

Friday, February 26, 2010

LOS ALAMOS

NATIONAL LABORATORY

Page 1 of 3
REQUEST NUMBER: 10-2139

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

These Samples are on:

LANL Request Number: 10-2139

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/26/2010

TURNAROUND/REPORT DUE: 3/28/2010

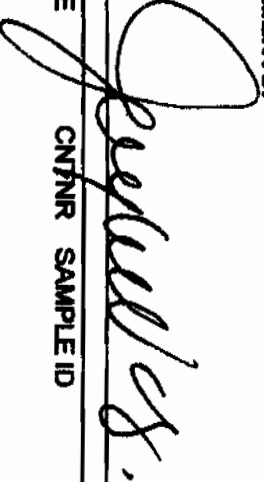
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature:



PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA 901.1	1	1	RE36-10-8464	R	2/24/2010	
	1	1	RE36-10-8471	R	2/24/2010	
	1	1	RE36-10-8475	R	2/24/2010	
	1	1	RE36-10-8477	R	2/24/2010	
	1	1	RE36-10-8479	R	2/24/2010	
	1	1	RE36-10-8481	R	2/24/2010	
	1	1	RE36-10-8484	R	2/24/2010	
	1	1	RE36-10-8485	R	2/24/2010	
EPA 906.0	1	1	RE36-10-8464	R	2/24/2010	

Friday, February 26, 2010

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REQUEST NUMBER: 10-2139

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA-906.0		1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	
		1	RE36-10-8479	R	2/24/2010	
		1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8485	R	2/24/2010	
		1	RE36-10-8464	R	2/24/2010	
		1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
HASL-300:AM-241		1	RE36-10-8477	R	2/24/2010	
		1	RE36-10-8479	R	2/24/2010	
		1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8485	R	2/24/2010	
		1	RE36-10-8464	R	2/24/2010	
		1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	
		1	RE36-10-8479	R	2/24/2010	
HASL-300:ISOPU		1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8485	R	2/24/2010	
		1	RE36-10-8464	R	2/24/2010	
		1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	
		1	RE36-10-8479	R	2/24/2010	
		1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
HASL-300:ISOU		1	RE36-10-8485	R	2/24/2010	
		1	RE36-10-8464	R	2/24/2010	
		1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	

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REQUEST NUMBER: 10-2139

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8485	R	2/24/2010	

Final Page of REQUEST NUMBER 10-2139

Friday, February 26, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2139

LOS ALAMOS

REQUEST NUMBER: 10-2139

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/28/2010

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
RE36-10-8464	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8464	1	POLY	H3	Ice	R
RE36-10-8475	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8475	1	POLY	H3	Ice	R
RE36-10-8471	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8471	1	POLY	H3	Ice	R
RE36-10-8485	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8485	1	POLY	H3	Ice	R
RE36-10-8477	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8477	1	POLY	H3	Ice	R
RE36-10-8479	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8479	1	POLY	H3	Ice	R
RE36-10-8484	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8484	1	POLY	H3	Ice	R
RE36-10-8481	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8481	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: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8464

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:	QBT3		Qbt 2
TIME COLLECTED (HH:MM)		1535		SUB-MEDIA:	TUFF 1		ok
PRS ID:	36-003(a)	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	36-610880	↓		FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		↓
TOP DEPTH:	0	3.0		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	4.0		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	R		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		WATER FLOWING: YES/NO/NA
BOREHOLE: YES/NO/NA	NO			BOREHOLE DECLINATION:	NA		BOREHOLE DIRECTION:
					NA		NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+8270+NME D-EXP	500 ML AMBER GLASS	Ice	y	
1		8260B	125 ML SEPTUM AMBER GLASS	Ice	y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	y	
1		H3	500 ML POLY	Ice	y	
1		METALS+U-GEL	125 ML POLY	Ice	y	
1		Perchlorate+CN+ N03+pH	500 ML POLY	Ice	y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	y	

SAMPLE DESC:

Brownish gray tuff

SAMPLE COMMENTS:

NA

LOCATION DESC:

3a- 3

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 5 dpm
Beta/Gamma \leq 2010 dpm



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

73m 2/24/10

COLLECTED BY (PRINT)

T. McFarland

REVIEWED BY (PRINT) Jon Roberson

RELINQUISHED BY (Printed Name) Ryley Evans (Signature) 	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name)  (Signature)	Date/Time 2/24/10 1734
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8471

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:	OBT3		QBT 2
TIME COLLECTED (HH:MM)		1435		SUB-MEDIA:	TUFF 1		OK
PRS ID:	36-003(a)	OK		SAMPLE TECH CODE:	HA		
LOCATION ID:	36-610882			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0	5.6		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	6.1		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	OK		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice		
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None		
1		H3	500 ML POLY	Ice		
1		METALS+U-GEL	125 ML POLY	Ice		
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice		
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None		

SAMPLE DESC:

Gray tuff and clay

SAMPLE COMMENTS:

NR

LOCATION DESC:

3a5 7.6 ft from 3a6: 5 ft N from staked location 3a5

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 30 dpm
 Beta/Gamma \leq 2290 dpm

PID Ambient Reading = ppm 2/20/10

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Riley Evans	2/24/10	(Printed Name)	2/24/10
(Signature)	1634	(Signature)	4134
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8475

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		13/2		SUB-MEDIA:		TUFF 1	
PRS ID:	36-003(a)	ok		SAMPLE TECH CODE:		HA	
LOCATION ID:	36-610884	↓		FIELD QC TYPE:		NA	
LOCATION TYPE:	GENERIC	↓		FIELD PREP:		NA	
TOP DEPTH:	0	1.0		SAMPLE USAGE:		INV	
BOTTOM DEPTH:	0	2.5		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	R		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Gray tuff and red bricks

SAMPLE COMMENTS:

NA

LOCATION DESC:

3a-7

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 41 dpm
Beta/Gamma ≤ 2270 dpm

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


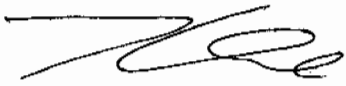
72m 2/24/10

COLLECTED BY (PRINT)

TLMcFarlane

REVIEWED BY (PRINT)

Jonherson

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name)  (Signature)	Date/Time 2/24/10 4:34
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8477

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA: QBT3		JR 2/24/10 OK QBT3	
TIME COLLECTED (HH:MM)		1255		SUB-MEDIA: TUFF 1		OK	
PRS ID: 36-003(a)		ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID: 36-610885		↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE: GENERIC		↓		FIELD PREP: NA		↓	
TOP DEPTH: 0		2.5		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH: 0		3.0		SCREEN/PORT DESC:		NA	
FIELD MATRIX: R		R		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Gray, buff

SAMPLE COMMENTS:

NA

LOCATION DESC:

3a-8

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 30 dpm

Beta/Gamma ≤ 1970 dpm



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

72m 2/24/10

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT) Jon Roberson

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name)  (Signature)	Date/Time 2/24/10 4134
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8479

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:	QBT3		OK Q3T2
TIME COLLECTED (HH:MM)		1300		SUB-MEDIA:	TUFF 1		OK
PRS ID:	36-003(a)		OK	SAMPLE TECH CODE:	HA		OK
LOCATION ID:	36-610886		↓	FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC		↓	FIELD PREP:	NA		↓
TOP DEPTH:	0		2.3	SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0		3.9	SCREEN/PORT DESC:			7m 2/24/10 ↓ NA
FIELD MATRIX:	R		R	EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+ N03+pH	500 ML POLY	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Gray, tuff and brown clay

SAMPLE COMMENTS:

NA

LOCATION DESC: 3a-10

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 25 dpm
Beta/Gamma ≤ 2100 dpm

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

7m 2/24/10

COLLECTED BY (PRINT)

TLM Farland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Rhey Lewis (Signature)	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name) (Signature)	Date/Time 2/24/10 4134
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8481

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:	QBT3	JR2/24/10	OK QBT2
TIME COLLECTED (HH:MM)		1237		SUB-MEDIA:	TUFF 1	OK	
PRS ID:	36-003(a)	OK		SAMPLE TECH CODE:	HA	OK	
LOCATION ID:	36-610887			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0	2.0		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	4.0		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	R		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES/NO/NA				WATER FLOWING: YES/NO/NA			
BOREHOLE DECLINATION:	NA			BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+ N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Gray, tuff and brown clay

SAMPLE COMMENTS:

NA

LOCATION DESC:

3a-9

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 30 dpm
 Beta/Gamma \leq 2010 dpm

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

73m 2/24/10

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Ryley Swans	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name)	Date/Time 2/24/10 4:34
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8484

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:	QBT3		Allh
TIME COLLECTED (HH:MM)		1425		SUB-MEDIA:	TUFF 1		NA
PRS ID:	36-003(a)	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	36-610889	↓		FIELD QC TYPE:	NA		↓
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA		↓
TOP DEPTH:	0	2.0		SAMPLE USAGE:	INV		↓
BOTTOM DEPTH:	0	3.0		SCREEN/PORT DESC:			NA
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES/NO/NA				WATER FLOWING: YES/NO/NA			
BOREHOLE DECLINATION:	NA			BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown sandy silt and clay

SAMPLE COMMENTS:

NA

LOCATION DESC:

3a-2

FIELD SCREENING/MEASUREMENT RESULTS:


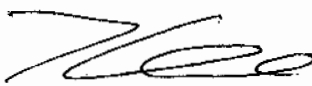
Alpha \leq 25 dpm
Beta/Gamma \leq 2110 dpm

PID $\frac{\text{Ambient Reading}}{\text{Reading}} = \text{ppm}$ 73m 2/24/10

COLLECTED BY (PRINT)

Th McFarlang

REVIEWED BY (PRINT) Jon Roberson

RELINQUISHED BY (Printed Name) Riley Adams (Signature) 	Date/Time 2/24/10 1434	RECEIVED BY (Printed Name)  (Signature)	Date/Time 2/24/10 4:34
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8485

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		1455		SUB-MEDIA:		TUFE1	
PRS ID: 36-003(a)		ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID: 36-610889		↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE: GENERIC		↓		FIELD PREP: NA		↓	
TOP DEPTH: 0		3.0		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH: 0		4.2		SCREEN/PORT DESC:		NA	
FIELD MATRIX: R		S		EXCAVATED: YES (NO) / NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES (NO) / NA			
BOREHOLE: YES (NO) / NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		8270C+NMED Exp	500 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		H3	500 ML POLY	Ice	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	
1		Perchlorate+CN+ N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	1	

SAMPLE DESC:

clayey sand, dark brown/reddish brown, moist, few organics

SAMPLE COMMENTS:

NA

FR: RE36-10-8493

LOCATION DESC:

3a-2

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 10 dpm
Beta/Gamma \leq 1734 dpm

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

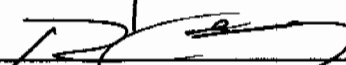
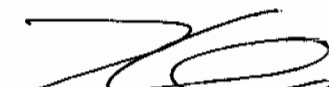
7am 2/24/10

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Riley Evans (Signature) 	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name)  (Signature)	Date/Time 2/24/10 4:34
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2511

EVENT NAME: 4th Qtr. FY09 - SWMU 36-003(a) - Threemile Canyon

SAMPLE ID: RE36-10-8493

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/24/2010	MEDIA:	NA		OK	
TIME COLLECTED (HH:MM)		1512	SUB-MEDIA:	OTHER			
PRS ID:	36-003(a)	OK	SAMPLE TECH CODE:	QC			
LOCATION ID:	UNK	36-610889	FIELD QC TYPE:	ER			
LOCATION TYPE:	GENERIC	OK	FIELD PREP:	UF			
TOP DEPTH:	0		SAMPLE USAGE:	QC			
BOTTOM DEPTH:	0		SCREEN/PORT DESC:				NA
FIELD MATRIX:	W		EXCAVATED: YES/NO/NA				
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	NA			
BOREHOLE: YES/NO/NA			BOREHOLE DECLINATION:	NA			
			BOREHOLE DIRECTION:	NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	METALS+U-GEL	1 LITER POLY	Nitric Acid	Y	
1		NO3NO2	250 ML POLY	Sulfuric Acid (Hydrogen Sulfate)	N	
1	Normal	SW-846:6850	250 ML POLY	Ice	Y	
1	Normal	TCN	500 ML POLY	Sodium Hydroxide	Y	

SAMPLE DESC: QC Sample of RE 36-10-8485

SAMPLE COMMENTS:

Rinse

LOCATION DESC:

NA

FIELD SCREENING/MEASUREMENT RESULTS:


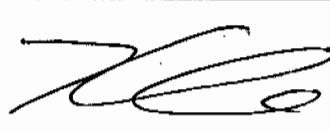
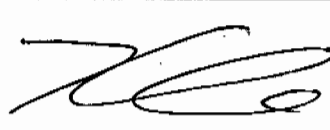
NA

COLLECTED BY (PRINT)

TL McFarlane

REVIEWED BY (PRINT)

Jon Roberson

RELINQUISHED BY (Printed Name) Riley Spans (Signature) 	Date/Time 2/24/10 1634	RECEIVED BY (Printed Name)  (Signature) 	Date/Time 2/24/10 4:34
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

DATA VALIDATION COVER SHEET

5119-1

Data Validation Cover Sheet

Records Use only

**Section I.**REQUEST NUMBER: 10-2139 VALIDATION DATE: 04/06/10 LAB CODE: GELCONTRACT LABORATORY NAME: GEL Laboratories LLCVALIDATOR: John A. Bailey ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

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

Section II. Completeness Check

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


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

1. The gamma spec results that were rejected by the laboratory due to high peak width, interference, low abundance, or no valid peak were qualified R,R5a.
2. An MS was not analyzed for tritium. However, an LCS was analyzed, met acceptance criteria and, thus, no sample results were qualified.
3. It should be noted that the parent sample for all QC analyses except tritium and gamma spec was a LANL sample from another RN. No sample data were qualified as a result.


Reviewed by: Susan Ball **Level:** I **Date:** 04/07/10

VALIDATOR'S SIGNATURE: _____


*John Bailey*DATE: 04/06/10

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

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

RAD ANALYTICAL DATA VALIDATION CHECKLIST	
5119-2 Rad Analytical Data Validation Checklist	Records Use only  ESTD 1947

Yes No N/A (Check One)				Assign Qualifier Listed Below If Criterion = Yes	
				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. The tracer is < the Lower Acceptance Level (LAL) but $\geq 10\%R$. Follow the external laboratory limits located within the associated data package. Tracer%R is not applicable for Gamma Spectroscopy.	UJ, R3a	J-, R3a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. The Tracer%R value is > the Upper Acceptance Limit (UAL). Follow the external laboratory limits located within the associated data package. Tracer%R is not applicable for Gamma Spectroscopy.	N/A	J+, R3b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Required tracer information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. Tracer%R is not applicable for Gamma Spectroscopy.	R, R3d	R, R3d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15. The LCS percent recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, R12	R, R12
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16. The LCS percent recovery was < the LAL but >10%. Follow the external laboratory limits located within the associated data package.	UJ, R12a	J-, R12a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17. The LCS percent recovery was > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, R12b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18. The LCS documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, R12c	R, R12c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19. Associated duplicate sample has DER or RER > the analytical laboratory's acceptance limits.	R, R10	J, J10
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20. The duplicate sample was not prepared and/or analyzed with the samples for unspecified reasons. The duplicate information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, R6	R, R6

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

Yes No N/A (Check One)				Assign Qualifier Listed Below If Criterion = Yes	
				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 29, 2010

Client Sample ID: RE36-10-8464
Sample ID: 248248001
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 9.54%

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	-0.00558	0.0256	+/-0.00279	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00534	0.0236	+/-0.0031	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	0.00711	0.020	+/-0.00358	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.971	0.113	+/-0.0943	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236	U	0.0546	0.0691	+/-0.0183	0.100	pCi/g						
Uranium-238		1.07	0.0796	+/-0.102	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0648	0.293	+/-0.0839	0.200	pCi/g		MXR1	03/19/10	1058	959280	4
Bismuth-211	UI	4.49	R,R5a	0.367	+/-0.315	pCi/g						
Bismuth-214		1.48		0.119	+/-0.114	pCi/g						
Cadmium-109	UI	2.79	R,R5a	1.46	+/-0.560	pCi/g						
Cerium-139	U	0.0185		0.0583	+/-0.016	pCi/g						
Cesium-134	UI	0.136	R,R5a	0.102	+/-0.0325	pCi/g						
Cesium-137	U	0.00378		0.071	+/-0.0206	pCi/g						
Cobalt-60	U	-0.000633		0.0588	+/-0.0175	pCi/g						
Europium-152	U	0.000894		0.181	+/-0.0572	pCi/g						
Lanthanum-140	U	-0.0264		0.228	+/-0.0745	pCi/g						
Lead-212		1.94		0.103	+/-0.116	pCi/g						
Lead-214		1.63		0.130	+/-0.123	pCi/g						
Mercury-203	UI	0.275	R,R5a	0.0697	+/-0.0592	pCi/g						
Potassium-40		30.2		0.520	+/-1.64	pCi/g						
Radium-223	U	-0.454		1.13	+/-0.395	pCi/g						
Radium-224	UI	5.61	R,R5a	1.10	+/-0.736	pCi/g						
Radium-226		1.48		0.119	+/-0.114	pCi/g						
Radium-228		1.87		0.239	+/-0.194	pCi/g						
Ruthenium-106	U	0.179		0.583	+/-0.163	pCi/g						
Sodium-22	U	-0.0132		0.0756	+/-0.023	pCi/g						
Strontium-85	UI	0.123	R,R5a	0.0902	+/-0.0241	pCi/g						

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

Report Date: March 29, 2010

Client Sample ID:
Sample ID:

RE36-10-8464
248248001

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"											
Thallium-208		0.575	0.0586	+/-0.0518	0.080	pCi/g					
Thorium-227	U	-0.0645	0.466	+/-0.135		pCi/g					
Thorium-231	U	-0.454	1.13	+/-0.395		pCi/g					
Thorium-234	U	1.36	2.67	+/-0.754	2.00	pCi/g					
Tin-113	U	-0.0389	0.081	+/-0.0252	0.100	pCi/g					
Uranium-235	U	0.041	0.385	+/-0.107	0.500	pCi/g					
Yttrium-88	U	0.020	0.071	+/-0.020	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
H3 "As Received"											
Tritium	U	39.5	246	+/-72.6	250	pCi/L		KXK2	03/19/10	1946 964056	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"	72.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	82.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	86.5	(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

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 29, 2010

Client Sample ID: RE36-10-8475
Sample ID: 248248002
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 8.84%

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	0.00205	0.0222	+/-0.00297	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00199	0.0207	+/-0.00247	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	0.00467	0.0175	+/-0.00271	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.03	0.105	+/-0.0967	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236		0.0643	0.064	+/-0.019	0.100	pCi/g						
Uranium-238		0.963	0.0737	+/-0.0916	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.198	0.306	+/-0.096	0.200	pCi/g		MXR1	03/19/10	1058	959280	4
Bismuth-211	UI	4.98	R,R5a	0.365	+/-0.290	pCi/g						
Bismuth-214		1.63		0.122	+/-0.105	pCi/g						
Cadmium-109	UI	4.46	R,R5a	1.40	+/-0.500	pCi/g						
Cerium-139	U	-0.000103	0.0585	+/-0.0174	0.050	pCi/g						
Cesium-134	U	0.0834	0.0993	+/-0.0364	0.100	pCi/g						
Cesium-137	U	0.0156	0.0776	+/-0.0229	0.100	pCi/g						
Cobalt-60	U	0.0147	0.0764	+/-0.0223	0.100	pCi/g						
Europium-152	U	-0.00858	0.180	+/-0.0689	0.200	pCi/g						
Lanthanum-140	U	-0.0466	0.205	+/-0.0658	pCi/g							
Lead-212		2.27	0.0981	+/-0.104	0.100	pCi/g						
Lead-214		1.81	0.133	+/-0.116	0.100	pCi/g						
Mercury-203	U	0.0441	0.0871	+/-0.0277	0.100	pCi/g						
Potassium-40		33.7	0.441	+/-1.56	1.00	pCi/g						
Radium-223	U	0.591	1.20	+/-0.381	pCi/g							
Radium-224	UI	6.53	R,R5a	1.05	+/-0.820	pCi/g						
Radium-226		1.63	0.122	+/-0.105	pCi/g							
Radium-228		2.50	0.258	+/-0.224	0.500	pCi/g						
Ruthenium-106	U	-0.0681	0.562	+/-0.171	0.800	pCi/g						
Sodium-22	U	-0.0231	0.0781	+/-0.0244	0.080	pCi/g						
Strontium-85	UI	0.132	R,R5a	0.0889	+/-0.0256	pCi/g						
Thallium-208		0.569	0.0621	+/-0.0458	0.080	pCi/g						

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

Report Date: March 29, 2010

Client Sample ID:
Sample ID:

RE36-10-8475
248248002

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	0.157	0.491	+/-0.146		pCi/g					
Thorium-231	U	0.591	1.20	+/-0.381		pCi/g					
Thorium-234		3.48	2.55	+/-1.11	2.00	pCi/g					
Tin-113	U	-0.00801	0.0858	+/-0.0253	0.100	pCi/g					
Uranium-235	U	0.103	0.393	+/-0.115	0.500	pCi/g					
Yttrium-88	U	0.0107	0.0673	+/-0.0198	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	-88.9	245	+/-69.5	250	pCi/L		KXX2	03/19/10	2038 964056	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"	83.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	91.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.6	(50%-105%)

Notes:

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

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

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

Report Date: March 29, 2010

Client Sample ID: RE36-10-8471
Sample ID: 248248003
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 11.5%

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	-0.00261	0.0186	+/-0.00207	0.050	pCi/g		JXD2	03/27/10	1301	969568	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00888	0.0225	+/-0.00662	0.050	pCi/g		JXD2	03/24/10	2109	964872	3
Plutonium-239/240	U	-0.00468	0.019	+/-0.00453	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.12	0.105	+/-0.103	0.100	pCi/g		JXD2	03/25/10	1416	964874	4
Uranium-235/236	U	0.0229	0.0639	+/-0.0122	0.100	pCi/g						
Uranium-238		1.08	0.0735	+/-0.100	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.174	0.229	+/-0.0715	0.200	pCi/g		MXR1	03/19/10	1059	959280	5
Bismuth-211	UI	4.98	R,R5a	0.317	+/-0.279	pCi/g						
Bismuth-214		1.52		0.108	+/-0.100	0.200	pCi/g					
Cadmium-109	UI	3.14	R,R5a	1.52	+/-0.500	pCi/g						
Cerium-139	U	0.00868		0.0546	+/-0.0161	0.050	pCi/g					
Cesium-134	UI	0.147	R,R5a	0.0924	+/-0.0415	0.100	pCi/g					
Cesium-137	U	-0.0439		0.0537	+/-0.018	0.100	pCi/g					
Cobalt-60	U	0.0142		0.0695	+/-0.0203	0.100	pCi/g					
Europium-152	U	0.0231		0.158	+/-0.0663	0.200	pCi/g					
Lanthanum-140	U	0.0692		0.196	+/-0.0621	pCi/g						
Lead-212		1.88		0.096	+/-0.0889	0.100	pCi/g					
Lead-214		1.81		0.115	+/-0.113	0.100	pCi/g					
Mercury-203	U	0.0605		0.0799	+/-0.0248	0.100	pCi/g					
Potassium-40		35.4		0.502	+/-1.59	1.00	pCi/g					
Radium-223	U	-0.88		1.11	+/-0.349	pCi/g						
Radium-224	UI	5.03	R,R5a	1.03	+/-0.596	pCi/g						
Radium-226		1.52		0.108	+/-0.100	pCi/g						
Radium-228		1.95		0.232	+/-0.185	0.500	pCi/g					
Ruthenium-106	U	-0.171		0.481	+/-0.151	0.800	pCi/g					
Sodium-22	U	-0.000896		0.0689	+/-0.0208	0.080	pCi/g					
Strontium-85	UI	0.139	R,R5a	0.0839	+/-0.0241	pCi/g						
Thallium-208		0.631		0.0584	+/-0.0477	0.080	pCi/g					

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8471
Sample ID: 248248003

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	0.425	+/-0.124		pCi/g						
Thorium-231	U	-0.88	1.11	+/-0.349		pCi/g						
Thorium-234	U	1.66	2.06	+/-0.867	2.00	pCi/g						
Tin-113	U	-0.0289	0.0775	+/-0.0235	0.100	pCi/g						
Uranium-235	U	0.000381	0.352	+/-0.105	0.500	pCi/g						
Yttrium-88	U	0.0136	0.0579	+/-0.0167	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	79.4	217	+/-65.5	250	pCi/L		KXK2	03/22/10	1624	964056	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"	84.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	88.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	88.9	(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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8485
Sample ID: 248248004
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-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	0.00588	0.0226	+/-0.00303	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00202	0.0248	+/-0.00716	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	0.00478	0.021	+/-0.0042	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.13	0.129	+/-0.110	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236	U	0.0677	0.0786	+/-0.0217	0.100	pCi/g						
Uranium-238		1.22	0.0905	+/-0.117	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0143	0.112	+/-0.0349	0.200	pCi/g		MXR1	03/19/10	1100	959280	4
Bismuth-211	UI	5.25	R,R5a	0.368	+/-0.388	pCi/g						
Bismuth-214		1.77		0.145	+/-0.142	pCi/g						
Cadmium-109	UI	4.78	R,R5a	1.06	+/-0.511	pCi/g						
Cerium-139	U	-0.0313		0.0524	+/-0.0165	pCi/g						
Cesium-134	UI	0.139	R,R5a	0.132	+/-0.0563	pCi/g						
Cesium-137	U	-0.0664		0.0745	+/-0.0264	pCi/g						
Cobalt-60	U	-0.00992		0.0926	+/-0.0288	pCi/g						
Europium-152	U	-0.00526		0.195	+/-0.0571	pCi/g						
Lanthanum-140	U	-0.148		0.239	+/-0.0866	pCi/g						
Lead-212		2.39		0.111	+/-0.142	pCi/g						
Lead-214		1.91		0.134	+/-0.150	pCi/g						
Mercury-203	U	-0.00523		0.0877	+/-0.0254	pCi/g						
Potassium-40		26.0		0.745	+/-1.56	pCi/g						
Radium-223	U	-0.00136		1.23	+/-0.416	pCi/g						
Radium-224	UI	5.36	R,R5a	1.19	+/-0.929	pCi/g						
Radium-226		1.77		0.145	+/-0.142	pCi/g						
Radium-228		2.43		0.267	+/-0.240	pCi/g						
Ruthenium-106	U	-0.21		0.641	+/-0.207	pCi/g						
Sodium-22	U	-0.0787		0.0759	+/-0.0294	pCi/g						
Strontium-85	U	0.0453		0.0895	+/-0.0285	pCi/g						
Thallium-208		0.711		0.0734	+/-0.0658	pCi/g						

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Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8485
Sample ID: 248248004

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	-0.306	0.455	+/-0.151		pCi/g						
Thorium-231	U	-0.00136	1.23	+/-0.416		pCi/g						
Thorium-234		2.65	1.12	+/-0.614	2.00	pCi/g						
Tin-113	U	0.00542	0.0941	+/-0.0276	0.100	pCi/g						
Uranium-235	UI	0.460	R,R5a	+/-0.151	0.500	pCi/g						
Yttrium-88	U	-0.00161	0.0741	+/-0.023	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	158	246	+/-76.0	250	pCi/L		KXK2	03/19/10	2223	964056	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"	82.0	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	79.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	73.6	(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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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8477
Sample ID: 248248005
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 12.8%

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	0.00014	0.0225	+/-0.00189	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.000927	0.0237	+/-0.00609	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	0.000998	0.020	+/-0.00311	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.973	0.114	+/-0.0948	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236	U	0.020	0.0698	+/-0.0101	0.100	pCi/g						
Uranium-238		0.948	0.0804	+/-0.093	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0452	0.295	+/-0.0929	0.200	pCi/g		MXR1	03/19/10	1100	959280	4
Bismuth-211	UI	4.74	R,R5a	0.262	+/-0.250	pCi/g						
Bismuth-214		1.28		0.085	+/-0.0923	0.200	pCi/g					
Cadmium-109	UI	3.17	R,R5a	1.30	+/-0.478	pCi/g						
Cerium-139	U	0.0129		0.0464	+/-0.0129	0.050	pCi/g					
Cesium-134	UI	0.128	R,R5a	0.0755	+/-0.0268	0.100	pCi/g					
Cesium-137	U	-0.0121		0.0498	+/-0.0149	0.100	pCi/g					
Cobalt-60	U	0.0219		0.0552	+/-0.0159	0.100	pCi/g					
Europium-152	U	-0.022		0.131	+/-0.0437	0.200	pCi/g					
Lanthanum-140	U	0.00499		0.171	+/-0.0538	pCi/g						
Lead-212		1.95		0.0769	+/-0.0866	0.100	pCi/g					
Lead-214		1.72		0.0951	+/-0.103	0.100	pCi/g					
Mercury-203	U	0.0301		0.0619	+/-0.0201	0.100	pCi/g					
Potassium-40		33.6		0.382	+/-1.47	1.00	pCi/g					
Radium-223	U	-0.276		0.840	+/-0.300	pCi/g						
Radium-224	UI	5.79	R,R5a	0.823	+/-0.634	pCi/g						
Radium-226		1.28		0.085	+/-0.0923	pCi/g						
Radium-228		2.14		0.184	+/-0.193	0.500	pCi/g					
Ruthenium-106	U	0.186		0.441	+/-0.128	0.800	pCi/g					
Sodium-22	U	-0.0305		0.0568	+/-0.0184	0.080	pCi/g					
Strontium-85	UI	0.0922	R,R5a	0.0614	+/-0.018	pCi/g						
Thallium-208		0.600		0.0474	+/-0.0415	0.080	pCi/g					

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Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID:
Sample ID:

RE36-10-8477
248248005

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	-0.0614	0.339	+/-0.101		pCi/g						
Thorium-231	U	-0.276	0.840	+/-0.300		pCi/g						
Thorium-234	U	1.73	2.54	+/-0.934	2.00	pCi/g						
Tin-113	U	-0.0218	0.061	+/-0.0182	0.100	pCi/g						
Uranium-235	U	-0.0794	0.301	+/-0.0925	0.500	pCi/g						
Yttrium-88	U	0.012	0.0456	+/-0.0131	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	98.2	244	+/-73.7	250	pCi/L		KXK2	03/19/10	2315	964056	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"	80.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	86.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	82.0	(50%-105%)

Notes:

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

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- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8479
Sample ID: 248248006
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 10.2%

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	0.00855	0.0217	+/-0.0036	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00689	0.0254	+/-0.00363	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	0.00926	0.0215	+/-0.00562	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.03	0.111	+/-0.0983	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236	U	0.0633	0.0679	+/-0.0182	0.100	pCi/g						
Uranium-238		1.17	0.0781	+/-0.109	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.00142	0.085	+/-0.0261	0.200	pCi/g		MXR1	03/19/10	1101	959280	4
Bismuth-211	UI	5.23	R,R5a	0.342	+/-0.367	pCi/g						
Bismuth-214		1.53		0.133	+/-0.143	pCi/g						
Cadmium-109	UI	4.64	R,R5a	0.730	+/-0.430	pCi/g						
Cerium-139	U	-0.00123		0.0478	+/-0.0135	pCi/g						
Cesium-134	UI	0.206	R,R5a	0.129	+/-0.0456	pCi/g						
Cesium-137	U	0.0657		0.103	+/-0.0288	pCi/g						
Cobalt-60	U	0.0556		0.0964	+/-0.0253	pCi/g						
Europium-152	U	0.00517		0.171	+/-0.0543	pCi/g						
Lanthanum-140	U	-0.0616		0.270	+/-0.0875	pCi/g						
Lead-212		2.30		0.0893	+/-0.131	pCi/g						
Lead-214		1.90		0.125	+/-0.143	pCi/g						
Mercury-203	U	0.0375		0.0729	+/-0.0226	pCi/g						
Potassium-40		32.3		0.666	+/-1.79	pCi/g						
Radium-223	U	-0.401		1.10	+/-0.390	pCi/g						
Radium-224	UI	6.50	R,R5a	0.959	+/-0.556	pCi/g						
Radium-226		1.53		0.133	+/-0.143	pCi/g						
Radium-228		2.44		0.310	+/-0.261	pCi/g						
Ruthenium-106	U	0.463		0.746	+/-0.206	pCi/g						
Sodium-22	U	0.0489		0.110	+/-0.0311	pCi/g						
Strontium-85	U	0.070		0.0836	+/-0.0244	pCi/g						
Thallium-208		0.628		0.0729	+/-0.062	pCi/g						

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 29, 2010

Client Sample ID:
Sample ID:

RE36-10-8479
248248006

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	0.0256	0.415	+/-0.121		pCi/g						
Thorium-231	U	-0.401	1.10	+/-0.390		pCi/g						
Thorium-234		2.03	0.838	+/-0.521	2.00	pCi/g						
Tin-113	U	-0.0239	0.0884	+/-0.0281	0.100	pCi/g						
Uranium-235	U	0.0211	0.303	+/-0.0925	0.500	pCi/g						
Yttrium-88	U	0.015	0.0839	+/-0.0241	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	68.9	245	+/-73.1	250	pCi/L		KXK2	03/20/10	0007	964056	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"	83.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	79.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	84.4	(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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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 29, 2010

Client Sample ID: RE36-10-8484
Sample ID: 248248007
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-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	-0.00204	0.020	+/-0.00218	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00234	0.0243	+/-0.00291	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	0.00183	0.0205	+/-0.00183	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.954	0.110	+/-0.0921	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236	U	0.0385	0.0671	+/-0.0139	0.100	pCi/g						
Uranium-238		0.842	0.0772	+/-0.0836	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0436	0.190	+/-0.0582	0.200	pCi/g		MXR1	03/19/10	1102	959280	4
Bismuth-211	UI	4.64	R,R5a	0.288	+/-0.311	pCi/g						
Bismuth-214		1.45		0.103	+/-0.110	pCi/g						
Cadmium-109	UI	4.76	R,R5a	1.08	+/-0.504	pCi/g						
Cerium-139	U	-0.011		0.0489	+/-0.0147	pCi/g						
Cesium-134	UI	0.164	R,R5a	0.0927	+/-0.0313	pCi/g						
Cesium-137	U	-0.0286		0.0534	+/-0.0165	pCi/g						
Cobalt-60	U	0.00922		0.0608	+/-0.0183	pCi/g						
Europium-152	U	0.0149		0.140	+/-0.0432	pCi/g						
Lanthanum-140	U	-0.0188		0.196	+/-0.0608	pCi/g						
Lead-212		2.20		0.0839	+/-0.130	pCi/g						
Lead-214		1.68		0.105	+/-0.122	pCi/g						
Mercury-203	U	0.0574		0.0752	+/-0.0205	pCi/g						
Potassium-40		32.1		0.445	+/-1.61	pCi/g						
Radium-223	U	0.173		0.951	+/-0.306	pCi/g						
Radium-224	UI	5.19	R,R5a	0.899	+/-0.695	pCi/g						
Radium-226		1.45		0.103	+/-0.110	pCi/g						
Radium-228		2.10		0.206	+/-0.205	pCi/g						
Ruthenium-106	U	-0.223		0.407	+/-0.134	pCi/g						
Sodium-22	U	0.0123		0.0707	+/-0.0212	pCi/g						
Strontium-85	U	0.0493		0.0729	+/-0.0231	pCi/g						
Thallium-208		0.625		0.0584	+/-0.0539	pCi/g						

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 29, 2010

Client Sample ID: RE36-10-8484
Sample ID: 248248007

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	-0.16	0.377	+/-0.111		pCi/g						
Thorium-231	U	0.173	0.951	+/-0.306		pCi/g						
Thorium-234		1.96	1.69	+/-0.793	2.00	pCi/g						
Tin-113	U	-0.00765	0.0675	+/-0.020	0.100	pCi/g						
Uranium-235	U	-0.211	0.302	+/-0.0946	0.500	pCi/g						
Yttrium-88	U	-0.0112	0.0469	+/-0.0153	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	-22.9	244	+/-70.6	250	pCi/L		KXK2	03/20/10	0059	964056	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"	91.3	(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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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 29, 2010

Client Sample ID: RE36-10-8481
Sample ID: 248248008
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 11.2%

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	0.000522	0.0221	+/-0.00253	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00558	0.0247	+/-0.00324	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	-0.00536	0.0209	+/-0.00326	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.958	0.115	+/-0.094	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236	U	0.0405	0.0705	+/-0.0146	0.100	pCi/g						
Uranium-238		1.02	0.0812	+/-0.0989	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.281	0.357	+/-0.109	0.200	pCi/g		MXR1	03/19/10	1103	959280	4
Bismuth-211	UI	5.38	R,R5a	0.431	+/-0.372	pCi/g						
Bismuth-214		1.50		0.136	+/-0.123	pCi/g						
Cadmium-109	UI	4.06	R,R5a	1.94	+/-0.661	pCi/g						
Cerium-139	U	-0.0289		0.066	+/-0.0207	pCi/g						
Cesium-134	UI	0.176	R,R5a	0.120	+/-0.0506	pCi/g						
Cesium-137	U	-0.0223		0.0744	+/-0.0228	pCi/g						
Cobalt-60	U	0.0232		0.0806	+/-0.0231	pCi/g						
Europium-152	U	-0.0694		0.202	+/-0.0769	pCi/g						
Lanthanum-140	U	0.0283		0.247	+/-0.0799	pCi/g						
Lead-212		2.40		0.123	+/-0.140	pCi/g						
Lead-214		1.95		0.164	+/-0.145	pCi/g						
Mercury-203	U	0.0318		0.0971	+/-0.0321	pCi/g						
Potassium-40		37.1		0.706	+/-2.26	pCi/g						
Radium-223	U	0.653		1.36	+/-0.449	pCi/g						
Radium-224	UI	6.45	R,R5a	1.32	+/-0.906	pCi/g						
Radium-226		1.50		0.136	+/-0.123	pCi/g						
Radium-228		2.28		0.277	+/-0.261	pCi/g						
Ruthenium-106	U	0.114		0.699	+/-0.203	pCi/g						
Sodium-22	U	-0.0105		0.0892	+/-0.0271	pCi/g						
Strontium-85	UI	0.113	R,R5a	0.104	+/-0.0333	pCi/g						
Thallium-208		0.751		0.0641	+/-0.0612	pCi/g						

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 29, 2010

Client Sample ID: RE36-10-8481
Sample ID: 248248008

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	0.305	0.568	+/-0.163		pCi/g					
Thorium-231	U	0.653	1.36	+/-0.449		pCi/g					
Thorium-234	U	0.481	3.18	+/-0.933	2.00	pCi/g					
Tin-113	U	-0.0211	0.0953	+/-0.0293	0.100	pCi/g					
Uranium-235	U	0.126	0.467	+/-0.141	0.500	pCi/g					
Yttrium-88	U	0.00184	0.0621	+/-0.0189	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	-19.8	245	+/-71.1	250	pCi/L		KXK2	03/20/10	0151 964056	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"	82.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	81.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	84.5	(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

Friday, February 26, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2139

LOS ALAMOS

REQUEST NUMBER: 10-2139

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/28/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

248248

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-8464	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8464	1	POLY	H3	Ice	R
RE36-10-8475	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8475	1	POLY	H3	Ice	R
RE36-10-8471	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8471	1	POLY	H3	Ice	R
RE36-10-8485	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8485	1	POLY	H3	Ice	R
RE36-10-8477	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8477	1	POLY	H3	Ice	R
RE36-10-8479	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8479	1	POLY	H3	Ice	R
RE36-10-8484	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8484	1	POLY	H3	Ice	R
RE36-10-8481	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8481	1	POLY	H3	Ice	R

Relinquished By:

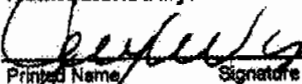
Date

Time

Received By:

Date

Time

 2/26/10 1400 Patricia Dover-Dent P. A. Dent 2/27/10 09:10
 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

Friday, February 26, 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: 2/26/2010

TURNAROUND/REPORT DUE: 3/28/2010

TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature:

[Handwritten Signature]

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-301.1	1	RE36-10-8464	R	2/24/2010	
		1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	
		1	RE36-10-8479	R	2/24/2010	
		1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8485	R	2/24/2010	
	EPA-906.0	1	RE36-10-8464	R	2/24/2010	

These Samples are on:

LANL Request Number: 10-2139
Per Agreement Number: 126310011
Project Cost Code: MR3A05529ED0

Friday, February 26, 2010

Page 2 of 3

REQUEST NUMBER: 10-2139

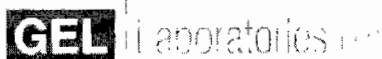
PRIORITY	METHOD CODE	CNTR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-808.0	1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	
		1	RE36-10-8479	R	2/24/2010	
		1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8485	R	2/24/2010	
	HASL-300:AM-241	1	RE36-10-8464	R	2/24/2010	
		1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	
		1	RE36-10-8479	R	2/24/2010	
		1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8485	R	2/24/2010	
	HASL-300:ISOPU	1	RE36-10-8464	R	2/24/2010	
		1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	
		1	RE36-10-8479	R	2/24/2010	
		1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8485	R	2/24/2010	
	HASL-300:ISOU	1	RE36-10-8464	R	2/24/2010	
		1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	

REQUEST NUMBER: 10-2139

Friday, February 26, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE38-10-8481	R	2/24/2010	
		1	RE38-10-8484	R	2/24/2010	
		1	RE38-10-8485	R	2/24/2010	

Final Page of REQUEST NUMBER 10-2139



a member of The GEL Group LLC



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

March 06, 2010

www.gel.com

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

Re: LANL ER Project
Work Order: 248248
SDG: 10-2139

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on February 27, 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: 10-2139
Enclosures

Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Work Order #: 248248
SDG: 10-2139

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Case Narrative

**Case Narrative for
Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Workorder #: 248248
SDG #: 10-2139**

March 06, 2010

Laboratory Identification:

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

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on February 27, 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 original chain of custody was received 3/2/10. 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 10/11C 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>
248248001	RE36-10-8464
248248002	RE36-10-8475
248248003	RE36-10-8471
248248004	RE36-10-8485
248248005	RE36-10-8477
248248006	RE36-10-8479
248248007	RE36-10-8484
248248008	RE36-10-8481

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 06 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

Friday, February 26, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2139

LOS ALAMOS

REQUEST NUMBER: 10-2139

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/28/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

248248

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-8464	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8464	1	POLY	H3	Ice	R
RE36-10-8475	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8475	1	POLY	H3	Ice	R
RE36-10-8471	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8471	1	POLY	H3	Ice	R
RE36-10-8485	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8485	1	POLY	H3	Ice	R
RE36-10-8477	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8477	1	POLY	H3	Ice	R
RE36-10-8479	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8479	1	POLY	H3	Ice	R
RE36-10-8484	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8484	1	POLY	H3	Ice	R
RE36-10-8481	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE36-10-8481	1	POLY	H3	Ice	R

Relinquished By:

Date

Time

Received By:

Date

Time

[Signature]
Printed Name Signature

2/26/10

1400

[Signature]
Printed Name Signature

PATRICK DOVER-DEW

P. A. Dew

2/27/10 09:10

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature

Project Cost Code: MR3A05529E00

LAB REQUEST COMMENTS:

Signature:

PRIORITY	METHOD CODE	CNT/NR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE36-10-8464	R	2/24/2010	
		1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	
		1	RE36-10-8479	R	2/24/2010	
		1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8485	R	2/24/2010	
	EPA:906.0	1	RE36-10-8464	R	2/24/2010	

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-906.0	1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	
		1	RE36-10-8479	R	2/24/2010	
		1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8485	R	2/24/2010	
	HASL-300:AM-241	1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	
		1	RE36-10-8479	R	2/24/2010	
		1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8485	R	2/24/2010	
	HASL-300:ISOPU	1	RE36-10-8464	R	2/24/2010	
		1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	
		1	RE36-10-8479	R	2/24/2010	
		1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8485	R	2/24/2010	
	HASL-300:ISOU	1	RE36-10-8464	R	2/24/2010	
		1	RE36-10-8471	R	2/24/2010	
		1	RE36-10-8475	R	2/24/2010	
		1	RE36-10-8477	R	2/24/2010	

Friday, February 26, 2010

REQUEST NUMBER: 10-2139

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE36-10-8481	R	2/24/2010	
		1	RE36-10-8484	R	2/24/2010	
		1	RE36-10-8485	R	2/24/2010	

Final Page of REQUEST NUMBER 10-2139

SAMPLE RECEIPT & REVIEW FORM

Client: LANL			SDG/ARCOC/Work Order: 10-2147		
Received By: Patricia Dover-Dent			Date Received: 2/27/10		
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 1-6C 10,11C
3 Chain of custody documents included with shipment?	X		X	<i>The original COC rec'd 3/2/10</i>
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 2525 1C 7209 7850 2570 5C
 7209 7850 2606 1C 7209 7850 2558 6C
 7209 7850 2547 1C 7209 7850 2536 6C
 7209 7850 2639 2C 7209 7850 2591 6C
 7209 7850 2580 2C 7209 7850 2514 10C
 7209 7850 2499 2C 7209 7850 2628 11C
 7209 7850 2617 3C 7209 7850 2503 11C
 7209 7850 2569 4C

Subject: Sample Receipt for 2/27/10

From: Dionne Francis <Dionne.Francis@gel.com>

Date: Mon, 01 Mar 2010 13:52:03 -0500

To: "Keith R. Greene" <kgreene@lanl.gov>, Joylene Valdez <joylenev@lanl.gov>, Valerie Davis <vsd@gel.com>

Keith,

The lab did not receive any original chain of custodies.

RN 10-2149: the lab did not receive the RAD poly container for sample WSTTH-10-13314.

RN 10-2148: the lab did not receive the GrossG container for sample WSTTH-10-13314

RN 10-2145: the lab did not receive the 40ml vial container for sample RE46-10-13543.

RN 10-2098: the Metals container for sample WST16-10-12239 will be preserved prior to analysis.

The following containers were rec'd without a COC:

RE36-10-7533 and 7535

250 poly Perchlorate, 500ml poly TCN, 1L poly Metals+U

RE36-10-7416 thru 7420, 7477 thru 7490, 7492 thru 7500, 7521 thru 7523

125ml poly Metals, 500ml amber glass 8270+NMED Exp, 500ml poly Perchlorate

RE36-10-7491

500ml amber glass H3, 8270+NMED Exp

Thanks,

Dionne

--

Dionne Francis

Project Manager Assistant

GEL Laboratories, LLC

2040 Savage Road

Charleston, SC (USA) 29407

Direct: 843.769.7376 Ext. 4432

Main: 843.556.8171

Fax: 843.766.1178

E-mail: daf@gel.com

Web: www.gel.com

Let the Bible fill the memory, rule the heart, and guide the feet.

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

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 26FEB10
ACTWGT: 54.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

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

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 26FEB10
ACTWGT: 52.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: MR3A0223CY10

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: MR2A0515BYD0

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1 of 2
TRKH 0201 7209 7850 2525
NM MASTER NM

SATURDAY ### A1
PRIORITY OVERNIGHT

X0 CHSA



LOS ALAMOS, NM 87545
UNITED STATES US

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TO VALERIE DAVIS
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1 of 2
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NM MASTER NM

SATURDAY ### A1
PRIORITY OVERNIGHT

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1 of 2
TRKH 0201 7209 7850 2606
NM MASTER NM

SATURDAY ### A1
PRIORITY OVERNIGHT

X0 CHSA



LOS ALAMOS, NM 87545
UNITED STATES US

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REF: MR3A0223CY10

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2 of 2
TRKH 0201 7209 7850 2639
NM MASTER NM

SATURDAY ### A1
PRIORITY OVERNIGHT

X0 CHSA



29407
SC-US
CHS

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 26FEB10
ACTWGT: 57.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: MR2A0515BYD0

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

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 26FEB10
ACTWGT: 58.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

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REF: MR3A0223CY10

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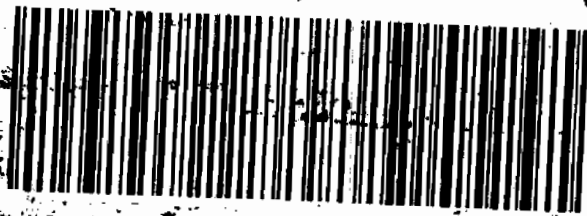


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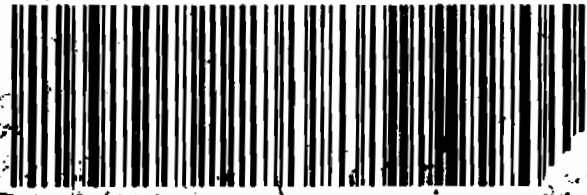


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LOS ALAMOS, NM 87545
UNITED STATES US

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TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: MR2A0515BYD0

3c

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 53.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

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REF: MR2A0515BYD0

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0263 7209 7850 2617

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PRIORITY OVERNIGHT

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TRKH 1 of 2
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NM MASTER NM

SATURDAY ### A1
PRIORITY OVERNIGHT

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JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 28FEB10
ACTWGT: 63.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

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VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: MR3A0223CY10

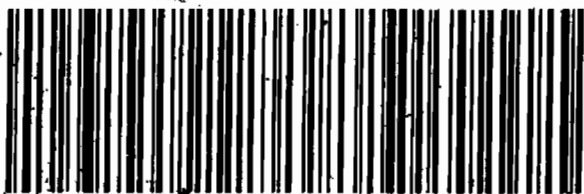
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LOS ALAMOS, NM 87545
UNITED STATES US

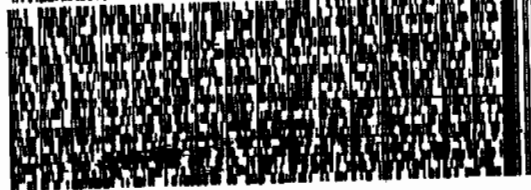
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VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: MR3A0223CY10

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2 of 2
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str# 7209 7850 2525 0201
SATURDAY ### A1
PRIORITY OVERNIGHT

X0 CHSA

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CHS



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

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 28FEB10
ACTWGT: 58.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

6c
VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: MR3A0223FCY10

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2 of 2
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PRIORITY OVERNIGHT

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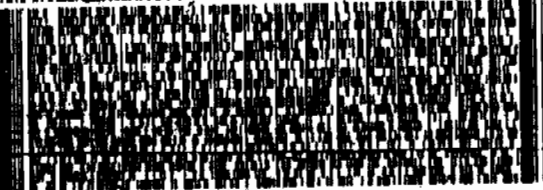
UNITED STATES US

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VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: MR2A0515BYD0

UNITED STATES US



2 of 2
MPS# 7209 7850 2591
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SATURDAY ### A1
PRIORITY OVERNIGHT

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29407
SC-US
CHS



ORIGIN ID: SAFA (805) 865-0171
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DRU 03
LOS ALAMOS, NM 87545
UNITED STATES US
SHIP DATE: 26FEB10
CTWGT: 39.0 LB MAN
CAD: 0014176/CAFE2450
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-0171
REF: MR3A0223CY10

10c

ORIGIN ID: SAFA (805) 865-0171
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DRU 03
LOS ALAMOS, NM 87545
UNITED STATES US
SHIP DATE: 26FEB10
CTWGT: 39.0 LB MAN
CAD: 0014176/CAFE2450
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-0171
REF: MR3A0223CY10

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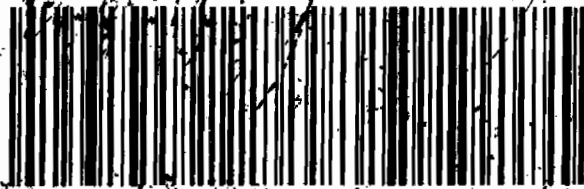
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3 of 3
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SATURDAY ### A1
PRIORITY OVERNIGHT

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29407
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1 of 2
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Matrn 7209 7850 2499 (0201)
SATURDAY ### A1
PRIORITY OVERNIGHT

X0 CHSA

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CHS



ORIGIN ID: SAFA (805) 865-0171
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DRU 03
LOS ALAMOS, NM 87545
UNITED STATES US

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-0171
REF: MR3A0223CY10

SHIP DATE: 26FEB10
CTWGT: 40.0 LB MAN
CAD: 0014176/CAFE2450
BILL SENDER

11c



2 of 3
NPS# 7209 7850 2503
Matrn 7209 7850 2499 (0201)
SATURDAY ### A1
PRIORITY OVERNIGHT

X0 CHSA

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SC-US
CHS

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier Explanation

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

< Result is less than value reported

> Result is greater than value reported

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL

A The TIC is a suspected aldol-condensation product

B Target analyte was detected in the associated blank

B Metals-Either presence of analyte detected in the associated blank, or
MDL/IDL < sample value < PQL

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

C Analyte has been confirmed by GC/MS analysis

D Results are reported from a diluted aliquot of the sample

d 5-day BOD-The 2:1 depletion requirement was not met for this sample

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

E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria

H Analytical holding time was exceeded

h Preparation or preservation holding time was exceeded

J Value is estimated

N Metals-The Matrix spike sample recovery is not within specified control limits

N Organics-Presumptive evidence based on mass spectral library search to make a tentative
identification of the analyte (TIC). Quantitation is based on nearest internal standard
response factor

N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration
by 4X or more

ND Analyte concentration is not detected above the reporting limit

UI Gamma Spectroscopy-Uncertain identification

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

Y QC Samples were not spiked with this compound

Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Los Alamos National Laboratory (LANL)
SDG 10-2139**

Method/Analysis Information

Product: AM241
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 964871
Prep Batch Number: 959187

Sample ID	Client ID
248248001	RE36-10-8464
248248002	RE36-10-8475
248248004	RE36-10-8485
248248005	RE36-10-8477
248248006	RE36-10-8479
248248007	RE36-10-8484
248248008	RE36-10-8481
1202070038	Method Blank (MB)
1202070039	248258001(RE46-10-13534) Sample Duplicate (DUP)
1202070040	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 1202070038 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248258001 (RE46-10-13534). The QC was from LANL work order 248258.

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:	969568
Prep Batch Number:	959187

Sample ID	Client ID
248248003	RE36-10-8471
1202081812	Method Blank (MB)
1202081813	248248003(RE36-10-8471) Sample Duplicate (DUP)
1202081814	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 1202081812 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248248003 (RE36-10-8471). The QC was from LANL work order 248248.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The Am-241 blank, 1202081812 (MB), result is greater than 1.65 times the CSU but less than the MDC.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

Sample 248248003 (RE36-10-8471) was repreppe to verify activity.

Miscellaneous Information:

Data Exception (DER) Documentation

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

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	ISOPU
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	964872
Prep Batch Number:	959187

Sample ID	Client ID
248248001	RE36-10-8464
248248002	RE36-10-8475
248248003	RE36-10-8471
248248004	RE36-10-8485
248248005	RE36-10-8477
248248006	RE36-10-8479
248248007	RE36-10-8484
248248008	RE36-10-8481
1202070043	Method Blank (MB)
1202070044	248258001(RE46-10-13534) Sample Duplicate (DUP)
1202070045	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 1202070043 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248258001 (RE46-10-13534). The QC was from LANL work order 248258.

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: ISOU

Analytical Method: DOE EML HASL-300, U-02-RC Modified

Prep Method: Dry Soil Prep
Analytical Batch Number: 964874
Prep Batch Number: 959187

Sample ID	Client ID
248248001	RE36-10-8464
248248002	RE36-10-8475
248248003	RE36-10-8471
248248004	RE36-10-8485
248248005	RE36-10-8477
248248006	RE36-10-8479
248248007	RE36-10-8484
248248008	RE36-10-8481
1202070047	Method Blank (MB)
1202070048	248258001(RE46-10-13534) Sample Duplicate (DUP)
1202070049	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 1202070047 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248258001 (RE46-10-13534). The QC was from LANL work order 248258.

QC Information

All of the QC samples met the required acceptance limits.

CSU

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

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

Data Exception (DER) Documentation

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

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:	959280
Prep Batch Number:	959187

Sample ID	Client ID
248248001	RE36-10-8464
248248002	RE36-10-8475
248248003	RE36-10-8471
248248004	RE36-10-8485
248248005	RE36-10-8477
248248006	RE36-10-8479
248248007	RE36-10-8484
248248008	RE36-10-8481
1202057355	Method Blank (MB)
1202057356	248248001(RE36-10-8464) Sample Duplicate (DUP)
1202057357	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, July 2009, August 2009, October 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: 248248001 (RE36-10-8464). The QC was from LANL work order 248248.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The method blank 1202057355 (MB) result is greater than 1.65 times the CSU but less than the MDC for Bi-214, Hg-203, and Ra-226.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

Data Exception (DER) Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Blank Decision Level

The method blank 1202057355 (MB) result is greater than the decision level but less than the MDC for Hg-203.

Qualifier information

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to high peak-width.	Mercury-203	248248001	RE36-10-8464
		Thorium-234	1202057356	RE36-10-8464(248248001DUP)
UI	Data rejected due to interference.	Bismuth-211	248248001	RE36-10-8464
			248248002	RE36-10-8475
			248248003	RE36-10-8471
			248248004	RE36-10-8485
			248248005	RE36-10-8477
			248248006	RE36-10-8479
			248248007	RE36-10-8484
			248248008	RE36-10-8481
			1202057356	RE36-10-8464(248248001DUP)
		Cadmium-109	248248001	RE36-10-8464
			248248002	RE36-10-8475
			248248003	RE36-10-8471
			248248004	RE36-10-8485
			248248005	RE36-10-8477
			248248006	RE36-10-8479
			248248007	RE36-10-8484
			248248008	RE36-10-8481
			1202057356	RE36-10-8464(248248001DUP)
		Radium-224	248248001	RE36-10-8464
			248248002	RE36-10-8475
			248248003	RE36-10-8471
			248248004	RE36-10-8485
			248248005	RE36-10-8477
			248248006	RE36-10-8479
			248248007	RE36-10-8484
			248248008	RE36-10-8481

UI	Data rejected due to low abundance.	Cesium-134	1202057356	RE36-10-8464(248248001DUP)
			248248001	RE36-10-8464
			248248003	RE36-10-8471
			248248004	RE36-10-8485
			248248005	RE36-10-8477
			248248006	RE36-10-8479
			248248007	RE36-10-8484
			248248008	RE36-10-8481
		Strontium-85	1202057356	RE36-10-8464(248248001DUP)
			248248001	RE36-10-8464
			248248002	RE36-10-8475
			248248003	RE36-10-8471
			248248005	RE36-10-8477
			248248008	RE36-10-8481
			1202057356	RE36-10-8464(248248001DUP)
UI	Data rejected due to no valid peak.	Potassium-40	1202057355	MB for batch 959280
		Uranium-235	248248004	RE36-10-8485

Method/Analysis Information

Product: H3
Analytical Method: GL-RAD-A-002
Analytical Batch Number: 964056

Sample ID	Client ID
248248001	RE36-10-8464
248248002	RE36-10-8475
248248003	RE36-10-8471
248248004	RE36-10-8485
248248005	RE36-10-8477
248248006	RE36-10-8479
248248007	RE36-10-8484
248248008	RE36-10-8481
1202068216	Method Blank (MB)

1202068217 248248008(RE36-10-8481) Sample Duplicate (DUP)
1202068218 Laboratory Control Sample (LCS)

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

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

The blank volume is representative of the sample volume in this batch.

Designated QC

The following sample was used for QC: 248248008 (RE36-10-8481). The QC was from LANL work order 248248.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

Sample 248248003 (RE36-10-8471) was recounted due to high MDA.

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:

Shawn Thant 3/27/2010

Reviewer/Date: _____

SAMPLE DATA SUMMARY

GEL LABORATORIES LLC

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

Certificate of Analysis Report for

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

Client SDG: 10-2139 GEL Work Order: 248248

The Qualifiers in this report are defined as follows:

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

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

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

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

Reviewed by



GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 29, 2010

Client Sample ID: RE36-10-8464
Sample ID: 248248001
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 9.54%

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	-0.00558	0.0256	+/-0.00279	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00534	0.0236	+/-0.0031	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	0.00711	0.020	+/-0.00358	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.971	0.113	+/-0.0943	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236	U	0.0546	0.0691	+/-0.0183	0.100	pCi/g						
Uranium-238		1.07	0.0796	+/-0.102	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0648	0.293	+/-0.0839	0.200	pCi/g		MXR1	03/19/10	1058	959280	4
Bismuth-211	UI	4.49	0.367	+/-0.315		pCi/g						
Bismuth-214		1.48	0.119	+/-0.114	0.200	pCi/g						
Cadmium-109	UI	2.79	1.46	+/-0.560		pCi/g						
Cerium-139	U	0.0185	0.0583	+/-0.016	0.050	pCi/g						
Cesium-134	UI	0.136	0.102	+/-0.0325	0.100	pCi/g						
Cesium-137	U	0.00378	0.071	+/-0.0206	0.100	pCi/g						
Cobalt-60	U	-0.000633	0.0588	+/-0.0175	0.100	pCi/g						
Europium-152	U	0.000894	0.181	+/-0.0572	0.200	pCi/g						
Lanthanum-140	U	-0.0264	0.228	+/-0.0745		pCi/g						
Lead-212		1.94	0.103	+/-0.116	0.100	pCi/g						
Lead-214		1.63	0.130	+/-0.123	0.100	pCi/g						
Mercury-203	UI	0.275	0.0697	+/-0.0592	0.100	pCi/g						
Potassium-40		30.2	0.520	+/-1.64	1.00	pCi/g						
Radium-223	U	-0.454	1.13	+/-0.395		pCi/g						
Radium-224	UI	5.61	1.10	+/-0.736		pCi/g						
Radium-226		1.48	0.119	+/-0.114		pCi/g						
Radium-228		1.87	0.239	+/-0.194	0.500	pCi/g						
Ruthenium-106	U	0.179	0.583	+/-0.163	0.800	pCi/g						
Sodium-22	U	-0.0132	0.0756	+/-0.023	0.080	pCi/g						
Strontium-85	UI	0.123	0.0902	+/-0.0241		pCi/g						

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 29, 2010

Client Sample ID: RE36-10-8464
Sample ID: 248248001

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		0.575	0.0586	+/-0.0518	0.080	pCi/g					
Thorium-227	U	-0.0645	0.466	+/-0.135		pCi/g					
Thorium-231	U	-0.454	1.13	+/-0.395		pCi/g					
Thorium-234	U	1.36	2.67	+/-0.754	2.00	pCi/g					
Tin-113	U	-0.0389	0.081	+/-0.0252	0.100	pCi/g					
Uranium-235	U	0.041	0.385	+/-0.107	0.500	pCi/g					
Yttrium-88	U	0.020	0.071	+/-0.020	0.100	pCi/g					

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium	U	39.5	246	+/-72.6	250	pCi/L	KXK2	03/19/10	1946	964056	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"	72.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	82.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	86.5	(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

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 29, 2010

Client Sample ID: RE36-10-8464
Sample ID: 248248001

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.

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 29, 2010

Client Sample ID: RE36-10-8475
Sample ID: 248248002
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 8.84%

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	0.00205	0.0222	+/-0.00297	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00199	0.0207	+/-0.00247	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	0.00467	0.0175	+/-0.00271	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.03	0.105	+/-0.0967	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236		0.0643	0.064	+/-0.019	0.100	pCi/g						
Uranium-238		0.963	0.0737	+/-0.0916	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.198	0.306	+/-0.096	0.200	pCi/g		MXR1	03/19/10	1058	959280	4
Bismuth-211	UI	4.98	0.365	+/-0.290		pCi/g						
Bismuth-214		1.63	0.122	+/-0.105	0.200	pCi/g						
Cadmium-109	UI	4.46	1.40	+/-0.500		pCi/g						
Cerium-139	U	-0.000103	0.0585	+/-0.0174	0.050	pCi/g						
Cesium-134	U	0.0834	0.0993	+/-0.0364	0.100	pCi/g						
Cesium-137	U	0.0156	0.0776	+/-0.0229	0.100	pCi/g						
Cobalt-60	U	0.0147	0.0764	+/-0.0223	0.100	pCi/g						
Europium-152	U	-0.00858	0.180	+/-0.0689	0.200	pCi/g						
Lanthanum-140	U	-0.0466	0.205	+/-0.0658		pCi/g						
Lead-212		2.27	0.0981	+/-0.104	0.100	pCi/g						
Lead-214		1.81	0.133	+/-0.116	0.100	pCi/g						
Mercury-203	U	0.0441	0.0871	+/-0.0277	0.100	pCi/g						
Potassium-40		33.7	0.441	+/-1.56	1.00	pCi/g						
Radium-223	U	0.591	1.20	+/-0.381		pCi/g						
Radium-224	UI	6.53	1.05	+/-0.820		pCi/g						
Radium-226		1.63	0.122	+/-0.105		pCi/g						
Radium-228		2.50	0.258	+/-0.224	0.500	pCi/g						
Ruthenium-106	U	-0.0681	0.562	+/-0.171	0.800	pCi/g						
Sodium-22	U	-0.0231	0.0781	+/-0.0244	0.080	pCi/g						
Strontium-85	UI	0.132	0.0889	+/-0.0256		pCi/g						
Thallium-208		0.569	0.0621	+/-0.0458	0.080	pCi/g						

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Certificate of Analysis

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

Report Date: March 29, 2010

Client Sample ID: RE36-10-8475
Sample ID: 248248002

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	0.157	0.491	+/-0.146		pCi/g						
Thorium-231	U	0.591	1.20	+/-0.381		pCi/g						
Thorium-234		3.48	2.55	+/-1.11	2.00	pCi/g						
Tin-113	U	-0.00801	0.0858	+/-0.0253	0.100	pCi/g						
Uranium-235	U	0.103	0.393	+/-0.115	0.500	pCi/g						
Yttrium-88	U	0.0107	0.0673	+/-0.0198	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	-88.9	245	+/-69.5	250	pCi/L		KXK2	03/19/10	2038	964056	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"	83.6	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	91.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.6	(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
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID:
Sample ID:

RE36-10-8475
248248002

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 29, 2010

Client Sample ID: RE36-10-8471
Sample ID: 248248003
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 11.5%

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	-0.00261	0.0186	+/-0.00207	0.050	pCi/g		JXD2	03/27/10	1301	969568	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00888	0.0225	+/-0.00662	0.050	pCi/g		JXD2	03/24/10	2109	964872	3
Plutonium-239/240	U	-0.00468	0.019	+/-0.00453	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.12	0.105	+/-0.103	0.100	pCi/g		JXD2	03/25/10	1416	964874	4
Uranium-235/236	U	0.0229	0.0639	+/-0.0122	0.100	pCi/g						
Uranium-238		1.08	0.0735	+/-0.100	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.174	0.229	+/-0.0715	0.200	pCi/g		MXR1	03/19/10	1059	959280	5
Bismuth-211	UI	4.98	0.317	+/-0.279		pCi/g						
Bismuth-214		1.52	0.108	+/-0.100	0.200	pCi/g						
Cadmium-109	UI	3.14	1.52	+/-0.500		pCi/g						
Cerium-139	U	0.00868	0.0546	+/-0.0161	0.050	pCi/g						
Cesium-134	UI	0.147	0.0924	+/-0.0415	0.100	pCi/g						
Cesium-137	U	-0.0439	0.0537	+/-0.018	0.100	pCi/g						
Cobalt-60	U	0.0142	0.0695	+/-0.0203	0.100	pCi/g						
Europium-152	U	0.0231	0.158	+/-0.0663	0.200	pCi/g						
Lanthanum-140	U	0.0692	0.196	+/-0.0621		pCi/g						
Lead-212		1.88	0.096	+/-0.0889	0.100	pCi/g						
Lead-214		1.81	0.115	+/-0.113	0.100	pCi/g						
Mercury-203	U	0.0605	0.0799	+/-0.0248	0.100	pCi/g						
Potassium-40		35.4	0.502	+/-1.59	1.00	pCi/g						
Radium-223	U	-0.88	1.11	+/-0.349		pCi/g						
Radium-224	UI	5.03	1.03	+/-0.596		pCi/g						
Radium-226		1.52	0.108	+/-0.100		pCi/g						
Radium-228		1.95	0.232	+/-0.185	0.500	pCi/g						
Ruthenium-106	U	-0.171	0.481	+/-0.151	0.800	pCi/g						
Sodium-22	U	-0.000896	0.0689	+/-0.0208	0.080	pCi/g						
Strontium-85	UI	0.139	0.0839	+/-0.0241		pCi/g						
Thallium-208		0.631	0.0584	+/-0.0477	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8471
Sample ID: 248248003

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	0.425	+/-0.124		pCi/g					
Thorium-231	U	-0.88	1.11	+/-0.349		pCi/g					
Thorium-234	U	1.66	2.06	+/-0.867	2.00	pCi/g					
Tin-113	U	-0.0289	0.0775	+/-0.0235	0.100	pCi/g					
Uranium-235	U	0.000381	0.352	+/-0.105	0.500	pCi/g					
Yttrium-88	U	0.0136	0.0579	+/-0.0167	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	79.4	217	+/-65.5	250	pCi/L		KXK2	03/22/10	1624 964056	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"	84.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	88.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	88.9	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8471
Sample ID: 248248003

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 29, 2010

Client Sample ID: RE36-10-8485
Sample ID: 248248004
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-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	0.00588	0.0226	+/-0.00303	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00202	0.0248	+/-0.00716	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	0.00478	0.021	+/-0.0042	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.13	0.129	+/-0.110	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236	U	0.0677	0.0786	+/-0.0217	0.100	pCi/g						
Uranium-238		1.22	0.0905	+/-0.117	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0143	0.112	+/-0.0349	0.200	pCi/g		MXR1	03/19/10	1100	959280	4
Bismuth-211	UI	5.25	0.368	+/-0.388		pCi/g						
Bismuth-214		1.77	0.145	+/-0.142	0.200	pCi/g						
Cadmium-109	UI	4.78	1.06	+/-0.511		pCi/g						
Cerium-139	U	-0.0313	0.0524	+/-0.0165	0.050	pCi/g						
Cesium-134	UI	0.139	0.132	+/-0.0563	0.100	pCi/g						
Cesium-137	U	-0.0664	0.0745	+/-0.0264	0.100	pCi/g						
Cobalt-60	U	-0.00992	0.0926	+/-0.0288	0.100	pCi/g						
Europium-152	U	-0.00526	0.195	+/-0.0571	0.200	pCi/g						
Lanthanum-140	U	-0.148	0.239	+/-0.0866		pCi/g						
Lead-212		2.39	0.111	+/-0.142	0.100	pCi/g						
Lead-214		1.91	0.134	+/-0.150	0.100	pCi/g						
Mercury-203	U	-0.00523	0.0877	+/-0.0254	0.100	pCi/g						
Potassium-40		26.0	0.745	+/-1.56	1.00	pCi/g						
Radium-223	U	-0.00136	1.23	+/-0.416		pCi/g						
Radium-224	UI	5.36	1.19	+/-0.929		pCi/g						
Radium-226		1.77	0.145	+/-0.142		pCi/g						
Radium-228		2.43	0.267	+/-0.240	0.500	pCi/g						
Ruthenium-106	U	-0.21	0.641	+/-0.207	0.800	pCi/g						
Sodium-22	U	-0.0787	0.0759	+/-0.0294	0.080	pCi/g						
Strontium-85	U	0.0453	0.0895	+/-0.0285		pCi/g						
Thallium-208		0.711	0.0734	+/-0.0658	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8485
Sample ID: 248248004

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	-0.306	0.455	+/-0.151		pCi/g						
Thorium-231	U	-0.00136	1.23	+/-0.416		pCi/g						
Thorium-234		2.65	1.12	+/-0.614	2.00	pCi/g						
Tin-113	U	0.00542	0.0941	+/-0.0276	0.100	pCi/g						
Uranium-235	UI	0.460	0.354	+/-0.151	0.500	pCi/g						
Yttrium-88	U	-0.00161	0.0741	+/-0.023	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	158	246	+/-76.0	250	pCi/L		KXK2	03/19/10	2223	964056	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"	82.0	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	79.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	73.6	(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
- F Estimated Value
- H Analytical holding time was exceeded

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Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8485
Sample ID: 248248004

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 29, 2010

Client Sample ID: RE36-10-8477
Sample ID: 248248005
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 12.8%

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	0.00014	0.0225	+/-0.00189	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.000927	0.0237	+/-0.00609	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	0.000998	0.020	+/-0.00311	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.973	0.114	+/-0.0948	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236	U	0.020	0.0698	+/-0.0101	0.100	pCi/g						
Uranium-238		0.948	0.0804	+/-0.093	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0452	0.295	+/-0.0929	0.200	pCi/g		MXR1	03/19/10	1100	959280	4
Bismuth-211	UI	4.74	0.262	+/-0.250		pCi/g						
Bismuth-214		1.28	0.085	+/-0.0923	0.200	pCi/g						
Cadmium-109	UI	3.17	1.30	+/-0.478		pCi/g						
Cerium-139	U	0.0129	0.0464	+/-0.0129	0.050	pCi/g						
Cesium-134	UI	0.128	0.0755	+/-0.0268	0.100	pCi/g						
Cesium-137	U	-0.0121	0.0498	+/-0.0149	0.100	pCi/g						
Cobalt-60	U	0.0219	0.0552	+/-0.0159	0.100	pCi/g						
Europium-152	U	-0.022	0.131	+/-0.0437	0.200	pCi/g						
Lanthanum-140	U	0.00499	0.171	+/-0.0538		pCi/g						
Lead-212		1.95	0.0769	+/-0.0866	0.100	pCi/g						
Lead-214		1.72	0.0951	+/-0.103	0.100	pCi/g						
Mercury-203	U	0.0301	0.0619	+/-0.0201	0.100	pCi/g						
Potassium-40		33.6	0.382	+/-1.47	1.00	pCi/g						
Radium-223	U	-0.276	0.840	+/-0.300		pCi/g						
Radium-224	UI	5.79	0.823	+/-0.634		pCi/g						
Radium-226		1.28	0.085	+/-0.0923		pCi/g						
Radium-228		2.14	0.184	+/-0.193	0.500	pCi/g						
Ruthenium-106	U	0.186	0.441	+/-0.128	0.800	pCi/g						
Sodium-22	U	-0.0305	0.0568	+/-0.0184	0.080	pCi/g						
Strontium-85	UI	0.0922	0.0614	+/-0.018		pCi/g						
Thallium-208		0.600	0.0474	+/-0.0415	0.080	pCi/g						

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

Report Date: March 29, 2010

Client Sample ID: RE36-10-8477
Sample ID: 248248005

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	-0.0614	0.339	+/-0.101		pCi/g						
Thorium-231	U	-0.276	0.840	+/-0.300		pCi/g						
Thorium-234	U	1.73	2.54	+/-0.934	2.00	pCi/g						
Tin-113	U	-0.0218	0.061	+/-0.0182	0.100	pCi/g						
Uranium-235	U	-0.0794	0.301	+/-0.0925	0.500	pCi/g						
Yttrium-88	U	0.012	0.0456	+/-0.0131	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	98.2	244	+/-73.7	250	pCi/L		KXK2	03/19/10	2315	964056	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"	80.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	86.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	82.0	(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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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8477 Project: LANL01004
Sample ID: 248248005 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 29, 2010

Client Sample ID: RE36-10-8479
Sample ID: 248248006
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 10.2%

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	0.00855	0.0217	+/-0.0036	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00689	0.0254	+/-0.00363	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	0.00926	0.0215	+/-0.00562	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.03	0.111	+/-0.0983	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236	U	0.0633	0.0679	+/-0.0182	0.100	pCi/g						
Uranium-238		1.17	0.0781	+/-0.109	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.00142	0.085	+/-0.0261	0.200	pCi/g		MXR1	03/19/10	1101	959280	4
Bismuth-211	UI	5.23	0.342	+/-0.367		pCi/g						
Bismuth-214		1.53	0.133	+/-0.143	0.200	pCi/g						
Cadmium-109	UI	4.64	0.730	+/-0.430		pCi/g						
Cerium-139	U	-0.00123	0.0478	+/-0.0135	0.050	pCi/g						
Cesium-134	UI	0.206	0.129	+/-0.0456	0.100	pCi/g						
Cesium-137	U	0.0657	0.103	+/-0.0288	0.100	pCi/g						
Cobalt-60	U	0.0556	0.0964	+/-0.0253	0.100	pCi/g						
Europium-152	U	0.00517	0.171	+/-0.0543	0.200	pCi/g						
Lanthanum-140	U	-0.0616	0.270	+/-0.0875		pCi/g						
Lead-212		2.30	0.0893	+/-0.131	0.100	pCi/g						
Lead-214		1.90	0.125	+/-0.143	0.100	pCi/g						
Mercury-203	U	0.0375	0.0729	+/-0.0226	0.100	pCi/g						
Potassium-40		32.3	0.666	+/-1.79	1.00	pCi/g						
Radium-223	U	-0.401	1.10	+/-0.390		pCi/g						
Radium-224	UI	6.50	0.959	+/-0.556		pCi/g						
Radium-226		1.53	0.133	+/-0.143		pCi/g						
Radium-228		2.44	0.310	+/-0.261	0.500	pCi/g						
Ruthenium-106	U	0.463	0.746	+/-0.206	0.800	pCi/g						
Sodium-22	U	0.0489	0.110	+/-0.0311	0.080	pCi/g						
Strontium-85	U	0.070	0.0836	+/-0.0244		pCi/g						
Thallium-208		0.628	0.0729	+/-0.062	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8479
Sample ID: 248248006

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	0.0256	0.415	+/-0.121		pCi/g						
Thorium-231	U	-0.401	1.10	+/-0.390		pCi/g						
Thorium-234		2.03	0.838	+/-0.521	2.00	pCi/g						
Tin-113	U	-0.0239	0.0884	+/-0.0281	0.100	pCi/g						
Uranium-235	U	0.0211	0.303	+/-0.0925	0.500	pCi/g						
Yttrium-88	U	0.015	0.0839	+/-0.0241	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	68.9	245	+/-73.1	250	pCi/L		KXK2	03/20/10	0007	964056	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"	83.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	79.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	84.4	(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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Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8479
Sample ID: 248248006

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 29, 2010

Client Sample ID: RE36-10-8484
Sample ID: 248248007
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-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	-0.00204	0.020	+/-0.00218	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00234	0.0243	+/-0.00291	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	0.00183	0.0205	+/-0.00183	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.954	0.110	+/-0.0921	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236	U	0.0385	0.0671	+/-0.0139	0.100	pCi/g						
Uranium-238		0.842	0.0772	+/-0.0836	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0436	0.190	+/-0.0582	0.200	pCi/g		MXR1	03/19/10	1102	959280	4
Bismuth-211	UI	4.64	0.288	+/-0.311		pCi/g						
Bismuth-214		1.45	0.103	+/-0.110	0.200	pCi/g						
Cadmium-109	UI	4.76	1.08	+/-0.504		pCi/g						
Cerium-139	U	-0.011	0.0489	+/-0.0147	0.050	pCi/g						
Cesium-134	UI	0.164	0.0927	+/-0.0313	0.100	pCi/g						
Cesium-137	U	-0.0286	0.0534	+/-0.0165	0.100	pCi/g						
Cobalt-60	U	0.00922	0.0608	+/-0.0183	0.100	pCi/g						
Europium-152	U	0.0149	0.140	+/-0.0432	0.200	pCi/g						
Lanthanum-140	U	-0.0188	0.196	+/-0.0608		pCi/g						
Lead-212		2.20	0.0839	+/-0.130	0.100	pCi/g						
Lead-214		1.68	0.105	+/-0.122	0.100	pCi/g						
Mercury-203	U	0.0574	0.0752	+/-0.0205	0.100	pCi/g						
Potassium-40		32.1	0.445	+/-1.61	1.00	pCi/g						
Radium-223	U	0.173	0.951	+/-0.306		pCi/g						
Radium-224	UI	5.19	0.899	+/-0.695		pCi/g						
Radium-226		1.45	0.103	+/-0.110		pCi/g						
Radium-228		2.10	0.206	+/-0.205	0.500	pCi/g						
Ruthenium-106	U	-0.223	0.407	+/-0.134	0.800	pCi/g						
Sodium-22	U	0.0123	0.0707	+/-0.0212	0.080	pCi/g						
Strontium-85	U	0.0493	0.0729	+/-0.0231		pCi/g						
Thallium-208		0.625	0.0584	+/-0.0539	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8484
Sample ID: 248248007

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	-0.16	0.377	+/-0.111		pCi/g						
Thorium-231	U	0.173	0.951	+/-0.306		pCi/g						
Thorium-234		1.96	1.69	+/-0.793	2.00	pCi/g						
Tin-113	U	-0.00765	0.0675	+/-0.020	0.100	pCi/g						
Uranium-235	U	-0.211	0.302	+/-0.0946	0.500	pCi/g						
Yttrium-88	U	-0.0112	0.0469	+/-0.0153	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	-22.9	244	+/-70.6	250	pCi/L		KXK2	03/20/10	0059	964056	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"	91.3	(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 29, 2010

Client Sample ID: RE36-10-8484
Sample ID: 248248007

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 29, 2010

Client Sample ID: RE36-10-8481
Sample ID: 248248008
Matrix: R
Collect Date: 24-FEB-10
Receive Date: 27-FEB-10
Collector: Client
Moisture: 11.2%

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	0.000522	0.0221	+/-0.00253	0.050	pCi/g		JXD2	03/24/10	2056	964871	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00558	0.0247	+/-0.00324	0.050	pCi/g		JXD2	03/24/10	2109	964872	2
Plutonium-239/240	U	-0.00536	0.0209	+/-0.00326	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.958	0.115	+/-0.094	0.100	pCi/g		JXD2	03/25/10	1416	964874	3
Uranium-235/236	U	0.0405	0.0705	+/-0.0146	0.100	pCi/g						
Uranium-238		1.02	0.0812	+/-0.0989	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.281	0.357	+/-0.109	0.200	pCi/g		MXR1	03/19/10	1103	959280	4
Bismuth-211	UI	5.38	0.431	+/-0.372		pCi/g						
Bismuth-214		1.50	0.136	+/-0.123	0.200	pCi/g						
Cadmium-109	UI	4.06	1.94	+/-0.661		pCi/g						
Cerium-139	U	-0.0289	0.066	+/-0.0207	0.050	pCi/g						
Cesium-134	UI	0.176	0.120	+/-0.0506	0.100	pCi/g						
Cesium-137	U	-0.0223	0.0744	+/-0.0228	0.100	pCi/g						
Cobalt-60	U	0.0232	0.0806	+/-0.0231	0.100	pCi/g						
Europium-152	U	-0.0694	0.202	+/-0.0769	0.200	pCi/g						
Lanthanum-140	U	0.0283	0.247	+/-0.0799		pCi/g						
Lead-212		2.40	0.123	+/-0.140	0.100	pCi/g						
Lead-214		1.95	0.164	+/-0.145	0.100	pCi/g						
Mercury-203	U	0.0318	0.0971	+/-0.0321	0.100	pCi/g						
Potassium-40		37.1	0.706	+/-2.26	1.00	pCi/g						
Radium-223	U	0.653	1.36	+/-0.449		pCi/g						
Radium-224	UI	6.45	1.32	+/-0.906		pCi/g						
Radium-226		1.50	0.136	+/-0.123		pCi/g						
Radium-228		2.28	0.277	+/-0.261	0.500	pCi/g						
Ruthenium-106	U	0.114	0.699	+/-0.203	0.800	pCi/g						
Sodium-22	U	-0.0105	0.0892	+/-0.0271	0.080	pCi/g						
Strontium-85	UI	0.113	0.104	+/-0.0333		pCi/g						
Thallium-208		0.751	0.0641	+/-0.0612	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 29, 2010

Client Sample ID: RE36-10-8481
Sample ID: 248248008

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	0.305	0.568	+/-0.163		pCi/g						
Thorium-231	U	0.653	1.36	+/-0.449		pCi/g						
Thorium-234	U	0.481	3.18	+/-0.933	2.00	pCi/g						
Tin-113	U	-0.0211	0.0953	+/-0.0293	0.100	pCi/g						
Uranium-235	U	0.126	0.467	+/-0.141	0.500	pCi/g						
Yttrium-88	U	0.00184	0.0621	+/-0.0189	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	-19.8	245	+/-71.1	250	pCi/L		KXK2	03/20/10	0151	964056	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"	82.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	81.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	84.5	(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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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 29, 2010

Client Sample ID: RE36-10-8481
Sample ID: 248248008

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.

QUALITY CONTROL DATA

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QC Summary

Report Date: March 29, 2010

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Client : Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm
Los Alamos, New Mexico
Contact: Ms. Joylene Valdez
Workorder: 248248

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch	964871									
QC1202070039	248258001	DUP								
Americium-241		U	0.000365	U	0.00249	pCi/g	0.260	(0-1)	JXD2	03/25/1007:54
		TPU:	+/-0.00219		+/-0.0019					
		Yield:	85.1		88.2					
QC1202070040	LCS									
Americium-241		33.1			31.5	pCi/g	94.9	(75%-125%)		03/25/1007:54
		TPU:			+/-2.30					
		Yield:			99.4					
QC1202070038	MB									
Americium-241				U	0.00148	pCi/g				03/25/1007:54
		TPU:			+/-0.00427					
		Yield:			91.1					
Batch	964872									
QC1202070044	248258001	DUP								
Plutonium-238		U	0.00414	U	-0.000279	pCi/g	0.329	(0-1)	JXD2	03/24/1021:09
		TPU:	+/-0.00341		+/-0.00329					
		Yield:	87.9		87.4					
Plutonium-239/240		U	0.00878	U	0.0105	pCi/g	0.0875	(0-1)		
		TPU:	+/-0.00533		+/-0.00432					
		Yield:	87.9		87.4					
QC1202070045	LCS									
Plutonium-238					4.66	pCi/g		(75%-125%)		
		TPU:			+/-0.455					
		Yield:			88.2					
Plutonium-239/240		41.8			40.4	pCi/g	96.8	(75%-125%)		
		TPU:			+/-2.88					
		Yield:			88.2					
QC1202070043	MB									
Plutonium-238				U	0.00107	pCi/g				
		TPU:			+/-0.00332					
		Yield:			95.8					
Plutonium-239/240				U	-0.000838	pCi/g				
		TPU:			+/-0.00272					
		Yield:			95.8					
Batch	964874									
QC1202070048	248258001	DUP								
Uranium-233/234			0.885		0.929	pCi/g	0.127	(0-1)	JXD2	03/25/1012:59
		TPU:	+/-0.0878		+/-0.0858					
		Yield:	88.6		87.8					
Uranium-235/236		U	0.0549	U	0.0197	pCi/g	0.638	(0-1)		
		TPU:	+/-0.017		+/-0.0105					
		Yield:	88.6		87.8					
Uranium-238			0.905		0.891	pCi/g	0.0399	(0-1)		
		TPU:	+/-0.0893		+/-0.0829					

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QC Summary

Workorder: 248248

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	964874										
QC1202070049	LCS	Yield:	88.6	87.8							
Uranium-233/234				5.78	pCi/g					03/25/10	12:59
		TPU:		+/-0.520							
		Yield:		99.7							
Uranium-235/236			U	0.192	pCi/g						
		TPU:		+/-0.0615							
		Yield:		99.7							
Uranium-238	5.75			5.49	pCi/g		95.5	(75%-125%)			
		TPU:		+/-0.498							
		Yield:		99.7							
QC1202070047	MB										
Uranium-233/234			U	0.00911	pCi/g					03/25/10	12:59
		TPU:		+/-0.00412							
		Yield:		96.3							
Uranium-235/236			U	0.00517	pCi/g						
		TPU:		+/-0.00519							
		Yield:		96.3							
Uranium-238			U	0.00558	pCi/g						
		TPU:		+/-0.00282							
		Yield:		96.3							
Batch	969568										
QC1202081813	248248003	DUP									
Americium-241		U	-0.00261	U	0.00234	pCi/g	0.546	(0-1)	JXD2	03/27/10	13:01
		TPU:	+/-0.00207		+/-0.00246						
		Yield:	84.5		91.7						
QC1202081814	LCS										
Americium-241		33.1		36.4	pCi/g		110	(75%-125%)			
		TPU:		+/-2.41							
		Yield:		93.7							
QC1202081812	MB										
Americium-241			U	0.0062	pCi/g						
		TPU:		+/-0.00317							
		Yield:		89.1							
Rad Gamma Spec											
Batch	959280										
QC1202057356	248248001	DUP									
Americium-241		U	-0.0648	U	0.113	pCi/g	0.587	(0-1)	MXR1	03/19/10	13:09
		TPU:	+/-0.0839		+/-0.0675						
Bismuth-211		UI	4.49	UI	4.47	pCi/g	0.0169	(0-1)			
		TPU:	+/-0.315		+/-0.247						
Bismuth-214			1.48		1.47	pCi/g	0.0262	(0-1)			
		TPU:	+/-0.114		+/-0.0955						
Cadmium-109		UI	2.79	UI	2.19	pCi/g	0.289	(0-1)			
		TPU:	+/-0.560		+/-0.469						
Cerium-139		U	0.0185	U	0.00551	pCi/g	0.206	(0-1)			
		TPU:	+/-0.016		+/-0.0156						
Cesium-134		UI	0.136	UI	0.139	pCi/g	0.0245	(0-1)			
		TPU:	+/-0.0325		+/-0.0287						

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QC Summary

Workorder: 248248

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	959280										
Cesium-137	U	0.00378	U	0.000902	pCi/g	0.0375		(0-1)			
	TPU:	+/-0.0206		+/-0.0177							
Cobalt-60	U	-0.000633	U	-0.00125	pCi/g	0.00881		(0-1)			
	TPU:	+/-0.0175		+/-0.0172							
Europium-152	U	0.000894	U	0.0278	pCi/g	0.122		(0-1)			
	TPU:	+/-0.0572		+/-0.0533							
Lanthanum-140	U	-0.0264	U	0.0108	pCi/g	0.138		(0-1)			
	TPU:	+/-0.0745		+/-0.0601							
Lead-212		1.94		1.81	pCi/g	0.323		(0-1)			
	TPU:	+/-0.116		+/-0.0852							
Lead-214		1.63		1.62	pCi/g	0.0157		(0-1)			
	TPU:	+/-0.123		+/-0.100							
Mercury-203	UI	0.275	U	0.0224	pCi/g	1.57		(0-1)			
	TPU:	+/-0.0592		+/-0.0213							
Potassium-40		30.2		33.6	pCi/g	0.542		(0-1)			
	TPU:	+/-1.64		+/-1.48							
Radium-223	U	-0.454	U	-0.231	pCi/g	0.153		(0-1)			
	TPU:	+/-0.395		+/-0.335							
Radium-224	UI	5.61	UI	5.04	pCi/g	0.201		(0-1)			
	TPU:	+/-0.736		+/-0.660							
Radium-226		1.48		1.47	pCi/g	0.0262		(0-1)			
	TPU:	+/-0.114		+/-0.0955							
Radium-228		1.87		2.03	pCi/g	0.214		(0-1)			
	TPU:	+/-0.194		+/-0.186							
Ruthenium-106	U	0.179	U	0.0759	pCi/g	0.166		(0-1)			
	TPU:	+/-0.163		+/-0.145							
Sodium-22	U	-0.0132	U	0.0282	pCi/g	0.470		(0-1)			
	TPU:	+/-0.023		+/-0.021							
Strontium-85	UI	0.123	UI	0.108	pCi/g	0.168		(0-1)			
	TPU:	+/-0.0241		+/-0.0209							
Thallium-208		0.575		0.561	pCi/g	0.075		(0-1)			
	TPU:	+/-0.0518		+/-0.0442							
Thorium-227	U	-0.0645	U	0.0954	pCi/g	0.317		(0-1)			
	TPU:	+/-0.135		+/-0.118							
Thorium-231	U	-0.454	U	-0.231	pCi/g	0.153		(0-1)			
	TPU:	+/-0.395		+/-0.335							
Thorium-234	U	1.36	UI	2.78	pCi/g	0.437		(0-1)			
	TPU:	+/-0.754		+/-0.862							
Tin-113	U	-0.0389	U	0.00338	pCi/g	0.458		(0-1)			
	TPU:	+/-0.0252		+/-0.021							
Uranium-235	U	0.041	U	0.00475	pCi/g	0.0858		(0-1)			
	TPU:	+/-0.107		+/-0.104							
Yttrium-88	U	0.020	U	-0.0149	pCi/g	0.470		(0-1)			
	TPU:	+/-0.020		+/-0.017							
QC1202057357	LCS										
Americium-241	16.3			13.9	pCi/g		85.3 (75%-125%)			03/19/10	11:17
				+/-1.01							
Bismuth-211				2.98	pCi/g						
				+/-0.297							
Bismuth-214				0.732	pCi/g						
				+/-0.117							

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QC Summary

Workorder: 248248

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch	959280								
Cadmium-109			32.7	pCi/g					
		TPU:	+/-2.28						
Cerium-139		U	0.0165	pCi/g					
		TPU:	+/-0.0223						
Cesium-134		U	-0.00703	pCi/g					
		TPU:	+/-0.0479						
Cesium-137	5.69		5.75	pCi/g			101 (75%-125%)		
		TPU:	+/-0.198						
Cobalt-60	6.49		6.48	pCi/g			99.8 (75%-125%)		
		TPU:	+/-0.282						
Europium-152		U	-0.0494	pCi/g					
		TPU:	+/-0.0911						
Lanthanum-140		U	-0.00642	pCi/g					
		TPU:	+/-0.0731						
Lead-212			1.28	pCi/g					
		TPU:	+/-0.0912						
Lead-214			1.08	pCi/g					
		TPU:	+/-0.112						
Mercury-203		U	0.0334	pCi/g					
		TPU:	+/-0.030						
Potassium-40		U	0.782	pCi/g					
		TPU:	+/-0.303						
Radium-223		U	-1.24	pCi/g					
		TPU:	+/-0.571						
Radium-224			4.11	pCi/g					
		TPU:	+/-0.961						
Radium-226			0.732	pCi/g					
		TPU:	+/-0.117						
Radium-228			1.75	pCi/g					
		TPU:	+/-0.318						
Ruthenium-106		U	-0.193	pCi/g					
		TPU:	+/-0.277						
Sodium-22		U	-0.0326	pCi/g					
		TPU:	+/-0.0253						
Strontium-85		U	-0.0862	pCi/g					
		TPU:	+/-0.0412						
Thallium-208			0.382	pCi/g					
		TPU:	+/-0.0606						
Thorium-227		U	0.255	pCi/g					
		TPU:	+/-0.218						
Thorium-231		U	-1.24	pCi/g					
		TPU:	+/-0.571						
Thorium-234		U	-0.593	pCi/g					
		TPU:	+/-1.52						
Tin-113		U	0.0324	pCi/g					
		TPU:	+/-0.0406						
Uranium-235		U	-0.34	pCi/g					
		TPU:	+/-0.159						
Yttrium-88		U	0.0338	pCi/g					
		TPU:	+/-0.0223						
QC1202057355	MB								

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QC Summary

Workorder: 248248

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	959280									
Americium-241		U	-0.0868	pCi/g						
	TPU:		+/-0.0464							
Bismuth-211		U	-0.0533	pCi/g						
	TPU:		+/-0.0677							
Bismuth-214		U	0.0422	pCi/g						
	TPU:		+/-0.0238							
Cadmium-109		U	0.102	pCi/g						
	TPU:		+/-0.181							
Cerium-139		U	0.00316	pCi/g						
	TPU:		+/-0.00821							
Cesium-134		U	0.00294	pCi/g						
	TPU:		+/-0.0128							
Cesium-137		U	-0.023	pCi/g						
	TPU:		+/-0.0111							
Cobalt-60		U	-0.00358	pCi/g						
	TPU:		+/-0.0097							
Europium-152		U	-0.00339	pCi/g						
	TPU:		+/-0.0287							
Lanthanum-140		U	-0.0152	pCi/g						
	TPU:		+/-0.0246							
Lead-212		U	-0.00233	pCi/g						
	TPU:		+/-0.0189							
Lead-214		U	0.00219	pCi/g						
	TPU:		+/-0.0236							
Mercury-203		U	0.0356	pCi/g						
	TPU:		+/-0.0111							
Potassium-40		UI	0.319	pCi/g						
	TPU:		+/-0.133							
Radium-223		U	0.0967	pCi/g						
	TPU:		+/-0.163							
Radium-224		U	-0.0336	pCi/g						
	TPU:		+/-0.179							
Radium-226		U	0.0422	pCi/g						
	TPU:		+/-0.0238							
Radium-228		U	-0.0592	pCi/g						
	TPU:		+/-0.0415							
Ruthenium-106		U	0.0254	pCi/g						
	TPU:		+/-0.0882							
Sodium-22		U	-0.0361	pCi/g						
	TPU:		+/-0.0114							
Strontium-85		U	-0.0635	pCi/g						
	TPU:		+/-0.0159							
Thallium-208		U	0.00926	pCi/g						
	TPU:		+/-0.0108							
Thorium-227		U	0.0636	pCi/g						
	TPU:		+/-0.0765							
Thorium-231		U	0.0967	pCi/g						
	TPU:		+/-0.163							
Thorium-234		U	-0.944	pCi/g						
	TPU:		+/-0.451							

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QC Summary

Workorder: 248248

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	959280										
Tin-113			U	-0.0016	pCi/g						
		TPU:		+/-0.012							
Uranium-235			U	-0.0664	pCi/g						
		TPU:		+/-0.0629							
Yttrium-88			U	-0.00235	pCi/g						
		TPU:		+/-0.0102							
Rad Liquid Scintillation											
Batch	964056										
QC1202068217	248248008	DUP									
Tritium		U	-19.8	U	69.3	pCi/L	0.308	(0-1)	KXX2	03/20/1004:27	
		TPU:	+/-71.1		+/-73.5						
QC1202068218	LCS										
Tritium	5530				6040	pCi/L	109	(80%-120%)		03/19/1010:47	
		TPU:			+/-505						
QC1202068216	MB										
Tritium		U	-16.2		pCi/L					03/20/1003:35	
		TPU:			+/-70.3						

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
- 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.

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

QC Summary

Workorder: 248248

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
h	Preparation or preservation holding time was exceeded									

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

** Indicates analyte is a surrogate compound.

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

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

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

RAW DATA

Radiochemistry Batch Checklist, Rev10

Batch# 964871 Product: Am Date: 3/26/10

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

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: JopLM1- 3/26/10Secondary Review Performed By: NyLHua 3/26/10

3/27

LANL

✓

Am/Cm Que Sheet

12-MAR-10

Batch #: 964871 Analyst: JXD2 First Client Due Date: 27-MAR-10 Internal Due Date: 16-MAR-10 Comments:
Tracer(s): Am241/242m244 Tracer Code: 445-96-2-S Expiration Date: 05/11/10 Vol: 0.1
LCS Isotope(s): Am241/Cm244 LCS Code(s): Expiration Date: Vol(s):
Spike Isotope(s): Am241/Cm244 Spike Code(s): Expiration Date: Vol(s):
Prep Date: 03/10/10 Initials: JXD Pipet ID: 2771058 Balance ID: 50410272 Witness: JXD 3/16/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Aliquot (g/11 fl)	Am/Cm Det #
248248001-1	RE36-10-8464	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	1	1	1.258	241
248248002-1	RE36-10-8475	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	2	2	1.251	242
248248003-1	RE36-10-8471	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	3	3	1.210	243
248248004-1	RE36-10-8485	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	4	4	1.252	244
248248005-1	RE36-10-8477	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	5	5	1.254	245
248248006-1	RE36-10-8479	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	6	6	1.250	246
248248007-1	RE36-10-8484	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	7	7	1.252	247
248248008-1	RE36-10-8481	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	8	8	1.251	248
248250001-1	RE36-10-8285	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	9	9	1.255	249
248250002-1	RE36-10-8286	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	10	10	1.251	250
248250003-1	RE36-10-8283	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	11	11	1.250	251
248250004-1	RE36-10-8284	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	12	12	1.258	252
248258001-1	RE46-10-13534	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	13	13	1.254	89
248258002-1	RE46-10-13539	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	14	14	1.258	89
248258003-1	RE46-10-13538	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	15	15	1.254	89
248258004-1	RE46-10-13536	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	16	16	1.256	90
248258005-1	RE46-10-13537	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	17	17	1.253	91
248258006-1	RE46-10-13535	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	18	18	1.255	93
248258007-1	RE46-10-13542	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	19	19	1.253	94
1202070038-1	MB for batch 964871	MB		.05 pCi/g	SOIL	QC ACCOUNT		20	20	1	232
1202070039-1	RE46-10-13534/248258001DUP)	DUP		.05 pCi/g	SOIL	QC ACCOUNT	25-FEB-10	21	21	1.252	233
1202070040-1	LCS for batch 964871	LCS		.05 pCi/g	SOIL	QC ACCOUNT		22	22	0.101	234

* SLM 0244-B exp 04/30/20 0.101g

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

Solid Sample Dissolution by: LEACH or DIGESTION

Circle One

Data Reviewed By: JANAL-3/26/10

Blank Correction Report

Batch ID 964871

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202070039	DUP	Americium-241	1.25 g	0.00249	0.0019	0.0211	.001184	pCi/g	YES
1202070040	LCS	Americium-241	0.101 g	31.5	2.30	0.230	.014653465	pCi/g	NO
1202070038	MB	Americium-241	1.00 g	0.00148	0.00427	0.026	.00148	pCi/g	YES
248248001	RE36-10-8464	Americium-241	1.26 g	-0.00558	0.00279	0.0256	.001174603	pCi/g	YES
248248002	RE36-10-8475	Americium-241	1.25 g	0.00205	0.00297	0.0222	.001184	pCi/g	YES
248248004	RE36-10-8485	Americium-241	1.25 g	0.00588	0.00303	0.0226	.001184	pCi/g	YES
248248005	RE36-10-8477	Americium-241	1.25 g	0.00014	0.00189	0.0225	.001184	pCi/g	YES
248248006	RE36-10-8479	Americium-241	1.25 g	0.00855	0.0036	0.0217	.001184	pCi/g	NO
248248007	RE36-10-8484	Americium-241	1.25 g	-0.00204	0.00218	0.020	.001184	pCi/g	YES
248248008	RE36-10-8481	Americium-241	1.25 g	0.000522	0.00253	0.0221	.001184	pCi/g	YES
248250001	RE36-10-8285	Americium-241	1.26 g	0.0183	0.00546	0.0227	.001174603	pCi/g	NO
248250002	RE36-10-8286	Americium-241	1.25 g	0.00414	0.00287	0.0204	.001184	pCi/g	YES
248250003	RE36-10-8283	Americium-241	1.25 g	0.00139	0.0021	0.0207	.001184	pCi/g	YES
248250004	RE36-10-8284	Americium-241	1.26 g	0.00103	0.00142	0.0208	.001174603	pCi/g	YES
248258001	RE46-10-13534	Americium-241	1.25 g	0.000365	0.00219	0.0314	.001184	pCi/g	YES
248258002	RE46-10-13539	Americium-241	1.26 g	-0.000118	0.00164	0.0194	.001174603	pCi/g	YES
248258003	RE46-10-13538	Americium-241	1.25 g	-8.11E-05	0.00174	0.0255	.001184	pCi/g	YES
248258004	RE46-10-13536	Americium-241	1.26 g	0.00285	0.00211	0.0228	.001174603	pCi/g	YES
248258005	RE46-10-13537	Americium-241	1.25 g	-0.00182	0.00155	0.0227	.001184	pCi/g	YES
248258006	RE46-10-13535	Americium-241	1.26 g	-0.00208	0.00264	0.0242	.001174603	pCi/g	YES
248258007	RE46-10-13542	Americium-241	1.25 g	0.0017	0.00176	0.0258	.001184	pCi/g	YES

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964871
SAMPLE ID : S0248248001_AM
SAMPLE QTY : 1.258 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 72.404

CHAMBER : 241
DETECTOR S/N : 79434
AVERAGE %EFFICIENCY : 39.4182
COUNT DATE : 24-MAR-2010 20:56:00
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

TRACER ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9166E+00 dpm
RESULTS : 2.1117E+00 dpm

MS/MSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

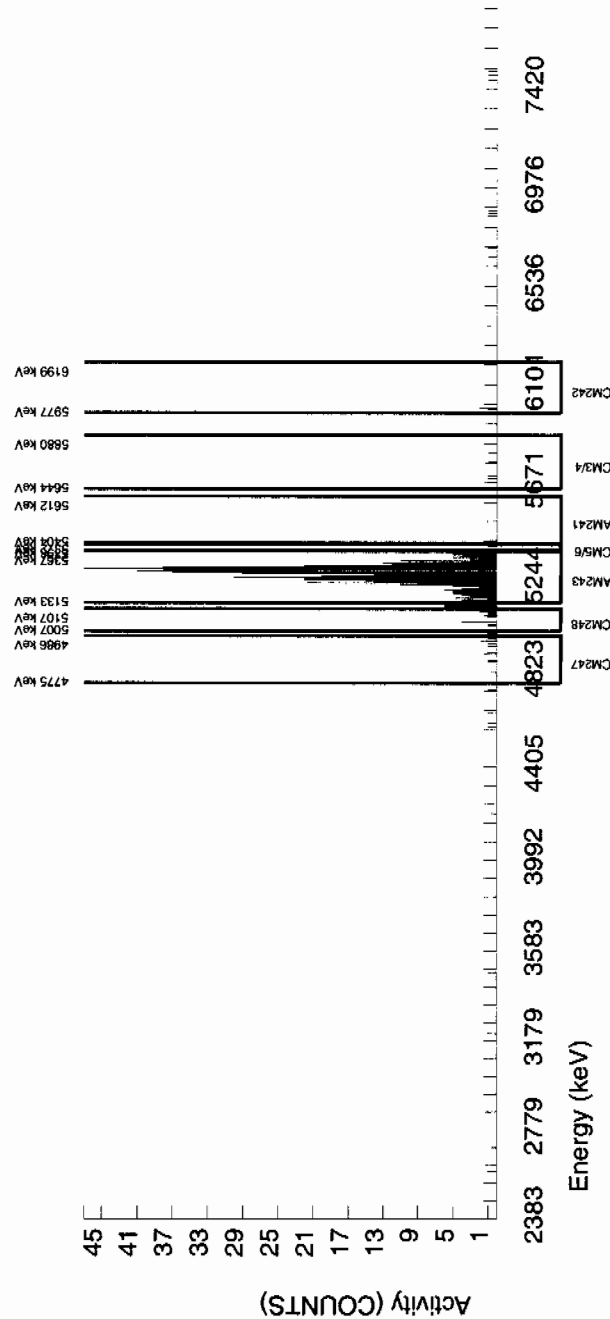
LCS/LCSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

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	5507.665	0.000	0.000	-3.200	2.160	2.7707	99.94000	-5.58E-03	2.79E-03	1.04E-02	2.56E-02	2.79E-03
AM243	5270.000	5270.204	52.665	598.000	598.000	0.000	0.0000	99.78000	1.04E+00	8.06E-02	0.00E+00	4.73E-03	4.27E-02
CM-242	6102.000	6002.255	7.221	3.000	3.000	0.000	4.0092	100.0000	5.92E-03	3.44E-03	1.51E-02	3.49E-02	3.42E-03
CM-3/4	5795.020	5745.736	108.165	4.000	3.280	0.720	4.8510	100.0000	5.73E-03	3.73E-03	1.82E-02	4.12E-02	3.72E-03
CM-5/6	5386.000	5382.488	7.221	4.000	4.000	0.000	6.1294	86.09000	8.10E-03	4.08E-03	2.68E-02	5.90E-02	4.05E-03
CM-247	4946.000	4923.939	7.221	10.000	9.280	0.720	6.3427	79.30000	2.04E-02	7.25E-03	3.01E-02	6.61E-02	7.13E-03
CM-248	5078.600	5069.883	4.917	14.000	13.280	0.720	11.0244	91.00000	2.54E-02	7.48E-03	4.55E-02	9.63E-02	7.30E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964871
SAMPLE ID : S0248248002_AM
SAMPLE QTY : 1.251 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 83.570

CHAMBER : 242
DETECTOR S/N : 79435
AVERAGE %EFFICIENCY : 39.5199
COUNT DATE : 24-MAR-2010 20:56:04
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B242.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W242.CNF:30
CAL DATE : 28-FEB-2010

TRACER ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 2.4373E+00 dpm

MS/MSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

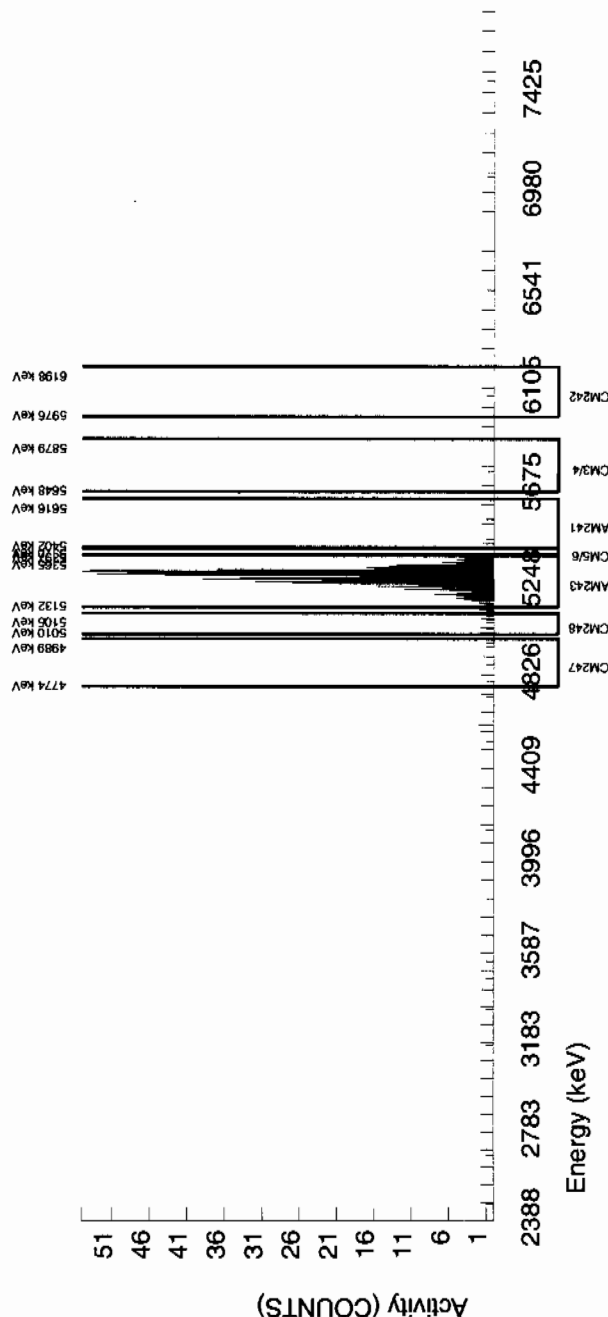
LCS/LCSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

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	5478.150	5531.491	0.000	4.000	1.356	1.440	2.7707	99.94000	2.05E-03	2.97E-03	9.06E-03	2.22E-02	2.97E-03
AM-243	5270.000	5274.306	55.492	692.000	692.000	0.000	0.0000	99.78000	1.05E+00	7.79E-02	0.00E+00	4.11E-03	3.99E-02
CM-242	6102.000	6072.932	4.912	1.000	1.000	0.000	4.0092	100.0000	1.71E-03	1.72E-03	1.31E-02	3.03E-02	1.71E-03
CM-3/4	5795.020	5738.902	4.912	1.000	-0.440	1.440	4.8510	100.0000	-6.68E-04	2.17E-03	1.58E-02	3.58E-02	2.17E-03
CM-5/6	5386.000	5374.291	0.000	4.000	4.000	0.000	6.1294	86.09000	7.04E-03	3.55E-03	2.33E-02	5.13E-02	3.52E-03
CM-247	4946.000	4896.746	191.569	7.000	6.280	0.720	6.3427	79.30000	1.20E-02	5.29E-03	2.61E-02	5.74E-02	5.24E-03
CM-248	5078.600	5075.781	0.000	12.000	12.000	0.000	11.0244	91.00000	2.00E-02	5.90E-03	3.96E-02	8.37E-02	5.76E-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 : 964871
SAMPLE ID : S0248248004_AM
SAMPLE QTY : 1.252 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 82.008

CHAMBER : 244
DETECTOR S/N : 79437
AVERAGE %EFFICIENCY : 39.5742
COUNT DATE : 24-MAR-2010 20:56:10
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B244.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W244.CNF:30
CAL DATE : 28-FEB-2010

TRACER ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 2.3918E+00 dpm

MS/MSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

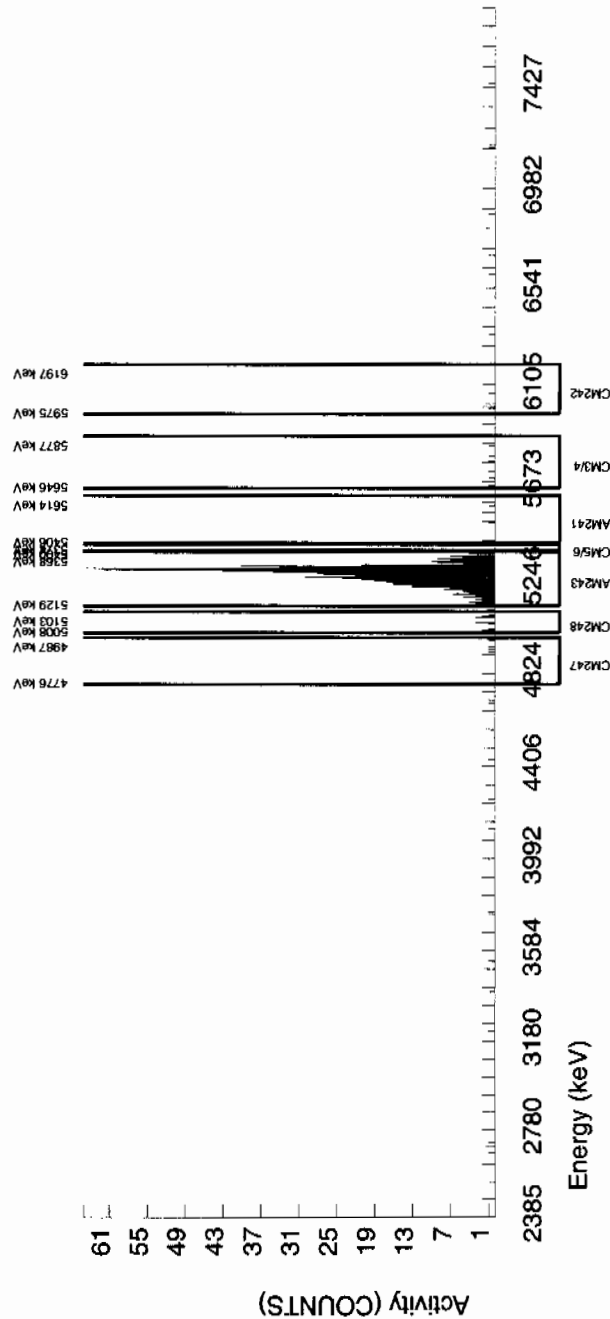
LCS/LCSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

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	5534.766	4.906	5.000	3.817	0.000	2.7707	99.94000	5.88E-03	3.03E-03	9.21E-03	2.26E-02	3.01E-03
AM-243	5270.000	5273.762	26.838	680.000	680.000	0.000	0.0000	99.78000	1.05E+00	7.82E-02	0.00E+00	4.18E-03	4.02E-02
CM-242	6102.000	6024.696	4.906	4.000	4.000	0.000	4.0092	100.00000	6.97E-03	3.51E-03	1.33E-02	3.08E-02	3.49E-03
CM-3/4	5795.020	5747.297	166.815	6.000	3.840	2.160	4.8510	100.00000	5.93E-03	4.26E-03	1.61E-02	3.64E-02	4.25E-03
CM-5/6	5386.000	5386.897	0.000	2.000	2.000	0.000	6.1294	86.09000	3.58E-03	2.54E-03	2.37E-02	5.21E-02	2.53E-03
CM-247	4946.000	4874.483	6.082	10.000	10.000	0.000	6.3427	79.30000	1.94E-02	6.26E-03	2.66E-02	5.84E-02	6.14E-03
CM-248	5078.600	5066.227	62.464	14.000	13.280	0.720	11.0244	91.00000	2.25E-02	6.61E-03	4.02E-02	8.51E-02	6.45E-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 : 964871
SAMPLE ID : S0248248005_AM
SAMPLE QTY : 1.254 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 80.383

CHAMBER : 245
DETECTOR S/N : 79438
AVERAGE %EFFICIENCY : 40.5519
COUNT DATE : 24-MAR-2010 20:56:13
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B245.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W245.CNF:31
CAL DATE : 28-FEB-2010

TRACER ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 2.3444E+00 dpm

MS/MSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

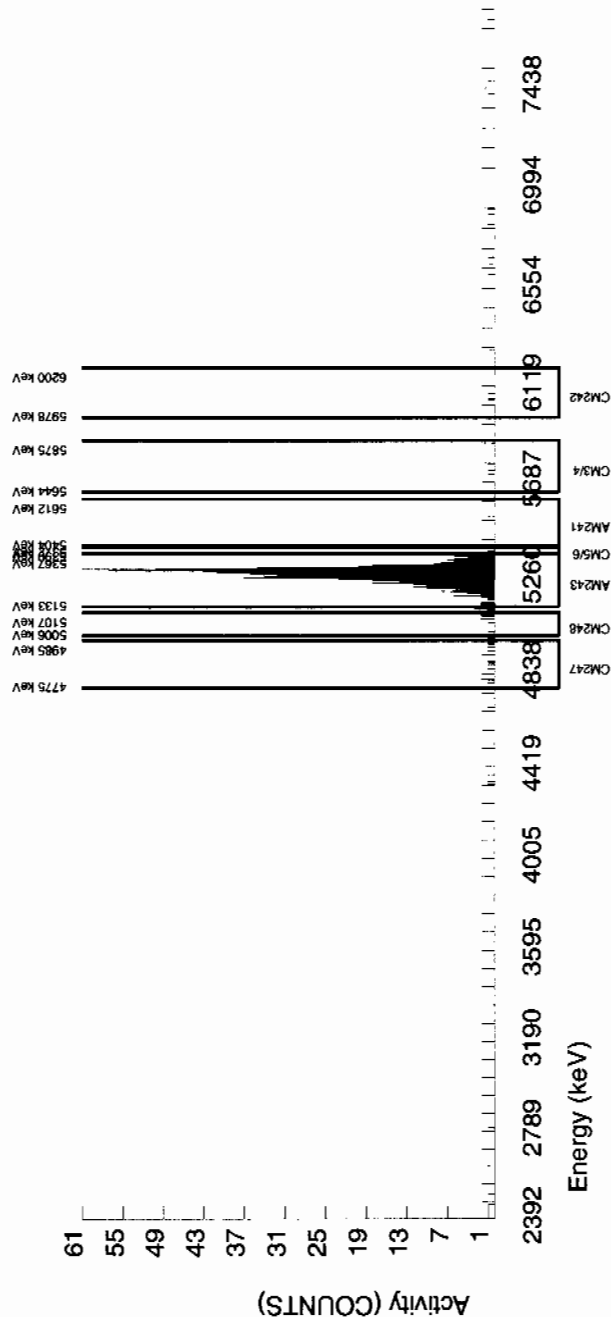
LCS/LCSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

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	5574.843	64.159	2.000	0.092	0.720	2.7707	99.94000	1.40E-04	1.89E-03	9.15E-03	2.25E-02	1.89E-03
AM-243	5270.000	5281.049	48.051	683.000	683.000	0.000	0.0000	99.78000	1.05E+00	7.80E-02	0.00E+00	4.16E-03	4.01E-02
CM-242	6102.000	6063.017	54.288	4.000	4.000	0.000	4.0092	100.0000	6.93E-03	3.49E-03	1.32E-02	3.06E-02	3.46E-03
CM-3/4	5795.020	5757.097	49.353	4.000	4.000	0.000	4.8510	100.0000	6.14E-03	3.10E-03	1.60E-02	3.62E-02	3.07E-03
CM-5/6	5386.000	5378.837	0.000	11.000	11.000	0.000	6.1294	86.09000	1.96E-02	6.03E-03	2.35E-02	5.18E-02	5.90E-03
CM-247	4946.000	4888.177	4.935	12.000	12.000	0.000	6.3427	79.30000	2.32E-02	6.85E-03	2.64E-02	5.81E-02	6.69E-03
CM-248	5078.600	5072.999	19.741	8.000	8.000	0.000	11.0244	91.00000	1.35E-02	4.83E-03	4.00E-02	8.46E-02	4.76E-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 : 964871
SAMPLE ID : S0248248006_AM
SAMPLE QTY : 1.250 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 83.546

CHAMBER : 246
DETECTOR S/N : 78912
AVERAGE %EFFICIENCY : 40.4448
COUNT DATE : 24-MAR-2010 20:56:16
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B246.CNF:91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W246.CNF:32
CAL DATE : 28-FEB-2010

TRACER
ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9166E+00 dpm
RESULTS : 2.4367E+00 dpm

MS/MSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

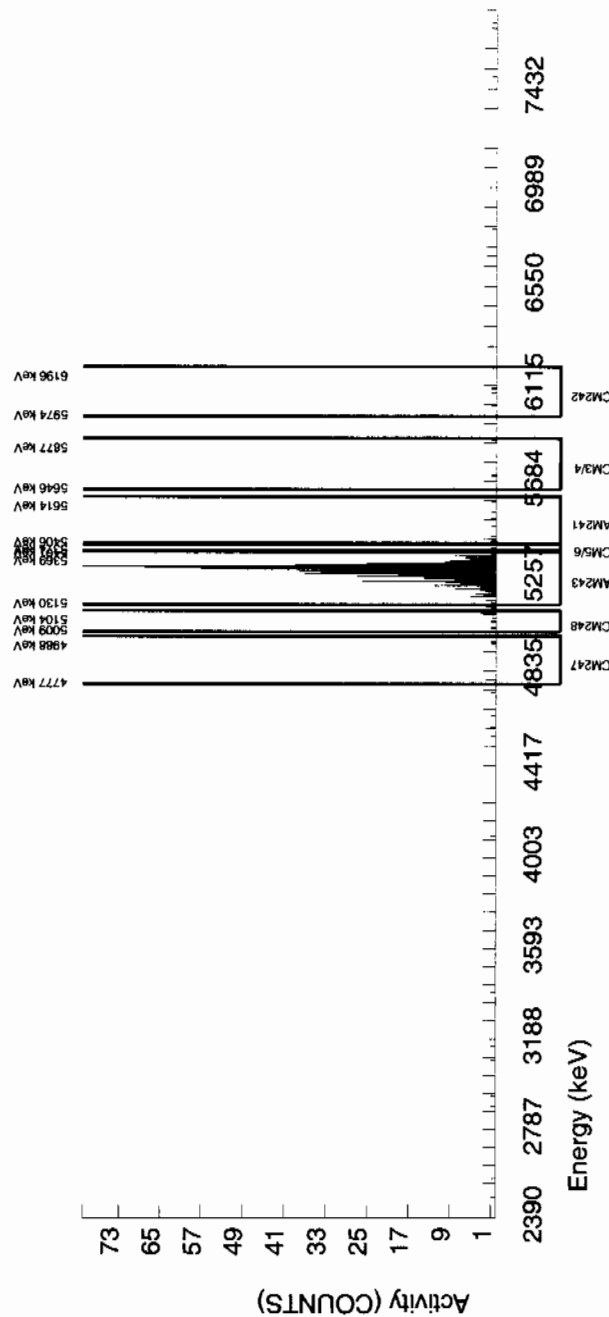
LCS/LCSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

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	5505.925	167.782	7.000	5.768	0.000	2.7707	99.94000	8.55E-03	3.60E-03	8.86E-03	2.17E-02	3.56E-03
AM-243	5270.000	5284.980	22.596	708.000	708.000	0.000	0.0000	99.78000	1.05E+00	7.75E-02	0.00E+00	4.02E-03	3.95E-02
CM-242	6102.000	6082.257	78.956	4.000	4.000	0.000	4.0092	100.0000	6.71E-03	3.38E-03	1.28E-02	2.96E-02	3.35E-03
CM-3/4	5795.020	5768.396	152.361	4.000	4.000	0.000	4.8510	100.0000	5.94E-03	3.00E-03	1.55E-02	3.50E-02	2.97E-03
CM-5/6	5386.000	5380.743	0.000	9.000	9.000	0.000	6.1294	86.09000	1.55E-02	5.25E-03	2.28E-02	5.02E-02	5.16E-03
CM-247	4946.000	4901.262	4.935	5.000	3.560	1.440	6.3427	79.30000	6.65E-03	4.61E-03	2.56E-02	5.62E-02	4.59E-03
CM-248	5078.600	5069.425	13.519	12.000	12.000	0.000	11.0244	91.00000	1.95E-02	5.77E-03	3.87E-02	8.18E-02	5.64E-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 : 964871
SAMPLE ID : S0248248007_AM
SAMPLE QTY : 1.252 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 92.062

CHAMBER : 247
DETECTOR S/N : 79440
AVERAGE %EFFICIENCY : 39.7832
COUNT DATE : 24-MAR-2010 20:56:20
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B247.CNF:92
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W247.CNF:31
CAL DATE : 28-FEB-2010

TRACER
ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9166E+00 dpm
RESULTS : 2.6850E+00 dpm

MS/MSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

LCS/LCSD

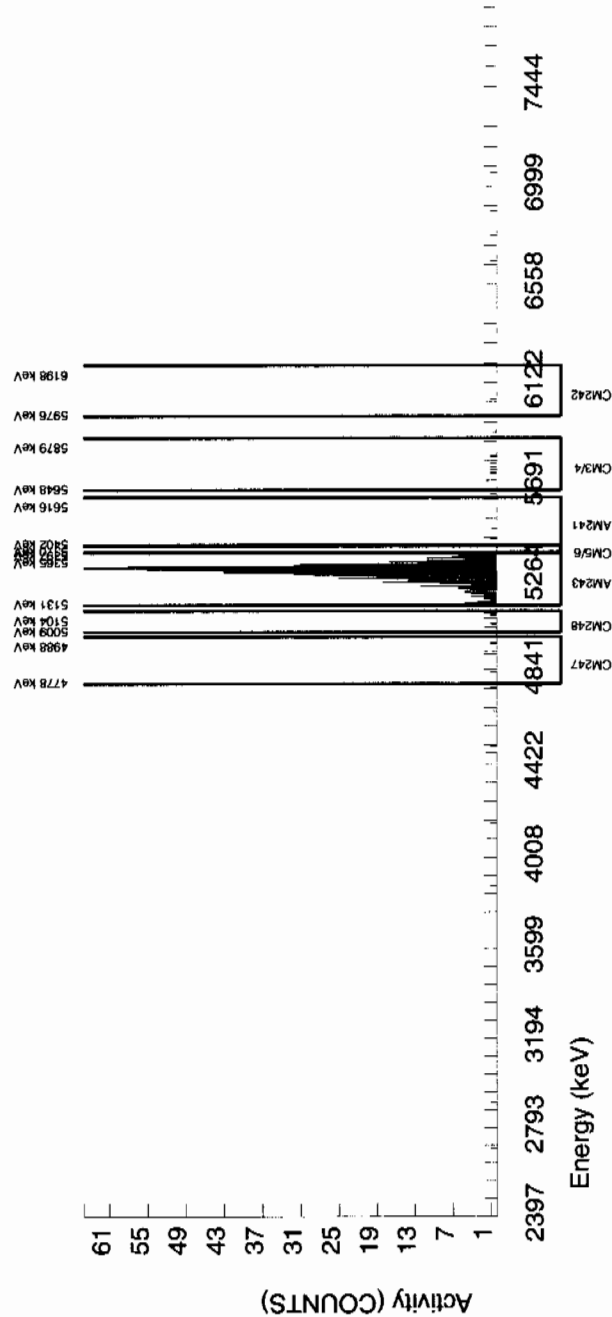
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

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	5457.877	49.249	2.000	-1.495	2.160	2.7707	99.94000	-2.04E-03	2.18E-03	8.16E-03	2.00E-02	2.18E-03
AM243	5270.000	5283.219	38.682	771.000	767.400	3.600	1.8974	99.78000	1.05E+00	7.60E-02	5.60E-03	1.49E-02	3.80E-02
CM-242	6102.000	6041.046	34.474	3.000	3.000	0.000	4.0092	100.0000	4.63E-03	2.69E-03	1.18E-02	2.73E-02	2.67E-03
CM-3/4	5795.020	5763.613	78.182	7.000	7.000	0.000	4.8510	100.0000	9.58E-03	3.67E-03	1.43E-02	3.23E-02	3.62E-03
CM-5/6	5386.000	5377.006	9.521	12.000	12.000	0.000	6.1294	86.09000	1.90E-02	5.62E-03	2.10E-02	4.62E-02	5.49E-03
CM-247	4946.000	4918.636	4.925	5.000	3.560	1.440	6.3427	79.30000	6.13E-03	4.24E-03	2.35E-02	5.17E-02	4.23E-03
CM-248	5078.600	5066.964	64.023	11.000	11.000	0.000	11.0244	91.00000	1.65E-02	5.08E-03	3.57E-02	7.54E-02	4.97E-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 : 964871
SAMPLE ID : S0248248008_AM
SAMPLE QTY : 1.251 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 82.322

CHAMBER : 248
DETECTOR S/N : 79441
AVERAGE %EFFICIENCY : 40.4154
COUNT DATE : 24-MAR-2010 20:56:23
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B248.CNF:94
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W248.CNF:31
CAL DATE : 28-FEB-2010

TRACER ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9166E+00 dpm
RESULTS : 2.4010E+00 dpm

MS/MSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

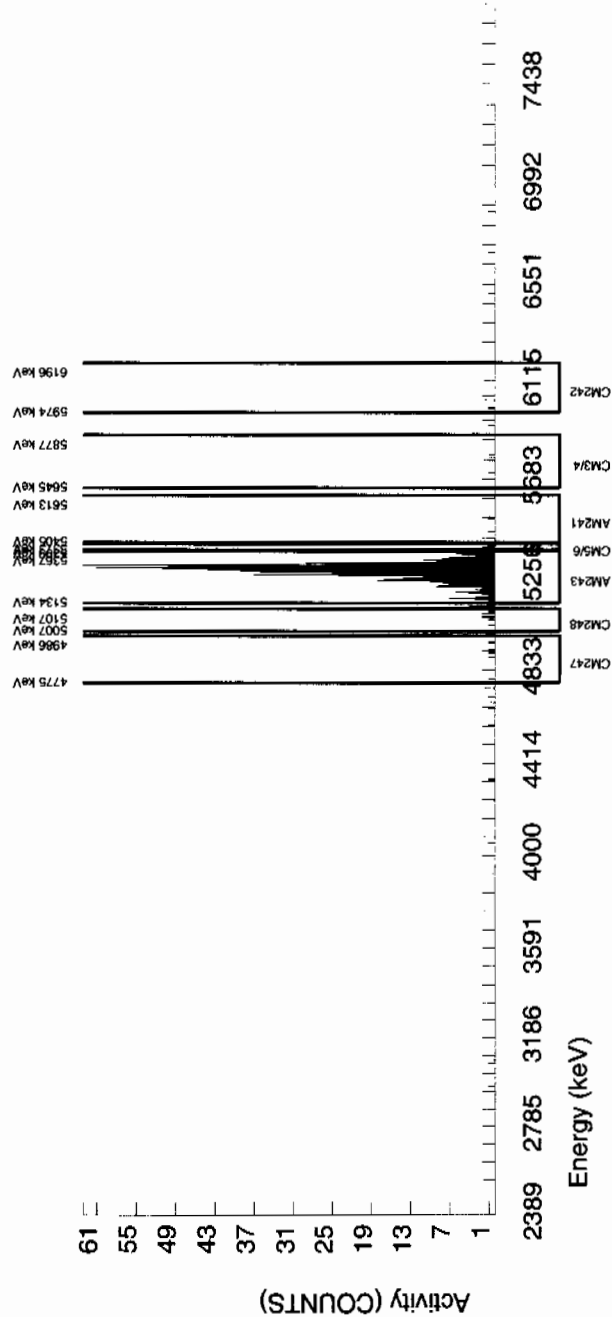
LCS/LCSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

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	5497.296	63.980	3.000	0.347	1.440	2.7707	99.94000	5.22E-04	2.53E-03	8.99E-03	2.21E-02	2.53E-03
AM243	5270.000	5280.575	45.276	700.000	697.120	2.880	1.6971	99.78000	1.05E+00	7.79E-02	5.52E-03	1.51E-02	3.99E-02
CM-242	6102.000	6018.463	4.922	5.000	5.000	0.000	4.0092	100.00000	8.51E-03	3.84E-03	1.30E-02	3.01E-02	3.80E-03
CM-3/4	5795.020	5765.039	78.745	4.000	1.120	2.880	4.8510	100.00000	1.69E-03	3.72E-03	1.57E-02	3.55E-02	3.72E-03
CM-5/6	5386.000	5379.710	0.000	13.000	13.000	0.000	6.1294	86.09000	2.27E-02	6.46E-03	2.31E-02	5.09E-02	6.30E-03
CM-247	4946.000	4918.390	0.000	11.000	10.280	0.720	6.3427	79.30000	1.95E-02	6.55E-03	2.59E-02	5.70E-02	6.43E-03
CM-248	5078.600	5059.931	11.842	12.000	10.560	1.440	11.0244	91.00000	1.74E-02	6.07E-03	3.93E-02	8.30E-02	5.96E-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 : 964871
SAMPLE ID : S0248258001_AM
SAMPLE QTY : 1.254 G
SAMPLE DATE : 25-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 85.114

CHAMBER : 089
DETECTOR S/N : 78262
AVERAGE %EFFICIENCY : 30.5954
COUNT DATE : 25-MAR-2010 23:38:21
ELAPSED LIVE TIME(SEC) : 37903.63

LIB FILE : ENV_ALPHA_AM
BKG FILE : B089.CNF;729
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W089.CNF;197
CAL DATE : 12-MAR-2010

TRACER
ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 2.4824E+00 dpm

MS/MSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

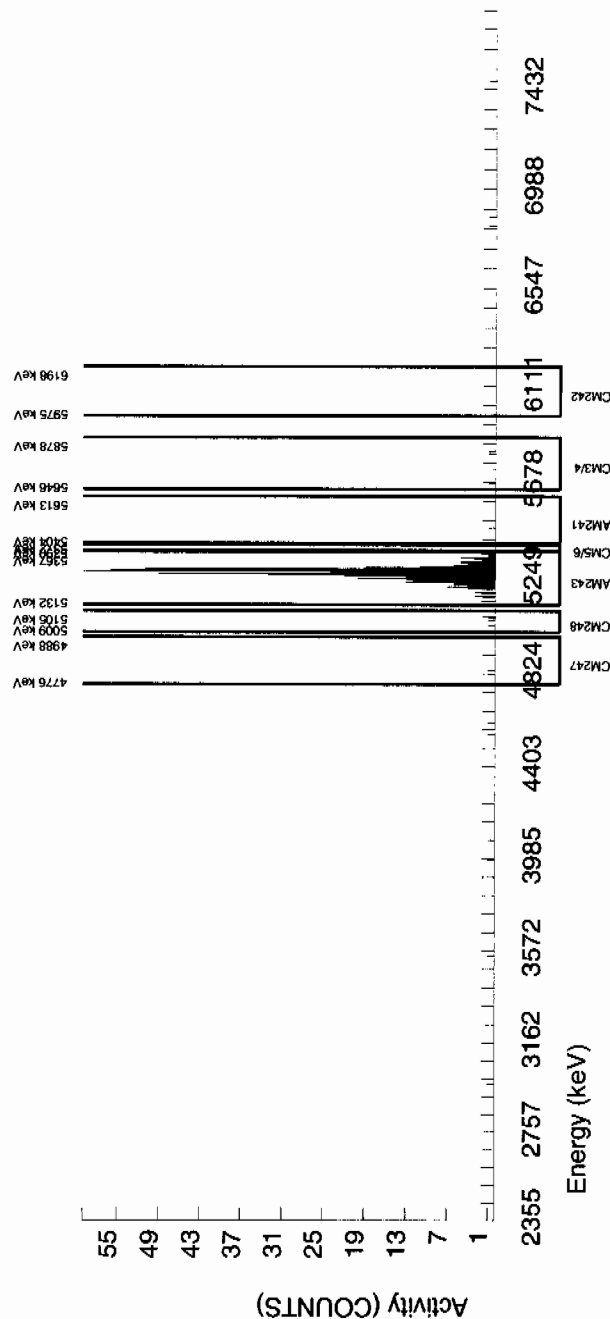
LCS/LCSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

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	5479.046	4.998	1.000	0.167	0.000	2.7707	99.94000	3.65E-04	2.19E-03	1.27E-02	3.14E-02	2.19E-03
AM243	5270.000	5276.445	28.659	480.000	478.737	1.263	1.1240	99.78000	1.05E+00	8.66E-02	5.17E-03	1.63E-02	4.80E-02
CM-242	6102.000	6086.238	0.000	0.000	0.000	0.000	4.0092	100.0000	0.00E+00	2.48E-03	1.84E-02	4.27E-02	2.47E-03
CM-3/4	5795.020	5772.782	139.958	5.000	5.000	0.000	4.8510	100.0000	1.10E-02	4.96E-03	2.23E-02	5.04E-02	4.90E-03
CM-5/6	5386.000	5379.929	9.372	2.000	2.000	0.000	6.1294	86.09000	5.07E-03	3.60E-03	3.27E-02	7.22E-02	3.59E-03
CM-247	4946.000	4834.511	24.992	2.000	2.000	0.000	6.3427	79.30000	5.51E-03	3.91E-03	3.67E-02	8.09E-02	3.89E-03
CM-248	5078.600	5062.548	39.988	3.000	3.000	0.000	11.0244	91.00000	7.20E-03	4.19E-03	5.56E-02	1.18E-01	4.16E-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 : 964871
SAMPLE ID : S1202070038_AM
SAMPLE QTY : 1.000 G
SAMPLE DATE : 16-MAR-2010 00:00:00
ANALYST : JXD2
% YIELD : 91.094

CHAMBER : 232
DETECTOR S/N : 79425
AVERAGE %EFFICIENCY : 38.7095
COUNT DATE : 25-MAR-2010 07:54:52
ELAPSED LIVE TIME(SEC) : 43200.00

LIB FILE : ENV_ALPHA_AM
BKG FILE : B232.CNF:93
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W232.CNF:30
CAL DATE : 28-FEB-2010

TRACER ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 2.6568E+00 dpm

MS/MSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3149E+01 pCi/g

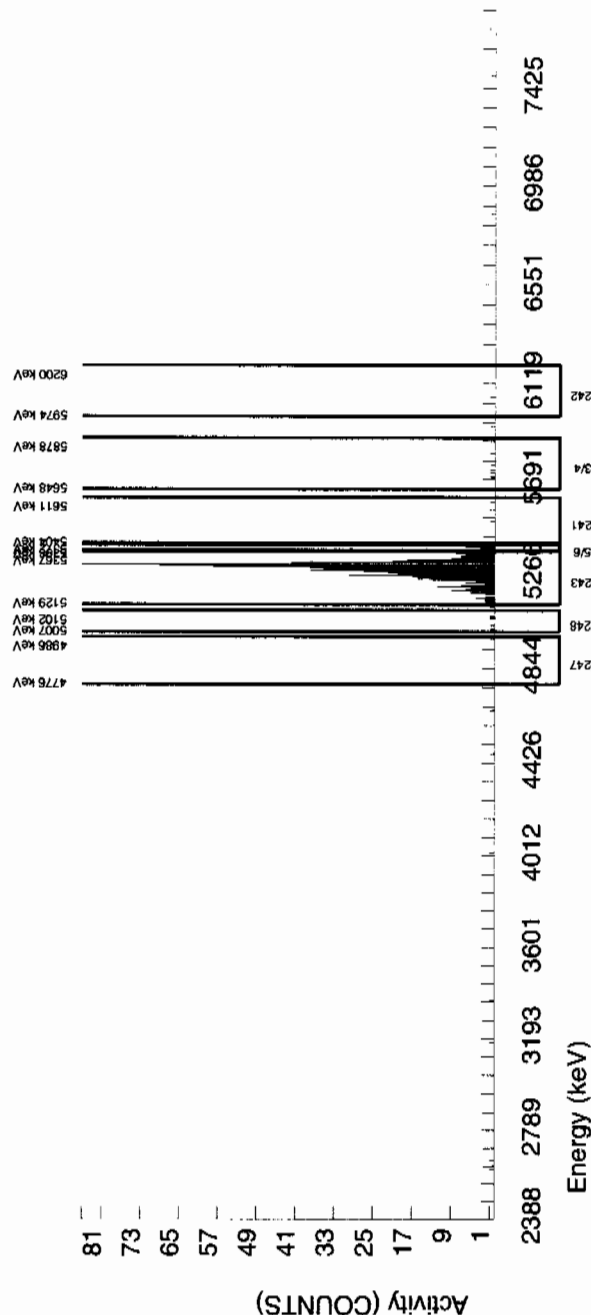
LCS/LCSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3149E+01 pCi/g

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	5524.715	4.988	5.000	0.835	2.880	2.7707	99.94000	1.48E-03	4.27E-03	1.06E-02	2.60E-02	4.27E-03
AM243	5270.000	5288.790	18.490	741.000	738.840	2.160	1.4697	99.78000	1.31E+00	9.60E-02	5.64E-03	1.61E-02	4.85E-02
CM-242	6102.000	6065.504	4.988	1.000	1.000	0.000	4.0092	100.0000	1.85E-03	1.85E-03	1.53E-02	3.55E-02	1.85E-03
CM-3/4	5795.020	5748.026	104.129	7.000	7.000	0.000	4.8510	100.0000	1.24E-02	4.76E-03	1.86E-02	4.19E-02	4.70E-03
CM-5/6	5386.000	5383.408	0.000	27.000	26.280	0.720	6.1294	86.09000	5.42E-02	1.13E-02	2.73E-02	6.01E-02	1.08E-02
CM-247	4946.000	4975.762	4.988	1.000	0.280	0.720	6.3427	79.30000	6.26E-04	2.76E-03	3.06E-02	6.73E-02	2.76E-03
CM-248	5078.600	5057.893	59.858	5.000	3.560	1.440	11.0244	91.00000	6.94E-03	4.81E-03	4.64E-02	9.80E-02	4.79E-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 : 964871	CHAMBER : 233	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S1202070039_AM	DETECTOR S/N : 79426	BKG FILE : B233.CNF:92
SAMPLE QTY : 1.252 G	AVERAGE %EFFICIENCY : 39.4029	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 07:54:56	BKG LIVE TIME(SEC) : 60000.00
ANALYST : JXD2	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W233.CNF:31
% YIELD : 88.212		CAL DATE : 2-MAR-2010

TRACER ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9165E+00 dpm
RESULTS : 2.5727E+00 dpm

MS/MSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

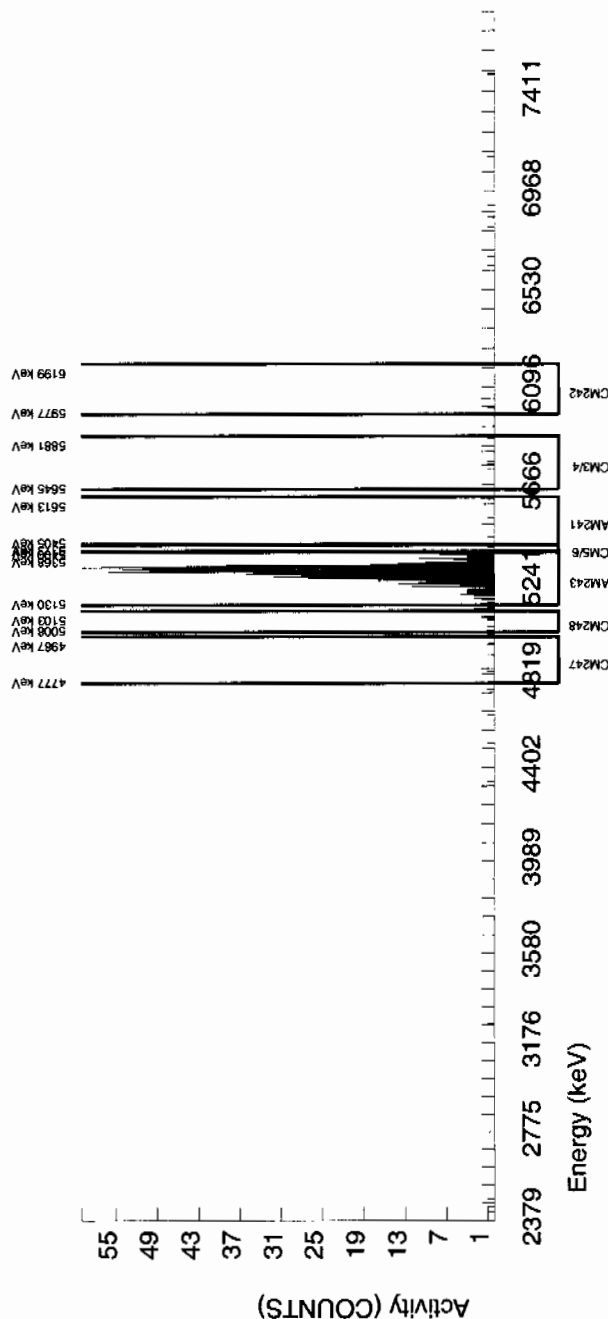
LCS/LCSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/g

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	5525.584	157.608	3.000	1.733	0.000	2.7707	99.94000	2.49E-03	1.90E-03	8.60E-03	2.11E-02	1.89E-03
AM-243	5270.000	5283.130	53.105	729.000	728.280	0.720	0.8485	99.78000	1.05E+00	7.69E-02	2.64E-03	9.18E-03	3.89E-02
CM-242	6102.000	6024.467	4.925	4.000	3.280	0.720	4.0092	100.0000	5.33E-03	3.47E-03	1.24E-02	2.88E-02	3.45E-03
CM-3/4	5795.020	5791.577	4.925	7.000	5.560	1.440	4.8510	100.0000	8.02E-03	4.12E-03	1.50E-02	3.40E-02	4.09E-03
CM-5/6	5386.000	5381.586	9.851	5.000	4.280	0.720	6.1294	86.09000	7.15E-03	3.95E-03	2.21E-02	4.87E-02	3.92E-03
CM-247	4946.000	4906.590	4.925	6.000	5.280	0.720	6.3427	79.30000	9.57E-03	4.67E-03	2.48E-02	5.45E-02	4.63E-03
CM-248	5078.600	5055.664	4.925	9.000	8.280	0.720	11.0244	91.00000	1.31E-02	4.94E-03	3.76E-02	7.94E-02	4.87E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964871	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S1202070040_AM	BKG FILE : B234.CNF:92
SAMPLE QTY : 0.101 G	BKG DATE : 21-MAR-2010
SAMPLE DATE : 16-MAR-2010 00:00:00	BKG LIVE TIME(SEC) : 60000.00
ANALYST : JXD2	EFF FILE : W234.CNF:30
% YIELD : 99.444	CAL DATE : 28-FEB-2010

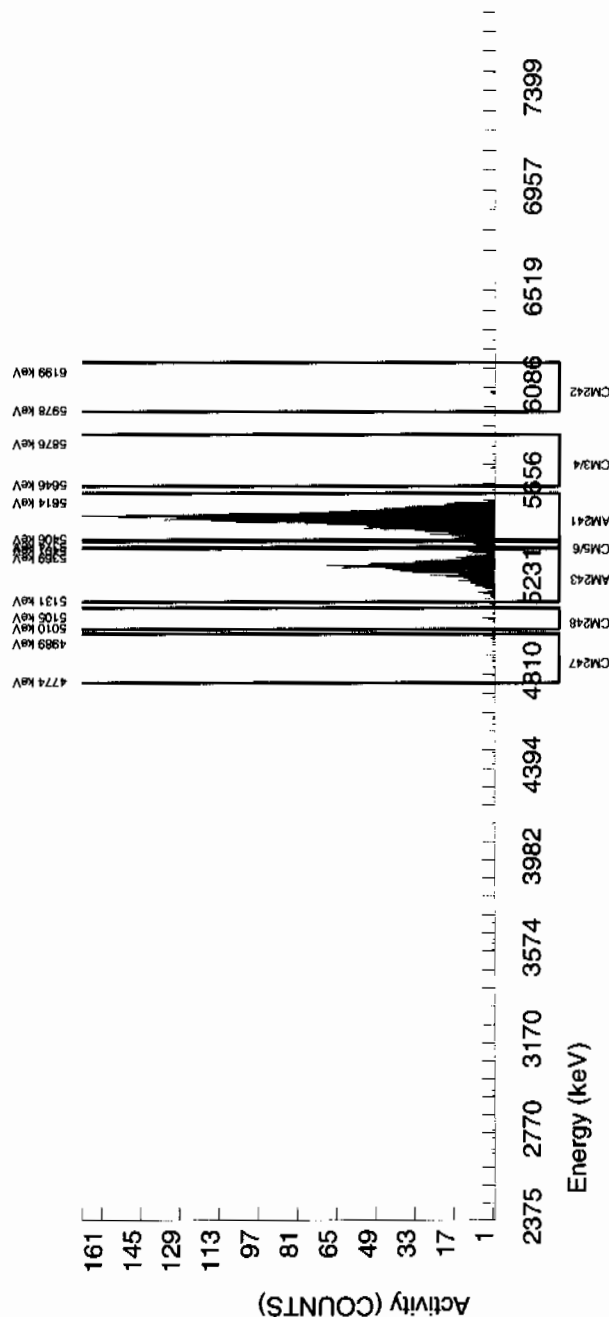
TRACER ID : 445-96-2-SS	LCS/LCSD ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241
NOMINAL : 2.9165E+00 dpm	NOMINAL : 3.3149E+01 pCi/G
RESULTS : 2.9003E+00 dpm	

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	5503.818	42.317	2008.000	2006.559	0.000	2.7707	99.94000	3.15E+01	2.30E+00	9.38E-02	2.30E-01	7.03E-01
AM243	5270.000	5283.761	42.998	828.000	828.000	0.000	0.0000	99.78000	1.30E+01	1.01E+00	0.00E+00	4.26E-02	4.52E-01
CM-242	6102.000	6070.465	11.824	5.000	5.000	0.000	4.0092	100.0000	8.16E-02	3.69E-02	1.36E-01	3.14E-01	3.65E-02
CM-3/4	5795.020	5764.097	7.217	6.000	5.280	0.720	4.8510	100.0000	8.28E-02	4.05E-02	1.64E-01	3.71E-01	4.01E-02
CM-5/6	5386.000	5389.020	0.000	52.000	52.000	0.000	6.1294	86.09000	9.47E-01	1.47E-01	2.41E-01	5.31E-01	1.31E-01
CM-247	4946.000	4916.669	9.828	15.000	13.560	1.440	6.3427	79.30000	2.68E-01	8.13E-02	2.70E-01	5.95E-01	7.92E-02
CM-248	5078.600	5070.623	7.371	9.000	9.000	0.000	11.0244	91.00000	1.55E-01	5.28E-02	4.10E-01	8.66E-01	5.17E-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#

964872

Product:

Pu

Date:

3/25/10

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

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By:

J. L. M. I. - 3/25/10

Secondary Review Performed By:

C. J. M. O. N. 3/25/10

3/27

LANL

Plutonium Que Sheet

12-MAR-10

Batch #: 964872

First Client Due Date: 27-MAR-10

Analyst: JXD2

Internal Due Date: 16-MAR-10

Tracer Isotope(s): Pu-236 ⁹⁶⁴⁸⁷² Tracer Code: 1420-C Expiration Date: 03/04/11 Vol: 0.1

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

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

Prep Date: 03/04/10 Initials: JXD2 Pipet ID: 2524058 Balance ID: 5040272 Witness: AB3316/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l/f)	Pu Det #
248248001-1	RE36-10-8464	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	1	1	1.258	45
248248002-1	RE36-10-8475	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	2	2	1.251	46
248248003-1	RE36-10-8471	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	3	3	1.250	48
248248004-1	RE36-10-8485	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	4	4	1.252	65
248248005-1	RE36-10-8477	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	5	5	1.254	66
248248006-1	RE36-10-8479	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	6	6	1.250	67
248248007-1	RE36-10-8484	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	7	7	1.252	68
248248008-1	RE36-10-8481	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	8	8	1.251	69
248250001-1	RE36-10-8285	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	9	9	1.255	72
248250002-1	RE36-10-8286	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	10	10	1.251	73
248250003-1	RE36-10-8283	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	11	11	1.250	74
248250004-1	RE36-10-8284	SAMPLE		.05 pCi/g	SOIL	LANL010	24-FEB-10	12	12	1.258	75
248258001-1	RE46-10-13534	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	13	13	1.254	76
248258002-1	RE46-10-13539	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	14	14	1.258	77
248258003-1	RE46-10-13538	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	15	15	1.254	79
248258004-1	RE46-10-13536	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	16	16	1.258	80
248258005-1	RE46-10-13537	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	17	17	1.253	81
248258006-1	RE46-10-13535	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	18	18	1.255	82
248258007-1	RE46-10-13542	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	19	19	1.253	83
1202070043-1	MB for batch 964872	MB		.05 pCi/g	SOIL	QC ACCOUNT	QC ACCOUNT	20	20	1.00	84
1202070044-1	RE46-10-13534(248258001DUP)	DUP		.05 pCi/g	SOIL	QC ACCOUNT	25-FEB-10	21	21	1.252	85
1202070045-1	LCS for batch 964872	LCS		.05 pCi/g	SOIL	QC ACCOUNT	QC ACCOUNT	22	22	0.101	86

*SLM 02448 exp 07/30/20 0.101g

Solid Sample Dissolution by: LEACH or DIGESTION
Circle One

Data Reviewed By: JPLM-L-3/25/10

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

GEL Laboratories LLC, Radiochemistry Division

Blank Correction Report

Batch ID 964872

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202070044	DUP	Plutonium-238	1.25 g	-0.000279	0.00329	0.0232	.000856	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0105	0.00432	0.0196	-.0006704	pCi/g	NO
1202070045	LCS	Plutonium-238	0.101 g	4.66	0.455	0.307	.010594059	pCi/g	NO
		Plutonium-239/240	0.101 g	40.4	2.88	0.260	-.00829703	pCi/g	NO
1202070043	MB	Plutonium-238	1.00 g	0.00107	0.00332	0.0253	.00107	pCi/g	YES
		Plutonium-239/240	1.00 g	-0.000838	0.00272	0.0214	-.000838	pCi/g	NO
248248001	RE36-10-8464	Plutonium-238	1.26 g	0.00534	0.0031	0.0236	.000849206	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00711	0.00358	0.020	-.00066508	pCi/g	NO
248248002	RE36-10-8475	Plutonium-238	1.25 g	0.00199	0.00247	0.0207	.000856	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00467	0.00271	0.0175	-.0006704	pCi/g	NO
248248003	RE36-10-8471	Plutonium-238	1.25 g	0.00888	0.00662	0.0225	.000856	pCi/g	NO
		Plutonium-239/240	1.25 g	-0.00468	0.00453	0.019	-.0006704	pCi/g	YES
248248004	RE36-10-8485	Plutonium-238	1.25 g	0.00202	0.00716	0.0248	.000856	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00478	0.0042	0.021	-.0006704	pCi/g	NO
248248005	RE36-10-8477	Plutonium-238	1.25 g	0.000927	0.00609	0.0237	.000856	pCi/g	YES
		Plutonium-239/240	1.25 g	0.000998	0.00311	0.020	-.0006704	pCi/g	NO
248248006	RE36-10-8479	Plutonium-238	1.25 g	-0.00689	0.00363	0.0254	.000856	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00926	0.00562	0.0215	-.0006704	pCi/g	NO
248248007	RE36-10-8484	Plutonium-238	1.25 g	0.00234	0.00291	0.0243	.000856	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00183	0.00183	0.0205	-.0006704	pCi/g	NO
248248008	RE36-10-8481	Plutonium-238	1.25 g	0.00558	0.00324	0.0247	.000856	pCi/g	NO
		Plutonium-239/240	1.25 g	-0.00536	0.00326	0.0209	-.0006704	pCi/g	YES
248250001	RE36-10-8285	Plutonium-238	1.26 g	0.00916	0.00781	0.0239	.000849206	pCi/g	NO
		Plutonium-239/240	1.26 g	0.0437	0.00946	0.0202	-.00066508	pCi/g	NO
248250002	RE36-10-8286	Plutonium-238	1.25 g	0.00378	0.00268	0.0251	.000856	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0148	0.00648	0.0212	-.0006704	pCi/g	NO
248250003	RE36-10-8283	Plutonium-238	1.25 g	0.00248	0.00308	0.0258	.000856	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0166	0.00652	0.0218	-.0006704	pCi/g	NO
248250004	RE36-10-8284	Plutonium-238	1.26 g	0.0026	0.00323	0.027	.000849206	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0211	0.00837	0.0228	-.00066508	pCi/g	NO
248258001	RE46-10-13534	Plutonium-238	1.25 g	0.00414	0.00341	0.0241	.000856	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00878	0.00533	0.0204	-.0006704	pCi/g	NO
248258002	RE46-10-13539	Plutonium-238	1.26 g	-0.00546	0.00334	0.0218	.000849206	pCi/g	YES
		Plutonium-239/240	1.26 g	-0.000263	0.0031	0.0185	-.00066508	pCi/g	NO
248258003	RE46-10-13538	Plutonium-238	1.25 g	0.00053	0.00233	0.0251	.000856	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00756	0.00381	0.0212	-.0006704	pCi/g	NO
248258004	RE46-10-13536	Plutonium-238	1.26 g	0.00585	0.00381	0.0237	.000849206	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00535	0.00311	0.020	-.00066508	pCi/g	NO
248258005	RE48-10-13537	Plutonium-238	1.25 g	0.000471	0.00207	0.0223	.000856	pCi/g	YES

Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Alliquot	Result	TPU	MDA	Alliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
248258005	RE46-10-13537	Plutonium-239/240	1.25 g	0.00047	0.00207	0.0189	-.0006704	pCi/g	NO
248258006	RE46-10-13535	Plutonium-238	1.26 g	-0.0013	0.00223	0.024	.000849206	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00361	0.00256	0.0203	-.00066508	pCi/g	NO
248258007	RE46-10-13542	Plutonium-238	1.25 g	0.00518	0.0058	0.0212	.000856	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00683	0.00377	0.0179	-.0006704	pCi/g	NO

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964872
SAMPLE ID : S0248248001_PU
SAMPLE QTY : 1.258 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 82.400

CHAMBER : 045
DETECTOR S/N : 78783
AVERAGE %EFFICIENCY : 33.9687
COUNT DATE : 24-MAR-2010 21:09:18
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B045.CNF;1116
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W045.CNF;300
CAL DATE : 5-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0180E+00 dpm
RESULTS : 2.4868E+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

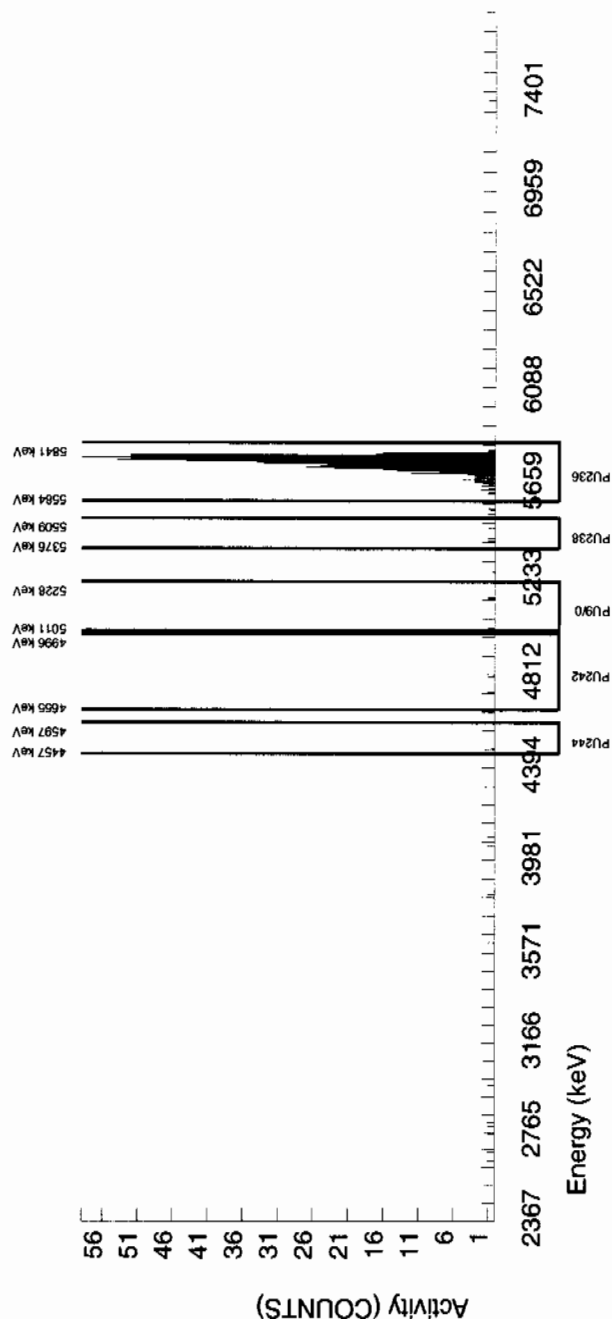
NUCLIDE ACTIVITY SUMMARY

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	5761.015	39.690	598.000	596.560	1.440	1.2000	100.0000	1.08E+00	7.73E-02	4.60E-03	1.40E-02	4.43E-02
PU-238	5499.000	5436.453	59.299	3.000	3.000	0.000	2.4495	99.900000	5.34E-03	3.10E-03	9.40E-03	2.36E-02	3.08E-03
PU-9/0	5155.000	5093.031	137.747	4.000	4.000	0.000	1.9732	99.900000	7.11E-03	3.58E-03	7.57E-03	2.00E-02	3.56E-03
PU242	4890.000	4772.320	69.182	2.000	0.560	1.440	*****	100.0000	9.95E-04	3.10E-03	4.78E-01	9.60E-01	3.10E-03
PU-244	4589.000	4526.806	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	1.78E-03	2.48E-02	5.44E-02	1.78E-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 REPORTBATCH NUMBER : 964872
SAMPLE ID : S0248248002_PU
SAMPLE QTY : 1.251 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 91.810CHAMBER : 046
DETECTOR S/N : 76544
AVERAGE %EFFICIENCY : 35.0500
COUNT DATE : 24-MAR-2010 21:09:18
ELAPSED LIVE TIME(SEC) : 43199.99LIB FILE : ENV_ALPHA_PU
BKG FILE : B046.CNF;1127
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W046.CNF;291
CAL DATE : 5-MAR-2010

TRACER

ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0180E+00 dpm
RESULTS : 2.7708E+00 dpm

MS/MSD

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

LCS/LCSD

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

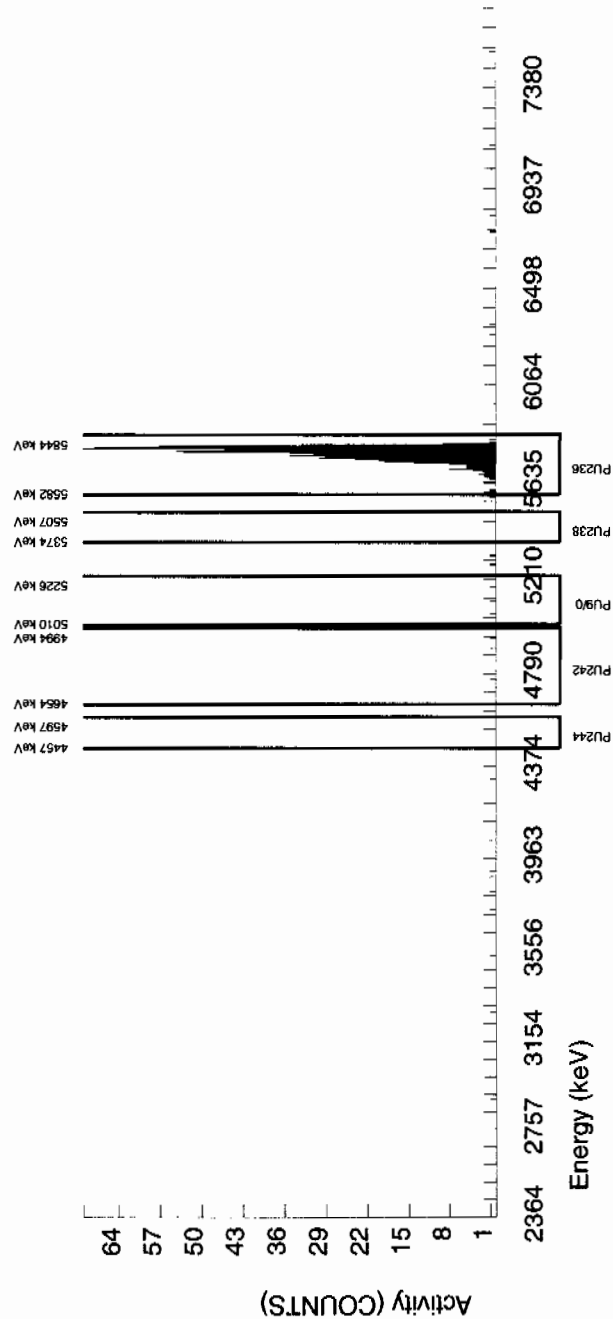
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLG pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5767.601	33.215	688.000	685.840	2.160	1.4697	100.0000	1.09E+00	7.43E-02	4.93E-03	1.41E-02	4.16E-02
PU-238	5499.000	5421.881	0.000	2.000	1.280	0.720	2.4495	99.90000	1.99E-03	2.47E-03	8.22E-03	2.07E-02	2.47E-03
PU-9/0	5155.000	5122.093	117.170	3.000	3.000	0.000	1.9732	99.90000	4.67E-03	2.71E-03	6.62E-03	1.75E-02	2.69E-03
PU-242	4890.000	4876.927	175.755	3.000	1.560	1.440	*****	100.0000	2.42E-03	3.13E-03	4.18E-01	8.40E-01	3.12E-03
PU-244	4589.000	4526.790	0.000	0.000	-0.720	0.720	6.4609	99.90000	-1.12E-03	1.92E-03	2.17E-02	4.76E-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 : 964872
SAMPLE ID : S0248248003_PU
SAMPLE QTY : 1.250 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 88.862

CHAMBER : 048
DETECTOR S/N : 42483
AVERAGE %EFFICIENCY : 33.2770
COUNT DATE : 24-MAR-2010 21:09:18
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B048.CNF:1123
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W048.CNF:318
CAL DATE : 5-MAR-2010

TRACER ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0180E+00 dpm
RESULTS : 2.6818E+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

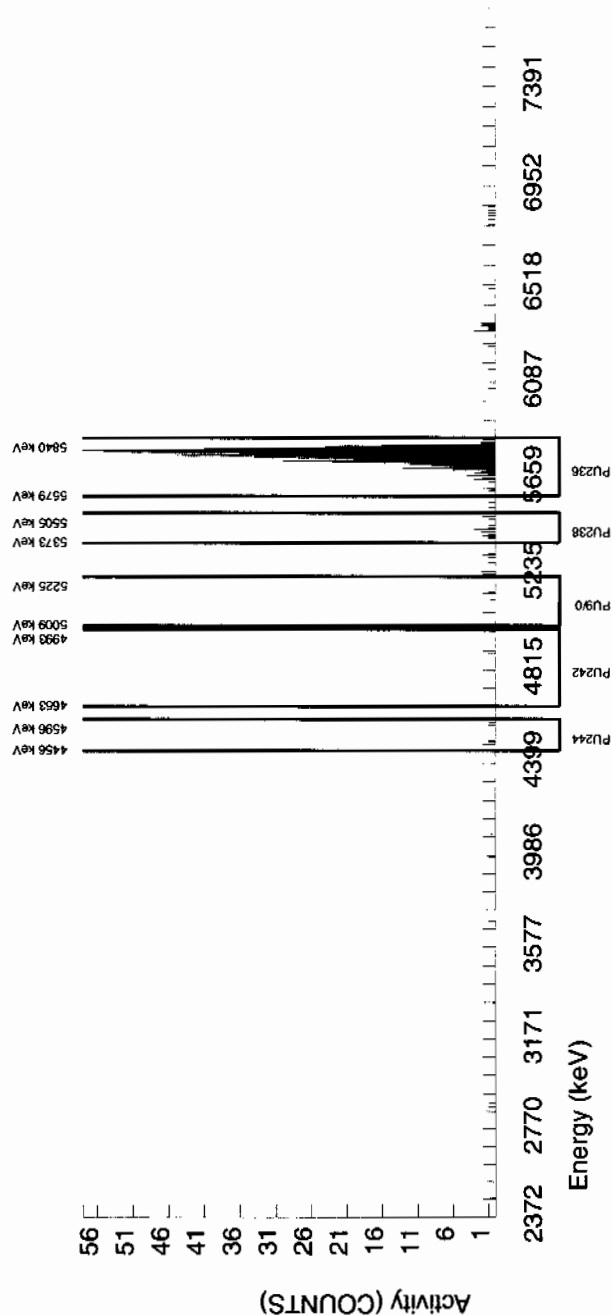
NUCLIDE ACTIVITY SUMMARY

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	5766.795	58.625	636.000	630.240	5.760	2.4000	100.0000	1.09E+00	7.67E-02	8.76E-03	2.21E-02	4.37E-02
PU-238	5499.000	5432.335	14.797	11.000	5.240	5.760	2.4495	99.90000	8.88E-03	6.62E-03	8.95E-03	2.25E-02	6.60E-03
PU-9/0	5155.000	5149.277	34.671	3.000	-2.760	5.760	1.9732	99.90000	-4.68E-03	4.53E-03	7.21E-03	1.90E-02	4.53E-03
PU242	4890.000	4867.547	4.953	3.000	-1.320	4.320	*****	100.0000	-2.23E-03	4.19E-03	4.55E-01	9.15E-01	4.18E-03
PU-244	4589.000	4540.225	88.535	4.000	4.000	0.000	6.4609	99.90000	6.78E-03	3.41E-03	2.36E-02	5.18E-02	3.39E-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 : 964872	CHAMBER : 065	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248248004_PU	DETECTOR S/N : 68551	BKG FILE : B065.CNF;1955
SAMPLE QTY : 1.252 G	AVERAGE %EFFICIENCY : 33.5681	BKG DATE : 21-MAR-2010
SAMPLE DATE : 24-FEB-2010 00:00:00	COUNT DATE : 24-MAR-2010 21:09:19	BKG LIVE TIME(SEC) : 59999.99
ANALYST : JXD2	ELAPSED LIVE TIME(SEC) : 43199.99	EFF FILE : W065.CNF;309
% YIELD : 79.816		CAL DATE : 12-MAR-2010

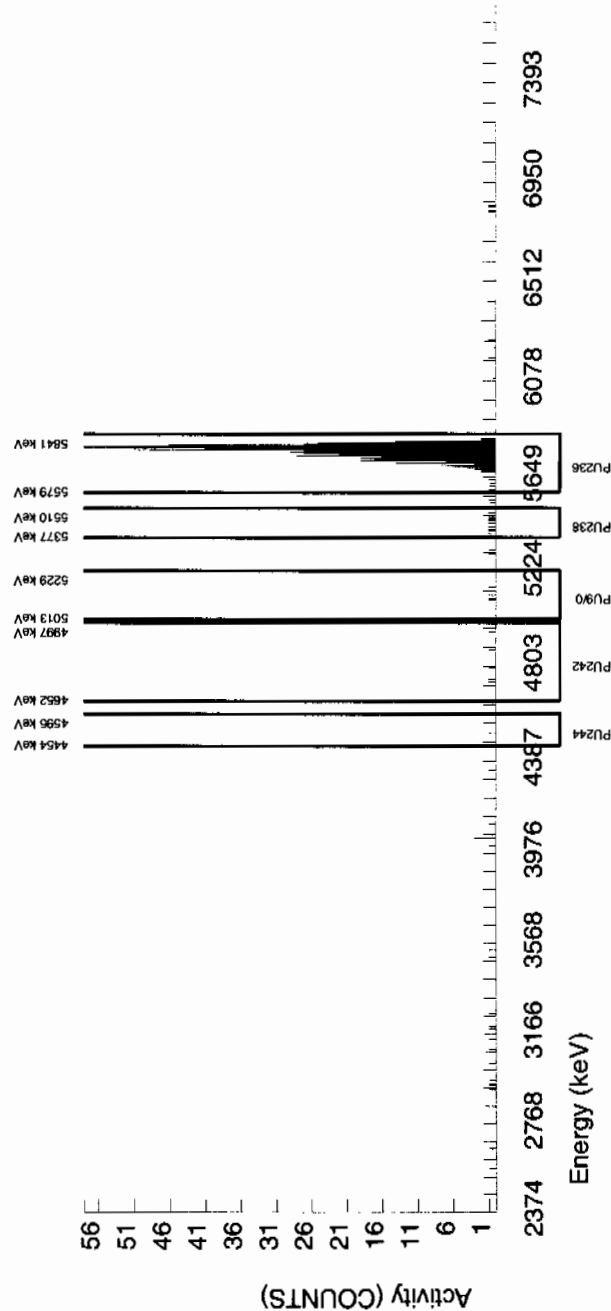
TRACER ID : 1430-C	MS/MSD ID : 0244-B	LCS/LCSD ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0180E+00 dpm	NOMINAL : 4.1778E+01 pCi/g	NOMINAL : 4.1778E+01 pCi/g
RESULTS : 2.4088E+00 dpm		

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	5769.619	27.945	584.000	571.040	12.960	3.6000	100.0000	1.09E+00	7.97E-02	1.45E-02	3.40E-02	4.63E-02
PU-238	5499.000	5451.625	77.677	9.000	1.080	7.920	2.4495	99.900000	2.02E-03	7.16E-03	9.87E-03	2.48E-02	7.16E-03
PU-9/0	5155.000	5123.472	58.105	4.000	2.560	1.440	1.9732	99.900000	4.78E-03	4.20E-03	7.95E-03	2.10E-02	4.19E-03
PU242	4890.000	4827.288	210.402	5.000	-0.040	5.040	*****	100.0000	-7.46E-05	5.48E-03	5.02E-01	1.01E+00	5.48E-03
PU-244	4589.000	4516.710	4.893	1.000	-0.440	1.440	6.4609	99.900000	-8.21E-04	2.67E-03	2.60E-02	5.71E-02	2.66E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964872
SAMPLE ID : S0248248005_PU
SAMPLE QTY : 1.254 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 86.731

CHAMBER : 066
DETECTOR S/N : 46-089C1
AVERAGE %EFFICIENCY : 32.3245
COUNT DATE : 24-MAR-2010 21:09:19
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B066.CNF:1116
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W066.CNF:310
CAL DATE : 12-MAR-2010

TRACER

ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0180E+00 dpm
RESULTS : 2.6175E+00 dpm

MS/MSD

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

LCS/LCSD

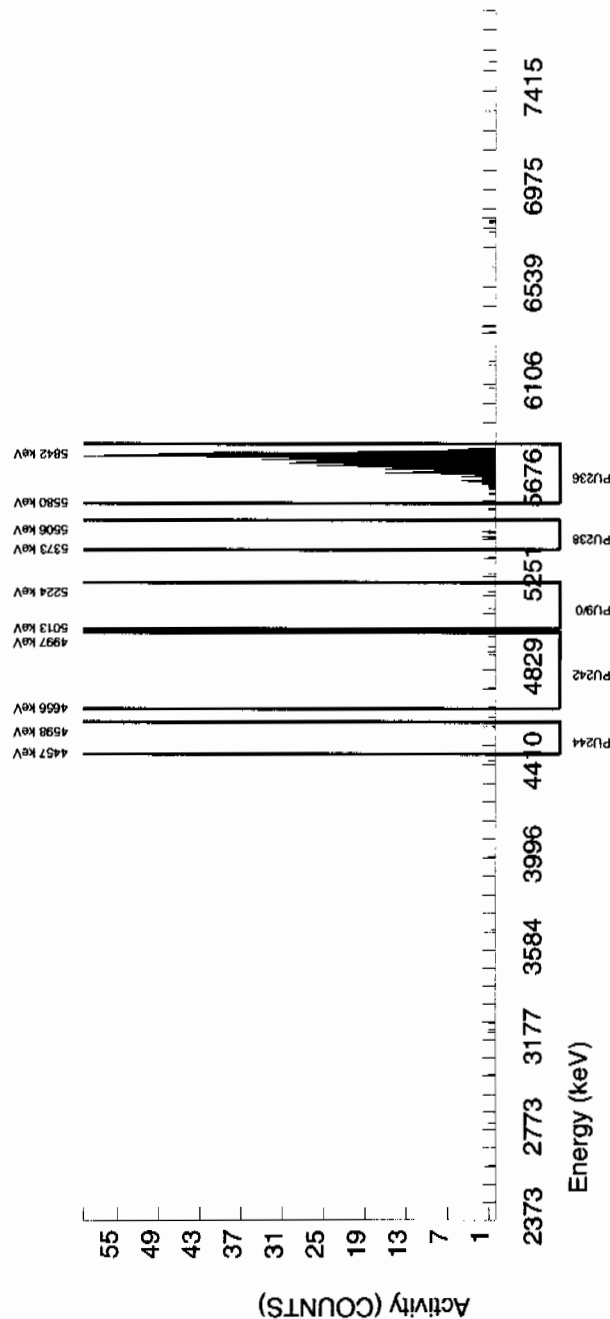
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

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	5773.407	34.407	604.000	597.520	6.480	2.5456	100.0000	1.08E+00	7.78E-02	9.77E-03	2.44E-02	4.48E-02
PU-238	5499.000	5447.947	29.676	7.000	0.520	6.480	2.4495	99.900000	9.27E-04	6.09E-03	9.41E-03	2.37E-02	6.09E-03
PU-9/0	5155.000	5147.561	79.688	2.000	0.560	1.440	1.9732	99.900000	9.98E-04	3.11E-03	7.58E-03	2.00E-02	3.10E-03
PU242	4890.000	4861.128	303.810	6.000	0.240	5.760	*****	100.0000	4.27E-04	5.67E-03	4.79E-01	9.62E-01	5.67E-03
PU-244	4589.000	4527.621	0.000	0.000	-2.160	2.160	6.4609	99.900000	-3.85E-03	2.85E-03	2.48E-02	5.45E-02	2.85E-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 : 964872
SAMPLE ID : S0248248006_PU
SAMPLE QTY : 1.250 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 79.070

CHAMBER : 067
DETECTOR S/N : 46-089B4
AVERAGE %EFFICIENCY : 33.1255
COUNT DATE : 24-MAR-2010 21:09:19
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B067.CNF:1114
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W067.CNF:291
CAL DATE : 12-MAR-2010

TRACER ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0180E+00 dpm
RESULTS : 2.3863E+00 dpm

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

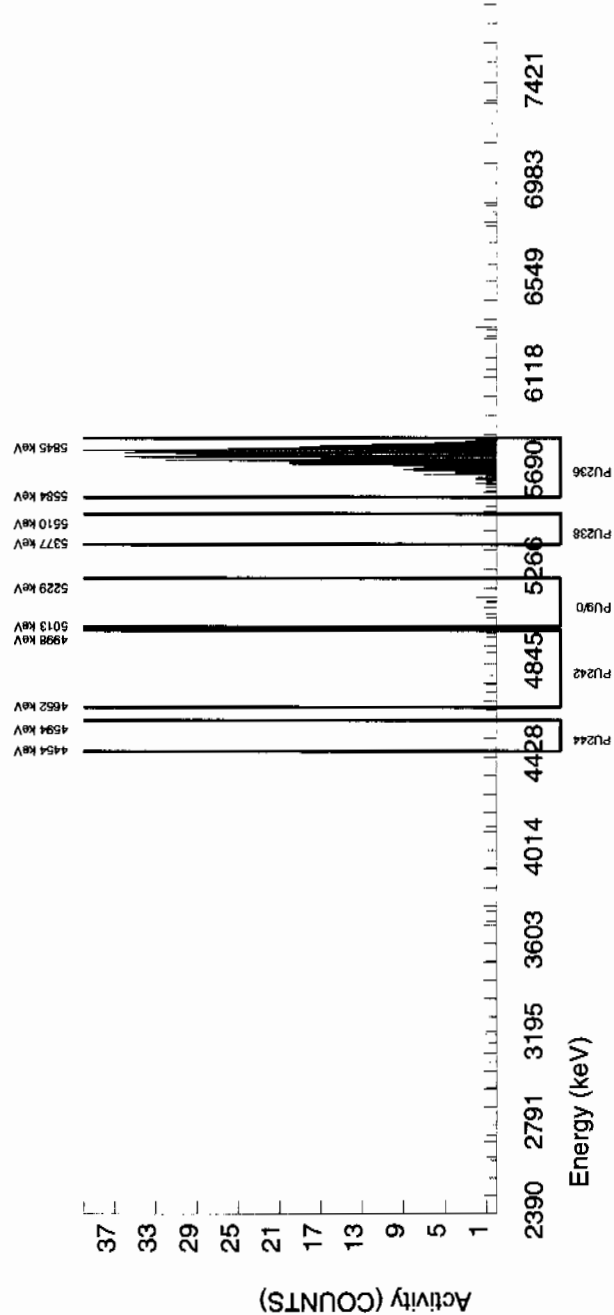
LCS/LCSD ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/g

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	5767.591	63.592	564.000	558.240	5.760	2.4000	100.0000	1.09E+00	7.98E-02	9.89E-03	2.50E-02	4.64E-02
PU-238	5499.000	5443.443	0.000	0.000	-3.600	3.600	2.4495	99.900000	-6.89E-03	3.63E-03	1.01E-02	2.54E-02	3.63E-03
PU-9/0	5155.000	5127.557	4.989	7.000	4.840	2.160	1.9732	99.900000	9.26E-03	5.62E-03	8.14E-03	2.15E-02	5.59E-03
PU242	4890.000	4857.566	254.454	6.000	2.400	3.600	*****	100.0000	4.59E-03	5.61E-03	5.14E-01	1.03E+00	5.60E-03
PU-244	4589.000	4555.317	0.000	2.000	0.560	1.440	6.4609	99.900000	1.07E-03	3.34E-03	2.67E-02	5.85E-02	3.33E-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 : 964872
SAMPLE ID : S0248248007_PU
SAMPLE QTY : 1.252 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 91.270

CHAMBER : 068
DETECTOR S/N : 78794
AVERAGE %EFFICIENCY : 29.9395
COUNT DATE : 24-MAR-2010 21:09:19
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B068.CNF;1107
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W068.CNF;282
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0180E+00 dpm
RESULTS : 2.7545E+00 dpm

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

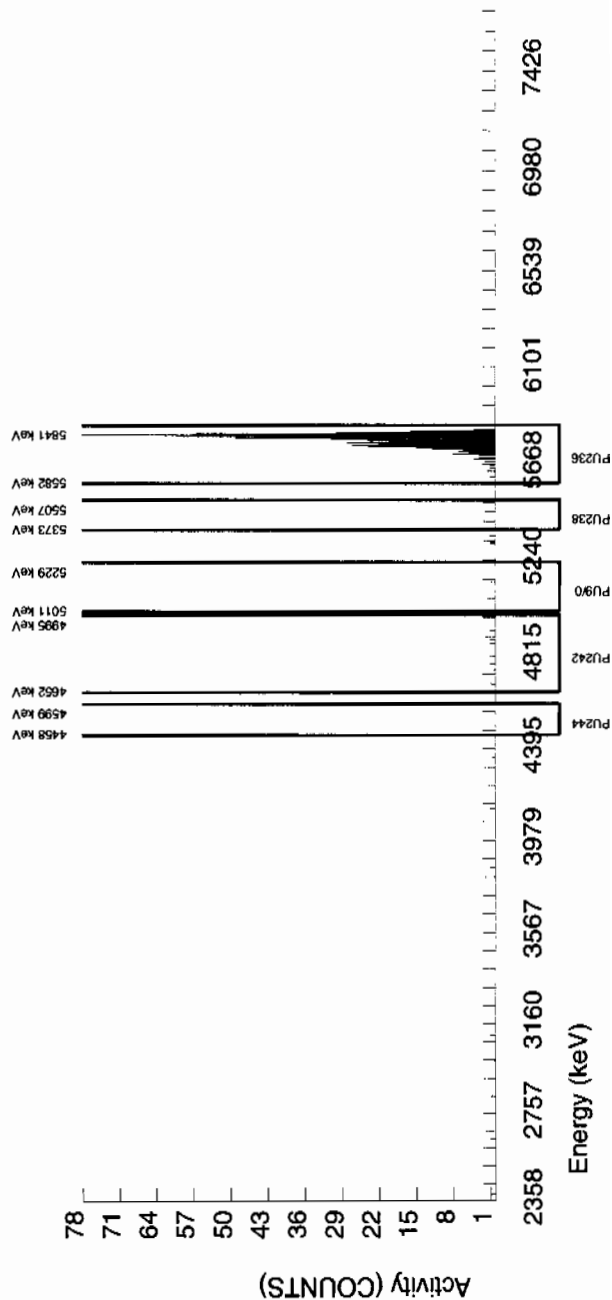
LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

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	5780.684	25.887	586.000	582.400	3.600	1.8974	100.0000	1.09E+00	7.84E-02	7.49E-03	1.99E-02	4.52E-02
PU-238	5499.000	5458.857	4.958	2.000	1.280	0.720	2.4495	99.90000	2.34E-03	2.91E-03	9.67E-03	2.43E-02	2.91E-03
PU-9/0	5155.000	5143.759	4.958	1.000	1.000	0.000	1.9732	99.90000	1.83E-03	1.83E-03	7.79E-03	2.05E-02	1.83E-03
PU242	4890.000	4822.184	228.083	6.000	3.840	2.160	*****	100.0000	7.02E-03	5.04E-03	4.92E-01	9.88E-01	5.03E-03
PU-244	4589.000	4528.400	0.000	0.000	-2.160	2.160	6.4609	99.90000	-3.95E-03	2.93E-03	2.55E-02	5.60E-02	2.93E-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 : 964872
SAMPLE ID : S0248248008_PU
SAMPLE QTY : 1.251 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 81.245

CHAMBER : 069
DETECTOR S/N : 78795
AVERAGE %EFFICIENCY : 33.1235
COUNT DATE : 24-MAR-2010 21:09:19
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B069.CNF;1109
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W069.CNF;289
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0180E+00 dpm
RESULTS : 2.4519E+00 dpm

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

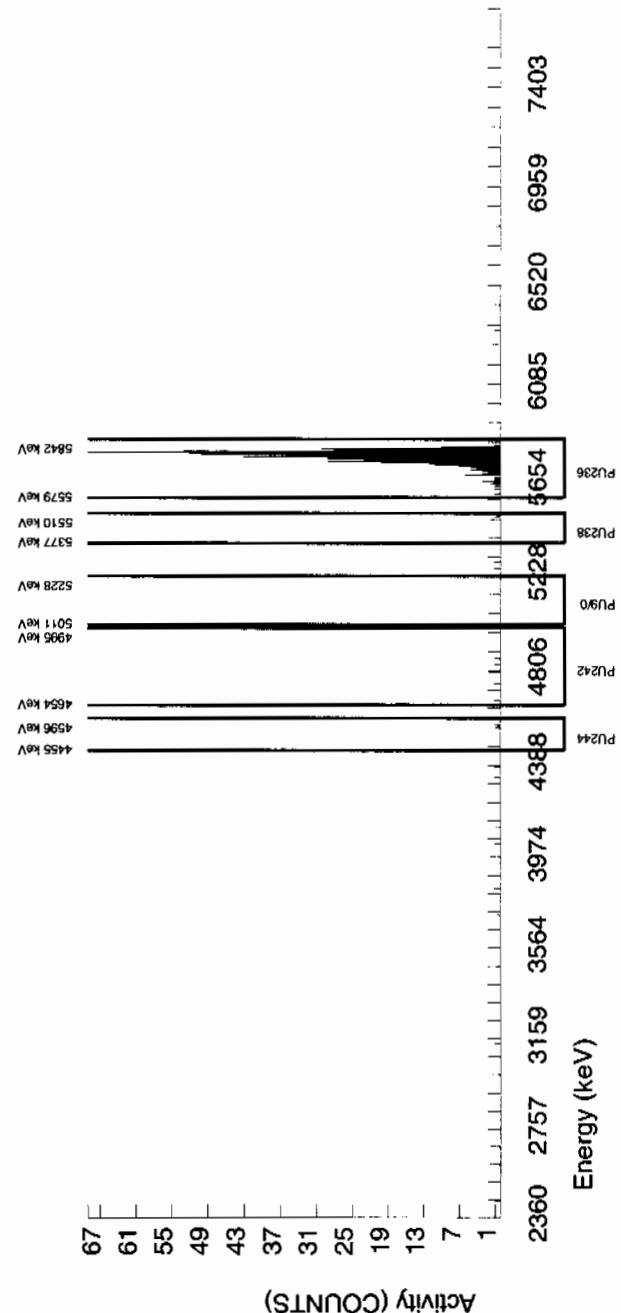
LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

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	5767.643	31.325	575.000	573.560	1.440	1.2000	100.0000	1.09E+00	7.87E-02	4.81E-03	1.47E-02	4.55E-02
PU-238	5499.000	5458.409	108.580	3.000	3.000	0.000	2.4495	99.900000	5.58E-03	3.24E-03	9.83E-03	2.47E-02	3.22E-03
PU-9/0	5155.000	5119.292	0.000	0.000	-2.880	2.880	1.9732	99.900000	-5.36E-03	3.26E-03	7.92E-03	2.09E-02	3.26E-03
PU242	4890.000	4801.861	4.935	7.000	0.520	6.480	*****	100.0000	9.66E-04	6.35E-03	5.00E-01	1.00E+00	6.35E-03
PU-244	4589.000	4569.925	4.935	1.000	0.280	0.720	6.4609	99.900000	5.21E-04	2.29E-03	2.59E-02	5.69E-02	2.29E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964872
SAMPLE ID : S0248258001_PU
SAMPLE QTY : 1.254 G
SAMPLE DATE : 25-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 87.914

CHAMBER : 076
DETECTOR S/N : 78779
AVERAGE %EFFICIENCY : 31.3281
COUNT DATE : 24-MAR-2010 21:09:20
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B076.CNF:1118
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W076.CNF:297
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0160E+00 dpm
RESULTS : 2.6515E+00 dpm

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

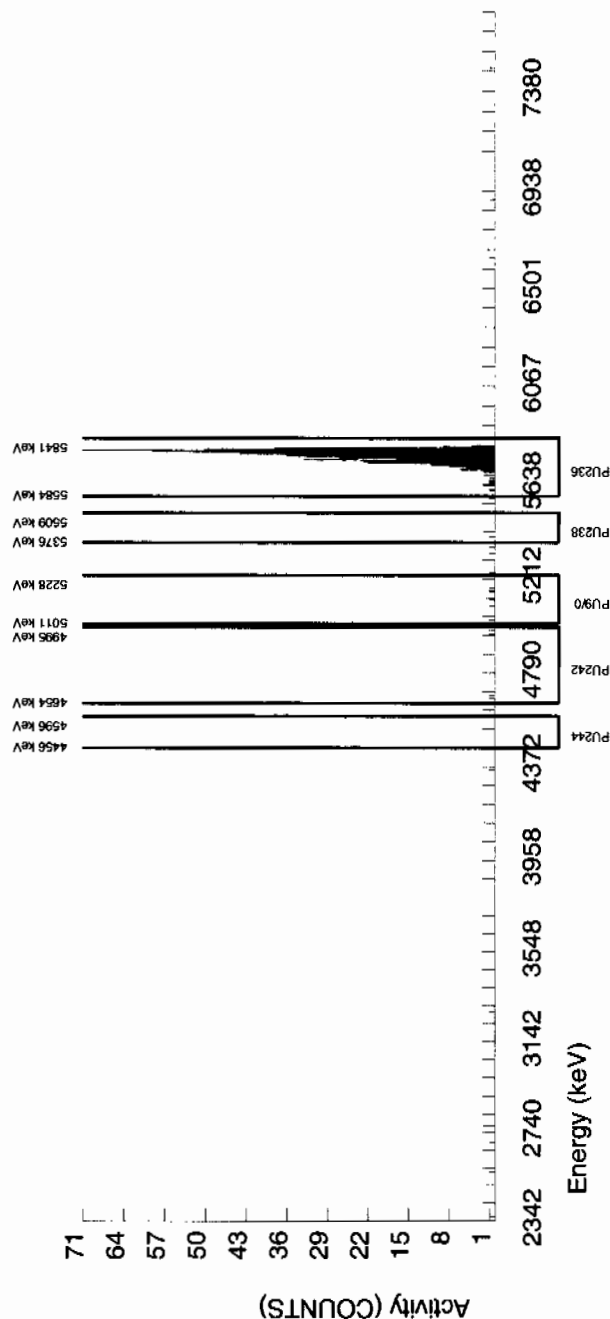
LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

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	5770.062	35.253	587.000	587.000	0.000	0.0000	100.0000	1.08E+00	7.77E-02	0.00E+00	4.91E-03	4.47E-02
PU-238	5499.000	5422.478	4.952	3.000	2.280	0.720	2.4495	99.90000	4.14E-03	3.41E-03	9.58E-03	2.41E-02	3.40E-03
PU-9/0	5155.000	5139.312	0.000	7.000	4.840	2.160	1.9732	99.90000	8.78E-03	5.33E-03	7.72E-03	2.04E-02	5.30E-03
PU242	4890.000	4807.974	292.149	5.000	3.560	1.440	*****	100.0000	6.45E-03	4.47E-03	4.87E-01	9.79E-01	4.45E-03
PU-244	4589.000	4525.916	0.000	0.000	-0.720	0.720	6.4609	99.90000	-1.31E-03	2.24E-03	2.53E-02	5.55E-02	2.23E-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 : 964872
SAMPLE ID : S1202070043_PU
SAMPLE QTY : 1.000 G
SAMPLE DATE : 16-MAR-2010 00:00:00
ANALYST : JXD2
% YIELD : 95.764

CHAMBER : 084
DETECTOR S/N : 78265
AVERAGE %EFFICIENCY : 34.3452
COUNT DATE : 24-MAR-2010 21:09:22
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B084.CNF:1032
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W084.CNF:297
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 2.9782E+00 dpm
RESULTS : 2.8520E+00 dpm

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

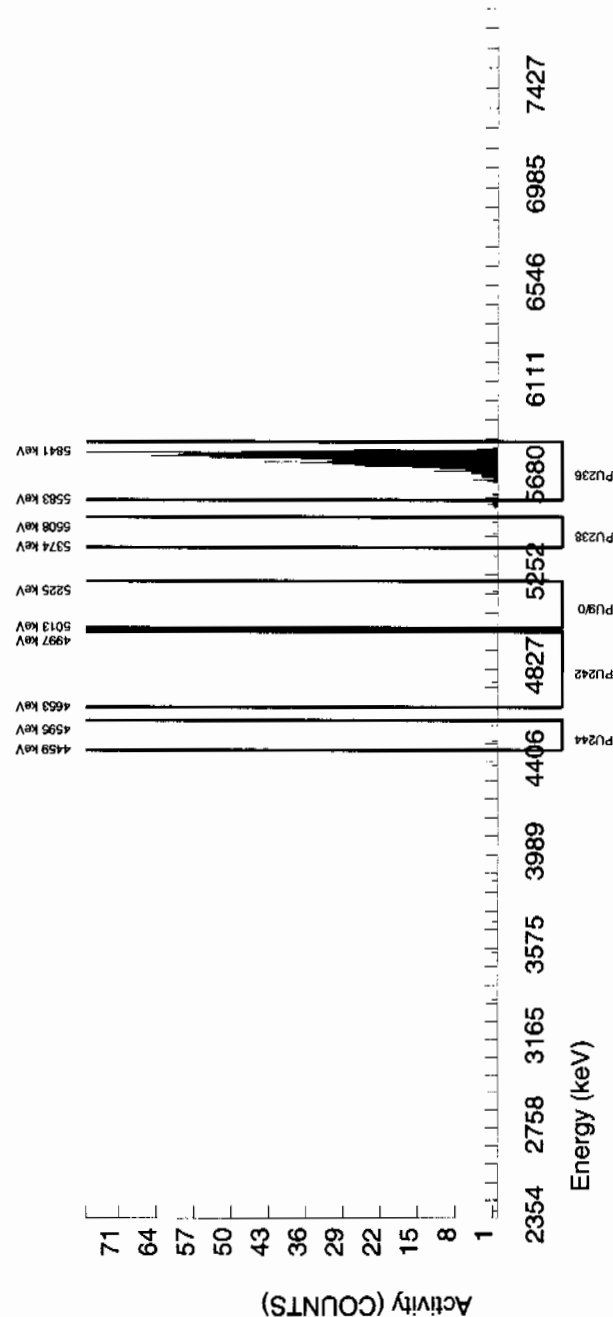
LCS/LCSD
ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

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	5770.548	49.477	701.000	701.000	0.000	0.0000	100.0000	1.34E+00	9.09E-02	0.00E+00	5.15E-03	5.07E-02
PU-238	5499.000	5465.279	55.223	2.000	0.560	1.440	2.4495	99.900000	1.07E-03	3.32E-03	1.01E-02	2.53E-02	3.32E-03
PU-9/0	5155.000	5182.522	5.020	1.000	-0.440	1.440	1.9732	99.900000	-8.38E-04	2.72E-03	8.11E-03	2.14E-02	2.72E-03
PU242	4890.000	4774.467	5.020	1.000	0.280	0.720	*****	100.0000	5.33E-04	2.35E-03	5.11E-01	1.03E+00	2.34E-03
PU-244	4589.000	4505.985	5.020	1.000	1.000	0.000	6.4609	99.900000	1.90E-03	1.91E-03	2.65E-02	5.82E-02	1.90E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964872
SAMPLE ID : S1202070044_PU
SAMPLE QTY : 1.252 G
SAMPLE DATE : 25-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 87.420

CHAMBER : 085
DETECTOR S/N : 78776
AVERAGE %EFFICIENCY : 32.8080
COUNT DATE : 24-MAR-2010 21:09:22
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B085.CNF:1035
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W085.CNF:304
CAL DATE : 12-MAR-2010

TRACER
ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 3.0160E+00 dpm
RESULTS : 2.6366E+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

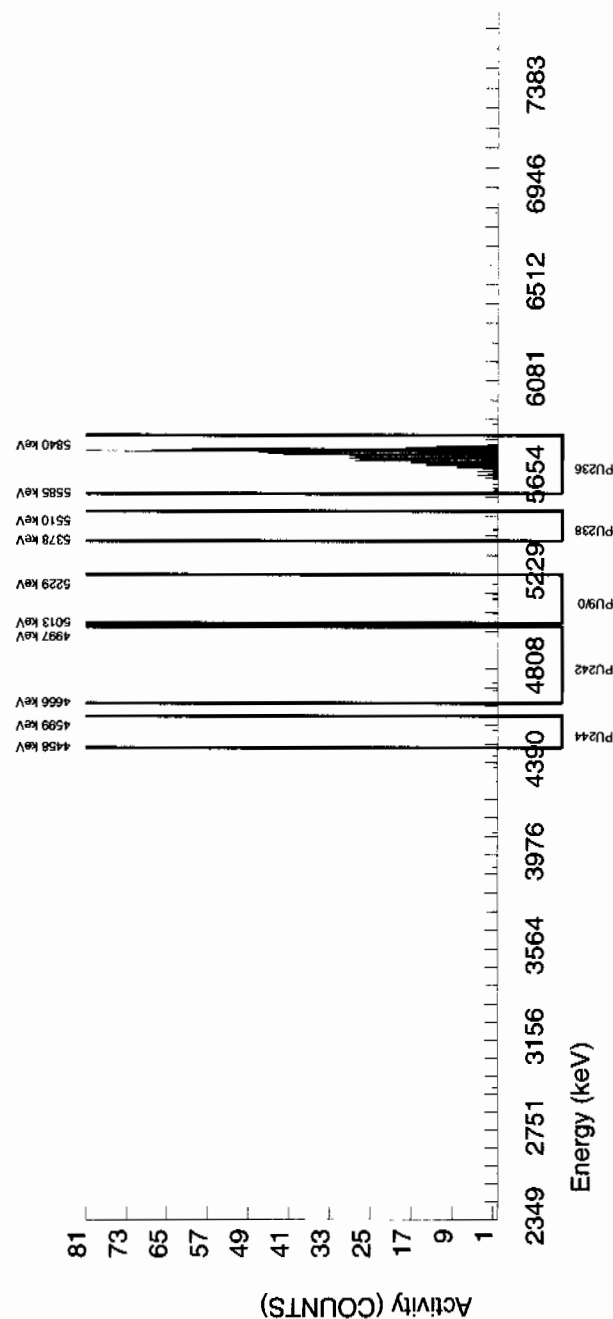
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5758.343	27.615	612.000	611.280	0.720	0.8485	100.0000	1.09E+00	7.69E-02	3.19E-03	1.11E-02	4.39E-02
PU-238	5499.000	5433.201	9.379	2.000	-0.160	2.160	2.4495	99.900000	-2.79E-04	3.29E-03	9.22E-03	2.32E-02	3.29E-03
PU-9/0	5155.000	5133.493	130.057	6.000	6.000	0.000	1.9732	99.900000	1.05E-02	4.32E-03	7.42E-03	1.96E-02	4.27E-03
PU242	4890.000	4734.937	35.015	2.000	1.280	0.720	*****	100.0000	2.23E-03	2.77E-03	4.69E-01	9.42E-01	2.76E-03
PU-244	4589.000	4541.523	5.002	1.000	1.000	0.000	6.4609	99.900000	1.74E-03	1.75E-03	2.43E-02	5.33E-02	1.74E-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 : 964872
SAMPLE ID : S1202070045_PU
SAMPLE QTY : 0.101 G
SAMPLE DATE : 16-MAR-2010 00:00:00
ANALYST : JXD2
% YIELD : 88.197

CHAMBER : 086
DETECTOR S/N : 78198
AVERAGE %EFFICIENCY : 30.3911
COUNT DATE : 24-MAR-2010 21:09:22
ELAPSED LIVE TIME(SEC) : 43199.99

LIB FILE : ENV_ALPHA_PU
BKG FILE : B086.CNF;1034
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W086.CNF;285
CAL DATE : 12-MAR-2010

TRACER ID : 1430-C
NUCLIDE : PU-236
NOMINAL : 2.9782E+00 dpm
RESULTS : 2.6267E+00 dpm

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

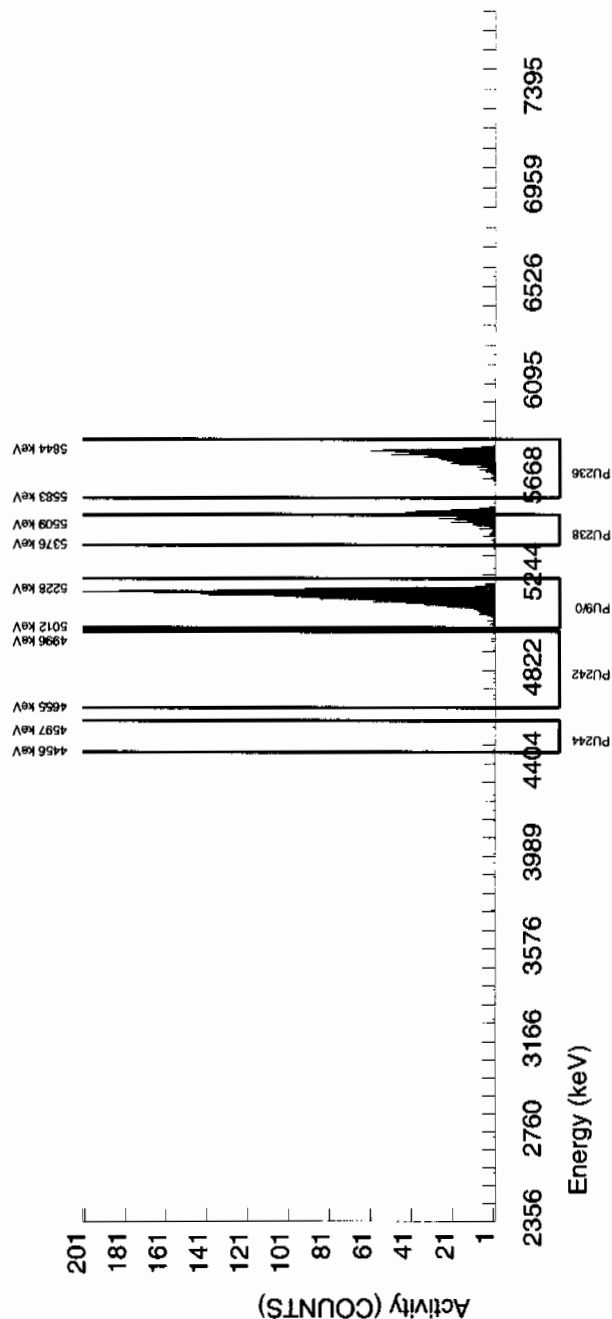
LCS/LCSD ID : 0244-B
NUCLIDE : PU-9/0
NOMINAL : 4.1778E+01 pCi/G

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	5774.605	39.277	572.000	571.280	0.720	0.8485	100.0000	1.33E+01	1.05E+00	4.23E-02	1.47E-01	5.56E-01
PU-238	5499.000	5481.586	0.000	203.000	201.560	1.440	2.4495	99.90000	4.66E+00	4.55E-01	1.22E-01	3.07E-01	3.30E-01
PU-9/0	5155.000	5159.844	35.612	1750.000	1747.840	2.160	1.9732	99.90000	4.04E+01	2.88E+00	9.85E-02	2.60E-01	9.68E-01
PU242	4890.000	4877.403	15.082	13.000	10.840	2.160	*****	100.0000	2.51E-01	8.98E-02	6.21E+00	1.25E+01	8.82E-02
PU-244	4589.000	4500.523	104.948	4.000	3.280	0.720	6.4609	99.90000	7.59E-02	4.94E-02	3.22E-01	7.08E-01	4.92E-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# 964874 Product: U Date: 3/26/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10% MDA/MDC, error is 150% or less of sample activity. If greater 10% MDA/MDC, error is 40% or less. If below the MDA/MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RCL/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 RCL/LLD.	✓		
(If rad samples, < 5% of lowest activity)			Case narrative
Sample was run within hold time	✓		
Sample was correctly preserved if required			N/A
Smears Taken for Radioactive batches			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.			
All line outs initialed and dated.	✓		
No transcription errors are apparent.			
Aux data is correct.			N/A
Client Special requirements care 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)			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: Jopel M. - 3/26/10Secondary Review Performed By: Myo Sten 3/26/10

3/27

LANL

Uranium Que Sheet

12-MAR-10

Batch #: 964874 Analyst: JXD2 First Client Due Date: 27-MAR-10 Internal Due Date: 16-MAR-10
 Tracer Isotope: U-232 U-236 Tracer Code: 1213-H Expiration Date: 12/04/10 Vol: 0.1
 LCS Isotope: U-238 LCS Code: Expiration Date: Vol: 11A
 Spike Isotope: U-238 Spike Code: Expiration Date: Vol: 11A
 Prep Date: 03/14/10 Initials: per Pipet ID: 222058 Balance ID: 50719222 Witness: AB 3/16/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Alkquot (g/l/f)	U Det #
248248001-1	RE36-10-8464	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	1		0.503	121
248248002-1	RE36-10-8475	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	2		0.501	122
248248003-1	RE36-10-8471	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	3		0.502	123
248248004-1	RE36-10-8485	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	4		0.503	124
248248005-1	RE36-10-8477	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	5		0.502	125
248248006-1	RE36-10-8479	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	6		0.508	126
248248007-1	RE36-10-8484	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	7		0.505	127
248248008-1	RE36-10-8481	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	8		0.501	128
248250001-1	RE36-10-8285	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	9		0.504	129
248250002-1	RE36-10-8286	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	10		0.506	130
248250003-1	RE36-10-8283	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	11		0.503	131
248250004-1	RE36-10-8284	SAMPLE		.1 pCi/g	SOIL	LANL010	24-FEB-10	12		0.506	132
248250001-1	RE46-10-13534	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	13		0.501	133
248250002-1	RE46-10-13539	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	14		0.509	134
248250003-1	RE46-10-13538	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	15		0.500	135
248250004-1	RE46-10-13536	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	16		0.506	136
248250005-1	RE46-10-13537	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	17		0.500	139
248250006-1	RE46-10-13535	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	18		0.509	140
248250007-1	RE46-10-13542	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	19		0.502	4
1202070047-1	MB for batch 964874	MB		.1 pCi/g	SOIL	QC ACCOUNT		20		1	5
1202070048-1	RE46-10-13534(248250001DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	25-FEB-10	21		0.501	6
1202070049-1	LCS for batch 964874	LCS		.1 pCi/g	SOIL	QC ACCOUNT		22		0.102	9

* SRM 0244-A exp 10/31/20 0.102g

Choose SOP used: GL-RAD-A-011 Solid Sample Dissolution by: LEACH OF DIGESTION Data Reviewed By: John L. 3/26/10
 Circle One

Blank Correction Report

Batch ID 964874

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202070048	DUP	Uranium-233/234	0.501 g	0.929	0.0858	0.0901	.018183633	pCi/g	NO
		Uranium-235/236	0.501 g	0.0197	0.0105	0.055	.010319361	pCi/g	YES
		Uranium-238	0.501 g	0.891	0.0829	0.0633	.011137725	pCi/g	NO
1202070049	LCS	Uranium-233/234	0.102 g	5.78	0.520	0.364	.089313725	pCi/g	NO
		Uranium-235/236	0.102 g	0.192	0.0615	0.222	.050686275	pCi/g	YES
		Uranium-238	0.102 g	5.49	0.498	0.256	.054705882	pCi/g	NO
1202070047	MB	Uranium-233/234	1.00 g	0.00911	0.00412	0.0393	.00911	pCi/g	YES
		Uranium-235/236	1.00 g	0.00517	0.00519	0.024	.00517	pCi/g	YES
		Uranium-238	1.00 g	0.00558	0.00282	0.0276	.00558	pCi/g	YES
248248001	RE36-10-8464	Uranium-233/234	0.503 g	0.971	0.0943	0.113	.018111332	pCi/g	NO
		Uranium-235/236	0.503 g	0.0546	0.0183	0.0691	.010278330	pCi/g	NO
		Uranium-238	0.503 g	1.07	0.102	0.0796	.011093439	pCi/g	NO
248248002	RE36-10-8475	Uranium-233/234	0.501 g	1.03	0.0967	0.105	.018183633	pCi/g	NO
		Uranium-235/236	0.501 g	0.0643	0.019	0.064	.010319361	pCi/g	NO
		Uranium-238	0.501 g	0.963	0.0916	0.0737	.011137725	pCi/g	NO
248248003	RE36-10-8471	Uranium-233/234	0.502 g	1.12	0.103	0.105	.018147410	pCi/g	NO
		Uranium-235/236	0.502 g	0.0229	0.0122	0.0639	.010298805	pCi/g	YES
		Uranium-238	0.502 g	1.08	0.100	0.0735	.011115538	pCi/g	NO
248248004	RE36-10-8485	Uranium-233/234	0.503 g	1.13	0.110	0.129	.018111332	pCi/g	NO
		Uranium-235/236	0.503 g	0.0677	0.0217	0.0786	.010278330	pCi/g	NO
		Uranium-238	0.503 g	1.22	0.117	0.0905	.011093439	pCi/g	NO
248248005	RE36-10-8477	Uranium-233/234	0.502 g	0.973	0.0948	0.114	.018147410	pCi/g	NO
		Uranium-235/236	0.502 g	0.020	0.0101	0.0698	.010298805	pCi/g	YES
		Uranium-238	0.502 g	0.948	0.093	0.0804	.011115538	pCi/g	NO
248248006	RE36-10-8479	Uranium-233/234	0.508 g	1.03	0.0983	0.111	.017933071	pCi/g	NO
		Uranium-235/236	0.508 g	0.0633	0.0182	0.0679	.010177165	pCi/g	NO
		Uranium-238	0.508 g	1.17	0.109	0.0781	.010984252	pCi/g	NO
248248007	RE36-10-8484	Uranium-233/234	0.505 g	0.954	0.0921	0.110	.018039604	pCi/g	NO
		Uranium-235/236	0.505 g	0.0385	0.0139	0.0671	.010237624	pCi/g	YES
		Uranium-238	0.505 g	0.842	0.0836	0.0772	.011049505	pCi/g	NO
248248008	RE36-10-8481	Uranium-233/234	0.501 g	0.958	0.094	0.115	.018183633	pCi/g	NO
		Uranium-235/236	0.501 g	0.0405	0.0146	0.0705	.010319361	pCi/g	YES
		Uranium-238	0.501 g	1.02	0.0989	0.0812	.011137725	pCi/g	NO
248250001	RE36-10-8285	Uranium-233/234	0.504 g	6.10	0.511	0.187	.018075397	pCi/g	NO
		Uranium-235/236	0.504 g	0.278	0.0523	0.114	.010257937	pCi/g	NO
		Uranium-238	0.504 g	4.51	0.388	0.131	.011071429	pCi/g	NO
248250002	RE36-10-8286	Uranium-233/234	0.506 g	3.21	0.265	0.130	.018003953	pCi/g	NO
		Uranium-235/236	0.506 g	0.165	0.0329	0.0792	.010217391	pCi/g	NO
		Uranium-238	0.506 g	2.62	0.222	0.0912	.011027668	pCi/g	NO
248250003	RE36-10-8283	Uranium-233/234	0.503 g	4.43	0.377	0.176	.018111332	pCi/g	NO
		Uranium-235/236	0.503 g	0.147	0.0355	0.108	.010278330	pCi/g	NO

Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Alliquot	Result	TPU	MDA	Alliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
248250003	RE36-10-8283	Uranium-238	0.503 g	3.72	0.322	0.124	.011093439	pCi/g	NO
248250004	RE36-10-8284	Uranium-233/234	0.506 g	3.72	0.308	0.141	.018003953	pCi/g	NO
		Uranium-235/236	0.506 g	0.124	0.0292	0.0862	.010217391	pCi/g	NO
		Uranium-238	0.506 g	2.88	0.245	0.0992	.011027668	pCi/g	NO
248258001	RE46-10-13534	Uranium-233/234	0.501 g	0.885	0.0878	0.114	.018183633	pCi/g	NO
		Uranium-235/236	0.501 g	0.0549	0.017	0.0696	.010319361	pCi/g	NO
		Uranium-238	0.501 g	0.905	0.0893	0.0801	.011137725	pCi/g	NO
248258002	RE46-10-13539	Uranium-233/234	0.509 g	0.855	0.0825	0.0985	.017897839	pCi/g	NO
		Uranium-235/236	0.509 g	0.0475	0.0147	0.0602	.010157171	pCi/g	YES
		Uranium-238	0.509 g	0.856	0.0822	0.0692	.010962672	pCi/g	NO
248258003	RE46-10-13538	Uranium-233/234	0.500 g	0.792	0.0789	0.106	.01822	pCi/g	NO
		Uranium-235/236	0.500 g	0.065	0.0192	0.0647	.01034	pCi/g	NO
		Uranium-238	0.500 g	0.838	0.0826	0.0745	.01116	pCi/g	NO
248258004	RE46-10-13536	Uranium-233/234	0.506 g	0.835	0.0817	0.103	.018003953	pCi/g	NO
		Uranium-235/236	0.506 g	0.0181	0.0112	0.0631	.010217391	pCi/g	YES
		Uranium-238	0.506 g	0.839	0.0821	0.0726	.011027668	pCi/g	NO
248258005	RE46-10-13537	Uranium-233/234	0.500 g	0.834	0.0824	0.104	.01822	pCi/g	NO
		Uranium-235/236	0.500 g	0.073	0.019	0.0636	.01034	pCi/g	NO
		Uranium-238	0.500 g	0.938	0.0896	0.0732	.01116	pCi/g	NO
248258006	RE46-10-13535	Uranium-233/234	0.509 g	0.772	0.0768	0.101	.017897839	pCi/g	NO
		Uranium-235/236	0.509 g	0.0442	0.0143	0.0616	.010157171	pCi/g	YES
		Uranium-238	0.509 g	0.826	0.0807	0.0709	.010962672	pCi/g	NO
248258007	RE46-10-13542	Uranium-233/234	0.502 g	0.792	0.0748	0.0851	.018147410	pCi/g	NO
		Uranium-235/236	0.502 g	0.0559	0.0159	0.052	.010298805	pCi/g	NO
		Uranium-238	0.502 g	0.824	0.0773	0.0598	.011115538	pCi/g	NO

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964874
SAMPLE ID : S0248248001_UU
SAMPLE QTY : 0.503 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 86.518

CHAMBER : 121
DETECTOR S/N : 75545
AVERAGE %EFFICIENCY : 25.7929
COUNT DATE : 25-MAR-2010 14:16:24
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B121.CNF:457
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W121.CNF:121
CAL DATE : 19-MAR-2010

TRACER

ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5028E+00 dpm
RESULTS : 3.8958E+00 dpm

MS/MSD

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

LCS/LCSD

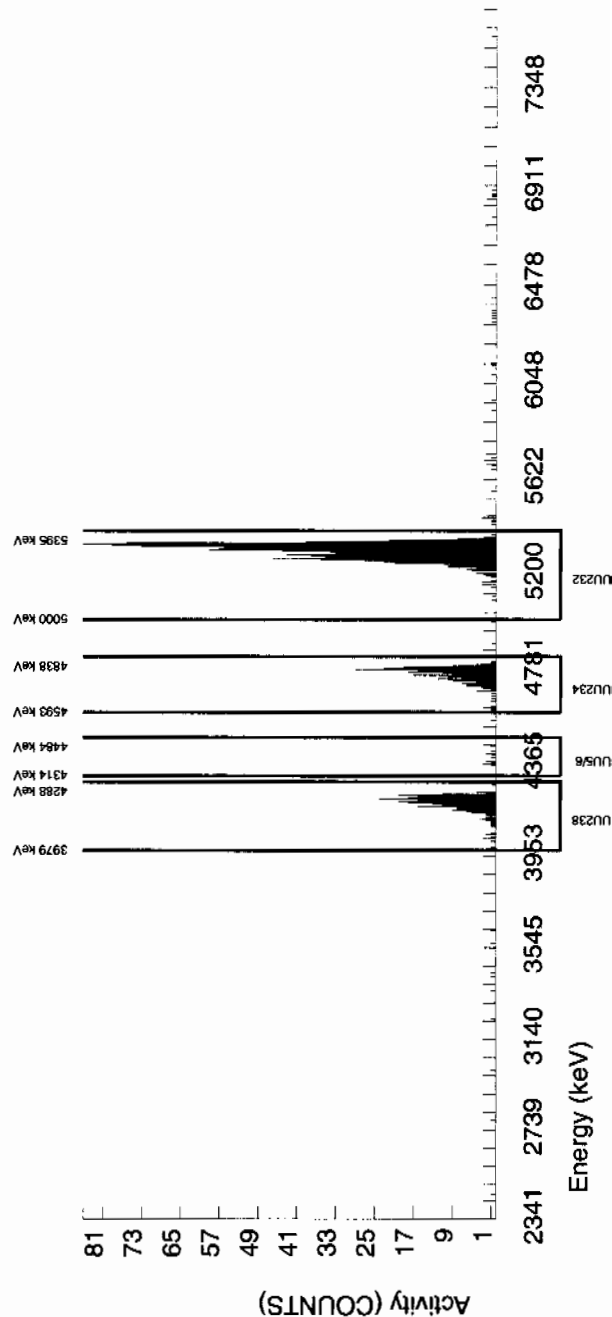
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5308.879	70.551	1009.000	1004.000	5.000	2.2361	100.0000	4.03E+00	3.19E-01	2.09E-02	5.26E-02	1.28E-01
U-3/4	4763.020	4763.116	38.457	244.000	241.983	1.000	5.4790	100.0000	9.71E-01	9.43E-02	5.12E-02	1.13E-01	6.27E-02
U-235	4391.000	4392.838	41.927	12.000	11.000	1.000	2.4127	80.90000	5.46E-02	1.83E-02	2.78E-02	6.91E-02	1.79E-02
U-238	4184.730	4194.067	56.363	269.000	267.000	2.000	3.6781	100.0000	1.07E+00	1.02E-01	3.43E-02	7.96E-02	6.61E-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 : 964874
SAMPLE ID : S0248248002_UU
SAMPLE QTY : 0.501 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 91.602

CHAMBER : 122
DETECTOR S/N : 75546
AVERAGE %EFFICIENCY : 26.3997
COUNT DATE : 25-MAR-2010 14:16:27
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B122.CNF:459
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W122.CNF:124
CAL DATE : 19-MAR-2010

TRACER
ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5028E+00 dpm
RESULTS : 4.1247E+00 dpm

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

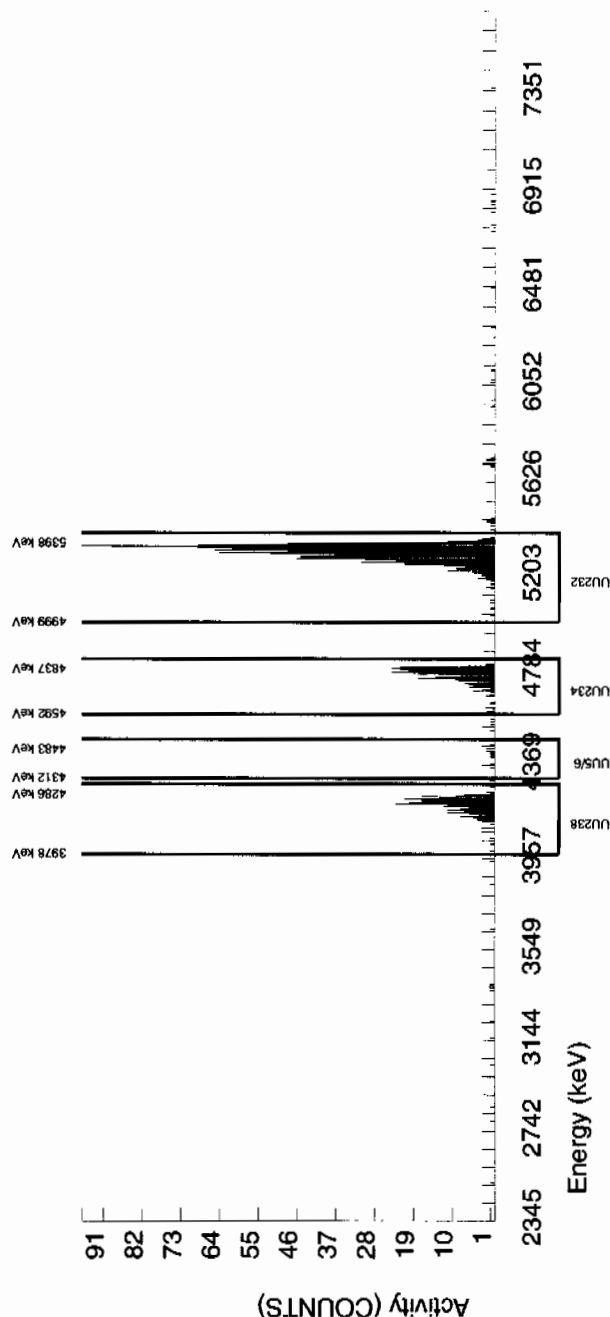
LCS/LCSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5312.935	45.461	1095.000	1088.000	7.000	2.6458	100.0000	4.05E+00	3.17E-01	2.29E-02	5.58E-02	1.24E-01
U-3/4	4763.020	4766.292	56.064	279.000	276.898	1.000	5.4790	100.0000	1.03E+00	9.67E-02	4.74E-02	1.05E-01	6.21E-02
U-235	4391.000	4419.399	74.159	15.000	14.000	1.000	2.4127	80.90000	6.43E-02	1.90E-02	2.58E-02	6.40E-02	1.84E-02
U-238	4184.730	4195.267	42.935	259.000	259.000	0.000	3.6781	100.0000	9.63E-01	9.16E-02	3.18E-02	7.37E-02	5.98E-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 : 964874
SAMPLE ID : S0248248003_UU
SAMPLE QTY : 0.502 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 88.865

CHAMBER : 123
DETECTOR S/N : 45-142V3
AVERAGE %EFFICIENCY : 27.2378
COUNT DATE : 25-MAR-2010 14:16:29
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B123.CNF;457
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W123.CNF;120
CAL DATE : 19-MAR-2010

TRACER ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5028E+00 dpm
RESULTS : 4.0014E+00 dpm

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

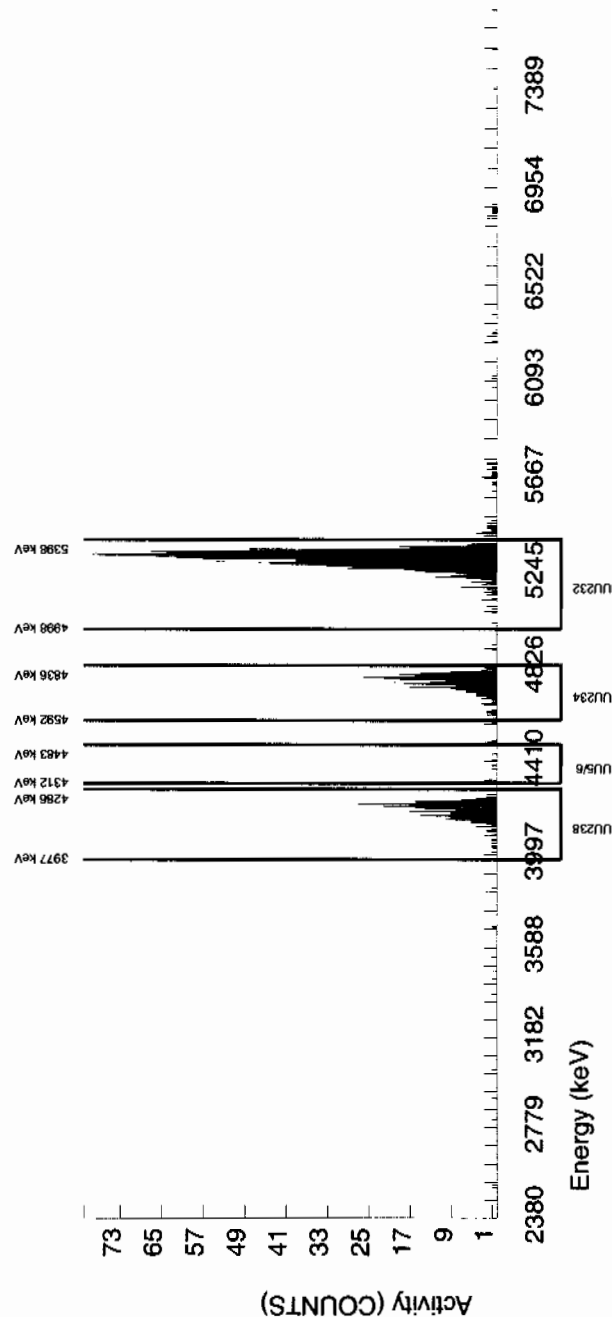
LCS/LCSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/g

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
U232	5302.100	5313.673	66.232	1094.000	1089.000	5.000	2.2361	100.0000	4.04E+00	3.16E-01	1.93E-02	4.86E-02	1.23E-01
U-3/4	4763.020	4763.915	63.390	304.000	302.897	0.000	5.4790	100.0000	1.12E+00	1.03E-01	4.73E-02	1.05E-01	6.45E-02
U-235	4391.000	4395.433	114.415	6.000	5.000	1.000	2.4127	80.90000	2.29E-02	1.22E-02	2.57E-02	6.39E-02	1.21E-02
U-238	4184.730	4194.810	63.557	292.000	291.000	1.000	3.6781	100.0000	1.08E+00	1.00E-01	3.17E-02	7.35E-02	6.35E-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

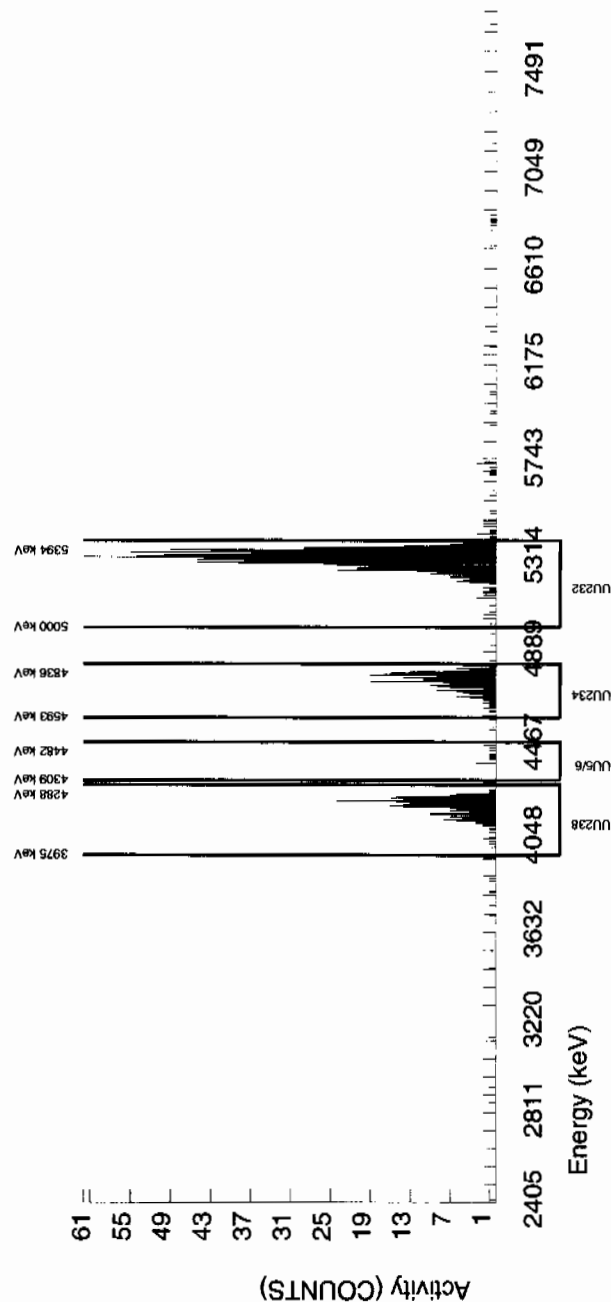


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 964874				CHAMBER : 124				LIB FILE : ENV_ALPHA_UU					
SAMPLE ID : S0248248004_UU				DETECTOR S/N : 45-142V2				BKG FILE : B124.CNF;453					
SAMPLE QTY : 0.503 G				AVERAGE %EFFICIENCY : 26.6674				BKG DATE : 21-MAR-2010					
SAMPLE DATE : 24-FEB-2010 00:00:00				COUNT DATE : 25-MAR-2010 14:16:31				BKG LIVE TIME(SEC) : 60000.00					
ANALYST : JXD2				ELAPSED LIVE TIME(SEC) : 60000.00				EFF FILE : W124.CNF;116					
% YIELD : 73.596								CAL DATE : 19-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 : 4.5028E+00 dpm				NOMINAL : 5.7500E+00 pCi/G				NOMINAL : 5.7500E+00 pCi/G					
RESULTS : 3.3139E+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	5313.747	63.062	889.000	883.000	6.000	2.4495	100.0000	4.03E+00	3.26E-01	2.60E-02	6.44E-02	1.37E-01
U-3/4	4763.020	4760.896	61.443	250.000	248.105	1.000	5.4790	100.0000	1.13E+00	1.10E-01	5.82E-02	1.29E-01	7.22E-02
U-235	4391.000	4409.656	6.261	13.000	12.000	1.000	2.4127	80.90000	6.77E-02	2.17E-02	3.17E-02	7.86E-02	2.11E-02
U-238	4184.730	4193.956	48.792	271.000	268.000	3.000	3.6781	100.0000	1.22E+00	1.17E-01	3.90E-02	9.05E-02	7.55E-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 : 964874
SAMPLE ID : S0248248005_UU
SAMPLE QTY : 0.502 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 81.968

CHAMBER : 125
DETECTOR S/N : 75547
AVERAGE %EFFICIENCY : 27.0077
COUNT DATE : 25-MAR-2010 14:16:33
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B125.CNF.463
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W125.CNF.134
CAL DATE : 18-MAR-2010

TRACER ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5028E+00 dpm
RESULTS : 3.6909E+00 dpm

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

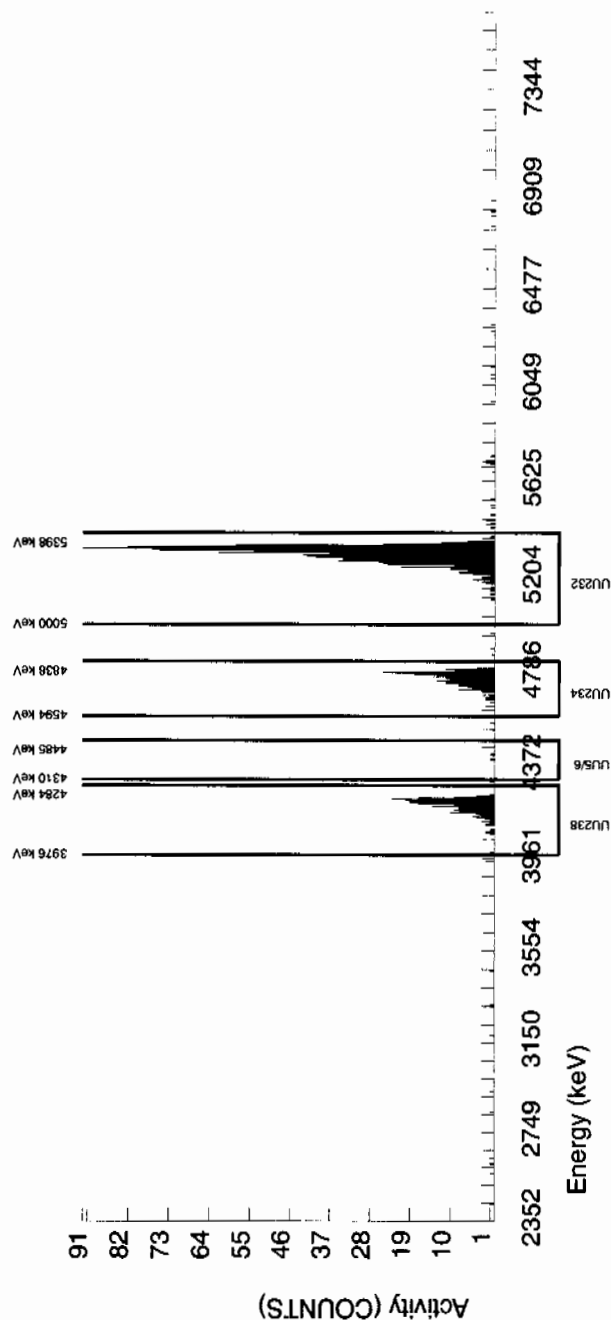
LCS/LCSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5310.132	34.562	1000.000	996.000	4.000	2.0000	100.0000	4.04E+00	3.20E-01	1.89E-02	4.87E-02	1.29E-01
U-3/4	4763.020	4763.233	25.433	243.000	239.991	2.000	5.4790	100.0000	9.73E-01	9.48E-02	5.17E-02	1.14E-01	6.33E-02
U-235	4391.000	4415.583	29.026	4.000	4.000	0.000	2.4127	80.90000	2.00E-02	1.01E-02	2.81E-02	6.98E-02	1.00E-02
U-238	4184.730	4195.812	39.949	236.000	234.000	2.000	3.6781	100.0000	9.48E-01	9.30E-02	3.47E-02	8.04E-02	6.25E-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 : 964874
SAMPLE ID : S0248248006_UU
SAMPLE QTY : 0.508 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 84.367

CHAMBER : 126
DETECTOR S/N : 75548
AVERAGE %EFFICIENCY : 26.6612
COUNT DATE : 25-MAR-2010 14:16:36
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B126.CNF:462
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W126.CNF:136
CAL DATE : 18-MAR-2010

TRACER
ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5028E+00 dpm
RESULTS : 3.7989E+00 dpm

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

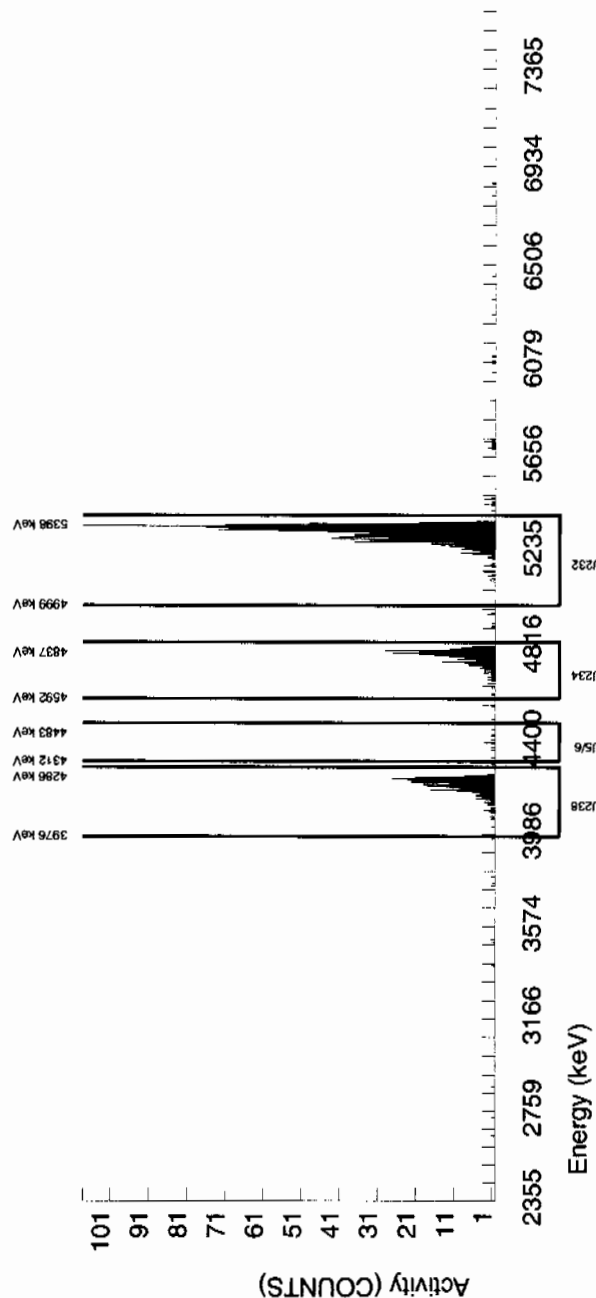
LCS/LCSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/g

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
U232	5302.100	5321.965	30.208	1013.000	1012.000	1.000	1.0000	100.0000	3.99E+00	3.15E-01	9.17E-03	2.90E-02	1.26E-01
U-3/4	4763.020	4778.061	30.687	264.000	260.975	2.000	5.4790	100.0000	1.03E+00	9.83E-02	5.02E-02	1.11E-01	6.42E-02
U-235	4391.000	4394.467	6.240	13.000	13.000	0.000	2.4127	80.90000	6.33E-02	1.82E-02	2.74E-02	6.79E-02	1.76E-02
U-238	4184.730	4205.747	61.294	299.000	297.000	2.000	3.6781	100.0000	1.17E+00	1.09E-01	3.37E-02	7.81E-02	6.84E-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 : 964874
SAMPLE ID : S0248248007_UU
SAMPLE QTY : 0.505 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 87.005

CHAMBER : 127
DETECTOR S/N : 78770
AVERAGE %EFFICIENCY : 26.3126
COUNT DATE : 25-MAR-2010 14:16:38
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B127.CNF:466
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W127.CNF:127
CAL DATE : 18-MAR-2010

TRACER ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5028E+00 dpm
RESULTS : 3.9177E+00 dpm

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

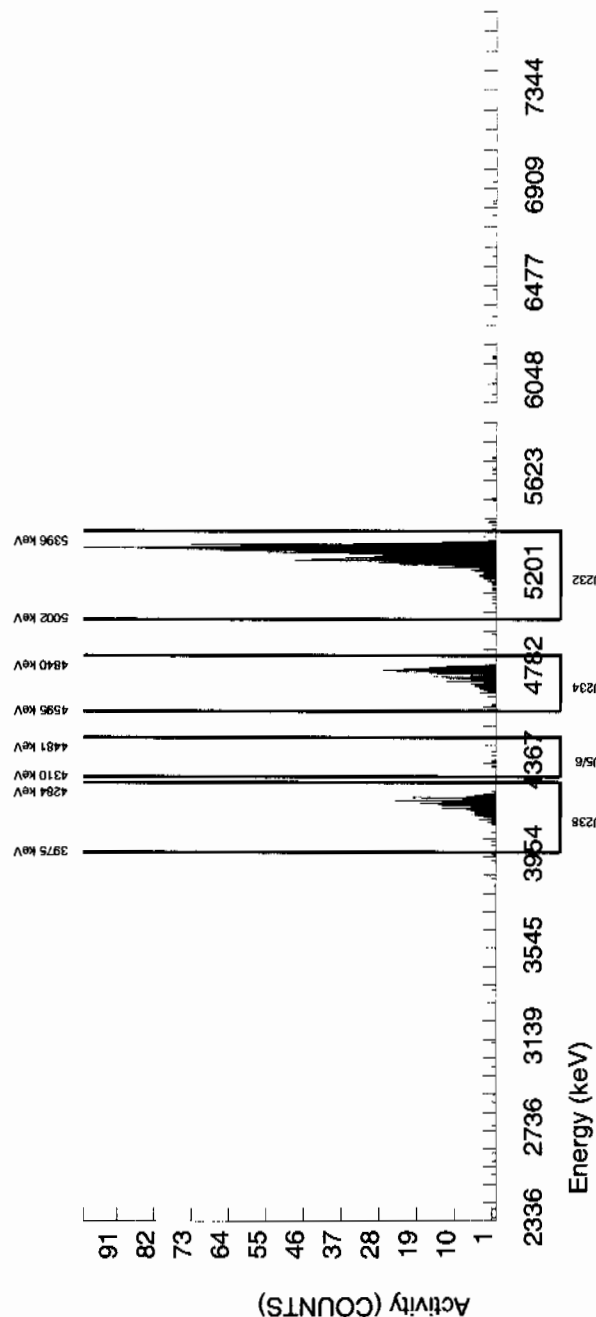
LCS/LCSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5302.235	39.185	1034.000	1030.000	4.000	2.0000	100.0000	4.02E+00	3.17E-01	1.81E-02	4.68E-02	1.26E-01
U-3/4	4763.020	4756.411	45.266	246.000	244.957	0.000	5.4790	100.0000	9.54E-01	9.21E-02	4.97E-02	1.10E-01	6.10E-02
U-235	4391.000	4383.360	69.019	8.000	8.000	0.000	2.4127	80.90000	3.85E-02	1.39E-02	2.70E-02	6.71E-02	1.36E-02
U-238	4184.730	4187.969	48.548	216.000	216.000	0.000	3.6781	100.0000	8.42E-01	8.36E-02	3.33E-02	7.72E-02	5.73E-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 : 964874
SAMPLE ID : S0248248008_UU
SAMPLE QTY : 0.501 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 84.545

CHAMBER : 128
DETECTOR S/N : 75549
AVERAGE %EFFICIENCY : 25.9743
COUNT DATE : 25-MAR-2010 14:16:41
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B128.CNF:472
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W128.CNF:137
CAL DATE : 18-MAR-2010

TRACER ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5028E+00 dpm
RESULTS : 3.8069E+00 dpm

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

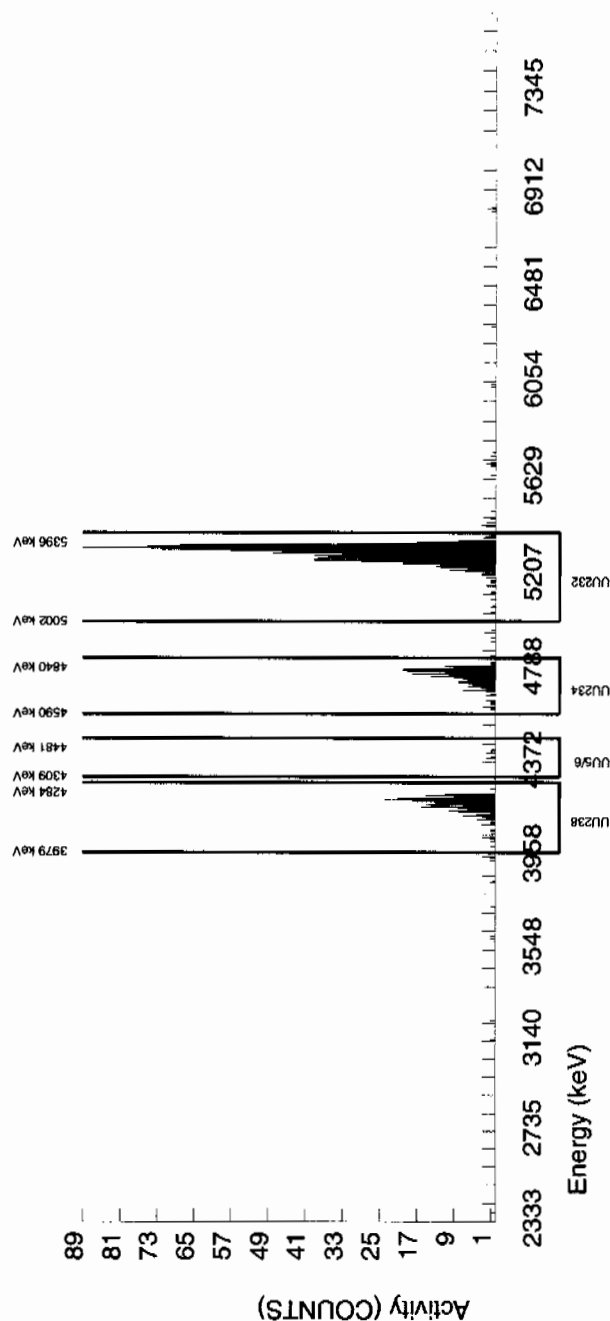
LCS/LCSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/g

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
U232	5302.100	5310.969	39.372	991.000	988.000	3.000	1.7321	100.0000	4.05E+00	3.21E-01	1.65E-02	4.41E-02	1.29E-01
U-3/4	4763.020	4761.735	49.462	237.000	233.999	2.000	5.4790	100.0000	9.58E-01	9.40E-02	5.22E-02	1.15E-01	6.32E-02
U-235	4391.000	4402.060	24.924	8.000	8.000	0.000	2.4127	80.90000	4.05E-02	1.46E-02	2.84E-02	7.05E-02	1.43E-02
U-238	4184.730	4190.465	56.196	252.000	250.000	2.000	3.6781	100.0000	1.02E+00	9.89E-02	3.50E-02	8.12E-02	6.53E-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 : 964874
SAMPLE ID : S0248258001_UU
SAMPLE QTY : 0.501 G
SAMPLE DATE : 25-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 88.582

CHAMBER : 133
DETECTOR S/N : 76229
AVERAGE %EFFICIENCY : 25.1168
COUNT DATE : 25-MAR-2010 14:16:54
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B133.CNF:446
BKG DATE : 22-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W133.CNF:125
CAL DATE : 18-MAR-2010

TRACER
ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5027E+00 dpm
RESULTS : 3.9886E+00 dpm

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

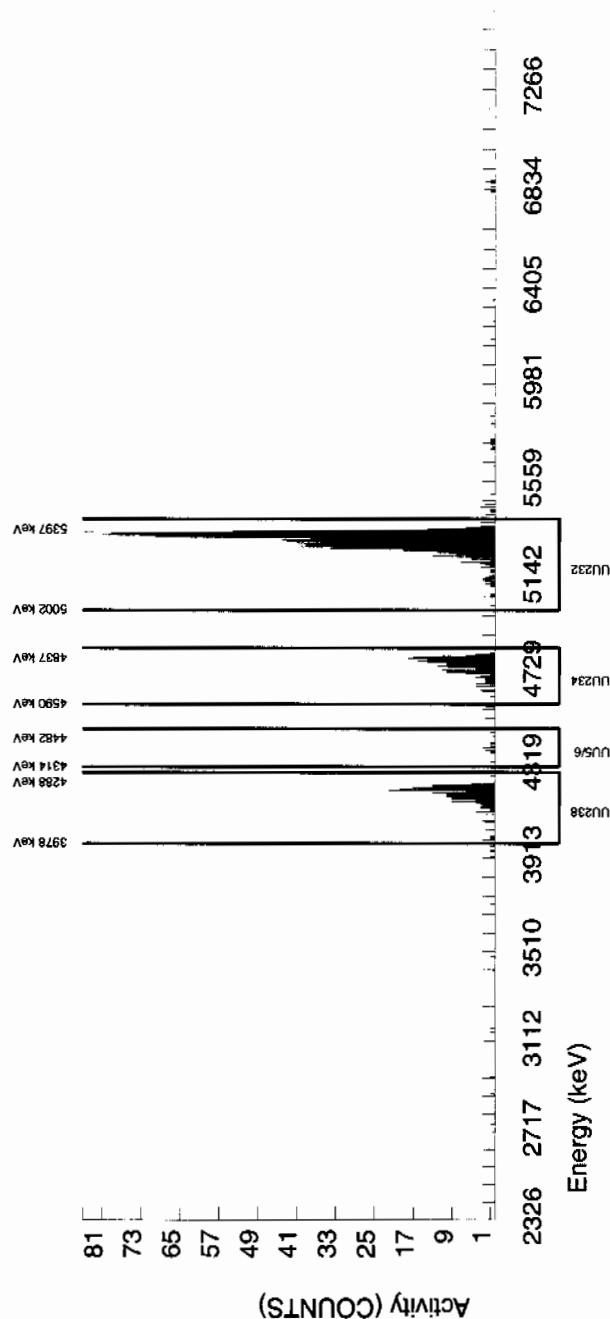
LCS/LCSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5308.806	38.639	1004.000	1001.000	3.000	1.7321	100.0000	4.05E+00	3.21E-01	1.63E-02	4.35E-02	1.28E-01
U-3/4	4763.020	4762.808	71.032	220.000	218.986	0.000	5.4790	100.0000	8.85E-01	8.78E-02	5.15E-02	1.14E-01	5.98E-02
U-235	4391.000	4398.074	7.146	11.000	11.000	0.000	2.4127	80.90000	5.49E-02	1.70E-02	2.80E-02	6.96E-02	1.66E-02
U-238	4184.730	4191.735	38.146	224.000	224.000	0.000	3.6781	100.0000	9.05E-01	8.93E-02	3.46E-02	8.01E-02	6.05E-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 : 964874
SAMPLE ID : S1202070047_UU
SAMPLE QTY : 1.000 G
SAMPLE DATE : 16-MAR-2010 00:00:00
ANALYST : JXD2
% YIELD : 96.269

CHAMBER : 005
DETECTOR S/N : 79454
AVERAGE %EFFICIENCY : 33.5469
COUNT DATE : 25-MAR-2010 12:59:05
ELAPSED LIVE TIME(SEC) : 59999.99

LIB FILE : ENV_ALPHA_UU
BKG FILE : B005.CNF;1115
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W005.CNF;339
CAL DATE : 4-MAR-2010

TRACER
ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5003E+00 dpm
RESULTS : 4.3324E+00 dpm

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

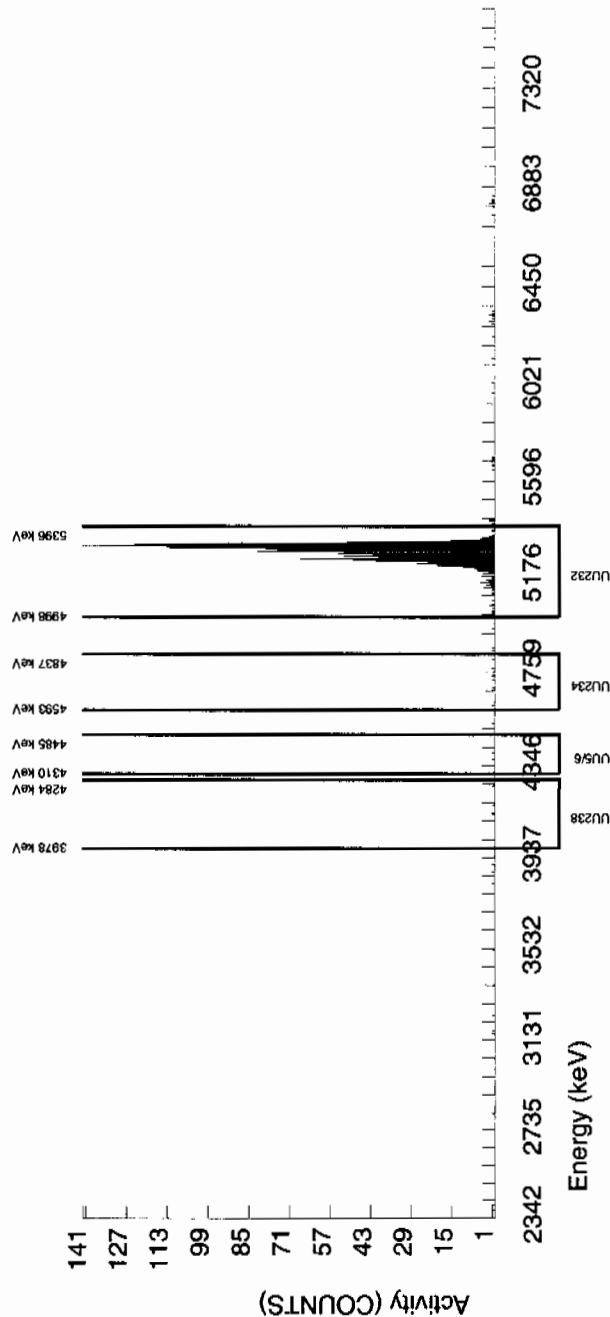
LCS/LCSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5288.693	38.429	1458.000	1453.000	5.000	2.2361	100.0000	2.03E+00	1.52E-01	7.26E-03	1.83E-02	5.34E-02
U-3/4	4763.020	4731.064	190.446	9.000	6.528	1.000	5.4790	100.0000	9.11E-03	4.12E-03	1.78E-02	3.93E-02	4.07E-03
U-235	4391.000	4366.408	0.000	6.000	3.000	3.000	2.4127	80.90000	5.17E-03	5.18E-03	9.68E-03	2.40E-02	5.17E-03
U-238	4184.730	4178.012	121.471	4.000	4.000	0.000	3.6781	100.0000	5.58E-03	2.82E-03	1.19E-02	2.76E-02	2.79E-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 : 964874
SAMPLE ID : S1202070048_UU
SAMPLE QTY : 0.501 G
SAMPLE DATE : 25-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 87.750

CHAMBER : 006
DETECTOR S/N : 79455
AVERAGE %EFFICIENCY : 32.0671
COUNT DATE : 25-MAR-2010 12:59:05
ELAPSED LIVE TIME(SEC) : 59999.99

LIB FILE : ENV_ALPHA_UU
BKG FILE : B006.CNF;1128
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W006.CNF;363
CAL DATE : 4-MAR-2010

TRACER
ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5027E+00 dpm
RESULTS : 3.9511E+00 dpm

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

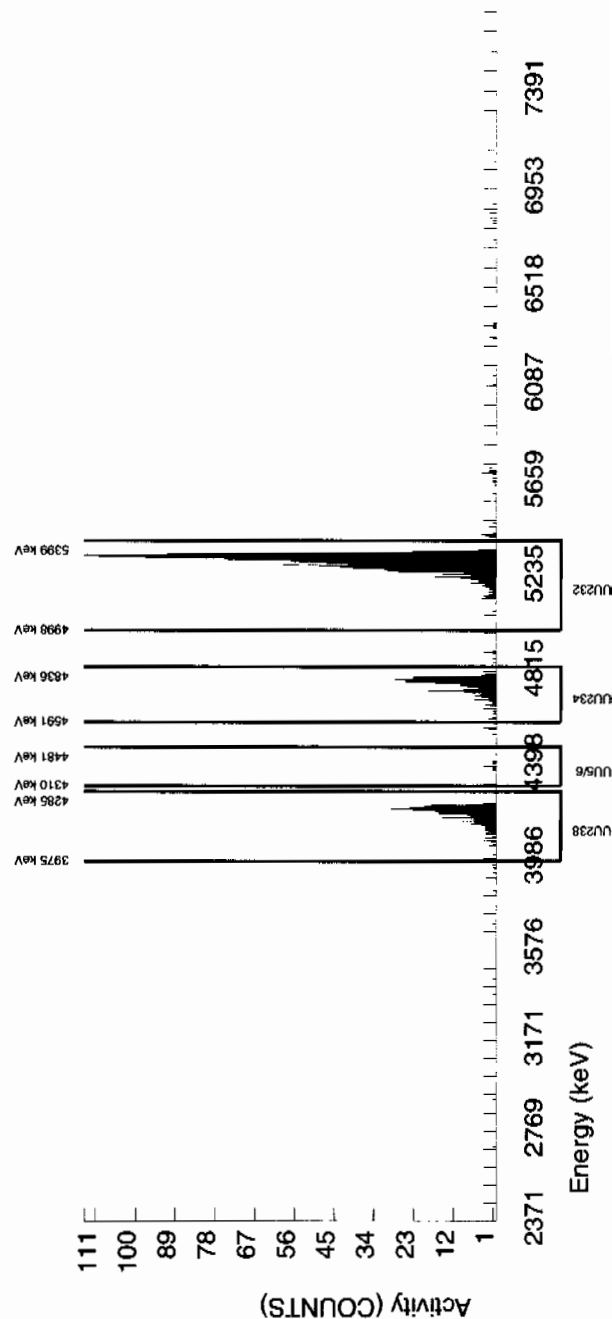
LCS/LCSD
ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5308.655	54.027	1267.000	1266.000	1.000	1.0000	100.0000	4.05E+00	3.09E-01	7.43E-03	2.35E-02	1.14E-01
U-3/4	4763.020	4759.281	64.085	294.000	290.717	2.000	5.4790	100.0000	9.29E-01	8.58E-02	4.07E-02	9.01E-02	5.49E-02
U-235	4391.000	4405.361	44.573	6.000	5.000	1.000	2.4127	80.90000	1.97E-02	1.05E-02	2.22E-02	5.50E-02	1.04E-02
U-238	4184.730	4187.155	51.606	279.000	279.000	0.000	3.6781	100.0000	8.91E-01	8.29E-02	2.73E-02	6.33E-02	5.34E-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 : 964874
SAMPLE ID : S1202070049_UU
SAMPLE QTY : 0.102 G
SAMPLE DATE : 16-MAR-2010 00:00:00
ANALYST : JXD2
% YIELD : 99.653

CHAMBER : 009
DETECTOR S/N : 72528
AVERAGE %EFFICIENCY : 34.3260
COUNT DATE : 25-MAR-2010 12:59:06
ELAPSED LIVE TIME(SEC) : 60000.00

LIB FILE : ENV_ALPHA_UU
BKG FILE : B009.CNF;1116
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W009.CNF;309
CAL DATE : 4-MAR-2010

TRACER ID : 1283-H
NUCLIDE : U232
NOMINAL : 4.5003E+00 dpm
RESULTS : 4.4847E+00 dpm

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

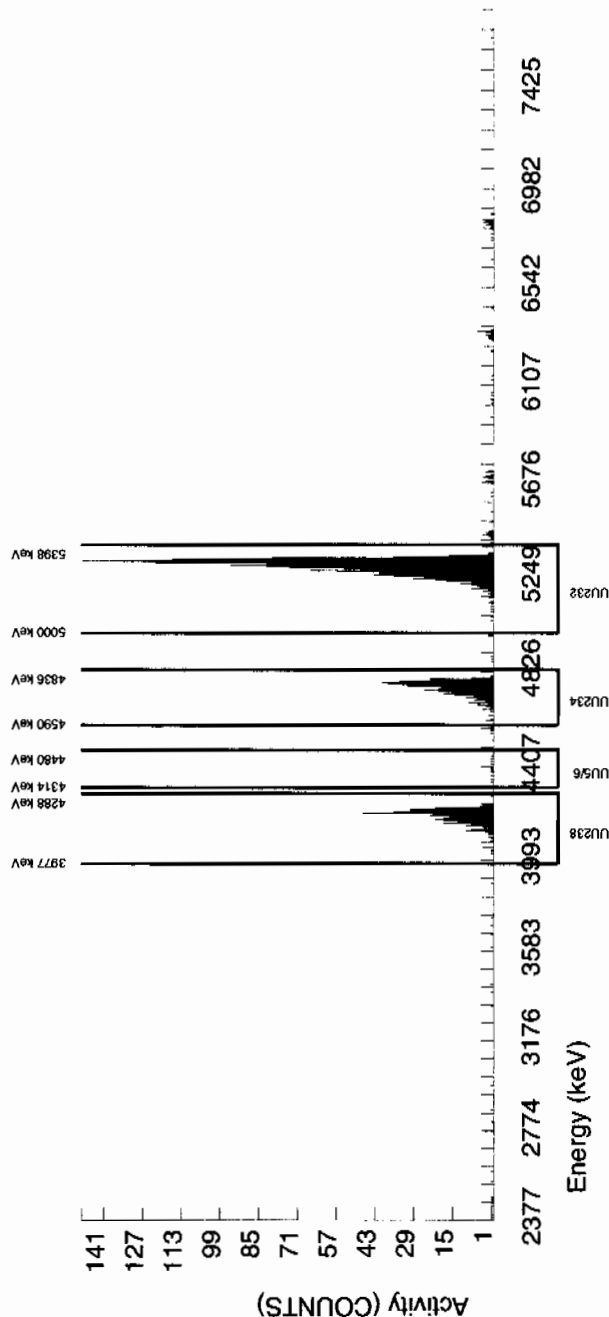
LCS/LCSD ID : 0244-A
NUCLIDE : U-238
NOMINAL : 5.7500E+00 pCi/g

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
U232	5302.100	5303.813	39.568	1549.000	1539.000	10.000	3.1623	100.0000	1.99E+01	1.61E+00	9.50E-02	2.25E-01	5.10E-01
U-3/4	4763.020	4757.287	55.230	449.000	447.441	0.000	5.4790	100.0000	5.78E+00	5.20E-01	1.65E-01	3.64E-01	2.73E-01
U-235	4391.000	4406.916	118.703	13.000	12.000	1.000	2.4127	80.90000	1.91E-01	6.15E-02	8.96E-02	2.22E-01	5.97E-02
U-238	4184.730	4188.958	27.751	426.000	425.000	1.000	3.6781	100.0000	5.49E+00	4.98E-01	1.10E-01	2.56E-01	2.67E-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#

9695768

Product:

Am

Date:

3/28/10

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 RDU/ 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 RDU/ 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.	✓		
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs initialed and dated.	✓		
No transcription errors are apparent.			MA
Aux data is correct.			MA
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hlt notification complete (if necessary)			MA
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			MA
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			MA
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:

Denise Green 3/28/10

Secondary Review Performed By:

K. Bell 3/28/10

3/27
LAN

Am/Cm Que Sheet

26-MAR-10

Batch #: 969568 Analyst: JXD2 First Client Due Date: 27-MAR-10 Internal Due Date: 21-MAR-10 Comments:
 Tracer(s): Am241/Cm244 Tracer Code: 445-96-2-VV Expiration Date: 05/05/11 Vol: 0.1
 LCS Isotope(s): Am241/Cm244 LCS Code(s): --- Expiration Date: --- Vol(s): ---
 Spike Isotope(s): Am241/Cm244 Spike Code(s): --- Expiration Date: --- Vol(s): ---
 Prep Date: 01/24/10 Initials: WMD Pipet ID: 16423/5 Balance ID: 50410272 Witness: WMD 3/26/10

Sample ID	Client Description	Type	Hazard Code	CRDL	Mln	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry	Aliquot (g/l/n)	Am/Cm	Det #
248248003-2	RE36-10-8471	SAMPLE	.05	pCi/g	SOIL	LANL010	24-FEB-10	1	31	1.257	31	66		
1202081812-1	MB for batch 969568	MB	UCF	pCi/g to pCi/soil	SOIL	QC ACCOUNT	24-FEB-10	2	32	1	33	47		
1202081813-2	RE36-10-8471(248248003DUP)	DUP	.05	pCi/g	SOIL	QC ACCOUNT	24-FEB-10	3	33	1.268	35	08		
1202081814-1	LCS for batch 969568	LCS	UCF	pCi/g to pCi/soil	SOIL	QC ACCOUNT	24-FEB-10	4	34	0.150	36	09		

*SRM 0244-B exp 4/30/20 0.100g

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

Solid Sample Dissolution by: LEACH or DIGESTION
 Circle One

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By:

DL 5/08/10

Blank Correction Report

Batch ID 969568

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202081813	DUP	Americium-241	1.27 g	0.00234	0.00246	0.0195	.004881890	pCi/g	YES
1202081814	LCS	Americium-241	0.100 g	36.4	2.41	0.217	.062	pCi/g	NO
1202081812	MB	Americium-241	1.00 g	0.0062	0.00317	0.0249	.0062	pCi/g	YES
248248003	RE36-10-8471	Americium-241	1.26 g	-0.00261	0.00207	0.0186	.004920635	pCi/g	YES

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 969568
SAMPLE ID : S0248248003_AM
SAMPLE QTY : 1.257 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 84.510

CHAMBER : 031
DETECTOR S/N : 79988
AVERAGE %EFFICIENCY : 35.5462
COUNT DATE : 27-MAR-2010 13:01:49
ELAPSED LIVE TIME(SEC) : 59999.99

LIB FILE : ENV_ALPHA_AM
BKG FILE : B031.CNF;1121
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W031.CNF;347
CAL DATE : 4-MAR-2010

TRACER ID : 445-96-2-VV
NUCLIDE : AM243
NOMINAL : 2.2753E+00 dpm
RESULTS : 1.9229E+00 dpm

MS/MSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/G

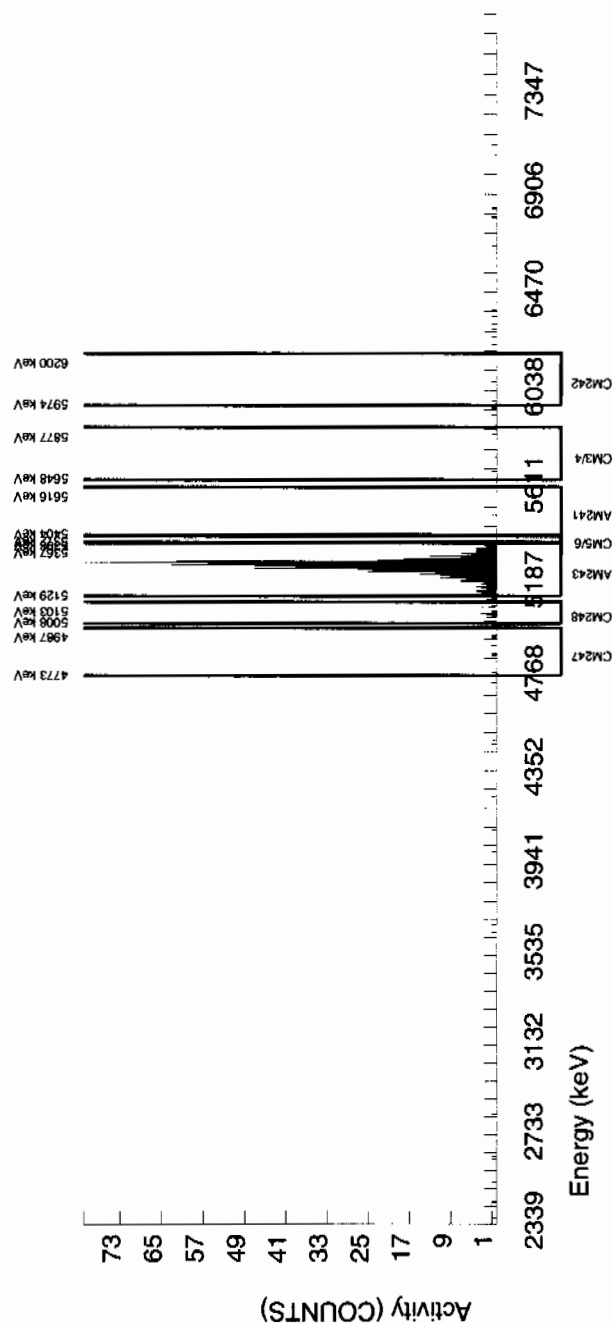
LCS/LCSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/G

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	5499.044	4.902	1.000	-2.187	2.000	2.7707	99.94000	-2.61E-03	2.07E-03	7.69E-03	1.86E-02	2.07E-03
AM-243	5270.000	5268.197	33.874	684.000	682.000	2.000	1.4142	99.78000	8.15E-01	6.09E-02	3.93E-03	1.11E-02	3.13E-02
CM-242	6102.000	6038.385	83.336	2.000	-3.000	5.000	4.0092	100.0000	-4.10E-03	3.62E-03	1.11E-02	2.55E-02	3.61E-03
CM-3/4	5795.020	5762.542	4.902	4.000	2.000	2.000	4.8510	100.0000	2.39E-03	2.94E-03	1.35E-02	3.02E-02	2.93E-03
CM-5/6	5386.000	5385.094	0.000	0.000	-1.000	1.000	6.1294	86.09000	-1.39E-03	1.96E-03	1.98E-02	4.33E-02	1.96E-03
CM-247	4946.000	4894.006	161.770	11.000	5.000	6.000	6.3427	79.30000	7.52E-03	6.22E-03	2.22E-02	4.85E-02	6.20E-03
CM-248	5078.600	5055.886	62.417	16.000	13.000	3.000	11.0244	91.00000	1.70E-02	5.82E-03	3.36E-02	7.08E-02	5.71E-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 : 969568
SAMPLE ID : S1202081812_AM
SAMPLE QTY : 1.000 G
SAMPLE DATE : 26-MAR-2010 00:00:00
ANALYST : JXD2
% YIELD : 89.065

CHAMBER : 033
DETECTOR S/N : 78785
AVERAGE %EFFICIENCY : 31.7007
COUNT DATE : 27-MAR-2010 13:01:49
ELAPSED LIVE TIME(SEC) : 59999.99

LIB FILE : ENV_ALPHA_AM
BKG FILE : B033.CNF;1120
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W033.CNF;332
CAL DATE : 4-MAR-2010

TRACER ID : 445-96-2-VW
NUCLIDE : AM243
NOMINAL : 2.2753E+00 dpm
RESULTS : 2.0265E+00 dpm

MS/MSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3147E+01 pCi/G

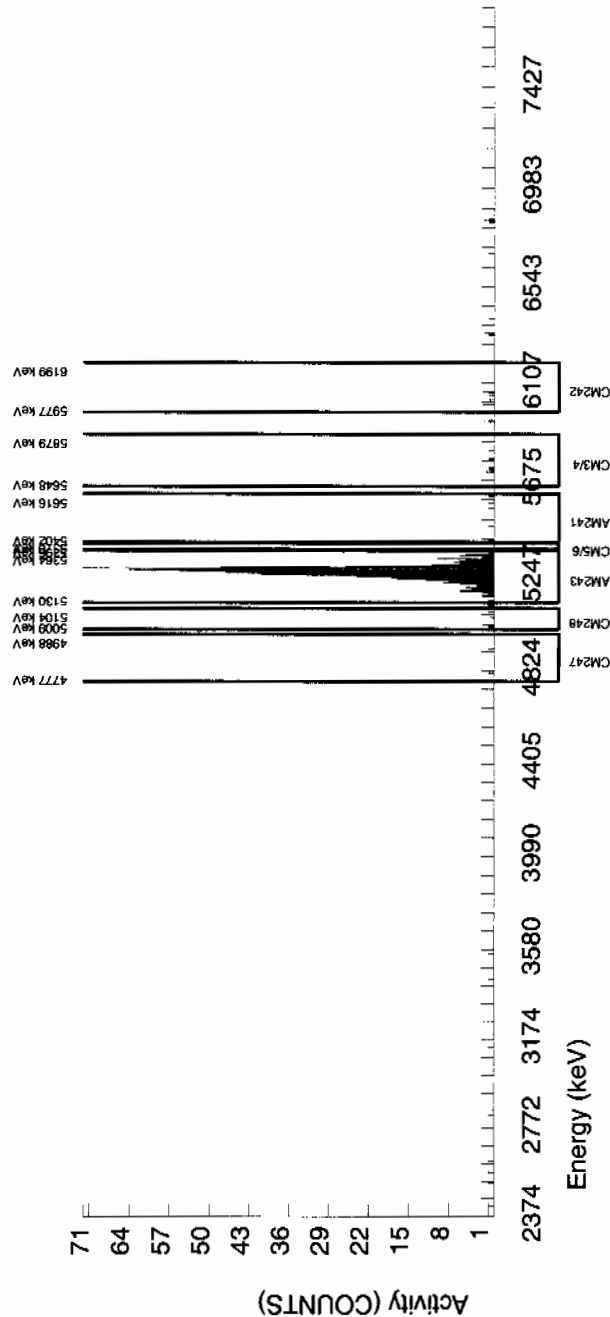
LCS/LCSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3147E+01 pCi/G

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	5527.906	182.942	5.000	3.885	0.000	2.7707	99.94000	6.20E-03	3.17E-03	1.03E-02	2.49E-02	3.15E-03
AM243	5270.000	5273.070	35.959	642.000	641.000	1.000	1.0000	99.78000	1.02E+00	7.79E-02	3.72E-03	1.18E-02	4.05E-02
CM-242	6102.000	6045.583	59.332	8.000	5.000	3.000	4.0092	100.0000	8.04E-03	5.36E-03	1.49E-02	3.41E-02	5.33E-03
CM-3/4	5795.020	5741.686	4.944	9.000	7.000	2.000	4.8510	100.0000	1.12E-02	5.34E-03	1.80E-02	4.03E-02	5.29E-03
CM-5/6	5386.000	5375.108	4.944	1.000	1.000	0.000	6.1294	86.09000	1.85E-03	1.86E-03	2.64E-02	5.79E-02	1.85E-03
CM-247	4946.000	4874.096	108.776	2.000	2.000	0.000	6.3427	79.30000	4.02E-03	2.86E-03	2.97E-02	6.48E-02	2.85E-03
CM-248	5078.600	5055.561	7.262	7.000	7.000	0.000	11.0244	91.00000	1.23E-02	4.71E-03	4.50E-02	9.47E-02	4.64E-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 : 969568
SAMPLE ID : S1202081813_AM
SAMPLE QTY : 1.268 G
SAMPLE DATE : 24-FEB-2010 00:00:00
ANALYST : JXD2
% YIELD : 91.740

CHAMBER : 035
DETECTOR S/N : 78202
AVERAGE %EFFICIENCY : 31.0164
COUNT DATE : 27-MAR-2010 13:01:49
ELAPSED LIVE TIME(SEC) : 59999.99

LIB FILE : ENV_ALPHA_AM
BKG FILE : B035.CNF;1118
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W035.CNF;321
CAL DATE : 4-MAR-2010

TRACER
ID : 445-96-2-VV
NUCLIDE : AM243
NOMINAL : 2.2753E+00 dpm
RESULTS : 2.0874E+00 dpm

MS/MSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/G

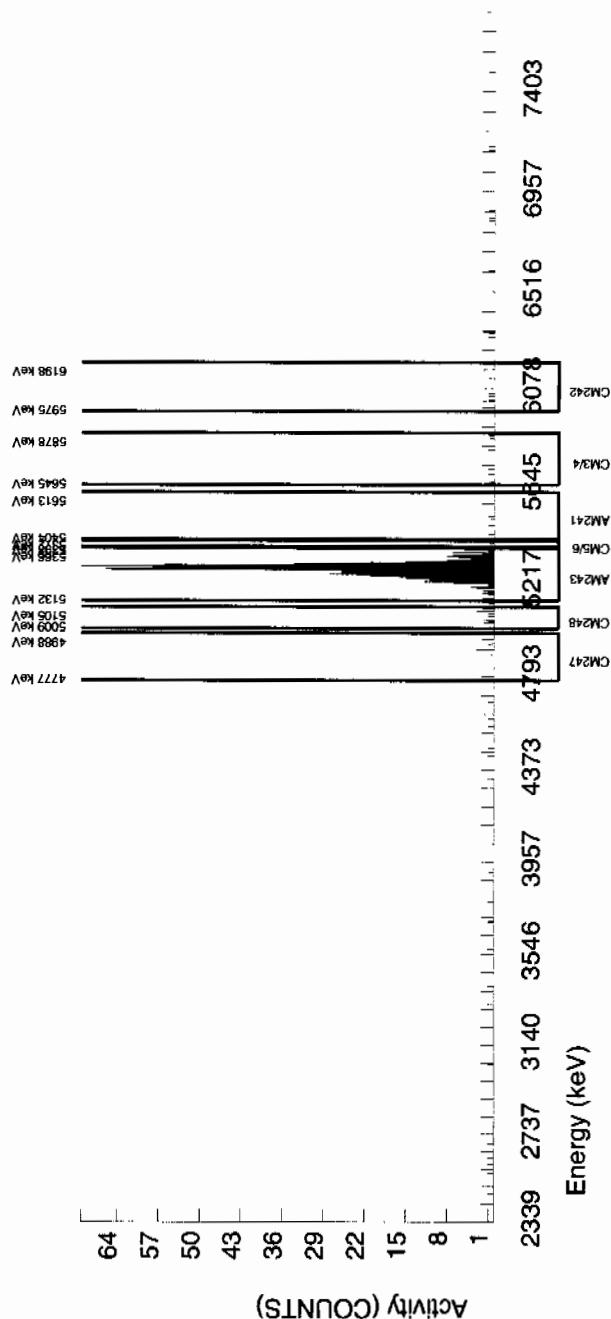
LCS/LCSD
ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3152E+01 pCi/G

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	5476.106	79.132	4.000	1.876	1.000	2.7707	99.94000	2.34E-03	2.46E-03	8.05E-03	1.95E-02	2.46E-03
AM243	5270.000	5277.394	28.305	655.000	646.000	9.000	3.0000	99.78000	8.08E-01	6.16E-02	8.73E-03	2.09E-02	3.22E-02
CM-242	6102.000	6054.761	4.946	6.000	3.000	3.000	4.0092	100.0000	4.29E-03	4.30E-03	1.16E-02	2.67E-02	4.29E-03
CM-3/4	5795.020	5770.301	197.831	6.000	5.000	1.000	4.8510	100.0000	6.26E-03	3.34E-03	1.41E-02	3.16E-02	3.31E-03
CM-5/6	5386.000	5377.010	0.000	3.000	3.000	0.000	6.1294	86.09000	4.35E-03	2.53E-03	2.07E-02	4.53E-02	2.51E-03
CM-247	4946.000	4928.240	4.946	6.000	0.000	6.000	6.3427	79.30000	0.00E+00	5.45E-03	2.32E-02	5.07E-02	5.45E-03
CM-248	5078.600	5073.158	63.059	12.000	9.000	3.000	11.0244	91.00000	1.23E-02	5.37E-03	3.52E-02	7.41E-02	5.31E-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 : 969568
SAMPLE ID : S1202081814_AM
SAMPLE QTY : 0.100 G
SAMPLE DATE : 26-MAR-2010 00:00:00
ANALYST : JXD2
% YIELD : 93.703

CHAMBER : 036
DETECTOR S/N : 78203
AVERAGE %EFFICIENCY : 34.5971
COUNT DATE : 27-MAR-2010 13:01:49
ELAPSED LIVE TIME(SEC) : 59999.99

LIB FILE : ENV_ALPHA_AM
BKG FILE : B036.CNF;1116
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE : W036.CNF;333
CAL DATE : 4-MAR-2010

TRACER ID : 445-96-2-VV
NUCLIDE : AM243
NOMINAL : 2.2753E+00 dpm
RESULTS : 2.1320E+00 dpm

MS/MSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3147E+01 pCi/g

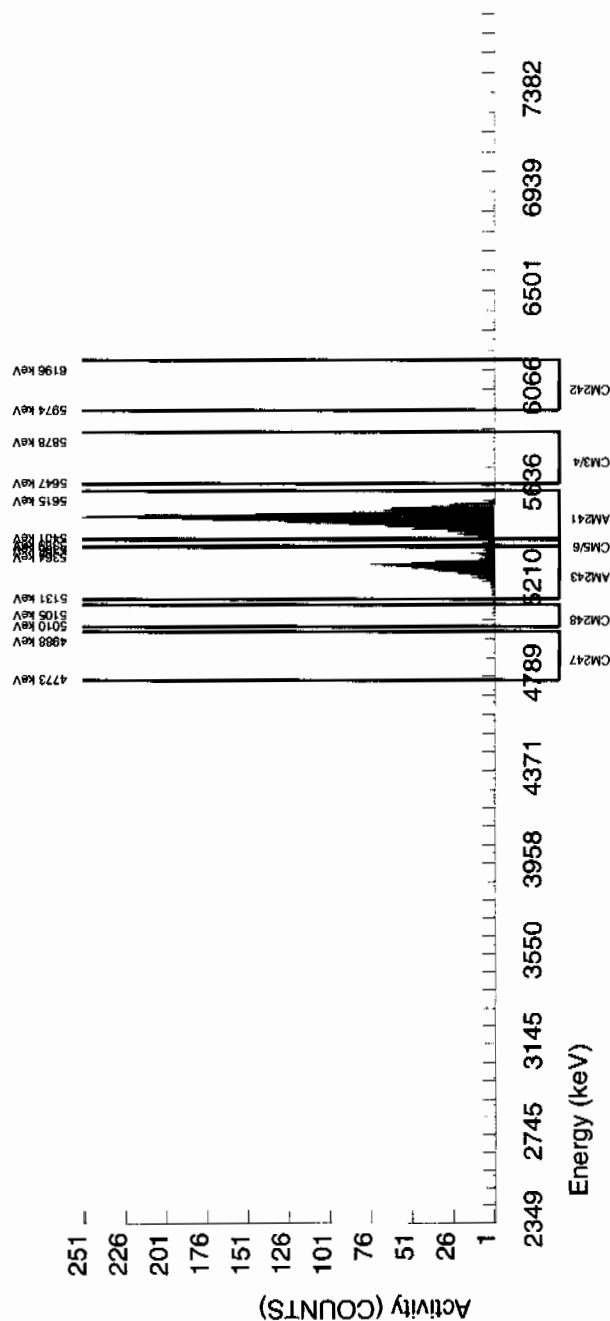
LCS/LCSD ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3147E+01 pCi/g

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	5497.898	36.132	2622.000	2619.719	1.000	2.7707	99.94000	3.64E+01	2.41E+00	8.96E-02	2.17E-01	7.12E-01
AM-243	5270.000	5280.684	33.447	738.000	736.000	2.000	1.4142	99.78000	1.02E+01	7.51E-01	4.58E-02	1.29E-01	3.79E-01
CM-242	6102.000	6059.487	113.213	4.000	2.000	2.000	4.0092	100.0000	2.80E-02	3.44E-02	1.30E-01	2.97E-01	3.43E-02
CM-3/4	5795.020	5810.351	108.290	4.000	1.000	3.000	4.8510	100.0000	1.39E-02	3.68E-02	1.57E-01	3.51E-01	3.68E-02
CM-5/6	5386.000	5386.323	0.000	30.000	28.000	2.000	6.1294	86.09000	4.52E-01	9.57E-02	2.30E-01	5.04E-01	9.13E-02
CM-247	4946.000	4948.066	0.000	3.000	1.000	2.000	6.3427	79.30000	1.75E-02	3.92E-02	2.59E-01	5.65E-01	3.92E-02
CM-248	5078.600	5070.553	7.230	7.000	6.000	1.000	11.0244	91.00000	9.16E-02	4.36E-02	3.92E-01	8.25E-01	4.32E-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# 959280 Product: SS 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)			NA
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.			NA
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			NA
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.			
All line outs initialed and dated.	✓		
No transcription errors are apparent.			
Aux data is correct.			NA
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly 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 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: H. E. Law 3/22/10

Secondary Review Performed By: K. Bat 3/22/10

LANC
3/27/10

Gamma Spec Que Sheet

1.6-3/12/10

03/01/2010

Batch #: 959280 Analyst: MXR1 First Client Due Date: 03/27/2010 Internal Due Date: 03/16/2010
 Gamma Spike Isotope: Mixed Gamma Spike Code: MS Expiration Date: 3/5/10 Vol: 1.0 Nominal Concentration: 600 6.495
 Gamma LCS Isotope: Mixed Gamma LCS Code: 1032-A Expiration Date: 12/2/10 Vol: 1.0 Nominal Concentration: 5.687 16.29
 Initials: MS Prep Date: 3/5/10 Library: SOLID Witness: MS

Wet

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Aliquot (1 @ / F)	Detector	Sealing Date/Time (if Applicable)
248243001-1	RE36-10-7458	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	99.82	6	3/4/10
248243002-1	RE36-10-7453	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	115.76	23	
248243003-1	RE36-10-7454	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	137.38	12	
248243004-1	RE36-10-7460	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	171.47	3	
248243005-1	RE36-10-7456	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	128.52	1	
248243006-1	RE36-10-7455	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	122.33	1	
248243007-1	RE36-10-7459	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	118.82	6	
248243008-1	RE36-10-7457	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	106.76	15	3/5/10
248243009-1	RE36-10-7520	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	106.82	23	
248243010-1	RE36-10-7519	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	102.03	25	
248248001-1	RE36-10-8464	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	152.09	1	3/4/10
248248002-1	RE36-10-8475	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	134.14	19	
248248003-1	RE36-10-8471	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	142.38	14	
248248004-1	RE36-10-8485	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	126.45	17	
248248005-1	RE36-10-8477	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	138.46	18	
248248006-1	RE36-10-8479	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	133.77	21	
248248007-1	RE36-10-8484	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	151.47	20	
248248008-1	RE36-10-8481	SAMPLE	LANL010	LANL010	SOIL	24-FEB-10 12:00:00	CG	118.77	29	
1202057355-1	MB	MB	QC ACCOUNT	QC ACCOUNT	SOIL	3/5/10	CG	152.09	2	3/5/10
1202057356-1	DUP RE36-10-8464(248248001)	DUP	QC ACCOUNT	QC ACCOUNT	SOIL	24-FEB-10 12:00:00	MS	152.09	14	3/4/10
1202057357-1	LCS	LCS	QC ACCOUNT	QC ACCOUNT	SOIL	3/5/10	CG	151.73	4	3/5/10

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: Kendall 3/22/10
 dailiesy
 no history
 10 3/23/10
 Page 1 of 1

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
959280	248243001	SAMPLE	19-MAR-10		Americium-241	-0.2616	0.2436	0.200
					Cerium-139	-0.00881	0.05099	0.050
					Thorium-234	0.2061	2.374	2.00
959280	248243002	SAMPLE	19-MAR-10		Americium-241	-0.293	0.3816	0.200
					Cerium-139	-0.0157	0.06342	0.050
					Cesium-134	0.06706	0.1116	0.100
					Sodium-22	-0.00218	0.09874	0.080
					Thorium-234	0.6285	3.349	2.00
959280	248243003	SAMPLE	19-MAR-10		Americium-241	0.1564	0.2975	0.200
					Cerium-139	0.0374	0.0601	0.050
					Sodium-22	0.0073	0.08596	0.080
959280	248243004	SAMPLE	19-MAR-10		Cerium-139	0.00618	0.06397	0.050
					Europium-152	0.00694	0.201	0.200
					Sodium-22	-0.08651	0.08097	0.080
					Tin-113	0.04341	0.1075	0.100
959280	248243005	SAMPLE	19-MAR-10		Cerium-139	-0.00105	0.05537	0.050
					Cesium-134	0.09085	0.1014	0.100
959280	248243006	SAMPLE	19-MAR-10					
959280	248243007	SAMPLE	19-MAR-10		Americium-241	-0.08446	0.3339	0.200
					Cerium-139	0.00132	0.06248	0.050
					Cesium-134	0.08098	0.1157	0.100
					Sodium-22	0.01501	0.08828	0.080
					Thorium-234	2.068	3.049	2.00
					Tin-113	0.02074	0.1026	0.100
959280	248243008	SAMPLE	19-MAR-10		Americium-241	-0.2468	0.5479	0.200
					Cerium-139	-0.00062	0.07249	0.050
					Cesium-134	0.04759	0.1055	0.100
					Europium-152	-0.06343	0.2195	0.200
					Mercury-203	0.08809	0.1101	0.100
					Sodium-22	-0.02053	0.09603	0.080
					Thorium-234	0.09645	4.452	2.00
					Tin-113	0.04099	0.1059	0.100
959280	248243009	SAMPLE	19-MAR-10		Americium-241	0.0572	0.2457	0.200
					Cerium-139	-0.00366	0.05738	0.050
959280	248243010	SAMPLE	19-MAR-10		Cesium-134	0.07639	0.1091	0.100
					Sodium-22	-0.0275	0.08511	0.080
959280	248248001	SAMPLE	19-MAR-10		Americium-241	-0.06477	0.2927	0.200
					Cerium-139	0.01847	0.05834	0.050
					Thorium-234	1.363	2.666	2.00
959280	248248002	SAMPLE	19-MAR-10		Americium-241	0.1984	0.3061	0.200
					Cerium-139	-0.0001	0.05853	0.050
959280	248248003	SAMPLE	19-MAR-10		Americium-241	0.1738	0.2293	0.200
					Cerium-139	0.00868	0.05462	0.050
					Thorium-234	1.655	2.06	2.00
959280	248248004	SAMPLE	19-MAR-10		Cerium-139	-0.03127	0.05235	0.050

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
959280	248248005	SAMPLE	19-MAR-10		Americium-241	-0.04522	0.2945	0.200
					Thorium-234	1.734	2.537	2.00
959280	248248006	SAMPLE	19-MAR-10		Cesium-137	0.06573	0.1025	0.100
					Sodium-22	0.04886	0.1096	0.080
959280	248248007	SAMPLE	19-MAR-10					
959280	248248008	SAMPLE	19-MAR-10		Americium-241	-0.2809	0.3568	0.200
					Cerium-139	-0.02893	0.06597	0.050
					Europium-152	-0.0694	0.2024	0.200
					Sodium-22	-0.01046	0.08916	0.080
					Thorium-234	0.4806	3.184	2.00
959280	1202057355	MB	19-MAR-10					
959280	1202057356	DUP	19-MAR-10		Americium-241	0.113	0.2172	0.200
					Cerium-139	0.00551	0.05327	0.050
959280	1202057357	LCS	19-MAR-10		Cerium-139	0.01646	0.0783	0.050
					Cesium-134	-0.00703	0.1621	0.100
					Europium-152	-0.04939	0.2888	0.200
					Mercury-203	0.03339	0.1093	0.100
					Potassium-40	0.7819	1.175	1.00
					Ruthenium-106	-0.1933	0.8836	0.800
					Thorium-234	-0.593	4.958	2.00
					Tin-113	0.03235	0.1431	0.100
					Uranium-235	-0.3401	0.515	0.500

Gamma Review Report based on Result > MDA for Batch:959280

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248243001	24-FEB-10 12:00	19-MAR-10 10:50	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.756	0.2173	pCi/g	0.2697	N	911.1 3	1.794	IDENTIFIED 10.76	<input type="checkbox"/>	
Annihilation Rad. HE	0.09876	0.03873	pCi/g	0.04877	N	510.8 1	1.356	IDENTIFIED 38.93	<input type="checkbox"/>	
Barium-137m	0.1473	0.03346	pCi/g	0.06049	N	661.4 2	1.081	IDENTIFIED 22.28	<input type="checkbox"/>	
Bismuth-211	4.536	0.3584	pCi/g	0.3511	Y	351.8 2	1.081	IDENTIFIED 5.714	<input checked="" type="checkbox"/>	U
Bismuth-212	2.024	0.4165	pCi/g	1.317	N	0 4 0		FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214	1.486	0.1218	pCi/g	0.1328	0.200	609.2 2	1.352	IDENTIFIED 6.244	<input type="checkbox"/>	
Cadmium-109	3.539	0.5247	pCi/g	1.231	Y	87.14 3	1.002	IDENTIFIED 14.04	<input checked="" type="checkbox"/>	U
Cadmium-115	30.69	69.81	pCi/g	0	N	0 4 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cerium-143	29520	5910	pCi/g	0	N	0 4 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-137	0.1556	0.03535	pCi/g	0.0639	0.100	661.4 2	1.081	IDENTIFIED 22.28	<input type="checkbox"/>	
Gross Gamma	10.11	1.458	pCi/g	3.566	N	0			<input type="checkbox"/>	
Lead-212	1.831	0.1257	pCi/g	0.08933	0.100	238.5 2	0.9979	IDENTIFIED 3.449	<input type="checkbox"/>	
Lead-214	1.646	0.1378	pCi/g	0.1277	0.100	351.8 2	1.081	IDENTIFIED 5.714	<input type="checkbox"/>	
Neptunium-237	1.02	0.1852	pCi/g	0.3578	N	87.14 3	1.002	IDENTIFIED 14.04	<input type="checkbox"/>	
Potassium-40	27.75	1.541	pCi/g	0.3386	1.00	1460 1	1.939	IDENTIFIED 3.398	<input type="checkbox"/>	
Promethium-149	231.9	579.5	pCi/g	0	N	0 4 0		SHORT_HLIF 0	<input type="checkbox"/>	
Radium-224	5.794	0.7236	pCi/g	0.9577	Y	241.6 1	1.737	IDENTIFIED 11.2	<input checked="" type="checkbox"/>	U
Radium-226	1.486	0.1218	pCi/g	0.1328	Y	609.2 2	1.352	IDENTIFIED 6.244	<input type="checkbox"/>	
Radium-228	1.756	0.2173	pCi/g	0.2697	0.500	911.1 3	1.794	IDENTIFIED 10.76	<input type="checkbox"/>	
Thallium-208	0.5525	0.05585	pCi/g	0.05653	0.080	583 1	1.498	IDENTIFIED 8.813	<input type="checkbox"/>	
Thorium-228	1.831	0.1257	pCi/g	0.08933	N	238.5 2	0.9979	IDENTIFIED 3.449	<input type="checkbox"/>	
Thorium-232	1.756	0.2173	pCi/g	0.2697	N	911.1 3	1.794	IDENTIFIED 10.76	<input type="checkbox"/>	
Tin-126	0.3419	0.05069	pCi/g	0.1195	N	87.14 3	1.002	IDENTIFIED 14.04	<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
248243002	24-FEB-10 12:00	19-MAR-10 10:51	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	2.011	0.2136	pCi/g	0.2499	N	910.1 3	1.856	IDENTIFIED 8.805	<input type="checkbox"/>	
Annihilation Rad. HE	0.1127	0.03495	pCi/g	0.05837	N	510.4 1	1.609	IDENTIFIED 30.89	<input type="checkbox"/>	
Barium-137m	0.6258	0.05204	pCi/g	0.06766	N	660.8 2	1.772	IDENTIFIED 7.914	<input type="checkbox"/>	
Bismuth-211	4.561	0.3028	pCi/g	0.3935	Y	351.5 2	1.351	IDENTIFIED 5.784	<input checked="" type="checkbox"/>	U
Bismuth-212	2.965	0.482	pCi/g	1.47	N	0 6 0		FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214	1.38	0.1073	pCi/g	0.1345	0.200	608.5 2	1.589	IDENTIFIED 6.783	<input type="checkbox"/>	
Cadmium-109	4.07	0.641	pCi/g	1.711	Y	87.05 3	1.106	IDENTIFIED 14.99	<input checked="" type="checkbox"/>	U
Cadmium-115	66.57	79.12	pCi/g	0	N	0 6 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cerium-143	73370	11460	pCi/g	0	N	0 6 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-137	0.6611	0.05501	pCi/g	0.07147	0.100	660.8 2	1.772	IDENTIFIED 7.914	<input type="checkbox"/>	
Gross Gamma	9.608	1.236	pCi/g	4.223	N	0			<input type="checkbox"/>	
Lead-212	1.698	0.08977	pCi/g	0.1205	0.100	238.3 2	1.095	IDENTIFIED 3.849	<input type="checkbox"/>	
Lead-214	1.655	0.119	pCi/g	0.1431	0.100	351.5 2	1.351	IDENTIFIED 5.784	<input type="checkbox"/>	
Molybdenum-99	69.81	54.92	pCi/g	0	N	0 6 0		SHORT_HLIF 0	<input type="checkbox"/>	
Neptunium-237	1.173	0.222	pCi/g	0.5569	N	87.05 3	1.106	IDENTIFIED 14.99	<input type="checkbox"/>	
Niobium-95m	0.7767	0.1123	pCi/g	0.3671	N	0 6 0		NOT_IDENTI 0	<input type="checkbox"/>	
Potassium-40	24.95	1.34	pCi/g	0.5754	1.00	1459 1	2.205	IDENTIFIED 3.85	<input type="checkbox"/>	
Radium-224	3.729	0.7706	pCi/g	1.292	Y	241.3 1	1.787	IDENTIFIED 20.47	<input checked="" type="checkbox"/>	U
Radium-226	1.38	0.1073	pCi/g	0.1345	Y	608.5 2	1.589	IDENTIFIED 6.783	<input type="checkbox"/>	
Radium-228	2.011	0.2136	pCi/g	0.2499	0.500	910.1 3	1.856	IDENTIFIED 8.805	<input type="checkbox"/>	
Silver-110m	0.1674	0.03026	pCi/g	0.1059	N	0 6 0		FAIL_ABUND 0	<input type="checkbox"/>	
Thallium-208	0.5839	0.05328	pCi/g	0.07492	0.080	582.5 1	1.558	IDENTIFIED 8.531	<input type="checkbox"/>	
Thorium-228	1.698	0.08977	pCi/g	0.1205	N	238.3 2	1.095	IDENTIFIED 3.849	<input type="checkbox"/>	
Thorium-232	2.011	0.2136	pCi/g	0.2499	N	910.1 3	1.856	IDENTIFIED 8.805	<input type="checkbox"/>	

Tin-126 *ML* 0.3931 0.06193 pCi/g 0.1852 N 87.05 3 1.106 IDENTIFIED 14.99 ☐

*** = 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
248243003	24-FEB-10 12:00	19-MAR-10 10:52	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>ML</i>	2.475	0.2621	pCi/g	0.2924	N	911.1 3	1.819	IDENTIFIED 8.423	<input type="checkbox"/>	
Annihilation Rad.	0.2129	0.03568	pCi/g	0.0535	N	510.6 1	1.52	IDENTIFIED 16.18	<input type="checkbox"/>	
Bismuth-211 <i>JNT</i>	5.62	0.3499	pCi/g	0.3525	Y	351.8 2	1.248	IDENTIFIED 4.352	<input checked="" type="checkbox"/>	<i>Uf</i>
Bismuth-212 <i>U</i>	3.135	0.4926	pCi/g	1.449	N	0 8 0	FAIL_ABUND 0		<input type="checkbox"/>	
Bismuth-214 <i>V</i>	1.628	0.1269	pCi/g	0.1257	0.200	609.3 2	1.399	IDENTIFIED 5.816	<input type="checkbox"/>	
Cadmium-109 <i>JNT</i>	4.163	0.5792	pCi/g	1.409	Y	87.19 3	0.9877	IDENTIFIED 13.11	<input checked="" type="checkbox"/>	<i>Uf</i>
Cadmium-115 HE	7.601	73.5	pCi/g	0	N	0 8 0	SHORT_HLIF 0		<input type="checkbox"/>	
Cerium-143 <i>-</i>	43470	7094	pCi/g	0	N	0 8 0	SHORT_HLIF 0		<input type="checkbox"/>	
Cesium-134 <i>U</i>	0.1882	0.0377	pCi/g	0.1132	0.100	0 8 0	FAIL_ABUND 0	<input checked="" type="checkbox"/> UI		Data rejected due to low abundance.
Cesium-135 HE	0.3385	0.09933	pCi/g	0.3246	N	0 8 0	NOT_IDENTI 0		<input type="checkbox"/>	
Gross Gamma <i>-</i>	13.29	1.649	pCi/g	4.572	N	0			<input type="checkbox"/>	
Lead-212 <i>✓</i>	2.522	0.1392	pCi/g	0.1081	0.100	238.7 2	1.063	IDENTIFIED 2.65	<input type="checkbox"/>	
Lead-214 <i>✓</i>	2.04	0.1389	pCi/g	0.1282	0.100	351.8 2	1.248	IDENTIFIED 4.352	<input type="checkbox"/>	
Molybdenum-99 HE	29.02	52.26	pCi/g	0	N	0 8 0	SHORT_HLIF 0		<input type="checkbox"/>	
Neptunium-237 <i>ML</i>	1.2	0.209	pCi/g	0.4541	N	87.19 3	0.9877	IDENTIFIED 13.11	<input type="checkbox"/>	
Potassium-40 <i>✓</i>	39.04	2.051	pCi/g	0.5327	1.00	1461 1	2.089	IDENTIFIED 2.652	<input type="checkbox"/>	
Promethium-149 HE	743.5	643.9	pCi/g	0	N	0 8 0	SHORT_HLIF 0		<input type="checkbox"/>	
Radium-224 <i>JNT</i>	6.597	0.8179	pCi/g	1.159	Y	241.6 1	1.793	IDENTIFIED 11.64	<input checked="" type="checkbox"/>	<i>Uf</i>
Radium-226 <i>✓</i>	1.628	0.1269	pCi/g	0.1257	Y	609.3 2	1.399	IDENTIFIED 5.816	<input type="checkbox"/>	
Radium-228 <i>✓</i>	2.475	0.2621	pCi/g	0.2924	0.500	911.1 3	1.819	IDENTIFIED 8.423	<input type="checkbox"/>	
Sodium-24 HE	1.45E+09	2.46E+09	pCi/g	0	N	0 8 0	SHORT_HLIF 0		<input type="checkbox"/>	
Thallium-208 <i>✓</i>	0.7461	0.058	pCi/g	0.06237	0.080	583.2 1	1.433	IDENTIFIED 6.15	<input type="checkbox"/>	
Thorium-228 <i>ML</i>	2.522	0.1392	pCi/g	0.1081	N	238.7 2	1.063	IDENTIFIED 2.65	<input type="checkbox"/>	
Thorium-232 <i>ML</i>	2.475	0.2621	pCi/g	0.2924	N	911.1 3	1.819	IDENTIFIED 8.423	<input type="checkbox"/>	
Thorium-234 <i>✓</i>	2.818	1.138	pCi/g	2.44	2.00	63.56 2	1.002	IDENTIFIED 39.38	<input type="checkbox"/>	
Tin-126 <i>ML</i>	0.4021	0.05595	pCi/g	0.1505	N	87.19 3	0.9877	IDENTIFIED 13.11	<input type="checkbox"/>	
Total Uranium	8.4705	3.39E-06	ug/g	3.6334	N	0			<input type="checkbox"/>	
Uranium-238 HE	2.818	1.138	pCi/g	2.44	N	63.56 2	1.002	IDENTIFIED 39.38	<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
248243004	24-FEB-10 12:00	19-MAR-10 10:52	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>ML</i>	2.696	0.2525	pCi/g	0.2677	N	910.4 3	2.013	IDENTIFIED 6.883	<input type="checkbox"/>	
Barium-137m HE	0.09332	0.02955	pCi/g	0.08403	N	661.2 2	1.092	IDENTIFIED 31.49	<input type="checkbox"/>	
Bismuth-211 <i>JNT</i>	5.736	0.356	pCi/g	0.4131	Y	351.5 2	1.331	IDENTIFIED 4.784	<input checked="" type="checkbox"/>	<i>Uf</i>
Bismuth-212 HE	2.087	0.7285	pCi/g	1.469	N	0 6 0	FAIL_ABUND 0		<input type="checkbox"/>	
Bismuth-214 <i>V</i>	1.82	0.1298	pCi/g	0.1468	0.200	608.7 2	1.553	IDENTIFIED 5.752	<input type="checkbox"/>	
Cadmium-109 <i>JNT</i>	5.926	0.521	pCi/g	1.201	Y	86.79 3	1.393	IDENTIFIED 7.923	<input checked="" type="checkbox"/>	<i>Uf</i>
Cerium-143 <i>-</i>	97610	13850	pCi/g	0	N	0 6 0	SHORT_HLIF 0		<input type="checkbox"/>	
Cesium-134 <i>U</i>	0.165	0.03208	pCi/g	0.1171	0.100	0 6 0	FAIL_ABUND 0	<input checked="" type="checkbox"/> UI		Data rejected due to low abundance.
Cesium-135 <i>U</i>	0.6377	0.1507	pCi/g	0.307	N	269.6 1	1.626	IDENTIFIED 23.01	<input type="checkbox"/>	
Cesium-137 <i>✓</i>	0.09858	0.03122	pCi/g	0.08877	0.100	661.2 2	1.092	IDENTIFIED 31.49	<input type="checkbox"/>	
Gross Gamma	12.2	1.435	pCi/g	4.92	N	0			<input type="checkbox"/>	
Lead-210 HE	1.763	0.4245	pCi/g	1.023	N	46.06 1	1.312	IDENTIFIED 23.76	<input type="checkbox"/>	
Lead-212 <i>✓</i>	2.351	0.145	pCi/g	0.1112	0.100	238.2 2	1.253	IDENTIFIED 2.953	<input type="checkbox"/>	
Lead-214 <i>✓</i>	2.082	0.1414	pCi/g	0.1503	0.100	351.5 2	1.331	IDENTIFIED 4.784	<input type="checkbox"/>	
Neptunium-237 <i>ML</i>	1.708	0.2337	pCi/g	0.3448	N	86.79 3	1.393	IDENTIFIED 7.923	<input type="checkbox"/>	
Niobium-95m <i>U</i>	1.775	0.149	pCi/g	0.4385	N	0 6 0	NOT_IDENTI 0		<input type="checkbox"/>	
Potassium-40 <i>✓</i>	30.26	1.41	pCi/g	0.6388	1.00	1460 1	2.32	IDENTIFIED 3.47	<input type="checkbox"/>	
Promethium-149 HE	386	608.1	pCi/g	0	N	0 6 0	SHORT_HLIF 0		<input type="checkbox"/>	
Radium-224 <i>JNT</i>	6.292	0.6438	pCi/g	1.192	Y	241.2 1	1.829	IDENTIFIED 8.988	<input checked="" type="checkbox"/>	<i>Uf</i>

Radium-226	V	1.82	0.1298	pCi/g	0.1468	Y	608.7	2	1.553	IDENTIFIED	5.752	<input type="checkbox"/>
Radium-228	V	2.696	0.2525	pCi/g	0.2677	0.500	910.4	3	2.013	IDENTIFIED	6.883	<input type="checkbox"/>
Sodium-24	HE	1.67E+09	2.92E+09	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208	V	0.6956	0.05359	pCi/g	0.07344	0.080	582.7	1	1.552	IDENTIFIED	6.773	<input type="checkbox"/>
Thorium-228	u	2.351	0.145	pCi/g	0.1112	N	238.2	2	1.253	IDENTIFIED	2.953	<input type="checkbox"/>
Thorium-232	u	2.696	0.2525	pCi/g	0.2677	N	910.4	3	2.013	IDENTIFIED	6.883	<input type="checkbox"/>
Thorium-234	V	1.67	0.4574	pCi/g	1.402	2.00	62.69	2	1.436	IDENTIFIED	25.85	<input type="checkbox"/>
Tin-126	u	0.5724	0.05034	pCi/g	0.1159	N	86.79	3	1.393	IDENTIFIED	7.923	<input type="checkbox"/>
Total Uranium		4.8855	1.36E-06	ug/g	2.0894	N						<input type="checkbox"/>
Uranium-238	HE	1.67	0.4574	pCi/g	1.402	N	62.69	2	1.436	IDENTIFIED	25.85	<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
248243005	24-FEB-10 12:00	19-MAR-10 10:53	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.903	0.1926	pCi/g	0.243	N	911.5	3	1.64	IDENTIFIED	8.152
Annihilation Rad.	0.1924	0.03763	pCi/g	0.04477	N	511.1	1	1.611	IDENTIFIED	19.05
Bismuth-211	5.392	0.3364	pCi/g	0.3456	Y	352.1	2	1.198	IDENTIFIED	4.337
Bismuth-212	1.958	0.4814	pCi/g	1.262	N	0	6	0	FAIL_ABUND	0
Bismuth-214	1.758	0.1328	pCi/g	0.1174	0.200	609.6	2	1.455	IDENTIFIED	5.483
Cadmium-109	4.923	0.5651	pCi/g	1.064	Y	87.26	3	1.276	IDENTIFIED	10.49
Cerium-143	30970	5965	pCi/g	0	N	0	6	0	SHORT_HLIF	0
Gross Gamma	11.11	1.504	pCi/g	3.763	N					
Iodine-133	6.05E+05	1.61E+06	pCi/g	0	N	0	6	0	SHORT_HLIF	0
Iodine-135	7.72E+23	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0
Lead-212	2.064	0.1181	pCi/g	0.1035	0.100	238.8	2	1.156	IDENTIFIED	3.104
Lead-214	1.957	0.1335	pCi/g	0.1272	0.100	352.1	2	1.198	IDENTIFIED	4.337
Neptunium-237	1.419	0.2206	pCi/g	0.3091	N	87.26	3	1.276	IDENTIFIED	10.49
Potassium-40	30.51	1.594	pCi/g	0.6149	1.00	1461	1	2.155	IDENTIFIED	2.977
Radium-224	5.424	0.6833	pCi/g	1.109	Y	241.8	1	1.625	IDENTIFIED	11.87
Radium-226	1.758	0.1328	pCi/g	0.1174	Y	609.6	2	1.455	IDENTIFIED	5.483
Radium-228	1.903	0.1926	pCi/g	0.243	0.500	911.5	3	1.64	IDENTIFIED	8.152
Sodium-24	6.41E+08	2.17E+09	pCi/g	0	N	0	6	0	SHORT_HLIF	0
Strontium-85	0.1418	0.02297	pCi/g	0.08404	Y	0	6	0	NOT_IDENTI	0
Thallium-208	0.5444	0.04633	pCi/g	0.06412	0.080	583.4	1	1.21	IDENTIFIED	7.043
Thorium-228	2.064	0.1181	pCi/g	0.1035	N	238.8	2	1.156	IDENTIFIED	3.104
Thorium-232	1.903	0.1926	pCi/g	0.243	N	911.5	3	1.64	IDENTIFIED	8.152
Tin-126	0.4755	0.05459	pCi/g	0.103	N	87.26	3	1.276	IDENTIFIED	10.49
Total Uranium	5.1918	2.20E-06	ug/g	2.6222	N					

*** = 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
248243006	24-FEB-10 12:00	19-MAR-10 10:54	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.422	0.171	pCi/g	0.2145	N	911.7	3	1.431	IDENTIFIED	10.27
Annihilation Rad.	0.09868	0.03678	pCi/g	0.04065	N	510.9	1	1.491	IDENTIFIED	36.88
Barium-137m	0.642	0.05172	pCi/g	0.04958	N	661.9	2	1.283	IDENTIFIED	6.521
Bismuth-211	4.778	0.396	pCi/g	0.2933	Y	352	2	1.147	IDENTIFIED	5.048
Bismuth-212	1.977	0.4302	pCi/g	1.16	N	0	6	0	FAIL_ABUND	0
Bismuth-214	1.367	0.1116	pCi/g	0.1054	0.200	609.6	2	1.352	IDENTIFIED	5.868
Cadmium-109	1.842	0.5237	pCi/g	1.234	Y	86.57	3	1.268	IDENTIFIED	28.05
Cerium-143	16400	4181	pCi/g	0	N	0	6	0	SHORT_HLIF	0
Cesium-137	0.6782	0.05467	pCi/g	0.05238	0.100	661.9	2	1.283	IDENTIFIED	6.521
Gross Gamma	9.674	1.327	pCi/g	3.627	N					
Iodine-133	1.61E+05	1.38E+06	pCi/g	0	N	0	6	0	SHORT_HLIF	0
Lead-212	1.595	0.1243	pCi/g	0.08901	0.100	238.7	2	0.9001	IDENTIFIED	3.388
Lead-214	1.734	0.1515	pCi/g	0.1067	0.100	352	2	1.147	IDENTIFIED	5.048

Cadmium-115	HE	1.506	88.49	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>
Cerium-143		49650	8609	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>
Cesium-137	✓	0.4847	0.05346	pCi/g	0.08688	0.100	661.6	2	1.476	IDENTIFIED	10.23	<input type="checkbox"/>
Gross Gamma		8.637	1.34	pCi/g	2.999	N		0				<input type="checkbox"/>
Iodine-133	HE	1.51E+06	2.15E+06	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212	✓	1.48	0.116	pCi/g	0.1337	0.100	238.8	2	1.317	IDENTIFIED	5.073	<input type="checkbox"/>
Lead-214	✓	1.587	0.1458	pCi/g	0.1707	0.100	352	2	1.242	IDENTIFIED	7.22	<input type="checkbox"/>
Neptunium-237	HE	0.5889	0.2243	pCi/g	0.5347	N	87.57	3	1.275	IDENTIFIED	36.09	<input type="checkbox"/>
Niobium-95m	HE	0.4755	0.1167	pCi/g	0.3714	N	0	5	0	NOT_IDENTI	0	<input type="checkbox"/>
Potassium-40	✓	25.57	1.588	pCi/g	0.6874	1.00	1460	1	2.037	IDENTIFIED	3.796	<input type="checkbox"/>
Radium-224	INT	4.111	0.8499	pCi/g	1.433	Y	241.8	1	1.854	IDENTIFIED	19.92	<input checked="" type="checkbox"/> M V F
Radium-226	✓	1.457	0.1264	pCi/g	0.1529	Y	609.2	2	1.596	IDENTIFIED	7.102	<input type="checkbox"/>
Radium-228	✓	1.6	0.2142	pCi/g	0.2847	0.500	911.2	3	1.675	IDENTIFIED	11.94	<input type="checkbox"/>
Strontium-85	LA	0.1229	0.03401	pCi/g	0.1103	Y	0	5	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Thallium-208	✓	0.4687	0.06347	pCi/g	0.07607	0.080	583.3	1	1.755	IDENTIFIED	12.75	<input type="checkbox"/>
Thorium-228	UL	1.48	0.116	pCi/g	0.1337	N	238.8	2	1.317	IDENTIFIED	5.073	<input type="checkbox"/>
Thorium-232	UL	1.6	0.2142	pCi/g	0.2847	N	911.2	3	1.675	IDENTIFIED	11.94	<input type="checkbox"/>
Tin-126	HE	0.1974	0.07226	pCi/g	0.1758	N	87.57	3	1.275	IDENTIFIED	36.09	<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
248243009	24-FEB-10 12:00	19-MAR-10 10:56	23	SAMPLE	LOAD	1	LANL	LANL01004	GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	UL	2.083	0.2257	pCi/g	0.2363	N	911.4	3	1.995	IDENTIFIED	8.461 <input type="checkbox"/>
Annihilation Rad.	HE	0.115	0.03523	pCi/g	0.0522	N	510.9	1	2.245	IDENTIFIED	30.23 <input type="checkbox"/>
Barium-137m	UL	0.5514	0.05134	pCi/g	0.06359	N	661.8	2	1.644	IDENTIFIED	7.674 <input type="checkbox"/>
Bismuth-211	INT	5.05	0.3952	pCi/g	0.3749	Y	352	2	1.358	IDENTIFIED	5.237 <input checked="" type="checkbox"/> Y U
Bismuth-212	✓	1.892	0.3938	pCi/g	0.7757	N	727.6	1	1.678	IDENTIFIED	19.59 <input type="checkbox"/>
Bismuth-214	✓	1.493	0.1231	pCi/g	0.1233	0.200	609.3	2	1.66	IDENTIFIED	5.825 <input type="checkbox"/>
Cadmium-109	INT	4.992	0.6091	pCi/g	1.247	Y	87.25	3	1.3	IDENTIFIED	11.26 <input checked="" type="checkbox"/> U F
Cadmium-115	HE	77.18	70.06	pCi/g	0	N	0	10	0	SHORT_HLIF	0 <input type="checkbox"/>
Cerium-143		45030	7675	pCi/g	0	N	0	10	0	SHORT_HLIF	0 <input type="checkbox"/>
Cesium-134	U	0.1045	0.04088	pCi/g	0.09321	0.100	0	10	0	FAIL_ABUND	0 <input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Cesium-137	Y	0.5825	0.05426	pCi/g	0.06717	0.100	661.8	2	1.644	IDENTIFIED	7.674 <input type="checkbox"/>
Gross Gamma		11.75	1.559	pCi/g	3.149	N		0			<input type="checkbox"/>
Iodine-133	HE	3.01E+06	1.71E+06	pCi/g	0	N	0	10	0	SHORT_HLIF	0 <input type="checkbox"/>
Lead-212	✓	2.111	0.1533	pCi/g	0.1029	0.100	238.7	2	1.163	IDENTIFIED	2.977 <input type="checkbox"/>
Lead-214	✓	1.833	0.1521	pCi/g	0.1309	0.100	352	2	1.358	IDENTIFIED	5.237 <input type="checkbox"/>
Molybdenum-99	HE	34.54	45.07	pCi/g	0	N	0	10	0	SHORT_HLIF	0 <input type="checkbox"/>
Neptunium-237	UL	1.439	0.2315	pCi/g	0.3645	N	87.25	3	1.3	IDENTIFIED	11.26 <input type="checkbox"/>
Niobium-95	HE	0.1035	0.02966	pCi/g	0.09209	N	0	10	0	NOT_IDENTI	0 <input type="checkbox"/>
Niobium-95m	HE	0.3317	0.08862	pCi/g	0.2685	N	0	10	0	NOT_IDENTI	0 <input type="checkbox"/>
Potassium-40	✓	32.23	1.7	pCi/g	0.5367	1.00	1461	1	2.467	IDENTIFIED	2.616 <input type="checkbox"/>
Radium-224	INT	5.084	0.7601	pCi/g	1.102	Y	241.8	1	1.886	IDENTIFIED	13.57 <input checked="" type="checkbox"/> U F
Radium-226	✓	1.493	0.1231	pCi/g	0.1233	Y	609.3	2	1.66	IDENTIFIED	5.825 <input type="checkbox"/>
Radium-228	✓	2.083	0.2257	pCi/g	0.2363	0.500	911.4	3	1.995	IDENTIFIED	8.461 <input type="checkbox"/>
Silver-110m	HE	0.08462	0.02419	pCi/g	0.07576	N	0	10	0	NOT_IDENTI	0 <input type="checkbox"/>
Sodium-24	HE	1.42E+09	2.33E+09	pCi/g	0	N	0	10	0	SHORT_HLIF	0 <input type="checkbox"/>
Strontium-85	U	0.1686	0.02886	pCi/g	0.09155	Y	0	10	0	NOT_IDENTI	0 <input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Thallium-208	✓	0.5916	0.05597	pCi/g	0.05919	0.080	583.1	1	1.827	IDENTIFIED	7.756 <input type="checkbox"/>
Thorium-228	UL	2.111	0.1533	pCi/g	0.1029	N	238.7	2	1.163	IDENTIFIED	2.977 <input type="checkbox"/>
Thorium-232	UL	2.083	0.2257	pCi/g	0.2363	N	911.4	3	1.995	IDENTIFIED	8.461 <input type="checkbox"/>
Thorium-234	✓	2.767	1.073	pCi/g	2.075	2.00	63.19	2	0.8779	IDENTIFIED	37.74 <input type="checkbox"/>
Tin-126	UL	0.4822	0.05885	pCi/g	0.1209	N	87.25	3	1.3	IDENTIFIED	11.26 <input type="checkbox"/>
Total Uranium		8.275	3.19E-06	ug/g	3.0901	N		0			<input type="checkbox"/>
Uranium-238	HE	2.767	1.073	pCi/g	2.075	N	63.19	2	0.8779	IDENTIFIED	37.74 <input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248243010	24-FEB-10 12:00	19-MAR-10 10:57	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>u</i>	2.147	0.2449	pCi/g	0.2611	N	911.2 3	1.63	IDENTIFIED 9.631	<input type="checkbox"/>	
Annihilation Rad.	0.1762	0.04229	pCi/g	0.05695	N	510.9 1	1.701	IDENTIFIED 23.44	<input type="checkbox"/>	
Barium-137m <i>u</i>	0.7092	0.06415	pCi/g	0.07914	N	661.7 2	1.511	IDENTIFIED 7.152	<input type="checkbox"/>	
Bismuth-211 <i>INT</i>	5.028	0.3762	pCi/g	0.3717	Y	351.9 2	1.218	IDENTIFIED 5.322	<input checked="" type="checkbox"/> <i>u</i>	
Bismuth-212 HE	2.299	0.458	pCi/g	1.494	N	0 7 0		FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214 <i>V</i>	1.444	0.1241	pCi/g	0.1298	0.200	609.3 2	1.344	IDENTIFIED 6.099	<input type="checkbox"/>	
Cadmium-109 <i>INT</i>	4.935	0.4936	pCi/g	0.8509	Y	87.24 3	1.129	IDENTIFIED 8.45	<input checked="" type="checkbox"/> <i>u</i>	
Cadmium-115 HE	16.85	81.95	pCi/g	0	N	0 7 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cerium-143	23910	5373	pCi/g	0	N	0 7 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-137 <i>V</i>	0.7492	0.0678	pCi/g	0.08361	0.100	661.7 2	1.511	IDENTIFIED 7.152	<input type="checkbox"/>	
Gross Gamma	11.51	1.461	pCi/g	3.864	N	0			<input type="checkbox"/>	
Iodine-135	4.13E+23 0		pCi/g	0	N	0 7 0		SHORT_HLIF 0	<input type="checkbox"/>	
Lead-210 <i>V</i>	2.678	0.4103	pCi/g	0.6747	N	46.6 1	0.8013	IDENTIFIED 14.44	<input type="checkbox"/>	
Lead-212 <i>V</i>	1.986	0.1312	pCi/g	0.09406	0.100	238.6 2	0.9562	IDENTIFIED 3.32	<input type="checkbox"/>	
Lead-214 <i>V</i>	1.825	0.1455	pCi/g	0.1352	0.100	351.9 2	1.218	IDENTIFIED 5.322	<input type="checkbox"/>	
Neptunium-237 <i>u</i>	1.423	0.2061	pCi/g	0.2436	N	87.24 3	1.129	IDENTIFIED 8.45	<input type="checkbox"/>	
Potassium-40 <i>V</i>	28.21	1.549	pCi/g	0.5113	1.00	1461 1	2.143	IDENTIFIED 3.467	<input type="checkbox"/>	
Promethium-149 HE	68.35	632.5	pCi/g	0	N	0 7 0		SHORT_HLIF 0	<input type="checkbox"/>	
Radium-224 <i>INT</i>	5.494	0.7143	pCi/g	1.009	Y	241.7 1	1.588	IDENTIFIED 11.89	<input checked="" type="checkbox"/> <i>u</i>	
Radium-226 <i>V</i>	1.444	0.1241	pCi/g	0.1298	Y	609.3 2	1.344	IDENTIFIED 6.099	<input type="checkbox"/>	
Radium-228 <i>V</i>	2.147	0.2449	pCi/g	0.2611	0.500	911.2 3	1.63	IDENTIFIED 9.631	<input type="checkbox"/>	
Sodium-24 HE	6.46E+07 2.30E+09		pCi/g	0	N	0 7 0		SHORT_HLIF 0	<input type="checkbox"/>	
Technetium-99m	3.15E+25 0		pCi/g	0	N	0 7 0		SHORT_HLIF 0	<input type="checkbox"/>	
Thallium-208 <i>V</i>	0.4994	0.05599	pCi/g	0.06981	0.080	583.4 1	1.295	IDENTIFIED 9.694	<input type="checkbox"/>	
Thorium-228 <i>u</i>	1.986	0.1312	pCi/g	0.09406	N	238.6 2	0.9562	IDENTIFIED 3.32	<input type="checkbox"/>	
Thorium-232 <i>u</i>	2.147	0.2449	pCi/g	0.2611	N	911.2 3	1.63	IDENTIFIED 9.631	<input type="checkbox"/>	
Thorium-234 <i>V</i>	1.638	0.4794	pCi/g	0.8792	2.00	63.35 2	0.7877	IDENTIFIED 27.69	<input type="checkbox"/>	
Tin-126 <i>u</i>	0.4767	0.04769	pCi/g	0.08203	N	87.24 3	1.129	IDENTIFIED 8.45	<input type="checkbox"/>	
Total Uranium	4.9801	1.43E-06	ug/g	1.3104	N	0			<input type="checkbox"/>	
Uranium-238 HE	1.638	0.4794	pCi/g	0.8792	N	63.35 2	0.7877	IDENTIFIED 27.69	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248248001	24-FEB-10 12:00	19-MAR-10 10:58	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>u</i>	1.871	0.1942	pCi/g	0.2386	N	911.7 3	1.613	IDENTIFIED 8.5	<input type="checkbox"/>	
Annihilation Rad.	0.1492	0.03768	pCi/g	0.04843	N	511.4 1	2.047	IDENTIFIED 24.9	<input type="checkbox"/>	
Bismuth-211 <i>INT</i>	4.485	0.3149	pCi/g	0.3672	Y	352.2 2	1.311	IDENTIFIED 5.355	<input checked="" type="checkbox"/> <i>u</i>	
Bismuth-212 HE	1.819	0.3875	pCi/g	1.211	N	0 6 0		FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214 <i>V</i>	1.477	0.1142	pCi/g	0.1191	0.200	609.7 2	1.399	IDENTIFIED 5.936	<input type="checkbox"/>	
Cadmium-109 <i>INT</i>	2.786	0.5599	pCi/g	1.458	Y	87.13 3	1.029	IDENTIFIED 19.54	<input checked="" type="checkbox"/> <i>u</i>	
Cadmium-115 HE	57.6	65.96	pCi/g	0	N	0 6 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cerium-143	13840	4350	pCi/g	0	N	0 6 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-134 <i>LA</i>	0.1363	0.03253	pCi/g	0.1017	0.100	0 6 0		FAIL_ABUND 0	<input checked="" type="checkbox"/> <i>u</i>	Data rejected due to low abundance.
Gross Gamma	10.08	1.326	pCi/g	3.929	N	0			<input type="checkbox"/>	
Lead-212 <i>V</i>	1.941	0.1158	pCi/g	0.103	0.100	239 2	1.229	IDENTIFIED 3.116	<input type="checkbox"/>	
Lead-214 <i>V</i>	1.628	0.1228	pCi/g	0.1295	0.100	352.2 2	1.311	IDENTIFIED 5.355	<input type="checkbox"/>	
Mercury-203 <i>PPW</i>	0.2747	0.05915	pCi/g	0.06973	0.100	278.9 1	6.269	IDENTIFIED 21.02	<input checked="" type="checkbox"/> <i>u</i>	Data rejected due to high peak-width.
Neptunium-237 HE	0.8031	0.182	pCi/g	0.4516	N	87.13 3	1.029	IDENTIFIED 19.54	<input type="checkbox"/>	
Potassium-40 <i>V</i>	30.18	1.637	pCi/g	0.5196	1.00	1461 1	2.026	IDENTIFIED 3.106	<input type="checkbox"/>	
Radium-224 <i>INT</i>	5.605	0.736	pCi/g	1.104	Y	242.1 1	1.821	IDENTIFIED 12.32	<input checked="" type="checkbox"/> <i>u</i>	
Radium-226 <i>V</i>	1.477	0.1142	pCi/g	0.1191	Y	609.7 2	1.399	IDENTIFIED 5.936	<input type="checkbox"/>	
Radium-228 <i>V</i>	1.871	0.1942	pCi/g	0.2386	0.500	911.7 3	1.613	IDENTIFIED 8.5	<input type="checkbox"/>	
Sodium-24 HE	2.01E+09 1.97E+09		pCi/g	0	N	0 6 0		SHORT_HLIF 0	<input type="checkbox"/>	

Strontium-85	0.1226	0.0241	pCi/g	0.09016	Y	0	6	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI	Data rejected due to low abundance.
Thallium-208	0.575	0.05182	pCi/g	0.05856	0.080	583.6	1	1.504	IDENTIFIED	7.787	<input type="checkbox"/>	
Thorium-228	1.941	0.1158	pCi/g	0.103	N	239	2	1.229	IDENTIFIED	3.116	<input type="checkbox"/>	
Thorium-232	1.871	0.1942	pCi/g	0.2386	N	911.7	3	1.613	IDENTIFIED	8.5	<input type="checkbox"/>	
Tin-126	0.2691	0.05409	pCi/g	0.1416	N	87.13	3	1.029	IDENTIFIED	19.54	<input type="checkbox"/>	
Total Uranium	4.0734	2.24E-06	ug/g	3.9685	N		0				<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue	
248248002	24-FEB-10 12:00	19-MAR-10 10:58	23	SAMPLE	LOAD	I	LANL	LANL01004GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	2.501	0.2242	pCi/g	0.2576	N	911.7	3	1.814	IDENTIFIED	6.815	
Annihilation Rad.	0.1781	0.03566	pCi/g	0.04774	N	511	1	1.757	IDENTIFIED	19.8	
Bismuth-211	4.977	0.2898	pCi/g	0.3653	Y	351.8	2	1.333	IDENTIFIED	4.87	UI
Bismuth-212	3.315	0.4652	pCi/g	1.355	N	0	6	0	FAIL_ABUND	0	
Bismuth-214	1.632	0.1047	pCi/g	0.1217	0.200	609.4	2	1.409	IDENTIFIED	5.047	
Cadmium-109	4.459	0.4999	pCi/g	1.397	Y	87.27	3	1.393	IDENTIFIED	10.29	UI
Cerium-143	65260	9301	pCi/g	0	N	0	6	0	SHORT_HLIF	0	
Cesium-135	0.3981	0.1012	pCi/g	0.3366	N	0	6	0	NOT_IDENTI	0	
Gross Gamma	12.45	1.705	pCi/g	4.877	N		0				
Iodine-133	2.89E+06	1.74E+06	pCi/g	0	N	0	6	0	SHORT_HLIF	0	
Lead-212	2.268	0.1038	pCi/g	0.09809	0.100	238.6	2	1.244	IDENTIFIED	2.77	
Lead-214	1.806	0.1164	pCi/g	0.1328	0.100	351.8	2	1.333	IDENTIFIED	4.87	
Neptunium-237	1.285	0.1973	pCi/g	0.4445	N	87.27	3	1.393	IDENTIFIED	10.29	
Niobium-95m	0.6726	0.09472	pCi/g	0.3134	N	0	6	0	NOT_IDENTI	0	
Potassium-40	33.65	1.557	pCi/g	0.4414	1.00	1461	1	1.976	IDENTIFIED	2.745	
Radium-224	6.533	0.8202	pCi/g	1.051	Y	241.5	1	2.083	IDENTIFIED	12.23	UI
Radium-226	1.632	0.1047	pCi/g	0.1217	Y	609.4	2	1.409	IDENTIFIED	5.047	
Radium-228	2.501	0.2242	pCi/g	0.2576	0.500	911.7	3	1.814	IDENTIFIED	6.815	
Strontium-85	0.1319	0.02559	pCi/g	0.08889	Y	0	6	0	NOT_IDENTI	0	UI Data rejected due to low abundance.
Thallium-208	0.5688	0.04576	pCi/g	0.06206	0.080	583.3	1	1.396	IDENTIFIED	7.295	
Thorium-228	2.268	0.1038	pCi/g	0.09809	N	238.6	2	1.244	IDENTIFIED	2.77	
Thorium-232	2.501	0.2242	pCi/g	0.2576	N	911.7	3	1.814	IDENTIFIED	6.815	
Thorium-234	3.48	1.113	pCi/g	2.548	2.00	63.48	2	1.375	IDENTIFIED	30.72	
Tin-126	0.4308	0.04829	pCi/g	0.1356	N	87.27	3	1.393	IDENTIFIED	10.29	
Total Uranium	10.401	3.31E-06	ug/g	3.7939	N		0				
Uranium-238	3.48	1.113	pCi/g	2.548	N	63.48	2	1.375	IDENTIFIED	30.72	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue	
248248003	24-FEB-10 12:00	19-MAR-10 10:59	23	SAMPLE	LOAD	I	LANL	LANL01004GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	1.947	0.1845	pCi/g	0.2318	N	911.6	3	1.567	IDENTIFIED	7.304	
Annihilation Rad.	0.1926	0.0318	pCi/g	0.04667	N	511.1	1	2.246	IDENTIFIED	16.24	
Bismuth-211	4.977	0.2786	pCi/g	0.3173	Y	351.8	2	1.503	IDENTIFIED	4.615	UI
Bismuth-212	2.327	0.4469	pCi/g	1.197	N	0	8	0	FAIL_ABUND	0	
Bismuth-214	1.519	0.1002	pCi/g	0.1081	0.200	609.3	2	1.658	IDENTIFIED	5.256	
Cadmium-109	3.141	0.5003	pCi/g	1.518	Y	87.11	3	1.359	IDENTIFIED	15.33	UI
Cerium-143	67440	9264	pCi/g	0	N	0	8	0	SHORT_HLIF	0	
Cesium-134	0.1468	0.04149	pCi/g	0.09244	0.100	0	8	0	FAIL_ABUND	0	UI Data rejected due to low abundance.
Cesium-135	0.4043	0.08767	pCi/g	0.2945	N	0	8	0	NOT_IDENTI	0	
Gross Gamma	11.19	1.412	pCi/g	4.193	N		0				
Lead-212	1.883	0.0889	pCi/g	0.09597	0.100	238.5	2	1.327	IDENTIFIED	2.967	
Lead-214	1.806	0.1127	pCi/g	0.1154	0.100	351.8	2	1.503	IDENTIFIED	4.615	
Neptunium-237	0.9054	0.1726	pCi/g	0.4455	N	87.11	3	1.359	IDENTIFIED	15.33	
Niobium-95m	0.7823	0.0899	pCi/g	0.307	N	0	8	0	NOT_IDENTI	0	
Potassium-40	35.44	1.592	pCi/g	0.5015	1.00	1461	1	1.977	IDENTIFIED	2.645	

Promethium-149 HE	768.1	546.5	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>	
Radium-224 <i>INT</i>	5.031	0.5962	pCi/g	1.028	Y	241.5	1	1.881	IDENTIFIED	11.5	<input checked="" type="checkbox"/>	<i>UI</i>
Radium-226 <i>✓</i>	1.519	0.1002	pCi/g	0.1081	Y	609.3	2	1.658	IDENTIFIED	5.256	<input type="checkbox"/>	
Radium-228 <i>✓</i>	1.947	0.1845	pCi/g	0.2318	0.500	911.6	3	1.567	IDENTIFIED	7.304	<input type="checkbox"/>	
Sodium-24 HE	1.80E+09	2.19E+09	pCi/g	0	N	0	8	0	SHORT_HLIF	0	<input type="checkbox"/>	
Strontium-85 <i>LA</i>	0.1394	0.02407	pCi/g	0.08393	Y	0	8	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	<i>UI</i> Data rejected due to low abundance.
Thallium-208 <i>✓</i>	0.6314	0.04772	pCi/g	0.05842	0.080	583.2	1	1.597	IDENTIFIED	6.744	<input type="checkbox"/>	
Thorium-228 <i>UL</i>	1.883	0.0889	pCi/g	0.09597	N	238.5	2	1.327	IDENTIFIED	2.967	<input type="checkbox"/>	
Thorium-232 <i>UL</i>	1.947	0.1845	pCi/g	0.2318	N	911.6	3	1.567	IDENTIFIED	7.304	<input type="checkbox"/>	
Tin-126 <i>UL</i>	0.3034	0.04833	pCi/g	0.1477	N	87.11	3	1.359	IDENTIFIED	15.33	<input type="checkbox"/>	
Total Uranium	4.9248	2.58E-06	ug/g	3.0674	N			0			<input type="checkbox"/>	

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue
248248004	24-FEB-10 12:00	19-MAR-10 11:00	23	SAMPLE	LOAD	1	LANL	LANL01004GEL		N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	2.425	0.2403	pCi/g	0.2672	N	910.8	3	1.796	IDENTIFIED	8.001	
Annihilation Rad.	0.1543	0.04849	pCi/g	0.05405	N	510.3	1	2.007	IDENTIFIED	31.11	
Bismuth-211	5.253	0.3882	pCi/g	0.3684	Y	352	2	1.349	IDENTIFIED	5.736	
Bismuth-212	2.097	0.55	pCi/g	1.487	N	0	5	0	FAIL_ABUND	0	
Bismuth-214	1.767	0.1417	pCi/g	0.1451	0.200	609.2	2	1.301	IDENTIFIED	6.184	
Cadmium-109	4.78	0.5113	pCi/g	1.058	Y	87.38	3	1.224	IDENTIFIED	9.521	
Cadmium-115	39.46	82.7	pCi/g	0	N	0	5	0	SHORT_HLIF	0	
Cerium-143	26630	5587	pCi/g	0	N	0	5	0	SHORT_HLIF	0	
Cesium-134	0.1386	0.05629	pCi/g	0.132	0.100	0	5	0	FAIL_ABUND	0	
Gross Gamma	11.16	1.515	pCi/g	4.276	N			0			
Lead-210	1.576	0.4429	pCi/g	0.8315	N	46.44	1	0.8426	IDENTIFIED	27.57	
Lead-212	2.386	0.1417	pCi/g	0.1113	0.100	238.7	2	1.088	IDENTIFIED	3.097	
Lead-214	1.906	0.1504	pCi/g	0.134	0.100	352	2	1.349	IDENTIFIED	5.736	
Neptunium-237	1.378	0.2064	pCi/g	0.3035	N	87.38	3	1.224	IDENTIFIED	9.521	
Potassium-40	25.96	1.561	pCi/g	0.7454	1.00	1460	1	1.92	IDENTIFIED	4.054	
Radium-224	5.361	0.9291	pCi/g	1.193	Y	241.7	1	1.939	IDENTIFIED	16.73	
Radium-226	1.767	0.1417	pCi/g	0.1451	Y	609.2	2	1.301	IDENTIFIED	6.184	
Radium-228	2.425	0.2403	pCi/g	0.2672	0.500	910.8	3	1.796	IDENTIFIED	8.001	
Sodium-24	1.98E+09	2.77E+09	pCi/g	0	N	0	5	0	SHORT_HLIF	0	
Thallium-208	0.7112	0.06582	pCi/g	0.07343	0.080	583.2	1	1.189	IDENTIFIED	7.959	
Thorium-228	2.386	0.1417	pCi/g	0.1113	N	238.7	2	1.088	IDENTIFIED	3.097	
Thorium-232	2.425	0.2403	pCi/g	0.2672	N	910.8	3	1.796	IDENTIFIED	8.001	
Thorium-234	2.653	0.6142	pCi/g	1.121	2.00	63.36	2	1.117	IDENTIFIED	21.11	
Tin-126	0.4617	0.04939	pCi/g	0.102	N	87.38	3	1.224	IDENTIFIED	9.521	
Total Uranium	8.104	1.83E-06	ug/g	1.6704	N			0			
Uranium-235	0.4598	0.1508	pCi/g	0.3541	0.500	143.8	1	1.508	IDENTIFIED	31.56	
Uranium-238	2.653	0.6142	pCi/g	1.121	N	63.36	2	1.117	IDENTIFIED	21.11	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248248005	24-FEB-10 12:00	19-MAR-10 11:00	23	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 <i>UL</i>	2.137	0.1931	pCi/g	0.1836	N	910.6	3	1.959	IDENTIFIED	5.976 <input type="checkbox"/>
Annihilation Rad.	0.1092	0.02812	pCi/g	0.03616	N	510.7	1	1.813	IDENTIFIED	25.54 <input type="checkbox"/>
Bismuth-211 <i>INT</i>	4.739	0.2503	pCi/g	0.2615	Y	351.8	2	1.342	IDENTIFIED	4.195 <input checked="" type="checkbox"/> <i>UT</i>
Bismuth-212 <i>LA</i>	2.539	0.429	pCi/g	0.9884	N	0	11	0	FAIL_ABUND	0 <input type="checkbox"/>
Bismuth-214 <i>✓</i>	1.28	0.09228	pCi/g	0.08495	0.200	609.1	2	1.62	IDENTIFIED	5.638 <input type="checkbox"/>
Cadmium-109 <i>INT</i>	3.169	0.4783	pCi/g	1.297	Y	87.32	3	1.175	IDENTIFIED	14.38 <input checked="" type="checkbox"/> <i>UT</i>
Cerium-143 <i>-</i>	49200	6921	pCi/g	0	N	0	11	0	SHORT_HLIF	0 <input type="checkbox"/>
Cesium-134 <i>LA</i>	0.1277	0.02682	pCi/g	0.07546	0.100	0	11	0	FAIL_ABUND	0 <input checked="" type="checkbox"/> <i>UI</i> Data rejected due to low abundance.
Europium-155 <i>HE</i>	0.1999	0.04854	pCi/g	0.1765	N	0	11	0	FAIL_ABUND	0 <input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue
248248007	24-FEB-10 12:00	19-MAR-10 11:02	23	SAMPLE	LOAD	1	LANL	LANL01004	GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228 <i>u</i>	2.101	0.2048	pCi/g	0.2063	N	911.8 3	1.701	IDENTIFIED	7.452				
Annihilation Rad. HE	0.1083	0.03271	pCi/g	0.04609	N	510.8 1	1.631	IDENTIFIED	29.84				
Bismuth-211 <i>INT</i>	4.641	0.3108	pCi/g	0.2878	Y	352 2	1.184	IDENTIFIED	4.687	<input checked="" type="checkbox"/>	<i>U</i>		
Bismuth-212 <i>LA</i>	2.49	0.4044	pCi/g	1.126	N	0 5 0		FAIL_ABUND	0				
Bismuth-214 <i>✓</i>	1.452	0.1096	pCi/g	0.1032	0.200	609.6 2	1.387	IDENTIFIED	5.078				
Cadmium-109 <i>INT</i>	4.755	0.5044	pCi/g	1.078	Y	87.35 3	1.361	IDENTIFIED	9.515	<input checked="" type="checkbox"/>	<i>U</i>		
Cerium-143	35640	5854	pCi/g	0	N	0 5 0		SHORT_HLIF	0				
Cesium-134 <i>LA</i>	0.1637	0.03128	pCi/g	0.09272	0.100	0 5 0		FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI	Data rejected due to low abundance.	
Europium-155 HE	0.1777	0.0667	pCi/g	0.1617	N	105.4 1	1.456	IDENTIFIED	37.28				
Gross Gamma	11.61	1.425	pCi/g	4.138	N	0							
Iodine-135	6.93E+23 0		pCi/g	0	N	0 5 0		SHORT_HLIF	0				
Lead-212 <i>✓</i>	2.201	0.1301	pCi/g	0.08394	0.100	238.7 2	1.223	IDENTIFIED	2.54				
Lead-214 <i>✓</i>	1.684	0.122	pCi/g	0.1047	0.100	352 2	1.184	IDENTIFIED	4.687				
Neptunium-237 <i>u</i>	1.371	0.2044	pCi/g	0.314	N	87.35 3	1.361	IDENTIFIED	9.515				
Potassium-40 <i>✓</i>	32.06	1.606	pCi/g	0.4452	1.00	1462 1	2.028	IDENTIFIED	2.462				
Radium-224 <i>INT</i>	5.186	0.6953	pCi/g	0.8994	Y	241.7 1	1.771	IDENTIFIED	12.5	<input checked="" type="checkbox"/>	<i>U</i>		
Radium-226 <i>✓</i>	1.452	0.1096	pCi/g	0.1032	Y	609.6 2	1.387	IDENTIFIED	5.078				
Radium-228 <i>✓</i>	2.101	0.2048	pCi/g	0.2063	0.500	911.8 3	1.701	IDENTIFIED	7.452				
Technetium-99m	9.02E+25 0		pCi/g	0	N	0 5 0		SHORT_HLIF	0				
Thallium-208 <i>✓</i>	0.6249	0.05394	pCi/g	0.05841	0.080	583.4 1	1.346	IDENTIFIED	6.937				
Thorium-228 <i>u</i>	2.201	0.1301	pCi/g	0.08394	N	238.7 2	1.223	IDENTIFIED	2.54				
Thorium-232 <i>u</i>	2.101	0.2048	pCi/g	0.2063	N	911.8 3	1.701	IDENTIFIED	7.452				
Thorium-234 <i>✓</i>	1.958	0.7933	pCi/g	1.687	2.00	63.12 2	0.756	IDENTIFIED	39.53				
Tin-126 <i>u</i>	0.4593	0.04873	pCi/g	0.1045	N	87.35 3	1.361	IDENTIFIED	9.515				
Total Uranium	5.7276	2.36E-06 ug/g		2.5122	N	0							
Uranium-238 HE	1.958	0.7933	pCi/g	1.687	N	63.12 2	0.756	IDENTIFIED	39.53				

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue		
248248008	24-FEB-10 12:00	19-MAR-10 11:03	23	SAMPLE	LOAD	1	LANL	LANL01004GEL		N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	2.282	0.2605	pCi/g	0.2774	N	911 3	1.33	IDENTIFIED	8.498				
Annihilation Rad.	0.1479	0.04137	pCi/g	0.06448	N	510.5 1	1.466	IDENTIFIED	27.61				
Bismuth-211	5.38	0.3716	pCi/g	0.4311	Y	351.8 2	1.212	IDENTIFIED	4.98				
Bismuth-212	2.236	0.4953	pCi/g	1.398	N	0 12 0		FAIL_ABUND	0				
Bismuth-214	1.502	0.123	pCi/g	0.1356	0.200	609.2 2	1.429	IDENTIFIED	6.449				
Cadmium-109	4.061	0.6612	pCi/g	1.938	Y	87.17 3	1.226	IDENTIFIED	15.59				
Cadmium-115	29.94	83.12	pCi/g	0	N	0 12 0		SHORT_HLIF	0				
Cerium-143	72340	10810	pCi/g	0	N	0 12 0		SHORT_HLIF	0				
Cesium-134	0.176	0.05056	pCi/g	0.1195	0.100	0 12 0		FAIL_ABUND	0				
Gross Gamma	12.85	1.733	pCi/g	5.332	N	0							
Iodine-133	2.29E+06	2.03E+06	pCi/g	0	N	0 12 0		SHORT_HLIF	0				
Iodine-135	2.28E+24	0	pCi/g	0	N	0 12 0		SHORT_HLIF	0				
Lead-212	2.4	0.1395	pCi/g	0.1228	0.100	238.5 2	1.129	IDENTIFIED	2.984				
Lead-214	1.952	0.1452	pCi/g	0.1644	0.100	351.8 2	1.212	IDENTIFIED	4.98				
Molybdenum-99	61.91	54.34	pCi/g	0	N	0 12 0		SHORT_HLIF	0				
Neptunium-237	1.171	0.2267	pCi/g	0.5469	N	87.17 3	1.226	IDENTIFIED	15.59				
Niobium-95	0.1168	0.03444	pCi/g	0.1119	N	0 12 0		NOT_IDENTI	0				
Niobium-95m	0.8793	0.1186	pCi/g	0.3814	N	0 12 0		NOT_IDENTI	0				
Potassium-40	37.05	2.264	pCi/g	0.7056	1.00	1461 1	1.954	IDENTIFIED	2.786				
Promethium-149	585.7	686.4	pCi/g	0	N	0 12 0		SHORT_HLIF	0				
Radium-224	6.447	0.9063	pCi/g	1.315	Y	241.5 1	1.99	IDENTIFIED	13.34				
Radium-226	1.502	0.123	pCi/g	0.1356	Y	609.2 2	1.429	IDENTIFIED	6.449				
Radium-228	2.282	0.2605	pCi/g	0.2774	0.500	911 3	1.33	IDENTIFIED	8.498				
Sodium-24	7.35E+08	2.58E+09	pCi/g	0	N	0 12 0		SHORT_HLIF	0				
Strontium-85	0.1127	0.03325	pCi/g	0.1042	Y	0 12 0		NOT_IDENTI	0				
Thallium-208	0.7513	0.06124	pCi/g	0.0641	0.080	583 1	1.362	IDENTIFIED	6.67				

Thorium-228	2.4	0.1395	pCi/g	0.1228	N	238.5	2	1.129	IDENTIFIED	2.984	<input type="checkbox"/>
Thorium-232	2.282	0.2605	pCi/g	0.2774	N	911	3	1.33	IDENTIFIED	8.498	<input type="checkbox"/>
Tin-126	0.3923	0.06387	pCi/g	0.188	N	87.17	3	1.226	IDENTIFIED	15.59	<input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202057355		19-MAR-10 11:16	0	MB	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Cerium-143 HE	20.69	24.4	pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>	
Iodine-135 HE	4.40E+14	2.90E+14	pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>	
Potassium-40	0.3192	0.133	pCi/g	0.2831	1.00	1460	1	0.898	IDENTIFIED	41.39	<input checked="" type="checkbox"/>	UI
Sodium-24 HE	1.25E+05	99980	pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202057356	24-FEB-10 12:00	19-MAR-10 13:09	23	DUP	LOAD	1		LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	2.034	0.1862	pCi/g	0.2155	N	911.7	3	1.938	IDENTIFIED	6.88	<input type="checkbox"/>	
Annihilation Rad.	0.09806	0.02935	pCi/g	0.04603	N	511.2	1	1.97	IDENTIFIED	29.79	<input type="checkbox"/>	
Bismuth-211	4.466	0.2465	pCi/g	0.3005	Y	351.8	2	1.628	IDENTIFIED	4.521	<input checked="" type="checkbox"/>	UI
Bismuth-212	2.163	0.4675	pCi/g	1.142	N	0	9	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	1.466	0.09546	pCi/g	0.1113	0.200	609.4	2	1.492	IDENTIFIED	5.147	<input type="checkbox"/>	
Cadmium-109	2.191	0.4686	pCi/g	1.524	Y	87.09	3	1.409	IDENTIFIED	20.95	<input checked="" type="checkbox"/>	UI
Cerium-143	53060	7815	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134	0.1393	0.02868	pCi/g	0.08231	0.100	0	9	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-135 HE	0.2936	0.08778	pCi/g	0.2892	N	0	9	0	NOT_IDENTI	0	<input type="checkbox"/>	
Gross Gamma	10.9	1.329	pCi/g	4.646	N	0	0	0			<input type="checkbox"/>	
Iodine-133 HE	1.23E+06	1.51E+06	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212	1.811	0.08517	pCi/g	0.08949	0.100	238.6	2	1.332	IDENTIFIED	2.938	<input type="checkbox"/>	
Lead-214	1.621	0.1	pCi/g	0.1093	0.100	351.8	2	1.628	IDENTIFIED	4.521	<input type="checkbox"/>	
Molybdenum-99 HE	34.3	40.71	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Neptunium-237 HE	0.6314	0.1504	pCi/g	0.4128	N	87.09	3	1.409	IDENTIFIED	20.95	<input type="checkbox"/>	
Niobium-95m	0.7263	0.08431	pCi/g	0.2907	N	0	9	0	NOT_IDENTI	0	<input type="checkbox"/>	
Potassium-40	33.56	1.479	pCi/g	0.4708	1.00	1462	1	2.053	IDENTIFIED	2.502	<input type="checkbox"/>	
Radium-224	5.044	0.6599	pCi/g	0.9584	Y	241.6	1	2.062	IDENTIFIED	12.76	<input checked="" type="checkbox"/>	UI
Radium-226	1.466	0.09546	pCi/g	0.1113	Y	609.4	2	1.492	IDENTIFIED	5.147	<input type="checkbox"/>	
Radium-228	2.034	0.1862	pCi/g	0.2155	0.500	911.7	3	1.938	IDENTIFIED	6.88	<input type="checkbox"/>	
Sodium-24 HE	6.69E+08	2.07E+09	pCi/g	0	N	0	9	0	SHORT_HLIF	0	<input type="checkbox"/>	
Strontium-85	0.1075	0.02091	pCi/g	0.07309	Y	0	9	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208	0.5606	0.04417	pCi/g	0.05579	0.080	583.2	1	1.46	IDENTIFIED	7.102	<input type="checkbox"/>	
Thorium-228	1.811	0.08517	pCi/g	0.08949	N	238.6	2	1.332	IDENTIFIED	2.938	<input type="checkbox"/>	
Thorium-232	2.034	0.1862	pCi/g	0.2155	N	911.7	3	1.938	IDENTIFIED	6.88	<input type="checkbox"/>	
Thorium-234	2.776	0.8617	pCi/g	1.921	2.00	63.86	2	3.117	IDENTIFIED	29.77	<input checked="" type="checkbox"/>	UI Data rejected due to high peak-width.
Tin-126 HE	0.2116	0.04526	pCi/g	0.1456	N	87.09	3	1.409	IDENTIFIED	20.95	<input type="checkbox"/>	
Total Uranium	8.2604	2.56E-06	ug/g	2.8598	N	0	0	0			<input type="checkbox"/>	
Uranium-238 HE	2.776	0.8617	pCi/g	1.921	N	63.86	2	3.117	IDENTIFIED	29.77	<input type="checkbox"/>	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202057357		19-MAR-10 11:17	0	LCS	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.752	0.3181	pCi/g	0.8539	N	0	8	0	FAIL_ABUND	0	<input type="checkbox"/>	
Americium-241	13.9	1.007	pCi/g	0.7788	0.200	59.55	1	0.9812	IDENTIFIED	3.552	<input type="checkbox"/>	
Barium-137m	5.438	0.1866	pCi/g	0.1148	N	662.2	2	1.459	IDENTIFIED	2.41	<input type="checkbox"/>	
Bismuth-211	2.977	0.2968	pCi/g	0.5828	Y	352.2	2	1.243	IDENTIFIED	9.381	<input type="checkbox"/>	
Bismuth-212 HE	2.118	0.5159	pCi/g	1.846	N	0	8	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	0.7318	0.1166	pCi/g	0.2211	0.200	609.8	2	1.444	IDENTIFIED	15.49	<input type="checkbox"/>	
Cadmium-109	32.68	2.28	pCi/g	2.384	Y	88.03	2	1.074	IDENTIFIED	3.546	<input type="checkbox"/>	

Cerium-143	✓	193.6	93.99	pCi/g 0	N	0	8	0	SHORT_HLIF 0	<input type="checkbox"/>
Cesium-137		5.745	0.1977	pCi/g 0.1213	0.100	662.2	2	1.459	IDENTIFIED 2.41	<input type="checkbox"/>
Cobalt-57		0.1643	0.04022	pCi/g 0.06439	N	122.5	1	1.452	IDENTIFIED 24.23	<input type="checkbox"/>
Cobalt-60	✓	6.481	0.2817	pCi/g 0.07587	0.100	1334	1	1.995	IDENTIFIED 2.675	<input type="checkbox"/>
Gross Gamma		28.16	2.927	pCi/g 4.08	N		0			<input type="checkbox"/>
Iodine-133	HE	5354	3283	pCi/g 0	N	0	8	0	SHORT_HLIF 0	<input type="checkbox"/>
Lead-212		1.276	0.0912	pCi/g 0.1602	0.100	238.8	2	1.087	IDENTIFIED 5.893	<input type="checkbox"/>
Lead-214		1.081	0.1118	pCi/g 0.2193	0.100	352.2	2	1.243	IDENTIFIED 9.381	<input type="checkbox"/>
Neptunium-237		3.016	0.4624	pCi/g 1.102	N	0	8	0	NOT_IDENTI 0	<input type="checkbox"/>
Radium-224		4.108	0.961	pCi/g 1.717	Y	241.8	1	1.865	IDENTIFIED 23.16	<input type="checkbox"/>
Radium-226		0.7318	0.1166	pCi/g 0.2211	Y	609.8	2	1.444	IDENTIFIED 15.49	<input type="checkbox"/>
Radium-228		1.752	0.3181	pCi/g 0.8539	0.500	0	8	0	FAIL_ABUND 0	<input type="checkbox"/>
Technetium-99m		1.42E+16	4.93E+15	pCi/g 0	N	0	8	0	SHORT_HLIF 0	<input type="checkbox"/>
Thallium-208		0.3821	0.06058	pCi/g 0.103	0.080	583.5	1	1.288	IDENTIFIED 15.54	<input type="checkbox"/>
Thorium-228		1.276	0.0912	pCi/g 0.1602	N	238.8	2	1.087	IDENTIFIED 5.893	<input type="checkbox"/>
Thorium-232		1.752	0.3181	pCi/g 0.8539	N	0	8	0	FAIL_ABUND 0	<input type="checkbox"/>
Tin-126		3.197	0.2231	pCi/g 0.2351	N	88.03	2	1.074	IDENTIFIED 3.546	<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	Parname	Result	Uncertainty	Units	DL	RDL
959280	248248008	SAMPLE	19-MAR-10	Lead-214	1.952	0.1452	pCi/g	0.08225	0.100
				Molybdenum-99	61.91	54.34	pCi/g	0	N
				Potassium-40	37.05	2.264	pCi/g	0.353	1.00
				Promethium-149	585.7	686.4	pCi/g	0	N
				Radium-224	6.447	8.9063	pCi/g	0.6579	Y
				Radium-226	1.502	0.123	pCi/g	0.06782	Y
				Radium-228	2.282	0.2605	pCi/g	0.1388	0.500
				Sodium-24	7.35E+08	2.58E+09	pCi/g	0	N
				Strontium-85	0.1127	0.03325	pCi/g	0.05215	Y
				Thallium-208	0.7513	0.06124	pCi/g	0.03207	0.080
				Thorium-227	0.3052	0.1625	pCi/g	0.2841	Y
959280	1202057355	MB	19-MAR-10	Cerium-143	20.69	24.4	pCi/g	0	N
				Iodine-135	4.40E+14	2.90E+14	pCi/g	0	N
				Mercury-203	0.03555	0.01112	pCi/g	0.02159	0.100
				Potassium-40	0.3192	0.133	pCi/g	0.1416	1.00
				Sodium-24	1.25E+05	99980	pCi/g	0	N
				Yttrium-91	8.418	4.034	pCi/g	8.171	N
959280	1202057356	DUP	19-MAR-10	Americium-241	0.113	0.06753	pCi/g	0.1088	0.200
				Bismuth-211	4.466	0.2465	pCi/g	0.1503	Y
				Bismuth-214	1.466	0.09546	pCi/g	0.05568	0.200
				Cadmium-109	2.191	0.4686	pCi/g	0.7625	Y
				Cerium-143	53060	7815	pCi/g	0	N
				Cesium-134	0.1393	0.02868	pCi/g	0.04118	0.100
				Gross Gamma	10.9	1.329	pCi/g	2.277	N
				Iodine-133	1.23E+06	1.51E+06	pCi/g	0	N
				Lead-212	1.811	0.08517	pCi/g	0.04477	0.100
				Lead-214	1.621	0.1	pCi/g	0.05467	0.100
				Molybdenum-99	34.3	40.71	pCi/g	0	N
				Potassium-40	33.56	1.479	pCi/g	0.2356	1.00
				Radium-224	5.044	0.6599	pCi/g	0.4795	Y
				Radium-226	1.466	0.09546	pCi/g	0.05568	Y
				Radium-228	2.034	0.1862	pCi/g	0.1078	0.500
				Sodium-24	6.69E+08	2.07E+09	pCi/g	0	N
				Strontium-85	0.1075	0.02091	pCi/g	0.03657	Y
				Thallium-208	0.5606	0.04417	pCi/g	0.02791	0.080
				Thorium-234	2.776	0.8617	pCi/g	0.9609	2.00
959280	1202057357	LCS	19-MAR-10	Americium-241	13.9	1.007	pCi/g	0.3896	0.200

see
3/22/10

see
3/22/10

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:59:48.75

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248001.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:58:10
Sample ID          : G248248001 Sample quantity      : 1.52090E+02 GRAM
Detector name      : GAM01 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.38 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials   : MXR1
Abundance limit    : 75.00000 Sensitivity           : 5.00000
Batch ID           : 959280 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	74.73*	387	581	1.30	150.17	143	17	5.38E-02	12.4	1.78E+00
2	2	77.14*	704	523	1.13	155.00	143	17	9.78E-02	6.7	
3	0	87.13*	209	517	1.03	174.97	172	7	2.90E-02	19.5	
4	3	90.15	130	214	0.84	180.99	179	15	1.81E-02	16.5	1.14E+00
5	3	92.97*	274	569	1.47	186.64	179	15	3.81E-02	17.9	
6	0	186.56*	208	423	1.02	373.72	369	11	2.89E-02	21.3	
7	0	209.79	156	384	1.24	420.14	415	10	2.17E-02	24.8	
8	4	239.03*	1490	224	1.23	478.60	474	16	2.07E-01	3.1	1.06E+00
9	4	242.08	401	290	1.82	484.68	474	16	5.57E-02	12.3	
10	0	270.15	137	290	1.45	540.81	536	13	1.91E-02	26.9	
11	0	278.91	249	382	6.27	558.30	548	22	3.46E-02	21.0	
12	0	295.61	359	260	1.18	591.68	587	9	4.98E-02	9.4	
13	0	300.52	110	146	0.77	601.51	598	8	1.53E-02	21.3	
14	0	328.60	60	174	1.02	657.64	654	8	8.37E-03	40.2	
15	0	338.74	330	194	1.33	677.90	673	10	4.58E-02	9.6	
16	0	352.25*	757	214	1.31	704.90	700	12	1.05E-01	5.4	
17	0	409.87	46	109	0.87	820.07	817	8	6.41E-03	42.2	
18	0	463.90*	120	148	1.96	928.06	921	16	1.67E-02	24.5	
19	0	511.41*	145	164	2.05	1023.04	1015	19	2.01E-02	24.9	
20	0	583.55*	424	128	1.50	1167.22	1160	16	5.89E-02	7.8	
21	0	609.69*	562	104	1.40	1219.48	1212	15	7.80E-02	5.9	
22	0	727.72	87	65	2.02	1455.38	1451	10	1.21E-02	20.4	
23	0	795.60	68	50	0.76	1591.05	1586	11	9.44E-03	23.5	
24	0	860.82	90	39	1.34	1721.39	1715	12	1.25E-02	17.4	
25	0	911.66*	282	64	1.61	1823.01	1817	13	3.92E-02	8.5	
26	5	965.28	38	65	2.02	1930.17	1926	20	5.25E-03	37.7	2.55E+00
27	5	969.46*	196	64	1.94	1938.52	1926	20	2.73E-02	11.3	
28	0	1120.95*	90	102	1.84	2241.30	2235	16	1.25E-02	27.0	
29	0	1461.31*	1232	38	2.03	2921.50	2913	19	1.71E-01	3.1	
30	0	1588.97*	24	15	1.76	3176.63	3171	10	3.33E-03	37.8	
31	0	1765.01*	80	10	1.71	3528.41	3520	15	1.11E-02	15.0	
32	0	1848.39	13	2	1.32	3695.03	3691	9	1.74E-03	35.7	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 12:59:52

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:58:10
Sample ID        : G248248001 Sample quantity : 152.09 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA1 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.38 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

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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	*	3.018E+01	3.274E+00	5.157E-01	4.585E-02	58.528
CD-109	+	88.03	*	2.786E+00	1.120E+00	1.350E+00	1.277E-01	2.064
SN-126		64.28		-1.883E-01	5.640E-01	8.885E-01	1.307E-01	-0.212
	+	86.94		1.119E+00	6.380E-01	5.988E-01	2.486E-01	1.869
	+	87.57	*	2.691E-01	1.082E-01	1.310E-01	1.234E-02	2.054
HG-203		70.83		1.620E+00	1.765E+00	2.622E+00	4.137E-01	0.618
		72.87		2.175E+00	1.018E+00	1.661E+00	2.543E-01	1.309
	+	279.20	*	2.747E-01	1.183E-01	6.633E-02	6.204E-03	4.141
TL-208		277.37		1.020E+00	4.652E-01	7.399E-01	9.542E-02	1.379
	+	583.19	*	5.750E-01	1.036E-01	5.675E-02	5.147E-03	10.133
	+	860.56		1.169E+00	4.222E-01	4.898E-01	4.693E-02	2.386
BI-211		72.87		7.776E+00	3.498E+00	5.938E+00	4.870E-01	1.309
	+	351.06	*	4.485E+00	6.298E-01	3.512E-01	3.195E-02	12.768
PB-212		74.82		2.245E+00	6.255E-01	5.883E-01	7.533E-02	3.817
	+	77.11		2.319E+00	3.678E-01	3.358E-01	2.850E-02	6.906
	+	238.63	*	1.941E+00	2.315E-01	9.757E-02	9.923E-03	19.891
	+	300.09		2.260E+00	9.934E-01	1.335E+00	1.458E-01	1.693
BI-214		609.32	*	1.477E+00	2.284E-01	1.155E-01	1.145E-02	12.780
	+	1120.29		1.246E+00	6.872E-01	4.801E-01	5.161E-02	2.596
	+	1764.49		1.561E+00	4.862E-01	3.199E-01	2.682E-02	4.880
PB-214		74.82		3.980E+00	1.086E+00	1.043E+00	1.199E-01	3.817
	+	77.11		4.088E+00	7.308E-01	5.920E-01	7.005E-02	6.906
	+	242.00		3.170E+00	8.524E-01	5.936E-01	6.399E-02	5.340
	+	295.22		1.300E+00	2.837E-01	2.230E-01	2.497E-02	5.830
	+	351.93	*	1.628E+00	2.456E-01	1.239E-01	1.317E-02	13.135
RA-224		240.99	*	5.605E+00	1.472E+00	1.046E+00	9.506E-02	5.359
RA-226		609.32	*	1.477E+00	2.284E-01	1.155E-01	1.145E-02	12.780
	+	1120.29		1.246E+00	6.872E-01	4.801E-01	5.161E-02	2.596
	+	1764.49		1.561E+00	4.862E-01	3.199E-01	2.682E-02	4.880
AC-228		338.32		2.172E+00	9.990E-01	4.119E-01	1.720E-01	5.273
	+	911.20	*	1.871E+00	3.884E-01	2.339E-01	2.786E-02	8.000
	+	968.97		2.248E+00	7.487E-01	4.322E-01	1.058E-01	5.202
RA-228		338.32		2.172E+00	9.990E-01	4.119E-01	1.720E-01	5.273
	+	911.20	*	1.871E+00	3.884E-01	2.339E-01	2.786E-02	8.000

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		2.248E+00	7.487E-01	4.322E-01	1.058E-01	5.202
	+	74.82		2.245E+00	5.867E-01	5.883E-01	4.946E-02	3.817
	+	77.11		2.319E+00	3.678E-01	3.358E-01	2.850E-02	6.906
	+	238.63	*	1.941E+00	2.315E-01	9.757E-02	9.923E-03	19.891
TH-232	+	300.09		2.260E+00	1.687E+00	1.335E+00	8.182E-01	1.693
	+	338.32		2.172E+00	4.603E-01	4.119E-01	3.626E-02	5.273
	+	911.20	*	1.871E+00	3.884E-01	2.339E-01	2.786E-02	8.000
	+	968.97		2.248E+00	7.487E-01	4.322E-01	1.058E-01	5.202
U-235	+	89.96		1.727E+00	7.129E-01	1.362E+00	3.387E-01	1.267
	+	93.35		2.196E+00	9.372E-01	7.436E-01	1.730E-01	2.953
		143.76	*	4.101E-02	2.140E-01	3.602E-01	6.093E-02	0.114
		163.33		-2.137E-01	4.510E-01	7.451E-01	1.334E-01	-0.287
NP-237	+	185.72		1.741E-01	7.567E-02	6.726E-02	5.845E-03	2.589
		205.31		2.553E-01	5.740E-01	8.618E-01	1.574E-01	0.296
	+	86.48	*	8.031E-01	3.641E-01	4.177E-01	9.582E-02	1.923
		95.86		2.016E-01	1.030E+00	1.480E+00	3.567E-01	0.136
ANH-511	+	511.00	*	1.492E-01	7.537E-02	4.677E-02	3.964E-03	3.190

---- 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	*	-3.838E-02	3.775E-01	6.008E-01	5.464E-02	-0.064
NA-22		1274.54	*	-1.315E-02	4.600E-02	7.475E-02	6.277E-03	-0.176
NA-24		1368.63	*	2.008E+03	4.600E-02	Half-Life too short		
SC-46		889.28	*	-2.115E-02	4.728E-02	7.413E-02	6.701E-03	-0.285
V-48	+	1120.55		2.249E-01	1.231E-01	1.512E-01	1.270E-02	1.488
		944.13		5.109E-01	1.303E+00	2.199E+00	1.981E-01	0.232
		983.53	*	1.092E-02	1.103E-01	1.808E-01	1.614E-02	0.060
		1312.11		-8.331E-02	1.164E-01	1.780E-01	1.509E-02	-0.468
CR-51		320.08	*	-2.525E-01	4.838E-01	7.551E-01	7.097E-02	-0.334
MN-54		834.85	*	3.129E-02	4.186E-02	7.255E-02	6.458E-03	0.431
CO-56		846.77	*	1.290E-02	4.456E-02	7.491E-02	6.693E-03	0.172
		1037.84		-1.504E-01	3.745E-01	5.818E-01	5.359E-02	-0.259
		1238.28		2.179E-01	1.099E-01	2.057E-01	1.759E-02	1.060
		1771.35		1.610E-01	2.452E-01	4.121E-01	3.450E-02	0.391
		122.06	*	1.927E-04	2.749E-02	4.361E-02	3.839E-03	0.004
CO-57		136.47		2.586E-02	2.103E-01	3.586E-01	3.309E-02	0.072
CO-58		810.76	*	-5.357E-02	4.471E-02	6.500E-02	5.751E-03	-0.824
FE-59		1099.45	*	-6.527E-02	1.131E-01	1.712E-01	1.578E-02	-0.381
CO-60		1291.59		-6.968E-02	1.538E-01	2.450E-01	2.356E-02	-0.284
		1173.23		-4.751E-03	4.689E-02	7.803E-02	6.316E-03	-0.061
		1332.49	*	-6.326E-04	3.505E-02	5.820E-02	4.961E-03	-0.011
		1115.54	*	-1.006E-01	1.154E-01	1.393E-01	1.175E-02	-0.722
ZN-65		121.12		7.292E-02	1.471E-01	2.379E-01	2.667E-02	0.307
SE-75		136.00		5.928E-03	4.128E-02	7.043E-02	6.097E-03	0.084
		264.66	*	3.132E-02	5.470E-02	8.235E-02	7.565E-03	0.380
	+	279.54		7.273E-01	3.134E-01	2.095E-01	1.981E-02	3.472
		400.66		1.626E-01	2.800E-01	4.629E-01	4.948E-02	0.351

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SR-85	514.00	*		1.226E-01	4.821E-02	8.709E-02	7.384E-03	1.408
Y-88	898.04			1.190E-02	4.459E-02	7.466E-02	6.793E-03	0.159
	1836.06	*		1.996E-02	4.006E-02	7.087E-02	5.829E-03	0.282
Y-91	1204.77	*		-3.019E+01	2.656E+01	4.017E+01	3.291E+00	-0.752
NB-94	702.65	*		3.354E-02	3.549E-02	6.267E-02	5.261E-03	0.535
	871.09			-4.777E-03	3.632E-02	5.871E-02	5.283E-03	-0.081
NB-95	765.81	*		-8.050E-03	5.160E-02	8.419E-02	7.295E-03	-0.096
NB-95M	235.69	*		-4.882E-02	1.570E-01	2.252E-01	2.313E-02	-0.217
ZR-95	724.19			-6.797E-02	1.208E-01	1.624E-01	1.499E-02	-0.418
	756.73	*		2.182E-02	8.674E-02	1.460E-01	1.391E-02	0.149
MO-99	140.51			-2.852E-04	8.674E-02	Half-Life	too short	
	181.07			-1.119E-04	8.674E-02	Half-Life	too short	
	366.42			-6.900E-04	8.674E-02	Half-Life	too short	
	739.50	*		-5.847E-05	8.674E-02	Half-Life	too short	
	777.92			-2.195E-04	8.674E-02	Half-Life	too short	
TC-99M	140.51	*		-1.742E+20	8.674E-02	Half-Life	too short	
RU-103	497.08	*		-1.109E-02	4.895E-02	7.692E-02	1.067E-02	-0.144
	610.33	+		1.750E+01	3.519E+00	3.665E+00	5.947E-01	4.775
RH-106	621.93	*		1.786E-01	3.269E-01	5.663E-01	7.409E-02	0.315
	1050.41			1.659E+00	2.821E+00	4.812E+00	4.196E-01	0.345
RU-106	621.93	*		1.786E-01	3.264E-01	5.663E-01	4.730E-02	0.315
	1050.41			1.659E+00	2.821E+00	4.812E+00	4.196E-01	0.345
AG-108M	433.94	*		-7.750E-03	3.043E-02	4.816E-02	4.122E-03	-0.161
	614.28			-8.173E-03	3.760E-02	5.334E-02	4.623E-03	-0.153
	722.91			-2.316E-02	4.555E-02	6.167E-02	5.407E-03	-0.376
AG-110M	657.76	*		-8.477E-03	3.698E-02	6.053E-02	5.132E-03	-0.140
	677.62			-7.730E-02	3.484E-01	5.697E-01	4.860E-02	-0.136
	706.68			-7.506E-02	2.351E-01	3.806E-01	3.299E-02	-0.197
	763.94			-2.867E-01	1.883E-01	2.714E-01	2.414E-02	-1.056
	884.68			-1.336E-02	5.216E-02	8.316E-02	7.728E-03	-0.161
	937.49			-2.480E-02	1.250E-01	2.000E-01	1.863E-02	-0.124
	1384.29			2.951E-02	1.621E-01	2.751E-01	2.427E-02	0.107
	1505.03			-9.568E-02	2.791E-01	4.364E-01	3.778E-02	-0.219
SN-113	391.69	*		-3.892E-02	5.047E-02	7.767E-02	6.469E-03	-0.501
CD-115	260.90			-1.170E-03	5.047E-02	Half-Life	too short	
	492.35			2.507E-04	5.047E-02	Half-Life	too short	
	527.90	*		5.760E-05	5.047E-02	Half-Life	too short	
SN-117M	156.02			-8.676E-01	3.520E+00	5.895E+00	5.020E-01	-0.147
	158.56	*		4.130E-02	8.518E-02	1.461E-01	1.244E-02	0.283
TE-123M	159.00	*		1.377E-02	3.117E-02	5.337E-02	4.572E-03	0.258
SB-124	602.73			1.984E-02	4.907E-02	7.425E-02	6.244E-03	0.267
	645.85			3.669E-01	5.558E-01	9.699E-01	8.514E-02	0.378
	722.78			-3.159E-01	5.111E-01	6.834E-01	5.937E-02	-0.462
	1690.97	*		-3.668E-02	7.157E-02	1.024E-01	9.100E-03	-0.358
SB-125	427.87	*		9.976E-02	1.036E-01	1.765E-01	1.484E-02	0.565
	463.37	+		1.104E+00	5.508E-01	5.793E-01	5.238E-02	1.906
	600.60			3.607E-02	1.842E-01	3.125E-01	2.833E-02	0.115
	635.95			-6.063E-02	2.798E-01	4.591E-01	4.144E-02	-0.132
TE-125M	109.28	*		-4.402E-01	1.173E+01	1.865E+01	1.966E+00	-0.024

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I-126	388.63			2.895E-01	2.641E-01	4.558E-01	3.692E-02	0.635
	666.33	*		-1.887E-01	3.663E-01	5.866E-01	4.819E-02	-0.322
	753.82			4.681E+00	3.035E+00	5.536E+00	4.771E-01	0.846
SB-126	414.70			8.773E-02	1.351E-01	2.022E-01	1.653E-02	0.434
	666.50			-9.127E-02	1.284E-01	2.024E-01	1.663E-02	-0.451
	695.00			-1.866E-02	1.259E-01	2.067E-01	1.728E-02	-0.090
	697.00			-1.912E-02	4.224E-01	6.986E-01	5.846E-02	-0.027
	720.70	*		1.426E-01	2.373E-01	4.013E-01	3.402E-02	0.355
	856.80			-2.916E-02	8.509E-01	1.201E+00	1.076E-01	-0.024
SB-127	252.40			3.348E+00	1.826E+01	3.042E+01	1.290E+01	0.110
	473.00			-3.175E+00	6.435E+00	9.877E+00	1.481E+00	-0.321
	685.70	*		-7.373E+00	5.819E+00	8.542E+00	1.176E+00	-0.863
	783.70			1.728E+01	1.521E+01	2.694E+01	3.996E+00	0.642
I-131	80.19			3.188E-04	1.040E+01	1.490E+01	1.319E+00	0.000
	284.31			-1.240E+00	3.448E+00	4.854E+00	4.669E-01	-0.255
	364.49	*		-1.069E-01	2.404E-01	3.803E-01	3.432E-02	-0.281
	636.99			-1.030E+00	3.065E+00	4.976E+00	4.420E-01	-0.207
TE-132	49.72			-5.923E+01	1.206E+02	1.925E+02	2.580E+01	-0.308
	111.76			-6.397E-01	2.001E+02	3.183E+02	4.304E+01	-0.002
	116.30			6.971E+01	1.716E+02	2.767E+02	3.747E+01	0.252
	228.16	*		-3.119E-01	4.266E+00	7.077E+00	1.263E+00	-0.044
BA-133	81.00			-1.457E-01	1.165E-01	1.543E-01	2.410E-02	-0.944
	276.40			9.744E-01	4.365E-01	6.875E-01	9.927E-02	1.417
	302.85			3.863E-02	1.686E-01	2.467E-01	3.298E-02	0.157
	356.01	*		-7.267E-03	5.179E-02	7.303E-02	9.450E-03	-0.100
	383.85			-8.916E-02	2.968E-01	4.720E-01	5.723E-02	-0.189
I-133	529.87	*		-2.380E+00	2.968E-01	Half-Life	too short	
	875.33			-1.344E+01	2.968E-01	Half-Life	too short	
	1298.22			-2.071E+01	2.968E-01	Half-Life	too short	
CS-134	563.25			-4.445E-01	3.671E-01	5.600E-01	4.795E-02	-0.794
	569.33			-1.137E-01	2.053E-01	3.313E-01	2.847E-02	-0.343
	604.72			1.298E-02	3.784E-02	5.697E-02	4.800E-03	0.228
	795.86	*		1.363E-01	6.506E-02	9.938E-02	8.782E-03	1.371
	801.95			-1.566E-01	5.120E-01	7.515E-01	6.647E-02	-0.208
	1365.19			7.357E-02	1.153E+00	1.933E+00	1.734E-01	0.038
CS-135	268.22	*		4.924E-02	1.866E-01	2.752E-01	2.870E-02	0.179
I-135	546.56			-3.847E+18	1.866E-01	Half-Life	too short	
	836.80			5.061E+18	1.866E-01	Half-Life	too short	
	1038.76			-3.179E+17	1.866E-01	Half-Life	too short	
	1131.51			1.999E+17	1.866E-01	Half-Life	too short	
	1260.41	*		-2.459E+18	1.866E-01	Half-Life	too short	
	1457.56			1.241E+20	1.866E-01	Half-Life	too short	
	1678.03			-5.401E+17	1.866E-01	Half-Life	too short	
	1791.20			-1.322E+18	1.866E-01	Half-Life	too short	
CS-136	153.25			7.965E-01	1.320E+00	2.273E+00	2.316E-01	0.350
	176.60			-3.746E-01	7.786E-01	1.285E+00	1.221E-01	-0.292
	273.65			1.039E+00	1.049E+00	1.239E+00	1.221E-01	0.838
	340.55			1.182E+00	3.295E-01	5.409E-01	4.928E-02	2.185
	818.51			4.379E-02	1.185E-01	2.008E-01	1.781E-02	0.218

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	1048.07	*		-7.208E-02	1.768E-01	2.739E-01	2.492E-02	-0.263
	1235.36			-2.453E-01	9.948E-01	1.634E+00	1.884E-01	-0.150
BA-137M	661.66	*		3.577E-03	3.897E-02	6.530E-02	5.349E-03	0.055
CS-137	661.66	*		3.778E-03	4.117E-02	6.898E-02	5.662E-03	0.055
CE-139	165.86	*		1.847E-02	3.190E-02	5.480E-02	4.667E-03	0.337
BA-140	162.66			-1.037E+00	1.276E+00	2.085E+00	1.897E-01	-0.498
	304.85			2.313E+00	2.482E+00	3.678E+00	1.081E+00	0.629
	423.72			1.644E+00	3.404E+00	5.591E+00	1.833E+00	0.294
	537.26	*		-1.413E-01	4.221E-01	6.904E-01	2.339E-01	-0.205
LA-140	328.76	+		7.509E-01	6.074E-01	8.932E-01	8.371E-02	0.841
	487.02			-1.594E-01	2.257E-01	3.413E-01	3.065E-02	-0.467
	815.77			3.477E-01	5.276E-01	9.144E-01	8.988E-02	0.380
	1596.21	*		-2.635E-02	1.491E-01	2.265E-01	1.955E-02	-0.116
CE-141	145.44	*		8.676E-02	7.996E-02	1.378E-01	1.199E-02	0.630
CE-143	57.36			-1.144E-02	7.996E-02	Half-Life	too short	
	293.27	*		1.384E-02	7.996E-02	Half-Life	too short	
	664.57			6.315E-02	7.996E-02	Half-Life	too short	
	721.93			3.963E-02	7.996E-02	Half-Life	too short	
CE-144	80.12			-5.730E-03	2.912E+00	4.175E+00	3.641E-01	-0.001
	133.52	*		1.433E-01	2.156E-01	3.485E-01	5.327E-02	0.411
PM-144	476.78			1.535E-02	6.855E-02	1.117E-01	1.026E-02	0.137
	618.01			-1.734E-02	3.332E-02	5.188E-02	4.471E-03	-0.334
	696.49	*		-3.085E-03	3.545E-02	5.845E-02	4.893E-03	-0.053
PR-144	696.51	*		-2.318E-01	2.664E+00	4.392E+00	3.674E-01	-0.053
	1489.16			1.338E+00	1.208E+01	2.030E+01	1.757E+00	0.066
PM-146	453.88	*		2.904E-03	4.488E-02	7.251E-02	7.519E-03	0.040
	633.25			-1.085E-01	1.442E+00	2.393E+00	9.123E-01	-0.045
	735.93			9.840E-02	1.572E-01	2.686E-01	7.523E-02	0.366
	747.24			5.491E-02	1.021E-01	1.755E-01	2.557E-02	0.313
ND-147	91.11	+		9.172E-01	3.159E-01	8.756E-01	8.661E-02	1.048
	319.41			4.550E+00	5.751E+00	9.635E+00	8.646E-01	0.472
	531.02	*		-3.482E-01	9.563E-01	1.571E+00	2.337E-01	-0.222
PM-149	285.90	*		-1.062E-03	9.563E-01	Half-Life	too short	
EU-152	121.78			2.930E-03	7.770E-02	1.234E-01	1.241E-02	0.024
	244.70			4.630E-01	3.822E-01	5.942E-01	5.409E-02	0.779
	344.28	*		8.936E-04	1.143E-01	1.727E-01	1.596E-02	0.005
	778.90			-1.633E-01	2.512E-01	3.883E-01	3.384E-02	-0.421
	964.08	+		4.665E-01	3.542E-01	6.353E-01	5.699E-02	0.734
	1085.87			-2.071E-01	4.841E-01	7.502E-01	6.431E-02	-0.276
	1112.07			1.871E-01	3.223E-01	5.480E-01	4.628E-02	0.341
	1408.01			-6.603E-02	1.943E-01	3.086E-01	2.658E-02	-0.214
GD-153	69.67			-8.305E-01	2.140E+00	3.027E+00	2.428E-01	-0.274
	97.43	*		-4.041E-02	1.029E-01	1.433E-01	1.272E-02	-0.282
	103.18			-5.879E-02	1.214E-01	1.898E-01	1.655E-02	-0.310
EU-154	123.07			-1.862E-02	5.526E-02	8.629E-02	9.898E-03	-0.216
	723.31			-9.504E-02	2.035E-01	2.767E-01	2.594E-02	-0.343
	873.19			4.456E-02	2.895E-01	4.806E-01	5.852E-02	0.093
	996.26			-2.270E-01	3.854E-01	5.849E-01	1.030E-01	-0.388
	1004.73			-1.826E-01	2.325E-01	3.459E-01	4.090E-02	-0.528

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EU-155	+	1274.44	*	-3.425E-02	1.301E-01	2.119E-01	2.374E-02	-0.162
		86.55		3.274E-01	1.316E-01	1.932E-01	1.815E-02	1.695
		105.31	*	1.291E-01	1.128E-01	1.871E-01	1.645E-02	0.690
TB-160	+	86.79		9.335E-01	3.752E-01	5.536E-01	5.169E-02	1.686
		197.04		-1.201E-02	6.340E-01	1.061E+00	9.326E-02	-0.011
		215.65		6.971E-01	8.728E-01	1.453E+00	1.299E-01	0.480
		298.57		1.132E-01	2.014E-01	2.231E-01	2.028E-02	0.507
		879.36	*	6.058E-02	1.556E-01	2.637E-01	2.378E-02	0.230
HO-166M	+	962.29		5.588E-01	6.968E-01	1.078E+00	9.671E-02	0.519
		966.15		3.509E-01	2.664E-01	5.422E-01	4.861E-02	0.647
		1177.93		1.336E-01	4.286E-01	7.369E-01	5.975E-02	0.181
		1271.85		2.596E-01	7.683E-01	1.325E+00	1.111E-01	0.196
		80.57		-1.479E-01	3.162E-01	4.430E-01	3.880E-02	-0.334
		184.41		9.682E-02	3.959E-02	6.403E-02	5.556E-03	1.512
		280.46		7.558E-02	9.461E-02	1.443E-01	1.320E-02	0.524
		410.95		3.553E-01	3.014E-01	4.625E-01	3.772E-02	0.768
		711.68	*	-2.904E-02	6.580E-02	1.054E-01	8.889E-03	-0.276
		752.31		-1.145E-02	3.005E-01	4.950E-01	4.263E-02	-0.023
		810.29		-7.813E-02	6.349E-02	9.217E-02	8.133E-03	-0.848
		67.75		2.329E-03	1.251E-01	2.025E-01	1.604E-02	0.012
TA-182		100.11		1.314E-01	1.980E-01	3.195E-01	2.809E-02	0.411
		152.43		3.891E-02	3.738E-01	6.343E-01	5.404E-02	0.061
		222.11		-6.889E-03	3.854E-01	6.416E-01	5.765E-02	-0.011
		1121.30		6.124E-01	3.352E-01	4.210E-01	3.536E-02	1.454
		1189.05		-1.441E-01	3.495E-01	5.658E-01	4.608E-02	-0.255
IR-192	+	1221.41	*	1.538E-01	2.326E-01	4.080E-01	3.363E-02	0.377
		1231.02		-6.390E-02	5.409E-01	8.967E-01	7.416E-02	-0.071
		295.96		1.035E+00	2.158E-01	3.288E-01	3.013E-02	3.147
		308.46		-6.953E-02	1.089E-01	1.723E-01	1.565E-02	-0.404
		316.51	*	4.687E-03	3.906E-02	6.445E-02	5.807E-03	0.073
BI-207	+	468.07		5.956E-02	7.608E-02	1.155E-01	1.044E-02	0.516
		72.81		3.915E-01	1.992E-01	3.370E-01	2.763E-02	1.162
		74.97		6.475E-01	1.690E-01	2.454E-01	2.045E-02	2.639
		569.70		-8.905E-03	3.108E-02	5.114E-02	4.332E-03	-0.174
		1063.66	*	8.209E-03	6.134E-02	1.003E-01	8.692E-03	0.082
PB-210		1770.23		1.825E-01	5.068E-01	7.814E-01	6.543E-02	0.234
PB-211		46.54	*	1.073E+00	4.277E+00	6.956E+00	6.515E-01	0.154
PB-211		404.85	*	-3.233E-01	8.171E-01	1.160E+00	5.603E-01	-0.279
		427.09		-5.792E-01	1.817E+00	2.843E+00	1.313E+00	-0.204
		832.01		-3.297E-01	1.070E+00	1.688E+00	8.762E-01	-0.195
BI-212	+	727.33	*	1.819E+00	7.749E-01	1.180E+00	1.461E-01	1.541
		785.37		3.689E+00	3.290E+00	5.873E+00	5.133E-01	0.628
		1620.50		9.310E-01	2.700E+00	4.644E+00	3.997E-01	0.200
RN-219	+	271.23		7.917E-01	4.347E-01	4.600E-01	4.924E-02	1.721
		401.81	*	1.025E-01	4.132E-01	6.796E-01	9.909E-02	0.151
RA-223		81.07		-2.571E-01	2.558E-01	3.483E-01	3.065E-02	-0.738
		83.79		1.069E-01	1.458E-01	2.144E-01	1.939E-02	0.499
		94.87		1.130E+00	5.323E-01	8.198E-01	7.372E-02	1.378
		144.24		6.693E-01	7.153E-01	1.228E+00	1.174E-01	0.545

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		154.21		2.491E-01	3.986E-01	6.868E-01	6.422E-02	0.363
	+	269.46		6.151E-01	3.362E-01	3.618E-01	3.369E-02	1.700
		323.87	*	-4.540E-01	7.894E-01	1.077E+00	1.885E-01	-0.421
	+	338.28		8.620E+00	1.967E+00	2.695E+00	3.289E-01	3.198
		79.69		5.831E-01	1.440E+00	2.097E+00	3.622E-01	0.278
		235.96		-2.290E-02	1.742E-01	2.526E-01	2.707E-02	-0.091
		256.23	*	-6.451E-02	2.700E-01	4.420E-01	5.492E-02	-0.146
	+	299.98		2.486E+00	1.107E+00	1.683E+00	2.192E-01	1.477
TH-227		304.50		1.337E+00	1.911E+00	2.872E+00	4.815E-01	0.466
		334.37		1.421E-01	2.188E+00	2.932E+00	4.606E-01	0.048
		79.80		4.098E-01	1.897E+00	2.744E+00	5.983E-01	0.149
		235.96		-2.290E-02	1.742E-01	2.526E-01	2.565E-02	-0.091
		256.23	*	-6.451E-02	2.700E-01	4.420E-01	6.160E-02	-0.146
	+	299.98		2.486E+00	1.107E+00	1.683E+00	2.192E-01	1.477
		304.50		1.337E+00	1.911E+00	2.872E+00	4.815E-01	0.466
		334.37		1.421E-01	2.188E+00	2.932E+00	4.606E-01	0.048
TH-229		85.43		5.535E-01	2.523E-01	3.857E-01	3.549E-02	1.435
	+	88.47		4.149E-01	1.668E-01	2.415E-01	2.276E-02	1.718
		193.51	*	-1.103E-01	5.445E-01	9.051E-01	7.929E-02	-0.122
	+	210.85		2.885E+00	1.456E+00	1.768E+00	1.574E-01	1.632
		283.69	*	3.480E-01	1.667E+00	2.446E+00	3.644E-01	0.142
	+	301.36		1.597E+00	7.086E-01	1.060E+00	1.323E-01	1.507
		81.07		-2.571E-01	2.558E-01	3.483E-01	3.065E-02	-0.738
		83.79		1.069E-01	1.458E-01	2.144E-01	1.939E-02	0.499
PA-231		94.87		1.130E+00	5.323E-01	8.198E-01	7.372E-02	1.378
		144.24		6.693E-01	7.153E-01	1.228E+00	1.174E-01	0.545
		154.21		2.491E-01	3.986E-01	6.868E-01	6.422E-02	0.363
	+	269.46		6.151E-01	3.362E-01	3.618E-01	3.369E-02	1.700
		323.87	*	-4.540E-01	7.894E-01	1.077E+00	1.885E-01	-0.421
	+	338.28		8.620E+00	1.967E+00	2.695E+00	3.289E-01	3.198
	+	300.13		1.125E+00	5.082E-01	7.601E-01	1.148E-01	1.480
		311.90	*	1.074E-02	6.526E-02	1.080E-01	1.000E-02	0.099
PA-233		340.48		3.465E+00	1.221E+00	1.549E+00	3.736E-01	2.237
		94.67		4.477E-01	2.056E-01	3.102E-01	3.931E-02	1.443
		98.44		1.720E-02	1.102E-01	1.561E-01	8.715E-02	0.110
		111.00		1.100E-01	2.004E-01	3.252E-01	3.941E-02	0.338
		131.20		-9.078E-02	1.170E-01	1.788E-01	1.546E-02	-0.508
		569.50		-7.492E-02	2.760E-01	4.547E-01	3.852E-02	-0.165
		733.00		1.248E-01	4.561E-01	6.736E-01	1.493E-01	0.185
		880.51		-9.847E-02	2.947E-01	4.664E-01	4.207E-02	-0.211
PA-234		883.24		-2.906E-02	2.928E-01	4.732E-01	3.183E-01	-0.061
		926.50		1.565E-01	1.997E-01	3.414E-01	8.678E-02	0.458
		946.00	*	-6.687E-02	3.324E-01	5.307E-01	1.005E-01	-0.126
		949.00		-1.816E-01	5.075E-01	7.987E-01	7.187E-02	-0.227
		766.42		1.195E+01	1.344E+01	2.123E+01	1.077E+01	0.563
		1001.03	*	6.883E+00	5.243E+00	9.384E+00	9.566E-01	0.733
		63.29	*	1.363E+00	1.508E+00	2.448E+00	4.397E-01	0.557
	+	92.59		2.907E+00	1.225E+00	1.401E+00	3.121E-01	2.075
U-238		63.29	*	1.363E+00	1.508E+00	2.448E+00	4.397E-01	0.557

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		2.907E+00	1.073E+00	1.401E+00	1.277E-01	2.075
		99.53		3.736E-02	1.835E-01	2.783E-01	2.452E-02	0.134
		103.37		-3.598E-02	1.070E-01	1.684E-01	1.468E-02	-0.214
		106.12		2.922E-02	9.093E-02	1.467E-01	1.274E-02	0.199
		117.23	*	-7.563E-03	4.350E-01	6.905E-01	6.016E-02	-0.011
		228.18		-1.907E-02	2.312E-01	3.834E-01	3.459E-02	-0.050
AM-241	+	277.60		1.102E+00	4.741E-01	3.375E-01	3.087E-02	3.265
CM-247		59.54	*	-6.477E-02	1.678E-01	2.684E-01	2.212E-02	-0.241
	+	278.00		4.680E+00	2.014E+00	1.424E+00	1.303E-01	3.285
		287.50		1.807E+00	1.375E+00	2.250E+00	2.054E-01	0.803
CF-249		402.40	*	-1.208E-02	3.835E-02	6.078E-02	4.928E-03	-0.199
		252.80		1.689E-01	9.772E-01	1.632E+00	1.489E-01	0.104
		333.37		9.644E-02	2.857E-01	3.084E-01	2.730E-02	0.313
		388.16	*	5.780E-02	4.135E-02	7.242E-02	5.872E-03	0.798
CF-251		177.52	*	4.123E-02	1.323E-01	2.249E-01	1.937E-02	0.183
		227.38		-6.618E-02	3.799E-01	6.278E-01	5.662E-02	-0.105
		285.41		-2.492E+00	2.659E+00	3.573E+00	3.263E-01	-0.698

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]G248248001      *
* Acquisition date   : 19-MAR-2010 10:58:10 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 02:00:01.38 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248248001 Analyst initials: MXR1                  *
* Batch Number       : 959280 Sample Quantity : 1.5209E+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	3.018E+01	3.208E+00	5.196E-01	0.000E+00
CD-109	2.786E+00	1.097E+00	1.458E+00	0.000E+00
SN-126	2.691E-01	1.060E-01	1.416E-01	0.000E+00
HG-203	2.747E-01	1.159E-01	6.973E-02	0.000E+00
TL-208	5.750E-01	1.016E-01	5.856E-02	0.000E+00
BI-211	4.485E+00	6.172E-01	3.672E-01	0.000E+00
PB-212	1.941E+00	2.269E-01	1.030E-01	0.000E+00
BI-214	1.477E+00	2.238E-01	1.191E-01	0.000E+00
PB-214	1.628E+00	2.407E-01	1.295E-01	0.000E+00
RA-224	5.605E+00	1.442E+00	1.104E+00	0.000E+00
RA-226	1.477E+00	2.238E-01	1.191E-01	0.000E+00
AC-228	1.871E+00	3.806E-01	2.386E-01	0.000E+00
RA-228	1.871E+00	3.806E-01	2.386E-01	0.000E+00
TH-228	1.941E+00	2.269E-01	1.030E-01	0.000E+00
TH-232	1.871E+00	3.806E-01	2.386E-01	0.000E+00
U-235	4.101E-02	2.097E-01	3.848E-01	0.000E+00
NP-237	8.031E-01	3.568E-01	4.516E-01	0.000E+00
ANH-511	1.492E-01	7.386E-02	4.843E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.838E-02	3.699E-01	6.232E-01	0.000E+00 NOT IDENT.
NA-22	-1.315E-02	4.508E-02	7.558E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.868E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.115E-02	4.633E-02	7.567E-02	0.000E+00 FAIL ABUN
V-48	1.092E-02	1.081E-01	1.841E-01	0.000E+00 NOT IDENT.
CR-51	-2.525E-01	4.741E-01	7.911E-01	0.000E+00 NOT IDENT.
MN-54	3.129E-02	4.102E-02	7.418E-02	0.000E+00 NOT IDENT.
CO-56	1.290E-02	4.367E-02	7.656E-02	0.000E+00 NOT IDENT.
CO-57	1.927E-04	2.694E-02	4.676E-02	0.000E+00 NOT IDENT.

CO-58	-5.357E-02	4.382E-02	6.652E-02	0.000E+00	NOT IDENT.
FE-59	-6.527E-02	1.108E-01	1.738E-01	0.000E+00	NOT IDENT.
CO-60	-6.326E-04	3.435E-02	5.878E-02	0.000E+00	NOT IDENT.
ZN-65	-1.006E-01	1.131E-01	1.413E-01	0.000E+00	NOT IDENT.
SE-75	3.132E-02	5.361E-02	8.668E-02	0.000E+00	FAIL ABUN
SR-85	0.000E+00	4.724E-02	9.016E-02	0.000E+00	NOT IDENT.
Y-88	1.996E-02	3.926E-02	7.097E-02	0.000E+00	NOT IDENT.
Y-91	-3.019E+01	2.603E+01	4.068E+01	0.000E+00	NOT IDENT.
NB-94	3.354E-02	3.478E-02	6.437E-02	0.000E+00	NOT IDENT.
NB-95	-8.050E-03	5.057E-02	8.627E-02	0.000E+00	NOT IDENT.
NB-95M	-4.882E-02	1.538E-01	2.377E-01	0.000E+00	NOT IDENT.
ZR-95	2.182E-02	8.500E-02	1.496E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.334E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.227E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.109E-02	4.797E-02	7.970E-02	0.000E+00	FAIL ABUN
RH-106	1.786E-01	3.204E-01	5.834E-01	0.000E+00	NOT IDENT.
RU-106	1.786E-01	3.199E-01	5.834E-01	0.000E+00	NOT IDENT.
AG-108M	-7.750E-03	2.982E-02	5.008E-02	0.000E+00	NOT IDENT.
AG-110M	-8.477E-03	3.624E-02	6.227E-02	0.000E+00	NOT IDENT.
SN-113	-3.892E-02	4.946E-02	8.096E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.293E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	4.130E-02	8.347E-02	1.557E-01	0.000E+00	NOT IDENT.
TE-123M	1.377E-02	3.054E-02	5.688E-02	0.000E+00	NOT IDENT.
SB-124	-3.668E-02	7.014E-02	1.028E-01	0.000E+00	NOT IDENT.
SB-125	9.976E-02	1.015E-01	1.836E-01	0.000E+00	FAIL ABUN
TE-125M	-4.402E-01	1.150E+01	2.006E+01	0.000E+00	NOT IDENT.
I-126	-1.887E-01	3.589E-01	6.033E-01	0.000E+00	NOT IDENT.
SB-126	1.426E-01	2.325E-01	4.119E-01	0.000E+00	NOT IDENT.
SB-127	-7.373E+00	5.702E+00	8.779E+00	0.000E+00	NOT IDENT.
I-131	-1.069E-01	2.356E-01	3.971E-01	0.000E+00	NOT IDENT.
TE-132	-3.119E-01	4.181E+00	7.477E+00	0.000E+00	NOT IDENT.
BA-133	-7.267E-03	5.075E-02	7.631E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.197E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.376E-02	1.017E-01	0.000E+00	FAIL ABUN
CS-135	4.924E-02	1.829E-01	2.896E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.854E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.208E-02	1.733E-01	2.784E-01	0.000E+00	NOT IDENT.
BA-137M	3.577E-03	3.819E-02	6.717E-02	0.000E+00	NOT IDENT.
CS-137	3.778E-03	4.035E-02	7.096E-02	0.000E+00	NOT IDENT.
CE-139	1.847E-02	3.126E-02	5.834E-02	0.000E+00	NOT IDENT.
BA-140	-1.413E-01	4.136E-01	7.140E-01	0.000E+00	NOT IDENT.
LA-140	-2.635E-02	1.461E-01	2.277E-01	0.000E+00	FAIL ABUN
CE-141	8.676E-02	7.836E-02	1.472E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	8.527E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.433E-01	2.113E-01	3.729E-01	0.000E+00	NOT IDENT.
PM-144	-3.085E-03	3.474E-02	6.004E-02	0.000E+00	NOT IDENT.
PR-144	-2.318E-01	2.611E+00	4.512E+00	0.000E+00	NOT IDENT.
PM-146	2.904E-03	4.398E-02	7.531E-02	0.000E+00	NOT IDENT.
ND-147	-3.482E-01	9.372E-01	1.625E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.282E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	8.936E-04	1.120E-01	1.806E-01	0.000E+00	FAIL ABUN
GD-153	-4.041E-02	1.008E-01	1.544E-01	0.000E+00	NOT IDENT.
EU-154	-3.425E-02	1.275E-01	2.143E-01	0.000E+00	NOT IDENT.
EU-155	1.291E-01	1.106E-01	2.013E-01	0.000E+00	FAIL ABUN
TB-160	6.058E-02	1.525E-01	2.692E-01	0.000E+00	FAIL ABUN
HO-166M	-2.904E-02	6.449E-02	1.082E-01	0.000E+00	FAIL ABUN
TA-182	1.538E-01	2.280E-01	4.130E-01	0.000E+00	FAIL ABUN
IR-192	4.687E-03	3.828E-02	6.754E-02	0.000E+00	FAIL ABUN
BI-207	8.209E-03	6.011E-02	1.019E-01	0.000E+00	FAIL ABUN
PB-210	1.073E+00	4.192E+00	7.628E+00	0.000E+00	NOT IDENT.
PB-211	-3.233E-01	8.007E-01	1.208E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.594E-01	1.211E+00	0.000E+00	FAIL ABUN
RN-219	1.025E-01	4.049E-01	7.079E-01	0.000E+00	FAIL ABUN
RA-223	-4.540E-01	7.736E-01	1.128E+00	0.000E+00	FAIL ABUN
AC-227	-6.451E-02	2.646E-01	4.656E-01	0.000E+00	FAIL ABUN
TH-227	-6.451E-02	2.646E-01	4.656E-01	0.000E+00	FAIL ABUN
TH-229	-1.103E-01	5.336E-01	9.600E-01	0.000E+00	FAIL ABUN
PA-231	3.480E-01	1.634E+00	2.570E+00	0.000E+00	FAIL ABUN
TH-231	-4.540E-01	7.736E-01	1.128E+00	0.000E+00	FAIL ABUN
PA-233	1.074E-02	6.395E-02	1.132E-01	0.000E+00	FAIL ABUN
PA-234	-6.687E-02	3.258E-01	5.408E-01	0.000E+00	NOT IDENT.
PA-234M	6.883E+00	5.138E+00	9.550E+00	0.000E+00	NOT IDENT.
TH-234	1.363E+00	1.477E+00	2.666E+00	0.000E+00	FAIL ABUN
U-238	1.363E+00	1.477E+00	2.666E+00	0.000E+00	FAIL ABUN
NP-239	-7.563E-03	4.263E-01	7.412E-01	0.000E+00	FAIL ABUN
AM-241	-6.477E-02	1.645E-01	2.927E-01	0.000E+00	NOT IDENT.
CM-247	-1.208E-02	3.758E-02	6.331E-02	0.000E+00	FAIL ABUN
CF-249	5.780E-02	4.052E-02	7.551E-02	0.000E+00	NOT IDENT.

CF-251	4.123E-02	1.296E-01	2.390E-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]G248248001.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:58:10
Sample ID          : G248248001 Sample quantity : 1.52090E+02 GRAM
Detector name      : GAM01 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.38 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959280 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	1232	10.66*	9.454E-01	3.018E+01	3.018E+01	10.85
CD-109	88.03	209	3.70*	5.183E+00	2.691E+00	2.786E+00	40.19
SN-126	64.28	-----	9.60	2.906E+00	-----	Line Not Found	-----
	86.94	209	8.90	5.183E+00	1.119E+00	1.119E+00	57.02
	87.57	209	37.00*	5.183E+00	2.691E-01	2.691E-01	40.19
HG-203	70.83	-----	3.69	3.714E+00	-----	Line Not Found	-----
	72.87	-----	6.19	3.944E+00	-----	Line Not Found	-----
	279.20	249	81.56*	3.868E+00	1.951E-01	2.747E-01	43.07
TL-208	277.37	-----	6.60	3.885E+00	-----	Line Not Found	-----
	583.19	424	85.00*	2.142E+00	5.750E-01	5.750E-01	18.02
	860.56	90	12.50	1.522E+00	1.169E+00	1.169E+00	36.12
BI-211	72.87	-----	1.23	3.944E+00	-----	Line Not Found	-----
	351.06	757	12.92*	3.226E+00	4.485E+00	4.485E+00	14.04
PB-212	74.82	387	10.28	4.142E+00	2.245E+00	2.245E+00	27.86
	77.11	704	17.10	4.384E+00	2.319E+00	2.319E+00	15.86
	238.63	1490	43.60*	4.345E+00	1.941E+00	1.941E+00	11.93
	300.09	110	3.30	3.652E+00	2.260E+00	2.260E+00	43.96
BI-214	609.32	562	45.49*	2.064E+00	1.477E+00	1.477E+00	15.47
	1120.29	90	14.92	1.193E+00	1.246E+00	1.246E+00	55.14
	1764.49	80	15.30	8.255E-01	1.561E+00	1.561E+00	31.15
PB-214	74.82	387	5.80	4.142E+00	3.980E+00	3.980E+00	27.28
	77.11	704	9.70	4.384E+00	4.088E+00	4.088E+00	17.87
	242.00	401	7.25	4.305E+00	3.170E+00	3.170E+00	26.89
	295.22	359	18.42	3.699E+00	1.300E+00	1.300E+00	21.82
	351.93	757	35.60*	3.226E+00	1.628E+00	1.628E+00	15.09
RA-224	240.99	401	4.10*	4.305E+00	5.605E+00	5.605E+00	26.26
RA-226	609.32	562	45.49*	2.064E+00	1.477E+00	1.477E+00	15.47
	1120.29	90	14.92	1.193E+00	1.246E+00	1.246E+00	55.14
	1764.49	80	15.30	8.255E-01	1.561E+00	1.561E+00	31.15
AC-228	338.32	330	11.27	3.326E+00	2.172E+00	2.172E+00	45.99
	911.20	282	25.80*	1.444E+00	1.871E+00	1.871E+00	20.76
	968.97	196	15.80	1.364E+00	2.248E+00	2.248E+00	33.30

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	330	11.27	3.326E+00	2.172E+00	2.172E+00	45.99
	911.20	282	25.80*	1.444E+00	1.871E+00	1.871E+00	20.76
	968.97	196	15.80	1.364E+00	2.248E+00	2.248E+00	33.30
TH-228	74.82	387	10.28	4.142E+00	2.245E+00	2.245E+00	26.13
	77.11	704	17.10	4.384E+00	2.319E+00	2.319E+00	15.86
	238.63	1490	43.60*	4.345E+00	1.941E+00	1.941E+00	11.93
TH-232	300.09	110	3.30	3.652E+00	2.260E+00	2.260E+00	74.62
	338.32	330	11.27	3.326E+00	2.172E+00	2.172E+00	21.19
	911.20	282	25.80*	1.444E+00	1.871E+00	1.871E+00	20.76
U-235	968.97	196	15.80	1.364E+00	2.248E+00	2.248E+00	33.30
	89.96	130	3.47	5.363E+00	1.727E+00	1.727E+00	41.29
	93.35	274	5.60	5.509E+00	2.196E+00	2.196E+00	42.68
	143.76	-----	10.96*	5.865E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.555E+00	-----	Line Not Found	-----
	185.72	208	57.20	5.152E+00	1.741E-01	1.741E-01	43.46
	205.31	-----	5.01	4.840E+00	-----	Line Not Found	-----
NP-237	86.48	209	12.40*	5.183E+00	8.031E-01	8.031E-01	45.33
	95.86	-----	2.68	5.636E+00	-----	Line Not Found	-----
ANH-511	511.00	145	100.00*	2.391E+00	1.492E-01	1.492E-01	50.51

Flag: "*" = Keyline

Total number of lines in spectrum 32
Number of unidentified lines 2
Number of lines tentatively identified by NID 30 93.75%

Nuclide Type :

Nuclide	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	3.018E+01	3.018E+01	0.327E+01	10.85	
CD-109	461.40D	1.04	2.691E+00	2.786E+00	1.120E+00	40.19	
SN-126	2.30E+05Y	1.00	2.691E-01	2.691E-01	1.082E-01	40.19	
HG-203	46.59D	1.41	1.951E-01	2.747E-01	1.183E-01	43.07	
TL-208	1.41E+10Y	1.00	5.750E-01	5.750E-01	1.036E-01	18.02	
BI-211	7.04E+08Y	1.00	4.485E+00	4.485E+00	0.630E+00	14.04	
PB-212	1.41E+10Y	1.00	1.941E+00	1.941E+00	0.232E+00	11.93	
BI-214	1600.00Y	1.00	1.477E+00	1.477E+00	0.228E+00	15.47	
PB-214	1600.00Y	1.00	1.628E+00	1.628E+00	0.246E+00	15.09	
RA-224	1.41E+10Y	1.00	5.605E+00	5.605E+00	1.472E+00	26.26	
RA-226	1600.00Y	1.00	1.477E+00	1.477E+00	0.228E+00	15.47	
AC-228	1.41E+10Y	1.00	1.871E+00	1.871E+00	0.388E+00	20.76	
RA-228	1.41E+10Y	1.00	1.871E+00	1.871E+00	0.388E+00	20.76	
TH-228	1.41E+10Y	1.00	1.941E+00	1.941E+00	0.232E+00	11.93	
TH-232	1.41E+10Y	1.00	1.871E+00	1.871E+00	0.388E+00	20.76	
U-235	7.04E+08Y	1.00	1.741E-01	1.741E-01	0.757E-01	43.46	K
NP-237	2.14E+06Y	1.00	8.031E-01	8.031E-01	3.641E-01	45.33	
ANH-511	1.00E+09Y	1.00	1.492E-01	1.492E-01	0.754E-01	50.51	

Total Activity : 5.920E+01 5.938E+01

Grand Total Activity : 5.920E+01 5.938E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.79	156	384	1.24	420.14	415	10	2.17E-02	49.7	4.77E+00	T
0	270.15	137	290	1.45	540.81	536	13	1.91E-02	53.9	3.96E+00	T
0	328.60	60	174	1.02	657.64	654	8	8.37E-03	80.3	3.41E+00	T
0	409.87	46	109	0.87	820.07	817	8	6.41E-03	84.4	2.86E+00	T
0	463.90	120	148	1.96	928.06	921	16	1.67E-02	49.0	2.59E+00	T
0	727.72	87	65	2.02	1455.38	1451	10	1.21E-02	40.8	1.77E+00	T
0	795.60	68	50	0.76	1591.05	1586	11	9.44E-03	46.9	1.63E+00	T
5	965.28	38	65	2.02	1930.17	1926	20	5.25E-03	75.4	1.37E+00	T
0	1588.97	24	15	1.76	3176.63	3171	10	3.33E-03	75.6	8.86E-01	
0	1848.39	13	2	1.32	3695.03	3691	9	1.74E-03	71.5	8.04E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248001.CNF;1
* Acquisition date   : 19-MAR-2010 10:58:10  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 02:00:01.38          Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248248001            Analyst initials: MXR1
* Batch Number       : 959280                Sample Quantity : 1.52090E+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	3.018E+01	3.274E+00	5.157E-01	4.585E-02	58.528
CD-109	2.786E+00	1.120E+00	1.350E+00	1.277E-01	2.064
SN-126	2.691E-01	1.082E-01	1.310E-01	1.234E-02	2.054
HG-203	2.747E-01	1.183E-01	6.633E-02	6.204E-03	4.141
TL-208	5.750E-01	1.036E-01	5.675E-02	5.147E-03	10.133
BI-211	4.485E+00	6.298E-01	3.512E-01	3.195E-02	12.768
PB-212	1.941E+00	2.315E-01	9.757E-02	9.923E-03	19.891
BI-214	1.477E+00	2.284E-01	1.155E-01	1.145E-02	12.780
PB-214	1.628E+00	2.456E-01	1.239E-01	1.317E-02	13.135
RA-224	5.605E+00	1.472E+00	1.046E+00	9.506E-02	5.359
RA-226	1.477E+00	2.284E-01	1.155E-01	1.145E-02	12.780
AC-228	1.871E+00	3.884E-01	2.339E-01	2.786E-02	8.000
RA-228	1.871E+00	3.884E-01	2.339E-01	2.786E-02	8.000
TH-228	1.941E+00	2.315E-01	9.757E-02	9.923E-03	19.891
TH-232	1.871E+00	3.884E-01	2.339E-01	2.786E-02	8.000
U-235	1.741E-01	7.567E-02	3.602E-01	6.093E-02	0.483
NP-237	8.031E-01	3.641E-01	4.177E-01	9.582E-02	1.923
ANH-511	1.492E-01	7.537E-02	4.677E-02	3.964E-03	3.190

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.838E-02		3.775E-01	6.008E-01	5.464E-02	-0.064
NA-22	-1.315E-02		4.600E-02	7.475E-02	6.277E-03	-0.176
NA-24	2.008E+03		1.973E+03	Half-Life	too short	
SC-46	-2.115E-02		4.728E-02	7.413E-02	6.701E-03	-0.285
V-48	1.092E-02		1.103E-01	1.808E-01	1.614E-02	0.060
CR-51	-2.525E-01		4.838E-01	7.551E-01	7.097E-02	-0.334
MN-54	3.129E-02		4.186E-02	7.255E-02	6.458E-03	0.431
CO-56	1.290E-02		4.456E-02	7.491E-02	6.693E-03	0.172
CO-57	1.927E-04		2.749E-02	4.361E-02	3.839E-03	0.004
CO-58	-5.357E-02		4.471E-02	6.500E-02	5.751E-03	-0.824
FE-59	-6.527E-02		1.131E-01	1.712E-01	1.578E-02	-0.381
CO-60	-6.326E-04		3.505E-02	5.820E-02	4.961E-03	-0.011
ZN-65	-1.006E-01		1.154E-01	1.393E-01	1.175E-02	-0.722
SE-75	3.132E-02		5.470E-02	8.235E-02	7.565E-03	0.380
SR-85	1.226E-01		4.821E-02	8.709E-02	7.384E-03	1.408
Y-88	1.996E-02		4.006E-02	7.087E-02	5.829E-03	0.282
Y-91	-3.019E+01		2.656E+01	4.017E+01	3.291E+00	-0.752
NB-94	3.354E-02		3.549E-02	6.267E-02	5.261E-03	0.535
NB-95	-8.050E-03		5.160E-02	8.419E-02	7.295E-03	-0.096
NB-95M	-4.882E-02		1.570E-01	2.252E-01	2.313E-02	-0.217
ZR-95	2.182E-02		8.674E-02	1.460E-01	1.391E-02	0.149
MO-99	-5.847E-05		4.762E-05	Half-Life	too short	
TC-99M	-1.742E+20		6.262E+19	Half-Life	too short	
RU-103	-1.109E-02		4.895E-02	7.692E-02	1.067E-02	-0.144
RH-106	1.786E-01		3.269E-01	5.663E-01	7.409E-02	0.315
RU-106	1.786E-01		3.264E-01	5.663E-01	4.730E-02	0.315
AG-108M	-7.750E-03		3.043E-02	4.816E-02	4.122E-03	-0.161
AG-110M	-8.477E-03		3.698E-02	6.053E-02	5.132E-03	-0.140
SN-113	-3.892E-02		5.047E-02	7.767E-02	6.469E-03	-0.501
CD-115	5.760E-05		6.596E-05	Half-Life	too short	
SN-117M	4.130E-02		8.518E-02	1.461E-01	1.244E-02	0.283
TE-123M	1.377E-02		3.117E-02	5.337E-02	4.572E-03	0.258
SB-124	-3.668E-02		7.157E-02	1.024E-01	9.100E-03	-0.358
SB-125	9.976E-02		1.036E-01	1.765E-01	1.484E-02	0.565
TE-125M	-4.402E-01		1.173E+01	1.865E+01	1.966E+00	-0.024
I-126	-1.887E-01		3.663E-01	5.866E-01	4.819E-02	-0.322
SB-126	1.426E-01		2.373E-01	4.013E-01	3.402E-02	0.355
SB-127	-7.373E+00		5.819E+00	8.542E+00	1.176E+00	-0.863
I-131	-1.069E-01		2.404E-01	3.803E-01	3.432E-02	-0.281
TE-132	-3.119E-01		4.266E+00	7.077E+00	1.263E+00	-0.044
BA-133	-7.267E-03		5.179E-02	7.303E-02	9.450E-03	-0.100
I-133	-2.380E+00		1.631E+00	Half-Life	too short	
CS-134	1.363E-01	+	6.506E-02	9.938E-02	8.782E-03	1.371
CS-135	4.924E-02		1.866E-01	2.752E-01	2.870E-02	0.179
I-135	-2.459E+18		1.456E+18	Half-Life	too short	
CS-136	-7.208E-02		1.768E-01	2.739E-01	2.492E-02	-0.263
BA-137M	3.577E-03		3.897E-02	6.530E-02	5.349E-03	0.055
CS-137	3.778E-03		4.117E-02	6.898E-02	5.662E-03	0.055

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-139	1.847E-02		3.190E-02	5.480E-02	4.667E-03	0.337
BA-140	-1.413E-01		4.221E-01	6.904E-01	2.339E-01	-0.205
LA-140	-2.635E-02		1.491E-01	2.265E-01	1.955E-02	-0.116
CE-141	8.676E-02		7.996E-02	1.378E-01	1.199E-02	0.630
CE-143	1.384E-02		4.350E-03	Half-Life too short		
CE-144	1.433E-01		2.156E-01	3.485E-01	5.327E-02	0.411
PM-144	-3.085E-03		3.545E-02	5.845E-02	4.893E-03	-0.053
PR-144	-2.318E-01		2.664E+00	4.392E+00	3.674E-01	-0.053
PM-146	2.904E-03		4.488E-02	7.251E-02	7.519E-03	0.040
ND-147	-3.482E-01		9.563E-01	1.571E+00	2.337E-01	-0.222
PM-149	-1.062E-03		6.543E-04	Half-Life too short		
EU-152	8.936E-04		1.143E-01	1.727E-01	1.596E-02	0.005
GD-153	-4.041E-02		1.029E-01	1.433E-01	1.272E-02	-0.282
EU-154	-3.425E-02		1.301E-01	2.119E-01	2.374E-02	-0.162
EU-155	1.291E-01		1.128E-01	1.871E-01	1.645E-02	0.690
TB-160	6.058E-02		1.556E-01	2.637E-01	2.378E-02	0.230
HO-166M	-2.904E-02		6.580E-02	1.054E-01	8.889E-03	-0.276
TA-182	1.538E-01		2.326E-01	4.080E-01	3.363E-02	0.377
IR-192	4.687E-03		3.906E-02	6.445E-02	5.807E-03	0.073
BI-207	8.209E-03		6.134E-02	1.003E-01	8.692E-03	0.082
PB-210	1.073E+00		4.277E+00	6.956E+00	6.515E-01	0.154
PB-211	-3.233E-01		8.171E-01	1.160E+00	5.603E-01	-0.279
BI-212	1.819E+00	+	7.749E-01	1.180E+00	1.461E-01	1.541
RN-219	1.025E-01		4.132E-01	6.796E-01	9.909E-02	0.151
RA-223	-4.540E-01		7.894E-01	1.077E+00	1.885E-01	-0.421
AC-227	-6.451E-02		2.700E-01	4.420E-01	5.492E-02	-0.146
TH-227	-6.451E-02		2.700E-01	4.420E-01	6.160E-02	-0.146
TH-229	-1.103E-01		5.445E-01	9.051E-01	7.929E-02	-0.122
PA-231	3.480E-01		1.667E+00	2.446E+00	3.644E-01	0.142
TH-231	-4.540E-01		7.894E-01	1.077E+00	1.885E-01	-0.421
PA-233	1.074E-02		6.526E-02	1.080E-01	1.000E-02	0.099
PA-234	-6.687E-02		3.324E-01	5.307E-01	1.005E-01	-0.126
PA-234M	6.883E+00		5.243E+00	9.384E+00	9.566E-01	0.733
TH-234	1.363E+00		1.508E+00	2.448E+00	4.397E-01	0.557
U-238	1.363E+00		1.508E+00	2.448E+00	4.397E-01	0.557
NP-239	-7.563E-03		4.350E-01	6.905E-01	6.016E-02	-0.011
AM-241	-6.477E-02		1.678E-01	2.684E-01	2.212E-02	-0.241
CM-247	-1.208E-02		3.835E-02	6.078E-02	4.928E-03	-0.199
CF-249	5.780E-02		4.135E-02	7.242E-02	5.872E-03	0.798
CF-251	4.123E-02		1.323E-01	2.249E-01	1.937E-02	0.183

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248248001          *
* Acquisition date   : 19-MAR-2010 10:58:10 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 02:00:01.38             Half life ratio : 8.000       *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248248001             Analyst initials: MXR1          *
* Batch Number       : 959280                 Sample Quantity : 1.5209E+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	3.018E+01	3.208E+00	2.599E-01	1.637E+00
CD-109	2.786E+00	1.097E+00	7.296E-01	5.599E-01
SN-126	2.691E-01	1.060E-01	7.086E-02	5.409E-02
HG-203	2.747E-01	1.159E-01	3.489E-02	5.915E-02
TL-208	5.750E-01	1.016E-01	2.930E-02	5.182E-02
BI-211	4.485E+00	6.172E-01	1.837E-01	3.149E-01
PB-212	1.941E+00	2.269E-01	5.151E-02	1.158E-01
BI-214	1.477E+00	2.238E-01	5.959E-02	1.142E-01
PB-214	1.628E+00	2.407E-01	6.479E-02	1.228E-01
RA-224	5.605E+00	1.442E+00	5.521E-01	7.360E-01
RA-226	1.477E+00	2.238E-01	5.959E-02	1.142E-01
AC-228	1.871E+00	3.806E-01	1.194E-01	1.942E-01
RA-228	1.871E+00	3.806E-01	1.194E-01	1.942E-01
TH-228	1.941E+00	2.269E-01	5.151E-02	1.158E-01
TH-232	1.871E+00	3.806E-01	1.194E-01	1.942E-01
U-235	4.101E-02	2.097E-01	1.925E-01	1.070E-01
NP-237	8.031E-01	3.568E-01	2.259E-01	1.820E-01
ANH-511	1.492E-01	7.386E-02	2.423E-02	3.768E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.838E-02	3.699E-01	3.118E-01	1.887E-01 NOT IDENT.
NA-22	-1.315E-02	4.508E-02	3.781E-02	2.300E-02 NOT IDENT.
NA-24	2.008E+09	3.868E+09	0.000E+00	1.973E+09 SHORT HLIF
SC-46	-2.115E-02	4.633E-02	3.786E-02	2.364E-02 FAIL ABUN
V-48	1.092E-02	1.081E-01	9.208E-02	5.516E-02 NOT IDENT.
CR-51	-2.525E-01	4.741E-01	3.958E-01	2.419E-01 NOT IDENT.
MN-54	3.129E-02	4.102E-02	3.711E-02	2.093E-02 NOT IDENT.
CO-56	1.290E-02	4.367E-02	3.830E-02	2.228E-02 NOT IDENT.
CO-57	1.927E-04	2.694E-02	2.340E-02	1.374E-02 NOT IDENT.

CO-58	-5.357E-02	4.382E-02	3.328E-02	2.236E-02	NOT IDENT.
FE-59	-6.527E-02	1.108E-01	8.697E-02	5.654E-02	NOT IDENT.
CO-60	-6.326E-04	3.435E-02	2.941E-02	1.753E-02	NOT IDENT.
ZN-65	-1.006E-01	1.131E-01	7.071E-02	5.772E-02	NOT IDENT.
SE-75	3.132E-02	5.361E-02	4.337E-02	2.735E-02	FAIL ABUN
SR-85	1.226E-01	4.724E-02	4.511E-02	2.410E-02	NOT IDENT.
Y-88	1.996E-02	3.926E-02	3.550E-02	2.003E-02	NOT IDENT.
Y-91	-3.019E+01	2.603E+01	2.035E+01	1.328E+01	NOT IDENT.
NB-94	3.354E-02	3.478E-02	3.220E-02	1.775E-02	NOT IDENT.
NB-95	-8.050E-03	5.057E-02	4.316E-02	2.580E-02	NOT IDENT.
NB-95M	-4.882E-02	1.538E-01	1.189E-01	7.848E-02	NOT IDENT.
ZR-95	2.182E-02	8.500E-02	7.486E-02	4.337E-02	NOT IDENT.
MO-99	-5.847E+01	9.334E+01	0.000E+00	4.762E+01	SHORT HLIF
TC-99M	-1.742E+26	1.227E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.109E-02	4.797E-02	3.988E-02	2.447E-02	FAIL ABUN
RH-106	1.786E-01	3.204E-01	2.919E-01	1.634E-01	NOT IDENT.
RU-106	1.786E-01	3.199E-01	2.919E-01	1.632E-01	NOT IDENT.
AG-108M	-7.750E-03	2.982E-02	2.505E-02	1.522E-02	NOT IDENT.
AG-110M	-8.477E-03	3.624E-02	3.115E-02	1.849E-02	NOT IDENT.
SN-113	-3.892E-02	4.946E-02	4.051E-02	2.523E-02	NOT IDENT.
CD-115	5.760E+01	1.293E+02	0.000E+00	6.596E+01	SHORT HLIF
SN-117M	4.130E-02	8.347E-02	7.789E-02	4.259E-02	NOT IDENT.
TE-123M	1.377E-02	3.054E-02	2.846E-02	1.558E-02	NOT IDENT.
SB-124	-3.668E-02	7.014E-02	5.142E-02	3.579E-02	NOT IDENT.
SB-125	9.976E-02	1.015E-01	9.184E-02	5.178E-02	FAIL ABUN
TE-125M	-4.402E-01	1.150E+01	1.003E+01	5.865E+00	NOT IDENT.
I-126	-1.887E-01	3.589E-01	3.018E-01	1.831E-01	NOT IDENT.
SB-126	1.426E-01	2.325E-01	2.061E-01	1.186E-01	NOT IDENT.
SB-127	-7.373E+00	5.702E+00	4.392E+00	2.909E+00	NOT IDENT.
I-131	-1.069E-01	2.356E-01	1.987E-01	1.202E-01	NOT IDENT.
TE-132	-3.119E-01	4.181E+00	3.741E+00	2.133E+00	NOT IDENT.
BA-133	-7.267E-03	5.075E-02	3.818E-02	2.589E-02	NOT IDENT.
I-133	-2.380E+06	3.197E+06	0.000E+00	1.631E+06	SHORT HLIF
CS-134	1.363E-01	6.376E-02	5.090E-02	3.253E-02	FAIL ABUN
CS-135	4.924E-02	1.829E-01	1.449E-01	9.329E-02	NOT IDENT.
I-135	-2.459E+24	2.854E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.208E-02	1.733E-01	1.393E-01	8.842E-02	NOT IDENT.
BA-137M	3.577E-03	3.819E-02	3.361E-02	1.949E-02	NOT IDENT.
CS-137	3.778E-03	4.035E-02	3.550E-02	2.059E-02	NOT IDENT.
CE-139	1.847E-02	3.126E-02	2.919E-02	1.595E-02	NOT IDENT.
BA-140	-1.413E-01	4.136E-01	3.572E-01	2.110E-01	NOT IDENT.
LA-140	-2.635E-02	1.461E-01	1.139E-01	7.453E-02	FAIL ABUN
CE-141	8.676E-02	7.836E-02	7.364E-02	3.998E-02	NOT IDENT.
CE-143	1.384E+04	8.527E+03	0.000E+00	4.350E+03	SHORT HLIF
CE-144	1.433E-01	2.113E-01	1.866E-01	1.078E-01	NOT IDENT.
PM-144	-3.085E-03	3.474E-02	3.004E-02	1.772E-02	NOT IDENT.
PR-144	-2.318E-01	2.611E+00	2.257E+00	1.332E+00	NOT IDENT.
PM-146	2.904E-03	4.398E-02	3.768E-02	2.244E-02	NOT IDENT.
ND-147	-3.482E-01	9.372E-01	8.128E-01	4.782E-01	FAIL ABUN
PM-149	-1.062E+03	1.282E+03	0.000E+00	6.543E+02	SHORT HLIF
EU-152	8.936E-04	1.120E-01	9.036E-02	5.717E-02	FAIL ABUN
GD-153	-4.041E-02	1.008E-01	7.727E-02	5.144E-02	NOT IDENT.
EU-154	-3.425E-02	1.275E-01	1.072E-01	6.507E-02	NOT IDENT.
EU-155	1.291E-01	1.106E-01	1.007E-01	5.642E-02	FAIL ABUN
TB-160	6.058E-02	1.525E-01	1.347E-01	7.782E-02	FAIL ABUN
HO-166M	-2.904E-02	6.449E-02	5.412E-02	3.290E-02	FAIL ABUN
TA-182	1.538E-01	2.280E-01	2.066E-01	1.163E-01	FAIL ABUN
IR-192	4.687E-03	3.828E-02	3.379E-02	1.953E-02	FAIL ABUN
BI-207	8.209E-03	6.011E-02	5.097E-02	3.067E-02	FAIL ABUN
PB-210	1.073E+00	4.192E+00	3.816E+00	2.139E+00	NOT IDENT.
PB-211	-3.233E-01	8.007E-01	6.044E-01	4.085E-01	NOT IDENT.
BI-212	1.819E+00	7.594E-01	6.060E-01	3.875E-01	FAIL ABUN
RN-219	1.025E-01	4.049E-01	3.542E-01	2.066E-01	FAIL ABUN
RA-223	-4.540E-01	7.736E-01	5.645E-01	3.947E-01	FAIL ABUN
AC-227	-6.451E-02	2.646E-01	2.329E-01	1.350E-01	FAIL ABUN
TH-227	-6.451E-02	2.646E-01	2.329E-01	1.350E-01	FAIL ABUN
TH-229	-1.103E-01	5.336E-01	4.803E-01	2.722E-01	FAIL ABUN
PA-231	3.480E-01	1.634E+00	1.286E+00	8.336E-01	FAIL ABUN
TH-231	-4.540E-01	7.736E-01	5.645E-01	3.947E-01	FAIL ABUN
PA-233	1.074E-02	6.395E-02	5.665E-02	3.263E-02	FAIL ABUN
PA-234	-6.687E-02	3.258E-01	2.706E-01	1.662E-01	NOT IDENT.
PA-234M	6.883E+00	5.138E+00	4.778E+00	2.621E+00	NOT IDENT.
TH-234	1.363E+00	1.477E+00	1.334E+00	7.538E-01	FAIL ABUN
U-238	1.363E+00	1.477E+00	1.334E+00	7.538E-01	FAIL ABUN
NP-239	-7.563E-03	4.263E-01	3.708E-01	2.175E-01	FAIL ABUN
AM-241	-6.477E-02	1.645E-01	1.464E-01	8.392E-02	NOT IDENT.
CM-247	-1.208E-02	3.758E-02	3.168E-02	1.917E-02	FAIL ABUN
CF-249	5.780E-02	4.052E-02	3.778E-02	2.067E-02	NOT IDENT.

CF-251

4.123E-02

1.296E-01

1.196E-01

6.613E-02 NOT IDENT.

 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON ,SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.54	327.5887
49.72	354.4937
57.36	0.0000
59.54	387.5262
63.29	386.9697
63.29	386.9697
64.28	451.1901
67.75	446.4257
69.67	484.2087
70.83	430.5171
72.81	477.0344
72.87	477.0796
72.87	477.0796
74.82	478.5723
74.82	478.5723
74.82	478.5723
74.97	478.6852
77.11	480.2999
77.11	480.2999
77.11	480.2999
79.69	467.5552
79.80	474.1516
80.12	474.3825
80.19	474.4336
80.57	504.0699
81.00	561.5300
81.07	538.7350
81.07	538.7350
83.79	458.9713
83.79	458.9713
85.43	450.2232
86.48	538.1334
86.55	562.8733
86.79	576.2402
86.94	576.3657
87.57	484.5891
88.03	484.9098
88.47	485.2148
89.96	486.2466
91.11	400.8937
92.59	401.7227
92.59	401.7227
93.35	402.1474
94.67	402.8785
94.87	371.3496
94.87	371.3496
95.86	366.8491
97.43	397.7083
98.44	371.4764
99.53	360.6216
100.11	342.1162
103.18	395.1317
103.37	385.1248
105.31	342.1902
106.12	379.7301
109.28	398.2183
111.00	371.8645
111.76	397.1786
116.30	361.7281
117.23	367.8430
121.12	330.5229
121.78	344.5610
122.06	344.6732
123.07	356.5817
131.20	409.8152
133.52	327.0644
136.00	341.3750

136.47	345.0536
140.51	0.0000
140.51	0.0000
143.76	375.1110
144.24	347.0413
144.24	347.0413
145.44	348.3602
152.43	359.7724
153.25	344.9199
154.21	346.1457
154.21	346.1457
156.02	376.2636
158.56	343.1636
159.00	346.8981
162.66	366.1299
163.33	360.0677
165.86	322.1422
176.60	339.0691
177.52	308.3394
181.07	0.0000
184.41	287.8654
185.72	299.9637
193.51	316.4502
197.04	327.6168
205.31	306.5416
210.85	265.8803
215.65	271.4370
222.11	279.4659
227.38	289.1794
228.16	283.6425
228.18	283.6470
235.69	294.0867
235.96	292.6156
235.96	292.6156
238.63	260.0067
238.63	260.0067
240.99	260.4658
242.00	260.6622
244.70	220.5119
252.40	216.1316
252.80	212.3167
256.23	238.1073
256.23	238.1073
260.90	0.0000
264.66	195.5353
268.22	221.1111
269.46	178.9238
269.46	178.9238
271.23	190.1407
273.65	141.6621
276.40	167.1570
277.37	167.2683
277.60	167.2942
278.00	167.3382
279.20	167.4753
279.54	167.5142
280.46	167.6177
283.69	182.2424
284.31	199.7543
285.41	222.1133
285.90	0.0000
287.50	164.1678
293.27	0.0000
295.22	175.6428
295.96	203.6825
298.57	204.0280
299.98	148.1536
299.98	148.1536
300.09	197.0192
300.09	197.0192
300.13	197.0222
301.36	195.5753
302.85	192.5508
304.50	168.6588
304.50	168.6588
304.85	160.6641
308.46	189.2106
311.90	159.3597

316.51	167.9099
319.41	144.9027
320.08	178.4143
323.87	191.8335
323.87	191.8335
328.76	194.6430
333.37	155.3282
334.37	171.7786
334.37	171.7786
338.28	181.4023
338.28	181.4023
338.32	181.4050
338.32	181.4050
338.32	181.4050
340.48	188.8207
340.55	185.5424
344.28	171.4122
351.06	163.5506
351.93	153.9223
356.01	164.0123
364.49	150.8588
366.42	0.0000
383.85	131.4411
388.16	108.5574
388.63	114.9110
391.69	155.2230
400.66	112.4616
401.81	121.0206
402.40	132.7400
404.85	136.0996
410.95	133.1142
414.70	107.7229
423.72	133.1237
427.09	157.0075
427.87	122.6418
433.94	115.4590
453.88	113.3152
463.37	101.7883
468.07	75.4673
473.00	94.5520
476.78	100.2241
477.60	107.9741
487.02	113.9749
492.35	0.0000
497.08	105.6008
511.00	95.0705
514.00	95.1950
527.90	0.0000
529.87	0.0000
531.02	104.6974
537.26	102.2628
546.56	0.0000
563.25	109.7783
569.33	105.4653
569.50	98.1365
569.70	98.1443
583.19	81.1551
600.60	93.7875
602.73	89.8368
604.72	86.8073
609.32	89.4469
609.32	89.4469
610.33	89.4820
614.28	79.3492
618.01	88.2926
621.93	76.7729
621.93	76.7729
633.25	80.8623
635.95	83.7678
636.99	80.0341
645.85	72.7421
657.76	87.2944
661.66	94.0693
661.66	94.0693
664.57	0.0000
666.33	101.8433
666.50	104.7041
677.62	91.7438

685.70	98.7176
695.00	86.5415
696.49	81.7751
696.51	81.7772
697.00	80.8274
702.65	74.2384
706.68	93.6514
711.68	91.8805
720.70	70.0658
721.93	0.0000
722.78	95.4669
722.91	90.6149
723.31	87.3918
724.19	92.2748
727.33	77.7871
733.00	74.6901
735.93	68.2620
739.50	0.0000
747.24	66.5623
752.31	81.3830
753.82	60.8224
756.73	78.5547
763.94	114.1733
765.81	97.5015
766.42	73.8794
777.92	0.0000
778.90	67.2546
783.70	59.4346
785.37	59.4668
795.86	62.9792
801.95	81.1304
810.29	82.9129
810.76	79.9277
815.77	57.0376
818.51	60.0908
832.01	73.4153
834.85	69.4515
836.80	0.0000
846.77	60.6123
856.80	60.7954
860.56	65.9363
871.09	62.0723
873.19	54.9835
875.33	0.0000
879.36	53.0436
880.51	62.2450
883.24	56.1682
884.68	59.2560
889.28	72.6346
898.04	53.3330
911.20	57.6529
911.20	57.6529
911.20	57.6529
926.50	54.8025
937.49	66.3812
944.13	51.9568
946.00	64.4597
949.00	70.7575
962.29	57.4398
964.08	62.6924
966.15	65.8639
968.97	65.9147
968.97	65.9147
968.97	65.9147
983.53	58.8232
996.26	63.2402
1001.03	42.2139
1004.73	67.6094
1037.84	65.0001
1038.76	0.0000
1048.07	60.8993
1050.41	50.2450
1050.41	50.2450
1063.66	63.2867
1085.87	77.6672
1099.45	63.8600
1112.07	48.8584
1115.54	70.6335

1120.29	55.4824
1120.29	55.4824
1120.55	55.4874
1121.30	55.4974
1131.51	0.0000
1173.23	61.5175
1177.93	64.3433
1189.05	70.9624
1204.77	86.9431
1221.41	68.7065
1231.02	75.3706
1235.36	92.2123
1238.28	60.5831
1260.41	0.0000
1271.85	41.3180
1274.44	49.7996
1274.54	49.7996
1291.59	54.7030
1298.22	0.0000
1312.11	46.4200
1332.49	26.6419
1365.19	23.9522
1368.63	0.0000
1384.29	27.8955
1408.01	35.7655
1457.56	0.0000
1460.82	20.5164
1489.16	17.6836
1505.03	24.6368
1596.21	25.2656
1620.50	22.1558
1678.03	0.0000
1690.97	12.2388
1764.49	12.3960
1764.49	12.3960
1770.23	10.6356
1771.35	7.0918
1791.20	0.0000
1836.06	12.5459

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248248001

Total Uranium Activity	4.0734E+00	ug/g
Total Uranium Counting Unc.	4.3964E+00	ug/g
Total Uranium Tpu	2.2431E-06	ug/g
Total Uranium Mda	3.9685E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959280          SAMPLE ID   : G248248001
*  ANALYST       : MXR1            DETECTOR    : GAM01
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 19-MAR-2010 10:58:10.97  SAMPLE ALQT: 152.090 GRAM
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.008E+01
GROSS GAMMA ERROR  (pCi/GRAM ) : 1.326E+00
GROSS GAMMA MDA    (pCi/GRAM ) : 3.929E+00
GROSS GAMMA DLC    (pCi/GRAM ) : 1.914E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 13:00:53.49

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248002.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:58:58
Sample ID          : G248248002 Sample quantity : 1.34140E+02 GRAM
Detector name      : GAM19 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.86 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959280 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	63.48*	168	687	1.37	126.83	122	10	2.33E-02	30.7	
2	4	74.85*	610	705	1.39	149.54	143	19	8.47E-02	8.6	2.43E+00
3	4	77.23	887	576	1.24	154.30	143	19	1.23E-01	5.8	
4	0	83.50*	82	557	1.27	166.84	165	7	1.14E-02	49.3	
5	3	87.27	347	418	1.39	174.37	171	22	4.82E-02	10.3	2.42E+00
6	3	90.02	247	658	1.80	179.86	171	22	3.43E-02	22.1	
7	3	93.08*	387	524	1.81	185.98	171	22	5.38E-02	14.1	
8	0	128.94	194	569	1.66	257.63	251	13	2.70E-02	26.3	
9	0	186.05*	260	345	1.57	371.76	367	9	3.61E-02	14.8	
10	0	209.00	220	348	1.41	417.64	413	11	3.06E-02	17.7	
11	4	238.57*	1773	208	1.24	476.75	468	23	2.46E-01	2.8	8.06E-01
12	4	241.46	476	299	2.08	482.52	468	23	6.61E-02	12.2	
13	0	270.27	132	324	1.67	540.10	535	12	1.84E-02	28.6	
14	0	276.98	140	319	1.51	553.52	547	14	1.94E-02	28.5	
15	2	295.10	539	177	1.35	589.73	584	26	7.48E-02	6.0	1.21E+00
16	2	300.07	123	232	1.85	599.66	584	26	1.71E-02	25.9	
17	0	327.38	82	258	1.53	654.25	651	11	1.13E-02	39.4	
18	0	338.43	320	278	1.61	676.33	670	12	4.44E-02	11.9	
19	0	351.79*	870	212	1.33	703.04	697	13	1.21E-01	4.9	
20	0	462.81	132	156	1.15	924.96	919	13	1.83E-02	21.4	
21	0	511.01*	181	169	1.76	1021.33	1015	16	2.51E-02	19.8	
22	0	568.93*	199	165	2.06	1137.12	1129	16	2.76E-02	16.4	
23	0	583.28*	441	143	1.40	1165.80	1160	12	6.13E-02	7.3	
24	0	609.42*	654	111	1.41	1218.08	1212	11	9.08E-02	5.0	
25	0	727.64	168	66	1.83	1454.44	1448	14	2.33E-02	12.9	
26	0	756.11	37	60	1.32	1511.38	1507	9	5.16E-03	40.7	
27	0	768.43	51	92	1.36	1536.00	1531	10	7.06E-03	36.8	
28	0	795.60	44	81	2.15	1590.35	1583	12	6.13E-03	43.5	
29	0	860.90	79	44	1.57	1720.94	1715	11	1.10E-02	19.8	
30	0	911.66*	402	72	1.81	1822.44	1814	15	5.59E-02	6.8	
31	2	964.87	72	64	2.21	1928.85	1922	25	1.00E-02	25.7	1.33E+00
32	2	969.48*	213	56	1.98	1938.08	1922	25	2.95E-02	9.9	
33	0	1120.73	189	76	2.16	2240.60	2233	16	2.63E-02	12.6	
34	0	1238.43	49	89	2.28	2476.05	2471	11	6.76E-03	40.5	
35	0	1377.41	51	28	5.70	2754.11	2745	16	7.11E-03	27.0	
36	0	1461.43*	1497	30	1.98	2922.22	2914	18	2.08E-01	2.7	
37	0	1730.88	22	17	1.50	3461.44	3453	14	3.00E-03	46.4	
38	0	1765.26	120	14	1.86	3530.25	3524	16	1.66E-02	11.7	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
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Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 13:00:56

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248002.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:58:58
Sample ID         : G248248002 Sample quantity : 134.14 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA19 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.86 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

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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	*	3.365E+01	3.113E+00	4.406E-01	3.281E-02	76.381
CD-109	+	88.03	*	4.459E+00	9.998E-01	1.327E+00	1.188E-01	3.360
SN-126	+	64.28		1.341E+00	8.470E-01	8.757E-01	1.279E-01	1.532
	+	86.94		1.791E+00	8.282E-01	5.852E-01	2.423E-01	3.060
	+	87.57	*	4.308E-01	9.659E-02	1.287E-01	1.148E-02	3.346
TL-208	+	277.37		1.311E+00	7.611E-01	6.705E-01	7.226E-02	1.955
	+	583.19	*	5.688E-01	9.153E-02	6.090E-02	4.132E-03	9.340
	+	860.56		9.635E-01	3.907E-01	4.765E-01	4.266E-02	2.022
BI-211		72.87		1.641E+01	4.478E+00	6.963E+00	5.456E-01	2.356
	+	351.06	*	4.977E+00	5.796E-01	3.552E-01	2.269E-02	14.011
PB-212	+	74.82		3.272E+00	6.948E-01	6.384E-01	8.016E-02	5.124
	+	77.11		2.732E+00	3.854E-01	3.675E-01	2.969E-02	7.435
	+	238.63	*	2.268E+00	2.075E-01	9.475E-02	6.900E-03	23.937
	+	300.09		2.454E+00	1.285E+00	1.291E+00	1.085E-01	1.900
BI-214	+	609.32	*	1.632E+00	2.095E-01	1.195E-01	9.470E-03	13.659
	+	1120.29		2.439E+00	6.547E-01	4.887E-01	4.498E-02	4.992
	+	1764.49		2.129E+00	5.164E-01	2.688E-01	1.629E-02	7.922
PB-214	+	74.82		5.799E+00	1.187E+00	1.132E+00	1.270E-01	5.124
	+	77.11		4.817E+00	7.870E-01	6.479E-01	7.479E-02	7.435
	+	242.00		3.695E+00	9.520E-01	5.758E-01	4.668E-02	6.417
	+	295.22		1.898E+00	2.830E-01	2.284E-01	1.994E-02	8.312
	+	351.93	*	1.806E+00	2.328E-01	1.292E-01	1.090E-02	13.983
RA-224	+	240.99	*	6.533E+00	1.640E+00	1.015E+00	5.751E-02	6.437
RA-226	+	609.32	*	1.632E+00	2.095E-01	1.195E-01	9.470E-03	13.659
	+	1120.29		2.439E+00	6.547E-01	4.887E-01	4.498E-02	4.992
	+	1764.49		2.129E+00	5.164E-01	2.688E-01	1.629E-02	7.922
AC-228	+	338.32		2.035E+00	9.677E-01	4.054E-01	1.671E-01	5.020
	+	911.20	*	2.501E+00	4.484E-01	2.549E-01	2.971E-02	9.812
	+	968.97		2.277E+00	7.124E-01	4.166E-01	1.009E-01	5.466
RA-228	+	338.32		2.035E+00	9.677E-01	4.054E-01	1.671E-01	5.020
	+	911.20	*	2.501E+00	4.484E-01	2.549E-01	2.971E-02	9.812
	+	968.97		2.277E+00	7.124E-01	4.166E-01	1.009E-01	5.466
TH-228	+	74.82		3.272E+00	6.188E-01	6.384E-01	5.123E-02	5.124
	+	77.11		2.732E+00	3.854E-01	3.675E-01	2.969E-02	7.435

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	2.268E+00	2.075E-01	9.475E-02	6.900E-03	23.937
	+	300.09		2.454E+00	1.960E+00	1.291E+00	7.862E-01	1.900
TH-232	+	338.32		2.035E+00	4.966E-01	4.054E-01	2.343E-02	5.020
	+	911.20	*	2.501E+00	4.484E-01	2.549E-01	2.971E-02	9.812
	+	968.97		2.277E+00	7.124E-01	4.166E-01	1.009E-01	5.466
TH-234	+	63.29	*	3.480E+00	2.227E+00	2.406E+00	4.303E-01	1.446
	+	92.59		4.003E+00	1.432E+00	1.082E+00	2.376E-01	3.701
U-235	+	89.96		3.188E+00	1.616E+00	1.344E+00	3.311E-01	2.372
	+	93.35		3.024E+00	1.101E+00	8.129E-01	1.866E-01	3.719
		143.76	*	1.032E-01	2.301E-01	3.767E-01	5.882E-02	0.274
		163.33		3.722E-02	4.981E-01	7.984E-01	1.325E-01	0.047
	+	185.72		2.162E-01	6.501E-02	7.511E-02	4.014E-03	2.878
		205.31		2.874E-01	6.148E-01	8.821E-01	1.489E-01	0.326
NP-237	+	86.48	*	1.285E+00	3.946E-01	4.220E-01	9.598E-02	3.046
		95.86		4.575E-01	1.142E+00	1.659E+00	3.941E-01	0.276
U-238	+	63.29	*	3.480E+00	2.227E+00	2.406E+00	4.303E-01	1.446
	+	92.59		4.003E+00	1.178E+00	1.082E+00	9.004E-02	3.701
ANH-511	+	511.00	*	1.781E-01	7.132E-02	4.674E-02	2.758E-03	3.810

---- 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	*	-2.031E-01	3.608E-01	5.744E-01	3.898E-02	-0.354
NA-22		1274.54	*	-2.313E-02	4.889E-02	7.776E-02	5.187E-03	-0.298
NA-24		1368.63	*	-2.817E+03	4.889E-02	Half-Life too short		
SC-46		889.28	*	9.246E-03	4.582E-02	7.524E-02	6.538E-03	0.123
	+	1120.55		4.403E-01	1.144E-01	1.662E-01	1.049E-02	2.648
V-48		944.13		-7.680E-01	1.300E+00	1.968E+00	1.658E-01	-0.390
		983.53	*	2.768E-02	1.099E-01	1.804E-01	1.451E-02	0.153
		1312.11		-8.129E-02	1.125E-01	1.716E-01	1.221E-02	-0.474
CR-51		320.08	*	-2.858E-01	4.935E-01	8.047E-01	5.199E-02	-0.355
MN-54		834.85	*	-3.040E-03	4.223E-02	6.794E-02	5.404E-03	-0.045
CO-56		846.77	*	-1.158E-02	4.637E-02	7.277E-02	5.904E-03	-0.159
		1037.84		-5.285E-02	3.553E-01	5.885E-01	4.675E-02	-0.090
	+	1238.28		1.873E-01	1.521E-01	2.143E-01	1.408E-02	0.874
		1771.35		4.615E-02	2.609E-01	3.831E-01	2.309E-02	0.120
CO-57		122.06	*	-2.450E-02	3.283E-02	4.776E-02	2.850E-03	-0.513
		136.47		1.306E-01	2.342E-01	3.877E-01	2.555E-02	0.337
CO-58		810.76	*	-6.931E-03	4.939E-02	7.913E-02	6.064E-03	-0.088
FE-59		1099.45	*	-1.363E-01	1.135E-01	1.701E-01	1.276E-02	-0.801
		1291.59		-3.130E-02	1.489E-01	2.422E-01	2.006E-02	-0.129
CO-60		1173.23		-6.549E-03	4.867E-02	7.921E-02	4.341E-03	-0.083
		1332.49	*	1.471E-02	4.453E-02	7.610E-02	5.608E-03	0.193
ZN-65		1115.54	*	-1.355E-02	1.098E-01	1.559E-01	9.968E-03	-0.087
SE-75		121.12		1.899E-02	1.601E-01	2.617E-01	2.409E-02	0.073
		136.00		9.372E-03	4.624E-02	7.563E-02	4.358E-03	0.124
		264.66	*	-7.503E-03	5.598E-02	8.162E-02	4.748E-03	-0.092
		279.54		7.575E-02	1.439E-01	2.160E-01	1.354E-02	0.351

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		400.66		1.294E-01	3.067E-01	5.211E-01	4.662E-02	0.248
SR-85		514.00	*	1.319E-01	5.118E-02	8.704E-02	5.139E-03	1.515
Y-88		898.04		2.518E-02	4.581E-02	7.745E-02	6.856E-03	0.325
		1836.06	*	1.074E-02	3.963E-02	6.745E-02	3.850E-03	0.159
Y-91		1204.77	*	1.138E+01	2.641E+01	4.534E+01	2.647E+00	0.251
NB-94		702.65	*	2.389E-02	3.545E-02	6.059E-02	3.816E-03	0.394
		871.09		-1.521E-02	3.782E-02	5.885E-02	4.968E-03	-0.258
NB-95		765.81	*	8.637E-02	5.740E-02	9.225E-02	6.520E-03	0.936
NB-95M		235.69	*	6.726E-01	1.894E-01	3.027E-01	2.250E-02	2.222
ZR-95		724.19		-7.393E-02	1.343E-01	1.784E-01	1.335E-02	-0.414
	+	756.73	*	1.194E-01	9.762E-02	1.580E-01	1.271E-02	0.756
MO-99		140.51		-1.306E-04	9.762E-02	Half-Life	too short	
		181.07		2.823E-06	9.762E-02	Half-Life	too short	
		366.42		-2.760E-04	9.762E-02	Half-Life	too short	
		739.50	*	-1.222E-05	9.762E-02	Half-Life	too short	
		777.92		-1.019E-04	9.762E-02	Half-Life	too short	
TC-99M		140.51	*	-7.991E+19	9.762E-02	Half-Life	too short	
RU-103		497.08	*	-2.414E-02	4.858E-02	7.754E-02	9.664E-03	-0.311
	+	610.33		1.935E+01	3.514E+00	3.805E+00	5.743E-01	5.086
RH-106		621.93	*	-6.811E-02	3.420E-01	5.522E-01	6.444E-02	-0.123
		1050.41		-3.836E-01	2.758E+00	4.569E+00	3.321E-01	-0.084
RU-106		621.93	*	-6.811E-02	3.419E-01	5.522E-01	3.256E-02	-0.123
		1050.41		-3.836E-01	2.758E+00	4.569E+00	3.321E-01	-0.084
AG-108M		433.94	*	2.019E-02	3.057E-02	5.271E-02	3.234E-03	0.383
		614.28		1.231E-02	4.165E-02	6.086E-02	3.842E-03	0.202
		722.91		-3.251E-02	4.753E-02	6.180E-02	4.265E-03	-0.526
AG-110M		657.76	*	-5.109E-02	4.282E-02	6.412E-02	3.979E-03	-0.797
		677.62		1.885E-01	3.491E-01	5.921E-01	3.764E-02	0.318
		706.68		-1.506E-01	2.253E-01	3.474E-01	2.320E-02	-0.434
		763.94		4.490E-02	1.975E-01	2.841E-01	2.083E-02	0.158
		884.68		-4.012E-03	5.609E-02	8.995E-02	8.008E-03	-0.045
		937.49		-9.255E-02	1.312E-01	1.977E-01	1.740E-02	-0.468
		1384.29		1.008E-01	1.876E-01	2.906E-01	2.201E-02	0.347
		1505.03		-3.429E-01	3.206E-01	4.540E-01	3.199E-02	-0.755
SN-113		391.69	*	-8.011E-03	5.058E-02	8.358E-02	4.987E-03	-0.096
CD-115		260.90		4.886E-04	5.058E-02	Half-Life	too short	
		492.35		1.706E-04	5.058E-02	Half-Life	too short	
		527.90	*	-2.287E-05	5.058E-02	Half-Life	too short	
SN-117M		156.02		2.301E+00	4.016E+00	6.626E+00	3.551E-01	0.347
		158.56	*	-4.752E-02	9.646E-02	1.532E-01	8.153E-03	-0.310
TE-123M		159.00	*	-2.995E-02	3.459E-02	5.407E-02	2.920E-03	-0.554
SB-124		602.73		-1.357E-03	5.278E-02	7.478E-02	4.428E-03	-0.018
		645.85		-9.740E-02	5.906E-01	9.547E-01	6.267E-02	-0.102
		722.78		-3.492E-01	5.230E-01	6.815E-01	4.632E-02	-0.512
		1690.97	*	6.135E-02	6.956E-02	1.333E-01	9.165E-03	0.460
SB-125		427.87	*	-4.842E-02	9.581E-02	1.544E-01	9.179E-03	-0.314
	+	463.37		1.157E+00	5.004E-01	6.405E-01	4.315E-02	1.806
		600.60		1.663E-01	1.950E-01	3.371E-01	2.297E-02	0.493
		635.95		-2.657E-02	2.967E-01	4.826E-01	3.311E-02	-0.055

---- 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	*	-1.059E+01	1.262E+01	1.996E+01	1.806E+00	-0.530	
I-126	388.63		-9.575E-02	2.716E-01	4.442E-01	2.479E-02	-0.216	
	666.33	*	-1.385E-01	3.971E-01	6.337E-01	3.723E-02	-0.219	
	753.82		1.713E+00	3.516E+00	5.194E+00	3.593E-01	0.330	
SB-126	414.70		-1.469E-02	1.237E-01	2.044E-01	1.156E-02	-0.072	
	666.50		-4.094E-02	1.395E-01	2.235E-01	1.314E-02	-0.183	
	695.00		7.807E-02	1.354E-01	2.295E-01	1.425E-02	0.340	
	697.00		1.374E-02	4.646E-01	7.593E-01	4.732E-02	0.018	
	720.70	*	1.981E-01	2.869E-01	4.320E-01	2.814E-02	0.459	
	856.80		4.267E-02	8.974E-01	1.258E+00	1.038E-01	0.034	
SB-127	252.40		-2.125E+01	2.251E+01	3.142E+01	1.314E+01	-0.676	
	473.00		1.474E+00	6.888E+00	1.156E+01	1.585E+00	0.128	
	685.70	*	3.474E+00	5.941E+00	1.008E+01	1.266E+00	0.344	
	783.70		7.406E-01	1.733E+01	2.820E+01	3.957E+00	0.026	
I-131	80.19		-1.093E+01	1.667E+01	1.648E+01	1.388E+00	-0.663	
	284.31		-1.677E+00	3.414E+00	5.294E+00	3.458E-01	-0.317	
	364.49	*	1.623E-02	2.526E-01	4.234E-01	2.743E-02	0.038	
	636.99		-1.819E+00	3.374E+00	5.301E+00	3.536E-01	-0.343	
TE-132	49.72		-5.410E+01	1.005E+02	1.629E+02	2.053E+01	-0.332	
	111.76		-1.184E+02	2.101E+02	3.352E+02	4.122E+01	-0.353	
	116.30		-4.263E+01	1.811E+02	2.926E+02	3.552E+01	-0.146	
	228.16	*	5.298E-01	4.729E+00	7.610E+00	1.246E+00	0.070	
BA-133	81.00		-3.521E-02	1.641E-01	1.674E-01	2.573E-02	-0.210	
+	276.40		1.213E+00	7.089E-01	7.410E-01	9.323E-02	1.637	
	302.85		6.834E-02	1.677E-01	2.516E-01	2.872E-02	0.272	
	356.01	*	-7.704E-03	5.036E-02	7.237E-02	8.134E-03	-0.106	
	383.85		-7.911E-02	3.123E-01	5.135E-01	5.422E-02	-0.154	
I-133	529.87	*	2.889E+00	3.123E-01	Half-Life	too short		
	875.33		3.414E+01	3.123E-01	Half-Life	too short		
	1298.22		-4.861E+01	3.123E-01	Half-Life	too short		
CS-134	563.25		6.268E-02	4.879E-01	7.031E-01	4.258E-02	0.089	
+	569.33		1.418E+00	4.741E-01	5.768E-01	3.522E-02	2.458	
	604.72		-3.790E-02	4.255E-02	5.508E-02	3.277E-03	-0.688	
+	795.86	*	8.336E-02	7.278E-02	9.802E-02	7.371E-03	0.850	
	801.95		-4.080E-01	4.621E-01	6.407E-01	4.858E-02	-0.637	
	1365.19		-2.554E-02	1.083E+00	1.786E+00	1.392E-01	-0.014	
CS-135	268.22	*	3.981E-01	2.025E-01	3.258E-01	2.486E-02	1.222	
I-135	546.56		-2.102E+18	2.025E-01	Half-Life	too short		
	836.80		-4.307E+18	2.025E-01	Half-Life	too short		
	1038.76		5.169E+18	2.025E-01	Half-Life	too short		
	1131.51		1.404E+18	2.025E-01	Half-Life	too short		
	1260.41	*	-1.433E+18	2.025E-01	Half-Life	too short		
	1457.56		1.036E+20	2.025E-01	Half-Life	too short		
	1678.03		-4.470E+18	2.025E-01	Half-Life	too short		
	1791.20		-2.847E+18	2.025E-01	Half-Life	too short		
CS-136	153.25		-2.782E-01	1.534E+00	2.467E+00	1.918E-01	-0.113	
	176.60		-1.377E-01	8.785E-01	1.409E+00	9.368E-02	-0.098	
	273.65		6.335E-01	1.331E+00	1.394E+00	9.522E-02	0.455	
	340.55		1.166E+00	3.039E-01	5.220E-01	3.272E-02	2.233	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	818.51			-4.367E-02	1.215E-01	1.906E-01	1.479E-02	-0.229
	1048.07	*		7.217E-02	1.617E-01	2.812E-01	2.175E-02	0.257
	1235.36			1.662E+00	1.179E+00	1.891E+00	1.916E-01	0.879
BA-137M	661.66	*		1.475E-02	4.328E-02	7.226E-02	4.208E-03	0.204
CS-137	661.66	*		1.558E-02	4.572E-02	7.634E-02	4.464E-03	0.204
CE-139	165.86	*		-1.028E-04	3.478E-02	5.619E-02	2.933E-03	-0.002
BA-140	162.66			-7.308E-03	1.427E+00	2.280E+00	1.407E-01	-0.003
	304.85			-5.431E-01	2.485E+00	3.575E+00	1.021E+00	-0.152
	423.72			-1.708E+00	3.169E+00	5.021E+00	1.619E+00	-0.340
	537.26	*		-1.063E-01	4.203E-01	6.779E-01	2.260E-01	-0.157
LA-140	328.76	+		9.841E-01	7.779E-01	9.758E-01	6.351E-02	1.009
	487.02			-1.052E-01	2.144E-01	3.427E-01	2.269E-02	-0.307
	815.77			1.100E-01	5.330E-01	8.785E-01	7.749E-02	0.125
	1596.21	*		-4.658E-02	1.316E-01	2.047E-01	1.385E-02	-0.228
CE-141	145.44	*		6.508E-02	8.472E-02	1.409E-01	8.119E-03	0.462
CE-143	57.36			5.305E-02	8.472E-02	Half-Life	too short	
	293.27	*		6.526E-02	8.472E-02	Half-Life	too short	
	664.57			3.526E-02	8.472E-02	Half-Life	too short	
	721.93			3.991E-02	8.472E-02	Half-Life	too short	
CE-144	80.12			-2.390E+00	4.677E+00	4.677E+00	3.875E-01	-0.511
	133.52	*		-2.277E-02	2.510E-01	3.548E-01	4.916E-02	-0.064
PM-144	476.78			-4.299E-02	6.671E-02	1.056E-01	7.283E-03	-0.407
	618.01			1.601E-02	3.504E-02	5.925E-02	3.705E-03	0.270
	696.49	*		1.366E-02	3.899E-02	6.513E-02	4.061E-03	0.210
PR-144	696.51	*		1.039E+00	2.931E+00	4.897E+00	3.049E-01	0.212
	1489.16			-1.857E+00	1.153E+01	1.851E+01	1.312E+00	-0.100
PM-146	453.88	*		2.705E-02	4.783E-02	8.171E-02	6.901E-03	0.331
	633.25			9.425E-01	1.600E+00	2.663E+00	1.003E+00	0.354
	735.93			1.506E-01	1.716E-01	2.826E-01	7.770E-02	0.533
	747.24			-1.289E-02	1.092E-01	1.760E-01	2.395E-02	-0.073
ND-147	91.11	+		1.694E+00	7.668E-01	9.643E-01	8.914E-02	1.756
	319.41			-4.997E+00	5.968E+00	9.600E+00	5.584E-01	-0.521
	531.02	*		8.132E-01	9.908E-01	1.710E+00	2.322E-01	0.475
PM-149	285.90	*		-1.251E-04	9.908E-01	Half-Life	too short	
EU-152	121.78			-7.523E-02	8.845E-02	1.341E-01	1.034E-02	-0.561
	244.70			1.980E-01	4.023E-01	5.784E-01	3.287E-02	0.342
	344.28	*		-8.583E-03	1.377E-01	1.746E-01	1.136E-02	-0.049
	778.90			1.030E-01	2.850E-01	4.757E-01	3.440E-02	0.217
	964.08	+		8.325E-01	4.341E-01	6.163E-01	5.076E-02	1.351
	1085.87			-1.752E-01	4.306E-01	6.965E-01	4.738E-02	-0.252
	1112.07			1.203E-01	3.415E-01	5.483E-01	3.527E-02	0.219
	1408.01			6.494E-02	1.905E-01	3.267E-01	2.373E-02	0.199
GD-153	69.67			-3.429E-01	2.474E+00	3.303E+00	2.542E-01	-0.104
	97.43	*		-4.107E-03	1.098E-01	1.571E-01	1.221E-02	-0.026
	103.18			-1.515E-01	1.319E-01	2.065E-01	1.495E-02	-0.734
EU-154	123.07			-1.516E-02	6.861E-02	9.660E-02	9.151E-03	-0.157
	723.31			-2.638E-01	2.261E-01	2.770E-01	2.121E-02	-0.952
	873.19			9.298E-02	3.043E-01	5.044E-01	5.946E-02	0.184
	996.26			-1.241E-01	3.624E-01	5.601E-01	9.593E-02	-0.222

---- 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		4.994E-02	2.296E-01	3.919E-01	4.331E-02	0.127
		1274.44	*	-3.733E-02	1.363E-01	2.207E-01	2.202E-02	-0.169
	+	86.55		5.240E-01	1.177E-01	2.167E-01	1.931E-02	2.418
		105.31	*	8.413E-02	1.236E-01	2.060E-01	1.481E-02	0.408
TB-160	+	86.79		1.494E+00	3.350E-01	6.116E-01	5.410E-02	2.443
		197.04		2.873E-01	7.069E-01	1.141E+00	6.180E-02	0.252
		215.65		2.248E-01	9.651E-01	1.509E+00	8.353E-02	0.149
	+	298.57		3.725E-01	1.938E-01	2.476E-01	1.440E-02	1.504
		879.36	*	-9.506E-02	1.596E-01	2.428E-01	2.077E-02	-0.391
		962.29		8.105E-01	6.937E-01	1.085E+00	8.954E-02	0.747
	+	966.15		6.263E-01	3.266E-01	5.384E-01	4.423E-02	1.163
		1177.93		-7.416E-02	4.341E-01	7.141E-01	3.951E-02	-0.104
HO-166M		1271.85		-1.763E-01	8.219E-01	1.338E+00	8.868E-02	-0.132
		80.57		-9.898E-02	4.682E-01	4.780E-01	3.977E-02	-0.207
		184.41		1.122E-01	4.838E-02	7.580E-02	4.044E-03	1.481
		280.46		1.700E-02	1.017E-01	1.507E-01	8.730E-03	0.113
		410.95		1.625E-01	2.708E-01	4.642E-01	2.619E-02	0.350
		711.68	*	5.159E-04	6.289E-02	1.026E-01	6.569E-03	0.005
		752.31		-1.786E-02	3.347E-01	4.670E-01	3.221E-02	-0.038
		810.29		1.358E-03	6.680E-02	1.084E-01	8.276E-03	0.013
TA-182		67.75		-1.599E-02	1.607E-01	2.152E-01	1.642E-02	-0.074
		100.11		2.420E-01	2.186E-01	3.552E-01	2.669E-02	0.681
		152.43		-1.269E-01	4.319E-01	6.919E-01	3.744E-02	-0.183
		222.11		-9.959E-02	4.346E-01	6.900E-01	3.844E-02	-0.144
	+	1121.30		1.199E+00	3.115E-01	4.505E-01	2.836E-02	2.661
		1189.05		-1.437E-01	3.504E-01	5.648E-01	3.196E-02	-0.254
		1221.41	*	9.372E-02	2.415E-01	4.124E-01	2.486E-02	0.227
		1231.02		-3.524E-01	6.099E-01	8.913E-01	5.474E-02	-0.395
IR-192	+	295.96		1.511E+00	2.032E-01	3.549E-01	2.096E-02	4.257
		308.46		-1.422E-03	1.173E-01	1.794E-01	1.055E-02	-0.008
		316.51	*	4.249E-02	4.016E-02	7.053E-02	4.121E-03	0.603
		468.07		1.813E-02	8.768E-02	1.283E-01	8.615E-03	0.141
HG-203		70.83		2.271E-01	1.962E+00	2.842E+00	4.435E-01	0.080
		72.87		4.590E+00	1.386E+00	1.948E+00	2.945E-01	2.356
		279.20	*	4.414E-02	5.542E-02	8.436E-02	5.158E-03	0.523
		72.81		7.808E-01	2.569E-01	3.968E-01	3.108E-02	1.967
BI-207	+	74.97		9.434E-01	1.781E-01	2.836E-01	2.254E-02	3.326
	+	569.70		2.186E-01	7.302E-02	8.777E-02	5.210E-03	2.491
		1063.66	*	4.263E-02	5.512E-02	9.792E-02	6.953E-03	0.435
		1770.23		1.618E-01	4.910E-01	7.481E-01	4.513E-02	0.216
PB-210		46.54	*	8.073E-01	3.340E+00	5.510E+00	4.154E-01	0.147
PB-211		404.85	*	-3.579E-01	8.629E-01	1.378E+00	6.609E-01	-0.260
		427.09		5.994E-01	1.608E+00	2.691E+00	1.233E+00	0.223
		832.01		5.660E-02	1.112E+00	1.806E+00	9.347E-01	0.031
	+	727.33	*	3.315E+00	9.303E-01	1.335E+00	1.489E-01	2.483
BI-212		785.37		2.753E+00	3.786E+00	6.444E+00	4.713E-01	0.427
		1620.50		-2.074E+00	2.305E+00	3.207E+00	2.142E-01	-0.647
	+	271.23		7.462E-01	4.316E-01	5.067E-01	4.060E-02	1.473
		401.81	*	1.593E-01	4.731E-01	8.002E-01	1.069E-01	0.199

---- 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		-7.871E-02	3.710E-01	3.787E-01	3.165E-02	-0.208
	+	83.79		1.590E-01	1.574E-01	2.394E-01	2.053E-02	0.664
		94.87		1.221E+00	6.078E-01	9.292E-01	7.484E-02	1.314
		144.24		5.993E-01	7.742E-01	1.283E+00	8.977E-02	0.467
		154.21		3.671E-01	4.572E-01	7.598E-01	5.035E-02	0.483
	+	269.46		5.798E-01	3.339E-01	3.950E-01	2.378E-02	1.468
		323.87	*	5.914E-01	7.618E-01	1.163E+00	1.874E-01	0.509
AC-227	+	338.28		8.075E+00	2.086E+00	2.735E+00	2.801E-01	2.952
		79.69		3.475E+00	2.296E+00	2.539E+00	4.331E-01	1.369
		235.96		1.523E+00	2.562E-01	4.066E-01	3.265E-02	3.746
		256.23	*	1.568E-01	2.908E-01	4.753E-01	4.840E-02	0.330
	+	299.98		2.699E+00	1.427E+00	1.795E+00	1.974E-01	1.504
		304.50		-4.293E-01	1.938E+00	2.791E+00	4.258E-01	-0.154
		334.37		-3.693E+00	2.977E+00	2.927E+00	4.161E-01	-1.262
TH-227		79.80		3.118E+00	2.976E+00	3.225E+00	6.978E-01	0.967
		235.96		1.523E+00	2.508E-01	4.066E-01	2.953E-02	3.746
		256.23	*	1.568E-01	2.909E-01	4.753E-01	5.695E-02	0.330
	+	299.98		2.699E+00	1.427E+00	1.795E+00	1.974E-01	1.504
		304.50		-4.293E-01	1.938E+00	2.791E+00	4.258E-01	-0.154
		334.37		-3.693E+00	2.977E+00	2.927E+00	4.161E-01	-1.262
		85.43		9.878E-01	3.773E-01	4.459E-01	3.889E-02	2.215
TH-229	+	88.47		6.641E-01	1.489E-01	2.781E-01	2.472E-02	2.388
		193.51	*	-1.471E-01	5.990E-01	9.544E-01	5.149E-02	-0.154
		210.85		2.301E+00	1.206E+00	1.845E+00	1.016E-01	1.247
PA-231		283.69	*	-4.552E-01	1.823E+00	2.631E+00	3.451E-01	-0.173
	+	301.36		1.734E+00	9.143E-01	1.146E+00	1.186E-01	1.514
TH-231		81.07		-7.871E-02	3.710E-01	3.787E-01	3.165E-02	-0.208
	+	83.79		1.590E-01	1.574E-01	2.394E-01	2.053E-02	0.664
		94.87		1.221E+00	6.078E-01	9.292E-01	7.484E-02	1.314
		144.24		5.993E-01	7.742E-01	1.283E+00	8.977E-02	0.467
		154.21		3.671E-01	4.572E-01	7.598E-01	5.035E-02	0.483
	+	269.46		5.798E-01	3.339E-01	3.950E-01	2.378E-02	1.468
		323.87	*	5.914E-01	7.618E-01	1.163E+00	1.874E-01	0.509
PA-233	+	338.28		8.075E+00	2.086E+00	2.735E+00	2.801E-01	2.952
	+	300.13		1.221E+00	6.523E-01	8.125E-01	1.088E-01	1.503
		311.90	*	-8.380E-02	6.769E-02	1.064E-01	6.569E-03	-0.788
PA-234		340.48		3.523E+00	1.173E+00	1.501E+00	3.483E-01	2.347
		94.67		7.203E-01	2.321E-01	3.491E-01	4.201E-02	2.063
		98.44		1.195E-01	1.324E-01	1.712E-01	9.526E-02	0.698
		111.00		8.144E-02	2.094E-01	3.457E-01	3.723E-02	0.236
		131.20		1.323E-01	1.305E-01	1.947E-01	1.121E-02	0.679
	+	569.50		1.940E+00	6.480E-01	7.853E-01	4.661E-02	2.470
		733.00		-2.457E-01	4.743E-01	6.232E-01	1.341E-01	-0.394
		880.51		-1.380E-01	3.097E-01	4.780E-01	4.096E-02	-0.289
		883.24		-5.259E-02	3.201E-01	5.060E-01	3.402E-01	-0.104
		926.50		7.655E-02	1.857E-01	3.089E-01	7.804E-02	0.248
PA-234M		946.00	*	-1.515E-01	3.077E-01	4.685E-01	8.745E-02	-0.323
		949.00		-2.577E-01	4.620E-01	7.013E-01	5.876E-02	-0.367
		766.42		2.642E+01	1.968E+01	2.384E+01	1.204E+01	1.108

---- 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	*		-8.484E-01	4.731E+00	7.875E+00	7.331E-01	-0.108
	99.53			3.950E-01	1.989E-01	3.197E-01	2.420E-02	1.236
	103.37			-7.422E-02	1.157E-01	1.847E-01	1.334E-02	-0.402
	106.12			1.074E-01	9.726E-02	1.640E-01	1.148E-02	0.654
	117.23	*		1.692E-01	4.621E-01	7.621E-01	4.755E-02	0.222
	228.18			2.581E-02	2.562E-01	4.121E-01	2.310E-02	0.063
AM-241	+	277.60		5.991E-01	3.436E-01	3.657E-01	2.116E-02	1.638
CM-247	59.54	*		1.984E-01	1.920E-01	2.888E-01	2.378E-02	0.687
	+	278.00		2.544E+00	1.459E+00	1.524E+00	8.818E-02	1.670
CF-249	287.50			1.281E+00	1.368E+00	2.337E+00	1.357E-01	0.548
	402.40	*		1.652E-02	4.316E-02	7.321E-02	4.106E-03	0.226
	252.80			-8.417E-01	1.109E+00	1.705E+00	9.746E-02	-0.494
	333.37			-6.620E-02	3.457E-01	3.302E-01	1.912E-02	-0.200
CF-251	388.16	*		-1.065E-02	4.328E-02	7.120E-02	3.975E-03	-0.150
	177.52	*		1.535E-02	1.531E-01	2.479E-01	1.311E-02	0.062
	227.38			2.893E-01	4.234E-01	6.967E-01	3.902E-02	0.415
	285.41			-7.087E-01	2.374E+00	3.943E+00	2.288E-01	-0.180

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]G248248002      *
* Acquisition date   : 19-MAR-2010 10:58:58 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 02:00:01.86 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248248002 Analyst initials: MXR1                  *
* Batch Number       : 959280 Sample Quantity : 1.3414E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM           : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.365E+01	3.051E+00	4.414E-01	0.000E+00
CD-109	4.459E+00	9.798E-01	1.397E+00	0.000E+00
SN-126	4.308E-01	9.466E-02	1.356E-01	0.000E+00
TL-208	5.688E-01	8.970E-02	6.206E-02	0.000E+00
BI-211	4.977E+00	5.680E-01	3.653E-01	0.000E+00
PB-212	2.268E+00	2.034E-01	9.809E-02	0.000E+00
BI-214	1.632E+00	2.053E-01	1.217E-01	0.000E+00
PB-214	1.806E+00	2.281E-01	1.328E-01	0.000E+00
RA-224	6.533E+00	1.608E+00	1.051E+00	0.000E+00
RA-226	1.632E+00	2.053E-01	1.217E-01	0.000E+00
AC-228	2.501E+00	4.395E-01	2.576E-01	0.000E+00
RA-228	2.501E+00	4.395E-01	2.576E-01	0.000E+00
TH-228	2.268E+00	2.034E-01	9.809E-02	0.000E+00
TH-232	2.501E+00	4.395E-01	2.576E-01	0.000E+00
TH-234	3.480E+00	2.182E+00	2.548E+00	0.000E+00
U-235	1.032E-01	2.255E-01	3.934E-01	0.000E+00
NP-237	1.285E+00	3.867E-01	4.445E-01	0.000E+00
U-238	3.480E+00	2.182E+00	2.548E+00	0.000E+00
ANH-511	1.781E-01	6.989E-02	4.774E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.031E-01	3.536E-01	5.874E-01	0.000E+00 NOT IDENT.
NA-22	-2.313E-02	4.791E-02	7.811E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.328E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	9.246E-03	4.490E-02	7.608E-02	0.000E+00 FAIL ABUN
V-48	2.768E-02	1.077E-01	1.821E-01	0.000E+00 NOT IDENT.
CR-51	-2.858E-01	4.836E-01	8.288E-01	0.000E+00 NOT IDENT.
MN-54	-3.040E-03	4.138E-02	6.878E-02	0.000E+00 NOT IDENT.
CO-56	-1.158E-02	4.544E-02	7.364E-02	0.000E+00 FAIL ABUN

CO-57	-2.450E-02	3.218E-02	5.001E-02	0.000E+00	NOT IDENT.
CO-58	-6.931E-03	4.840E-02	8.015E-02	0.000E+00	NOT IDENT.
FE-59	-1.363E-01	1.113E-01	1.714E-01	0.000E+00	NOT IDENT.
CO-60	1.471E-02	4.364E-02	7.638E-02	0.000E+00	NOT IDENT.
ZN-65	-1.355E-02	1.076E-01	1.570E-01	0.000E+00	NOT IDENT.
SE-75	-7.503E-03	5.486E-02	8.434E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.016E-02	8.889E-02	0.000E+00	NOT IDENT.
Y-88	1.074E-02	3.884E-02	6.729E-02	0.000E+00	NOT IDENT.
Y-91	1.138E+01	2.588E+01	4.559E+01	0.000E+00	NOT IDENT.
NB-94	2.389E-02	3.474E-02	6.153E-02	0.000E+00	NOT IDENT.
NB-95	8.637E-02	5.625E-02	9.354E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.857E-01	3.134E-01	0.000E+00	NOT IDENT.
ZR-95	1.194E-01	9.566E-02	1.602E-01	0.000E+00	FAIL ABUN
MO-99	0.000E+00	1.024E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.127E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.414E-02	4.761E-02	7.923E-02	0.000E+00	FAIL ABUN
RH-106	-6.811E-02	3.352E-01	5.620E-01	0.000E+00	NOT IDENT.
RU-106	-6.811E-02	3.351E-01	5.620E-01	0.000E+00	NOT IDENT.
AG-108M	2.019E-02	2.996E-02	5.399E-02	0.000E+00	NOT IDENT.
AG-110M	-5.109E-02	4.197E-02	6.519E-02	0.000E+00	NOT IDENT.
SN-113	-8.011E-03	4.956E-02	8.577E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.458E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-4.752E-02	9.454E-02	1.597E-01	0.000E+00	NOT IDENT.
TE-123M	-2.995E-02	3.390E-02	5.637E-02	0.000E+00	NOT IDENT.
SB-124	6.135E-02	6.817E-02	1.332E-01	0.000E+00	NOT IDENT.
SB-125	-4.842E-02	9.389E-02	1.582E-01	0.000E+00	FAIL ABUN
TE-125M	-1.059E+01	1.237E+01	2.094E+01	0.000E+00	NOT IDENT.
I-126	-1.385E-01	3.892E-01	6.441E-01	0.000E+00	NOT IDENT.
SB-126	1.981E-01	2.812E-01	4.386E-01	0.000E+00	NOT IDENT.
SB-127	3.474E+00	5.822E+00	1.024E+01	0.000E+00	NOT IDENT.
I-131	1.623E-02	2.476E-01	4.351E-01	0.000E+00	NOT IDENT.
TE-132	5.298E-01	4.635E+00	7.884E+00	0.000E+00	NOT IDENT.
BA-133	-7.704E-03	4.935E-02	7.439E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.413E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.336E-02	7.132E-02	9.932E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.984E-01	3.366E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.885E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	7.217E-02	1.585E-01	2.835E-01	0.000E+00	NOT IDENT.
BA-137M	1.475E-02	4.242E-02	7.346E-02	0.000E+00	NOT IDENT.
CS-137	1.558E-02	4.481E-02	7.761E-02	0.000E+00	NOT IDENT.
CE-139	-1.028E-04	3.408E-02	5.853E-02	0.000E+00	NOT IDENT.
BA-140	-1.063E-01	4.119E-01	6.918E-01	0.000E+00	NOT IDENT.
LA-140	-4.658E-02	1.290E-01	2.048E-01	0.000E+00	FAIL ABUN
CE-141	6.508E-02	8.303E-02	1.472E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.823E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.277E-02	2.459E-01	3.710E-01	0.000E+00	NOT IDENT.
PM-144	1.366E-02	3.821E-02	6.615E-02	0.000E+00	NOT IDENT.
PR-144	1.039E+00	2.872E+00	4.974E+00	0.000E+00	NOT IDENT.
PM-146	2.705E-02	4.687E-02	8.363E-02	0.000E+00	NOT IDENT.
ND-147	8.132E-01	9.710E-01	1.746E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.135E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-8.583E-03	1.350E-01	1.796E-01	0.000E+00	FAIL ABUN
GD-153	-4.107E-03	1.076E-01	1.651E-01	0.000E+00	NOT IDENT.
EU-154	-3.733E-02	1.336E-01	2.217E-01	0.000E+00	NOT IDENT.
EU-155	8.413E-02	1.211E-01	2.163E-01	0.000E+00	FAIL ABUN
TB-160	-9.506E-02	1.564E-01	2.456E-01	0.000E+00	FAIL ABUN
HO-166M	5.159E-04	6.164E-02	1.041E-01	0.000E+00	NOT IDENT.
TA-182	9.372E-02	2.366E-01	4.146E-01	0.000E+00	FAIL ABUN
IR-192	4.249E-02	3.935E-02	7.265E-02	0.000E+00	FAIL ABUN
HG-203	4.414E-02	5.431E-02	8.710E-02	0.000E+00	NOT IDENT.
BI-207	4.263E-02	5.402E-02	9.869E-02	0.000E+00	FAIL ABUN
PB-210	8.073E-01	3.274E+00	5.865E+00	0.000E+00	NOT IDENT.
PB-211	-3.579E-01	8.456E-01	1.414E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.117E-01	1.355E+00	0.000E+00	FAIL ABUN
RN-219	1.593E-01	4.637E-01	8.208E-01	0.000E+00	FAIL ABUN
RA-223	5.914E-01	7.466E-01	1.197E+00	0.000E+00	FAIL ABUN
AC-227	1.568E-01	2.850E-01	4.914E-01	0.000E+00	FAIL ABUN
TH-227	1.568E-01	2.851E-01	4.914E-01	0.000E+00	FAIL ABUN
TH-229	-1.471E-01	5.870E-01	9.916E-01	0.000E+00	FAIL ABUN
PA-231	-4.552E-01	1.787E+00	2.716E+00	0.000E+00	FAIL ABUN
TH-231	5.914E-01	7.466E-01	1.197E+00	0.000E+00	FAIL ABUN
PA-233	-8.380E-02	6.634E-02	1.096E-01	0.000E+00	FAIL ABUN
PA-234	-1.515E-01	3.016E-01	4.732E-01	0.000E+00	FAIL ABUN
PA-234M	-8.484E-01	4.636E+00	7.946E+00	0.000E+00	NOT IDENT.
NF-239	1.692E-01	4.529E-01	7.987E-01	0.000E+00	FAIL ABUN
AM-241	1.984E-01	1.882E-01	3.061E-01	0.000E+00	NOT IDENT.
CM-247	1.652E-02	4.230E-02	7.510E-02	0.000E+00	FAIL ABUN
CF-249	-1.065E-02	4.241E-02	7.308E-02	0.000E+00	NOT IDENT.

CF-251	1.535E-02	1.500E-01	2.579E-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]G248248002.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:58:58
Sample ID          : G248248002 Sample quantity      : 1.34140E+02 GRAM
Detector name      : GAM19 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.86 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials    : MXR1
Abundance limit    : 75.00000 Sensitivity          : 5.00000
Batch ID           : 959280 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	1497	10.66*	1.168E+00	3.365E+01	3.365E+01	9.25
CD-109	88.03	347	3.70*	6.096E+00	4.308E+00	4.459E+00	22.42
SN-126	64.28	168	9.60	3.652E+00	1.341E+00	1.341E+00	63.15
	86.94	347	8.90	6.096E+00	1.791E+00	1.791E+00	46.25
	87.57	347	37.00*	6.096E+00	4.308E-01	4.308E-01	22.42
TL-208	277.37	140	6.60	4.516E+00	1.311E+00	1.311E+00	58.06
	583.19	441	85.00*	2.554E+00	5.688E-01	5.688E-01	16.09
	860.56	79	12.50	1.836E+00	9.635E-01	9.635E-01	40.55
BI-211	72.87	-----	1.23	4.857E+00	-----	Line Not Found	-----
	351.06	870	12.92*	3.788E+00	4.977E+00	4.977E+00	11.65
PB-212	74.82	610	10.28	5.072E+00	3.272E+00	3.272E+00	21.24
	77.11	887	17.10	5.311E+00	2.732E+00	2.732E+00	14.10
	238.63	1773	43.60*	5.016E+00	2.268E+00	2.268E+00	9.15
	300.09	123	3.30	4.261E+00	2.454E+00	2.454E+00	52.38
BI-214	609.32	654	45.49*	2.464E+00	1.632E+00	1.632E+00	12.83
	1120.29	189	14.92	1.455E+00	2.439E+00	2.439E+00	26.84
	1764.49	120	15.30	1.029E+00	2.129E+00	2.129E+00	24.26
PB-214	74.82	610	5.80	5.072E+00	5.799E+00	5.799E+00	20.48
	77.11	887	9.70	5.311E+00	4.817E+00	4.817E+00	16.34
	242.00	476	7.25	4.975E+00	3.695E+00	3.695E+00	25.77
	295.22	539	18.42	4.313E+00	1.898E+00	1.898E+00	14.91
	351.93	870	35.60*	3.788E+00	1.806E+00	1.806E+00	12.89
RA-224	240.99	476	4.10*	4.975E+00	6.533E+00	6.533E+00	25.11
RA-226	609.32	654	45.49*	2.464E+00	1.632E+00	1.632E+00	12.83
	1120.29	189	14.92	1.455E+00	2.439E+00	2.439E+00	26.84
	1764.49	120	15.30	1.029E+00	2.129E+00	2.129E+00	24.26
AC-228	338.32	320	11.27	3.899E+00	2.035E+00	2.035E+00	47.56
	911.20	402	25.80*	1.745E+00	2.501E+00	2.501E+00	17.93
	968.97	213	15.80	1.653E+00	2.277E+00	2.277E+00	31.28
RA-228	338.32	320	11.27	3.899E+00	2.035E+00	2.035E+00	47.56
	911.20	402	25.80*	1.745E+00	2.501E+00	2.501E+00	17.93
	968.97	213	15.80	1.653E+00	2.277E+00	2.277E+00	31.28

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	610	10.28	5.072E+00	3.272E+00	3.272E+00	18.91
	77.11	887	17.10	5.311E+00	2.732E+00	2.732E+00	14.10
	238.63	1773	43.60*	5.016E+00	2.268E+00	2.268E+00	9.15
	300.09	123	3.30	4.261E+00	2.454E+00	2.454E+00	79.88
TH-232	338.32	320	11.27	3.899E+00	2.035E+00	2.035E+00	24.41
	911.20	402	25.80*	1.745E+00	2.501E+00	2.501E+00	17.93
	968.97	213	15.80	1.653E+00	2.277E+00	2.277E+00	31.28
	63.29	168	3.70*	3.652E+00	3.480E+00	3.480E+00	63.99
TH-234	92.59	387	4.23	6.401E+00	4.003E+00	4.003E+00	35.77
	89.96	247	3.47	6.252E+00	3.188E+00	3.188E+00	50.68
	93.35	387	5.60	6.401E+00	3.024E+00	3.024E+00	36.41
	143.76	-----	10.96*	6.636E+00	-----	Line Not Found	-----
U-235	163.33	-----	5.08	6.300E+00	-----	Line Not Found	-----
	185.72	260	57.20	5.881E+00	2.162E-01	2.162E-01	30.07
	205.31	-----	5.01	5.540E+00	-----	Line Not Found	-----
	86.48	347	12.40*	6.096E+00	1.285E+00	1.285E+00	30.70
NP-237	95.86	-----	2.68	6.514E+00	-----	Line Not Found	-----
	63.29	168	3.70*	3.652E+00	3.480E+00	3.480E+00	63.99
U-238	92.59	387	4.23	6.401E+00	4.003E+00	4.003E+00	29.43
	511.00	181	100.00*	2.841E+00	1.781E-01	1.781E-01	40.04

Flag: "*" = Keyline

Total number of lines in spectrum 38
Number of unidentified lines 5
Number of lines tentatively identified by NID 33 86.84%

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	3.365E+01	3.365E+01	0.311E+01	9.25	
CD-109	461.40D	1.04	4.308E+00	4.459E+00	0.100E+01	22.42	
SN-126	2.30E+05Y	1.00	4.308E-01	4.308E-01	0.966E-01	22.42	
TL-208	1.41E+10Y	1.00	5.688E-01	5.688E-01	0.915E-01	16.09	
BI-211	7.04E+08Y	1.00	4.977E+00	4.977E+00	0.580E+00	11.65	
PB-212	1.41E+10Y	1.00	2.268E+00	2.268E+00	0.208E+00	9.15	
BI-214	1600.00Y	1.00	1.632E+00	1.632E+00	0.209E+00	12.83	
PB-214	1600.00Y	1.00	1.806E+00	1.806E+00	0.233E+00	12.89	
RA-224	1.41E+10Y	1.00	6.533E+00	6.533E+00	1.640E+00	25.11	
RA-226	1600.00Y	1.00	1.632E+00	1.632E+00	0.209E+00	12.83	
AC-228	1.41E+10Y	1.00	2.501E+00	2.501E+00	0.448E+00	17.93	
RA-228	1.41E+10Y	1.00	2.501E+00	2.501E+00	0.448E+00	17.93	
TH-228	1.41E+10Y	1.00	2.268E+00	2.268E+00	0.208E+00	9.15	
TH-232	1.41E+10Y	1.00	2.501E+00	2.501E+00	0.448E+00	17.93	
TH-234	4.47E+09Y	1.00	3.480E+00	3.480E+00	2.227E+00	63.99	
U-235	7.04E+08Y	1.00	2.162E-01	2.162E-01	0.650E-01	30.07	K
NP-237	2.14E+06Y	1.00	1.285E+00	1.285E+00	0.395E+00	30.70	
U-238	4.47E+09Y	1.00	3.480E+00	3.480E+00	2.227E+00	63.99	
ANH-511	1.00E+09Y	1.00	1.781E-01	1.781E-01	0.713E-01	40.04	
Total Activity :			7.622E+01	7.637E+01			

Grand Total Activity : 7.622E+01 7.637E+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	83.50	82	557	1.27	166.84	165	7	1.14E-02	98.6	5.84E+00	T
0	128.94	194	569	1.66	257.63	251	13	2.70E-02	52.7	6.82E+00	
0	209.00	220	348	1.41	417.64	413	11	3.06E-02	35.3	5.48E+00	
0	270.27	132	324	1.67	540.10	535	12	1.84E-02	57.3	4.60E+00	T
0	327.38	82	258	1.53	654.25	651	11	1.13E-02	78.8	4.00E+00	T
0	462.81	132	156	1.15	924.96	919	13	1.83E-02	42.7	3.07E+00	T
0	568.93	199	165	2.06	1137.12	1129	16	2.76E-02	32.9	2.61E+00	T
0	727.64	168	66	1.83	1454.44	1448	14	2.33E-02	25.7	2.12E+00	T
0	756.11	37	60	1.32	1511.38	1507	9	5.16E-03	81.4	2.05E+00	T
0	768.43	51	92	1.36	1536.00	1531	10	7.06E-03	73.5	2.03E+00	
0	795.60	44	81	2.15	1590.35	1583	12	6.13E-03	87.0	1.97E+00	T
2	964.87	72	64	2.21	1928.85	1922	25	1.00E-02	51.5	1.66E+00	T
0	1238.43	49	89	2.28	2476.05	2471	11	6.76E-03	80.9	1.34E+00	T
0	1377.41	51	28	5.70	2754.11	2745	16	7.11E-03	54.0	1.22E+00	
0	1730.88	22	17	1.50	3461.44	3453	14	3.00E-03	92.9	1.04E+00	

Flags: "T" = Tentatively associated


```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
*                               DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248002.CNF;1
* Acquisition date   : 19-MAR-2010 10:58:58   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 02:00:01.86          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                             *
*
* Sample date        : 24-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G248248002             Analyst initials: MXR1
* Batch Number       : 959280                 Sample Quantity  : 1.34140E+02 GRAM
*****
*                               QC DATA                                *
*
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54.1MS Isotope      :
* MSD ID              :                               MSD Isotope :
* LCS ID              : 1032-A                       LCS Isotope   :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.365E+01	3.113E+00	4.406E-01	3.281E-02	76.381
CD-109	4.459E+00	9.998E-01	1.327E+00	1.188E-01	3.360
SN-126	4.308E-01	9.659E-02	1.287E-01	1.148E-02	3.346
TL-208	5.688E-01	9.153E-02	6.090E-02	4.132E-03	9.340
BI-211	4.977E+00	5.796E-01	3.552E-01	2.269E-02	14.011
PB-212	2.268E+00	2.075E-01	9.475E-02	6.900E-03	23.937
BI-214	1.632E+00	2.095E-01	1.195E-01	9.470E-03	13.659
PB-214	1.806E+00	2.328E-01	1.292E-01	1.090E-02	13.983
RA-224	6.533E+00	1.640E+00	1.015E+00	5.751E-02	6.437
RA-226	1.632E+00	2.095E-01	1.195E-01	9.470E-03	13.659
AC-228	2.501E+00	4.484E-01	2.549E-01	2.971E-02	9.812
RA-228	2.501E+00	4.484E-01	2.549E-01	2.971E-02	9.812
TH-228	2.268E+00	2.075E-01	9.475E-02	6.900E-03	23.937
TH-232	2.501E+00	4.484E-01	2.549E-01	2.971E-02	9.812
TH-234	3.480E+00	2.227E+00	2.406E+00	4.303E-01	1.446
U-235	2.162E-01	6.501E-02	3.767E-01	5.882E-02	0.574
NP-237	1.285E+00	3.946E-01	4.220E-01	9.598E-02	3.046
U-238	3.480E+00	2.227E+00	2.406E+00	4.303E-01	1.446

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.781E-01	7.132E-02	4.674E-02	2.758E-03	3.810

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.031E-01		3.608E-01	5.744E-01	3.898E-02	-0.354
NA-22	-2.313E-02		4.889E-02	7.776E-02	5.187E-03	-0.298
NA-24	-2.817E+03		2.208E+03	Half-Life too short		
SC-46	9.246E-03		4.582E-02	7.524E-02	6.538E-03	0.123
V-48	2.768E-02		1.099E-01	1.804E-01	1.451E-02	0.153
CR-51	-2.858E-01		4.935E-01	8.047E-01	5.199E-02	-0.355
MN-54	-3.040E-03		4.223E-02	6.794E-02	5.404E-03	-0.045
CO-56	-1.158E-02		4.637E-02	7.277E-02	5.904E-03	-0.159
CO-57	-2.450E-02		3.283E-02	4.776E-02	2.850E-03	-0.513
CO-58	-6.931E-03		4.939E-02	7.913E-02	6.064E-03	-0.088
FE-59	-1.363E-01		1.135E-01	1.701E-01	1.276E-02	-0.801
CO-60	1.471E-02		4.453E-02	7.610E-02	5.608E-03	0.193
ZN-65	-1.355E-02		1.098E-01	1.559E-01	9.968E-03	-0.087
SE-75	-7.503E-03		5.598E-02	8.162E-02	4.748E-03	-0.092
SR-85	1.319E-01		5.118E-02	8.704E-02	5.139E-03	1.515
Y-88	1.074E-02		3.963E-02	6.745E-02	3.850E-03	0.159
Y-91	1.138E+01		2.641E+01	4.534E+01	2.647E+00	0.251
NB-94	2.389E-02		3.545E-02	6.059E-02	3.816E-03	0.394
NB-95	8.637E-02		5.740E-02	9.225E-02	6.520E-03	0.936
NB-95M	6.726E-01		1.894E-01	3.027E-01	2.250E-02	2.222
ZR-95	1.194E-01	+	9.762E-02	1.580E-01	1.271E-02	0.756
MO-99	-1.222E-05		5.226E-05	Half-Life too short		
TC-99M	-7.991E+19		5.750E+19	Half-Life too short		
RU-103	-2.414E-02		4.858E-02	7.754E-02	9.664E-03	-0.311
RH-106	-6.811E-02		3.420E-01	5.522E-01	6.444E-02	-0.123
RU-106	-6.811E-02		3.419E-01	5.522E-01	3.256E-02	-0.123
AG-108M	2.019E-02		3.057E-02	5.271E-02	3.234E-03	0.383
AG-110M	-5.109E-02		4.282E-02	6.412E-02	3.979E-03	-0.797
SN-113	-8.011E-03		5.058E-02	8.358E-02	4.987E-03	-0.096
CD-115	-2.287E-05		7.437E-05	Half-Life too short		
SN-117M	-4.752E-02		9.646E-02	1.532E-01	8.153E-03	-0.310
TE-123M	-2.995E-02		3.459E-02	5.407E-02	2.920E-03	-0.554
SB-124	6.135E-02		6.956E-02	1.333E-01	9.165E-03	0.460
SB-125	-4.842E-02		9.581E-02	1.544E-01	9.179E-03	-0.314
TE-125M	-1.059E+01		1.262E+01	1.996E+01	1.806E+00	-0.530
I-126	-1.385E-01		3.971E-01	6.337E-01	3.723E-02	-0.219
SB-126	1.981E-01		2.869E-01	4.320E-01	2.814E-02	0.459
SB-127	3.474E+00		5.941E+00	1.008E+01	1.266E+00	0.344
I-131	1.623E-02		2.526E-01	4.234E-01	2.743E-02	0.038
TE-132	5.298E-01		4.729E+00	7.610E+00	1.246E+00	0.070
BA-133	-7.704E-03		5.036E-02	7.237E-02	8.134E-03	-0.106
I-133	2.889E+00		1.741E+00	Half-Life too short		

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	8.336E-02	+	7.278E-02	9.802E-02	7.371E-03	0.850
CS-135	3.981E-01		2.025E-01	3.258E-01	2.486E-02	1.222
I-135	-1.433E+18		1.472E+18	Half-Life too short		
CS-136	7.217E-02		1.617E-01	2.812E-01	2.175E-02	0.257
BA-137M	1.475E-02		4.328E-02	7.226E-02	4.208E-03	0.204
CS-137	1.558E-02		4.572E-02	7.634E-02	4.464E-03	0.204
CE-139	-1.028E-04		3.478E-02	5.619E-02	2.933E-03	-0.002
BA-140	-1.063E-01		4.203E-01	6.779E-01	2.260E-01	-0.157
LA-140	-4.658E-02		1.316E-01	2.047E-01	1.385E-02	-0.228
CE-141	6.508E-02		8.472E-02	1.409E-01	8.119E-03	0.462
CE-143	6.526E-02		9.301E-03	Half-Life too short		
CE-144	-2.277E-02		2.510E-01	3.548E-01	4.916E-02	-0.064
PM-144	1.366E-02		3.899E-02	6.513E-02	4.061E-03	0.210
PR-144	1.039E+00		2.931E+00	4.897E+00	3.049E-01	0.212
PM-146	2.705E-02		4.783E-02	8.171E-02	6.901E-03	0.331
ND-147	8.132E-01		9.908E-01	1.710E+00	2.322E-01	0.475
PM-149	-1.251E-04		5.790E-04	Half-Life too short		
EU-152	-8.583E-03		1.377E-01	1.746E-01	1.136E-02	-0.049
GD-153	-4.107E-03		1.098E-01	1.571E-01	1.221E-02	-0.026
EU-154	-3.733E-02		1.363E-01	2.207E-01	2.202E-02	-0.169
EU-155	8.413E-02		1.236E-01	2.060E-01	1.481E-02	0.408
TB-160	-9.506E-02		1.596E-01	2.428E-01	2.077E-02	-0.391
HO-166M	5.159E-04		6.289E-02	1.026E-01	6.569E-03	0.005
TA-182	9.372E-02		2.415E-01	4.124E-01	2.486E-02	0.227
IR-192	4.249E-02		4.016E-02	7.053E-02	4.121E-03	0.603
HG-203	4.414E-02		5.542E-02	8.436E-02	5.158E-03	0.523
BI-207	4.263E-02		5.512E-02	9.792E-02	6.953E-03	0.435
PB-210	8.073E-01		3.340E+00	5.510E+00	4.154E-01	0.147
PB-211	-3.579E-01		8.629E-01	1.378E+00	6.609E-01	-0.260
BI-212	3.315E+00	+	9.303E-01	1.335E+00	1.489E-01	2.483
RN-219	1.593E-01		4.731E-01	8.002E-01	1.069E-01	0.199
RA-223	5.914E-01		7.618E-01	1.163E+00	1.874E-01	0.509
AC-227	1.568E-01		2.908E-01	4.753E-01	4.840E-02	0.330
TH-227	1.568E-01		2.909E-01	4.753E-01	5.695E-02	0.330
TH-229	-1.471E-01		5.990E-01	9.544E-01	5.149E-02	-0.154
PA-231	-4.552E-01		1.823E+00	2.631E+00	3.451E-01	-0.173
TH-231	5.914E-01		7.618E-01	1.163E+00	1.874E-01	0.509
PA-233	-8.380E-02		6.769E-02	1.064E-01	6.569E-03	-0.788
PA-234	-1.515E-01		3.077E-01	4.685E-01	8.745E-02	-0.323
PA-234M	-8.484E-01		4.731E+00	7.875E+00	7.331E-01	-0.108
NP-239	1.692E-01		4.621E-01	7.621E-01	4.755E-02	0.222
AM-241	1.984E-01		1.920E-01	2.888E-01	2.378E-02	0.687
CM-247	1.652E-02		4.316E-02	7.321E-02	4.106E-03	0.226
CF-249	-1.065E-02		4.328E-02	7.120E-02	3.975E-03	-0.150
CF-251	1.535E-02		1.531E-01	2.479E-01	1.311E-02	0.062

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248248002          *
* Acquisition date   : 19-MAR-2010 10:58:58 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 02:00:01.86 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248248002 Analyst initials: MXR1                  *
* Batch Number       : 959280 Sample Quantity : 1.3414E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54 MS Isotope :                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.365E+01	3.051E+00	2.208E-01	1.557E+00
CD-109	4.459E+00	9.798E-01	6.991E-01	4.999E-01
SN-126	4.308E-01	9.466E-02	6.783E-02	4.829E-02
TL-208	5.688E-01	8.970E-02	3.105E-02	4.576E-02
BI-211	4.977E+00	5.680E-01	1.827E-01	2.898E-01
PB-212	2.268E+00	2.034E-01	4.907E-02	1.038E-01
BI-214	1.632E+00	2.053E-01	6.088E-02	1.047E-01
PB-214	1.806E+00	2.281E-01	6.645E-02	1.164E-01
RA-224	6.533E+00	1.608E+00	5.256E-01	8.202E-01
RA-226	1.632E+00	2.053E-01	6.088E-02	1.047E-01
AC-228	2.501E+00	4.395E-01	1.289E-01	2.242E-01
RA-228	2.501E+00	4.395E-01	1.289E-01	2.242E-01
TH-228	2.268E+00	2.034E-01	4.907E-02	1.038E-01
TH-232	2.501E+00	4.395E-01	1.289E-01	2.242E-01
TH-234	3.480E+00	2.182E+00	1.275E+00	1.113E+00
U-235	1.032E-01	2.255E-01	1.968E-01	1.150E-01
NP-237	1.285E+00	3.867E-01	2.224E-01	1.973E-01
U-238	3.480E+00	2.182E+00	1.275E+00	1.113E+00
ANH-511	1.781E-01	6.989E-02	2.388E-02	3.566E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.031E-01	3.536E-01	2.939E-01	1.804E-01 NOT IDENT.
NA-22	-2.313E-02	4.791E-02	3.908E-02	2.444E-02 NOT IDENT.
NA-24	-2.817E+09	4.328E+09	0.000E+00	2.208E+09 SHORT HLIF
SC-46	9.246E-03	4.490E-02	3.806E-02	2.291E-02 FAIL ABUN
V-48	2.768E-02	1.077E-01	9.112E-02	5.493E-02 NOT IDENT.
CR-51	-2.858E-01	4.836E-01	4.146E-01	2.467E-01 NOT IDENT.
MN-54	-3.040E-03	4.138E-02	3.441E-02	2.111E-02 NOT IDENT.
CO-56	-1.158E-02	4.544E-02	3.684E-02	2.318E-02 FAIL ABUN

CO-57	-2.450E-02	3.218E-02	2.502E-02	1.642E-02	NOT IDENT.
CO-58	-6.931E-03	4.840E-02	4.010E-02	2.469E-02	NOT IDENT.
FE-59	-1.363E-01	1.113E-01	8.573E-02	5.677E-02	NOT IDENT.
CO-60	1.471E-02	4.364E-02	3.821E-02	2.227E-02	NOT IDENT.
ZN-65	-1.355E-02	1.076E-01	7.855E-02	5.492E-02	NOT IDENT.
SE-75	-7.503E-03	5.486E-02	4.220E-02	2.799E-02	NOT IDENT.
SR-85	1.319E-01	5.016E-02	4.447E-02	2.559E-02	NOT IDENT.
Y-88	1.074E-02	3.884E-02	3.366E-02	1.982E-02	NOT IDENT.
Y-91	1.138E+01	2.588E+01	2.281E+01	1.320E+01	NOT IDENT.
NB-94	2.389E-02	3.474E-02	3.079E-02	1.773E-02	NOT IDENT.
NB-95	8.637E-02	5.625E-02	4.680E-02	2.870E-02	NOT IDENT.
NB-95M	6.726E-01	1.857E-01	1.568E-01	9.472E-02	NOT IDENT.
ZR-95	1.194E-01	9.566E-02	8.016E-02	4.881E-02	FAIL ABUN
MO-99	-1.222E+01	1.024E+02	0.000E+00	5.226E+01	SHORT HLIF
TC-99M	-7.991E+25	1.127E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.414E-02	4.761E-02	3.964E-02	2.429E-02	FAIL ABUN
RH-106	-6.811E-02	3.352E-01	2.812E-01	1.710E-01	NOT IDENT.
RU-106	-6.811E-02	3.351E-01	2.812E-01	1.710E-01	NOT IDENT.
AG-108M	2.019E-02	2.996E-02	2.701E-02	1.528E-02	NOT IDENT.
AG-110M	-5.109E-02	4.197E-02	3.262E-02	2.141E-02	NOT IDENT.
SN-113	-8.011E-03	4.956E-02	4.291E-02	2.529E-02	NOT IDENT.
CD-115	-2.287E+01	1.458E+02	0.000E+00	7.437E+01	SHORT HLIF
SN-117M	-4.752E-02	9.454E-02	7.990E-02	4.823E-02	NOT IDENT.
TE-123M	-2.995E-02	3.390E-02	2.820E-02	1.729E-02	NOT IDENT.
SB-124	6.135E-02	6.817E-02	6.664E-02	3.478E-02	NOT IDENT.
SB-125	-4.842E-02	9.389E-02	7.913E-02	4.791E-02	FAIL ABUN
TE-125M	-1.059E+01	1.237E+01	1.048E+01	6.312E+00	NOT IDENT.
I-126	-1.385E-01	3.892E-01	3.223E-01	1.985E-01	NOT IDENT.
SB-126	1.981E-01	2.812E-01	2.194E-01	1.435E-01	NOT IDENT.
SB-127	3.474E+00	5.822E+00	5.125E+00	2.971E+00	NOT IDENT.
I-131	1.623E-02	2.476E-01	2.177E-01	1.263E-01	NOT IDENT.
TE-132	5.298E-01	4.635E+00	3.944E+00	2.365E+00	NOT IDENT.
BA-133	-7.704E-03	4.935E-02	3.722E-02	2.518E-02	FAIL ABUN
I-133	2.889E+06	3.413E+06	0.000E+00	1.741E+06	SHORT HLIF
CS-134	8.336E-02	7.132E-02	4.969E-02	3.639E-02	FAIL ABUN
CS-135	3.981E-01	1.984E-01	1.684E-01	1.012E-01	NOT IDENT.
I-135	-1.433E+24	2.885E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	7.217E-02	1.585E-01	1.418E-01	8.087E-02	NOT IDENT.
BA-137M	1.475E-02	4.242E-02	3.675E-02	2.164E-02	NOT IDENT.
CS-137	1.558E-02	4.481E-02	3.883E-02	2.286E-02	NOT IDENT.
CE-139	-1.028E-04	3.408E-02	2.928E-02	1.739E-02	NOT IDENT.
BA-140	-1.063E-01	4.119E-01	3.461E-01	2.101E-01	NOT IDENT.
LA-140	-4.658E-02	1.290E-01	1.024E-01	6.580E-02	FAIL ABUN
CE-141	6.508E-02	8.303E-02	7.362E-02	4.236E-02	NOT IDENT.
CE-143	6.526E+04	1.823E+04	0.000E+00	9.301E+03	SHORT HLIF
CE-144	-2.277E-02	2.459E-01	1.856E-01	1.255E-01	NOT IDENT.
PM-144	1.366E-02	3.821E-02	3.310E-02	1.949E-02	NOT IDENT.
PR-144	1.039E+00	2.872E+00	2.488E+00	1.465E+00	NOT IDENT.
PM-146	2.705E-02	4.687E-02	4.184E-02	2.391E-02	NOT IDENT.
ND-147	8.132E-01	9.710E-01	8.734E-01	4.954E-01	FAIL ABUN
PM-149	-1.251E+02	1.135E+03	0.000E+00	5.790E+02	SHORT HLIF
EU-152	-8.583E-03	1.350E-01	8.985E-02	6.887E-02	FAIL ABUN
GD-153	-4.107E-03	1.076E-01	8.261E-02	5.492E-02	NOT IDENT.
EU-154	-3.733E-02	1.336E-01	1.109E-01	6.814E-02	NOT IDENT.
EU-155	8.413E-02	1.211E-01	1.082E-01	6.180E-02	FAIL ABUN
TB-160	-9.506E-02	1.564E-01	1.229E-01	7.979E-02	FAIL ABUN
HO-166M	5.159E-04	6.164E-02	5.209E-02	3.145E-02	NOT IDENT.
TA-182	9.372E-02	2.366E-01	2.074E-01	1.207E-01	FAIL ABUN
IR-192	4.249E-02	3.935E-02	3.635E-02	2.008E-02	FAIL ABUN
HG-203	4.414E-02	5.431E-02	4.357E-02	2.771E-02	NOT IDENT.
BI-207	4.263E-02	5.402E-02	4.938E-02	2.756E-02	FAIL ABUN
PB-210	8.073E-01	3.274E+00	2.934E+00	1.670E+00	NOT IDENT.
PB-211	-3.579E-01	8.456E-01	7.073E-01	4.314E-01	NOT IDENT.
BI-212	3.315E+00	9.117E-01	6.779E-01	4.652E-01	FAIL ABUN
RN-219	1.593E-01	4.637E-01	4.106E-01	2.366E-01	FAIL ABUN
RA-223	5.914E-01	7.466E-01	5.989E-01	3.809E-01	FAIL ABUN
AC-227	1.568E-01	2.850E-01	2.458E-01	1.454E-01	FAIL ABUN
TH-227	1.568E-01	2.851E-01	2.458E-01	1.455E-01	FAIL ABUN
TH-229	-1.471E-01	5.870E-01	4.961E-01	2.995E-01	FAIL ABUN
PA-231	-4.552E-01	1.787E+00	1.359E+00	9.117E-01	FAIL ABUN
TH-231	5.914E-01	7.466E-01	5.989E-01	3.809E-01	FAIL ABUN
PA-233	-8.380E-02	6.634E-02	5.483E-02	3.385E-02	FAIL ABUN
PA-234	-1.515E-01	3.016E-01	2.367E-01	1.539E-01	FAIL ABUN
PA-234M	-8.484E-01	4.636E+00	3.975E+00	2.365E+00	NOT IDENT.
NP-239	1.692E-01	4.529E-01	3.996E-01	2.311E-01	FAIL ABUN
AM-241	1.984E-01	1.882E-01	1.531E-01	9.600E-02	NOT IDENT.
CM-247	1.652E-02	4.230E-02	3.757E-02	2.158E-02	FAIL ABUN
CF-249	-1.065E-02	4.241E-02	3.656E-02	2.164E-02	NOT IDENT.

CF-251	1.535E-02	1.500E-01	1.290E-01	7.654E-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	412.0714
49.72	458.5281
57.36	0.0000
59.54	520.8185
63.29	614.9687
63.29	614.9687
64.28	591.6047
67.75	628.6899
69.67	675.7292
70.83	689.6602
72.81	710.1670
72.87	671.8180
72.87	671.8180
74.82	653.5970
74.82	653.5970
74.82	653.5970
74.97	653.6891
77.11	654.9911
77.11	654.9911
77.11	654.9911
79.69	631.8138
79.80	631.8785
80.12	724.6555
80.19	724.7021
80.57	632.3170
81.00	632.5613
81.07	632.5996
81.07	632.5996
83.79	718.9504
83.79	718.9504
85.43	590.5452
86.48	591.0844
86.55	591.1200
86.79	591.2403
86.94	591.3183
87.57	500.8670
88.03	501.0632
88.47	501.2518
89.96	501.8855
91.11	502.3702
92.59	502.9907
92.59	502.9907
93.35	503.3075
94.67	481.0261
94.87	531.6621
94.87	531.6621
95.86	466.8046
97.43	465.7638
98.44	407.2618
99.53	381.9694
100.11	417.6310
103.18	516.1169
103.37	489.5117
105.31	459.4153
106.12	437.0750
109.28	511.3203
111.00	436.6286
111.76	478.1894
116.30	445.5912
117.23	426.1908
121.12	425.3011
121.78	461.3167
122.06	462.0026
123.07	438.1749
131.20	365.2458
133.52	380.9205
136.00	388.6931

136.47	377.2551
140.51	0.0000
140.51	0.0000
143.76	400.1690
144.24	393.9562
144.24	393.9562
145.44	402.7138
152.43	451.1993
153.25	453.5539
154.21	414.4970
154.21	414.4970
156.02	423.4702
158.56	433.7168
159.00	429.5680
162.66	379.2351
163.33	371.9059
165.86	370.3228
176.60	389.8615
177.52	390.0658
181.07	0.0000
184.41	392.8718
185.72	377.7834
193.51	358.7345
197.04	351.7879
205.31	325.5341
210.85	342.2593
215.65	330.5249
222.11	343.0961
227.38	319.6525
228.16	327.5191
228.18	327.5214
235.69	282.5103
235.96	282.5472
235.96	282.5472
238.63	253.5481
238.63	253.5481
240.99	253.8299
242.00	253.9499
244.70	249.8091
252.40	297.7056
252.80	285.4460
256.23	248.8938
256.23	248.8938
260.90	0.0000
264.66	234.0793
268.22	237.4565
269.46	215.0295
269.46	215.0295
271.23	225.7294
273.65	225.9674
276.40	235.2886
277.37	235.3870
277.60	235.4092
278.00	235.4504
279.20	238.5912
279.54	234.0957
280.46	223.6109
283.69	245.1028
284.31	251.9756
285.41	241.6470
285.90	0.0000
287.50	209.1282
293.27	0.0000
295.22	194.2962
295.96	194.3547
298.57	194.5653
299.98	194.6771
299.98	194.6771
300.09	194.6875
300.09	194.6875
300.13	194.6901
301.36	194.7889
302.85	204.3615
304.50	209.0789
304.50	209.0789
304.85	212.1622
308.46	189.9787
311.90	217.6628

316.51	177.5803
319.41	221.0786
320.08	219.2929
323.87	172.2520
323.87	172.2520
328.76	221.8887
333.37	226.9151
334.37	265.6076
334.37	265.6076
338.28	187.4418
338.28	187.4418
338.32	187.4443
338.32	187.4443
338.32	187.4443
340.48	179.5484
340.55	179.5531
344.28	190.6585
351.06	179.0203
351.93	179.0789
356.01	172.8120
364.49	178.0322
366.42	0.0000
383.85	164.1743
388.16	170.0903
388.63	167.2836
391.69	166.5168
400.66	174.6248
401.81	180.3887
402.40	177.5770
404.85	202.4358
410.95	159.0455
414.70	148.7561
423.72	149.2017
427.09	129.2602
427.87	145.5764
433.94	118.9943
453.88	140.0386
463.37	135.6130
468.07	126.1105
473.00	114.6438
476.78	123.5320
477.60	121.6171
487.02	117.0864
492.35	0.0000
497.08	125.2703
511.00	104.1665
514.00	101.6349
527.90	0.0000
529.87	0.0000
531.02	98.8403
537.26	105.9472
546.56	0.0000
563.25	129.6572
569.33	119.8828
569.50	119.8887
569.70	119.8945
583.19	103.2867
600.60	101.7496
602.73	115.9181
604.72	132.7885
609.32	106.0228
609.32	106.0228
610.33	85.8508
614.28	96.0483
618.01	95.1291
621.93	101.3037
621.93	101.3037
633.25	91.4370
635.95	98.6175
636.99	105.7621
645.85	100.9022
657.76	139.0248
661.66	120.7426
661.66	120.7426
664.57	0.0000
666.33	124.9785
666.50	124.9845
677.62	88.3432

685.70	86.4568
695.00	96.9662
696.49	100.0976
696.51	100.0976
697.00	104.2376
702.65	84.7427
706.68	97.2358
711.68	84.9229
720.70	88.2166
721.93	0.0000
722.78	107.2941
722.91	107.2991
723.31	122.8864
724.19	121.1784
727.33	78.9966
733.00	95.4063
735.93	78.6914
739.50	0.0000
747.24	92.9350
752.31	81.8905
753.82	83.6621
756.73	75.3451
763.94	82.1047
765.81	76.8962
766.42	80.4027
777.92	0.0000
778.90	79.9262
783.70	106.3311
785.37	95.8366
795.86	61.5761
801.95	91.1647
810.29	83.6521
810.76	91.0748
815.77	69.9687
818.51	78.4967
832.01	84.0416
834.85	89.4141
836.80	0.0000
846.77	73.6326
856.80	73.0730
860.56	70.6326
871.09	77.2225
873.19	65.4529
875.33	0.0000
879.36	73.0552
880.51	73.0734
883.24	74.1885
884.68	73.1349
889.28	67.8204
898.04	59.3130
911.20	77.8518
911.20	77.8518
911.20	77.8518
926.50	58.5655
937.49	86.9512
944.13	68.5617
946.00	64.2331
949.00	67.5385
962.29	65.5269
964.08	69.9188
966.15	69.9469
968.97	69.9844
968.97	69.9844
968.97	69.9844
983.53	63.5989
996.26	60.4543
1001.03	56.8409
1004.73	68.8065
1037.84	69.2291
1038.76	0.0000
1048.07	53.6363
1050.41	68.4596
1050.41	68.4596
1063.66	55.6421
1085.87	76.3445
1099.45	86.7939
1112.07	62.3535
1115.54	72.1959

1120.29	66.5018
1120.29	66.5018
1120.55	66.5047
1121.30	66.5134
1131.51	0.0000
1173.23	70.8832
1177.93	82.2882
1189.05	81.4928
1204.77	77.9060
1221.41	90.5005
1231.02	100.5030
1235.36	86.7498
1238.28	92.6584
1260.41	0.0000
1271.85	61.4661
1274.44	65.3327
1274.54	69.1787
1291.59	56.8394
1298.22	0.0000
1312.11	50.2565
1332.49	46.5352
1365.19	25.3324
1368.63	0.0000
1384.29	30.1515
1408.01	34.3193
1457.56	0.0000
1460.82	17.7861
1489.16	20.8342
1505.03	43.7511
1596.21	27.1857
1620.50	27.2736
1678.03	0.0000
1690.97	7.1367
1764.49	10.5854
1764.49	10.5854
1770.23	12.3584
1771.35	12.3599
1791.20	0.0000
1836.06	16.6120

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248248002

Total Uranium Activity	1.0401E+01	ug/g
Total Uranium Counting Unc.	6.4934E+00	ug/g
Total Uranium Tpu	3.3130E-06	ug/g
Total Uranium Mda	3.7939E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 959280          SAMPLE ID   : G248248002
*  ANALYST       : MXR1            DETECTOR    : GAM19
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 10:58:58.36  SAMPLE ALQT: 134.140 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.245E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.705E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 4.877E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 2.383E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 13:01:53.89

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248003.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:59:33
Sample ID          : G248248003 Sample quantity : 1.42380E+02 GRAM
Detector name      : GAM14 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.80 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959280 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	63.07*	107	818	1.41	125.69	122	10	1.48E-02	51.6	
2	2	74.93	658	685	1.24	149.38	145	21	9.14E-02	7.6	9.31E-01
3	2	77.24*	972	706	1.33	154.00	145	21	1.35E-01	6.1	
4	0	87.11	300	668	1.36	173.72	171	7	4.17E-02	15.3	
5	4	89.98	161	382	1.04	179.45	177	13	2.23E-02	18.2	2.82E+00
6	4	92.97*	314	619	1.39	185.44	177	13	4.37E-02	15.8	
7	0	129.20	123	458	1.30	257.83	254	9	1.70E-02	32.9	
8	0	185.88*	272	411	1.35	371.08	367	10	3.77E-02	15.7	
9	0	209.33	154	390	1.51	417.93	413	10	2.14E-02	25.3	
10	3	238.52*	1734	271	1.33	476.27	470	19	2.41E-01	3.0	5.63E-01
11	3	241.52	432	314	1.88	482.25	470	19	6.00E-02	11.5	
12	0	270.04	198	282	1.29	539.25	533	13	2.76E-02	18.8	
13	0	277.29	67	226	1.15	553.73	550	8	9.32E-03	40.8	
14	0	295.10	616	342	1.57	589.33	580	15	8.56E-02	7.7	
15	0	300.93	188	283	1.77	600.99	596	14	2.61E-02	20.6	
16	0	338.09	352	216	1.21	675.26	670	12	4.88E-02	9.9	
17	0	351.80*	1019	232	1.50	702.66	695	16	1.42E-01	4.6	
18	0	463.02	80	193	1.76	924.94	917	14	1.12E-02	38.2	
19	0	511.12*	226	174	2.25	1021.09	1014	16	3.13E-02	16.2	
20	0	569.08*	165	176	1.79	1136.97	1129	16	2.29E-02	19.9	
21	0	583.23*	561	162	1.60	1165.26	1157	17	7.80E-02	6.7	
22	0	609.33*	696	124	1.66	1217.44	1209	16	9.66E-02	5.3	
23	0	727.79*	133	99	1.87	1454.28	1449	14	1.85E-02	18.4	
24	0	769.13	76	84	1.59	1536.93	1532	9	1.05E-02	24.9	
25	0	795.52	88	98	1.66	1589.71	1582	17	1.22E-02	28.0	
26	0	861.41	86	60	1.99	1721.47	1716	13	1.19E-02	21.3	
27	0	911.65*	351	69	1.57	1821.94	1816	13	4.88E-02	7.3	
28	0	968.48	240	165	1.73	1935.60	1926	20	3.34E-02	14.6	
29	0	1120.91*	130	83	1.44	2240.50	2234	14	1.81E-02	17.5	
30	0	1461.43*	1735	61	1.98	2921.84	2914	19	2.41E-01	2.6	
31	0	1590.74	56	35	0.71	3180.64	3172	19	7.79E-03	29.4	
32	0	1730.19	39	9	1.85	3459.78	3453	11	5.47E-03	21.3	
33	0	1764.85*	104	15	1.46	3529.17	3522	15	1.45E-02	13.0	

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248003.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:59:33
Sample ID         : G248248003 Sample quantity : 142.38 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA14 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.80 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	*	3.544E+01	3.184E+00	4.992E-01	3.625E-02	70.993
CD-109	+	88.03	*	3.141E+00	1.001E+00	1.424E+00	1.245E-01	2.206
SN-126	+	64.28		6.380E-01	6.648E-01	7.490E-01	1.067E-01	0.852
	+	86.94		1.262E+00	6.495E-01	5.941E-01	2.457E-01	2.124
	+	87.57	*	3.034E-01	9.666E-02	1.385E-01	1.205E-02	2.190
TL-208	+	277.37		5.358E-01	4.409E-01	5.871E-01	6.340E-02	0.913
	+	583.19	*	6.314E-01	9.545E-02	5.700E-02	3.889E-03	11.078
	+	860.56		9.330E-01	4.078E-01	4.494E-01	4.227E-02	2.076
BI-211		72.87		1.519E+01	3.817E+00	5.869E+00	4.325E-01	2.588
	+	351.06	*	4.977E+00	5.572E-01	3.063E-01	1.941E-02	16.251
PB-212	+	74.82		2.768E+00	5.423E-01	5.754E-01	7.073E-02	4.812
	+	77.11		2.374E+00	3.414E-01	3.340E-01	2.572E-02	7.106
	+	238.63	*	1.883E+00	1.778E-01	9.188E-02	6.751E-03	20.490
	+	300.09		3.190E+00	1.342E+00	1.152E+00	9.691E-02	2.768
BI-214	+	609.32	*	1.519E+00	2.005E-01	1.055E-01	8.418E-03	14.395
	+	1120.29		1.512E+00	5.487E-01	4.771E-01	4.447E-02	3.169
	+	1764.49		1.695E+00	4.518E-01	3.221E-01	1.932E-02	5.263
PB-214	+	74.82		4.907E+00	9.205E-01	1.020E+00	1.114E-01	4.812
	+	77.11		4.184E+00	6.938E-01	5.889E-01	6.644E-02	7.106
	+	242.00		2.845E+00	6.942E-01	5.584E-01	4.558E-02	5.096
	+	295.22		1.846E+00	3.262E-01	2.060E-01	1.801E-02	8.963
	+	351.93	*	1.806E+00	2.254E-01	1.114E-01	9.356E-03	16.217
RA-224	+	240.99	*	5.031E+00	1.192E+00	9.843E-01	5.658E-02	5.112
RA-226	+	609.32	*	1.519E+00	2.005E-01	1.055E-01	8.418E-03	14.395
	+	1120.29		1.512E+00	5.487E-01	4.771E-01	4.447E-02	3.169
	+	1764.49		1.695E+00	4.518E-01	3.221E-01	1.932E-02	5.263
AC-228	+	338.32		1.909E+00	8.727E-01	3.606E-01	1.486E-01	5.294
	+	911.20	*	1.947E+00	3.690E-01	2.284E-01	2.759E-02	8.525
	+	968.97		2.303E+00	8.754E-01	3.546E-01	8.643E-02	6.494
RA-228	+	338.32		1.909E+00	8.727E-01	3.606E-01	1.486E-01	5.294
	+	911.20	*	1.947E+00	3.690E-01	2.284E-01	2.759E-02	8.525
	+	968.97		2.303E+00	8.754E-01	3.546E-01	8.643E-02	6.494
TH-228	+	74.82		2.768E+00	4.718E-01	5.754E-01	4.376E-02	4.812
	+	77.11		2.374E+00	3.414E-01	3.340E-01	2.572E-02	7.106

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	1.883E+00	1.778E-01	9.188E-02	6.751E-03	20.490
	+	300.09		3.190E+00	2.345E+00	1.152E+00	7.016E-01	2.768
TH-232	+	338.32		1.909E+00	3.929E-01	3.606E-01	2.072E-02	5.294
	+	911.20	*	1.947E+00	3.690E-01	2.284E-01	2.759E-02	8.525
	+	968.97		2.303E+00	8.754E-01	3.546E-01	8.643E-02	6.494
TH-234	+	63.29	*	1.655E+00	1.733E+00	1.920E+00	3.376E-01	0.862
	+	92.59		2.677E+00	1.029E+00	9.813E-01	2.157E-01	2.728
U-235	+	89.96		1.698E+00	7.463E-01	1.350E+00	3.320E-01	1.258
	+	93.35		2.022E+00	7.893E-01	6.650E-01	1.528E-01	3.041
		143.76	*	3.805E-04	2.095E-01	3.336E-01	5.294E-02	0.001
		163.33		-3.185E-02	4.439E-01	7.077E-01	1.180E-01	-0.045
	+	185.72		1.917E-01	6.115E-02	7.028E-02	3.849E-03	2.728
		205.31		5.154E-01	5.323E-01	8.056E-01	1.363E-01	0.640
NP-237	+	86.48	*	9.054E-01	3.453E-01	4.178E-01	9.466E-02	2.167
		95.86		-2.726E-01	1.053E+00	1.470E+00	3.500E-01	-0.185
U-238	+	63.29	*	1.655E+00	1.733E+00	1.920E+00	3.376E-01	0.862
	+	92.59		2.677E+00	8.733E-01	9.813E-01	8.194E-02	2.728
ANH-511	+	511.00	*	1.926E-01	6.359E-02	4.541E-02	2.667E-03	4.242

---- 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	*	2.677E-01	3.546E-01	6.060E-01	4.083E-02	0.442
NA-22		1274.54	*	-8.956E-04	4.161E-02	6.833E-02	4.464E-03	-0.013
NA-24		1368.63	*	1.795E+03	4.161E-02	Half-Life too short		
SC-46		889.28	*	1.819E-02	3.983E-02	6.894E-02	6.371E-03	0.264
	+	1120.55		2.729E-01	9.733E-02	1.396E-01	9.041E-03	1.954
V-48		944.13		-1.204E+00	1.267E+00	1.949E+00	1.741E-01	-0.618
		983.53	*	-3.225E-02	1.005E-01	1.632E-01	1.385E-02	-0.198
		1312.11		-9.266E-02	1.153E-01	1.740E-01	1.203E-02	-0.532
CR-51		320.08	*	4.838E-04	4.519E-01	7.505E-01	4.842E-02	0.001
MN-54		834.85	*	-1.708E-02	3.841E-02	6.244E-02	5.238E-03	-0.274
CO-56		846.77	*	-2.664E-03	4.248E-02	7.090E-02	6.077E-03	-0.038
		1037.84		-2.368E-01	3.410E-01	5.339E-01	4.419E-02	-0.444
		1238.28		1.794E-01	1.064E-01	1.926E-01	1.251E-02	0.932
		1771.35		-5.322E-02	2.920E-01	3.850E-01	2.298E-02	-0.138
CO-57		122.06	*	-1.627E-03	2.690E-02	4.321E-02	3.074E-03	-0.038
		136.47		4.180E-02	2.203E-01	3.560E-01	2.609E-02	0.117
CO-58		810.76	*	1.608E-04	4.635E-02	7.439E-02	5.985E-03	0.002
FE-59		1099.45	*	-7.418E-02	1.104E-01	1.731E-01	1.333E-02	-0.428
		1291.59		-5.507E-02	1.410E-01	2.232E-01	1.818E-02	-0.247
CO-60		1173.23		1.986E-04	4.896E-02	8.093E-02	4.458E-03	0.002
		1332.49	*	1.415E-02	4.063E-02	6.900E-02	4.917E-03	0.205
ZN-65		1115.54	*	-5.003E-02	1.071E-01	1.442E-01	9.480E-03	-0.347
SE-75		121.12		-7.713E-02	1.461E-01	2.307E-01	2.300E-02	-0.334
		136.00		6.256E-04	4.327E-02	6.952E-02	4.593E-03	0.009
		264.66	*	-4.085E-02	5.067E-02	6.978E-02	4.098E-03	-0.585
		279.54		1.799E-01	1.285E-01	2.005E-01	1.264E-02	0.897

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	400.66			-6.677E-02	2.670E-01	4.345E-01	3.855E-02	-0.154
SR-85	514.00	*		1.394E-01	4.815E-02	8.167E-02	4.803E-03	1.707
Y-88	898.04			7.015E-02	4.677E-02	8.530E-02	8.035E-03	0.822
	1836.06	*		1.358E-02	3.340E-02	5.795E-02	3.291E-03	0.234
Y-91	1204.77	*		-1.360E+01	2.708E+01	4.311E+01	2.507E+00	-0.315
NB-94	702.65	*		2.337E-02	3.573E-02	6.015E-02	3.901E-03	0.389
	871.09			4.854E-03	3.365E-02	5.696E-02	5.099E-03	0.085
NB-95	765.81	*		4.364E-02	5.779E-02	8.571E-02	6.312E-03	0.509
NB-95M	235.69	*		7.823E-01	1.798E-01	2.938E-01	2.203E-02	2.662
ZR-95	724.19			-5.210E-02	1.303E-01	1.742E-01	1.339E-02	-0.299
	756.73	*		1.377E-02	7.900E-02	1.289E-01	1.068E-02	0.107
MO-99	140.51			-1.800E-04	7.900E-02	Half-Life	too short	
	181.07			1.340E-04	7.900E-02	Half-Life	too short	
	366.42			1.812E-04	7.900E-02	Half-Life	too short	
	739.50	*		-7.100E-05	7.900E-02	Half-Life	too short	
	777.92			-4.161E-04	7.900E-02	Half-Life	too short	
TC-99M	140.51	*		-1.102E+20	7.900E-02	Half-Life	too short	
RU-103	497.08	*		-2.460E-02	4.372E-02	6.874E-02	8.555E-03	-0.358
	610.33		+	1.801E+01	3.316E+00	3.343E+00	5.056E-01	5.387
RH-106	621.93	*		-1.706E-01	3.029E-01	4.695E-01	5.499E-02	-0.363
	1050.41			-2.575E-01	2.553E+00	4.205E+00	3.195E-01	-0.061
RU-106	621.93	*		-1.706E-01	3.024E-01	4.695E-01	2.808E-02	-0.363
	1050.41			-2.575E-01	2.553E+00	4.205E+00	3.195E-01	-0.061
AG-108M	433.94	*		-1.480E-02	2.776E-02	4.416E-02	2.672E-03	-0.335
	614.28			-1.629E-03	3.809E-02	5.316E-02	3.393E-03	-0.031
	722.91			7.837E-03	4.505E-02	6.372E-02	4.531E-03	0.123
AG-110M	657.76	*		3.725E-04	3.279E-02	5.314E-02	3.357E-03	0.007
	677.62			-1.244E-02	3.146E-01	5.072E-01	3.295E-02	-0.025
	706.68			-1.441E-01	2.320E-01	3.579E-01	2.456E-02	-0.403
	763.94			-4.151E-02	2.015E-01	2.732E-01	2.080E-02	-0.152
	884.68			-3.833E-03	4.764E-02	7.922E-02	7.468E-03	-0.048
	937.49			-3.327E-02	1.153E-01	1.882E-01	1.751E-02	-0.177
	1384.29			-3.224E-01	1.672E-01	2.057E-01	1.514E-02	-1.567
	1505.03			-5.023E-01	2.753E-01	3.200E-01	2.199E-02	-1.570
SN-113	391.69	*		-2.888E-02	4.694E-02	7.495E-02	4.385E-03	-0.385
CD-115	260.90			1.866E-03	4.694E-02	Half-Life	too short	
	492.35			-2.366E-04	4.694E-02	Half-Life	too short	
	527.90	*		-1.152E-04	4.694E-02	Half-Life	too short	
SN-117M	156.02			3.528E+00	3.587E+00	5.927E+00	3.412E-01	0.595
	158.56	*		-1.497E-02	8.650E-02	1.375E-01	7.780E-03	-0.109
TE-123M	159.00	*		-6.748E-03	3.112E-02	4.939E-02	2.825E-03	-0.137
SB-124	602.73			-9.714E-03	4.679E-02	6.430E-02	3.848E-03	-0.151
	645.85			-2.674E-01	5.460E-01	8.528E-01	5.680E-02	-0.313
	722.78			1.225E-01	4.974E-01	7.084E-01	4.966E-02	0.173
	1690.97	*		3.906E-02	8.466E-02	1.473E-01	1.000E-02	0.265
SB-125	427.87	*		4.199E-02	8.404E-02	1.423E-01	8.328E-03	0.295
	463.37		+	6.089E-01	4.674E-01	5.256E-01	3.509E-02	1.159
	600.60			2.751E-02	1.916E-01	2.964E-01	2.036E-02	0.093
	635.95			-1.719E-01	2.717E-01	4.194E-01	2.912E-02	-0.410

----- 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	*		1.074E+00	1.120E+01	1.812E+01	1.737E+00	0.059
I-126	388.63			3.312E-01	2.471E-01	4.345E-01	2.374E-02	0.762
	666.33	*		1.445E-01	3.338E-01	5.565E-01	3.342E-02	0.260
	753.82			-1.675E+00	2.767E+00	4.235E+00	3.046E-01	-0.395
SB-126	414.70			2.619E-03	1.198E-01	1.976E-01	1.096E-02	0.013
	666.50			5.590E-02	1.172E-01	1.960E-01	1.177E-02	0.285
	695.00			8.350E-02	1.310E-01	2.202E-01	1.406E-02	0.379
	697.00			2.705E-02	4.578E-01	7.422E-01	4.758E-02	0.036
	720.70	*		2.326E-01	2.506E-01	4.081E-01	2.747E-02	0.570
	856.80			-2.305E-01	7.992E-01	1.118E+00	9.754E-02	-0.206
SB-127	252.40			-5.620E+00	1.703E+01	2.783E+01	1.164E+01	-0.202
	473.00			-4.490E+00	6.828E+00	1.072E+01	1.467E+00	-0.419
	685.70	*		-2.066E+00	5.553E+00	8.719E+00	1.101E+00	-0.237
	783.70			3.066E+01	1.556E+01	2.749E+01	3.905E+00	1.115
I-131	80.19			-1.454E+01	9.120E+00	1.406E+01	1.139E+00	-1.034
	284.31			-1.719E-01	2.850E+00	4.738E+00	3.110E-01	-0.036
	364.49	*		-4.256E-02	2.225E-01	3.644E-01	2.336E-02	-0.117
	636.99			-2.932E+00	3.120E+00	4.697E+00	3.174E-01	-0.624
TE-132	49.72			-8.107E+01	7.436E+01	1.165E+02	1.424E+01	-0.696
	111.76			-5.056E+01	1.906E+02	3.046E+02	3.879E+01	-0.166
	116.30			4.168E+01	1.616E+02	2.625E+02	3.323E+01	0.159
	228.16	*		-1.263E-01	3.919E+00	6.563E+00	1.077E+00	-0.019
BA-133	81.00			-1.881E-01	1.090E-01	1.390E-01	2.113E-02	-1.354
	276.40	+		4.960E-01	4.094E-01	6.369E-01	8.025E-02	0.779
	302.85			1.807E-01	1.505E-01	2.320E-01	2.649E-02	0.779
	356.01	*		9.281E-03	4.499E-02	6.559E-02	7.351E-03	0.142
	383.85			-6.582E-02	2.783E-01	4.535E-01	4.763E-02	-0.145
I-133	529.87	*		-1.967E-01	2.783E-01	Half-Life	too short	
	875.33			-4.073E+01	2.783E-01	Half-Life	too short	
	1298.22			5.923E+01	2.783E-01	Half-Life	too short	
CS-134	563.25			1.756E-01	4.252E-01	6.208E-01	3.774E-02	0.283
	569.33	+		1.026E+00	4.138E-01	4.947E-01	3.035E-02	2.074
	604.72			-1.186E-02	3.663E-02	4.971E-02	2.990E-03	-0.239
	795.86	*		1.468E-01	8.297E-02	9.080E-02	7.147E-03	1.616
	801.95			-5.011E-01	4.987E-01	6.062E-01	4.817E-02	-0.827
	1365.19			1.663E-01	1.258E+00	2.093E+00	1.586E-01	0.079
CS-135	268.22	*		4.043E-01	1.753E-01	2.827E-01	2.168E-02	1.430
I-135	546.56			9.954E+18	1.753E-01	Half-Life	too short	
	836.80			6.729E+18	1.753E-01	Half-Life	too short	
	1038.76			-6.477E+18	1.753E-01	Half-Life	too short	
	1131.51			-2.392E+18	1.753E-01	Half-Life	too short	
	1260.41	*		-5.056E+17	1.753E-01	Half-Life	too short	
	1457.56			1.478E+20	1.753E-01	Half-Life	too short	
	1678.03			1.243E+18	1.753E-01	Half-Life	too short	
	1791.20			1.626E+18	1.753E-01	Half-Life	too short	
CS-136	153.25			6.879E-01	1.384E+00	2.252E+00	1.825E-01	0.305
	176.60			-1.771E-01	7.575E-01	1.197E+00	8.097E-02	-0.148
	273.65			3.047E-01	1.178E+00	1.183E+00	8.127E-02	0.258
	340.55			1.003E+00	2.720E-01	4.589E-01	2.860E-02	2.185

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	818.51			4.741E-02	1.062E-01	1.842E-01	1.503E-02	0.257
	1048.07	*		-5.927E-02	1.627E-01	2.621E-01	2.110E-02	-0.226
	1235.36			-5.187E-01	9.425E-01	1.493E+00	1.506E-01	-0.347
BA-137M	661.66	*		-4.159E-02	3.408E-02	4.976E-02	2.959E-03	-0.836
CS-137	661.66	*		-4.394E-02	3.600E-02	5.257E-02	3.138E-03	-0.836
CE-139	165.86	*		8.684E-03	3.216E-02	5.190E-02	2.787E-03	0.167
BA-140	162.66			-8.551E-01	1.280E+00	1.994E+00	1.269E-01	-0.429
	304.85			1.214E+00	2.193E+00	3.244E+00	9.270E-01	0.374
	423.72			1.108E-01	2.710E+00	4.472E+00	1.441E+00	0.025
	537.26	*		-4.007E-01	4.616E-01	6.703E-01	2.234E-01	-0.598
LA-140	328.76			7.076E-01	4.822E-01	8.437E-01	5.475E-02	0.839
	487.02			1.162E-01	1.957E-01	3.325E-01	2.187E-02	0.349
	815.77			-5.196E-01	4.833E-01	7.404E-01	6.788E-02	-0.702
	1596.21	*		6.918E-02	1.241E-01	1.950E-01	1.293E-02	0.355
CE-141	145.44	*		1.545E-02	7.647E-02	1.235E-01	7.881E-03	0.125
CE-143	57.36			-1.678E-02	7.647E-02	Half-Life	too short	
	293.27	*		6.744E-02	7.647E-02	Half-Life	too short	
	664.57			1.681E-02	7.647E-02	Half-Life	too short	
	721.93			4.433E-02	7.647E-02	Half-Life	too short	
CE-144	80.12			-3.687E+00	2.559E+00	3.969E+00	3.160E-01	-0.929
	133.52	*		-1.396E-01	2.407E-01	3.266E-01	4.655E-02	-0.428
PM-144	476.78			7.063E-02	6.577E-02	1.142E-01	7.821E-03	0.619
	618.01			1.658E-02	3.194E-02	5.259E-02	3.328E-03	0.315
	696.49	*		5.699E-03	3.837E-02	6.257E-02	4.012E-03	0.091
PR-144	696.51	*		4.318E-01	2.884E+00	4.703E+00	3.011E-01	0.092
	1489.16			-7.216E+00	1.290E+01	1.941E+01	1.340E+00	-0.372
PM-146	453.88	*		5.290E-03	4.170E-02	6.718E-02	5.639E-03	0.079
	633.25			-8.723E-02	1.441E+00	2.327E+00	8.769E-01	-0.037
	735.93			9.324E-02	1.576E-01	2.405E-01	6.626E-02	0.388
	747.24			4.384E-04	9.383E-02	1.512E-01	2.077E-02	0.003
ND-147	91.11	+		9.020E-01	3.391E-01	8.814E-01	8.108E-02	1.023
	319.41			-1.468E-01	5.466E+00	9.068E+00	5.266E-01	-0.016
	531.02	*		2.662E-01	9.119E-01	1.516E+00	2.057E-01	0.176
PM-149	285.90	*		7.681E-04	9.119E-01	Half-Life	too short	
EU-152	121.78			-1.332E-02	7.593E-02	1.215E-01	1.048E-02	-0.110
	244.70			3.764E-01	3.631E-01	5.567E-01	3.207E-02	0.676
	344.28	*		2.307E-02	1.325E-01	1.528E-01	9.875E-03	0.151
	778.90			-2.688E-01	2.704E-01	3.985E-01	3.010E-02	-0.675
	964.08			5.758E-01	3.493E-01	5.710E-01	4.978E-02	1.008
	1085.87			1.297E-01	3.776E-01	6.439E-01	4.541E-02	0.201
	1112.07			-1.392E-01	3.289E-01	4.995E-01	3.307E-02	-0.279
	1408.01			1.803E-01	1.774E-01	3.220E-01	2.270E-02	0.560
GD-153	69.67			7.220E-01	2.092E+00	2.809E+00	2.009E-01	0.257
	97.43	*		-1.932E-02	9.853E-02	1.380E-01	1.107E-02	-0.140
	103.18			-6.964E-02	1.160E-01	1.835E-01	1.416E-02	-0.380
EU-154	123.07			2.533E-02	5.537E-02	8.737E-02	8.928E-03	0.290
	723.31			-1.005E-01	2.117E-01	2.800E-01	2.198E-02	-0.359
	873.19			-1.213E-02	2.800E-01	4.673E-01	5.683E-02	-0.026
	996.26			5.888E-03	3.638E-01	6.064E-01	1.051E-01	0.010

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1004.73		-1.330E-01	2.159E-01	3.407E-01	3.867E-02	-0.390
		1274.44	*	-1.411E-03	1.175E-01	1.932E-01	1.909E-02	-0.007
		86.55		3.691E-01	1.177E-01	1.919E-01	1.666E-02	1.924
		105.31	*	2.972E-03	1.094E-01	1.768E-01	1.368E-02	0.017
TB-160	+	86.79		1.052E+00	3.352E-01	5.438E-01	4.686E-02	1.935
		197.04		-1.035E-02	5.923E-01	9.870E-01	5.470E-02	-0.010
		215.65		-5.285E-02	8.165E-01	1.292E+00	7.290E-02	-0.041
		298.57		4.670E-01	1.812E-01	2.269E-01	1.323E-02	2.058
HO-166M	+	879.36	*	5.164E-02	1.411E-01	2.429E-01	2.206E-02	0.213
		962.29		7.646E-01	6.378E-01	1.021E+00	8.926E-02	0.749
		966.15		1.114E+00	3.038E-01	5.356E-01	4.657E-02	2.079
		1177.93		1.355E-01	4.202E-01	7.103E-01	3.945E-02	0.191
		1271.85		-6.891E-02	7.411E-01	1.209E+00	7.850E-02	-0.057
		80.57		-6.590E-01	2.703E-01	4.010E-01	3.209E-02	-1.643
		184.41		1.523E-01	4.858E-02	6.899E-02	3.773E-03	2.208
		280.46		3.770E-02	9.338E-02	1.386E-01	8.081E-03	0.272
		410.95		2.635E-01	2.622E-01	4.519E-01	2.500E-02	0.583
		711.68	*	2.210E-02	6.445E-02	1.065E-01	7.035E-03	0.208
		752.31		-8.176E-03	2.644E-01	4.246E-01	3.045E-02	-0.019
		810.29		2.877E-02	6.450E-02	1.069E-01	8.572E-03	0.269
TA-182	+	67.75		-1.175E-01	1.323E-01	1.812E-01	1.274E-02	-0.649
		100.11		2.115E-01	1.873E-01	3.126E-01	2.460E-02	0.676
		152.43		2.417E-01	3.943E-01	6.442E-01	3.798E-02	0.375
		222.11		1.543E-01	3.586E-01	6.107E-01	3.464E-02	0.253
		1121.30		7.429E-01	2.650E-01	3.810E-01	2.462E-02	1.950
		1189.05		-1.964E-01	3.456E-01	5.459E-01	3.091E-02	-0.360
		1221.41	*	-5.986E-02	2.166E-01	3.498E-01	2.092E-02	-0.171
		1231.02		-4.125E-01	5.012E-01	7.727E-01	4.696E-02	-0.534
IR-192	+	295.96		1.470E+00	2.418E-01	3.172E-01	1.880E-02	4.632
		308.46		1.515E-01	1.049E-01	1.661E-01	9.781E-03	0.912
		316.51	*	-2.895E-03	3.628E-02	6.006E-02	3.506E-03	-0.048
		468.07		2.145E-02	8.034E-02	1.166E-01	7.768E-03	0.184
HG-203	+	70.83		7.473E-01	1.660E+00	2.395E+00	3.678E-01	0.312
		72.87		4.250E+00	1.201E+00	1.642E+00	2.443E-01	2.588
		279.20	*	6.049E-02	4.969E-02	7.674E-02	4.721E-03	0.788
BI-207	+	72.81		8.197E-01	2.177E-01	3.344E-01	2.463E-02	2.451
		74.97		7.982E-01	1.357E-01	2.410E-01	1.814E-02	3.312
		569.70		1.581E-01	6.375E-02	7.565E-02	4.513E-03	2.090
		1063.66	*	1.643E-02	5.576E-02	9.459E-02	7.000E-03	0.174
PB-210		1770.23		4.889E-02	5.032E-01	7.133E-01	4.260E-02	0.069
PB-211		46.54	*	3.728E-01	2.297E+00	3.764E+00	2.756E-01	0.099
PB-211		404.85	*	-9.066E-01	8.806E-01	1.188E+00	5.697E-01	-0.763
		427.09		1.053E+00	1.503E+00	2.442E+00	1.118E+00	0.431
		832.01		-9.210E-01	1.088E+00	1.529E+00	7.921E-01	-0.602
BI-212	+	727.33	*	2.327E+00	8.938E-01	1.174E+00	1.325E-01	1.983
		785.37		3.879E+00	3.338E+00	5.788E+00	4.426E-01	0.670
		1620.50		1.619E+00	2.285E+00	4.077E+00	2.671E-01	0.397
RN-219	+	271.23		9.499E-01	3.661E-01	4.259E-01	3.428E-02	2.230
		401.81	*	-1.842E-01	4.205E-01	6.680E-01	8.888E-02	-0.276

---- 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			-4.256E-01	2.404E-01	3.143E-01	2.530E-02	-1.354
	83.79			1.974E-02	1.913E-01	1.961E-01	1.630E-02	0.101
	94.87			1.819E+00	5.398E-01	8.329E-01	6.817E-02	2.184
	144.24			-8.532E-03	7.085E-01	1.127E+00	8.503E-02	-0.008
	154.21			7.567E-02	4.224E-01	6.803E-01	4.755E-02	0.111
	269.46			7.380E-01	2.818E-01	3.423E-01	2.078E-02	2.156
AC-227	323.87	*		-8.796E-01	6.980E-01	1.072E+00	1.728E-01	-0.820
	338.28	+		7.576E+00	1.685E+00	2.295E+00	2.346E-01	3.300
	79.69			1.354E+00	1.340E+00	2.196E+00	3.710E-01	0.617
	235.96			1.539E+00	2.417E-01	3.813E-01	3.086E-02	4.036
	256.23	*		-1.015E-01	2.480E-01	4.075E-01	4.165E-02	-0.249
	299.98	+		3.509E+00	1.497E+00	1.596E+00	1.757E-01	2.198
TH-227	304.50			4.661E-01	1.741E+00	2.557E+00	3.902E-01	0.182
	334.37			-1.429E+00	1.888E+00	2.560E+00	3.636E-01	-0.558
	79.80			7.107E-01	1.722E+00	2.812E+00	6.051E-01	0.253
	235.96			1.539E+00	2.359E-01	3.813E-01	2.795E-02	4.036
	256.23	*		-1.015E-01	2.481E-01	4.075E-01	4.896E-02	-0.249
	299.98	+		3.509E+00	1.497E+00	1.596E+00	1.757E-01	2.198
TH-229	304.50			4.661E-01	1.741E+00	2.557E+00	3.902E-01	0.182
	334.37			-1.429E+00	1.888E+00	2.560E+00	3.636E-01	-0.558
	85.43			9.989E-01	3.253E-01	3.837E-01	3.252E-02	2.603
	88.47	+		4.678E-01	1.490E-01	2.549E-01	2.219E-02	1.835
	193.51	*		3.843E-01	5.162E-01	8.894E-01	4.912E-02	0.432
	210.85			2.221E+00	1.001E+00	1.601E+00	8.991E-02	1.388
PA-231	283.69	*		-1.004E+00	1.497E+00	2.328E+00	3.056E-01	-0.431
	301.36	+		2.254E+00	9.578E-01	1.038E+00	1.076E-01	2.171
TH-231	81.07			-4.256E-01	2.404E-01	3.143E-01	2.530E-02	-1.354
	83.79			1.974E-02	1.913E-01	1.961E-01	1.630E-02	0.101
	94.87			1.819E+00	5.398E-01	8.329E-01	6.817E-02	2.184
	144.24			-8.532E-03	7.085E-01	1.127E+00	8.503E-02	-0.008
	154.21			7.567E-02	4.224E-01	6.803E-01	4.755E-02	0.111
	269.46	+		7.380E-01	2.818E-01	3.423E-01	2.078E-02	2.156
PA-233	323.87	*		-8.796E-01	6.980E-01	1.072E+00	1.728E-01	-0.820
	338.28	+		7.576E+00	1.685E+00	2.295E+00	2.346E-01	3.300
	300.13	+		1.588E+00	6.880E-01	7.248E-01	9.714E-02	2.191
	311.90	*		-7.576E-02	6.148E-02	9.585E-02	5.920E-03	-0.790
	340.48			3.011E+00	1.028E+00	1.316E+00	3.053E-01	2.287
	94.67			8.060E-01	2.151E-01	3.138E-01	3.801E-02	2.569
PA-234	98.44			8.340E-02	1.080E-01	1.505E-01	8.382E-02	0.554
	111.00			-4.033E-02	1.917E-01	3.070E-01	3.456E-02	-0.131
	131.20			1.544E-01	1.218E-01	1.806E-01	1.213E-02	0.855
	569.50	+		1.403E+00	5.658E-01	6.745E-01	4.024E-02	2.081
	733.00			1.888E-01	4.281E-01	6.207E-01	1.340E-01	0.304
	880.51			3.347E-02	2.636E-01	4.457E-01	4.056E-02	0.075
PA-234M	883.24			4.283E-02	2.790E-01	4.700E-01	3.163E-01	0.091
	926.50			7.382E-02	1.685E-01	2.895E-01	7.367E-02	0.255
	946.00	*		-1.029E-01	3.035E-01	4.920E-01	9.300E-02	-0.209
	949.00			8.809E-02	4.687E-01	7.925E-01	7.041E-02	0.111
	766.42			2.206E+01	1.833E+01	2.288E+01	1.156E+01	0.964

---- 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	*		1.619E+00	4.583E+00	7.871E+00	7.609E-01	0.206
	99.53			1.843E-01	1.648E-01	2.750E-01	2.172E-02	0.670
	103.37			-5.714E-02	1.033E-01	1.636E-01	1.261E-02	-0.349
	106.12			6.695E-02	8.591E-02	1.420E-01	1.077E-02	0.472
	117.23	*		-1.080E-01	4.158E-01	6.638E-01	4.793E-02	-0.163
	228.18			-5.691E-03	2.124E-01	3.559E-01	2.028E-02	-0.016
AM-241	+	277.60		2.449E-01	2.003E-01	3.140E-01	1.830E-02	0.780
CM-247	59.54	*		1.738E-01	1.429E-01	2.135E-01	1.585E-02	0.814
	+	278.00		1.040E+00	8.506E-01	1.342E+00	7.825E-02	0.775
CF-249	287.50			7.052E-01	1.326E+00	1.984E+00	1.158E-01	0.355
	402.40	*		-2.208E-02	3.934E-02	6.223E-02	3.418E-03	-0.355
	252.80			-2.024E-01	9.121E-01	1.511E+00	8.742E-02	-0.134
	333.37			-2.855E-01	2.069E-01	2.690E-01	1.550E-02	-1.061
CF-251	388.16	*		5.212E-02	3.923E-02	6.892E-02	3.767E-03	0.756
	177.52	*		-9.796E-02	1.327E-01	2.054E-01	1.115E-02	-0.477
	227.38			-2.927E-01	3.500E-01	5.685E-01	3.238E-02	-0.515
	285.41			9.398E-01	2.156E+00	3.568E+00	2.082E-01	0.263

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]G248248003      *
* Acquisition date   : 19-MAR-2010 10:59:33 Detector SN# :                 *
* Detector ID        : GAM14 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                      *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000           *
* Elapsed real time  : 0 02:00:01.80 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G248248003 Analyst initials: MXR1                 *
* Batch Number       : 959280 Sample Quantity : 1.4238E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 6-MAR-2009 11:43:06 MS Isotope :                  *
* MSD DPM            : 0.000 MSD Isotope :                               *
* LCS DPM            : 0.000 LCS Isotope :                               *
* LCSD DPM           : 0.000 LCSD Isotope :                              *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.544E+01	3.120E+00	5.015E-01	0.000E+00
CD-109	3.141E+00	9.805E-01	1.518E+00	0.000E+00
SN-126	3.034E-01	9.472E-02	1.477E-01	0.000E+00
TL-208	6.314E-01	9.354E-02	5.842E-02	0.000E+00
BI-211	4.977E+00	5.461E-01	3.173E-01	0.000E+00
PB-212	1.883E+00	1.742E-01	9.597E-02	0.000E+00
BI-214	1.519E+00	1.965E-01	1.081E-01	0.000E+00
PB-214	1.806E+00	2.209E-01	1.154E-01	0.000E+00
RA-224	5.031E+00	1.169E+00	1.028E+00	0.000E+00
RA-226	1.519E+00	1.965E-01	1.081E-01	0.000E+00
AC-228	1.947E+00	3.616E-01	2.318E-01	0.000E+00
RA-228	1.947E+00	3.616E-01	2.318E-01	0.000E+00
TH-228	1.883E+00	1.742E-01	9.597E-02	0.000E+00
TH-232	1.947E+00	3.616E-01	2.318E-01	0.000E+00
TH-234	1.655E+00	1.699E+00	2.060E+00	0.000E+00
U-235	3.805E-04	2.053E-01	3.521E-01	0.000E+00
NP-237	9.054E-01	3.384E-01	4.455E-01	0.000E+00
U-238	1.655E+00	1.699E+00	2.060E+00	0.000E+00
ANH-511	1.926E-01	6.232E-02	4.667E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	2.677E-01	3.475E-01	6.238E-01	0.000E+00 NOT IDENT.
NA-22	-8.956E-04	4.078E-02	6.885E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.290E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	1.819E-02	3.903E-02	7.002E-02	0.000E+00 FAIL ABUN
V-48	-3.225E-02	9.854E-02	1.653E-01	0.000E+00 NOT IDENT.
CR-51	4.838E-04	4.428E-01	7.791E-01	0.000E+00 NOT IDENT.
MN-54	-1.708E-02	3.764E-02	6.351E-02	0.000E+00 NOT IDENT.
CO-56	-2.664E-03	4.163E-02	7.208E-02	0.000E+00 NOT IDENT.

CO-57	-1.627E-03	2.636E-02	4.575E-02	0.000E+00	NOT IDENT.
CO-58	1.608E-04	4.542E-02	7.570E-02	0.000E+00	NOT IDENT.
FE-59	-7.418E-02	1.082E-01	1.750E-01	0.000E+00	NOT IDENT.
CO-60	1.415E-02	3.982E-02	6.945E-02	0.000E+00	NOT IDENT.
ZN-65	-5.003E-02	1.050E-01	1.457E-01	0.000E+00	NOT IDENT.
SE-75	-4.085E-02	4.965E-02	7.273E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.718E-02	8.393E-02	0.000E+00	NOT IDENT.
Y-88	1.358E-02	3.273E-02	5.791E-02	0.000E+00	NOT IDENT.
Y-91	-1.360E+01	2.653E+01	4.349E+01	0.000E+00	NOT IDENT.
NB-94	2.337E-02	3.502E-02	6.140E-02	0.000E+00	NOT IDENT.
NB-95	4.364E-02	5.663E-02	8.733E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.762E-01	3.070E-01	0.000E+00	NOT IDENT.
ZR-95	1.377E-02	7.742E-02	1.313E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	8.965E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.117E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.460E-02	4.284E-02	7.070E-02	0.000E+00	FAIL ABUN
RH-106	-1.706E-01	2.968E-01	4.806E-01	0.000E+00	NOT IDENT.
RU-106	-1.706E-01	2.964E-01	4.806E-01	0.000E+00	NOT IDENT.
AG-108M	-1.480E-02	2.720E-02	4.555E-02	0.000E+00	NOT IDENT.
AG-110M	3.725E-04	3.214E-02	5.433E-02	0.000E+00	NOT IDENT.
SN-113	-2.888E-02	4.600E-02	7.747E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.293E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.497E-02	8.477E-02	1.449E-01	0.000E+00	NOT IDENT.
TE-123M	-6.748E-03	3.049E-02	5.202E-02	0.000E+00	NOT IDENT.
SB-124	3.906E-02	8.296E-02	1.475E-01	0.000E+00	NOT IDENT.
SB-125	4.199E-02	8.236E-02	1.468E-01	0.000E+00	FAIL ABUN
TE-125M	1.074E+00	1.097E+01	1.923E+01	0.000E+00	NOT IDENT.
I-126	1.445E-01	3.271E-01	5.687E-01	0.000E+00	NOT IDENT.
SB-126	2.326E-01	2.456E-01	4.164E-01	0.000E+00	NOT IDENT.
SB-127	-2.066E+00	5.442E+00	8.906E+00	0.000E+00	NOT IDENT.
I-131	-4.256E-02	2.180E-01	3.773E-01	0.000E+00	NOT IDENT.
TE-132	-1.263E-01	3.840E+00	6.862E+00	0.000E+00	NOT IDENT.
BA-133	9.281E-03	4.409E-02	6.793E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.004E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	8.131E-02	9.244E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.718E-01	2.945E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.765E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.927E-02	1.595E-01	2.653E-01	0.000E+00	NOT IDENT.
BA-137M	-4.159E-02	3.340E-02	5.086E-02	0.000E+00	NOT IDENT.
CS-137	-4.394E-02	3.528E-02	5.373E-02	0.000E+00	NOT IDENT.
CE-139	8.684E-03	3.152E-02	5.462E-02	0.000E+00	NOT IDENT.
BA-140	-4.007E-01	4.524E-01	6.883E-01	0.000E+00	NOT IDENT.
LA-140	6.918E-02	1.217E-01	1.955E-01	0.000E+00	NOT IDENT.
CE-141	1.545E-02	7.494E-02	1.303E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.816E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.396E-01	2.359E-01	3.452E-01	0.000E+00	NOT IDENT.
PM-144	5.699E-03	3.760E-02	6.389E-02	0.000E+00	NOT IDENT.
PR-144	4.318E-01	2.826E+00	4.802E+00	0.000E+00	NOT IDENT.
PM-146	5.290E-03	4.087E-02	6.923E-02	0.000E+00	NOT IDENT.
ND-147	2.662E-01	8.936E-01	1.557E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.071E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	2.307E-02	1.298E-01	1.583E-01	0.000E+00	NOT IDENT.
GD-153	-1.932E-02	9.656E-02	1.468E-01	0.000E+00	NOT IDENT.
EU-154	-1.411E-03	1.152E-01	1.947E-01	0.000E+00	NOT IDENT.
EU-155	2.972E-03	1.072E-01	1.878E-01	0.000E+00	FAIL ABUN
TB-160	5.164E-02	1.383E-01	2.468E-01	0.000E+00	FAIL ABUN
HO-166M	2.210E-02	6.316E-02	1.087E-01	0.000E+00	FAIL ABUN
TA-182	-5.986E-02	2.122E-01	3.528E-01	0.000E+00	FAIL ABUN
IR-192	-2.895E-03	3.556E-02	6.236E-02	0.000E+00	FAIL ABUN
HG-203	6.049E-02	4.869E-02	7.989E-02	0.000E+00	NOT IDENT.
BI-207	1.643E-02	5.464E-02	9.569E-02	0.000E+00	FAIL ABUN
PB-210	3.728E-01	2.251E+00	4.062E+00	0.000E+00	NOT IDENT.
PB-211	-9.066E-01	8.630E-01	1.228E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.759E-01	1.197E+00	0.000E+00	FAIL ABUN
RN-219	-1.842E-01	4.120E-01	6.901E-01	0.000E+00	FAIL ABUN
RA-223	-8.796E-01	6.840E-01	1.113E+00	0.000E+00	FAIL ABUN
AC-227	-1.015E-01	2.431E-01	4.250E-01	0.000E+00	FAIL ABUN
TH-227	-1.015E-01	2.431E-01	4.250E-01	0.000E+00	FAIL ABUN
TH-229	3.843E-01	5.058E-01	9.330E-01	0.000E+00	FAIL ABUN
PA-231	-1.004E+00	1.467E+00	2.422E+00	0.000E+00	FAIL ABUN
TH-231	-8.796E-01	6.840E-01	1.113E+00	0.000E+00	FAIL ABUN
PA-233	-7.576E-02	6.025E-02	9.956E-02	0.000E+00	FAIL ABUN
PA-234	-1.029E-01	2.974E-01	4.990E-01	0.000E+00	FAIL ABUN
PA-234M	1.619E+00	4.492E+00	7.973E+00	0.000E+00	NOT IDENT.
NP-239	-1.080E-01	4.074E-01	7.035E-01	0.000E+00	FAIL ABUN
AM-241	1.738E-01	1.400E-01	2.293E-01	0.000E+00	NOT IDENT.
CM-247	-2.208E-02	3.855E-02	6.429E-02	0.000E+00	FAIL ABUN
CF-249	5.212E-02	3.845E-02	7.126E-02	0.000E+00	NOT IDENT.

CF-251	-9.796E-02	1.300E-01	2.159E-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]G248248003.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 10:59:33
Sample ID          : G248248003      Sample quantity   : 1.42380E+02 GRAM
Detector name      : GAM14           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.80 0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 959280          Detector SN#     :
Matrix Spike ID    :                 LCS ID            : 1032-A
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	1735	10.66*	1.211E+00	3.544E+01	3.544E+01	8.98
CD-109	88.03	300	3.70*	7.043E+00	3.034E+00	3.141E+00	31.85
SN-126	64.28	107	9.60	4.594E+00	6.380E-01	6.380E-01	104.20
	86.94	300	8.90	7.043E+00	1.262E+00	1.262E+00	51.49
	87.57	300	37.00*	7.043E+00	3.034E-01	3.034E-01	31.85
TL-208	277.37	67	6.60	5.002E+00	5.358E-01	5.358E-01	82.28
	583.19	561	85.00*	2.758E+00	6.314E-01	6.314E-01	15.12
	860.56	86	12.50	1.942E+00	9.330E-01	9.330E-01	43.70
BI-211	72.87	-----	1.23	5.875E+00	-----	Line Not Found	-----
	351.06	1019	12.92*	4.178E+00	4.977E+00	4.977E+00	11.19
PB-212	74.82	658	10.28	6.093E+00	2.768E+00	2.768E+00	19.59
	77.11	972	17.10	6.317E+00	2.374E+00	2.374E+00	14.38
	238.63	1734	43.60*	5.569E+00	1.883E+00	1.883E+00	9.44
	300.09	188	3.30	4.708E+00	3.190E+00	3.190E+00	42.05
BI-214	609.32	696	45.49*	2.655E+00	1.519E+00	1.519E+00	13.20
	1120.29	130	14.92	1.523E+00	1.512E+00	1.512E+00	36.29
	1764.49	104	15.30	1.059E+00	1.695E+00	1.695E+00	26.65
PB-214	74.82	658	5.80	6.093E+00	4.907E+00	4.907E+00	18.76
	77.11	972	9.70	6.317E+00	4.184E+00	4.184E+00	16.58
	242.00	432	7.25	5.521E+00	2.845E+00	2.845E+00	24.40
	295.22	616	18.42	4.777E+00	1.846E+00	1.846E+00	17.67
	351.93	1019	35.60*	4.178E+00	1.806E+00	1.806E+00	12.48
RA-224	240.99	432	4.10*	5.521E+00	5.031E+00	5.031E+00	23.70
RA-226	609.32	696	45.49*	2.655E+00	1.519E+00	1.519E+00	13.20
	1120.29	130	14.92	1.523E+00	1.512E+00	1.512E+00	36.29
	1764.49	104	15.30	1.059E+00	1.695E+00	1.695E+00	26.65
AC-228	338.32	352	11.27	4.309E+00	1.909E+00	1.909E+00	45.71
	911.20	351	25.80*	1.843E+00	1.947E+00	1.947E+00	18.95
	968.97	240	15.80	1.743E+00	2.303E+00	2.303E+00	38.02
RA-228	338.32	352	11.27	4.309E+00	1.909E+00	1.909E+00	45.71
	911.20	351	25.80*	1.843E+00	1.947E+00	1.947E+00	18.95
	968.97	240	15.80	1.743E+00	2.303E+00	2.303E+00	38.02

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	658	10.28	6.093E+00	2.768E+00	2.768E+00	17.04
	77.11	972	17.10	6.317E+00	2.374E+00	2.374E+00	14.38
	238.63	1734	43.60*	5.569E+00	1.883E+00	1.883E+00	9.44
TH-232	300.09	188	3.30	4.708E+00	3.190E+00	3.190E+00	73.52
	338.32	352	11.27	4.309E+00	1.909E+00	1.909E+00	20.58
	911.20	351	25.80*	1.843E+00	1.947E+00	1.947E+00	18.95
TH-234	968.97	240	15.80	1.743E+00	2.303E+00	2.303E+00	38.02
	63.29	107	3.70*	4.594E+00	1.655E+00	1.655E+00	104.71
	92.59	314	4.23	7.322E+00	2.677E+00	2.677E+00	38.44
U-235	89.96	161	3.47	7.192E+00	1.698E+00	1.698E+00	43.95
	93.35	314	5.60	7.322E+00	2.022E+00	2.022E+00	39.03
	143.76	-----	10.96*	7.372E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.992E+00	-----	Line Not Found	-----
	185.72	272	57.20	6.530E+00	1.917E-01	1.917E-01	31.89
	205.31	-----	5.01	6.150E+00	-----	Line Not Found	-----
NP-237	86.48	300	12.40*	7.043E+00	9.054E-01	9.054E-01	38.13
	95.86	-----	2.68	7.425E+00	-----	Line Not Found	-----
U-238	63.29	107	3.70*	4.594E+00	1.655E+00	1.655E+00	104.71
	92.59	314	4.23	7.322E+00	2.677E+00	2.677E+00	32.62
ANH-511	511.00	226	100.00*	3.087E+00	1.926E-01	1.926E-01	33.02

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	3.544E+01	3.544E+01	0.318E+01	8.98	
CD-109	461.40D	1.04	3.034E+00	3.141E+00	1.001E+00	31.85	
SN-126	2.30E+05Y	1.00	3.034E-01	3.034E-01	0.967E-01	31.85	
TL-208	1.41E+10Y	1.00	6.314E-01	6.314E-01	0.954E-01	15.12	
BI-211	7.04E+08Y	1.00	4.977E+00	4.977E+00	0.557E+00	11.19	
PB-212	1.41E+10Y	1.00	1.883E+00	1.883E+00	0.178E+00	9.44	
BI-214	1600.00Y	1.00	1.519E+00	1.519E+00	0.200E+00	13.20	
PB-214	1600.00Y	1.00	1.806E+00	1.806E+00	0.225E+00	12.48	
RA-224	1.41E+10Y	1.00	5.031E+00	5.031E+00	1.192E+00	23.70	
RA-226	1600.00Y	1.00	1.519E+00	1.519E+00	0.200E+00	13.20	
AC-228	1.41E+10Y	1.00	1.947E+00	1.947E+00	0.369E+00	18.95	
RA-228	1.41E+10Y	1.00	1.947E+00	1.947E+00	0.369E+00	18.95	
TH-228	1.41E+10Y	1.00	1.883E+00	1.883E+00	0.178E+00	9.44	
TH-232	1.41E+10Y	1.00	1.947E+00	1.947E+00	0.369E+00	18.95	
TH-234	4.47E+09Y	1.00	1.655E+00	1.655E+00	1.733E+00	104.71	
U-235	7.04E+08Y	1.00	1.917E-01	1.917E-01	0.611E-01	31.89	K
NP-237	2.14E+06Y	1.00	9.054E-01	9.054E-01	3.453E-01	38.13	
U-238	4.47E+09Y	1.00	1.655E+00	1.655E+00	1.733E+00	104.71	
ANH-511	1.00E+09Y	1.00	1.926E-01	1.926E-01	0.636E-01	33.02	
Total Activity :			6.847E+01	6.858E+01			

Grand Total Activity : 6.847E+01 6.858E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.20	123	458	1.30	257.83	254	9	1.70E-02	65.7	7.59E+00	
0	209.33	154	390	1.51	417.93	413	10	2.14E-02	50.6	6.07E+00	
0	270.04	198	282	1.29	539.25	533	13	2.76E-02	37.7	5.10E+00	T
0	463.02	80	193	1.76	924.94	917	14	1.12E-02	76.5	3.35E+00	T
0	569.08	165	176	1.79	1136.97	1129	16	2.29E-02	39.9	2.82E+00	T
0	727.79	133	99	1.87	1454.28	1449	14	1.85E-02	36.7	2.27E+00	T
0	769.13	76	84	1.59	1536.93	1532	9	1.05E-02	49.8	2.16E+00	
0	795.52	88	98	1.66	1589.71	1582	17	1.22E-02	56.0	2.09E+00	T
0	1590.74	56	35	0.71	3180.64	3172	19	7.79E-03	58.8	1.14E+00	
0	1730.19	39	9	1.85	3459.78	3453	11	5.47E-03	42.7	1.07E+00	

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248003.CNF;1
* Acquisition date   : 19-MAR-2010 10:59:33  Detector SN#      :
* Detector ID        : GAM14                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.80          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248248003           Analyst initials: MXR1
* Batch Number       : 959280               Sample Quantity : 1.42380E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 6-MAR-2009 11:43:06.61MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A              LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.544E+01	3.184E+00	4.992E-01	3.625E-02	70.993
CD-109	3.141E+00	1.001E+00	1.424E+00	1.245E-01	2.206
SN-126	3.034E-01	9.666E-02	1.385E-01	1.205E-02	2.190
TL-208	6.314E-01	9.545E-02	5.700E-02	3.889E-03	11.078
BI-211	4.977E+00	5.572E-01	3.063E-01	1.941E-02	16.251
PB-212	1.883E+00	1.778E-01	9.188E-02	6.751E-03	20.490
BI-214	1.519E+00	2.005E-01	1.055E-01	8.418E-03	14.395
PB-214	1.806E+00	2.254E-01	1.114E-01	9.356E-03	16.217
RA-224	5.031E+00	1.192E+00	9.843E-01	5.658E-02	5.112
RA-226	1.519E+00	2.005E-01	1.055E-01	8.418E-03	14.395
AC-228	1.947E+00	3.690E-01	2.284E-01	2.759E-02	8.525
RA-228	1.947E+00	3.690E-01	2.284E-01	2.759E-02	8.525
TH-228	1.883E+00	1.778E-01	9.188E-02	6.751E-03	20.490
TH-232	1.947E+00	3.690E-01	2.284E-01	2.759E-02	8.525
TH-234	1.655E+00	1.733E+00	1.920E+00	3.376E-01	0.862
U-235	1.917E-01	6.115E-02	3.336E-01	5.294E-02	0.575
NP-237	9.054E-01	3.453E-01	4.178E-01	9.466E-02	2.167
U-238	1.655E+00	1.733E+00	1.920E+00	3.376E-01	0.862

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.926E-01	6.359E-02	4.541E-02	2.667E-03	4.242

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.677E-01		3.546E-01	6.060E-01	4.083E-02	0.442
NA-22	-8.956E-04		4.161E-02	6.833E-02	4.464E-03	-0.013
NA-24	1.795E+03		2.189E+03	Half-Life	too short	
SC-46	1.819E-02		3.983E-02	6.894E-02	6.371E-03	0.264
V-48	-3.225E-02		1.005E-01	1.632E-01	1.385E-02	-0.198
CR-51	4.838E-04		4.519E-01	7.505E-01	4.842E-02	0.001
MN-54	-1.708E-02		3.841E-02	6.244E-02	5.238E-03	-0.274
CO-56	-2.664E-03		4.248E-02	7.090E-02	6.077E-03	-0.038
CO-57	-1.627E-03		2.690E-02	4.321E-02	3.074E-03	-0.038
CO-58	1.608E-04		4.635E-02	7.439E-02	5.985E-03	0.002
FE-59	-7.418E-02		1.104E-01	1.731E-01	1.333E-02	-0.428
CO-60	1.415E-02		4.063E-02	6.900E-02	4.917E-03	0.205
ZN-65	-5.003E-02		1.071E-01	1.442E-01	9.480E-03	-0.347
SE-75	-4.085E-02		5.067E-02	6.978E-02	4.098E-03	-0.585
SR-85	1.394E-01		4.815E-02	8.167E-02	4.803E-03	1.707
Y-88	1.358E-02		3.340E-02	5.795E-02	3.291E-03	0.234
Y-91	-1.360E+01		2.708E+01	4.311E+01	2.507E+00	-0.315
NB-94	2.337E-02		3.573E-02	6.015E-02	3.901E-03	0.389
NB-95	4.364E-02		5.779E-02	8.571E-02	6.312E-03	0.509
NB-95M	7.823E-01		1.798E-01	2.938E-01	2.203E-02	2.662
ZR-95	1.377E-02		7.900E-02	1.289E-01	1.068E-02	0.107
MO-99	-7.100E-05		4.574E-05	Half-Life	too short	
TC-99M	-1.102E+20		5.698E+19	Half-Life	too short	
RU-103	-2.460E-02		4.372E-02	6.874E-02	8.555E-03	-0.358
RH-106	-1.706E-01		3.029E-01	4.695E-01	5.499E-02	-0.363
RU-106	-1.706E-01		3.024E-01	4.695E-01	2.808E-02	-0.363
AG-108M	-1.480E-02		2.776E-02	4.416E-02	2.672E-03	-0.335
AG-110M	3.725E-04		3.279E-02	5.314E-02	3.357E-03	0.007
SN-113	-2.888E-02		4.694E-02	7.495E-02	4.385E-03	-0.385
CD-115	-1.152E-04		6.599E-05	Half-Life	too short	
SN-117M	-1.497E-02		8.650E-02	1.375E-01	7.780E-03	-0.109
TE-123M	-6.748E-03		3.112E-02	4.939E-02	2.825E-03	-0.137
SB-124	3.906E-02		8.466E-02	1.473E-01	1.000E-02	0.265
SB-125	4.199E-02		8.404E-02	1.423E-01	8.328E-03	0.295
TE-125M	1.074E+00		1.120E+01	1.812E+01	1.737E+00	0.059
I-126	1.445E-01		3.338E-01	5.565E-01	3.342E-02	0.260
SB-126	2.326E-01		2.506E-01	4.081E-01	2.747E-02	0.570
SB-127	-2.066E+00		5.553E+00	8.719E+00	1.101E+00	-0.237
I-131	-4.256E-02		2.225E-01	3.644E-01	2.336E-02	-0.117
TE-132	-1.263E-01		3.919E+00	6.563E+00	1.077E+00	-0.019
BA-133	9.281E-03		4.499E-02	6.559E-02	7.351E-03	0.142
I-133	-1.967E-01		1.533E+00	Half-Life	too short	

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	1.468E-01	+	8.297E-02	9.080E-02	7.147E-03	1.616
CS-135	4.043E-01		1.753E-01	2.827E-01	2.168E-02	1.430
I-135	-5.056E+17		1.411E+18	Half-Life too short		
CS-136	-5.927E-02		1.627E-01	2.621E-01	2.110E-02	-0.226
BA-137M	-4.159E-02		3.408E-02	4.976E-02	2.959E-03	-0.836
CS-137	-4.394E-02		3.600E-02	5.257E-02	3.138E-03	-0.836
CE-139	8.684E-03		3.216E-02	5.190E-02	2.787E-03	0.167
BA-140	-4.007E-01		4.616E-01	6.703E-01	2.234E-01	-0.598
LA-140	6.918E-02		1.241E-01	1.950E-01	1.293E-02	0.355
CE-141	1.545E-02		7.647E-02	1.235E-01	7.881E-03	0.125
CE-143	6.744E-02		9.264E-03	Half-Life too short		
CE-144	-1.396E-01		2.407E-01	3.266E-01	4.655E-02	-0.428
PM-144	5.699E-03		3.837E-02	6.257E-02	4.012E-03	0.091
PR-144	4.318E-01		2.884E+00	4.703E+00	3.011E-01	0.092
PM-146	5.290E-03		4.170E-02	6.718E-02	5.639E-03	0.079
ND-147	2.662E-01		9.119E-01	1.516E+00	2.057E-01	0.176
PM-149	7.681E-04		5.465E-04	Half-Life too short		
EU-152	2.307E-02		1.325E-01	1.528E-01	9.875E-03	0.151
GD-153	-1.932E-02		9.853E-02	1.380E-01	1.107E-02	-0.140
EU-154	-1.411E-03		1.175E-01	1.932E-01	1.909E-02	-0.007
EU-155	2.972E-03		1.094E-01	1.768E-01	1.368E-02	0.017
TB-160	5.164E-02		1.411E-01	2.429E-01	2.206E-02	0.213
HO-166M	2.210E-02		6.445E-02	1.065E-01	7.035E-03	0.208
TA-182	-5.986E-02		2.166E-01	3.498E-01	2.092E-02	-0.171
IR-192	-2.895E-03		3.628E-02	6.006E-02	3.506E-03	-0.048
HG-203	6.049E-02		4.969E-02	7.674E-02	4.721E-03	0.788
BI-207	1.643E-02		5.576E-02	9.459E-02	7.000E-03	0.174
PB-210	3.728E-01		2.297E+00	3.764E+00	2.756E-01	0.099
PB-211	-9.066E-01		8.806E-01	1.188E+00	5.697E-01	-0.763
BI-212	2.327E+00	+	8.938E-01	1.174E+00	1.325E-01	1.983
RN-219	-1.842E-01		4.205E-01	6.680E-01	8.888E-02	-0.276
RA-223	-8.796E-01		6.980E-01	1.072E+00	1.728E-01	-0.820
AC-227	-1.015E-01		2.480E-01	4.075E-01	4.165E-02	-0.249
TH-227	-1.015E-01		2.481E-01	4.075E-01	4.896E-02	-0.249
TH-229	3.843E-01		5.162E-01	8.894E-01	4.912E-02	0.432
PA-231	-1.004E+00		1.497E+00	2.328E+00	3.056E-01	-0.431
TH-231	-8.796E-01		6.980E-01	1.072E+00	1.728E-01	-0.820
PA-233	-7.576E-02		6.148E-02	9.585E-02	5.920E-03	-0.790
PA-234	-1.029E-01		3.035E-01	4.920E-01	9.300E-02	-0.209
PA-234M	1.619E+00		4.583E+00	7.871E+00	7.609E-01	0.206
NP-239	-1.080E-01		4.158E-01	6.638E-01	4.793E-02	-0.163
AM-241	1.738E-01		1.429E-01	2.135E-01	1.585E-02	0.814
CM-247	-2.208E-02		3.934E-02	6.223E-02	3.418E-03	-0.355
CF-249	5.212E-02		3.923E-02	6.892E-02	3.767E-03	0.756
CF-251	-9.796E-02		1.327E-01	2.054E-01	1.115E-02	-0.477

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]G248248003
* Acquisition date   : 19-MAR-2010 10:59:33 Detector SN#      :
* Detector ID        : GAM14                      Sensitivity   : 5.000
* Geometry           : CAN                        Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000
* Elapsed real time  : 0 02:00:01.80             Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248248003              Analyst initials: MXR1
* Batch Number       : 959280                  Sample Quantity : 1.4238E+02 GRAM
* Recovery           : 1.00000                 Carrier Weight  : 0.00000
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME  : 6-MAR-2009 11:43:06 MS Isotope      :
* MSD DPM           : 0.000                      MSD Isotope   :
* LCS DPM           : 0.000                      LCS Isotope    :
* LCSD DPM          : 0.000                      LCSD Isotope   :
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.544E+01	3.120E+00	2.509E-01	1.592E+00
CD-109	3.141E+00	9.805E-01	7.592E-01	5.003E-01
SN-126	3.034E-01	9.472E-02	7.388E-02	4.833E-02
TL-208	6.314E-01	9.354E-02	2.923E-02	4.772E-02
BI-211	4.977E+00	5.461E-01	1.588E-01	2.786E-01
PB-212	1.883E+00	1.742E-01	4.801E-02	8.890E-02
BI-214	1.519E+00	1.965E-01	5.407E-02	1.002E-01
PB-214	1.806E+00	2.209E-01	5.774E-02	1.127E-01
RA-224	5.031E+00	1.169E+00	5.142E-01	5.962E-01
RA-226	1.519E+00	1.965E-01	5.407E-02	1.002E-01
AC-228	1.947E+00	3.616E-01	1.160E-01	1.845E-01
RA-228	1.947E+00	3.616E-01	1.160E-01	1.845E-01
TH-228	1.883E+00	1.742E-01	4.801E-02	8.890E-02
TH-232	1.947E+00	3.616E-01	1.160E-01	1.845E-01
TH-234	1.655E+00	1.699E+00	1.031E+00	8.667E-01
U-235	3.805E-04	2.053E-01	1.761E-01	1.048E-01
NP-237	9.054E-01	3.384E-01	2.229E-01	1.726E-01
U-238	1.655E+00	1.699E+00	1.031E+00	8.667E-01
ANH-511	1.926E-01	6.232E-02	2.335E-02	3.180E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	2.677E-01	3.475E-01	3.121E-01	1.773E-01 NOT IDENT.
NA-22	-8.956E-04	4.078E-02	3.445E-02	2.080E-02 NOT IDENT.
NA-24	1.795E+09	4.290E+09	0.000E+00	2.189E+09 SHORT HLIF
SC-46	1.819E-02	3.903E-02	3.503E-02	1.991E-02 FAIL ABUN
V-48	-3.225E-02	9.854E-02	8.272E-02	5.027E-02 NOT IDENT.
CR-51	4.838E-04	4.428E-01	3.898E-01	2.259E-01 NOT IDENT.
MN-54	-1.708E-02	3.764E-02	3.177E-02	1.920E-02 NOT IDENT.
CO-56	-2.664E-03	4.163E-02	3.606E-02	2.124E-02 NOT IDENT.

CO-57	-1.627E-03	2.636E-02	2.289E-02	1.345E-02	NOT IDENT.
CO-58	1.608E-04	4.542E-02	3.787E-02	2.317E-02	NOT IDENT.
FE-59	-7.418E-02	1.082E-01	8.756E-02	5.519E-02	NOT IDENT.
CO-60	1.415E-02	3.982E-02	3.475E-02	2.032E-02	NOT IDENT.
ZN-65	-5.003E-02	1.050E-01	7.292E-02	5.355E-02	NOT IDENT.
SE-75	-4.085E-02	4.965E-02	3.639E-02	2.533E-02	NOT IDENT.
SR-85	1.394E-01	4.718E-02	4.199E-02	2.407E-02	NOT IDENT.
Y-88	1.358E-02	3.273E-02	2.897E-02	1.670E-02	NOT IDENT.
Y-91	-1.360E+01	2.653E+01	2.176E+01	1.354E+01	NOT IDENT.
NB-94	2.337E-02	3.502E-02	3.072E-02	1.787E-02	NOT IDENT.
NB-95	4.364E-02	5.663E-02	4.369E-02	2.889E-02	NOT IDENT.
NB-95M	7.823E-01	1.762E-01	1.536E-01	8.990E-02	NOT IDENT.
ZR-95	1.377E-02	7.742E-02	6.571E-02	3.950E-02	NOT IDENT.
MO-99	-7.100E+01	8.965E+01	0.000E+00	4.574E+01	SHORT HLIF
TC-99M	-1.102E+26	1.117E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.460E-02	4.284E-02	3.537E-02	2.186E-02	FAIL ABUN
RH-106	-1.706E-01	2.968E-01	2.404E-01	1.514E-01	NOT IDENT.
RU-106	-1.706E-01	2.964E-01	2.404E-01	1.512E-01	NOT IDENT.
AG-108M	-1.480E-02	2.720E-02	2.279E-02	1.388E-02	NOT IDENT.
AG-110M	3.725E-04	3.214E-02	2.718E-02	1.640E-02	NOT IDENT.
SN-113	-2.888E-02	4.600E-02	3.876E-02	2.347E-02	NOT IDENT.
CD-115	-1.152E+02	1.293E+02	0.000E+00	6.599E+01	SHORT HLIF
SN-117M	-1.497E-02	8.477E-02	7.248E-02	4.325E-02	NOT IDENT.
TE-123M	-6.748E-03	3.049E-02	2.602E-02	1.556E-02	NOT IDENT.
SB-124	3.906E-02	8.296E-02	7.380E-02	4.233E-02	NOT IDENT.
SB-125	4.199E-02	8.236E-02	7.345E-02	4.202E-02	FAIL ABUN
TE-125M	1.074E+00	1.097E+01	9.623E+00	5.599E+00	NOT IDENT.
I-126	1.445E-01	3.271E-01	2.845E-01	1.669E-01	NOT IDENT.
SB-126	2.326E-01	2.456E-01	2.083E-01	1.253E-01	NOT IDENT.
SB-127	-2.066E+00	5.442E+00	4.455E+00	2.776E+00	NOT IDENT.
I-131	-4.256E-02	2.180E-01	1.888E-01	1.112E-01	NOT IDENT.
TE-132	-1.263E-01	3.840E+00	3.433E+00	1.959E+00	NOT IDENT.
BA-133	9.281E-03	4.409E-02	3.399E-02	2.250E-02	FAIL ABUN
I-133	-1.967E+05	3.004E+06	0.000E+00	1.533E+06	SHORT HLIF
CS-134	1.468E-01	8.131E-02	4.625E-02	4.149E-02	FAIL ABUN
CS-135	4.043E-01	1.718E-01	1.473E-01	8.767E-02	NOT IDENT.
I-135	-5.056E+23	2.765E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.927E-02	1.595E-01	1.327E-01	8.136E-02	NOT IDENT.
BA-137M	-4.159E-02	3.340E-02	2.545E-02	1.704E-02	NOT IDENT.
CS-137	-4.394E-02	3.528E-02	2.688E-02	1.800E-02	NOT IDENT.
CE-139	8.684E-03	3.152E-02	2.733E-02	1.608E-02	NOT IDENT.
BA-140	-4.007E-01	4.524E-01	3.443E-01	2.308E-01	NOT IDENT.
LA-140	6.918E-02	1.217E-01	9.779E-02	6.207E-02	NOT IDENT.
CE-141	1.545E-02	7.494E-02	6.518E-02	3.824E-02	NOT IDENT.
CE-143	6.744E+04	1.816E+04	0.000E+00	9.264E+03	SHORT HLIF
CE-144	-1.396E-01	2.359E-01	1.727E-01	1.203E-01	NOT IDENT.
PM-144	5.699E-03	3.760E-02	3.196E-02	1.918E-02	NOT IDENT.
PR-144	4.318E-01	2.826E+00	2.402E+00	1.442E+00	NOT IDENT.
PM-146	5.290E-03	4.087E-02	3.464E-02	2.085E-02	NOT IDENT.
ND-147	2.662E-01	8.936E-01	7.788E-01	4.559E-01	FAIL ABUN
PM-149	7.681E+02	1.071E+03	0.000E+00	5.465E+02	SHORT HLIF
EU-152	2.307E-02	1.298E-01	7.922E-02	6.625E-02	NOT IDENT.
GD-153	-1.932E-02	9.656E-02	7.343E-02	4.926E-02	NOT IDENT.
EU-154	-1.411E-03	1.152E-01	9.738E-02	5.876E-02	NOT IDENT.
EU-155	2.972E-03	1.072E-01	9.396E-02	5.471E-02	FAIL ABUN
TB-160	5.164E-02	1.383E-01	1.235E-01	7.057E-02	FAIL ABUN
HO-166M	2.210E-02	6.316E-02	5.436E-02	3.223E-02	FAIL ABUN
TA-182	-5.986E-02	2.122E-01	1.765E-01	1.083E-01	FAIL ABUN
IR-192	-2.895E-03	3.556E-02	3.120E-02	1.814E-02	FAIL ABUN
HG-203	6.049E-02	4.869E-02	3.997E-02	2.484E-02	NOT IDENT.
BI-207	1.643E-02	5.464E-02	4.787E-02	2.788E-02	FAIL ABUN
PB-210	3.728E-01	2.251E+00	2.032E+00	1.148E+00	NOT IDENT.
PB-211	-9.066E-01	8.630E-01	6.142E-01	4.403E-01	NOT IDENT.
BI-212	2.327E+00	8.759E-01	5.989E-01	4.469E-01	FAIL ABUN
RN-219	-1.842E-01	4.120E-01	3.453E-01	2.102E-01	FAIL ABUN
RA-223	-8.796E-01	6.840E-01	5.566E-01	3.490E-01	FAIL ABUN
AC-227	-1.015E-01	2.431E-01	2.126E-01	1.240E-01	FAIL ABUN
TH-227	-1.015E-01	2.431E-01	2.126E-01	1.241E-01	FAIL ABUN
TH-229	3.843E-01	5.058E-01	4.668E-01	2.581E-01	FAIL ABUN
PA-231	-1.004E+00	1.467E+00	1.212E+00	7.485E-01	FAIL ABUN
TH-231	-8.796E-01	6.840E-01	5.566E-01	3.490E-01	FAIL ABUN
PA-233	-7.576E-02	6.025E-02	4.981E-02	3.074E-02	FAIL ABUN
PA-234	-1.029E-01	2.974E-01	2.497E-01	1.517E-01	FAIL ABUN
PA-234M	1.619E+00	4.492E+00	3.989E+00	2.292E+00	NOT IDENT.
NP-239	-1.080E-01	4.074E-01	3.519E-01	2.079E-01	FAIL ABUN
AM-241	1.738E-01	1.400E-01	1.147E-01	7.145E-02	NOT IDENT.
CM-247	-2.208E-02	3.855E-02	3.217E-02	1.967E-02	FAIL ABUN
CF-249	5.212E-02	3.845E-02	3.565E-02	1.962E-02	NOT IDENT.

CF-251	-9.796E-02	1.300E-01	1.080E-01	6.635E-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	523.3027
49.72	611.9488
57.36	0.0000
59.54	542.6743
63.29	719.2374
63.29	719.2374
64.28	783.9692
67.75	849.8400
69.67	781.0135
70.83	792.2939
72.81	780.3951
72.87	780.4379
72.87	780.4379
74.82	861.1543
74.82	861.1543
74.82	861.1543
74.97	861.2736
77.11	862.9438
77.11	862.9438
77.11	862.9438
79.69	864.9280
79.80	865.0128
80.12	865.2545
80.19	865.3079
80.57	865.5967
81.00	813.1050
81.07	813.1552
81.07	813.1552
83.79	717.1927
83.79	717.1927
85.43	633.7029
86.48	876.6964
86.55	876.7470
86.79	888.1998
86.94	920.0406
87.57	873.5466
88.03	867.1063
88.47	753.9143
89.96	754.8432
91.11	611.2354
92.59	611.9714
92.59	611.9714
93.35	496.6816
94.67	526.1544
94.87	526.2392
94.87	526.2392
95.86	589.7162
97.43	535.8392
98.44	486.7353
99.53	485.0126
100.11	482.0245
103.18	544.2245
103.37	544.3040
105.31	527.9319
106.12	490.6739
109.28	531.6459
111.00	529.0822
111.76	536.9214
116.30	473.7726
117.23	495.7328
121.12	505.7642
121.78	482.1071
122.06	478.9422
123.07	455.8316
131.20	426.6128
133.52	485.0510
136.00	470.2661

136.47	468.2171
140.51	0.0000
140.51	0.0000
143.76	472.5965
144.24	480.4509
144.24	480.4509
145.44	465.3713
152.43	481.7683
153.25	479.7912
154.21	503.3514
154.21	503.3514
156.02	446.1834
158.56	463.5288
159.00	452.5310
162.66	452.3887
163.33	424.6979
165.86	421.9710
176.60	395.3367
177.52	420.2592
181.07	0.0000
184.41	436.1299
185.72	459.0110
193.51	375.3821
197.04	383.3416
205.31	349.6957
210.85	346.0951
215.65	353.0326
222.11	337.5867
227.38	372.5608
228.16	345.9457
228.18	345.9503
235.69	354.8875
235.96	359.5615
235.96	359.5615
238.63	330.9593
238.63	330.9593
240.99	331.3210
242.00	331.4735
244.70	295.9369
252.40	285.4593
252.80	281.7794
256.23	299.0283
256.23	299.0283
260.90	0.0000
264.66	271.9989
268.22	231.7107
269.46	238.0999
269.46	238.0999
271.23	256.3070
273.65	240.0959
276.40	262.3713
277.37	249.9029
277.60	256.7402
278.00	250.4949
279.20	259.5346
279.54	242.2668
280.46	250.2264
283.69	273.1537
284.31	257.2512
285.41	239.7049
285.90	0.0000
287.50	222.5500
293.27	0.0000
295.22	218.5028
295.96	180.5557
298.57	180.7482
299.98	180.8502
299.98	180.8502
300.09	214.1730
300.09	214.1730
300.13	214.1757
301.36	198.4100
302.85	203.2917
304.50	217.7306
304.50	217.7306
304.85	203.4544
308.46	160.7674
311.90	240.9996

316.51	222.2720
319.41	232.1126
320.08	235.0499
323.87	300.7276
323.87	300.7276
328.76	241.6089
333.37	263.5638
334.37	231.5098
334.37	231.5098
338.28	203.8319
338.28	203.8319
338.32	203.8370
338.32	203.8370
338.32	203.8370
340.48	201.4211
340.55	201.4262
344.28	187.1831
351.06	182.4715
351.93	182.5289
356.01	178.2599
364.49	190.1821
366.42	0.0000
383.85	173.7979
388.16	155.3712
388.63	151.4622
391.69	199.8628
400.66	189.6047
401.81	194.6169
402.40	205.5244
404.85	236.3509
410.95	191.2448
414.70	182.5513
423.72	139.3062
427.09	132.4853
427.87	131.5214
433.94	150.7456
453.88	140.6409
463.37	139.3718
468.07	137.8895
473.00	162.6823
476.78	126.4496
477.60	130.5290
487.02	110.6007
492.35	0.0000
497.08	133.3171
511.00	130.7898
514.00	114.1987
527.90	0.0000
529.87	0.0000
531.02	119.2002
537.26	153.3798
546.56	0.0000
563.25	122.6784
569.33	120.4548
569.50	120.4605
569.70	120.4661
583.19	118.8149
600.60	124.3280
602.73	118.7205
604.72	118.7814
609.32	108.0796
609.32	108.0796
610.33	113.7050
614.28	106.8145
618.01	93.5956
621.93	106.3188
621.93	106.3188
633.25	109.7891
635.95	113.0318
636.99	120.4570
645.85	114.3677
657.76	90.2731
661.66	115.8737
661.66	115.8737
664.57	0.0000
666.33	101.1045
666.50	101.1091
677.62	99.2439

685.70	110.1265
695.00	114.6541
696.49	126.4841
696.51	126.4841
697.00	127.5705
702.65	110.5641
706.68	127.8582
711.68	107.5684
720.70	97.0115
721.93	0.0000
722.78	109.6392
722.91	109.6441
723.31	125.8325
724.19	140.2419
727.33	107.9541
733.00	86.4746
735.93	78.8052
739.50	0.0000
747.24	84.5832
752.31	85.7640
753.82	100.9967
756.73	90.1956
763.94	112.4709
765.81	110.7015
766.42	108.9014
777.92	0.0000
778.90	108.1072
783.70	71.0525
785.37	86.3870
795.86	76.7197
801.95	109.7412
810.29	91.2473
810.76	97.8522
815.77	94.4711
818.51	71.5825
832.01	102.1542
834.85	105.8986
836.80	0.0000
846.77	87.6960
856.80	82.4579
860.56	79.3474
871.09	76.0709
873.19	79.8149
875.33	0.0000
879.36	65.9760
880.51	68.7788
883.24	72.5363
884.68	71.6267
889.28	66.1060
898.04	69.9524
911.20	78.5483
911.20	78.5483
911.20	78.5483
926.50	64.7142
937.49	85.5291
944.13	91.2829
946.00	81.9023
949.00	82.8903
962.29	74.4660
964.08	85.8255
966.15	76.1390
968.97	63.3482
968.97	63.3482
968.97	63.3482
983.53	78.6889
996.26	76.9741
1001.03	65.6281
1004.73	84.7086
1037.84	84.2581
1038.76	0.0000
1048.07	76.7383
1050.41	71.0130
1050.41	71.0130
1063.66	76.9499
1085.87	62.7651
1099.45	91.9501
1112.07	83.8055
1115.54	86.5167

1120.29	78.2601
1120.29	78.2601
1120.55	82.5686
1121.30	82.5789
1131.51	0.0000
1173.23	91.1344
1177.93	86.3027
1189.05	97.2678
1204.77	113.2733
1221.41	96.7878
1231.02	98.9136
1235.36	118.7793
1238.28	90.1150
1260.41	0.0000
1271.85	58.7359
1274.44	55.7721
1274.54	55.7721
1291.59	62.9077
1298.22	0.0000
1312.11	63.1051
1332.49	46.2190
1365.19	39.3777
1368.63	0.0000
1384.29	60.7520
1408.01	29.4649
1457.56	0.0000
1460.82	27.6405
1489.16	27.7504
1505.03	44.2930
1596.21	16.0890
1620.50	19.8767
1678.03	0.0000
1690.97	16.8913
1764.49	18.1130
1764.49	18.1130
1770.23	16.4500
1771.35	20.1086
1791.20	0.0000
1836.06	12.8975

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248248003

Total Uranium Activity	4.9248E+00	ug/g
Total Uranium Counting Unc.	5.0546E+00	ug/g
Total Uranium Tpu	2.5789E-06	ug/g
Total Uranium Mda	3.0674E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959280          SAMPLE ID   : G248248003
*  ANALYST       : MXR1            DETECTOR    : GAM14
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 10:59:33.42  SAMPLE ALQT: 142.380 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.119E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.412E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.193E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.055E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 13:02:50.70

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248004.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:00:09
Sample ID          : G248248004      Sample quantity   : 1.26450E+02 GRAM
Detector name      : GAM17           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:10.14 0.1%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID          : 959280           Detector SN#     :
Matrix Spike ID    :                 LCS ID           : 1032-A
*****
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.44*	142	380	0.84	92.50	88	9	1.97E-02	27.6	
2	0	63.36*	224	587	1.12	126.36	122	9	3.11E-02	21.1	
3	4	74.94*	809	434	1.04	149.54	143	15	1.12E-01	5.5	3.21E+00
4	4	77.23*	1145	423	0.95	154.11	143	15	1.59E-01	4.2	
5	3	87.38*	384	326	1.22	174.42	165	28	5.33E-02	9.5	4.51E+00
6	3	89.99*	318	311	1.18	179.63	165	28	4.42E-02	11.1	
7	3	92.90*	400	293	1.24	185.45	165	28	5.55E-02	9.5	
8	0	129.33	56	286	0.67	258.35	255	7	7.85E-03	52.0	
9	0	143.81*	95	241	1.51	287.31	284	8	1.32E-02	31.6	
10	0	185.85*	244	323	1.22	371.42	366	12	3.40E-02	16.5	
11	0	209.42*	111	257	1.59	418.58	415	9	1.54E-02	28.3	
12	7	238.71*	1409	158	1.09	477.19	472	17	1.96E-01	3.1	3.17E+00
13	7	241.68	295	243	1.94	483.13	472	17	4.10E-02	16.7	
14	0	270.30	132	235	1.55	540.40	534	13	1.84E-02	25.4	
15	0	295.18*	341	124	1.04	590.18	586	8	4.73E-02	8.0	
16	0	300.15	88	152	0.94	600.13	596	10	1.23E-02	28.5	
17	0	328.30	50	144	1.33	656.46	652	9	6.98E-03	45.5	
18	0	338.42*	237	151	1.23	676.70	672	9	3.30E-02	11.5	
19	0	352.03*	664	159	1.35	703.93	697	15	9.23E-02	5.7	
20	0	462.77	50	120	1.12	925.52	922	11	7.01E-03	44.1	
21	0	510.34*	107	155	2.01	1020.71	1014	18	1.49E-02	31.1	
22	0	583.22*	369	106	1.19	1166.55	1161	13	5.12E-02	8.0	
23	0	609.20*	470	85	1.30	1218.53	1212	13	6.53E-02	6.2	
24	0	726.87	69	60	1.36	1454.01	1448	12	9.58E-03	25.5	
25	0	795.70*	47	61	1.50	1591.74	1585	15	6.56E-03	40.4	
26	0	859.79	43	47	1.31	1720.02	1713	11	5.97E-03	34.4	
27	0	910.77*	249	33	1.80	1822.05	1816	12	3.46E-02	8.0	
28	0	964.46	71	45	1.33	1929.50	1922	13	9.82E-03	23.0	
29	0	968.76*	136	26	1.16	1938.10	1934	10	1.89E-02	11.4	
30	0	1120.01	119	43	1.56	2240.82	2235	15	1.65E-02	15.3	
31	0	1377.12	21	18	1.08	2755.46	2748	12	2.93E-03	45.6	
32	0	1460.33*	725	24	1.92	2922.02	2914	17	1.01E-01	4.1	
33	0	1764.06	64	12	1.51	3530.06	3523	12	8.89E-03	16.5	

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248004.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:00:09
Sample ID         : G248248004 Sample quantity : 126.45 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA17 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:10.14 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	*	2.596E+01	3.121E+00	7.457E-01	6.621E-02	34.810
CD-109	+	88.03	*	4.780E+00	1.023E+00	1.016E+00	9.918E-02	4.705
SN-126	+	64.28		1.022E+00	4.615E-01	4.138E-01	6.605E-02	2.471
	+	86.94		1.920E+00	8.784E-01	4.067E-01	1.692E-01	4.720
	+	87.57	*	4.617E-01	9.879E-02	9.800E-02	9.564E-03	4.711
TL-208		277.37		4.991E-01	4.666E-01	8.153E-01	1.053E-01	0.612
	+	583.19	*	7.112E-01	1.316E-01	7.246E-02	6.846E-03	9.814
	+	860.56		8.180E-01	5.681E-01	6.641E-01	6.246E-02	1.232
PB-210	+	46.54	*	1.576E+00	8.858E-01	7.918E-01	8.536E-02	1.991
BI-211		72.87		4.141E+00	2.144E+00	3.763E+00	3.680E-01	1.100
	+	351.06	*	5.253E+00	7.765E-01	3.608E-01	3.368E-02	14.557
PB-212	+	74.82		3.437E+00	6.054E-01	3.979E-01	5.483E-02	8.638
	+	77.11		2.931E+00	3.783E-01	2.403E-01	2.342E-02	12.199
	+	238.63	*	2.386E+00	2.833E-01	1.084E-01	1.098E-02	22.016
	+	300.09		2.377E+00	1.381E+00	1.368E+00	1.504E-01	1.738
BI-214	+	609.32	*	1.767E+00	2.835E-01	1.433E-01	1.464E-02	12.329
	+	1120.29		2.414E+00	7.847E-01	6.648E-01	7.141E-02	3.631
	+	1764.49		1.849E+00	6.312E-01	3.974E-01	3.360E-02	4.653
PB-214	+	74.82		6.092E+00	1.017E+00	7.053E-01	8.870E-02	8.638
	+	77.11		5.168E+00	7.915E-01	4.236E-01	5.409E-02	12.199
	+	242.00		3.032E+00	1.065E+00	6.601E-01	7.092E-02	4.593
	+	295.22		1.621E+00	3.165E-01	2.609E-01	2.937E-02	6.214
	+	351.93	*	1.906E+00	3.008E-01	1.313E-01	1.423E-02	14.520
RA-224	+	240.99	*	5.361E+00	1.858E+00	1.163E+00	1.052E-01	4.611
RA-226	+	609.32	*	1.767E+00	2.835E-01	1.433E-01	1.464E-02	12.329
	+	1120.29		2.414E+00	7.847E-01	6.648E-01	7.141E-02	3.631
	+	1764.49		1.849E+00	6.312E-01	3.974E-01	3.360E-02	4.653
AC-228	+	338.32		2.077E+00	9.912E-01	4.848E-01	2.026E-01	4.285
	+	911.20	*	2.425E+00	4.806E-01	2.654E-01	3.102E-02	9.137
	+	968.97		2.297E+00	7.687E-01	5.631E-01	1.374E-01	4.079
RA-228	+	338.32		2.077E+00	9.912E-01	4.848E-01	2.026E-01	4.285
	+	911.20	*	2.425E+00	4.806E-01	2.654E-01	3.102E-02	9.137
	+	968.97		2.297E+00	7.687E-01	5.631E-01	1.374E-01	4.079
TH-228	+	74.82		3.437E+00	5.063E-01	3.979E-01	3.912E-02	8.638

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	77.11		2.931E+00	3.783E-01	2.403E-01	2.342E-02	12.199
	+	238.63	*	2.386E+00	2.833E-01	1.084E-01	1.098E-02	22.016
	+	300.09		2.377E+00	1.991E+00	1.368E+00	8.384E-01	1.738
TH-232	+	338.32		2.077E+00	5.132E-01	4.848E-01	4.368E-02	4.285
	+	911.20	*	2.425E+00	4.806E-01	2.654E-01	3.102E-02	9.137
	+	968.97		2.297E+00	7.687E-01	5.631E-01	1.374E-01	4.079
TH-234	+	63.29	*	2.653E+00	1.228E+00	1.072E+00	2.039E-01	2.475
	+	92.59		4.256E+00	1.259E+00	8.712E-01	1.973E-01	4.886
U-235	+	89.96		4.105E+00	1.373E+00	1.053E+00	2.640E-01	3.899
	+	93.35		3.215E+00	9.757E-01	6.597E-01	1.560E-01	4.873
	+	143.76	*	4.598E-01	3.015E-01	3.425E-01	6.098E-02	1.343
		163.33		1.746E-01	4.579E-01	7.585E-01	1.360E-01	0.230
	+	185.72		2.639E-01	8.991E-02	6.714E-02	5.750E-03	3.931
		205.31		6.373E-01	6.356E-01	9.483E-01	1.727E-01	0.672
NP-237	+	86.48	*	1.378E+00	4.127E-01	2.915E-01	6.740E-02	4.727
		95.86		4.464E-01	8.470E-01	1.297E+00	3.189E-01	0.344
U-238	+	63.29	*	2.653E+00	1.228E+00	1.072E+00	2.039E-01	2.475
	+	92.59		4.256E+00	9.147E-01	8.712E-01	8.692E-02	4.886
ANH-511	+	511.00	*	1.543E-01	9.699E-02	5.323E-02	4.754E-03	2.898

---- 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	*	1.709E-02	4.336E-01	7.131E-01	6.784E-02	0.024
NA-22		1274.54	*	-7.873E-02	5.884E-02	7.578E-02	6.384E-03	-1.039
NA-24		1368.63	*	1.983E+03	5.884E-02	Half-Life too short		
SC-46		889.28	*	-5.197E-02	5.414E-02	7.953E-02	6.963E-03	-0.653
	+	1120.55		4.357E-01	1.386E-01	2.060E-01	1.728E-02	2.115
V-48		944.13		1.173E-01	1.702E+00	2.824E+00	2.471E-01	0.042
		983.53	*	-6.774E-02	1.273E-01	1.956E-01	1.706E-02	-0.346
		1312.11		-7.424E-02	1.444E-01	2.262E-01	1.920E-02	-0.328
CR-51		320.08	*	4.950E-02	4.879E-01	8.262E-01	7.884E-02	0.060
MN-54		834.85	*	-1.716E-02	5.333E-02	8.614E-02	7.574E-03	-0.199
CO-56		846.77	*	-3.714E-02	5.494E-02	8.467E-02	7.443E-03	-0.439
		1037.84		-4.369E-01	4.784E-01	7.001E-01	6.360E-02	-0.624
		1238.28		1.929E-01	1.476E-01	2.628E-01	2.258E-02	0.734
		1771.35		-3.372E-02	3.287E-01	5.253E-01	4.436E-02	-0.064
CO-57		122.06	*	-8.430E-03	2.542E-02	4.134E-02	4.843E-03	-0.204
		136.47		5.334E-03	2.242E-01	3.690E-01	4.151E-02	0.014
CO-58		810.76	*	3.920E-02	5.475E-02	9.728E-02	8.567E-03	0.403
FE-59		1099.45	*	3.022E-02	1.377E-01	2.295E-01	2.106E-02	0.132
		1291.59		-2.941E-02	1.729E-01	2.716E-01	2.617E-02	-0.108
CO-60		1173.23		2.023E-02	6.424E-02	1.073E-01	8.767E-03	0.189
		1332.49	*	-9.923E-03	5.752E-02	9.254E-02	7.887E-03	-0.107
ZN-65		1115.54	*	4.299E-02	1.437E-01	2.107E-01	1.774E-02	0.204
SE-75		121.12		-3.228E-02	1.357E-01	2.218E-01	3.010E-02	-0.146
		136.00		-2.872E-03	4.415E-02	7.239E-02	7.829E-03	-0.040
		264.66	*	5.563E-03	5.692E-02	8.076E-02	7.421E-03	0.069

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	279.54			-6.596E-02	1.317E-01	2.172E-01	2.061E-02	-0.304
	400.66			-1.606E-01	3.389E-01	5.439E-01	5.972E-02	-0.295
SR-85	514.00	*		4.532E-02	5.701E-02	8.816E-02	7.877E-03	0.514
Y-88	898.04			-2.208E-02	5.145E-02	8.066E-02	7.084E-03	-0.274
	1836.06	*		-1.610E-03	4.602E-02	7.437E-02	6.202E-03	-0.022
Y-91	1204.77	*		3.433E-01	3.692E+01	5.966E+01	4.924E+00	0.006
NB-94	702.65	*		2.858E-03	4.283E-02	7.255E-02	6.223E-03	0.039
	871.09			1.400E-02	4.467E-02	7.641E-02	6.705E-03	0.183
NB-95	765.81	*		3.862E-02	6.480E-02	1.133E-01	9.896E-03	0.341
NB-95M	235.69	*		-5.852E-02	1.703E-01	2.350E-01	2.404E-02	-0.249
ZR-95	724.19			-4.452E-02	1.606E-01	2.277E-01	2.133E-02	-0.195
	756.73	*		-5.995E-02	9.968E-02	1.572E-01	1.511E-02	-0.381
MO-99	140.51			-4.535E-05	9.968E-02	Half-Life	too short	
	181.07			-1.660E-05	9.968E-02	Half-Life	too short	
	366.42			1.432E-04	9.968E-02	Half-Life	too short	
	739.50	*		-1.017E-05	9.968E-02	Half-Life	too short	
	777.92			-5.730E-05	9.968E-02	Half-Life	too short	
TC-99M	140.51	*		-2.780E+19	9.968E-02	Half-Life	too short	
RU-103	497.08	*		1.453E-02	5.173E-02	8.666E-02	1.226E-02	0.168
+	610.33			2.094E+01	4.305E+00	4.693E+00	7.703E-01	4.462
RH-106	621.93	*		-2.100E-01	4.152E-01	6.327E-01	8.415E-02	-0.332
	1050.41			-7.390E-01	3.550E+00	5.662E+00	4.873E-01	-0.131
RU-106	621.93	*		-2.100E-01	4.147E-01	6.327E-01	5.497E-02	-0.332
	1050.41			-7.390E-01	3.550E+00	5.662E+00	4.873E-01	-0.131
AG-108M	433.94	*		2.281E-02	3.329E-02	5.780E-02	5.180E-03	0.395
	614.28			-3.003E-02	4.799E-02	6.115E-02	5.508E-03	-0.491
	722.91			-1.287E-02	5.869E-02	8.372E-02	7.463E-03	-0.154
AG-110M	657.76	*		4.067E-02	4.791E-02	8.255E-02	7.195E-03	0.493
	677.62			1.680E-01	4.437E-01	7.338E-01	6.413E-02	0.229
	706.68			8.880E-02	2.813E-01	4.858E-01	4.294E-02	0.183
	763.94			-3.753E-01	2.408E-01	3.467E-01	3.108E-02	-1.083
	884.68			1.005E-01	6.616E-02	1.250E-01	1.129E-02	0.804
	937.49			-1.286E-01	1.567E-01	2.349E-01	2.128E-02	-0.547
	1384.29			-7.814E-02	2.047E-01	3.041E-01	2.680E-02	-0.257
	1505.03			-5.156E-02	3.786E-01	6.143E-01	5.312E-02	-0.084
SN-113	391.69	*		5.417E-03	5.518E-02	9.229E-02	8.019E-03	0.059
CD-115	260.90			6.832E-04	5.518E-02	Half-Life	too short	
	492.35			-8.055E-05	5.518E-02	Half-Life	too short	
	527.90	*		3.946E-05	5.518E-02	Half-Life	too short	
SN-117M	156.02			-8.749E-01	3.766E+00	6.081E+00	5.599E-01	-0.144
	158.56	*		-1.643E-02	8.864E-02	1.433E-01	1.288E-02	-0.115
TE-123M	159.00	*		-5.455E-04	3.236E-02	5.276E-02	4.749E-03	-0.010
SB-124	602.73			2.745E-02	6.618E-02	9.753E-02	8.566E-03	0.281
	645.85			7.498E-01	6.681E-01	1.186E+00	1.072E-01	0.632
	722.78			-1.612E-02	6.332E-01	9.243E-01	8.168E-02	-0.017
	1690.97	*		-5.710E-03	1.236E-01	2.011E-01	1.793E-02	-0.028
SB-125	427.87	*		4.820E-02	1.045E-01	1.786E-01	1.574E-02	0.270
+	463.37			6.382E-01	5.658E-01	6.941E-01	6.563E-02	0.919
	600.60			6.724E-02	2.554E-01	4.204E-01	3.959E-02	0.160

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M	635.95			2.575E-01	3.345E-01	5.775E-01	5.374E-02	0.446
	109.28	*		-7.883E-01	1.055E+01	1.747E+01	2.173E+00	-0.045
	388.63			7.584E-02	3.044E-01	5.143E-01	4.352E-02	0.147
I-126	666.33	*		3.973E-01	4.503E-01	7.771E-01	6.561E-02	0.511
	753.82			3.646E+00	3.535E+00	6.433E+00	5.605E-01	0.567
	414.70			1.389E-02	1.371E-01	2.286E-01	1.961E-02	0.061
SB-126	666.50			1.441E-01	1.567E-01	2.714E-01	2.291E-02	0.531
	695.00			2.189E-02	1.529E-01	2.608E-01	2.230E-02	0.084
	697.00			-2.548E-02	5.253E-01	8.817E-01	7.547E-02	-0.029
SB-127	720.70	*		2.989E-01	3.278E-01	5.310E-01	4.584E-02	0.563
	856.80			7.514E-01	1.093E+00	1.720E+00	1.512E-01	0.437
	252.40			6.919E+00	2.025E+01	3.253E+01	1.380E+01	0.213
I-131	473.00			-2.491E+00	8.343E+00	1.335E+01	2.035E+00	-0.187
	685.70	*		2.858E+00	7.552E+00	1.247E+01	1.732E+00	0.229
	783.70			2.374E+00	2.015E+01	3.389E+01	5.033E+00	0.070
TE-132	80.19			6.693E+00	9.055E+00	1.147E+01	1.130E+00	0.584
	284.31			1.123E-01	3.219E+00	5.465E+00	5.282E-01	0.021
	364.49	*		-7.803E-03	2.722E-01	4.535E-01	4.216E-02	-0.017
BA-133	636.99			-4.522E-02	3.815E+00	6.115E+00	5.602E-01	-0.007
	49.72			1.077E+00	2.121E+01	3.288E+01	4.746E+00	0.033
	111.76			-1.119E+02	1.857E+02	2.954E+02	4.477E+01	-0.379
I-133	116.30			1.440E+02	1.594E+02	2.720E+02	4.179E+01	0.530
	228.16	*		1.649E+00	4.532E+00	7.380E+00	1.314E+00	0.223
	81.00			3.540E-02	9.442E-02	1.167E-01	1.887E-02	0.303
CS-134	276.40			2.664E-01	4.664E-01	7.539E-01	1.090E-01	0.353
	302.85			1.085E-02	1.552E-01	2.328E-01	3.127E-02	0.047
	356.01	*		2.867E-02	5.076E-02	7.856E-02	1.030E-02	0.365
I-135	383.85			-6.394E-02	3.555E-01	5.841E-01	7.222E-02	-0.109
	529.87	*		-1.083E+00	3.555E-01	Half-Life	too short	
	875.33			3.000E+00	3.555E-01	Half-Life	too short	
CS-135	1298.22			2.058E+01	3.555E-01	Half-Life	too short	
	563.25			2.523E-01	4.871E-01	8.220E-01	7.387E-02	0.307
	569.33			1.558E-01	2.764E-01	4.670E-01	4.206E-02	0.334
I-135	604.72			-4.822E-03	5.030E-02	6.993E-02	6.150E-03	-0.069
	795.86	*		1.386E-01	1.126E-01	1.309E-01	1.156E-02	1.059
	801.95			1.905E-01	6.443E-01	9.869E-01	8.712E-02	0.193
CS-136	1365.19			-1.025E+00	1.445E+00	2.123E+00	1.903E-01	-0.483
	268.22	*		1.261E-01	1.987E-01	2.947E-01	3.076E-02	0.428
	546.56			-1.410E+18	1.987E-01	Half-Life	too short	
I-135	836.80			2.449E+18	1.987E-01	Half-Life	too short	
	1038.76			-8.978E+18	1.987E-01	Half-Life	too short	
	1131.51			-9.772E+17	1.987E-01	Half-Life	too short	
CS-136	1260.41	*		-1.660E+18	1.987E-01	Half-Life	too short	
	1457.56			3.218E+20	1.987E-01	Half-Life	too short	
	1678.03			-8.144E+17	1.987E-01	Half-Life	too short	
CS-136	1791.20			4.360E+18	1.987E-01	Half-Life	too short	
	153.25			1.119E+00	1.432E+00	2.415E+00	2.649E-01	0.463
	176.60			-2.399E-01	8.240E-01	1.316E+00	1.234E-01	-0.182
	273.65			-1.025E+00	1.131E+00	1.464E+00	1.445E-01	-0.700

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		340.55		6.320E-01	3.105E-01	5.168E-01	4.815E-02	1.223
		818.51		1.128E-01	1.474E-01	2.628E-01	2.314E-02	0.429
	1048.07	*		-1.387E-02	2.229E-01	3.616E-01	3.249E-02	-0.038
	1235.36			2.934E-01	1.320E+00	2.168E+00	2.507E-01	0.135
BA-137M	661.66	*		-6.286E-02	5.003E-02	6.972E-02	5.873E-03	-0.902
CS-137	661.66	*		-6.640E-02	5.285E-02	7.365E-02	6.217E-03	-0.902
CE-139	165.86	*		-3.127E-02	3.291E-02	5.073E-02	4.230E-03	-0.616
BA-140	162.66			6.638E-02	1.327E+00	2.167E+00	1.996E-01	0.031
	304.85			6.229E-02	2.412E+00	3.600E+00	1.060E+00	0.017
	423.72			-1.510E+00	3.460E+00	5.465E+00	1.798E+00	-0.276
	537.26	*		-2.441E-01	5.473E-01	8.454E-01	2.874E-01	-0.289
LA-140	328.76	+		8.301E-01	7.596E-01	9.963E-01	9.505E-02	0.833
	487.02			-2.787E-01	2.676E-01	3.973E-01	3.738E-02	-0.701
	815.77			-7.452E-01	6.438E-01	9.326E-01	9.123E-02	-0.799
	1596.21	*		-1.477E-01	1.732E-01	2.397E-01	2.069E-02	-0.616
CE-141	145.44	*		2.455E-02	8.896E-02	1.325E-01	1.351E-02	0.185
CE-143	57.36			-2.275E-03	8.896E-02	Half-Life	too short	
	293.27	*		2.663E-02	8.896E-02	Half-Life	too short	
	664.57			8.941E-04	8.896E-02	Half-Life	too short	
	721.93			1.314E-02	8.896E-02	Half-Life	too short	
CE-144	80.12			1.834E+00	2.531E+00	3.204E+00	3.121E-01	0.572
	133.52	*		-3.700E-02	2.230E-01	3.468E-01	5.794E-02	-0.107
PM-144	476.78			-4.150E-02	7.955E-02	1.246E-01	1.195E-02	-0.333
	618.01			3.691E-02	3.907E-02	6.850E-02	6.131E-03	0.539
	696.49	*		-1.002E-02	4.421E-02	7.309E-02	6.259E-03	-0.137
PR-144	696.51	*		-7.527E-01	3.323E+00	5.492E+00	4.700E-01	-0.137
	1489.16			1.110E+01	1.757E+01	3.194E+01	2.761E+00	0.348
PM-146	453.88	*		-2.374E-02	5.121E-02	8.104E-02	8.690E-03	-0.293
	633.25			8.085E-02	1.844E+00	2.974E+00	1.136E+00	0.027
	735.93			1.238E-02	1.853E-01	3.130E-01	8.777E-02	0.040
	747.24			-1.243E-02	1.303E-01	2.166E-01	3.170E-02	-0.057
ND-147	91.11	+		2.181E+00	5.346E-01	7.814E-01	8.234E-02	2.791
	319.41			-4.536E+00	6.045E+00	9.665E+00	8.816E-01	-0.469
	531.02	*		-2.726E-01	1.188E+00	1.893E+00	2.865E-01	-0.144
PM-149	285.90	*		-1.890E-04	1.188E+00	Half-Life	too short	
EU-152	121.78			-2.966E-02	7.179E-02	1.162E-01	1.472E-02	-0.255
	244.70			5.411E-02	4.197E-01	5.996E-01	5.435E-02	0.090
	344.28	*		-5.259E-03	1.143E-01	1.909E-01	1.805E-02	-0.028
	778.90			2.651E-02	3.151E-01	5.311E-01	4.650E-02	0.050
	964.08	+		1.284E+00	6.002E-01	8.716E-01	7.617E-02	1.473
	1085.87			6.412E-02	5.394E-01	8.901E-01	7.574E-02	0.072
	1112.07			-2.901E-01	4.318E-01	6.245E-01	5.260E-02	-0.465
	1408.01			8.752E-02	2.689E-01	4.661E-01	4.010E-02	0.188
GD-153	69.67			7.310E-01	1.189E+00	1.856E+00	1.822E-01	0.394
	97.43	*		-1.087E-01	8.776E-02	1.213E-01	1.240E-02	-0.896
	103.18			-1.569E-01	1.105E-01	1.712E-01	1.804E-02	-0.917
EU-154	123.07			-2.089E-02	5.311E-02	8.608E-02	1.187E-02	-0.243
	723.31			-8.264E-02	2.647E-01	3.731E-01	3.549E-02	-0.222
	873.19			-2.291E-01	3.650E-01	5.617E-01	6.744E-02	-0.408

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EU-155	+	996.26		-1.325E-01	5.067E-01	8.074E-01	1.414E-01	-0.164
		1004.73		-2.444E-01	3.011E-01	4.475E-01	5.233E-02	-0.546
		1274.44	*	-2.237E-01	1.667E-01	2.131E-01	2.392E-02	-1.050
		86.55		5.616E-01	1.204E-01	1.762E-01	1.733E-02	3.187
		105.31	*	1.289E-01	1.055E-01	1.826E-01	1.962E-02	0.706
TB-160	+	86.79		1.601E+00	3.426E-01	5.035E-01	4.911E-02	3.181
		197.04		-2.368E-01	7.033E-01	1.095E+00	9.506E-02	-0.216
		215.65		5.125E-01	9.316E-01	1.536E+00	1.361E-01	0.334
		298.57		2.095E-01	2.146E-01	2.615E-01	2.400E-02	0.801
		879.36	*	-2.100E-01	1.973E-01	2.866E-01	2.512E-02	-0.733
HO-166M	+	962.29		9.100E-01	9.859E-01	1.553E+00	1.357E-01	0.586
		966.15		2.057E+00	4.355E-01	8.054E-01	7.037E-02	2.554
		1177.93		-8.670E-02	5.390E-01	8.564E-01	7.007E-02	-0.101
		1271.85		5.970E-02	9.235E-01	1.498E+00	1.259E-01	0.040
		80.57		3.928E-01	2.583E-01	3.430E-01	3.340E-02	1.145
		184.41		2.097E-01	7.143E-02	7.307E-02	6.247E-03	2.869
		280.46		-1.324E-01	9.836E-02	1.535E-01	1.409E-02	-0.863
		410.95		4.116E-01	3.059E-01	5.471E-01	4.678E-02	0.752
		711.68	*	-5.448E-02	7.895E-02	1.246E-01	1.073E-02	-0.437
		752.31		2.505E-01	3.617E-01	6.413E-01	5.585E-02	0.391
TA-182	+	810.29		6.644E-02	7.764E-02	1.393E-01	1.224E-02	0.477
		67.75		3.154E-02	7.482E-02	1.161E-01	1.144E-02	0.272
		100.11		1.709E-01	1.714E-01	2.960E-01	3.069E-02	0.577
		152.43		-2.599E-01	4.130E-01	6.547E-01	6.224E-02	-0.397
		222.11		1.696E-01	4.206E-01	6.880E-01	6.132E-02	0.247
IR-192	+	1121.30		1.186E+00	3.773E-01	5.412E-01	4.540E-02	2.192
		1189.05		1.687E-01	4.245E-01	7.164E-01	5.883E-02	0.236
		1221.41	*	-7.039E-02	2.891E-01	4.541E-01	3.767E-02	-0.155
		1231.02		4.217E-01	7.097E-01	1.209E+00	1.006E-01	0.349
		295.96		1.290E+00	2.378E-01	3.725E-01	3.442E-02	3.464
HG-203	+	308.46		-6.391E-02	1.120E-01	1.819E-01	1.673E-02	-0.351
		316.51	*	-3.308E-02	3.970E-02	6.298E-02	5.762E-03	-0.525
		468.07		-1.100E-02	1.031E-01	1.467E-01	1.386E-02	-0.075
		70.83		-3.042E-01	1.045E+00	1.570E+00	2.625E-01	-0.194
		72.87		1.158E+00	6.182E-01	1.053E+00	1.706E-01	1.100
BI-207	+	279.20	*	-5.226E-03	5.074E-02	8.561E-02	8.037E-03	-0.061
		72.81		2.179E-01	1.223E-01	2.145E-01	2.097E-02	1.016
		74.97		9.911E-01	1.455E-01	1.999E-01	1.951E-02	4.958
		569.70		3.332E-02	4.229E-02	7.260E-02	6.456E-03	0.459
		1063.66	*	1.898E-02	6.790E-02	1.144E-01	9.804E-03	0.166
PB-211	+	1770.23		-3.018E+00	1.071E+00	8.726E-01	7.371E-02	-3.458
		404.85	*	1.337E-03	9.113E-01	1.511E+00	7.309E-01	0.001
		427.09		2.063E+00	1.957E+00	3.081E+00	1.426E+00	0.669
		832.01		-5.352E-01	1.397E+00	2.195E+00	1.139E+00	-0.244
		727.33	*	2.097E+00	1.100E+00	1.472E+00	1.838E-01	1.424
RN-219	+	785.37		3.997E+00	4.348E+00	7.771E+00	6.810E-01	0.514
		1620.50		3.832E+00	3.634E+00	6.870E+00	5.919E-01	0.558
		271.23		9.980E-01	5.177E-01	5.623E-01	6.028E-02	1.775
		401.81	*	1.552E-01	5.195E-01	8.775E-01	1.299E-01	0.177

---- 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		4.893E-02	2.142E-01	2.625E-01	2.557E-02	0.186
		83.79		9.493E-02	1.146E-01	1.778E-01	1.732E-02	0.534
		94.87		6.902E-01	4.232E-01	7.381E-01	7.447E-02	0.935
	+	144.24		1.541E+00	9.875E-01	1.286E+00	1.417E-01	1.199
		154.21		4.698E-01	4.318E-01	7.359E-01	7.450E-02	0.638
	+	269.46		7.755E-01	4.002E-01	4.135E-01	3.855E-02	1.875
		323.87	*	-1.356E-03	8.320E-01	1.207E+00	2.122E-01	-0.001
	+	338.28		8.244E+00	2.152E+00	3.130E+00	3.867E-01	2.634
	AC-227	79.69		5.243E-01	1.076E+00	1.527E+00	2.721E-01	0.343
		235.96		9.938E-03	1.915E-01	2.726E-01	2.909E-02	0.036
		256.23	*	-3.063E-01	3.020E-01	4.436E-01	5.506E-02	-0.691
		299.98		2.615E+00	1.531E+00	1.941E+00	2.540E-01	1.347
TH-227	+	304.50		5.179E-02	1.847E+00	2.758E+00	4.640E-01	0.019
		334.37		-2.737E-01	2.328E+00	3.410E+00	5.396E-01	-0.080
		79.80		6.772E-01	1.422E+00	2.014E+00	4.480E-01	0.336
		235.96		9.938E-03	1.915E-01	2.726E-01	2.755E-02	0.036
		256.23	*	-3.063E-01	3.026E-01	4.436E-01	6.178E-02	-0.691
	+	299.98		2.615E+00	1.531E+00	1.941E+00	2.540E-01	1.347
		304.50		5.179E-02	1.847E+00	2.758E+00	4.640E-01	0.019
		334.37		-2.737E-01	2.328E+00	3.410E+00	5.396E-01	-0.080
	TH-229	85.43		4.858E-01	1.758E-01	3.073E-01	2.996E-02	1.581
		88.47		7.118E-01	1.523E-01	2.213E-01	2.164E-02	3.217
		193.51	*	-1.543E-01	5.740E-01	9.125E-01	7.891E-02	-0.169
PA-231	+	210.85		2.660E+00	1.523E+00	1.791E+00	1.579E-01	1.486
		283.69	*	-7.274E-02	1.575E+00	2.662E+00	3.973E-01	-0.027
	+	301.36		1.680E+00	9.812E-01	1.145E+00	1.438E-01	1.467
TH-231		81.07		4.893E-02	2.142E-01	2.625E-01	2.557E-02	0.186
		83.79		9.493E-02	1.146E-01	1.778E-01	1.732E-02	0.534
		94.87		6.902E-01	4.232E-01	7.381E-01	7.447E-02	0.935
	+	144.24		1.541E+00	9.875E-01	1.286E+00	1.417E-01	1.199
		154.21		4.698E-01	4.318E-01	7.359E-01	7.450E-02	0.638
	+	269.46		7.755E-01	4.002E-01	4.135E-01	3.855E-02	1.875
		323.87	*	-1.356E-03	8.320E-01	1.207E+00	2.122E-01	-0.001
	+	338.28		8.244E+00	2.152E+00	3.130E+00	3.867E-01	2.634
	PA-233	300.13		1.183E+00	6.984E-01	8.768E-01	1.329E-01	1.350
		311.90	*	4.559E-02	7.285E-02	1.270E-01	1.192E-02	0.359
PA-234		340.48		2.083E+00	1.011E+00	1.508E+00	3.649E-01	1.382
		94.67		3.973E-01	1.656E-01	2.840E-01	3.822E-02	1.399
		98.44		6.071E-02	9.675E-02	1.407E-01	7.888E-02	0.432
		111.00		-9.669E-02	1.807E-01	2.923E-01	4.058E-02	-0.331
		131.20		5.150E-02	1.191E-01	1.801E-01	2.000E-02	0.286
		569.50		1.305E-01	3.838E-01	6.378E-01	5.671E-02	0.205
		733.00		-1.034E-01	5.272E-01	7.873E-01	1.749E-01	-0.131
		880.51		-2.561E-01	3.746E-01	5.740E-01	5.031E-02	-0.446
		883.24		4.924E-01	4.947E-01	6.908E-01	4.645E-01	0.713
		926.50		-3.636E-02	2.254E-01	3.648E-01	9.238E-02	-0.100
PA-234M		946.00	*	-8.693E-02	4.185E-01	6.738E-01	1.268E-01	-0.129
		949.00		-1.625E-01	6.333E-01	1.015E+00	8.883E-02	-0.160
		766.42		2.343E+01	2.011E+01	3.000E+01	1.523E+01	0.781

---- 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	*		3.761E+00	6.303E+00	1.094E+01	1.098E+00	0.344
	99.53			2.514E-01	1.492E-01	2.622E-01	2.710E-02	0.959
	103.37			-8.834E-02	9.631E-02	1.535E-01	1.619E-02	-0.575
	106.12			6.211E-02	8.601E-02	1.467E-01	1.571E-02	0.423
	117.23	*		1.635E-01	3.963E-01	6.678E-01	7.606E-02	0.245
	228.18			8.730E-02	2.451E-01	3.996E-01	3.580E-02	0.218
AM-241	277.60			3.051E-01	2.097E-01	3.731E-01	3.424E-02	0.818
	59.54	*		1.425E-02	6.971E-02	1.069E-01	1.136E-02	0.133
CM-247	278.00			1.761E+00	8.841E-01	1.616E+00	1.483E-01	1.090
	287.50			1.649E+00	1.439E+00	2.567E+00	2.358E-01	0.642
CF-249	402.40	*		2.312E-02	4.849E-02	8.277E-02	7.030E-03	0.279
	252.80			1.918E-01	1.088E+00	1.748E+00	1.591E-01	0.110
	333.37			3.778E-02	2.867E-01	3.641E-01	3.293E-02	0.104
CF-251	388.16	*		3.847E-03	4.832E-02	8.075E-02	6.839E-03	0.048
	177.52	*		-2.326E-02	1.414E-01	2.274E-01	1.926E-02	-0.102
	227.38			8.727E-02	3.947E-01	6.389E-01	5.720E-02	0.137
	285.41			-1.506E+00	2.511E+00	4.109E+00	3.774E-01	-0.367

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]G248248004      *
* Acquisition date   : 19-MAR-2010 11:00:09 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 02:00:10.14           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248248004              Analyst initials: MXR1         *
* Batch Number       : 959280                  Sample Quantity : 1.2645E+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	2.596E+01	3.059E+00	7.454E-01	0.000E+00
CD-109	4.780E+00	1.002E+00	1.058E+00	0.000E+00
SN-126	4.617E-01	9.681E-02	1.020E-01	0.000E+00
TL-208	7.112E-01	1.290E-01	7.343E-02	0.000E+00
PB-210	1.576E+00	8.681E-01	8.315E-01	0.000E+00
BI-211	5.253E+00	7.610E-01	3.684E-01	0.000E+00
PB-212	2.386E+00	2.777E-01	1.113E-01	0.000E+00
BI-214	1.767E+00	2.778E-01	1.451E-01	0.000E+00
PB-214	1.906E+00	2.948E-01	1.340E-01	0.000E+00
RA-224	5.361E+00	1.821E+00	1.193E+00	0.000E+00
RA-226	1.767E+00	2.778E-01	1.451E-01	0.000E+00
AC-228	2.425E+00	4.710E-01	2.672E-01	0.000E+00
RA-228	2.425E+00	4.710E-01	2.672E-01	0.000E+00
TH-228	2.386E+00	2.777E-01	1.113E-01	0.000E+00
TH-232	2.425E+00	4.710E-01	2.672E-01	0.000E+00
TH-234	2.653E+00	1.204E+00	1.121E+00	0.000E+00
U-235	4.598E-01	2.955E-01	3.541E-01	0.000E+00
NP-237	1.378E+00	4.045E-01	3.035E-01	0.000E+00
U-238	2.653E+00	1.204E+00	1.121E+00	0.000E+00
ANH-511	1.543E-01	9.505E-02	5.405E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.709E-02	4.249E-01	7.247E-01	0.000E+00 NOT IDENT.
NA-22	-7.873E-02	5.767E-02	7.590E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.435E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-5.197E-02	5.306E-02	8.009E-02	0.000E+00 FAIL ABUN
V-48	-6.774E-02	1.248E-01	1.966E-01	0.000E+00 NOT IDENT.
CR-51	4.950E-02	4.782E-01	8.445E-01	0.000E+00 NOT IDENT.
MN-54	-1.716E-02	5.227E-02	8.683E-02	0.000E+00 NOT IDENT.

CO-56	-3.714E-02	5.384E-02	8.533E-02	0.000E+00	NOT IDENT.
CO-57	-8.430E-03	2.491E-02	4.284E-02	0.000E+00	NOT IDENT.
CO-58	3.920E-02	5.365E-02	9.810E-02	0.000E+00	NOT IDENT.
FE-59	3.022E-02	1.349E-01	2.304E-01	0.000E+00	NOT IDENT.
CO-60	-9.923E-03	5.637E-02	9.263E-02	0.000E+00	NOT IDENT.
ZN-65	4.299E-02	1.408E-01	2.115E-01	0.000E+00	NOT IDENT.
SE-75	5.563E-03	5.579E-02	8.278E-02	0.000E+00	NOT IDENT.
SR-85	4.532E-02	5.587E-02	8.950E-02	0.000E+00	NOT IDENT.
Y-88	-1.610E-03	4.510E-02	7.408E-02	0.000E+00	NOT IDENT.
Y-91	3.433E-01	3.618E+01	5.981E+01	0.000E+00	NOT IDENT.
NB-94	2.858E-03	4.197E-02	7.331E-02	0.000E+00	NOT IDENT.
NB-95	3.862E-02	6.350E-02	1.143E-01	0.000E+00	NOT IDENT.
NB-95M	-5.852E-02	1.669E-01	2.413E-01	0.000E+00	NOT IDENT.
ZR-95	-5.995E-02	9.768E-02	1.587E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.096E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.138E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.453E-02	5.070E-02	8.802E-02	0.000E+00	FAIL ABUN
RH-106	-2.100E-01	4.069E-01	6.405E-01	0.000E+00	NOT IDENT.
RU-106	-2.100E-01	4.064E-01	6.405E-01	0.000E+00	NOT IDENT.
AG-108M	2.281E-02	3.262E-02	5.882E-02	0.000E+00	NOT IDENT.
AG-110M	4.067E-02	4.696E-02	8.350E-02	0.000E+00	NOT IDENT.
SN-113	5.417E-03	5.407E-02	9.407E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.621E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.643E-02	8.686E-02	1.479E-01	0.000E+00	NOT IDENT.
TE-123M	-5.455E-04	3.172E-02	5.447E-02	0.000E+00	NOT IDENT.
SB-124	-5.710E-03	1.211E-01	2.005E-01	0.000E+00	NOT IDENT.
SB-125	4.820E-02	1.024E-01	1.818E-01	0.000E+00	FAIL ABUN
TE-125M	-7.883E-01	1.033E+01	1.813E+01	0.000E+00	NOT IDENT.
I-126	3.973E-01	4.413E-01	7.859E-01	0.000E+00	NOT IDENT.
SB-126	2.989E-01	3.212E-01	5.364E-01	0.000E+00	NOT IDENT.
SB-127	2.858E+00	7.401E+00	1.261E+01	0.000E+00	NOT IDENT.
I-131	-7.803E-03	2.667E-01	4.627E-01	0.000E+00	NOT IDENT.
TE-132	1.649E+00	4.442E+00	7.580E+00	0.000E+00	NOT IDENT.
BA-133	2.867E-02	4.974E-02	8.018E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.922E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	1.103E-01	1.320E-01	0.000E+00	FAIL ABUN
CS-135	1.261E-01	1.947E-01	3.020E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.975E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.387E-02	2.185E-01	3.633E-01	0.000E+00	NOT IDENT.
BA-137M	-6.286E-02	4.902E-02	7.052E-02	0.000E+00	NOT IDENT.
CS-137	-6.640E-02	5.179E-02	7.450E-02	0.000E+00	NOT IDENT.
CE-139	-3.127E-02	3.226E-02	5.235E-02	0.000E+00	NOT IDENT.
BA-140	-2.441E-01	5.363E-01	8.577E-01	0.000E+00	NOT IDENT.
LA-140	-1.477E-01	1.697E-01	2.393E-01	0.000E+00	FAIL ABUN
CE-141	2.455E-02	8.718E-02	1.370E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.095E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.700E-02	2.185E-01	3.590E-01	0.000E+00	NOT IDENT.
PM-144	-1.002E-02	4.333E-02	7.387E-02	0.000E+00	NOT IDENT.
PR-144	-7.527E-01	3.256E+00	5.551E+00	0.000E+00	NOT IDENT.
PM-146	-2.374E-02	5.019E-02	8.242E-02	0.000E+00	NOT IDENT.
ND-147	-2.726E-01	1.164E+00	1.920E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.208E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-5.259E-03	1.120E-01	1.949E-01	0.000E+00	FAIL ABUN
GD-153	-1.087E-01	8.600E-02	1.261E-01	0.000E+00	NOT IDENT.
EU-154	-2.237E-01	1.634E-01	2.134E-01	0.000E+00	NOT IDENT.
EU-155	1.289E-01	1.034E-01	1.897E-01	0.000E+00	FAIL ABUN
TB-160	-2.100E-01	1.933E-01	2.886E-01	0.000E+00	FAIL ABUN
HO-166M	-5.448E-02	7.738E-02	1.259E-01	0.000E+00	FAIL ABUN
TA-182	-7.039E-02	2.833E-01	4.552E-01	0.000E+00	FAIL ABUN
IR-192	-3.308E-02	3.890E-02	6.439E-02	0.000E+00	FAIL ABUN
HG-203	-5.226E-03	4.972E-02	8.768E-02	0.000E+00	NOT IDENT.
BI-207	1.898E-02	6.655E-02	1.149E-01	0.000E+00	FAIL ABUN
PB-211	1.337E-03	8.931E-01	1.539E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.078E+00	1.487E+00	0.000E+00	FAIL ABUN
RN-219	1.552E-01	5.092E-01	8.940E-01	0.000E+00	FAIL ABUN
RA-223	-1.356E-03	8.154E-01	1.234E+00	0.000E+00	FAIL ABUN
AC-227	-3.063E-01	2.959E-01	4.549E-01	0.000E+00	FAIL ABUN
TH-227	-3.063E-01	2.965E-01	4.549E-01	0.000E+00	FAIL ABUN
TH-229	-1.543E-01	5.625E-01	9.395E-01	0.000E+00	FAIL ABUN
PA-231	-7.274E-02	1.543E+00	2.726E+00	0.000E+00	FAIL ABUN
TH-231	-1.356E-03	8.154E-01	1.234E+00	0.000E+00	FAIL ABUN
PA-233	4.559E-02	7.140E-02	1.299E-01	0.000E+00	FAIL ABUN
PA-234	-8.693E-02	4.101E-01	6.780E-01	0.000E+00	NOT IDENT.
PA-234M	3.761E+00	6.177E+00	1.100E+01	0.000E+00	NOT IDENT.
NP-239	1.635E-01	3.883E-01	6.924E-01	0.000E+00	NOT IDENT.
AM-241	1.425E-02	6.832E-02	1.119E-01	0.000E+00	NOT IDENT.
CM-247	2.312E-02	4.752E-02	8.433E-02	0.000E+00	NOT IDENT.
CF-249	3.847E-03	4.735E-02	8.232E-02	0.000E+00	NOT IDENT.

CF-251	-2.326E-02	1.386E-01	2.344E-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]G248248004.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:00:09
Sample ID          : G248248004          Sample quantity  : 1.26450E+02 GRAM
Detector name      : GAM17              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:10.14  0.1%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 959280             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	725	10.66*	7.780E-01	2.596E+01	2.596E+01	12.02
CD-109	88.03	384	3.70*	6.673E+00	4.617E+00	4.780E+00	21.40
SN-126	64.28	224	9.60	6.777E+00	1.022E+00	1.022E+00	45.15
	86.94	384	8.90	6.673E+00	1.920E+00	1.920E+00	45.76
	87.57	384	37.00*	6.673E+00	4.617E-01	4.617E-01	21.40
TL-208	277.37	-----	6.60	3.568E+00	-----	Line Not Found	-----
	583.19	369	85.00*	1.811E+00	7.112E-01	7.112E-01	18.51
	860.56	43	12.50	1.247E+00	8.180E-01	8.180E-01	69.46
PB-210	46.54	142	4.25*	6.309E+00	1.573E+00	1.576E+00	56.19
BI-211	72.87	-----	1.23	6.803E+00	-----	Line Not Found	-----
	351.06	664	12.92*	2.906E+00	5.253E+00	5.253E+00	14.78
PB-212	74.82	809	10.28	6.795E+00	3.437E+00	3.437E+00	17.61
	77.11	1145	17.10	6.781E+00	2.931E+00	2.931E+00	12.91
	238.63	1409	43.60*	4.021E+00	2.386E+00	2.386E+00	11.87
	300.09	88	3.30	3.340E+00	2.377E+00	2.377E+00	58.09
BI-214	609.32	470	45.49*	1.736E+00	1.767E+00	1.767E+00	16.04
	1120.29	119	14.92	9.771E-01	2.414E+00	2.414E+00	32.51
	1764.49	64	15.30	6.715E-01	1.849E+00	1.849E+00	34.14
PB-214	74.82	809	5.80	6.795E+00	6.092E+00	6.092E+00	16.69
	77.11	1145	9.70	6.781E+00	5.168E+00	5.168E+00	15.32
	242.00	295	7.25	3.983E+00	3.032E+00	3.032E+00	35.14
	295.22	341	18.42	3.387E+00	1.621E+00	1.621E+00	19.52
	351.93	664	35.60*	2.906E+00	1.906E+00	1.906E+00	15.78
RA-224	240.99	295	4.10*	3.983E+00	5.361E+00	5.361E+00	34.66
RA-226	609.32	470	45.49*	1.736E+00	1.767E+00	1.767E+00	16.04
	1120.29	119	14.92	9.771E-01	2.414E+00	2.414E+00	32.51
	1764.49	64	15.30	6.715E-01	1.849E+00	1.849E+00	34.14
AC-228	338.32	237	11.27	3.010E+00	2.077E+00	2.077E+00	47.71
	911.20	249	25.80*	1.182E+00	2.425E+00	2.425E+00	19.82
	968.97	136	15.80	1.115E+00	2.297E+00	2.297E+00	33.46
RA-228	338.32	237	11.27	3.010E+00	2.077E+00	2.077E+00	47.71
	911.20	249	25.80*	1.182E+00	2.425E+00	2.425E+00	19.82

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	968.97	136	15.80	1.115E+00	2.297E+00	2.297E+00	33.46
	74.82	809	10.28	6.795E+00	3.437E+00	3.437E+00	14.73
	77.11	1145	17.10	6.781E+00	2.931E+00	2.931E+00	12.91
	238.63	1409	43.60*	4.021E+00	2.386E+00	2.386E+00	11.87
TH-232	300.09	88	3.30	3.340E+00	2.377E+00	2.377E+00	83.73
	338.32	237	11.27	3.010E+00	2.077E+00	2.077E+00	24.70
	911.20	249	25.80*	1.182E+00	2.425E+00	2.425E+00	19.82
	968.97	136	15.80	1.115E+00	2.297E+00	2.297E+00	33.46
TH-234	63.29	224	3.70*	6.777E+00	2.653E+00	2.653E+00	46.31
	92.59	400	4.23	6.592E+00	4.256E+00	4.256E+00	29.58
U-235	89.96	318	3.47	6.636E+00	4.105E+00	4.105E+00	33.46
	93.35	400	5.60	6.592E+00	3.215E+00	3.215E+00	30.35
	143.76	95	10.96*	5.591E+00	4.598E-01	4.598E-01	65.58
	163.33	-----	5.08	5.211E+00	-----	Line Not Found	-----
NP-237	185.72	244	57.20	4.808E+00	2.639E-01	2.639E-01	34.07
	205.31	-----	5.01	4.493E+00	-----	Line Not Found	-----
	86.48	384	12.40*	6.673E+00	1.378E+00	1.378E+00	29.96
	95.86	-----	2.68	6.543E+00	-----	Line Not Found	-----
U-238	63.29	224	3.70*	6.777E+00	2.653E+00	2.653E+00	46.31
	92.59	400	4.23	6.592E+00	4.256E+00	4.256E+00	21.49
ANH-511	511.00	107	100.00*	2.059E+00	1.543E-01	1.543E-01	62.87

Flag: "*" = Keyline

Total number of lines in spectrum 33
Number of unidentified lines 2
Number of lines tentatively identified by NID 31 93.94%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.596E+01	2.596E+01	0.312E+01	12.02	
CD-109	461.40D	1.04	4.617E+00	4.780E+00	1.023E+00	21.40	
SN-126	2.30E+05Y	1.00	4.617E-01	4.617E-01	0.988E-01	21.40	
TL-208	1.41E+10Y	1.00	7.112E-01	7.112E-01	1.316E-01	18.51	
PB-210	22.20Y	1.00	1.573E+00	1.576E+00	0.886E+00	56.19	
BI-211	7.04E+08Y	1.00	5.253E+00	5.253E+00	0.776E+00	14.78	
PB-212	1.41E+10Y	1.00	2.386E+00	2.386E+00	0.283E+00	11.87	
BI-214	1600.00Y	1.00	1.767E+00	1.767E+00	0.283E+00	16.04	
PB-214	1600.00Y	1.00	1.906E+00	1.906E+00	0.301E+00	15.78	
RA-224	1.41E+10Y	1.00	5.361E+00	5.361E+00	1.858E+00	34.66	
RA-226	1600.00Y	1.00	1.767E+00	1.767E+00	0.283E+00	16.04	
AC-228	1.41E+10Y	1.00	2.425E+00	2.425E+00	0.481E+00	19.82	
RA-228	1.41E+10Y	1.00	2.425E+00	2.425E+00	0.481E+00	19.82	
TH-228	1.41E+10Y	1.00	2.386E+00	2.386E+00	0.283E+00	11.87	
TH-232	1.41E+10Y	1.00	2.425E+00	2.425E+00	0.481E+00	19.82	
TH-234	4.47E+09Y	1.00	2.653E+00	2.653E+00	1.228E+00	46.31	
U-235	7.04E+08Y	1.00	4.598E-01	4.598E-01	3.015E-01	65.58	
NP-237	2.14E+06Y	1.00	1.378E+00	1.378E+00	0.413E+00	29.96	
U-238	4.47E+09Y	1.00	2.653E+00	2.653E+00	1.228E+00	46.31	
ANH-511	1.00E+09Y	1.00	1.543E-01	1.543E-01	0.970E-01	62.87	

Total Activity : 6.872E+01 6.889E+01

Grand Total Activity : 6.872E+01 6.889E+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	129.33	56	286	0.67	258.35	255	7	7.85E-03	****	5.89E+00	
0	209.42	111	257	1.59	418.58	415	9	1.54E-02	56.6	4.43E+00	T
0	270.30	132	235	1.55	540.40	534	13	1.84E-02	50.8	3.64E+00	T
0	328.30	50	144	1.33	656.46	652	9	6.98E-03	91.0	3.09E+00	T
0	462.77	50	120	1.12	925.52	922	11	7.01E-03	88.2	2.26E+00	T
0	726.87	69	60	1.36	1454.01	1448	12	9.58E-03	51.0	1.46E+00	T
0	795.70	47	61	1.50	1591.74	1585	15	6.56E-03	80.7	1.34E+00	T
0	964.46	71	45	1.33	1929.50	1922	13	9.82E-03	45.9	1.12E+00	T
0	1377.12	21	18	1.08	2755.46	2748	12	2.93E-03	91.3	8.17E-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]G248248004.CNF;1
* Acquisition date   : 19-MAR-2010 11:00:09   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 02:00:10.14          Half life ratio  : 8.00000
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G248248004             Analyst initials: MXR1
* Batch Number       : 959280                 Sample Quantity : 1.26450E+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	2.596E+01	3.121E+00	7.457E-01	6.621E-02	34.810
CD-109	4.780E+00	1.023E+00	1.016E+00	9.918E-02	4.705
SN-126	4.617E-01	9.879E-02	9.800E-02	9.564E-03	4.711
TL-208	7.112E-01	1.316E-01	7.246E-02	6.846E-03	9.814
PB-210	1.576E+00	8.858E-01	7.918E-01	8.536E-02	1.991
BI-211	5.253E+00	7.765E-01	3.608E-01	3.368E-02	14.557
PB-212	2.386E+00	2.833E-01	1.084E-01	1.098E-02	22.016
BI-214	1.767E+00	2.835E-01	1.433E-01	1.464E-02	12.329
PB-214	1.906E+00	3.008E-01	1.313E-01	1.423E-02	14.520
RA-224	5.361E+00	1.858E+00	1.163E+00	1.052E-01	4.611
RA-226	1.767E+00	2.835E-01	1.433E-01	1.464E-02	12.329
AC-228	2.425E+00	4.806E-01	2.654E-01	3.102E-02	9.137
RA-228	2.425E+00	4.806E-01	2.654E-01	3.102E-02	9.137
TH-228	2.386E+00	2.833E-01	1.084E-01	1.098E-02	22.016
TH-232	2.425E+00	4.806E-01	2.654E-01	3.102E-02	9.137
TH-234	2.653E+00	1.228E+00	1.072E+00	2.039E-01	2.475
U-235	4.598E-01	3.015E-01	3.425E-01	6.098E-02	1.343
NP-237	1.378E+00	4.127E-01	2.915E-01	6.740E-02	4.727

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	2.653E+00	1.228E+00	1.072E+00	2.039E-01	2.475
ANH-511	1.543E-01	9.699E-02	5.323E-02	4.754E-03	2.898

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.709E-02		4.336E-01	7.131E-01	6.784E-02	0.024
NA-22	-7.873E-02		5.884E-02	7.578E-02	6.384E-03	-1.039
NA-24	1.983E+03		2.773E+03	Half-Life too short		
SC-46	-5.197E-02		5.414E-02	7.953E-02	6.963E-03	-0.653
V-48	-6.774E-02		1.273E-01	1.956E-01	1.706E-02	-0.346
CR-51	4.950E-02		4.879E-01	8.262E-01	7.884E-02	0.060
MN-54	-1.716E-02		5.333E-02	8.614E-02	7.574E-03	-0.199
CO-56	-3.714E-02		5.494E-02	8.467E-02	7.443E-03	-0.439
CO-57	-8.430E-03		2.542E-02	4.134E-02	4.843E-03	-0.204
CO-58	3.920E-02		5.475E-02	9.728E-02	8.567E-03	0.403
FE-59	3.022E-02		1.377E-01	2.295E-01	2.106E-02	0.132
CO-60	-9.923E-03		5.752E-02	9.254E-02	7.887E-03	-0.107
ZN-65	4.299E-02		1.437E-01	2.107E-01	1.774E-02	0.204
SE-75	5.563E-03		5.692E-02	8.076E-02	7.421E-03	0.069
SR-85	4.532E-02		5.701E-02	8.816E-02	7.877E-03	0.514
Y-88	-1.610E-03		4.602E-02	7.437E-02	6.202E-03	-0.022
Y-91	3.433E-01		3.692E+01	5.966E+01	4.924E+00	0.006
NB-94	2.858E-03		4.283E-02	7.255E-02	6.223E-03	0.039
NB-95	3.862E-02		6.480E-02	1.133E-01	9.896E-03	0.341
NB-95M	-5.852E-02		1.703E-01	2.350E-01	2.404E-02	-0.249
ZR-95	-5.995E-02		9.968E-02	1.572E-01	1.511E-02	-0.381
MO-99	-1.017E-05		5.591E-05	Half-Life too short		
TC-99M	-2.780E+19		5.806E+19	Half-Life too short		
RU-103	1.453E-02		5.173E-02	8.666E-02	1.226E-02	0.168
RH-106	-2.100E-01		4.152E-01	6.327E-01	8.415E-02	-0.332
RU-106	-2.100E-01		4.147E-01	6.327E-01	5.497E-02	-0.332
AG-108M	2.281E-02		3.329E-02	5.780E-02	5.180E-03	0.395
AG-110M	4.067E-02		4.791E-02	8.255E-02	7.195E-03	0.493
SN-113	5.417E-03		5.518E-02	9.229E-02	8.019E-03	0.059
CD-115	3.946E-05		8.270E-05	Half-Life too short		
SN-117M	-1.643E-02		8.864E-02	1.433E-01	1.288E-02	-0.115
TE-123M	-5.455E-04		3.236E-02	5.276E-02	4.749E-03	-0.010
SB-124	-5.710E-03		1.236E-01	2.011E-01	1.793E-02	-0.028
SB-125	4.820E-02		1.045E-01	1.786E-01	1.574E-02	0.270
TE-125M	-7.883E-01		1.055E+01	1.747E+01	2.173E+00	-0.045
I-126	3.973E-01		4.503E-01	7.771E-01	6.561E-02	0.511
SB-126	2.989E-01		3.278E-01	5.310E-01	4.584E-02	0.563
SB-127	2.858E+00		7.552E+00	1.247E+01	1.732E+00	0.229
I-131	-7.803E-03		2.722E-01	4.535E-01	4.216E-02	-0.017
TE-132	1.649E+00		4.532E+00	7.380E+00	1.314E+00	0.223
BA-133	2.867E-02		5.076E-02	7.856E-02	1.030E-02	0.365

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	-1.083E+00		2.001E+00	Half-Life too short		
CS-134	1.386E-01	+	1.126E-01	1.309E-01	1.156E-02	1.059
CS-135	1.261E-01		1.987E-01	2.947E-01	3.076E-02	0.428
I-135	-1.660E+18		2.028E+18	Half-Life too short		
CS-136	-1.387E-02		2.229E-01	3.616E-01	3.249E-02	-0.038
BA-137M	-6.286E-02		5.003E-02	6.972E-02	5.873E-03	-0.902
CS-137	-6.640E-02		5.285E-02	7.365E-02	6.217E-03	-0.902
CE-139	-3.127E-02		3.291E-02	5.073E-02	4.230E-03	-0.616
BA-140	-2.441E-01		5.473E-01	8.454E-01	2.874E-01	-0.289
LA-140	-1.477E-01		1.732E-01	2.397E-01	2.069E-02	-0.616
CE-141	2.455E-02		8.896E-02	1.325E-01	1.351E-02	0.185
CE-143	2.663E-02		5.587E-03	Half-Life too short		
CE-144	-3.700E-02		2.230E-01	3.468E-01	5.794E-02	-0.107
PM-144	-1.002E-02		4.421E-02	7.309E-02	6.259E-03	-0.137
PR-144	-7.527E-01		3.323E+00	5.492E+00	4.700E-01	-0.137
PM-146	-2.374E-02		5.121E-02	8.104E-02	8.690E-03	-0.293
ND-147	-2.726E-01		1.188E+00	1.893E+00	2.865E-01	-0.144
PM-149	-1.890E-04		6.163E-04	Half-Life too short		
EU-152	-5.259E-03		1.143E-01	1.909E-01	1.805E-02	-0.028
GD-153	-1.087E-01		8.776E-02	1.213E-01	1.240E-02	-0.896
EU-154	-2.237E-01		1.667E-01	2.131E-01	2.392E-02	-1.050
EU-155	1.289E-01		1.055E-01	1.826E-01	1.962E-02	0.706
TB-160	-2.100E-01		1.973E-01	2.866E-01	2.512E-02	-0.733
HO-166M	-5.448E-02		7.895E-02	1.246E-01	1.073E-02	-0.437
TA-182	-7.039E-02		2.891E-01	4.541E-01	3.767E-02	-0.155
IR-192	-3.308E-02		3.970E-02	6.298E-02	5.762E-03	-0.525
HG-203	-5.226E-03		5.074E-02	8.561E-02	8.037E-03	-0.061
BI-207	1.898E-02		6.790E-02	1.144E-01	9.804E-03	0.166
PB-211	1.337E-03		9.113E-01	1.511E+00	7.309E-01	0.001
BI-212	2.097E+00	+	1.100E+00	1.472E+00	1.838E-01	1.424
RN-219	1.552E-01		5.195E-01	8.775E-01	1.299E-01	0.177
RA-223	-1.356E-03		8.320E-01	1.207E+00	2.122E-01	-0.001
AC-227	-3.063E-01		3.020E-01	4.436E-01	5.506E-02	-0.691
TH-227	-3.063E-01		3.026E-01	4.436E-01	6.178E-02	-0.691
TH-229	-1.543E-01		5.740E-01	9.125E-01	7.891E-02	-0.169
PA-231	-7.274E-02		1.575E+00	2.662E+00	3.973E-01	-0.027
TH-231	-1.356E-03		8.320E-01	1.207E+00	2.122E-01	-0.001
PA-233	4.559E-02		7.285E-02	1.270E-01	1.192E-02	0.359
PA-234	-8.693E-02		4.185E-01	6.738E-01	1.268E-01	-0.129
PA-234M	3.761E+00		6.303E+00	1.094E+01	1.098E+00	0.344
NP-239	1.635E-01		3.963E-01	6.678E-01	7.606E-02	0.245
AM-241	1.425E-02		6.971E-02	1.069E-01	1.136E-02	0.133
CM-247	2.312E-02		4.849E-02	8.277E-02	7.030E-03	0.279
CF-249	3.847E-03		4.832E-02	8.075E-02	6.839E-03	0.048
CF-251	-2.326E-02		1.414E-01	2.274E-01	1.926E-02	-0.102

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]G248248004
* Acquisition date   : 19-MAR-2010 11:00:09 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 02:00:10.14                      Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248248004                      Analyst initials: MXR1
* Batch Number       : 959280                          Sample Quantity : 1.2645E+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	2.596E+01	3.059E+00	3.729E-01	1.561E+00
CD-109	4.780E+00	1.002E+00	5.291E-01	5.113E-01
SN-126	4.617E-01	9.681E-02	5.105E-02	4.939E-02
TL-208	7.112E-01	1.290E-01	3.673E-02	6.582E-02
PB-210	1.576E+00	8.681E-01	4.160E-01	4.429E-01
BI-211	5.253E+00	7.610E-01	1.843E-01	3.882E-01
PB-212	2.386E+00	2.777E-01	5.567E-02	1.417E-01
BI-214	1.767E+00	2.778E-01	7.261E-02	1.417E-01
PB-214	1.906E+00	2.948E-01	6.705E-02	1.504E-01
RA-224	5.361E+00	1.821E+00	5.971E-01	9.291E-01
RA-226	1.767E+00	2.778E-01	7.261E-02	1.417E-01
AC-228	2.425E+00	4.710E-01	1.337E-01	2.403E-01
RA-228	2.425E+00	4.710E-01	1.337E-01	2.403E-01
TH-228	2.386E+00	2.777E-01	5.567E-02	1.417E-01
TH-232	2.425E+00	4.710E-01	1.337E-01	2.403E-01
TH-234	2.653E+00	1.204E+00	5.608E-01	6.142E-01
U-235	4.598E-01	2.955E-01	1.772E-01	1.508E-01
NP-237	1.378E+00	4.045E-01	1.518E-01	2.064E-01
U-238	2.653E+00	1.204E+00	5.608E-01	6.142E-01
ANH-511	1.543E-01	9.505E-02	2.704E-02	4.849E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.709E-02	4.249E-01	3.626E-01	2.168E-01 NOT IDENT.
NA-22	-7.873E-02	5.767E-02	3.797E-02	2.942E-02 NOT IDENT.
NA-24	1.983E+09	5.435E+09	0.000E+00	2.773E+09 SHORT HLIF
SC-46	-5.197E-02	5.306E-02	4.007E-02	2.707E-02 FAIL ABUN
V-48	-6.774E-02	1.248E-01	9.837E-02	6.367E-02 NOT IDENT.
CR-51	4.950E-02	4.782E-01	4.225E-01	2.440E-01 NOT IDENT.
MN-54	-1.716E-02	5.227E-02	4.344E-02	2.667E-02 NOT IDENT.

CO-56	-3.714E-02	5.384E-02	4.269E-02	2.747E-02	NOT IDENT.
CO-57	-8.430E-03	2.491E-02	2.143E-02	1.271E-02	NOT IDENT.
CO-58	3.920E-02	5.365E-02	4.908E-02	2.737E-02	NOT IDENT.
FE-59	3.022E-02	1.349E-01	1.153E-01	6.883E-02	NOT IDENT.
CO-60	-9.923E-03	5.637E-02	4.634E-02	2.876E-02	NOT IDENT.
ZN-65	4.299E-02	1.408E-01	1.058E-01	7.185E-02	NOT IDENT.
SE-75	5.563E-03	5.579E-02	4.142E-02	2.846E-02	NOT IDENT.
SR-85	4.532E-02	5.587E-02	4.478E-02	2.851E-02	NOT IDENT.
Y-88	-1.610E-03	4.510E-02	3.706E-02	2.301E-02	NOT IDENT.
Y-91	3.433E-01	3.618E+01	2.992E+01	1.846E+01	NOT IDENT.
NB-94	2.858E-03	4.197E-02	3.668E-02	2.142E-02	NOT IDENT.
NB-95	3.862E-02	6.350E-02	5.721E-02	3.240E-02	NOT IDENT.
NB-95M	-5.852E-02	1.669E-01	1.207E-01	8.514E-02	NOT IDENT.
ZR-95	-5.995E-02	9.768E-02	7.937E-02	4.984E-02	NOT IDENT.
MO-99	-1.017E+01	1.096E+02	0.000E+00	5.591E+01	SHORT HLIF
TC-99M	-2.780E+25	1.138E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.453E-02	5.070E-02	4.404E-02	2.587E-02	FAIL ABUN
RH-106	-2.100E-01	4.069E-01	3.205E-01	2.076E-01	NOT IDENT.
RU-106	-2.100E-01	4.064E-01	3.205E-01	2.073E-01	NOT IDENT.
AG-108M	2.281E-02	3.262E-02	2.943E-02	1.664E-02	NOT IDENT.
AG-110M	4.067E-02	4.696E-02	4.177E-02	2.396E-02	NOT IDENT.
SN-113	5.417E-03	5.407E-02	4.706E-02	2.759E-02	NOT IDENT.
CD-115	3.946E+01	1.621E+02	0.000E+00	8.270E+01	SHORT HLIF
SN-117M	-1.643E-02	8.686E-02	7.402E-02	4.432E-02	NOT IDENT.
TE-123M	-5.455E-04	3.172E-02	2.725E-02	1.618E-02	NOT IDENT.
SB-124	-5.710E-03	1.211E-01	1.003E-01	6.178E-02	NOT IDENT.
SB-125	4.820E-02	1.024E-01	9.096E-02	5.226E-02	FAIL ABUN
TE-125M	-7.883E-01	1.033E+01	9.072E+00	5.273E+00	NOT IDENT.
I-126	3.973E-01	4.413E-01	3.932E-01	2.252E-01	NOT IDENT.
SB-126	2.989E-01	3.212E-01	2.684E-01	1.639E-01	NOT IDENT.
SB-127	2.858E+00	7.401E+00	6.307E+00	3.776E+00	NOT IDENT.
I-131	-7.803E-03	2.667E-01	2.315E-01	1.361E-01	NOT IDENT.
TE-132	1.649E+00	4.442E+00	3.792E+00	2.266E+00	NOT IDENT.
BA-133	2.867E-02	4.974E-02	4.011E-02	2.538E-02	NOT IDENT.
I-133	-1.083E+06	3.922E+06	0.000E+00	2.001E+06	SHORT HLIF
CS-134	1.386E-01	1.103E-01	6.604E-02	5.629E-02	FAIL ABUN
CS-135	1.261E-01	1.947E-01	1.511E-01	9.933E-02	NOT IDENT.
I-135	-1.660E+24	3.975E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.387E-02	2.185E-01	1.818E-01	1.115E-01	NOT IDENT.
BA-137M	-6.286E-02	4.902E-02	3.528E-02	2.501E-02	NOT IDENT.
CS-137	-6.640E-02	5.179E-02	3.727E-02	2.642E-02	NOT IDENT.
CE-139	-3.127E-02	3.226E-02	2.619E-02	1.646E-02	NOT IDENT.
BA-140	-2.441E-01	5.363E-01	4.291E-01	2.736E-01	NOT IDENT.
LA-140	-1.477E-01	1.697E-01	1.197E-01	8.659E-02	FAIL ABUN
CE-141	2.455E-02	8.718E-02	6.852E-02	4.448E-02	NOT IDENT.
CE-143	2.663E+04	1.095E+04	0.000E+00	5.587E+03	SHORT HLIF
CE-144	-3.700E-02	2.185E-01	1.796E-01	1.115E-01	NOT IDENT.
PM-144	-1.002E-02	4.333E-02	3.696E-02	2.211E-02	NOT IDENT.
PR-144	-7.527E-01	3.256E+00	2.777E+00	1.661E+00	NOT IDENT.
PM-146	-2.374E-02	5.019E-02	4.123E-02	2.560E-02	NOT IDENT.
ND-147	-2.726E-01	1.164E+00	9.608E-01	5.938E-01	FAIL ABUN
PM-149	-1.890E+02	1.208E+03	0.000E+00	6.163E+02	SHORT HLIF
EU-152	-5.259E-03	1.120E-01	9.750E-02	5.713E-02	FAIL ABUN
GD-153	-1.087E-01	8.600E-02	6.311E-02	4.388E-02	NOT IDENT.
EU-154	-2.237E-01	1.634E-01	1.068E-01	8.336E-02	NOT IDENT.
EU-155	1.289E-01	1.034E-01	9.489E-02	5.276E-02	FAIL ABUN
TB-160	-2.100E-01	1.933E-01	1.444E-01	9.865E-02	FAIL ABUN
HO-166M	-5.448E-02	7.738E-02	6.300E-02	3.948E-02	FAIL ABUN
TA-182	-7.039E-02	2.833E-01	2.277E-01	1.446E-01	FAIL ABUN
IR-192	-3.308E-02	3.890E-02	3.221E-02	1.985E-02	FAIL ABUN
HG-203	-5.226E-03	4.972E-02	4.387E-02	2.537E-02	NOT IDENT.
BI-207	1.898E-02	6.655E-02	5.746E-02	3.395E-02	FAIL ABUN
PB-211	1.337E-03	8.931E-01	7.701E-01	4.557E-01	NOT IDENT.
BI-212	2.097E+00	1.078E+00	7.441E-01	5.500E-01	FAIL ABUN
RN-219	1.552E-01	5.092E-01	4.473E-01	2.598E-01	FAIL ABUN
RA-223	-1.356E-03	8.154E-01	6.174E-01	4.160E-01	FAIL ABUN
AC-227	-3.063E-01	2.959E-01	2.276E-01	1.510E-01	FAIL ABUN
TH-227	-3.063E-01	2.965E-01	2.276E-01	1.513E-01	FAIL ABUN
TH-229	-1.543E-01	5.625E-01	4.700E-01	2.870E-01	FAIL ABUN
PA-231	-7.274E-02	1.543E+00	1.364E+00	7.874E-01	FAIL ABUN
TH-231	-1.356E-03	8.154E-01	6.174E-01	4.160E-01	FAIL ABUN
PA-233	4.559E-02	7.140E-02	6.499E-02	3.643E-02	FAIL ABUN
PA-234	-8.693E-02	4.101E-01	3.392E-01	2.092E-01	NOT IDENT.
PA-234M	3.761E+00	6.177E+00	5.504E+00	3.152E+00	NOT IDENT.
NP-239	1.635E-01	3.883E-01	3.464E-01	1.981E-01	NOT IDENT.
AM-241	1.425E-02	6.832E-02	5.600E-02	3.485E-02	NOT IDENT.
CM-247	2.312E-02	4.752E-02	4.219E-02	2.425E-02	NOT IDENT.
CF-249	3.847E-03	4.735E-02	4.118E-02	2.416E-02	NOT IDENT.

CF-251	-2.326E-02	1.386E-01	1.173E-01	7.072E-02 NOT IDENT.
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*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                          *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT            *
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ENERGY	MDA COUNTS
46.54	235.9710
49.72	248.2850
57.36	0.0000
59.54	332.7077
63.29	379.0027
63.29	379.0027
64.28	381.2382
67.75	395.0061
69.67	391.4863
70.83	429.7927
72.81	403.6651
72.87	403.7204
72.87	403.7204
74.82	405.4853
74.82	405.4853
74.82	405.4853
74.97	405.6213
77.11	407.5291
77.11	407.5291
77.11	407.5291
79.69	358.2325
79.80	358.3151
80.12	353.1261
80.19	353.1776
80.57	296.3637
81.00	348.3398
81.07	353.8342
81.07	353.8342
83.79	390.0561
83.79	390.0561
85.43	305.7675
86.48	306.4181
86.55	306.4606
86.79	306.6067
86.94	306.7001
87.57	307.0874
88.03	307.3694
88.47	307.6378
89.96	308.5416
91.11	309.2347
92.59	310.1215
92.59	310.1215
93.35	310.5734
94.67	311.3531
94.87	311.4704
94.87	311.4704
95.86	245.2513
97.43	306.4095
98.44	249.2466
99.53	220.1153
100.11	243.8901
103.18	313.4203
103.37	292.6878
105.31	252.8250
106.12	280.7878
109.28	268.9315
111.00	268.7620
111.76	271.0303
116.30	225.6370
117.23	225.9818
121.12	224.4795
121.78	228.6239
122.06	226.7702
123.07	246.7141
131.20	221.5788
133.52	241.1572
136.00	239.6484

136.47	237.8160
140.51	0.0000
140.51	0.0000
143.76	231.2457
144.24	231.4017
144.24	231.4017
145.44	235.3358
152.43	268.7949
153.25	227.1444
154.21	219.2442
154.21	219.2442
156.02	247.5065
158.56	224.6440
159.00	221.6816
162.66	211.3503
163.33	195.9791
165.86	221.5868
176.60	210.8826
177.52	205.8406
181.07	0.0000
184.41	191.5906
185.72	179.0947
193.51	196.8631
197.04	213.8575
205.31	183.1373
210.85	202.3412
215.65	184.0901
222.11	174.2437
227.38	164.0337
228.16	166.3973
228.18	166.4003
235.69	194.1046
235.96	194.1573
235.96	194.1573
238.63	189.5930
238.63	189.5930
240.99	190.0322
242.00	190.2202
244.70	163.4736
252.40	138.3775
252.80	141.8613
256.23	172.1611
256.23	172.1611
260.90	0.0000
264.66	121.4532
268.22	123.5891
269.46	128.9535
269.46	128.9535
271.23	129.1590
273.65	201.1552
276.40	161.3173
277.37	143.9054
277.60	130.7706
278.00	129.0602
279.20	166.1104
279.54	166.1594
280.46	179.4899
283.69	133.2310
284.31	134.1863
285.41	157.2887
285.90	0.0000
287.50	127.4744
293.27	0.0000
295.22	139.0042
295.96	117.6934
298.57	139.3969
299.98	119.2810
299.98	119.2810
300.09	119.2932
300.09	119.2932
300.13	119.2973
301.36	108.9086
302.85	101.8701
304.50	104.8823
304.50	104.8823
304.85	110.6612
308.46	122.5175
311.90	112.0193

316.51	117.8760
319.41	124.5095
320.08	108.2069
323.87	115.2810
323.87	115.2810
328.76	131.8337
333.37	132.3040
334.37	138.2897
334.37	138.2897
338.28	142.0228
338.28	142.0228
338.32	142.0275
338.32	142.0275
338.32	142.0275
340.48	118.2422
340.55	118.2480
344.28	119.5065
351.06	96.8335
351.93	96.8954
356.01	85.2245
364.49	108.1266
366.42	0.0000
383.85	107.7031
388.16	103.2424
388.63	98.4941
391.69	96.7834
400.66	118.5782
401.81	108.0574
402.40	109.0653
404.85	112.1414
410.95	86.3858
414.70	87.5706
423.72	88.0815
427.09	61.7897
427.87	73.5958
433.94	65.9971
453.88	87.7556
463.37	90.2637
468.07	86.8957
473.00	84.7280
476.78	81.8825
477.60	75.8537
487.02	91.5216
492.35	0.0000
497.08	58.2959
511.00	62.8741
514.00	72.6833
527.90	0.0000
529.87	0.0000
531.02	75.0256
537.26	81.5491
546.56	0.0000
563.25	69.9437
569.33	74.4135
569.50	79.7356
569.70	70.1754
583.19	65.3002
600.60	80.9784
602.73	74.3598
604.72	74.4312
609.32	67.2241
609.32	67.2241
610.33	57.2763
614.28	62.6027
618.01	43.5510
621.93	66.5400
621.93	66.5400
633.25	58.1208
635.95	43.9209
636.99	52.7300
645.85	40.8131
657.76	53.2339
661.66	83.3244
661.66	83.3244
664.57	0.0000
666.33	53.4404
666.50	52.3314
677.62	59.3047

685.70	58.3921
695.00	59.5321
696.49	64.0820
696.51	64.0837
697.00	61.3893
702.65	61.5387
706.68	58.9253
711.68	68.1354
720.70	48.6367
721.93	0.0000
722.78	66.9346
722.91	71.5021
723.31	71.5136
724.19	77.6289
727.33	45.7239
733.00	57.6180
735.93	52.3117
739.50	0.0000
747.24	59.0109
752.31	48.9694
753.82	42.5275
756.73	58.3135
763.94	92.8296
765.81	65.0286
766.42	58.5411
777.92	0.0000
778.90	44.8242
783.70	58.0084
785.37	46.8115
795.86	49.8234
801.95	48.6847
810.29	40.6484
810.76	40.6558
815.77	56.8374
818.51	39.8282
832.01	60.0469
834.85	64.8806
836.80	0.0000
846.77	52.7106
856.80	41.6829
860.56	56.1886
871.09	40.6106
873.19	48.3826
875.33	0.0000
879.36	53.3390
880.51	51.4201
883.24	29.1343
884.68	28.1773
889.28	50.6086
898.04	39.0498
911.20	34.3267
911.20	34.3267
911.20	34.3267
926.50	41.4104
937.49	55.4217
944.13	44.6353
946.00	48.6339
949.00	51.6636
962.29	58.2137
964.08	53.2565
966.15	9.9924
968.97	51.6755
968.97	51.6755
968.97	51.6755
983.53	42.2092
996.26	49.4474
1001.03	40.4277
1004.73	54.6420
1037.84	55.2182
1038.76	0.0000
1048.07	43.0849
1050.41	44.1422
1050.41	44.1422
1063.66	35.0459
1085.87	41.5098
1099.45	38.5537
1112.07	49.9707
1115.54	43.6239

1120.29	49.2766
1120.29	49.2766
1120.55	49.2789
1121.30	49.2903
1131.51	0.0000
1173.23	45.7757
1177.93	47.9685
1189.05	38.4943
1204.77	61.2165
1221.41	53.9429
1231.02	48.6760
1235.36	64.9775
1238.28	54.1919
1260.41	0.0000
1271.85	27.3401
1274.44	44.8678
1274.54	44.8698
1291.59	26.3824
1298.22	0.0000
1312.11	33.1538
1332.49	30.5494
1365.19	22.4014
1368.63	0.0000
1384.29	22.5078
1408.01	27.3551
1457.56	0.0000
1460.82	20.0601
1489.16	14.4238
1505.03	20.2668
1596.21	21.6697
1620.50	13.8621
1678.03	0.0000
1690.97	14.0706
1764.49	8.7448
1764.49	8.7448
1770.23	55.1558
1771.35	11.2377
1791.20	0.0000
1836.06	9.3124

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248248004

Total Uranium Activity	8.1040E+00	ug/g
Total Uranium Counting Unc.	3.5842E+00	ug/g
Total Uranium Tpu	1.8287E-06	ug/g
Total Uranium Mda	1.6704E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 959280          SAMPLE ID   : G248248004
*  ANALYST       : MXR1            DETECTOR    : GAM17
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 19-MAR-2010 11:00:09.66  SAMPLE ALQT: 126.450 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.116E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.515E+00
GROSS GAMMA MDA (pCi/GRAM ) : 4.276E+00
GROSS GAMMA DLC (pCi/GRAM ) : 2.074E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 13:03:41.56

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248005.CNF;1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:00:54
Sample ID        : G248248005 Sample quantity : 1.38460E+02 GRAM
Detector name    : GAM18 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.00 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 959280 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	63.36*	73	503	1.03	125.84	122	7	1.02E-02	53.1	
2	2	74.95*	555	609	1.18	149.02	144	18	7.71E-02	8.6	1.39E+00
3	2	77.25	819	500	0.95	153.61	144	18	1.14E-01	5.6	
4	0	87.32	269	494	1.18	173.76	171	6	3.74E-02	14.4	
5	3	90.06	212	242	1.25	179.24	177	14	2.95E-02	10.8	1.68E+00
6	3	93.09*	312	543	1.37	185.28	177	14	4.34E-02	15.1	
7	0	128.91	125	506	0.96	256.89	253	9	1.73E-02	33.7	
8	0	186.01*	265	523	0.97	371.05	366	10	3.68E-02	17.8	
9	0	209.46	233	460	1.62	417.94	413	10	3.24E-02	18.4	
10	4	238.64*	2135	286	1.20	476.28	469	19	2.97E-01	2.6	1.27E+00
11	4	241.51*	591	375	1.86	482.03	469	19	8.20E-02	10.6	
12	0	270.06*	170	336	1.80	539.11	534	11	2.36E-02	22.7	
13	0	277.46	104	307	1.68	553.89	548	11	1.44E-02	34.4	
14	0	295.19*	681	293	1.17	589.35	584	12	9.45E-02	6.4	
15	0	300.05	103	234	1.22	599.05	596	8	1.42E-02	27.5	
16	0	328.43	127	255	1.84	655.80	650	11	1.77E-02	26.0	
17	0	338.13*	431	235	1.49	675.19	670	10	5.99E-02	8.3	
18	0	351.81*	1231	307	1.34	702.56	696	14	1.71E-01	4.2	
19	0	409.91	148	206	1.38	818.71	812	14	2.06E-02	22.1	
20	0	462.40	222	161	1.75	923.66	916	15	3.08E-02	14.2	
21	0	510.68*	174	260	1.81	1020.19	1012	18	2.41E-02	25.5	
22	0	582.79*	740	199	1.53	1164.38	1155	16	1.03E-01	5.7	
23	0	609.07*	819	224	1.62	1216.92	1208	18	1.14E-01	5.6	
24	0	726.90	209	156	1.78	1452.52	1444	18	2.90E-02	15.7	
25	0	769.00	136	158	1.60	1536.71	1530	16	1.89E-02	22.2	
26	0	794.74	110	92	1.79	1588.17	1582	13	1.53E-02	20.4	
27	0	860.54*	106	126	1.91	1719.73	1712	14	1.48E-02	24.9	
28	0	910.57*	566	113	1.96	1819.78	1809	18	7.85E-02	6.0	
29	0	934.48	39	92	1.38	1867.60	1861	12	5.38E-03	52.3	
30	2	964.31	106	116	2.55	1927.24	1918	24	1.47E-02	26.6	1.99E+00
31	2	968.42*	340	87	1.96	1935.46	1918	24	4.72E-02	8.2	
32	0	1119.57	245	85	2.65	2237.72	2231	15	3.40E-02	10.4	
33	0	1376.45	86	52	2.38	2751.40	2742	19	1.19E-02	23.0	
34	0	1459.67*	2503	63	2.00	2917.82	2907	21	3.48E-01	2.2	
35	0	1508.36	29	28	1.32	3015.19	3005	19	4.00E-03	48.1	
36	0	1585.88	74	12	2.05	3170.22	3161	17	1.02E-02	16.1	
37	0	1763.36*	200	11	2.12	3525.16	3516	21	2.78E-02	8.5	

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


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248005.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:00:54
Sample ID         : G248248005 Sample quantity : 138.46 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA18 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.00 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	*	3.362E+01	2.935E+00	3.804E-01	2.887E-02	88.362
CD-109	+	88.03	*	3.169E+00	9.567E-01	1.224E+00	1.131E-01	2.589
SN-126	+	64.28		6.685E-01	7.165E-01	8.706E-01	1.287E-01	0.768
	+	86.94		1.273E+00	6.423E-01	5.540E-01	2.298E-01	2.297
	+	87.57	*	3.061E-01	9.242E-02	1.255E-01	1.157E-02	2.438
TL-208	+	277.37		6.809E-01	4.741E-01	4.962E-01	5.323E-02	1.372
	+	583.19	*	5.997E-01	8.293E-02	4.635E-02	3.628E-03	12.939
	+	860.56		7.913E-01	4.045E-01	3.559E-01	3.981E-02	2.223
BI-211		72.87		4.794E+00	3.516E+00	5.456E+00	4.505E-01	0.879
	+	351.06	*	4.739E+00	5.007E-01	2.533E-01	1.626E-02	18.709
PB-212	+	74.82		2.969E+00	6.360E-01	5.617E-01	7.202E-02	5.285
	+	77.11		2.472E+00	3.480E-01	3.179E-01	2.694E-02	7.776
	+	238.63	*	1.954E+00	1.732E-01	7.388E-02	5.326E-03	26.449
	+	300.09		1.408E+00	7.839E-01	1.043E+00	8.709E-02	1.350
BI-214	+	609.32	*	1.280E+00	1.846E-01	8.318E-02	7.475E-03	15.389
	+	1120.29		1.907E+00	4.383E-01	3.688E-01	3.552E-02	5.171
	+	1764.49		2.091E+00	3.761E-01	2.571E-01	1.563E-02	8.130
PB-214	+	74.82		5.262E+00	1.088E+00	9.956E-01	1.147E-01	5.285
	+	77.11		4.358E+00	7.110E-01	5.604E-01	6.628E-02	7.776
	+	242.00		3.272E+00	7.420E-01	4.486E-01	3.606E-02	7.293
	+	295.22		1.658E+00	2.574E-01	1.718E-01	1.492E-02	9.651
	+	351.93	*	1.720E+00	2.050E-01	9.211E-02	7.796E-03	18.675
RA-224	+	240.99	*	5.785E+00	1.269E+00	7.909E-01	4.406E-02	7.314
RA-226	+	609.32	*	1.280E+00	1.846E-01	8.318E-02	7.475E-03	15.389
	+	1120.29		1.907E+00	4.383E-01	3.688E-01	3.552E-02	5.171
	+	1764.49		2.091E+00	3.761E-01	2.571E-01	1.563E-02	8.130
AC-228	+	338.32		1.859E+00	8.266E-01	3.048E-01	1.256E-01	6.100
	+	911.20	*	2.137E+00	3.862E-01	1.812E-01	2.455E-02	11.792
	+	968.97		2.210E+00	6.592E-01	2.878E-01	7.178E-02	7.680
RA-228	+	338.32		1.859E+00	8.266E-01	3.048E-01	1.256E-01	6.100
	+	911.20	*	2.137E+00	3.862E-01	1.812E-01	2.455E-02	11.792
	+	968.97		2.210E+00	6.592E-01	2.878E-01	7.178E-02	7.680
TH-228	+	74.82		2.969E+00	5.677E-01	5.617E-01	4.737E-02	5.285
	+	77.11		2.472E+00	3.480E-01	3.179E-01	2.694E-02	7.776

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	1.954E+00	1.732E-01	7.388E-02	5.326E-03	26.449
	+	300.09		1.408E+00	1.155E+00	1.043E+00	6.348E-01	1.350
TH-232	+	338.32		1.859E+00	3.279E-01	3.048E-01	1.763E-02	6.100
	+	911.20	*	2.137E+00	3.862E-01	1.812E-01	2.455E-02	11.792
	+	968.97		2.210E+00	6.592E-01	2.878E-01	7.178E-02	7.680
TH-234	+	63.29	*	1.734E+00	1.868E+00	2.379E+00	4.286E-01	0.729
	+	92.59		2.872E+00	1.072E+00	8.494E-01	1.871E-01	3.381
U-235	+	89.96		2.471E+00	8.115E-01	1.229E+00	3.038E-01	2.010
	+	93.35		2.169E+00	8.229E-01	6.366E-01	1.464E-01	3.408
		143.76	*	-7.939E-02	1.850E-01	2.862E-01	4.463E-02	-0.277
		163.33		3.479E-02	3.605E-01	6.114E-01	1.015E-01	0.057
	+	185.72		1.641E-01	5.922E-02	5.789E-02	3.079E-03	2.834
		205.31		1.484E-01	4.757E-01	7.062E-01	1.191E-01	0.210
NP-237	+	86.48	*	9.133E-01	3.357E-01	3.861E-01	8.828E-02	2.366
		95.86		-4.916E-01	9.370E-01	1.318E+00	3.135E-01	-0.373
U-238	+	63.29	*	1.734E+00	1.868E+00	2.379E+00	4.286E-01	0.729
	+	92.59		2.872E+00	8.989E-01	8.494E-01	7.192E-02	3.381
ANH-511	+	511.00	*	1.092E-01	5.624E-02	3.528E-02	2.330E-03	3.095

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	2.271E-01	2.733E-01	4.706E-01	3.409E-02	0.483
NA-22		1274.54	*	-3.051E-02	3.671E-02	5.646E-02	3.842E-03	-0.540
NA-24		1368.63	*	-1.434E+03	3.671E-02	Half-Life too short		
SC-46		889.28	*	-1.541E-02	3.489E-02	5.522E-02	6.159E-03	-0.279
	+	1120.55		3.442E-01	7.567E-02	1.157E-01	7.993E-03	2.975
V-48		944.13		-2.985E-01	9.681E-01	1.536E+00	1.625E-01	-0.194
		983.53	*	-3.030E-02	8.074E-02	1.269E-01	1.255E-02	-0.239
		1312.11		-1.892E-02	8.591E-02	1.379E-01	1.005E-02	-0.137
CR-51		320.08	*	2.090E-01	3.721E-01	6.152E-01	3.955E-02	0.340
MN-54		834.85	*	1.706E-02	3.235E-02	5.474E-02	5.607E-03	0.312
CO-56		846.77	*	3.747E-02	3.468E-02	6.049E-02	6.315E-03	0.619
		1037.84		-1.900E-01	2.596E-01	4.113E-01	3.807E-02	-0.462
		1238.28		1.201E-01	8.525E-02	1.499E-01	9.995E-03	0.801
		1771.35		8.429E-02	1.907E-01	2.925E-01	1.768E-02	0.288
CO-57		122.06	*	1.443E-03	2.277E-02	3.663E-02	2.170E-03	0.039
		136.47		5.793E-02	1.904E-01	3.068E-01	2.004E-02	0.189
CO-58		810.76	*	-5.204E-02	3.444E-02	5.026E-02	4.962E-03	-1.035
FE-59		1099.45	*	-6.802E-03	8.141E-02	1.348E-01	1.109E-02	-0.050
		1291.59		-5.339E-02	1.150E-01	1.816E-01	1.527E-02	-0.294
CO-60		1173.23		2.415E-02	3.725E-02	6.411E-02	3.543E-03	0.377
		1332.49	*	2.187E-02	3.176E-02	5.489E-02	4.147E-03	0.399
ZN-65		1115.54	*	1.775E-01	9.500E-02	1.543E-01	1.087E-02	1.151
SE-75		121.12		3.503E-02	1.237E-01	2.007E-01	1.841E-02	0.175
		136.00		3.372E-03	3.764E-02	6.016E-02	3.428E-03	0.056
		264.66	*	2.954E-02	4.375E-02	6.514E-02	3.727E-03	0.454
		279.54		6.012E-02	1.056E-01	1.556E-01	9.625E-03	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		5.227E-02	2.021E-01	3.422E-01	3.107E-02	0.153
SR-85		514.00	*	9.216E-02	3.601E-02	5.989E-02	3.968E-03	1.539
Y-88		898.04		1.592E-02	3.611E-02	6.063E-02	6.872E-03	0.263
		1836.06	*	1.202E-02	2.616E-02	4.565E-02	2.600E-03	0.263
Y-91		1204.77	*	-2.521E-01	1.999E+01	3.297E+01	1.949E+00	-0.008
NB-94		702.65	*	1.776E-02	2.731E-02	4.711E-02	3.865E-03	0.377
		871.09		-2.557E-02	2.676E-02	4.047E-02	4.389E-03	-0.632
NB-95		765.81	*	7.394E-02	4.496E-02	7.139E-02	6.531E-03	1.036
NB-95M		235.69	*	2.429E-01	1.319E-01	2.059E-01	1.516E-02	1.180
ZR-95		724.19		2.054E-01	9.964E-02	1.616E-01	1.496E-02	1.271
		756.73	*	9.490E-03	6.030E-02	1.010E-01	9.973E-03	0.094
MO-99		140.51		-7.663E-05	6.030E-02	Half-Life	too short	
		181.07		8.951E-05	6.030E-02	Half-Life	too short	
		366.42		1.251E-04	6.030E-02	Half-Life	too short	
		739.50	*	-5.444E-05	6.030E-02	Half-Life	too short	
		777.92		-1.171E-04	6.030E-02	Half-Life	too short	
TC-99M		140.51	*	-4.703E+19	6.030E-02	Half-Life	too short	
RU-103		497.08	*	-1.018E-02	3.521E-02	5.687E-02	7.263E-03	-0.179
	+	610.33		1.517E+01	2.930E+00	2.657E+00	4.167E-01	5.710
RH-106		621.93	*	1.863E-01	2.574E-01	4.320E-01	5.389E-02	0.431
		1050.41		3.043E-01	2.105E+00	3.553E+00	3.036E-01	0.086
RU-106		621.93	*	1.863E-01	2.567E-01	4.320E-01	3.180E-02	0.431
		1050.41		3.043E-01	2.105E+00	3.553E+00	3.036E-01	0.086
AG-108M		433.94	*	1.116E-02	2.266E-02	3.862E-02	2.490E-03	0.289
		614.28		2.319E-02	2.985E-02	4.444E-02	3.395E-03	0.522
		722.91		2.260E-02	3.361E-02	5.085E-02	4.465E-03	0.444
AG-110M		657.76	*	6.431E-04	2.769E-02	4.655E-02	3.671E-03	0.014
		677.62		-1.688E-01	2.479E-01	3.976E-01	3.228E-02	-0.425
		706.68		-1.435E-01	1.745E-01	2.766E-01	2.357E-02	-0.519
		763.94		7.951E-02	1.436E-01	2.147E-01	2.006E-02	0.370
		884.68		6.132E-02	4.193E-02	7.421E-02	8.380E-03	0.826
		937.49		4.071E-02	9.910E-02	1.441E-01	1.577E-02	0.283
		1384.29		-1.233E-01	1.622E-01	2.006E-01	1.552E-02	-0.615
		1505.03		1.476E-01	2.264E-01	3.557E-01	2.553E-02	0.415
SN-113		391.69	*	-2.184E-02	3.639E-02	5.918E-02	3.630E-03	-0.369
CD-115		260.90		-1.939E-04	3.639E-02	Half-Life	too short	
		492.35		2.232E-04	3.639E-02	Half-Life	too short	
		527.90	*	-9.720E-05	3.639E-02	Half-Life	too short	
SN-117M		156.02		1.392E+00	2.881E+00	4.958E+00	2.648E-01	0.281
		158.56	*	8.684E-03	7.130E-02	1.193E-01	6.340E-03	0.073
TE-123M		159.00	*	-7.258E-03	2.598E-02	4.288E-02	2.314E-03	-0.169
SB-124		602.73		-3.664E-02	4.367E-02	5.633E-02	4.075E-03	-0.650
		645.85		9.992E-02	4.439E-01	7.233E-01	5.845E-02	0.138
		722.78		2.026E-01	3.669E-01	5.503E-01	4.787E-02	0.368
		1690.97	*	-2.012E-02	6.408E-02	1.013E-01	7.019E-03	-0.199
SB-125		427.87	*	4.150E-02	7.046E-02	1.207E-01	7.533E-03	0.344
	+	463.37		1.257E+00	3.673E-01	4.501E-01	3.212E-02	2.792
		600.60		3.544E-03	1.739E-01	2.518E-01	2.006E-02	0.014
		635.95		1.064E-01	2.221E-01	3.679E-01	3.036E-02	0.289

---- 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	*	-2.960E+00	9.629E+00	1.538E+01	1.384E+00	-0.193	
I-126	388.63		2.253E-01	1.996E-01	3.514E-01	2.020E-02	0.641	
	666.33	*	1.018E-01	2.640E-01	4.518E-01	3.473E-02	0.225	
	753.82		5.720E-01	2.061E+00	3.479E+00	3.118E-01	0.164	
SB-126	414.70		1.670E-02	1.046E-01	1.534E-01	9.075E-03	0.109	
	666.50		4.314E-02	9.288E-02	1.596E-01	1.227E-02	0.270	
	695.00		-2.519E-02	9.516E-02	1.566E-01	1.267E-02	-0.161	
	697.00		-1.563E-01	3.397E-01	5.527E-01	4.489E-02	-0.283	
	720.70	*	1.177E-03	2.004E-01	2.876E-01	2.435E-02	0.004	
	856.80		4.638E-01	7.517E-01	1.111E+00	1.179E-01	0.417	
SB-127	252.40		1.307E+00	1.407E+01	2.317E+01	9.684E+00	0.056	
	473.00		-1.138E-01	5.254E+00	8.662E+00	1.207E+00	-0.013	
	685.70	*	-2.131E+00	4.177E+00	6.756E+00	9.159E-01	-0.315	
	783.70		1.073E+01	1.215E+01	2.083E+01	3.176E+00	0.515	
I-131	80.19		2.833E+00	9.224E+00	1.376E+01	1.210E+00	0.206	
	284.31		-1.726E+00	2.421E+00	3.804E+00	2.455E-01	-0.454	
	364.49	*	-1.205E-01	1.785E-01	2.911E-01	1.906E-02	-0.414	
	636.99		1.692E-01	2.531E+00	4.089E+00	3.313E-01	0.041	
TE-132	49.72		-7.997E-02	1.309E+02	2.209E+02	2.865E+01	0.000	
	111.76		-1.507E+02	1.659E+02	2.569E+02	3.149E+01	-0.587	
	116.30		1.221E+02	1.451E+02	2.397E+02	2.902E+01	0.510	
	228.16	*	9.212E-01	3.382E+00	5.641E+00	9.222E-01	0.163	
BA-133	81.00		-6.705E-02	9.926E-02	1.411E-01	2.197E-02	-0.475	
+	276.40		6.303E-01	4.408E-01	5.182E-01	6.498E-02	1.216	
	302.85		2.264E-02	1.317E-01	1.882E-01	2.141E-02	0.120	
	356.01	*	1.438E-02	3.748E-02	5.362E-02	6.041E-03	0.268	
	383.85		-3.371E-01	2.248E-01	3.438E-01	3.658E-02	-0.981	
I-133	529.87	*	1.062E+00	2.248E-01	Half-Life	too short		
	875.33		6.419E+01	2.248E-01	Half-Life	too short		
	1298.22		-1.488E+00	2.248E-01	Half-Life	too short		
CS-134	563.25		1.207E-01	3.063E-01	5.088E-01	3.595E-02	0.237	
	569.33		-4.636E-03	1.657E-01	2.655E-01	1.899E-02	-0.017	
	604.72		-2.242E-02	3.349E-02	4.408E-02	3.205E-03	-0.509	
+	795.86	*	1.277E-01	5.363E-02	7.429E-02	7.186E-03	1.719	
	801.95		-2.112E-01	3.893E-01	5.573E-01	5.437E-02	-0.379	
	1365.19		-1.398E-01	1.050E+00	1.620E+00	1.290E-01	-0.086	
CS-135	268.22	*	1.846E-01	1.568E-01	2.377E-01	1.797E-02	0.777	
I-135	546.56		2.560E+18	1.568E-01	Half-Life	too short		
	836.80		1.413E+19	1.568E-01	Half-Life	too short		
	1038.76		-7.062E+18	1.568E-01	Half-Life	too short		
	1131.51		1.495E+18	1.568E-01	Half-Life	too short		
	1260.41	*	3.075E+17	1.568E-01	Half-Life	too short		
	1457.56		6.955E+20	1.568E-01	Half-Life	too short		
	1678.03		-3.808E+18	1.568E-01	Half-Life	too short		
	1791.20		-3.484E+17	1.568E-01	Half-Life	too short		
CS-136	153.25		-6.809E-01	1.092E+00	1.816E+00	1.408E-01	-0.375	
	176.60		-2.168E-01	6.164E-01	1.024E+00	6.808E-02	-0.212	
	273.65		-8.924E-02	9.483E-01	9.629E-01	6.503E-02	-0.093	
	340.55		6.168E-01	2.269E-01	3.615E-01	2.269E-02	1.706	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		818.51		-1.069E-02	8.965E-02	1.464E-01	1.463E-02	-0.073
		1048.07	*	1.979E-02	1.312E-01	2.216E-01	1.988E-02	0.089
		1235.36		8.148E-01	7.926E-01	1.368E+00	1.394E-01	0.596
BA-137M		661.66	*	-1.141E-02	2.818E-02	4.619E-02	3.521E-03	-0.247
CS-137		661.66	*	-1.205E-02	2.977E-02	4.880E-02	3.729E-03	-0.247
CE-139		165.86	*	1.286E-02	2.581E-02	4.430E-02	2.325E-03	0.290
BA-140		162.66		-8.090E-02	1.019E+00	1.719E+00	1.062E-01	-0.047
		304.85		-2.574E+00	2.178E+00	2.661E+00	7.600E-01	-0.967
		423.72		-2.009E-01	2.336E+00	3.872E+00	1.251E+00	-0.052
		537.26	*	3.755E-01	3.362E-01	5.454E-01	1.827E-01	0.688
LA-140	+	328.76		1.045E+00	5.472E-01	6.926E-01	4.497E-02	1.509
		487.02		3.700E-02	1.618E-01	2.698E-01	1.925E-02	0.137
		815.77		2.553E-01	3.869E-01	6.640E-01	7.187E-02	0.385
		1596.21	*	4.988E-03	1.075E-01	1.702E-01	1.168E-02	0.029
CE-141		145.44	*	8.388E-03	6.727E-02	1.064E-01	6.079E-03	0.079
CE-143		57.36		5.875E-03	6.727E-02	Half-Life	too short	
		293.27	*	4.920E-02	6.727E-02	Half-Life	too short	
		664.57		3.455E-02	6.727E-02	Half-Life	too short	
		721.93		-7.254E-04	6.727E-02	Half-Life	too short	
CE-144		80.12		7.392E-01	2.583E+00	3.850E+00	3.334E-01	0.192
		133.52	*	5.972E-02	2.016E-01	2.901E-01	4.012E-02	0.206
PM-144		476.78		9.909E-03	5.211E-02	8.684E-02	6.379E-03	0.114
		618.01		-7.935E-04	2.789E-02	4.223E-02	3.218E-03	-0.019
		696.49	*	-9.273E-03	2.821E-02	4.625E-02	3.757E-03	-0.200
PR-144		696.51	*	-6.744E-01	2.121E+00	3.480E+00	2.824E-01	-0.194
		1489.16		-5.325E+00	9.994E+00	1.511E+01	1.091E+00	-0.353
PM-146		453.88	*	2.330E-02	3.311E-02	5.546E-02	4.845E-03	0.420
		633.25		1.243E-01	1.182E+00	1.913E+00	7.259E-01	0.065
		735.93		1.142E-02	1.181E-01	1.834E-01	5.143E-02	0.062
		747.24		-1.043E-02	7.455E-02	1.226E-01	1.807E-02	-0.085
ND-147	+	91.11		1.313E+00	3.106E-01	7.548E-01	7.104E-02	1.739
		319.41		9.430E-01	4.470E+00	7.275E+00	4.204E-01	0.130
		531.02	*	3.390E-01	7.050E-01	1.183E+00	1.651E-01	0.287
PM-149		285.90	*	2.443E-04	7.050E-01	Half-Life	too short	
EU-152		121.78		1.105E-02	6.477E-02	1.046E-01	8.032E-03	0.106
		244.70		2.367E-01	2.841E-01	4.294E-01	2.399E-02	0.551
		344.28	*	-2.199E-02	8.734E-02	1.269E-01	8.275E-03	-0.173
		778.90		-1.908E-01	2.198E-01	3.340E-01	3.123E-02	-0.571
	+	964.08		7.440E-01	4.033E-01	5.515E-01	5.648E-02	1.349
		1085.87		2.972E-02	3.102E-01	5.204E-01	4.031E-02	0.057
		1112.07		4.913E-01	2.743E-01	4.540E-01	3.232E-02	1.082
		1408.01		2.100E-01	1.581E-01	2.839E-01	2.109E-02	0.740
GD-153		69.67		-2.577E-01	1.930E+00	2.984E+00	2.422E-01	-0.086
		97.43	*	-3.549E-02	8.983E-02	1.280E-01	1.001E-02	-0.277
		103.18		-1.348E-01	1.047E-01	1.609E-01	1.161E-02	-0.838
EU-154		123.07		-2.506E-02	4.627E-02	7.251E-02	6.847E-03	-0.346
		723.31		1.510E-01	1.600E-01	2.458E-01	2.308E-02	0.614
		873.19		-1.436E-01	2.208E-01	3.427E-01	4.669E-02	-0.419
		996.26		-1.424E-01	3.245E-01	5.076E-01	9.137E-02	-0.281

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1004.73		-9.969E-02	1.923E-01	2.992E-01	3.678E-02	-0.333
		1274.44	*	-1.104E-01	1.055E-01	1.588E-01	1.599E-02	-0.695
		86.55		3.723E-01	1.125E-01	1.799E-01	1.657E-02	2.070
		105.31	*	1.999E-01	9.708E-02	1.671E-01	1.194E-02	1.196
TB-160	+	86.79		1.062E+00	3.205E-01	5.140E-01	4.702E-02	2.066
		197.04		-8.252E-02	5.308E-01	8.715E-01	4.680E-02	-0.095
		215.65		1.659E-01	6.802E-01	1.102E+00	6.016E-02	0.150
		298.57		2.137E-01	1.183E-01	1.781E-01	1.023E-02	1.200
HO-166M	+	879.36	*	-1.108E-01	1.247E-01	1.904E-01	2.091E-02	-0.582
		962.29		1.557E+00	6.012E-01	9.765E-01	1.003E-01	1.595
		966.15		2.195E+00	3.542E-01	5.649E-01	5.765E-02	3.886
		1177.93		5.950E-02	3.318E-01	5.549E-01	3.098E-02	0.107
		1271.85		-1.030E-01	6.174E-01	1.001E+00	6.767E-02	-0.103
		80.57		3.483E-02	2.749E-01	4.071E-01	3.537E-02	0.086
		184.41		7.622E-02	3.596E-02	5.802E-02	3.082E-03	1.314
		280.46		1.575E-02	7.696E-02	1.110E-01	6.333E-03	0.142
		410.95		7.224E-01	3.226E-01	3.679E-01	2.166E-02	1.964
		711.68	*	2.019E-02	4.763E-02	8.131E-02	6.778E-03	0.248
		752.31		3.372E-02	2.074E-01	3.477E-01	3.109E-02	0.097
		810.29		-7.063E-02	4.774E-02	6.984E-02	6.877E-03	-1.011
TA-182		67.75		-1.099E-02	1.224E-01	1.998E-01	1.606E-02	-0.055
		100.11		2.441E-01	1.701E-01	2.890E-01	2.172E-02	0.845
		152.43		-2.278E-01	3.287E-01	5.047E-01	2.715E-02	-0.451
		222.11		2.121E-02	3.076E-01	5.107E-01	2.803E-02	0.042
		1121.30		7.783E-01	1.733E-01	3.086E-01	2.126E-02	2.522
		1189.05		-8.729E-02	2.661E-01	4.304E-01	2.461E-02	-0.203
IR-192	+	1221.41	*	3.082E-02	1.737E-01	2.895E-01	1.771E-02	0.106
		1231.02		-3.116E-01	4.622E-01	7.325E-01	4.569E-02	-0.425
		295.96		1.320E+00	1.865E-01	2.676E-01	1.561E-02	4.932
		308.46		6.730E-02	8.757E-02	1.464E-01	8.528E-03	0.460
HG-203		316.51	*	1.113E-02	3.025E-02	4.964E-02	2.879E-03	0.224
		468.07		-1.072E-02	6.344E-02	8.965E-02	6.397E-03	-0.120
		70.83		2.738E-01	1.707E+00	2.515E+00	3.979E-01	0.109
		72.87		1.341E+00	9.990E-01	1.527E+00	2.341E-01	0.879
BI-207	+	279.20	*	3.009E-02	4.013E-02	5.973E-02	3.601E-03	0.504
		72.81		2.356E-01	2.013E-01	3.107E-01	2.565E-02	0.758
		74.97		8.559E-01	1.634E-01	2.374E-01	1.984E-02	3.606
		569.70		-1.746E-03	2.550E-02	4.077E-02	2.857E-03	-0.043
PB-210	+	1063.66	*	-5.961E-03	4.386E-02	7.262E-02	5.994E-03	-0.082
		1770.23		3.726E-01	3.485E-01	5.965E-01	3.609E-02	0.625
		46.54	*	1.279E+00	5.000E+00	8.275E+00	6.344E-01	0.155
		404.85	*	-3.656E-01	6.369E-01	8.505E-01	4.080E-01	-0.430
PB-211		427.09		1.450E+00	1.347E+00	2.071E+00	9.494E-01	0.700
		832.01		-1.255E-01	8.199E-01	1.331E+00	6.940E-01	-0.094
		727.33	*	2.539E+00	8.580E-01	9.713E-01	1.206E-01	2.614
		785.37		1.525E+00	2.626E+00	4.460E+00	4.215E-01	0.342
RN-219	+	1620.50		1.609E+00	1.888E+00	3.399E+00	2.299E-01	0.473
		271.23		6.710E-01	3.089E-01	3.735E-01	2.967E-02	1.797
		401.81	*	1.257E-02	3.127E-01	5.106E-01	6.865E-02	0.025

---- 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	-1.551E-01	2.235E-01	3.186E-01	2.779E-02	-0.487
		83.79	1.087E-01	1.432E-01	1.982E-01	1.767E-02	0.548
		94.87	1.071E+00	4.572E-01	7.221E-01	5.880E-02	1.484
		144.24	-6.570E-02	6.168E-01	9.682E-01	6.732E-02	-0.068
		154.21	1.216E-01	3.283E-01	5.635E-01	3.722E-02	0.216
	+	269.46	5.214E-01	2.384E-01	2.983E-01	1.769E-02	1.748
AC-227		323.87	* -2.759E-01	5.998E-01	8.128E-01	1.309E-01	-0.339
	+	338.28	7.378E+00	1.443E+00	2.045E+00	2.094E-01	3.608
		79.69	-6.164E-01	1.163E+00	1.875E+00	3.233E-01	-0.329
		235.96	6.474E-01	1.627E-01	2.633E-01	2.097E-02	2.459
	+	256.23	* -6.137E-02	2.018E-01	3.261E-01	3.304E-02	-0.188
	+	299.98	1.548E+00	8.693E-01	1.309E+00	1.435E-01	1.183
TH-227		304.50	-1.891E+00	1.633E+00	2.099E+00	3.197E-01	-0.901
		334.37	3.117E-01	1.828E+00	2.180E+00	3.099E-01	0.143
		79.80	3.076E-01	1.667E+00	2.475E+00	5.391E-01	0.124
		235.96	6.474E-01	1.612E-01	2.633E-01	1.893E-02	2.459
	+	256.23	* -6.137E-02	2.018E-01	3.261E-01	3.893E-02	-0.188
	+	299.98	1.548E+00	8.693E-01	1.309E+00	1.435E-01	1.183
TH-229		304.50	-1.891E+00	1.633E+00	2.099E+00	3.197E-01	-0.901
		334.37	3.117E-01	1.828E+00	2.180E+00	3.099E-01	0.143
		85.43	4.165E-01	2.185E-01	3.400E-01	3.074E-02	1.225
	+	88.47	4.719E-01	1.425E-01	2.271E-01	2.081E-02	2.078
	+	193.51	* 1.467E-01	4.500E-01	7.606E-01	4.072E-02	0.193
	+	210.85	3.116E+00	1.162E+00	1.397E+00	7.595E-02	2.230
PA-231		283.69	* -4.214E-01	1.250E+00	1.928E+00	2.522E-01	-0.219
	+	301.36	9.947E-01	5.572E-01	8.651E-01	8.924E-02	1.150
TH-231		81.07	-1.551E-01	2.235E-01	3.186E-01	2.779E-02	-0.487
		83.79	1.087E-01	1.432E-01	1.982E-01	1.767E-02	0.548
		94.87	1.071E+00	4.572E-01	7.221E-01	5.880E-02	1.484
		144.24	-6.570E-02	6.168E-01	9.682E-01	6.732E-02	-0.068
		154.21	1.216E-01	3.283E-01	5.635E-01	3.722E-02	0.216
	+	269.46	5.214E-01	2.384E-01	2.983E-01	1.769E-02	1.748
PA-233		323.87	* -2.759E-01	5.998E-01	8.128E-01	1.309E-01	-0.339
	+	338.28	7.378E+00	1.443E+00	2.045E+00	2.094E-01	3.608
	+	300.13	7.006E-01	3.970E-01	5.947E-01	7.948E-02	1.178
		311.90	* -4.411E-02	5.500E-02	8.524E-02	5.223E-03	-0.518
		340.48	1.952E+00	7.828E-01	1.045E+00	2.424E-01	1.868
		94.67	5.205E-01	1.783E-01	2.751E-01	3.327E-02	1.892
PA-234		98.44	1.177E-01	1.092E-01	1.428E-01	7.948E-02	0.824
		111.00	8.375E-02	1.636E-01	2.689E-01	2.884E-02	0.312
		131.20	5.919E-02	1.051E-01	1.534E-01	8.732E-03	0.386
		569.50	-1.055E-02	2.265E-01	3.626E-01	2.541E-02	-0.029
		733.00	8.817E-02	3.192E-01	4.682E-01	1.040E-01	0.188
		880.51	-2.284E-01	2.342E-01	3.547E-01	3.904E-02	-0.644
		883.24	1.281E-01	2.537E-01	4.040E-01	2.730E-01	0.317
		926.50	5.658E-02	1.534E-01	2.300E-01	6.009E-02	0.246
		946.00	* -1.165E-02	2.374E-01	3.844E-01	7.582E-02	-0.030
		949.00	3.840E-01	3.603E-01	6.251E-01	6.565E-02	0.614
		766.42	1.779E+01	1.431E+01	1.770E+01	8.996E+00	1.005
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	*		5.383E+00	4.185E+00	7.236E+00	7.806E-01	0.744
	99.53			2.544E-01	1.515E-01	2.588E-01	1.962E-02	0.983
	103.37			-8.818E-02	9.204E-02	1.436E-01	1.033E-02	-0.614
	106.12			1.041E-01	7.777E-02	1.314E-01	9.133E-03	0.793
	117.23	*		-1.556E-01	3.751E-01	5.939E-01	3.668E-02	-0.262
	228.18			4.796E-02	1.830E-01	3.054E-01	1.685E-02	0.157
AM-241	+	277.60		3.112E-01	2.149E-01	2.525E-01	1.438E-02	1.232
CM-247	59.54	*		-4.522E-02	1.858E-01	2.759E-01	2.288E-02	-0.164
	+	278.00		1.322E+00	9.125E-01	1.062E+00	6.052E-02	1.244
CF-249	287.50			3.186E-01	1.003E+00	1.653E+00	9.457E-02	0.193
	402.40	*		-3.424E-03	2.967E-02	4.655E-02	2.711E-03	-0.074
	252.80			-2.684E-02	7.632E-01	1.250E+00	7.021E-02	-0.021
	333.37			2.412E-01	2.087E-01	2.398E-01	1.387E-02	1.006
CF-251	388.16	*		5.202E-02	3.127E-02	5.618E-02	3.229E-03	0.926
	177.52	*		-5.167E-02	1.068E-01	1.766E-01	9.331E-03	-0.293
	227.38			8.813E-02	2.999E-01	5.011E-01	2.763E-02	0.176
	285.41			-1.005E+00	1.796E+00	2.843E+00	1.625E-01	-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]G248248005
* Acquisition date   : 19-MAR-2010 11:00:54 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 02:00:02.00                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248248005                     Analyst initials: MXR1
* Batch Number       : 959280                         Sample Quantity : 1.3846E+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	3.362E+01	2.877E+00	3.817E-01	0.000E+00
CD-109	3.169E+00	9.375E-01	1.297E+00	0.000E+00
SN-126	3.061E-01	9.057E-02	1.331E-01	0.000E+00
TL-208	5.997E-01	8.127E-02	4.738E-02	0.000E+00
BI-211	4.739E+00	4.907E-01	2.615E-01	0.000E+00
PB-212	1.954E+00	1.697E-01	7.685E-02	0.000E+00
BI-214	1.280E+00	1.809E-01	8.495E-02	0.000E+00
PB-214	1.720E+00	2.009E-01	9.508E-02	0.000E+00
RA-224	5.785E+00	1.243E+00	8.225E-01	0.000E+00
RA-226	1.280E+00	1.809E-01	8.495E-02	0.000E+00
AC-228	2.137E+00	3.785E-01	1.836E-01	0.000E+00
RA-228	2.137E+00	3.785E-01	1.836E-01	0.000E+00
TH-228	1.954E+00	1.697E-01	7.685E-02	0.000E+00
TH-232	2.137E+00	3.785E-01	1.836E-01	0.000E+00
TH-234	1.734E+00	1.830E+00	2.537E+00	0.000E+00
U-235	-7.939E-02	1.813E-01	3.005E-01	0.000E+00
NP-237	9.133E-01	3.290E-01	4.093E-01	0.000E+00
U-238	1.734E+00	1.830E+00	2.537E+00	0.000E+00
ANH-511	1.092E-01	5.511E-02	3.616E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	2.271E-01	2.678E-01	4.829E-01	0.000E+00 NOT IDENT.
NA-22	-3.051E-02	3.597E-02	5.680E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.041E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.541E-02	3.419E-02	5.596E-02	0.000E+00 FAIL ABUN
V-48	-3.030E-02	7.912E-02	1.284E-01	0.000E+00 NOT IDENT.
CR-51	2.090E-01	3.646E-01	6.363E-01	0.000E+00 NOT IDENT.
MN-54	1.706E-02	3.170E-02	5.555E-02	0.000E+00 NOT IDENT.
CO-56	3.747E-02	3.398E-02	6.136E-02	0.000E+00 NOT IDENT.

CO-57	1.443E-03	2.232E-02	3.859E-02	0.000E+00	NOT IDENT.
CO-58	-5.204E-02	3.375E-02	5.104E-02	0.000E+00	NOT IDENT.
FE-59	-6.802E-03	7.979E-02	1.360E-01	0.000E+00	NOT IDENT.
CO-60	2.187E-02	3.113E-02	5.517E-02	0.000E+00	NOT IDENT.
ZN-65	0.000E+00	9.310E-02	1.557E-01	0.000E+00	NOT IDENT.
SE-75	2.954E-02	4.287E-02	6.762E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.529E-02	6.137E-02	0.000E+00	NOT IDENT.
Y-88	1.202E-02	2.563E-02	4.558E-02	0.000E+00	NOT IDENT.
Y-91	-2.521E-01	1.959E+01	3.321E+01	0.000E+00	NOT IDENT.
NB-94	1.776E-02	2.676E-02	4.798E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	4.406E-02	7.257E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.293E-01	2.142E-01	0.000E+00	NOT IDENT.
ZR-95	9.490E-03	5.910E-02	1.027E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	6.743E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	9.242E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.018E-02	3.451E-02	5.831E-02	0.000E+00	FAIL ABUN
RH-106	1.863E-01	2.523E-01	4.410E-01	0.000E+00	NOT IDENT.
RU-106	1.863E-01	2.516E-01	4.410E-01	0.000E+00	NOT IDENT.
AG-108M	1.116E-02	2.221E-02	3.971E-02	0.000E+00	NOT IDENT.
AG-110M	6.431E-04	2.714E-02	4.746E-02	0.000E+00	NOT IDENT.
SN-113	-2.184E-02	3.566E-02	6.096E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.017E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	8.684E-03	6.988E-02	1.250E-01	0.000E+00	NOT IDENT.
TE-123M	-7.258E-03	2.546E-02	4.495E-02	0.000E+00	NOT IDENT.
SB-124	-2.012E-02	6.280E-02	1.014E-01	0.000E+00	NOT IDENT.
SB-125	4.150E-02	6.905E-02	1.241E-01	0.000E+00	FAIL ABUN
TE-125M	-2.960E+00	9.437E+00	1.623E+01	0.000E+00	NOT IDENT.
I-126	1.018E-01	2.587E-01	4.605E-01	0.000E+00	NOT IDENT.
SB-126	1.177E-03	1.964E-01	2.927E-01	0.000E+00	NOT IDENT.
SB-127	-2.131E+00	4.094E+00	6.883E+00	0.000E+00	NOT IDENT.
I-131	-1.205E-01	1.750E-01	3.003E-01	0.000E+00	NOT IDENT.
TE-132	9.212E-01	3.314E+00	5.872E+00	0.000E+00	NOT IDENT.
BA-133	1.438E-02	3.673E-02	5.534E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	2.367E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.256E-02	7.546E-02	0.000E+00	FAIL ABUN
CS-135	1.846E-01	1.537E-01	2.467E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.239E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.979E-02	1.286E-01	2.239E-01	0.000E+00	NOT IDENT.
BA-137M	-1.141E-02	2.762E-02	4.709E-02	0.000E+00	NOT IDENT.
CS-137	-1.205E-02	2.917E-02	4.975E-02	0.000E+00	NOT IDENT.
CE-139	1.286E-02	2.529E-02	4.639E-02	0.000E+00	NOT IDENT.
BA-140	3.755E-01	3.295E-01	5.584E-01	0.000E+00	NOT IDENT.
LA-140	4.988E-03	1.054E-01	1.705E-01	0.000E+00	FAIL ABUN
CE-141	8.388E-03	6.592E-02	1.118E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.356E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	5.972E-02	1.976E-01	3.051E-01	0.000E+00	NOT IDENT.
PM-144	-9.273E-03	2.765E-02	4.711E-02	0.000E+00	NOT IDENT.
PR-144	-6.744E-01	2.079E+00	3.544E+00	0.000E+00	NOT IDENT.
PM-146	2.330E-02	3.245E-02	5.697E-02	0.000E+00	NOT IDENT.
ND-147	3.390E-01	6.909E-01	1.212E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	8.575E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-2.199E-02	8.559E-02	1.311E-01	0.000E+00	FAIL ABUN
GD-153	-3.549E-02	8.803E-02	1.354E-01	0.000E+00	NOT IDENT.
EU-154	-1.104E-01	1.034E-01	1.598E-01	0.000E+00	NOT IDENT.
EU-155	0.000E+00	9.514E-02	1.765E-01	0.000E+00	FAIL ABUN
TB-160	-1.108E-01	1.222E-01	1.930E-01	0.000E+00	FAIL ABUN
HO-166M	2.019E-02	4.668E-02	8.278E-02	0.000E+00	FAIL ABUN
TA-182	3.082E-02	1.703E-01	2.915E-01	0.000E+00	NOT IDENT.
IR-192	1.113E-02	2.964E-02	5.135E-02	0.000E+00	FAIL ABUN
HG-203	3.009E-02	3.932E-02	6.193E-02	0.000E+00	NOT IDENT.
BI-207	-5.961E-03	4.299E-02	7.333E-02	0.000E+00	FAIL ABUN
PB-210	1.279E+00	4.900E+00	8.873E+00	0.000E+00	NOT IDENT.
PB-211	-3.656E-01	6.242E-01	8.756E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.408E-01	9.884E-01	0.000E+00	FAIL ABUN
RN-219	1.257E-02	3.064E-01	5.258E-01	0.000E+00	FAIL ABUN
RA-223	-2.759E-01	5.878E-01	8.404E-01	0.000E+00	FAIL ABUN
AC-227	-6.137E-02	1.978E-01	3.388E-01	0.000E+00	FAIL ABUN
TH-227	-6.137E-02	1.978E-01	3.388E-01	0.000E+00	FAIL ABUN
TH-229	1.467E-01	4.410E-01	7.943E-01	0.000E+00	FAIL ABUN
PA-231	-4.214E-01	1.225E+00	1.999E+00	0.000E+00	FAIL ABUN
TH-231	-2.759E-01	5.878E-01	8.404E-01	0.000E+00	FAIL ABUN
PA-233	-4.411E-02	5.390E-02	8.820E-02	0.000E+00	FAIL ABUN
PA-234	-1.165E-02	2.327E-01	3.891E-01	0.000E+00	NOT IDENT.
PA-234M	5.383E+00	4.101E+00	7.316E+00	0.000E+00	NOT IDENT.
NP-239	-1.556E-01	3.676E-01	6.261E-01	0.000E+00	FAIL ABUN
AM-241	-4.522E-02	1.821E-01	2.945E-01	0.000E+00	NOT IDENT.
CM-247	-3.424E-03	2.908E-02	4.793E-02	0.000E+00	FAIL ABUN
CF-249	5.202E-02	3.064E-02	5.788E-02	0.000E+00	NOT IDENT.

CF-251	-5.167E-02	1.047E-01	1.847E-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]G248248005.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:00:54
Sample ID          : G248248005          Sample quantity  : 1.38460E+02 GRAM
Detector name      : GAM18              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:02.00  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 959280             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	2503	10.66*	1.894E+00	3.362E+01	3.362E+01	8.73
CD-109	88.03	269	3.70*	6.450E+00	3.061E+00	3.169E+00	30.19
SN-126	64.28	73	9.60	3.092E+00	6.685E-01	6.685E-01	107.19
	86.94	269	8.90	6.450E+00	1.273E+00	1.273E+00	50.48
	87.57	269	37.00*	6.450E+00	3.061E-01	3.061E-01	30.19
TL-208	277.37	104	6.60	6.257E+00	6.809E-01	6.809E-01	69.63
	583.19	740	85.00*	3.935E+00	5.997E-01	5.997E-01	13.83
	860.56	106	12.50	2.914E+00	7.913E-01	7.913E-01	51.12
BI-211	72.87	-----	1.23	4.622E+00	-----	Line Not Found	-----
	351.06	1231	12.92*	5.452E+00	4.739E+00	4.739E+00	10.56
PB-212	74.82	555	10.28	4.930E+00	2.969E+00	2.969E+00	21.42
	77.11	819	17.10	5.253E+00	2.472E+00	2.472E+00	14.08
	238.63	2135	43.60*	6.793E+00	1.954E+00	1.954E+00	8.86
	300.09	103	3.30	5.985E+00	1.408E+00	1.408E+00	55.69
BI-214	609.32	819	45.49*	3.813E+00	1.280E+00	1.280E+00	14.42
	1120.29	245	14.92	2.335E+00	1.907E+00	1.907E+00	22.98
	1764.49	200	15.30	1.695E+00	2.090E+00	2.091E+00	17.99
PB-214	74.82	555	5.80	4.930E+00	5.261E+00	5.262E+00	20.67
	77.11	819	9.70	5.253E+00	4.358E+00	4.358E+00	16.31
	242.00	591	7.25	6.751E+00	3.271E+00	3.272E+00	22.68
	295.22	681	18.42	6.041E+00	1.658E+00	1.658E+00	15.52
	351.93	1231	35.60*	5.452E+00	1.720E+00	1.720E+00	11.92
RA-224	240.99	591	4.10*	6.751E+00	5.785E+00	5.785E+00	21.93
RA-226	609.32	819	45.49*	3.813E+00	1.280E+00	1.280E+00	14.42
	1120.29	245	14.92	2.335E+00	1.907E+00	1.907E+00	22.98
	1764.49	200	15.30	1.695E+00	2.090E+00	2.091E+00	17.99
AC-228	338.32	431	11.27	5.582E+00	1.859E+00	1.859E+00	44.46
	911.20	566	25.80*	2.781E+00	2.137E+00	2.137E+00	18.07
	968.97	340	15.80	2.640E+00	2.210E+00	2.210E+00	29.83
RA-228	338.32	431	11.27	5.582E+00	1.859E+00	1.859E+00	44.46
	911.20	566	25.80*	2.781E+00	2.137E+00	2.137E+00	18.07
	968.97	340	15.80	2.640E+00	2.210E+00	2.210E+00	29.83

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	555	10.28	4.930E+00	2.969E+00	2.969E+00	19.12
	77.11	819	17.10	5.253E+00	2.472E+00	2.472E+00	14.08
	238.63	2135	43.60*	6.793E+00	1.954E+00	1.954E+00	8.86
	300.09	103	3.30	5.985E+00	1.408E+00	1.408E+00	82.08
TH-232	338.32	431	11.27	5.582E+00	1.859E+00	1.859E+00	17.64
	911.20	566	25.80*	2.781E+00	2.137E+00	2.137E+00	18.07
	968.97	340	15.80	2.640E+00	2.210E+00	2.210E+00	29.83
TH-234	63.29	73	3.70*	3.092E+00	1.734E+00	1.734E+00	107.69
	92.59	312	4.23	6.970E+00	2.872E+00	2.872E+00	37.32
U-235	89.96	212	3.47	6.711E+00	2.471E+00	2.471E+00	32.84
	93.35	312	5.60	6.970E+00	2.169E+00	2.169E+00	37.93
	143.76	-----	10.96*	8.222E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.005E+00	-----	Line Not Found	-----
NP-237	185.72	265	57.20	7.647E+00	1.641E-01	1.641E-01	36.09
	205.31	-----	5.01	7.323E+00	-----	Line Not Found	-----
	86.48	269	12.40*	6.450E+00	9.133E-01	9.133E-01	36.76
	95.86	-----	2.68	7.180E+00	-----	Line Not Found	-----
U-238	63.29	73	3.70*	3.092E+00	1.734E+00	1.734E+00	107.69
	92.59	312	4.23	6.970E+00	2.872E+00	2.872E+00	31.30
ANH-511	511.00	174	100.00*	4.311E+00	1.092E-01	1.092E-01	51.50

Flag: "*" = Keyline

Total number of lines in spectrum 37
Number of unidentified lines 6
Number of lines tentatively identified by NID 31 83.78%

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	3.362E+01	3.362E+01	0.294E+01	8.73	
CD-109	461.40D	1.04	3.061E+00	3.169E+00	0.957E+00	30.19	
SN-126	2.30E+05Y	1.00	3.061E-01	3.061E-01	0.924E-01	30.19	
TL-208	1.41E+10Y	1.00	5.997E-01	5.997E-01	0.829E-01	13.83	
BI-211	7.04E+08Y	1.00	4.739E+00	4.739E+00	0.501E+00	10.56	
PB-212	1.41E+10Y	1.00	1.954E+00	1.954E+00	0.173E+00	8.86	
BI-214	1600.00Y	1.00	1.280E+00	1.280E+00	0.185E+00	14.42	
PB-214	1600.00Y	1.00	1.720E+00	1.720E+00	0.205E+00	11.92	
RA-224	1.41E+10Y	1.00	5.785E+00	5.785E+00	1.269E+00	21.93	
RA-226	1600.00Y	1.00	1.280E+00	1.280E+00	0.185E+00	14.42	
AC-228	1.41E+10Y	1.00	2.137E+00	2.137E+00	0.386E+00	18.07	
RA-228	1.41E+10Y	1.00	2.137E+00	2.137E+00	0.386E+00	18.07	
TH-228	1.41E+10Y	1.00	1.954E+00	1.954E+00	0.173E+00	8.86	
TH-232	1.41E+10Y	1.00	2.137E+00	2.137E+00	0.386E+00	18.07	
TH-234	4.47E+09Y	1.00	1.734E+00	1.734E+00	1.868E+00	107.69	
U-235	7.04E+08Y	1.00	1.641E-01	1.641E-01	0.592E-01	36.09	K
NP-237	2.14E+06Y	1.00	9.133E-01	9.133E-01	3.357E-01	36.76	
U-238	4.47E+09Y	1.00	1.734E+00	1.734E+00	1.868E+00	107.69	
ANH-511	1.00E+09Y	1.00	1.092E-01	1.092E-01	0.562E-01	51.50	
Total Activity :			6.736E+01	6.747E+01			

Grand Total Activity : 6.736E+01 6.747E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.91	125	506	0.96	256.89	253	9	1.73E-02	67.4	8.25E+00	
0	209.46	233	460	1.62	417.94	413	10	3.24E-02	36.9	7.25E+00	T
0	270.06	170	336	1.80	539.11	534	11	2.36E-02	45.3	6.35E+00	T
0	328.43	127	255	1.84	655.80	650	11	1.77E-02	52.0	5.68E+00	T
0	409.91	148	206	1.38	818.71	812	14	2.06E-02	44.3	4.97E+00	T
0	462.40	222	161	1.75	923.66	916	15	3.08E-02	28.4	4.60E+00	T
0	726.90	209	156	1.78	1452.52	1444	18	2.90E-02	31.4	3.34E+00	T
0	769.00	136	158	1.60	1536.71	1530	16	1.89E-02	44.5	3.19E+00	
0	794.74	110	92	1.79	1588.17	1582	13	1.53E-02	40.9	3.11E+00	T
0	934.48	39	92	1.38	1867.60	1861	12	5.38E-03	****	2.72E+00	
2	964.31	106	116	2.55	1927.24	1918	24	1.47E-02	53.2	2.65E+00	T
0	1376.45	86	52	2.38	2751.40	2742	19	1.19E-02	46.0	1.98E+00	
0	1508.36	29	28	1.32	3015.19	3005	19	4.00E-03	96.3	1.85E+00	
0	1585.88	74	12	2.05	3170.22	3161	17	1.02E-02	32.2	1.79E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248005.CNF;1
* Acquisition date   : 19-MAR-2010 11:00:54  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 02:00:02.00          Half life ratio    : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G248248005            Analyst initials: MXR1
* Batch Number       : 959280                Sample Quantity  : 1.38460E+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	3.362E+01	2.935E+00	3.804E-01	2.887E-02	88.362
CD-109	3.169E+00	9.567E-01	1.224E+00	1.131E-01	2.589
SN-126	3.061E-01	9.242E-02	1.255E-01	1.157E-02	2.438
TL-208	5.997E-01	8.293E-02	4.635E-02	3.628E-03	12.939
BI-211	4.739E+00	5.007E-01	2.533E-01	1.626E-02	18.709
PB-212	1.954E+00	1.732E-01	7.388E-02	5.326E-03	26.449
BI-214	1.280E+00	1.846E-01	8.318E-02	7.475E-03	15.389
PB-214	1.720E+00	2.050E-01	9.211E-02	7.796E-03	18.675
RA-224	5.785E+00	1.269E+00	7.909E-01	4.406E-02	7.314
RA-226	1.280E+00	1.846E-01	8.318E-02	7.475E-03	15.389
AC-228	2.137E+00	3.862E-01	1.812E-01	2.455E-02	11.792
RA-228	2.137E+00	3.862E-01	1.812E-01	2.455E-02	11.792
TH-228	1.954E+00	1.732E-01	7.388E-02	5.326E-03	26.449
TH-232	2.137E+00	3.862E-01	1.812E-01	2.455E-02	11.792
TH-234	1.734E+00	1.868E+00	2.379E+00	4.286E-01	0.729
U-235	1.641E-01	5.922E-02	2.862E-01	4.463E-02	0.573
NP-237	9.133E-01	3.357E-01	3.861E-01	8.828E-02	2.366
U-238	1.734E+00	1.868E+00	2.379E+00	4.286E-01	0.729

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.092E-01	5.624E-02	3.528E-02	2.330E-03	3.095

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.271E-01		2.733E-01	4.706E-01	3.409E-02	0.483
NA-22	-3.051E-02		3.671E-02	5.646E-02	3.842E-03	-0.540
NA-24	-1.434E+03		2.062E+03	Half-Life too short		
SC-46	-1.541E-02		3.489E-02	5.522E-02	6.159E-03	-0.279
V-48	-3.030E-02		8.074E-02	1.269E-01	1.255E-02	-0.239
CR-51	2.090E-01		3.721E-01	6.152E-01	3.955E-02	0.340
MN-54	1.706E-02		3.235E-02	5.474E-02	5.607E-03	0.312
CO-56	3.747E-02		3.468E-02	6.049E-02	6.315E-03	0.619
CO-57	1.443E-03		2.277E-02	3.663E-02	2.170E-03	0.039
CO-58	-5.204E-02		3.444E-02	5.026E-02	4.962E-03	-1.035
FE-59	-6.802E-03		8.141E-02	1.348E-01	1.109E-02	-0.050
CO-60	2.187E-02		3.176E-02	5.489E-02	4.147E-03	0.399
ZN-65	1.775E-01		9.500E-02	1.543E-01	1.087E-02	1.151
SE-75	2.954E-02		4.375E-02	6.514E-02	3.727E-03	0.454
SR-85	9.216E-02		3.601E-02	5.989E-02	3.968E-03	1.539
Y-88	1.202E-02		2.616E-02	4.565E-02	2.600E-03	0.263
Y-91	-2.521E-01		1.999E+01	3.297E+01	1.949E+00	-0.008
NB-94	1.776E-02		2.731E-02	4.711E-02	3.865E-03	0.377
NB-95	7.394E-02		4.496E-02	7.139E-02	6.531E-03	1.036
NB-95M	2.429E-01		1.319E-01	2.059E-01	1.516E-02	1.180
ZR-95	9.490E-03		6.030E-02	1.010E-01	9.973E-03	0.094
MO-99	-5.444E-05		3.440E-05	Half-Life too short		
TC-99M	-4.703E+19		4.715E+19	Half-Life too short		
RU-103	-1.018E-02		3.521E-02	5.687E-02	7.263E-03	-0.179
RH-106	1.863E-01		2.574E-01	4.320E-01	5.389E-02	0.431
RU-106	1.863E-01		2.567E-01	4.320E-01	3.180E-02	0.431
AG-108M	1.116E-02		2.266E-02	3.862E-02	2.490E-03	0.289
AG-110M	6.431E-04		2.769E-02	4.655E-02	3.671E-03	0.014
SN-113	-2.184E-02		3.639E-02	5.918E-02	3.630E-03	-0.369
CD-115	-9.720E-05		5.190E-05	Half-Life too short		
SN-117M	8.684E-03		7.130E-02	1.193E-01	6.340E-03	0.073
TE-123M	-7.258E-03		2.598E-02	4.288E-02	2.314E-03	-0.169
SB-124	-2.012E-02		6.408E-02	1.013E-01	7.019E-03	-0.199
SB-125	4.150E-02		7.046E-02	1.207E-01	7.533E-03	0.344
TE-125M	-2.960E+00		9.629E+00	1.538E+01	1.384E+00	-0.193
I-126	1.018E-01		2.640E-01	4.518E-01	3.473E-02	0.225
SB-126	1.177E-03		2.004E-01	2.876E-01	2.435E-02	0.004
SB-127	-2.131E+00		4.177E+00	6.756E+00	9.159E-01	-0.315
I-131	-1.205E-01		1.785E-01	2.911E-01	1.906E-02	-0.414
TE-132	9.212E-01		3.382E+00	5.641E+00	9.222E-01	0.163
BA-133	1.438E-02		3.748E-02	5.362E-02	6.041E-03	0.268
I-133	1.062E+00		1.208E+00	Half-Life too short		

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	1.277E-01	+	5.363E-02	7.429E-02	7.186E-03	1.719
CS-135	1.846E-01		1.568E-01	2.377E-01	1.797E-02	0.777
I-135	3.075E+17		1.143E+18	Half-Life	too short	
CS-136	1.979E-02		1.312E-01	2.216E-01	1.988E-02	0.089
BA-137M	-1.141E-02		2.818E-02	4.619E-02	3.521E-03	-0.247
CS-137	-1.205E-02		2.977E-02	4.880E-02	3.729E-03	-0.247
CE-139	1.286E-02		2.581E-02	4.430E-02	2.325E-03	0.290
BA-140	3.755E-01		3.362E-01	5.454E-01	1.827E-01	0.688
LA-140	4.988E-03		1.075E-01	1.702E-01	1.168E-02	0.029
CE-141	8.388E-03		6.727E-02	1.064E-01	6.079E-03	0.079
CE-143	4.920E-02		6.921E-03	Half-Life	too short	
CE-144	5.972E-02		2.016E-01	2.901E-01	4.012E-02	0.206
PM-144	-9.273E-03		2.821E-02	4.625E-02	3.757E-03	-0.200
PR-144	-6.744E-01		2.121E+00	3.480E+00	2.824E-01	-0.194
PM-146	2.330E-02		3.311E-02	5.546E-02	4.845E-03	0.420
ND-147	3.390E-01		7.050E-01	1.183E+00	1.651E-01	0.287
PM-149	2.443E-04		4.375E-04	Half-Life	too short	
EU-152	-2.199E-02		8.734E-02	1.269E-01	8.275E-03	-0.173
GD-153	-3.549E-02		8.983E-02	1.280E-01	1.001E-02	-0.277
EU-154	-1.104E-01		1.055E-01	1.588E-01	1.599E-02	-0.695
EU-155	1.999E-01		9.708E-02	1.671E-01	1.194E-02	1.196
TB-160	-1.108E-01		1.247E-01	1.904E-01	2.091E-02	-0.582
HO-166M	2.019E-02		4.763E-02	8.131E-02	6.778E-03	0.248
TA-182	3.082E-02		1.737E-01	2.895E-01	1.771E-02	0.106
IR-192	1.113E-02		3.025E-02	4.964E-02	2.879E-03	0.224
HG-203	3.009E-02		4.013E-02	5.973E-02	3.601E-03	0.504
BI-207	-5.961E-03		4.386E-02	7.262E-02	5.994E-03	-0.082
PB-210	1.279E+00		5.000E+00	8.275E+00	6.344E-01	0.155
PB-211	-3.656E-01	+	6.369E-01	8.505E-01	4.080E-01	-0.430
BI-212	2.539E+00		8.580E-01	9.713E-01	1.206E-01	2.614
RN-219	1.257E-02		3.127E-01	5.106E-01	6.865E-02	0.025
RA-223	-2.759E-01		5.998E-01	8.128E-01	1.309E-01	-0.339
AC-227	-6.137E-02		2.018E-01	3.261E-01	3.304E-02	-0.188
TH-227	-6.137E-02		2.018E-01	3.261E-01	3.893E-02	-0.188
TH-229	1.467E-01		4.500E-01	7.606E-01	4.072E-02	0.193
PA-231	-4.214E-01		1.250E+00	1.928E+00	2.522E-01	-0.219
TH-231	-2.759E-01		5.998E-01	8.128E-01	1.309E-01	-0.339
PA-233	-4.411E-02		5.500E-02	8.524E-02	5.223E-03	-0.518
PA-234	-1.165E-02		2.374E-01	3.844E-01	7.582E-02	-0.030
PA-234M	5.383E+00		4.185E+00	7.236E+00	7.806E-01	0.744
NP-239	-1.556E-01		3.751E-01	5.939E-01	3.668E-02	-0.262
AM-241	-4.522E-02		1.858E-01	2.759E-01	2.288E-02	-0.164
CM-247	-3.424E-03		2.967E-02	4.655E-02	2.711E-03	-0.074
CF-249	5.202E-02		3.127E-02	5.618E-02	3.229E-03	0.926
CF-251	-5.167E-02		1.068E-01	1.766E-01	9.331E-03	-0.293

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G248248005          *
* Acquisition date   : 19-MAR-2010 11:00:54 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 02:00:02.00 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248248005 Analyst initials: MXR1                 *
* Batch Number       : 959280 Sample Quantity : 1.3846E+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	3.362E+01	2.877E+00	1.910E-01	1.468E+00
CD-109	3.169E+00	9.375E-01	6.489E-01	4.783E-01
SN-126	3.061E-01	9.057E-02	6.657E-02	4.621E-02
TL-208	5.997E-01	8.127E-02	2.370E-02	4.146E-02
BI-211	4.739E+00	4.907E-01	1.308E-01	2.503E-01
PB-212	1.954E+00	1.697E-01	3.845E-02	8.658E-02
BI-214	1.280E+00	1.809E-01	4.250E-02	9.228E-02
PB-214	1.720E+00	2.009E-01	4.757E-02	1.025E-01
RA-224	5.785E+00	1.243E+00	4.115E-01	6.343E-01
RA-226	1.280E+00	1.809E-01	4.250E-02	9.228E-02
AC-228	2.137E+00	3.785E-01	9.185E-02	1.931E-01
RA-228	2.137E+00	3.785E-01	9.185E-02	1.931E-01
TH-228	1.954E+00	1.697E-01	3.845E-02	8.658E-02
TH-232	2.137E+00	3.785E-01	9.185E-02	1.931E-01
TH-234	1.734E+00	1.830E+00	1.269E+00	9.339E-01
U-235	-7.939E-02	1.813E-01	1.503E-01	9.248E-02
NP-237	9.133E-01	3.290E-01	2.048E-01	1.679E-01
U-238	1.734E+00	1.830E+00	1.269E+00	9.339E-01
ANH-511	1.092E-01	5.511E-02	1.809E-02	2.812E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	2.271E-01	2.678E-01	2.416E-01	1.367E-01 NOT IDENT.
NA-22	-3.051E-02	3.597E-02	2.842E-02	1.835E-02 NOT IDENT.
NA-24	-1.434E+09	4.041E+09	0.000E+00	2.062E+09 SHORT HLIF
SC-46	-1.541E-02	3.419E-02	2.800E-02	1.745E-02 FAIL ABUN
V-48	-3.030E-02	7.912E-02	6.422E-02	4.037E-02 NOT IDENT.
CR-51	2.090E-01	3.646E-01	3.183E-01	1.860E-01 NOT IDENT.
MN-54	1.706E-02	3.170E-02	2.779E-02	1.618E-02 NOT IDENT.
CO-56	3.747E-02	3.398E-02	3.070E-02	1.734E-02 NOT IDENT.

CO-57	1.443E-03	2.232E-02	1.930E-02	1.139E-02	NOT IDENT.
CO-58	-5.204E-02	3.375E-02	2.553E-02	1.722E-02	NOT IDENT.
FE-59	-6.802E-03	7.979E-02	6.805E-02	4.071E-02	NOT IDENT.
CO-60	2.187E-02	3.113E-02	2.760E-02	1.588E-02	NOT IDENT.
ZN-65	1.775E-01	9.310E-02	7.788E-02	4.750E-02	NOT IDENT.
SE-75	2.954E-02	4.287E-02	3.383E-02	2.187E-02	NOT IDENT.
SR-85	9.216E-02	3.529E-02	3.070E-02	1.801E-02	NOT IDENT.
Y-88	1.202E-02	2.563E-02	2.280E-02	1.308E-02	NOT IDENT.
Y-91	-2.521E-01	1.959E+01	1.662E+01	9.993E+00	NOT IDENT.
NB-94	1.776E-02	2.676E-02	2.400E-02	1.366E-02	NOT IDENT.
NB-95	7.394E-02	4.406E-02	3.631E-02	2.248E-02	NOT IDENT.
NB-95M	2.429E-01	1.293E-01	1.072E-01	6.596E-02	NOT IDENT.
ZR-95	9.490E-03	5.910E-02	5.137E-02	3.015E-02	NOT IDENT.
MO-99	-5.444E+01	6.743E+01	0.000E+00	3.440E+01	SHORT HLIF
TC-99M	-4.703E+25	9.242E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.018E-02	3.451E-02	2.917E-02	1.761E-02	FAIL ABUN
RH-106	1.863E-01	2.523E-01	2.206E-01	1.287E-01	NOT IDENT.
RU-106	1.863E-01	2.516E-01	2.206E-01	1.284E-01	NOT IDENT.
AG-108M	1.116E-02	2.221E-02	1.987E-02	1.133E-02	NOT IDENT.
AG-110M	6.431E-04	2.714E-02	2.374E-02	1.385E-02	NOT IDENT.
SN-113	-2.184E-02	3.566E-02	3.050E-02	1.820E-02	NOT IDENT.
CD-115	-9.720E+01	1.017E+02	0.000E+00	5.190E+01	SHORT HLIF
SN-117M	8.684E-03	6.988E-02	3.565E-02	3.565E-02	NOT IDENT.
TE-123M	-7.258E-03	2.546E-02	2.249E-02	1.299E-02	NOT IDENT.
SB-124	-2.012E-02	6.280E-02	5.071E-02	3.204E-02	NOT IDENT.
SB-125	4.150E-02	6.905E-02	6.210E-02	3.523E-02	FAIL ABUN
TE-125M	-2.960E+00	9.437E+00	8.120E+00	4.815E+00	NOT IDENT.
I-126	1.018E-01	2.587E-01	1.320E-01	1.320E-01	NOT IDENT.
SB-126	1.177E-03	1.964E-01	1.465E-01	1.002E-01	NOT IDENT.
SB-127	-2.131E+00	4.094E+00	3.444E+00	2.089E+00	NOT IDENT.
I-131	-1.205E-01	1.750E-01	1.502E-01	8.927E-02	NOT IDENT.
TE-132	9.212E-01	3.314E+00	2.938E+00	1.691E+00	NOT IDENT.
BA-133	1.438E-02	3.673E-02	2.769E-02	1.874E-02	FAIL ABUN
I-133	1.062E+06	2.367E+06	0.000E+00	1.208E+06	SHORT HLIF
CS-134	1.277E-01	5.256E-02	3.775E-02	2.682E-02	FAIL ABUN
CS-135	1.846E-01	1.537E-01	1.234E-01	7.841E-02	NOT IDENT.
I-135	3.075E+23	2.239E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.979E-02	1.286E-01	1.120E-01	6.562E-02	NOT IDENT.
BA-137M	-1.141E-02	2.762E-02	2.356E-02	1.409E-02	NOT IDENT.
CS-137	-1.205E-02	2.917E-02	2.489E-02	1.488E-02	NOT IDENT.
CE-139	1.286E-02	2.529E-02	2.321E-02	1.290E-02	NOT IDENT.
BA-140	3.755E-01	3.295E-01	2.794E-01	1.681E-01	NOT IDENT.
LA-140	4.988E-03	1.054E-01	8.529E-02	5.376E-02	FAIL ABUN
CE-141	8.388E-03	6.592E-02	5.591E-02	3.363E-02	NOT IDENT.
CE-143	4.920E+04	1.356E+04	0.000E+00	6.921E+03	SHORT HLIF
CE-144	5.972E-02	1.976E-01	1.526E-01	1.008E-01	NOT IDENT.
PM-144	-9.273E-03	2.765E-02	2.357E-02	1.411E-02	NOT IDENT.
PR-144	-6.744E-01	2.079E+00	1.773E+00	1.061E+00	NOT IDENT.
PM-146	2.330E-02	3.245E-02	2.850E-02	1.655E-02	NOT IDENT.
ND-147	3.390E-01	6.909E-01	6.062E-01	3.525E-01	FAIL ABUN
PM-149	2.443E+02	8.575E+02	0.000E+00	4.375E+02	SHORT HLIF
EU-152	-2.199E-02	8.559E-02	6.557E-02	4.367E-02	FAIL ABUN
GD-153	-3.549E-02	8.803E-02	6.773E-02	4.491E-02	NOT IDENT.
EU-154	-1.104E-01	1.034E-01	7.994E-02	5.274E-02	NOT IDENT.
EU-155	1.999E-01	9.514E-02	8.832E-02	4.854E-02	FAIL ABUN
TB-160	-1.108E-01	1.222E-01	9.654E-02	6.236E-02	FAIL ABUN
HO-166M	2.019E-02	4.668E-02	4.142E-02	2.381E-02	FAIL ABUN
TA-182	3.082E-02	1.703E-01	1.458E-01	8.687E-02	NOT IDENT.
IR-192	1.113E-02	2.964E-02	2.569E-02	1.512E-02	FAIL ABUN
HG-203	3.009E-02	4.932E-02	3.098E-02	2.006E-02	NOT IDENT.
BI-207	-5.961E-03	3.299E-02	3.669E-02	2.193E-02	FAIL ABUN
PB-210	1.279E+00	4.900E+00	4.439E+00	2.500E+00	NOT IDENT.
PB-211	-3.656E-01	6.242E-01	4.381E-01	3.185E-01	NOT IDENT.
BI-212	2.539E+00	8.408E-01	4.945E-01	4.290E-01	FAIL ABUN
RN-219	1.257E-02	3.064E-01	2.630E-01	1.563E-01	FAIL ABUN
RA-223	-2.759E-01	5.878E-01	4.205E-01	2.999E-01	FAIL ABUN
AC-227	-6.137E-02	1.978E-01	1.695E-01	1.009E-01	FAIL ABUN
TH-227	-6.137E-02	1.978E-01	1.695E-01	1.009E-01	FAIL ABUN
TH-229	1.467E-01	4.410E-01	3.974E-01	2.250E-01	FAIL ABUN
PA-231	-4.214E-01	1.225E+00	1.000E+00	6.252E-01	FAIL ABUN
TH-231	-2.759E-01	5.878E-01	4.205E-01	2.999E-01	FAIL ABUN
PA-233	-4.411E-02	5.390E-02	4.413E-02	2.750E-02	FAIL ABUN
PA-234	-1.165E-02	2.327E-01	1.946E-01	1.187E-01	NOT IDENT.
PA-234M	5.383E+00	4.101E+00	3.660E+00	2.092E+00	NOT IDENT.
NP-239	-1.556E-01	3.676E-01	3.132E-01	1.875E-01	FAIL ABUN
AM-241	-4.522E-02	1.821E-01	1.473E-01	9.292E-02	NOT IDENT.
CM-247	-3.424E-03	2.908E-02	2.398E-02	1.484E-02	FAIL ABUN
CF-249	5.202E-02	3.064E-02	2.896E-02	1.563E-02	NOT IDENT.

CF-251 -5.167E-02 1.047E-01 9.240E-02 5.340E-02 NOT IDENT.

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*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT             *
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ENERGY	MDA COUNTS
46.54	326.1188
49.72	343.8444
57.36	0.0000
59.54	388.3701
63.29	462.7502
63.29	462.7502
64.28	462.8659
67.75	461.4362
69.67	481.9832
70.83	479.9566
72.81	504.7690
72.87	504.8614
72.87	504.8614
74.82	505.8768
74.82	505.8768
74.82	505.8768
74.97	506.1029
77.11	509.3058
77.11	509.3058
77.11	509.3058
79.69	513.1108
79.80	469.0922
80.12	469.5200
80.19	469.6113
80.57	474.5957
81.00	524.4808
81.07	524.5853
81.07	524.5853
83.79	477.8691
83.79	477.8691
85.43	473.4569
86.48	584.0179
86.55	584.1295
86.79	628.5269
86.94	628.7827
87.57	568.9866
88.03	511.8007
88.47	512.3954
89.96	514.4026
91.11	388.4911
92.59	389.9715
92.59	389.9715
93.35	390.7263
94.67	376.5358
94.87	376.7249
94.87	376.7249
95.86	439.8233
97.43	429.0539
98.44	366.6148
99.53	357.5511
100.11	357.0052
103.18	443.9977
103.37	427.3153
105.31	339.1667
106.12	373.7834
109.28	404.2974
111.00	370.4300
111.76	428.0593
116.30	378.0186
117.23	427.7549
121.12	367.6399
121.78	367.0470
122.06	365.0619
123.07	393.3740
131.20	383.0731
133.52	378.0615
136.00	399.0928

136.47	391.5308
140.51	0.0000
140.51	0.0000
143.76	422.1496
144.24	409.8905
144.24	409.8905
145.44	390.0790
152.43	427.6029
153.25	437.5534
154.21	407.6058
154.21	407.6058
156.02	406.2486
158.56	397.4236
159.00	409.2085
162.66	383.2806
163.33	383.7114
165.86	371.0152
176.60	374.7361
177.52	381.6528
181.07	0.0000
184.41	419.7766
185.72	404.0052
193.51	382.5701
197.04	403.2890
205.31	402.3426
210.85	330.4626
215.65	333.2715
222.11	342.6528
227.38	339.1399
228.16	338.5004
228.18	338.5083
235.69	347.6655
235.96	338.2987
235.96	338.2987
238.63	301.3560
238.63	301.3560
240.99	302.2327
242.00	302.6061
244.70	255.6660
252.40	264.0809
252.80	268.2405
256.23	272.3596
256.23	272.3596
260.90	0.0000
264.66	256.8230
268.22	300.5650
269.46	279.5994
269.46	279.5994
271.23	259.5558
273.65	260.2557
276.40	264.0075
277.37	264.2875
277.60	264.3536
278.00	283.9201
279.20	252.7037
279.54	252.7965
280.46	248.0581
283.69	274.4606
284.31	277.9289
285.41	271.9812
285.90	0.0000
287.50	244.2810
293.27	0.0000
295.22	229.9980
295.96	230.1774
298.57	203.6484
299.98	246.4327
299.98	246.4327
300.09	266.8578
300.09	266.8578
300.13	266.8655
301.36	226.3565
302.85	253.9766
304.50	302.2094
304.50	302.2094
304.85	305.7334
308.46	232.4962
311.90	268.7759

316.51	216.0065
319.41	222.0385
320.08	221.0986
323.87	240.1928
323.87	240.1928
328.76	264.0583
333.37	171.2487
334.37	213.8969
334.37	213.8969
338.28	231.1498
338.28	231.1498
338.32	231.1594
338.32	231.1594
338.32	231.1594
340.48	242.2351
340.55	242.2485
344.28	229.1857
351.06	200.8548
351.93	201.0114
356.01	184.7135
364.49	216.8262
366.42	0.0000
383.85	214.9532
388.16	163.1805
388.63	176.1574
391.69	207.1180
400.66	178.8398
401.81	179.2146
402.40	183.0573
404.85	188.4815
410.95	178.4474
414.70	182.1185
423.72	184.9905
427.09	150.2813
427.87	162.7422
433.94	158.7193
453.88	148.8074
463.37	161.2375
468.07	163.4155
473.00	164.3172
476.78	162.7824
477.60	140.1730
487.02	146.0633
492.35	0.0000
497.08	154.0771
511.00	145.4247
514.00	124.8005
527.90	0.0000
529.87	0.0000
531.02	129.9425
537.26	118.1361
546.56	0.0000
563.25	161.8267
569.33	150.9012
569.50	150.9152
569.70	150.9363
583.19	151.1031
600.60	164.7008
602.73	188.8254
604.72	194.3913
609.32	130.8909
609.32	130.8909
610.33	130.9683
614.28	114.7656
618.01	141.5135
621.93	125.3485
621.93	125.3485
633.25	140.2780
635.95	127.4175
636.99	136.2091
645.85	134.6814
657.76	137.7563
661.66	152.7678
661.66	152.7678
664.57	0.0000
666.33	137.4624
666.50	137.4746
677.62	142.9212

685.70	136.0671
695.00	147.0214
696.49	156.5047
696.51	156.5081
697.00	161.2325
702.65	141.0156
706.68	159.2008
711.68	126.5465
720.70	128.4714
721.93	0.0000
722.78	125.3506
722.91	125.3586
723.31	133.5246
724.19	131.9527
727.33	121.8229
733.00	107.9843
735.93	112.1437
739.50	0.0000
747.24	119.1638
752.31	112.7106
753.82	108.9354
756.73	115.8447
763.94	114.5797
765.81	131.3011
766.42	139.6523
777.92	0.0000
778.90	145.7905
783.70	120.2498
785.37	124.2560
795.86	119.6590
801.95	128.6494
810.29	138.5331
810.76	140.5439
815.77	95.2285
818.51	113.2207
832.01	128.8845
834.85	134.0464
836.80	0.0000
846.77	99.5479
856.80	131.5713
860.56	105.7735
871.09	112.7773
873.19	108.8090
875.33	0.0000
879.36	124.3828
880.51	126.4824
883.24	104.1603
884.68	86.8521
889.28	118.7542
898.04	105.8269
911.20	106.2493
911.20	106.2493
911.20	106.2493
926.50	90.4232
937.49	85.8968
944.13	99.4280
946.00	98.4541
949.00	87.0358
962.29	110.2221
964.08	104.4221
966.15	104.5067
968.97	90.5797
968.97	90.5797
968.97	90.5797
983.53	104.1390
996.26	132.4009
1001.03	100.5482
1004.73	133.8908
1037.84	107.7992
1038.76	0.0000
1048.07	102.6032
1050.41	103.6212
1050.41	103.6212
1063.66	113.4924
1085.87	99.2542
1099.45	102.5684
1112.07	75.1135
1115.54	111.9666

1120.29	103.7773
1120.29	103.7773
1120.55	103.7887
1121.30	97.1174
1131.51	0.0000
1173.23	108.0461
1177.93	123.8108
1189.05	124.2538
1204.77	129.7948
1221.41	131.4646
1231.02	180.4385
1235.36	154.8737
1238.28	136.1351
1260.41	0.0000
1271.85	92.3626
1274.44	114.5368
1274.54	108.5123
1291.59	93.9212
1298.22	0.0000
1312.11	71.1230
1332.49	60.3046
1365.19	60.1847
1368.63	0.0000
1384.29	74.4276
1408.01	45.9443
1457.56	0.0000
1460.82	37.0740
1489.16	44.8242
1505.03	31.6749
1596.21	42.5201
1620.50	33.7888
1678.03	0.0000
1690.97	30.4352
1764.49	27.9590
1764.49	27.9590
1770.23	14.2196
1771.35	17.7794
1791.20	0.0000
1836.06	20.2899

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248248005

Total Uranium Activity	5.1231E+00	ug/g
Total Uranium Counting Unc.	5.4461E+00	ug/g
Total Uranium Tpu	2.7786E-06	ug/g
Total Uranium Mda	3.7765E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 959280          SAMPLE ID   : G248248005
*  ANALYST       : MXR1            DETECTOR    : GAM18
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 11:00:54.33  SAMPLE ALQT: 138.460 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.117E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.335E+00
GROSS GAMMA MDA (pCi/GRAM ) : 2.897E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.412E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 13:04:30.17

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248006.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:01:46
Sample ID          : G248248006 Sample quantity : 1.33770E+02 GRAM
Detector name      : GAM21 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:25.48 0.4%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959280 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.49*	204	409	0.68	92.97	89	7	2.84E-02	18.0	
2	0	63.16	219	787	0.98	126.29	122	9	3.05E-02	24.0	
3	3	74.86*	921	560	0.78	149.67	146	19	1.28E-01	4.9	4.99E+00
4	3	77.09*	1526	344	0.71	154.13	146	19	2.12E-01	3.1	
5	3	80.88	114	375	0.92	161.71	146	19	1.59E-02	31.8	
6	3	84.08*	196	362	0.93	168.11	165	18	2.72E-02	17.9	5.32E+00
7	3	87.30	481	376	0.94	174.53	165	18	6.68E-02	8.0	
8	3	89.89	303	386	0.95	179.73	165	18	4.21E-02	11.7	
9	0	93.09*	494	507	1.52	186.12	183	9	6.85E-02	9.5	
10	0	99.10	131	387	1.31	198.13	195	8	1.82E-02	27.6	
11	0	128.72	176	411	0.83	257.35	253	9	2.44E-02	22.1	
12	0	186.09*	252	402	1.01	372.03	367	11	3.51E-02	16.8	
13	0	208.91	164	236	0.96	417.65	414	8	2.28E-02	17.9	
14	7	238.47*	1571	108	0.87	476.76	474	13	2.18E-01	2.7	2.89E+00
15	7	241.44	412	169	1.61	482.69	474	13	5.72E-02	7.3	
16	0	269.96	107	180	0.67	539.72	536	8	1.49E-02	23.8	
17	0	277.50	90	220	0.99	554.79	550	11	1.26E-02	33.6	
18	2	295.05*	479	90	1.01	589.88	586	22	6.66E-02	5.6	1.45E+00
19	2	299.79	111	120	1.26	599.36	586	22	1.54E-02	19.6	
20	0	327.48	60	154	0.99	654.73	650	9	8.39E-03	39.1	
21	0	338.26	309	155	1.11	676.28	672	11	4.29E-02	9.6	
22	0	351.78*	722	189	1.09	703.31	697	12	1.00E-01	5.4	
23	0	462.45	87	115	1.12	924.60	918	12	1.21E-02	27.1	
24	0	510.82*	156	138	1.84	1021.34	1015	16	2.17E-02	20.1	
25	0	583.06*	338	107	1.13	1165.82	1161	11	4.70E-02	8.2	
26	0	609.00*	422	106	1.18	1217.70	1211	14	5.87E-02	7.2	
27	0	727.15	81	79	1.23	1454.01	1449	12	1.12E-02	24.9	
28	0	767.96	83	39	1.82	1535.63	1529	13	1.15E-02	19.0	
29	0	794.59	72	41	1.65	1588.91	1584	13	9.97E-03	21.6	
30	0	860.30	52	44	1.13	1720.35	1715	11	7.22E-03	28.3	
31	0	910.90	254	56	1.47	1821.58	1815	15	3.53E-02	9.0	
32	0	968.87	125	57	1.33	1937.56	1932	10	1.74E-02	13.7	
33	0	1377.58	20	16	1.25	2755.40	2752	8	2.78E-03	41.2	
34	0	1460.23*	884	14	2.10	2920.82	2911	19	1.23E-01	3.5	
35	0	1659.73	17	0	1.49	3320.18	3316	9	2.36E-03	24.3	
36	0	1763.88*	80	5	2.75	3528.69	3522	16	1.11E-02	12.7	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248006.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:01:46
Sample ID        : G248248006 Sample quantity : 133.77 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA21 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:25.48 0.4%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.230E+01	3.578E+00	6.651E-01	5.679E-02	48.567
CD-109	+	88.03	*	4.640E+00	8.603E-01	6.935E-01	6.525E-02	6.691
SN-126	+	64.28		7.840E-01	3.935E-01	3.051E-01	4.521E-02	2.569
	+	86.94		1.864E+00	8.292E-01	2.773E-01	1.151E-01	6.719
	+	87.57	*	4.482E-01	8.311E-02	6.687E-02	6.268E-03	6.703
TL-208	+	277.37		1.013E+00	6.919E-01	5.944E-01	7.571E-02	1.704
	+	583.19	*	6.283E-01	1.239E-01	7.156E-02	7.789E-03	8.781
	+	860.56		9.718E-01	5.590E-01	6.107E-01	6.060E-02	1.591
PB-210	+	46.54	*	1.840E+00	6.835E-01	6.066E-01	5.736E-02	3.033
BI-211		72.87		1.228E+00	1.799E+00	2.802E+00	2.345E-01	0.438
	+	351.06	*	5.233E+00	7.343E-01	3.327E-01	3.003E-02	15.731
PB-212	+	74.82		3.039E+00	4.921E-01	3.046E-01	3.932E-02	9.977
	+	77.11		3.029E+00	3.223E-01	1.841E-01	1.588E-02	16.454
	+	238.63	*	2.304E+00	2.624E-01	8.625E-02	8.617E-03	26.713
	+	300.09		2.676E+00	1.090E+00	1.224E+00	1.320E-01	2.186
BI-214	+	609.32	*	1.533E+00	2.860E-01	1.304E-01	1.546E-02	11.755
		1120.29		1.937E+00	6.050E-01	1.141E+00	1.231E-01	1.697
	+	1764.49		2.455E+00	6.556E-01	3.245E-01	2.698E-02	7.565
PB-214	+	74.82		5.387E+00	8.177E-01	5.399E-01	6.271E-02	9.977
	+	77.11		5.340E+00	7.190E-01	3.246E-01	3.874E-02	16.454
	+	242.00		3.678E+00	6.644E-01	5.032E-01	5.339E-02	7.309
	+	295.22		2.041E+00	3.214E-01	2.152E-01	2.378E-02	9.484
	+	351.93	*	1.899E+00	2.864E-01	1.211E-01	1.280E-02	15.685
RA-223	+	81.07		2.602E-01	1.669E-01	2.122E-01	1.887E-02	1.226
	+	83.79		2.719E-01	1.003E-01	9.881E-02	8.977E-03	2.752
		94.87		3.372E-01	3.116E-01	4.886E-01	4.760E-02	0.690
		144.24		-2.477E-01	6.253E-01	9.531E-01	1.035E-01	-0.260
		154.21		4.328E-01	3.385E-01	6.046E-01	6.021E-02	0.716
	+	269.46		5.536E-01	2.680E-01	2.824E-01	2.571E-02	1.960
		323.87	*	-4.013E-01	7.793E-01	1.066E+00	1.858E-01	-0.376
	+	338.28		9.790E+00	2.231E+00	1.440E+00	1.748E-01	6.801
RA-224	+	240.99	*	6.503E+00	1.113E+00	9.271E-01	8.238E-02	7.014
RA-226	+	609.32	*	1.533E+00	2.860E-01	1.304E-01	1.546E-02	11.755
		1120.29		1.937E+00	6.050E-01	1.141E+00	1.231E-01	1.697

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	+	1764.49		2.455E+00	6.556E-01	3.245E-01	2.698E-02	7.565
	+	338.32		2.467E+00	1.134E+00	3.628E-01	1.514E-01	6.800
	+	911.20	*	2.435E+00	5.217E-01	3.065E-01	3.585E-02	7.943
RA-228	+	968.97		2.082E+00	7.636E-01	5.198E-01	1.269E-01	4.005
	+	338.32		2.467E+00	1.134E+00	3.628E-01	1.514E-01	6.800
	+	911.20	*	2.435E+00	5.217E-01	3.065E-01	3.585E-02	7.943
TH-228	+	968.97		2.082E+00	7.636E-01	5.198E-01	1.269E-01	4.005
	+	74.82		3.039E+00	3.950E-01	3.046E-01	2.609E-02	9.977
	+	77.11		3.029E+00	3.223E-01	1.841E-01	1.588E-02	16.454
TH-229	+	238.63	*	2.304E+00	2.624E-01	8.625E-02	8.617E-03	26.713
	+	300.09		2.676E+00	1.947E+00	1.224E+00	7.498E-01	2.186
	+	85.43		4.569E-01	1.685E-01	1.670E-01	1.538E-02	2.736
	+	88.47		6.911E-01	1.281E-01	1.035E-01	9.755E-03	6.680
	+	193.51	*	-2.078E-01	4.833E-01	7.992E-01	6.784E-02	-0.260
TH-231		210.85		3.299E-01	8.859E-01	1.364E+00	1.183E-01	0.242
	+	81.07		2.602E-01	1.669E-01	2.122E-01	1.887E-02	1.226
	+	83.79		2.719E-01	1.003E-01	9.881E-02	8.977E-03	2.752
		94.87		3.372E-01	3.116E-01	4.886E-01	4.760E-02	0.690
		144.24		-2.477E-01	6.253E-01	9.531E-01	1.035E-01	-0.260
TH-232		154.21		4.328E-01	3.385E-01	6.046E-01	6.021E-02	0.716
	+	269.46		5.536E-01	2.680E-01	2.824E-01	2.571E-02	1.960
		323.87	*	-4.013E-01	7.793E-01	1.066E+00	1.858E-01	-0.376
	+	338.28		9.790E+00	2.231E+00	1.440E+00	1.748E-01	6.801
	+	338.32		2.467E+00	5.220E-01	3.628E-01	3.163E-02	6.800
TH-234	+	911.20	*	2.435E+00	5.217E-01	3.065E-01	3.585E-02	7.943
	+	968.97		2.082E+00	7.636E-01	5.198E-01	1.269E-01	4.005
	+	63.29	*	2.034E+00	1.042E+00	7.920E-01	1.429E-01	2.568
U-235	+	92.59		4.084E+00	1.205E+00	6.315E-01	1.420E-01	6.467
	+	89.96		3.030E+00	1.036E+00	7.198E-01	1.795E-01	4.210
	+	93.35		3.085E+00	9.338E-01	4.785E-01	1.125E-01	6.446
NP-237		143.76	*	2.110E-02	1.849E-01	2.898E-01	5.131E-02	0.073
		163.33		-2.411E-02	3.780E-01	6.444E-01	1.149E-01	-0.037
	+	185.72		2.276E-01	7.885E-02	5.882E-02	4.936E-03	3.869
		205.31		4.260E-02	4.808E-01	7.297E-01	1.324E-01	0.058
	+	86.48	*	1.338E+00	3.744E-01	1.987E-01	4.557E-02	6.731
U-238		95.86		3.794E-01	7.390E-01	9.944E-01	2.430E-01	0.382
	+	63.29	*	2.034E+00	1.042E+00	7.920E-01	1.429E-01	2.568
	+	92.59		4.084E+00	8.732E-01	6.315E-01	6.078E-02	6.467
ANH-511	+	511.00	*	2.155E-01	8.910E-02	5.062E-02	4.853E-03	4.257

---- 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	*	-3.443E-02	4.143E-01	6.905E-01	6.764E-02	-0.050
NA-22		1274.54	*	4.886E-02	6.220E-02	1.091E-01	8.949E-03	0.448
NA-24		1368.63	*	2.154E+03	6.220E-02	Half-Life too short		
SC-46		889.28	*	-2.175E-02	5.889E-02	9.486E-02	8.435E-03	-0.229
		1120.55		3.657E-01	1.066E-01	2.070E-01	1.749E-02	1.767

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
V-48	944.13			9.006E-01	1.669E+00	2.917E+00	2.557E-01	0.309
	983.53	*		-6.064E-03	1.370E-01	2.256E-01	1.973E-02	-0.027
	1312.11			-1.117E-01	1.696E-01	2.483E-01	2.023E-02	-0.450
CR-51	320.08	*		1.314E-01	4.680E-01	7.718E-01	7.169E-02	0.170
MN-54	834.85	*		-1.587E-02	4.985E-02	8.135E-02	7.884E-03	-0.195
CO-56	846.77	*		3.991E-03	5.252E-02	8.878E-02	8.463E-03	0.045
	1037.84			-3.686E-01	4.326E-01	6.375E-01	5.816E-02	-0.578
	1238.28			3.384E-02	1.497E-01	2.470E-01	2.096E-02	0.137
	1771.35			-1.002E-01	3.890E-01	4.921E-01	4.089E-02	-0.204
CO-57	122.06	*		6.047E-04	2.092E-02	3.310E-02	3.802E-03	0.018
	136.47			-5.705E-02	1.838E-01	2.827E-01	3.130E-02	-0.202
CO-58	810.76	*		-2.737E-02	5.320E-02	8.505E-02	8.512E-03	-0.322
FE-59	1099.45	*		5.649E-03	1.405E-01	2.307E-01	2.129E-02	0.024
	1291.59			2.149E-03	2.080E-01	3.349E-01	3.146E-02	0.006
CO-60	1173.23			-1.305E-02	6.345E-02	1.008E-01	8.306E-03	-0.129
	1332.49	*		5.564E-02	5.060E-02	9.603E-02	7.794E-03	0.579
ZN-65	1115.54	*		-5.632E-01	1.768E-01	1.952E-01	1.655E-02	-2.886
SE-75	121.12			1.547E-02	1.100E-01	1.752E-01	2.343E-02	0.088
	136.00			-2.875E-02	3.646E-02	5.441E-02	5.783E-03	-0.528
	264.66	*		-3.025E-02	4.440E-02	6.980E-02	6.268E-03	-0.433
	279.54			4.391E-02	1.181E-01	1.783E-01	1.646E-02	0.246
	400.66			-5.549E-02	3.078E-01	4.805E-01	5.131E-02	-0.115
SR-85	514.00	*		7.000E-02	4.883E-02	8.190E-02	7.881E-03	0.855
Y-88	898.04			-2.379E-02	6.042E-02	9.695E-02	8.521E-03	-0.245
	1836.06	*		1.499E-02	4.822E-02	8.405E-02	6.940E-03	0.178
Y-91	1204.77	*		-7.035E+00	3.521E+01	5.589E+01	4.604E+00	-0.126
NB-94	702.65	*		4.954E-03	4.520E-02	7.379E-02	8.036E-03	0.067
	871.09			9.720E-03	4.544E-02	7.759E-02	7.122E-02	0.125
NB-95	765.81	*		2.097E-02	7.163E-02	1.039E-01	1.085E-02	0.202
NB-95M	235.69	*		-2.208E-02	1.342E-01	1.976E-01	1.994E-02	-0.112
ZR-95	724.19			5.097E-02	1.547E-01	2.265E-01	2.572E-02	0.225
	756.73	*		1.056E-01	9.900E-02	1.751E-01	1.975E-02	0.603
MO-99	140.51			-6.125E-05	9.900E-02	Half-Life	too short	
	181.07			-2.954E-05	9.900E-02	Half-Life	too short	
	366.42			2.266E-04	9.900E-02	Half-Life	too short	
	739.50	*		3.284E-05	9.900E-02	Half-Life	too short	
	777.92			1.131E-04	9.900E-02	Half-Life	too short	
TC-99M	140.51	*		-3.766E+19	9.900E-02	Half-Life	too short	
RU-103	497.08	*		-3.483E-03	5.290E-02	8.793E-02	1.272E-02	-0.040
	610.33			1.817E+01	4.117E+00	4.306E+00	7.532E-01	4.220
RH-106	621.93	*		4.629E-01	4.148E-01	7.333E-01	1.079E-01	0.631
	1050.41			-1.847E+00	3.699E+00	5.750E+00	4.973E-01	-0.321
RU-106	621.93	*		4.629E-01	4.121E-01	7.333E-01	7.868E-02	0.631
	1050.41			-1.847E+00	3.699E+00	5.750E+00	4.973E-01	-0.321
AG-108M	433.94	*		-3.053E-02	3.137E-02	4.893E-02	4.332E-03	-0.624
	614.28			-1.519E-02	4.600E-02	6.308E-02	6.871E-03	-0.241
	722.91			-3.234E-03	5.770E-02	8.062E-02	8.867E-03	-0.040
AG-110M	657.76	*		-8.788E-02	5.308E-02	7.244E-02	8.126E-03	-1.213
	677.62			1.569E-01	4.016E-01	6.754E-01	7.559E-02	0.232

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		706.68		4.552E-02	2.907E-01	4.764E-01	5.272E-02	0.096
		763.94		1.984E-01	2.092E-01	3.338E-01	3.560E-02	0.594
		884.68		2.919E-02	6.404E-02	1.118E-01	1.032E-02	0.261
		937.49		-1.059E-01	1.494E-01	2.280E-01	2.068E-02	-0.465
		1384.29		5.967E-02	2.333E-01	3.771E-01	3.182E-02	0.158
		1505.03		-4.019E-01	3.730E-01	4.944E-01	4.114E-02	-0.813
SN-113		391.69	*	-2.391E-02	5.610E-02	8.613E-02	7.093E-03	-0.278
CD-115		260.90		8.635E-05	5.610E-02	Half-Life	too short	
		492.35		-1.782E-04	5.610E-02	Half-Life	too short	
		527.90	*	-2.147E-04	5.610E-02	Half-Life	too short	
SN-117M		156.02		-3.270E+00	2.932E+00	4.775E+00	4.310E-01	-0.685
		158.56	*	1.984E-02	7.150E-02	1.238E-01	1.090E-02	0.160
TE-123M		159.00	*	6.284E-03	2.610E-02	4.511E-02	3.976E-03	0.139
SB-124		602.73		2.193E-02	5.465E-02	8.251E-02	8.714E-03	0.266
		645.85		-3.744E-01	6.810E-01	1.061E+00	1.201E-01	-0.353
		722.78		-4.793E-02	6.334E-01	8.827E-01	9.653E-02	-0.054
		1690.97	*	6.784E-03	1.236E-01	2.046E-01	1.786E-02	0.033
SB-125		427.87	*	2.356E-03	1.075E-01	1.823E-01	1.577E-02	0.013
	+	463.37		1.039E+00	5.708E-01	7.058E-01	6.780E-02	1.472
		600.60		6.938E-02	2.111E-01	3.563E-01	3.943E-02	0.195
		635.95		-3.003E-02	3.533E-01	5.723E-01	6.530E-02	-0.052
TE-125M		109.28	*	9.012E+00	8.228E+00	1.369E+01	1.667E+00	0.658
I-126		388.63		2.244E-01	3.021E-01	5.056E-01	4.049E-02	0.444
		666.33	*	-1.232E-01	4.235E-01	6.699E-01	7.390E-02	-0.184
		753.82		3.210E+00	3.697E+00	6.408E+00	6.763E-01	0.501
SB-126		414.70		-5.021E-02	1.252E-01	2.066E-01	1.714E-02	-0.243
		666.50		-2.022E-02	1.452E-01	2.331E-01	2.572E-02	-0.087
		695.00		8.740E-02	1.487E-01	2.538E-01	2.773E-02	0.344
		697.00		-1.070E-01	5.409E-01	8.585E-01	9.373E-02	-0.125
		720.70	*	1.763E-01	3.013E-01	4.967E-01	5.359E-02	0.355
		856.80		1.789E-01	1.041E+00	1.555E+00	1.460E-01	0.115
SB-127		252.40		4.784E+00	1.680E+01	2.801E+01	1.187E+01	0.171
		473.00		-3.889E+00	7.381E+00	1.183E+01	1.822E+00	-0.329
		685.70	*	-1.263E+00	7.168E+00	1.142E+01	1.771E+00	-0.111
		783.70		1.227E+01	1.794E+01	3.061E+01	4.834E+00	0.401
I-131	+	80.19		1.085E+01	6.962E+00	8.436E+00	7.553E-01	1.286
		284.31		-6.449E-02	3.011E+00	4.918E+00	4.632E-01	-0.013
		364.49	*	1.574E-01	2.555E-01	4.265E-01	3.821E-02	0.369
		636.99		-1.558E+00	4.122E+00	6.495E+00	7.344E-01	-0.240
TE-132		49.72		-3.016E+00	1.509E+01	2.511E+01	3.349E+00	-0.120
		111.76		-4.032E+01	1.422E+02	2.228E+02	3.330E+01	-0.181
		116.30		1.593E+01	1.242E+02	1.982E+02	3.007E+01	0.080
		228.16	*	1.975E+00	3.882E+00	6.604E+00	1.171E+00	0.299
BA-133	+	81.00		1.150E-01	7.522E-02	8.665E-02	1.357E-02	1.327
	+	276.40		9.373E-01	6.433E-01	6.764E-01	9.672E-02	1.386
		302.85		-9.930E-03	1.473E-01	2.124E-01	2.818E-02	-0.047
		356.01	*	-3.602E-02	4.912E-02	6.417E-02	8.273E-03	-0.561
		383.85		-4.690E-02	3.270E-01	5.142E-01	6.206E-02	-0.091
I-133		529.87	*	4.955E-01	3.270E-01	Half-Life	too short	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134		875.33		6.474E+00	3.270E-01	Half-Life	too short	
		1298.22		1.438E+02	3.270E-01	Half-Life	too short	
		563.25		8.918E-01	4.769E-01	8.729E-01	8.941E-02	1.022
		569.33		7.872E-02	2.413E-01	4.087E-01	4.224E-02	0.193
		604.72		-1.834E-02	4.428E-02	6.023E-02	6.382E-03	-0.304
	+	795.86	*	2.058E-01	9.126E-02	1.273E-01	1.300E-02	1.616
CS-135		801.95		-2.315E-01	5.650E-01	8.369E-01	8.479E-02	-0.277
		1365.19		2.355E-01	1.589E+00	2.715E+00	2.332E-01	0.087
		268.22	*	1.715E-01	1.767E-01	2.771E-01	2.838E-02	0.619
	I-135	546.56		-7.405E+17	1.767E-01	Half-Life	too short	
		836.80		1.208E+19	1.767E-01	Half-Life	too short	
		1038.76		-7.945E+18	1.767E-01	Half-Life	too short	
CS-136		1131.51		3.554E+17	1.767E-01	Half-Life	too short	
		1260.41	*	5.939E+17	1.767E-01	Half-Life	too short	
		1457.56		4.182E+20	1.767E-01	Half-Life	too short	
		1678.03		5.771E+18	1.767E-01	Half-Life	too short	
		1791.20		-2.216E+18	1.767E-01	Half-Life	too short	
		153.25		1.497E+00	1.126E+00	2.011E+00	2.176E-01	0.744
BA-137M		176.60		-1.583E-01	6.674E-01	1.122E+00	1.033E-01	-0.141
		273.65		-9.301E-02	1.028E+00	1.177E+00	1.135E-01	-0.079
		340.55		2.350E-01	2.392E-01	3.733E-01	3.371E-02	0.630
		818.51		7.545E-03	1.496E-01	2.530E-01	2.507E-02	0.030
		1048.07	*	1.133E-01	2.255E-01	3.893E-01	3.513E-02	0.291
		1235.36		7.060E-01	1.327E+00	2.240E+00	2.573E-01	0.315
CS-137		661.66	*	6.222E-02	5.451E-02	9.545E-02	1.054E-02	0.652
CE-139		661.66	*	6.573E-02	5.759E-02	1.008E-01	1.115E-02	0.652
BA-140		165.86	*	-1.226E-03	2.692E-02	4.587E-02	3.729E-03	-0.027
		162.66		-7.162E-01	1.070E+00	1.775E+00	1.601E-01	-0.404
		304.85		-1.232E+00	2.235E+00	3.027E+00	8.887E-01	-0.407
		423.72		8.268E-01	3.316E+00	5.694E+00	1.870E+00	0.145
		537.26	*	-1.611E-02	4.487E-01	7.420E-01	2.542E-01	-0.022
LA-140	+	328.76		9.052E-01	7.127E-01	9.175E-01	8.513E-02	0.987
		487.02		3.393E-02	2.187E-01	3.708E-01	3.629E-02	0.091
		815.77		1.183E-01	6.486E-01	1.110E+00	1.201E-01	0.107
		1596.21	*	-6.156E-02	1.751E-01	2.697E-01	2.255E-02	-0.228
CE-141		145.44	*	-7.885E-02	6.990E-02	1.016E-01	1.019E-02	-0.776
CE-143		57.36		5.363E-05	6.990E-02	Half-Life	too short	
		293.27	*	2.632E-02	6.990E-02	Half-Life	too short	
		664.57		-9.784E-02	6.990E-02	Half-Life	too short	
		721.93		2.127E-02	6.990E-02	Half-Life	too short	
CE-144	+	80.12		3.036E+00	1.947E+00	2.347E+00	2.071E-01	1.294
		133.52	*	1.422E-01	1.726E-01	2.800E-01	4.643E-02	0.508
PM-144		476.78		4.315E-02	7.561E-02	1.319E-01	1.301E-02	0.327
		618.01		-2.483E-02	3.914E-02	6.002E-02	6.539E-03	-0.414
		696.49	*	5.325E-04	4.376E-02	7.088E-02	7.744E-03	0.008
PR-144		696.51	*	2.206E-02	3.287E+00	5.321E+00	5.811E-01	0.004
		1489.16		-4.006E+00	1.732E+01	2.759E+01	2.292E+00	-0.145
PM-146		453.88	*	-6.886E-03	5.009E-02	8.356E-02	9.008E-03	-0.082
		633.25		7.565E-01	1.831E+00	3.062E+00	1.187E+00	0.247

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	+	735.93		-6.762E-02	2.060E-01	3.195E-01	9.180E-02	-0.212
		747.24		-5.950E-02	1.236E-01	1.875E-01	2.969E-02	-0.317
		91.11		1.610E+00	4.108E-01	5.104E-01	5.210E-02	3.154
		319.41		-1.306E+00	5.722E+00	9.112E+00	8.070E-01	-0.143
		531.02	*	1.754E+00	1.144E+00	2.066E+00	3.238E-01	0.849
PM-149		285.90	*	-6.570E-04	1.144E+00	Half-Life too short		
EU-152		121.78		-1.297E-02	5.913E-02	9.227E-02	1.149E-02	-0.141
		244.70		-1.116E-01	3.240E-01	4.674E-01	4.161E-02	-0.239
		344.28	*	5.170E-03	1.085E-01	1.667E-01	1.528E-02	0.031
		778.90		1.219E-01	3.265E-01	5.432E-01	5.611E-02	0.224
		964.08		5.102E-01	4.293E-01	7.062E-01	6.187E-02	0.722
		1085.87		3.037E-01	5.768E-01	9.926E-01	8.497E-02	0.306
		1112.07		1.070E-01	4.025E-01	6.766E-01	5.737E-02	0.158
		1408.01		2.575E-01	2.743E-01	5.064E-01	4.166E-02	0.508
GD-153		69.67		-4.439E-01	8.472E-01	1.366E+00	1.120E-01	-0.325
		97.43	*	5.985E-02	7.043E-02	9.755E-02	9.636E-03	0.614
EU-154		103.18		-7.964E-02	9.609E-02	1.345E-01	1.373E-02	-0.592
		123.07		-1.751E-03	4.294E-02	6.762E-02	9.200E-03	-0.026
		723.31		6.611E-02	2.541E-01	3.698E-01	4.247E-02	0.179
		873.19		4.118E-01	3.727E-01	6.824E-01	8.381E-02	0.603
		996.26		7.482E-02	4.896E-01	8.210E-01	1.439E-01	0.091
		1004.73		-2.257E-01	2.856E-01	4.281E-01	5.015E-02	-0.527
		1274.44	*	1.155E-01	1.781E-01	3.074E-01	3.400E-02	0.376
		86.55		5.452E-01	1.013E-01	1.406E-01	1.318E-02	3.879
EU-155	+	105.31	*	2.398E-02	8.038E-02	1.302E-01	1.357E-02	0.184
TB-160	+	86.79		1.555E+00	2.883E-01	4.215E-01	3.925E-02	3.688
		197.04		-1.990E-02	5.373E-01	9.040E-01	7.711E-02	-0.022
		215.65		-2.573E-01	7.673E-01	1.263E+00	1.101E-01	-0.204
		298.57		4.062E-01	1.637E-01	2.242E-01	2.001E-02	1.812
	+	879.36	*	-3.403E-02	1.866E-01	3.059E-01	2.768E-02	-0.111
		962.29		1.805E-01	8.549E-01	1.319E+00	1.156E-01	0.137
		966.15		1.043E+00	4.074E-01	7.167E-01	6.278E-02	1.456
		1177.93		-4.236E-01	5.157E-01	7.544E-01	6.217E-02	-0.562
HO-166M	+	1271.85		2.224E-01	1.090E+00	1.798E+00	1.474E-01	0.124
		80.57		3.261E-01	2.092E-01	2.518E-01	2.229E-02	1.295
		184.41		3.272E-02	3.465E-02	5.554E-02	4.652E-03	0.589
		280.46		-3.363E-02	8.956E-02	1.266E-01	1.130E-02	-0.266
		410.95		3.014E-01	2.918E-01	4.956E-01	4.083E-02	0.608
		711.68	*	5.404E-03	8.242E-02	1.339E-01	1.452E-02	0.040
		752.31		-9.375E-03	3.580E-01	5.732E-01	6.056E-02	-0.016
		810.29		-4.426E-02	7.359E-02	1.165E-01	1.164E-02	-0.380
TA-182	+	67.75		4.305E-02	5.293E-02	8.953E-02	7.256E-03	0.481
		100.11		3.797E-01	2.131E-01	2.295E-01	2.302E-02	1.655
		152.43		-1.710E-01	3.467E-01	5.227E-01	4.876E-02	-0.327
		222.11		-1.470E-01	3.490E-01	5.700E-01	5.000E-02	-0.258
		1121.30		9.379E-01	2.907E-01	5.606E-01	4.736E-02	1.673
		1189.05		-4.058E-01	4.722E-01	6.940E-01	5.719E-02	-0.585
		1221.41	*	-7.971E-02	3.059E-01	4.819E-01	3.968E-02	-0.165
		1231.02		6.386E-02	7.454E-01	1.214E+00	9.991E-02	0.053

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
IR-192	+	295.96		1.624E+00	2.335E-01	3.669E-01	3.298E-02	4.427
		308.46		2.016E-03	1.061E-01	1.726E-01	1.543E-02	0.012
		316.51	*	-2.210E-02	3.806E-02	5.911E-02	5.253E-03	-0.374
		468.07		-5.374E-03	8.892E-02	1.380E-01	1.330E-02	-0.039
HG-203		70.83		-5.832E-01	8.059E-01	1.179E+00	1.871E-01	-0.495
		72.87		3.436E-01	5.052E-01	7.839E-01	1.207E-01	0.438
		279.20	*	3.747E-02	4.526E-02	7.065E-02	6.450E-03	0.530
		72.81		6.878E-02	1.034E-01	1.610E-01	1.347E-02	0.427
BI-207	+	74.97		8.763E-01	1.134E-01	1.610E-01	1.367E-02	5.444
		569.70		2.674E-02	3.563E-02	6.235E-02	6.385E-03	0.429
		1063.66	*	-3.111E-02	7.364E-02	1.152E-01	9.930E-03	-0.270
		1770.23		2.891E-02	6.878E-01	9.735E-01	8.089E-02	0.030
PB-211		404.85	*	1.185E+00	1.026E+00	1.487E+00	7.182E-01	0.797
		427.09		4.920E-01	1.819E+00	3.108E+00	1.437E+00	0.158
		832.01		-5.885E-01	1.282E+00	1.997E+00	1.039E+00	-0.295
		727.33	*	2.392E+00	1.236E+00	1.630E+00	2.285E-01	1.467
BI-212	+	785.37		3.560E+00	4.007E+00	6.968E+00	7.153E-01	0.511
		1620.50		1.717E+00	3.098E+00	5.597E+00	4.682E-01	0.307
		271.23		7.124E-01	3.469E-01	4.480E-01	4.713E-02	1.590
		401.81	*	-5.219E-01	5.034E-01	7.232E-01	1.054E-01	-0.722
AC-227	+	79.69		1.479E+00	9.739E-01	1.105E+00	1.914E-01	1.338
		235.96		-4.166E-02	1.502E-01	2.192E-01	2.311E-02	-0.190
		256.23	*	2.562E-02	2.416E-01	4.011E-01	4.923E-02	0.064
		299.98		2.943E+00	1.217E+00	1.762E+00	2.274E-01	1.671
TH-227	+	304.50		-1.247E+00	1.792E+00	2.411E+00	4.022E-01	-0.517
		334.37		-7.389E-01	2.051E+00	2.842E+00	4.450E-01	-0.260
		79.80		1.952E+00	1.312E+00	1.468E+00	3.207E-01	1.330
		235.96		-4.166E-02	1.502E-01	2.192E-01	2.185E-02	-0.190
PA-231	+	256.23	*	2.562E-02	2.416E-01	4.011E-01	5.537E-02	0.064
		299.98		2.943E+00	1.217E+00	1.762E+00	2.274E-01	1.671
		304.50		-1.247E+00	1.792E+00	2.411E+00	4.022E-01	-0.517
		334.37		-7.389E-01	2.051E+00	2.842E+00	4.450E-01	-0.260
PA-233	+	283.69	*	3.529E-01	1.459E+00	2.421E+00	3.574E-01	0.146
		301.36		8.812E-01	5.981E-01	1.040E+00	1.286E-01	0.847
		300.13		1.332E+00	5.602E-01	7.952E-01	1.193E-01	1.675
		311.90	*	3.036E-02	6.392E-02	1.070E-01	9.769E-03	0.284
PA-234	+	340.48		7.605E-01	7.027E-01	1.074E+00	2.587E-01	0.708
		94.67		1.397E-01	1.222E-01	1.904E-01	2.513E-02	0.734
		98.44		1.834E-01	1.442E-01	1.146E-01	6.420E-02	1.600
		111.00		-1.577E-01	1.472E-01	2.191E-01	2.991E-02	-0.720
PA-234M		131.20		-6.443E-02	1.007E-01	1.392E-01	1.518E-02	-0.463
		569.50		2.540E-01	3.177E-01	5.578E-01	5.710E-02	0.455
		733.00		2.342E-01	5.628E-01	8.321E-01	1.921E-01	0.281
		880.51		-1.481E-01	3.437E-01	5.472E-01	4.942E-02	-0.271
		883.24		9.988E-02	3.579E-01	6.049E-01	4.069E-01	0.165
		926.50		-7.232E-02	1.955E-01	3.087E-01	7.819E-02	-0.234
		946.00	*	-3.133E-01	4.240E-01	6.442E-01	1.213E-01	-0.486
		949.00		8.550E-02	5.967E-01	1.005E+00	8.806E-02	0.085
		766.42		1.911E+01	2.087E+01	2.892E+01	1.477E+01	0.661

---- 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	*	4.333E+00	5.845E+00	1.037E+01	1.044E+00	0.418
		99.53		3.327E-01	1.867E-01	2.132E-01	2.131E-02	1.561
		103.37		-7.966E-02	8.531E-02	1.184E-01	1.211E-02	-0.673
		106.12		5.785E-02	6.164E-02	1.025E-01	1.065E-02	0.564
		117.23	*	-2.521E-01	3.274E-01	4.959E-01	5.520E-02	-0.508
		228.18		1.077E-01	2.097E-01	3.579E-01	3.155E-02	0.301
AM-241	+	277.60		4.628E-01	3.134E-01	3.420E-01	3.051E-02	1.353
CM-247	+	59.54	*	-1.417E-03	5.211E-02	8.019E-02	6.802E-03	-0.018
		278.00		1.966E+00	1.331E+00	1.430E+00	1.275E-01	1.375
CF-249		287.50		1.457E+00	1.264E+00	2.198E+00	1.962E-01	0.663
		402.40	*	-4.832E-02	4.657E-02	6.757E-02	5.480E-03	-0.715
		252.80		1.727E-01	8.986E-01	1.501E+00	1.340E-01	0.115
		333.37		3.181E-02	2.141E-01	3.117E-01	2.730E-02	0.102
CF-251		388.16	*	3.448E-02	4.634E-02	7.765E-02	6.225E-03	0.444
		177.52	*	3.423E-02	1.167E-01	2.006E-01	1.662E-02	0.171
		227.38		-1.142E-01	3.434E-01	5.625E-01	4.955E-02	-0.203
		285.41		7.738E-02	2.274E+00	3.726E+00	3.326E-01	0.021

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]G248248006      *
* Acquisition date   : 19-MAR-2010 11:01:46 Detector SN#      :              *
* Detector ID        : GAM21                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit: 75.000       *
* Elapsed real time  : 0 02:00:25.48             Half life ratio : 8.000       *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248248006             Analyst initials: MXR1         *
* Batch Number       : 959280                 Sample Quantity : 1.3377E+02 GRAM *
* Recovery           : 1.00000                Carrier Weight  : 0.00000       *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                                    *
* CALIB. DATE/TIME   : 28-JUL-2009 10:09:51 MS Isotope      :              *
* MSD DPM             : 0.000                      MSD Isotope :              *
* LCS DPM             : 0.000                      LCS Isotope  :              *
* LCSD DPM            : 0.000                      LCSD Isotope :              *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.230E+01	3.507E+00	6.663E-01	0.000E+00
CD-109	4.640E+00	8.431E-01	7.299E-01	0.000E+00
SN-126	4.482E-01	8.145E-02	7.039E-02	0.000E+00
TL-208	6.283E-01	1.215E-01	7.289E-02	0.000E+00
PB-210	1.840E+00	6.699E-01	6.452E-01	0.000E+00
BI-211	5.233E+00	7.196E-01	3.419E-01	0.000E+00
PB-212	2.304E+00	2.572E-01	8.925E-02	0.000E+00
BI-214	1.533E+00	2.803E-01	1.327E-01	0.000E+00
PB-214	1.899E+00	2.806E-01	1.245E-01	0.000E+00
RA-223	-4.013E-01	7.637E-01	1.097E+00	0.000E+00
RA-224	6.503E+00	1.091E+00	9.592E-01	0.000E+00
RA-226	1.533E+00	2.803E-01	1.327E-01	0.000E+00
AC-228	2.435E+00	5.113E-01	3.097E-01	0.000E+00
RA-228	2.435E+00	5.113E-01	3.097E-01	0.000E+00
TH-228	2.304E+00	2.572E-01	8.925E-02	0.000E+00
TH-229	-2.078E-01	4.736E-01	8.300E-01	0.000E+00
TH-231	-4.013E-01	7.637E-01	1.097E+00	0.000E+00
TH-232	2.435E+00	5.113E-01	3.097E-01	0.000E+00
TH-234	2.034E+00	1.022E+00	8.382E-01	0.000E+00
U-235	2.110E-02	1.812E-01	3.025E-01	0.000E+00
NP-237	1.338E+00	3.669E-01	2.092E-01	0.000E+00
U-238	2.034E+00	1.022E+00	8.382E-01	0.000E+00
ANH-511	2.155E-01	8.732E-02	5.169E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.443E-02	4.061E-01	7.059E-01	0.000E+00 NOT IDENT.
NA-22	4.886E-02	6.096E-02	1.096E-01	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.854E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.175E-02	5.771E-02	9.590E-02	0.000E+00 NOT IDENT.

V-48	-6.064E-03	1.343E-01	2.276E-01	0.000E+00	NOT IDENT.
CR-51	1.314E-01	4.587E-01	7.946E-01	0.000E+00	NOT IDENT.
MN-54	-1.587E-02	4.885E-02	8.234E-02	0.000E+00	NOT IDENT.
CO-56	3.991E-03	5.147E-02	8.984E-02	0.000E+00	NOT IDENT.
CO-57	6.047E-04	2.050E-02	3.464E-02	0.000E+00	NOT IDENT.
CO-58	-2.737E-02	5.213E-02	8.613E-02	0.000E+00	NOT IDENT.
FE-59	5.649E-03	1.377E-01	2.323E-01	0.000E+00	NOT IDENT.
CO-60	5.564E-02	4.959E-02	9.637E-02	0.000E+00	NOT IDENT.
ZN-65	-5.632E-01	1.732E-01	1.965E-01	0.000E+00	NOT IDENT.
SE-75	-3.025E-02	4.352E-02	7.211E-02	0.000E+00	NOT IDENT.
SR-85	7.000E-02	4.785E-02	8.362E-02	0.000E+00	NOT IDENT.
Y-88	1.499E-02	4.725E-02	8.385E-02	0.000E+00	NOT IDENT.
Y-91	-7.035E+00	3.450E+01	5.619E+01	0.000E+00	NOT IDENT.
NB-94	4.954E-03	4.430E-02	7.492E-02	0.000E+00	NOT IDENT.
NB-95	2.097E-02	7.020E-02	1.053E-01	0.000E+00	NOT IDENT.
NB-95M	-2.208E-02	1.315E-01	2.045E-01	0.000E+00	NOT IDENT.
ZR-95	1.056E-01	9.702E-02	1.776E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.212E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	9.102E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.483E-03	5.184E-02	8.983E-02	0.000E+00	FAIL ABUN
RH-106	4.629E-01	4.065E-01	7.461E-01	0.000E+00	NOT IDENT.
RU-106	4.629E-01	4.039E-01	7.461E-01	0.000E+00	NOT IDENT.
AG-108M	-3.053E-02	3.074E-02	5.010E-02	0.000E+00	NOT IDENT.
AG-110M	-8.788E-02	5.202E-02	7.363E-02	0.000E+00	NOT IDENT.
SN-113	-2.391E-02	5.498E-02	8.836E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.567E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.984E-02	7.007E-02	1.290E-01	0.000E+00	NOT IDENT.
TE-123M	6.284E-03	2.557E-02	4.701E-02	0.000E+00	NOT IDENT.
SB-124	6.784E-03	1.212E-01	2.044E-01	0.000E+00	NOT IDENT.
SB-125	2.356E-03	1.054E-01	1.867E-01	0.000E+00	FAIL ABUN
TE-125M	9.012E+00	8.063E+00	1.436E+01	0.000E+00	NOT IDENT.
I-126	-1.232E-01	4.151E-01	6.808E-01	0.000E+00	NOT IDENT.
SB-126	1.763E-01	2.953E-01	5.041E-01	0.000E+00	NOT IDENT.
SB-127	-1.263E+00	7.024E+00	1.160E+01	0.000E+00	NOT IDENT.
I-131	1.574E-01	2.503E-01	4.381E-01	0.000E+00	FAIL ABUN
TE-132	1.975E+00	3.805E+00	6.839E+00	0.000E+00	NOT IDENT.
BA-133	-3.602E-02	4.813E-02	6.594E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.798E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	8.944E-02	1.290E-01	0.000E+00	FAIL ABUN
CS-135	1.715E-01	1.732E-01	2.862E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.640E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.133E-01	2.210E-01	3.924E-01	0.000E+00	NOT IDENT.
BA-137M	6.222E-02	5.342E-02	9.701E-02	0.000E+00	NOT IDENT.
CS-137	6.573E-02	5.644E-02	1.025E-01	0.000E+00	NOT IDENT.
CE-139	-1.226E-03	2.638E-02	4.776E-02	0.000E+00	NOT IDENT.
BA-140	-1.611E-02	4.397E-01	7.569E-01	0.000E+00	NOT IDENT.
LA-140	-6.156E-02	1.716E-01	2.698E-01	0.000E+00	FAIL ABUN
CE-141	-7.885E-02	6.850E-02	1.060E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.003E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.422E-01	1.692E-01	2.927E-01	0.000E+00	FAIL ABUN
PM-144	5.325E-04	4.288E-02	7.198E-02	0.000E+00	NOT IDENT.
PR-144	2.206E-02	3.221E+00	5.403E+00	0.000E+00	NOT IDENT.
PM-146	-6.886E-03	4.909E-02	8.550E-02	0.000E+00	NOT IDENT.
ND-147	1.754E+00	1.121E+00	2.108E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.132E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	5.170E-03	1.064E-01	1.714E-01	0.000E+00	NOT IDENT.
GD-153	5.985E-02	6.902E-02	1.025E-01	0.000E+00	NOT IDENT.
EU-154	1.155E-01	1.745E-01	3.088E-01	0.000E+00	NOT IDENT.
EU-155	2.398E-02	7.877E-02	1.366E-01	0.000E+00	FAIL ABUN
TB-160	-3.403E-02	1.828E-01	3.093E-01	0.000E+00	FAIL ABUN
HO-166M	5.404E-03	8.077E-02	1.359E-01	0.000E+00	FAIL ABUN
TA-182	-7.971E-02	2.998E-01	4.844E-01	0.000E+00	FAIL ABUN
IR-192	-2.210E-02	3.730E-02	6.087E-02	0.000E+00	FAIL ABUN
HG-203	3.747E-02	4.435E-02	7.291E-02	0.000E+00	NOT IDENT.
BI-207	-3.111E-02	7.216E-02	1.161E-01	0.000E+00	FAIL ABUN
PB-211	1.185E+00	1.006E+00	1.524E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.211E+00	1.654E+00	0.000E+00	FAIL ABUN
RN-219	-5.219E-01	4.934E-01	7.416E-01	0.000E+00	FAIL ABUN
AC-227	2.562E-02	2.367E-01	4.145E-01	0.000E+00	FAIL ABUN
TH-227	2.562E-02	2.368E-01	4.145E-01	0.000E+00	FAIL ABUN
PA-231	3.529E-01	1.430E+00	2.497E+00	0.000E+00	NOT IDENT.
PA-233	3.036E-02	6.264E-02	1.102E-01	0.000E+00	FAIL ABUN
PA-234	-3.133E-01	4.155E-01	6.505E-01	0.000E+00	FAIL ABUN
PA-234M	4.333E+00	5.728E+00	1.046E+01	0.000E+00	NOT IDENT.
NP-239	-2.521E-01	3.208E-01	5.195E-01	0.000E+00	FAIL ABUN
AM-241	-1.417E-03	5.107E-02	8.495E-02	0.000E+00	NOT IDENT.
CM-247	-4.832E-02	4.564E-02	6.929E-02	0.000E+00	FAIL ABUN
CF-249	3.448E-02	4.542E-02	7.967E-02	0.000E+00	NOT IDENT.

CF-251	3.423E-02	1.143E-01	2.087E-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]G248248006.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:01:46
Sample ID          : G248248006 Sample quantity : 1.33770E+02 GRAM
Detector name      : GAM21 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:25.48 0.4%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959280 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	884	10.66*	7.205E-01	3.230E+01	3.230E+01	11.08
CD-109	88.03	481	3.70*	8.135E+00	4.482E+00	4.640E+00	18.54
SN-126	64.28	219	9.60	8.179E+00	7.840E-01	7.840E-01	50.19
	86.94	481	8.90	8.135E+00	1.864E+00	1.864E+00	44.50
	87.57	481	37.00*	8.135E+00	4.482E-01	4.482E-01	18.54
TL-208	277.37	90	6.60	3.799E+00	1.013E+00	1.013E+00	68.33
	583.19	338	85.00*	1.777E+00	6.283E-01	6.283E-01	19.73
	860.56	52	12.50	1.201E+00	9.718E-01	9.718E-01	57.52
PB-210	46.54	204	4.25*	7.348E+00	1.836E+00	1.840E+00	37.16
BI-211	72.87	-----	1.23	8.278E+00	-----	Line Not Found	-----
	351.06	722	12.92*	2.997E+00	5.233E+00	5.233E+00	14.03
PB-212	74.82	921	10.28	8.275E+00	3.039E+00	3.039E+00	16.19
	77.11	1526	17.10	8.264E+00	3.029E+00	3.029E+00	10.64
	238.63	1571	43.60*	4.388E+00	2.304E+00	2.304E+00	11.39
	300.09	111	3.30	3.521E+00	2.676E+00	2.676E+00	40.75
BI-214	609.32	422	45.49*	1.700E+00	1.533E+00	1.533E+00	18.66
	1120.29	-----	14.92	9.295E-01	-----	Line Not Found	-----
	1764.49	80	15.30	5.984E-01	2.455E+00	2.455E+00	26.70
PB-214	74.82	921	5.80	8.275E+00	5.387E+00	5.387E+00	15.18
	77.11	1526	9.70	8.264E+00	5.340E+00	5.340E+00	13.46
	242.00	412	7.25	4.338E+00	3.677E+00	3.678E+00	18.07
	295.22	479	18.42	3.578E+00	2.041E+00	2.041E+00	15.75
	351.93	722	35.60*	2.997E+00	1.899E+00	1.899E+00	15.08
RA-223	81.07	114	15.00	8.230E+00	2.602E-01	2.602E-01	64.15
	83.79	196	24.70	8.188E+00	2.719E-01	2.719E-01	36.88
	94.87	-----	5.69	7.977E+00	-----	Line Not Found	-----
	144.24	-----	3.27	6.553E+00	-----	Line Not Found	-----
	154.21	-----	5.70	6.267E+00	-----	Line Not Found	-----
	269.46	107	13.90	3.902E+00	5.536E-01	5.536E-01	48.41
	323.87	-----	3.99*	3.259E+00	-----	Line Not Found	-----
	338.28	309	2.84	3.119E+00	9.790E+00	9.790E+00	22.78
RA-224	240.99	412	4.10*	4.338E+00	6.503E+00	6.503E+00	17.11

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-226	609.32	422	45.49*	1.700E+00	1.533E+00	1.533E+00	18.66
	1120.29	-----	14.92	9.295E-01	-----	Line Not Found	-----
	1764.49	80	15.30	5.984E-01	2.455E+00	2.455E+00	26.70
AC-228	338.32	309	11.27	3.119E+00	2.467E+00	2.467E+00	45.97
	911.20	254	25.80*	1.136E+00	2.435E+00	2.435E+00	21.43
	968.97	125	15.80	1.069E+00	2.082E+00	2.082E+00	36.68
RA-228	338.32	309	11.27	3.119E+00	2.467E+00	2.467E+00	45.97
	911.20	254	25.80*	1.136E+00	2.435E+00	2.435E+00	21.43
	968.97	125	15.80	1.069E+00	2.082E+00	2.082E+00	36.68
TH-228	74.82	921	10.28	8.275E+00	3.039E+00	3.039E+00	13.00
	77.11	1526	17.10	8.264E+00	3.029E+00	3.029E+00	10.64
	238.63	1571	43.60*	4.388E+00	2.304E+00	2.304E+00	11.39
	300.09	111	3.30	3.521E+00	2.676E+00	2.676E+00	72.78
TH-229	85.43	196	14.70	8.188E+00	4.569E-01	4.569E-01	36.88
	88.47	481	24.00	8.135E+00	6.911E-01	6.911E-01	18.54
	193.51	-----	4.41*	5.271E+00	-----	Line Not Found	-----
	210.85	-----	2.80	4.900E+00	-----	Line Not Found	-----
TH-231	81.07	114	15.00	8.230E+00	2.602E-01	2.602E-01	64.15
	83.79	196	24.70	8.188E+00	2.719E-01	2.719E-01	36.88
	94.87	-----	5.69	7.977E+00	-----	Line Not Found	-----
	144.24	-----	3.27	6.553E+00	-----	Line Not Found	-----
	154.21	-----	5.70	6.267E+00	-----	Line Not Found	-----
	269.46	107	13.90	3.902E+00	5.536E-01	5.536E-01	48.41
	323.87	-----	3.99*	3.259E+00	-----	Line Not Found	-----
	338.28	309	2.84	3.119E+00	9.790E+00	9.790E+00	22.78
TH-232	338.32	309	11.27	3.119E+00	2.467E+00	2.467E+00	21.16
	911.20	254	25.80*	1.136E+00	2.435E+00	2.435E+00	21.43
	968.97	125	15.80	1.069E+00	2.082E+00	2.082E+00	36.68
TH-234	63.29	219	3.70*	8.179E+00	2.034E+00	2.034E+00	51.25
	92.59	494	4.23	8.017E+00	4.084E+00	4.084E+00	29.51
U-235	89.96	303	3.47	8.085E+00	3.030E+00	3.030E+00	34.20
	93.35	494	5.60	8.017E+00	3.085E+00	3.085E+00	30.27
	143.76	-----	10.96*	6.567E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.017E+00	-----	Line Not Found	-----
	185.72	252	57.20	5.442E+00	2.276E-01	2.276E-01	34.65
	205.31	-----	5.01	5.015E+00	-----	Line Not Found	-----
NP-237	86.48	481	12.40*	8.135E+00	1.338E+00	1.338E+00	27.99
	95.86	-----	2.68	7.953E+00	-----	Line Not Found	-----
U-238	63.29	219	3.70*	8.179E+00	2.034E+00	2.034E+00	51.25
	92.59	494	4.23	8.017E+00	4.084E+00	4.084E+00	21.38
ANH-511	511.00	156	100.00*	2.038E+00	2.155E-01	2.155E-01	41.35

Flag: "*" = Keyline

Total number of lines in spectrum 36
Number of unidentified lines 5
Number of lines tentatively identified by NID 31 86.11%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.230E+01	3.230E+01	0.358E+01	11.08	
CD-109	461.40D	1.04	4.482E+00	4.640E+00	0.860E+00	18.54	
SN-126	2.30E+05Y	1.00	4.482E-01	4.482E-01	0.831E-01	18.54	
TL-208	1.41E+10Y	1.00	6.283E-01	6.283E-01	1.239E-01	19.73	
PB-210	22.20Y	1.00	1.836E+00	1.840E+00	0.684E+00	37.16	
BI-211	7.04E+08Y	1.00	5.233E+00	5.233E+00	0.734E+00	14.03	
PB-212	1.41E+10Y	1.00	2.304E+00	2.304E+00	0.262E+00	11.39	
BI-214	1600.00Y	1.00	1.533E+00	1.533E+00	0.286E+00	18.66	
PB-214	1600.00Y	1.00	1.899E+00	1.899E+00	0.286E+00	15.08	
RA-223	7.04E+08Y	1.00	2.719E-01	2.719E-01	1.003E-01	36.88	K
RA-224	1.41E+10Y	1.00	6.503E+00	6.503E+00	1.113E+00	17.11	
RA-226	1600.00Y	1.00	1.533E+00	1.533E+00	0.286E+00	18.66	
AC-228	1.41E+10Y	1.00	2.435E+00	2.435E+00	0.522E+00	21.43	
RA-228	1.41E+10Y	1.00	2.435E+00	2.435E+00	0.522E+00	21.43	
TH-228	1.41E+10Y	1.00	2.304E+00	2.304E+00	0.262E+00	11.39	
TH-229	7340.00Y	1.00	6.911E-01	6.911E-01	1.281E-01	18.54	K
TH-231	7.04E+08Y	1.00	2.719E-01	2.719E-01	1.003E-01	36.88	K
TH-232	1.41E+10Y	1.00	2.435E+00	2.435E+00	0.522E+00	21.43	
TH-234	4.47E+09Y	1.00	2.034E+00	2.034E+00	1.042E+00	51.25	
U-235	7.04E+08Y	1.00	2.276E-01	2.276E-01	0.789E-01	34.65	K
NP-237	2.14E+06Y	1.00	1.338E+00	1.338E+00	0.374E+00	27.99	
U-238	4.47E+09Y	1.00	2.034E+00	2.034E+00	1.042E+00	51.25	
ANH-511	1.00E+09Y	1.00	2.155E-01	2.155E-01	0.891E-01	41.35	

Total Activity : 7.539E+01 7.555E+01

Grand Total Activity : 7.539E+01 7.555E+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	99.10	131	387	1.31	198.13	195	8	1.82E-02	55.2	7.87E+00	T
0	128.72	176	411	0.83	257.35	253	9	2.44E-02	44.2	7.02E+00	
0	208.91	164	236	0.96	417.65	414	8	2.28E-02	35.9	4.94E+00	
0	327.48	60	154	0.99	654.73	650	9	8.39E-03	78.2	3.22E+00	T
0	462.45	87	115	1.12	924.60	918	12	1.21E-02	54.1	2.26E+00	T
0	727.15	81	79	1.23	1454.01	1449	12	1.12E-02	49.7	1.42E+00	T
0	767.96	83	39	1.82	1535.63	1529	13	1.15E-02	38.0	1.34E+00	
0	794.59	72	41	1.65	1588.91	1584	13	9.97E-03	43.1	1.30E+00	T
0	1377.58	20	16	1.25	2755.40	2752	8	2.78E-03	82.5	7.62E-01	
0	1659.73	17	0	1.49	3320.18	3316	9	2.36E-03	48.5	6.36E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248006.CNF;1
* Acquisition date   : 19-MAR-2010 11:01:46  Detector SN#      :
* Detector ID        : GAM21                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:25.48          Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248248006            Analyst initials: MXR1
* Batch Number       : 959280                Sample Quantity : 1.33770E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 28-JUL-2009 10:09:51.9MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A                LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.230E+01	3.578E+00	6.651E-01	5.679E-02	48.567
CD-109	4.640E+00	8.603E-01	6.935E-01	6.525E-02	6.691
SN-126	4.482E-01	8.311E-02	6.687E-02	6.268E-03	6.703
TL-208	6.283E-01	1.239E-01	7.156E-02	7.789E-03	8.781
PB-210	1.840E+00	6.835E-01	6.066E-01	5.736E-02	3.033
BI-211	5.233E+00	7.343E-01	3.327E-01	3.003E-02	15.731
PB-212	2.304E+00	2.624E-01	8.625E-02	8.617E-03	26.713
BI-214	1.533E+00	2.860E-01	1.304E-01	1.546E-02	11.755
PB-214	1.899E+00	2.864E-01	1.211E-01	1.280E-02	15.685
RA-223	2.719E-01	1.003E-01	1.066E+00	1.858E-01	0.255
RA-224	6.503E+00	1.113E+00	9.271E-01	8.238E-02	7.014
RA-226	1.533E+00	2.860E-01	1.304E-01	1.546E-02	11.755
AC-228	2.435E+00	5.217E-01	3.065E-01	3.585E-02	7.943
RA-228	2.435E+00	5.217E-01	3.065E-01	3.585E-02	7.943
TH-228	2.304E+00	2.624E-01	8.625E-02	8.617E-03	26.713
TH-229	6.911E-01	1.281E-01	7.992E-01	6.784E-02	0.865
TH-231	2.719E-01	1.003E-01	1.066E+00	1.858E-01	0.255
TH-232	2.435E+00	5.217E-01	3.065E-01	3.585E-02	7.943

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	2.034E+00	1.042E+00	7.920E-01	1.429E-01	2.568
U-235	2.276E-01	7.885E-02	2.898E-01	5.131E-02	0.785
NP-237	1.338E+00	3.744E-01	1.987E-01	4.557E-02	6.731
U-238	2.034E+00	1.042E+00	7.920E-01	1.429E-01	2.568
ANH-511	2.155E-01	8.910E-02	5.062E-02	4.853E-03	4.257

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.443E-02		4.143E-01	6.905E-01	6.764E-02	-0.050
NA-22	4.886E-02		6.220E-02	1.091E-01	8.949E-03	0.448
NA-24	2.154E+03		2.987E+03	Half-Life too short		
SC-46	-2.175E-02		5.889E-02	9.486E-02	8.435E-03	-0.229
V-48	-6.064E-03		1.370E-01	2.256E-01	1.973E-02	-0.027
CR-51	1.314E-01		4.680E-01	7.718E-01	7.169E-02	0.170
MN-54	-1.587E-02		4.985E-02	8.135E-02	7.884E-03	-0.195
CO-56	3.991E-03		5.252E-02	8.878E-02	8.463E-03	0.045
CO-57	6.047E-04		2.092E-02	3.310E-02	3.802E-03	0.018
CO-58	-2.737E-02		5.320E-02	8.505E-02	8.512E-03	-0.322
FE-59	5.649E-03		1.405E-01	2.307E-01	2.129E-02	0.024
CO-60	5.564E-02		5.060E-02	9.603E-02	7.794E-03	0.579
ZN-65	-5.632E-01		1.768E-01	1.952E-01	1.655E-02	-2.886
SE-75	-3.025E-02		4.440E-02	6.980E-02	6.268E-03	-0.433
SR-85	7.000E-02		4.883E-02	8.190E-02	7.881E-03	0.855
Y-88	1.499E-02		4.822E-02	8.405E-02	6.940E-03	0.178
Y-91	-7.035E+00		3.521E+01	5.589E+01	4.604E+00	-0.126
NB-94	4.954E-03		4.520E-02	7.379E-02	8.036E-03	0.067
NB-95	2.097E-02		7.163E-02	1.039E-01	1.085E-02	0.202
NB-95M	-2.208E-02		1.342E-01	1.976E-01	1.994E-02	-0.112
ZR-95	1.056E-01		9.900E-02	1.751E-01	1.975E-02	0.603
MO-99	3.284E-05		6.184E-05	Half-Life too short		
TC-99M	-3.766E+19		4.644E+19	Half-Life too short		
RU-103	-3.483E-03		5.290E-02	8.793E-02	1.272E-02	-0.040
RH-106	4.629E-01		4.148E-01	7.333E-01	1.079E-01	0.631
RU-106	4.629E-01		4.121E-01	7.333E-01	7.868E-02	0.631
AG-108M	-3.053E-02		3.137E-02	4.893E-02	4.332E-03	-0.624
AG-110M	-8.788E-02		5.308E-02	7.244E-02	8.126E-03	-1.213
SN-113	-2.391E-02		5.610E-02	8.613E-02	7.093E-03	-0.278
CD-115	-2.147E-04		7.997E-05	Half-Life too short		
SN-117M	1.984E-02		7.150E-02	1.238E-01	1.090E-02	0.160
TE-123M	6.284E-03		2.610E-02	4.511E-02	3.976E-03	0.139
SB-124	6.784E-03		1.236E-01	2.046E-01	1.786E-02	0.033
SB-125	2.356E-03		1.075E-01	1.823E-01	1.577E-02	0.013
TE-125M	9.012E+00		8.228E+00	1.369E+01	1.667E+00	0.658
I-126	-1.232E-01		4.235E-01	6.699E-01	7.390E-02	-0.184
SB-126	1.763E-01		3.013E-01	4.967E-01	5.359E-02	0.355
SB-127	-1.263E+00		7.168E+00	1.142E+01	1.771E+00	-0.111

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	1.574E-01		2.555E-01	4.265E-01	3.821E-02	0.369
TE-132	1.975E+00		3.882E+00	6.604E+00	1.171E+00	0.299
BA-133	-3.602E-02		4.912E-02	6.417E-02	8.273E-03	-0.561
I-133	4.955E-01		1.938E+00	Half-Life too short		
CS-134	2.058E-01	+	9.126E-02	1.273E-01	1.300E-02	1.616
CS-135	1.715E-01		1.767E-01	2.771E-01	2.838E-02	0.619
I-135	5.939E+17		1.857E+18	Half-Life too short		
CS-136	1.133E-01		2.255E-01	3.893E-01	3.513E-02	0.291
BA-137M	6.222E-02		5.451E-02	9.545E-02	1.054E-02	0.652
CS-137	6.573E-02		5.759E-02	1.008E-01	1.115E-02	0.652
CE-139	-1.226E-03		2.692E-02	4.587E-02	3.729E-03	-0.027
BA-140	-1.611E-02		4.487E-01	7.420E-01	2.542E-01	-0.022
LA-140	-6.156E-02		1.751E-01	2.697E-01	2.255E-02	-0.228
CE-141	-7.885E-02		6.990E-02	1.016E-01	1.019E-02	-0.776
CE-143	2.632E-02		5.116E-03	Half-Life too short		
CE-144	1.422E-01		1.726E-01	2.800E-01	4.643E-02	0.508
PM-144	5.325E-04		4.376E-02	7.088E-02	7.744E-03	0.008
PR-144	2.206E-02		3.287E+00	5.321E+00	5.811E-01	0.004
PM-146	-6.886E-03		5.009E-02	8.356E-02	9.008E-03	-0.082
ND-147	1.754E+00		1.144E+00	2.066E+00	3.238E-01	0.849
PM-149	-6.570E-04		5.773E-04	Half-Life too short		
EU-152	5.170E-03		1.085E-01	1.667E-01	1.528E-02	0.031
GD-153	5.985E-02		7.043E-02	9.755E-02	9.636E-03	0.614
EU-154	1.155E-01		1.781E-01	3.074E-01	3.400E-02	0.376
EU-155	2.398E-02		8.038E-02	1.302E-01	1.357E-02	0.184
TB-160	-3.403E-02		1.866E-01	3.059E-01	2.768E-02	-0.111
HO-166M	5.404E-03		8.242E-02	1.339E-01	1.452E-02	0.040
TA-182	-7.971E-02		3.059E-01	4.819E-01	3.968E-02	-0.165
IR-192	-2.210E-02		3.806E-02	5.911E-02	5.253E-03	-0.374
HG-203	3.747E-02		4.526E-02	7.065E-02	6.450E-03	0.530
BI-207	-3.111E-02		7.364E-02	1.152E-01	9.930E-03	-0.270
PB-211	1.185E+00		1.026E+00	1.487E+00	7.182E-01	0.797
BI-212	2.392E+00	+	1.236E+00	1.630E+00	2.285E-01	1.467
RN-219	-5.219E-01		5.034E-01	7.232E-01	1.054E-01	-0.722
AC-227	2.562E-02		2.416E-01	4.011E-01	4.923E-02	0.064
TH-227	2.562E-02		2.416E-01	4.011E-01	5.537E-02	0.064
PA-231	3.529E-01		1.459E+00	2.421E+00	3.574E-01	0.146
PA-233	3.036E-02		6.392E-02	1.070E-01	9.769E-03	0.284
PA-234	-3.133E-01		4.240E-01	6.442E-01	1.213E-01	-0.486
PA-234M	4.333E+00		5.845E+00	1.037E+01	1.044E+00	0.418
NP-239	-2.521E-01		3.274E-01	4.959E-01	5.520E-02	-0.508
AM-241	-1.417E-03		5.211E-02	8.019E-02	6.802E-03	-0.018
CM-247	-4.832E-02		4.657E-02	6.757E-02	5.480E-03	-0.715
CF-249	3.448E-02		4.634E-02	7.765E-02	6.225E-03	0.444
CF-251	3.423E-02		1.167E-01	2.006E-01	1.662E-02	0.171

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G248248006           *
* Acquisition date   : 19-MAR-2010 11:01:46 Detector SN#      :             *
* Detector ID        : GAM21          Sensitivity             : 5.000         *
* Geometry           : CAN            Energy tolerance:       : 1.500         *
* Elapsed live time  : 0 02:00:00.00 Abundance limit :       : 75.000        *
* Elapsed real time  : 0 02:00:25.48 Half life ratio :       : 8.000         *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID           : G248248006      Analyst initials: MXR1             *
* Batch Number        : 959280          Sample Quantity : 1.3377E+02 GRAM    *
* Recovery            : 1.00000          Carrier Weight  : 0.00000          *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 28-JUL-2009 10:09:51 MS Isotope        :             *
* MSD DPM             : 0.000           MSD Isotope          :             *
* LCS DPM             : 0.000           LCS Isotope          :             *
* LCSD DPM            : 0.000           LCSD Isotope         :             *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.230E+01	3.507E+00	3.334E-01	1.789E+00
CD-109	4.640E+00	8.431E-01	3.652E-01	4.302E-01
SN-126	4.482E-01	8.145E-02	3.522E-02	4.156E-02
TL-208	6.283E-01	1.215E-01	3.647E-02	6.197E-02
PB-210	1.840E+00	6.699E-01	3.228E-01	3.418E-01
BI-211	5.233E+00	7.196E-01	1.711E-01	3.672E-01
PB-212	2.304E+00	2.572E-01	4.465E-02	1.312E-01
BI-214	1.533E+00	2.803E-01	6.641E-02	1.430E-01
PB-214	1.899E+00	2.806E-01	6.227E-02	1.432E-01
RA-223	-4.013E-01	7.637E-01	5.489E-01	3.897E-01
RA-224	6.503E+00	1.091E+00	4.799E-01	5.564E-01
RA-226	1.533E+00	2.803E-01	6.641E-02	1.430E-01
AC-228	2.435E+00	5.113E-01	1.550E-01	2.609E-01
RA-228	2.435E+00	5.113E-01	1.550E-01	2.609E-01
TH-228	2.304E+00	2.572E-01	4.465E-02	1.312E-01
TH-229	-2.078E-01	4.736E-01	4.153E-01	2.416E-01
TH-231	-4.013E-01	7.637E-01	5.489E-01	3.897E-01
TH-232	2.435E+00	5.113E-01	1.550E-01	2.609E-01
TH-234	2.034E+00	1.022E+00	4.193E-01	5.212E-01
U-235	2.110E-02	1.812E-01	1.514E-01	9.246E-02
NP-237	1.338E+00	3.669E-01	1.047E-01	1.872E-01
U-238	2.034E+00	1.022E+00	4.193E-01	5.212E-01
ANH-511	2.155E-01	8.732E-02	2.586E-02	4.455E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.443E-02	4.061E-01	3.532E-01	2.072E-01 NOT IDENT.
NA-22	4.886E-02	6.096E-02	5.481E-02	3.110E-02 NOT IDENT.
NA-24	2.154E+09	5.854E+09	0.000E+00	2.987E+09 SHORT HLIF
SC-46	-2.175E-02	5.771E-02	4.798E-02	2.944E-02 NOT IDENT.

V-48	-6.064E-03	1.343E-01	1.139E-01	6.851E-02	NOT IDENT.
CR-51	1.314E-01	4.587E-01	3.975E-01	2.340E-01	NOT IDENT.
MN-54	-1.587E-02	4.885E-02	4.119E-02	2.492E-02	NOT IDENT.
CO-56	3.991E-03	5.147E-02	4.495E-02	2.626E-02	NOT IDENT.
CO-57	6.047E-04	2.050E-02	1.733E-02	1.046E-02	NOT IDENT.
CO-58	-2.737E-02	5.213E-02	4.309E-02	2.660E-02	NOT IDENT.
FE-59	5.649E-03	1.377E-01	1.162E-01	7.023E-02	NOT IDENT.
CO-60	5.564E-02	4.959E-02	4.821E-02	2.530E-02	NOT IDENT.
ZN-65	-5.632E-01	1.732E-01	9.831E-02	8.839E-02	NOT IDENT.
SE-75	-3.025E-02	4.352E-02	3.607E-02	2.220E-02	NOT IDENT.
SR-85	7.000E-02	4.785E-02	4.183E-02	2.442E-02	NOT IDENT.
Y-88	1.499E-02	4.725E-02	4.195E-02	2.411E-02	NOT IDENT.
Y-91	-7.035E+00	3.450E+01	2.811E+01	1.760E+01	NOT IDENT.
NB-94	4.954E-03	4.430E-02	3.748E-02	2.260E-02	NOT IDENT.
NB-95	2.097E-02	7.020E-02	5.267E-02	3.582E-02	NOT IDENT.
NB-95M	-2.208E-02	1.315E-01	1.023E-01	6.711E-02	NOT IDENT.
ZR-95	1.056E-01	9.702E-02	8.883E-02	4.950E-02	NOT IDENT.
MO-99	3.284E+01	1.212E+02	0.000E+00	6.184E+01	SHORT HLIF
TC-99M	-3.766E+25	9.102E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.483E-03	5.184E-02	4.494E-02	2.645E-02	FAIL ABUN
RH-106	4.629E-01	4.065E-01	3.733E-01	2.074E-01	NOT IDENT.
RU-106	4.629E-01	4.039E-01	3.733E-01	2.061E-01	NOT IDENT.
AG-108M	-3.053E-02	3.074E-02	2.507E-02	1.569E-02	NOT IDENT.
AG-110M	-8.788E-02	5.202E-02	3.684E-02	2.654E-02	NOT IDENT.
SN-113	-2.391E-02	5.498E-02	4.420E-02	2.805E-02	NOT IDENT.
CD-115	-2.147E+02	1.567E+02	0.000E+00	7.997E+01	SHORT HLIF
SN-117M	1.984E-02	7.007E-02	6.454E-02	3.575E-02	NOT IDENT.
TE-123M	6.284E-03	2.557E-02	2.352E-02	1.305E-02	NOT IDENT.
SB-124	6.784E-03	1.212E-01	1.023E-01	6.182E-02	NOT IDENT.
SB-125	2.356E-03	1.054E-01	9.341E-02	5.375E-02	FAIL ABUN
TE-125M	9.012E+00	8.063E+00	7.183E+00	4.114E+00	NOT IDENT.
I-126	-1.232E-01	4.151E-01	3.406E-01	2.118E-01	NOT IDENT.
SB-126	1.763E-01	2.953E-01	2.522E-01	1.506E-01	NOT IDENT.
SB-127	-1.263E+00	7.024E+00	5.802E+00	3.584E+00	NOT IDENT.
I-131	1.574E-01	2.503E-01	2.192E-01	1.277E-01	FAIL ABUN
TE-132	1.975E+00	3.805E+00	3.421E+00	1.941E+00	NOT IDENT.
BA-133	-3.602E-02	4.813E-02	3.299E-02	2.456E-02	FAIL ABUN
I-133	4.955E+05	3.798E+06	0.000E+00	1.938E+06	SHORT HLIF
CS-134	2.058E-01	8.944E-02	6.454E-02	4.563E-02	FAIL ABUN
CS-135	1.715E-01	1.732E-01	1.432E-01	8.837E-02	NOT IDENT.
I-135	5.939E+23	3.640E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.133E-01	2.210E-01	1.963E-01	1.127E-01	NOT IDENT.
BA-137M	6.222E-02	5.342E-02	4.853E-02	2.726E-02	NOT IDENT.
CS-137	6.573E-02	5.644E-02	5.127E-02	2.879E-02	NOT IDENT.
CE-139	-1.226E-03	2.638E-02	2.390E-02	1.346E-02	NOT IDENT.
BA-140	-1.611E-02	4.397E-01	3.787E-01	2.244E-01	NOT IDENT.
LA-140	-6.156E-02	1.716E-01	1.350E-01	8.754E-02	FAIL ABUN
CE-141	-7.885E-02	6.850E-02	5.304E-02	3.495E-02	NOT IDENT.
CE-143	2.632E+04	1.003E+04	0.000E+00	5.116E+03	SHORT HLIF
CE-144	1.422E-01	1.692E-01	1.464E-01	8.631E-02	FAIL ABUN
PM-144	5.325E-04	4.288E-02	3.601E-02	2.188E-02	NOT IDENT.
PR-144	2.206E-02	3.221E+00	2.703E+00	1.643E+00	NOT IDENT.
PM-146	-6.886E-03	4.909E-02	4.278E-02	2.504E-02	NOT IDENT.
ND-147	1.754E+00	1.121E+00	1.055E+00	5.718E-01	FAIL ABUN
PM-149	-6.570E+02	1.132E+03	0.000E+00	5.773E+02	SHORT HLIF
EU-152	5.170E-03	1.064E-01	8.573E-02	5.426E-02	NOT IDENT.
GD-153	5.985E-02	6.902E-02	5.128E-02	3.521E-02	NOT IDENT.
EU-154	1.155E-01	1.745E-01	1.545E-01	8.904E-02	NOT IDENT.
EU-155	2.398E-02	7.877E-02	6.835E-02	4.019E-02	FAIL ABUN
TB-160	-3.403E-02	1.828E-01	1.547E-01	9.328E-02	FAIL ABUN
HO-166M	5.404E-03	8.077E-02	6.799E-02	4.121E-02	FAIL ABUN
TA-182	-7.971E-02	2.998E-01	2.424E-01	1.530E-01	FAIL ABUN
IR-192	-2.210E-02	3.730E-02	3.045E-02	1.903E-02	FAIL ABUN
HG-203	3.747E-02	4.435E-02	3.648E-02	2.263E-02	NOT IDENT.
BI-207	-3.111E-02	7.216E-02	5.809E-02	3.682E-02	FAIL ABUN
PB-211	1.185E+00	1.006E+00	7.626E-01	5.130E-01	NOT IDENT.
BI-212	2.392E+00	1.211E+00	8.277E-01	6.180E-01	FAIL ABUN
RN-219	-5.219E-01	4.934E-01	3.710E-01	2.517E-01	FAIL ABUN
AC-227	2.562E-02	2.367E-01	2.074E-01	1.208E-01	FAIL ABUN
TH-227	2.562E-02	2.368E-01	2.074E-01	1.208E-01	FAIL ABUN
PA-231	3.529E-01	1.430E+00	1.249E+00	7.295E-01	NOT IDENT.
PA-233	3.036E-02	6.264E-02	5.515E-02	3.196E-02	FAIL ABUN
PA-234	-3.133E-01	4.155E-01	3.255E-01	2.120E-01	FAIL ABUN
PA-234M	4.333E+00	5.728E+00	5.235E+00	2.923E+00	NOT IDENT.
NP-239	-2.521E-01	3.208E-01	2.599E-01	1.637E-01	FAIL ABUN
AM-241	-1.417E-03	5.107E-02	4.250E-02	2.606E-02	NOT IDENT.
CM-247	-4.832E-02	4.564E-02	3.467E-02	2.329E-02	FAIL ABUN
CF-249	3.448E-02	4.542E-02	3.986E-02	2.317E-02	NOT IDENT.

CF-251	3.423E-02	1.143E-01	1.044E-01	5.834E-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	210.1297
49.72	234.5537
57.36	0.0000
59.54	319.3130
63.29	337.6130
63.29	337.6130
64.28	338.9625
67.75	366.3839
69.67	413.9647
70.83	428.7870
72.81	433.2689
72.87	433.3623
72.87	433.3623
74.82	394.4029
74.82	394.4029
74.82	394.4029
74.97	394.6161
77.11	397.5999
77.11	397.5999
77.11	397.5999
79.69	401.1463
79.80	401.2972
80.12	401.7324
80.19	401.8271
80.57	402.3452
81.00	402.9254
81.07	403.0201
81.07	403.0201
83.79	234.7769
83.79	234.7769
85.43	236.0295
86.48	236.8242
86.55	236.8772
86.79	237.0566
86.94	237.1729
87.57	237.6462
88.03	237.9915
88.47	238.3196
89.96	239.4287
91.11	278.8942
92.59	270.0951
92.59	270.0951
93.35	270.7147
94.67	271.7857
94.87	234.3384
94.87	234.3384
95.86	235.0239
97.43	212.0587
98.44	241.1831
99.53	241.9392
100.11	242.3404
103.18	293.3282
103.37	293.4833
105.31	244.7626
106.12	210.5806
109.28	215.7654
111.00	273.4877
111.76	247.8795
116.30	222.0269
117.23	251.3739
121.12	208.4041
121.78	222.7345
122.06	217.0520
123.07	228.1125
131.20	260.7444
133.52	202.5880
136.00	244.7052

136.47	232.8952
140.51	0.0000
140.51	0.0000
143.76	250.1098
144.24	263.8651
144.24	263.8651
145.44	279.3026
152.43	255.9184
153.25	218.4133
154.21	218.8371
154.21	218.8371
156.02	268.2552
158.56	231.6983
159.00	232.7402
162.66	241.1995
163.33	230.4564
165.86	223.8849
176.60	220.5360
177.52	213.9164
181.07	0.0000
184.41	216.0989
185.72	197.5455
193.51	219.9328
197.04	201.3610
205.31	193.5544
210.85	189.7150
215.65	204.6141
222.11	193.4729
227.38	193.0948
228.16	175.3100
228.18	175.3157
235.69	175.3061
235.96	181.1240
235.96	181.1240
238.63	159.6845
238.63	159.6845
240.99	160.2130
242.00	146.4250
244.70	148.4273
252.40	136.2654
252.80	136.3389
256.23	139.9199
256.23	139.9199
260.90	0.0000
264.66	142.4676
268.22	139.6164
269.46	138.3341
269.46	138.3341
271.23	131.1080
273.65	136.0437
276.40	130.4461
277.37	130.6010
277.60	130.6403
278.00	130.7033
279.20	111.1107
279.54	114.2029
280.46	128.0533
283.69	129.5786
284.31	138.8665
285.41	141.0968
285.90	0.0000
287.50	114.8027
293.27	0.0000
295.22	117.9313
295.96	118.0333
298.57	118.3951
299.98	118.5876
299.98	118.5876
300.09	118.6039
300.09	118.6039
300.13	118.6085
301.36	118.7778
302.85	109.5886
304.50	123.9149
304.50	123.9149
304.85	116.1173
308.46	116.5961
311.90	100.1779

316.51	111.2933
319.41	118.0301
320.08	109.6051
323.87	131.4307
323.87	131.4307
328.76	136.9603
333.37	116.5869
334.37	124.8148
334.37	124.8148
338.28	95.4891
338.28	95.4891
338.32	95.4927
338.32	95.4927
338.32	95.4927
340.48	91.3589
340.55	91.3657
344.28	106.1325
351.06	97.8544
351.93	97.9413
356.01	104.4226
364.49	93.6045
366.42	0.0000
383.85	96.4983
388.16	91.1881
388.63	95.7903
391.69	113.2159
400.66	99.1593
401.81	123.5011
402.40	127.0331
404.85	83.3320
410.95	87.2772
414.70	94.5725
423.72	88.2584
427.09	98.2513
427.87	100.0871
433.94	90.8126
453.88	94.1373
463.37	84.6438
468.07	84.2285
473.00	79.9615
476.78	71.9015
477.60	82.0930
487.02	59.4639
492.35	0.0000
497.08	74.8987
511.00	62.4339
514.00	53.0900
527.90	0.0000
529.87	0.0000
531.02	52.7844
537.26	59.7654
546.56	0.0000
563.25	48.0848
569.33	66.0186
569.50	55.1848
569.70	55.1917
583.19	68.6125
600.60	60.3369
602.73	56.3914
604.72	67.7537
609.32	59.6590
609.32	59.6590
610.33	59.6968
614.28	61.6702
618.01	66.0831
621.93	52.9950
621.93	52.9950
633.25	57.4697
635.95	64.7592
636.99	71.9995
645.85	58.9413
657.76	103.0938
661.66	74.1049
661.66	74.1049
664.57	0.0000
666.33	62.7942
666.50	58.6147
677.62	52.6703

685.70	63.4955
695.00	49.9992
696.49	58.5583
696.51	58.5600
697.00	64.9651
702.65	66.2383
706.68	63.1736
711.68	63.3465
720.70	51.7910
721.93	0.0000
722.78	65.6743
722.91	65.6799
723.31	58.7795
724.19	63.9948
727.33	57.3897
733.00	52.1338
735.93	66.3576
739.50	0.0000
747.24	54.7165
752.31	53.7642
753.82	47.2176
756.73	38.4917
763.94	33.5571
765.81	61.8755
766.42	61.8943
777.92	0.0000
778.90	43.3799
783.70	41.2546
785.37	41.2896
795.86	34.7757
801.95	52.7214
810.29	53.3247
810.76	53.3377
815.77	48.0300
818.51	51.7230
832.01	53.8865
834.85	60.3604
836.80	0.0000
846.77	44.1469
856.80	44.6611
860.56	49.3672
871.09	45.5762
873.19	35.3792
875.33	0.0000
879.36	42.9476
880.51	43.9041
883.24	37.4111
884.68	38.3714
889.28	56.2690
898.04	55.5487
911.20	47.3499
911.20	47.3499
911.20	47.3499
926.50	34.3195
937.49	50.7654
944.13	40.3430
946.00	56.7169
949.00	44.2772
962.29	56.6939
964.08	43.5894
966.15	53.3215
968.97	45.2961
968.97	45.2961
968.97	45.2961
983.53	45.8938
996.26	44.1694
1001.03	34.4207
1004.73	51.2154
1037.84	46.9013
1038.76	0.0000
1048.07	40.0762
1050.41	52.1447
1050.41	52.1447
1063.66	49.3876
1085.87	44.7219
1099.45	42.9044
1112.07	39.0001
1115.54	132.5651

1120.29	43.2346
1120.29	43.2346
1120.55	40.1502
1121.30	44.2808
1131.51	0.0000
1173.23	50.3531
1177.93	50.4352
1189.05	61.1775
1204.77	58.3274
1221.41	60.7907
1231.02	59.9156
1235.36	62.1461
1238.28	67.5681
1260.41	0.0000
1271.85	36.8704
1274.44	33.6444
1274.54	31.4752
1291.59	39.2871
1298.22	0.0000
1312.11	41.7425
1332.49	17.5040
1365.19	20.4719
1368.63	0.0000
1384.29	22.4629
1408.01	22.6221
1457.56	0.0000
1460.82	15.3145
1489.16	18.3328
1505.03	24.2289
1596.21	17.8806
1620.50	10.9969
1678.03	0.0000
1690.97	12.2139
1764.49	5.1815
1764.49	5.1815
1770.23	8.8947
1771.35	10.6766
1791.20	0.0000
1836.06	7.3777

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248248006

Total Uranium Activity	6.0615E+00	ug/g
Total Uranium Counting Unc.	3.0404E+00	ug/g
Total Uranium Tpu	1.5512E-06	ug/g
Total Uranium Mda	1.2495E+00	ug/g


```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 959280          SAMPLE ID   : G248248006
*  ANALYST       : MXR1            DETECTOR    : GAM21
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 19-MAR-2010 11:01:46.28  SAMPLE ALQT: 133.770 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.185E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 1.414E+00
GROSS GAMMA MDA (pCi/GRAM ) : 3.995E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.933E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 13:05:16.05

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248007.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:02:26
Sample ID          : G248248007 Sample quantity : 1.51470E+02 GRAM
Detector name      : GAM20 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:33.06 0.5%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959280 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.12*	135	807	0.76	126.22	122	9	1.87E-02	39.5	
2	3	74.95*	748	781	1.26	149.85	144	14	1.04E-01	7.6	5.41E+00
3	3	77.27	1063	574	1.00	154.48	144	14	1.48E-01	4.9	
4	6	84.63*	276	551	1.64	169.18	165	27	3.84E-02	15.4	1.92E+00
5	6	87.35*	476	513	1.36	174.60	165	27	6.61E-02	9.5	
6	6	90.05	327	480	1.26	179.99	165	27	4.54E-02	13.3	
7	6	92.98*	533	549	1.70	185.85	165	27	7.41E-02	10.2	
8	0	105.36	111	494	1.46	210.57	207	9	1.54E-02	37.3	
9	0	129.67	184	559	1.49	259.12	254	11	2.56E-02	26.0	
10	0	186.05*	323	461	1.37	371.73	366	11	4.49E-02	14.4	
11	0	209.13	194	287	1.02	417.82	414	8	2.69E-02	16.8	
12	6	238.73*	2032	216	1.22	476.95	469	22	2.82E-01	2.5	2.81E+00
13	6	241.66	446	356	1.77	482.80	469	22	6.20E-02	12.5	
14	0	270.11	137	248	1.33	539.64	535	9	1.90E-02	22.5	
15	0	295.29	650	264	1.29	589.93	584	11	9.02E-02	6.2	
16	0	300.23	109	240	0.80	599.80	596	9	1.51E-02	27.5	
17	0	327.96	110	145	1.31	655.20	652	8	1.52E-02	21.2	
18	0	338.42	375	223	1.05	676.09	672	10	5.21E-02	9.0	
19	0	351.99	960	252	1.18	703.21	697	13	1.33E-01	4.7	
20	0	463.45	108	157	1.73	925.93	921	12	1.50E-02	25.4	
21	0	510.81*	131	233	1.63	1020.58	1014	16	1.82E-02	29.8	
22	0	583.44*	578	211	1.35	1165.74	1159	15	8.02E-02	6.9	
23	0	609.65*	694	124	1.39	1218.12	1211	13	9.63E-02	5.1	
24	0	727.43	151	81	1.23	1453.59	1447	13	2.10E-02	14.8	
25	0	770.61	150	165	4.82	1539.92	1529	26	2.08E-02	25.5	
26	0	795.67	104	64	1.11	1590.03	1585	12	1.44E-02	18.4	
27	0	861.37*	46	89	1.17	1721.41	1715	12	6.44E-03	43.9	
28	0	911.83*	407	107	1.70	1822.33	1816	14	5.65E-02	7.5	
29	0	934.94	50	49	2.07	1868.56	1862	11	6.88E-03	31.0	
30	0	965.40	83	69	1.18	1929.47	1924	10	1.15E-02	21.9	
31	0	969.60*	222	69	1.72	1937.88	1933	10	3.08E-02	10.0	
32	0	1121.27	180	80	1.75	2241.31	2235	16	2.50E-02	13.4	
33	0	1238.65	105	72	1.90	2476.19	2470	13	1.45E-02	19.3	
34	0	1379.12	33	33	0.79	2757.36	2748	12	4.52E-03	39.4	
35	0	1408.76	24	20	1.05	2816.67	2811	10	3.33E-03	40.4	
36	0	1461.52	1728	17	2.03	2922.30	2915	16	2.40E-01	2.5	
37	0	1730.87	42	18	2.20	3461.72	3455	17	5.82E-03	29.2	
38	0	1765.18	139	3	1.35	3530.44	3525	12	1.93E-02	8.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1848.71	16	14	1.31	3697.80	3690	11	2.23E-03	48.3	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 13:05:19

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248007.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:02:26
Sample ID         : G248248007 Sample quantity : 151.47 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA20 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:33.06 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	*	3.206E+01	3.211E+00	4.420E-01	3.854E-02	72.549
CD-109	+	88.03	*	4.755E+00	1.009E+00	9.985E-01	9.441E-02	4.762
SN-126	+	64.28		7.546E-01	6.065E-01	6.089E-01	8.816E-02	1.239
	+	86.94		1.910E+00	8.722E-01	4.038E-01	1.676E-01	4.729
	+	87.57	*	4.593E-01	9.746E-02	9.673E-02	9.098E-03	4.749
EU-155	+	86.55		5.587E-01	1.187E-01	1.184E-01	1.109E-02	4.717
	+	105.31	*	1.777E-01	1.334E-01	1.503E-01	1.307E-02	1.182
TL-208		277.37		6.232E-01	3.706E-01	6.441E-01	8.679E-02	0.968
	+	583.19	*	6.249E-01	1.079E-01	5.662E-02	5.816E-03	11.036
	+	860.56		4.708E-01	4.165E-01	3.891E-01	4.123E-02	1.210
BI-211		72.87		3.241E+00	2.894E+00	4.381E+00	3.459E-01	0.740
	+	351.06	*	4.641E+00	6.216E-01	2.755E-01	2.640E-02	16.844
PB-212	+	74.82		2.979E+00	5.882E-01	4.730E-01	5.976E-02	6.298
	+	77.11		2.459E+00	3.141E-01	2.753E-01	2.277E-02	8.930
	+	238.63	*	2.201E+00	2.603E-01	7.960E-02	8.500E-03	27.649
	+	300.09		1.828E+00	1.027E+00	1.104E+00	1.273E-01	1.656
BI-214	+	609.32	*	1.452E+00	2.193E-01	1.001E-01	1.118E-02	14.506
	+	1120.29		1.921E+00	5.549E-01	3.977E-01	4.323E-02	4.830
	+	1764.49		2.044E+00	3.990E-01	2.678E-01	2.200E-02	7.630
PB-214	+	74.82		5.280E+00	9.993E-01	8.384E-01	9.482E-02	6.298
	+	77.11		4.334E+00	6.591E-01	4.854E-01	5.669E-02	8.930
	+	242.00		2.933E+00	8.046E-01	4.840E-01	5.458E-02	6.060
	+	295.22		1.937E+00	3.326E-01	1.890E-01	2.233E-02	10.246
	+	351.93	*	1.684E+00	2.440E-01	1.002E-01	1.107E-02	16.809
RA-224	+	240.99	*	5.186E+00	1.391E+00	8.530E-01	8.245E-02	6.080
RA-226	+	609.32	*	1.452E+00	2.193E-01	1.001E-01	1.118E-02	14.506
	+	1120.29		1.921E+00	5.549E-01	3.977E-01	4.323E-02	4.830
	+	1764.49		2.044E+00	3.990E-01	2.678E-01	2.200E-02	7.630
AC-228	+	338.32		2.018E+00	9.200E-01	3.349E-01	1.402E-01	6.025
	+	911.20	*	2.101E+00	4.097E-01	2.023E-01	2.543E-02	10.386
	+	968.97		1.972E+00	6.264E-01	3.544E-01	8.768E-02	5.563
RA-228	+	338.32		2.018E+00	9.200E-01	3.349E-01	1.402E-01	6.025
	+	911.20	*	2.101E+00	4.097E-01	2.023E-01	2.543E-02	10.386
	+	968.97		1.972E+00	6.264E-01	3.544E-01	8.768E-02	5.563

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.979E+00	5.131E-01	4.730E-01	3.853E-02	6.298
	+	77.11		2.459E+00	3.141E-01	2.753E-01	2.277E-02	8.930
	+	238.63	*	2.201E+00	2.603E-01	7.960E-02	8.500E-03	27.649
	+	300.09		1.828E+00	1.507E+00	1.104E+00	6.776E-01	1.656
TH-229	+	85.43		6.851E-01	2.202E-01	2.471E-01	2.261E-02	2.773
	+	88.47		7.082E-01	1.502E-01	1.483E-01	1.397E-02	4.775
		193.51	*	5.470E-02	4.608E-01	7.842E-01	7.141E-02	0.070
		210.85		1.373E+00	8.997E-01	1.426E+00	1.331E-01	0.963
TH-232	+	338.32		2.018E+00	4.099E-01	3.349E-01	3.138E-01	6.025
	+	911.20	*	2.101E+00	4.097E-01	2.023E-01	2.543E-02	10.386
	+	968.97		1.972E+00	6.264E-01	3.544E-01	8.768E-02	5.563
TH-234	+	63.29	*	1.958E+00	1.587E+00	1.551E+00	2.755E-01	1.262
	+	92.59		4.355E+00	1.314E+00	8.245E-01	1.837E-01	5.282
U-235	+	89.96		3.305E+00	1.205E+00	1.017E+00	2.529E-01	3.248
	+	93.35		3.289E+00	1.017E+00	6.209E-01	1.445E-01	5.298
		143.76	*	-2.105E-01	1.891E-01	2.830E-01	4.775E-02	-0.744
		163.33		7.753E-02	4.134E-01	6.611E-01	1.189E-01	0.117
	+	185.72		2.268E-01	6.854E-02	5.871E-02	5.284E-03	3.862
		205.31		1.668E-01	4.715E-01	7.121E-01	1.315E-01	0.234
NP-237	+	86.48	*	1.371E+00	4.088E-01	2.907E-01	6.665E-02	4.715
		95.86		-5.070E-01	8.589E-01	1.194E+00	2.878E-01	-0.425
U-238	+	63.29	*	1.958E+00	1.587E+00	1.551E+00	2.755E-01	1.262
	+	92.59		4.355E+00	9.704E-01	8.245E-01	7.526E-02	5.282
ANH-511	+	511.00	*	1.083E-01	6.541E-02	4.453E-02	4.149E-03	2.432

---- 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	*	9.677E-03	3.097E-01	5.036E-01	4.894E-02	0.019
NA-22		1274.54	*	1.225E-02	4.232E-02	6.998E-02	5.797E-03	0.175
NA-24		1368.63	*	-6.625E+01	4.232E-02	Half-Life too short		
SC-46		889.28	*	-1.048E-02	3.722E-02	6.001E-02	5.982E-03	-0.175
	+	1120.55		3.468E-01	9.741E-02	1.325E-01	1.133E-02	2.617
V-48		944.13		6.121E-01	1.023E+00	1.771E+00	1.728E-01	0.346
		983.53	*	5.927E-03	8.270E-02	1.366E-01	1.306E-02	0.043
		1312.11		-1.108E-02	1.072E-01	1.706E-01	1.423E-02	-0.065
CR-51		320.08	*	2.183E-01	3.864E-01	6.581E-01	6.594E-02	0.332
MN-54		834.85	*	8.724E-03	3.519E-02	5.939E-02	5.999E-03	0.147
CO-56		846.77	*	2.123E-02	3.616E-02	6.266E-02	6.316E-03	0.339
		1037.84		-4.380E-02	2.887E-01	4.654E-01	4.486E-02	-0.094
	+	1238.28		3.326E-01	1.317E-01	1.883E-01	1.594E-02	1.766
		1771.35		1.947E-02	2.070E-01	3.008E-01	2.467E-02	0.065
CO-57		122.06	*	1.958E-03	2.350E-02	3.788E-02	3.162E-03	0.052
		136.47		1.939E-02	1.929E-01	3.099E-01	2.802E-02	0.063
CO-58		810.76	*	-3.047E-02	3.666E-02	5.653E-02	5.741E-03	-0.539
FE-59		1099.45	*	3.066E-02	9.766E-02	1.632E-01	1.539E-02	0.188
		1291.59		-5.702E-02	1.300E-01	1.997E-01	1.899E-02	-0.285
CO-60		1173.23		1.662E-02	4.285E-02	7.163E-02	5.759E-03	0.232

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1332.49	*		9.220E-03	3.651E-02	6.025E-02	5.047E-03	0.153
ZN-65	1115.54	*		-1.952E-02	8.723E-02	1.189E-01	1.023E-02	-0.164
SE-75	121.12			6.699E-03	1.245E-01	2.005E-01	2.181E-02	0.033
	136.00			2.262E-02	3.794E-02	6.204E-02	5.244E-03	0.365
	264.66	*		-1.055E-02	4.380E-02	6.704E-02	6.638E-03	-0.157
	279.54			4.583E-02	1.073E-01	1.820E-01	1.864E-02	0.252
	400.66			1.685E-01	2.397E-01	4.072E-01	4.458E-02	0.414
SR-85	514.00	*		4.932E-02	4.622E-02	7.042E-02	6.576E-03	0.700
Y-88	898.04			5.088E-03	3.514E-02	5.878E-02	5.865E-03	0.087
	1836.06	*		-1.122E-02	3.057E-02	4.680E-02	3.776E-03	-0.240
Y-91	1204.77	*		-6.230E+00	2.086E+01	3.285E+01	2.667E+00	-0.190
NB-94	702.65	*		1.456E-03	2.908E-02	4.892E-02	4.949E-03	0.030
	871.09			2.561E-02	3.047E-02	5.294E-02	5.306E-03	0.484
NB-95	765.81	*		3.073E-02	4.728E-02	7.265E-02	7.384E-03	0.423
NB-95M	235.69	*		5.564E-02	1.288E-01	1.952E-01	2.101E-02	0.285
ZR-95	724.19			1.126E-01	8.832E-02	1.447E-01	1.558E-02	0.778
	756.73	*		4.238E-02	7.214E-02	1.250E-01	1.368E-02	0.339
MO-99	140.51			1.465E-04	7.214E-02	Half-Life	too short	
	181.07			-1.060E-05	7.214E-02	Half-Life	too short	
	366.42			2.510E-04	7.214E-02	Half-Life	too short	
	739.50	*		-8.420E-05	7.214E-02	Half-Life	too short	
	777.92			-8.772E-06	7.214E-02	Half-Life	too short	
TC-99M	140.51	*		9.018E+19	7.214E-02	Half-Life	too short	
RU-103	497.08	*		-9.351E-03	4.094E-02	6.519E-02	9.353E-03	-0.143
	610.33	+		1.722E+01	3.413E+00	3.210E+00	5.466E-01	5.363
RH-106	621.93	*		-2.228E-01	2.693E-01	3.956E-01	5.586E-02	-0.563
	1050.41			1.872E+00	2.535E+00	4.376E+00	3.994E-01	0.428
RU-106	621.93	*		-2.228E-01	2.683E-01	3.956E-01	3.915E-02	-0.563
	1050.41			1.872E+00	2.535E+00	4.376E+00	3.994E-01	0.428
AG-108M	433.94	*		3.346E-03	2.560E-02	4.211E-02	3.795E-03	0.079
	614.28			-2.747E-03	3.642E-02	5.032E-02	5.090E-03	-0.055
	722.91			3.725E-02	3.267E-02	5.312E-02	5.514E-03	0.701
AG-110M	657.76	*		-1.164E-02	3.107E-02	5.093E-02	5.219E-03	-0.228
	677.62			1.327E-01	2.820E-01	4.883E-01	5.022E-02	0.272
	706.68			6.020E-02	1.952E-01	3.337E-01	3.449E-02	0.180
	763.94			1.852E-01	1.614E-01	2.593E-01	2.688E-02	0.714
	884.68			2.710E-03	4.426E-02	7.353E-02	7.517E-03	0.037
	937.49			8.689E-02	9.757E-02	1.556E-01	1.565E-02	0.559
	1384.29			8.401E-02	1.451E-01	2.370E-01	2.054E-02	0.354
	1505.03			-3.625E-01	2.398E-01	3.110E-01	2.636E-02	-1.166
SN-113	391.69	*		-7.647E-03	3.998E-02	6.482E-02	5.591E-03	-0.118
CD-115	260.90			-2.055E-04	3.998E-02	Half-Life	too short	
	492.35			-6.159E-05	3.998E-02	Half-Life	too short	
	527.90	*		-1.593E-05	3.998E-02	Half-Life	too short	
SN-117M	156.02			-3.126E-01	3.125E+00	4.952E+00	4.258E-01	-0.063
	158.56	*		-4.928E-03	7.633E-02	1.210E-01	1.045E-02	-0.041
TE-123M	159.00	*		7.457E-03	2.734E-02	4.394E-02	3.818E-03	0.170
SB-124	602.73			3.621E-04	4.163E-02	5.830E-02	5.725E-03	0.006
	645.85			-2.003E-01	4.448E-01	7.242E-01	7.544E-02	-0.277

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		722.78		4.026E-01	3.586E-01	5.824E-01	6.005E-02	0.691
		1690.97	*	-2.967E-02	5.910E-02	8.726E-02	7.602E-03	-0.340
SB-125		427.87	*	9.222E-02	8.121E-02	1.410E-01	1.248E-02	0.654
	+	463.37		7.975E-01	4.122E-01	5.017E-01	4.818E-02	1.590
		600.60		-5.025E-02	1.555E-01	2.425E-01	2.515E-02	-0.207
		635.95		1.712E-01	2.319E-01	4.094E-01	4.324E-02	0.418
TE-125M		109.28	*	4.167E+00	1.064E+01	1.558E+01	1.621E+00	0.267
I-126		388.63		-1.030E-01	2.229E-01	3.555E-01	2.994E-02	-0.290
		666.33	*	4.328E-01	3.004E-01	5.455E-01	5.480E-02	0.793
		753.82		1.356E+00	2.483E+00	4.296E+00	4.366E-01	0.316
SB-126		414.70		-1.132E-02	1.033E-01	1.679E-01	1.438E-02	-0.067
		666.50		1.528E-01	1.053E-01	1.912E-01	1.921E-02	0.799
		695.00		7.166E-02	1.003E-01	1.761E-01	1.780E-02	0.407
		697.00		3.420E-02	3.569E-01	6.026E-01	6.092E-02	0.057
		720.70	*	-2.950E-02	2.154E-01	3.092E-01	3.135E-02	-0.095
		856.80		-9.861E-02	7.530E-01	1.066E+00	1.072E-01	-0.093
SB-127		252.40		-7.092E+00	1.522E+01	2.446E+01	1.041E+01	-0.290
		473.00		2.411E-02	5.884E+00	9.555E+00	1.468E+00	0.003
		685.70	*	-4.472E+00	4.673E+00	7.212E+00	1.075E+00	-0.620
		783.70		-1.666E+00	1.180E+01	1.944E+01	3.054E+00	-0.086
I-131		80.19		9.429E-01	1.044E+01	1.205E+01	1.049E+00	0.078
		284.31		-1.733E+00	2.623E+00	4.227E+00	4.386E-01	-0.410
		364.49	*	-2.335E-02	1.987E-01	3.250E-01	3.069E-02	-0.072
		636.99		2.890E-01	2.636E+00	4.478E+00	4.678E-01	0.065
TE-132		49.72		-1.715E+01	5.818E+01	9.511E+01	1.238E+01	-0.180
		111.76		6.470E+01	1.648E+02	2.690E+02	3.600E+01	0.241
		116.30		-1.474E+02	1.424E+02	2.178E+02	2.906E+01	-0.677
		228.16	*	-2.726E+00	3.564E+00	5.759E+00	1.043E+00	-0.473
BA-133		81.00		-4.166E-02	1.089E-01	1.216E-01	1.890E-02	-0.343
		276.40		5.614E-01	3.464E-01	5.982E-01	8.946E-02	0.939
		302.85		4.876E-02	1.346E-01	2.013E-01	2.792E-02	0.242
		356.01	*	-1.930E-02	4.277E-02	5.962E-02	7.909E-03	-0.324
		383.85		2.160E-01	2.600E-01	4.448E-01	5.499E-02	0.486
I-133		529.87	*	-1.807E+00	2.600E-01	Half-Life	too short	
		875.33		-2.307E+01	2.600E-01	Half-Life	too short	
		1298.22		7.905E+01	2.600E-01	Half-Life	too short	
CS-134		563.25		-6.591E-02	3.337E-01	5.284E-01	5.127E-02	-0.125
		569.33		-3.502E-03	1.769E-01	2.836E-01	2.769E-02	-0.012
		604.72		1.649E-02	3.310E-02	4.849E-02	4.775E-03	0.340
	+	795.86	*	1.637E-01	6.256E-02	9.060E-02	9.244E-03	1.807
		801.95		1.395E-01	4.008E-01	6.007E-01	6.119E-02	0.232
		1365.19		3.277E-01	9.223E-01	1.615E+00	1.425E-01	0.203
CS-135		268.22	*	1.868E-01	1.558E-01	2.438E-01	2.701E-02	0.767
I-135		546.56		4.225E+16	1.558E-01	Half-Life	too short	
		836.80		1.887E+18	1.558E-01	Half-Life	too short	
		1038.76		-9.614E+17	1.558E-01	Half-Life	too short	
		1131.51		7.432E+17	1.558E-01	Half-Life	too short	
		1260.41	*	6.926E+17	1.558E-01	Half-Life	too short	
		1457.56		5.596E+19	1.558E-01	Half-Life	too short	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	1678.03			-2.243E+18	1.558E-01	Half-Life	too short	
	1791.20			4.101E+18	1.558E-01	Half-Life	too short	
	153.25			1.126E+00	1.199E+00	1.971E+00	2.016E-01	0.571
	176.60			-2.236E-01	7.026E-01	1.096E+00	1.069E-01	-0.204
	273.65			-4.458E-01	8.024E-01	1.138E+00	1.203E-01	-0.392
	340.55			8.022E-01	2.438E-01	4.048E-01	3.906E-02	1.982
BA-137M	818.51			8.269E-03	9.855E-02	1.648E-01	1.671E-02	0.050
	1048.07	*		1.868E-01	1.512E-01	2.703E-01	2.567E-02	0.691
	1235.36			1.928E-01	9.462E-01	1.347E+00	1.544E-01	0.143
	661.66	*		-2.711E-02	3.120E-02	4.918E-02	4.936E-03	-0.551
	661.66	*		-2.864E-02	3.296E-02	5.196E-02	5.222E-03	-0.551
	165.86	*		-1.098E-02	2.941E-02	4.592E-02	4.009E-03	-0.239
CE-139	162.66			8.157E-01	1.172E+00	1.909E+00	1.768E-01	0.427
	304.85			-1.358E+00	2.106E+00	2.881E+00	8.538E-01	-0.471
	423.72			-3.224E+00	2.760E+00	3.810E+00	1.254E+00	-0.846
	537.26	*		5.136E-02	3.899E-01	6.314E-01	2.156E-01	0.081
	328.76			1.118E+00	4.864E-01	7.585E-01	7.549E-02	1.474
	487.02			-6.037E-02	1.918E-01	3.039E-01	2.935E-02	-0.199
BA-140	815.77			6.787E-02	4.399E-01	7.397E-01	8.139E-02	0.092
	1596.21	*		-1.881E-02	1.216E-01	1.949E-01	1.645E-02	-0.097
	145.44	*		1.619E-02	6.731E-02	1.084E-01	9.361E-03	0.149
	57.36			3.322E-02	6.731E-02	Half-Life	too short	
	293.27	*		3.564E-02	6.731E-02	Half-Life	too short	
	664.57			1.234E-02	6.731E-02	Half-Life	too short	
CE-141	721.93			1.228E-02	6.731E-02	Half-Life	too short	
	80.12			2.436E-01	2.922E+00	3.372E+00	2.889E-01	0.072
	133.52	*		6.164E-03	2.049E-01	2.925E-01	4.430E-02	0.021
	476.78			-1.052E-03	5.662E-02	9.176E-02	8.986E-03	-0.011
	618.01			3.456E-02	2.816E-02	4.897E-02	4.944E-03	0.706
	696.49	*		9.550E-03	2.965E-02	5.081E-02	5.139E-03	0.188
PM-144	696.51	*		7.109E-01	2.228E+00	3.817E+00	3.858E-01	0.186
	1489.16			3.042E-01	8.993E+00	1.508E+01	1.279E+00	0.020
	453.88	*		9.261E-03	3.694E-02	6.108E-02	6.610E-03	0.152
	633.25			-9.718E-01	1.388E+00	2.008E+00	7.734E-01	-0.484
	735.93			7.149E-02	1.228E-01	2.115E-01	6.034E-02	0.338
	747.24			-4.623E-02	8.290E-02	1.320E-01	2.052E-02	-0.350
ND-147	91.11			1.756E+00	4.998E-01	7.291E-01	7.217E-02	2.408
	319.41			-3.848E+00	4.796E+00	7.591E+00	7.305E-01	-0.507
	531.02	*		-1.888E-01	8.019E-01	1.265E+00	1.953E-01	-0.149
	285.90	*		-5.864E-04	8.019E-01	Half-Life	too short	
	121.78			-1.699E-04	6.632E-02	1.066E-01	1.030E-02	-0.002
	244.70			2.261E-01	3.071E-01	4.729E-01	4.588E-02	0.478
EU-152	344.28	*		1.485E-02	8.648E-02	1.339E-01	1.306E-02	0.111
	778.90			-2.469E-02	2.340E-01	3.344E-01	3.398E-02	-0.074
	964.08			7.919E-01	3.551E-01	5.511E-01	5.324E-02	1.437
	1085.87			9.817E-02	3.498E-01	5.842E-01	5.172E-02	0.168
	1112.07			1.323E-01	2.516E-01	4.293E-01	3.704E-02	0.308
	1408.01			2.195E-01	1.785E-01	2.854E-01	2.411E-02	0.769
GD-153	69.67			2.298E-01	1.560E+00	2.295E+00	1.756E-01	0.100

---- 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	*		2.679E-02	8.308E-02	1.214E-01	1.076E-02	0.221
	103.18			-2.890E-02	1.089E-01	1.549E-01	1.340E-02	-0.187
	123.07			2.746E-02	4.706E-02	7.712E-02	8.590E-03	0.356
	723.31			1.760E-01	1.474E-01	2.408E-01	2.623E-02	0.731
	873.19			2.690E-02	2.504E-01	4.120E-01	5.333E-02	0.065
	996.26			-6.192E-02	3.053E-01	4.910E-01	8.794E-02	-0.126
TB-160	1004.73			-4.968E-02	1.957E-01	3.137E-01	3.843E-02	-0.158
	1274.44	*		6.073E-03	1.209E-01	1.957E-01	2.176E-02	0.031
	86.79	+		1.593E+00	3.380E-01	4.693E-01	4.370E-02	3.394
	197.04			2.555E-01	5.231E-01	9.004E-01	8.241E-02	0.284
	215.65			-1.968E-01	7.059E-01	1.178E+00	1.106E-01	-0.167
	298.57			1.979E-01	1.678E-01	1.995E-01	1.961E-02	0.992
HO-166M	879.36	*		-6.127E-02	1.310E-01	2.077E-01	2.077E-02	-0.295
	962.29			6.111E-02	5.980E-01	8.605E-01	8.322E-02	0.071
	966.15	+		5.957E-01	2.671E-01	4.451E-01	4.295E-02	1.338
	1177.93			-1.433E-01	3.806E-01	5.977E-01	4.813E-02	-0.240
	1271.85			9.819E-02	7.472E-01	1.219E+00	1.008E-01	0.081
	80.57			4.658E-01	2.824E-01	3.565E-01	3.071E-02	1.307
TA-182	184.41			7.292E-02	3.669E-02	6.006E-02	5.394E-03	1.214
	280.46			-1.499E-01	8.194E-02	1.234E-01	1.228E-02	-1.215
	410.95			3.117E-02	2.191E-01	3.582E-01	3.057E-02	0.087
	711.68	*		-3.111E-02	5.560E-02	8.946E-02	9.062E-03	-0.348
	752.31			-1.897E-01	2.504E-01	3.940E-01	4.004E-02	-0.481
	810.29			-3.381E-02	5.145E-02	8.077E-02	8.187E-03	-0.419
IR-192	67.75			-8.953E-02	1.048E-01	1.479E-01	1.112E-02	-0.605
	100.11			3.364E-02	1.610E-01	2.625E-01	2.298E-02	0.128
	152.43			3.052E-01	3.374E-01	5.550E-01	4.747E-02	0.550
	222.11			-2.455E-01	3.171E-01	5.164E-01	4.888E-02	-0.475
	1121.30	+		9.441E-01	2.652E-01	3.684E-01	3.149E-02	2.563
	1189.05			-3.765E-01	3.026E-01	4.335E-01	3.503E-02	-0.869
HG-203	1221.41	*		-1.210E-01	1.995E-01	3.064E-01	2.500E-02	-0.395
	1231.02			-8.771E-02	5.214E-01	7.807E-01	6.387E-02	-0.112
	295.96	+		1.541E+00	2.455E-01	3.167E-01	3.136E-02	4.868
	308.46			2.906E-02	9.217E-02	1.553E-01	1.519E-02	0.187
	316.51	*		-7.982E-03	3.197E-02	5.230E-02	5.059E-03	-0.153
	468.07			3.125E-03	7.343E-02	1.047E-01	1.007E-02	0.030
BI-207	70.83			6.006E-01	1.326E+00	1.968E+00	3.071E-01	0.305
	72.87			9.067E-01	8.181E-01	1.226E+00	1.856E-01	0.740
	279.20	*		5.741E-02	4.093E-02	7.153E-02	7.260E-03	0.803
	72.81			1.505E-01	1.656E-01	2.493E-01	1.967E-02	0.604
	74.97	+		8.590E-01	1.476E-01	1.976E-01	1.596E-02	4.346
	569.70			-6.055E-03	2.763E-02	4.363E-02	4.215E-03	-0.139
PB-210	1063.66	*		4.033E-02	4.751E-02	8.297E-02	7.492E-03	0.486
	1770.23			1.686E-01	3.194E-01	5.284E-01	4.335E-02	0.319
	46.54	*		-1.040E+00	1.842E+00	2.983E+00	2.741E-01	-0.349
	404.85	*		-1.929E-01	6.211E-01	9.861E-01	4.770E-01	-0.196
	427.09			1.832E+00	1.583E+00	2.363E+00	1.094E+00	0.775
	832.01			-8.690E-01	1.037E+00	1.440E+00	7.507E-01	-0.603
BI-212	727.33	+	*	2.490E+00	8.088E-01	1.097E+00	1.488E-01	2.269

----- 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		2.317E+00	2.666E+00	4.708E+00	4.782E-01	0.492
		1620.50		4.089E+00	2.352E+00	4.603E+00	3.876E-01	0.888
	+	271.23		6.510E-01	3.018E-01	4.070E-01	4.624E-02	1.599
RA-223		401.81	*	1.109E-01	3.601E-01	5.999E-01	8.864E-02	0.185
		81.07		-1.073E-01	2.458E-01	2.738E-01	2.373E-02	-0.392
	+	83.79		4.077E-01	1.311E-01	1.767E-01	1.584E-02	2.308
		94.87		1.205E+00	4.351E-01	6.838E-01	6.151E-02	1.762
		144.24		-5.168E-01	6.233E-01	9.585E-01	9.090E-02	-0.539
		154.21		1.715E-01	3.640E-01	5.896E-01	5.544E-02	0.291
	+	269.46		5.058E-01	2.329E-01	3.191E-01	3.207E-02	1.585
		323.87	*	1.727E-01	6.125E-01	9.088E-01	1.620E-01	0.190
	+	338.28		8.007E+00	1.762E+00	2.311E+00	2.916E-01	3.465
AC-227		79.69		8.695E-01	1.236E+00	1.684E+00	2.895E-01	0.516
		235.96		2.662E-01	1.507E-01	2.389E-01	2.673E-02	1.114
		256.23	*	-1.601E-01	2.221E-01	3.585E-01	4.632E-02	-0.447
	+	299.98		2.011E+00	1.139E+00	1.524E+00	2.064E-01	1.319
		304.50		-2.071E-01	1.590E+00	2.301E+00	3.948E-01	-0.090
		334.37		1.111E+00	1.619E+00	2.457E+00	3.942E-01	0.452
TH-227		79.80		2.378E-01	1.887E+00	2.184E+00	4.748E-01	0.109
		235.96		2.662E-01	1.504E-01	2.389E-01	2.544E-02	1.114
		256.23	*	-1.601E-01	2.224E-01	3.585E-01	5.156E-02	-0.447
	+	299.98		2.011E+00	1.139E+00	1.524E+00	2.064E-01	1.319
		304.50		-2.071E-01	1.590E+00	2.301E+00	3.948E-01	-0.090
		334.37		1.111E+00	1.619E+00	2.457E+00	3.942E-01	0.452
PA-231		283.69	*	-4.501E-01	1.273E+00	2.084E+00	3.209E-01	-0.216
	+	301.36		1.292E+00	7.299E-01	9.803E-01	1.276E-01	1.317
		81.07		-1.073E-01	2.458E-01	2.738E-01	2.373E-02	-0.392
TH-231	+	83.79		4.077E-01	1.311E-01	1.767E-01	1.584E-02	2.308
		94.87		1.205E+00	4.351E-01	6.838E-01	6.151E-02	1.762
		144.24		-5.168E-01	6.233E-01	9.585E-01	9.090E-02	-0.539
		154.21		1.715E-01	3.640E-01	5.896E-01	5.544E-02	0.291
	+	269.46		5.058E-01	2.329E-01	3.191E-01	3.207E-02	1.585
		323.87	*	1.727E-01	6.125E-01	9.088E-01	1.620E-01	0.190
PA-233	+	338.28		8.007E+00	1.762E+00	2.311E+00	2.916E-01	3.465
	+	300.13		9.097E-01	5.199E-01	6.907E-01	1.074E-01	1.317
		311.90	*	-3.619E-02	5.855E-02	9.400E-02	9.328E-03	-0.385
PA-234		340.48		2.567E+00	9.125E-01	1.181E+00	2.875E-01	2.173
		94.67		5.890E-01	1.733E-01	2.611E-01	3.309E-02	2.256
		98.44		1.088E-01	1.021E-01	1.326E-01	7.404E-02	0.820
		111.00		-9.175E-02	1.692E-01	2.669E-01	3.196E-02	-0.344
		131.20		7.339E-02	1.058E-01	1.561E-01	1.304E-02	0.470
		569.50		-4.780E-03	2.420E-01	3.881E-01	3.749E-02	-0.012
		733.00		1.355E-01	3.515E-01	5.308E-01	1.212E-01	0.255
		880.51		-1.058E-01	2.544E-01	4.058E-01	4.056E-02	-0.261
		883.24		6.274E-02	2.604E-01	4.332E-01	2.920E-01	0.145
		926.50		-3.894E-03	1.533E-01	2.453E-01	6.307E-02	-0.016
		946.00	*	2.536E-01	2.575E-01	4.521E-01	8.730E-02	0.561
		949.00		-3.452E-01	4.055E-01	6.157E-01	5.994E-02	-0.561
PA-234M		766.42		9.270E+00	1.317E+01	1.902E+01	9.702E+00	0.487

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		9.223E-01	4.100E+00	6.924E+00	7.407E-01	0.133
	99.53			1.261E-01	1.442E-01	2.383E-01	2.092E-02	0.529
	103.37			-5.320E-03	9.750E-02	1.401E-01	1.211E-02	-0.038
	106.12	+		1.413E-01	1.060E-01	1.257E-01	1.077E-02	1.124
	117.23	*		-2.289E-01	3.498E-01	5.473E-01	4.584E-02	-0.418
	228.18			-1.624E-01	1.924E-01	3.120E-01	2.975E-02	-0.520
	277.60			2.534E-01	1.694E-01	2.963E-01	2.948E-02	0.855
AM-241	59.54	*		4.358E-02	1.164E-01	1.740E-01	1.362E-02	0.250
CM-247	278.00			1.352E+00	7.185E-01	1.267E+00	1.261E-01	1.067
	287.50			1.252E+00	1.098E+00	1.912E+00	1.895E-01	0.655
CF-249	402.40	*		2.498E-02	3.281E-02	5.601E-02	4.735E-03	0.446
	252.80			-4.332E-01	8.134E-01	1.328E+00	1.298E-01	-0.326
	333.37			1.191E-01	1.986E-01	2.582E-01	2.437E-02	0.461
CF-251	388.16	*		-1.428E-02	3.535E-02	5.660E-02	4.773E-03	-0.252
	177.52	*		2.952E-03	1.214E-01	1.923E-01	1.709E-02	0.015
	227.38			-1.390E-01	3.110E-01	5.139E-01	4.895E-02	-0.271
	285.41			-1.845E+00	1.952E+00	3.093E+00	3.069E-01	-0.597

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]G248248007      *
* Acquisition date   : 19-MAR-2010 11:02:26 Detector SN#      :             *
* Detector ID        : GAM20                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:33.06           Half life ratio  : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248248007           Analyst initials: MXR1          *
* Batch Number       : 959280              Sample Quantity  : 1.5147E+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	3.206E+01	3.147E+00	4.452E-01	0.000E+00
CD-109	4.755E+00	9.886E-01	1.078E+00	0.000E+00
SN-126	4.593E-01	9.551E-02	1.045E-01	0.000E+00
EU-155	1.777E-01	1.307E-01	1.617E-01	0.000E+00
TL-208	6.249E-01	1.057E-01	5.841E-02	0.000E+00
BI-211	4.641E+00	6.091E-01	2.878E-01	0.000E+00
PB-212	2.201E+00	2.551E-01	8.394E-02	0.000E+00
BI-214	1.452E+00	2.149E-01	1.032E-01	0.000E+00
PB-214	1.684E+00	2.391E-01	1.047E-01	0.000E+00
RA-224	5.186E+00	1.363E+00	8.994E-01	0.000E+00
RA-226	1.452E+00	2.149E-01	1.032E-01	0.000E+00
AC-228	2.101E+00	4.015E-01	2.063E-01	0.000E+00
RA-228	2.101E+00	4.015E-01	2.063E-01	0.000E+00
TH-228	2.201E+00	2.551E-01	8.394E-02	0.000E+00
TH-229	5.470E-02	4.516E-01	8.312E-01	0.000E+00
TH-232	2.101E+00	4.015E-01	2.063E-01	0.000E+00
TH-234	1.958E+00	1.555E+00	1.687E+00	0.000E+00
U-235	-2.105E-01	1.853E-01	3.021E-01	0.000E+00
NP-237	1.371E+00	4.007E-01	3.140E-01	0.000E+00
U-238	1.958E+00	1.555E+00	1.687E+00	0.000E+00
ANH-511	1.083E-01	6.410E-02	4.609E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	9.677E-03	3.035E-01	5.221E-01	0.000E+00 NOT IDENT.
NA-22	1.225E-02	4.147E-02	7.074E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.421E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.048E-02	3.647E-02	6.124E-02	0.000E+00 FAIL ABUN
V-48	5.927E-03	8.105E-02	1.391E-01	0.000E+00 NOT IDENT.
CR-51	2.183E-01	3.787E-01	6.891E-01	0.000E+00 NOT IDENT.

MN-54	8.724E-03	3.449E-02	6.070E-02	0.000E+00	NOT IDENT.
CO-56	2.123E-02	3.543E-02	6.403E-02	0.000E+00	FAIL ABUN
CO-57	1.958E-03	2.303E-02	4.059E-02	0.000E+00	NOT IDENT.
CO-58	-3.047E-02	3.592E-02	5.783E-02	0.000E+00	NOT IDENT.
FE-59	3.066E-02	9.571E-02	1.656E-01	0.000E+00	NOT IDENT.
CO-60	9.220E-03	3.578E-02	6.084E-02	0.000E+00	NOT IDENT.
ZN-65	-1.952E-02	8.548E-02	1.206E-01	0.000E+00	NOT IDENT.
SE-75	-1.055E-02	4.293E-02	7.053E-02	0.000E+00	NOT IDENT.
SR-85	4.932E-02	4.529E-02	7.287E-02	0.000E+00	NOT IDENT.
Y-88	-1.122E-02	2.996E-02	4.686E-02	0.000E+00	NOT IDENT.
Y-91	-6.230E+00	2.044E+01	3.326E+01	0.000E+00	NOT IDENT.
NB-94	1.456E-03	2.850E-02	5.022E-02	0.000E+00	NOT IDENT.
NB-95	3.073E-02	4.634E-02	7.443E-02	0.000E+00	NOT IDENT.
NB-95M	5.564E-02	1.263E-01	2.059E-01	0.000E+00	NOT IDENT.
ZR-95	4.238E-02	7.070E-02	1.281E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.519E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	9.697E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-9.351E-03	4.013E-02	6.751E-02	0.000E+00	FAIL ABUN
RH-106	-2.228E-01	2.639E-01	4.074E-01	0.000E+00	NOT IDENT.
RU-106	-2.228E-01	2.630E-01	4.074E-01	0.000E+00	NOT IDENT.
AG-108M	3.346E-03	2.508E-02	4.376E-02	0.000E+00	NOT IDENT.
AG-110M	-1.164E-02	3.045E-02	5.238E-02	0.000E+00	NOT IDENT.
SN-113	-7.647E-03	3.919E-02	6.753E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.135E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-4.928E-03	7.480E-02	1.289E-01	0.000E+00	NOT IDENT.
TE-123M	7.457E-03	2.679E-02	4.679E-02	0.000E+00	NOT IDENT.
SB-124	-2.967E-02	5.792E-02	8.756E-02	0.000E+00	NOT IDENT.
SB-125	9.222E-02	7.959E-02	1.466E-01	0.000E+00	FAIL ABUN
TE-125M	4.167E+00	1.043E+01	1.674E+01	0.000E+00	NOT IDENT.
I-126	4.328E-01	2.944E-01	5.608E-01	0.000E+00	NOT IDENT.
SB-126	-2.950E-02	2.111E-01	3.172E-01	0.000E+00	NOT IDENT.
SB-127	-4.472E+00	4.579E+00	7.409E+00	0.000E+00	NOT IDENT.
I-131	-2.335E-02	1.948E-01	3.392E-01	0.000E+00	NOT IDENT.
TE-132	-2.726E+00	3.492E+00	6.080E+00	0.000E+00	NOT IDENT.
BA-133	-1.930E-02	4.191E-02	6.226E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.736E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.131E-02	9.272E-02	0.000E+00	FAIL ABUN
CS-135	1.868E-01	1.527E-01	2.563E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.543E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.868E-01	1.481E-01	2.747E-01	0.000E+00	NOT IDENT.
BA-137M	-2.711E-02	3.058E-02	5.057E-02	0.000E+00	NOT IDENT.
CS-137	-2.864E-02	3.230E-02	5.342E-02	0.000E+00	NOT IDENT.
CE-139	-1.098E-02	2.882E-02	4.885E-02	0.000E+00	NOT IDENT.
BA-140	5.136E-02	3.821E-01	6.526E-01	0.000E+00	NOT IDENT.
LA-140	-1.881E-02	1.191E-01	1.958E-01	0.000E+00	FAIL ABUN
CE-141	1.619E-02	6.596E-02	1.157E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.147E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	6.164E-03	2.009E-01	3.127E-01	0.000E+00	NOT IDENT.
PM-144	9.550E-03	2.906E-02	5.218E-02	0.000E+00	NOT IDENT.
PR-144	7.109E-01	2.183E+00	3.919E+00	0.000E+00	NOT IDENT.
PM-146	9.261E-03	3.620E-02	6.340E-02	0.000E+00	NOT IDENT.
ND-147	-1.888E-01	7.859E-01	1.308E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	9.410E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	1.485E-02	8.475E-02	1.399E-01	0.000E+00	FAIL ABUN
GD-153	2.679E-02	8.142E-02	1.307E-01	0.000E+00	NOT IDENT.
EU-154	6.073E-03	1.184E-01	1.978E-01	0.000E+00	NOT IDENT.
TB-160	-6.127E-02	1.284E-01	2.120E-01	0.000E+00	FAIL ABUN
HO-166M	-3.111E-02	5.449E-02	9.182E-02	0.000E+00	NOT IDENT.
TA-182	-1.210E-01	1.955E-01	3.101E-01	0.000E+00	FAIL ABUN
IR-192	-7.982E-02	3.133E-02	5.478E-02	0.000E+00	FAIL ABUN
HG-203	5.741E-03	4.012E-02	7.515E-02	0.000E+00	NOT IDENT.
BI-207	4.033E-02	4.656E-02	8.428E-02	0.000E+00	FAIL ABUN
PB-210	-1.040E+00	1.805E+00	3.268E+00	0.000E+00	NOT IDENT.
PB-211	-1.929E-01	6.087E-01	1.027E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.927E-01	1.126E+00	0.000E+00	FAIL ABUN
RN-219	1.109E-01	3.529E-01	6.247E-01	0.000E+00	FAIL ABUN
RA-223	1.727E-01	6.002E-01	9.513E-01	0.000E+00	FAIL ABUN
AC-227	-1.601E-01	2.177E-01	3.774E-01	0.000E+00	FAIL ABUN
TH-227	-1.601E-01	2.179E-01	3.774E-01	0.000E+00	FAIL ABUN
PA-231	-4.501E-01	1.248E+00	2.189E+00	0.000E+00	FAIL ABUN
TH-231	1.727E-01	6.002E-01	9.513E-01	0.000E+00	FAIL ABUN
PA-233	-3.619E-02	5.738E-02	9.849E-02	0.000E+00	FAIL ABUN
PA-234	2.536E-01	2.523E-01	4.607E-01	0.000E+00	NOT IDENT.
PA-234M	9.223E-01	4.018E+00	7.045E+00	0.000E+00	NOT IDENT.
NP-239	-2.289E-01	3.428E-01	5.871E-01	0.000E+00	FAIL ABUN
AM-241	4.358E-02	1.141E-01	1.896E-01	0.000E+00	NOT IDENT.
CM-247	2.498E-02	3.215E-02	5.831E-02	0.000E+00	NOT IDENT.
CF-249	-1.428E-02	3.464E-02	5.898E-02	0.000E+00	NOT IDENT.

CF-251	2.952E-03	1.190E-01	2.042E-01	0.000E+00 NOT IDENT.
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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248007.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:02:26
Sample ID          : G248248007          Sample quantity  : 1.51470E+02 GRAM
Detector name      : GAM20              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time : 0 02:00:33.06 0.5%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 959280             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	1728	10.66*	1.253E+00	3.206E+01	3.206E+01	10.01
CD-109	88.03	476	3.70*	6.942E+00	4.593E+00	4.755E+00	21.22
SN-126	64.28	135	9.60	4.610E+00	7.546E-01	7.546E-01	80.37
	86.94	476	8.90	6.942E+00	1.910E+00	1.910E+00	45.68
	87.57	476	37.00*	6.942E+00	4.593E-01	4.593E-01	21.22
EU-155	86.55	476	30.70	6.942E+00	5.536E-01	5.587E-01	21.25
	105.31	111	21.10*	7.417E+00	1.761E-01	1.777E-01	75.07
TL-208	277.37	-----	6.60	4.721E+00	-----	Line Not Found	-----
	583.19	578	85.00*	2.695E+00	6.249E-01	6.249E-01	17.26
	860.56	46	12.50	1.952E+00	4.708E-01	4.708E-01	88.46
BI-211	72.87	-----	1.23	5.845E+00	-----	Line Not Found	-----
	351.06	960	12.92*	3.969E+00	4.641E+00	4.641E+00	13.39
PB-212	74.82	748	10.28	6.054E+00	2.979E+00	2.979E+00	19.75
	77.11	1063	17.10	6.266E+00	2.459E+00	2.459E+00	12.78
	238.63	2032	43.60*	5.247E+00	2.201E+00	2.201E+00	11.83
	300.09	109	3.30	4.459E+00	1.828E+00	1.828E+00	56.19
BI-214	609.32	694	45.49*	2.602E+00	1.452E+00	1.452E+00	15.10
	1120.29	180	14.92	1.556E+00	1.921E+00	1.921E+00	28.88
	1764.49	139	15.30	1.100E+00	2.043E+00	2.044E+00	19.52
PB-214	74.82	748	5.80	6.054E+00	5.280E+00	5.280E+00	18.93
	77.11	1063	9.70	6.266E+00	4.334E+00	4.334E+00	15.21
	242.00	446	7.25	5.203E+00	2.933E+00	2.933E+00	27.43
	295.22	650	18.42	4.513E+00	1.937E+00	1.937E+00	17.18
	351.93	960	35.60*	3.969E+00	1.684E+00	1.684E+00	14.48
RA-224	240.99	446	4.10*	5.203E+00	5.186E+00	5.186E+00	26.81
RA-226	609.32	694	45.49*	2.602E+00	1.452E+00	1.452E+00	15.10
	1120.29	180	14.92	1.556E+00	1.921E+00	1.921E+00	28.88
	1764.49	139	15.30	1.100E+00	2.043E+00	2.044E+00	19.52
AC-228	338.32	375	11.27	4.086E+00	2.018E+00	2.018E+00	45.59
	911.20	407	25.80*	1.859E+00	2.101E+00	2.101E+00	19.49
	968.97	222	15.80	1.763E+00	1.972E+00	1.972E+00	31.77
RA-228	338.32	375	11.27	4.086E+00	2.018E+00	2.018E+00	45.59

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	407	25.80*	1.859E+00	2.101E+00	2.101E+00	19.49
	968.97	222	15.80	1.763E+00	1.972E+00	1.972E+00	31.77
	74.82	748	10.28	6.054E+00	2.979E+00	2.979E+00	17.22
	77.11	1063	17.10	6.266E+00	2.459E+00	2.459E+00	12.78
	238.63	2032	43.60*	5.247E+00	2.201E+00	2.201E+00	11.83
TH-229	300.09	109	3.30	4.459E+00	1.828E+00	1.828E+00	82.42
	85.43	276	14.70	6.795E+00	6.851E-01	6.851E-01	32.15
	88.47	476	24.00	6.942E+00	7.081E-01	7.082E-01	21.22
	193.51	-----	4.41*	6.026E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.705E+00	-----	Line Not Found	-----
TH-232	338.32	375	11.27	4.086E+00	2.018E+00	2.018E+00	20.31
	911.20	407	25.80*	1.859E+00	2.101E+00	2.101E+00	19.49
	968.97	222	15.80	1.763E+00	1.972E+00	1.972E+00	31.77
TH-234	63.29	135	3.70*	4.610E+00	1.958E+00	1.958E+00	81.03
	92.59	533	4.23	7.174E+00	4.355E+00	4.355E+00	30.16
U-235	89.96	327	3.47	7.064E+00	3.305E+00	3.305E+00	36.45
	93.35	533	5.60	7.174E+00	3.289E+00	3.289E+00	30.92
	143.76	-----	10.96*	7.037E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.638E+00	-----	Line Not Found	-----
NP-237	185.72	323	57.20	6.172E+00	2.268E-01	2.268E-01	30.23
	205.31	-----	5.01	5.804E+00	-----	Line Not Found	-----
	86.48	476	12.40*	6.942E+00	1.371E+00	1.371E+00	29.83
	95.86	-----	2.68	7.260E+00	-----	Line Not Found	-----
	63.29	135	3.70*	4.610E+00	1.958E+00	1.958E+00	81.03
U-238	92.59	533	4.23	7.174E+00	4.355E+00	4.355E+00	22.28
	511.00	131	100.00*	2.993E+00	1.083E-01	1.083E-01	60.41

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	3.206E+01	3.206E+01	0.321E+01	10.01	
CD-109	461.40D	1.04	4.593E+00	4.755E+00	1.009E+00	21.22	
SN-126	2.30E+05Y	1.00	4.593E-01	4.593E-01	0.975E-01	21.22	
EU-155	4.75Y	1.01	1.761E-01	1.777E-01	1.334E-01	75.07	
TL-208	1.41E+10Y	1.00	6.249E-01	6.249E-01	1.079E-01	17.26	
BI-211	7.04E+08Y	1.00	4.641E+00	4.641E+00	0.622E+00	13.39	
PB-212	1.41E+10Y	1.00	2.201E+00	2.201E+00	0.260E+00	11.83	
BI-214	1600.00Y	1.00	1.452E+00	1.452E+00	0.219E+00	15.10	
PB-214	1600.00Y	1.00	1.684E+00	1.684E+00	0.244E+00	14.48	
RA-224	1.41E+10Y	1.00	5.186E+00	5.186E+00	1.391E+00	26.81	
RA-226	1600.00Y	1.00	1.452E+00	1.452E+00	0.219E+00	15.10	
AC-228	1.41E+10Y	1.00	2.101E+00	2.101E+00	0.410E+00	19.49	
RA-228	1.41E+10Y	1.00	2.101E+00	2.101E+00	0.410E+00	19.49	
TH-228	1.41E+10Y	1.00	2.201E+00	2.201E+00	0.260E+00	11.83	
TH-229	7340.00Y	1.00	7.081E-01	7.082E-01	1.502E-01	21.22	K
TH-232	1.41E+10Y	1.00	2.101E+00	2.101E+00	0.410E+00	19.49	
TH-234	4.47E+09Y	1.00	1.958E+00	1.958E+00	1.587E+00	81.03	
U-235	7.04E+08Y	1.00	2.268E-01	2.268E-01	0.685E-01	30.23	K
NP-237	2.14E+06Y	1.00	1.371E+00	1.371E+00	0.409E+00	29.83	
U-238	4.47E+09Y	1.00	1.958E+00	1.958E+00	1.587E+00	81.03	
ANH-511	1.00E+09Y	1.00	1.083E-01	1.083E-01	0.654E-01	60.41	
Total Activity :			6.937E+01	6.953E+01			

Grand Total Activity : 6.937E+01 6.953E+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	129.67	184	559	1.49	259.12	254	11	2.56E-02	52.0	7.28E+00	
0	209.13	194	287	1.02	417.82	414	8	2.69E-02	33.6	5.74E+00	
0	270.11	137	248	1.33	539.64	535	9	1.90E-02	44.9	4.81E+00	T
0	327.96	110	145	1.31	655.20	652	8	1.52E-02	42.4	4.18E+00	T
0	463.45	108	157	1.73	925.93	921	12	1.50E-02	50.8	3.23E+00	T
0	727.43	151	81	1.23	1453.59	1447	13	2.10E-02	29.5	2.25E+00	T
0	770.61	150	165	4.82	1539.92	1529	26	2.08E-02	51.0	2.15E+00	
0	795.67	104	64	1.11	1590.03	1585	12	1.44E-02	36.8	2.09E+00	T
0	934.94	50	49	2.07	1868.56	1862	11	6.88E-03	61.9	1.82E+00	
0	965.40	83	69	1.18	1929.47	1924	10	1.15E-02	43.8	1.77E+00	T
0	1238.65	105	72	1.90	2476.19	2470	13	1.45E-02	38.7	1.43E+00	T
0	1379.12	33	33	0.79	2757.36	2748	12	4.52E-03	78.9	1.31E+00	
0	1408.76	24	20	1.05	2816.67	2811	10	3.33E-03	80.9	1.29E+00	T
0	1730.87	42	18	2.20	3461.72	3455	17	5.82E-03	58.5	1.11E+00	
0	1848.71	16	14	1.31	3697.80	3690	11	2.23E-03	96.6	1.07E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248007.CNF;1
* Acquisition date   : 19-MAR-2010 11:02:26  Detector SN#      :
* Detector ID        : GAM20                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:33.06          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248248007           Analyst initials: MXR1
* Batch Number       : 959280               Sample Quantity : 1.51470E+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	3.206E+01	3.211E+00	4.420E-01	3.854E-02	72.549
CD-109	4.755E+00	1.009E+00	9.985E-01	9.441E-02	4.762
SN-126	4.593E-01	9.746E-02	9.673E-02	9.098E-03	4.749
EU-155	1.777E-01	1.334E-01	1.503E-01	1.307E-02	1.182
TL-208	6.249E-01	1.079E-01	5.662E-02	5.816E-03	11.036
BI-211	4.641E+00	6.216E-01	2.755E-01	2.640E-02	16.844
PB-212	2.201E+00	2.603E-01	7.960E-02	8.500E-03	27.649
BI-214	1.452E+00	2.193E-01	1.001E-01	1.118E-02	14.506
PB-214	1.684E+00	2.440E-01	1.002E-01	1.107E-02	16.809
RA-224	5.186E+00	1.391E+00	8.530E-01	8.245E-02	6.080
RA-226	1.452E+00	2.193E-01	1.001E-01	1.118E-02	14.506
AC-228	2.101E+00	4.097E-01	2.023E-01	2.543E-02	10.386
RA-228	2.101E+00	4.097E-01	2.023E-01	2.543E-02	10.386
TH-228	2.201E+00	2.603E-01	7.960E-02	8.500E-03	27.649
TH-229	7.082E-01	1.502E-01	7.842E-01	7.141E-02	0.903
TH-232	2.101E+00	4.097E-01	2.023E-01	2.543E-02	10.386
TH-234	1.958E+00	1.587E+00	1.551E+00	2.755E-01	1.262
U-235	2.268E-01	6.854E-02	2.830E-01	4.775E-02	0.801

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.371E+00	4.088E-01	2.907E-01	6.665E-02	4.715
U-238	1.958E+00	1.587E+00	1.551E+00	2.755E-01	1.262
ANH-511	1.083E-01	6.541E-02	4.453E-02	4.149E-03	2.432

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	9.677E-03		3.097E-01	5.036E-01	4.894E-02	0.019
NA-22	1.225E-02		4.232E-02	6.998E-02	5.797E-03	0.175
NA-24	-6.625E+01		1.745E+03	Half-Life too short		
SC-46	-1.048E-02		3.722E-02	6.001E-02	5.982E-03	-0.175
V-48	5.927E-03		8.270E-02	1.366E-01	1.306E-02	0.043
CR-51	2.183E-01		3.864E-01	6.581E-01	6.594E-02	0.332
MN-54	8.724E-03		3.519E-02	5.939E-02	5.999E-03	0.147
CO-56	2.123E-02		3.616E-02	6.266E-02	6.316E-03	0.339
CO-57	1.958E-03		2.350E-02	3.788E-02	3.162E-03	0.052
CO-58	-3.047E-02		3.666E-02	5.653E-02	5.741E-03	-0.539
FE-59	3.066E-02		9.766E-02	1.632E-01	1.539E-02	0.188
CO-60	9.220E-03		3.651E-02	6.025E-02	5.047E-03	0.153
ZN-65	-1.952E-02		8.723E-02	1.189E-01	1.023E-02	-0.164
SE-75	-1.055E-02		4.380E-02	6.704E-02	6.638E-03	-0.157
SR-85	4.932E-02		4.622E-02	7.042E-02	6.576E-03	0.700
Y-88	-1.122E-02		3.057E-02	4.680E-02	3.776E-03	-0.240
Y-91	-6.230E+00		2.086E+01	3.285E+01	2.667E+00	-0.190
NB-94	1.456E-03		2.908E-02	4.892E-02	4.949E-03	0.030
NB-95	3.073E-02		4.728E-02	7.265E-02	7.384E-03	0.423
NB-95M	5.564E-02		1.288E-01	1.952E-01	2.101E-02	0.285
ZR-95	4.238E-02		7.214E-02	1.250E-01	1.368E-02	0.339
MO-99	-8.420E-05		3.836E-05	Half-Life too short		
TC-99M	9.018E+19		4.948E+19	Half-Life too short		
RU-103	-9.351E-03		4.094E-02	6.519E-02	9.353E-03	-0.143
RH-106	-2.228E-01		2.693E-01	3.956E-01	5.586E-02	-0.563
RU-106	-2.228E-01		2.683E-01	3.956E-01	3.915E-02	-0.563
AG-108M	3.346E-03		2.560E-02	4.211E-02	3.795E-03	0.079
AG-110M	-1.164E-02		3.107E-02	5.093E-02	5.219E-03	-0.228
SN-113	-7.647E-03		3.998E-02	6.482E-02	5.591E-03	-0.118
CD-115	-1.593E-05		5.791E-05	Half-Life too short		
SN-117M	-4.928E-03		7.633E-02	1.210E-01	1.045E-02	-0.041
TE-123M	7.457E-03		2.734E-02	4.394E-02	3.818E-03	0.170
SB-124	-2.967E-02		5.910E-02	8.726E-02	7.602E-03	-0.340
SB-125	9.222E-02		8.121E-02	1.410E-01	1.248E-02	0.654
TE-125M	4.167E+00		1.064E+01	1.558E+01	1.621E+00	0.267
I-126	4.328E-01		3.004E-01	5.455E-01	5.480E-02	0.793
SB-126	-2.950E-02		2.154E-01	3.092E-01	3.135E-02	-0.095
SB-127	-4.472E+00		4.673E+00	7.212E+00	1.075E+00	-0.620
I-131	-2.335E-02		1.987E-01	3.250E-01	3.069E-02	-0.072
TE-132	-2.726E+00		3.564E+00	5.759E+00	1.043E+00	-0.473

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	-1.930E-02		4.277E-02	5.962E-02	7.909E-03	-0.324
I-133	-1.807E+00		1.396E+00	Half-Life too short		
CS-134	1.637E-01	+	6.256E-02	9.060E-02	9.244E-03	1.807
CS-135	1.868E-01		1.558E-01	2.438E-01	2.701E-02	0.767
I-135	6.926E+17		1.298E+18	Half-Life too short		
CS-136	1.868E-01		1.512E-01	2.703E-01	2.567E-02	0.691
BA-137M	-2.711E-02		3.120E-02	4.918E-02	4.936E-03	-0.551
CS-137	-2.864E-02		3.296E-02	5.196E-02	5.222E-03	-0.551
CE-139	-1.098E-02		2.941E-02	4.592E-02	4.009E-03	-0.239
BA-140	5.136E-02		3.899E-01	6.314E-01	2.156E-01	0.081
LA-140	-1.881E-02		1.216E-01	1.949E-01	1.645E-02	-0.097
CE-141	1.619E-02		6.731E-02	1.084E-01	9.361E-03	0.149
CE-143	3.564E-02		5.854E-03	Half-Life too short		
CE-144	6.164E-03		2.049E-01	2.925E-01	4.430E-02	0.021
PM-144	9.550E-03		2.965E-02	5.081E-02	5.139E-03	0.188
PR-144	7.109E-01		2.228E+00	3.817E+00	3.858E-01	0.186
PM-146	9.261E-03		3.694E-02	6.108E-02	6.610E-03	0.152
ND-147	-1.888E-01		8.019E-01	1.265E+00	1.953E-01	-0.149
PM-149	-5.864E-04		4.801E-04	Half-Life too short		
EU-152	1.485E-02		8.648E-02	1.339E-01	1.306E-02	0.111
GD-153	2.679E-02		8.308E-02	1.214E-01	1.076E-02	0.221
EU-154	6.073E-03		1.209E-01	1.957E-01	2.176E-02	0.031
TB-160	-6.127E-02		1.310E-01	2.077E-01	2.077E-02	-0.295
HO-166M	-3.111E-02		5.560E-02	8.946E-02	9.062E-03	-0.348
TA-182	-1.210E-01		1.995E-01	3.064E-01	2.500E-02	-0.395
IR-192	-7.982E-03		3.197E-02	5.230E-02	5.059E-03	-0.153
HG-203	5.741E-02		4.093E-02	7.153E-02	7.260E-03	0.803
BI-207	4.033E-02		4.751E-02	8.297E-02	7.492E-03	0.486
PB-210	-1.040E+00		1.842E+00	2.983E+00	2.741E-01	-0.349
PB-211	-1.929E-01		6.211E-01	9.861E-01	4.770E-01	-0.196
BI-212	2.490E+00	+	8.088E-01	1.097E+00	1.488E-01	2.269
RN-219	1.109E-01		3.601E-01	5.999E-01	8.864E-02	0.185
RA-223	1.727E-01		6.125E-01	9.088E-01	1.620E-01	0.190
AC-227	-1.601E-01		2.221E-01	3.585E-01	4.632E-02	-0.447
TH-227	-1.601E-01		2.224E-01	3.585E-01	5.156E-02	-0.447
PA-231	-4.501E-01		1.273E+00	2.084E+00	3.209E-01	-0.216
TH-231	1.727E-01		6.125E-01	9.088E-01	1.620E-01	0.190
PA-233	-3.619E-02		5.855E-02	9.400E-02	9.328E-03	-0.385
PA-234	2.536E-01		2.575E-01	4.521E-01	8.730E-02	0.561
PA-234M	9.223E-01		4.100E+00	6.924E+00	7.407E-01	0.133
NP-239	-2.289E-01		3.498E-01	5.473E-01	4.584E-02	-0.418
AM-241	4.358E-02		1.164E-01	1.740E-01	1.362E-02	0.250
CM-247	2.498E-02		3.281E-02	5.601E-02	4.735E-03	0.446
CF-249	-1.428E-02		3.535E-02	5.660E-02	4.773E-03	-0.252
CF-251	2.952E-03		1.214E-01	1.923E-01	1.709E-02	0.015

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]G248248007
* Acquisition date   : 19-MAR-2010 11:02:26 Detector SN#      :
* Detector ID        : GAM20 Sensitivity      : 5.000
* Geometry           : CAN Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 02:00:33.06 Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G248248007 Analyst initials: MXR1
* Batch Number       : 959280 Sample Quantity : 1.5147E+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	3.206E+01	3.147E+00	2.227E-01	1.606E+00
CD-109	4.755E+00	9.886E-01	5.393E-01	5.044E-01
SN-126	4.593E-01	9.551E-02	5.226E-02	4.873E-02
EU-155	1.777E-01	1.307E-01	8.088E-02	6.670E-02
TL-208	6.249E-01	1.057E-01	2.922E-02	5.394E-02
BI-211	4.641E+00	6.091E-01	1.440E-01	3.108E-01
PB-212	2.201E+00	2.551E-01	4.200E-02	1.301E-01
BI-214	1.452E+00	2.149E-01	5.161E-02	1.096E-01
PB-214	1.684E+00	2.391E-01	5.237E-02	1.220E-01
RA-224	5.186E+00	1.363E+00	4.499E-01	6.953E-01
RA-226	1.452E+00	2.149E-01	5.161E-02	1.096E-01
AC-228	2.101E+00	4.015E-01	1.032E-01	2.048E-01
RA-228	2.101E+00	4.015E-01	1.032E-01	2.048E-01
TH-228	2.201E+00	2.551E-01	4.200E-02	1.301E-01
TH-229	5.470E-02	4.516E-01	4.158E-01	2.304E-01
TH-232	2.101E+00	4.015E-01	1.032E-01	2.048E-01
TH-234	1.958E+00	1.555E+00	8.441E-01	7.933E-01
U-235	-2.105E-01	1.853E-01	1.511E-01	9.457E-02
NP-237	1.371E+00	4.007E-01	1.571E-01	2.044E-01
U-238	1.958E+00	1.555E+00	8.441E-01	7.933E-01
ANH-511	1.083E-01	6.410E-02	2.306E-02	3.271E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	9.677E-03	3.035E-01	2.612E-01	1.549E-01 NOT IDENT.
NA-22	1.225E-02	4.147E-02	3.539E-02	2.116E-02 NOT IDENT.
NA-24	-6.625E+07	3.421E+09	0.000E+00	1.745E+09 SHORT HLIF
SC-46	-1.048E-02	3.647E-02	3.064E-02	1.861E-02 FAIL ABUN
V-48	5.927E-03	8.105E-02	6.958E-02	4.135E-02 NOT IDENT.
CR-51	2.183E-01	3.787E-01	3.448E-01	1.932E-01 NOT IDENT.

MN-54	8.724E-03	3.449E-02	3.037E-02	1.760E-02	NOT IDENT.
CO-56	2.123E-02	3.543E-02	3.203E-02	1.808E-02	FAIL ABUN
CO-57	1.958E-03	2.303E-02	2.031E-02	1.175E-02	NOT IDENT.
CO-58	-3.047E-02	3.592E-02	2.893E-02	1.833E-02	NOT IDENT.
FE-59	3.066E-02	9.571E-02	8.284E-02	4.883E-02	NOT IDENT.
CO-60	9.220E-03	3.578E-02	3.044E-02	1.825E-02	NOT IDENT.
ZN-65	-1.952E-02	8.548E-02	6.033E-02	4.361E-02	NOT IDENT.
SE-75	-1.055E-02	4.293E-02	3.528E-02	2.190E-02	NOT IDENT.
SR-85	4.932E-02	4.529E-02	3.646E-02	2.311E-02	NOT IDENT.
Y-88	-1.122E-02	2.996E-02	2.344E-02	1.528E-02	NOT IDENT.
Y-91	-6.230E+00	2.044E+01	1.664E+01	1.043E+01	NOT IDENT.
NB-94	1.456E-03	2.850E-02	2.513E-02	1.454E-02	NOT IDENT.
NB-95	3.073E-02	4.634E-02	3.724E-02	2.364E-02	NOT IDENT.
NB-95M	5.564E-02	1.263E-01	1.030E-01	6.442E-02	NOT IDENT.
ZR-95	4.238E-02	7.070E-02	6.410E-02	3.607E-02	NOT IDENT.
MO-99	-8.420E+01	7.519E+01	0.000E+00	3.836E+01	SHORT HLIF
TC-99M	9.018E+25	9.697E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-9.351E-03	4.013E-02	3.378E-02	2.047E-02	FAIL ABUN
RH-106	-2.228E-01	2.639E-01	2.038E-01	1.346E-01	NOT IDENT.
RU-106	-2.228E-01	2.630E-01	2.038E-01	1.342E-01	NOT IDENT.
AG-108M	3.346E-03	2.508E-02	2.189E-02	1.280E-02	NOT IDENT.
AG-110M	-1.164E-02	3.045E-02	2.621E-02	1.554E-02	NOT IDENT.
SN-113	-7.647E-03	3.919E-02	3.379E-02	1.999E-02	NOT IDENT.
CD-115	-1.593E+01	1.135E+02	0.000E+00	5.791E+01	SHORT HLIF
SN-117M	-4.928E-03	7.480E-02	6.449E-02	3.817E-02	NOT IDENT.
TE-123M	7.457E-03	2.679E-02	2.341E-02	1.367E-02	NOT IDENT.
SB-124	-2.967E-02	5.792E-02	4.380E-02	2.955E-02	NOT IDENT.
SB-125	9.222E-02	7.959E-02	7.336E-02	4.061E-02	FAIL ABUN
TE-125M	4.167E+00	1.043E+01	8.374E+00	5.321E+00	NOT IDENT.
I-126	4.328E-01	2.944E-01	2.805E-01	1.502E-01	NOT IDENT.
SB-126	-2.950E-02	2.111E-01	1.587E-01	1.077E-01	NOT IDENT.
SB-127	-4.472E+00	4.579E+00	3.707E+00	2.336E+00	NOT IDENT.
I-131	-2.335E-02	1.948E-01	1.697E-01	9.937E-02	NOT IDENT.
TE-132	-2.726E+00	3.492E+00	3.042E+00	1.782E+00	NOT IDENT.
BA-133	-1.930E-02	4.191E-02	3.115E-02	2.138E-02	NOT IDENT.
I-133	-1.807E+06	2.736E+06	0.000E+00	1.396E+06	SHORT HLIF
CS-134	1.637E-01	6.131E-02	4.639E-02	3.128E-02	FAIL ABUN
CS-135	1.868E-01	1.527E-01	1.282E-01	7.792E-02	NOT IDENT.
I-135	6.926E+23	2.543E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.868E-01	1.481E-01	1.374E-01	7.558E-02	NOT IDENT.
BA-137M	-2.711E-02	3.058E-02	2.530E-02	1.560E-02	NOT IDENT.
CS-137	-2.864E-02	3.230E-02	2.673E-02	1.648E-02	NOT IDENT.
CE-139	-1.098E-02	2.882E-02	2.444E-02	1.470E-02	NOT IDENT.
BA-140	5.136E-02	3.821E-01	3.265E-01	1.950E-01	NOT IDENT.
LA-140	-1.881E-02	1.191E-01	9.798E-02	6.079E-02	FAIL ABUN
CE-141	1.619E-02	6.596E-02	5.788E-02	3.366E-02	NOT IDENT.
CE-143	3.564E+04	1.147E+04	0.000E+00	5.854E+03	SHORT HLIF
CE-144	6.164E-03	2.009E-01	1.565E-01	1.025E-01	NOT IDENT.
PM-144	9.550E-03	2.906E-02	2.610E-02	1.483E-02	NOT IDENT.
PR-144	7.109E-01	2.183E+00	1.961E+00	1.114E+00	NOT IDENT.
PM-146	9.261E-03	3.620E-02	3.172E-02	1.847E-02	NOT IDENT.
ND-147	-1.888E-01	7.859E-01	6.544E-01	4.009E-01	FAIL ABUN
PM-149	-5.864E+02	9.410E+02	0.000E+00	4.801E+02	SHORT HLIF
EU-152	1.485E-02	8.475E-02	7.000E-02	4.324E-02	FAIL ABUN
GD-153	2.679E-02	8.142E-02	6.541E-02	4.154E-02	NOT IDENT.
EU-154	6.073E-03	1.184E-01	9.896E-02	6.043E-02	NOT IDENT.
TB-160	-6.127E-02	1.284E-01	1.061E-01	6.552E-02	FAIL ABUN
HO-166M	-3.111E-02	5.449E-02	4.594E-02	2.780E-02	NOT IDENT.
TA-182	-1.210E-01	1.955E-01	1.551E-01	9.973E-02	FAIL ABUN
IR-192	-7.982E-03	3.133E-02	2.741E-02	1.599E-02	FAIL ABUN
HG-203	5.741E-02	4.012E-02	3.760E-02	2.047E-02	NOT IDENT.
BI-207	4.033E-02	4.656E-02	4.217E-02	2.376E-02	FAIL ABUN
PB-210	-1.040E+00	1.805E+00	1.635E+00	9.211E-01	NOT IDENT.
PB-211	-1.929E-01	6.087E-01	5.136E-01	3.105E-01	NOT IDENT.
BI-212	2.490E+00	7.927E-01	5.632E-01	4.044E-01	FAIL ABUN
RN-219	1.109E-01	3.529E-01	3.125E-01	1.801E-01	FAIL ABUN
RA-223	1.727E-01	6.002E-01	4.759E-01	3.062E-01	FAIL ABUN
AC-227	-1.601E-01	2.177E-01	1.888E-01	1.111E-01	FAIL ABUN
TH-227	-1.601E-01	2.179E-01	1.888E-01	1.112E-01	FAIL ABUN
PA-231	-4.501E-01	1.248E+00	1.095E+00	6.367E-01	FAIL ABUN
TH-231	1.727E-01	6.002E-01	4.759E-01	3.062E-01	FAIL ABUN
PA-233	-3.619E-02	5.738E-02	4.927E-02	2.928E-02	FAIL ABUN
PA-234	2.536E-01	2.523E-01	2.305E-01	1.287E-01	NOT IDENT.
PA-234M	9.223E-01	4.018E+00	3.524E+00	2.050E+00	NOT IDENT.
NP-239	-2.289E-01	3.428E-01	2.937E-01	1.749E-01	FAIL ABUN
AM-241	4.358E-02	1.141E-01	9.485E-02	5.822E-02	NOT IDENT.
CM-247	2.498E-02	3.215E-02	2.917E-02	1.640E-02	NOT IDENT.
CF-249	-1.428E-02	3.464E-02	2.951E-02	1.767E-02	NOT IDENT.

CF-251	2.952E-03	1.190E-01	1.022E-01	6.069E-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	409.4669
49.72	426.9266
57.36	0.0000
59.54	458.2179
63.29	532.7402
63.29	532.7402
64.28	587.5570
67.75	639.7644
69.67	600.7033
70.83	597.2928
72.81	652.9041
72.87	652.9691
72.87	652.9691
74.82	649.9268
74.82	649.9268
74.82	649.9268
74.97	650.0847
77.11	652.3195
77.11	652.3195
77.11	652.3195
79.69	561.9961
79.80	588.9577
80.12	589.2505
80.19	589.3143
80.57	437.5914
81.00	590.0536
81.07	590.1174
81.07	590.1174
83.79	547.3476
83.79	547.3476
85.43	464.8034
86.48	465.5270
86.55	465.5769
86.79	465.7403
86.94	465.8446
87.57	466.2756
88.03	466.5909
88.47	466.8904
89.96	467.9021
91.11	468.6757
92.59	469.6647
92.59	469.6647
93.35	470.1706
94.67	391.3044
94.87	396.1678
94.87	396.1678
95.86	445.9057
97.43	405.5249
98.44	368.1840
99.53	391.2714
100.11	409.6676
103.18	402.2699
103.37	402.3714
105.31	409.2907
106.12	409.7240
109.28	397.3946
111.00	445.7519
111.76	406.2069
116.30	415.0224
117.23	379.6010
121.12	371.5516
121.78	380.5931
122.06	378.5325
123.07	363.6519
131.20	358.2444
133.52	367.4982
136.00	355.7324

136.47	371.4894
140.51	0.0000
140.51	0.0000
143.76	409.1955
144.24	398.1905
144.24	398.1905
145.44	366.1299
152.43	346.1862
153.25	348.7402
154.21	369.4859
154.21	369.4859
156.02	369.0303
158.56	362.0071
159.00	340.5268
162.66	346.3399
163.33	363.7248
165.86	370.3571
176.60	341.7329
177.52	333.9082
181.07	0.0000
184.41	337.4294
185.72	324.1621
193.51	321.1244
197.04	310.6090
205.31	295.1696
210.85	302.2693
215.65	305.6218
222.11	294.5720
227.38	291.2687
228.16	302.3427
228.18	305.9796
235.69	277.6338
235.96	268.9203
235.96	268.9203
238.63	249.8827
238.63	249.8827
240.99	250.3305
242.00	250.5222
244.70	222.1591
252.40	229.3478
252.80	233.1161
256.23	248.5388
256.23	248.5388
260.90	0.0000
264.66	225.1674
268.22	209.5215
269.46	227.4899
269.46	227.4899
271.23	256.4541
273.65	270.4087
276.40	230.4726
277.37	224.9779
277.60	237.2536
278.00	223.1928
279.20	222.4312
279.54	244.1680
280.46	299.9762
283.69	218.3848
284.31	231.7175
285.41	235.6754
285.90	0.0000
287.50	186.7195
293.27	0.0000
295.22	185.9666
295.96	205.8816
298.57	206.2343
299.98	172.0212
299.98	172.0212
300.09	198.7927
300.09	198.7927
300.13	198.7991
301.36	191.3055
302.85	183.8291
304.50	194.7602
304.50	194.7602
304.85	213.2103
308.46	186.4160
311.90	209.9368

316.51	177.7109
319.41	194.4795
320.08	162.6193
323.87	164.5536
323.87	164.5536
328.76	172.8332
333.37	153.5402
334.37	154.6754
334.37	154.6754
338.28	179.1158
338.28	179.1158
338.32	179.1214
338.32	179.1214
338.32	179.1214
340.48	156.8115
340.55	156.8164
344.28	147.9975
351.06	150.8872
351.93	150.9642
356.01	177.2340
364.49	153.0530
366.42	0.0000
383.85	134.6195
388.16	157.0902
388.63	155.1162
391.69	142.2586
400.66	138.8877
401.81	142.0145
402.40	131.9122
404.85	144.2751
410.95	141.6788
414.70	140.9354
423.72	146.7203
427.09	108.9437
427.87	114.1283
433.94	121.6965
453.88	117.6934
463.37	118.2331
468.07	124.1596
473.00	116.6723
476.78	111.6141
477.60	112.7112
487.02	123.7858
492.35	0.0000
497.08	116.9170
511.00	133.6947
514.00	142.2267
527.90	0.0000
529.87	0.0000
531.02	98.1899
537.26	110.3547
546.56	0.0000
563.25	113.7627
569.33	104.1788
569.50	104.1846
569.70	109.6771
583.19	126.8271
600.60	103.2797
602.73	92.4752
604.72	94.3286
609.32	105.8632
609.32	105.8632
610.33	90.9683
614.28	105.3991
618.01	71.5605
621.93	91.8271
621.93	91.8271
633.25	109.0954
635.95	79.2602
636.99	89.2039
645.85	90.4053
657.76	101.7051
661.66	110.9467
661.66	110.9467
664.57	0.0000
666.33	80.1646
666.50	80.1689
677.62	87.8109

685.70	99.9947
695.00	77.3165
696.49	87.4877
696.51	87.4877
697.00	92.1069
702.65	95.0613
706.68	96.1187
711.68	108.3250
720.70	85.1363
721.93	0.0000
722.78	58.8632
722.91	58.8663
723.31	57.3247
724.19	60.4408
727.33	82.8487
733.00	71.5063
735.93	69.0877
739.50	0.0000
747.24	86.2230
752.31	102.3285
753.82	82.6547
756.73	84.6167
763.94	72.2531
765.81	91.1584
766.42	103.7534
777.92	0.0000
778.90	66.2949
783.70	76.8333
785.37	68.3332
795.86	75.2313
801.95	74.7418
810.29	83.2299
810.76	84.1994
815.77	72.8327
818.51	72.8958
832.01	103.0633
834.85	89.6578
836.80	0.0000
846.77	62.8942
856.80	80.8797
860.56	68.0159
871.09	57.5106
873.19	66.3249
875.33	0.0000
879.36	73.2880
880.51	78.1992
883.24	68.4807
884.68	67.5311
889.28	73.5022
898.04	56.9890
911.20	71.0156
911.20	71.0156
911.20	71.0156
926.50	62.7427
937.49	41.4073
944.13	51.7740
946.00	49.8083
949.00	81.7558
962.29	88.3980
964.08	80.0977
966.15	50.0891
968.97	73.5213
968.97	73.5213
968.97	73.5213
983.53	56.3691
996.26	63.6352
1001.03	60.6826
1004.73	74.9160
1037.84	63.3229
1038.76	0.0000
1048.07	55.2999
1050.41	68.6521
1050.41	68.6521
1063.66	56.5496
1085.87	62.0420
1099.45	70.5533
1112.07	52.0410
1115.54	64.2411

1120.29	64.3164
1120.29	64.3164
1120.55	53.1939
1121.30	53.2039
1131.51	0.0000
1173.23	75.0076
1177.93	89.8975
1189.05	93.3152
1204.77	75.5658
1221.41	98.2980
1231.02	99.0491
1235.36	92.8958
1238.28	81.5145
1260.41	0.0000
1271.85	65.9265
1274.44	67.0466
1274.54	62.7210
1291.59	61.8734
1298.22	0.0000
1312.11	55.6094
1332.49	43.8086
1365.19	24.8159
1368.63	0.0000
1384.29	29.0673
1408.01	40.8042
1457.56	0.0000
1460.82	26.2466
1489.16	17.9107
1505.03	40.6607
1596.21	30.7917
1620.50	18.3653
1678.03	0.0000
1690.97	14.6857
1764.49	15.3011
1764.49	15.3011
1770.23	6.8072
1771.35	11.9150
1791.20	0.0000
1836.06	18.0696

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248248007

Total Uranium Activity	5.7276E+00	ug/g
Total Uranium Counting Unc.	4.6263E+00	ug/g
Total Uranium Tpu	2.3604E-06	ug/g
Total Uranium Mda	2.5122E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*             2040 SAVAGE ROAD                     *
*             CHARLESTON , SC 29417                 *
*             GROSS GAMMA REPORT                   *
*
*****
*
*  BATCH ID      : 959280          SAMPLE ID   : G248248007   *
*  ANALYST       : MXR1            DETECTOR    : GAM20        *
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00 *
*  ANALYSIS DATE: 19-MAR-2010 11:02:26.32  SAMPLE ALQT: 151.470 GRAM *
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.161E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.425E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.138E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.019E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 13:06:02.84

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248008.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:03:02
Sample ID          : G248248008 Sample quantity : 1.18770E+02 GRAM
Detector name      : GAM29 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:59.97 0.8%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959280 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.73*	591	681	1.48	149.67	142	17	8.22E-02	9.3	5.79E+00
2	2	77.15*	789	531	1.12	154.49	142	17	1.10E-01	6.3	
3	3	87.17*	270	542	1.23	174.51	171	12	3.75E-02	15.6	7.35E-01
4	3	89.90	201	333	1.13	179.96	171	12	2.80E-02	15.7	
5	0	93.06*	349	478	1.69	186.27	183	9	4.85E-02	13.4	
6	0	129.15	148	536	0.95	258.37	253	11	2.06E-02	31.4	
7	0	185.76*	253	433	1.33	371.45	366	12	3.51E-02	18.3	
8	0	209.06	220	309	1.27	418.01	413	10	3.05E-02	16.4	
9	3	238.53*	1653	224	1.13	476.88	469	21	2.30E-01	3.0	1.13E+00
10	3	241.47	414	345	1.99	482.75	469	21	5.75E-02	13.3	
11	0	270.58	207	307	1.25	540.92	534	14	2.87E-02	19.3	
12	0	277.05	42	212	0.93	553.85	551	8	5.85E-03	61.6	
13	4	295.13	508	161	1.15	589.96	582	23	7.05E-02	6.0	1.55E+00
14	4	300.14	145	177	1.58	599.99	582	23	2.01E-02	19.1	
15	0	327.77	111	243	0.95	655.18	649	12	1.54E-02	29.6	
16	0	338.36*	310	286	1.10	676.35	670	13	4.30E-02	12.7	
17	0	351.80*	846	235	1.21	703.21	698	11	1.18E-01	5.0	
18	0	409.13	51	202	1.17	817.77	813	12	7.04E-03	57.7	
19	0	462.77	130	140	1.30	924.95	919	13	1.80E-02	20.8	
20	0	510.53*	137	206	1.47	1020.42	1012	15	1.91E-02	27.6	
21	0	583.04*	535	136	1.36	1165.34	1157	16	7.43E-02	6.7	
22	0	609.18*	552	156	1.43	1217.60	1211	13	7.67E-02	6.4	
23	0	727.11*	104	93	1.64	1453.35	1446	13	1.44E-02	21.2	
24	0	767.66	63	83	0.65	1534.43	1529	11	8.78E-03	30.6	
25	0	795.26	86	102	1.52	1589.61	1581	15	1.19E-02	28.2	
26	0	860.57	90	56	1.56	1720.20	1714	13	1.25E-02	20.4	
27	0	911.03*	337	99	1.33	1821.10	1814	15	4.68E-02	8.5	
28	3	964.42	73	123	2.70	1927.87	1920	30	1.01E-02	33.4	3.41E+00
29	3	969.10*	251	70	1.98	1937.24	1920	30	3.48E-02	9.2	
30	0	1120.04*	161	62	2.30	2239.16	2229	19	2.23E-02	14.5	
31	0	1237.99*	55	79	1.91	2475.11	2470	12	7.63E-03	35.5	
32	0	1460.80*	1512	40	1.95	2920.98	2912	20	2.10E-01	2.8	
33	0	1510.16	37	33	6.19	3019.77	3009	22	5.14E-03	42.9	
34	0	1588.20*	31	16	2.19	3175.96	3169	13	4.24E-03	33.4	
35	0	1764.65*	90	14	1.67	3529.23	3524	13	1.25E-02	14.4	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248008.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:03:02
 Sample ID : G248248008 Sample quantity : 118.77 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAM29 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:59.97 0.8%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 1.50 keV Half life ratio : 8.00
 Errors propagated: Yes Systematic Error : 0.00 %
 Efficiency type : Empirical Efficiencies at : Peak Energy
 Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.705E+01	4.528E+00	7.076E-01	7.696E-02	52.367
CD-109	+	88.03	*	4.061E+00	1.322E+00	1.883E+00	1.778E-01	2.156
SN-126		64.28		-3.284E-01	7.010E-01	1.134E+00	1.682E-01	-0.290
	+	86.94		1.631E+00	8.469E-01	7.812E-01	3.243E-01	2.088
	+	87.57	*	3.923E-01	1.277E-01	1.827E-01	1.718E-02	2.147
TL-208	+	277.37		4.459E-01	5.522E-01	7.564E-01	9.724E-02	0.589
	+	583.19	*	7.513E-01	1.225E-01	6.362E-02	5.961E-03	11.810
	+	860.56		1.195E+00	5.109E-01	5.494E-01	7.046E-02	2.176
BI-211		72.87		1.999E+01	4.794E+00	8.169E+00	6.751E-01	2.447
	+	351.06	*	5.380E+00	7.432E-01	4.254E-01	4.073E-02	12.647
PB-212	+	74.82		3.761E+00	8.528E-01	7.490E-01	9.613E-02	5.021
	+	77.11		2.869E+00	4.350E-01	4.303E-01	3.665E-02	6.666
	+	238.63	*	2.400E+00	2.789E-01	1.207E-01	1.203E-02	19.889
	+	300.09		3.230E+00	1.286E+00	1.510E+00	1.659E-01	2.139
BI-214	+	609.32	*	1.502E+00	2.461E-01	1.346E-01	1.359E-02	11.162
	+	1120.29		2.265E+00	7.079E-01	6.087E-01	7.105E-02	3.722
	+	1764.49		1.720E+00	5.204E-01	3.579E-01	3.250E-02	4.805
PB-214	+	74.82		6.666E+00	1.464E+00	1.328E+00	1.531E-01	5.021
	+	77.11		5.057E+00	8.730E-01	7.587E-01	8.994E-02	6.666
	+	242.00		3.646E+00	1.047E+00	7.330E-01	7.772E-02	4.974
	+	295.22		2.008E+00	3.315E-01	2.744E-01	3.083E-02	7.318
	+	351.93	*	1.952E+00	2.904E-01	1.622E-01	1.792E-02	12.035
RA-224	+	240.99	*	6.447E+00	1.813E+00	1.292E+00	1.147E-01	4.989
RA-226	+	609.32	*	1.502E+00	2.461E-01	1.346E-01	1.359E-02	11.162
	+	1120.29		2.265E+00	7.079E-01	6.087E-01	7.105E-02	3.722
	+	1764.49		1.720E+00	5.204E-01	3.579E-01	3.250E-02	4.805
AC-228	+	338.32		2.198E+00	1.077E+00	4.692E-01	1.963E-01	4.685
	+	911.20	*	2.282E+00	5.210E-01	2.766E-01	4.214E-02	8.250
	+	968.97		2.933E+00	9.338E-01	4.584E-01	1.188E-01	6.399
RA-228	+	338.32		2.198E+00	1.077E+00	4.692E-01	1.963E-01	4.685
	+	911.20	*	2.282E+00	5.210E-01	2.766E-01	4.214E-02	8.250
	+	968.97		2.933E+00	9.338E-01	4.584E-01	1.188E-01	6.399
TH-228	+	74.82		3.761E+00	7.716E-01	7.490E-01	6.331E-02	5.021
	+	77.11		2.869E+00	4.350E-01	4.303E-01	3.665E-02	6.666

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	+	238.63	*	2.400E+00	2.789E-01	1.207E-01	1.203E-02	19.889
	+	300.09		3.230E+00	2.334E+00	1.510E+00	9.256E-01	2.139
	+	338.32		2.198E+00	5.952E-01	4.692E-01	4.309E-02	4.685
	+	911.20	*	2.282E+00	5.210E-01	2.766E-01	4.214E-02	8.250
U-235	+	968.97		2.933E+00	9.338E-01	4.584E-01	1.188E-01	6.399
	+	89.96		3.039E+00	1.217E+00	1.598E+00	3.974E-01	1.902
	+	93.35		3.182E+00	1.129E+00	9.068E-01	2.112E-01	3.509
		143.76	*	1.262E-01	2.815E-01	4.559E-01	7.706E-02	0.277
NP-237		163.33		1.557E-01	5.918E-01	9.446E-01	1.677E-01	0.165
	+	185.72		2.412E-01	9.040E-02	8.361E-02	6.982E-03	2.885
		205.31		3.099E-01	7.182E-01	1.071E+00	1.941E-01	0.289
	+	86.48	*	1.171E+00	4.533E-01	5.314E-01	1.219E-01	2.203
ANH-511		95.86		-7.566E-03	1.338E+00	1.912E+00	4.615E-01	-0.004
	+	511.00	*	1.479E-01	8.273E-02	6.389E-02	5.784E-03	2.314

---- 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	*	2.554E-01	4.440E-01	7.459E-01	7.262E-02	0.342
NA-22		1274.54	*	-1.046E-02	5.423E-02	8.927E-02	8.911E-03	-0.117
NA-24		1368.63	*	7.349E+02	5.423E-02	Half-Life too short		
SC-46		889.28	*	-4.027E-02	5.250E-02	8.058E-02	1.052E-02	-0.500
V-48	+	1120.55		4.089E-01	1.248E-01	1.669E-01	1.594E-02	2.449
		944.13		-4.659E-01	1.570E+00	2.511E+00	3.189E-01	-0.186
		983.53	*	-1.049E-02	1.280E-01	2.080E-01	2.523E-02	-0.050
CR-51		1312.11		-7.681E-02	1.278E-01	2.001E-01	2.124E-02	-0.384
		320.08	*	-2.111E-01	5.955E-01	9.107E-01	8.757E-02	-0.232
		834.85	*	2.978E-02	4.922E-02	8.438E-02	9.945E-03	0.353
CO-56		846.77	*	2.047E-02	4.921E-02	8.380E-02	1.011E-02	0.244
		1037.84		-3.849E-01	4.103E-01	6.087E-01	7.043E-02	-0.632
	+	1238.28		2.314E-01	1.657E-01	2.339E-01	2.245E-02	0.989
CO-57		1771.35		-1.137E-01	3.584E-01	4.617E-01	4.170E-02	-0.246
		122.06	*	3.046E-02	3.421E-02	5.703E-02	5.153E-03	0.534
		136.47		-1.889E-01	2.934E-01	4.622E-01	4.293E-02	-0.409
CO-58		810.76	*	-3.186E-02	5.078E-02	7.969E-02	8.974E-03	-0.400
FE-59		1099.45	*	-2.243E-02	1.439E-01	2.310E-01	2.453E-02	-0.097
CO-60		1291.59		3.226E-02	1.748E-01	2.966E-01	3.340E-02	0.109
		1173.23		3.262E-02	5.708E-02	9.653E-02	8.025E-03	0.338
		1332.49	*	2.319E-02	4.617E-02	8.070E-02	8.851E-03	0.287
ZN-65		1115.54	*	-3.765E-03	1.315E-01	1.820E-01	1.760E-02	-0.021
SE-75		121.12		5.648E-02	1.840E-01	3.014E-01	3.433E-02	0.187
		136.00		-2.521E-02	5.734E-02	9.110E-02	7.951E-03	-0.277
		264.66	*	3.060E-02	6.743E-02	1.004E-01	9.101E-03	0.305
SR-85		279.54		4.556E-02	1.673E-01	2.458E-01	2.313E-02	0.185
		400.66		2.456E-02	3.400E-01	5.593E-01	6.378E-02	0.044
		514.00	*	1.127E-01	6.649E-02	1.033E-01	9.345E-03	1.091
Y-88		898.04		-3.000E-03	5.642E-02	9.244E-02	1.229E-02	-0.032
		1836.06	*	1.836E-03	3.785E-02	6.239E-02	5.335E-03	0.029

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91		1204.77	*	-7.061E+00	3.056E+01	4.845E+01	4.272E+00	-0.146
NB-94		702.65	*	1.116E-02	4.009E-02	6.803E-02	6.111E-03	0.164
		871.09		6.400E-03	4.088E-02	6.821E-02	8.611E-03	0.094
NB-95		765.81	*	1.168E-01	6.887E-02	1.114E-01	1.144E-02	1.048
NB-95M		235.69	*	8.793E-01	2.372E-01	3.747E-01	3.773E-02	2.347
ZR-95		724.19		1.016E-01	1.495E-01	2.265E-01	2.285E-02	0.448
		756.73	*	4.478E-02	9.160E-02	1.573E-01	1.709E-02	0.285
MO-99		140.51		-7.506E-05	9.160E-02	Half-Life	too short	
		181.07		1.483E-04	9.160E-02	Half-Life	too short	
		366.42		-4.155E-04	9.160E-02	Half-Life	too short	
		739.50	*	6.191E-05	9.160E-02	Half-Life	too short	
		777.92		-2.472E-04	9.160E-02	Half-Life	too short	
TC-99M		140.51	*	-4.627E+19	9.160E-02	Half-Life	too short	
RU-103		497.08	*	1.597E-02	5.559E-02	8.954E-02	1.276E-02	0.178
	+	610.33		1.781E+01	3.707E+00	4.010E+00	6.551E-01	4.441
RH-106		621.93	*	1.136E-01	4.070E-01	6.938E-01	9.153E-02	0.164
		1050.41		1.049E+00	3.083E+00	5.171E+00	5.682E-01	0.203
RU-106		621.93	*	1.136E-01	4.068E-01	6.938E-01	5.913E-02	0.164
		1050.41		1.049E+00	3.083E+00	5.171E+00	5.682E-01	0.203
AG-108M		433.94	*	-4.719E-02	3.771E-02	5.652E-02	5.288E-03	-0.835
		614.28		-1.600E-02	4.904E-02	6.896E-02	6.112E-03	-0.232
		722.91		-8.674E-03	5.150E-02	7.259E-02	6.999E-03	-0.119
AG-110M		657.76	*	-7.786E-03	4.055E-02	6.694E-02	5.691E-03	-0.116
		677.62		-2.506E-01	3.803E-01	6.055E-01	5.298E-02	-0.414
		706.68		-2.024E-01	2.545E-01	3.994E-01	3.714E-02	-0.507
		763.94		3.022E-01	2.243E-01	3.596E-01	3.752E-02	0.840
		884.68		-8.363E-03	6.222E-02	1.013E-01	1.331E-02	-0.083
		937.49		-1.462E-01	1.470E-01	2.199E-01	2.859E-02	-0.665
		1384.29		1.930E-02	1.962E-01	3.300E-01	3.651E-02	0.059
		1505.03		-9.210E-02	4.112E-01	5.585E-01	5.877E-02	-0.165
SN-113		391.69	*	-2.107E-02	5.858E-02	9.417E-02	8.710E-03	-0.224
CD-115		260.90		1.772E-03	5.858E-02	Half-Life	too short	
		492.35		-2.725E-04	5.858E-02	Half-Life	too short	
		527.90	*	2.994E-05	5.858E-02	Half-Life	too short	
SN-117M		156.02		7.886E-01	4.470E+00	7.234E+00	6.008E-01	0.109
		158.56	*	-2.949E-02	1.088E-01	1.730E-01	1.430E-02	-0.170
TE-123M		159.00	*	-1.083E-02	3.946E-02	6.272E-02	5.213E-03	-0.173
SB-124		602.73		-2.520E-02	6.133E-02	8.128E-02	7.036E-03	-0.310
		645.85		-2.912E-01	6.155E-01	9.959E-01	8.812E-02	-0.292
		722.78		-1.007E-01	5.659E-01	7.969E-01	7.623E-02	-0.126
		1690.97	*	-3.439E-02	9.390E-02	1.444E-01	1.430E-02	-0.238
SB-125		427.87	*	7.936E-02	1.186E-01	2.005E-01	1.852E-02	0.396
	+	463.37		1.247E+00	5.318E-01	6.911E-01	6.722E-02	1.804
		600.60		-2.013E-01	2.377E-01	3.467E-01	3.225E-02	-0.581
		635.95		-1.263E-02	3.246E-01	5.426E-01	4.955E-02	-0.023
TE-125M		109.28	*	-9.167E+00	1.487E+01	2.363E+01	2.528E+00	-0.388
I-126		388.63		5.103E-01	3.234E-01	5.683E-01	5.121E-02	0.898
		666.33	*	4.092E-01	4.258E-01	7.504E-01	6.216E-02	0.545
		753.82		1.665E+00	3.258E+00	5.602E+00	5.613E-01	0.297

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	414.70			4.579E-02	1.659E-01	2.401E-01	2.175E-02	0.191
	666.50			1.485E-01	1.495E-01	2.637E-01	2.186E-02	0.563
	695.00			1.341E-01	1.525E-01	2.673E-01	2.361E-02	0.502
	697.00			-1.445E-01	5.403E-01	8.863E-01	7.863E-02	-0.163
	720.70	*		1.391E-01	3.042E-01	4.560E-01	4.260E-02	0.305
SB-127	856.80			5.091E-01	9.838E-01	1.474E+00	1.812E-01	0.345
	252.40			-7.853E+00	2.175E+01	3.535E+01	1.498E+01	-0.222
	473.00			-5.142E+00	8.552E+00	1.333E+01	2.052E+00	-0.386
	685.70	*		2.005E+00	6.352E+00	1.082E+01	1.513E+00	0.185
	783.70			2.084E+01	1.825E+01	3.202E+01	5.136E+00	0.651
I-131	80.19			-2.406E+01	1.433E+01	1.903E+01	1.687E+00	-1.264
	284.31			-7.712E-02	3.746E+00	6.226E+00	5.977E-01	-0.012
	364.49	*		1.582E-01	2.708E-01	4.593E-01	4.421E-02	0.344
TE-132	636.99			2.764E+00	3.592E+00	6.309E+00	5.668E-01	0.438
	49.72			-1.382E+02	1.332E+02	2.115E+02	2.857E+01	-0.653
	111.76			-2.805E+02	2.542E+02	3.930E+02	5.365E+01	-0.714
	116.30			-2.339E+01	2.124E+02	3.435E+02	4.700E+01	-0.068
BA-133	228.16	*		1.998E+00	5.200E+00	8.822E+00	1.563E+00	0.227
	81.00			-2.793E-01	1.553E-01	1.987E-01	3.104E-02	-1.406
	276.40			4.127E-01	5.118E-01	7.733E-01	1.114E-01	0.534
	302.85			8.507E-02	1.948E-01	2.882E-01	3.872E-02	0.295
	356.01	*		3.121E-02	6.065E-02	8.959E-02	1.193E-02	0.348
I-133	383.85			-2.622E-01	3.747E-01	5.897E-01	7.500E-02	-0.445
	529.87	*		2.292E+00	3.747E-01	Half-Life	too short	
	875.33			2.639E+01	3.747E-01	Half-Life	too short	
	1298.22			-9.708E+01	3.747E-01	Half-Life	too short	
CS-134	563.25			-9.244E-02	4.796E-01	7.632E-01	6.833E-02	-0.121
	569.33			-1.893E-02	2.531E-01	4.056E-01	3.634E-02	-0.047
	604.72			2.646E-02	4.501E-02	6.586E-02	5.706E-03	0.402
	795.86	*		1.760E-01	1.011E-01	1.190E-01	1.305E-02	1.479
	801.95			-3.930E-01	5.969E-01	8.047E-01	8.923E-02	-0.488
CS-135	1365.19			-2.783E-01	1.428E+00	2.327E+00	2.614E-01	-0.120
I-135	268.22	*		3.796E-01	2.415E-01	3.750E-01	3.876E-02	1.012
	546.56			-1.244E+18	2.415E-01	Half-Life	too short	
	836.80			1.462E+19	2.415E-01	Half-Life	too short	
	1038.76			-5.497E+18	2.415E-01	Half-Life	too short	
	1131.51			-2.849E+18	2.415E-01	Half-Life	too short	
	1260.41	*		2.280E+18	2.415E-01	Half-Life	too short	
	1457.56			4.599E+20	2.415E-01	Half-Life	too short	
	1678.03			-3.752E+18	2.415E-01	Half-Life	too short	
	1791.20			1.518E+18	2.415E-01	Half-Life	too short	
	153.25			1.547E+00	1.700E+00	2.815E+00	2.829E-01	0.550
CS-136	176.60			-1.174E+00	1.035E+00	1.573E+00	1.446E-01	-0.746
	273.65			5.295E-01	1.530E+00	1.549E+00	1.515E-01	0.342
	340.55			1.496E+00	3.719E-01	6.085E-01	5.779E-02	2.458
	818.51			3.866E-02	1.337E-01	2.260E-01	2.583E-02	0.171
	1048.07	*		-1.080E-01	2.036E-01	3.160E-01	3.579E-02	-0.342
BA-137M	1235.36			1.051E+00	1.374E+00	2.029E+00	2.495E-01	0.518
	661.66	*		-2.112E-02	4.322E-02	6.996E-02	5.735E-03	-0.302

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CS-137	661.66	*		-2.231E-02	4.566E-02	7.390E-02	6.071E-03	-0.302
CE-139	165.86	*		-2.893E-02	4.144E-02	6.456E-02	5.262E-03	-0.448
BA-140	162.66			6.116E-01	1.698E+00	2.722E+00	2.398E-01	0.225
	304.85			7.377E-01	2.794E+00	4.083E+00	1.202E+00	0.181
	423.72			7.741E-01	3.762E+00	6.207E+00	2.049E+00	0.125
	537.26	*		-8.281E-02	5.189E-01	8.282E-01	2.816E-01	-0.100
LA-140	328.76	+		1.494E+00	8.972E-01	1.099E+00	1.061E-01	1.359
	487.02			1.067E-01	2.621E-01	4.362E-01	4.188E-02	0.245
	815.77			-4.673E-01	6.141E-01	9.509E-01	1.155E-01	-0.491
	1596.21	*		2.833E-02	1.598E-01	2.481E-01	2.510E-02	0.114
CE-141	145.44	*		1.426E-01	1.007E-01	1.692E-01	1.462E-02	0.843
CE-143	57.36			-1.332E-02	1.007E-01	Half-Life	too short	
	293.27	*		7.234E-02	1.007E-01	Half-Life	too short	
	664.57			4.571E-02	1.007E-01	Half-Life	too short	
	721.93			2.207E-02	1.007E-01	Half-Life	too short	
CE-144	80.12			-2.474E+00	3.836E+00	5.368E+00	4.689E-01	-0.461
	133.52	*		-4.873E-02	3.162E-01	4.430E-01	6.798E-02	-0.110
PM-144	476.78			2.188E-02	8.240E-02	1.361E-01	1.336E-02	0.161
	618.01			3.406E-03	4.048E-02	6.828E-02	6.008E-03	0.050
	696.49	*		6.170E-03	4.450E-02	7.486E-02	6.639E-03	0.082
PR-144	696.51	*		1.548E-01	3.363E+00	5.625E+00	4.985E-01	0.028
	1489.16			-9.359E+00	1.442E+01	2.164E+01	2.290E+00	-0.433
PM-146	453.88	*		4.184E-02	5.293E-02	8.991E-02	9.883E-03	0.465
	633.25			-3.415E-01	1.677E+00	2.764E+00	1.055E+00	-0.124
	735.93			-6.588E-02	1.888E-01	2.953E-01	8.373E-02	-0.223
	747.24			5.540E-02	1.181E-01	2.021E-01	3.106E-02	0.274
ND-147	91.11	+		1.615E+00	5.317E-01	1.161E+00	1.152E-01	1.391
	319.41			-4.483E+00	6.869E+00	1.099E+01	1.010E+00	-0.408
	531.02	*		8.118E-01	1.201E+00	2.014E+00	3.056E-01	0.403
PM-149	285.90	*		5.857E-04	1.201E+00	Half-Life	too short	
EU-152	121.78			6.877E-02	9.657E-02	1.601E-01	1.642E-02	0.429
	244.70			6.565E-01	4.538E-01	7.087E-01	6.307E-02	0.926
	344.28	*		-6.940E-02	1.537E-01	1.997E-01	1.928E-02	-0.348
	778.90			-4.335E-01	3.367E-01	5.017E-01	5.293E-02	-0.864
	964.08	+		9.155E-01	6.220E-01	6.781E-01	8.422E-02	1.350
	1085.87			1.957E-02	4.808E-01	7.848E-01	8.077E-02	0.025
	1112.07			1.291E-02	4.620E-01	6.440E-01	6.272E-02	0.020
	1408.01			1.206E-01	2.303E-01	4.021E-01	4.353E-02	0.300
GD-153	69.67			1.338E+00	2.678E+00	3.938E+00	3.198E-01	0.340
	97.43	*		-7.892E-02	1.309E-01	1.815E-01	1.630E-02	-0.435
	103.18			-1.055E-01	1.563E-01	2.485E-01	2.204E-02	-0.425
EU-154	123.07			6.251E-02	7.407E-02	1.145E-01	1.333E-02	0.546
	723.31			-8.603E-02	2.403E-01	3.323E-01	3.389E-02	-0.259
	873.19			8.282E-02	3.286E-01	5.523E-01	8.336E-02	0.150
	996.26			-7.770E-02	4.562E-01	7.351E-01	1.420E-01	-0.106
	1004.73			4.301E-03	2.745E-01	4.491E-01	6.355E-02	0.010
	1274.44	*		-2.547E-02	1.534E-01	2.531E-01	3.147E-02	-0.101
EU-155	86.55	+		4.772E-01	1.555E-01	2.546E-01	2.388E-02	1.874
	105.31	*		-4.262E-03	1.473E-01	2.396E-01	2.145E-02	-0.018

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TB-160	+	86.79		1.361E+00	4.431E-01	7.196E-01	6.708E-02	1.891
		197.04		3.049E-01	7.760E-01	1.312E+00	1.111E-01	0.232
		215.65		-3.836E-01	1.027E+00	1.657E+00	1.434E-01	-0.232
		298.57		4.036E-01	1.636E-01	2.906E-01	2.663E-02	1.389
		879.36	*	-1.158E-01	1.883E-01	2.938E-01	3.766E-02	-0.394
		962.29		1.218E+00	8.591E-01	1.355E+00	1.687E-01	0.899
		966.15		1.910E+00	4.244E-01	7.283E-01	9.024E-02	2.622
		1177.93		-1.802E-02	5.095E-01	8.221E-01	6.895E-02	-0.022
		1271.85		-4.802E-01	9.484E-01	1.518E+00	1.507E-01	-0.316
		80.57		-7.712E-01	4.276E-01	5.639E-01	4.945E-02	-1.368
HO-166M	+	184.41		1.917E-01	7.182E-02	8.900E-02	7.420E-03	2.153
		280.46		-3.846E-02	1.237E-01	1.753E-01	1.596E-02	-0.219
		410.95		5.679E-01	3.676E-01	5.736E-01	5.191E-02	0.990
		711.68	*	4.166E-02	7.239E-02	1.251E-01	1.146E-02	0.333
		752.31		-7.765E-02	3.287E-01	5.367E-01	5.360E-02	-0.145
		810.29		-6.294E-02	7.081E-02	1.083E-01	1.217E-02	-0.581
		67.75		1.733E-01	1.773E-01	2.652E-01	2.137E-02	0.653
TA-182	+	100.11		3.330E-01	2.494E-01	4.214E-01	3.758E-02	0.790
		152.43		5.355E-01	4.797E-01	8.003E-01	6.694E-02	0.669
		222.11		2.189E-01	4.774E-01	8.139E-01	7.094E-02	0.269
		1121.30		1.113E+00	3.398E-01	4.510E-01	4.300E-02	2.468
		1189.05		2.557E-01	4.295E-01	7.252E-01	6.211E-02	0.353
		1221.41	*	-1.246E-01	2.829E-01	4.412E-01	4.011E-02	-0.282
		1231.02		-3.670E-01	7.868E-01	1.027E+00	9.502E-02	-0.357
IR-192	+	295.96		1.598E+00	2.430E-01	3.967E-01	3.655E-02	4.029
		308.46		-5.980E-04	1.266E-01	2.098E-01	1.935E-02	-0.003
		316.51	*	9.475E-03	4.577E-02	7.654E-02	7.048E-03	0.124
		468.07		2.237E-02	9.745E-02	1.398E-01	1.357E-02	0.160
HG-203	+	70.83		6.533E-02	2.303E+00	3.328E+00	5.265E-01	0.020
		72.87		5.593E+00	1.524E+00	2.286E+00	3.506E-01	2.447
		279.20	*	3.179E-02	6.428E-02	9.556E-02	8.894E-03	0.333
BI-207	+	72.81		1.063E+00	2.717E-01	4.642E-01	3.835E-02	2.289
		74.97		1.084E+00	2.221E-01	3.317E-01	2.780E-02	3.269
		569.70		-1.270E-03	3.813E-02	6.127E-02	5.417E-03	-0.021
		1063.66	*	1.115E-02	6.808E-02	1.112E-01	1.194E-02	0.100
		1770.23		-2.142E-01	6.832E-01	8.840E-01	7.991E-02	-0.242
PB-210		46.54	*	2.468E+00	4.599E+00	7.672E+00	7.321E-01	0.322
PB-211	+	404.85	*	-2.893E-01	1.099E+00	1.514E+00	7.337E-01	-0.191
		427.09		1.094E+00	2.039E+00	3.325E+00	1.541E+00	0.329
BI-212	+	832.01		-7.096E-01	1.305E+00	1.980E+00	1.039E+00	-0.358
		727.33	*	2.236E+00	9.906E-01	1.391E+00	1.817E-01	1.608
		785.37		2.995E+00	4.190E+00	6.964E+00	7.444E-01	0.430
		1620.50		6.214E-01	3.055E+00	5.157E+00	5.151E-01	0.120
RN-219	+	271.23		1.317E+00	5.286E-01	5.913E-01	6.286E-02	2.227
		401.81	*	-7.599E-02	5.395E-01	8.532E-01	1.289E-01	-0.089
RA-223	+	81.07		-6.236E-01	3.417E-01	4.502E-01	3.966E-02	-1.385
		83.79		1.041E-01	1.933E-01	2.816E-01	2.546E-02	0.370
		94.87		2.435E+00	7.058E-01	1.100E+00	9.971E-02	2.215
		144.24		7.194E-01	9.392E-01	1.537E+00	1.464E-01	0.468

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		154.21		4.562E-01	5.106E-01	8.456E-01	7.768E-02	0.539
	+	269.46		1.023E+00	4.071E-01	4.485E-01	4.133E-02	2.282
		323.87	*	6.530E-01	8.976E-01	1.342E+00	2.366E-01	0.486
	+	338.28		8.723E+00	2.474E+00	3.010E+00	3.757E-01	2.898
		79.69		1.761E-01	1.911E+00	2.758E+00	4.765E-01	0.064
		235.96		1.898E+00	3.352E-01	4.935E-01	5.192E-02	3.846
TH-227		256.23	*	3.052E-01	3.244E-01	5.584E-01	6.874E-02	0.546
	+	299.98		3.553E+00	1.437E+00	2.035E+00	2.661E-01	1.746
		304.50		2.598E-01	2.204E+00	3.198E+00	5.380E-01	0.081
		334.37		5.996E-01	3.074E+00	3.531E+00	5.618E-01	0.170
		79.80		-2.364E-01	2.508E+00	3.593E+00	7.837E-01	-0.066
		235.96		1.898E+00	3.289E-01	4.935E-01	4.909E-02	3.846
TH-229		256.23	*	3.052E-01	3.250E-01	5.584E-01	7.726E-02	0.546
	+	299.98		3.553E+00	1.437E+00	2.035E+00	2.661E-01	1.746
		304.50		2.598E-01	2.204E+00	3.198E+00	5.380E-01	0.081
		334.37		5.996E-01	3.074E+00	3.531E+00	5.618E-01	0.170
		85.43		9.770E-01	3.475E-01	5.281E-01	4.854E-02	1.850
	+	88.47		6.048E-01	1.969E-01	3.303E-01	3.109E-02	1.831
PA-231		193.51	*	-1.292E-02	6.991E-01	1.114E+00	9.398E-02	-0.012
		210.85		3.298E+00	1.283E+00	2.064E+00	1.777E-01	1.598
		283.69	*	-2.918E-01	1.993E+00	3.106E+00	4.623E-01	-0.094
TH-231	+	301.36		2.282E+00	9.191E-01	1.322E+00	1.658E-01	1.726
		81.07		-6.236E-01	3.417E-01	4.502E-01	3.966E-02	-1.385
		83.79		1.041E-01	1.933E-01	2.816E-01	2.546E-02	0.370
PA-233		94.87		2.435E+00	7.058E-01	1.100E+00	9.971E-02	2.215
		144.24		7.194E-01	9.392E-01	1.537E+00	1.464E-01	0.468
		154.21		4.562E-01	5.106E-01	8.456E-01	7.768E-02	0.539
	+	269.46		1.023E+00	4.071E-01	4.485E-01	4.133E-02	2.282
		323.87	*	6.530E-01	8.976E-01	1.342E+00	2.366E-01	0.486
	+	338.28		8.723E+00	2.474E+00	3.010E+00	3.757E-01	2.898
	+	300.13		1.608E+00	6.617E-01	9.173E-01	1.390E-01	1.752
		311.90	*	-1.047E-02	7.827E-02	1.288E-01	1.213E-02	-0.081
		340.48		4.540E+00	1.476E+00	1.754E+00	4.257E-01	2.589
		94.67		1.050E+00	2.813E-01	4.132E-01	5.258E-02	2.540
		98.44		8.348E-02	1.452E-01	2.019E-01	1.128E-01	0.413
		111.00		-7.747E-02	2.519E-01	4.049E-01	4.964E-02	-0.191
PA-234		131.20		1.877E-01	1.624E-01	2.411E-01	2.116E-02	0.779
		569.50		1.426E-02	3.399E-01	5.490E-01	4.855E-02	0.026
		733.00		-4.688E-02	5.287E-01	7.505E-01	1.695E-01	-0.062
		880.51		2.202E-01	3.410E-01	5.883E-01	7.559E-02	0.374
		883.24		1.679E-01	3.659E-01	5.945E-01	4.037E-01	0.282
		926.50		9.466E-03	2.238E-01	3.687E-01	9.975E-02	0.026
		946.00	*	2.764E-02	3.741E-01	6.171E-01	1.292E-01	0.045
		949.00		5.271E-01	5.330E-01	9.376E-01	1.184E-01	0.562
	+	766.42		2.967E+01	2.363E+01	2.711E+01	1.384E+01	1.094
		1001.03	*	1.560E+00	6.124E+00	1.014E+01	1.305E+00	0.154
	TH-234	63.29	*	4.806E-01	1.866E+00	3.084E+00	5.571E-01	0.156
	+	92.59		4.213E+00	1.467E+00	1.749E+00	3.900E-01	2.409
U-238		63.29	*	4.806E-01	1.866E+00	3.084E+00	5.571E-01	0.156

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		4.213E+00	1.190E+00	1.749E+00	1.603E-01	2.409
		99.53		3.208E-01	2.258E-01	3.709E-01	3.313E-02	0.865
		103.37		-9.016E-02	1.392E-01	2.215E-01	1.965E-02	-0.407
		106.12		1.072E-01	1.147E-01	1.918E-01	1.697E-02	0.559
	*	117.23		-4.376E-01	5.389E-01	8.469E-01	7.563E-02	-0.517
		228.18		1.085E-01	2.812E-01	4.779E-01	4.191E-02	0.227
AM-241	+	277.60		2.038E-01	2.517E-01	3.886E-01	3.533E-02	0.524
CM-247		59.54	*	-2.809E-01	2.184E-01	3.454E-01	2.980E-02	-0.813
	+	278.00		8.655E-01	1.069E+00	1.651E+00	1.501E-01	0.524
CF-249		287.50		-3.765E-01	1.831E+00	2.609E+00	2.382E-01	-0.144
	*	402.40		1.700E-02	5.080E-02	8.005E-02	7.226E-03	0.212
		252.80		1.412E-01	1.168E+00	1.961E+00	1.756E-01	0.072
		333.37		-3.701E-01	4.322E-01	3.661E-01	3.364E-02	-1.011
CF-251	*	388.16		7.353E-02	5.148E-02	8.991E-02	8.105E-03	0.818
	*	177.52		-1.494E-01	1.777E-01	2.743E-01	2.267E-02	-0.545
		227.38		1.611E-01	4.594E-01	7.801E-01	6.835E-02	0.207
		285.41		5.952E-01	2.771E+00	4.651E+00	4.242E-01	0.128

VAX/VMS Nuclide Identification Report Generated

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29414 *

DETECTOR DATA

* Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248008 *
 * Acquisition date : 19-MAR-2010 11:03:02 Detector SN# : *
 * Detector ID : GAM29 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 02:00:59.97 Half life ratio : 8.000 *

SAMPLE DATA

* Sample date : 24-FEB-2010 12:00:00 Nuclide Library : SOLID *
 * Sample ID : G248248008 Analyst initials: MXR1 *
 * Batch Number : 959280 Sample Quantity : 1.1877E+02 GRAM *
 * Recovery : 1.00000 Carrier Weight : 0.00000 *

QC DATA

* Standard Weight : 0.00000 *
 * CALIB. DATE/TIME : 23-FEB-2010 10:06:45 MS Isotope : *
 * MSD DPM : 0.000 MSD Isotope : *
 * LCS DPM : 0.000 LCS Isotope : *
 * LCSD DPM : 0.000 LCSD Isotope : *

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.705E+01	4.438E+00	7.056E-01	0.000E+00
CD-109	4.061E+00	1.296E+00	1.938E+00	0.000E+00
SN-126	3.923E-01	1.252E-01	1.880E-01	0.000E+00
TL-208	7.513E-01	1.200E-01	6.410E-02	0.000E+00
BI-211	5.380E+00	7.283E-01	4.311E-01	0.000E+00
PB-212	2.400E+00	2.733E-01	1.228E-01	0.000E+00
BI-214	1.502E+00	2.412E-01	1.356E-01	0.000E+00
PB-214	1.952E+00	2.846E-01	1.644E-01	0.000E+00
RA-224	6.447E+00	1.776E+00	1.315E+00	0.000E+00
RA-226	1.502E+00	2.412E-01	1.356E-01	0.000E+00
AC-228	2.282E+00	5.106E-01	2.774E-01	0.000E+00
RA-228	2.282E+00	5.106E-01	2.774E-01	0.000E+00
TH-228	2.400E+00	2.733E-01	1.228E-01	0.000E+00
TH-232	2.282E+00	5.106E-01	2.774E-01	0.000E+00
U-235	1.262E-01	2.759E-01	4.666E-01	0.000E+00
NP-237	1.171E+00	4.443E-01	5.469E-01	0.000E+00
ANH-511	1.479E-01	8.108E-02	6.448E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	2.554E-01	4.351E-01	7.534E-01	0.000E+00 NOT IDENT.
NA-22	-1.046E-02	5.314E-02	8.916E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.048E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-4.027E-02	5.145E-02	8.081E-02	0.000E+00 FAIL ABUN
V-48	-1.049E-02	1.254E-01	2.083E-01	0.000E+00 NOT IDENT.
CR-51	-2.111E-01	5.836E-01	9.239E-01	0.000E+00 NOT IDENT.
MN-54	2.978E-02	4.824E-02	8.468E-02	0.000E+00 NOT IDENT.
CO-56	2.047E-02	4.822E-02	8.409E-02	0.000E+00 FAIL ABUN
CO-57	3.046E-02	3.352E-02	5.848E-02	0.000E+00 NOT IDENT.
CO-58	-3.186E-02	4.977E-02	8.000E-02	0.000E+00 NOT IDENT.

FE-59	-2.243E-02	1.410E-01	2.311E-01	0.000E+00	NOT IDENT.
CO-60	2.319E-02	4.524E-02	8.056E-02	0.000E+00	NOT IDENT.
ZN-65	-3.765E-03	1.288E-01	1.820E-01	0.000E+00	NOT IDENT.
SE-75	3.060E-02	6.609E-02	1.020E-01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	6.516E-02	1.042E-01	0.000E+00	NOT IDENT.
Y-88	1.836E-03	3.709E-02	6.205E-02	0.000E+00	NOT IDENT.
Y-91	-7.061E+00	2.995E+01	4.842E+01	0.000E+00	NOT IDENT.
NB-94	1.116E-02	3.928E-02	6.841E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	6.750E-02	1.119E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.324E-01	3.814E-01	0.000E+00	NOT IDENT.
ZR-95	4.478E-02	8.977E-02	1.580E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.065E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.341E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.597E-02	5.448E-02	9.039E-02	0.000E+00	FAIL ABUN
RH-106	1.136E-01	3.988E-01	6.986E-01	0.000E+00	NOT IDENT.
RU-106	1.136E-01	3.987E-01	6.986E-01	0.000E+00	NOT IDENT.
AG-108M	-4.719E-02	3.696E-02	5.714E-02	0.000E+00	NOT IDENT.
AG-110M	-7.786E-03	3.974E-02	6.736E-02	0.000E+00	NOT IDENT.
SN-113	-2.107E-02	5.741E-02	9.531E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.629E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-2.949E-02	1.067E-01	1.769E-01	0.000E+00	NOT IDENT.
TE-123M	-1.083E-02	3.867E-02	6.412E-02	0.000E+00	NOT IDENT.
SB-124	-3.439E-02	9.202E-02	1.437E-01	0.000E+00	NOT IDENT.
SB-125	7.936E-02	1.162E-01	2.027E-01	0.000E+00	FAIL ABUN
TE-125M	-9.167E+00	1.457E+01	2.426E+01	0.000E+00	NOT IDENT.
I-126	4.092E-01	4.173E-01	7.550E-01	0.000E+00	NOT IDENT.
SB-126	1.391E-01	2.981E-01	4.584E-01	0.000E+00	NOT IDENT.
SB-127	2.005E+00	6.225E+00	1.089E+01	0.000E+00	NOT IDENT.
I-131	1.582E-01	2.654E-01	4.652E-01	0.000E+00	NOT IDENT.
TE-132	1.998E+00	5.096E+00	8.983E+00	0.000E+00	NOT IDENT.
BA-133	3.121E-02	5.944E-02	9.078E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.983E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	9.909E-02	1.195E-01	0.000E+00	FAIL ABUN
CS-135	3.796E-01	2.366E-01	3.812E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.331E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.080E-01	1.996E-01	3.163E-01	0.000E+00	NOT IDENT.
BA-137M	-2.112E-02	4.236E-02	7.039E-02	0.000E+00	NOT IDENT.
CS-137	-2.231E-02	4.475E-02	7.436E-02	0.000E+00	NOT IDENT.
CE-139	-2.893E-02	4.061E-02	6.597E-02	0.000E+00	NOT IDENT.
BA-140	-8.281E-02	5.085E-01	8.353E-01	0.000E+00	NOT IDENT.
LA-140	2.833E-02	1.566E-01	2.472E-01	0.000E+00	FAIL ABUN
CE-141	1.426E-01	9.872E-02	1.731E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.119E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-4.873E-02	3.099E-01	4.538E-01	0.000E+00	NOT IDENT.
PM-144	6.170E-03	4.361E-02	7.528E-02	0.000E+00	NOT IDENT.
PR-144	1.548E-01	3.295E+00	5.657E+00	0.000E+00	NOT IDENT.
PM-146	4.184E-02	5.187E-02	9.086E-02	0.000E+00	NOT IDENT.
ND-147	8.118E-01	1.177E+00	2.031E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.345E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-6.940E-02	1.506E-01	2.024E-01	0.000E+00	FAIL ABUN
GD-153	-7.892E-02	1.283E-01	1.865E-01	0.000E+00	NOT IDENT.
EU-154	-2.547E-02	1.503E-01	2.528E-01	0.000E+00	NOT IDENT.
EU-155	-4.262E-03	1.444E-01	2.460E-01	0.000E+00	FAIL ABUN
TB-160	-1.158E-01	1.845E-01	2.947E-01	0.000E+00	FAIL ABUN
HO-166M	4.166E-02	7.094E-02	1.258E-01	0.000E+00	FAIL ABUN
TA-182	-1.246E-01	2.772E-01	4.409E-01	0.000E+00	FAIL ABUN
IR-192	9.475E-03	4.486E-02	7.766E-02	0.000E+00	FAIL ABUN
HG-203	3.179E-02	6.299E-02	9.709E-02	0.000E+00	NOT IDENT.
BI-207	1.115E-02	6.672E-02	1.113E-01	0.000E+00	FAIL ABUN
PB-210	2.468E+00	4.507E+00	7.948E+00	0.000E+00	NOT IDENT.
PB-211	-2.893E-01	1.077E+00	1.532E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.707E-01	1.398E+00	0.000E+00	FAIL ABUN
RN-219	-7.599E-02	5.287E-01	8.633E-01	0.000E+00	FAIL ABUN
RA-223	6.530E-01	8.797E-01	1.362E+00	0.000E+00	FAIL ABUN
AC-227	3.052E-01	3.179E-01	5.679E-01	0.000E+00	FAIL ABUN
TH-227	3.052E-01	3.185E-01	5.679E-01	0.000E+00	FAIL ABUN
TH-229	-1.292E-02	6.851E-01	1.137E+00	0.000E+00	FAIL ABUN
PA-231	-2.918E-01	1.953E+00	3.155E+00	0.000E+00	FAIL ABUN
TH-231	6.530E-01	8.797E-01	1.362E+00	0.000E+00	FAIL ABUN
PA-233	-1.047E-02	7.670E-02	1.307E-01	0.000E+00	FAIL ABUN
PA-234	2.764E-02	3.666E-01	6.184E-01	0.000E+00	NOT IDENT.
PA-234M	1.560E+00	6.002E+00	1.016E+01	0.000E+00	FAIL ABUN
TH-234	4.806E-01	1.829E+00	3.184E+00	0.000E+00	FAIL ABUN
U-238	4.806E-01	1.829E+00	3.184E+00	0.000E+00	FAIL ABUN
NP-239	-4.376E-01	5.281E-01	8.686E-01	0.000E+00	FAIL ABUN
AM-241	-2.809E-01	2.140E-01	3.568E-01	0.000E+00	NOT IDENT.
CM-247	1.700E-02	4.979E-02	8.100E-02	0.000E+00	FAIL ABUN
CF-249	7.353E-02	5.045E-02	9.102E-02	0.000E+00	NOT IDENT.

CF-251	-1.494E-01	1.741E-01	2.801E-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]G248248008.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 11:03:02
Sample ID          : G248248008 Sample quantity   : 1.18770E+02 GRAM
Detector name      : GAM29 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:59.97 0.8%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity        : 5.00000
Batch ID           : 959280 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	1512	10.66*	1.210E+00	3.705E+01	3.705E+01	12.22
CD-109	88.03	270	3.70*	5.874E+00	3.923E+00	4.061E+00	32.56
SN-126	64.28	-----	9.60	3.540E+00	-----	Line Not Found	-----
	86.94	270	8.90	5.874E+00	1.631E+00	1.631E+00	51.93
	87.57	270	37.00*	5.874E+00	3.923E-01	3.923E-01	32.56
TL-208	277.37	42	6.60	4.527E+00	4.459E-01	4.459E-01	123.84
	583.19	535	85.00*	2.646E+00	7.513E-01	7.513E-01	16.30
	860.56	90	12.50	1.902E+00	1.195E+00	1.195E+00	42.74
BI-211	72.87	-----	1.23	4.632E+00	-----	Line Not Found	-----
	351.06	846	12.92*	3.848E+00	5.380E+00	5.380E+00	13.82
PB-212	74.82	591	10.28	4.835E+00	3.761E+00	3.761E+00	22.68
	77.11	789	17.10	5.080E+00	2.869E+00	2.869E+00	15.16
	238.63	1653	43.60*	4.991E+00	2.400E+00	2.400E+00	11.62
	300.09	145	3.30	4.291E+00	3.230E+00	3.230E+00	39.82
BI-214	609.32	552	45.49*	2.554E+00	1.502E+00	1.502E+00	16.38
	1120.29	161	14.92	1.503E+00	2.265E+00	2.265E+00	31.25
	1764.49	90	15.30	1.081E+00	1.720E+00	1.720E+00	30.26
PB-214	74.82	591	5.80	4.835E+00	6.666E+00	6.666E+00	21.97
	77.11	789	9.70	5.080E+00	5.057E+00	5.057E+00	17.26
	242.00	414	7.25	4.953E+00	3.646E+00	3.646E+00	28.71
	295.22	508	18.42	4.340E+00	2.008E+00	2.008E+00	16.51
	351.93	846	35.60*	3.848E+00	1.952E+00	1.952E+00	14.88
RA-224	240.99	414	4.10*	4.953E+00	6.447E+00	6.447E+00	28.12
RA-226	609.32	552	45.49*	2.554E+00	1.502E+00	1.502E+00	16.38
	1120.29	161	14.92	1.503E+00	2.265E+00	2.265E+00	31.25
	1764.49	90	15.30	1.081E+00	1.720E+00	1.720E+00	30.26
AC-228	338.32	310	11.27	3.953E+00	2.198E+00	2.198E+00	48.98
	911.20	337	25.80*	1.808E+00	2.282E+00	2.282E+00	22.83
	968.97	251	15.80	1.710E+00	2.933E+00	2.933E+00	31.83
RA-228	338.32	310	11.27	3.953E+00	2.198E+00	2.198E+00	48.98
	911.20	337	25.80*	1.808E+00	2.282E+00	2.282E+00	22.83
	968.97	251	15.80	1.710E+00	2.933E+00	2.933E+00	31.83

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	591	10.28	4.835E+00	3.761E+00	3.761E+00	20.52
	77.11	789	17.10	5.080E+00	2.869E+00	2.869E+00	15.16
	238.63	1653	43.60*	4.991E+00	2.400E+00	2.400E+00	11.62
	300.09	145	3.30	4.291E+00	3.230E+00	3.230E+00	72.26
TH-232	338.32	310	11.27	3.953E+00	2.198E+00	2.198E+00	27.08
	911.20	337	25.80*	1.808E+00	2.282E+00	2.282E+00	22.83
	968.97	251	15.80	1.710E+00	2.933E+00	2.933E+00	31.83
	89.96	201	3.47	6.033E+00	3.039E+00	3.039E+00	40.03
U-235	93.35	349	5.60	6.190E+00	3.182E+00	3.182E+00	35.46
	143.76	-----	10.96*	6.480E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.173E+00	-----	Line Not Found	-----
	185.72	253	57.20	5.792E+00	2.412E-01	2.412E-01	37.47
NP-237	205.31	-----	5.01	5.473E+00	-----	Line Not Found	-----
	86.48	270	12.40*	5.874E+00	1.171E+00	1.171E+00	38.73
	95.86	-----	2.68	6.306E+00	-----	Line Not Found	-----
ANH-511	511.00	137	100.00*	2.935E+00	1.479E-01	1.479E-01	55.96

Flag: "*" = Keyline

Total number of lines in spectrum 35
Number of unidentified lines 5
Number of lines tentatively identified by NID 30 85.71%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.705E+01	3.705E+01	0.453E+01	12.22	
CD-109	461.40D	1.04	3.923E+00	4.061E+00	1.322E+00	32.56	
SN-126	2.30E+05Y	1.00	3.923E-01	3.923E-01	1.277E-01	32.56	
TL-208	1.41E+10Y	1.00	7.513E-01	7.513E-01	1.225E-01	16.30	
BI-211	7.04E+08Y	1.00	5.380E+00	5.380E+00	0.743E+00	13.82	
PB-212	1.41E+10Y	1.00	2.400E+00	2.400E+00	0.279E+00	11.62	
BI-214	1600.00Y	1.00	1.502E+00	1.502E+00	0.246E+00	16.38	
PB-214	1600.00Y	1.00	1.952E+00	1.952E+00	0.290E+00	14.88	
RA-224	1.41E+10Y	1.00	6.447E+00	6.447E+00	1.813E+00	28.12	
RA-226	1600.00Y	1.00	1.502E+00	1.502E+00	0.246E+00	16.38	
AC-228	1.41E+10Y	1.00	2.282E+00	2.282E+00	0.521E+00	22.83	
RA-228	1.41E+10Y	1.00	2.282E+00	2.282E+00	0.521E+00	22.83	
TH-228	1.41E+10Y	1.00	2.400E+00	2.400E+00	0.279E+00	11.62	
TH-232	1.41E+10Y	1.00	2.282E+00	2.282E+00	0.521E+00	22.83	
U-235	7.04E+08Y	1.00	2.412E-01	2.412E-01	0.904E-01	37.47	K
NP-237	2.14E+06Y	1.00	1.171E+00	1.171E+00	0.453E+00	38.73	
ANH-511	1.00E+09Y	1.00	1.479E-01	1.479E-01	0.827E-01	55.96	

Total Activity : 7.211E+01 7.225E+01

Grand Total Activity : 7.211E+01 7.225E+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	129.15	148	536	0.95	258.37	253	11	2.06E-02	62.8	6.64E+00	
0	209.06	220	309	1.27	418.01	413	10	3.05E-02	32.9	5.41E+00	
0	270.58	207	307	1.25	540.92	534	14	2.87E-02	38.7	4.60E+00	T
0	327.77	111	243	0.95	655.18	649	12	1.54E-02	59.3	4.04E+00	T
0	409.13	51	202	1.17	817.77	813	12	7.04E-03	****	3.46E+00	
0	462.77	130	140	1.30	924.95	919	13	1.80E-02	41.5	3.16E+00	T
0	727.11	104	93	1.64	1453.35	1446	13	1.44E-02	42.3	2.20E+00	T
0	767.66	63	83	0.65	1534.43	1529	11	8.78E-03	61.1	2.10E+00	T
0	795.26	86	102	1.52	1589.61	1581	15	1.19E-02	56.4	2.04E+00	T
3	964.42	73	123	2.70	1927.87	1920	30	1.01E-02	66.8	1.72E+00	T
0	1237.99	55	79	1.91	2475.11	2470	12	7.63E-03	71.0	1.38E+00	T
0	1510.16	37	33	6.19	3019.77	3009	22	5.14E-03	85.7	1.18E+00	
0	1588.20	31	16	2.19	3175.96	3169	13	4.24E-03	66.7	1.14E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248248008.CNF;1
* Acquisition date   : 19-MAR-2010 11:03:02  Detector SN#      :
* Detector ID        : GAM29                  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 02:00:59.97          Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248248008            Analyst initials: MXR1
* Batch Number       : 959280                Sample Quantity : 1.18770E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 23-FEB-2010 10:06:45.9MS Isotope      :
* MSD ID             :                          MSD Isotope   :
* LCS ID             : 1032-A                    LCS Isotope   :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.705E+01	4.528E+00	7.076E-01	7.696E-02	52.367
CD-109	4.061E+00	1.322E+00	1.883E+00	1.778E-01	2.156
SN-126	3.923E-01	1.277E-01	1.827E-01	1.718E-02	2.147
TL-208	7.513E-01	1.225E-01	6.362E-02	5.961E-03	11.810
BI-211	5.380E+00	7.432E-01	4.254E-01	4.073E-02	12.647
PB-212	2.400E+00	2.789E-01	1.207E-01	1.203E-02	19.889
BI-214	1.502E+00	2.461E-01	1.346E-01	1.359E-02	11.162
PB-214	1.952E+00	2.904E-01	1.622E-01	1.792E-02	12.035
RA-224	6.447E+00	1.813E+00	1.292E+00	1.147E-01	4.989
RA-226	1.502E+00	2.461E-01	1.346E-01	1.359E-02	11.162
AC-228	2.282E+00	5.210E-01	2.766E-01	4.214E-02	8.250
RA-228	2.282E+00	5.210E-01	2.766E-01	4.214E-02	8.250
TH-228	2.400E+00	2.789E-01	1.207E-01	1.203E-02	19.889
TH-232	2.282E+00	5.210E-01	2.766E-01	4.214E-02	8.250
U-235	2.412E-01	9.040E-02	4.559E-01	7.706E-02	0.529
NP-237	1.171E+00	4.533E-01	5.314E-01	1.219E-01	2.203
ANH-511	1.479E-01	8.273E-02	6.389E-02	5.784E-03	2.314

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.554E-01		4.440E-01	7.459E-01	7.262E-02	0.342

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-1.046E-02		5.423E-02	8.927E-02	8.911E-03	-0.117
NA-24	7.349E+02		2.576E+03	Half-Life too short		
SC-46	-4.027E-02		5.250E-02	8.058E-02	1.052E-02	-0.500
V-48	-1.049E-02		1.280E-01	2.080E-01	2.523E-02	-0.050
CR-51	-2.111E-01		5.955E-01	9.107E-01	8.757E-02	-0.232
MN-54	2.978E-02		4.922E-02	8.438E-02	9.945E-03	0.353
CO-56	2.047E-02		4.921E-02	8.380E-02	1.011E-02	0.244
CO-57	3.046E-02		3.421E-02	5.703E-02	5.153E-03	0.534
CO-58	-3.186E-02		5.078E-02	7.969E-02	8.974E-03	-0.400
FE-59	-2.243E-02		1.439E-01	2.310E-01	2.453E-02	-0.097
CO-60	2.319E-02		4.617E-02	8.070E-02	8.851E-03	0.287
ZN-65	-3.765E-03		1.315E-01	1.820E-01	1.760E-02	-0.021
SE-75	3.060E-02		6.743E-02	1.004E-01	9.101E-03	0.305
SR-85	1.127E-01		6.649E-02	1.033E-01	9.345E-03	1.091
Y-88	1.836E-03		3.785E-02	6.239E-02	5.335E-03	0.029
Y-91	-7.061E+00		3.056E+01	4.845E+01	4.272E+00	-0.146
NB-94	1.116E-02		4.009E-02	6.803E-02	6.111E-03	0.164
NB-95	1.168E-01		6.887E-02	1.114E-01	1.144E-02	1.048
NB-95M	8.793E-01		2.372E-01	3.747E-01	3.773E-02	2.347
ZR-95	4.478E-02		9.160E-02	1.573E-01	1.709E-02	0.285
MO-99	6.191E-05		5.434E-05	Half-Life too short		
TC-99M	-4.627E+19		6.840E+19	Half-Life too short		
RU-103	1.597E-02		5.559E-02	8.954E-02	1.276E-02	0.178
RH-106	1.136E-01		4.070E-01	6.938E-01	9.153E-02	0.164
RU-106	1.136E-01		4.068E-01	6.938E-01	5.913E-02	0.164
AG-108M	-4.719E-02		3.771E-02	5.652E-02	5.288E-03	-0.835
AG-110M	-7.786E-03		4.055E-02	6.694E-02	5.691E-03	-0.116
SN-113	-2.107E-02		5.858E-02	9.417E-02	8.710E-03	-0.224
CD-115	2.994E-05		8.312E-05	Half-Life too short		
SN-117M	-2.949E-02		1.088E-01	1.730E-01	1.430E-02	-0.170
TE-123M	-1.083E-02		3.946E-02	6.272E-02	5.213E-03	-0.173
SB-124	-3.439E-02		9.390E-02	1.444E-01	1.430E-02	-0.238
SB-125	7.936E-02		1.186E-01	2.005E-01	1.852E-02	0.396
TE-125M	-9.167E+00		1.487E+01	2.363E+01	2.528E+00	-0.388
I-126	4.092E-01		4.258E-01	7.504E-01	6.216E-02	0.545
SB-126	1.391E-01		3.042E-01	4.560E-01	4.260E-02	0.305
SB-127	2.005E+00		6.352E+00	1.082E+01	1.513E+00	0.185
I-131	1.582E-01		2.708E-01	4.593E-01	4.421E-02	0.344
TE-132	1.998E+00		5.200E+00	8.822E+00	1.563E+00	0.227
BA-133	3.121E-02		6.065E-02	8.959E-02	1.193E-02	0.348
I-133	2.292E+00		2.032E+00	Half-Life too short		
CS-134	1.760E-01	+	1.011E-01	1.190E-01	1.305E-02	1.479
CS-135	3.796E-01		2.415E-01	3.750E-01	3.876E-02	1.012
I-135	2.280E+18		1.700E+18	Half-Life too short		
CS-136	-1.080E-01		2.036E-01	3.160E-01	3.579E-02	-0.342
BA-137M	-2.112E-02		4.322E-02	6.996E-02	5.735E-03	-0.302
CS-137	-2.231E-02		4.566E-02	7.390E-02	6.071E-03	-0.302
CE-139	-2.893E-02		4.144E-02	6.456E-02	5.262E-03	-0.448

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-140	-8.281E-02		5.189E-01	8.282E-01	2.816E-01	-0.100
LA-140	2.833E-02		1.598E-01	2.481E-01	2.510E-02	0.114
CE-141	1.426E-01		1.007E-01	1.692E-01	1.462E-02	0.843
CE-143	7.234E-02		1.081E-02	Half-Life too short		
CE-144	-4.873E-02		3.162E-01	4.430E-01	6.798E-02	-0.110
PM-144	6.170E-03		4.450E-02	7.486E-02	6.639E-03	0.082
PR-144	1.548E-01		3.363E+00	5.625E+00	4.985E-01	0.028
PM-146	4.184E-02		5.293E-02	8.991E-02	9.883E-03	0.465
ND-147	8.118E-01		1.201E+00	2.014E+00	3.056E-01	0.403
PM-149	5.857E-04		6.864E-04	Half-Life too short		
EU-152	-6.940E-02		1.537E-01	1.997E-01	1.928E-02	-0.348
GD-153	-7.892E-02		1.309E-01	1.815E-01	1.630E-02	-0.435
EU-154	-2.547E-02		1.534E-01	2.531E-01	3.147E-02	-0.101
EU-155	-4.262E-03		1.473E-01	2.396E-01	2.145E-02	-0.018
TB-160	-1.158E-01		1.883E-01	2.938E-01	3.766E-02	-0.394
HO-166M	4.166E-02		7.239E-02	1.251E-01	1.146E-02	0.333
TA-182	-1.246E-01		2.829E-01	4.412E-01	4.011E-02	-0.282
IR-192	9.475E-03		4.577E-02	7.654E-02	7.048E-03	0.124
HG-203	3.179E-02		6.428E-02	9.556E-02	8.894E-03	0.333
BI-207	1.115E-02		6.808E-02	1.112E-01	1.194E-02	0.100
PB-210	2.468E+00		4.599E+00	7.672E+00	7.321E-01	0.322
PB-211	-2.893E-01		1.099E+00	1.514E+00	7.337E-01	-0.191
BI-212	2.236E+00	+	9.906E-01	1.391E+00	1.817E-01	1.608
RN-219	-7.599E-02		5.395E-01	8.532E-01	1.289E-01	-0.089
RA-223	6.530E-01		8.976E-01	1.342E+00	2.366E-01	0.486
AC-227	3.052E-01		3.244E-01	5.584E-01	6.874E-02	0.546
TH-227	3.052E-01		3.250E-01	5.584E-01	7.726E-02	0.546
TH-229	-1.292E-02		6.991E-01	1.114E+00	9.398E-02	-0.012
PA-231	-2.918E-01		1.993E+00	3.106E+00	4.623E-01	-0.094
TH-231	6.530E-01		8.976E-01	1.342E+00	2.366E-01	0.486
PA-233	-1.047E-02		7.827E-02	1.288E-01	1.213E-02	-0.081
PA-234	2.764E-02		3.741E-01	6.171E-01	1.292E-01	0.045
PA-234M	1.560E+00		6.124E+00	1.014E+01	1.305E+00	0.154
TH-234	4.806E-01		1.866E+00	3.084E+00	5.571E-01	0.156
U-238	4.806E-01		1.866E+00	3.084E+00	5.571E-01	0.156
NP-239	-4.376E-01		5.389E-01	8.469E-01	7.563E-02	-0.517
AM-241	-2.809E-01		2.184E-01	3.454E-01	2.980E-02	-0.813
CM-247	1.700E-02		5.080E-02	8.005E-02	7.226E-03	0.212
CF-249	7.353E-02		5.148E-02	8.991E-02	8.105E-03	0.818
CF-251	-1.494E-01		1.777E-01	2.743E-01	2.267E-02	-0.545

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]G248248008          *
* Acquisition date   : 19-MAR-2010 11:03:02 Detector SN#                  *
* Detector ID        : GAM29                      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 02:00:59.97          Half life ratio : 8.000    *
*****
*
*                                     SAMPLE DATA                          *
*
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248248008          Analyst initials: MXR1          *
* Batch Number       : 959280              Sample Quantity : 1.1877E+02 GRAM *
* Recovery           : 1.00000             Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                              *
*
* CALIB. DATE/TIME   : 23-FEB-2010 10:06:45 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	4.438E+00	3.530E-01	2.264E+00
CD-109	4.061E+00	1.296E+00	9.694E-01	6.612E-01
SN-126	3.923E-01	1.252E-01	9.407E-02	6.387E-02
TL-208	7.513E-01	1.200E-01	3.207E-02	6.124E-02
BI-211	5.380E+00	7.283E-01	2.157E-01	3.716E-01
PB-212	2.400E+00	2.733E-01	6.144E-02	1.395E-01
BI-214	1.502E+00	2.412E-01	6.782E-02	1.230E-01
PB-214	1.952E+00	2.846E-01	8.225E-02	1.452E-01
RA-224	6.447E+00	1.776E+00	6.579E-01	9.063E-01
RA-226	1.502E+00	2.412E-01	6.782E-02	1.230E-01
AC-228	2.282E+00	5.106E-01	1.388E-01	2.605E-01
RA-228	2.282E+00	5.106E-01	1.388E-01	2.605E-01
TH-228	2.400E+00	2.733E-01	6.144E-02	1.395E-01
TH-232	2.282E+00	5.106E-01	1.388E-01	2.605E-01
U-235	1.262E-01	2.759E-01	2.335E-01	1.408E-01
NP-237	1.171E+00	4.443E-01	2.736E-01	2.267E-01
ANH-511	1.479E-01	8.108E-02	3.226E-02	4.137E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	2.554E-01	4.351E-01	3.769E-01	2.220E-01 NOT IDENT.
NA-22	-1.046E-02	5.314E-02	4.460E-02	2.711E-02 NOT IDENT.
NA-24	7.349E+08	5.048E+09	0.000E+00	2.576E+09 SHORT HLIF
SC-46	-4.027E-02	5.145E-02	4.043E-02	2.625E-02 FAIL ABUN
V-48	-1.049E-02	1.254E-01	1.042E-01	6.398E-02 NOT IDENT.
CR-51	-2.111E-01	5.836E-01	4.622E-01	2.978E-01 NOT IDENT.
MN-54	2.978E-02	4.824E-02	4.237E-02	2.461E-02 NOT IDENT.
CO-56	2.047E-02	4.822E-02	4.207E-02	2.460E-02 FAIL ABUN
CO-57	3.046E-02	3.352E-02	2.926E-02	1.710E-02 NOT IDENT.
CO-58	-3.186E-02	4.977E-02	4.003E-02	2.539E-02 NOT IDENT.

FE-59	-2.243E-02	1.410E-01	1.156E-01	7.194E-02	NOT IDENT.
CO-60	2.319E-02	4.524E-02	4.030E-02	2.308E-02	NOT IDENT.
ZN-65	-3.765E-03	1.288E-01	9.107E-02	6.573E-02	NOT IDENT.
SE-75	3.060E-02	6.609E-02	5.105E-02	3.372E-02	NOT IDENT.
SR-85	1.127E-01	6.516E-02	5.215E-02	3.325E-02	NOT IDENT.
Y-88	1.836E-03	3.709E-02	3.104E-02	1.892E-02	NOT IDENT.
Y-91	-7.061E+00	2.995E+01	2.422E+01	1.528E+01	NOT IDENT.
NB-94	1.116E-02	3.928E-02	3.423E-02	2.004E-02	NOT IDENT.
NB-95	1.168E-01	6.750E-02	5.600E-02	3.444E-02	NOT IDENT.
NB-95M	8.793E-01	2.324E-01	1.908E-01	1.186E-01	NOT IDENT.
ZR-95	4.478E-02	8.977E-02	7.907E-02	4.580E-02	NOT IDENT.
MO-99	6.191E+01	1.065E+02	0.000E+00	5.434E+01	SHORT HLIF
TC-99M	-4.627E+25	1.341E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.597E-02	5.448E-02	4.522E-02	2.780E-02	FAIL ABUN
RH-106	1.136E-01	3.988E-01	3.495E-01	2.035E-01	NOT IDENT.
RU-106	1.136E-01	3.987E-01	3.495E-01	2.034E-01	NOT IDENT.
AG-108M	-4.719E-02	3.696E-02	2.859E-02	1.886E-02	NOT IDENT.
AG-110M	-7.786E-03	3.974E-02	3.370E-02	2.027E-02	NOT IDENT.
SN-113	-2.107E-02	5.741E-02	4.769E-02	2.929E-02	NOT IDENT.
CD-115	2.994E+01	1.629E+02	0.000E+00	8.312E+01	SHORT HLIF
SN-117M	-2.949E-02	1.067E-01	8.851E-02	5.442E-02	NOT IDENT.
TE-123M	-1.083E-02	3.867E-02	3.208E-02	1.973E-02	NOT IDENT.
SB-124	-3.439E-02	9.202E-02	7.191E-02	4.695E-02	NOT IDENT.
SB-125	7.936E-02	1.162E-01	1.014E-01	5.928E-02	FAIL ABUN
TE-125M	-9.167E+00	1.457E+01	1.214E+01	7.434E+00	NOT IDENT.
I-126	4.092E-01	4.173E-01	3.777E-01	2.129E-01	NOT IDENT.
SB-126	1.391E-01	2.981E-01	2.293E-01	1.521E-01	NOT IDENT.
SB-127	2.005E+00	6.225E+00	5.446E+00	3.176E+00	NOT IDENT.
I-131	1.582E-01	2.654E-01	2.328E-01	1.354E-01	NOT IDENT.
TE-132	1.998E+00	5.096E+00	4.494E+00	2.600E+00	NOT IDENT.
BA-133	3.121E-02	5.944E-02	4.542E-02	3.033E-02	FAIL ABUN
I-133	2.292E+06	3.983E+06	0.000E+00	2.032E+06	SHORT HLIF
CS-134	1.760E-01	9.909E-02	5.977E-02	5.056E-02	FAIL ABUN
CS-135	3.796E-01	2.366E-01	1.907E-01	1.207E-01	NOT IDENT.
I-135	2.280E+24	3.331E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.080E-01	1.996E-01	1.583E-01	1.018E-01	NOT IDENT.
BA-137M	-2.112E-02	4.236E-02	3.522E-02	2.161E-02	NOT IDENT.
CS-137	-2.231E-02	4.475E-02	3.720E-02	2.283E-02	NOT IDENT.
CE-139	-2.893E-02	4.061E-02	3.301E-02	2.072E-02	NOT IDENT.
BA-140	-8.281E-02	5.085E-01	4.179E-01	2.595E-01	NOT IDENT.
LA-140	2.833E-02	1.566E-01	1.237E-01	7.992E-02	FAIL ABUN
CE-141	1.426E-01	9.872E-02	8.660E-02	5.037E-02	NOT IDENT.
CE-143	7.234E+04	2.119E+04	0.000E+00	1.081E+04	SHORT HLIF
CE-144	-4.873E-02	3.099E-01	2.270E-01	1.581E-01	NOT IDENT.
PM-144	6.170E-03	4.361E-02	3.766E-02	2.225E-02	NOT IDENT.
PR-144	1.548E-01	3.295E+00	2.830E+00	1.681E+00	NOT IDENT.
PM-146	4.184E-02	5.187E-02	4.546E-02	2.646E-02	NOT IDENT.
ND-147	8.118E-01	1.177E+00	1.016E+00	6.003E-01	FAIL ABUN
PM-149	5.857E+02	1.345E+03	0.000E+00	6.864E+02	SHORT HLIF
EU-152	-6.940E-02	1.506E-01	1.013E-01	7.685E-02	FAIL ABUN
GD-153	-7.892E-02	1.283E-01	9.331E-02	6.545E-02	NOT IDENT.
EU-154	-2.547E-02	1.503E-01	1.265E-01	7.670E-02	NOT IDENT.
EU-155	-4.262E-03	1.444E-01	1.231E-01	7.365E-02	FAIL ABUN
TB-160	-1.158E-01	1.845E-01	1.474E-01	9.413E-02	FAIL ABUN
HO-166M	4.166E-02	7.094E-02	6.293E-02	3.620E-02	FAIL ABUN
TA-182	-1.246E-01	2.772E-01	2.206E-01	1.414E-01	FAIL ABUN
IR-192	9.475E-03	4.486E-02	3.885E-02	2.289E-02	FAIL ABUN
HG-203	3.179E-02	6.299E-02	4.857E-02	3.214E-02	NOT IDENT.
BI-207	1.115E-02	6.672E-02	5.568E-02	3.404E-02	FAIL ABUN
PB-210	2.468E+00	4.507E+00	3.976E+00	2.299E+00	NOT IDENT.
PB-211	-2.893E-01	1.077E+00	7.663E-01	5.494E-01	NOT IDENT.
BI-212	2.236E+00	9.707E-01	6.994E-01	4.953E-01	FAIL ABUN
RN-219	-7.599E-02	5.287E-01	4.319E-01	2.697E-01	FAIL ABUN
RA-223	6.530E-01	8.797E-01	6.812E-01	4.488E-01	FAIL ABUN
AC-227	3.052E-01	3.179E-01	2.841E-01	1.622E-01	FAIL ABUN
TH-227	3.052E-01	3.185E-01	2.841E-01	1.625E-01	FAIL ABUN
TH-229	-1.292E-02	6.851E-01	5.688E-01	3.496E-01	FAIL ABUN
PA-231	-2.918E-01	1.953E+00	1.579E+00	9.966E-01	FAIL ABUN
TH-231	6.530E-01	8.797E-01	6.812E-01	4.488E-01	FAIL ABUN
PA-233	-1.047E-02	7.670E-02	6.541E-02	3.913E-02	FAIL ABUN
PA-234	2.764E-02	3.666E-01	3.094E-01	1.870E-01	NOT IDENT.
PA-234M	1.560E+00	6.002E+00	5.083E+00	3.062E+00	FAIL ABUN
TH-234	4.806E-01	1.829E+00	1.593E+00	9.332E-01	FAIL ABUN
U-238	4.806E-01	1.829E+00	1.593E+00	9.332E-01	FAIL ABUN
NP-239	-4.376E-01	5.281E-01	4.346E-01	2.694E-01	FAIL ABUN
AM-241	-2.809E-01	2.140E-01	1.785E-01	1.092E-01	NOT IDENT.
CM-247	1.700E-02	4.979E-02	4.052E-02	2.540E-02	FAIL ABUN
CF-249	7.353E-02	5.045E-02	4.554E-02	2.574E-02	NOT IDENT.

CF-251	-1.494E-01	1.741E-01	1.401E-01	8.884E-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	425.0903
49.72	509.4607
57.36	0.0000
59.54	670.5323
63.29	623.0629
63.29	623.0629
64.28	668.3995
67.75	593.7615
69.67	625.6169
70.83	677.6473
72.81	642.5168
72.87	642.5683
72.87	642.5683
74.82	644.2607
74.82	644.2607
74.82	644.2607
74.97	644.3907
77.11	646.2206
77.11	646.2206
77.11	646.2206
79.69	685.7042
79.80	685.8002
80.12	686.0829
80.19	770.0970
80.57	770.4697
81.00	783.8239
81.07	783.8919
81.07	783.8919
83.79	634.1364
83.79	634.1364
85.43	630.5544
86.48	683.4408
86.55	683.4998
86.79	768.3483
86.94	768.4923
87.57	736.4946
88.03	736.9057
88.47	737.2974
89.96	518.8327
91.11	519.5439
92.59	520.4528
92.59	520.4528
93.35	459.3921
94.67	437.0946
94.87	437.1953
94.87	437.1953
95.86	483.7685
97.43	497.8281
98.44	455.4910
99.53	424.8931
100.11	430.9284
103.18	517.4281
103.37	518.5738
105.31	503.0447
106.12	451.4746
109.28	514.5898
111.00	486.2487
111.76	521.1718
116.30	446.8706
117.23	458.8724
121.12	407.8441
121.78	391.1956
122.06	386.0164
123.07	388.1664
131.20	411.4357
133.52	446.5547
136.00	459.8088

136.47	472.8759
140.51	0.0000
140.51	0.0000
143.76	437.1659
144.24	422.2360
144.24	422.2360
145.44	396.7415
152.43	369.8128
153.25	378.7824
154.21	378.0037
154.21	378.0037
156.02	399.3184
158.56	403.4586
159.00	399.2327
162.66	389.4838
163.33	385.3095
165.86	408.1107
176.60	424.9578
177.52	415.2715
181.07	0.0000
184.41	403.6495
185.72	355.3360
193.51	359.6704
197.04	358.8049
205.31	361.2594
210.85	291.3555
215.65	336.9939
222.11	331.2501
227.38	326.9016
228.16	326.1515
228.18	326.1558
235.69	344.1320
235.96	344.1932
235.96	344.1932
238.63	319.1238
238.63	319.1238
240.99	319.6110
242.00	319.8188
244.70	245.2452
252.40	261.0993
252.80	251.8033
256.23	252.3394
256.23	252.3394
260.90	0.0000
264.66	246.7275
268.22	267.7313
269.46	230.5003
269.46	230.5003
271.23	230.7413
273.65	227.5195
276.40	213.6456
277.37	236.1611
277.60	233.4796
278.00	237.6068
279.20	261.5521
279.54	256.8461
280.46	263.3298
283.69	263.4256
284.31	251.8345
285.41	242.4472
285.90	0.0000
287.50	256.4365
293.27	0.0000
295.22	222.6883
295.96	222.7817
298.57	223.1074
299.98	223.2830
299.98	223.2830
300.09	211.7446
300.09	211.7446
300.13	211.7500
301.36	195.8424
302.85	212.0696
304.50	202.6146
304.50	202.6146
304.85	197.8280
308.46	206.9233
311.90	204.4063

316.51	198.1156
319.41	223.7137
320.08	216.4948
323.87	186.8703
323.87	186.8703
328.76	200.3830
333.37	279.2527
334.37	205.8728
334.37	205.8728
338.28	202.3588
338.28	202.3588
338.32	202.3613
338.32	202.3613
338.32	202.3613
340.48	185.2113
340.55	185.2182
344.28	220.7133
351.06	207.6288
351.93	228.4904
356.01	183.3627
364.49	151.2838
366.42	0.0000
383.85	193.8835
388.16	155.0189
388.63	146.9980
391.69	180.4815
400.66	177.1790
401.81	185.7145
402.40	174.7868
404.85	196.1158
410.95	157.6641
414.70	152.8345
423.72	157.5398
427.09	157.7729
427.87	154.7529
433.94	177.7685
453.88	132.6516
463.37	132.1377
468.07	123.3602
473.00	154.5979
476.78	134.9587
477.60	127.6785
487.02	125.0125
492.35	0.0000
497.08	111.8008
511.00	162.6078
514.00	159.2569
527.90	0.0000
529.87	0.0000
531.02	120.7550
537.26	128.5342
546.56	0.0000
563.25	139.5001
569.33	127.8842
569.50	121.3898
569.70	121.3980
583.19	94.7548
600.60	142.4509
602.73	129.7622
604.72	100.5872
609.32	113.2019
609.32	113.2019
610.33	115.4410
614.28	125.8175
618.01	118.4993
621.93	118.6542
621.93	118.6542
633.25	104.3328
635.95	103.5029
636.99	86.8972
645.85	101.0587
657.76	98.6612
661.66	118.3545
661.66	118.3545
664.57	0.0000
666.33	105.4662
666.50	105.4731
677.62	109.5947

685.70	91.0914
695.00	103.6017
696.49	118.7249
696.51	121.5516
697.00	129.1120
702.65	101.9597
706.68	110.5920
711.68	90.8828
720.70	89.5054
721.93	0.0000
722.78	104.2165
722.91	104.2210
723.31	112.3777
724.19	114.0356
727.33	104.3594
733.00	99.6377
735.93	101.0873
739.50	0.0000
747.24	87.0750
752.31	95.8293
753.82	83.4086
756.73	80.6008
763.94	77.4749
765.81	94.0106
766.42	110.5224
777.92	0.0000
778.90	120.7148
783.70	84.1343
785.37	94.0419
795.86	79.8499
801.95	98.3176
810.29	93.5371
810.76	90.6254
815.77	93.6797
818.51	75.1953
832.01	101.9412
834.85	96.1338
836.80	0.0000
846.77	69.8733
856.80	71.0493
860.56	79.0234
871.09	72.3109
873.19	67.3954
875.33	0.0000
879.36	88.3518
880.51	67.5241
883.24	69.5599
884.68	79.5280
889.28	89.5752
898.04	87.7852
911.20	77.0721
911.20	77.0721
911.20	77.0721
926.50	80.3874
937.49	97.7400
944.13	82.7624
946.00	75.7324
949.00	58.6101
962.29	83.4241
964.08	70.9998
966.15	71.0368
968.97	71.0852
968.97	71.0852
968.97	71.0852
983.53	79.4901
996.26	80.7567
1001.03	79.8250
1004.73	80.9207
1037.84	81.5523
1038.76	0.0000
1048.07	79.6757
1050.41	62.1191
1050.41	62.1191
1063.66	71.6532
1085.87	69.9280
1099.45	94.2188
1112.07	80.9849
1115.54	79.2467

1120.29	86.2408
1120.29	86.2408
1120.55	86.2475
1121.30	88.3647
1131.51	0.0000
1173.23	73.4023
1177.93	87.3185
1189.05	82.1885
1204.77	91.0250
1221.41	109.6077
1231.02	108.9006
1235.36	101.6058
1238.28	78.7150
1260.41	0.0000
1271.85	72.5809
1274.44	68.8950
1274.54	68.8950
1291.59	61.6563
1298.22	0.0000
1312.11	53.4633
1332.49	40.4910
1365.19	38.8493
1368.63	0.0000
1384.29	41.8424
1408.01	41.0729
1457.56	0.0000
1460.82	38.5770
1489.16	31.0179
1505.03	37.4231
1596.21	24.8818
1620.50	30.7329
1678.03	0.0000
1690.97	20.0572
1764.49	16.2333
1764.49	16.2333
1770.23	24.8794
1771.35	23.1063
1791.20	0.0000
1836.06	14.3608

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248248008

Total Uranium Activity	1.4883E+00	ug/g
Total Uranium Counting Unc.	5.4429E+00	ug/g
Total Uranium Tpu	2.7770E-06	ug/g
Total Uranium Mda	4.7403E+00	ug/g

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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                          *
*                               GROSS GAMMA REPORT                            *
*
*****
*
*  BATCH ID      : 959280                SAMPLE ID   : G248248008                *
*  ANALYST       : MXR1                  DETECTOR    : GAM29                  *
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00        *
*  ANALYSIS DATE : 19-MAR-2010 11:03:02.48  SAMPLE ALQT: 118.770 GRAM        *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.285E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.733E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 5.332E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.609E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 13:16:51.23

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057355.CNF;1
Sample date        : 5-MAR-2010 00:00:00. Acquisition date : 19-MAR-2010 11:16:19
Sample ID          : G1202057355      Sample quantity   : 1.52090E+02 GRAM
Detector name      : GAM02             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:02.92  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 959280             Detector SN#      :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	1459.54*	14	0	0.90	2920.08	2914	12	1.97E-03	41.4	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 13:16:54

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057355.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-MAR-2010 00:00:00   Acquisition date : 19-MAR-2010 11:16:19
Sample ID        : G1202057355           Sample quantity  : 152.09 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA2                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:02.92    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	*	3.192E-01	2.660E-01	2.810E-01	2.671E-02	1.136

---- 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	*	8.070E-02	1.847E-01	3.136E-01	3.325E-02	0.257
NA-22		1274.54	*	-3.606E-02	2.278E-02	2.310E-02	2.048E-03	-1.561
NA-24		1368.63	*	1.254E-01	2.278E-02	Half-Life too short		
SC-46		889.28	*	-2.225E-02	2.244E-02	2.971E-02	3.020E-03	-0.749
		1120.55		-2.048E-04	2.628E-02	4.450E-02	3.845E-03	-0.005
V-48		944.13		-1.406E-01	4.693E-01	7.153E-01	7.159E-02	-0.197
		983.53	*	1.578E-02	4.086E-02	6.980E-02	6.826E-03	0.226
		1312.11		1.029E-02	3.999E-02	6.906E-02	6.323E-03	0.149
CR-51		320.08	*	-5.122E-02	1.931E-01	3.125E-01	3.811E-02	-0.164
MN-54		834.85	*	-4.559E-03	2.112E-02	3.334E-02	3.275E-03	-0.137
CO-56		846.77	*	-8.878E-03	1.984E-02	2.964E-02	2.935E-03	-0.300
		1037.84		-1.177E-01	1.546E-01	2.219E-01	2.176E-02	-0.530
		1238.28		-2.717E-03	3.668E-02	5.962E-02	5.259E-03	-0.046
		1771.35		-1.112E-01	1.776E-01	2.661E-01	2.247E-02	-0.418
CO-57		122.06	*	1.935E-03	1.209E-02	2.015E-02	1.685E-03	0.096
		136.47		2.097E-04	1.030E-01	1.685E-01	1.589E-02	0.001
CO-58		810.76	*	-1.013E-02	2.006E-02	2.987E-02	2.893E-03	-0.339
FE-59		1099.45	*	-1.041E-03	4.192E-02	6.954E-02	6.629E-03	-0.015
		1291.59		9.931E-03	4.637E-02	8.047E-02	8.140E-03	0.123
CO-60		1173.23		7.225E-03	2.130E-02	3.740E-02	3.012E-03	0.193
		1332.49	*	-3.583E-03	1.940E-02	3.038E-02	2.830E-03	-0.118
ZN-65		1115.54	*	-2.343E-02	4.226E-02	6.303E-02	5.483E-03	-0.372
SE-75		121.12		-1.725E-02	6.473E-02	1.044E-01	1.136E-02	-0.165
		136.00		-2.324E-03	2.014E-02	3.267E-02	2.892E-03	-0.071
		264.66	*	-9.740E-03	2.576E-02	4.205E-02	5.141E-03	-0.232
		279.54		5.726E-02	6.389E-02	1.138E-01	1.438E-02	0.503
		400.66		-1.780E-02	1.461E-01	2.359E-01	2.881E-02	-0.075
SR-85		514.00	*	-6.348E-02	3.188E-02	4.074E-02	4.033E-03	-1.558

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-88	898.04			-1.332E-02	2.446E-02	3.601E-02	3.693E-03	-0.370
	1836.06	*		-2.350E-03	2.047E-02	3.265E-02	2.663E-03	-0.072
Y-91	1204.77	*		8.418E+00	8.068E+00	1.613E+01	1.339E+00	0.522
NB-94	702.65	*		2.852E-03	1.945E-02	3.277E-02	2.922E-03	0.087
	871.09			3.166E-03	1.878E-02	3.137E-02	3.154E-03	0.101
NB-95	765.81	*		-1.010E-02	2.627E-02	3.744E-02	3.505E-03	-0.270
NB-95M	235.69	*		6.661E-04	6.851E-02	1.163E-01	1.473E-02	0.006
ZR-95	724.19			-1.097E-02	4.668E-02	7.528E-02	7.351E-03	-0.146
	756.73	*		8.867E-03	3.302E-02	5.676E-02	5.757E-03	0.156
MO-99	140.51			-8.781E+00	1.140E+01	1.666E+01	3.978E+00	-0.527
	181.07			8.835E+00	8.350E+00	1.421E+01	2.809E+00	0.622
	366.42			7.395E+00	5.153E+01	8.602E+01	9.279E+00	0.086
	739.50	*		-4.198E-01	5.205E+00	8.465E+00	1.360E+00	-0.050
	777.92			-6.330E+00	1.399E+01	2.098E+01	1.982E+00	-0.302
TC-99M	140.51	*		-2.975E+09	1.399E+01	Half-Life too short		
RU-103	497.08	*		-1.272E-02	2.482E-02	3.731E-02	5.535E-03	-0.341
	610.33			2.931E-01	4.911E-01	8.260E-01	1.376E-01	0.355
RH-106	621.93	*		2.535E-02	1.764E-01	2.999E-01	4.067E-02	0.085
	1050.41			-1.963E-01	1.229E+00	1.997E+00	1.856E-01	-0.098
RU-106	621.93	*		2.535E-02	1.763E-01	2.999E-01	2.723E-02	0.085
	1050.41			-1.963E-01	1.229E+00	1.997E+00	1.856E-01	-0.098
AG-108M	433.94	*		1.047E-02	1.696E-02	2.945E-02	3.038E-03	0.356
	614.28			-1.290E-02	1.967E-02	3.018E-02	2.845E-03	-0.427
	722.91			-2.646E-02	2.075E-02	2.790E-02	2.602E-03	-0.949
CD-109	88.03	*		1.016E-01	3.611E-01	6.158E-01	6.183E-02	0.165
AG-110M	657.76	*		4.864E-03	1.925E-02	3.305E-02	2.949E-03	0.147
	677.62			1.564E-02	1.424E-01	2.406E-01	2.160E-02	0.065
	706.68			-4.650E-02	1.047E-01	1.610E-01	1.479E-02	-0.289
	763.94			6.271E-02	9.718E-02	1.588E-01	1.520E-02	0.395
	884.68			1.187E-02	2.851E-02	4.925E-02	5.109E-03	0.241
	937.49			-2.437E-02	6.528E-02	9.875E-02	1.018E-02	-0.247
	1384.29			2.023E-02	1.039E-01	1.757E-01	1.676E-02	0.115
	1505.03			-6.791E-02	1.610E-01	2.316E-01	2.137E-02	-0.293
SN-113	391.69	*		-1.603E-03	2.401E-02	3.905E-02	3.996E-03	-0.041
CD-115	260.90			-3.804E+01	6.584E+01	1.057E+02	1.283E+01	-0.360
	492.35			6.018E+00	1.818E+01	3.047E+01	3.042E+00	0.198
	527.90	*		4.405E-01	5.597E+00	8.406E+00	8.263E-01	0.052
SN-117M	156.02			-9.480E-01	1.141E+00	1.721E+00	1.672E-01	-0.551
	158.56	*		2.020E-02	2.770E-02	4.732E-02	4.661E-03	0.427
TE-123M	159.00	*		1.601E-02	1.463E-02	2.558E-02	2.538E-03	0.626
SB-124	602.73			1.995E-02	2.275E-02	4.148E-02	3.847E-03	0.481
	645.85			3.089E-02	2.420E-01	4.107E-01	3.818E-02	0.075
	722.78			-1.983E-01	1.962E-01	2.762E-01	2.554E-02	-0.718
	1690.97	*		1.992E-03	4.485E-02	7.561E-02	6.892E-03	0.026
SB-125	427.87	*		-4.253E-03	5.528E-02	8.924E-02	9.110E-03	-0.048
	463.37			6.060E-02	1.704E-01	2.860E-01	3.036E-02	0.212
	600.60			7.903E-02	1.062E-01	1.914E-01	1.893E-02	0.413
	635.95			-7.945E-02	1.602E-01	2.504E-01	2.404E-02	-0.317
TE-125M	109.28	*		-3.507E+00	5.160E+00	8.129E+00	8.459E-01	-0.431

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-126	388.63			-2.011E-02	9.263E-02	1.483E-01	1.499E-02	-0.136
	666.33	*		7.040E-02	1.225E-01	2.174E-01	1.880E-02	0.324
	753.82			3.662E-01	8.040E-01	1.422E+00	1.320E-01	0.257
SB-126	414.70			1.185E-02	3.994E-02	6.736E-02	6.773E-03	0.176
	666.50			3.878E-02	4.064E-02	7.515E-02	6.501E-03	0.516
	695.00			-5.460E-03	4.671E-02	7.630E-02	6.761E-03	-0.072
	697.00			4.709E-02	1.817E-01	2.750E-01	2.440E-02	0.171
	720.70	*		-7.087E-02	8.176E-02	1.149E-01	1.039E-02	-0.617
	856.80			6.057E-02	2.582E-01	4.350E-01	4.335E-02	0.139
SN-126	64.28			-8.583E-01	3.323E-01	4.454E-01	6.607E-02	-1.927
	86.94			-5.773E-02	1.516E-01	2.445E-01	1.018E-01	-0.236
	87.57	*		-8.770E-03	3.563E-02	5.870E-02	5.867E-03	-0.149
SB-127	252.40			1.656E+00	2.272E+00	3.860E+00	1.633E+00	0.429
	473.00			1.089E-01	8.670E-01	1.421E+00	1.934E-01	0.077
	685.70	*		-1.619E-01	6.289E-01	1.004E+00	1.136E-01	-0.161
	783.70			1.013E+00	1.378E+00	2.536E+00	3.248E-01	0.400
I-131	80.19			7.799E-01	1.882E+00	3.253E+00	3.014E-01	0.240
	284.31			-2.061E-01	7.787E-01	1.275E+00	1.615E-01	-0.162
	364.49	*		-6.872E-03	6.509E-02	1.061E-01	1.190E-02	-0.065
	636.99			4.159E-02	8.705E-01	1.461E+00	1.371E-01	0.028
TE-132	49.72			5.101E-01	1.286E+01	2.001E+01	2.192E+00	0.025
	111.76			6.412E+00	1.638E+01	2.640E+01	2.826E+00	0.243
	116.30			9.482E+00	1.283E+01	2.221E+01	2.365E+00	0.427
	228.16	*		1.217E-01	3.455E-01	5.636E-01	9.853E-02	0.216
BA-133	81.00			-2.213E-03	4.115E-02	6.895E-02	1.097E-02	-0.032
	276.40			-1.798E-01	1.926E-01	2.934E-01	4.890E-02	-0.613
	302.85			4.249E-02	7.667E-02	1.337E-01	2.087E-02	0.318
	356.01	*		4.683E-03	2.350E-02	3.954E-02	5.812E-03	0.118
	383.85			-1.972E-02	1.696E-01	2.749E-01	3.743E-02	-0.072
I-133	529.87	*		-5.583E-04	1.696E-01	Half-Life	too short	
	875.33			-2.395E-02	1.696E-01	Half-Life	too short	
	1298.22			3.446E-02	1.696E-01	Half-Life	too short	
CS-134	563.25			3.450E-02	1.968E-01	3.382E-01	3.274E-02	0.102
	569.33			-4.438E-02	1.138E-01	1.828E-01	1.767E-02	-0.243
	604.72			-3.184E-02	2.141E-02	2.967E-02	2.752E-03	-1.073
	795.86	*		2.941E-03	2.564E-02	4.269E-02	4.108E-03	0.069
	801.95			5.993E-02	2.675E-01	4.335E-01	4.184E-02	0.138
	1365.19			-3.537E-02	7.524E-01	1.218E+00	1.180E-01	-0.029
CS-135	268.22	*		5.771E-03	8.820E-02	1.492E-01	1.974E-02	0.039
I-135	546.56			-8.129E+08	8.820E-02	Half-Life	too short	
	836.80			-8.007E+08	8.820E-02	Half-Life	too short	
	1038.76			-1.248E+09	8.820E-02	Half-Life	too short	
	1131.51			6.391E+07	8.820E-02	Half-Life	too short	
	1260.41	*		4.400E+08	8.820E-02	Half-Life	too short	
	1457.56			4.247E+09	8.820E-02	Half-Life	too short	
	1678.03			-3.597E+08	8.820E-02	Half-Life	too short	
	1791.20			2.760E+08	8.820E-02	Half-Life	too short	
CS-136	153.25			1.623E-01	4.312E-01	7.198E-01	7.974E-02	0.226
	176.60			-7.336E-02	2.692E-01	4.239E-01	4.756E-02	-0.173

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	273.65			9.366E-02	2.460E-01	4.266E-01	5.480E-02	0.220
	340.55			-7.425E-02	7.386E-02	1.089E-01	1.273E-02	-0.682
	818.51			1.005E-02	3.720E-02	6.349E-02	6.174E-03	0.158
	1048.07	*		-3.399E-02	5.006E-02	7.269E-02	7.013E-03	-0.468
	1235.36			5.832E-04	2.341E-01	3.862E-01	4.523E-02	0.002
BA-137M	661.66	*		-2.181E-02	2.108E-02	2.552E-02	2.199E-03	-0.854
CS-137	661.66	*		-2.304E-02	2.227E-02	2.696E-02	2.328E-03	-0.854
CE-139	165.86	*		3.157E-03	1.643E-02	2.694E-02	2.763E-03	0.117
BA-140	162.66			-4.288E-01	4.819E-01	6.709E-01	7.096E-02	-0.639
	304.85			3.961E-01	7.588E-01	1.305E+00	3.979E-01	0.303
	423.72			-1.241E-01	1.139E+00	1.832E+00	6.101E-01	-0.068
	537.26	*		-2.492E-02	1.533E-01	2.393E-01	8.190E-02	-0.104
LA-140	328.76			1.589E-02	1.492E-01	2.503E-01	3.020E-02	0.063
	487.02			-1.965E-02	7.948E-02	1.241E-01	1.298E-02	-0.158
	815.77			4.905E-02	1.635E-01	2.804E-01	2.974E-02	0.175
	1596.21	*		-1.524E-02	4.913E-02	7.626E-02	6.898E-03	-0.200
CE-141	145.44	*		-2.111E-02	3.511E-02	5.472E-02	5.112E-03	-0.386
CE-143	57.36			5.170E-04	3.511E-02	Half-Life	too short	
	293.27	*		2.069E-05	3.511E-02	Half-Life	too short	
	664.57			2.305E-05	3.511E-02	Half-Life	too short	
	721.93			-2.923E-04	3.511E-02	Half-Life	too short	
CE-144	80.12			4.566E-01	1.076E+00	1.860E+00	1.714E-01	0.245
	133.52	*		1.949E-02	1.035E-01	1.718E-01	2.634E-02	0.113
PM-144	476.78			1.358E-02	3.763E-02	6.336E-02	6.763E-03	0.214
	618.01			5.366E-03	1.896E-02	3.272E-02	3.059E-03	0.164
	696.49	*		-1.155E-03	2.090E-02	3.439E-02	3.052E-03	-0.034
PR-144	696.51	*		-7.101E-02	1.566E+00	2.579E+00	2.288E-01	-0.028
	1489.16			-2.422E+00	8.317E+00	1.254E+01	1.160E+00	-0.193
PM-146	453.88	*		-5.079E-03	2.412E-02	3.807E-02	4.492E-03	-0.133
	633.25			9.204E-02	8.222E-01	1.390E+00	5.319E-01	0.066
	735.93			-3.251E-02	7.568E-02	1.153E-01	3.252E-02	-0.282
	747.24			2.350E-02	4.415E-02	7.900E-02	1.181E-02	0.297
ND-147	91.11			-5.065E-01	1.885E-01	2.987E-01	3.077E-02	-1.696
	319.41			-8.647E-01	1.747E+00	2.758E+00	3.276E-01	-0.314
	531.02	*		-9.522E-02	3.149E-01	4.823E-01	7.557E-02	-0.197
PM-149	285.90	*		-1.758E+01	4.214E+01	6.789E+01	1.213E+01	-0.259
EU-152	121.78			5.584E-03	3.484E-02	5.809E-02	5.618E-03	0.096
	244.70			-1.011E-01	1.721E-01	2.772E-01	3.289E-02	-0.365
	344.28	*		-3.394E-03	5.739E-02	9.443E-02	1.110E-02	-0.036
	778.90			-1.870E-02	1.132E-01	1.798E-01	1.700E-02	-0.104
	964.08			-1.702E-02	1.498E-01	2.367E-01	2.343E-02	-0.072
	1085.87			-7.093E-02	2.010E-01	3.144E-01	2.824E-02	-0.226
	1112.07			-3.118E-02	1.398E-01	2.227E-01	1.943E-02	-0.140
	1408.01			-2.899E-02	1.005E-01	1.526E-01	1.422E-02	-0.190
GD-153	69.67			-1.008E-01	7.308E-01	1.225E+00	1.026E-01	-0.082
	97.43	*		-5.237E-02	4.748E-02	6.643E-02	6.037E-03	-0.788
	103.18			1.689E-02	5.307E-02	9.018E-02	7.894E-03	0.187
EU-154	123.07			-7.494E-03	2.532E-02	4.069E-02	4.544E-03	-0.184
	723.31			-1.092E-01	9.203E-02	1.254E-01	1.241E-02	-0.871

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	873.19			-1.850E-01	1.692E-01	2.203E-01	2.860E-02	-0.840
	996.26			-6.658E-02	2.051E-01	3.095E-01	5.579E-02	-0.215
	1004.73			-3.619E-02	1.168E-01	1.865E-01	2.315E-02	-0.194
	1274.44	*		-1.034E-01	6.479E-02	6.423E-02	7.424E-03	-1.610
EU-155	86.55			3.877E-03	4.338E-02	7.316E-02	7.283E-03	0.053
	105.31	*		-1.885E-02	5.425E-02	8.782E-02	7.697E-03	-0.215
TB-160	86.79			-3.202E-02	1.163E-01	1.913E-01	1.895E-02	-0.167
	197.04			8.498E-02	3.542E-01	5.367E-01	5.859E-02	0.158
	215.65			1.815E-02	4.074E-01	6.497E-01	7.349E-02	0.028
	298.57			-2.989E-02	5.929E-02	9.441E-02	1.151E-02	-0.317
	879.36	*		3.394E-02	8.945E-02	1.529E-01	1.545E-02	0.222
	962.29			-1.263E-02	2.673E-01	4.270E-01	4.231E-02	-0.030
	966.15			6.540E-02	1.027E-01	1.817E-01	1.796E-02	0.360
	1177.93			4.426E-02	1.671E-01	2.900E-01	2.346E-02	0.153
	1271.85			7.366E-02	3.289E-01	5.661E-01	5.003E-02	0.130
HO-166M	80.57			2.116E-02	1.165E-01	1.984E-01	1.836E-02	0.107
	184.41			-1.623E-02	2.675E-02	4.556E-02	4.850E-03	-0.356
	280.46			3.231E-02	4.988E-02	8.759E-02	1.085E-02	0.369
	410.95			4.251E-02	1.273E-01	2.160E-01	2.170E-02	0.197
	711.68	*		-1.291E-02	2.853E-02	4.357E-02	3.913E-03	-0.296
	752.31			9.965E-03	1.256E-01	2.095E-01	1.942E-02	0.048
	810.29			-1.067E-02	3.115E-02	4.797E-02	4.636E-03	-0.222
TA-182	67.75			-1.507E-02	4.935E-02	8.177E-02	6.740E-03	-0.184
	100.11			9.199E-03	8.639E-02	1.448E-01	1.291E-02	0.064
	152.43			-3.557E-02	1.859E-01	2.978E-01	2.838E-02	-0.119
	222.11			1.903E-02	1.992E-01	3.184E-01	3.643E-02	0.060
	1121.30			3.061E-02	6.854E-02	1.221E-01	1.054E-02	0.251
	1189.05			3.171E-02	1.365E-01	2.357E-01	1.928E-02	0.135
	1221.41	*		-4.892E-02	8.383E-02	1.214E-01	1.024E-02	-0.403
	1231.02			-1.553E-02	2.115E-01	3.442E-01	2.929E-02	-0.045
IR-192	295.96			-6.335E-04	5.644E-02	9.428E-02	1.157E-02	-0.007
	308.46			-4.783E-02	5.264E-02	7.947E-02	9.606E-03	-0.602
	316.51	*		-4.889E-03	1.998E-02	3.249E-02	3.880E-03	-0.150
	468.07			5.120E-03	4.354E-02	7.125E-02	7.545E-03	0.072
HG-203	70.83			-3.634E-01	5.750E-01	9.231E-01	1.475E-01	-0.394
	72.87			2.004E-01	3.327E-01	5.828E-01	9.050E-02	0.344
	279.20	*		3.555E-02	2.224E-02	4.106E-02	5.155E-03	0.866
BI-207	72.81			4.393E-02	7.727E-02	1.355E-01	1.166E-02	0.324
	74.97			3.187E-02	4.506E-02	7.945E-02	6.966E-03	0.401
	569.70			1.672E-03	1.733E-02	2.948E-02	2.817E-03	0.057
	1063.66	*		1.907E-02	2.731E-02	5.058E-02	4.644E-03	0.377
	1770.23			-2.059E-01	3.871E-01	5.965E-01	5.041E-02	-0.345
TL-208	277.37			4.332E-02	2.029E-01	3.467E-01	5.323E-02	0.125
	583.19	*		9.264E-03	2.160E-02	3.781E-02	3.783E-03	0.245
	860.56			-9.968E-02	1.689E-01	2.352E-01	2.479E-02	-0.424
PB-210	46.54	*		2.604E+00	3.161E+00	5.229E+00	4.974E-01	0.498
BI-211	72.87			8.126E-01	1.345E+00	2.363E+00	2.034E-01	0.344
	351.06	*		-5.327E-02	1.354E-01	2.058E-01	2.375E-02	-0.259
PB-211	404.85	*		-6.249E-02	3.923E-01	6.278E-01	3.055E-01	-0.100

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BI-212	427.09			-2.504E-01	9.661E-01	1.518E+00	7.069E-01	-0.165
	832.01			1.870E-01	5.310E-01	8.999E-01	4.686E-01	0.208
	727.33	*		-1.317E-01	3.209E-01	4.545E-01	5.814E-02	-0.290
	785.37			2.036E-01	1.465E+00	2.459E+00	2.335E-01	0.083
PB-212	1620.50			-8.550E-02	1.483E+00	2.446E+00	2.196E-01	-0.035
	74.82			1.181E-01	1.579E-01	2.784E-01	3.644E-02	0.424
	77.11			-9.431E-02	8.959E-02	1.392E-01	1.245E-02	-0.677
	238.63	*		-2.331E-03	3.775E-02	6.371E-02	8.041E-03	-0.037
BI-214	300.09			7.811E-02	4.117E-01	6.993E-01	9.511E-02	0.112
	609.32	*		4.218E-02	4.761E-02	8.226E-02	8.730E-03	0.513
	1120.29			4.099E-02	1.554E-01	2.736E-01	2.993E-02	0.150
	1764.49			-3.542E-03	1.958E-01	3.726E-01	3.158E-02	-0.010
PB-214	74.82			2.093E-01	2.797E-01	4.935E-01	5.830E-02	0.424
	77.11			-1.663E-01	1.585E-01	2.454E-01	2.986E-02	-0.677
	242.00			-1.798E-01	1.976E-01	3.104E-01	4.086E-02	-0.579
	295.22			1.382E-02	7.624E-02	1.294E-01	1.794E-02	0.107
RN-219	351.93	*		2.186E-03	4.724E-02	7.463E-02	9.530E-03	0.029
	271.23			2.865E-02	1.287E-01	2.202E-01	2.970E-02	0.130
	401.81	*		5.425E-03	2.296E-01	3.766E-01	5.924E-02	0.014
	81.07			-2.818E-02	9.508E-02	1.567E-01	1.457E-02	-0.180
RA-223	83.79			-4.113E-02	6.028E-02	8.763E-02	8.391E-03	-0.469
	94.87			-1.541E+00	3.284E-01	3.471E-01	3.223E-02	-4.441
	144.24			-1.461E-01	4.127E-01	6.343E-01	6.402E-02	-0.230
	154.21			1.928E-01	1.963E-01	3.411E-01	3.536E-02	0.565
RA-224	269.46			7.753E-03	1.014E-01	1.716E-01	2.126E-02	0.045
	323.87	*		9.666E-02	3.266E-01	5.579E-01	1.066E-01	0.173
	338.28			-1.008E-01	5.116E-01	8.312E-01	1.186E-01	-0.121
	240.99	*		-3.355E-02	3.587E-01	6.040E-01	7.128E-02	-0.056
RA-226	609.32	*		4.218E-02	4.761E-02	8.226E-02	8.730E-03	0.513
	1120.29			4.099E-02	1.554E-01	2.736E-01	2.993E-02	0.150
	1764.49			-3.542E-03	1.958E-01	3.726E-01	3.158E-02	-0.010
	79.69			-1.280E-02	5.498E-01	9.240E-01	1.619E-01	-0.014
AC-227	235.96			6.109E-03	8.346E-02	1.423E-01	1.854E-02	0.043
	256.23	*		6.358E-02	1.530E-01	2.502E-01	3.681E-02	0.254
	299.98			1.002E-01	4.543E-01	7.734E-01	1.187E-01	0.130
	304.50			4.482E-01	9.275E-01	1.605E+00	2.984E-01	0.279
TH-227	334.37			-7.443E-01	9.885E-01	1.509E+00	2.625E-01	-0.493
	79.80			1.720E-01	7.151E-01	1.221E+00	2.688E-01	0.141
	235.96			6.109E-03	8.346E-02	1.423E-01	1.789E-02	0.043
	256.23	*		6.358E-02	1.530E-01	2.502E-01	4.006E-02	0.254
AC-228	299.98			1.002E-01	4.543E-01	7.734E-01	1.187E-01	0.130
	304.50			4.482E-01	9.275E-01	1.605E+00	2.984E-01	0.279
	334.37			-7.443E-01	9.885E-01	1.509E+00	2.625E-01	-0.493
	338.32			-2.541E-02	1.293E-01	2.095E-01	8.882E-02	-0.121
RA-228	911.20	*		-5.919E-02	8.306E-02	1.338E-01	1.711E-02	-0.442
	968.97			-6.826E-02	1.517E-01	2.342E-01	5.815E-02	-0.291
	338.32			-2.541E-02	1.293E-01	2.095E-01	8.882E-02	-0.121
	911.20	*		-5.919E-02	8.306E-02	1.338E-01	1.711E-02	-0.442
	968.97			-6.826E-02	1.517E-01	2.342E-01	5.815E-02	-0.291

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	74.82			1.181E-01	1.575E-01	2.784E-01	2.459E-02	0.424
	77.11			-9.431E-02	8.959E-02	1.392E-01	1.245E-02	-0.677
	238.63	*		-2.331E-03	3.775E-02	6.371E-02	8.041E-03	-0.037
	300.09			7.811E-02	4.144E-01	6.993E-01	4.323E-01	0.112
TH-229	85.43			-2.437E-02	8.603E-02	1.413E-01	1.378E-02	-0.172
	88.47			8.379E-03	5.612E-02	9.485E-02	9.467E-03	0.088
	193.51	*		-1.848E-01	3.051E-01	4.632E-01	5.022E-02	-0.399
	210.85			7.427E-02	4.436E-01	7.165E-01	8.033E-02	0.104
PA-231	283.69	*		-1.990E-01	8.188E-01	1.344E+00	2.293E-01	-0.148
	301.36			-1.216E-01	3.072E-01	4.943E-01	7.352E-02	-0.246
TH-231	81.07			-2.818E-02	9.508E-02	1.567E-01	1.457E-02	-0.180
	83.79			-4.113E-02	6.028E-02	8.763E-02	8.391E-03	-0.469
	94.87			-1.541E+00	3.284E-01	3.471E-01	3.223E-02	-4.441
	144.24			-1.461E-01	4.127E-01	6.343E-01	6.402E-02	-0.230
	154.21			1.928E-01	1.963E-01	3.411E-01	3.536E-02	0.565
	269.46			7.753E-03	1.014E-01	1.716E-01	2.126E-02	0.045
	323.87	*		9.666E-02	3.266E-01	5.579E-01	1.066E-01	0.173
	338.28			-1.008E-01	5.116E-01	8.312E-01	1.186E-01	-0.121
TH-232	338.32			-2.541E-02	1.289E-01	2.095E-01	2.408E-02	-0.121
	911.20	*		-5.919E-02	8.306E-02	1.338E-01	1.711E-02	-0.442
	968.97			-6.826E-02	1.517E-01	2.342E-01	5.815E-02	-0.291
PA-233	300.13			3.652E-02	2.048E-01	3.474E-01	5.955E-02	0.105
	311.90	*		1.018E-02	3.783E-02	6.446E-02	7.852E-03	0.158
	340.48			-3.233E-01	3.344E-01	4.824E-01	1.217E-01	-0.670
PA-234	94.67			-5.270E-01	1.270E-01	1.299E-01	1.674E-02	-4.058
	98.44			1.364E-02	5.122E-02	7.899E-02	4.412E-02	0.173
	111.00			-3.580E-04	1.032E-01	1.619E-01	1.941E-02	-0.002
	131.20			2.672E-02	5.259E-02	8.938E-02	7.700E-03	0.299
	569.50			-4.814E-02	1.585E-01	2.574E-01	2.461E-02	-0.187
	733.00			6.418E-02	1.911E-01	3.300E-01	7.393E-02	0.194
	880.51			9.638E-02	1.817E-01	3.164E-01	3.200E-02	0.305
	883.24			1.709E-02	1.746E-01	2.870E-01	1.935E-01	0.060
	926.50			-1.016E-01	9.935E-02	1.223E-01	3.157E-02	-0.831
	946.00	*		3.283E-02	1.524E-01	2.557E-01	4.969E-02	0.128
	949.00			6.735E-02	2.203E-01	3.757E-01	3.751E-02	0.179
PA-234M	766.42			-3.905E+00	7.237E+00	9.620E+00	4.894E+00	-0.406
	1001.03	*		3.121E-01	2.700E+00	4.745E+00	5.163E-01	0.066
TH-234	63.29	*		-9.435E-01	9.027E-01	1.445E+00	2.606E-01	-0.653
	92.59			2.408E-01	4.869E-01	8.984E-01	2.016E-01	0.268
U-235	89.96			-2.543E+00	8.279E-01	6.601E-01	1.653E-01	-3.853
	93.35			-1.761E-01	3.484E-01	6.255E-01	1.464E-01	-0.282
	143.76	*		-6.642E-02	1.258E-01	1.907E-01	3.282E-02	-0.348
	163.33			-9.232E-02	2.644E-01	3.856E-01	7.217E-02	-0.239
	185.72			5.131E-03	3.437E-02	6.052E-02	6.459E-03	0.085
	205.31			1.896E-01	2.925E-01	4.670E-01	9.080E-02	0.406
NP-237	86.48	*		9.235E-04	1.072E-01	1.799E-01	4.169E-02	0.005
	95.86			-1.343E+00	5.869E-01	6.626E-01	1.604E-01	-2.026
U-238	63.29	*		-9.435E-01	9.027E-01	1.445E+00	2.606E-01	-0.653
	92.59			2.408E-01	4.844E-01	8.984E-01	8.535E-02	0.268

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.53		8.881E-03	9.142E-02	1.408E-01	1.260E-02	0.063
		103.37		1.675E-02	4.846E-02	8.247E-02	7.212E-03	0.203
		106.12		-2.221E-02	4.354E-02	6.960E-02	6.008E-03	-0.319
		117.23	*	7.391E-02	2.108E-01	3.561E-01	2.985E-02	0.208
		228.18		4.089E-02	1.176E-01	1.919E-01	2.219E-02	0.213
		277.60		3.724E-02	9.514E-02	1.647E-01	2.039E-02	0.226
AM-241		59.54	*	-8.676E-02	9.277E-02	1.483E-01	1.215E-02	-0.585
CM-247		278.00		3.964E-01	4.083E-01	7.335E-01	9.085E-02	0.540
		287.50		6.502E-01	6.750E-01	1.215E+00	1.497E-01	0.535
		402.40	*	-1.072E-02	2.115E-02	3.258E-02	3.268E-03	-0.329
CF-249		252.80		3.025E-01	5.382E-01	9.458E-01	1.136E-01	0.320
		333.37		-3.459E-02	1.012E-01	1.623E-01	1.883E-02	-0.213
		388.16	*	-3.824E-03	2.330E-02	3.755E-02	3.800E-03	-0.102
CF-251		177.52	*	-4.751E-02	7.262E-02	1.104E-01	1.159E-02	-0.430
		227.38		1.137E-01	1.945E-01	3.236E-01	3.736E-02	0.351
		285.41		-1.163E+00	1.258E+00	1.927E+00	2.379E-01	-0.604
ANH-511		511.00	*	-5.870E-02	3.237E-02	5.448E-02	5.401E-03	-1.077

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057355
* Acquisition date   : 19-MAR-2010 11:16:19 Detector SN#      :
* Detector ID        : GAM02                                           Sensitivity      : 5.000
* Geometry           : CAN                                           Energy tolerance : 1.500
* Elapsed live time  : 0 02:00:00.00                               Abundance limit : 75.000
* Elapsed real time  : 0 02:00:02.92                               Half life ratio  : 8.000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-MAR-2010 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1202057355 Analyst initials: MXR1
* Batch Number       : 959280 Sample Quantity : 1.5209E+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	3.192E-01	2.607E-01	2.831E-01	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	8.070E-02	1.810E-01	3.253E-01	0.000E+00 NOT IDENT.
NA-22	-3.606E-02	2.232E-02	2.336E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.960E+05	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.225E-02	2.199E-02	3.032E-02	0.000E+00 NOT IDENT.
V-48	1.578E-02	4.004E-02	7.106E-02	0.000E+00 NOT IDENT.
CR-51	-5.122E-02	1.893E-01	3.274E-01	0.000E+00 NOT IDENT.
MN-54	-4.559E-03	2.070E-02	3.409E-02	0.000E+00 NOT IDENT.
CO-56	-8.878E-03	1.944E-02	3.030E-02	0.000E+00 NOT IDENT.
CO-57	1.935E-03	1.185E-02	2.161E-02	0.000E+00 NOT IDENT.
CO-58	-1.013E-02	1.966E-02	3.056E-02	0.000E+00 NOT IDENT.
FE-59	-1.041E-03	4.108E-02	7.059E-02	0.000E+00 NOT IDENT.
CO-60	-3.583E-03	1.902E-02	3.068E-02	0.000E+00 NOT IDENT.
ZN-65	-2.343E-02	4.142E-02	6.396E-02	0.000E+00 NOT IDENT.
SE-75	-9.740E-03	2.524E-02	4.427E-02	0.000E+00 NOT IDENT.
SR-85	-6.348E-02	3.124E-02	4.218E-02	0.000E+00 NOT IDENT.
Y-88	-2.350E-03	2.006E-02	3.269E-02	0.000E+00 NOT IDENT.
Y-91	8.418E+00	7.907E+00	1.633E+01	0.000E+00 NOT IDENT.
NB-94	2.852E-03	1.906E-02	3.366E-02	0.000E+00 NOT IDENT.
NB-95	-1.010E-02	2.574E-02	3.836E-02	0.000E+00 NOT IDENT.
NB-95M	6.661E-04	6.714E-02	1.228E-01	0.000E+00 NOT IDENT.
ZR-95	8.867E-03	3.236E-02	5.819E-02	0.000E+00 NOT IDENT.
MO-99	-4.198E-01	5.100E+00	8.683E+00	0.000E+00 NOT IDENT.
TC-99M	0.000E+00	3.811E+15	0.000E+00	0.000E+00 SHORT HLIF
RU-103	-1.272E-02	2.433E-02	3.866E-02	0.000E+00 NOT IDENT.
RH-106	2.535E-02	1.728E-01	3.090E-01	0.000E+00 NOT IDENT.
RU-106	2.535E-02	1.728E-01	3.090E-01	0.000E+00 NOT IDENT.

AG-108M	1.047E-02	1.662E-02	3.063E-02	0.000E+00	NOT IDENT.
CD-109	1.016E-01	3.539E-01	6.654E-01	0.000E+00	NOT IDENT.
AG-110M	4.864E-03	1.887E-02	3.401E-02	0.000E+00	NOT IDENT.
SN-113	-1.603E-03	2.353E-02	4.071E-02	0.000E+00	NOT IDENT.
CD-115	4.405E-01	5.485E+00	8.697E+00	0.000E+00	NOT IDENT.
SN-117M	2.020E-02	2.715E-02	5.043E-02	0.000E+00	NOT IDENT.
TE-123M	1.601E-02	1.434E-02	2.726E-02	0.000E+00	NOT IDENT.
SB-124	1.992E-03	4.396E-02	7.587E-02	0.000E+00	NOT IDENT.
SB-125	-4.253E-03	5.417E-02	9.282E-02	0.000E+00	NOT IDENT.
TE-125M	-3.507E+00	5.057E+00	8.740E+00	0.000E+00	NOT IDENT.
I-126	7.040E-02	1.201E-01	2.236E-01	0.000E+00	NOT IDENT.
SB-126	-7.087E-02	8.013E-02	1.179E-01	0.000E+00	NOT IDENT.
SN-126	-8.770E-03	3.492E-02	6.345E-02	0.000E+00	NOT IDENT.
SB-127	-1.619E-01	6.163E-01	1.032E+00	0.000E+00	NOT IDENT.
I-131	-6.872E-03	6.379E-02	1.108E-01	0.000E+00	NOT IDENT.
TE-132	1.217E-01	3.385E-01	5.954E-01	0.000E+00	NOT IDENT.
BA-133	4.683E-03	2.303E-02	4.132E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.008E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	2.941E-03	2.513E-02	4.370E-02	0.000E+00	NOT IDENT.
CS-135	5.771E-03	8.643E-02	1.570E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.683E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.399E-02	4.905E-02	7.389E-02	0.000E+00	NOT IDENT.
BA-137M	-2.181E-02	2.066E-02	2.625E-02	0.000E+00	NOT IDENT.
CS-137	-2.304E-02	2.182E-02	2.774E-02	0.000E+00	NOT IDENT.
CE-139	3.157E-03	1.610E-02	2.868E-02	0.000E+00	NOT IDENT.
BA-140	-2.492E-02	1.502E-01	2.475E-01	0.000E+00	NOT IDENT.
LA-140	-1.524E-02	4.815E-02	7.665E-02	0.000E+00	NOT IDENT.
CE-141	-2.111E-02	3.441E-02	5.844E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.782E+01	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.949E-02	1.015E-01	1.839E-01	0.000E+00	NOT IDENT.
PM-144	-1.155E-03	2.049E-02	3.533E-02	0.000E+00	NOT IDENT.
PR-144	-7.101E-02	1.534E+00	2.650E+00	0.000E+00	NOT IDENT.
PM-146	-5.079E-03	2.364E-02	3.954E-02	0.000E+00	NOT IDENT.
ND-147	-9.522E-02	3.086E-01	4.989E-01	0.000E+00	NOT IDENT.
PM-149	-1.758E+01	4.130E+01	7.132E+01	0.000E+00	NOT IDENT.
EU-152	-3.394E-03	5.624E-02	9.876E-02	0.000E+00	NOT IDENT.
GD-153	-5.237E-02	4.653E-02	7.162E-02	0.000E+00	NOT IDENT.
EU-154	-1.034E-01	6.350E-02	6.494E-02	0.000E+00	NOT IDENT.
EU-155	-1.885E-02	5.316E-02	9.450E-02	0.000E+00	NOT IDENT.
TB-160	3.394E-02	8.766E-02	1.561E-01	0.000E+00	NOT IDENT.
HO-166M	-1.291E-02	2.796E-02	4.473E-02	0.000E+00	NOT IDENT.
TA-182	-4.892E-02	8.216E-02	1.229E-01	0.000E+00	NOT IDENT.
IR-192	-4.889E-03	1.958E-02	3.405E-02	0.000E+00	NOT IDENT.
HG-203	3.555E-02	2.180E-02	4.316E-02	0.000E+00	NOT IDENT.
BI-207	1.907E-02	2.676E-02	5.140E-02	0.000E+00	NOT IDENT.
TL-208	9.264E-03	2.117E-02	3.902E-02	0.000E+00	NOT IDENT.
PB-210	2.604E+00	3.098E+00	5.734E+00	0.000E+00	NOT IDENT.
BI-211	-5.327E-02	1.327E-01	2.151E-01	0.000E+00	NOT IDENT.
PB-211	-6.249E-02	3.844E-01	6.539E-01	0.000E+00	NOT IDENT.
BI-212	-1.317E-01	3.145E-01	4.664E-01	0.000E+00	NOT IDENT.
PB-212	-2.331E-03	3.699E-02	6.723E-02	0.000E+00	NOT IDENT.
BI-214	4.218E-02	4.666E-02	8.479E-02	0.000E+00	NOT IDENT.
PB-214	2.186E-03	4.630E-02	7.800E-02	0.000E+00	NOT IDENT.
RN-219	5.425E-03	2.250E-01	3.923E-01	0.000E+00	NOT IDENT.
RA-223	9.666E-02	3.200E-01	5.844E-01	0.000E+00	NOT IDENT.
RA-224	-3.355E-02	3.515E-01	6.372E-01	0.000E+00	NOT IDENT.
RA-226	4.218E-02	4.666E-02	8.479E-02	0.000E+00	NOT IDENT.
AC-227	6.358E-02	1.499E-01	2.636E-01	0.000E+00	NOT IDENT.
TH-227	6.358E-02	1.500E-01	2.636E-01	0.000E+00	NOT IDENT.
AC-228	-5.919E-02	8.140E-02	1.365E-01	0.000E+00	NOT IDENT.
RA-228	-5.919E-02	8.140E-02	1.365E-01	0.000E+00	NOT IDENT.
TH-228	-2.331E-03	3.699E-02	6.723E-02	0.000E+00	NOT IDENT.
TH-229	-1.848E-01	2.990E-01	4.913E-01	0.000E+00	NOT IDENT.
PA-231	-1.990E-01	8.024E-01	1.412E+00	0.000E+00	NOT IDENT.
TH-231	9.666E-02	3.200E-01	5.844E-01	0.000E+00	NOT IDENT.
TH-232	-5.919E-02	8.140E-02	1.365E-01	0.000E+00	NOT IDENT.
PA-233	1.018E-02	3.707E-02	6.757E-02	0.000E+00	NOT IDENT.
PA-234	3.283E-02	1.494E-01	2.606E-01	0.000E+00	NOT IDENT.
PA-234M	3.121E-01	2.646E+00	4.828E+00	0.000E+00	NOT IDENT.
TH-234	-9.435E-01	8.847E-01	1.573E+00	0.000E+00	NOT IDENT.
U-235	-6.642E-02	1.233E-01	2.037E-01	0.000E+00	NOT IDENT.
NP-237	9.235E-04	1.051E-01	1.945E-01	0.000E+00	NOT IDENT.
U-238	-9.435E-01	8.847E-01	1.573E+00	0.000E+00	NOT IDENT.
NP-239	7.391E-02	2.066E-01	3.823E-01	0.000E+00	NOT IDENT.
AM-241	-8.676E-02	9.092E-02	1.617E-01	0.000E+00	NOT IDENT.
CM-247	-1.072E-02	2.073E-02	3.394E-02	0.000E+00	NOT IDENT.
CF-249	-3.824E-03	2.283E-02	3.915E-02	0.000E+00	NOT IDENT.
CF-251	-4.751E-02	7.116E-02	1.174E-01	0.000E+00	NOT IDENT.

ANH-511	-5.870E-02	3.172E-02	5.642E-02	0.000E+00 NOT IDENT.
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```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057355.CNF;1
Sample date        : 5-MAR-2010 00:00:00. Acquisition date : 19-MAR-2010 11:16:19
Sample ID          : G1202057355      Sample quantity   : 1.52090E+02 GRAM
Detector name      : GAM02            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:02.92  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials : MXR1
Abundance limit    : 75.00000         Sensitivity      : 5.00000
Batch ID           : 959280           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	14	10.66*	1.028E+00	3.192E-01	3.192E-01	83.32

Flag: "*" = Keyline

Total number of lines in spectrum 1
Number of unidentified lines 0
Number of lines tentatively identified by NID 1 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.192E-01	3.192E-01	2.660E-01	83.32	
Total Activity :			3.192E-01	3.192E-01			

Grand Total Activity : 3.192E-01 3.192E-01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202057355

Page : 3
Acquisition date : 19-MAR-2010 11:16:19

None

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057355.CNF;1
* Acquisition date   : 19-MAR-2010 11:16:19  Detector SN#      :
* Detector ID        : GAM02                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:02.92             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-MAR-2010 00:00:00.  Nuclide Library : SOLID
* Sample ID          : G1202057355             Analyst initials: MXR1
* Batch Number       : 959280                  Sample Quantity : 1.52090E+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	3.192E-01	2.660E-01	2.810E-01	2.671E-02	1.136

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	8.070E-02		1.847E-01	3.136E-01	3.325E-02	0.257
NA-22	-3.606E-02		2.278E-02	2.310E-02	2.048E-03	-1.561
NA-24	1.254E-01		9.998E-02	Half-Life too short		
SC-46	-2.225E-02		2.244E-02	2.971E-02	3.020E-03	-0.749
V-48	1.578E-02		4.086E-02	6.980E-02	6.826E-03	0.226
CR-51	-5.122E-02		1.931E-01	3.125E-01	3.811E-02	-0.164
MN-54	-4.559E-03		2.112E-02	3.334E-02	3.275E-03	-0.137
CO-56	-8.878E-03		1.984E-02	2.964E-02	2.935E-03	-0.300
CO-57	1.935E-03		1.209E-02	2.015E-02	1.685E-03	0.096
CO-58	-1.013E-02		2.006E-02	2.987E-02	2.893E-03	-0.339
FE-59	-1.041E-03		4.192E-02	6.954E-02	6.629E-03	-0.015

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60	-3.583E-03		1.940E-02	3.038E-02	2.830E-03	-0.118
ZN-65	-2.343E-02		4.226E-02	6.303E-02	5.483E-03	-0.372
SE-75	-9.740E-03		2.576E-02	4.205E-02	5.141E-03	-0.232
SR-85	-6.348E-02		3.188E-02	4.074E-02	4.033E-03	-1.558
Y-88	-2.350E-03		2.047E-02	3.265E-02	2.663E-03	-0.072
Y-91	8.418E+00		8.068E+00	1.613E+01	1.339E+00	0.522
NB-94	2.852E-03		1.945E-02	3.277E-02	2.922E-03	0.087
NB-95	-1.010E-02		2.627E-02	3.744E-02	3.505E-03	-0.270
NB-95M	6.661E-04		6.851E-02	1.163E-01	1.473E-02	0.006
ZR-95	8.867E-03		3.302E-02	5.676E-02	5.757E-03	0.156
MO-99	-4.198E-01		5.205E+00	8.465E+00	1.360E+00	-0.050
TC-99M	-2.975E+09		1.944E+09	Half-Life too short		
RU-103	-1.272E-02		2.482E-02	3.731E-02	5.535E-03	-0.341
RH-106	2.535E-02		1.764E-01	2.999E-01	4.067E-02	0.085
RU-106	2.535E-02		1.763E-01	2.999E-01	2.723E-02	0.085
AG-108M	1.047E-02		1.696E-02	2.945E-02	3.038E-03	0.356
CD-109	1.016E-01		3.611E-01	6.158E-01	6.183E-02	0.165
AG-110M	4.864E-03		1.925E-02	3.305E-02	2.949E-03	0.147
SN-113	-1.603E-03		2.401E-02	3.905E-02	3.996E-03	-0.041
CD-115	4.405E-01		5.597E+00	8.406E+00	8.263E-01	0.052
SN-117M	2.020E-02		2.770E-02	4.732E-02	4.661E-03	0.427
TE-123M	1.601E-02		1.463E-02	2.558E-02	2.538E-03	0.626
SB-124	1.992E-03		4.485E-02	7.561E-02	6.892E-03	0.026
SB-125	-4.253E-03		5.528E-02	8.924E-02	9.110E-03	-0.048
TE-125M	-3.507E+00		5.160E+00	8.129E+00	8.459E-01	-0.431
I-126	7.040E-02		1.225E-01	2.174E-01	1.880E-02	0.324
SB-126	-7.087E-02		8.176E-02	1.149E-01	1.039E-02	-0.617
SN-126	-8.770E-03		3.563E-02	5.870E-02	5.867E-03	-0.149
SB-127	-1.619E-01		6.289E-01	1.004E+00	1.136E-01	-0.161
I-131	-6.872E-03		6.509E-02	1.061E-01	1.190E-02	-0.065
TE-132	1.217E-01		3.455E-01	5.636E-01	9.853E-02	0.216
BA-133	4.683E-03		2.350E-02	3.954E-02	5.812E-03	0.118
I-133	-5.583E-04		1.024E-03	Half-Life too short		
CS-134	2.941E-03		2.564E-02	4.269E-02	4.108E-03	0.069
CS-135	5.771E-03		8.820E-02	1.492E-01	1.974E-02	0.039
I-135	4.400E+08		2.900E+08	Half-Life too short		
CS-136	-3.399E-02		5.006E-02	7.269E-02	7.013E-03	-0.468
BA-137M	-2.181E-02		2.108E-02	2.552E-02	2.199E-03	-0.854
CS-137	-2.304E-02		2.227E-02	2.696E-02	2.328E-03	-0.854
CE-139	3.157E-03		1.643E-02	2.694E-02	2.763E-03	0.117
BA-140	-2.492E-02		1.533E-01	2.393E-01	8.190E-02	-0.104
LA-140	-1.524E-02		4.913E-02	7.626E-02	6.898E-03	-0.200
CE-141	-2.111E-02		3.511E-02	5.472E-02	5.112E-03	-0.386
CE-143	2.069E-05		2.440E-05	Half-Life too short		
CE-144	1.949E-02		1.035E-01	1.718E-01	2.634E-02	0.113
PM-144	-1.155E-03		2.090E-02	3.439E-02	3.052E-03	-0.034
PR-144	-7.101E-02		1.566E+00	2.579E+00	2.288E-01	-0.028
PM-146	-5.079E-03		2.412E-02	3.807E-02	4.492E-03	-0.133

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	-9.522E-02		3.149E-01	4.823E-01	7.557E-02	-0.197
PM-149	-1.758E+01		4.214E+01	6.789E+01	1.213E+01	-0.259
EU-152	-3.394E-03		5.739E-02	9.443E-02	1.110E-02	-0.036
GD-153	-5.237E-02		4.748E-02	6.643E-02	6.037E-03	-0.788
EU-154	-1.034E-01		6.479E-02	6.423E-02	7.424E-03	-1.610
EU-155	-1.885E-02		5.425E-02	8.782E-02	7.697E-03	-0.215
TB-160	3.394E-02		8.945E-02	1.529E-01	1.545E-02	0.222
HO-166M	-1.291E-02		2.853E-02	4.357E-02	3.913E-03	-0.296
TA-182	-4.892E-02		8.383E-02	1.214E-01	1.024E-02	-0.403
IR-192	-4.889E-03		1.998E-02	3.249E-02	3.880E-03	-0.150
HG-203	3.555E-02		2.224E-02	4.106E-02	5.155E-03	0.866
BI-207	1.907E-02		2.731E-02	5.058E-02	4.644E-03	0.377
TL-208	9.264E-03		2.160E-02	3.781E-02	3.783E-03	0.245
PB-210	2.604E+00		3.161E+00	5.229E+00	4.974E-01	0.498
BI-211	-5.327E-02		1.354E-01	2.058E-01	2.375E-02	-0.259
PB-211	-6.249E-02		3.923E-01	6.278E-01	3.055E-01	-0.100
BI-212	-1.317E-01		3.209E-01	4.545E-01	5.814E-02	-0.290
PB-212	-2.331E-03		3.775E-02	6.371E-02	8.041E-03	-0.037
BI-214	4.218E-02		4.761E-02	8.226E-02	8.730E-03	0.513
PB-214	2.186E-03		4.724E-02	7.463E-02	9.530E-03	0.029
RN-219	5.425E-03		2.296E-01	3.766E-01	5.924E-02	0.014
RA-223	9.666E-02		3.266E-01	5.579E-01	1.066E-01	0.173
RA-224	-3.355E-02		3.587E-01	6.040E-01	7.128E-02	-0.056
RA-226	4.218E-02		4.761E-02	8.226E-02	8.730E-03	0.513
AC-227	6.358E-02		1.530E-01	2.502E-01	3.681E-02	0.254
TH-227	6.358E-02		1.530E-01	2.502E-01	4.006E-02	0.254
AC-228	-5.919E-02		8.306E-02	1.338E-01	1.711E-02	-0.442
RA-228	-5.919E-02		8.306E-02	1.338E-01	1.711E-02	-0.442
TH-228	-2.331E-03		3.775E-02	6.371E-02	8.041E-03	-0.037
TH-229	-1.848E-01		3.051E-01	4.632E-01	5.022E-02	-0.399
PA-231	-1.990E-01		8.188E-01	1.344E+00	2.293E-01	-0.148
TH-231	9.666E-02		3.266E-01	5.579E-01	1.066E-01	0.173
TH-232	-5.919E-02		8.306E-02	1.338E-01	1.711E-02	-0.442
PA-233	1.018E-02		3.783E-02	6.446E-02	7.852E-03	0.158
PA-234	3.283E-02		1.524E-01	2.557E-01	4.969E-02	0.128
PA-234M	3.121E-01		2.700E+00	4.745E+00	5.163E-01	0.066
TH-234	-9.435E-01		9.027E-01	1.445E+00	2.606E-01	-0.653
U-235	-6.642E-02		1.258E-01	1.907E-01	3.282E-02	-0.348
NP-237	9.235E-04		1.072E-01	1.799E-01	4.169E-02	0.005
U-238	-9.435E-01		9.027E-01	1.445E+00	2.606E-01	-0.653
NP-239	7.391E-02		2.108E-01	3.561E-01	2.985E-02	0.208
AM-241	-8.676E-02		9.277E-02	1.483E-01	1.215E-02	-0.585
CM-247	-1.072E-02		2.115E-02	3.258E-02	3.268E-03	-0.329
CF-249	-3.824E-03		2.330E-02	3.755E-02	3.800E-03	-0.102
CF-251	-4.751E-02		7.262E-02	1.104E-01	1.159E-02	-0.430
ANH-511	-5.870E-02		3.237E-02	5.448E-02	5.401E-03	-1.077

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]G1202057355          *
* Acquisition date   : 19-MAR-2010 11:16:19 Detector SN#      :              *
* Detector ID        : GAM02                                           Sensitivity   : 5.000          *
* Geometry           : CAN                                           Energy tolerance: 1.500          *
* Elapsed live time  : 0 02:00:00.00                               Abundance limit : 75.000          *
* Elapsed real time  : 0 02:00:02.92                               Half life ratio  : 8.000          *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-MAR-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202057355 Analyst initials: MXR1              *
* Batch Number       : 959280 Sample Quantity : 1.5209E+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	3.192E-01	2.607E-01	1.416E-01	1.330E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	8.070E-02	1.810E-01	1.627E-01	9.236E-02 NOT IDENT.
NA-22	-3.606E-02	2.232E-02	1.169E-02	1.139E-02 NOT IDENT.
NA-24	1.254E+05	1.960E+05	0.000E+00	9.998E+04 SHORT HLIF
SC-46	-2.225E-02	2.199E-02	1.517E-02	1.122E-02 NOT IDENT.
V-48	1.578E-02	4.004E-02	3.555E-02	2.043E-02 NOT IDENT.
CR-51	-5.122E-02	1.893E-01	1.638E-01	9.657E-02 NOT IDENT.
MN-54	-4.559E-03	2.070E-02	1.705E-02	1.056E-02 NOT IDENT.
CO-56	-8.878E-03	1.944E-02	1.516E-02	9.920E-03 NOT IDENT.
CO-57	1.935E-03	1.185E-02	1.081E-02	6.045E-03 NOT IDENT.
CO-58	-1.013E-02	1.966E-02	1.529E-02	1.003E-02 NOT IDENT.
FE-59	-1.041E-03	4.108E-02	3.532E-02	2.096E-02 NOT IDENT.
CO-60	-3.583E-03	1.902E-02	1.535E-02	9.702E-03 NOT IDENT.
ZN-65	-2.343E-02	4.142E-02	3.200E-02	2.113E-02 NOT IDENT.
SE-75	-9.740E-03	2.524E-02	2.215E-02	1.288E-02 NOT IDENT.
SR-85	-6.348E-02	3.124E-02	2.110E-02	1.594E-02 NOT IDENT.
Y-88	-2.350E-03	2.006E-02	1.635E-02	1.024E-02 NOT IDENT.
Y-91	8.418E+00	7.907E+00	8.171E+00	4.034E+00 NOT IDENT.
NB-94	2.852E-03	1.906E-02	1.684E-02	9.723E-03 NOT IDENT.
NB-95	-1.010E-02	2.574E-02	1.919E-02	1.313E-02 NOT IDENT.
NB-95M	6.661E-04	6.714E-02	6.144E-02	3.425E-02 NOT IDENT.
ZR-95	8.867E-03	3.236E-02	2.911E-02	1.651E-02 NOT IDENT.
MO-99	-4.198E-01	5.100E+00	4.344E+00	2.602E+00 NOT IDENT.
TC-99M	-2.975E+15	3.811E+15	0.000E+00	1.944E+15 SHORT HLIF
RU-103	-1.272E-02	2.433E-02	1.934E-02	1.241E-02 NOT IDENT.
RH-106	2.535E-02	1.728E-01	1.546E-01	8.818E-02 NOT IDENT.
RU-106	2.535E-02	1.728E-01	1.546E-01	8.817E-02 NOT IDENT.

AG-108M	1.047E-02	1.662E-02	1.532E-02	8.480E-03	NOT IDENT.
CD-109	1.016E-01	3.539E-01	3.329E-01	1.806E-01	NOT IDENT.
AG-110M	4.864E-03	1.887E-02	1.701E-02	9.625E-03	NOT IDENT.
SN-113	-1.603E-03	2.353E-02	2.037E-02	1.201E-02	NOT IDENT.
CD-115	4.405E-01	5.485E+00	4.351E+00	2.799E+00	NOT IDENT.
SN-117M	2.020E-02	2.715E-02	2.523E-02	1.385E-02	NOT IDENT.
TE-123M	1.601E-02	1.434E-02	1.364E-02	7.315E-03	NOT IDENT.
SB-124	1.992E-03	4.396E-02	3.796E-02	2.243E-02	NOT IDENT.
SB-125	-4.253E-03	5.417E-02	4.644E-02	2.764E-02	NOT IDENT.
TE-125M	-3.507E+00	5.057E+00	4.373E+00	2.580E+00	NOT IDENT.
I-126	7.040E-02	1.201E-01	1.119E-01	6.125E-02	NOT IDENT.
SB-126	-7.087E-02	8.013E-02	5.899E-02	4.088E-02	NOT IDENT.
SN-126	-8.770E-03	3.492E-02	3.174E-02	1.781E-02	NOT IDENT.
SB-127	-1.619E-01	6.163E-01	5.163E-01	3.144E-01	NOT IDENT.
I-131	-6.872E-03	6.379E-02	5.545E-02	3.255E-02	NOT IDENT.
TE-132	1.217E-01	3.385E-01	2.979E-01	1.727E-01	NOT IDENT.
BA-133	4.683E-03	2.303E-02	2.067E-02	1.175E-02	NOT IDENT.
I-133	-5.583E+02	2.008E+03	0.000E+00	1.024E+03	SHORT HLIF
CS-134	2.941E-03	2.513E-02	2.186E-02	1.282E-02	NOT IDENT.
CS-135	5.771E-03	8.643E-02	7.854E-02	4.410E-02	NOT IDENT.
I-135	4.400E+14	5.683E+14	0.000E+00	2.900E+14	SHORT HLIF
CS-136	-3.399E-02	4.905E-02	3.697E-02	2.503E-02	NOT IDENT.
BA-137M	-2.181E-02	2.066E-02	1.314E-02	1.054E-02	NOT IDENT.
CS-137	-2.304E-02	2.182E-02	1.388E-02	1.113E-02	NOT IDENT.
CS-139	3.157E-03	1.610E-02	1.435E-02	8.214E-03	NOT IDENT.
BA-140	-2.492E-02	1.502E-01	1.238E-01	7.664E-02	NOT IDENT.
LA-140	-1.524E-02	4.815E-02	3.835E-02	2.457E-02	NOT IDENT.
CE-141	-2.111E-02	3.441E-02	2.924E-02	1.756E-02	NOT IDENT.
CE-143	2.069E+01	4.782E+01	0.000E+00	2.440E+01	SHORT HLIF
CE-144	1.949E-02	1.015E-01	9.200E-02	5.177E-02	NOT IDENT.
PM-144	-1.155E-03	2.049E-02	1.768E-02	1.045E-02	NOT IDENT.
PR-144	-7.101E-02	1.534E+00	1.326E+00	7.829E-01	NOT IDENT.
PM-146	-5.079E-03	2.364E-02	1.978E-02	1.206E-02	NOT IDENT.
ND-147	-9.522E-02	3.086E-01	2.496E-01	1.575E-01	NOT IDENT.
PM-149	-1.758E+01	4.130E+01	3.568E+01	2.107E+01	NOT IDENT.
EU-152	-3.394E-03	5.624E-02	4.941E-02	2.870E-02	NOT IDENT.
GD-153	-5.237E-02	4.653E-02	3.583E-02	2.374E-02	NOT IDENT.
EU-154	-1.034E-01	6.350E-02	3.249E-02	3.240E-02	NOT IDENT.
EU-155	-1.885E-02	5.316E-02	4.728E-02	2.712E-02	NOT IDENT.
TB-160	3.394E-02	8.766E-02	7.810E-02	4.473E-02	NOT IDENT.
HO-166M	-1.291E-02	2.796E-02	2.238E-02	1.427E-02	NOT IDENT.
TA-182	-4.892E-02	8.216E-02	6.151E-02	4.192E-02	NOT IDENT.
IR-192	-4.889E-03	1.958E-02	1.704E-02	9.988E-03	NOT IDENT.
HG-203	3.555E-02	2.180E-02	2.159E-02	1.112E-02	NOT IDENT.
BI-207	1.907E-02	2.676E-02	2.571E-02	1.365E-02	NOT IDENT.
TL-208	9.264E-03	2.117E-02	1.952E-02	1.080E-02	NOT IDENT.
PB-210	2.604E+00	3.098E+00	2.869E+00	1.581E+00	NOT IDENT.
BI-211	-5.327E-02	1.327E-01	1.076E-01	6.769E-02	NOT IDENT.
PB-211	-6.249E-02	3.844E-01	3.271E-01	1.961E-01	NOT IDENT.
BI-212	-1.317E-01	3.145E-01	2.333E-01	1.604E-01	NOT IDENT.
PB-212	-2.331E-03	3.699E-02	3.363E-02	1.887E-02	NOT IDENT.
BI-214	4.218E-02	4.666E-02	4.242E-02	2.381E-02	NOT IDENT.
PB-214	2.186E-03	4.630E-02	3.902E-02	2.362E-02	NOT IDENT.
RN-219	5.425E-03	2.250E-01	1.963E-01	1.148E-01	NOT IDENT.
RA-223	9.666E-02	3.200E-01	2.924E-01	1.633E-01	NOT IDENT.
RA-224	-3.355E-02	3.515E-01	3.188E-01	1.793E-01	NOT IDENT.
RA-226	4.218E-02	4.666E-02	4.242E-02	2.381E-02	NOT IDENT.
AC-227	6.358E-02	1.499E-01	1.319E-01	7.649E-02	NOT IDENT.
TH-227	6.358E-02	1.500E-01	1.319E-01	7.651E-02	NOT IDENT.
AC-228	-5.919E-02	8.140E-02	6.830E-02	4.153E-02	NOT IDENT.
RA-228	-5.919E-02	8.140E-02	6.830E-02	4.153E-02	NOT IDENT.
TH-228	-2.331E-03	3.699E-02	3.363E-02	1.887E-02	NOT IDENT.
TH-229	-1.848E-01	2.990E-01	2.458E-01	1.526E-01	NOT IDENT.
PA-231	-1.990E-01	8.024E-01	7.064E-01	4.094E-01	NOT IDENT.
TH-231	9.666E-02	3.200E-01	2.924E-01	1.633E-01	NOT IDENT.
TH-232	-5.919E-02	8.140E-02	6.830E-02	4.153E-02	NOT IDENT.
PA-233	1.018E-02	3.707E-02	3.381E-02	1.891E-02	NOT IDENT.
PA-234	3.283E-02	1.494E-01	1.304E-01	7.622E-02	NOT IDENT.
PA-234M	3.121E-01	2.646E+00	2.416E+00	1.350E+00	NOT IDENT.
TH-234	-9.435E-01	8.847E-01	7.870E-01	4.514E-01	NOT IDENT.
U-235	-6.642E-02	1.233E-01	1.019E-01	6.289E-02	NOT IDENT.
NP-237	9.235E-04	1.051E-01	9.730E-02	5.362E-02	NOT IDENT.
U-238	-9.435E-01	8.847E-01	7.870E-01	4.514E-01	NOT IDENT.
NP-239	7.391E-02	2.066E-01	1.913E-01	1.054E-01	NOT IDENT.
AM-241	-8.676E-02	9.092E-02	8.088E-02	4.639E-02	NOT IDENT.
CM-247	-1.072E-02	2.073E-02	1.698E-02	1.057E-02	NOT IDENT.
CF-249	-3.824E-03	2.283E-02	1.959E-02	1.165E-02	NOT IDENT.
CF-251	-4.751E-02	7.116E-02	5.871E-02	3.631E-02	NOT IDENT.

ANH-511	-5.870E-02	3.172E-02	2.822E-02	1.618E-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	87.6060
49.72	88.5981
57.36	0.0000
59.54	116.8152
63.29	85.9972
63.29	85.9972
64.28	98.4432
67.75	80.9469
69.67	76.0732
70.83	89.6254
72.81	79.3992
72.87	79.4118
72.87	79.4118
74.82	83.4099
74.82	83.4099
74.82	83.4099
74.97	83.4426
77.11	109.1688
77.11	109.1688
77.11	109.1688
79.69	96.2631
79.80	89.9307
80.12	86.3663
80.19	86.3817
80.57	89.1938
81.00	94.7557
81.07	102.0623
81.07	102.0623
83.79	95.4053
83.79	95.4053
85.43	93.0195
86.48	101.5612
86.55	99.7311
86.79	109.0267
86.94	109.0657
87.57	106.4508
88.03	98.2255
88.47	107.6024
89.96	311.8227
91.11	161.4554
92.59	99.2591
92.59	99.2591
93.35	97.5529
94.67	293.5220
94.87	299.2993
94.87	299.2993
95.86	163.1827
97.43	101.2755
98.44	75.8858
99.53	78.9164
100.11	90.4382
103.18	83.3604
103.37	83.3936
105.31	104.9024
106.12	108.9331
109.28	117.3941
111.00	98.3261
111.76	94.5741
116.30	83.6088
117.23	93.6113
121.12	87.3510
121.78	77.5196
122.06	77.5596
123.07	87.6665
131.20	82.8909
133.52	92.3617
136.00	90.7184

136.47	85.6902
140.51	121.1977
140.51	0.0000
143.76	103.2644
144.24	95.0771
144.24	95.0771
145.44	121.1514
152.43	99.4763
153.25	87.0232
154.21	72.4527
154.21	72.4527
156.02	100.0349
158.56	77.1689
159.00	69.8162
162.66	101.0496
163.33	89.4388
165.86	91.9130
176.60	95.5186
177.52	99.9895
181.07	75.3642
184.41	111.9205
185.72	104.4252
193.51	101.0744
197.04	82.5725
205.31	73.3002
210.85	68.1299
215.65	75.3840
222.11	77.1205
227.38	63.7006
228.16	64.9175
228.18	64.9192
235.69	92.9586
235.96	92.9870
235.96	92.9870
238.63	87.1084
238.63	87.1084
240.99	93.5134
242.00	98.0345
244.70	77.9534
252.40	62.5291
252.80	64.3436
256.23	61.8885
256.23	61.8885
260.90	80.2217
264.66	76.0109
268.22	70.8410
269.46	70.0221
269.46	70.0221
271.23	65.5928
273.65	52.0555
276.40	74.1775
277.37	58.6670
277.60	59.5966
278.00	53.1997
279.20	49.5901
279.54	60.6313
280.46	63.4441
283.69	66.4146
284.31	63.6852
285.41	75.7652
285.90	66.5574
287.50	47.2187
293.27	0.0000
295.22	58.7635
295.96	61.6051
298.57	64.5643
299.98	53.4062
299.98	53.4062
300.09	53.4123
300.09	53.4123
300.13	53.4140
301.36	65.6720
302.85	51.6708
304.50	55.5142
304.50	55.5142
304.85	56.4734
308.46	62.3282
311.90	56.8405

316.51	59.9325
319.41	55.3193
320.08	50.5803
323.87	42.1335
323.87	42.1335
328.76	48.0850
333.37	58.8992
334.37	65.7152
334.37	65.7152
338.28	54.3004
338.28	54.3004
338.32	54.3021
338.32	54.3021
338.32	54.3021
340.48	61.2024
340.55	61.2062
344.28	56.5265
351.06	56.8477
351.93	46.1000
356.01	46.2549
364.49	51.5303
366.42	52.6021
383.85	47.2919
388.16	48.4592
388.63	47.4665
391.69	40.4913
400.66	45.8617
401.81	42.8415
402.40	47.9624
404.85	41.9159
410.95	33.8890
414.70	36.0414
423.72	46.6411
427.09	50.9088
427.87	45.7396
433.94	33.4077
453.88	39.1612
463.37	43.6720
468.07	47.0132
473.00	37.5183
476.78	33.3126
477.60	32.2549
487.02	38.9416
492.35	31.4758
497.08	44.6335
511.00	49.4131
514.00	107.8088
527.90	19.9688
529.87	0.0000
531.02	34.4550
537.26	34.5817
546.56	0.0000
563.25	29.8966
569.33	38.1804
569.50	38.1845
569.70	32.7331
583.19	22.9028
600.60	30.5194
602.73	29.6289
604.72	58.3934
609.32	24.1579
609.32	24.1579
610.33	27.8899
614.28	37.2637
618.01	30.8034
621.93	28.0605
621.93	28.0605
633.25	29.1669
635.95	34.8600
636.99	30.1656
645.85	20.8329
657.76	25.7212
661.66	30.5430
661.66	30.5430
664.57	0.0000
666.33	25.8306
666.50	21.0488
677.62	17.3162

685.70	26.0758
695.00	35.8934
696.49	33.9772
696.51	33.9772
697.00	29.1306
702.65	29.2083
706.68	24.3866
711.68	21.5107
720.70	23.5646
721.93	0.0000
722.78	28.5016
722.91	33.4173
723.31	31.4578
724.19	22.6193
727.33	26.5913
733.00	18.7611
735.93	23.7299
739.50	19.8071
747.24	12.9197
752.31	15.9371
753.82	13.9545
756.73	14.9703
763.94	14.0171
765.81	26.0533
766.42	27.0626
777.92	18.1327
778.90	15.1168
783.70	11.1088
785.37	16.1699
795.86	23.3487
801.95	20.3560
810.29	21.4486
810.76	21.4527
815.77	16.3793
818.51	16.3980
832.01	17.5205
834.85	25.7953
836.80	0.0000
846.77	19.6995
856.80	20.8203
860.56	23.9793
871.09	17.7981
873.19	29.3385
875.33	0.0000
879.36	23.1075
880.51	22.0674
883.24	22.0910
884.68	17.8932
889.28	26.3605
898.04	25.3916
911.20	13.8233
911.20	13.8233
911.20	13.8233
926.50	18.1812
937.49	23.6253
944.13	19.3772
946.00	14.0042
949.00	12.9413
962.29	19.5064
964.08	21.6875
966.15	16.2781
968.97	20.6398
968.97	20.6398
968.97	20.6398
983.53	17.4719
996.26	20.8416
1001.03	10.9875
1004.73	21.0866
1037.84	19.4739
1038.76	0.0000
1048.07	17.6811
1050.41	14.9010
1050.41	14.9010
1063.66	12.1605
1085.87	17.9045
1099.45	13.2509
1112.07	14.2554
1115.54	18.0769

1120.29	9.5284
1120.29	9.5284
1120.55	11.4351
1121.30	14.2975
1131.51	0.0000
1173.23	12.5938
1177.93	12.6117
1189.05	11.6812
1204.77	4.8901
1221.41	15.7266
1231.02	14.7852
1235.36	13.8171
1238.28	13.8291
1260.41	0.0000
1271.85	9.9740
1274.44	21.9588
1274.54	21.9597
1291.59	6.0181
1298.22	0.0000
1312.11	10.0879
1332.49	10.1449
1365.19	12.2822
1368.63	0.0000
1384.29	13.3740
1408.01	11.3872
1457.56	0.0000
1460.82	7.1959
1489.16	11.6257
1505.03	10.6104
1596.21	10.2262
1620.50	9.3492
1678.03	0.0000
1690.97	5.6999
1764.49	6.7578
1764.49	6.7578
1770.23	12.5656
1771.35	10.6351
1791.20	0.0000
1836.06	5.8805

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202057355

Total Uranium Activity	-2.8378E+00	ug/g
Total Uranium Counting Unc.	2.6325E+00	ug/g
Total Uranium Tpu	1.3431E-06	ug/g
Total Uranium Mda	2.3418E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 959280          SAMPLE ID   : G1202057355
*  ANALYST       : MXR1            DETECTOR    : GAM02
*  SAMPLE DATE   : 5-MAR-2010 00:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 19-MAR-2010 11:16:19.02  SAMPLE ALQT: 152.090 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 3.403E-02
GROSS GAMMA ERROR (pCi/GRAM ) : 1.409E-02
GROSS GAMMA MDA (pCi/GRAM ) : 1.109E-01
GROSS GAMMA DLC (pCi/GRAM ) : 5.225E-02

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 15:09:48.33

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057356.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 13:09:18
Sample ID          : G1202057356 Sample quantity : 1.52090E+02 GRAM
Detector name      : GAM14 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.82 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID          : 959280 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	63.86*	196	836	3.12	127.27	122	11	2.72E-02	29.8	
2	2	74.93	677	643	1.24	149.39	142	18	9.40E-02	7.4	1.09E+00
3	2	77.17*	1002	581	1.25	153.87	142	18	1.39E-01	5.5	
4	0	87.09	223	720	1.41	173.68	171	7	3.10E-02	20.9	
5	2	89.95	163	482	1.15	179.39	177	14	2.27E-02	20.6	3.54E+00
6	2	93.05*	398	768	1.72	185.60	177	14	5.53E-02	14.8	
7	0	185.91*	320	500	1.43	371.13	365	12	4.45E-02	15.4	
8	0	209.43	118	453	1.26	418.13	413	10	1.64E-02	35.1	
9	3	238.58*	1781	296	1.33	476.39	471	19	2.47E-01	2.9	2.94E-01
10	3	241.55	463	347	2.06	482.32	471	19	6.42E-02	12.8	
11	0	270.53	163	384	1.20	540.23	534	13	2.26E-02	26.1	
12	2	295.16	536	199	1.35	589.46	585	19	7.45E-02	6.2	3.21E-01
13	2	299.98	125	230	1.92	599.09	585	19	1.74E-02	24.8	
14	0	327.75	169	210	1.46	654.59	649	12	2.34E-02	18.8	
15	0	338.49	389	268	1.61	676.06	670	15	5.40E-02	10.6	
16	0	351.83*	977	221	1.63	702.71	696	13	1.36E-01	4.5	
17	0	462.69	99	157	1.59	924.30	919	12	1.37E-02	27.2	
18	0	511.24*	123	189	1.97	1021.34	1015	16	1.70E-02	29.8	
19	0	569.39*	264	247	2.24	1137.59	1127	22	3.66E-02	16.6	
20	0	583.18*	533	185	1.46	1165.15	1158	15	7.40E-02	7.1	
21	0	609.43*	717	131	1.49	1217.63	1210	15	9.96E-02	5.1	
22	0	727.42*	133	124	1.77	1453.54	1446	16	1.84E-02	20.9	
23	0	769.65	123	159	2.04	1537.97	1527	22	1.70E-02	27.7	
24	0	795.02	89	54	1.57	1588.71	1582	13	1.23E-02	20.2	
25	0	860.98	94	55	1.37	1720.60	1714	13	1.31E-02	19.2	
26	0	911.65*	392	66	1.94	1821.95	1814	15	5.44E-02	6.9	
27	2	965.30	85	43	2.29	1929.24	1924	21	1.18E-02	18.0	1.18E+00
28	2	969.55	226	46	2.02	1937.74	1924	21	3.15E-02	9.2	
29	0	1120.72*	182	85	1.92	2240.12	2232	17	2.52E-02	14.0	
30	0	1461.58*	1755	29	2.05	2922.15	2914	17	2.44E-01	2.5	
31	0	1564.47	21	4	4.49	3128.07	3120	15	2.96E-03	29.3	
32	0	1589.68	31	27	1.73	3178.53	3173	12	4.25E-03	38.5	
33	0	1631.45	18	6	1.85	3262.14	3257	9	2.47E-03	35.3	
34	0	1730.37	29	10	1.83	3460.14	3456	8	4.01E-03	26.6	
35	0	1765.27*	114	3	1.73	3530.02	3524	12	1.59E-02	10.1	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057356.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 13:09:18
Sample ID         : G1202057356 Sample quantity : 152.09 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA14 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.82 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated : Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line	Energy	Activity	Act error	MDA	MDA error	Act/MDA
	Ided	(keV) Key	(pCi/GRAM)		(pCi/GRAM)		
K-40	+	1460.82 *	3.356E+01	2.959E+00	4.673E-01	3.394E-02	71.807
CD-109	+	88.03 *	2.191E+00	9.372E-01	1.410E+00	1.233E-01	1.553
SN-126	+	64.28	1.070E+00	6.550E-01	6.593E-01	9.395E-02	1.623
	+	86.94	8.797E-01	5.179E-01	5.532E-01	2.288E-01	1.590
	+	87.57 *	2.116E-01	9.052E-02	1.348E-01	1.173E-02	1.570
TL-208		277.37	5.596E-01	4.023E-01	6.451E-01	6.967E-02	0.867
	+	583.19 *	5.606E-01	8.835E-02	5.406E-02	3.689E-03	10.371
	+	860.56	9.576E-01	3.792E-01	4.090E-01	3.847E-02	2.342
BI-211		72.87	1.253E+01	3.565E+00	5.457E+00	4.022E-01	2.296
	+	351.06 *	4.466E+00	4.930E-01	2.875E-01	1.822E-02	15.534
PB-212	+	74.82	2.667E+00	5.116E-01	5.080E-01	6.245E-02	5.249
	+	77.11	2.291E+00	3.077E-01	2.949E-01	2.271E-02	7.770
	+	238.63 *	1.811E+00	1.703E-01	8.480E-02	6.231E-03	21.352
	+	300.09	1.980E+00	9.972E-01	1.163E+00	9.784E-02	1.702
BI-214	+	609.32 *	1.466E+00	1.909E-01	1.080E-01	8.612E-03	13.579
	+	1120.29	1.973E+00	5.805E-01	4.450E-01	4.149E-02	4.434
	+	1764.49	1.744E+00	3.675E-01	1.791E-01	1.074E-02	9.734
PB-214	+	74.82	4.726E+00	8.668E-01	9.004E-01	9.838E-02	5.249
	+	77.11	4.040E+00	6.366E-01	5.199E-01	5.866E-02	7.770
	+	242.00	2.853E+00	7.644E-01	5.154E-01	4.207E-02	5.535
	+	295.22	1.504E+00	2.291E-01	2.124E-01	1.857E-02	7.083
	+	351.93 *	1.621E+00	2.000E-01	1.046E-01	8.782E-03	15.502
RA-224	+	240.99 *	5.044E+00	1.320E+00	9.085E-01	5.222E-02	5.552
RA-226	+	609.32 *	1.466E+00	1.909E-01	1.080E-01	8.612E-03	13.579
	+	1120.29	1.973E+00	5.805E-01	4.450E-01	4.149E-02	4.434
	+	1764.49	1.744E+00	3.675E-01	1.791E-01	1.074E-02	9.734
AC-228	+	338.32	1.977E+00	9.163E-01	3.303E-01	1.362E-01	5.984
	+	911.20 *	2.034E+00	3.724E-01	2.113E-01	2.552E-02	9.630
	+	968.97	2.032E+00	6.198E-01	3.441E-01	8.388E-02	5.906
RA-228	+	338.32	1.977E+00	9.163E-01	3.303E-01	1.362E-01	5.984
	+	911.20 *	2.034E+00	3.724E-01	2.113E-01	2.552E-02	9.630
	+	968.97	2.032E+00	6.198E-01	3.441E-01	8.388E-02	5.906
TH-228	+	74.82	2.667E+00	4.421E-01	5.080E-01	3.864E-02	5.249
	+	77.11	2.291E+00	3.077E-01	2.949E-01	2.271E-02	7.770

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	+	238.63	*	1.811E+00	1.703E-01	8.480E-02	6.231E-03	21.352
	+	300.09		1.980E+00	1.556E+00	1.163E+00	7.083E-01	1.702
	+	338.32		1.977E+00	4.343E-01	3.303E-01	1.898E-02	5.984
	+	911.20	*	2.034E+00	3.724E-01	2.113E-01	2.552E-02	9.630
TH-234	+	968.97		2.032E+00	6.198E-01	3.441E-01	8.388E-02	5.906
	+	63.29	*	2.776E+00	1.723E+00	1.764E+00	3.101E-01	1.574
	+	92.59		3.171E+00	1.167E+00	8.993E-01	1.977E-01	3.527
U-235	+	89.96		1.617E+00	7.760E-01	1.657E+00	4.075E-01	0.976
	+	93.35		2.396E+00	8.964E-01	6.767E-01	1.555E-01	3.540
		143.76	*	4.748E-03	2.087E-01	3.327E-01	5.281E-02	0.014
		163.33		2.796E-01	4.346E-01	7.067E-01	1.178E-01	0.396
NP-237	+	185.72		2.115E-01	6.602E-02	6.163E-02	3.376E-03	3.432
		205.31		-1.784E-01	5.173E-01	7.439E-01	1.259E-01	-0.240
	+	86.48	*	6.314E-01	3.008E-01	3.818E-01	8.651E-02	1.654
		95.86		3.372E-01	9.981E-01	1.427E+00	3.397E-01	0.236
U-238	+	63.29	*	2.776E+00	1.723E+00	1.764E+00	3.101E-01	1.574
	+	92.59		3.171E+00	9.729E-01	8.993E-01	7.509E-02	3.527
ANH-511	+	511.00	*	9.806E-02	5.870E-02	4.445E-02	2.612E-03	2.206

---- 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	*	8.737E-03	3.282E-01	5.388E-01	3.630E-02	0.016
NA-22		1274.54	*	2.817E-02	4.198E-02	7.299E-02	4.768E-03	0.386
NA-24		1368.63	*	6.691E+02	4.198E-02	Half-Life too short		
SC-46		889.28	*	2.590E-02	3.950E-02	6.913E-02	6.388E-03	0.375
	+	1120.55		3.564E-01	1.021E-01	1.418E-01	9.181E-03	2.513
V-48		944.13		-5.514E-01	1.178E+00	1.892E+00	1.691E-01	-0.291
		983.53	*	-7.220E-02	8.402E-02	1.285E-01	1.091E-02	-0.562
		1312.11		-3.587E-02	1.031E-01	1.634E-01	1.129E-02	-0.220
CR-51		320.08	*	-6.784E-02	4.257E-01	6.832E-01	4.408E-02	-0.099
MN-54		834.85	*	2.466E-02	3.709E-02	6.474E-02	5.430E-03	0.381
CO-56		846.77	*	-2.261E-02	3.934E-02	6.308E-02	5.407E-03	-0.358
		1037.84		1.152E-01	3.165E-01	5.408E-01	4.475E-02	0.213
		1238.28		1.587E-01	9.241E-02	1.687E-01	1.096E-02	0.940
		1771.35		-1.404E+00	3.862E-01	2.839E-01	1.694E-02	-4.947
CO-57		122.06	*	3.790E-03	2.495E-02	4.038E-02	2.873E-03	0.094
		136.47		-3.230E-01	2.141E-01	3.237E-01	2.372E-02	-0.998
CO-58		810.76	*	-3.168E-02	4.174E-02	6.265E-02	5.041E-03	-0.506
FE-59		1099.45	*	-5.790E-02	9.300E-02	1.457E-01	1.121E-02	-0.397
		1291.59		-9.458E-02	1.362E-01	2.092E-01	1.703E-02	-0.452
CO-60		1173.23		9.188E-03	4.602E-02	7.713E-02	4.248E-03	0.119
		1332.49	*	-1.245E-03	3.449E-02	5.640E-02	4.020E-03	-0.022
ZN-65		1115.54	*	-3.279E-02	1.042E-01	1.433E-01	9.417E-03	-0.229
SE-75		121.12		-3.647E-02	1.350E-01	2.152E-01	2.145E-02	-0.169
		136.00		-3.797E-02	4.154E-02	6.447E-02	4.260E-03	-0.589
		264.66	*	-4.595E-03	4.926E-02	7.115E-02	4.178E-03	-0.065
		279.54		1.881E-02	1.125E-01	1.888E-01	1.190E-02	0.100

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		400.66		-1.015E-01	2.488E-01	4.013E-01	3.560E-02	-0.253
SR-85		514.00	*	1.075E-01	4.182E-02	7.060E-02	4.153E-03	1.523
Y-88		898.04		2.491E-02	4.000E-02	6.989E-02	6.584E-03	0.356
		1836.06	*	-1.486E-02	3.403E-02	5.050E-02	2.868E-03	-0.294
Y-91		1204.77	*	-1.892E+01	2.484E+01	3.872E+01	2.252E+00	-0.489
NB-94		702.65	*	-3.840E-03	3.207E-02	5.133E-02	3.329E-03	-0.075
		871.09		1.956E-02	3.364E-02	5.854E-02	5.240E-03	0.334
NB-95		765.81	*	6.916E-02	4.820E-02	7.633E-02	5.621E-03	0.906
NB-95M		235.69	*	7.263E-01	1.686E-01	2.754E-01	2.065E-02	2.638
ZR-95		724.19		5.707E-04	1.180E-01	1.641E-01	1.261E-02	0.003
		756.73	*	-2.529E-02	7.260E-02	1.135E-01	9.408E-03	-0.223
MO-99		140.51		-5.476E-05	7.260E-02	Half-Life	too short	
		181.07		-7.846E-05	7.260E-02	Half-Life	too short	
		366.42		2.873E-04	7.260E-02	Half-Life	too short	
		739.50	*	3.430E-05	7.260E-02	Half-Life	too short	
		777.92		-3.980E-04	7.260E-02	Half-Life	too short	
TC-99M		140.51	*	-4.204E+19	7.260E-02	Half-Life	too short	
RU-103		497.08	*	5.499E-03	4.266E-02	7.037E-02	8.758E-03	0.078
	+	610.33		1.740E+01	3.184E+00	3.198E+00	4.836E-01	5.442
RH-106		621.93	*	7.593E-02	2.905E-01	4.801E-01	5.622E-02	0.158
		1050.41		-8.575E-01	2.371E+00	3.817E+00	2.900E-01	-0.225
RU-106		621.93	*	7.593E-02	2.904E-01	4.801E-01	2.870E-02	0.158
		1050.41		-8.575E-01	2.371E+00	3.817E+00	2.900E-01	-0.225
AG-108M		433.94	*	-1.316E-02	2.519E-02	4.006E-02	2.424E-03	-0.329
		614.28		1.201E-02	3.438E-02	4.994E-02	3.187E-03	0.241
		722.91		8.488E-03	4.087E-02	5.803E-02	4.126E-03	0.146
AG-110M		657.76	*	-1.599E-02	3.237E-02	5.043E-02	3.186E-03	-0.317
		677.62		-7.282E-02	3.091E-01	4.913E-01	3.191E-02	-0.148
		706.68		9.551E-02	2.101E-01	3.497E-01	2.400E-02	0.273
		763.94		1.623E-01	1.611E-01	2.484E-01	1.891E-02	0.653
		884.68		-1.935E-02	4.733E-02	7.667E-02	7.229E-03	-0.252
		937.49		-3.920E-03	1.131E-01	1.883E-01	1.752E-02	-0.021
		1384.29		-2.226E-01	1.676E-01	2.334E-01	1.717E-02	-0.953
		1505.03		-2.300E-01	2.733E-01	3.961E-01	2.722E-02	-0.581
SN-113		391.69	*	3.377E-03	4.190E-02	6.944E-02	4.063E-03	0.049
CD-115		260.90		-3.290E-04	4.190E-02	Half-Life	too short	
		492.35		3.793E-04	4.190E-02	Half-Life	too short	
		527.90	*	-3.107E-05	4.190E-02	Half-Life	too short	
SN-117M		156.02		6.928E-01	3.430E+00	5.528E+00	3.182E-01	0.125
		158.56	*	-3.526E-02	8.381E-02	1.321E-01	7.472E-03	-0.267
TE-123M		159.00	*	-6.229E-03	3.011E-02	4.782E-02	2.735E-03	-0.130
SB-124		602.73		-2.568E-02	4.555E-02	6.039E-02	3.614E-03	-0.425
		645.85		1.367E-01	5.073E-01	8.375E-01	5.578E-02	0.163
		722.78		9.680E-02	4.500E-01	6.394E-01	4.482E-02	0.151
		1690.97	*	-3.762E-03	7.033E-02	1.129E-01	7.663E-03	-0.033
SB-125		427.87	*	-6.543E-02	7.920E-02	1.236E-01	7.235E-03	-0.529
	+	463.37		6.991E-01	3.838E-01	4.920E-01	3.285E-02	1.421
		600.60		-3.623E-02	1.668E-01	2.594E-01	1.782E-02	-0.140
		635.95		-1.006E-01	2.466E-01	3.873E-01	2.690E-02	-0.260

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M	109.28	*		-8.586E+00	1.081E+01	1.696E+01	1.625E+00	-0.506
I-126	388.63			1.850E-02	2.392E-01	3.965E-01	2.166E-02	0.047
	666.33	*		3.029E-01	3.209E-01	5.517E-01	3.314E-02	0.549
	753.82			1.616E+00	2.574E+00	4.340E+00	3.122E-01	0.372
SB-126	414.70			-2.626E-02	1.155E-01	1.880E-01	1.043E-02	-0.140
	666.50			1.036E-01	1.122E-01	1.927E-01	1.158E-02	0.538
	695.00			2.820E-02	1.189E-01	1.951E-01	1.246E-02	0.145
	697.00			1.692E-02	4.099E-01	6.640E-01	4.256E-02	0.025
	720.70	*		1.221E-01	2.468E-01	3.606E-01	2.427E-02	0.339
	856.80			-1.563E-01	7.560E-01	1.068E+00	9.319E-02	-0.146
SB-127	252.40			-7.770E+00	1.656E+01	2.664E+01	1.114E+01	-0.292
	473.00			-1.094E+00	6.081E+00	9.856E+00	1.353E+00	-0.111
	685.70	*		-4.299E+00	5.467E+00	8.288E+00	1.050E+00	-0.519
	783.70			2.234E+01	1.456E+01	2.541E+01	3.618E+00	0.879
I-131	80.19			-3.459E+00	9.481E+00	1.327E+01	1.076E+00	-0.261
	284.31			2.087E-01	2.779E+00	4.646E+00	3.049E-01	0.045
	364.49	*		3.816E-02	2.063E-01	3.445E-01	2.209E-02	0.111
	636.99			-3.690E-02	2.737E+00	4.433E+00	2.996E-01	-0.008
TE-132	49.72			-1.160E+02	6.991E+01	1.060E+02	1.298E+01	-1.094
	111.76			-2.119E+01	1.849E+02	2.970E+02	3.793E+01	-0.071
	116.30			2.656E+01	1.586E+02	2.569E+02	3.260E+01	0.103
	228.16	*		2.936E+00	3.873E+00	6.613E+00	1.087E+00	0.444
BA-133	81.00			-2.060E-01	1.072E-01	1.345E-01	2.045E-02	-1.532
	276.40			5.007E-01	3.916E-01	5.997E-01	7.558E-02	0.835
	302.85			2.083E-01	1.432E-01	2.227E-01	2.543E-02	0.935
	356.01	*		4.297E-03	4.037E-02	5.846E-02	6.552E-03	0.073
	383.85			1.441E-02	2.846E-01	4.712E-01	4.948E-02	0.031
I-133	529.87	*		1.225E+00	2.846E-01	Half-Life	too short	
	875.33			-8.861E+01	2.846E-01	Half-Life	too short	
	1298.22			3.900E+01	2.846E-01	Half-Life	too short	
CS-134	563.25			5.096E-02	4.026E-01	5.733E-01	3.485E-02	0.089
+	569.33			1.537E+00	5.176E-01	5.206E-01	3.194E-02	2.952
	604.72			3.441E-02	3.270E-02	5.053E-02	3.038E-03	0.681
+	795.86	*		1.393E-01	5.736E-02	8.040E-02	6.328E-03	1.732
	801.95			8.636E-02	4.144E-01	6.143E-01	4.881E-02	0.141
	1365.19			6.856E-01	1.071E+00	1.888E+00	1.431E-01	0.363
CS-135	268.22	*		2.936E-01	1.756E-01	2.748E-01	2.108E-02	1.068
I-135	546.56			-5.539E+18	1.756E-01	Half-Life	too short	
	836.80			8.869E+18	1.756E-01	Half-Life	too short	
	1038.76			-8.571E+17	1.756E-01	Half-Life	too short	
	1131.51			-2.068E+17	1.756E-01	Half-Life	too short	
	1260.41	*		-3.614E+18	1.756E-01	Half-Life	too short	
	1457.56			1.385E+20	1.756E-01	Half-Life	too short	
	1678.03			1.394E+18	1.756E-01	Half-Life	too short	
	1791.20			8.259E+17	1.756E-01	Half-Life	too short	
CS-136	153.25			8.763E-01	1.294E+00	2.117E+00	1.715E-01	0.414
	176.60			6.257E-02	7.304E-01	1.169E+00	7.907E-02	0.054
	273.65			-6.586E-01	8.738E-01	1.214E+00	8.340E-02	-0.543
	340.55			1.141E+00	2.478E-01	4.322E-01	2.693E-02	2.639

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	Line Nuclide	Energy Ided (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		818.51	3.730E-02	1.079E-01	1.854E-01	1.513E-02	0.201
		1048.07 *	-1.731E-02	1.427E-01	2.345E-01	1.888E-02	-0.074
		1235.36	-7.917E-01	8.721E-01	1.340E+00	1.352E-01	-0.591
BA-137M		661.66 *	8.538E-04	3.353E-02	5.438E-02	3.233E-03	0.016
CS-137		661.66 *	9.019E-04	3.543E-02	5.745E-02	3.430E-03	0.016
CE-139		165.86 *	5.512E-03	3.111E-02	5.003E-02	2.686E-03	0.110
BA-140		162.66	3.735E-03	1.264E+00	2.021E+00	1.287E-01	0.002
		304.85	1.211E+00	2.091E+00	3.094E+00	8.840E-01	0.391
		423.72	2.266E+00	2.672E+00	4.445E+00	1.433E+00	0.510
		537.26 *	-1.785E-01	3.760E-01	5.750E-01	1.917E-01	-0.310
LA-140	+	328.76	1.630E+00	6.232E-01	8.132E-01	5.277E-02	2.004
		487.02	-1.452E-01	1.910E-01	2.972E-01	1.955E-02	-0.489
		815.77	4.229E-01	4.899E-01	8.673E-01	7.950E-02	0.488
		1596.21 *	1.081E-02	1.202E-01	1.709E-01	1.133E-02	0.063
CE-141		145.44 *	6.260E-02	7.505E-02	1.235E-01	7.881E-03	0.507
CE-143		57.36	2.362E-02	7.505E-02	Half-Life	too short	
		293.27 *	5.306E-02	7.505E-02	Half-Life	too short	
		664.57	4.585E-02	7.505E-02	Half-Life	too short	
		721.93	5.315E-02	7.505E-02	Half-Life	too short	
CE-144		80.12	-7.531E-01	2.639E+00	3.706E+00	2.950E-01	-0.203
		133.52 *	-1.568E-01	2.087E-01	3.249E-01	4.632E-02	-0.483
PM-144		476.78	1.590E-02	6.084E-02	1.013E-01	6.936E-03	0.157
		618.01	-8.111E-03	3.063E-02	4.774E-02	3.021E-03	-0.170
		696.49 *	3.174E-03	3.457E-02	5.619E-02	3.603E-03	0.056
PR-144		696.51 *	2.550E-01	2.599E+00	4.226E+00	2.706E-01	0.060
		1489.16	-7.624E+00	1.279E+01	1.923E+01	1.328E+00	-0.396
PM-146		453.88 *	6.376E-03	3.954E-02	6.551E-02	5.499E-03	0.097
		633.25	-5.931E-01	1.279E+00	1.969E+00	7.419E-01	-0.301
		735.93	-1.087E-01	1.460E-01	2.006E-01	5.528E-02	-0.542
		747.24	-1.577E-02	9.163E-02	1.455E-01	2.000E-02	-0.108
ND-147	+	91.11	8.640E-01	3.649E-01	8.290E-01	7.626E-02	1.042
		319.41	-6.522E-01	5.068E+00	8.368E+00	4.860E-01	-0.078
		531.02 *	2.287E-01	8.169E-01	1.358E+00	1.843E-01	0.168
PM-149		285.90 *	-1.664E-04	8.169E-01	Half-Life	too short	
EU-152		121.78	6.384E-03	7.071E-02	1.142E-01	9.847E-03	0.056
		244.70	3.907E-01	3.306E-01	5.110E-01	2.944E-02	0.764
		344.28 *	2.775E-02	1.066E-01	1.375E-01	8.887E-03	0.202
		778.90	-1.758E-01	2.781E-01	3.771E-01	2.848E-02	-0.466
	+	964.08	8.241E-01	3.056E-01	5.372E-01	4.684E-02	1.534
		1085.87	1.545E-01	3.664E-01	6.279E-01	4.429E-02	0.246
		1112.07	1.823E-01	3.257E-01	5.107E-01	3.381E-02	0.357
		1408.01	2.478E-01	1.930E-01	3.529E-01	2.487E-02	0.702
GD-153		69.67	1.661E+00	2.128E+00	2.642E+00	1.890E-01	0.628
		97.43 *	6.007E-02	9.117E-02	1.325E-01	1.063E-02	0.453
		103.18	-6.312E-02	1.097E-01	1.737E-01	1.340E-02	-0.363
EU-154		123.07	-2.514E-03	5.012E-02	8.053E-02	8.229E-03	-0.031
		723.31	-2.121E-02	1.930E-01	2.653E-01	2.083E-02	-0.080
		873.19	-1.698E-02	2.662E-01	4.437E-01	5.396E-02	-0.038
		996.26	-6.826E-02	3.172E-01	5.181E-01	8.979E-02	-0.132

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EU-155	+	1004.73		1.110E-01	2.012E-01	3.484E-01	3.953E-02	0.319
		1274.44	*	7.845E-02	1.185E-01	2.057E-01	2.033E-02	0.381
		86.55		2.574E-01	1.102E-01	1.800E-01	1.562E-02	1.430
		105.31	*	7.636E-02	1.035E-01	1.707E-01	1.321E-02	0.447
TB-160	+	86.79		7.346E-01	3.142E-01	5.094E-01	4.390E-02	1.442
		197.04		-1.011E-02	5.642E-01	9.404E-01	5.212E-02	-0.011
		215.65		6.109E-01	7.967E-01	1.302E+00	7.342E-02	0.469
		298.57		3.009E-01	1.504E-01	2.067E-01	1.205E-02	1.456
	+	879.36	*	3.688E-02	1.364E-01	2.330E-01	2.116E-02	0.158
		962.29		1.230E+00	5.431E-01	9.519E-01	8.318E-02	1.292
		966.15		6.205E-01	2.301E-01	4.837E-01	4.205E-02	1.283
		1177.93		1.321E-01	4.067E-01	6.870E-01	3.816E-02	0.192
HO-166M	+	1271.85		-9.329E-02	7.658E-01	1.247E+00	8.099E-02	-0.075
		80.57		-5.111E-01	2.918E-01	3.828E-01	3.063E-02	-1.335
		184.41		1.681E-01	5.245E-02	6.401E-02	3.501E-03	2.626
		280.46		-3.590E-02	8.185E-02	1.341E-01	7.818E-03	-0.268
	+	410.95		3.310E-01	2.419E-01	4.233E-01	2.342E-02	0.782
		711.68	*	-5.187E-02	5.912E-02	8.902E-02	5.882E-03	-0.583
		752.31		-6.546E-02	2.557E-01	4.032E-01	2.891E-02	-0.162
		810.29		-3.420E-02	5.849E-02	8.928E-02	7.157E-03	-0.383
TA-182	+	67.75		-7.958E-02	1.453E-01	1.687E-01	1.186E-02	-0.472
		100.11		1.387E-01	1.753E-01	2.900E-01	2.282E-02	0.478
		152.43		2.320E-02	3.636E-01	5.836E-01	3.441E-02	0.040
		222.11		-2.314E-03	3.372E-01	5.657E-01	3.208E-02	-0.004
	+	1121.30		9.701E-01	2.779E-01	3.830E-01	2.475E-02	2.533
		1189.05		2.740E-02	3.014E-01	5.013E-01	2.838E-02	0.055
		1221.41	*	-1.049E-01	2.015E-01	3.192E-01	1.909E-02	-0.329
		1231.02		1.585E-02	4.858E-01	8.028E-01	4.879E-02	0.020
IR-192	+	295.96		1.198E+00	1.655E-01	2.882E-01	1.708E-02	4.158
		308.46		-7.340E-03	9.208E-02	1.525E-01	8.982E-03	-0.048
		316.51	*	1.170E-02	3.425E-02	5.778E-02	3.373E-03	0.203
		468.07		-7.979E-03	7.335E-02	1.031E-01	6.868E-03	-0.077
HG-203	+	70.83		7.110E-01	1.564E+00	2.257E+00	3.466E-01	0.315
		72.87		3.511E+00	1.097E+00	1.529E+00	2.275E-01	2.296
		279.20	*	2.242E-02	4.260E-02	7.241E-02	4.455E-03	0.310
		72.81		6.712E-01	2.035E-01	3.110E-01	2.290E-02	2.158
BI-207	+	74.97		7.689E-01	1.271E-01	2.271E-01	1.710E-02	3.385
		569.70		2.369E-01	7.971E-02	7.981E-02	4.761E-03	2.968
		1063.66	*	2.527E-02	4.819E-02	8.333E-02	6.166E-03	0.303
		1770.23		-2.904E-02	4.333E-01	5.874E-01	3.508E-02	-0.049
PB-210		46.54	*	3.552E-01	2.094E+00	3.432E+00	2.513E-01	0.103
PB-211		404.85	*	-1.124E+00	8.834E-01	1.059E+00	5.075E-01	-1.062
		427.09		-9.205E-01	1.396E+00	2.099E+00	9.613E-01	-0.439
		832.01		-1.080E+00	1.137E+00	1.540E+00	7.977E-01	-0.701
BI-212	+	727.33	*	2.163E+00	9.350E-01	1.113E+00	1.257E-01	1.943
		785.37		1.002E+00	3.198E+00	5.252E+00	4.017E-01	0.191
		1620.50		3.022E+00	2.263E+00	4.294E+00	2.813E-01	0.704
		271.23		7.303E-01	3.856E-01	4.316E-01	3.473E-02	1.692
RN-219	+	401.81	*	-3.439E-02	3.810E-01	6.169E-01	8.209E-02	-0.056

---- 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		-4.640E-01	2.348E-01	3.044E-01	2.450E-02	-1.524
		83.79		1.955E-01	1.416E-01	1.965E-01	1.633E-02	0.995
		94.87		1.761E+00	5.191E-01	7.988E-01	6.538E-02	2.205
		144.24		4.388E-01	6.989E-01	1.135E+00	8.560E-02	0.387
		154.21		2.711E-01	3.899E-01	6.382E-01	4.460E-02	0.425
	+	269.46		5.674E-01	2.981E-01	3.353E-01	2.035E-02	1.692
AC-227		323.87	*	-2.306E-01	6.695E-01	9.413E-01	1.517E-01	-0.245
	+	338.28		7.844E+00	1.847E+00	2.199E+00	2.248E-01	3.567
		79.69		2.316E+00	1.385E+00	2.003E+00	3.384E-01	1.157
		235.96		1.442E+00	2.257E-01	3.562E-01	2.882E-02	4.049
		256.23	*	9.539E-02	2.350E-01	3.986E-01	4.074E-02	0.239
	+	299.98		2.178E+00	1.108E+00	1.509E+00	1.661E-01	1.443
TH-227		304.50		1.302E+00	1.601E+00	2.419E+00	3.691E-01	0.538
		334.37		6.612E-01	2.247E+00	2.620E+00	3.722E-01	0.252
		79.80		2.250E+00	1.801E+00	2.577E+00	5.545E-01	0.873
		235.96		1.442E+00	2.202E-01	3.562E-01	2.611E-02	4.049
		256.23	*	9.539E-02	2.350E-01	3.986E-01	4.790E-02	0.239
	+	299.98		2.178E+00	1.108E+00	1.509E+00	1.661E-01	1.443
TH-229		304.50		1.302E+00	1.601E+00	2.419E+00	3.691E-01	0.538
		334.37		6.612E-01	2.247E+00	2.620E+00	3.722E-01	0.252
		85.43		7.326E-01	2.429E-01	3.672E-01	3.113E-02	1.995
	+	88.47		3.262E-01	1.396E-01	2.333E-01	2.030E-02	1.398
		193.51	*	-1.773E-01	4.882E-01	8.120E-01	4.484E-02	-0.218
	+	210.85		1.710E+00	1.206E+00	1.551E+00	8.712E-02	1.103
PA-231		283.69	*	-3.375E-01	1.396E+00	2.282E+00	2.996E-01	-0.148
	+	301.36		1.399E+00	7.098E-01	9.690E-01	1.004E-01	1.444
TH-231		81.07		-4.640E-01	2.348E-01	3.044E-01	2.450E-02	-1.524
		83.79		1.955E-01	1.416E-01	1.965E-01	1.633E-02	0.995
		94.87		1.761E+00	5.191E-01	7.988E-01	6.538E-02	2.205
		144.24		4.388E-01	6.989E-01	1.135E+00	8.560E-02	0.387
		154.21		2.711E-01	3.899E-01	6.382E-01	4.460E-02	0.425
	+	269.46		5.674E-01	2.981E-01	3.353E-01	2.035E-02	1.692
PA-233		323.87	*	-2.306E-01	6.695E-01	9.413E-01	1.517E-01	-0.245
	+	338.28		7.844E+00	1.847E+00	2.199E+00	2.248E-01	3.567
	+	300.13		9.857E-01	5.069E-01	6.829E-01	9.152E-02	1.443
		311.90	*	5.909E-03	5.857E-02	9.781E-02	6.041E-03	0.060
		340.48		3.381E+00	1.034E+00	1.234E+00	2.863E-01	2.739
		94.67		7.816E-01	2.071E-01	3.009E-01	3.645E-02	2.598
PA-234		98.44		1.042E-01	1.118E-01	1.417E-01	7.894E-02	0.735
		111.00		3.221E-02	1.834E-01	2.974E-01	3.347E-02	0.108
		131.20		9.224E-02	1.082E-01	1.784E-01	1.198E-02	0.517
	+	569.50		2.102E+00	7.075E-01	7.104E-01	4.238E-02	2.960
		733.00		-2.615E-01	3.912E-01	4.938E-01	1.066E-01	-0.530
		880.51		1.037E-01	2.531E-01	4.367E-01	3.974E-02	0.237
PA-234M		883.24		-2.332E-02	2.663E-01	4.419E-01	2.974E-01	-0.053
		926.50		-1.509E-01	1.723E-01	2.609E-01	6.639E-02	-0.578
		946.00	*	9.404E-02	2.959E-01	5.042E-01	9.531E-02	0.187
		949.00		2.311E-01	4.482E-01	7.741E-01	6.878E-02	0.299
		766.42		1.579E+01	1.488E+01	1.953E+01	9.871E+00	0.809

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		6.729E-01	4.299E+00	7.280E+00	7.037E-01	0.092
	99.53			1.547E-01	1.594E-01	2.564E-01	2.026E-02	0.603
	103.37			-3.156E-02	9.815E-02	1.569E-01	1.209E-02	-0.201
	106.12			3.587E-02	8.257E-02	1.351E-01	1.025E-02	0.266
	117.23	*		-4.995E-02	3.963E-01	6.358E-01	4.591E-02	-0.079
	228.18			1.573E-01	2.045E-01	3.517E-01	2.004E-02	0.447
AM-241	277.60			2.043E-01	1.782E-01	2.944E-01	1.716E-02	0.694
	59.54	*		1.130E-01	1.351E-01	1.992E-01	1.479E-02	0.567
CM-247	278.00			9.040E-01	7.623E-01	1.260E+00	7.347E-02	0.717
	287.50			-6.421E-01	1.171E+00	1.905E+00	1.112E-01	-0.337
CF-249	402.40	*		8.578E-03	3.484E-02	5.741E-02	3.153E-03	0.149
	252.80			-6.010E-01	8.753E-01	1.422E+00	8.228E-02	-0.422
	333.37			2.570E-01	2.551E-01	2.795E-01	1.611E-02	0.919
CF-251	388.16	*		1.992E-02	3.731E-02	6.322E-02	3.456E-03	0.315
	177.52	*		5.057E-02	1.240E-01	2.008E-01	1.090E-02	0.252
	227.38			1.630E-01	3.321E-01	5.662E-01	3.225E-02	0.288
	285.41			-7.306E-01	2.037E+00	3.344E+00	1.951E-01	-0.219

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]G1202057356      *
* Acquisition date   : 19-MAR-2010 13:09:18 Detector SN#      :              *
* Detector ID        : GAM14          Sensitivity             : 5.000          *
* Geometry           : CAN            Energy tolerance        : 1.500          *
* Elapsed live time  : 0 02:00:00.00  Abundance limit         : 75.000          *
* Elapsed real time  : 0 02:00:01.82  Half life ratio         : 8.000          *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library    : SOLID          *
* Sample ID          : G1202057356    Analyst initials       : MXR1           *
* Batch Number       : 959280          Sample Quantity        : 1.5209E+02 GRAM *
* Recovery           : 1.00000         Carrier Weight         : 0.00000         *
*****
*                                     QC DATA                               *
*                                     *                                       *
* Standard Weight    : 0.00000                                                *
* CALIB. DATE/TIME   : 6-MAR-2009 11:43:06 MS Isotope         :              *
* MSD DPM             : 0.000          MSD Isotope            :              *
* LCS DPM             : 0.000          LCS Isotope             :              *
* LCSD DPM            : 0.000          LCSD Isotope            :              *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.356E+01	2.900E+00	4.708E-01	0.000E+00
CD-109	2.191E+00	9.184E-01	1.524E+00	0.000E+00
SN-126	2.116E-01	8.871E-02	1.456E-01	0.000E+00
TL-208	5.606E-01	8.658E-02	5.579E-02	0.000E+00
BI-211	4.466E+00	4.831E-01	3.005E-01	0.000E+00
PB-212	1.811E+00	1.669E-01	8.949E-02	0.000E+00
BI-214	1.466E+00	1.871E-01	1.113E-01	0.000E+00
PB-214	1.621E+00	1.960E-01	1.093E-01	0.000E+00
RA-224	5.044E+00	1.293E+00	9.584E-01	0.000E+00
RA-226	1.466E+00	1.871E-01	1.113E-01	0.000E+00
AC-228	2.034E+00	3.650E-01	2.155E-01	0.000E+00
RA-228	2.034E+00	3.650E-01	2.155E-01	0.000E+00
TH-228	1.811E+00	1.669E-01	8.949E-02	0.000E+00
TH-232	2.034E+00	3.650E-01	2.155E-01	0.000E+00
TH-234	2.776E+00	1.689E+00	1.921E+00	0.000E+00
U-235	4.748E-03	2.045E-01	3.554E-01	0.000E+00
NP-237	6.314E-01	2.948E-01	4.128E-01	0.000E+00
U-238	2.776E+00	1.689E+00	1.921E+00	0.000E+00
ANH-511	9.806E-02	5.753E-02	4.603E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	8.737E-03	3.216E-01	5.588E-01	0.000E+00 NOT IDENT.
NA-22	2.817E-02	4.114E-02	7.380E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.053E+09	0.000E+00	0.000E+00 SHORT HLIF
SC-46	2.590E-02	3.871E-02	7.057E-02	0.000E+00 FAIL ABUN
V-48	-7.220E-02	8.234E-02	1.308E-01	0.000E+00 NOT IDENT.
CR-51	-6.784E-02	4.172E-01	7.157E-01	0.000E+00 NOT IDENT.
MN-54	2.466E-02	3.635E-02	6.619E-02	0.000E+00 NOT IDENT.
CO-56	-2.261E-02	3.856E-02	6.448E-02	0.000E+00 NOT IDENT.

CO-57	3.790E-03	2.445E-02	4.330E-02	0.000E+00	NOT IDENT.
CO-58	-3.168E-02	4.090E-02	6.411E-02	0.000E+00	NOT IDENT.
FE-59	-5.790E-02	9.114E-02	1.479E-01	0.000E+00	NOT IDENT.
CO-60	-1.245E-03	3.380E-02	5.697E-02	0.000E+00	NOT IDENT.
ZN-65	-3.279E-02	1.021E-01	1.454E-01	0.000E+00	NOT IDENT.
SE-75	-4.595E-03	4.828E-02	7.489E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.098E-02	7.309E-02	0.000E+00	NOT IDENT.
Y-88	-1.486E-02	3.335E-02	5.057E-02	0.000E+00	NOT IDENT.
Y-91	-1.892E+01	2.434E+01	3.921E+01	0.000E+00	NOT IDENT.
NB-94	-3.840E-03	3.142E-02	5.272E-02	0.000E+00	NOT IDENT.
NB-95	6.916E-02	4.724E-02	7.822E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.653E-01	2.907E-01	0.000E+00	NOT IDENT.
ZR-95	-2.529E-02	7.114E-02	1.163E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.979E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.259E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	5.499E-03	4.181E-02	7.291E-02	0.000E+00	FAIL ABUN
RH-106	7.593E-02	2.847E-01	4.946E-01	0.000E+00	NOT IDENT.
RU-106	7.593E-02	2.846E-01	4.946E-01	0.000E+00	NOT IDENT.
AG-108M	-1.316E-02	2.468E-02	4.165E-02	0.000E+00	NOT IDENT.
AG-110M	-1.599E-02	3.172E-02	5.189E-02	0.000E+00	NOT IDENT.
SN-113	3.377E-03	4.106E-02	7.239E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.196E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-3.526E-02	8.214E-02	1.408E-01	0.000E+00	NOT IDENT.
TE-123M	-6.229E-03	2.951E-02	5.096E-02	0.000E+00	NOT IDENT.
SB-124	-3.762E-03	6.893E-02	1.133E-01	0.000E+00	NOT IDENT.
SB-125	-6.543E-02	7.761E-02	1.286E-01	0.000E+00	FAIL ABUN
TE-125M	-8.586E+00	1.060E+01	1.823E+01	0.000E+00	NOT IDENT.
I-126	3.029E-01	3.145E-01	5.674E-01	0.000E+00	NOT IDENT.
SB-126	1.221E-01	2.418E-01	3.701E-01	0.000E+00	NOT IDENT.
SB-127	-4.299E+00	5.357E+00	8.518E+00	0.000E+00	NOT IDENT.
I-131	3.816E-02	2.021E-01	3.597E-01	0.000E+00	NOT IDENT.
TE-132	2.936E+00	3.796E+00	6.987E+00	0.000E+00	NOT IDENT.
BA-133	4.297E-03	3.957E-02	6.108E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.964E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.621E-02	8.231E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.721E-01	2.892E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.563E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.731E-02	1.398E-01	2.384E-01	0.000E+00	NOT IDENT.
BA-137M	8.538E-04	3.286E-02	5.594E-02	0.000E+00	NOT IDENT.
CS-137	9.019E-04	3.472E-02	5.909E-02	0.000E+00	NOT IDENT.
CE-139	5.512E-03	3.049E-02	5.327E-02	0.000E+00	NOT IDENT.
BA-140	-1.785E-01	3.685E-01	5.946E-01	0.000E+00	NOT IDENT.
LA-140	1.081E-02	1.178E-01	1.718E-01	0.000E+00	FAIL ABUN
CE-141	6.260E-02	7.355E-02	1.319E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.532E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.568E-01	2.045E-01	3.477E-01	0.000E+00	NOT IDENT.
PM-144	3.174E-03	3.388E-02	5.772E-02	0.000E+00	NOT IDENT.
PR-144	2.550E-01	2.547E+00	4.342E+00	0.000E+00	NOT IDENT.
PM-146	6.376E-03	3.875E-02	6.804E-02	0.000E+00	NOT IDENT.
ND-147	2.287E-01	8.005E-01	1.405E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.016E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	2.775E-02	1.045E-01	1.438E-01	0.000E+00	FAIL ABUN
GD-153	6.007E-02	8.934E-02	1.428E-01	0.000E+00	NOT IDENT.
EU-154	7.845E-02	1.162E-01	2.080E-01	0.000E+00	NOT IDENT.
EU-155	7.636E-02	1.014E-01	1.837E-01	0.000E+00	FAIL ABUN
TB-160	3.688E-02	1.337E-01	2.379E-01	0.000E+00	FAIL ABUN
HO-166M	-5.187E-02	5.794E-02	9.140E-02	0.000E+00	FAIL ABUN
TA-182	-1.049E-01	1.974E-01	3.231E-01	0.000E+00	FAIL ABUN
IR-192	1.170E-02	3.356E-02	6.055E-02	0.000E+00	FAIL ABUN
HG-203	2.242E-02	4.175E-02	7.612E-02	0.000E+00	NOT IDENT.
BI-207	2.527E-02	4.722E-02	8.466E-02	0.000E+00	FAIL ABUN
PB-210	3.552E-01	2.052E+00	3.764E+00	0.000E+00	NOT IDENT.
PB-211	-1.124E+00	8.657E-01	1.103E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.163E-01	1.142E+00	0.000E+00	FAIL ABUN
RN-219	-3.439E-02	3.734E-01	6.427E-01	0.000E+00	FAIL ABUN
RA-223	-2.306E-01	6.561E-01	9.859E-01	0.000E+00	FAIL ABUN
AC-227	9.539E-02	2.303E-01	4.199E-01	0.000E+00	FAIL ABUN
TH-227	9.539E-02	2.303E-01	4.199E-01	0.000E+00	FAIL ABUN
TH-229	-1.773E-01	4.784E-01	8.612E-01	0.000E+00	FAIL ABUN
PA-231	-3.375E-01	1.368E+00	2.397E+00	0.000E+00	FAIL ABUN
TH-231	-2.306E-01	6.561E-01	9.859E-01	0.000E+00	FAIL ABUN
PA-233	5.909E-03	5.740E-02	1.025E-01	0.000E+00	FAIL ABUN
PA-234	9.404E-02	2.900E-01	5.139E-01	0.000E+00	FAIL ABUN
PA-234M	6.729E-01	4.213E+00	7.408E+00	0.000E+00	NOT IDENT.
NP-239	-4.995E-02	3.884E-01	6.825E-01	0.000E+00	NOT IDENT.
AM-241	1.130E-01	1.324E-01	2.172E-01	0.000E+00	NOT IDENT.
CM-247	8.578E-03	3.414E-02	5.980E-02	0.000E+00	NOT IDENT.
CF-249	1.992E-02	3.656E-02	6.592E-02	0.000E+00	NOT IDENT.

CF-251	5.057E-02	1.215E-01	2.135E-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]G1202057356.CNF;1
Sample date        : 24-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 13:09:18
Sample ID          : G1202057356      Sample quantity   : 1.52090E+02 GRAM
Detector name      : GAM14            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:01.82  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity      : 5.00000
Batch ID           : 959280            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	1755	10.66*	1.211E+00	3.356E+01	3.356E+01	8.82
CD-109	88.03	223	3.70*	7.042E+00	2.116E+00	2.191E+00	42.78
SN-126	64.28	196	9.60	4.712E+00	1.070E+00	1.070E+00	61.22
	86.94	223	8.90	7.042E+00	8.797E-01	8.797E-01	58.87
	87.57	223	37.00*	7.042E+00	2.116E-01	2.116E-01	42.78
TL-208	277.37	-----	6.60	5.001E+00	-----	Line Not Found	-----
	583.19	533	85.00*	2.758E+00	5.606E-01	5.606E-01	15.76
	860.56	94	12.50	1.943E+00	9.576E-01	9.576E-01	39.60
BI-211	72.87	-----	1.23	5.875E+00	-----	Line Not Found	-----
	351.06	977	12.92*	4.178E+00	4.466E+00	4.466E+00	11.04
PB-212	74.82	677	10.28	6.093E+00	2.667E+00	2.667E+00	19.19
	77.11	1002	17.10	6.311E+00	2.291E+00	2.291E+00	13.43
	238.63	1781	43.60*	5.568E+00	1.811E+00	1.811E+00	9.41
	300.09	125	3.30	4.719E+00	1.980E+00	1.980E+00	50.36
BI-214	609.32	717	45.49*	2.654E+00	1.466E+00	1.466E+00	13.02
	1120.29	182	14.92	1.523E+00	1.973E+00	1.973E+00	29.42
	1764.49	114	15.30	1.059E+00	1.744E+00	1.744E+00	21.08
PB-214	74.82	677	5.80	6.093E+00	4.726E+00	4.726E+00	18.34
	77.11	1002	9.70	6.311E+00	4.039E+00	4.040E+00	15.76
	242.00	463	7.25	5.521E+00	2.852E+00	2.853E+00	26.80
	295.22	536	18.42	4.777E+00	1.504E+00	1.504E+00	15.23
	351.93	977	35.60*	4.178E+00	1.621E+00	1.621E+00	12.34
RA-224	240.99	463	4.10*	5.521E+00	5.044E+00	5.044E+00	26.16
RA-226	609.32	717	45.49*	2.654E+00	1.466E+00	1.466E+00	13.02
	1120.29	182	14.92	1.523E+00	1.973E+00	1.973E+00	29.42
	1764.49	114	15.30	1.059E+00	1.744E+00	1.744E+00	21.08
AC-228	338.32	389	11.27	4.305E+00	1.977E+00	1.977E+00	46.35
	911.20	392	25.80*	1.843E+00	2.034E+00	2.034E+00	18.31
	968.97	226	15.80	1.741E+00	2.032E+00	2.032E+00	30.50
RA-228	338.32	389	11.27	4.305E+00	1.977E+00	1.977E+00	46.35
	911.20	392	25.80*	1.843E+00	2.034E+00	2.034E+00	18.31
	968.97	226	15.80	1.741E+00	2.032E+00	2.032E+00	30.50

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	677	10.28	6.093E+00	2.667E+00	2.667E+00	16.58
	77.11	1002	17.10	6.311E+00	2.291E+00	2.291E+00	13.43
	238.63	1781	43.60*	5.568E+00	1.811E+00	1.811E+00	9.41
	300.09	125	3.30	4.719E+00	1.980E+00	1.980E+00	78.56
TH-232	338.32	389	11.27	4.305E+00	1.977E+00	1.977E+00	21.97
	911.20	392	25.80*	1.843E+00	2.034E+00	2.034E+00	18.31
	968.97	226	15.80	1.741E+00	2.032E+00	2.032E+00	30.50
	63.29	196	3.70*	4.712E+00	2.776E+00	2.776E+00	62.08
TH-234	92.59	398	4.23	7.325E+00	3.171E+00	3.171E+00	36.80
	89.96	163	3.47	7.190E+00	1.617E+00	1.617E+00	47.98
	93.35	398	5.60	7.325E+00	2.396E+00	2.396E+00	37.42
	143.76	-----	10.96*	7.372E+00	-----	Line Not Found	-----
U-235	163.33	-----	5.08	6.992E+00	-----	Line Not Found	-----
	185.72	320	57.20	6.530E+00	2.115E-01	2.115E-01	31.21
	205.31	-----	5.01	6.150E+00	-----	Line Not Found	-----
	86.48	223	12.40*	7.042E+00	6.314E-01	6.314E-01	47.64
NP-237	95.86	-----	2.68	7.425E+00	-----	Line Not Found	-----
	63.29	196	3.70*	4.712E+00	2.776E+00	2.776E+00	62.08
U-238	92.59	398	4.23	7.325E+00	3.171E+00	3.171E+00	30.68
	511.00	123	100.00*	3.087E+00	9.806E-02	9.806E-02	59.86

Flag: "*" = Keyline

Total number of lines in spectrum 35
Number of unidentified lines 5
Number of lines tentatively identified by NID 30 85.71%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.356E+01	3.356E+01	0.296E+01	8.82	
CD-109	461.40D	1.04	2.116E+00	2.191E+00	0.937E+00	42.78	
SN-126	2.30E+05Y	1.00	2.116E-01	2.116E-01	0.905E-01	42.78	
TL-208	1.41E+10Y	1.00	5.606E-01	5.606E-01	0.883E-01	15.76	
BI-211	7.04E+08Y	1.00	4.466E+00	4.466E+00	0.493E+00	11.04	
PB-212	1.41E+10Y	1.00	1.811E+00	1.811E+00	0.170E+00	9.41	
BI-214	1600.00Y	1.00	1.466E+00	1.466E+00	0.191E+00	13.02	
PB-214	1600.00Y	1.00	1.621E+00	1.621E+00	0.200E+00	12.34	
RA-224	1.41E+10Y	1.00	5.044E+00	5.044E+00	1.320E+00	26.16	
RA-226	1600.00Y	1.00	1.466E+00	1.466E+00	0.191E+00	13.02	
AC-228	1.41E+10Y	1.00	2.034E+00	2.034E+00	0.372E+00	18.31	
RA-228	1.41E+10Y	1.00	2.034E+00	2.034E+00	0.372E+00	18.31	
TH-228	1.41E+10Y	1.00	1.811E+00	1.811E+00	0.170E+00	9.41	
TH-232	1.41E+10Y	1.00	2.034E+00	2.034E+00	0.372E+00	18.31	
TH-234	4.47E+09Y	1.00	2.776E+00	2.776E+00	1.723E+00	62.08	
U-235	7.04E+08Y	1.00	2.115E-01	2.115E-01	0.660E-01	31.21	K
NP-237	2.14E+06Y	1.00	6.314E-01	6.314E-01	3.008E-01	47.64	
U-238	4.47E+09Y	1.00	2.776E+00	2.776E+00	1.723E+00	62.08	
ANH-511	1.00E+09Y	1.00	9.806E-02	9.806E-02	5.870E-02	59.86	
Total Activity :			6.673E+01	6.680E+01			

Grand Total Activity : 6.673E+01 6.680E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.43	118	453	1.26	418.13	413	10	1.64E-02	70.3	6.07E+00	T
0	270.53	163	384	1.20	540.23	534	13	2.26E-02	52.2	5.09E+00	T
0	327.75	169	210	1.46	654.59	649	12	2.34E-02	37.7	4.41E+00	T
0	462.69	99	157	1.59	924.30	919	12	1.37E-02	54.5	3.35E+00	T
0	569.39	264	247	2.24	1137.59	1127	22	3.66E-02	33.1	2.82E+00	T
0	727.42	133	124	1.77	1453.54	1446	16	1.84E-02	41.7	2.27E+00	T
0	769.65	123	159	2.04	1537.97	1527	22	1.70E-02	55.5	2.15E+00	
0	795.02	89	54	1.57	1588.71	1582	13	1.23E-02	40.4	2.09E+00	T
2	965.30	85	43	2.29	1929.24	1924	21	1.18E-02	36.1	1.75E+00	T
0	1564.47	21	4	4.49	3128.07	3120	15	2.96E-03	58.6	1.15E+00	
0	1589.68	31	27	1.73	3178.53	3173	12	4.25E-03	77.0	1.14E+00	
0	1631.45	18	6	1.85	3262.14	3257	9	2.47E-03	70.5	1.11E+00	
0	1730.37	29	10	1.83	3460.14	3456	8	4.01E-03	53.2	1.07E+00	

Flags: "T" = Tentatively associated


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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057356.CNF;1
* Acquisition date   : 19-MAR-2010 13:09:18   Detector SN#      :
* Detector ID        : GAM14                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.82          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 24-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G1202057356           Analyst initials: MXR1
* Batch Number       : 959280                Sample Quantity : 1.52090E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 6-MAR-2009 11:43:06.61MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A               LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.356E+01	2.959E+00	4.673E-01	3.394E-02	71.807
CD-109	2.191E+00	9.372E-01	1.410E+00	1.233E-01	1.553
SN-126	2.116E-01	9.052E-02	1.348E-01	1.173E-02	1.570
TL-208	5.606E-01	8.835E-02	5.406E-02	3.689E-03	10.371
BI-211	4.466E+00	4.930E-01	2.875E-01	1.822E-02	15.534
PB-212	1.811E+00	1.703E-01	8.480E-02	6.231E-03	21.352
BI-214	1.466E+00	1.909E-01	1.080E-01	8.612E-03	13.579
PB-214	1.621E+00	2.000E-01	1.046E-01	8.782E-03	15.502
RA-224	5.044E+00	1.320E+00	9.085E-01	5.222E-02	5.552
RA-226	1.466E+00	1.909E-01	1.080E-01	8.612E-03	13.579
AC-228	2.034E+00	3.724E-01	2.113E-01	2.552E-02	9.630
RA-228	2.034E+00	3.724E-01	2.113E-01	2.552E-02	9.630
TH-228	1.811E+00	1.703E-01	8.480E-02	6.231E-03	21.352
TH-232	2.034E+00	3.724E-01	2.113E-01	2.552E-02	9.630
TH-234	2.776E+00	1.723E+00	1.764E+00	3.101E-01	1.574
U-235	2.115E-01	6.602E-02	3.327E-01	5.281E-02	0.636
NP-237	6.314E-01	3.008E-01	3.818E-01	8.651E-02	1.654
U-238	2.776E+00	1.723E+00	1.764E+00	3.101E-01	1.574

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	9.806E-02	5.870E-02	4.445E-02	2.612E-03	2.206

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	8.737E-03		3.282E-01	5.388E-01	3.630E-02	0.016
NA-22	2.817E-02		4.198E-02	7.299E-02	4.768E-03	0.386
NA-24	6.691E+02		2.068E+03	Half-Life too short		
SC-46	2.590E-02		3.950E-02	6.913E-02	6.388E-03	0.375
V-48	-7.220E-02		8.402E-02	1.285E-01	1.091E-02	-0.562
CR-51	-6.784E-02		4.257E-01	6.832E-01	4.408E-02	-0.099
MN-54	2.466E-02		3.709E-02	6.474E-02	5.430E-03	0.381
CO-56	-2.261E-02		3.934E-02	6.308E-02	5.407E-03	-0.358
CO-57	3.790E-03		2.495E-02	4.038E-02	2.873E-03	0.094
CO-58	-3.168E-02		4.174E-02	6.265E-02	5.041E-03	-0.506
FE-59	-5.790E-02		9.300E-02	1.457E-01	1.121E-02	-0.397
CO-60	-1.245E-03		3.449E-02	5.640E-02	4.020E-03	-0.022
ZN-65	-3.279E-02		1.042E-01	1.433E-01	9.417E-03	-0.229
SE-75	-4.595E-03		4.926E-02	7.115E-02	4.178E-03	-0.065
SR-85	1.075E-01		4.182E-02	7.060E-02	4.153E-03	1.523
Y-88	-1.486E-02		3.403E-02	5.050E-02	2.868E-03	-0.294
Y-91	-1.892E+01		2.484E+01	3.872E+01	2.252E+00	-0.489
NB-94	-3.840E-03		3.207E-02	5.133E-02	3.329E-03	-0.075
NB-95	6.916E-02		4.820E-02	7.633E-02	5.621E-03	0.906
NB-95M	7.263E-01		1.686E-01	2.754E-01	2.065E-02	2.638
ZR-95	-2.529E-02		7.260E-02	1.135E-01	9.408E-03	-0.223
MO-99	3.430E-05		4.071E-05	Half-Life too short		
TC-99M	-4.204E+19		6.425E+19	Half-Life too short		
RU-103	5.499E-03		4.266E-02	7.037E-02	8.758E-03	0.078
RH-106	7.593E-02		2.905E-01	4.801E-01	5.622E-02	0.158
RU-106	7.593E-02		2.904E-01	4.801E-01	2.870E-02	0.158
AG-108M	-1.316E-02		2.519E-02	4.006E-02	2.424E-03	-0.329
AG-110M	-1.599E-02		3.237E-02	5.043E-02	3.186E-03	-0.317
SN-113	3.377E-03		4.190E-02	6.944E-02	4.063E-03	0.049
CD-115	-3.107E-05		6.104E-05	Half-Life too short		
SN-117M	-3.526E-02		8.381E-02	1.321E-01	7.472E-03	-0.267
TE-123M	-6.229E-03		3.011E-02	4.782E-02	2.735E-03	-0.130
SB-124	-3.762E-03		7.033E-02	1.129E-01	7.663E-03	-0.033
SB-125	-6.543E-02		7.920E-02	1.236E-01	7.235E-03	-0.529
TE-125M	-8.586E+00		1.081E+01	1.696E+01	1.625E+00	-0.506
I-126	3.029E-01		3.209E-01	5.517E-01	3.314E-02	0.549
SB-126	1.221E-01		2.468E-01	3.606E-01	2.427E-02	0.339
SB-127	-4.299E+00		5.467E+00	8.288E+00	1.050E+00	-0.519
I-131	3.816E-02		2.063E-01	3.445E-01	2.209E-02	0.111
TE-132	2.936E+00		3.873E+00	6.613E+00	1.087E+00	0.444
BA-133	4.297E-03		4.037E-02	5.846E-02	6.552E-03	0.073
I-133	1.225E+00		1.512E+00	Half-Life too short		

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	1.393E-01	+	5.736E-02	8.040E-02	6.328E-03	1.732
CS-135	2.936E-01		1.756E-01	2.748E-01	2.108E-02	1.068
I-135	-3.614E+18		1.818E+18	Half-Life	too short	
CS-136	-1.731E-02		1.427E-01	2.345E-01	1.888E-02	-0.074
BA-137M	8.538E-04		3.353E-02	5.438E-02	3.233E-03	0.016
CS-137	9.019E-04		3.543E-02	5.745E-02	3.430E-03	0.016
CE-139	5.512E-03		3.111E-02	5.003E-02	2.686E-03	0.110
BA-140	-1.785E-01		3.760E-01	5.750E-01	1.917E-01	-0.310
LA-140	1.081E-02		1.202E-01	1.709E-01	1.133E-02	0.063
CE-141	6.260E-02		7.505E-02	1.235E-01	7.881E-03	0.507
CE-143	5.306E-02		7.815E-03	Half-Life	too short	
CE-144	-1.568E-01		2.087E-01	3.249E-01	4.632E-02	-0.483
PM-144	3.174E-03		3.457E-02	5.619E-02	3.603E-03	0.056
PR-144	2.550E-01		2.599E+00	4.226E+00	2.706E-01	0.060
PM-146	6.376E-03		3.954E-02	6.551E-02	5.499E-03	0.097
ND-147	2.287E-01		8.169E-01	1.358E+00	1.843E-01	0.168
PM-149	-1.664E-04		5.182E-04	Half-Life	too short	
EU-152	2.775E-02		1.066E-01	1.375E-01	8.887E-03	0.202
GD-153	6.007E-02		9.117E-02	1.325E-01	1.063E-02	0.453
EU-154	7.845E-02		1.185E-01	2.057E-01	2.033E-02	0.381
EU-155	7.636E-02		1.035E-01	1.707E-01	1.321E-02	0.447
BT-160	3.688E-02		1.364E-01	2.330E-01	2.116E-02	0.158
HO-166M	-5.187E-02		5.912E-02	8.902E-02	5.882E-03	-0.583
TA-182	-1.049E-01		2.015E-01	3.192E-01	1.909E-02	-0.329
IR-192	1.170E-02		3.425E-02	5.778E-02	3.373E-03	0.203
HG-203	2.242E-02		4.260E-02	7.241E-02	4.455E-03	0.310
BI-207	2.527E-02		4.819E-02	8.333E-02	6.166E-03	0.303
PB-210	3.552E-01		2.094E+00	3.432E+00	2.513E-01	0.103
PB-211	-1.124E+00		8.834E-01	1.059E+00	5.075E-01	-1.062
BI-212	2.163E+00	+	9.350E-01	1.113E+00	1.257E-01	1.943
RN-219	-3.439E-02		3.810E-01	6.169E-01	8.209E-02	-0.056
RA-223	-2.306E-01		6.695E-01	9.413E-01	1.517E-01	-0.245
AC-227	9.539E-02		2.350E-01	3.986E-01	4.074E-02	0.239
TH-227	9.539E-02		2.350E-01	3.986E-01	4.790E-02	0.239
TH-229	-1.773E-01		4.882E-01	8.120E-01	4.484E-02	-0.218
PA-231	-3.375E-01		1.396E+00	2.282E+00	2.996E-01	-0.148
TH-231	-2.306E-01		6.695E-01	9.413E-01	1.517E-01	-0.245
PA-233	5.909E-03		5.857E-02	9.781E-02	6.041E-03	0.060
PA-234	9.404E-02		2.959E-01	5.042E-01	9.531E-02	0.187
PA-234M	6.729E-01		4.299E+00	7.280E+00	7.037E-01	0.092
NP-239	-4.995E-02		3.963E-01	6.358E-01	4.591E-02	-0.079
AM-241	1.130E-01		1.351E-01	1.992E-01	1.479E-02	0.567
CM-247	8.578E-03		3.484E-02	5.741E-02	3.153E-03	0.149
CF-249	1.992E-02		3.731E-02	6.322E-02	3.456E-03	0.315
CF-251	5.057E-02		1.240E-01	2.008E-01	1.090E-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]G1202057356          *
* Acquisition date   : 19-MAR-2010 13:09:18 Detector SN#      :              *
* Detector ID        : GAM14                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.82           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 24-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202057356           Analyst initials: MXR1          *
* Batch Number       : 959280                Sample Quantity : 1.5209E+02 GRAM *
* Recovery           : 1.00000                Carrier Weight  : 0.00000        *
*****
*                                     QC DATA                               *
*                                     *                                       *
* CALIB. DATE/TIME   : 6-MAR-2009 11:43:06 MS Isotope        :              *
* MSD DPM             : 0.000                  MSD Isotope     :              *
* LCS DPM             : 0.000                  LCS Isotope      :              *
* LCSD DPM            : 0.000                  LCSD Isotope     :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.356E+01	2.900E+00	2.356E-01	1.479E+00
CD-109	2.191E+00	9.184E-01	7.625E-01	4.686E-01
SN-126	2.116E-01	8.871E-02	7.286E-02	4.526E-02
TL-208	5.606E-01	8.658E-02	2.791E-02	4.417E-02
BI-211	4.466E+00	4.831E-01	1.503E-01	2.465E-01
PB-212	1.811E+00	1.669E-01	4.477E-02	8.517E-02
BI-214	1.466E+00	1.871E-01	5.568E-02	9.546E-02
PB-214	1.621E+00	1.960E-01	5.467E-02	1.000E-01
RA-224	5.044E+00	1.293E+00	4.795E-01	6.599E-01
RA-226	1.466E+00	1.871E-01	5.568E-02	9.546E-02
AC-228	2.034E+00	3.650E-01	1.078E-01	1.862E-01
RA-228	2.034E+00	3.650E-01	1.078E-01	1.862E-01
TH-228	1.811E+00	1.669E-01	4.477E-02	8.517E-02
TH-232	2.034E+00	3.650E-01	1.078E-01	1.862E-01
TH-234	2.776E+00	1.689E+00	9.609E-01	8.617E-01
U-235	4.748E-03	2.045E-01	1.778E-01	1.043E-01
NP-237	6.314E-01	2.948E-01	2.065E-01	1.504E-01
U-238	2.776E+00	1.689E+00	9.609E-01	8.617E-01
ANH-511	9.806E-02	5.753E-02	2.303E-02	2.935E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	8.737E-03	3.216E-01	2.796E-01	1.641E-01 NOT IDENT.
NA-22	2.817E-02	4.114E-02	3.692E-02	2.099E-02 NOT IDENT.
NA-24	6.691E+08	4.053E+09	0.000E+00	2.068E+09 SHORT HLIF
SC-46	2.590E-02	3.871E-02	3.530E-02	1.975E-02 FAIL ABUN
V-48	-7.220E-02	8.234E-02	6.545E-02	4.201E-02 NOT IDENT.
CR-51	-6.784E-02	4.172E-01	3.581E-01	2.129E-01 NOT IDENT.
MN-54	2.466E-02	3.635E-02	3.312E-02	1.854E-02 NOT IDENT.
CO-56	-2.261E-02	3.856E-02	3.226E-02	1.967E-02 NOT IDENT.

CO-57	3.790E-03	2.445E-02	2.166E-02	1.248E-02	NOT IDENT.
CO-58	-3.168E-02	4.090E-02	3.207E-02	2.087E-02	NOT IDENT.
FE-59	-5.790E-02	9.114E-02	7.398E-02	4.650E-02	NOT IDENT.
CO-60	-1.245E-03	3.380E-02	2.850E-02	1.724E-02	NOT IDENT.
ZN-65	-3.279E-02	1.021E-01	7.273E-02	5.211E-02	NOT IDENT.
SE-75	-4.595E-03	4.828E-02	3.747E-02	2.463E-02	NOT IDENT.
SR-85	1.075E-01	4.098E-02	3.657E-02	2.091E-02	NOT IDENT.
Y-88	-1.486E-02	3.335E-02	2.530E-02	1.702E-02	NOT IDENT.
Y-91	-1.892E+01	2.434E+01	1.962E+01	1.242E+01	NOT IDENT.
NB-94	-3.840E-03	3.142E-02	2.638E-02	1.603E-02	NOT IDENT.
NB-95	6.916E-02	4.724E-02	3.913E-02	2.410E-02	NOT IDENT.
NB-95M	7.263E-01	1.653E-01	1.454E-01	8.431E-02	NOT IDENT.
ZR-95	-2.529E-02	7.114E-02	5.821E-02	3.630E-02	NOT IDENT.
MO-99	3.430E+01	7.979E+01	0.000E+00	4.071E+01	SHORT HLIF
TC-99M	-4.204E+25	1.259E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	5.499E-03	4.181E-02	3.648E-02	2.133E-02	FAIL ABUN
RH-106	7.593E-02	2.847E-01	2.474E-01	1.453E-01	NOT IDENT.
RU-106	7.593E-02	2.846E-01	2.474E-01	1.452E-01	NOT IDENT.
AG-108M	-1.316E-02	2.468E-02	2.084E-02	1.259E-02	NOT IDENT.
AG-110M	-1.599E-02	3.172E-02	2.596E-02	1.618E-02	NOT IDENT.
SN-113	3.377E-03	4.106E-02	3.621E-02	2.095E-02	NOT IDENT.
CD-115	-3.107E+01	1.196E+02	0.000E+00	6.104E+01	SHORT HLIF
SN-117M	-3.526E-02	8.214E-02	7.043E-02	4.191E-02	NOT IDENT.
TE-123M	-6.229E-03	2.951E-02	2.550E-02	1.506E-02	NOT IDENT.
SB-124	-3.762E-03	6.893E-02	5.669E-02	3.517E-02	NOT IDENT.
SB-125	-6.543E-02	7.761E-02	6.433E-02	3.960E-02	FAIL ABUN
TE-125M	-8.586E+00	1.060E+01	9.122E+00	5.407E+00	NOT IDENT.
I-126	3.029E-01	3.145E-01	2.839E-01	1.604E-01	NOT IDENT.
SB-126	1.221E-01	2.418E-01	1.852E-01	1.234E-01	NOT IDENT.
SB-127	-4.299E+00	5.357E+00	4.261E+00	2.733E+00	NOT IDENT.
I-131	3.816E-02	2.021E-01	1.800E-01	1.031E-01	NOT IDENT.
TE-132	2.936E+00	3.796E+00	3.495E+00	1.937E+00	NOT IDENT.
BA-133	4.297E-03	3.957E-02	3.056E-02	2.019E-02	NOT IDENT.
I-133	1.225E+06	2.964E+06	0.000E+00	1.512E+06	SHORT HLIF
CS-134	1.393E-01	5.621E-02	4.118E-02	2.868E-02	FAIL ABUN
CS-135	2.936E-01	1.721E-01	1.447E-01	8.778E-02	NOT IDENT.
I-135	-3.614E+24	3.563E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.731E-02	1.398E-01	1.192E-01	7.135E-02	NOT IDENT.
BA-137M	8.538E-04	3.286E-02	2.799E-02	1.677E-02	NOT IDENT.
CS-137	9.019E-04	3.472E-02	2.956E-02	1.771E-02	NOT IDENT.
CE-139	5.512E-03	3.049E-02	2.665E-02	1.556E-02	NOT IDENT.
BA-140	-1.785E-01	3.685E-01	2.975E-01	1.880E-01	NOT IDENT.
LA-140	1.081E-02	1.178E-01	8.594E-02	6.009E-02	FAIL ABUN
CE-141	6.260E-02	7.355E-02	6.597E-02	3.752E-02	NOT IDENT.
CE-143	5.306E+04	1.532E+04	0.000E+00	7.815E+03	SHORT HLIF
CE-144	-1.568E-01	2.045E-01	1.739E-01	1.043E-01	NOT IDENT.
PM-144	3.174E-03	3.388E-02	2.888E-02	1.729E-02	NOT IDENT.
PR-144	2.550E-01	2.547E+00	2.172E+00	1.300E+00	NOT IDENT.
PM-146	6.376E-03	3.875E-02	3.404E-02	1.977E-02	NOT IDENT.
ND-147	2.287E-01	8.005E-01	7.028E-01	4.084E-01	FAIL ABUN
PM-149	-1.664E+02	1.016E+03	0.000E+00	5.182E+02	SHORT HLIF
EU-152	2.775E-02	1.045E-01	7.193E-02	5.332E-02	FAIL ABUN
GD-153	6.007E-02	8.934E-02	7.146E-02	4.558E-02	NOT IDENT.
EU-154	7.845E-02	1.162E-01	1.040E-01	5.926E-02	NOT IDENT.
EU-155	7.636E-02	1.014E-01	9.192E-02	5.173E-02	FAIL ABUN
TB-160	3.688E-02	1.337E-01	1.190E-01	6.820E-02	FAIL ABUN
HO-166M	-5.187E-02	5.794E-02	4.573E-02	2.956E-02	FAIL ABUN
TA-182	-1.049E-01	1.974E-01	1.616E-01	1.007E-01	FAIL ABUN
IR-192	1.170E-02	3.356E-02	3.029E-02	1.712E-02	FAIL ABUN
HG-203	2.242E-02	4.175E-02	3.808E-02	2.130E-02	NOT IDENT.
BI-207	2.527E-02	4.722E-02	4.236E-02	2.409E-02	FAIL ABUN
PB-210	3.552E-01	2.052E+00	1.883E+00	1.047E+00	NOT IDENT.
PB-211	-1.124E+00	8.657E-01	5.517E-01	4.417E-01	NOT IDENT.
BI-212	2.163E+00	9.163E-01	5.715E-01	4.675E-01	FAIL ABUN
RN-219	-3.439E-02	3.734E-01	3.215E-01	1.905E-01	FAIL ABUN
RA-223	-2.306E-01	6.561E-01	4.932E-01	3.348E-01	FAIL ABUN
AC-227	9.539E-02	2.303E-01	2.101E-01	1.175E-01	FAIL ABUN
TH-227	9.539E-02	2.303E-01	2.101E-01	1.175E-01	FAIL ABUN
TH-229	-1.773E-01	4.784E-01	4.309E-01	2.441E-01	FAIL ABUN
PA-231	-3.375E-01	1.368E+00	1.199E+00	6.979E-01	FAIL ABUN
TH-231	-2.306E-01	6.561E-01	4.932E-01	3.348E-01	FAIL ABUN
PA-233	5.909E-03	5.740E-02	5.130E-02	2.929E-02	FAIL ABUN
PA-234	9.404E-02	2.900E-01	2.571E-01	1.479E-01	FAIL ABUN
PA-234M	6.729E-01	4.213E+00	3.706E+00	2.149E+00	NOT IDENT.
NP-239	-4.995E-02	3.884E-01	3.415E-01	1.982E-01	NOT IDENT.
AM-241	1.130E-01	1.324E-01	1.086E-01	6.753E-02	NOT IDENT.
CM-247	8.578E-03	3.414E-02	2.992E-02	1.742E-02	NOT IDENT.
CF-249	1.992E-02	3.656E-02	3.298E-02	1.865E-02	NOT IDENT.

CF-251 5.057E-02 1.215E-01 1.068E-01 6.199E-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	493.8352
49.72	599.7098
57.36	0.0000
59.54	567.4163
63.29	692.3307
63.29	692.3307
64.28	693.0172
67.75	817.6870
69.67	738.6652
70.83	800.6338
72.81	813.8167
72.87	813.8613
72.87	813.8613
74.82	765.9355
74.82	765.9355
74.82	765.9355
74.97	766.0416
77.11	767.5272
77.11	767.5272
77.11	767.5272
79.69	743.2285
79.80	743.3013
80.12	768.7413
80.19	768.7887
80.57	858.2344
81.00	885.4932
81.07	885.5478
81.07	885.5478
83.79	702.4269
83.79	702.4269
85.43	763.8232
86.48	835.5396
86.55	835.5879
86.79	861.1309
86.94	910.3115
87.57	942.9564
88.03	970.4138
88.47	804.7400
89.96	1297.6519
91.11	585.7672
92.59	586.4727
92.59	586.4727
93.35	586.8327
94.67	556.8041
94.87	556.8939
94.87	556.8939
95.86	584.6031
97.43	498.2963
98.44	473.0725
99.53	488.3702
100.11	493.7812
103.18	553.8663
103.37	553.9471
105.31	513.9825
106.12	530.4003
109.28	590.8372
111.00	539.8578
111.76	549.8593
116.30	504.0595
117.23	509.8038
121.12	485.1429
121.78	469.0772
122.06	463.7377
123.07	473.8413
131.20	517.9674
133.52	550.4978
136.00	520.6909

136.47	551.5532
140.51	0.0000
140.51	0.0000
143.76	536.4907
144.24	513.5095
144.24	513.5095
145.44	488.5296
152.43	483.9834
153.25	467.6025
154.21	472.3077
154.21	472.3077
156.02	487.2501
158.56	499.0994
159.00	482.5515
162.66	478.0166
163.33	438.0742
165.86	453.2281
176.60	406.5678
177.52	387.6723
181.07	0.0000
184.41	392.5169
185.72	402.7257
193.51	416.1845
197.04	396.9675
205.31	421.1553
210.85	413.1796
215.65	359.9099
222.11	352.3044
227.38	346.7397
228.16	343.1782
228.18	343.1827
235.69	357.9735
235.96	354.9319
235.96	354.9319
238.63	321.6888
238.63	321.6888
240.99	322.0403
242.00	322.1886
244.70	275.7946
252.40	295.7209
252.80	306.9716
256.23	285.9458
256.23	285.9458
260.90	0.0000
264.66	278.2517
268.22	288.0728
269.46	291.3591
269.46	291.3591
271.23	296.2815
273.65	353.0823
276.40	276.5111
277.37	269.4371
277.60	282.9382
278.00	285.3441
279.20	303.8914
279.54	311.4858
280.46	310.6584
283.69	277.0409
284.31	271.4378
285.41	276.2915
285.90	0.0000
287.50	286.9475
293.27	0.0000
295.22	265.0534
295.96	265.1317
298.57	265.4144
299.98	249.0656
299.98	249.0656
300.09	249.0752
300.09	249.0752
300.13	249.0784
301.36	217.4574
302.85	203.2917
304.50	197.0700
304.50	197.0700
304.85	208.2229
308.46	218.7073
311.90	221.8727

316.51	216.5236
319.41	227.3169
320.08	228.1210
323.87	228.9885
323.87	228.9885
328.76	239.0421
333.37	173.5664
334.37	215.4327
334.37	215.4327
338.28	195.1376
338.28	195.1376
338.32	195.1426
338.32	195.1426
338.32	195.1426
340.48	159.5255
340.55	159.5295
344.28	169.4330
351.06	183.4421
351.93	183.4998
356.01	165.2955
364.49	176.5280
366.42	0.0000
383.85	201.2914
388.16	177.0051
388.63	186.8689
391.69	169.3419
400.66	190.5922
401.81	175.8467
402.40	167.9767
404.85	234.3731
410.95	177.3721
414.70	196.4410
423.72	127.3656
427.09	156.3925
427.87	155.4344
433.94	141.7608
453.88	151.6912
463.37	129.2968
468.07	136.2079
473.00	136.4106
476.78	137.5771
477.60	139.6357
487.02	141.0412
492.35	0.0000
497.08	133.3171
511.00	143.0514
514.00	100.5630
527.90	0.0000
529.87	0.0000
531.02	107.8967
537.26	115.2922
546.56	0.0000
563.25	129.5898
569.33	126.6852
569.50	126.6912
569.70	126.6971
583.19	121.9417
600.60	119.8202
602.73	132.6877
604.72	90.8328
609.32	129.0659
609.32	129.0659
610.33	118.9530
614.28	94.5571
618.01	110.4218
621.93	100.0028
621.93	100.0028
633.25	101.3438
635.95	103.5245
636.99	92.9844
645.85	101.6602
657.76	107.2657
661.66	109.4953
661.66	109.4953
664.57	0.0000
666.33	97.9117
666.50	97.9162
677.62	112.0496

685.70	122.9568
695.00	112.5110
696.49	117.9089
696.51	117.9089
697.00	115.7783
702.65	112.7109
706.68	104.2205
711.68	120.4766
720.70	95.2150
721.93	0.0000
722.78	102.4497
722.91	102.4543
723.31	115.0469
724.19	125.8582
727.33	90.6814
733.00	93.6808
735.93	98.6997
739.50	0.0000
747.24	94.3428
752.31	94.4490
753.82	82.5350
756.73	93.4557
763.94	68.9338
765.81	78.0355
766.42	94.3812
777.92	0.0000
778.90	101.3993
783.70	77.6112
785.37	103.8831
795.86	80.3730
801.95	83.0898
810.29	98.9429
810.76	100.0511
815.77	81.6304
818.51	85.3484
832.01	120.5604
834.85	95.7692
836.80	0.0000
846.77	92.3116
856.80	82.4579
860.56	74.9833
871.09	80.7094
873.19	82.5991
875.33	0.0000
879.36	71.5515
880.51	68.7788
883.24	79.0459
884.68	84.6497
889.28	71.6925
898.04	69.0197
911.20	76.6781
911.20	76.6781
911.20	76.6781
926.50	91.9129
937.49	90.2285
944.13	83.7544
946.00	80.0195
949.00	81.9484
962.29	46.9460
964.08	76.1094
966.15	68.0391
968.97	68.0757
968.97	68.0757
968.97	68.0757
983.53	68.2603
996.26	69.3717
1001.03	68.4814
1004.73	69.4801
1037.84	69.8960
1038.76	0.0000
1048.07	64.2683
1050.41	72.9323
1050.41	72.9323
1063.66	62.5218
1085.87	66.6276
1099.45	74.5280
1112.07	71.2928
1115.54	91.5081

1120.29	77.7051
1120.29	77.7051
1120.55	77.7116
1121.30	77.7214
1131.51	0.0000
1173.23	89.1745
1177.93	92.1870
1189.05	76.6353
1204.77	112.2883
1221.41	98.7630
1231.02	93.9679
1235.36	119.7691
1238.28	75.2609
1260.41	0.0000
1271.85	71.6777
1274.44	56.7681
1274.54	56.7681
1291.59	69.8975
1298.22	0.0000
1312.11	53.0884
1332.49	41.1952
1365.19	28.2712
1368.63	0.0000
1384.29	62.7770
1408.01	38.6092
1457.56	0.0000
1460.82	27.6405
1489.16	31.8615
1505.03	41.2028
1596.21	19.6643
1620.50	17.7844
1678.03	0.0000
1690.97	15.8356
1764.49	6.3928
1764.49	6.3928
1770.23	14.6222
1771.35	86.3756
1791.20	0.0000
1836.06	20.4210

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202057356

Total Uranium Activity	8.2604E+00	ug/g
Total Uranium Counting Unc.	5.0254E+00	ug/g
Total Uranium Tpu	2.5640E-06	ug/g
Total Uranium Mda	2.8598E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 959280          SAMPLE ID   : G1202057356
*  ANALYST       : MXR1            DETECTOR    : GAM14
*  SAMPLE DATE   : 24-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 19-MAR-2010 13:09:18.29  SAMPLE ALQT: 152.090 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.090E+01
GROSS GAMMA ERROR  (pCi/GRAM )  : 1.329E+00
GROSS GAMMA MDA    (pCi/GRAM )  : 4.646E+00
GROSS GAMMA DLC    (pCi/GRAM )  : 2.277E+00

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VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 12:18:25.67

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057357.CNF;1
Sample date        : 5-MAR-2010 00:00:00. Acquisition date : 19-MAR-2010 11:17:59
Sample ID          : G1202057357      Sample quantity   : 1.51730E+02 GRAM
Detector name      : GAM04            Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00    Elapsed real time: 0 01:00:01.37  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials  : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 959280           Detector SN#      :
Matrix Spike ID    :                  LCS ID            : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	59.55	1584	469	0.98	119.14	115	9	4.40E-01	3.6	
2	1	74.90	131	248	0.88	149.85	146	14	3.64E-02	19.7	1.79E+00
3	1	77.07*	193	284	1.00	154.18	146	14	5.37E-02	15.9	
4	3	88.03	1216	257	1.07	176.09	172	11	3.38E-01	3.5	9.19E-01
5	3	90.01	74	222	0.94	180.05	172	11	2.07E-02	43.6	
6	0	122.48	178	418	1.45	245.00	239	12	4.94E-02	24.2	
7	0	186.06*	93	318	0.85	372.17	367	10	2.59E-02	37.7	
8	5	238.77*	542	166	1.09	477.62	472	26	1.51E-01	5.9	1.31E+00
9	5	241.78	163	246	1.87	483.63	472	26	4.52E-02	23.2	
10	0	295.27*	218	230	1.21	590.61	584	12	6.04E-02	15.6	
11	0	338.50	149	177	1.14	677.09	672	11	4.14E-02	19.1	
12	0	352.18*	282	127	1.24	704.45	701	9	7.83E-02	9.4	
13	0	583.53*	161	114	1.29	1167.15	1161	12	4.47E-02	15.5	
14	0	609.85*	159	115	1.44	1219.79	1214	11	4.42E-02	15.5	
15	0	662.17*	2178	126	1.46	1324.43	1317	14	6.05E-01	2.4	
16	0	728.05	58	44	1.65	1456.18	1452	8	1.61E-02	23.8	
17	0	911.92*	151	121	1.61	1823.90	1817	13	4.19E-02	17.3	
18	0	970.91*	74	167	1.44	1941.87	1934	16	2.07E-02	41.1	
19	0	1121.58*	78	55	1.80	2243.17	2236	16	2.16E-02	25.0	
20	0	1174.19	1678	45	1.91	2348.38	2342	13	4.66E-01	2.6	
21	0	1333.62	1509	20	2.00	2667.17	2657	20	4.19E-01	2.7	
22	0	1380.10	17	16	1.14	2760.13	2752	13	4.84E-03	53.2	
23	0	1766.29	28	3	1.47	3532.30	3525	13	7.80E-03	23.0	

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

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057357.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 5-MAR-2010 00:00:00   Acquisition date : 19-MAR-2010 11:17:59
Sample ID        : G1202057357           Sample quantity  : 151.73 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA4                 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00          Elapsed real time: 0 01:00:01.37    0.0%
Peak Width (FWHM): 3.00                   Confidence level  : 5.00 %
Energy tolerance : 1.50 keV               Half life ratio  : 8.00
Errors propagated: Yes                    Systematic Error : 0.00 %
Efficiency type  : Empirical              Efficiencies at  : Peak Energy
Abundance limit  : 75.00                  WTM error limit  : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	+	122.06	*	1.643E-01	8.044E-02	6.007E-02	4.170E-03	2.735
		136.47		1.238E-01	3.093E-01	5.152E-01	3.826E-02	0.240
CO-60	+	1173.23		6.434E+00	5.067E-01	1.335E-01	7.939E-03	48.198
	+	1332.49	*	6.481E+00	5.634E-01	7.513E-02	5.148E-03	86.265
CD-109	+	88.03	*	3.268E+01	4.560E+00	2.207E+00	2.652E-01	14.806
SN-126		64.28		2.669E-01	1.055E+00	1.714E+00	2.953E-01	0.156
	+	86.94		1.329E+01	5.688E+00	9.811E-01	4.138E-01	13.549
	+	87.57	*	3.197E+00	4.462E-01	2.176E-01	2.610E-02	14.694
BA-137M	+	661.66	*	5.438E+00	3.731E-01	1.116E-01	5.445E-03	48.715
CS-137	+	661.66	*	5.745E+00	3.954E-01	1.179E-01	5.786E-03	48.715
TL-208		277.37		1.026E-01	6.077E-01	1.034E+00	1.165E-01	0.099
	+	583.19	*	3.821E-01	1.212E-01	9.986E-02	6.267E-03	3.826
		860.56		1.920E-01	6.290E-01	1.060E+00	8.842E-02	0.181
BI-211		72.87		1.018E+00	6.024E+00	9.178E+00	1.052E+00	0.111
	+	351.06	*	2.977E+00	5.936E-01	5.578E-01	3.769E-02	5.338
PB-212	+	74.82		1.730E+00	7.285E-01	1.044E+00	1.568E-01	1.657
	+	77.11		1.426E+00	4.819E-01	5.828E-01	6.686E-02	2.447
	+	238.63	*	1.276E+00	1.824E-01	1.518E-01	1.228E-02	8.403
		300.09		2.373E+00	1.580E+00	2.549E+00	2.278E-01	0.931
BI-214	+	609.32	*	7.318E-01	2.332E-01	2.145E-01	1.590E-02	3.412
	+	1120.29		1.905E+00	9.689E-01	9.830E-01	9.214E-02	1.937
		1764.49		8.369E-01	3.729E-01	8.115E-01	4.947E-02	1.031
PB-214	+	74.82		3.066E+00	1.280E+00	1.850E+00	2.577E-01	1.657
	+	77.11		2.514E+00	8.745E-01	1.027E+00	1.452E-01	2.447
	+	242.00		2.323E+00	1.095E+00	9.239E-01	8.161E-02	2.514
	+	295.22		1.415E+00	4.596E-01	4.071E-01	3.772E-02	3.475
	+	351.93	*	1.081E+00	2.235E-01	2.099E-01	1.830E-02	5.148
RA-224	+	240.99	*	4.108E+00	1.922E+00	1.628E+00	1.085E-01	2.523
RA-226	+	609.32	*	7.318E-01	2.332E-01	2.145E-01	1.590E-02	3.412
	+	1120.29		1.905E+00	9.689E-01	9.830E-01	9.214E-02	1.937
		1764.49		8.369E-01	3.729E-01	8.115E-01	4.947E-02	1.031
TH-228	+	74.82		1.730E+00	7.091E-01	1.044E+00	1.201E-01	1.657
	+	77.11		1.426E+00	4.819E-01	5.828E-01	6.686E-02	2.447
	+	238.63	*	1.276E+00	1.824E-01	1.518E-01	1.228E-02	8.403

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		300.09		2.373E+00	2.132E+00	2.549E+00	1.554E+00	0.931
AM-241	+	59.54	*	1.390E+01	2.014E+00	7.146E-01	9.021E-02	19.454

---- 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	*	-1.599E-01	6.912E-01	1.105E+00	7.316E-02	-0.145
NA-22		1274.54	*	-3.259E-02	5.059E-02	7.579E-02	4.956E-03	-0.430
NA-24		1368.63	*	-3.504E-01	5.059E-02	Half-Life too short		
K-40		1460.82	*	7.819E-01	6.066E-01	1.166E+00	8.287E-02	0.671
SC-46		889.28	*	-6.996E-03	9.423E-02	1.544E-01	1.248E-02	-0.045
	+	1120.55		3.204E-01	1.616E-01	2.030E-01	1.330E-02	1.578
V-48		944.13		1.124E+00	2.295E+00	3.877E+00	3.099E-01	0.290
		983.53	*	-1.866E-01	1.669E-01	2.478E-01	1.920E-02	-0.753
		1312.11		1.682E-02	8.172E-02	1.415E-01	9.535E-03	0.119
CR-51		320.08	*	-2.610E-01	6.214E-01	1.015E+00	7.140E-02	-0.257
MN-54		834.85	*	4.556E-02	8.117E-02	1.393E-01	1.008E-02	0.327
CO-56		846.77	*	-5.801E-02	8.494E-02	1.330E-01	9.867E-03	-0.436
		1037.84		1.158E-01	7.284E-01	1.200E+00	9.434E-02	0.097
		1238.28		1.235E-01	1.079E-01	2.032E-01	1.353E-02	0.608
		1771.35		1.224E-01	3.682E-01	5.726E-01	3.477E-02	0.214
CO-58		810.76	*	6.259E-02	8.033E-02	1.406E-01	9.706E-03	0.445
FE-59		1099.45	*	-6.458E-02	2.082E-01	3.284E-01	2.509E-02	-0.197
		1291.59		-1.010E-02	1.396E-01	2.305E-01	1.863E-02	-0.044
ZN-65		1115.54	*	-1.642E-02	2.246E-01	3.104E-01	2.053E-02	-0.053
SE-75	+	121.12		8.569E-01	4.238E-01	4.163E-01	4.116E-02	2.059
		136.00		7.402E-02	5.851E-02	1.012E-01	6.783E-03	0.732
		264.66	*	-1.172E-02	7.657E-02	1.285E-01	8.647E-03	-0.091
		279.54		-1.254E-02	1.728E-01	2.905E-01	2.053E-02	-0.043
		400.66		3.494E-01	4.952E-01	8.476E-01	7.603E-02	0.412
SR-85		514.00	*	-8.623E-02	8.238E-02	1.252E-01	6.993E-03	-0.689
Y-88		898.04		-5.672E-02	1.039E-01	1.644E-01	1.360E-02	-0.345
		1836.06	*	3.379E-02	4.451E-02	8.598E-02	5.017E-03	0.393
Y-91		1204.77	*	-3.340E+01	2.907E+01	3.867E+01	2.370E+00	-0.864
NB-94		702.65	*	-1.210E-02	6.345E-02	1.049E-01	5.653E-03	-0.115
		871.09		3.455E-02	7.977E-02	1.355E-01	1.057E-02	0.255
NB-95		765.81	*	-7.108E-02	8.141E-02	1.269E-01	7.907E-03	-0.560
NB-95M		235.69	*	-1.176E-02	2.265E-01	3.177E-01	2.614E-02	-0.037
ZR-95		724.19		-2.912E-02	1.959E-01	2.806E-01	1.886E-02	-0.104
		756.73	*	8.264E-03	1.379E-01	2.309E-01	1.691E-02	0.036
MO-99		140.51		4.405E+01	2.980E+01	4.903E+01	1.131E+01	0.898
		181.07		1.197E+01	2.636E+01	3.884E+01	6.947E+00	0.308
		366.42		1.107E+02	1.586E+02	2.730E+02	1.632E+01	0.405
		739.50	*	2.989E+00	1.950E+01	3.294E+01	4.756E+00	0.091
		777.92		-1.039E+01	5.898E+01	9.679E+01	6.198E+00	-0.107
TC-99M		140.51	*	1.423E+10	5.898E+01	Half-Life too short		
RU-103		497.08	*	-4.957E-02	7.666E-02	1.186E-01	1.463E-02	-0.418
	+	610.33		7.465E+00	2.564E+00	3.521E+00	5.222E-01	2.120

---- 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	*	-1.933E-01	5.543E-01	8.578E-01	9.697E-02	-0.225	
	1050.41		6.472E+00	5.646E+00	9.987E+00	7.220E-01	0.648	
RU-106	621.93	*	-1.933E-01	5.539E-01	8.578E-01	4.406E-02	-0.225	
	1050.41		6.472E+00	5.646E+00	9.987E+00	7.220E-01	0.648	
AG-108M	433.94	*	5.350E-03	5.969E-02	9.848E-02	5.994E-03	0.054	
	614.28		4.183E-02	6.799E-02	1.017E-01	5.736E-03	0.411	
AG-110M	722.91		6.129E-03	8.267E-02	1.212E-01	7.349E-03	0.051	
	657.76	*	2.568E-02	7.411E-02	1.124E-01	6.009E-03	0.228	
	677.62		2.044E-01	5.822E-01	1.002E+00	5.495E-02	0.204	
	706.68		-7.999E-02	4.140E-01	6.845E-01	3.986E-02	-0.117	
	763.94		-5.575E-02	3.156E-01	5.192E-01	3.391E-02	-0.107	
	884.68		-2.710E-02	1.153E-01	1.867E-01	1.552E-02	-0.145	
	937.49		-1.526E-02	2.962E-01	4.841E-01	4.050E-02	-0.032	
SN-113	1384.29		2.256E-02	2.071E-01	3.056E-01	2.181E-02	0.074	
	1505.03		-4.908E-01	4.293E-01	5.560E-01	3.752E-02	-0.883	
	391.69	*	3.235E-02	8.121E-02	1.373E-01	8.274E-03	0.236	
	260.90		8.401E+01	1.957E+02	3.379E+02	2.256E+01	0.249	
	492.35		-5.886E+01	6.537E+01	9.994E+01	5.626E+00	-0.589	
	527.90	*	-1.271E+01	1.817E+01	2.788E+01	1.547E+00	-0.456	
	156.02		-6.823E-01	3.250E+00	5.219E+00	3.347E-01	-0.131	
CD-115	158.56	*	1.725E-02	7.992E-02	1.310E-01	8.382E-03	0.132	
	159.00	*	-9.396E-03	4.299E-02	6.892E-02	4.455E-03	-0.136	
TE-123M	602.73		-4.335E-03	7.534E-02	1.159E-01	6.081E-03	-0.037	
	645.85		6.537E-03	8.687E-01	1.466E+00	8.503E-02	0.004	
	722.78		-3.840E-02	8.380E-01	1.214E+00	7.218E-02	-0.032	
SB-124	1690.97	*	-6.401E-02	1.388E-01	2.063E-01	1.407E-02	-0.310	
	427.87	*	-6.286E-02	1.804E-01	2.901E-01	1.715E-02	-0.217	
	463.37		5.832E-01	5.985E-01	1.027E+00	6.790E-02	0.568	
	600.60		1.039E-01	3.464E-01	5.675E-01	3.545E-02	0.183	
SB-125	635.95		1.405E-01	5.111E-01	8.346E-01	5.149E-02	0.168	
	602.73		-4.335E-03	7.534E-02	1.159E-01	6.081E-03	-0.037	
	645.85		6.537E-03	8.687E-01	1.466E+00	8.503E-02	0.004	
TE-125M	722.78		-3.840E-02	8.380E-01	1.214E+00	7.218E-02	-0.032	
	1690.97	*	-6.401E-02	1.388E-01	2.063E-01	1.407E-02	-0.310	
	427.87	*	-6.286E-02	1.804E-01	2.901E-01	1.715E-02	-0.217	
I-126	463.37		5.832E-01	5.985E-01	1.027E+00	6.790E-02	0.568	
	600.60		1.039E-01	3.464E-01	5.675E-01	3.545E-02	0.183	
	635.95		1.405E-01	5.111E-01	8.346E-01	5.149E-02	0.168	
SB-126	109.28	*	4.880E+00	1.462E+01	2.446E+01	2.466E+00	0.199	
	388.63		-5.455E-02	2.984E-01	4.880E-01	2.768E-02	-0.112	
	666.33	*	-6.647E-02	4.427E-01	6.388E-01	3.151E-02	-0.104	
SB-127	753.82		8.109E-01	3.258E+00	5.534E+00	3.357E-01	0.147	
	414.70		-1.032E-01	1.445E-01	2.278E-01	1.289E-02	-0.453	
	666.50		-6.949E-02	1.525E-01	2.129E-01	1.051E-02	-0.326	
I-131	695.00		3.891E-02	1.330E-01	2.279E-01	1.205E-02	0.171	
	697.00		-1.566E-01	4.706E-01	7.718E-01	4.102E-02	-0.203	
	720.70	*	6.882E-02	2.753E-01	4.683E-01	2.632E-02	0.147	
	856.80		2.833E-01	9.590E-01	1.618E+00	1.225E-01	0.175	
	252.40		-3.504E+00	6.816E+00	1.065E+01	4.377E+00	-0.329	
TE-132	473.00		1.966E+00	3.100E+00	5.234E+00	5.646E-01	0.376	
	685.70	*	2.266E+00	2.097E+00	3.780E+00	3.326E-01	0.599	
	783.70		4.408E+00	6.161E+00	1.073E+01	1.156E+00	0.411	
	80.19		-4.174E+00	8.216E+00	1.200E+01	1.391E+00	-0.348	
I-131	284.31		6.176E-02	2.387E+00	4.028E+00	2.896E-01	0.015	
	364.49	*	-1.964E-02	2.081E-01	3.436E-01	2.284E-02	-0.057	
	636.99		1.114E+00	2.894E+00	4.761E+00	2.781E-01	0.234	
	49.72		2.519E+01	6.459E+01	1.115E+02	1.556E+01	0.226	

----- 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			1.340E+01	4.272E+01	7.152E+01	7.315E+00	0.187
	116.30			9.244E+00	3.761E+01	5.990E+01	5.926E+00	0.154
	228.16	*		3.117E-01	1.115E+00	1.797E+00	2.640E-01	0.173
	81.00			-1.375E-01	1.857E-01	2.661E-01	4.615E-02	-0.517
	276.40			-1.265E-01	5.736E-01	9.572E-01	1.245E-01	-0.132
	302.85			-2.684E-01	2.543E-01	4.012E-01	4.736E-02	-0.669
I-133	356.01	*		-5.986E-03	8.217E-02	1.194E-01	1.365E-02	-0.050
	383.85			9.683E-02	5.419E-01	9.059E-01	9.632E-02	0.107
	529.87	*		5.354E-03	5.419E-01	Half-Life	too short	
	875.33			3.139E-02	5.419E-01	Half-Life	too short	
CS-134	1298.22			9.388E-02	5.419E-01	Half-Life	too short	
	563.25			-1.671E-01	6.965E-01	1.102E+00	6.125E-02	-0.152
	569.33			-1.973E-01	3.811E-01	5.892E-01	3.293E-02	-0.335
	604.72			-3.910E-02	7.472E-02	9.864E-02	5.198E-03	-0.396
	795.86	*		-7.031E-03	9.585E-02	1.584E-01	1.067E-02	-0.044
CS-135	801.95			5.361E-01	8.097E-01	1.407E+00	9.579E-02	0.381
	1365.19			1.408E+00	1.557E+00	2.976E+00	2.187E-01	0.473
	268.22	*		-2.990E-01	2.668E-01	4.249E-01	3.542E-02	-0.704
I-135	546.56			-3.572E+09	2.668E-01	Half-Life	too short	
	836.80			5.728E+09	2.668E-01	Half-Life	too short	
	1038.76			2.811E+09	2.668E-01	Half-Life	too short	
	1131.51			7.972E+06	2.668E-01	Half-Life	too short	
	1260.41	*		-3.722E+08	2.668E-01	Half-Life	too short	
	1457.56			-4.705E+09	2.668E-01	Half-Life	too short	
	1678.03			2.378E+09	2.668E-01	Half-Life	too short	
CS-136	1791.20			5.173E+09	2.668E-01	Half-Life	too short	
	153.25			1.965E-01	1.226E+00	2.009E+00	1.710E-01	0.098
	176.60			-4.745E-01	7.850E-01	1.226E+00	9.261E-02	-0.387
	273.65			-6.248E-01	8.372E-01	1.362E+00	1.032E-01	-0.459
	340.55			4.962E-01	2.701E-01	4.454E-01	2.987E-02	1.114
	818.51			-1.398E-01	1.437E-01	2.187E-01	1.531E-02	-0.639
CE-139	1048.07	*		1.238E-01	2.317E-01	3.926E-01	3.014E-02	0.315
	1235.36			-4.124E-01	6.708E-01	1.038E+00	1.058E-01	-0.397
	165.86	*		1.646E-02	4.463E-02	7.358E-02	4.675E-03	0.224
	162.66			-5.380E-01	1.180E+00	1.860E+00	1.328E-01	-0.289
BA-140	304.85			-6.613E-01	2.222E+00	3.658E+00	1.051E+00	-0.181
	423.72			4.034E+00	4.003E+00	6.597E+00	2.127E+00	0.612
	537.26	*		3.082E-02	4.783E-01	7.795E-01	2.593E-01	0.040
LA-140	328.76			2.591E-01	5.294E-01	9.064E-01	6.366E-02	0.286
	487.02			-2.030E-01	2.852E-01	4.431E-01	2.846E-02	-0.458
	815.77			-7.249E-02	5.908E-01	9.692E-01	7.919E-02	-0.075
	1596.21	*		-6.422E-03	1.461E-01	2.383E-01	1.570E-02	-0.027
CE-141	145.44	*		-9.007E-03	9.501E-02	1.535E-01	1.031E-02	-0.059
CE-143	57.36			3.808E-03	9.501E-02	Half-Life	too short	
	293.27	*		1.936E-04	9.501E-02	Half-Life	too short	
	664.57			5.449E-02	9.501E-02	Half-Life	too short	
CE-144	721.93			7.403E-04	9.501E-02	Half-Life	too short	
	80.12			-2.315E+00	4.703E+00	6.876E+00	7.944E-01	-0.337
	133.52	*		-3.029E-01	2.994E-01	4.599E-01	6.565E-02	-0.659

----- 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		-1.641E-02	1.375E-01	2.213E-01	1.490E-02	-0.074
		618.01		-1.196E-02	5.638E-02	8.849E-02	4.914E-03	-0.135
		696.49	*	1.703E-02	6.106E-02	1.047E-01	5.562E-03	0.163
PR-144		696.51	*	7.939E-01	4.606E+00	7.838E+00	4.161E-01	0.101
		1489.16		-6.388E+00	1.810E+01	2.785E+01	1.885E+00	-0.229
PM-146		453.88	*	4.935E-02	8.821E-02	1.489E-01	1.246E-02	0.331
		633.25		-5.146E-01	2.733E+00	4.285E+00	1.609E+00	-0.120
		735.93		-1.940E-02	2.714E-01	4.509E-01	1.231E-01	-0.043
		747.24		2.329E-01	1.959E-01	3.496E-01	4.614E-02	0.666
ND-147	+	91.11		6.274E-01	5.520E-01	6.624E-01	7.770E-02	0.947
		319.41		4.022E-02	5.456E+00	9.136E+00	5.891E-01	0.004
		531.02	*	3.552E-01	1.017E+00	1.686E+00	2.261E-01	0.211
PM-149		285.90	*	-7.024E-02	1.324E+02	2.230E+02	3.241E+01	0.000
EU-152	+	121.78		4.737E-01	2.331E-01	2.422E-01	2.058E-02	1.956
		244.70		-3.295E-02	5.613E-01	8.847E-01	5.902E-02	-0.037
		344.28	*	-4.939E-02	1.822E-01	2.762E-01	1.910E-02	-0.179
		778.90		-2.102E-01	5.049E-01	8.127E-01	5.215E-02	-0.259
		964.08		-3.262E-01	7.894E-01	1.073E+00	8.448E-02	-0.304
		1085.87		-2.982E-01	9.037E-01	1.424E+00	9.831E-02	-0.209
		1112.07		4.017E-01	6.816E-01	1.154E+00	7.661E-02	0.348
		1408.01		1.186E-01	2.105E-01	3.856E-01	2.637E-02	0.308
GD-153		69.67		-7.412E-01	3.220E+00	5.369E+00	6.200E-01	-0.138
		97.43	*	2.385E-02	1.252E-01	2.097E-01	2.058E-02	0.114
		103.18		5.059E-02	1.630E-01	2.740E-01	2.438E-02	0.185
EU-154	+	123.07		3.349E-01	1.658E-01	1.679E-01	1.697E-02	1.995
		723.31		3.782E-02	3.722E-01	5.471E-01	3.783E-02	0.069
		873.19		2.529E-01	6.684E-01	1.130E+00	1.281E-01	0.224
		996.26		-3.808E-01	7.602E-01	1.182E+00	2.012E-01	-0.322
		1004.73		1.007E-01	4.878E-01	8.080E-01	8.807E-02	0.125
		1274.44	*	-7.496E-02	1.428E-01	2.186E-01	2.162E-02	-0.343
EU-155	+	86.55		3.876E+00	5.430E-01	4.339E-01	5.198E-02	8.932
		105.31	*	-7.748E-02	1.603E-01	2.589E-01	2.256E-02	-0.299
TB-160	+	86.79		1.022E+01	1.426E+00	1.305E+00	1.558E-01	7.830
		197.04		-2.715E-01	9.309E-01	1.471E+00	9.571E-02	-0.185
		215.65		-5.428E-01	1.285E+00	2.002E+00	1.320E-01	-0.271
		298.57		1.311E-01	2.166E-01	3.339E-01	2.195E-02	0.393
		879.36	*	-5.230E-02	3.139E-01	5.109E-01	4.051E-02	-0.102
		962.29		-1.131E+00	1.415E+00	2.048E+00	1.615E-01	-0.552
		966.15		1.047E-01	5.133E-01	7.409E-01	5.824E-02	0.141
		1177.93		4.432E+00	1.014E+00	1.929E+00	1.153E-01	2.297
		1271.85		5.416E-01	7.963E-01	1.467E+00	9.552E-02	0.369
HO-166M		80.57		-4.041E-01	5.165E-01	7.410E-01	8.574E-02	-0.545
		184.41		2.565E-02	6.183E-02	9.085E-02	5.852E-03	0.282
		280.46		-1.453E-01	1.364E-01	2.163E-01	1.437E-02	-0.672
		410.95		9.182E-02	4.889E-01	8.136E-01	4.601E-02	0.113
		711.68	*	4.100E-02	1.228E-01	2.101E-01	1.157E-02	0.195
		752.31		-5.747E-01	5.305E-01	8.089E-01	4.890E-02	-0.710
		810.29		7.107E-02	1.233E-01	2.129E-01	1.462E-02	0.334
TA-182		67.75		-1.080E-01	2.135E-01	3.516E-01	4.090E-02	-0.307

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		100.11		-1.489E-02	2.642E-01	4.371E-01	4.091E-02	-0.034
		152.43		-1.940E-02	5.163E-01	8.380E-01	5.398E-02	-0.023
		222.11		2.367E-01	6.398E-01	1.036E+00	6.859E-02	0.228
	+	1121.30		8.889E-01	4.483E-01	5.599E-01	3.663E-02	1.588
		1189.05		1.403E-01	5.343E-01	8.826E-01	5.329E-02	0.159
		1221.41	*	1.003E-01	2.266E-01	4.014E-01	2.498E-02	0.250
		1231.02		3.359E-01	5.345E-01	9.671E-01	6.072E-02	0.347
IR-192	+	295.96		1.040E+00	3.311E-01	4.038E-01	2.693E-02	2.574
		308.46		-1.033E-01	1.700E-01	2.759E-01	1.815E-02	-0.374
		316.51	*	4.047E-03	6.183E-02	1.039E-01	6.746E-03	0.039
		468.07		5.875E-02	1.425E-01	2.381E-01	1.566E-02	0.247
HG-203		70.83		2.133E+00	2.650E+00	4.142E+00	7.363E-01	0.515
		72.87		2.509E-01	1.485E+00	2.263E+00	3.909E-01	0.111
		279.20	*	3.339E-02	5.999E-02	1.040E-01	7.212E-03	0.321
BI-207		72.81		5.881E-02	3.473E-01	5.292E-01	6.068E-02	0.111
	+	74.97		4.985E-01	2.043E-01	3.552E-01	4.068E-02	1.403
		569.70		-1.163E-02	5.829E-02	9.241E-02	4.991E-03	-0.126
		1063.66	*	2.959E-03	1.278E-01	2.078E-01	1.478E-02	0.014
		1770.23		3.569E-01	7.520E-01	1.213E+00	7.369E-02	0.294
PB-210		46.54	*	3.101E-01	1.558E+01	2.659E+01	2.321E+00	0.012
PB-211		404.85	*	-1.912E+00	1.653E+00	2.078E+00	9.965E-01	-0.920
		427.09		-1.615E+00	3.199E+00	4.958E+00	2.271E+00	-0.326
		832.01		-1.818E+00	2.339E+00	3.325E+00	1.717E+00	-0.547
BI-212	+	727.33	*	2.118E+00	1.032E+00	1.799E+00	1.917E-01	1.177
		785.37		2.377E+00	6.200E+00	1.059E+01	6.891E-01	0.225
		1620.50		4.599E-01	3.419E+00	5.756E+00	3.758E-01	0.080
RN-219		271.23		5.111E-01	4.087E-01	7.250E-01	6.291E-02	0.705
		401.81	*	-3.078E-01	7.841E-01	1.262E+00	1.688E-01	-0.244
RA-223		81.07		-2.850E-01	4.191E-01	6.058E-01	7.022E-02	-0.470
		83.79		2.356E-01	2.403E-01	3.750E-01	4.399E-02	0.628
		94.87		-5.078E-01	6.722E-01	1.076E+00	1.110E-01	-0.472
		144.24		-1.198E+00	1.060E+00	1.621E+00	1.264E-01	-0.739
		154.21		3.608E-02	5.712E-01	9.313E-01	6.982E-02	0.039
		269.46		4.034E-01	3.134E-01	5.582E-01	3.845E-02	0.723
		323.87	*	-1.241E+00	1.142E+00	1.766E+00	2.886E-01	-0.703
	+	338.28		6.952E+00	2.756E+00	3.528E+00	3.716E-01	1.970
AC-227		79.69		-1.164E+00	2.398E+00	3.500E+00	6.602E-01	-0.333
		235.96		-1.266E-01	2.793E-01	3.799E-01	3.333E-02	-0.333
		256.23	*	2.550E-01	4.361E-01	7.575E-01	8.142E-02	0.337
		299.98		2.978E+00	1.725E+00	2.796E+00	3.191E-01	1.065
		304.50		-2.215E+00	2.909E+00	4.660E+00	7.245E-01	-0.475
		334.37		-6.155E-01	3.313E+00	4.796E+00	6.927E-01	-0.128
TH-227		79.80		-1.686E+00	3.162E+00	4.585E+00	1.059E+00	-0.368
		235.96		-1.266E-01	2.793E-01	3.799E-01	3.068E-02	-0.333
		256.23	*	2.550E-01	4.364E-01	7.575E-01	9.443E-02	0.337
		299.98		2.978E+00	1.725E+00	2.796E+00	3.191E-01	1.065
		304.50		-2.215E+00	2.909E+00	4.660E+00	7.245E-01	-0.475
		334.37		-6.155E-01	3.313E+00	4.796E+00	6.927E-01	-0.128
AC-228	+	338.32		1.752E+00	9.857E-01	8.899E-01	3.675E-01	1.969

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RA-228	+	911.20	*	1.752E+00	6.362E-01	8.372E-01	9.428E-02	2.092
		968.97		1.355E+00	8.583E-01	1.283E+00	3.091E-01	1.057
	+	338.32		1.752E+00	9.857E-01	8.899E-01	3.675E-01	1.969
	+	911.20	*	1.752E+00	6.362E-01	8.372E-01	9.428E-02	2.092
TH-229		968.97		1.355E+00	8.583E-01	1.283E+00	3.091E-01	1.057
		85.43		1.030E-01	3.890E-01	5.904E-01	6.987E-02	0.174
	+	88.47		4.929E+00	6.879E-01	7.092E-01	8.430E-02	6.951
		193.51	*	2.173E-01	8.675E-01	1.409E+00	9.143E-02	0.154
PA-231		210.85		1.448E-01	1.493E+00	2.388E+00	1.570E-01	0.061
		283.69	*	9.506E-02	2.437E+00	4.116E+00	5.559E-01	0.023
		301.36		1.631E+00	1.024E+00	1.777E+00	1.917E-01	0.918
TH-231		81.07		-2.850E-01	4.191E-01	6.058E-01	7.022E-02	-0.470
		83.79		2.356E-01	2.403E-01	3.750E-01	4.399E-02	0.628
		94.87		-5.078E-01	6.722E-01	1.076E+00	1.110E-01	-0.472
		144.24		-1.198E+00	1.060E+00	1.621E+00	1.264E-01	-0.739
TH-232		154.21		3.608E-02	5.712E-01	9.313E-01	6.982E-02	0.039
		269.46		4.034E-01	3.134E-01	5.582E-01	3.845E-02	0.723
		323.28	*	-1.241E+00	1.142E+00	1.766E+00	2.886E-01	-0.703
	+	338.87		6.952E+00	2.756E+00	3.528E+00	3.716E-01	1.970
PA-233	+	338.32		1.752E+00	6.785E-01	8.899E-01	5.594E-02	1.969
	+	911.20	*	1.752E+00	6.362E-01	8.372E-01	9.428E-02	2.092
		968.97		1.355E+00	8.583E-01	1.283E+00	3.091E-01	1.057
PA-234		300.13		1.187E+00	7.965E-01	1.270E+00	1.744E-01	0.935
		311.90	*	1.334E-01	1.169E-01	2.066E-01	1.409E-02	0.646
		340.48		2.410E+00	1.321E+00	2.004E+00	4.675E-01	1.203
		94.67		-1.285E-01	2.466E-01	3.995E-01	5.459E-02	-0.322
PA-234M		98.44		6.349E-02	1.413E-01	2.320E-01	1.298E-01	0.274
		111.00		-9.605E-02	2.809E-01	4.550E-01	5.285E-02	-0.211
		131.20		7.717E-02	1.530E-01	2.566E-01	1.721E-02	0.301
		569.50		-3.096E-01	5.287E-01	8.130E-01	4.392E-02	-0.381
TH-234		733.00		1.396E-01	7.739E-01	1.146E+00	2.437E-01	0.122
		880.51		-5.097E-02	6.412E-01	1.050E+00	8.348E-02	-0.049
		883.24		1.507E-01	6.684E-01	1.106E+00	7.429E-01	0.136
		926.50		-2.252E-01	4.516E-01	7.100E-01	1.782E-01	-0.317
U-235		946.00	*	-1.995E-01	8.206E-01	1.322E+00	2.444E-01	-0.151
		949.00		7.955E-01	1.136E+00	1.945E+00	1.549E-01	0.409
		766.42		-1.407E+00	2.126E+01	3.520E+01	1.774E+01	-0.040
		1001.03	*	1.405E+00	9.887E+00	1.631E+01	1.487E+00	0.086
NP-237		63.29	*	-5.930E-01	3.035E+00	4.556E+00	9.169E-01	-0.130
		92.59		1.235E+00	1.084E+00	1.687E+00	3.885E-01	0.732
	+	89.96		2.021E+00	1.837E+00	2.712E+00	6.983E-01	0.745
		93.35		6.712E-01	8.026E-01	1.247E+00	2.983E-01	0.538
U-238		143.76	*	-3.401E-01	3.180E-01	4.823E-01	7.711E-02	-0.705
		163.33		-1.505E-01	6.492E-01	1.035E+00	1.758E-01	-0.145
	+	185.72		1.414E-01	1.070E-01	1.252E-01	8.070E-03	1.130
		205.31		4.231E-01	8.064E-01	1.318E+00	2.275E-01	0.321

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	92.59			1.235E+00	1.054E+00	1.687E+00	1.824E-01	0.732
	99.53			1.210E-01	2.422E-01	4.109E-01	3.884E-02	0.295
	103.37			6.824E-02	1.489E-01	2.518E-01	2.234E-02	0.271
	106.12			-8.313E-02	1.284E-01	2.056E-01	1.749E-02	-0.404
	117.23	*		-5.674E-01	6.565E-01	9.081E-01	6.664E-02	-0.625
	228.18			1.045E-01	3.814E-01	6.146E-01	4.079E-02	0.170
CM-247	277.60			6.995E-02	2.777E-01	4.747E-01	3.158E-02	0.147
	278.00			3.791E-01	1.189E+00	2.039E+00	1.356E-01	0.186
	287.50			1.807E+00	2.216E+00	3.871E+00	2.563E-01	0.467
CF-249	402.40	*		-3.534E-02	7.077E-02	1.132E-01	6.390E-03	-0.312
	252.80			1.362E-01	1.602E+00	2.729E+00	1.822E-01	0.050
	333.37			1.780E-01	3.541E-01	5.397E-01	3.417E-02	0.330
CF-251	388.16	*		-3.337E-02	7.431E-02	1.196E-01	6.789E-03	-0.279
	177.52	*		-1.993E-02	2.064E-01	3.310E-01	2.120E-02	-0.060
	227.38			4.866E-01	5.980E-01	9.908E-01	6.574E-02	0.491
ANH-511	285.41			1.118E-01	3.831E+00	6.465E+00	4.286E-01	0.017
	511.00	*		3.077E-02	6.969E-02	1.244E-01	6.956E-03	0.247

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]G1202057357      *
* Acquisition date   : 19-MAR-2010 11:17:59 Detector SN#      :              *
* Detector ID        : GAM04          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 01:00:01.37 Half life ratio         : 8.000          *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-MAR-2010 00:00:00 Nuclide Library    : SOLID          *
* Sample ID          : G1202057357      Analyst initials     : MXR1           *
* Batch Number       : 959280           Sample Quantity      : 1.5173E+02 GRAM  *
* Recovery           : 1.00000          Carrier Weight        : 0.00000          *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                                  *
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41 MS Isotope         :              *
* MSD DPM             : 0.000           MSD Isotope           :              *
* LCS DPM             : 0.000           LCS Isotope           :              *
* LCSD DPM            : 0.000           LCSD Isotope          :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
CO-57	1.643E-01	7.884E-02	6.439E-02	0.000E+00
CO-60	6.481E+00	5.522E-01	7.587E-02	0.000E+00
CD-109	3.268E+01	4.469E+00	2.384E+00	0.000E+00
SN-126	3.197E+00	4.373E-01	2.351E-01	0.000E+00
BA-137M	5.438E+00	3.657E-01	1.148E-01	0.000E+00
CS-137	5.745E+00	3.875E-01	1.213E-01	0.000E+00
TL-208	3.821E-01	1.187E-01	1.030E-01	0.000E+00
BI-211	2.977E+00	5.818E-01	5.828E-01	0.000E+00
PB-212	1.276E+00	1.788E-01	1.602E-01	0.000E+00
BI-214	7.318E-01	2.285E-01	2.211E-01	0.000E+00
PB-214	1.081E+00	2.191E-01	2.193E-01	0.000E+00
RA-224	4.108E+00	1.884E+00	1.717E+00	0.000E+00
RA-226	7.318E-01	2.285E-01	2.211E-01	0.000E+00
TH-228	1.276E+00	1.788E-01	1.602E-01	0.000E+00
AM-241	1.390E+01	1.973E+00	7.788E-01	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.599E-01	6.774E-01	1.146E+00	0.000E+00 NOT IDENT.
NA-22	-3.259E-02	4.958E-02	7.663E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	4.936E+05	0.000E+00	0.000E+00 SHORT HLIF
K-40	7.819E-01	5.945E-01	1.175E+00	0.000E+00 NOT IDENT.
SC-46	-6.996E-03	9.234E-02	1.575E-01	0.000E+00 FAIL ABUN
V-48	-1.866E-01	1.635E-01	2.523E-01	0.000E+00 NOT IDENT.
CR-51	-2.610E-01	6.090E-01	1.063E+00	0.000E+00 NOT IDENT.
MN-54	4.556E-02	7.955E-02	1.424E-01	0.000E+00 NOT IDENT.
CO-56	-5.801E-02	8.324E-02	1.359E-01	0.000E+00 NOT IDENT.
CO-58	6.259E-02	7.873E-02	1.438E-01	0.000E+00 NOT IDENT.
FE-59	-6.458E-02	2.041E-01	3.333E-01	0.000E+00 NOT IDENT.
ZN-65	-1.642E-02	2.201E-01	3.149E-01	0.000E+00 NOT IDENT.

SE-75	-1.172E-02	7.504E-02	1.352E-01	0.000E+00	FAIL ABUN
SR-85	-8.623E-02	8.073E-02	1.296E-01	0.000E+00	NOT IDENT.
Y-88	3.379E-02	4.362E-02	8.609E-02	0.000E+00	NOT IDENT.
Y-91	-3.340E+01	2.849E+01	3.916E+01	0.000E+00	NOT IDENT.
NB-94	-1.210E-02	6.218E-02	1.077E-01	0.000E+00	NOT IDENT.
NB-95	-7.108E-02	7.978E-02	1.300E-01	0.000E+00	NOT IDENT.
NB-95M	-1.176E-02	2.219E-01	3.352E-01	0.000E+00	NOT IDENT.
ZR-95	8.264E-03	1.351E-01	2.366E-01	0.000E+00	NOT IDENT.
MO-99	2.989E+00	1.911E+01	3.378E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	9.656E+15	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.957E-02	7.513E-02	1.228E-01	0.000E+00	FAIL ABUN
RH-106	-1.933E-01	5.432E-01	8.836E-01	0.000E+00	NOT IDENT.
RU-106	-1.933E-01	5.429E-01	8.836E-01	0.000E+00	NOT IDENT.
AG-108M	5.350E-03	5.849E-02	1.024E-01	0.000E+00	NOT IDENT.
AG-110M	2.568E-02	7.263E-02	1.157E-01	0.000E+00	NOT IDENT.
SN-113	3.235E-02	7.958E-02	1.431E-01	0.000E+00	NOT IDENT.
CD-115	-1.271E+01	1.781E+01	2.884E+01	0.000E+00	NOT IDENT.
SN-117M	1.725E-02	7.832E-02	1.396E-01	0.000E+00	NOT IDENT.
TE-123M	-9.396E-03	4.213E-02	7.342E-02	0.000E+00	NOT IDENT.
SB-124	-6.401E-02	1.361E-01	2.070E-01	0.000E+00	NOT IDENT.
SB-125	-6.286E-02	1.768E-01	3.017E-01	0.000E+00	NOT IDENT.
TE-125M	4.880E+00	1.433E+01	2.629E+01	0.000E+00	NOT IDENT.
I-126	-6.647E-02	4.338E-01	6.569E-01	0.000E+00	NOT IDENT.
SB-126	6.882E-02	2.697E-01	4.805E-01	0.000E+00	NOT IDENT.
SB-127	2.266E+00	2.056E+00	3.884E+00	0.000E+00	NOT IDENT.
I-131	-1.964E-02	2.039E-01	3.587E-01	0.000E+00	NOT IDENT.
TE-132	3.117E-01	1.093E+00	1.897E+00	0.000E+00	NOT IDENT.
BA-133	-5.986E-03	8.053E-02	1.247E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	6.435E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	-7.031E-03	9.394E-02	1.621E-01	0.000E+00	NOT IDENT.
CS-135	-2.990E-01	2.615E-01	4.470E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.394E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.238E-01	2.271E-01	3.990E-01	0.000E+00	NOT IDENT.
CE-139	1.646E-02	4.374E-02	7.830E-02	0.000E+00	NOT IDENT.
BA-140	3.082E-02	4.687E-01	8.059E-01	0.000E+00	NOT IDENT.
LA-140	-6.422E-03	1.432E-01	2.395E-01	0.000E+00	NOT IDENT.
CE-141	-9.007E-03	9.311E-02	1.639E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.842E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.029E-01	2.934E-01	4.919E-01	0.000E+00	NOT IDENT.
PM-144	1.703E-02	5.984E-02	1.075E-01	0.000E+00	NOT IDENT.
PR-144	7.939E-01	4.514E+00	8.050E+00	0.000E+00	NOT IDENT.
PM-146	4.935E-02	8.644E-02	1.546E-01	0.000E+00	NOT IDENT.
ND-147	3.552E-01	9.965E-01	1.743E+00	0.000E+00	FAIL ABUN
PM-149	-7.024E-02	1.297E+02	2.343E+02	0.000E+00	NOT IDENT.
EU-152	-4.939E-02	1.786E-01	2.888E-01	0.000E+00	FAIL ABUN
GD-153	2.385E-02	1.227E-01	2.260E-01	0.000E+00	NOT IDENT.
EU-154	-7.496E-02	1.400E-01	2.210E-01	0.000E+00	FAIL ABUN
EU-155	-7.748E-02	1.571E-01	2.785E-01	0.000E+00	FAIL ABUN
TB-160	-5.230E-02	3.076E-01	5.216E-01	0.000E+00	FAIL ABUN
HO-166M	4.100E-02	1.204E-01	2.157E-01	0.000E+00	NOT IDENT.
TA-182	1.003E-01	2.220E-01	4.063E-01	0.000E+00	FAIL ABUN
IR-192	4.047E-03	6.060E-02	1.089E-01	0.000E+00	FAIL ABUN
HG-203	3.339E-02	5.879E-02	1.093E-01	0.000E+00	NOT IDENT.
BI-207	2.959E-03	1.252E-01	2.111E-01	0.000E+00	FAIL ABUN
PB-210	3.101E-01	1.527E+01	2.915E+01	0.000E+00	NOT IDENT.
PB-211	-1.912E+00	1.620E+00	2.164E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.011E+00	1.846E+00	0.000E+00	FAIL ABUN
RN-219	-3.078E-01	7.685E-01	1.315E+00	0.000E+00	NOT IDENT.
RA-223	-1.241E+00	1.119E+00	1.849E+00	0.000E+00	FAIL ABUN
AC-227	2.550E-01	4.274E-01	7.977E-01	0.000E+00	NOT IDENT.
TH-227	2.550E-01	4.276E-01	7.977E-01	0.000E+00	NOT IDENT.
AC-228	0.000E+00	6.235E-01	8.539E-01	0.000E+00	FAIL ABUN
RA-228	0.000E+00	6.235E-01	8.539E-01	0.000E+00	FAIL ABUN
TH-229	2.173E-01	8.501E-01	1.494E+00	0.000E+00	FAIL ABUN
PA-231	9.506E-02	2.388E+00	4.323E+00	0.000E+00	NOT IDENT.
TH-231	-1.241E+00	1.119E+00	1.849E+00	0.000E+00	FAIL ABUN
TH-232	0.000E+00	6.235E-01	8.539E-01	0.000E+00	FAIL ABUN
PA-233	1.334E-01	1.146E-01	2.165E-01	0.000E+00	NOT IDENT.
PA-234	-1.995E-01	8.042E-01	1.347E+00	0.000E+00	NOT IDENT.
PA-234M	1.405E+00	9.689E+00	1.660E+01	0.000E+00	NOT IDENT.
TH-234	-5.930E-01	2.975E+00	4.958E+00	0.000E+00	NOT IDENT.
U-235	-3.401E-01	3.116E-01	5.150E-01	0.000E+00	FAIL ABUN
NP-237	0.000E+00	9.063E-01	1.102E+00	0.000E+00	NOT IDENT.
U-238	-5.930E-01	2.975E+00	4.958E+00	0.000E+00	NOT IDENT.
NP-239	-5.674E-01	6.434E-01	9.744E-01	0.000E+00	NOT IDENT.
CM-247	-3.534E-02	6.935E-02	1.179E-01	0.000E+00	NOT IDENT.
CF-249	-3.337E-02	7.282E-02	1.246E-01	0.000E+00	NOT IDENT.
CF-251	-1.993E-02	2.023E-01	3.517E-01	0.000E+00	NOT IDENT.

ANH-511	3.077E-02	6.829E-02	1.288E-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]G1202057357.CNF;1
Sample date        : 5-MAR-2010 00:00:00. Acquisition date : 19-MAR-2010 11:17:59
Sample ID          : G1202057357      Sample quantity   : 1.51730E+02 GRAM
Detector name      : GAM04             Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00    Elapsed real time: 0 01:00:01.37  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity      : 5.00000
Batch ID           : 959280            Detector SN#     :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****

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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	178	85.60*	6.490E+00	1.583E-01	1.643E-01	48.96
	136.47	-----	10.68	6.470E+00	-----	Line Not Found	-----
CO-60	1173.23	1678	99.85	1.299E+00	6.400E+00	6.434E+00	7.88
	1332.49	1509	99.98*	1.158E+00	6.447E+00	6.481E+00	8.69
CD-109	88.03	1216	3.70*	5.087E+00	3.197E+01	3.268E+01	13.96
SN-126	64.28	-----	9.60	2.203E+00	-----	Line Not Found	-----
	86.94	1216	8.90	5.087E+00	1.329E+01	1.329E+01	42.79
	87.57	1216	37.00*	5.087E+00	3.197E+00	3.197E+00	13.96
BA-137M	661.66	2178	89.90*	2.207E+00	5.433E+00	5.438E+00	6.86
CS-137	661.66	2178	85.10*	2.207E+00	5.740E+00	5.745E+00	6.88
TL-208	277.37	-----	6.60	4.326E+00	-----	Line Not Found	-----
	583.19	161	85.00*	2.454E+00	3.821E-01	3.821E-01	31.71
	860.56	-----	12.50	1.744E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.384E+00	-----	Line Not Found	-----
	351.06	282	12.92*	3.624E+00	2.977E+00	2.977E+00	19.94
PB-212	74.82	131	10.28	3.650E+00	1.730E+00	1.730E+00	42.12
	77.11	193	17.10	3.923E+00	1.426E+00	1.426E+00	33.79
	238.63	542	43.60*	4.823E+00	1.276E+00	1.276E+00	14.30
	300.09	-----	3.30	4.082E+00	-----	Line Not Found	-----
BI-214	609.32	159	45.49*	2.366E+00	7.318E-01	7.318E-01	31.86
	1120.29	78	14.92	1.356E+00	1.905E+00	1.905E+00	50.87
	1764.49	-----	15.30	9.529E-01	-----	Line Not Found	-----
PB-214	74.82	131	5.80	3.650E+00	3.066E+00	3.066E+00	41.74
	77.11	193	9.70	3.923E+00	2.514E+00	2.514E+00	34.78
	242.00	163	7.25	4.781E+00	2.323E+00	2.323E+00	47.15
	295.22	218	18.42	4.131E+00	1.415E+00	1.415E+00	32.49
	351.93	282	35.60*	3.624E+00	1.081E+00	1.081E+00	20.69
RA-224	240.99	163	4.10*	4.781E+00	4.108E+00	4.108E+00	46.79
RA-226	609.32	159	45.49*	2.366E+00	7.318E-01	7.318E-01	31.86
	1120.29	78	14.92	1.356E+00	1.905E+00	1.905E+00	50.87
	1764.49	-----	15.30	9.529E-01	-----	Line Not Found	-----
TH-228	74.82	131	10.28	3.650E+00	1.730E+00	1.730E+00	41.00

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	193	17.10	3.923E+00	1.426E+00	1.426E+00	33.79
	238.63	542	43.60*	4.823E+00	1.276E+00	1.276E+00	14.30
	300.09	-----	3.30	4.082E+00	-----	Line Not Found	-----
AM-241	59.54	1584	35.90*	1.571E+00	1.390E+01	1.390E+01	14.49

Flag: "*" = Keyline

Total number of lines in spectrum 23
Number of unidentified lines 3
Number of lines tentatively identified by NID 20 86.96%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	1.04	1.583E-01	1.643E-01	0.804E-01	48.96	
CO-60	5.27Y	1.01	6.447E+00	6.481E+00	0.563E+00	8.69	
CD-109	461.40D	1.02	3.197E+01	3.268E+01	0.456E+01	13.96	
SN-126	2.30E+05Y	1.00	3.197E+00	3.197E+00	0.446E+00	13.96	
BA-137M	30.08Y	1.00	5.433E+00	5.438E+00	0.373E+00	6.86	
CS-137	30.08Y	1.00	5.740E+00	5.745E+00	0.395E+00	6.88	
TL-208	1.41E+10Y	1.00	3.821E-01	3.821E-01	1.212E-01	31.71	
BI-211	7.04E+08Y	1.00	2.977E+00	2.977E+00	0.594E+00	19.94	
PB-212	1.41E+10Y	1.00	1.276E+00	1.276E+00	0.182E+00	14.30	
BI-214	1600.00Y	1.00	7.318E-01	7.318E-01	2.332E-01	31.86	
PB-214	1600.00Y	1.00	1.081E+00	1.081E+00	0.224E+00	20.69	
RA-224	1.41E+10Y	1.00	4.108E+00	4.108E+00	1.922E+00	46.79	
RA-226	1600.00Y	1.00	7.318E-01	7.318E-01	2.332E-01	31.86	
TH-228	1.41E+10Y	1.00	1.276E+00	1.276E+00	0.182E+00	14.30	
AM-241	432.60Y	1.00	1.390E+01	1.390E+01	0.201E+01	14.49	

Total Activity : 7.941E+01 8.017E+01

Grand Total Activity : 7.941E+01 8.017E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202057357

Page : 4
Acquisition date : 19-MAR-2010 11:17:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	90.01	74	222	0.94	180.05	172	11	2.07E-02	87.2	5.25E+00	T
0	186.06	93	318	0.85	372.17	367	10	2.59E-02	75.4	5.69E+00	T
0	338.50	149	177	1.14	677.09	672	11	4.14E-02	38.2	3.73E+00	T
0	728.05	58	44	1.65	1456.18	1452	8	1.61E-02	47.5	2.03E+00	T
0	911.92	151	121	1.61	1823.90	1817	13	4.19E-02	34.5	1.65E+00	T
0	970.91	74	167	1.44	1941.87	1934	16	2.07E-02	82.2	1.56E+00	
0	1380.10	17	16	1.14	2760.13	2752	13	4.84E-03	****	1.12E+00	
0	1766.29	28	3	1.47	3532.30	3525	13	7.80E-03	45.9	9.52E-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]G1202057357.CNF;1
* Acquisition date   : 19-MAR-2010 11:17:59   Detector SN#      :
* Detector ID        : GAM04                  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 01:00:01.37          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 5-MAR-2010 00:00:00.   Nuclide Library : SOLID
* Sample ID          : G1202057357           Analyst initials: MXR1
* Batch Number       : 959280                Sample Quantity : 1.51730E+02 GRAM
*****
*                               QC DATA                                   *
*
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41.36MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A                LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	1.643E-01	8.044E-02	6.007E-02	4.170E-03	2.735
CO-60	6.481E+00	5.634E-01	7.513E-02	5.148E-03	86.265
CD-109	3.268E+01	4.560E+00	2.207E+00	2.652E-01	14.806
SN-126	3.197E+00	4.462E-01	2.176E-01	2.610E-02	14.694
BA-137M	5.438E+00	3.731E-01	1.116E-01	5.445E-03	48.715
CS-137	5.745E+00	3.954E-01	1.179E-01	5.786E-03	48.715
TL-208	3.821E-01	1.212E-01	9.986E-02	6.267E-03	3.826
BI-211	2.977E+00	5.936E-01	5.578E-01	3.769E-02	5.338
PB-212	1.276E+00	1.824E-01	1.518E-01	1.228E-02	8.403
BI-214	7.318E-01	2.332E-01	2.145E-01	1.590E-02	3.412
PB-214	1.081E+00	2.235E-01	2.099E-01	1.830E-02	5.148
RA-224	4.108E+00	1.922E+00	1.628E+00	1.085E-01	2.523
RA-226	7.318E-01	2.332E-01	2.145E-01	1.590E-02	3.412
TH-228	1.276E+00	1.824E-01	1.518E-01	1.228E-02	8.403
AM-241	1.390E+01	2.014E+00	7.146E-01	9.021E-02	19.454

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.599E-01		6.912E-01	1.105E+00	7.316E-02	-0.145

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-3.259E-02		5.059E-02	7.579E-02	4.956E-03	-0.430
NA-24	-3.504E-01		2.519E-01	Half-Life too short		
K-40	7.819E-01		6.066E-01	1.166E+00	8.287E-02	0.671
SC-46	-6.996E-03		9.423E-02	1.544E-01	1.248E-02	-0.045
V-48	-1.866E-01		1.669E-01	2.478E-01	1.920E-02	-0.753
CR-51	-2.610E-01		6.214E-01	1.015E+00	7.140E-02	-0.257
MN-54	4.556E-02		8.117E-02	1.393E-01	1.008E-02	0.327
CO-56	-5.801E-02		8.494E-02	1.330E-01	9.867E-03	-0.436
CO-58	6.259E-02		8.038E-02	1.406E-01	9.706E-03	0.445
FE-59	-6.458E-02		2.082E-01	3.284E-01	2.509E-02	-0.197
ZN-65	-1.642E-02		2.246E-01	3.104E-01	2.053E-02	-0.053
SE-75	-1.172E-02		7.657E-02	1.285E-01	8.647E-03	-0.091
SR-85	-8.623E-02		8.238E-02	1.252E-01	6.993E-03	-0.689
Y-88	3.379E-02		4.451E-02	8.598E-02	5.017E-03	0.393
Y-91	-3.340E+01		2.907E+01	3.867E+01	2.370E+00	-0.864
NB-94	-1.210E-02		6.345E-02	1.049E-01	5.653E-03	-0.115
NB-95	-7.108E-02		8.141E-02	1.269E-01	7.907E-03	-0.560
NB-95M	-1.176E-02		2.265E-01	3.177E-01	2.614E-02	-0.037
ZR-95	8.264E-03		1.379E-01	2.309E-01	1.691E-02	0.036
MO-99	2.989E+00		1.950E+01	3.294E+01	4.756E+00	0.091
TC-99M	1.423E+10		4.927E+09	Half-Life too short		
RU-103	-4.957E-02		7.666E-02	1.186E-01	1.463E-02	-0.418
RH-106	-1.933E-01		5.543E-01	8.578E-01	9.697E-02	-0.225
RU-106	-1.933E-01		5.539E-01	8.578E-01	4.406E-02	-0.225
AG-108M	5.350E-03		5.969E-02	9.848E-02	5.994E-03	0.054
AG-110M	2.568E-02		7.411E-02	1.124E-01	6.009E-03	0.228
SN-113	3.235E-02		8.121E-02	1.373E-01	8.274E-03	0.236
CD-115	-1.271E+01		1.817E+01	2.788E+01	1.547E+00	-0.456
SN-117M	1.725E-02		7.992E-02	1.310E-01	8.382E-03	0.132
TE-123M	-9.396E-03		4.299E-02	6.892E-02	4.455E-03	-0.136
SB-124	-6.401E-02		1.388E-01	2.063E-01	1.407E-02	-0.310
SB-125	-6.286E-02		1.804E-01	2.901E-01	1.715E-02	-0.217
TE-125M	4.880E+00		1.462E+01	2.446E+01	2.466E+00	0.199
I-126	-6.647E-02		4.427E-01	6.388E-01	3.151E-02	-0.104
SB-126	6.882E-02		2.753E-01	4.683E-01	2.632E-02	0.147
SB-127	2.266E+00		2.097E+00	3.780E+00	3.326E-01	0.599
I-131	-1.964E-02		2.081E-01	3.436E-01	2.284E-02	-0.057
TE-132	3.117E-01		1.115E+00	1.797E+00	2.640E-01	0.173
BA-133	-5.986E-03		8.217E-02	1.194E-01	1.365E-02	-0.050
I-133	5.354E-03		3.283E-03	Half-Life too short		
CS-134	-7.031E-03		9.585E-02	1.584E-01	1.067E-02	-0.044
CS-135	-2.990E-01		2.668E-01	4.249E-01	3.542E-02	-0.704
I-135	-3.722E+08		7.111E+08	Half-Life too short		
CS-136	1.238E-01		2.317E-01	3.926E-01	3.014E-02	0.315
CE-139	1.646E-02		4.463E-02	7.358E-02	4.675E-03	0.224
BA-140	3.082E-02		4.783E-01	7.795E-01	2.593E-01	0.040
LA-140	-6.422E-03		1.461E-01	2.383E-01	1.570E-02	-0.027
CE-141	-9.007E-03		9.501E-02	1.535E-01	1.031E-02	-0.059

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-143	1.936E-04		9.399E-05	Half-Life too short		
CE-144	-3.029E-01		2.994E-01	4.599E-01	6.565E-02	-0.659
PM-144	1.703E-02		6.106E-02	1.047E-01	5.562E-03	0.163
PR-144	7.939E-01		4.606E+00	7.838E+00	4.161E-01	0.101
PM-146	4.935E-02		8.821E-02	1.489E-01	1.246E-02	0.331
ND-147	3.552E-01		1.017E+00	1.686E+00	2.261E-01	0.211
PM-149	-7.024E-02		1.324E+02	2.230E+02	3.241E+01	0.000
EU-152	-4.939E-02		1.822E-01	2.762E-01	1.910E-02	-0.179
GD-153	2.385E-02		1.252E-01	2.097E-01	2.058E-02	0.114
EU-154	-7.496E-02		1.428E-01	2.186E-01	2.162E-02	-0.343
EU-155	-7.748E-02		1.603E-01	2.589E-01	2.256E-02	-0.299
TB-160	-5.230E-02		3.139E-01	5.109E-01	4.051E-02	-0.102
HO-166M	4.100E-02		1.228E-01	2.101E-01	1.157E-02	0.195
TA-182	1.003E-01		2.266E-01	4.014E-01	2.498E-02	0.250
IR-192	4.047E-03		6.183E-02	1.039E-01	6.746E-03	0.039
HG-203	3.339E-02		5.999E-02	1.040E-01	7.212E-03	0.321
BI-207	2.959E-03		1.278E-01	2.078E-01	1.478E-02	0.014
PB-210	3.101E-01		1.558E+01	2.659E+01	2.321E+00	0.012
PB-211	-1.912E+00		1.653E+00	2.078E+00	9.965E-01	-0.920
BI-212	2.118E+00	+	1.032E+00	1.799E+00	1.917E-01	1.177
RN-219	-3.078E-01		7.841E-01	1.262E+00	1.688E-01	-0.244
RA-223	-1.241E+00		1.142E+00	1.766E+00	2.886E-01	-0.703
AC-227	2.550E-01		4.361E-01	7.575E-01	8.142E-02	0.337
TH-227	2.550E-01		4.364E-01	7.575E-01	9.443E-02	0.337
AC-228	1.752E+00	+	6.362E-01	8.372E-01	9.428E-02	2.092
RA-228	1.752E+00	+	6.362E-01	8.372E-01	9.428E-02	2.092
TH-229	2.173E-01		8.675E-01	1.409E+00	9.143E-02	0.154
PA-231	9.506E-02		2.437E+00	4.116E+00	5.559E-01	0.023
TH-231	-1.241E+00		1.142E+00	1.766E+00	2.886E-01	-0.703
TH-232	1.752E+00	+	6.362E-01	8.372E-01	9.428E-02	2.092
PA-233	1.334E-01		1.169E-01	2.066E-01	1.409E-02	0.646
PA-234	-1.995E-01		8.206E-01	1.322E+00	2.444E-01	-0.151
PA-234M	1.405E+00		9.887E+00	1.631E+01	1.487E+00	0.086
TH-234	-5.930E-01		3.035E+00	4.556E+00	9.169E-01	-0.130
U-235	-3.401E-01		3.180E-01	4.823E-01	7.711E-02	-0.705
NP-237	3.016E+00		9.248E-01	1.020E+00	2.459E-01	2.957
U-238	-5.930E-01		3.035E+00	4.556E+00	9.169E-01	-0.130
NP-239	-5.674E-01		6.565E-01	9.081E-01	6.664E-02	-0.625
CM-247	-3.534E-02		7.077E-02	1.132E-01	6.390E-03	-0.312
CF-249	-3.337E-02		7.431E-02	1.196E-01	6.789E-03	-0.279
CF-251	-1.993E-02		2.064E-01	3.310E-01	2.120E-02	-0.060
ANH-511	3.077E-02		6.969E-02	1.244E-01	6.956E-03	0.247

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]G1202057357          *
* Acquisition date   : 19-MAR-2010 11:17:59 Detector SN#      :              *
* Detector ID        : GAM04                      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 01:00:01.37             Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 5-MAR-2010 00:00:00 Nuclide Library : SOLID            *
* Sample ID          : G1202057357             Analyst initials: MXRl          *
* Batch Number       : 959280                  Sample Quantity : 1.5173E+02 GRAM *
* Recovery           : 1.00000                  Carrier Weight  : 0.00000        *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME  : 5-MAY-2009 14:25:41 MS Isotope          :              *
* MSD DPM            : 0.000                      MSD Isotope    :              *
* LCS DPM            : 0.000                      LCS Isotope     :              *
* LCSD DPM           : 0.000                      LCSD Isotope    :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
CO-57	1.643E-01	7.884E-02	3.221E-02	4.022E-02
CO-60	6.481E+00	5.522E-01	3.796E-02	2.817E-01
CD-109	3.268E+01	4.469E+00	1.193E+00	2.280E+00
SN-126	3.197E+00	4.373E-01	1.176E-01	2.231E-01
BA-137M	5.438E+00	3.657E-01	5.744E-02	1.866E-01
CS-137	5.745E+00	3.875E-01	6.068E-02	1.977E-01
TL-208	3.821E-01	1.187E-01	5.155E-02	6.058E-02
BI-211	2.977E+00	5.818E-01	2.916E-01	2.968E-01
PB-212	1.276E+00	1.788E-01	8.014E-02	9.120E-02
BI-214	7.318E-01	2.285E-01	1.106E-01	1.166E-01
PB-214	1.081E+00	2.191E-01	1.097E-01	1.118E-01
RA-224	4.108E+00	1.884E+00	8.590E-01	9.610E-01
RA-226	7.318E-01	2.285E-01	1.106E-01	1.166E-01
TH-228	1.276E+00	1.788E-01	8.014E-02	9.120E-02
AM-241	1.390E+01	1.973E+00	3.896E-01	1.007E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.599E-01	6.774E-01	5.733E-01	3.456E-01 NOT IDENT.
NA-22	-3.259E-02	4.958E-02	3.834E-02	2.530E-02 NOT IDENT.
NA-24	-3.504E+05	4.936E+05	0.000E+00	2.519E+05 SHORT HLIF
K-40	7.819E-01	5.945E-01	5.876E-01	3.033E-01 NOT IDENT.
SC-46	-6.996E-03	9.234E-02	7.882E-02	4.711E-02 FAIL ABUN
V-48	-1.866E-01	1.635E-01	1.262E-01	8.344E-02 NOT IDENT.
CR-51	-2.610E-01	6.090E-01	5.319E-01	3.107E-01 NOT IDENT.
MN-54	4.556E-02	7.955E-02	7.123E-02	4.059E-02 NOT IDENT.
CO-56	-5.801E-02	8.324E-02	6.799E-02	4.247E-02 NOT IDENT.
CO-58	6.259E-02	7.873E-02	7.196E-02	4.017E-02 NOT IDENT.
FE-59	-6.458E-02	2.041E-01	1.667E-01	1.041E-01 NOT IDENT.
ZN-65	-1.642E-02	2.201E-01	1.575E-01	1.123E-01 NOT IDENT.

SE-75	-1.172E-02	7.504E-02	6.766E-02	3.829E-02	FAIL ABUN
SR-85	-8.623E-02	8.073E-02	6.483E-02	4.119E-02	NOT IDENT.
Y-88	3.379E-02	4.362E-02	4.307E-02	2.225E-02	NOT IDENT.
Y-91	-3.340E+01	2.849E+01	1.959E+01	1.453E+01	NOT IDENT.
NB-94	-1.210E-02	6.218E-02	5.390E-02	3.172E-02	NOT IDENT.
NB-95	-7.108E-02	7.978E-02	6.503E-02	4.071E-02	NOT IDENT.
NB-95M	-1.176E-02	2.219E-01	1.677E-01	1.132E-01	NOT IDENT.
ZR-95	8.264E-03	1.351E-01	1.184E-01	6.894E-02	NOT IDENT.
MO-99	2.989E+00	1.911E+01	1.690E+01	9.752E+00	NOT IDENT.
TC-99M	1.423E+16	9.656E+15	0.000E+00	4.927E+15	SHORT HLIF
RU-103	-4.957E-02	7.513E-02	6.144E-02	3.833E-02	FAIL ABUN
RH-106	-1.933E-01	5.432E-01	4.420E-01	2.771E-01	NOT IDENT.
RU-106	-1.933E-01	5.429E-01	4.420E-01	2.770E-01	NOT IDENT.
AG-108M	5.350E-03	5.849E-02	5.121E-02	2.984E-02	NOT IDENT.
AG-110M	2.568E-02	7.263E-02	5.786E-02	3.705E-02	NOT IDENT.
SN-113	3.235E-02	7.958E-02	7.159E-02	4.060E-02	NOT IDENT.
CD-115	-1.271E+01	1.781E+01	1.443E+01	9.087E+00	NOT IDENT.
SN-117M	1.725E-02	7.832E-02	6.984E-02	3.996E-02	NOT IDENT.
TE-123M	-9.396E-03	4.213E-02	3.673E-02	2.149E-02	NOT IDENT.
SB-124	-6.401E-02	1.361E-01	1.036E-01	6.942E-02	NOT IDENT.
SB-125	-6.286E-02	1.768E-01	1.509E-01	9.021E-02	NOT IDENT.
TE-125M	4.880E+00	1.433E+01	1.315E+01	7.311E+00	NOT IDENT.
I-126	-6.647E-02	4.338E-01	3.286E-01	2.213E-01	NOT IDENT.
SB-126	6.882E-02	2.697E-01	2.404E-01	1.376E-01	NOT IDENT.
SB-127	2.266E+00	2.056E+00	1.943E+00	1.049E+00	NOT IDENT.
I-131	-1.964E-02	2.039E-01	1.795E-01	1.040E-01	NOT IDENT.
TE-132	3.117E-01	1.093E+00	9.492E-01	5.577E-01	NOT IDENT.
BA-133	-5.986E-03	8.053E-02	6.241E-02	4.109E-02	NOT IDENT.
I-133	5.354E+03	6.435E+03	0.000E+00	3.283E+03	SHORT HLIF
CS-134	-7.031E-03	9.394E-02	8.110E-02	4.793E-02	NOT IDENT.
CS-135	-2.990E-01	2.615E-01	2.236E-01	1.334E-01	NOT IDENT.
I-135	-3.722E+14	1.394E+15	0.000E+00	7.111E+14	SHORT HLIF
CS-136	1.238E-01	2.271E-01	1.996E-01	1.159E-01	NOT IDENT.
CE-139	1.646E-02	4.374E-02	3.917E-02	2.232E-02	NOT IDENT.
BA-140	3.082E-02	4.687E-01	4.032E-01	2.391E-01	NOT IDENT.
LA-140	-6.422E-03	1.432E-01	1.198E-01	7.306E-02	NOT IDENT.
CE-141	-9.007E-03	9.311E-02	8.198E-02	4.750E-02	NOT IDENT.
CE-143	1.936E+02	1.842E+02	0.000E+00	9.399E+01	SHORT HLIF
CE-144	-3.029E-01	2.934E-01	2.461E-01	1.497E-01	NOT IDENT.
PM-144	1.703E-02	5.984E-02	5.380E-02	3.053E-02	NOT IDENT.
PR-144	7.939E-01	4.514E+00	4.027E+00	2.303E+00	NOT IDENT.
PM-146	4.935E-02	8.644E-02	7.733E-02	4.410E-02	NOT IDENT.
ND-147	3.552E-01	9.965E-01	8.722E-01	5.084E-01	FAIL ABUN
PM-149	-7.024E-02	1.297E+02	1.172E+02	6.619E+01	NOT IDENT.
EU-152	-4.939E-02	1.786E-01	1.445E-01	9.112E-02	FAIL ABUN
GD-153	2.385E-02	1.227E-01	1.130E-01	6.258E-02	NOT IDENT.
EU-154	-7.496E-02	1.400E-01	1.106E-01	7.142E-02	FAIL ABUN
EU-155	-7.748E-02	1.571E-01	1.393E-01	8.013E-02	FAIL ABUN
TB-160	-5.230E-02	3.076E-01	2.610E-01	1.570E-01	FAIL ABUN
HO-166M	4.100E-02	1.204E-01	1.079E-01	6.140E-02	NOT IDENT.
TA-182	1.003E-01	2.220E-01	2.033E-01	1.133E-01	FAIL ABUN
IR-192	4.047E-03	6.060E-02	5.446E-02	3.092E-02	FAIL ABUN
HG-203	3.339E-02	5.879E-02	5.470E-02	2.999E-02	NOT IDENT.
BI-207	2.959E-03	1.252E-01	1.056E-01	6.390E-02	FAIL ABUN
PB-210	3.101E-01	1.527E+01	1.458E+01	7.791E+00	NOT IDENT.
PB-211	-1.912E+00	1.620E+00	1.083E+00	8.264E-01	NOT IDENT.
BI-212	2.118E+00	1.011E+00	9.236E-01	5.159E-01	FAIL ABUN
RN-219	-3.078E-01	7.685E-01	6.577E-01	3.921E-01	NOT IDENT.
RA-223	-1.241E+00	1.119E+00	9.249E-01	5.711E-01	FAIL ABUN
AC-227	2.550E-01	4.274E-01	3.991E-01	2.180E-01	NOT IDENT.
TH-227	2.550E-01	4.276E-01	3.991E-01	2.182E-01	NOT IDENT.
AC-228	1.752E+00	6.235E-01	4.272E-01	3.181E-01	FAIL ABUN
RA-228	1.752E+00	6.235E-01	4.272E-01	3.181E-01	FAIL ABUN
TH-229	2.173E-01	8.501E-01	7.474E-01	4.337E-01	FAIL ABUN
PA-231	9.506E-02	2.388E+00	2.163E+00	1.218E+00	NOT IDENT.
TH-231	-1.241E+00	1.119E+00	9.249E-01	5.711E-01	FAIL ABUN
TH-232	1.752E+00	6.235E-01	4.272E-01	3.181E-01	FAIL ABUN
PA-233	1.334E-01	1.146E-01	1.083E-01	5.847E-02	NOT IDENT.
PA-234	-1.995E-01	8.042E-01	6.741E-01	4.103E-01	NOT IDENT.
PA-234M	1.405E+00	9.689E+00	8.303E+00	4.943E+00	NOT IDENT.
TH-234	-5.930E-01	2.975E+00	2.480E+00	1.518E+00	NOT IDENT.
U-235	-3.401E-01	3.116E-01	2.576E-01	1.590E-01	FAIL ABUN
NP-237	3.016E+00	9.063E-01	5.513E-01	4.624E-01	NOT IDENT.
U-238	-5.930E-01	2.975E+00	2.480E+00	1.518E+00	NOT IDENT.
NP-239	-5.674E-01	6.434E-01	4.875E-01	3.283E-01	NOT IDENT.
CM-247	-3.534E-02	6.935E-02	5.899E-02	3.538E-02	NOT IDENT.
CF-249	-3.337E-02	7.282E-02	6.234E-02	3.715E-02	NOT IDENT.
CF-251	-1.993E-02	2.023E-01	1.759E-01	1.032E-01	NOT IDENT.

ANH-511	3.077E-02	6.829E-02	6.442E-02	3.484E-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	240.7072
49.72	264.5019
57.36	0.0000
59.54	306.1298
63.29	225.0656
63.29	225.0656
64.28	223.4616
67.75	261.7918
69.67	265.6862
70.83	237.2972
72.81	267.1297
72.87	267.1654
72.87	267.1654
74.82	288.0457
74.82	288.0457
74.82	288.0457
74.97	288.1400
77.11	289.4847
77.11	289.4847
77.11	289.4847
79.69	315.6476
79.80	315.7204
80.12	308.9737
80.19	309.0186
80.57	321.8036
81.00	338.8247
81.07	338.8730
81.07	338.8730
83.79	295.9026
83.79	295.9026
85.43	319.3989
86.48	365.1929
86.55	365.2443
86.79	358.3618
86.94	358.4704
87.57	311.8176
88.03	312.1004
88.47	312.3715
89.96	282.5219
91.11	266.0761
92.59	209.7558
92.59	209.7558
93.35	218.6325
94.67	255.9460
94.87	256.0427
94.87	256.0427
95.86	259.3872
97.43	206.3861
98.44	203.8837
99.53	196.5801
100.11	213.1855
103.18	200.7797
103.37	198.9066
105.31	230.7413
106.12	237.8916
109.28	210.7592
111.00	228.0883
111.76	207.7063
116.30	191.6179
117.23	217.5352
121.12	194.9078
121.78	195.1111
122.06	195.1974
123.07	195.5078
131.20	197.9616
133.52	235.3214
136.00	180.9702

136.47	205.6496
140.51	185.2423
140.51	0.0000
143.76	259.5025
144.24	262.7824
144.24	262.7824
145.44	226.9532
152.43	209.2611
153.25	205.3031
154.21	202.4199
154.21	202.4199
156.02	211.3215
158.56	202.5371
159.00	213.2092
162.66	209.9843
163.33	199.5511
165.86	192.7433
176.60	238.5039
177.52	216.0807
181.07	206.6986
184.41	243.4687
185.72	236.7522
193.51	214.6738
197.04	225.4803
205.31	213.0545
210.85	226.6788
215.65	230.0914
222.11	229.3747
227.38	180.3811
228.16	207.9455
228.18	207.9492
235.69	205.4864
235.96	219.3587
235.96	219.3587
238.63	192.8033
238.63	192.8033
240.99	193.2466
242.00	193.4369
244.70	193.9415
252.40	200.5441
252.80	185.1965
256.23	183.1489
256.23	183.1489
260.90	184.8235
264.66	186.3455
268.22	214.5413
269.46	172.0025
269.46	172.0025
271.23	174.9513
273.65	207.5313
276.40	173.9594
277.37	158.8506
277.60	157.0877
278.00	158.0391
279.20	144.7221
279.54	158.2512
280.46	177.2778
283.69	166.0425
284.31	168.8382
285.41	179.8427
285.90	183.5351
287.50	170.2057
293.27	0.0000
295.22	181.3428
295.96	199.8742
298.57	171.0639
299.98	147.8432
299.98	147.8432
300.09	158.1056
300.09	158.1056
300.13	158.1108
301.36	152.8259
302.85	207.2506
304.50	191.0010
304.50	191.0010
304.85	167.1731
308.46	175.9557
311.90	146.8838

316.51	161.3329
319.41	145.9034
320.08	154.3484
323.87	178.1211
323.87	178.1211
328.76	170.3723
333.37	147.3039
334.37	153.4333
334.37	153.4333
338.28	140.4969
338.28	140.4969
338.32	140.5014
338.32	140.5014
338.32	140.5014
340.48	126.9413
340.55	126.9475
344.28	147.7615
351.06	129.4652
351.93	138.6906
356.01	136.0466
364.49	154.7576
366.42	140.5330
383.85	136.4069
388.16	148.5349
388.63	142.7162
391.69	128.3195
400.66	138.9453
401.81	154.8320
402.40	151.9321
404.85	171.9397
410.95	156.7536
414.70	162.1096
423.72	131.0380
427.09	159.3882
427.87	147.4307
433.94	140.9464
453.88	137.5832
463.37	152.7150
468.07	144.9179
473.00	135.0298
476.78	142.5568
477.60	149.8609
487.02	151.7120
492.35	145.9195
497.08	122.2719
511.00	131.6471
514.00	186.7189
527.90	115.8524
529.87	0.0000
531.02	93.6880
537.26	92.9313
546.56	0.0000
563.25	106.1019
569.33	109.6889
569.50	111.8704
569.70	102.1039
583.19	82.0175
600.60	99.2642
602.73	100.9431
604.72	114.9338
609.32	100.7893
609.32	100.7893
610.33	93.9689
614.28	69.2764
618.01	78.9650
621.93	79.1101
621.93	79.1101
633.25	88.4917
635.95	78.5086
636.99	83.0332
645.85	81.1187
657.76	86.0891
661.66	92.5944
661.66	92.5944
664.57	0.0000
666.33	89.4531
666.50	94.0091
677.62	82.2832

685.70	64.2253
695.00	78.3013
696.49	76.5085
696.51	79.2750
697.00	88.5117
702.65	96.1187
706.68	99.9870
711.68	95.5617
720.70	92.1986
721.93	0.0000
722.78	97.8735
722.91	93.2178
723.31	91.6785
724.19	93.2666
727.33	91.5209
733.00	73.3266
735.93	79.6626
739.50	76.9651
747.24	72.4996
752.31	98.1246
753.82	75.5254
756.73	82.2316
763.94	95.7404
765.81	107.1955
766.42	90.1410
777.92	82.9282
778.90	86.7744
783.70	78.3384
785.37	82.2144
795.86	97.9085
801.95	77.9328
810.29	79.1472
810.76	74.3343
815.77	69.6410
818.51	89.0778
832.01	107.0459
834.85	94.4945
836.80	0.0000
846.77	98.8276
856.80	84.4589
860.56	92.4417
871.09	90.8186
873.19	94.8398
875.33	0.0000
879.36	93.0683
880.51	93.1073
883.24	90.2224
884.68	99.1968
889.28	103.3322
898.04	120.5953
911.20	114.1392
911.20	114.1392
911.20	114.1392
926.50	117.7627
937.49	125.2745
944.13	112.3929
946.00	128.6743
949.00	99.3925
962.29	147.7117
964.08	129.1128
966.15	105.3995
968.97	117.4089
968.97	117.4089
968.97	117.4089
983.53	108.7380
996.26	79.3160
1001.03	77.3730
1004.73	83.6618
1037.84	84.5398
1038.76	0.0000
1048.07	71.1975
1050.41	61.8204
1050.41	61.8204
1063.66	91.5284
1085.87	86.8487
1099.45	87.2011
1112.07	72.5854
1115.54	81.9188

1120.29	74.8979
1120.29	74.8979
1120.55	67.4143
1121.30	67.4297
1131.51	0.0000
1173.23	56.1295
1177.93	39.8857
1189.05	48.0111
1204.77	40.5500
1221.41	22.9360
1231.02	21.1563
1235.36	36.8359
1238.28	23.0408
1260.41	0.0000
1271.85	13.9484
1274.44	22.3330
1274.54	23.2635
1291.59	17.7592
1298.22	0.0000
1312.11	12.2155
1332.49	14.1684
1365.19	9.5231
1368.63	0.0000
1384.29	11.4819
1408.01	9.6236
1457.56	0.0000
1460.82	15.5924
1489.16	15.6953
1505.03	24.6134
1596.21	21.0991
1620.50	12.1201
1678.03	0.0000
1690.97	17.4268
1764.49	1.7838
1764.49	1.7838
1770.23	7.1434
1771.35	7.1448
1791.20	0.0000
1836.06	4.2210

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202057357

Total Uranium Activity	-1.9214E+00	ug/g
Total Uranium Counting Unc.	8.8507E+00	ug/g
Total Uranium Tpu	4.5157E-06	ug/g
Total Uranium Mda	7.3804E+00	ug/g

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*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON , SC 29417                          *
*                               GROSS GAMMA REPORT                            *
*
*****
*
*  BATCH ID      : 959280                SAMPLE ID   : G1202057357            *
*  ANALYST       : MXR1                  DETECTOR    : GAM04                *
*  SAMPLE DATE   : 5-MAR-2010 00:00:00.00  COUNT TIME : 0 01:00:00.00        *
*  ANALYSIS DATE: 19-MAR-2010 11:17:59.76  SAMPLE ALQT: 151.730 GRAM        *
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.816E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 2.927E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.080E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.972E+00

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Radiochemistry Batch Checklist, Rev10

Batch# 964056 Product: H3 Date: 3/23/10
3/23/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)			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 initiated 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] 3/23/10

Secondary Review Performed By: [Signature] 3/23/10

LANL

3/15 - 3/25

Tritium Que Sheet

11-MAR-10

VAC

Batch #: 964056

Analyst: KKK2

First Client Due Date 25-MAR-10

Internal Due Date: 15-MAR-10

Spike Isotope: Hydrogen-3

Spike Code: 0134-K

Expiration Date: 3/27/10

Vol: 0.1

LCS Isotope: Hydrogen-3

LCS Code: 0134-K

Expiration Date: 3/27/10

Vol: 0.1

Prep Date: 3/15/10 Initials: yyg Pipet ID: 2970968 Witness: DJM 3-15-10

Sample ID	Client Samp ID	Type	Hazard Code	Min CRDL	Matrix	Client	Sample Date	Aliquot in vial (g/mL)	LSC Rack #	Dist Rtg #	Vol added for Dist (mL)	Initial Sample Aliquot (g/mL)	Final Wt (g)	Total Initial Sample Aliquot (g/mL)	Total Final Wt (g)
248243001-1	RE36-10-7458	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-2	1		376.52	323.05	53.47	
248243002-1	RE36-10-7453	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-3	2		272.48	150.68	121.80	
248243003-1	RE36-10-7454	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-4	3		436.65	400.84	35.81	
248243004-1	RE36-10-7460	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-5	4		515.45	466.48	48.97	
248243005-1	RE36-10-7456	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-6	5		498.95	461.53	37.42	
248243006-1	RE36-10-7455	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-7	6		342.05	258.59	83.46	
248243007-1	RE36-10-7459	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-8	7		405.47	329.24	76.23	
248243008-1	RE36-10-7457	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-9	8		341.93	277.65	64.28	
248243009-1	RE36-10-7520	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-10	9		298.20	172.36	125.84	
248243010-1	RE36-10-7519	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-11	10		417.46	329.79	87.67	
248248001-1	RE36-10-8464	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-12	11		403.80	365.44	38.36	
248248002-1	RE36-10-8475	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-13	12		525.29	479.06	46.23	
248248003-1	RE36-10-8471	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-14	13		120.39	106.55	13.84	
248248004-1	RE36-10-8485	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-15	14		457.82	350.23	107.59	
248248005-1	RE36-10-8477	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-16	15		443.12	386.40	56.72	
248248006-1	RE36-10-8479	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-17	16		361.42	324.56	36.86	
248248007-1	RE36-10-8484	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-18	17		476.06	398.94	77.12	
248248008-1	RE36-10-8481	SAMPLE		.25 pCi/mL SOIL		LANL010	24-FEB-10	10	21-19	18		434.34	385.69	48.65	
248660002-1	WST36-10-8929	SAMPLE		.25 pCi/mL SOIL		LANL010	26-FEB-10	10	21-20	19		506.20	436.34	69.86	
1202068216-1	MB for batch 964056	MB		.25 pCi/mL SOIL		QC ACCOUNT		10	21-21	20		20.00	0.00	20.00	
1202068217-1	RE36-10-8481 (248248008DUP)	DUP		.25 pCi/mL SOIL		QC ACCOUNT		10	21-22	18		434.34	385.69	48.65	
1202068218-1	LCS for batch 964056	LCS		.25 pCi/mL SOIL		QC ACCOUNT		10	21-23	21		20.00	0.00	20.00	

Bkg Rack #: 21-1, 8-1
* 3/23/10

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) 7067404, LS6000 (Brown) 7060655, Wallac (Pink) 2200082, Wallac (White) 4140299, Purple 7069123, Silver 7060656, Orange DG06095168

Calibration Used: Ecoscint Ultra (10 mL sample/13 mL Ecoscint Ultra)
Data Reviewed By: yyg 3/23/10

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1

Prep Logbook

The Determination of Tritium

Batch ID: 964056
 Analyst: Kelly Gainey
 Method: GL-RAD-A-002

Verified by: _____

Lab SOP: GL-RAD-A-002 REV# 18
 Instrument: No instrument-manual method

Sample ID	Run Date	Vacuum Flask Rig # (g)	Aliquot in (mL)	Amount of Prepped Moisture Collected in vial (mL)	Aliquot in scintillation vial (mL)
248243001	15-MAR-2010 09:44:10	1	376.52	53.47	10
248243002	15-MAR-2010 09:44:10	2	272.48	121.8	10
248243003	15-MAR-2010 09:44:10	3	436.65	35.81	10
248243004	15-MAR-2010 09:44:10	4	515.45	48.97	10
248243005	15-MAR-2010 09:44:10	5	498.95	37.42	10
248243006	15-MAR-2010 09:44:10	6	342.05	83.46	10
248243007	15-MAR-2010 09:44:10	7	405.47	76.23	10
248243008	15-MAR-2010 09:44:10	8	341.93	64.28	10
248243009	15-MAR-2010 09:44:10	9	298.2	125.84	10
248243010	15-MAR-2010 09:44:10	10	417.46	87.67	10
248248001	15-MAR-2010 09:44:10	11	403.8	38.36	10
248248002	15-MAR-2010 09:44:10	12	525.29	46.23	10
248248003	15-MAR-2010 09:44:10	13	120.39	13.84	8.5
248248004	15-MAR-2010 09:44:10	14	457.82	107.59	10
248248005	15-MAR-2010 09:44:10	15	443.12	56.72	10
248248006	15-MAR-2010 09:44:10	16	361.42	36.86	10
248248007	15-MAR-2010 09:44:10	17	476.06	77.12	10
248248008	15-MAR-2010 09:44:10	18	434.34	48.65	10
248660002	15-MAR-2010 09:44:10	19	506.2	69.86	10
1202068216 MB	15-MAR-2010 09:44:10	20	20	20	10
1202068217 DUP (248248008)	15-MAR-2010 09:44:10	18	434.34	48.65	10
1202068218 LCS	15-MAR-2010 09:44:10	21	20	20	10

Comments:

Type	Sample Id	Description	Serial Number	Spike Amt	Units
LCS	1202068218	4 Bottles: stock, LSC, Rad II, and Bioassay	0134-K	.1	mL
REGNT Ali		Brown Colorant for Calibrations	1158135	10	uL
REGNT Ali		ecosint ultra scintillation solution	1265065.2	13	mL

DATE	3/16/2010	INITIALS	KXK2	BATCH NUMBER	964056	
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
248243001	376.52	0.142	53.47	323.05	10	
248243002	272.48	0.447	121.80	150.68	10	
248243003	436.65	0.082	35.81	400.84	10	
248243004	515.45	0.095	48.97	466.48	10	
248243005	498.95	0.075	37.42	461.53	10	
248243006	342.05	0.244	83.46	258.59	10	
248243007	405.47	0.188	76.23	329.24	10	
248243008	341.93	0.188	64.28	277.65	10	
248243009	298.20	0.422	125.84	172.36	10	
248243010	417.46	0.210	87.67	329.79	10	
248248001	403.80	0.095	38.36	365.44	10	
248248002	525.29	0.088	46.23	479.06	10	
248248003	120.39	0.115	13.84	106.55	10 8.5	
248248004	457.82	0.235	107.59	350.23	10 1.5123/10	
248248005	443.12	0.128	56.72	386.40	10	
248248006	361.42	0.102	36.86	324.56	10	
248248007	476.06	0.162	77.12	398.94	10	
248248008	434.34	0.112	48.65	385.69	10	
248660002	506.20	0.138	69.86	436.34	10	
MB	20.00	1.000	20.00	0.00	10	
DUP		0.112	0.00	0.00	10	
MS	20.00	1.000	20.00	0.00	10	

Tritium Solid

Filename : H3VAC.XLS
File type : Excel
Version # : 1.2.6

Spike S/N : N/A
Spike Exp Date : N/A
Spike Activity (dpm/ml): N/A
Spike Volume Added: N/A

LCS S/N : 0134-K
LCS Exp Date : 3/11/2011
LCS Activity (dpm/ml): 2456.07
LCS Volume Added: 0.10

Batch : 964056
Analyst : KXK2
Prep Date : 3/15/2010

Procedure Code : LSC_VH3S
Paramname : Tritium
Required MDC : 250 pCi/L
Half-life of Tritium : 12.32 years

H-3 Abundance : 1
Method Uncertainty : 0.0691
Geometry: 10mL DW/13mL
Eoscent Ultra

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	248243001.1	376.52	0.0535	0.0100	2.5729E-05	323.05	14.20%	1	2/24/2010 12:00					
2	248243002.1	272.48	0.1218	0.0100	2.5729E-05	150.68	44.70%	2	2/24/2010 12:00					
3	248243003.1	436.65	0.0358	0.0100	2.5729E-05	400.84	8.20%	3	2/24/2010 12:00					
4	248243004.1	515.45	0.0490	0.0100	2.5729E-05	466.46	9.50%	4	2/24/2010 12:00					
5	248243005.1	488.95	0.0374	0.0100	2.5729E-05	461.53	7.50%	5	2/24/2010 12:00					
6	248243006.1	342.05	0.0835	0.0100	2.5729E-05	258.59	24.40%	6	2/24/2010 12:00					
7	248243007.1	405.47	0.0762	0.0100	2.5729E-05	328.24	18.80%	7	2/24/2010 12:00					
8	248243008.1	341.93	0.0643	0.0100	2.5729E-05	277.65	18.80%	8	2/24/2010 12:00					
9	248243009.1	298.20	0.1258	0.0100	2.5729E-05	172.36	42.20%	9	2/24/2010 12:00					
10	248243010.1	417.46	0.0877	0.0100	2.5729E-05	328.79	21.00%	10	2/24/2010 12:00					
11	248248001.1	403.80	0.0384	0.0100	2.5729E-05	365.44	9.50%	11	2/24/2010 12:00					
12	248248002.1	525.29	0.0462	0.0100	2.5729E-05	479.06	8.80%	12	2/24/2010 12:00					
13	248248003.1	120.39	0.0138	0.0085	2.5729E-05	106.55	11.50%	13	2/24/2010 12:00					
14	248248004.1	457.82	0.1076	0.0100	2.5729E-05	350.23	23.50%	14	2/24/2010 12:00					
15	248248005.1	443.12	0.0567	0.0100	2.5729E-05	386.40	12.80%	15	2/24/2010 12:00					
16	248248006.1	361.42	0.0369	0.0100	2.5729E-05	324.56	10.20%	16	2/24/2010 12:00					
17	248248007.1	476.06	0.0771	0.0100	2.5729E-05	398.94	16.20%	17	2/24/2010 12:00					
18	248248008.1	434.34	0.0487	0.0100	2.5729E-05	385.69	11.20%	18	2/24/2010 12:00					
19	248960002.1	506.20	0.0699	0.0100	2.5729E-05	436.34	13.80%	19	2/26/2010 12:00					
20	1202068216.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	20	3/15/2010 0:00					
21	1202068217.1	434.34	0.0487	0.0100	2.5729E-05	385.69	11.20%	18	2/24/2010 12:00					
22	1202068218.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	21	3/15/2010 0:00					

Count raw Data				Background				Calibration Data				Detector				Backgrounds	
Pos.	Rack Position #	Counting Time (min.)	Quench#	Gross 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	21-2	50	126.7	6.02	90	3/19/2010 11:05	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2727	0.00792	21-1	3/19/2010 8:32			
2	21-3	50	125.3	5.64	90	3/19/2010 11:57	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2752	0.00792	21-1	3/19/2010 8:32			
3	21-4	50	124.6	6.5	90	3/19/2010 12:49	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2765	0.00792	21-1	3/19/2010 8:32			
4	21-5	50	125	6.38	90	3/19/2010 13:41	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2757	0.00792	21-1	3/19/2010 8:32			
5	21-6	50	125.3	6.92	90	3/19/2010 14:33	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2752	0.00792	21-1	3/19/2010 8:32			
6	21-7	50	125	6.78	90	3/19/2010 15:25	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2757	0.00792	21-1	3/19/2010 8:32			
7	21-8	50	125.1	7.26	90	3/19/2010 16:18	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2756	0.00792	21-1	3/19/2010 8:32			
8	21-9	50	126.1	6.54	90	3/19/2010 17:10	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2738	0.00792	21-1	3/19/2010 8:32			
9	21-10	50	125.9	6.52	90	3/19/2010 18:02	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2741	0.00792	21-1	3/19/2010 8:32			
10	21-11	50	125.2	6.22	90	3/19/2010 18:54	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2754	0.00792	21-1	3/19/2010 8:32			
11	21-12	50	125.7	6.32	90	3/19/2010 19:46	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2745	0.00792	21-1	3/19/2010 8:32			
12	19-1	50	125.6	5.54	90	3/19/2010 20:38	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2747	0.00792	21-1	3/19/2010 8:32			
13	8-2	90	115.2	3.07	90	3/22/2010 16:24	0.996	LSCRED	8/21/2009	8/31/2010	0.2076	0.00792	8-1	3/22/2010 14:51			
14	19-3	50	125.8	7.04	90	3/19/2010 22:23	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2743	0.00792	21-1	3/19/2010 8:32			
15	19-4	50	124.7	6.68	90	3/19/2010 23:15	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2763	0.00792	21-1	3/19/2010 8:32			
16	19-5	50	125.2	6.5	90	3/20/2010 0:07	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2754	0.00792	21-1	3/19/2010 8:32			
17	19-6	50	124.6	5.94	90	3/20/2010 0:59	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2765	0.00792	21-1	3/19/2010 8:32			
18	19-7	50	125.6	5.96	90	3/20/2010 1:51	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2747	0.00792	21-1	3/19/2010 8:32			
19	19-8	50	125.7	5.94	90	3/20/2010 2:43	0.997	LSCSILVER	8/21/2009	8/31/2010	0.2745	0.00792	21-1	3/19/2010 8:32			
20	19-9	50	124	5.98	90	3/20/2010 3:35	0.999	LSCSILVER	8/21/2009	8/31/2010	0.2775	0.00792	21-1	3/19/2010 8:32			
21	19-10	50	125.9	6.5	90	3/20/2010 4:27	0.996	LSCSILVER	8/21/2009	8/31/2010	0.2741	0.00792	21-1	3/19/2010 8:32			
22	60-1	15	125.1	43	90	3/19/2010 10:47	0.999	LSCSILVER	8/21/2009	8/31/2010	0.2756	0.00792	21-1	3/19/2010 8:32			

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 1202068217.1

Results		Decision Level	Critical Level	Required MDC	MDC	Sample Act. Conc.	Sample Act. Error	Net Count Rate	Net Count Rate Error	1 SIGMA Counting Uncertainty	1 SIGMA Total Prop. Uncertainty	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
Pos.	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	CPM	CPM	pCi/L	pCi/L						
1	167.9991	118.6088	250	247.1646	-9.9470	7.226	-0.060	0.434	71.8735	71.8739			SAMPLE				
2	166.4522	117.5167	250	244.8867	-72.2791	0.965	-0.440	0.425	69.7572	69.7575			SAMPLE				
3	165.6976	116.9839	250	243.7786	66.6762	1.058	0.420	0.444	72.6767	72.6767			SAMPLE				
4	166.1287	117.2883	250	244.4129	48.1814	1.473	0.300	0.442	72.4219	72.4219			SAMPLE				
5	166.4550	117.5186	250	244.8928	137.9782	0.540	0.840	0.451	74.5449	74.5449			SAMPLE				
6	166.1306	117.2896	250	244.4156	114.7578	0.644	0.700	0.451	73.8922	73.8922			SAMPLE				
7	166.2397	117.3667	250	244.5762	193.5759	0.391	1.180	0.461	75.8676	75.8676			SAMPLE				
8	167.3362	118.1408	250	246.1894	75.9595	0.968	0.460	0.445	73.5438	73.5438			SAMPLE				
9	167.1160	117.9853	250	245.8654	72.5813	1.011	0.440	0.445	73.3730	73.3730			SAMPLE				
10	166.3509	117.4452	250	244.7398	22.9820	3.128	0.140	0.438	71.9217	71.9395			SAMPLE				
11	166.8978	117.6313	250	245.5443	39.5272	1.835	0.240	0.440	72.5331	72.5853			SAMPLE				
12	166.7890	117.7545	250	245.3843	-68.6763	0.762	-0.540	0.422	69.5097	69.5101			SAMPLE				
13	147.8618	104.3917	250	217.3249	79.4383	0.821	0.310	0.255	65.2176	65.4521			SAMPLE				
14	167.0105	117.9108	250	245.7102	158.2157	0.476	0.860	0.458	75.2282	76.0310			SAMPLE				
15	165.8159	117.0674	250	243.9526	98.1775	0.748	0.600	0.449	73.3883	73.7061			SAMPLE				
16	166.3565	117.4491	250	244.7480	68.9483	1.058	0.420	0.444	72.9657	73.1236			SAMPLE				
17	165.7105	116.9831	250	243.7978	-22.8835	3.084	-0.140	0.432	70.5921	70.5924			SAMPLE				
18	166.7946	117.7584	250	245.3925	-19.7514	3.601	-0.120	0.432	71.1301	71.1304			SAMPLE				
19	166.8538	117.8002	250	245.4796	-23.0515	3.084	-0.140	0.432	71.0791	71.0795			SAMPLE				
20	164.6056	116.2190	250	242.1721	-16.2435	4.326	-0.100	0.433	70.2717	70.2721			SAMPLE				
21	167.1272	117.9832	250	245.8819	69.2877	1.058	0.420	0.444	73.3038	73.3038			MB				
22	262.0903	185.0380	250	402.7909	6038.1691	0.047	36.920	1.713	280.1960	505.3961			DUP	0.0%	0.3078	5531.6783	109.2%
												248248008.1	LCS				

PAGE: 1

ID: TRITIUM

22 MAR 2010 14:46

USER: 2

COMMENT: RED

PRESET TIME : 90.00

DATA CALC : CPM H# : YES SAMPLE REPEATS: 1 PRINTER : EDIT

COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 : EDIT

TWO PHASE : NO ADC : NO CYCLE REPEATS : 1 DISK : OFF

SCINTILLATOR: LIQUID LUMEX: YES LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

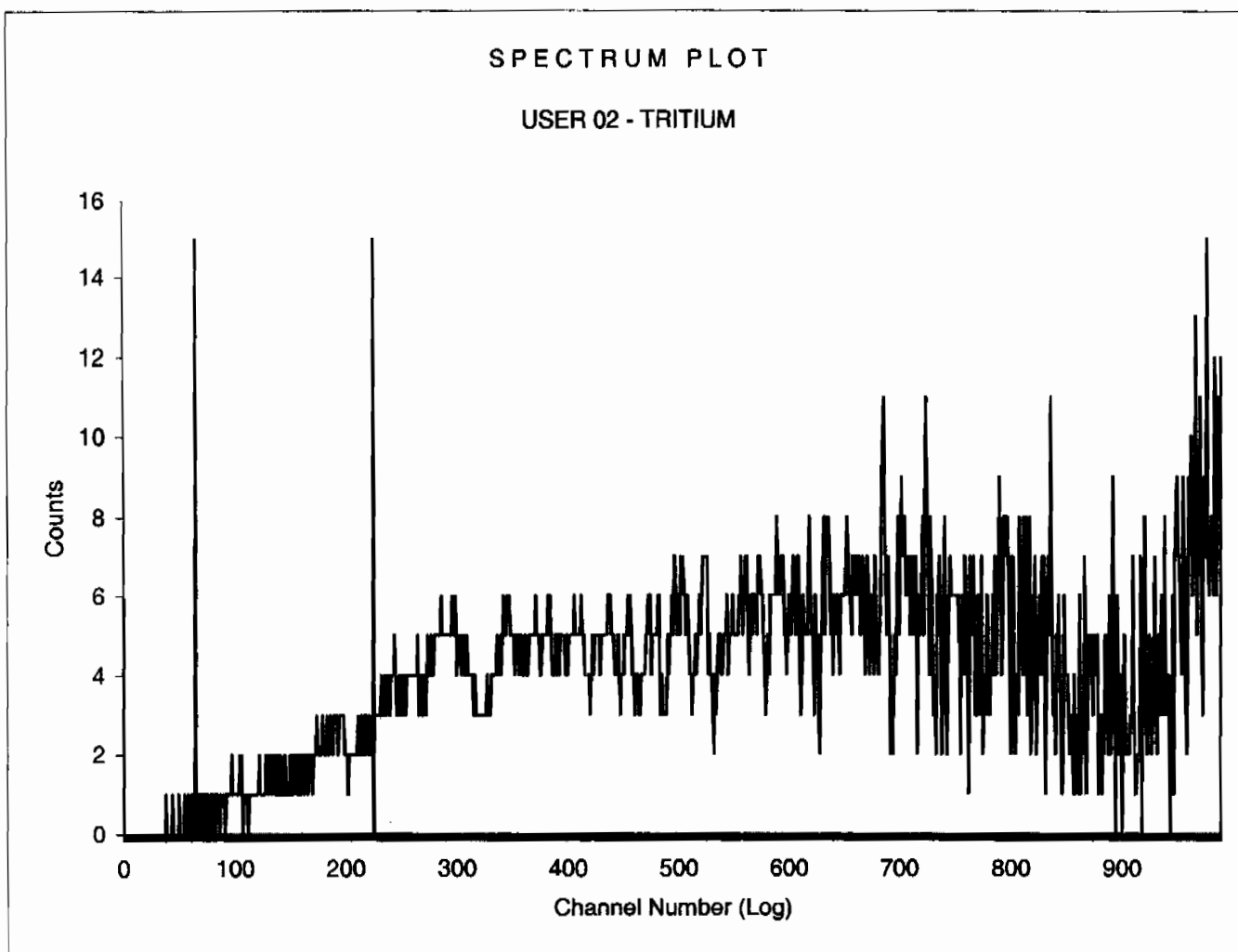
CHAN: 65.0 - 225.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 990.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

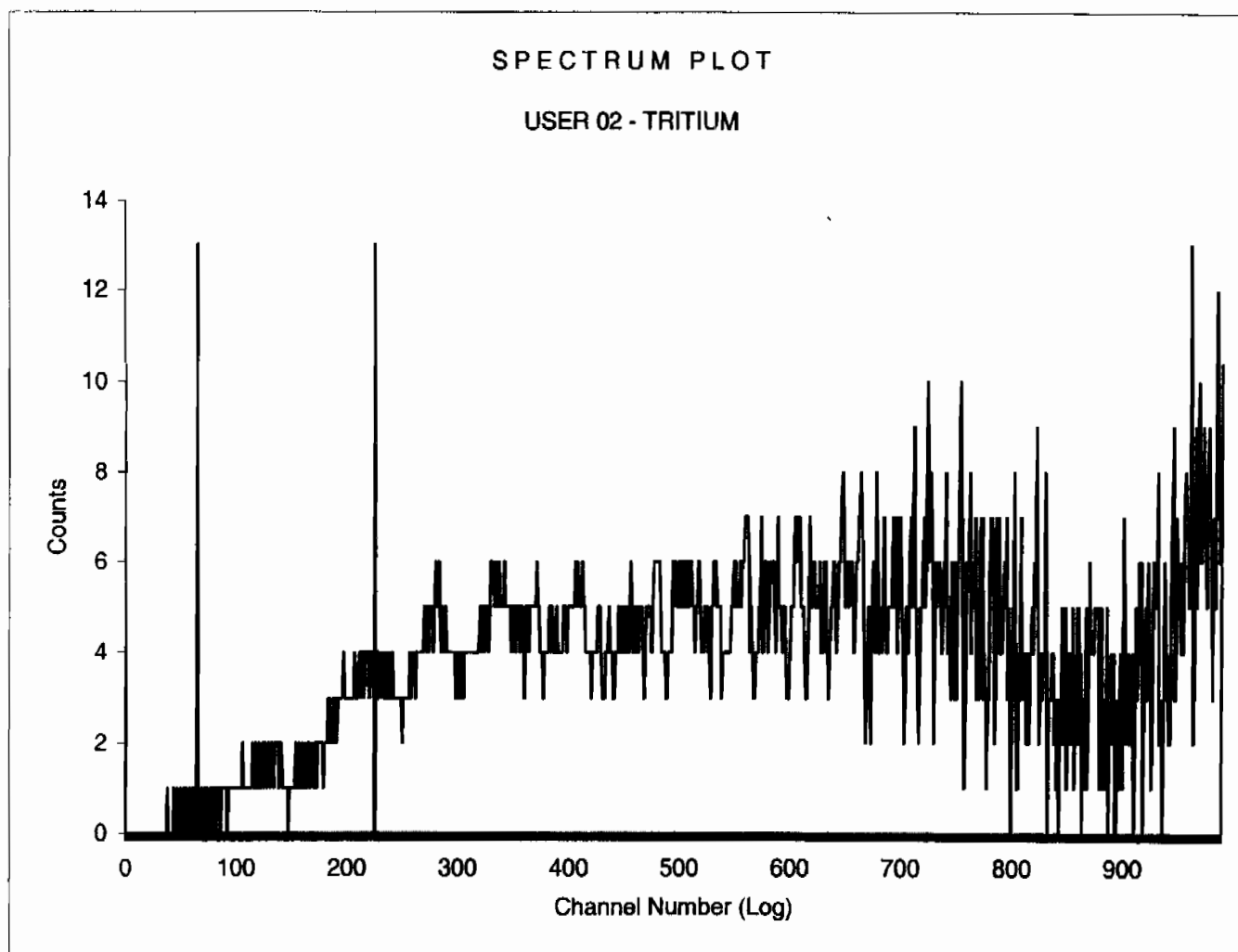
ALPHA-BETA DISCRIMINATION: NO

SAM NO	POS	TIME MIN	H#	<u>WIND1</u>		<u>WIND2</u>		LUMEX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
1	8-1	90.00	114.7	2.76	14.41	44.76	3.18	1.64	92.78
2	8-2	90.00	115.2	3.07	13.34	42.37	3.27	1.56	186.05

Sample Count Start Time:	22 Mar 2010 14:51:13		
Data Capture Date	22 Mar 2010 16:20:31		
User Filename	S02032208-1A.XLS		
	U02032208-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	RED		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	8-1	90.00
H#, Total Counts:	114.7	4798	
Win1: Tritium - Start, End, Counts:	65	225	251
Win2: - Start, End, Counts:	0	990	4033



Sample Count Start Time:	22 Mar 2010 16:24:29		
Data Capture Date	22 Mar 2010 17:53:47		
User Filename	S02032208-2A.XLS		
	U02032208-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	RED		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	8-2	90.00
H#, Total Counts:	115.2	4569	
Win1: Tritium - Start, End, Counts:	65	225	279
Win2: - Start, End, Counts:	0	990	3821



ID:TRITIUM

19 MAR 2010 08:29

USER: 4

COMMENT:SILVER

PRESET TIME : 90.00

DATA CALC : CPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 :EDIT

TWO PHASE : NO AQC : NO CYCLE REPEATS : 1 DISK : OFF

SCINTILLATOR: LIQUID LUMEX:YES LOW SAMPLE REJ: 0

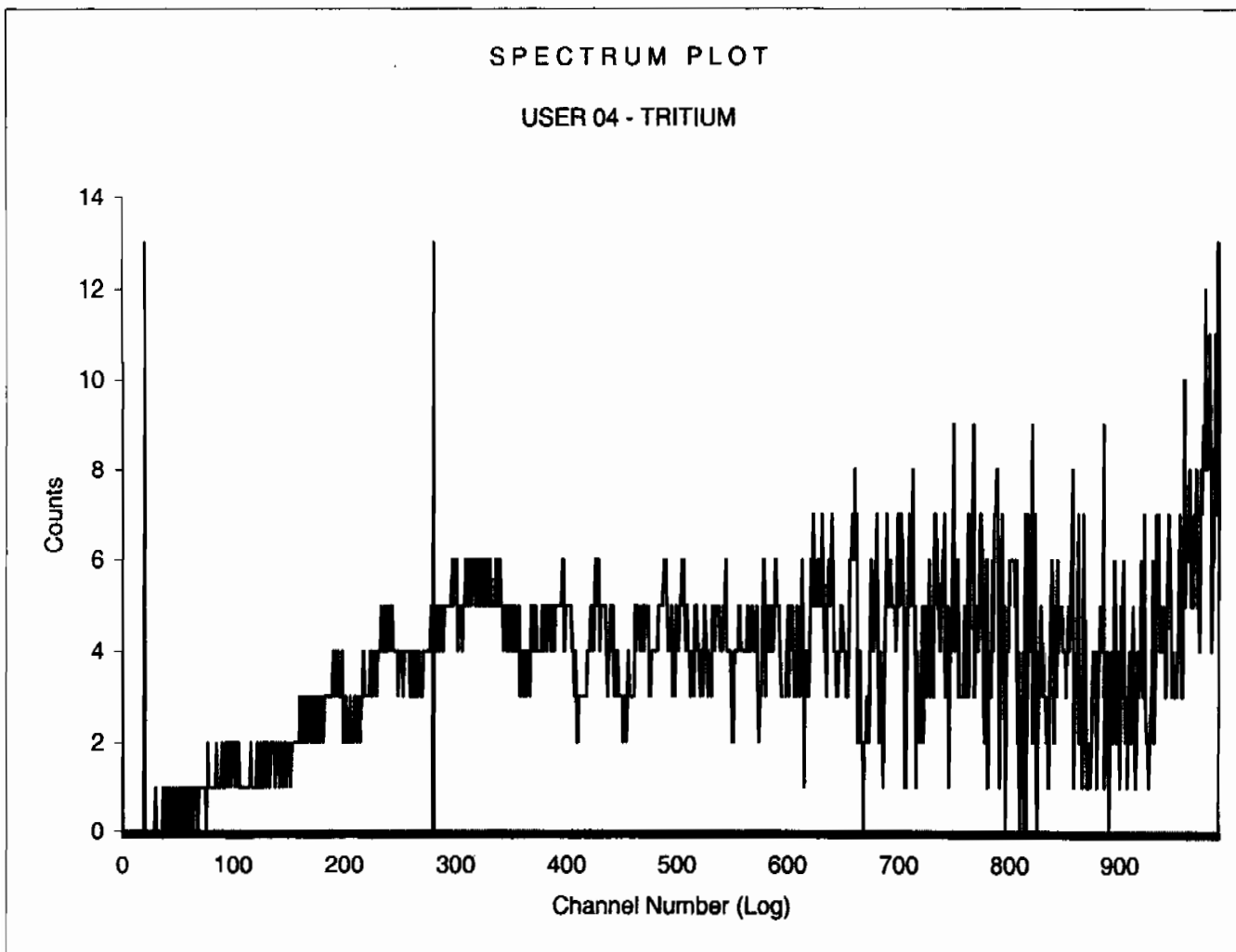
LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

CHAN: 20.0 - 280.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 1000.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

SAM NO	POS	TIME MIN	H#	WIND1		WIND2		LUMEX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
1	21-1	90.00	123.6	6.08	8.77	45.30	3.14	0.75	92.54
2	21-2	8.50	125.4	7.53	25.29	47.29	10.00	0.72	102.23
3	21-3	0.05	125.7	20.00	200.00	120.00	81.65	0.69	103.03
4	21-4	0.05	125.1	0.00	0.00	20.00	200.00	3.93	103.97
5	21-5	0.05	124.7	0.00	0.00	60.00	115.47	0.94	104.88
6	21-6	0.05	125.3	0.00	0.00	20.00	200.00	3.38	105.78
MISSING SAMPLE									
19	30-7	0.05	125.6	20.00	200.00	60.00	115.47	1.01	106.93
20	30-8	0.05	125.2	0.00	0.00	20.00	200.00	3.94	107.83
21	30-9	0.05	126.0	0.00	0.00	40.00	141.42	1.71	108.73
22	30-10	0.05	125.9	0.00	0.00	40.00	141.42	1.52	109.67
23	30-11	0.05	125.1	0.00	0.00	60.00	115.47	0.92	110.57
24	30-12	0.05	125.6	0.00	0.00	20.00	200.00	3.32	111.48
25	19-1	0.05	125.7	0.00	0.00	40.00	141.42	1.50	112.48
26	19-2	0.05	124.3	20.00	200.00	100.00	89.44	0.84	113.37
27	19-3	0.05	126.0	0.00	0.00	20.00	200.00	2.85	114.27
28	19-4	0.05	125.3	0.00	0.00	60.00	115.47	1.41	115.22
29	19-5	0.05	125.0	0.00	0.00	20.00	200.00	4.08	116.10
30	19-6	0.05	124.6	0.00	0.00	20.00	200.00	3.92	117.00
31	19-7	0.05	125.9	0.00	0.00	20.00	200.00	3.02	117.90
32	19-8	0.05	125.1	0.00	0.00	40.00	141.42	1.98	118.80
33	19-9	0.05	123.5	20.00	200.00	60.00	115.47	1.18	119.70
34	19-10	0.05	125.6	0.00	0.00	60.00	115.47	1.09	120.63

Sample Count Start Time:	19 Mar 2010 08:32:19		
Data Capture Date	19 Mar 2010 10:02:44		
User Filename	S04031921-1A.XLS		
	U04031921-1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	21-1	90.00
H#, Total Counts:	123.6	4077	
Win1: Tritium - Start, End, Counts:	20	280	551
Win2: - Start, End, Counts:	0	990	3710



ID:TRITIUM

19 MAR 2010 11:03

USER: 4

COMMENT:SILVER

PRESET TIME : 50.00

DATA CALC : CPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 :EDIT

TWO PHASE : NO AQC : NO CYCLE REPEATS : 1 DISK : OFF

SCINTILLATOR: LIQUID LUMEX:YES LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

CHAN: 20.0 - 280.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 1000.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

SAM	POS	TIME	H#	WIND1		WIND2		LUMEX	ELAPSED
NO		MIN		CPM	%ERROR	CPM	%ERROR	%	TIME

MISSING SAMPLE

1	2	21-2	50.00	126.7	6.02	11.89	44.72	4.25	0.95	51.66
2	3	21-3	50.00	125.3	5.64	12.28	43.28	4.32	0.95	103.84
3	4	21-4	50.00	124.6	6.50	11.38	44.30	4.27	0.83	155.97
4	5	21-5	50.00	125.0	6.38	11.48	46.58	4.16	0.78	208.11
5	6	21-6	50.00	125.3	6.92	10.98	45.68	4.20	0.74	260.28
6	7	21-7	50.00	125.0	6.78	11.07	45.92	4.19	0.66	312.40
7	8	21-8	50.00	125.1	7.26	10.68	45.52	4.20	0.62	364.54
8	9	21-9	50.00	126.1	6.54	11.26	45.06	4.22	0.58	416.66
9	10	21-10	50.00	125.9	6.52	11.28	46.46	4.16	0.57	468.79
10	11	21-11	50.00	125.2	6.22	11.56	45.94	4.18	0.56	520.90
11	12	21-12	50.00	125.7	6.32	11.46	45.38	4.21	0.62	573.04
12	13	19-1	50.00	125.6	5.54	12.27	44.00	4.28	0.57	625.24
13	14	19-2	50.00	125.0	5.88	11.90	44.42	4.26	0.62	677.40
14	15	19-3	50.00	125.8	7.04	10.84	45.18	4.22	0.62	729.53
15	16	19-4	50.00	124.7	6.68	11.15	43.82	4.29	0.69	781.67
16	17	19-5	50.00	125.2	6.50	11.31	44.78	4.24	0.66	833.81
17	18	19-6	50.00	124.6	5.94	11.84	43.60	4.30	0.64	885.94
18	19	19-7	50.00	125.6	5.96	11.82	42.96	4.33	0.61	938.07
19	20	19-8	50.00	125.7	5.94	11.80	46.66	4.15	0.53	990.18
20	21	19-9	50.00	124.0	5.98	11.74	45.84	4.19	0.52	1042.30
21	22	19-10	50.00	125.9	6.50	11.25	45.50	4.20	0.51	1094.42

QP

INSTRUMENT CALIBRATION: Maxi 20 MAR 2010 05:20

Calibration successful

QP

Calibrating Auto DPM

Counting Standard for 14C

Calibration Complete: 14C

Counting Standard for 3H

Calibration Complete: 3H

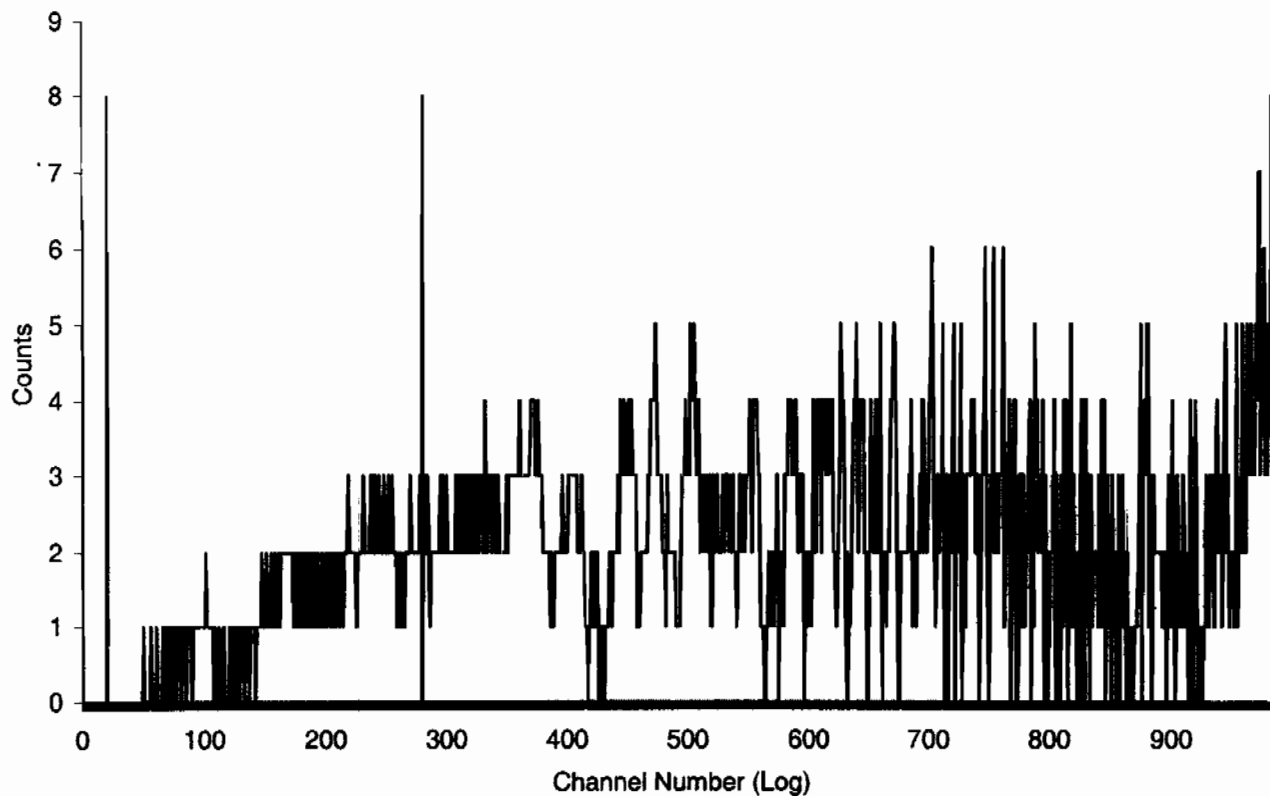
Calibration Successful

QPQP

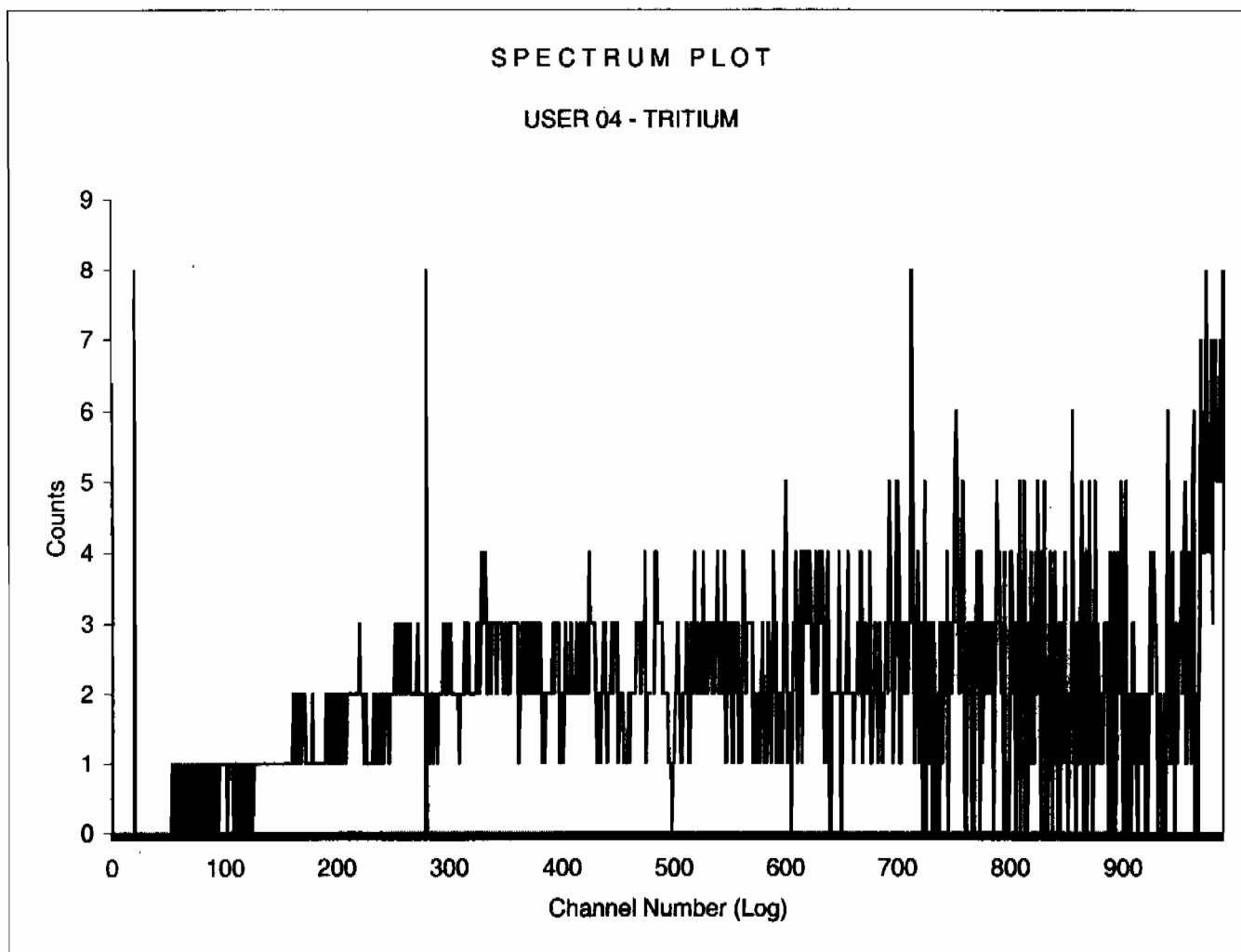
Sample Count Start Time:	19 Mar 2010 11:05:08		
Data Capture Date	19 Mar 2010 11:55:31		
User Filename	S04031921-2B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	21-2	50.00
H#, Total Counts:	126.7	2236	
Win1: Tritium - Start, End, Counts:	20	280	304
Win2: - Start, End, Counts:	0	990	2040

SPECTRUM PLOT

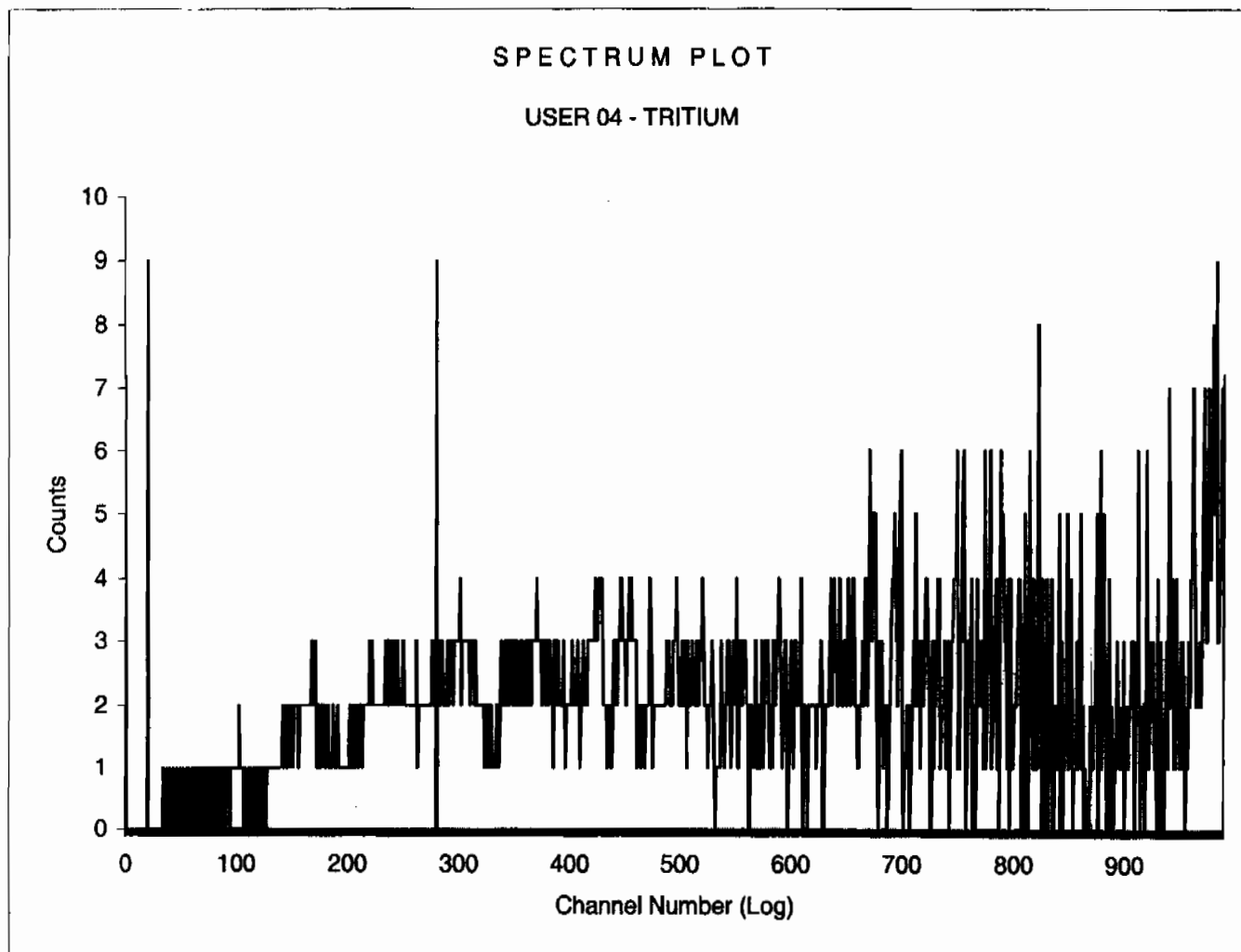
USER 04 - TRITIUM



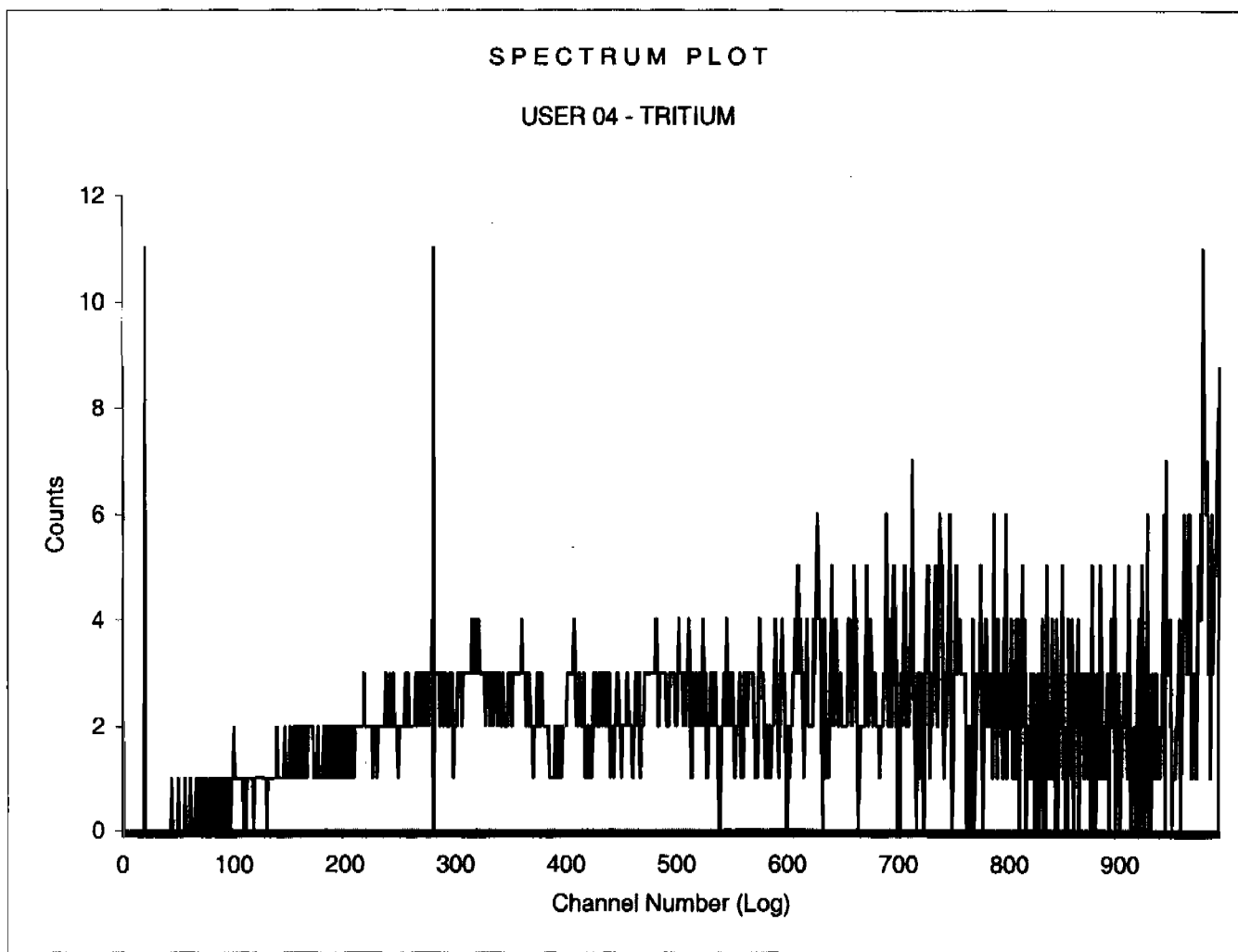
Sample Count Start Time:	19 Mar 2010 11:57:18		
Data Capture Date	19 Mar 2010 12:47:41		
User Filename	S04031921-3B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	21-3	50.00
H#, Total Counts:	125.3	2164	
Win1: Tritium - Start, End, Counts:	20	280	284
Win2: - Start, End, Counts:	0	990	1993



Sample Count Start Time:	19 Mar 2010 12:49:26		
Data Capture Date	19 Mar 2010 13:39:50		
User Filename	S04031921-4B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	21-4	50.00
H#, Total Counts:	124.6	2215	
Win1: Tritium - Start, End, Counts:	20	280	328
Win2: - Start, End, Counts:	0	990	2031



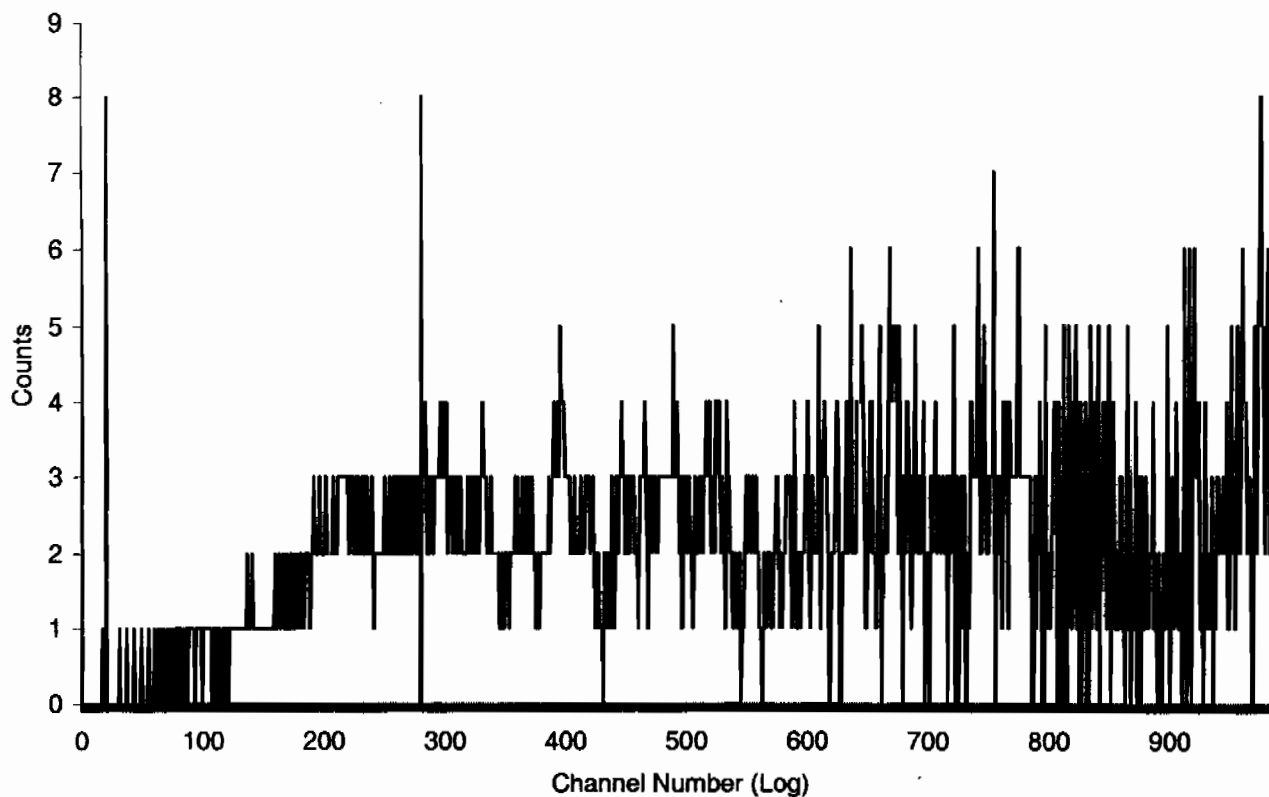
Sample Count Start Time:	19 Mar 2010 13:41:35		
Data Capture Date	19 Mar 2010 14:31:58		
User Filename	S04031921-5B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	21-5	50.00
H#, Total Counts:	125.0	2329	
Win1: Tritium - Start, End, Counts:	20	280	322
Win2: - Start, End, Counts:	0	990	2141



Sample Count Start Time:	19 Mar 2010 14:33:45		
Data Capture Date	19 Mar 2010 15:24:08		
User Filename	S04031921-6B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	21-6	50.00
H#, Total Counts:	125.3	2284	
Win1: Tritium - Start, End, Counts:	20	280	349
Win2: - Start, End, Counts:	0	990	2119

SPECTRUM PLOT

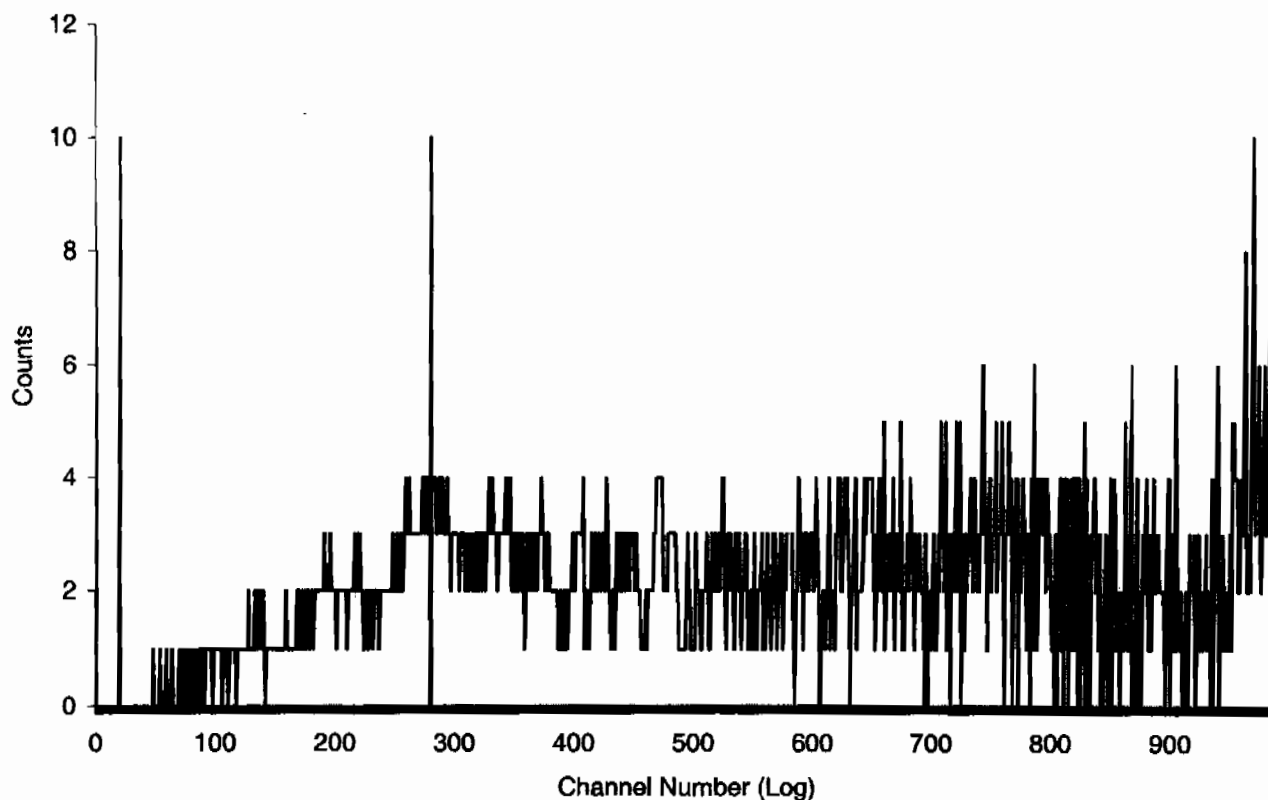
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 15:25:52		
Data Capture Date	19 Mar 2010 16:16:15		
User Filename	S04031921-7A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	21-7	50.00
H#, Total Counts:	125.0	2296	
Win1: Tritium - Start, End, Counts:	20	280	343
Win2: - Start, End, Counts:	0	990	2106

SPECTRUM PLOT

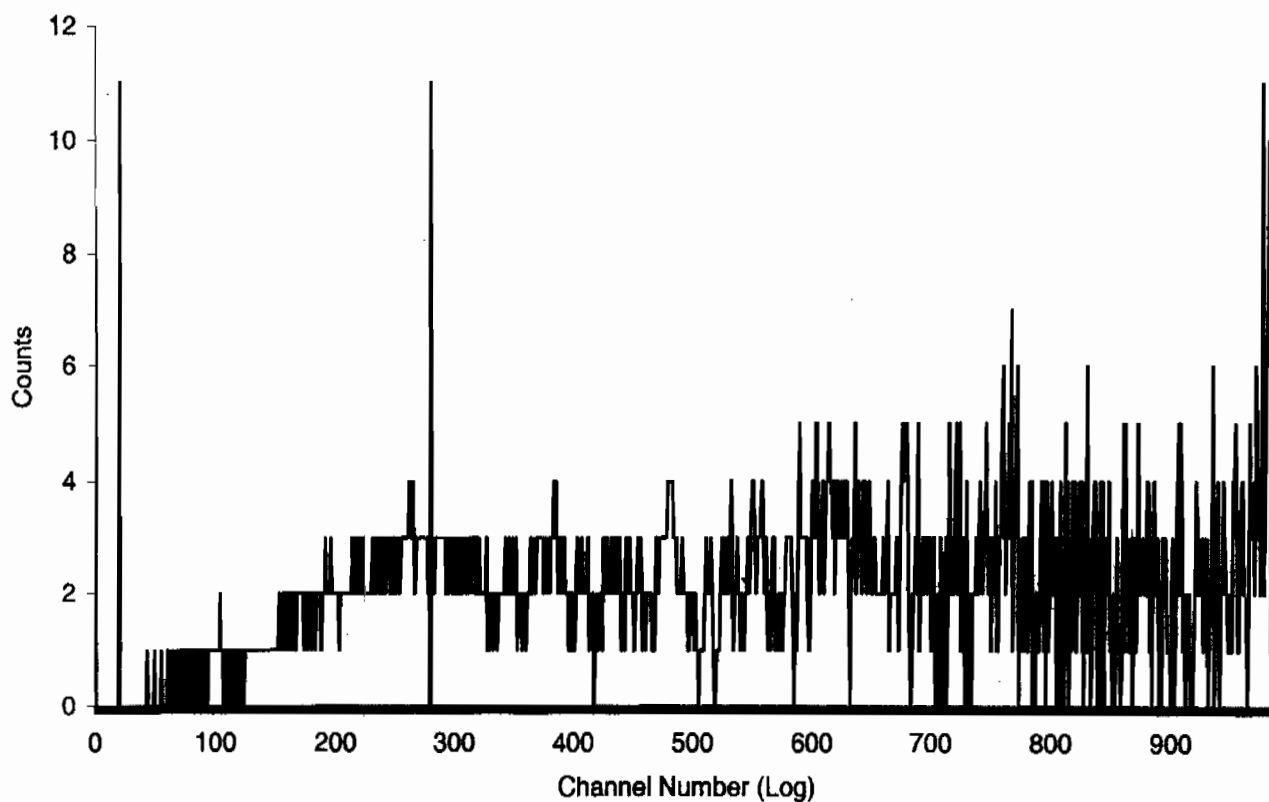
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 16:18:00		
Data Capture Date	19 Mar 2010 17:08:23		
User Filename	S04031921-8A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	8	21-8	50.00
H#, Total Counts:	125.1	2276	
Win1: Tritium - Start, End, Counts:	20	280	366
Win2: - Start, End, Counts:	0	990	2096

SPECTRUM PLOT

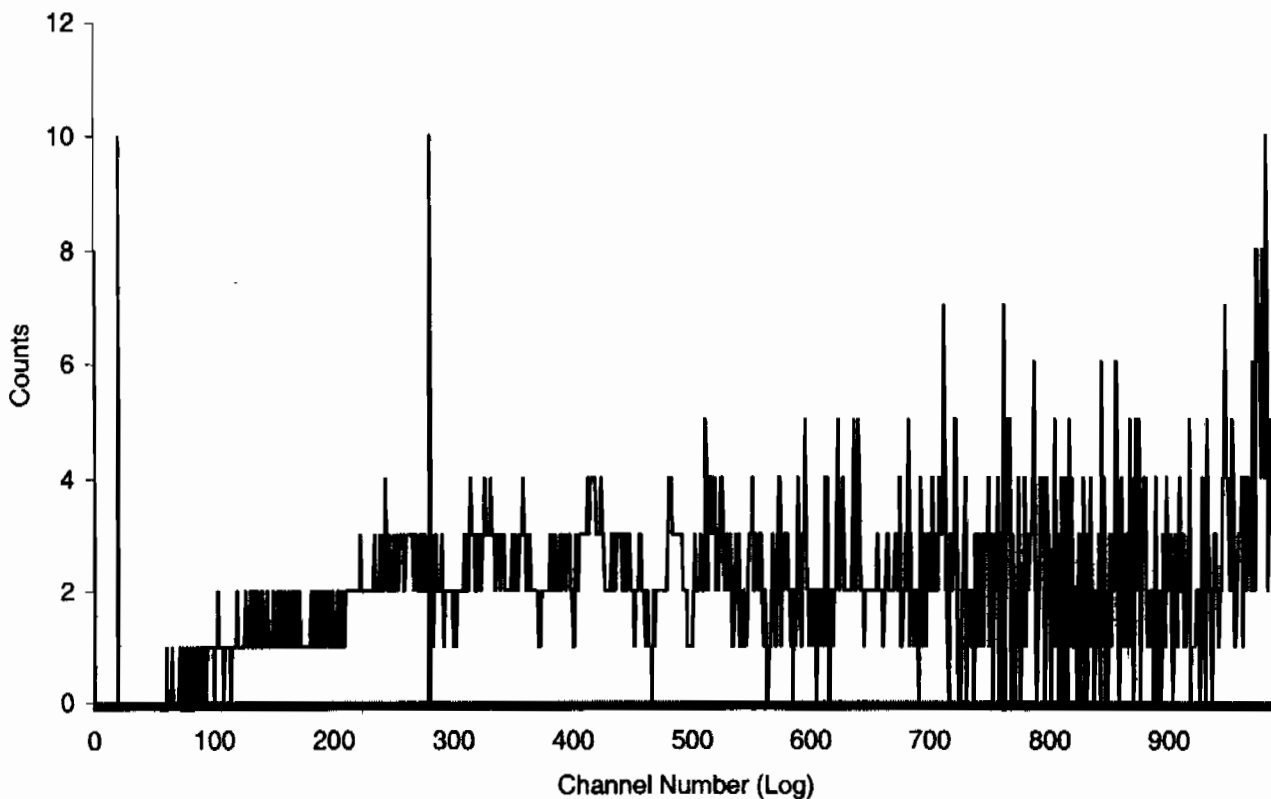
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 17:10:08		
Data Capture Date	19 Mar 2010 18:00:31		
User Filename	S04031921-9A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	9	21-9	50.00
H#, Total Counts:	126.1	2253	
Win1: Tritium - Start, End, Counts:	20	280	330
Win2: - Start, End, Counts:	0	990	2048

SPECTRUM PLOT

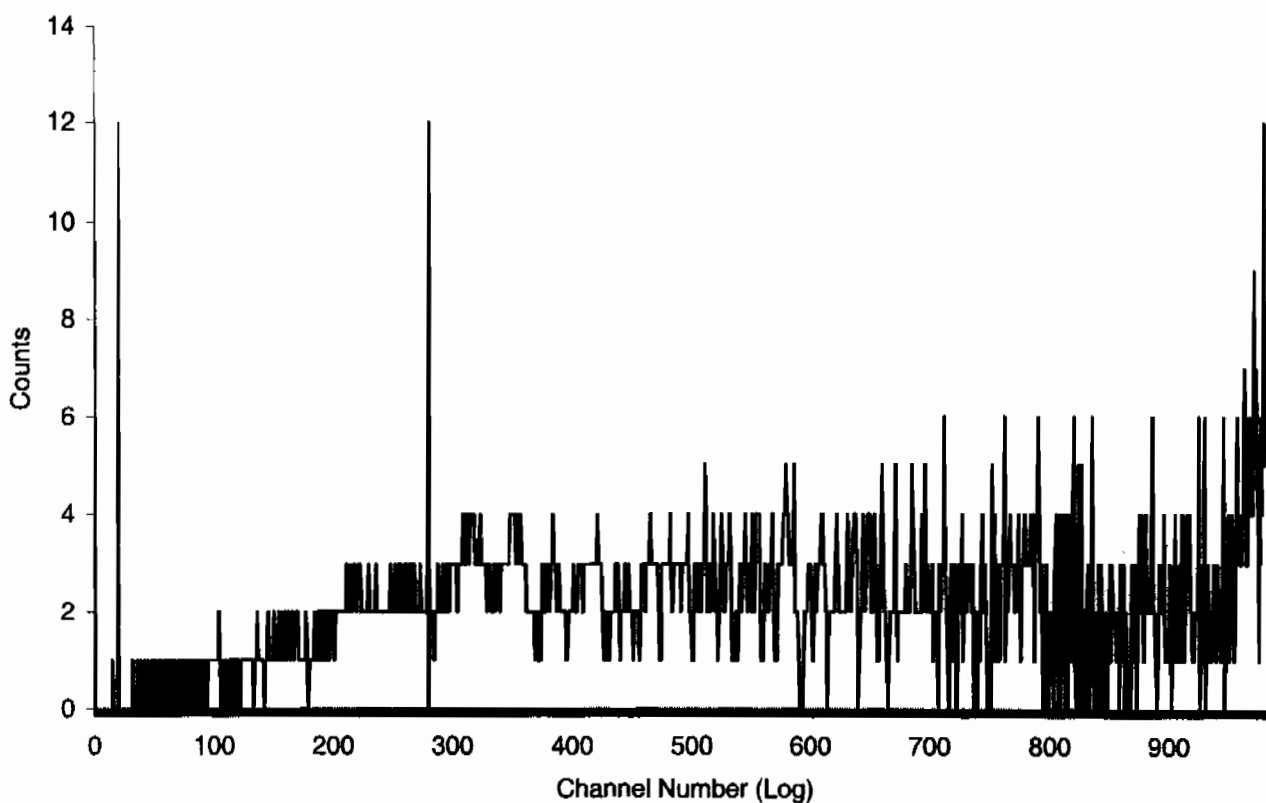
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 18:02:15		
Data Capture Date	19 Mar 2010 18:52:41		
User Filename:	S04031921-10A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	10	21-10	50.00
H#, Total Counts:	125.9	2323	
Win1: Tritium - Start, End, Counts:	20	280	328
Win2: - Start, End, Counts:	0	990	2133

SPECTRUM PLOT

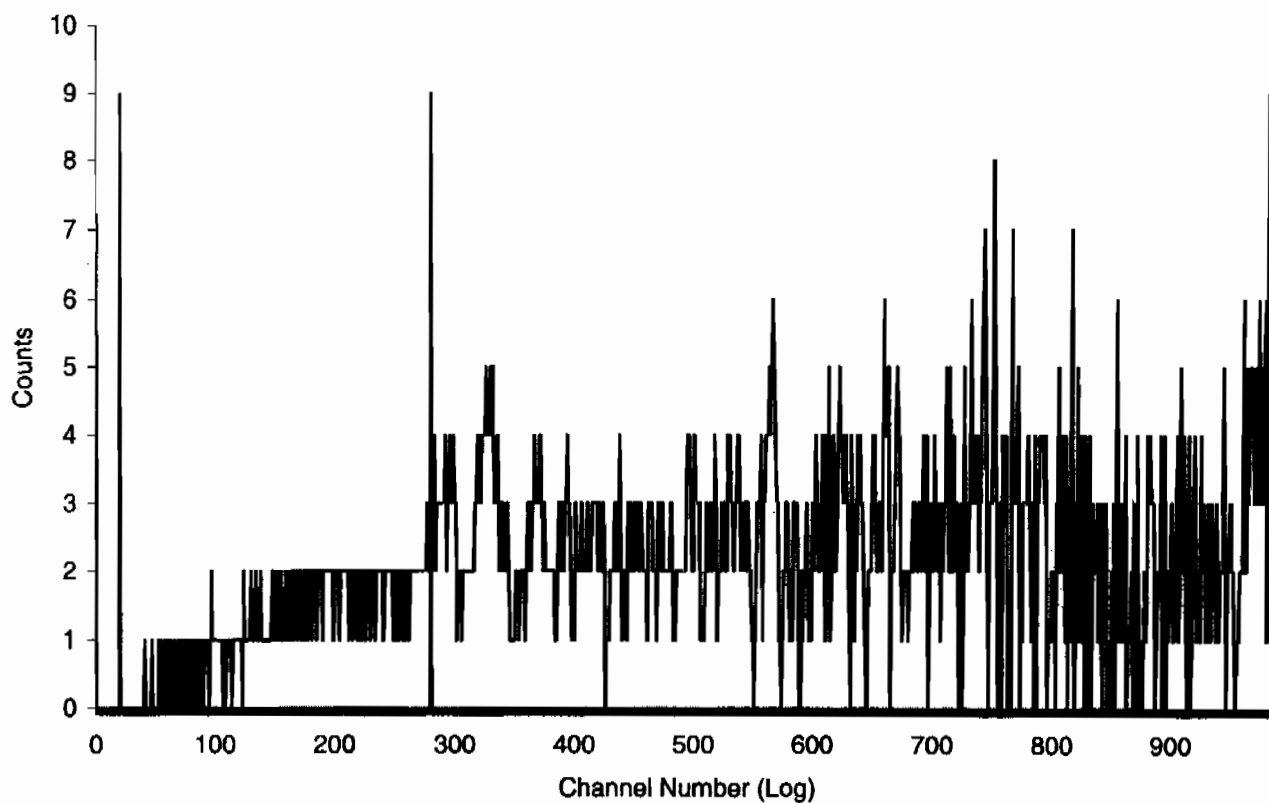
USER 04 - TRITIUM



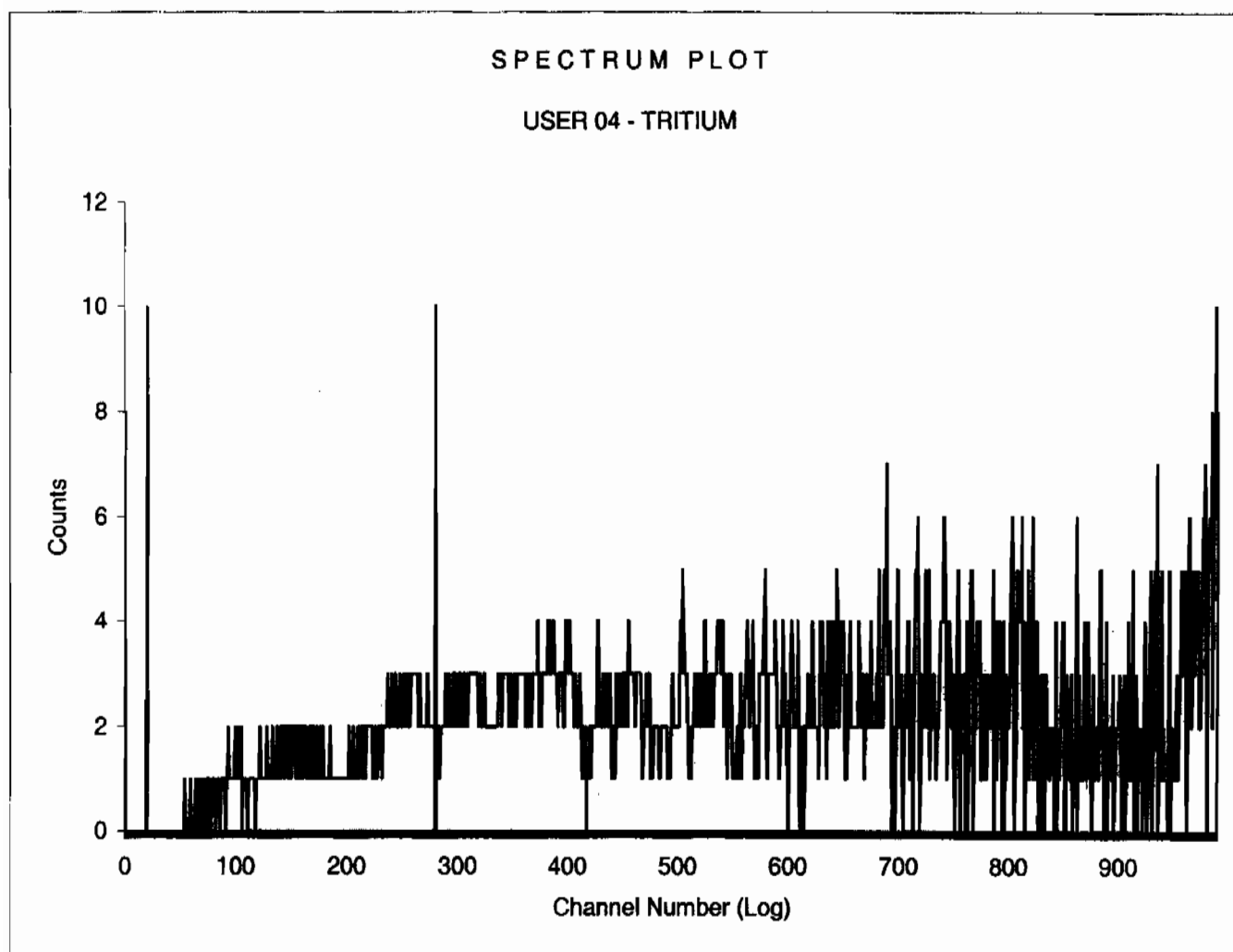
Sample Count Start Time:	19 Mar 2010 18:54:22		
Data Capture Date	19 Mar 2010 19:44:45		
User Filename	S04031921-11A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	11	21-11	50.00
H#, Total Counts:	125.2	2297	
Win1: Tritium - Start, End, Counts:	20	280	314
Win2: - Start, End, Counts:	0	990	2110

SPECTRUM PLOT

USER 04 - TRITIUM



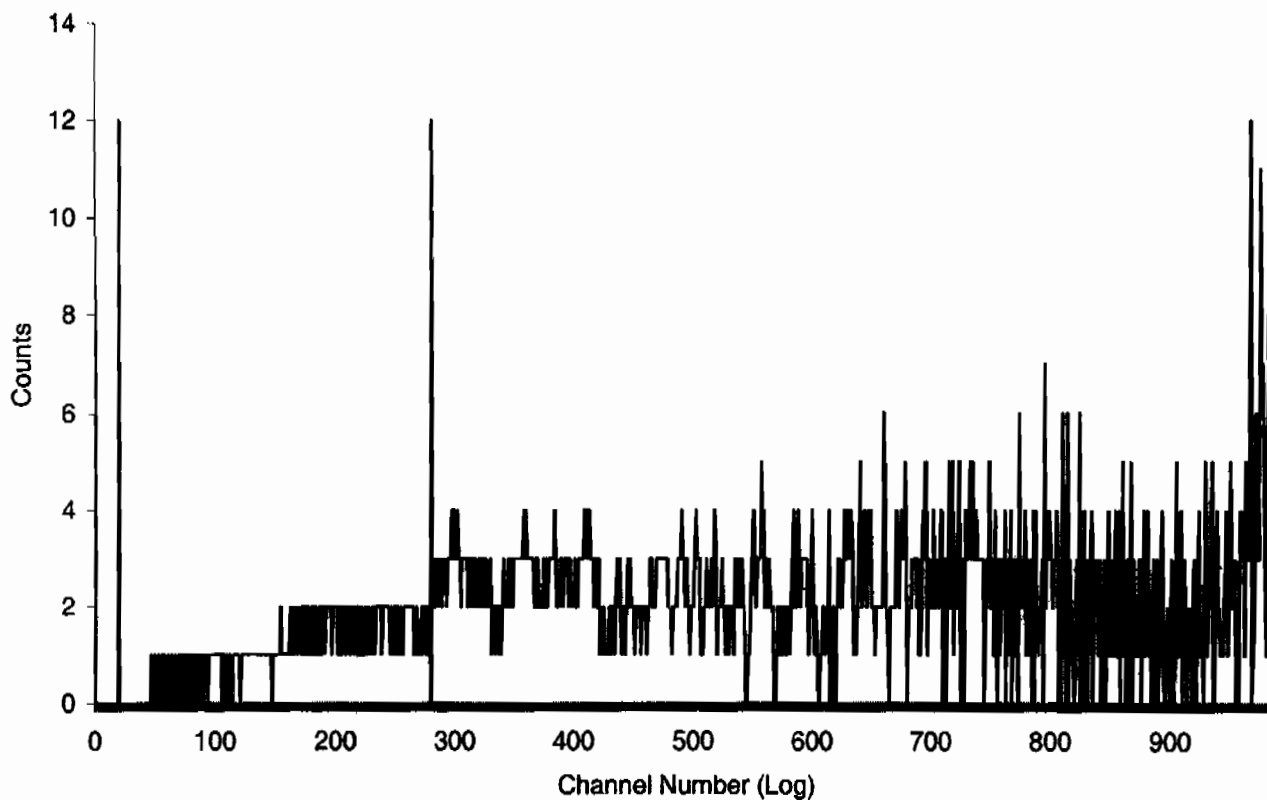
Sample Count Start Time:	19 Mar 2010 19:46:30		
Data Capture Date	19 Mar 2010 20:36:53		
User Filename	S04031921-12A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	12	21-12	50.00
H#, Total Counts:	125.7	2269	
Win1: Tritium - Start, End, Counts:	20	280	318
Win2: - Start, End, Counts:	0	990	2096



Sample Count Start Time:	19 Mar 2010 20:38:42		
Data Capture Date	19 Mar 2010 21:29:06		
User Filename	S04031919-1B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	13	19-1	50.00
H#, Total Counts:	125.6	2200	
Win1: Tritium - Start, End, Counts:	20	280	279
Win2: - Start, End, Counts:	0	990	2009

SPECTRUM PLOT

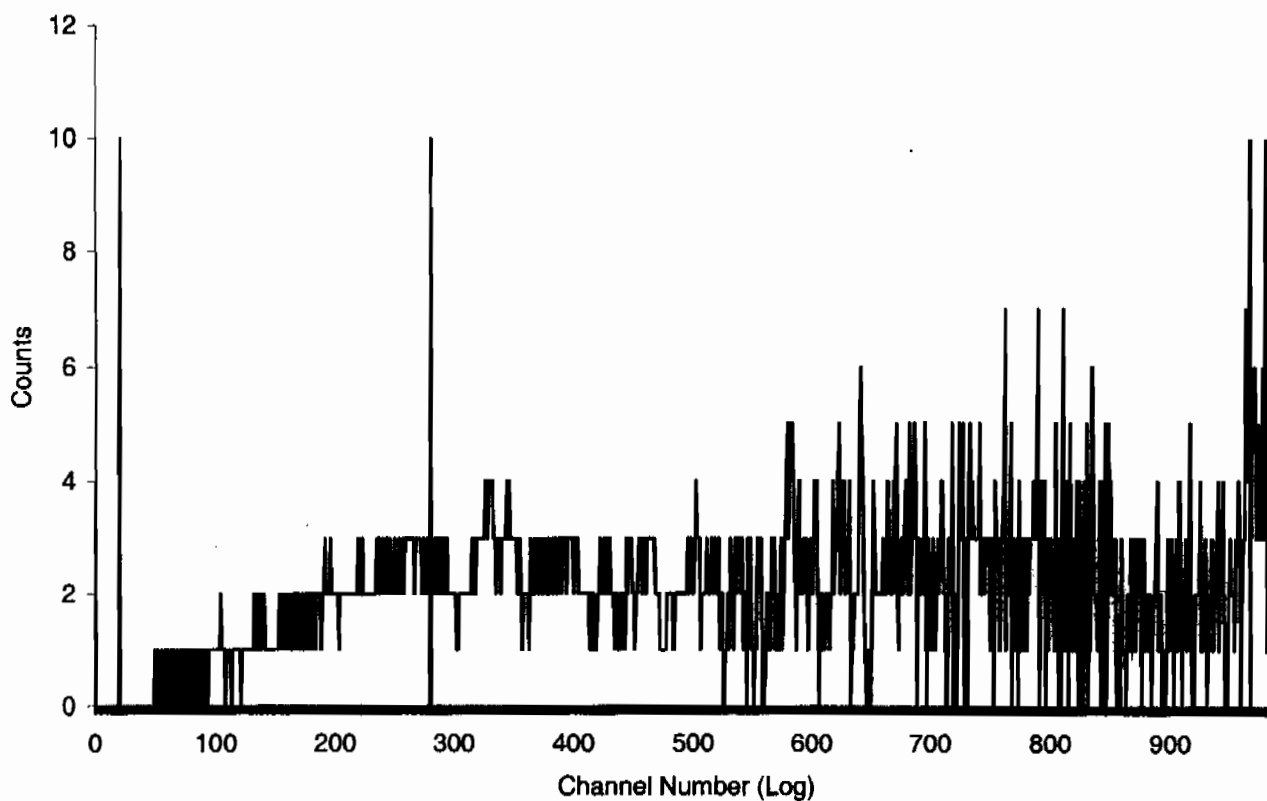
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 22:23:00		
Data Capture Date	19 Mar 2010 23:13:23		
User Filename	S04031919-3B.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	15	19-3	50.00
H#, Total Counts:	125.8	2259	
Win1: Tritium - Start, End, Counts:	20	280	355
Win2: - Start, End, Counts:	0	990	2062

SPECTRUM PLOT

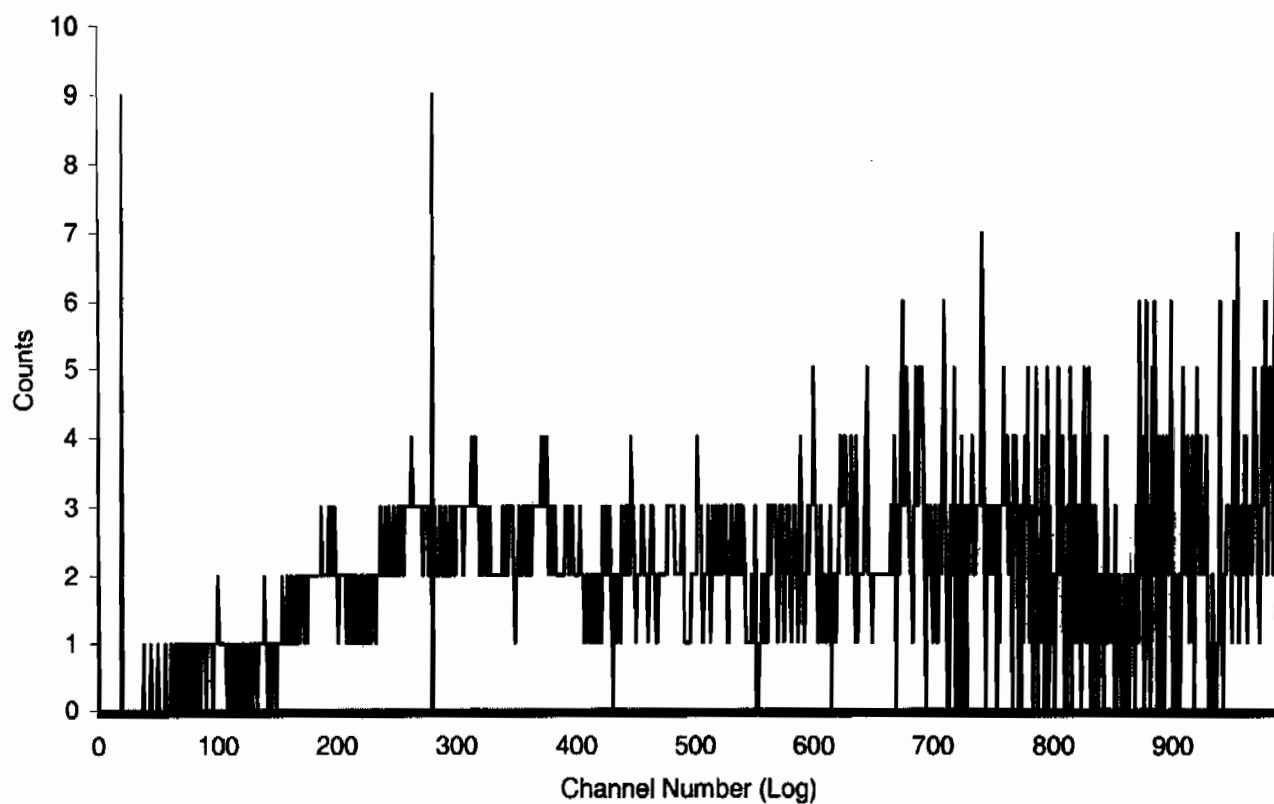
USER 04 - TRITIUM



Sample Count Start Time:	19 Mar 2010 23:15:08		
Data Capture Date	20 Mar 2010 00:05:32		
User Filename	S04032019-4A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	16	19-4	50.00
H#, Total Counts:	124.7	2191	
Win1: Tritium - Start, End, Counts:	20	280	337
Win2: - Start, End, Counts:	0	990	1996

SPECTRUM PLOT

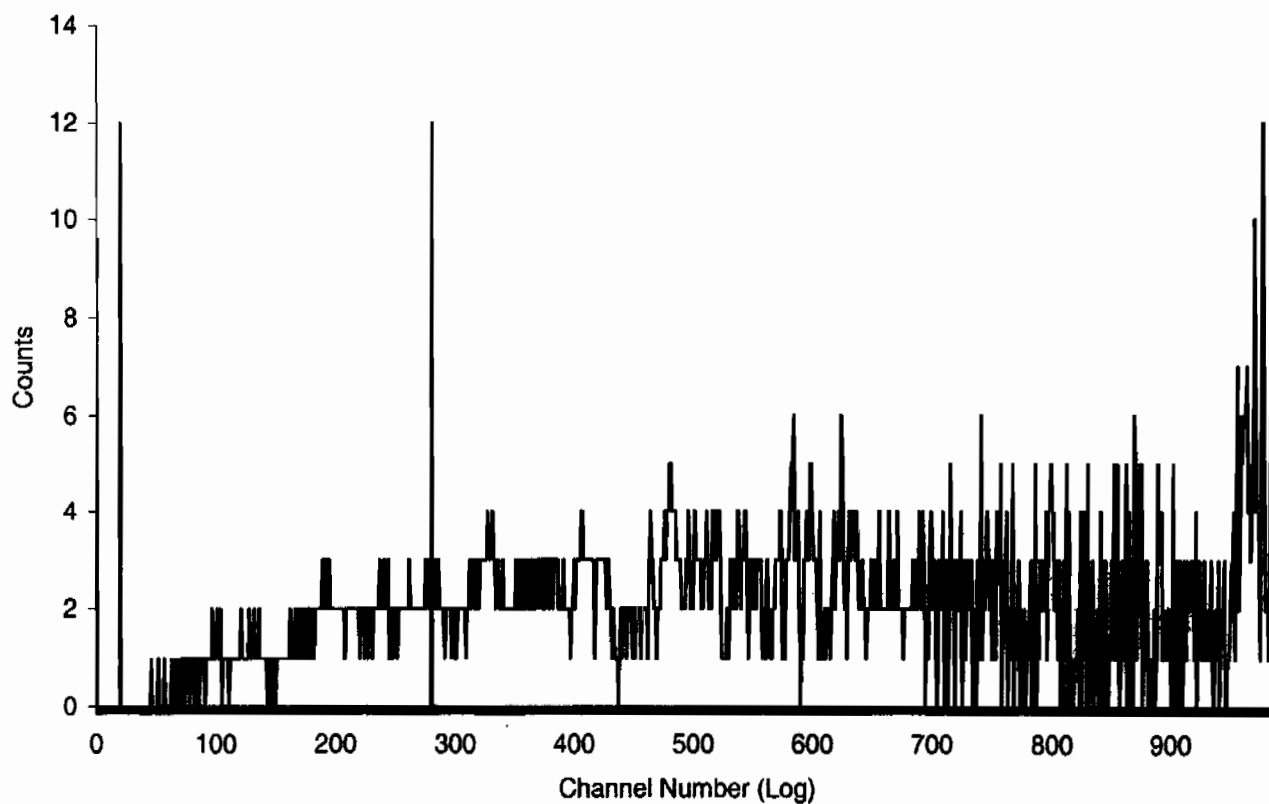
USER 04 - TRITIUM



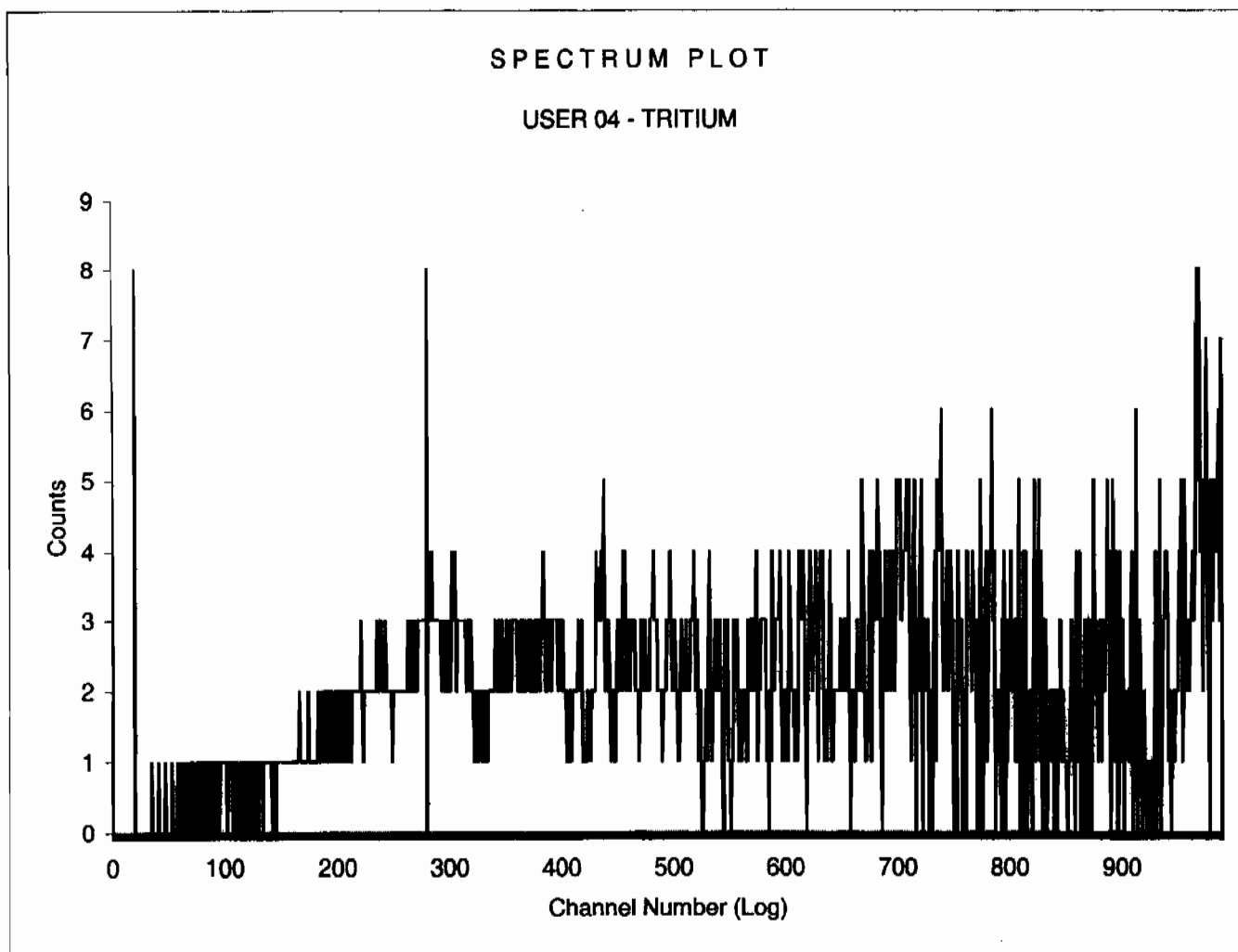
Sample Count Start Time:	20 Mar 2010 00:07:17		
Data Capture Date	20 Mar 2010 00:57:40		
User Filename	S04032019-5A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	17	19-5	50.00
H#, Total Counts:	125.2	2239	
Win1: Tritium - Start, End, Counts:	20	280	328
Win2: - Start, End, Counts:	0	990	2047

SPECTRUM PLOT

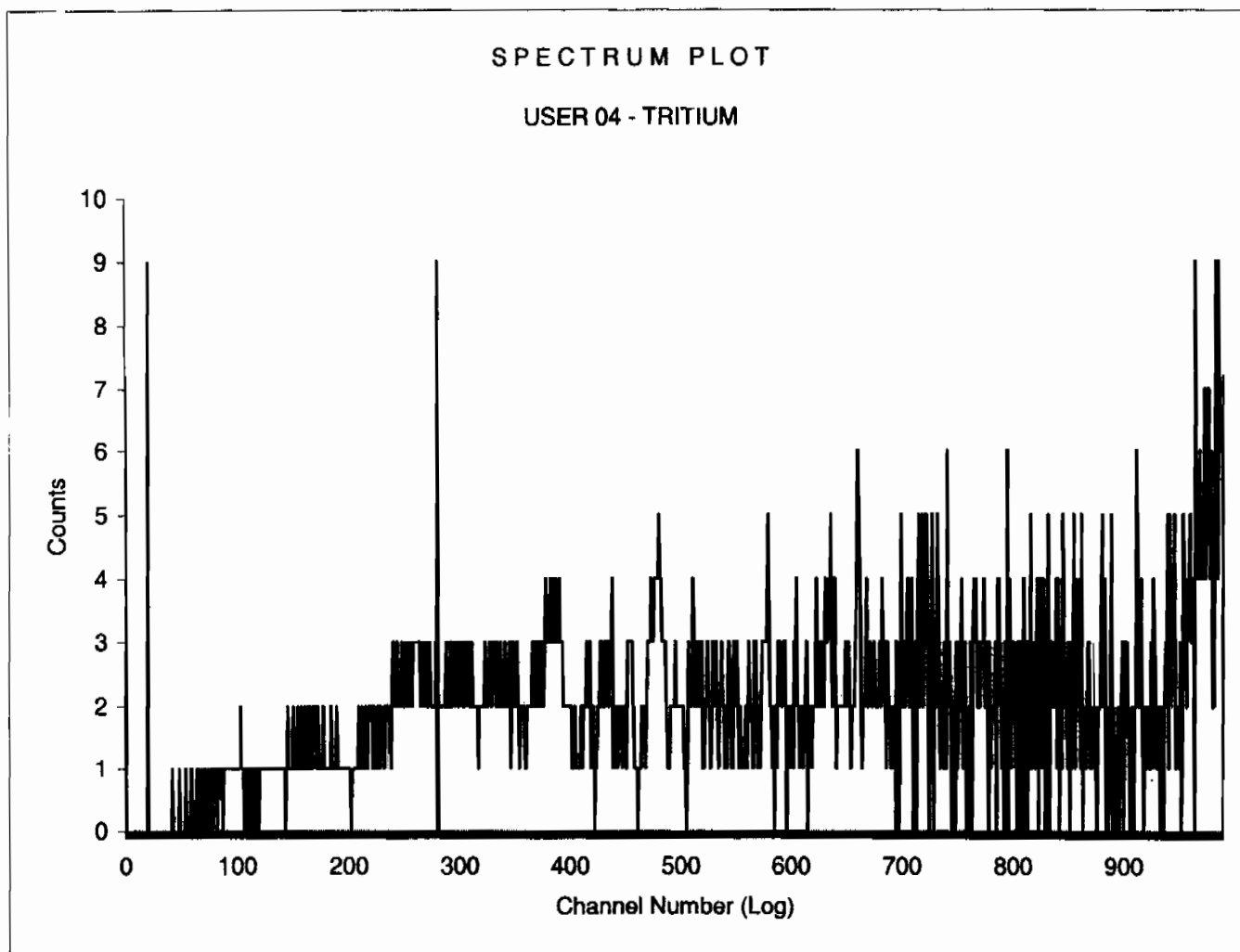
USER 04 - TRITIUM



Sample Count Start Time:	20 Mar 2010 00:59:24		
Data Capture Date	20 Mar 2010 01:49:48		
User Filename	S04032019-6A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	18	19-6	50.00
H#, Total Counts:	124.6	2180	
Win1: Tritium - Start, End, Counts:	20	280	300
Win2: - Start, End, Counts:	0	990	2013



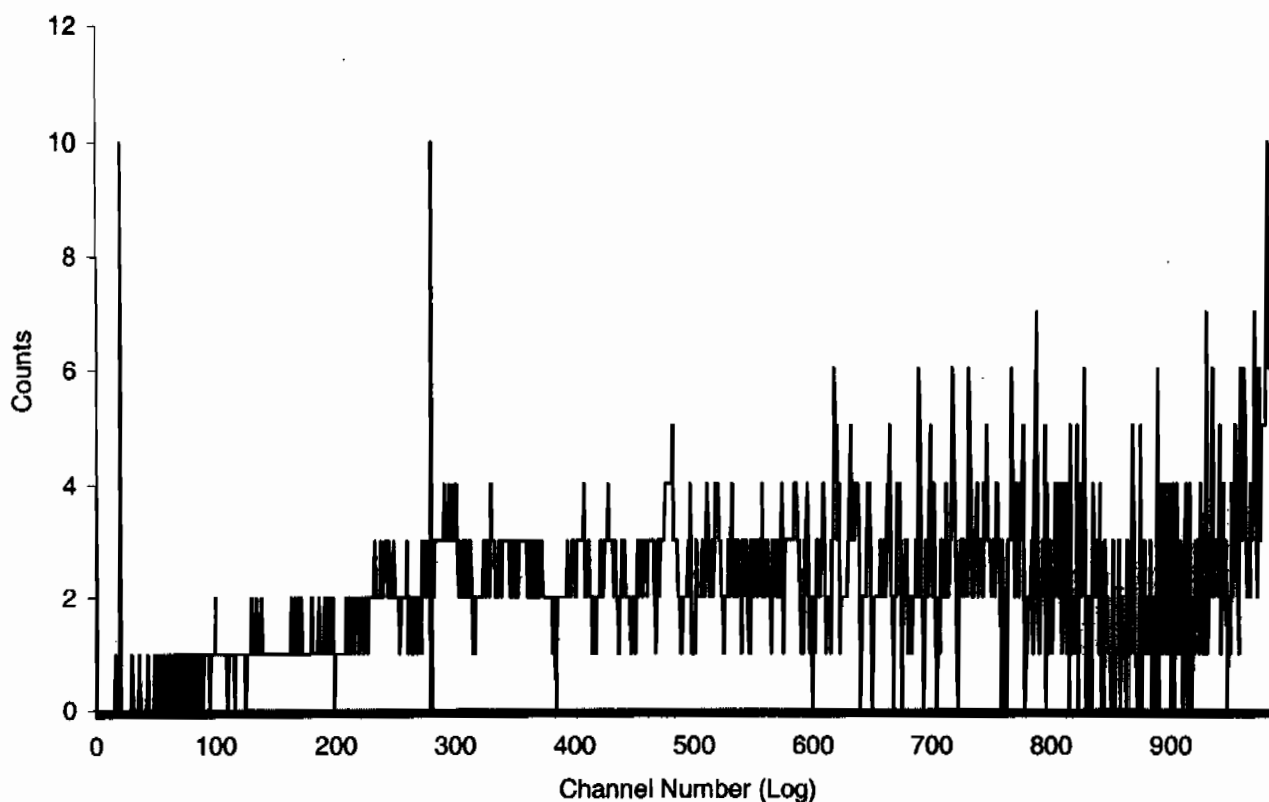
Sample Count Start Time:	20 Mar 2010 01:51:32		
Data Capture Date	20 Mar 2010 02:41:56		
User Filename	S04032019-7A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	19	19-7	50.00
H#, Total Counts:	125.6	2148	
Win1: Tritium - Start, End, Counts:	20	280	300
Win2: - Start, End, Counts:	0	990	1964



Sample Count Start Time:	20 Mar 2010 02:43:39		
Data Capture Date	20 Mar 2010 03:34:03		
User Filename	S04032019-8A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	20	19-8	50.00
H#, Total Counts:	125.7	2333	
Win1: Tritium - Start, End, Counts:	20	280	300
Win2: - Start, End, Counts:	0	990	2137

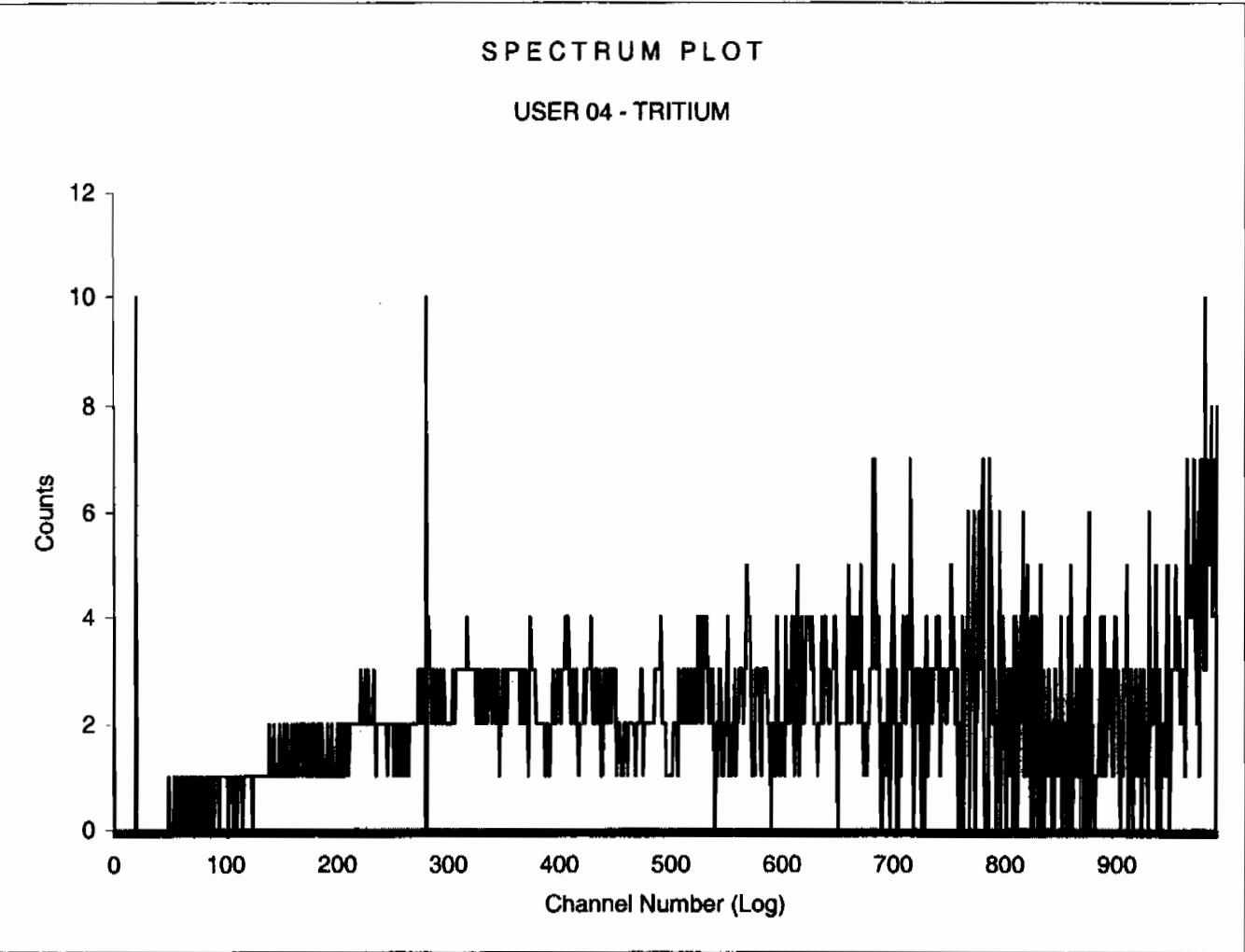
SPECTRUM PLOT

USER 04 - TRITIUM

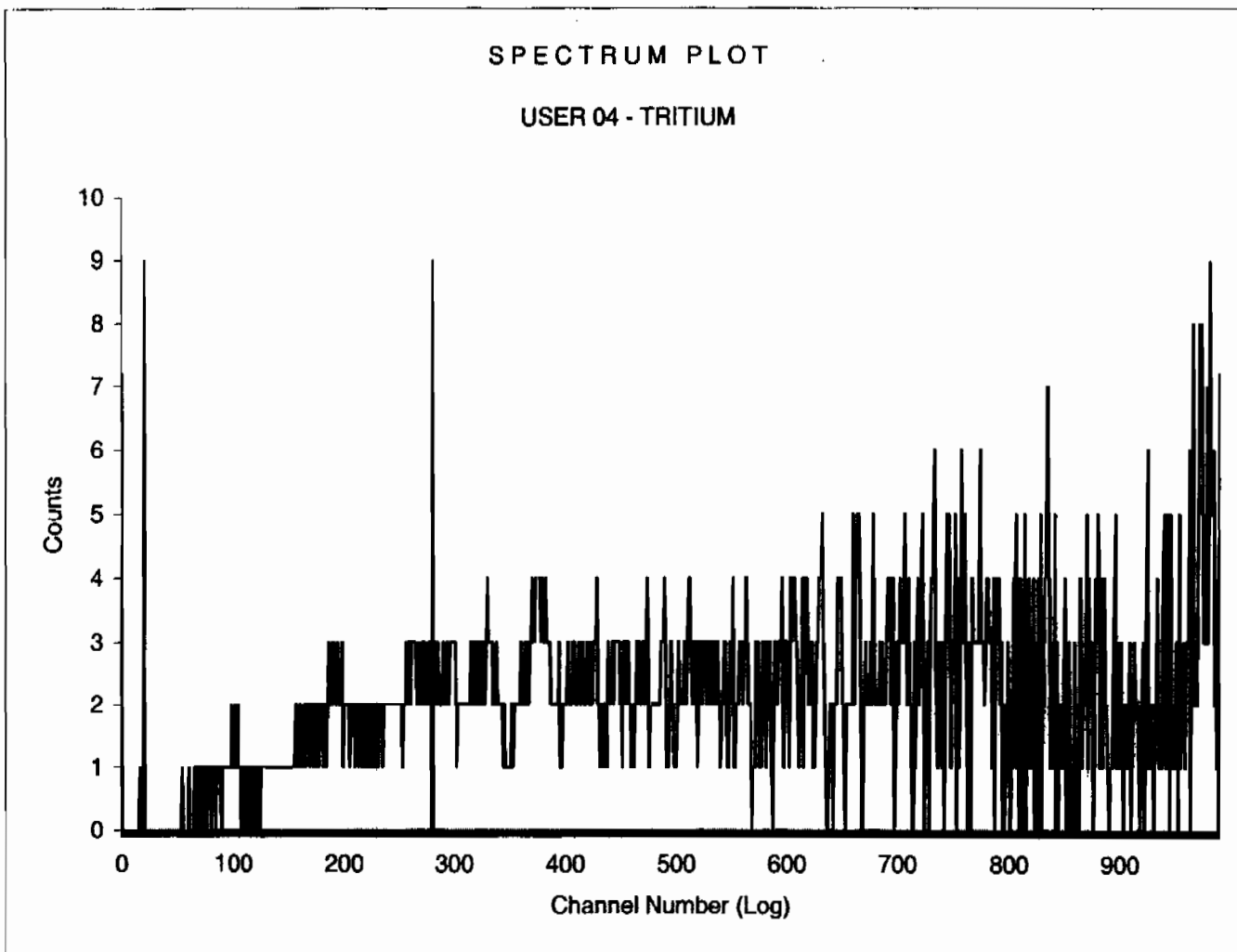


Sample Count Start Time:	20 Mar 2010 03:35:46		
Data Capture Date	20 Mar 2010 04:26:10		
User Filename	S04032019-9A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	21	19-9	50.00
H#, Total Counts:	124.0	2292	
Win1: Tritium - Start, End, Counts:	20	280	302
Win2: - Start, End, Counts:	0	990	2080

SPECTRUM PLOT
USER 04 - TRITIUM



Sample Count Start Time:	20 Mar 2010 04:27:53		
Data Capture Date	20 Mar 2010 05:18:18		
User Filename	S04032019-10A.XLS		
	U04031921-2A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	22	19-10	50.00
H#, Total Counts:	125.9	2275	
Win1: Tritium - Start, End, Counts:	20	280	328
Win2: - Start, End, Counts:	0	990	2066



ID:H-3

19 MAR 2010 10:46

USER: 3

COMMENT:SILVER

PRESET TIME : 15.00

DATA CALC : CPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD

COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 :EDIT

TWO PHASE : NO AQC : NO CYCLE REPEATS : 1 DISK : OFF

SCINTILLATOR: LIQUID LUMEX:YES LOW SAMPLE REJ: 0

LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

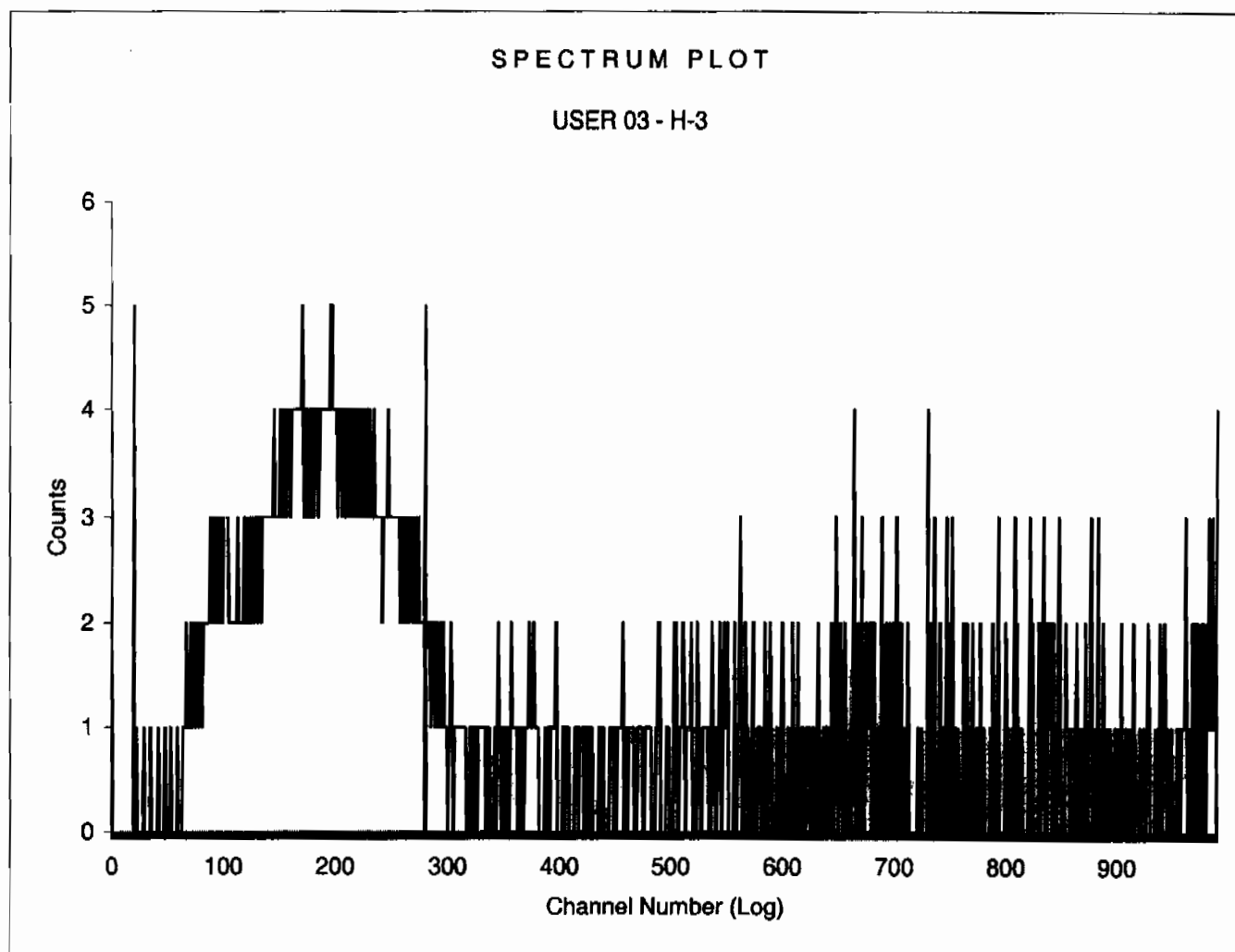
CHAN: 20.0 - 280.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 1000.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

SAM	POS	TIME	H#	WIND1		WIND2		LUMEX	ELAPSED
				CPM	%ERROR	CPM	%ERROR		
NO		MIN						%	TIME

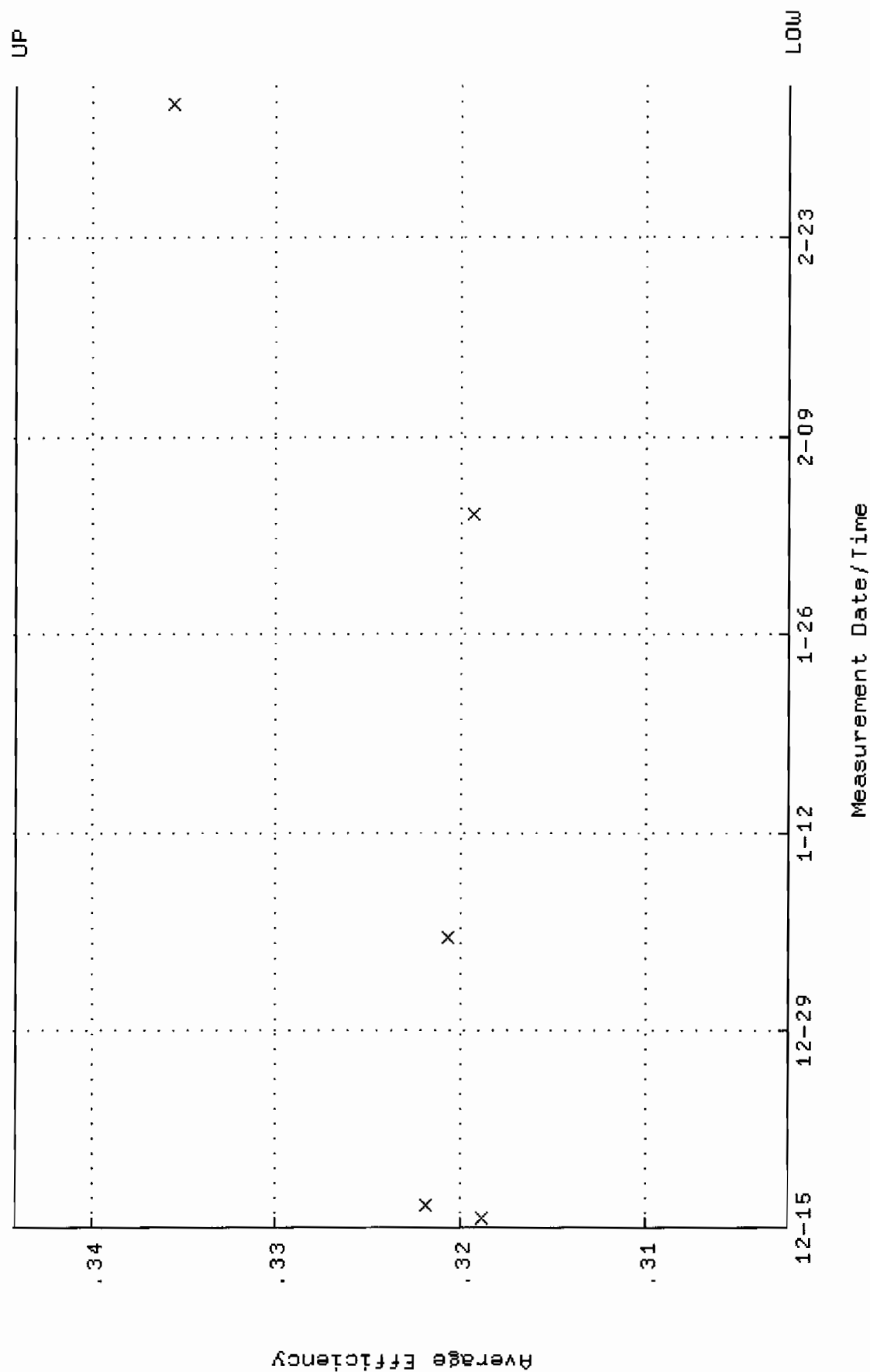
JP 1 60-1 15.00 125.1 43.00 7.91 80.87 5.76 0.67 15.83
 QPQP

Sample Count Start Time:	19 Mar 2010 10:47:35		
Data Capture Date	19 Mar 2010 11:02:59		
User Filename	S03031960-1A.XLS		
	U03031960-1A.XLS		
Spectrum Type	Log Counts		
User Number	03		
User Id	H-3		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	60-1	15.00
H#, Total Counts:	125.1	1213	
Win1: Tritium - Start, End, Counts:	20	280	647
Win2: - Start, End, Counts:	0	990	1158

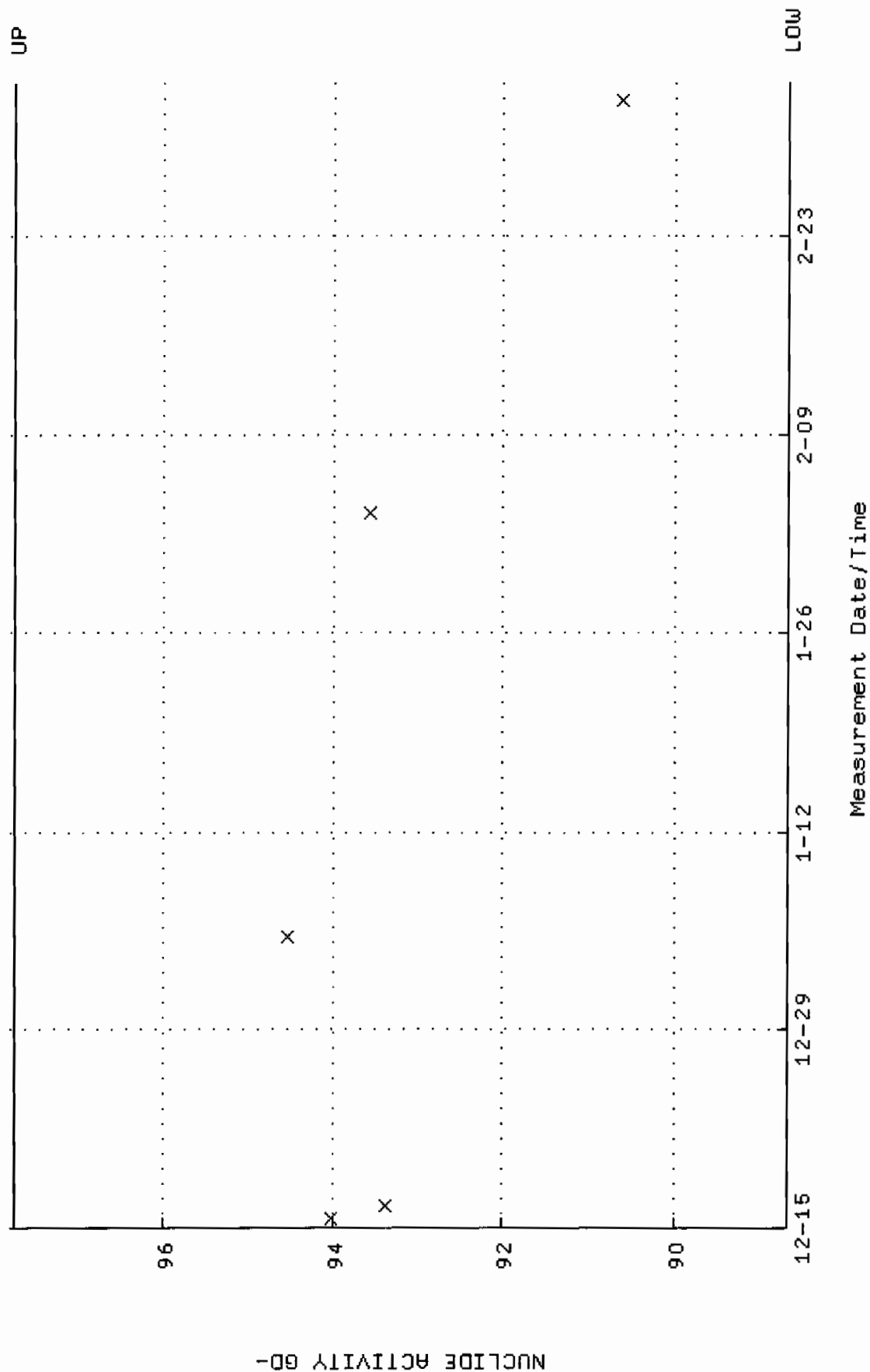


BACKGROUND AND EFFICIENCY DATA

QA filename : DKA100:[ENV_ALPHA.QA.W]W005.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.302314 through 0.344088



QA filename : DKA100:[ENV_ALPHA.QA.W]W005.QAF;6
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.6685 through 97.7693

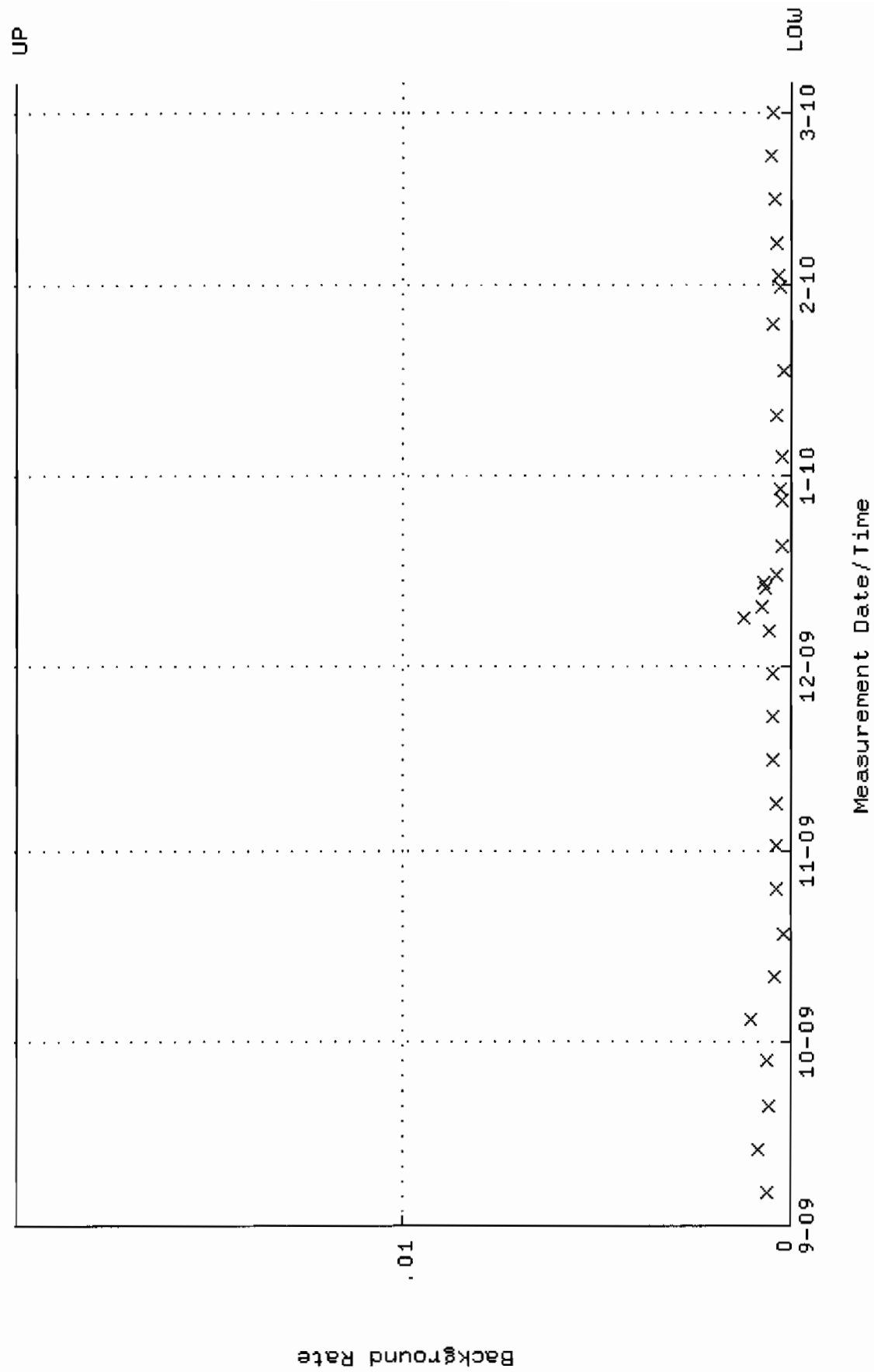


QA filename : DKA100:[ENV_ALPHA.QA.B]B005.QAF;2

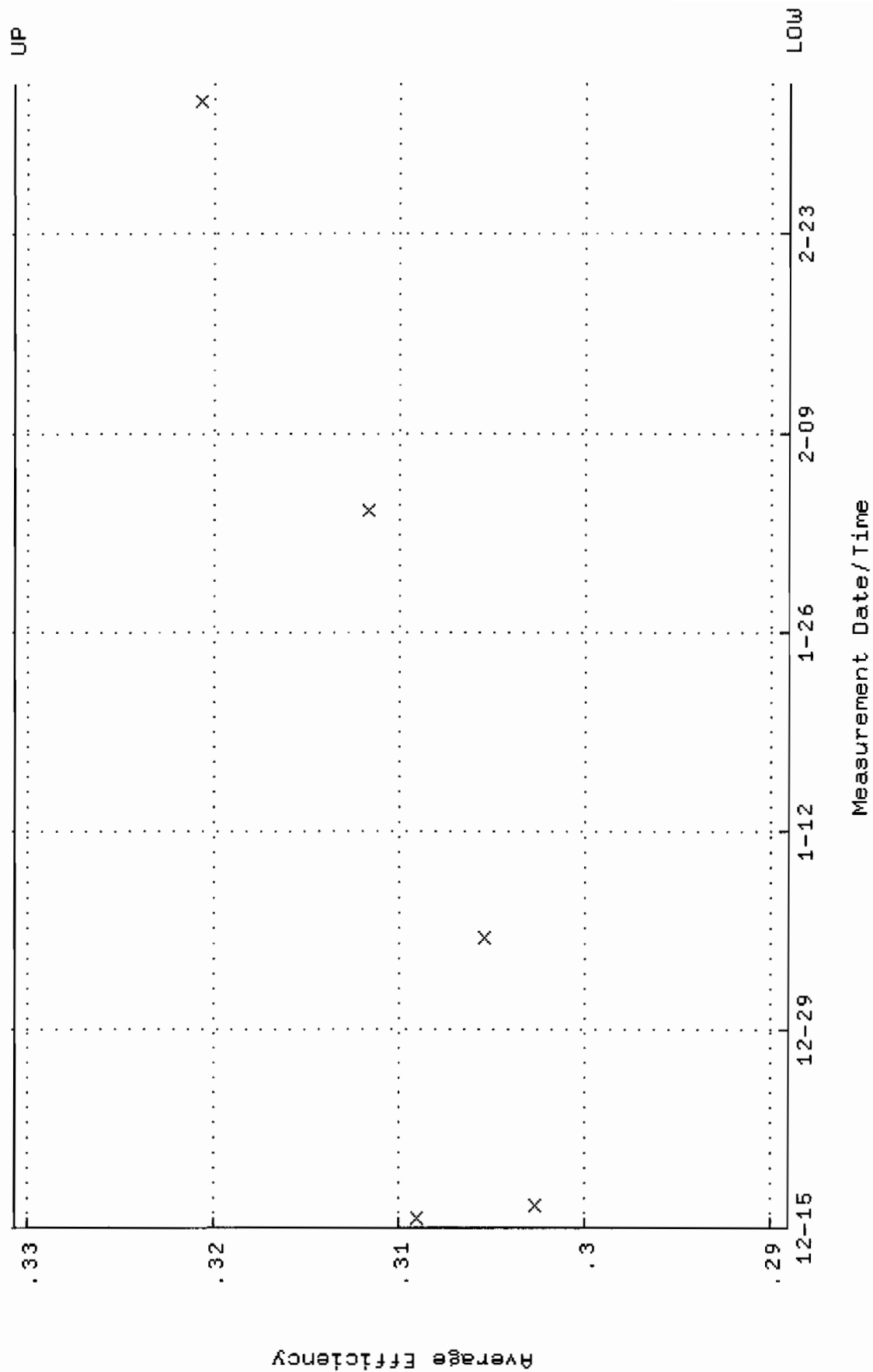
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:00 through 5-MAR-2010 12:00:00

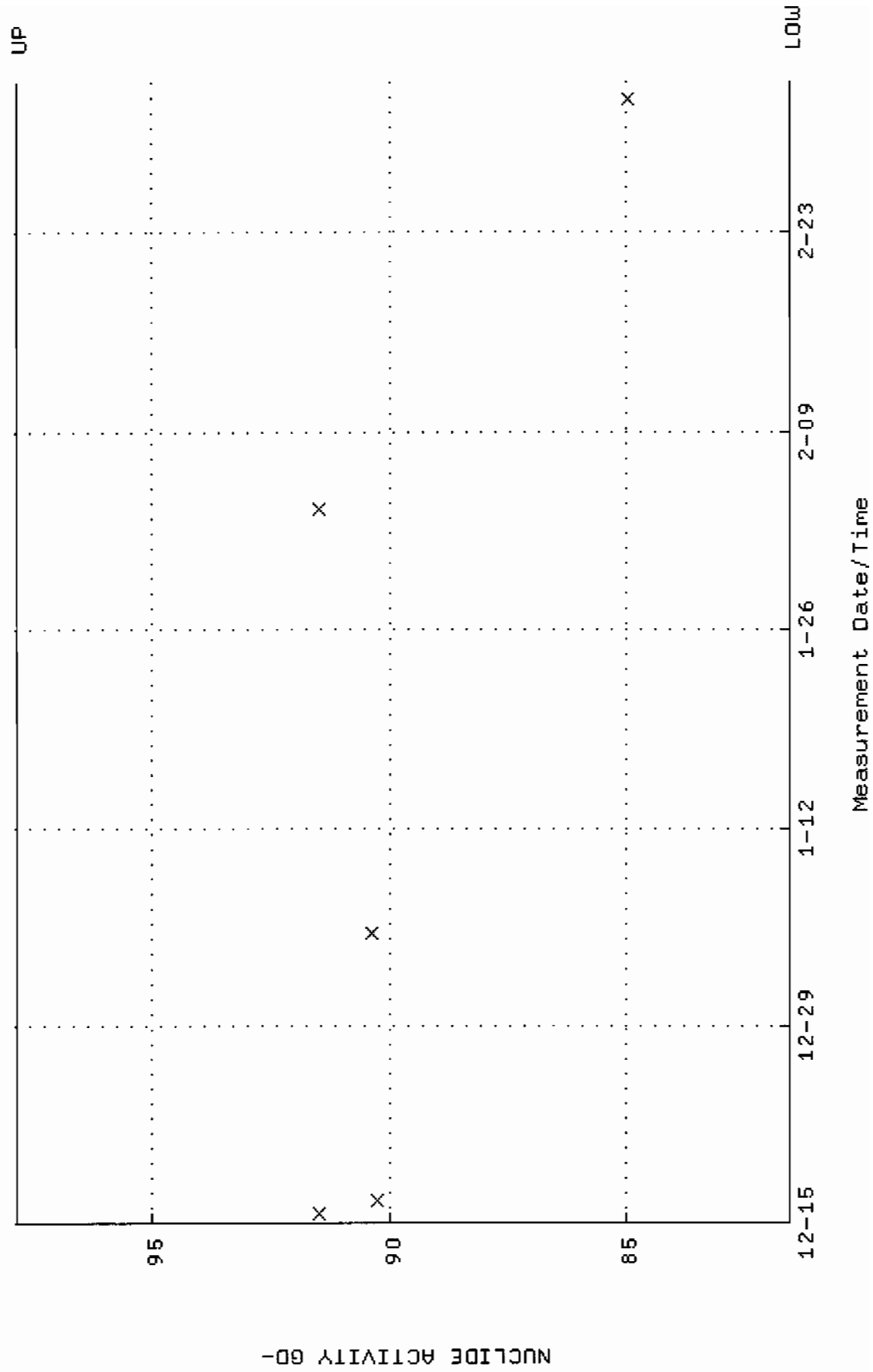
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



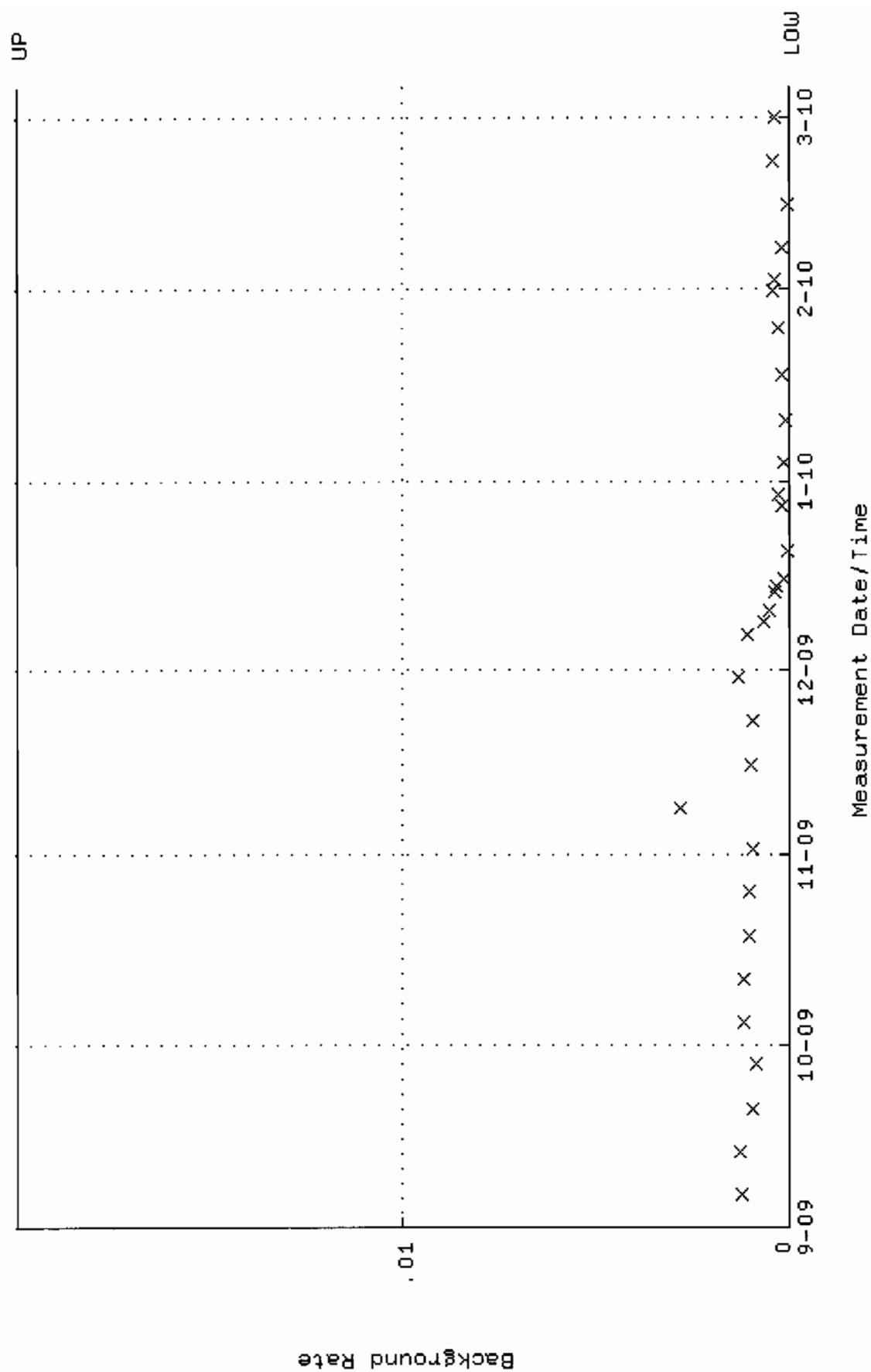
QA filename : DKA100:[ENV_ALPHA.QA.W]W006.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.288996 through 0.330714



QA filename : DKA100:[ENV-ALPHA.QA.W]W006.QAF;6
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.5567 through 97.8515



QA filename : DKA100:[ENV_ALPHA.QA.B]B006.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:00 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

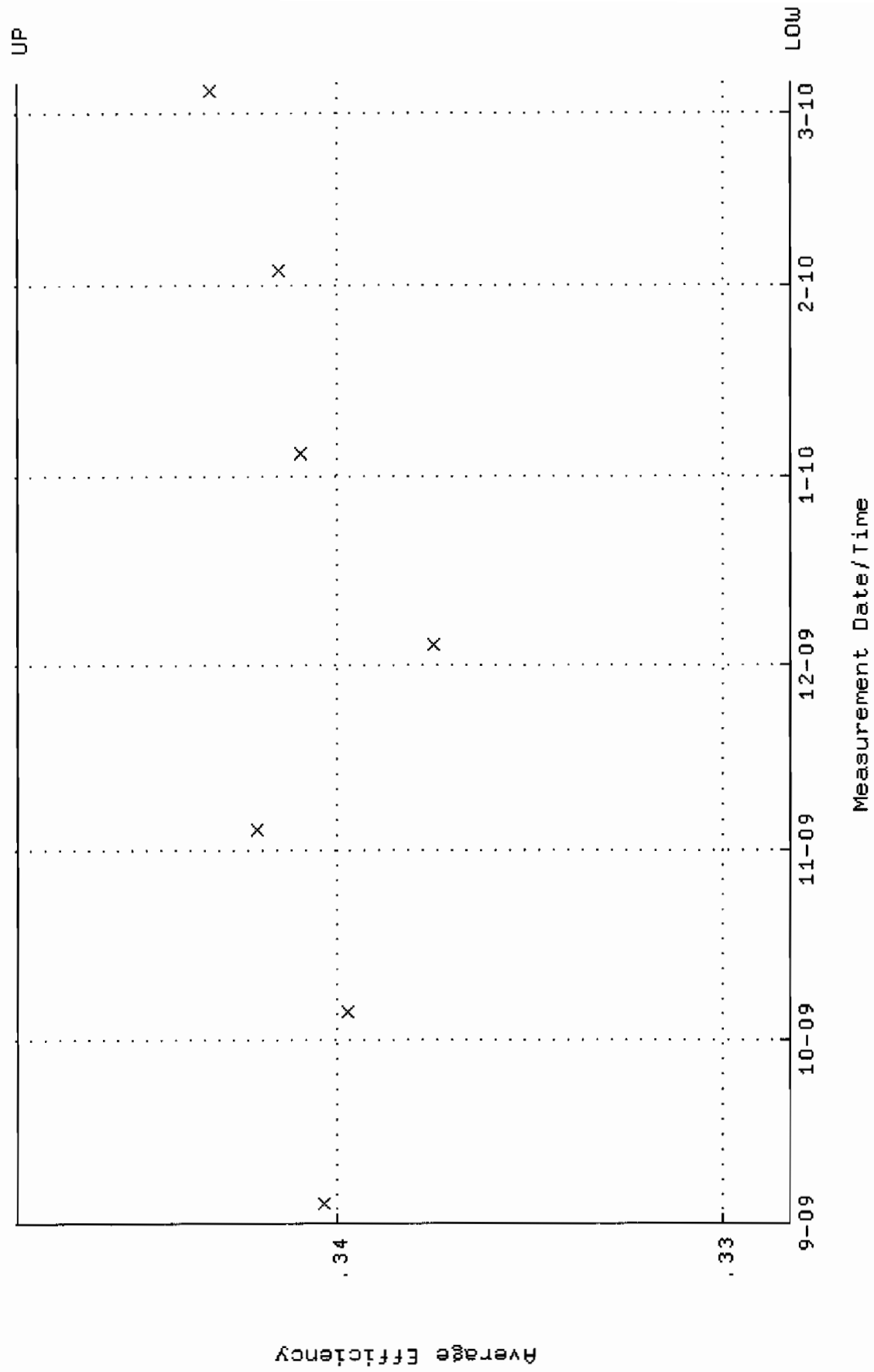


QA filename : DKA100:[ENV_ALPHA.QA.W]W009.QAF;3

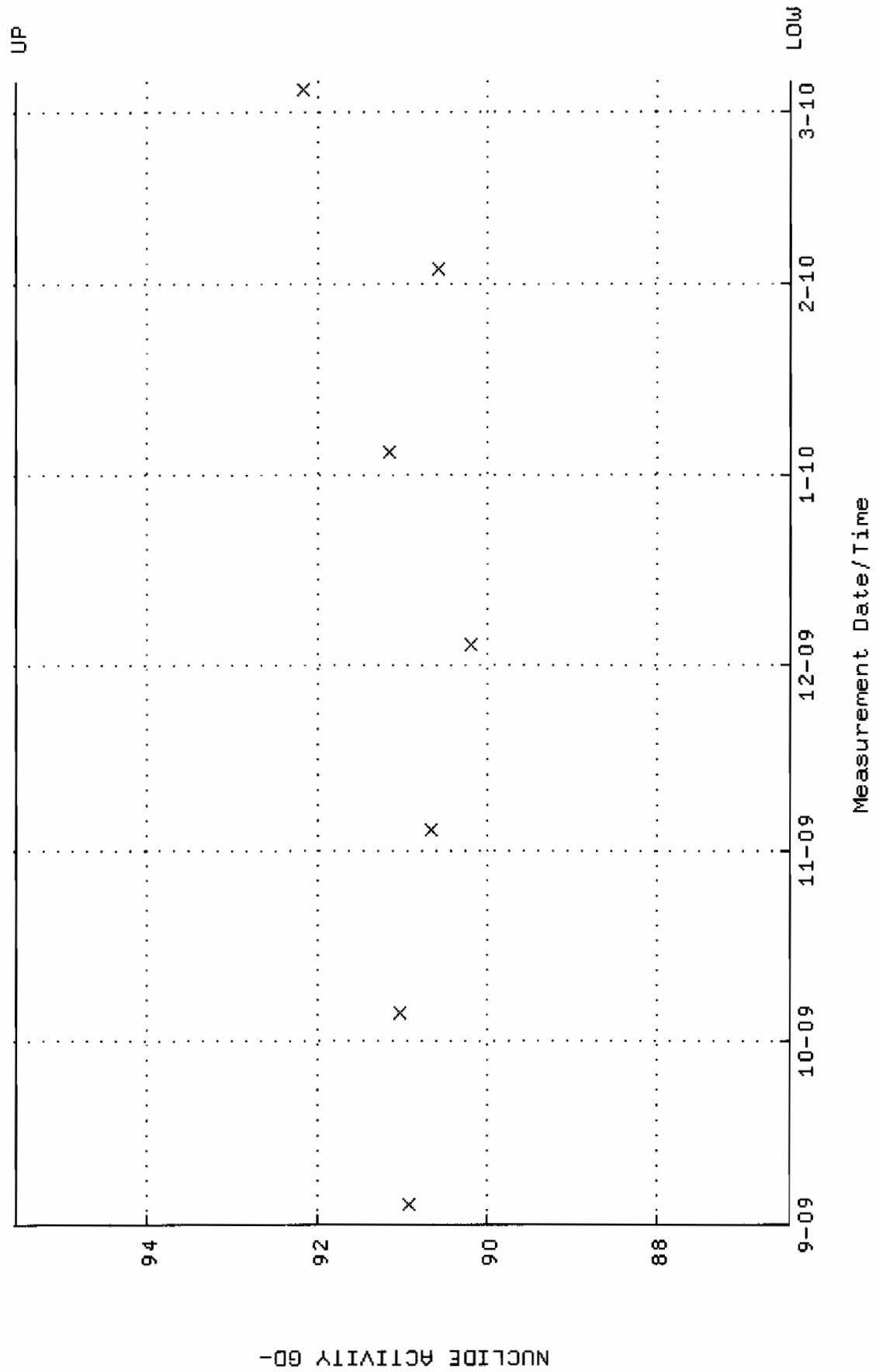
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00

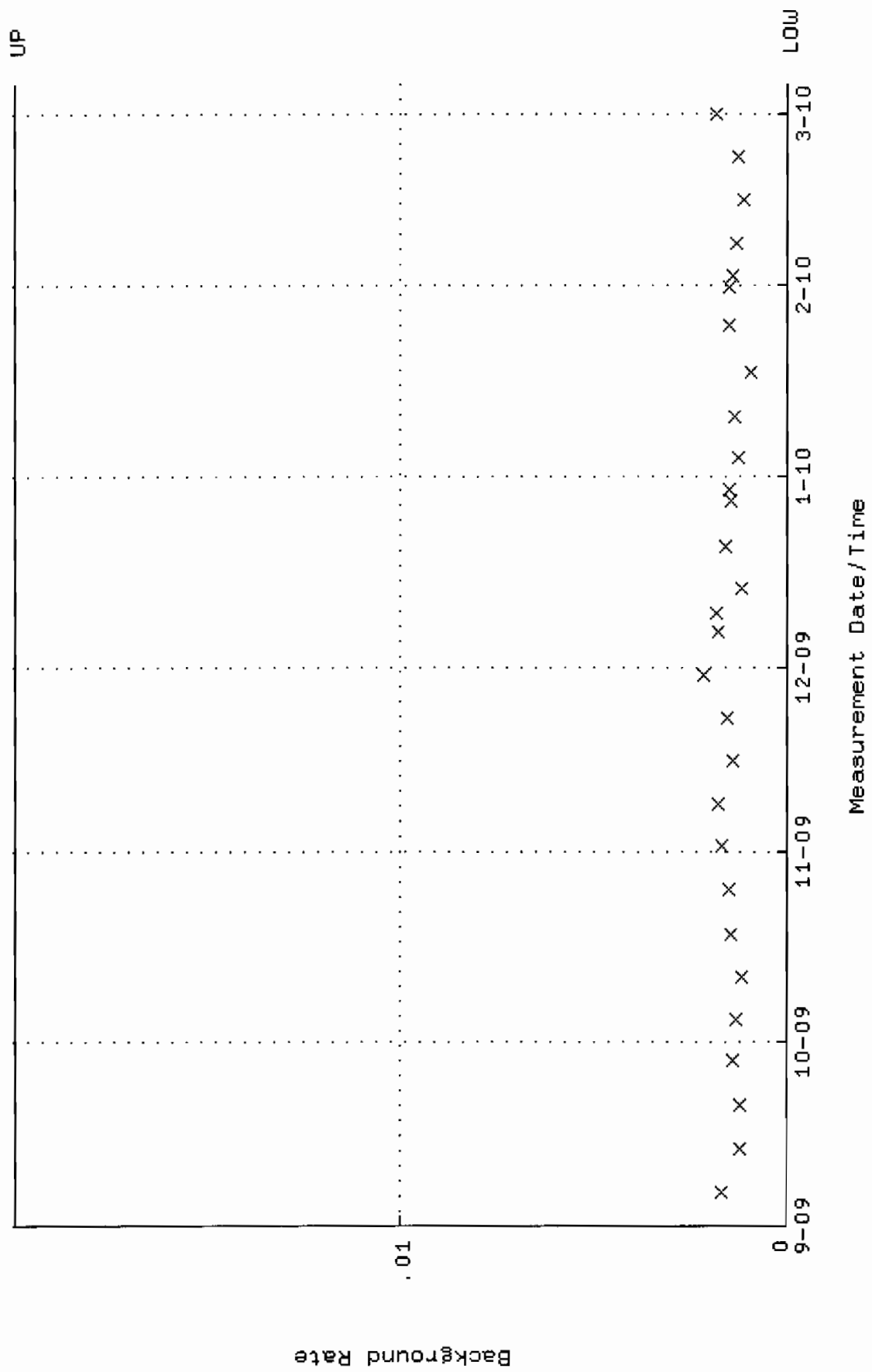
Lower/Upper Lmts: 0.328261 through 0.348261



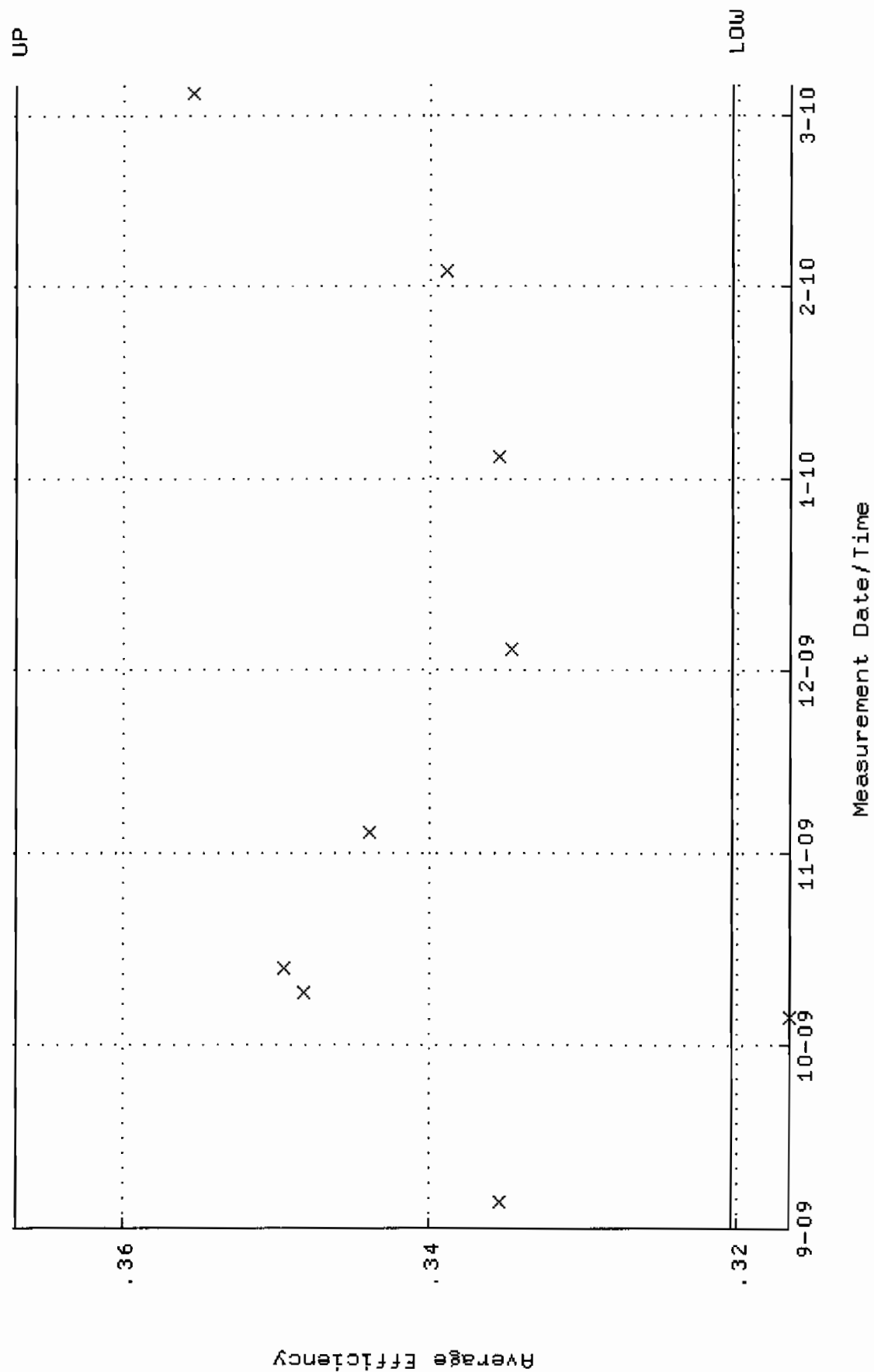
QA filename : DKA100:[ENV_ALPHA.QA.W]W009.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.4475 through 95.5473



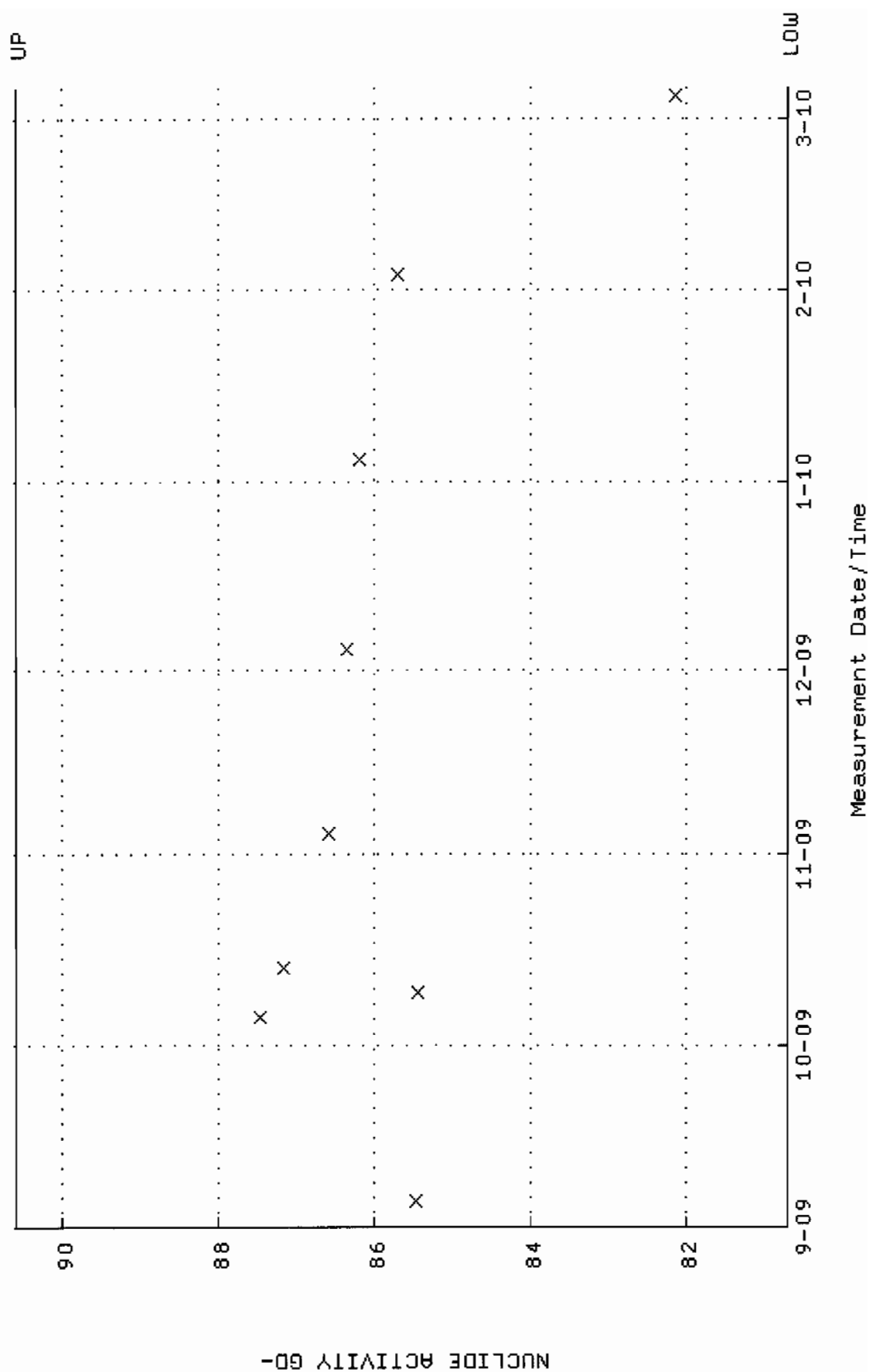
QA filename : DKA100:[ENV_ALPHA.QA.B]B009.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:01 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



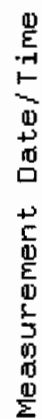
QA filename : DKA100:[ENV_ALPHA.QA.W]W031.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:09 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.320406 through 0.367042



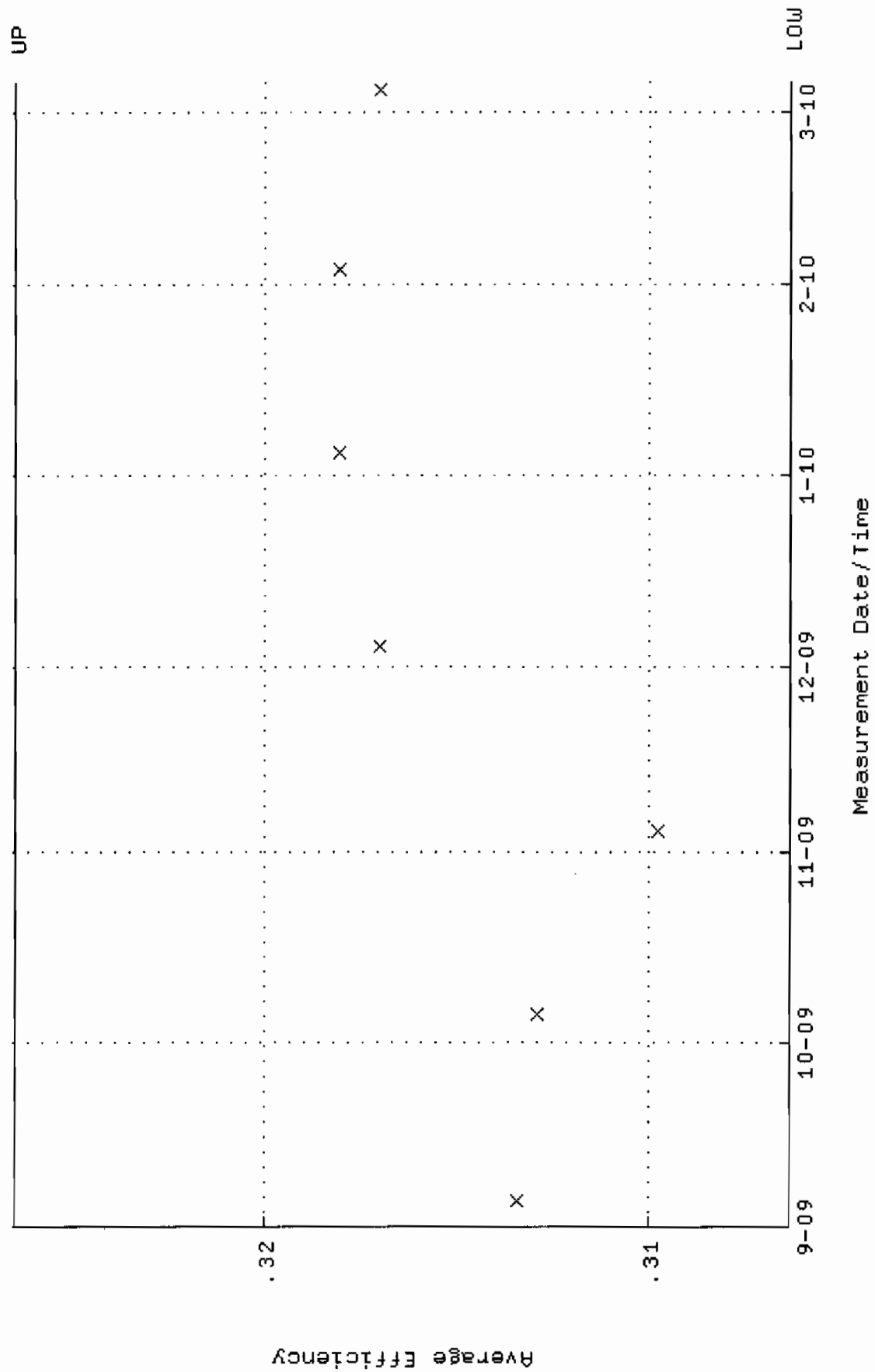
QA filename : DKA100:[ENV_ALPHA.QA.W]W031.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:09 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 80.6868 through 90.5808



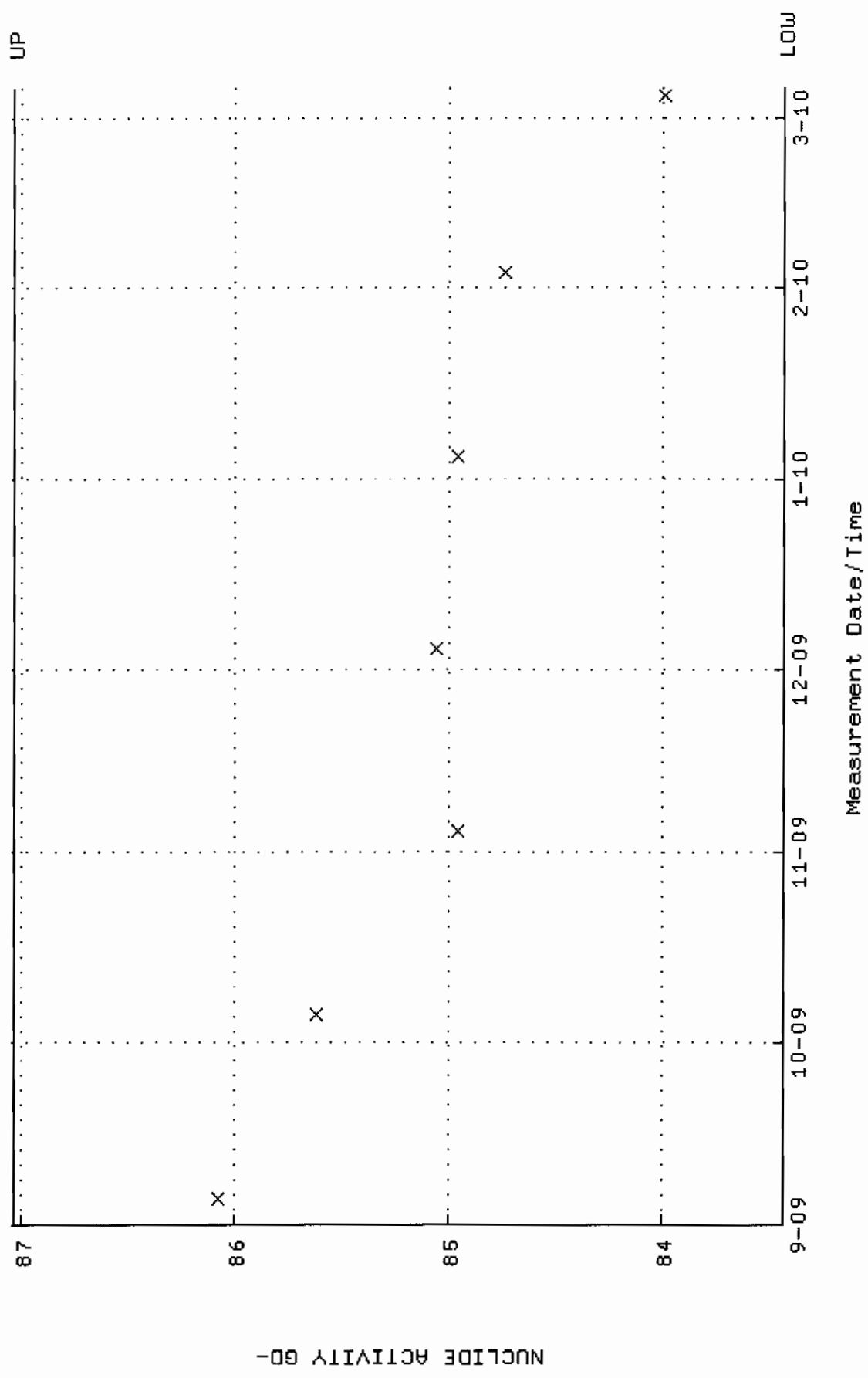
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W033.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:09 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.306364 through 0.326480



QA filename : DKA100:[ENV_ALPHA.QA.W]W033.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:09 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.4328 through 87.0310

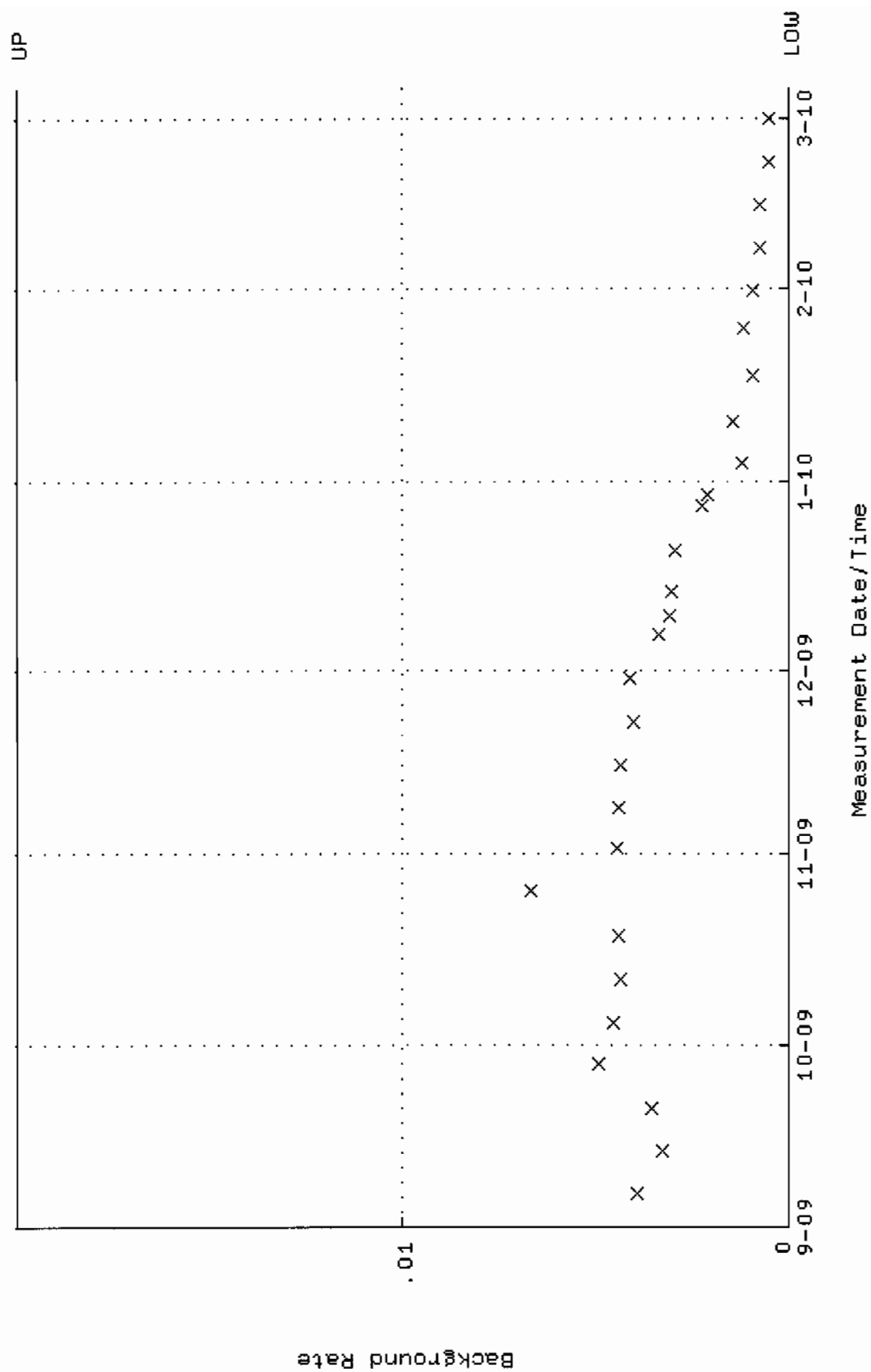


QA filename : DKA100:[ENV_ALPHA.QA.B]B033.QAF;1

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:04 through 5-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

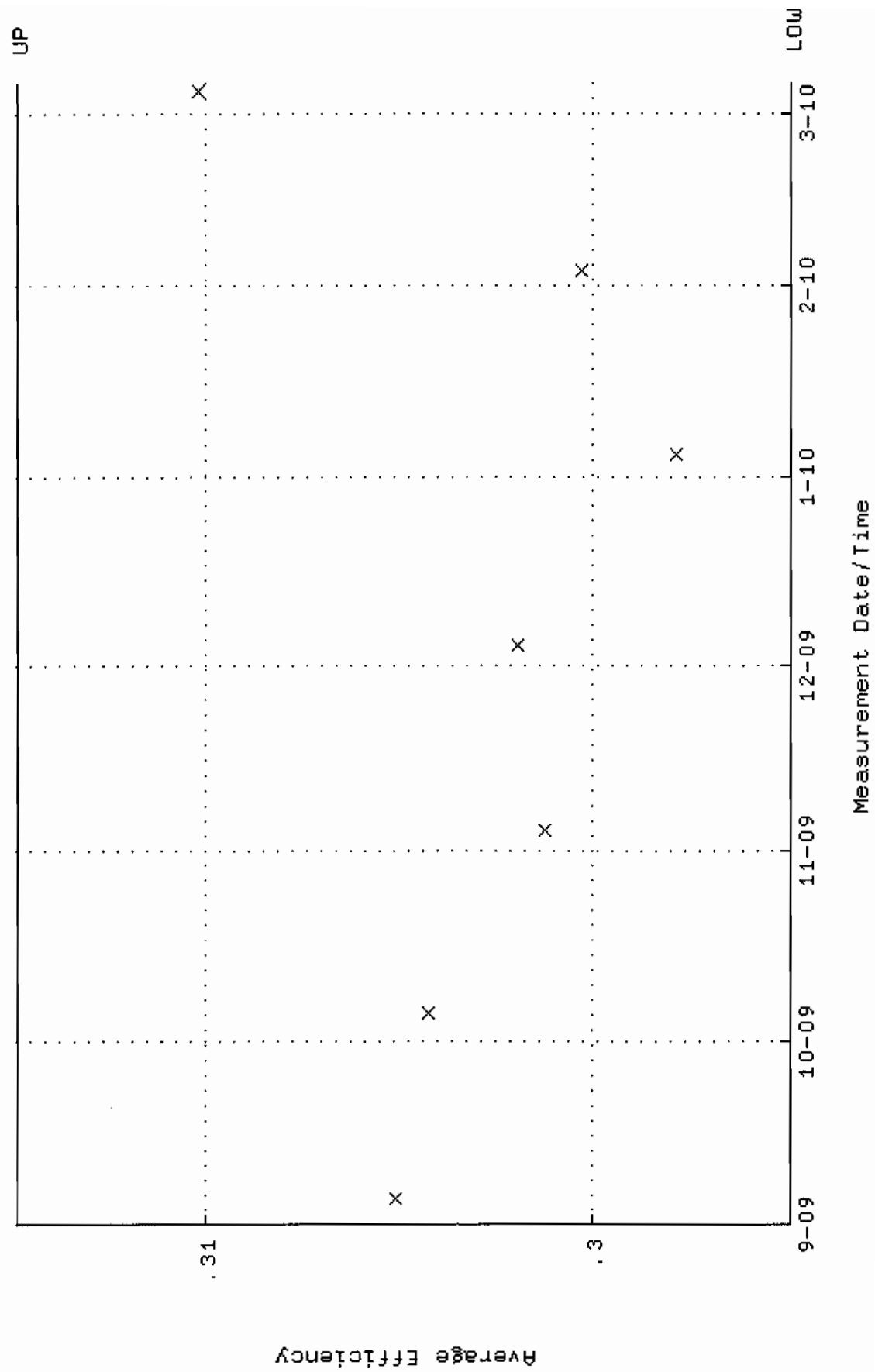


QA filename : DKA100:[ENV_ALPHA.QA.W]W035.QAF;3

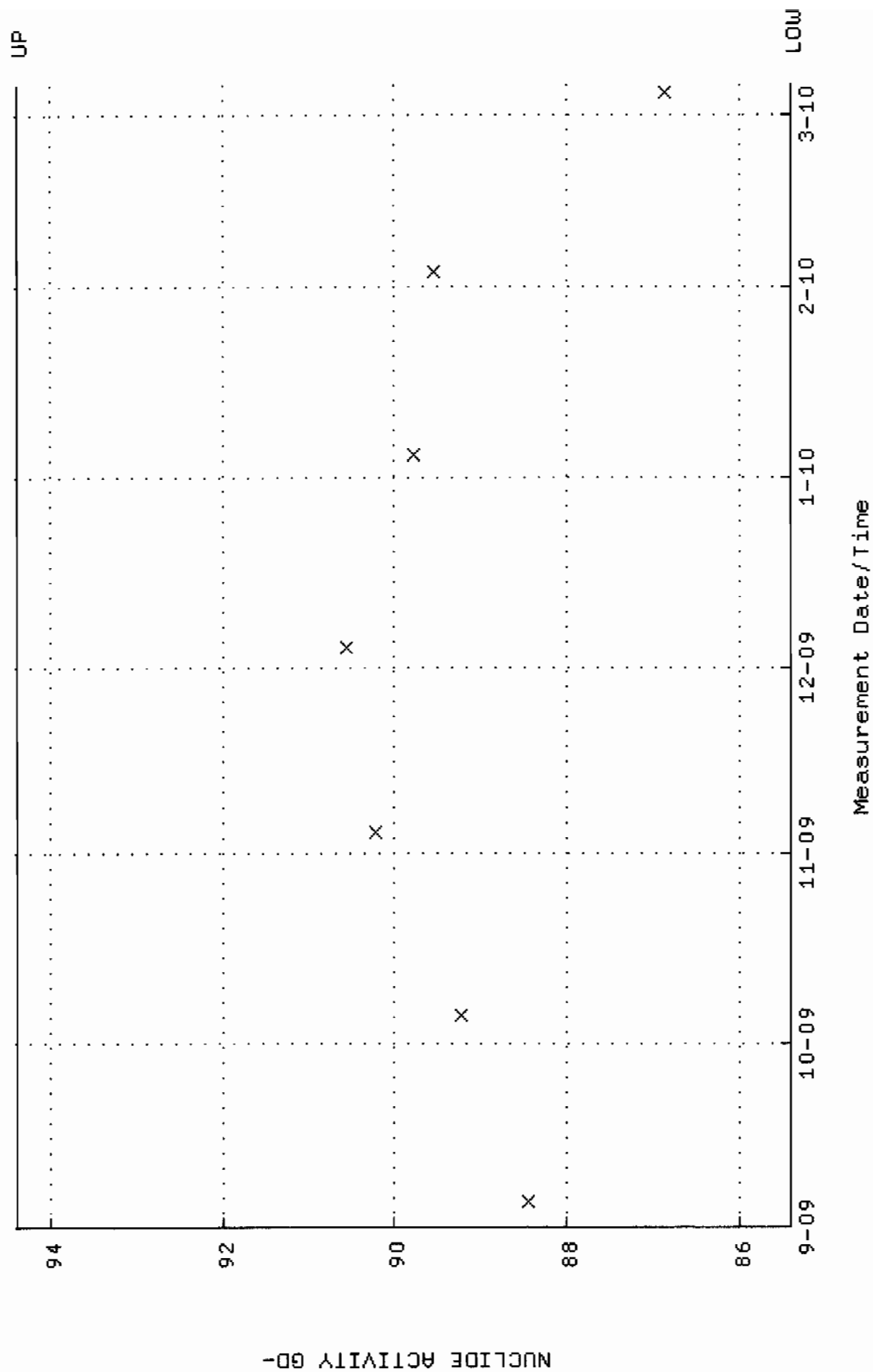
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 5-SEP-2009 09:03:09 through 5-MAR-2010 12:00:00

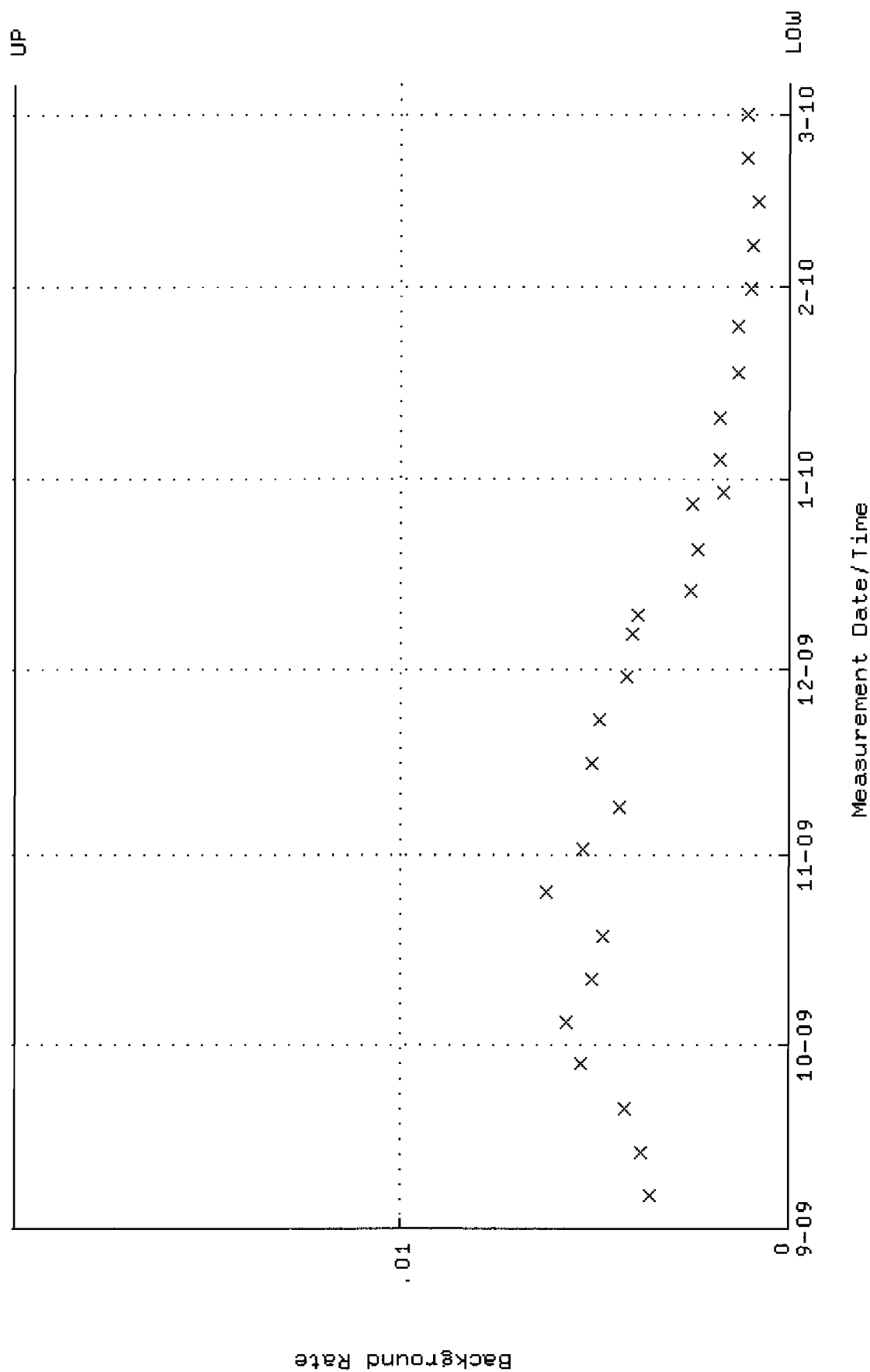
Lower/Upper Lmts: 0.294859 through 0.314859



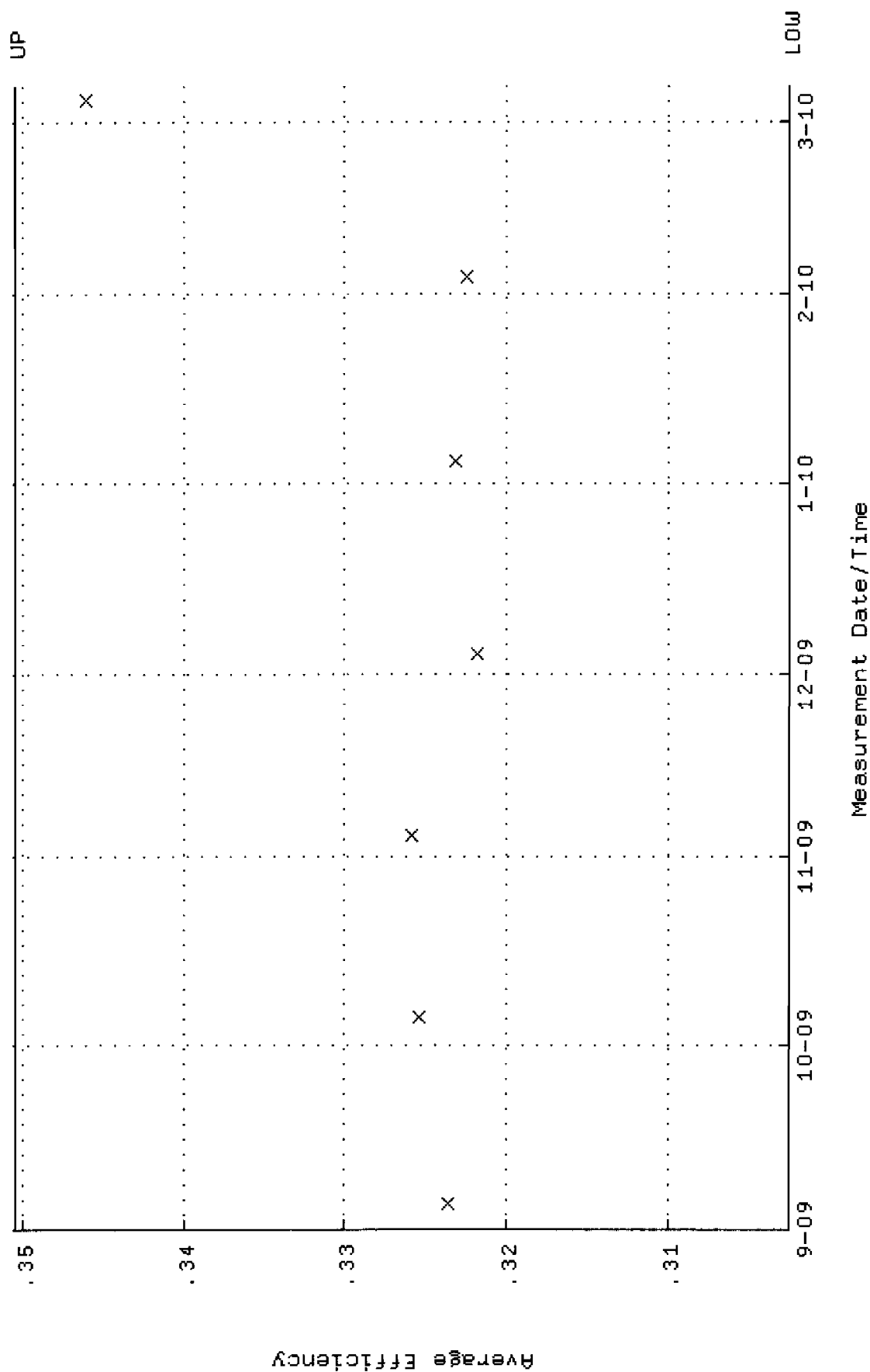
QA filename : DKA100:[ENV_ALPHA.QA.W]W035.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:09 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.3984 through 94.3878



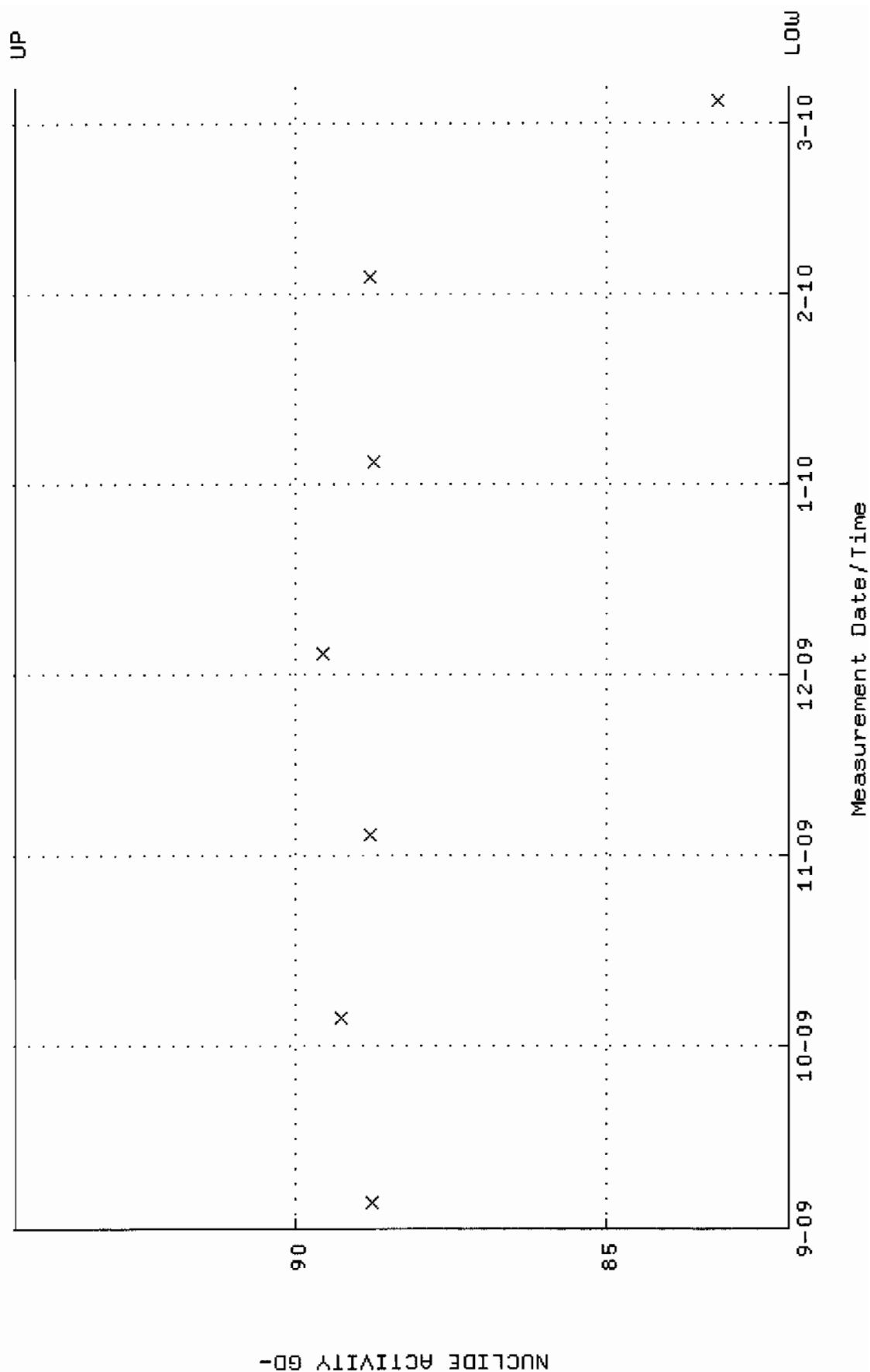
QA filename : DKA100:[ENV_ALPHA.QA.B]B035.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:04 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



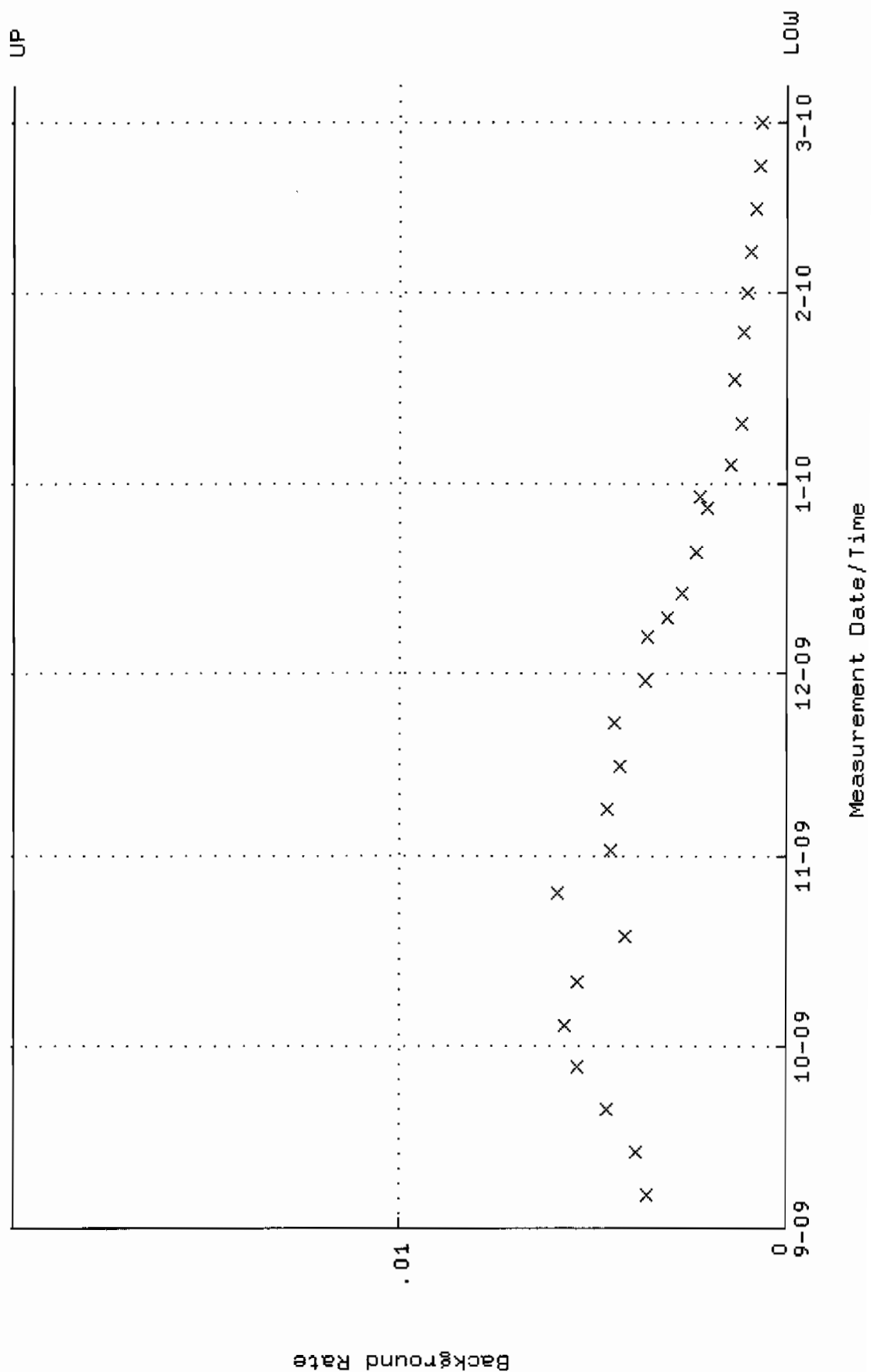
QA filename : DKA100:[ENV_ALPHA.QA.W]W036.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:09 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.302527 through 0.350457



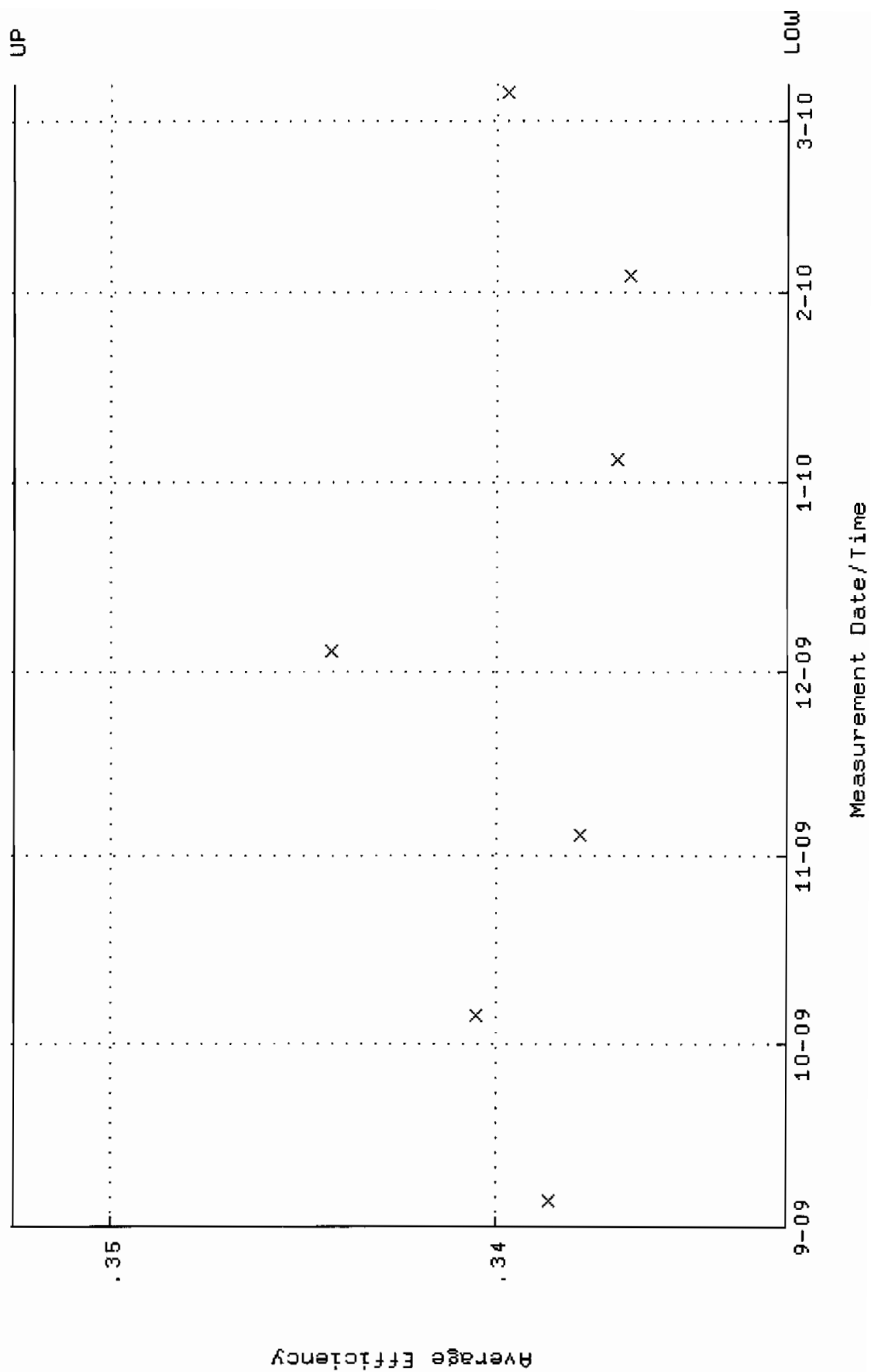
QA filename : DKA100:[ENV_ALPHA.QA.W]w036.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:09 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.0564 through 94.5140



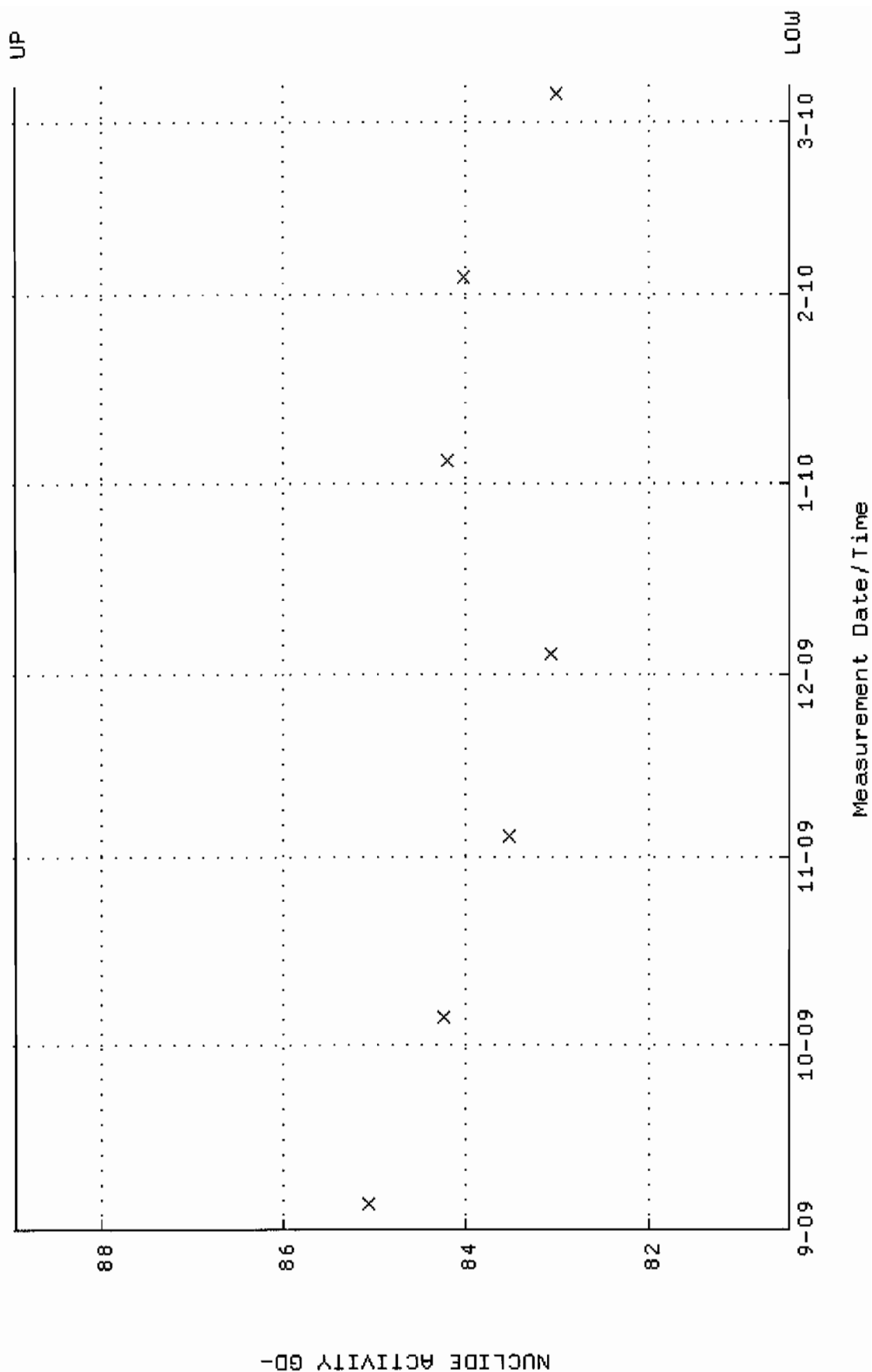
QA filename : DKA100:[ENV_ALPHA.QA.B]B036.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:04 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV-ALPHA.QA.W]W045.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:12 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.332472 through 0.352472



QA filename : DKA100:[ENV-ALPHA.QA.W]W045.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:12 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 80.4622 through 88.9320

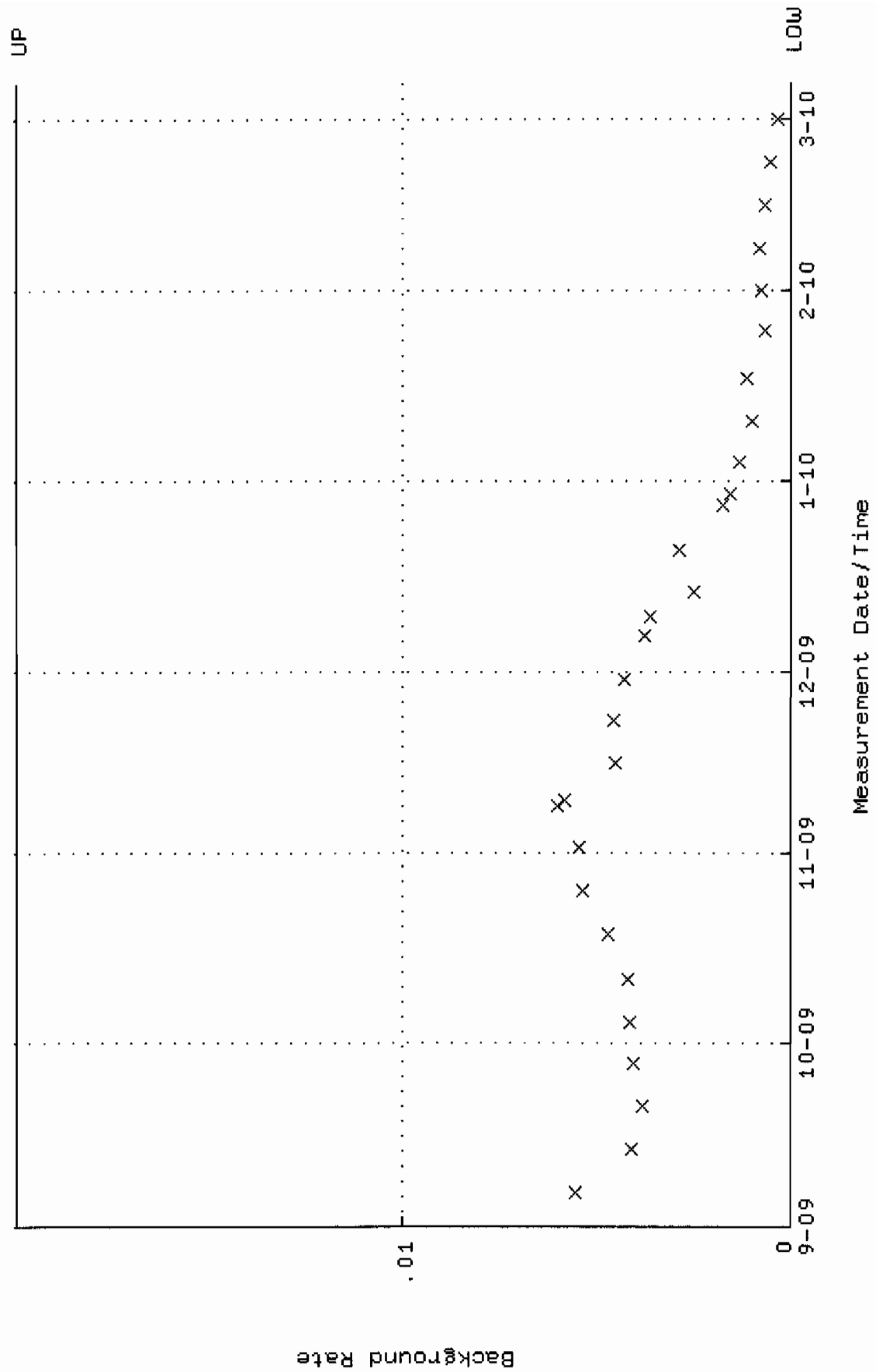


QA filename : DKA100:[ENV_ALPHA.QA.B]B045.QAF;1

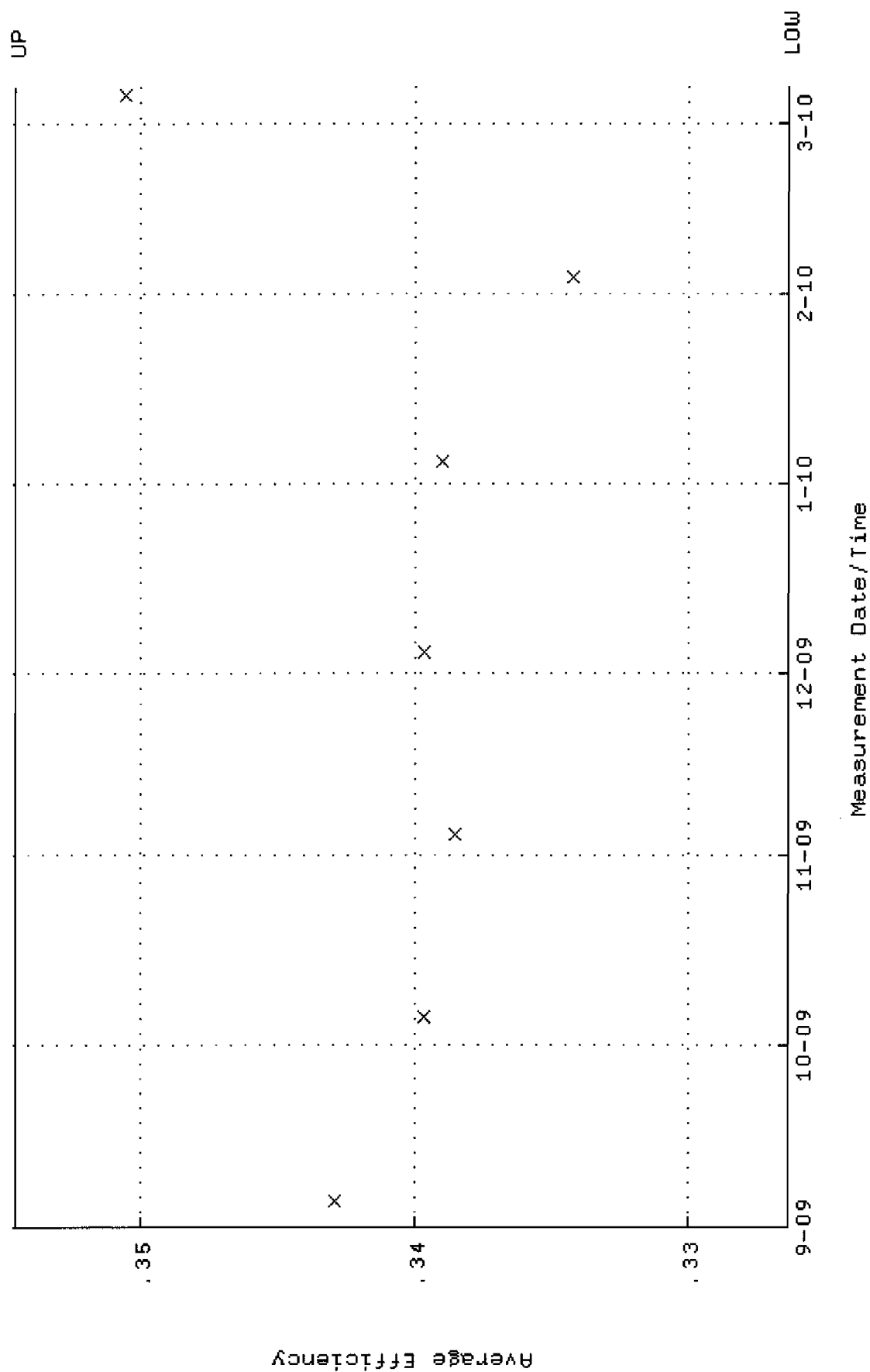
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:06 through 6-MAR-2010 12:00:00

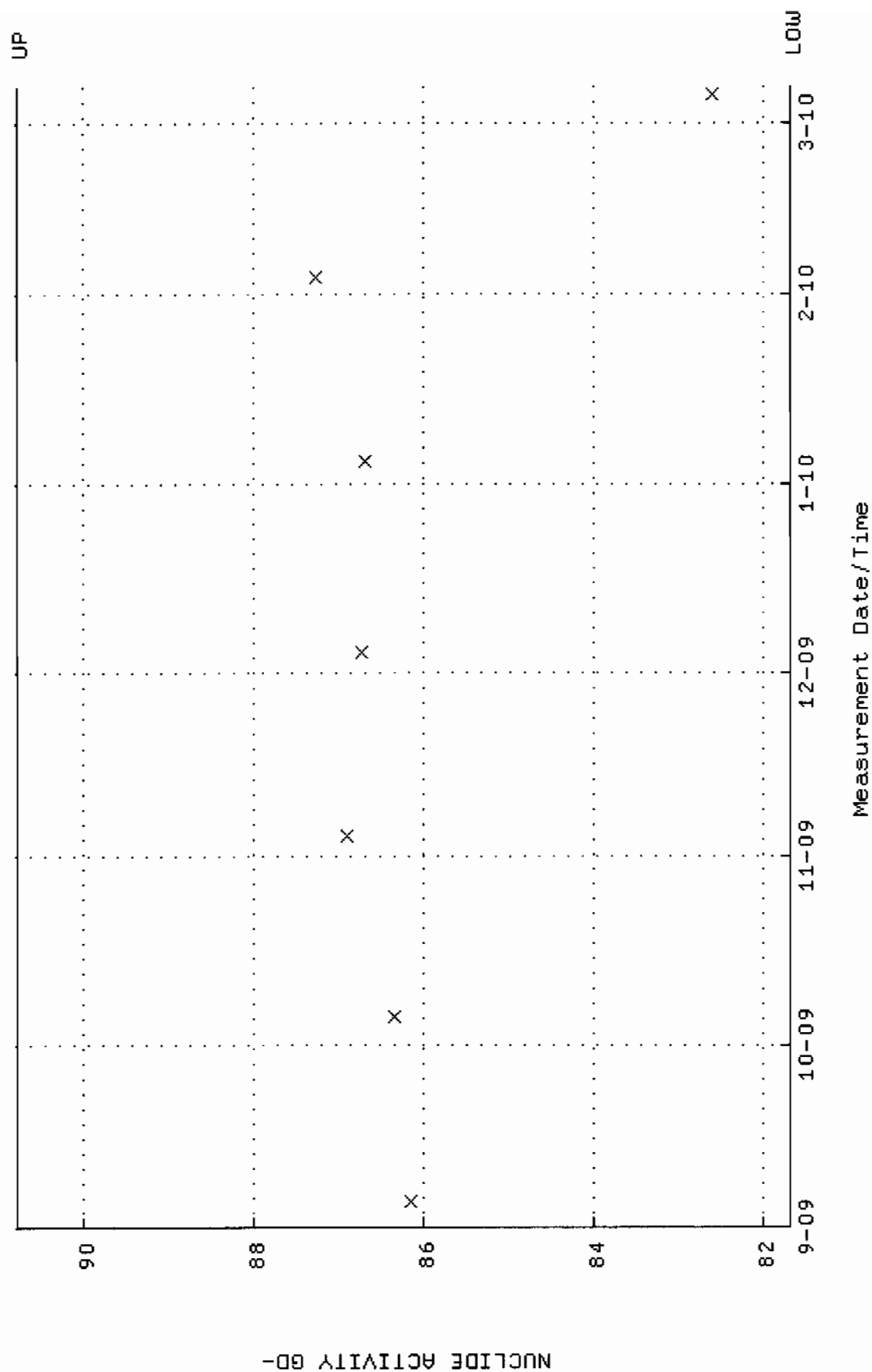
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W046.QAF; 4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:12 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.326384 through 0.354578



QA filename : DKA100:[ENV_ALPHA.QA.W]W046.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:12 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.6839 through 90.7805

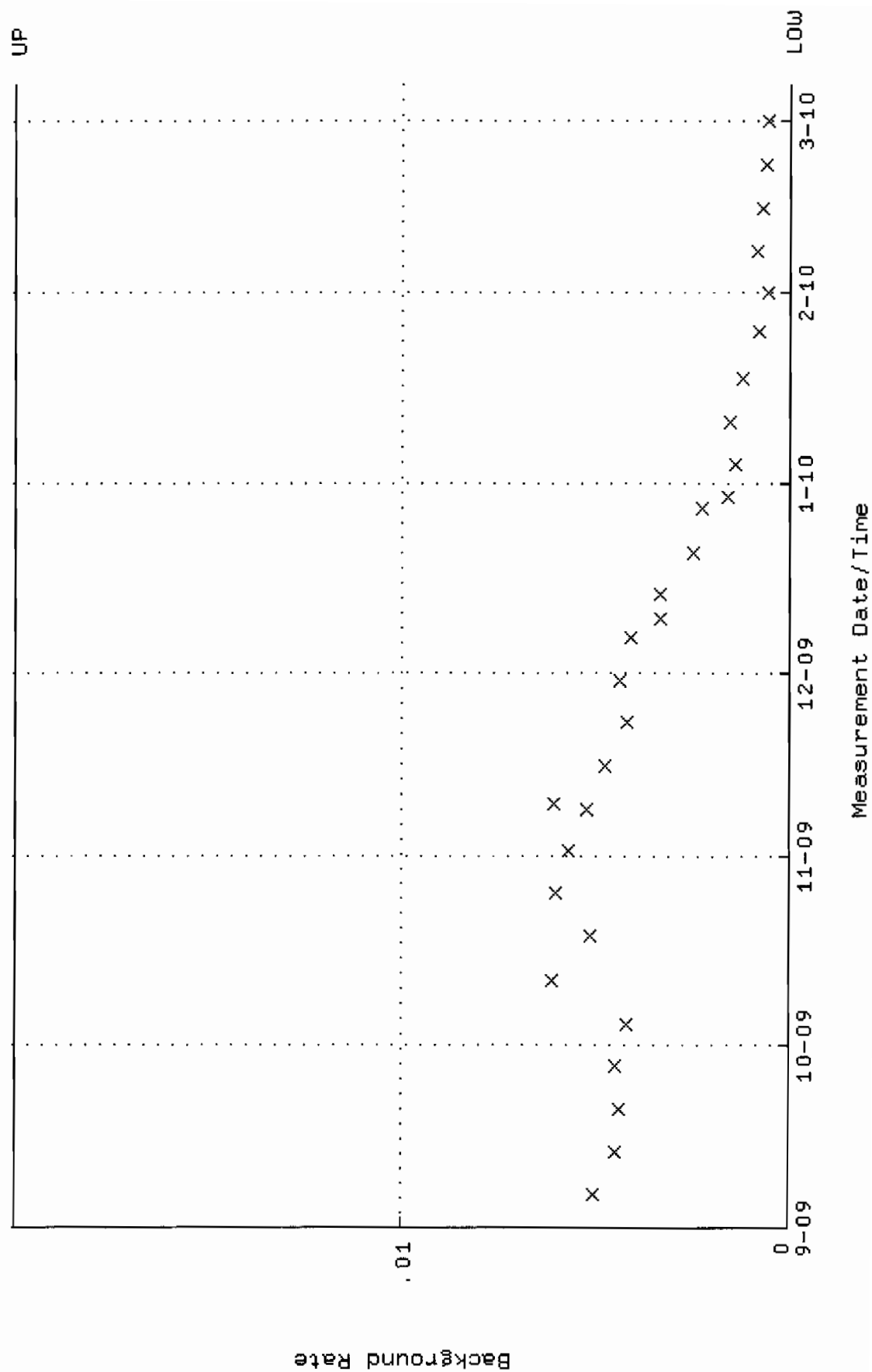


QA filename : DKA100:[ENV_ALPHA.QA.B]B046.QAF;1

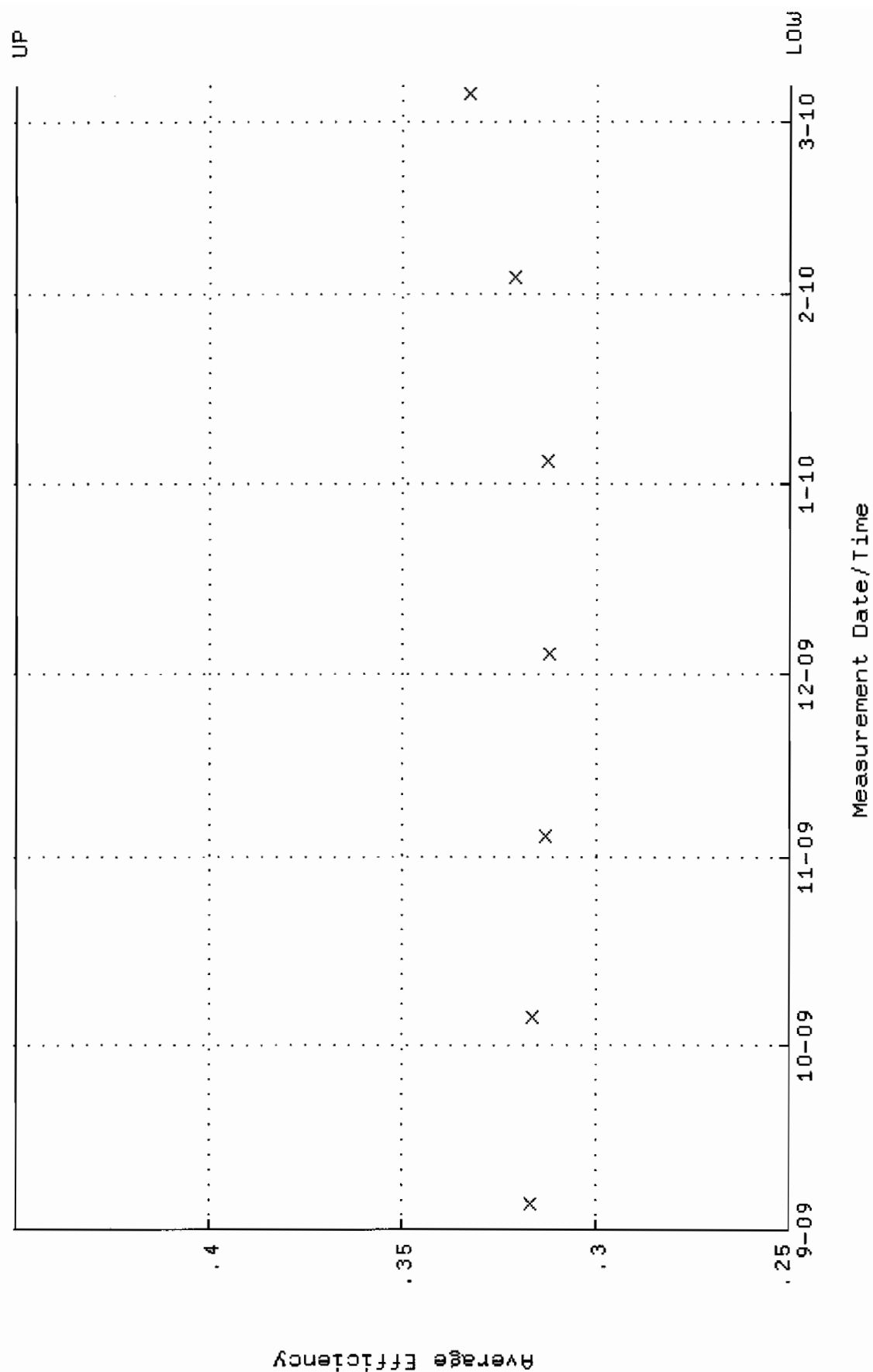
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:06 through 6-MAR-2010 12:00:00

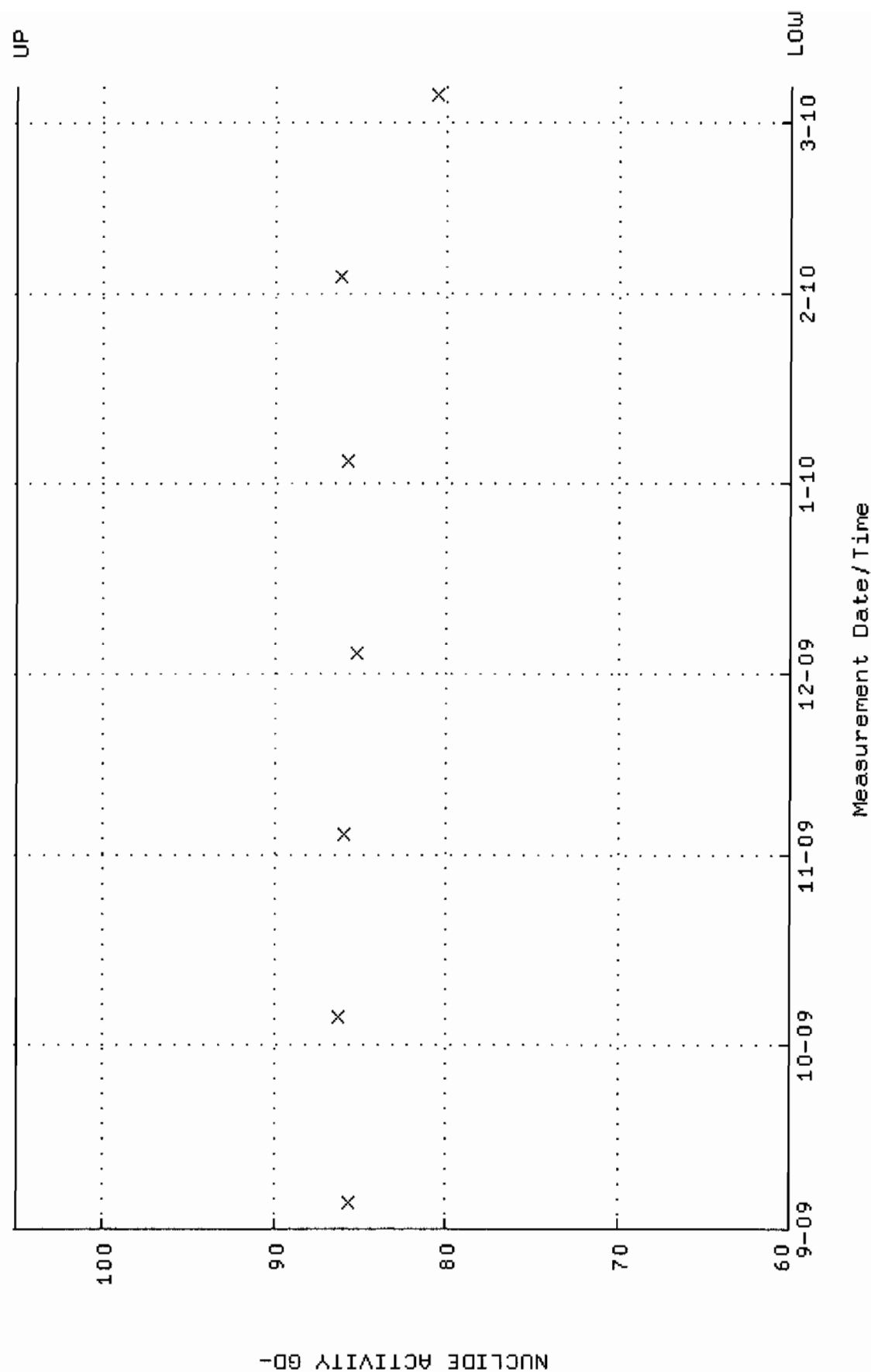
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



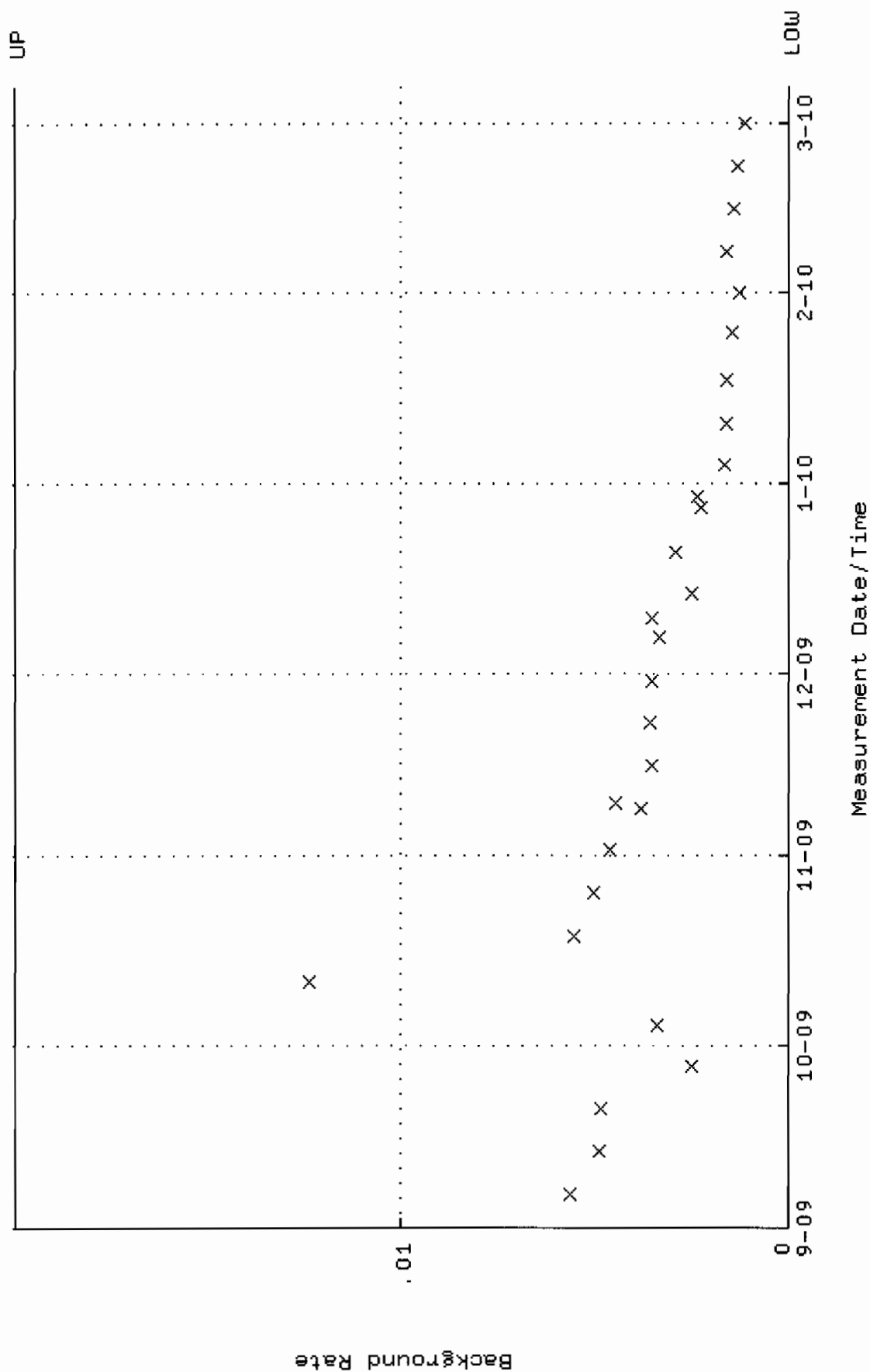
QA filename : DKA100:[ENV_ALPHA.QA.W]W048.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:12 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



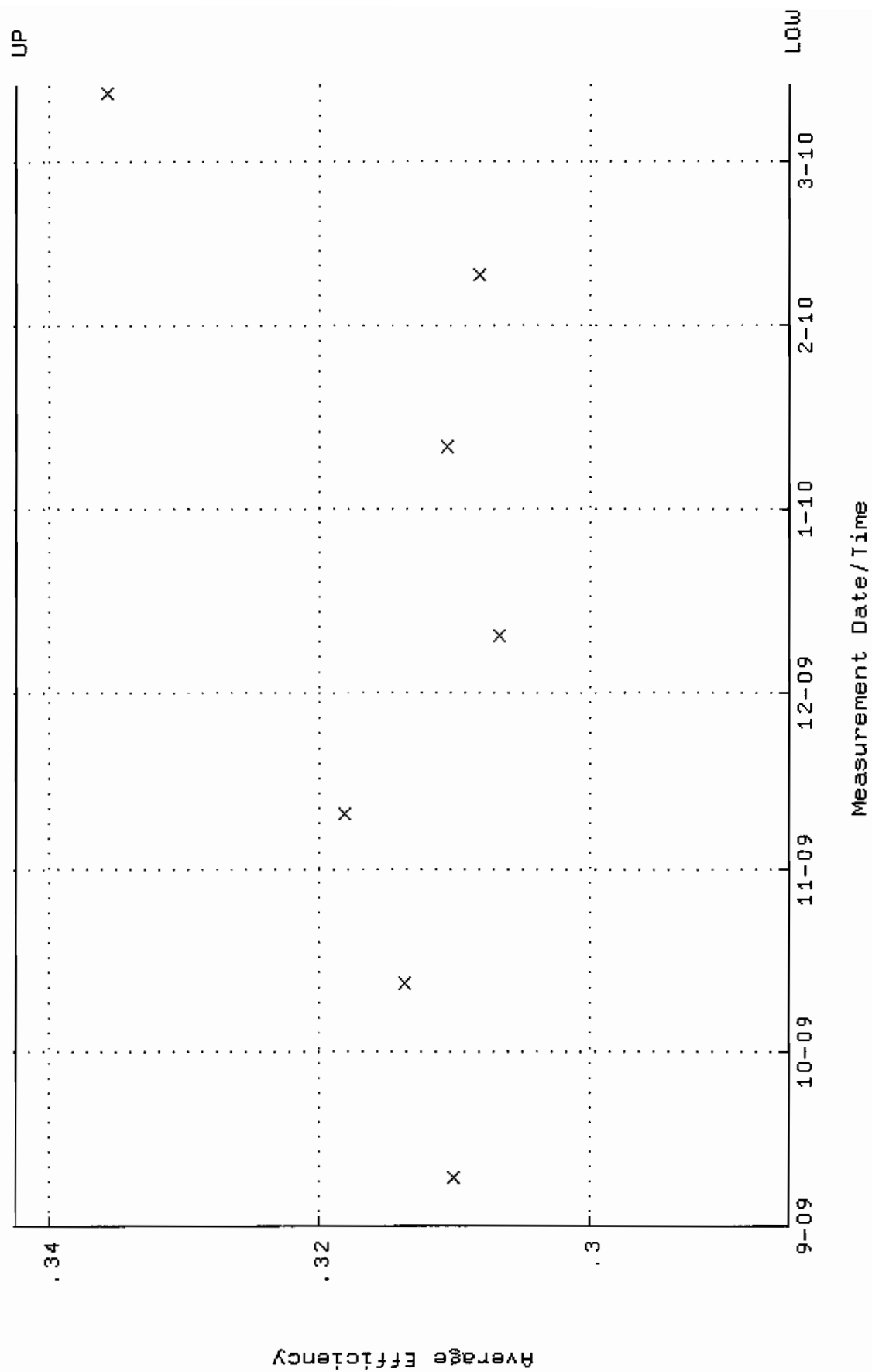
QA filename : DKA100:[ENV-ALPHA.QA.W]W048.QAF; 6
 Parameter Name : NLAactivity-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:12 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.0000



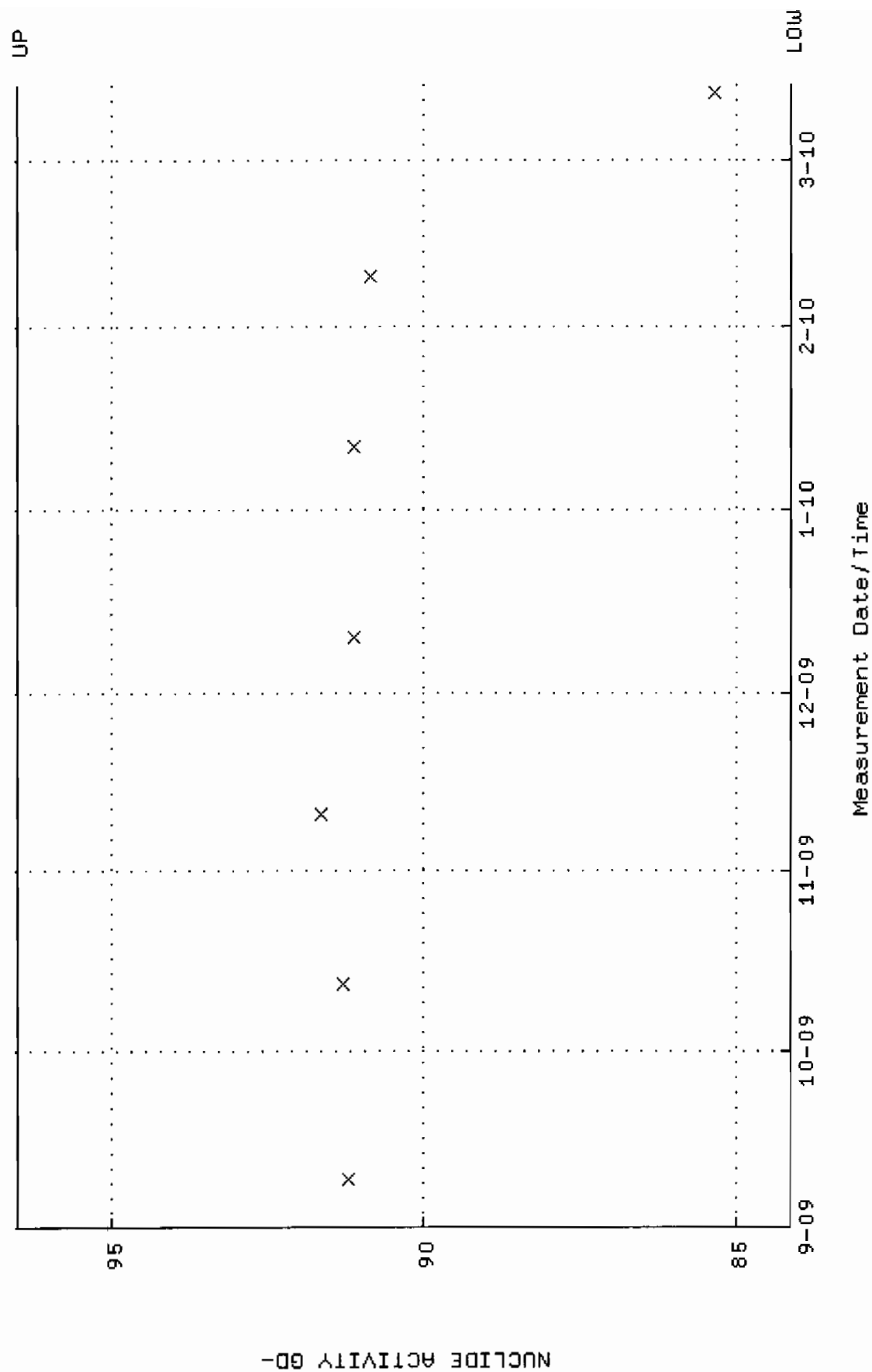
QA filename : DKA100:[ENV_ALPHA.QA.B]B048.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:06 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



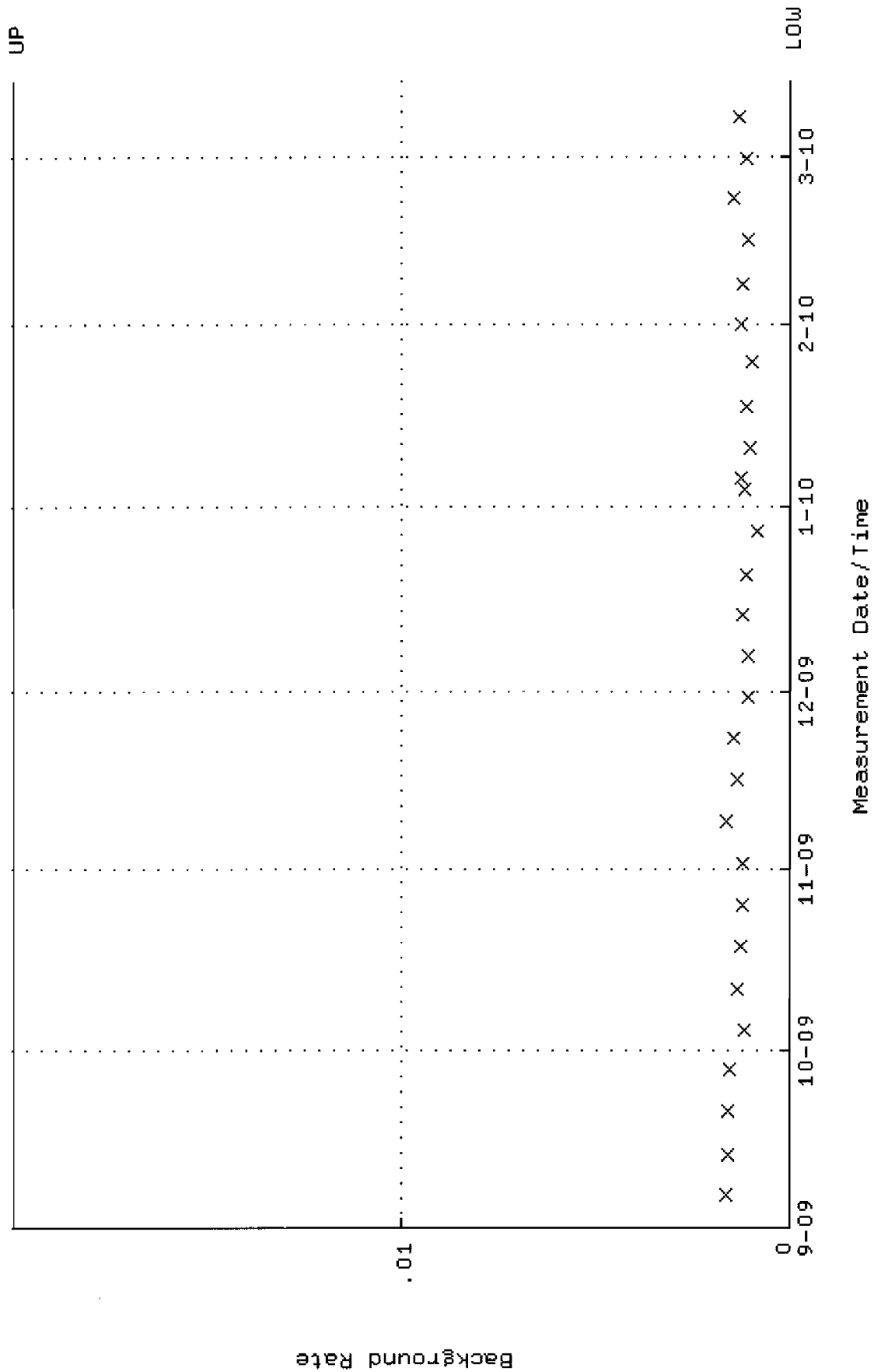
QA filename : DKA100:[ENV_ALPHA.QA.W]W065.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.285385 through 0.342467



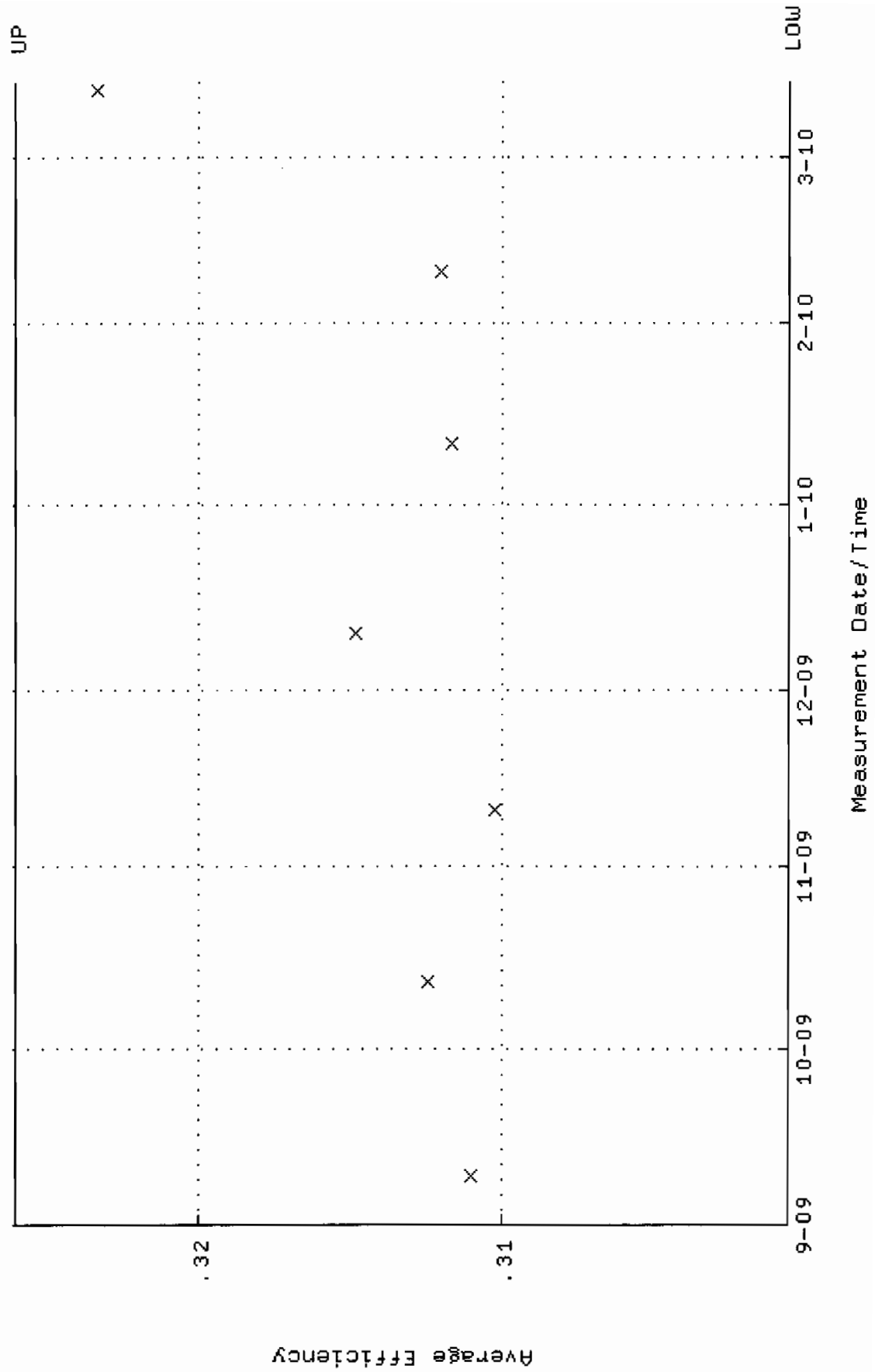
QA filename : DKA100:[ENV_ALPHA.QA.W]W065.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.1135 through 96.5061



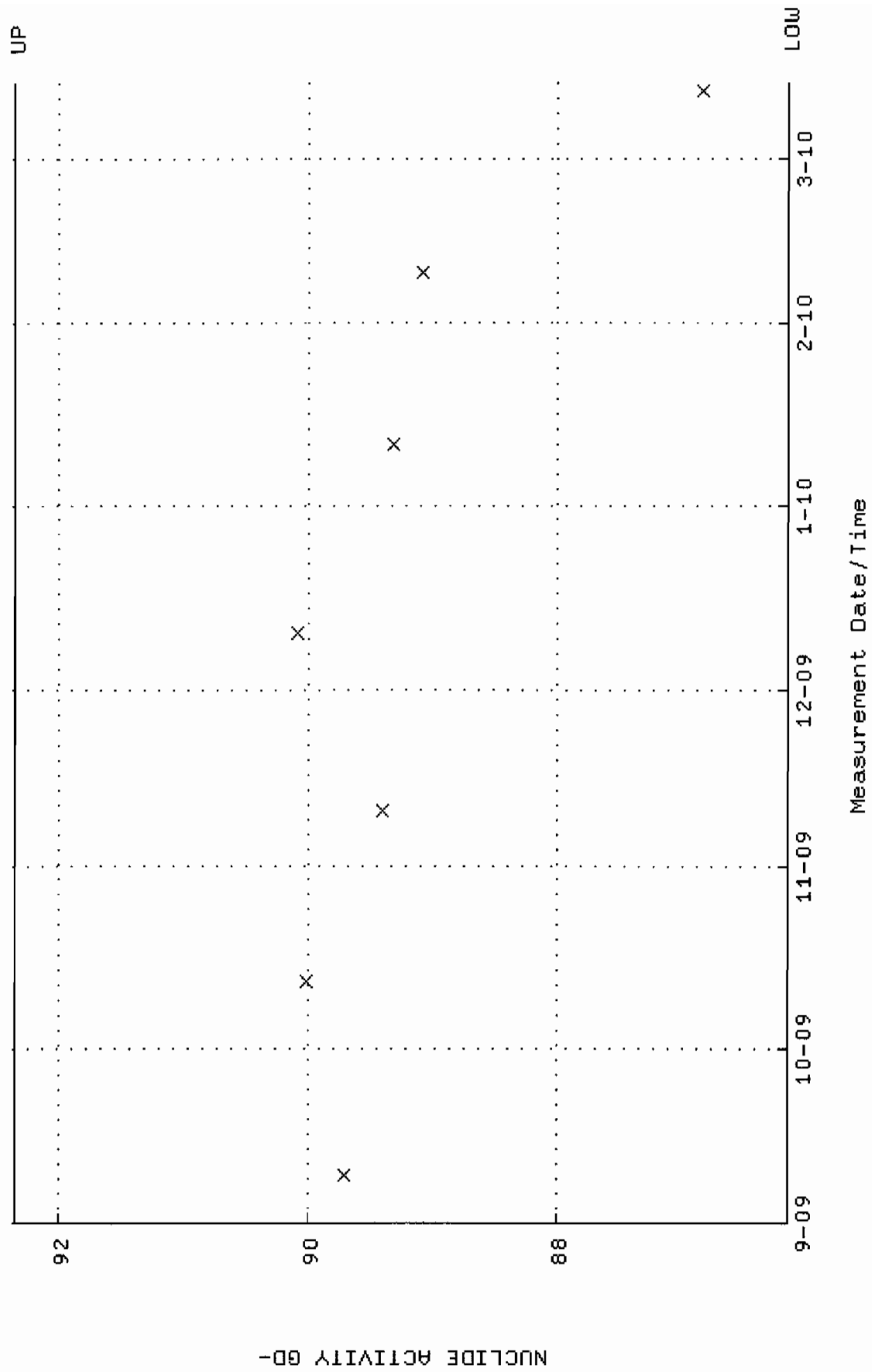
QA filename : DKA100:[ENV_ALPHA.QA.B]B065.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]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

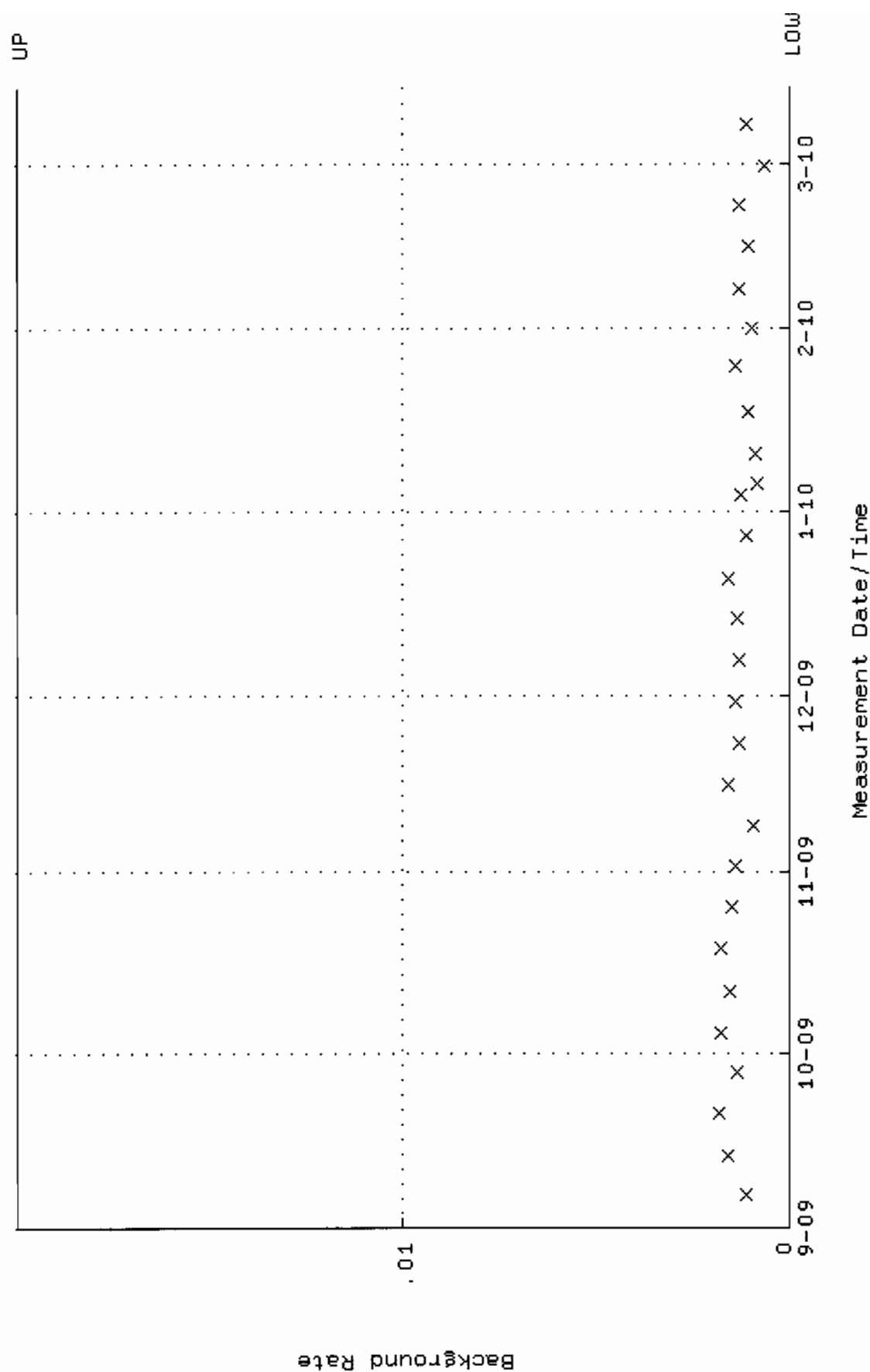


QA filename : DKA100:[ENV_ALPHA.QA.B]B066.QAF;1

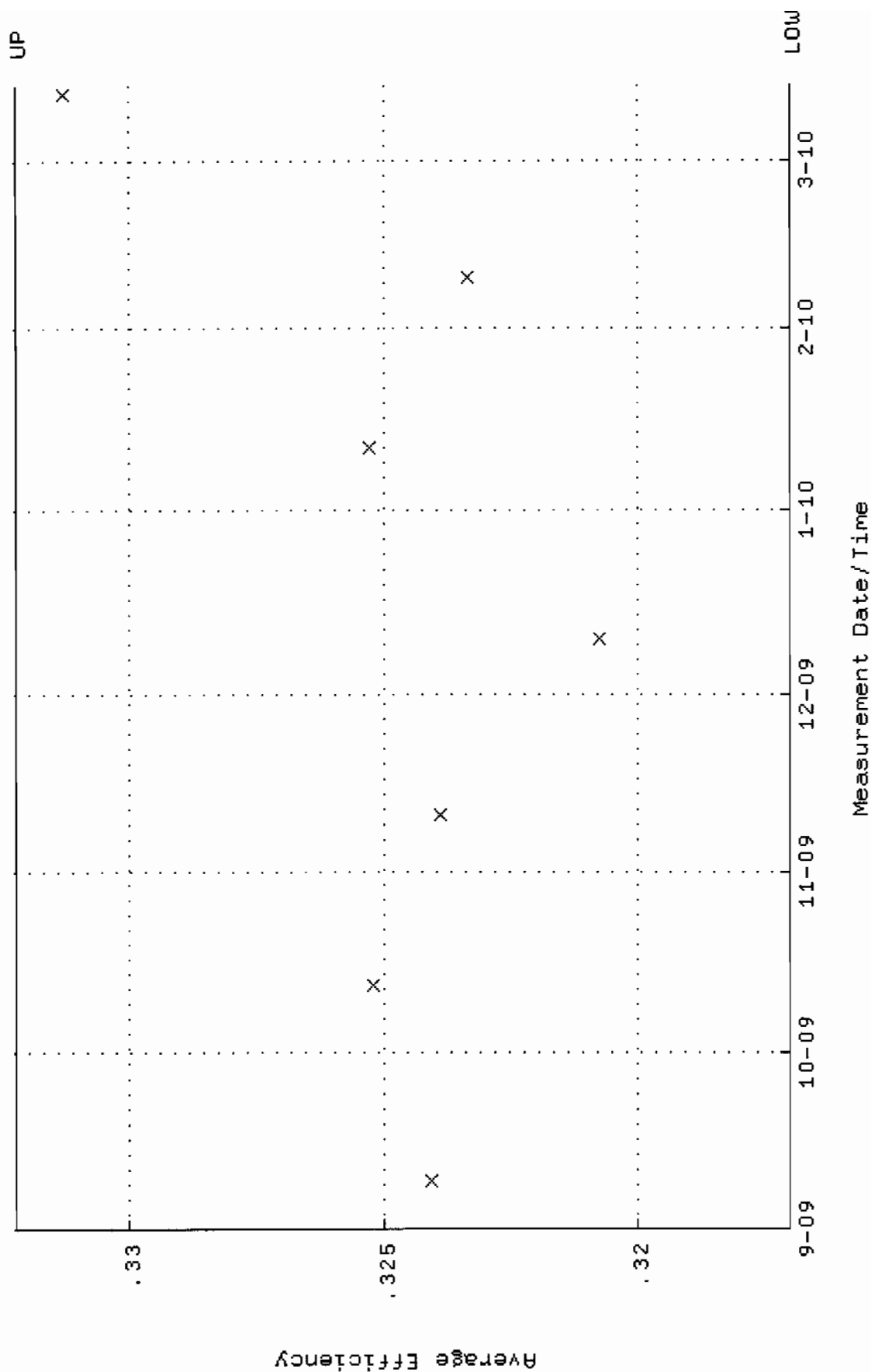
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00

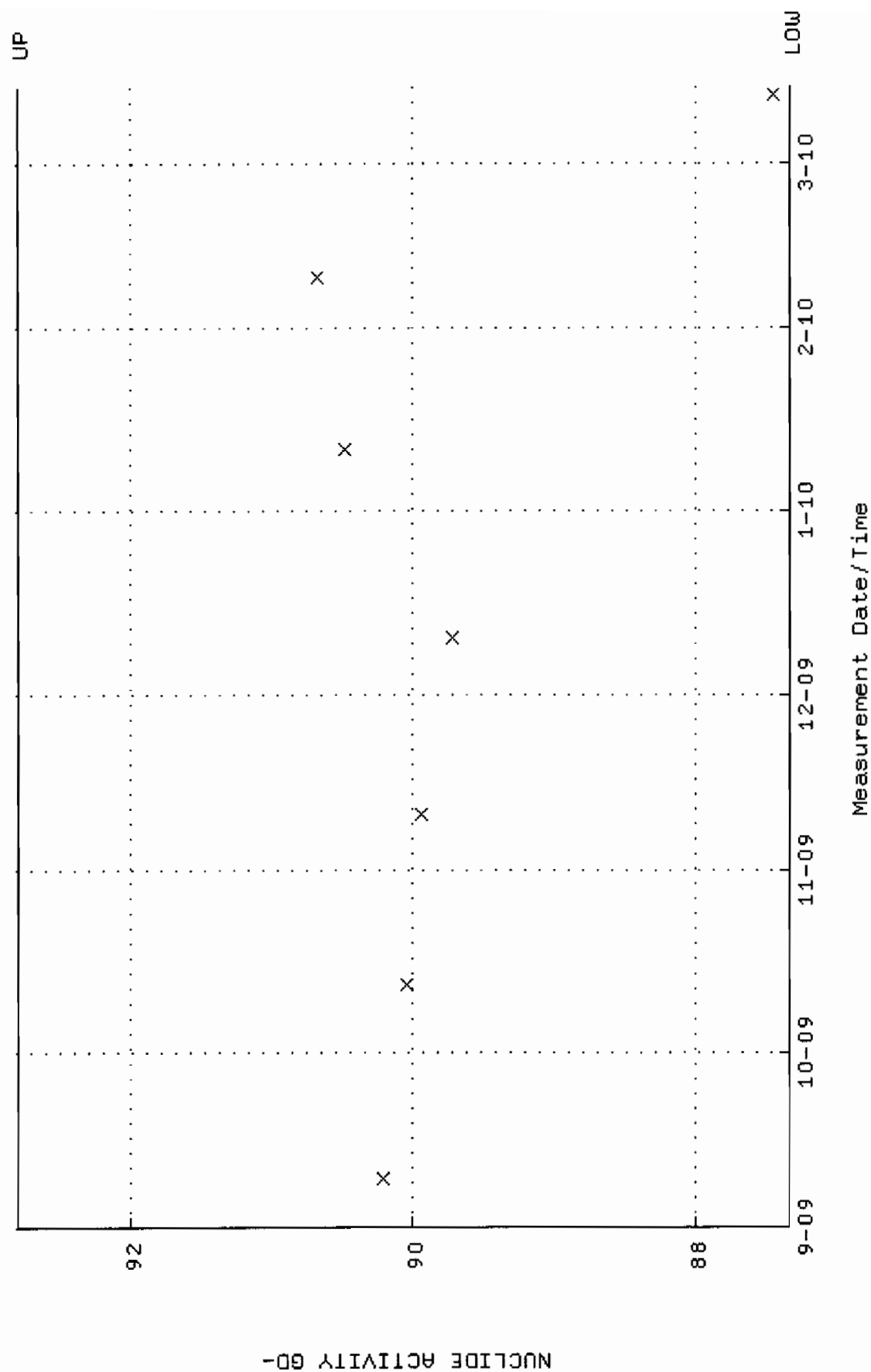
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



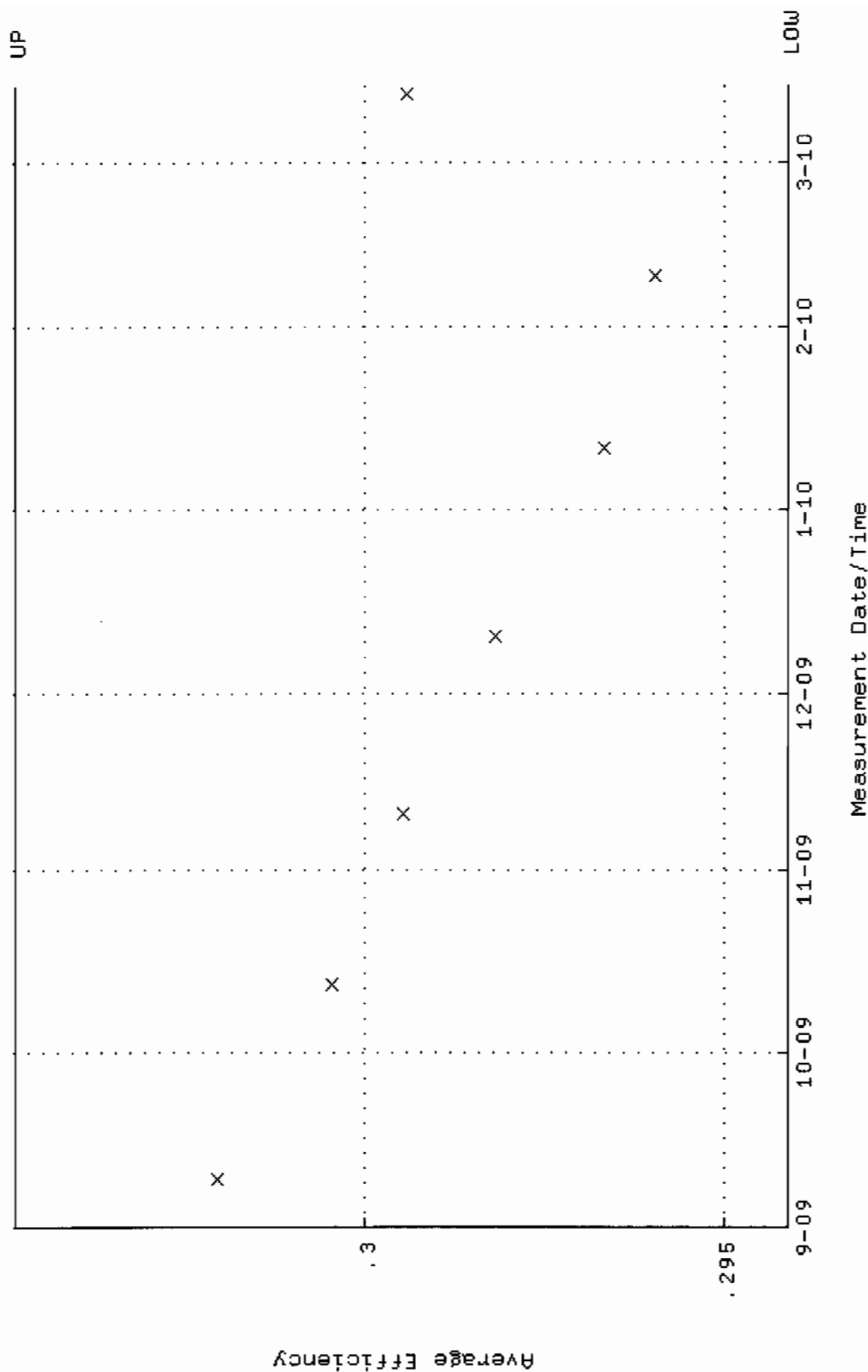
QA filename : DKA100:[ENV_ALPHA.QA.W]W067.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.317012 through 0.332214



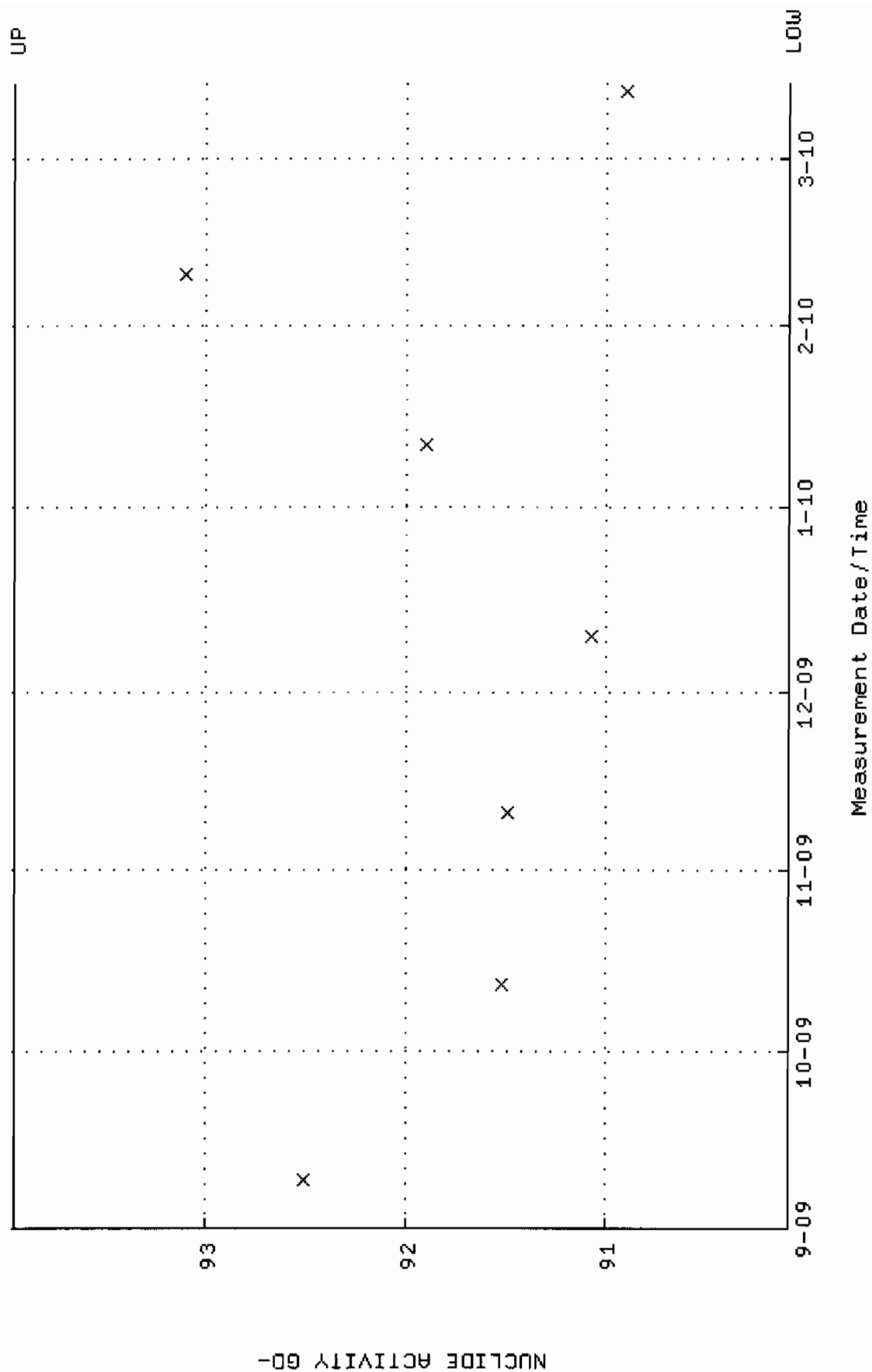
QA filename : DKA100:[ENV_ALPHA.QA.W]W067.QAF;2
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.3271 through 92.8001



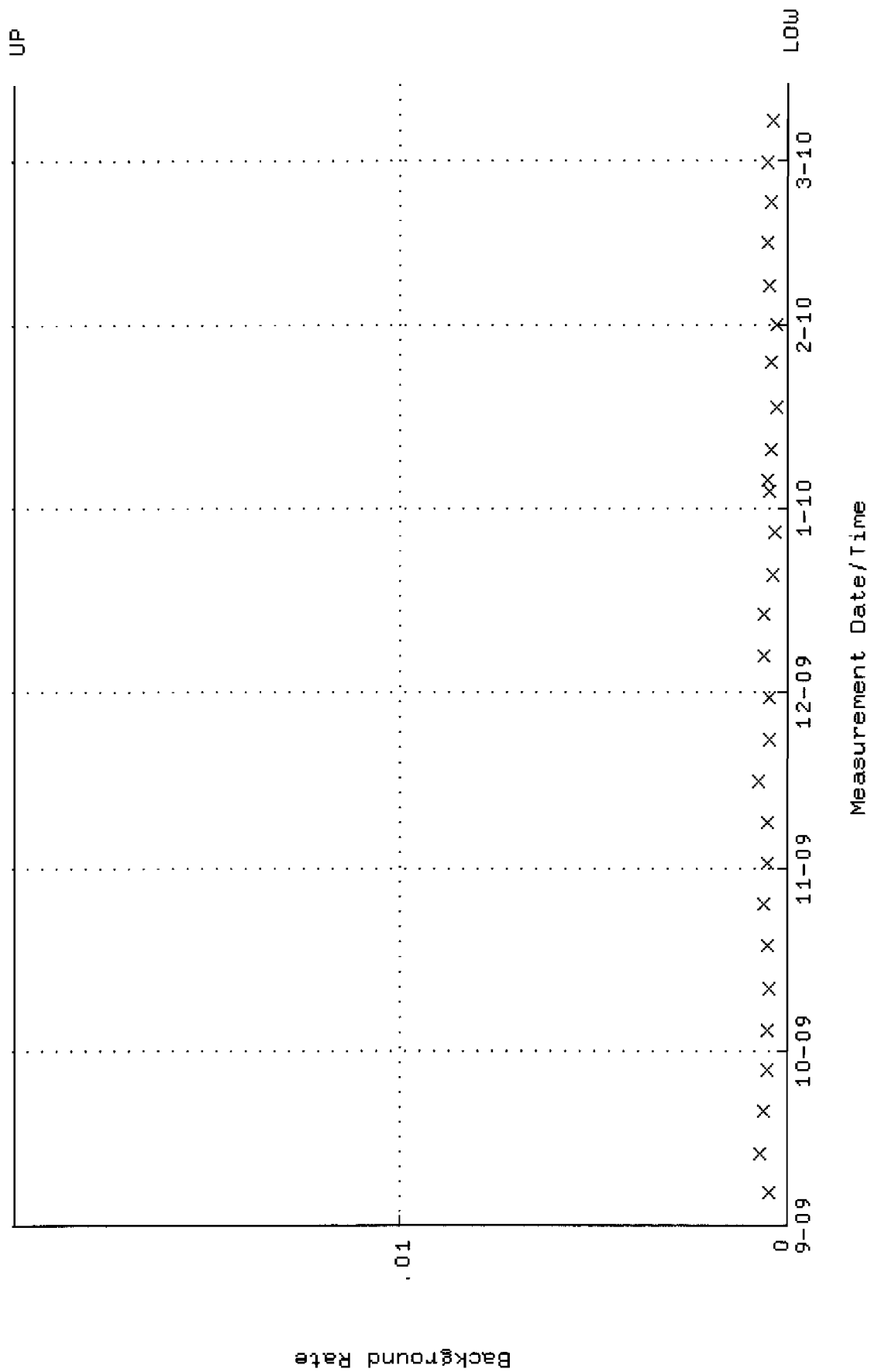
QA filename : DKA100:[ENV_ALPHA.QA.W]W068.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.294113 through 0.304839



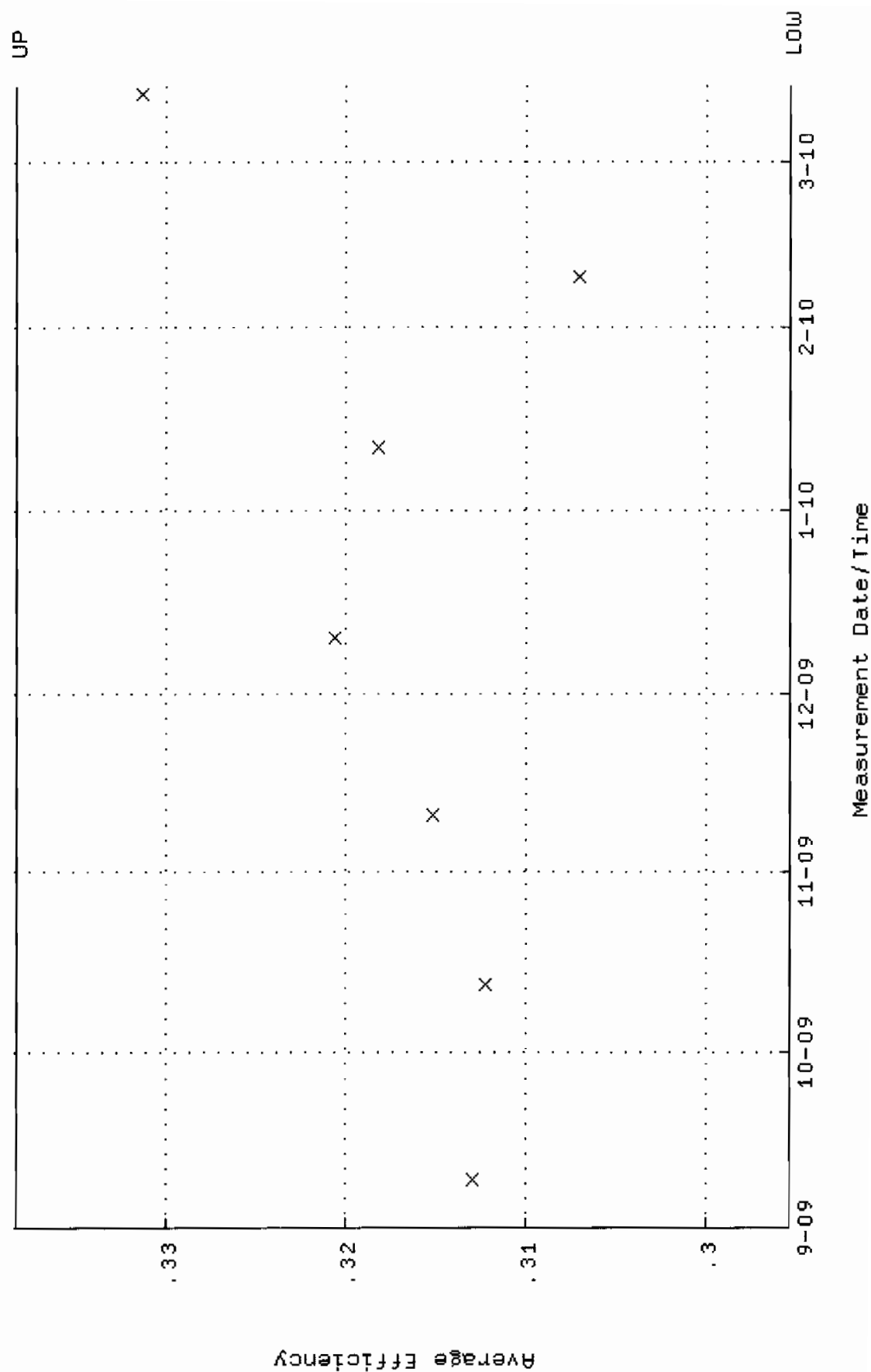
QA filename : DKA100:[ENV_ALPHA.QA.W]W068.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 90.0941 through 93.9543



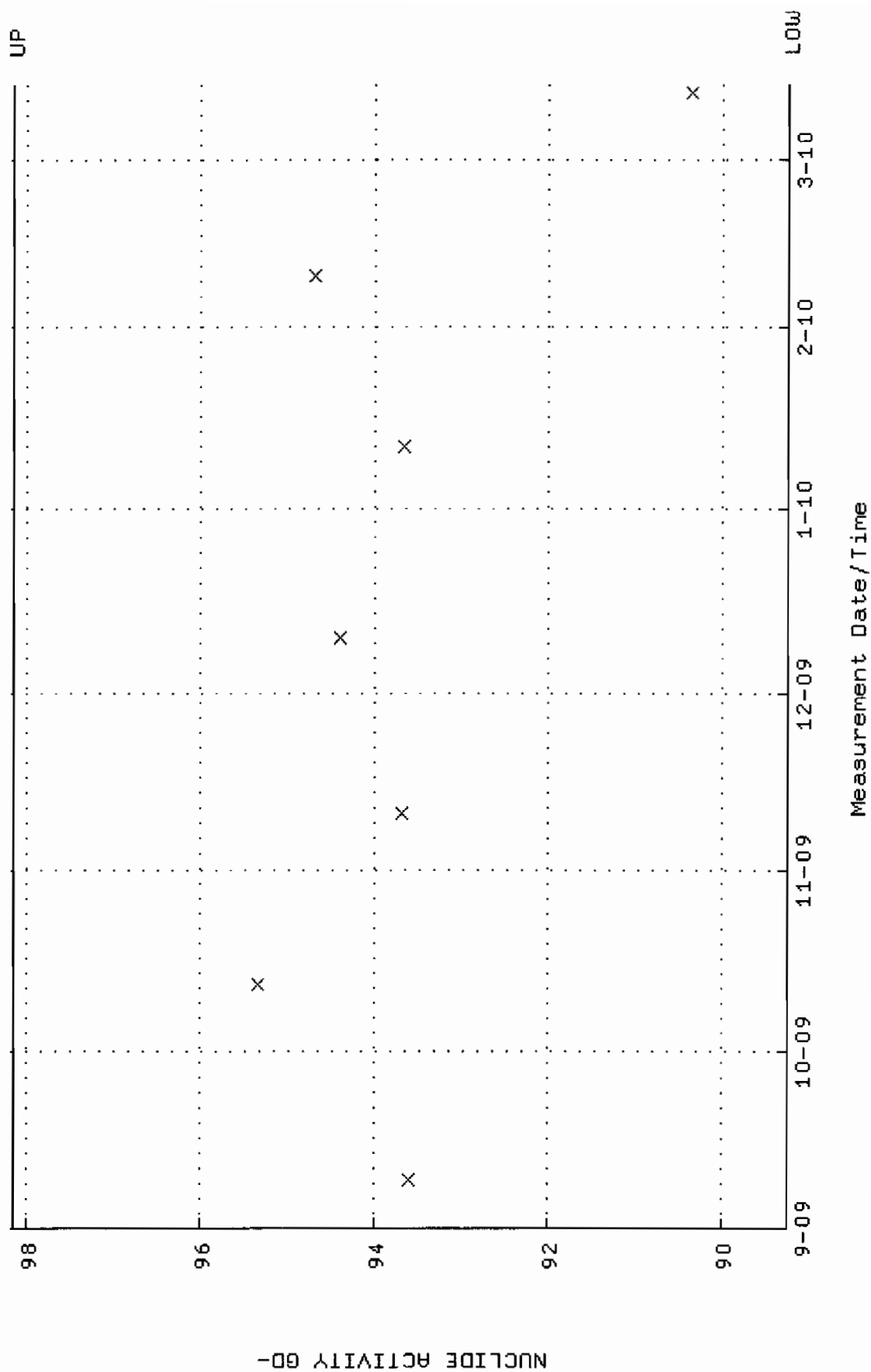
QA filename : DKA100:[ENV_ALPHA.QA.B]B068.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



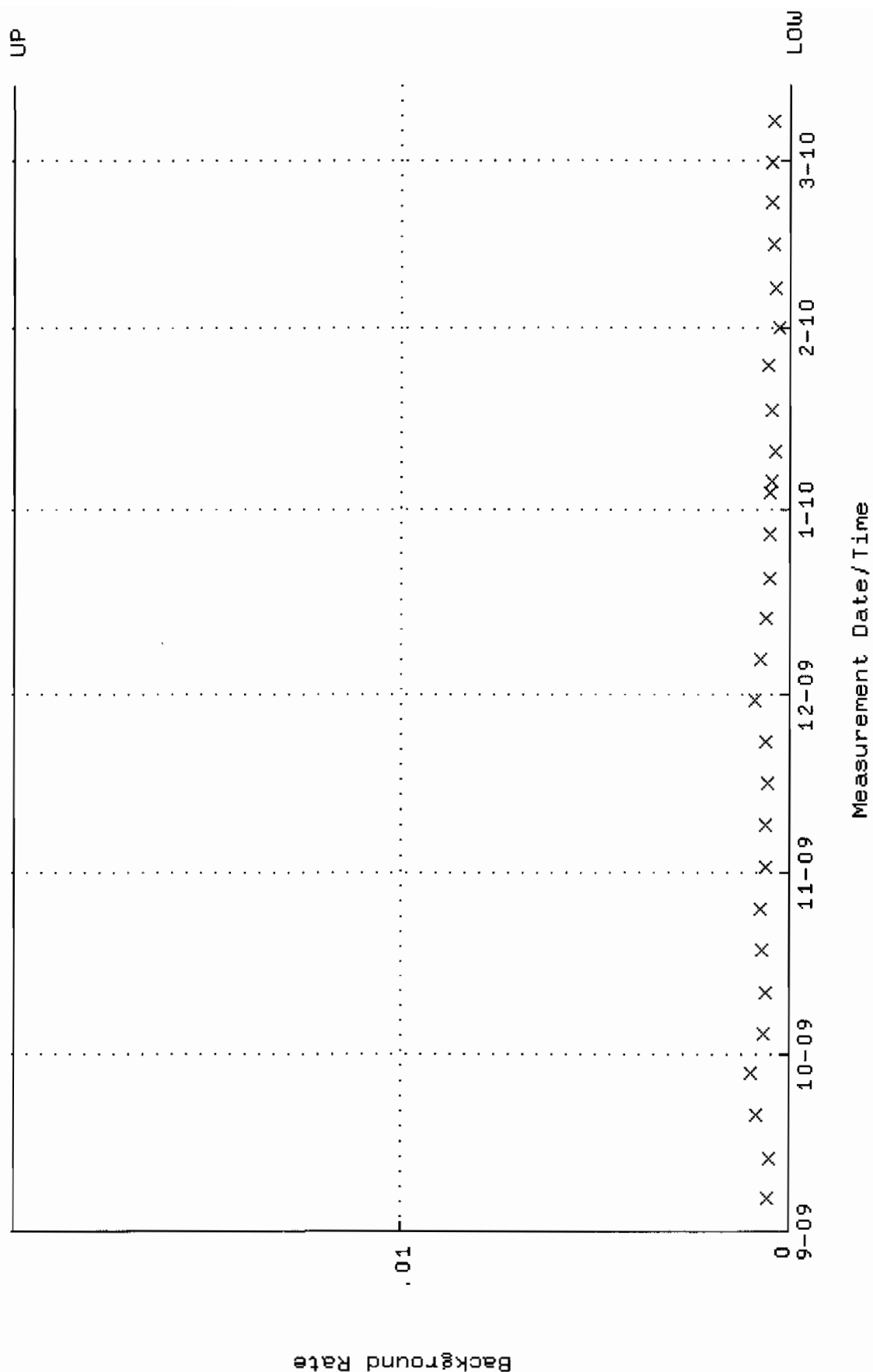
QA filename : DKA100:[ENV_ALPHA.QA.w]W069.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.295353 through 0.338329



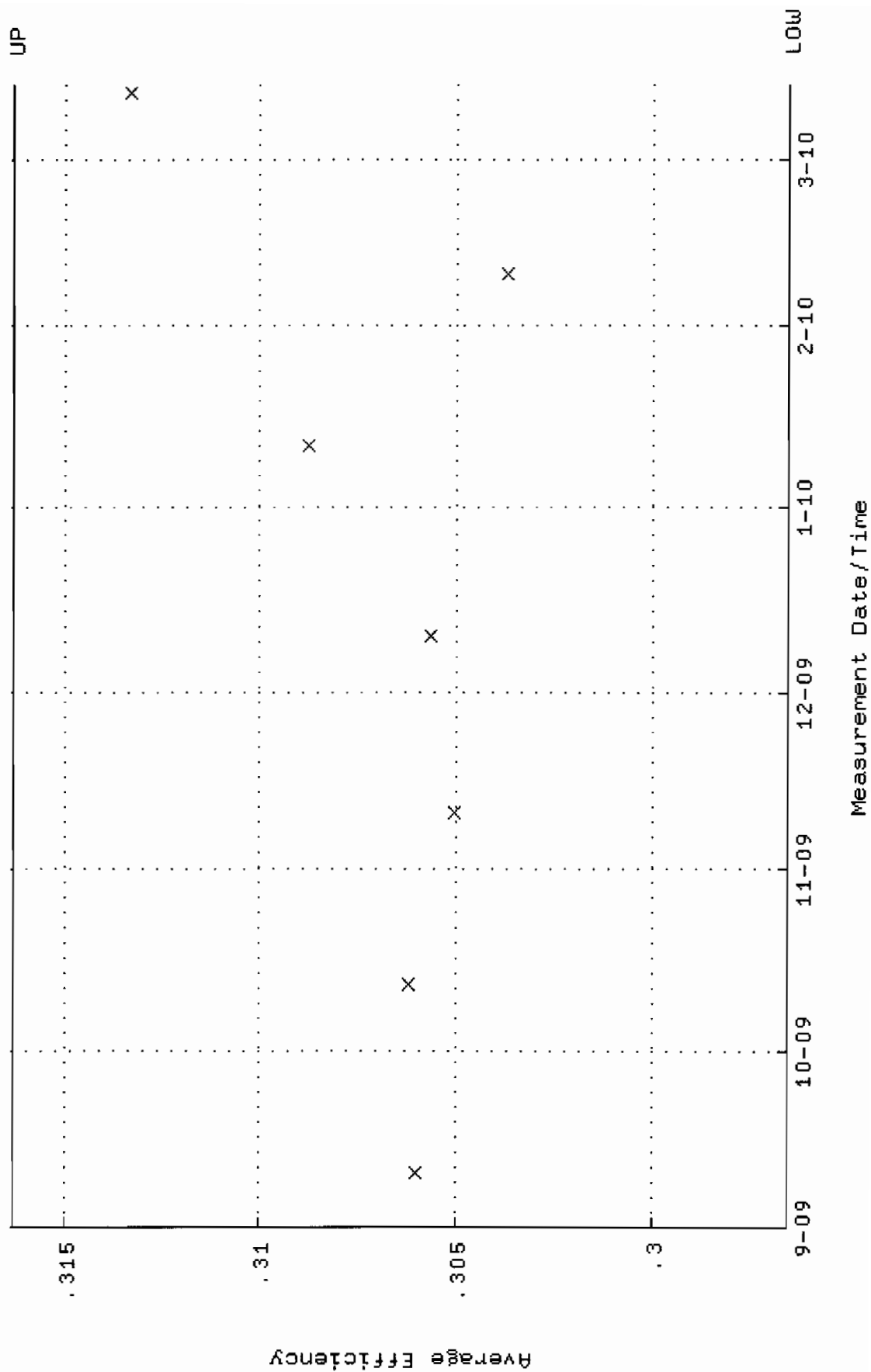
QA filename : DKA100:[ENV_ALPHA.QA.W]W069.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:46 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.2430 through 98.1406



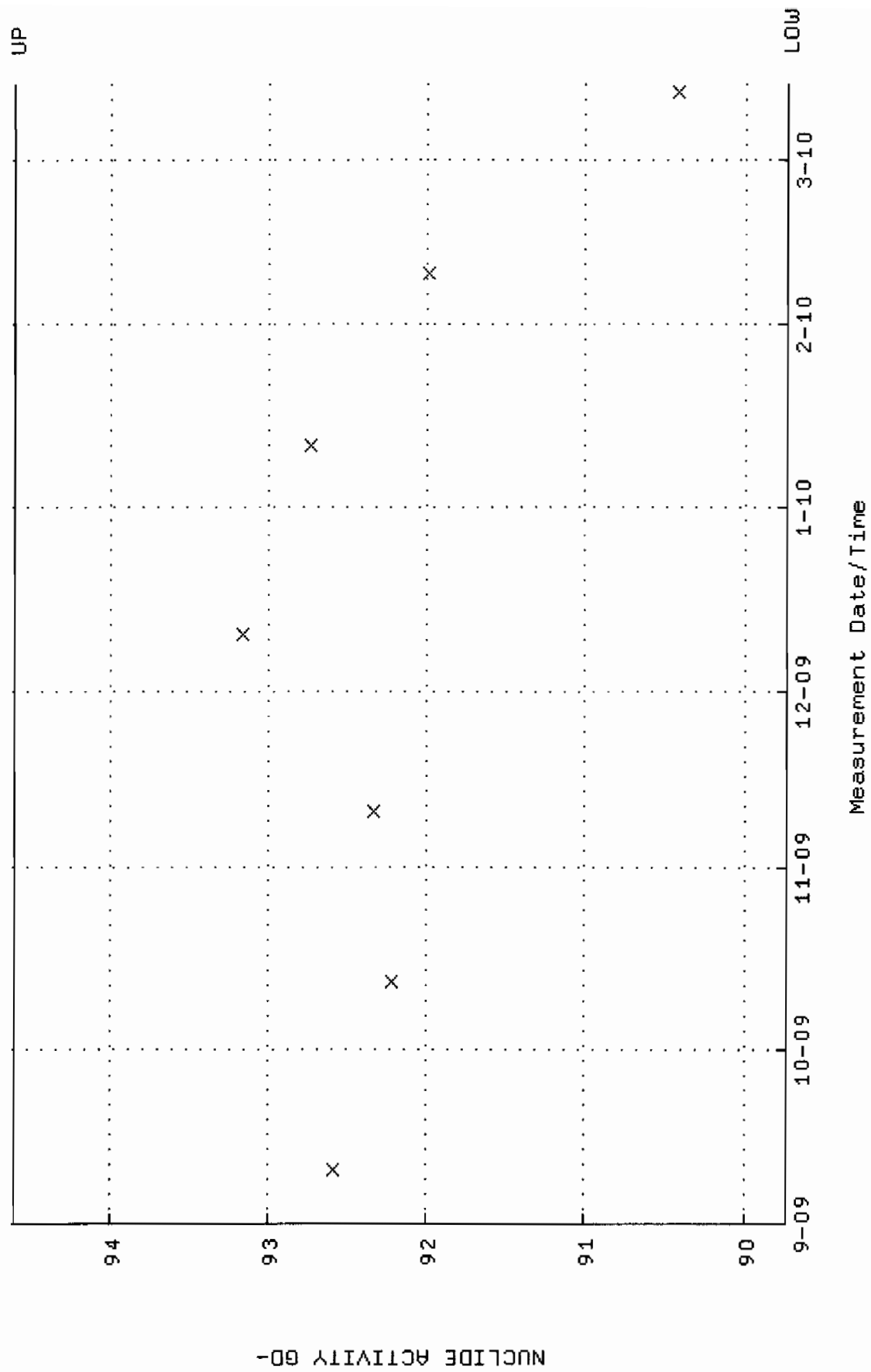
QA filename : DKA100:[ENV_ALPHA.QA.B]B069.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



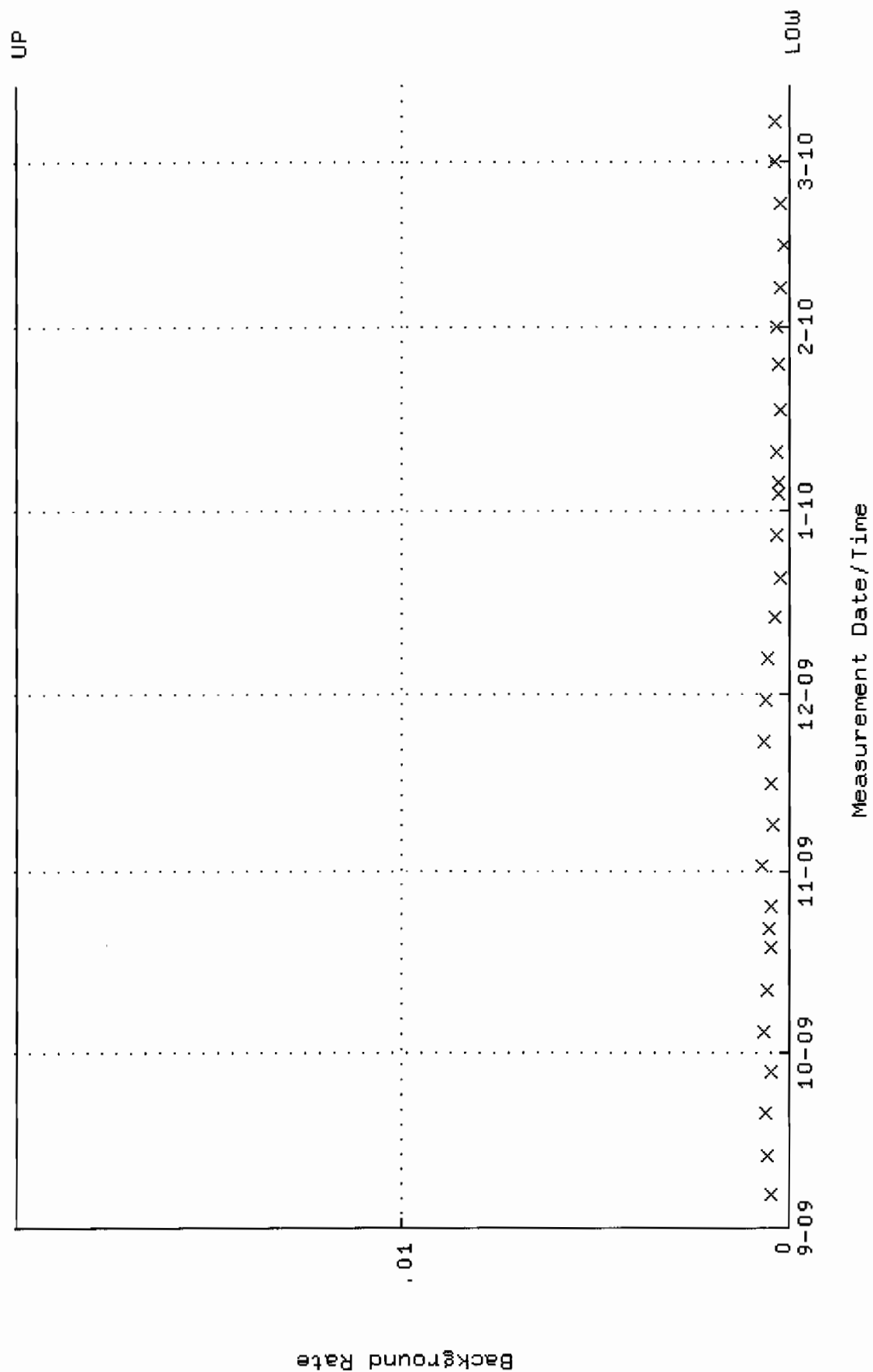
QA filename : DKA100:[ENV_ALPHA.QA.W]W076.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 10-SEP-2009 07:45:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.296554 through 0.316286



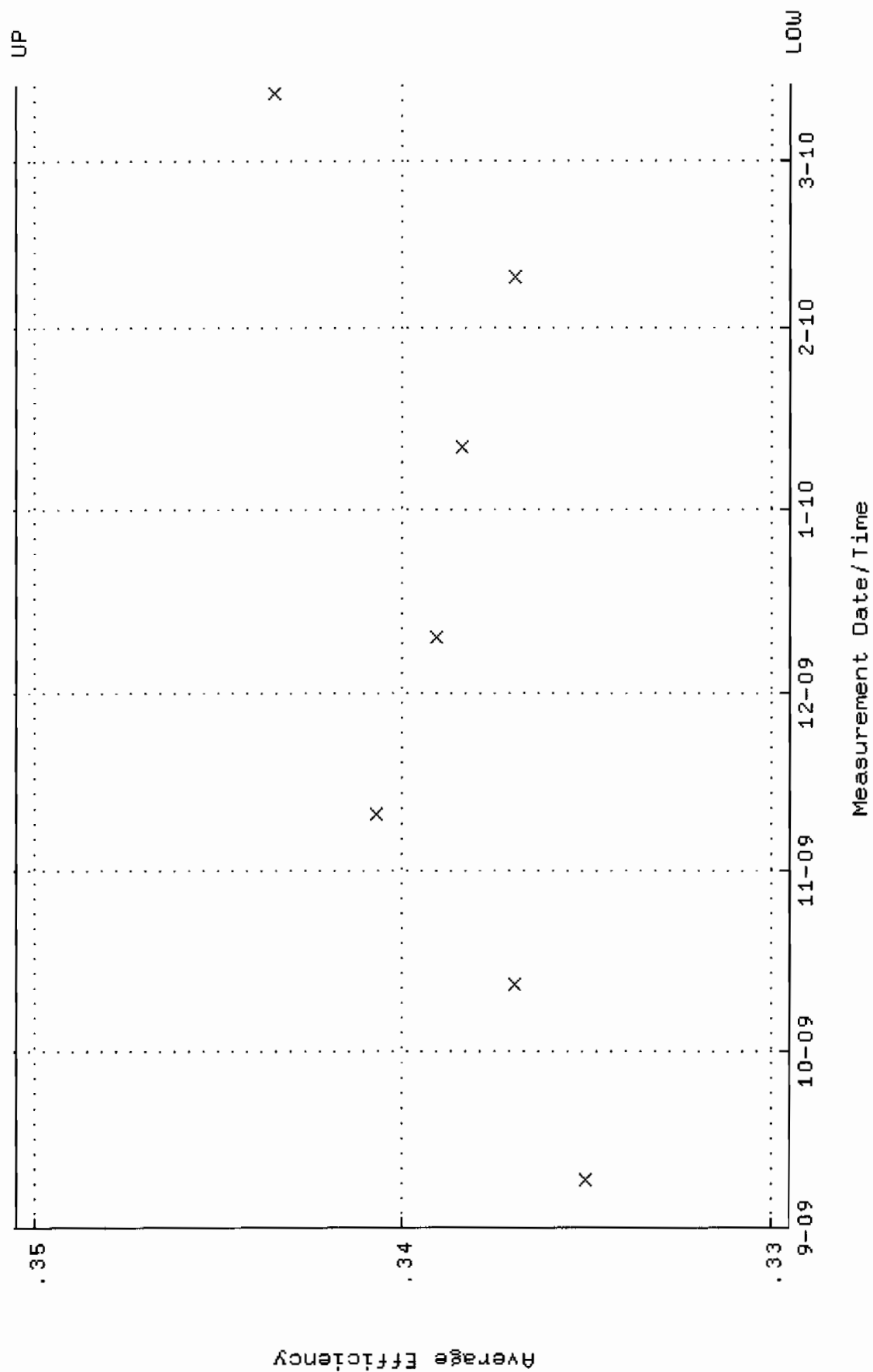
QA filename : DKA100:[ENV_ALPHA.QA.W]W076.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 10-SEP-2009 07:45:11 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.7306 through 94.6123



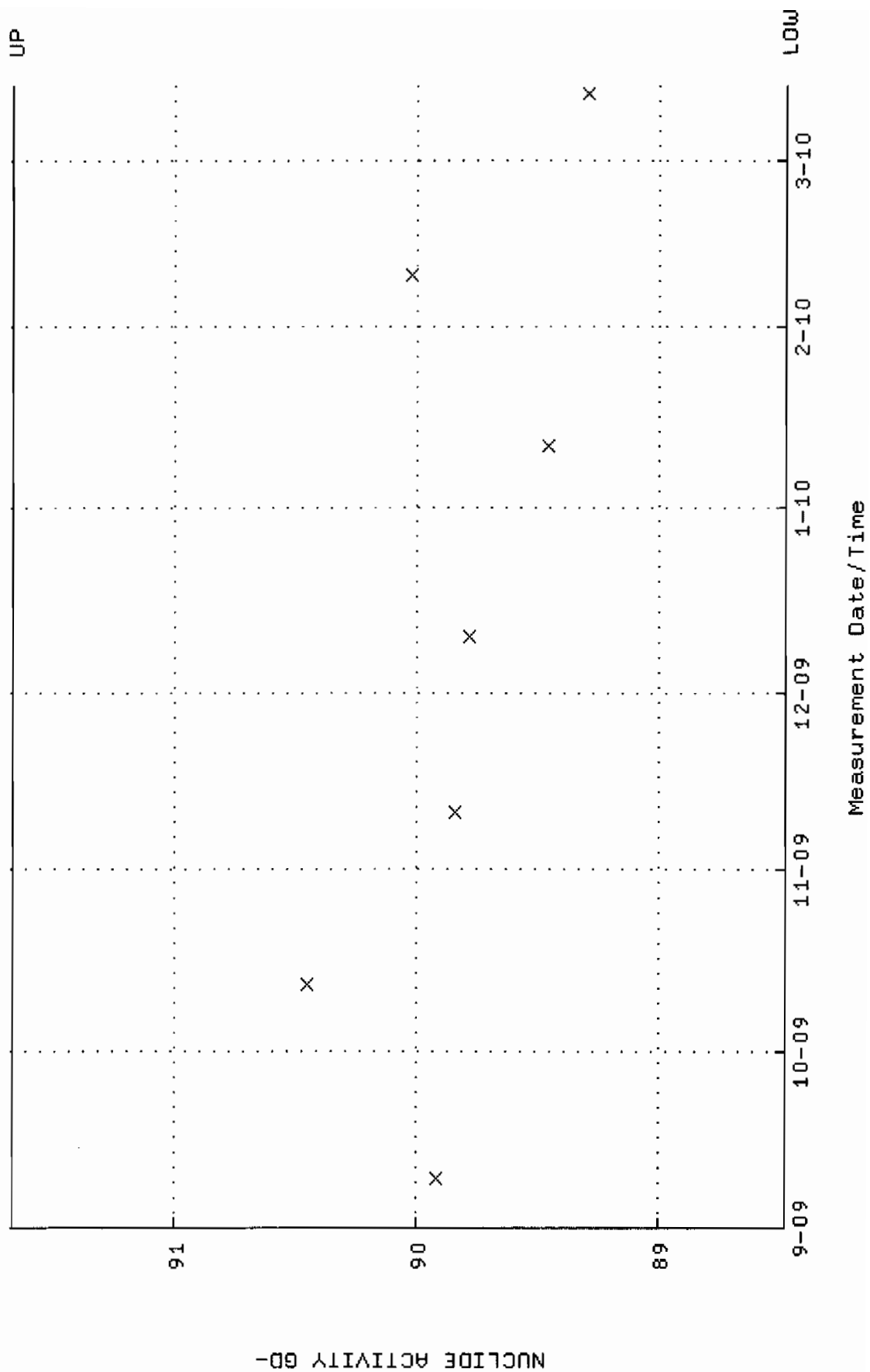
QA filename : DKA100:[ENV_ALPHA.QA.B]B076.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:07 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



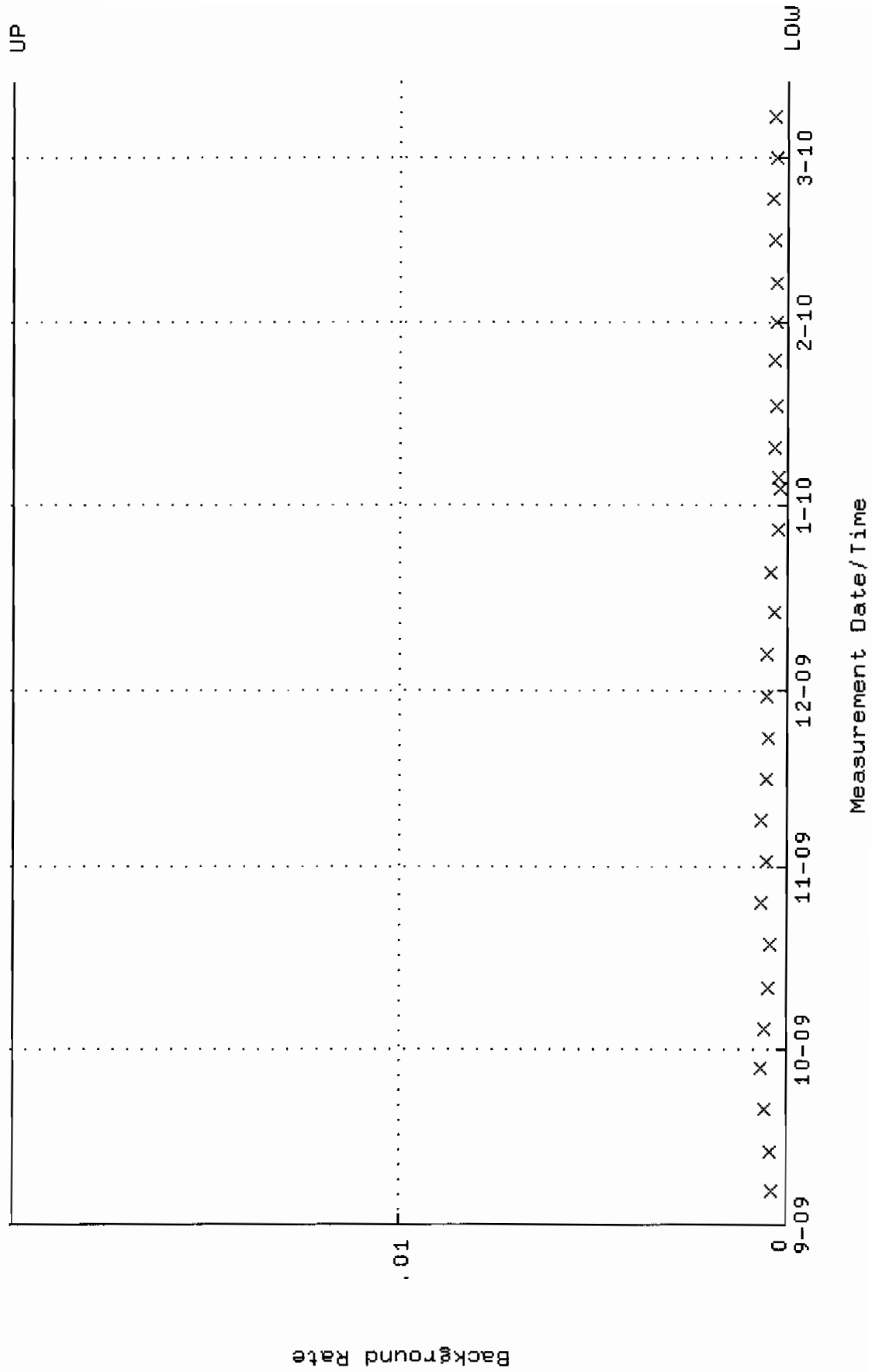
QA filename : DKA100:[ENV_ALPHA.QA.W]W084.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.329490 through 0.350492



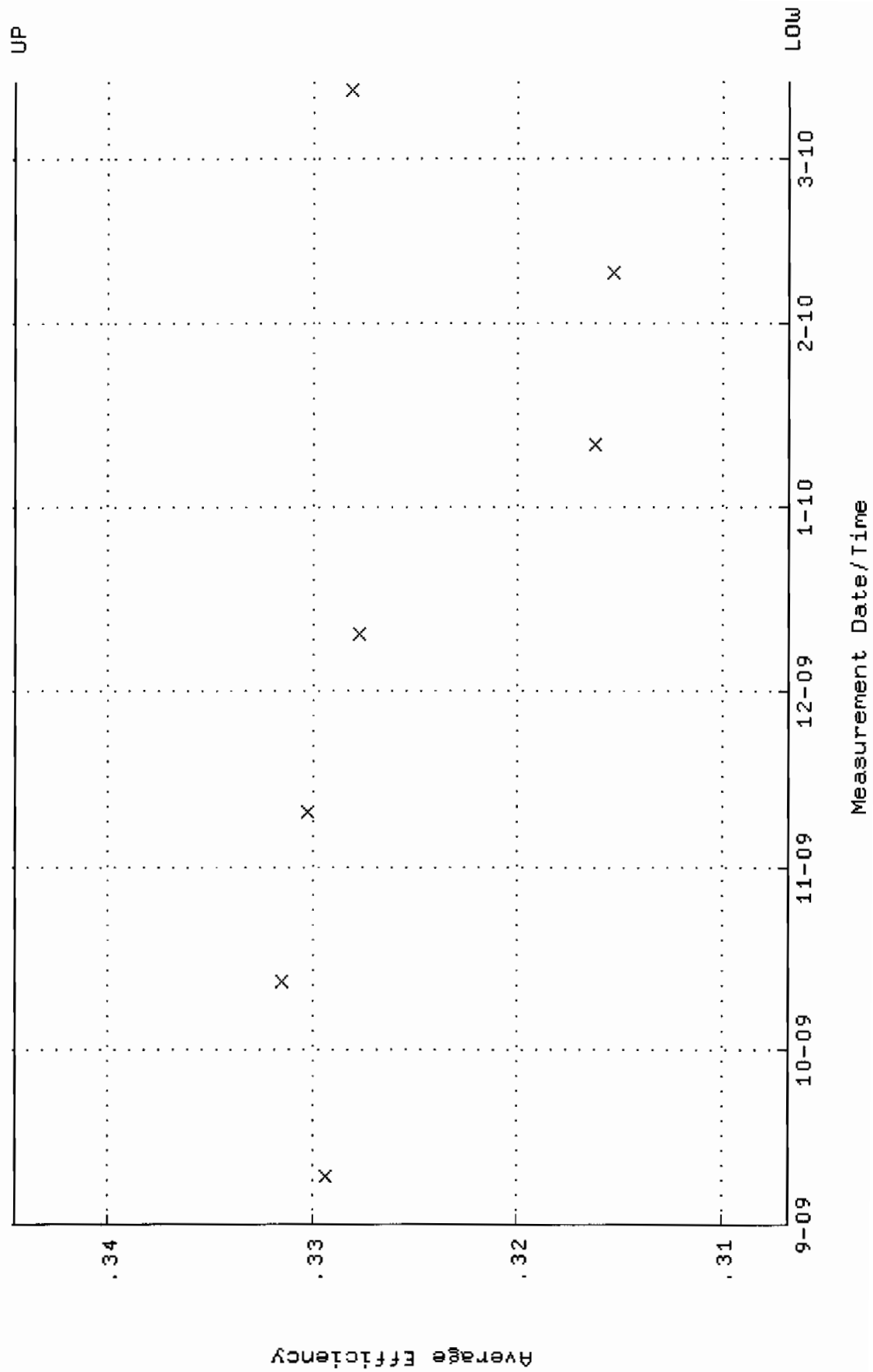
QA filename : DKA100:[ENV_ALPHA.QA.W]W084.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.4771 through 91.6651



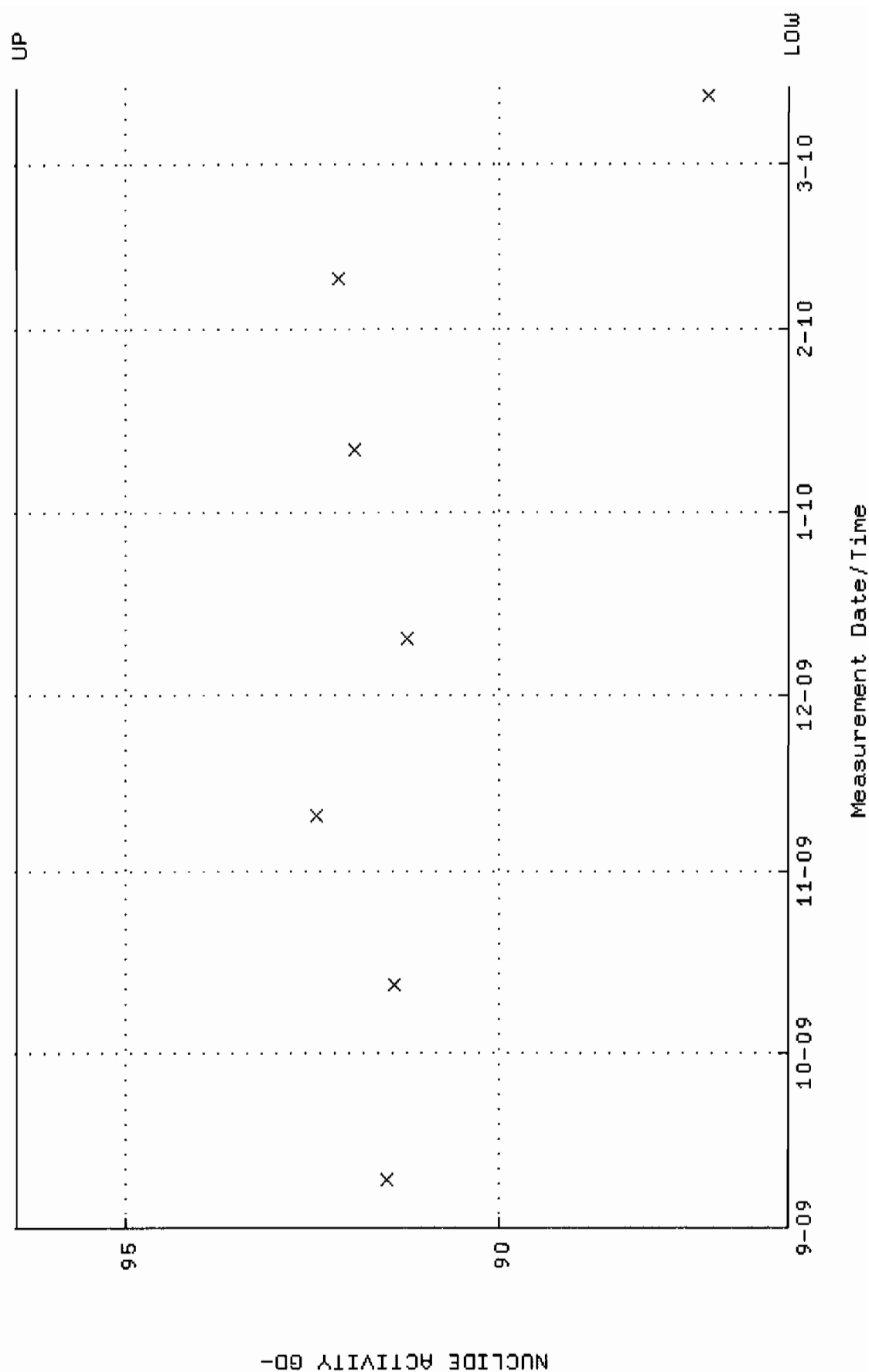
QA filename : DKA100:[ENV_ALPHA.QA.B]B084.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W085.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.306815 through 0.344543



QA filename : DKA100:[ENV_ALPHA.QA.W]W085.QAF;6
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.1313 through 96.4525

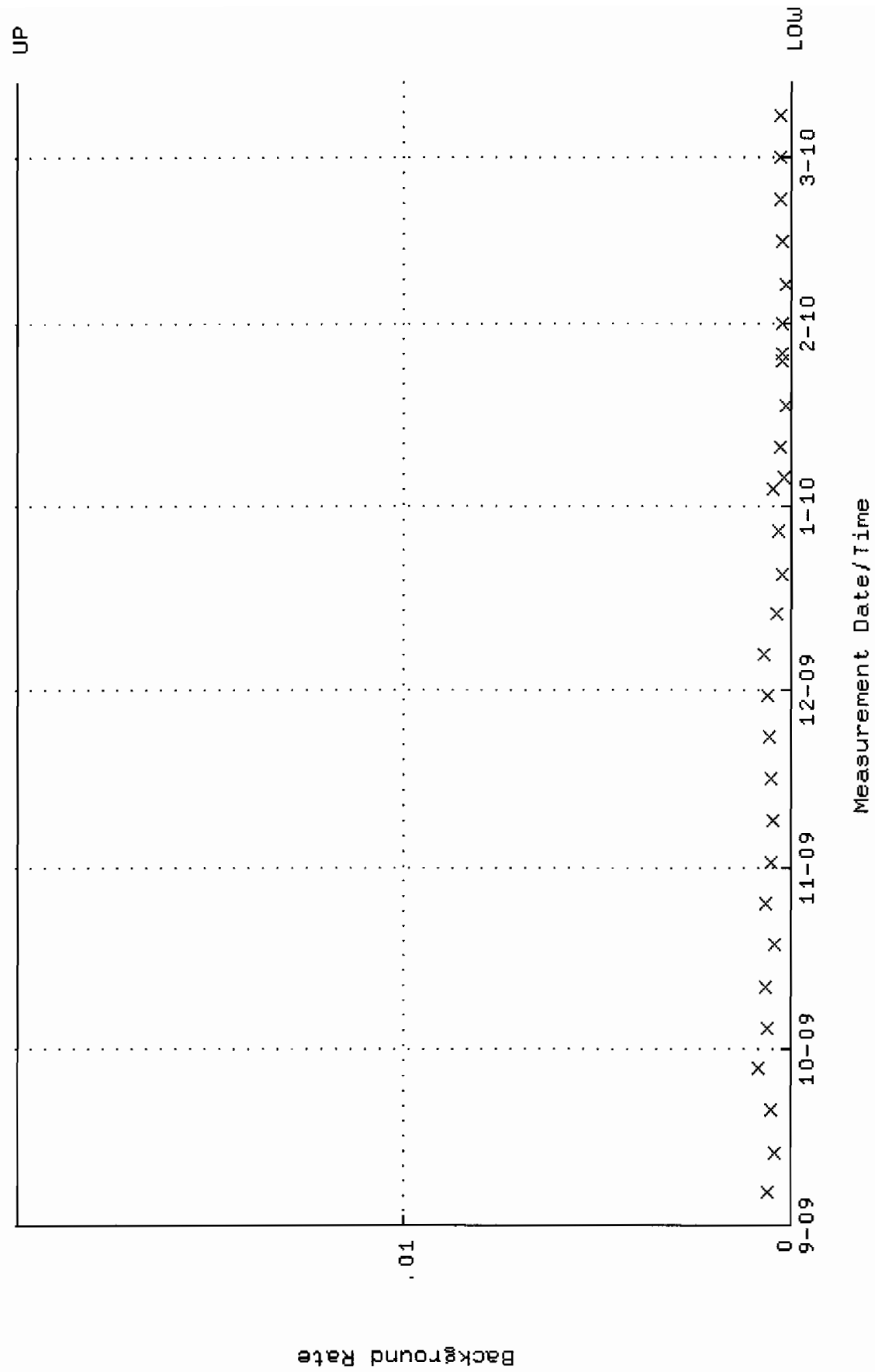


QA filename : DKA100:[ENV_ALPHA.QA.B]B085.QAF;2

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

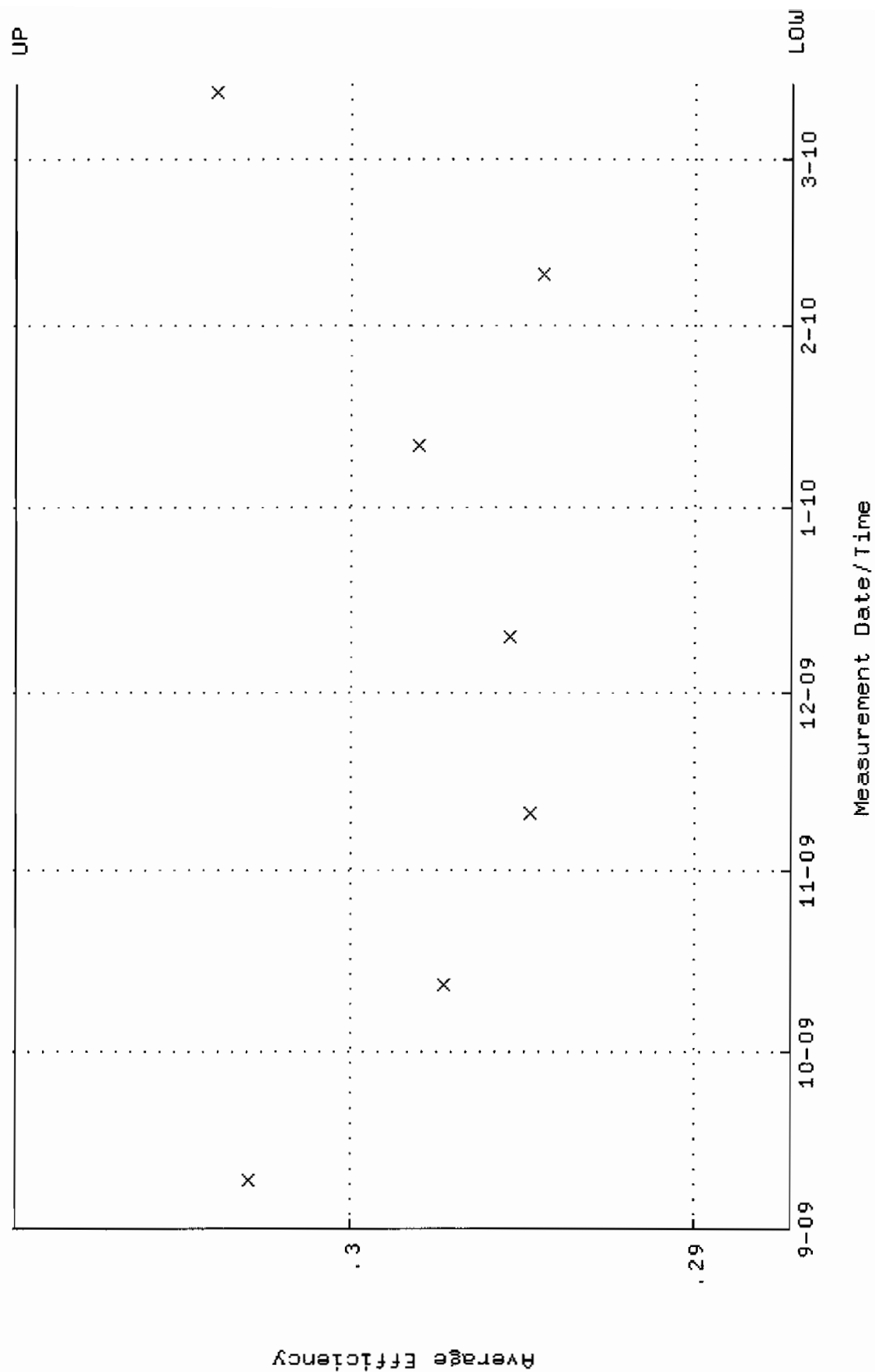


QA filename : DKA100:[ENV_ALPHA.QA.W]W086.QAF;4

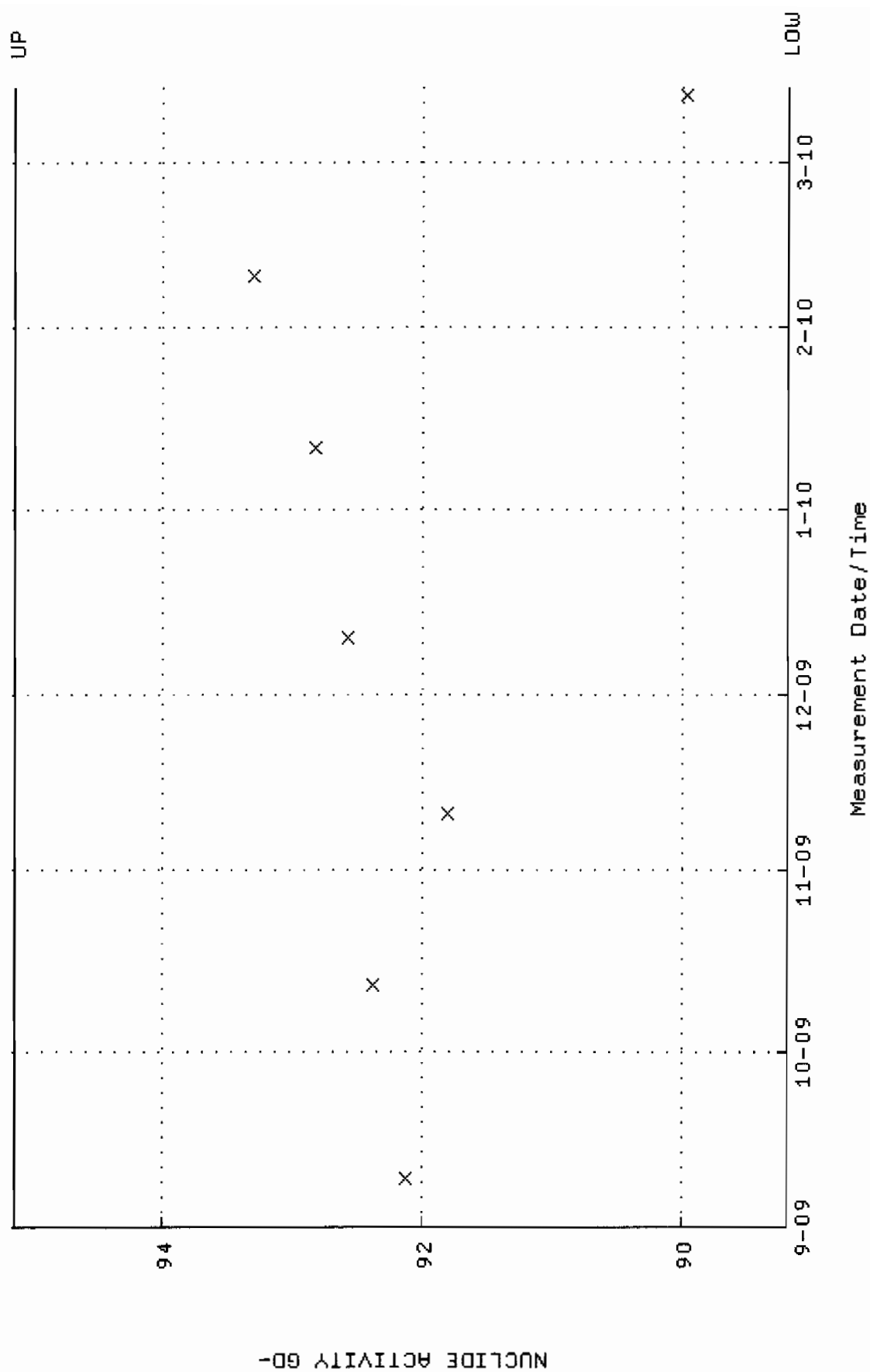
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00

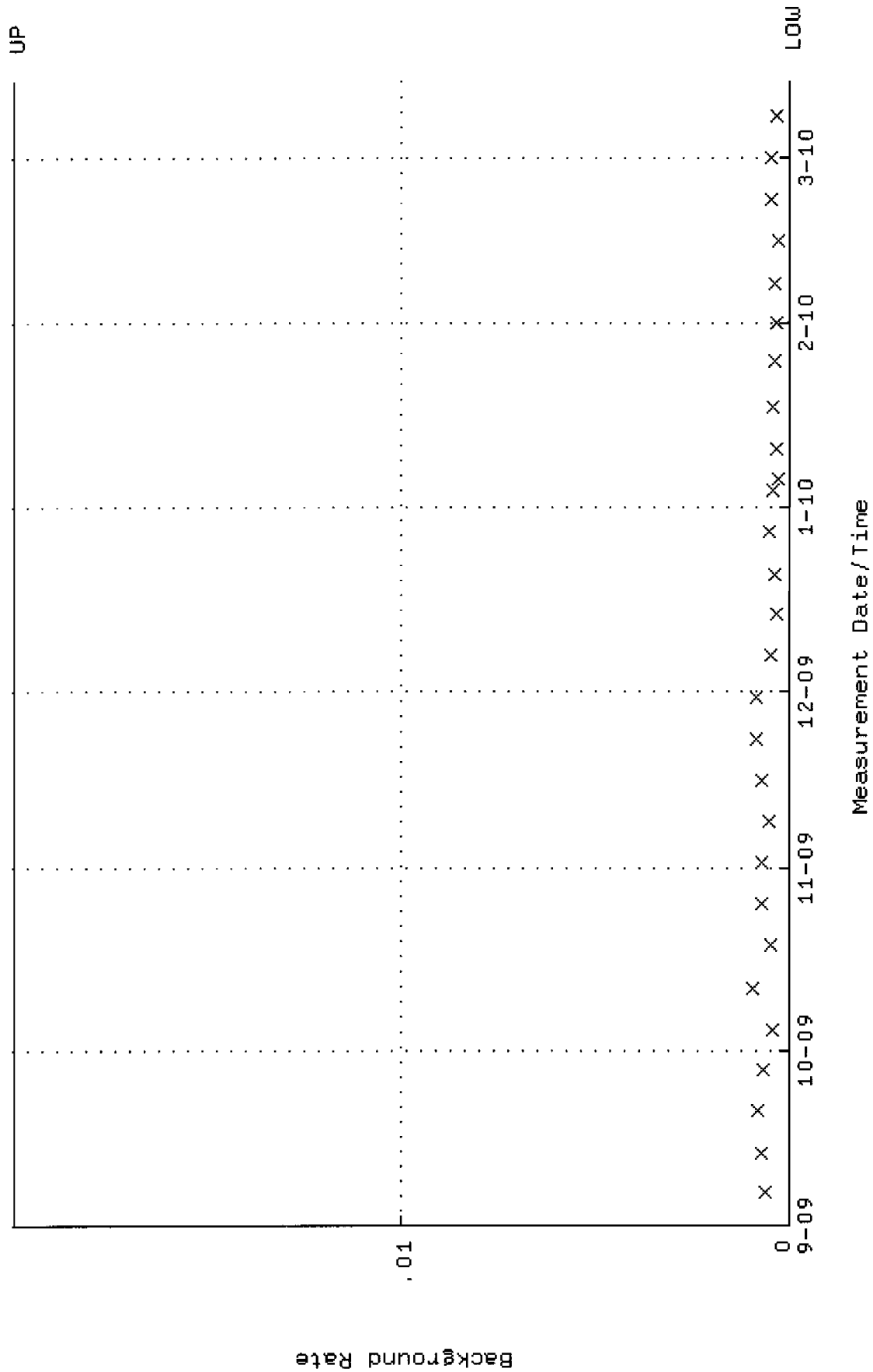
Lower/Upper Lmts: 0.287158 through 0.309794



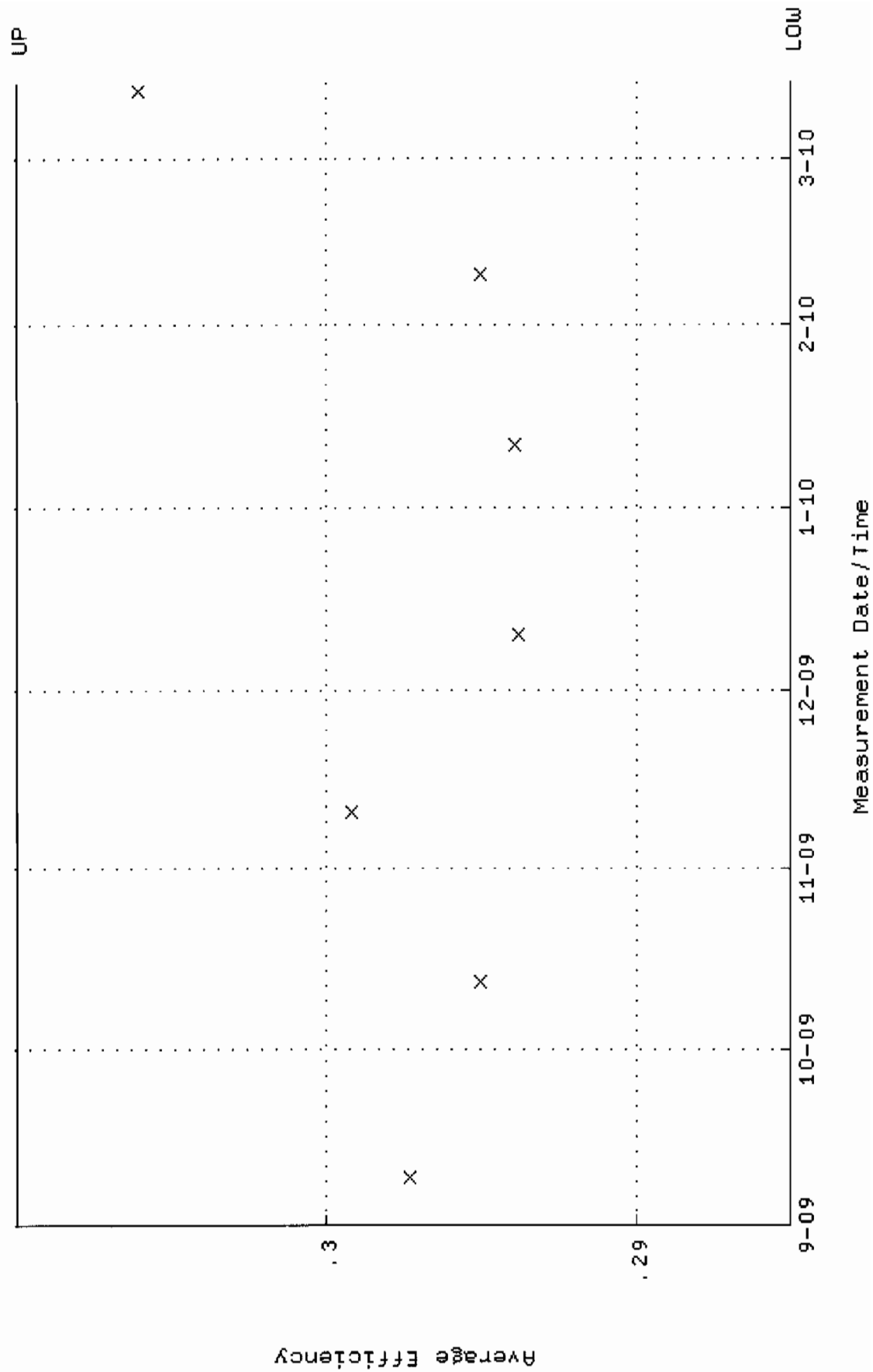
QA filename : DKA100:[ENV_ALPHA.QA.W]W086.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-SEP-2009 09:27:48 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.1886 through 95.1274



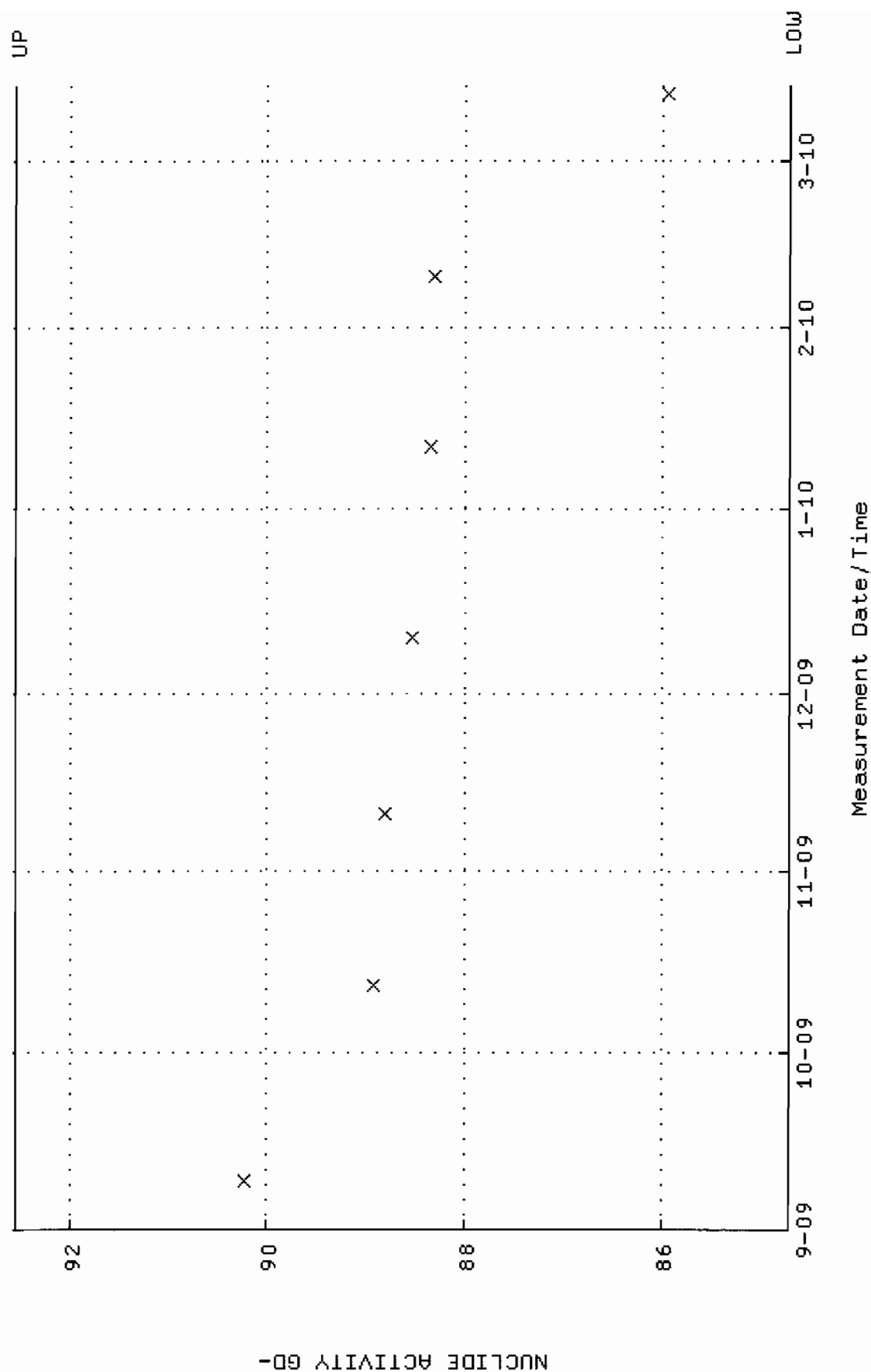
QA filename : DKA100:[ENV-ALPHA.QA.B]B086.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:09 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



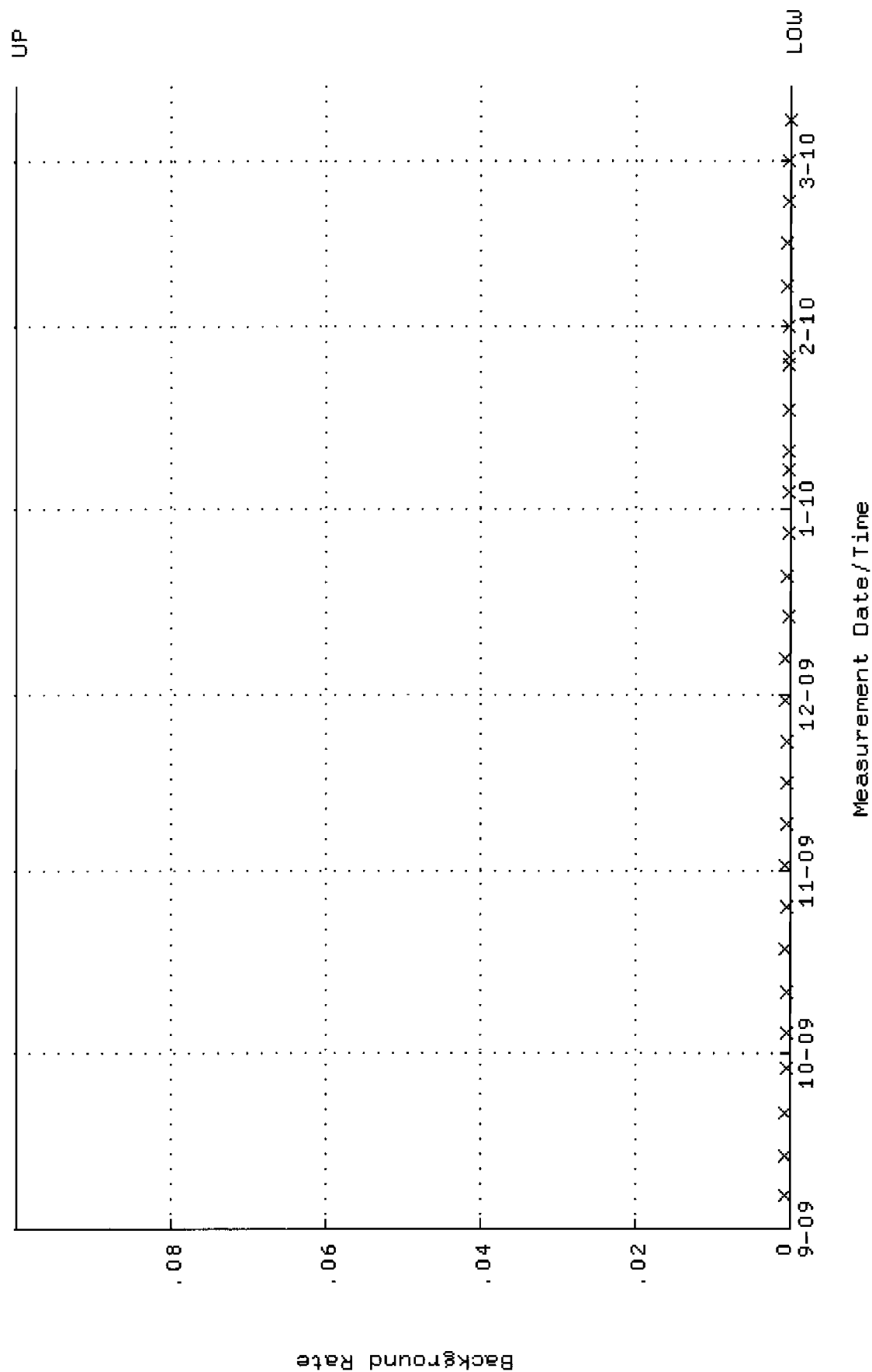
QA filename : DKA100:[ENV_ALPHA.QA.W]W089.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-SEP-2009 09:27:49 through 13-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.285061 through 0.309915



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

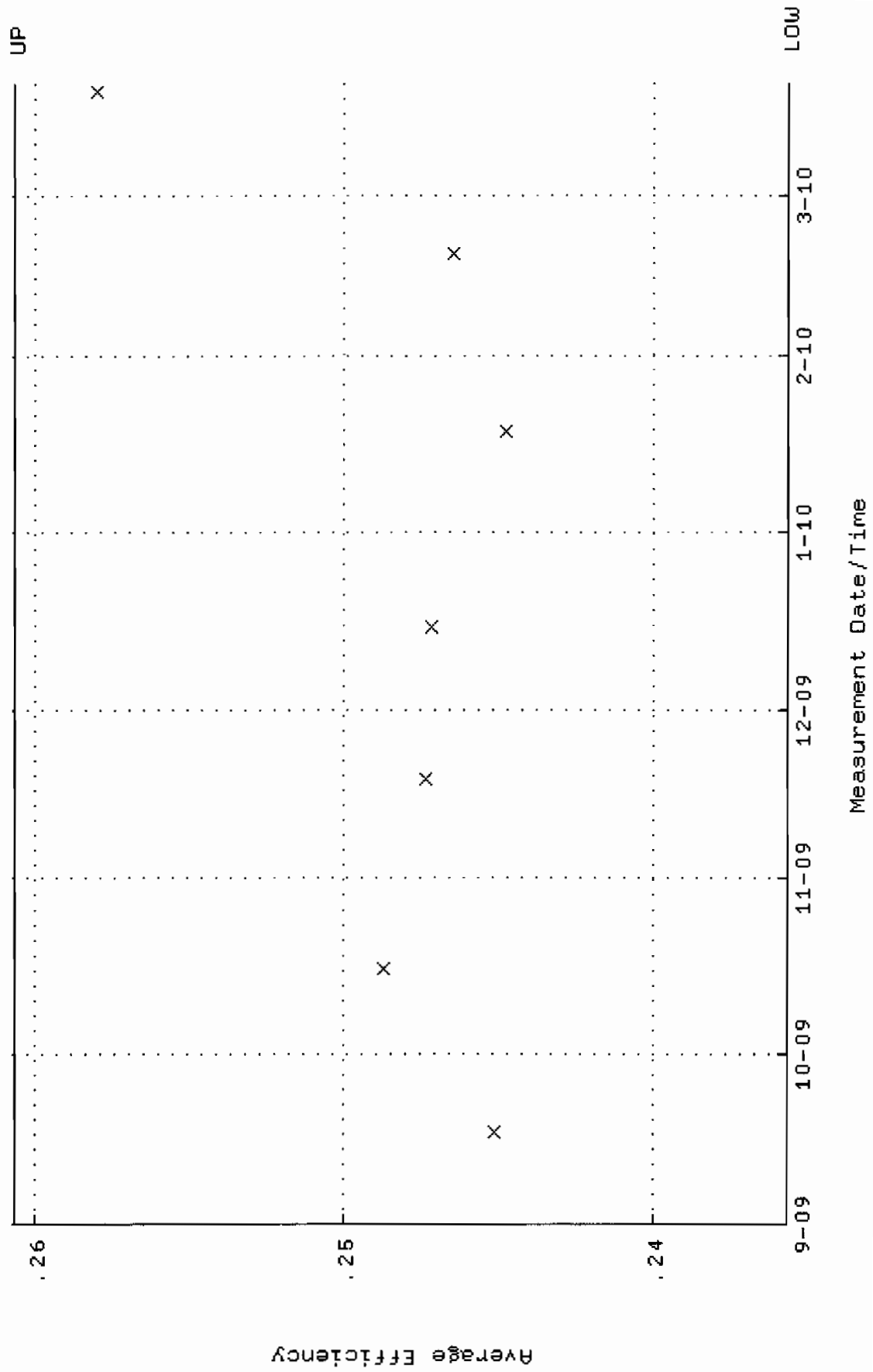


QA filename : DKA100:[ENV_ALPHA.QA.W]W121.QAF;1

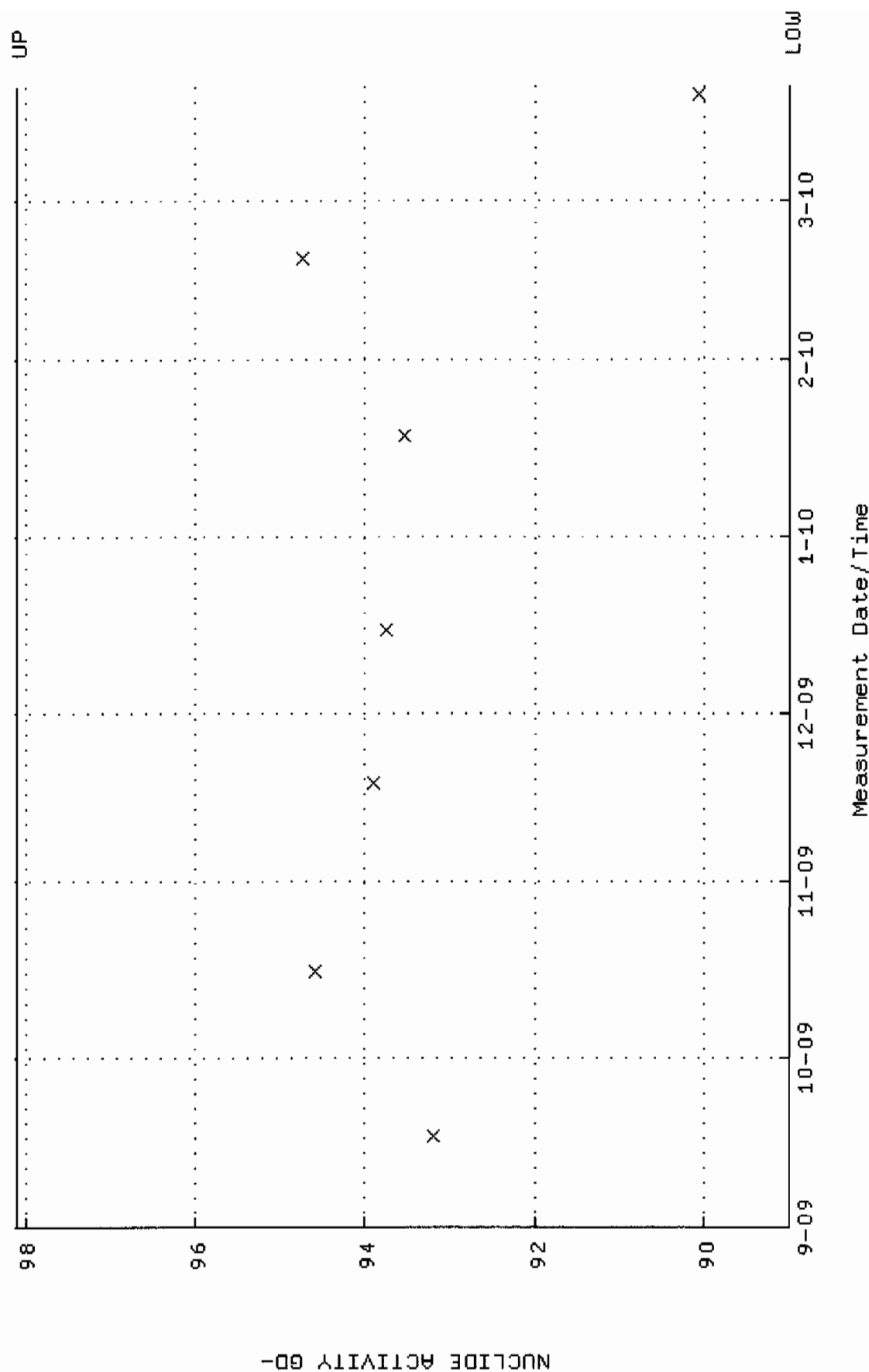
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-SEP-2009 07:23:26 through 20-MAR-2010 12:00:00

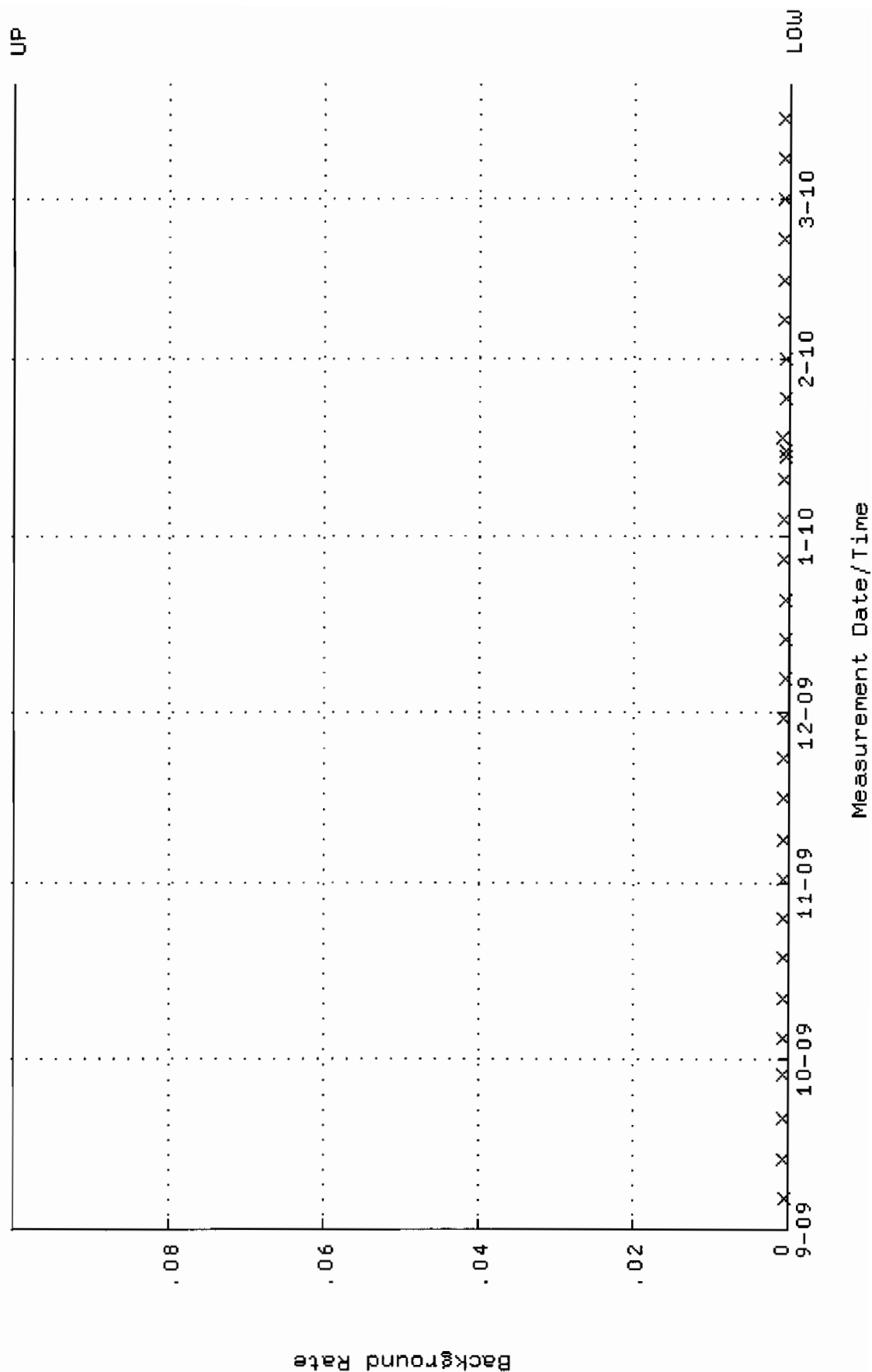
Lower/Upper Lmts: 0.235679 through 0.260639



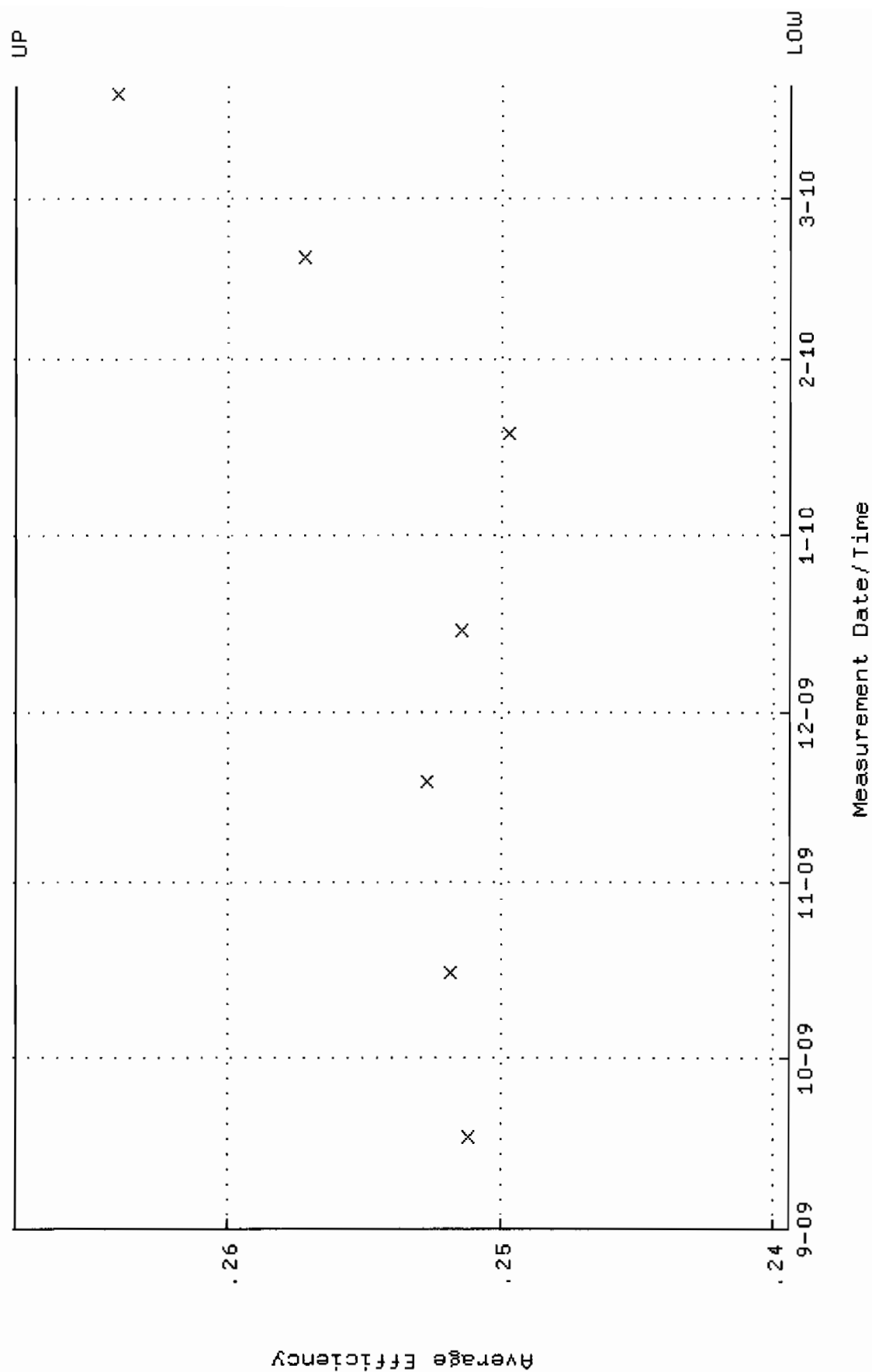
QA filename : DKA100:[ENV_ALPHA.QA.W]W121.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:26 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.9962 through 98.1012



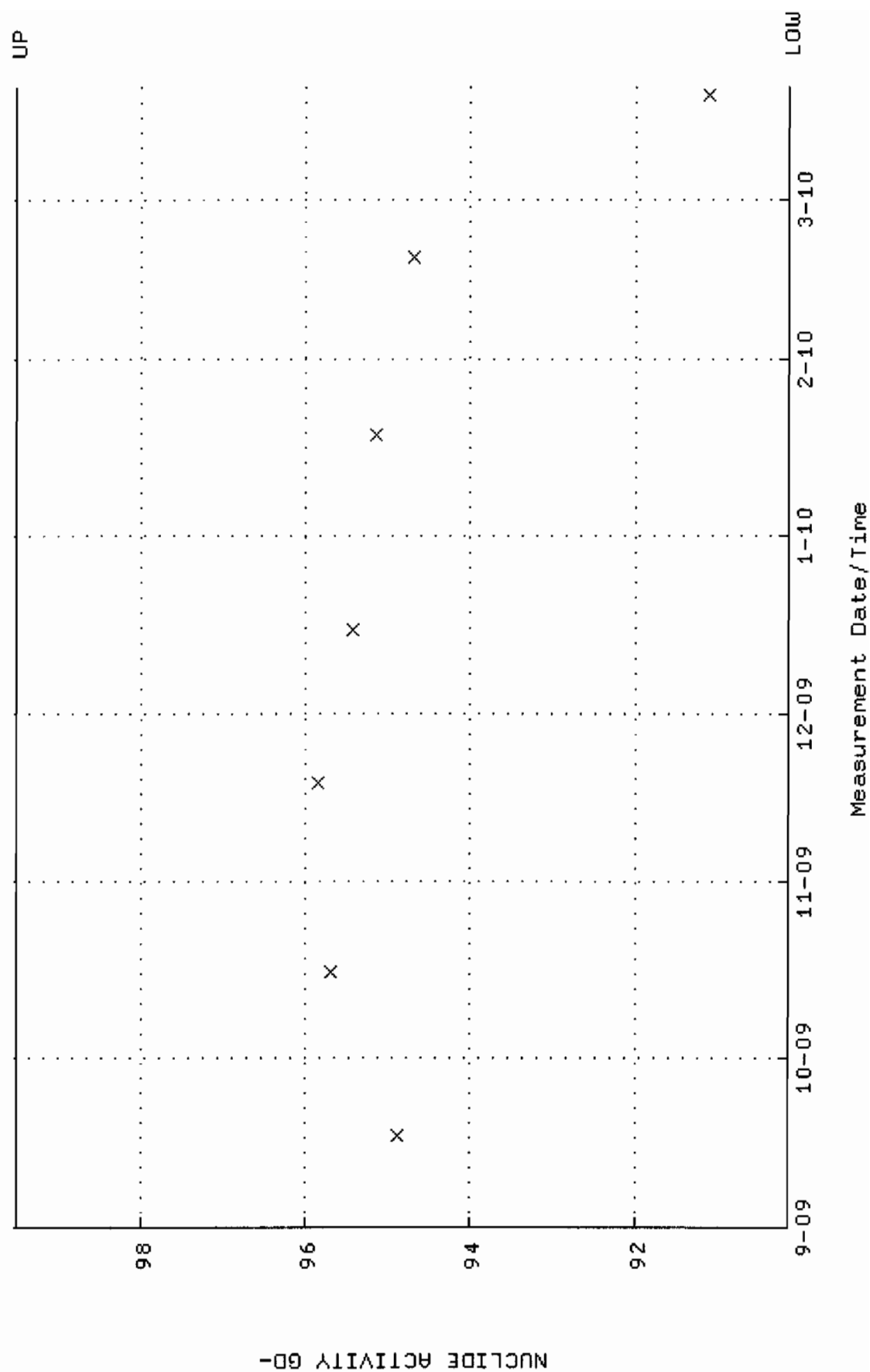
QA filename : DKA100:[ENV_ALPHA.QA.B]B121.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:43 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



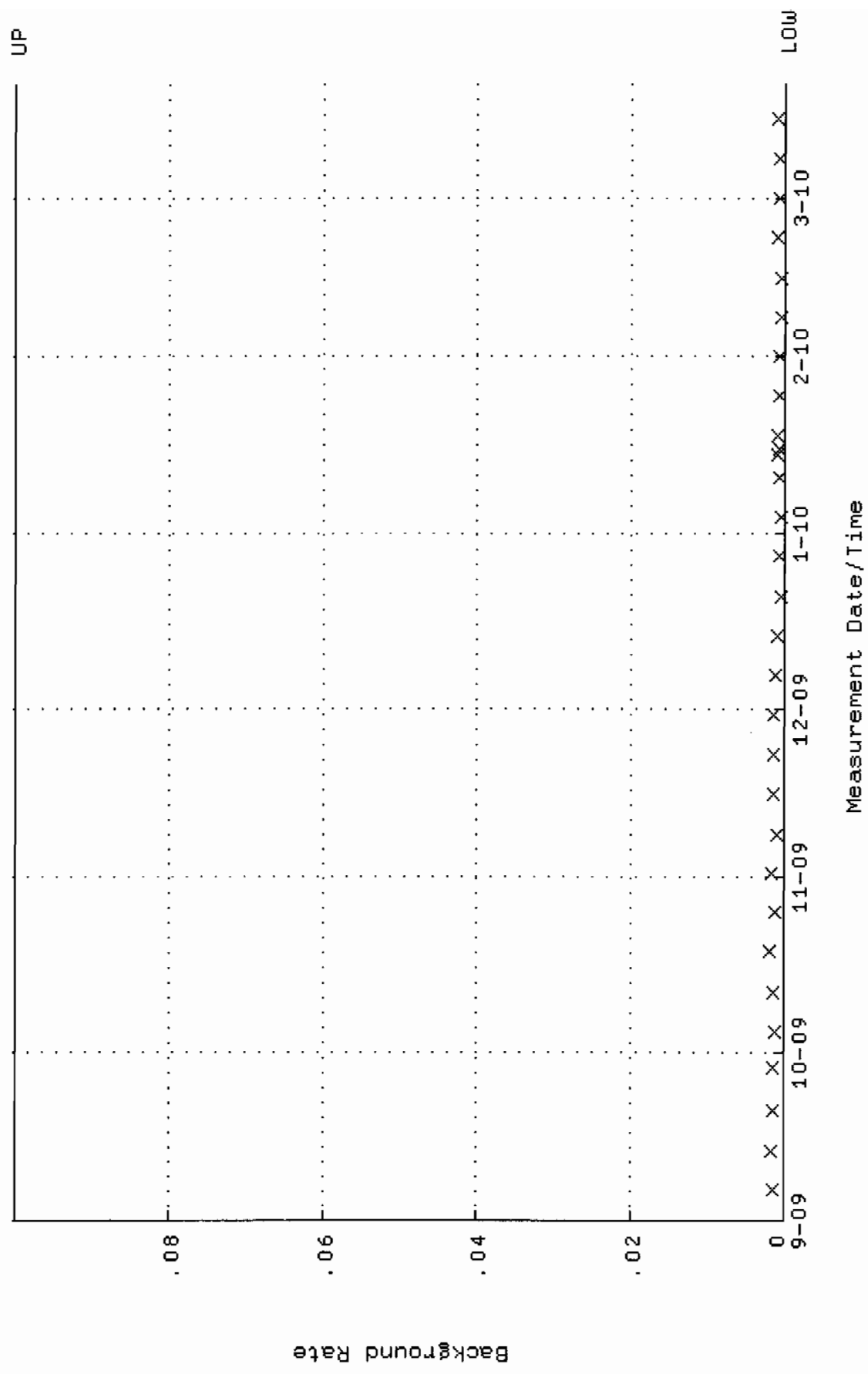
QA filename : DKA100:[ENV_ALPHA.QA.W]W122.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:33 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.239412 through 0.267828



QA filename : DKA100:[ENV_ALPHA.QA.W]W122.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:33 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 90.1506 through 99.5122



QA filename : DKA100:[ENV_ALPHA.QA.B]B122.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:48 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

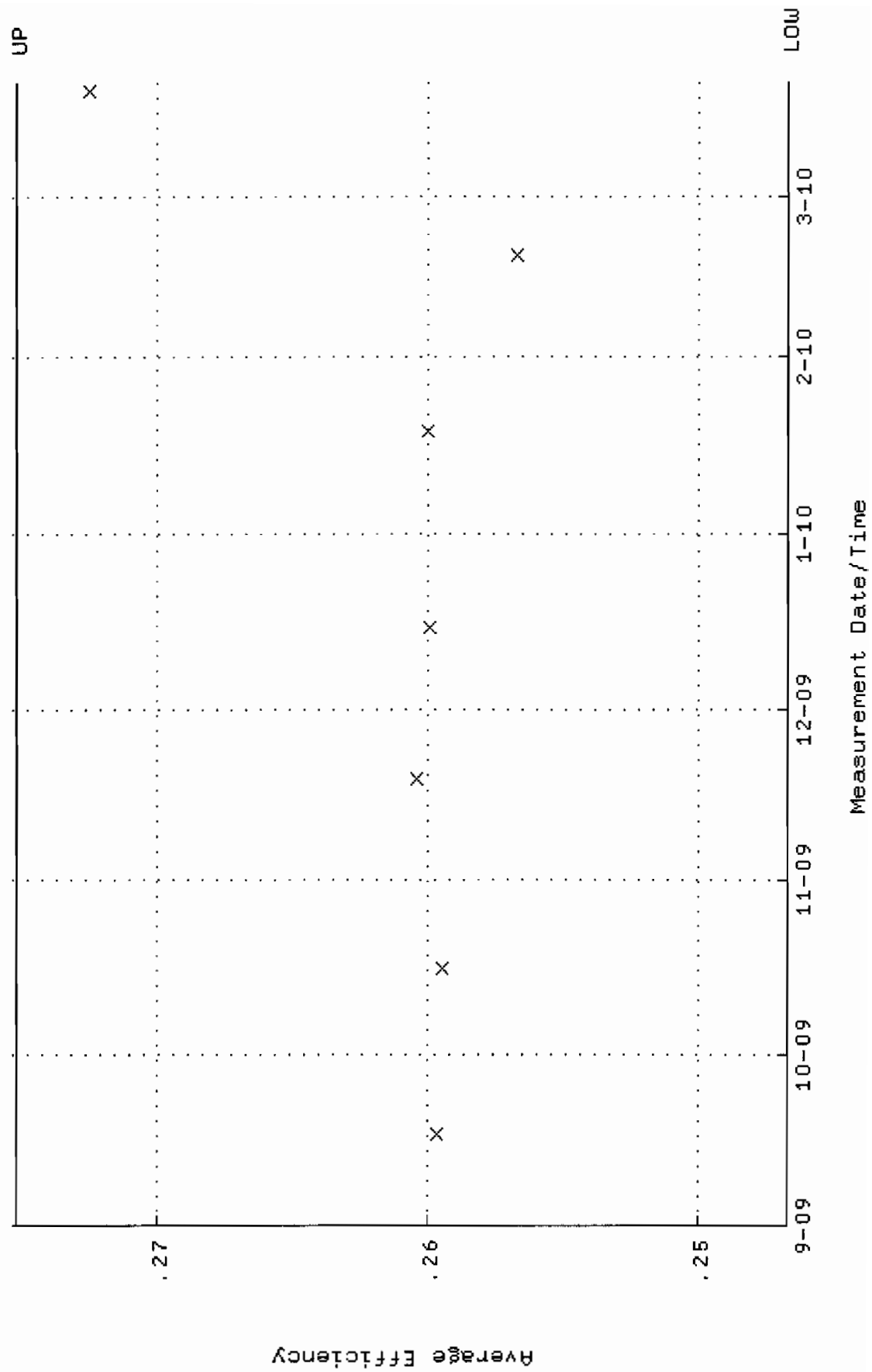


QA filename : DKA100:[ENV_ALPHA.QA.W]W123.QAF;1

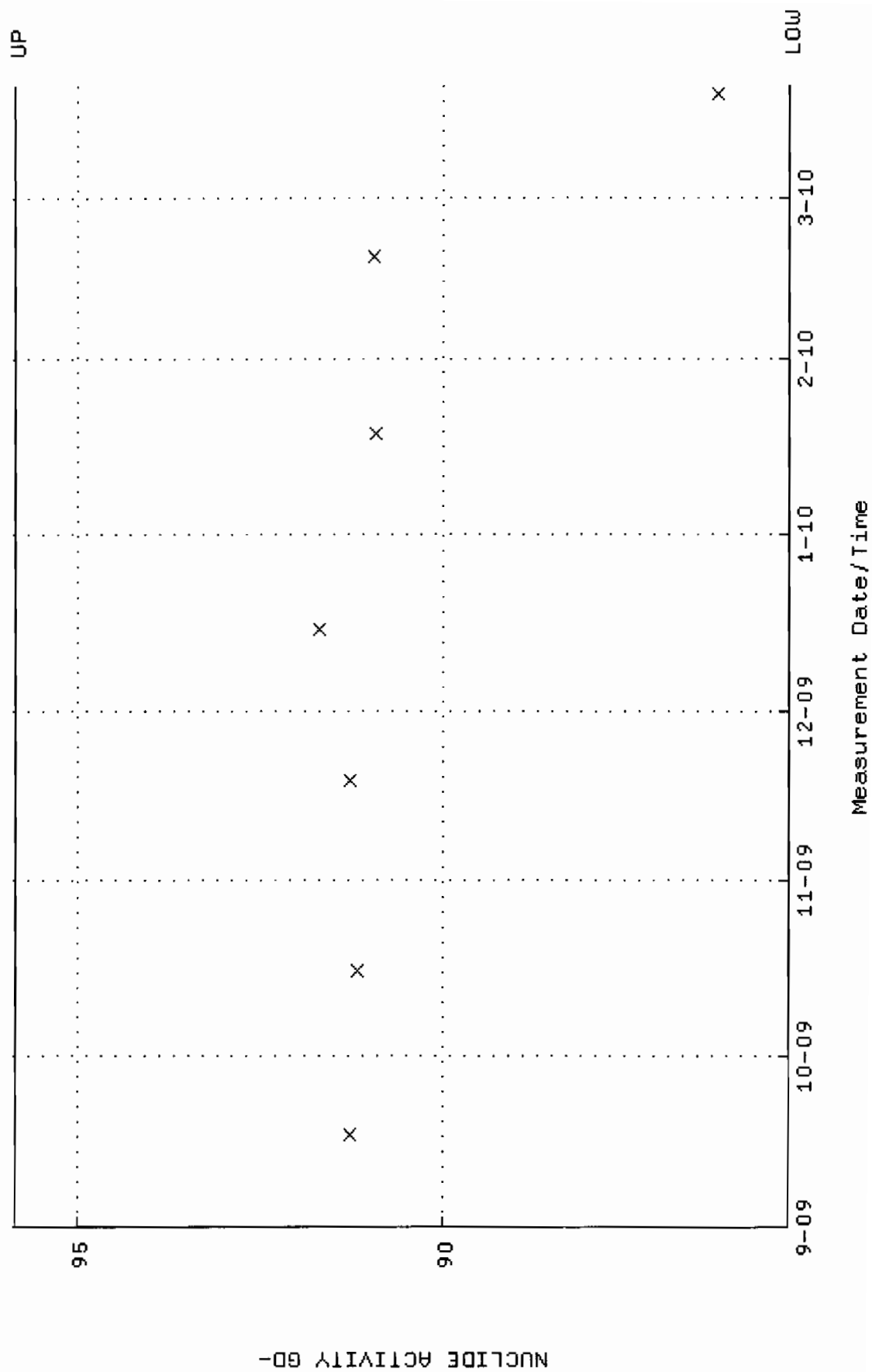
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-SEP-2009 07:23:40 through 20-MAR-2010 12:00:00

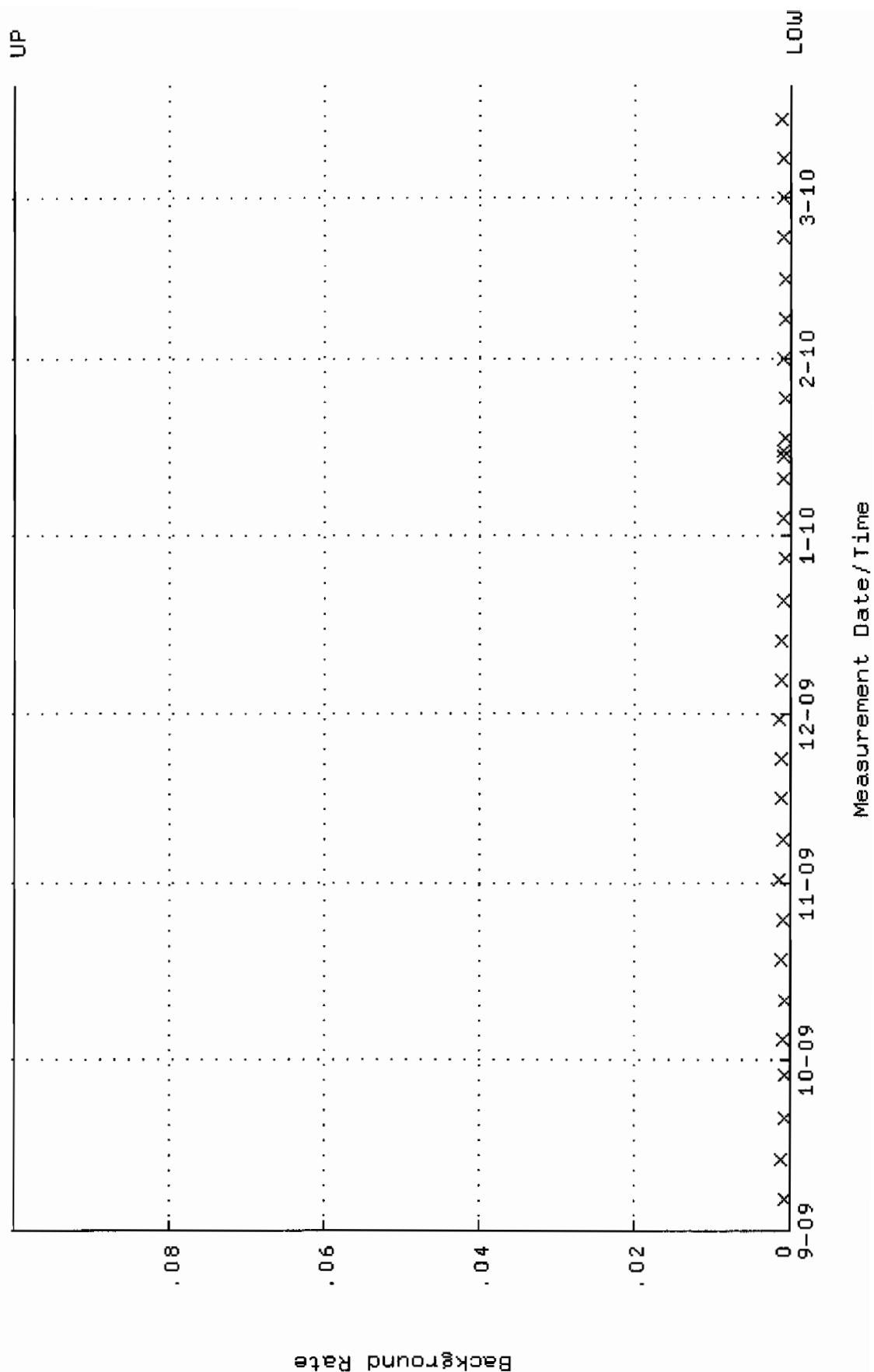
Lower/Upper Lmts: 0.246718 through 0.275204



QA filename : DKA100:[ENV_ALPHA.QA.W]w123.QAF;1
 Parameter Name : NLACTIVITY-GD148 (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

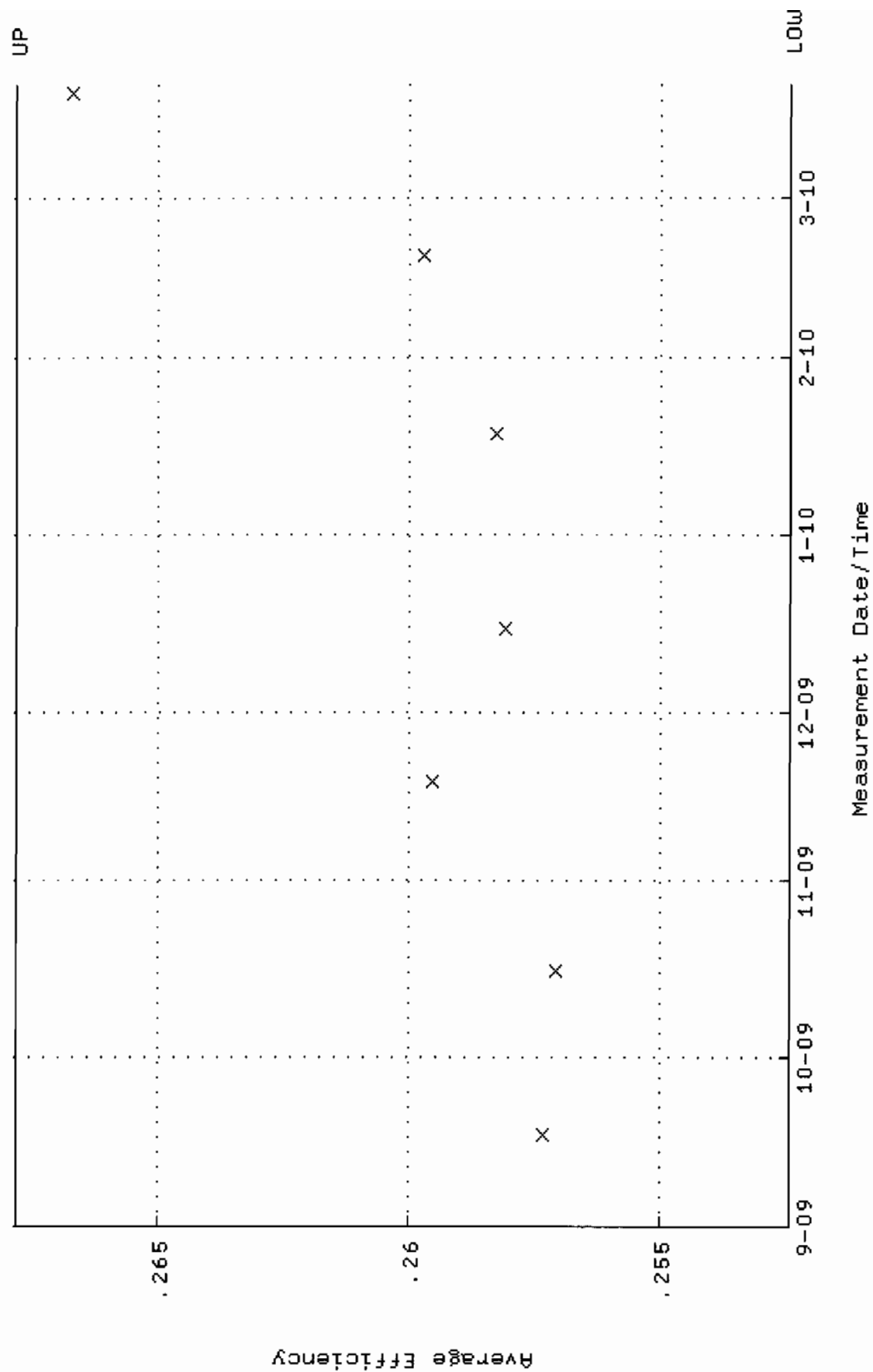


QA filename : DKA100:[ENV_ALPHA.QA.W]W124.QAF;1

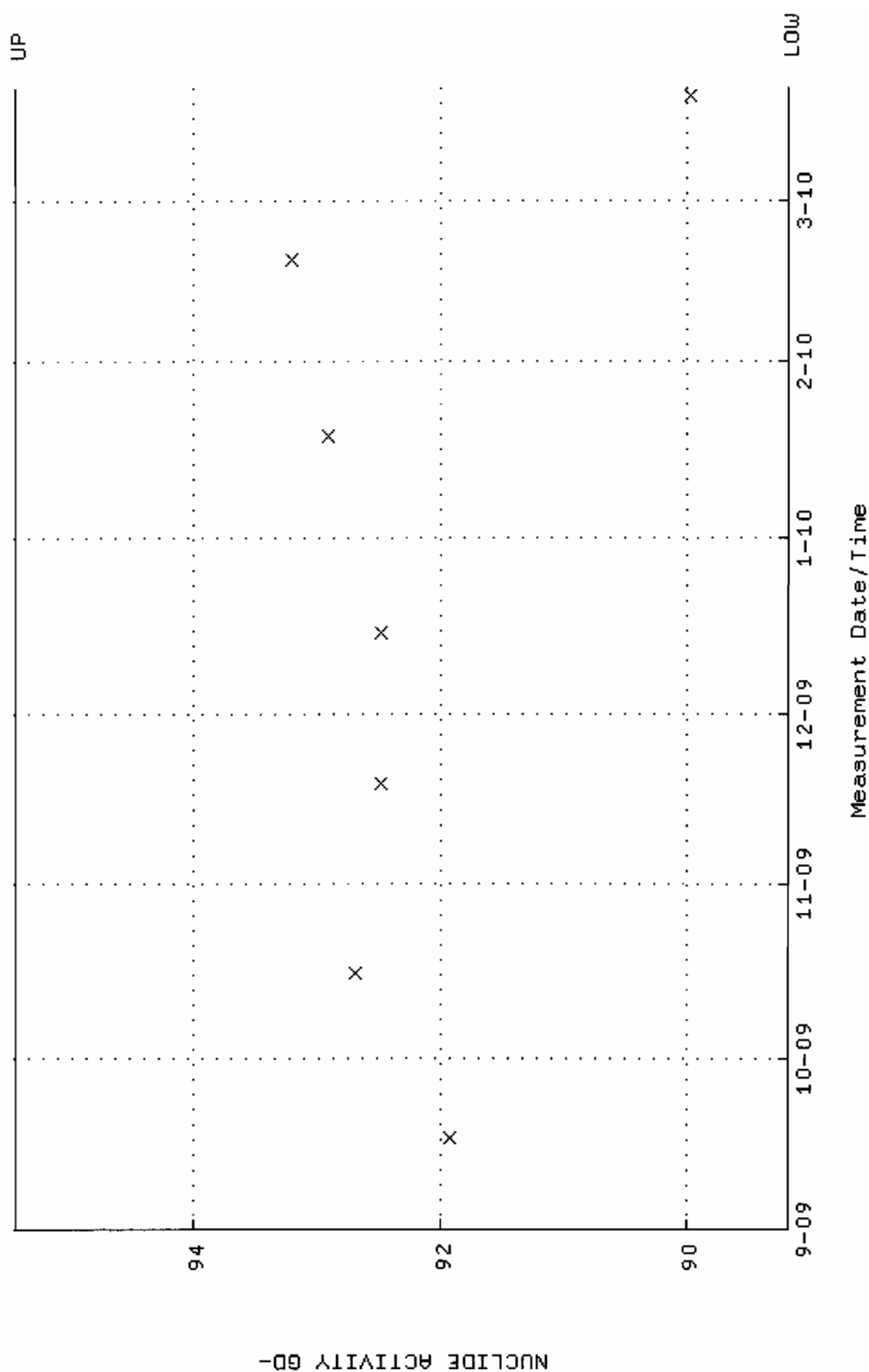
Parameter Name : AVRGEFF (Average Efficiency)

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 : NLAIVITY-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

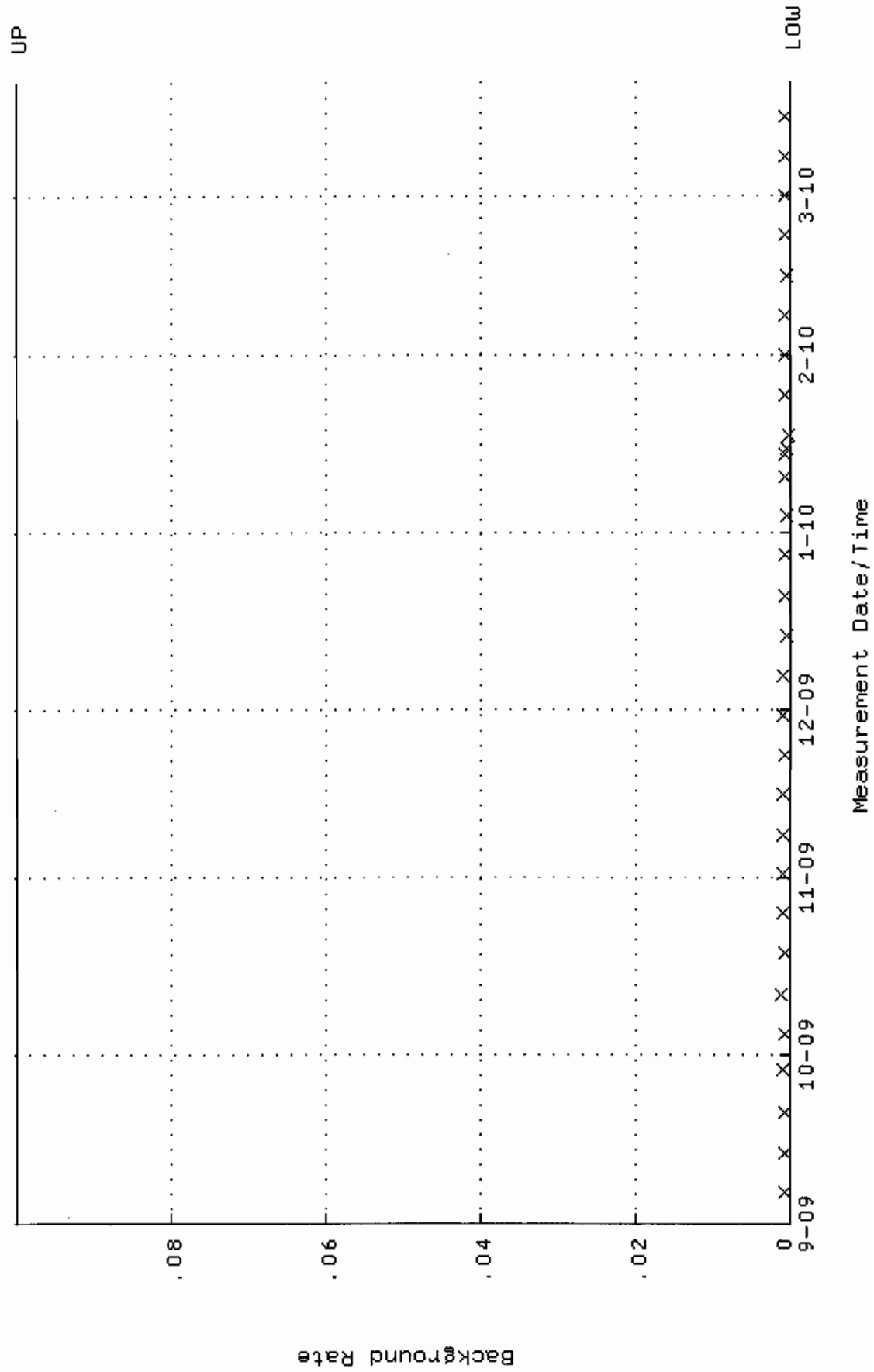


QA filename : DKA100:[ENV_ALPHA.QA.B]B124.QAF;1

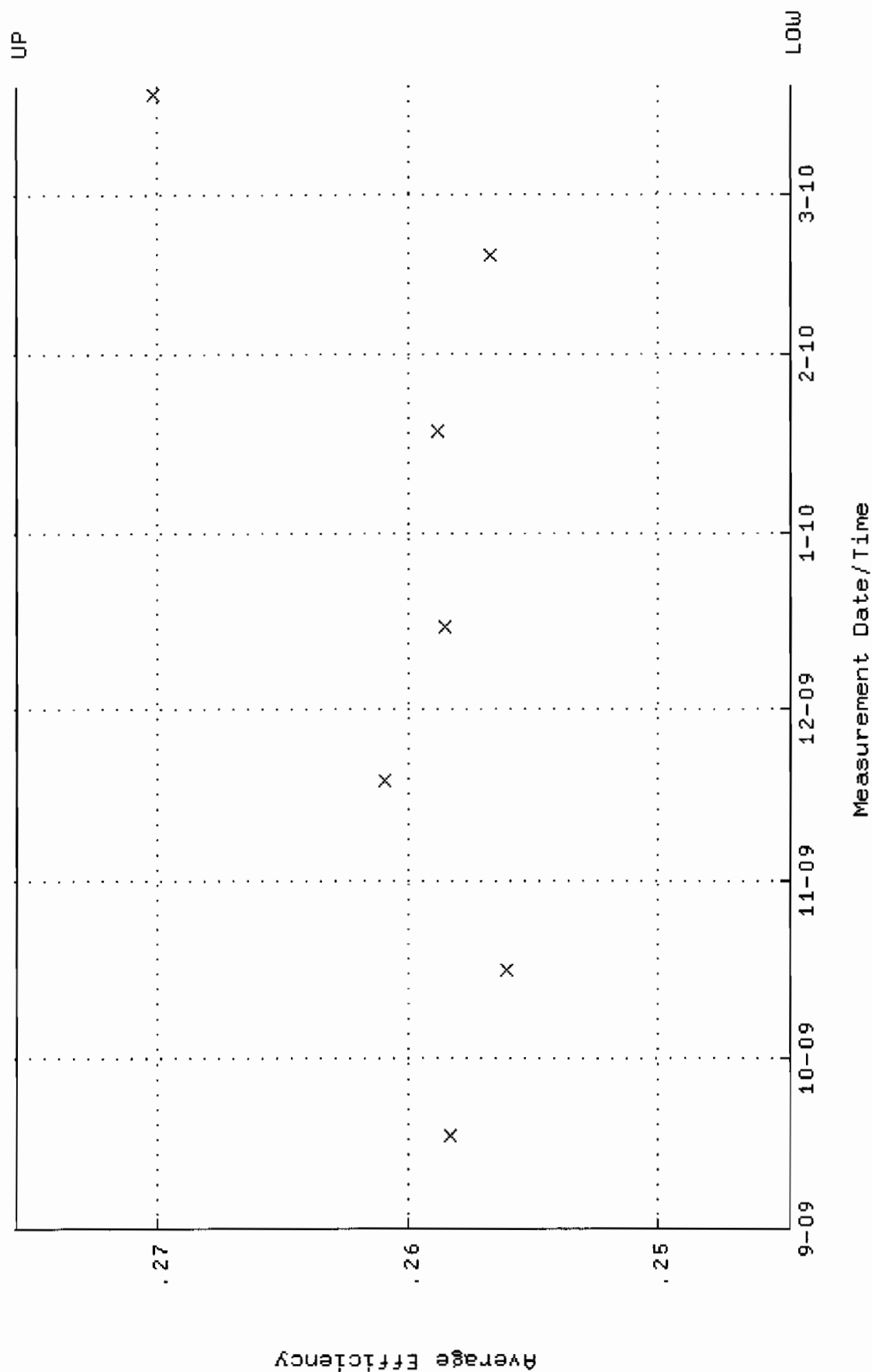
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:40:56 through 20-MAR-2010 12:00:00

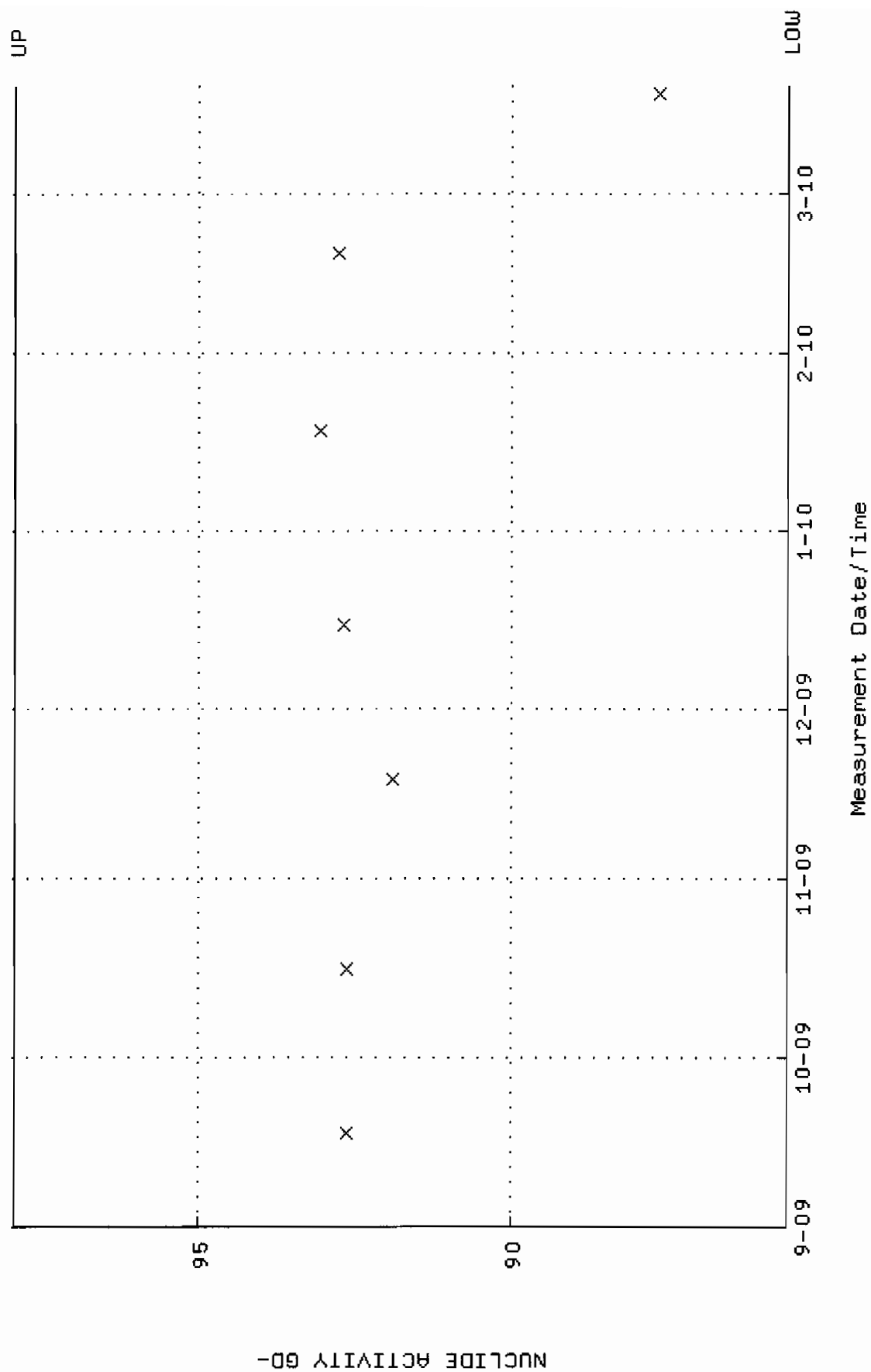
Lower/Upper Lmts: 0.000000E+00 through 0.100000



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 : NLAIVITY-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

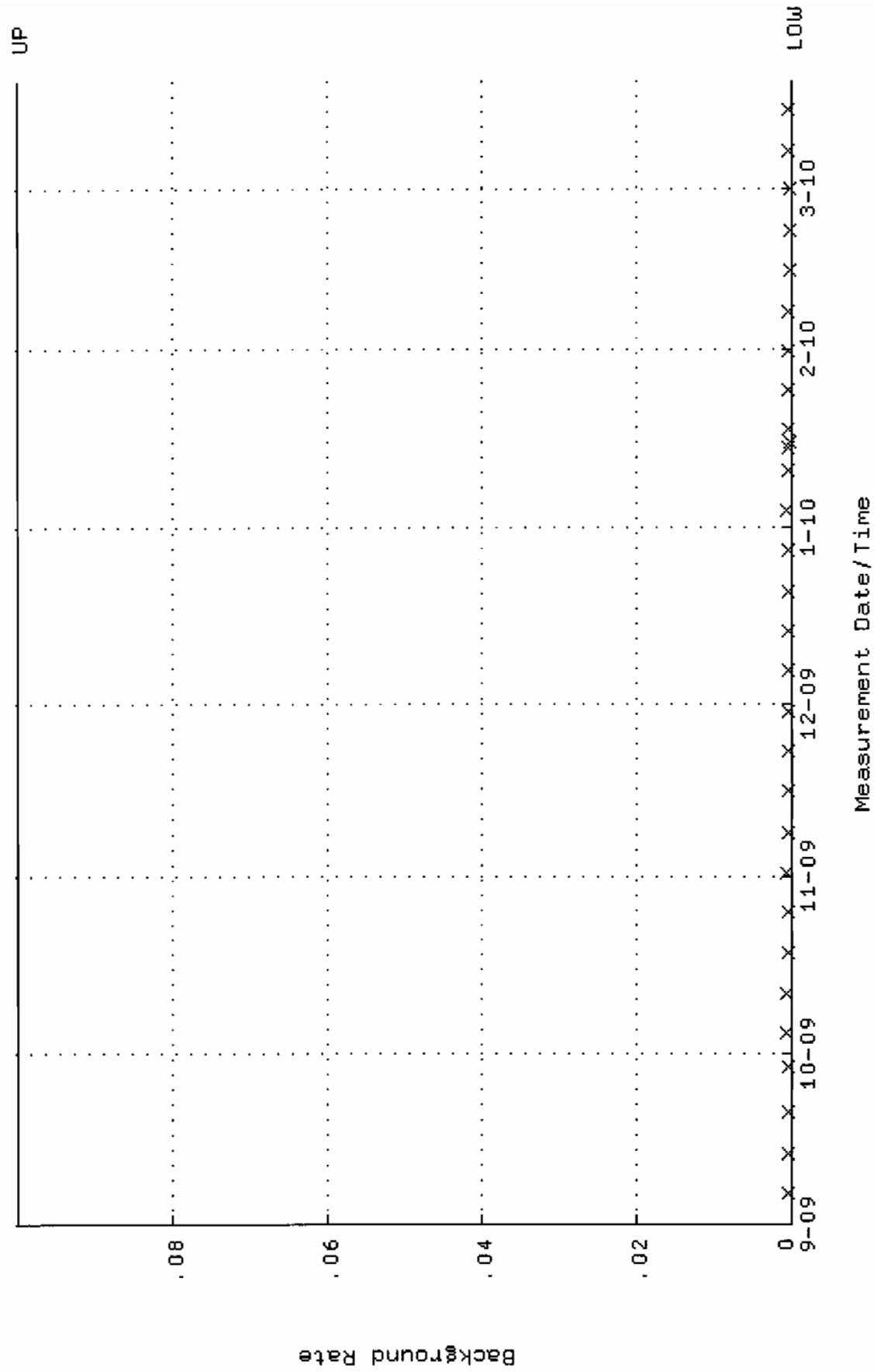


QA filename : DKA100:[ENV_ALPHA.QA.B]B125.QAF;1

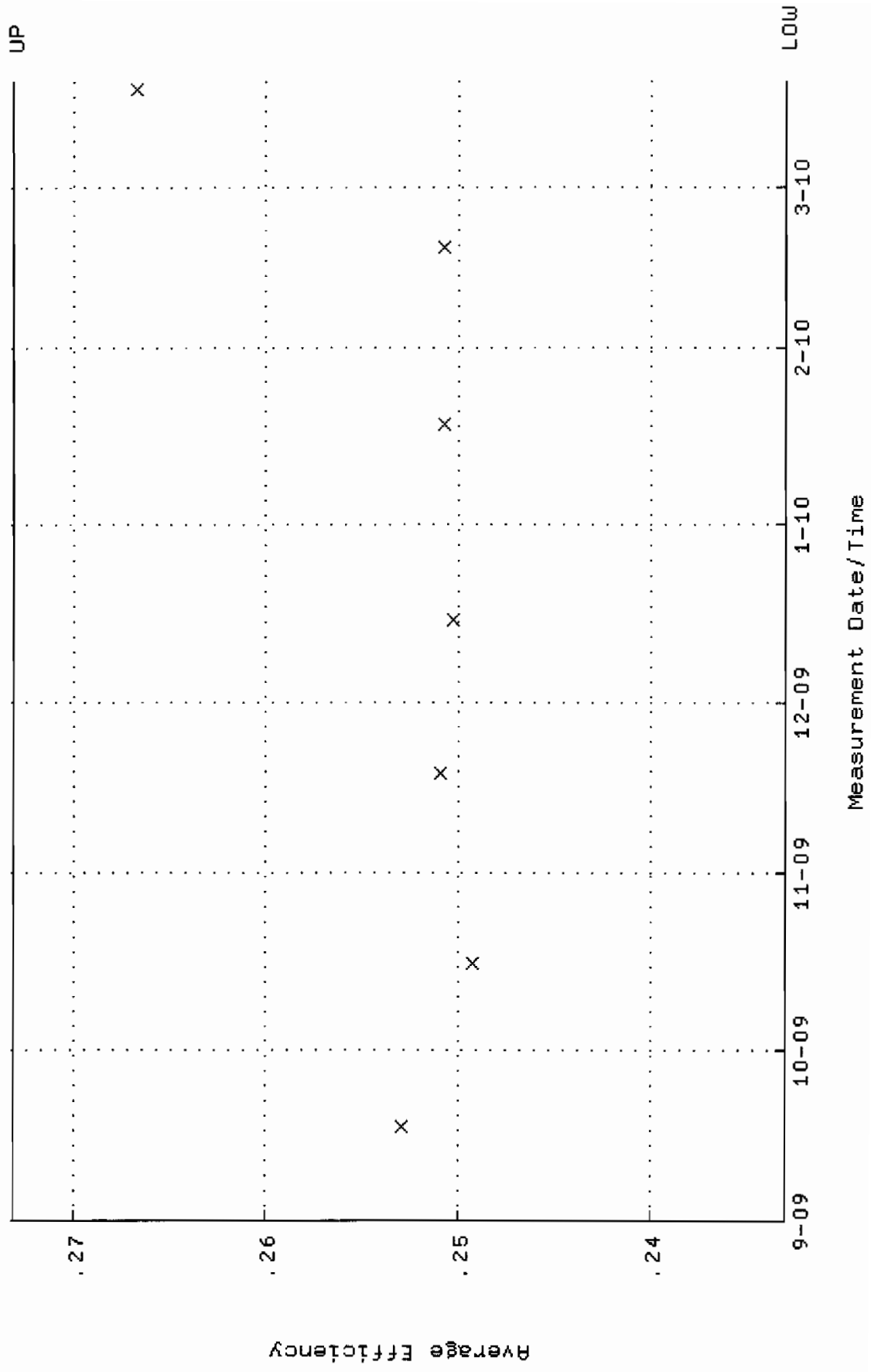
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:41:01 through 19-MAR-2010 12:00:00

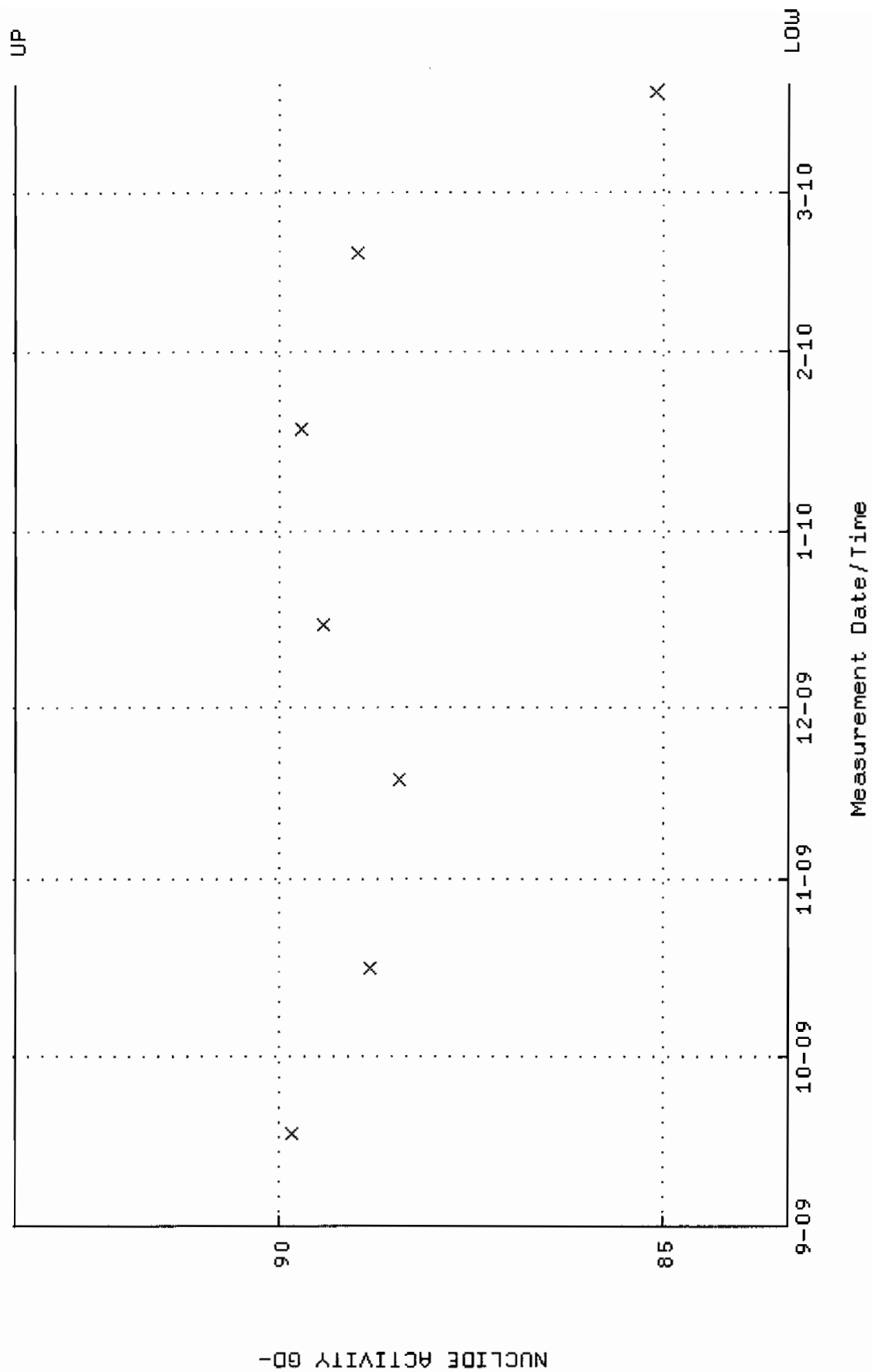
Lower/Upper Lmts: 0.000000E+00 through 0.100000



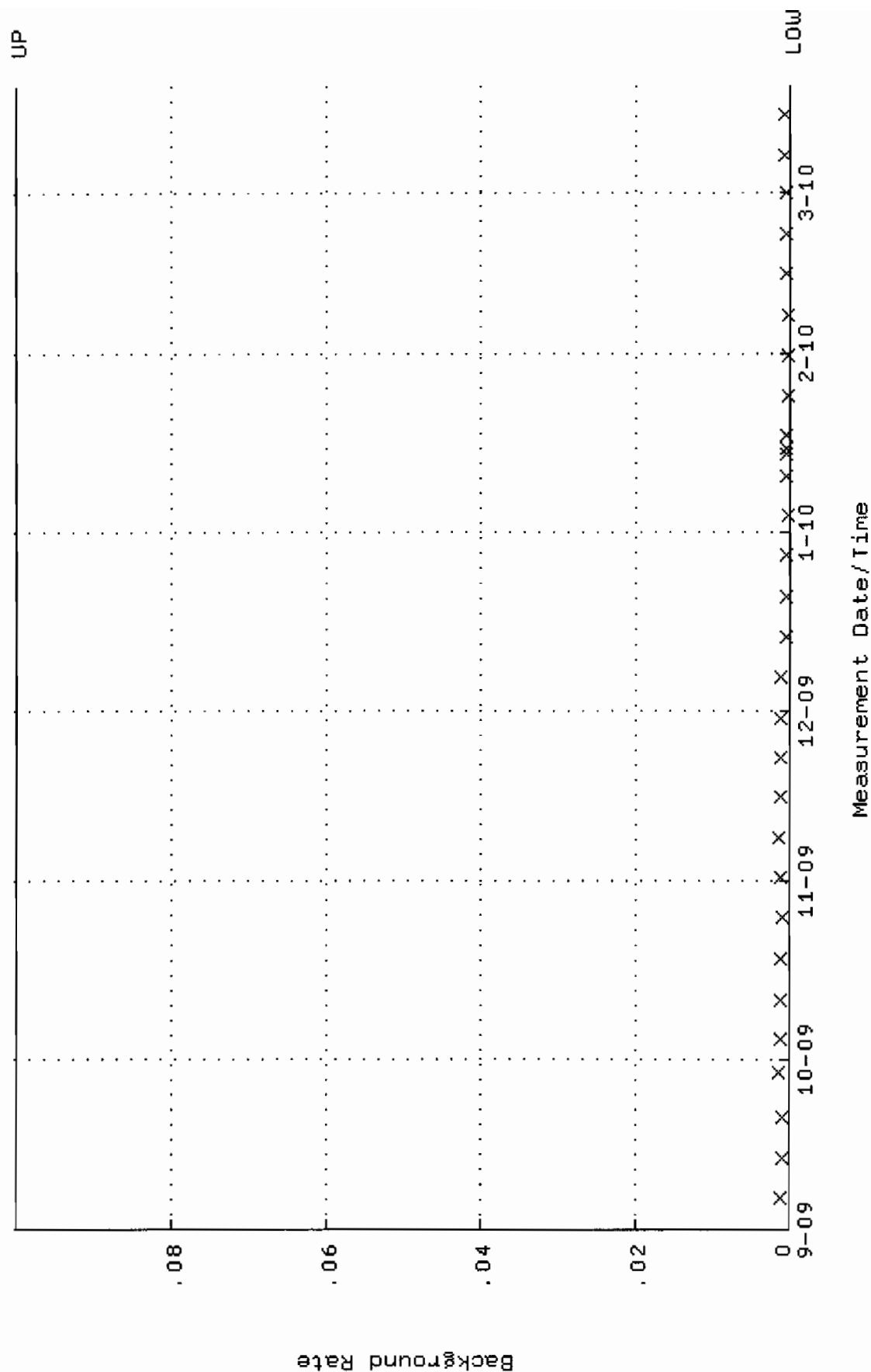
QA filename : DKA100:[ENV_ALPHA.QA.W]w126.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 17-SEP-2009 07:24:03 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 0.233045 through 0.273065



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 : DKA100:[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

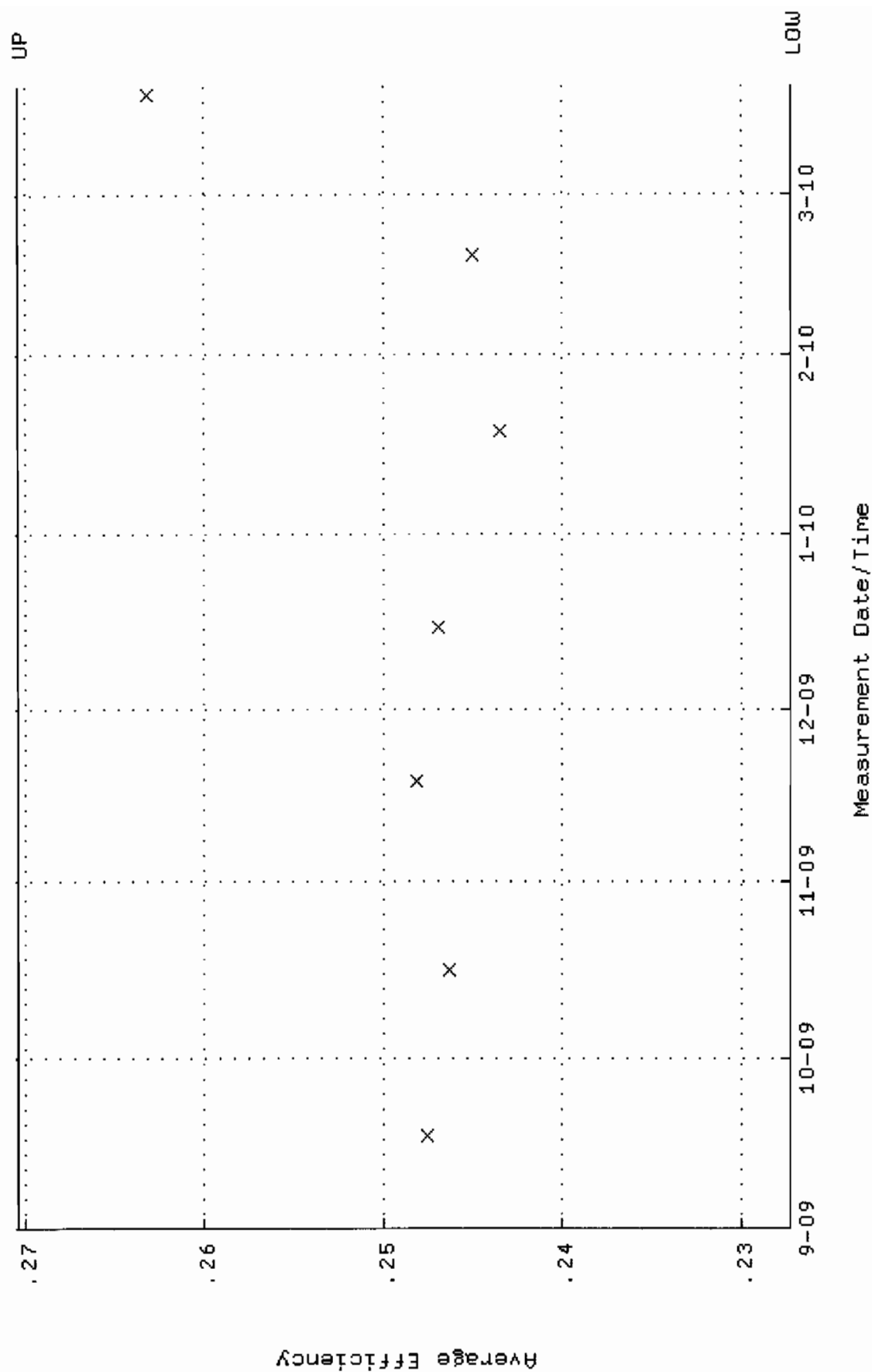


QA filename : DKA100:[ENV_ALPHA.QA.W]W127.QAF;1

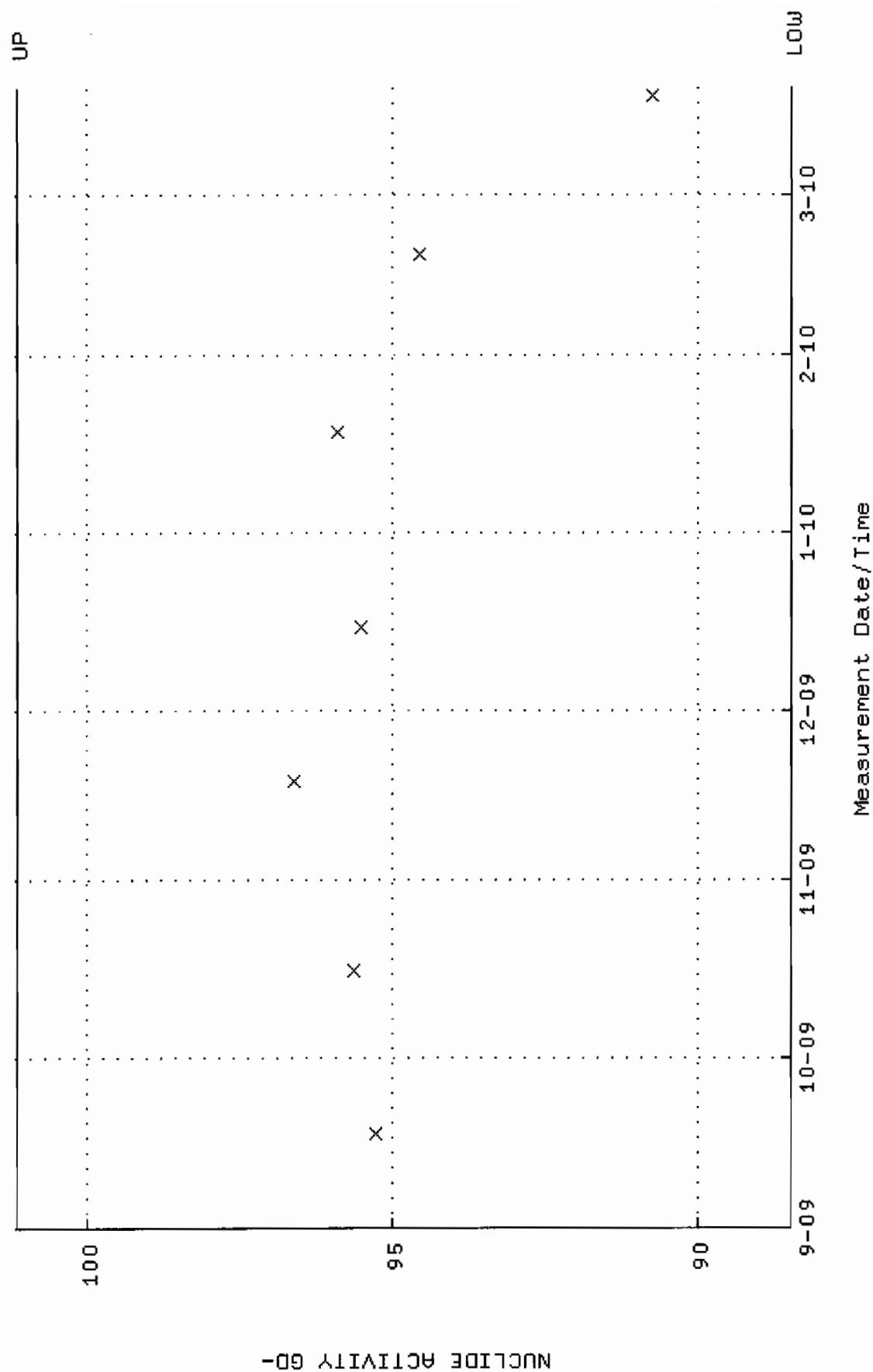
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-SEP-2009 07:24:09 through 19-MAR-2010 12:00:00

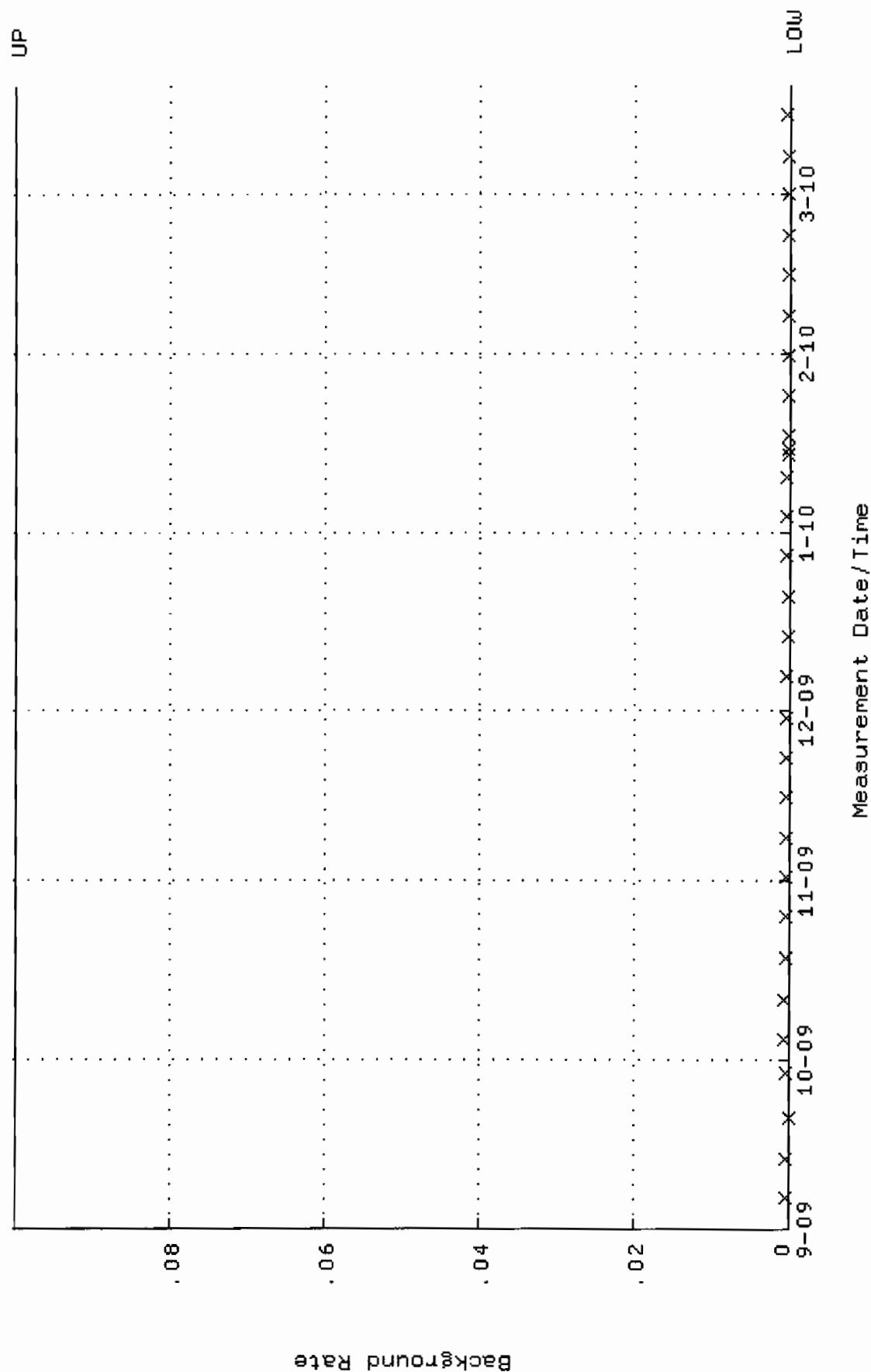
Lower/Upper Lmts: 0.227212 through 0.270396



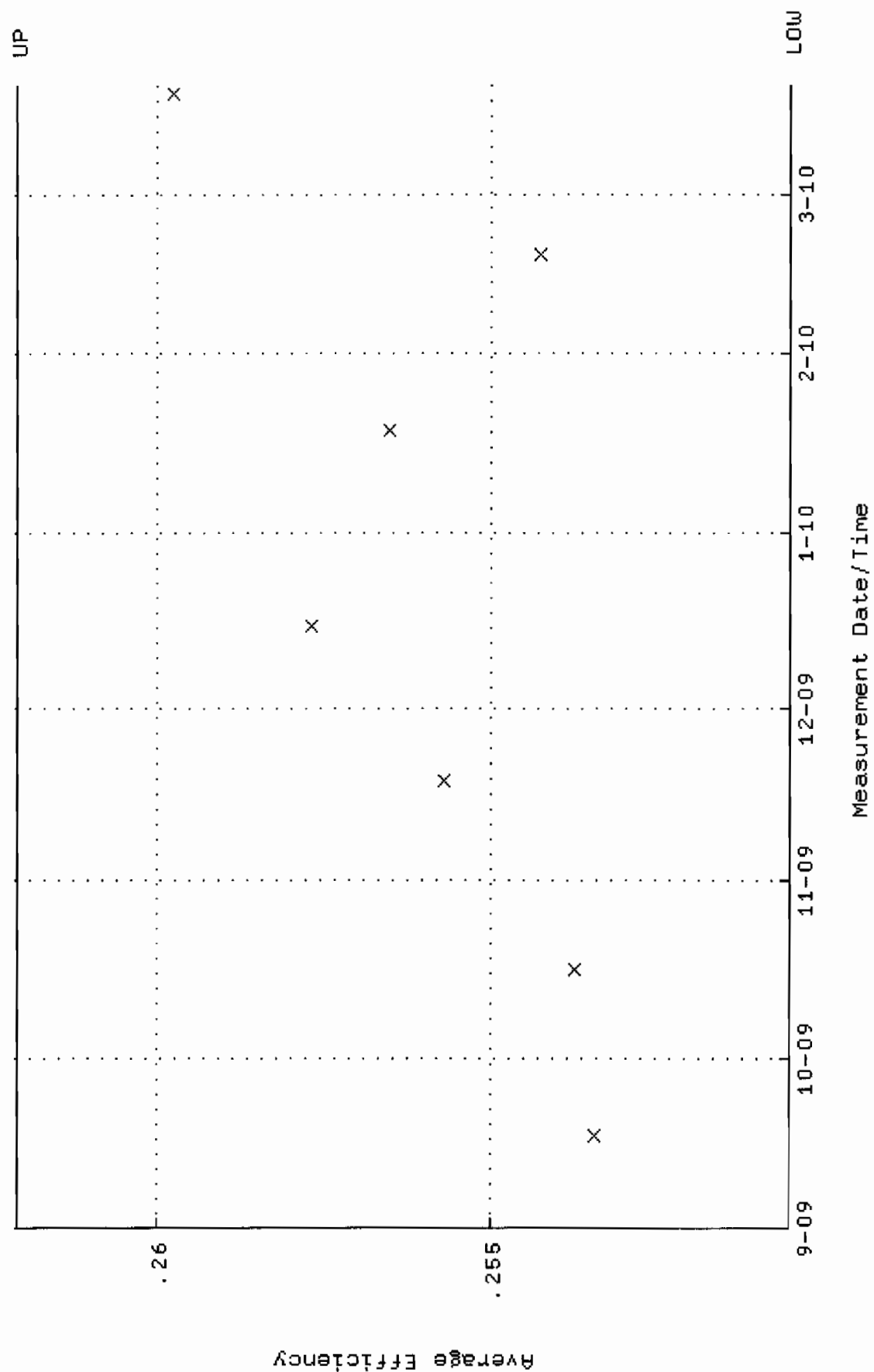
QA filename : DKA100:[ENV_ALPHA.QA.W]w127.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:09 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.4641 through 101.145



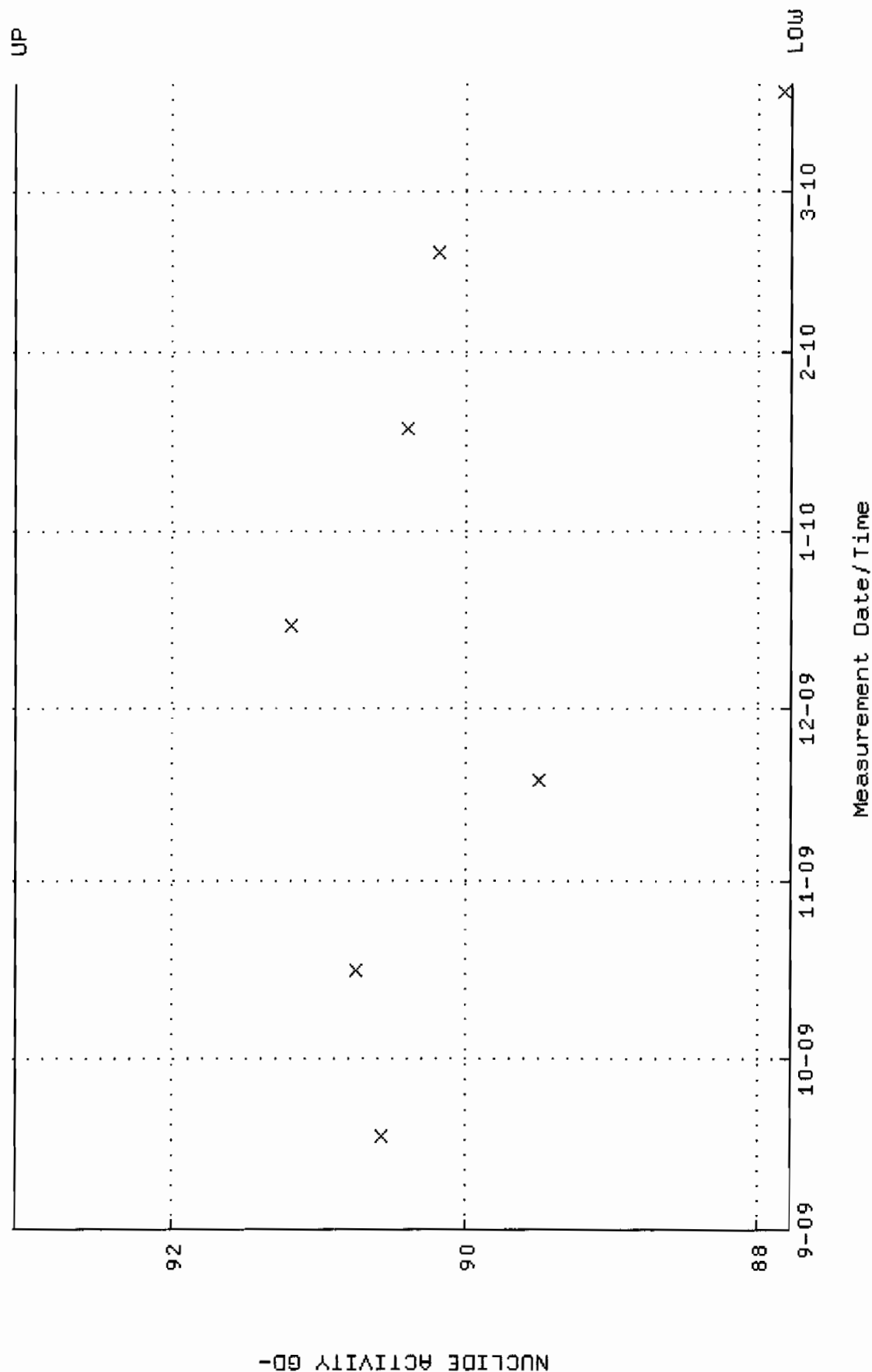
QA filename : DKA100:[ENV_ALPHA.QA.B]B127.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:09 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



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 : OKA100:[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

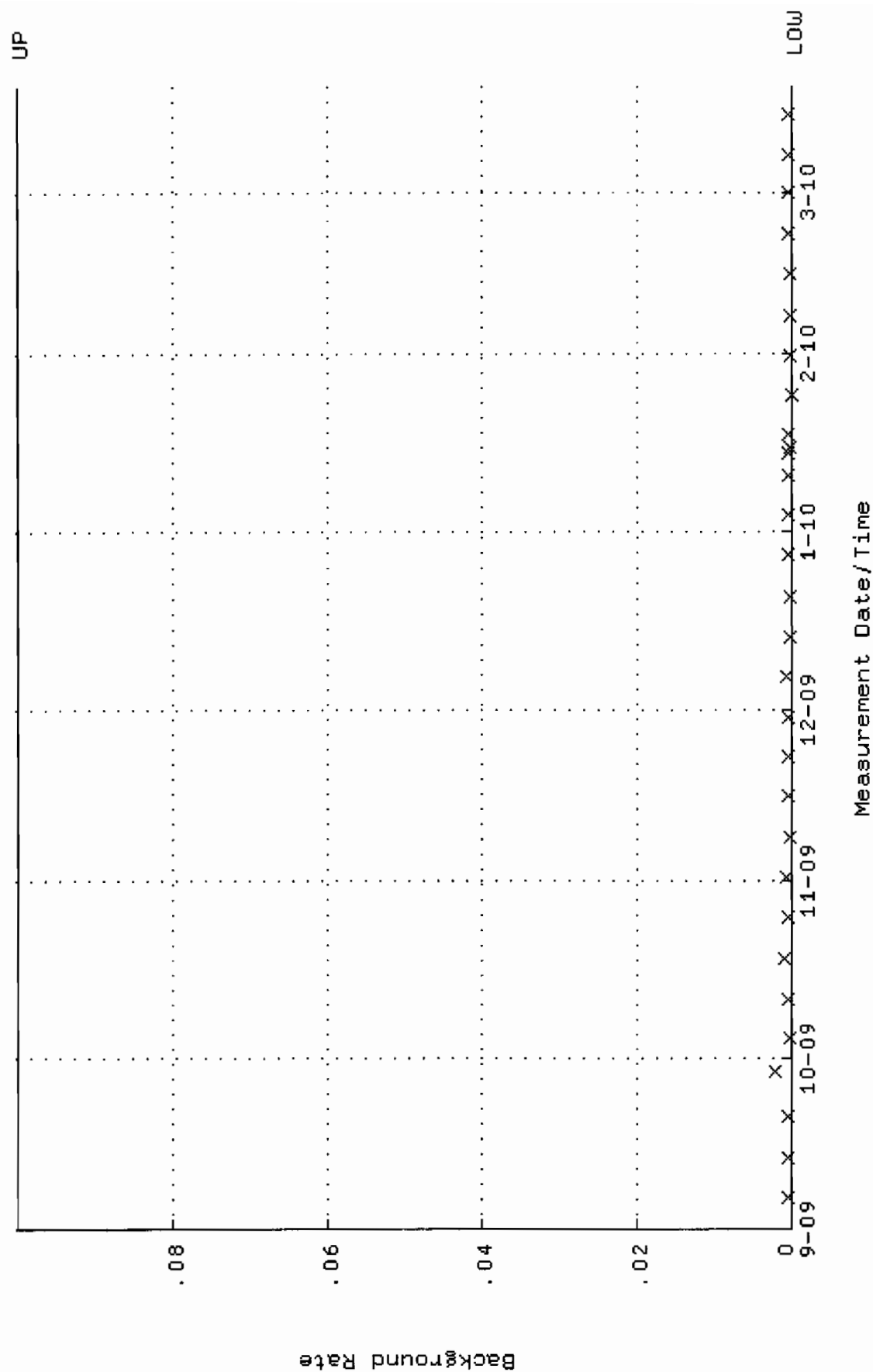


QA filename : DKA100:[ENV_ALPHA.QA.B]B128.QAF;1

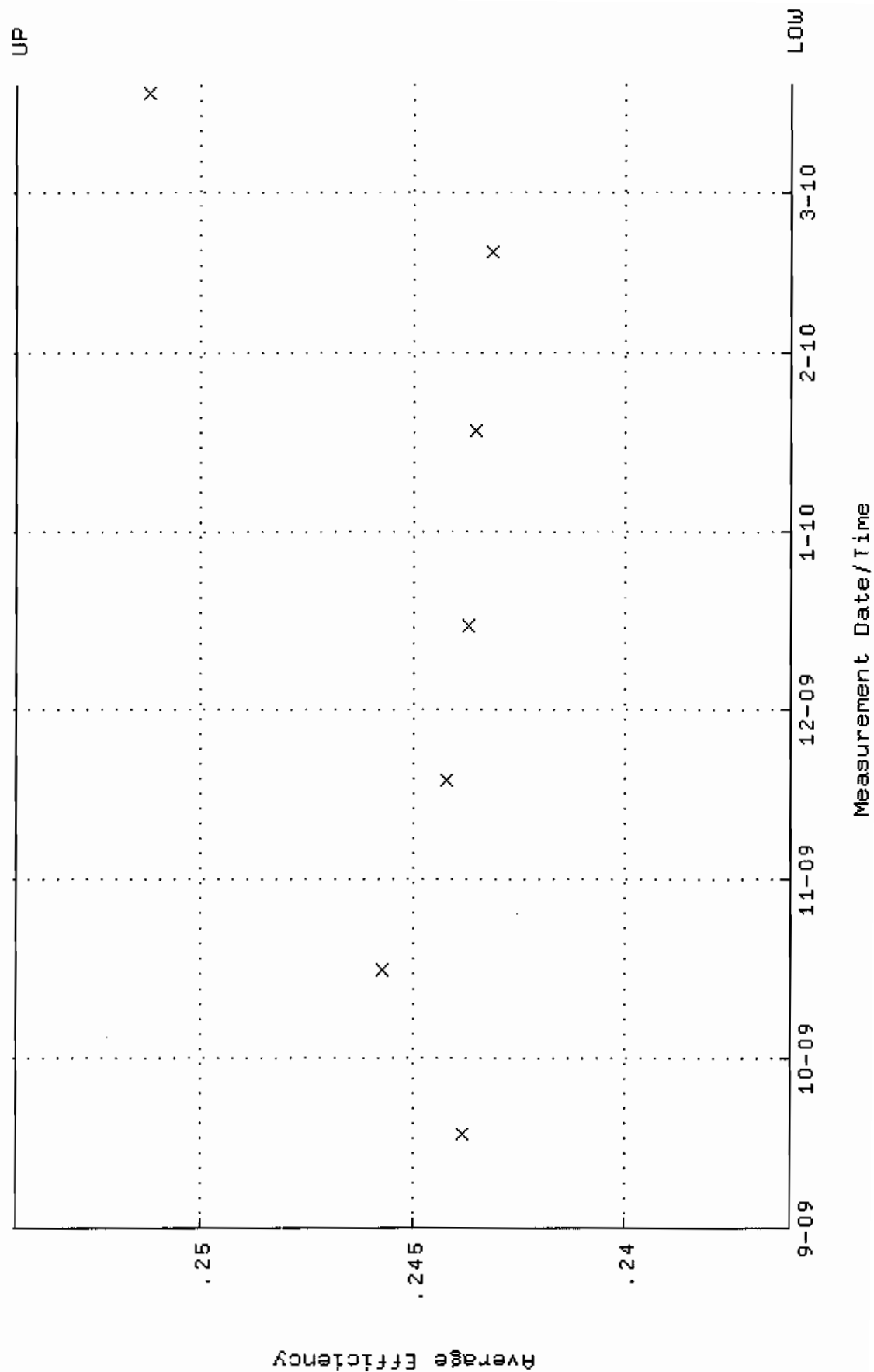
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:41:14 through 19-MAR-2010 12:00:00

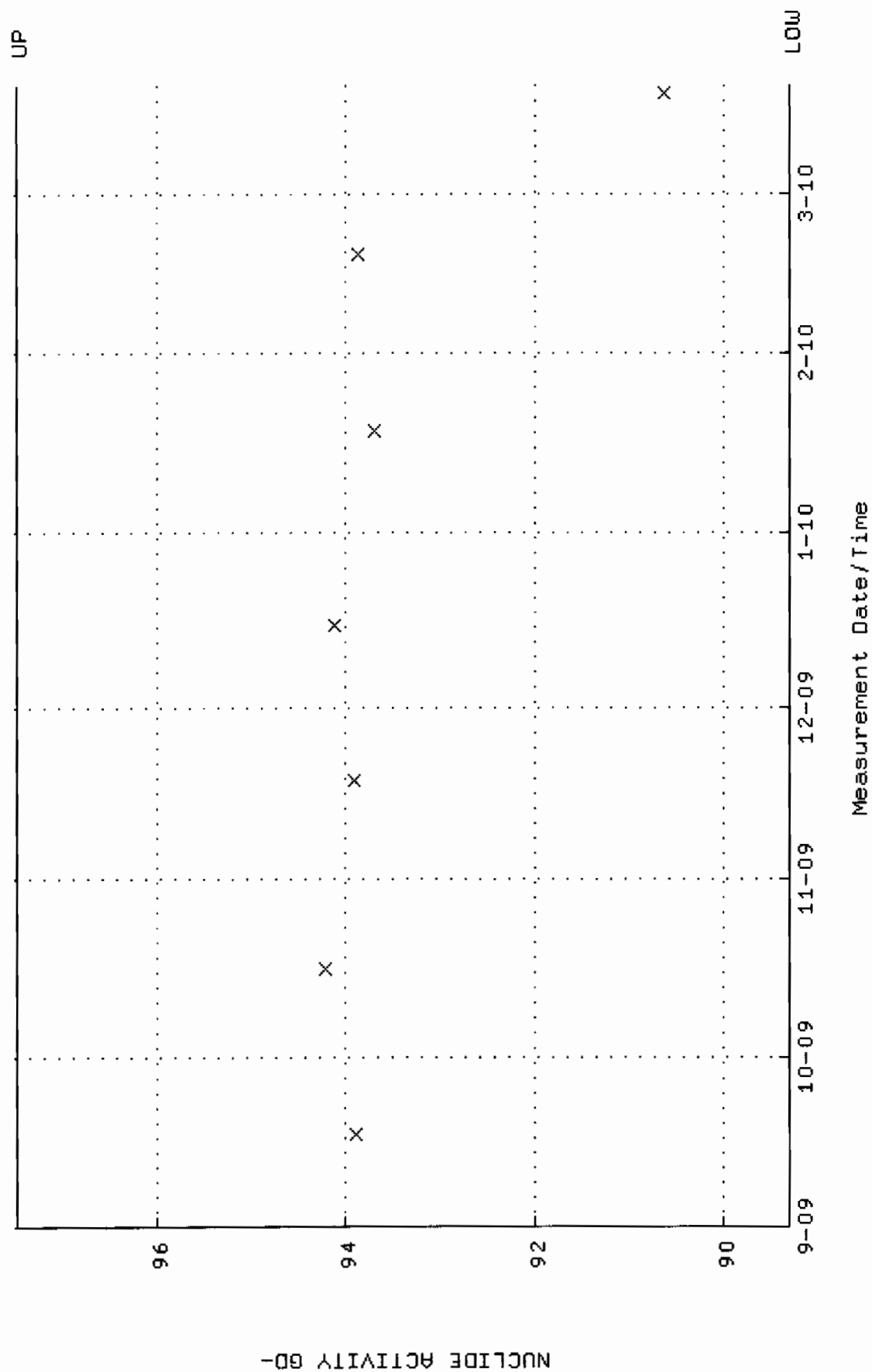
Lower/Upper Lmts: 0.000000E+00 through 0.100000



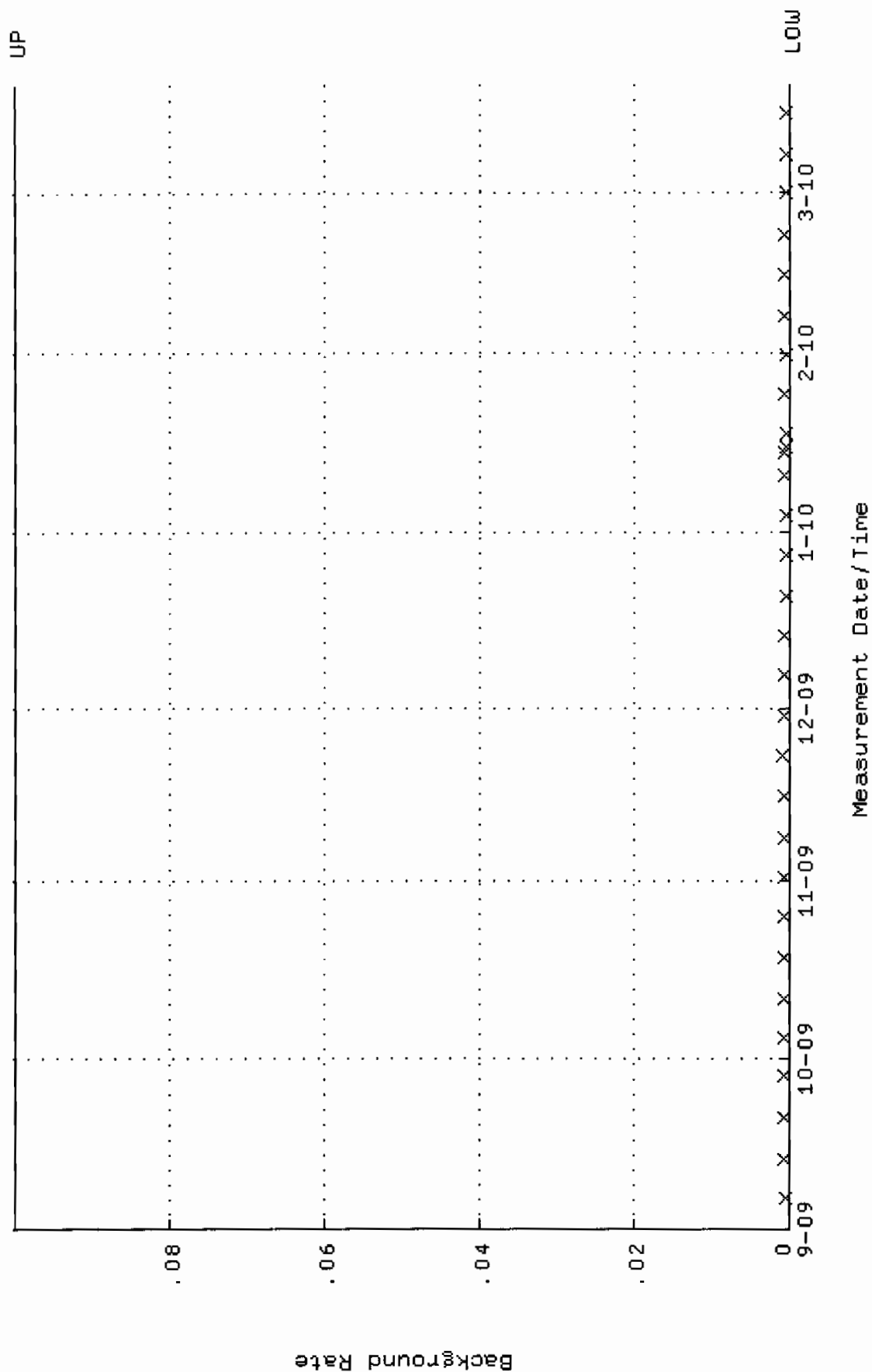
QA filename : DKA100:[ENV_ALPHA.QA.W]U133.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:41 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.236089 through 0.254355



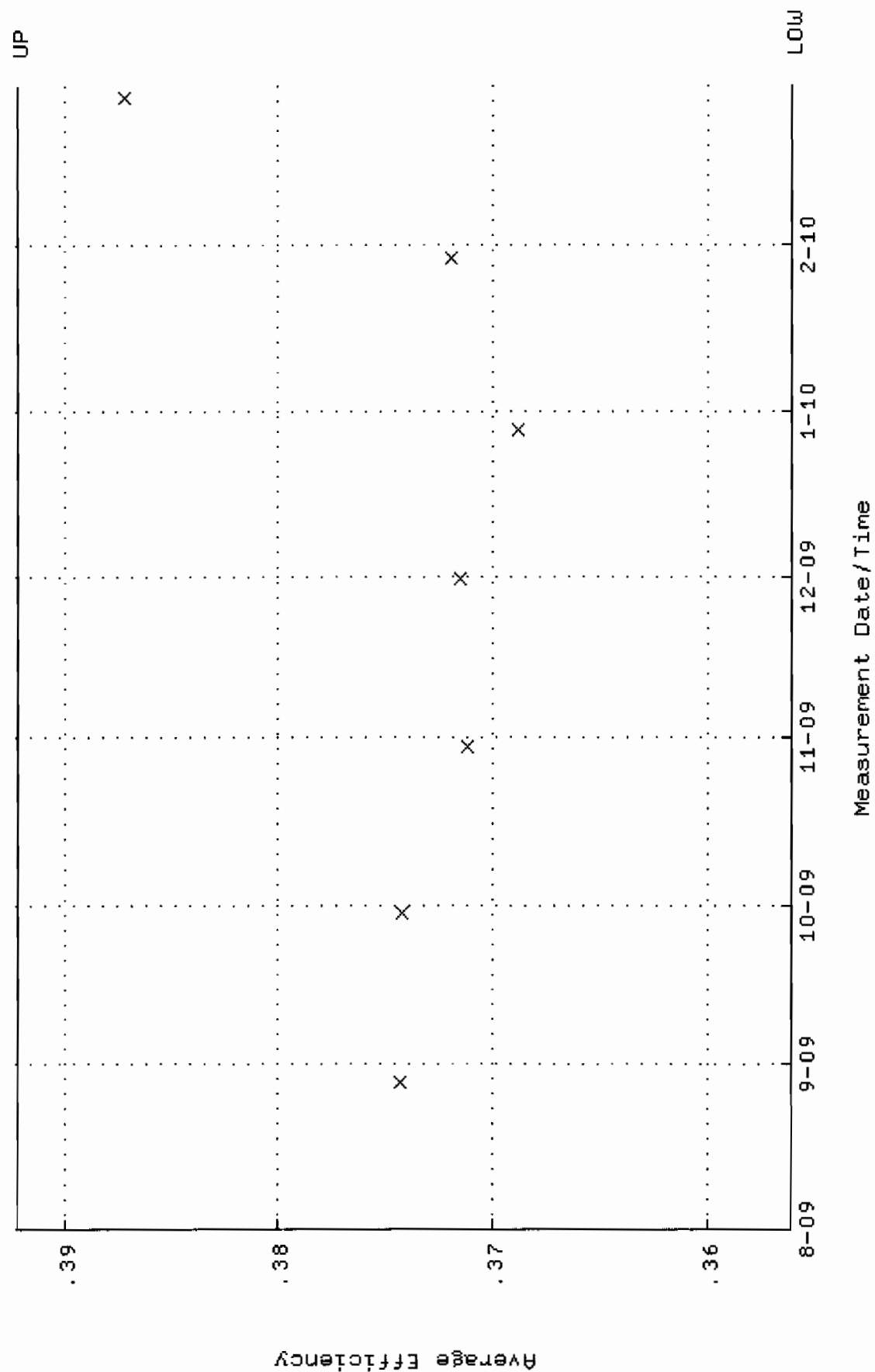
QA filename : DKA100:[ENV_ALPHA.QA.W]W133.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:41 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.3104 through 97.4810



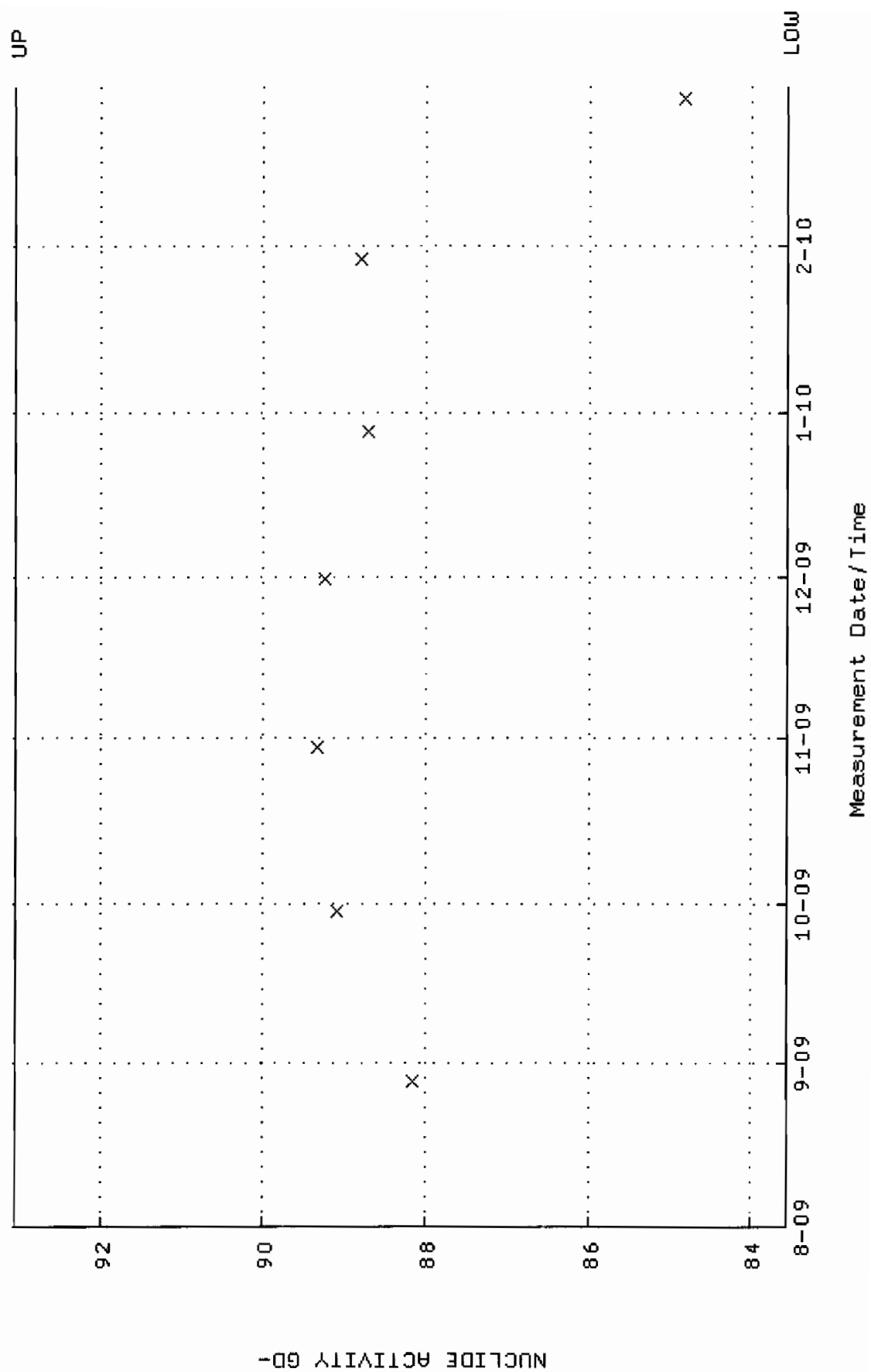
QA filename : DKA100:[ENV_ALPHA.QA.B]B133.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:37 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W232.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:30 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.356063 through 0.392181



QA filename : DKA100:[ENV_ALPHA.QA.W]W232.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:30 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.5615 through 93.0435

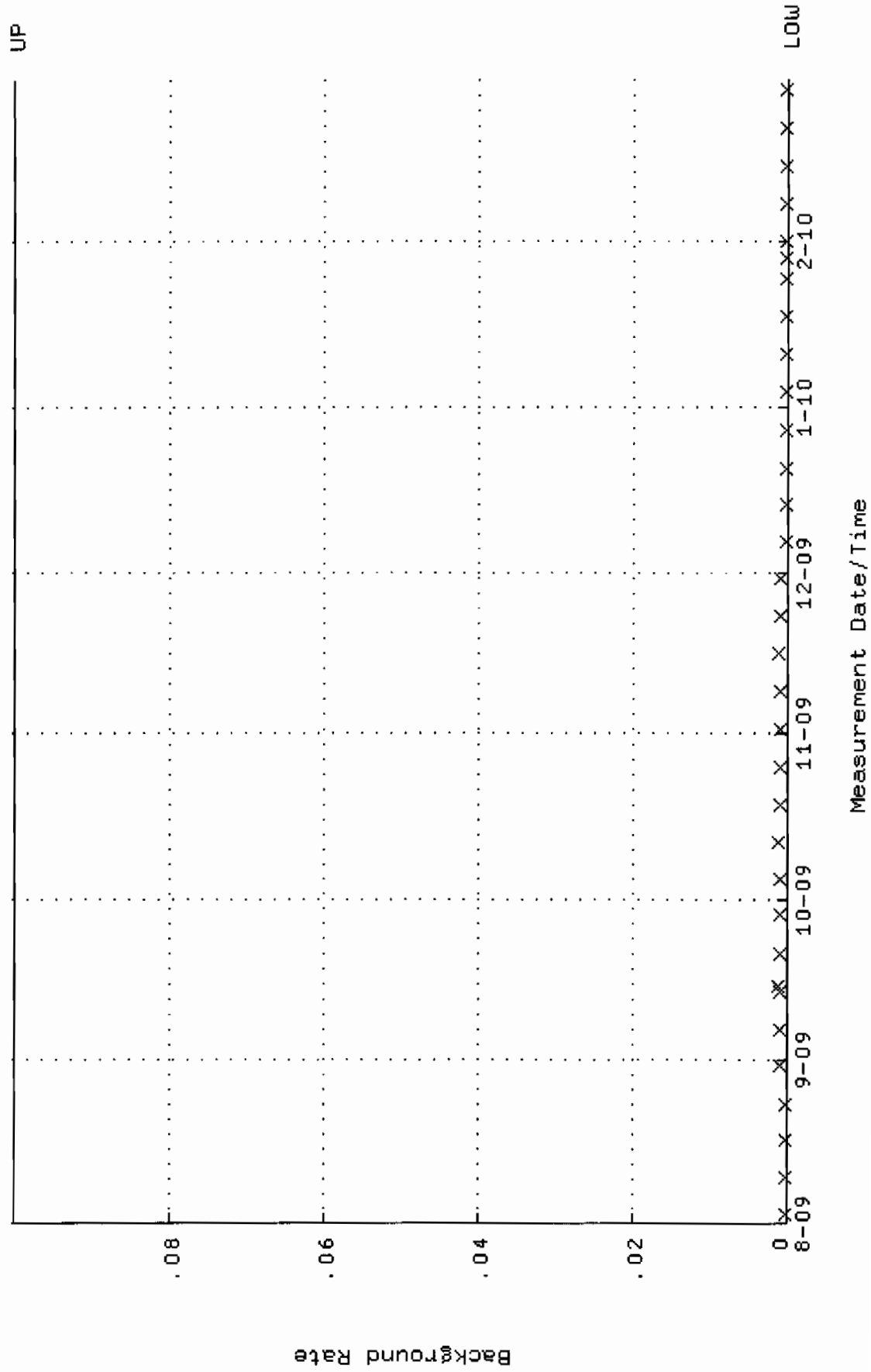


QA filename : DKA100:[ENV_ALPHA.QA.B]B232.QAF;1

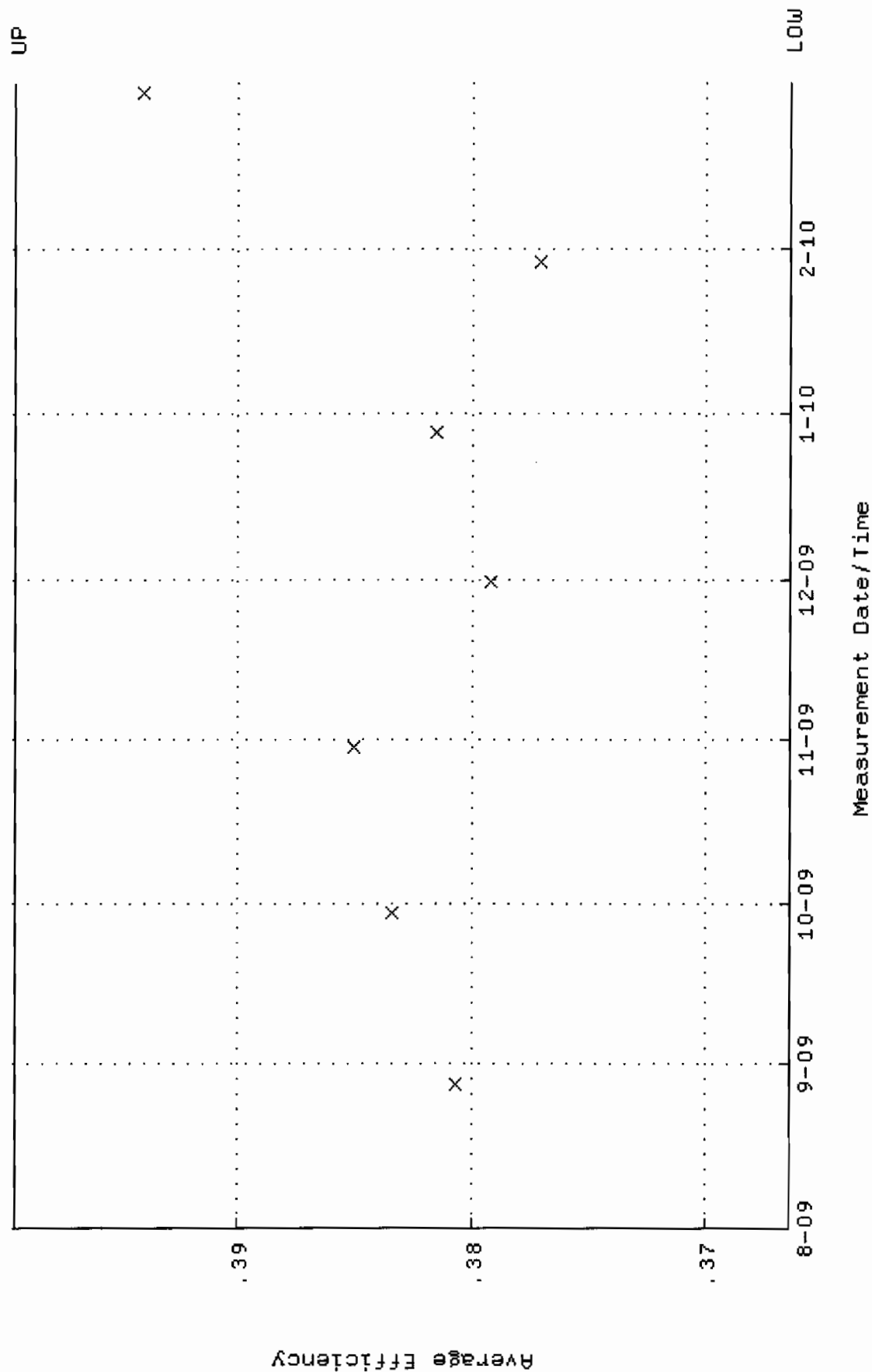
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:26:47 through 2-MAR-2010 12:00:00

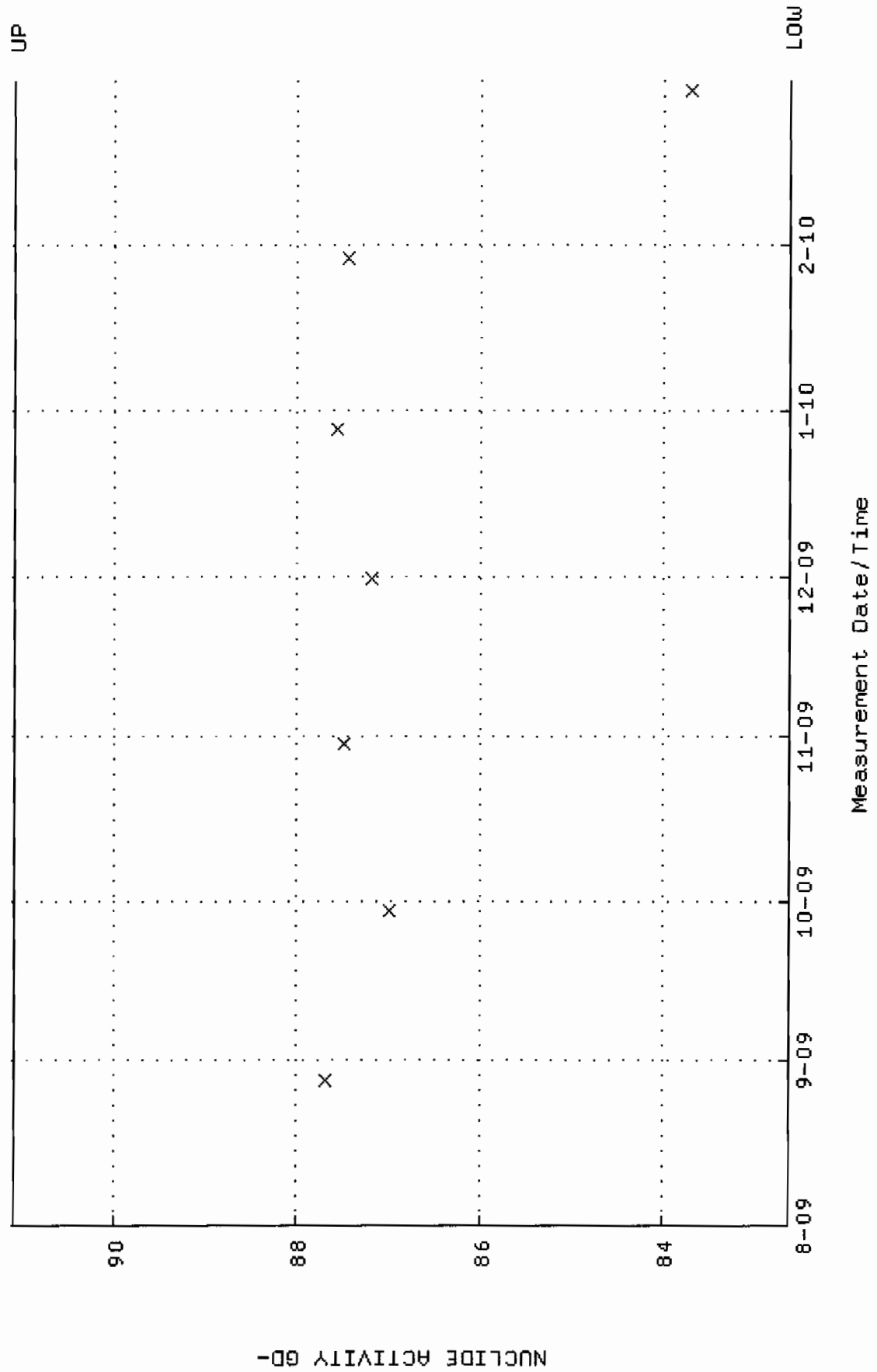
Lower/Upper Lmts: 0.000000E+00 through 0.100000



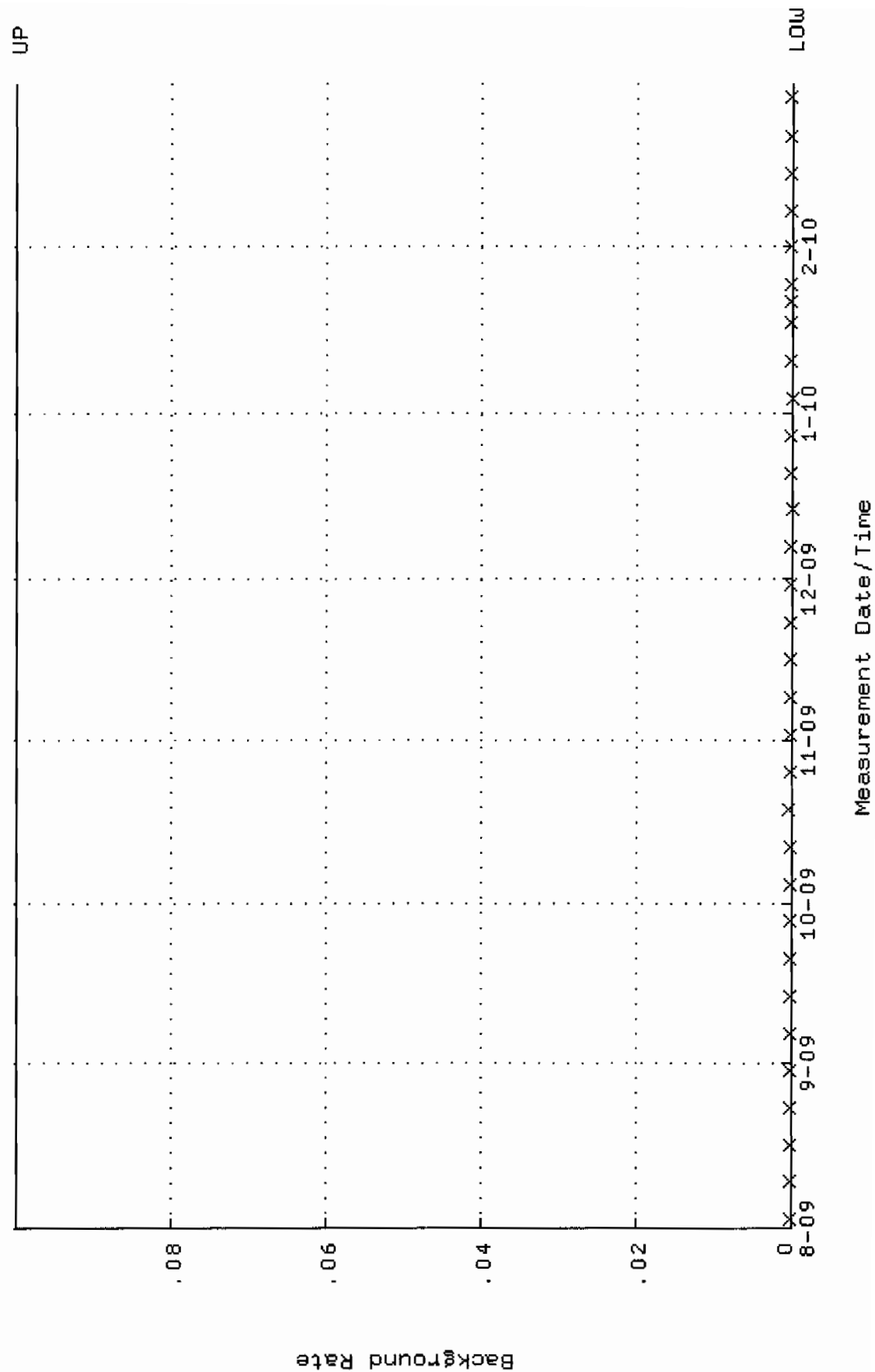
QA filename : DKA100:[ENV_ALPHA.QA.W]W233.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:35 through 3-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.366381 through 0.399563



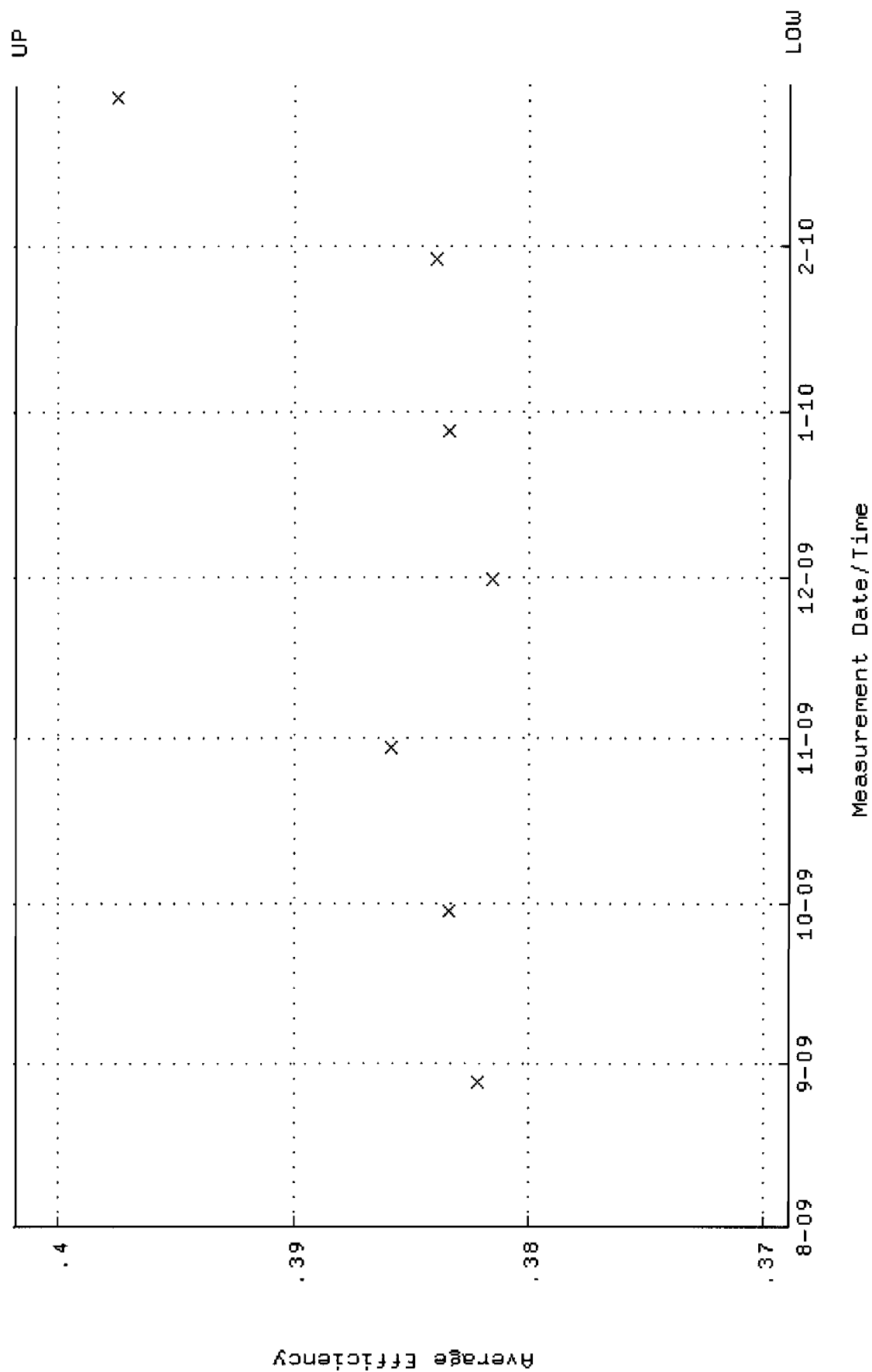
QA filename : DKA100:[ENV_ALPHA.QA.W]w233.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:35 through 3-MAR-2010 12:00:00
 Lower/Upper Lmts: 82.6177 through 91.1049



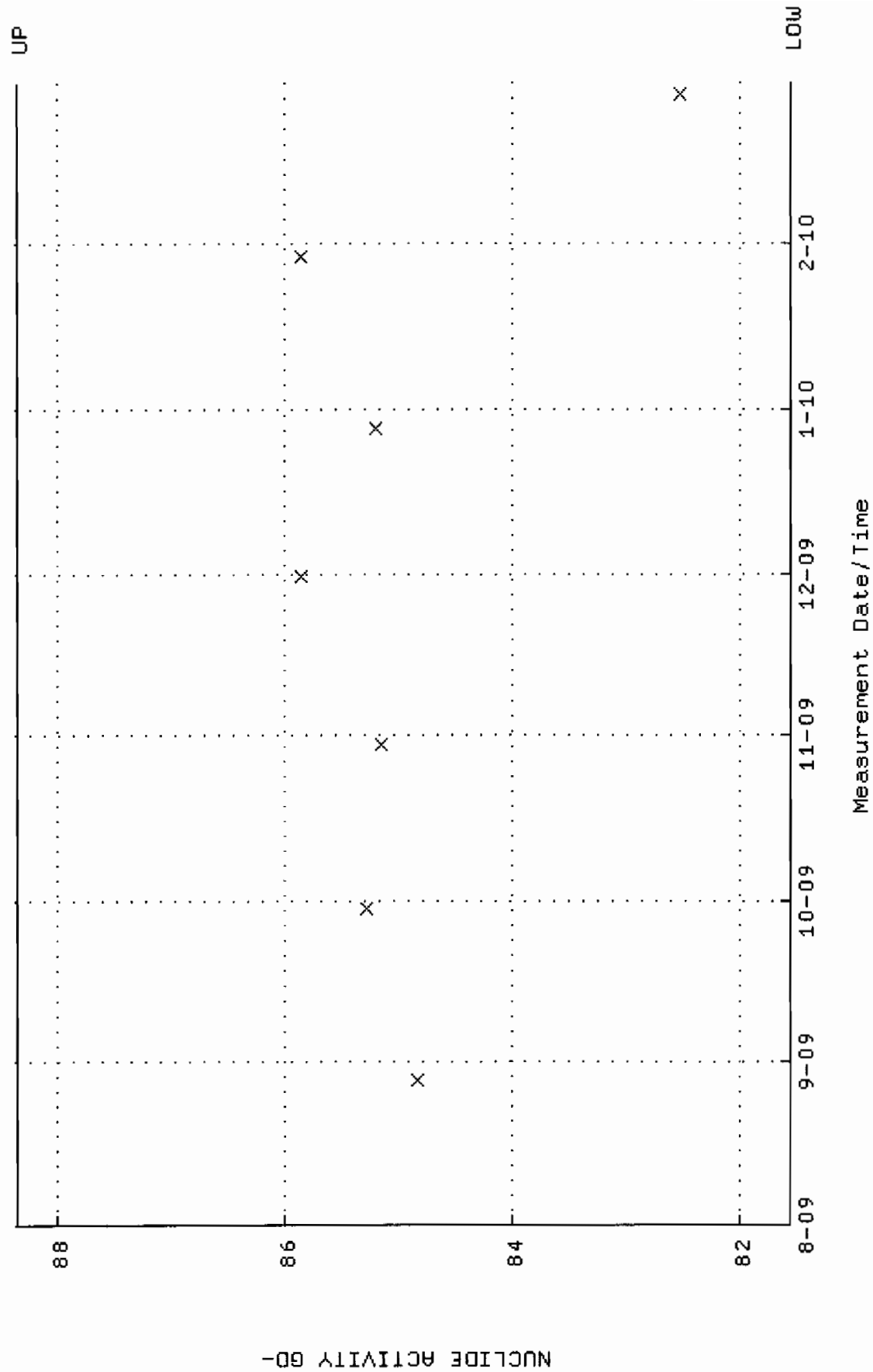
QA filename : DKA100:[ENV_ALPHA.QA.B]B233.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:52 through 3-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W234.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:41 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.368938 through 0.401788



QA filename : DKA100:[ENV_ALPHA.QA.W]W234.QAF;1
 Parameter Name : NACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:41 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.5490 through 88.3592

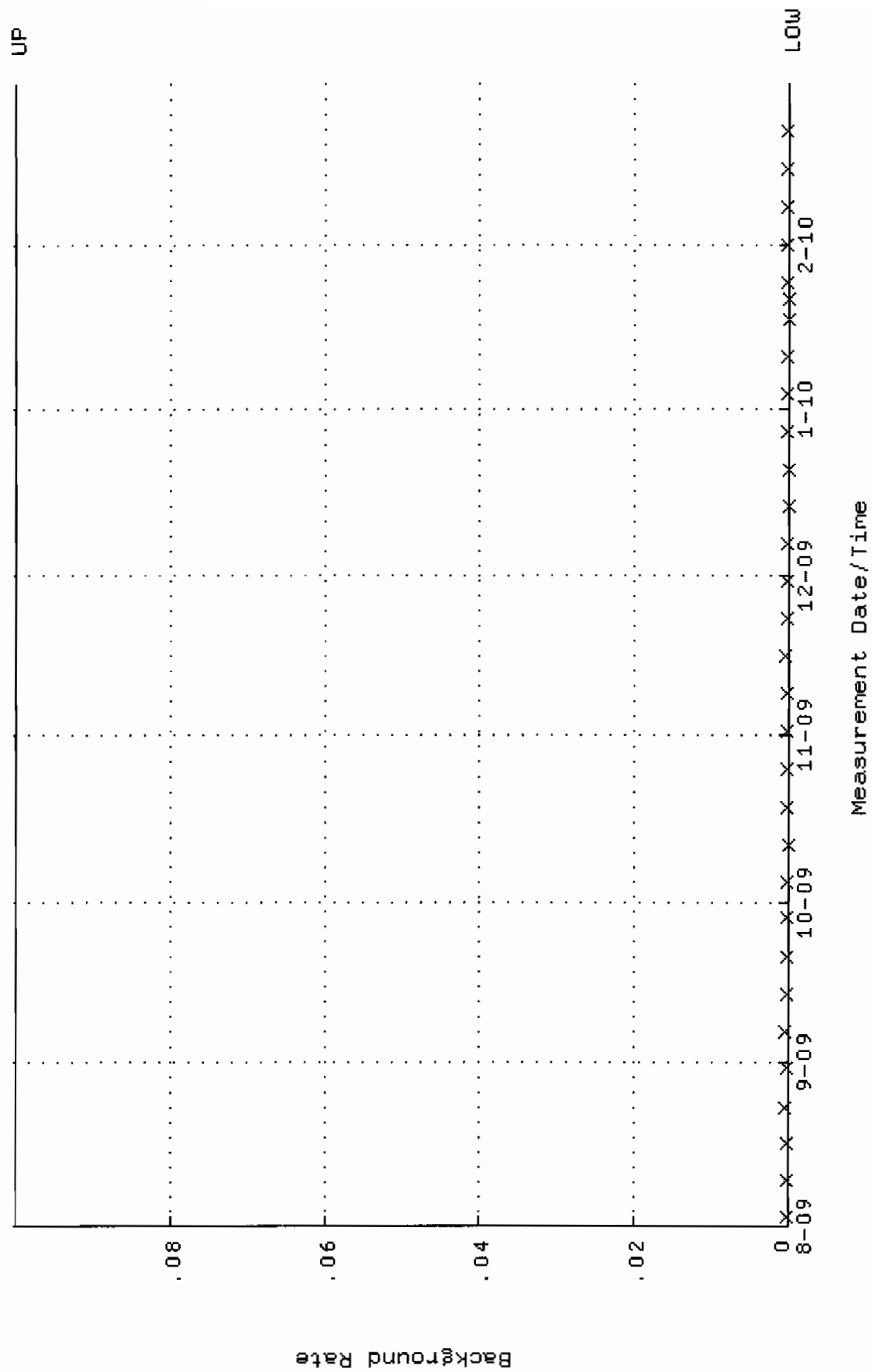


QA filename : DKA100:[ENV_ALPHA.QA.B]B234.QAF;1

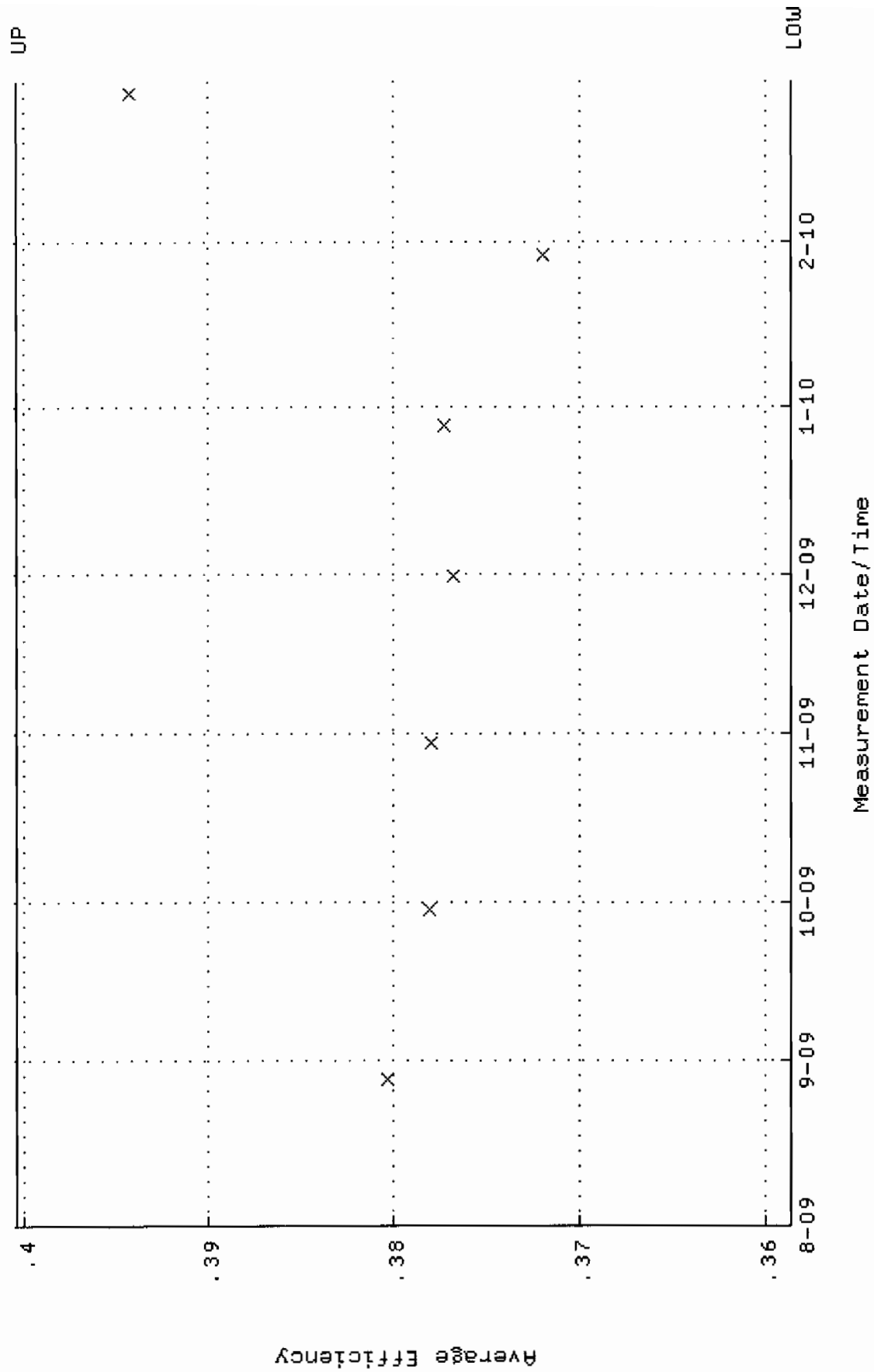
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:26:56 through 2-MAR-2010 12:00:00

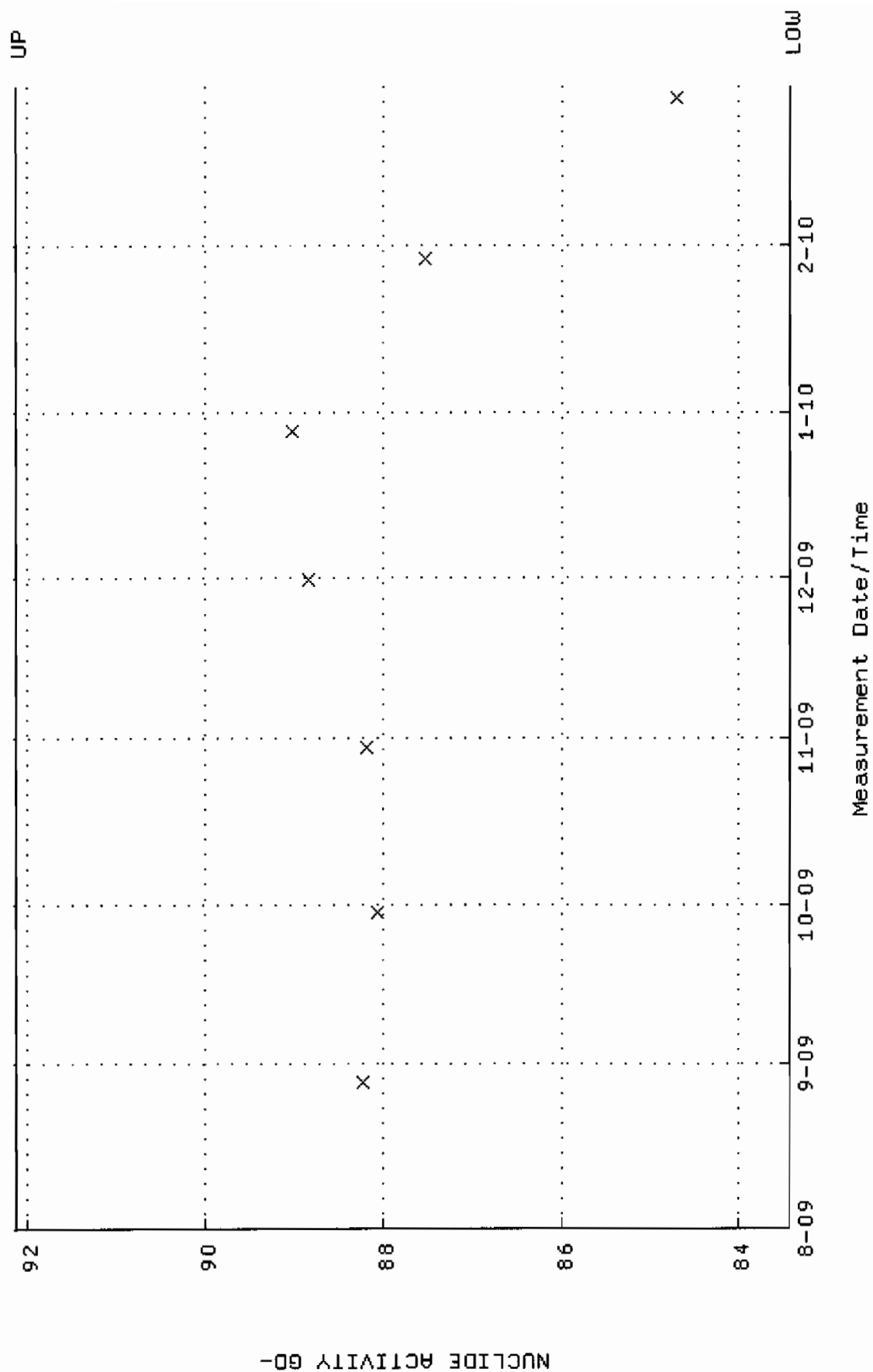
Lower/Upper Lmts: 0.000000E+00 through 0.100000



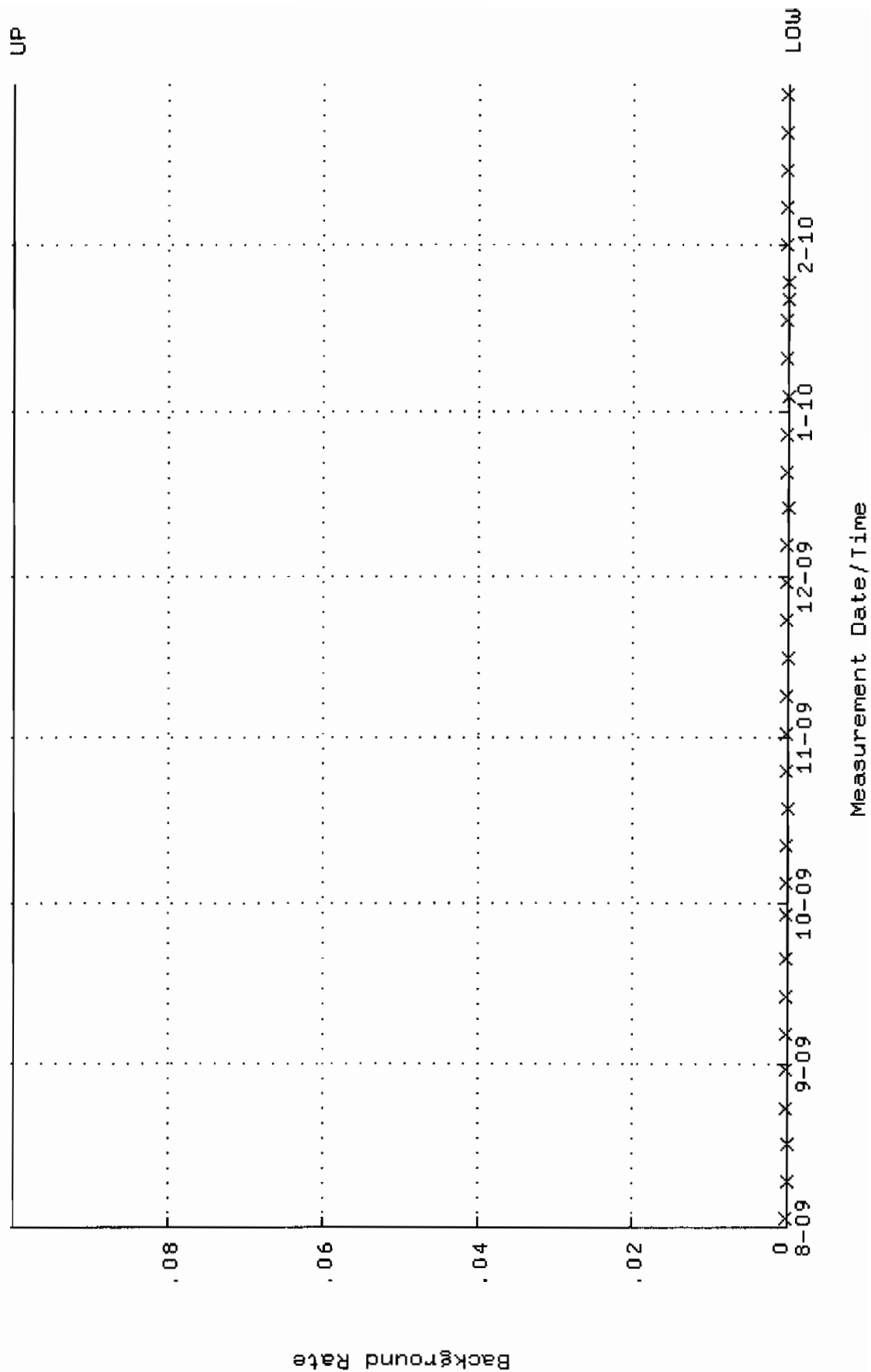
QA filename : DKA100:[ENV_ALPHA.QA.W]W241.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:15 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.358643 through 0.400349



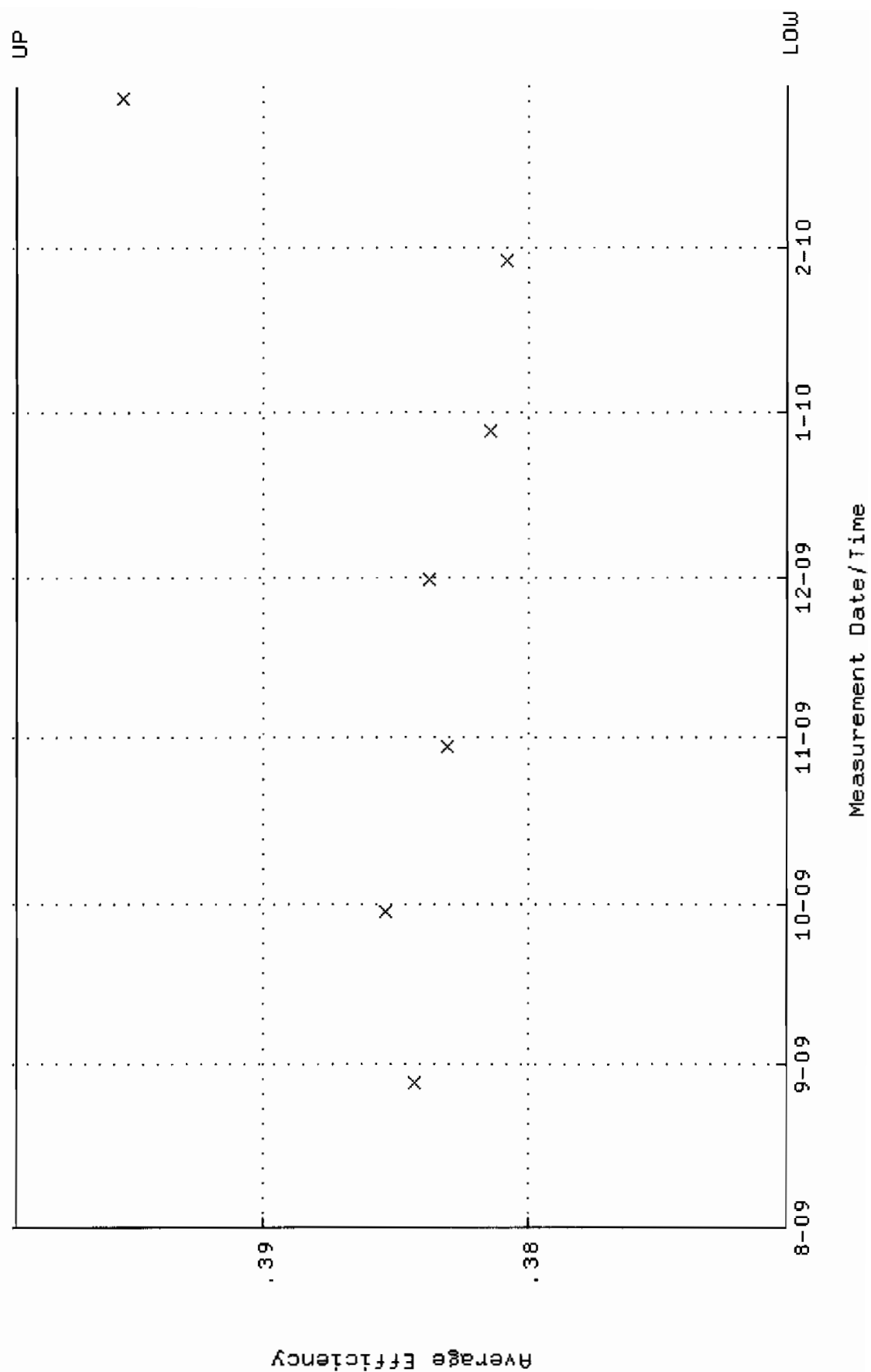
QA filename : DKA100:[ENV_ALPHA.QA.W]W241.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:15 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.4341 through 92.1277



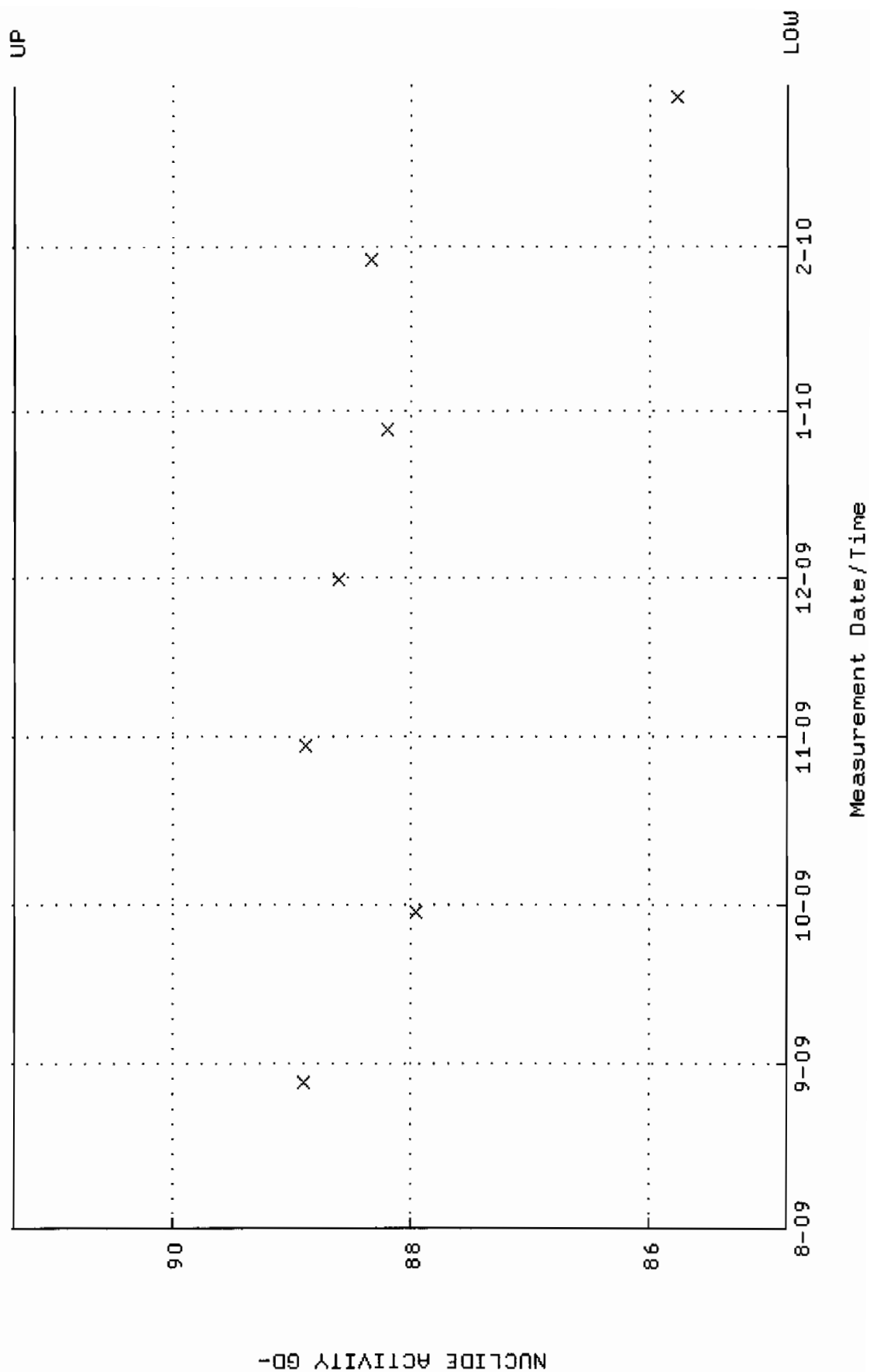
QA filename : DKA100:[ENV_ALPHA.QA.B]B241.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:26 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



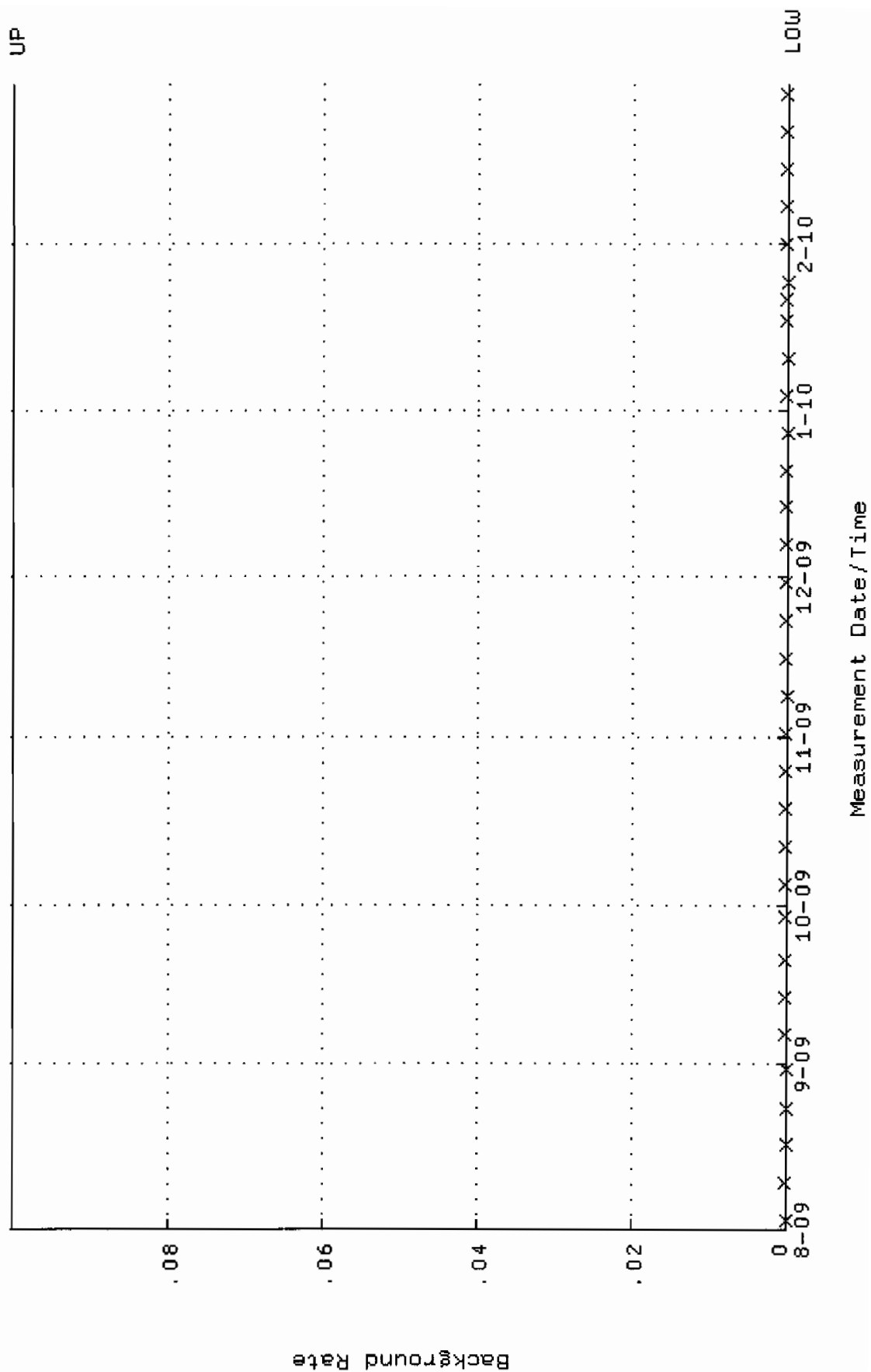
QA filename : DKA100:[ENV_ALPHA.QA.W]W242.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:21 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.370324 through 0.399338



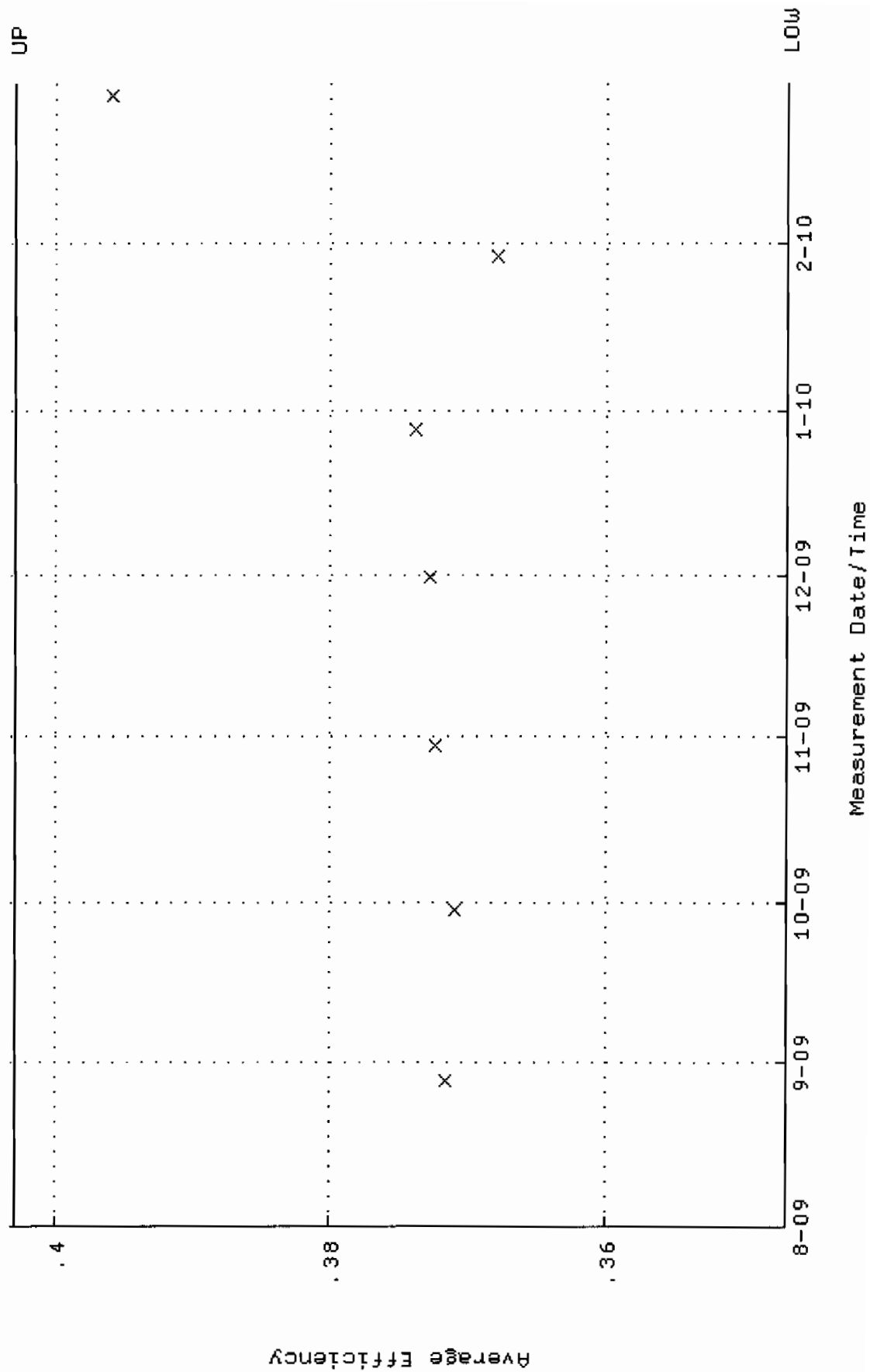
QA filename : DKA100:[ENV-ALPHA.QA.W]W242.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:21 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 84.8419 through 91.3223



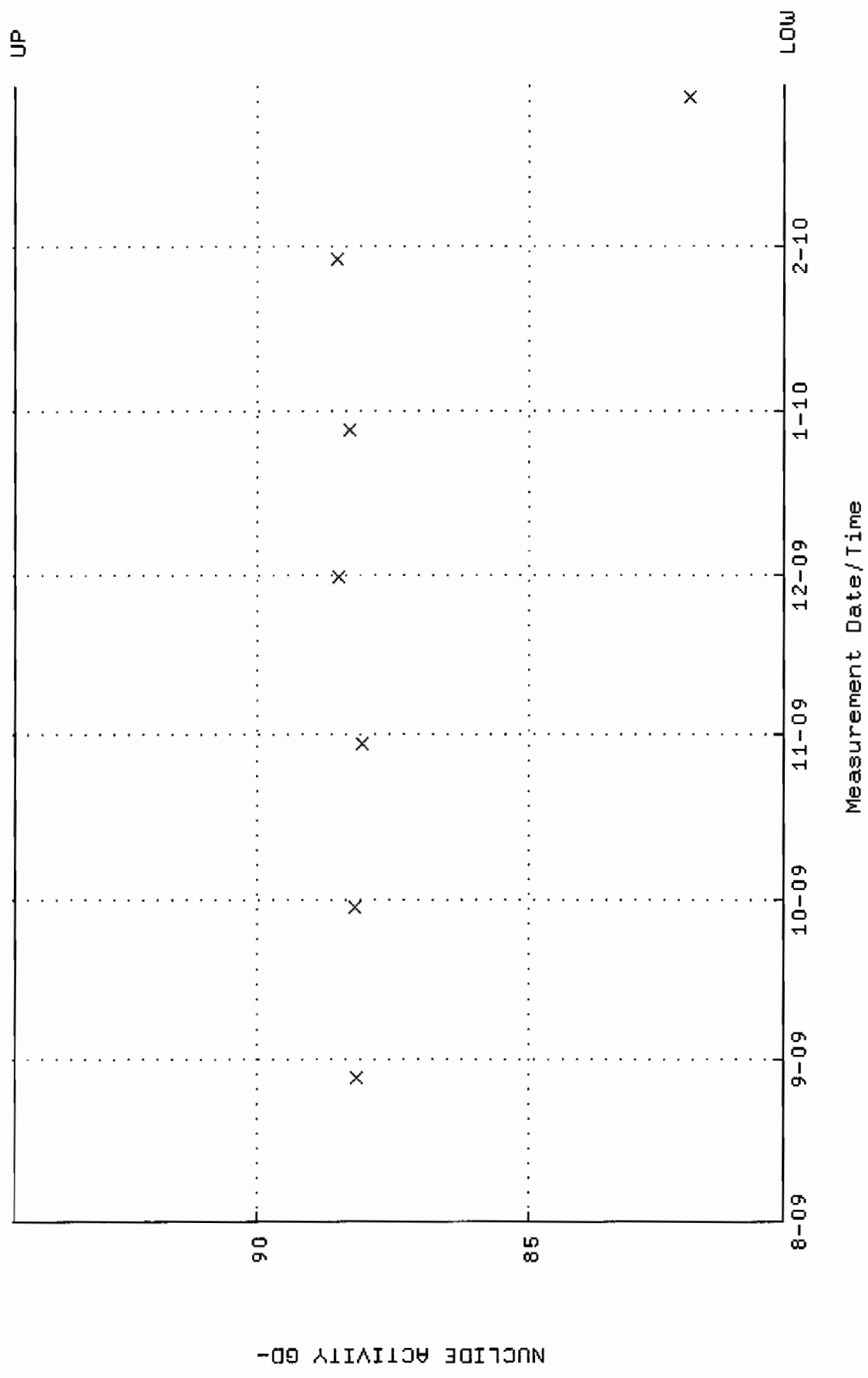
QA filename : DKA100:[ENV_ALPHA.QA.B]B242.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:31 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



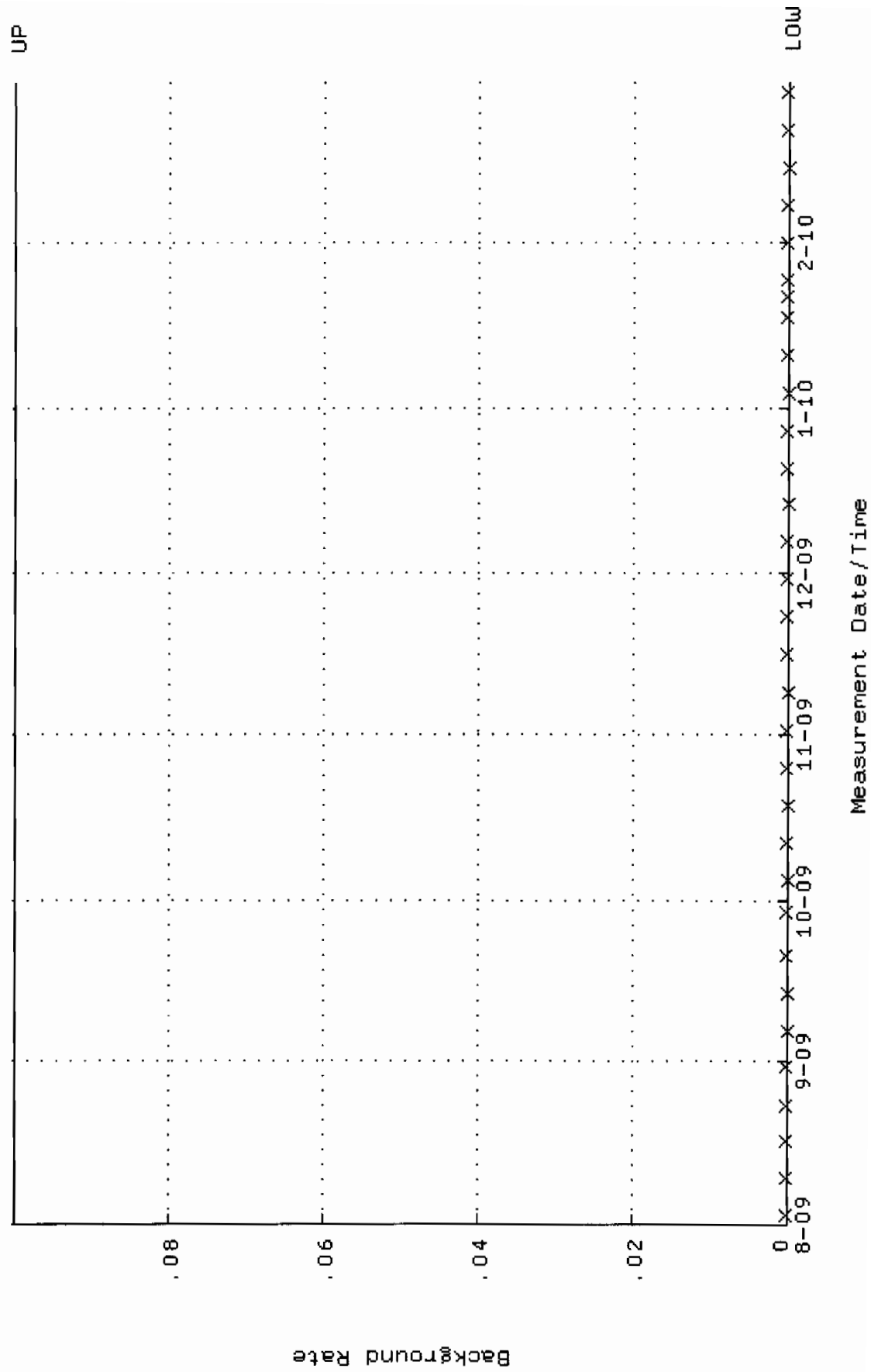
QA filename : DKA100:[ENV_ALPHA.QA.W]W244.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:32 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.346871 through 0.403035



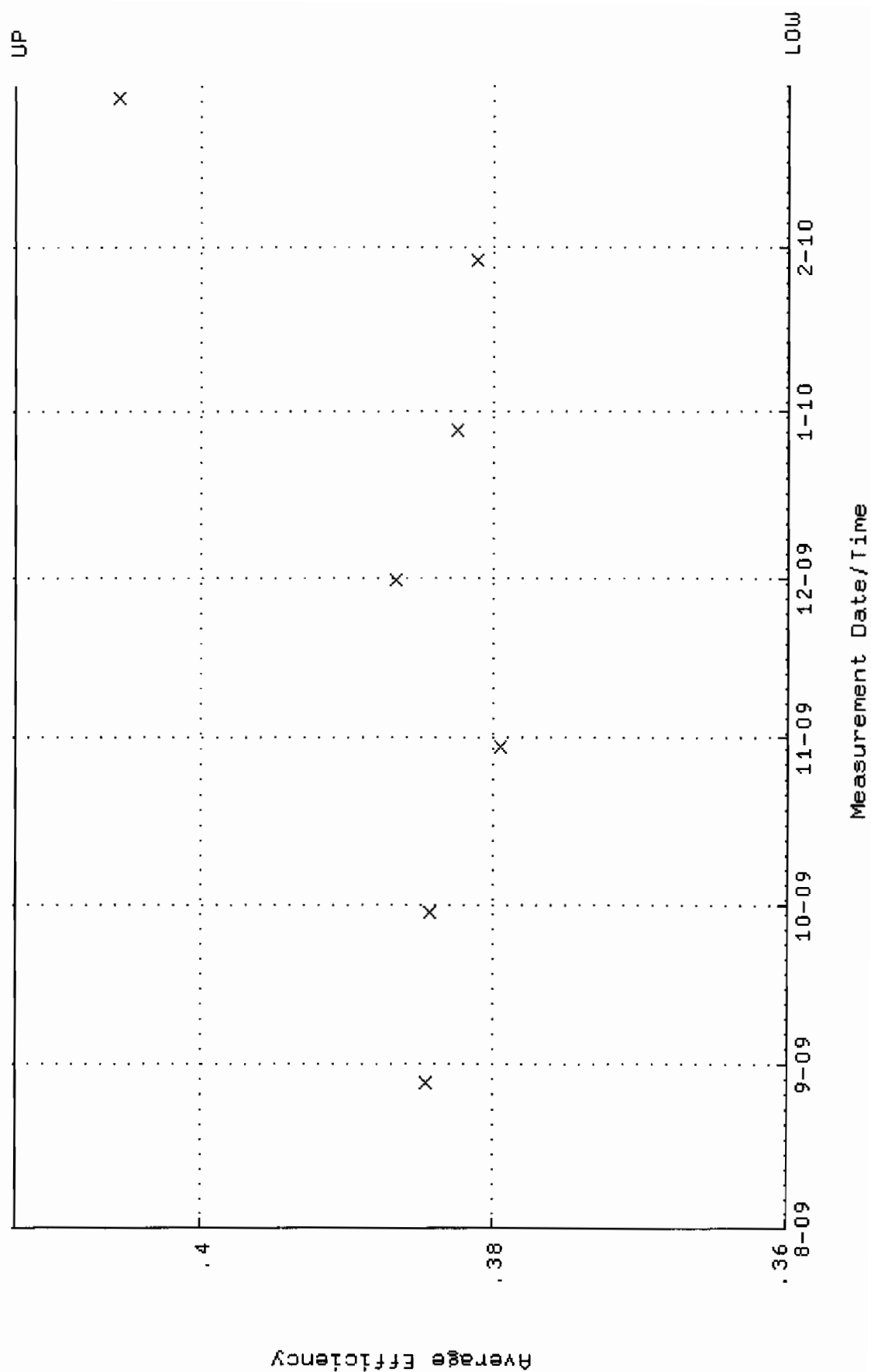
QA filename : DKA100:[ENV_ALPHA.QA.W]W244.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:32 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 80.2814 through 94.4734



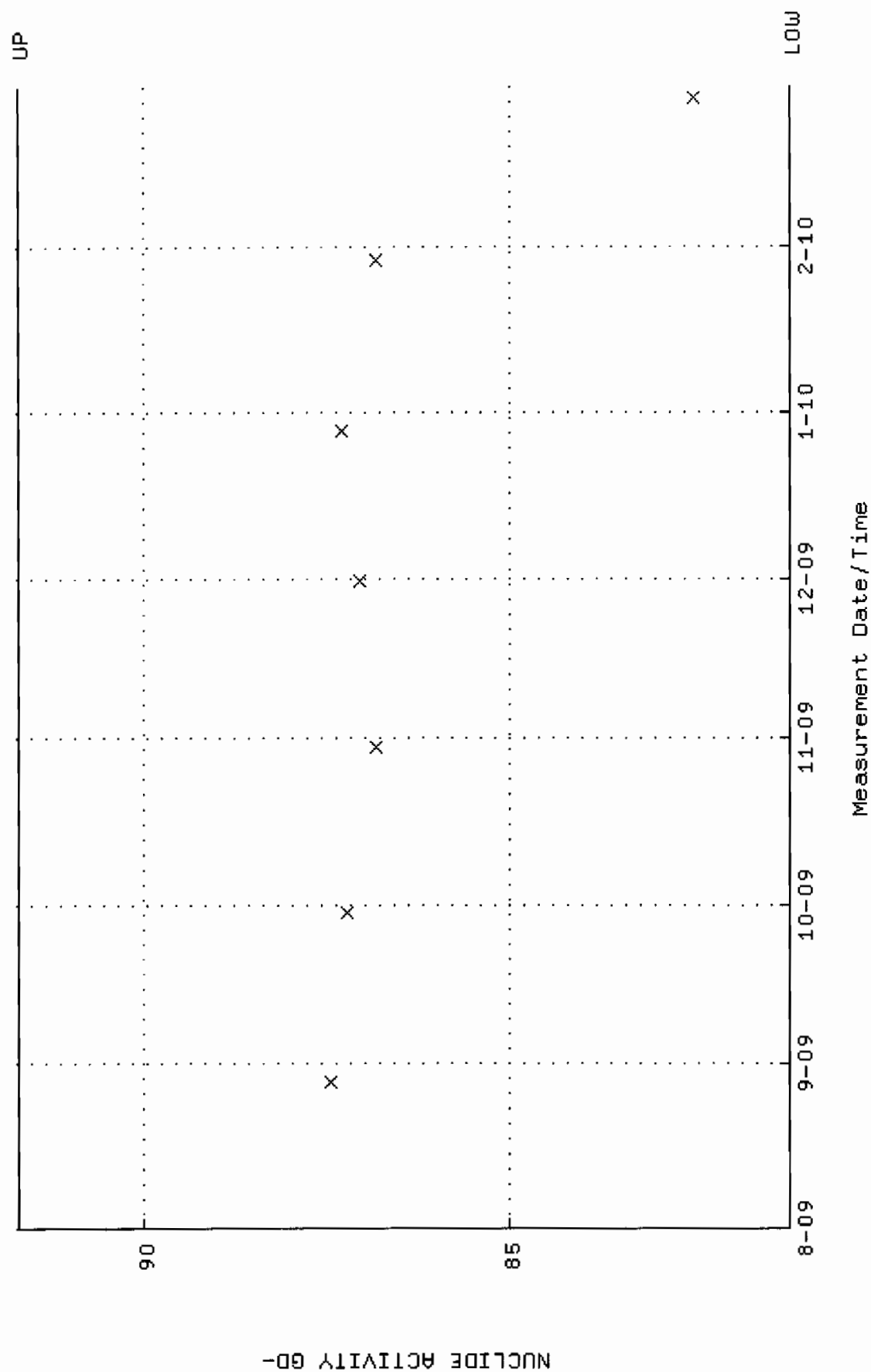
QA filename : DKA100:[ENV_ALPHA.QA.B]B244.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:40 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



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 : NLAIVITY-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

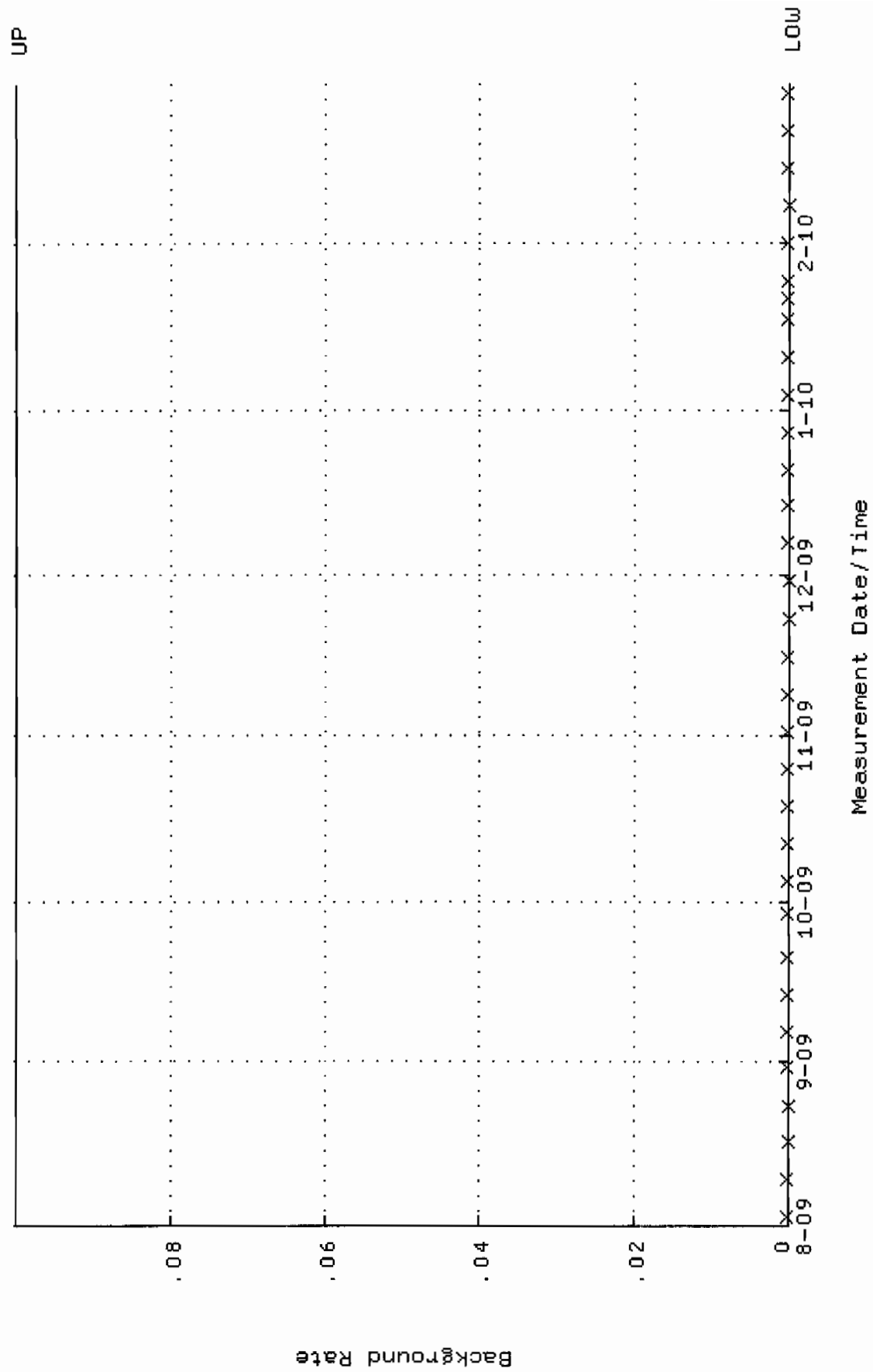


QA filename : DKA100:[ENV_ALPHA.QA.B]B245.QAF;1

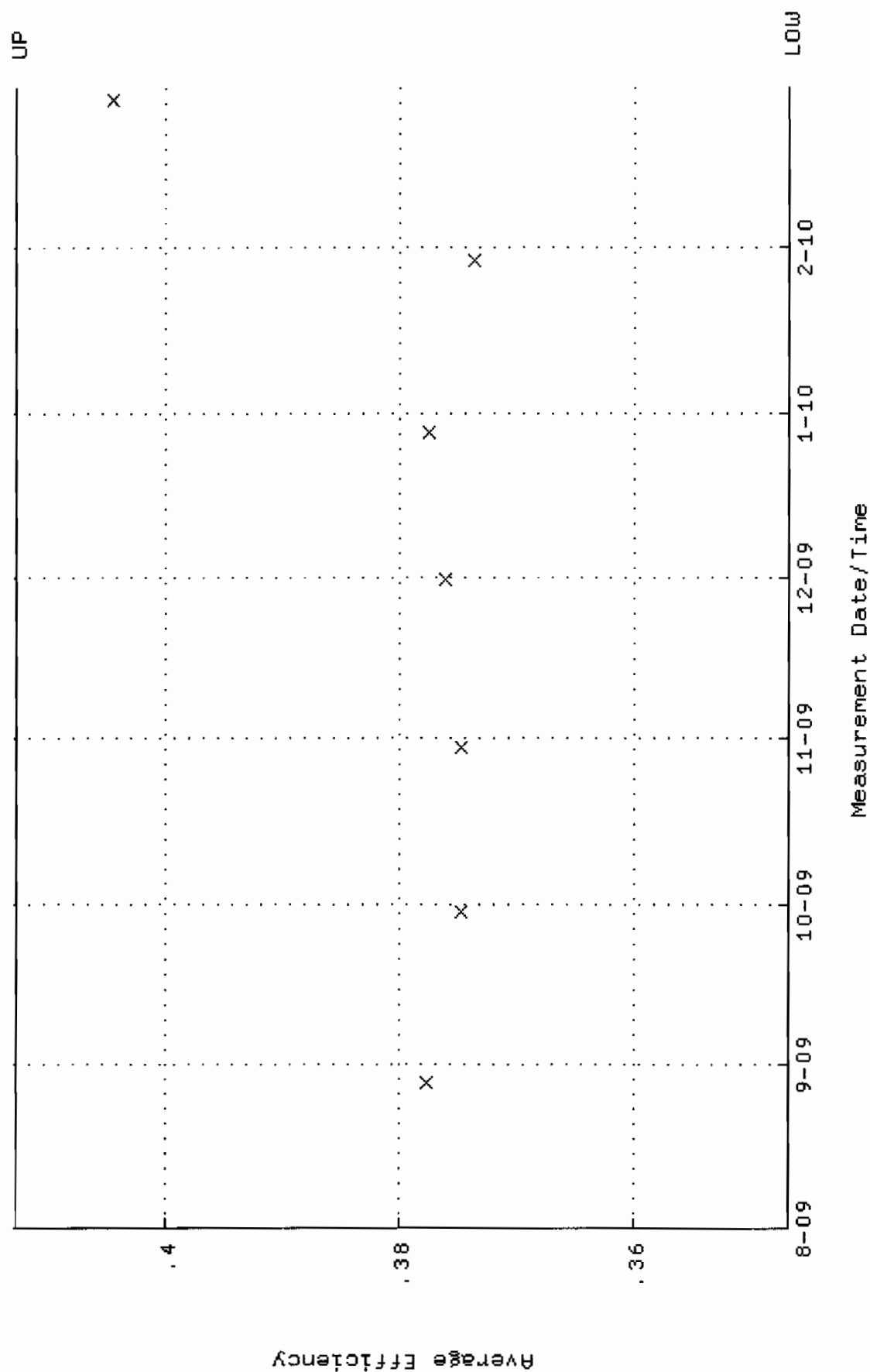
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:27:45 through 2-MAR-2010 12:00:00

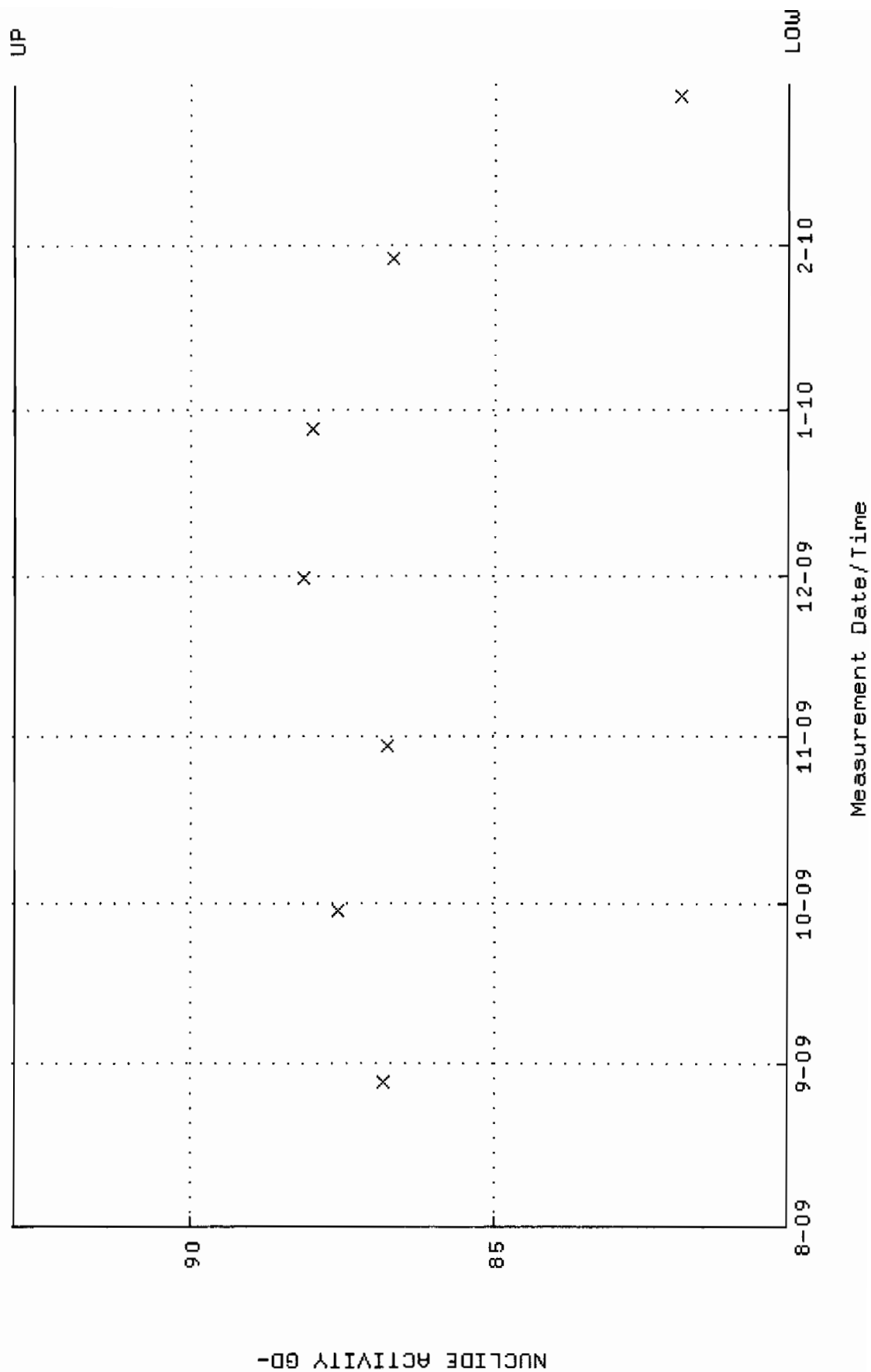
Lower/Upper Lmts: 0.000000E+00 through 0.100000



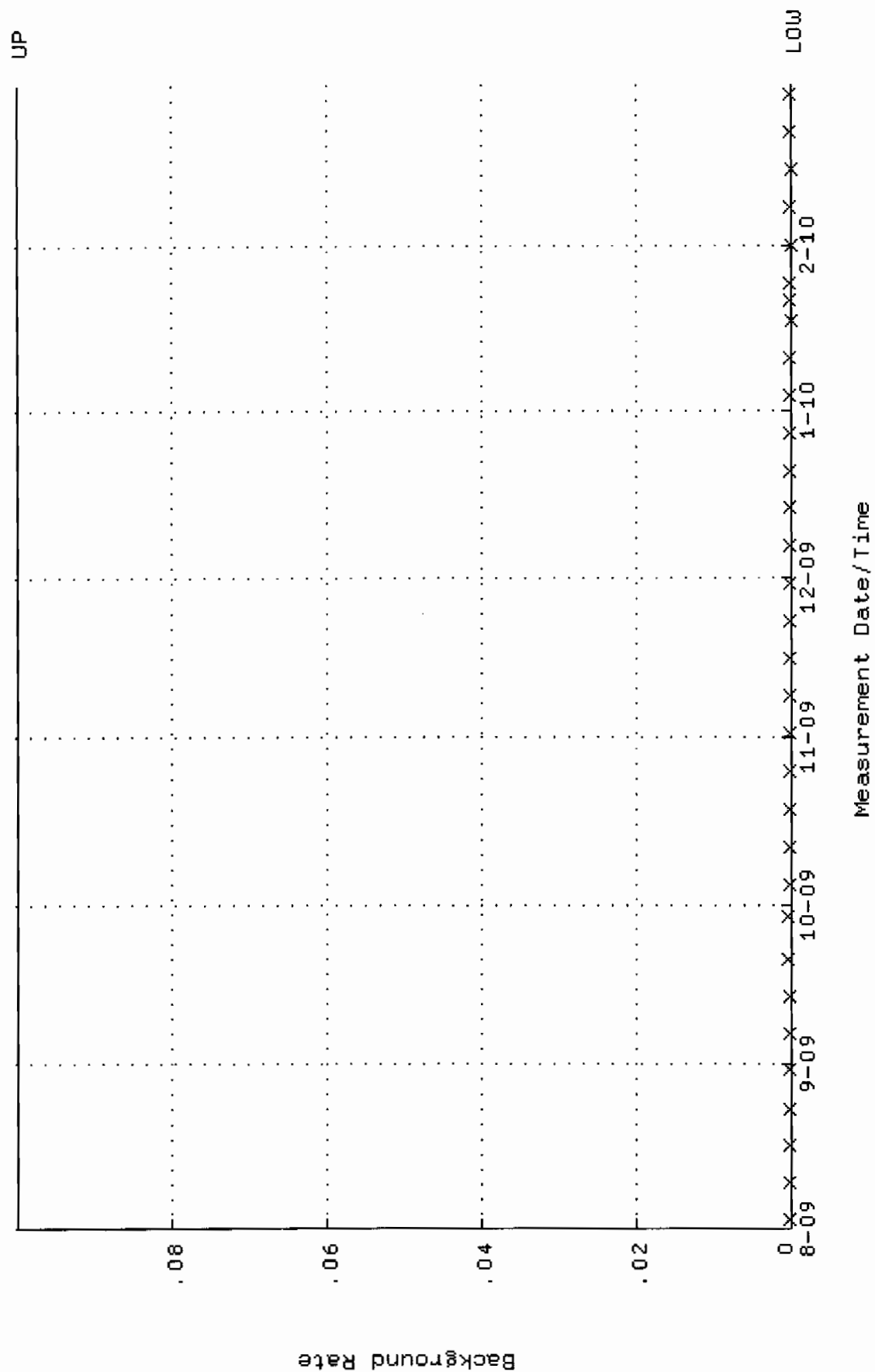
QA filename : OKA100: [ENV_ALPHA.QA.W]W246.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:44 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.346753 through 0.412735



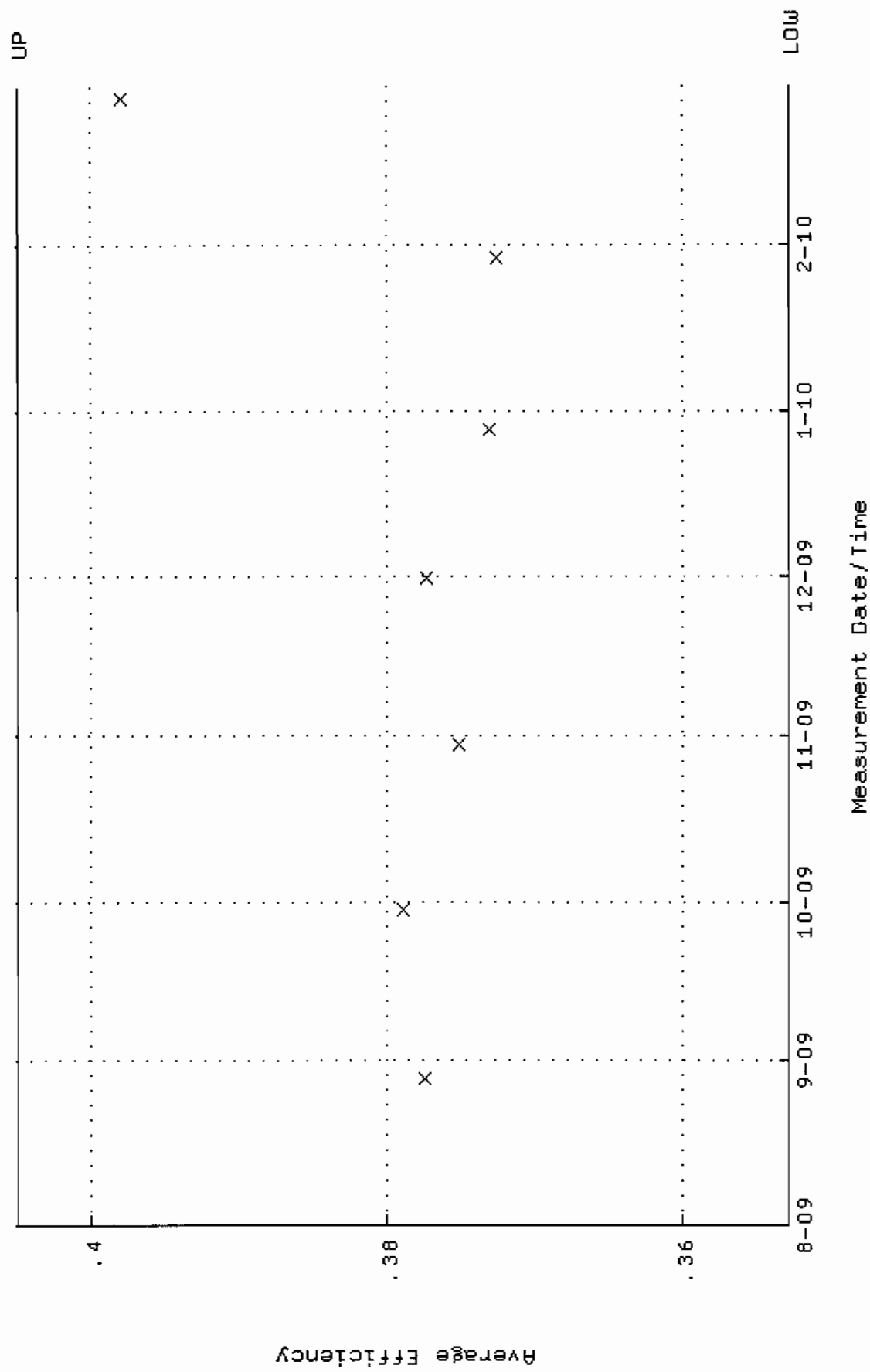
QA filename : DKA100:[ENV_ALPHA.QA.W]W246.QAF;1
Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 28-AUG-2009 07:09:44 through 2-MAR-2010 12:00:00
Lower/Upper Lmts: 80.1657 through 92.9177



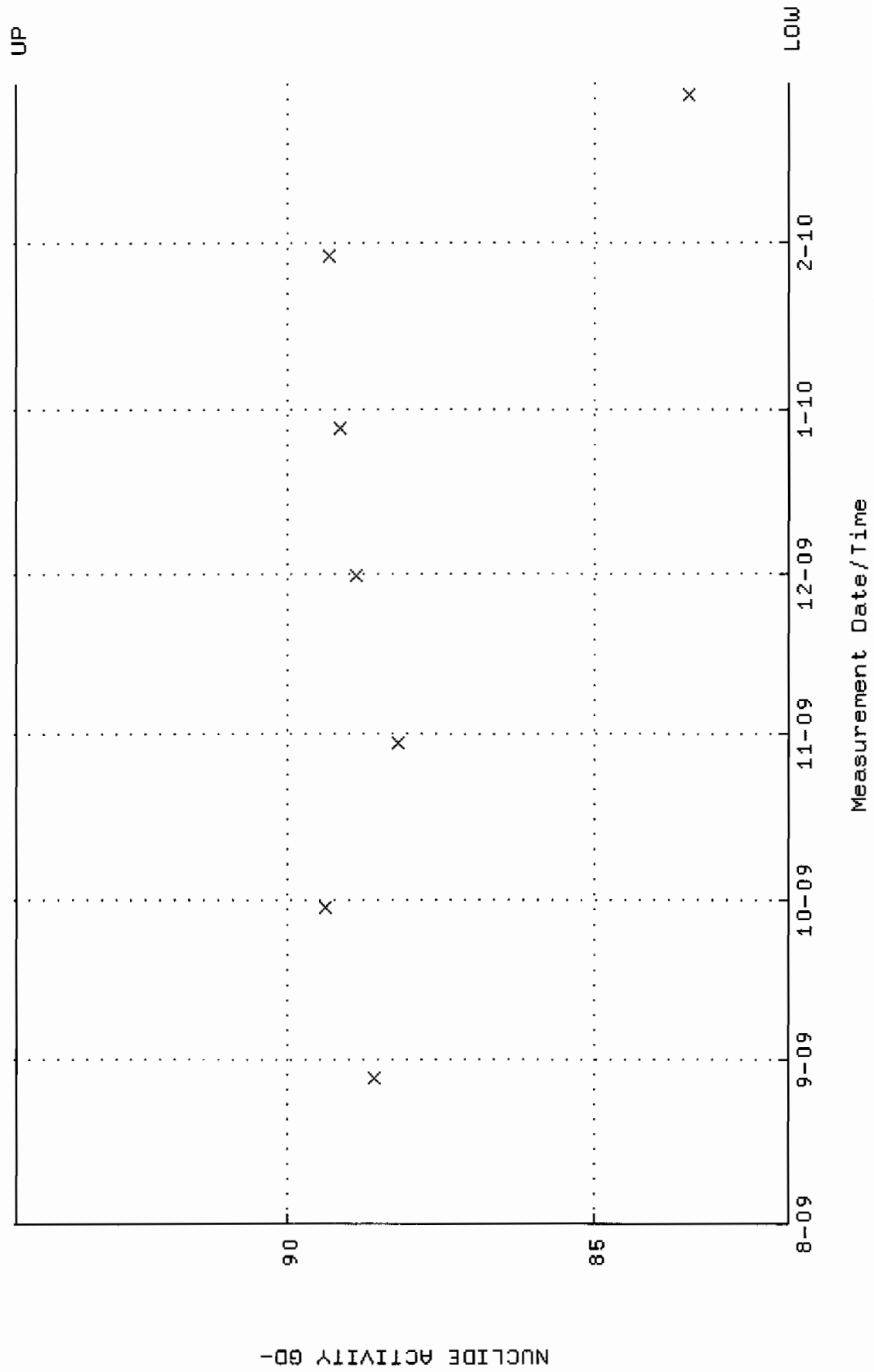
QA filename : DKA100:[ENV_ALPHA.QA.B]B246.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:49 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



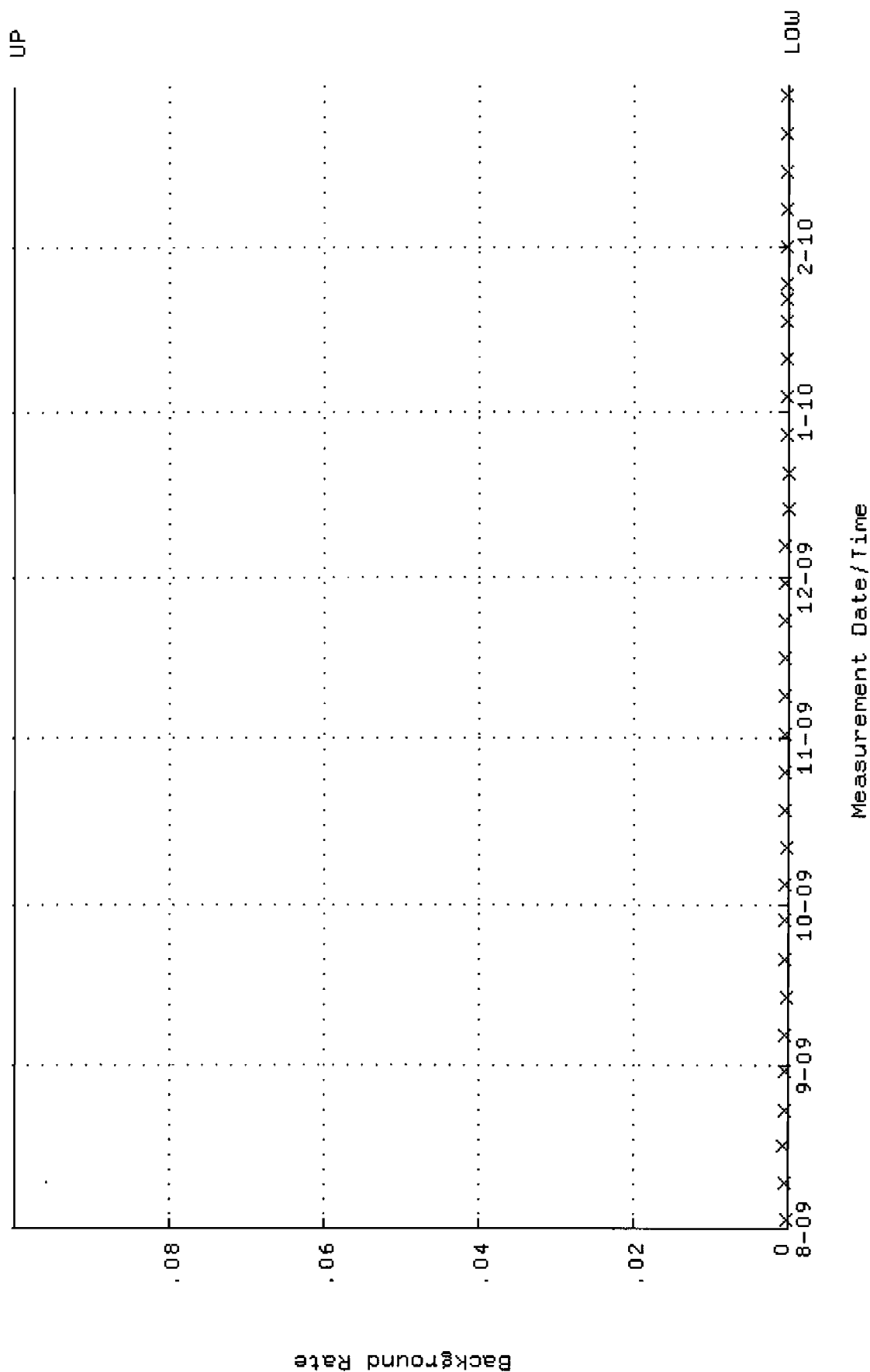
QA filename : DKA100:[ENV_ALPHA.QA.W]w247.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 28-AUG-2009 07:09:50 through 2-MAR-2010 12:00:00
Lower/Upper Lmts: 0.352698 through 0.404942



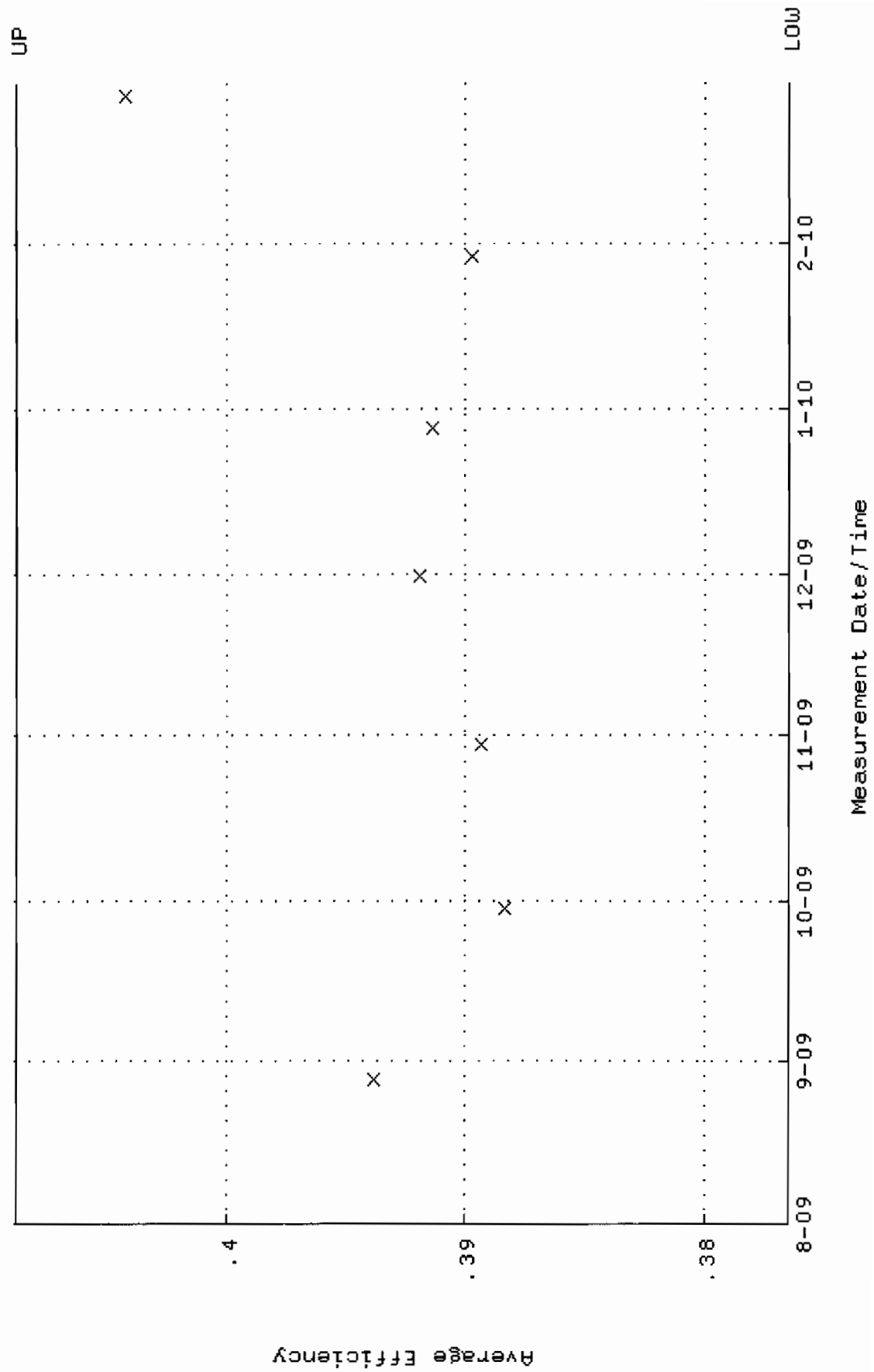
QA filename : DKA100:[ENV_ALPHA.QA.W]W247.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:50 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.8318 through 94.4164



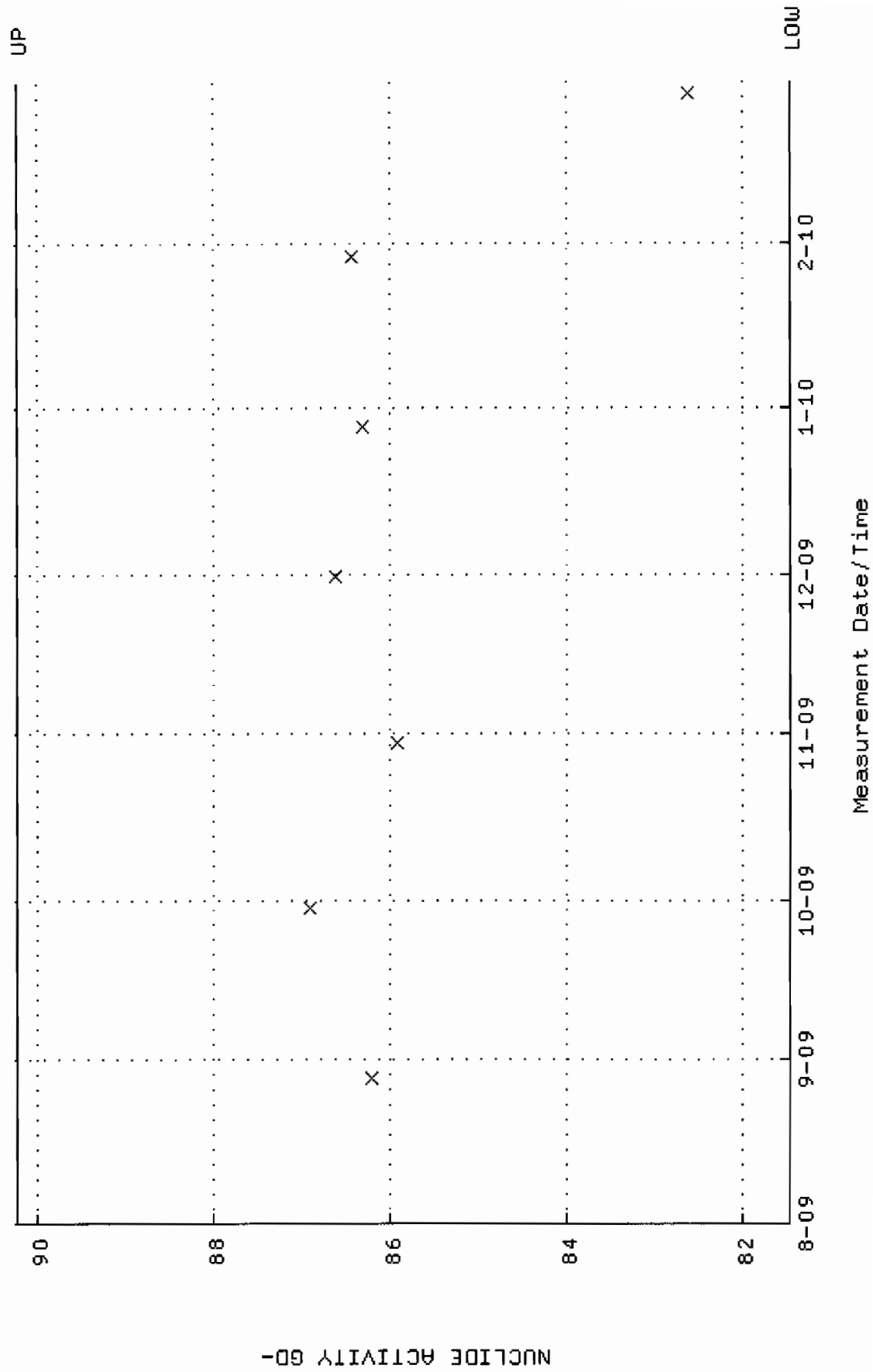
QA filename : DKA100:[ENV-ALPHA.QA.B]B247.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:54 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



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 : NLACTIVITY-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

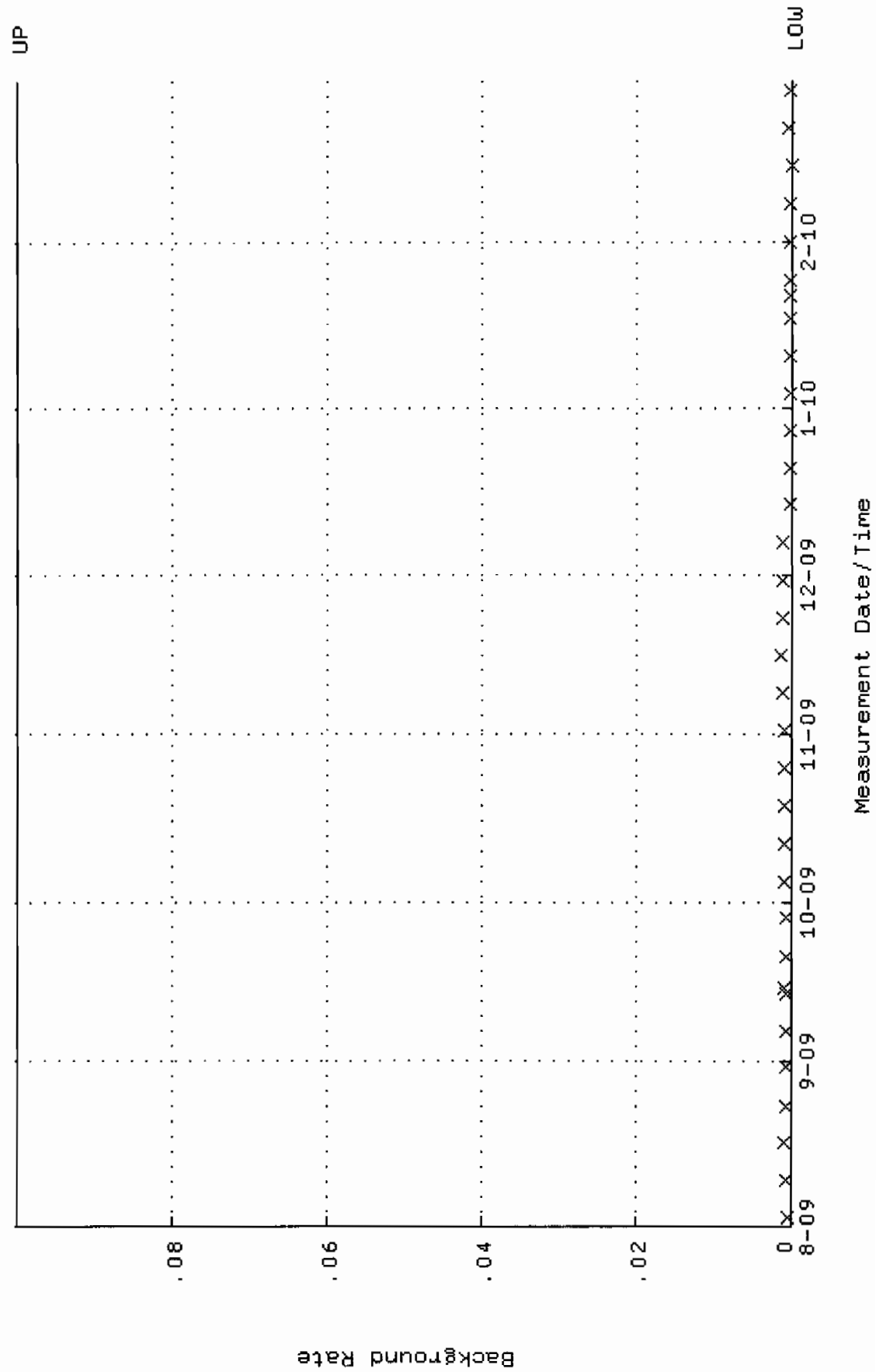


QA filename : DKA100:[ENV_ALPHA.QA.B]B248.QAF;1

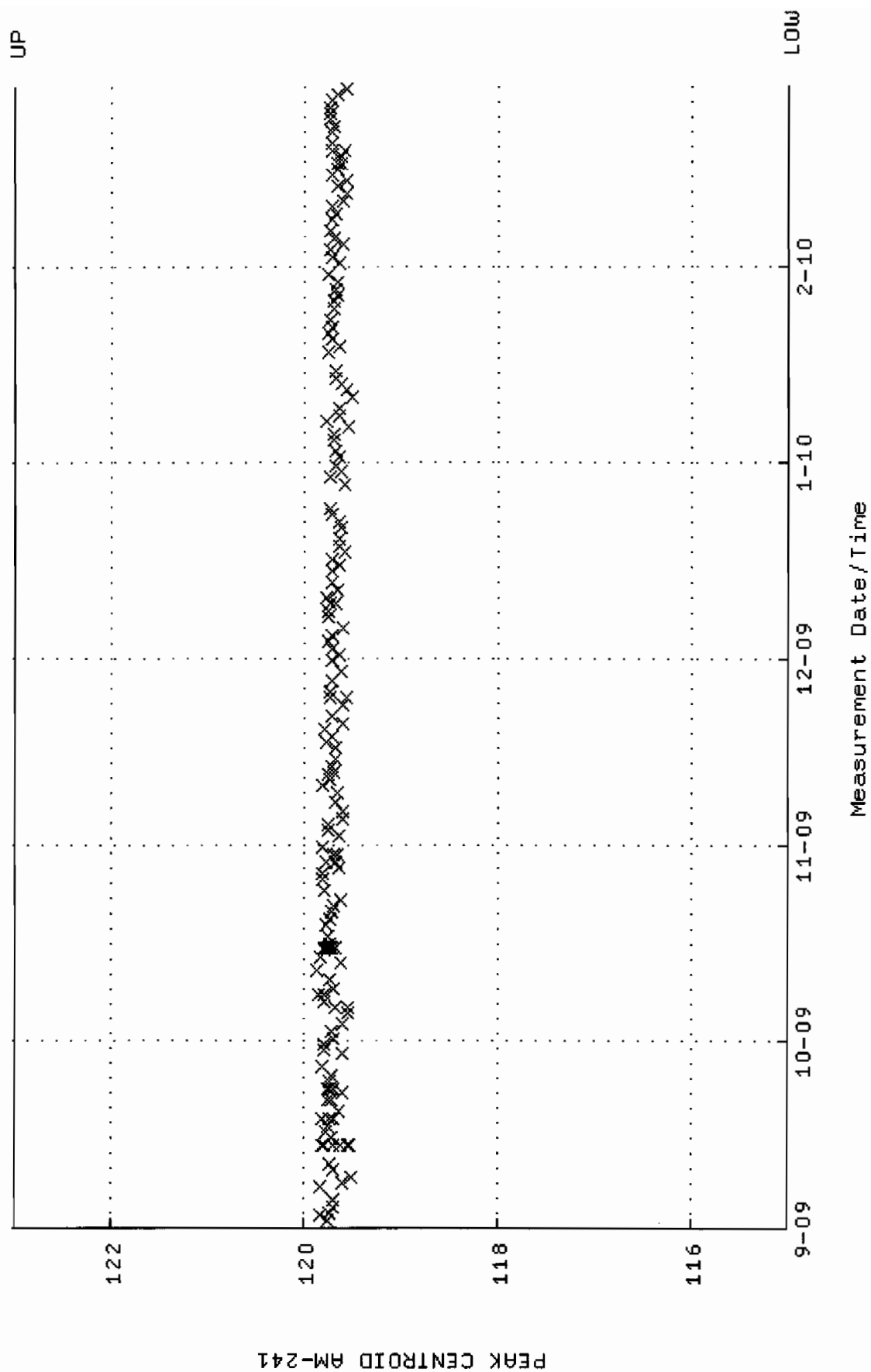
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:27:59 through 2-MAR-2010 12:00:00

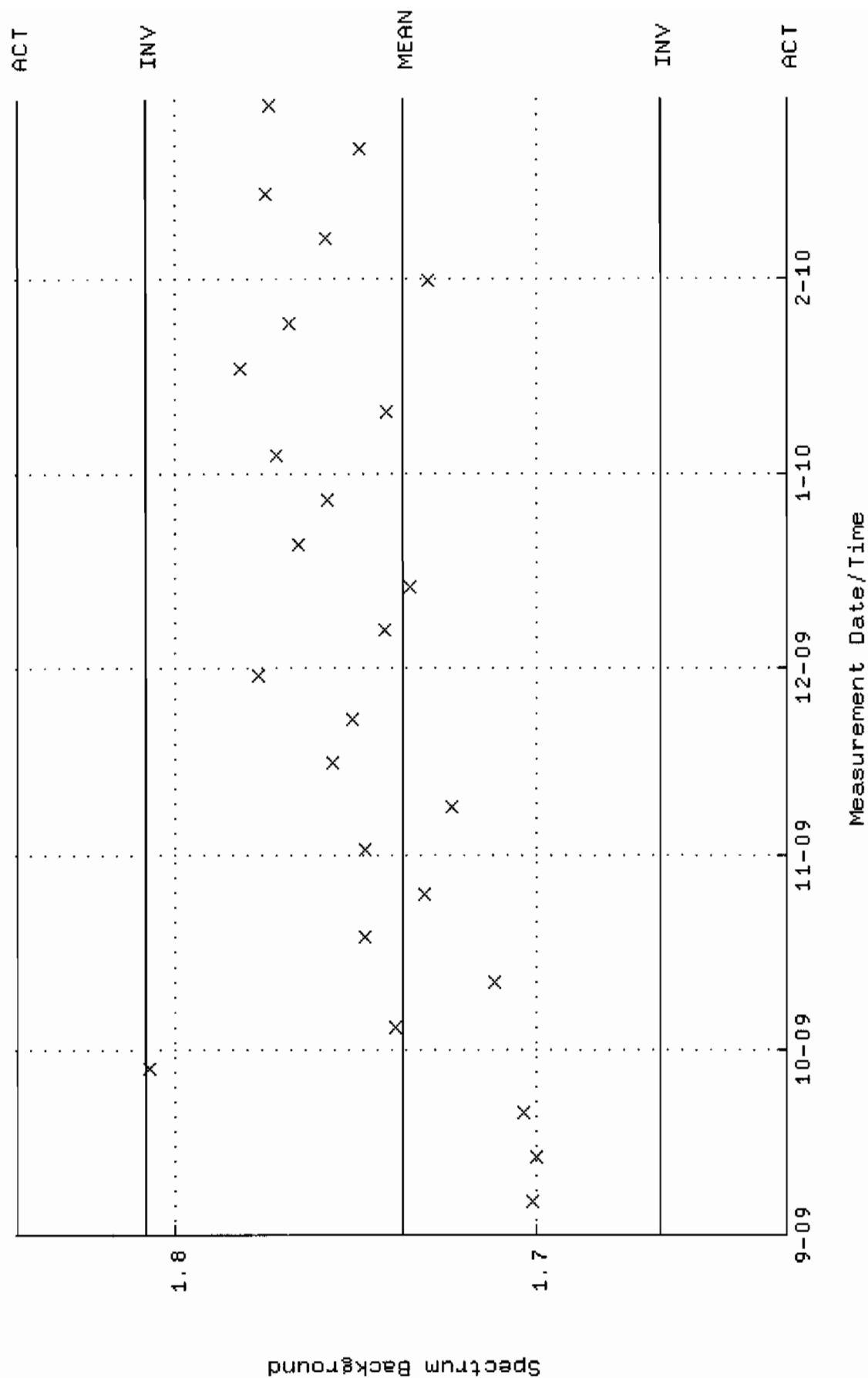
Lower/Upper Lmts: 0.000000E+00 through 0.100000



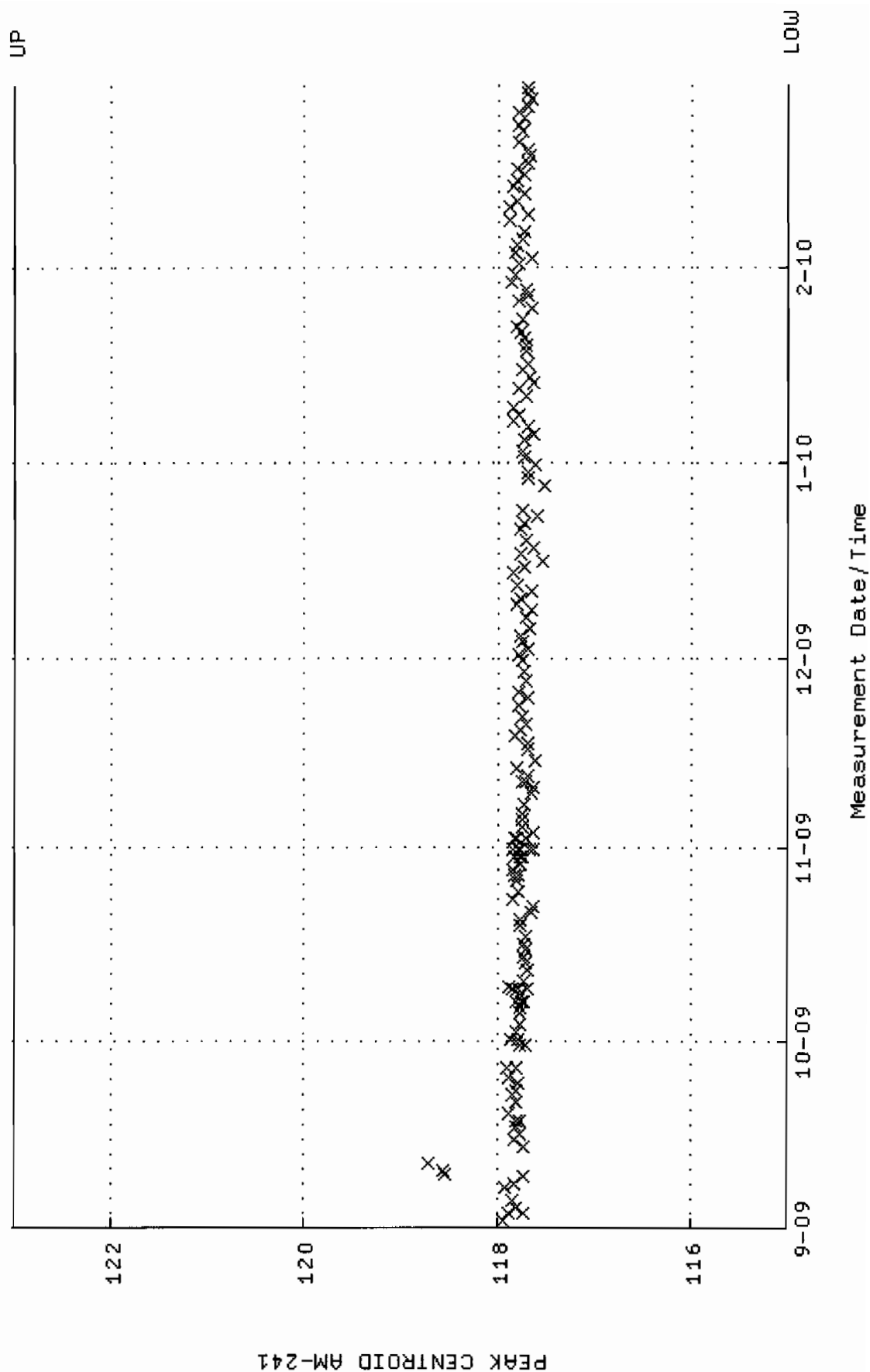
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM01-500MLMB.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 04:39:53 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



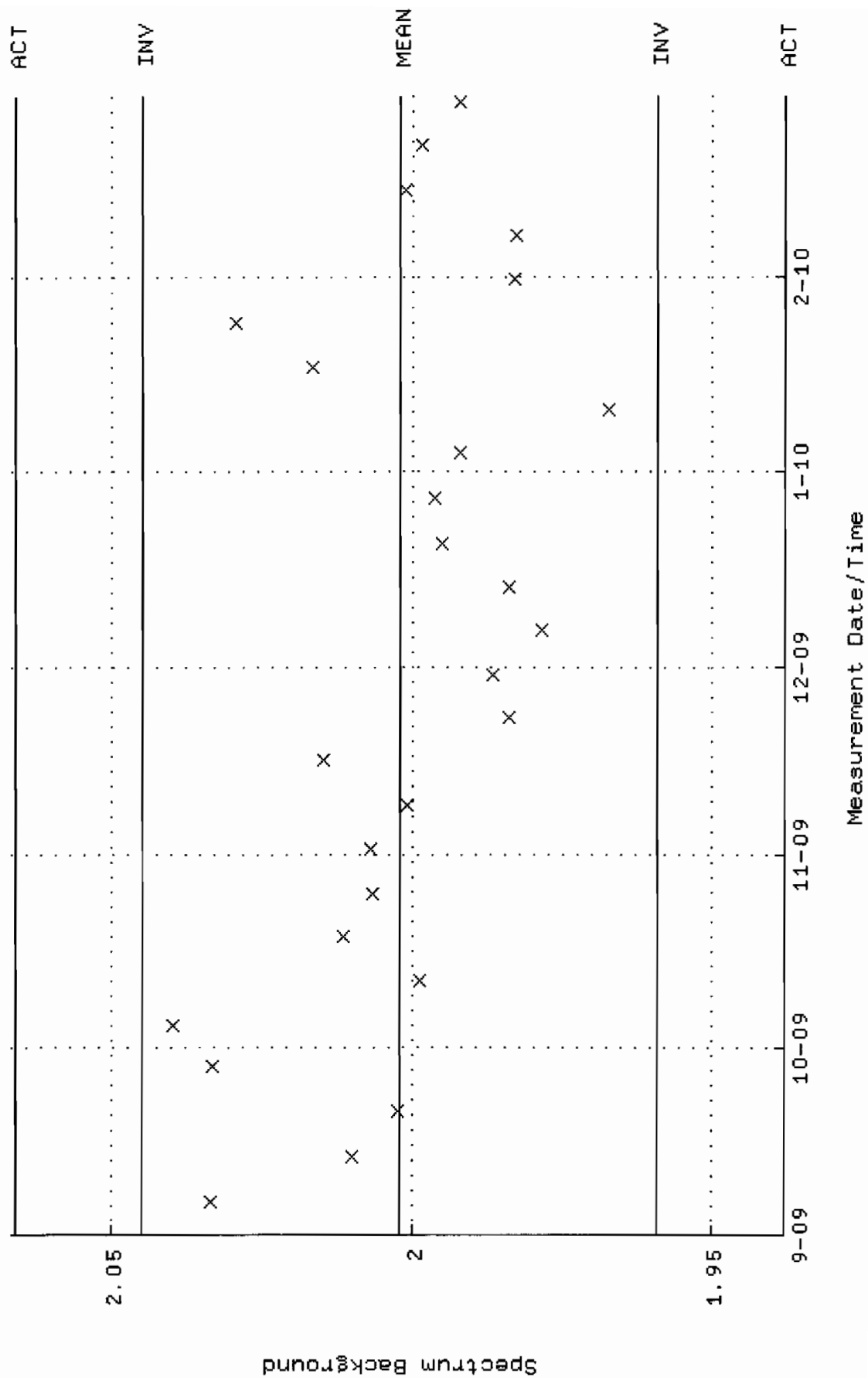
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM01.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:36:28 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.73723 +- 3.552524E-02 (2.04 %)



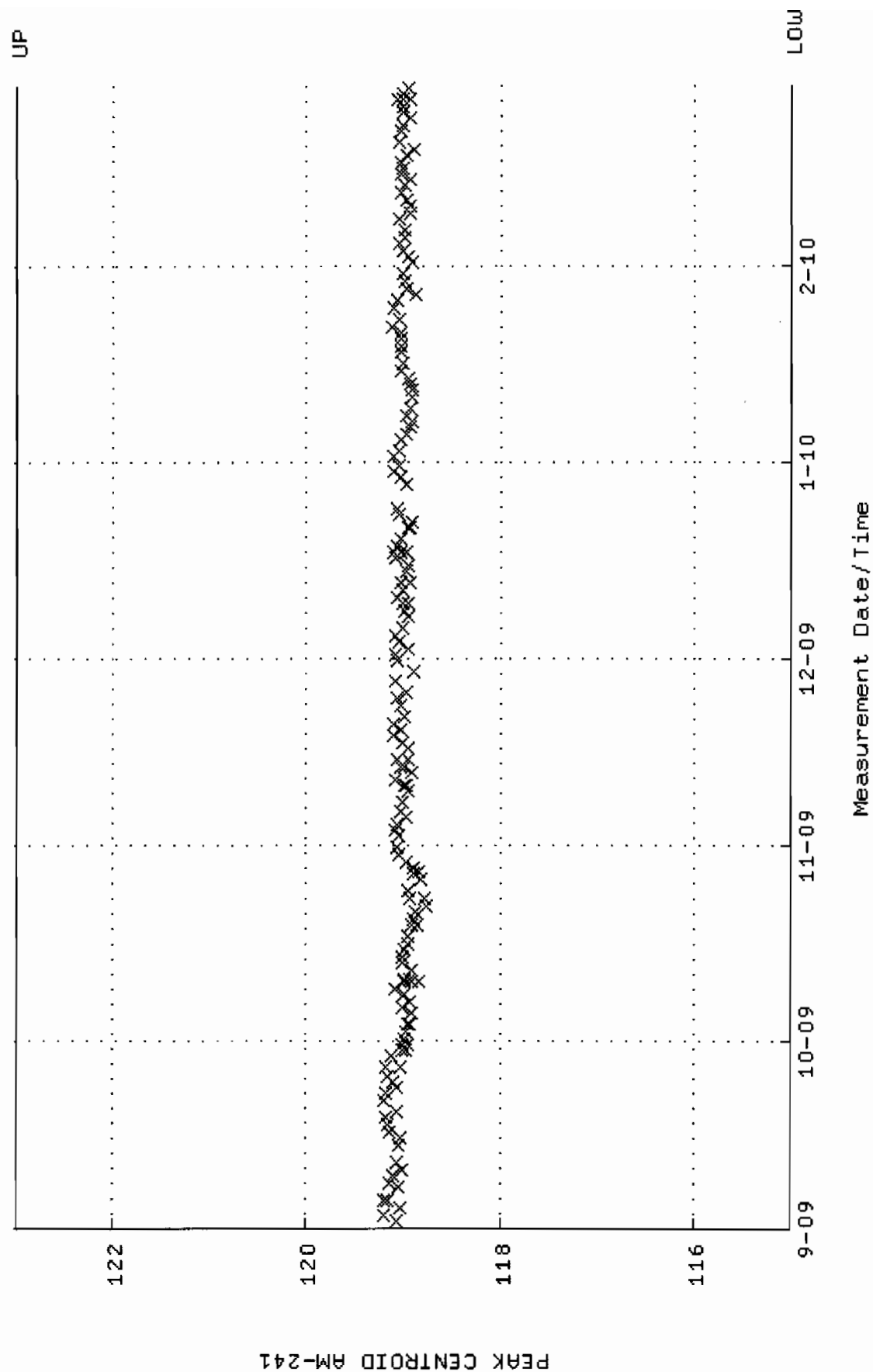
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM02-CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 04:40:02 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



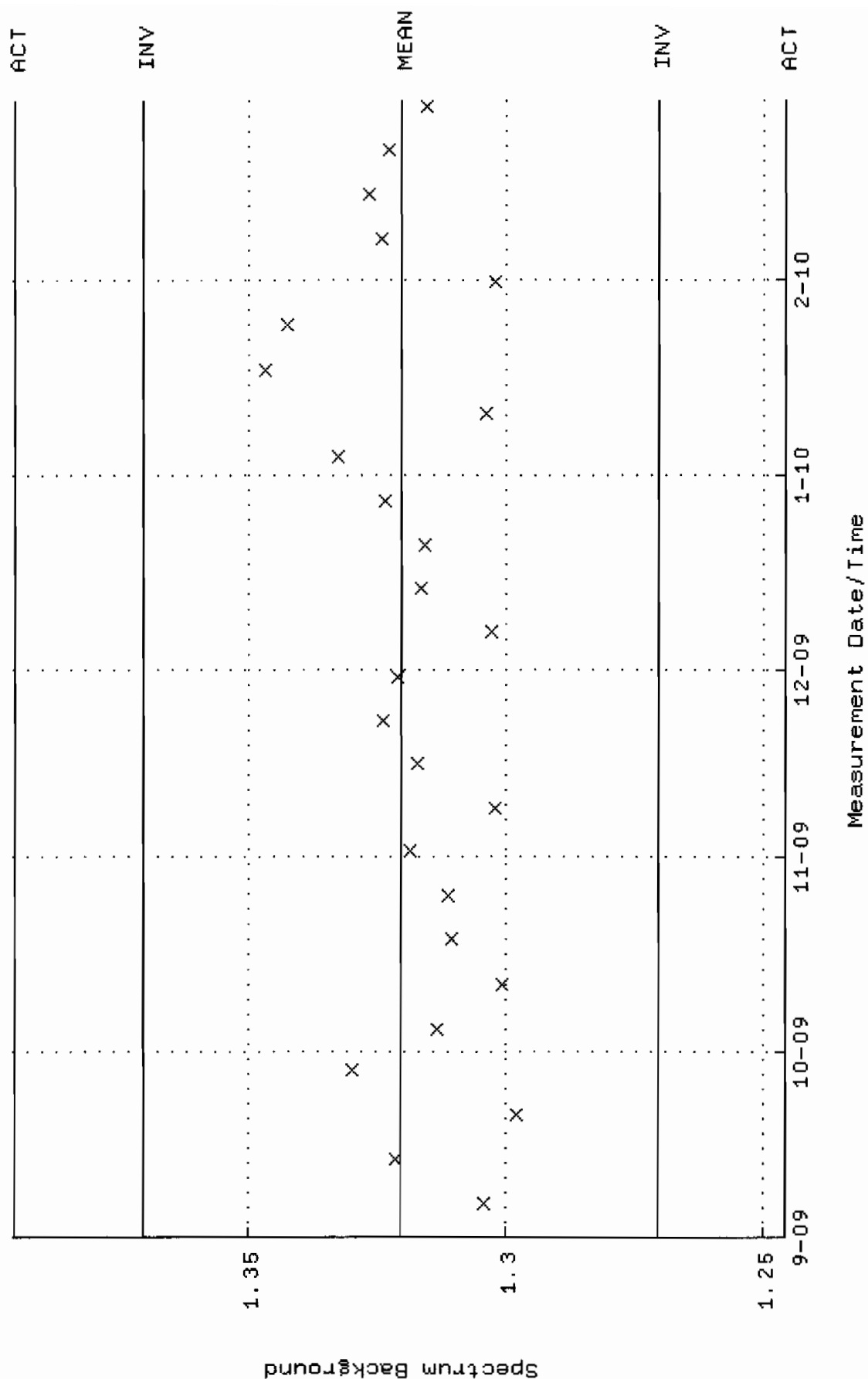
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM02.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:37:17 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 2.00226 +- 2.139827E-02 (1.07 %)



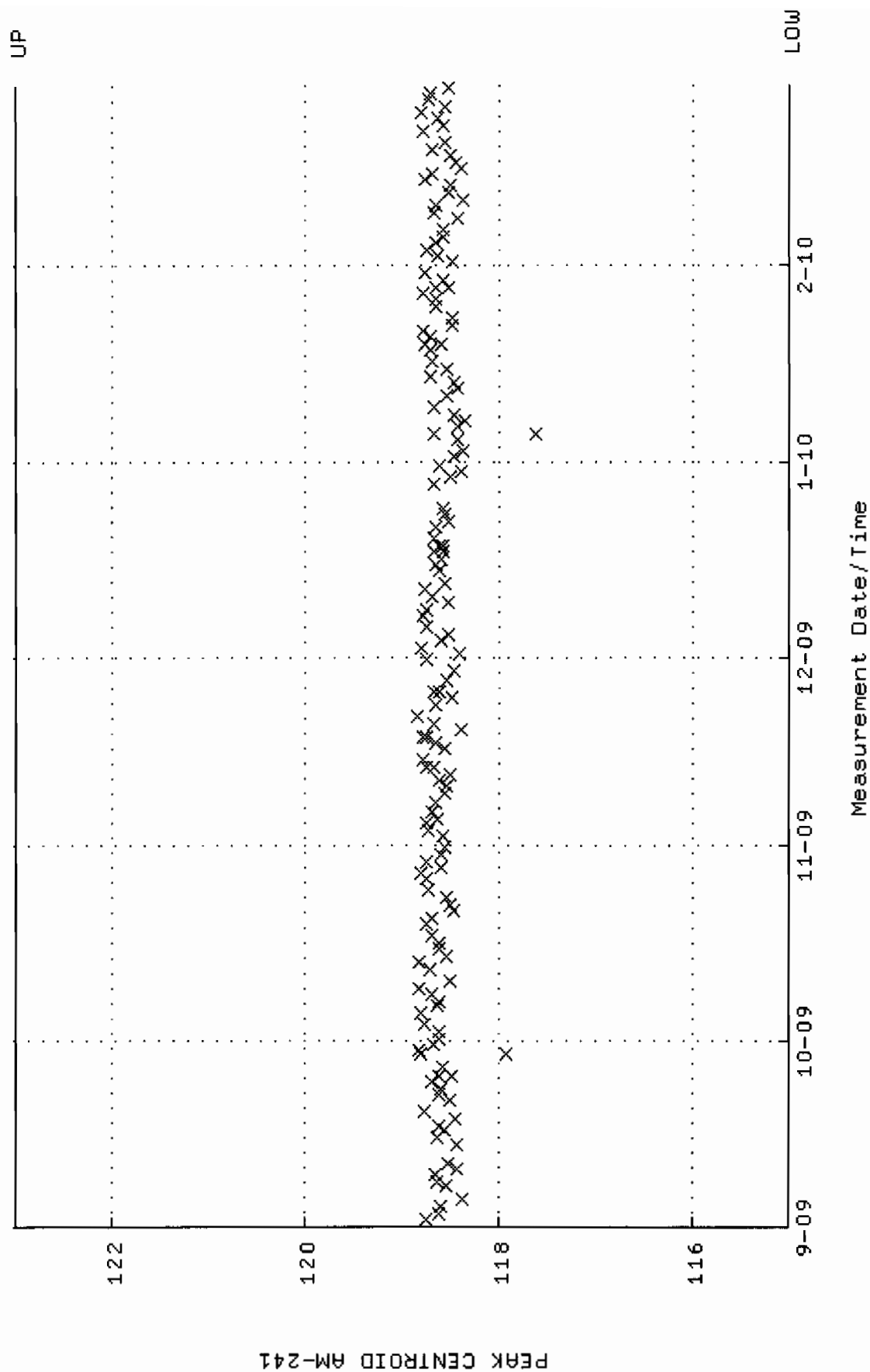
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM04-CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 05:22:58 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



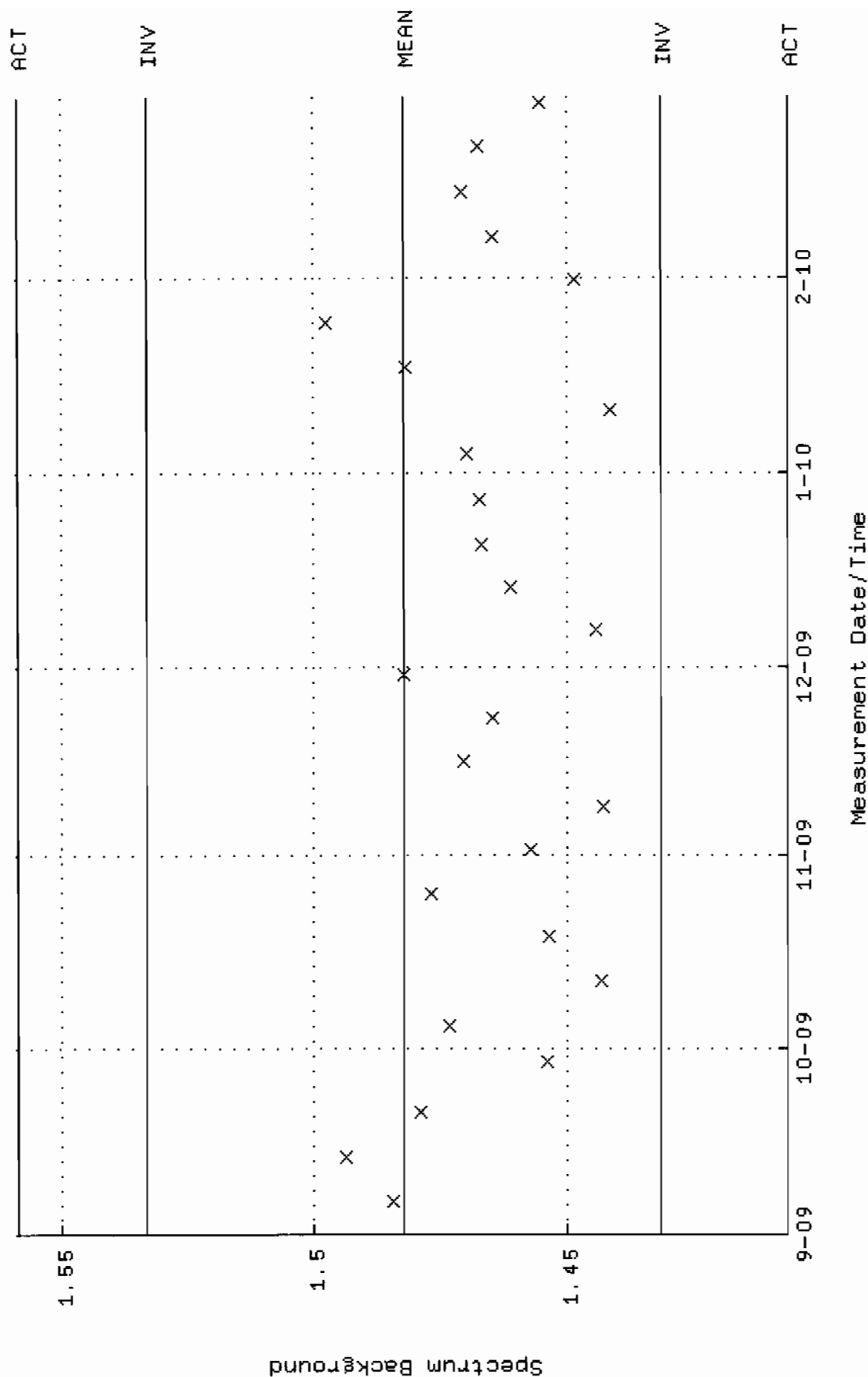
QA filename : DKA100: [CANBERRA.GAMMA.SCUSR.QA]LBC-GAM04.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:38:33 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.32050 +- 2.495234E-02 (1.89 %)



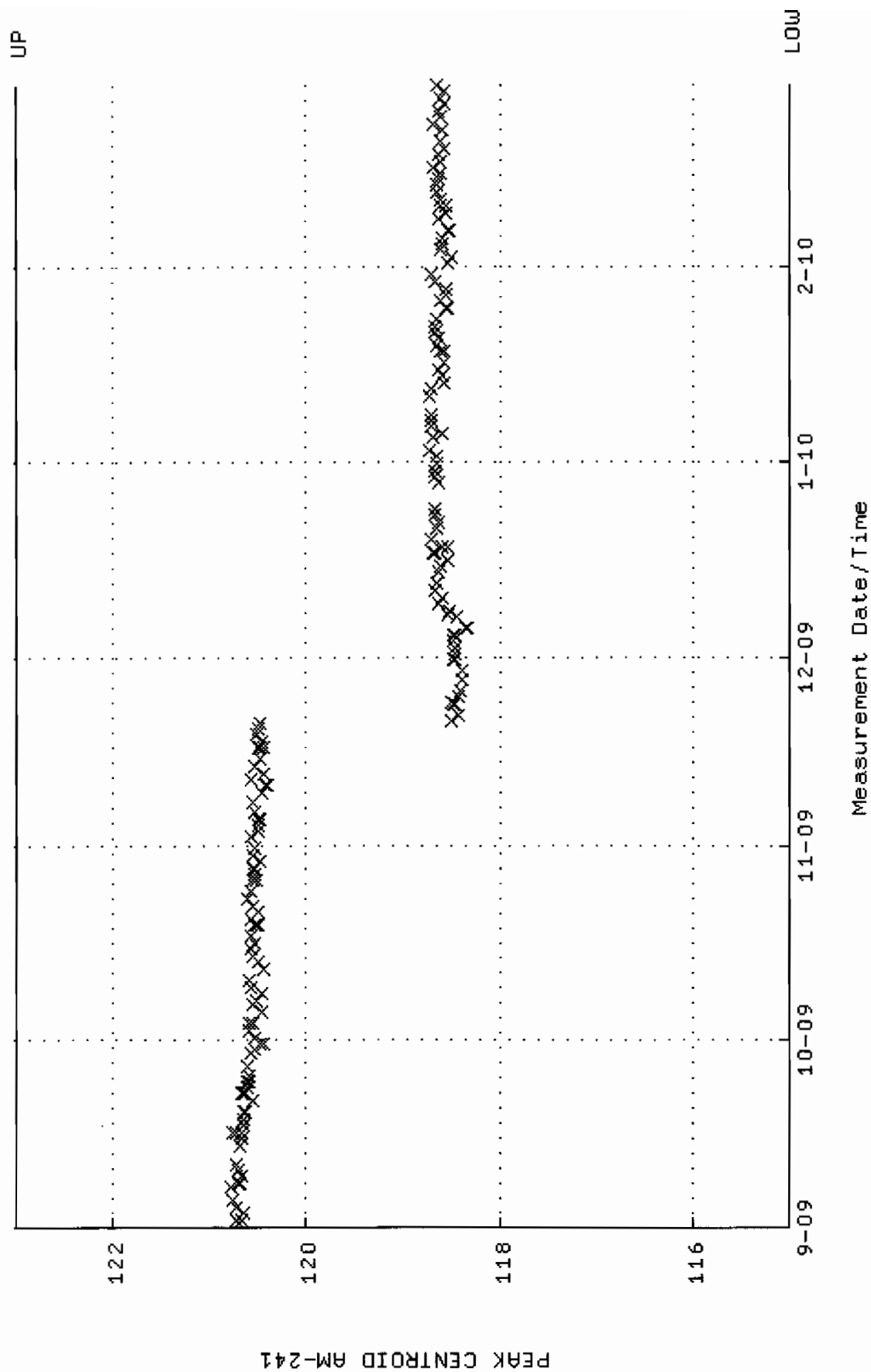
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM14_2LMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:40:36 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



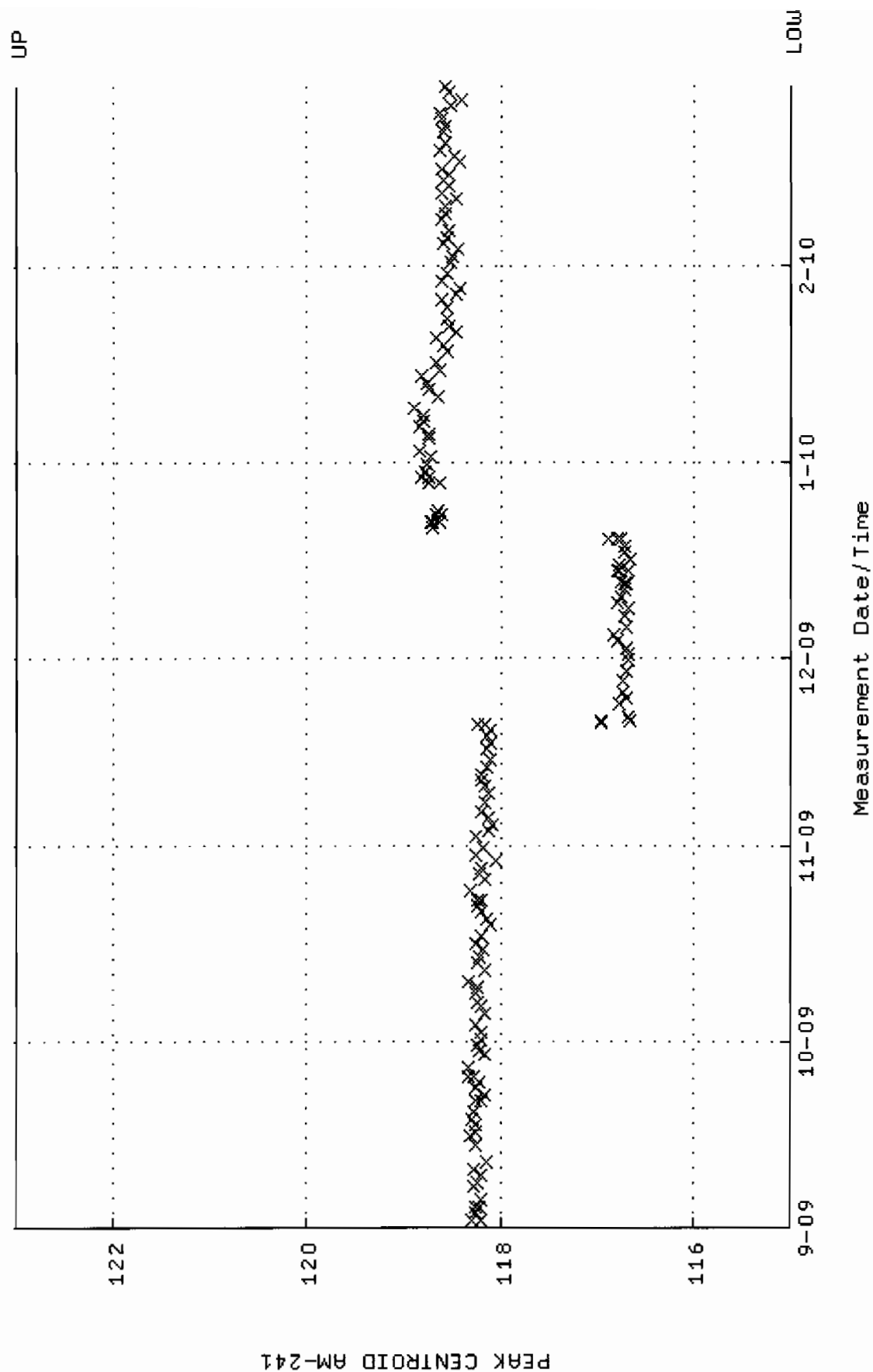
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM14.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:43:20 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.48240 +- 2.535500E-02 (1.71 %)



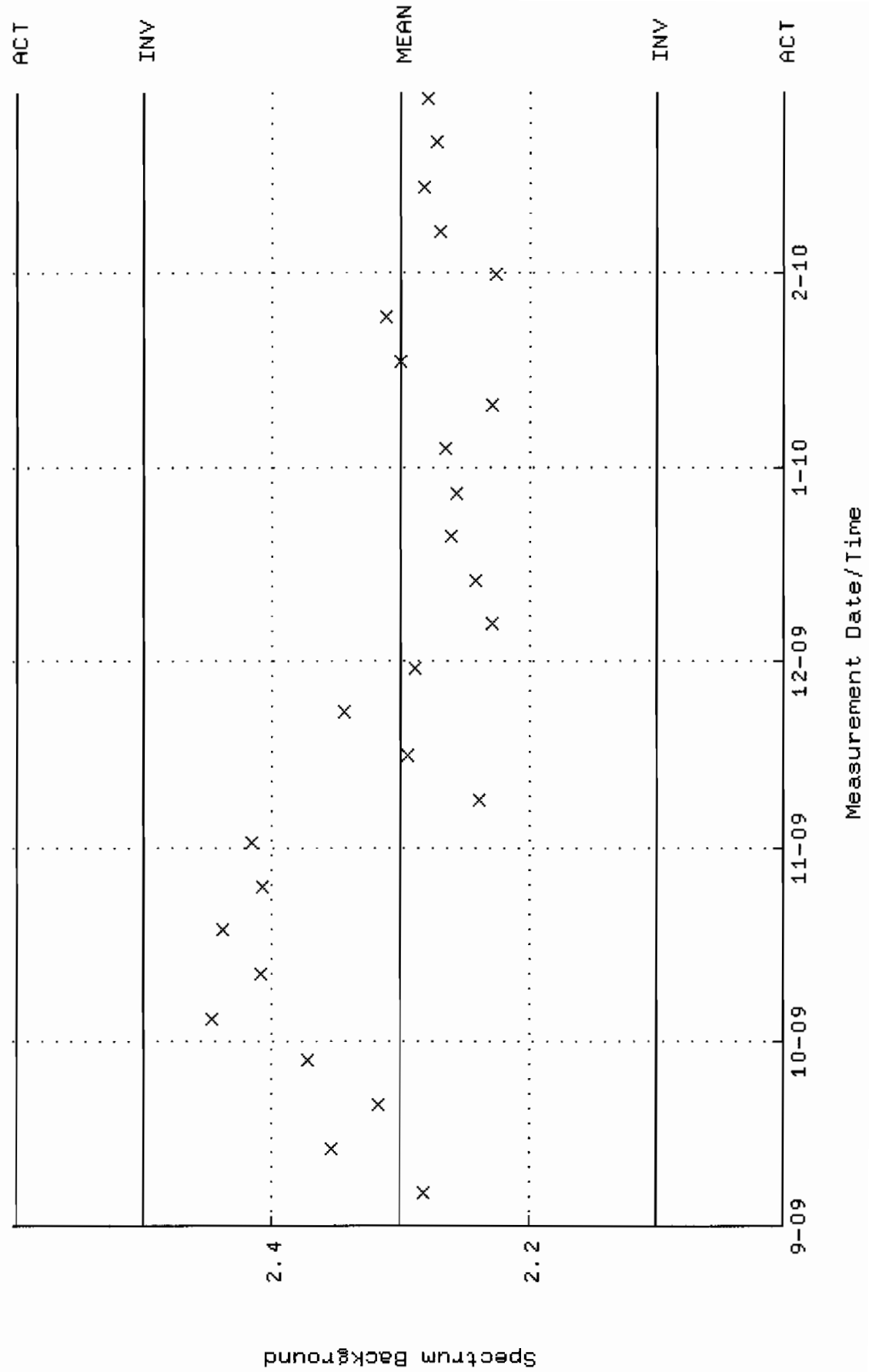
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM17-CAN.QAF;1
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:06:49 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



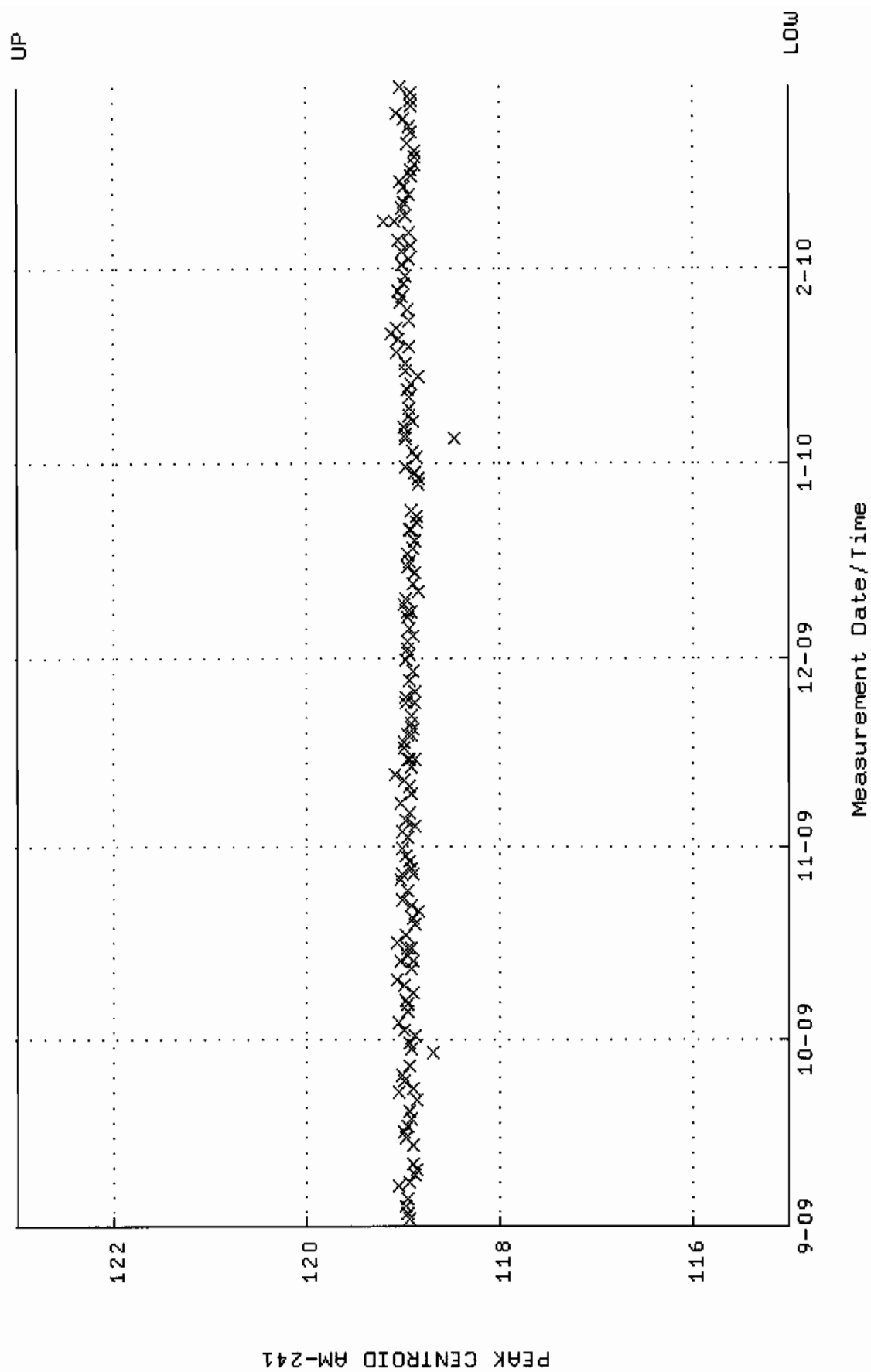
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM18-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:13:07 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



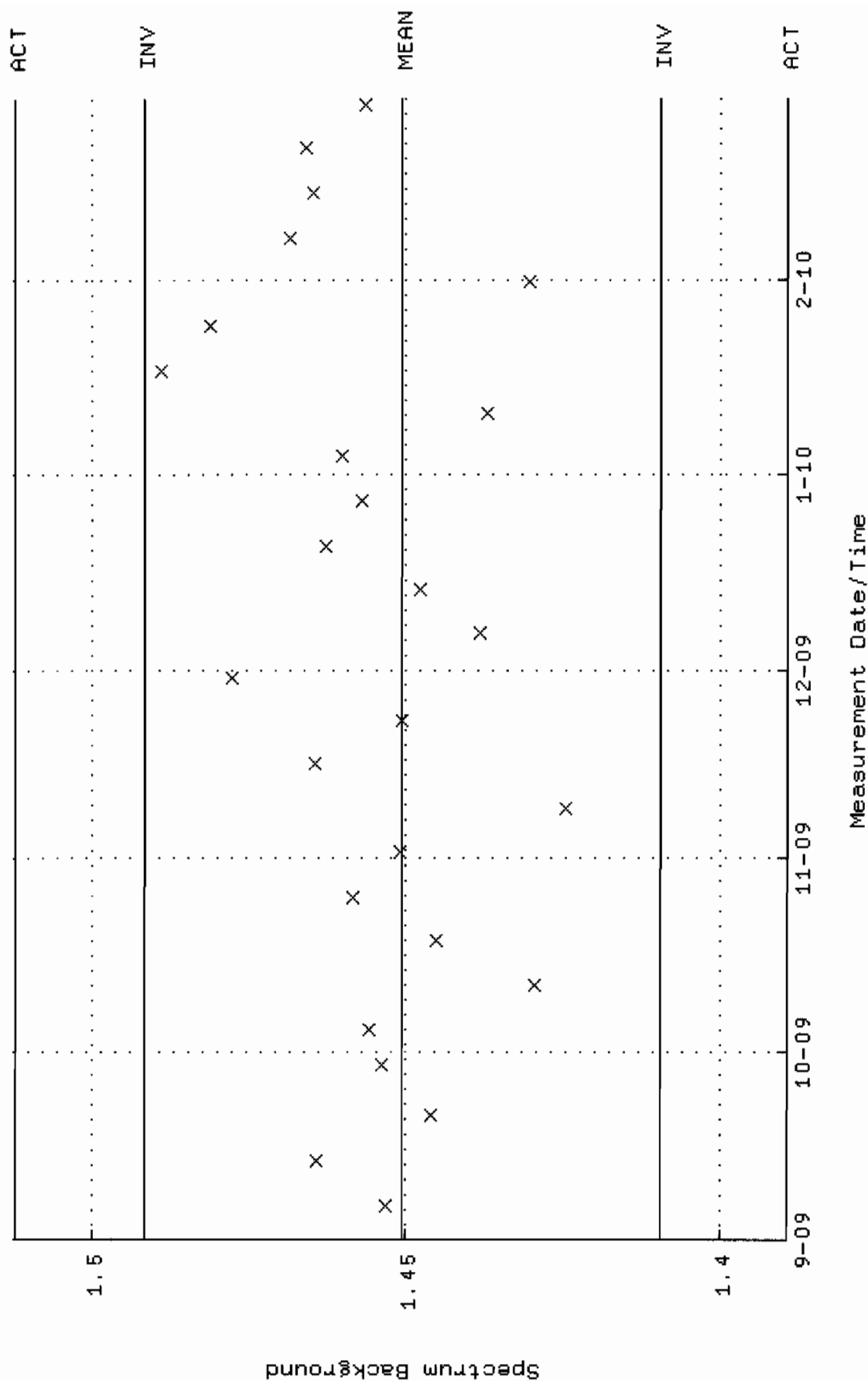
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM18.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:45:03 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 2.30164 +- 9.930626E-02 (4.31 %)



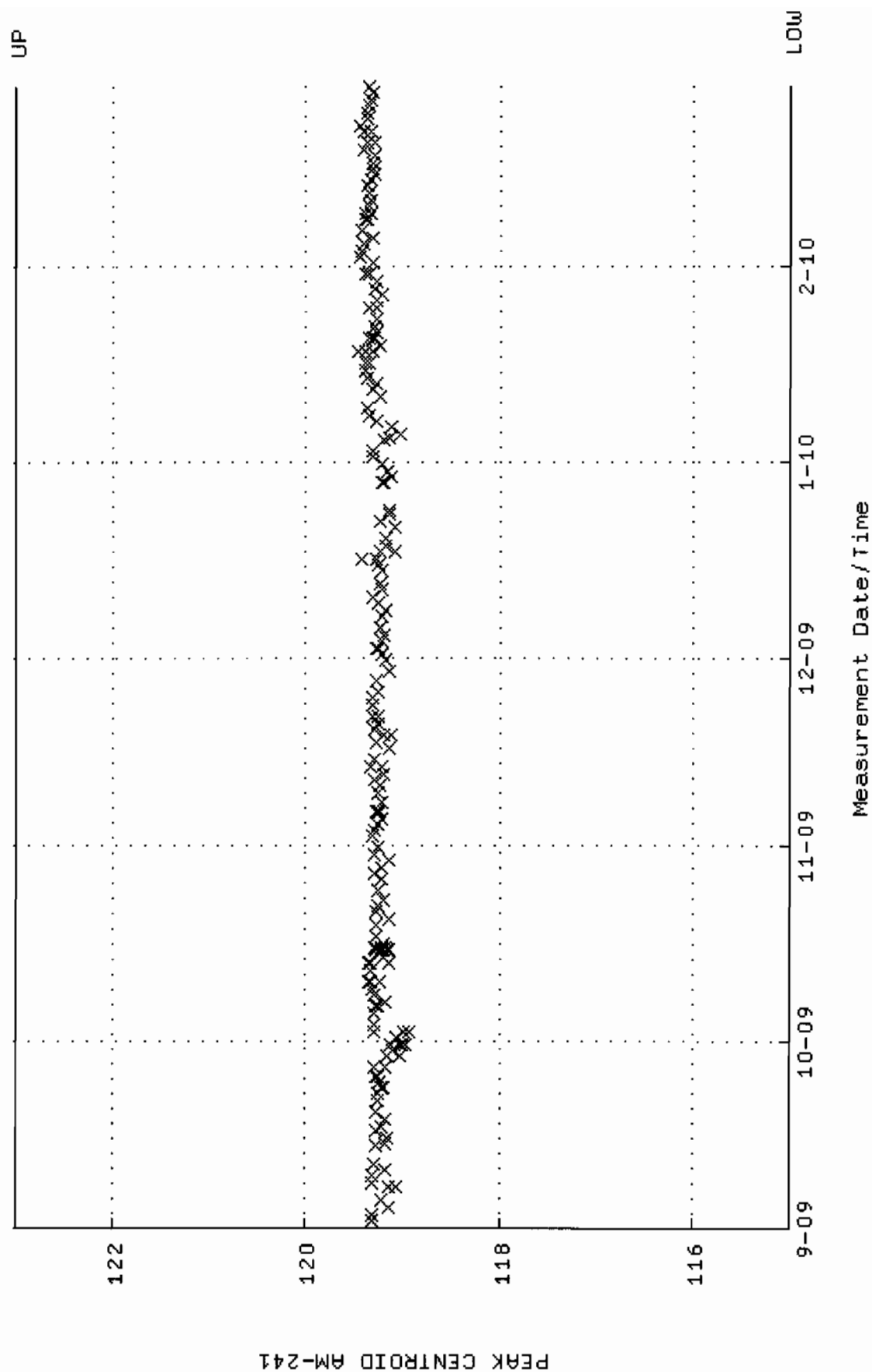
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM19-CAN.QAF;1
 Parameter Name : PSCENTROD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:06:58 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



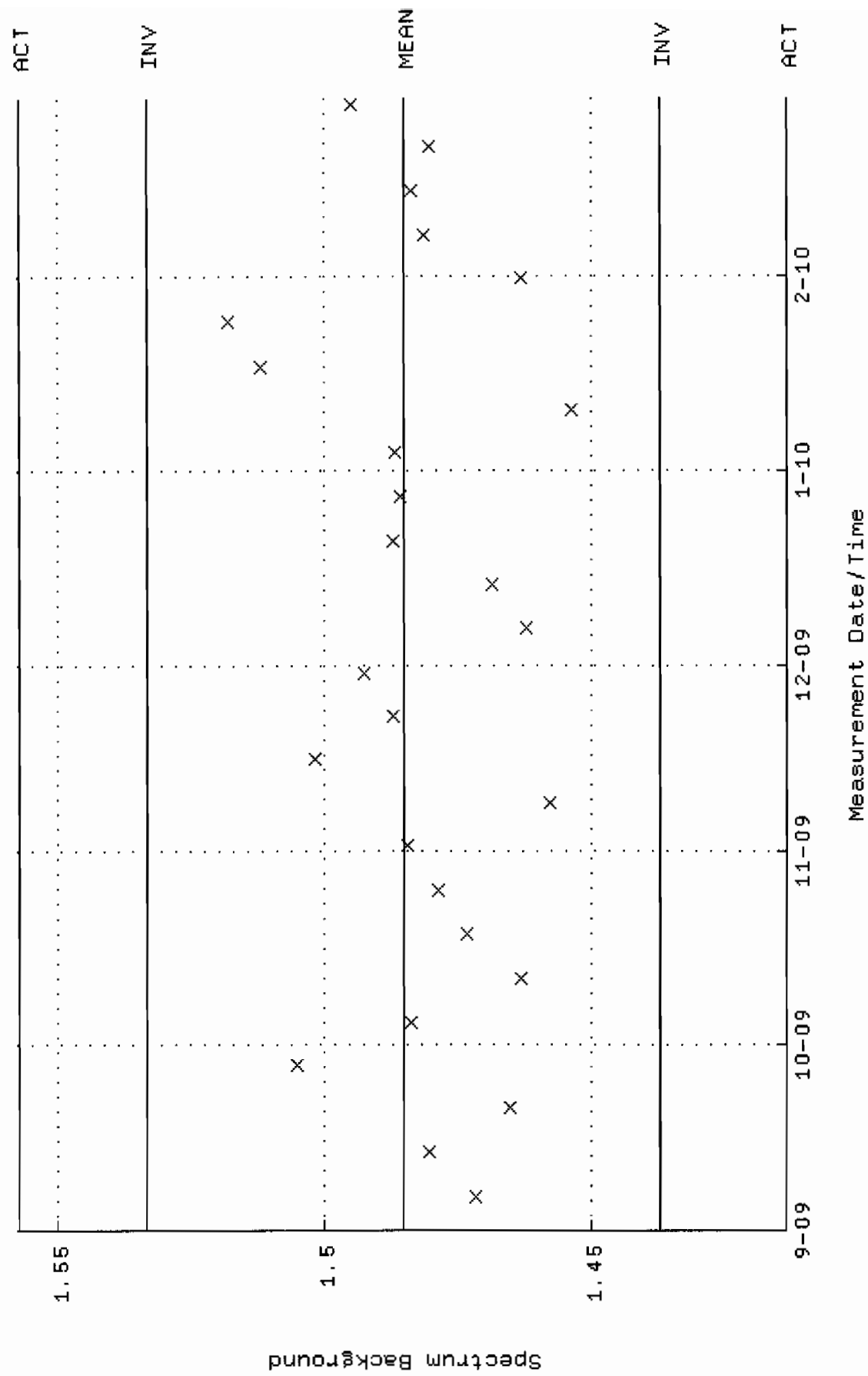
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM19.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:45:39 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.45067 +- 2.046038E-02 (1.41 %)



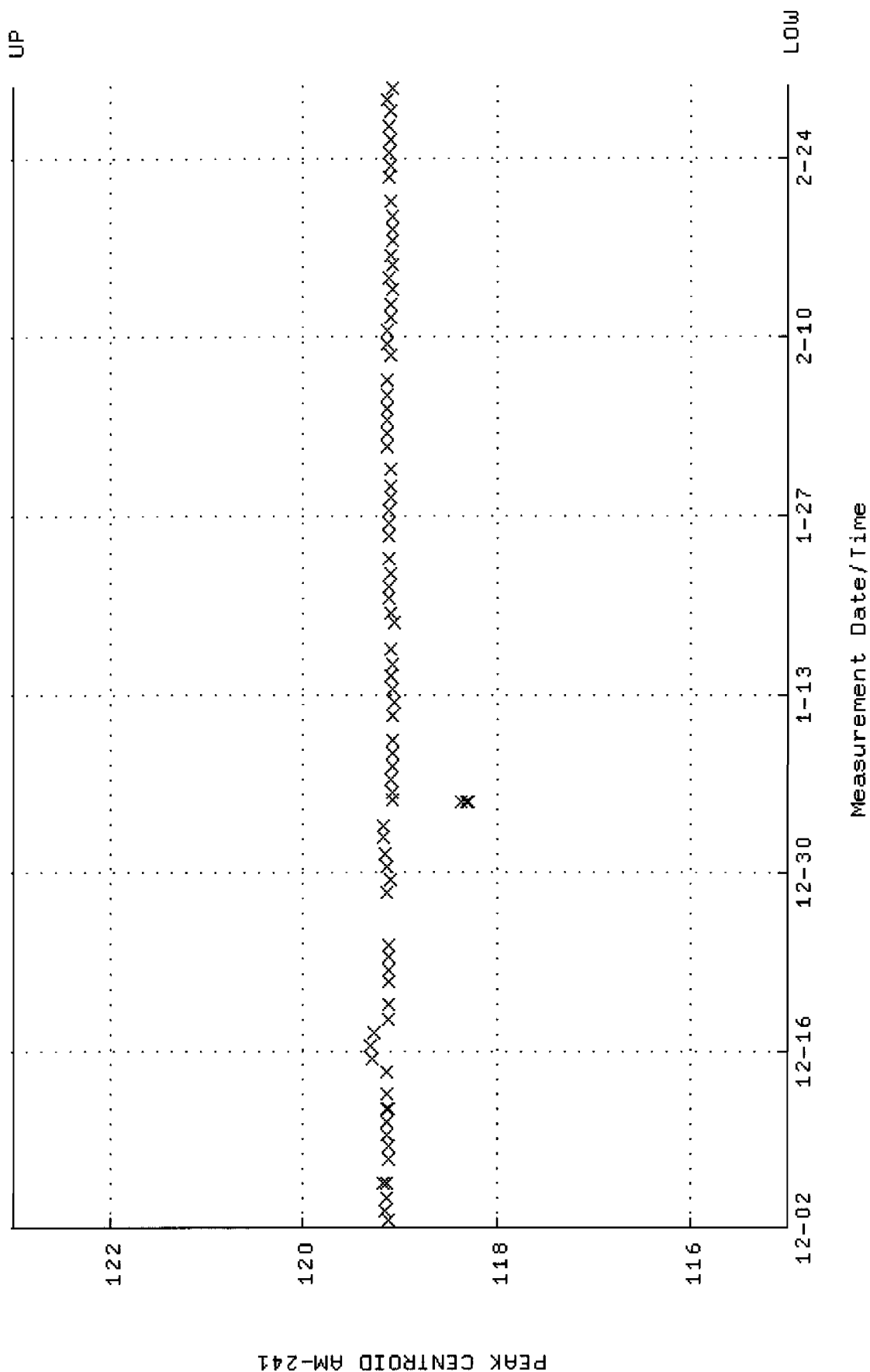
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM20-500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:53:11 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



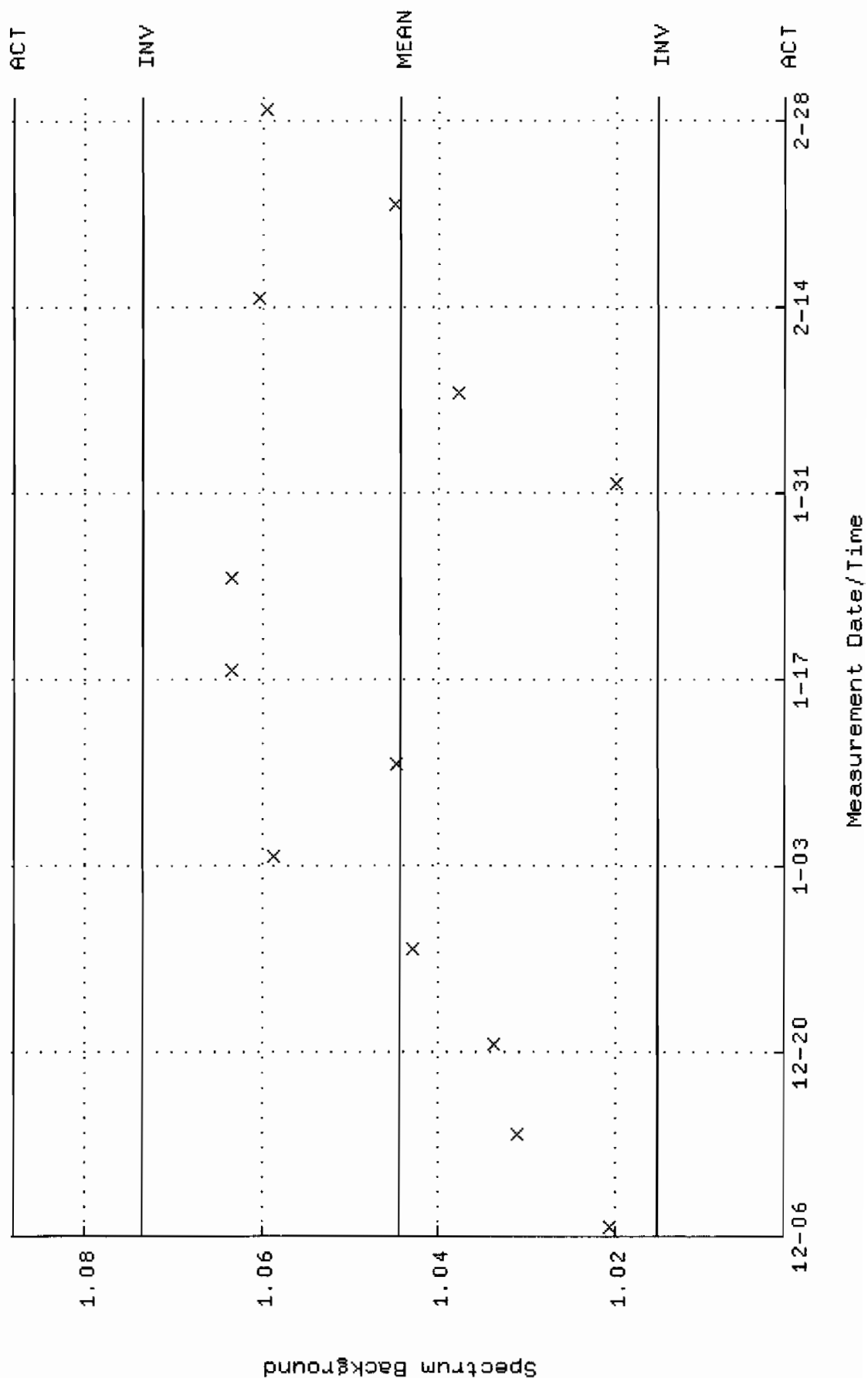
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM20.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:46:04 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.48527 +- 2.388665E-02 (1.61 %)



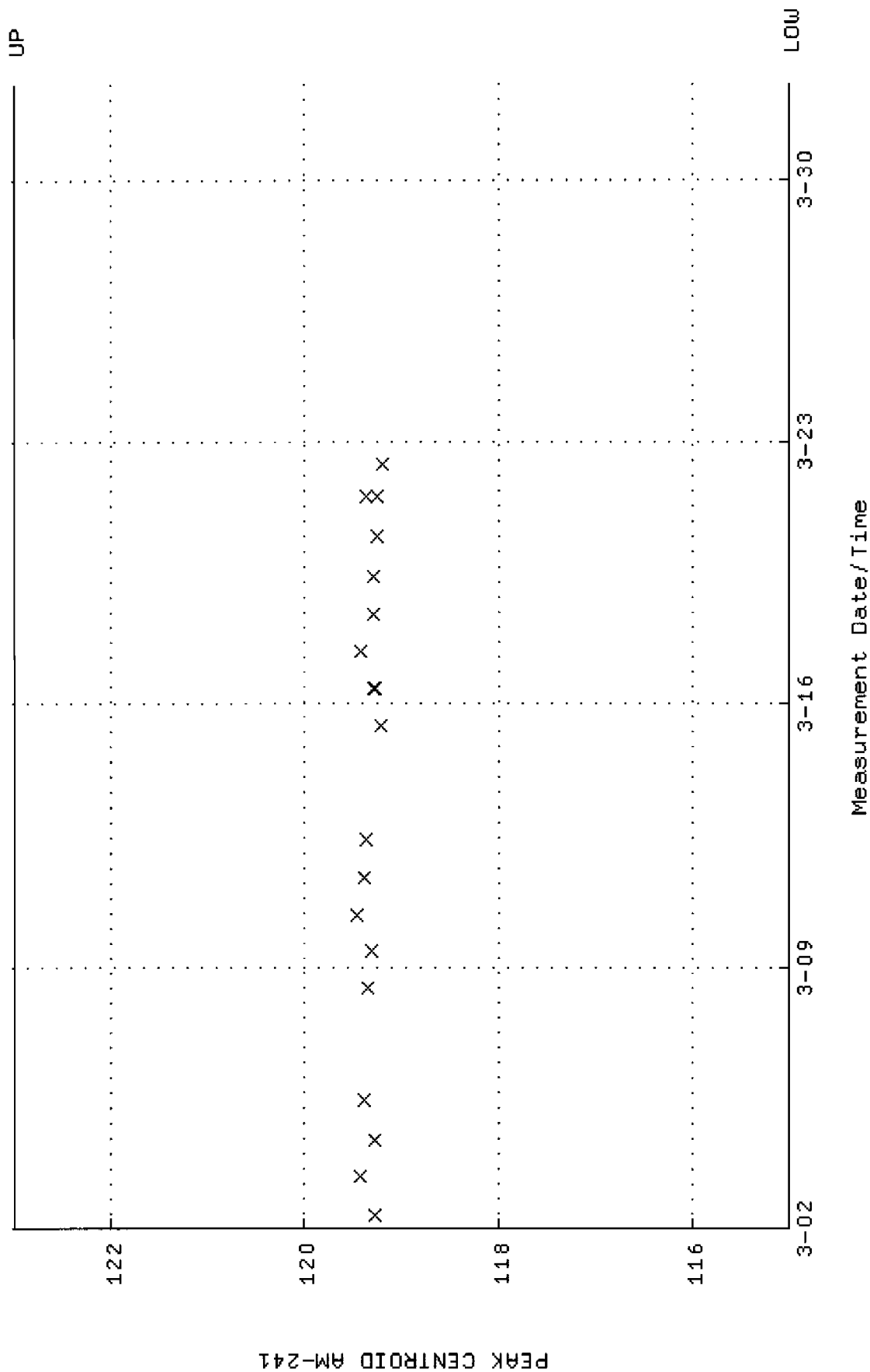
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM21_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-DEC-2009 13:07:42 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



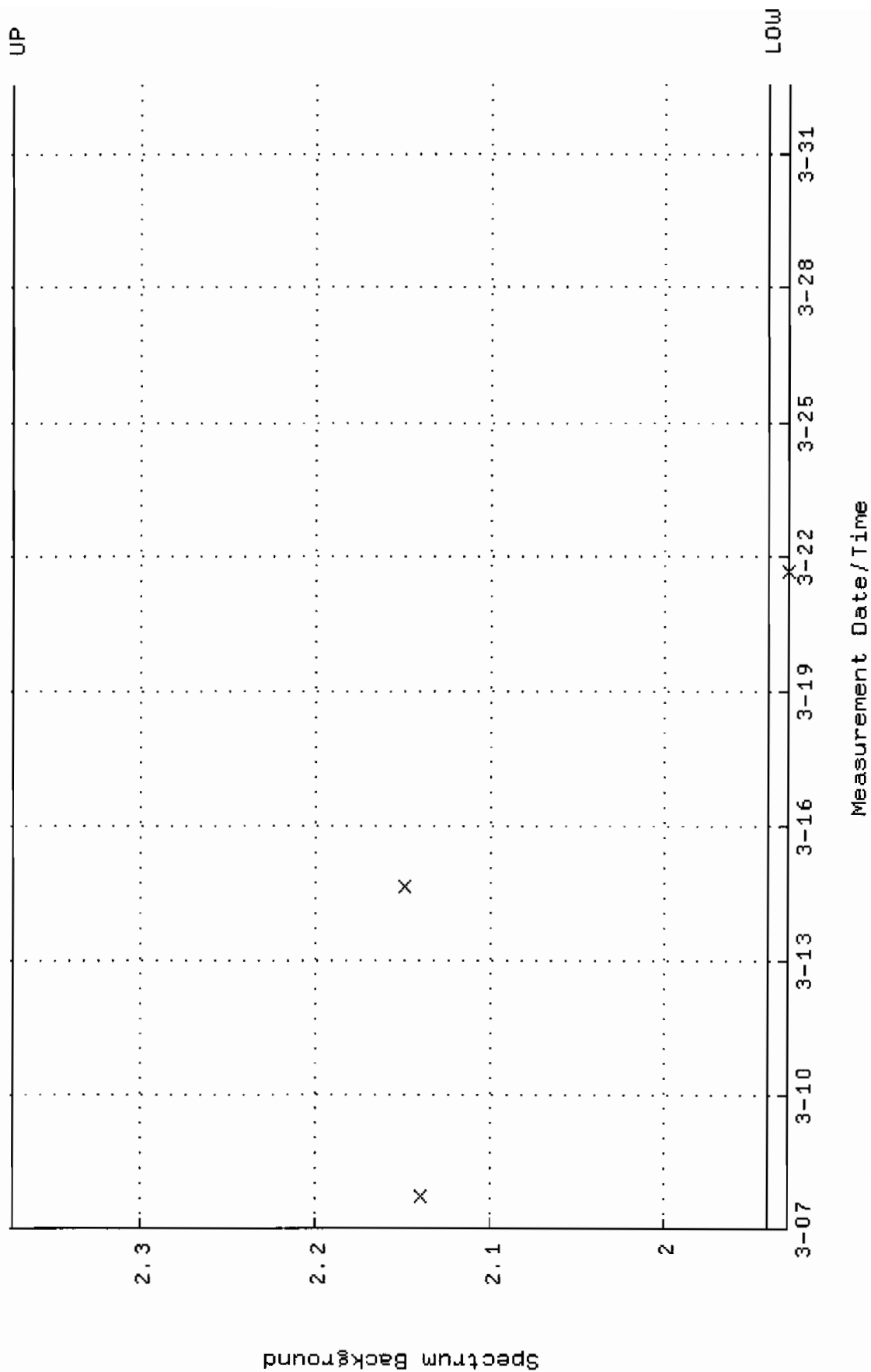
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM21.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-DEC-2009 15:25:38 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.04443 +- 1.452671E-02 (1.39 %)



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM29-CAN.QAF;1
 Parameter Name : PSCENTRD-59 (PEAK CENTROID AM-241)
 Start/End Dates : 2-MAR-2010 08:30:43 through 1-APR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



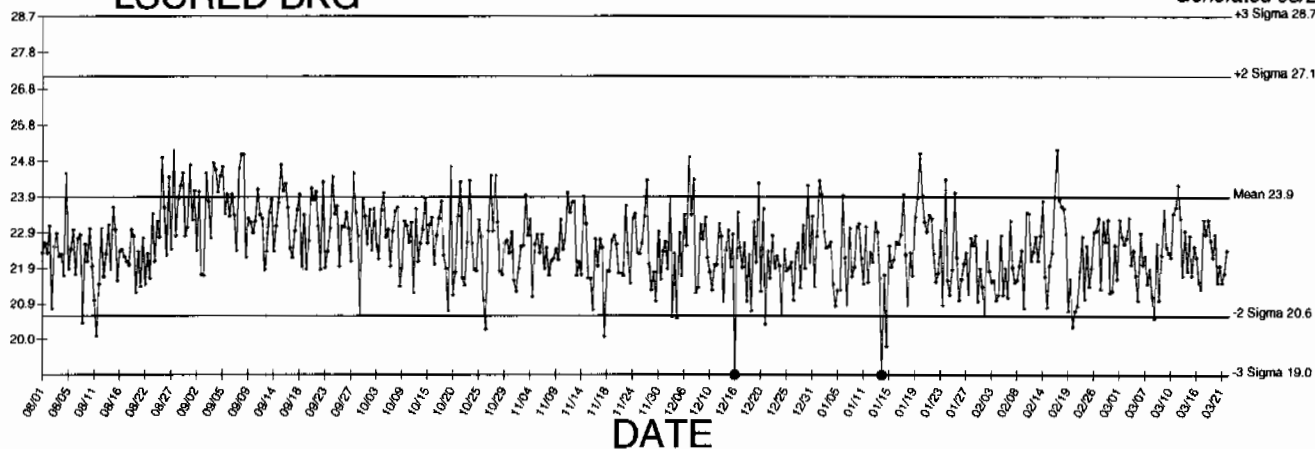
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM29.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 7-MAR-2010 16:47:12 through 1-APR-2010 12:00:00
 Lower/Upper Lmts: 1.94193 through 2.37347



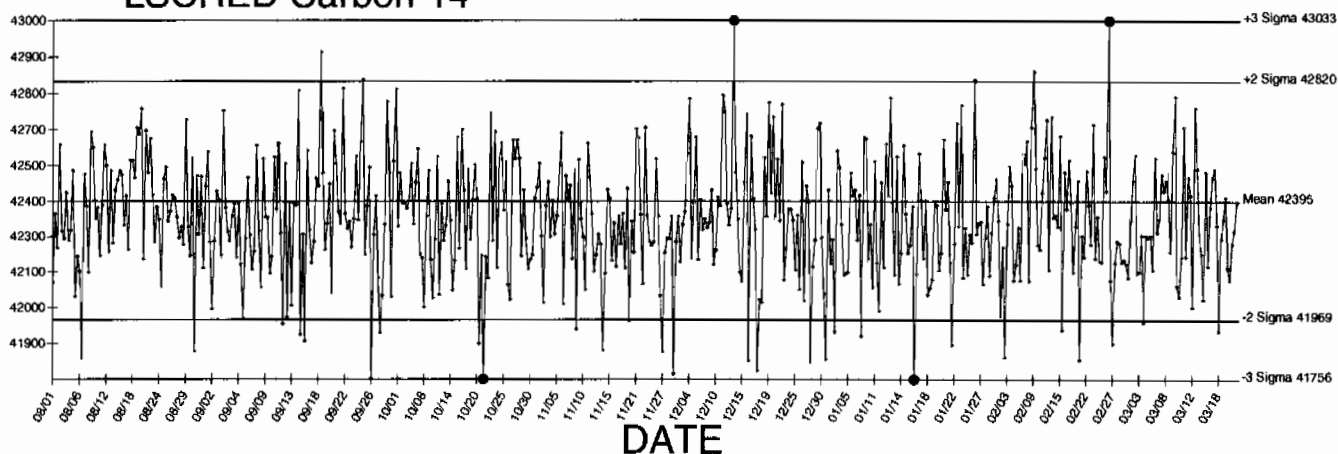
LSCRED BKG

Generated 03/22/2010
+3 Sigma 28.7

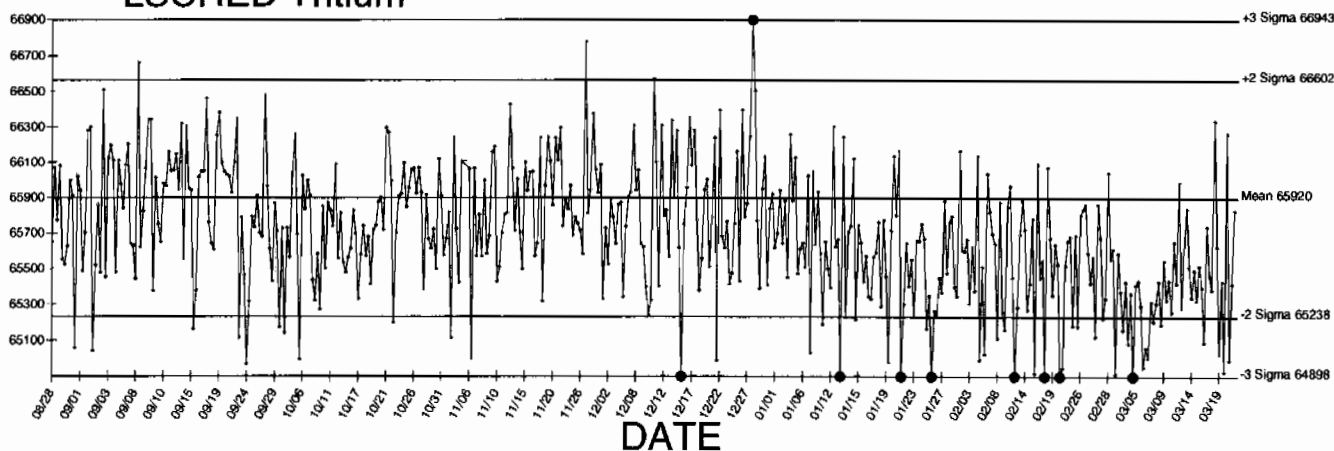
CPM



LSCRED Carbon-14



LSCRED Tritium

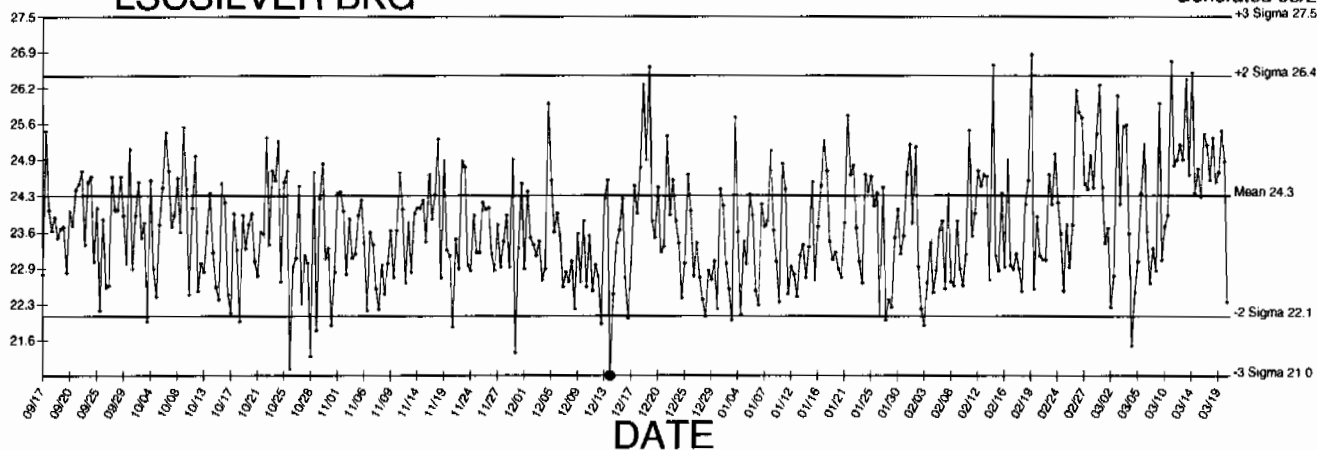


● Denotes Outlier

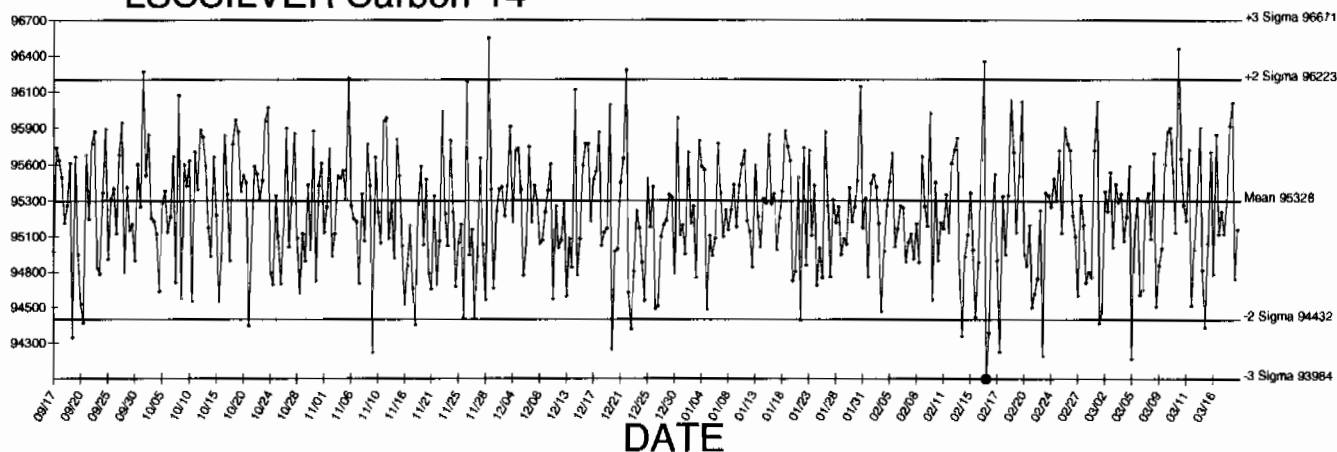
LSCSILVER BKG

Generated 03/20/2010
+3 Sigma 27.5

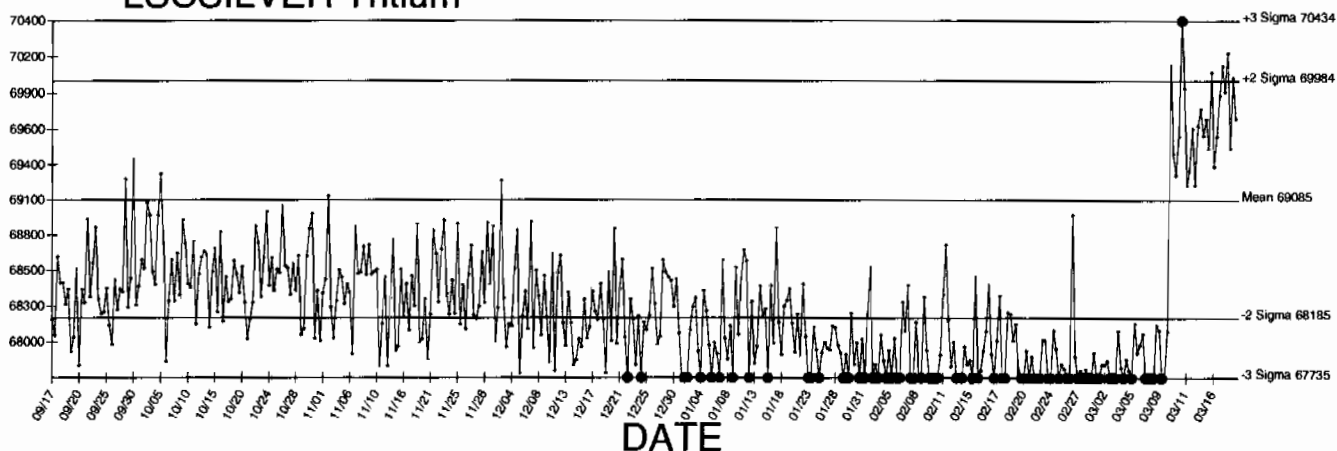
CPM



LSCSILVER Carbon-14



LSCSILVER 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

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)	Standard Source DPM/mL
4/9/2009	0134-K N1	1097.2000	54.0000	1043.2000	1.0000	2741.3098
	0134-K N2	1073.2000	54.0000	1019.2000	1.0000	2678.242955
	0134-K N3	1085.2000	54.0000	1031.2000	1.0000	2709.776428
					Average =	2709.776428

Mean Value (Counting) = 2709.776428
 Stddev = 31.53347278

Certificate Value = 2581.86 dpm/mL
 Lower Limit = 2646.709482 dpm/mL
 Upper Limit = 2772.843373 dpm/mL
 Rule 1 Pass/Fail **Fail**
 Two sigma = 63.06694556 dpm/mL
 10 % of Mean = 270.9778428 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:
 Amanda J. Feh 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. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: October 1, 2006 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	3339	3.0
Cd-109	88	462.6	d	4815	3.3
Co-57	122	271.79	d	2409	3.0
Ce-139	166	137.6	d	3408	2.8
Hg-203	279	46.61	d	7522	2.7
Sn-113	392	115.1	d	4728	2.6
Cs-137	662	30.07	y	2973	3.0
Y-88	898	106.6	d	11600	2.6
Co-60	1173	5.2714	y	5780	2.7
Co-60	1332	5.2714	y	5783	2.6
Y-88	1836	106.6	d	12260	2.6

5.31725 grams 4M HCl solution.
P O NUMBER 2734RD, Item 1

SOURCE PREPARED BY:

M. Dimitrova
M. Dimitrova, Radiochemist

Q A APPROVED:

W.M. [Signature] 11-28-06

This standard will expire one year after the calibration date.

rec'd 11/30/06
RC-S-045-073-0

1380 Seaboard Industrial Blvd.
 Atlanta, Georgia 30318

Tel 404-352-8677

Fax 404-352-2837

www.analytiscinc.com

ANALYSIS OF UNCERTAINTY FOR MIXED GAMMA STANDARDS BATCH 127

CALIBRATION DATE: October 1, 2006 12:00 EST

Isotope	Energy (keV)	Calibration Method ¹	Statistics ²	Calibration ²	Peak Fitting ²	Geometry ²	Impurities ²	Weighing	Combined Standard Uncertainty	Relative Expanded Uncertainty (k=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	1.1	0.71	0.7	0	0.2	1.52	3.0
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

Optional Additional Isotopes

Pb-210	46.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

Calibration Methods:

4π LS (4 pi Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

²As Percent (%) from counting data

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

Standard Traceability Log Rad

Source Material Info	
Parent Code:	1032
Prepared By:	Daniel Roy
Carrier Conc:	4 M HCL
Reference Date:	10/01/2006
Ampoule Mass (g):	5.31725 g
Uncertainty:	+/- 2.81 %
LogBook No:	RC-S-045-073

A Solution Material Info	
Isotope:	Mixed Gamma
Prepared By:	Daniel Roy
Prep Date:	11/30/2006
Verification Date:	12/02/2009
Expiration Date:	12/02/2010
Primary Code:	1032-A
Dilution(mL):	100 mL
Mass of Parent(g):	5.2579 g
Density(g/mL):	1.0611
Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2163.7461 \text{ dpm/mL}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (1.0611 \text{ g/mL}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2039.2400 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
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GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Am-241

Isotope	Result	pCi/L - Ver. Jar - 1
Mixed Gamma N1	2534	pCi/L
Mixed Gamma N2	2510	pCi/L
Mixed Gamma N3	2413	pCi/L
	100.00	Pass
Mean Value (Counting) =	2485.67	Rule 3 (Pass/Fail)
Stdev =	64.065	

Certificate Value =
Lower Limit =
Upper Limit =
Rule 1 (Pass/Fail)
Two sigma =
10 % of Mean =
Rule 2 (Pass/Fail)

2485.68018
2357.536524
2613.796809
Pass
128.1301422
248.56666667
Pass

pCi/L
pCi/L
pCi/L

M. Stamps
12/2/09
independent
12/2/09

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Cs-137

Isotope	Result	pCi/L - VER - IAR-1
Mixed Gamma N1	854.2	pCi/L - VER - IAR-3
Mixed Gamma N2	907.6	pCi/L - VER - IAR-2
Mixed Gamma N3	898.9	

Mean Value (Counting) = 886.90
Stdev = 28.651

95.01 Pass
Rule 3 (Pass/Fail)

Certificate Value =
Lower Limit =
Upper Limit =
Rule 1 (Pass/Fail)
Two sigma =
10 % of Mean =
Rule 2 (Pass/Fail)

933.44144
829.597644
944.202356
Pass
57.30235597
88.69000000
Pass

pCi/L
pCi/L
pCi/L

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

12/2/09
12/2/09
12/2/09

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - Ver-Int-5
Mixed Gamma N1	1572	pCi/L - Ver-Int-2
Mixed Gamma N2	1495	pCi/L - Ver-Int-3
Mixed Gamma N3	1501	

Mean Value (Counting) = 1522.67
Stdev = 42.829
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

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

U. Stampf issued 12/2/09

0244-A Characterization

Sample #	Uranium-233/234 Result (pCi/g)	Uranium-238 Result (pCi/g)	Thorium-230 Result (pCi/g)
0244-A 1	6.59	6.12	25.3
0244-A 2	6.36	6.07	28.5
0244-A 3	5.78	5.53	26.5
0244-A 4	6.48	5.97	25.5
0244-A 5	5.65	5.59	26.2
0244-A 6	6.96	5.78	27.0
0244-A 7	5.95	5.75	24.2
0244-A 8	5.29	5.67	27.2
0244-A 9	5.51	6.05	24.3
0244-A 10	6.37	5.57	25.6
0244-A 11	6.50	5.80	25.8
0244-A 12	6.13	5.42	22.4
0244-A 13	5.49	5.24	24.7
0244-A 14	6.19	5.21	26.9
0244-A 15	6.50	6.27	27.6
0244-A 16	6.50	5.24	24.9
0244-A 17	6.25	6.05	24.7
0244-A 18	6.14	6.00	25.4
0244-A 19	6.19	6.14	26.4
0244-A 20	5.67	5.61	23.2
Mean Value	6.13	5.75	25.62
1 sigma	0.439	0.325	1.493
2 sigma	0.878	0.650	2.986
75% Limit	4.60	4.31	19.22
125% Limit	7.66	7.19	32.03
Expected Result	6.2 +/- 4.0	6.0 +/- 4.0	24.5 +/- 0.6
Achieved Results	6.13 +/- 0.439	5.75 +/- 0.325	25.62 +/- 1.493

REFERENCE DATA 4/11/2000 *lett c held 12/1/04*

angela d. johnson 12/3/04

TRM

Invoice:

5 bottles 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	225 ± 24	22.1 ± 1.2	56.0 ± 2.1	38.9 ± 2.0

0244-B Characterization

Sample #	Plutonium-239 Result (pCi/g)	Plutonium-238 Result (pCi/g)	Americium-241 Result (pCi/g)
0244-B 1	39.9	7.88	38.4
0244-B 2	44.1	7.97	40.6
0244-B 3	45.8	6.56	31.8
0244-B 4	43.6	7.69	31.5
0244-B 5	43	7.9	40.2
0244-B 6	43.5	7.84	29.4
0244-B 7	41.3	7.67	36
0244-B 8	44.3	6.95	33.2
0244-B 9	42.7	7.2	29.2
0244-B 10	44.9	7.69	30
0244-B 11	41.4	7.22	30.2
0244-B 12	41.3	7.74	36
0244-B 13	39.2	6.65	33.8
0244-B 14	39.6	7.78	31.1
0244-B 15	45.3	8.41	37.3
0244-B 16	38.1	6.74	33.6
0244-B 17	48.5	8.51	30.5
0244-B 18	36.5	7.23	38.6
0244-B 19	35.3	6.98	30.9
0244-B 20	37.4	8.55	31.3
Mean Value	41.79	7.56	33.68
1 sigma	3.418	0.596	3.724
2 sigma	6.835	1.193	7.448
75% Limit	30.75	6.02	24.38
125% Limit	51.25	10.04	40.63
Expected Result	41.0 +/- 3.0	8.03 +/- 0.37	32.5 +/- 1.1
Achieved Results	41.79 +/- 3.418	7.56 +/- .596	33.68 +/- 3.724

REFERENCE DATA 4/14/2000

Amanda L. Lehn 4/30/04
 Lott & 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.

Attention Nancy Slater At GEL
 Not for Log In
 ANALYSIS REQUEST AND CHAIN OF CUSTODY
 Press F1 for Instructions for each field.

SF 2001-COC (10-97)
 Supervisor (9-97) name

Internal Lab
 Batch No.

SARWR No. N/A

AR/COC-

Page 1 of 1

602945

Dept. No./Mail Stop: 7132/1042 Project/Task Manager: PAM PUISSANT Project Name: Record Center Code: N/A Logbook Ref. No.: N/A Service Order No.:		Date Samples Shipped: 11-16-99 SMO USE Carriers/Waybill No.: 726199 Lab Contact: EDIE KENT Lab Destination: GEL SMO Contact/Phone: Doug Salmi / 844-3110 Send Report to SMO: Suzi Jensen/844-3184		Contract No.: AJ-2480A Case No.: 10204 13 SMO Authorization: [Signature] Bill to: Sandia National Laboratories Supplier Services, Dept. P.O. Box 5800 MS 0154	
Location Building N/A Sample No. - Fraction Tech Area VI Room N/A ER Sample ID or Sample Location Detail		Reference LOV (available at SMO) Container Type Volume Sample Method Date/Time Collected Date/Time Collected		Parameter & Method Requested Lab Sample ID	
050484 - 001 PEM-1 050485 - 001 TRM-2 050486 - 001 NRM-2 NBAD		N/A N/A N/A 11/15/9 1100 11/15/9 1100 11/15/9 1100		4C 4C 4C SA SA SA	
RMMA <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ref. No. Sample Disposal <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by lab		Sample Tracking Date Entered (mm/dd/yy) Entered by: [Signature] Init Company/Organization/Phone [Signature] Weston / 757 / 845-0887		Special Instructions/QC Requirements EDD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Raw data package <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No These samples were will characterized and materials being sent to GEL for backup to Hank Hinton Please list as separate report.	
Turnaround Time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush Required Report Date Name Douglas E. Perry Signature: [Signature]		1. Relinquished by [Signature] Date 11-16-99 Time 0900 1. Received by [Signature] Date Time 2. Relinquished by [Signature] Date Time 2. Received by [Signature] Date Time 3. Relinquished by [Signature] Date Time 3. Received by [Signature] Date Time		Abnormal Conditions on Receipt of Issues Date Date Date Date Date Date	

Original To Accompany Samples, Laboratory Copy (White)
 1st Copy To Accompany Samples, Return to SMO (Blue)
 2nd Copy SMO Suspense Copy (Yellow)
 3rd Copy Field Copy (Pink)

CERTIFICATE OF CALIBRATION

ALPHA STANDARD SOLUTION

Radionuclide: Am-243
Half Life: 7380 \pm 40 years
Catalog No.: 7243
Source No.: 445-96-2

Customer: GENERAL ENGINEERING LABS
P.O.No.: 9290-RAD
Reference Date: January 1 1994 12:00 PST.
Contained Radioactivity: (Am-243) 101.2 μ Ci
Contained Radioactivity: (Am-243) 3750 kBq

Description of Solution

a. Mass of solution: 5.3739 g (in a 5 ml Flame Sealed Ampoule)
b. Chemical form: Am(NO₃)₃ in 2N HNO₃
c. Carrier content: None added
d. Density: 1.0651 g/ml @ 20°C.

Radioimpurities

None detected

Radioactive Daughters

Np-239 (beta active) in equilibrium

Radionuclide Concentration

(Am-243) 18.84 μ Ci/g

Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry for Np-239:

Energy peak(s) intergrated under: 228, 278 keV.
Branching ratio(s) used: 0.108, 0.1420 gamma rays per decay.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration: $\pm 3.0\%$
b. Random uncertainty in assay: $\pm 0.4\%$
c. Random uncertainty in weighing(s): $\pm 0.0\%$
d. Total uncertainty at the 99% confidence level: $\pm 3.0\%$

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES
1800 North Keystone Street
Burbank, California 91504
(818) 843 - 7000

Anna H. Khan
QUALITY CONTROL

Jan 3, 1994
Date Signed

THE LEAK TEST(S) INDICATED BY THE CHECKED BOX(ES) WAS(WERE) APPLIED TO
DETERMINE THE INTEGRITY OF THE SOURCE DESCRIBED ON THE FRONT SIDE



1. STANDARD WIPE TEST

The source is wiped over its entire surface with a moistened filter paper disk. After drying, the disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



2. SOAK TEST

The source is immersed in distilled water and maintained at $50 \pm 10^\circ \text{C}$ for a minimum of four hours. After removal of the source, the liquid is a) checked for activity using a liquid scintillation counter, or b) evaporated in a planchet and the residue is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



3. SOAK TEST -- BERYLLIUM WINDOW

The source is immersed in distilled water and maintained at $50 \pm 10^\circ \text{C}$ for 20 minutes. The entire surface of the source is then wiped with a moistened cotton swab or filter paper disk. After drying, the swab or disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



4. GAS SOURCE TEST (Radioactive Gas)

The source is placed in a vacuum desiccator and maintained at a pressure of less than 1 mm Hg for not less than 12 hours. The activity is checked by introducing air into the desiccator and monitoring the air with an end-window G.M. tube. Activity levels exceeding 1000 cpm are cause for rejection of the source.



5. OTHER LEAK TEST

The ampoule is kept in an inverted position on a filter paper disk for a minimum of 16 hours. The filter paper disk is then checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



6. LEAK TEST NOT APPLICABLE

The active area of this source is uncovered or is protected by a very thin coating. Although the deposit is adherent, it is not designed or certified to pass a standard leak test. The inactive portions of the source have been checked using the standard wipe test. Levels of removable activity did not exceed 0.001 μCi beta-gamma or 0.0001 μCi alpha at the time of shipment.

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	445-96-2	Isotope:	Americium-243
Prepared By:	Genie Bost	Prepared By:	Angela Johnson
Carrier Conc:	2M HNO3	Prep Date:	01/05/1994
Reference Date:	01/01/1994	Verification Date:	03/09/2010
Ampoule Mass (g):	5.3739 g	Expiration Date:	03/09/2011
Uncertainty:	+/- 3 %	Primary Code:	445-96-2-A
LogBook No:	RC S 005 032	Dilution(mL):	100 mL
		Mass of Parent(g):	5.3419 g
		Density(g/mL):	1.0785
		Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (100 \text{ mL}) = 2234238.9912 \text{ dpm/mL}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (1.0785 \text{ g/mL}) / (100 \text{ mL}) = 2071617.0528 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/05/1994	Genie Bost	.0058	100	445-96-2-B	120.1 dpm/ml	01/05/1995	01/05/1996
09/10/2004	Amanda Fehr	.0325	1000	445-96-2-BB	67.328 dpm/mL	09/10/2005	09/10/2006
01/05/1994	Genie Bost	.0025	100	445-96-2-C	51.77 dpm/ml	01/05/1995	01/05/1996
05/27/2005	Brenda Burke	.000246	100	445-96-2-CC	5.10613 dpm/mL	05/31/2005	05/31/2006
03/25/1994	Genie Bost	.0064	100	445-96-2-D	132.53 dpm/ml	01/05/1995	01/05/1996
08/16/2005	Brenda Burke	.001224	500	445-96-2-DD	5.07144 dpm/mL	08/18/2007	08/18/2008
08/04/1994	Genie Bost	.0094	100	445-96-2-E	194.65 dpm/ml	01/05/1995	01/05/1996
10/13/2005	Brenda Burke	.0017	500	445-96-2-EE	7.0435 dpm/mL	11/15/2005	11/15/2006
08/04/1994	Genie Bost	.0046	100	445-96-2-F	95.25 dpm/ml	01/05/1995	01/05/1996
10/14/2005	Mary Aders	.0141	500	445-96-2-FF	58.4196 dpm/mL	10/14/2005	10/14/2006
09/01/1994	Genie Bost	.0031	100	445-96-2-G	64.19 dpm/ml	01/05/1995	01/05/1996
05/10/2006	Mary Aders	2.0753	1000	445-96-2-GG	4299.227 dpm/mL	09/30/2008	09/30/2009
10/17/1994	Genie Bost	.0969	100	445-96-2-H	2006.52 dpm/ml	01/05/1995	01/05/1996
06/07/2006	Mary Aders	.0365	1000	445-96-2-HH	75.614 dpm/mL	06/19/2006	06/19/2007
02/06/1995	Genie Bost	.0043	100	445-96-2-I	89.04 dpm/ml	01/05/1995	01/05/1996
05/11/2006	Brenda Burke	.000009739	100	445-96-2-II	.201761 dpm/mL	07/26/2006	07/26/2007
07/20/1995	Theresa Austin	.0041	100	445-96-2-J	84.9 dpm/ml	01/05/1995	01/05/1996
05/01/2007	Daniel Roy	.0352	1000	445-96-2-JJ	72.9209 dpm/ml	04/30/2008	04/30/2009
08/10/1995	Garret Ray	.0952	100	445-96-2-K	1971.32 dpm/ml	01/05/1995	01/05/1996
06/12/2007	Julie Strock	.01038	250	445-96-2-KK	22.1496 dpm/mL	05/28/2008	05/28/2009

09/11/1995	Theresa Austin	1.0525	100	445-96-2-L	21794.23 dpm/ml	01/05/1995	01/05/1996
09/11/1995	Theresa Austin	.5107	100	445-96-2-L-1	111.3 dpm/ml	01/05/1995	01/05/1996
04/28/1998	Richard Kinney	.1264	100	445-96-2-M	2617.4 dpm/ml	04/28/1998	04/28/1999
11/01/2007	Eric Williamson	.001274	500	445-96-2-MM	5.27945 dpm/mL	04/06/2008	04/06/2010
10/12/1998	Gregory Smith	.1348	100	445-96-2-N	2791.32 dpm/mL	01/05/1995	01/05/1996
01/25/1999	Gregory Smith	1.9382	100	445-96-2-N-1	50.16 dpm/ml	01/05/1995	01/05/1996
04/19/2008	Daniel Roy	.0424	1000	445-96-2-NN	87.8366 dpm/ml	04/16/2009	04/16/2010
04/21/1999	Greg Smith	.1645	100	445-96-2-O	3406.32 dpm/mL	04/21/1999	04/21/2000
07/27/1999	Gregory Smith	1.567	100	445-96-2-O-2	50.56 dpm/ml	05/13/1999	05/13/2000
10/12/1999	Richard Kinney	1.5589	100	445-96-2-O-3	50.31 dpm/mL	05/13/1999	05/13/2000
04/21/1999	Greg Smith	1.5309	100	445-96-2-O-1	49.4 dpm/mL	04/21/1999	04/21/2000
11/10/1999	Joe Davis	.1809	100	445-96-2-P	3745.92 dpm/mL	05/13/1999	05/13/2000
01/04/2008	Julie Strock	.00001005	100	445-96-2-PP	.20819 dpm/mL	12/29/2008	12/29/2009
01/28/2000	Angela Johnson	.0354	1000	445-96-2-Q	73.3 dpm/mL	02/08/2001	02/08/2002
09/29/2008	Tara Sides	.0025219	250	445-96-2-QQ	20.8977 dpm/mL	09/14/2009	09/14/2010
04/18/2000	Robert Timm	.429	250	445-96-2-R	3553.34 dpm/mL	04/18/2000	04/18/2001
04/23/2009	Tina Schoneman	.001251	500	445-96-2-RR	4.8075 dpm/mL	04/23/2009	04/23/2010
04/13/2001	Angela Johnson	.1869	100	445-96-2-S	3870.16 dpm/mL	04/13/2001	04/13/2002
05/08/2009	Mary Aders	.0141	1000	445-96-2-SS	29.2098 dpm/ml	05/11/2009	05/11/2010
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-103	4153.225 dpm/mL	07/03/2002	07/03/2003
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-203	4153.225 dpm/mL	07/03/2002	07/03/2003

07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-303	4153.225 dpm/mL	07/03/2002	07/03/2003
06/03/2009	Julie Strock	.00000927	100	445-96-2-TT	.1923 dpm/mL	06/05/2009	06/03/2010
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-103	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-203	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-303	80.34 dpm/ml	08/23/2001	08/23/2002
06/02/2009	Mary Aders	2.1177	1000	445-96-2-UU	4385.1449 dpm/ml	06/04/2009	06/04/2010
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-103	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-203	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-303	81.586 dpm/mL	08/27/2002	08/27/2003
03/09/2010	Ashley Drochter	.011	1000	445-96-2-VV	22.7878 dpm/mL	03/09/2010	03/09/2011
03/17/2003	Angela Johnson	2.1108	1000	445-96-2-W	4370.857 dpm/mL	03/14/2006	03/14/2007
03/23/2010	Ashley Drochter	.0163	1000	445-96-2-WW	33.7674 dpm/mL	03/23/2010	03/23/2011
04/14/2003	Lonnie Morris	.0315	1000	445-96-2-X	65.2559 dpm/mL	04/14/2004	04/14/2005
05/03/2003	Tim Chandler	.0103	1000	445-96-2-Y	21.3376 dpm/mL	05/05/2003	05/05/2004
05/05/2003	Eric Williamson	.011	1000	445-96-2-Z	22.7877 dpm/mL	04/03/2007	04/03/2008

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Am-243 Standard 445-96-2-SS

M. Aders	Isotope	Value	Uncertainty
5/15/2009	445-96-2-SS #1	1.360	0.1690
	445-96-2-SS #2	1.370	0.1690
	445-96-2-SS #3	1.290	0.1590
Mean Value (Counting) =	1.340	101.99	Pass
Stdev =	0.043588989	Rule 3 (Pass/Fail)	
Target =	1.314		
Lower Limit =	1.252822021		
Upper Limit =	1.427177979		
Rule 1 Pass/Fail	Pass		
Two sigma =	0.087177979		
10 % of Mean =	0.134		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for standard 445-96-2-SS using 0.1 mL for each source. Each standard was combined with 0.1 mL of Cm-244 standard 0533-O and 50 micrograms of neodymium carrier in a disposable centrifuge tube. Each standard was diluted with 4 mL of 2 M HCl and 6 mL of DI Water. Two mL of 48% HF was added to precipitate Nd (and Americium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Am-243 were calculated by comparison to Am-241 certified values.

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

Mary G. Aders 5/15/09
 Taha Bin
 07509

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.

Handwritten signature 3/15/10
 3/16/10



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*
Page 654 of 668

Signed: *[Signature]*

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}Ra , ^{232}U , ^{228}Th , ^{237}Np
Activity concentration of ^{226}Ra :	11.0 mBq g^{-1}
Expanded uncertainty:	$\pm 4.0 \text{ mBq g}^{-1} (\pm 36 \%)$
Activity concentration of ^{232}U :	0.67 Bq g^{-1}
Expanded uncertainty:	$\pm 0.12 \text{ Bq g}^{-1} (\pm 18 \%)$
Activity concentration of ^{228}Th :	11.38 mBq g^{-1}
Expanded uncertainty:	$\pm 0.46 \text{ mBq g}^{-1} (\pm 4 \%)$
Activity concentration of ^{237}Np :	5.00 mBq g^{-1}
Expanded uncertainty:	$\pm 0.34 \text{ mBq g}^{-1} (\pm 8 \%)$
Sample Mass:	$4.97 \text{ g} \pm 0.02 \text{ g}$

UNCERTAINTIES

The reported uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %. The uncertainty evaluations have been carried out in accordance with UKAS requirements.

NOTES

- [1]. The reported reference time is stated consistent with the format given in ISO 8601:2004. UTC is the abbreviation for Universal Time, Coordinated. The date is stated in the format YYYY-MM-DD such that 2008-09-01 represents 1 September 2008.
- [2]. The recommended half life of ^{236}Pu is 1044 (6) days and is taken from the evaluations published in *Nuclear Data Sheets*.
- [3]. The recommended half life of ^{226}Ra is $5.844 (50) \times 10^5$ days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [4]. The recommended half life of ^{232}U is 25800 (800) days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [5]. The recommended half life of ^{237}Np is $7.83 (6) \times 10^8$ days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [6]. The recommended half life of ^{228}Th is 698.60 (46) days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.

UNCERTAINTIES

The reported uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %. The uncertainty evaluations have been carried out in accordance with UKAS requirements.

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1430	Isotope:	Plutonium-236
Prepared By:	Ashley Drochter	Prepared By:	Ashley Drochter
Carrier Conc:	2 M HNO ₃	Prep Date:	01/27/2010
Reference Date:	07/01/2009	Verification Date:	01/27/2010
Ampoule Mass (g):	4.97 g	Expiration Date:	01/27/2011
Uncertainty:	+/- .36 %	Primary Code:	1430-A
LogBook No:	RC-S-051-149	Dilution(mL):	100 mL
		Mass of Parent(g):	4.8051 g
		Density(g/mL):	1.0610
		Balance ID:	38080204

Calculations Converting parent activity to dpm/mL/dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(4.8051 \text{ g}) * (170.8 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (100 \text{ mL}) = 492.4266 \text{ dpm/mL}$
$(4.8051 \text{ g}) * (170.8 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (1.0610 \text{ g/mL}) / (100 \text{ mL}) = 464.1156 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/27/2010	Bethany Fiem	33.0429	200	1430-B	76.6786262 dpm/mL	01/27/2010	01/27/2011
03/01/2010	Ashley Drochter	15.2331	200	1430-C	35.3496 dpm/mL	03/01/2010	03/01/2011

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Plutonium-236 Standard 1430-C

	Isotope	Value	Uncertainty
A. Drochter 3/4/2010	1430-C	2.760	0.4480
	1430-C	2.770	0.4520
	1430-C	2.950	0.4850
Mean Value (Counting) =	2.827	104.54659 % of Known Value	
Stdev =	0.106926766		
Target =	2.70		
Lower Limit =	2.612813134		
Upper Limit =	3.040520199		
Rule 1 Pass/Fail	Pass	Pass	Pass
Two sigma =	0.213853532		
10 % of Mean =	0.282666667		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for standard 1430-B using 0.1 mL for each source. Each standard was combined with 0.1 mL of Pu 239 standard 0338-BB and 50 micrograms of neodymium carrier in a disposable centrifuge tube containing 4 mL of 2 M HCl and 6 mL of DI water. Four drops of 25% Hydrazine dihydrochloride were added to each centrifuge tube and swirled. After approximately ten minutes, two mL of 49% HF was added to precipitate neodymium (and plutonium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Pu-236 were calculated by comparison to Pu-239 certified values.

file 3/5/10
file 3/5/10



Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404-352-8677
Fax 404-352-2837
www.analytiscinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

78747-278

1283

U-232 5 mL Liquid in Flame Sealed Vial

Customer: GEL Laboratories, LLC
P.O. No.: 7319 RD, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

Isotope:	U-232
Activity (Bq):	3.754 E3
Half-Life:	68.9 years
Calibration Date:	December 9, 2008 12:00 EST
Relative Expanded Uncertainty (k=2):	5.0%

Comments:

Impurities: U-233 <0.3%, Am-241 <0.15%
5.20453 grams 1M HNO₃ solution.

Source Prepared By: WMS

W. Mao, Radiochemist

QA Approved: DM 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

Date: 12/10/09

Analyst: A. Drochter	Serial #	Value	Uncertainty		
Date: 12/10/09	1283-H N1	2.020	pCi/L	0.238	pCi/L
	1283-H N2	2.000	pCi/L	0.234	pCi/L
	1283-H N3	2.060	pCi/L	0.242	pCi/L
Mean Value (Counting) =	2.027	pCi/L	99.66904	Pass	
Stdev =	0.030550505	pCi/L	Rule 3 (Pass/Fail)		
Target =	2.033	pCi/L			
Lower Limit =	1.965565657	pCi/L			
Upper Limit =	2.087767676	pCi/L			
Rule 1 Pass/Fail	Pass				
Two sigma =	0.061101009				
10 % of Mean =	0.202666667				
Rule 2 (Pass/Fail)	Pass				

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for standard 1283-H using 0.1 mL for each source. Each standard was combined with 0.1 mL of U-238 standard 1163-G and was diluted to 10 mL with DI water. 50 micrograms of neodymium carrier and 1ml of Titanium Chloride were added. The solution was allowed to sit for 30 seconds. One mL of 49% HF was then added to precipitate neodymium (and uranium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for U-238 were calculated by comparison to U-232 certified values.

A. Drochter
12/14/09

RUNLOGS

Instrument Run Log

Instrument Type: GAMMA SPECTROMETER

Batch ID: 959280

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248243001	SAMPLE	MXR1	GAM16	19-MAR-10 10:50	DONE	CAN	16-NOV-09 00:00
248243002	SAMPLE	MXR1	GAM23	19-MAR-10 10:51	DONE	CAN	02-JUN-09 00:00
248243003	SAMPLE	MXR1	GAM12	19-MAR-10 10:52	DONE	CAN	25-FEB-10 00:00
248243004	SAMPLE	MXR1	GAM05	19-MAR-10 10:52	DONE	CAN	11-JUN-09 00:00
248243005	SAMPLE	MXR1	GAM07	19-MAR-10 10:53	DONE	CAN	20-JUL-09 00:00
248243006	SAMPLE	MXR1	GAM11	19-MAR-10 10:54	DONE	CAN	18-NOV-09 00:00
248243007	SAMPLE	MXR1	GAM06	19-MAR-10 10:55	DONE	CAN	16-FEB-10 00:00
248243008	SAMPLE	MXR1	GAM15	19-MAR-10 10:55	DONE	CAN	03-FEB-10 00:00
248243009	SAMPLE	MXR1	GAM22	19-MAR-10 10:56	DONE	CAN	02-DEC-09 00:00
248243010	SAMPLE	MXR1	GAM25	19-MAR-10 10:57	DONE	CAN	07-OCT-09 00:00
248248001	SAMPLE	MXR1	GAM01	19-MAR-10 10:58	DONE	CAN	12-JAN-10 00:00
248248002	SAMPLE	MXR1	GAM19	19-MAR-10 10:58	DONE	CAN	12-MAR-09 00:00
248248003	SAMPLE	MXR1	GAM14	19-MAR-10 10:59	DONE	CAN	06-MAR-09 00:00
248248004	SAMPLE	MXR1	GAM17	19-MAR-10 11:00	DONE	CAN	06-JAN-10 00:00
248248005	SAMPLE	MXR1	GAM18	19-MAR-10 11:00	DONE	CAN	23-APR-09 00:00
248248006	SAMPLE	MXR1	GAM21	19-MAR-10 11:01	DONE	CAN	28-JUL-09 00:00
248248007	SAMPLE	MXR1	GAM20	19-MAR-10 11:02	DONE	CAN	26-AUG-09 00:00
248248008	SAMPLE	MXR1	GAM29	19-MAR-10 11:03	DONE	CAN	23-FEB-10 00:00
1202057355	MB	MXR1	GAM02	19-MAR-10 11:16	DONE	CAN	29-OCT-09 00:00
1202057357	LCS	MXR1	GAM04	19-MAR-10 11:17	DONE	CAN	05-MAY-09 00:00
1202057356	DUP	MXR1	GAM14	19-MAR-10 13:09	DONE	CAN	06-MAR-09 00:00

Instrument Run Log

Instrument Type: LSC

Batch ID: 964056

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1202068218	LCS	KXK2	LSCSILVER	19-MAR-10 10:47	DONE		
248243001	SAMPLE	KXK2	LSCSILVER	19-MAR-10 11:05	DONE		
248243002	SAMPLE	KXK2	LSCSILVER	19-MAR-10 11:57	DONE		
248243003	SAMPLE	KXK2	LSCSILVER	19-MAR-10 12:49	DONE		
248243004	SAMPLE	KXK2	LSCSILVER	19-MAR-10 13:41	DONE		
248243005	SAMPLE	KXK2	LSCSILVER	19-MAR-10 14:33	DONE		
248243006	SAMPLE	KXK2	LSCSILVER	19-MAR-10 15:25	DONE		
248243007	SAMPLE	KXK2	LSCSILVER	19-MAR-10 16:18	DONE		
248243008	SAMPLE	KXK2	LSCSILVER	19-MAR-10 17:10	DONE		
248243009	SAMPLE	KXK2	LSCSILVER	19-MAR-10 18:02	DONE		
248243010	SAMPLE	KXK2	LSCSILVER	19-MAR-10 18:54	DONE		
248248001	SAMPLE	KXK2	LSCSILVER	19-MAR-10 19:46	DONE		
248248002	SAMPLE	KXK2	LSCSILVER	19-MAR-10 20:38	DONE		
248248004	SAMPLE	KXK2	LSCSILVER	19-MAR-10 22:23	DONE		
248248005	SAMPLE	KXK2	LSCSILVER	19-MAR-10 23:15	DONE		
248248006	SAMPLE	KXK2	LSCSILVER	20-MAR-10 00:07	DONE		
248248007	SAMPLE	KXK2	LSCSILVER	20-MAR-10 00:59	DONE		
248248008	SAMPLE	KXK2	LSCSILVER	20-MAR-10 01:51	DONE		
248660002	SAMPLE	KXK2	LSCSILVER	20-MAR-10 02:43	DONE		
1202068216	MB	KXK2	LSCSILVER	20-MAR-10 03:35	DONE		
1202068217	DUP	KXK2	LSCSILVER	20-MAR-10 04:27	DONE		
248248003	SAMPLE	KXK2	LSCRED	22-MAR-10 16:24	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 964871

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248248001	SAMPLE	JXD2	1241	24-MAR-10 20:56	DONE		
248248002	SAMPLE	JXD2	1242	24-MAR-10 20:56	DONE		
248248003	SAMPLE	JXD2	1243	24-MAR-10 20:56	DUSE		
248248004	SAMPLE	JXD2	1244	24-MAR-10 20:56	DONE		
248248005	SAMPLE	JXD2	1245	24-MAR-10 20:56	DONE		
248248006	SAMPLE	JXD2	1246	24-MAR-10 20:56	DONE		
248248007	SAMPLE	JXD2	1247	24-MAR-10 20:56	DONE		
248248008	SAMPLE	JXD2	1248	24-MAR-10 20:56	DONE		
248250001	SAMPLE	JXD2	1249	24-MAR-10 20:56	DONE		
248250002	SAMPLE	JXD2	1250	24-MAR-10 20:56	DONE		
248250003	SAMPLE	JXD2	1251	24-MAR-10 20:56	DONE		
248250004	SAMPLE	JXD2	1252	24-MAR-10 20:56	DONE		
248258001	SAMPLE	JXD2	1253	24-MAR-10 20:56	DUSE		
248258002	SAMPLE	JXD2	1254	24-MAR-10 20:56	DONE		
248258003	SAMPLE	JXD2	1089	24-MAR-10 21:59	DONE		
248258004	SAMPLE	JXD2	1090	24-MAR-10 21:59	DONE		
248258005	SAMPLE	JXD2	1091	24-MAR-10 21:59	DONE		
248258006	SAMPLE	JXD2	1093	24-MAR-10 21:59	DONE		
248258007	SAMPLE	JXD2	1094	24-MAR-10 21:59	DONE		
1202070038	MB	JXD2	1232	25-MAR-10 07:54	DONE		
1202070039	DUP	JXD2	1233	25-MAR-10 07:54	DONE		
1202070040	LCS	JXD2	1234	25-MAR-10 07:54	DONE		
248258001	SAMPLE	JXD2	1089	25-MAR-10 23:38	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 964872

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248248001	SAMPLE	JXD2	1045	24-MAR-10 21:09	DONE		
248248002	SAMPLE	JXD2	1046	24-MAR-10 21:09	DONE		
248248003	SAMPLE	JXD2	1048	24-MAR-10 21:09	DONE		
248248004	SAMPLE	JXD2	1065	24-MAR-10 21:09	DONE		
248248005	SAMPLE	JXD2	1066	24-MAR-10 21:09	DONE		
248248006	SAMPLE	JXD2	1067	24-MAR-10 21:09	DONE		
248248007	SAMPLE	JXD2	1068	24-MAR-10 21:09	DONE		
248248008	SAMPLE	JXD2	1069	24-MAR-10 21:09	DONE		
248250001	SAMPLE	JXD2	1072	24-MAR-10 21:09	DONE		
248250002	SAMPLE	JXD2	1073	24-MAR-10 21:09	DONE		
248250003	SAMPLE	JXD2	1074	24-MAR-10 21:09	DONE		
248250004	SAMPLE	JXD2	1075	24-MAR-10 21:09	DONE		
248258001	SAMPLE	JXD2	1076	24-MAR-10 21:09	DONE		
248258002	SAMPLE	JXD2	1077	24-MAR-10 21:09	DONE		
248258003	SAMPLE	JXD2	1079	24-MAR-10 21:09	DONE		
248258004	SAMPLE	JXD2	1080	24-MAR-10 21:09	DONE		
248258005	SAMPLE	JXD2	1081	24-MAR-10 21:09	DONE		
248258006	SAMPLE	JXD2	1082	24-MAR-10 21:09	DONE		
248258007	SAMPLE	JXD2	1083	24-MAR-10 21:09	DONE		
1202070043	MB	JXD2	1084	24-MAR-10 21:09	DONE		
1202070044	DUP	JXD2	1085	24-MAR-10 21:09	DONE		
1202070045	LCS	JXD2	1086	24-MAR-10 21:09	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 964874

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248258007	SAMPLE	JXD2	1004	25-MAR-10 12:59	DONE		
1202070047	MB	JXD2	1005	25-MAR-10 12:59	DONE		
1202070048	DUP	JXD2	1006	25-MAR-10 12:59	DONE		
1202070049	LCS	JXD2	1009	25-MAR-10 12:59	DONE		
248248001	SAMPLE	JXD2	1121	25-MAR-10 14:16	DONE		
248248002	SAMPLE	JXD2	1122	25-MAR-10 14:16	DONE		
248248003	SAMPLE	JXD2	1123	25-MAR-10 14:16	DONE		
248248004	SAMPLE	JXD2	1124	25-MAR-10 14:16	DONE		
248248005	SAMPLE	JXD2	1125	25-MAR-10 14:16	DONE		
248248006	SAMPLE	JXD2	1126	25-MAR-10 14:16	DONE		
248248007	SAMPLE	JXD2	1127	25-MAR-10 14:16	DONE		
248248008	SAMPLE	JXD2	1128	25-MAR-10 14:16	DONE		
248250001	SAMPLE	JXD2	1129	25-MAR-10 14:16	DONE		
248250002	SAMPLE	JXD2	1130	25-MAR-10 14:16	DONE		
248250003	SAMPLE	JXD2	1131	25-MAR-10 14:16	DONE		
248250004	SAMPLE	JXD2	1132	25-MAR-10 14:16	DONE		
248258001	SAMPLE	JXD2	1133	25-MAR-10 14:16	DONE		
248258002	SAMPLE	JXD2	1134	25-MAR-10 14:16	DONE		
248258003	SAMPLE	JXD2	1135	25-MAR-10 14:16	DONE		
248258004	SAMPLE	JXD2	1136	25-MAR-10 14:17	DONE		
248258005	SAMPLE	JXD2	1139	25-MAR-10 14:17	DONE		
248258006	SAMPLE	JXD2	1140	25-MAR-10 14:17	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 969568

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248248003	SAMPLE	JXD2	1031	27-MAR-10 13:01	DONE		
1202081812	MB	JXD2	1033	27-MAR-10 13:01	DONE		
1202081813	DUP	JXD2	1035	27-MAR-10 13:01	DONE		
1202081814	LCS	JXD2	1036	27-MAR-10 13:01	DONE		