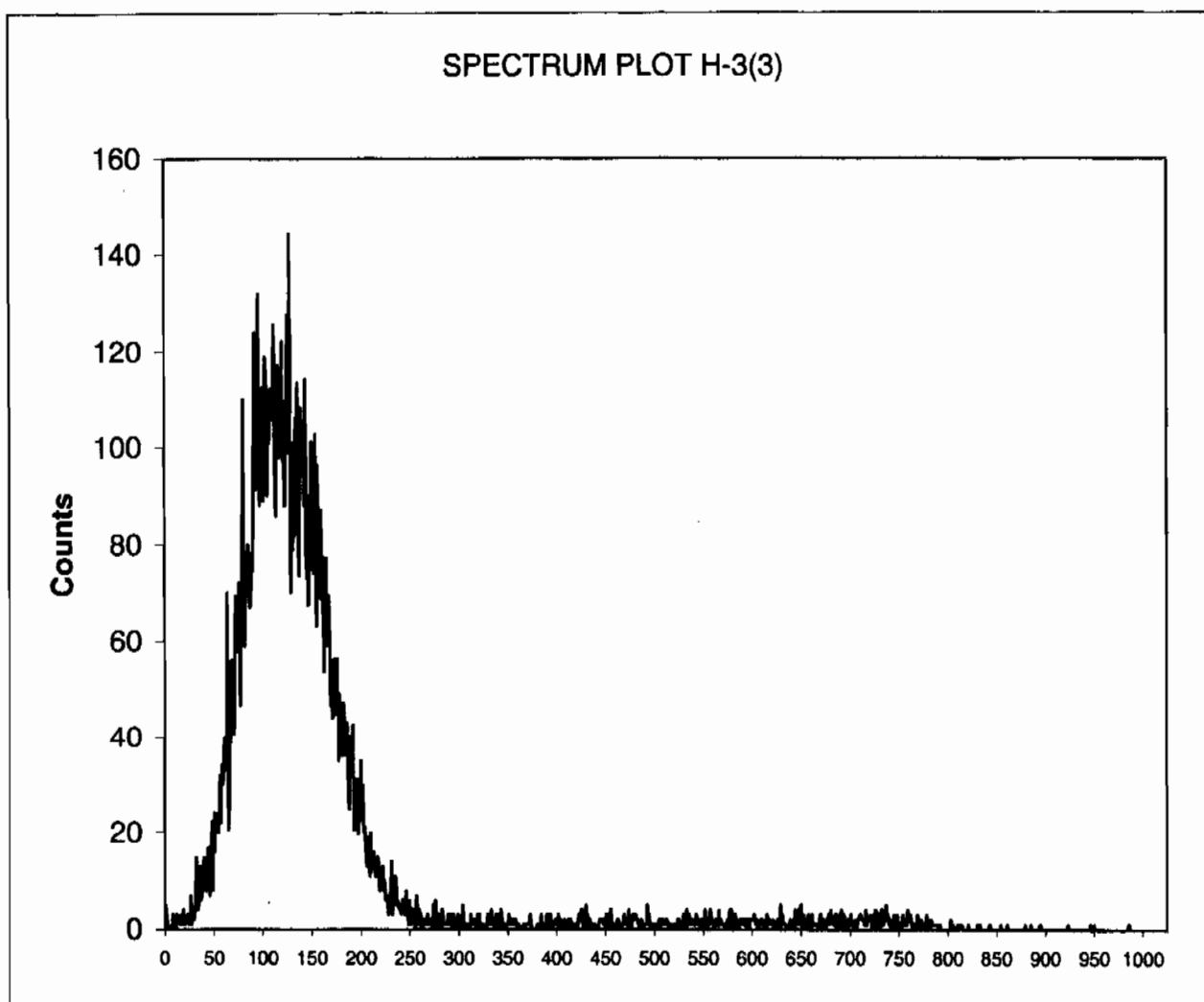
32	1
33	1
34	1
35	0

Instrument Type: Quantulus
Data Capture Date: THU 11 MAR 2010 1:41
FileName: s:\sc\files\pink\961540A0\SQ072701N.001.xls
File Info: s:\sc\files\pink\961540A0\U961540A0.xls

ID: H-3(3)
Comments: PINK

Sample, Rack-Pos, Time: 7, 247900004, 115.4796:
Quench: 808.45
Start, End, X-Axis 1-174

Channel Counts



32	15
33	5
34	4
35	7

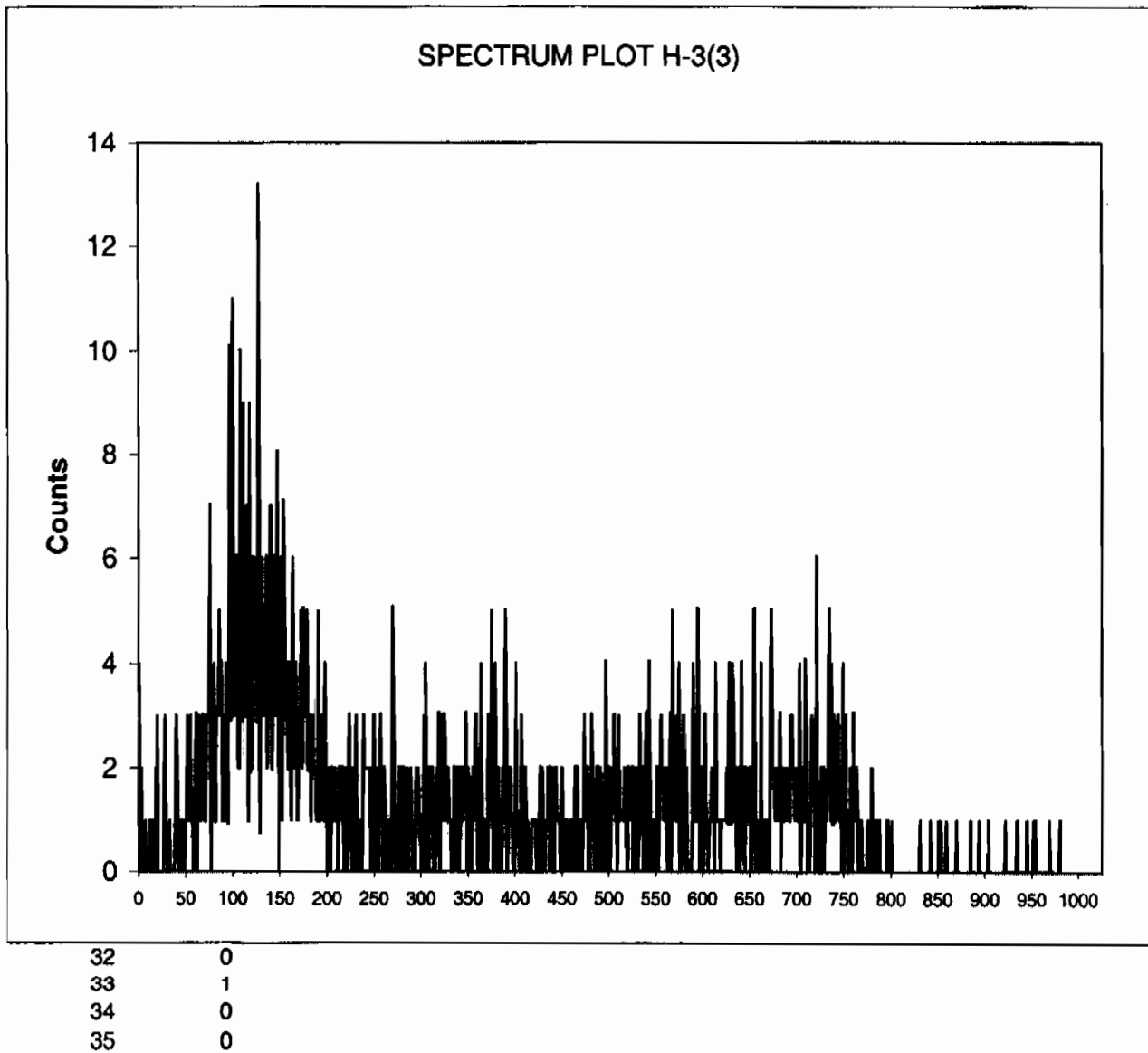
Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
THU 11 MAR 2010 1:41
s:\sc\files\pink\961540A0\SQ082801N.001.xls
s:\sc\files\pink\961540A0\U961540A0.xls

ID: H-3(3)
Comments: PINK

Sample, Rack-Pos, Time: 8, 247000006, 120.0297:
Quench: 809.31
Start, End, X-Axis 1-174

Channel Counts



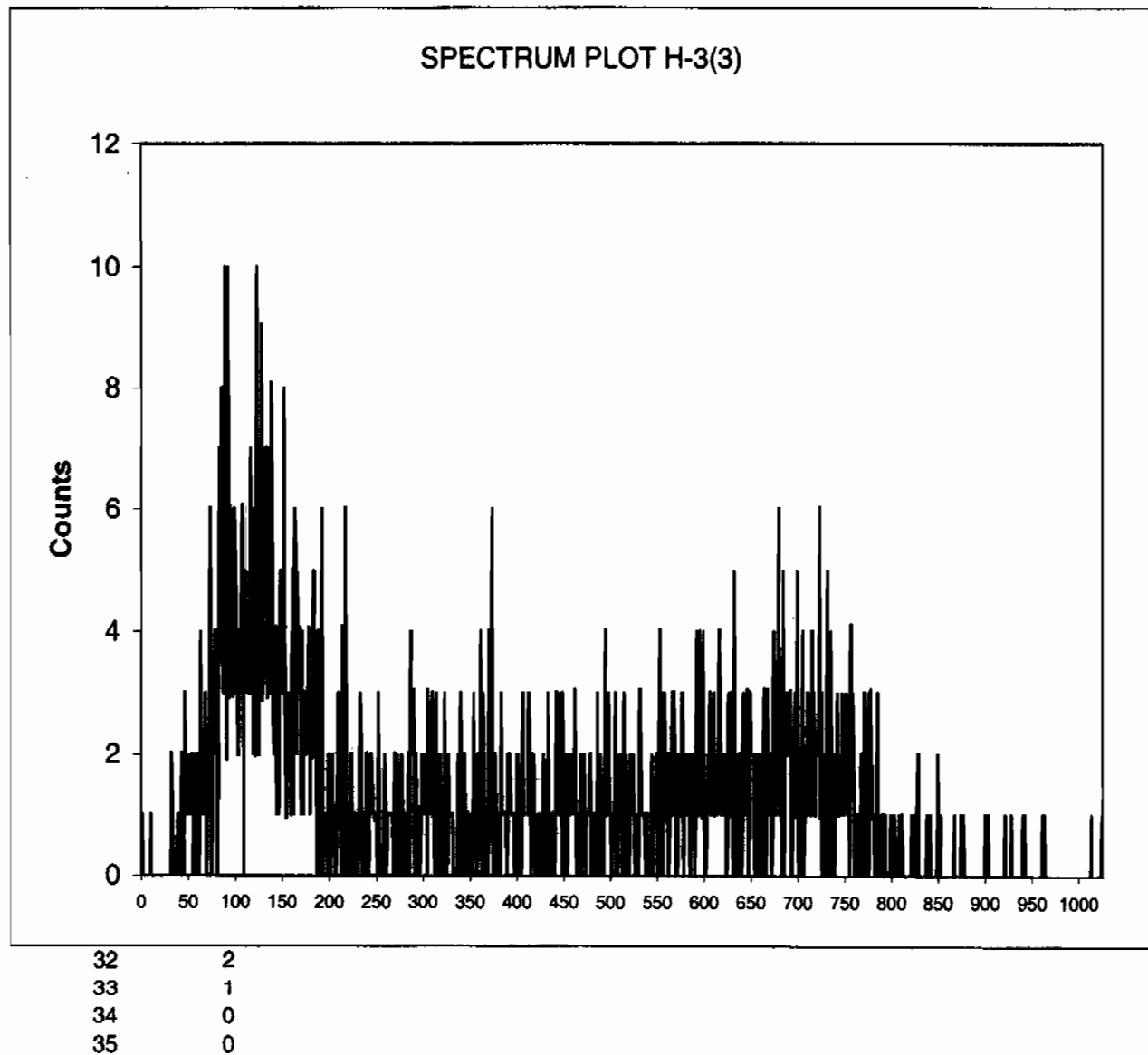
Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
THU 11 MAR 2010 1:41
s:\sc\files\pink\961540A0\SQ092901N.001.xls
s:\sc\files\pink\961540A0\U961540A0.xls

ID: H-3(3)
Comments: PINK

Sample, Rack-Pos, Time: 9, 247900008, 120.0297:
Quench: 806.32
Start, End, X-Axis 1-174

Channel Counts

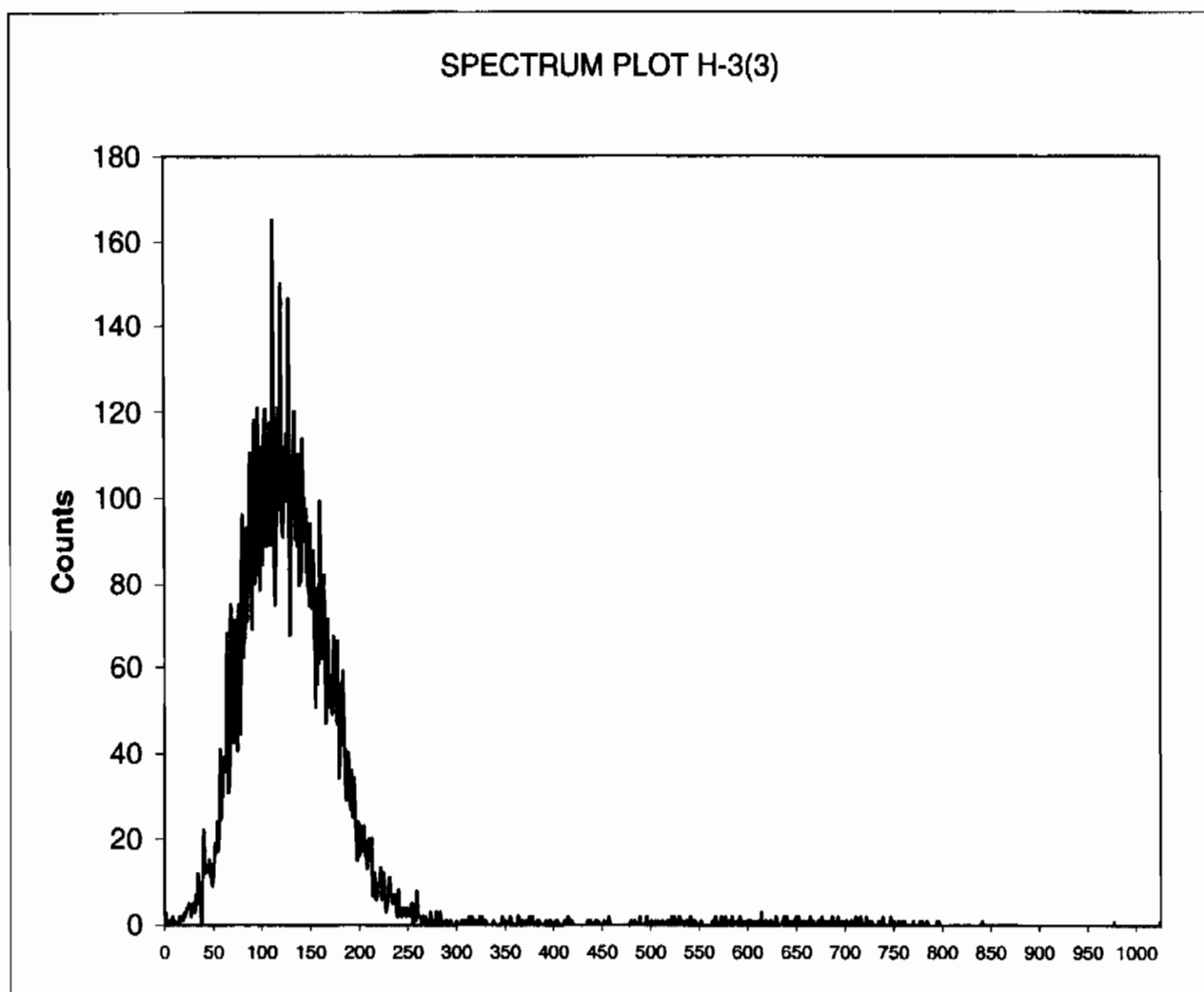


Instrument Type: Quantulus
Data Capture Date: THU 11 MAR 2010 1:41
FileName: s:\sc\files\pink\961540A0\SQ103001N.001.xls
File Info: s:\sc\files\pink\961540A0\U961540A0.xls

ID: H-3(3)
Comments: PINK

Sample, Rack-Pos, Time: 10, 247900011, 36.57973:
Quench: 807.55
Start, End, X-Axis 1-174

Channel Counts



32	7
33	5
34	12
35	6

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
THU 11 MAR 2010 1:41
s:\sc\files\pink\961540A0\SQ113101N.001.xls
s:\sc\files\pink\961540A0\U961540A0.xls

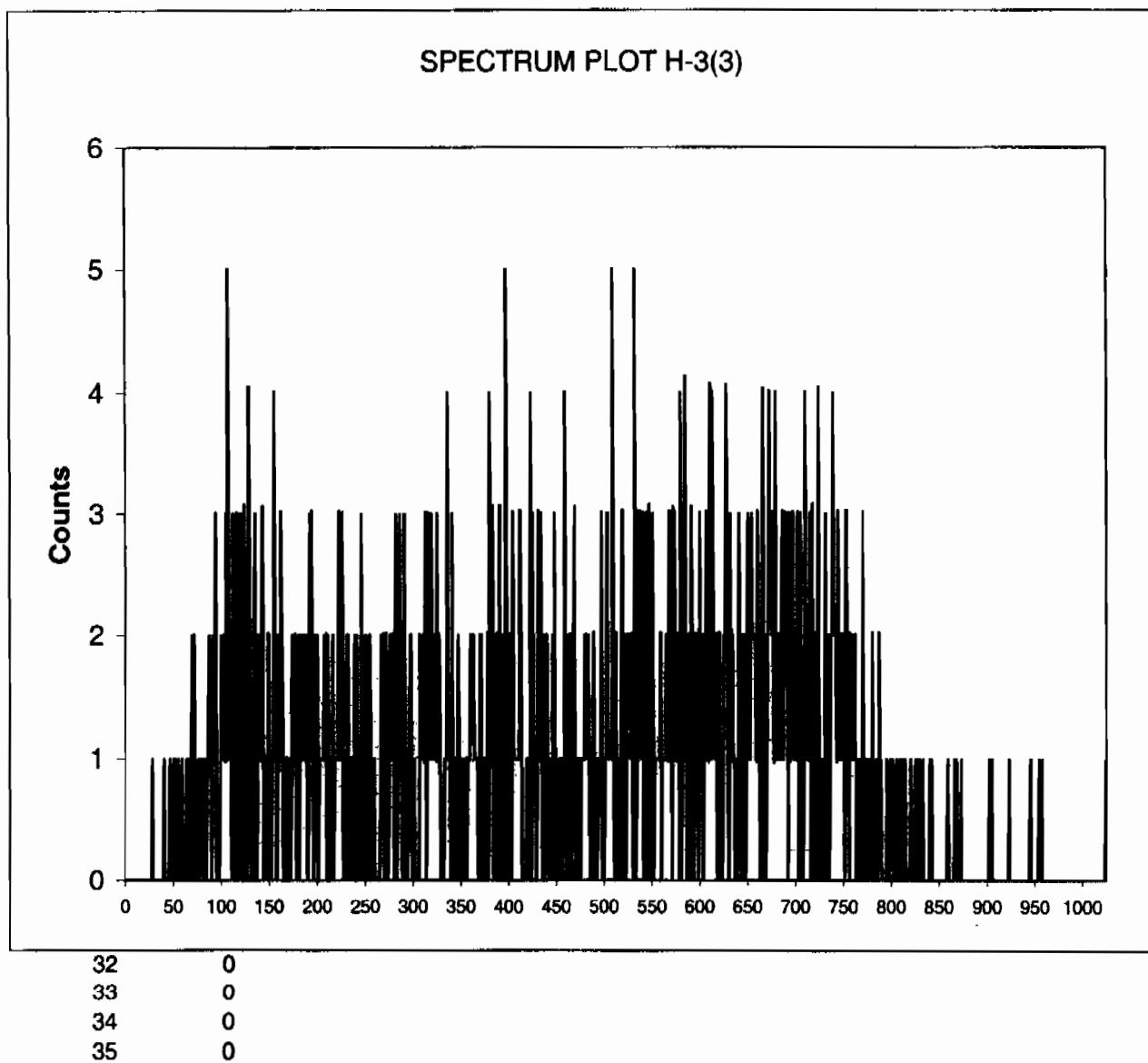
ID:
Comments:

H-3(3)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

11, 247920002, 120.0297:
805.88
1-174

Channel Counts

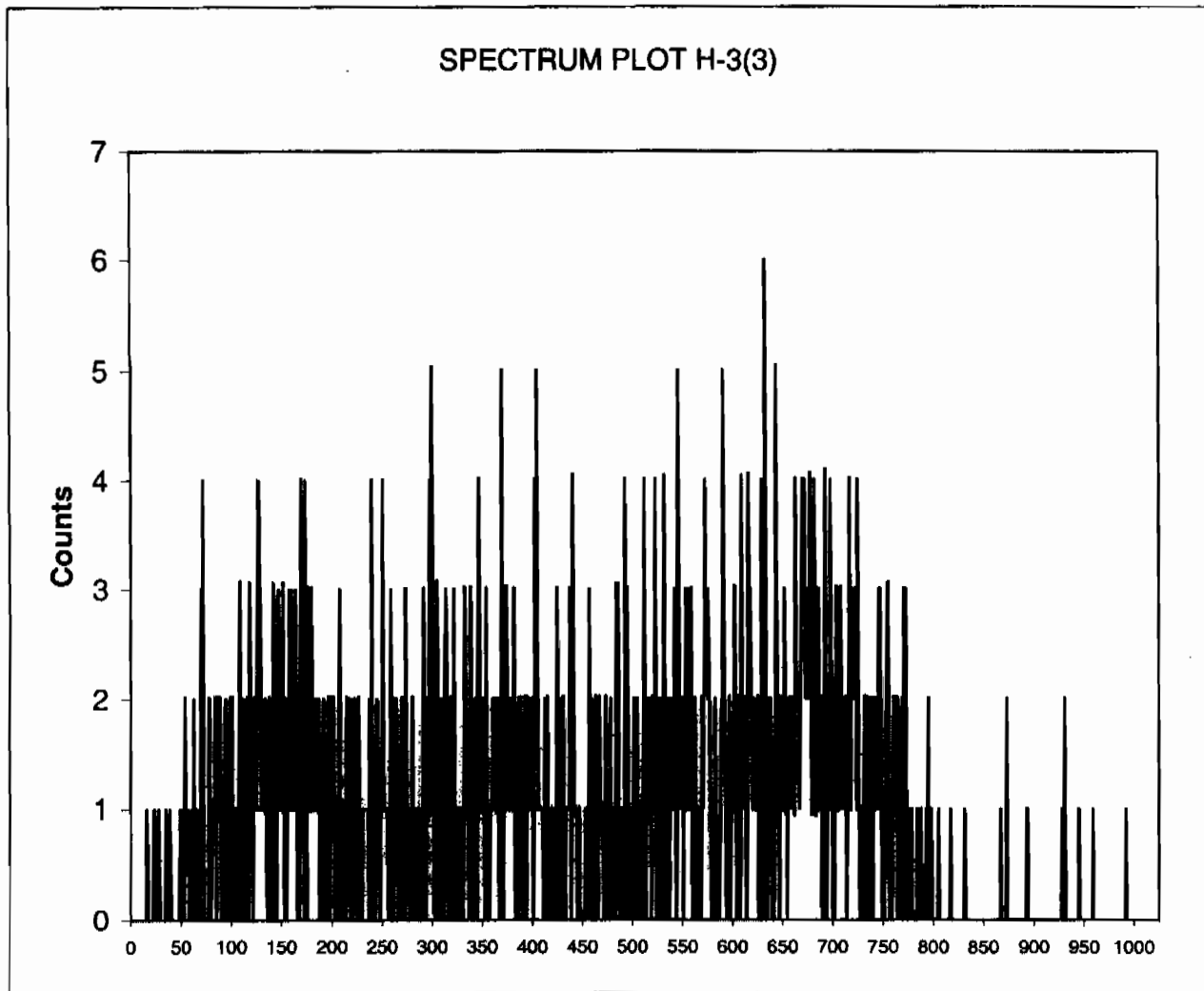


Instrument Type: Quantulus
Data Capture Date: THU 11 MAR 2010 1:41
FileName: s:\sc\files\pink\961540A0\SQ123201N.001.xls
File Info: s:\sc\files\pink\961540A0\U961540A0.xls

ID: H-3(3)
Comments: PINK

Sample, Rack-Pos, Time: 12, 248385001, 120.0297:
Quench: 805.85
Start, End, X-Axis 1-174

Channel Counts



32	0
33	0
34	0
35	1

REGISTRY

FRI 12 MAR 2010 1:59

*** DIRECTORY PATH :S:\LSC\Q\DA\961540A1 ***

PARAMETER GROUP: 8
ID: H-3(4)

00A PROGRAM MODE 6 ->

ORDER	POS	ID	CTIME	COUNTS	CUCNTS	MCW	REP	STD	STMS	STIME
1	33	248385002	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
2	34	248385003	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
3	35	248385004	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
4	36	248385005	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
5	37	248385006	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
6	38	248386003	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
7	39	248386004	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
8	40	1202062409	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
9	41	1202062410	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
10	42	1202062411	15:00	1.0E04	NO LIM	1	1	Y	1/10	1:00

NUMBER OF CYCLES 1
COINCIDENCE BIAS (L/H) L

MCA INPUT	TRIGG.	INHIBIT	MEMORY SPLIT
1 LRSUM	DCOS	G	L*R
2 GSUM	G		L*R

WINDOW	CHANNELS	MCA	HALF
1	1- 174	1	2
2	1- 174	1	2
3	60- 220	1	2
4	50- 320	1	1
5	50- 270	1	1
6	60- 220	1	1
7	1- 1024	2	1
8	1- 1024	2	2

SELECTED PRINTOUT FOR TERMINAL 1 (A)

SELECTED PRINTOUT FOR TERMINAL 2 (B)

1. POS	2. ID	3. CTIME	4. SQP	5. CPM1	6. CPM2	7. CPM3
SEND SPECTRA 12						
RESOLUTION OF SPECTRA 1024						
LISTING Y						
INSTRUMENT NUMBER 1						

POS	ID	CTIME	SQP	CPM1	CPM2	CPM3
Q013301N.001	12 MAR 2010	4:02				
33	248385002	120:01.785	804.82	1.16	1.16	1.45
Q023401N.001	12 MAR 2010	6:04				
34	248385003	120:01.785	806.81	1.01	1.01	1.28
Q033501N.001	12 MAR 2010	8:07				

Page 1

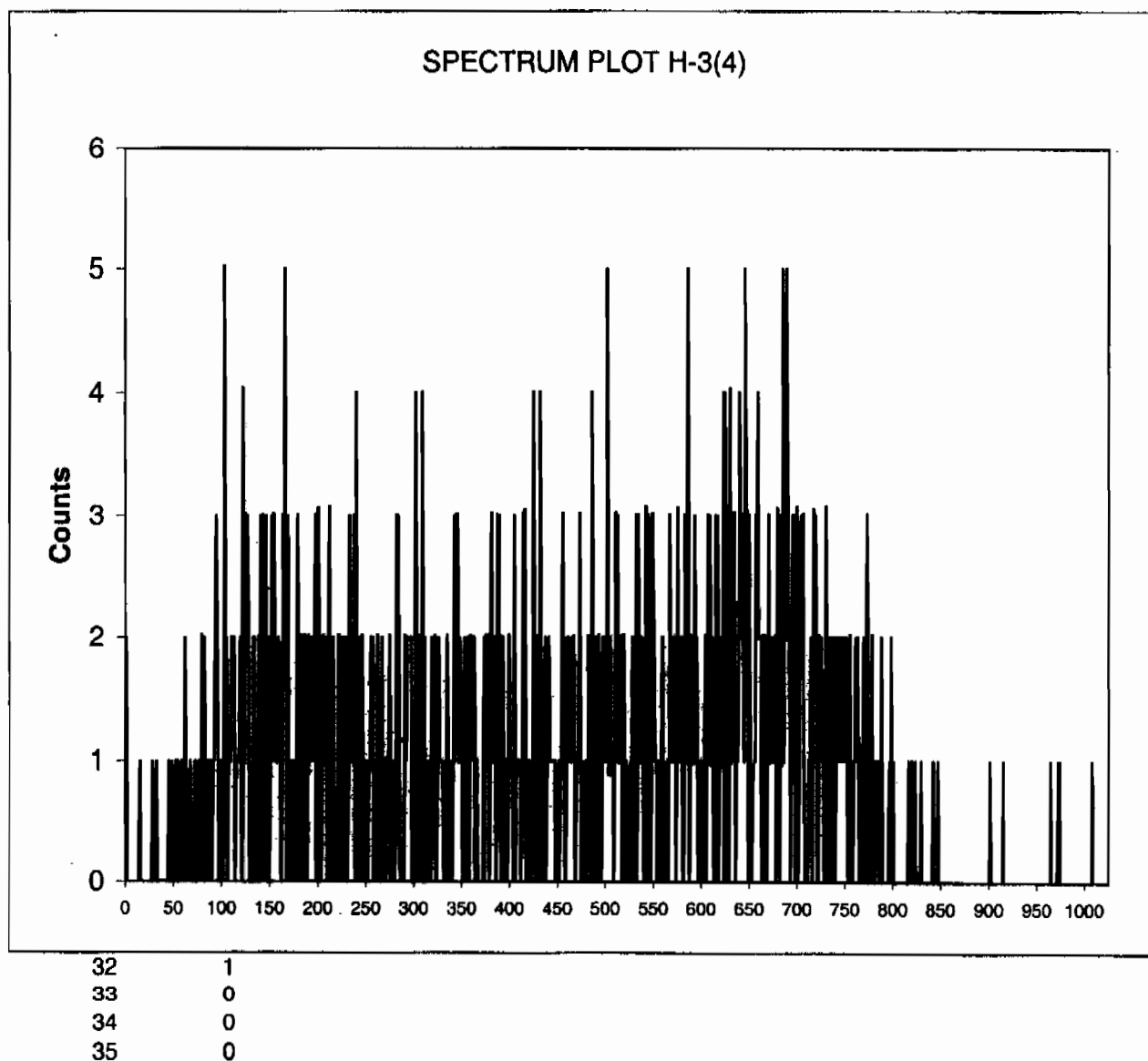
			REGISTRY			
35	248385004	120:01.785	804.34	.96	.96	1.32
Q043601N.001	12 MAR 2010	10:09				
36	248385005	120:01.785	805.21	.91	.91	1.24
Q053701N.001	12 MAR 2010	12:12				
37	248385006	120:01.785	805.60	.92	.92	1.25
Q063801N.001	12 MAR 2010	14:14				
38	248386003	120:01.785	804.48	1.19	1.19	1.50
Q073901N.001	12 MAR 2010	16:17				
39	248386004	120:01.778	808.23	.95	.95	1.18
Q084001N.001	12 MAR 2010	18:19				
40	1202062409	120:01.778	806.79	.69	.69	.97
Q094101N.001	12 MAR 2010	20:23				
41	1202062410	120:01.784	807.73	1.13	1.13	1.47
Q104201N.001	12 MAR 2010	20:40				
42	1202062411	15:01.784	806.71	20.55	20.55	22.70

Instrument Type: Quantulus
Data Capture Date: FRI 12 MAR 2010 1:59
FileName: s:\scfiles\pink\961540A1\SQ013301N.001.xls
File Info: s:\scfiles\pink\961540A1\U961540A1.xls

ID: H-3(4)
Comments: PINK

Sample, Rack-Pos, Time: 1, 248385002, 120.0297:
Quench: 804.82
Start, End, X-Axis 1-174

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
FRI 12 MAR 2010 1:59
s:\sc\files\pink\961540A1\SQ023401N.001.xls
s:\sc\files\pink\961540A1\U961540A1.xls

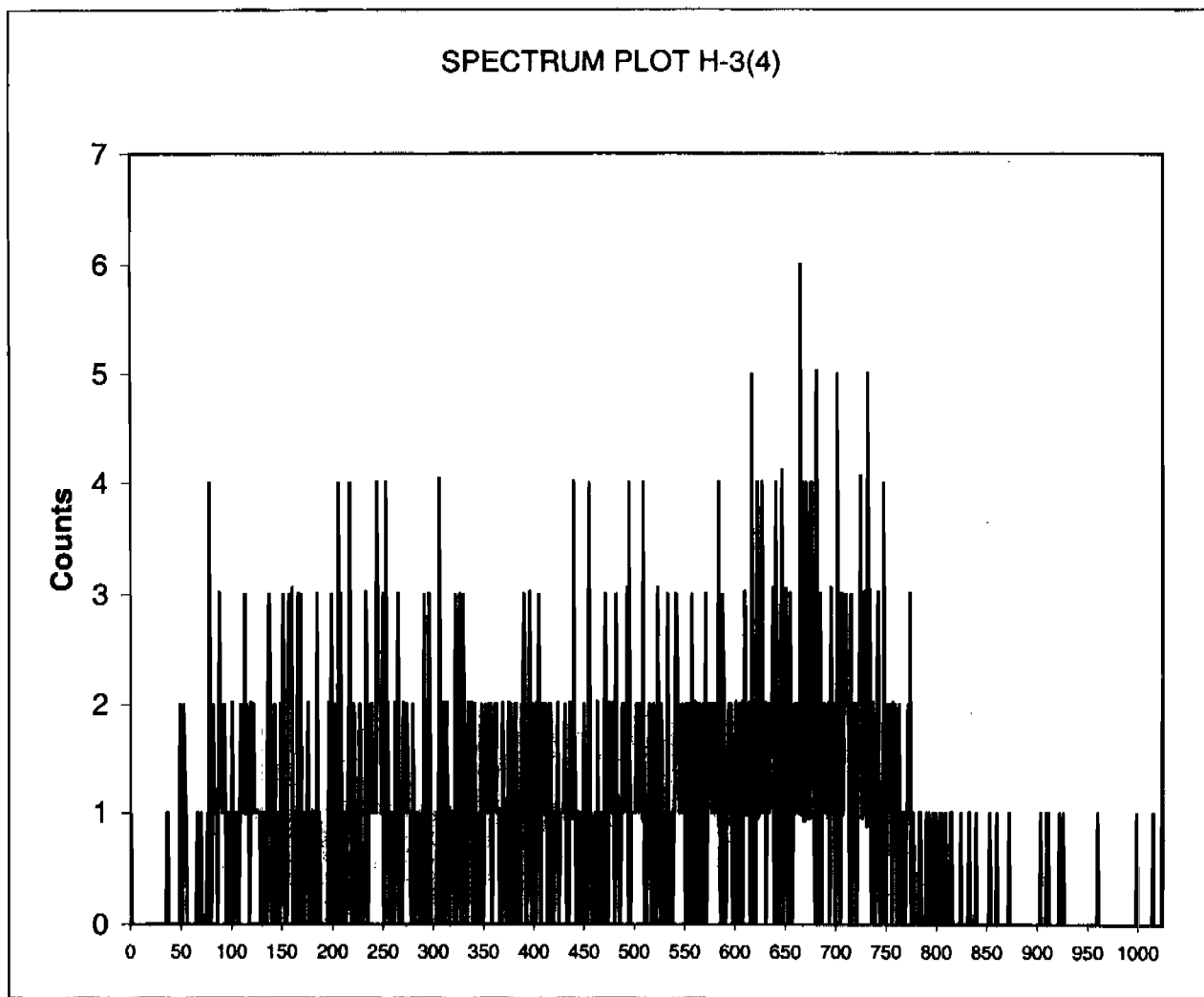
ID:
Comments:

H-3(4)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

2, 248385003, 120.0297:
806.81
1-174

Channel Counts



32	0
33	0
34	0
35	0

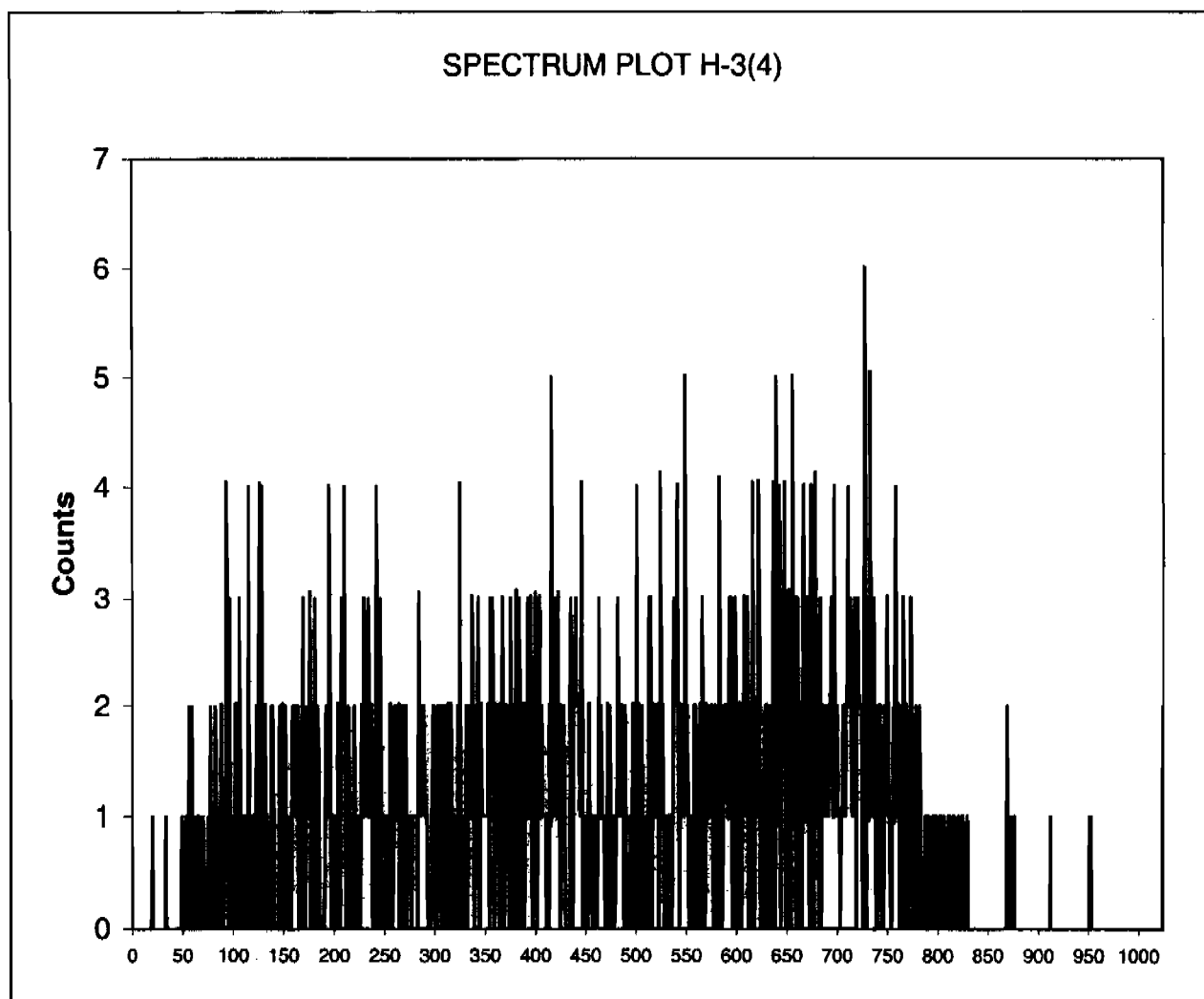
Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
FRI 12 MAR 2010 1:59
s:\sc\files\pink\961540A1\SQ033501N.001.xls
s:\sc\files\pink\961540A1\U961540A1.xls

ID: H-3(4)
Comments: PINK

Sample, Rack-Pos, Time: 3, 248385004, 120.0297:
Quench: 804.34
Start, End, X-Axis 1-174

Channel Counts



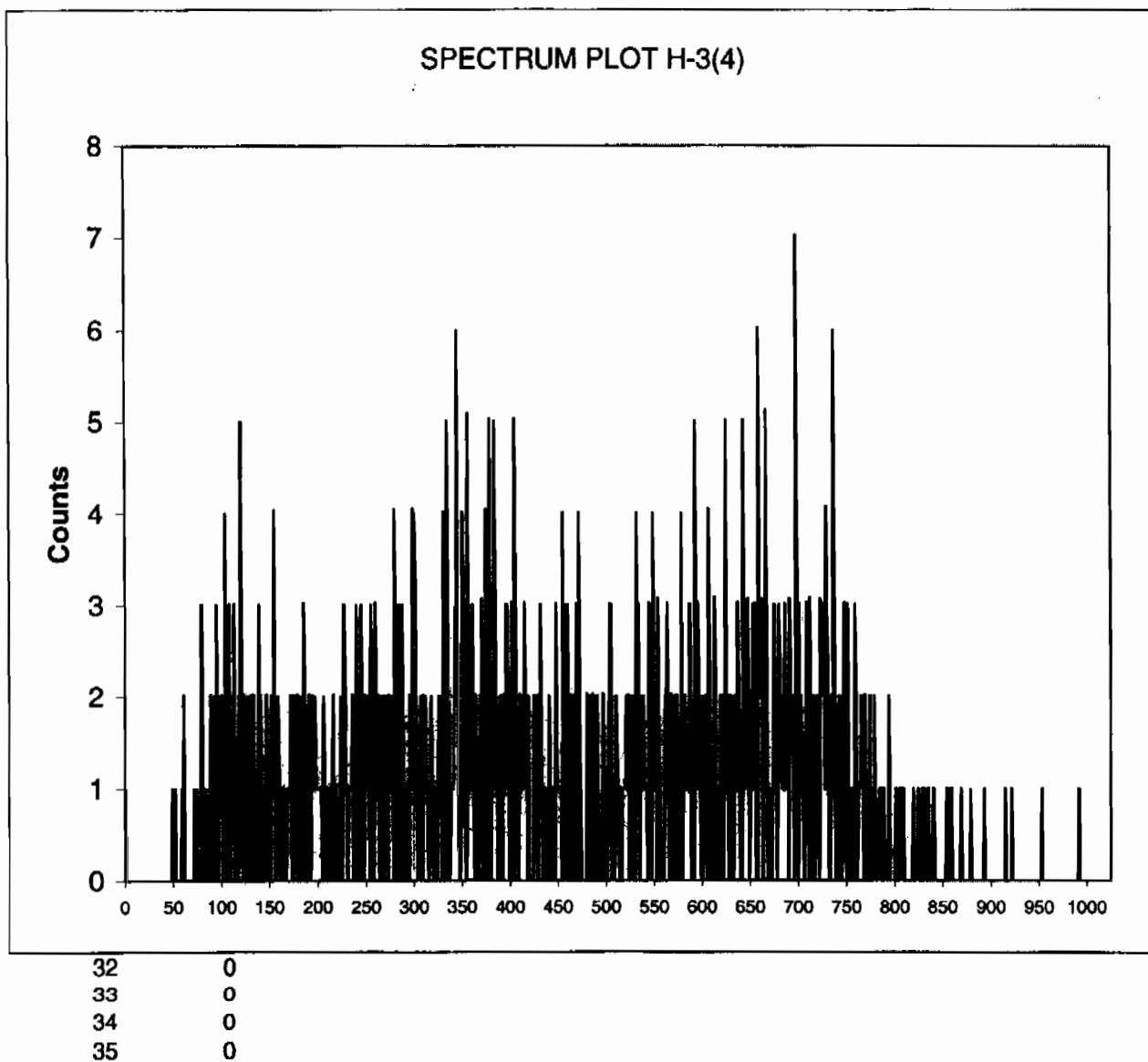
32	0
33	1
34	0
35	0

Instrument Type: Quantulus
Data Capture Date: FRI 12 MAR 2010 1:59
FileName: s:\sc\files\pink\961540A1\SQ043601N.001.xls
File Info: s:\sc\files\pink\961540A1\U961540A1.xls

ID: H-3(4)
Comments: PINK

Sample, Rack-Pos, Time: 4, 248385005, 120.0297:
Quench: 805.21
Start, End, X-Axis 1-174

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
FRI 12 MAR 2010 1:59
s:\sc\files\pink\961540A1\SQ053701N.001.xls
s:\sc\files\pink\961540A1\U961540A1.xls

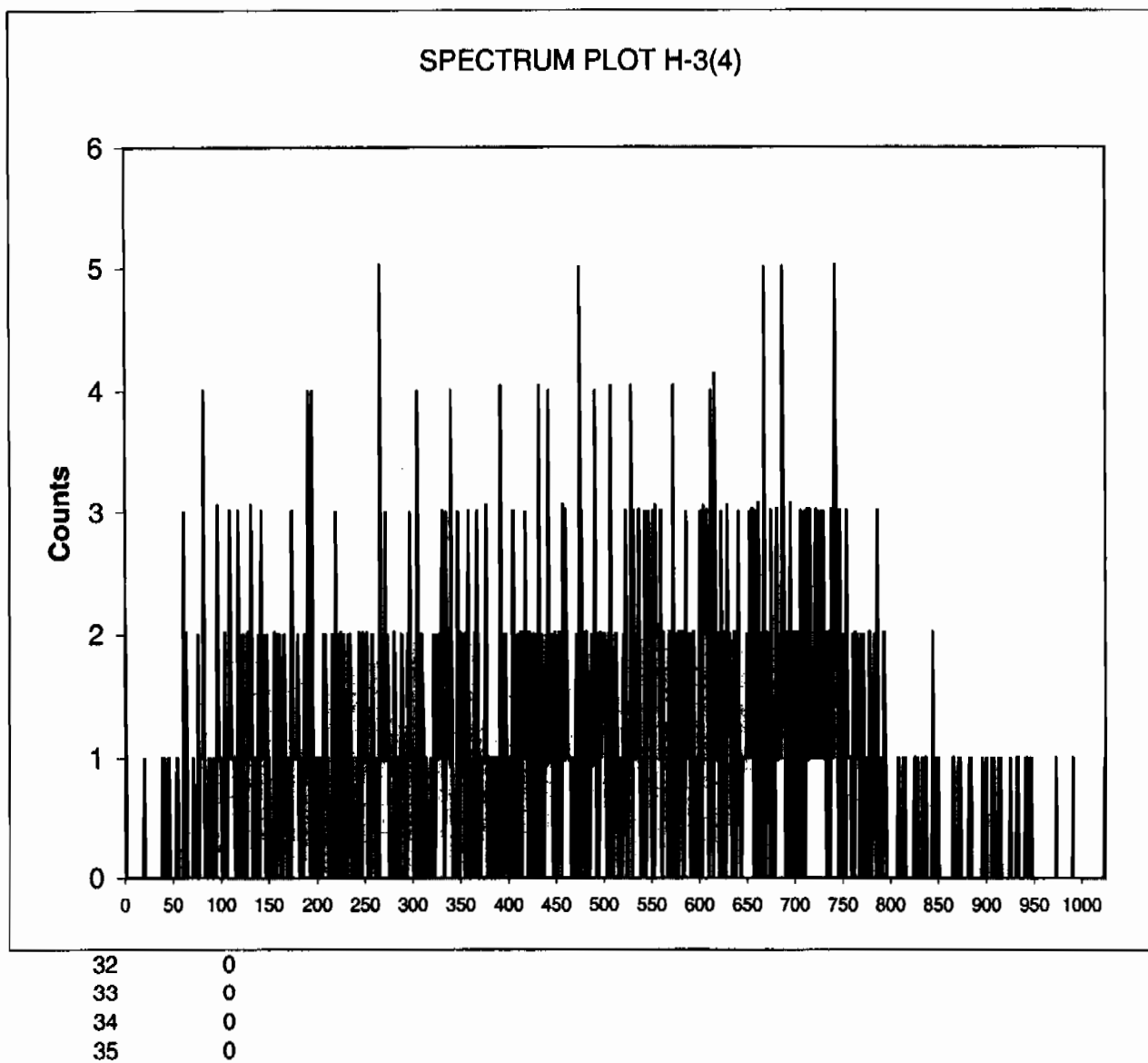
ID:
Comments:

H-3(4)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

5, 248385006, 120.0297:
805.6
1-174

Channel Counts

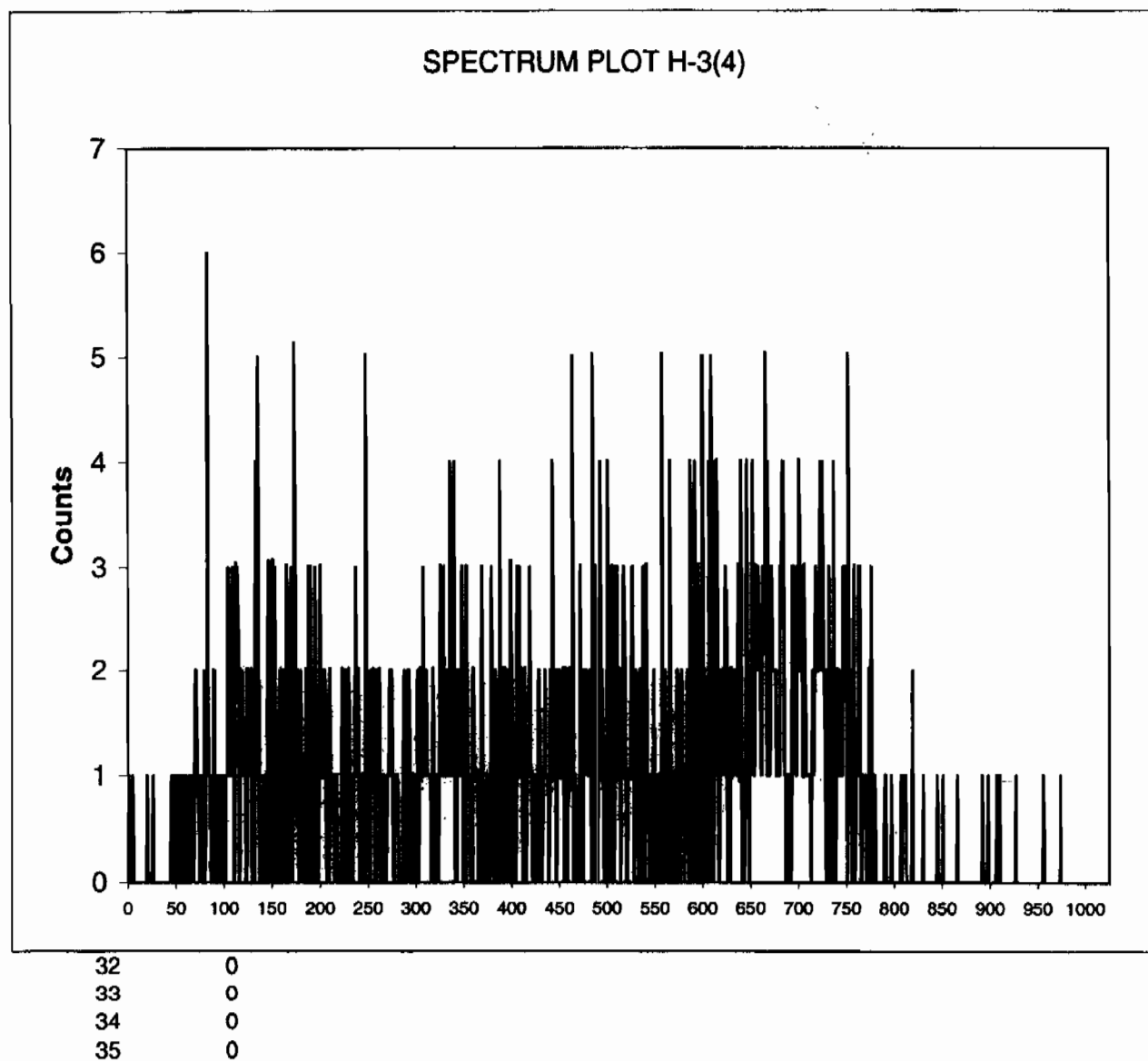


Instrument Type: Quantulus
Data Capture Date: FRI 12 MAR 2010 1:59
FileName: s:\sc\files\pink\961540A1\SQ063801N.001.xls
File Info: s:\sc\files\pink\961540A1\U961540A1.xls

ID: H-3(4)
Comments: PINK

Sample, Rack-Pos, Time: 6, 248386003, 120.0297:
Quench: 804.48
Start, End, X-Axis 1-174

Channel Counts



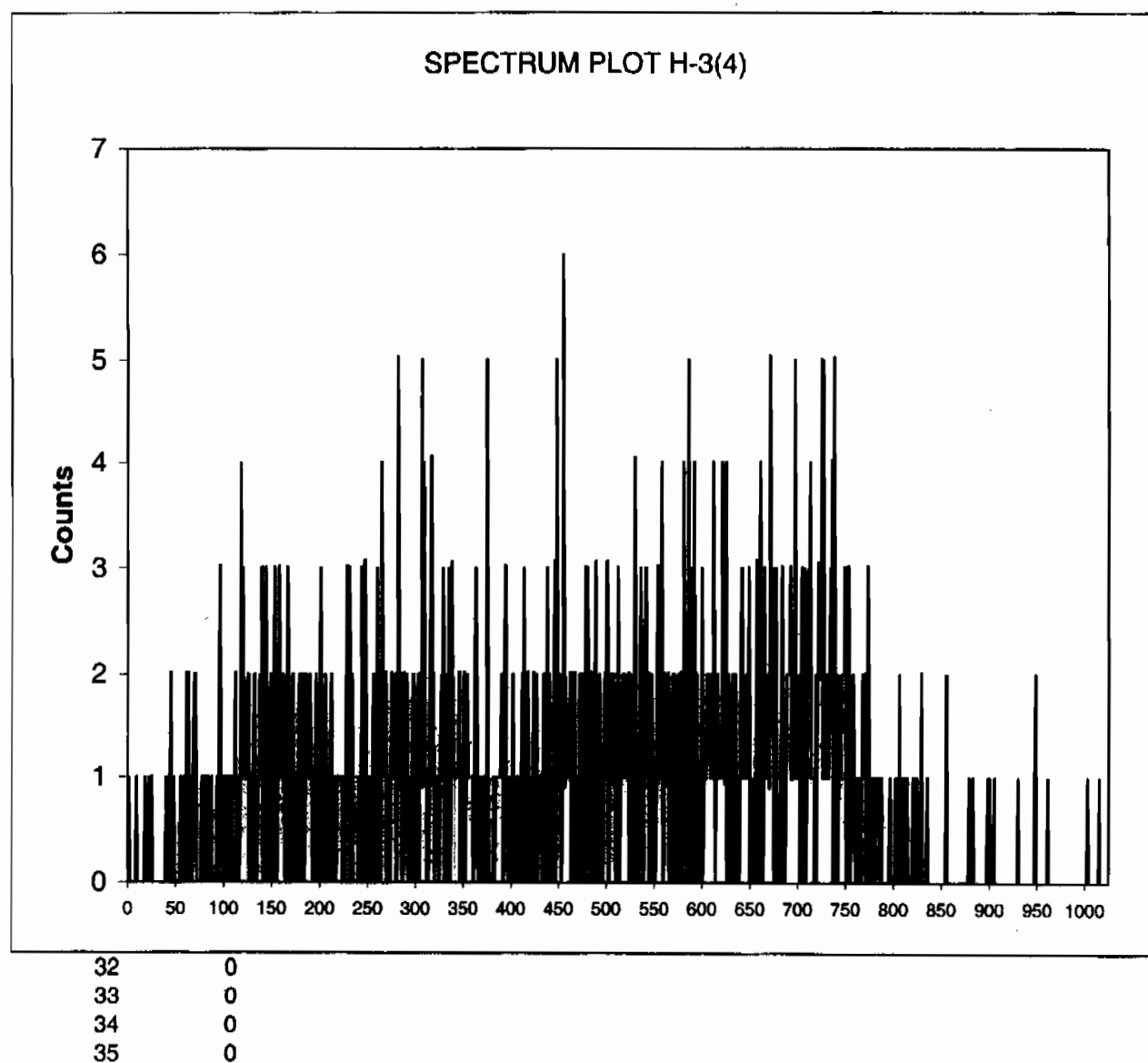
Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
FRI 12 MAR 2010 1:59
s:\sc\files\pink\961540A1\SQ073901N.001.xls
s:\sc\files\pink\961540A1\U961540A1.xls

ID: H-3(4)
Comments: PINK

Sample, Rack-Pos, Time: 7, 248386004, 120.0296:
Quench: 808.23
Start, End, X-Axis 1-174

Channel Counts

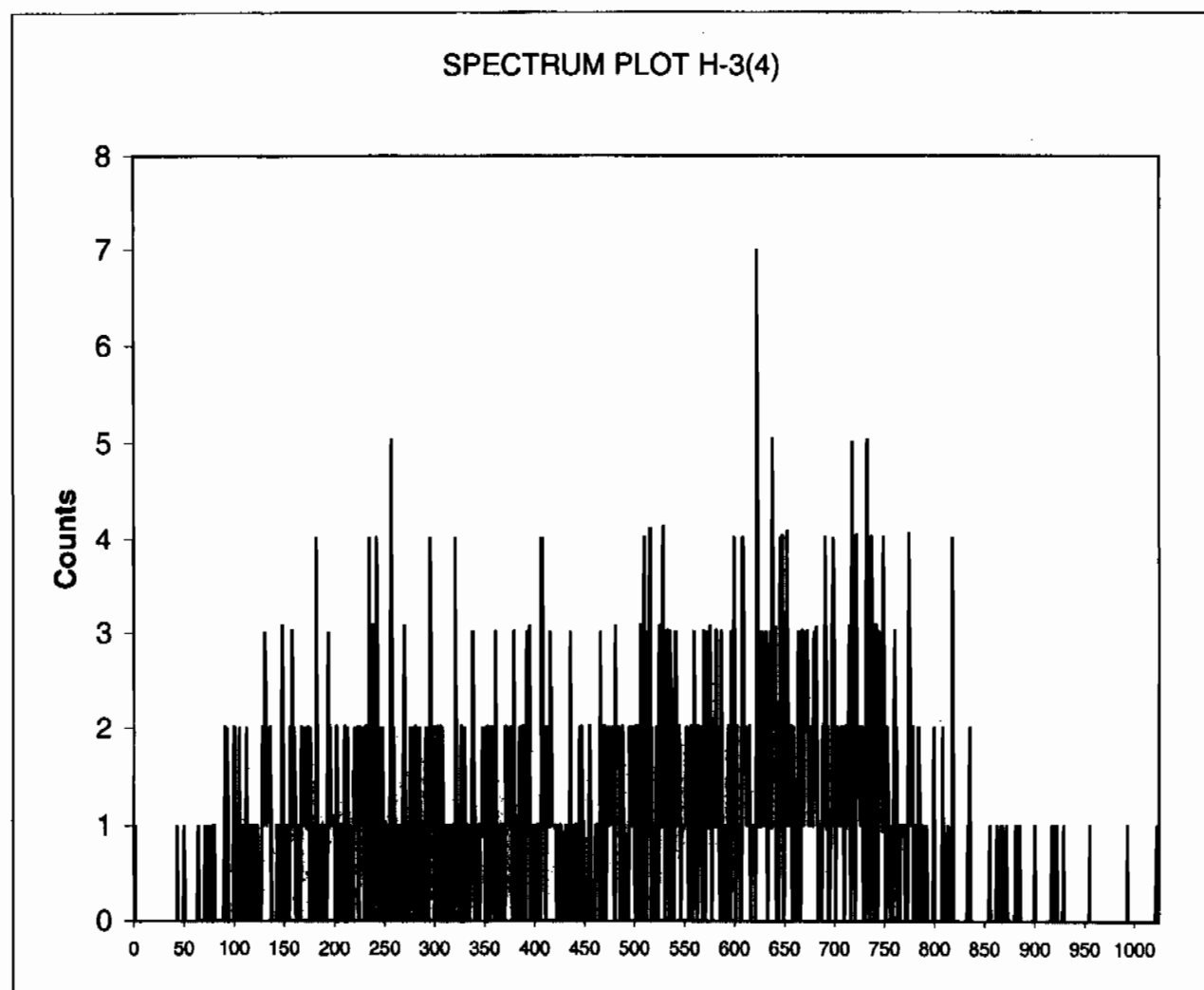


Instrument Type: Quantulus
Data Capture Date: FRI 12 MAR 2010 1:59
FileName: s:\sc\files\pink\961540A1\SQ084001N.001.xls
File Info: s:\sc\files\pink\961540A1\U961540A1.xls

ID: H-3(4)
Comments: PINK

Sample, Rack-Pos, Time: 8, 1202062409, 120.0296:
Quench: 806.79
Start, End, X-Axis 1-174

Channel Counts



32	0
33	0
34	0
35	0

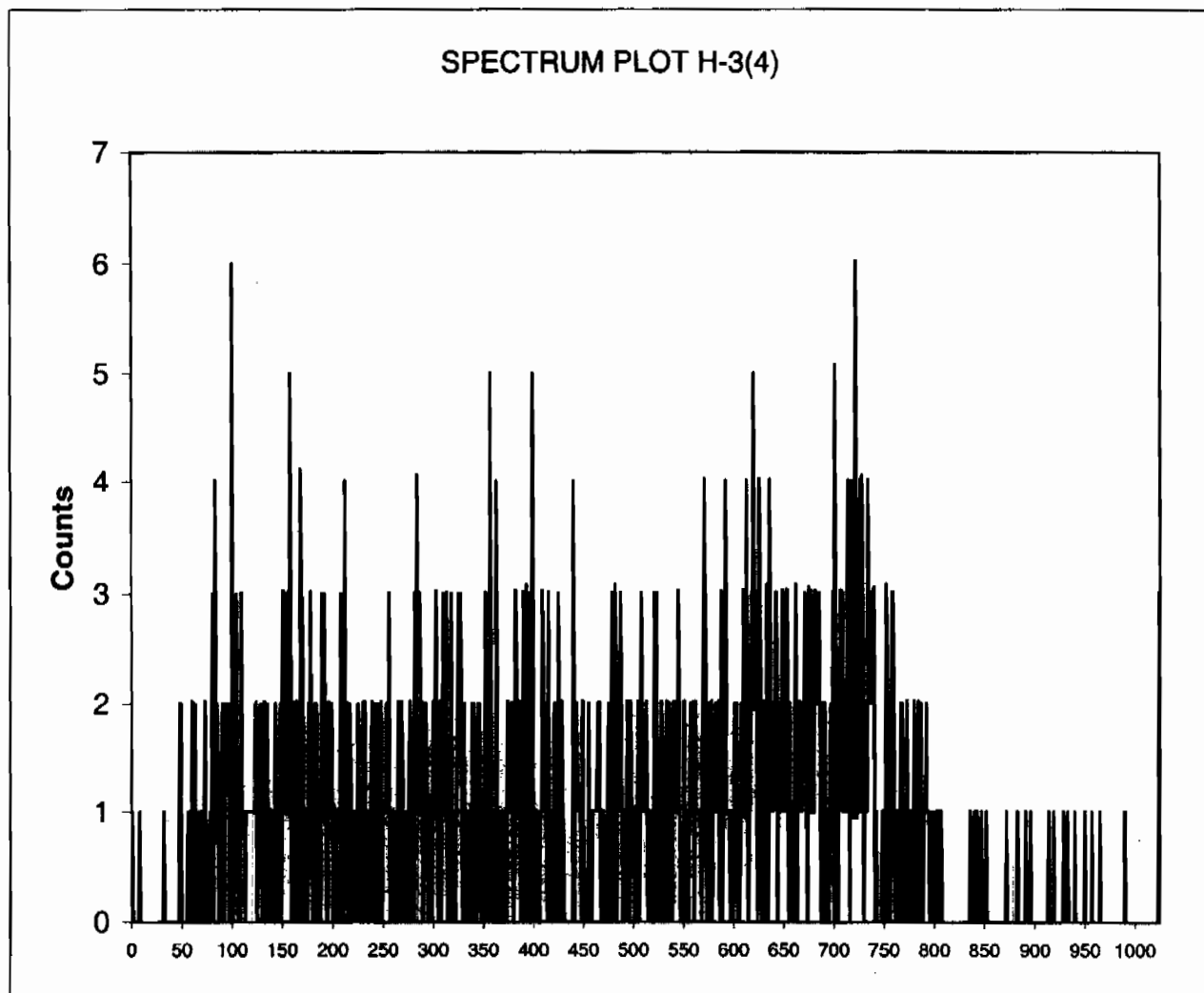
Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
FRI 12 MAR 2010 1:59
s:\sc\files\pink\961540A1\SQ094101N.001.xls
s:\sc\files\pink\961540A1\U961540A1.xls

ID: H-3(4)
Comments: PINK

Sample, Rack-Pos, Time: 9, 1202062410, 120.0297:
Quench: 807.73
Start, End, X-Axis 1-174

Channel Counts



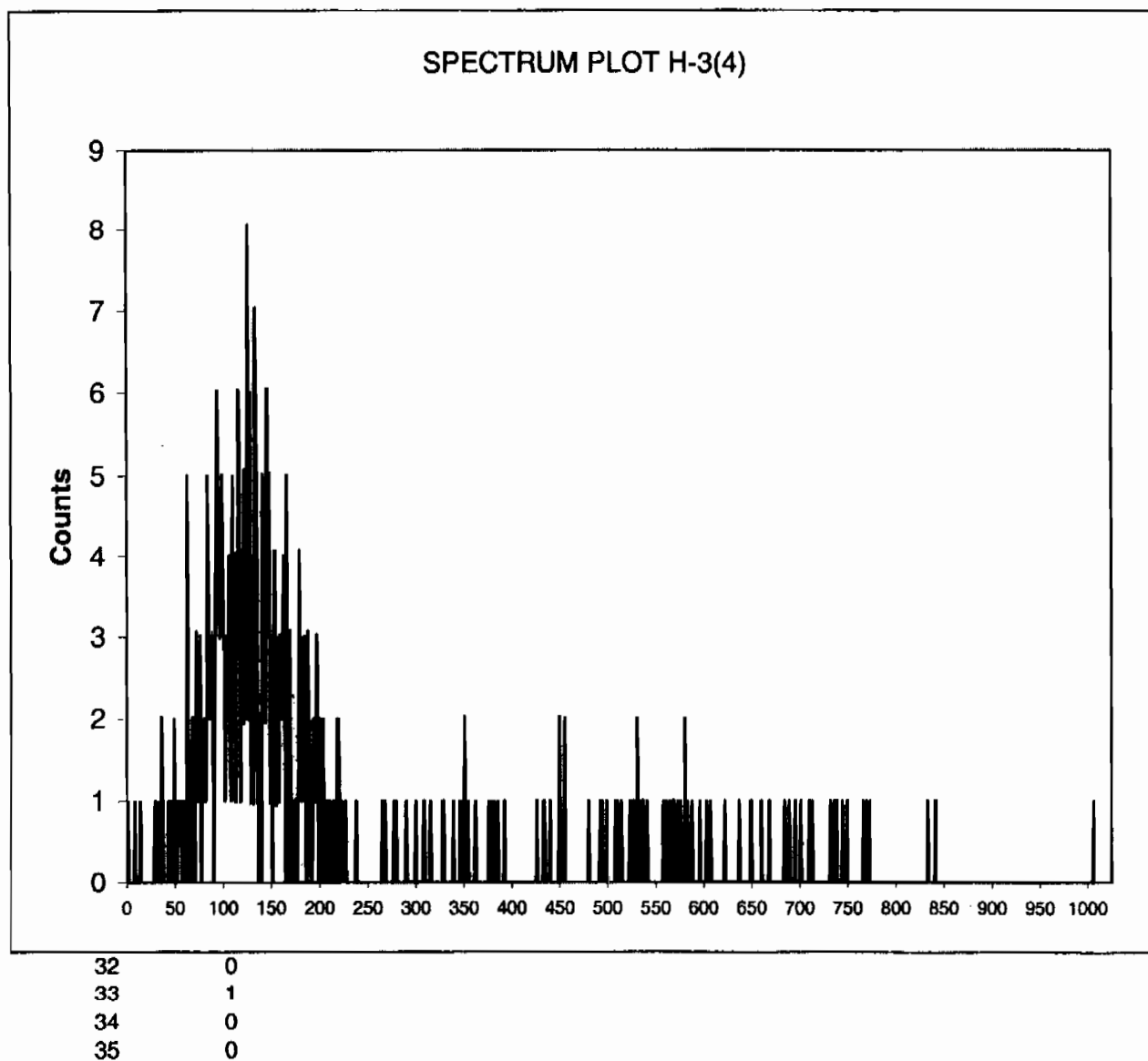
32	1
33	0
34	0
35	0

Instrument Type: Quantulus
Data Capture Date: FRI 12 MAR 2010 1:59
FileName: s:\sc\files\pink\961540A1\SQ104201N.001.xls
File Info: s:\sc\files\pink\961540A1\U961540A1.xls

ID: H-3(4)
Comments: PINK

Sample, Rack-Pos, Time: 10, 1202062411, 15.02973:
Quench: 806.71
Start, End, X-Axis 1-174

Channel Counts



Radiochemistry Batch Checklist, Rev10

Batch#

961541

Product:

Tritium

Date:

3/15/10

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:

Almadsuypare

Secondary Review Performed By:

Luzeta 3/15/10

LANL 3/23/10

05-MAR-10

95

Vacuum

Internal Due Date: 13-MAR-10

First Client Due Date 23-MAR-10

Analyst:KXK2

Batch #: 961541

Spike Code: _____ Expiration Date: _____ Vol: _____

Spike Isotope: Hydrogen-3

LCS Code: 0134-K Expiration Date: 3/27/0 Vol: 0.1

LC5 Isotone: Hydrogen-3

Prep Date: 3/10/10
Initials: *V. Lee*
Pipet ID: 2970968
Witness: *3/11/10*

Pipet ID: 2970968

Wiley

I

total	0111111110
moisture	0000000000
dis	0000000000
vol (mL)	0000000000

Sample ID	Client Samp ID	Type	Hazard Code	Min CRDL	Matrix	Client	Sample Date	Aliquet in vial (g/mL)	LSC Rack #	Dist Rig #	Vol added for Dist (mL)	Initial Sample Aliquot (g/mL)	Final Wt (g)	Vol (mL)	Yield (mL)
247900001-1	RE15-10-7896	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	5	1		519.57	488.97	30.65	
247900002-1	RE15-10-7894	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	6	2		368.40	285.65	97.75	
247900003-1	RE15-10-7900	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	7	3		620.94	570.64	50.30	
247900005-1	RE15-10-7897	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	8	4		491.50	411.88	79.62	
247900007-1	RE15-10-7899	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	9	5		550.17	448.94	101.23	
247900009-1	RE15-10-8011	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	10	6		461.93	394.03	67.90	
247900010-1	RE15-10-8004	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	11	7		554.74	489.28	65.46	
247900012-1	RE15-10-8003	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	12	8		358.06	289.60	88.44	
247900013-1	RE15-10-8007	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	13	9		395.90	298.90	97.00	
247900014-1	RE15-10-8002	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	14	10		513.40	472.33	41.07	
247900015-1	RE15-10-8010	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	15	11		355.76	318.41	37.35	
247900016-1	RE15-10-8006	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	16	12		435.19	404.73	30.46	
247900017-1	RE15-10-8001	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	17	13		301.93	213.16	88.77	
247900018-1	RE15-10-8012	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	18	14		484.57	456.95	27.62	
247900019-1	RE15-10-8008	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	19	15		438.24	370.91	47.33	
247900020-1	RE15-10-8005	SAMPLE		.25 pCi/mL SOIL		LANL010	18-FEB-10	10	20	16		444.56	365.43	79.13	
248389002-1	WST16-10-13296	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	43	17		502.98	417.47	85.51	
248389003-1	WST16-10-13295	SAMPLE		.25 pCi/mL SOIL		LANL010	25-FEB-10	10	44	18		583.80	505.57	78.23	
1202062412-1	MB for batch 961541	MB		.25 pCi/mL SOIL		QC ACCOUNT		10	45	19		20.00	0.00	20.00	
1202062413-1	WST16-10-13295(248389003DUP)	DUP		.25 pCi/mL SOIL		QC ACCOUNT	25-FEB-10	10	46	18		583.80	505.57	78.23	
1202062414-1	LCS for batch 961541	LCS		.25 pCi/mL SOIL		QC ACCOUNT		10	47	20		20.00	0.00	20.00	

Bkg prepared with dead water? Yes/No

Comments:

Instrument Used (circle as appropriate): LS6000 (Red) 7065155, LS6500 (Blue) 7067083, LS6500 (Gold) 7078506, LS6500 (Green) 7067404, Wallac (Yellow) 4140127, LS6000 (Brown) 7060455, Wallac (Pink) 2200082, Wallac (White) 4140299, Purple 7069123, Silver 7060656, Orange DG06095168

Calibration Used : Ecocount Ultra (10 mL sample/13 mL Ecocount Ultra)
Data Reviewed By: AW/ML/ML 3/5/10 -

DATE	3/8/2010	INITIALS	KXK2	BATCH NUMBER	961541	
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
247900001	519.57	0.059	30.65	488.92	10	
247900002	363.40	0.269	97.75	265.65	10	
247900003	620.94	0.081	50.30	570.64	10	
247900005	491.50	0.162	79.62	411.88	10	
247900007	550.17	0.184	101.23	448.94	10	
247900009	461.93	0.147	67.90	394.03	10	
247900010	554.74	0.118	65.46	489.28	10	
247900012	358.06	0.247	88.44	269.62	10	
247900013	395.90	0.245	97.00	298.90	10	
247900014	513.40	0.080	41.07	472.33	10	
247900015	355.76	0.105	37.35	318.41	10	
247900016	435.19	0.070	30.46	404.73	10	
247900017	301.93	0.294	88.77	213.16	10	
247900018	484.57	0.057	27.62	456.95	10	
247900019	438.24	0.108	47.33	390.91	10	
247900020	444.56	0.178	79.13	365.43	10	
248389002	502.98	0.170	85.51	417.47	10	
248389003	583.80	0.134	78.23	505.57	10	
MB	20.00	1.000	20.00	0.00	10	
DUP	583.80	0.134	78.23	505.57	10	
LCS	20.00	1.000	20.00	0.00	10	

Tritium Solid

Filename : H3VAC.XLS

File type : Excel

Version # : 1.2.6

Batch : 961541

Analyst : KKK2

Prep Date : 3/10/2010

Spike S/N :

Spike Exp Date :

Spike Activity (dpm/ml):

Spike Volume Added:

LCS S/N :

LCS Exp Date :

LCS Activity (dpm/ml):

LCS Volume Added:

H-3 Abundance : 1

Method Uncertainty : 0.0691

Geometry: 10mL DW/13mL

Ecosoft Ultra

Procedure Code : LSC_VH3S

Paramname :

Required MDC :

Half-life of Tritium :

Pipet, 0.1 ml Stdev : +/-

Pipet, 0.5 ml Stdev : +/-

Pipet, 1.0 ml Stdev : +/-

Pipet, 5.0 ml Stdev : +/-

0.000701

0.002564

0.005480

0.025729

ml

ml

ml

ml

Tritium

250

12.32

years

Sample Characteristics

Pos.	Sample ID	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
1	247900001.1	519.57	0.0307	0.0100	2.5729E-05	488.92	5.90%	1	2/18/2010 12:00
2	247900002.1	363.40	0.0978	0.0100	2.5729E-05	285.65	26.90%	2	2/18/2010 12:00
3	247900003.1	620.94	0.0503	0.0100	2.5729E-05	570.64	8.10%	3	2/18/2010 12:00
4	247900005.1	491.50	0.0796	0.0100	2.5729E-05	411.88	16.20%	4	2/18/2010 12:00
5	247900007.1	550.17	0.1012	0.0100	2.5729E-05	448.94	18.40%	5	2/18/2010 12:00
6	247900009.1	461.93	0.0679	0.0100	2.5729E-05	394.03	14.70%	6	2/18/2010 12:00
7	247900010.1	554.74	0.0655	0.0100	2.5729E-05	489.28	11.80%	7	2/18/2010 12:00
8	247900012.1	358.06	0.0884	0.0100	2.5729E-05	269.62	24.70%	8	2/18/2010 12:00
9	247900013.1	395.90	0.0970	0.0100	2.5729E-05	298.90	24.50%	9	2/18/2010 12:00
10	247900014.1	513.40	0.0411	0.0100	2.5729E-05	472.33	8.00%	10	2/18/2010 12:00
11	247900015.1	355.76	0.0374	0.0100	2.5729E-05	318.41	10.50%	11	2/18/2010 12:00
12	247900016.1	435.19	0.0305	0.0100	2.5729E-05	404.73	7.00%	12	2/18/2010 12:00
13	247900017.1	301.93	0.0888	0.0100	2.5729E-05	213.16	29.40%	13	2/18/2010 12:00
14	247900018.1	484.57	0.0276	0.0100	2.5729E-05	456.95	5.70%	14	2/18/2010 12:00
15	247900019.1	438.24	0.0473	0.0100	2.5729E-05	390.91	10.80%	15	2/18/2010 12:00
16	247900020.1	444.56	0.0791	0.0100	2.5729E-05	365.43	17.80%	16	2/18/2010 12:00
17	248389002.1	502.98	0.0855	0.0100	2.5729E-05	417.47	17.00%	17	2/25/2010 12:00
18	248389003.1	583.80	0.0782	0.0100	2.5729E-05	505.57	13.40%	18	2/25/2010 12:00
19	1202062412.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	19	3/10/2010 0:00
20	1202062413.1	583.80	0.0782	0.0100	2.5729E-05	505.57	13.40%	18	2/25/2010 12:00
21	1202062414.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	20	3/10/2010 0:00

Count raw data					Background				Counting				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	5	95.0298	815.51	2.69	0.63	95	3/12/2010 22:20	0.997	LSCPINK	8/21/2009	8/31/2010	0.1785	0.00792	4	3/12/2010 20:43							
2	6	95.0298	811.29	1.9	0.63	95	3/12/2010 23:58	0.997	LSCPINK	8/21/2009	8/31/2010	0.1748	0.00792	4	3/12/2010 20:43							
3	7	95.0298	815.91	2.17	0.63	95	3/13/2010 1:36	0.997	LSCPINK	8/21/2009	8/31/2010	0.1788	0.00792	4	3/12/2010 20:43							
4	8	16.6631	815.72	608.85	0.63	95	3/13/2010 3:14	0.997	LSCPINK	8/21/2009	8/31/2010	0.1787	0.00792	4	3/12/2010 20:43							
5	9	95.0298	816.37	3.21	0.63	95	3/13/2010 3:32	0.997	LSCPINK	8/21/2009	8/31/2010	0.1792	0.00792	4	3/12/2010 20:43							
6	10	95.0298	806.64	106.59	0.63	95	3/13/2010 6:25	0.996	LSCPINK	8/21/2009	8/31/2010	0.1704	0.00792	4	3/12/2010 20:43							
7	11	95.0298	802.55	8.21	0.63	95	3/13/2010 8:03	0.996	LSCPINK	8/21/2009	8/31/2010	0.1662	0.00792	4	3/12/2010 20:43							
8	12	95.0298	805.96	20.51	0.63	95	3/13/2010 9:41	0.996	LSCPINK	8/21/2009	8/31/2010	0.1697	0.00792	4	3/12/2010 20:43							
9	13	95.0298	811.41	6.46	0.63	95	3/13/2010 11:18	0.996	LSCPINK	8/21/2009	8/31/2010	0.1749	0.00792	4	3/12/2010 20:43							
10	14	95.0298	806.47	4.2	0.63	95	3/13/2010 12:56	0.996	LSCPINK	8/21/2009	8/31/2010	0.1702	0.00792	4	3/12/2010 20:43							
11	15	95.0298	807.32	46.73	0.63	95	3/13/2010 14:33	0.996	LSCPINK	8/21/2009	8/31/2010	0.1710	0.00792	4	3/12/2010 20:43							
12	16	95.0298	814.09	2.56	0.63	95	3/13/2010 16:11	0.996	LSCPINK	8/21/2009	8/31/2010	0.1773	0.00792	4	3/12/2010 20:43							
13	17	95.0297	815.79	21.43	0.63	95	3/13/2010 17:48	0.996	LSCPINK	8/21/2009	8/31/2010	0.1787	0.00792	4	3/12/2010 20:43							
14	18	95.0297	815.98	35.17	0.63	95	3/13/2010 19:26	0.996	LSCPINK	8/21/2009	8/31/2010	0.1789	0.00792	4	3/12/2010 20:43							
15	19	95.0297	812.76	1.69	0.63	95	3/13/2010 21:03	0.996	LSCPINK	8/21/2009	8/31/2010	0.1762	0.00792	4	3/12/2010 20:43							
16	20	95.0297	811.22	18.37	0.63	95	3/13/2010 22:41	0.996	LSCPINK	8/21/2009	8/31/2010	0.1748	0.00792	4	3/12/2010 20:43							
17	43	95.0296	814.33	0.78	0.63	95	3/14/2010 0:19	0.997	LSCPINK	8/21/2009	8/31/2010	0.1775	0.00792	4	3/12/2010 20:43							
18	44	95.0131	806.87	0.89	0.63	95	3/14/2010 1:57	0.997	LSCPINK	8/21/2009	8/31/2010	0.1708	0.00792	4	3/12/2010 20:43							
19	45	95.0297	811.49	0.78	0.63	95	3/14/2010 3:34	0.999	LSCPINK	8/21/2009	8/31/2010	0.1750	0.00792	4	3/12/2010 20:43							
20	46	95.0297	804.31	0.92	0.63	95	3/14/2010 5:12	0.997	LSCPINK	8/21/2009	8/31/2010	0.1680	0.00792	4	3/12/2010 20:43							
21	47	15.0297	805.71	22.37	0.63	95	3/14/2010 6:49	0.999	LSCPINK	8/21/2009	8/31/2010	0.1694	0.00792	4	3/12/2010 20:43							

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

*. RPD changed to 0% due to activity below MDC for 1202062413.1

Results		Decision Level	Critical Level	Required 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	CPM	CPM	pCi/L	pCi/L						
1	67.9354	47.9630	250	103.9197	521.6176	0.091	2.060	0.187	47.3287	59.6543		SAMPLE				
2	69.3682	48.9745	250	106.1113	328.3618	0.129	1.270	0.163	42.1871	47.9871		SAMPLE				
3	67.8116	47.8756	250	103.7302	389.2363	0.112	1.540	0.172	43.3852	51.1585		SAMPLE				
4	124.2528	87.7235	250	220.9920	153863.4215	0.013	608.220	6.045	1529.2962	10824.7766		SAMPLE				
5	67.6706	47.7761	250	103.5146	650.7417	0.078	2.580	0.201	50.7020	68.0060		SAMPLE				
6	71.1837	50.2563	250	106.8885	28113.2584	0.013	105.960	1.062	281.8236	1878.1964		SAMPLE				
7	72.9846	51.5278	250	111.6433	2062.0018	0.041	7.580	0.305	82.9691	185.6573		SAMPLE				
8	71.4711	50.4592	250	106.3281	5296.8440	0.025	19.880	0.472	125.6439	389.6551		SAMPLE				
9	69.3297	48.9474	250	106.0525	1506.5255	0.048	5.830	0.273	70.5832	126.4571		SAMPLE				
10	71.2577	50.3085	250	109.0016	948.1747	0.064	3.570	0.225	59.8775	89.1422		SAMPLE				
11	70.9069	50.0609	250	106.4651	12183.6655	0.018	46.100	0.706	186.5748	868.8312		SAMPLE				
12	68.4026	48.2928	250	104.6342	492.0603	0.095	1.930	0.183	46.7118	57.8351		SAMPLE				
13	67.8560	47.9069	250	103.7982	5260.6623	0.025	20.800	0.482	121.8569	386.1246		SAMPLE				
14	67.7976	47.8657	250	103.7089	8728.2146	0.020	34.540	0.614	155.1011	627.3730		SAMPLE				
15	68.8557	48.6127	250	105.3274	272.0411	0.148	1.060	0.156	40.0989	44.3507		SAMPLE				
16	69.4038	48.9996	250	106.1657	4589.0748	0.027	17.740	0.447	115.6694	339.9042		SAMPLE				
17	68.2533	48.1874	250	104.4059	38.1595	0.812	0.150	0.122	30.9879	31.1016		SAMPLE				
18	71.0236	50.1433	250	108.6448	68.8249	0.487	0.260	0.126	33.4801	33.8215		SAMPLE				
19	69.1001	48.7853	250	105.7013	38.6330	0.812	0.150	0.122	31.3724	31.4875		SAMPLE				
20	72.1181	50.9160	250	110.3179	77.9527	0.440	0.290	0.126	34.3296	34.7563	248389003.1	MB	0.0%	0.0666	5535.9403	104.5%
21	136.5690	96.4189	250	245.9370	5783.3188	0.057	21.740	1.223	325.2671	517.7273	DUP	LCS				

REGISTRY

FRI 12 MAR 2010 20:41

*** DIRECTORY PATH :S:\LSC\Q\DA\961541A0 ***

PARAMETER GROUP: 8
ID: H-3(5)

00A PROGRAM MODE 6 ->

ORDER	POS	ID	CTIME	COUNTS	CUCNTS	MCW	REP	STD	STMS	STIME
1	4	BKG	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
2	5	247900001	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
3	6	247900002	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
4	7	247900003	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
5	8	247900005	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
6	9	247900007	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00

NUMBER OF CYCLES 1
COINCIDENCE BIAS (L/H) L

MCA INPUT TRIGG. INHIBIT
1 LRSUM DCOS G
2 GSUM G

MEMORY SPLIT
L*R
L*R

WINDOW	CHANNELS	MCA	HALF
1	1- 174	1	2
2	1- 174	1	2
3	60- 220	1	2
4	50- 320	1	1
5	50- 270	1	1
6	60- 220	1	1
7	1- 1024	2	1
8	1- 1024	2	2

SELECTED PRINTOUT FOR TERMINAL 1 (A)

SELECTED PRINTOUT FOR TERMINAL 2 (B)

1. POS	2. ID	3. CTIME	4. SQP	5. CPM1	6. CPM2	7. CPM3
SEND SPECTRA		12				
RESOLUTION OF SPECTRA		1024				
LISTING		Y				
INSTRUMENT NUMBER		1				

POS	ID	CTIME	SQP	CPM1	CPM2	CPM3
Q010401N.001	12 MAR 2010	22:19				
4	BKG	95:01.785	809.88	.63	.63	.93
Q020501N.001	12 MAR 2010	23:56				
5	247900001	95:01.785	815.51	2.69	2.69	3.12
Q030601N.001	13 MAR 2010	1:34				
6	247900002	95:01.785	811.29	1.90	1.90	2.38
Q040701N.001	13 MAR 2010	3:12				
7	247900003	95:01.785	815.91	2.17	2.17	2.53
Q050801N.001	13 MAR 2010	3:31				

Page 1

8	247900005	16:39.785	815.72	608.85	608.85	664.48
Q060901N.001	13 MAR 2010	5:08				
9	247900007	95:01.785	816.37	3.21	3.21	3.78

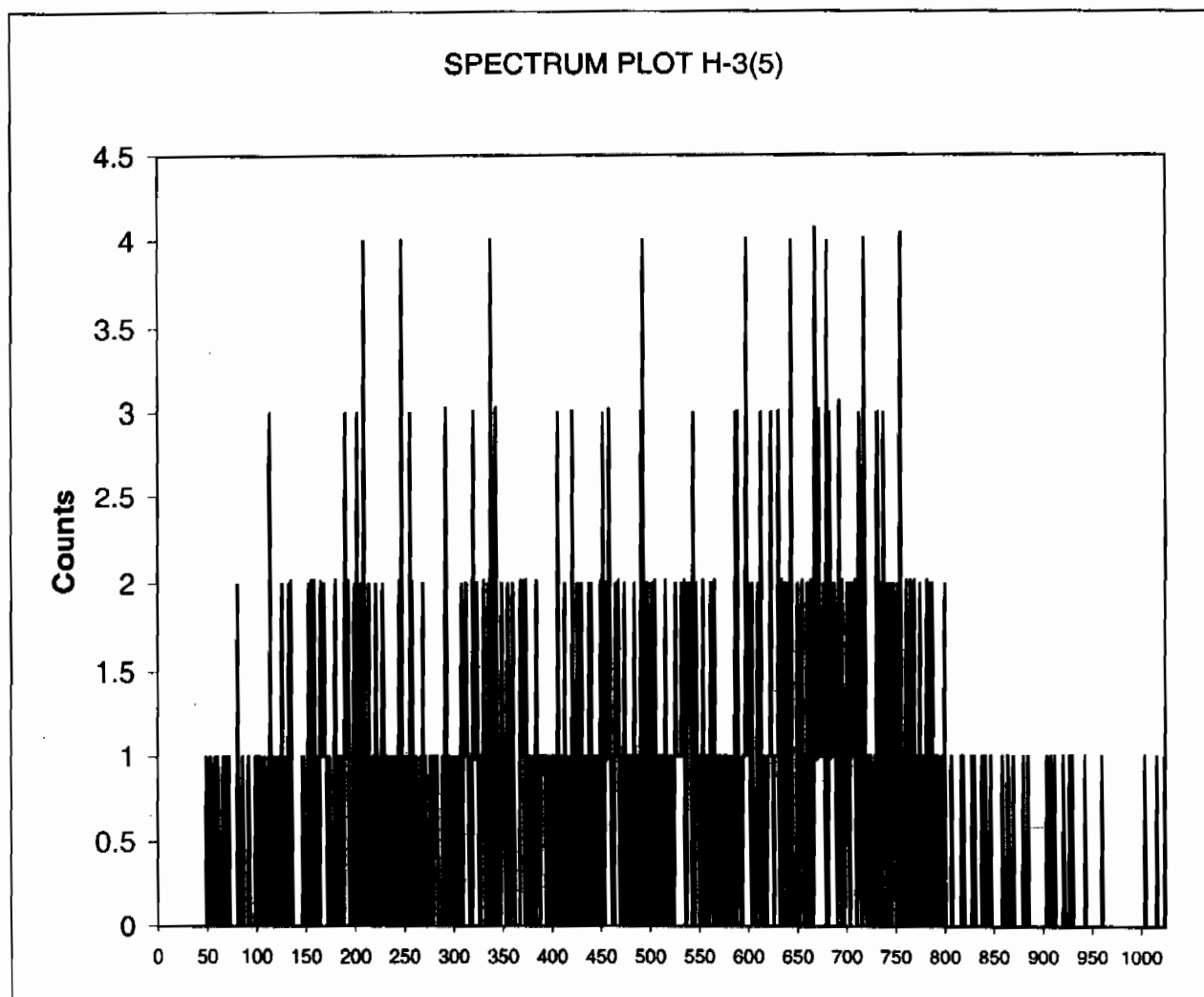
Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
FRI 12 MAR 2010 20:41
s:\sc\files\pink\961541A0\SQ010401N.001.xls
s:\sc\files\pink\961541A0\U961541A0.xls

ID: H-3(5)
Comments: PINK

Sample, Rack-Pos, Time: 1, BKG, 95.02975:
Quench: 809.88
Start, End, X-Axis 1-174

Channel Counts



32	0
33	0
34	0
35	0

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
FRI 12 MAR 2010 20:41
s:\sc\files\pink\961541A0\SQ020501N.001.xls
s:\sc\files\pink\961541A0\U961541A0.xls

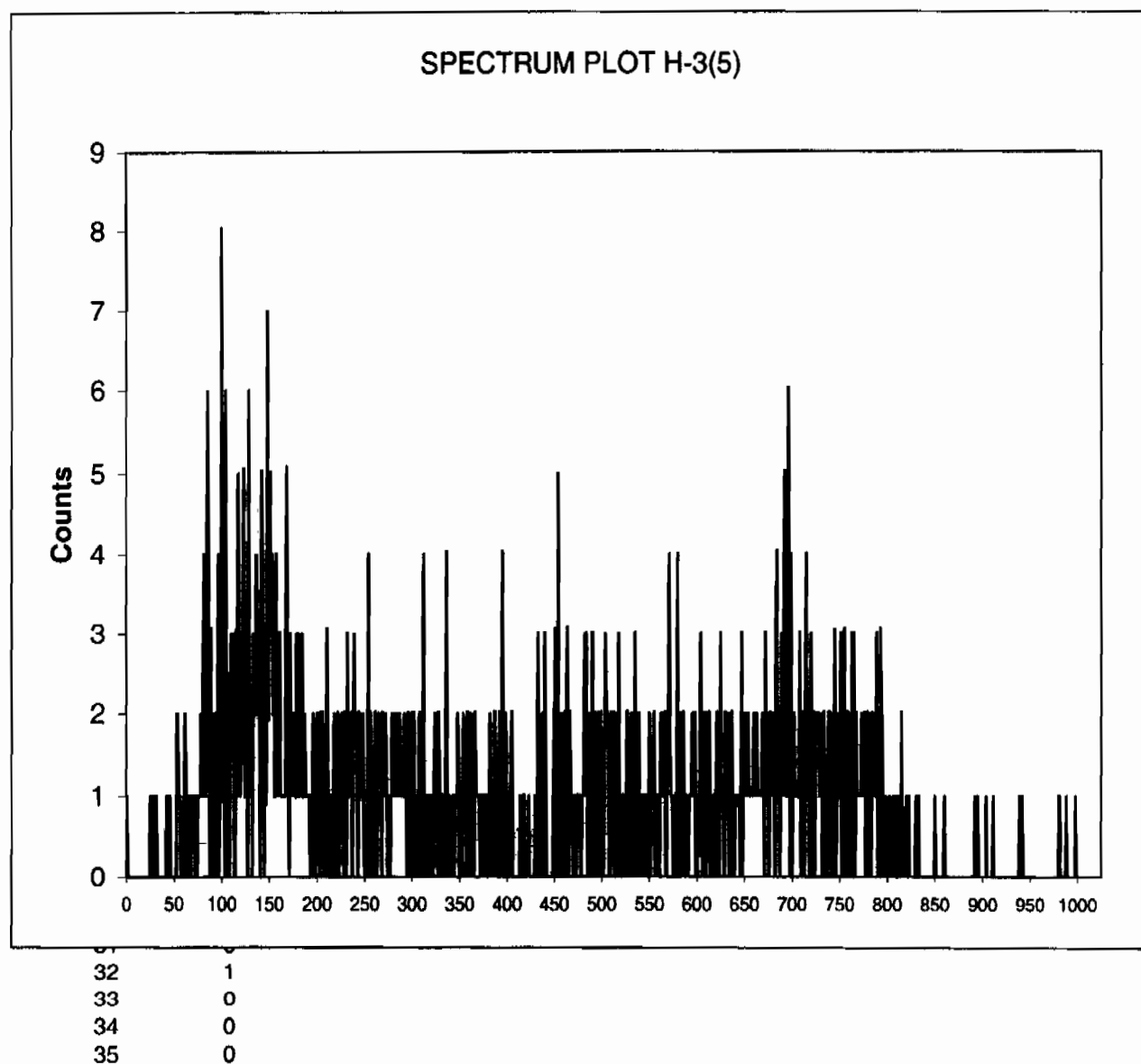
ID:
Comments:

H-3(5)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

2, 247900001, 95.02975:
815.51
1-174

Channel Counts

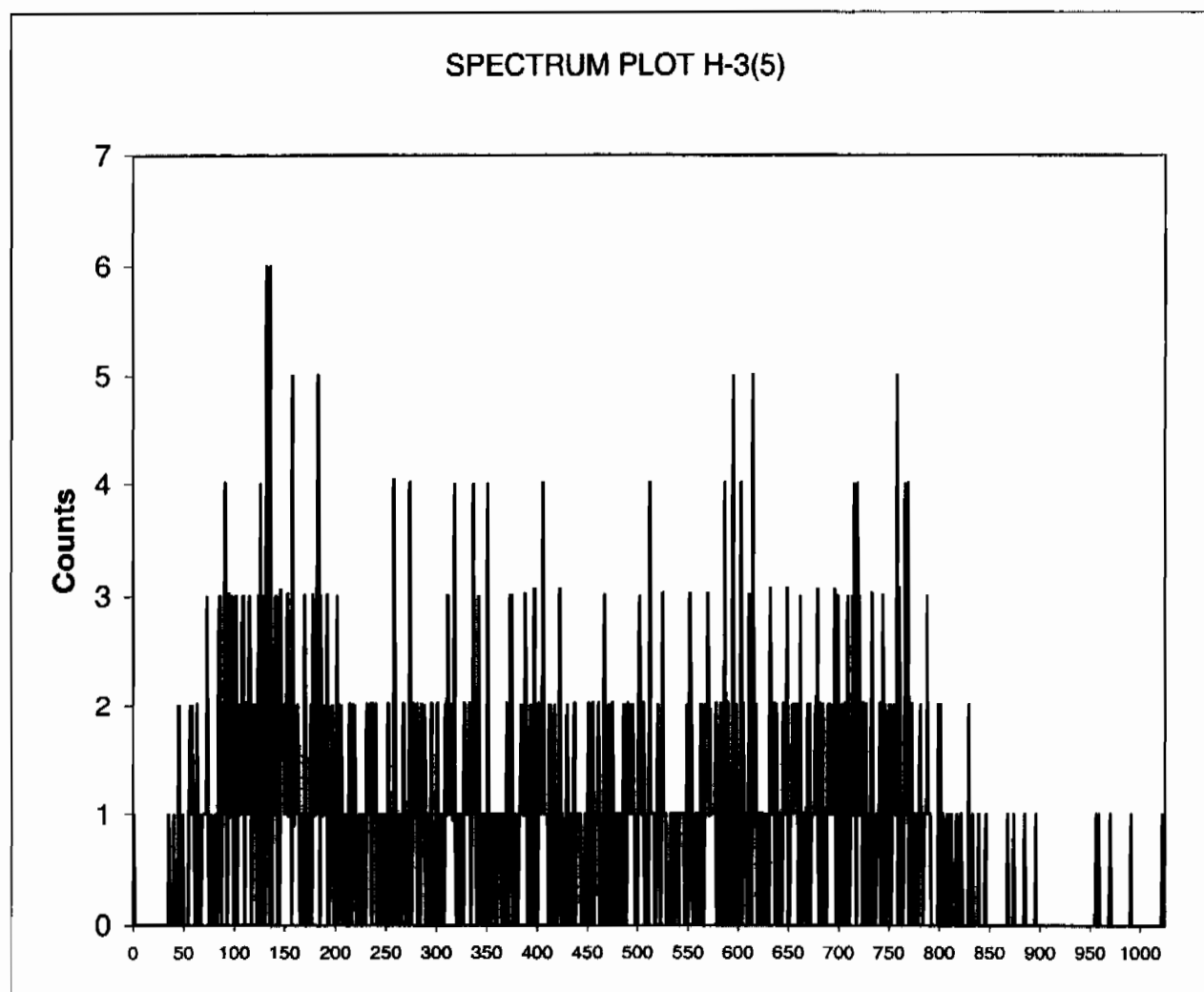


Instrument Type: Quantulus
Data Capture Date: FRI 12 MAR 2010 20:41
FileName: s:\sc\files\pink\961541A0\SQ030601N.001.xls
File Info: s:\sc\files\pink\961541A0\U961541A0.xls

ID: H-3(5)
Comments: PINK

Sample, Rack-Pos, Time: 3, 247900002, 95.02975:
Quench: 811.29
Start, End, X-Axis 1-174

Channel Counts



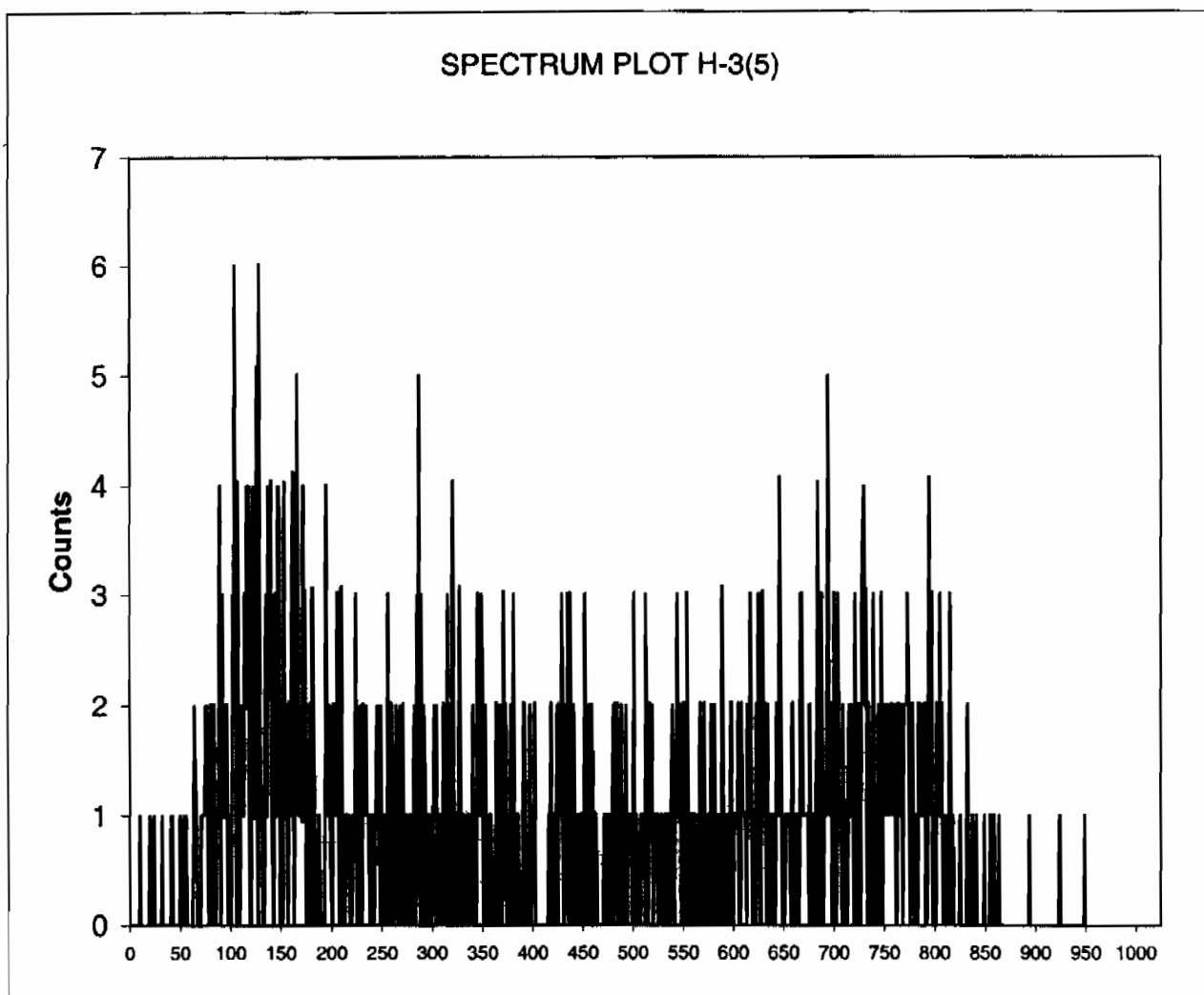
32	0
33	0
34	0
35	1

Instrument Type: Quantulus
Data Capture Date: FRI 12 MAR 2010 20:41
FileName: s:\lsc\files\pink\961541A0\SQ040701N.001.xls
File Info: s:\lsc\files\pink\961541A0\U961541A0.xls

ID: H-3(5)
Comments: PINK

Sample, Rack-Pos, Time: 4, 247900003, 95.02975:
Quench: 815.91
Start, End, X-Axis 1-174

Channel Counts



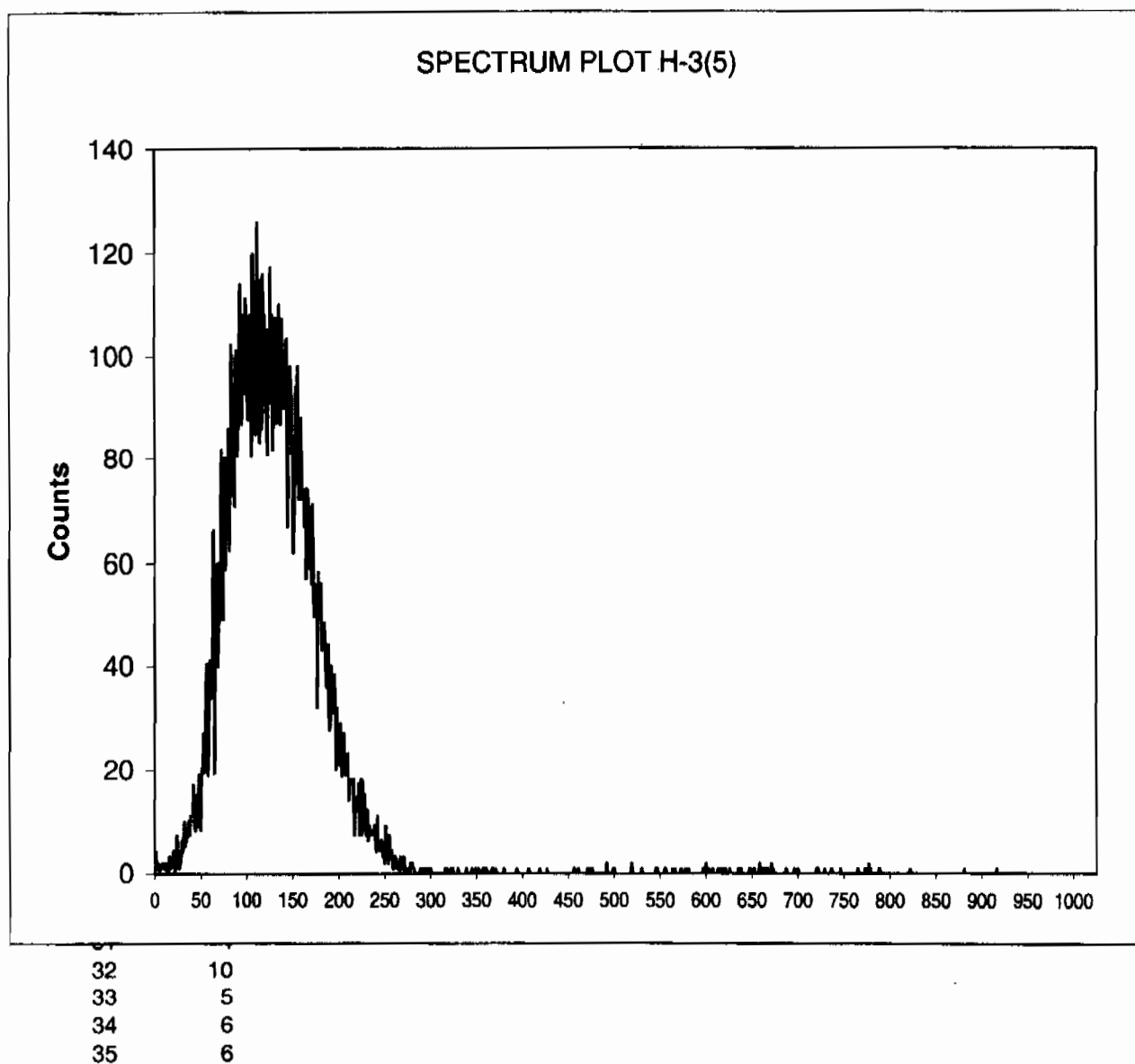
32	1
33	0
34	0
35	0

Instrument Type: Quantulus
Data Capture Date: FRI 12 MAR 2010 20:41
FileName: s:\sc\files\pink\961541A0\SQ050801N.001.xls
File Info: s:\sc\files\pink\961541A0\U961541A0.xls

ID: H-3(5)
Comments: PINK

Sample, Rack-Pos, Time: 5, 247900005, 16.66308:
Quench: 815.72
Start, End, X-Axis 1-174

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
FRI 12 MAR 2010 20:41
s:\sc\files\pink\961541A0\SQ060901N.001.xls
s:\sc\files\pink\961541A0\U961541A0.xls

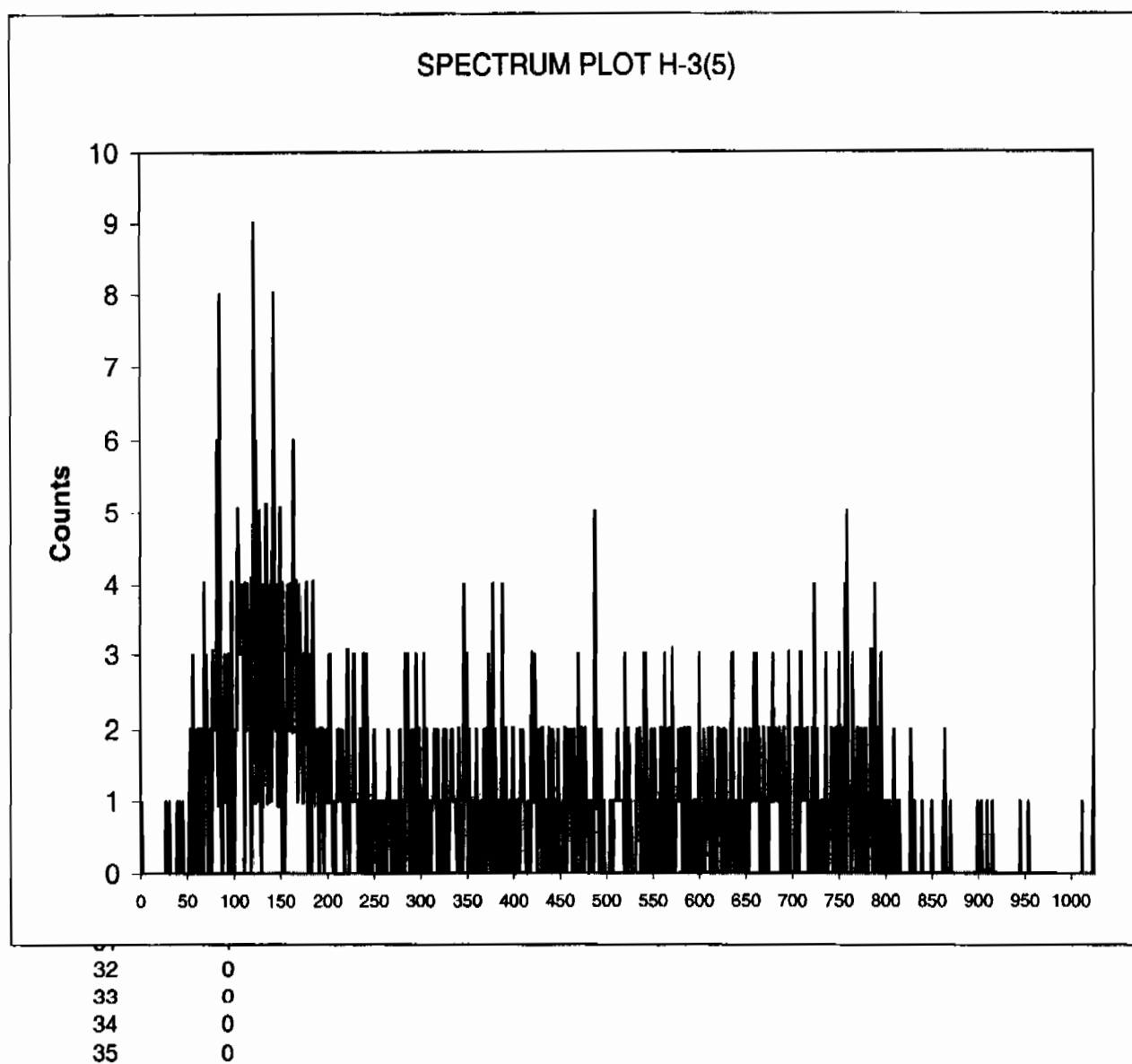
ID:
Comments:

H-3(5)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

6, 247900007, 95.02975:
816.37
1-174

Channel Counts



REGISTRY

SAT 13 MAR 2010 6:24

*** DIRECTORY PATH :S:\LSC\Q\DA\961541A1 ***

PARAMETER GROUP: 8
ID: H-3(6)

00A PROGRAM MODE 6 ->

ORDER	POS	ID	CTIME	COUNTS	CUCNTS	MCW	REP	STD	STMS	STIME
1	10	247900009	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
2	11	247900010	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
3	12	247900012	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
4	13	247900013	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
5	14	247900014	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
6	15	247900015	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
7	16	247900016	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
8	17	247900017	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
9	18	247900018	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
10	19	247900019	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
11	20	247900020	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
12	43	248389002	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
13	44	248389003	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
14	45	1202062412	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
15	46	1202062413	95:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
16	47	1202062414	15:00	1.0E04	NO LIM	1	1	Y	1/10	1:00

NUMBER OF CYCLES 1
COINCIDENCE BIAS (L/H) L

MCA INPUT TRIGG. INHIBIT
1 LRSUM DCOS G
2 GSUM G

MEMORY SPLIT
L*R
L*R

WINDOW	CHANNELS	MCA	HALF
1	1- 174	1	2
2	1- 174	1	2
3	60- 220	1	2
4	50- 320	1	1
5	50- 270	1	1
6	60- 220	1	1
7	1- 1024	2	1
8	1- 1024	2	2

SELECTED PRINTOUT FOR TERMINAL 1 (A)

SELECTED PRINTOUT FOR TERMINAL 2 (B)

1. POS	2. ID	3. CTIME	4. SQP	5. CPM1	6. CPM2	7. CPM3
SEND SPECTRA 12						
RESOLUTION OF SPECTRA 1024						
LISTING Y						
INSTRUMENT NUMBER 1						

POS	ID	CTIME	SQP	CPM1	CPM2	CPM3
-----	----	-------	-----	------	------	------

Page 1

REGISTRY

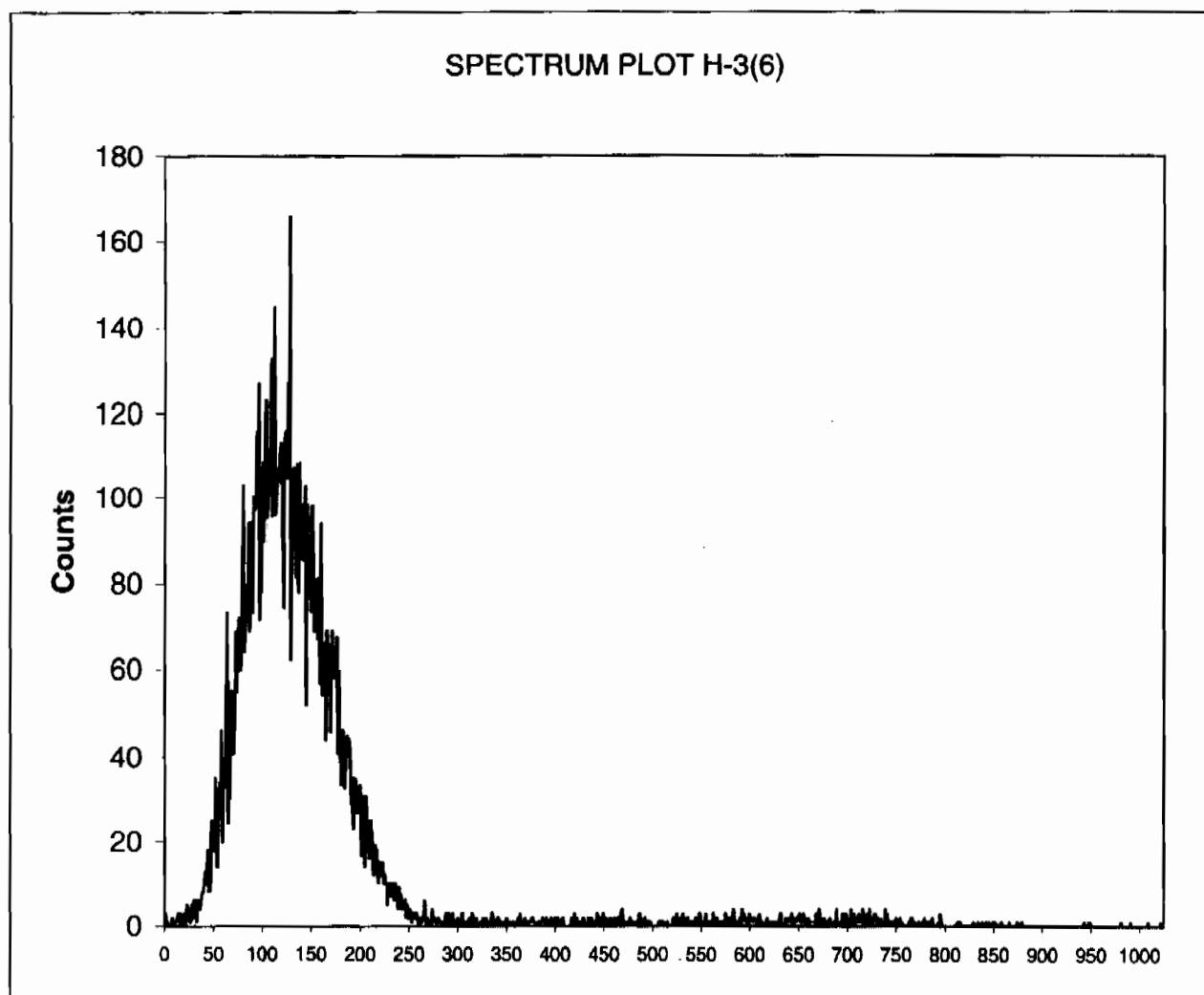
Q011001N.001	13 MAR 2010	8:01				
10	247900009	95:01.785	806.64	106.59	106.59	116.31
Q021101N.001	13 MAR 2010	9:39				
11	247900010	95:01.785	802.55	8.21	8.21	8.93
Q031201N.001	13 MAR 2010	11:17				
12	247900012	95:01.785	805.96	20.51	20.51	22.32
Q041301N.001	13 MAR 2010	12:54				
13	247900013	95:01.785	811.41	6.46	6.46	7.49
Q051401N.001	13 MAR 2010	14:32				
14	247900014	95:01.785	806.47	4.20	4.20	4.91
Q061501N.001	13 MAR 2010	16:09				
15	247900015	95:01.785	807.32	46.73	46.73	51.07
Q071601N.001	13 MAR 2010	17:47				
16	247900016	95:01.785	814.09	2.56	2.56	3.01
Q081701N.001	13 MAR 2010	19:24				
17	247900017	95:01.784	815.79	21.43	21.43	23.95
Q091801N.001	13 MAR 2010	21:02				
18	247900018	95:01.784	815.98	35.17	35.17	38.93
Q101901N.001	13 MAR 2010	22:39				
19	247900019	95:01.784	812.76	1.69	1.69	2.00
Q112001N.001	14 MAR 2010	0:17				
20	247900020	95:01.784	811.22	18.37	18.37	20.56
Q124301N.001	14 MAR 2010	1:55				
43	248389002	95:01.777	814.33	.78	.78	1.14
Q134401N.001	14 MAR 2010	3:33				
44	248389003	95:00.784	806.87	.89	.89	1.17
Q144501N.001	14 MAR 2010	5:10				
45	1202062412	95:01.783	811.49	.78	.78	1.11
Q154601N.001	14 MAR 2010	6:48				
46	1202062413	95:01.783	804.31	.92	.92	1.34
Q164701N.001	14 MAR 2010	7:05				
47	1202062414	15:01.783	805.71	22.37	22.37	23.92

Instrument Type: Quantulus
Data Capture Date: SAT 13 MAR 2010 6:24
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File Info: s:\lsc\files\pink\961541A1\U961541A1.xls

ID: H-3(6)
Comments: PINK

Sample, Rack-Pos, Time: 1, 247900009, 95.02975:
Quench: 806.64
Start, End, X-Axis 1-174

Channel Counts



32	6
33	1
34	6
35	5

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
SAT 13 MAR 2010 6:24
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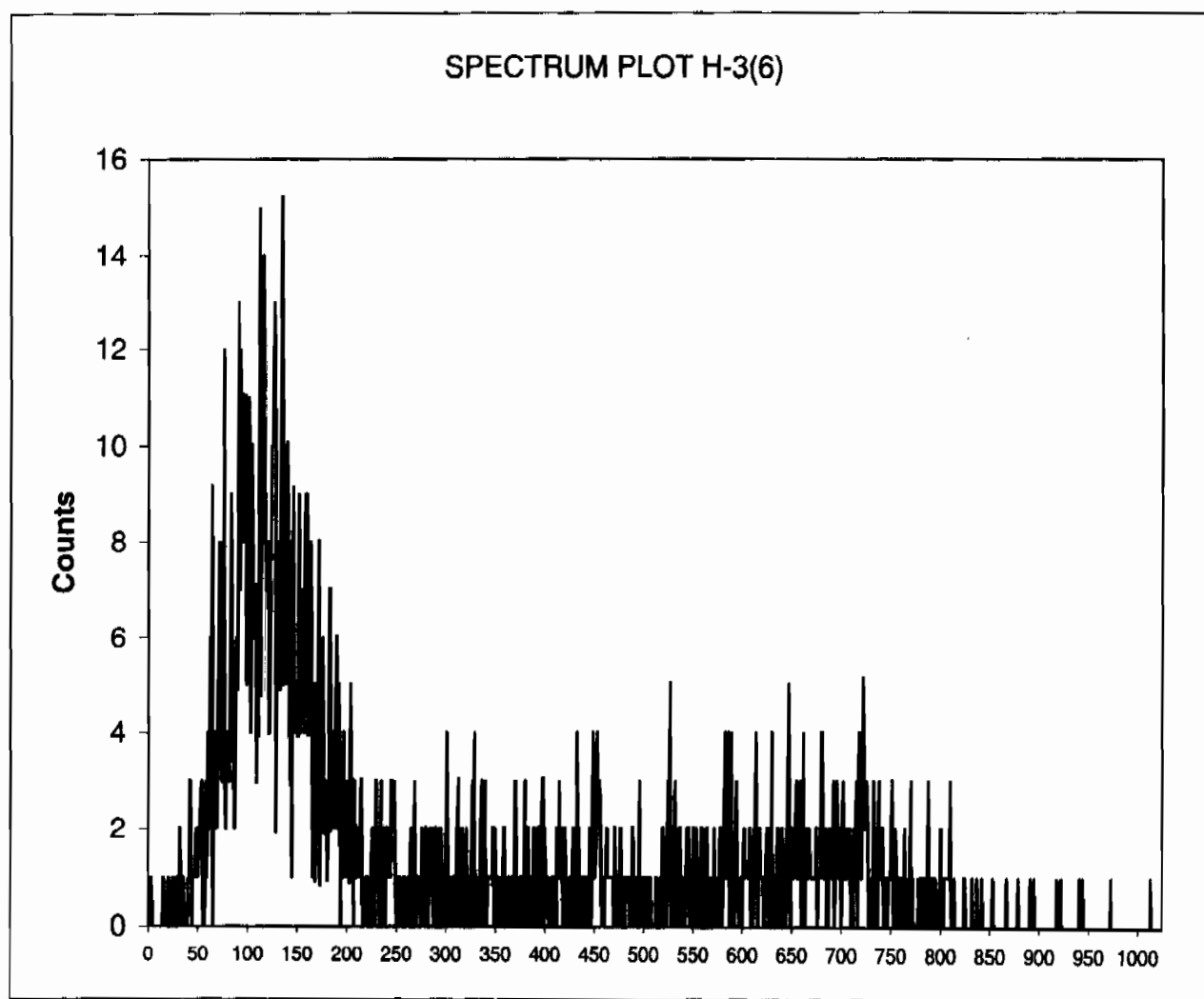
ID:
Comments:

H-3(6)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

2, 247900010, 95.02975:
802.55
1-174

Channel Counts



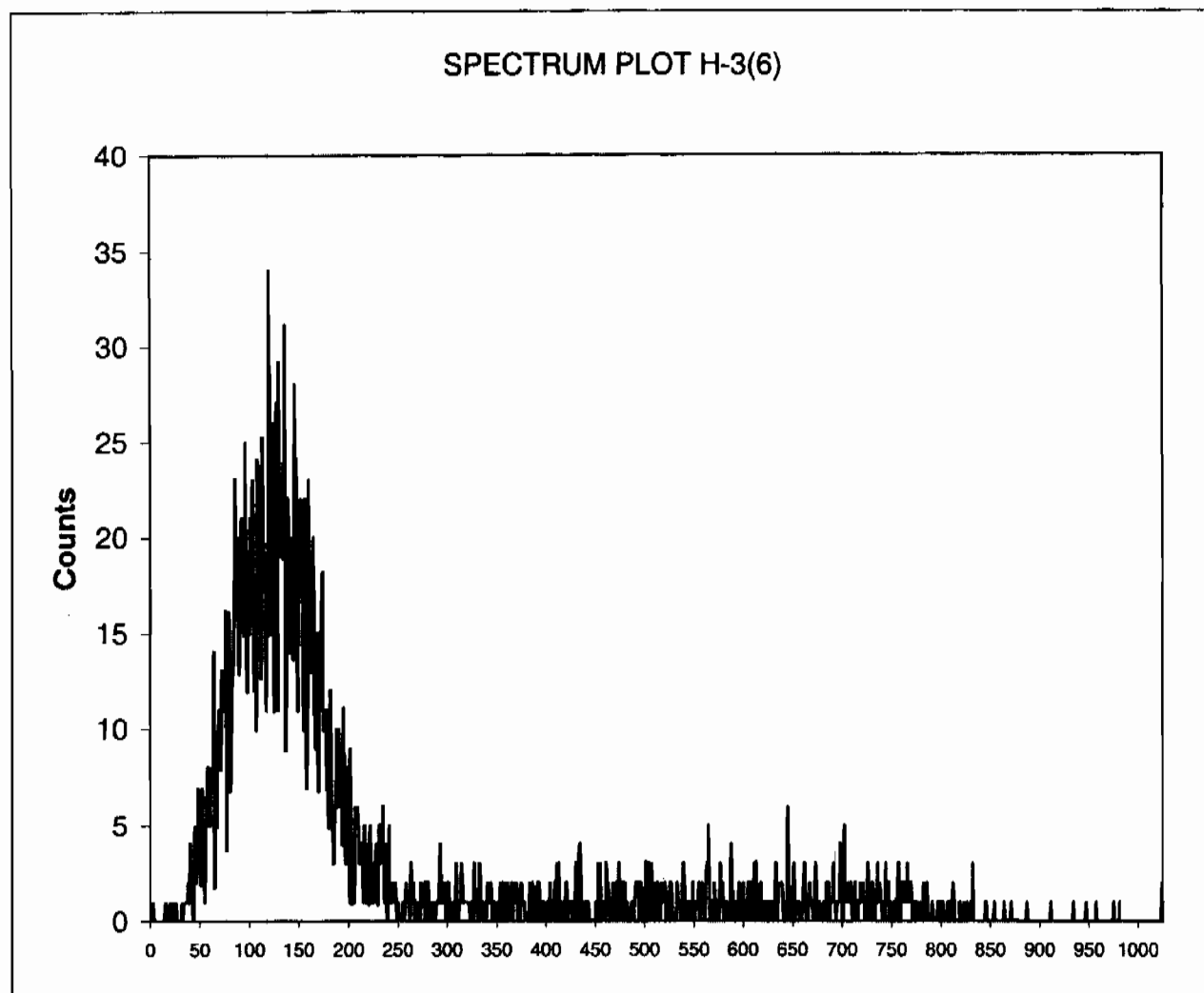
32	2
33	1
34	0
35	1

Instrument Type: Quantulus
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ID: H-3(6)
Comments: PINK

Sample, Rack-Pos, Time: 3, 247900012, 95.02975:
Quench: 805.96
Start, End, X-Axis 1-174

Channel Counts



32	1
33	0
34	1
35	1

Instrument Type:
Data Capture Date:
FileName:
File Info:

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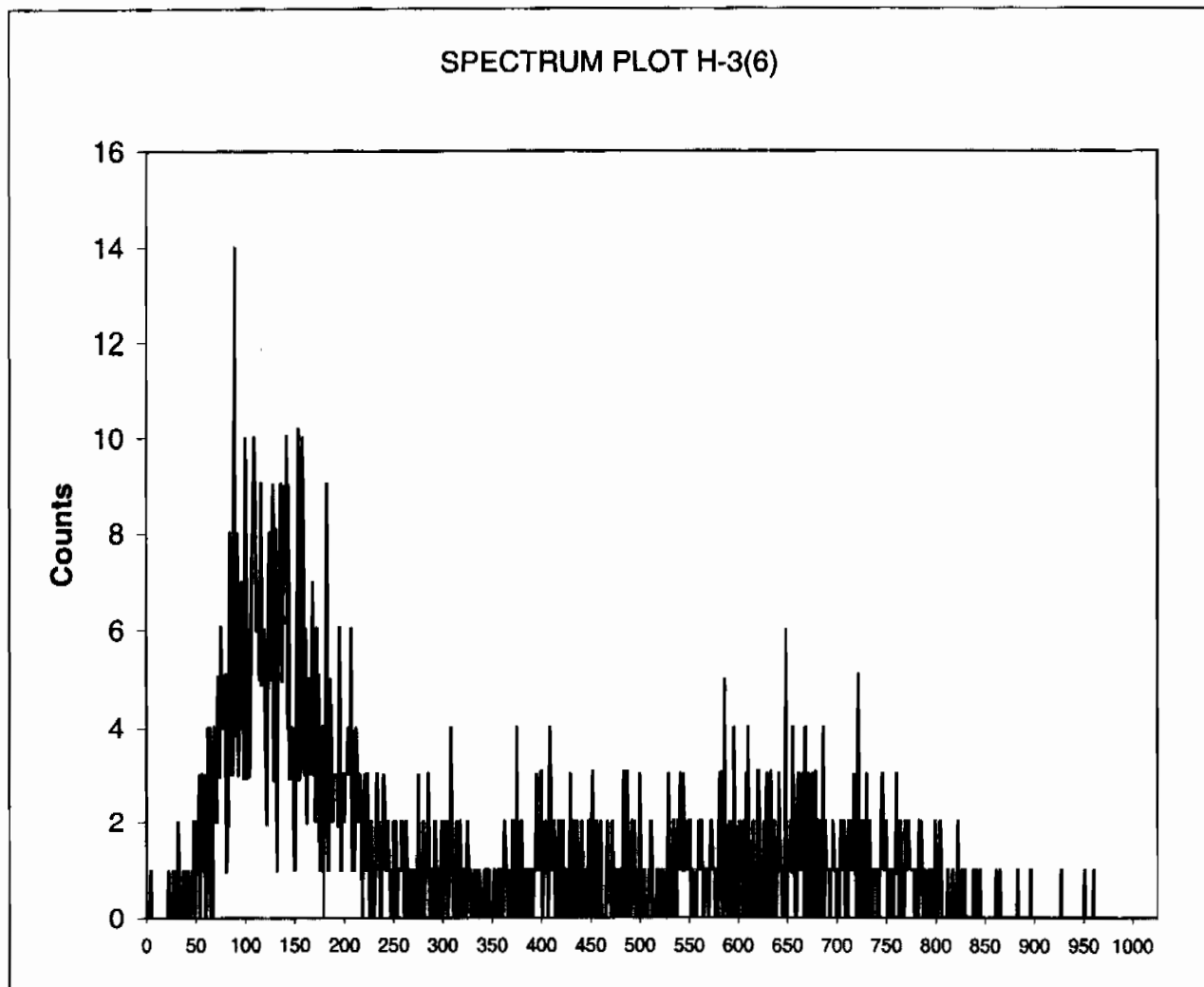
ID:
Comments:

H-3(6)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

4, 247900013, 95.02975:
811.41
1-174

Channel Counts



32	2
33	0
34	0
35	0

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
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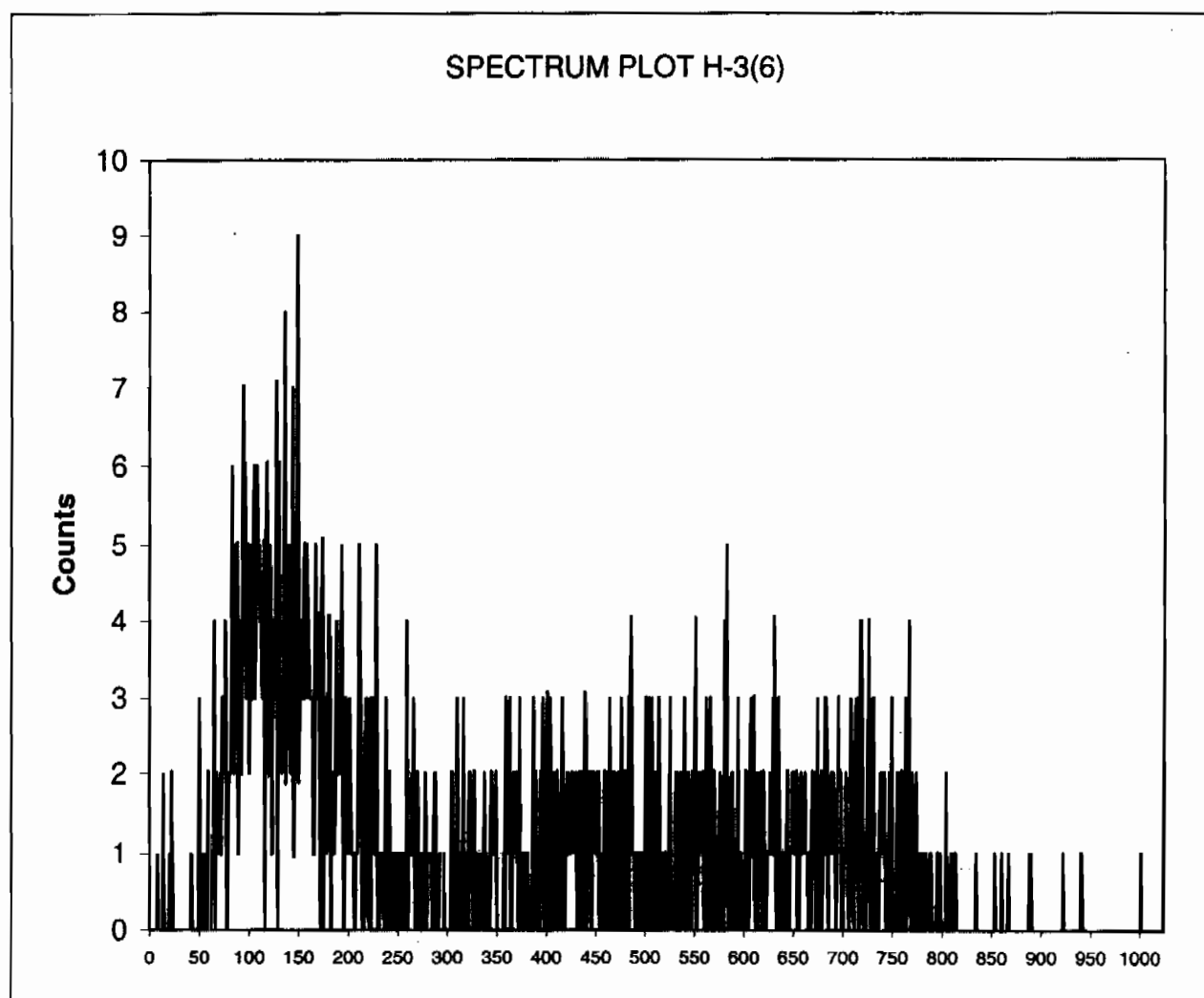
ID:
Comments:

H-3(6)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

5, 247900014, 95.02975:
806.47
1-174

Channel Counts



32	0
33	0
34	0
35	0

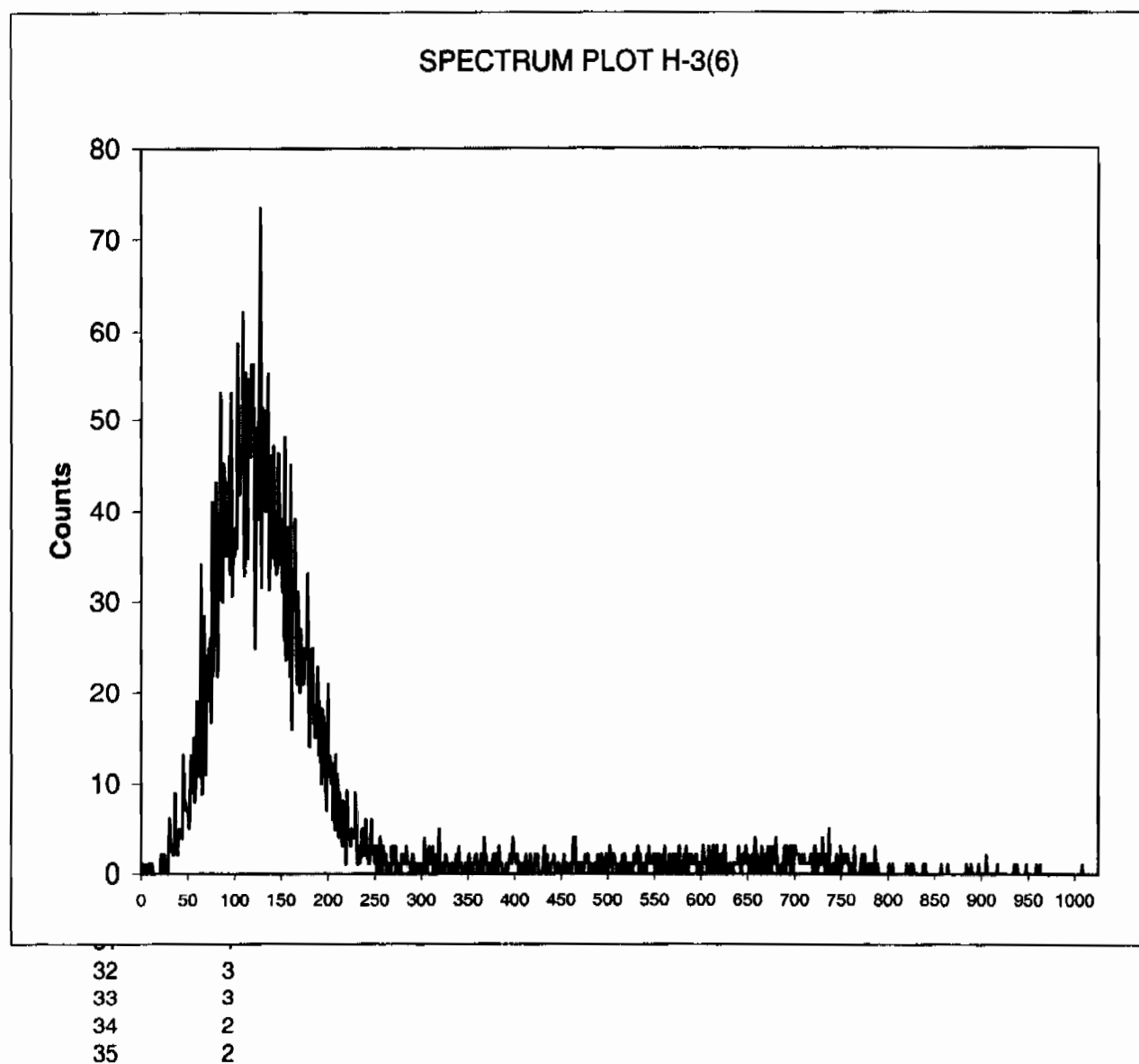
Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
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s:\sc\files\pink\961541A1\U961541A1.xls

ID: H-3(6)
Comments: PINK

Sample, Rack-Pos, Time: 6, 247900015, 95.02975:
Quench: 807.32
Start, End, X-Axis 1-174

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
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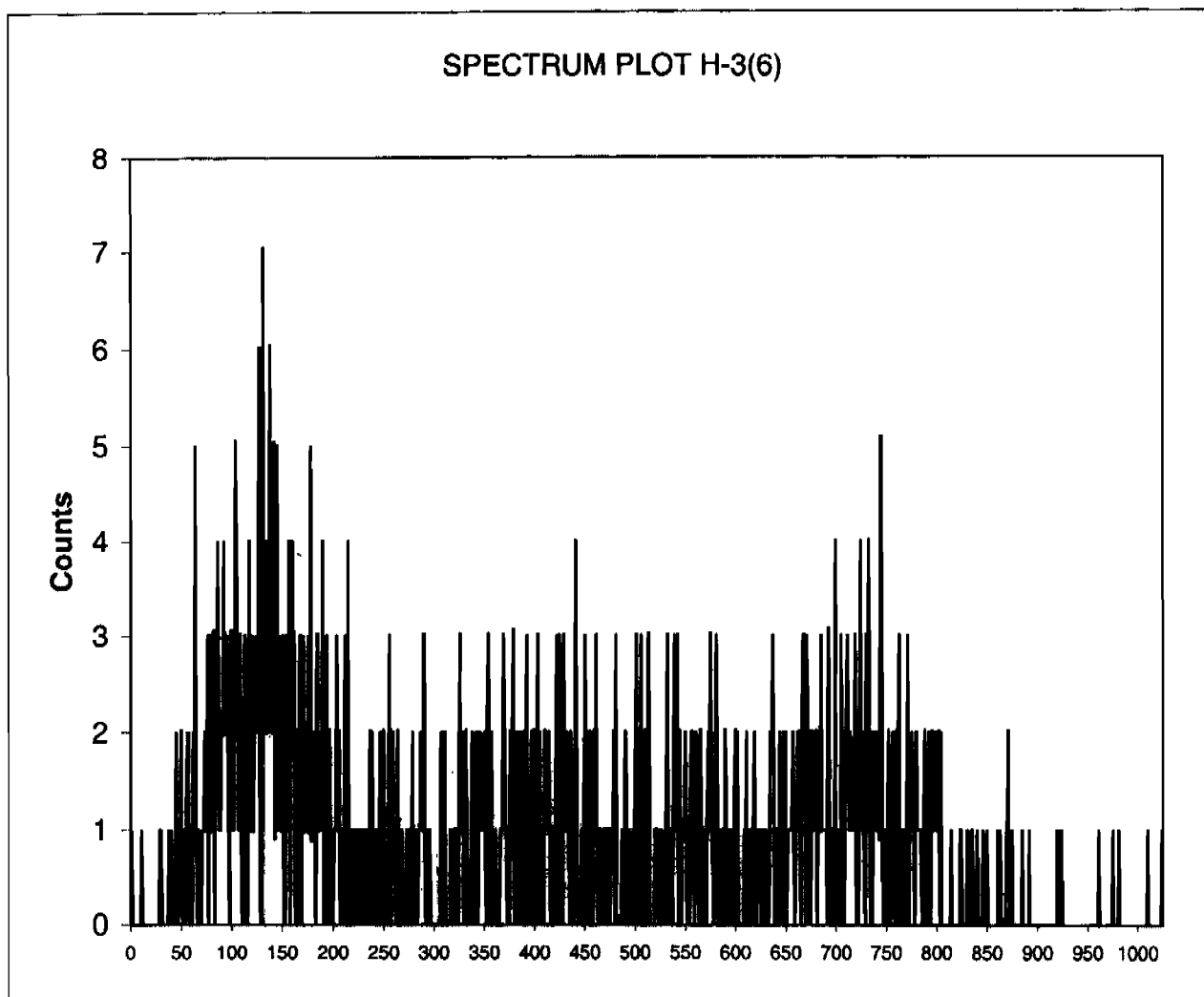
ID:
Comments:

H-3(6)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

7, 247900016, 95.02975:
814.09
1-174

Channel Counts



32	0
33	0
34	0
35	0

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
SAT 13 MAR 2010 6:24
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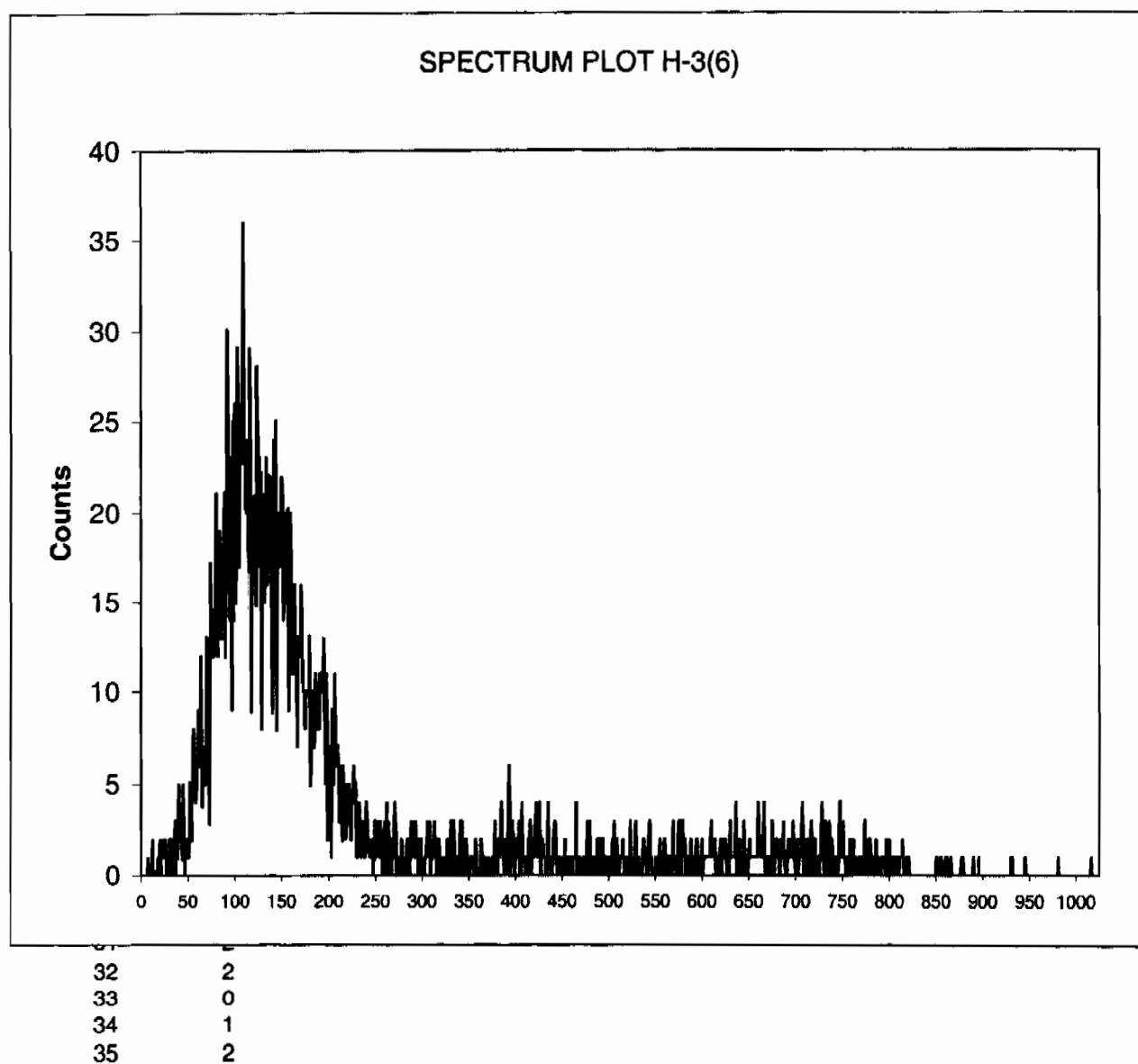
ID:
Comments:

H-3(6)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

8, 247900017, 95.02973:
815.79
1-174

Channel Counts

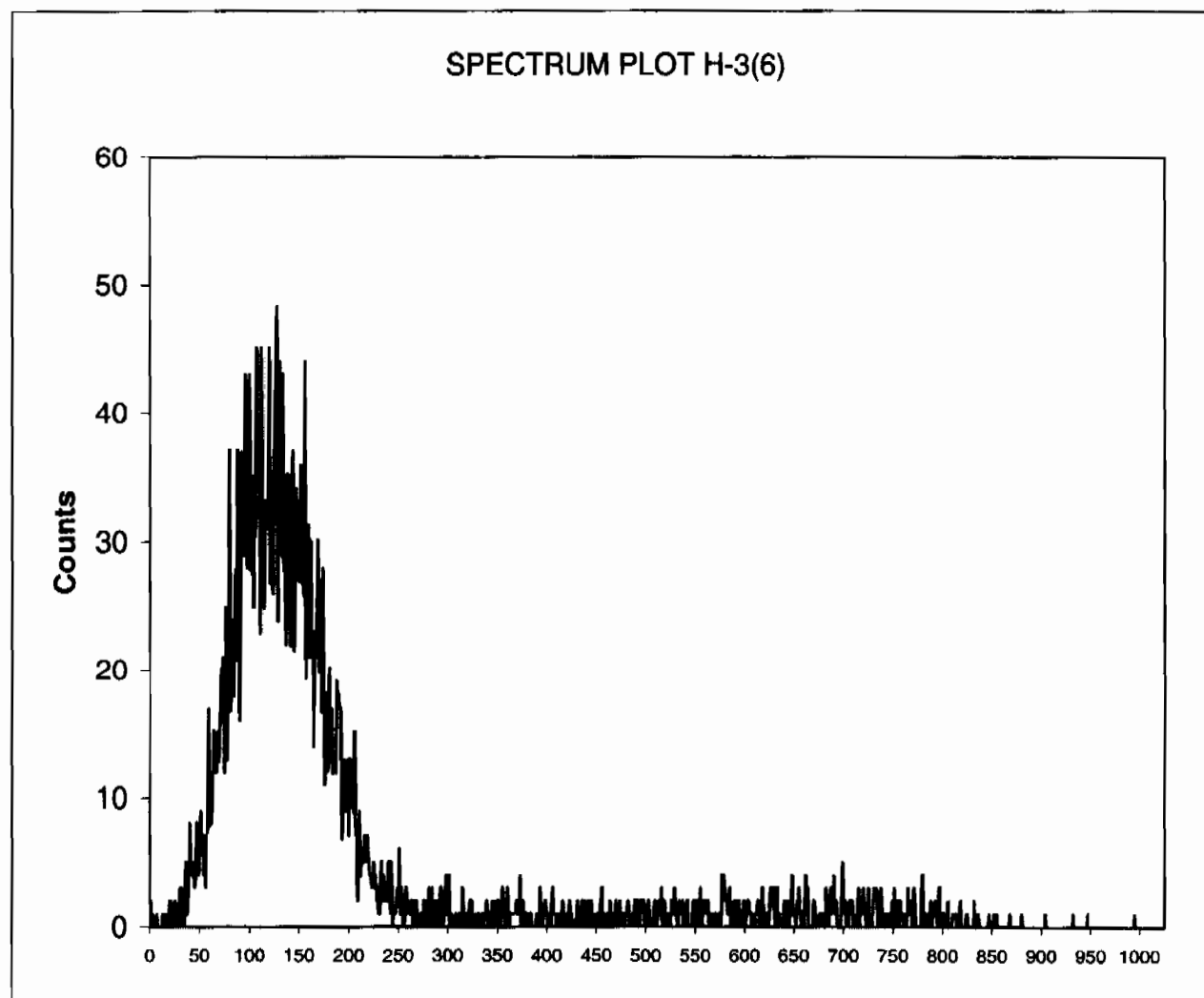


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ID: H-3(6)
Comments: PINK

Sample, Rack-Pos, Time: 9, 247900018, 95.02973:
Quench: 815.98
Start, End, X-Axis 1-174

Channel Counts



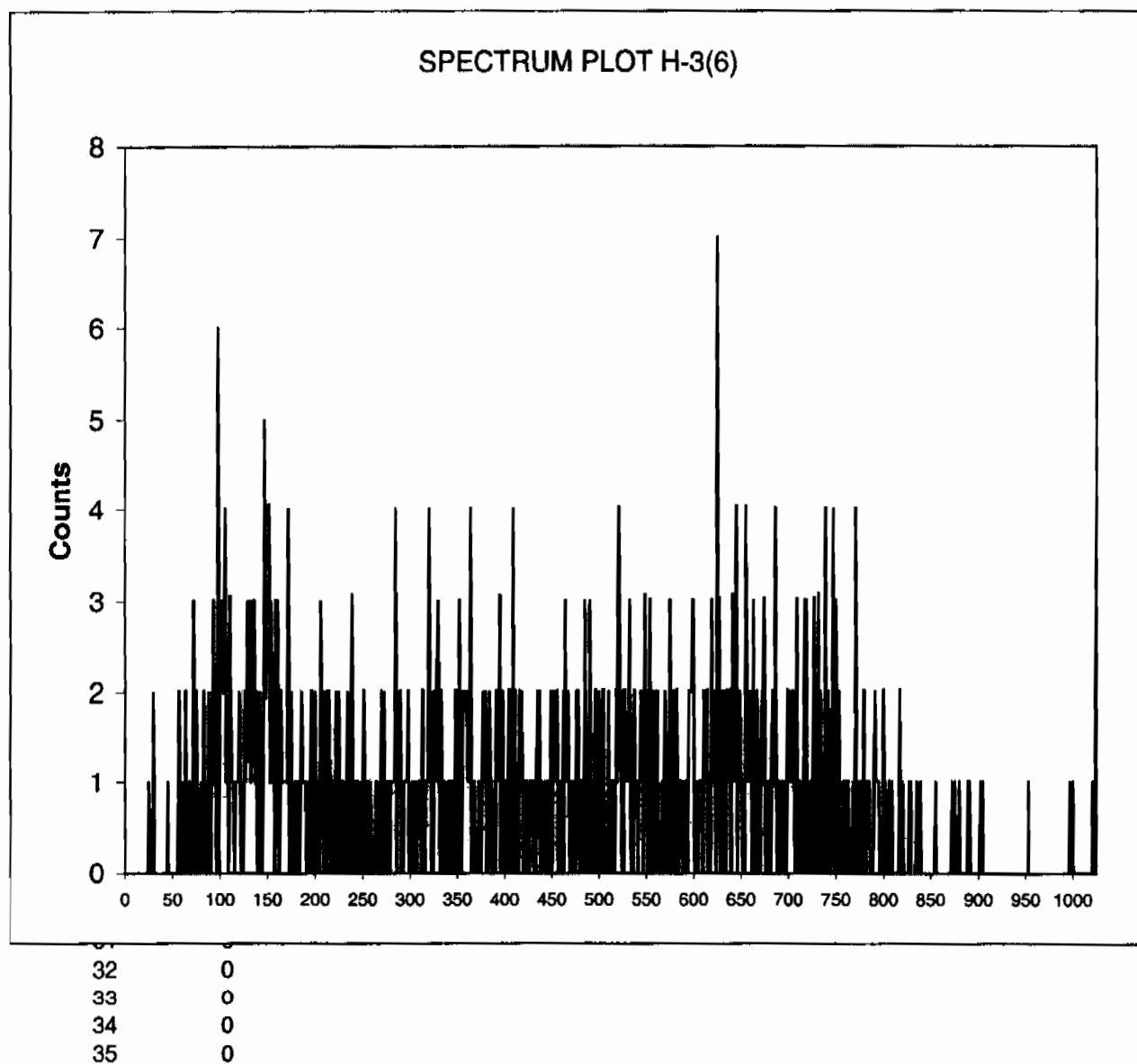
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33	1
34	0
35	0

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File Info: s:\sc\files\pink\961541A1\U961541A1.xls

ID: H-3(6)
Comments: PINK

Sample, Rack-Pos, Time: 10, 247900019, 95.02973;
Quench: 812.76
Start, End, X-Axis 1-174

Channel Counts



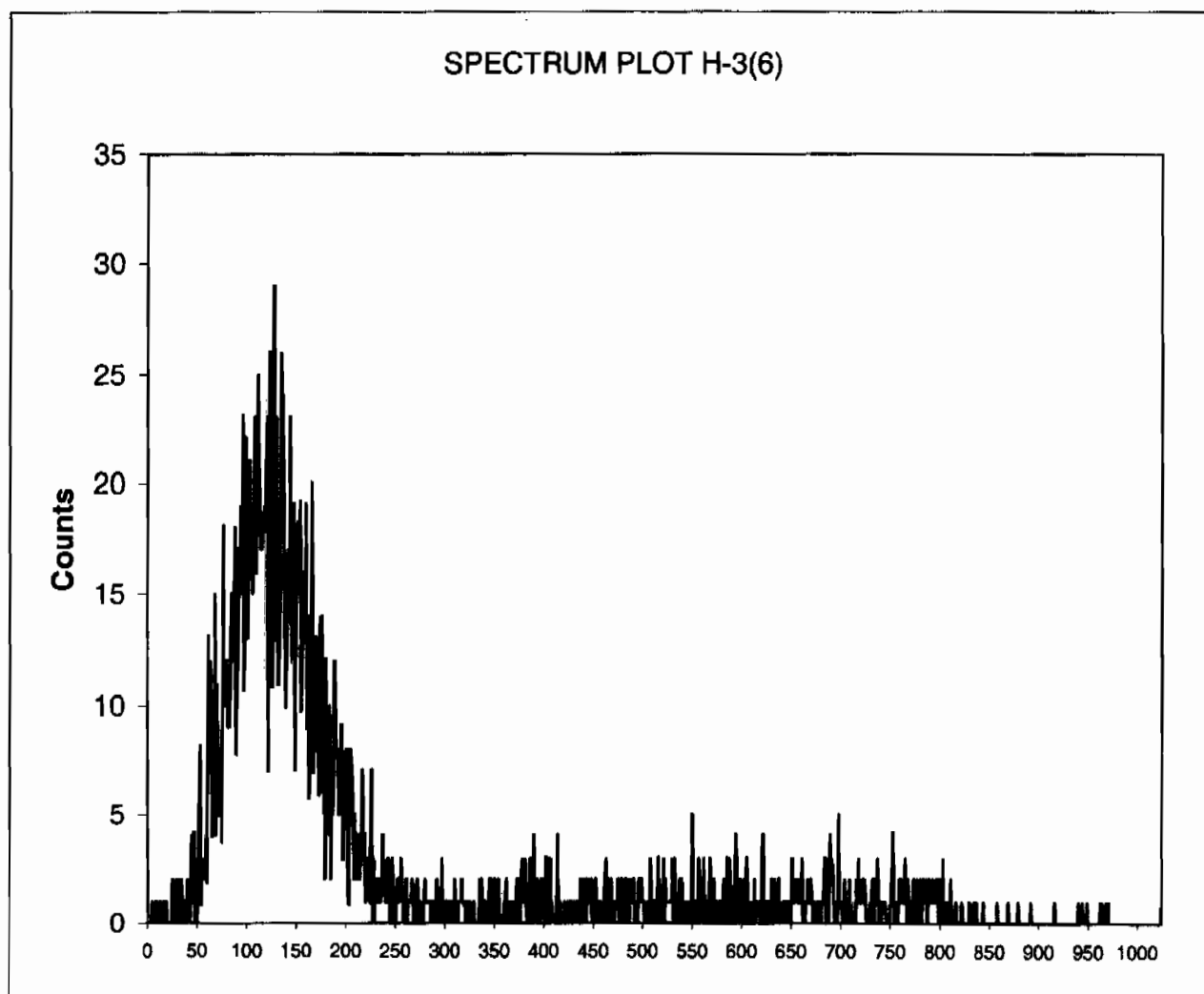
Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
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s:\sc\files\pink\961541A1\U961541A1.xls

ID: H-3(6)
Comments: PINK

Sample, Rack-Pos, Time: 11, 247900020, 95.02973:
Quench: 811.22
Start, End, X-Axis 1-174

Channel Counts



32	1
33	0
34	2
35	1

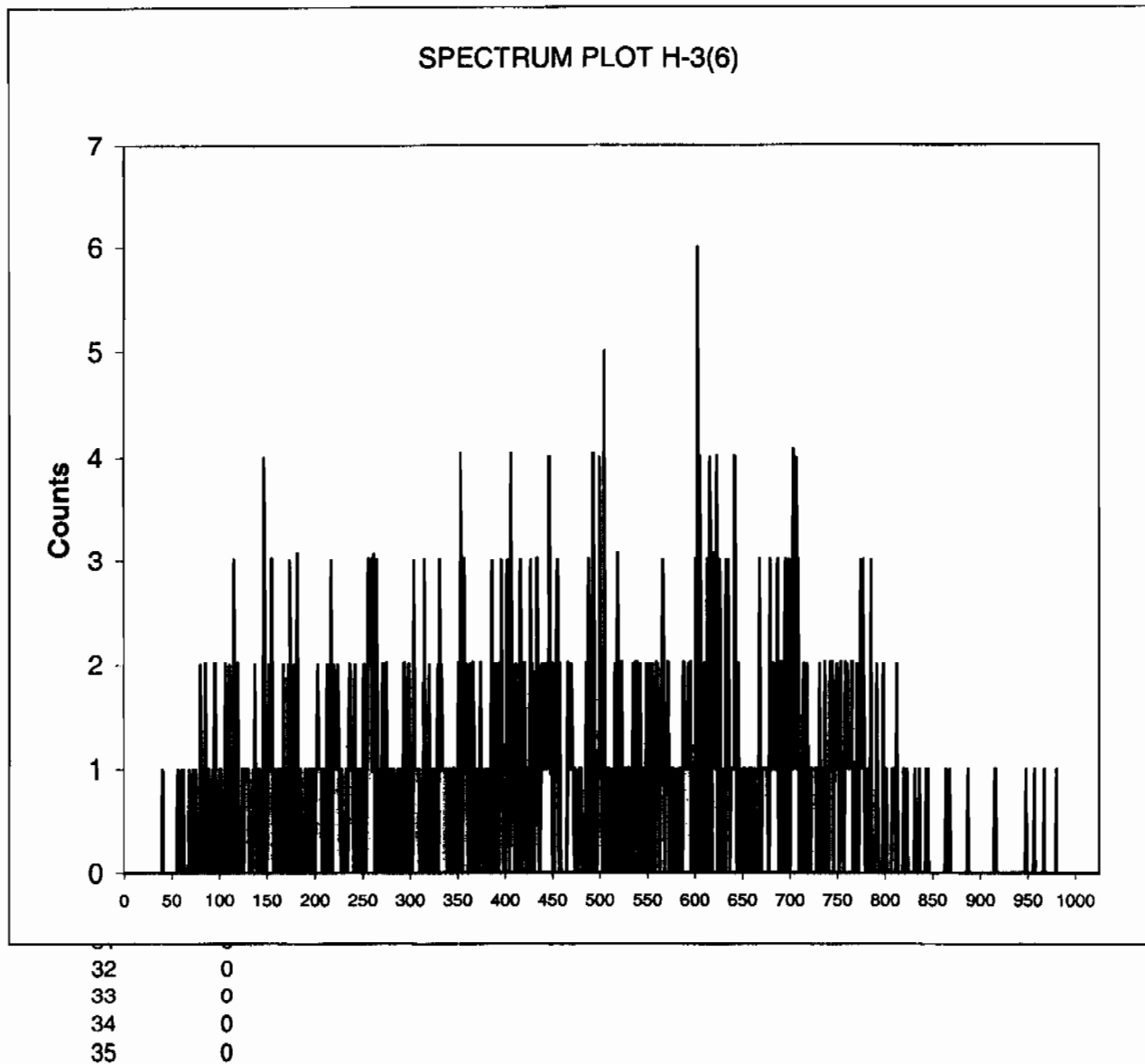
Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
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ID: H-3(6)
Comments: PINK

Sample, Rack-Pos, Time: 12, 248389002, 95.02962:
Quench: 814.33
Start, End, X-Axis 1-174

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
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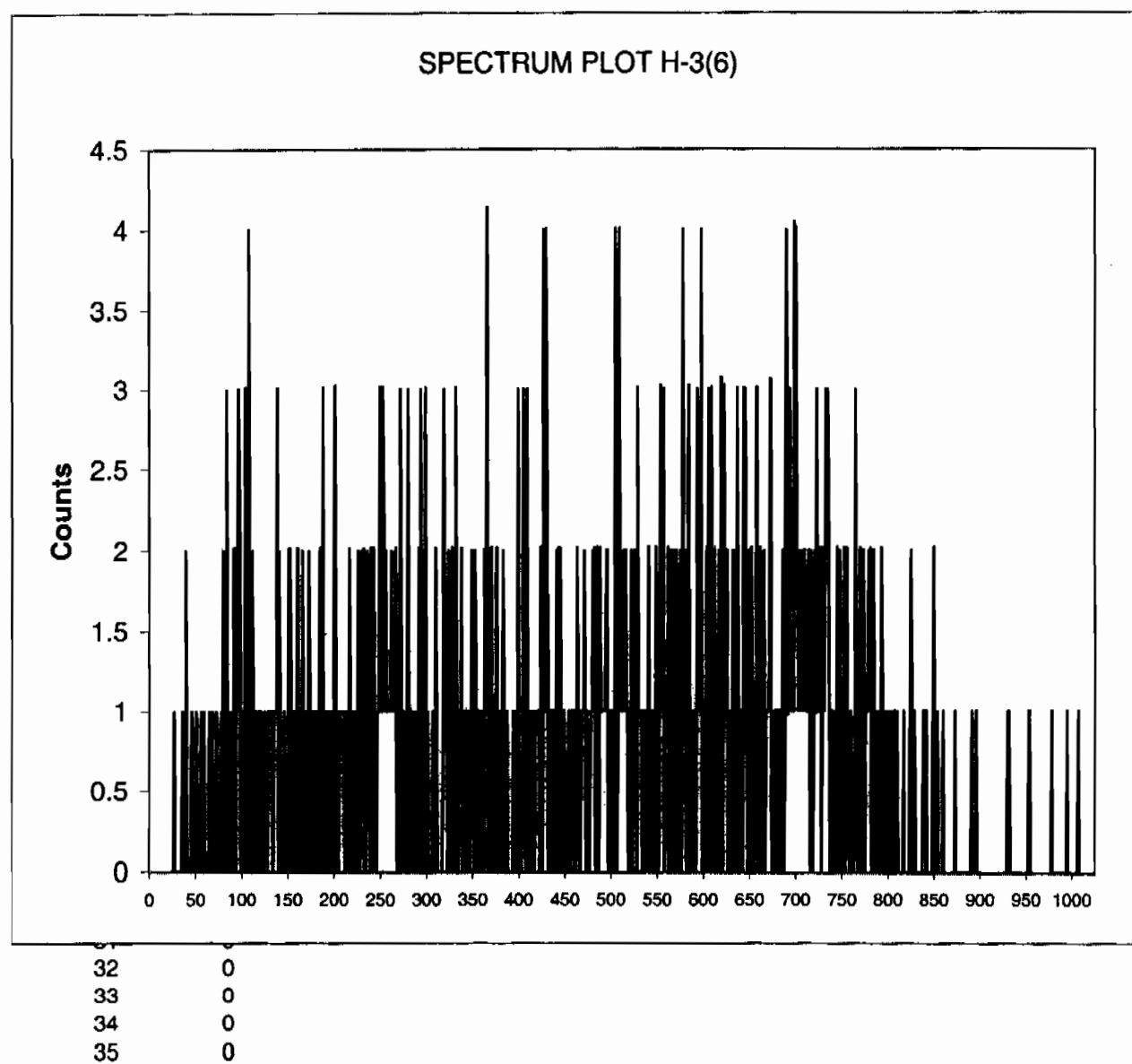
ID:
Comments:

H-3(6)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

13, 248389003, 95.01307:
806.87
1-174

Channel Counts

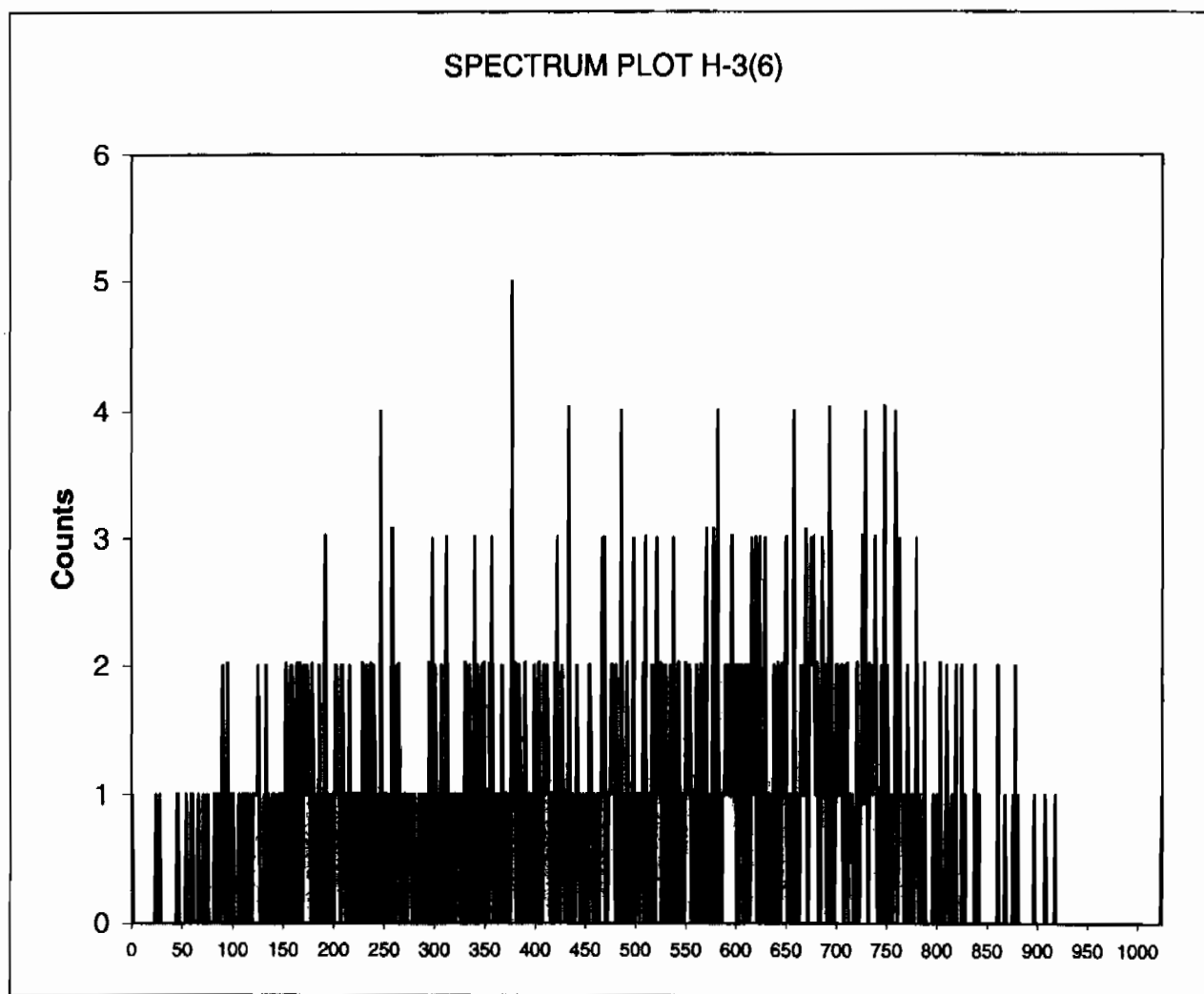


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ID: H-3(6)
Comments: PINK

Sample, Rack-Pos, Time: 14, 1202062412, 95.02972:
Quench: 811.49
Start, End, X-Axis 1-174

Channel Counts



32 0
33 0
34 0
35 0

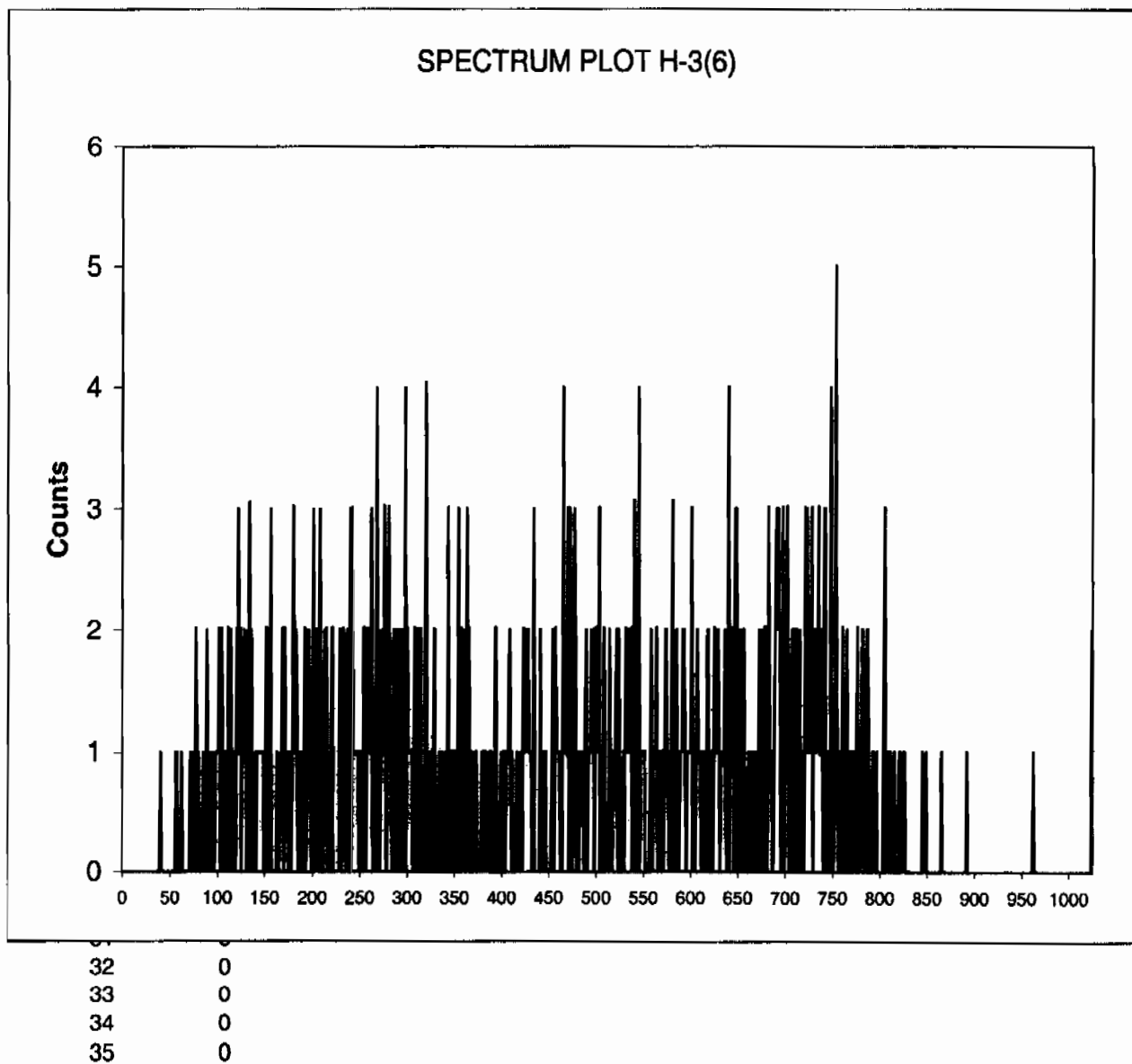
Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
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s:\isc\files\pink\961541A1\U961541A1.xls

ID: H-3(6)
Comments: PINK

Sample, Rack-Pos, Time: 15, 1202062413, 95.02972:
Quench: 804.31
Start, End, X-Axis 1-174

Channel Counts

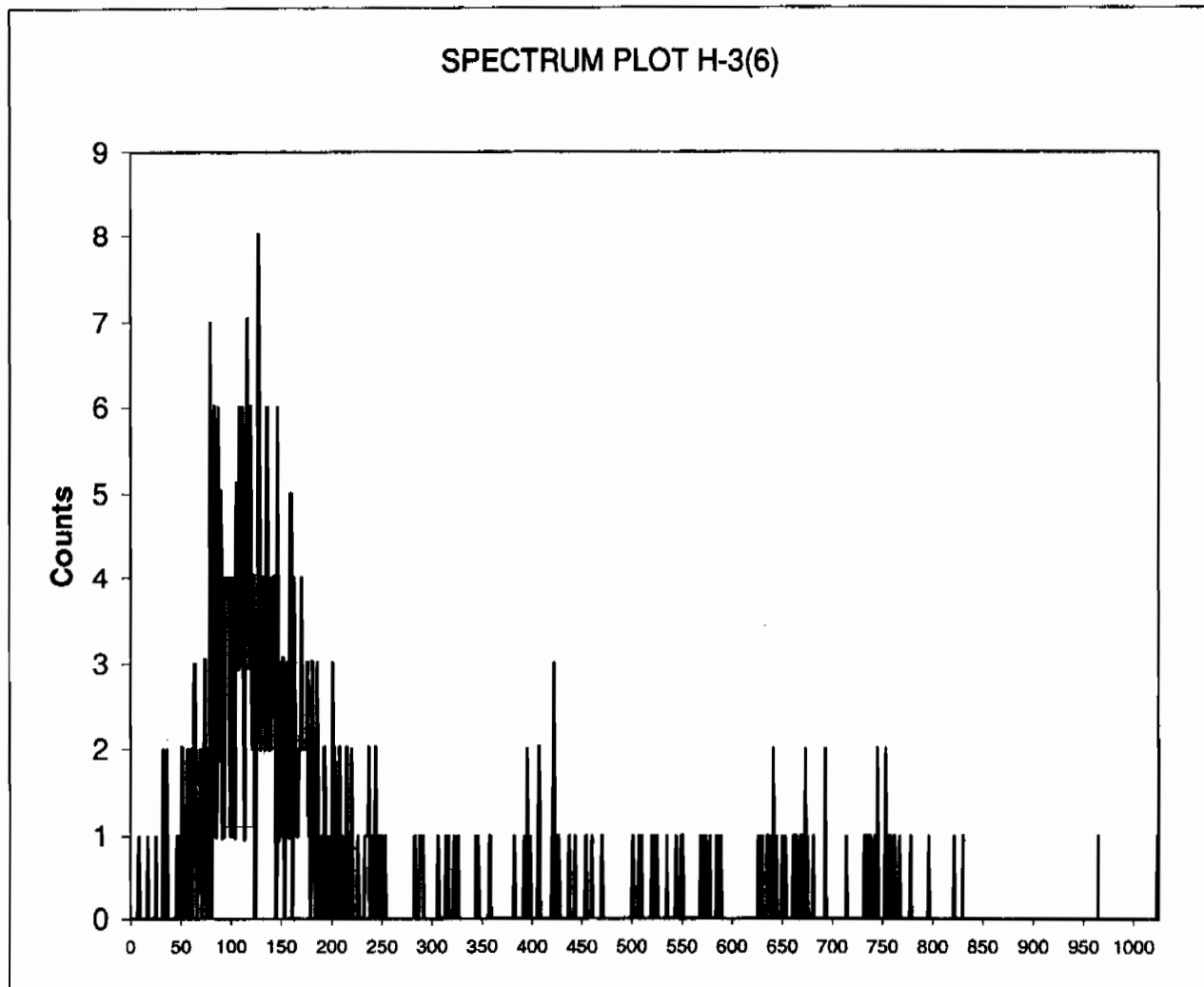


Instrument Type: Quantulus
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ID: H-3(6)
Comments: PINK

Sample, Rack-Pos, Time: 16, 1202062414, 15.02972:
Quench: 805.71
Start, End, X-Axis 1-174

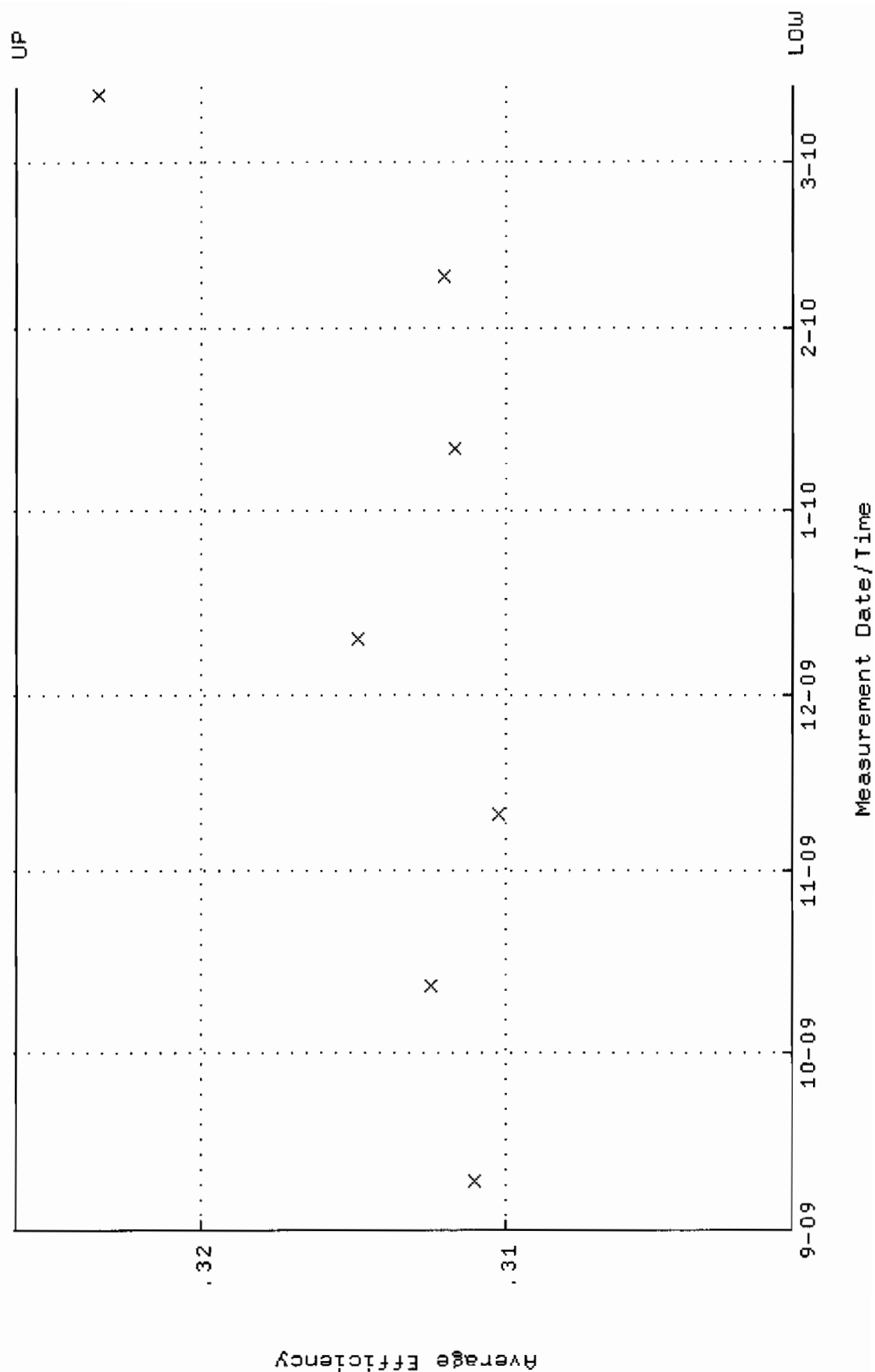
Channel Counts



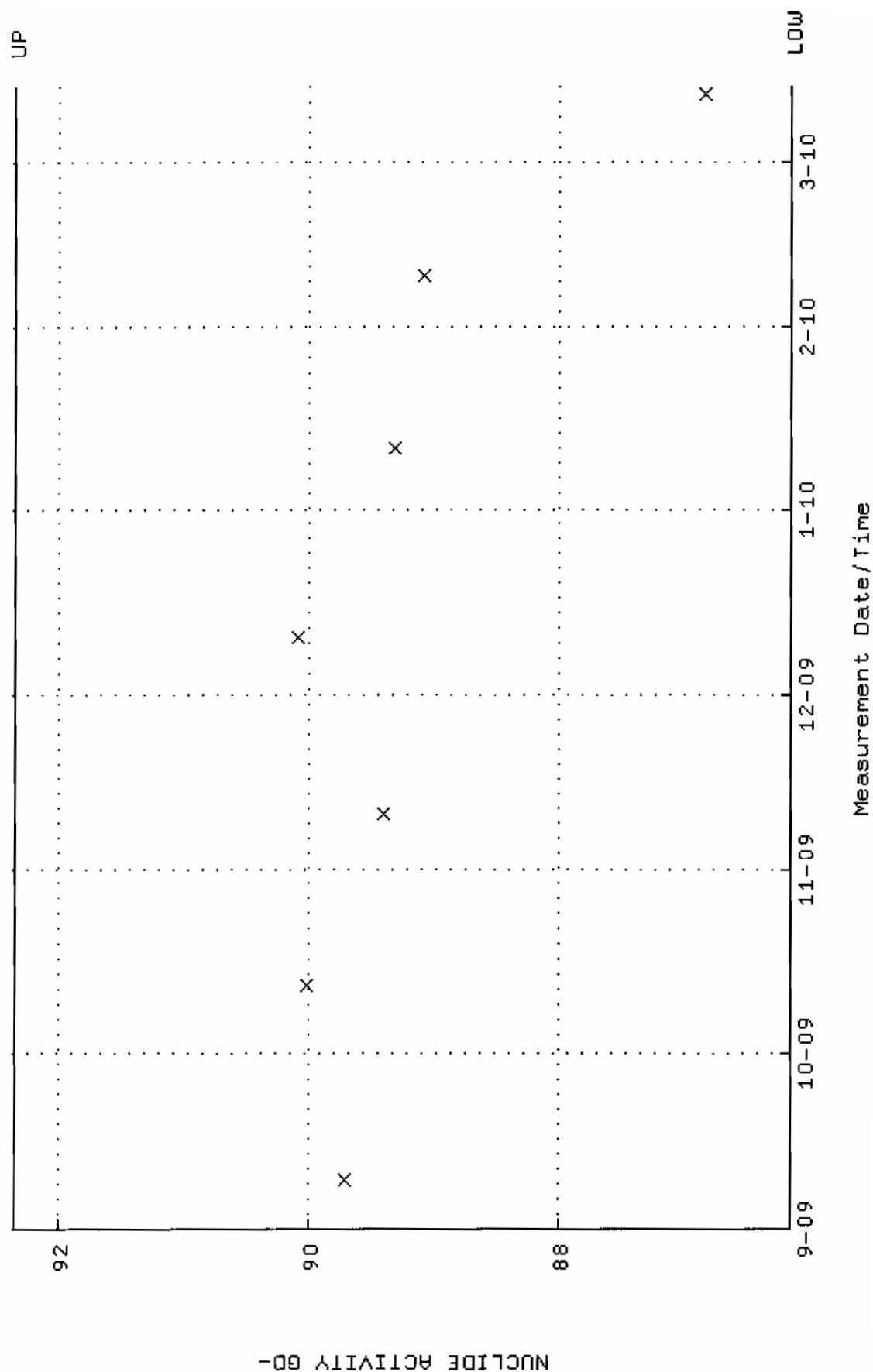
32	2
33	0
34	0
35	0

BACKGROUND AND EFFICIENCY DATA

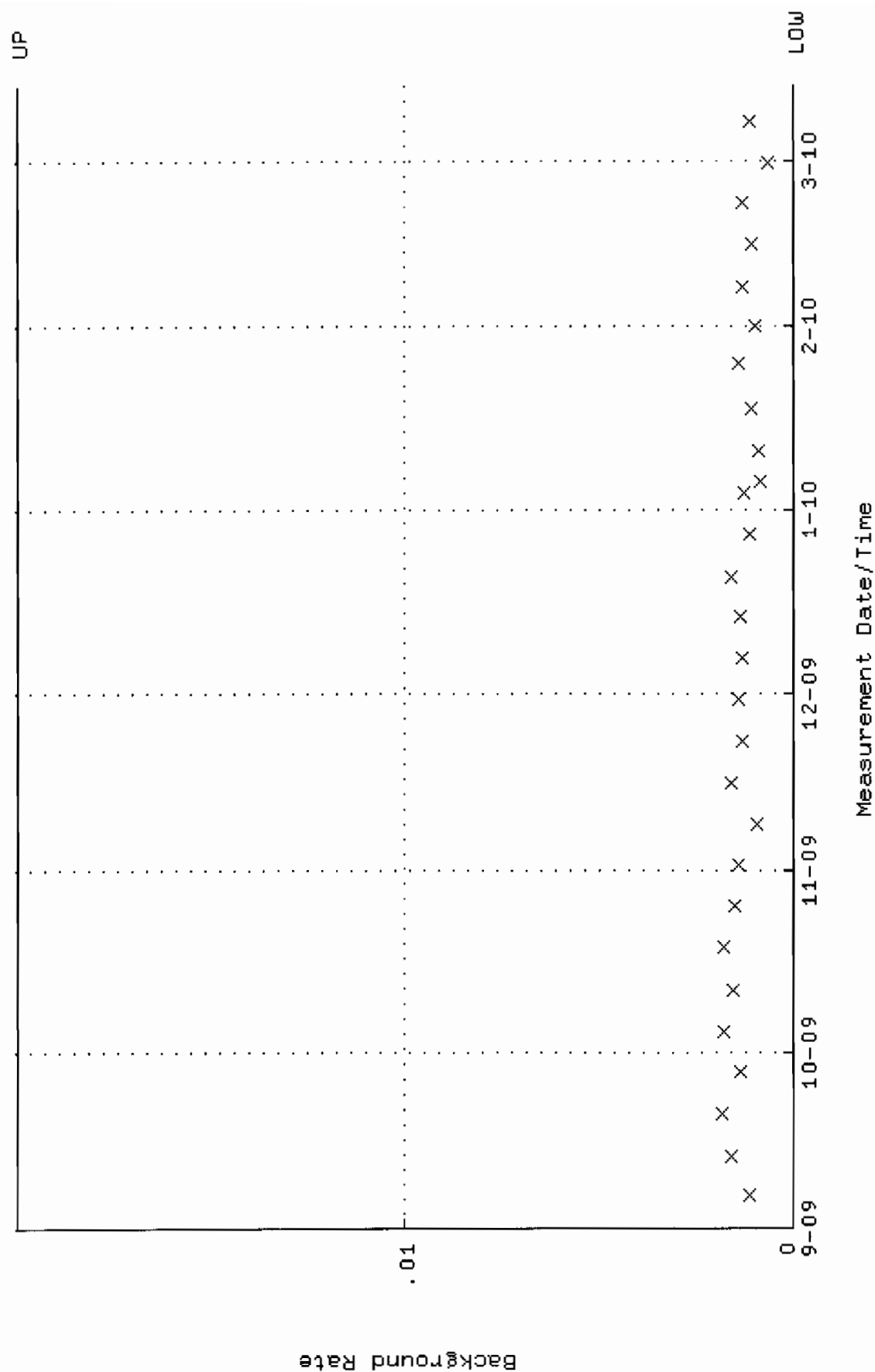
QA filename : DKA100:[ENV_ALPHA.QA.W]W066.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.300663 through 0.326009



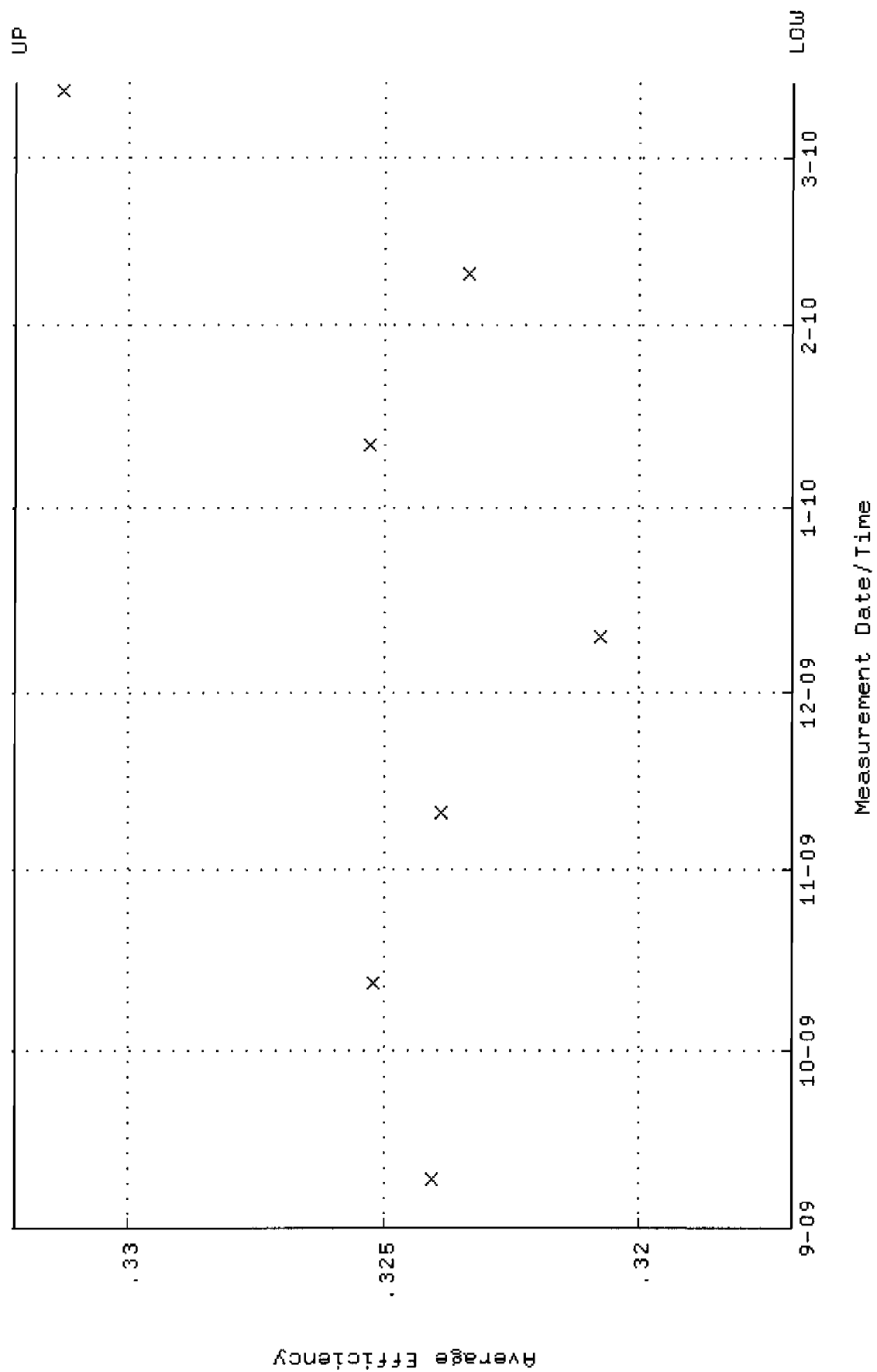
QA filename : DKA100:[ENV_ALPHA.QA.W]W066.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.1435 through 92.3575



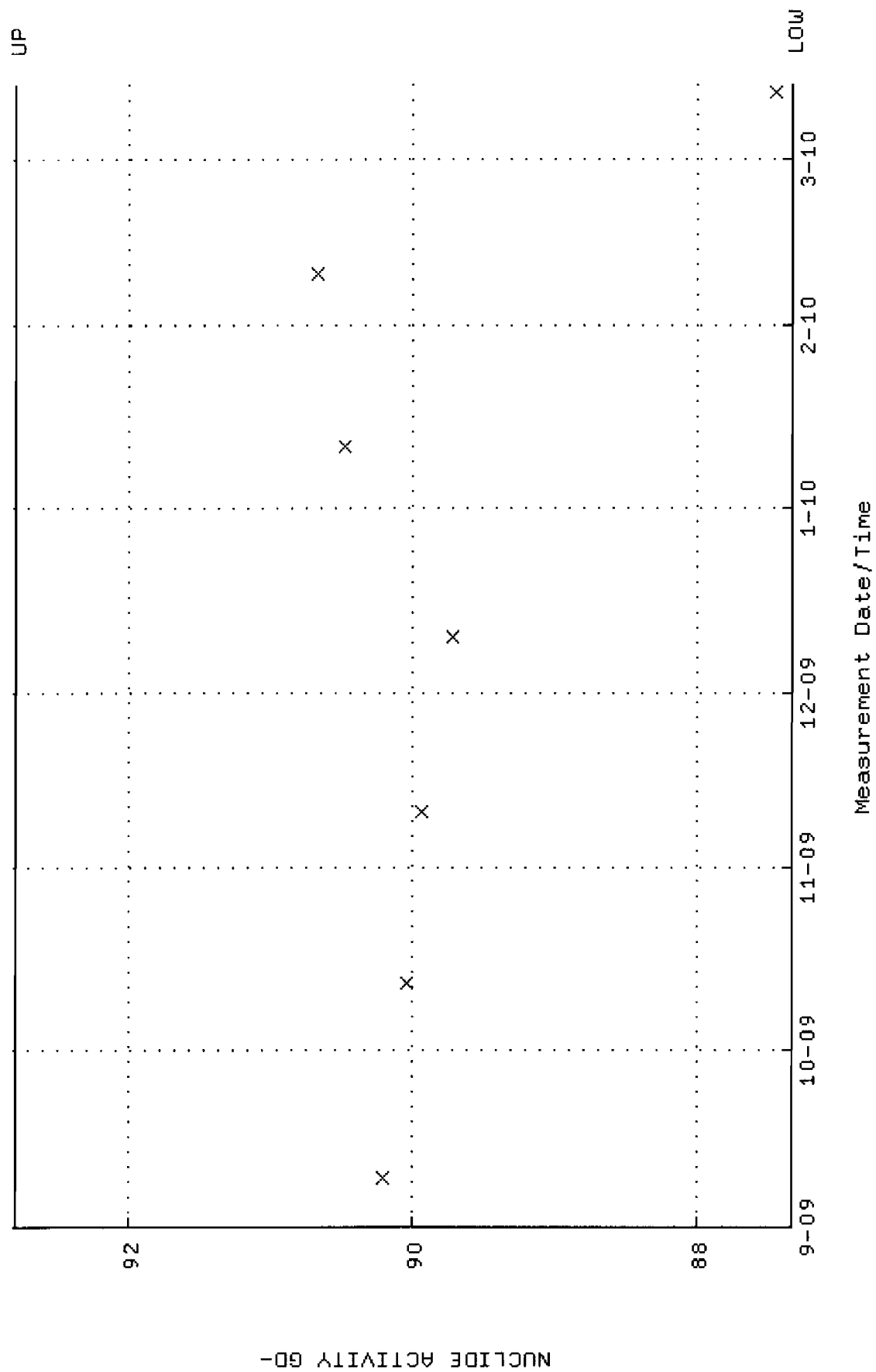
QA filename : DKA100:[ENV_ALPHA.QA.B]B066.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



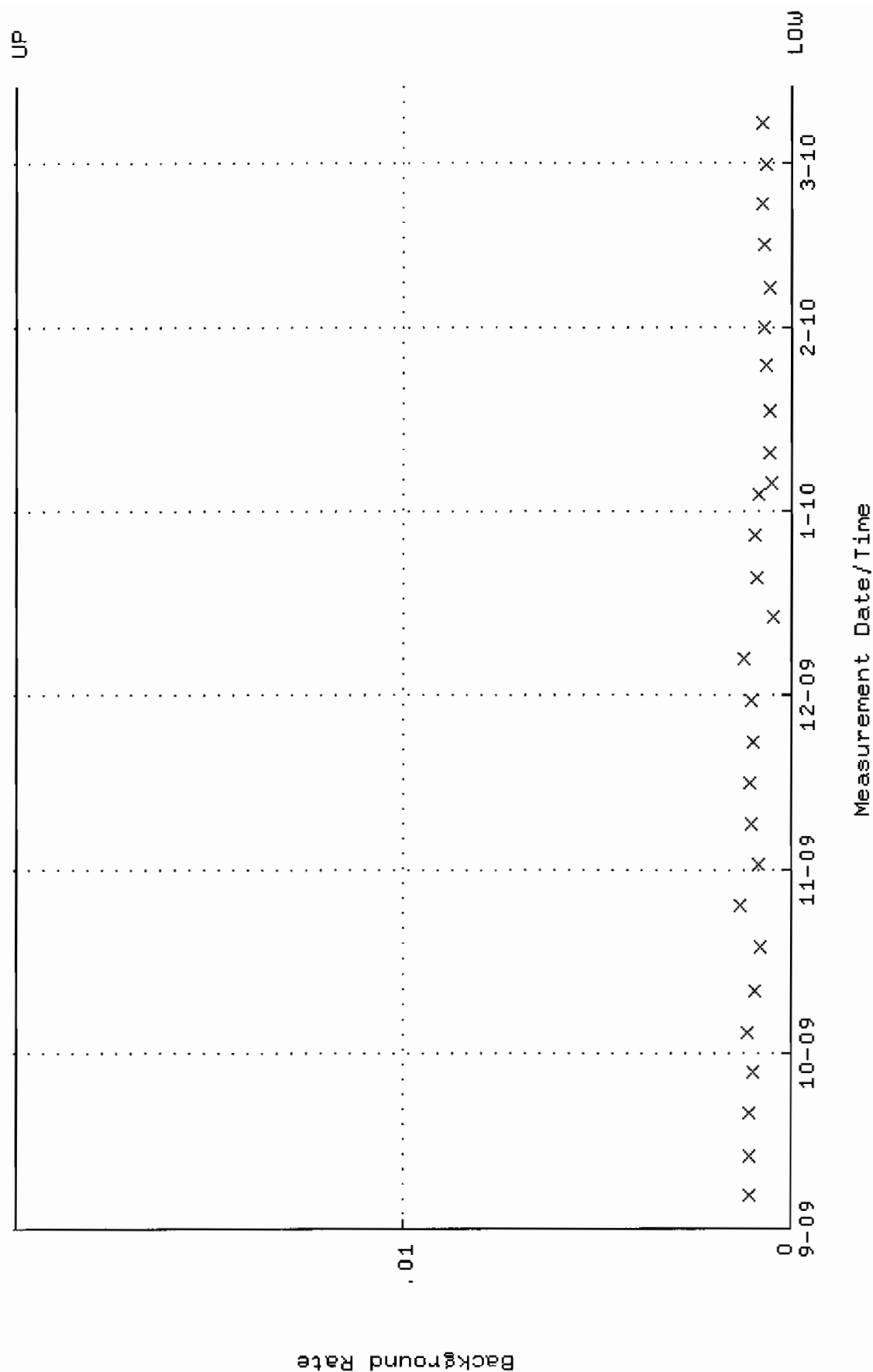
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 Parameter Name : AVRGEFF (Average Efficiency)
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 Lower/Upper Lmts: 0.317012 through 0.332214



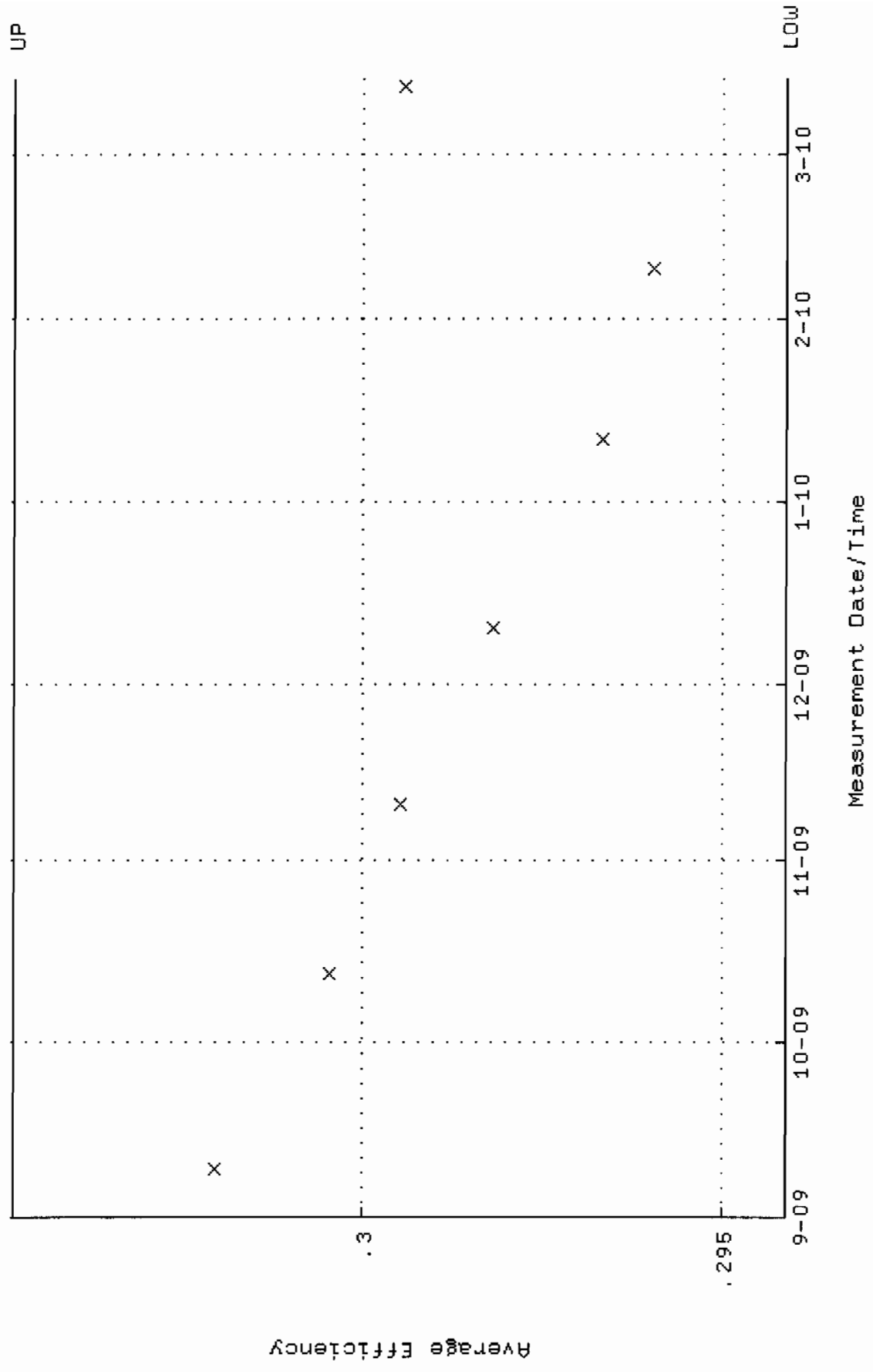
QA filename : DKA100:[ENV_ALPHA.QA.W]W067.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.3271 through 92.8001



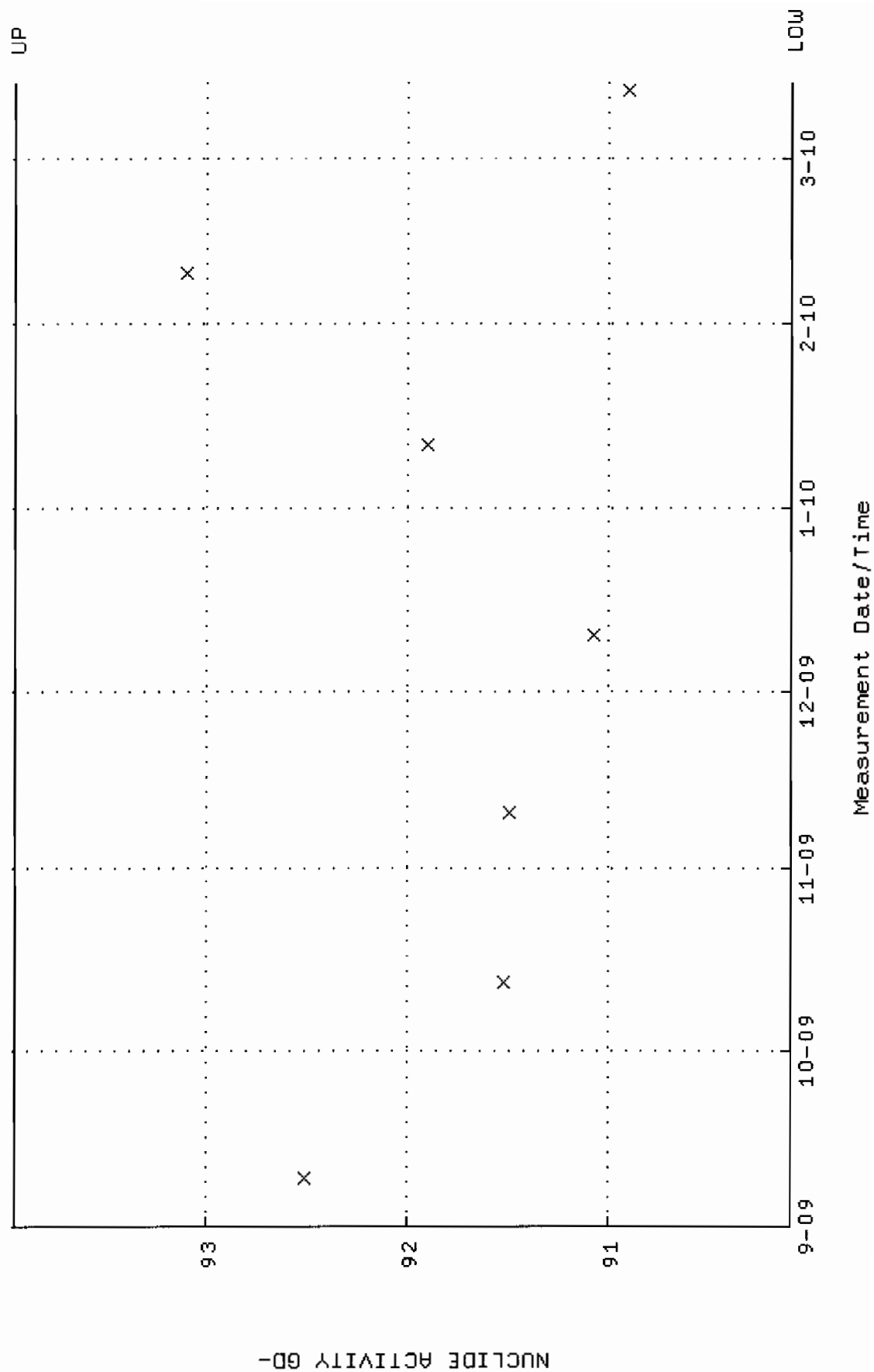
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



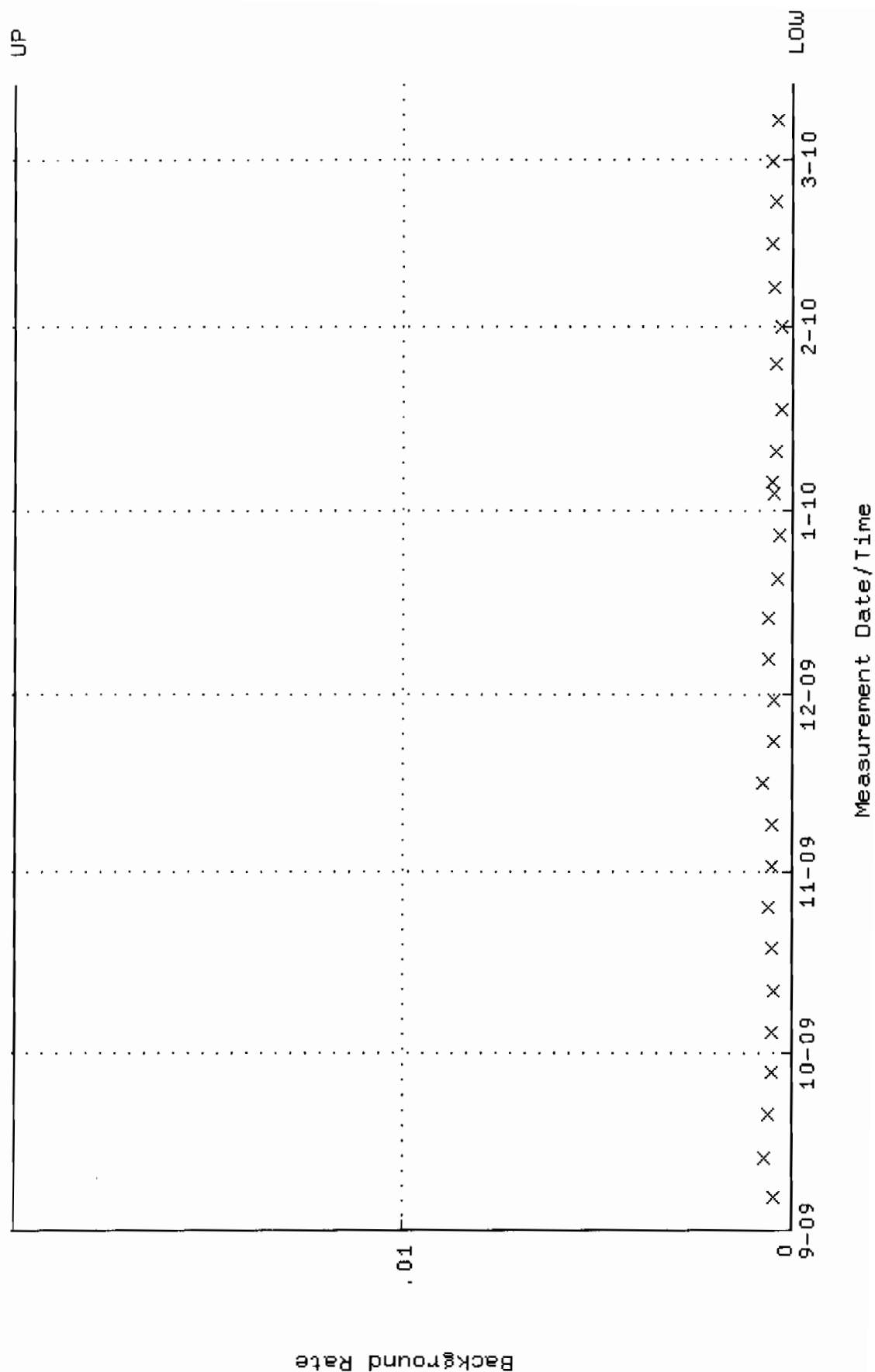
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 Lower/Upper Lmts: 0.294113 through 0.304839



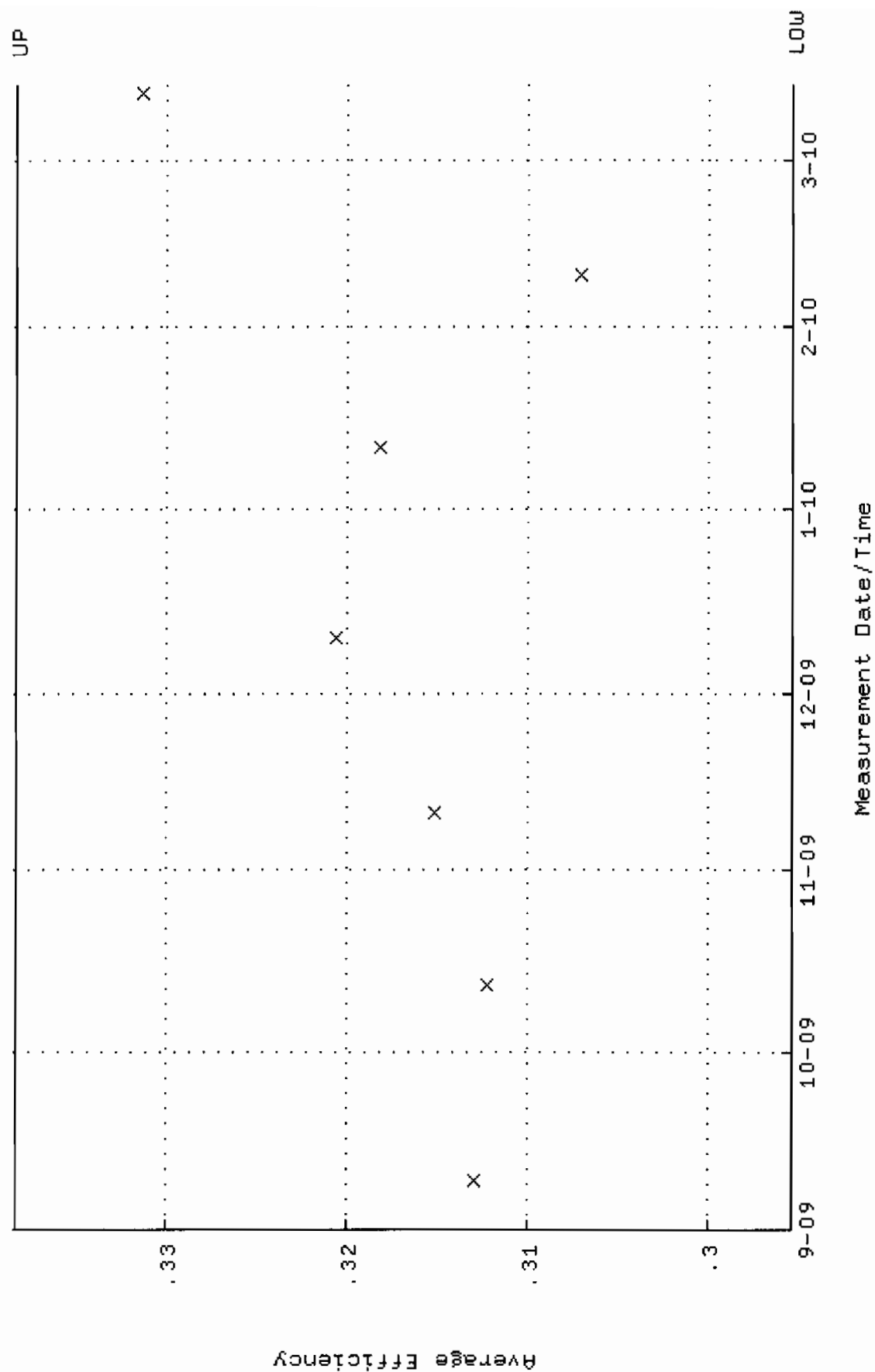
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 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
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 Lower/Upper Lmts: 90.0941 through 93.9543



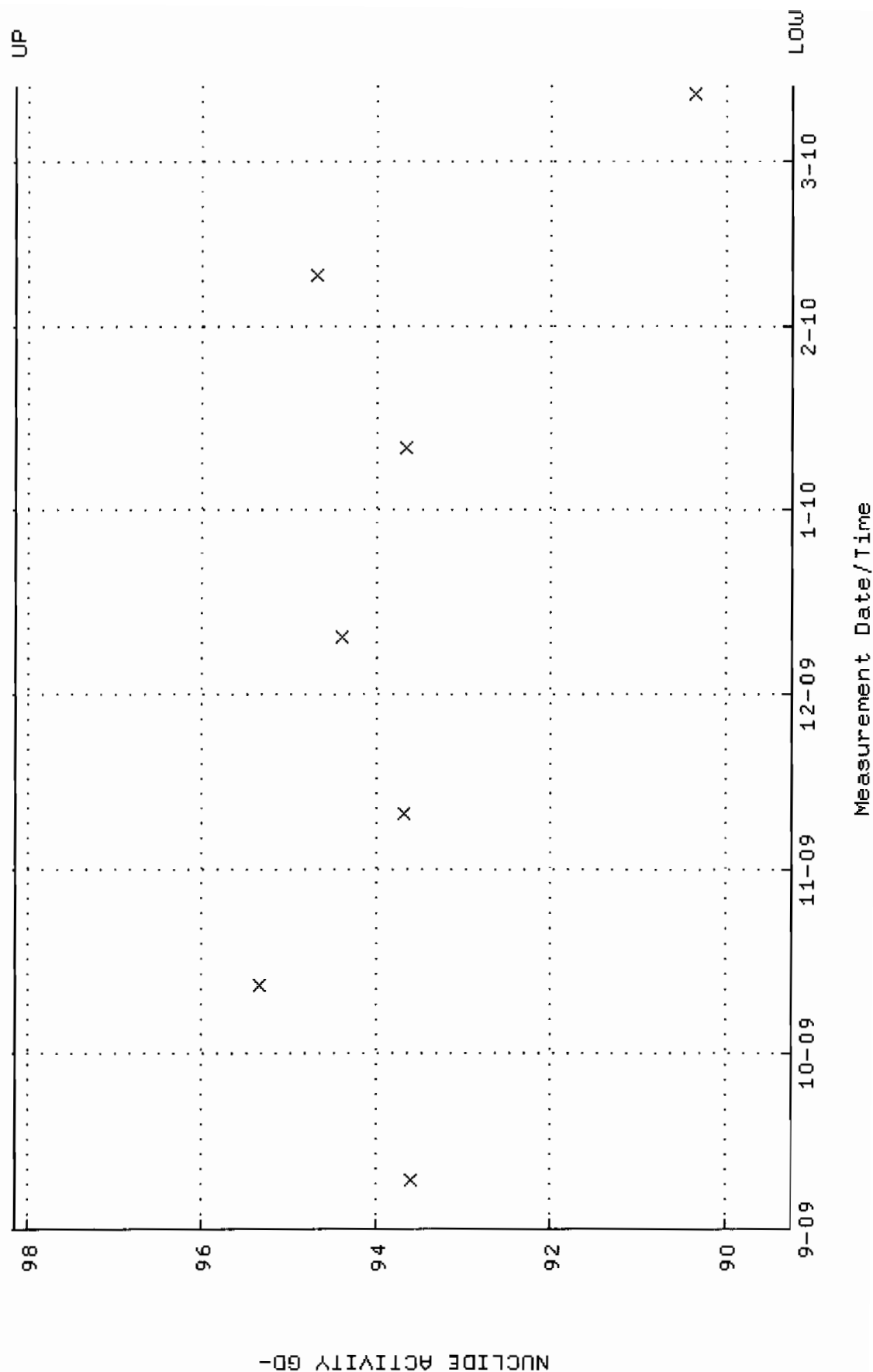
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 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



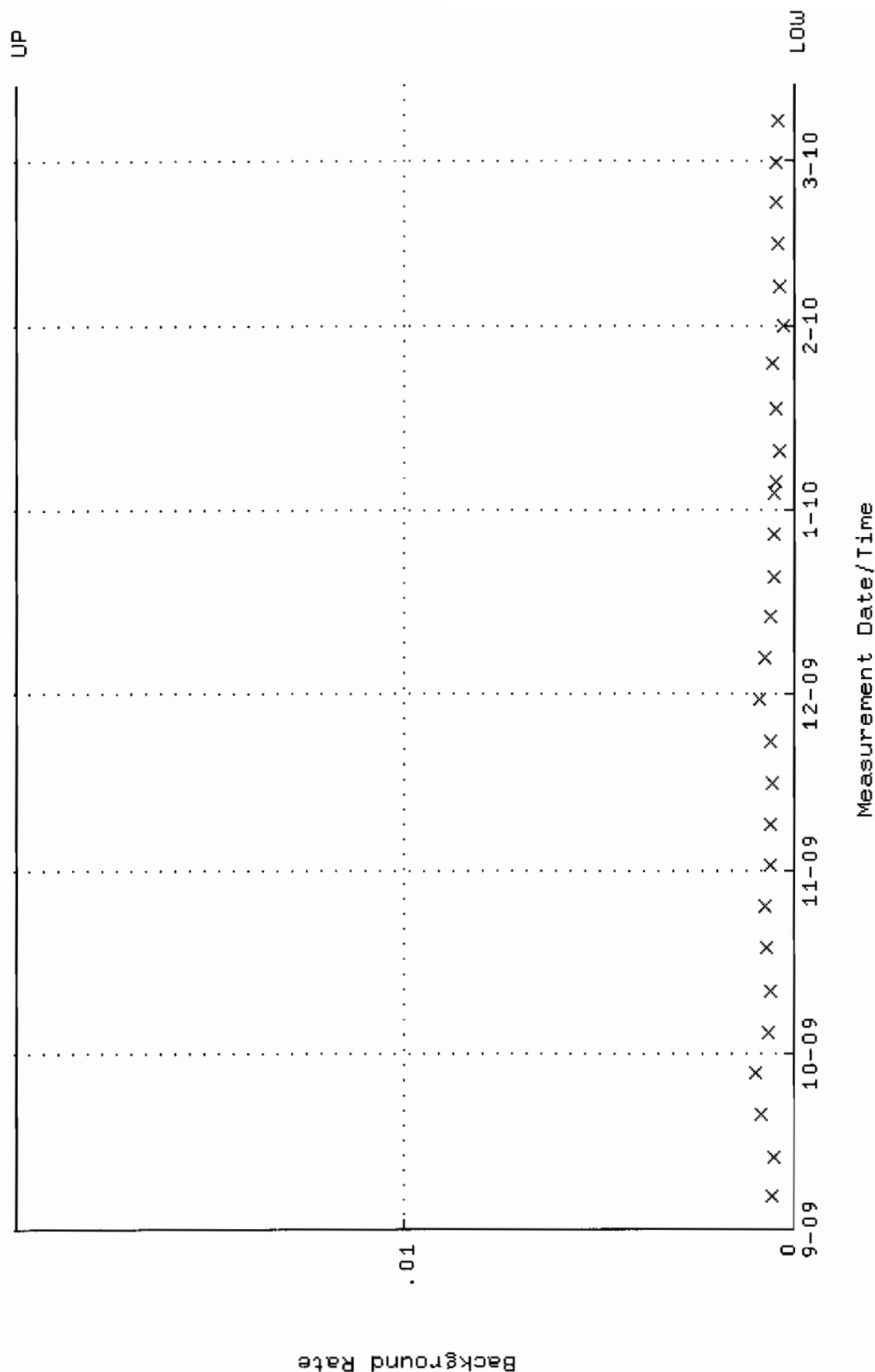
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 Lower/Upper Lmts: 0.295353 through 0.338329



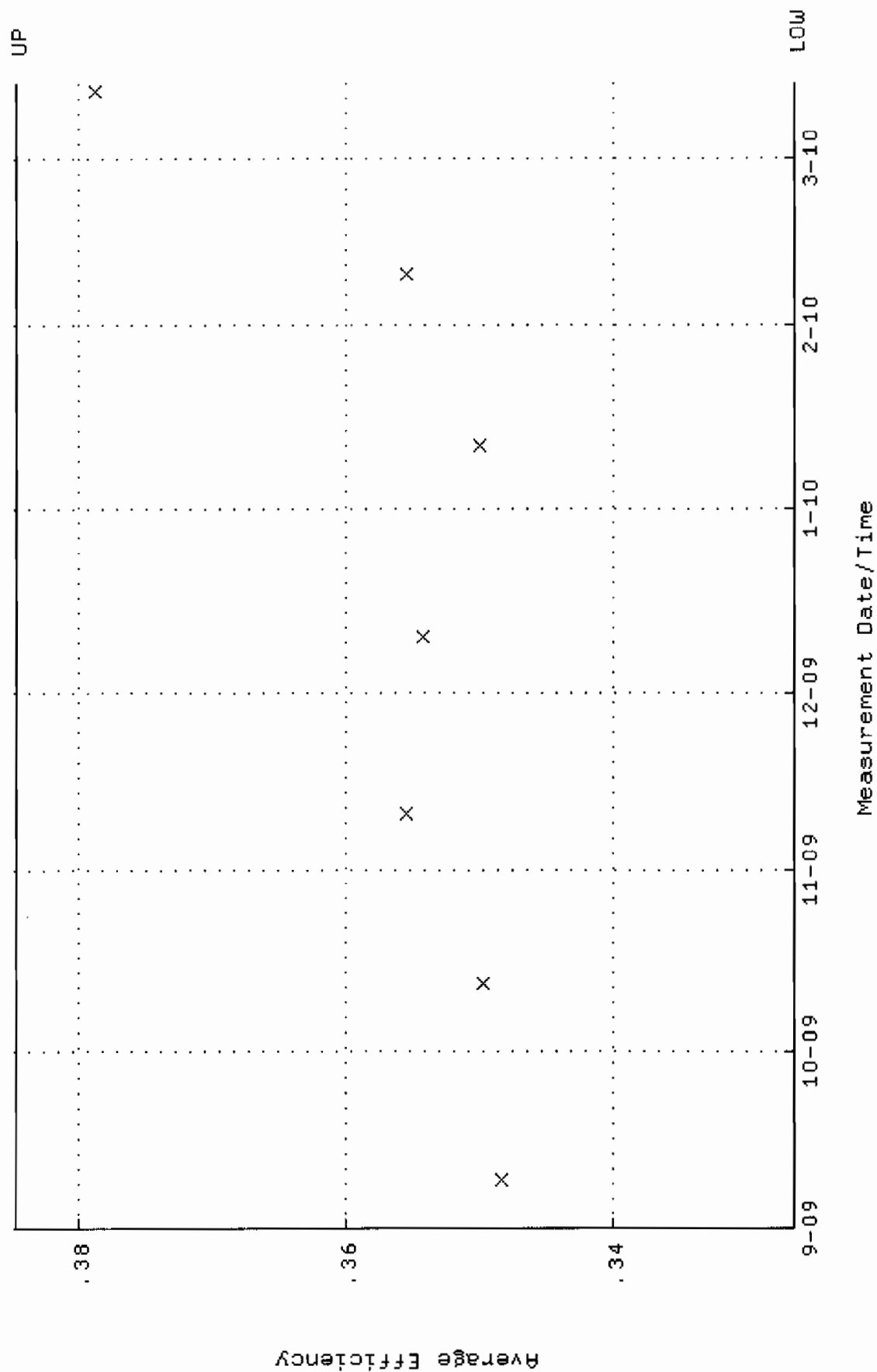
QA filename : DKA100:[ENV_ALPHA.QA.W]U069.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.2430 through 98.1406



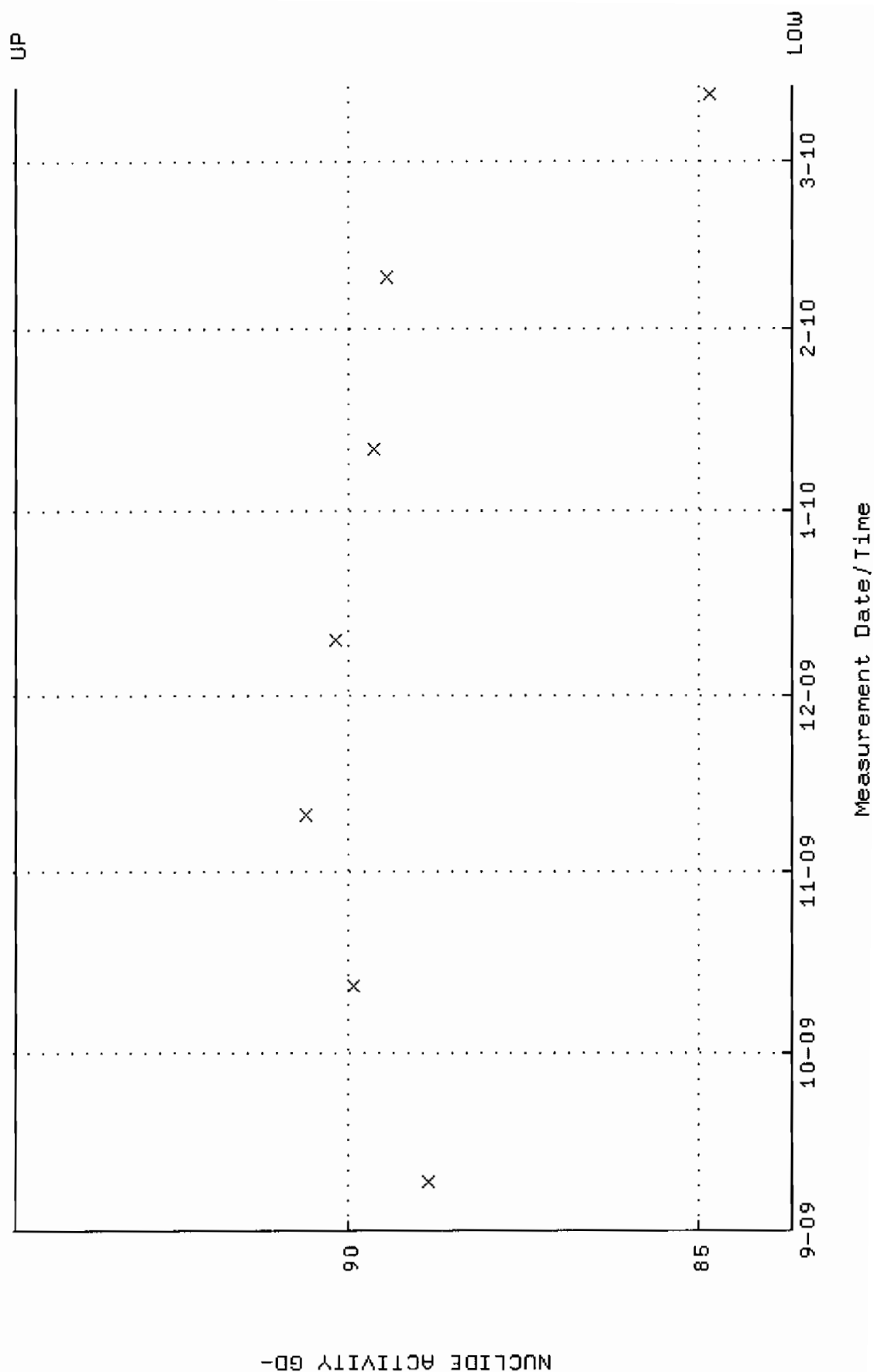
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 Parameter Name : BACKRATE (Background Rate)
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



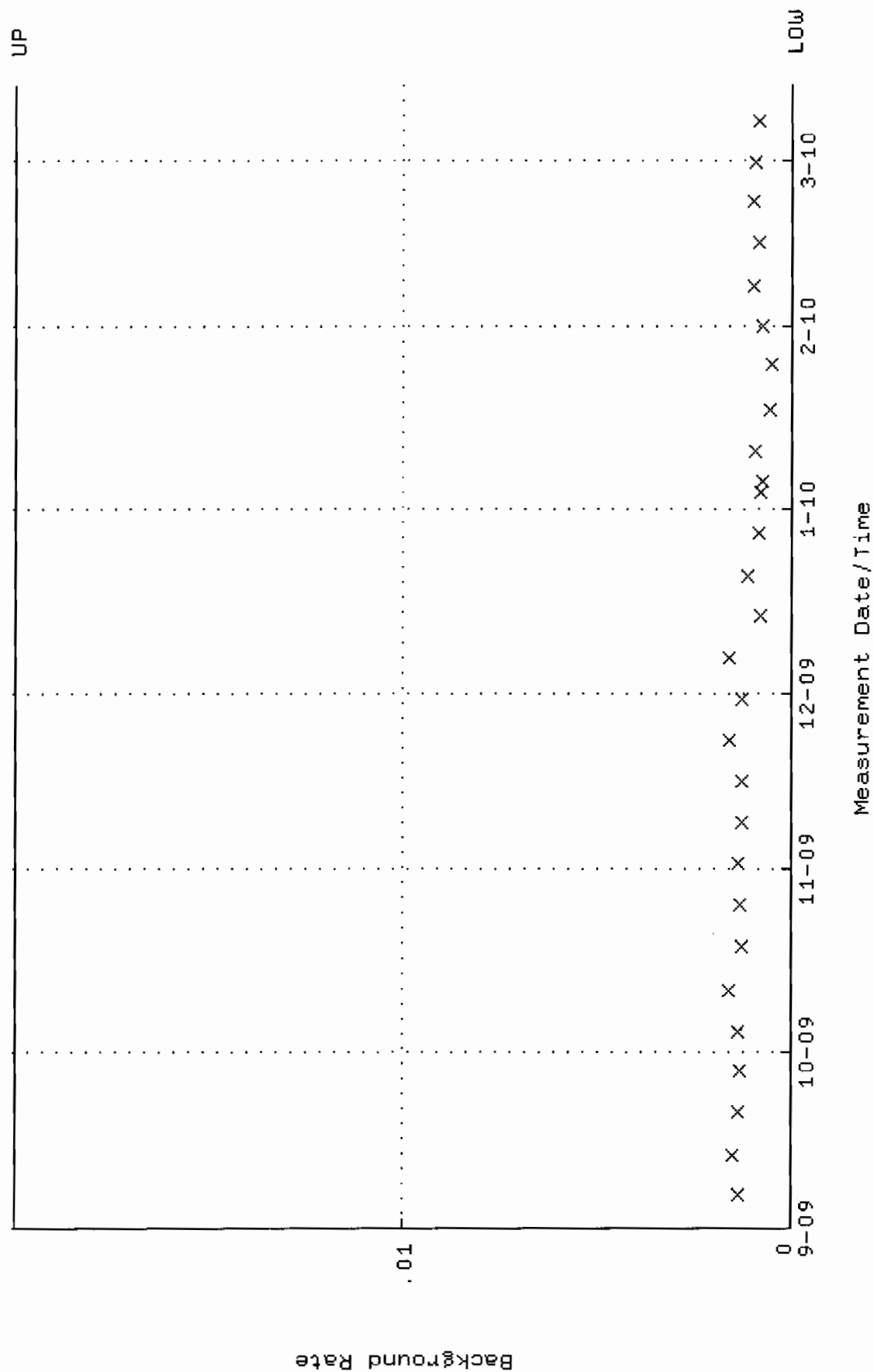
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 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.326414 through 0.384642



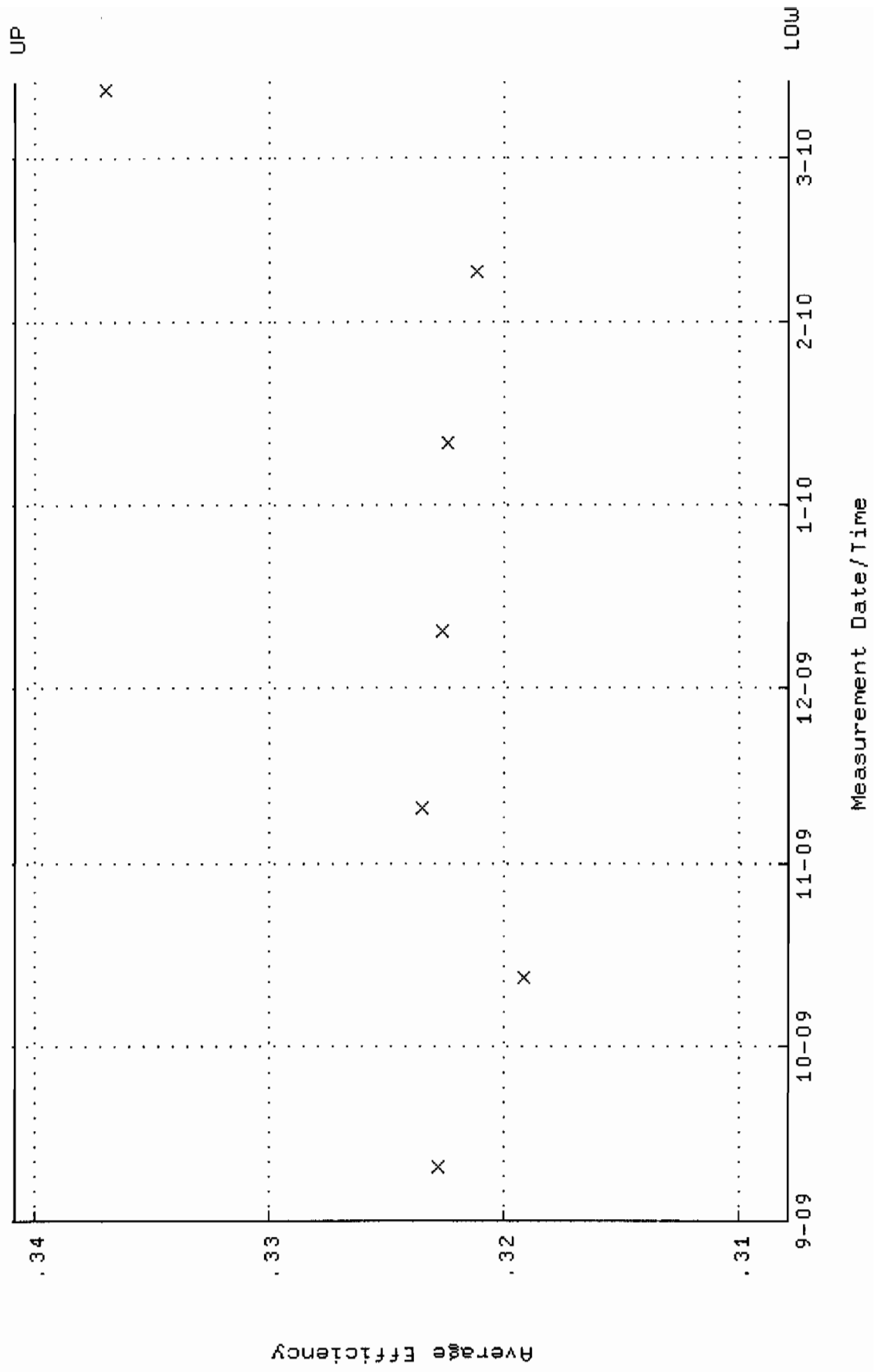
QA filename : DKA100:[ENV-ALPHA.QA.W]W070.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.6800 through 94.7126



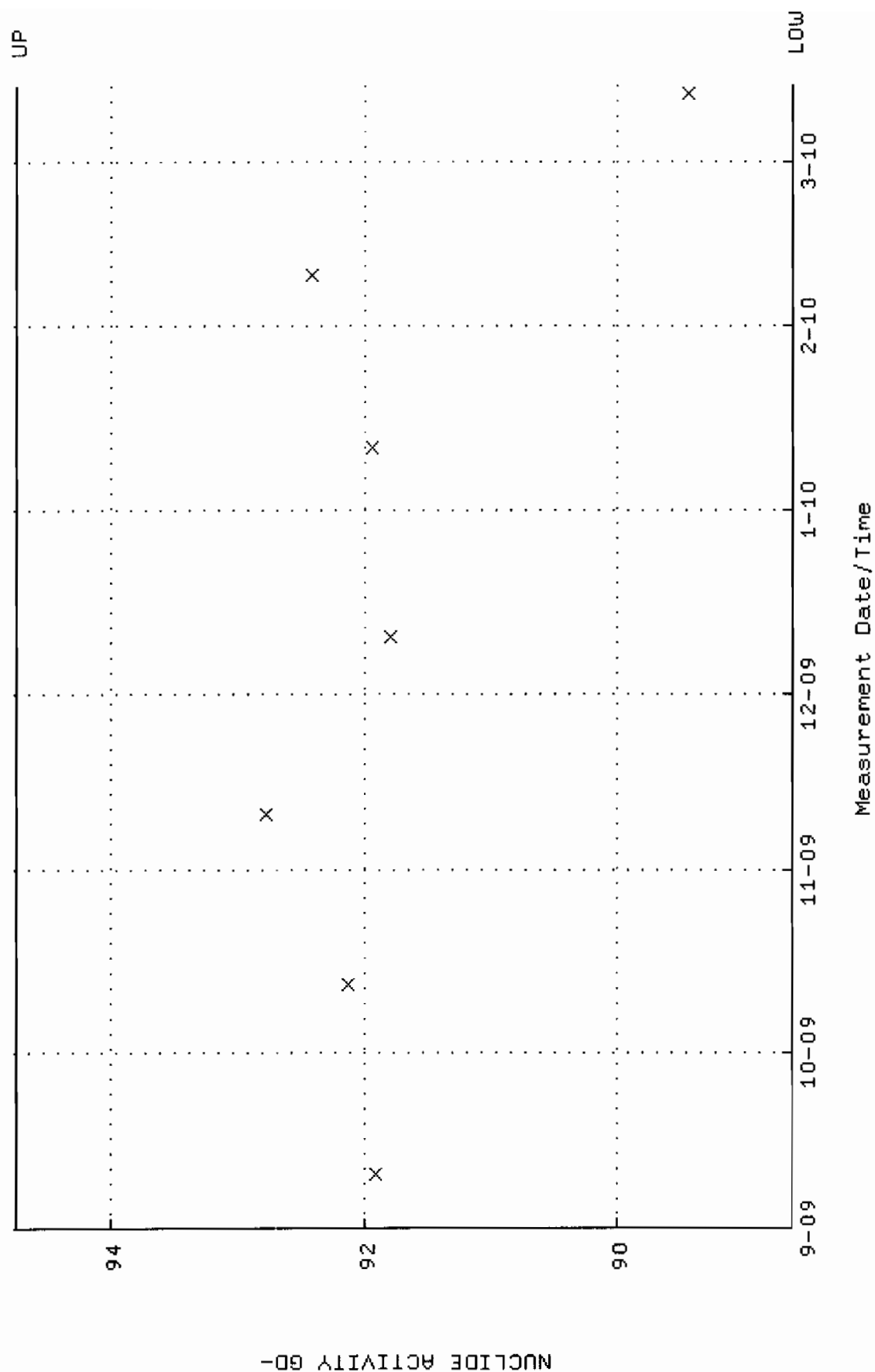
QA filename : DKA100:[ENV_ALPHA.QA.B]B070.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



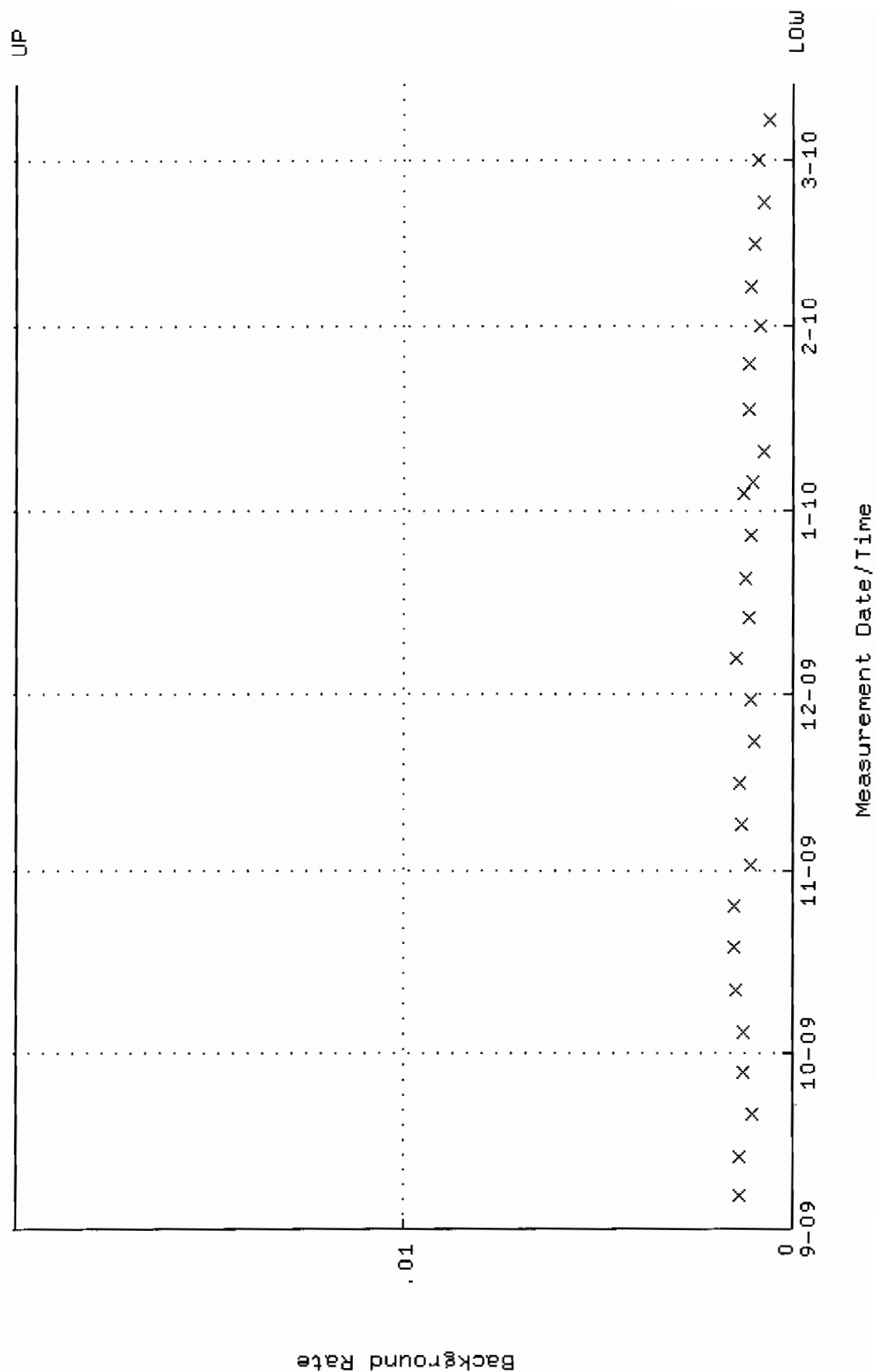
QA filename : DKA100:[ENV_ALPHA.QA.W]W072.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 10-SEP-2009 07:45:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.307889 through 0.340829



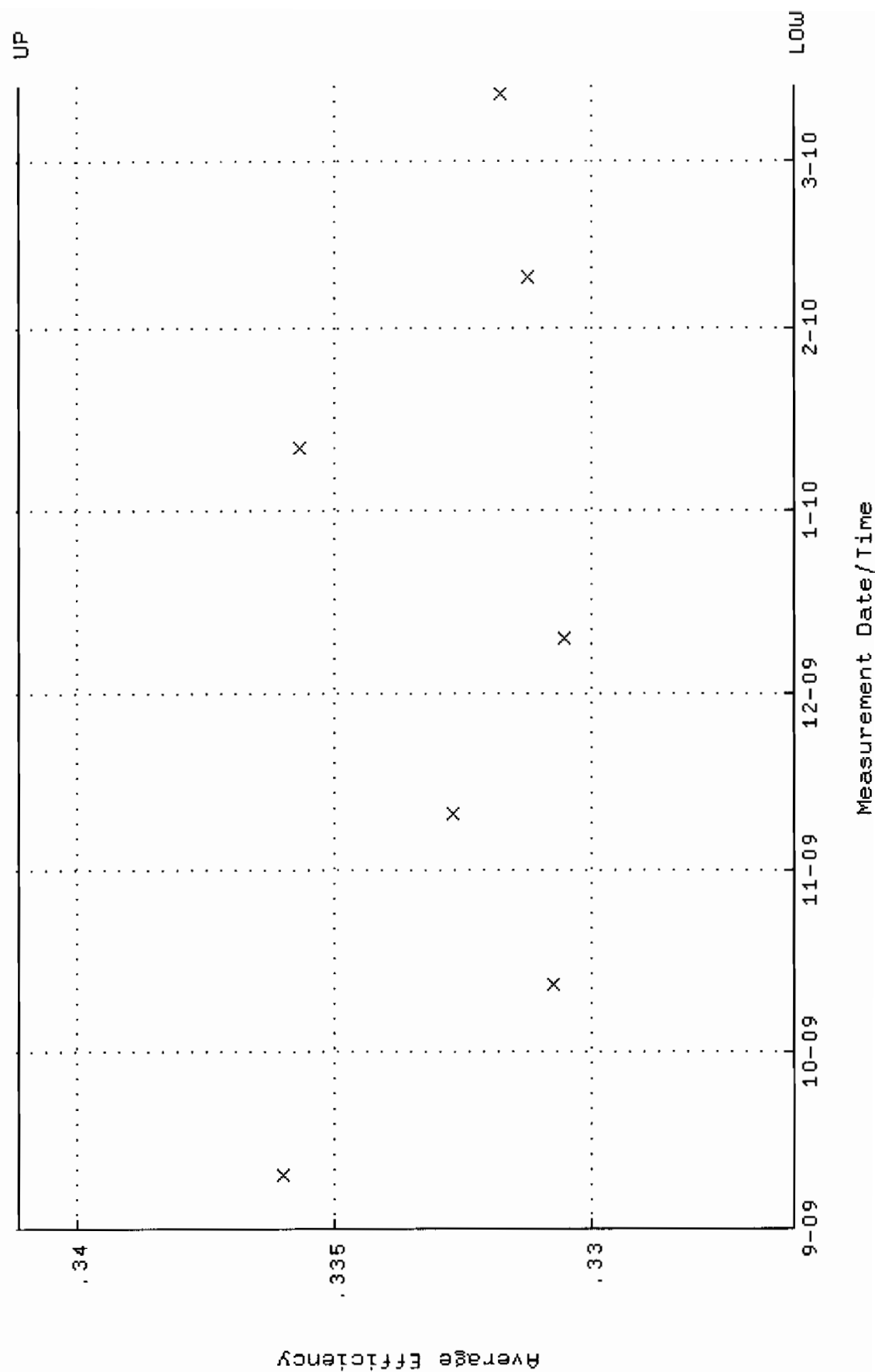
QA filename : DKA100:[ENV_ALPHA.QA.W]W072.QAF;2
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 10-SEP-2009 07:45:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.6219 through 94.7527



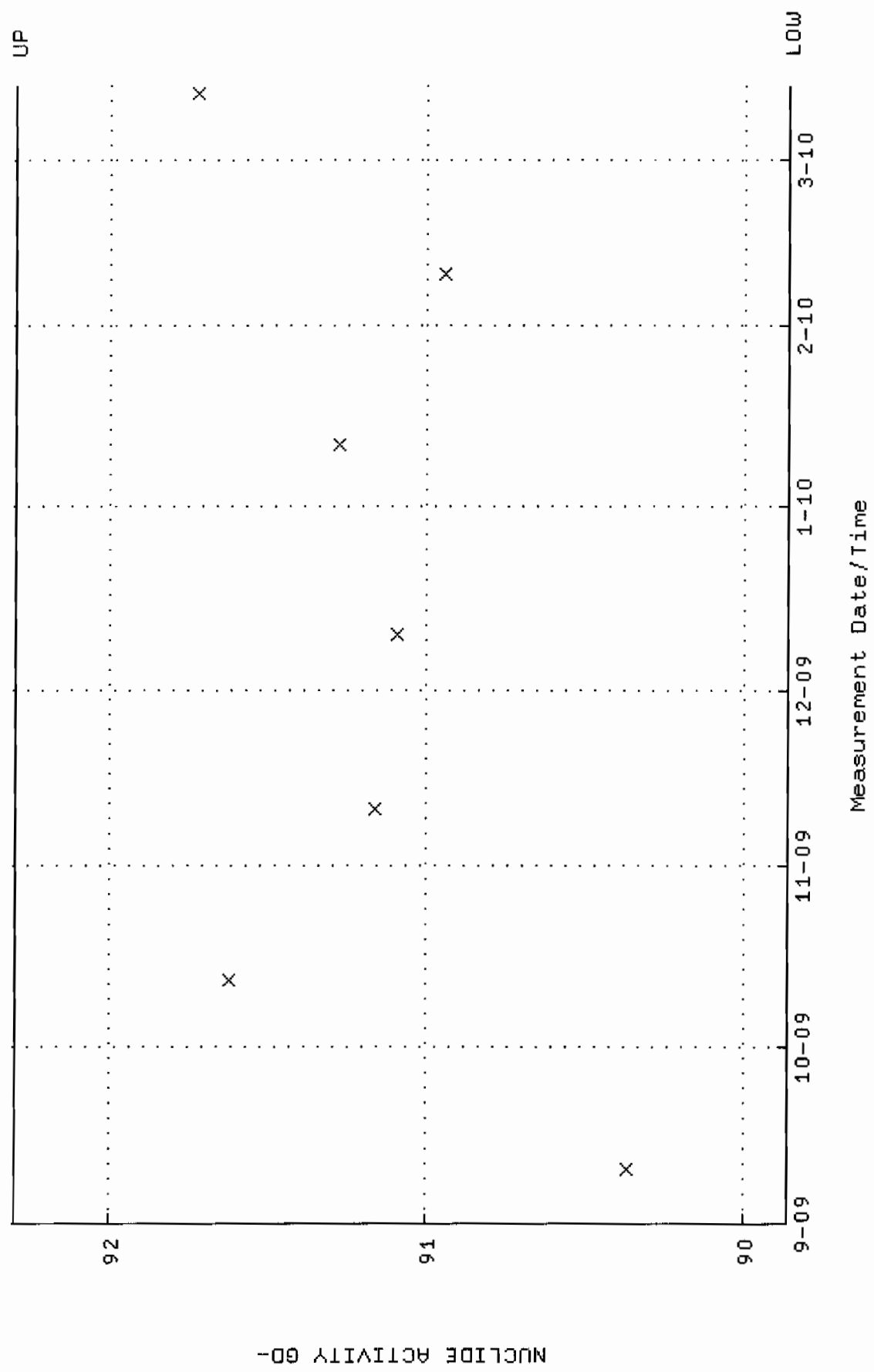
QA filename : DKA100:[ENV_ALPHA.QA.B]B072.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



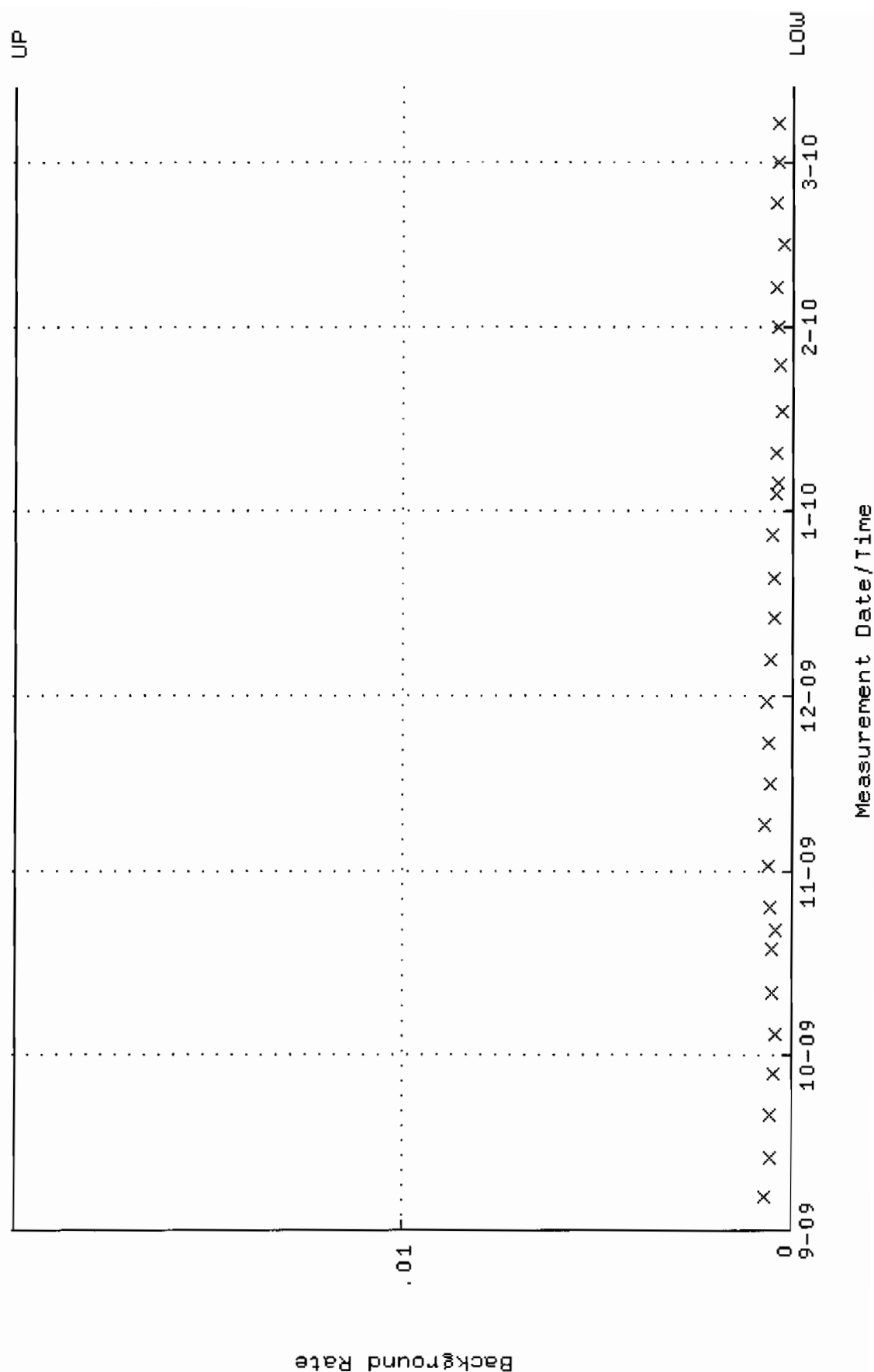
QA filename : DKA100:[ENV_ALPHA.QA.W]W073.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 10-SEP-2009 07:45:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.326078 through 0.341146



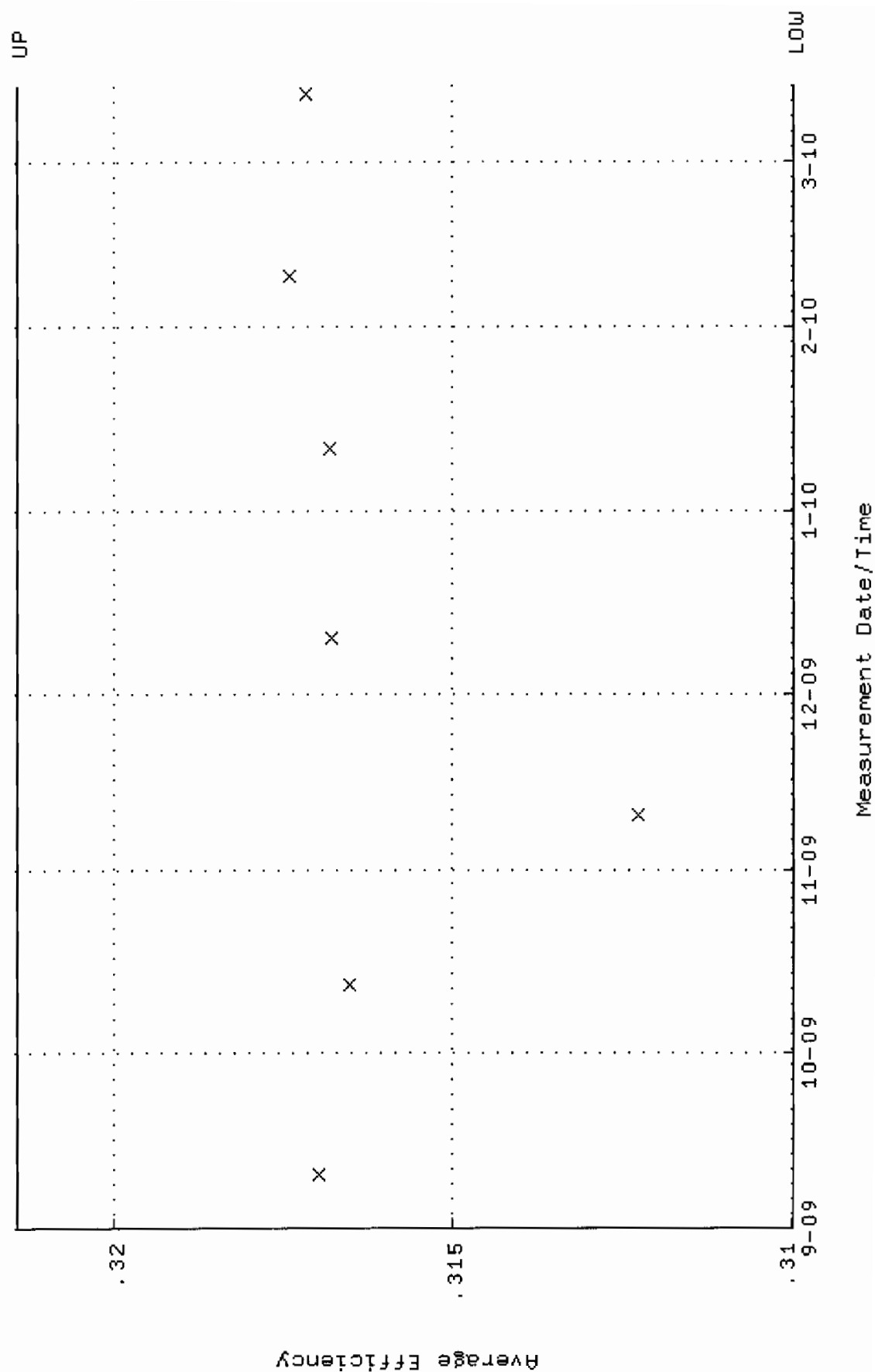
QA filename : DKA100:[ENV-ALPHA.QA.W]W073.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 10-SEP-2009 07:45:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.8600 through 92.3006



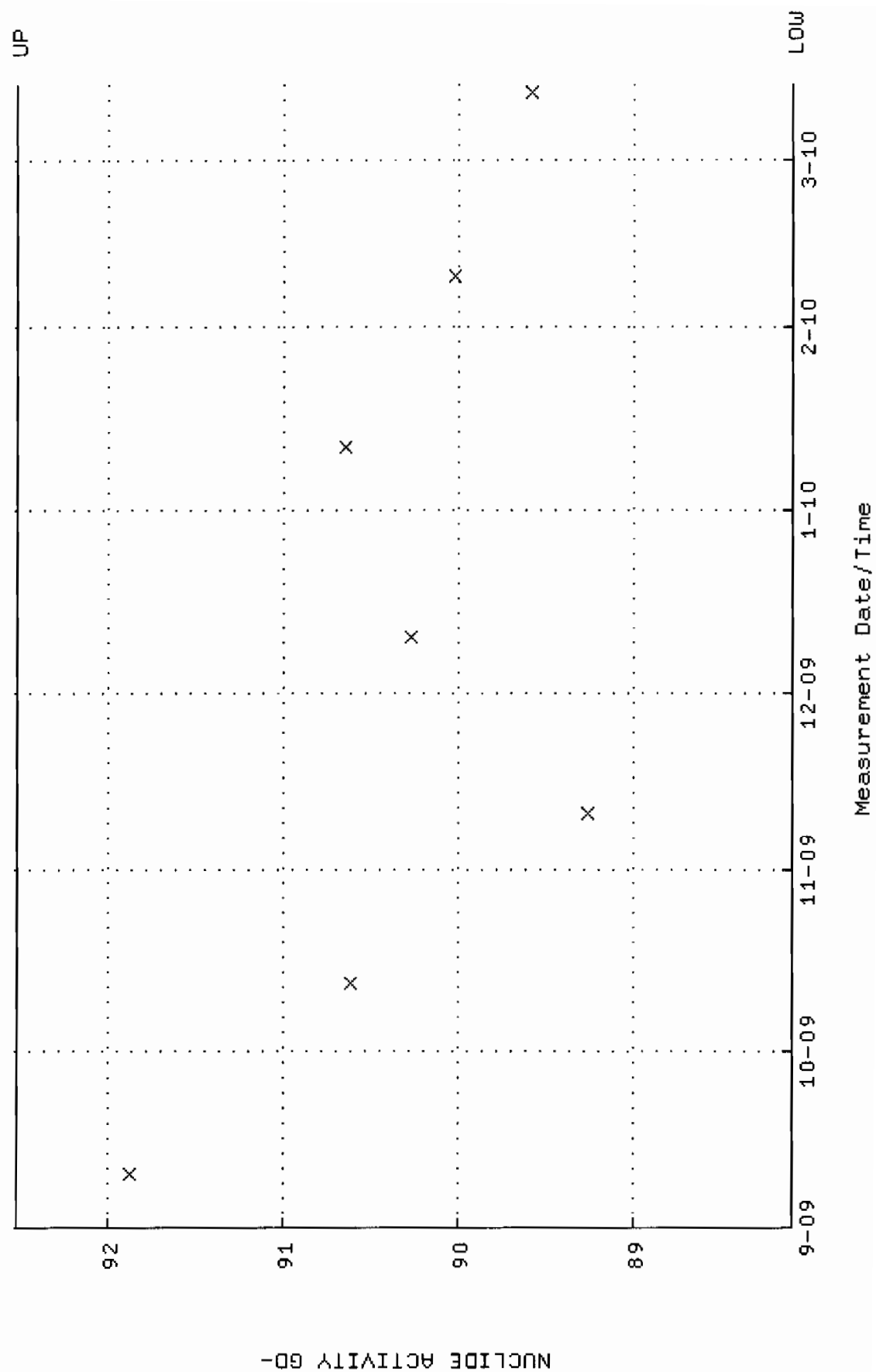
QA filename : DKA100:[ENV_ALPHA.QA.B]B073.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



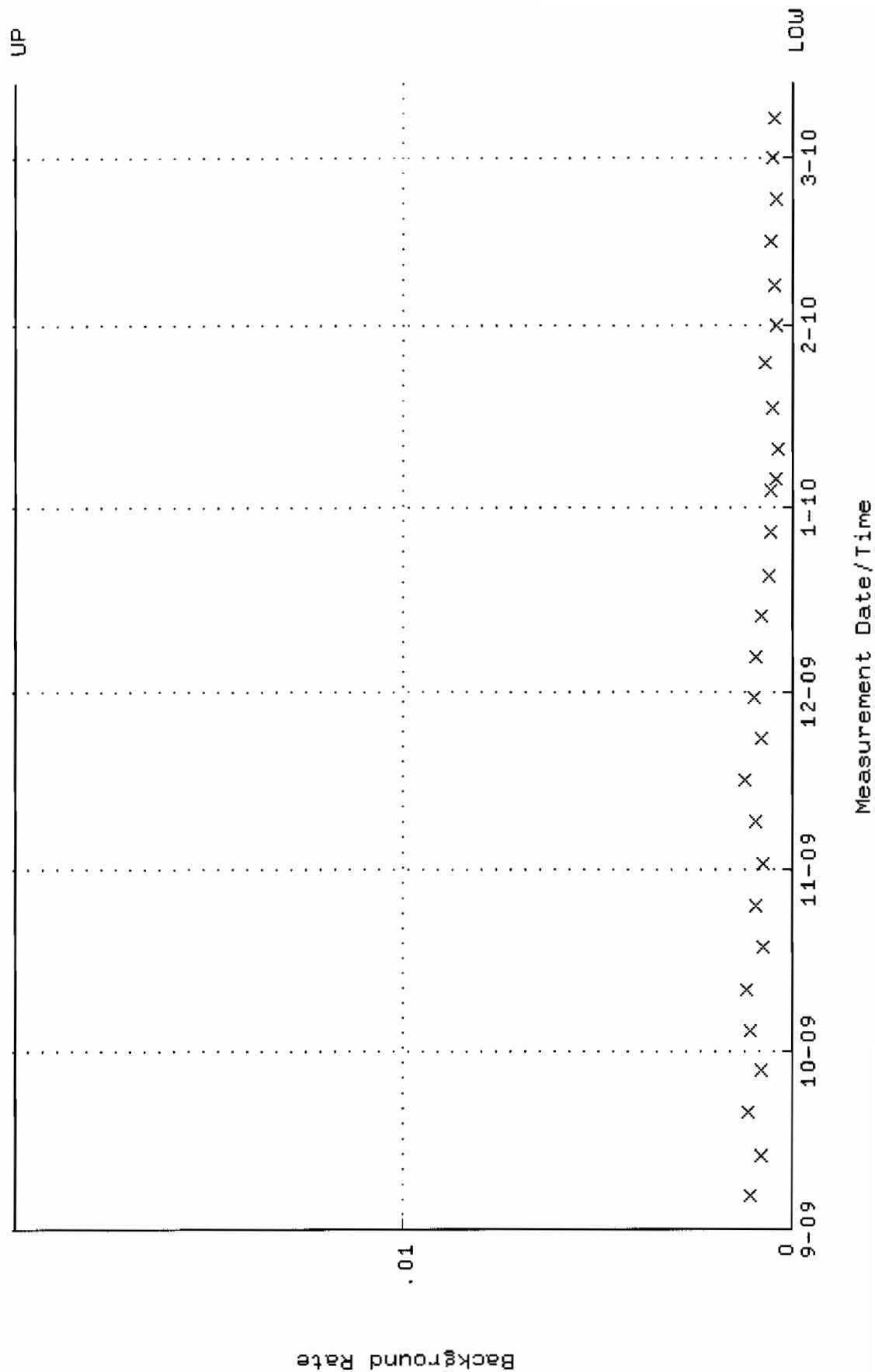
QA filename : DKA100:[ENV_ALPHA.QA.W]U074.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 10-SEP-2009 07:45:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.309960 through 0.321424



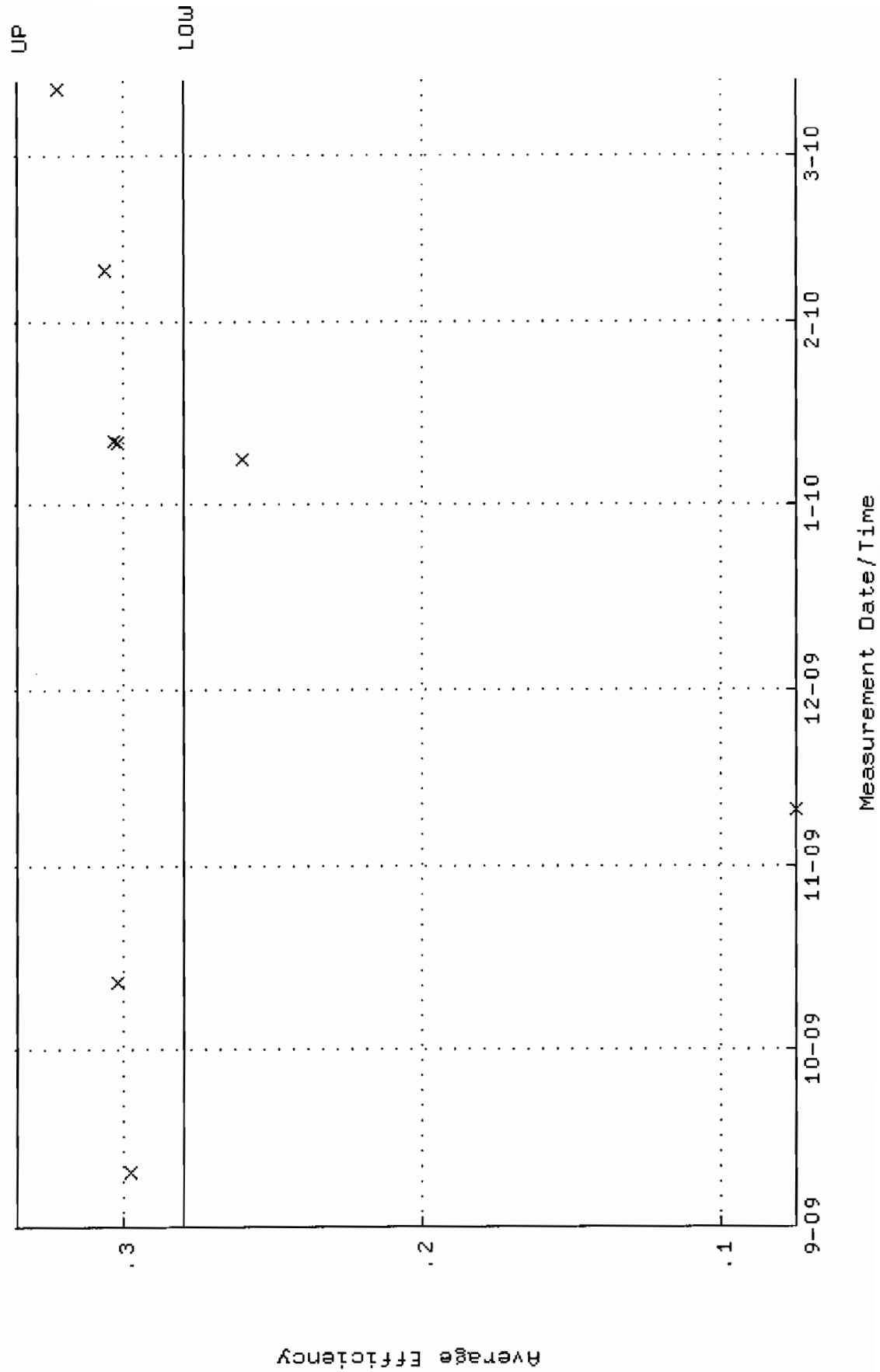
QA filename : DKA100:[ENV_ALPHA.QA.W]w074.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 10-SEP-2009 07:45:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.0938 through 92.5190



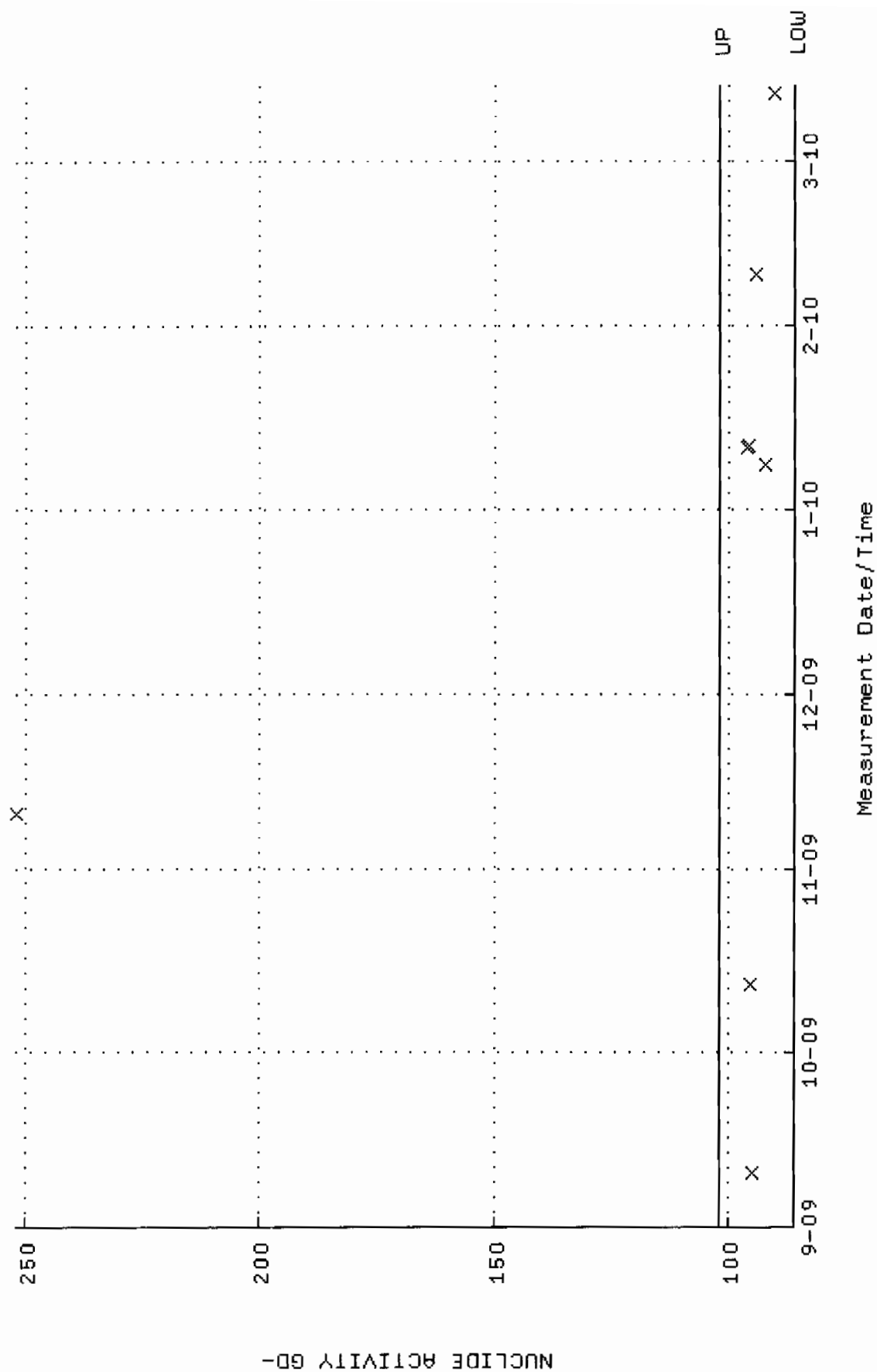
QA filename : DKA100:[ENV_ALPHA.QA.B]B074.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



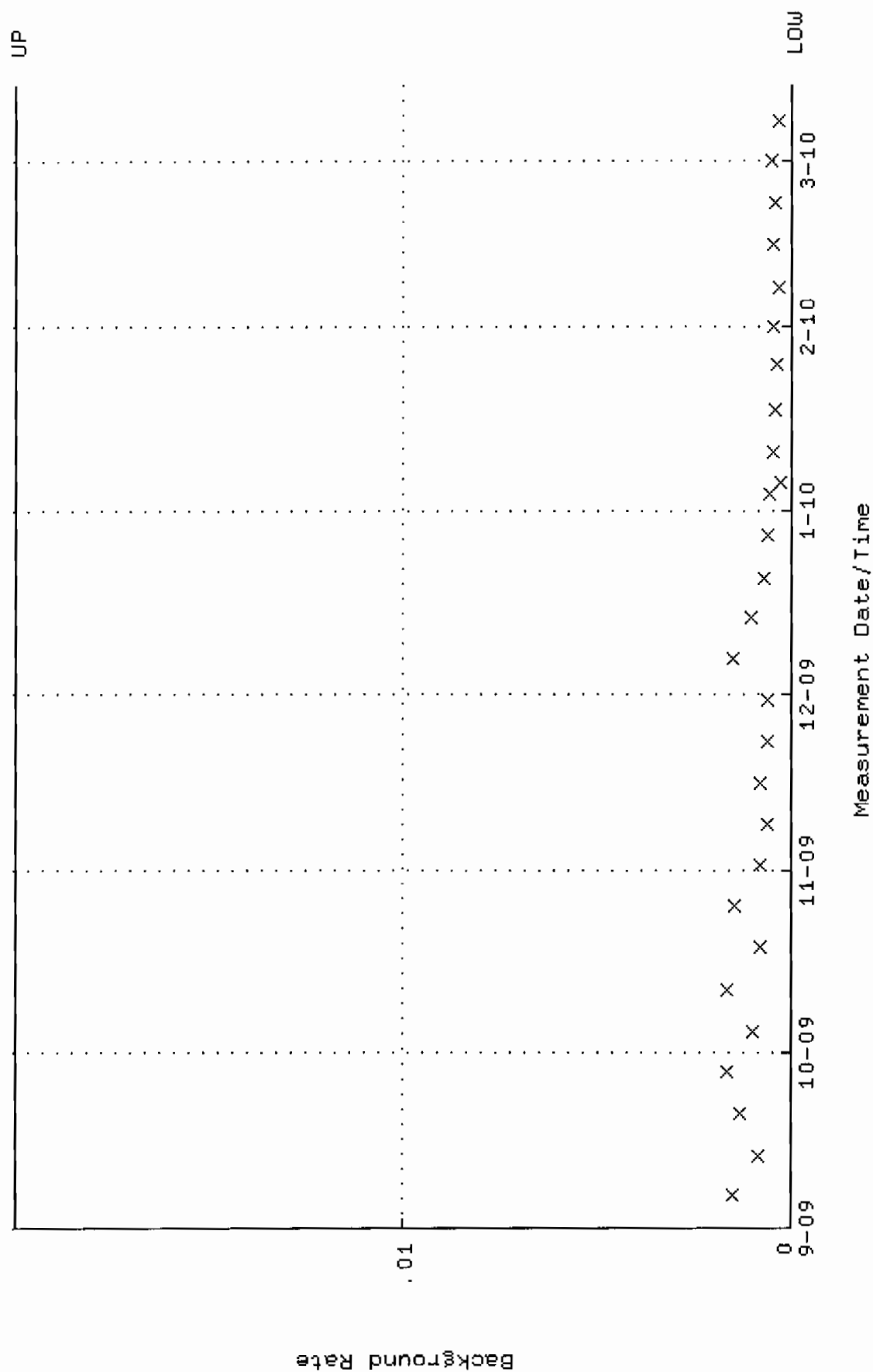
QA filename : DKA100:[ENV_ALPHA.QA.W]W075.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 10-SEP-2009 07:45:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.279983 through 0.335803



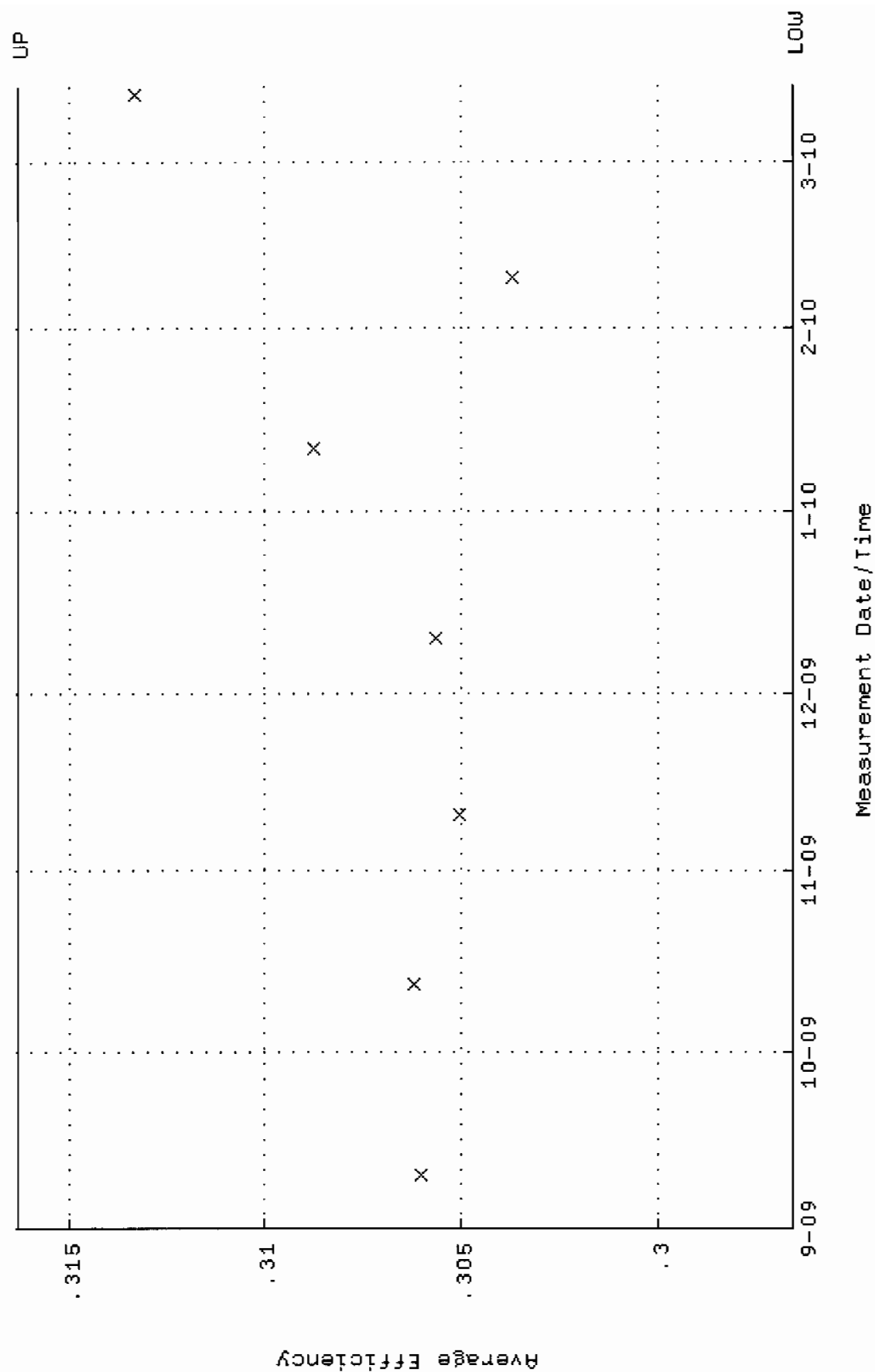
QA filename : DKA100:[ENV_ALPHA.QA.W]W075.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 10-SEP-2009 07:45:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.1031 through 102.173



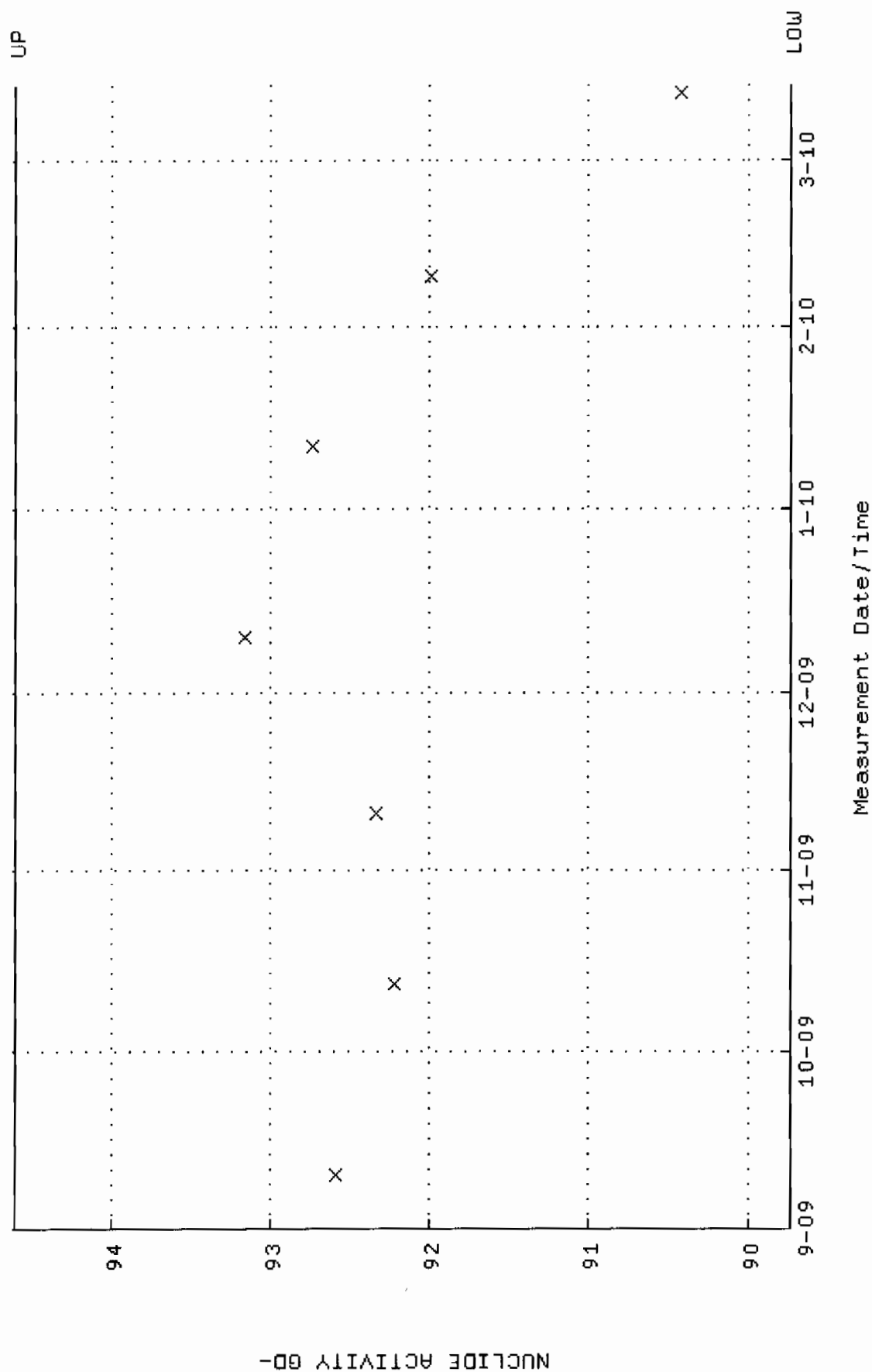
QA filename : DKA100:[ENV_ALPHA.QA.B]B075.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



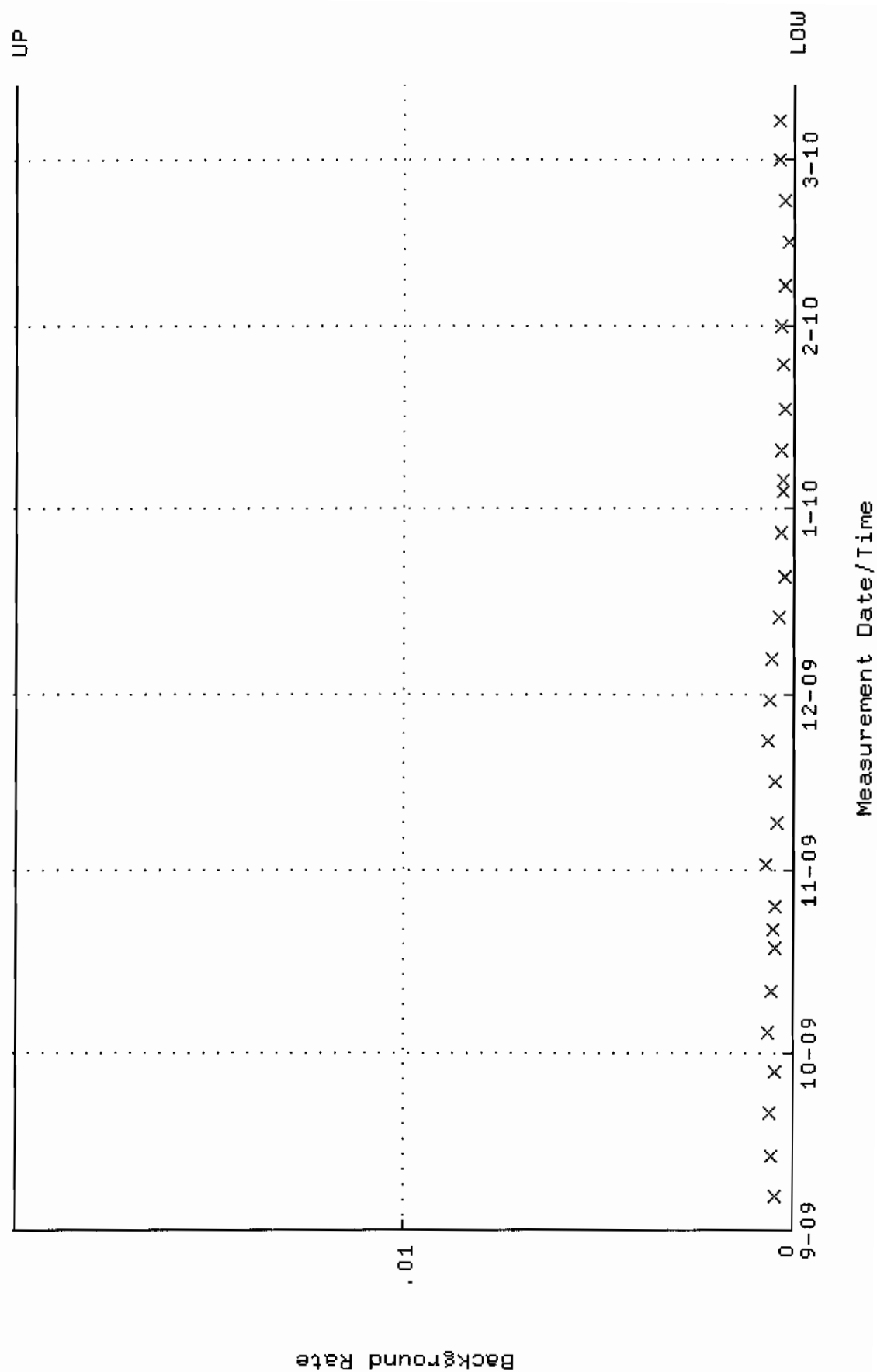
QA filename : DKA100:[ENV_ALPHA.QA.W]W076.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 10-SEP-2009 07:45:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.296554 through 0.316286



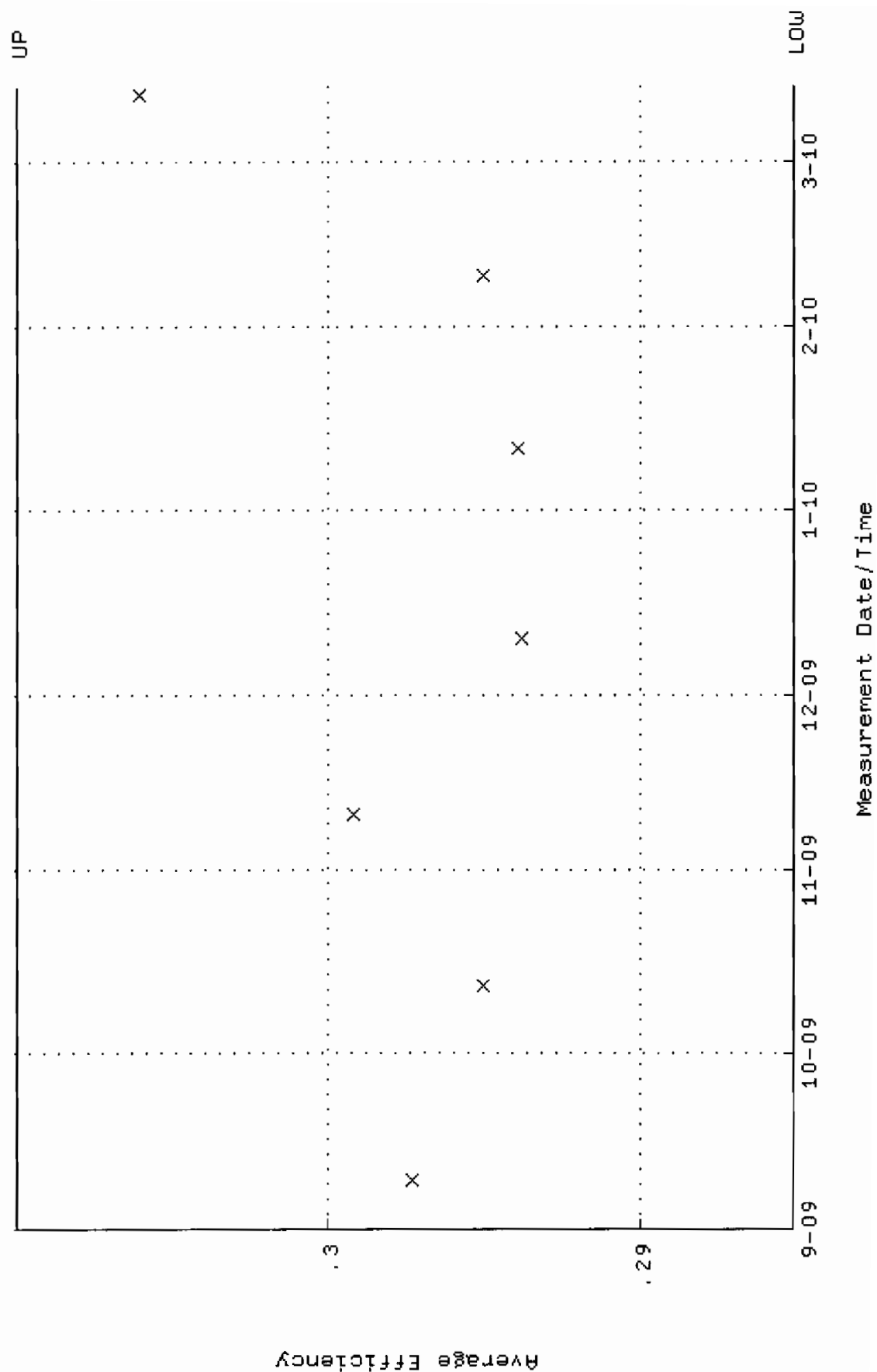
QA filename : DKA100:[ENV-ALPHA.QA.W]W076.QAF;2
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 10-SEP-2009 07:45:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.7306 through 94.6123



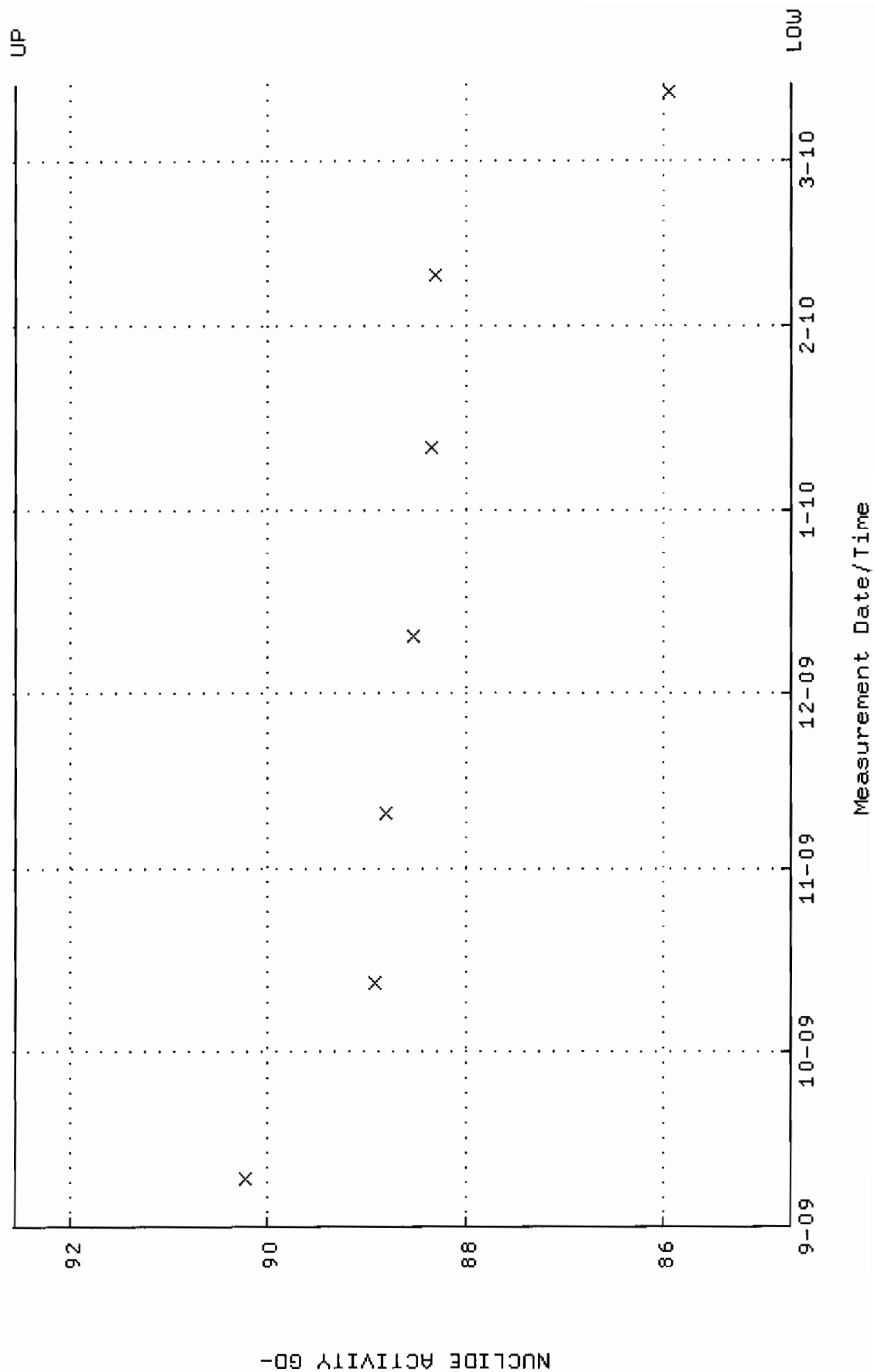
QA filename : DKA100:[ENV_ALPHA.QA.B]B076.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV-ALPHA.QA.W]W089.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.285061 through 0.309915



QA filename : DKA100:[ENV_ALPHA.QA.W]W089.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.7074 through 92.5526

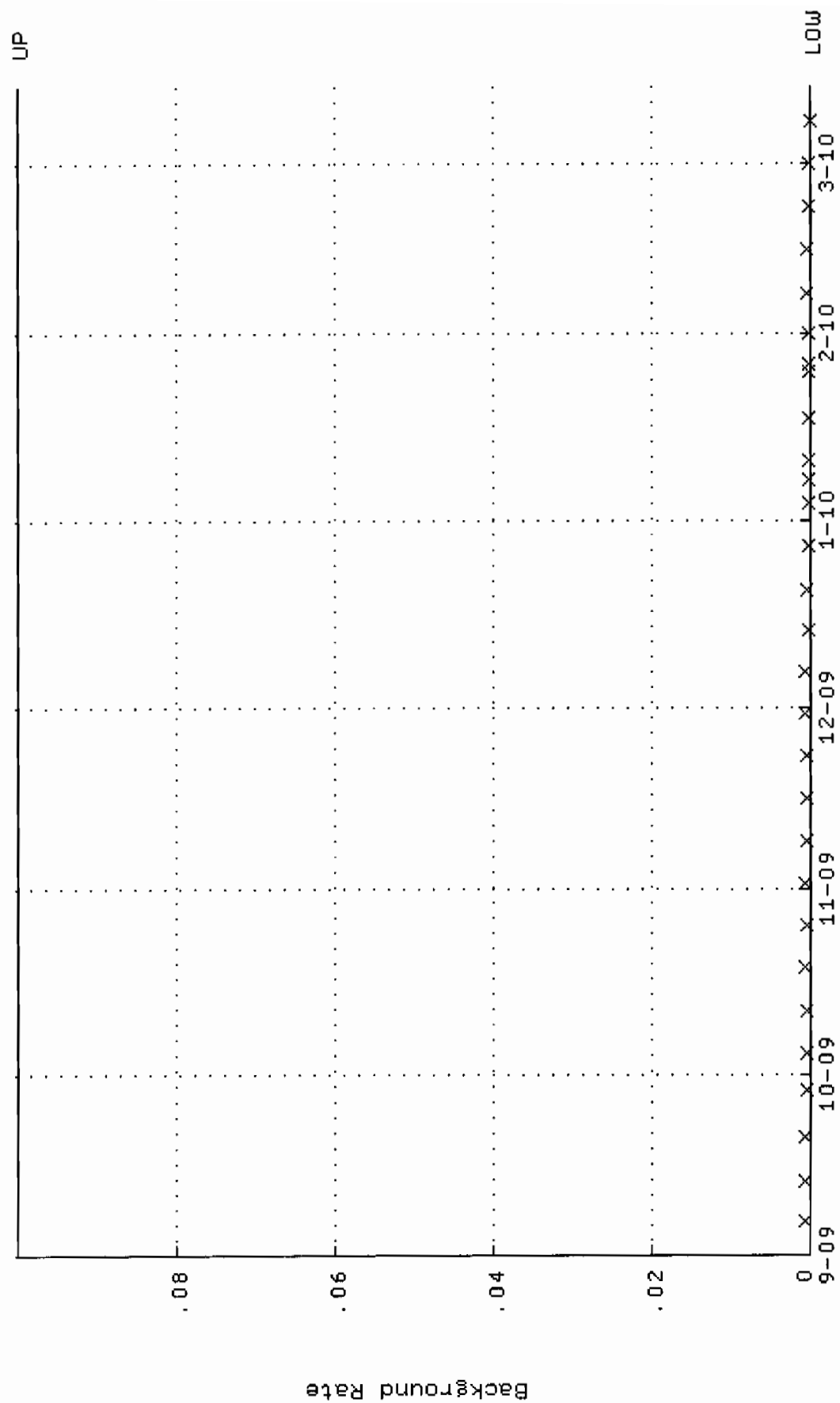


QA filename : DKA100:[ENV_ALPHA.QA.B]B089.QAF;1

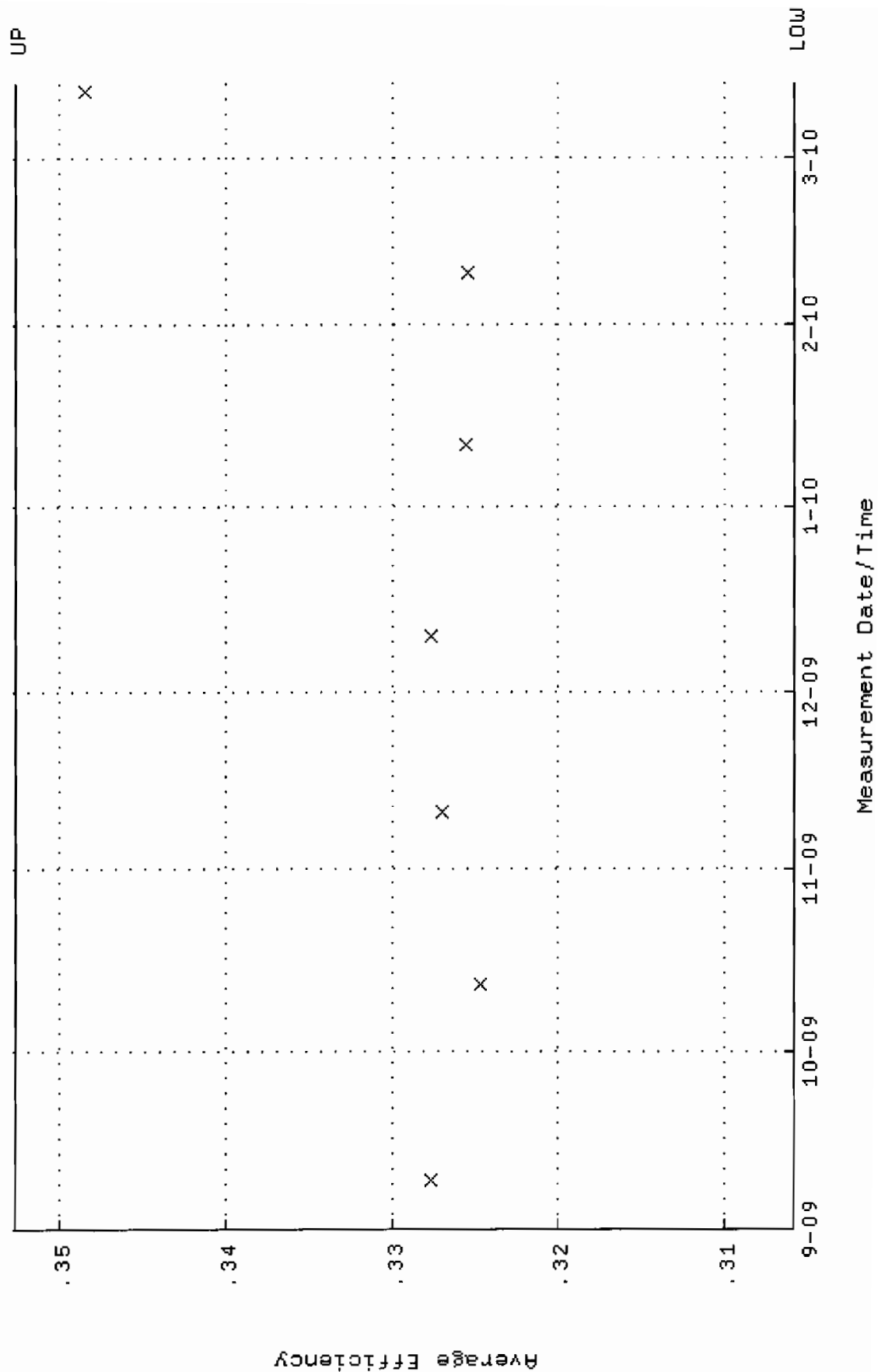
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:10 through 13-MAR-2010 12:00:00

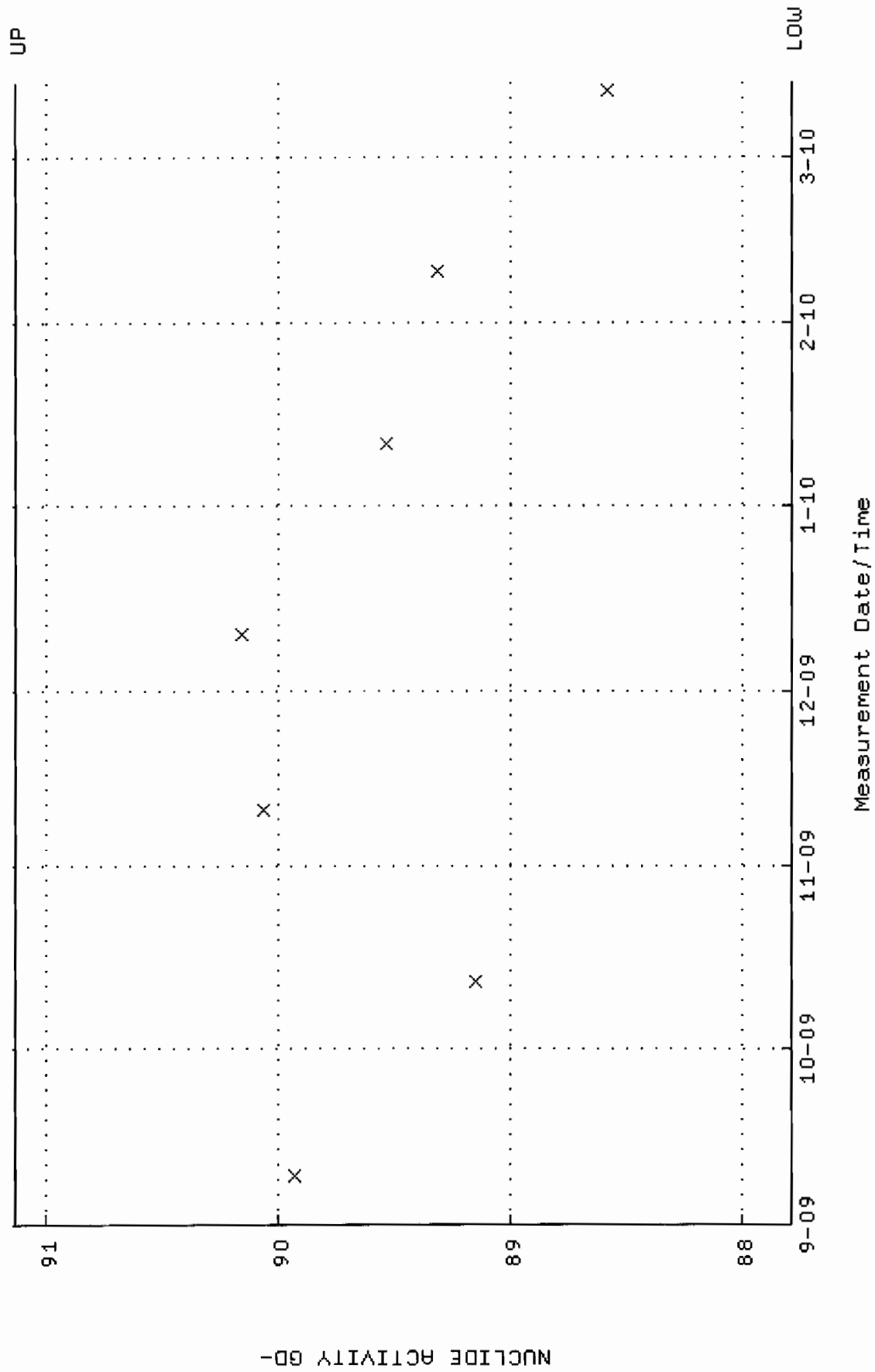
Lower/Upper Lmts: 0.000000E+00 through 0.100000



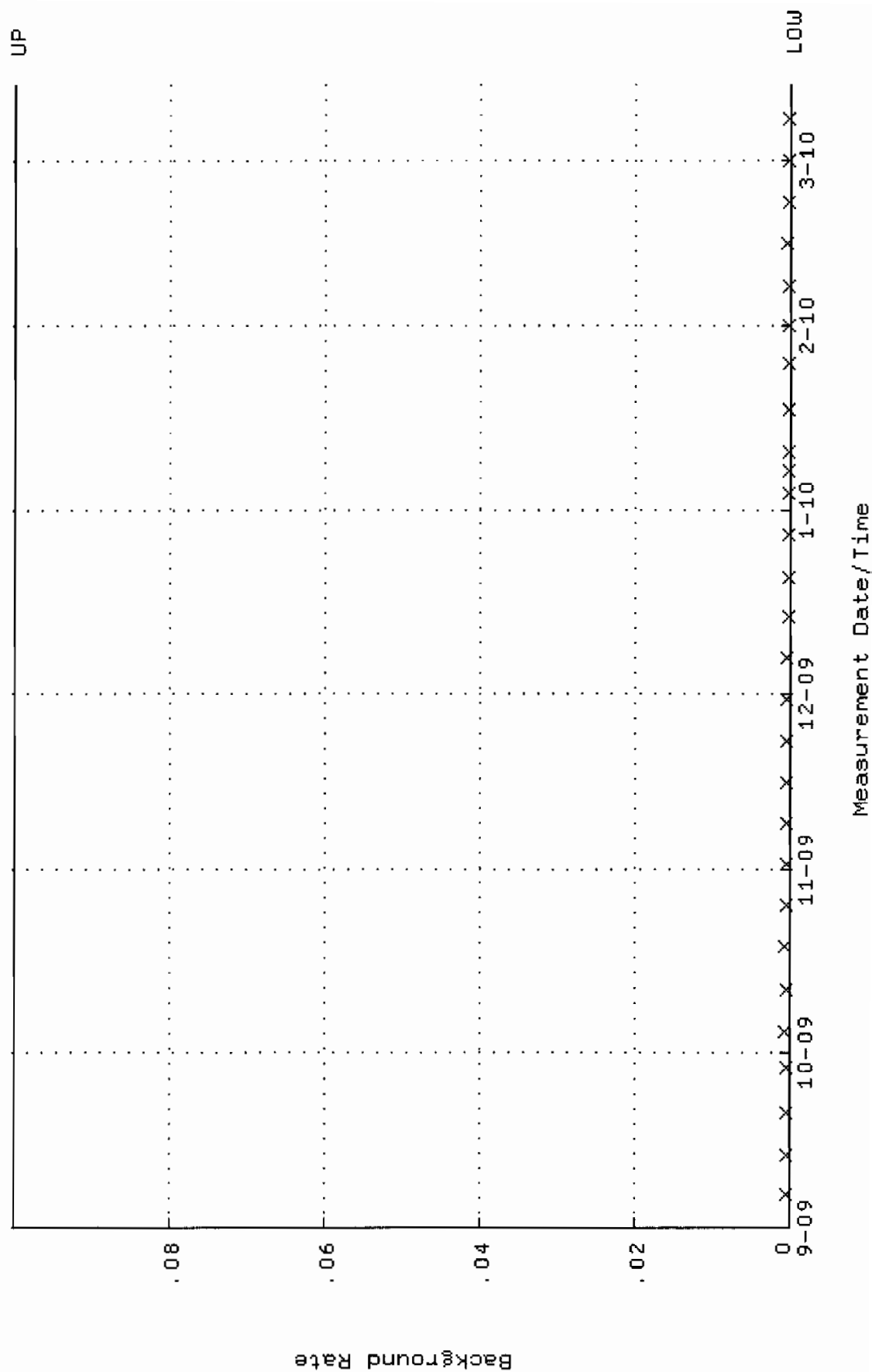
QA filename : DKA100:[ENV-ALPHA.QA.W]W090.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
Lower/Upper Lmts: 0.305824 through 0.352694



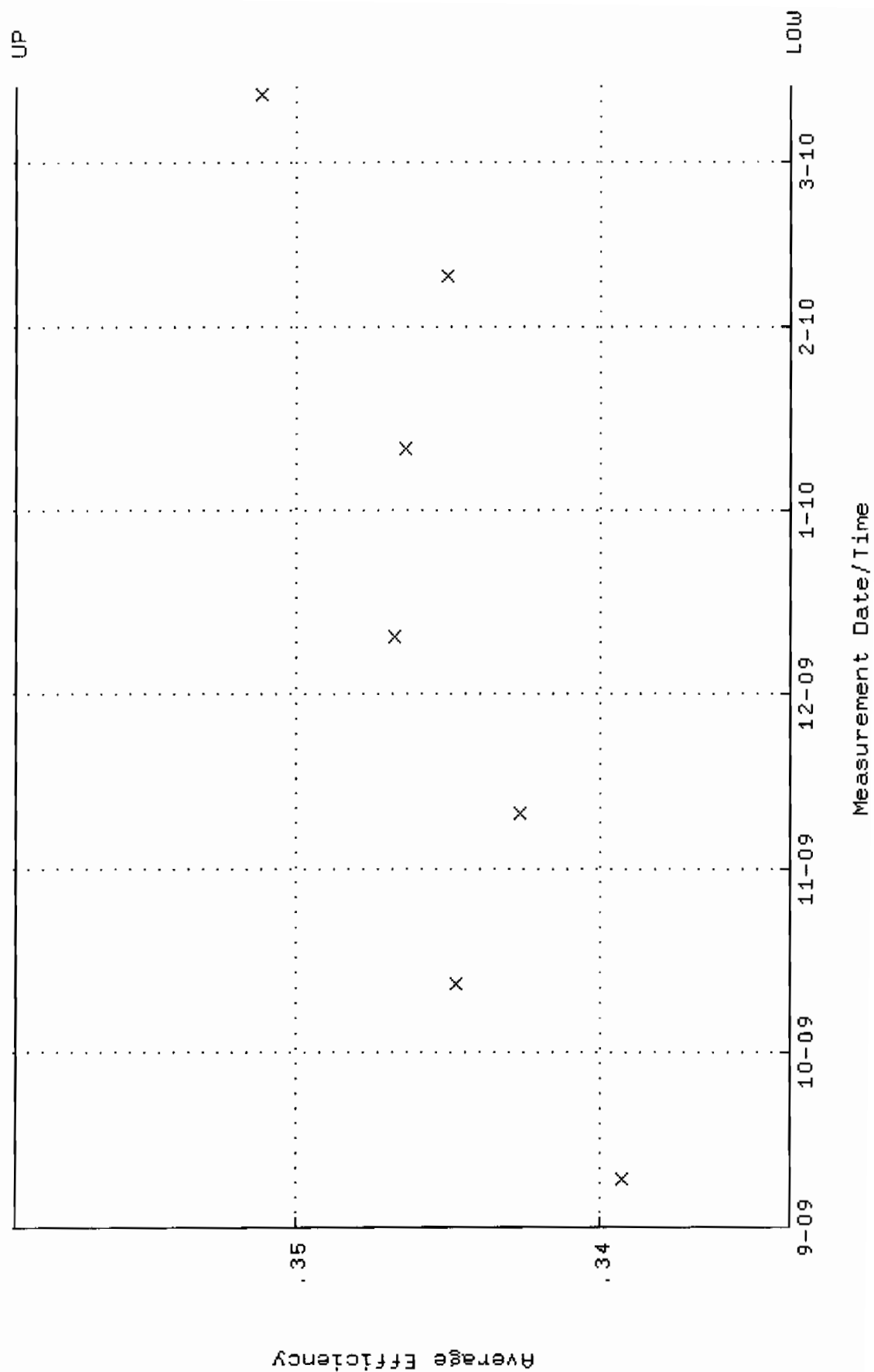
QA filename : DKA100:[ENV-ALPHA.QA.W]W090.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.7860 through 91.1302



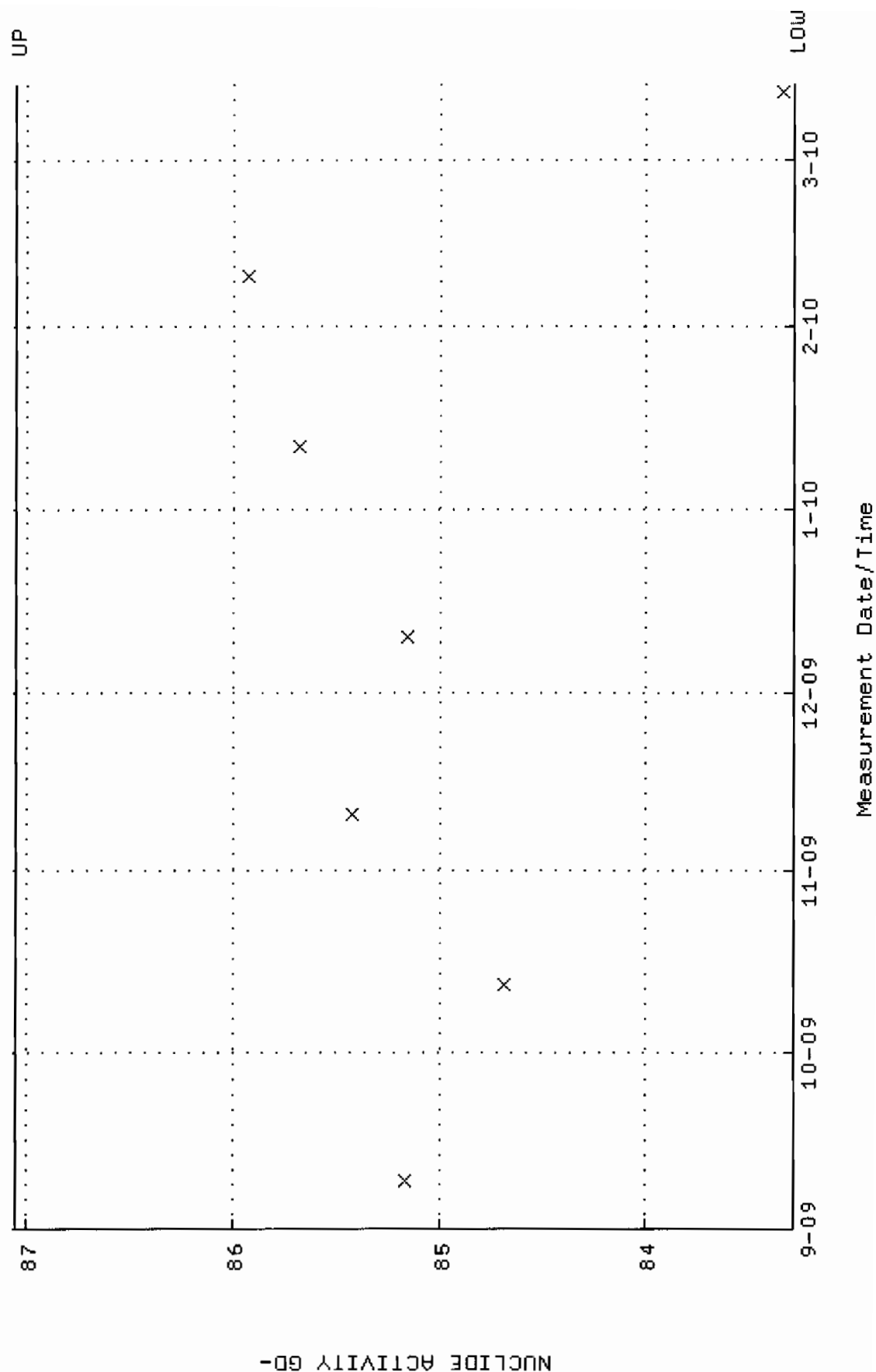
QA filename : DKA100:[ENV_ALPHA.QA.B]B090.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:10 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W091.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.333733 through 0.359273



QA filename : DKA100:[ENV_ALPHA.QA.W]W091.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.2831 through 87.0563

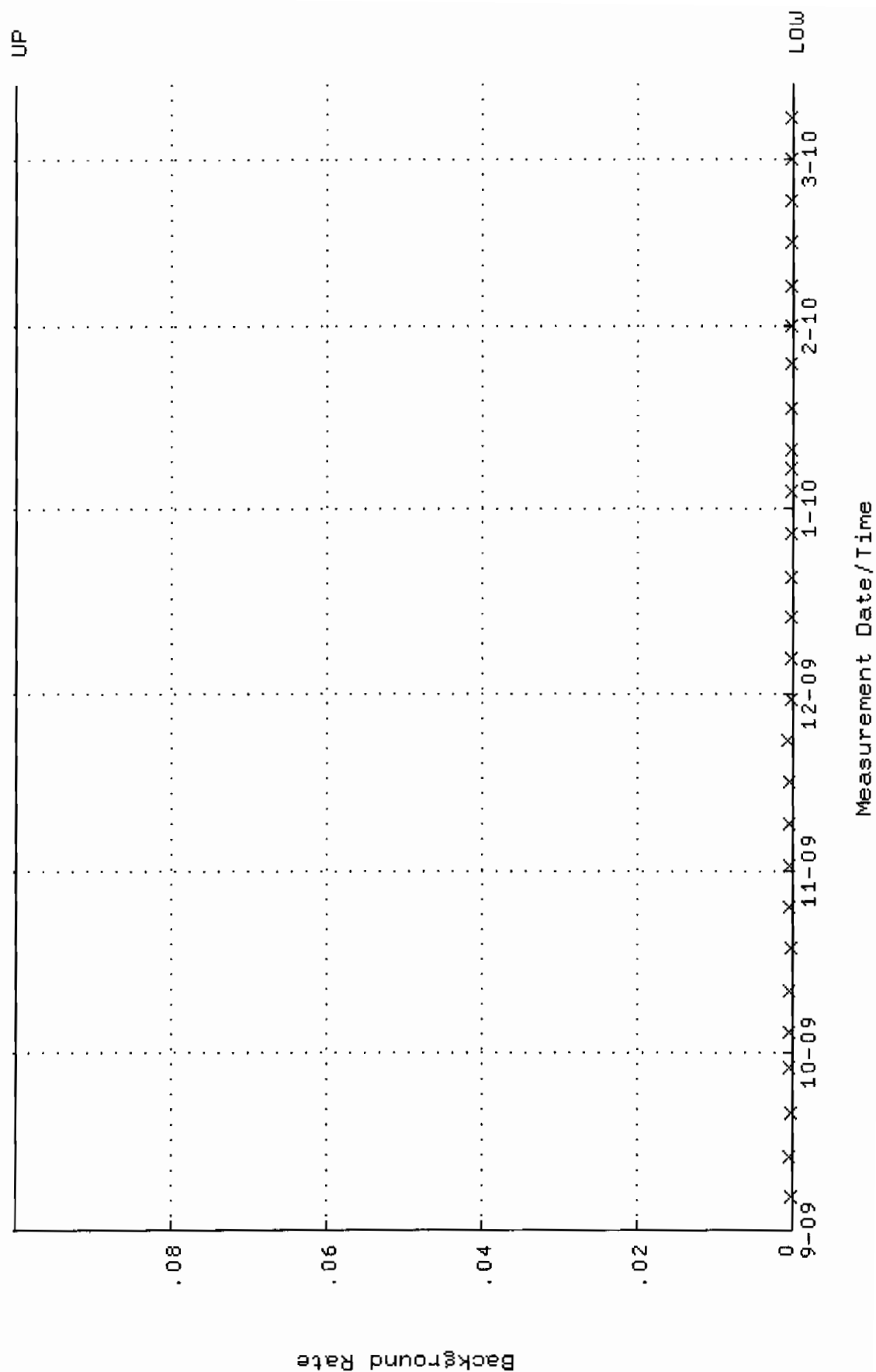


QA filename : DKA100:[ENV_ALPHA.QA.B]B091.QAF;1

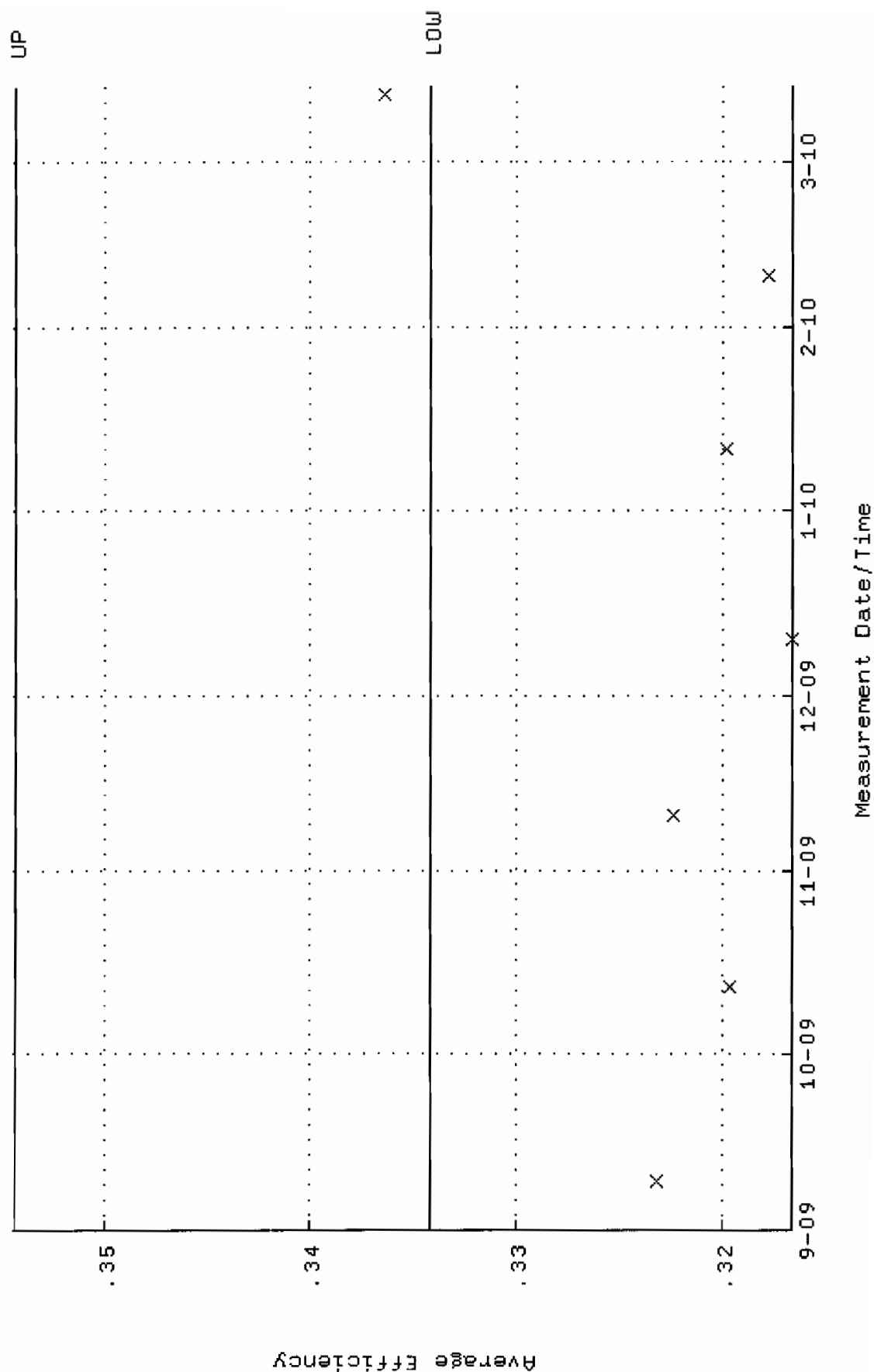
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:10 through 13-MAR-2010 12:00:00

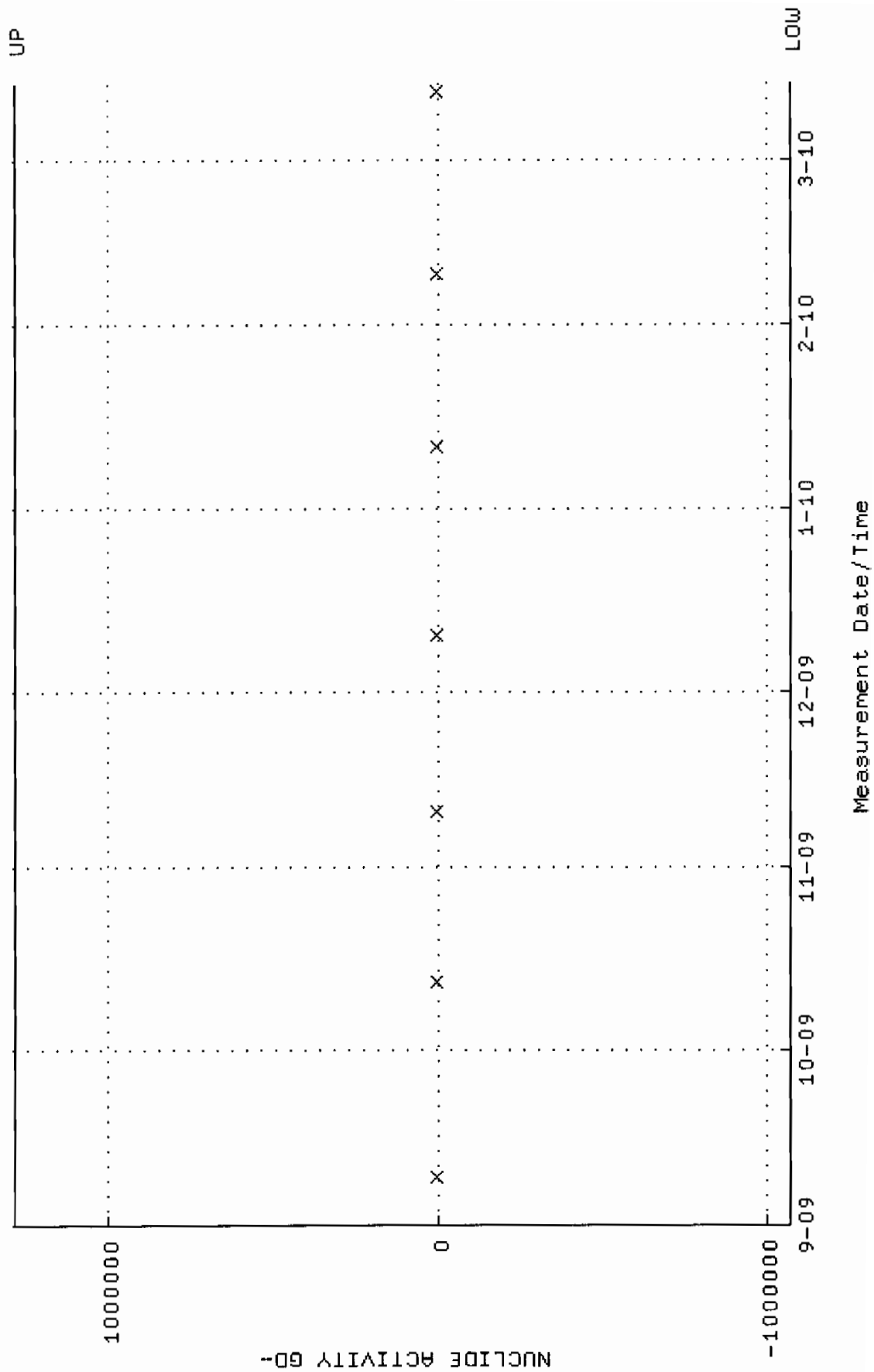
Lower/Upper Lmts: 0.000000E+00 through 0.100000



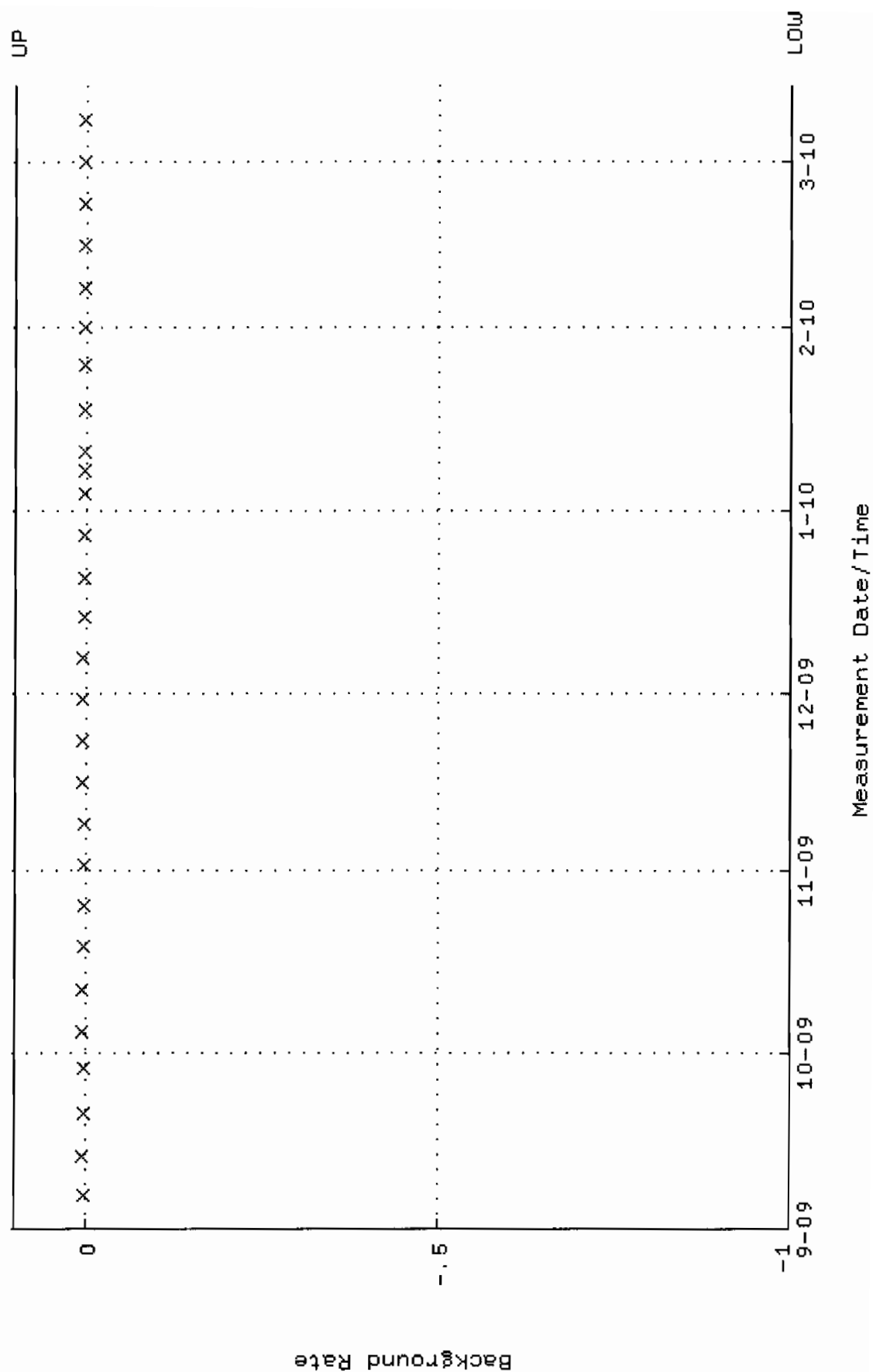
QA filename : DKA100:[ENV_ALPHA,QA.W]W093.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.334257 through 0.354343



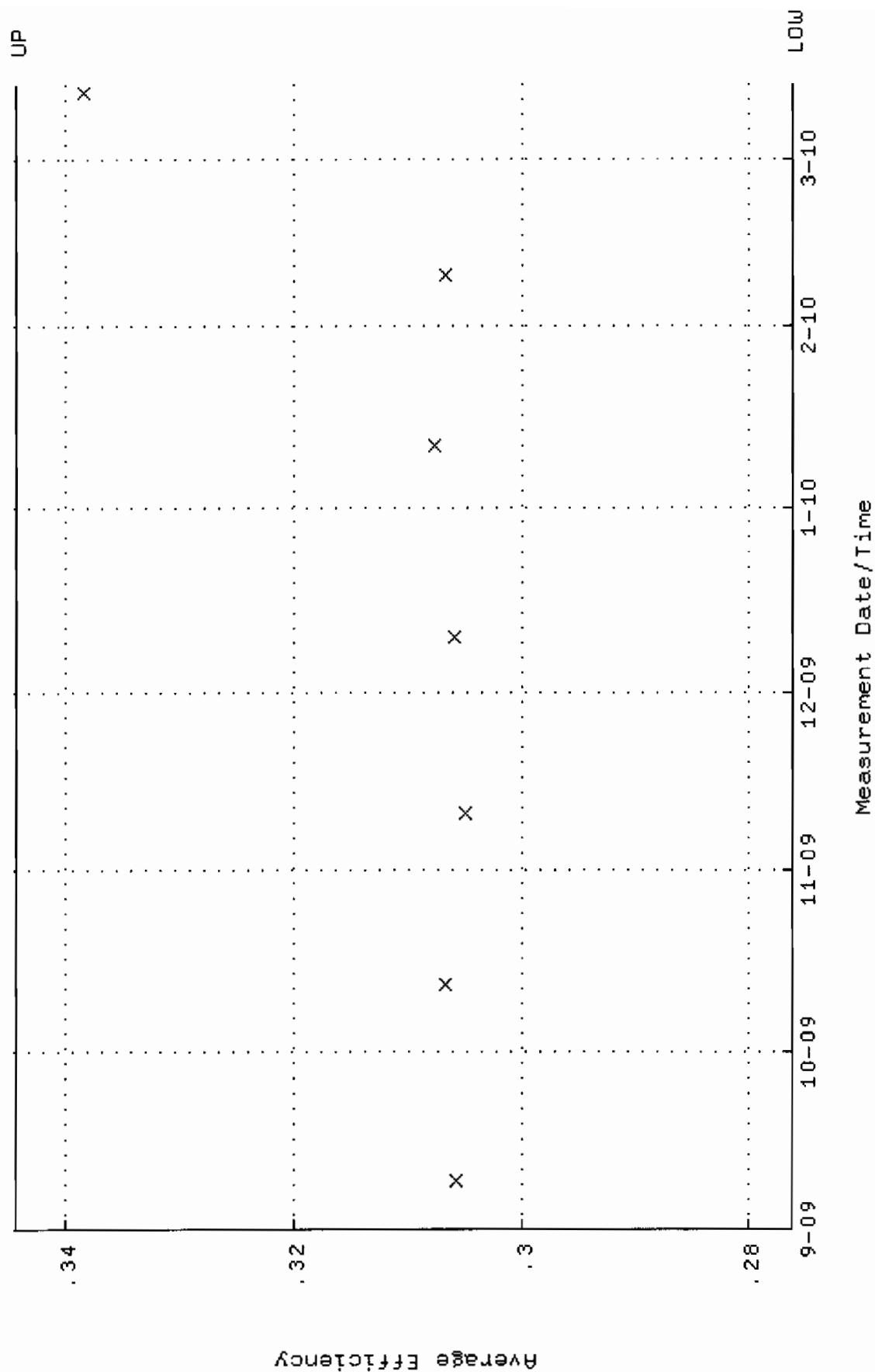
QA filename : DKA100:[ENV_ALPHA.QA.W]W093.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: -1.071934E+06 through 1.284428E+06



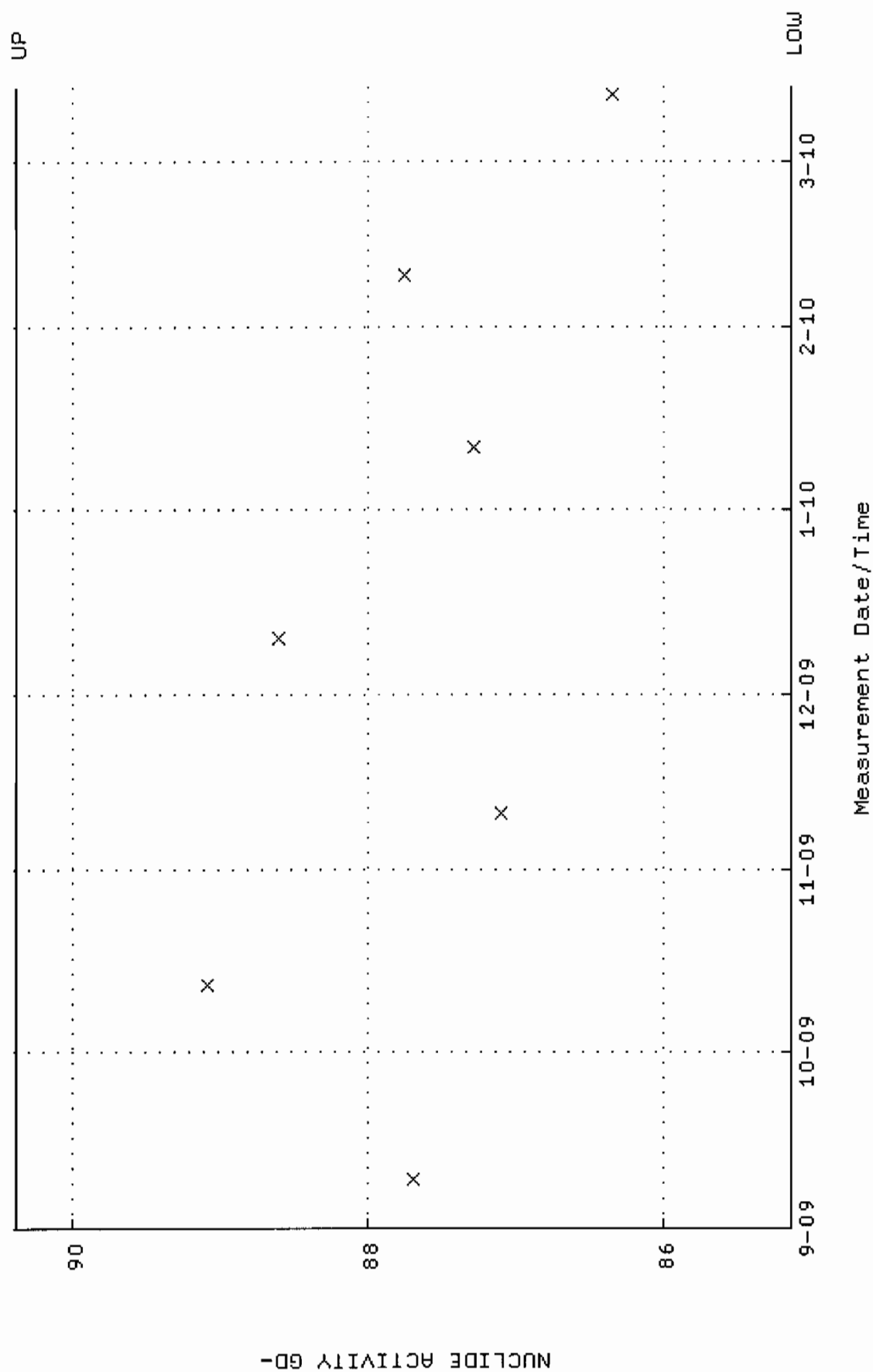
QA filename : DKA100:[ENV_ALPHA.QA.B]B093.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:10 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: -1.00000 through 0.100000



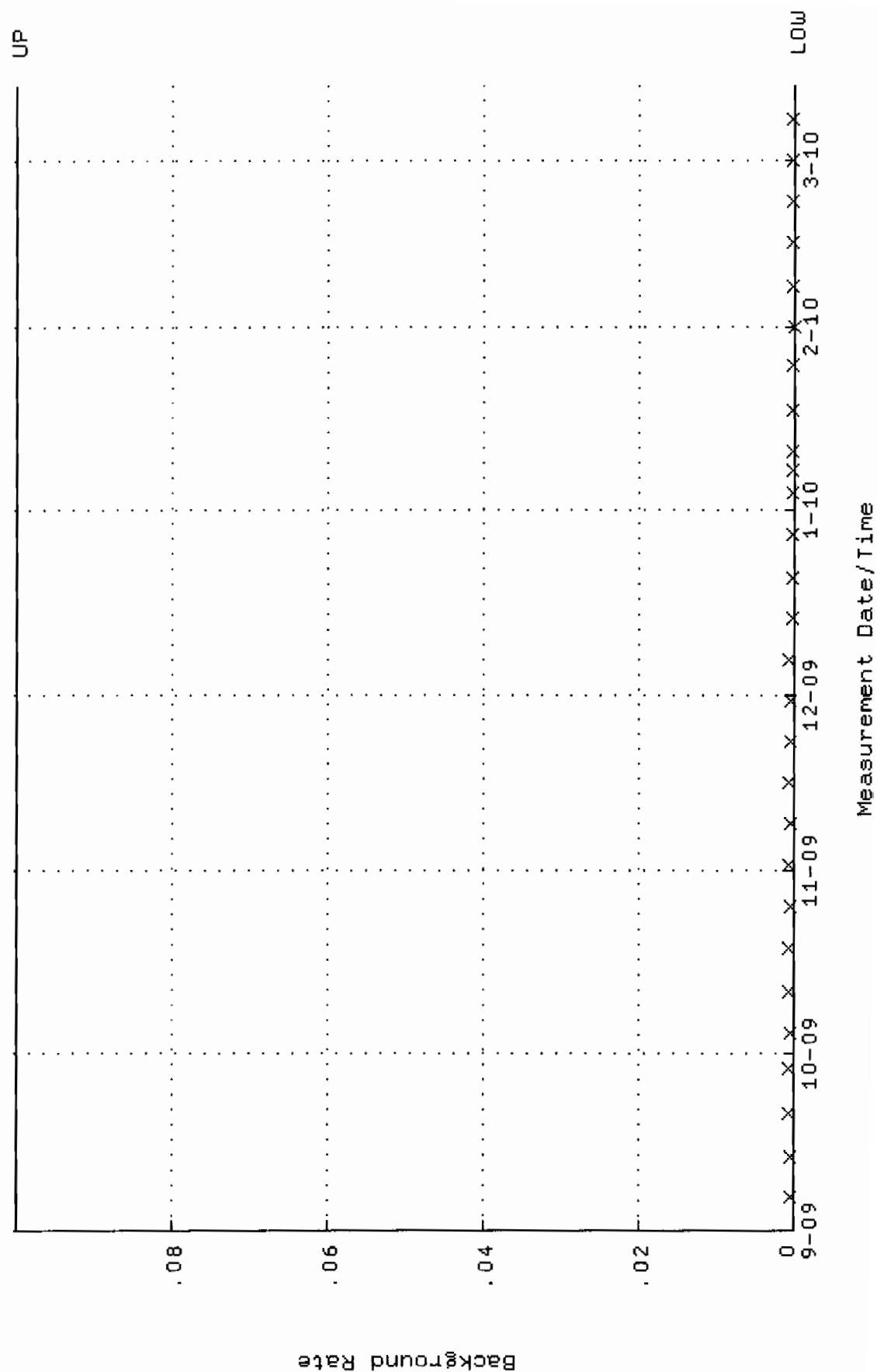
QA filename : DKA100:[ENV_ALPHA.QA.W]W094.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.276224 through 0.344338



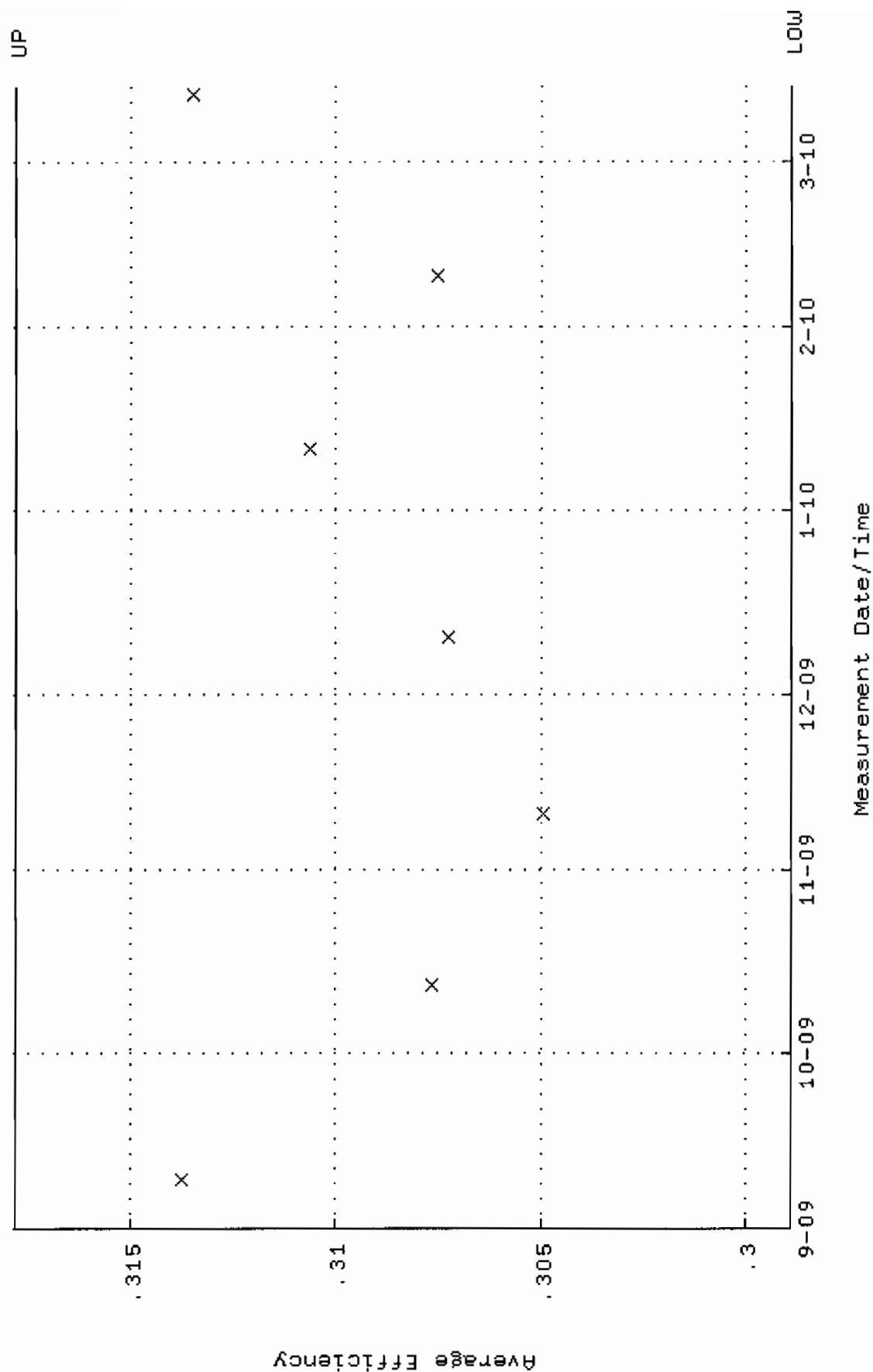
QA filename : DKA100:[ENV_ALPHA.QA.W]U094.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.1305 through 90.3863



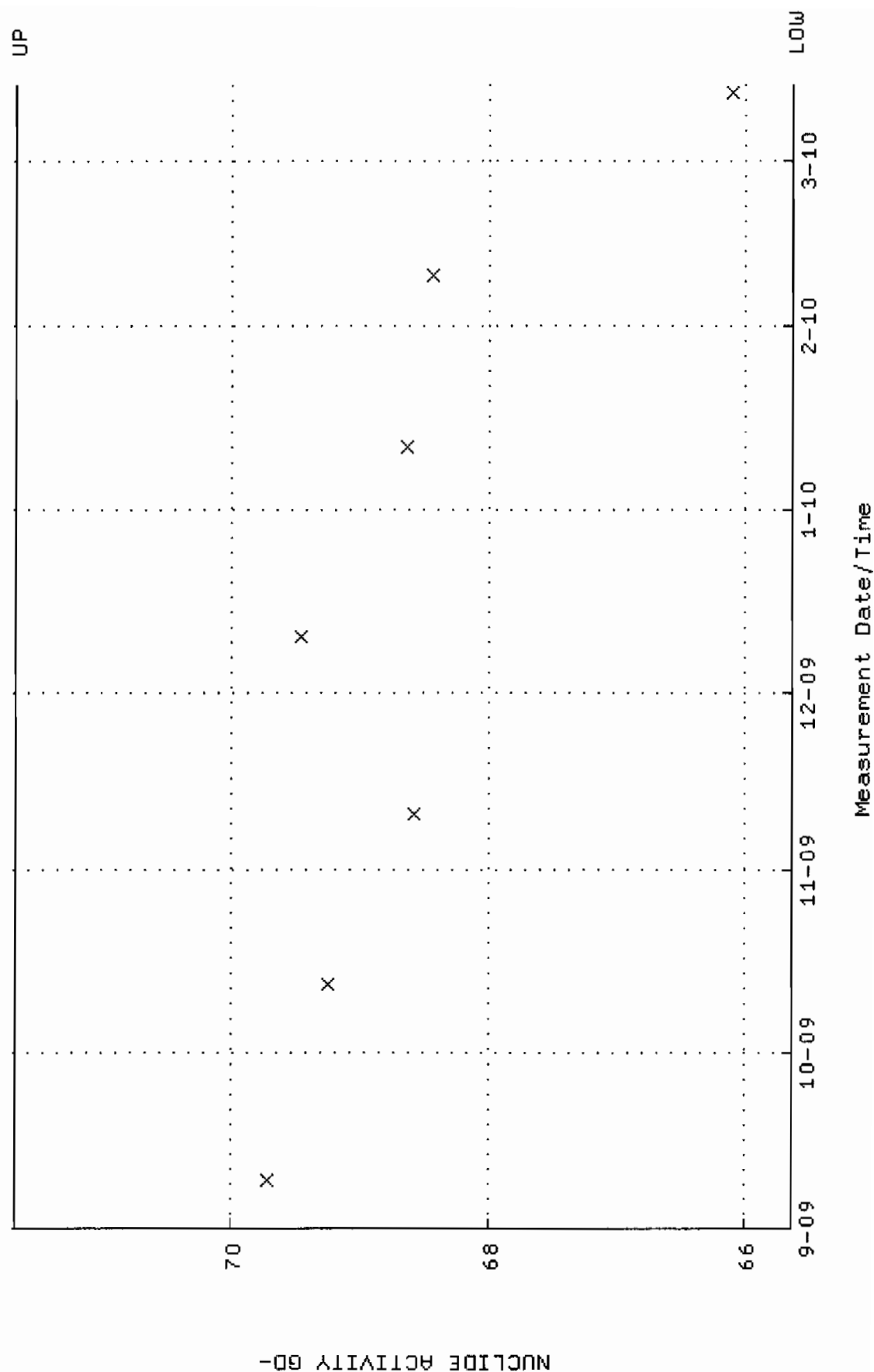
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 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:10 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



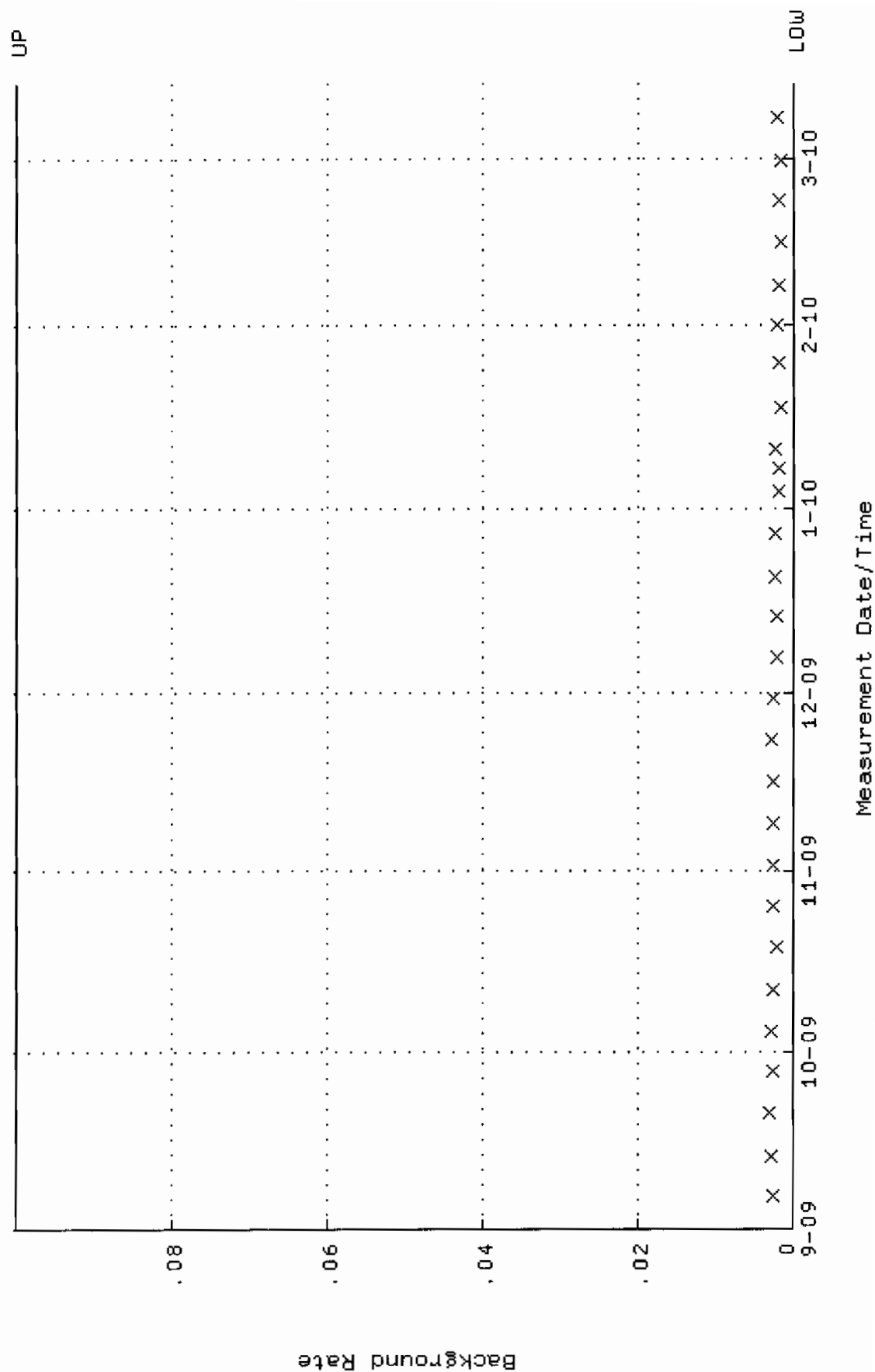
QA filename : OKA100:[ENV_ALPHA.QA.W]W095.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.298900 through 0.317790



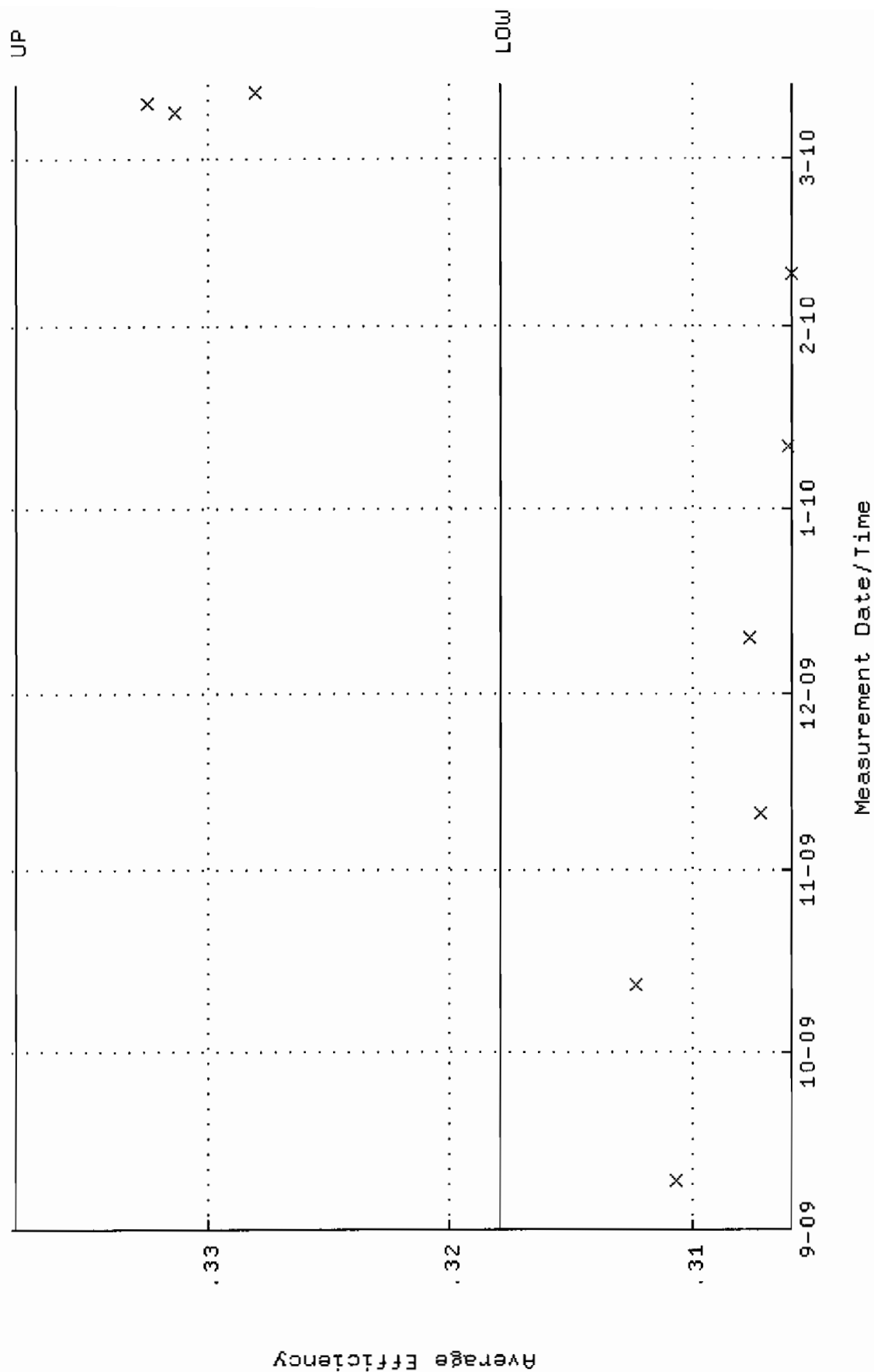
QA filename : DKA100:[ENV_ALPHA.QA.W]W095.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 65.6370 through 71.6700



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 : DKA100:[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

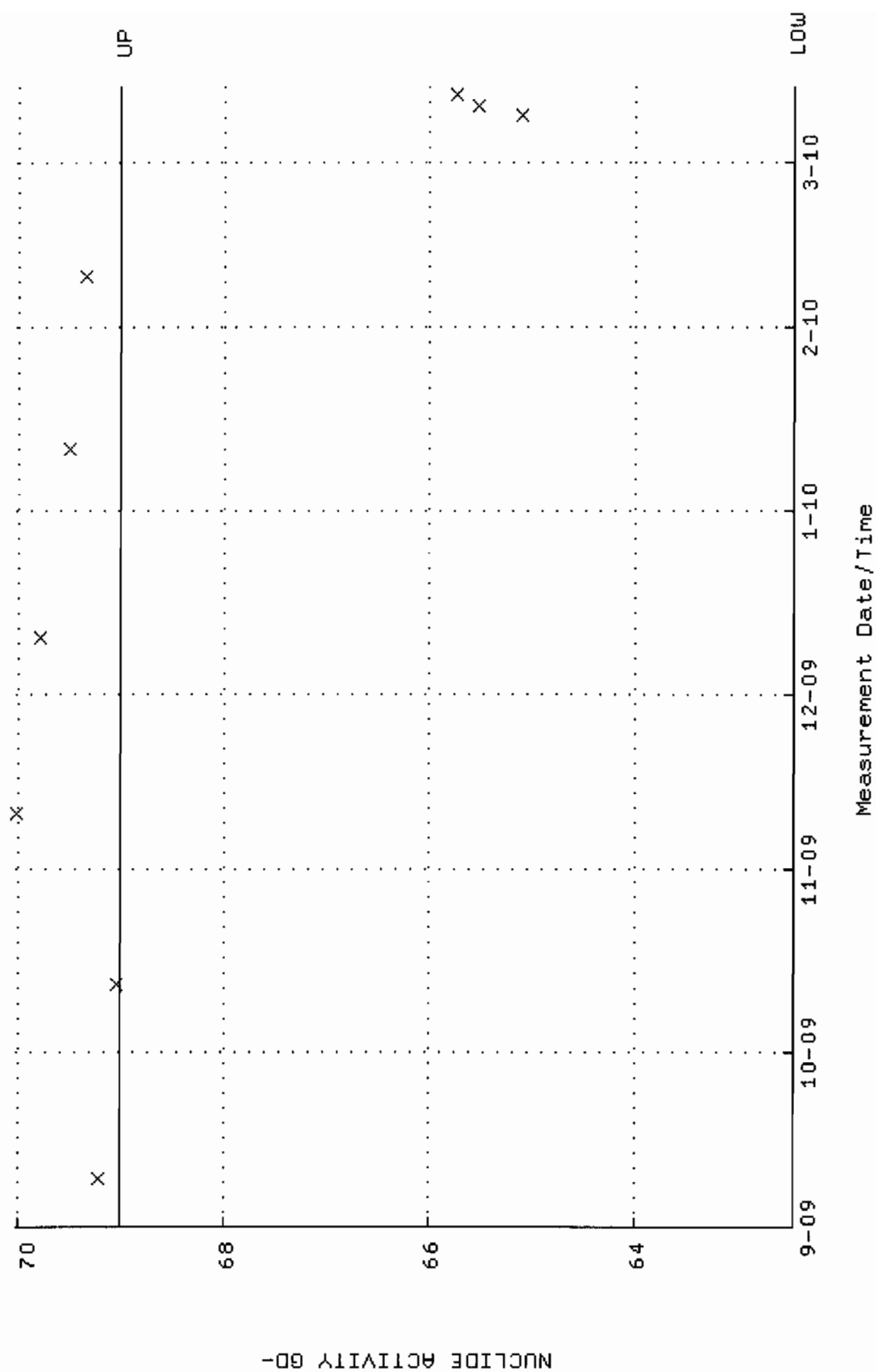


QA filename

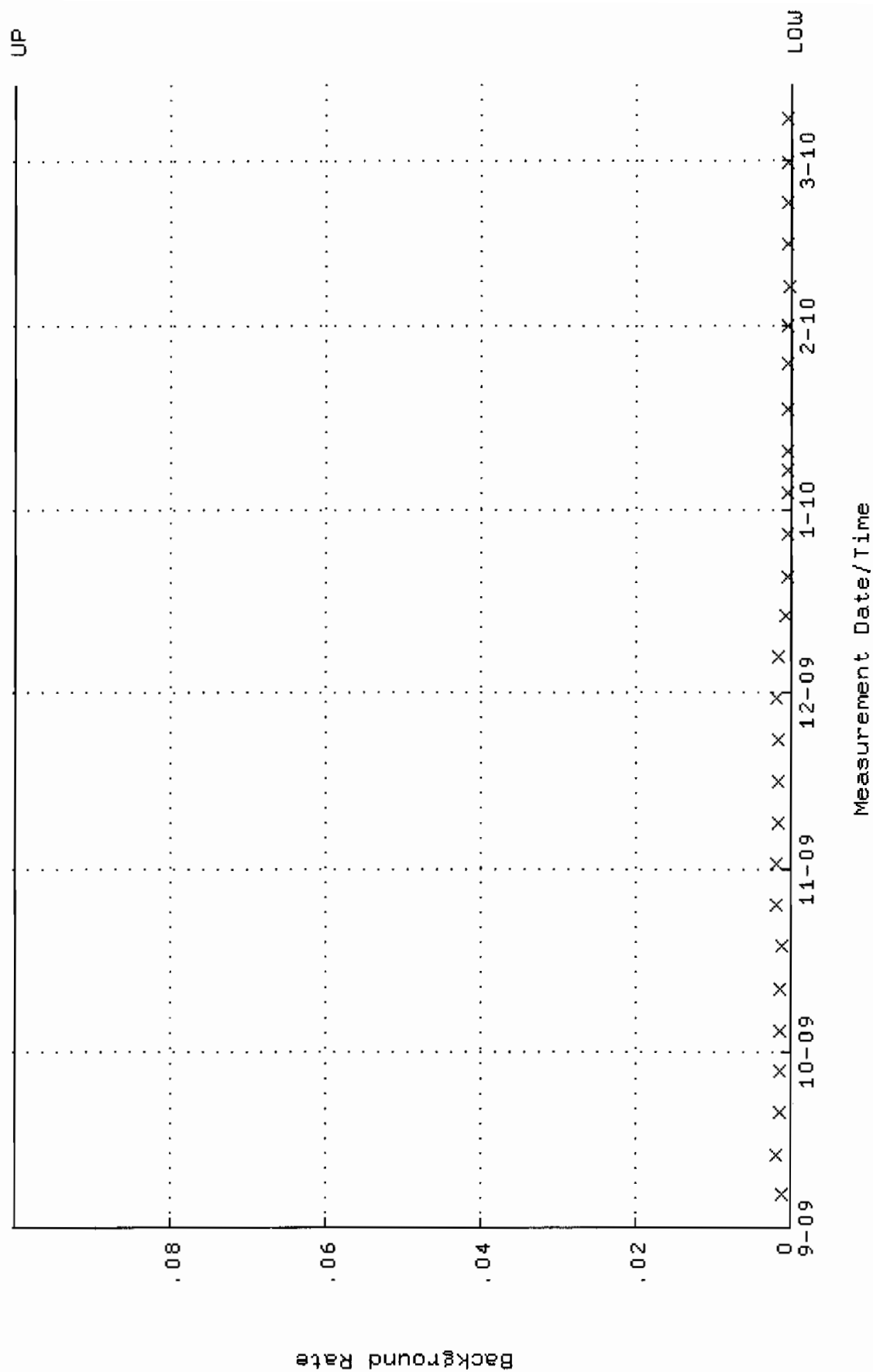
Parameter Name	
: NLACTIVITY-GD148 (NUCLTDF ACTIVITY GD-148)	

Start/End Dates	9-SEP-2009	09:27:50	through	13-MAR-2010	12:00:00
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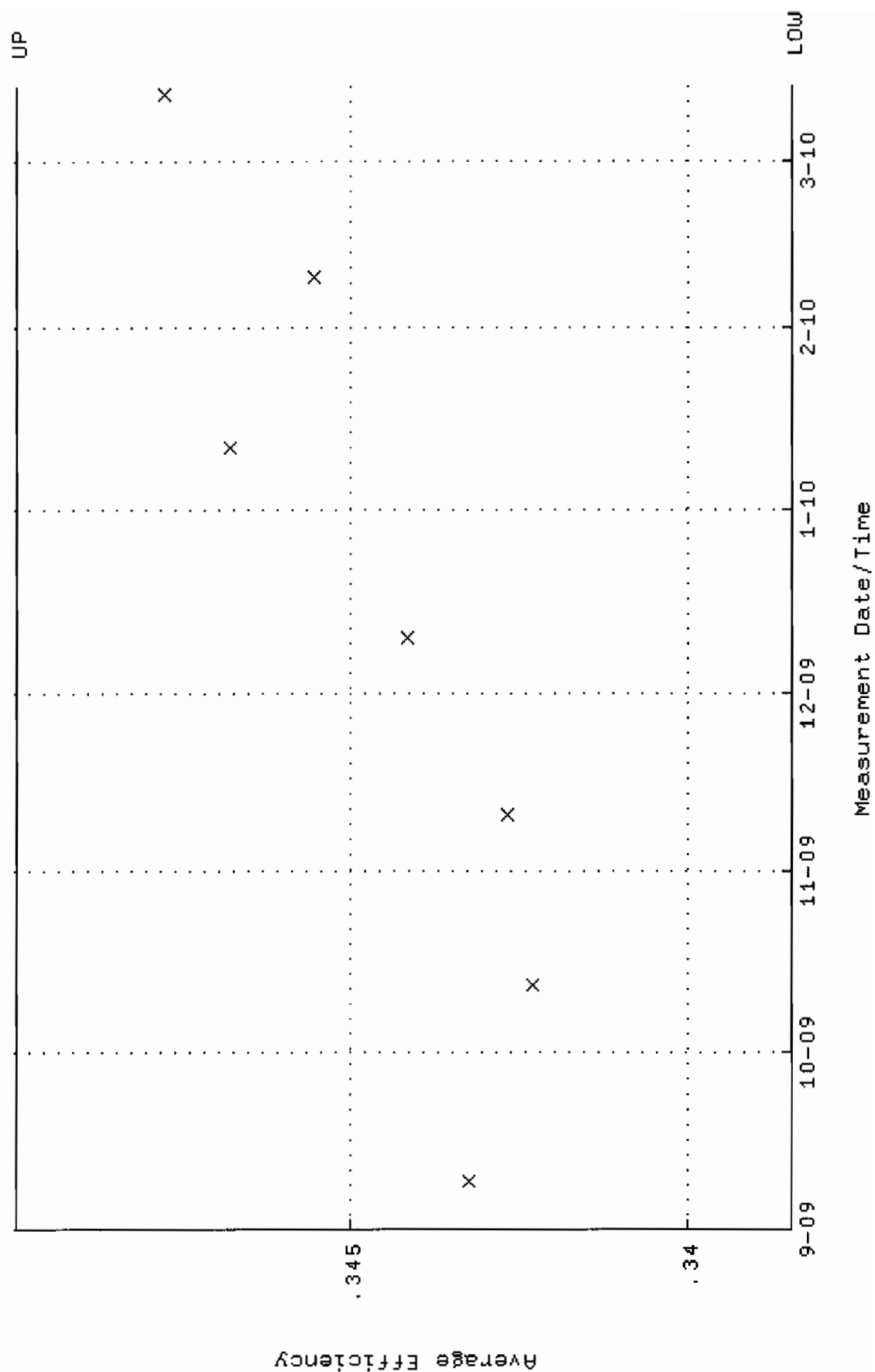
Lower/lower | mts: 62 4466 through 69 0200



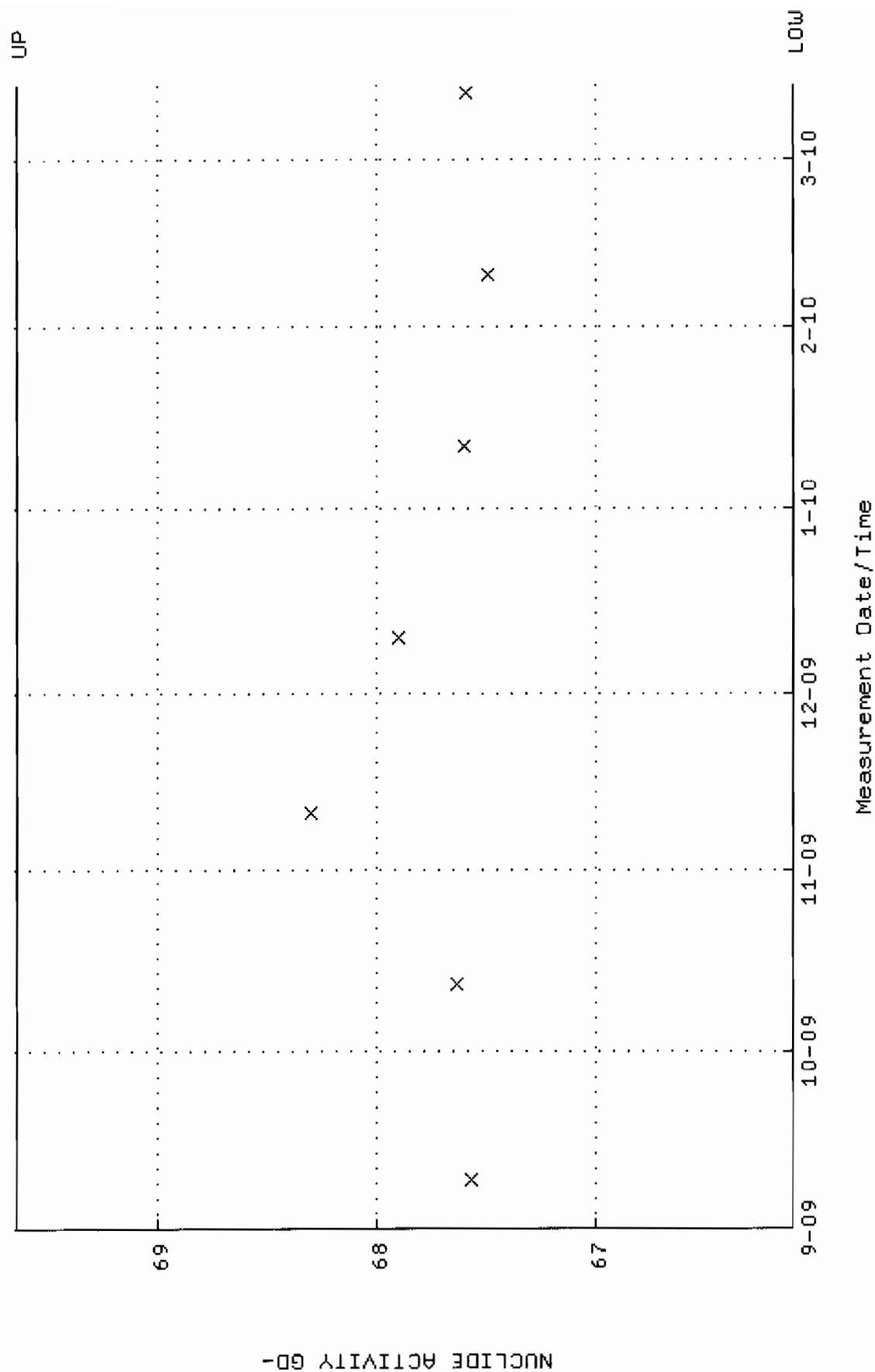
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 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



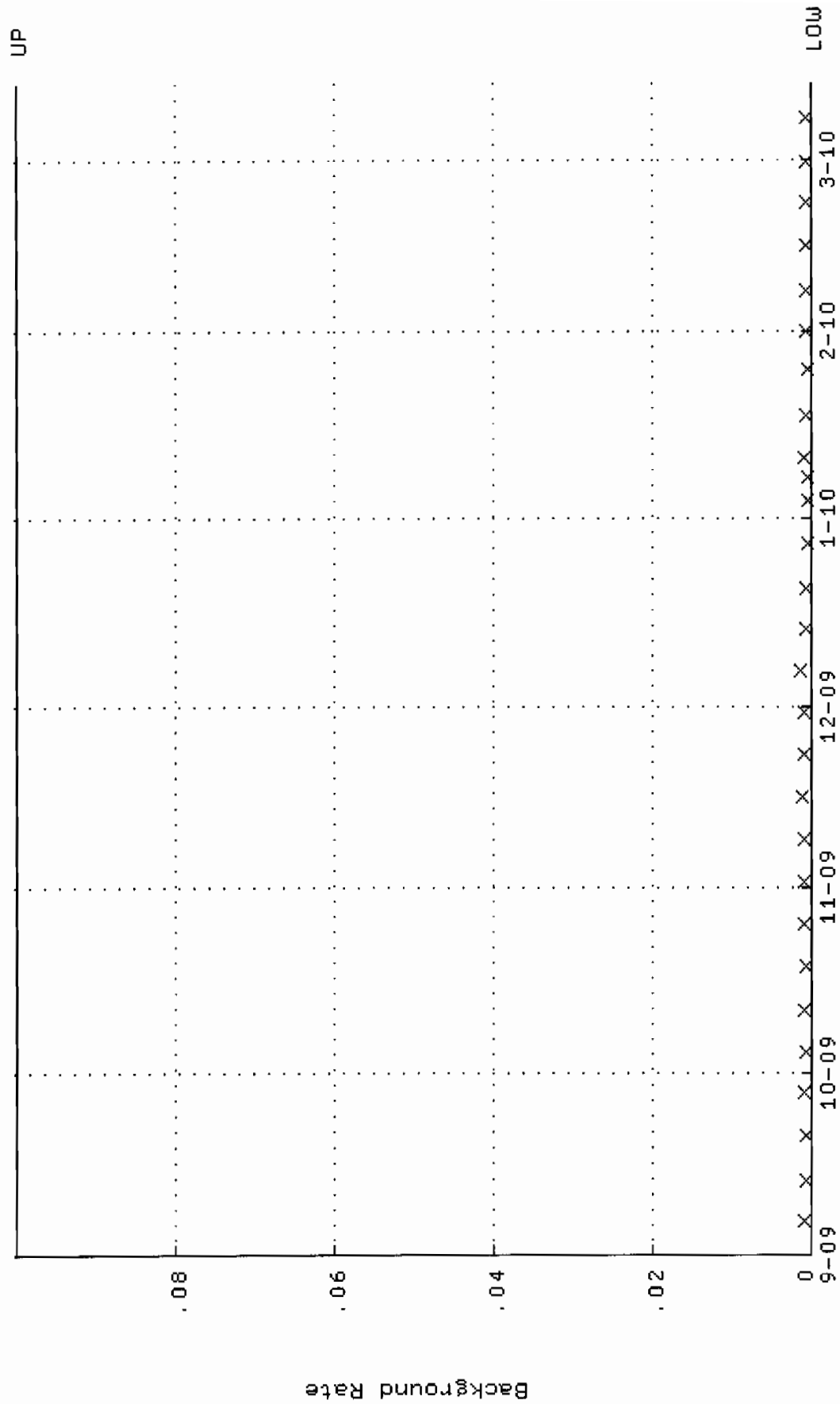
QA filename : DKA100:[ENV_ALPHA.QA.W]U097.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.338442 through 0.349972



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

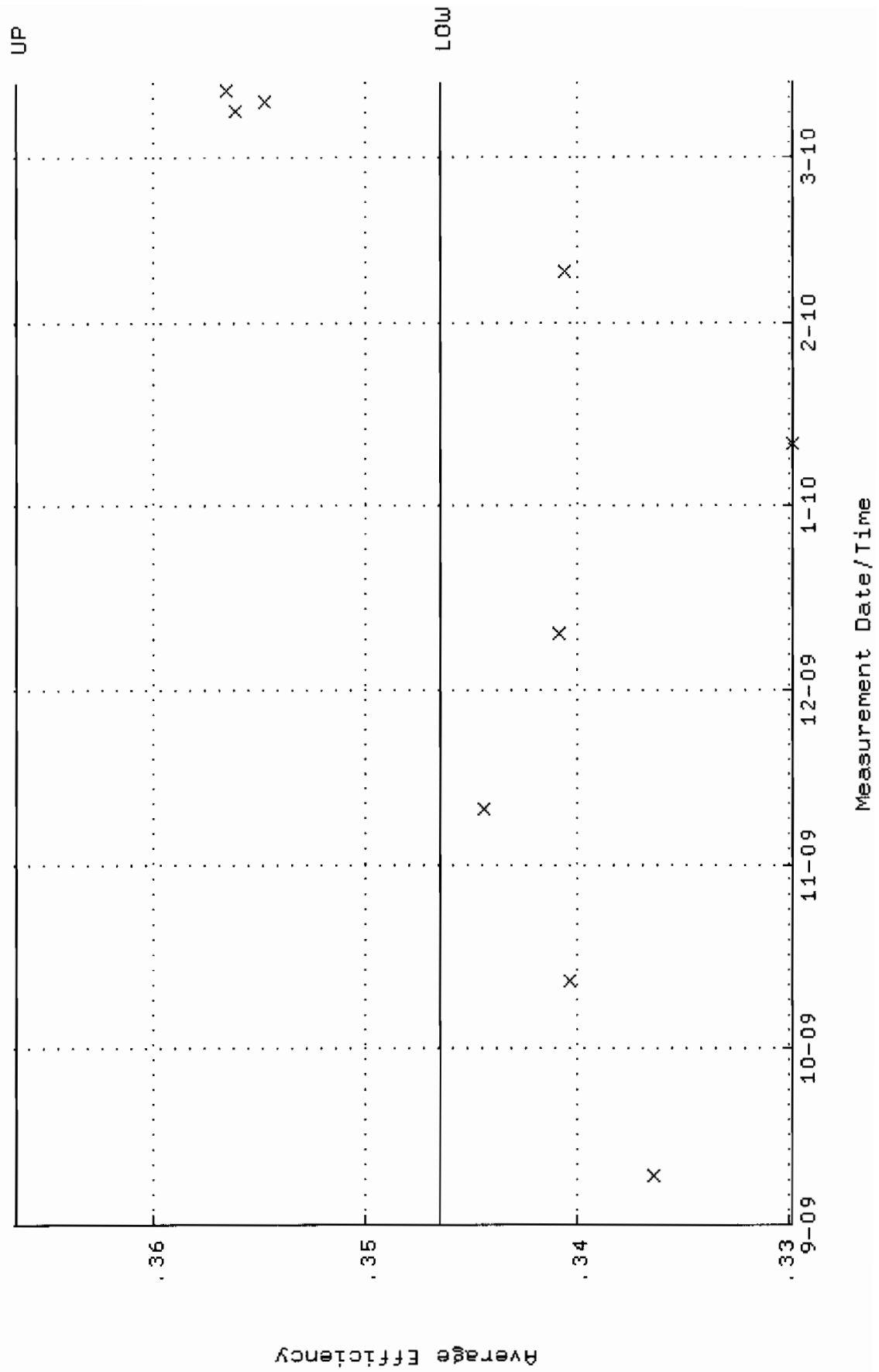


QA filename : DKA100:[ENV_ALPHA.QA.B]B097.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

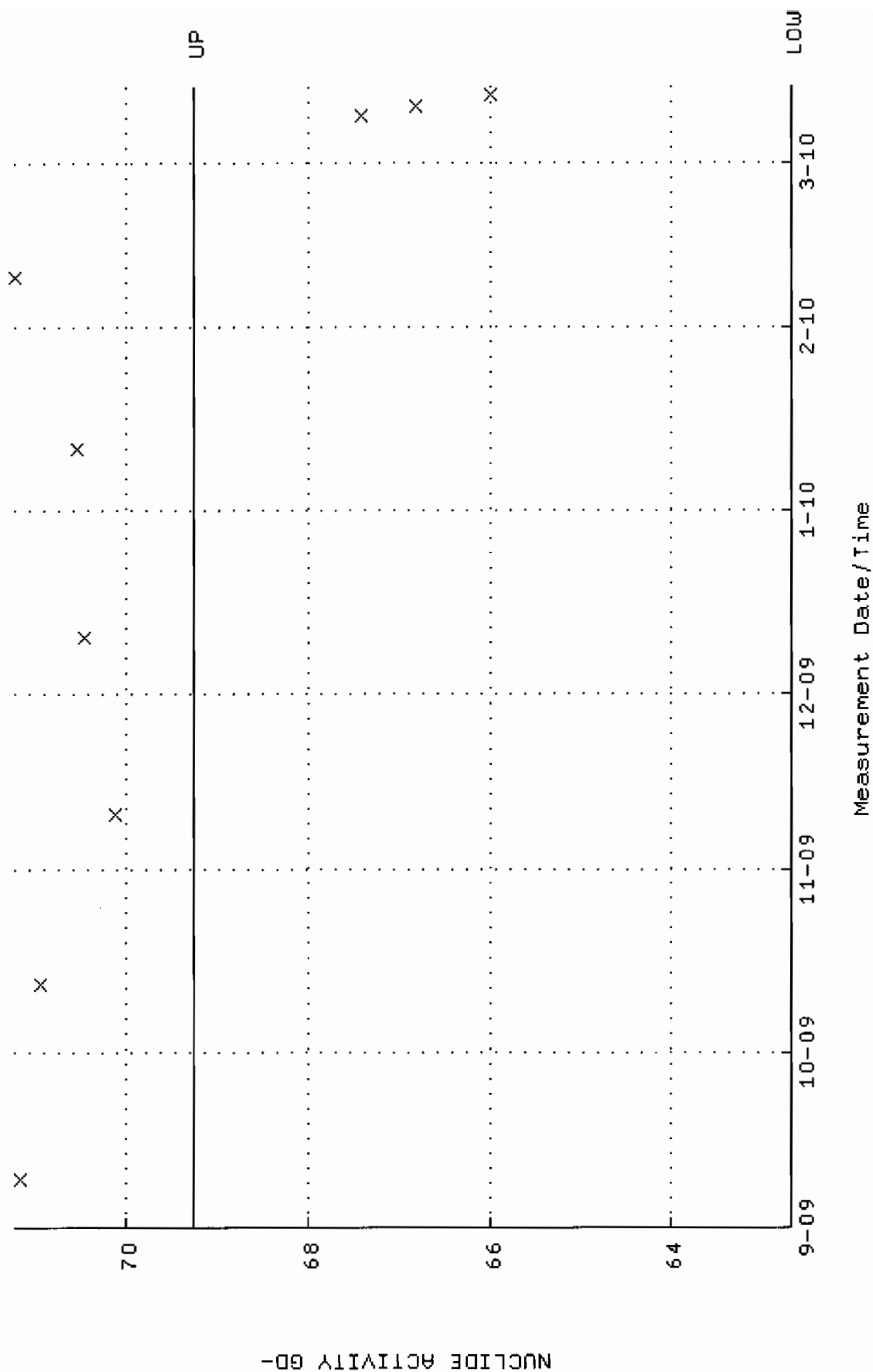


Measurement Date/Time

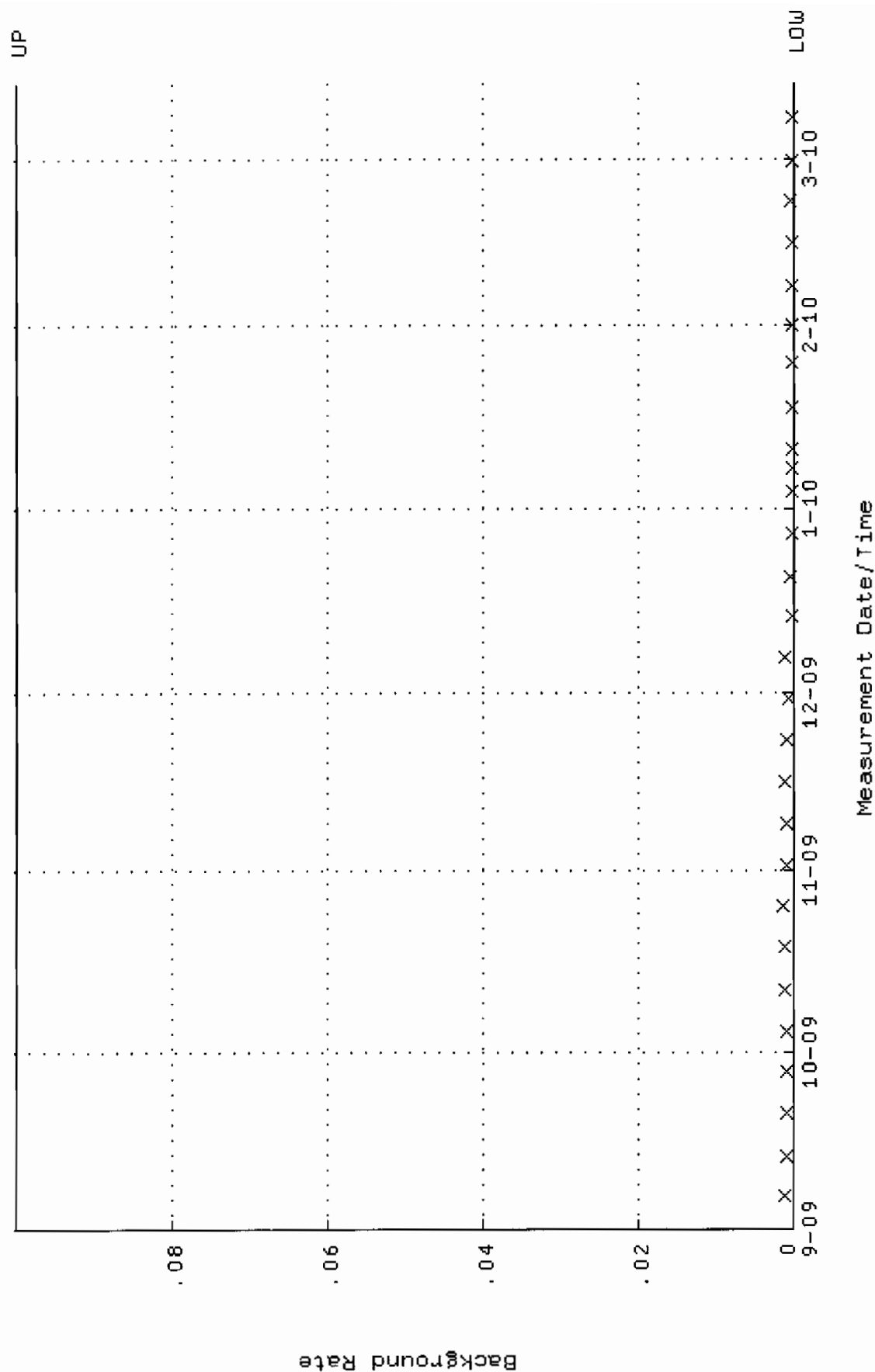
QA filename : DKA100:[ENV_ALPHA.QA.W]W098.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.346488 through 0.366488



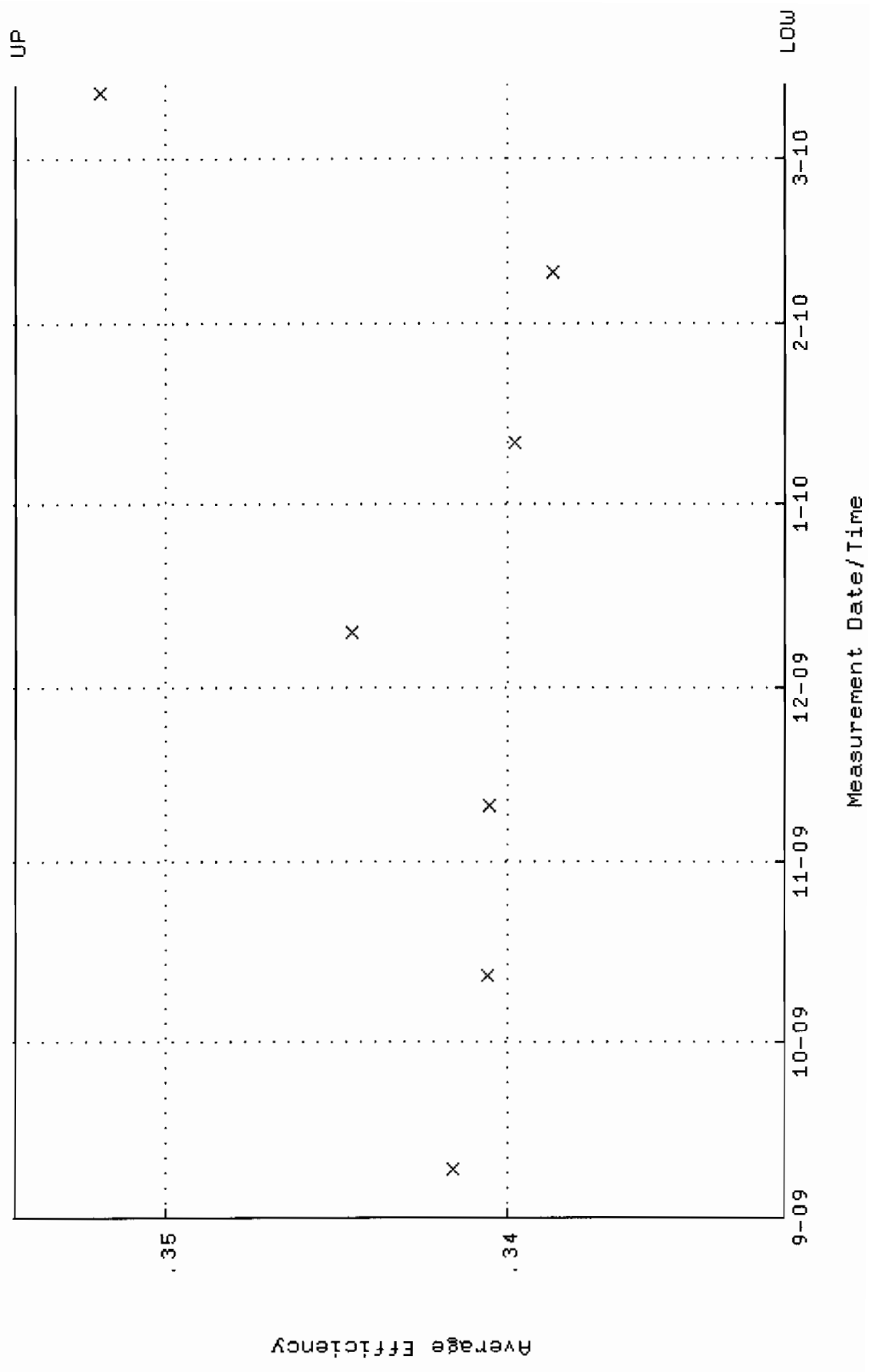
QA filename : DKA100:[ENV_ALPHA.QA.W]W098.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 62.6847 through 69.2831



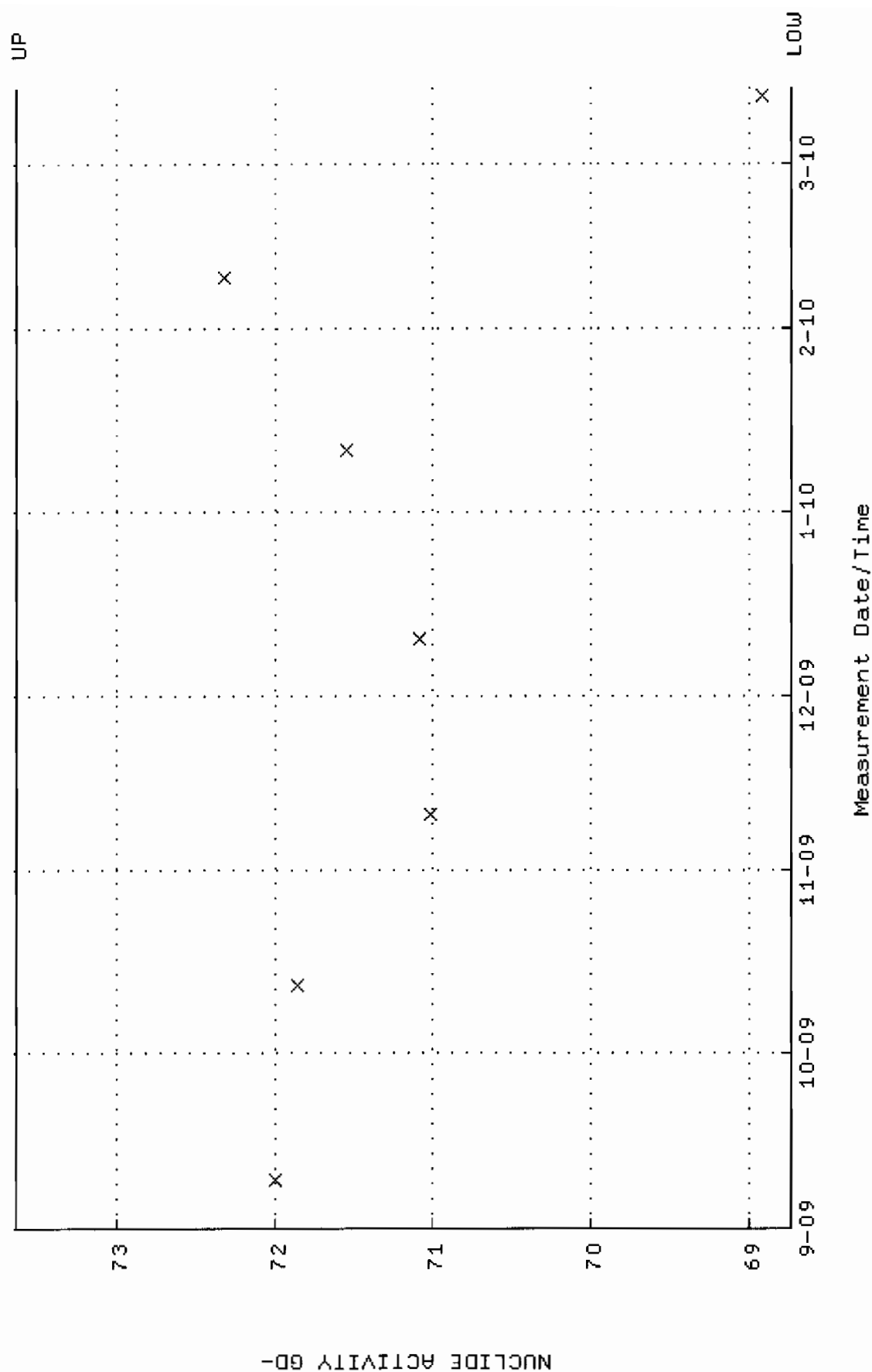
QA Filename : DKA100:[ENV_ALPHA.QA.B]B098.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



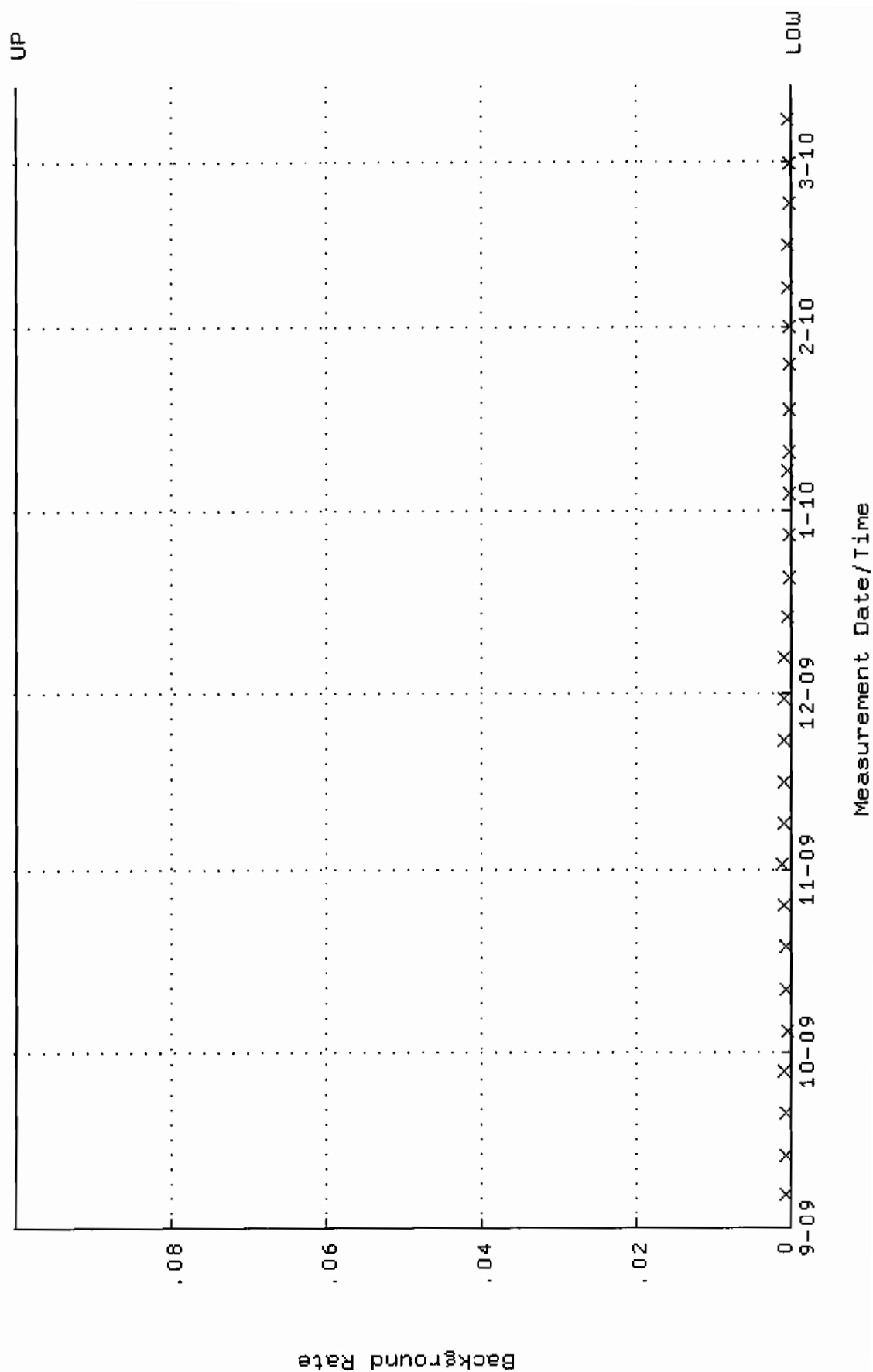
QA filename : DKA100:[ENV_ALPHA.QA.W]W099.QAF;2
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
Lower/Upper Lmts: 0.331877 through 0.354429



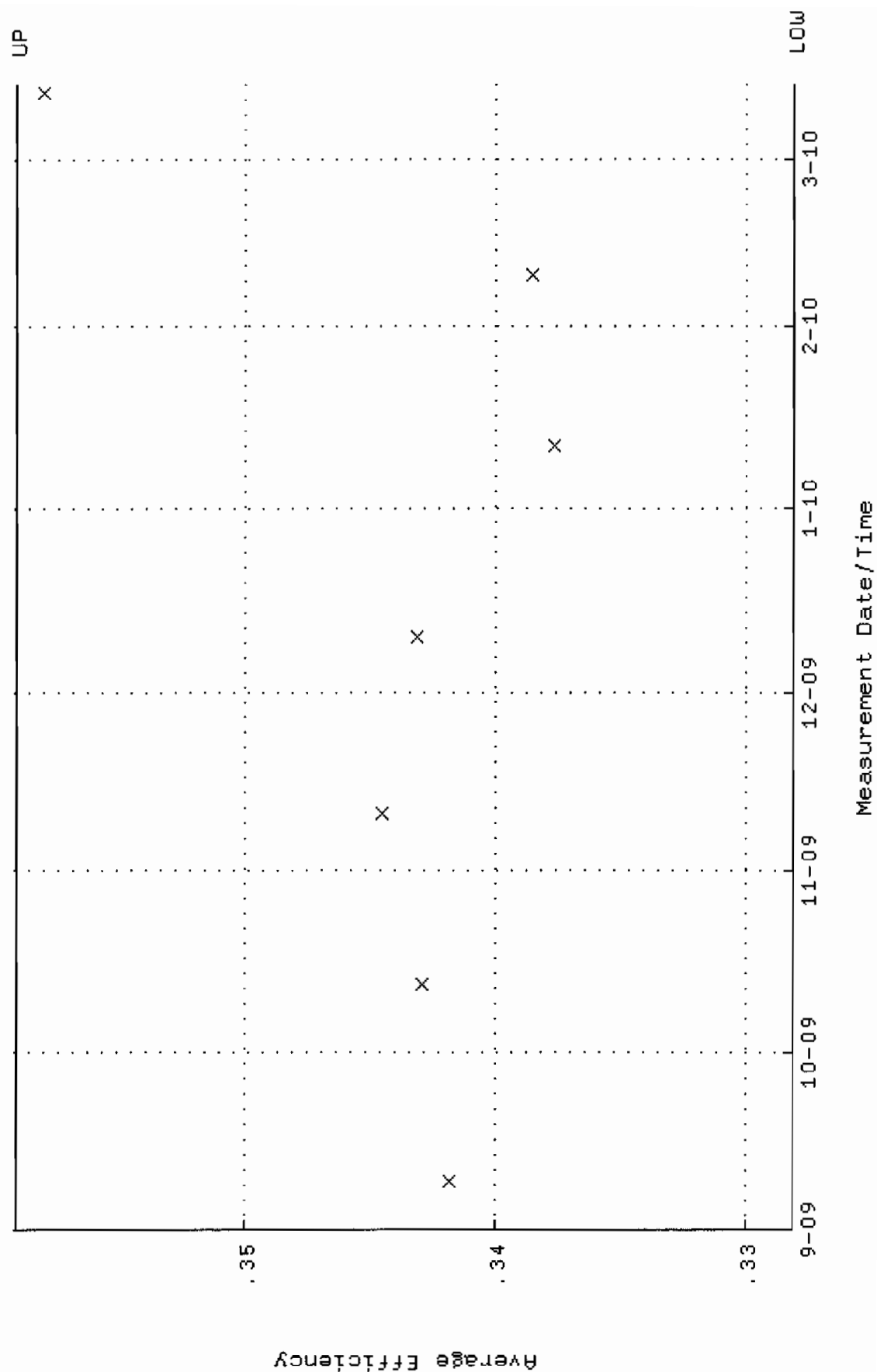
QA filename : DKA100:[ENV_ALPHA.QA.W]W099.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 68.7313 through 73.6359



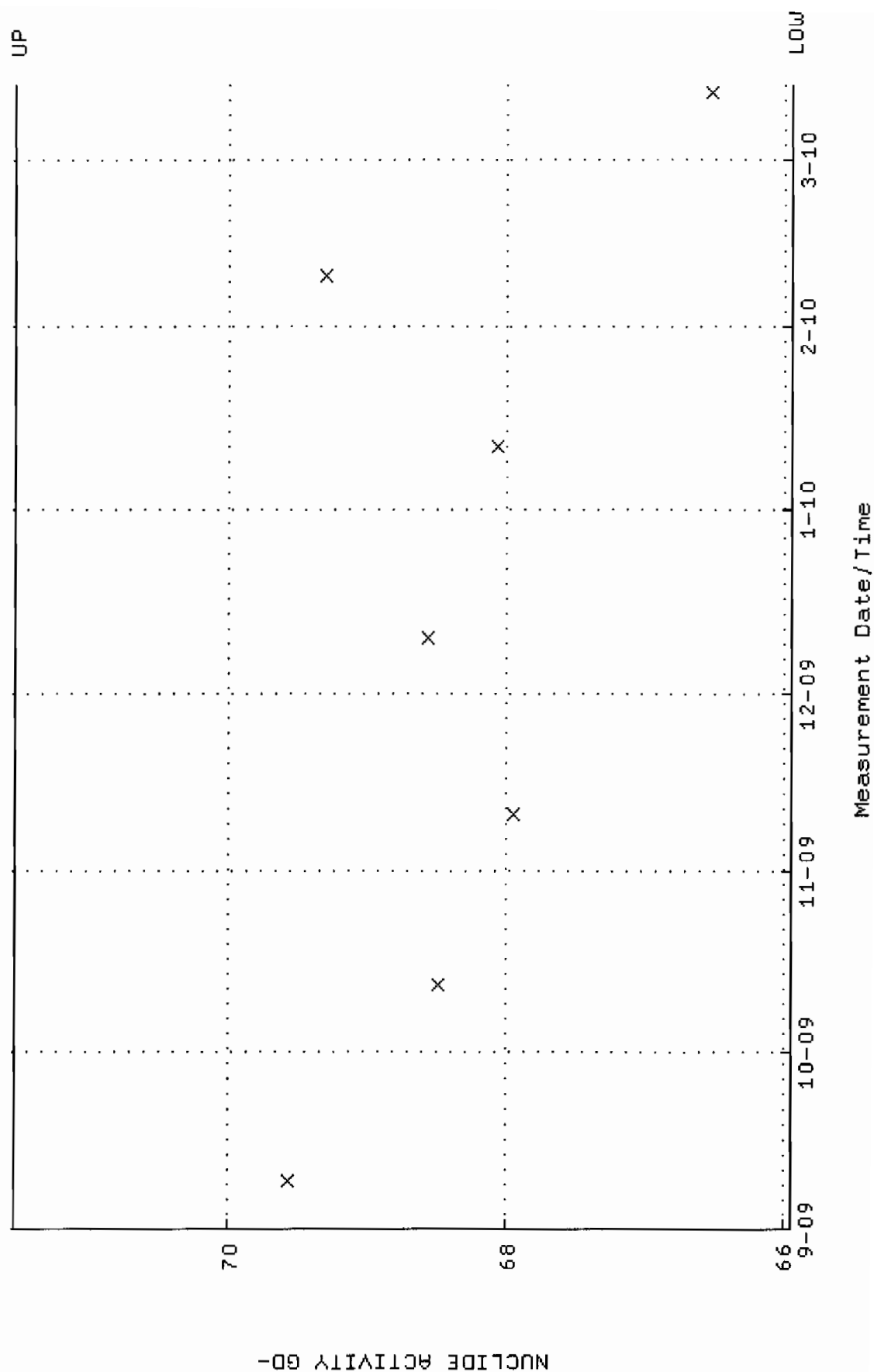
QA filename : DKA100:[ENV_ALPHA.QA.B]B099.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



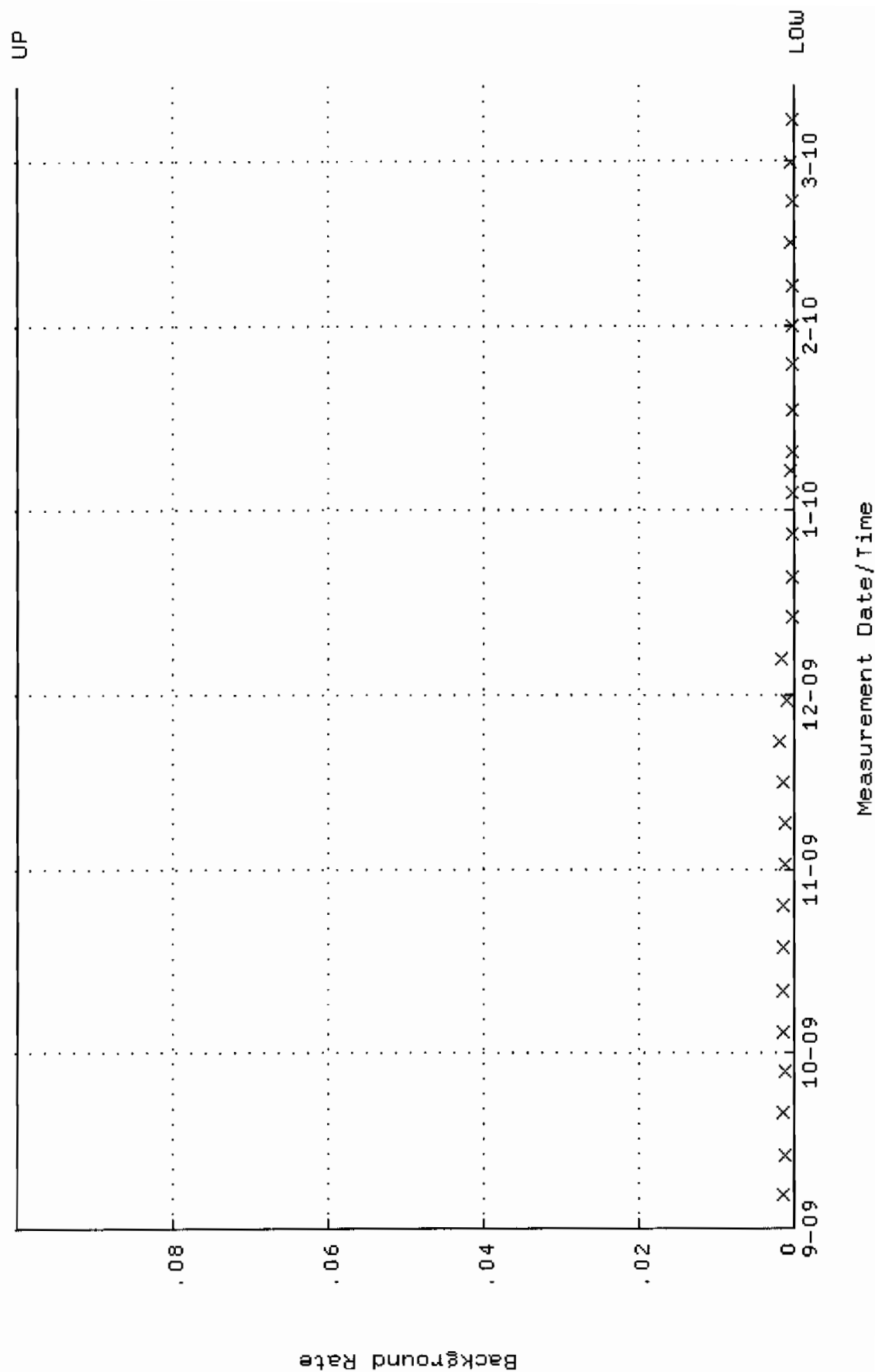
QA filename : DKA100:[ENV_ALPHA.QA.W]w100.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.328134 through 0.359116



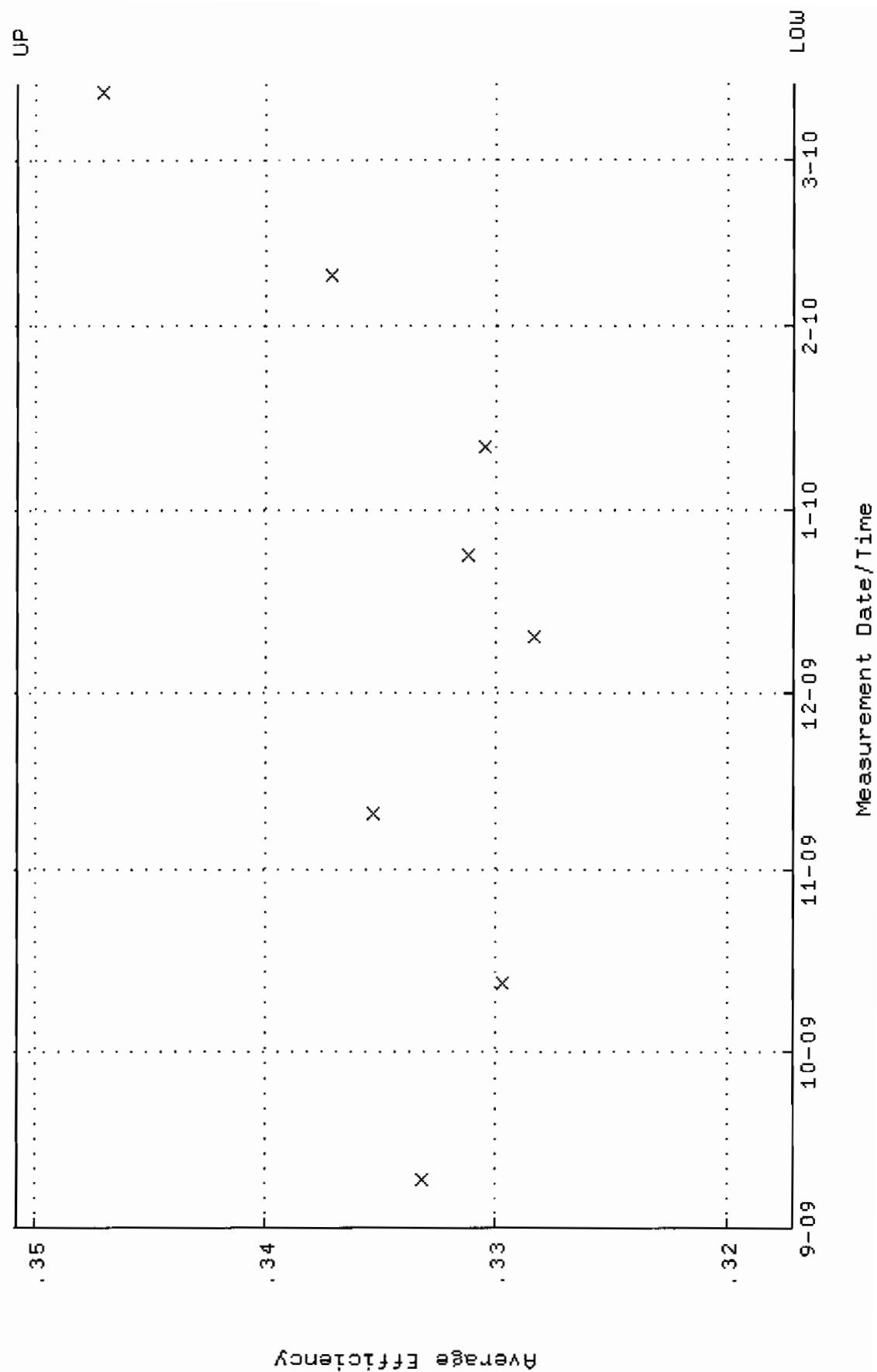
QA filename : DKA100:[ENV_ALPHA.QA.W]w100.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:50 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 65.9445 through 71.5395



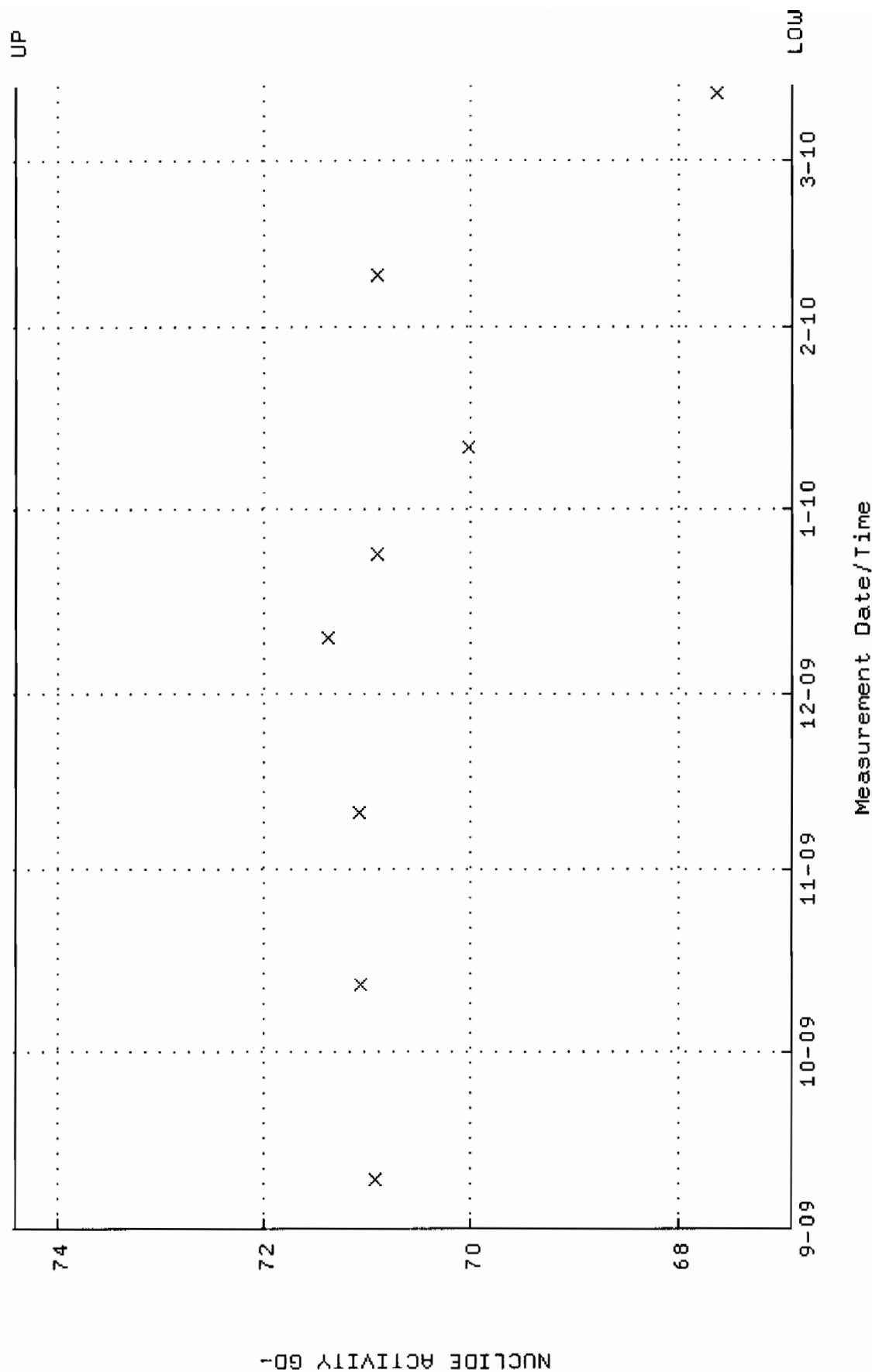
QA filename : DKA100:[ENV_ALPHA.QA.B]B100.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



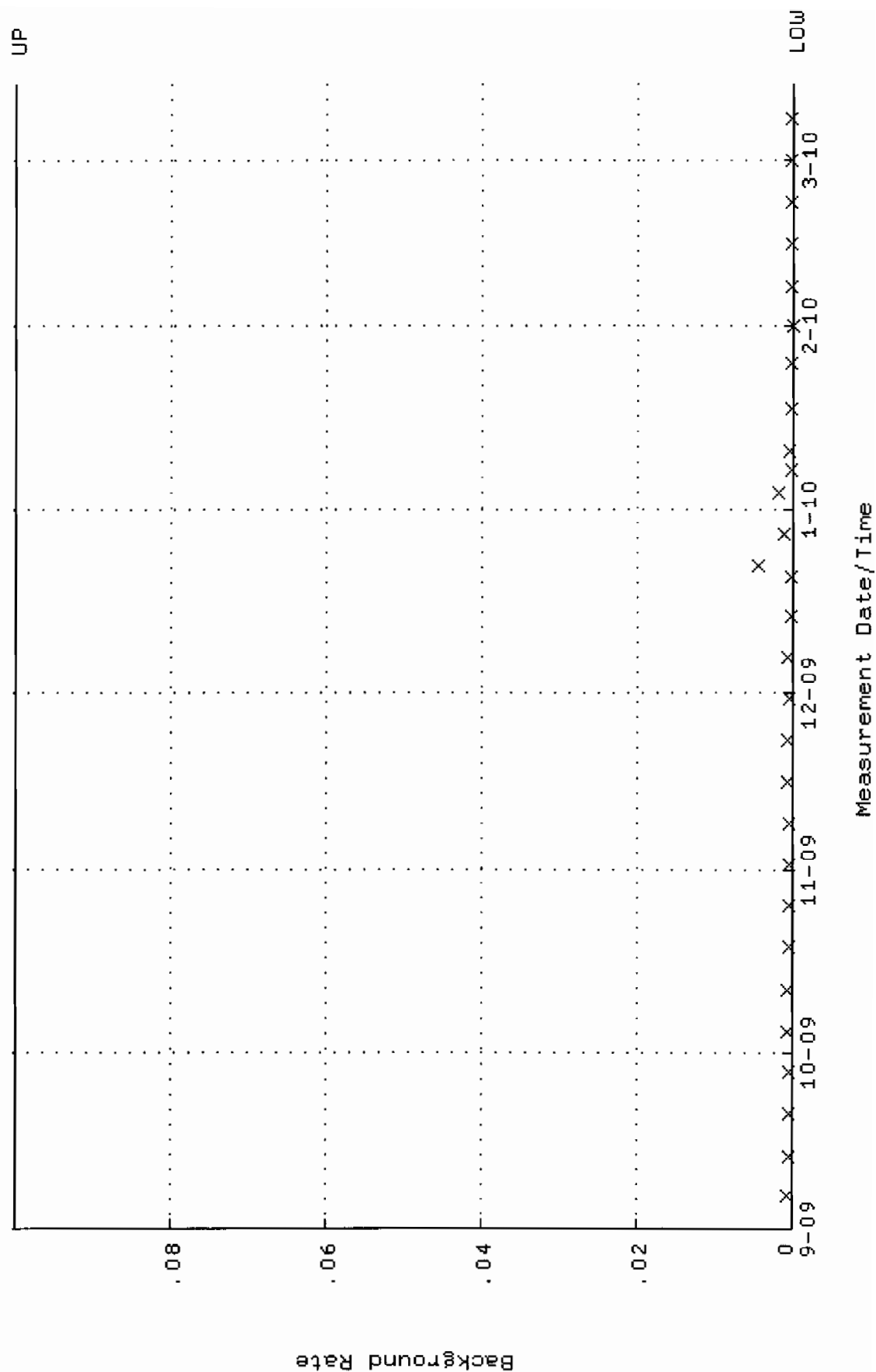
QA filename : DKA100:[ENV_ALPHA.QA.W]W101.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:51 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.317122 through 0.350794



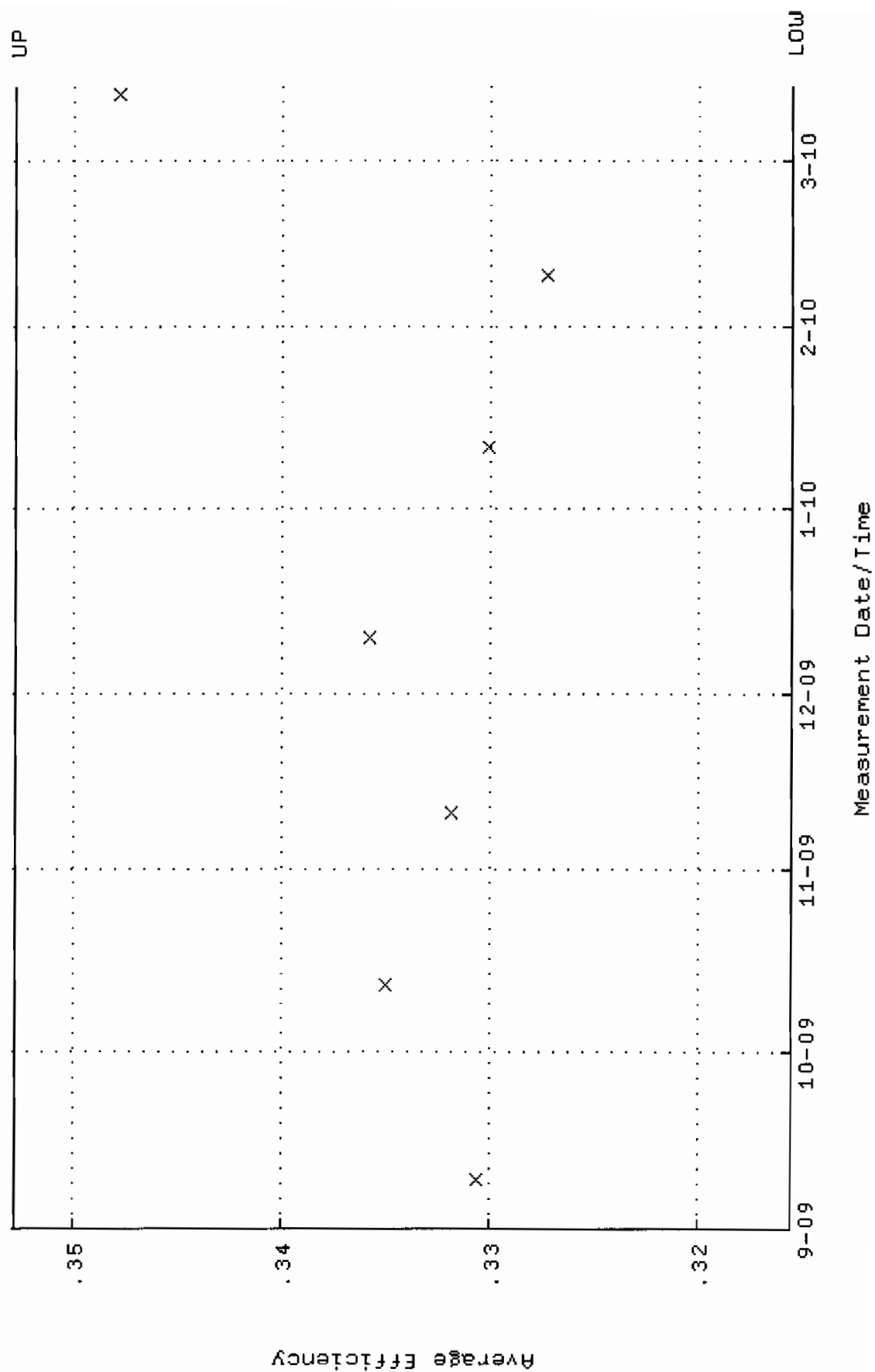
QA filename : DKA100:[ENV_ALPHA.QA.W]W101.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:51 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 66.8994 through 74.4026



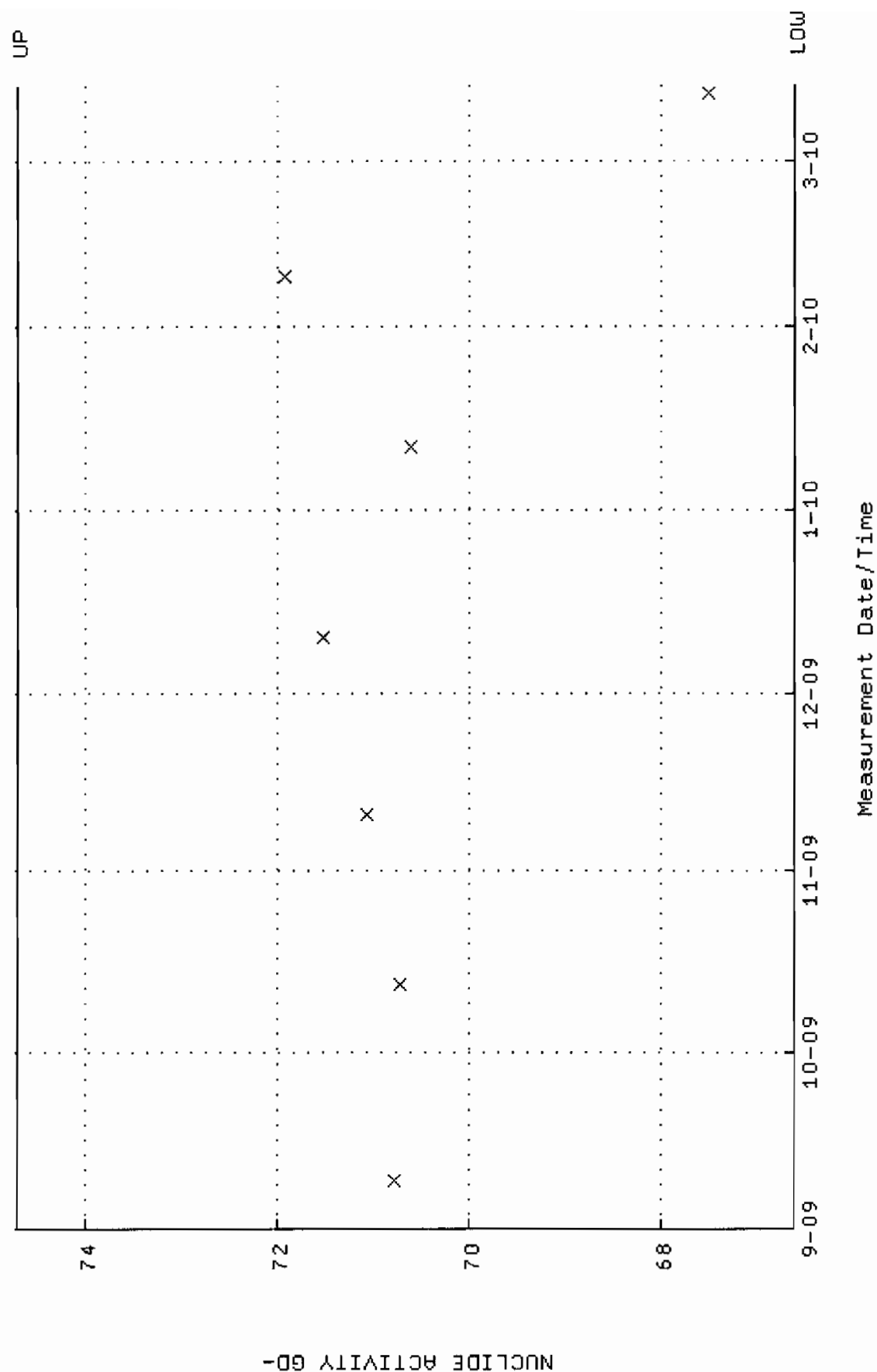
QA filename : DKA100:[ENV_ALPHA.QA.B]B101.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



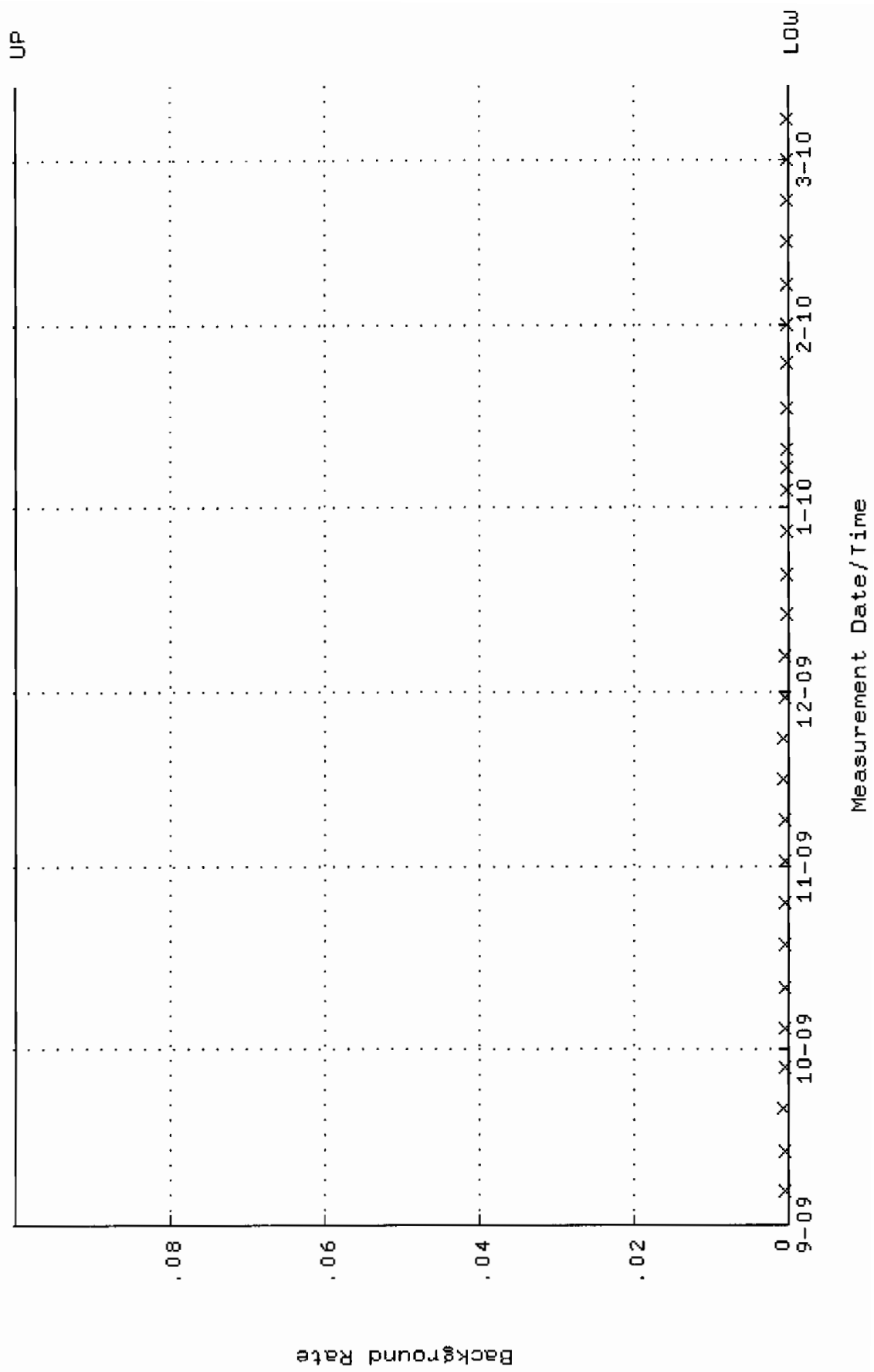
QA filename : DKA100:[ENV_ALPHA.QA.W]w102.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:51 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.315554 through 0.352816



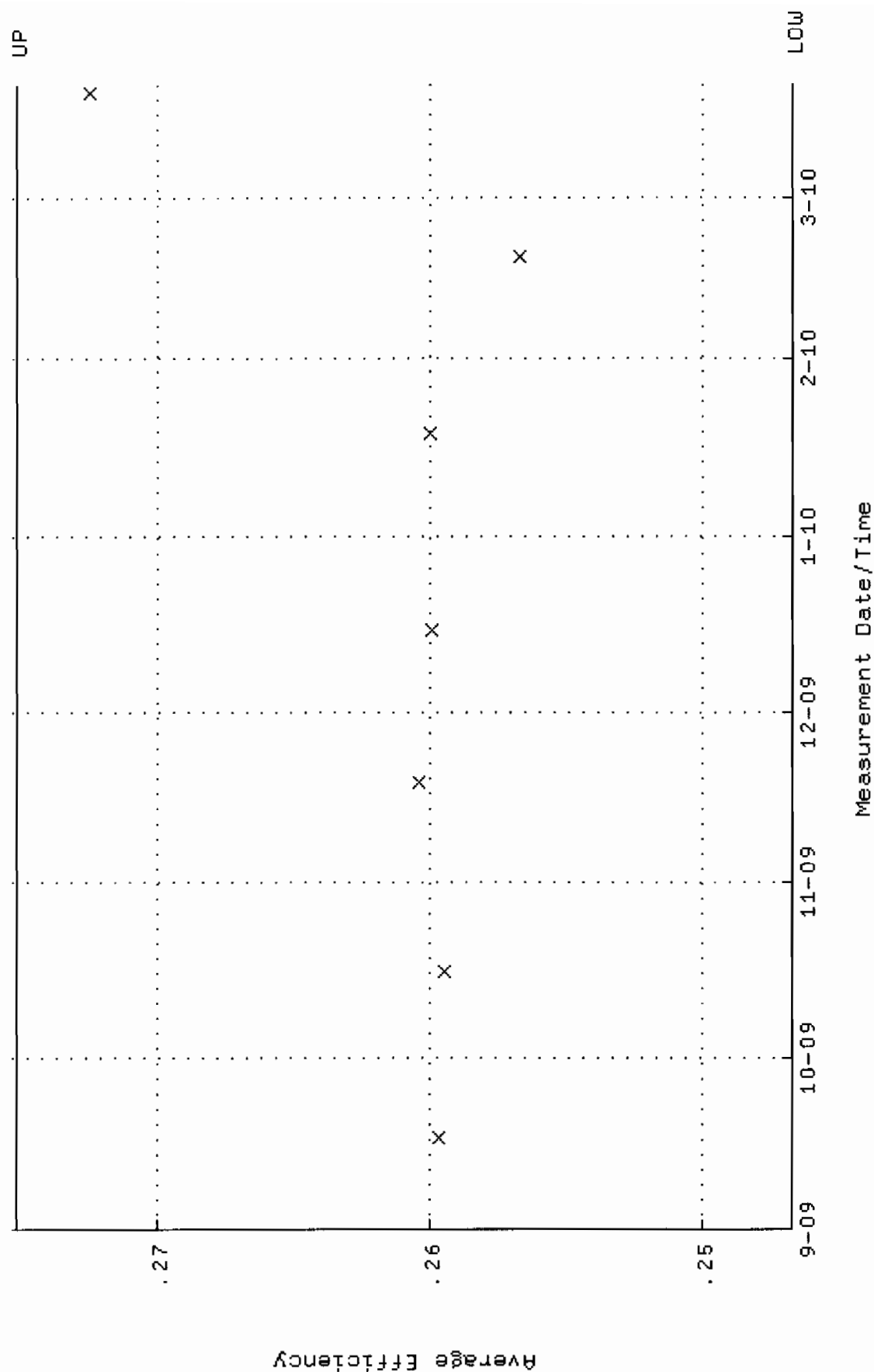
QA filename : DKA100:[ENV_ALPHA.QA.W]W102.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:51 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 66.6183 through 74.7119



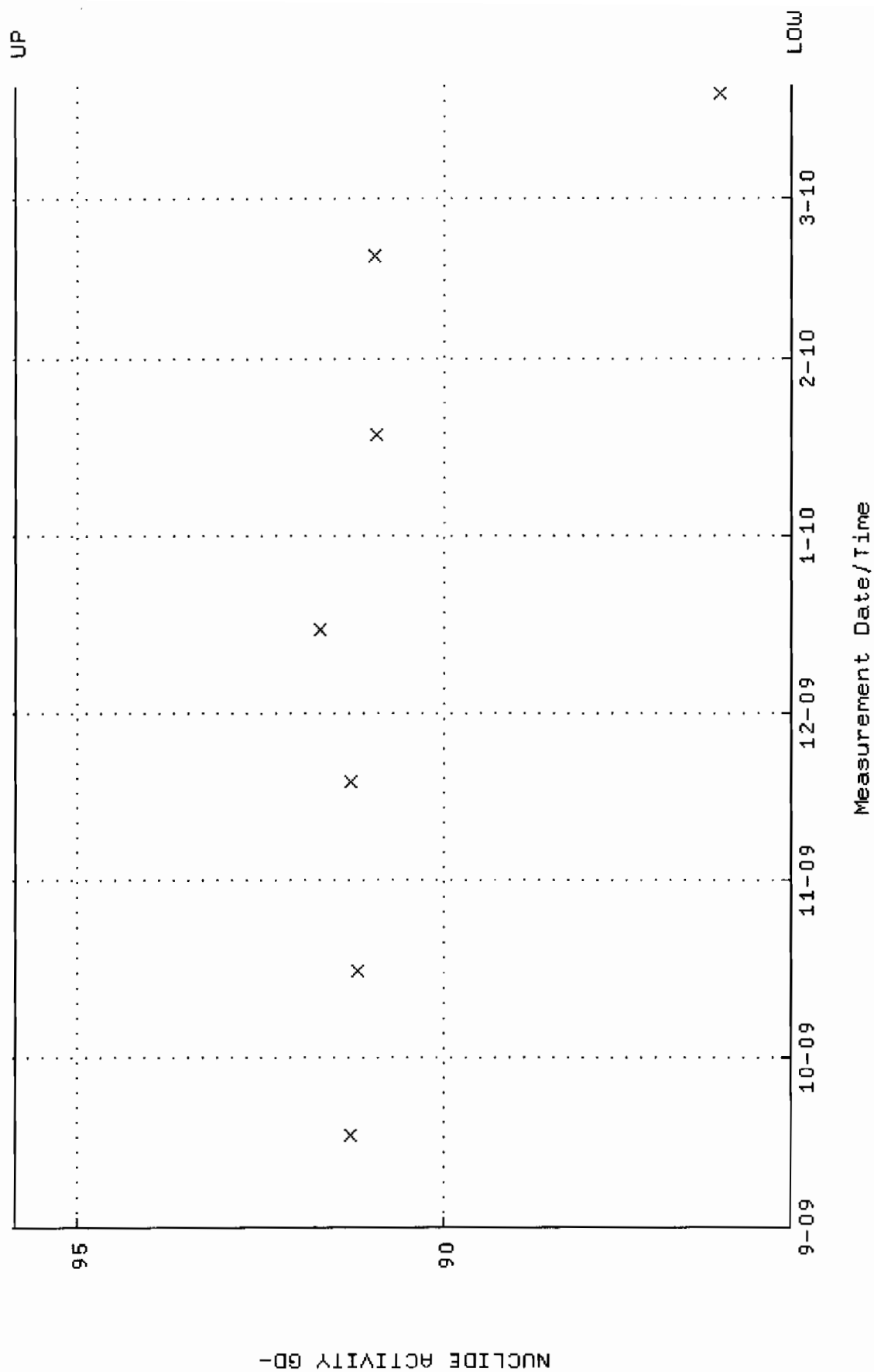
QA filename : DKA100:[ENV_ALPHA.QA.B]B102.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



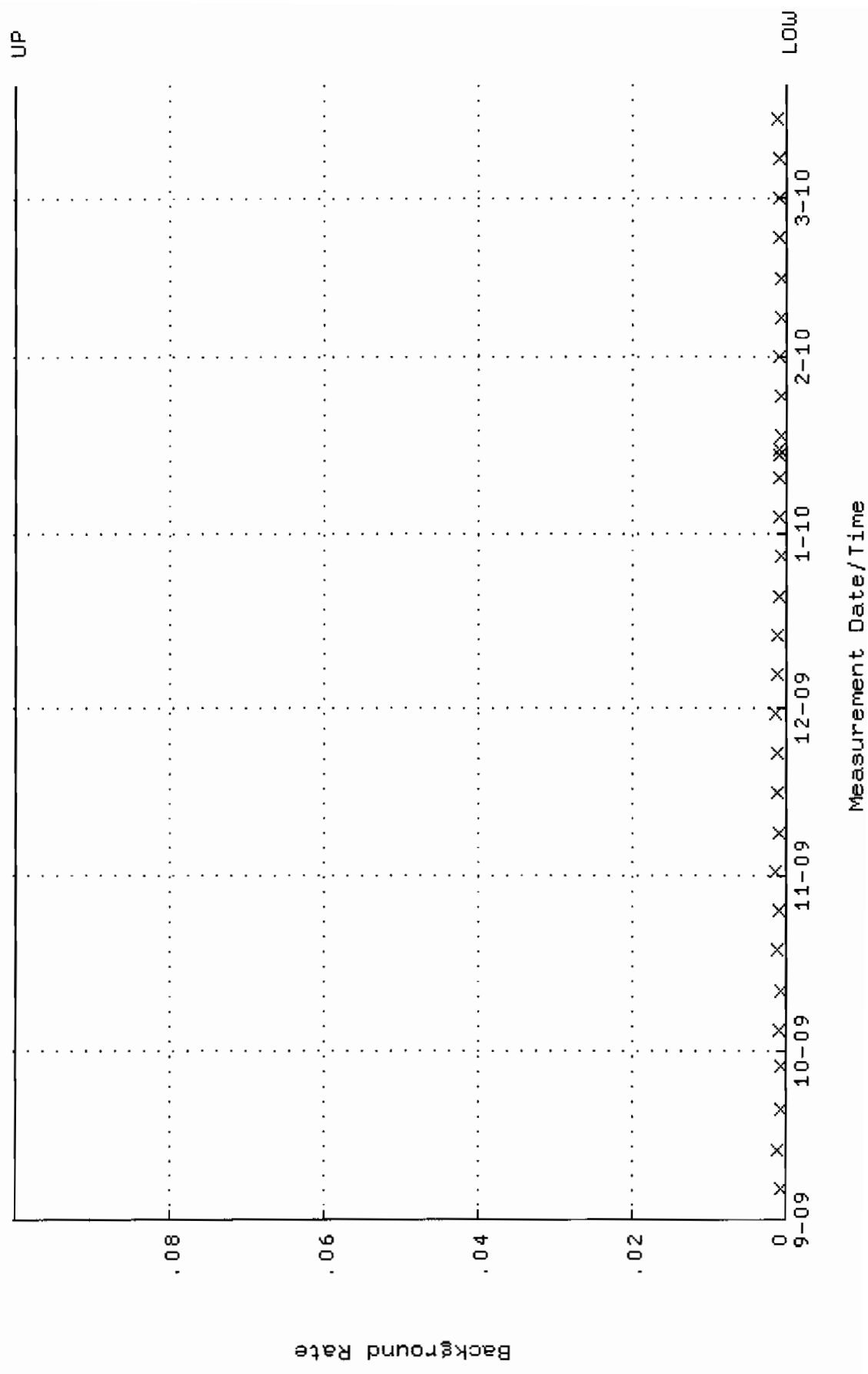
QA filename : DKA100:[ENV_ALPHA.QA.W]W123.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:40 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.246718 through 0.275204



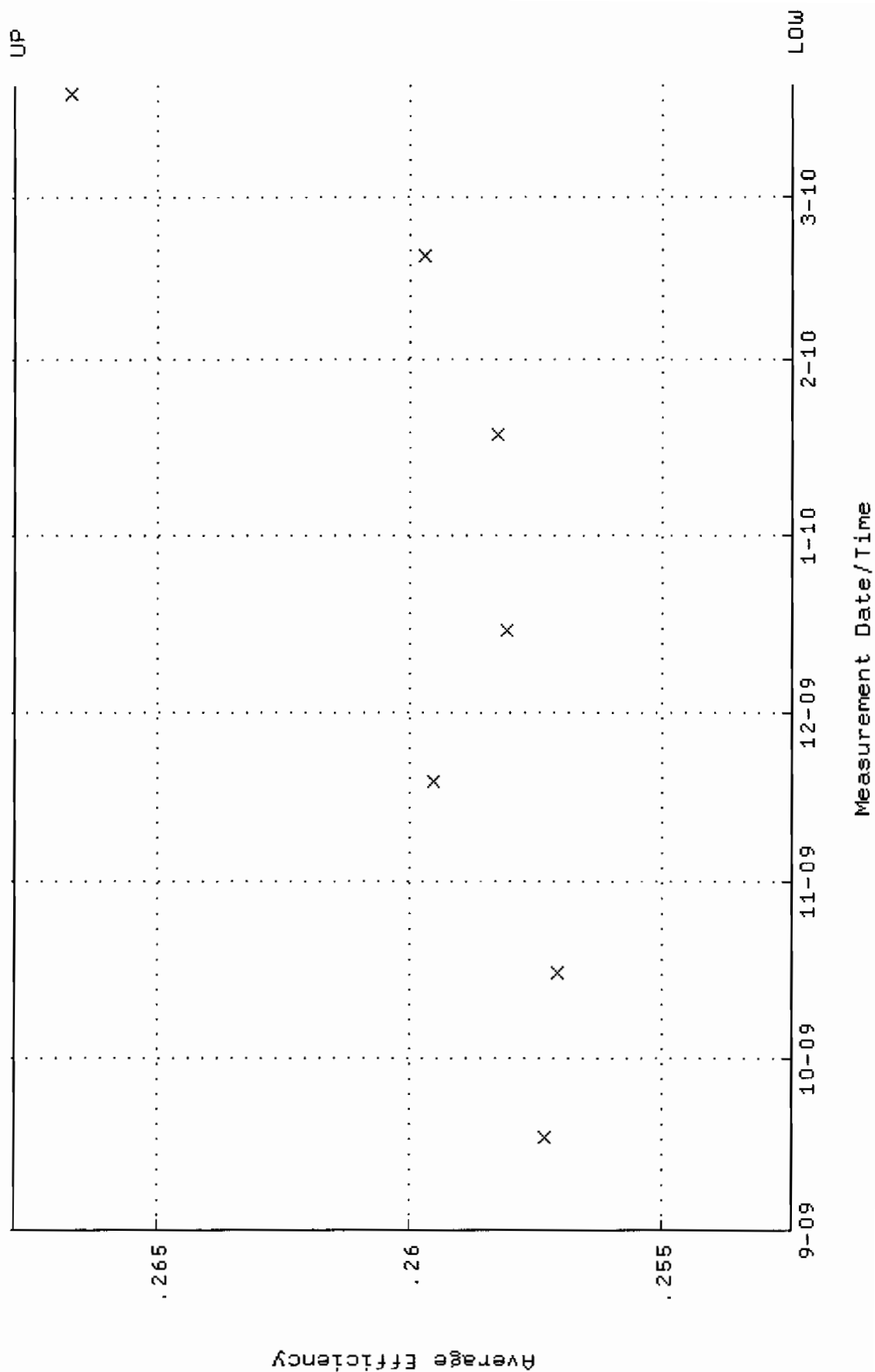
QA filename : DKA100:[ENV_ALPHA.QA.W]W123.QAF;1
 Parameter Name : NLAIVITY-G0148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:40 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.2791 through 95.8339



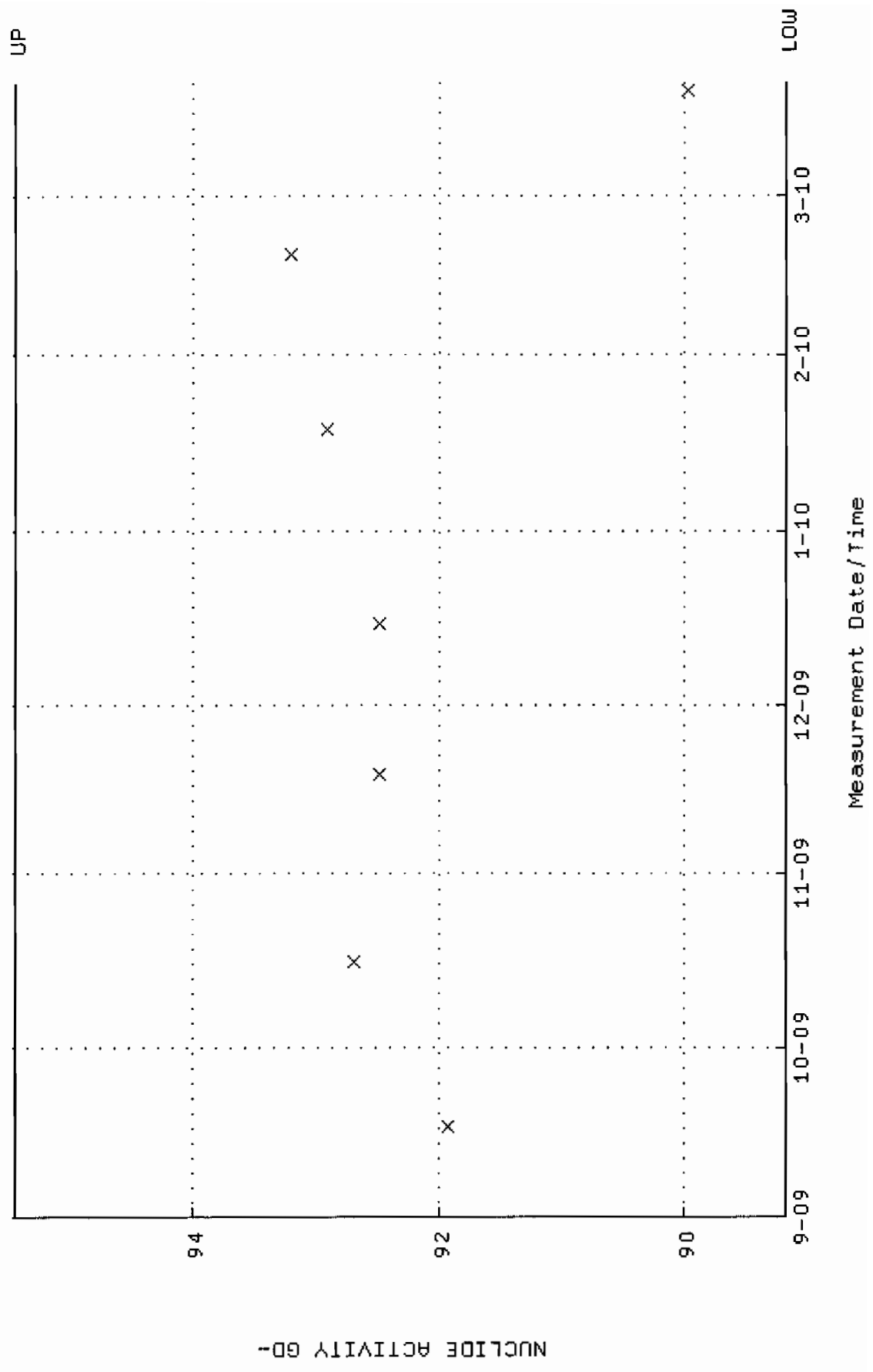
QA filename : DKA100:[ENV_ALPHA.QA.B]B123.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:52 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



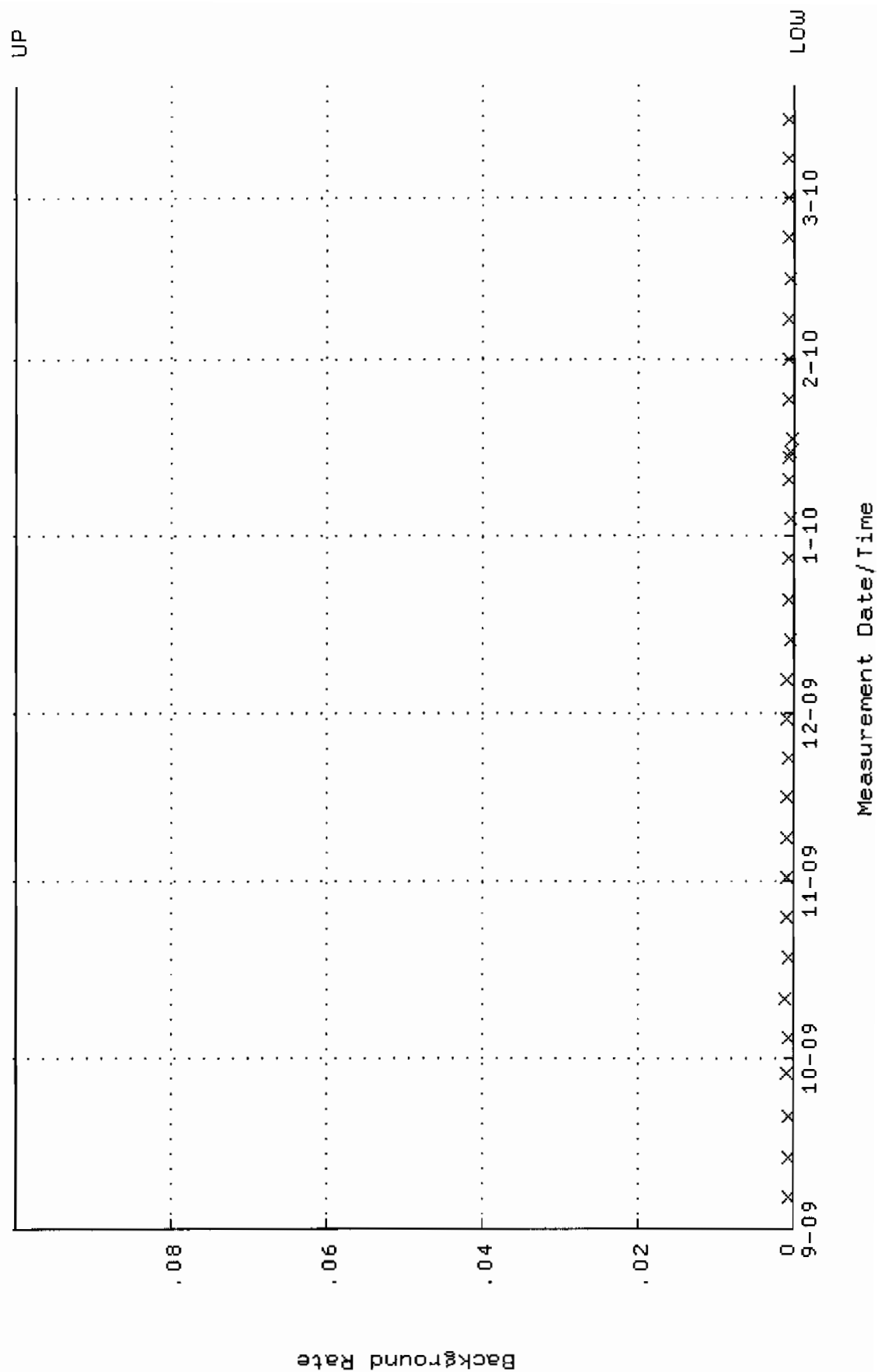
QA filename : DKA100:[ENV_ALPHA.QA.W]w124.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:47 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.252448 through 0.267830



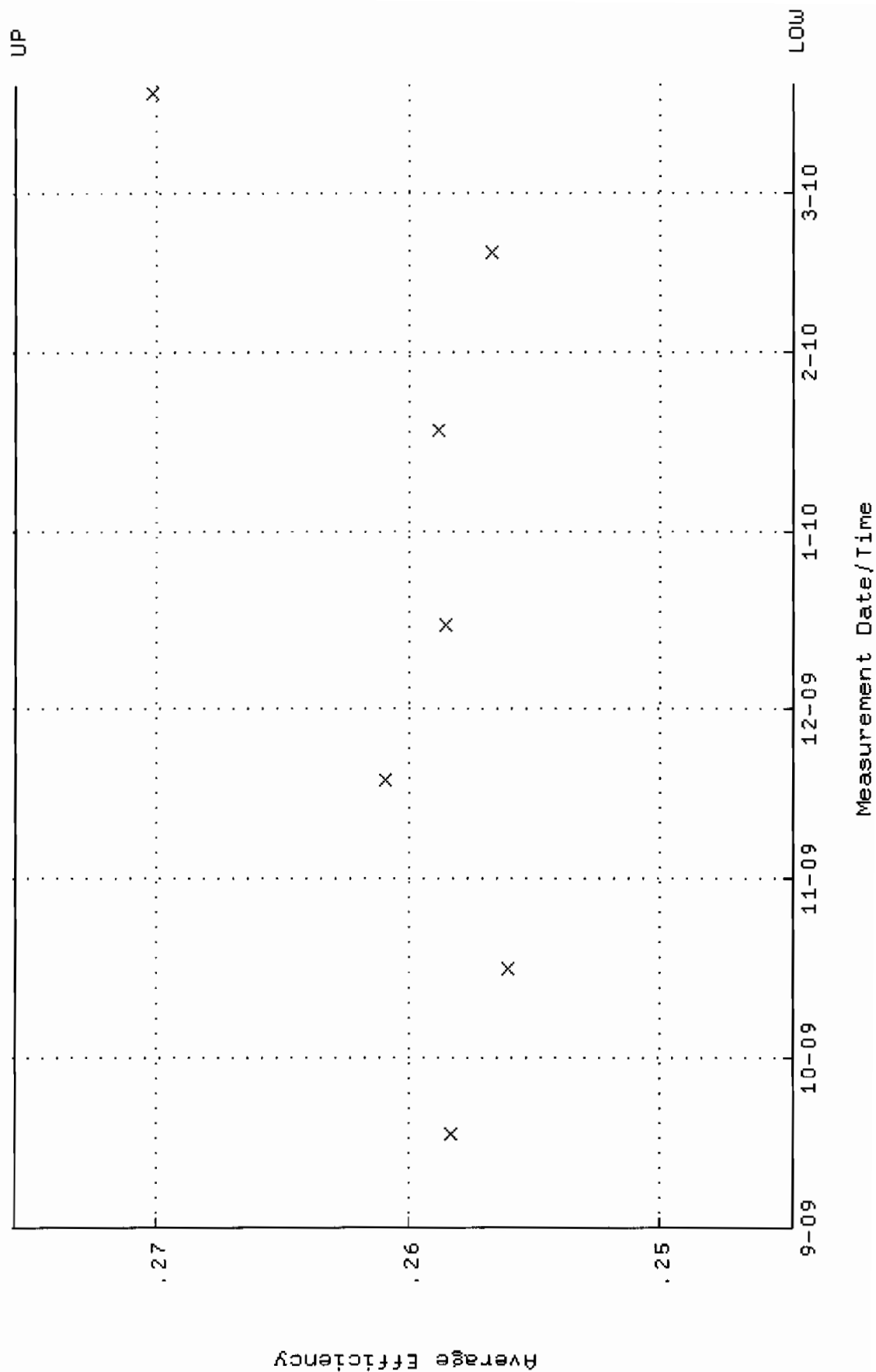
QA filename : DKA100:[ENV_ALPHA.QA.W]W124.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:47 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.1805 through 95.4483



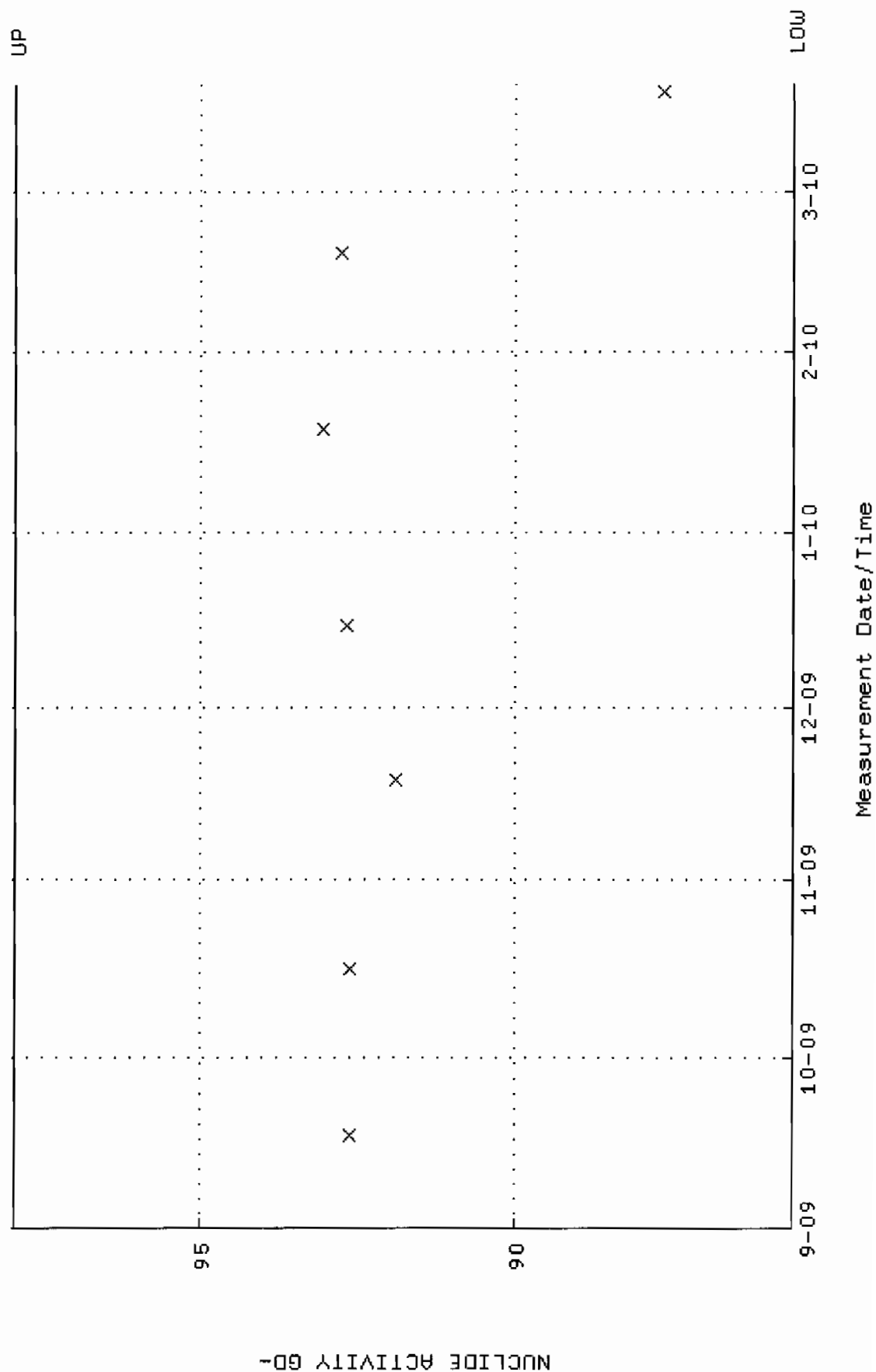
QA filename : DKA100:[ENV_ALPHA.QA.B]B124.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:56 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



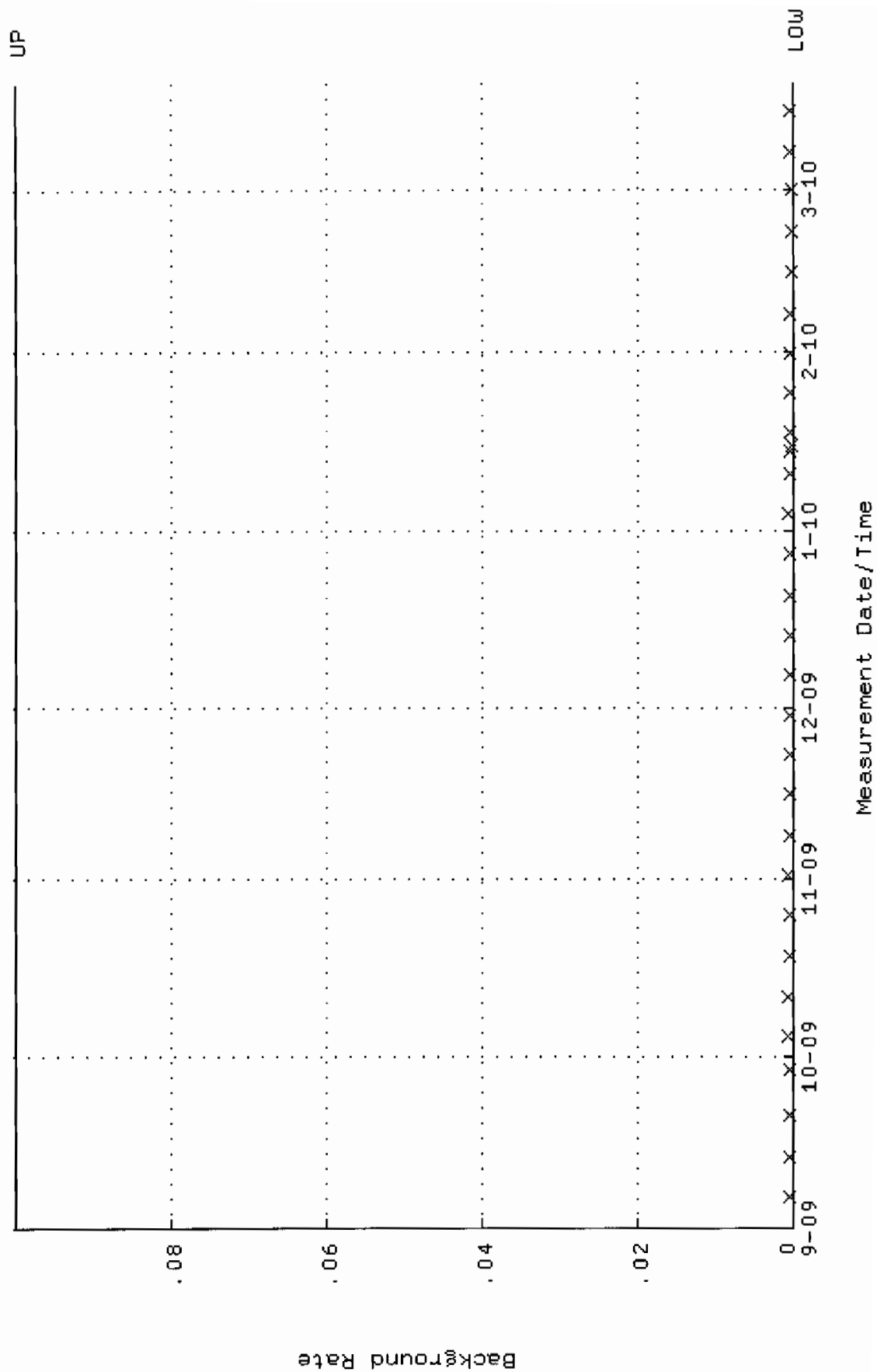
QA filename : DKA100:[ENV_ALPHA,QA.W]W125.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:54 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.244676 through 0.275622



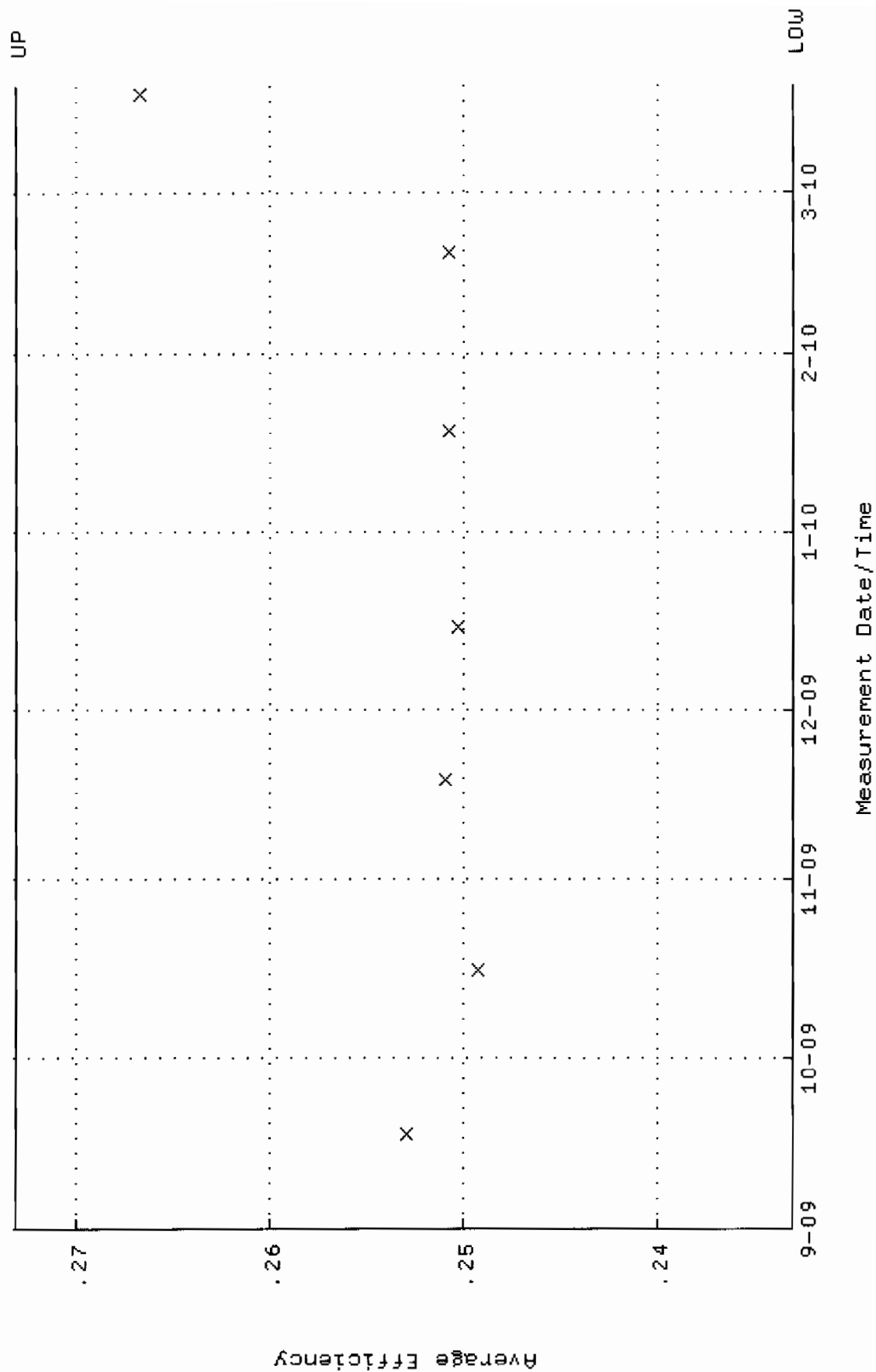
QA filename : DKA100:[ENV_ALPHA,QA.W]W125.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:54 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.5532 through 97.9632



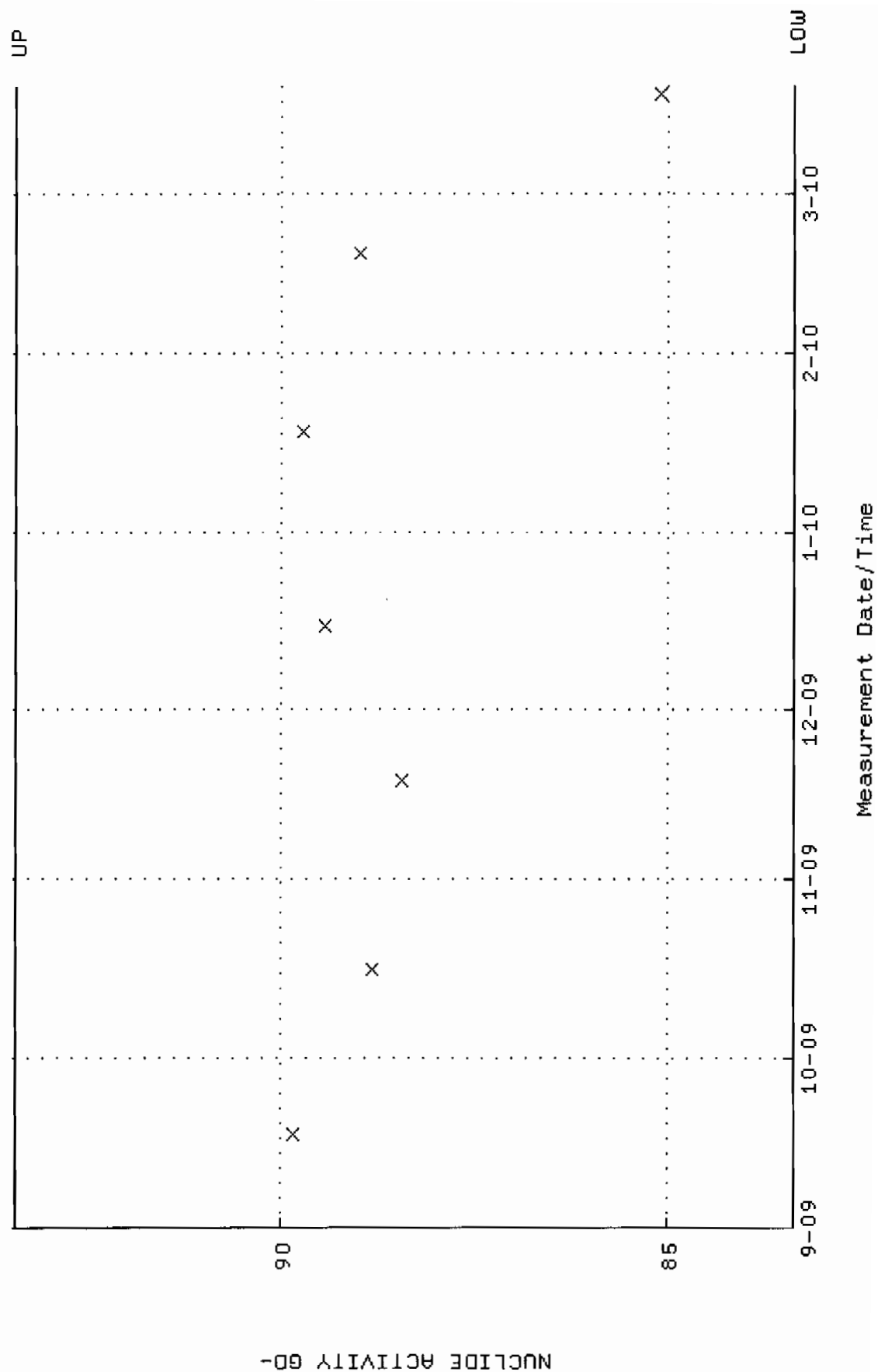
QA filename : DKA100:[ENV_ALPHA.QA.B]B125.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:01 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W126.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:03 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.233045 through 0.273065



QA filename : DKA100:[ENV_ALPHA.QA.W]W126.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:03 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.3533 through 93.4269

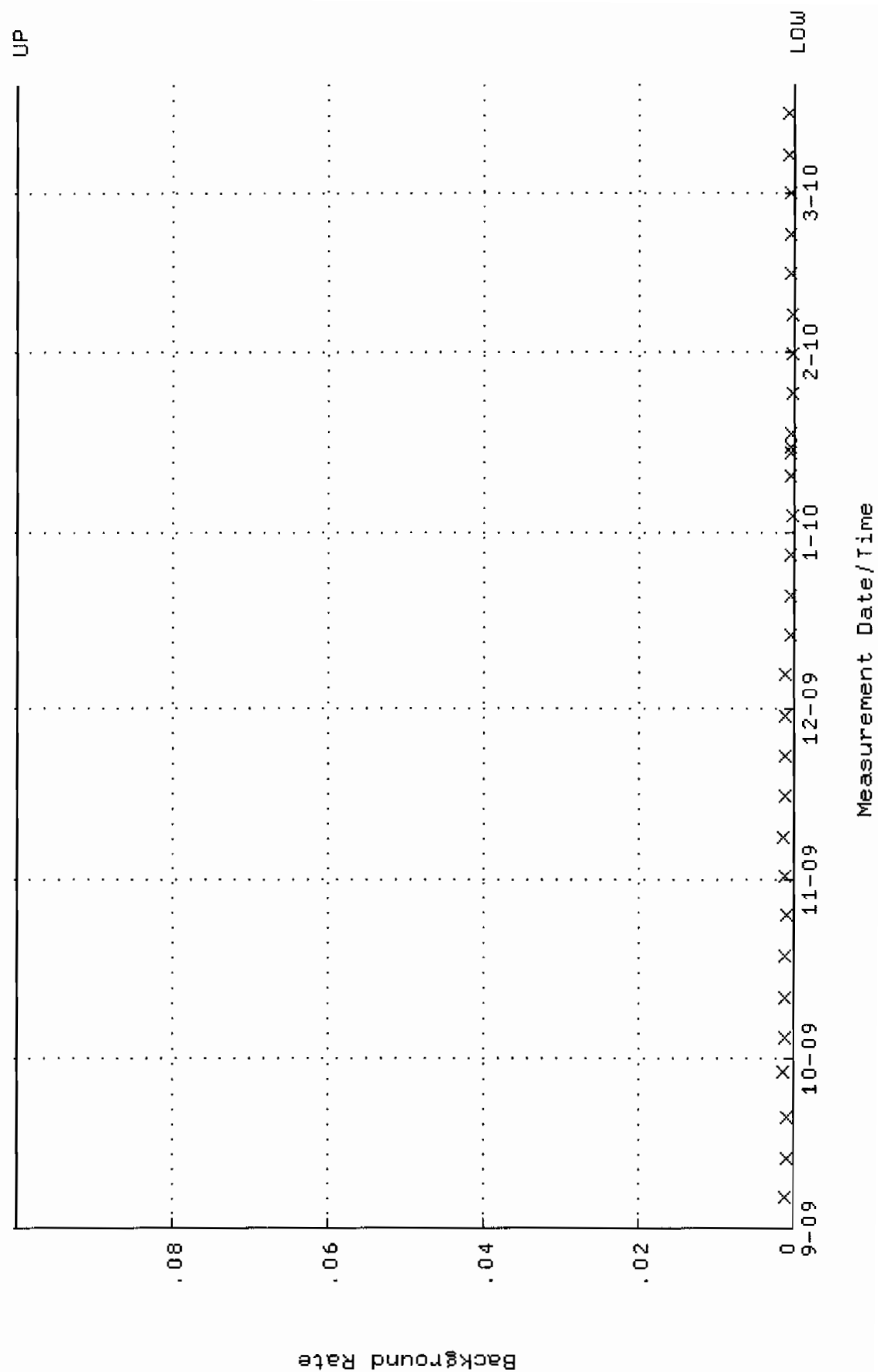


QA filename : OKA100:[ENV_ALPHA.QA.B]B126.QAF;1

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:41:05 through 19-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 0.100000

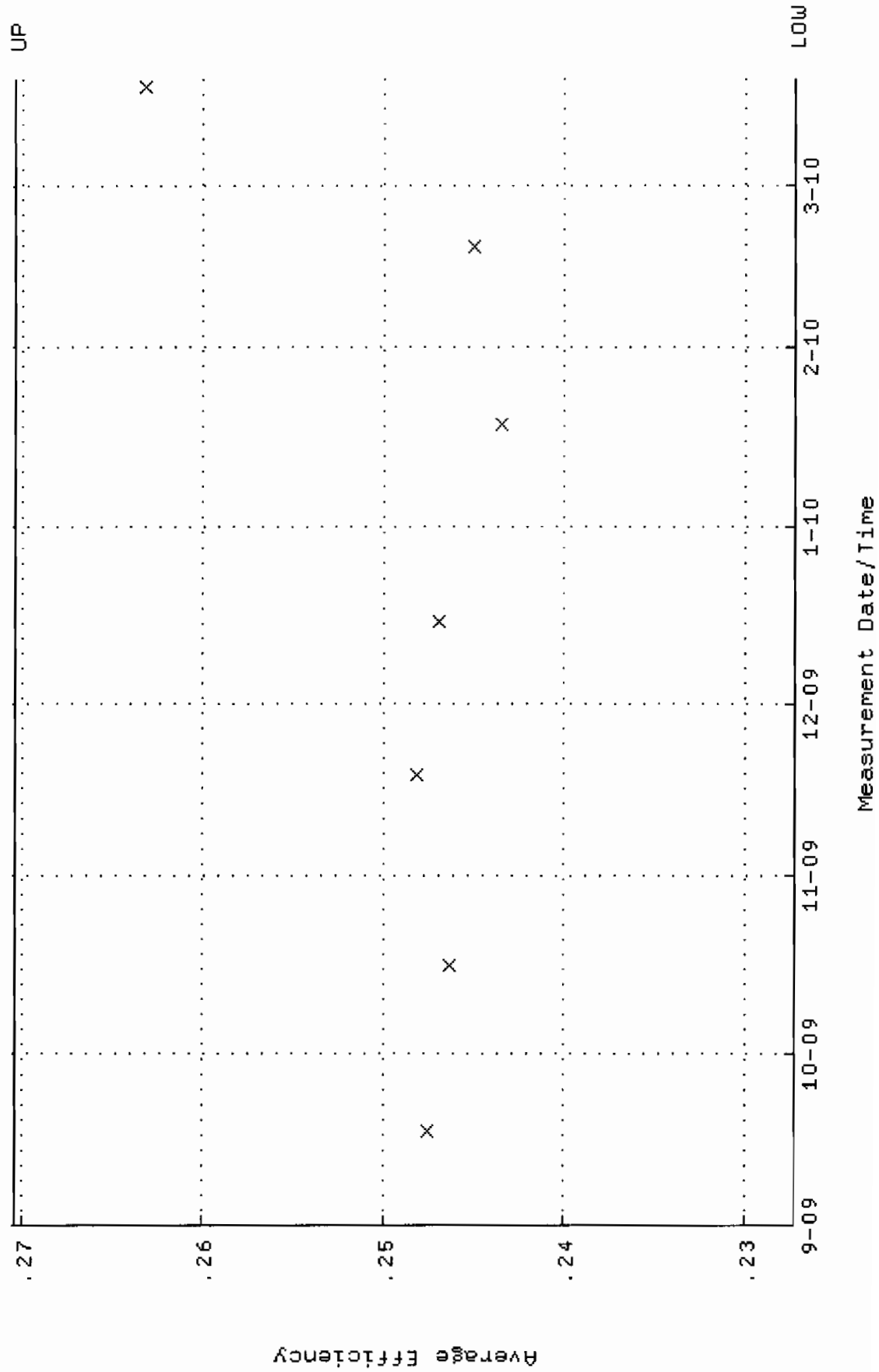


QA filename : DKA100:[ENV_ALPHA.QA.W]W127.QAF;1

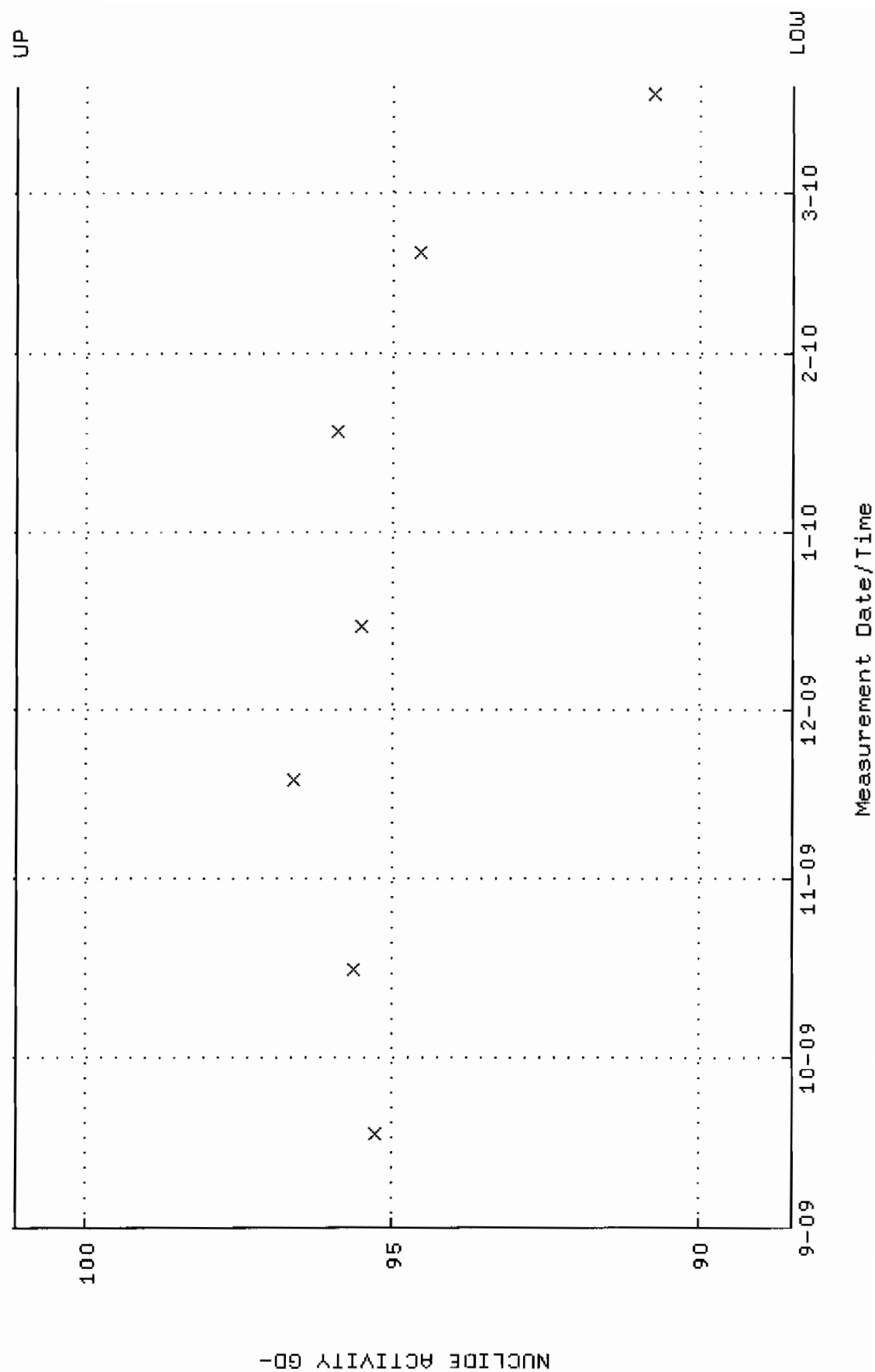
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-SEP-2009 07:24:09 through 19-MAR-2010 12:00:00

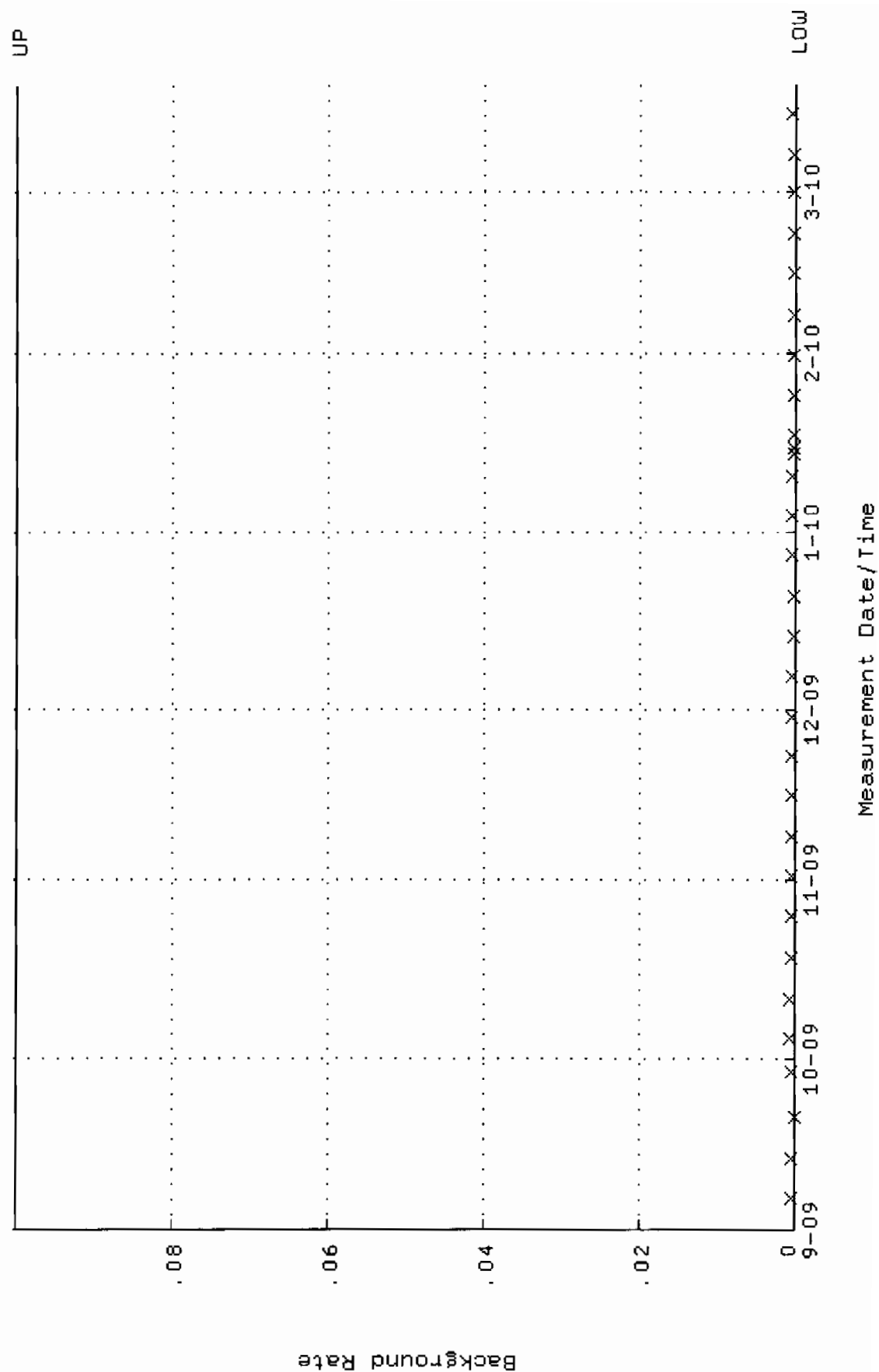
Lower/Upper Lmts: 0.227212 through 0.270396



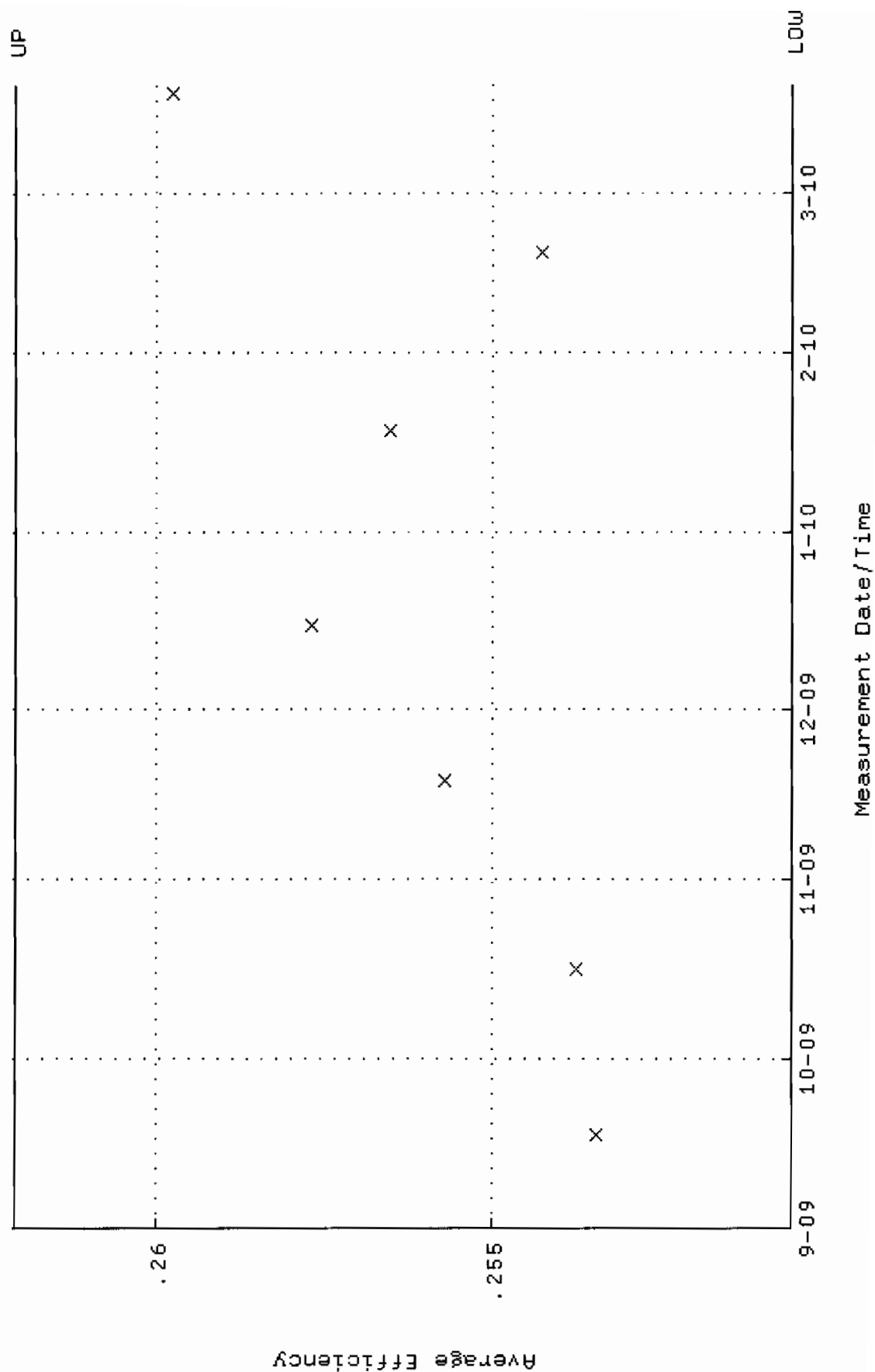
QA filename : DKA100:[ENV_ALPHA.QA.W]w127.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:09 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.4641 through 101.145



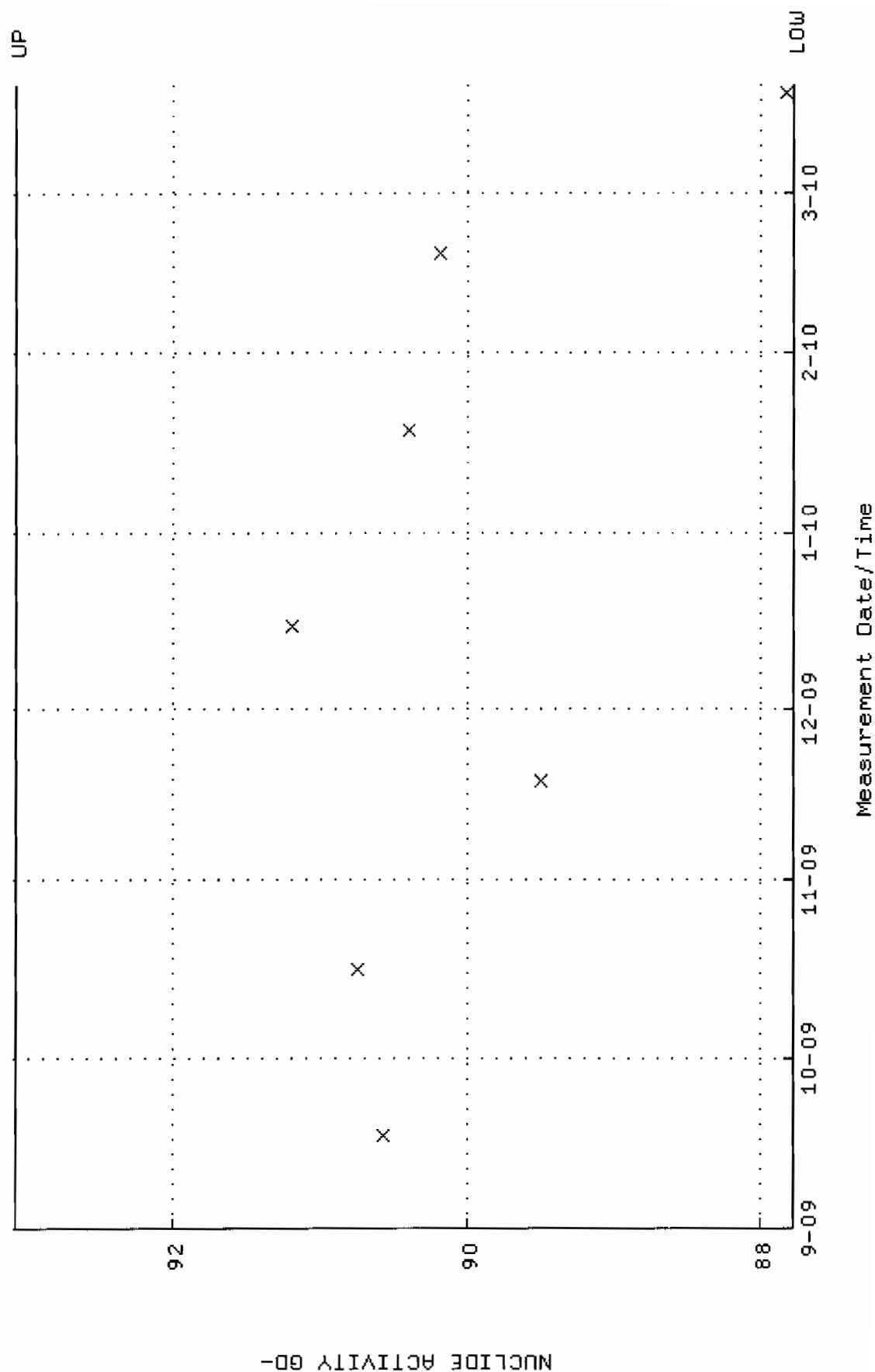
QA filename : DKA100:[ENV_ALPHA.QA.B]B127.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:09 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



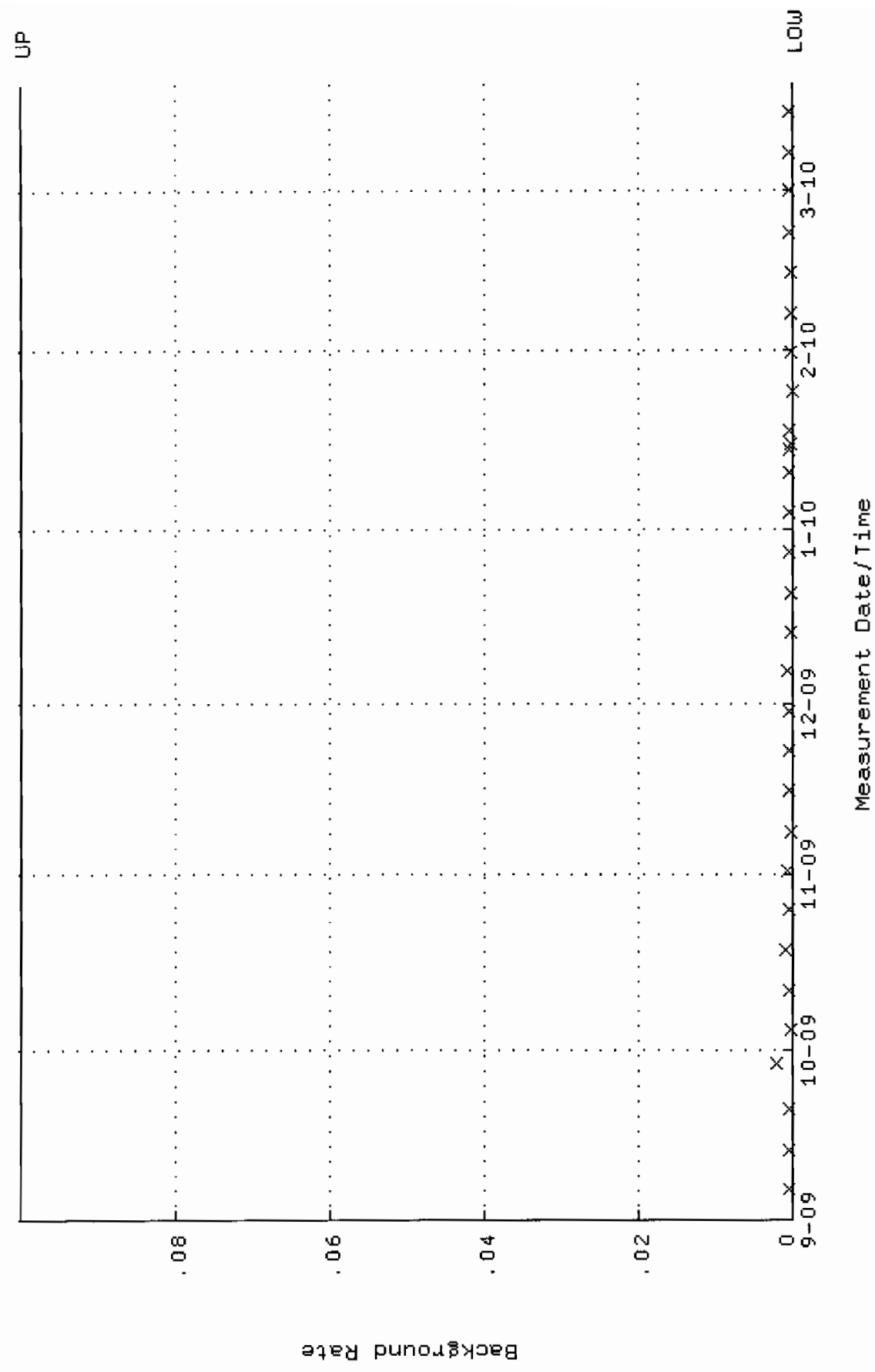
QA filename : DKA100:[ENV_ALPHA.QA.W]W128.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:16 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.250562 through 0.262084



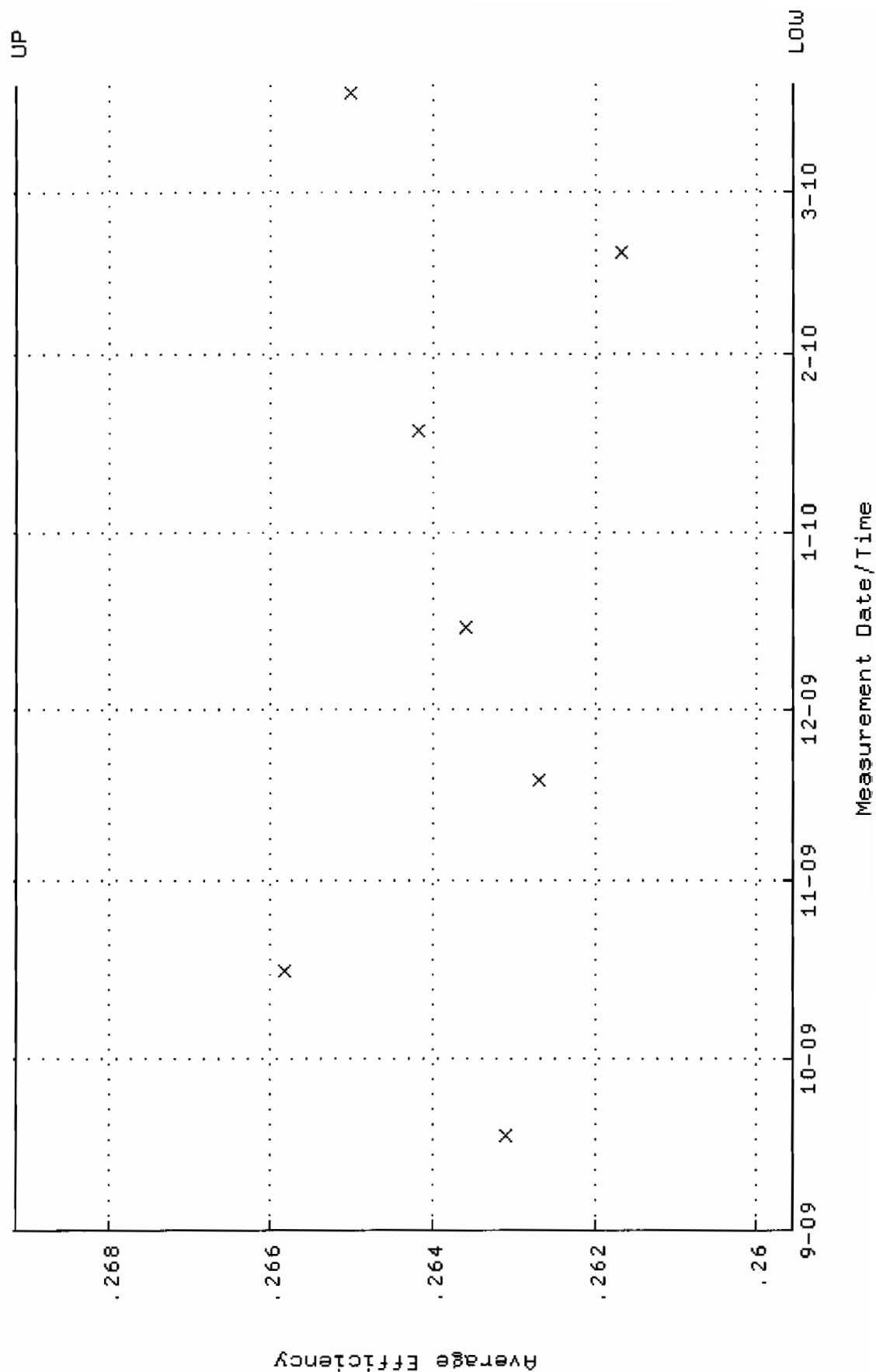
QA filename : DKA100:[ENV_ALPHA.QA.W]W128.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:16 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.7731 through 93.0795



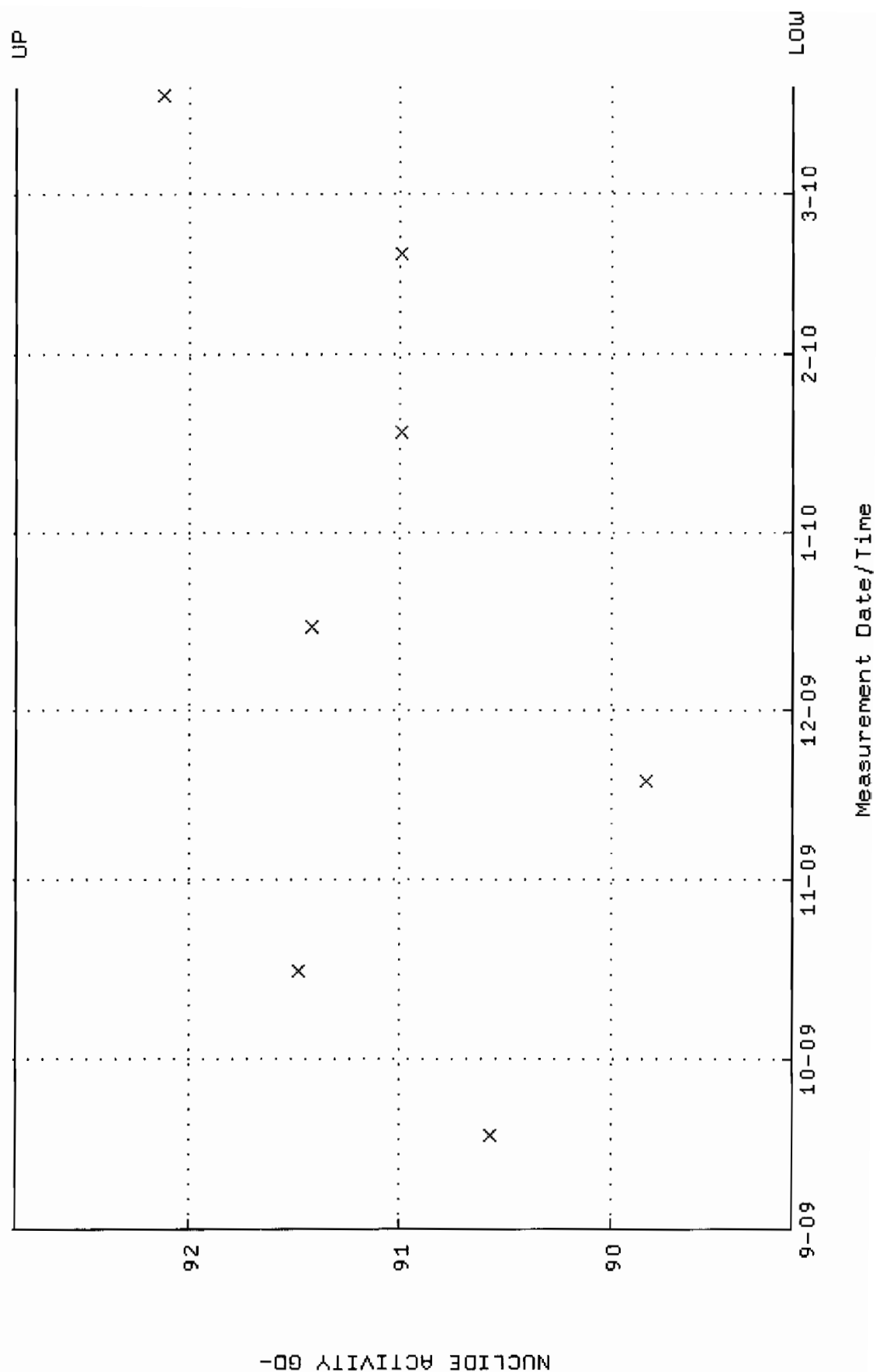
QA filename : DKA100:[ENV_ALPHA.QA.B]B128.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:41:14 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



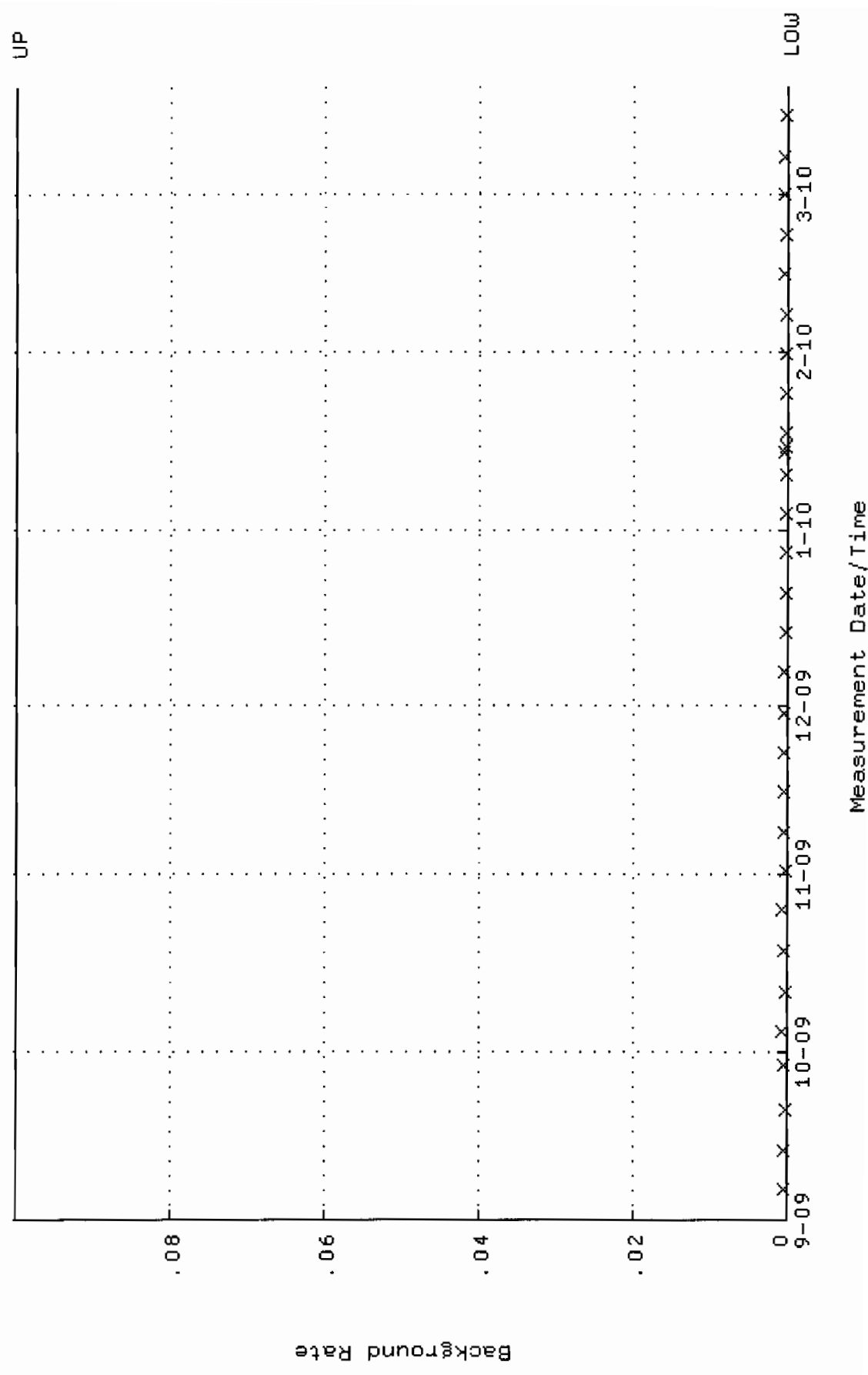
QA filename : DKA100:[ENV_ALPHA.QA.W]W129.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:21 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.259560 through 0.269146



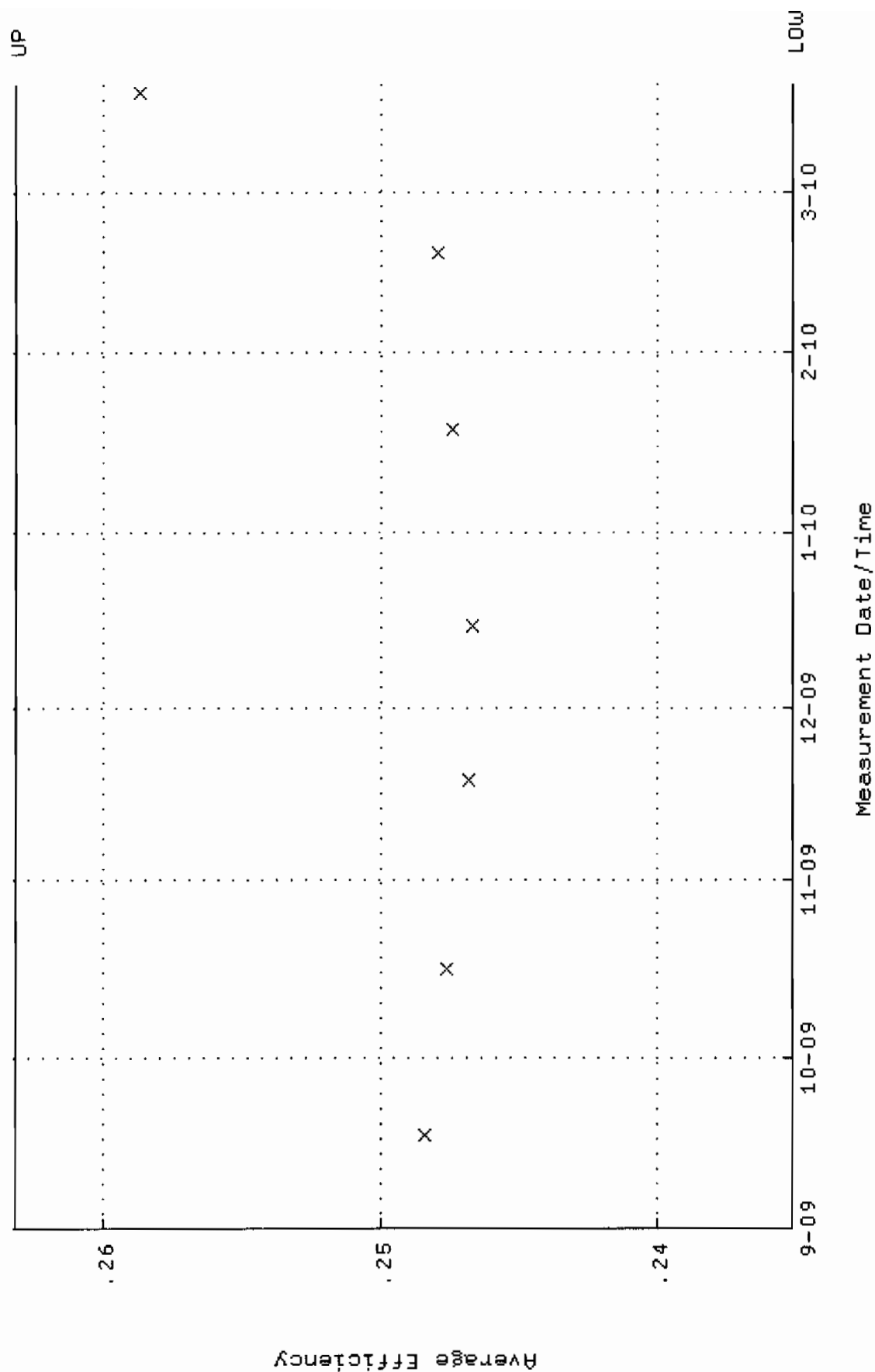
QA filename : DKA100:[ENV_ALPHA.QA.W]W129.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:21 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.1401 through 92.8201



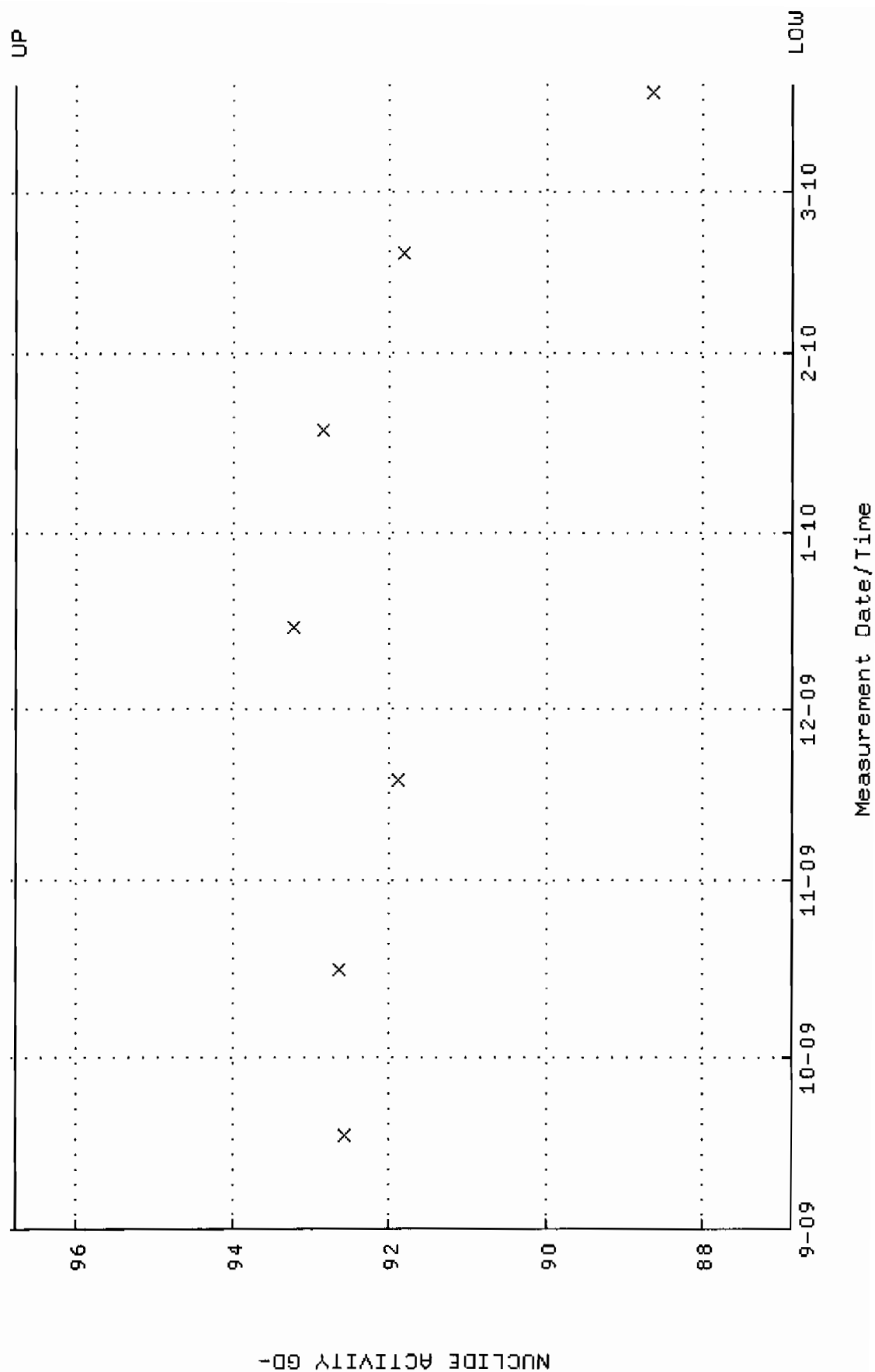
QA filename : DKA100:[ENV_ALPHA.QA.B]B129.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:19 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



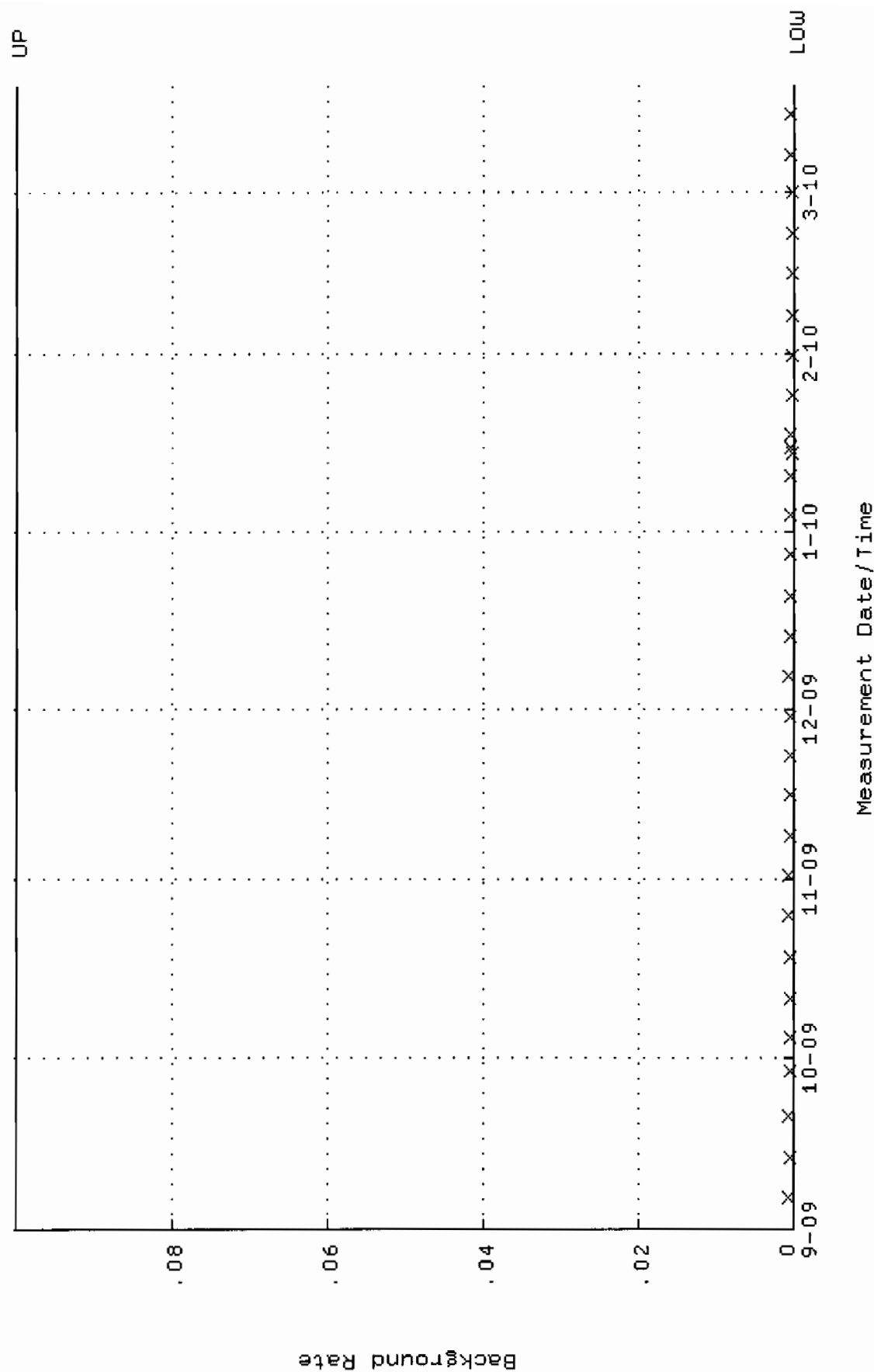
QA filename : DKA100:[ENV_ALPHA.QA.W]w130.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:25 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.235120 through 0.263192



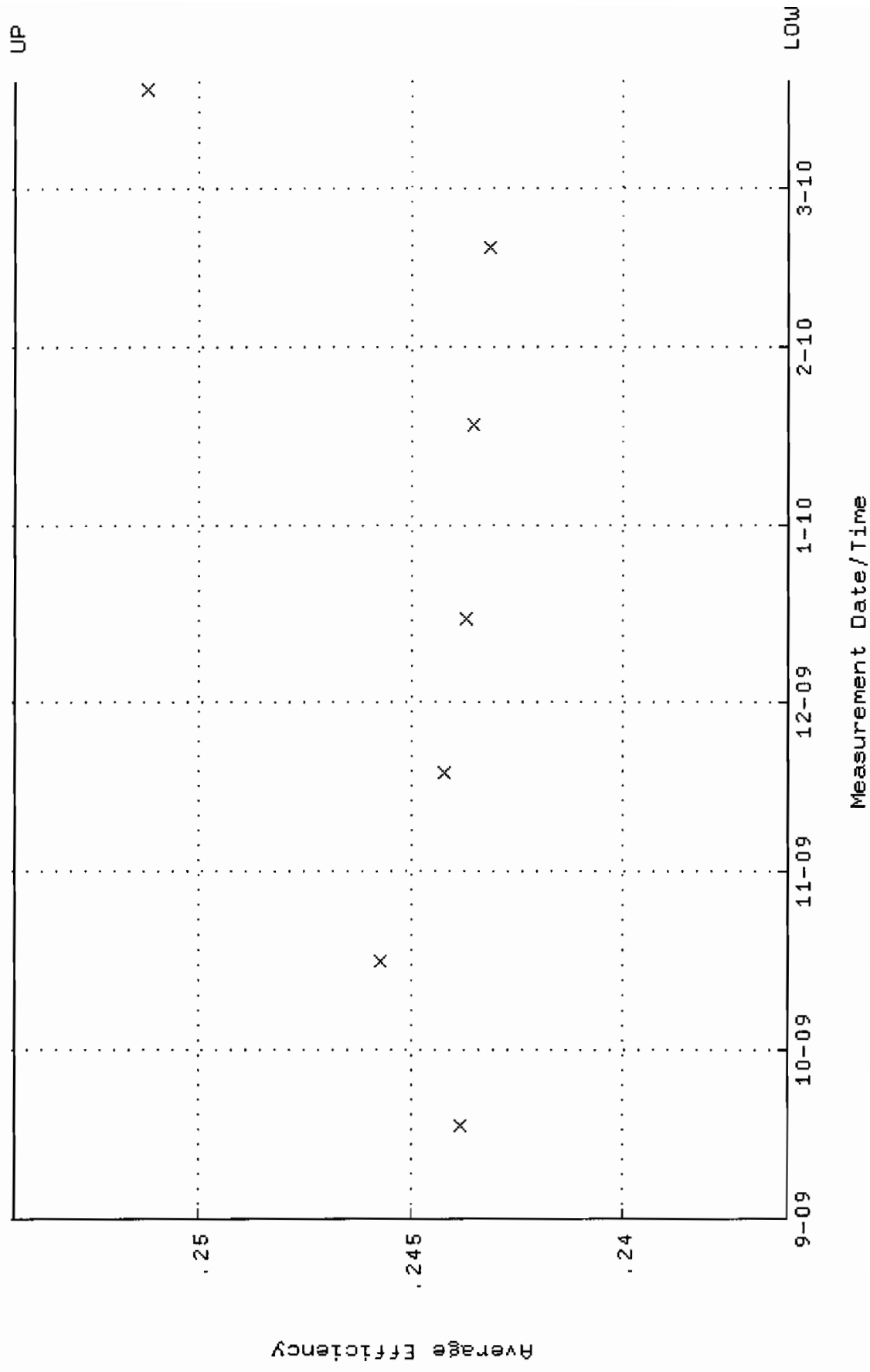
QA filename : DKA100:[ENV_ALPHA,QA,W]W130.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:25 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.8592 through 96.7952



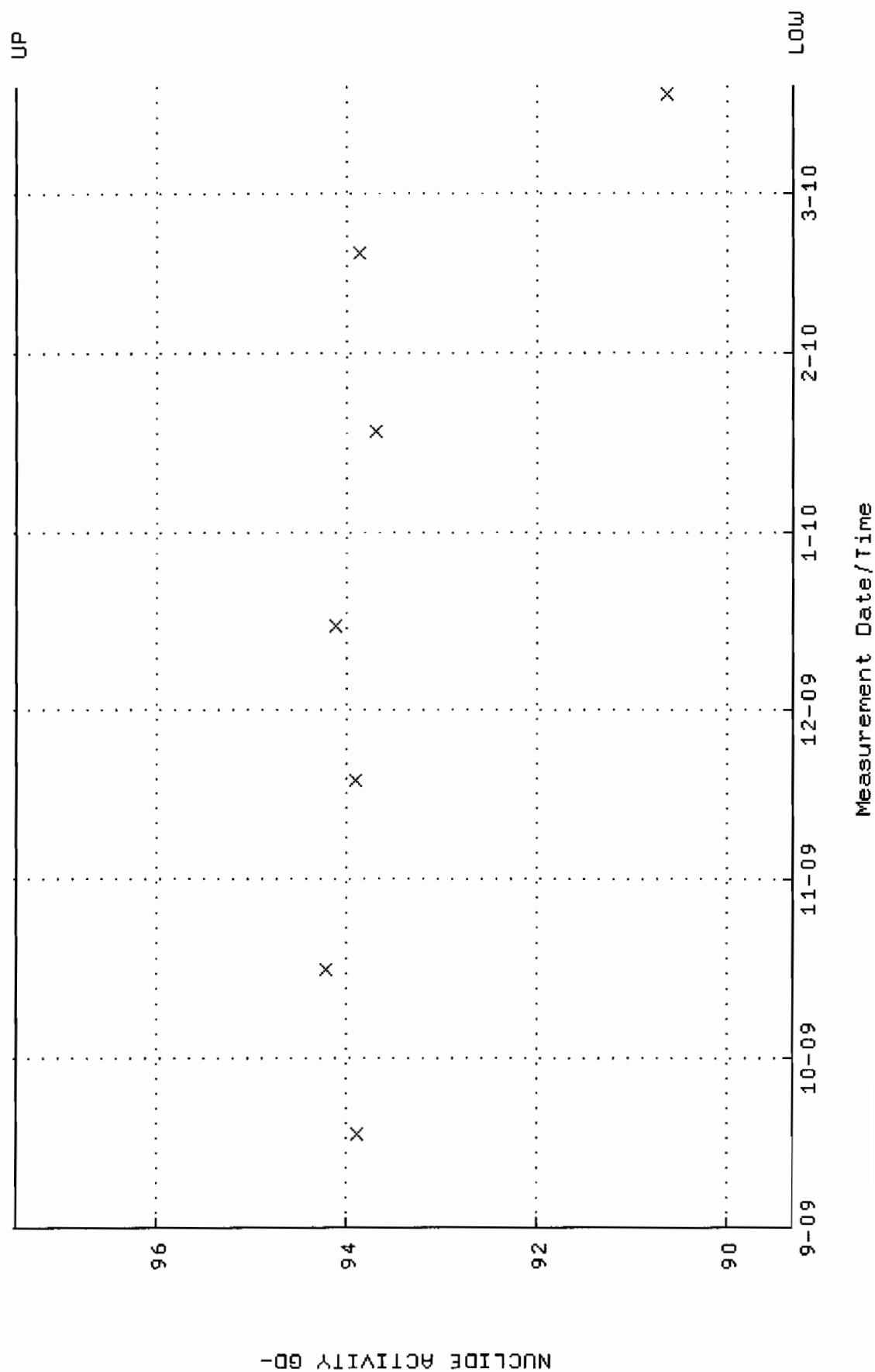
QA filename : DKA100:[ENV_ALPHA.QA.B]B130.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:24 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



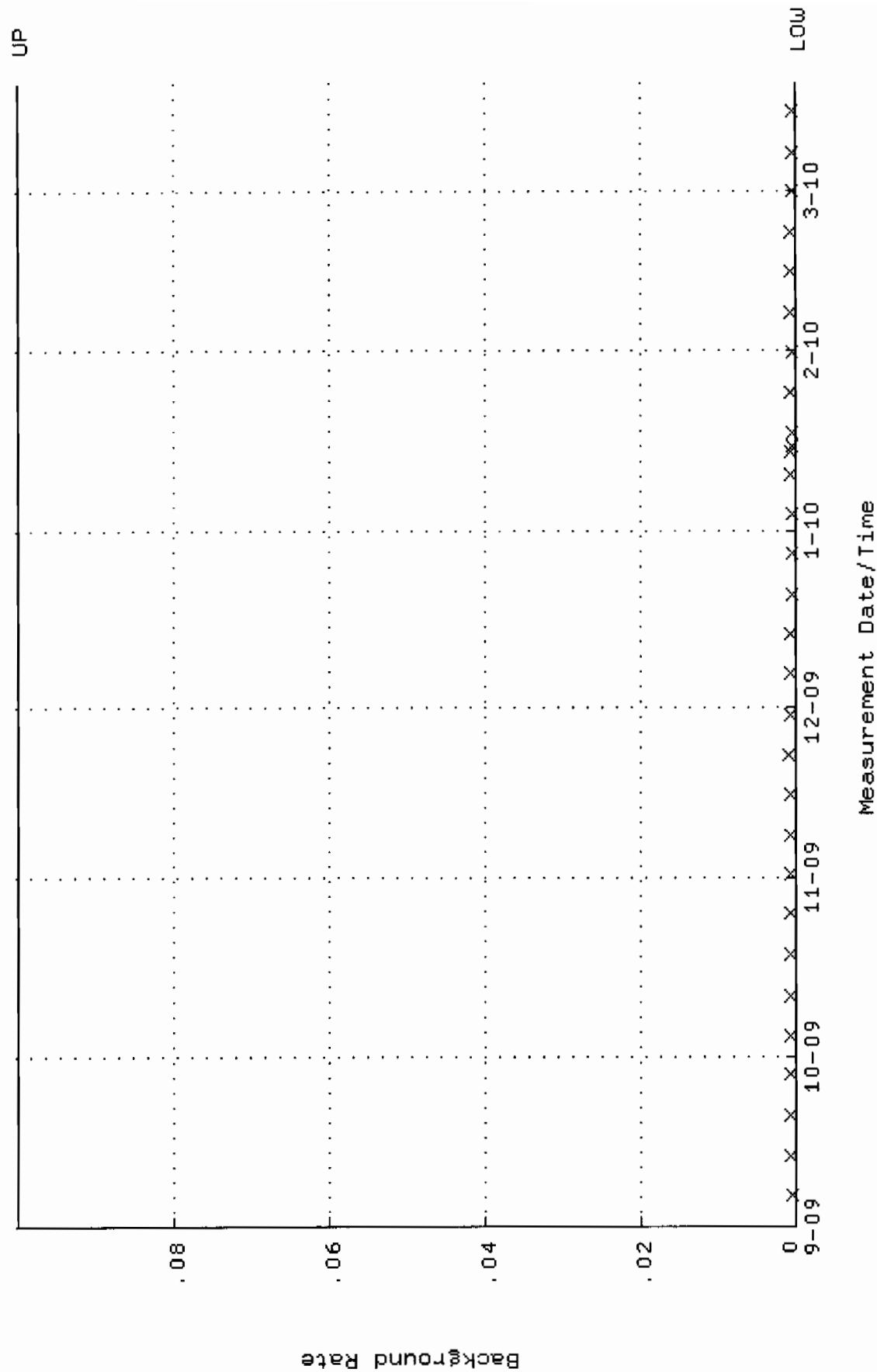
QA filename : DKA100:[ENV_ALPHA,QA,W]W133.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:41 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.236089 through 0.254355



QA filename : DKA100:[ENV_ALPHA.QA.W]W133.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:41 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.3104 through 97.4810



QA filename : DKA100:[ENV_ALPHA.QA.B]B133.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:37 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

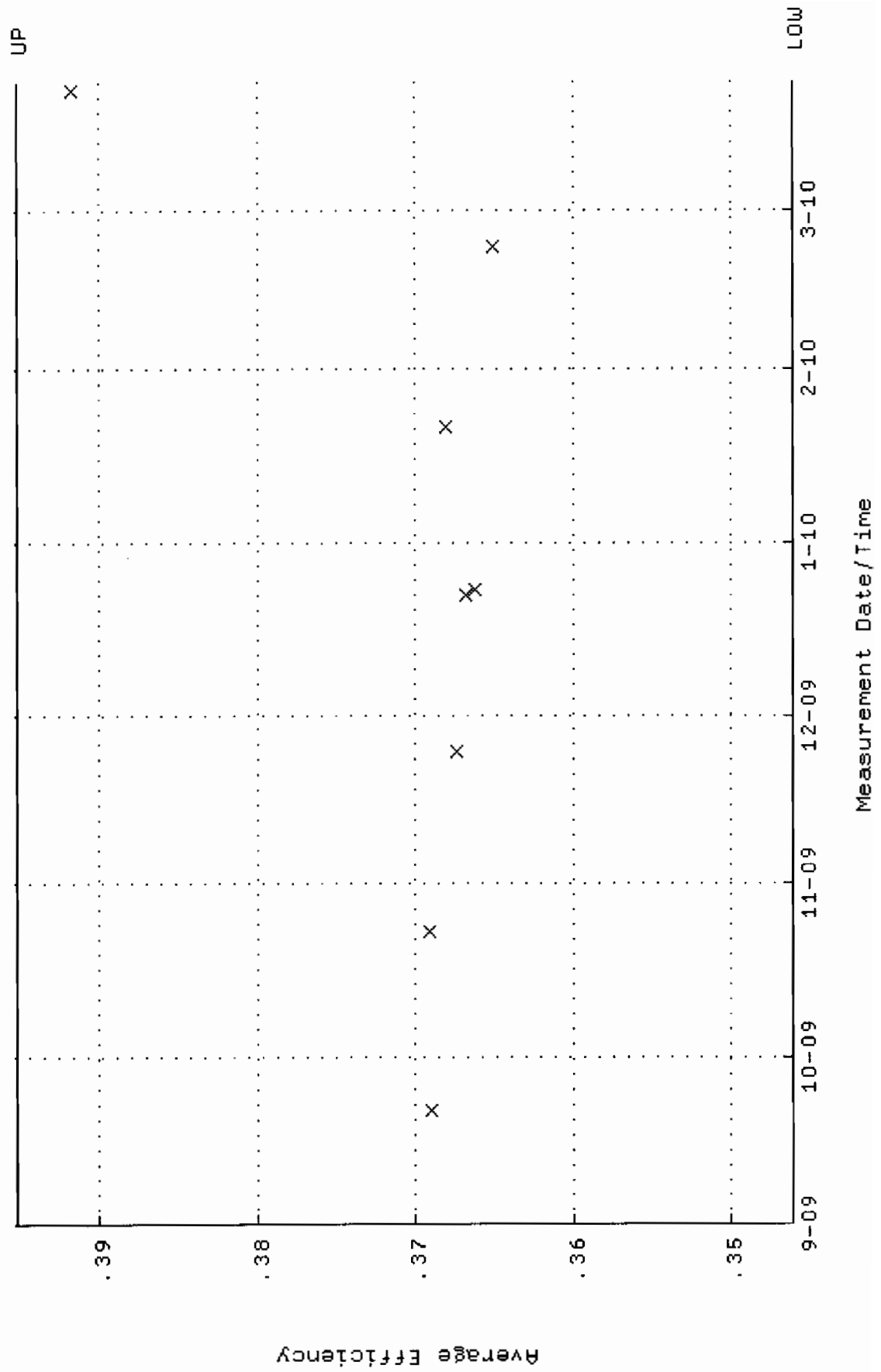


QA filename : DKA100:[ENV_ALPHA.QA.W]W161.QAF;1

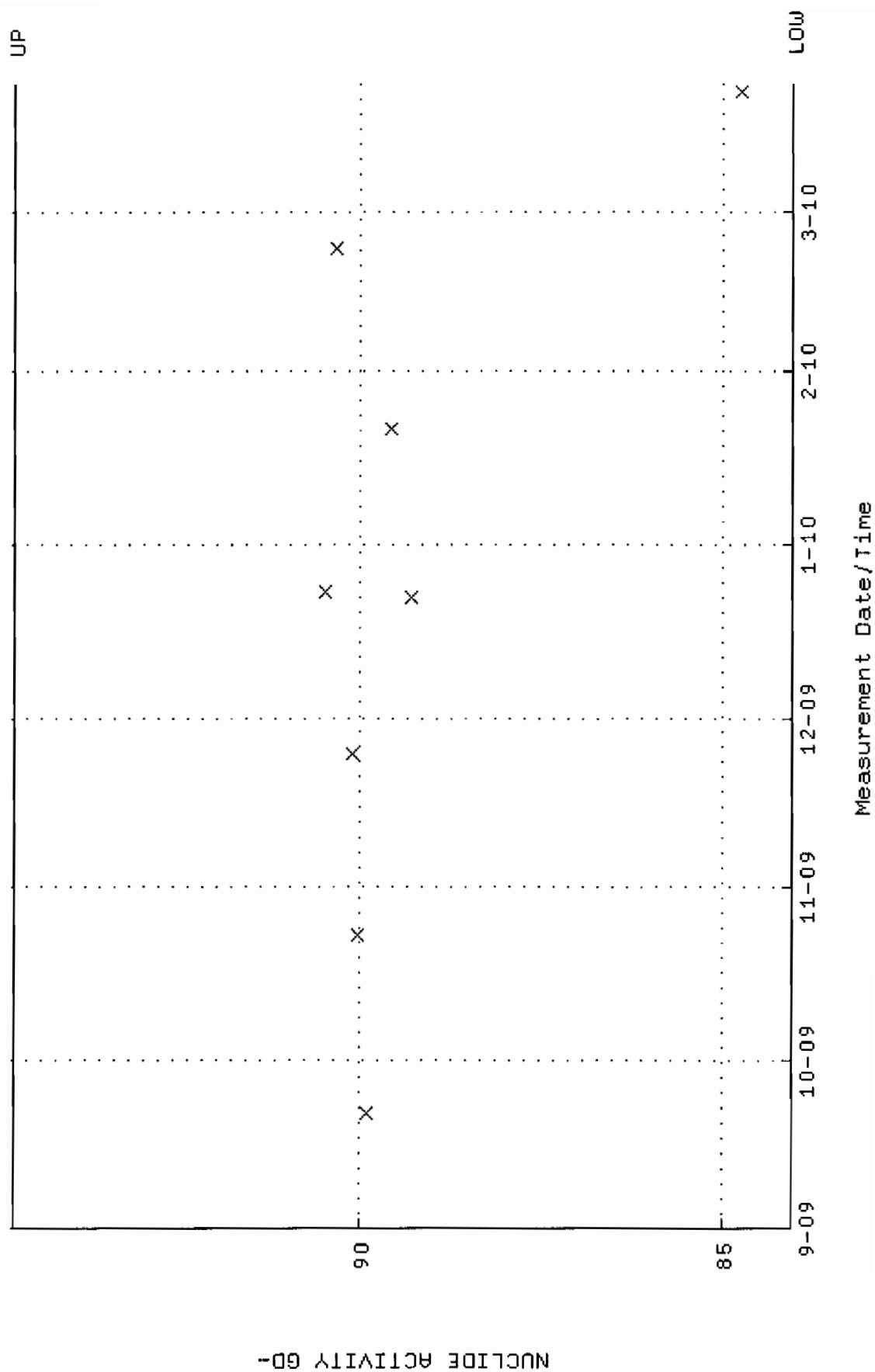
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 21-SEP-2009 09:28:18 through 23-MAR-2010 12:00:00

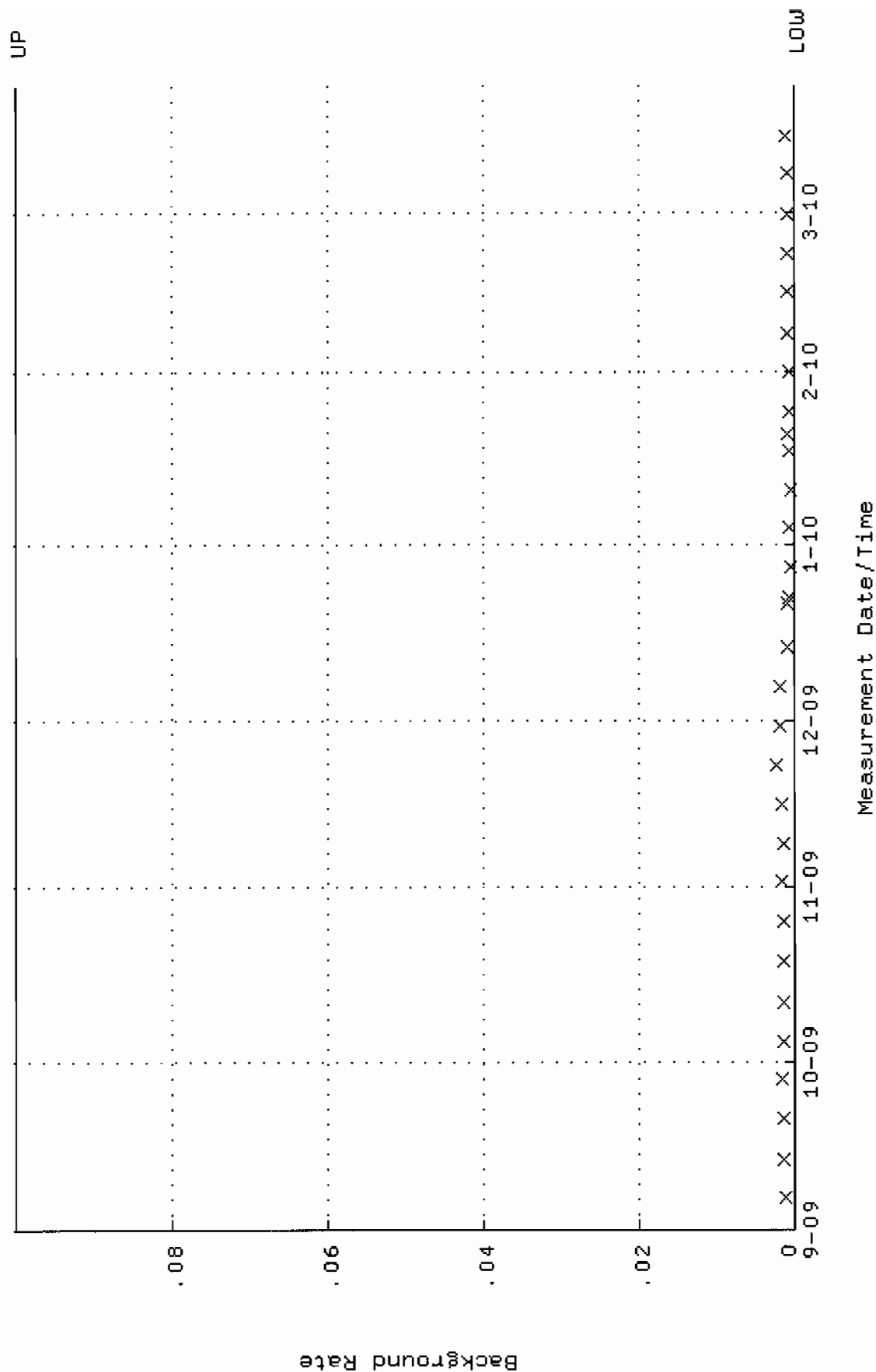
Lower/Upper Lmts: 0.346063 through 0.395257



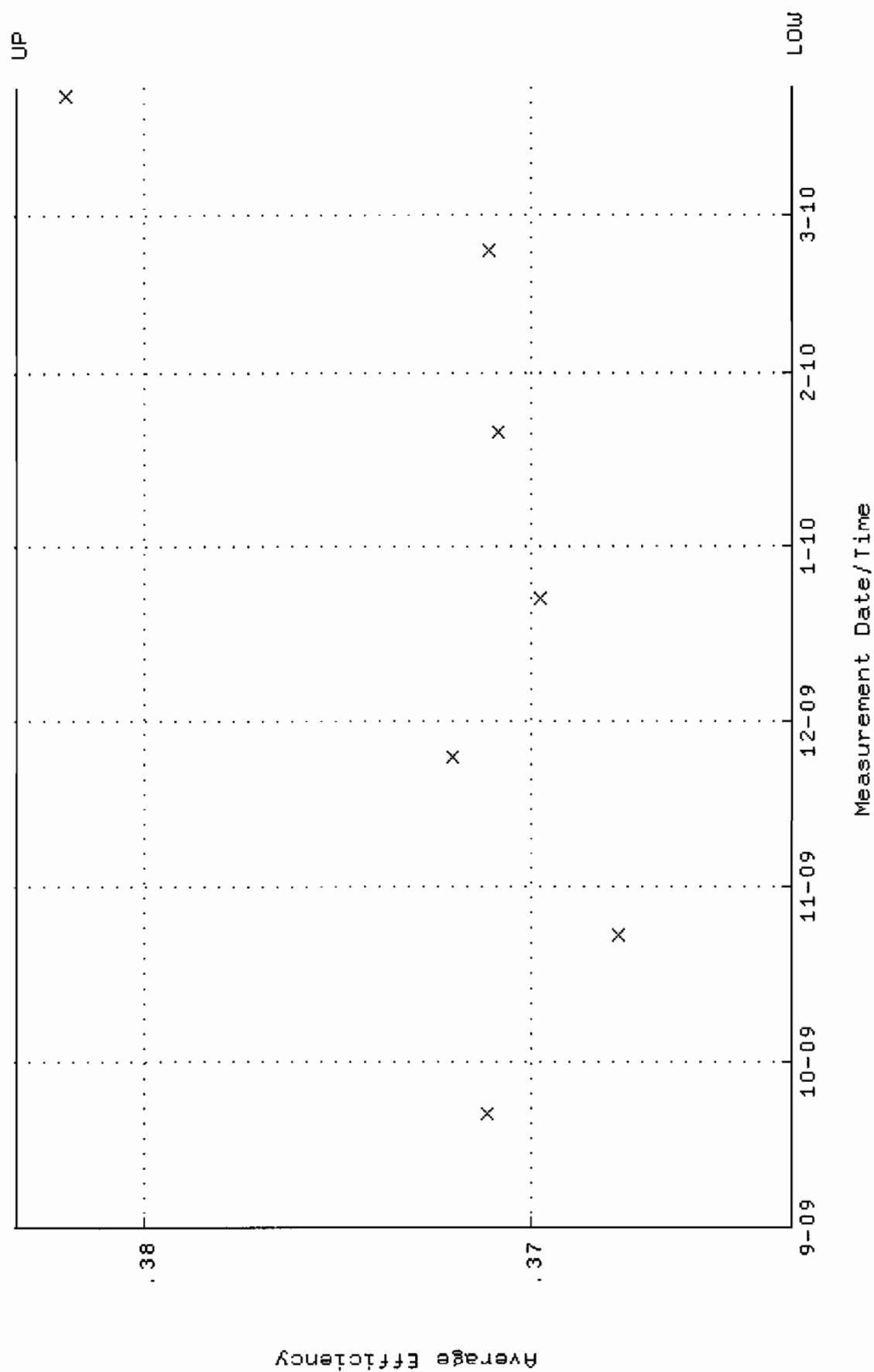
QA filename : DKA100:[ENV_ALPHA.QA.W]w161.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:18 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.0330 through 94.7716



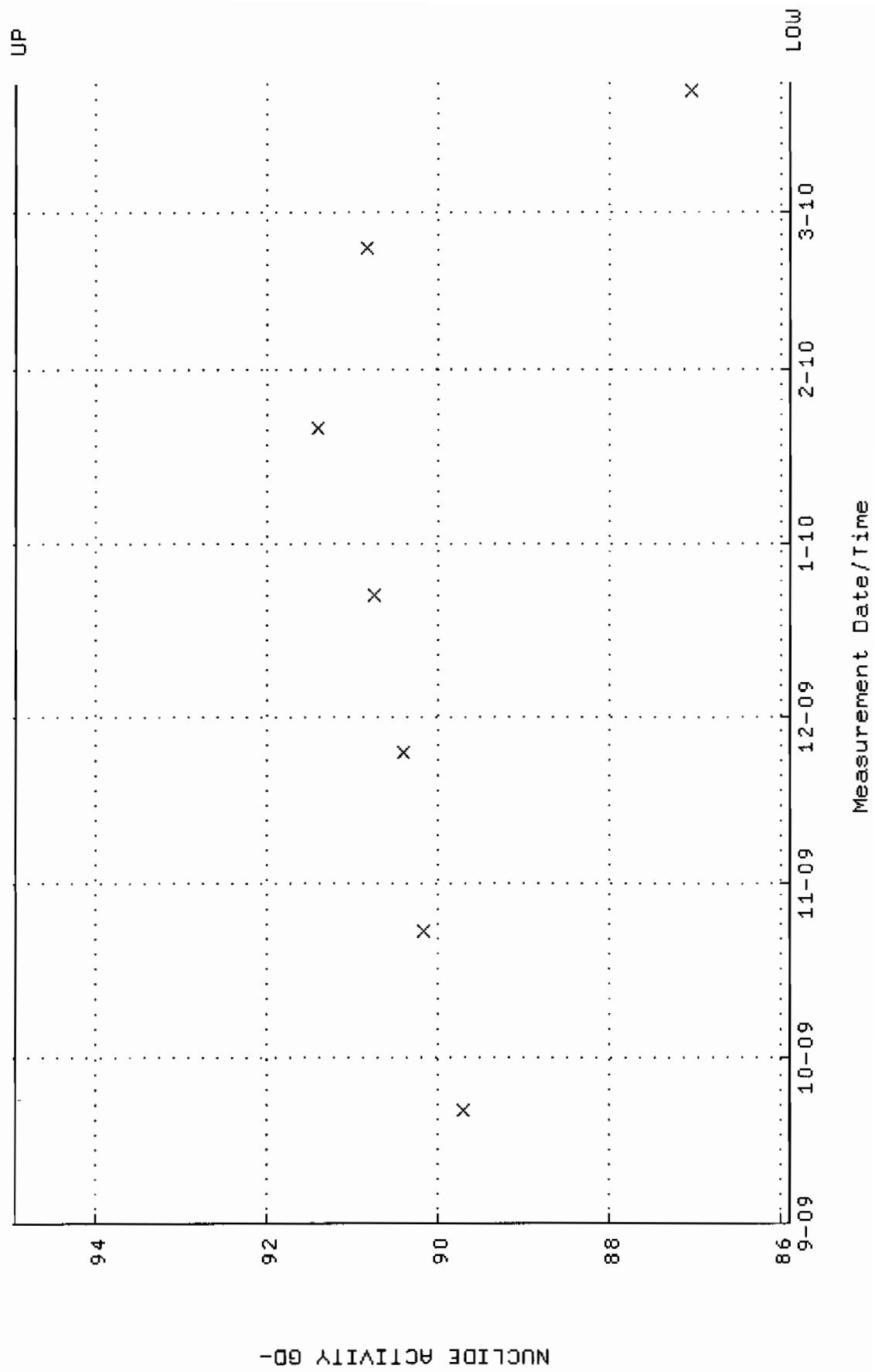
QA filename : DKA100:[ENV_ALPHA.QA.B]B161.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:12 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



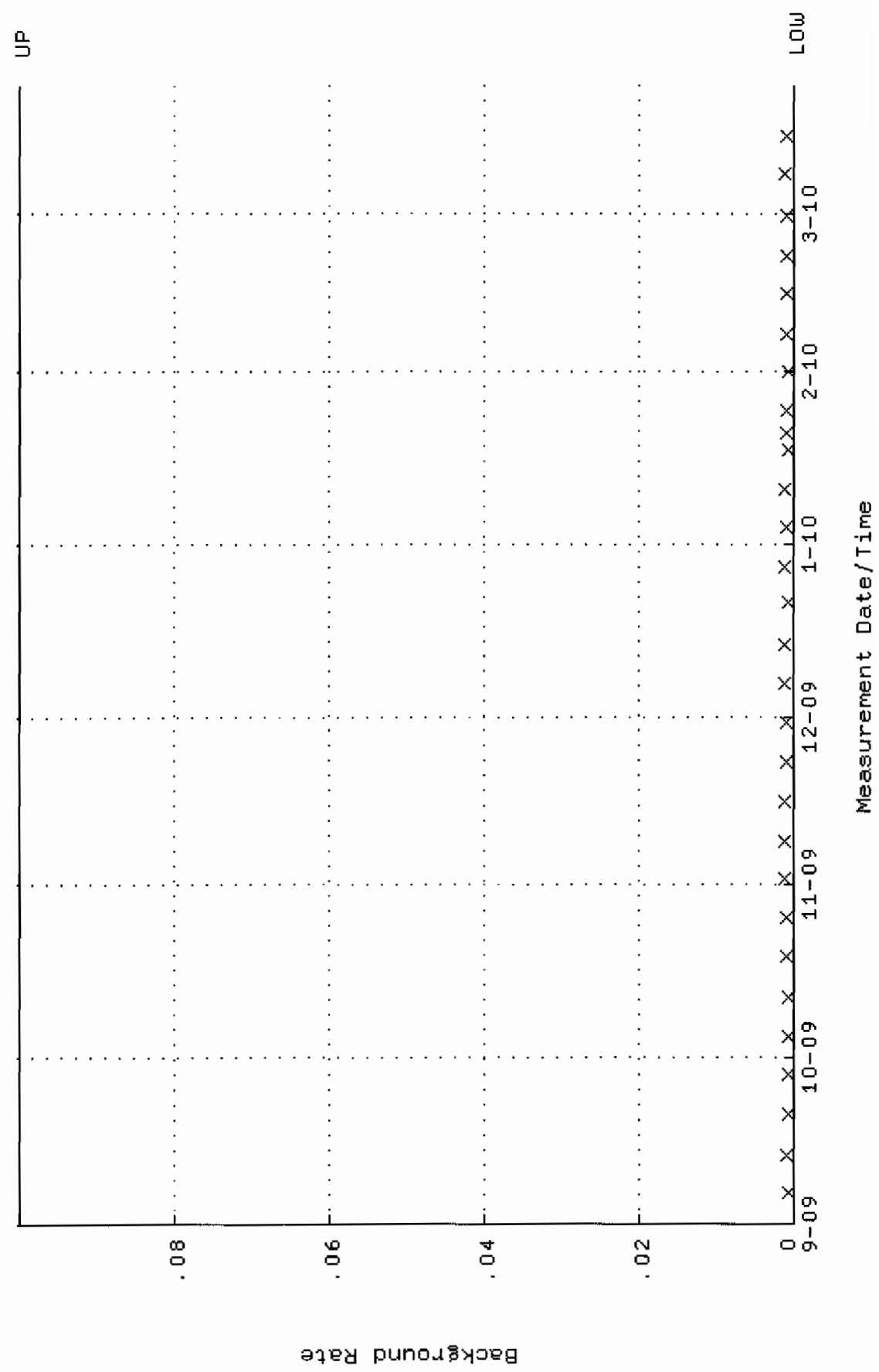
QA filename : DKA100: [ENV_ALPHA.QA.W]w162.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:25 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.363287 through 0.383287



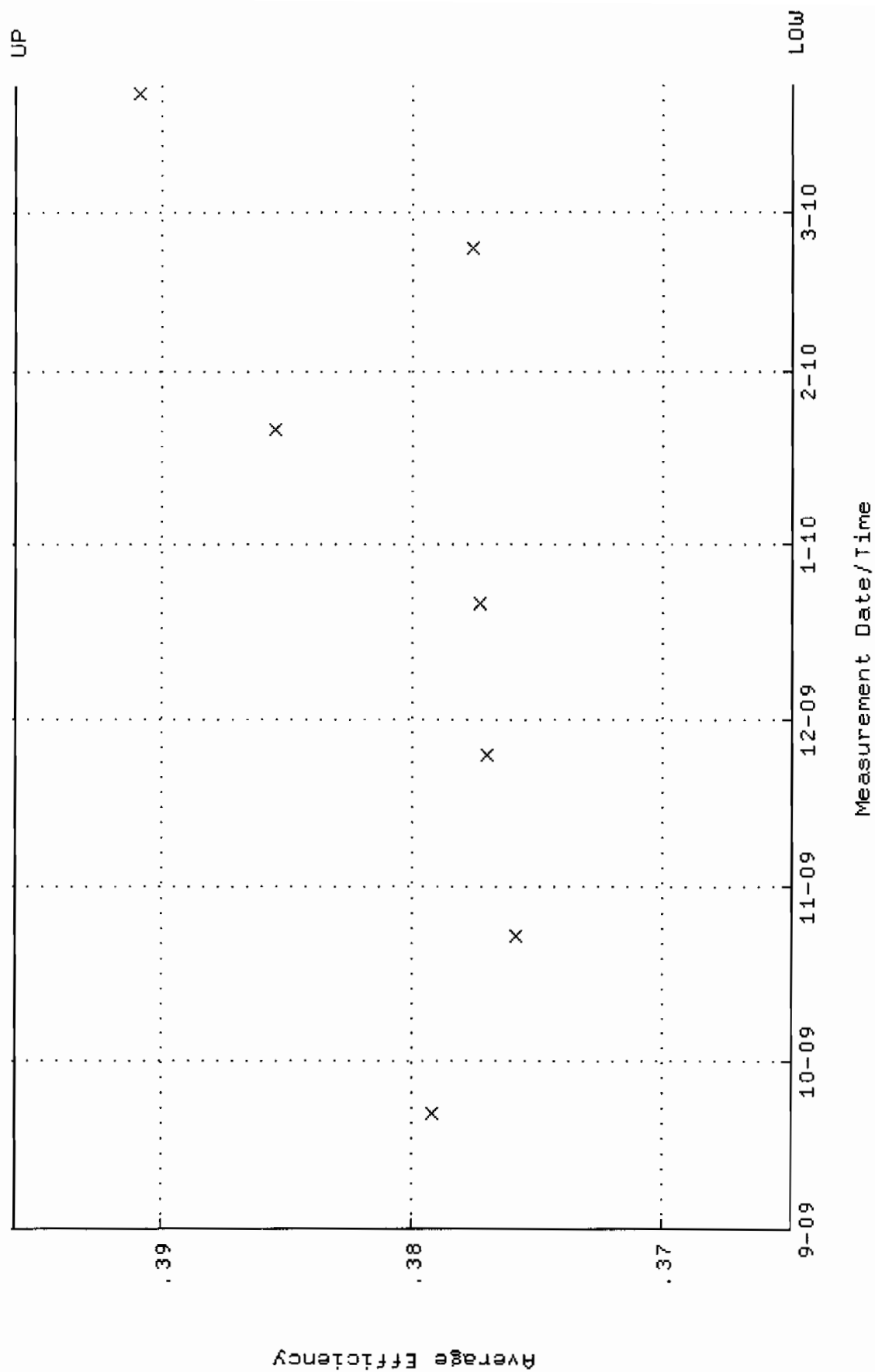
QA filename : DKA100:[ENV_ALPHA.QA.W]W162.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:25 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.8969 through 94.9387



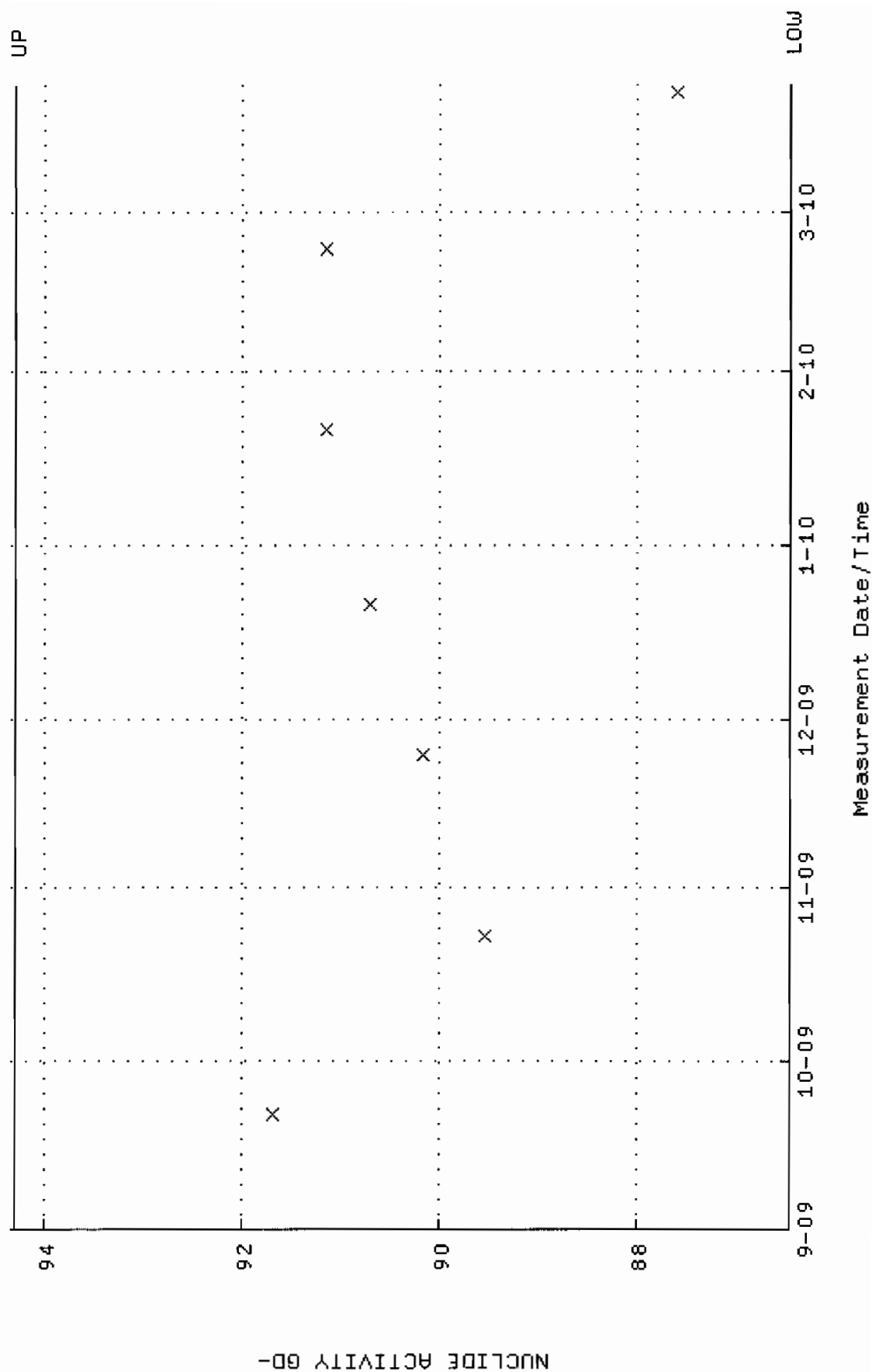
QA filename : DKA100:[ENV_ALPHA.QA.B]B162.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:17 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



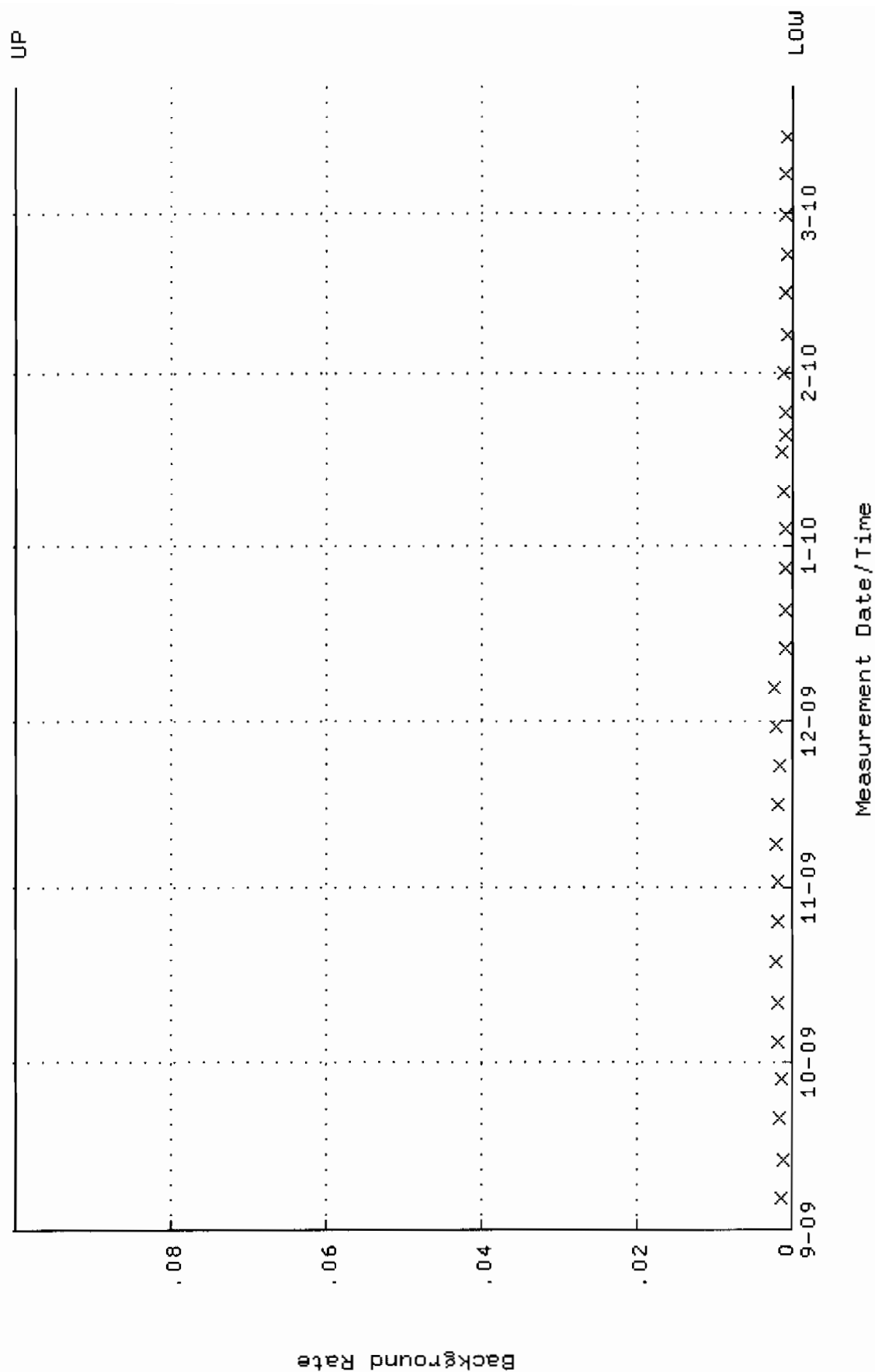
QA filename : DKA100:[ENV_ALPHA.QA.W]W164.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:39 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.364871 through 0.395783



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

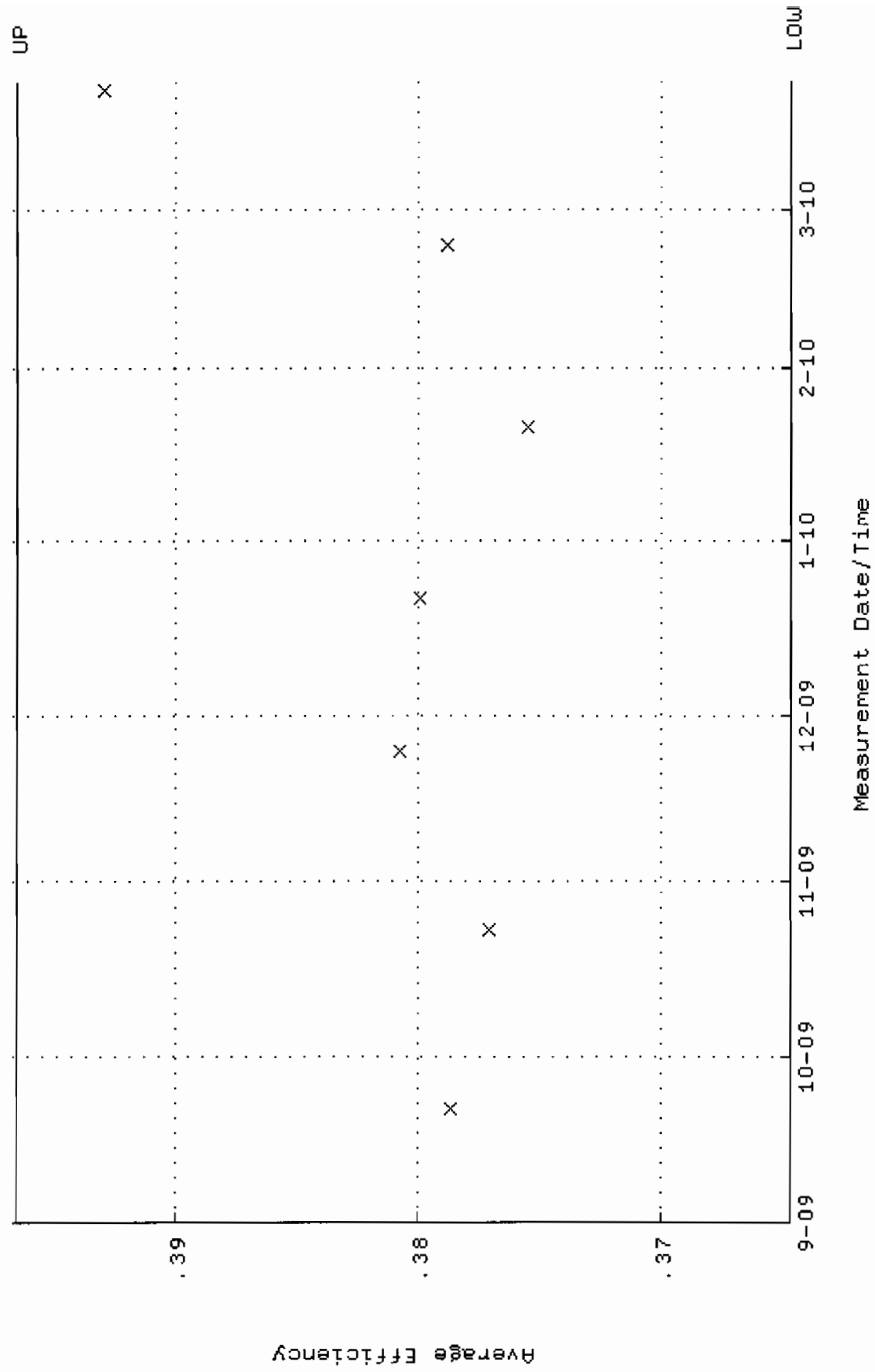


QA filename : DKA100:[ENV_ALPHA.QA.W]W165.QAF;1

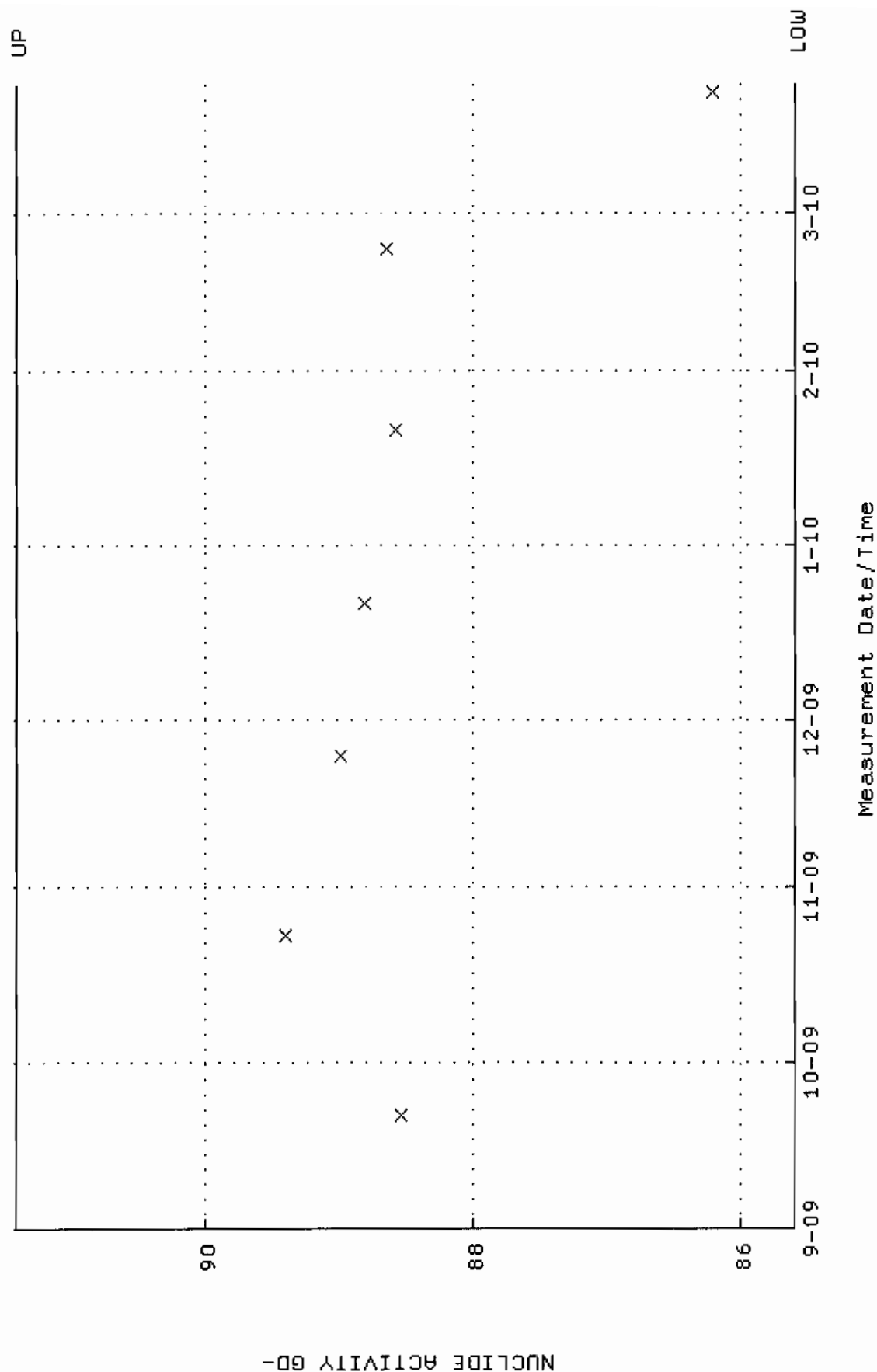
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 21-SEP-2009 09:28:46 through 23-MAR-2010 12:00:00

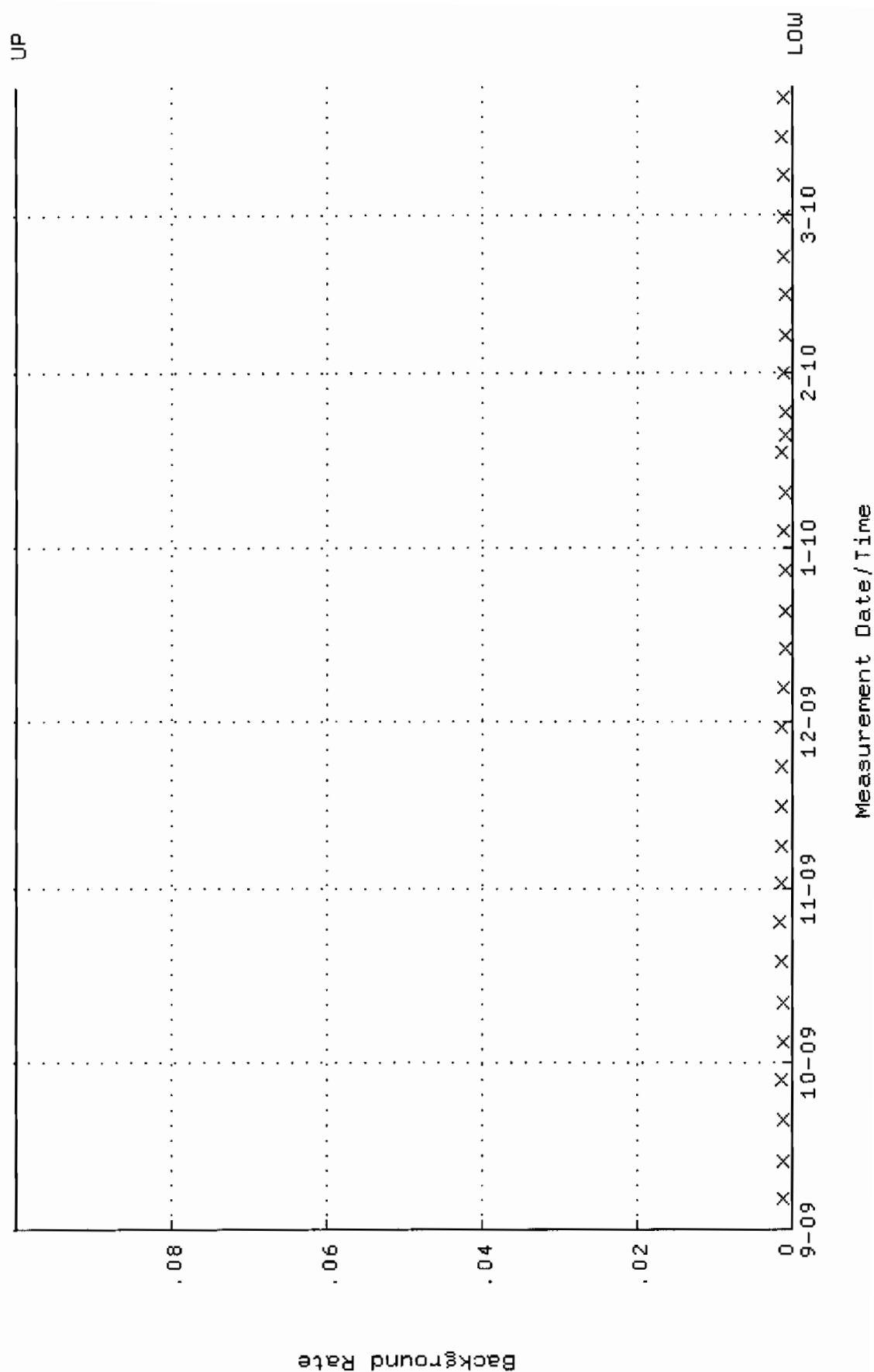
Lower/Upper Lmts: 0.364660 through 0.396652



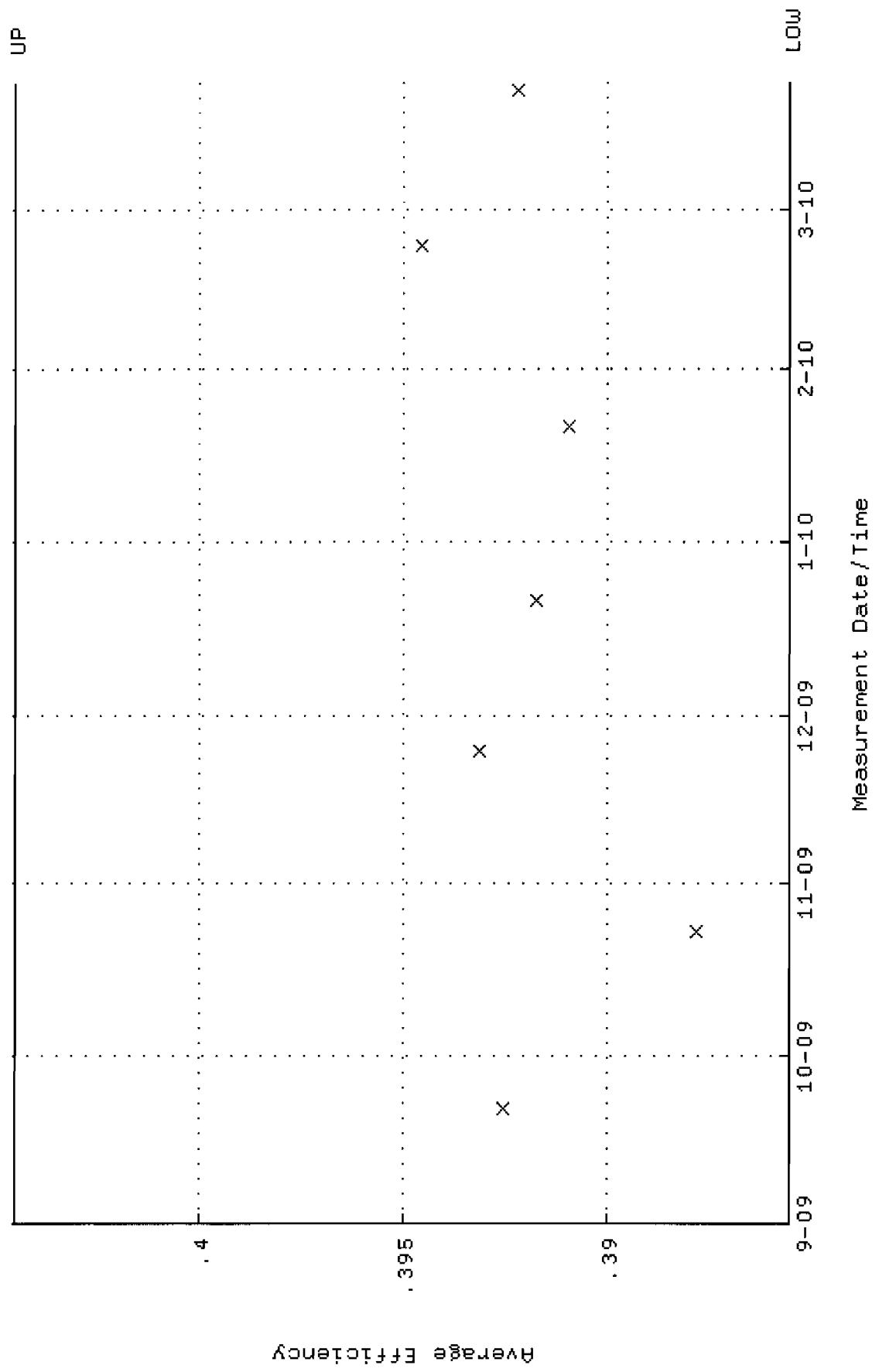
QA filename : DKA100:[ENV_ALPHA.QA.W]w165.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:46 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.5935 through 91.4009



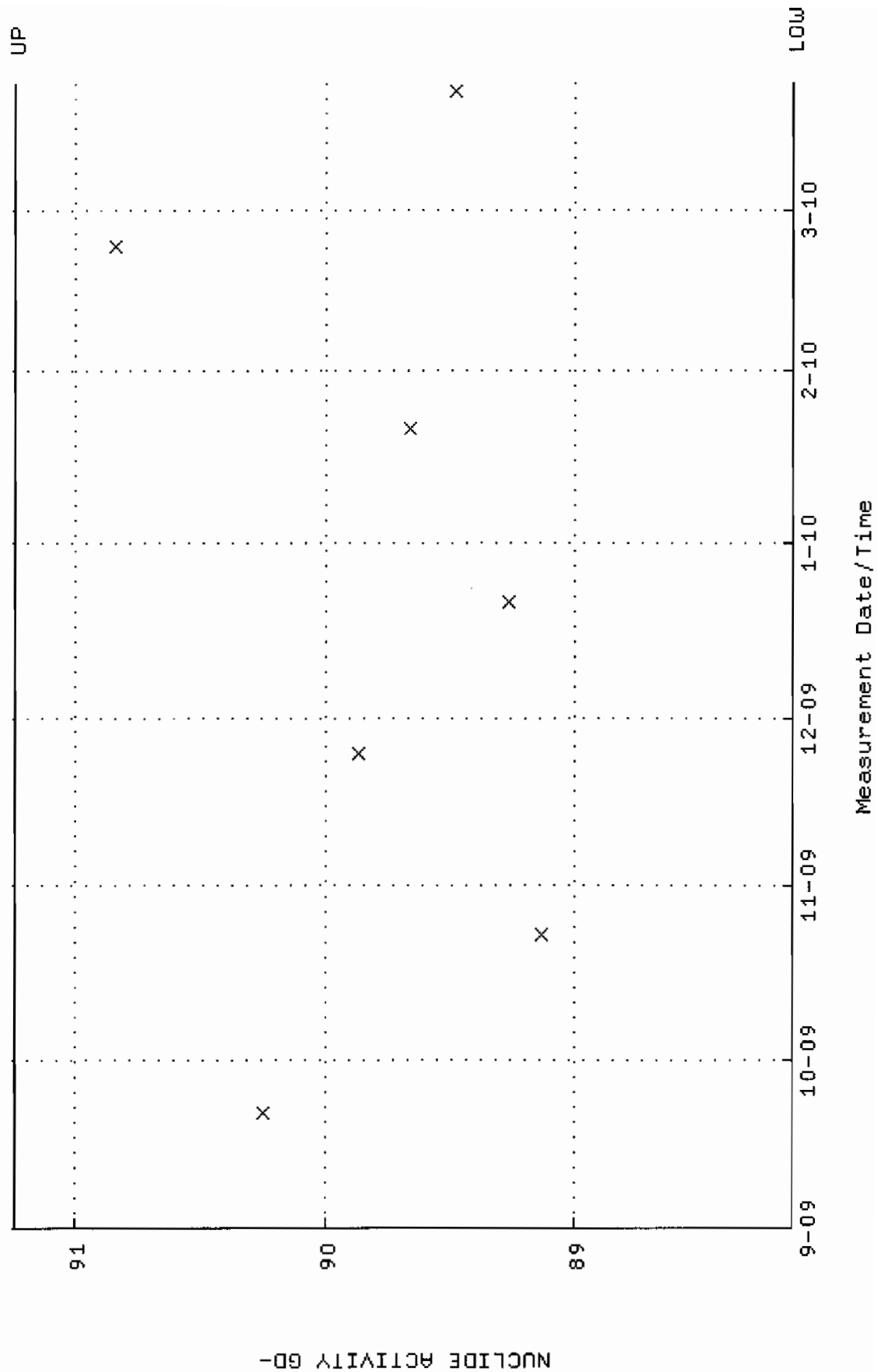
QA filename : OKA100:[ENV_ALPHA.QA.B]B165.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:31 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



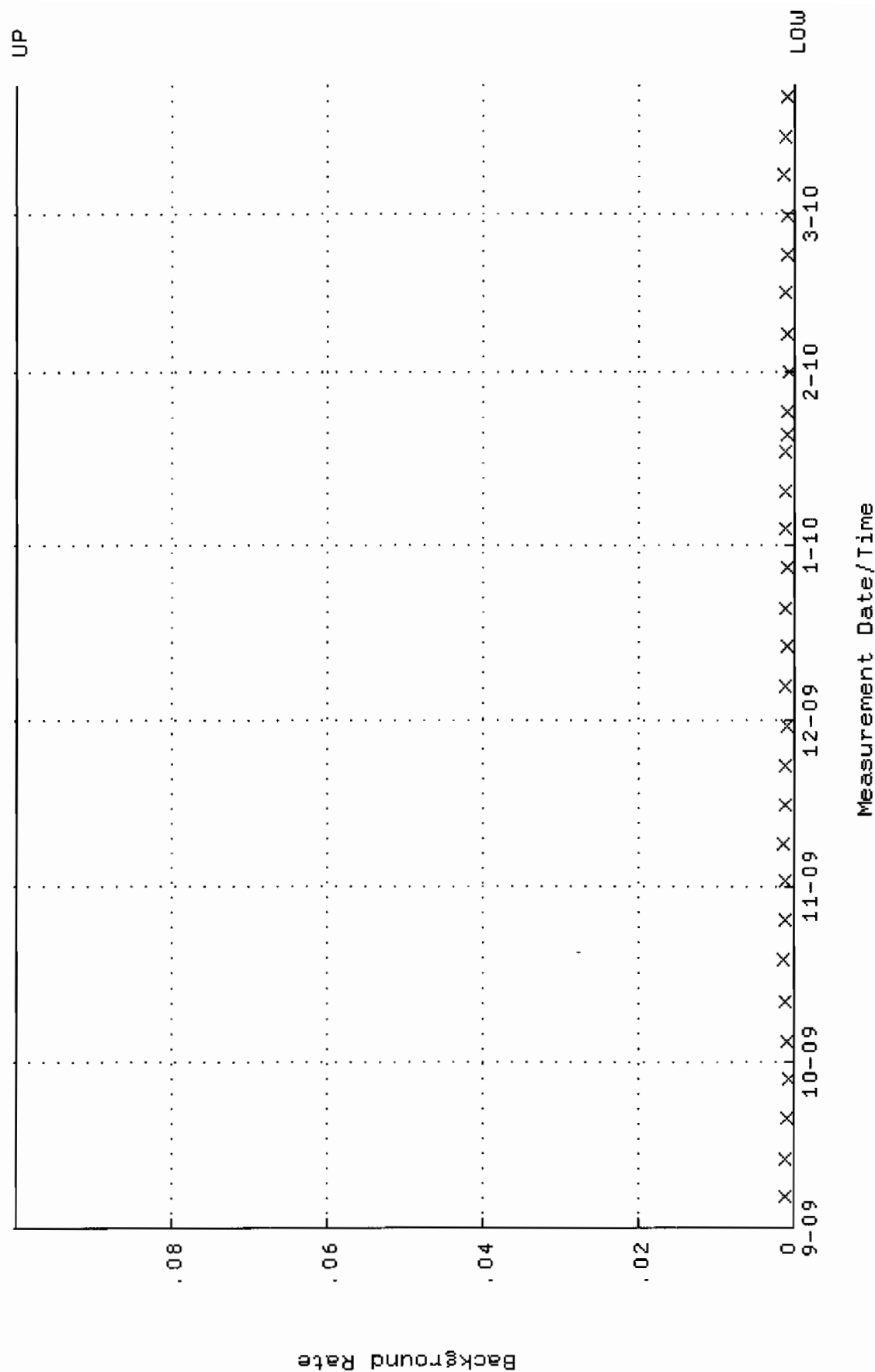
QA filename : DKA100:[ENV_ALPHA.QA.W]w166.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 21-SEP-2009 09:28:52 through 23-MAR-2010 12:00:00
Lower/Upper Lmts: 0.385564 through 0.404504



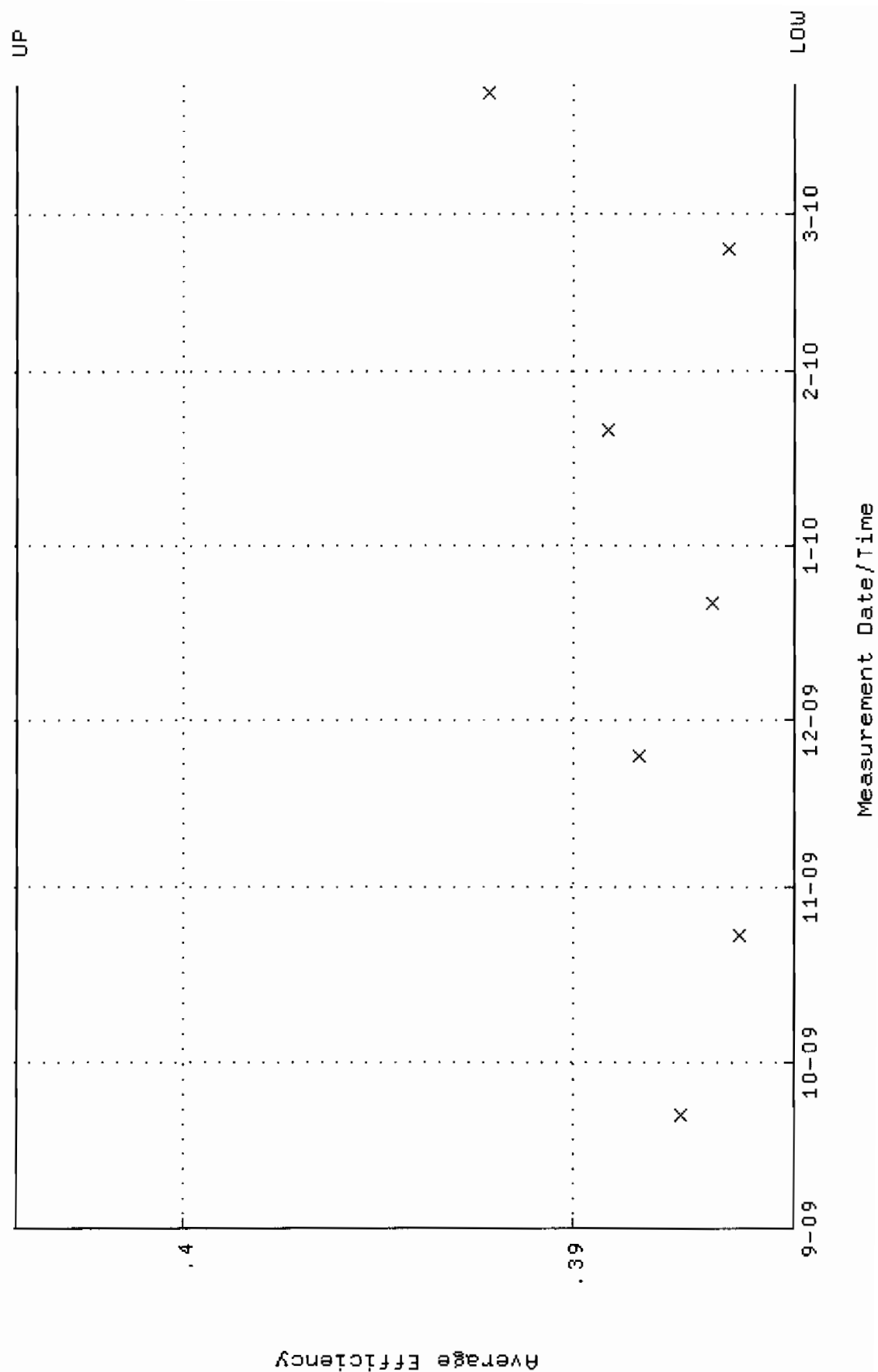
QA filename : DKA100:[ENV_ALPHA.QA.W]w166.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:52 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.1264 through 91.2442



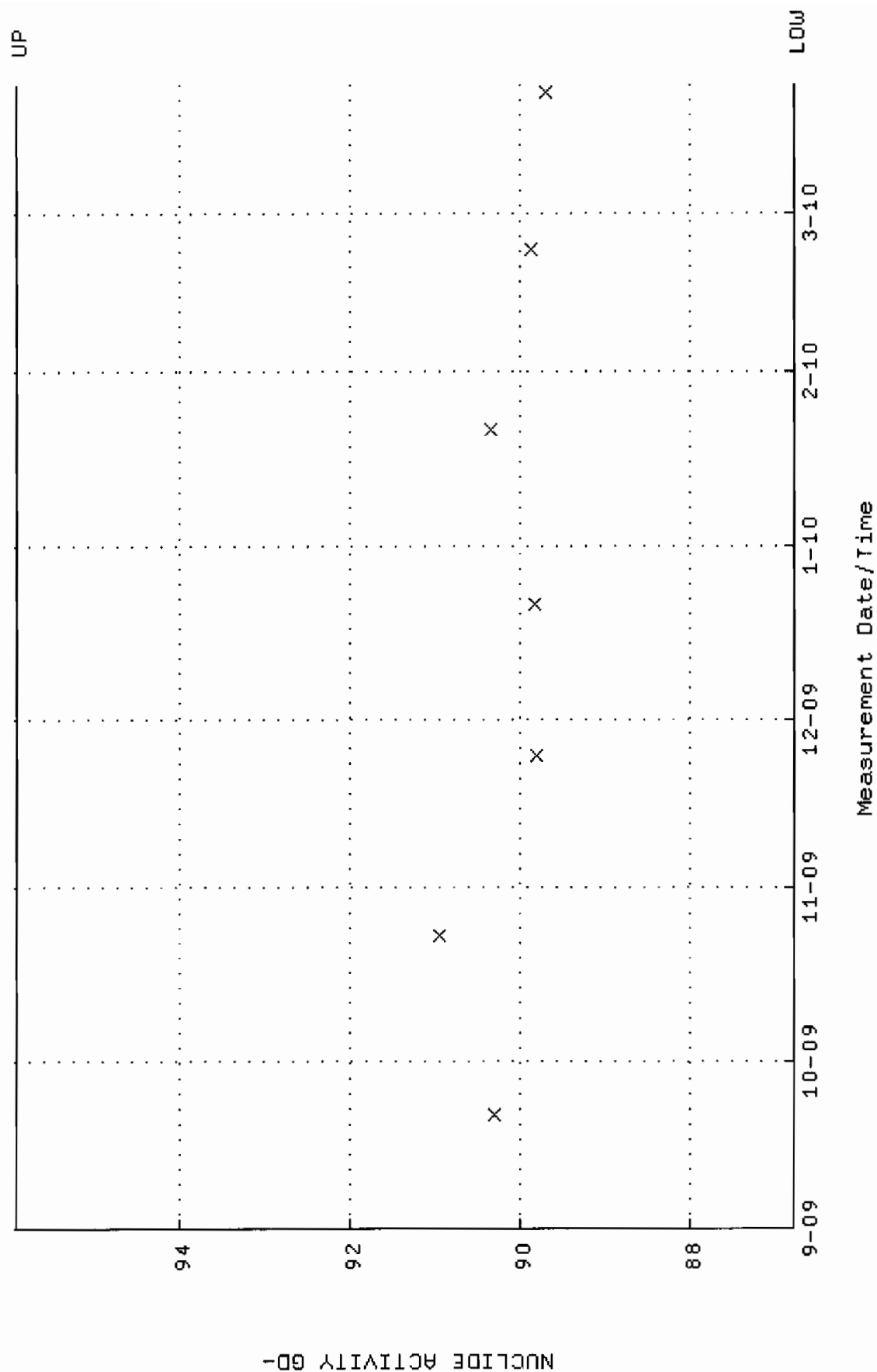
QA filename : DKA100:[ENV_ALPHA.QA.B]B166.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:35 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



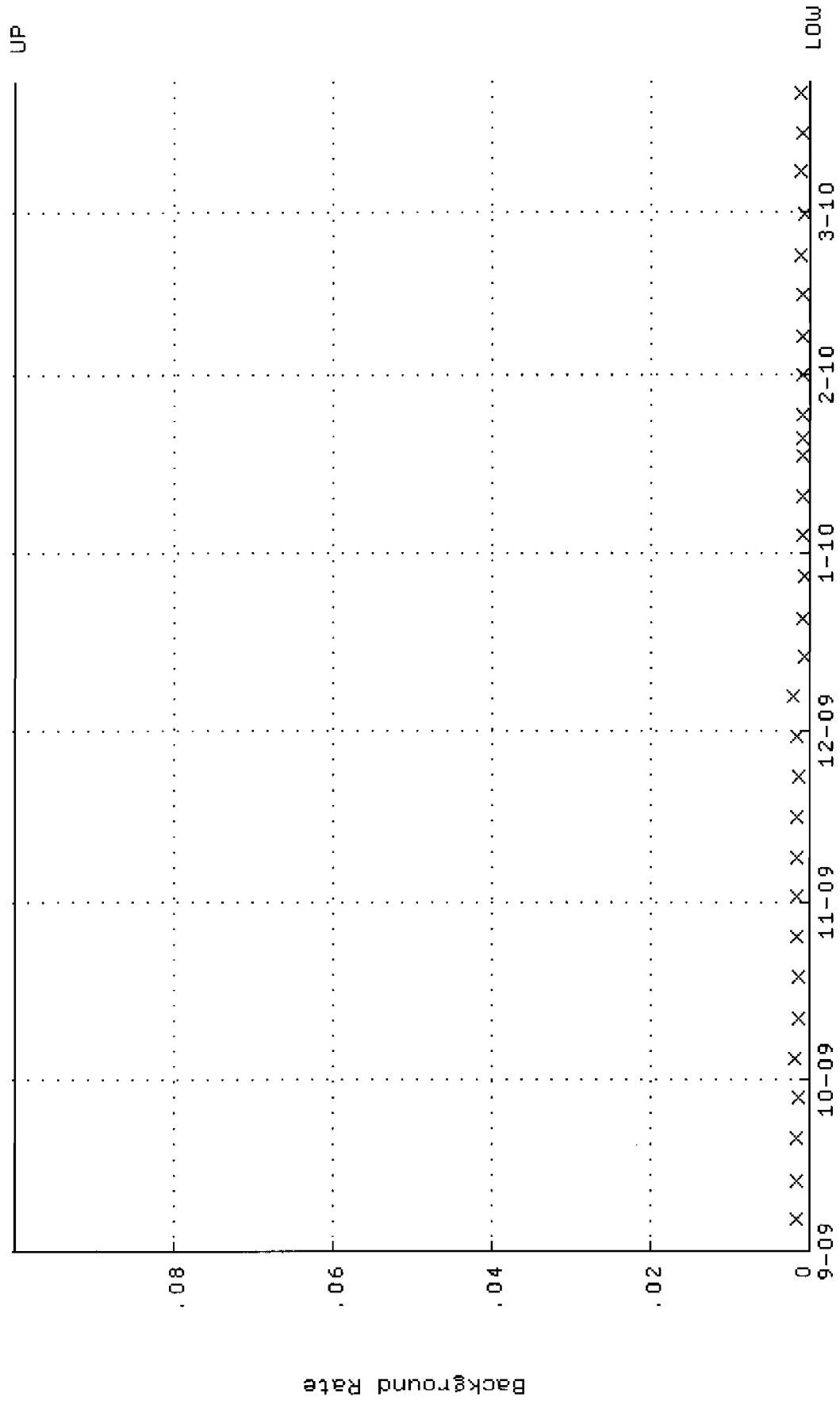
QA filename : DKA100:[ENV_ALPHA.QA.W]W167.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:28:59 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.384285 through 0.404285



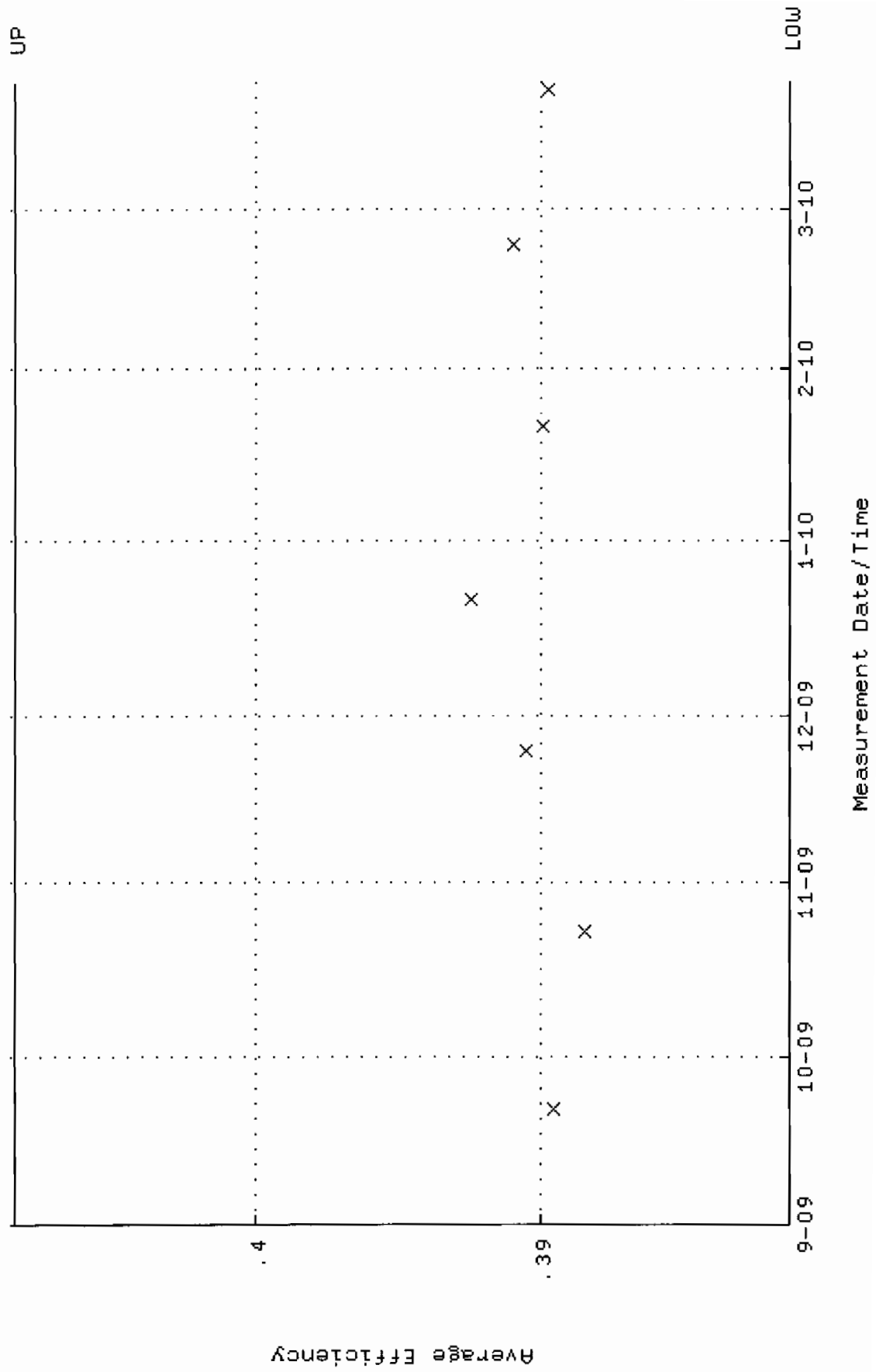
QA filename : DKA100:[ENV_ALPHA.QA.W]W167.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:59 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.7740 through 95.9082



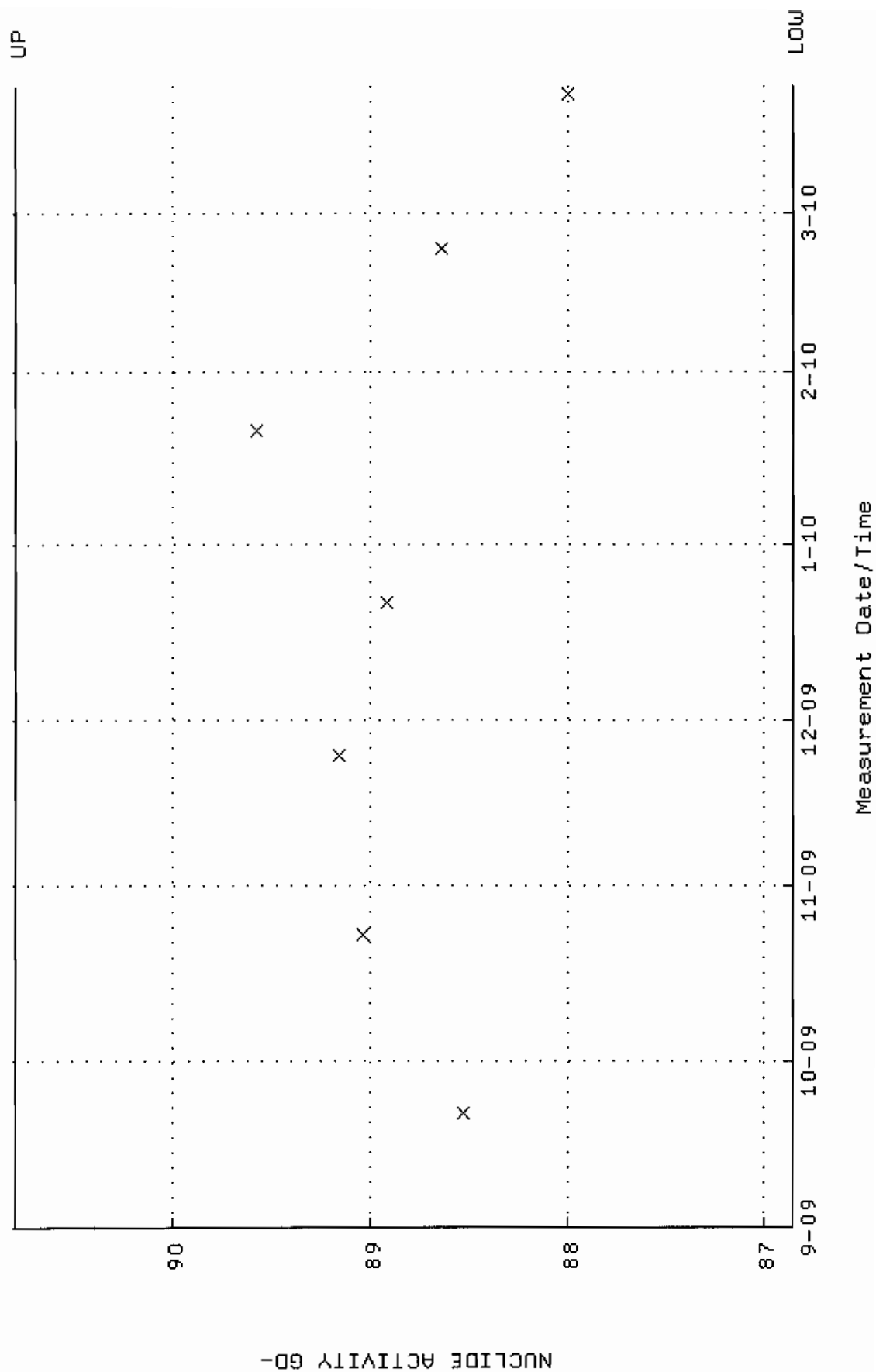
QA filename : DKA100:[ENV_ALPHA.QA.B]B167.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:40 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



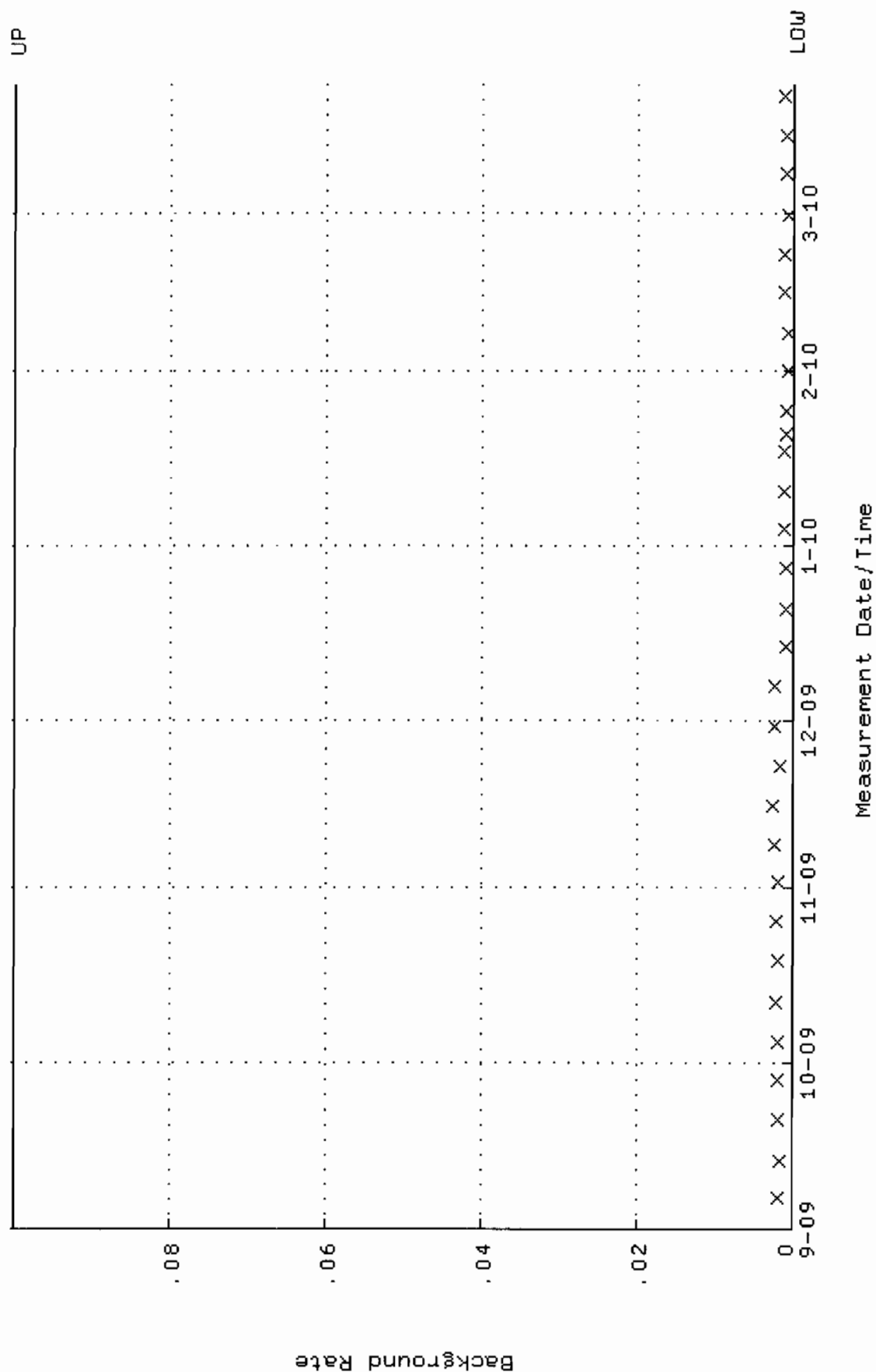
QA filename : DKA100:[ENV_ALPHA.QA.W]W168.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:07 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.381339 through 0.408495



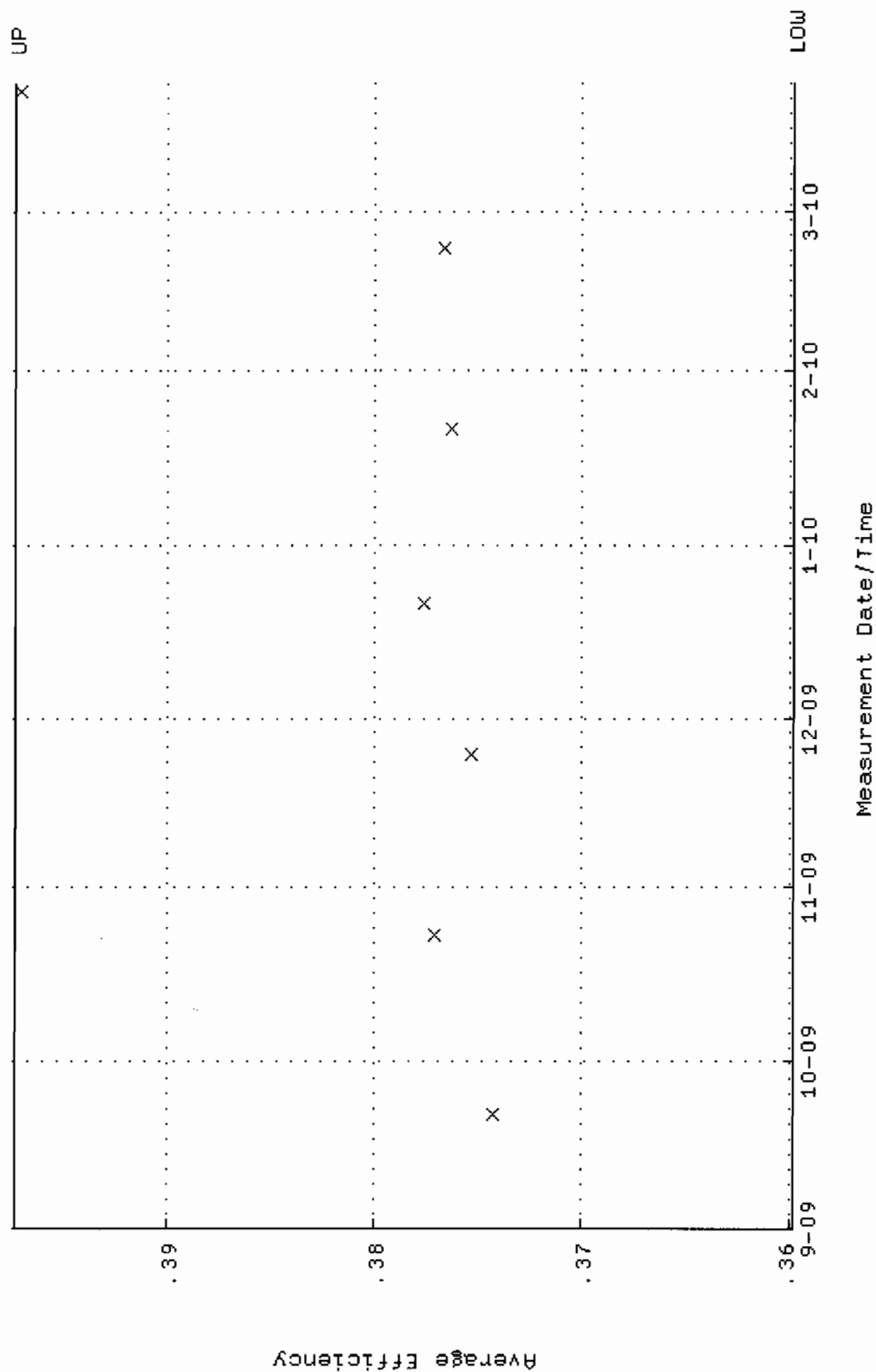
QA filename : DKA100:[ENV_ALPHA.QA.W]w168.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:07 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.8544 through 90.7976



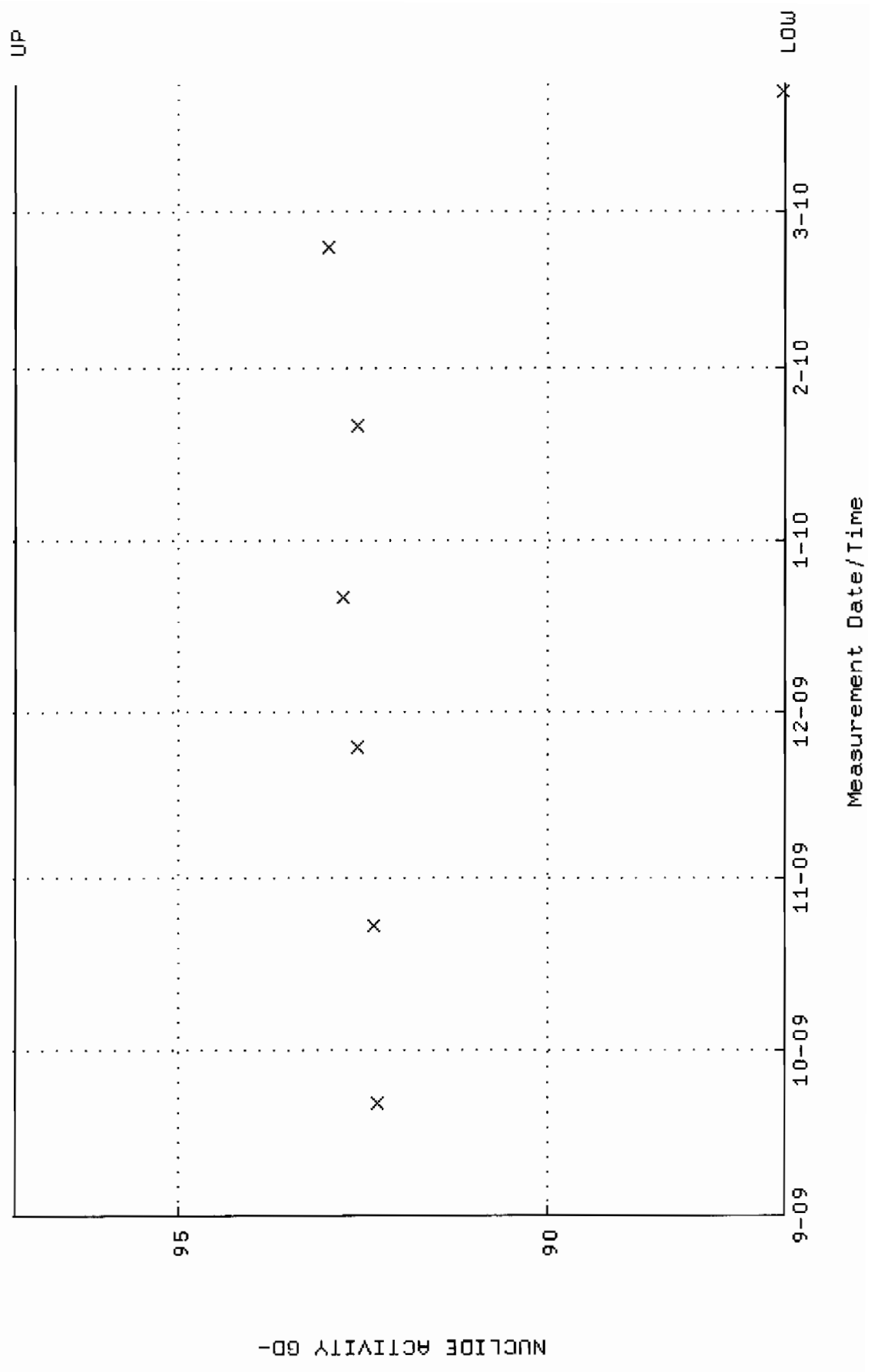
QA filename : DKA100:[ENV_ALPHA,QA,B]B168.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:44 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



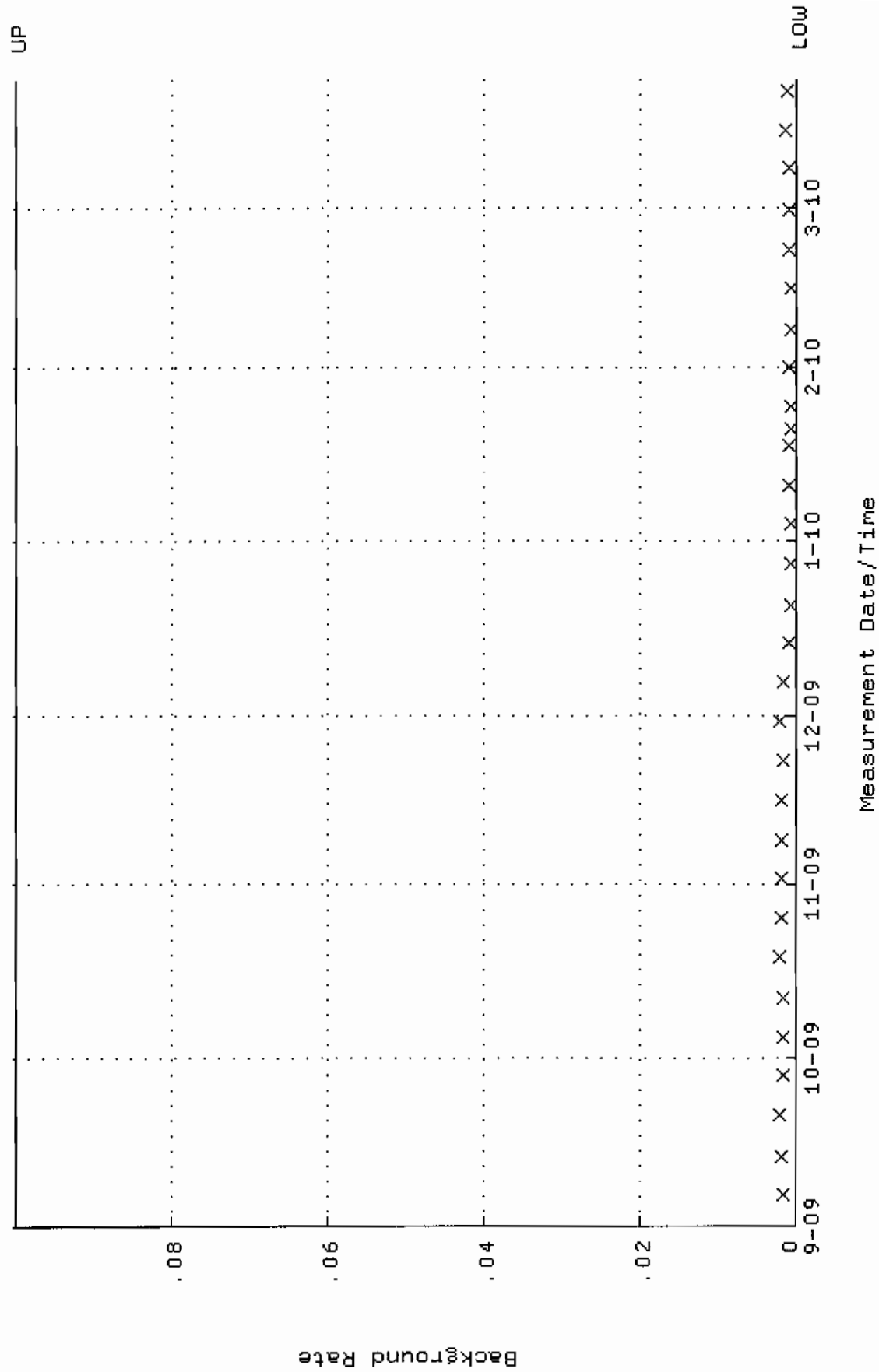
QA filename : DKA100:[ENV_ALPHA.QA.W]W169.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:13 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.359789 through 0.397279



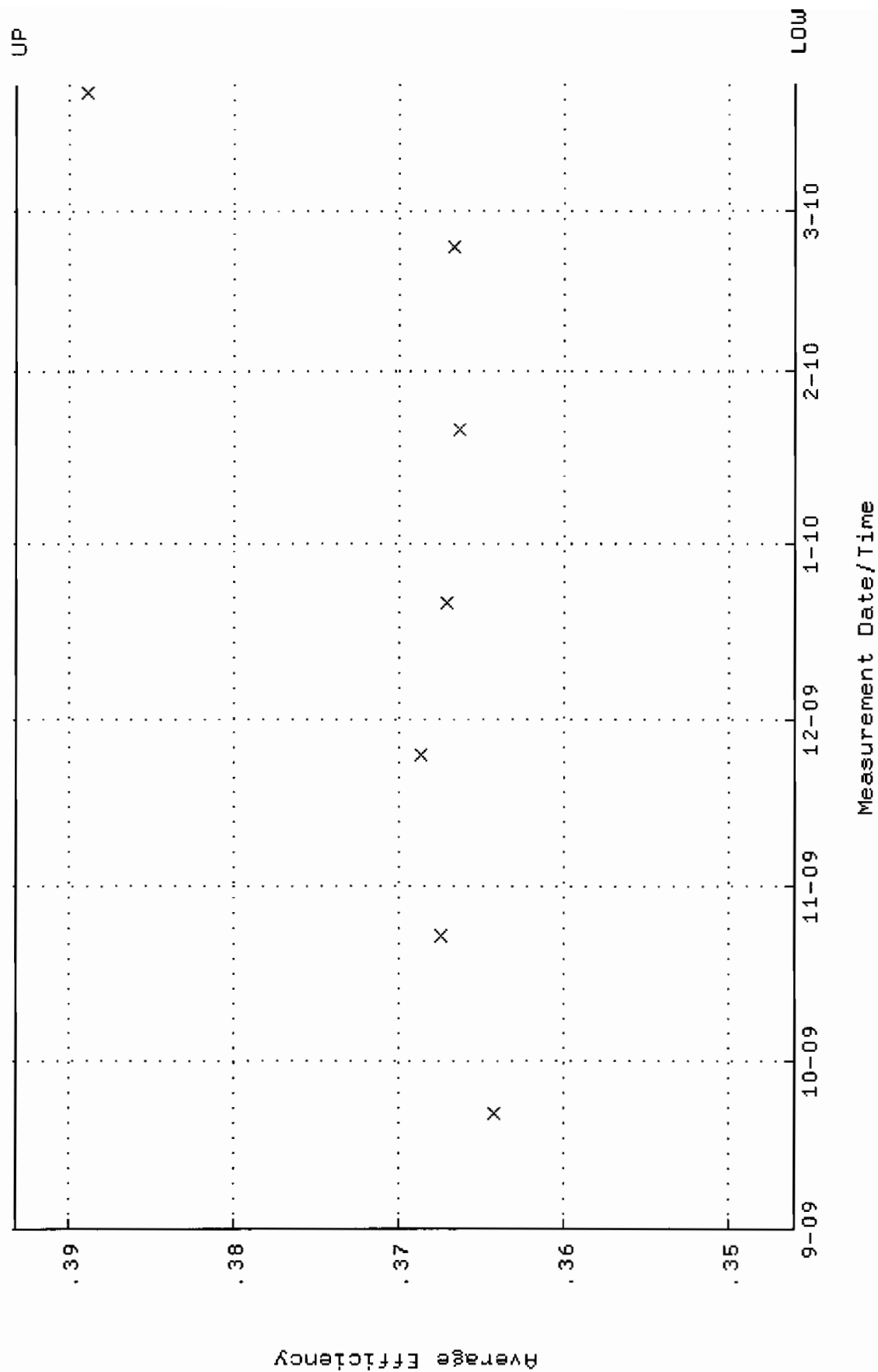
QA filename : DKA100:[ENV_ALPHA.QA.W]W169.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:13 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.7806 through 97.2228



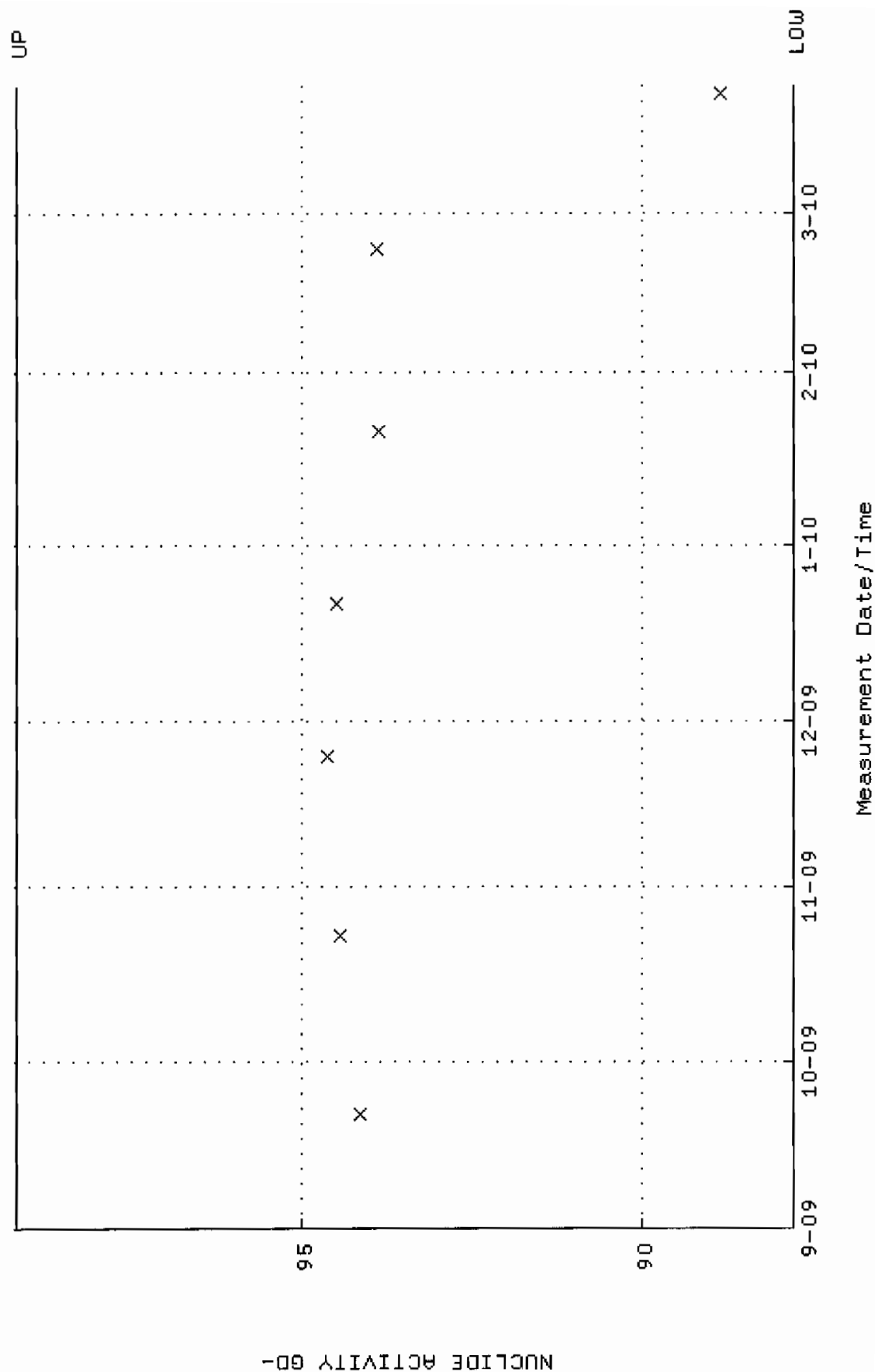
QA filename : DKA100:[ENV_ALPHA.QA.B]B169.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:48 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



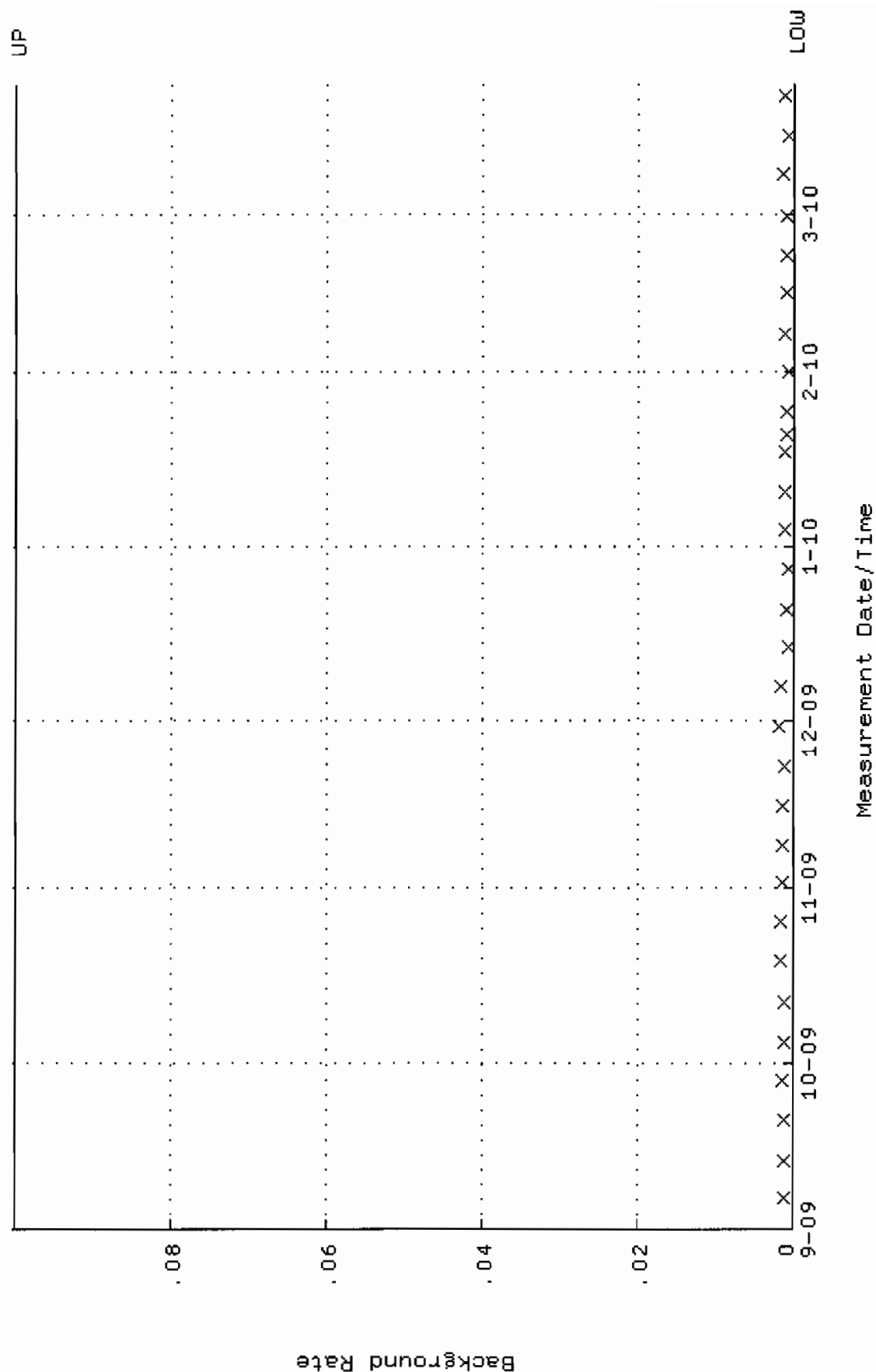
QA filename : DKA100:[ENV_ALPHA.QA.W]W170.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:20 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.345988 through 0.393202



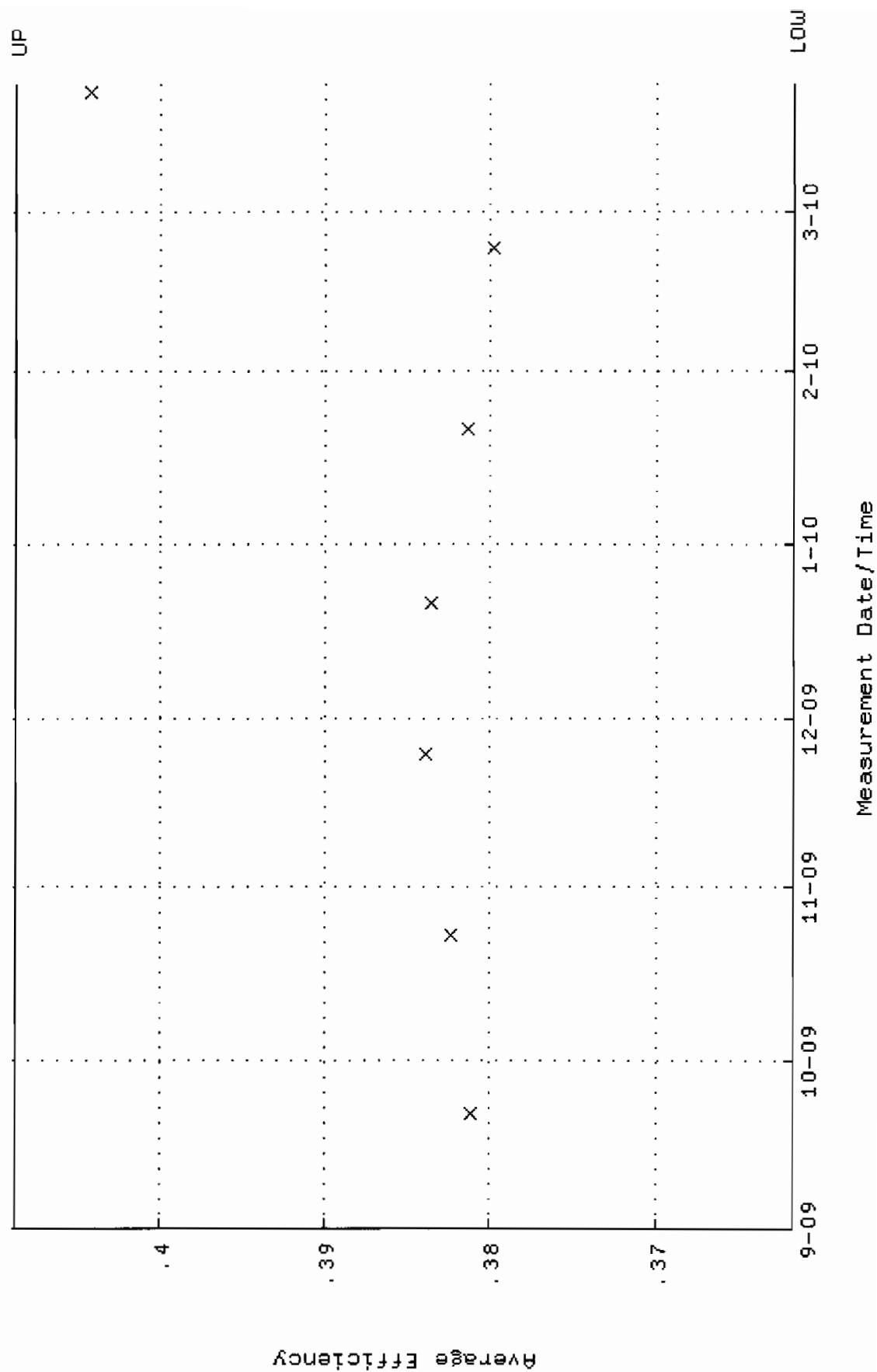
QA filename : DKA100:[ENV_ALPHA.QA.W]w170.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:20 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.7657 through 99.2031



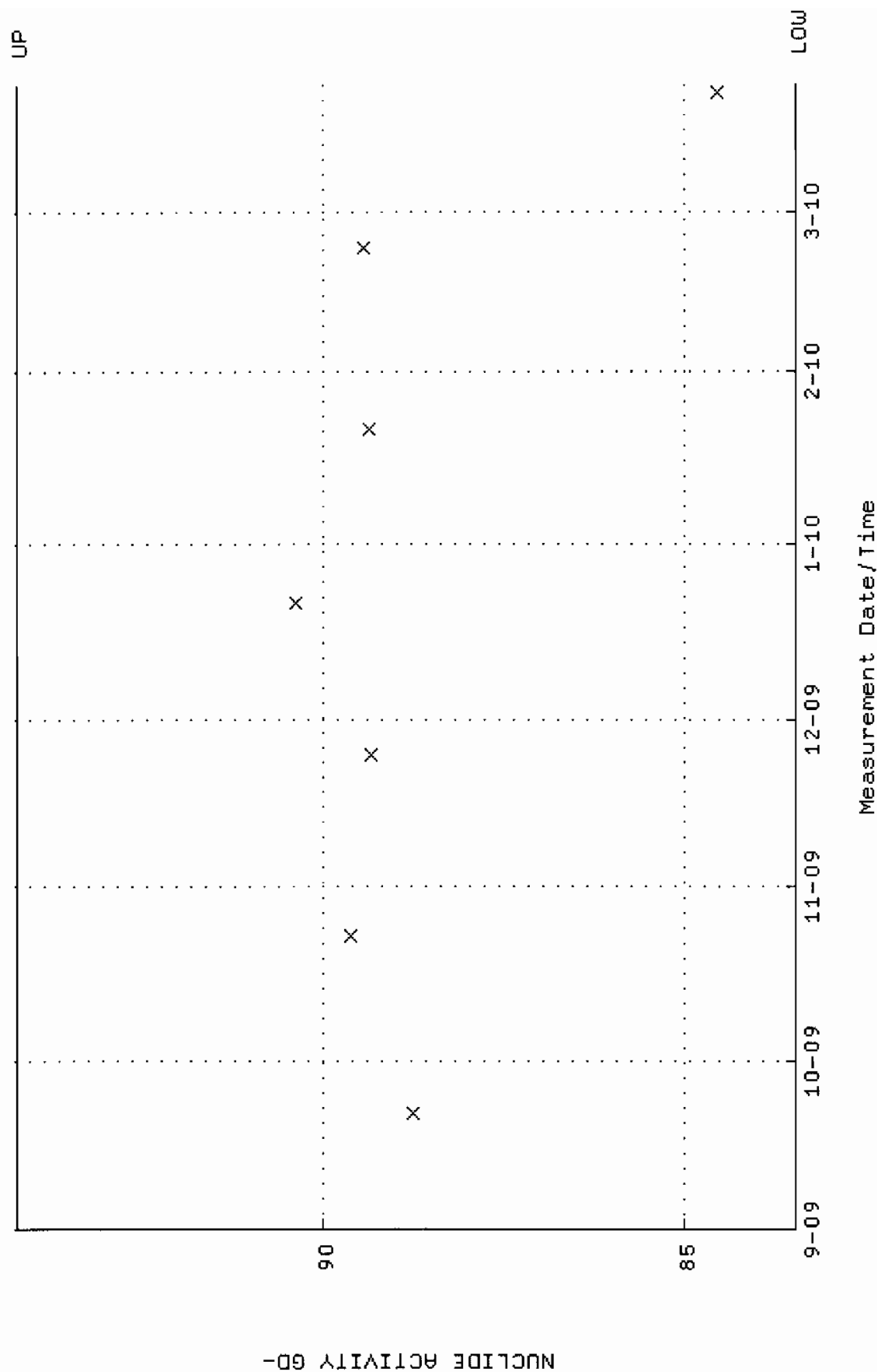
QA filename : DKA100:[ENV_ALPHA.QA.B]B170.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:53 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



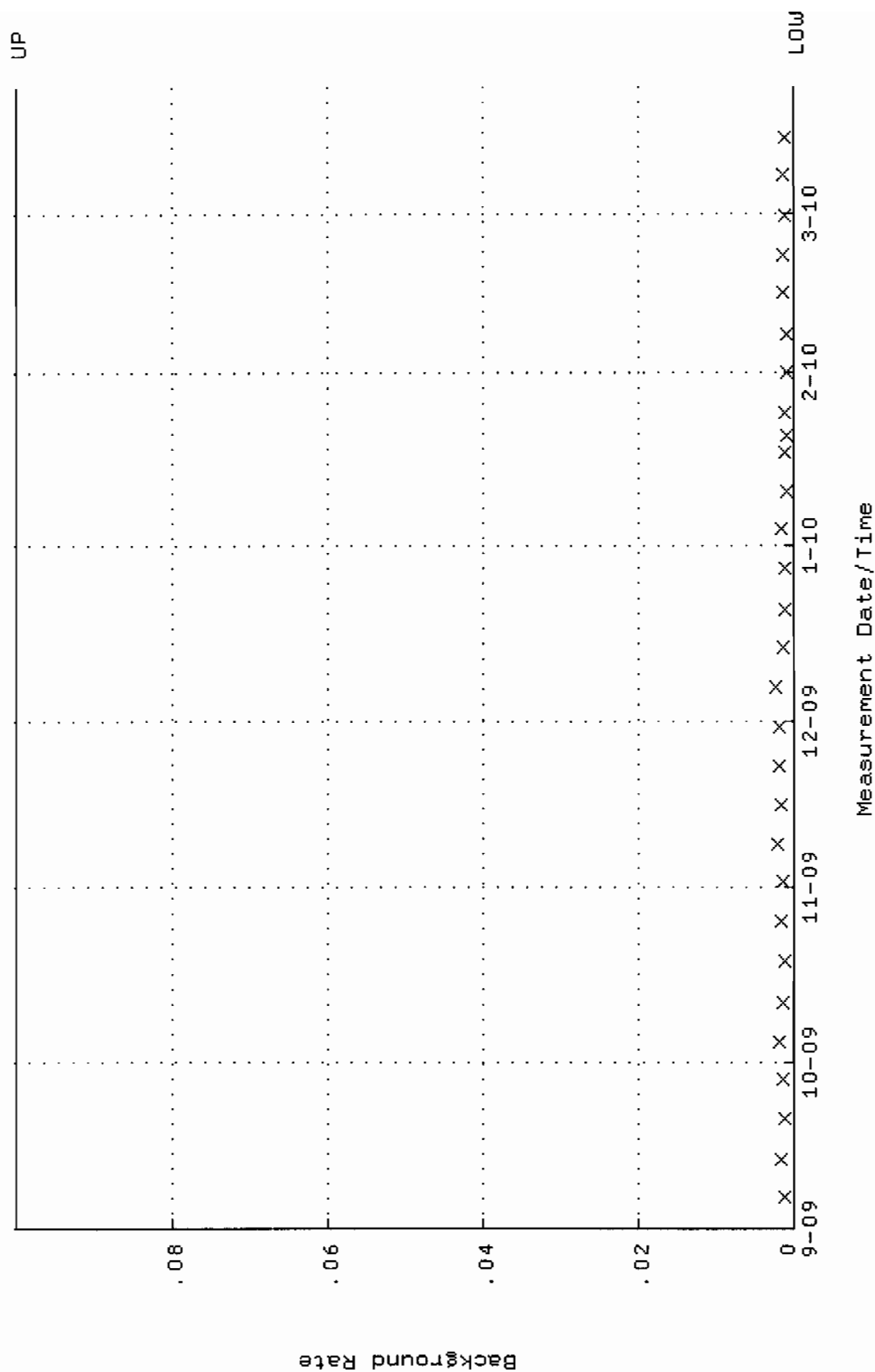
QA filename : DKA100:[ENV_ALPHA.QA.W]W171.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:26 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.361650 through 0.408748



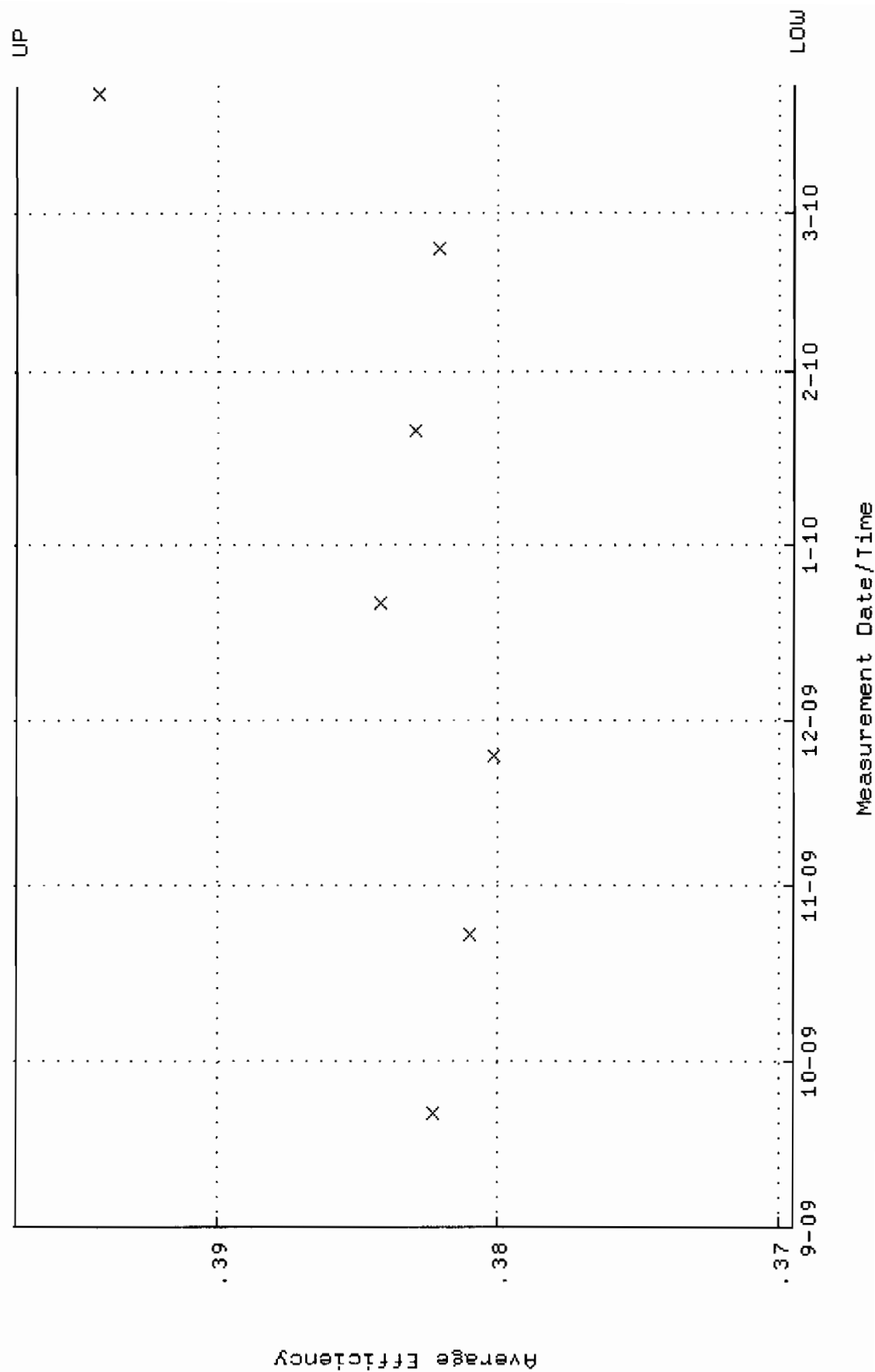
QA filename : DKA100:[ENV_ALPHA.QA.W]U171.QAF;1
 Parameter Name : NLACTVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:26 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.4334 through 94.2602



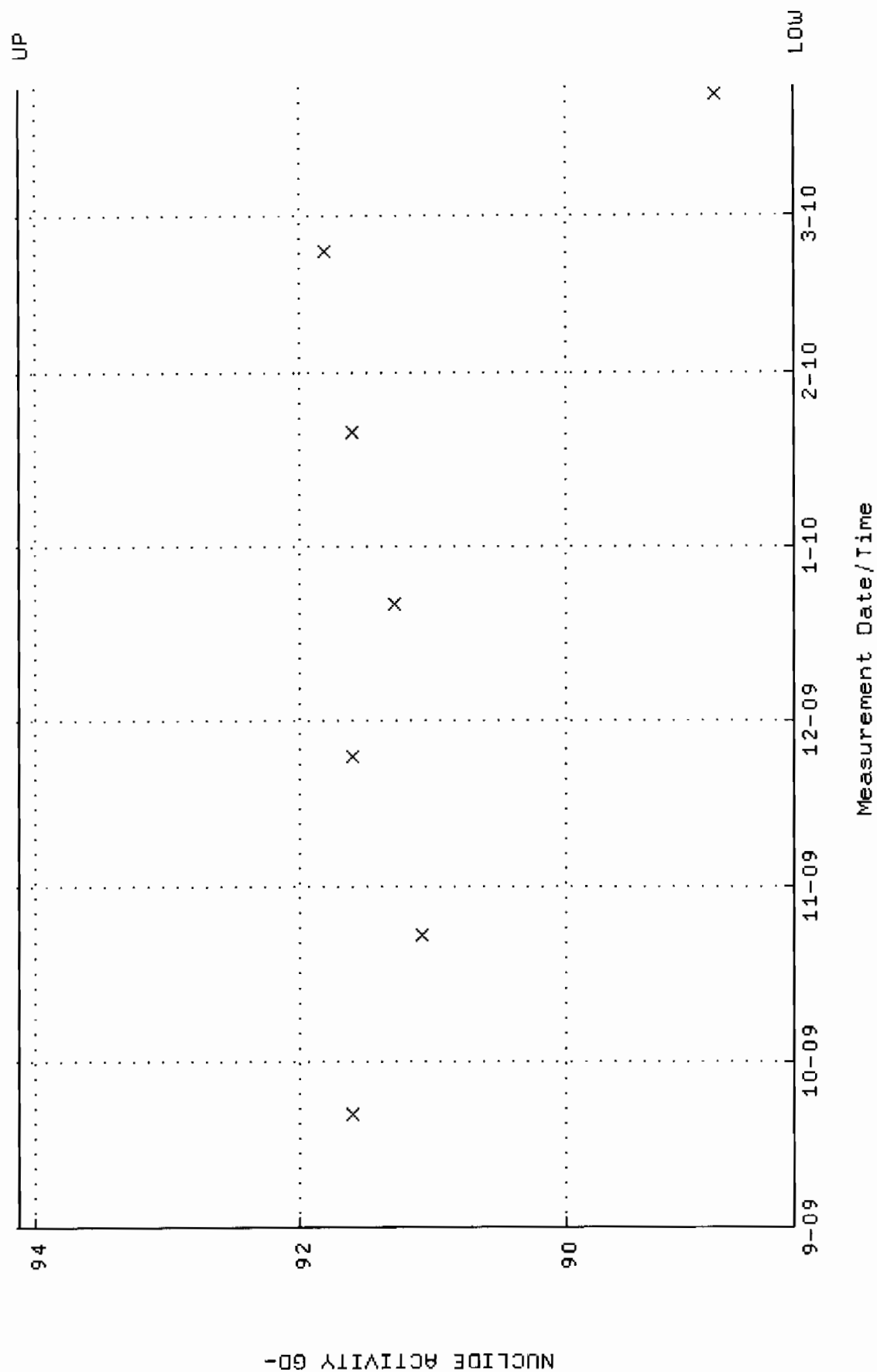
QA filename : DKA100:[ENV_ALPHA.QA.B]B171.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:58 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



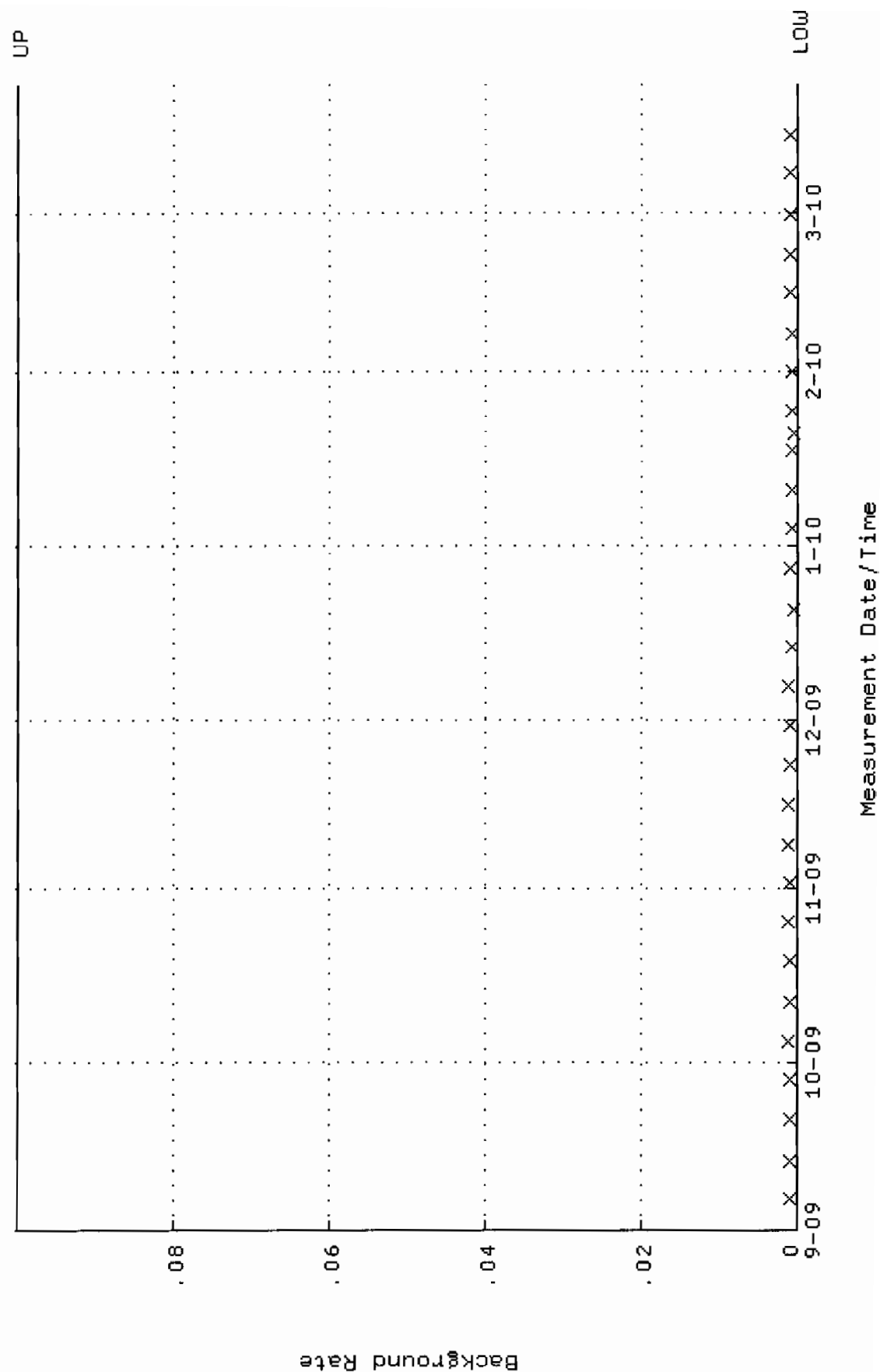
QA filename : DKA100:[ENV_ALPHA.QA.W]U172.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:32 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.369454 through 0.397138



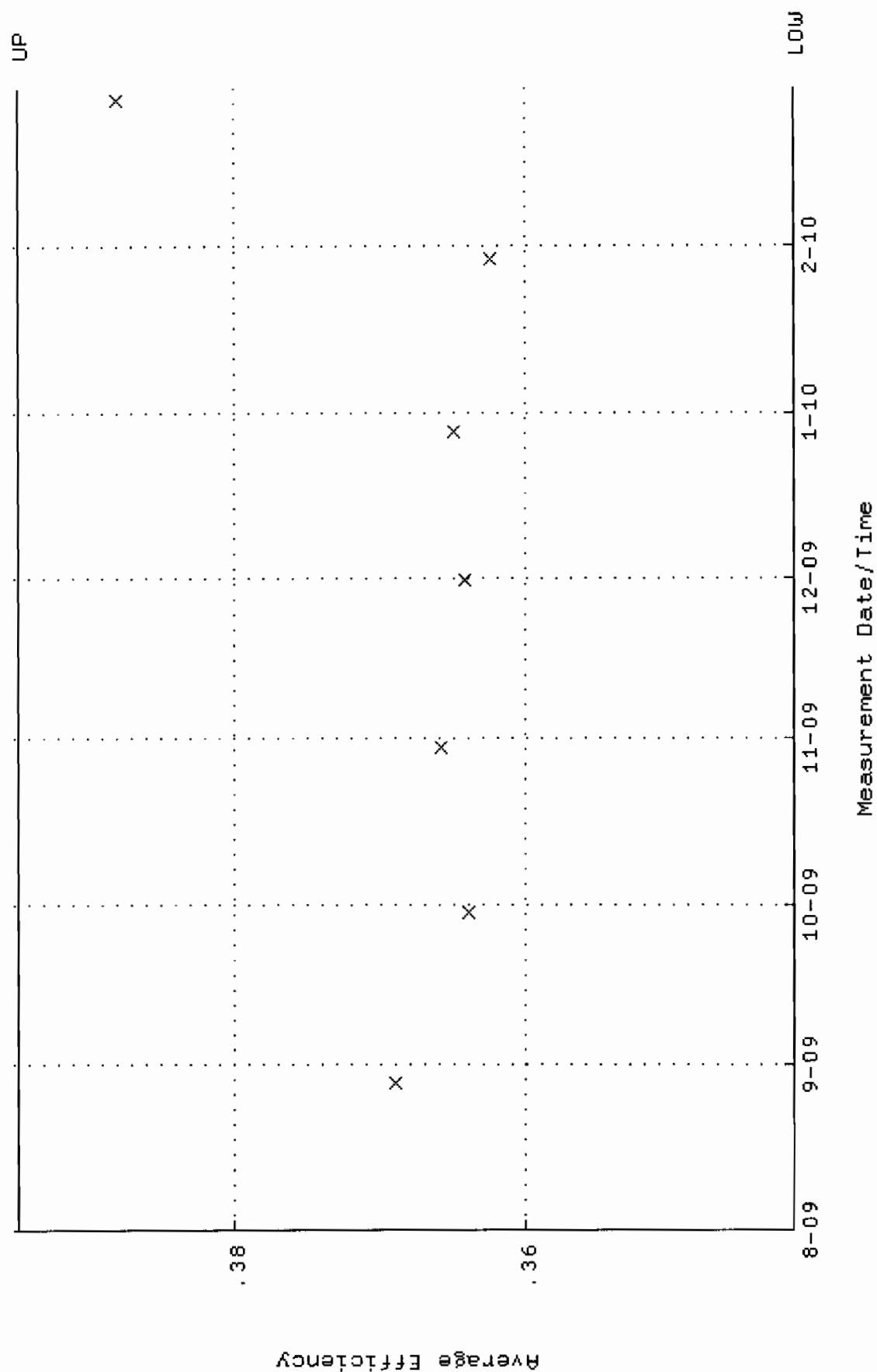
QA filename : DKA100:[ENV_ALPHA.QA.W]w172.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:32 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.2917 through 94.1169



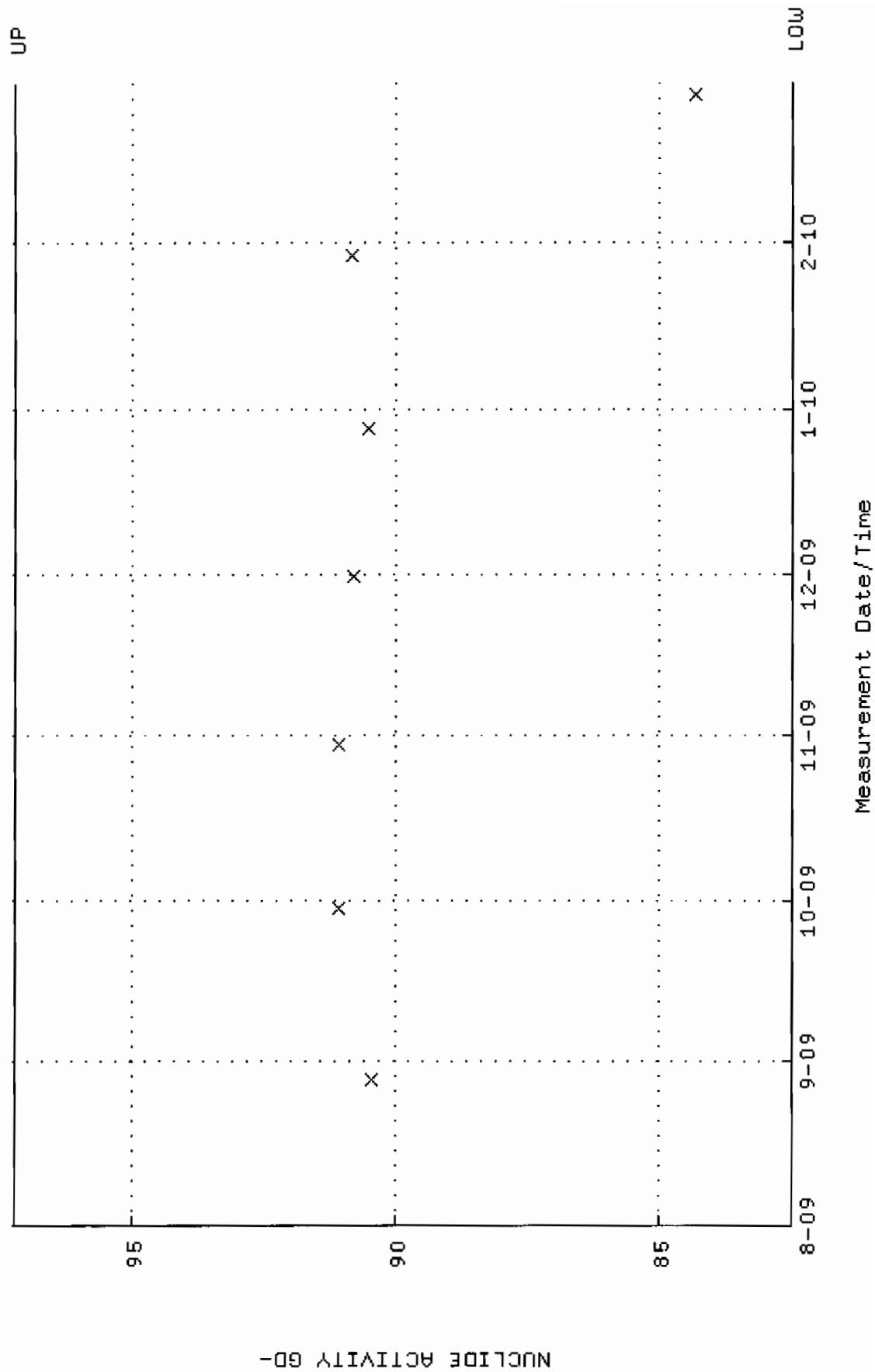
QA filename : DKA100:[ENV_ALPHA.QA.B]B172.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:45:02 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



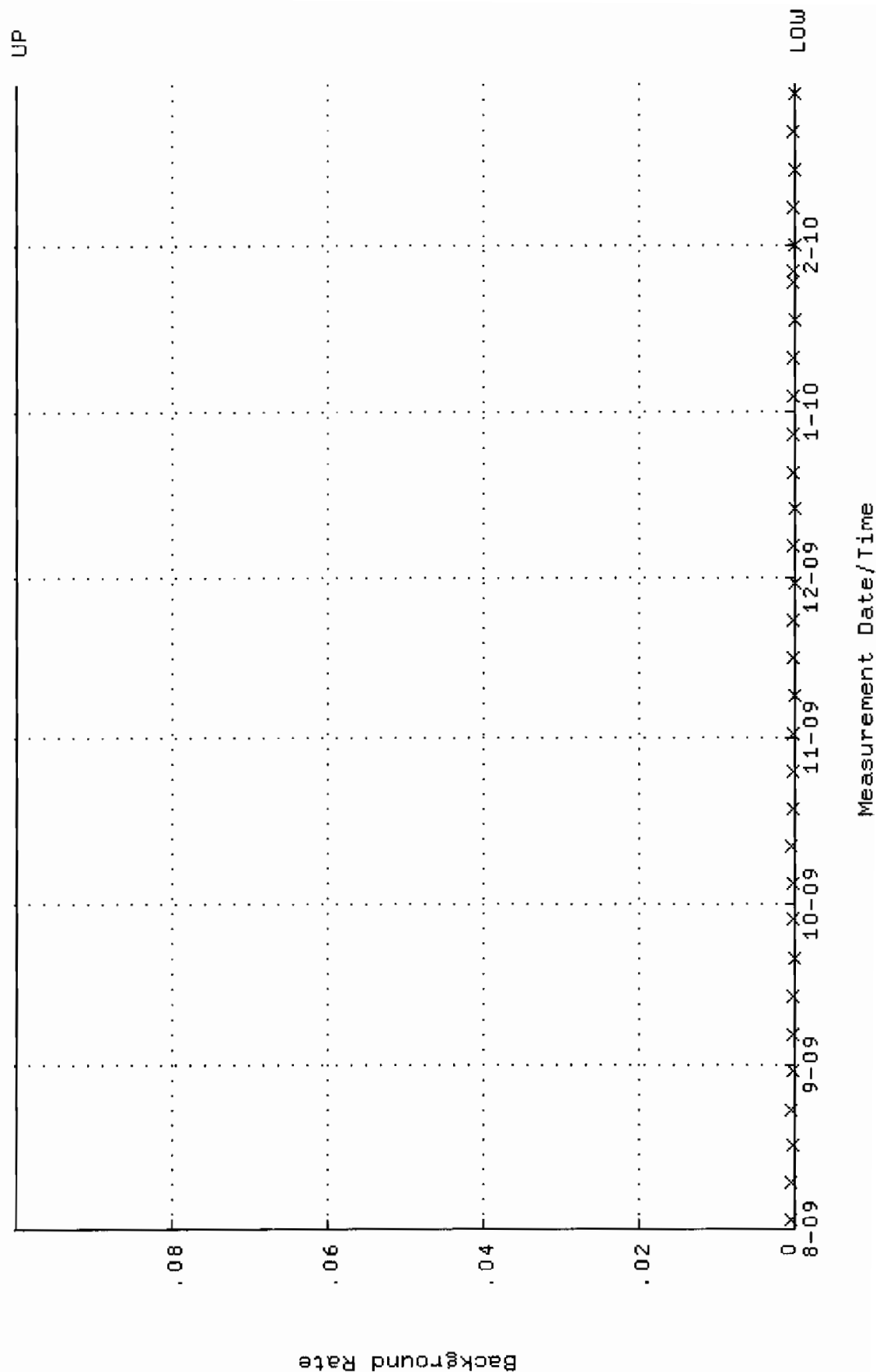
QA filename : DKA100:[ENV_ALPHA.QA.W]W209.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:06:29 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.341431 through 0.395023



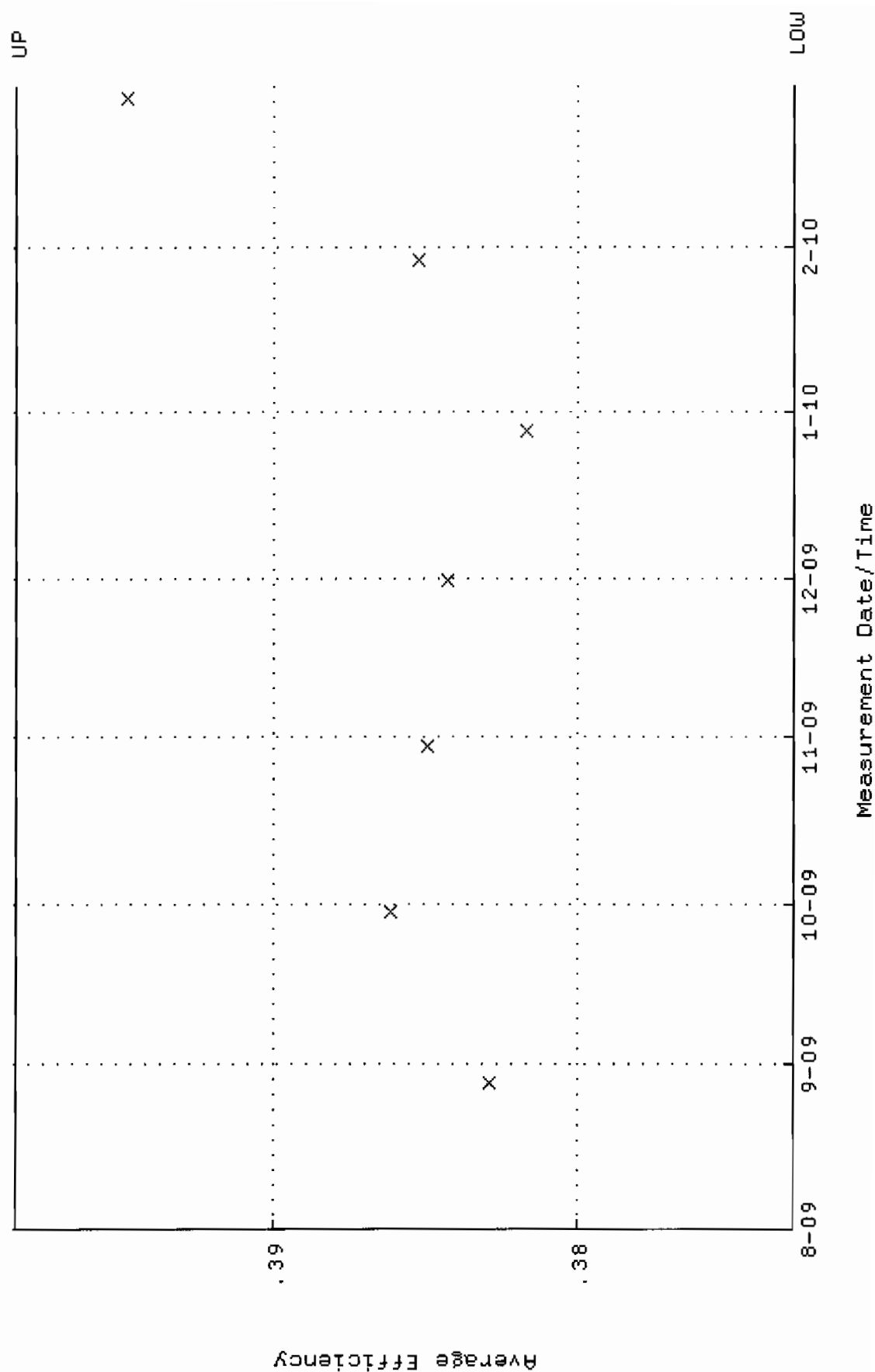
QA filename : DKA100:[ENV_ALPHA.QA.W]W209.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:06:29 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.4748 through 97.2344



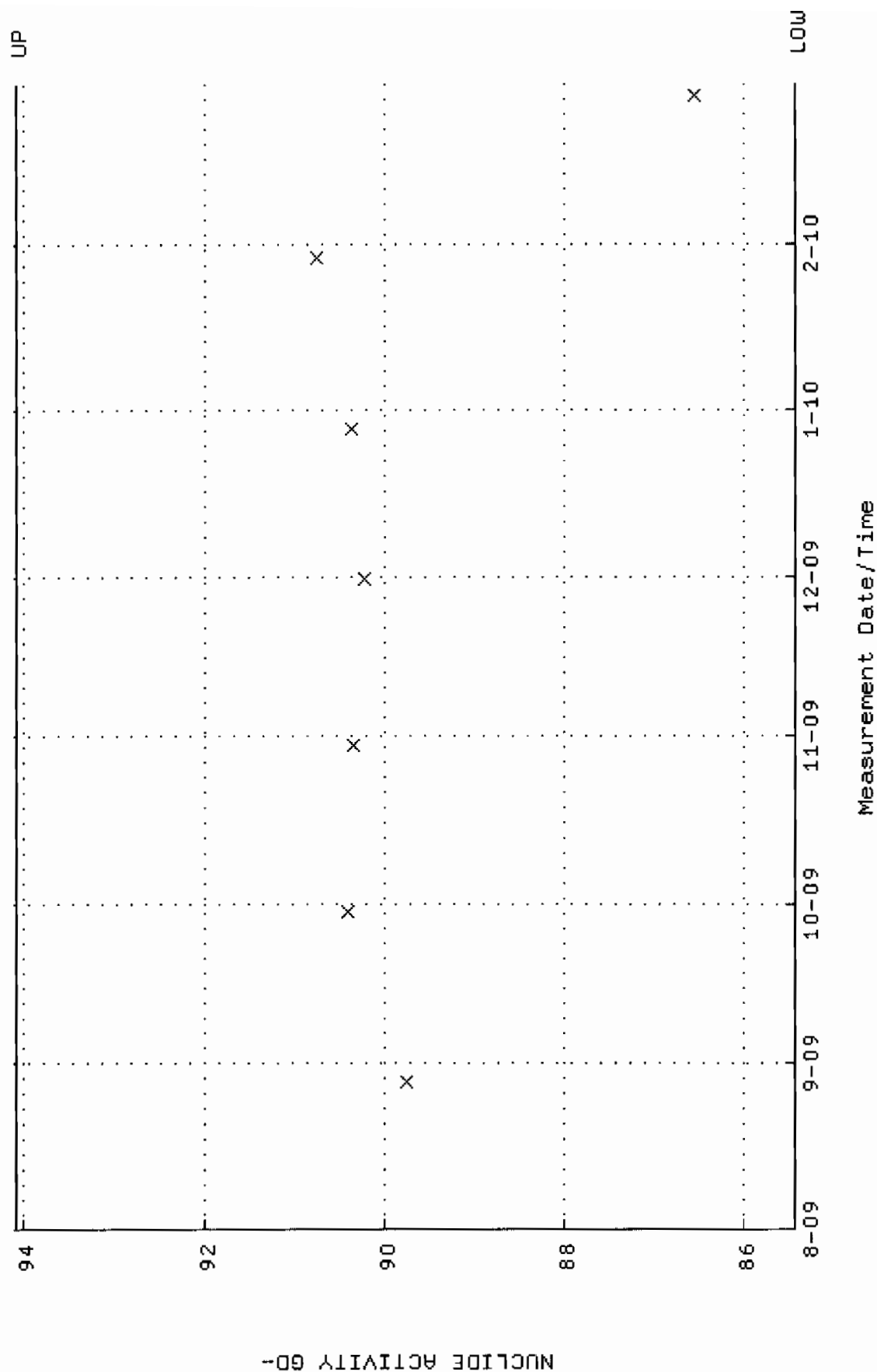
QA filename : DKA100:[ENV_ALPHA.QA.B]B209.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:25:10 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



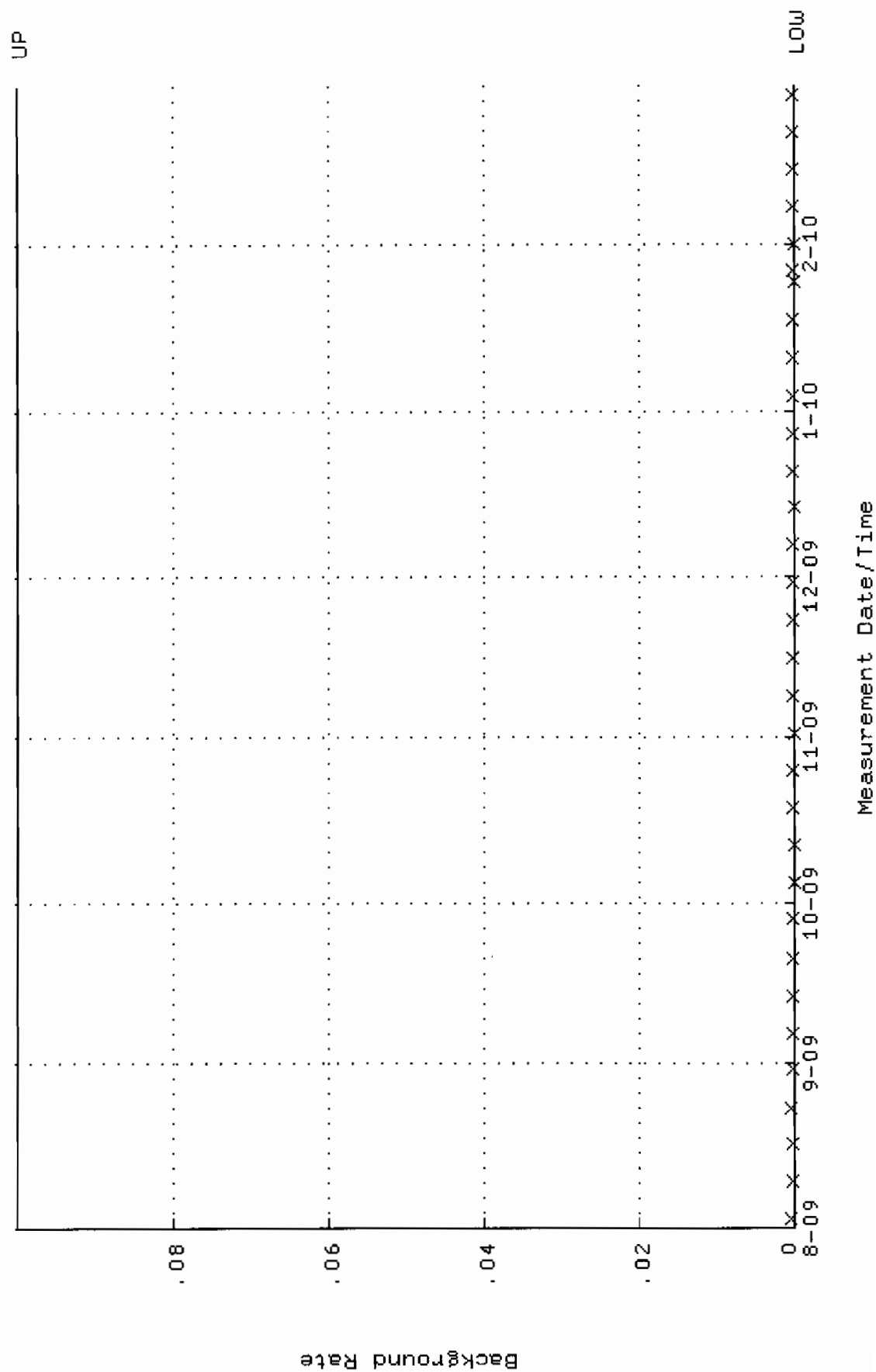
QA filename : DKA100:[ENV_ALPHA.QA.W]W210.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:06:35 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.372938 through 0.398472



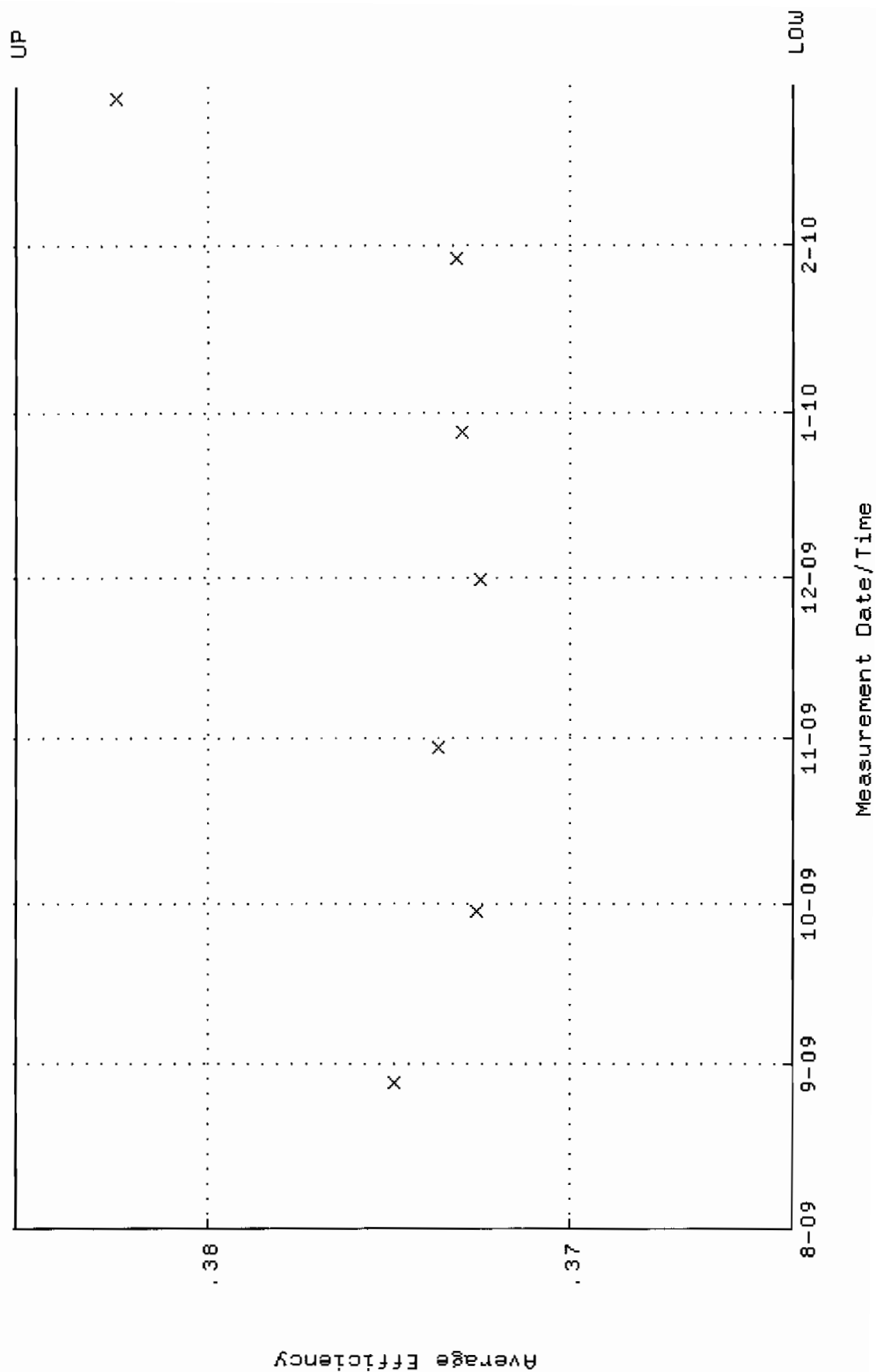
QA filename : DKA100:[ENV_ALPHA.QA.W]W210.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:06:35 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.4367 through 94.0881



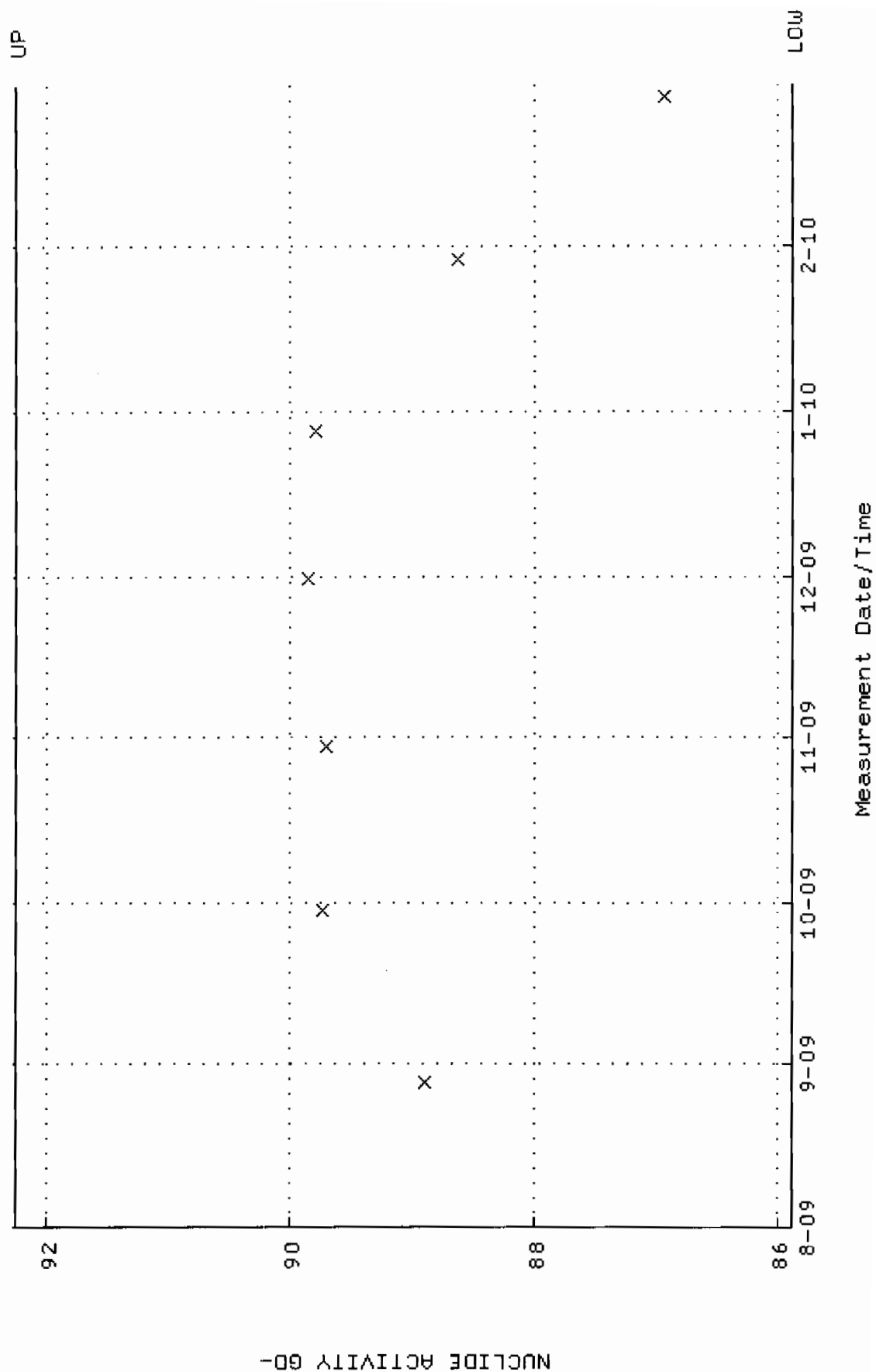
QA filename : DKA100:[ENV_ALPHA.QA.B]B210.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:25:14 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA,QA,W]U213.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:06:50 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.363867 through 0.385287



QA filename : DKA100:[ENV_ALPHA.QA.W]W213.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:06:50 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.8876 through 92.2476

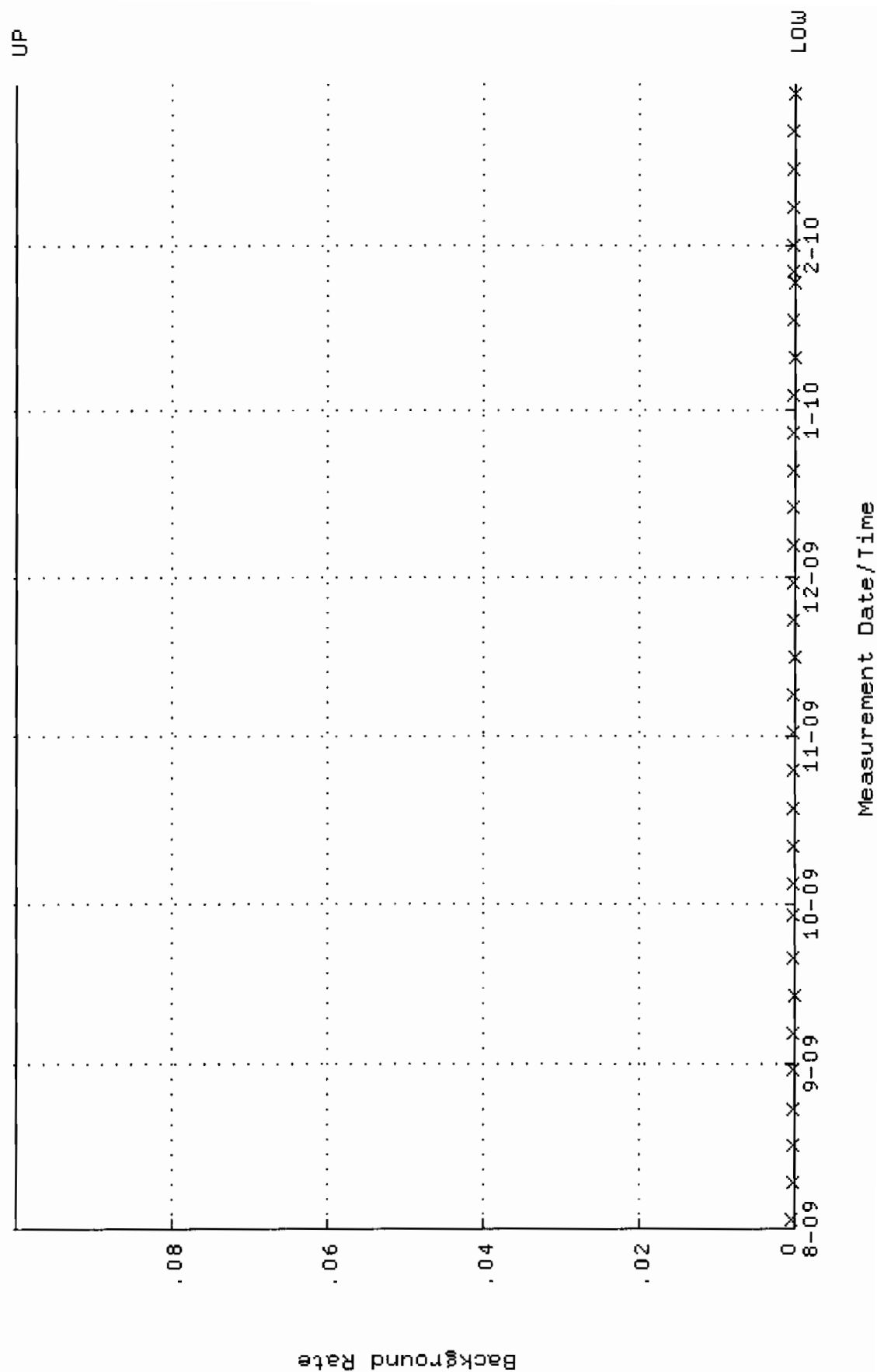


QA filename : DKA100:[ENV_ALPHA.QA.B]B213.QAF;1

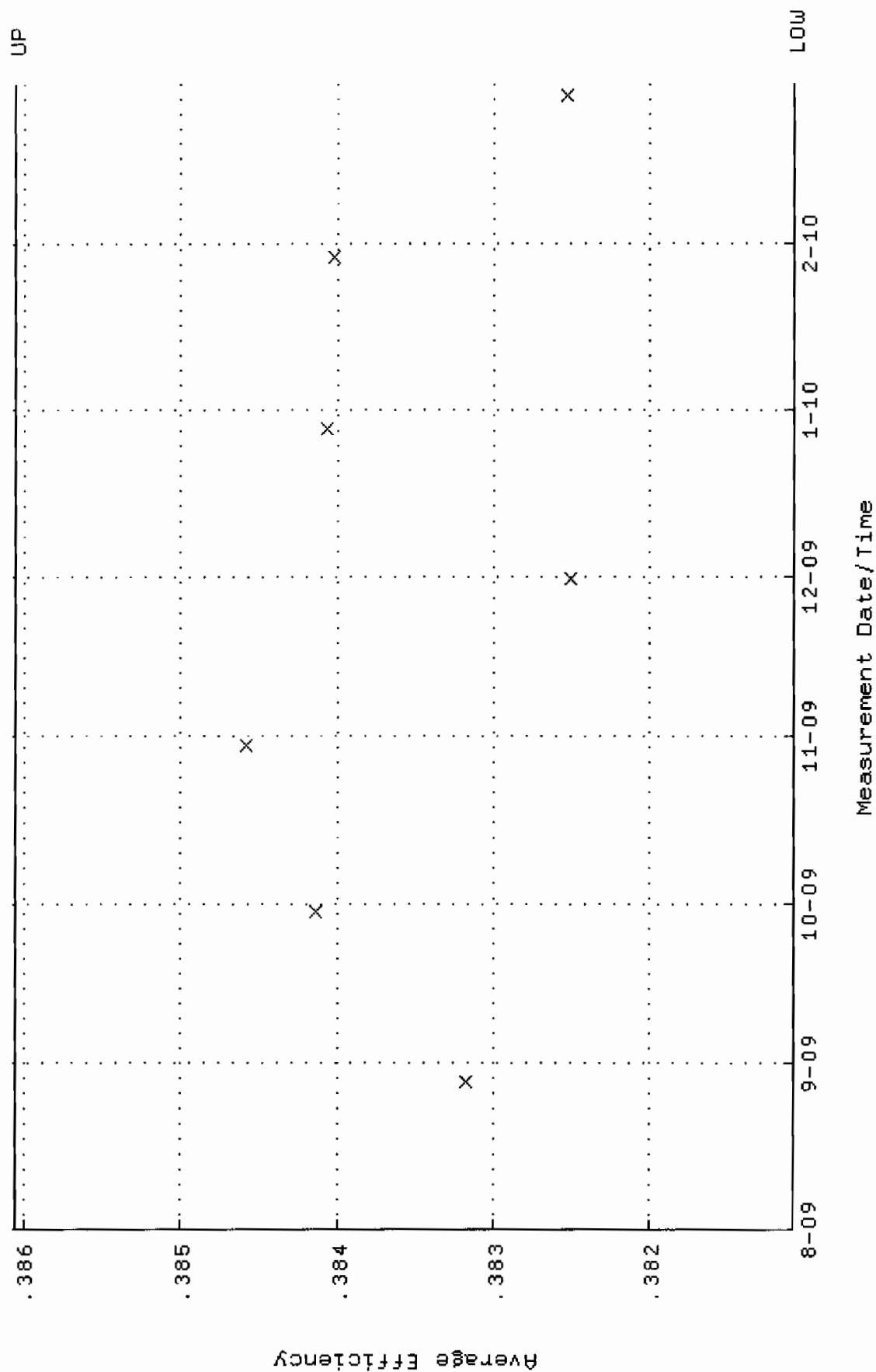
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:25:27 through 2-MAR-2010 12:00:00

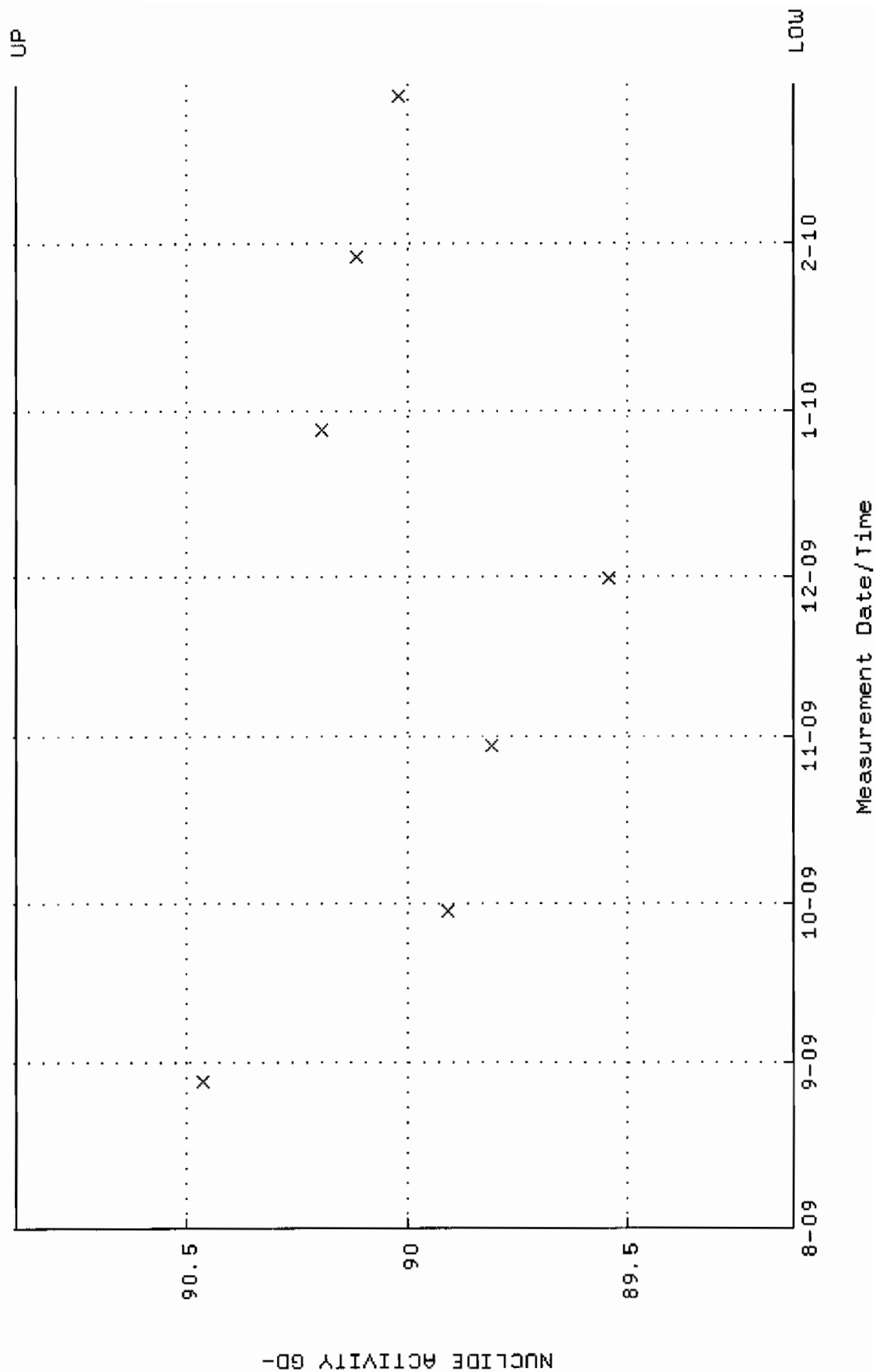
Lower/Upper Lmts: 0.000000E+00 through 0.100000



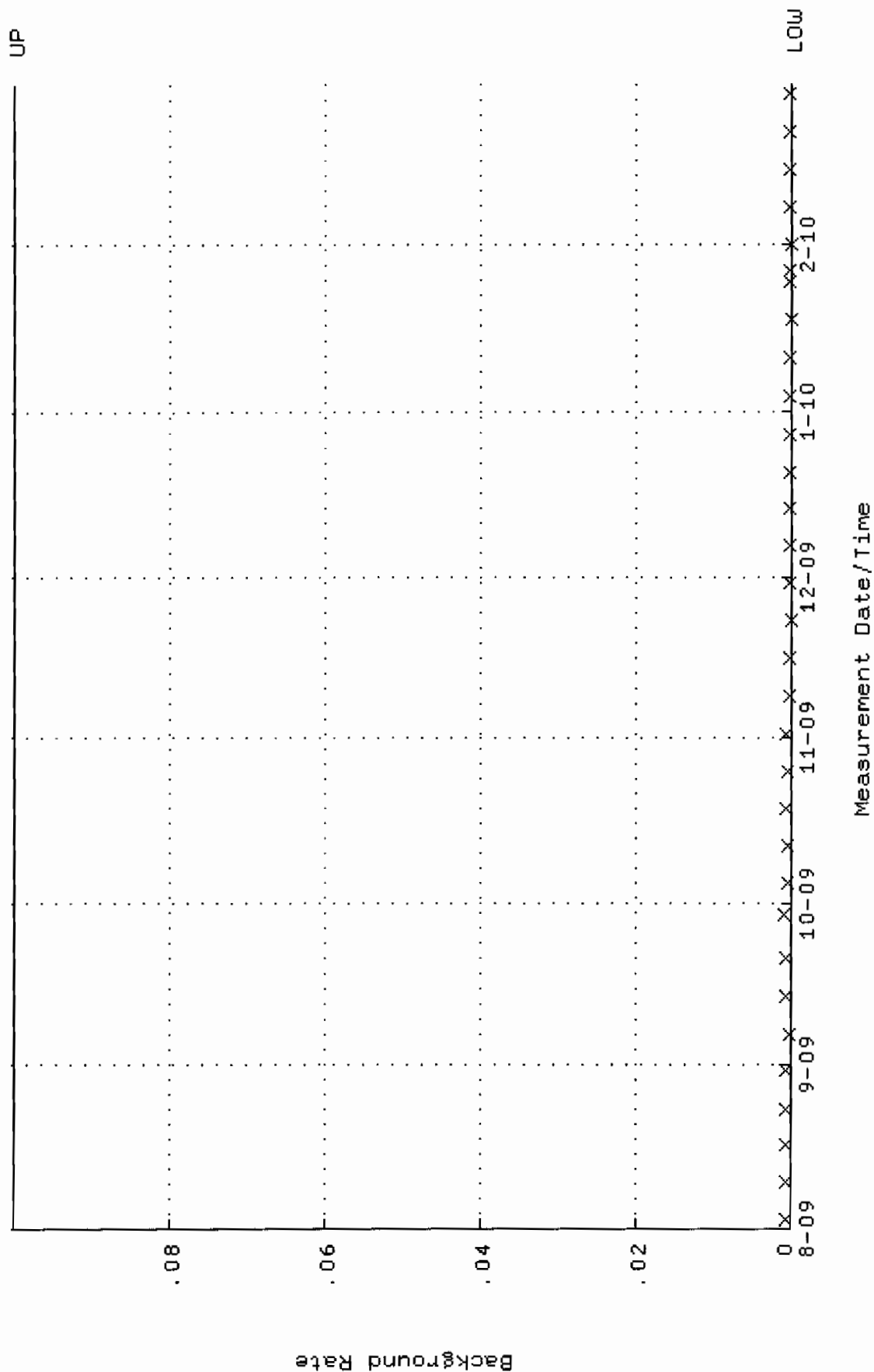
QA filename : DKA100:[ENV_ALPHA.QA.W]w214.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:06:55 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.381077 through 0.386057



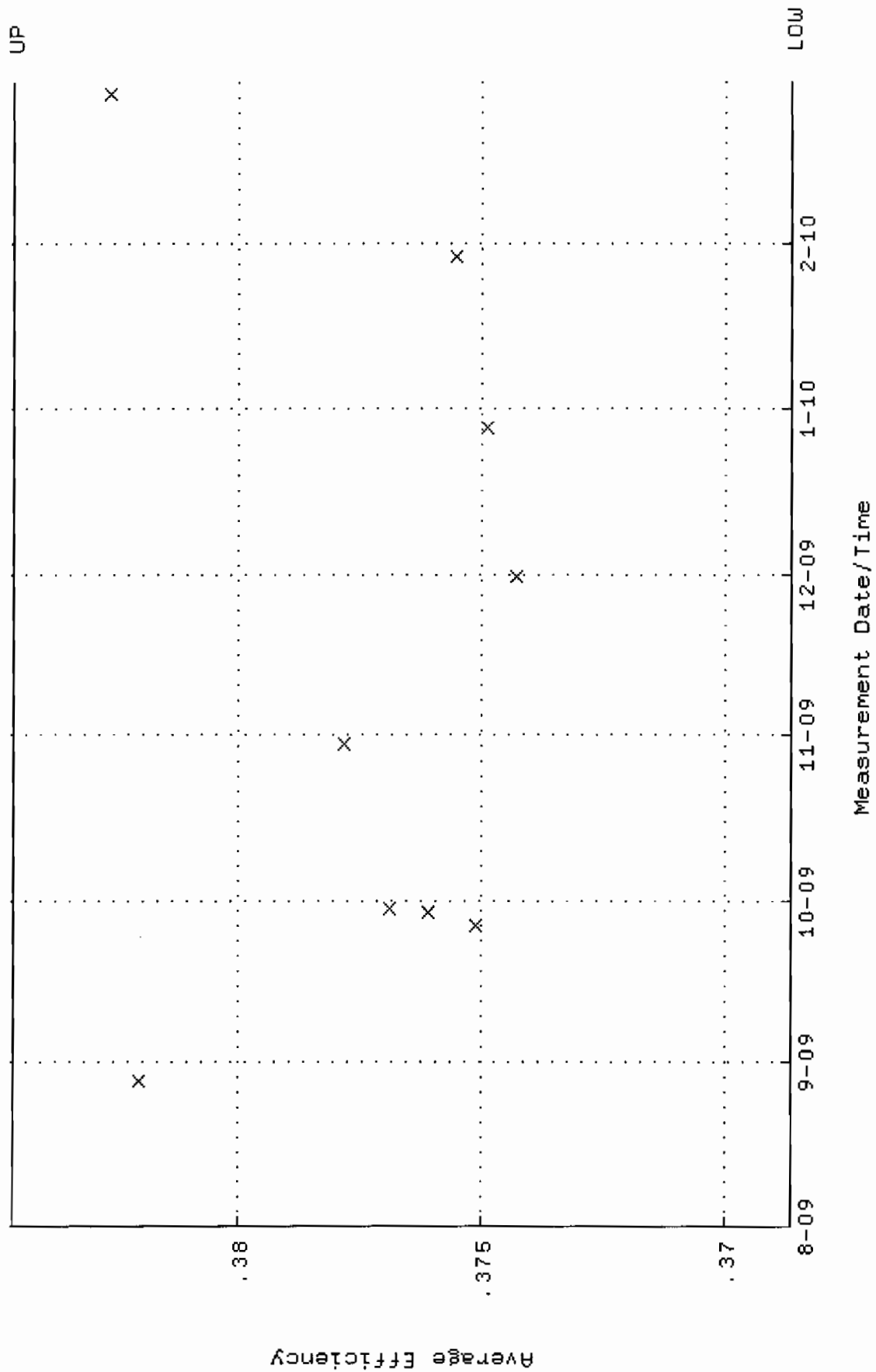
QA filename : DKA100:[ENV_ALPHA.QA.W]W214.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:06:55 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.1239 through 90.8865



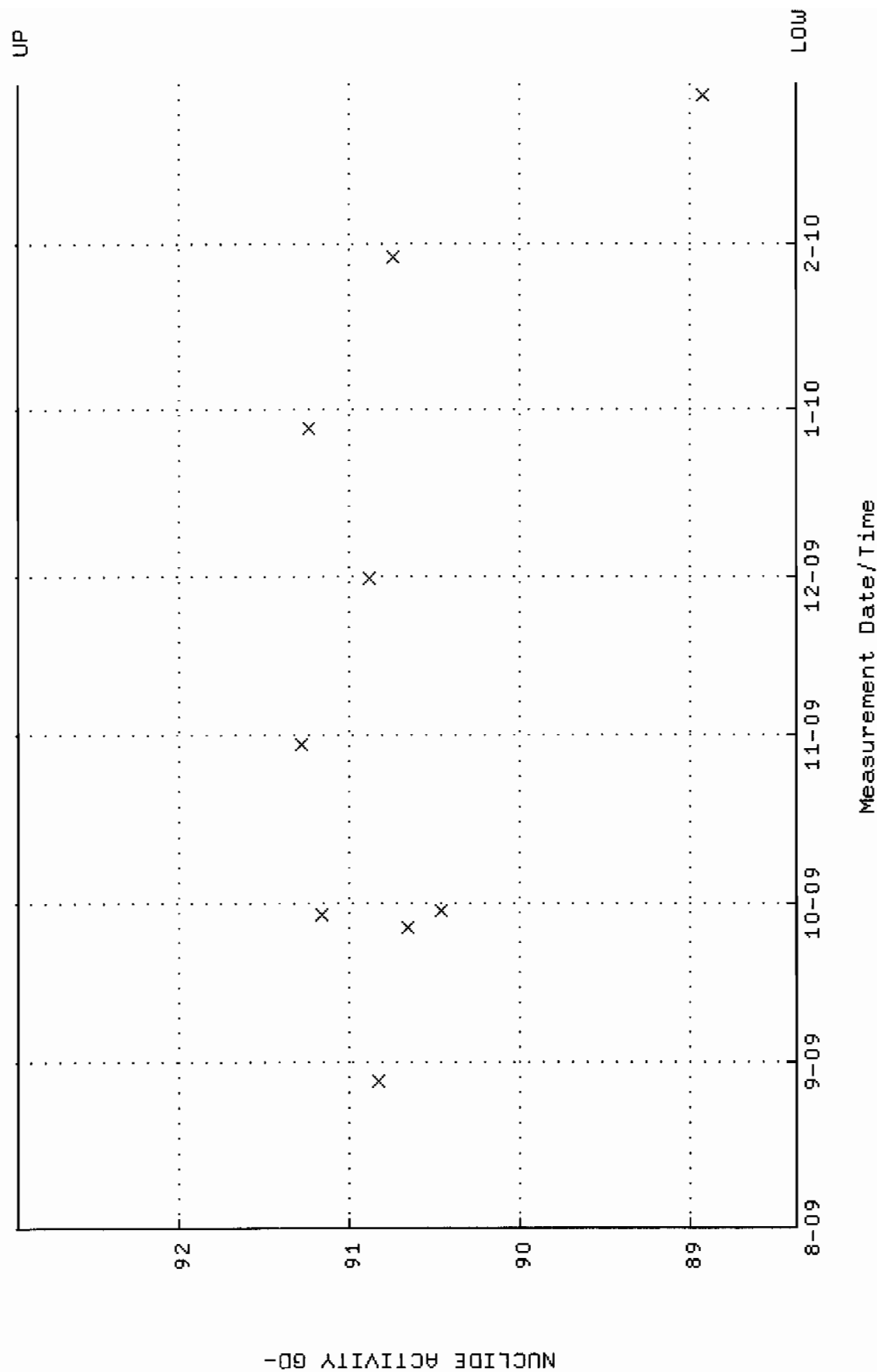
QA filename : DKA100:[ENV_ALPHA.QA.B]B214.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:25:31 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



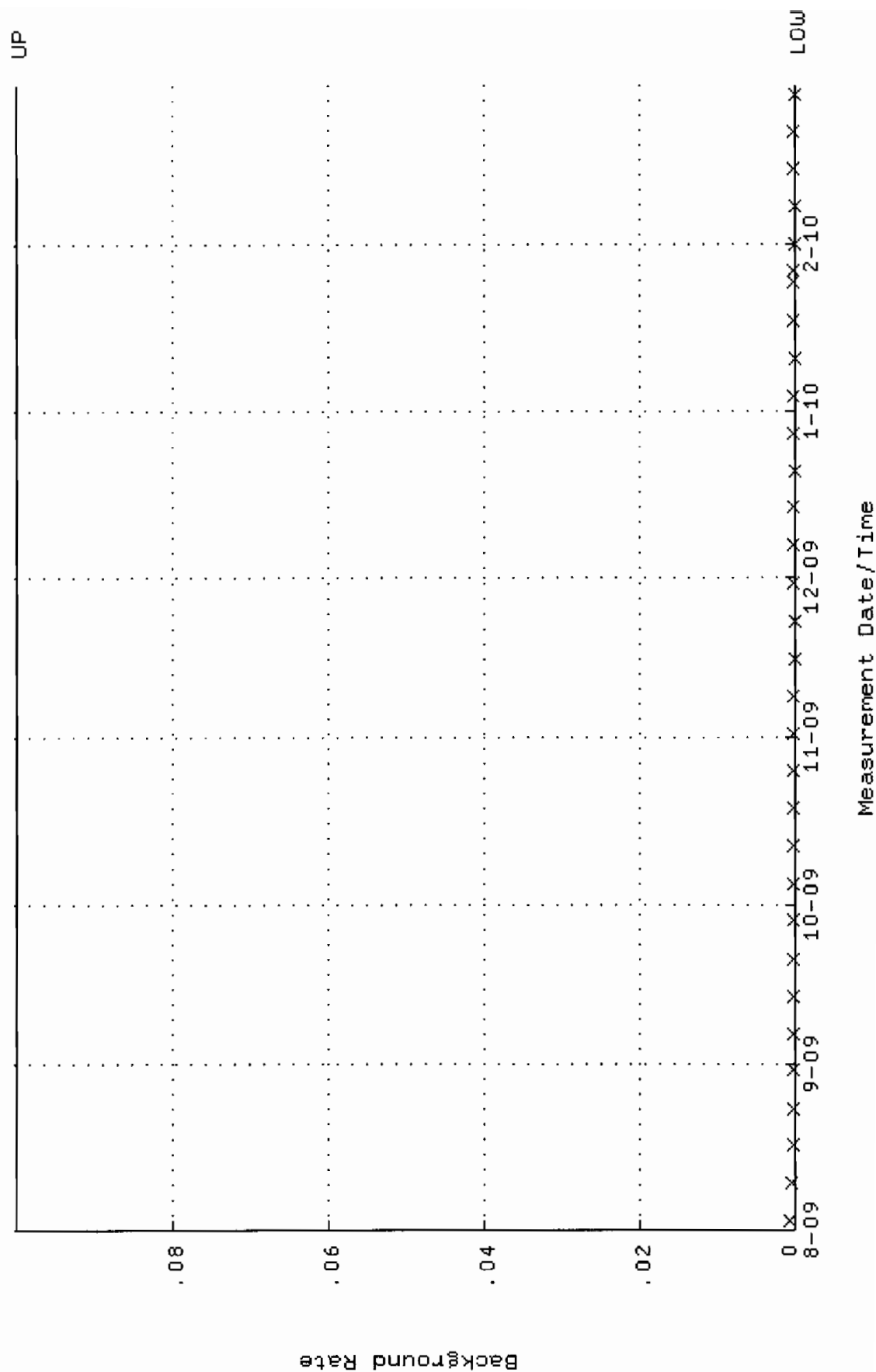
QA filename : DKA100:[ENV_ALPHA.QA.W]W215.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:06:59 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.368657 through 0.384643



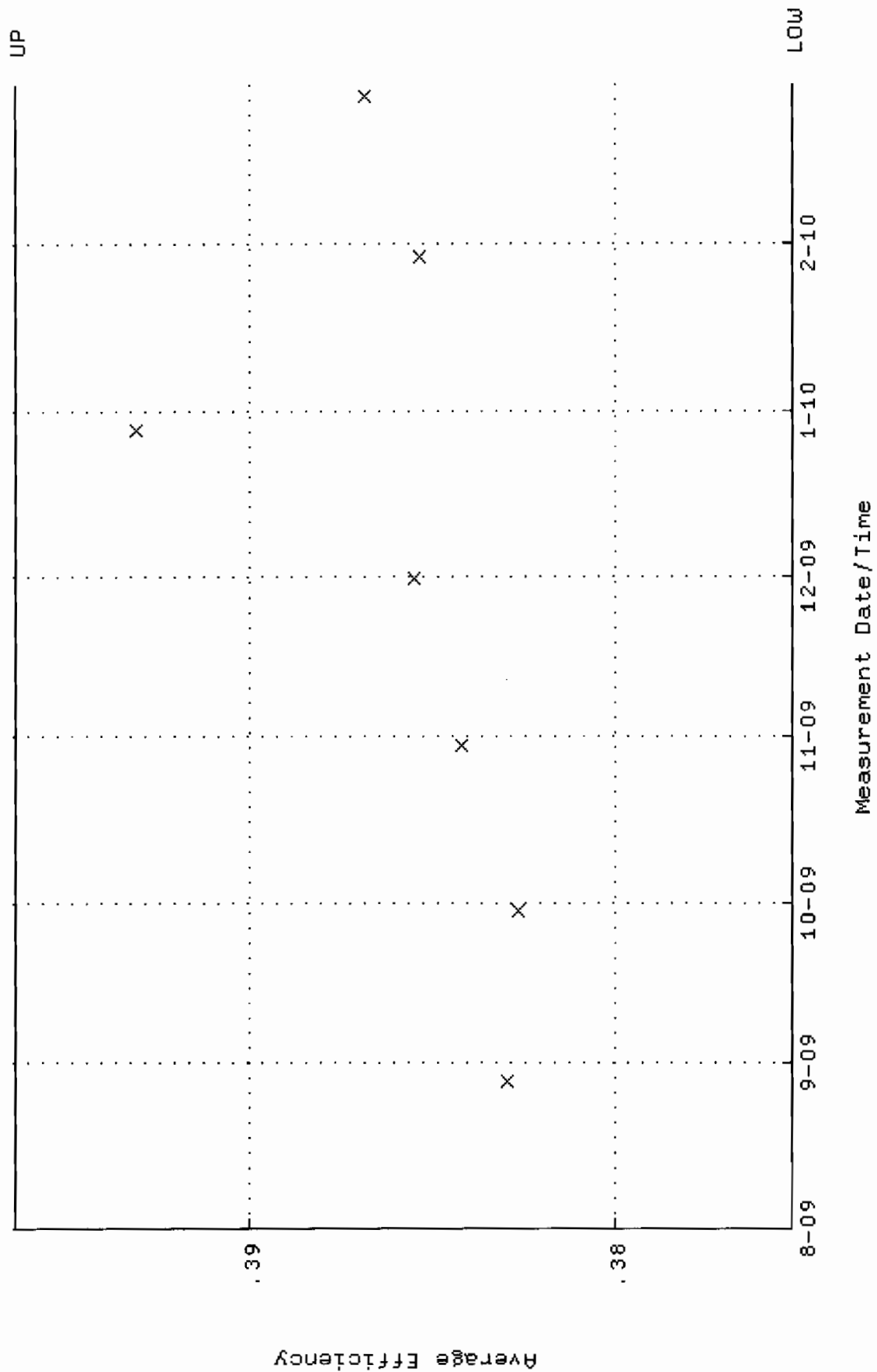
QA filename : DKA100:[ENV_ALPHA.QA.W]U215.QAF;1
 Parameter Name : NLACTVY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:06:59 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.3773 through 92.9481



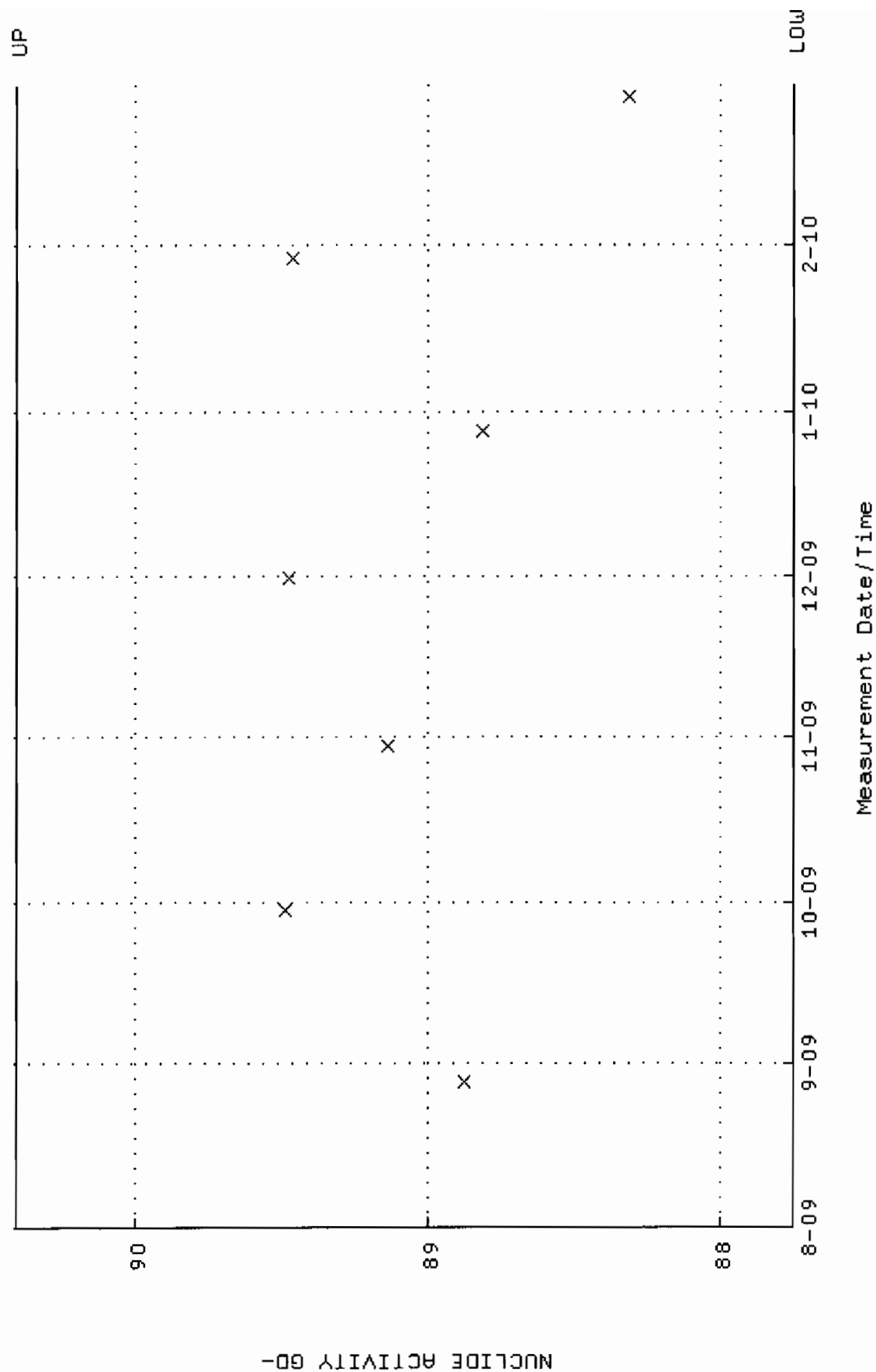
QA filename : DKA100:[ENV_ALPHA.QA.B]B215.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:25:35 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



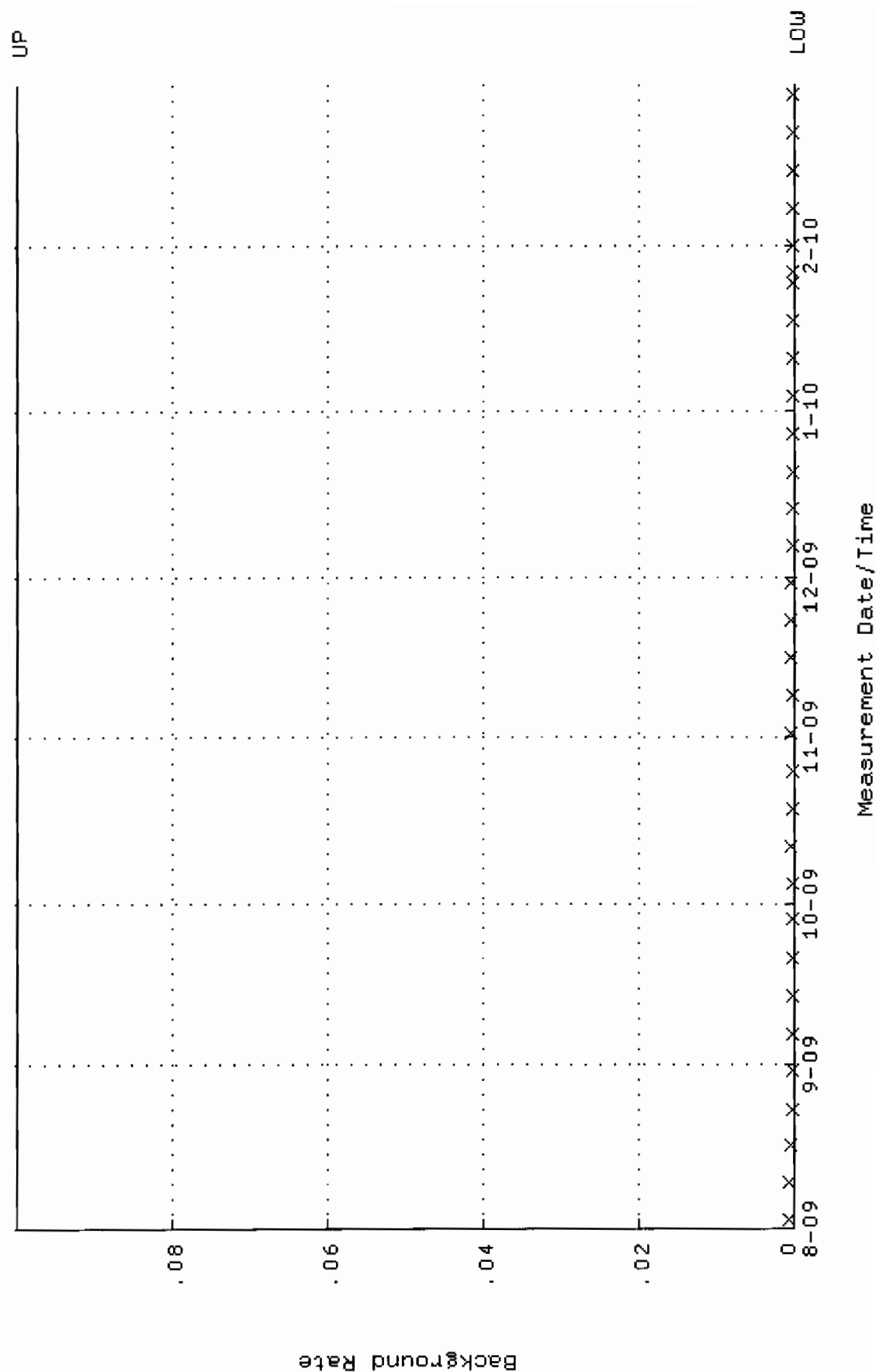
QA filename : DKA100:[ENV_ALPHA.QA.W]w216.QAF;1
 Parameter Name : AVRG6EFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:04 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.375142 through 0.396434



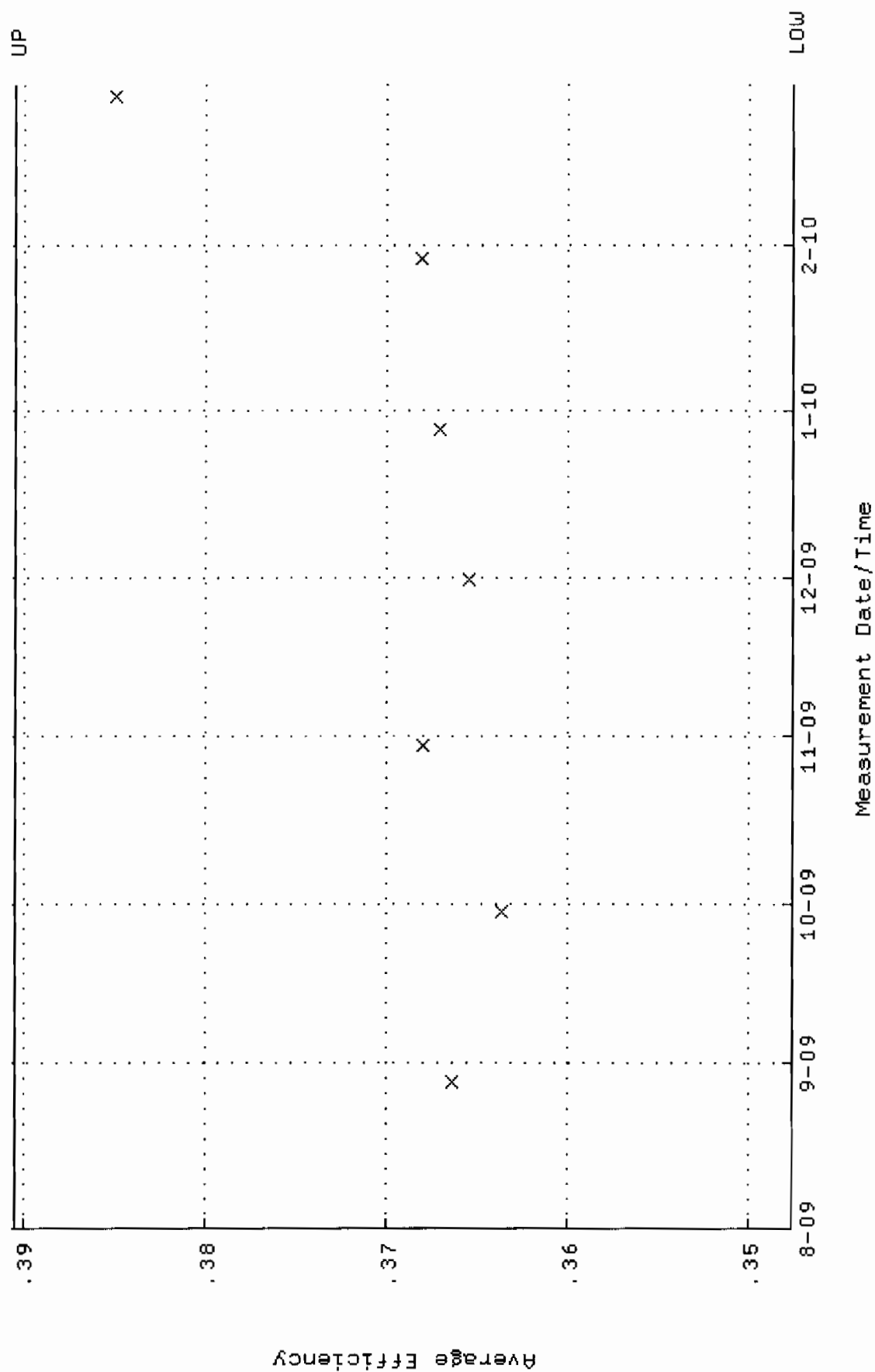
QA filename : DKA100:[ENV_ALPHA.QA.W]W216.QAF;1
 Parameter Name : NLACTVY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:04 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.7466 through 90.4082



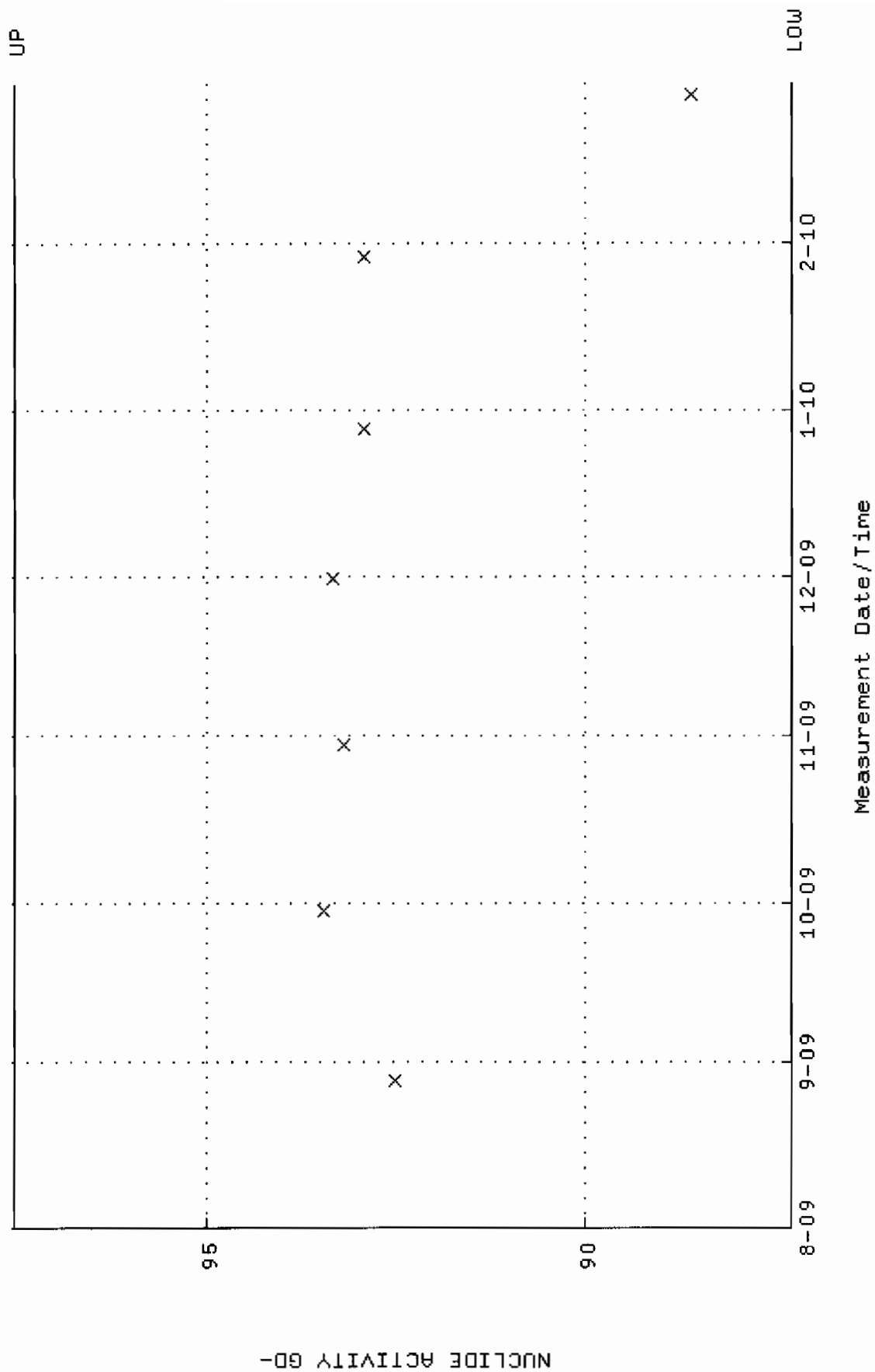
QA filename : DKA100:[ENV_ALPHA.QA.B]B216.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:25:40 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



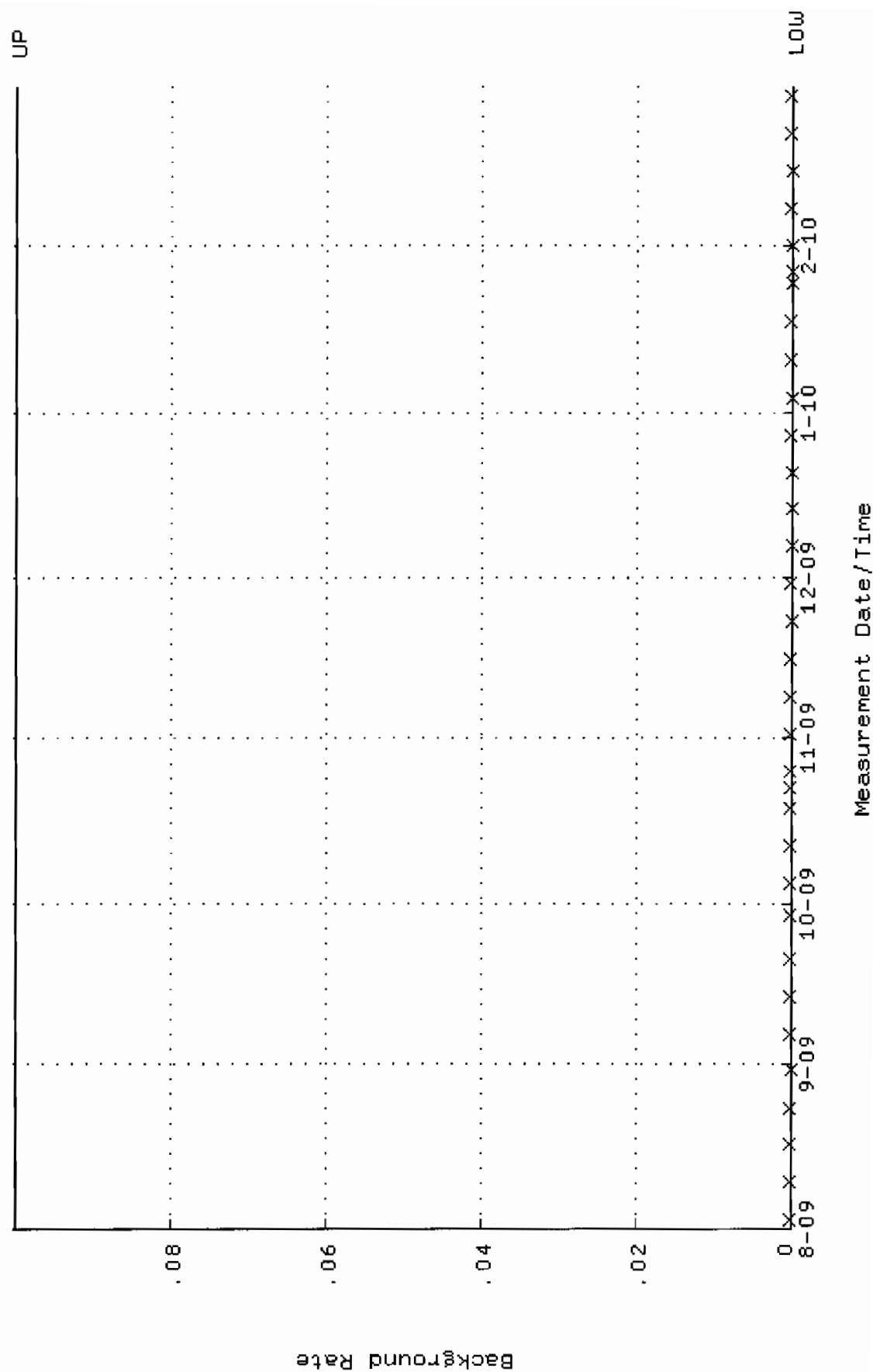
QA filename : DKA100:[ENV-ALPHA.QA.W]W217.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:09 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.347554 through 0.390494



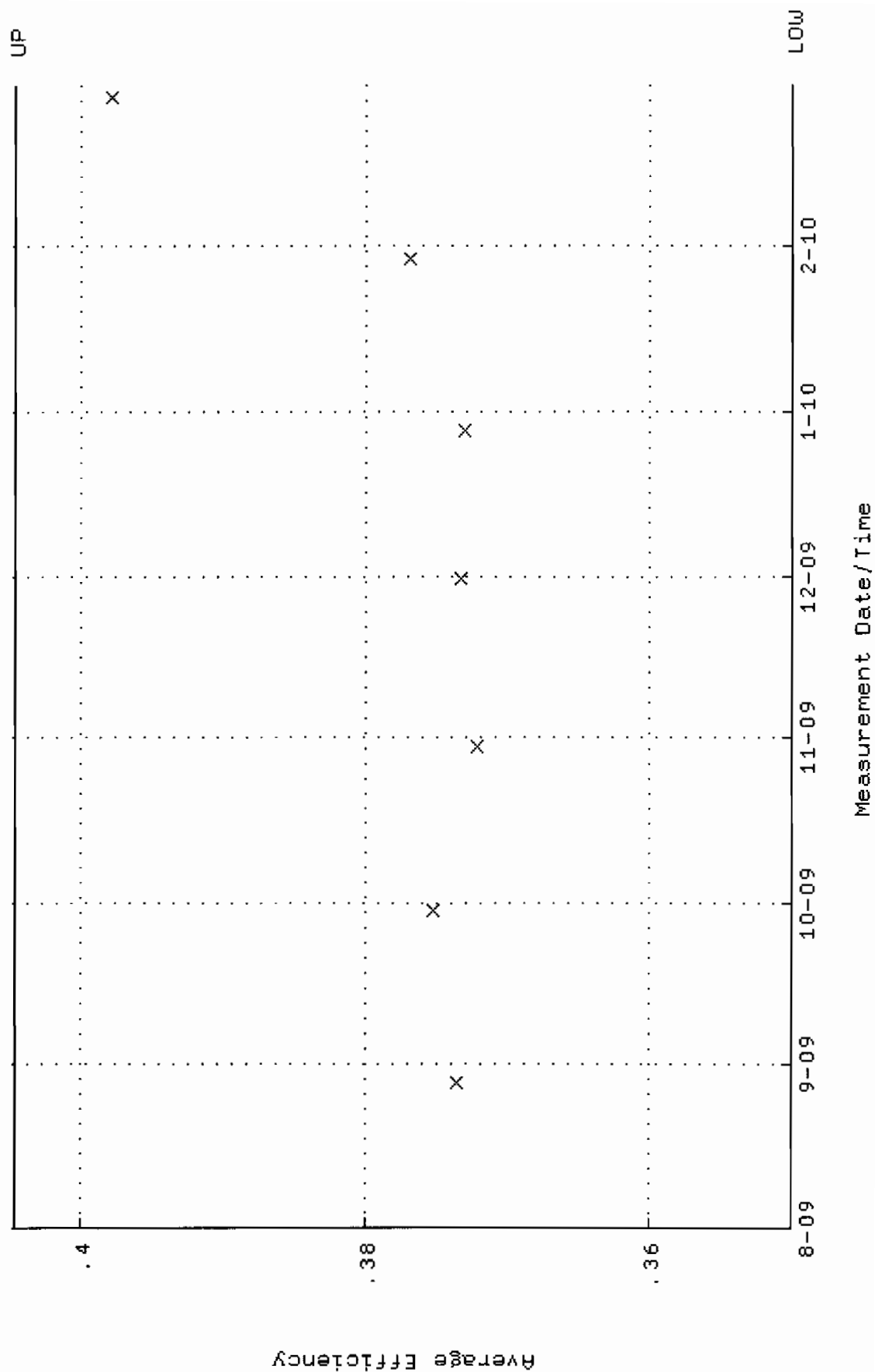
QA filename : DKA100:[ENV_ALPHA.QA.W]w217.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:09 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.2610 through 97.5406



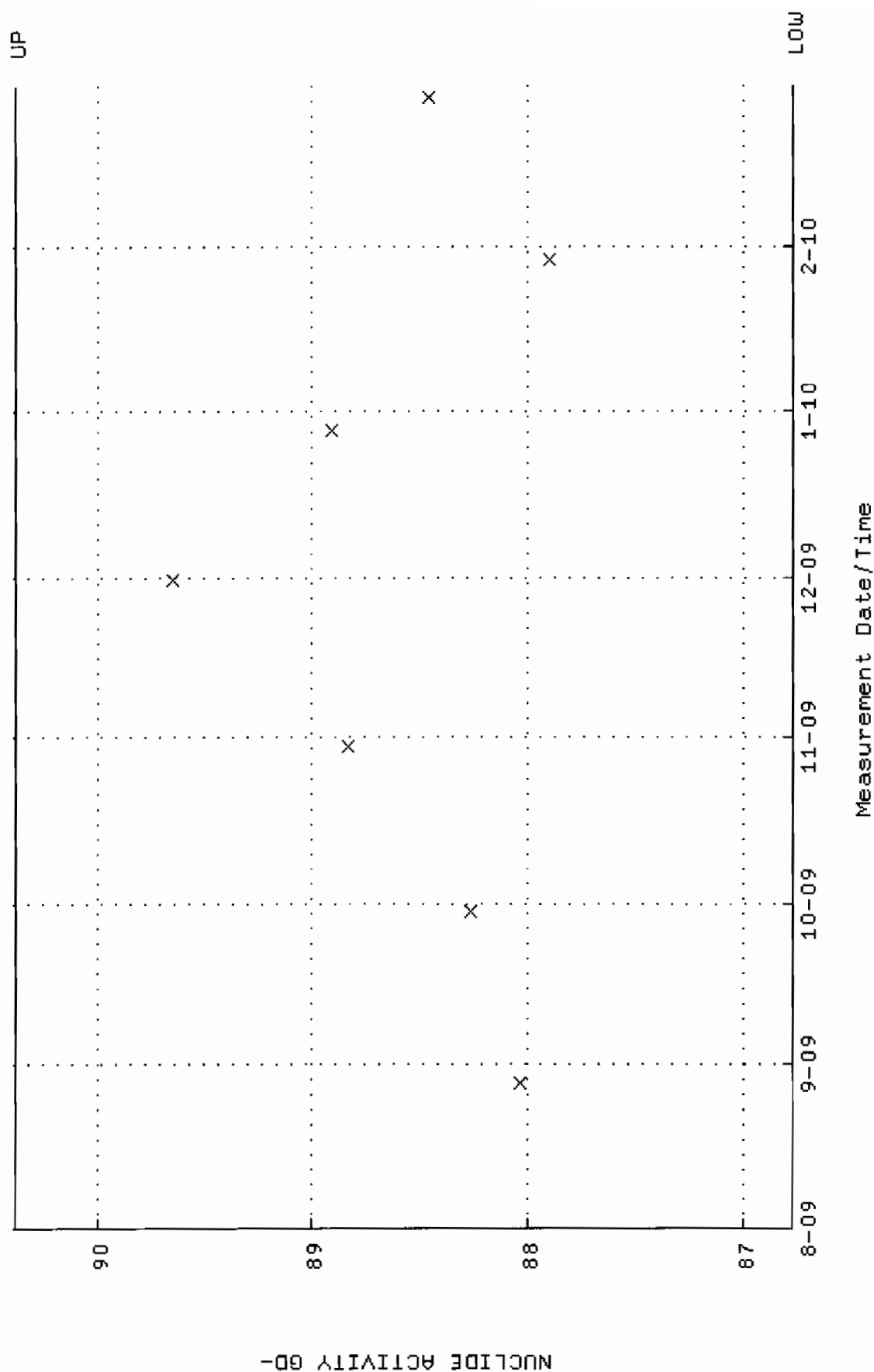
QA filename : DKA100:[ENV_ALPHA.QA.B]B217.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:25:44 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W235.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:45 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.350020 through 0.404668



QA filename : DKA100:[ENV_ALPHA.QA.W]W235.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:45 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.7703 through 90.3803

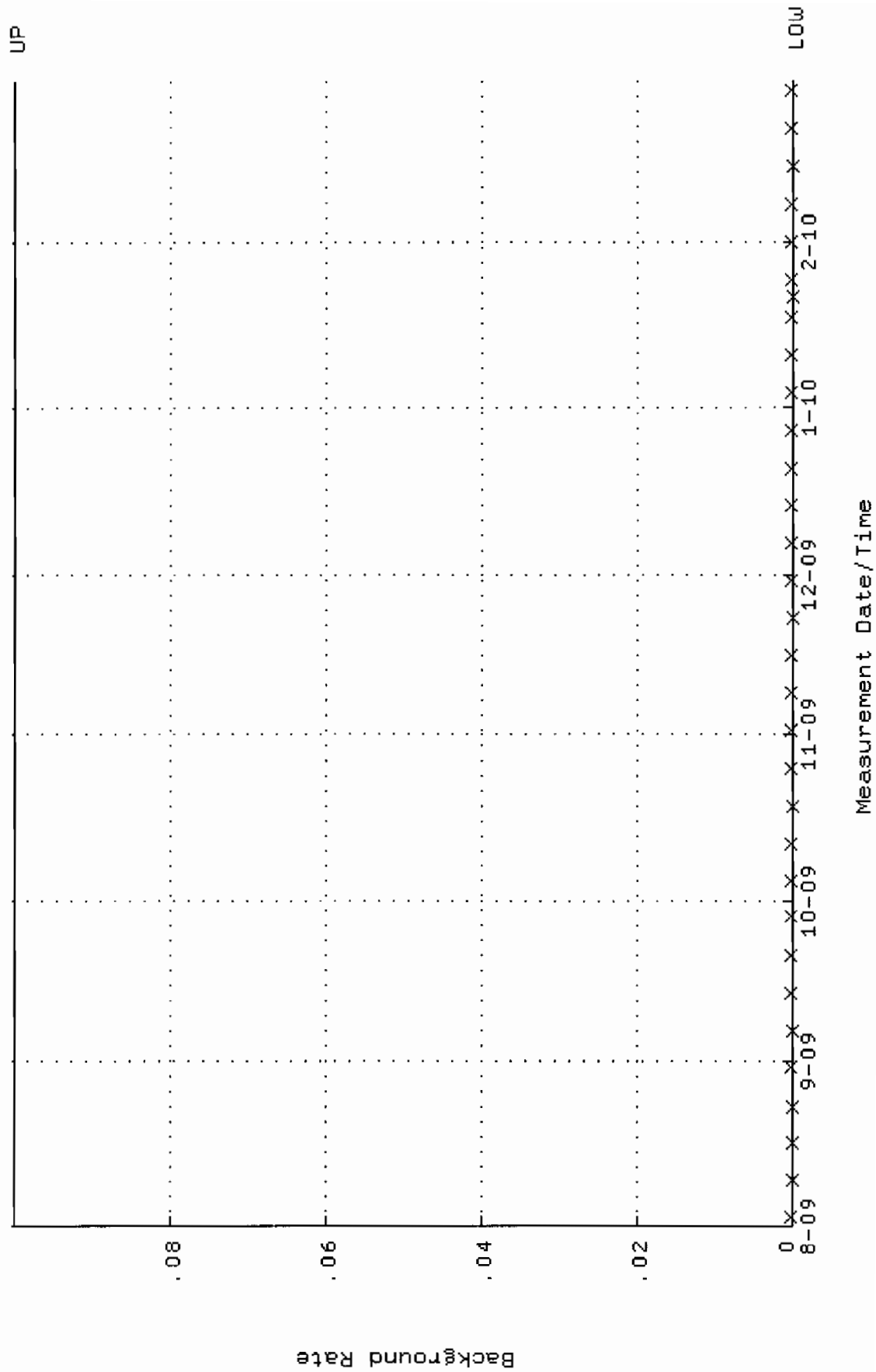


QA filename : DKA100:[ENV_ALPHA.QA.B]B235.QAF;1

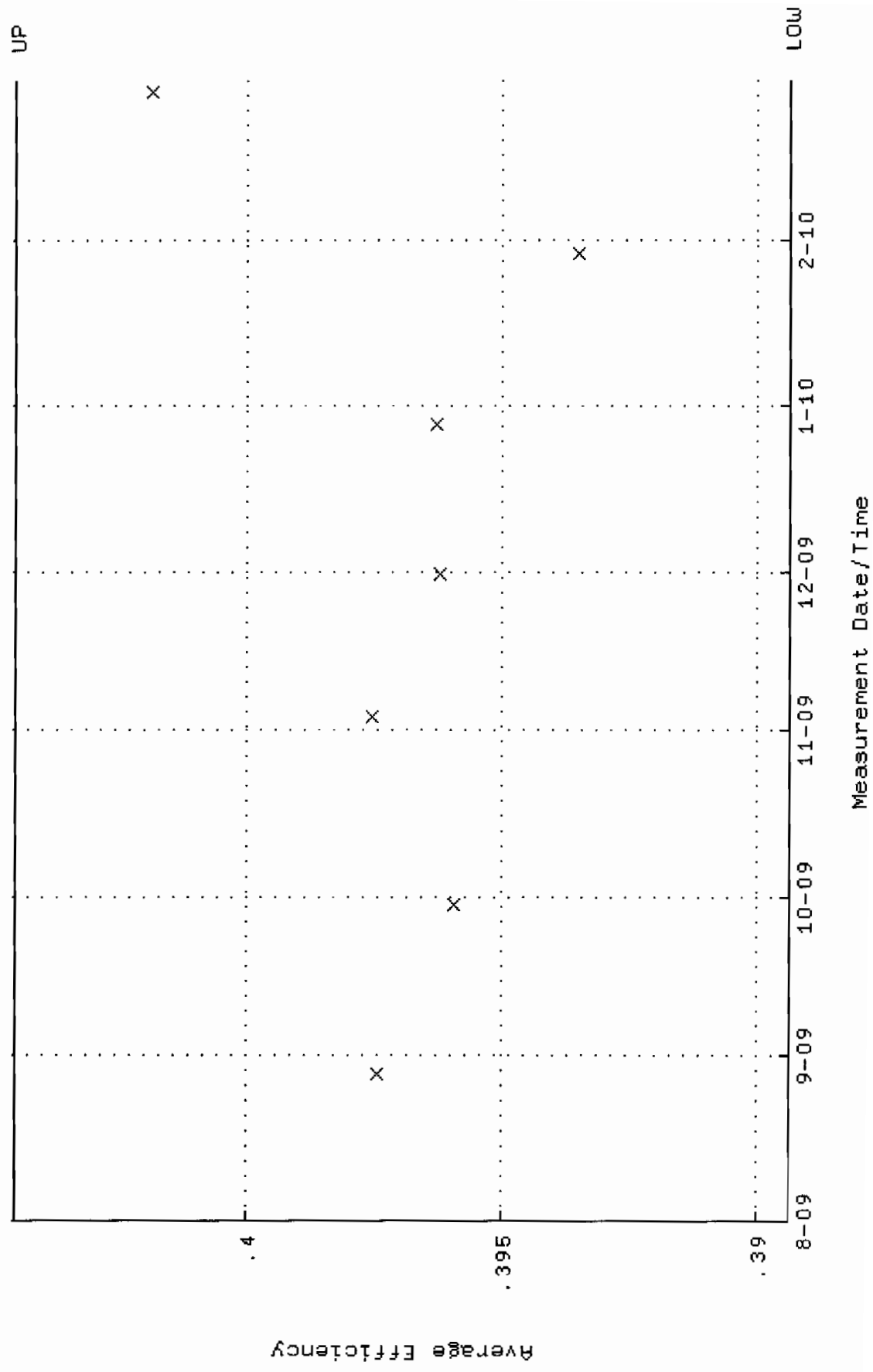
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:27:00 through 2-MAR-2010 12:00:00

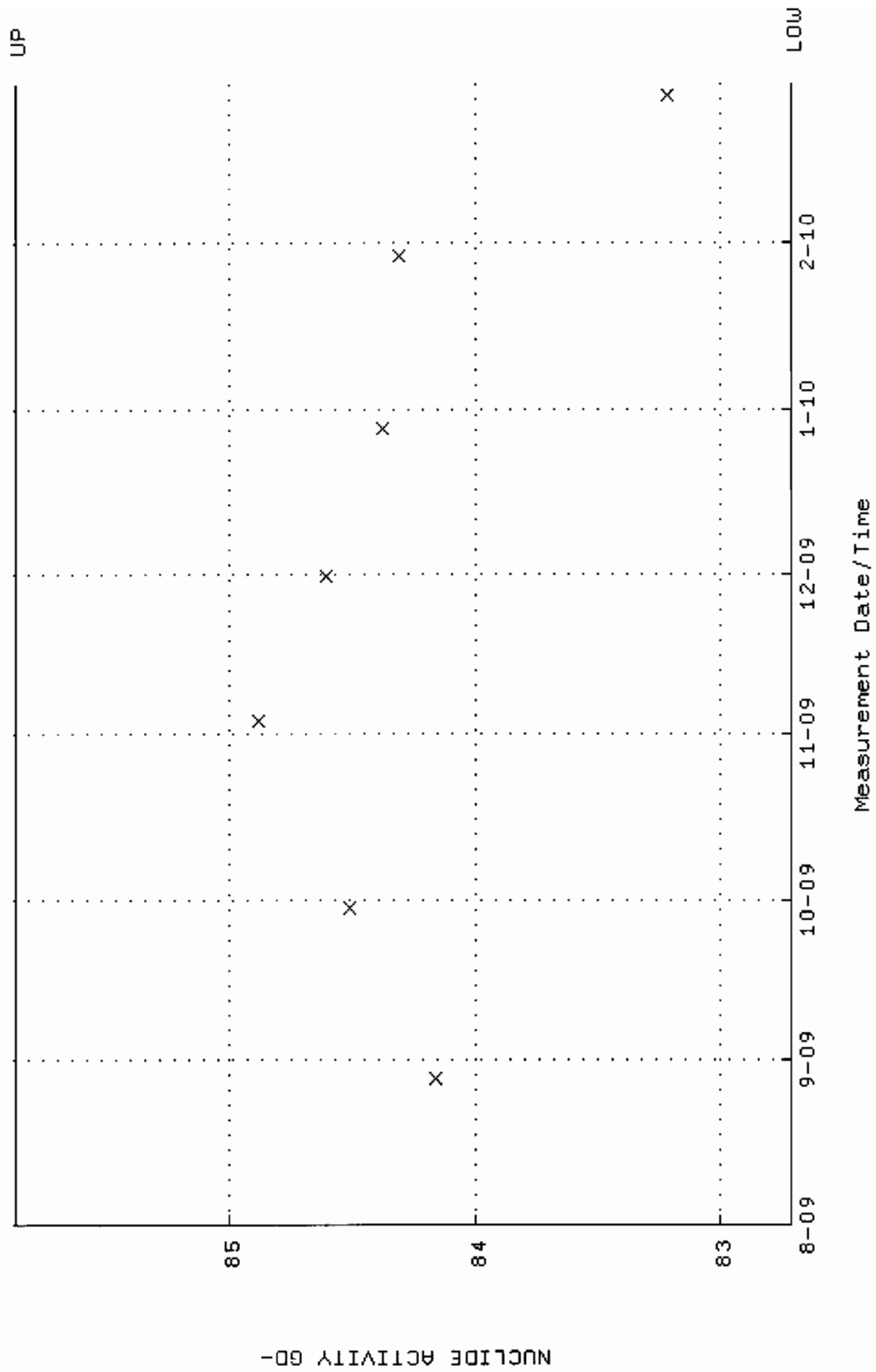
Lower/Upper Lmts: 0.000000E+00 through 0.100000



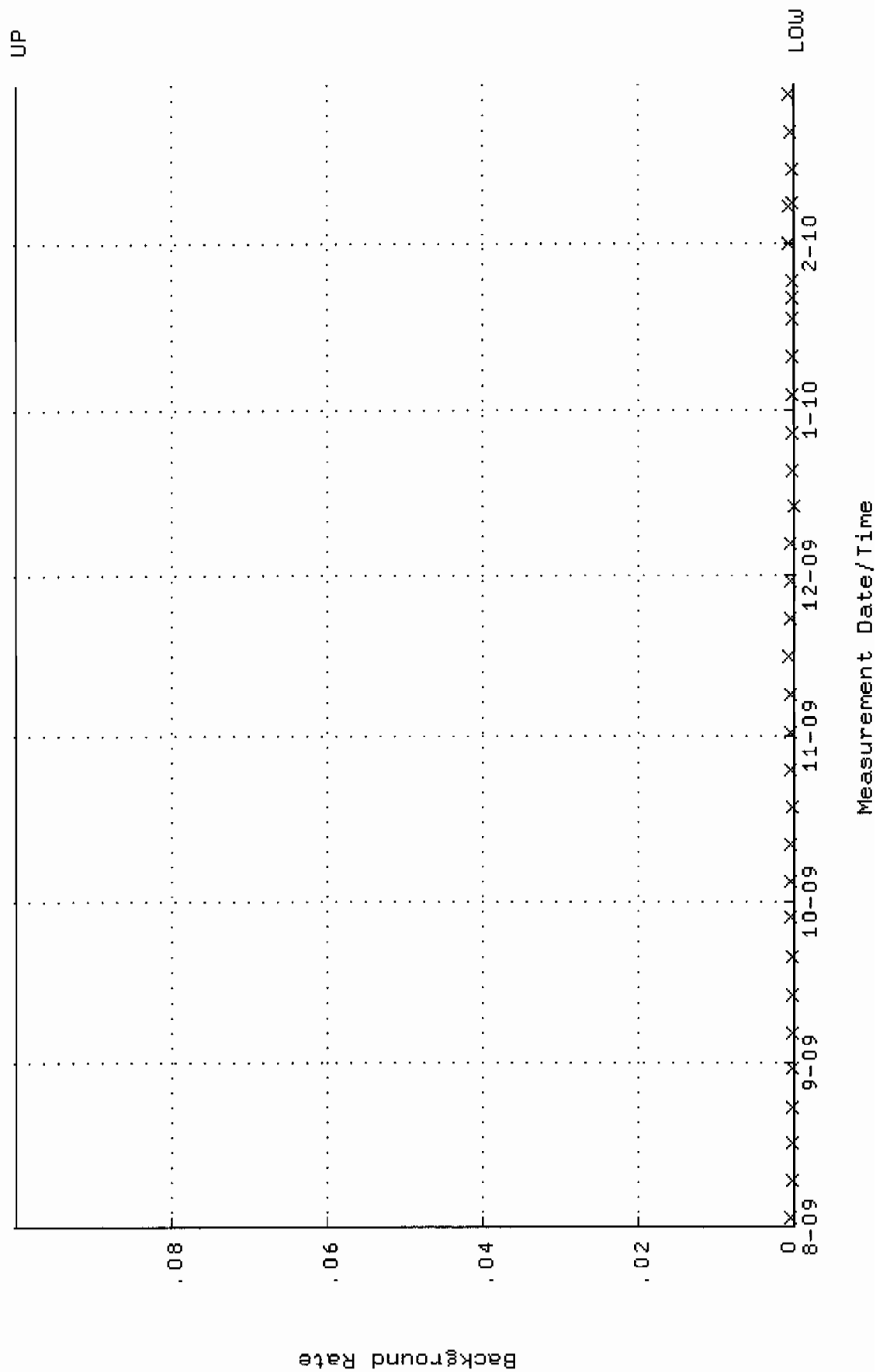
QA filename : DKA100:[ENV_ALPHA.QA.W]W238.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:00 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.389351 through 0.404525



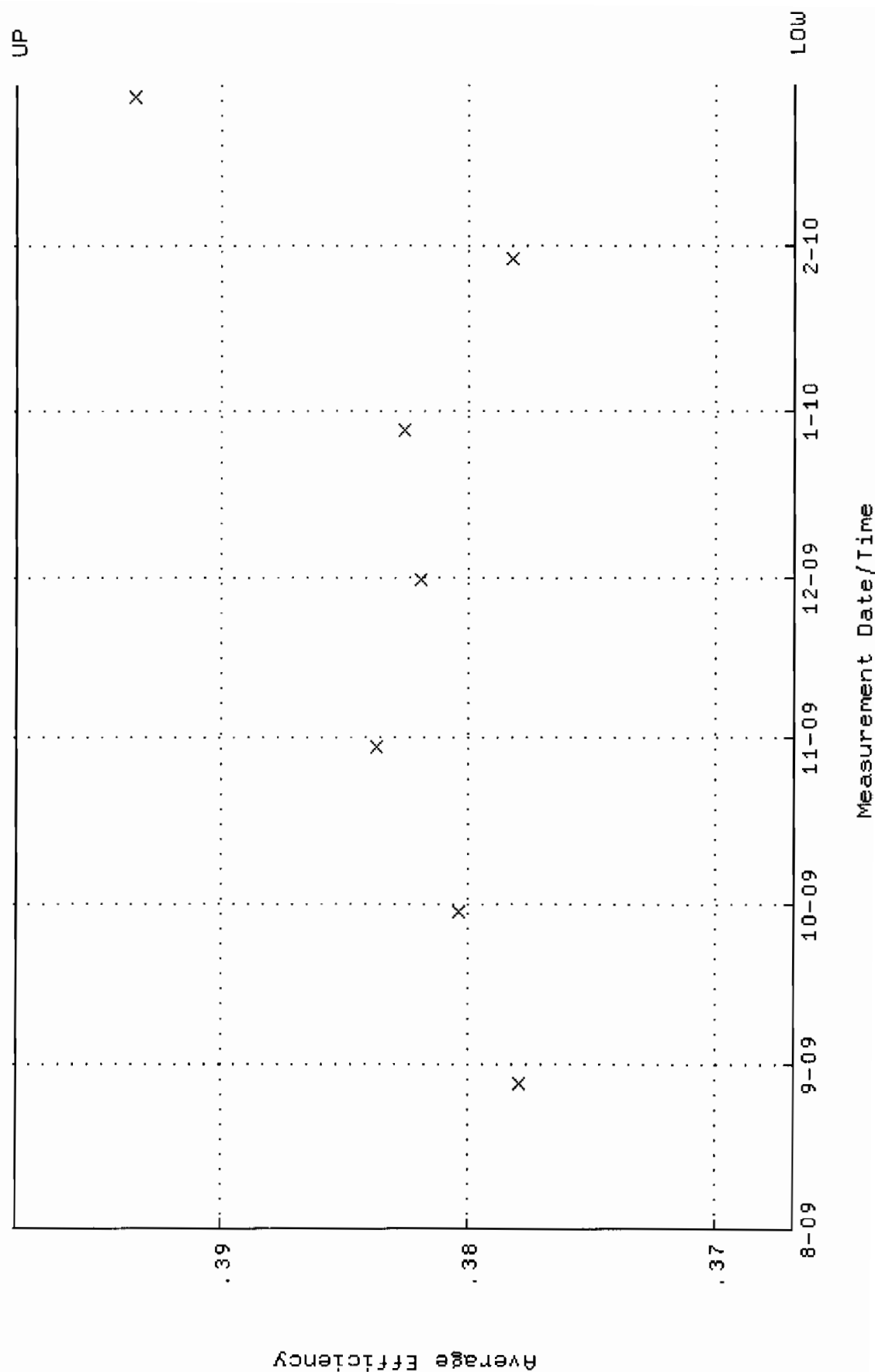
QA filename : DKA100:[ENV_ALPHA.QA.W]W238.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:00 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.7118 through 85.8726



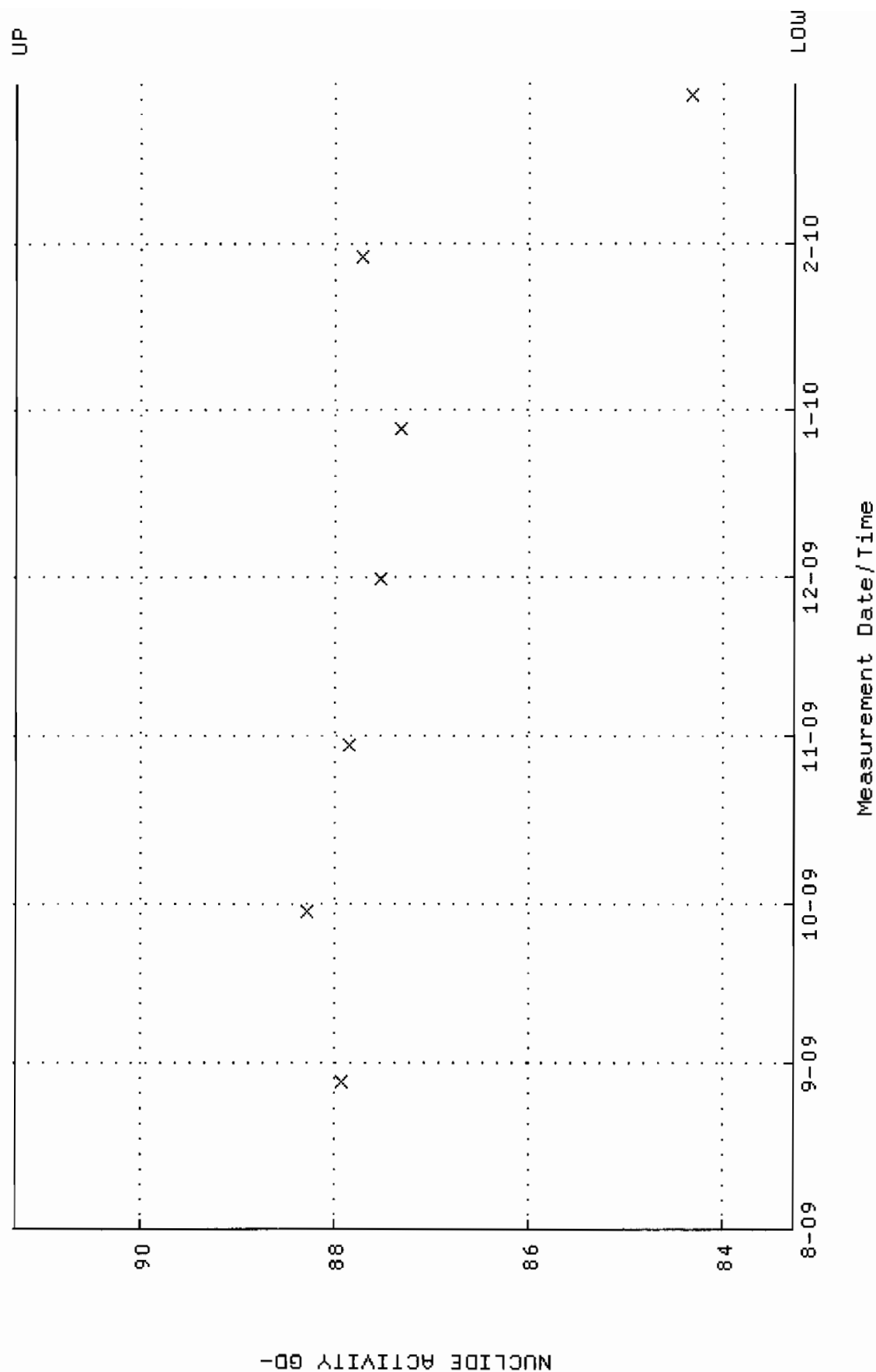
QA filename : DKA100:[ENV_ALPHA.QA.B]B238.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:12 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



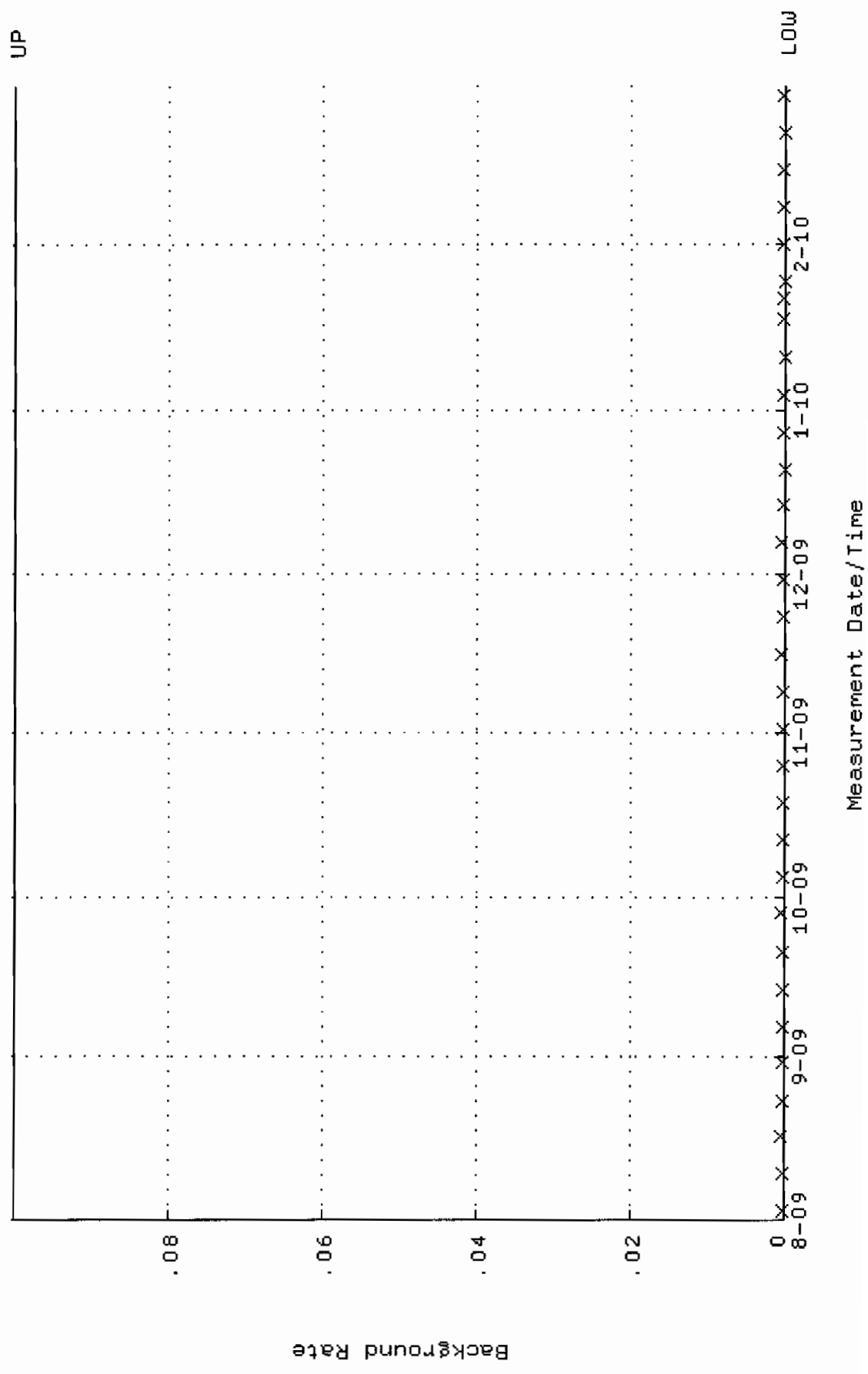
QA filename : DKA100:[ENV_ALPHA.QA.W]W239.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:05 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.366836 through 0.398318



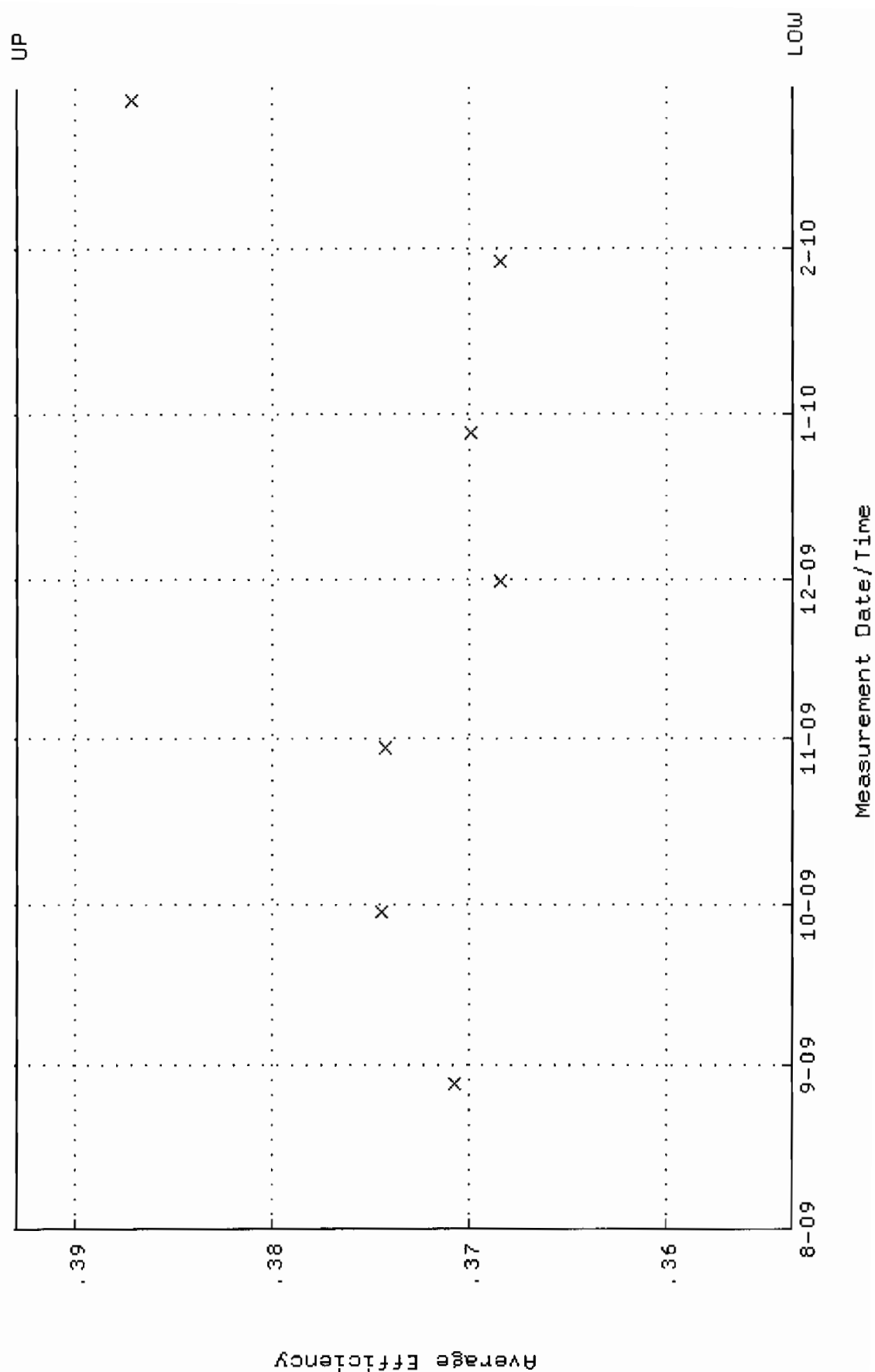
QA filename : DKA100:[ENV_ALPHA.QA.W]W239.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:05 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.2587 through 91.2737



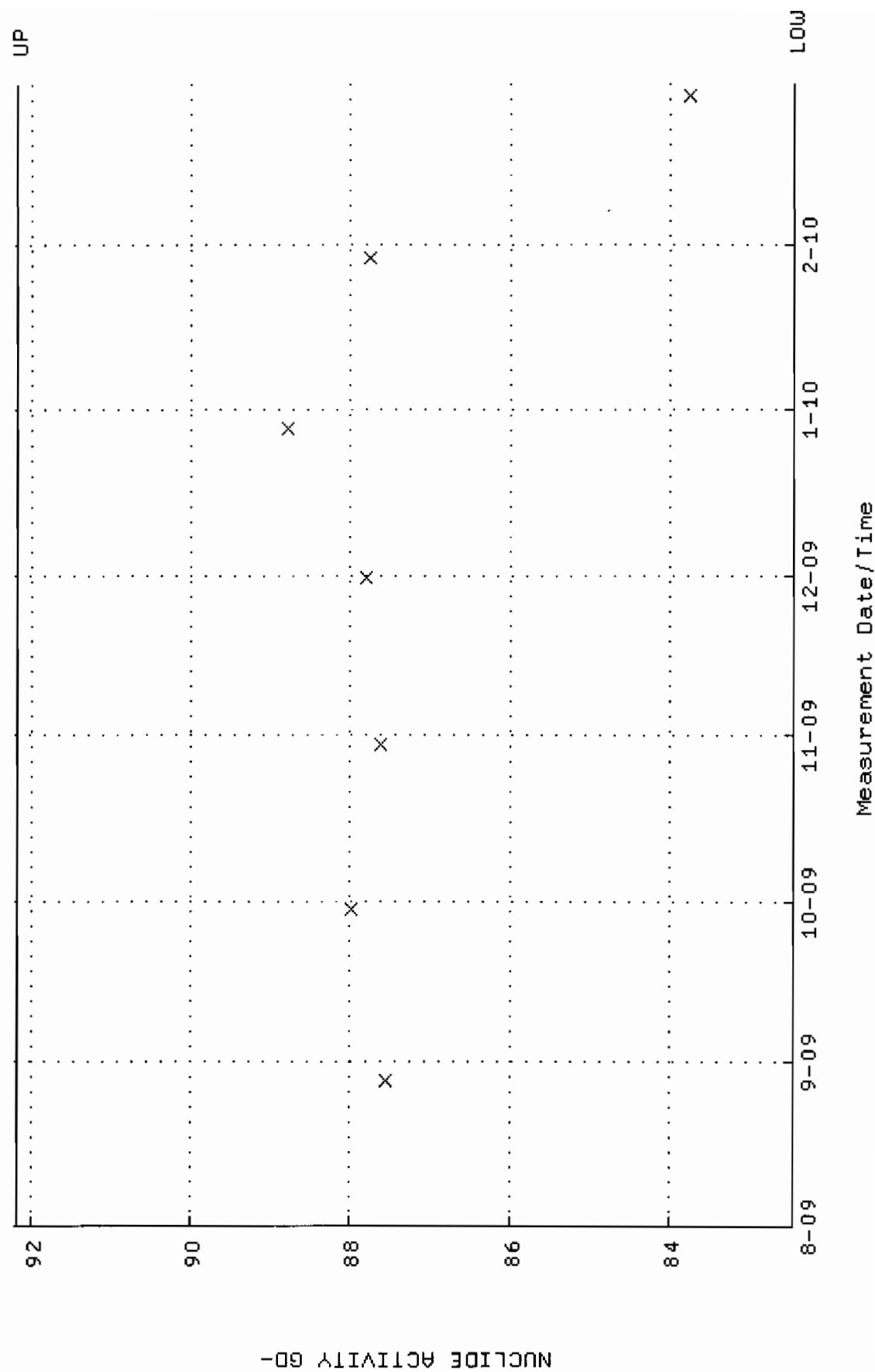
QA filename : DKA100:[ENV_ALPHA.QA.B]B239.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:16 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



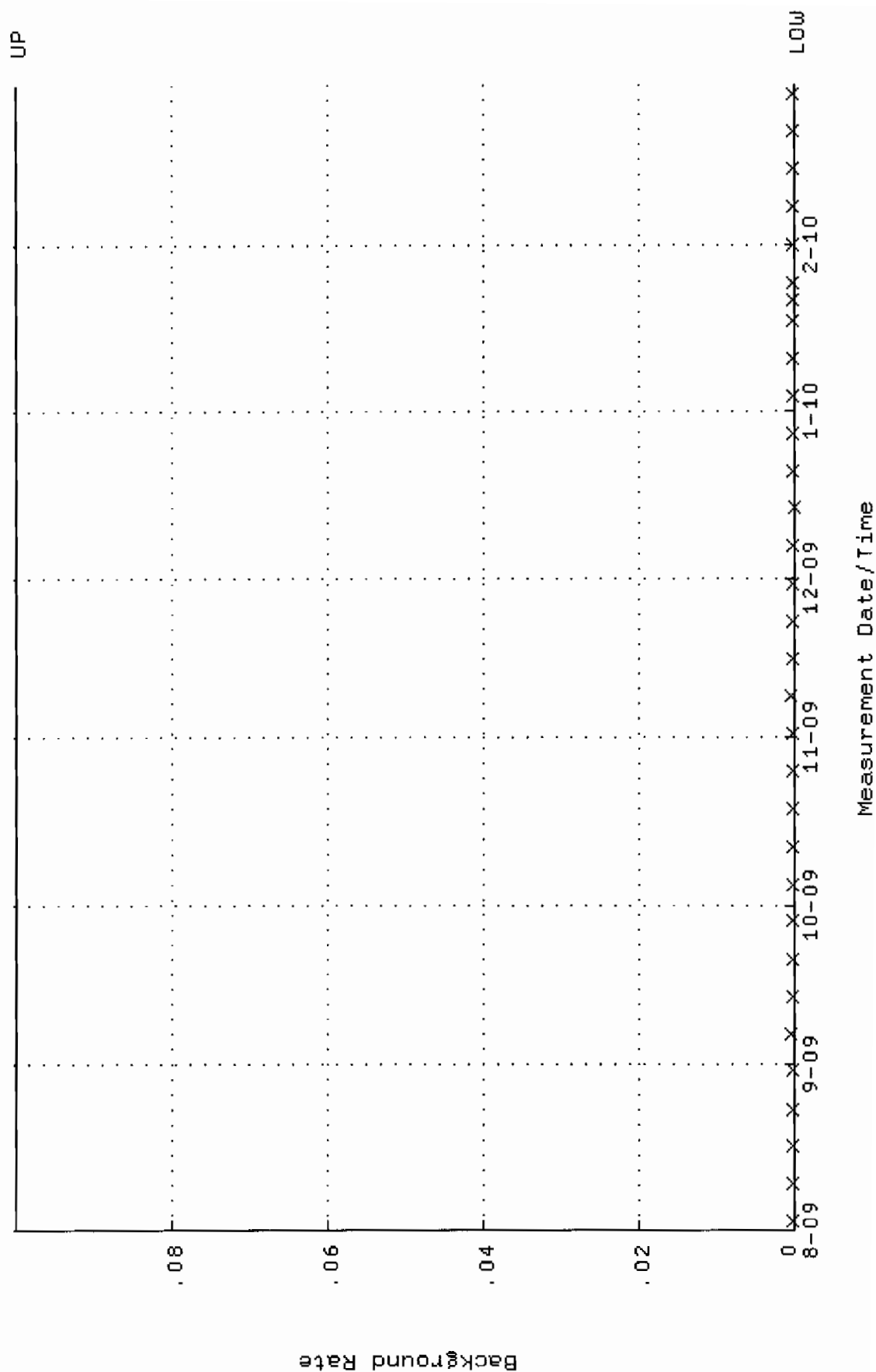
QA filename : DKA100:[ENV_ALPHA.QA.W]W240.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:09 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.353617 through 0.392947



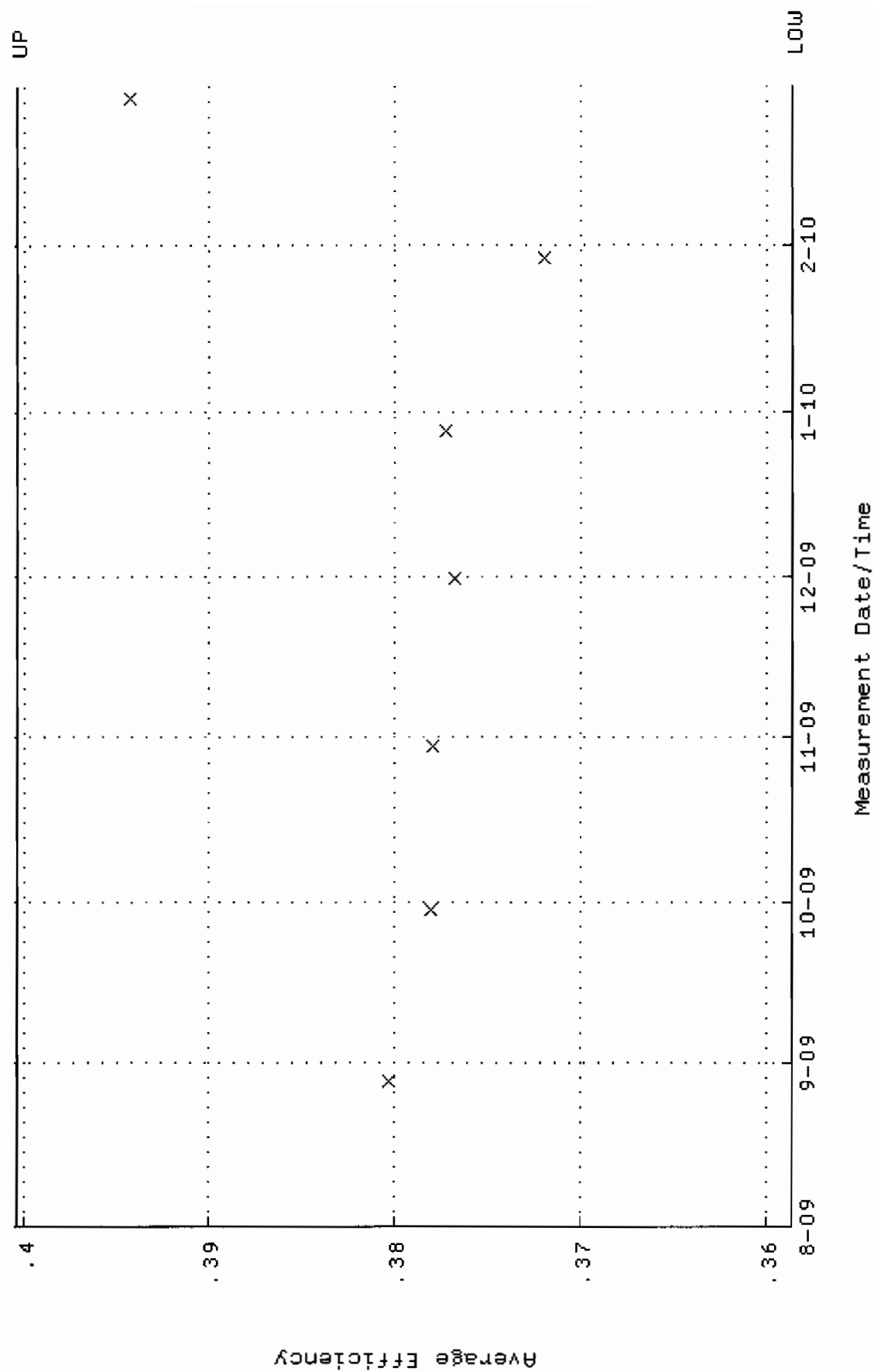
QA filename : DKA100:[ENV_ALPHA.QA.W]W240.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:09 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.4439 through 92.1786



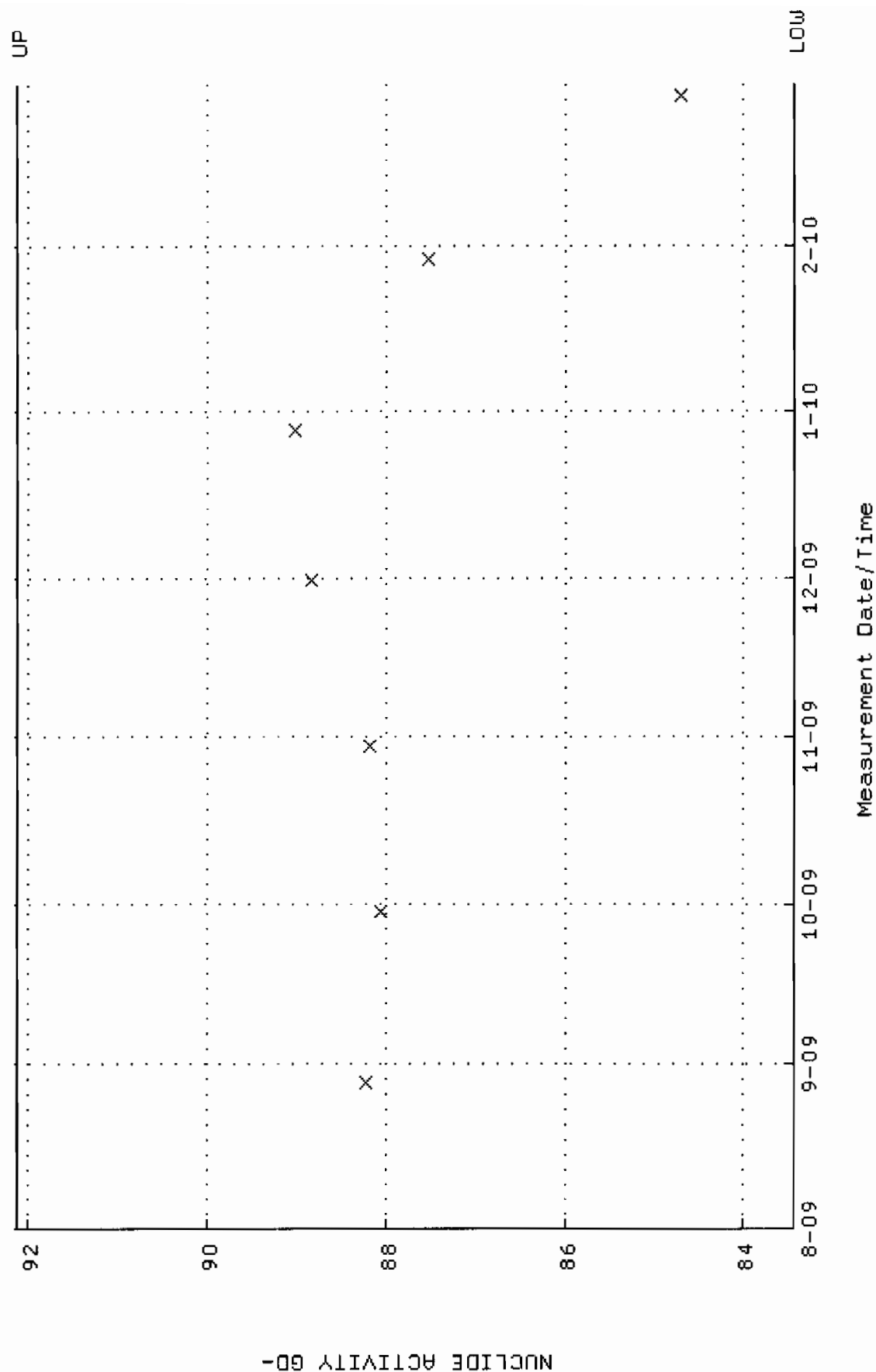
QA filename : DKA100:[ENV_ALPHA.QA.B]B240.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:21 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



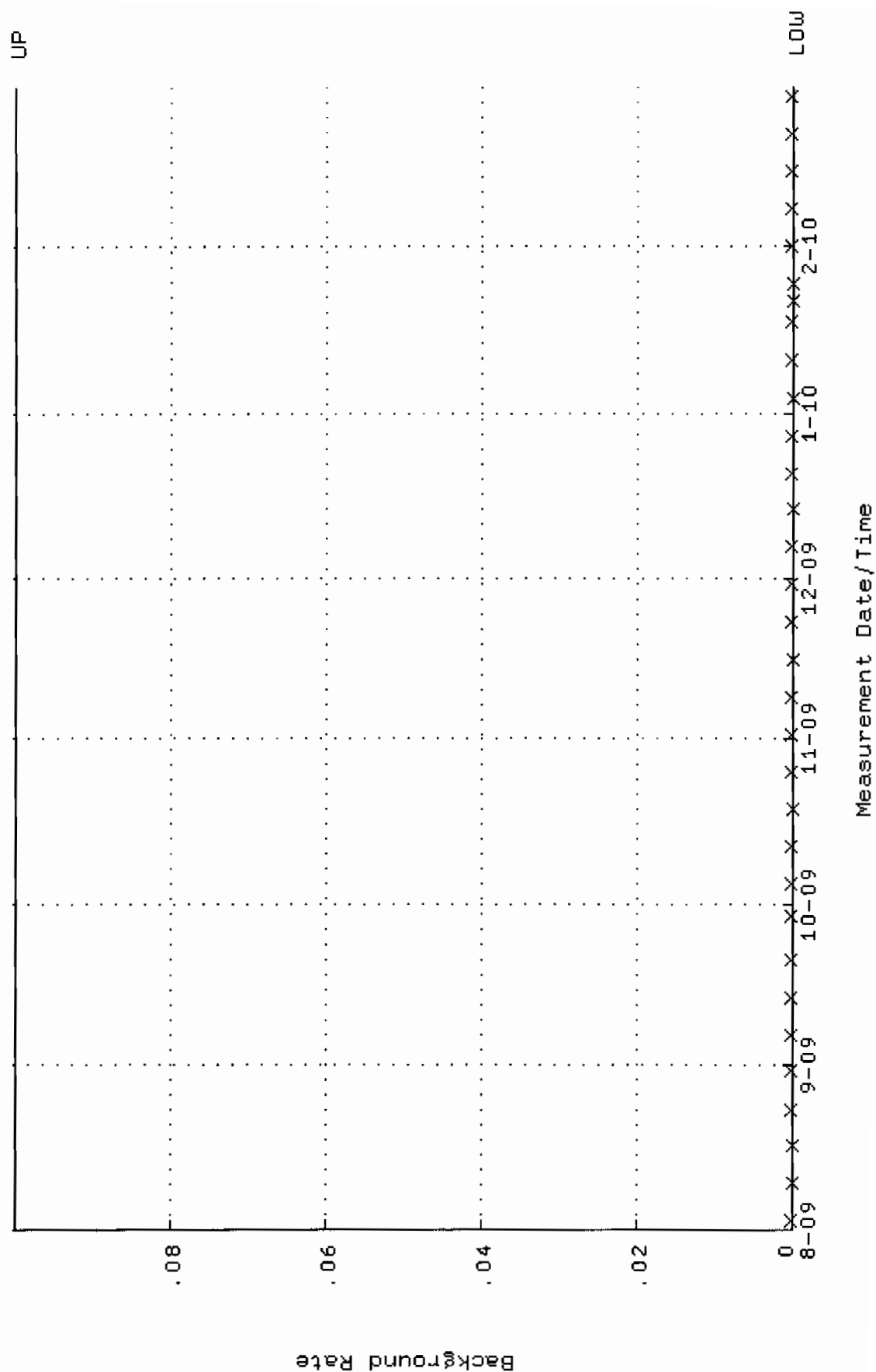
QA filename : DKA100:[ENV_ALPHA.QA.W]W241.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:15 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.358643 through 0.400349



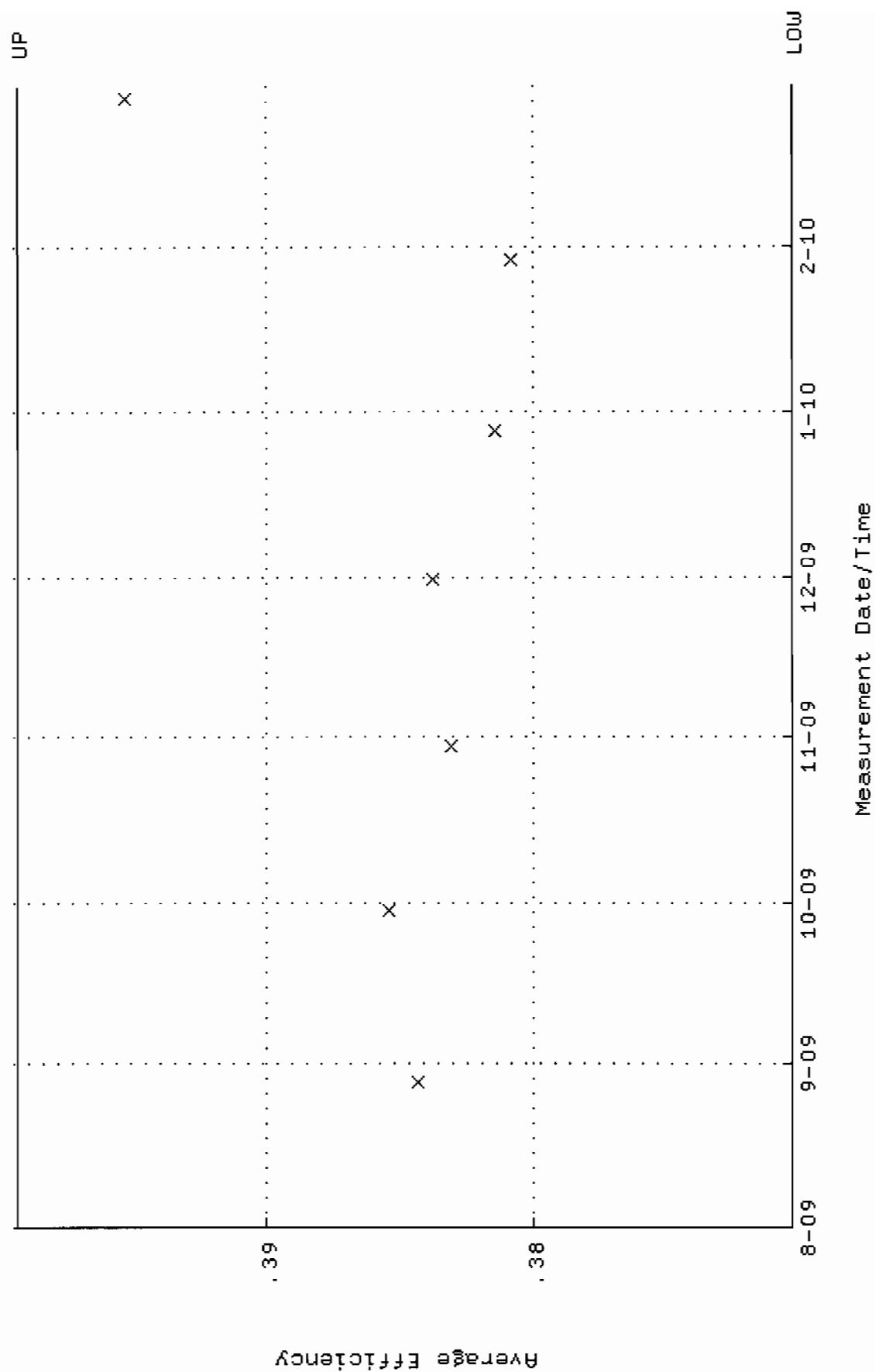
QA filename : DKA100:[ENV_ALPHA.QA.W]W241.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:15 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.4341 through 92.1277



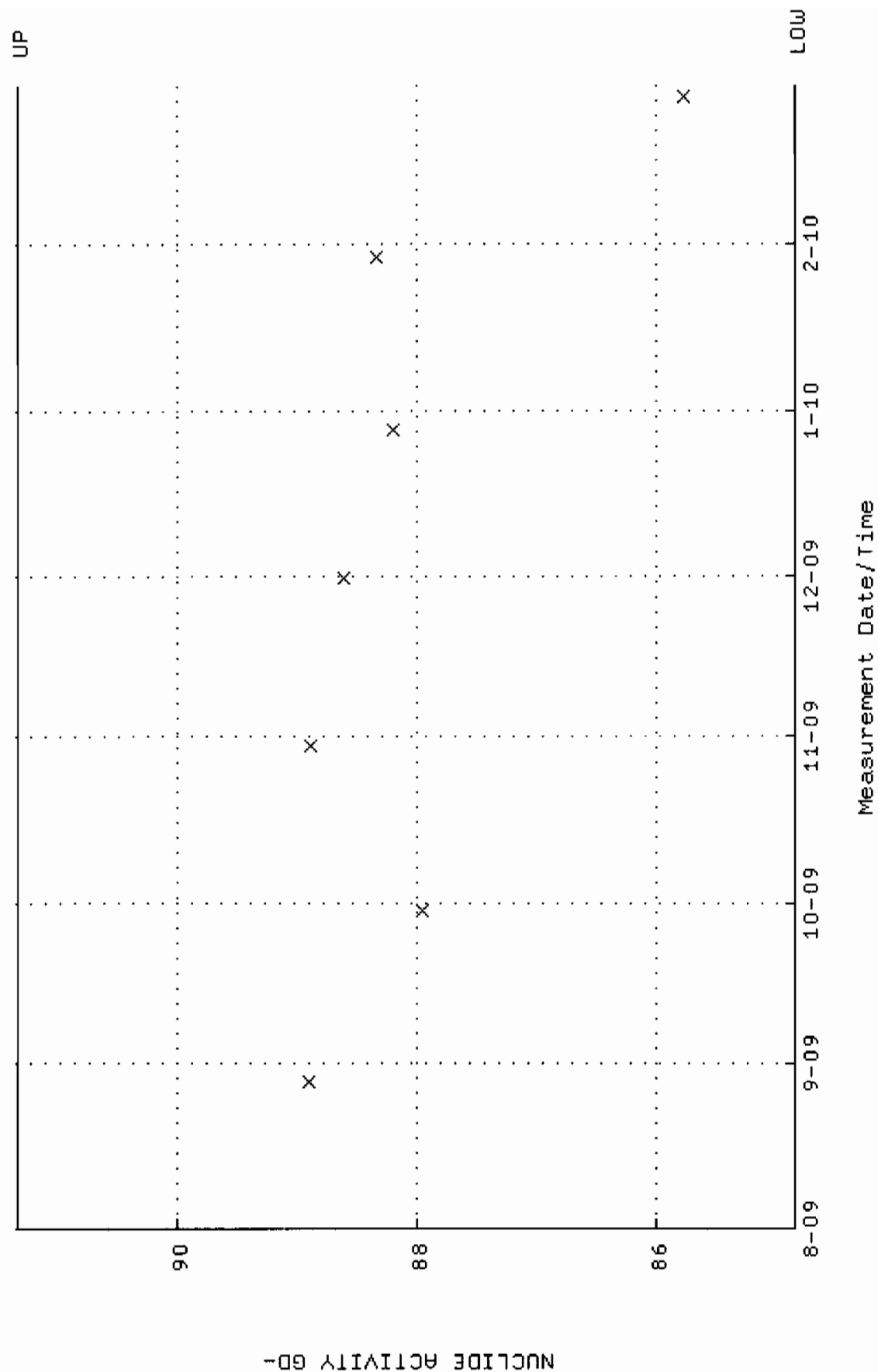
QA filename : DKA100:[ENV_ALPHA.QA.B]B241.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:26 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



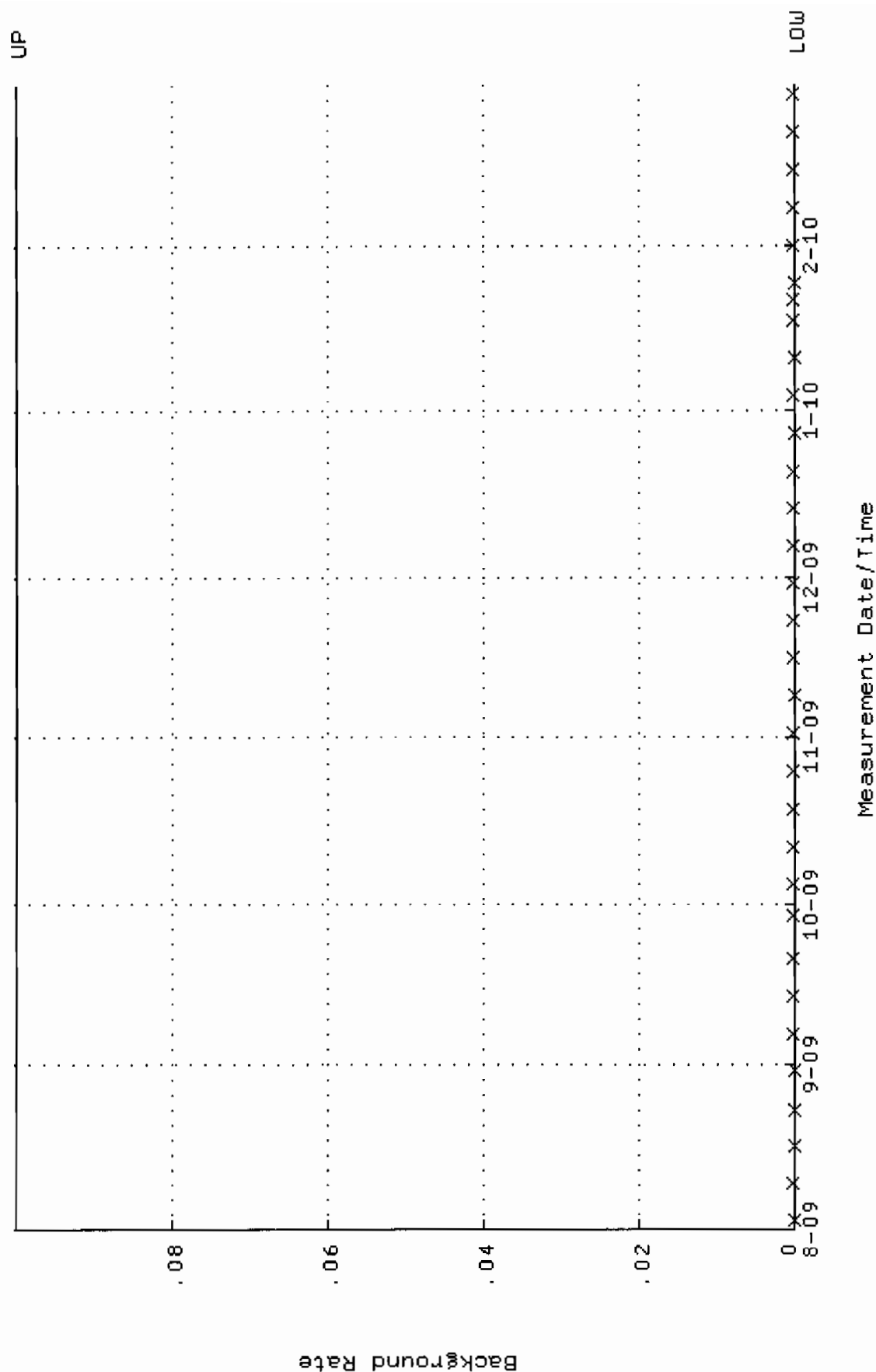
QA filename : DKA100:[ENV_ALPHA.QA.W]W242.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:21 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.370324 through 0.399338



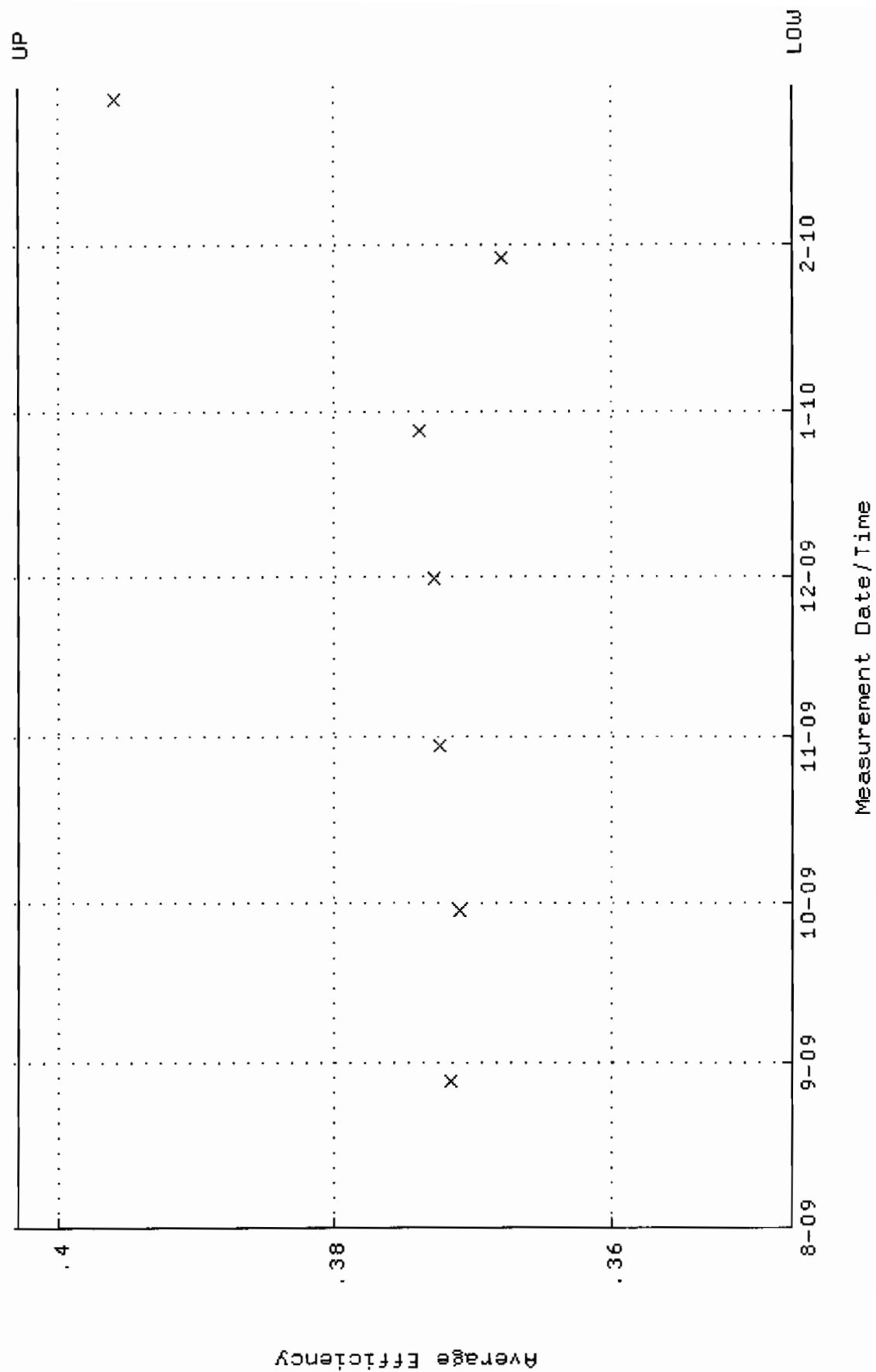
QA filename : DKA100:[ENV_ALPHA.QA.W]W242.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:21 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.8419 through 91.3223



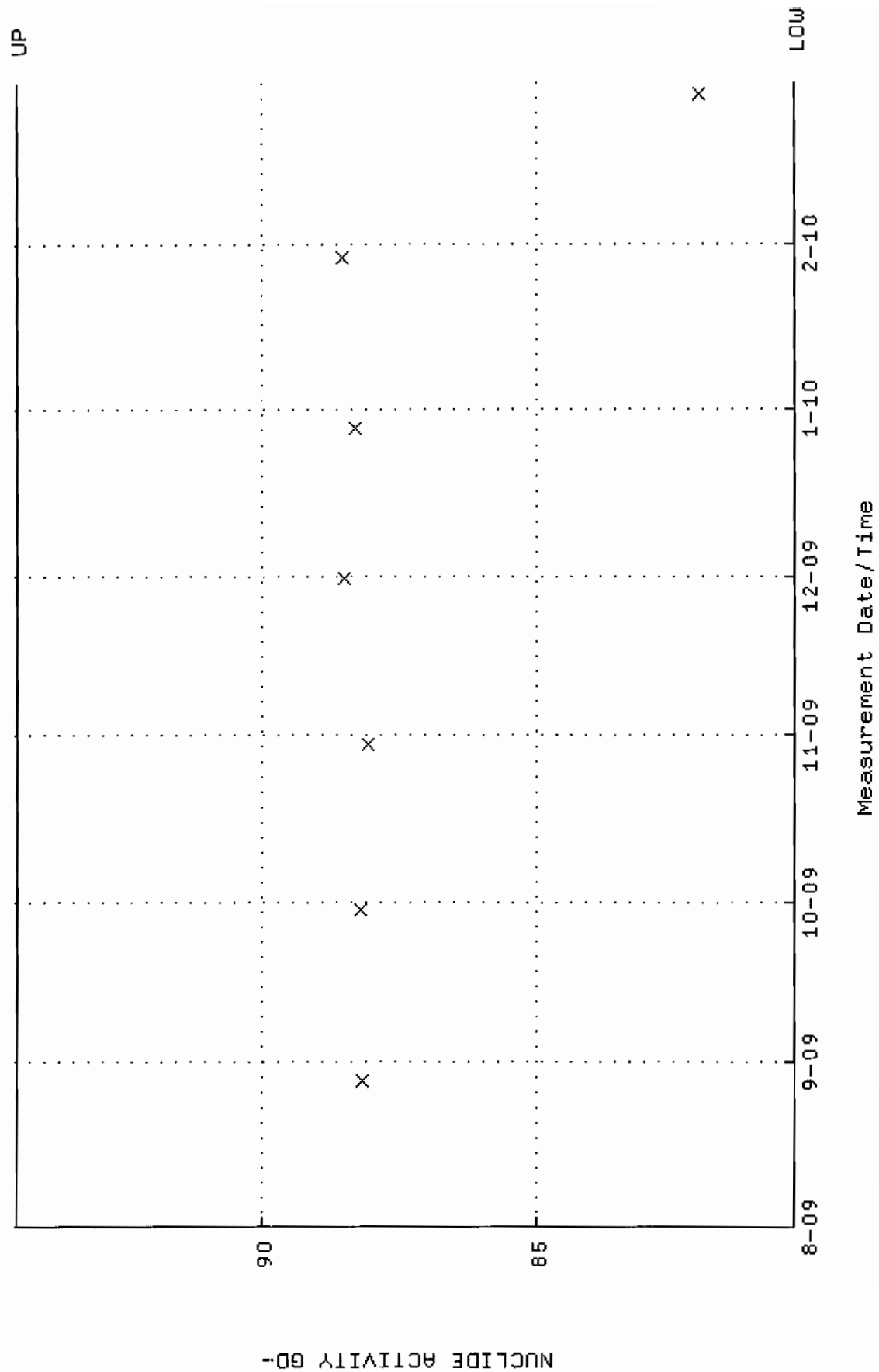
QA filename : DKA100:[ENV_ALPHA.QA.B]B242.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:31 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



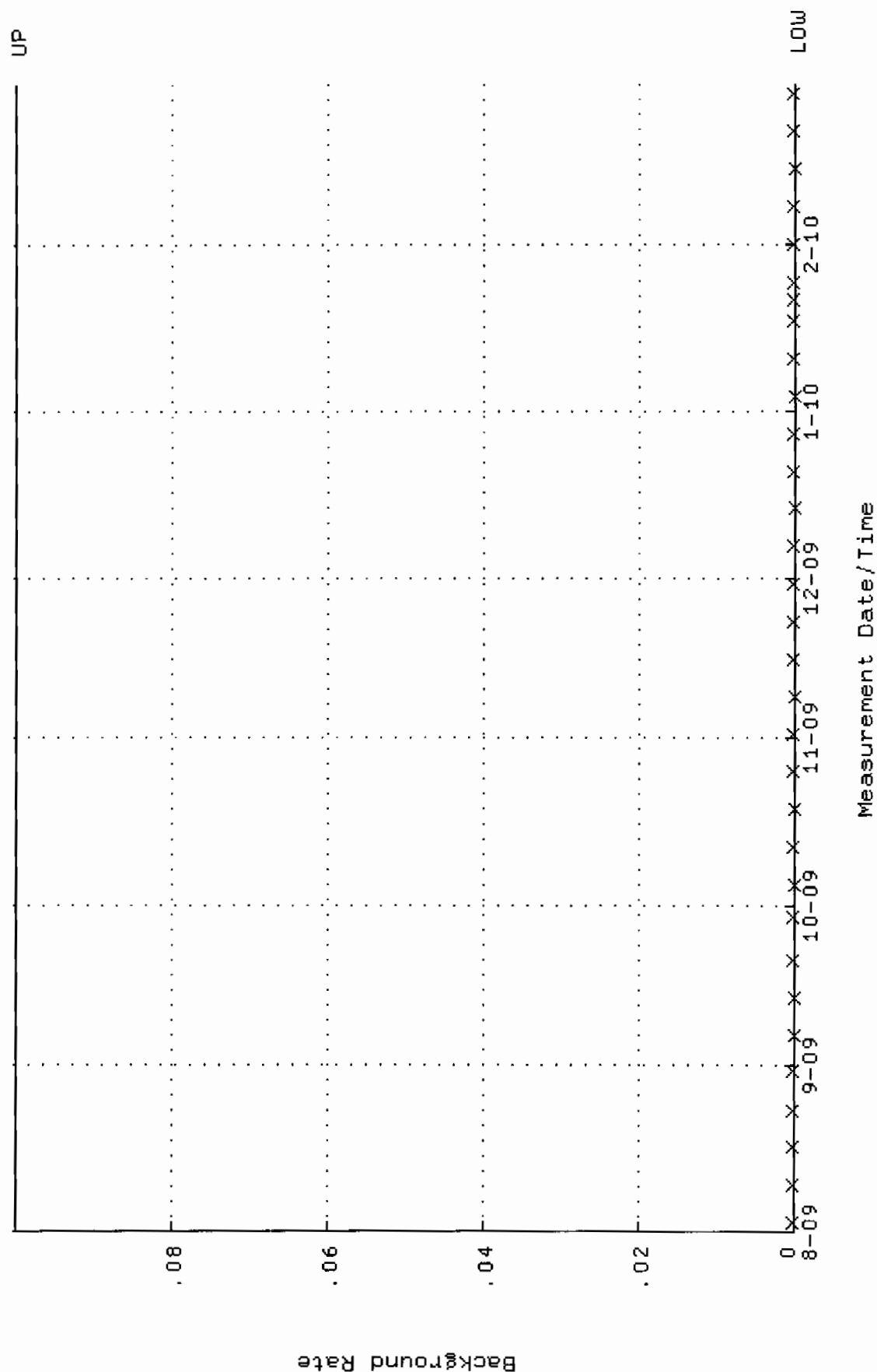
QA filename : DKA100:[ENV_ALPHA.QA.W]w244.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:32 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.346871 through 0.403035



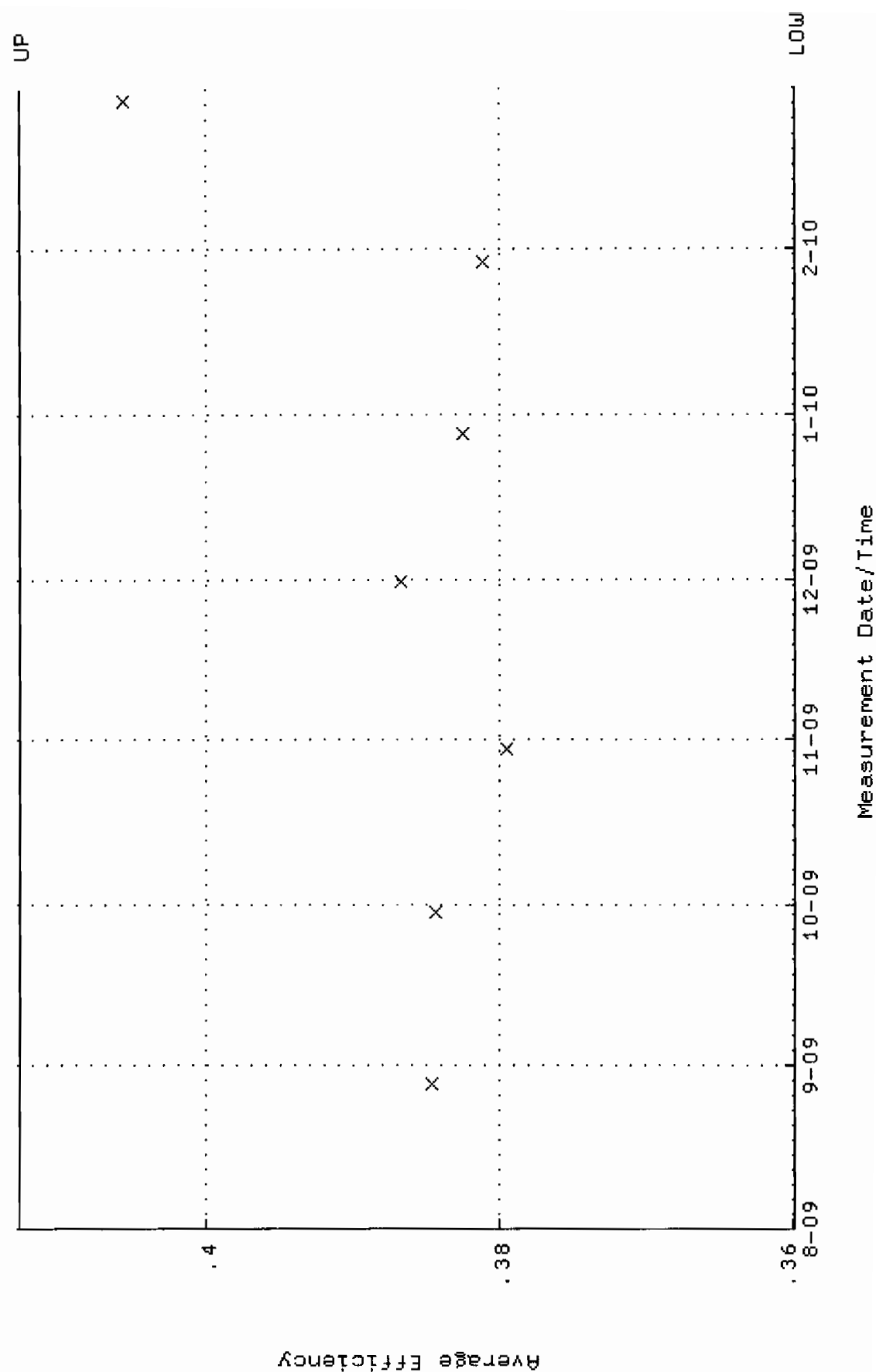
QA filename : DKA100:[ENV_ALPHA.QA.W]W244.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:32 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 80.2814 through 94.4734



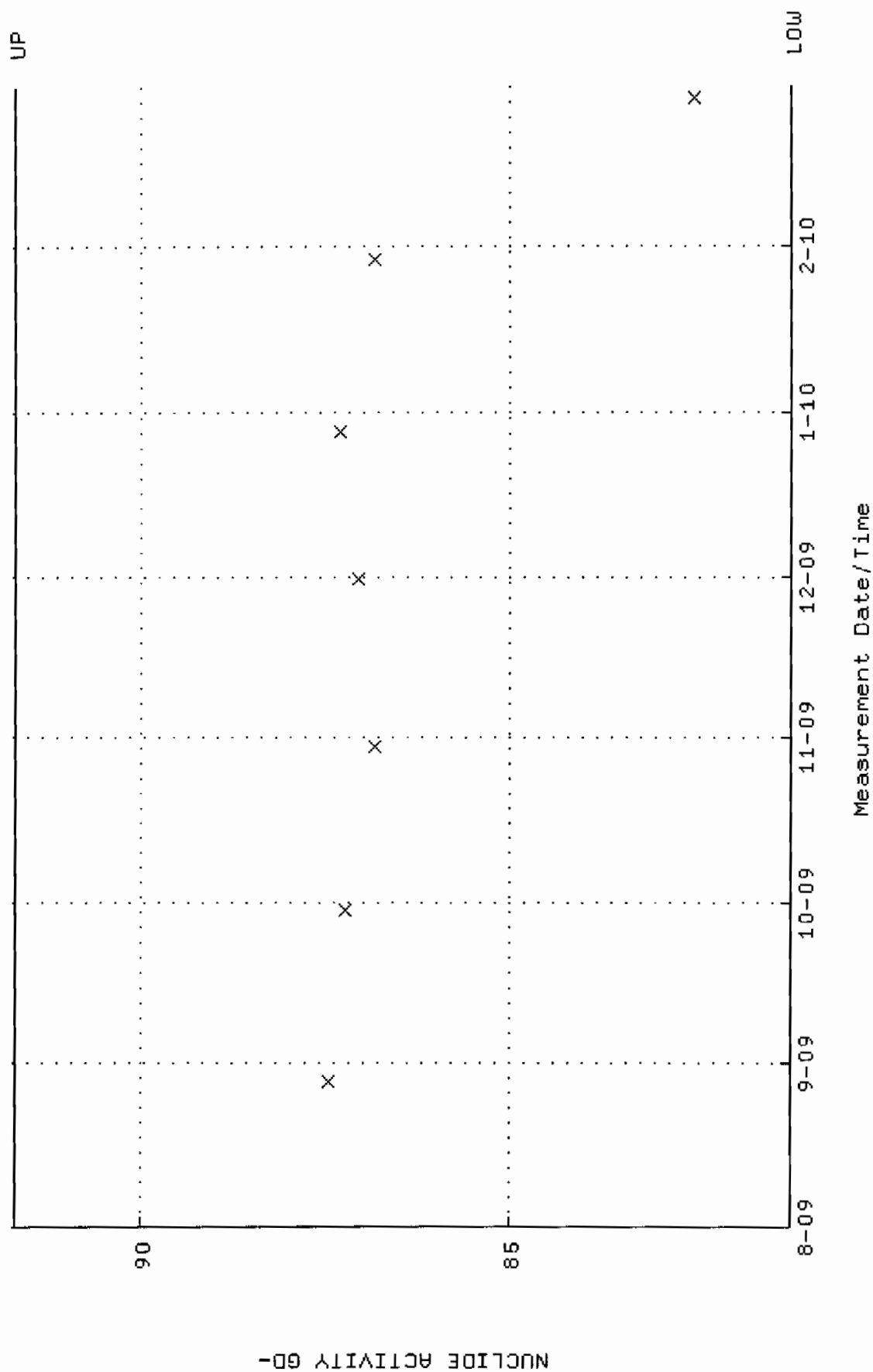
QA filename : DKA100:[ENV_ALPHA.QA.B]B244.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:40 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



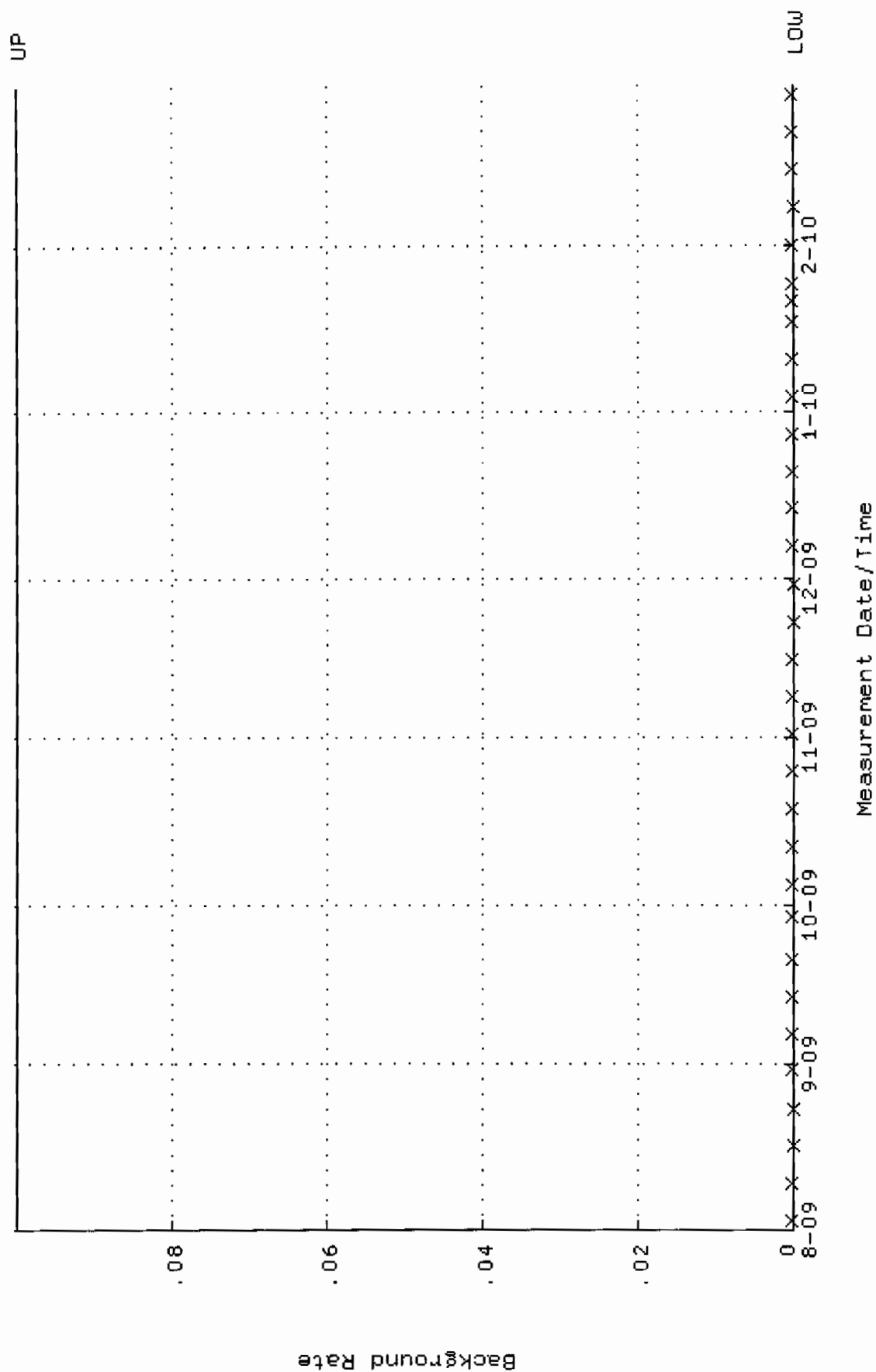
QA filename : DKA100:[ENV_ALPHA.QA.W]W245.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:37 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.359838 through 0.412714



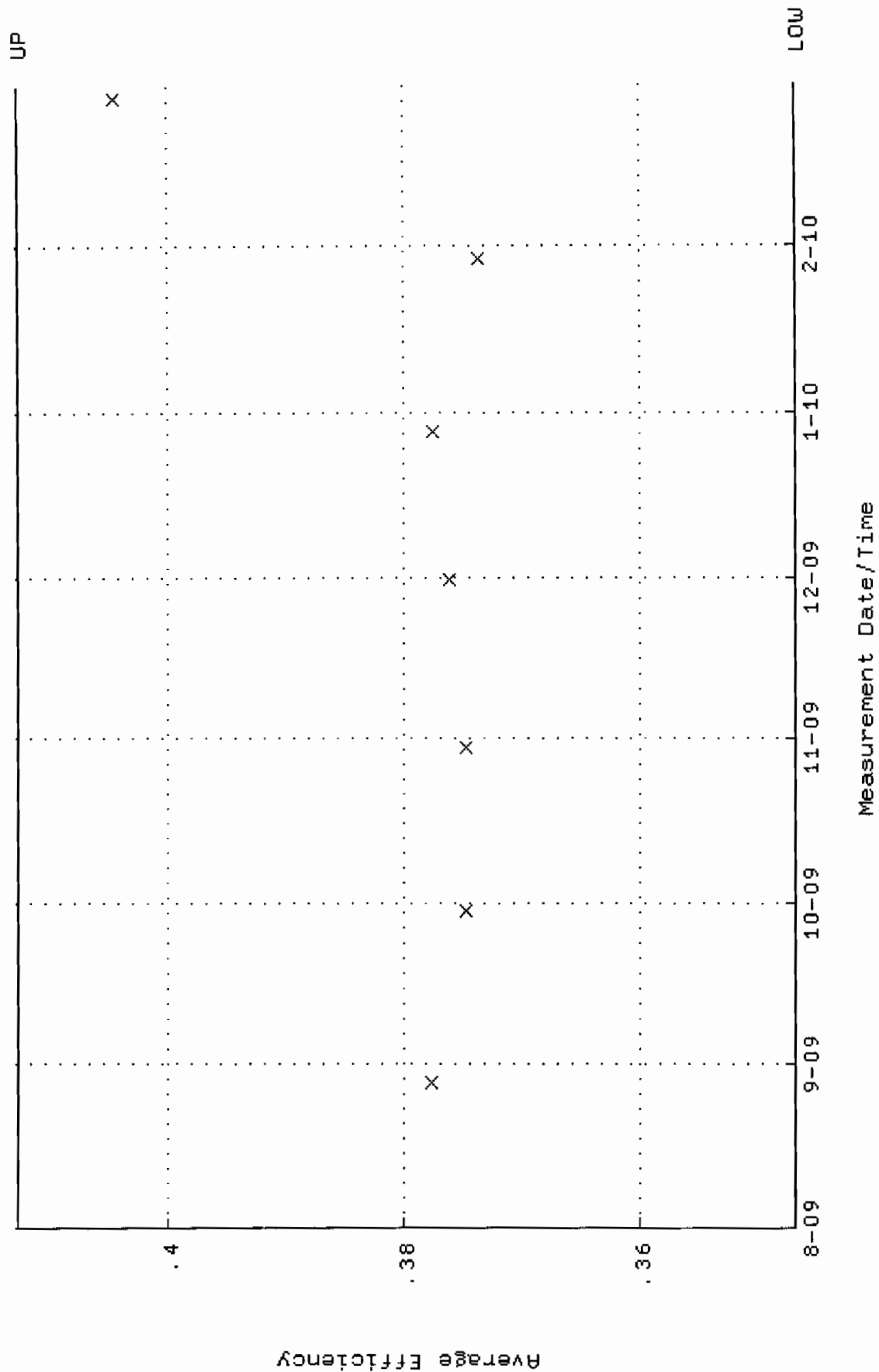
QA filename : DKA100:[ENV_ALPHA.QA.W]W245.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:37 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.1644 through 91.7216



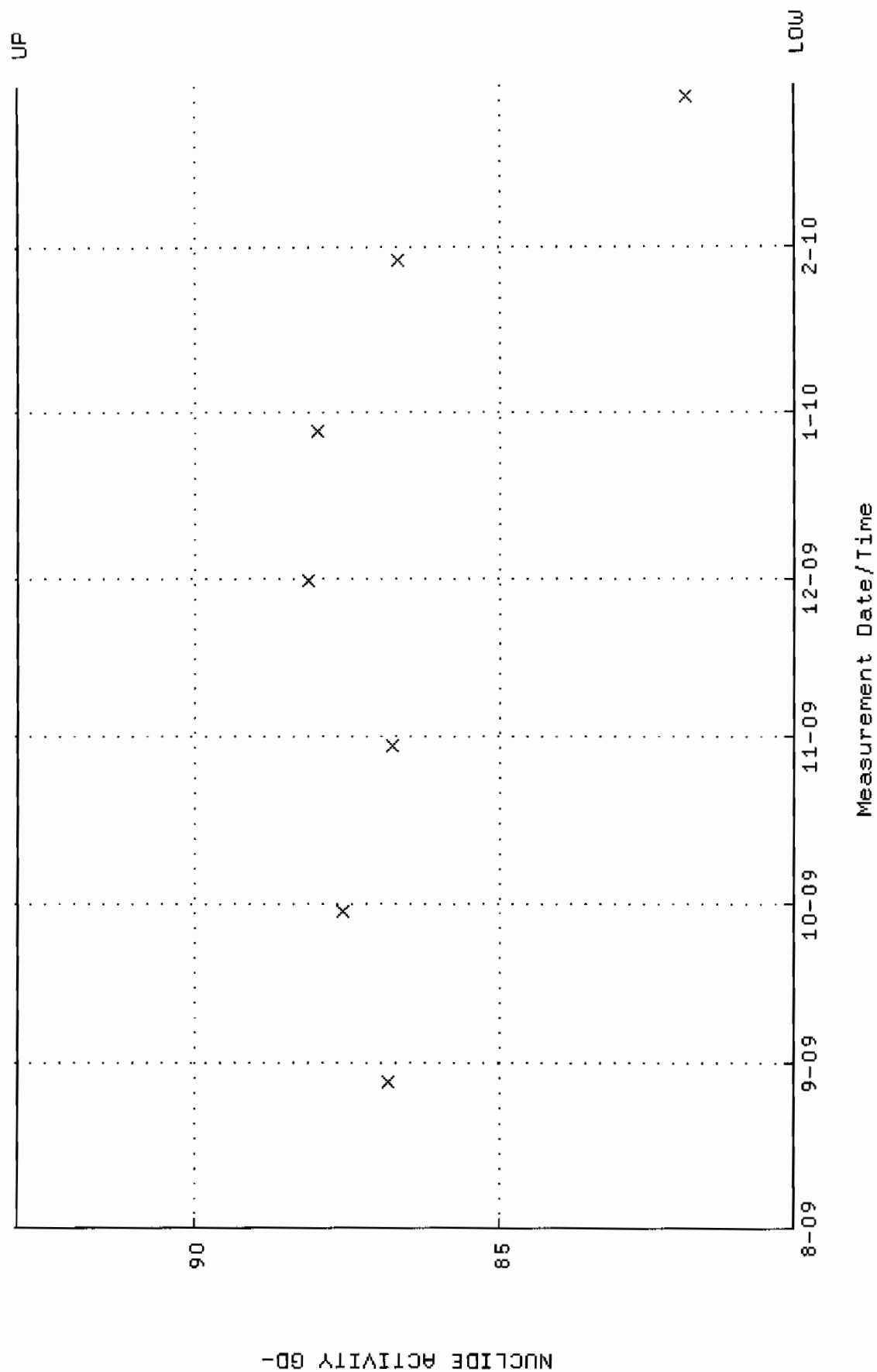
QA filename : DKA100:[ENV_ALPHA.QA.B]B245.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:45 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W246.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:44 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.346753 through 0.412735



QA filename : DKA100:[ENV_ALPHA.QA.W]W246.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:44 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 80.1657 through 92.9177

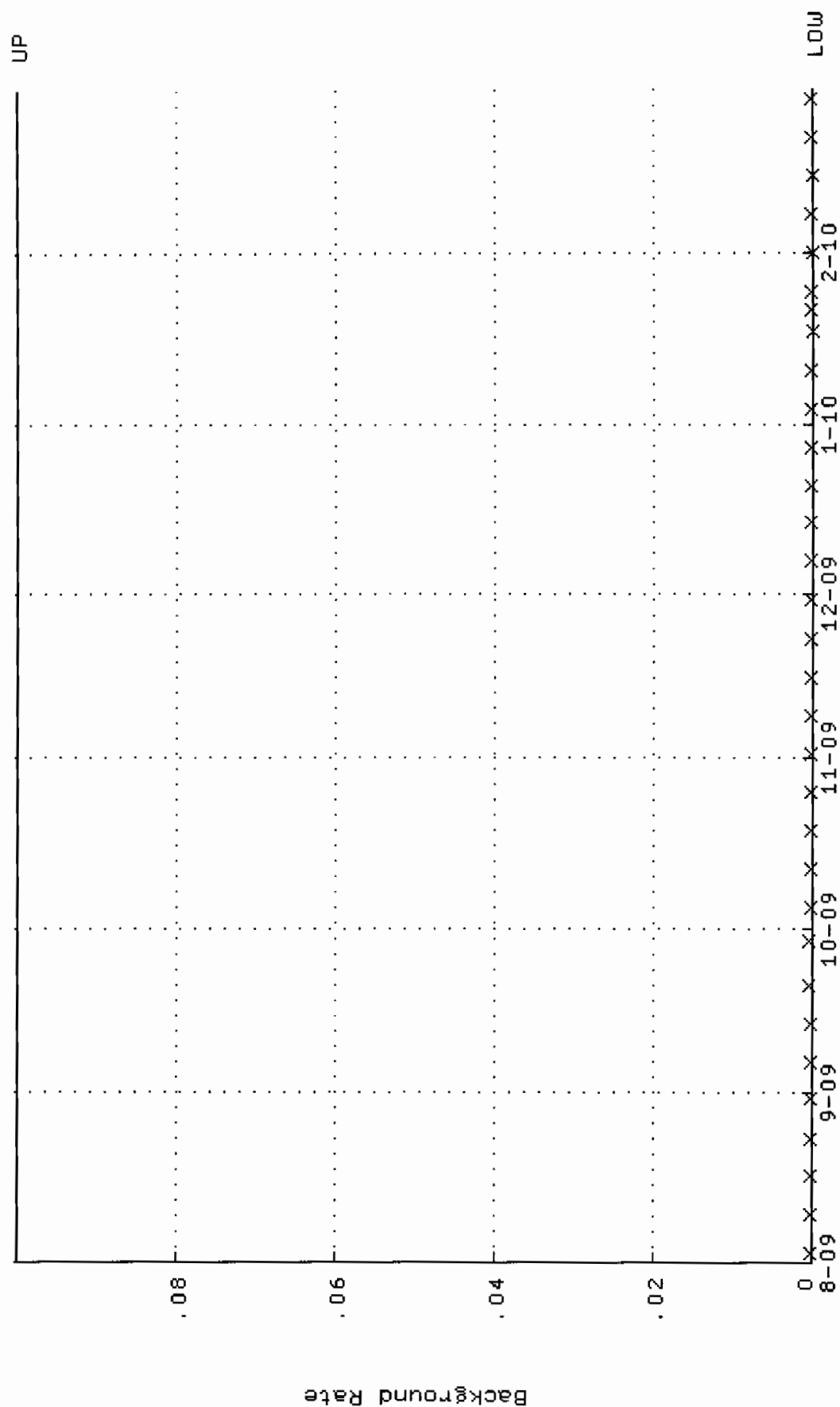


QA filename : OKA100:[ENV_ALPHA.QA.B]B246.QAF;1

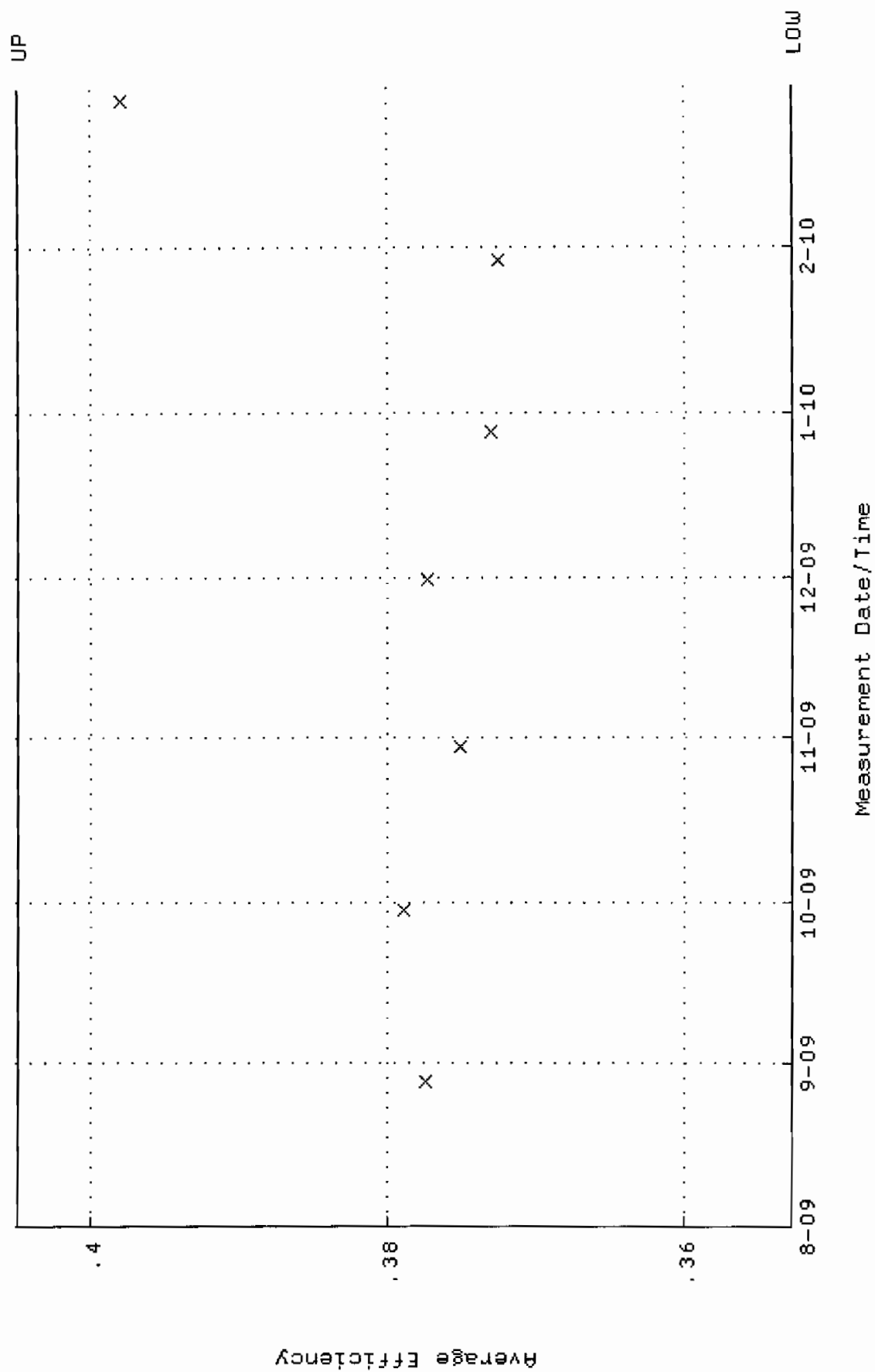
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:27:49 through 2-MAR-2010 12:00:00

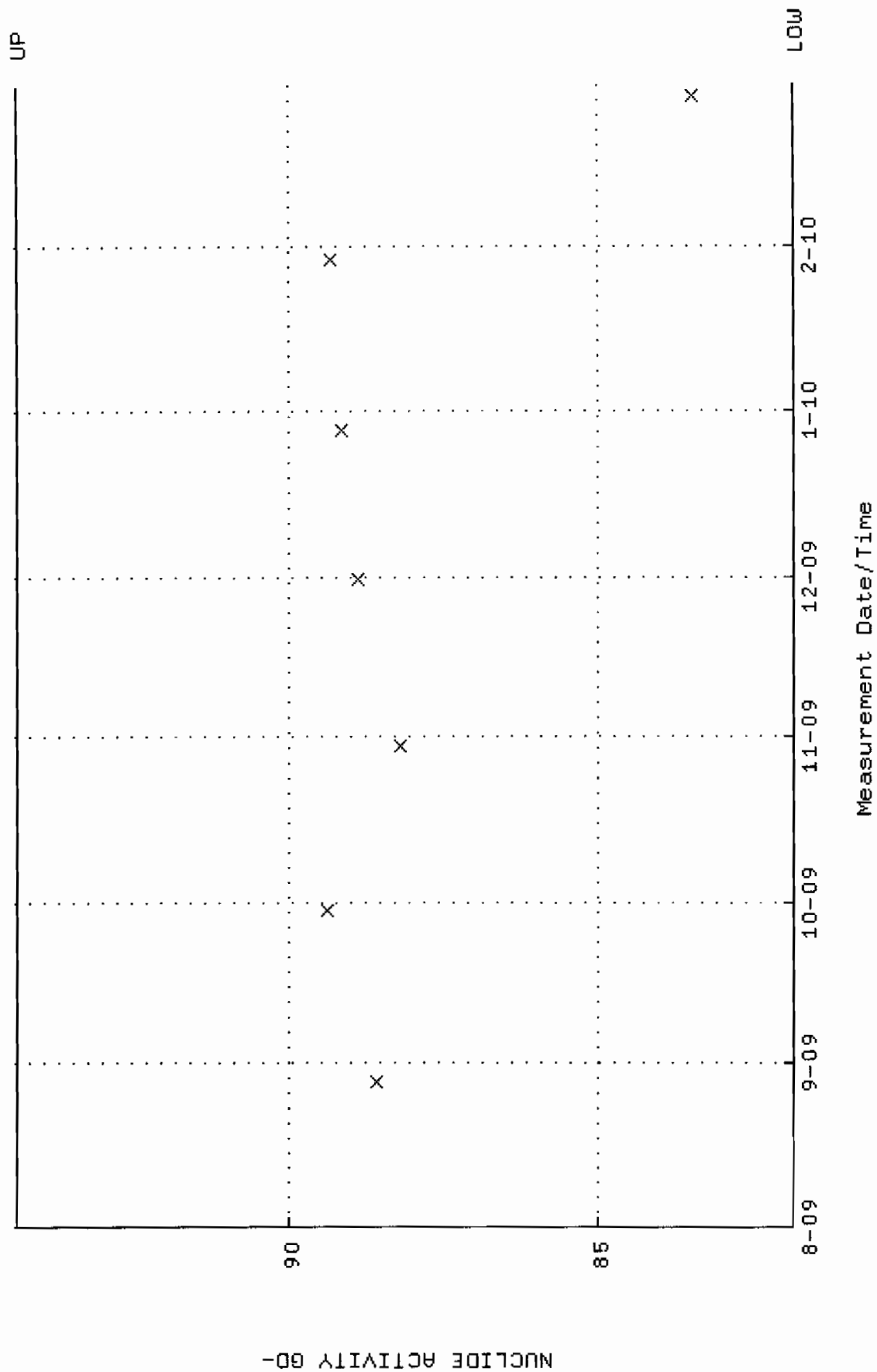
Lower/Upper Lmts: 0.000000E+00 through 0.100000



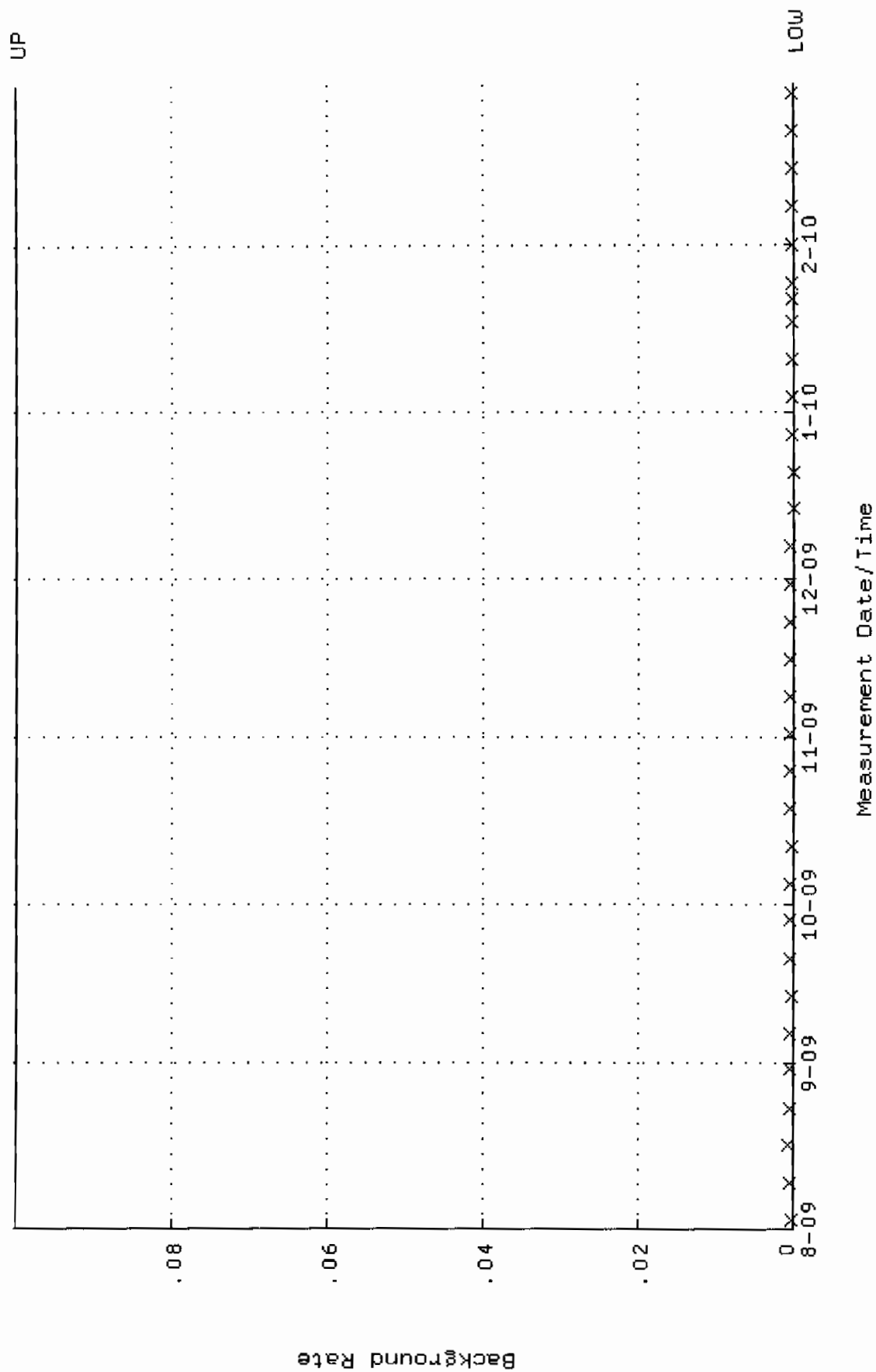
QA filename : DKA100:[ENV_ALPHA.QA.W]W247.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:50 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.352698 through 0.404942



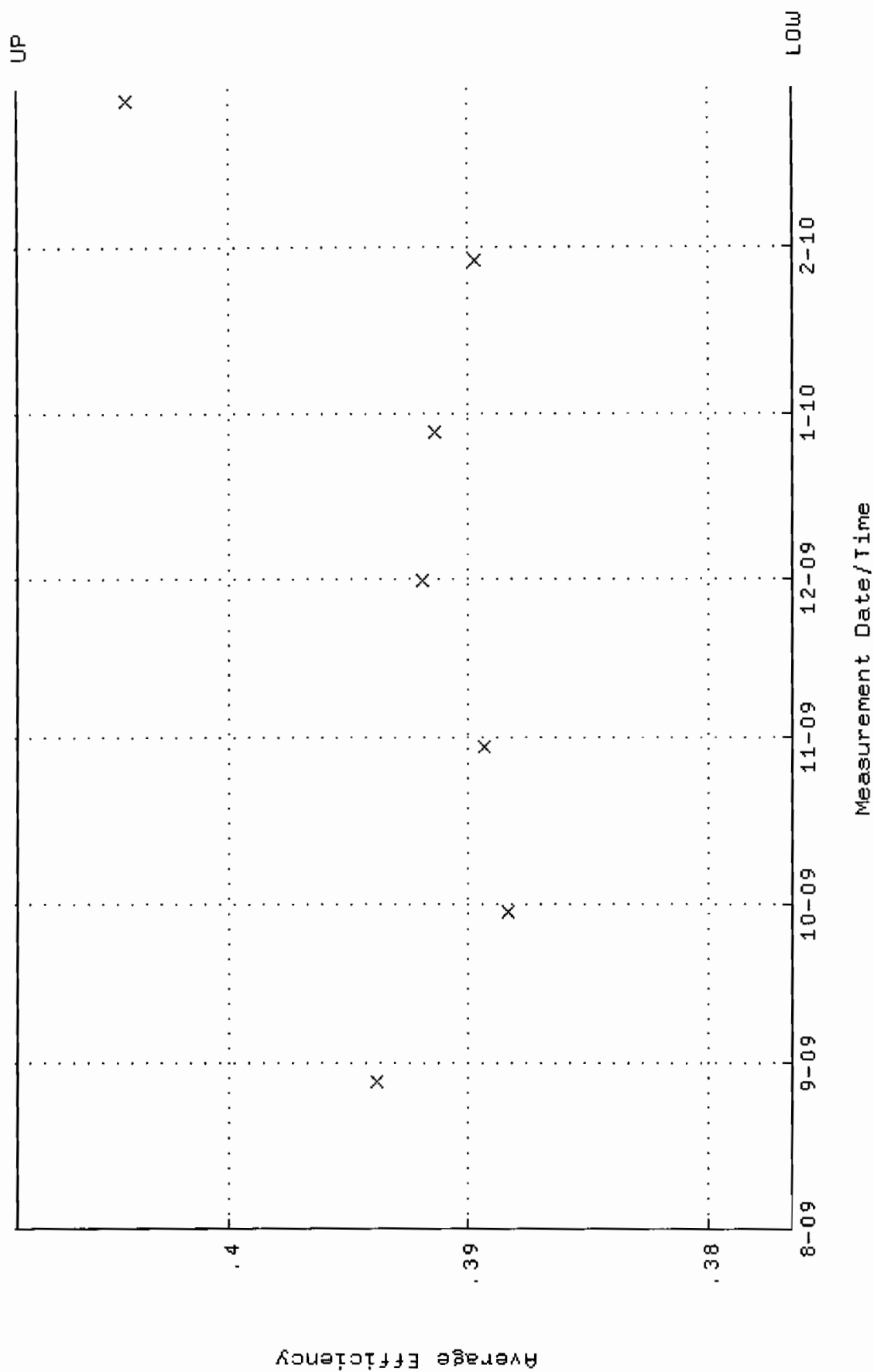
QA filename : DKA100:[ENV_ALPHA.QA.W]W247.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:50 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.8318 through 94.4164



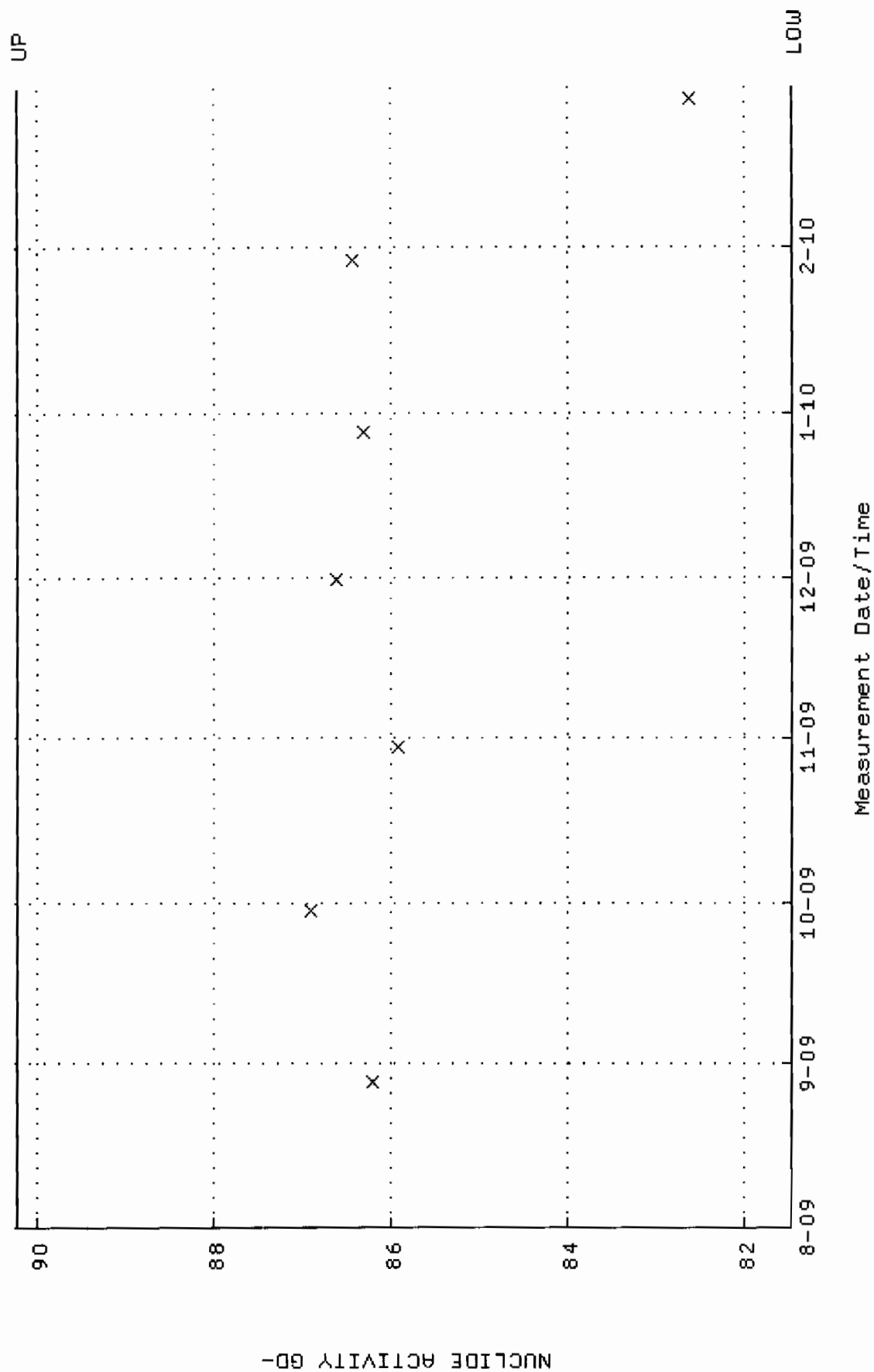
QA filename : DKA100:[ENV_ALPHA.QA.B]B247.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:54 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



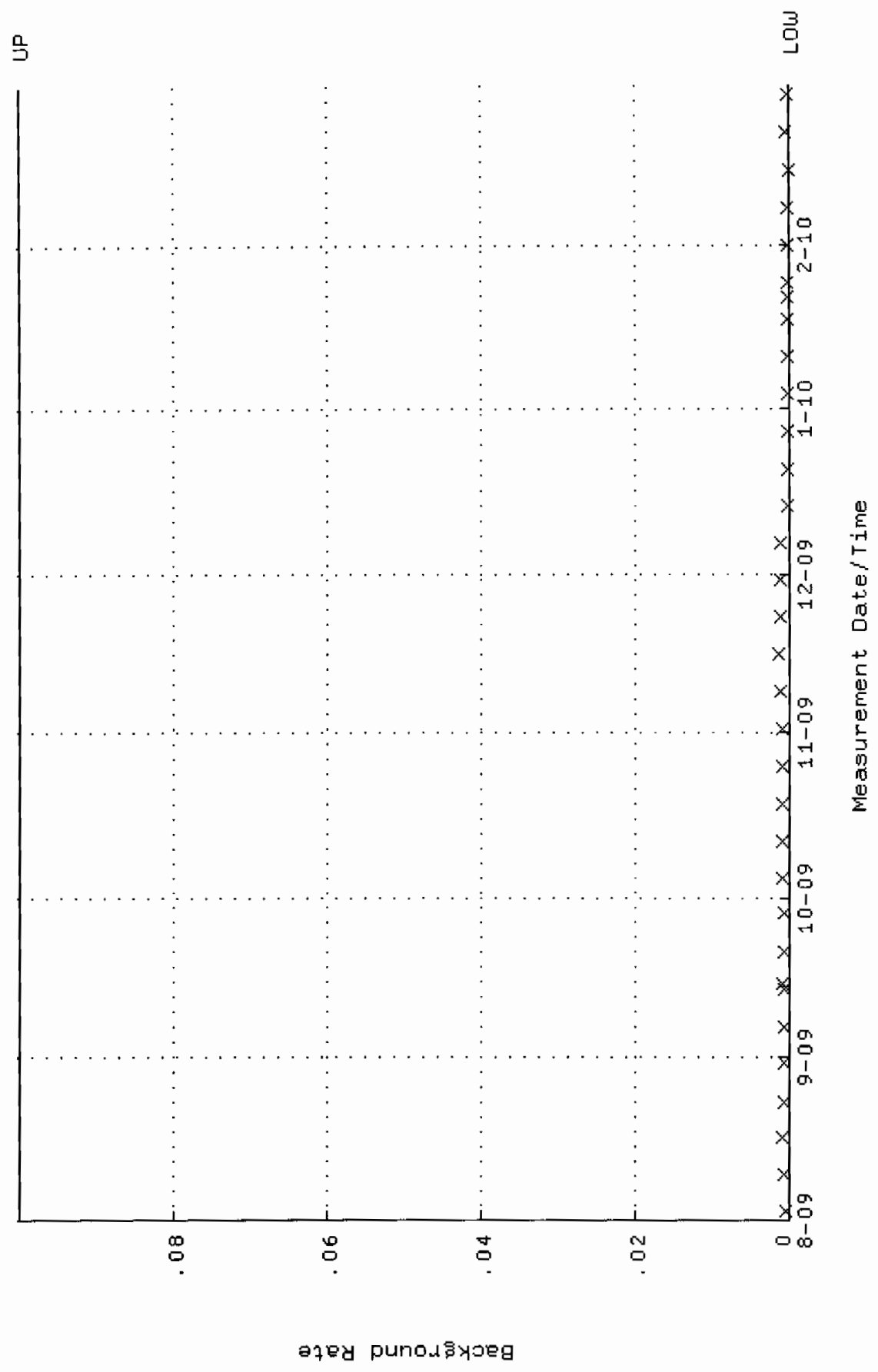
QA filename : DKA100:[ENV_ALPHA.QA.W]W248.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:55 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.376481 through 0.408807



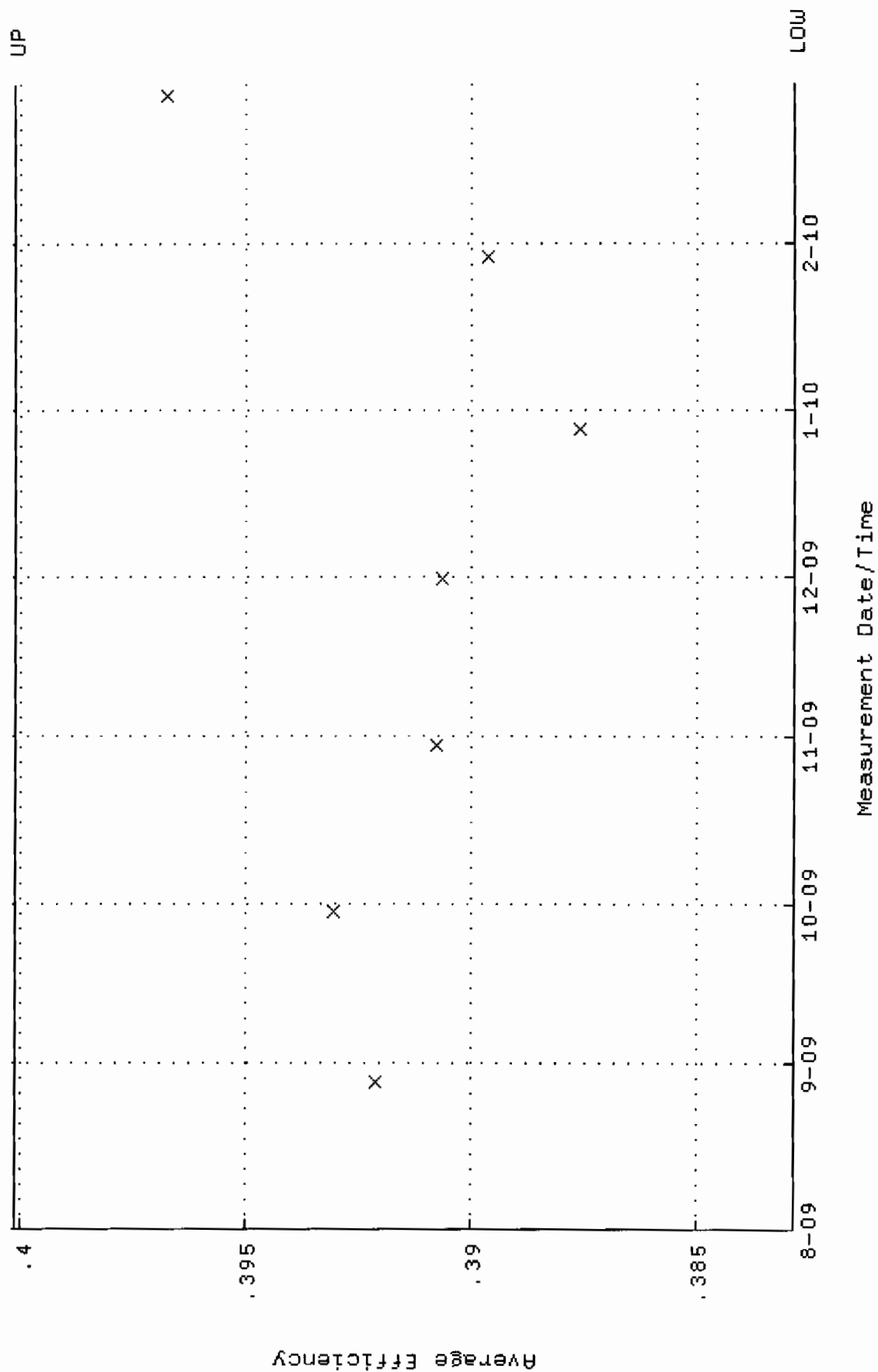
QA filename : DKA100:[ENV_ALPHA.QA.W]W248.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:55 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.4745 through 90.2275



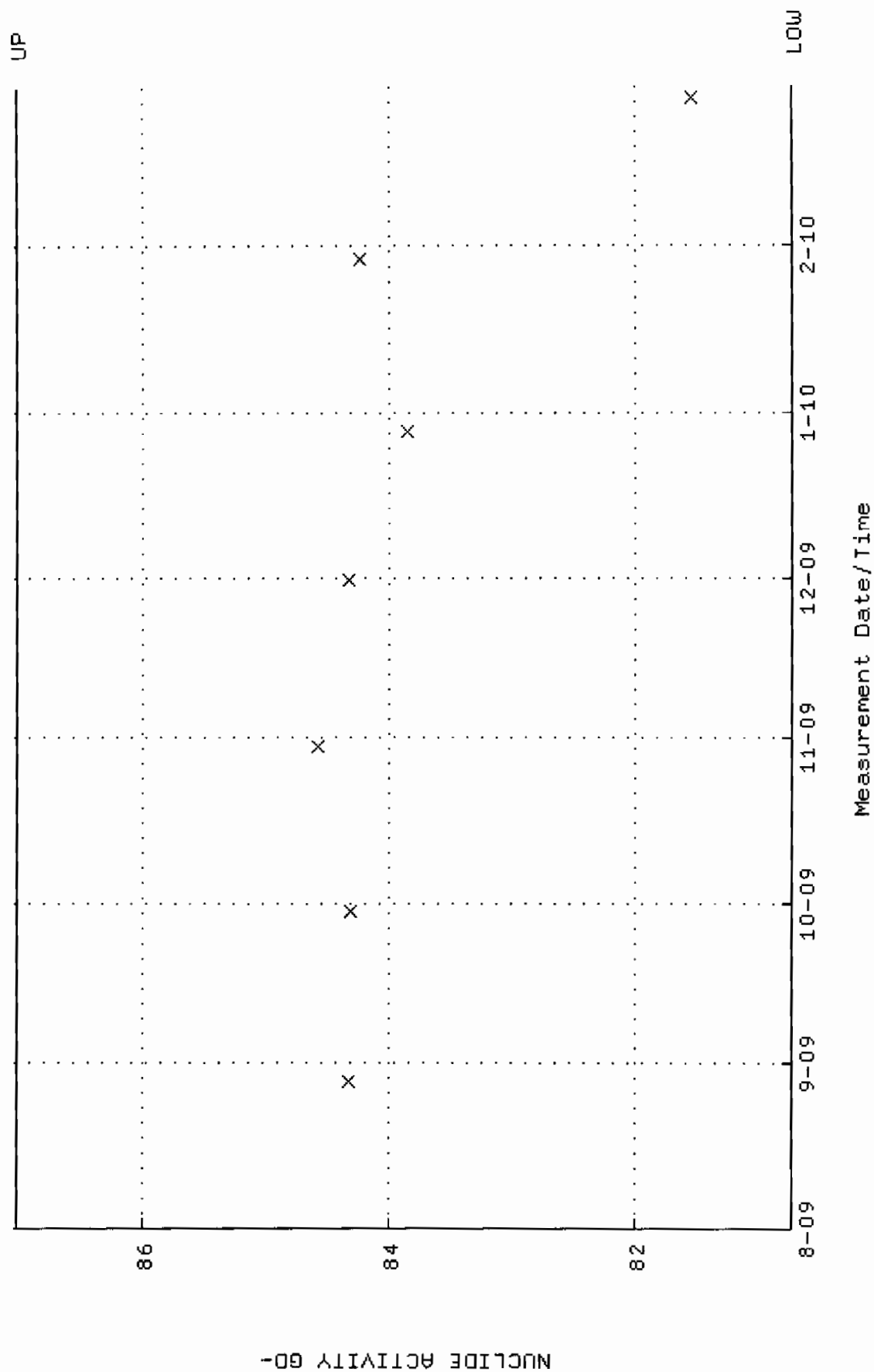
QA filename : DKA100:[ENV_ALPHA.QA.B]B248.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:59 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV-ALPHA.QA.W]W249.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:10:01 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.382845 through 0.400115



QA filename : DKA100:[ENV_ALPHA.QA.W]w249.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:10:01 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 80.7258 through 87.0246

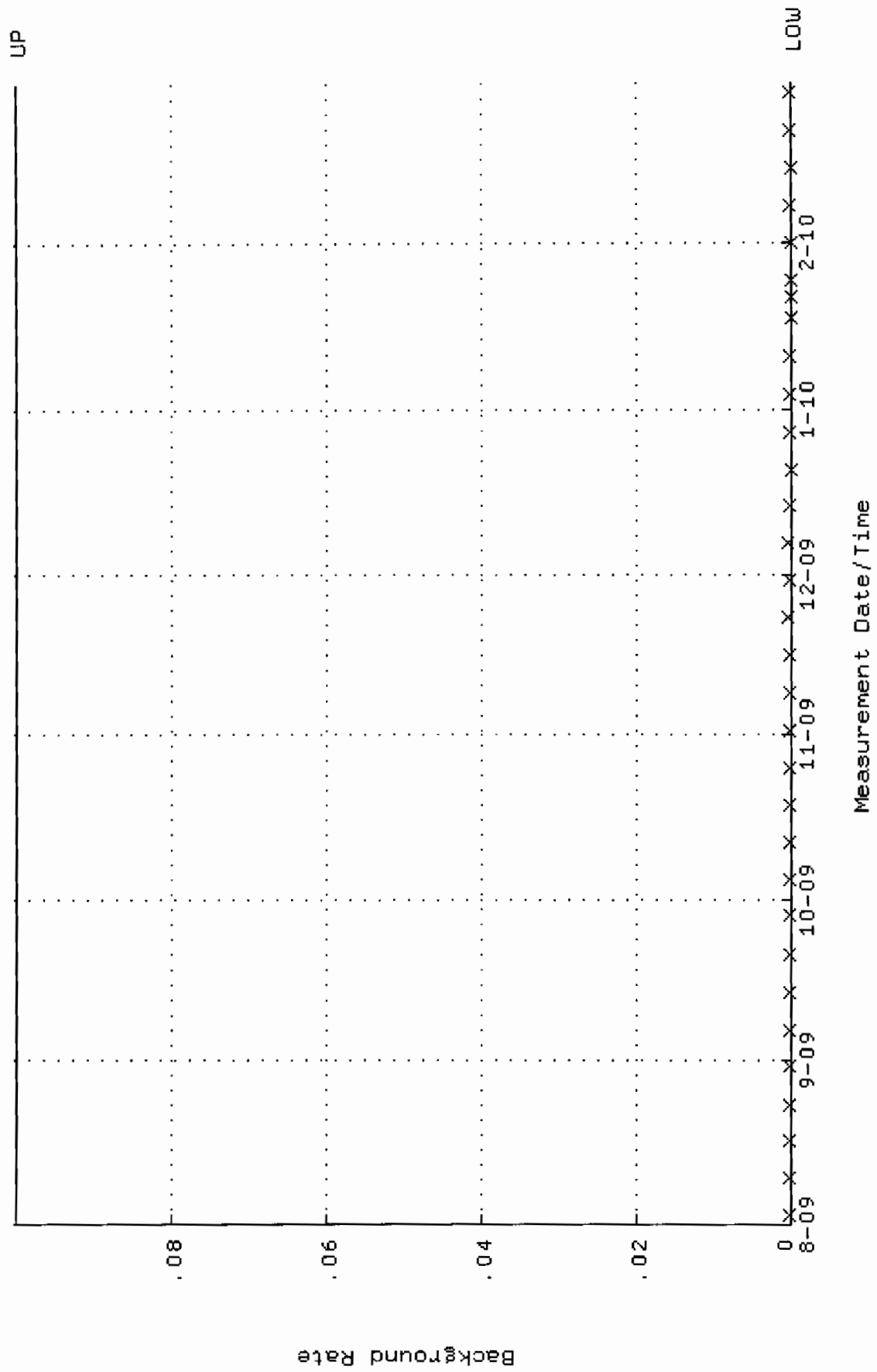


QA filename : DKA100:[ENV_ALPHA.QA.B]B249.QAF;1

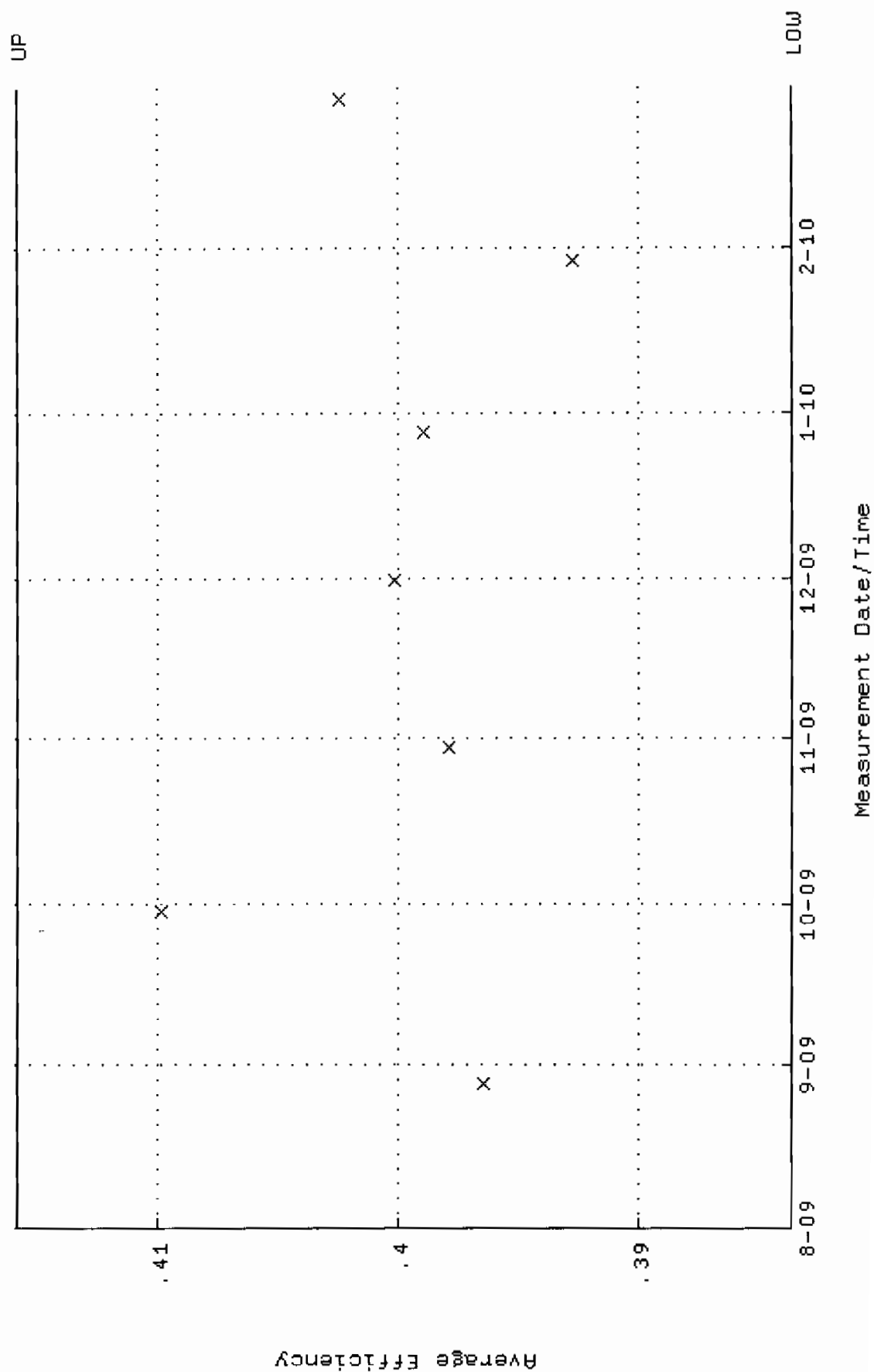
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:28:04 through 2-MAR-2010 12:00:00

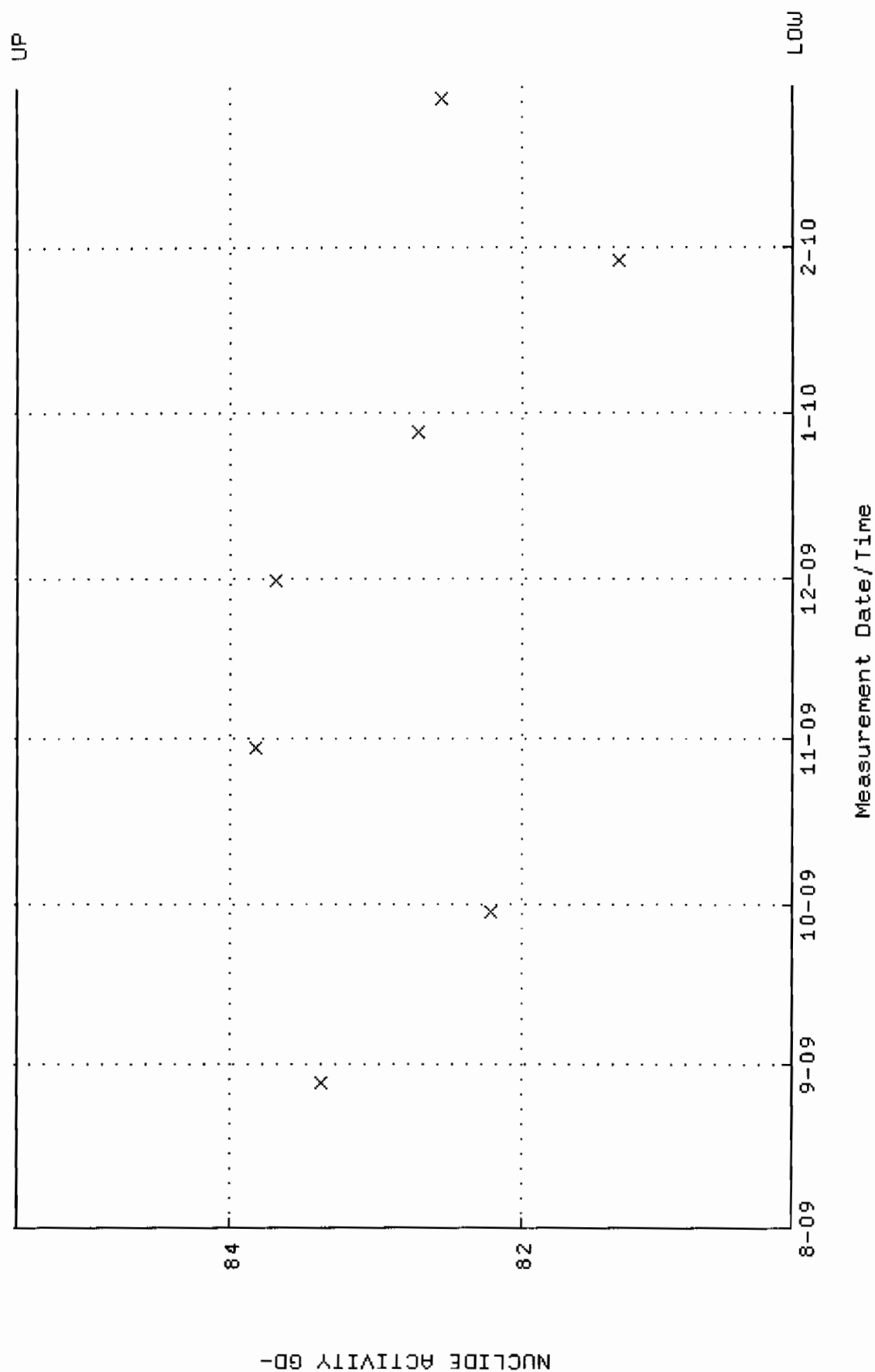
Lower/Upper Lmts: 0.000000E+00 through 0.100000



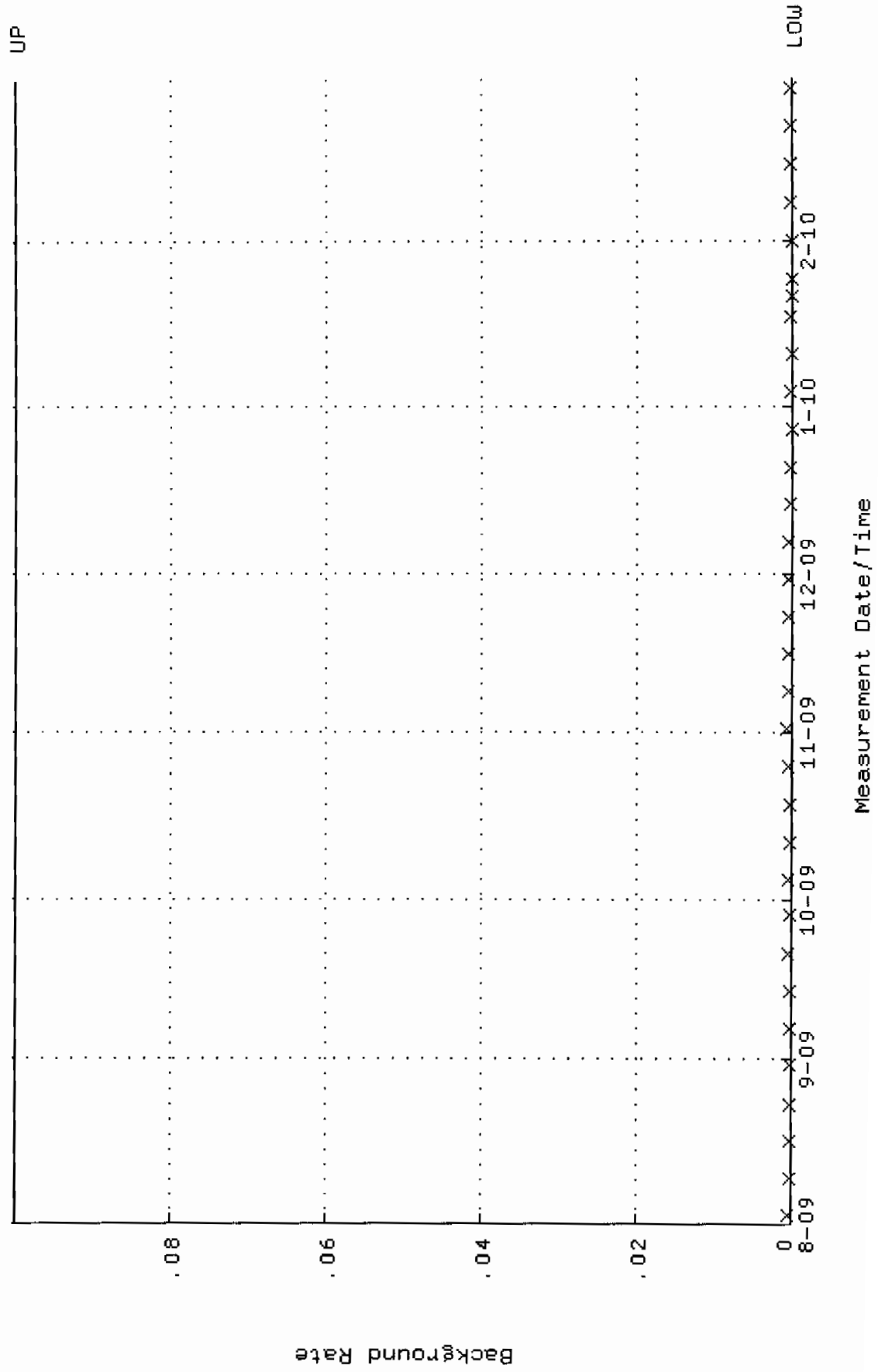
QA filename : DKA100:[ENV_ALPHA.QA.W]W250.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:10:06 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.383673 through 0.415835



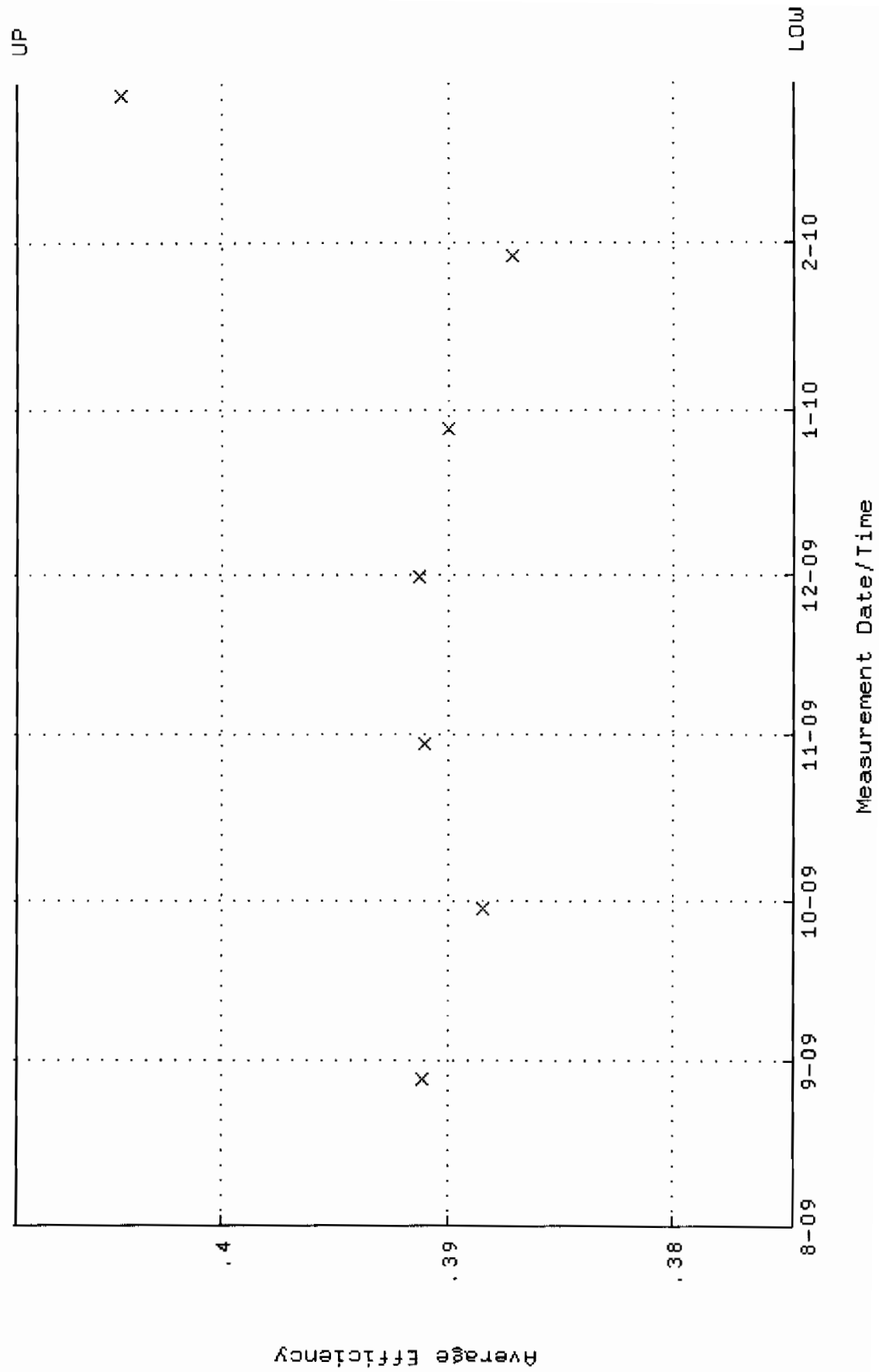
QA filename : DKA100:[ENV_ALPHA.QA.w]w250.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:10:06 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 80.1497 through 85.4585



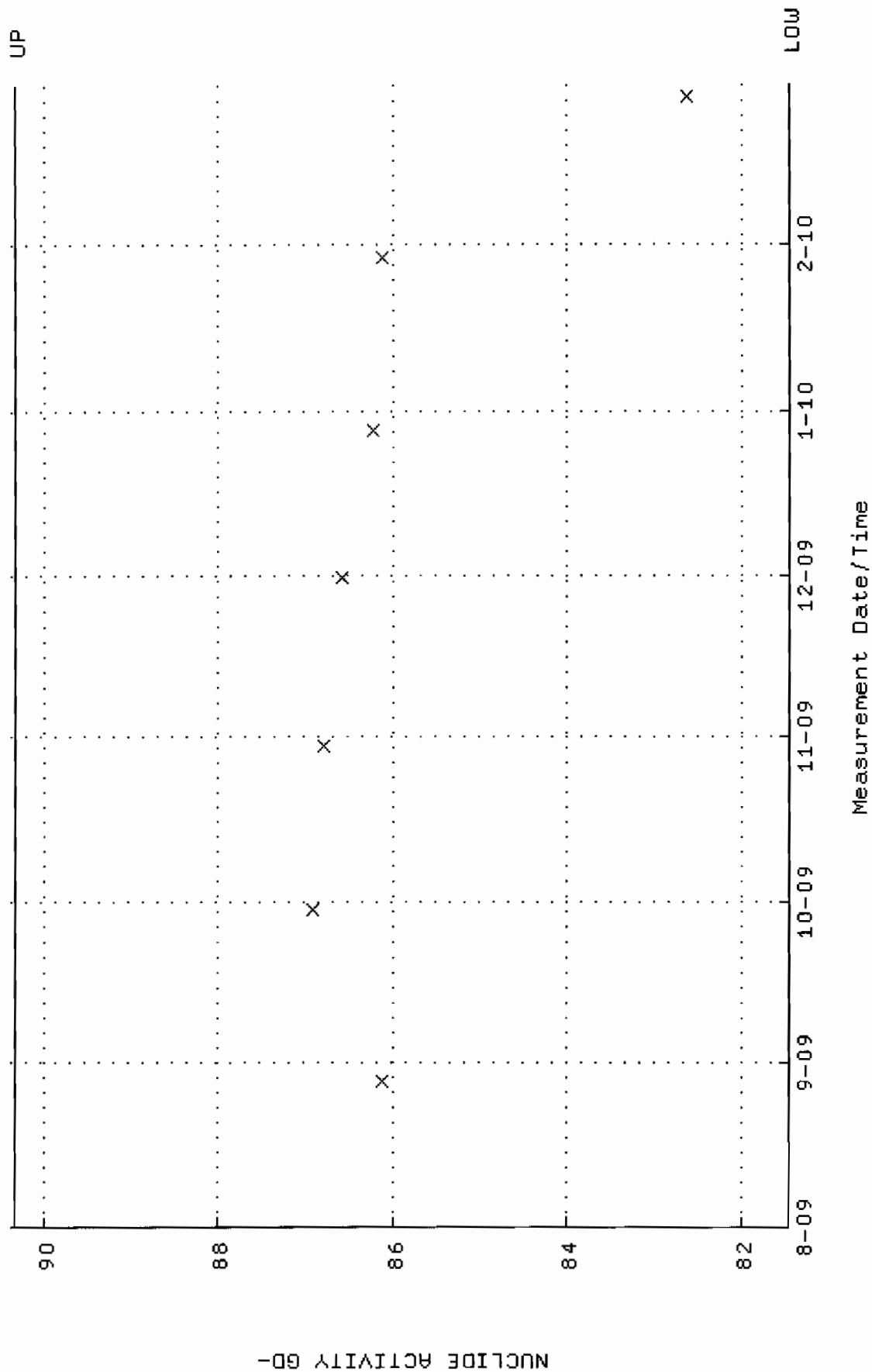
QA filename : DKA100:[ENV_ALPHA.QA.B]B250.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:28:08 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



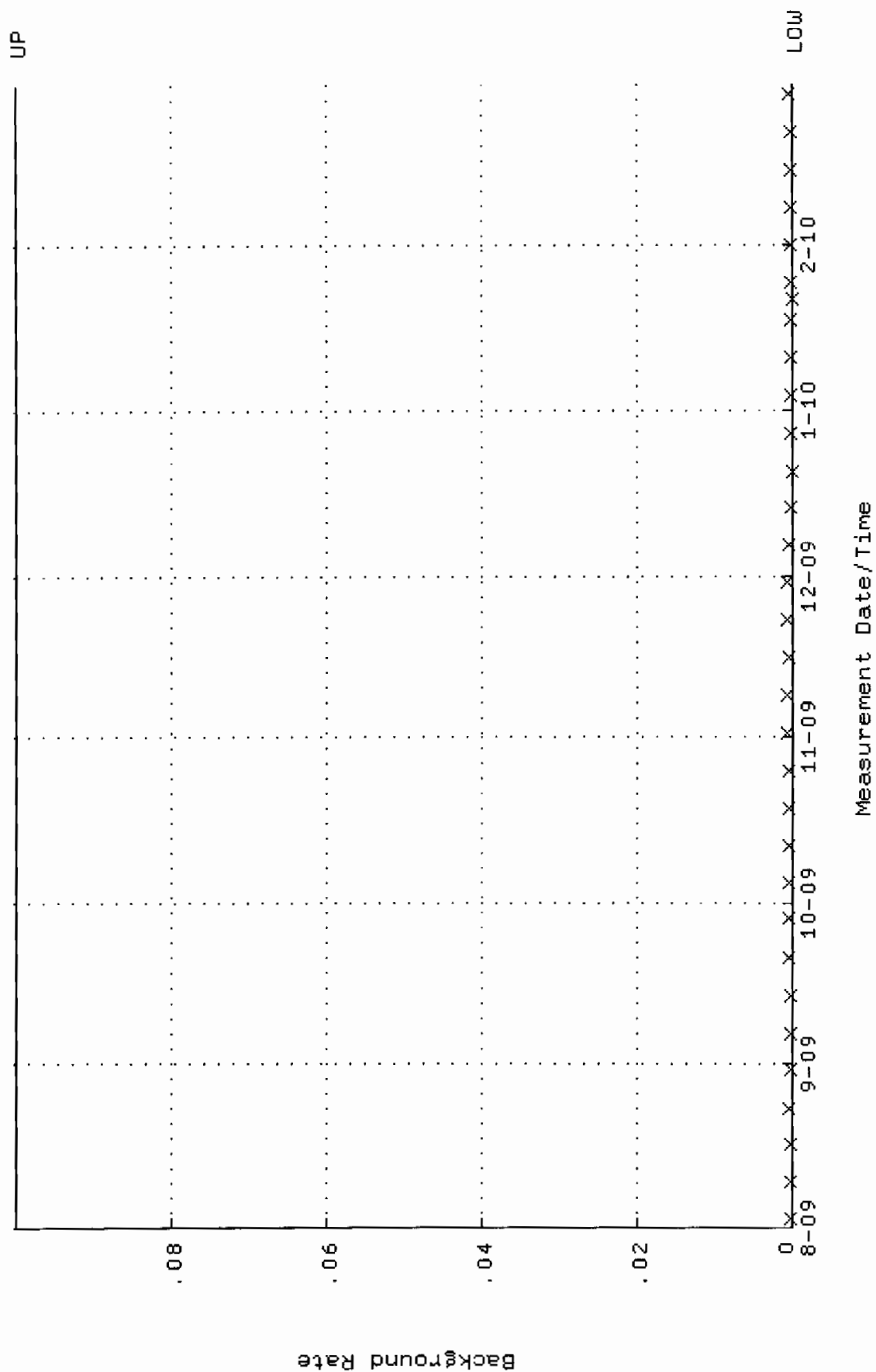
QA filename : DKA100:[ENV_ALPHA.QA.W]W251.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:10:12 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.374659 through 0.409089



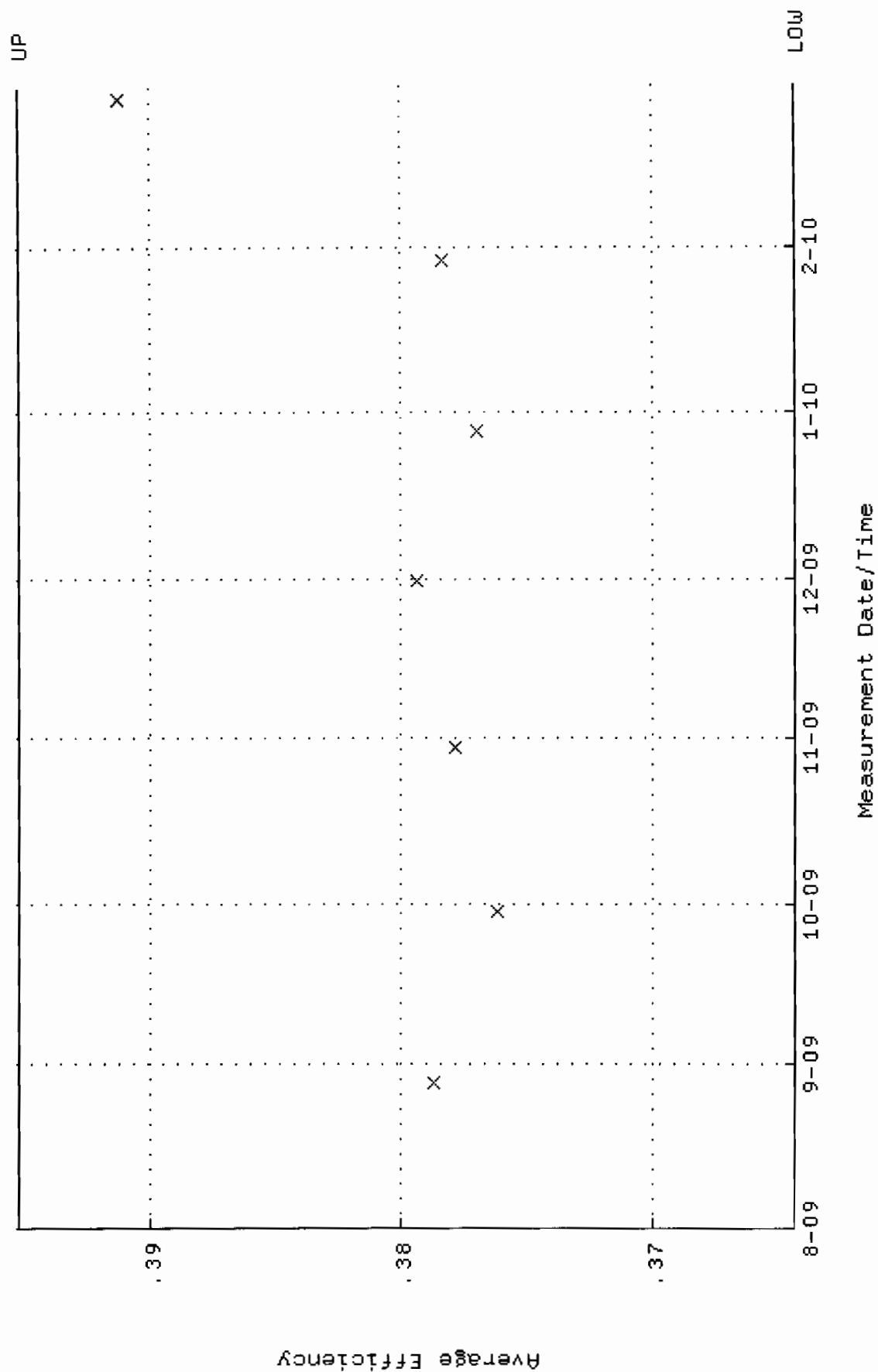
QA filename : DKA100:[ENV_ALPHA.QA.W]W251.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:10:12 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.4582 through 90.3490



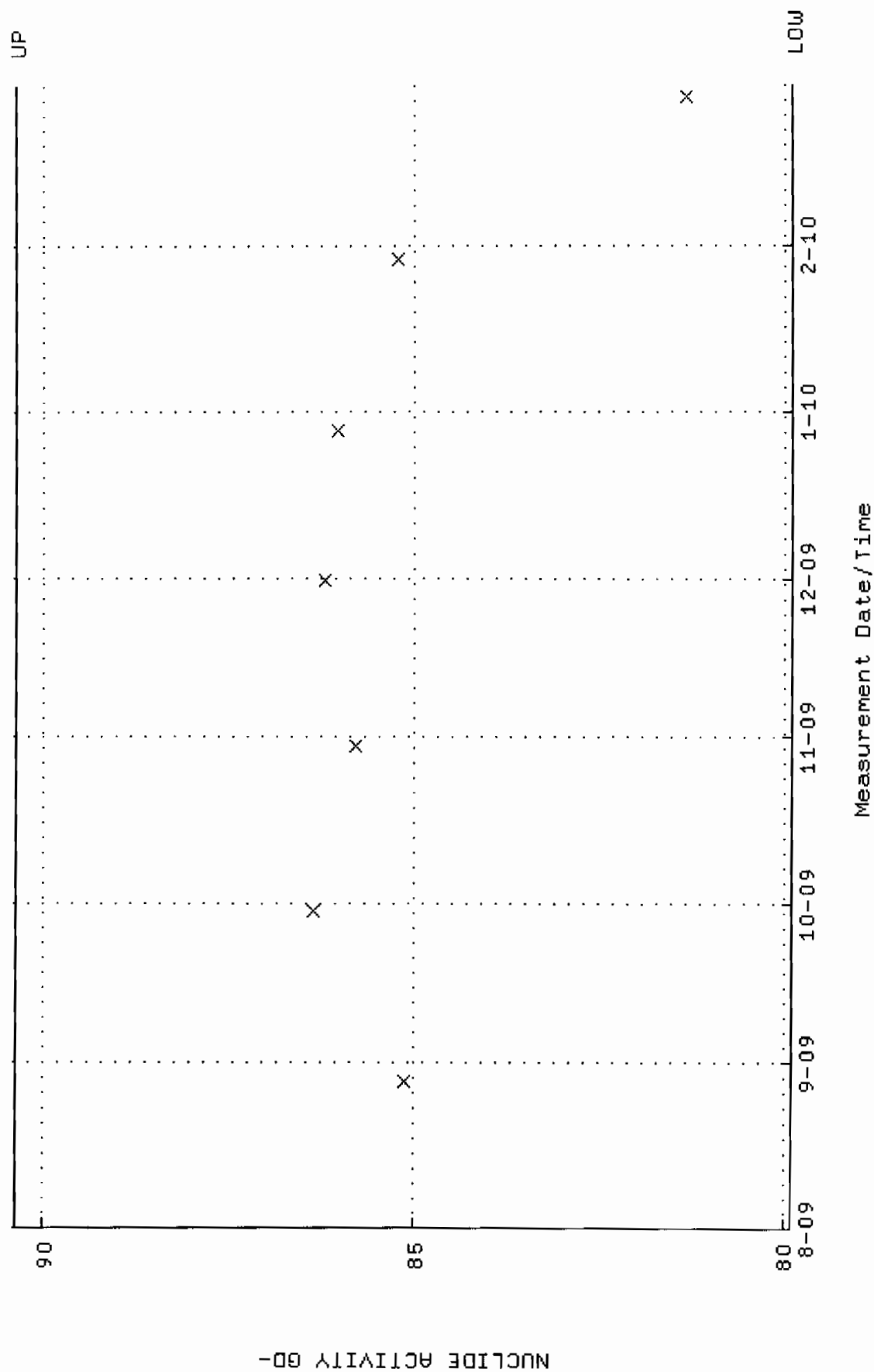
QA filename : DKA100:[ENV_ALPHA.QA.B]B251.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:28:13 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



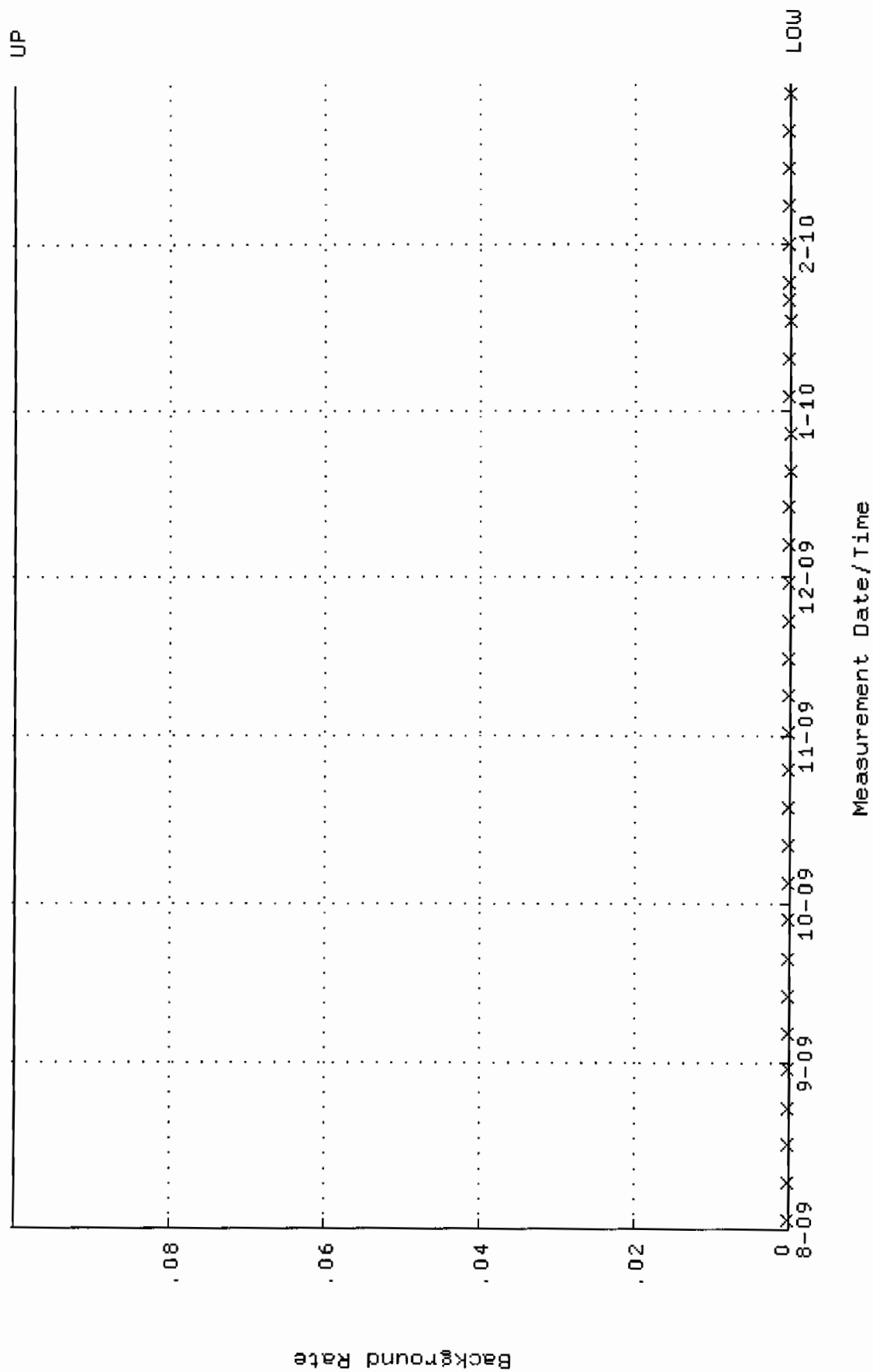
QA filename : DKA100:[ENV_ALPHA.QA.W]W252.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:10:17 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.364281 through 0.395267



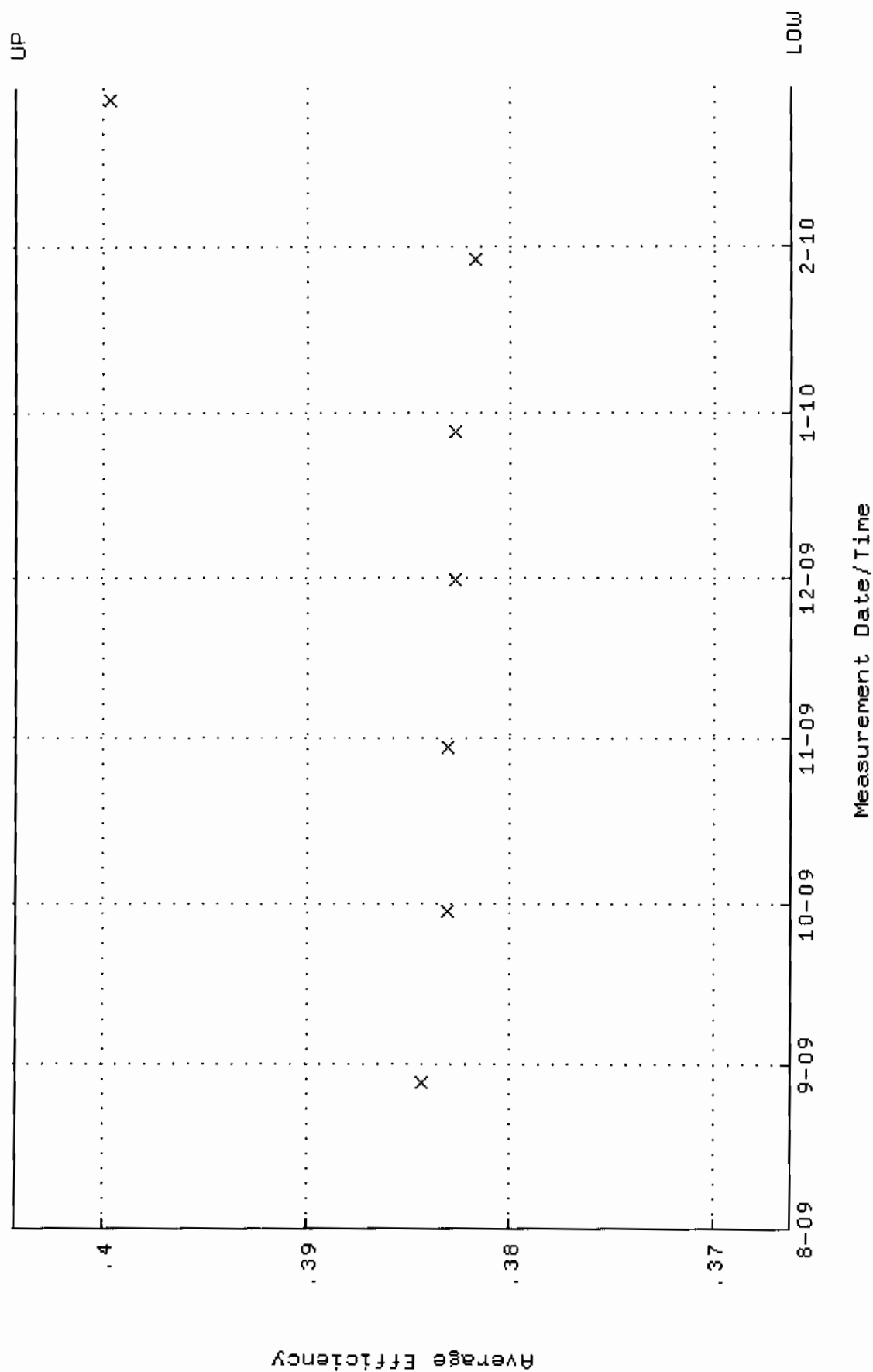
QA filename : DKA100:[ENV_ALPHA.QA.W]W252.QAF;1
 Parameter Name : NLACTVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:10:17 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 79.9099 through 90.3785



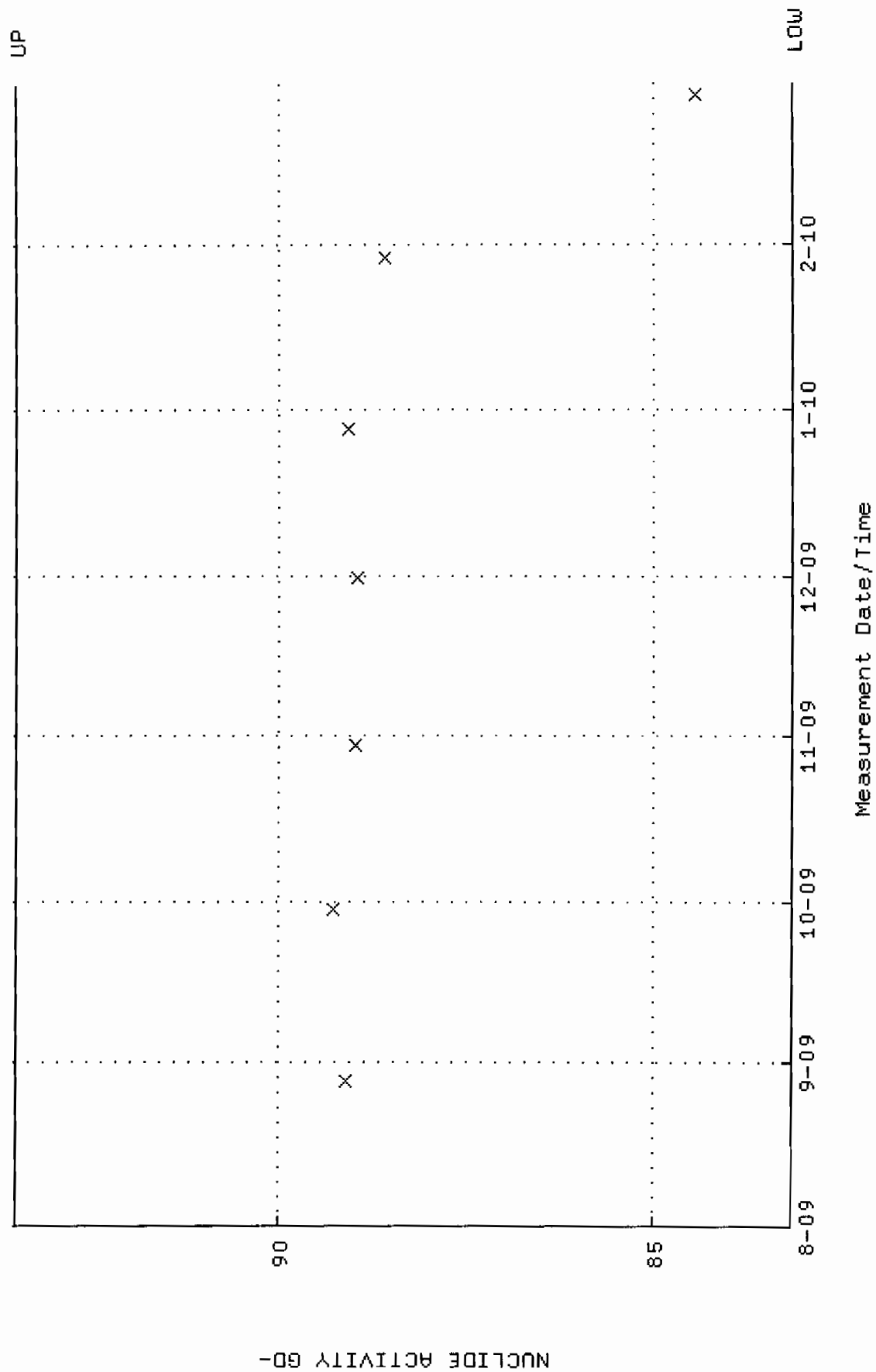
QA filename : DKA100:[ENV_ALPHA.QA.B]B252.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:28:18 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W253.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:10:22 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.366220 through 0.404308



QA filename : DKA100:[ENV_ALPHA.QA.W]W253.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:10:22 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.1439 through 93.5297

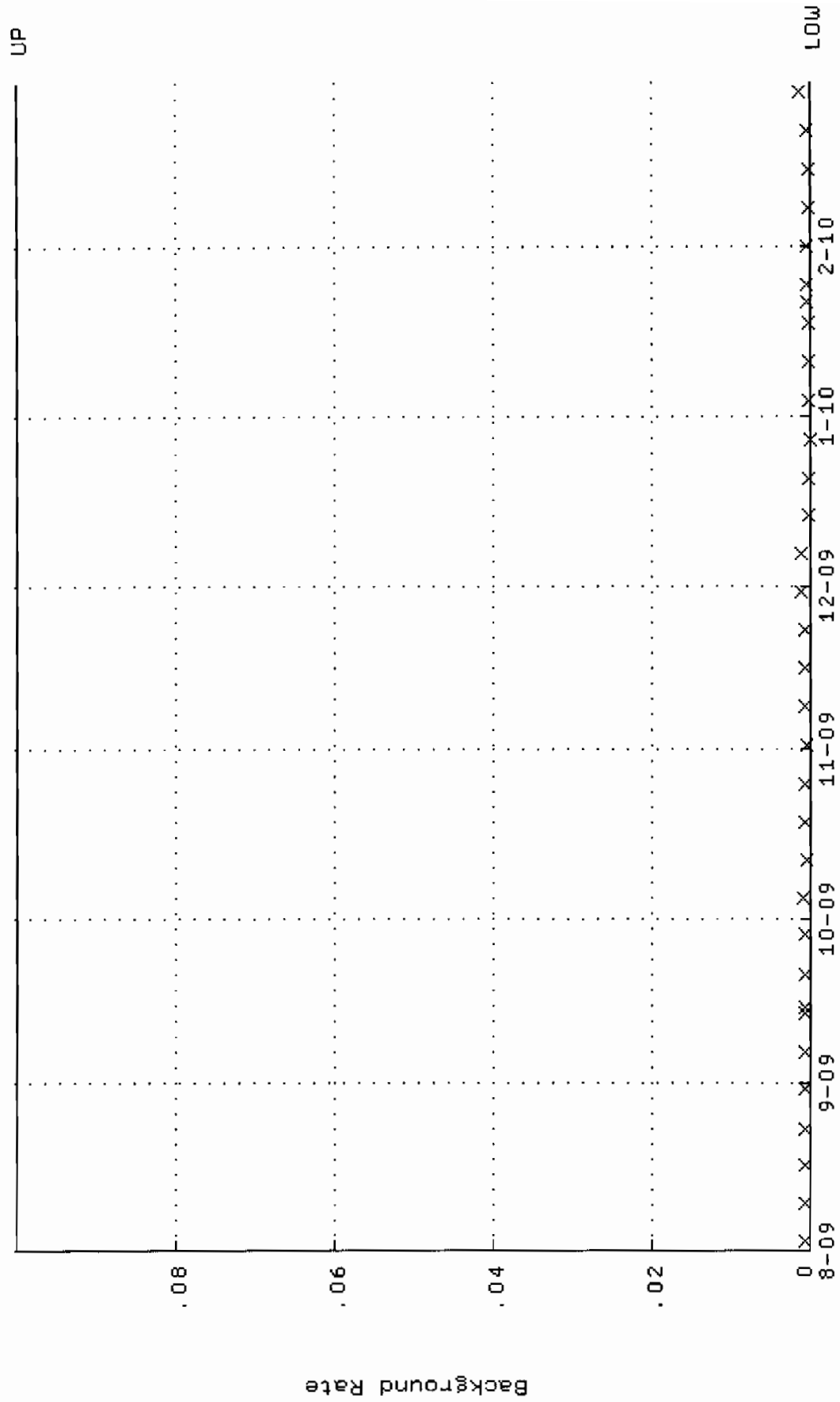


QA filename : DKA100:[ENV_ALPHA.QA.B]B253.QAF;1

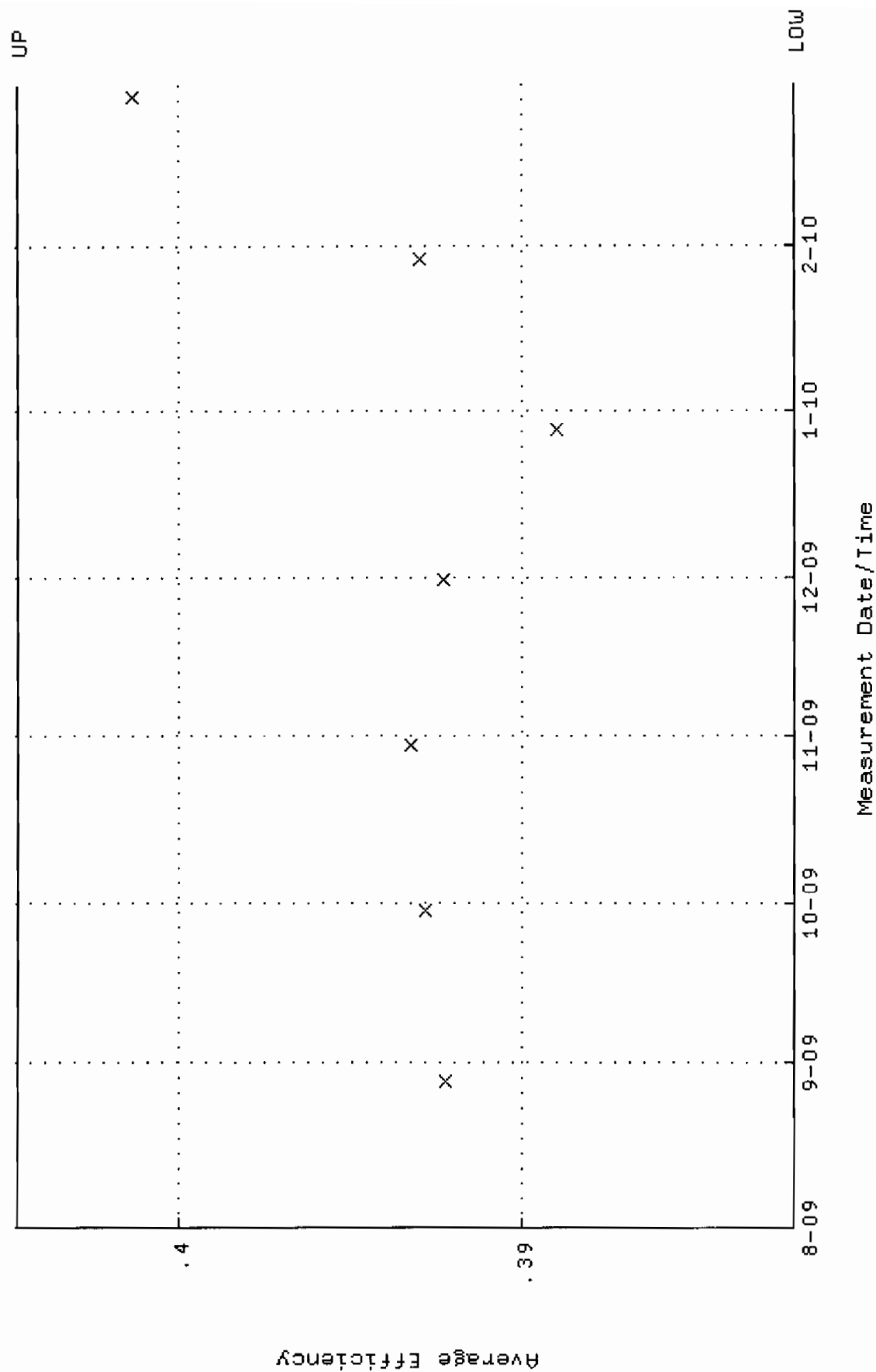
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:28:23 through 2-MAR-2010 12:00:00

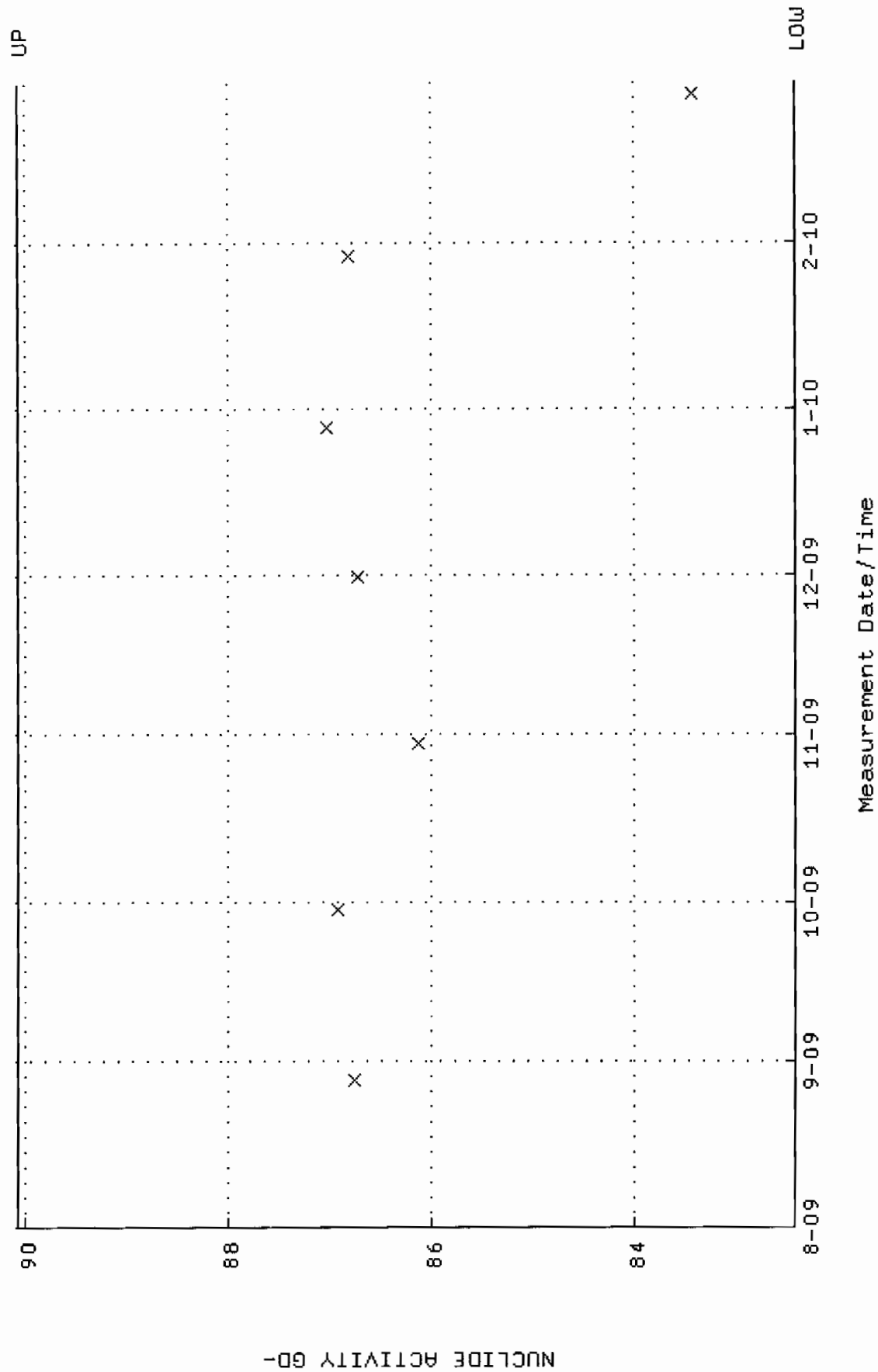
Lower/Upper Lmts: 0.000000E+00 through 0.100000



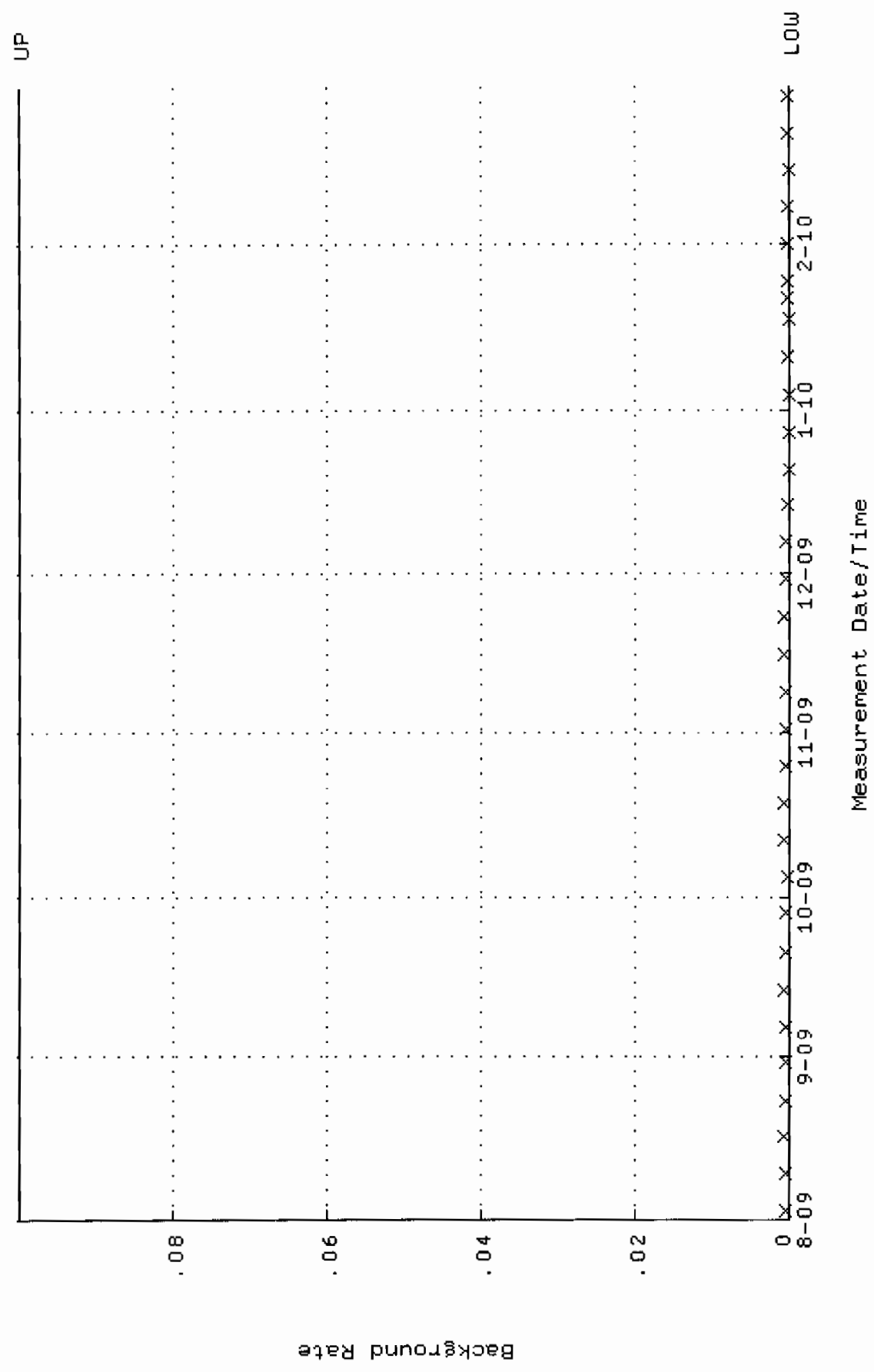
QA filename : DKA100:[ENV_ALPHA.QA.W]W254.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:10:27 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.382064 through 0.404708



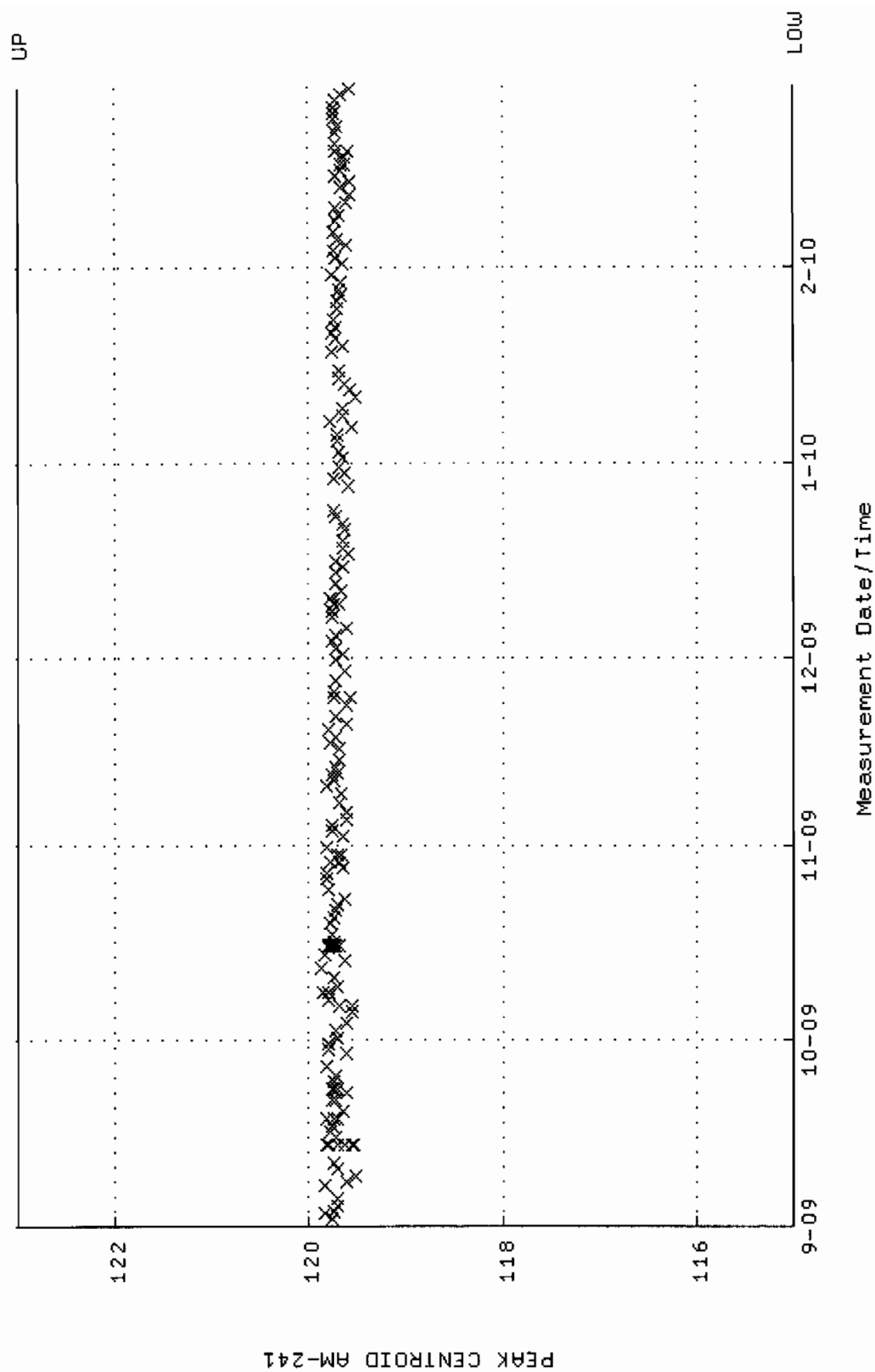
QA filename : DKA100:[ENV_ALPHA.QA.W]w254.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:10:27 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.4132 through 90.0734



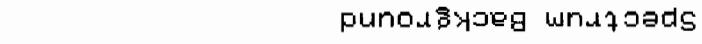
QA filename : DKA100:[ENV_ALPHA.QA.B]B254.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:28:28 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



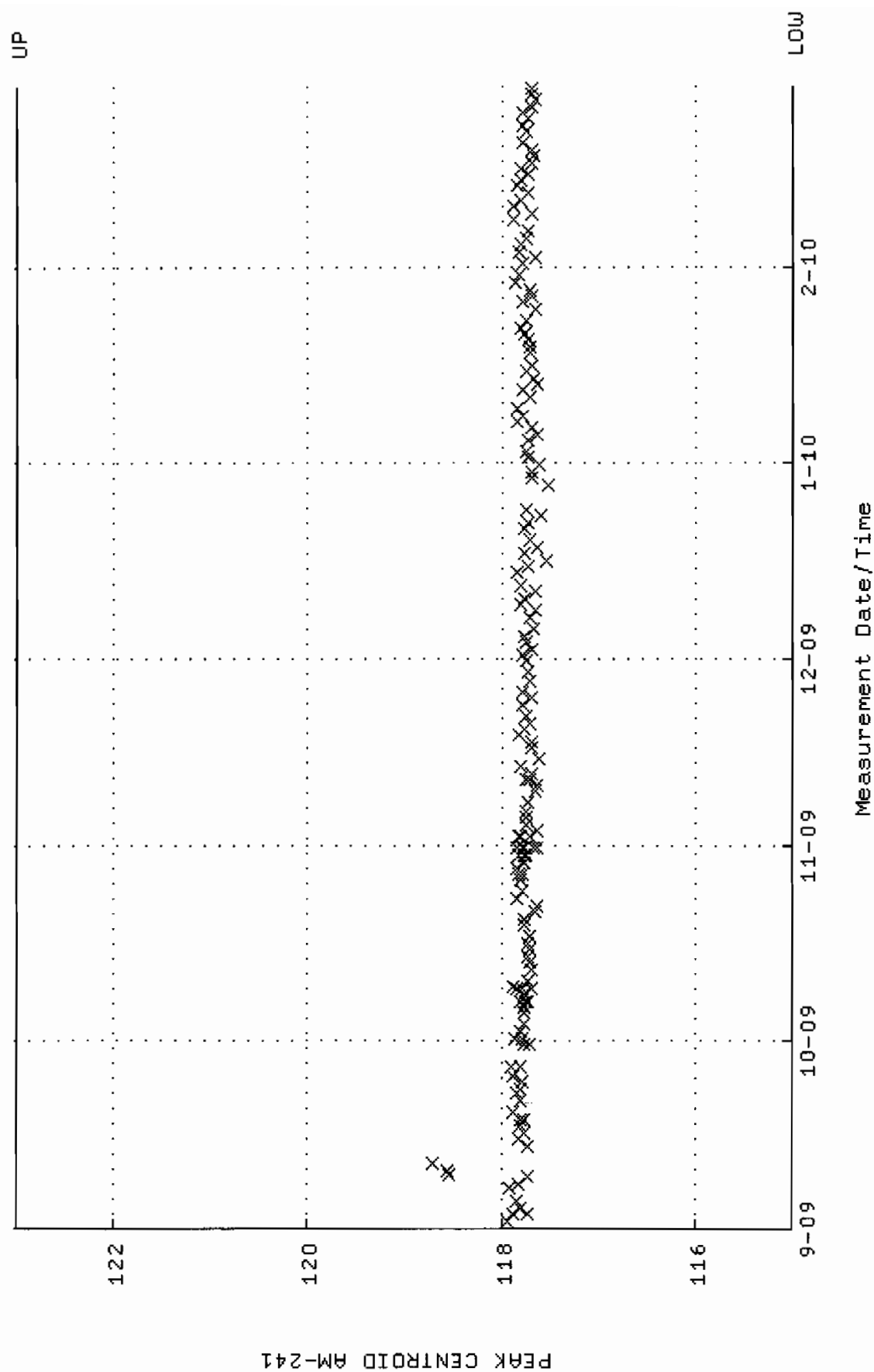
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM01_500MLMB.QAF;1
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:39:53 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



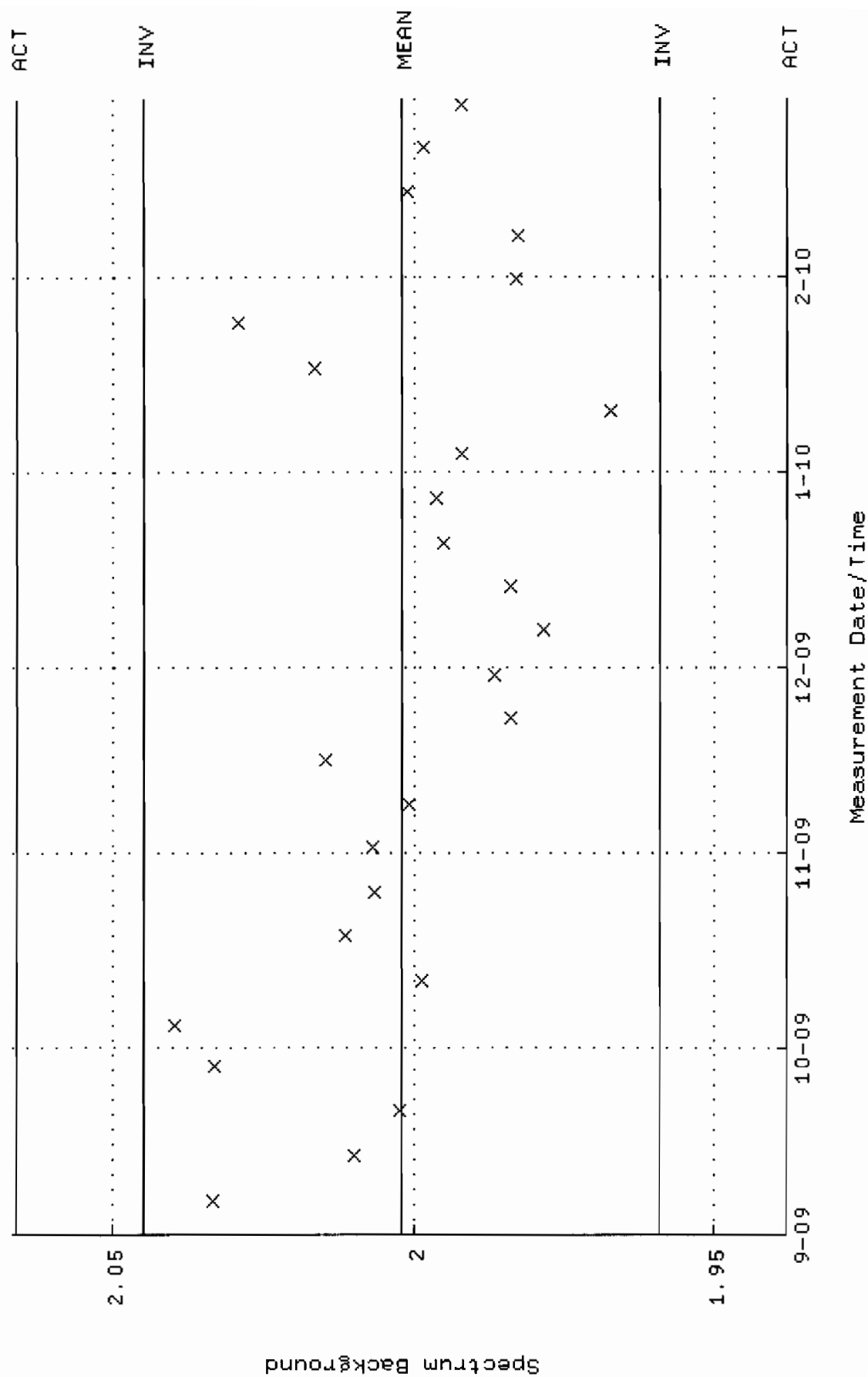
QA filename



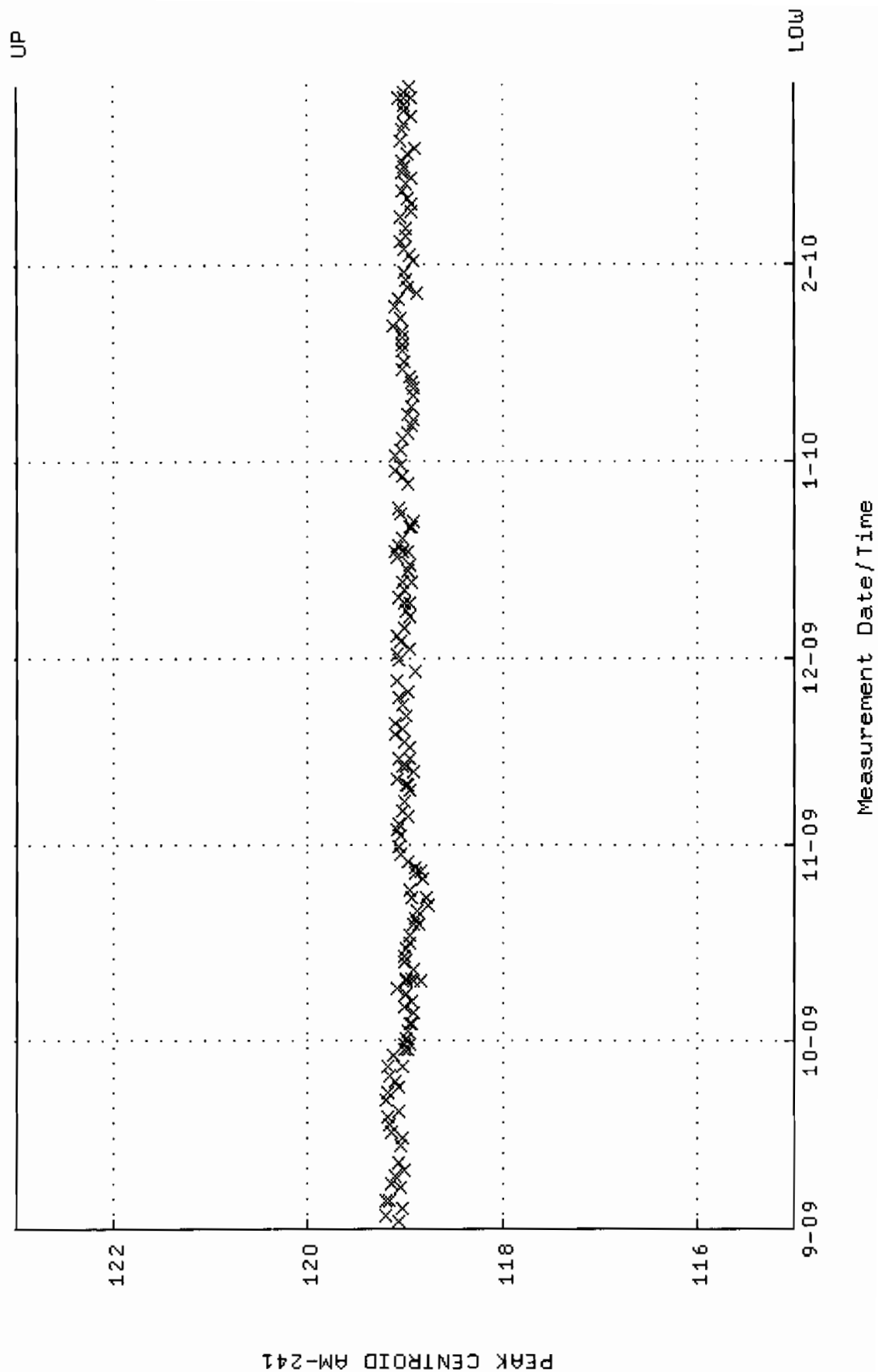
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM02_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 04:40:02 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



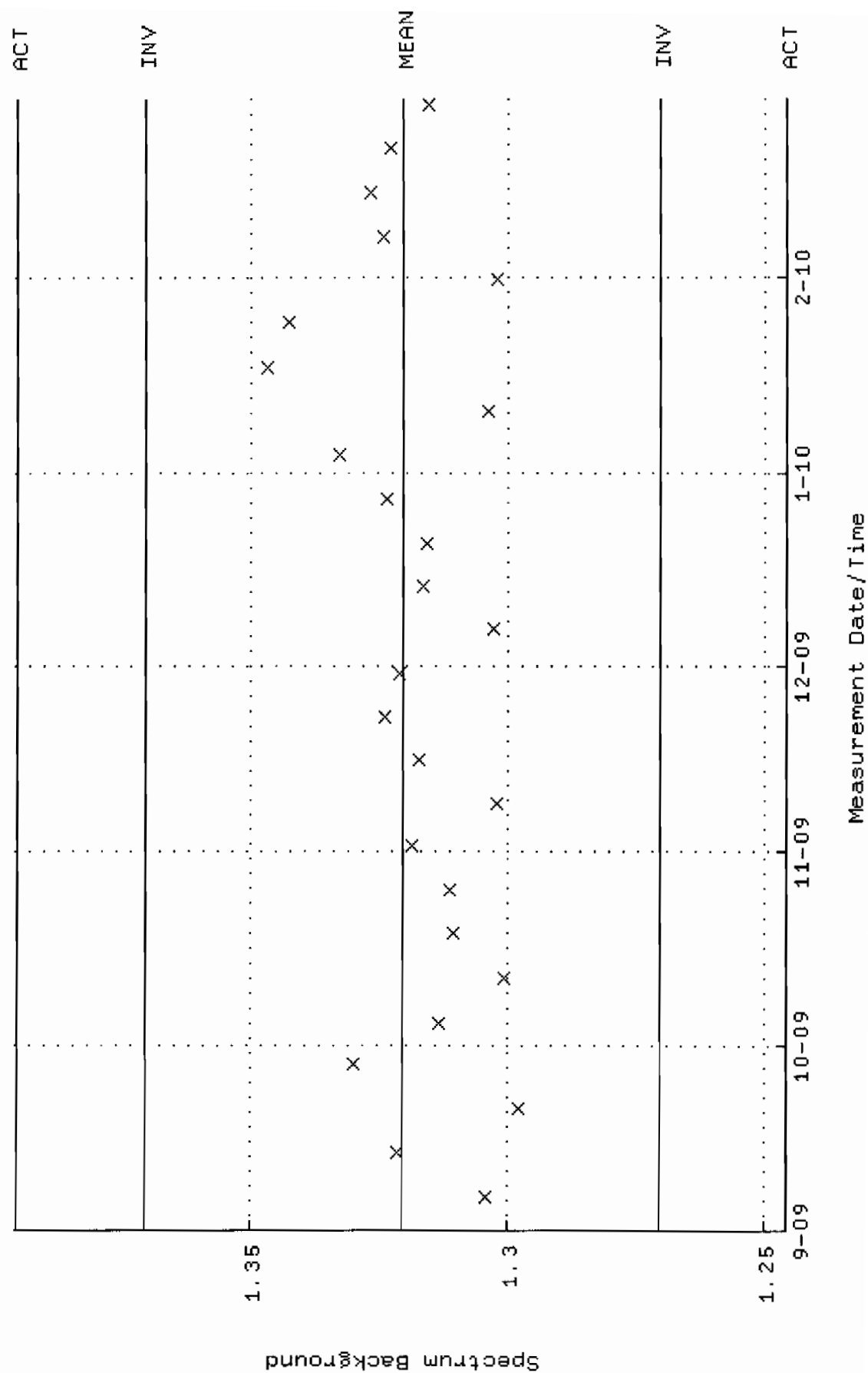
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM02.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:37:17 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 2.00226 +- 2.139827E-02 (1.07 %)



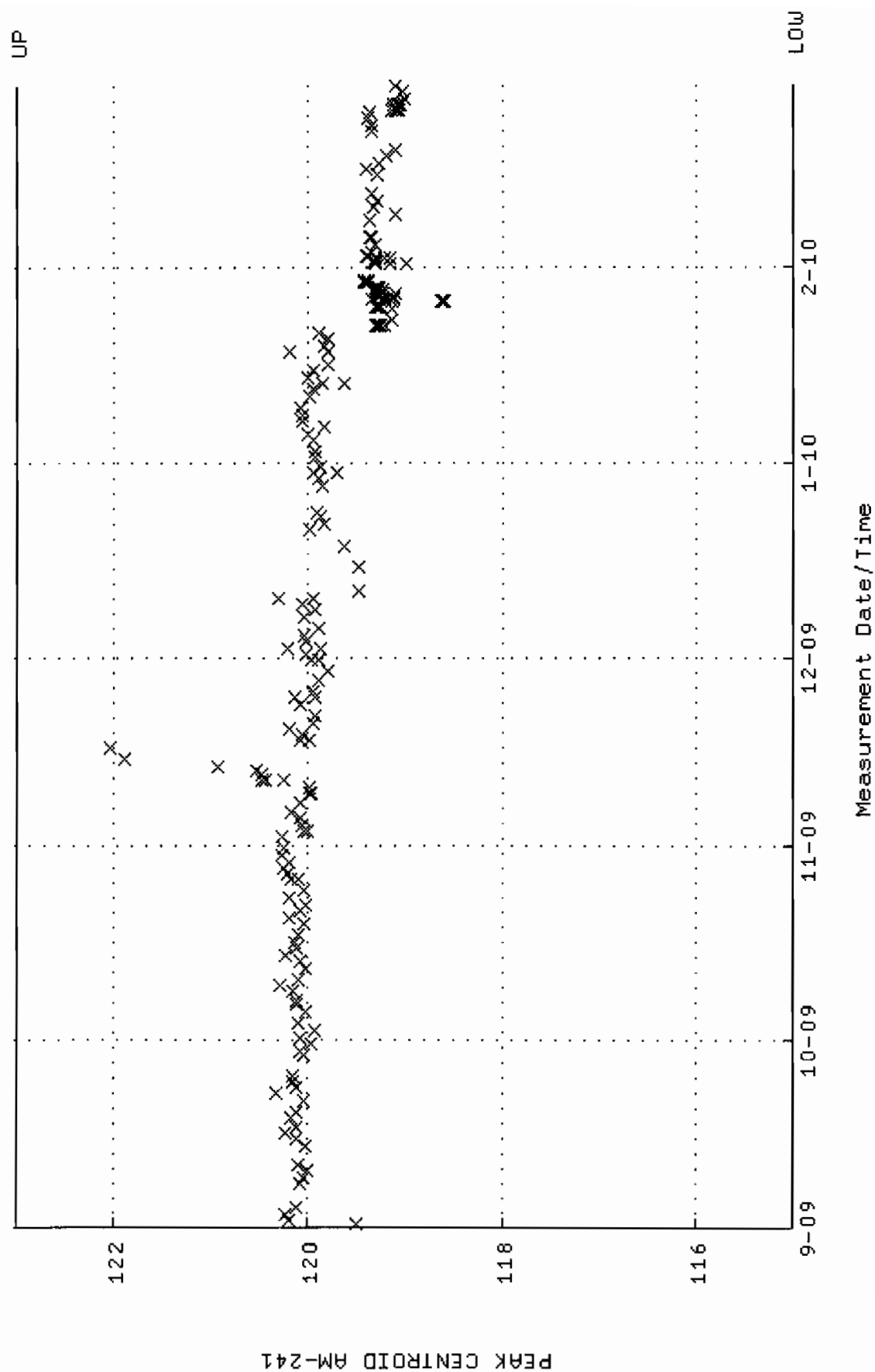
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM04-CAN.QAF;1
Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 05:22:58 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



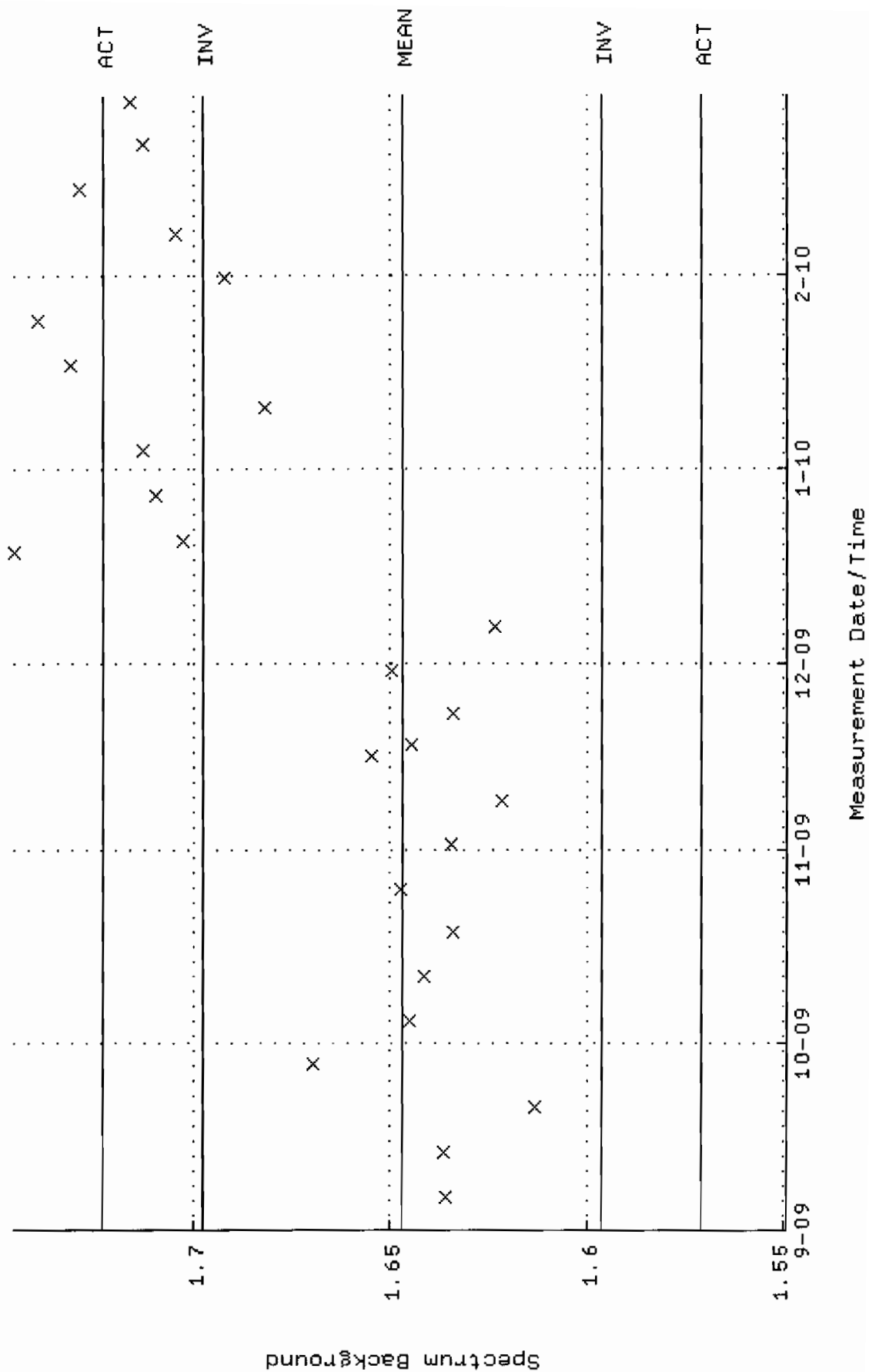
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM04.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:38:33 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.32050 +- 2.495234E-02 (1.89 %)



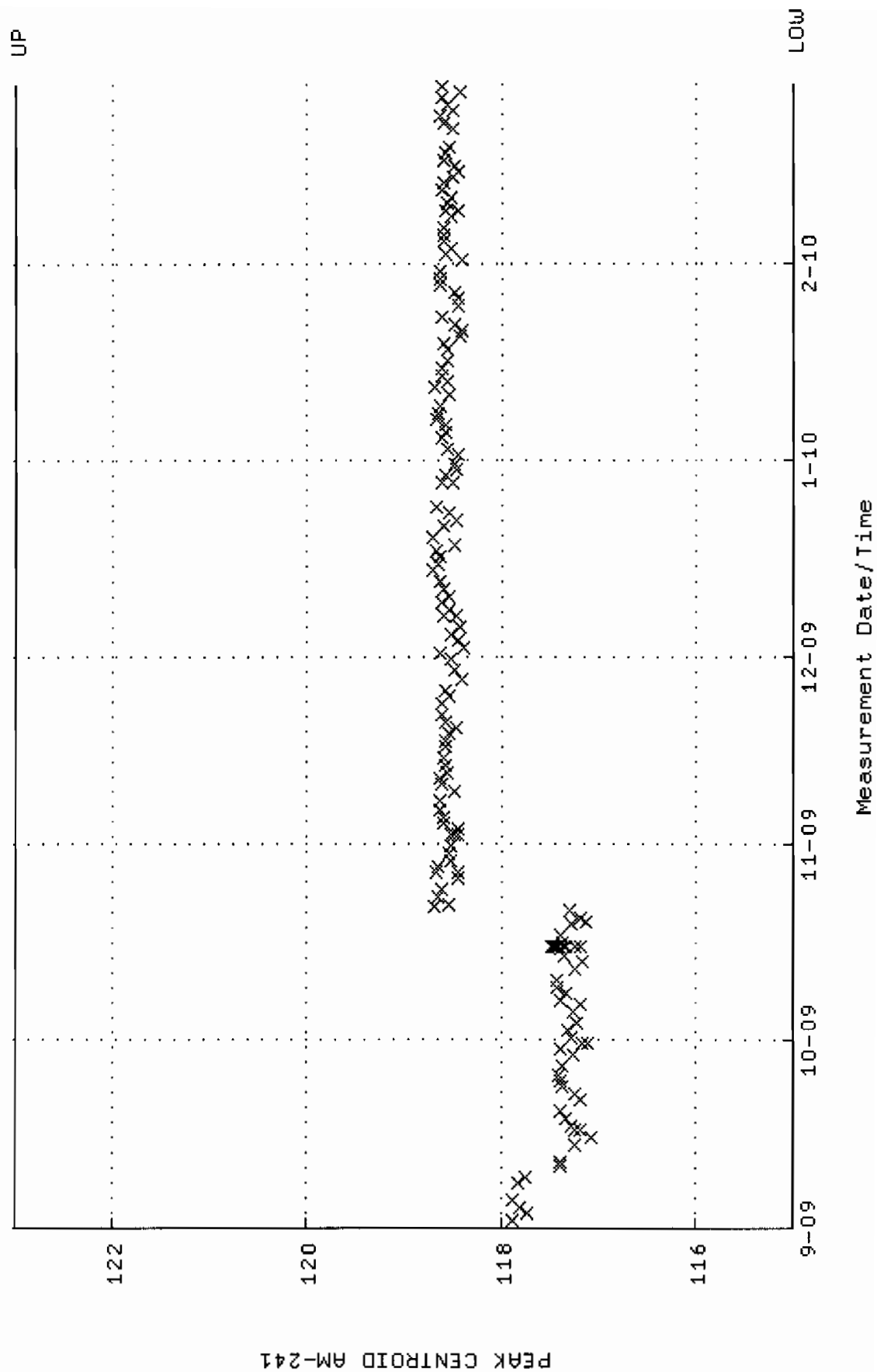
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM05_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 1-SEP-2009 14:54:46 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



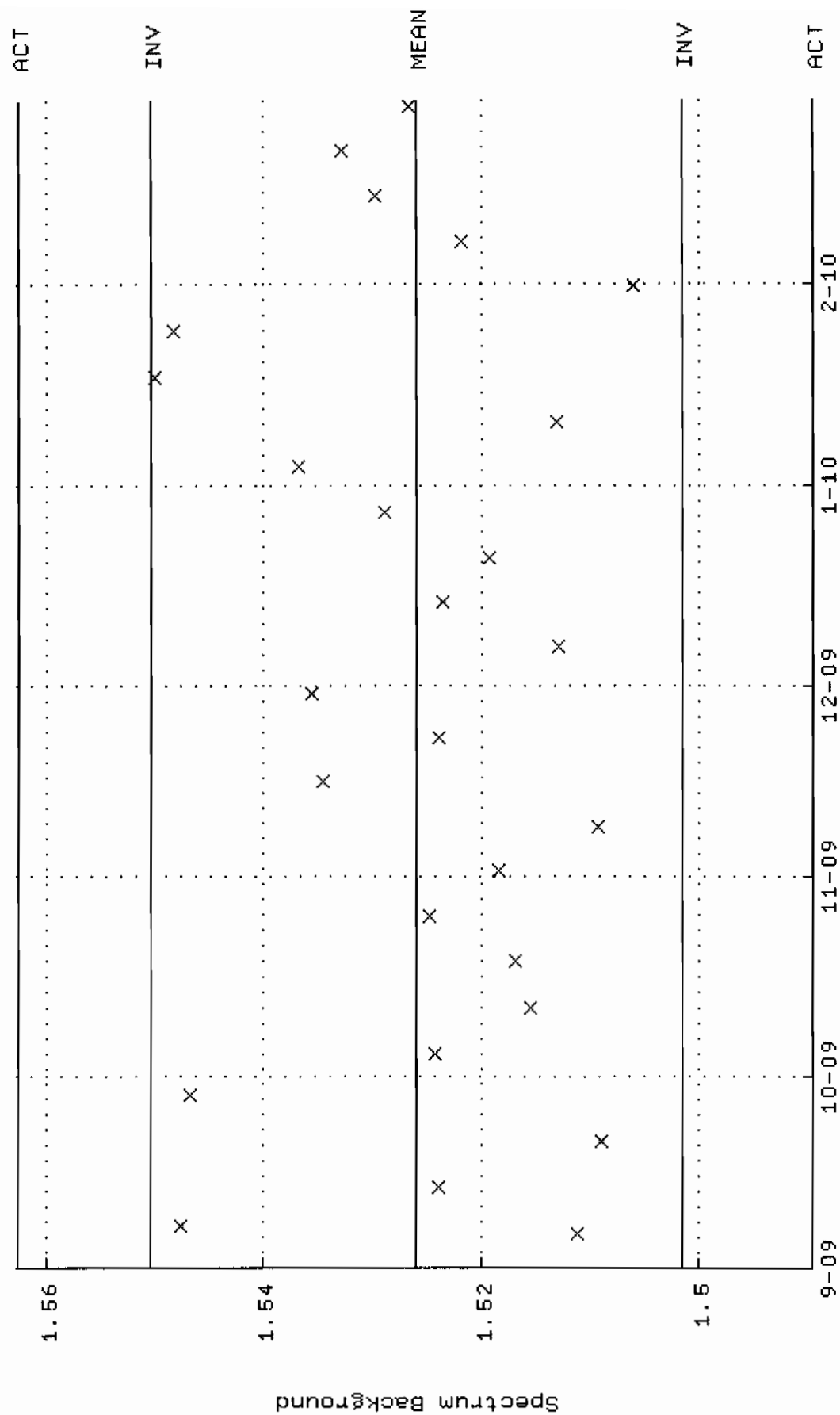
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM05.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:04 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.64719 +- 2.547087E-02 (1.55 %)



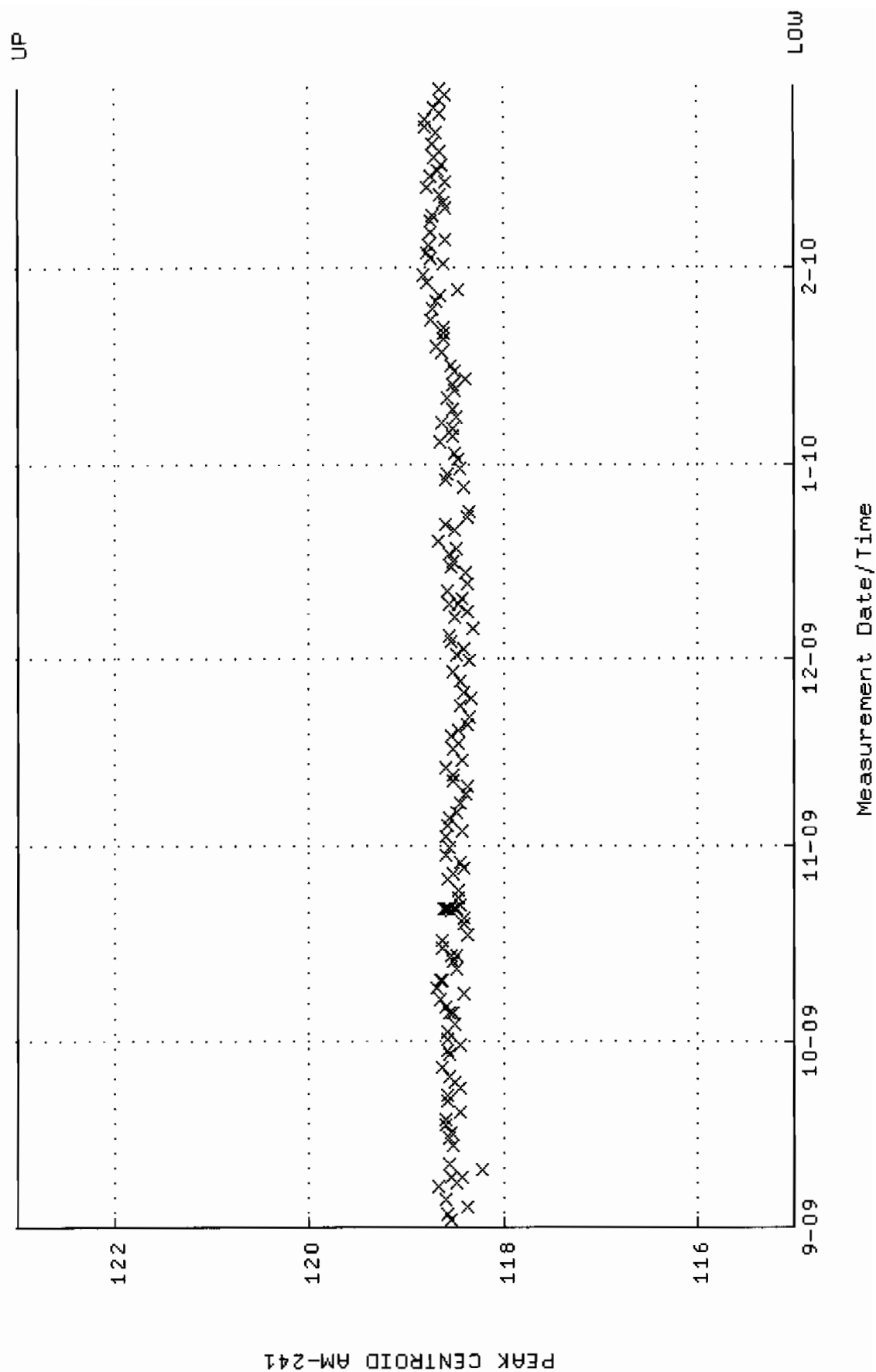
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM06_500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:40:19 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



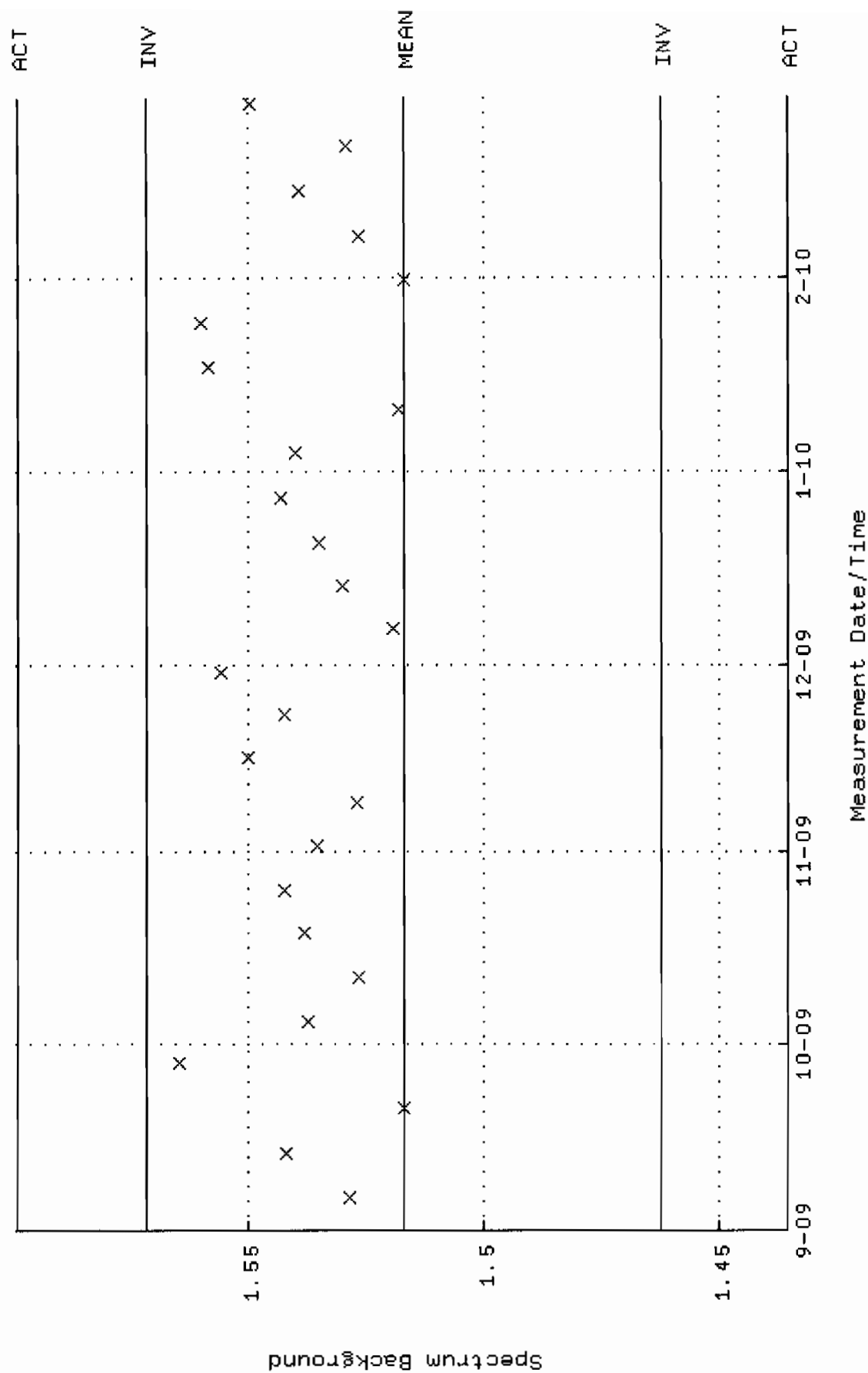
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM06.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:28 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.52603 +- 1.215987E-02 (0.80 %)



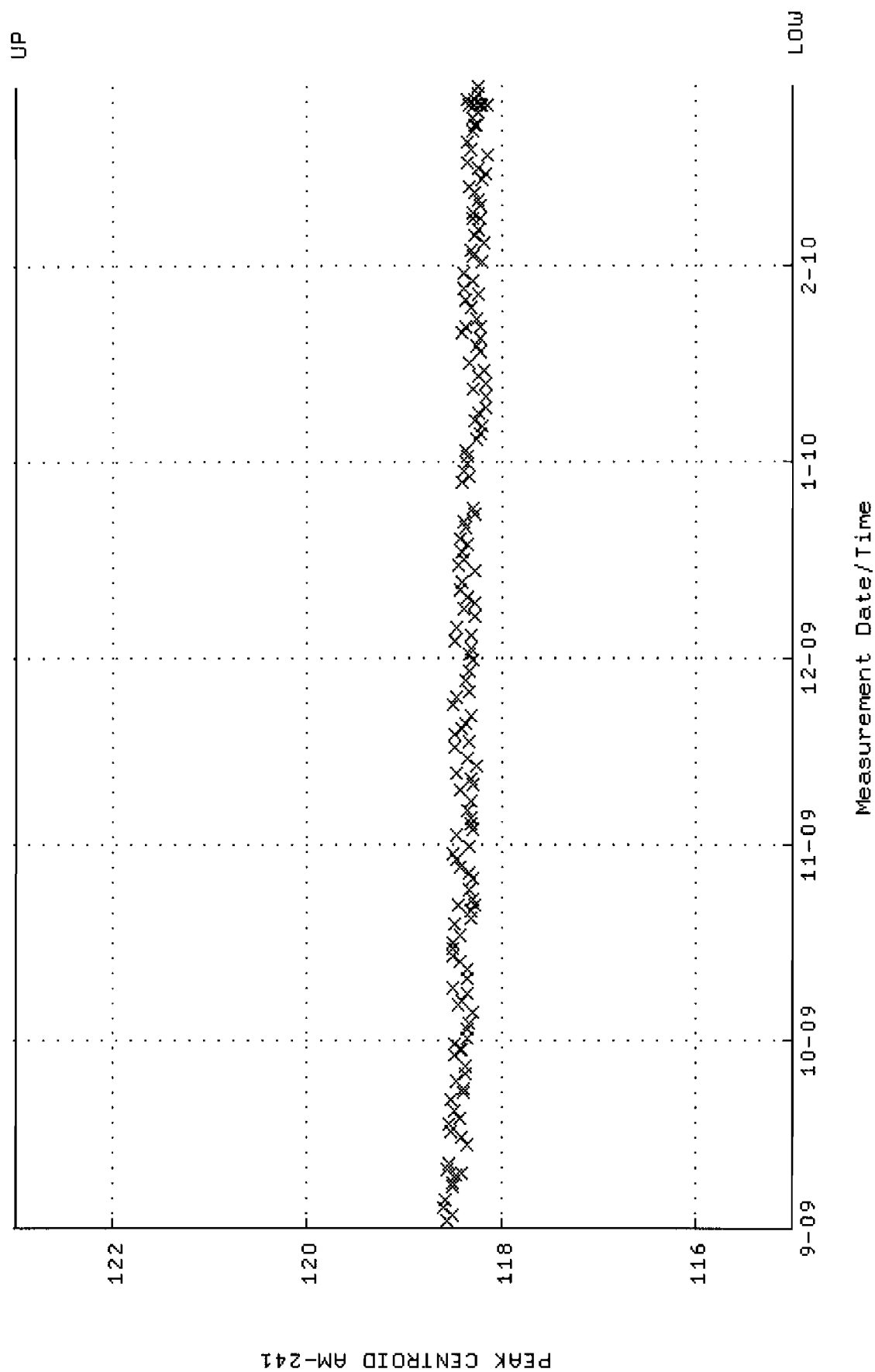
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM07-JAR.QAF;1
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:09:02 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



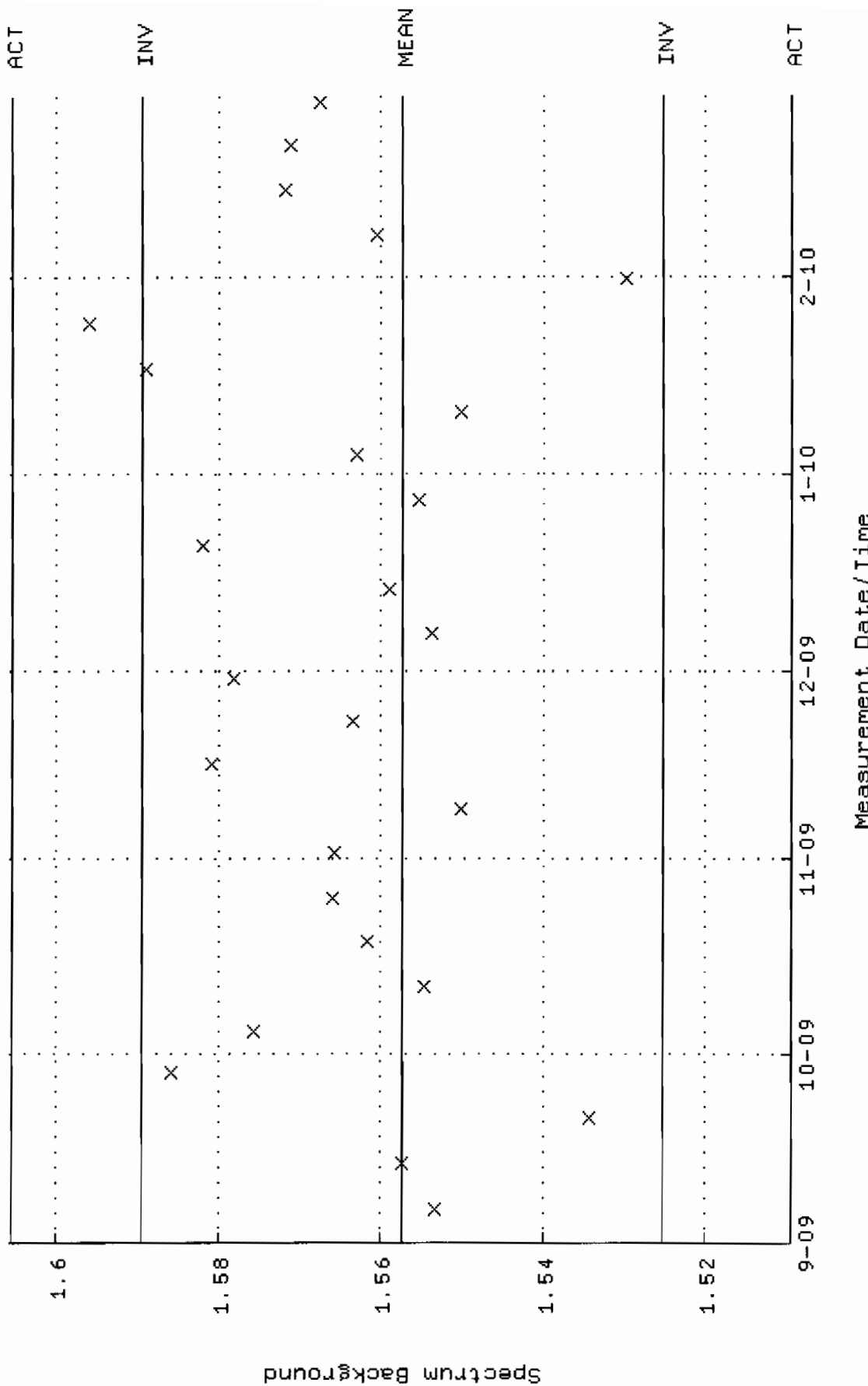
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM07.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:54 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.51715 +- 2.726376E-02 (1.80 %)



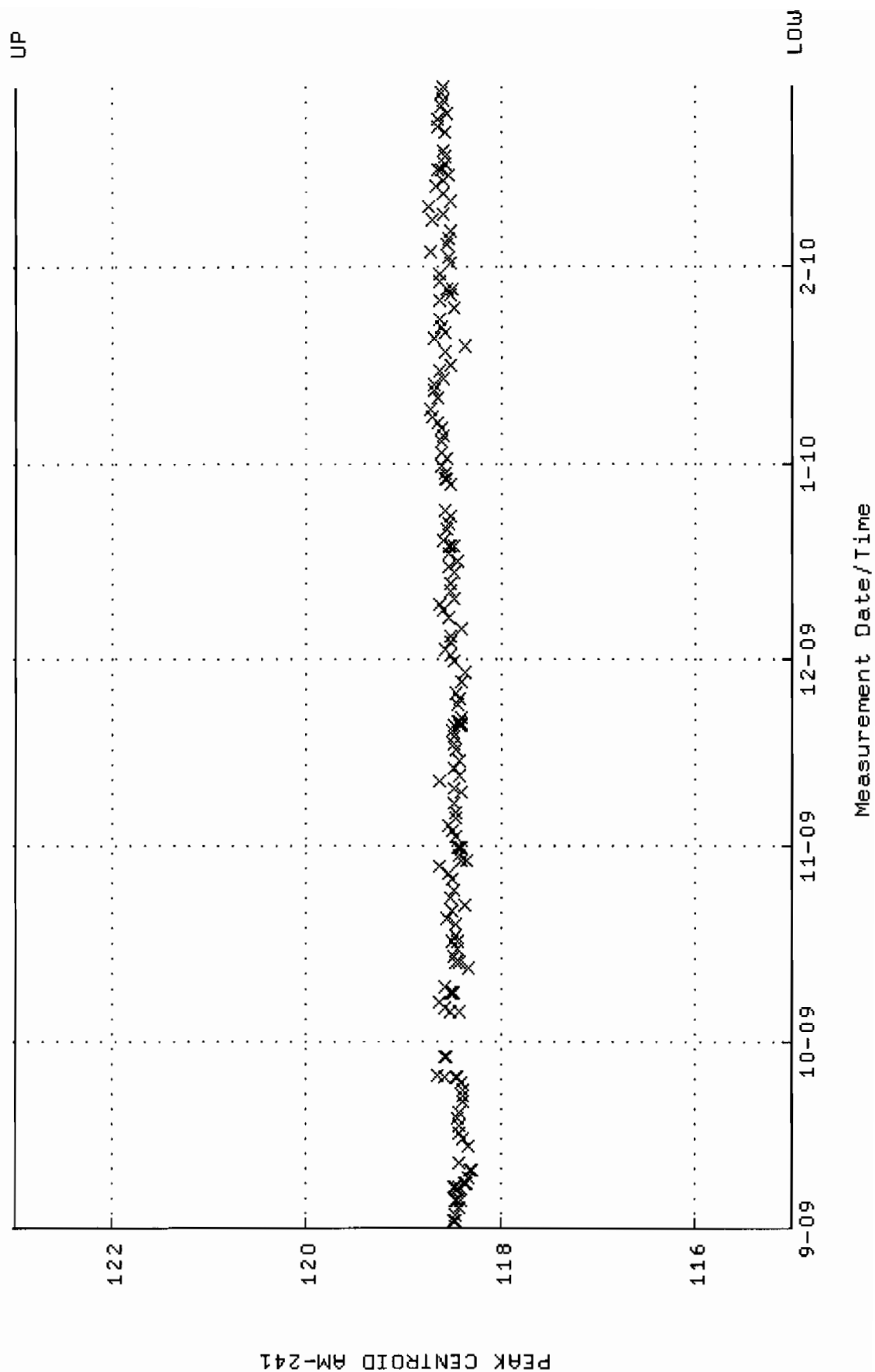
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM12_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 07:07:38 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



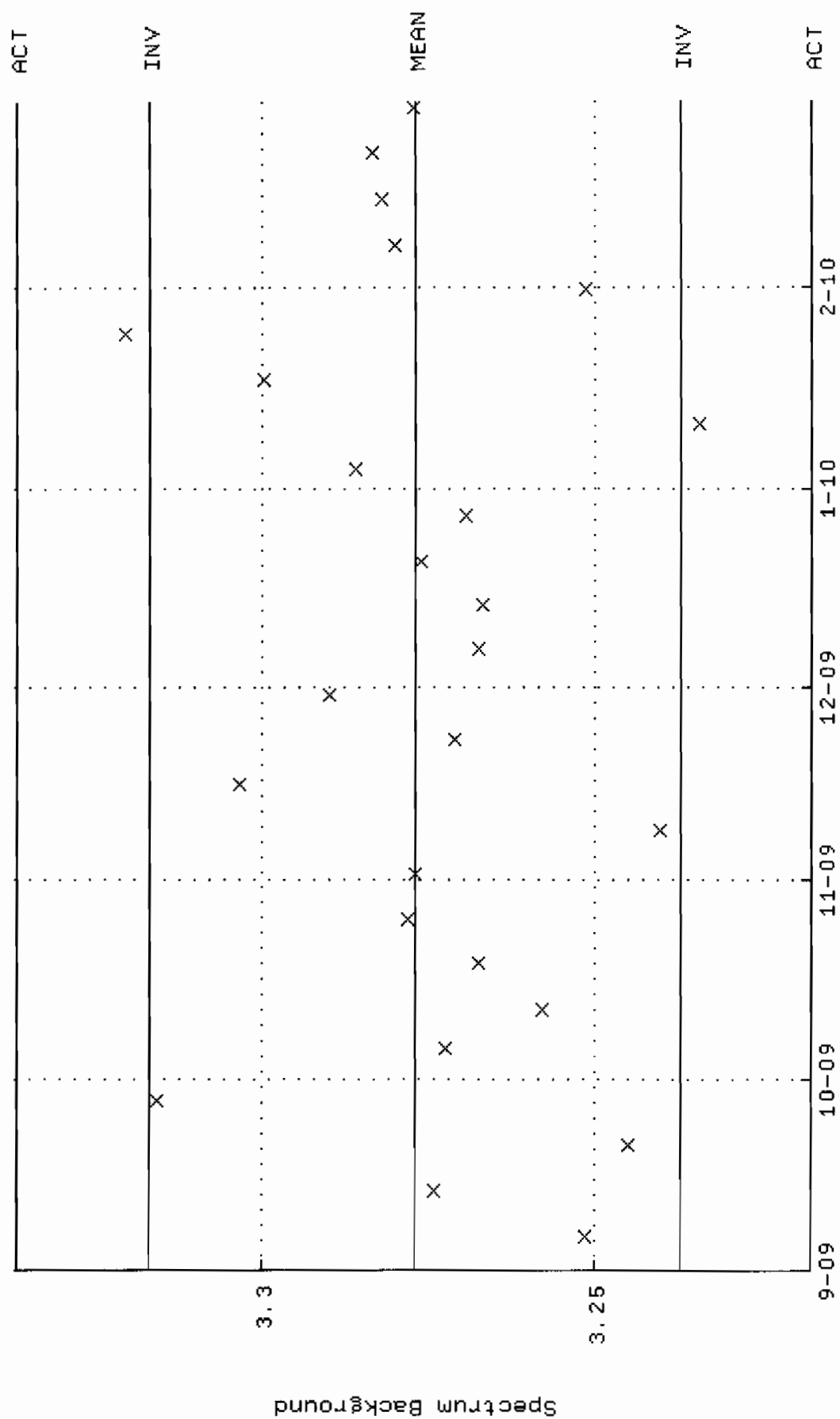
QA filename
Parameter Name
Start/End Date
Mean +- Std



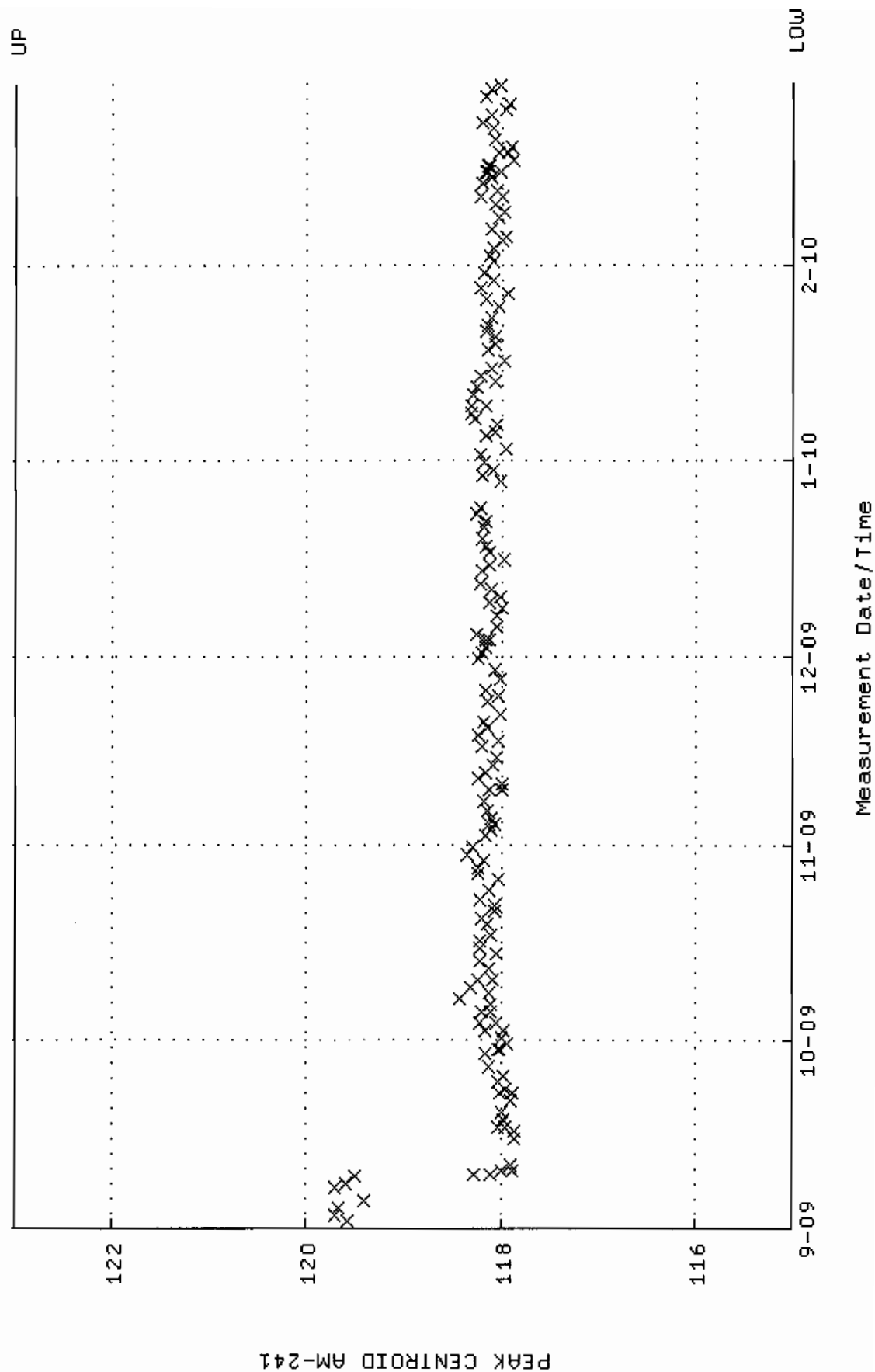
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM13_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:40:27 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



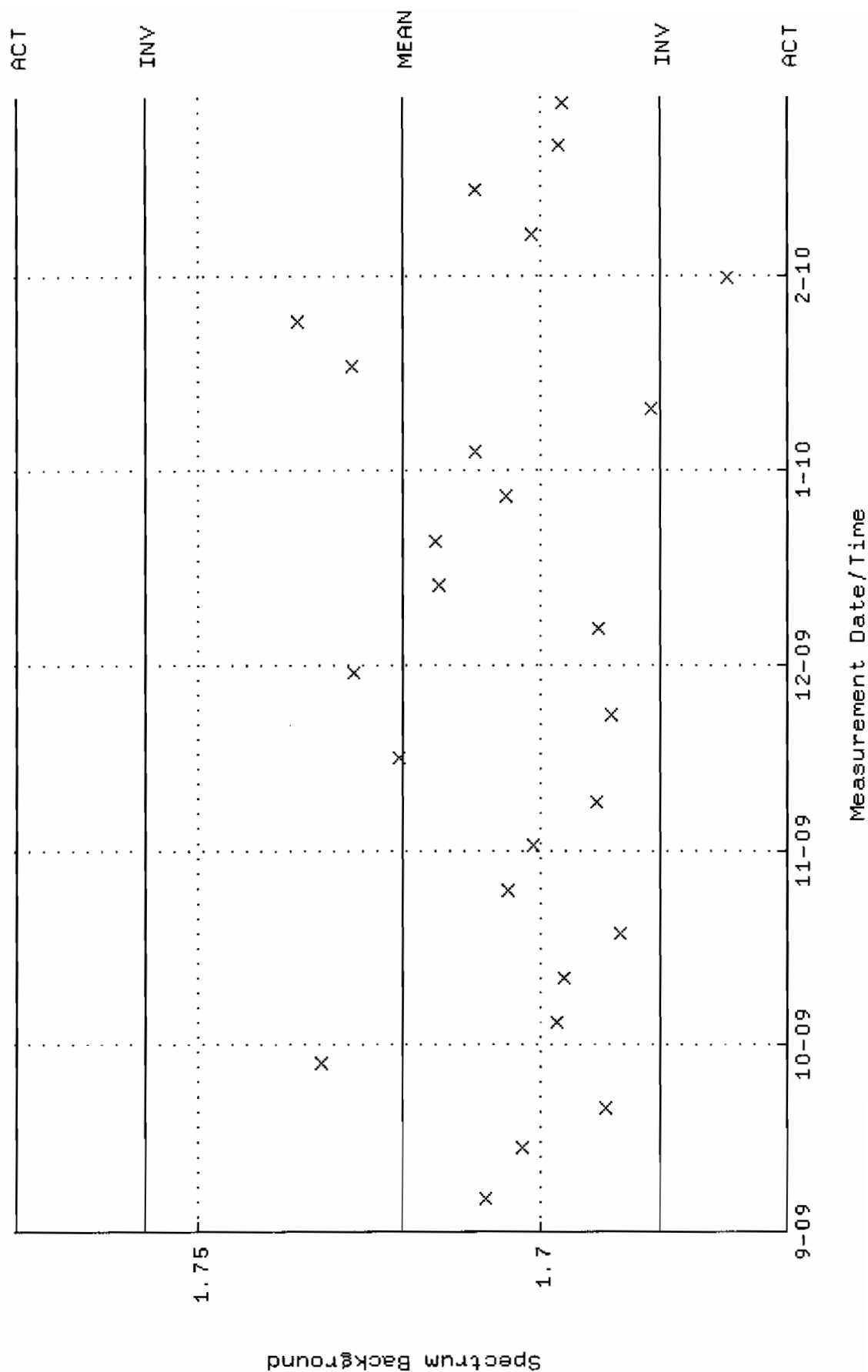
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM13.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:42:44 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 3.27712 +- 1.999120E-02 (0.61 %)



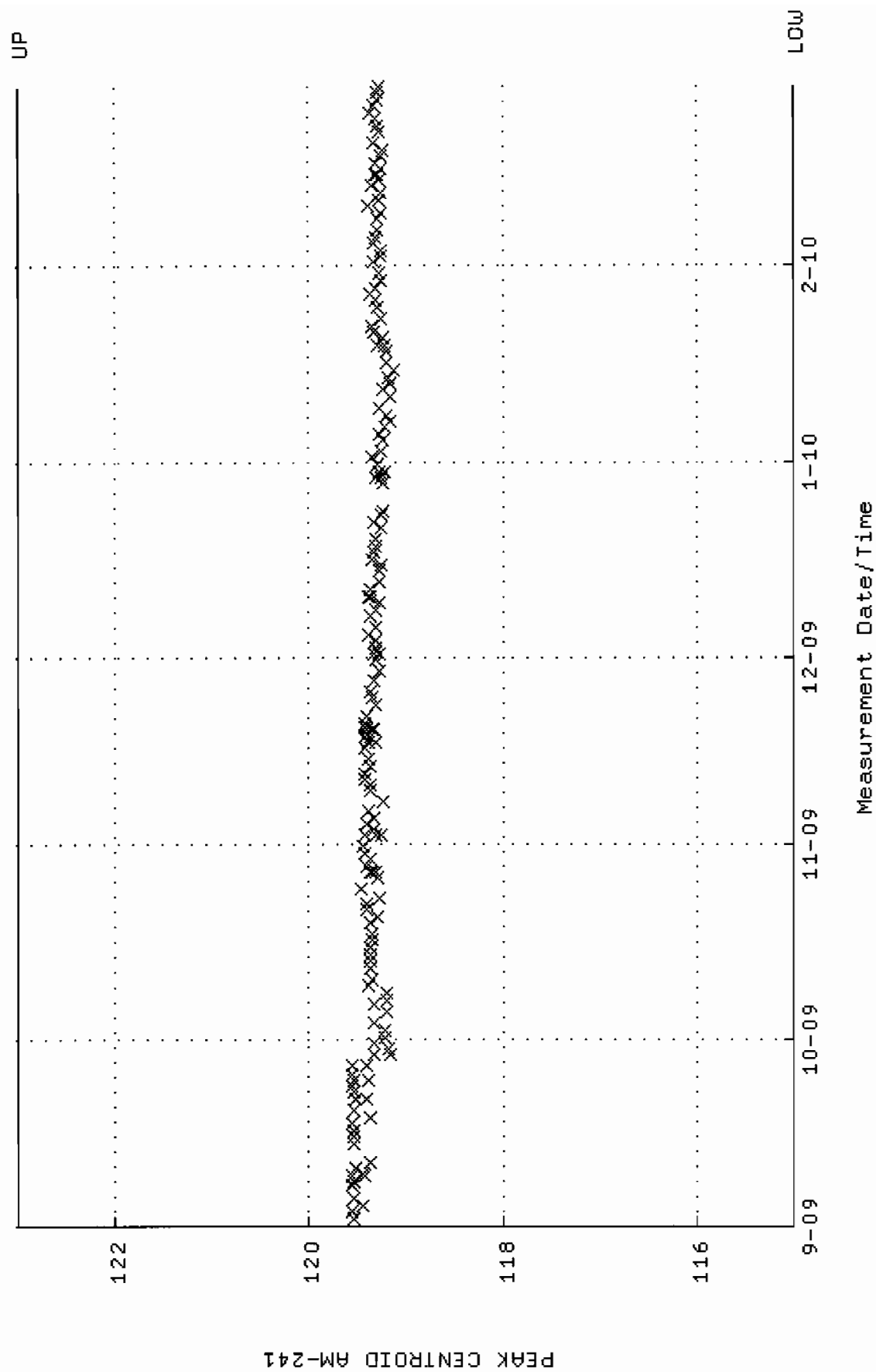
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM15_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:32:23 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



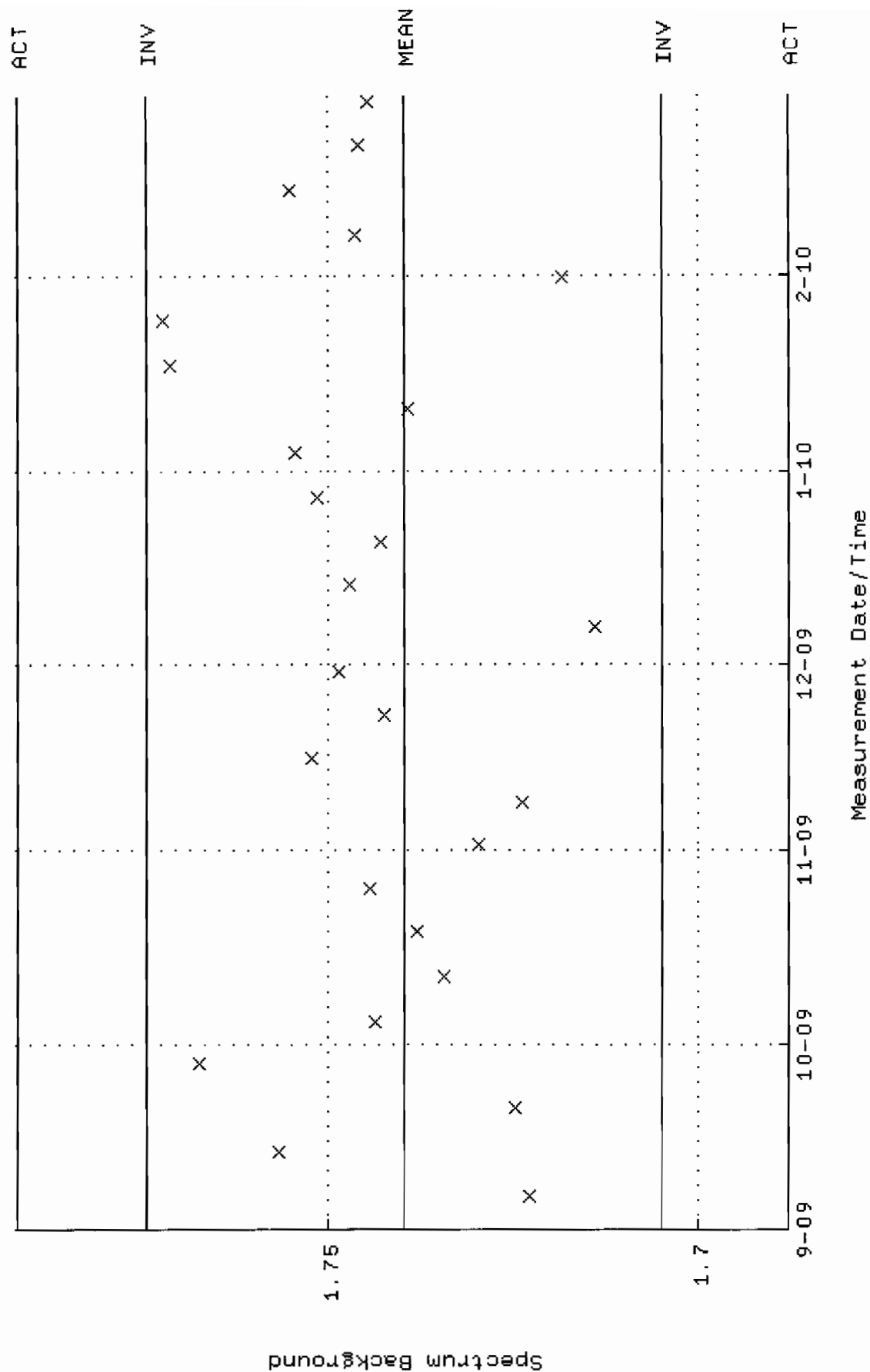
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM15.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:43:44 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.72024 +- 1.875820E-02 (1.09 %)



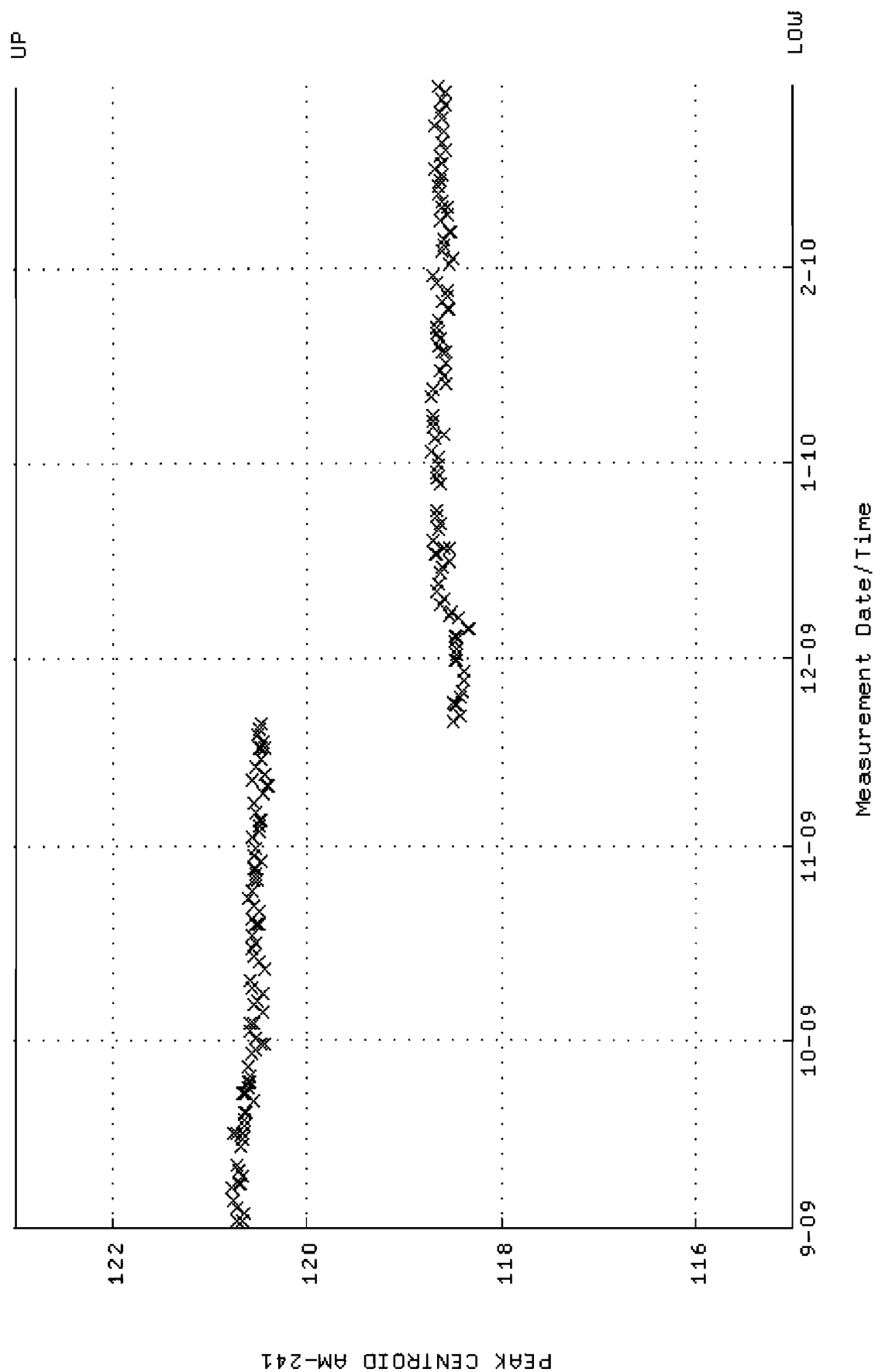
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM16-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:53:02 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



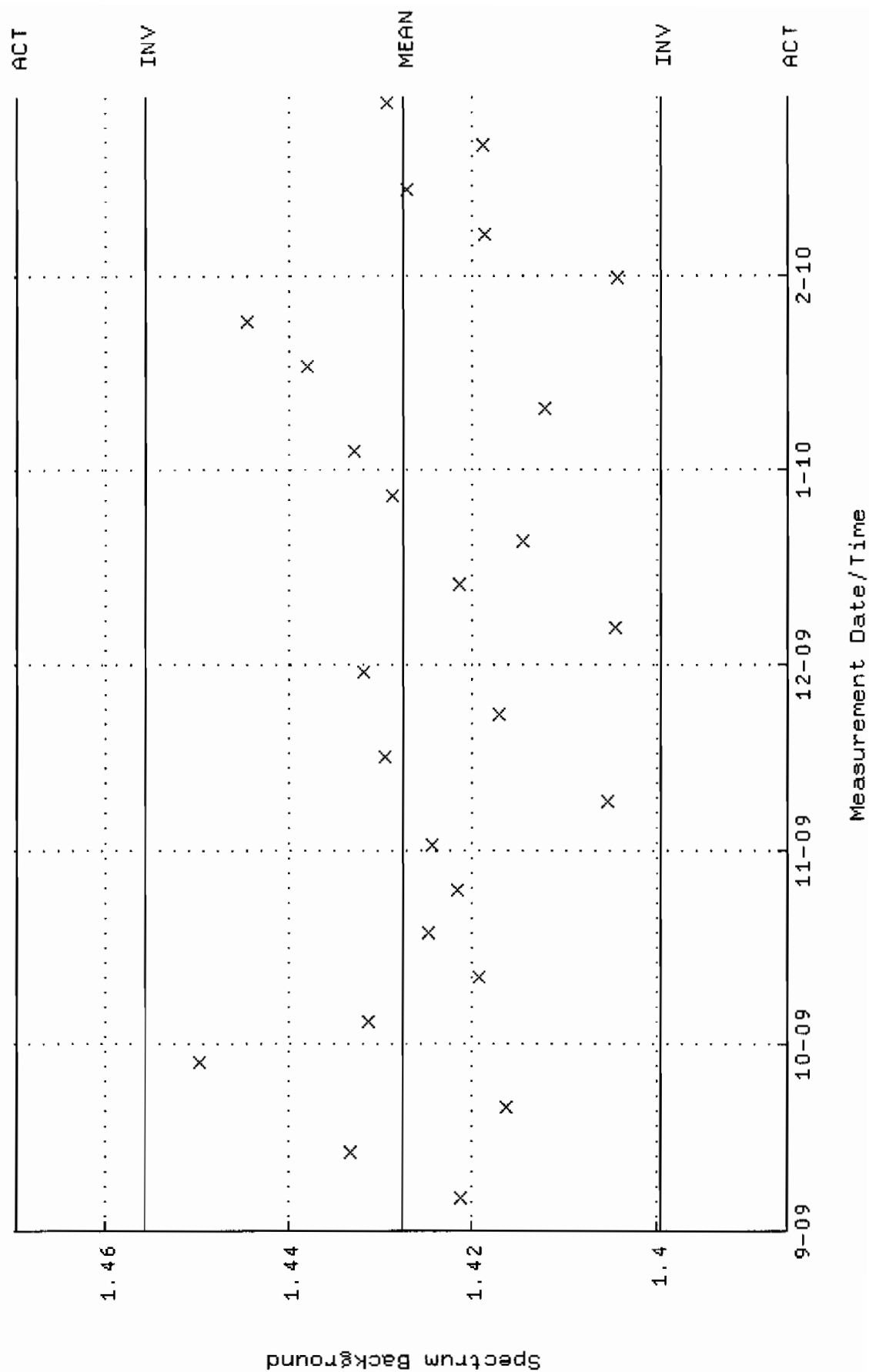
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM16.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:44:09 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.73980 +- 1.729897E-02 (0.99 %)



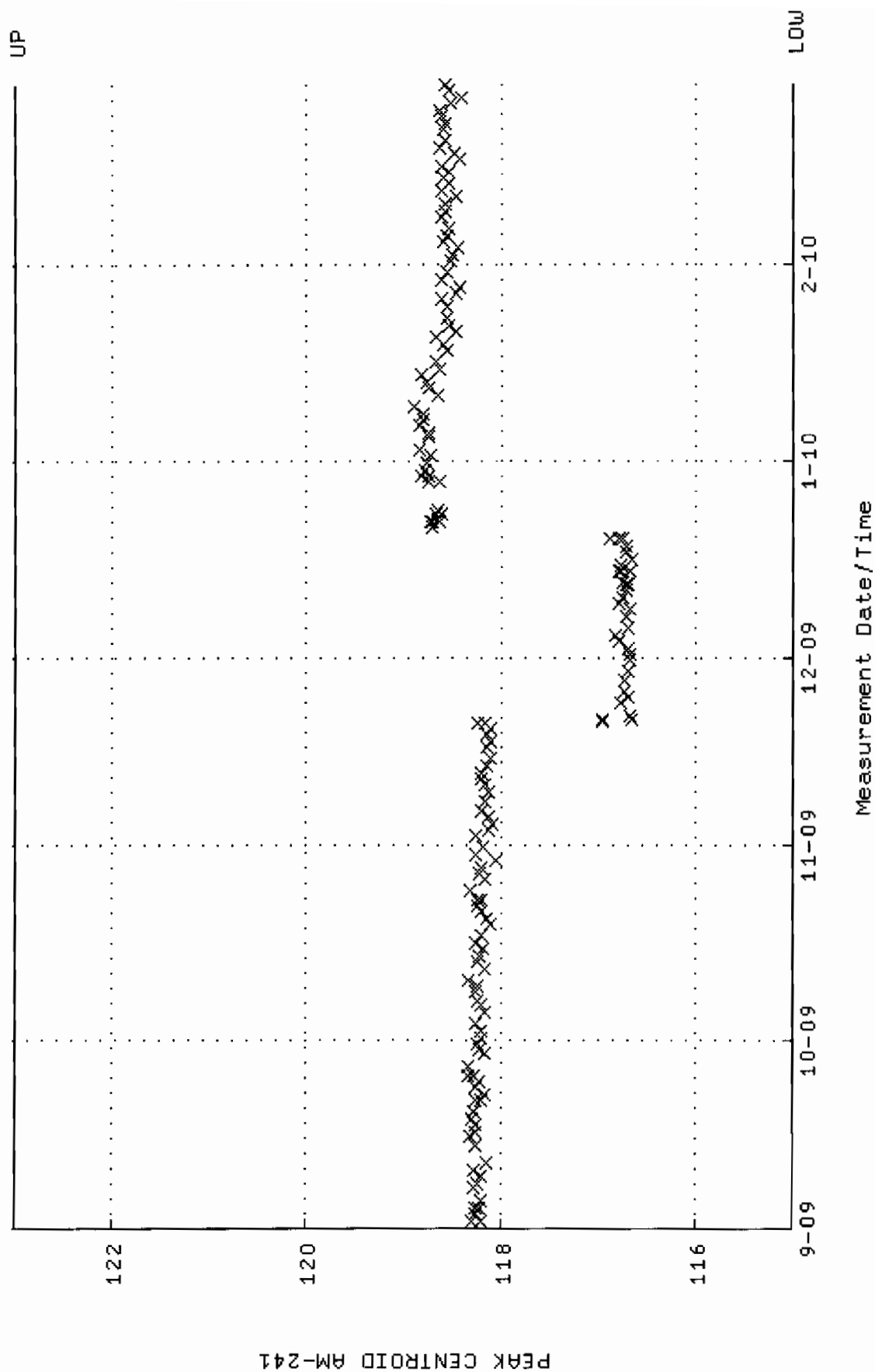
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM17-CAN.QAF;1
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:06:49 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



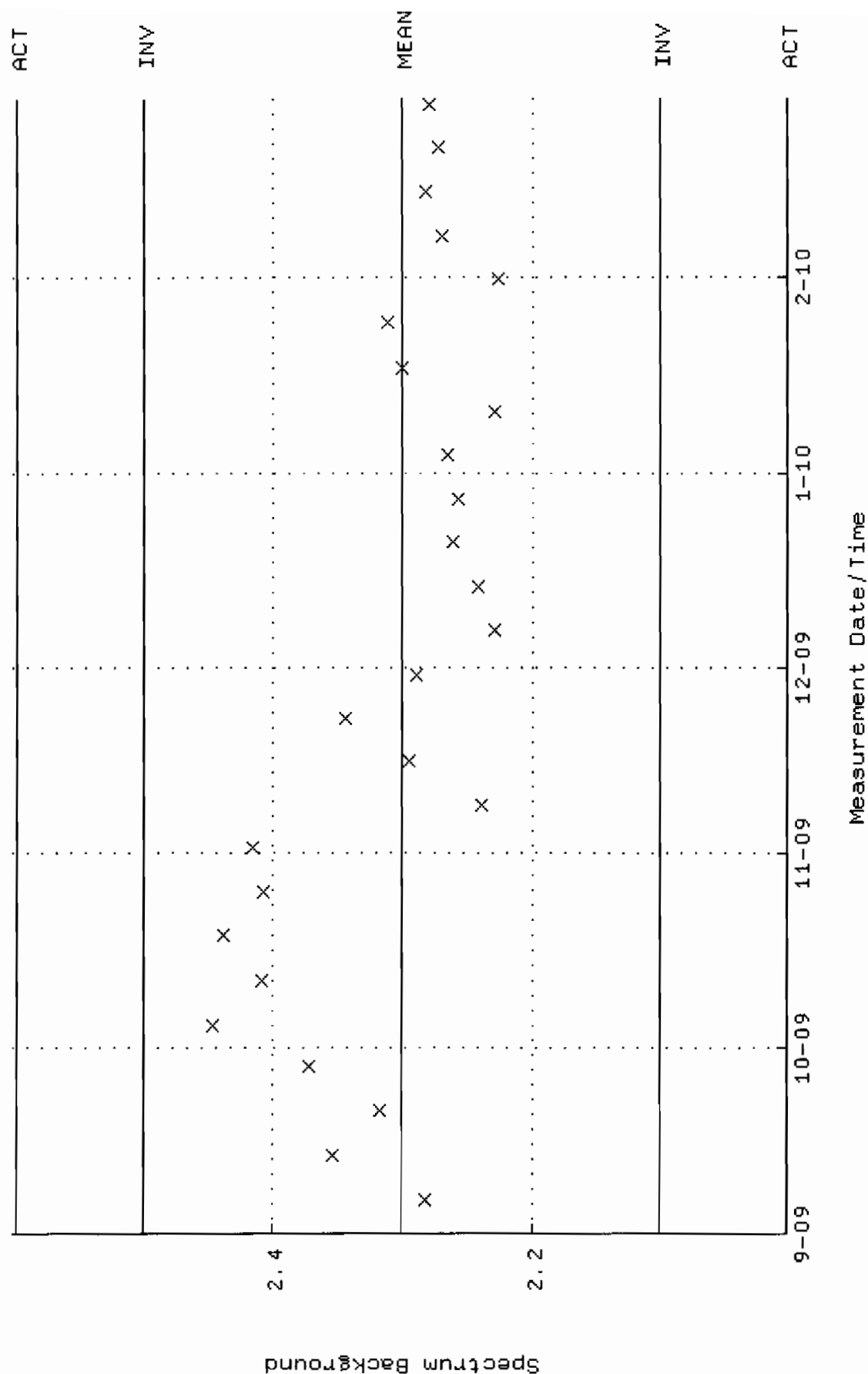
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM17.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:44:33 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.42766 +- 1.396974E-02 (0.98 %)



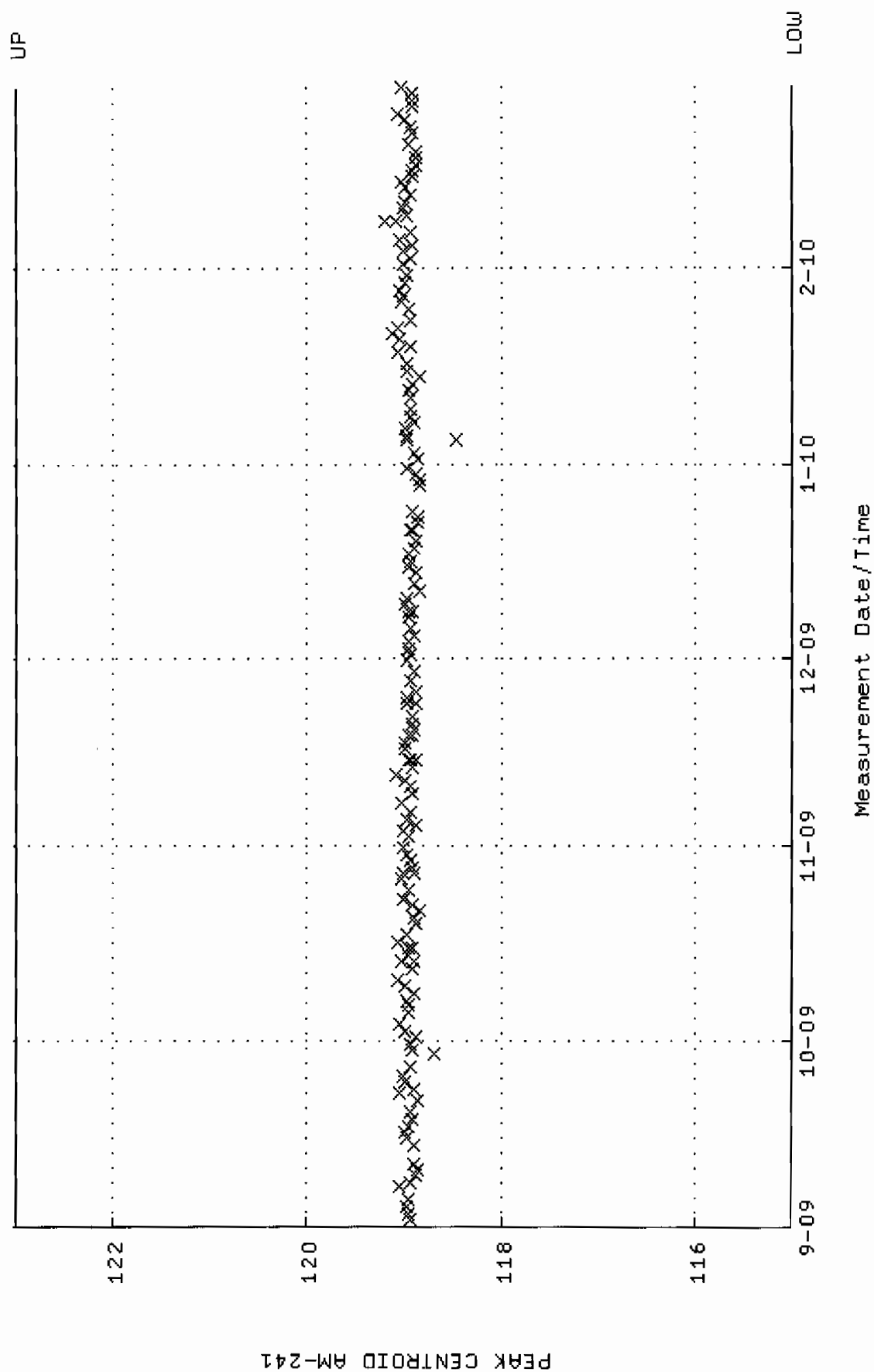
QA Filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM18-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:13:07 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



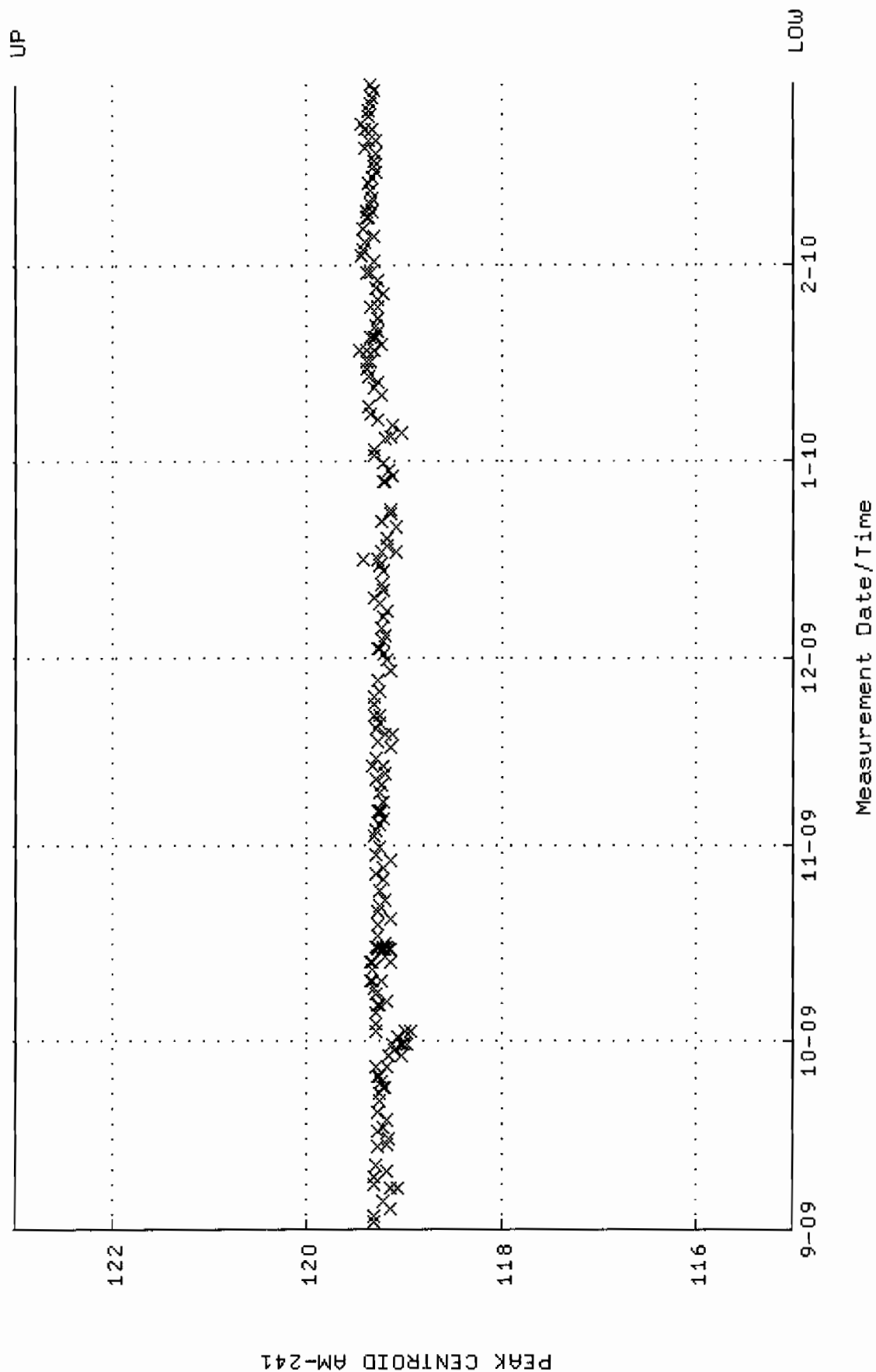
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM18.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:45:03 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 2.30164 +- 9.930626E-02 (4.31 %)



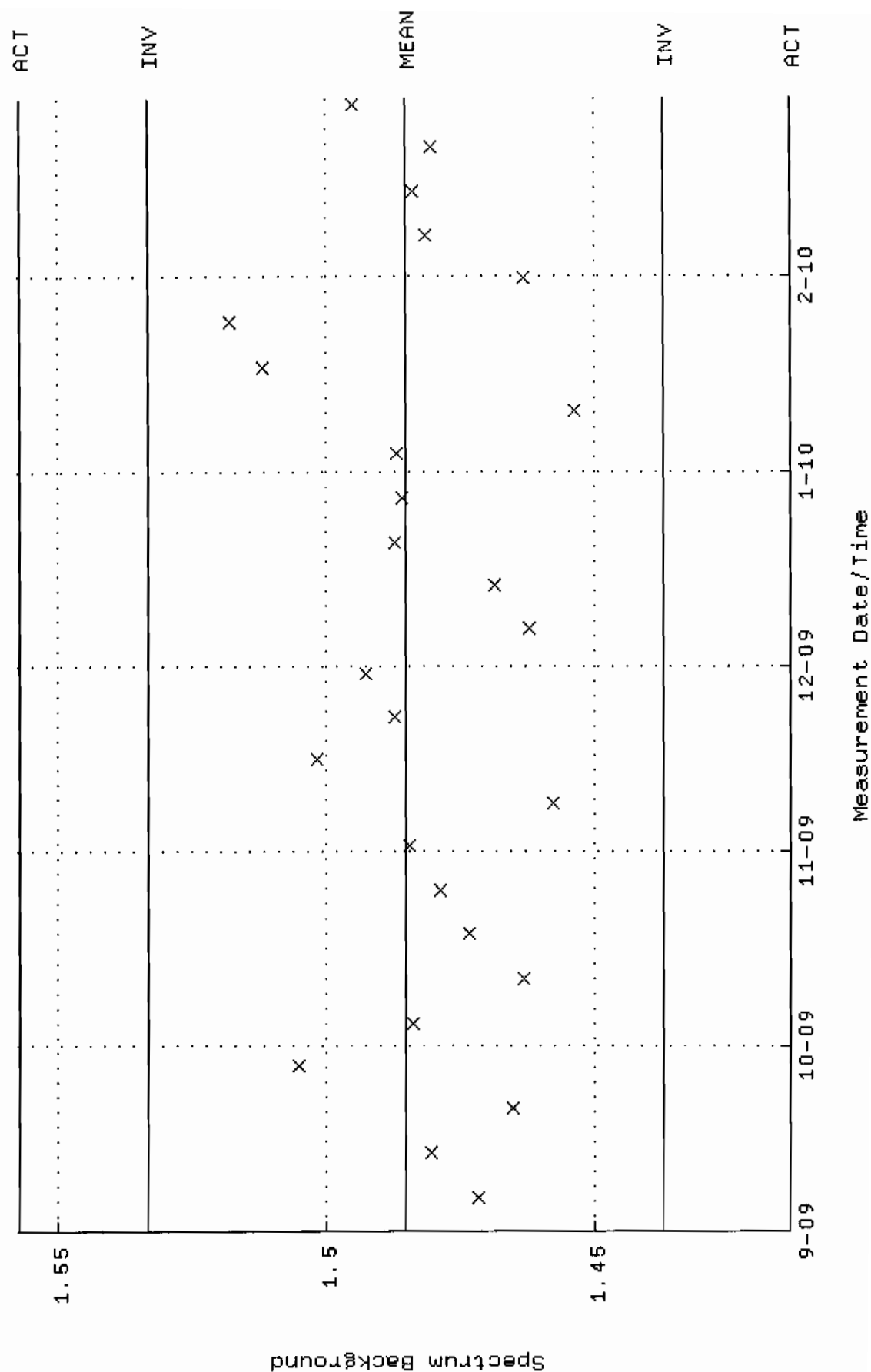
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM19_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:06:58 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



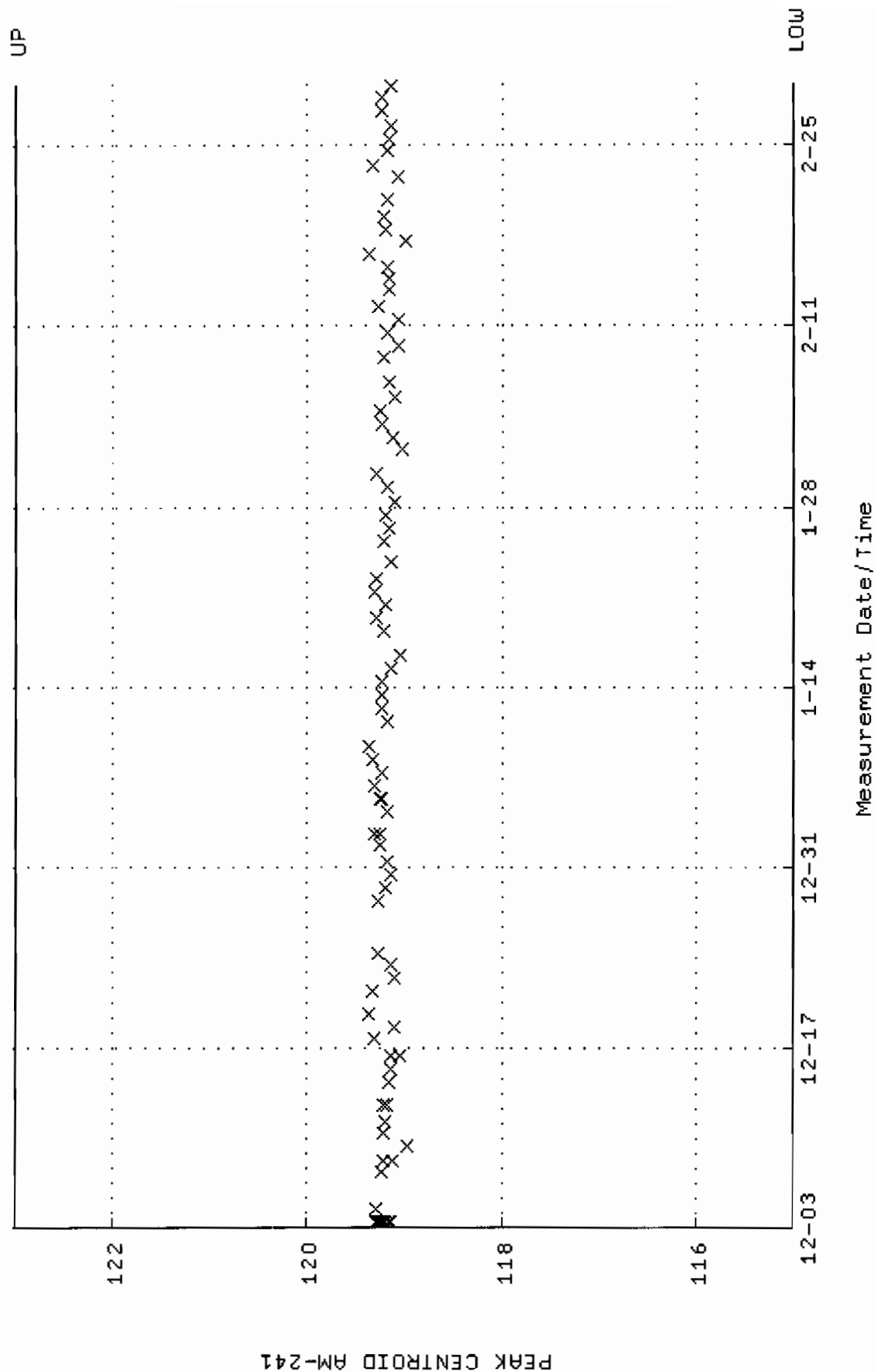
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM20_500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:53:11 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



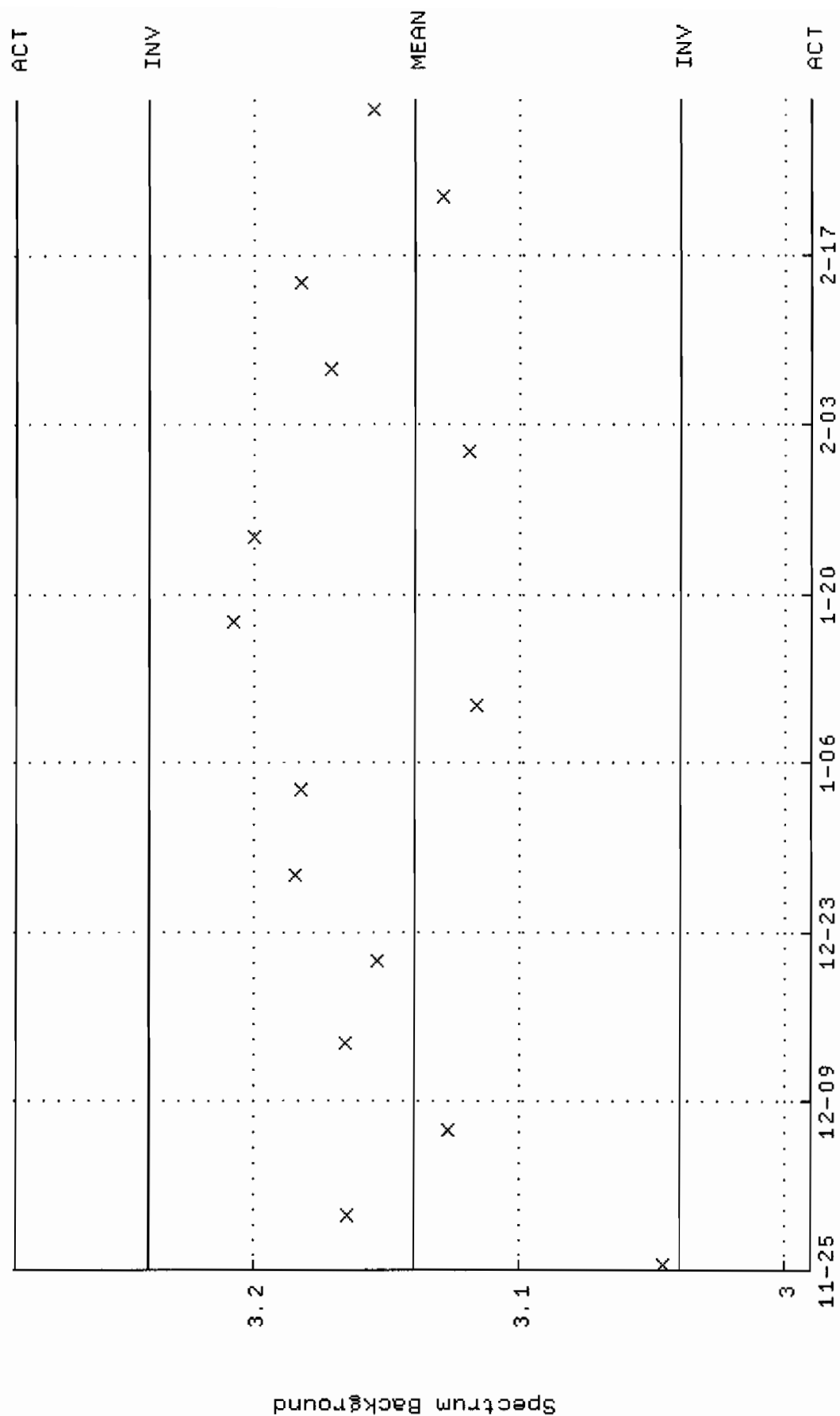
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM20.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:46:04 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.48527 +- 2.388665E-02 (1.61 %)



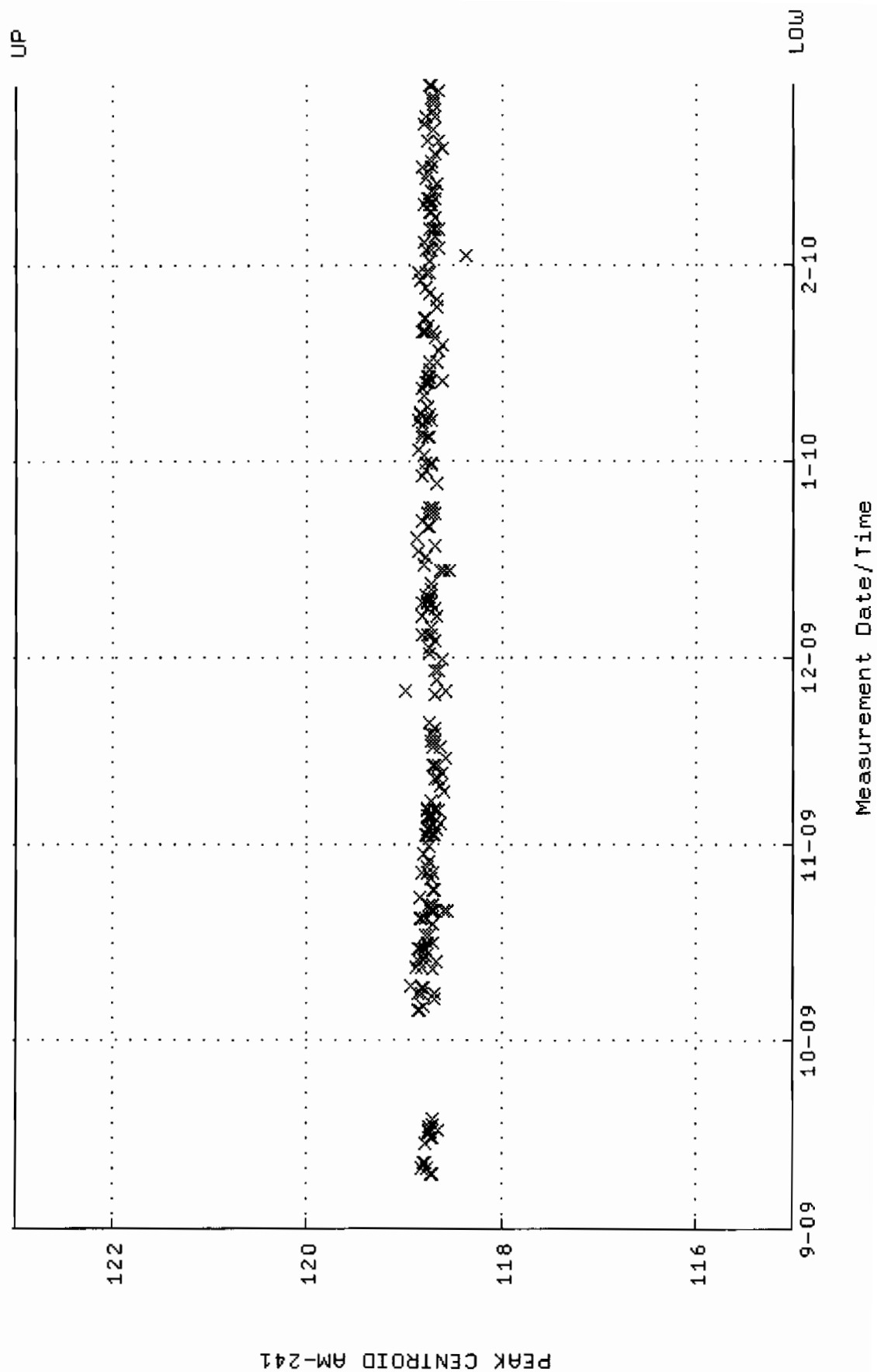
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM22-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-DEC-2009 09:11:39 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



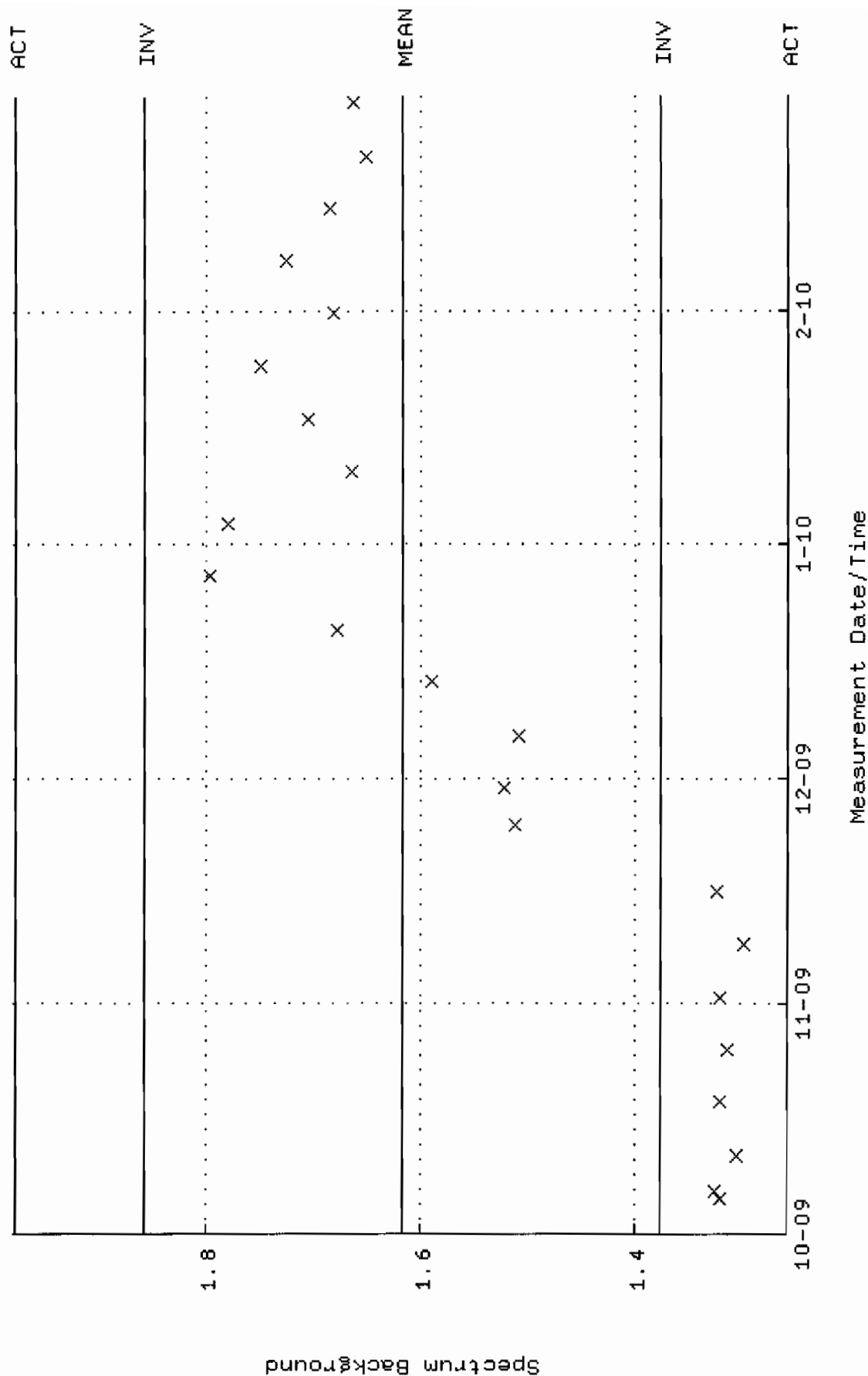
QA filename : DKA100:[CANBERRA,GAMMA,SCUSR.QA]LBC_GAM22.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 25-NOV-2009 10:28:37 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 3.13961 +- 4.985064E-02 (1.59 %)



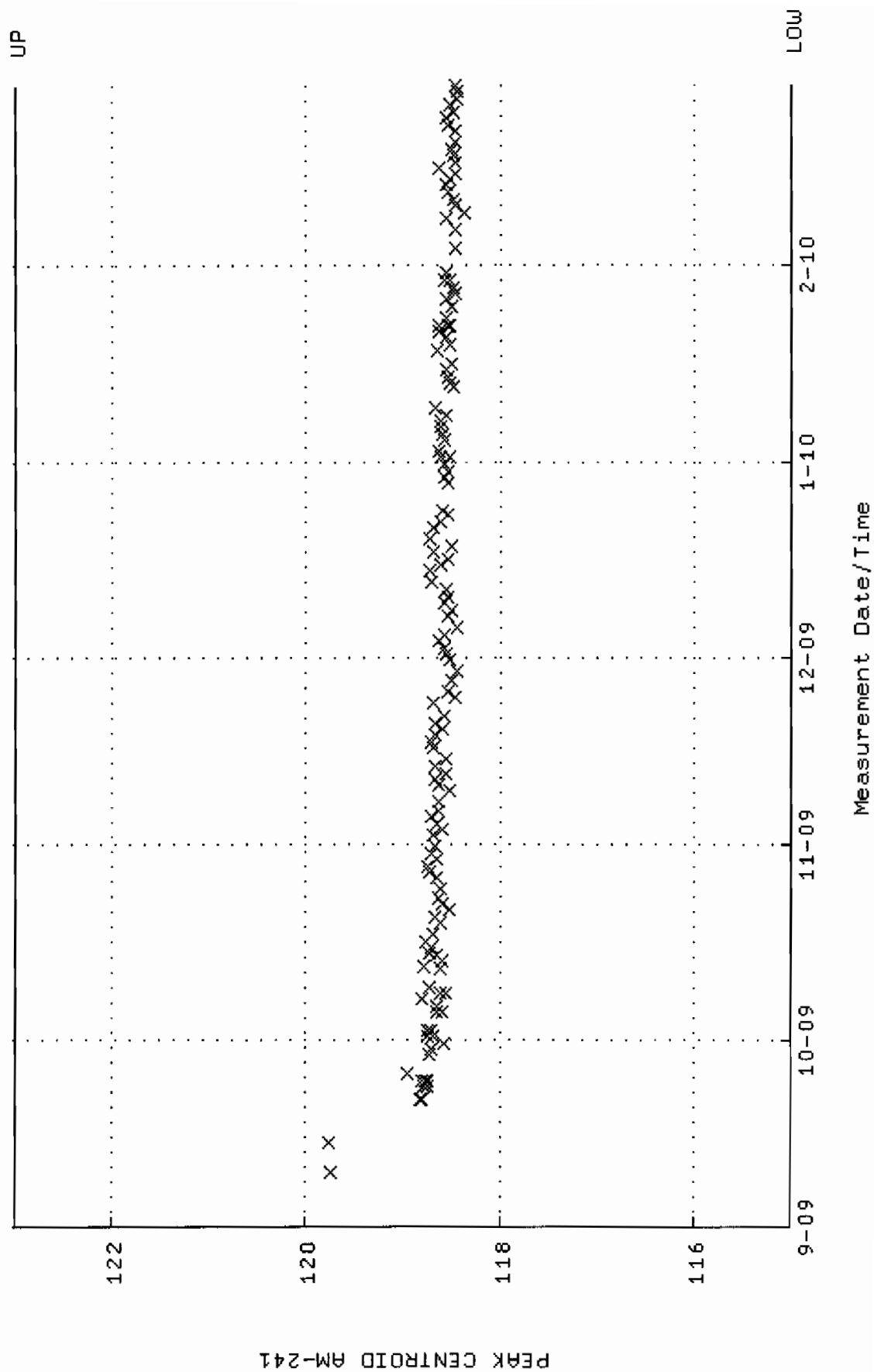
QA filename : DKA100:[CANBERRA,GAMMA,SCUSR,QA]QCC_GAM23_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 9-SEP-2009 16:19:12 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



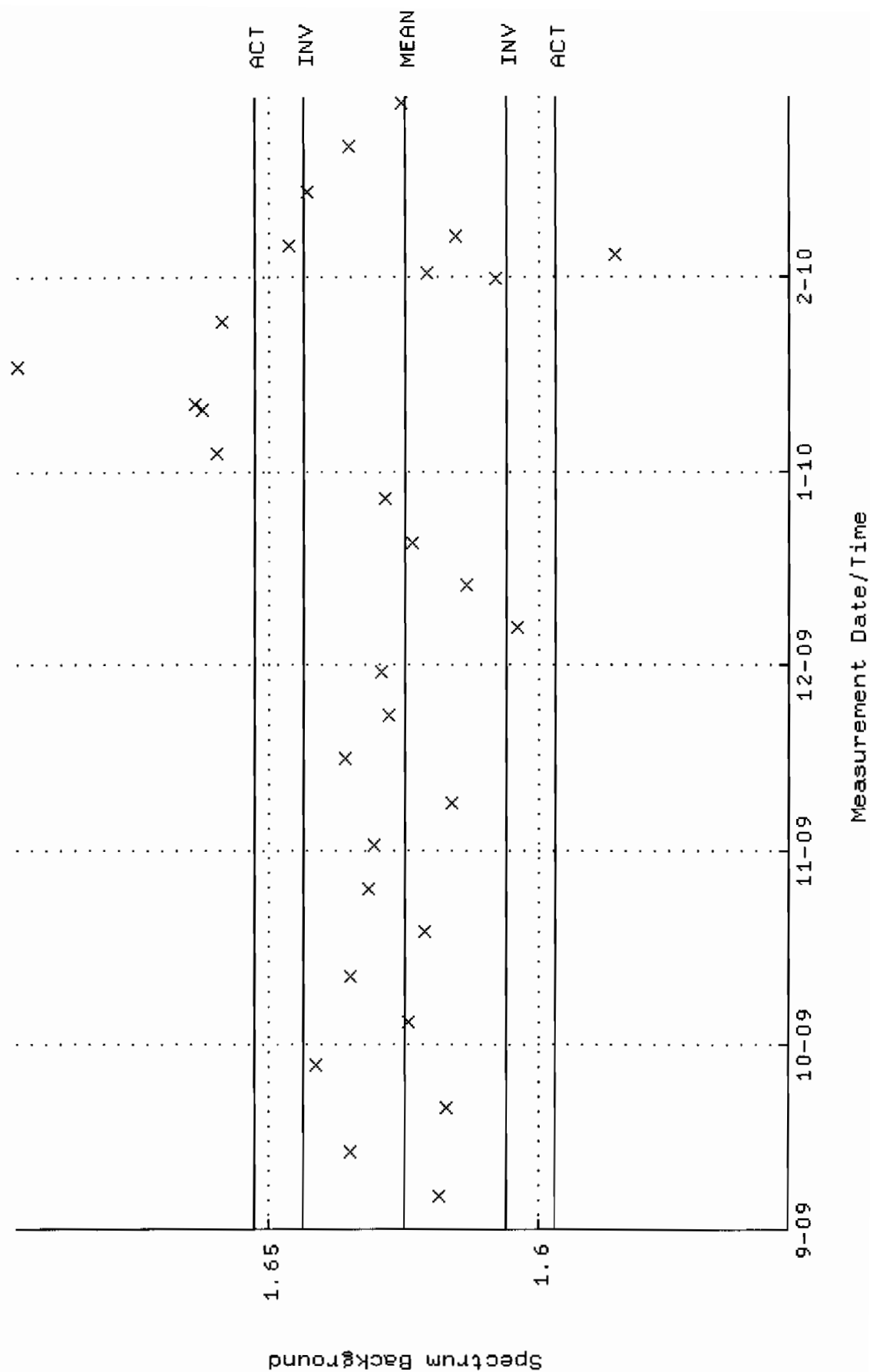
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM23.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-OCT-2009 15:13:53 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.61827 +- 0.119991 (7.41 %)



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM25_2LMB.QAF;1
 Parameter Name : PSCENTRD-59 (PEAK CENTROID AM-241)
 Start/End Dates : 9-SEP-2009 16:18:34 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000

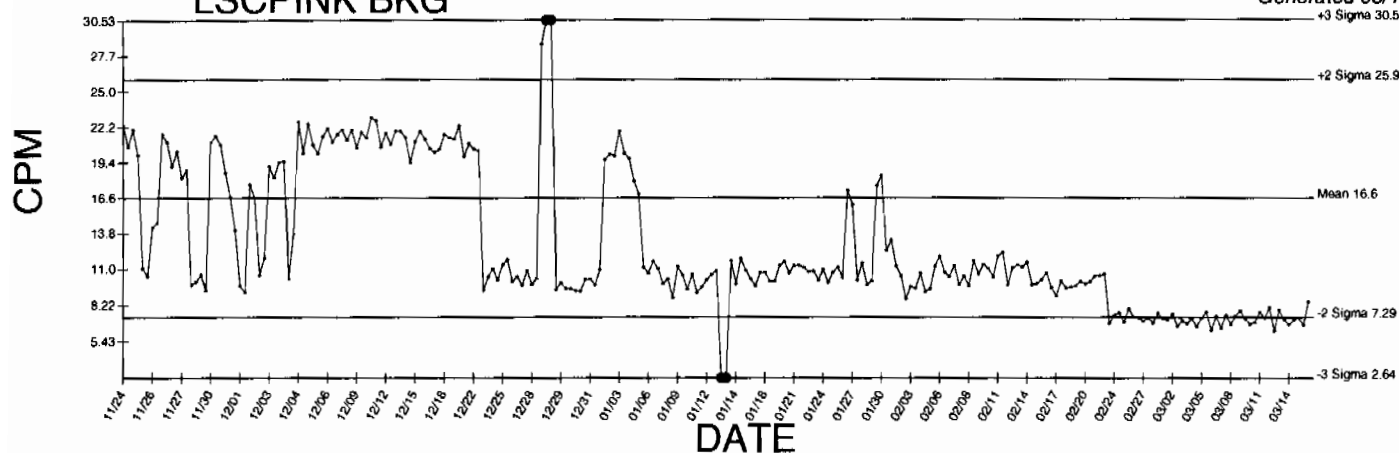


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM25.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:47:27 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.62502 +- 9.370414E-03 (0.58 %)

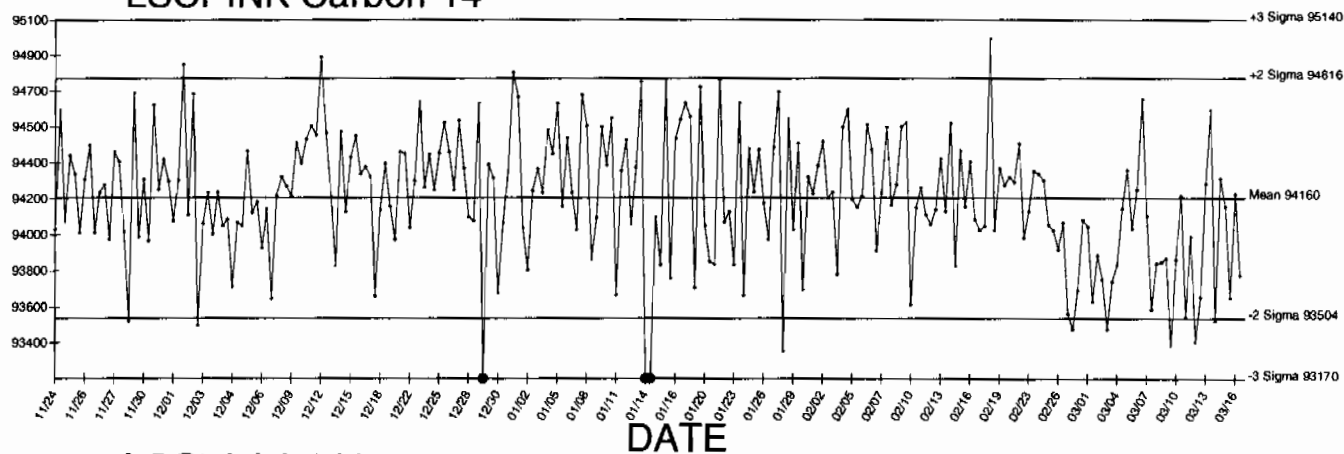


LSCPINK BKG

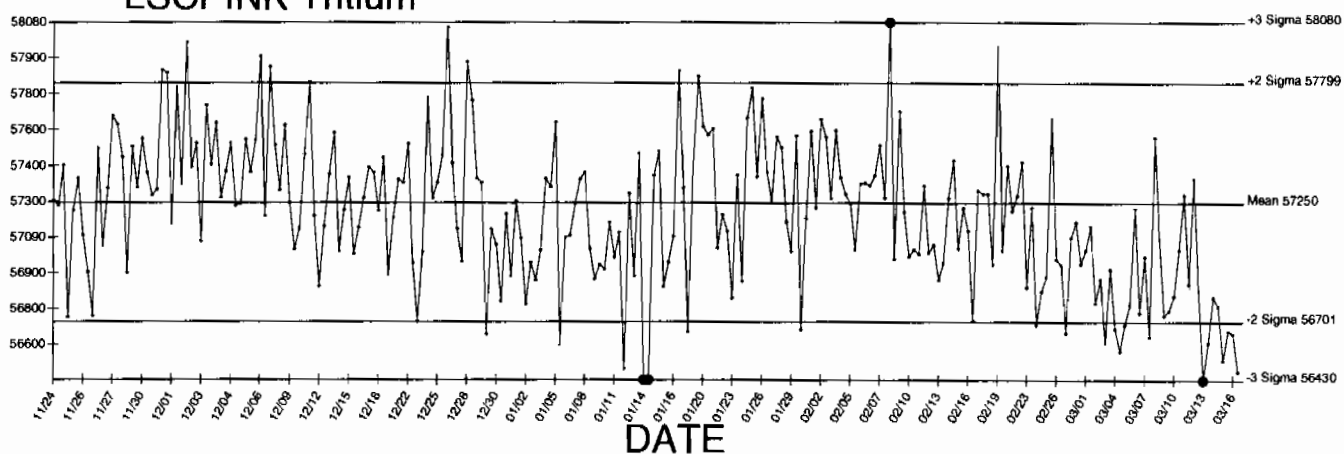
Generated 03/16/2010



LSCPINK Carbon-14



LSCPINK Tritium



● 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 (μCi) = 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 1199 of 1236
W.F. Case

2C-5-023-061a

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	0.380548	2741.3089
	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
Mean Value (Counting) =	2709.776428		104.954429	Pass		
Stdev =	31.53347278		0.01163693	Rule 3 (Pass/Fail)		Average = 2709.776428

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

Handwritten signatures and dates:
 Amanda J. Teh 4/9/09
 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:

W.M. [Signature] 11-28-06

This standard will expire one year after the calibration date.

rec'd 11/30/06
RC-S-045-073-0

1380 Seaboard Industrial Blvd.
 Atlanta, Georgia 30318

Tel 404-352-8677

Fax 404-352-2837

www.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

¹Calibration 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 - Jar - 1
	Mixed Gamma N1	2534	pCi/L - Var - Jar - 3
	Mixed Gamma N2	2510	pCi/L - Var - Jar - 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 = 248.5666667
 Rule 2 (Pass/Fail) **Pass**

M. Stamps
12/2/09
independent
12/2/09

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Cs-137

Isotope	Result	pCi/L - Ver. Jar. 1
Mixed Gamma N1	854.2	pCi/L
Mixed Gamma N2	907.6	pCi/L
Mixed Gamma N3	898.9	pCi/L

Mean Value (Counting) = 886.90
Stdev = 28.651
Rule 3 (Pass/Fail) Pass

Certificate Value =
Lower Limit = 933.44144
Upper Limit = 829.597644
Rule 1 (Pass/Fail) 944.202356
Two sigma = Pass
10 % of Mean = 57.30235597
Rule 2 (Pass/Fail) 88.69000000 Pass

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

Handwritten: 12/2/09
12/2/09
12/2/09

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - Ver - IAE-5
Mixed Gamma N1	1572	pCi/L - Ver - IAE-2
Mixed Gamma N2	1495	pCi/L - Ver - IAE-3
Mixed Gamma N3	1501	

Mean Value (Counting) = 1522.67
Stdev = 42.829
Rule 3 (Pass/Fail) Pass

Certificate Value = 1545.8378
Lower Limit = 1437.008431
Upper Limit = 1608.324902
Rule 1 (Pass/Fail) Pass
Two sigma = 85.65823564
10 % of Mean = 152.26666667
Rule 2 (Pass/Fail) Pass

pCi/L
pCi/L
pCi/L

U.S. Stamp issued 12/2/09

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

0244-A Characterization

Sample #	Uranium-233/234 Result (pCi/g)	Uranium-238 Result (pCi/g)	Thorium-230 Result (pCi/g)
0244-A 1	6.59	6.12	25.3
0244-A 2	6.36	6.07	28.5
0244-A 3	5.78	5.53	26.5
0244-A 4	6.48	5.97	25.5
0244-A 5	5.65	5.59	26.2
0244-A 6	6.96	5.78	27.0
0244-A 7	5.95	5.75	24.2
0244-A 8	5.29	5.67	27.2
0244-A 9	5.51	6.05	24.3
0244-A 10	6.37	5.57	25.6
0244-A 11	6.50	5.80	25.8
0244-A 12	6.13	5.42	22.4
0244-A 13	5.49	5.24	24.7
0244-A 14	6.19	5.21	26.9
0244-A 15	6.50	6.27	27.6
0244-A 16	6.50	5.24	24.9
0244-A 17	6.25	6.05	24.7
0244-A 18	6.14	6.00	25.4
0244-A 19	6.19	6.14	26.4
0244-A 20	5.67	5.61	23.2
Mean Value	6.13	5.75	25.62
1 sigma	0.439	0.325	1.493
2 sigma	0.878	0.650	2.986
75% Limit	4.60	4.31	19.22
125% Limit	7.66	7.19	32.03
Expected Result	6.2 +/- 4.0	6.0 +/- 4.0	24.5 +/- 0.6
Achieved Results	6.13 +/- 0.439	5.75 +/- 0.325	25.62 +/- 1.493

REFERENCE DATA 4/14/2000 *fit 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 ± 13	22.1 ± 1.2	56.0 ± 2.1	38.9 ± 2.0

9911627-01-201

**Internal Lab
Batch No.**

SARAWR No. N/A

Press F1 for instructions for each field.

AR/COC-602945

Page 1 of 1

Dept. No./Mail Stop: 7132 / 1042 Project/Task Manager: PAM PUISSANT Project Name: Record Center Code: N/A Logbook Ref. No.: N/A Service Order No.:		Date Samples Shipped: 11-16-99 SMO USE Garrie/Waybill No.: 7-26-99 Lab Contact: EDIE KENT Lab Destination: G.E.L. SMO Contact/Phone: Doug Salimi / 844-3110 Send Report to SMO: Suzi Jensen / 844-3184		Contract No.: AJ-2480A Case No.: 10204 13 SMO Authorization: <i>[Signature]</i> Bill to: Sandia National Laboratories Supplier Services, Dept. P.O. Box 5800 MS 0154																																																																											
Location Building N/A Tech Area VI Room N/A Sample No. - Fraction 050484 - 001 PEM-1 050485 - 001 TRM-2 050486 - 001 WRM-2 N.B.H.D.		Reference LOV (available at SMO) <table border="1"> <thead> <tr> <th rowspan="2">Sample Matrix</th> <th colspan="2">Container</th> <th rowspan="2">Preservative</th> <th rowspan="2">Sample Collection Method</th> <th rowspan="2">Sample Type</th> </tr> <tr> <th>Type</th> <th>Volume</th> </tr> </thead> <tbody> <tr> <td>S</td> <td>P</td> <td>1 L</td> <td>4 C</td> <td>G</td> <td>SA</td> </tr> <tr> <td>S</td> <td>G</td> <td>1 L</td> <td>4 C</td> <td>G</td> <td>SA</td> </tr> <tr> <td>S</td> <td>G</td> <td>1 L</td> <td>4 C</td> <td>G</td> <td>SA</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		Sample Matrix	Container		Preservative	Sample Collection Method	Sample Type	Type	Volume	S	P	1 L	4 C	G	SA	S	G	1 L	4 C	G	SA	S	G	1 L	4 C	G	SA																																																	Parameter & Method Requested <i>See Special Instructions Below</i>	
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RMMA <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ref. No. Sample Disposal <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by lab		Special Instructions/QC Requirements EDD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Raw data package <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>These samples are not for release. Being sent to the lab to be held at the lab.</i>		Abnormal Conditions on Receipt Lab Use																																																																											
Turnaround Time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush Required Report Date		Sample Tracking (min/daily) Date Entered: 11-16-99 Time: 0900 Entered by: <i>[Signature]</i>		Please list as separate report.																																																																											
Sample Team Douglas E. Perry		Company/Organization/Phone Weston / 757 718 45-0867		Date																																																																											
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Original	1 st Copy	2 nd Copy	3 rd Copy	Field Copy (Pink)
To Accompany Samples, Laboratory Copy (White)	To Accompany Samples, Return to SMO (Blue)	SMO Suspense Copy (Yellow)		

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. Feher 4/30/04
Lett & Shale 5/1/04

PREPARATION AND CHARACTERIZATION OF THE PERFORMANCE EVALUATION SOIL SAMPLE PEM-1

INTRODUCTION

Rust Geotech (Rust) was contracted by Los Alamos National Laboratory (LANL) to prepare and characterize a soil performance evaluation sample designated PEM-1. This report describes sample preparation, homogeneity assessment, and determination of the concentrations of 28 elements and radioactive isotopes in the sample.

SAMPLE PREPARATION

Rust received nine five-gallon buckets of soil from LANL. The soils were dried overnight in ovens at 103 °C. The large pieces of leaves and sticks were removed and the soils were ground with ceramic-plate grinders to a particle size that passed through a 325 mesh screen. The samples were blended at the proportions specified by LANL for 48 hours in a 3-cubic-foot cross-flow blender. The sample identifications and the amounts used are listed in Table 1.

Table 1. Sample Identifications and Amounts Used to Prepare PEM-1

LANL Sample ID	Amount Used (kg)
AAA 1592	1.7
AAA 2505-1	10.9
AAA 2505-2	12.8
AAA 2750-1	8.4
AAA 2750-2	8.4
AAA 3205	12.6
AAA 8581	4.2
AAB 3417	12.8
AAB 3475	12.6

The blended sample was transferred to three five-gallon plastic containers. While the sample was being transferred, 10 samples were taken at pre-determined time intervals to be used for homogeneity assessment and sample characterization. These samples are believed to be representative of the bulk material.

279
Slater At 6th
Not For Lead

SF 2001-COC (10-97)

Supervisors (5-07) have

Informa! lab

Batch No.

SARAWR No. N/A

SARAWR No. N/A

ANALYSIS REQUEST AND CHAIN OF CUSTODY

Press F1 for instructions for each field.

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)

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	
Parent Code:	445-96-2
Prepared By:	Genie Bost
Carrier Conc:	2M HNO3
Reference Date:	01/01/1994
Ampoule Mass (g):	5.3739 g
Uncertainty:	+/- 3 %
LogBook No:	RC S 005 032

A Solution Material Info	
Isotope:	Americium-243
Prepared By:	Angela Johnson
Prep Date:	01/05/1994
Verification Date:	03/09/2010
Expiration Date:	03/09/2011
Primary Code:	445-96-2-A
Dilution(mL):	100 mL
Mass of Parent(g):	5.3419 g
Density(g/mL):	1.0785
Balance ID:	38080204

Calculations Converting parent activity to dpm/mL/dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (100 \text{ mL}) = 2234238.9912 \text{ dpm/mL}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (1.0785 \text{ g/mL}) / (100 \text{ mL}) = 2071617.0528 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/05/1994	Genie Bost	.0058	100	445-96-2-B	120.1 dpm/ml	01/05/1995	01/05/1996
09/10/2004	Amanda Fehr	.0325	1000	445-96-2-BB	67.328 dpm/mL	09/10/2005	09/10/2006
01/05/1994	Genie Bost	.0025	100	445-96-2-C	51.77 dpm/ml	01/05/1995	01/05/1996
05/27/2005	Brenda Burke	.000246	100	445-96-2-CC	5.10613 dpm/mL	05/31/2005	05/31/2006
03/25/1994	Genie Bost	.0064	100	445-96-2-D	132.53 dpm/ml	01/05/1995	01/05/1996
08/16/2005	Brenda Burke	.001224	500	445-96-2-DD	5.07144 dpm/mL	08/18/2007	08/18/2008
08/04/1994	Genie Bost	.0094	100	445-96-2-E	194.65 dpm/ml	01/05/1995	01/05/1996
10/13/2005	Brenda Burke	.0017	500	445-96-2-EE	7.0435 dpm/mL	11/15/2005	11/15/2006
08/04/1994	Genie Bost	.0046	100	445-96-2-F	95.25 dpm/ml	01/05/1995	01/05/1996
10/14/2005	Mary Aders	.0141	500	445-96-2-FF	58.4196 dpm/mL	10/14/2005	10/14/2006
09/01/1994	Genie Bost	.0031	100	445-96-2-G	64.19 dpm/ml	01/05/1995	01/05/1996

05/10/2006	Mary Aders	2.0753	1000	445-96-2-GG	4299.227 dpm/mL	09/30/2008	09/30/2009
10/17/1994	Genie Bost	.0969	100	445-96-2-H	2006.52 dpm/ml	01/05/1995	01/05/1996
06/07/2006	Mary Aders	.0365	1000	445-96-2-HH	75.614 dpm/mL	06/19/2006	06/19/2007
02/06/1995	Genie Bost	.0043	100	445-96-2-I	89.04 dpm/ml	01/05/1995	01/05/1996
05/11/2006	Brenda Burke	.000009739	100	445-96-2-II	.201761 dpm/mL	07/26/2006	07/26/2007
07/20/1995	Theresa Austin	.0041	100	445-96-2-J	84.9 dpm/ml	01/05/1995	01/05/1996
05/01/2007	Daniel Roy	.0352	1000	445-96-2-JJ	72.9209 dpm/ml	04/30/2008	04/30/2009
08/10/1995	Garret Ray	.0952	100	445-96-2-K	1971.32 dpm/ml	01/05/1995	01/05/1996
06/12/2007	Julie Strock	.01038	250	445-96-2-KK	22.1496 dpm/mL	05/28/2008	05/28/2009
09/11/1995	Theresa Austin	1.0525	100	445-96-2-L	21794.23 dpm/ml	01/05/1995	01/05/1996
09/11/1995	Theresa Austin	.5107	100	445-96-2-L-1	111.3 dpm/ml	01/05/1995	01/05/1996
04/28/1998	Richard Kinney	.1264	100	445-96-2-M	2617.4 dpm/ml	04/28/1998	04/28/1999
11/01/2007	Eric Williamson	.001274	500	445-96-2-MM	5.27945 dpm/mL	04/06/2008	04/06/2010
10/12/1998	Gregory Smith	.1348	100	445-96-2-N	2791.32 dpm/mL	01/05/1995	01/05/1996
01/25/1999	Gregory Smith	1.9382	100	445-96-2-N-1	50.16 dpm/ml	01/05/1995	01/05/1996
04/19/2008	Daniel Roy	.0424	1000	445-96-2-NN	87.8366 dpm/ml	04/16/2009	04/16/2010
04/21/1999	Greg Smith	.1645	100	445-96-2-O	3406.32 dpm/mL	04/21/1999	04/21/2000
07/27/1999	Gregory Smith	1.567	100	445-96-2-O-2	50.56 dpm/ml	05/13/1999	05/13/2000
10/12/1999	Richard Kinney	1.5589	100	445-96-2-O-3	50.31 dpm/mL	05/13/1999	05/13/2000
04/21/1999	Greg Smith	1.5309	100	445-96-2-O-1	49.4 dpm/mL	04/21/1999	04/21/2000
11/10/1999	Joe Davis	.1809	100	445-96-2-P	3745.92 dpm/mL	05/13/1999	05/13/2000
01/04/2008	Julie Strock	.00001005	100	445-96-2-PP	.20819 dpm/mL	12/29/2008	12/29/2009

01/28/2000	Angela Johnson	.0354	1000	445-96-2-Q	73.3 dpm/mL	02/08/2001	02/08/2002
09/29/2008	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	Pass
Stdev =	0.042253205	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.

fil 3/15/10
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Verification for Am-243 Standard 445-96-2-SS

M. Aders 5/15/2009	Isotope	Value	Uncertainty
	445-96-2-SS #1	1.360	0.1690
	445-96-2-SS #2	1.370	0.1690
	445-96-2-SS #3	1.290	0.1590
Mean Value (Counting) =	1.340	101.99	Pass
Stdev =	0.043588989		Rule 3 (Pass/Fail)
Target =	1.314		
Lower Limit =	1.252822021		
Upper Limit =	1.427177979		
Rule 1 Pass/Fail	Pass		
Two sigma =	0.087177979		
10 % of Mean =	0.134		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for standard **445-96-2-SS** using 0.1 mL for each source. Each standard was combined with 0.1 mL of **Cm-244** standard **0533-O** and 50 micrograms of neodymium carrier in a disposable centrifuge tube. Each standard was diluted with 4 mL of 2 M HCl and 6 mL of DI Water. Two mL of 48% HF was added to precipitate Nd (and Americium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Am-243 were calculated by comparison to Am-241 certified values.

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

Handwritten: M. Aders 5/15/09
Taheri 07509



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.

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

Date of Issue: 4 November 2009

Checked by: *Ch Ali*
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Signed: *Arvic Harms*

Name: Dr Arvic Harms

Page 1 of 3

(Authorised Signatory)
for Managing Director

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	
Parent Code:	1430
Prepared By:	Ashley Drochter
Carrier Conc:	2 M HNO3
Reference Date:	07/01/2009
Ampoule Mass (g):	4.97 g
Uncertainty:	+/- .36 %
LogBook No:	RC-S-051-149

A Solution Material Info	
Isotope:	Plutonium-236
Prepared By:	Ashley Drochter
Prep Date:	01/27/2010
Verification Date:	01/27/2010
Expiration Date:	01/27/2011
Primary Code:	1430-A
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.

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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 4.16, 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	
Parent Code:	1283
Prepared By:	Daniel Roy
Carrier Conc:	1M HNO3
Reference Date:	12/09/2008
Ampoule Mass (g):	5.20453 g
Uncertainty:	+/- 5 %
LogBook No:	RC-S-051-002

A Solution Material Info	
Isotope:	Uranium-232
Prepared By:	Daniel Roy
Prep Date:	12/16/2008
Verification Date:	12/30/2008
Expiration Date:	12/30/2009
Primary Code:	1283-A
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
	1283-H N2	2.000	pCi/L	0.234
	1283-H N3	2.060	pCi/L	0.242
Mean Value (Counting) =	2.027	pCi/L	99.66904	Pass
Stdev =	0.030550505	pCi/L	Rule 3 (Pass/Fail)	
Target =	2.033	pCi/L		
Lower Limit =	1.965565657	pCi/L		
Upper Limit =	2.087767676	pCi/L		
Rule 1 Pass/Fail	Pass			
Two sigma =	0.061101009			
10 % of Mean =	0.202666667			
Rule 2 (Pass/Fail)	Pass			

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for standard 1283-H using 0.1 mL for each source. Each standard was combined with 0.1 mL of U-238 standard 1163-G and was diluted to 10 mL with DI water. 50 micrograms of neodymium carrier and 1ml of Titanium Chloride were added. The solution was allowed to sit for 30 seconds. One mL of 49% HF was then added to precipitate neodymium (and uranium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for U-238 were calculated by comparison to U-232 certified values.

A. Drochter
12/14/09

RUNLOGS

Instrument Run Log

Instrument Type: GAMMA SPECTROMETER

Batch ID: 957711

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247900001	SAMPLE	MXR1	GAM15	05-MAR-10 23:37	DONE	CAN	03-FEB-10 00:00
247900002	SAMPLE	MXR1	GAM17	05-MAR-10 23:38	DONE	CAN	06-JAN-10 00:00
247900003	SAMPLE	MXR1	GAM18	05-MAR-10 23:38	DONE	CAN	23-APR-09 00:00
247900004	SAMPLE	MXR1	GAM20	05-MAR-10 23:38	DONE	CAN	26-AUG-09 00:00
247900005	SAMPLE	MXR1	GAM23	05-MAR-10 23:39	DONE	CAN	02-JUN-09 00:00
247900006	SAMPLE	MXR1	GAM25	05-MAR-10 23:39	DONE	CAN	07-OCT-09 00:00
247900007	SAMPLE	MXR1	GAM05	06-MAR-10 14:59	DONE	CAN	11-JUN-09 00:00
247900008	SAMPLE	MXR1	GAM13	06-MAR-10 14:59	DONE	CAN	11-FEB-10 00:00
247900009	SAMPLE	MXR1	GAM15	06-MAR-10 14:59	DONE	CAN	03-FEB-10 00:00
247900010	SAMPLE	MXR1	GAM17	06-MAR-10 15:00	DONE	CAN	06-JAN-10 00:00
247900011	SAMPLE	MXR1	GAM18	06-MAR-10 15:00	DONE	CAN	23-APR-09 00:00
247900012	SAMPLE	MXR1	GAM19	06-MAR-10 15:01	DONE	CAN	12-MAR-09 00:00
247900013	SAMPLE	MXR1	GAM20	06-MAR-10 15:01	DONE	CAN	26-AUG-09 00:00
247900014	SAMPLE	MXR1	GAM22	06-MAR-10 15:02	DONE	CAN	02-DEC-09 00:00
247900015	SAMPLE	MXR1	GAM23	06-MAR-10 15:02	DONE	CAN	02-JUN-09 00:00
247900016	SAMPLE	MXR1	GAM25	06-MAR-10 15:02	DONE	CAN	07-OCT-09 00:00
247900017	SAMPLE	MXR1	GAM16	06-MAR-10 15:22	DONE	CAN	16-NOV-09 00:00
247900018	SAMPLE	MXR1	GAM01	06-MAR-10 17:00	DONE	CAN	12-JAN-10 00:00
247900019	SAMPLE	MXR1	GAM02	06-MAR-10 17:01	DONE	CAN	29-OCT-09 00:00
1202053644	MB	MXR1	GAM04	06-MAR-10 17:02	DONE	CAN	05-MAY-09 00:00
1202053645	DUP	MXR1	GAM06	06-MAR-10 17:03	DONE	CAN	16-FEB-10 00:00
1202053646	LCS	MXR1	GAM07	06-MAR-10 17:03	DONE	CAN	20-JUL-09 00:00
247900020	SAMPLE	MXR1	GAM12	09-MAR-10 11:36	DONE	CAN	25-FEB-10 00:00

Instrument Run Log

Instrument Type: LSC

Batch ID: 961540

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247797001	SAMPLE KXK2	LSCPINK		11-MAR-10 03:45	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247797002	SAMPLE KXK2	LSCPINK		11-MAR-10 05:48	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247797003	SAMPLE KXK2	LSCPINK		11-MAR-10 07:50	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247797004	SAMPLE KXK2	LSCPINK		11-MAR-10 09:53	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247797005	SAMPLE KXK2	LSCPINK		11-MAR-10 11:56	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900004	SAMPLE KXK2	LSCPINK		11-MAR-10 13:59	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900006	SAMPLE KXK2	LSCPINK		11-MAR-10 15:56	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900008	SAMPLE KXK2	LSCPINK		11-MAR-10 17:59	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900011	SAMPLE KXK2	LSCPINK		11-MAR-10 20:02	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247920002	SAMPLE KXK2	LSCPINK		11-MAR-10 20:40	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248385001	SAMPLE KXK2	LSCPINK		11-MAR-10 22:43	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248385002	SAMPLE KXK2	LSCPINK		12-MAR-10 02:01	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248385003	SAMPLE KXK2	LSCPINK		12-MAR-10 04:03	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248385004	SAMPLE KXK2	LSCPINK		12-MAR-10 06:06	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248385005	SAMPLE KXK2	LSCPINK		12-MAR-10 08:08	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248385006	SAMPLE KXK2	LSCPINK		12-MAR-10 10:11	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248386003	SAMPLE KXK2	LSCPINK		12-MAR-10 12:13	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248386004	SAMPLE KXK2	LSCPINK		12-MAR-10 14:16	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
1202062409 MB	KXK2	LSCPINK		12-MAR-10 16:18	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
1202062410 DUP	KXK2	LSCPINK		12-MAR-10 18:22	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
1202062411 LCS	KXK2	LSCPINK		12-MAR-10 20:24	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00

Instrument Run Log

Instrument Type: LSC

Batch ID: 961541

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247900001	SAMPLE	KXK2	LSCPINK	12-MAR-10 22:20	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900002	SAMPLE	KXK2	LSCPINK	12-MAR-10 23:58	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900003	SAMPLE	KXK2	LSCPINK	13-MAR-10 01:36	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900005	SAMPLE	KXK2	LSCPINK	13-MAR-10 03:14	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900007	SAMPLE	KXK2	LSCPINK	13-MAR-10 03:32	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900009	SAMPLE	KXK2	LSCPINK	13-MAR-10 06:25	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900010	SAMPLE	KXK2	LSCPINK	13-MAR-10 08:03	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900012	SAMPLE	KXK2	LSCPINK	13-MAR-10 09:41	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900013	SAMPLE	KXK2	LSCPINK	13-MAR-10 11:18	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900014	SAMPLE	KXK2	LSCPINK	13-MAR-10 12:56	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900015	SAMPLE	KXK2	LSCPINK	13-MAR-10 14:33	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900016	SAMPLE	KXK2	LSCPINK	13-MAR-10 16:11	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900017	SAMPLE	KXK2	LSCPINK	13-MAR-10 17:48	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900018	SAMPLE	KXK2	LSCPINK	13-MAR-10 19:26	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900019	SAMPLE	KXK2	LSCPINK	13-MAR-10 21:03	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
247900020	SAMPLE	KXK2	LSCPINK	13-MAR-10 22:41	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248389002	SAMPLE	KXK2	LSCPINK	14-MAR-10 00:19	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248389003	SAMPLE	KXK2	LSCPINK	14-MAR-10 01:57	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
1202062412 MB		KXK2	LSCPINK	14-MAR-10 03:34	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
1202062413 DUP		KXK2	LSCPINK	14-MAR-10 05:12	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
1202062414 LCS		KXK2	LSCPINK	14-MAR-10 06:49	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 961694

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247900001	SAMPLE	KXM4	1248	19-MAR-10 21:03	DONE		
247900002	SAMPLE	KXM4	1249	19-MAR-10 21:03	DONE		
247900003	SAMPLE	KXM4	1250	19-MAR-10 21:03	DONE		
247900004	SAMPLE	KXM4	1209	19-MAR-10 21:28	DONE		
247900005	SAMPLE	KXM4	1210	19-MAR-10 21:28	DONE		
247900006	SAMPLE	KXM4	1213	19-MAR-10 21:28	DONE		
247900007	SAMPLE	KXM4	1214	19-MAR-10 21:28	DONE		
247900008	SAMPLE	KXM4	1215	19-MAR-10 21:28	DONE		
247900009	SAMPLE	KXM4	1216	19-MAR-10 21:28	DONE		
247900010	SAMPLE	KXM4	1217	19-MAR-10 21:28	DONE		
247900011	SAMPLE	KXM4	1218	19-MAR-10 21:28	DUSE		
247900012	SAMPLE	KXM4	1242	20-MAR-10 11:13	DONE		
247900013	SAMPLE	KXM4	1244	20-MAR-10 11:13	DONE		
247900014	SAMPLE	KXM4	1245	20-MAR-10 11:13	DONE		
247900015	SAMPLE	KXM4	1246	20-MAR-10 11:13	DONE		
247900016	SAMPLE	KXM4	1247	20-MAR-10 11:13	DONE		
247900017	SAMPLE	KXM4	1248	20-MAR-10 11:14	DONE		
247900018	SAMPLE	KXM4	1249	20-MAR-10 11:14	DONE		
247900019	SAMPLE	KXM4	1250	20-MAR-10 11:14	DONE		
247900020	SAMPLE	KXM4	1251	20-MAR-10 11:14	DONE		
1202062741	MB	KXM4	1252	20-MAR-10 11:14	DONE		
1202062742	DUP	KXM4	1253	20-MAR-10 11:14	DONE		
1202062743	LCS	KXM4	1254	20-MAR-10 11:14	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 961696

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247900001	SAMPLE	KXM4	1066	19-MAR-10 21:07	DONE		
247900002	SAMPLE	KXM4	1067	19-MAR-10 21:07	DONE		
247900003	SAMPLE	KXM4	1068	19-MAR-10 21:07	DONE		
247900004	SAMPLE	KXM4	1069	19-MAR-10 21:07	DONE		
247900005	SAMPLE	KXM4	1070	19-MAR-10 21:07	DONE		
247900006	SAMPLE	KXM4	1072	19-MAR-10 21:07	DONE		
247900007	SAMPLE	KXM4	1073	19-MAR-10 21:07	DONE		
247900008	SAMPLE	KXM4	1074	19-MAR-10 21:07	DONE		
247900009	SAMPLE	KXM4	1075	19-MAR-10 21:07	DONE		
247900010	SAMPLE	KXM4	1076	19-MAR-10 21:07	DONE		
247900011	SAMPLE	KXM4	1089	19-MAR-10 21:07	DONE		
247900012	SAMPLE	KXM4	1090	19-MAR-10 21:07	DONE		
247900013	SAMPLE	KXM4	1091	19-MAR-10 21:07	DONE		
247900014	SAMPLE	KXM4	1093	19-MAR-10 21:07	DONE		
247900015	SAMPLE	KXM4	1094	19-MAR-10 21:07	DONE		
247900016	SAMPLE	KXM4	1095	19-MAR-10 21:07	DONE		
247900017	SAMPLE	KXM4	1096	19-MAR-10 21:07	DONE		
247900018	SAMPLE	KXM4	1097	19-MAR-10 21:07	DONE		
247900019	SAMPLE	KXM4	1098	19-MAR-10 21:07	DONE		
247900020	SAMPLE	KXM4	1099	19-MAR-10 21:07	DONE		
1202062744	MB	KXM4	1100	19-MAR-10 21:07	DONE		
1202062745	DUP	KXM4	1101	19-MAR-10 21:07	DONE		
1202062746	LCS	KXM4	1102	19-MAR-10 21:07	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 961697

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247900019	SAMPLE	KXM4	1166	18-MAR-10 08:50	DONE		
247900020	SAMPLE	KXM4	1167	18-MAR-10 08:50	DONE		
1202062751	MB	KXM4	1169	18-MAR-10 08:50	DUSE		
1202062752	DUP	KXM4	1170	18-MAR-10 08:50	DONE		
1202062753	LCS	KXM4	1171	18-MAR-10 08:50	DONE		
247900001	SAMPLE	KXM4	1161	19-MAR-10 16:24	DONE		
247900002	SAMPLE	KXM4	1162	19-MAR-10 16:24	DONE		
247900003	SAMPLE	KXM4	1164	19-MAR-10 16:24	DONE		
247900004	SAMPLE	KXM4	1165	19-MAR-10 16:24	DONE		
247900005	SAMPLE	KXM4	1166	19-MAR-10 16:24	DONE		
247900006	SAMPLE	KXM4	1167	19-MAR-10 16:24	DONE		
247900007	SAMPLE	KXM4	1168	19-MAR-10 16:24	DONE		
247900008	SAMPLE	KXM4	1169	19-MAR-10 16:24	DONE		
247900009	SAMPLE	KXM4	1170	19-MAR-10 16:24	DUSE		
247900010	SAMPLE	KXM4	1171	19-MAR-10 16:24	DUSE		
247900011	SAMPLE	KXM4	1172	19-MAR-10 16:24	DONE		
247900012	SAMPLE	KXM4	1125	19-MAR-10 18:29	DONE		
247900013	SAMPLE	KXM4	1126	19-MAR-10 18:29	DONE		
247900014	SAMPLE	KXM4	1127	19-MAR-10 18:29	DONE		
247900015	SAMPLE	KXM4	1128	19-MAR-10 18:29	DONE		
247900016	SAMPLE	KXM4	1129	19-MAR-10 18:29	DONE		
247900017	SAMPLE	KXM4	1130	19-MAR-10 18:29	DONE		
247900018	SAMPLE	KXM4	1133	19-MAR-10 18:29	DONE		
247900009	SAMPLE	KXM4	1123	20-MAR-10 21:13	DONE		
247900010	SAMPLE	KXM4	1124	20-MAR-10 21:13	DONE		
1202062751	MB	KXM4	1133	20-MAR-10 21:14	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 967505

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
247900011	SAMPLE	JXD2	1235	22-MAR-10 20:44	DONE		
248536010	SAMPLE	JXD2	1236	22-MAR-10 20:44	DONE		
248536014	SAMPLE	JXD2	1237	22-MAR-10 20:44	DONE		
248536015	SAMPLE	JXD2	1238	22-MAR-10 20:44	DONE		
1202076577	MB	JXD2	1239	22-MAR-10 20:44	DONE		
1202076578	DUP	JXD2	1240	22-MAR-10 20:44	DONE		
1202076579	LCS	JXD2	1241	22-MAR-10 20:44	DONE		