Tuesday, March 02, 2010

REQUEST NUMBER: 10-2201

LOS ALAMOS
NATIONAL LABORATORY

ATTN: Valerie Davis

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

These Samples are on:
LANL Request Number:10-2201
Per Agreement Number:126310011
Project Cost Code: MR3A05529E00

Please analyse the enclosed samples according to the schedule indicated:

SHIP DATE: 3/2/2010
TURNAROUND/REPORT DUE: 4/1/2010
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	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	
		1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2201

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	
	EPA:906.0	1	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	
		1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	
		1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	
	HASL-300:AM-241	1	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	
		1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	
		1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	
	HASL-300:ISOPU	1	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2201

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOPU	1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	
		1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	
	HASL-300:ISOU	1	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	
		1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	
		1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	

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Thursday, March 04, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2201C

REQUEST NUMBER: 10-2201

LOS ALAMOS

NATIONAL LABORATORY

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

TURNAROUND/REPORT DUE: 4/1/2010

TURNAROUND REQ'D: 30

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-8288	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8288	1	POLY	H3	Ice	R
RE36-10-8279	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8279	1	POLY	H3	Ice	R
RE36-10-8277	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8277	1	POLY	H3	Ice	R
RE36-10-8280	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8280	1	POLY	H3	Ice	R
RE36-10-8278	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8278	1	POLY	H3	Ice	R
RE36-10-8274	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8274	1	POLY	H3	Ice	R
RE36-10-8291	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8291	1	POLY	H3	Ice	R
RE36-10-8287	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8287	1	POLY	H3	Ice	R
RE36-10-8273	1	POLY	AM241+GS+ISOPU+ ISOU	None	R

Thursday, March 04, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2201C

REQUEST NUMBER: 10-2201

LOS ALAMOS

NATIONAL LABORATORY

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

TURNAROUND/REPORT DUE: 4/1/2010

TURNAROUND REQ'D: 30

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-8273	1	POLY	H3	Ice	R
RE36-10-8275	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8275	1	POLY	H3	Ice	R
RE36-10-8276	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8276	1	POLY	H3	Ice	R

Relinquished By:		Date	Time	Received By:		Date	Time
Printed Name	Signature	3/2/10		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: 2505 **EVENT NAME:** 4th Qtr. FY09 - SWMU C-36-003 - Threemile Canyon

SAMPLE ID: RE36-10-8273 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	QBT3	TJM 2/25/10 ~~AMA~~ SED
TIME COLLECTED (HH:MM)		915	SUB-MEDIA:	TUFF 1	NA
PRS ID:	C-36-003	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	36-610821	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	0.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	0.5	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	SED	EXCAVATED: YES / (NO) / NA		

COMPOSITE TYPE: NA **COMPOSITE TIME INTERVAL:** NA **WATER FLOWING:** YES / (NO) / NA

BOREHOLE: YES / (NO) / NA **BOREHOLE DECLINATION:** NA **BOREHOLE DIRECTION:** NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+8270+NMED-EXP	500 ML AMBER GLASS	Ice	Y	
1	↓	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1	↓	AM241+GS+ISOPU+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, moist, roots, rocks

FD RE36-10-8291

SAMPLE COMMENTS: NA

LOCATION DESC: 8-43

FIELD SCREENING/MEASUREMENT RESULTS:

$\alpha \leq 36$ dpm

$\beta/\gamma \leq 1873$ dpm

PID ~~Ambient Reading~~ = — ppm TJM 2/25/10

COLLECTED BY (PRINT) TLMcfarland

REVIEWED BY (PRINT) J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch	2/25/10	(Printed Name) Sherri Sherwood	2/25/10
(Signature) [signature]	1530	(Signature) Sherri Sherwood	1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2505 **EVENT NAME:** 4th Qtr. FY09 - SWMU C-36-003 - Threemile Canyon

SAMPLE ID: RE36-10-8274 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	QBT3	Alluv
TIME COLLECTED (HH:MM)		0945	SUB-MEDIA:	TUFF 1	NA
PRS ID:	C-36-003	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	36-610821	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	2.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	3.0	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES / NO / NA		

COMPOSITE TYPE: NA **COMPOSITE TIME INTERVAL:** NA **WATER FLOWING:** YES / NO / NA

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

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+8270+NMED-EXP	500 ML AMBER GLASS	Ice	Y	
1	↓	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1	↓	AM241+GS+ISOPU+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: Dark brown silty sand

SAMPLE COMMENTS: NA

LOCATION DESC: 8-43

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 82 **dpm**
Beta/Gamma ≤ 2040 **dpm**

PID ~~Ambient Reading~~ = **ppm** TJM 2/25/10

COLLECTED BY (PRINT) THMcFarland **REVIEWED BY (PRINT)** J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch	2/25/10	(Printed Name) Sherri Sherwood	2/25/10
(Signature) [signature]	1530	(Signature) Sherri Sherwood	1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2505 **EVENT NAME:** 4th Qtr. FY09 - SWMU C-36-003 - Threemile Canyon

SAMPLE ID: RE36-10-8275 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	OBT3	SED
TIME COLLECTED (HH:MM)		955	SUB-MEDIA:	TUFF 1	NA
PRS ID:	C-36-003	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	36-610822	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	0.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	0.5	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	SED	EXCAVATED: YES / (NO) / NA		

COMPOSITE TYPE: NA **COMPOSITE TIME INTERVAL:** NA **WATER FLOWING:** YES / (NO) / NA

BOREHOLE: YES / (NO) / NA **BOREHOLE DECLINATION:** NA **BOREHOLE DIRECTION:** NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+8270+NMED-EXP	500 ML AMBER GLASS	Ice	Y	
1	↓	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1	↓	AM241+GS+ISOPU+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 loamy silt, roots, leaves

FR: RE 36-10-8294

SAMPLE COMMENTS: NA

LOCATION DESC: 8-49

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 29 dpm
Beta/Gamma ≤ 1667 dpm

PID ~~Ambient Reading~~ = ppm TLM 2/25/10

COLLECTED BY (PRINT) TLMcFarland

REVIEWED BY (PRINT) J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch	2/25/10	(Printed Name) Sherrie Sherwood	2/25/10
(Signature) [signature]	1530	(Signature) Sherrie Sherwood	1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2505 **EVENT NAME:** 4th Qtr. FY09 - SWMU C-36-003 - Threemile Canyon

SAMPLE ID: RE36-10-8276 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	QBT3	SED
TIME COLLECTED (HH:MM)		1000	SUB-MEDIA:	TUFF 1	NA
PRS ID:	C-36-003	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	36-610822	↓	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	SED	EXCAVATED: YES / (NO) / NA		

COMPOSITE TYPE: NA **COMPOSITE TIME INTERVAL:** NA **WATER FLOWING:** YES / (NO) / NA

BOREHOLE: YES / (NO) / NA **BOREHOLE DECLINATION:** NA **BOREHOLE DIRECTION:** NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+8270+NMED-EXP	500 ML AMBER GLASS	Ice	Y	
1	↓	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1	↓	AM241+GS+ISOPU+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 loamy silt, roots

SAMPLE COMMENTS: NA

LOCATION DESC: 8-49

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 36 **dpm**
Beta/Gamma ≤ 1655 **dpm**

PID ~~Ambient Reading~~ = **ppm** 72 m 2/25/10

COLLECTED BY (PRINT) ThMcFarland **REVIEWED BY (PRINT)** J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch	2/25/10	(Printed Name) Sherri Sherwood	2/25/10
(Signature) [signature]	1530	(Signature) Sherri Sherwood	1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2505 **EVENT NAME:** 4th Qtr. FY09 - SWMU C-36-003 - Threemile Canyon

SAMPLE ID: RE36-10-8277 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	QBT3	SED
TIME COLLECTED (HH:MM)		1010	SUB-MEDIA:	TUFF 1	NA
PRS ID:	C-36-003	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	36-610823	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	0.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	0.5	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	SED	EXCAVATED: YES / NO / NA		

COMPOSITE TYPE: NA **COMPOSITE TIME INTERVAL:** NA **WATER FLOWING:** YES / NO / NA

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

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+8270+NMED-EXP	500 ML AMBER GLASS	Ice	Y	
1	↓	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1	↓	AM241+GS+ISOPU+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: moist loamy silt, roots

SAMPLE COMMENTS: NA

LOCATION DESC: 8-53

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 20 dpm
Beta/Gamma ≤ 1564 dpm

~~PID Ambient Reading = ppm~~ Thm 2/25/10

COLLECTED BY (PRINT) ThMcFarlana

REVIEWED BY (PRINT) J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch (Signature) [signature]	2/25/10 1530	(Printed Name) Sherri Sherwood (Signature) Sherri Sherwood	2/25/10 1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2505 **EVENT NAME:** 4th Qtr. FY09 - SWMU C-36-003 - Threemile Canyon

SAMPLE ID: RE36-10-8278 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	QBT3	SED
TIME COLLECTED (HH:MM)		1020	SUB-MEDIA:	TUFF 1	NA
PRS ID:	C-36-003	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	36-610823	↓	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	SED	EXCAVATED: YES / (NO) / NA		

COMPOSITE TYPE: NA **COMPOSITE TIME INTERVAL:** NA **WATER FLOWING:** YES / (NO) / NA

BOREHOLE: YES / (NO) / NA **BOREHOLE DECLINATION:** NA **BOREHOLE DIRECTION:** NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+8270+NMED-EXP	500 ML AMBER GLASS	Ice	Y	
1	↓	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1	↓	AM241+GS+ISOPU+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 loamy silt, roots

SAMPLE COMMENTS: NA

LOCATION DESC: 8-53

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 58 dpm
Beta/Gamma ≤ 2200 dpm

PID ~~Ambient Reading~~ = ppm 12m 2/25/10

COLLECTED BY (PRINT) TL McFarland **REVIEWED BY (PRINT)** J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch	2/25/10	(Printed Name) Sherri Sherwood	2/25/10
(Signature) [signature]	1530	(Signature) Sherri Sherwood	1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2505 **EVENT NAME:** 4th Qtr. FY09 - SWMU C-36-003 - Threemile Canyon

SAMPLE ID: RE36-10-8279 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	QBT3	Air
TIME COLLECTED (HH:MM)		1120	SUB-MEDIA:	TUFF 1	NA
PRS ID:	C-36-003	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	36-610824	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	0.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	0.5	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES / (NO) / NA		

COMPOSITE TYPE: NA **COMPOSITE TIME INTERVAL:** NA **WATER FLOWING:** YES / (NO) / NA

BOREHOLE: YES / (NO) / NA **BOREHOLE DECLINATION:** NA **BOREHOLE DIRECTION:** NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+8270+NMED-EXP	500 ML AMBER GLASS	Ice	Y	
1	↓	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1	↓	AM241+GS+ISOPU+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: Dry silt, leaves

SAMPLE COMMENTS: NA

LOCATION DESC: 8 - 26

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 47 dpm
Beta/Gamma ≤ 1961 dpm

PID ~~Ambient Reading~~ = ppm TJM 2/25/10

COLLECTED BY (PRINT) Th McFarlane **REVIEWED BY (PRINT)** J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch	2/25/10	(Printed Name) Sherri Sherwood	2/25/10
(Signature) [signature]	1530	(Signature) Sherri Sherwood	1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2505 **EVENT NAME:** 4th Qtr. FY09 - SWMU C-36-003 - Threemile Canyon

SAMPLE ID: RE36-10-8280 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	QBT3	Allh
TIME COLLECTED (HH:MM)		1132	SUB-MEDIA:	TUFF 1	NA
PRS ID:	C-36-003	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	36-610824	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	2.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	3.0	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES / NO / NA		

COMPOSITE TYPE: NA **COMPOSITE TIME INTERVAL:** NA **WATER FLOWING:** YES / NO / NA

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

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+8270+NMED-EXP	500 ML AMBER GLASS	Ice	Y	
1	↓	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1	↓	AM241+GS+ISOPU+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: Dry silt

SAMPLE COMMENTS: NA

LOCATION DESC: 8-26

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 30 dpm
Beta/Gamma ≤ 1793 dpm

PID ~~Ambient Reading~~ = ppm 7 2/25/10

COLLECTED BY (PRINT) LhMcFarland

REVIEWED BY (PRINT) J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch	2/25/10	(Printed Name) Sherri Sherwood	2/25/10
(Signature) [signature]	1530	(Signature) Sherri Sherwood	1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2505 **EVENT NAME:** 4th Qtr. FY09 - SWMU C-36-003 - Threemile Canyon

SAMPLE ID: RE36-10-8287 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	QBT3	TZM 2/25/10 ~~AHH~~ SED
TIME COLLECTED (HH:MM)		0900	SUB-MEDIA:	TUFF 1	NA
PRS ID:	C-36-003	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	36-610828	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	0.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	0.5	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	SED	EXCAVATED: YES / (NO) / NA		

COMPOSITE TYPE: NA **COMPOSITE TIME INTERVAL:** NA **WATER FLOWING:** YES / (NO) / NA

BOREHOLE: YES / (NO) / NA **BOREHOLE DECLINATION:** NA **BOREHOLE DIRECTION:** NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+8270+NMED-EXP	500 ML AMBER GLASS	Ice	Y	
1	↓	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1	↓	AM241+GS+ISOPU+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: moist brown silty sand, roots, leaves, rocks

FTB: RE36-10-8295

FD RE36-10-8292

SAMPLE COMMENTS: NA

LOCATION DESC: 8 - 36

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 10 dpm
Beta/Gamma ≤ 1564 dpm

PID ~~Ambient Reading~~ = ppm TZM 2/25/10

COLLECTED BY (PRINT) THMcFarland

REVIEWED BY (PRINT) J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch	2/25/10	(Printed Name) Sherri Henwood	2/25/10
(Signature) [signature]	1530	(Signature) Sherri Henwood	1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2505 **EVENT NAME:** 4th Qtr. FY09 - SWMU C-36-003 - Threemile Canyon

SAMPLE ID: RE36-10-8288 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	QBT3	All h
TIME COLLECTED (HH:MM)		915	SUB-MEDIA:	TUFF 1	NA
PRS ID:	C-36-003	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	36-610828	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	2.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	3.0	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES / (NO) / NA		

COMPOSITE TYPE: NA **COMPOSITE TIME INTERVAL:** NA **WATER FLOWING:** YES / (NO) / NA

BOREHOLE: YES / (NO) / NA **BOREHOLE DECLINATION:** NA **BOREHOLE DIRECTION:** NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+8270+NMED-EXP	500 ML AMBER GLASS	Ice	Y	
1	↓	8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1	↓	AM241+GS+ISOPU+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: Dark brown silty sand, roots, rocks

SAMPLE COMMENTS: NA

LOCATION DESC: 8 - 36

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 35 **dpm**
Beta/Gamma = 1873 **dpm**

PID ~~Ambient Reading~~ = **ppm** TJM 2/25/10

COLLECTED BY (PRINT) TJMcFarlane

REVIEWED BY (PRINT) J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch	2/25/10	(Printed Name) Sherri Sherwood	2/25/10
(Signature) [signature]	1530	(Signature) [signature]	1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2505 **EVENT NAME:** 4th Qtr. FY09 - SWMU C-36-003 - Threemile Canyon

SAMPLE ID: RE36-10-8291 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	QBT3	TAM 2/25/10 ~~AHH~~ SED
TIME COLLECTED (HH:MM)		0915	SUB-MEDIA:	TUFF 1	NA
PRS ID:	C-36-003	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	UNK	~~8/25~~ 36-610821	FIELD QC TYPE:	FD	↓
LOCATION TYPE:	GENERIC	~~8/25~~ ok	FIELD PREP:	NA	↓
TOP DEPTH:	0	0.0	SAMPLE USAGE:	QC	↓
BOTTOM DEPTH:	0	0.5	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	SED	EXCAVATED: YES / (NO) / NA		

COMPOSITE TYPE: NA **COMPOSITE TIME INTERVAL:** NA **WATER FLOWING:** YES / (NO) / NA

BOREHOLE: YES / (NO) / NA **BOREHOLE DECLINATION:** NA **BOREHOLE DIRECTION:** NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+8270+NMED-EXP	500 ML AMBER GLASS	Ice	y	
1	↓	8260B	125 ML SEPTUM AMBER GLASS	Ice	↓	
1	↓	AM241+GS+ISOPU+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: QC Sample of RE36-10-8273

SAMPLE COMMENTS: NA

LOCATION DESC: 8-43

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 36 **dpm**
Beta/Gamma ≤ 1873 **dpm**

PID ~~Ambient Reading~~ = **ppm** TAM 2/25/10

COLLECTED BY (PRINT) Thmcfarlane

REVIEWED BY (PRINT) J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J Branch	2/25/10	(Printed Name) Sherri Sherwood	2/25/10
(Signature) [signature]	1530	(Signature) Sherri Sherwood	1530
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2505 **EVENT NAME:** 4th Qtr. FY09 - SWMU C-36-003 - Threemile Canyon

SAMPLE ID: RE36-10-8295 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/25/2010	MEDIA:	NA	ok
TIME COLLECTED (HH:MM)		0850	SUB-MEDIA:	OTHER	
PRS ID:	C-36-003	ok	SAMPLE TECH CODE:	DC	
LOCATION ID:	UNK	36-610828	FIELD QC TYPE:	FTB	
LOCATION TYPE:	GENERIC	ok	FIELD PREP:	NA	
TOP DEPTH:	0		SAMPLE USAGE:	QC	
BOTTOM DEPTH:	0		SCREEN/PORT DESC:		NA
FIELD MATRIX:	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 ~~2~~	Normal 7an 2/25/10	8260B Trip Blank	40 ML SEPTUM AMBER GLASS	Ice	Y	

SAMPLE DESC: QC Sample of RE 36-10 - 8287

SAMPLE COMMENTS:

FTB

LOCATION DESC:

NA

FIELD SCREENING/MEASUREMENT RESULTS:

NA

COLLECTED BY (PRINT) TLMcFarland **REVIEWED BY (PRINT)** J. Branch

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) J. Branch	2/25/10	(Printed Name) Sherri Sherwood	2/25/10
(Signature) [signature]	1530	(Signature) Sherri Sherwood	1530
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

DATA VALIDATION COVER SHEET

5119-1

Data Validation Cover Sheet

Records Use only

Los Alamos NATIONAL LABORATORY EST. 1943

Section I.

REQUEST NUMBER: 10-2201 VALIDATION DATE: 04/08/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Kevin A. Lambert ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

- ☐ TPH-GRO
- ☐ TPH-DRO
- ☐ GENERAL CHEMISTRY
- ☐ HIGH EXPLOSIVES
- ☐ METALS
- ☒ RADIOCHEMISTRY
- ☐ DIOXIN FURANS
- ☐ PCB CONGENERS
- ☐ LCMSMS HIGH EXPLOSIVES
- ☐ LCMSMS PERCHLORATES
- ☐ ORGANOCHLORINE PESTICIDES/POLYCHLORINATED BIPHENYLS
- ☐ OTHER (DESCRIBE):

Section II. Completeness Check

YES	NO	N/A	(CHECK ONE)	YES	NO	N/A	(CHECK ONE)
☒	☐	☐	1. CHAIN-OF-CUSTODY FORM(S)	☒	☐	☐	6. RAW/BSS DATA
☒	☐	☐	2. CASE NARRATIVE	☒	☐	☐	7. QUALITY CONTROL FORMS
☒	☐	☐	3. SAMPLE RESULT FORMS	☐	☐	☒	8. QUANTITATION REPORTS
☐	☐	☒	4. SAMPLE CHROMATOGRAMS	☐	☐	☒	9. TICS FORMS
☐	☐	☒	5. STANDARD CHROMATOGRAMS	☐	☐	☒	10. TICS MASS SPECTRA

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

1. All reported gamma spec results that were rejected by the laboratory due to interference and low abundance were qualified R,R5a. Also, it should be noted that several results in the matrix QC samples were rejected by the laboratory. No sample data were qualified as a result.
2. The alpha spec U-232 tracer %R for samples RE36-10-8279 and -8280 were < the laboratory LAL. The associated sample results were detects and, thus, were qualified J+,R3b
3. It should be noted that an MS was not analyzed for tritium. However, an LCS was analyzed and passed acceptance criteria. Thus, no sample data were qualified.
4. It should be noted that the parent samples for all QC analyses <u>except</u> alpha spec isotopic-Am in Batch # 969981 were LANL samples from other RNs. No sample data were qualified as a result.

Reviewed by: ETM Level: 1 Date: 4/9/10

VALIDATOR'S SIGNATURE: Kevin A Lambert DATE: 04/08/10

RAD ANALYTICAL DATA VALIDATION CHECKLIST

5119-2 Rad Analytical Data Validation Checklist	Records Use only Los Alamos NATIONAL LABORATORY

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☒	☐	1. The holding time was >1 and ≤2 times the applicable holding time requirement.	UJ, R9	J-, R9
☐	☒	☐	2. The holding time was >2 times the applicable holding time requirement.	R, R9a	J-, R9a
☐	☐	☒	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
☒	☐	☐	4. The analyte should be regarded as rejected because spectral interferences prevent positive identification of the analytes.	R, R5a	R, R5a
☐	☒	☐	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
☐	☐	☒	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
☐	☒	☐	7. The sample result is ≤5X the concentration of the related analyte in the method blank.	U, R4	N/A
☐	☒	☐	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
☐	☐	☒	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
☐	☒	☐	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
☐	☒	☐	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 Los Alamos NATIONAL LABORATORY

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☒	☐	☐	12. The tracer is < the Lower Acceptance Level (LAL) but ≥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
☐	☒	☐	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
☐	☒	☐	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
☐	☒	☐	15. The LCS percent recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, R12	R, R12
☐	☒	☐	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
☐	☒	☐	17. The LCS percent recovery was > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, R12b
☐	☒	☐	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
☐	☒	☐	19. Associated duplicate sample has DER or RER > the analytical laboratory's acceptance limits.	R, R10	J, J10
☐	☒	☐	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 Los Alamos NATIONAL LABORATORY

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☐	☒	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
☐	☐	☒	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
☐	☐	☒	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
☒	☐	☐	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
☐	☒	☐	25. Duplicate, dilution, or reanalysis.	UJ, R88	J, R88
☐	☒	☐	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
☒	☐	☐	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 31, 2010

Client Sample ID:	RE36-10-8288	Project:	LANL01004
Sample ID:	248521001	Client ID:	LANL010
Matrix:	R		
Collect Date:	25-FEB-10		
Receive Date:	03-MAR-10		
Collector:	Client		
Moisture:	16.4%		

Parameter	Qualifier	Result		DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis													
AM241 "Dry Weight Corrected"													
Americium-241	U	0.000477		0.0218	+/-0.00186	0.050	pCi/g		MXE1	03/25/10	2212	965494	1
ISOPU "Dry Weight Corrected"													
Plutonium-238	U	0.00896		0.0278	+/-0.00495	0.050	pCi/g		MXE1	03/25/10	1840	965495	2
Plutonium-239/240	U	0.00435		0.0235	+/-0.00829	0.050	pCi/g						
ISOU "Dry Weight Corrected"													
Uranium-233/234		1.04		0.0979	+/-0.0961	0.100	pCi/g		MXE1	03/27/10	1301	965496	3
Uranium-235/236	U	0.0515		0.0598	+/-0.0186	0.100	pCi/g						
Uranium-238		0.857		0.0688	+/-0.0821	0.100	pCi/g						
Rad Gamma Spec Analysis													
GAMMA SPEC "Dry Weight Corrected"													
Americium-241	U	-0.23		0.292	+/-0.0901	0.200	pCi/g		MXR1	03/19/10	2042	961099	4
Bismuth-211	UI	5.11	R,R5a	0.444	+/-0.306		pCi/g						
Bismuth-214		1.52		0.133	+/-0.110	0.200	pCi/g						
Cadmium-109	UI	5.61	R,R5a	1.28	+/-0.634		pCi/g						
Cerium-139	U	0.00736		0.0623	+/-0.0188	0.050	pCi/g						
Cesium-134	UI	0.208	R,R5a	0.103	+/-0.0664	0.100	pCi/g						
Cesium-137		0.166		0.0712	+/-0.0334	0.100	pCi/g						
Cobalt-60	U	0.0177		0.0755	+/-0.0219	0.100	pCi/g						
Europium-152	U	-0.15		0.182	+/-0.0642	0.200	pCi/g						
Lanthanum-140	U	-0.00697		0.233	+/-0.0777		pCi/g						
Lead-212		2.02		0.111	+/-0.101	0.100	pCi/g						
Lead-214		1.85		0.143	+/-0.122	0.100	pCi/g						
Mercury-203	U	0.0447		0.0882	+/-0.0253	0.100	pCi/g						
Potassium-40		30.4		0.545	+/-1.47	1.00	pCi/g						
Radium-223	U	-0.162		1.17	+/-0.403		pCi/g						
Radium-224	UI	5.45	R,R5a	1.19	+/-0.673		pCi/g						
Radium-226		1.52		0.133	+/-0.110		pCi/g						
Radium-228		2.18		0.244	+/-0.237	0.500	pCi/g						
Ruthenium-106	U	-0.132		0.574	+/-0.180	0.800	pCi/g						
Sodium-22	U	0.0247		0.0841	+/-0.0242	0.080	pCi/g						
Strontium-85	UI	0.130	R,R5a	0.0924	+/-0.0268		pCi/g						

KAL
04/08/10

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 31, 2010

Client Sample ID: RE36-10-8288
Sample ID: 248521001

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		0.700	0.068	+/-0.0553	0.080	pCi/g						
Thorium-227	U	-0.143	0.483	+/-0.153		pCi/g						
Thorium-231	U	-0.162	1.17	+/-0.403		pCi/g						
Thorium-234	U	1.65	2.73	+/-0.807	2.00	pCi/g						
Tin-113	U	-0.00597	0.0923	+/-0.0276	0.100	pCi/g						
Uranium-235	U	0.138	0.416	+/-0.124	0.500	pCi/g						
Yttrium-88	U	0.00113	0.0562	+/-0.0172	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-34.4	172	+/-45.6	250	pCi/L		KXK2	03/29/10	1738	964063	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"	83.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	77.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	76.5	(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

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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 31, 2010

Client Sample ID: RE36-10-8279
Sample ID: 248521002
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 7.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result		DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis													
AM241 "Dry Weight Corrected"													
Americium-241	U	0.00362		0.0246	+/-0.00248	0.050	pCi/g		MXE1	03/25/10	2212	965494	1
ISOPU "Dry Weight Corrected"													
Plutonium-238	U	0.00168		0.0266	+/-0.00428	0.050	pCi/g		MXE1	03/25/10	1840	965495	2
Plutonium-239/240		0.0397		0.0225	+/-0.010	0.050	pCi/g						
ISOU "Dry Weight Corrected"													
Uranium-233/234		3.43	J+,R3b	0.188	+/-0.305	0.100	pCi/g		MXE1	03/27/10	1301	965496	3
Uranium-235/236		0.157		0.115	+/-0.0397	0.100	pCi/g						
Uranium-238		3.24		0.132	+/-0.290	0.100	pCi/g						
Rad Gamma Spec Analysis													
GAMMA SPEC "Dry Weight Corrected"													
Americium-241	U	0.00107		0.261	+/-0.0887	0.200	pCi/g		MXR1	03/19/10	2042	961099	4
Bismuth-211	UI	5.37	R,R5a	0.356	+/-0.399		pCi/g						
Bismuth-214		1.37		0.126	+/-0.115	0.200	pCi/g						
Cadmium-109	UI	3.18	R,R5a	1.41	+/-0.535		pCi/g						
Cerium-139	U	-0.0065		0.0595	+/-0.0182	0.050	pCi/g						
Cesium-134	UI	0.107	R,R5a	0.0989	+/-0.0283	0.100	pCi/g						
Cesium-137		0.625		0.0767	+/-0.0531	0.100	pCi/g						
Cobalt-60	U	-0.00883		0.0702	+/-0.0219	0.100	pCi/g						
Europium-152	U	0.0584		0.190	+/-0.0685	0.200	pCi/g						
Lanthanum-140	U	-0.111		0.232	+/-0.0758		pCi/g						
Lead-212		1.93		0.111	+/-0.143	0.100	pCi/g						
Lead-214		1.95		0.130	+/-0.155	0.100	pCi/g						
Mercury-203	U	0.065		0.0825	+/-0.0249	0.100	pCi/g						
Potassium-40		26.0		0.611	+/-1.47	1.00	pCi/g						
Radium-223	U	0.107		1.22	+/-0.419		pCi/g						
Radium-224	UI	4.72	R,R5a	1.18	+/-0.738		pCi/g						
Radium-226		1.37		0.126	+/-0.115		pCi/g						
Radium-228		2.05		0.242	+/-0.242	0.500	pCi/g						
Ruthenium-106	U	0.165		0.602	+/-0.179	0.800	pCi/g						
Sodium-22	U	-0.0163		0.0768	+/-0.0241	0.080	pCi/g						
Strontium-85	UI	0.157	R,R5a	0.0944	+/-0.030		pCi/g						
Thallium-208		0.600		0.0615	+/-0.0514	0.080	pCi/g						

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

Report Date: March 31, 2010

Client Sample ID: RE36-10-8279
Sample ID: 248521002

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.192	0.484	+/-0.157		pCi/g						
Thorium-231	U	0.107	1.22	+/-0.419		pCi/g						
Thorium-234		4.12	2.28	+/-1.04	2.00	pCi/g						
Tin-113	U	-0.0199	0.0883	+/-0.0277	0.100	pCi/g						
Uranium-235	U	0.172	0.413	+/-0.125	0.500	pCi/g						
Yttrium-88	U	0.0272	0.0721	+/-0.0204	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	126	175	+/-55.5	250	pCi/L		KXK2	03/29/10	1830	964063	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"	73.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	72.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	41.2 *	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
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B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
F Estimated Value
H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8277
Sample ID: 248521003
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 25.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result		DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis													
AM241 "Dry Weight Corrected"													
Americium-241	U	0.013		0.0238	+/-0.00563	0.050	pCi/g		MXE1	03/25/10	2212	965494	1
ISOPU "Dry Weight Corrected"													
Plutonium-238	U	0.00168		0.0233	+/-0.00544	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240		0.0492		0.0197	+/-0.0105	0.050	pCi/g						
ISOU "Dry Weight Corrected"													
Uranium-233/234		1.43		0.117	+/-0.130	0.100	pCi/g		MXE1	03/27/10	1301	965496	3
Uranium-235/236		0.0976		0.0716	+/-0.0256	0.100	pCi/g						
Uranium-238		1.40		0.0824	+/-0.128	0.100	pCi/g						
Rad Gamma Spec Analysis													
GAMMA SPEC "Dry Weight Corrected"													
Americium-241	U	-0.209		0.364	+/-0.108	0.200	pCi/g		MXR1	03/19/10	2043	961099	4
Bismuth-211	UI	4.19	R,R5a	0.384	+/-0.273		pCi/g						
Bismuth-214		1.30		0.135	+/-0.109	0.200	pCi/g						
Cadmium-109	UI	4.41	R,R5a	1.35	+/-0.618		pCi/g						
Cerium-139	U	-0.022		0.0577	+/-0.0176	0.050	pCi/g						
Cesium-134	UI	0.102	R,R5a	0.0955	+/-0.0369	0.100	pCi/g						
Cesium-137		0.521		0.0671	+/-0.0454	0.100	pCi/g						
Cobalt-60	U	0.0241		0.0813	+/-0.0236	0.100	pCi/g						
Europium-152	U	-0.0604		0.175	+/-0.0614	0.200	pCi/g						
Lanthanum-140	U	0.00154		0.237	+/-0.071		pCi/g						
Lead-212		1.66		0.110	+/-0.0852	0.100	pCi/g						
Lead-214		1.52		0.134	+/-0.108	0.100	pCi/g						
Mercury-203	U	-0.0135		0.0828	+/-0.0243	0.100	pCi/g						
Potassium-40		26.1		0.610	+/-1.31	1.00	pCi/g						
Radium-223	U	-1.13		1.25	+/-0.403		pCi/g						
Radium-224	UI	4.33	R,R5a	1.17	+/-0.597		pCi/g						
Radium-226		1.30		0.135	+/-0.109		pCi/g						
Radium-228		1.67		0.267	+/-0.242	0.500	pCi/g						
Ruthenium-106	U	-0.171		0.617	+/-0.194	0.800	pCi/g						
Sodium-22	U	0.00419		0.0855	+/-0.0259	0.080	pCi/g						
Strontium-85	U	0.0397		0.0767	+/-0.0246		pCi/g						
Thallium-208		0.583		0.0721	+/-0.0498	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8277
Sample ID: 248521003

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.0817	0.454	+/-0.141		pCi/g						
Thorium-231	U	-1.13	1.25	+/-0.403		pCi/g						
Thorium-234	U	0.478	3.19	+/-0.903	2.00	pCi/g						
Tin-113	U	0.0146	0.0923	+/-0.0268	0.100	pCi/g						
Uranium-235	U	0.0791	0.407	+/-0.120	0.500	pCi/g						
Yttrium-88	U	0.00967	0.0674	+/-0.0195	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-40.3	175	+/-46.0	250	pCi/L		KXK2	03/29/10	1923	964063	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"	76.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	79.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	68.3	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
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- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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

Report Date: March 31, 2010

Client Sample ID: RE36-10-8280
Sample ID: 248521004
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 9.46%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result		DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis													
AM241 "Dry Weight Corrected"													
Americium-241	U	0.0152		0.023	+/-0.00556	0.050	pCi/g		MXE1	03/25/10	2212	965494	1
ISOPU "Dry Weight Corrected"													
Plutonium-238	U	0.0049		0.0266	+/-0.0112	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240		0.0275		0.0225	+/-0.00937	0.050	pCi/g						
ISOU "Dry Weight Corrected"													
Uranium-233/234		3.49	J+,R3b	0.157	+/-0.298	0.100	pCi/g		MXE1	03/27/10	1301	965496	3
Uranium-235/236		0.179		0.0961	+/-0.0389	0.100	pCi/g						
Uranium-238		3.01		0.111	+/-0.261	0.100	pCi/g						
Rad Gamma Spec Analysis													
GAMMA SPEC "Dry Weight Corrected"													
Americium-241	UI	0.107	R,R5a	0.0971	+/-0.0319	0.200	pCi/g		MXR1	03/19/10	2311	961099	4
Bismuth-211	UI	4.59	R,R5a	0.304	+/-0.285		pCi/g						
Bismuth-214		1.40		0.112	+/-0.0979	0.200	pCi/g						
Cadmium-109	UI	5.00	R,R5a	0.902	+/-0.424		pCi/g						
Cerium-139	U	-0.00336		0.0493	+/-0.0153	0.050	pCi/g						
Cesium-134	UI	0.104	R,R5a	0.0912	+/-0.0365	0.100	pCi/g						
Cesium-137		0.614		0.0578	+/-0.0481	0.100	pCi/g						
Cobalt-60	U	0.0104		0.0639	+/-0.0195	0.100	pCi/g						
Europium-152	U	-0.0756		0.149	+/-0.0694	0.200	pCi/g						
Lanthanum-140	U	-0.156		0.175	+/-0.0675		pCi/g						
Lead-212		2.01		0.085	+/-0.120	0.100	pCi/g						
Lead-214		1.67		0.112	+/-0.113	0.100	pCi/g						
Mercury-203	U	0.00932		0.0688	+/-0.0235	0.100	pCi/g						
Potassium-40		27.5		0.506	+/-1.13	1.00	pCi/g						
Radium-223	U	0.191		1.03	+/-0.353		pCi/g						
Radium-224	UI	6.03	R,R5a	0.911	+/-0.694		pCi/g						
Radium-226		1.40		0.112	+/-0.0979		pCi/g						
Radium-228		1.92		0.242	+/-0.197	0.500	pCi/g						
Ruthenium-106	U	-0.119		0.529	+/-0.168	0.800	pCi/g						
Sodium-22	U	-0.0237		0.066	+/-0.0215	0.080	pCi/g						
Strontium-85	UI	0.0736	R,R5a	0.0728	+/-0.0237		pCi/g						
Thallium-208		0.588		0.0594	+/-0.0454	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8280
Sample ID: 248521004

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.0862	0.398	+/-0.120		pCi/g						
Thorium-231	U	0.191	1.03	+/-0.353		pCi/g						
Thorium-234		3.65	0.948	+/-0.569	2.00	pCi/g						
Tin-113	U	-0.00702	0.0772	+/-0.0237	0.100	pCi/g						
Uranium-235	U	0.232	0.326	+/-0.103	0.500	pCi/g						
Yttrium-88	U	-0.00273	0.0589	+/-0.0183	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-13.4	174	+/-47.4	250	pCi/L		KXK2	03/29/10	2015	964063	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"	78.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	73.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	47.4 *	(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 31, 2010

Client Sample ID: RE36-10-8278
Sample ID: 248521005
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 6.35%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result		DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis													
AM241 "Dry Weight Corrected"													
Americium-241	U	0.00182		0.0237	+/-0.00172	0.050	pCi/g		MXE1	03/25/10	2213	965494	1
ISOPU "Dry Weight Corrected"													
Plutonium-238	U	0.0181		0.0227	+/-0.00627	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240	U	-0.00123		0.0192	+/-0.00211	0.050	pCi/g						
ISOU "Dry Weight Corrected"													
Uranium-233/234		0.937		0.102	+/-0.0891	0.100	pCi/g		MXE1	03/27/10	1301	965496	3
Uranium-235/236	U	0.0582		0.0624	+/-0.0178	0.100	pCi/g						
Uranium-238		0.974		0.0718	+/-0.092	0.100	pCi/g						
Rad Gamma Spec Analysis													
GAMMA SPEC "Dry Weight Corrected"													
Americium-241	U	0.0644		0.136	+/-0.0423	0.200	pCi/g		MXR1	03/19/10	2311	961099	4
Bismuth-211	UI	4.72	R,R5a	0.204	+/-0.277		pCi/g						
Bismuth-214		1.49		0.0711	+/-0.101	0.200	pCi/g						
Cadmium-109	UI	3.73	R,R5a	0.764	+/-0.359		pCi/g						
Cerium-139	U	0.00062		0.0352	+/-0.0106	0.050	pCi/g						
Cesium-134	UI	0.121	R,R5a	0.0616	+/-0.0242	0.100	pCi/g						
Cesium-137	U	-0.00545		0.0436	+/-0.0128	0.100	pCi/g						
Cobalt-60	U	-0.00358		0.0421	+/-0.0132	0.100	pCi/g						
Europium-152	U	-0.0708		0.099	+/-0.0333	0.200	pCi/g						
Lanthanum-140	U	0.0556		0.143	+/-0.0475		pCi/g						
Lead-212		1.97		0.0636	+/-0.113	0.100	pCi/g						
Lead-214		1.71		0.0743	+/-0.111	0.100	pCi/g						
Mercury-203	U	0.0386		0.0448	+/-0.0215	0.100	pCi/g						
Potassium-40		30.5		0.359	+/-1.46	1.00	pCi/g						
Radium-223	U	-0.0719		0.694	+/-0.233		pCi/g						
Radium-224	UI	5.43	R,R5a	0.681	+/-0.492		pCi/g						
Radium-226		1.49		0.0711	+/-0.101		pCi/g						
Radium-228		1.83		0.147	+/-0.158	0.500	pCi/g						
Ruthenium-106	U	-0.00171		0.349	+/-0.107	0.800	pCi/g						
Sodium-22	U	0.00357		0.0415	+/-0.013	0.080	pCi/g						
Strontium-85	UI	0.0974	R,R5a	0.0531	+/-0.0147		pCi/g						
Thallium-208		0.628		0.0352	+/-0.043	0.080	pCi/g						

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Certificate of Analysis

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

Report Date: March 31, 2010

Client Sample ID: RE36-10-8274
Sample ID: 248521006
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-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													
AM241 "Dry Weight Corrected"													
Americium-241	U	0.00307		0.0201	+/-0.00256	0.050	pCi/g		MXE1	03/25/10	2213	965494	1
ISOPU "Dry Weight Corrected"													
Plutonium-238	U	-0.00216		0.0276	+/-0.00574	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240	U	0.0193		0.0233	+/-0.00683	0.050	pCi/g						
ISOU "Dry Weight Corrected"													
Uranium-233/234		1.18		0.107	+/-0.109	0.100	pCi/g		MXE1	03/27/10	1301	965496	3
Uranium-235/236		0.0844		0.0653	+/-0.0218	0.100	pCi/g						
Uranium-238		1.41		0.0752	+/-0.125	0.100	pCi/g						
Rad Gamma Spec Analysis													
GAMMA SPEC "Dry Weight Corrected"													
Americium-241	U	-0.00595		0.165	+/-0.0529	0.200	pCi/g		MXR1	03/19/10	2312	961099	4
Bismuth-211	UI	4.92	R,R5a	0.235	+/-0.331		pCi/g						
Bismuth-214		1.57		0.0754	+/-0.106	0.200	pCi/g						
Cadmium-109	UI	5.07	R,R5a	0.791	+/-0.443		pCi/g						
Cerium-139	U	-0.0229		0.0374	+/-0.0112	0.050	pCi/g						
Cesium-134	UI	0.106	R,R5a	0.0608	+/-0.0205	0.100	pCi/g						
Cesium-137		0.379		0.0439	+/-0.0307	0.100	pCi/g						
Cobalt-60	U	0.0333		0.0461	+/-0.0132	0.100	pCi/g						
Europium-152	U	-0.0197		0.109	+/-0.0476	0.200	pCi/g						
Lanthanum-140	U	0.0367		0.141	+/-0.0479		pCi/g						
Lead-212		2.18		0.0691	+/-0.150	0.100	pCi/g						
Lead-214		1.79		0.0854	+/-0.130	0.100	pCi/g						
Mercury-203	U	0.0482		0.0528	+/-0.0178	0.100	pCi/g						
Potassium-40		32.2		0.349	+/-1.57	1.00	pCi/g						
Radium-223	U	-0.0563		0.749	+/-0.253		pCi/g						
Radium-224	UI	5.22	R,R5a	0.740	+/-0.536		pCi/g						
Radium-226		1.57		0.0754	+/-0.106		pCi/g						
Radium-228		2.17		0.152	+/-0.180	0.500	pCi/g						
Ruthenium-106	U	-0.0412		0.353	+/-0.106	0.800	pCi/g						
Sodium-22	U	-0.0274		0.0484	+/-0.0153	0.080	pCi/g						
Strontium-85	UI	0.179	R,R5a	0.0584	+/-0.0191		pCi/g						
Thallium-208		0.633		0.0383	+/-0.0438	0.080	pCi/g						

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

Report Date: March 31, 2010

Client Sample ID: RE36-10-8278
Sample ID: 248521005

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	0.0252	0.272	+/-0.0779		pCi/g						
Thorium-231	U	-0.0719	0.694	+/-0.233		pCi/g						
Thorium-234	U	1.14	1.20	+/-0.525	2.00	pCi/g						
Tin-113	U	0.00123	0.0511	+/-0.0151	0.100	pCi/g						
Uranium-235	U	0.0947	0.232	+/-0.0692	0.500	pCi/g						
Yttrium-88	U	0.00578	0.0369	+/-0.0109	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-24	173	+/-46.5	250	pCi/L		KXK2	03/29/10	2108	964063	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"	77.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	87.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	72.2	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8274
Sample ID: 248521006

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.0292	0.306	+/-0.093		pCi/g						
Thorium-231	U	-0.0563	0.749	+/-0.253		pCi/g						
Thorium-234		3.23	1.45	+/-0.800	2.00	pCi/g						
Tin-113	U	-0.0125	0.0532	+/-0.0161	0.100	pCi/g						
Uranium-235	U	0.0563	0.254	+/-0.076	0.500	pCi/g						
Yttrium-88	U	0.00391	0.038	+/-0.0114	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-29.3	173	+/-46.2	250	pCi/L		KXK2	03/29/10	2200	964063	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	90.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	80.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	74.6	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

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- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8291
Sample ID: 248521007
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 28.9%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result		DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis													
AM241 "Dry Weight Corrected"													
Americium-241		0.0341		0.0214	+/-0.00759	0.050	pCi/g		MXE1	03/25/10	2213	965494	1
ISOPU "Dry Weight Corrected"													
Plutonium-238	U	0.00447		0.0251	+/-0.00787	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240		0.0782		0.0212	+/-0.0132	0.050	pCi/g						
ISOU "Dry Weight Corrected"													
Uranium-233/234		1.66		0.185	+/-0.165	0.100	pCi/g		MXE1	03/29/10	1238	965496	3
Uranium-235/236		0.114		0.113	+/-0.0336	0.100	pCi/g						
Uranium-238		2.25		0.130	+/-0.211	0.100	pCi/g						
Rad Gamma Spec Analysis													
GAMMA SPEC "Dry Weight Corrected"													
Americium-241	U	0.137		0.323	+/-0.108	0.200	pCi/g		MXR1	03/19/10	2312	961099	4
Bismuth-211	UI	4.63	R,R5a	0.345	+/-0.276		pCi/g						
Bismuth-214		1.65		0.118	+/-0.106	0.200	pCi/g						
Cadmium-109	UI	4.78	R,R5a	1.28	+/-0.516		pCi/g						
Cerium-139	U	0.00831		0.0524	+/-0.0162	0.050	pCi/g						
Cesium-134	U	0.0329		0.0851	+/-0.0248	0.100	pCi/g						
Cesium-137		2.06		0.0687	+/-0.082	0.100	pCi/g						
Cobalt-60	U	-0.0228		0.0596	+/-0.0197	0.100	pCi/g						
Europium-152	U	-0.00456		0.167	+/-0.0616	0.200	pCi/g						
Lanthanum-140	U	-0.0869		0.173	+/-0.0581		pCi/g						
Lead-212		2.04		0.0947	+/-0.093	0.100	pCi/g						
Lead-214		1.68		0.129	+/-0.111	0.100	pCi/g						
Mercury-203	U	-0.00567		0.076	+/-0.0229	0.100	pCi/g						
Potassium-40		26.8		0.584	+/-1.31	1.00	pCi/g						
Radium-223	U	0.585		1.12	+/-0.376		pCi/g						
Radium-224	UI	5.83	R,R5a	1.02	+/-0.670		pCi/g						
Radium-226		1.65		0.118	+/-0.106		pCi/g						
Radium-228		1.98		0.209	+/-0.215	0.500	pCi/g						
Ruthenium-106	U	0.0732		0.536	+/-0.165	0.800	pCi/g						
Sodium-22	U	-0.0442		0.0714	+/-0.024	0.080	pCi/g						
Strontium-85	U	0.0594		0.077	+/-0.0255		pCi/g						
Thallium-208		0.641		0.0584	+/-0.0475	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8291
Sample ID: 248521007

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.146	0.431	+/-0.139		pCi/g						
Thorium-231	U	0.585	1.12	+/-0.376		pCi/g						
Thorium-234		2.65	2.58	+/-1.09	2.00	pCi/g						
Tin-113	U	-0.0317	0.0825	+/-0.0257	0.100	pCi/g						
Uranium-235	U	0.162	0.339	+/-0.106	0.500	pCi/g						
Yttrium-88	U	0.0213	0.0641	+/-0.0181	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-102	174	+/-42.0	250	pCi/L		KXK2	03/29/10	2253	964063	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"	84.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	78.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	51.2	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8287
Sample ID: 248521008
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 32.9%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result		DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis													
AM241 "Dry Weight Corrected"													
Americium-241	U	0.0162		0.0215	+/-0.00498	0.050	pCi/g		MXE1	03/25/10	2213	965494	1
ISOPU "Dry Weight Corrected"													
Plutonium-238	U	0.00686		0.0271	+/-0.00872	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240		0.0388		0.0229	+/-0.0092	0.050	pCi/g						
ISOU "Dry Weight Corrected"													
Uranium-233/234		1.36		0.149	+/-0.132	0.100	pCi/g		MXE1	03/29/10	1238	965496	3
Uranium-235/236	U	0.0521		0.0908	+/-0.0188	0.100	pCi/g						
Uranium-238		1.58		0.104	+/-0.149	0.100	pCi/g						
Rad Gamma Spec Analysis													
GAMMA SPEC "Dry Weight Corrected"													
Americium-241	U	0.0656		0.230	+/-0.0727	0.200	pCi/g		MXR1	03/19/10	2314	961099	4
Bismuth-211	UI	4.39	R,R5a	0.286	+/-0.277		pCi/g						
Bismuth-214		1.46		0.095	+/-0.0993	0.200	pCi/g						
Cadmium-109	UI	4.18	R,R5a	0.923	+/-0.492		pCi/g						
Cerium-139	U	0.0133		0.0444	+/-0.0134	0.050	pCi/g						
Cesium-134	UI	0.104	R,R5a	0.0807	+/-0.0259	0.100	pCi/g						
Cesium-137		0.580		0.0591	+/-0.0386	0.100	pCi/g						
Cobalt-60	U	-0.00374		0.0537	+/-0.0166	0.100	pCi/g						
Europium-152	U	0.0045		0.138	+/-0.0474	0.200	pCi/g						
Lanthanum-140	U	0.0151		0.195	+/-0.0629		pCi/g						
Lead-212		1.62		0.0965	+/-0.099	0.100	pCi/g						
Lead-214		1.59		0.107	+/-0.110	0.100	pCi/g						
Mercury-203	U	0.0514		0.0607	+/-0.0229	0.100	pCi/g						
Potassium-40		26.0		0.478	+/-1.40	1.00	pCi/g						
Radium-223	U	0.122		0.904	+/-0.305		pCi/g						
Radium-224	UI	3.54	R,R5a	1.16	+/-0.405		pCi/g						
Radium-226		1.46		0.095	+/-0.0993		pCi/g						
Radium-228		1.68		0.179	+/-0.181	0.500	pCi/g						
Ruthenium-106	U	0.0413		0.427	+/-0.126	0.800	pCi/g						
Sodium-22	U	-0.00329		0.0605	+/-0.0186	0.080	pCi/g						
Strontium-85	UI	0.114	R,R5a	0.0678	+/-0.0182		pCi/g						
Thallium-208		0.531		0.0505	+/-0.0434	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8287
Sample ID: 248521008

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.122	0.358	+/-0.108		pCi/g						
Thorium-231	U	0.122	0.904	+/-0.305		pCi/g						
Thorium-234	U	1.83	1.86	+/-0.741	2.00	pCi/g						
Tin-113	U	-0.0107	0.0673	+/-0.0207	0.100	pCi/g						
Uranium-235	U	0.0997	0.281	+/-0.0842	0.500	pCi/g						
Yttrium-88	U	0.00323	0.045	+/-0.0134	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-97.1	176	+/-42.7	250	pCi/L		KXK2	03/29/10	2345	964063	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	80.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	64.2	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8273
Sample ID: 248521009
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 29%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result		DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis													
AM241 "Dry Weight Corrected"													
Americium-241	U	0.0202		0.023	+/-0.00799	0.050	pCi/g		MXE1	03/25/10	2213	965494	1
ISOPU "Dry Weight Corrected"													
Plutonium-238	U	0.0142		0.0228	+/-0.00738	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240		0.0762		0.0193	+/-0.0124	0.050	pCi/g						
ISOU "Dry Weight Corrected"													
Uranium-233/234		1.65		0.158	+/-0.157	0.100	pCi/g		MXE1	03/29/10	1238	965496	3
Uranium-235/236		0.111		0.0967	+/-0.0306	0.100	pCi/g						
Uranium-238		2.11		0.111	+/-0.192	0.100	pCi/g						
Rad Gamma Spec Analysis													
GAMMA SPEC "Dry Weight Corrected"													
Americium-241	U	0.0161		0.0706	+/-0.0224	0.200	pCi/g		MXR1	03/19/10	2315	961099	4
Bismuth-211	UI	5.66	R,R5a	0.295	+/-0.348		pCi/g						
Bismuth-214		1.75		0.112	+/-0.143	0.200	pCi/g						
Cadmium-109	UI	5.04	R,R5a	0.600	+/-0.385		pCi/g						
Cerium-139	U	-0.0101		0.038	+/-0.0112	0.050	pCi/g						
Cesium-134	UI	0.157	R,R5a	0.100	+/-0.0271	0.100	pCi/g						
Cesium-137		2.02		0.070	+/-0.127	0.100	pCi/g						
Cobalt-60	U	0.0128		0.0697	+/-0.0203	0.100	pCi/g						
Europium-152	U	0.0129		0.146	+/-0.0451	0.200	pCi/g						
Lanthanum-140	U	-0.0816		0.234	+/-0.0769		pCi/g						
Lead-212		2.22		0.0783	+/-0.122	0.100	pCi/g						
Lead-214		2.05		0.107	+/-0.139	0.100	pCi/g						
Mercury-203	U	-0.0134		0.0571	+/-0.0199	0.100	pCi/g						
Potassium-40		31.7		0.615	+/-1.63	1.00	pCi/g						
Radium-223	U	-0.318		0.882	+/-0.318		pCi/g						
Radium-224	UI	7.00	R,R5a	0.842	+/-0.729		pCi/g						
Radium-226		1.75		0.112	+/-0.143		pCi/g						
Radium-228		1.95		0.226	+/-0.221	0.500	pCi/g						
Ruthenium-106	U	-0.0675		0.515	+/-0.160	0.800	pCi/g						
Sodium-22	U	-0.0354		0.0738	+/-0.0249	0.080	pCi/g						
Strontium-85	UI	0.0799	R,R5a	0.0715	+/-0.0217		pCi/g						
Thallium-208		0.700		0.0552	+/-0.0564	0.080	pCi/g						

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Certificate of Analysis

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

Report Date: March 31, 2010

Client Sample ID: RE36-10-8273
Sample ID: 248521009

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.0231	0.344	+/-0.104		pCi/g						
Thorium-231	U	-0.318	0.882	+/-0.318		pCi/g						
Thorium-234		3.39	0.666	+/-0.454	2.00	pCi/g						
Tin-113	U	-0.076	0.0705	+/-0.0245	0.100	pCi/g						
Uranium-235	U	0.0312	0.241	+/-0.0764	0.500	pCi/g						
Yttrium-88	U	-0.0138	0.0621	+/-0.0206	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-40.4	175	+/-46.1	250	pCi/L		KXK2	03/30/10	0153	964063	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"	79.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	83.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	60.3	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

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

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Certificate of Analysis

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

Report Date: March 31, 2010

Client Sample ID: RE36-10-8275
Sample ID: 248521010
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 40.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result		DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis													
AM241 "Dry Weight Corrected"													
Americium-241	U	0.0106		0.0212	+/-0.00429	0.050	pCi/g		MXE1	03/25/10	2213	965494	1
ISOPU "Dry Weight Corrected"													
Plutonium-238	U	-0.000778		0.0258	+/-0.00961	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240		0.0366		0.0218	+/-0.0095	0.050	pCi/g						
ISOU "Dry Weight Corrected"													
Uranium-233/234		1.26		0.151	+/-0.125	0.100	pCi/g		MXE1	03/29/10	1238	965496	3
Uranium-235/236	U	0.0594		0.092	+/-0.0203	0.100	pCi/g						
Uranium-238		1.54		0.106	+/-0.147	0.100	pCi/g						
Rad Gamma Spec Analysis													
GAMMA SPEC "Dry Weight Corrected"													
Americium-241	U	0.123		0.128	+/-0.0406	0.200	pCi/g		MXR1	03/20/10	1110	961099	4
Bismuth-211	UI	4.29	R,R5a	0.420	+/-0.326		pCi/g						
Bismuth-214		1.43		0.147	+/-0.118	0.200	pCi/g						
Cadmium-109	UI	3.44	R,R5a	1.27	+/-0.489		pCi/g						
Cerium-139	U	-0.0126		0.062	+/-0.0191	0.050	pCi/g						
Cesium-134	U	0.0931		0.117	+/-0.0487	0.100	pCi/g						
Cesium-137		0.746		0.0844	+/-0.0548	0.100	pCi/g						
Cobalt-60	U	-0.00686		0.0837	+/-0.0264	0.100	pCi/g						
Europium-152	U	-0.016		0.202	+/-0.0699	0.200	pCi/g						
Lanthanum-140	U	-0.129		0.242	+/-0.0832		pCi/g						
Lead-212		1.90		0.121	+/-0.122	0.100	pCi/g						
Lead-214		1.56		0.152	+/-0.126	0.100	pCi/g						
Mercury-203	U	-0.00288		0.0901	+/-0.0266	0.100	pCi/g						
Potassium-40		25.5		0.667	+/-1.26	1.00	pCi/g						
Radium-223	U	-0.251		1.24	+/-0.433		pCi/g						
Radium-224	UI	4.67	R,R5a	1.30	+/-0.759		pCi/g						
Radium-226		1.43		0.147	+/-0.118		pCi/g						
Radium-228		2.08		0.322	+/-0.223	0.500	pCi/g						
Ruthenium-106	U	0.0221		0.678	+/-0.208	0.800	pCi/g						
Sodium-22	U	-0.0208		0.079	+/-0.0257	0.080	pCi/g						
Strontium-85	U	0.0717		0.0886	+/-0.0278		pCi/g						
Thallium-208		0.514		0.0673	+/-0.0518	0.080	pCi/g						

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

Report Date: March 31, 2010

Client Sample ID: RE36-10-8275
Sample ID: 248521010

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	0.169	0.526	+/-0.151		pCi/g						
Thorium-231	U	-0.251	1.24	+/-0.433		pCi/g						
Thorium-234		1.74	1.25	+/-0.629	2.00	pCi/g						
Tin-113	U	0.023	0.103	+/-0.0302	0.100	pCi/g						
Uranium-235	U	0.00801	0.392	+/-0.120	0.500	pCi/g						
Yttrium-88	U	0.0234	0.0776	+/-0.0215	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-44.9	172	+/-44.9	250	pCi/L		KXK2	03/30/10	0246	964063	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	85.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	79.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	65.6	(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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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8276
Sample ID: 248521011
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 14.6%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result		DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis													
AM241 "Dry Weight Corrected"													
Americium-241	U	0.00427		0.0178	+/-0.00318	0.050	pCi/g		MXE1	03/30/10	1431	969981	1
ISOPU "Dry Weight Corrected"													
Plutonium-238		0.026		0.0239	+/-0.00833	0.050	pCi/g		MXE1	03/25/10	2023	965495	3
Plutonium-239/240	U	0.00281		0.0202	+/-0.00363	0.050	pCi/g						
ISOU "Dry Weight Corrected"													
Uranium-233/234		1.05		0.127	+/-0.103	0.100	pCi/g		MXE1	03/29/10	1238	965496	4
Uranium-235/236	U	0.0611		0.0775	+/-0.019	0.100	pCi/g						
Uranium-238		0.971		0.0891	+/-0.0974	0.100	pCi/g						
Rad Gamma Spec Analysis													
GAMMA SPEC "Dry Weight Corrected"													
Americium-241	U	-0.0337		0.313	+/-0.0907	0.200	pCi/g		MXR1	03/20/10	1110	961099	5
Bismuth-211	UI	4.26	R,R5a	0.380	+/-0.340		pCi/g						
Bismuth-214		1.37		0.133	+/-0.116	0.200	pCi/g						
Cadmium-109	UI	2.15	R,R5a	1.42	+/-0.600		pCi/g						
Cerium-139	U	-0.014		0.0582	+/-0.0182	0.050	pCi/g						
Cesium-134	U	0.073		0.106	+/-0.0293	0.100	pCi/g						
Cesium-137	U	0.0706		0.0925	+/-0.0255	0.100	pCi/g						
Cobalt-60	U	-0.0202		0.066	+/-0.0217	0.100	pCi/g						
Europium-152	U	-0.00421		0.191	+/-0.0622	0.200	pCi/g						
Lanthanum-140	U	-0.0167		0.281	+/-0.0855		pCi/g						
Lead-212		1.92		0.105	+/-0.119	0.100	pCi/g						
Lead-214		1.54		0.138	+/-0.130	0.100	pCi/g						
Mercury-203	U	-0.0117		0.0829	+/-0.0248	0.100	pCi/g						
Potassium-40		25.2		0.636	+/-1.54	1.00	pCi/g						
Radium-223	U	-0.336		1.28	+/-0.393		pCi/g						
Radium-224	UI	5.13	R,R5a	1.13	+/-0.703		pCi/g						
Radium-226		1.37		0.133	+/-0.116		pCi/g						
Radium-228		1.71		0.276	+/-0.216	0.500	pCi/g						
Ruthenium-106	U	0.160		0.662	+/-0.191	0.800	pCi/g						
Sodium-22	U	-0.000521		0.0828	+/-0.0253	0.080	pCi/g						
Strontium-85	UI	0.108	R,R5a	0.0983	+/-0.029		pCi/g						
Thallium-208		0.585		0.0664	+/-0.0581	0.080	pCi/g						

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

Report Date: March 31, 2010

Client Sample ID: RE36-10-8276
Sample ID: 248521011

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.0516	0.484	+/-0.143		pCi/g						
Thorium-231	U	-0.336	1.28	+/-0.393		pCi/g						
Thorium-234	U	1.58	2.85	+/-0.817	2.00	pCi/g						
Tin-113	U	-0.0268	0.0882	+/-0.0277	0.100	pCi/g						
Uranium-235	U	-0.00817	0.373	+/-0.113	0.500	pCi/g						
Yttrium-88	U	0.017	0.0787	+/-0.0224	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-66.6	173	+/-44.0	250	pCi/L		KXK2	03/30/10	0338	964063	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"	82.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	82.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	77.2	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

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

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04/08/10

Thursday, March 04, 2010

LOS ALAMOS

NATIONAL LABORATORY

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2201C

REQUEST NUMBER: 10-2201

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

TURNAROUND/REPORT DUE: 4/1/2010

TURNAROUND REQ'D: 30

LAB REQUEST COMMENTS:

248521

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-8288	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8288	1	POLY	H3	Ice	R
RE36-10-8279	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8279	1	POLY	H3	Ice	R
RE36-10-8277	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8277	1	POLY	H3	Ice	R
RE36-10-8280	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8280	1	POLY	H3	Ice	R
RE36-10-8278	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8278	1	POLY	H3	Ice	R
RE36-10-8274	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8274	1	POLY	H3	Ice	R
RE36-10-8291	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8291	1	POLY	H3	Ice	R
RE36-10-8287	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8287	1	POLY	H3	Ice	R
RE36-10-8273	1	POLY	AM241+GS+ISOPU+ ISOU	None	R

Thursday, March 04, 2010

LOS ALAMOS
NATIONAL LABORATORY

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2201C
REQUEST NUMBER: 10-2201

ATTN: Valerie Davis
General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston, SC 29407

TURNAROUND/REPORT DUE: 4/1/2010
TURNAROUND REQ'D: 30

LAB REQUEST COMMENTS:

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-8273	1	POLY	H3	Ice	R
RE36-10-8275	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8275	1	POLY	H3	Ice	R
RE36-10-8276	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8276	1	POLY	H3	Ice	R

Relinquished By:	Date	Time	Received By:	Date	Time
Printed Name / Signature	3/2/10		Patricia Dover-Hunt / P. Dover-Hunt	3/3/10	08:50
Printed Name / Signature			Printed Name / Signature		
Printed Name / Signature			Printed Name / Signature		

Received for DISPOSAL By: **Date** **Time** **Remarks:**

Printed Name Signature

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2201

LOS ALAMOS
NATIONAL LABORATORY

ATTN: Valerie Davis
General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston, SC 29407

These Samples are on:
LANL Request Number:10-2201
Per Agreement Number:126310011
Project Cost Code: MR3A05529E00

Please analyse the enclosed samples according to the schedule indicated:

SHIP DATE: 3/2/2010
TURNAROUND/REPORT DUE: 4/1/2010
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	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	
		1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2201

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	
	EPA:906.0	1	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	
		1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	
		1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	
	HASL-300:AM-241	1	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	
		1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	
		1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	
	HASL-300:ISOPU	1	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2201

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOPU	1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	
		1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	
	HASL-300:ISOU	1	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	
		1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	
		1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	

Final Page of REQUEST NUMBER 10-2201

GEL Laboratories LLC

a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407

P 843.556.8171 F 843.766.1178

www.gel.com

March 10, 2010

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: 248521
SDG: 10-2201

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on March 03, 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,

for

Valerie Davis
Project Manager

Purchase Order: 72733-001-09
Chain of Custody: 10-2201
Enclosures

problem solved

Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Work Order #: 248521
SDG: 10-2201

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Case Narrative

Case Narrative for
Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Workorder #: 248521
SDG # : 10-2201

March 10, 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 March 03, 2010 for analysis. The samples were prepared/analyzed within the required holding time. Shipping container temperatures were checked, documented, and within specifications. The samples were screened according to GEL Standard Operating Procedure. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. The containers for radiochemistry were received at 14,15,17C temperatures. Shipping container temperature was within specification (0 - 6C).

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
248521001	RE36-10-8288
248521002	RE36-10-8279
248521003	RE36-10-8277
248521004	RE36-10-8280
248521005	RE36-10-8278
248521006	RE36-10-8274
248521007	RE36-10-8291
248521008	RE36-10-8287
248521009	RE36-10-8273
248521010	RE36-10-8275
248521011	RE36-10-8276

Case Narrative

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

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

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

for

Valerie Davis

Project Manager

GEL Laboratories LLC PO Box 30712 Charleston, SC 29417 2040 Savage Road Charleston, SC 29407 P 843.556.8171 F 843.766.1178 www.gel.com

List of current GEL Certifications as of 10 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

Thursday, March 04, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2201C

LOS ALAMOS

NATIONAL LABORATORY

REQUEST NUMBER: 10-2201

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

TURNAROUND/REPORT DUE: 4/1/2010

TURNAROUND REQ'D: 30

LAB REQUEST COMMENTS: 248521

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-8288	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8288	1	POLY	H3	Ice	R
RE36-10-8279	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8279	1	POLY	H3	Ice	R
RE36-10-8277	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8277	1	POLY	H3	Ice	R
RE36-10-8280	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8280	1	POLY	H3	Ice	R
RE36-10-8278	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8278	1	POLY	H3	Ice	R
RE36-10-8274	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8274	1	POLY	H3	Ice	R
RE36-10-8291	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8291	1	POLY	H3	Ice	R
RE36-10-8287	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8287	1	POLY	H3	Ice	R
RE36-10-8273	1	POLY	AM241+GS+ISOPU+ ISOU	None	R

Thursday, March 04, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2201C

REQUEST NUMBER: 10-2201

LOS ALAMOS
NATIONAL LABORATORY

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

TURNAROUND/REPORT DUE: 4/1/2010

TURNAROUND REQ'D: 30

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE36-10-8273	1	POLY	H3	Ice	R
RE36-10-8275	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8275	1	POLY	H3	Ice	R
RE36-10-8276	1	POLY	AM241+GS+ISOPU+ ISOU	None	R
RE36-10-8276	1	POLY	H3	Ice	R

Relinquished By:	Date	Time	Received By:	Date	Time
Printed Name / Signature	3/2/10		Patricia Dover-Hunt / P. W-Hunt	3/3/10	08:50
Printed Name / Signature			Printed Name / Signature		
Printed Name / Signature			Printed Name / Signature		

Received for DISPOSAL By: Date Time **Remarks:**

Printed Name Signature

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2201

LOS ALAMOS
NATIONAL LABORATORY

ATTN: Valerie Davis
General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston, SC 29407

These Samples are on:
LANL Request Number: 10-2201
Per Agreement Number: 126310011
Project Cost Code: MR3A05529E00

Please analyse the enclosed samples according to the schedule indicated:

SHIP DATE: 3/2/2010
TURNAROUND/REPORT DUE: 4/1/2010
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	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	
		1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2201

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	
	EPA:906.0	1	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	
		1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	
		1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	
	HASL-300:AM-241	1	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	
		1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	
		1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	
	HASL-300:ISOPU	1	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	

Tuesday, March 02, 2010

REQUEST NUMBER: 10-2201

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOPU	1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	
		1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	
	HASL-300:ISOU	1	RE36-10-8273	R	2/25/2010	
		1	RE36-10-8274	R	2/25/2010	
		1	RE36-10-8275	R	2/25/2010	
		1	RE36-10-8276	R	2/25/2010	
		1	RE36-10-8277	R	2/25/2010	
		1	RE36-10-8278	R	2/25/2010	
		1	RE36-10-8279	R	2/25/2010	
		1	RE36-10-8280	R	2/25/2010	
		1	RE36-10-8287	R	2/25/2010	
		1	RE36-10-8288	R	2/25/2010	
		1	RE36-10-8291	R	2/25/2010	

Final Page of REQUEST NUMBER 10-2201

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL	**SDG/ARCOC/Work Order: 10-2201**
Received By: Greg Tyler	**Date Received: 3/3/10**

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 **1-5** **14,15,17**
3	Chain of custody documents included with shipment?	X			
4	Sample containers intact and sealed?	X			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?		X		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		X		Sample ID's and containers affected:
7	Are Encore containers present?			X	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	X			Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?		X		Sample ID's affected: **No time on Chain of Custody.**
11	Number of containers received match number indicated on COC?	X			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	X			

Comments:

Fed Ex Tracking Numbers:

7209 7850 3083 1C **7209 7850 3061 2C** **7209 7850 3028 17C**
7209 7850 3040 1C **7209 7850 3072 3C**
7209 7850 3094 1C **7209 7850 3120 4C**
7209 7850 3109 2C **7209 7850 3110 5C**
7209 7850 3039 2C **7209 7850 3153 5C**
7209 7850 3050 2C **7209 7850 3006 14C**
7209 7850 3142 2C **7209 7850 2992 14C**
7209 7850 3131 2C **7209 7850 3071 15C**

PM (or PMA) review: Initials _____ Date 3/4/10

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: 02MAR10
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR3A0532VA00

1C

FedEx Express

2 of 2
TRK# 7209 7850 3083
Mstr# 7209 7850 3072 0201

WED - 03MAR A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
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: 02MAR10
ACTWGT: 47.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR3A0532VA00

1C

FedEx Express

1 of 3
TRK# 0201 7209 7850 3040
MASTER

WED - 03MAR A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS

TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

CAD: 0014176/CAFE2450

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

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

1C

FedEx Express

1 of 3
TRK# 0201 7209 7850 3094
MASTER

WED - 03MAR A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

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

2C

FedEx Express

2 of 3
TRK# 7209 7850 3109
Mstr# 7209 7850 3084 0201

WED - 03MAR A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS

JOYLENE VALDEZ (505) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 02MAR10
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: 6B010AMR3A0532VA00

2C

FedEx Express

3 of 3
MPS# 0263 7209 7850 3039
Mstr# 7209 7850 3017 0201

WED - 03MAR A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR3A0532VA00

2C

FedEx Express

2 of 3
MPS# 0263 7209 7850 3050
Mstr# 7209 7850 3040 0201

WED - 03MAR A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

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

2C

FedEx Express

3 of 3
MPS# 0263 7209 7850 3142
Mstr# 7209 7850 3120 0201

WED - 03MAR
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

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

2C

FedEx Express

2 of 3
MPS# 0263 7209 7850 3131
Mstr# 7209 7850 3120 0201

WED - 03MAR A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

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

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 02MAR10
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR3A0532VA00

2C

WED - 03MAR

FedEx
TRK# 0201 7209 7850 3061

WED - 03 MAR A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
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: 02MAR10
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR3A0532VA00

3C

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1 of 2
TRK# 0201 7209 7850 3072
MASTER

WED - 03MAR A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
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: 02MAR10
ACTWGT: 29.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

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

4C

FedEx Express

1 of 3
TRK# 0201 7209 7850 3120
MASTER

WED - 03MAR A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
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: 02MAR10
ACTWGT: 48.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

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

5C

FedEx Express

3 of 3
MPS# 0263 7209 7850 3110
Mstr# 7209 7850 3094 0201

WED - 03MAR A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
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: 02MAR10
ACTWGT: 46.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

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

5c

FedEx Express

TRK# 0201 7209 7850 3153

WED - 03MAR A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

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

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 02MAR10
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: 6B010AMR3A0532VA00

14c

FedEx Express

3 of 3
MPS# 0263 7209 7850 3006
Mstr# 7209 7850 2981 0201

WED - 03MAR A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

ORIGIN ID: [illegible]
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 82.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

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GENERAL ENGINEERING LAB
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2 of 3
MPS# 0263 7209 7850 2992
Mstr# 7209 7850 2981 0201

WED - 03MAR
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29

XX CHSA

LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 54.0 LB MAN
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1 of 3
TRK# 0201 7209 7850 3017
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WED - 03MAR A1
PRIORITY OVERNIGHT

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SC-US
CHS

XX CHSA

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: 02MAR10
ACTWGT: 21.0 LB MAN
CAD: 0014176/CAFE2450

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TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

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17C

FedEx Express

2 of 3
MPS# 0263 7209 7850 3028
Mstr# 7209 7854 3017 0201

WED - 03MAR - A1
PRIORITY OVERNIGHT

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29407
SC-US
CHS

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

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

RADIOLOGICAL ANALYSIS

Radiochemistry Case Narrative
Los Alamos National Laboratory (LANL)
SDG 10-2201

Method/Analysis Information

Product:	**AM241**
Analytical Method:	DOE EML HASL-300, Am-05-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	965494
Prep Batch Number:	961009

Sample ID	Client ID
248521001	RE36-10-8288
248521002	RE36-10-8279
248521003	RE36-10-8277
248521004	RE36-10-8280
248521005	RE36-10-8278
248521006	RE36-10-8274
248521007	RE36-10-8291
248521008	RE36-10-8287
248521009	RE36-10-8273
248521010	RE36-10-8275
1202071661	Method Blank (MB)
1202071662	248526001(RE36-10-8466) Sample Duplicate (DUP)
1202071663	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 1202071661 (MB) was changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 248526001 (RE36-10-8466). The QC was from LANL work order 248526.

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:	969981
Prep Batch Number:	961009

Sample ID	Client ID
248521011	RE36-10-8276
1202082742	Method Blank (MB)
1202082743	248521011(RE36-10-8276) Sample Duplicate (DUP)
1202082744	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 1202082742 (MB) was changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 248521011 (RE36-10-8276). The QC was from LANL work order 248521.

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 248521011 (RE36-10-8276) was reprepped due to low carrier/tracer yield.

Miscellaneous Information:

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

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The MDCs are calculated using a blank population. Sample 1202082743 (RE36-10-8276) did not meet the client's yield requirement. However, there are 400 tracer counts, GEL's standard tracer yield requirements are met, and the client's detection limits are met.

Blank Decision Level
The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**ISOPU**
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	965495
Prep Batch Number:	961009

Sample ID	Client ID
248521001	RE36-10-8288
248521002	RE36-10-8279
248521003	RE36-10-8277
248521004	RE36-10-8280
248521005	RE36-10-8278
248521006	RE36-10-8274
248521007	RE36-10-8291
248521008	RE36-10-8287
248521009	RE36-10-8273
248521010	RE36-10-8275
248521011	RE36-10-8276
1202071664	Method Blank (MB)
1202071665	248526001(RE36-10-8466) Sample Duplicate (DUP)
1202071666	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 1202071664 (MB) was changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 248526001 (RE36-10-8466). The QC was from LANL work order 248526.

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. Sample, 1202071665 (RE36-10-8466), did not meet the client tracer yield requirements, however it is less than 110 percent and does meet the GEL standard tracer yield requirements.

Blank Decision Level
The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**ISOU**
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	965496
Prep Batch Number:	961009

Sample ID	Client ID
248521001	RE36-10-8288
248521002	RE36-10-8279
248521003	RE36-10-8277
248521004	RE36-10-8280
248521005	RE36-10-8278
248521006	RE36-10-8274
248521007	RE36-10-8291
248521008	RE36-10-8287
248521009	RE36-10-8273
248521010	RE36-10-8275
248521011	RE36-10-8276
1202071667	Method Blank (MB)
1202071668	248526001(RE36-10-8466) Sample Duplicate (DUP)
1202071669	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 1202071667 (MB) was changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 248526001 (RE36-10-8466). The QC was from LANL work order 248526.

QC Information
All of the QC samples met the required acceptance limits.

CSU

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

Technical Information:

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

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

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

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The MDCs are calculated using a blank population. Samples 248521002 (RE36-10-8279) and 248521004 (RE36-10-8280) did not meet the client's yield requirement. However, there are 400 tracer counts, GEL's standard tracer yield requirements are met, and the client's detection limits are met.

Blank Decision Level
The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**GAMMA SPEC**
Analytical Method:	DOE HASL 300, 4.5.2.3/Ga-01-R
Prep Method:	Dry Soil Prep
Analytical Batch Number:	961099
Prep Batch Number:	961009

Sample ID	Client ID
248521001	RE36-10-8288
248521002	RE36-10-8279
248521003	RE36-10-8277
248521004	RE36-10-8280
248521005	RE36-10-8278
248521006	RE36-10-8274
248521007	RE36-10-8291
248521008	RE36-10-8287
248521009	RE36-10-8273
248521010	RE36-10-8275
248521011	RE36-10-8276
1202061469	Method Blank (MB)
1202061470	248526001(RE36-10-8466) Sample Duplicate (DUP)
1202061471	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, June 2009, July 2009, August 2009, October 2009, November 2009, December 2009 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: 248526001 (RE36-10-8466). The QC was from LANL work order 248526.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The method blank 1202061469 (MB) result is greater than 1.65 times the CSU but less than the MDC for Am-241.

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 1202061469 (MB) result is greater than the decision level but less than the MDC Am-241.

Qualifier information

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to interference.	Bismuth-211	248521001	RE36-10-8288
			248521002	RE36-10-8279
			248521003	RE36-10-8277
			248521004	RE36-10-8280
			248521005	RE36-10-8278
			248521006	RE36-10-8274
			248521007	RE36-10-8291
			248521008	RE36-10-8287
			248521009	RE36-10-8273
			248521010	RE36-10-8275
			248521011	RE36-10-8276

			1202061470	RE36-10-8466(248526001DUP)
		Cadmium-109	248521001	RE36-10-8288
			248521002	RE36-10-8279
			248521003	RE36-10-8277
			248521004	RE36-10-8280
			248521005	RE36-10-8278
			248521006	RE36-10-8274
			248521007	RE36-10-8291
			248521008	RE36-10-8287
			248521009	RE36-10-8273
			248521010	RE36-10-8275
			248521011	RE36-10-8276
			1202061470	RE36-10-8466(248526001DUP)
		Radium-224	248521001	RE36-10-8288
			248521002	RE36-10-8279
			248521003	RE36-10-8277
			248521004	RE36-10-8280
			248521005	RE36-10-8278
			248521006	RE36-10-8274
			248521007	RE36-10-8291
			248521008	RE36-10-8287
			248521009	RE36-10-8273
			248521010	RE36-10-8275
			248521011	RE36-10-8276
			1202061470	RE36-10-8466(248526001DUP)
UI	Data rejected due to low abundance.	Americium-241	248521004	RE36-10-8280
		Cesium-134	248521001	RE36-10-8288
			248521002	RE36-10-8279
			248521003	RE36-10-8277

	248521004	RE36-10-8280
	248521005	RE36-10-8278
	248521006	RE36-10-8274
	248521008	RE36-10-8287
	248521009	RE36-10-8273
Strontium-85	248521001	RE36-10-8288
	248521002	RE36-10-8279
	248521004	RE36-10-8280
	248521005	RE36-10-8278
	248521006	RE36-10-8274
	248521008	RE36-10-8287
	248521009	RE36-10-8273
	248521011	RE36-10-8276

Method/Analysis Information

Product:	**H3**
Analytical Method:	GL-RAD-A-002
Analytical Batch Number:	964063

Sample ID	**Client ID**
248521001	RE36-10-8288
248521002	RE36-10-8279
248521003	RE36-10-8277
248521004	RE36-10-8280
248521005	RE36-10-8278
248521006	RE36-10-8274
248521007	RE36-10-8291
248521008	RE36-10-8287
248521009	RE36-10-8273
248521010	RE36-10-8275
248521011	RE36-10-8276
1202068228	Method Blank (MB)
1202068229	248526001(RE36-10-8466) Sample Duplicate (DUP)
1202068230	Laboratory Control Sample (LCS)

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

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

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. The initial Calibration was performed in August 2009.

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

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

Quality Control (QC) Information:

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

Designated QC
The following sample was used for QC: 248526001 (RE36-10-8466). The QC was from LANL work order 248526.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The blank result is less than 1.65 times the CSU.

Technical Information:

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

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

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

Additional Comments
Additional comments were not required for this sample set.

Blank Decision Level
The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Certification Statement

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

Review Validation:

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

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

Reviewer/Date: Patrick Mullen 3/31/10

SAMPLE DATA SUMMARY

GEL LABORATORIES LLC

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

Certificate of Analysis Report
for

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

Client SDG: 10-2201 GEL Work Order: 248521

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 31, 2010

Client Sample ID: RE36-10-8288
Sample ID: 248521001
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 16.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.000477	0.0218	+/-0.00186	0.050	pCi/g		MXE1	03/25/10	2212	965494	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.00896	0.0278	+/-0.00495	0.050	pCi/g		MXE1	03/25/10	1840	965495	2
Plutonium-239/240	U	0.00435	0.0235	+/-0.00829	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		1.04	0.0979	+/-0.0961	0.100	pCi/g		MXE1	03/27/10	1301	965496	3
Uranium-235/236	U	0.0515	0.0598	+/-0.0186	0.100	pCi/g						
Uranium-238		0.857	0.0688	+/-0.0821	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	-0.23	0.292	+/-0.0901	0.200	pCi/g		MXR1	03/19/10	2042	961099	4
Bismuth-211	UI	5.11	0.444	+/-0.306		pCi/g						
Bismuth-214		1.52	0.133	+/-0.110	0.200	pCi/g						
Cadmium-109	UI	5.61	1.28	+/-0.634		pCi/g						
Cerium-139	U	0.00736	0.0623	+/-0.0188	0.050	pCi/g						
Cesium-134	UI	0.208	0.103	+/-0.0664	0.100	pCi/g						
Cesium-137		0.166	0.0712	+/-0.0334	0.100	pCi/g						
Cobalt-60	U	0.0177	0.0755	+/-0.0219	0.100	pCi/g						
Europium-152	U	-0.15	0.182	+/-0.0642	0.200	pCi/g						
Lanthanum-140	U	-0.00697	0.233	+/-0.0777		pCi/g						
Lead-212		2.02	0.111	+/-0.101	0.100	pCi/g						
Lead-214		1.85	0.143	+/-0.122	0.100	pCi/g						
Mercury-203	U	0.0447	0.0882	+/-0.0253	0.100	pCi/g						
Potassium-40		30.4	0.545	+/-1.47	1.00	pCi/g						
Radium-223	U	-0.162	1.17	+/-0.403		pCi/g						
Radium-224	UI	5.45	1.19	+/-0.673		pCi/g						
Radium-226		1.52	0.133	+/-0.110		pCi/g						
Radium-228		2.18	0.244	+/-0.237	0.500	pCi/g						
Ruthenium-106	U	-0.132	0.574	+/-0.180	0.800	pCi/g						
Sodium-22	U	0.0247	0.0841	+/-0.0242	0.080	pCi/g						
Strontium-85	UI	0.130	0.0924	+/-0.0268		pCi/g						

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 31, 2010

Client Sample ID: RE36-10-8288
Sample ID: 248521001

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		0.700	0.068	+/-0.0553	0.080	pCi/g						
Thorium-227	U	-0.143	0.483	+/-0.153		pCi/g						
Thorium-231	U	-0.162	1.17	+/-0.403		pCi/g						
Thorium-234	U	1.65	2.73	+/-0.807	2.00	pCi/g						
Tin-113	U	-0.00597	0.0923	+/-0.0276	0.100	pCi/g						
Uranium-235	U	0.138	0.416	+/-0.124	0.500	pCi/g						
Yttrium-88	U	0.00113	0.0562	+/-0.0172	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-34.4	172	+/-45.6	250	pCi/L		KXK2	03/29/10	1738	964063	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"	83.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	77.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	76.5	(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

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Client Sample ID: RE36-10-8288
Sample ID: 248521001

Project: LANL01004
Client ID: LANL010

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

H Analytical holding time was exceeded
J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
UJ Gamma Spectroscopy--Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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

Report Date: March 31, 2010

Client Sample ID:	RE36-10-8279	Project:	LANL01004
Sample ID:	248521002	Client ID:	LANL010
Matrix:	R		
Collect Date:	25-FEB-10		
Receive Date:	03-MAR-10		
Collector:	Client		
Moisture:	7.1%		

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.00362	0.0246	+/-0.00248	0.050	pCi/g		MXE1	03/25/10	2212	965494	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.00168	0.0266	+/-0.00428	0.050	pCi/g		MXE1	03/25/10	1840	965495	2
Plutonium-239/240		0.0397	0.0225	+/-0.010	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		3.43	0.188	+/-0.305	0.100	pCi/g		MXE1	03/27/10	1301	965496	3
Uranium-235/236		0.157	0.115	+/-0.0397	0.100	pCi/g						
Uranium-238		3.24	0.132	+/-0.290	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	0.00107	0.261	+/-0.0887	0.200	pCi/g		MXR1	03/19/10	2042	961099	4
Bismuth-211	UI	5.37	0.356	+/-0.399		pCi/g						
Bismuth-214		1.37	0.126	+/-0.115	0.200	pCi/g						
Cadmium-109	UI	3.18	1.41	+/-0.535		pCi/g						
Cerium-139	U	-0.0065	0.0595	+/-0.0182	0.050	pCi/g						
Cesium-134	UI	0.107	0.0989	+/-0.0283	0.100	pCi/g						
Cesium-137		0.625	0.0767	+/-0.0531	0.100	pCi/g						
Cobalt-60	U	-0.00883	0.0702	+/-0.0219	0.100	pCi/g						
Europium-152	U	0.0584	0.190	+/-0.0685	0.200	pCi/g						
Lanthanum-140	U	-0.111	0.232	+/-0.0758		pCi/g						
Lead-212		1.93	0.111	+/-0.143	0.100	pCi/g						
Lead-214		1.95	0.130	+/-0.155	0.100	pCi/g						
Mercury-203	U	0.065	0.0825	+/-0.0249	0.100	pCi/g						
Potassium-40		26.0	0.611	+/-1.47	1.00	pCi/g						
Radium-223	U	0.107	1.22	+/-0.419		pCi/g						
Radium-224	UI	4.72	1.18	+/-0.738		pCi/g						
Radium-226		1.37	0.126	+/-0.115		pCi/g						
Radium-228		2.05	0.242	+/-0.242	0.500	pCi/g						
Ruthenium-106	U	0.165	0.602	+/-0.179	0.800	pCi/g						
Sodium-22	U	-0.0163	0.0768	+/-0.0241	0.080	pCi/g						
Strontium-85	UI	0.157	0.0944	+/-0.030		pCi/g						
Thallium-208		0.600	0.0615	+/-0.0514	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8279
Sample ID: 248521002

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.192	0.484	+/-0.157		pCi/g						
Thorium-231	U	0.107	1.22	+/-0.419		pCi/g						
Thorium-234		4.12	2.28	+/-1.04	2.00	pCi/g						
Tin-113	U	-0.0199	0.0883	+/-0.0277	0.100	pCi/g						
Uranium-235	U	0.172	0.413	+/-0.125	0.500	pCi/g						
Yttrium-88	U	0.0272	0.0721	+/-0.0204	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	126	175	+/-55.5	250	pCi/L		KXK2	03/29/10	1830	964063	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"	73.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	72.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	41.2 *	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

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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 31, 2010

Client Sample ID: RE36-10-8279
Sample ID: 248521002

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 31, 2010

Client Sample ID: RE36-10-8277
Sample ID: 248521003
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 25.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.013	0.0238	+/-0.00563	0.050	pCi/g		MXE1	03/25/10	2212	965494	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.00168	0.0233	+/-0.00544	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240		0.0492	0.0197	+/-0.0105	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		1.43	0.117	+/-0.130	0.100	pCi/g		MXE1	03/27/10	1301	965496	3
Uranium-235/236		0.0976	0.0716	+/-0.0256	0.100	pCi/g						
Uranium-238		1.40	0.0824	+/-0.128	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	-0.209	0.364	+/-0.108	0.200	pCi/g		MXR1	03/19/10	2043	961099	4
Bismuth-211	UI	4.19	0.384	+/-0.273		pCi/g						
Bismuth-214		1.30	0.135	+/-0.109	0.200	pCi/g						
Cadmium-109	UI	4.41	1.35	+/-0.618		pCi/g						
Cerium-139	U	-0.022	0.0577	+/-0.0176	0.050	pCi/g						
Cesium-134	UI	0.102	0.0955	+/-0.0369	0.100	pCi/g						
Cesium-137		0.521	0.0671	+/-0.0454	0.100	pCi/g						
Cobalt-60	U	0.0241	0.0813	+/-0.0236	0.100	pCi/g						
Europium-152	U	-0.0604	0.175	+/-0.0614	0.200	pCi/g						
Lanthanum-140	U	0.00154	0.237	+/-0.071		pCi/g						
Lead-212		1.66	0.110	+/-0.0852	0.100	pCi/g						
Lead-214		1.52	0.134	+/-0.108	0.100	pCi/g						
Mercury-203	U	-0.0135	0.0828	+/-0.0243	0.100	pCi/g						
Potassium-40		26.1	0.610	+/-1.31	1.00	pCi/g						
Radium-223	U	-1.13	1.25	+/-0.403		pCi/g						
Radium-224	UI	4.33	1.17	+/-0.597		pCi/g						
Radium-226		1.30	0.135	+/-0.109		pCi/g						
Radium-228		1.67	0.267	+/-0.242	0.500	pCi/g						
Ruthenium-106	U	-0.171	0.617	+/-0.194	0.800	pCi/g						
Sodium-22	U	0.00419	0.0855	+/-0.0259	0.080	pCi/g						
Strontium-85	U	0.0397	0.0767	+/-0.0246		pCi/g						
Thallium-208		0.583	0.0721	+/-0.0498	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8277
Sample ID: 248521003

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.0817	0.454	+/-0.141		pCi/g						
Thorium-231	U	-1.13	1.25	+/-0.403		pCi/g						
Thorium-234	U	0.478	3.19	+/-0.903	2.00	pCi/g						
Tin-113	U	0.0146	0.0923	+/-0.0268	0.100	pCi/g						
Uranium-235	U	0.0791	0.407	+/-0.120	0.500	pCi/g						
Yttrium-88	U	0.00967	0.0674	+/-0.0195	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-40.3	175	+/-46.0	250	pCi/L		KXK2	03/29/10	1923	964063	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"	76.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	79.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	68.3	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
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- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8277
Sample ID: 248521003

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 31, 2010

Client Sample ID: RE36-10-8280
Sample ID: 248521004
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 9.46%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.0152	0.023	+/-0.00556	0.050	pCi/g		MXE1	03/25/10	2212	965494	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.0049	0.0266	+/-0.0112	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240		0.0275	0.0225	+/-0.00937	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		3.49	0.157	+/-0.298	0.100	pCi/g		MXE1	03/27/10	1301	965496	3
Uranium-235/236		0.179	0.0961	+/-0.0389	0.100	pCi/g						
Uranium-238		3.01	0.111	+/-0.261	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	UI	0.107	0.0971	+/-0.0319	0.200	pCi/g		MXR1	03/19/10	2311	961099	4
Bismuth-211	UI	4.59	0.304	+/-0.285		pCi/g						
Bismuth-214		1.40	0.112	+/-0.0979	0.200	pCi/g						
Cadmium-109	UI	5.00	0.902	+/-0.424		pCi/g						
Cerium-139	U	-0.00336	0.0493	+/-0.0153	0.050	pCi/g						
Cesium-134	UI	0.104	0.0912	+/-0.0365	0.100	pCi/g						
Cesium-137		0.614	0.0578	+/-0.0481	0.100	pCi/g						
Cobalt-60	U	0.0104	0.0639	+/-0.0195	0.100	pCi/g						
Europium-152	U	-0.0756	0.149	+/-0.0694	0.200	pCi/g						
Lanthanum-140	U	-0.156	0.175	+/-0.0675		pCi/g						
Lead-212		2.01	0.085	+/-0.120	0.100	pCi/g						
Lead-214		1.67	0.112	+/-0.113	0.100	pCi/g						
Mercury-203	U	0.00932	0.0688	+/-0.0235	0.100	pCi/g						
Potassium-40		27.5	0.506	+/-1.13	1.00	pCi/g						
Radium-223	U	0.191	1.03	+/-0.353		pCi/g						
Radium-224	UI	6.03	0.911	+/-0.694		pCi/g						
Radium-226		1.40	0.112	+/-0.0979		pCi/g						
Radium-228		1.92	0.242	+/-0.197	0.500	pCi/g						
Ruthenium-106	U	-0.119	0.529	+/-0.168	0.800	pCi/g						
Sodium-22	U	-0.0237	0.066	+/-0.0215	0.080	pCi/g						
Strontium-85	UI	0.0736	0.0728	+/-0.0237		pCi/g						
Thallium-208		0.588	0.0594	+/-0.0454	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8280
Sample ID: 248521004

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.0862	0.398	+/-0.120		pCi/g						
Thorium-231	U	0.191	1.03	+/-0.353		pCi/g						
Thorium-234		3.65	0.948	+/-0.569	2.00	pCi/g						
Tin-113	U	-0.00702	0.0772	+/-0.0237	0.100	pCi/g						
Uranium-235	U	0.232	0.326	+/-0.103	0.500	pCi/g						
Yttrium-88	U	-0.00273	0.0589	+/-0.0183	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-13.4	174	+/-47.4	250	pCi/L		KXK2	03/29/10	2015	964063	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"	78.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	73.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	47.4 *	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8280
Sample ID: 248521004

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 31, 2010

Client Sample ID:	RE36-10-8278	Project:	LANL01004
Sample ID:	248521005	Client ID:	LANL010
Matrix:	R		
Collect Date:	25-FEB-10		
Receive Date:	03-MAR-10		
Collector:	Client		
Moisture:	6.35%		

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.00182	0.0237	+/-0.00172	0.050	pCi/g		MXE1	03/25/10	2213	965494	1
1SOPU "Dry Weight Corrected"												
Plutonium-238	U	0.0181	0.0227	+/-0.00627	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240	U	-0.00123	0.0192	+/-0.00211	0.050	pCi/g						
1SOU "Dry Weight Corrected"												
Uranium-233/234		0.937	0.102	+/-0.0891	0.100	pCi/g		MXE1	03/27/10	1301	965496	3
Uranium-235/236	U	0.0582	0.0624	+/-0.0178	0.100	pCi/g						
Uranium-238		0.974	0.0718	+/-0.092	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	0.0644	0.136	+/-0.0423	0.200	pCi/g		MXR1	03/19/10	2311	961099	4
Bismuth-211	UI	4.72	0.204	+/-0.277		pCi/g						
Bismuth-214		1.49	0.0711	+/-0.101	0.200	pCi/g						
Cadmium-109	UI	3.73	0.764	+/-0.359		pCi/g						
Cerium-139	U	0.00062	0.0352	+/-0.0106	0.050	pCi/g						
Cesium-134	UI	0.121	0.0616	+/-0.0242	0.100	pCi/g						
Cesium-137	U	-0.00545	0.0436	+/-0.0128	0.100	pCi/g						
Cobalt-60	U	-0.00358	0.0421	+/-0.0132	0.100	pCi/g						
Europium-152	U	-0.0708	0.099	+/-0.0333	0.200	pCi/g						
Lanthanum-140	U	0.0556	0.143	+/-0.0475		pCi/g						
Lead-212		1.97	0.0636	+/-0.113	0.100	pCi/g						
Lead-214		1.71	0.0743	+/-0.111	0.100	pCi/g						
Mercury-203	U	0.0386	0.0448	+/-0.0215	0.100	pCi/g						
Potassium-40		30.5	0.359	+/-1.46	1.00	pCi/g						
Radium-223	U	-0.0719	0.694	+/-0.233		pCi/g						
Radium-224	UI	5.43	0.681	+/-0.492		pCi/g						
Radium-226		1.49	0.0711	+/-0.101		pCi/g						
Radium-228		1.83	0.147	+/-0.158	0.500	pCi/g						
Ruthenium-106	U	-0.00171	0.349	+/-0.107	0.800	pCi/g						
Sodium-22	U	0.00357	0.0415	+/-0.013	0.080	pCi/g						
Strontium-85	UI	0.0974	0.0531	+/-0.0147		pCi/g						
Thallium-208		0.628	0.0352	+/-0.043	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8278
Sample ID: 248521005
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	0.0252	0.272	+/-0.0779		pCi/g						
Thorium-231	U	-0.0719	0.694	+/-0.233		pCi/g						
Thorium-234	U	1.14	1.20	+/-0.525	2.00	pCi/g						
Tin-113	U	0.00123	0.0511	+/-0.0151	0.100	pCi/g						
Uranium-235	U	0.0947	0.232	+/-0.0692	0.500	pCi/g						
Yttrium-88	U	0.00578	0.0369	+/-0.0109	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-24	173	+/-46.5	250	pCi/L		KXK2	03/29/10	2108	964063	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"	77.7	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	87.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	72.2	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
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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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Client Sample ID: RE36-10-8278
Sample ID: 248521005

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 31, 2010

Client Sample ID:	RE36-10-8274	Project:	LANL01004
Sample ID:	248521006	Client ID:	LANL010
Matrix:	R		
Collect Date:	25-FEB-10		
Receive Date:	03-MAR-10		
Collector:	Client		
Moisture:	10.2%		

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.00307	0.0201	+/-0.00256	0.050	pCi/g		MXE1	03/25/10	2213	965494	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	-0.00216	0.0276	+/-0.00574	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240	U	0.0193	0.0233	+/-0.00683	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		1.18	0.107	+/-0.109	0.100	pCi/g		MXE1	03/27/10	1301	965496	3
Uranium-235/236		0.0844	0.0653	+/-0.0218	0.100	pCi/g						
Uranium-238		1.41	0.0752	+/-0.125	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	-0.00595	0.165	+/-0.0529	0.200	pCi/g		MXR1	03/19/10	2312	961099	4
Bismuth-211	UI	4.92	0.235	+/-0.331		pCi/g						
Bismuth-214		1.57	0.0754	+/-0.106	0.200	pCi/g						
Cadmium-109	UI	5.07	0.791	+/-0.443		pCi/g						
Cerium-139	U	-0.0229	0.0374	+/-0.0112	0.050	pCi/g						
Cesium-134	UI	0.106	0.0608	+/-0.0205	0.100	pCi/g						
Cesium-137		0.379	0.0439	+/-0.0307	0.100	pCi/g						
Cobalt-60	U	0.0333	0.0461	+/-0.0132	0.100	pCi/g						
Europium-152	U	-0.0197	0.109	+/-0.0476	0.200	pCi/g						
Lanthanum-140	U	0.0367	0.141	+/-0.0479		pCi/g						
Lead-212		2.18	0.0691	+/-0.150	0.100	pCi/g						
Lead-214		1.79	0.0854	+/-0.130	0.100	pCi/g						
Mercury-203	U	0.0482	0.0528	+/-0.0178	0.100	pCi/g						
Potassium-40		32.2	0.349	+/-1.57	1.00	pCi/g						
Radium-223	U	-0.0563	0.749	+/-0.253		pCi/g						
Radium-224	UI	5.22	0.740	+/-0.536		pCi/g						
Radium-226		1.57	0.0754	+/-0.106		pCi/g						
Radium-228		2.17	0.152	+/-0.180	0.500	pCi/g						
Ruthenium-106	U	-0.0412	0.353	+/-0.106	0.800	pCi/g						
Sodium-22	U	-0.0274	0.0484	+/-0.0153	0.080	pCi/g						
Strontium-85	UI	0.179	0.0584	+/-0.0191		pCi/g						
Thallium-208		0.633	0.0383	+/-0.0438	0.080	pCi/g						

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Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8274
Sample ID: 248521006

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.0292	0.306	+/-0.093		pCi/g						
Thorium-231	U	-0.0563	0.749	+/-0.253		pCi/g						
Thorium-234		3.23	1.45	+/-0.800	2.00	pCi/g						
Tin-113	U	-0.0125	0.0532	+/-0.0161	0.100	pCi/g						
Uranium-235	U	0.0563	0.254	+/-0.076	0.500	pCi/g						
Yttrium-88	U	0.00391	0.038	+/-0.0114	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-29.3	173	+/-46.2	250	pCi/L		KXK2	03/29/10	2200	964063	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	90.3	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	80.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	74.6	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

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- < 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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Client Sample ID: RE36-10-8274
Sample ID: 248521006

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 31, 2010

Client Sample ID:	RE36-10-8291	Project:	LANL01004
Sample ID:	248521007	Client ID:	LANL010
Matrix:	R		
Collect Date:	25-FEB-10		
Receive Date:	03-MAR-10		
Collector:	Client		
Moisture:	28.9%		

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241		0.0341	0.0214	+/-0.00759	0.050	pCi/g		MXE1	03/25/10	2213	965494	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.00447	0.0251	+/-0.00787	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240		0.0782	0.0212	+/-0.0132	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		1.66	0.185	+/-0.165	0.100	pCi/g		MXE1	03/29/10	1238	965496	3
Uranium-235/236		0.114	0.113	+/-0.0336	0.100	pCi/g						
Uranium-238		2.25	0.130	+/-0.211	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	0.137	0.323	+/-0.108	0.200	pCi/g		MXR1	03/19/10	2312	961099	4
Bismuth-211	UI	4.63	0.345	+/-0.276		pCi/g						
Bismuth-214		1.65	0.118	+/-0.106	0.200	pCi/g						
Cadmium-109	UI	4.78	1.28	+/-0.516		pCi/g						
Cerium-139	U	0.00831	0.0524	+/-0.0162	0.050	pCi/g						
Cesium-134	U	0.0329	0.0851	+/-0.0248	0.100	pCi/g						
Cesium-137		2.06	0.0687	+/-0.082	0.100	pCi/g						
Cobalt-60	U	-0.0228	0.0596	+/-0.0197	0.100	pCi/g						
Europium-152	U	-0.00456	0.167	+/-0.0616	0.200	pCi/g						
Lanthanum-140	U	-0.0869	0.173	+/-0.0581		pCi/g						
Lead-212		2.04	0.0947	+/-0.093	0.100	pCi/g						
Lead-214		1.68	0.129	+/-0.111	0.100	pCi/g						
Mercury-203	U	-0.00567	0.076	+/-0.0229	0.100	pCi/g						
Potassium-40		26.8	0.584	+/-1.31	1.00	pCi/g						
Radium-223	U	0.585	1.12	+/-0.376		pCi/g						
Radium-224	UI	5.83	1.02	+/-0.670		pCi/g						
Radium-226		1.65	0.118	+/-0.106		pCi/g						
Radium-228		1.98	0.209	+/-0.215	0.500	pCi/g						
Ruthenium-106	U	0.0732	0.536	+/-0.165	0.800	pCi/g						
Sodium-22	U	-0.0442	0.0714	+/-0.024	0.080	pCi/g						
Strontium-85	U	0.0594	0.077	+/-0.0255		pCi/g						
Thallium-208		0.641	0.0584	+/-0.0475	0.080	pCi/g						

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Report Date: March 31, 2010

Client Sample ID: RE36-10-8291
Sample ID: 248521007

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.146	0.431	+/-0.139		pCi/g						
Thorium-231	U	0.585	1.12	+/-0.376		pCi/g						
Thorium-234		2.65	2.58	+/-1.09	2.00	pCi/g						
Tin-113	U	-0.0317	0.0825	+/-0.0257	0.100	pCi/g						
Uranium-235	U	0.162	0.339	+/-0.106	0.500	pCi/g						
Yttrium-88	U	0.0213	0.0641	+/-0.0181	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-102	174	+/-42.0	250	pCi/L		KXK2	03/29/10	2253	964063	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"	84.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	78.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	51.2	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8291
Sample ID: 248521007

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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Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID:	RE36-10-8287	Project:	LANL01004
Sample ID:	248521008	Client ID:	LANL010
Matrix:	R		
Collect Date:	25-FEB-10		
Receive Date:	03-MAR-10		
Collector:	Client		
Moisture:	32.9%		

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.0162	0.0215	+/-0.00498	0.050	pCi/g		MXE1	03/25/10	2213	965494	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.00686	0.0271	+/-0.00872	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240		0.0388	0.0229	+/-0.0092	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		1.36	0.149	+/-0.132	0.100	pCi/g		MXE1	03/29/10	1238	965496	3
Uranium-235/236	U	0.0521	0.0908	+/-0.0188	0.100	pCi/g						
Uranium-238		1.58	0.104	+/-0.149	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	0.0656	0.230	+/-0.0727	0.200	pCi/g		MXR1	03/19/10	2314	961099	4
Bismuth-211	UI	4.39	0.286	+/-0.277		pCi/g						
Bismuth-214		1.46	0.095	+/-0.0993	0.200	pCi/g						
Cadmium-109	UI	4.18	0.923	+/-0.492		pCi/g						
Cerium-139	U	0.0133	0.0444	+/-0.0134	0.050	pCi/g						
Cesium-134	UI	0.104	0.0807	+/-0.0259	0.100	pCi/g						
Cesium-137		0.580	0.0591	+/-0.0386	0.100	pCi/g						
Cobalt-60	U	-0.00374	0.0537	+/-0.0166	0.100	pCi/g						
Europium-152	U	0.0045	0.138	+/-0.0474	0.200	pCi/g						
Lanthanum-140	U	0.0151	0.195	+/-0.0629		pCi/g						
Lead-212		1.62	0.0965	+/-0.099	0.100	pCi/g						
Lead-214		1.59	0.107	+/-0.110	0.100	pCi/g						
Mercury-203	U	0.0514	0.0607	+/-0.0229	0.100	pCi/g						
Potassium-40		26.0	0.478	+/-1.40	1.00	pCi/g						
Radium-223	U	0.122	0.904	+/-0.305		pCi/g						
Radium-224	UI	3.54	1.16	+/-0.405		pCi/g						
Radium-226		1.46	0.095	+/-0.0993		pCi/g						
Radium-228		1.68	0.179	+/-0.181	0.500	pCi/g						
Ruthenium-106	U	0.0413	0.427	+/-0.126	0.800	pCi/g						
Sodium-22	U	-0.00329	0.0605	+/-0.0186	0.080	pCi/g						
Strontium-85	UI	0.114	0.0678	+/-0.0182		pCi/g						
Thallium-208		0.531	0.0505	+/-0.0434	0.080	pCi/g						

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Certificate of Analysis

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

Report Date: March 31, 2010

Client Sample ID: RE36-10-8287
Sample ID: 248521008

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.122	0.358	+/-0.108		pCi/g						
Thorium-231	U	0.122	0.904	+/-0.305		pCi/g						
Thorium-234	U	1.83	1.86	+/-0.741	2.00	pCi/g						
Tin-113	U	-0.0107	0.0673	+/-0.0207	0.100	pCi/g						
Uranium-235	U	0.0997	0.281	+/-0.0842	0.500	pCi/g						
Yttrium-88	U	0.00323	0.045	+/-0.0134	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-97.1	176	+/-42.7	250	pCi/L		KXK2	03/29/10	2345	964063	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	80.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	64.2	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

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

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Report Date: March 31, 2010

Client Sample ID: RE36-10-8287
Sample ID: 248521008

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 31, 2010

Client Sample ID: RE36-10-8273
Sample ID: 248521009
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 29%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.0202	0.023	+/-0.00799	0.050	pCi/g		MXE1	03/25/10	2213	965494	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	0.0142	0.0228	+/-0.00738	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240		0.0762	0.0193	+/-0.0124	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		1.65	0.158	+/-0.157	0.100	pCi/g		MXE1	03/29/10	1238	965496	3
Uranium-235/236		0.111	0.0967	+/-0.0306	0.100	pCi/g						
Uranium-238		2.11	0.111	+/-0.192	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	0.0161	0.0706	+/-0.0224	0.200	pCi/g		MXR1	03/19/10	2315	961099	4
Bismuth-211	UI	5.66	0.295	+/-0.348		pCi/g						
Bismuth-214		1.75	0.112	+/-0.143	0.200	pCi/g						
Cadmium-109	UI	5.04	0.600	+/-0.385		pCi/g						
Cerium-139	U	-0.0101	0.038	+/-0.0112	0.050	pCi/g						
Cesium-134	UI	0.157	0.100	+/-0.0271	0.100	pCi/g						
Cesium-137		2.02	0.070	+/-0.127	0.100	pCi/g						
Cobalt-60	U	0.0128	0.0697	+/-0.0203	0.100	pCi/g						
Europium-152	U	0.0129	0.146	+/-0.0451	0.200	pCi/g						
Lanthanum-140	U	-0.0816	0.234	+/-0.0769		pCi/g						
Lead-212		2.22	0.0783	+/-0.122	0.100	pCi/g						
Lead-214		2.05	0.107	+/-0.139	0.100	pCi/g						
Mercury-203	U	-0.0134	0.0571	+/-0.0199	0.100	pCi/g						
Potassium-40		31.7	0.615	+/-1.63	1.00	pCi/g						
Radium-223	U	-0.318	0.882	+/-0.318		pCi/g						
Radium-224	UI	7.00	0.842	+/-0.729		pCi/g						
Radium-226		1.75	0.112	+/-0.143		pCi/g						
Radium-228		1.95	0.226	+/-0.221	0.500	pCi/g						
Ruthenium-106	U	-0.0675	0.515	+/-0.160	0.800	pCi/g						
Sodium-22	U	-0.0354	0.0738	+/-0.0249	0.080	pCi/g						
Strontium-85	UI	0.0799	0.0715	+/-0.0217		pCi/g						
Thallium-208		0.700	0.0552	+/-0.0564	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8273
Sample ID: 248521009

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.0231	0.344	+/-0.104		pCi/g						
Thorium-231	U	-0.318	0.882	+/-0.318		pCi/g						
Thorium-234		3.39	0.666	+/-0.454	2.00	pCi/g						
Tin-113	U	-0.076	0.0705	+/-0.0245	0.100	pCi/g						
Uranium-235	U	0.0312	0.241	+/-0.0764	0.500	pCi/g						
Yttrium-88	U	-0.0138	0.0621	+/-0.0206	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-40.4	175	+/-46.1	250	pCi/L		KXK2	03/30/10	0153	964063	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"	79.9	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	83.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	60.3	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8273
Sample ID: 248521009

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 31, 2010

Client Sample ID: RE36-10-8275
Sample ID: 248521010
Matrix: R
Collect Date: 25-FEB-10
Receive Date: 03-MAR-10
Collector: Client
Moisture: 40.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.0106	0.0212	+/-0.00429	0.050	pCi/g		MXE1	03/25/10	2213	965494	1
ISOPU "Dry Weight Corrected"												
Plutonium-238	U	-0.000778	0.0258	+/-0.00961	0.050	pCi/g		MXE1	03/25/10	2023	965495	2
Plutonium-239/240		0.0366	0.0218	+/-0.0095	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		1.26	0.151	+/-0.125	0.100	pCi/g		MXE1	03/29/10	1238	965496	3
Uranium-235/236	U	0.0594	0.092	+/-0.0203	0.100	pCi/g						
Uranium-238		1.54	0.106	+/-0.147	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	0.123	0.128	+/-0.0406	0.200	pCi/g		MXR1	03/20/10	1110	961099	4
Bismuth-211	UI	4.29	0.420	+/-0.326		pCi/g						
Bismuth-214		1.43	0.147	+/-0.118	0.200	pCi/g						
Cadmium-109	UI	3.44	1.27	+/-0.489		pCi/g						
Cerium-139	U	-0.0126	0.062	+/-0.0191	0.050	pCi/g						
Cesium-134	U	0.0931	0.117	+/-0.0487	0.100	pCi/g						
Cesium-137		0.746	0.0844	+/-0.0548	0.100	pCi/g						
Cobalt-60	U	-0.00686	0.0837	+/-0.0264	0.100	pCi/g						
Europium-152	U	-0.016	0.202	+/-0.0699	0.200	pCi/g						
Lanthanum-140	U	-0.129	0.242	+/-0.0832		pCi/g						
Lead-212		1.90	0.121	+/-0.122	0.100	pCi/g						
Lead-214		1.56	0.152	+/-0.126	0.100	pCi/g						
Mercury-203	U	-0.00288	0.0901	+/-0.0266	0.100	pCi/g						
Potassium-40		25.5	0.667	+/-1.26	1.00	pCi/g						
Radium-223	U	-0.251	1.24	+/-0.433		pCi/g						
Radium-224	UI	4.67	1.30	+/-0.759		pCi/g						
Radium-226		1.43	0.147	+/-0.118		pCi/g						
Radium-228		2.08	0.322	+/-0.223	0.500	pCi/g						
Ruthenium-106	U	0.0221	0.678	+/-0.208	0.800	pCi/g						
Sodium-22	U	-0.0208	0.079	+/-0.0257	0.080	pCi/g						
Strontium-85	U	0.0717	0.0886	+/-0.0278		pCi/g						
Thallium-208		0.514	0.0673	+/-0.0518	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: March 31, 2010

Client Sample ID: RE36-10-8275
Sample ID: 248521010

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	0.169	0.526	+/-0.151		pCi/g						
Thorium-231	U	-0.251	1.24	+/-0.433		pCi/g						
Thorium-234		1.74	1.25	+/-0.629	2.00	pCi/g						
Tin-113	U	0.023	0.103	+/-0.0302	0.100	pCi/g						
Uranium-235	U	0.00801	0.392	+/-0.120	0.500	pCi/g						
Yttrium-88	U	0.0234	0.0776	+/-0.0215	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-44.9	172	+/-44.9	250	pCi/L		KXK2	03/30/10	0246	964063	5

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	85.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	79.2	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	65.6	(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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Sample ID: 248521010

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 31, 2010

Client Sample ID:	RE36-10-8276	Project:	LANL01004
Sample ID:	248521011	Client ID:	LANL010
Matrix:	R		
Collect Date:	25-FEB-10		
Receive Date:	03-MAR-10		
Collector:	Client		
Moisture:	14.6%		

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AM241 "Dry Weight Corrected"												
Americium-241	U	0.00427	0.0178	+/-0.00318	0.050	pCi/g		MXE1	03/30/10	1431	969981	1
ISOPU "Dry Weight Corrected"												
Plutonium-238		0.026	0.0239	+/-0.00833	0.050	pCi/g		MXE1	03/25/10	2023	965495	3
Plutonium-239/240	U	0.00281	0.0202	+/-0.00363	0.050	pCi/g						
ISOU "Dry Weight Corrected"												
Uranium-233/234		1.05	0.127	+/-0.103	0.100	pCi/g		MXE1	03/29/10	1238	965496	4
Uranium-235/236	U	0.0611	0.0775	+/-0.019	0.100	pCi/g						
Uranium-238		0.971	0.0891	+/-0.0974	0.100	pCi/g						
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Americium-241	U	-0.0337	0.313	+/-0.0907	0.200	pCi/g		MXR1	03/20/10	1110	961099	5
Bismuth-211	UI	4.26	0.380	+/-0.340		pCi/g						
Bismuth-214		1.37	0.133	+/-0.116	0.200	pCi/g						
Cadmium-109	UI	2.15	1.42	+/-0.600		pCi/g						
Cerium-139	U	-0.014	0.0582	+/-0.0182	0.050	pCi/g						
Cesium-134	U	0.073	0.106	+/-0.0293	0.100	pCi/g						
Cesium-137	U	0.0706	0.0925	+/-0.0255	0.100	pCi/g						
Cobalt-60	U	-0.0202	0.066	+/-0.0217	0.100	pCi/g						
Europium-152	U	-0.00421	0.191	+/-0.0622	0.200	pCi/g						
Lanthanum-140	U	-0.0167	0.281	+/-0.0855		pCi/g						
Lead-212		1.92	0.105	+/-0.119	0.100	pCi/g						
Lead-214		1.54	0.138	+/-0.130	0.100	pCi/g						
Mercury-203	U	-0.0117	0.0829	+/-0.0248	0.100	pCi/g						
Potassium-40		25.2	0.636	+/-1.54	1.00	pCi/g						
Radium-223	U	-0.336	1.28	+/-0.393		pCi/g						
Radium-224	UI	5.13	1.13	+/-0.703		pCi/g						
Radium-226		1.37	0.133	+/-0.116		pCi/g						
Radium-228		1.71	0.276	+/-0.216	0.500	pCi/g						
Ruthenium-106	U	0.160	0.662	+/-0.191	0.800	pCi/g						
Sodium-22	U	-0.000521	0.0828	+/-0.0253	0.080	pCi/g						
Strontium-85	UI	0.108	0.0983	+/-0.029		pCi/g						
Thallium-208		0.585	0.0664	+/-0.0581	0.080	pCi/g						

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Certificate of Analysis

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

Report Date: March 31, 2010

Client Sample ID: RE36-10-8276
Sample ID: 248521011

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
GAMMA SPEC "Dry Weight Corrected"												
Thorium-227	U	-0.0516	0.484	+/-0.143		pCi/g						
Thorium-231	U	-0.336	1.28	+/-0.393		pCi/g						
Thorium-234	U	1.58	2.85	+/-0.817	2.00	pCi/g						
Tin-113	U	-0.0268	0.0882	+/-0.0277	0.100	pCi/g						
Uranium-235	U	-0.00817	0.373	+/-0.113	0.500	pCi/g						
Yttrium-88	U	0.017	0.0787	+/-0.0224	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	-66.6	173	+/-44.0	250	pCi/L		KXK2	03/30/10	0338	964063	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"	82.2	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	82.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	77.2	(50%-105%)

Notes:
TPU is calculated at the 67% confidence level (1-sigma).
The Qualifiers in this report are defined as follows :

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

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Client Sample ID: RE36-10-8276
Sample ID: 248521011

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.

QUALITY CONTROL DATA

GEL LABORATORIES LLC

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

QC Summary

Report Date: March 31, 2010

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

Workorder: **248521**

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 965494										
QC1202071662 248526001 DUP										
Americium-241	U	-0.00204	U	-0.00349	pCi/g	0.130		(0-1)	MXE1	03/26/1007:43
	TPU:	+/-0.002		+/-0.00358						
	Yield:	88.7		80.7						
QC1202071663 LCS										
Americium-241	33.1			28.1	pCi/g		84.6	(75%-125%)		03/26/1007:43
	TPU:			+/-2.07						
	Yield:			104						
QC1202071661 MB										
Americium-241			U	0.00482	pCi/g					03/26/1007:43
	TPU:			+/-0.00419						
	Yield:			87.8						
Batch 965495										
QC1202071665 248526001 DUP										
Plutonium-238	U	-0.00237	U	-0.00122	pCi/g	0.0737		(0-1)	MXE1	03/25/1020:23
	TPU:	+/-0.00498		+/-0.00281						
	Yield:	91.4		107						
Plutonium-239/240	U	0.0025	U	0.00633	pCi/g	0.277		(0-1)		
	TPU:	+/-0.00322		+/-0.0037						
	Yield:	91.4		107						
QC1202071666 LCS										
Plutonium-238				5.05	pCi/g			(75%-125%)		
	TPU:			+/-0.466						
	Yield:			81.5						
Plutonium-239/240	41.8			39.8	pCi/g		95.2	(75%-125%)		
	TPU:			+/-2.78						
	Yield:			81.5						
QC1202071664 MB										
Plutonium-238			U	0.00159	pCi/g					
	TPU:			+/-0.00723						
	Yield:			92.1						
Plutonium-239/240			U	0.00111	pCi/g					
	TPU:			+/-0.00347						
	Yield:			92.1						
Batch 965496										
QC1202071668 248526001 DUP										
Uranium-233/234		0.961		0.894	pCi/g	0.183		(0-1)	MXE1	03/29/1012:38
	TPU:	+/-0.0964		+/-0.0889						
	Yield:	76.3		79.9						
Uranium-235/236	U	0.0657		0.0709	pCi/g	0.0629		(0-1)		
	TPU:	+/-0.0196		+/-0.0221						
	Yield:	76.3		79.9						
Uranium-238		0.811		0.967	pCi/g	0.439		(0-1)		
	TPU:	+/-0.0844		+/-0.0945						

QC Summary

Workorder: 248521

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 965496										
	Yield:	76.3		79.9						
QC1202071669 LCS										
Uranium-233/234				7.26	pCi/g					03/29/1012:38
	TPU:			+/-0.696						
	Yield:			79.4						
Uranium-235/236				0.386	pCi/g					
	TPU:			+/-0.104						
	Yield:			79.4						
Uranium-238	5.75			6.01	pCi/g		105	(75%-125%)		
	TPU:			+/-0.593						
	Yield:			79.4						
QC1202071667 MB										
Uranium-233/234			U	0.00877	pCi/g					03/29/1012:38
	TPU:			+/-0.00477						
	Yield:			91.6						
Uranium-235/236			U	0.00892	pCi/g					
	TPU:			+/-0.00634						
	Yield:			91.6						
Uranium-238			U	0.0126	pCi/g					
	TPU:			+/-0.00549						
	Yield:			91.6						
Batch 969981										
QC1202082743 248521011 DUP										
Americium-241	U	0.00427	U	-0.00742	pCi/g	0.654		(0-1)	MXE1	03/30/1014:31
	TPU:	+/-0.00318		+/-0.00576						
	Yield:	82.2		46.4						
QC1202082744 LCS										
Americium-241	33.1			27.9	pCi/g		84	(75%-125%)		03/30/1014:31
	TPU:			+/-2.02						
	Yield:			90.1						
QC1202082742 MB										
Americium-241			U	-0.000295	pCi/g					03/30/1014:31
	TPU:			+/-0.0021						
	Yield:			74.8						
Rad Gamma Spec										
Batch 961099										
QC1202061470 248526001 DUP										
Americium-241	U	-0.00644	U	0.080	pCi/g	0.375		(0-1)	MXR1	03/20/1011:11
	TPU:	+/-0.0263		+/-0.0889						
Bismuth-211	UI	4.71	UI	4.80	pCi/g	0.0716		(0-1)		
	TPU:	+/-0.338		+/-0.319						
Bismuth-214		1.62		1.51	pCi/g	0.217		(0-1)		
	TPU:	+/-0.128		+/-0.119						
Cadmium-109	UI	4.54	UI	3.91	pCi/g	0.307		(0-1)		
	TPU:	+/-0.446		+/-0.589						
Cerium-139	U	-0.00338	U	-0.0115	pCi/g	0.134		(0-1)		
	TPU:	+/-0.0128		+/-0.0174						
Cesium-134	U	0.0524	U	0.0861	pCi/g	0.293		(0-1)		
	TPU:	+/-0.0265		+/-0.0311						

QC Summary

Workorder: 248521

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 961099										
Cesium-137	U	-0.0439	U	-0.00867	pCi/g	0.402		(0-1)		
	TPU:	+/-0.0228		+/-0.0211						
Cobalt-60	U	-0.0164	U	0.0145	pCi/g	0.350		(0-1)		
	TPU:	+/-0.0238		+/-0.0204						
Europium-152	U	-0.00356	U	-0.0998	pCi/g	0.450		(0-1)		
	TPU:	+/-0.0522		+/-0.0547						
Lanthanum-140	U	-0.182	U	-0.0839	pCi/g	0.331		(0-1)		
	TPU:	+/-0.0751		+/-0.0737						
Lead-212		2.15		1.98	pCi/g	0.339		(0-1)		
	TPU:	+/-0.136		+/-0.113						
Lead-214		1.71		1.74	pCi/g	0.0663		(0-1)		
	TPU:	+/-0.131		+/-0.125						
Mercury-203	U	0.0483	U	0.0801	pCi/g	0.342		(0-1)		
	TPU:	+/-0.0208		+/-0.0256						
Potassium-40		35.8		36.5	pCi/g	0.103		(0-1)		
	TPU:	+/-1.80		+/-1.93						
Radium-223	U	0.234	U	0.108	pCi/g	0.0868		(0-1)		
	TPU:	+/-0.327		+/-0.398						
Radium-224	UI	4.76	UI	4.84	pCi/g	0.0269		(0-1)		
	TPU:	+/-0.738		+/-0.710						
Radium-226		1.62		1.51	pCi/g	0.217		(0-1)		
	TPU:	+/-0.128		+/-0.119						
Radium-228		2.39		2.44	pCi/g	0.0581		(0-1)		
	TPU:	+/-0.221		+/-0.236						
Ruthenium-106	U	-0.0471	U	-0.0339	pCi/g	0.0196		(0-1)		
	TPU:	+/-0.168		+/-0.168						
Sodium-22	U	-0.0177	U	0.0147	pCi/g	0.301		(0-1)		
	TPU:	+/-0.0261		+/-0.0277						
Strontium-85	U	0.0446	U	0.0777	pCi/g	0.364		(0-1)		
	TPU:	+/-0.0219		+/-0.0235						
Thallium-208		0.652		0.759	pCi/g	0.492		(0-1)		
	TPU:	+/-0.0553		+/-0.054						
Thorium-227	U	-0.0699	U	-0.08	pCi/g	0.0207		(0-1)		
	TPU:	+/-0.121		+/-0.123						
Thorium-231	U	0.234	U	0.108	pCi/g	0.0868		(0-1)		
	TPU:	+/-0.327		+/-0.398						
Thorium-234		1.54	U	1.87	pCi/g	0.111		(0-1)		
	TPU:	+/-0.472		+/-1.02						
Tin-113	U	-0.0436	U	-0.0519	pCi/g	0.0827		(0-1)		
	TPU:	+/-0.0236		+/-0.0263						
Uranium-235	U	-0.0248	U	-0.0231	pCi/g	0.00437		(0-1)		
	TPU:	+/-0.0835		+/-0.112						
Yttrium-88	U	0.00749	U	0.00535	pCi/g	0.0266		(0-1)		
	TPU:	+/-0.019		+/-0.0212						
QC1202061471 LCS										
Americium-241	15.9			13.8	pCi/g		86.6	(75%-125%)		03/20/1011:12
	TPU:			+/-0.614						
Bismuth-211				2.43	pCi/g					
	TPU:			+/-0.340						
Bismuth-214				0.883	pCi/g					
	TPU:			+/-0.131						

QC Summary

Workorder: 248521

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 961099										
Cadmium-109				32.1	pCi/g					
	TPU:			+/-1.94						
Cerium-139			U	0.00887	pCi/g					
	TPU:			+/-0.0219						
Cesium-134			U	0.020	pCi/g					
	TPU:			+/-0.0427						
Cesium-137	5.55			6.17	pCi/g		111	(75%-125%)		
	TPU:			+/-0.338						
Cobalt-60	6.34			6.11	pCi/g		96.3	(75%-125%)		
	TPU:			+/-0.298						
Europium-152			U	-0.019	pCi/g					
	TPU:			+/-0.082						
Lanthanum-140			U	-0.0158	pCi/g					
	TPU:			+/-0.0517						
Lead-212				0.973	pCi/g					
	TPU:			+/-0.0979						
Lead-214				0.880	pCi/g					
	TPU:			+/-0.126						
Mercury-203			U	0.060	pCi/g					
	TPU:			+/-0.0305						
Potassium-40				1.16	pCi/g					
	TPU:			+/-0.435						
Radium-223			U	-0.896	pCi/g					
	TPU:			+/-0.532						
Radium-224				4.19	pCi/g					
	TPU:			+/-0.658						
Radium-226				0.883	pCi/g					
	TPU:			+/-0.131						
Radium-228				1.11	pCi/g					
	TPU:			+/-0.275						
Ruthenium-106			U	-0.214	pCi/g					
	TPU:			+/-0.292						
Sodium-22			U	-0.0399	pCi/g					
	TPU:			+/-0.0235						
Strontium-85			U	-0.124	pCi/g					
	TPU:			+/-0.0375						
Thallium-208				0.285	pCi/g					
	TPU:			+/-0.0627						
Thorium-227			U	0.0133	pCi/g					
	TPU:			+/-0.198						
Thorium-231			U	-0.896	pCi/g					
	TPU:			+/-0.532						
Thorium-234			U	-0.305	pCi/g					
	TPU:			+/-0.828						
Tin-113			U	0.00634	pCi/g					
	TPU:			+/-0.0389						
Uranium-235			U	-0.0673	pCi/g					
	TPU:			+/-0.138						
Yttrium-88			U	0.0048	pCi/g					
	TPU:			+/-0.0217						
QC1202061469 MB										

QC Summary

Workorder: 248521

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 961099										
Americium-241			U	0.048	pCi/g					
	TPU:			+/-0.0212						
Bismuth-211			U	0.0233	pCi/g					
	TPU:			+/-0.054						
Bismuth-214			U	-0.0477	pCi/g					
	TPU:			+/-0.0209						
Cadmium-109			U	-0.0863	pCi/g					
	TPU:			+/-0.136						
Cerium-139			U	-0.00579	pCi/g					
	TPU:			+/-0.00587						
Cesium-134			U	-0.0142	pCi/g					
	TPU:			+/-0.0118						
Cesium-137			U	-0.00681	pCi/g					
	TPU:			+/-0.0079						
Cobalt-60			U	0.00131	pCi/g					
	TPU:			+/-0.00767						
Europium-152			U	-0.0292	pCi/g					
	TPU:			+/-0.0225						
Lanthanum-140			U	0.0068	pCi/g					
	TPU:			+/-0.0231						
Lead-212			U	-0.000334	pCi/g					
	TPU:			+/-0.0153						
Lead-214			U	-0.0229	pCi/g					
	TPU:			+/-0.0205						
Mercury-203			U	-0.00236	pCi/g					
	TPU:			+/-0.00856						
Potassium-40			U	-0.0225	pCi/g					
	TPU:			+/-0.112						
Radium-223			U	-0.183	pCi/g					
	TPU:			+/-0.148						
Radium-224			U	-0.224	pCi/g					
	TPU:			+/-0.144						
Radium-226			U	-0.0477	pCi/g					
	TPU:			+/-0.0209						
Radium-228			U	0.00942	pCi/g					
	TPU:			+/-0.041						
Ruthenium-106			U	-0.0482	pCi/g					
	TPU:			+/-0.0765						
Sodium-22			U	0.00931	pCi/g					
	TPU:			+/-0.00935						
Strontium-85			U	-0.0752	pCi/g					
	TPU:			+/-0.0149						
Thallium-208			U	-0.00993	pCi/g					
	TPU:			+/-0.00804						
Thorium-227			U	0.00145	pCi/g					
	TPU:			+/-0.0522						
Thorium-231			U	-0.183	pCi/g					
	TPU:			+/-0.148						
Thorium-234			U	-0.117	pCi/g					
	TPU:			+/-0.226						

QC Summary

Workorder: 248521

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 961099										
Tin-113			U	-0.00224	pCi/g					
	TPU:			+/-0.0107						
Uranium-235			U	-0.0814	pCi/g					
	TPU:			+/-0.0463						
Yttrium-88			U	0.0111	pCi/g					
	TPU:			+/-0.00903						
Rad Liquid Scintillation										
Batch 964063										
QC1202068229 248526001 DUP										
Tritium	U	-96.8	U	-50.9	pCi/L	0.262		(0-1)	KXK2	03/30/1006:17
	TPU:	+/-42.6		+/-45.2						
QC1202068230 LCS										
Tritium	5520			6300	pCi/L		114	(80%-120%)		03/30/1007:09
	TPU:			+/-557						
QC1202068228 MB										
Tritium			U	-77	pCi/L					03/30/1005:24
	TPU:			+/-43.2						

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.

QC Summary

Workorder: **248521**

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 acceptence 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# 965494 Product: Am Date: 3/29/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to100 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: Denise Green 3/29/10

Secondary Review Performed By: [illegible] 3/29/10

3/31

LANL

Am/Cm Que Sheet

15-MAR-10

Batch #: 965494 | Analyst: MXE1 | First Client Due Date: 31-MAR-10 | Internal Due Date20-MAR-10 | Comments:

Tracer(s): Am243/Cm244 | Tracer Code: 44596-2-VV | Expiration Date: 3/9/11 | Vol: 0.1 NA NA

LCS Isotope(s): Am241/Cm244 | LCS Code(s): / NA / NA | Expiration Date: / NA / NA | Vol(s): / /

Spike Isotope(s): Am241/Cm244 | Spike Code(s): / / | Expiration Date: / / | Vol(s): / /

Prep Date: 3/22/10 | Initials: MAE | Pipet ID: 29710582 | Balance ID: 50410272 | Witness: JEH 3-22-10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l/f)	Am/Cm Det #
248515001-1	RE36-10-7501	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	1	1	1.252	241
~~248515002-1~~	~~RE36-10-7524~~	~~SAMPLE~~		~~.05 pCi/g~~	~~SOIL~~	~~LANL010~~	~~25-FEB-10~~	~~2~~	~~2~~	~~1.257~~	~~242~~
248515003-1	RE36-10-7525	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	3	3	1.259	243
248517001-1	RE36-10-8292	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	4	4	1.256	244
248521001-1	RE36-10-8288	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	5	5	1.250	245
248521002-1	RE36-10-8279	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	6	6	1.251	246
248521003-1	RE36-10-8277	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	7	7	1.258	247
248521004-1	RE36-10-8280	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	8	8	1.259	248
248521005-1	RE36-10-8278	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	9	9	1.256	249
248521006-1	RE36-10-8274	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	10	10	1.258	250
248521007-1	RE36-10-8291	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	11	11	1.256	251
248521008-1	RE36-10-8287	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	12	12	1.253	252
248521009-1	RE36-10-8273	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	13	13	1.252	253
248521010-1	RE36-10-8275	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	14	14	1.256	254
~~248521011-1~~	~~RE36-10-8276~~	~~SAMPLE~~		~~.05 pCi/g~~	~~SOIL~~	~~LANL010~~	~~25-FEB-10~~	~~15~~	~~15~~	~~1.251~~	~~255~~
248526001-1	RE36-10-8466	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	16	16	1.250	256
1202071661-1	MB for batch 965494	MB		.05 pCi/g	SOIL	QC ACCOUNT		17	17	1.00	217
1202071662-1	RE36-10-8466(248526001DUP)	DUP		.05 pCi/g	SOIL	QC ACCOUNT	25-FEB-10	18	18	1.256	218
1202071663-1	LCS for batch 965494	LCS		.05 pCi/g	SOIL	QC ACCOUNT		19	19	0.107	219

* SRM 0244-B exp: 04/30/20

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

Solid Sample Dissolution by: LEACH or DIGESTION (Circle One)

Data Reviewed By: 3/29/10

Blank Correction Report

Batch ID 965494

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202071662	DUP	Americium-241	1.26 g	-0.00349	0.00358	0.023	.003825397	pCi/g	YES
1202071663	LCS	Americium-241	0.107 g	28.1	2.07	0.203	.045046729	pCi/g	NO
1202071661	MB	Americium-241	1.00 g	0.00482	0.00419	0.0272	.00482	pCi/g	YES
248515001	RE36-10-7501	Americium-241	1.25 g	-0.000148	0.00289	0.0222	.003856	pCi/g	YES
248515003	RE36-10-7525	Americium-241	1.26 g	0.00922	0.00379	0.0223	.003825397	pCi/g	YES
248517001	RE36-10-8292	Americium-241	1.26 g	-3.90E-05	0.00138	0.0202	.003825397	pCi/g	YES
248521001	RE36-10-8288	Americium-241	1.25 g	0.000477	0.00186	0.0218	.003856	pCi/g	YES
248521002	RE36-10-8279	Americium-241	1.25 g	0.00362	0.00248	0.0246	.003856	pCi/g	YES
248521003	RE36-10-8277	Americium-241	1.26 g	0.013	0.00563	0.0238	.003825397	pCi/g	YES
248521004	RE36-10-8280	Americium-241	1.26 g	0.0152	0.00556	0.023	.003825397	pCi/g	YES
248521005	RE36-10-8278	Americium-241	1.26 g	0.00182	0.00172	0.0237	.003825397	pCi/g	YES
248521006	RE36-10-8274	Americium-241	1.26 g	0.00307	0.00256	0.0201	.003825397	pCi/g	YES
248521007	RE36-10-8291	Americium-241	1.26 g	0.0341	0.00759	0.0214	.003825397	pCi/g	NO
248521008	RE36-10-8287	Americium-241	1.25 g	0.0162	0.00498	0.0215	.003856	pCi/g	YES
248521009	RE36-10-8273	Americium-241	1.25 g	0.0202	0.00799	0.023	.003856	pCi/g	NO
248521010	RE36-10-8275	Americium-241	1.26 g	0.0106	0.00429	0.0212	.003825397	pCi/g	YES
248526001	RE36-10-8466	Americium-241	1.25 g	-0.00204	0.002	0.0205	.003856	pCi/g	YES

Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 245	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0248521001_AM	DETECTOR S/N : 79438	BKG FILE : B245.CNF;91
SAMPLE QTY : 1.250 G	AVERAGE %EFFICIENCY : 40.5519	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 22:12:50	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W245.CNF;31
% YIELD : 83.123		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 1.8913E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

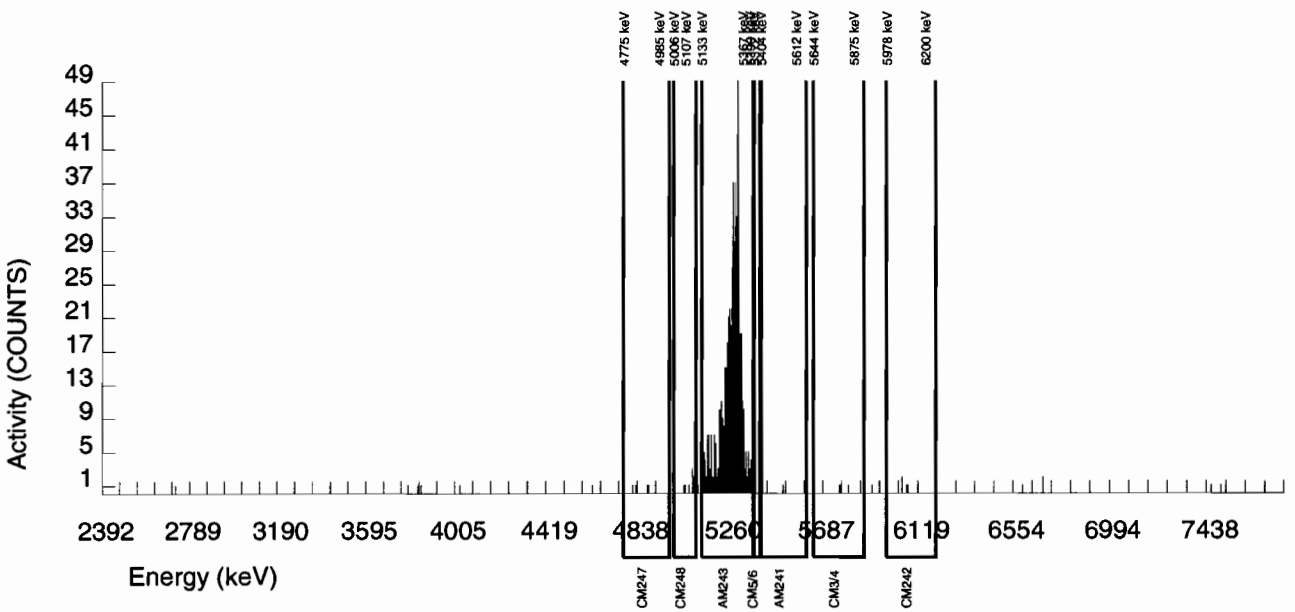
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5516.044	14.806	2.000	0.321	0.720	2.7707	99.94000	4.77E-04	1.86E-03	8.88E-03	2.18E-02	1.86E-03
AM243	5270.000	5274.098	34.694	551.000	551.000	0.000	0.0000	99.78000	8.20E-01	6.48E-02	0.00E+00	4.03E-03	3.49E-02
CM-242	6102.000	6060.042	4.935	5.000	5.000	0.000	4.0092	100.0000	8.41E-03	3.80E-03	1.28E-02	2.97E-02	3.76E-03
CM-3/4	5795.020	5783.964	43.801	3.000	3.000	0.000	4.8510	100.0000	4.47E-03	2.60E-03	1.55E-02	3.51E-02	2.58E-03
CM-5/6	5386.000	5378.717	7.249	4.000	4.000	0.000	6.1294	86.09000	6.90E-03	3.48E-03	2.28E-02	5.03E-02	3.45E-03
CM-247	4946.000	4893.001	0.000	6.000	6.000	0.000	6.3427	79.30000	1.12E-02	4.65E-03	2.56E-02	5.63E-02	4.59E-03
CM-248	5078.600	5078.506	8.380	9.000	9.000	0.000	11.0244	91.00000	1.47E-02	4.99E-03	3.88E-02	8.20E-02	4.89E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 246	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0248521002_AM	DETECTOR S/N : 78912	BKG FILE : B246.CNF;91
SAMPLE QTY : 1.251 G	AVERAGE %EFFICIENCY : 40.4448	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 22:12:53	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W246.CNF;32
% YIELD : 73.663		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 1.6761E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

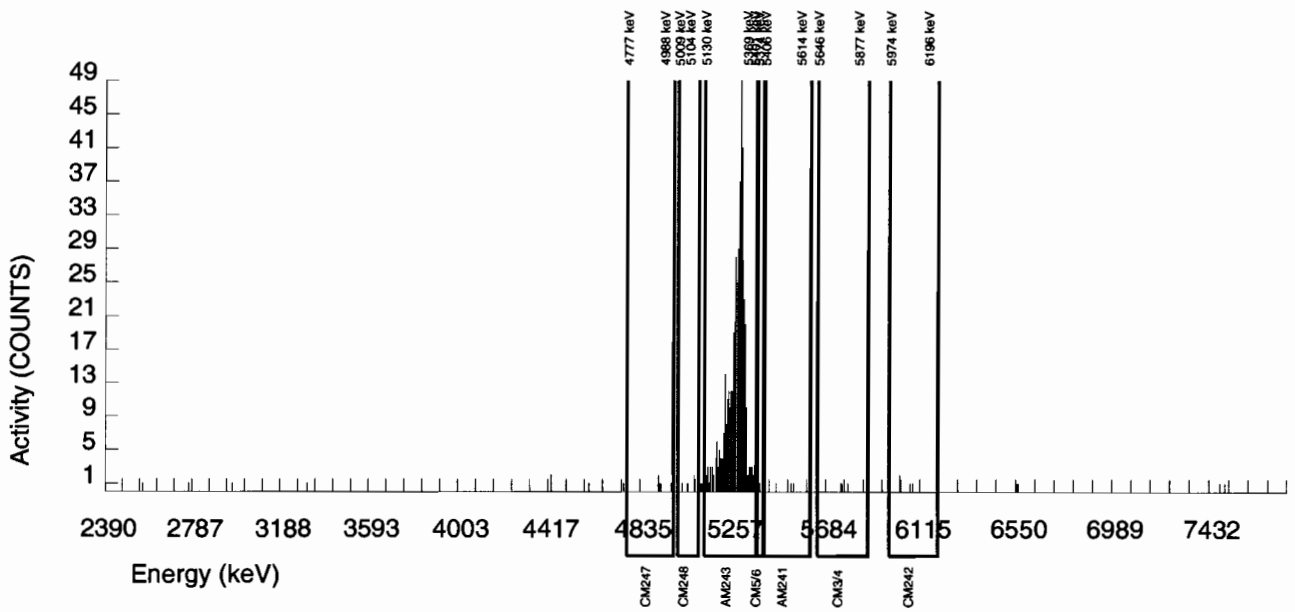
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5514.566	78.956	3.000	2.153	0.000	2.7707	99.94000	3.62E-03	2.48E-03	1.00E-02	2.46E-02	2.46E-03
AM243	5270.000	5279.686	35.142	487.000	487.000	0.000	0.0000	99.78000	8.19E-01	6.72E-02	0.00E+00	4.56E-03	3.71E-02
CM-242	6102.000	6050.905	7.248	5.000	5.000	0.000	4.0092	100.0000	9.50E-03	4.30E-03	1.45E-02	3.36E-02	4.25E-03
CM-3/4	5795.020	5771.530	33.926	3.000	3.000	0.000	4.8510	100.0000	5.05E-03	2.94E-03	1.76E-02	3.97E-02	2.92E-03
CM-5/6	5386.000	5382.753	6.117	5.000	5.000	0.000	6.1294	86.09000	9.75E-03	4.41E-03	2.58E-02	5.69E-02	4.36E-03
CM-247	4946.000	4939.158	7.248	5.000	3.560	1.440	6.3427	79.30000	7.54E-03	5.23E-03	2.90E-02	6.37E-02	5.20E-03
CM-248	5078.600	5061.503	7.248	7.000	7.000	0.000	11.0244	91.00000	1.29E-02	4.96E-03	4.39E-02	9.27E-02	4.88E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 247	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0248521003_AM	DETECTOR S/N : 79440	BKG FILE : B247.CNF;92
SAMPLE QTY : 1.258 G	AVERAGE %EFFICIENCY : 39.7832	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 22:12:56	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W247.CNF;31
% YIELD : 76.949		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 1.7508E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

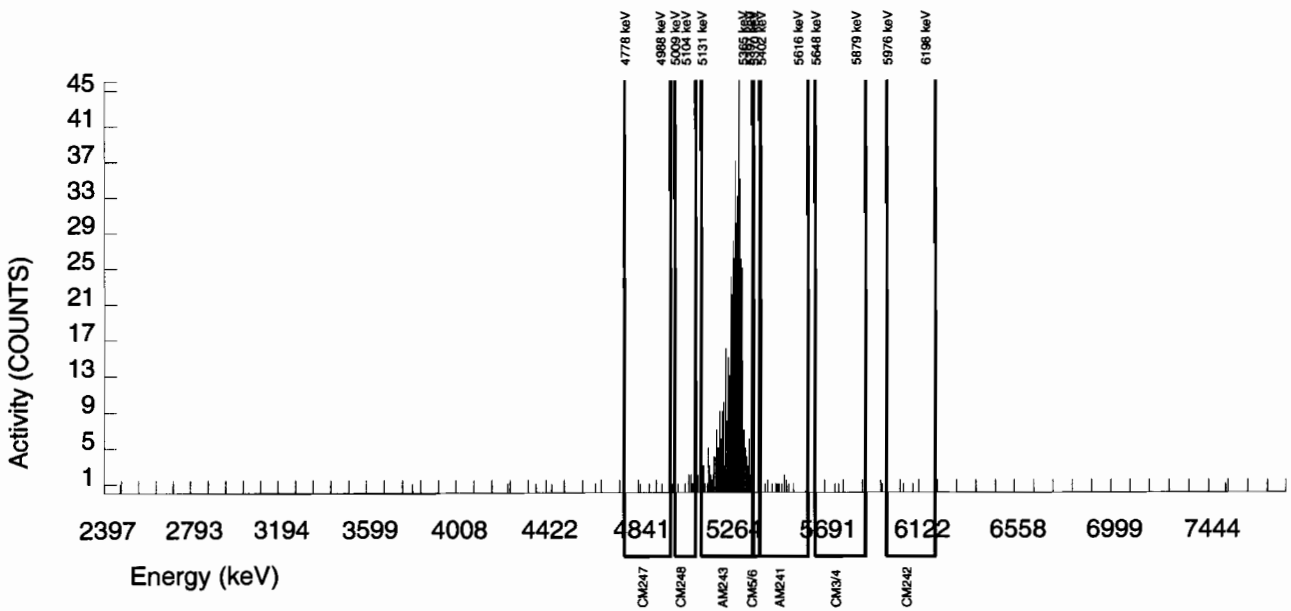
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5495.499	4.925	11.000	7.969	2.160	2.7707	99.94000	1.30E-02	5.63E-03	9.72E-03	2.38E-02	5.56E-03
AM243	5270.000	5281.097	50.345	504.000	500.400	3.600	1.8974	99.78000	8.15E-01	6.65E-02	6.66E-03	1.77E-02	3.66E-02
CM-242	6102.000	6066.312	59.098	3.000	3.000	0.000	4.0092	100.0000	5.52E-03	3.21E-03	1.41E-02	3.25E-02	3.19E-03
CM-3/4	5795.020	5752.478	19.699	2.000	2.000	0.000	4.8510	100.0000	3.26E-03	2.32E-03	1.70E-02	3.84E-02	2.30E-03
CM-5/6	5386.000	5377.229	0.000	8.000	8.000	0.000	6.1294	86.09000	1.51E-02	5.44E-03	2.50E-02	5.50E-02	5.34E-03
CM-247	4946.000	4889.414	108.347	4.000	2.560	1.440	6.3427	79.30000	5.24E-03	4.61E-03	2.80E-02	6.16E-02	4.60E-03
CM-248	5078.600	5069.795	17.237	9.000	9.000	0.000	11.0244	91.00000	1.61E-02	5.47E-03	4.25E-02	8.98E-02	5.36E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 248	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0248521004_AM	DETECTOR S/N : 79441	BKG FILE : B248.CNF;94
SAMPLE QTY : 1.259 G	AVERAGE %EFFICIENCY : 40.4154	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 22:12:58	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W248.CNF;31
% YIELD : 78.427		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 1.7845E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

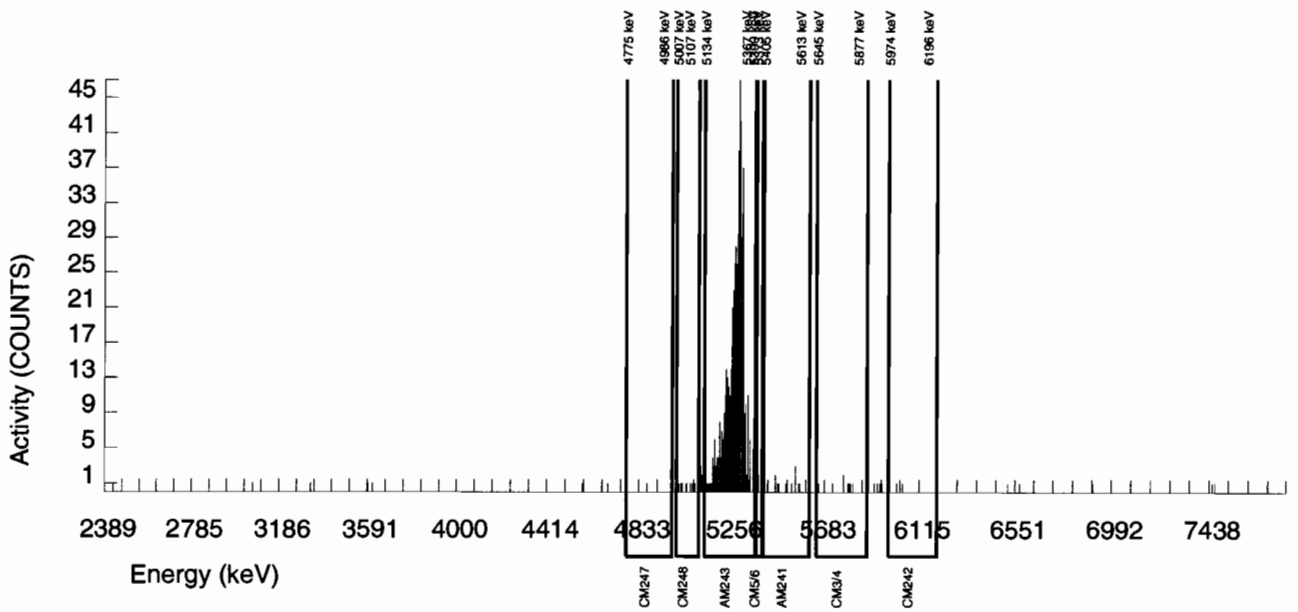
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5513.784	87.357	12.000	9.659	1.440	2.7707	99.94000	1.52E-02	5.56E-03	9.38E-03	2.30E-02	5.47E-03
AM243	5270.000	5279.874	41.890	521.000	518.120	2.880	1.6971	99.78000	8.14E-01	6.57E-02	5.75E-03	1.58E-02	3.59E-02
CM-242	6102.000	6030.917	29.529	2.000	2.000	0.000	4.0092	100.0000	3.55E-03	2.52E-03	1.36E-02	3.14E-02	2.51E-03
CM-3/4	5795.020	5769.748	4.922	8.000	5.120	2.880	4.8510	100.0000	8.05E-03	5.02E-03	1.64E-02	3.71E-02	4.99E-03
CM-5/6	5386.000	5383.400	9.228	5.000	5.000	0.000	6.1294	86.09000	9.11E-03	4.12E-03	2.41E-02	5.31E-02	4.07E-03
CM-247	4946.000	4874.818	4.922	1.000	0.280	0.720	6.3427	79.30000	5.54E-04	2.44E-03	2.71E-02	5.95E-02	2.44E-03
CM-248	5078.600	5056.318	0.000	10.000	8.560	1.440	11.0244	91.00000	1.47E-02	5.81E-03	4.10E-02	8.66E-02	5.72E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 249	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0248521005_AM	DETECTOR S/N : 79442	BKG FILE : B249.CNF;91
SAMPLE QTY : 1.256 G	AVERAGE %EFFICIENCY : 39.6696	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 22:13:00	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W249.CNF;33
% YIELD : 77.656		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 1.7669E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

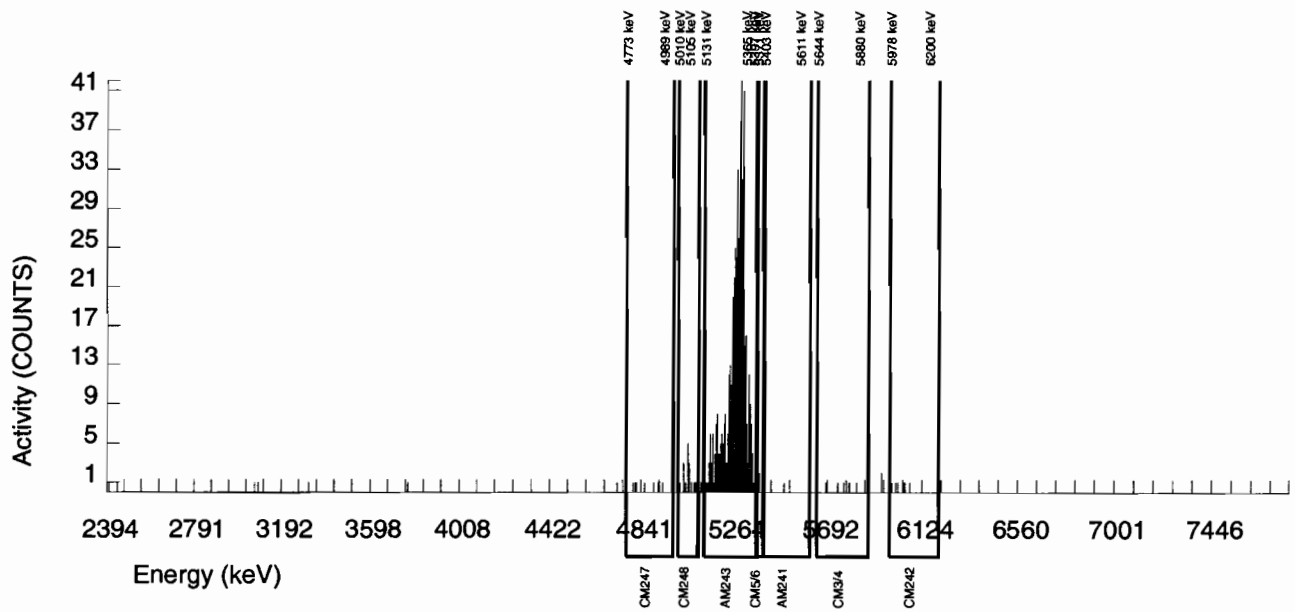
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5512.233	29.594	2.000	1.124	0.000	2.7707	99.94000	1.82E-03	1.72E-03	9.67E-03	2.37E-02	1.72E-03
AM243	5270.000	5278.009	45.292	505.000	503.560	1.440	1.2000	99.78000	8.16E-01	6.63E-02	4.20E-03	1.28E-02	3.65E-02
CM-242	6102.000	6028.977	83.233	8.000	8.000	0.000	4.0092	100.0000	1.46E-02	5.27E-03	1.40E-02	3.24E-02	5.18E-03
CM-3/4	5795.020	5772.505	133.172	6.000	4.560	1.440	4.8510	100.0000	7.40E-03	4.33E-03	1.69E-02	3.82E-02	4.30E-03
CM-5/6	5386.000	5378.323	0.000	7.000	7.000	0.000	6.1294	86.09000	1.31E-02	5.05E-03	2.48E-02	5.48E-02	4.97E-03
CM-247	4946.000	4870.318	133.172	7.000	5.560	1.440	6.3427	79.30000	1.13E-02	5.83E-03	2.79E-02	6.13E-02	5.78E-03
CM-248	5078.600	5060.403	26.041	19.000	18.280	0.720	11.0244	91.00000	3.25E-02	8.15E-03	4.23E-02	8.93E-02	7.85E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 250	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0248521006_AM	DETECTOR S/N : 79443	BKG FILE : B250.CNF;91
SAMPLE QTY : 1.258 G	AVERAGE %EFFICIENCY : 40.2400	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 22:13:03	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W250.CNF;31
% YIELD : 90.347		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 2.0557E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

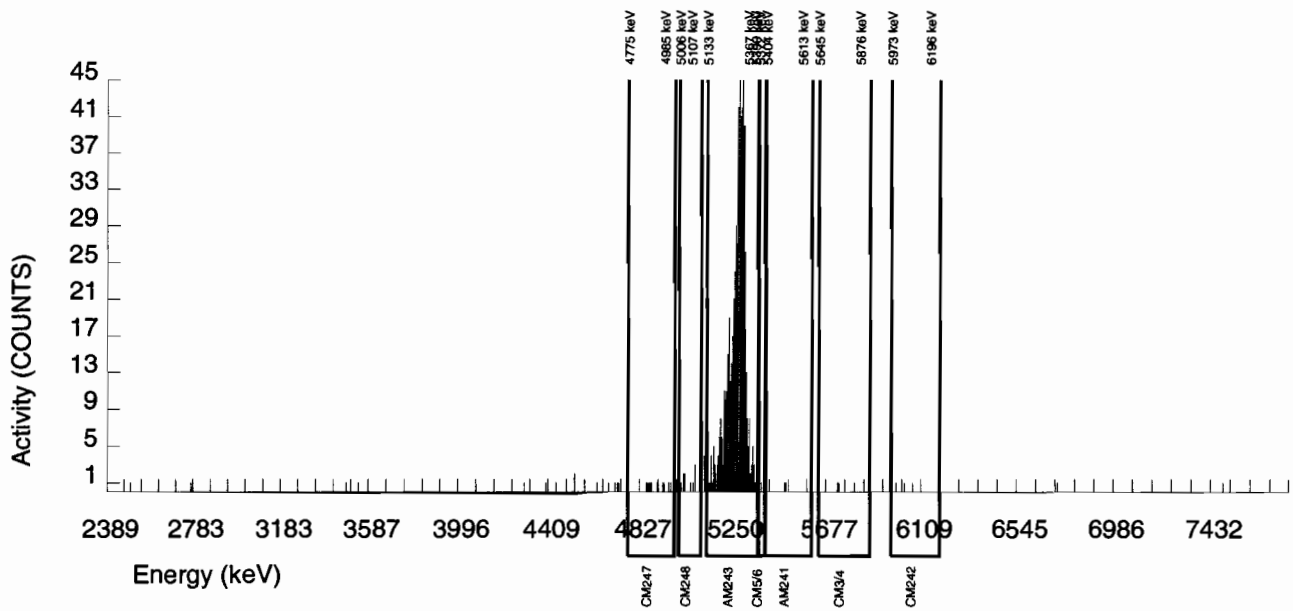
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5482.801	83.408	4.000	2.246	0.720	2.7707	99.94000	3.07E-03	2.56E-03	8.18E-03	2.01E-02	2.56E-03
AM243	5270.000	5273.857	47.913	595.000	594.280	0.720	0.8485	99.78000	8.15E-01	6.30E-02	2.51E-03	8.73E-03	3.35E-02
CM-242	6102.000	6038.306	73.595	3.000	3.000	0.000	4.0092	100.0000	4.65E-03	2.70E-03	1.18E-02	2.74E-02	2.68E-03
CM-3/4	5795.020	5762.954	72.982	3.000	3.000	0.000	4.8510	100.0000	4.12E-03	2.39E-03	1.43E-02	3.23E-02	2.38E-03
CM-5/6	5386.000	5383.636	0.000	6.000	6.000	0.000	6.1294	86.09000	9.53E-03	3.94E-03	2.10E-02	4.63E-02	3.89E-03
CM-247	4946.000	4894.285	0.000	13.000	13.000	0.000	6.3427	79.30000	2.24E-02	6.39E-03	2.36E-02	5.19E-02	6.22E-03
CM-248	5078.600	5063.843	52.743	12.000	12.000	0.000	11.0244	91.00000	1.80E-02	5.34E-03	3.58E-02	7.56E-02	5.21E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 251	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0248521007_AM	DETECTOR S/N : 79444	BKG FILE : B251.CNF;91
SAMPLE QTY : 1.256 G	AVERAGE %EFFICIENCY : 40.4400	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 22:13:05	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W251.CNF;31
% YIELD : 84.364		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 1.9196E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

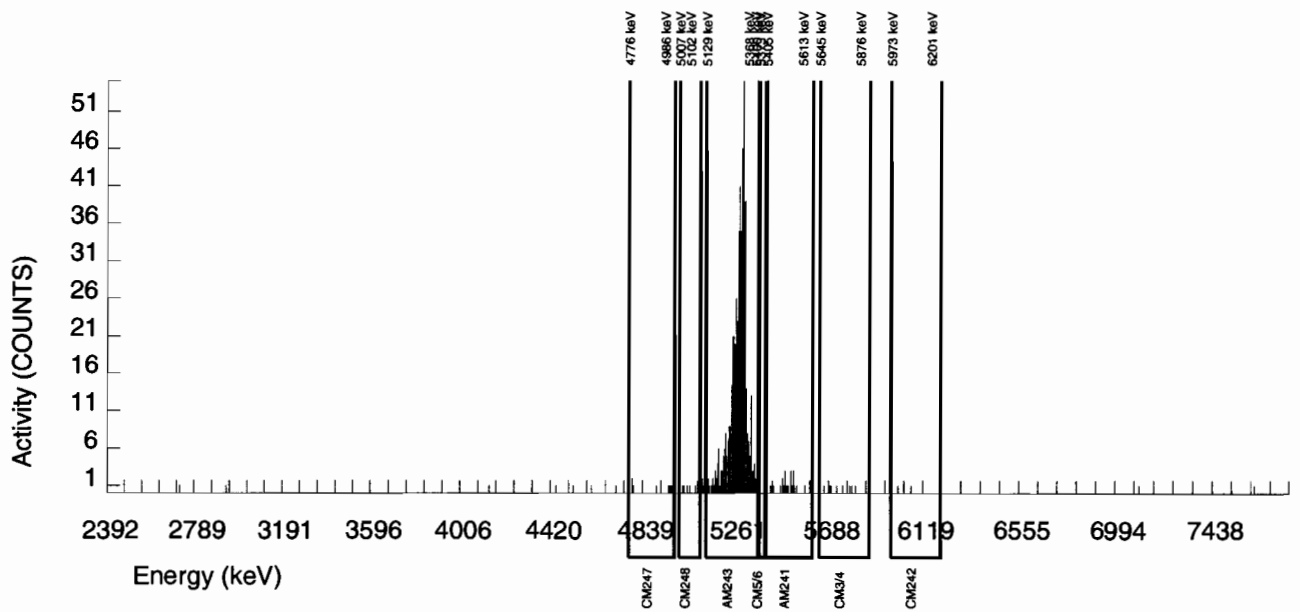
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5497.816	49.391	25.000	23.310	0.720	2.7707	99.94000	3.41E-02	7.59E-03	8.73E-03	2.14E-02	7.24E-03
AM243	5270.000	5281.714	34.919	562.000	557.680	4.320	2.0785	99.78000	8.16E-01	6.45E-02	6.56E-03	1.71E-02	3.48E-02
CM-242	6102.000	6040.858	59.270	2.000	2.000	0.000	4.0092	100.0000	3.31E-03	2.35E-03	1.26E-02	2.92E-02	2.34E-03
CM-3/4	5795.020	5746.612	138.296	8.000	7.280	0.720	4.8510	100.0000	1.07E-02	4.33E-03	1.53E-02	3.45E-02	4.27E-03
CM-5/6	5386.000	5375.748	0.000	4.000	4.000	0.000	6.1294	86.09000	6.78E-03	3.42E-03	2.24E-02	4.94E-02	3.39E-03
CM-247	4946.000	4885.610	7.254	9.000	5.400	3.600	6.3427	79.30000	9.94E-03	6.30E-03	2.52E-02	5.54E-02	6.27E-03
CM-248	5078.600	5047.652	4.939	8.000	8.000	0.000	11.0244	91.00000	1.28E-02	4.62E-03	3.82E-02	8.07E-02	4.54E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 252	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0248521008_AM	DETECTOR S/N : 79445	BKG FILE : B252.CNF;91
SAMPLE QTY : 1.253 G	AVERAGE %EFFICIENCY : 39.1229	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 22:13:08	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W252.CNF;31
% YIELD : 87.142		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 1.9828E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

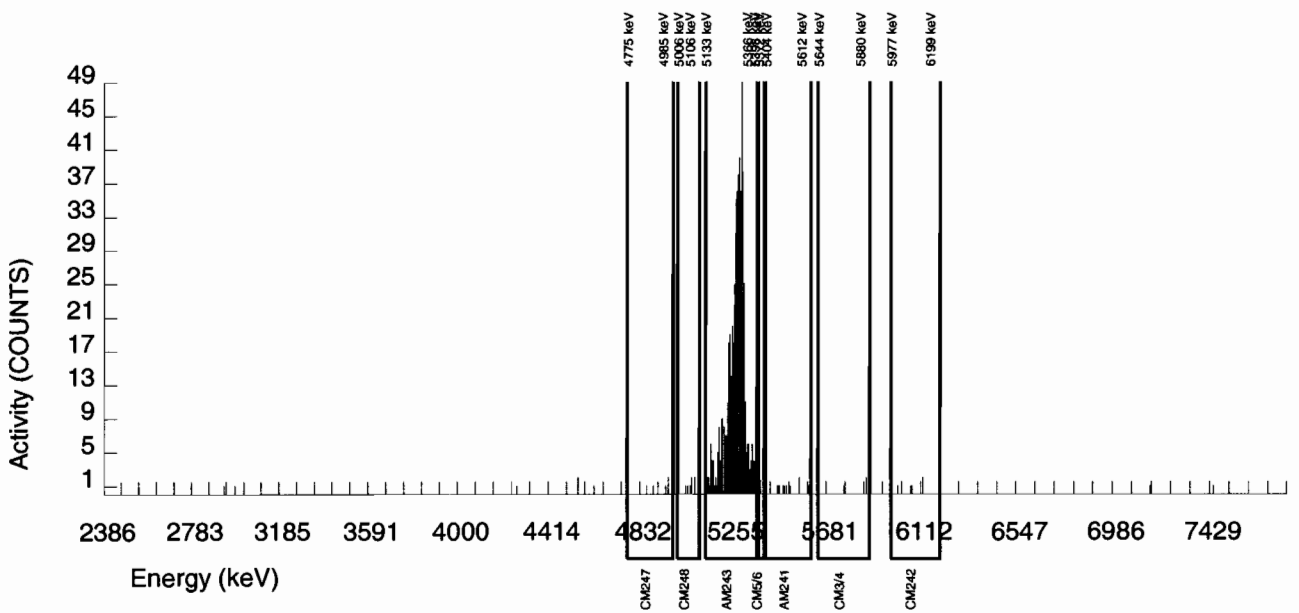
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5507.522	4.939	12.000	11.030	0.000	2.7707	99.94000	1.62E-02	4.98E-03	8.76E-03	2.15E-02	4.87E-03
AM243	5270.000	5275.768	40.034	558.000	557.280	0.720	0.8485	99.78000	8.18E-01	6.45E-02	2.69E-03	9.35E-03	3.47E-02
CM-242	6102.000	6084.931	4.939	5.000	5.000	0.000	4.0092	100.0000	8.29E-03	3.75E-03	1.27E-02	2.93E-02	3.71E-03
CM-3/4	5795.020	5819.462	4.939	4.000	4.000	0.000	4.8510	100.0000	5.88E-03	2.96E-03	1.53E-02	3.46E-02	2.94E-03
CM-5/6	5386.000	5379.642	14.757	6.000	6.000	0.000	6.1294	86.09000	1.02E-02	4.22E-03	2.25E-02	4.96E-02	4.17E-03
CM-247	4946.000	4933.437	4.939	5.000	5.000	0.000	6.3427	79.30000	9.23E-03	4.18E-03	2.53E-02	5.55E-02	4.13E-03
CM-248	5078.600	5079.485	22.073	9.000	9.000	0.000	11.0244	91.00000	1.45E-02	4.92E-03	3.83E-02	8.09E-02	4.83E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 253	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0248521009_AM	DETECTOR S/N : 79446	BKG FILE : B253.CNF;93
SAMPLE QTY : 1.252 G	AVERAGE %EFFICIENCY : 39.9556	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 22:13:10	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W253.CNF;30
% YIELD : 79.936		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 1.8188E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

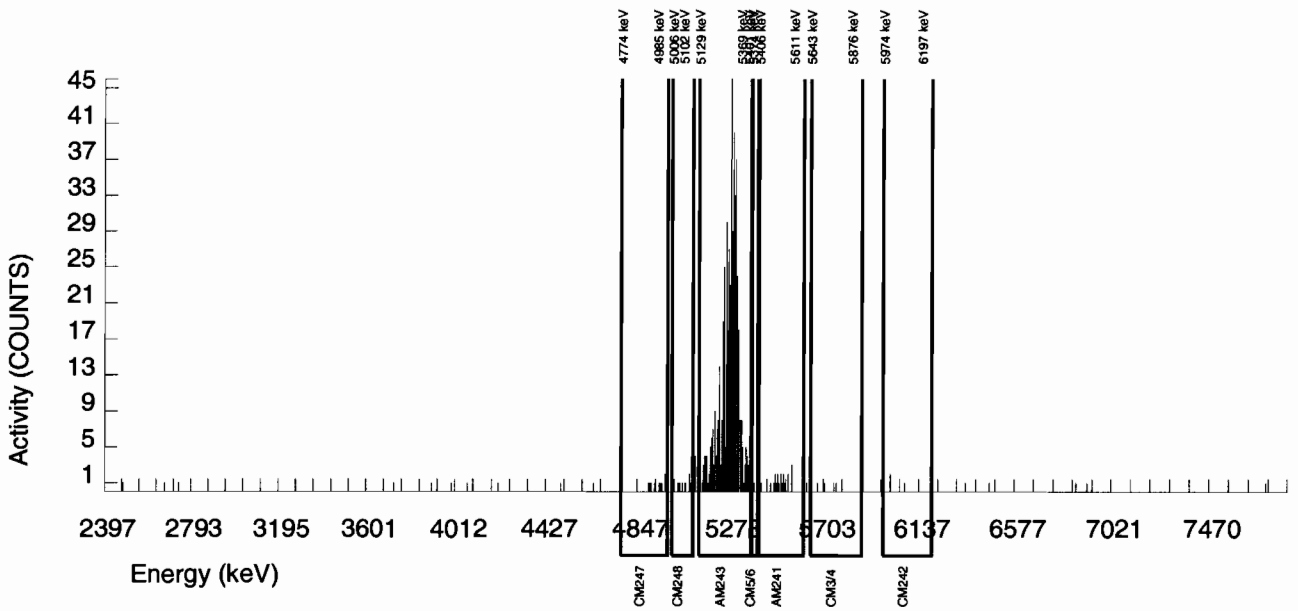
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5508.974	73.895	21.000	12.892	7.200	2.7707	99.94000	2.02E-02	7.99E-03	9.36E-03	2.30E-02	7.87E-03
AM243	5270.000	5271.877	56.561	530.000	522.080	7.920	2.8142	99.78000	8.19E-01	6.62E-02	9.52E-03	2.33E-02	3.63E-02
CM-242	6102.000	6033.490	4.926	3.000	3.000	0.000	4.0092	100.0000	5.31E-03	3.09E-03	1.35E-02	3.13E-02	3.07E-03
CM-3/4	5795.020	5725.201	83.748	5.000	-4.360	9.360	4.8510	100.0000	-6.84E-03	5.38E-03	1.64E-02	3.70E-02	5.38E-03
CM-5/6	5386.000	5379.638	0.000	4.000	3.280	0.720	6.1294	86.09000	5.96E-03	3.88E-03	2.40E-02	5.30E-02	3.86E-03
CM-247	4946.000	4944.492	4.926	9.000	0.360	8.640	6.3427	79.30000	7.10E-04	7.70E-03	2.70E-02	5.93E-02	7.70E-03
CM-248	5078.600	5058.006	7.236	11.000	8.120	2.880	11.0244	91.00000	1.40E-02	6.29E-03	4.09E-02	8.64E-02	6.22E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 254	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0248521010_AM	DETECTOR S/N : 79447	BKG FILE : B254.CNF;91
SAMPLE QTY : 1.256 G	AVERAGE %EFFICIENCY : 40.1306	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 22:13:13	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W254.CNF;30
% YIELD : 85.801		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 1.9523E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

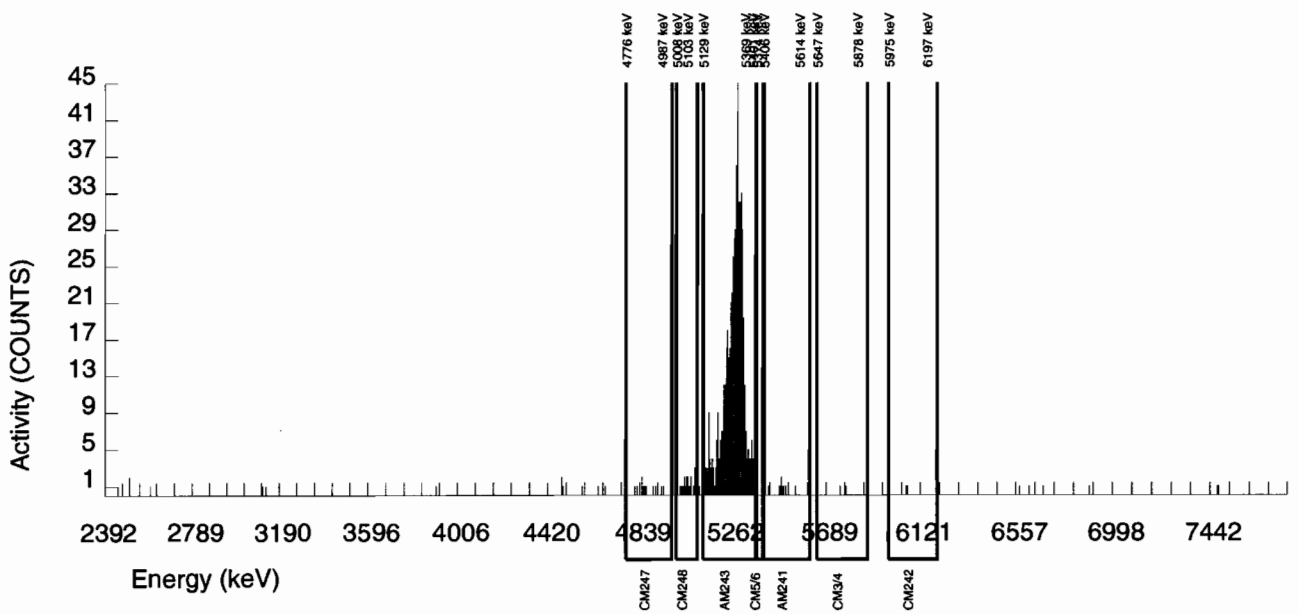
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5494.247	9.871	9.000	7.301	0.720	2.7707	99.94000	1.06E-02	4.29E-03	8.65E-03	2.12E-02	4.23E-03
AM243	5270.000	5274.572	46.196	565.000	562.840	2.160	1.4697	99.78000	8.16E-01	6.42E-02	4.60E-03	1.31E-02	3.45E-02
CM-242	6102.000	6064.318	9.254	2.000	2.000	0.000	4.0092	100.0000	3.28E-03	2.33E-03	1.25E-02	2.89E-02	2.32E-03
CM-3/4	5795.020	5772.802	29.613	2.000	2.000	0.000	4.8510	100.0000	2.90E-03	2.06E-03	1.51E-02	3.42E-02	2.05E-03
CM-5/6	5386.000	5387.187	0.000	0.000	-0.720	0.720	6.1294	86.09000	-1.21E-03	2.07E-03	2.22E-02	4.90E-02	2.07E-03
CM-247	4946.000	4877.366	7.249	14.000	11.120	2.880	6.3427	79.30000	2.03E-02	7.44E-03	2.50E-02	5.49E-02	7.31E-03
CM-248	5078.600	5068.637	0.000	23.000	20.840	2.160	11.0244	91.00000	3.31E-02	8.18E-03	3.78E-02	7.99E-02	7.88E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 256	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0248526001_AM	DETECTOR S/N : 79449	BKG FILE : B256.CNF;93
SAMPLE QTY : 1.250 G	AVERAGE %EFFICIENCY : 40.3572	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 22:13:17	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W256.CNF;30
% YIELD : 88.654		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 2.0172E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

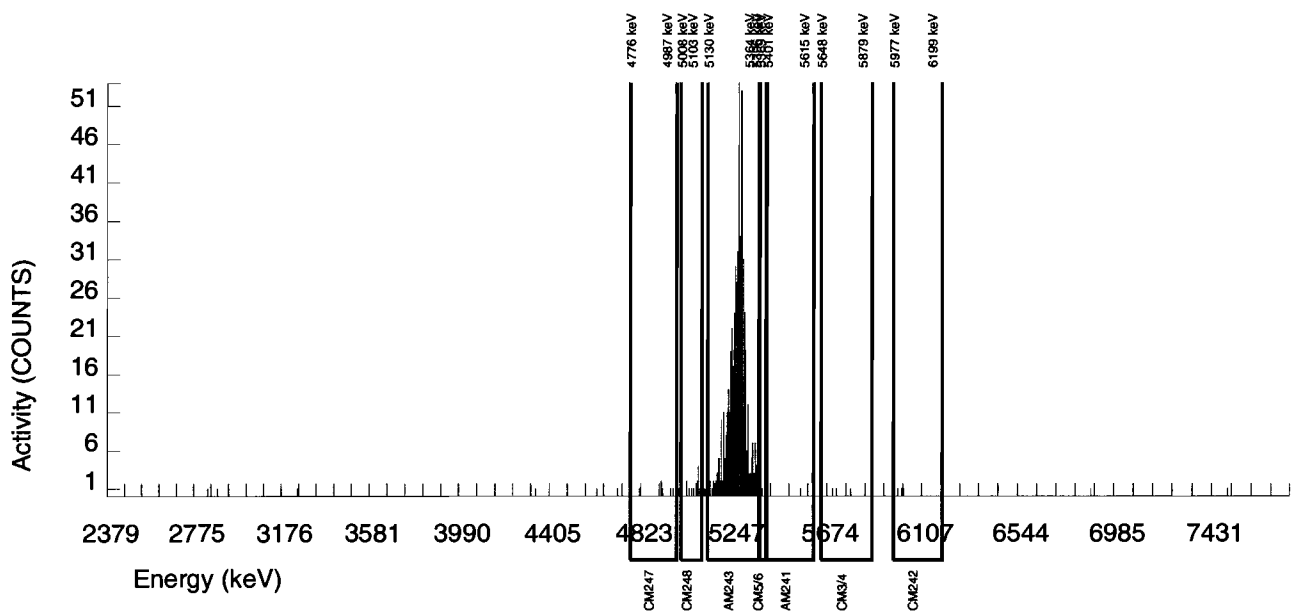
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5561.735	4.920	1.000	-1.458	1.440	2.7707	99.94000	-2.04E-03	2.00E-03	8.37E-03	2.05E-02	2.00E-03
AM243	5270.000	5270.920	39.706	587.000	584.840	2.160	1.4697	99.78000	8.20E-01	6.38E-02	4.45E-03	1.27E-02	3.40E-02
CM-242	6102.000	6010.547	44.284	4.000	4.000	0.000	4.0092	100.0000	6.33E-03	3.19E-03	1.21E-02	2.80E-02	3.17E-03
CM-3/4	5795.020	5744.438	186.976	5.000	3.560	1.440	4.8510	100.0000	5.00E-03	3.46E-03	1.46E-02	3.31E-02	3.45E-03
CM-5/6	5386.000	5374.518	0.000	4.000	4.000	0.000	6.1294	86.09000	6.50E-03	3.28E-03	2.15E-02	4.74E-02	3.25E-03
CM-247	4946.000	4921.968	7.227	7.000	6.280	0.720	6.3427	79.30000	1.11E-02	4.89E-03	2.41E-02	5.31E-02	4.84E-03
CM-248	5078.600	5063.542	8.149	16.000	16.000	0.000	11.0244	91.00000	2.46E-02	6.36E-03	3.66E-02	7.73E-02	6.15E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 217	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S1202071661_AM	DETECTOR S/N : 79410	BKG FILE : B217.CNF;93
SAMPLE QTY : 1.000 G	AVERAGE %EFFICIENCY : 38.4865	BKG DATE : 21-MAR-2010
SAMPLE DATE : 22-MAR-2010 00:00:00	COUNT DATE : 26-MAR-2010 07:43:53	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W217.CNF;32
% YIELD : 87.788		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3148E+01 pCi/G	NOMINAL : 3.3148E+01 pCi/G
RESULTS : 1.9975E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

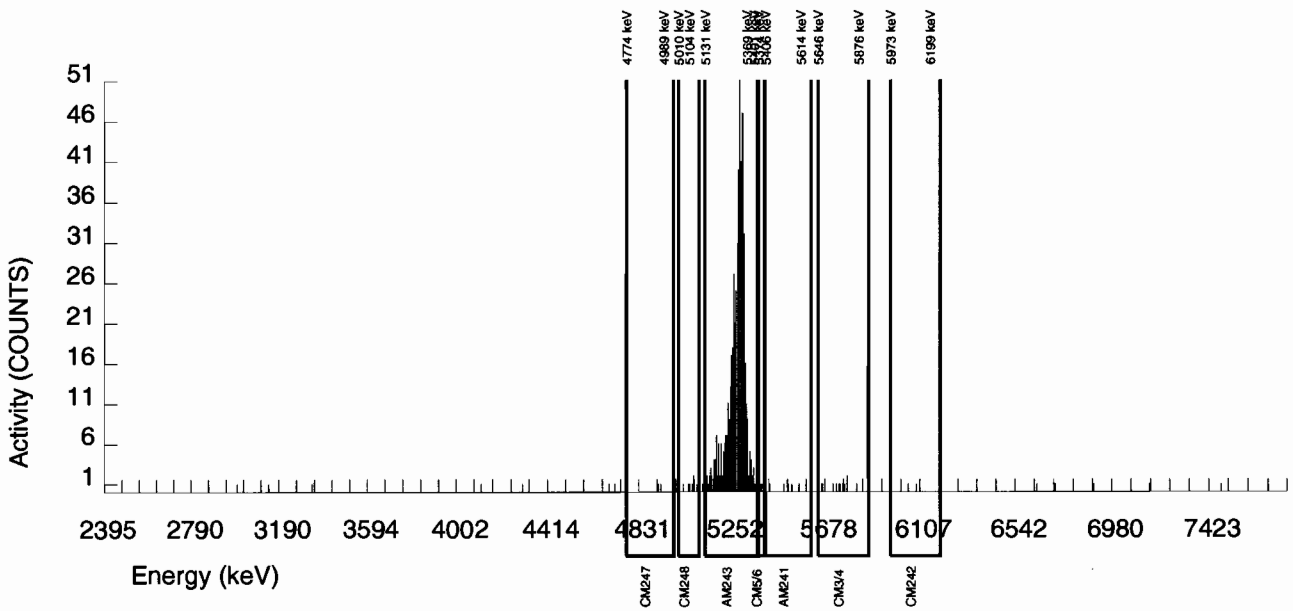
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5509.126	127.716	5.000	2.599	1.440	2.7707	99.94000	4.82E-03	4.19E-03	1.11E-02	2.72E-02	4.17E-03
AM243	5270.000	5282.072	47.021	553.000	552.280	0.720	0.8485	99.78000	1.02E+00	8.10E-02	3.40E-03	1.18E-02	4.37E-02
CM-242	6102.000	6060.723	68.770	3.000	3.000	0.000	4.0092	100.0000	5.66E-03	3.29E-03	1.60E-02	3.71E-02	3.27E-03
CM-3/4	5795.020	5748.223	4.912	11.000	10.280	0.720	4.8510	100.0000	1.90E-02	6.41E-03	1.94E-02	4.38E-02	6.29E-03
CM-5/6	5386.000	5382.455	0.000	7.000	6.280	0.720	6.1294	86.09000	1.35E-02	5.97E-03	2.84E-02	6.27E-02	5.90E-03
CM-247	4946.000	4887.873	4.912	6.000	5.280	0.720	6.3427	79.30000	1.23E-02	6.02E-03	3.20E-02	7.02E-02	5.96E-03
CM-248	5078.600	5074.700	9.824	8.000	8.000	0.000	11.0244	91.00000	1.63E-02	5.86E-03	4.84E-02	1.02E-01	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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 218	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S1202071662_AM	DETECTOR S/N : 79411	BKG FILE : B218.CNF;91
SAMPLE QTY : 1.256 G	AVERAGE %EFFICIENCY : 39.3974	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 26-MAR-2010 07:43:55	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W218.CNF;30
% YIELD : 80.696		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 1.8361E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

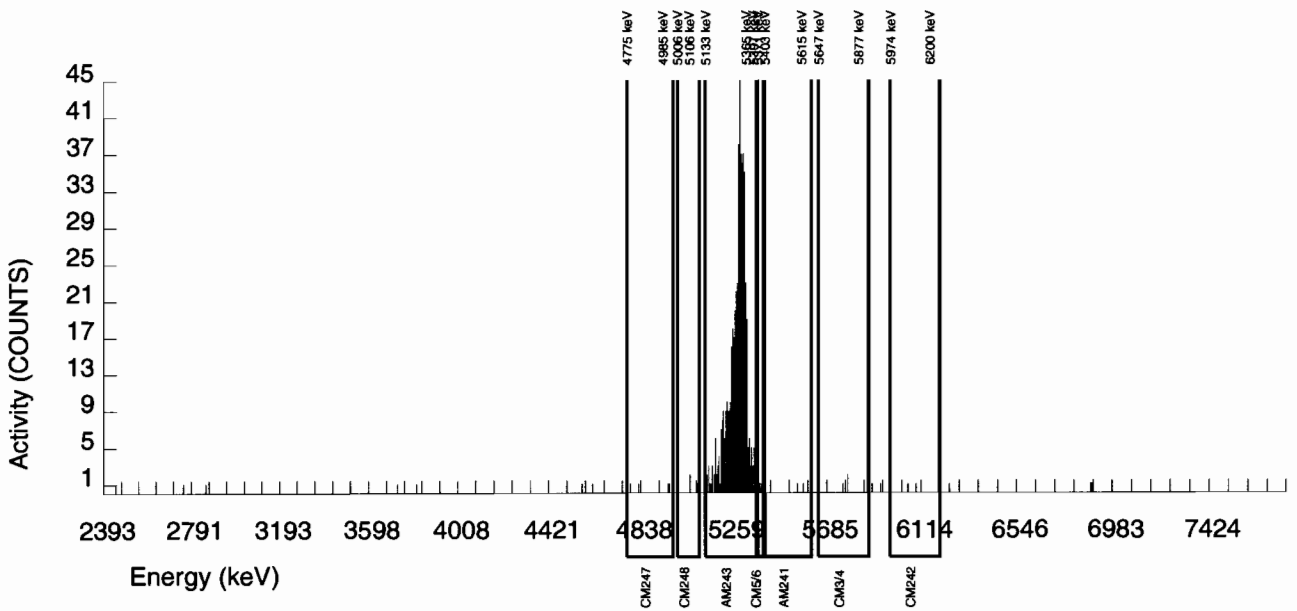
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5515.834	168.164	3.000	-2.224	4.320	2.7707	99.94000	-3.49E-03	3.58E-03	9.37E-03	2.30E-02	3.58E-03
AM243	5270.000	5283.286	37.687	524.000	519.680	4.320	2.0785	99.78000	8.16E-01	6.59E-02	7.04E-03	1.83E-02	3.61E-02
CM-242	6102.000	6078.564	39.568	2.000	2.000	0.000	4.0092	100.0000	3.55E-03	2.52E-03	1.36E-02	3.13E-02	2.51E-03
CM-3/4	5795.020	5778.966	4.946	3.000	1.560	1.440	4.8510	100.0000	2.45E-03	3.16E-03	1.64E-02	3.70E-02	3.16E-03
CM-5/6	5386.000	5379.361	0.000	11.000	11.000	0.000	6.1294	86.09000	2.00E-02	6.19E-03	2.41E-02	5.31E-02	6.04E-03
CM-247	4946.000	4893.361	173.110	4.000	1.840	2.160	6.3427	79.30000	3.64E-03	4.66E-03	2.70E-02	5.94E-02	4.66E-03
CM-248	5078.600	5088.432	4.946	5.000	5.000	0.000	11.0244	91.00000	8.61E-03	3.89E-03	4.09E-02	8.66E-02	3.85E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965494	CHAMBER : 219	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S1202071663_AM	DETECTOR S/N : 79412	BKG FILE : B219.CNF;91
SAMPLE QTY : 0.107 G	AVERAGE %EFFICIENCY : 40.6279	BKG DATE : 21-MAR-2010
SAMPLE DATE : 22-MAR-2010 00:00:00	COUNT DATE : 26-MAR-2010 07:43:58	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W219.CNF;30
% YIELD : 104.049		CAL DATE : 28-FEB-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3148E+01 pCi/G	NOMINAL : 3.3148E+01 pCi/G
RESULTS : 2.3674E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

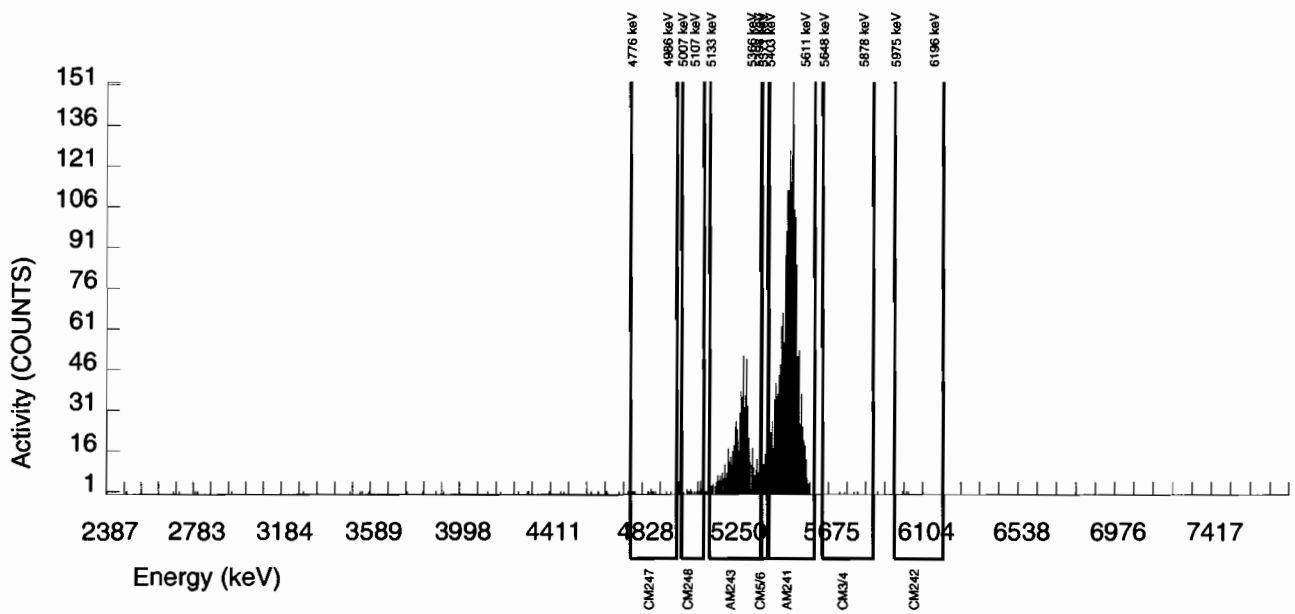
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5499.138	52.248	2028.000	2026.798	0.000	2.7707	99.94000	2.81E+01	2.07E+00	8.27E-02	2.03E-01	6.23E-01
AM243	5270.000	5277.317	55.655	691.000	691.000	0.000	0.0000	99.78000	9.58E+00	7.67E-01	0.00E+00	3.76E-02	3.64E-01
CM-242	6102.000	6032.537	29.598	3.000	2.280	0.720	4.0092	100.0000	3.22E-02	2.66E-02	1.20E-01	2.77E-01	2.65E-02
CM-3/4	5795.020	5775.234	78.928	4.000	4.000	0.000	4.8510	100.0000	5.54E-02	2.79E-02	1.45E-01	3.27E-01	2.77E-02
CM-5/6	5386.000	5385.860	0.000	73.000	73.000	0.000	6.1294	86.09000	1.17E+00	1.60E-01	2.12E-01	4.68E-01	1.37E-01
CM-247	4946.000	4847.984	93.726	16.000	16.000	0.000	6.3427	79.30000	2.79E-01	7.25E-02	2.39E-01	5.25E-01	6.98E-02
CM-248	5078.600	5067.183	7.168	22.000	22.000	0.000	11.0244	91.00000	3.34E-01	7.51E-02	3.62E-01	7.64E-01	7.13E-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# 965495 Product: Pu Date: 3/26/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits. Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%. Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.	✓		Case narrative
Method blank is less than the RDL/ LLD. (If rad samples, < 5% of lowest activity)	✓		
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: JapLMT 3/26/10

Secondary Review Performed By: [illegible] 3/26/10

3/31

PJ

Plutonium Que Sheet

15-MAR-10

Batch #: 965495 Pu-236 Analyst: MXE1 First Client Due Date:31-MAR-10 Internal Due Date:20-MAR-10

Tracer Isotope(s): ~~Pu-242/Pu-238~~ Tracer Code: 1430-C Expiration Date: 3/4/10 Vol: 0.1

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

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

Prep Date: 3/22/10 Initials: MAE Pipet ID: 2971058 Balance ID: 50410272 Witness: JEH 3-22-10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l / f)	Pu Det #
248515001-1	RE36-10-7501	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	1	1	1.252	75
248515002-1	RE36-10-7524	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	2	2	1.257	76
248515003-1	RE36-10-7525	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	3	3	1.259	31
248517001-1	RE36-10-8292	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	4	4	1.256	33
248521001-1	RE36-10-8288	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	5	5	1.250	35
248521002-1	RE36-10-8279	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	6	6	1.251	36
248521003-1	RE36-10-8277	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	7	7	1.258	13
248521004-1	RE36-10-8280	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	8	8	1.259	14
248521005-1	RE36-10-8278	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	9	9	1.256	16
248521006-1	RE36-10-8274	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	10	10	1.258	17
248521007-1	RE36-10-8291	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	11	11	1.256	18
248521008-1	RE36-10-8287	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	12	12	1.253	19
248521009-1	RE36-10-8273	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	13	13	1.252	20
248521010-1	RE36-10-8275	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	14	14	1.256	22
248521011-1	RE36-10-8276	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	15	15	1.251	23
248526001-1	RE36-10-8466	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	16	16	1.250	24
1202071664-1	MB for batch 965495	MB		.05 pCi/g	SOIL	QC ACCOUNT		17	17	1	25
1202071665-1	RE36-10-8466(248526001DUP)	DUP		.05 pCi/g	SOIL	QC ACCOUNT	25-FEB-10	18	18	1.256	26
1202071666-1	LCS for batch 965495	LCS		.05 pCi/g	SOIL	QC ACCOUNT		19	19	0.107	27

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

Solid Sample Dissolution by: ~~LEACH~~ or DIGESTION
Circle One

Data Reviewed By: [signature] 3/26/10

GEL Laboratories LLC, , Radiochemistry Division

Blank Correction Report

Batch ID 965495

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202071665	DUP	Plutonium-238	1.26 g	-0.00122	0.00281	0.0184	.001261905	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00633	0.0037	0.0156	.000880952	pCi/g	NO
1202071666	LCS	Plutonium-238	0.107 g	5.05	0.466	0.279	.014859813	pCi/g	NO
		Plutonium-239/240	0.107 g	39.8	2.78	0.235	.010373832	pCi/g	NO
1202071664	MB	Plutonium-238	1.00 g	0.00159	0.00723	0.0264	.00159	pCi/g	YES
		Plutonium-239/240	1.00 g	0.00111	0.00347	0.0223	.00111	pCi/g	YES
248515001	RE36-10-7501	Plutonium-238	1.25 g	0.00574	0.00373	0.0232	.001272	pCi/g	YES
		Plutonium-239/240	1.25 g	-0.00455	0.00332	0.0196	.000888	pCi/g	YES
248515002	RE36-10-7524	Plutonium-238	1.26 g	0.00521	0.0043	0.0303	.001261905	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0453	0.0114	0.0256	.000880952	pCi/g	NO
248515003	RE36-10-7525	Plutonium-238	1.26 g	0.00499	0.00438	0.0259	.001261905	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0222	0.00828	0.0219	.000880952	pCi/g	NO
248517001	RE36-10-8292	Plutonium-238	1.26 g	0.00572	0.00332	0.0253	.001261905	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0114	0.00472	0.0214	.000880952	pCi/g	NO
248521001	RE36-10-8288	Plutonium-238	1.25 g	0.00896	0.00495	0.0278	.001272	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00435	0.00829	0.0235	.000888	pCi/g	YES
248521002	RE36-10-8279	Plutonium-238	1.25 g	0.00168	0.00428	0.0266	.001272	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0397	0.010	0.0225	.000888	pCi/g	NO
248521003	RE36-10-8277	Plutonium-238	1.26 g	0.00168	0.00544	0.0233	.001261905	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0492	0.0105	0.0197	.000880952	pCi/g	NO
248521004	RE36-10-8280	Plutonium-238	1.26 g	0.0049	0.0112	0.0266	.001261905	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0275	0.00937	0.0225	.000880952	pCi/g	NO
248521005	RE36-10-8278	Plutonium-238	1.26 g	0.0181	0.00627	0.0227	.001261905	pCi/g	NO
		Plutonium-239/240	1.26 g	-0.00123	0.00211	0.0192	.000880952	pCi/g	YES
248521006	RE36-10-8274	Plutonium-238	1.26 g	-0.00216	0.00574	0.0276	.001261905	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0193	0.00683	0.0233	.000880952	pCi/g	NO
248521007	RE36-10-8291	Plutonium-238	1.26 g	0.00447	0.00787	0.0251	.001261905	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0782	0.0132	0.0212	.000880952	pCi/g	NO
248521008	RE36-10-8287	Plutonium-238	1.25 g	0.00686	0.00872	0.0271	.001272	pCi/g	NO
		Plutonium-239/240	1.25 g	0.0388	0.0092	0.0229	.000888	pCi/g	NO
248521009	RE36-10-8273	Plutonium-238	1.25 g	0.0142	0.00738	0.0228	.001272	pCi/g	NO
		Plutonium-239/240	1.25 g	0.0762	0.0124	0.0193	.000888	pCi/g	NO
248521010	RE36-10-8275	Plutonium-238	1.26 g	-0.000778	0.00961	0.0258	.001261905	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0366	0.0095	0.0218	.000880952	pCi/g	NO
248521011	RE36-10-8276	Plutonium-238	1.25 g	0.026	0.00833	0.0239	.001272	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00281	0.00363	0.0202	.000888	pCi/g	YES
248526001	RE36-10-8466	Plutonium-238	1.25 g	-0.00237	0.00498	0.0213	.001272	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0025	0.00322	0.018	.000888	pCi/g	YES

Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 035	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248521001_PU	DETECTOR S/N : 78202	BKG FILE : B035.CNF;1118
SAMPLE QTY : 1.250 G	AVERAGE %EFFICIENCY : 31.0164	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 18:40:50	BKG LIVE TIME(SEC) : 59999.99
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W035.CNF;321
% YIELD : 77.237		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0160E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.3295E+00 dpm		

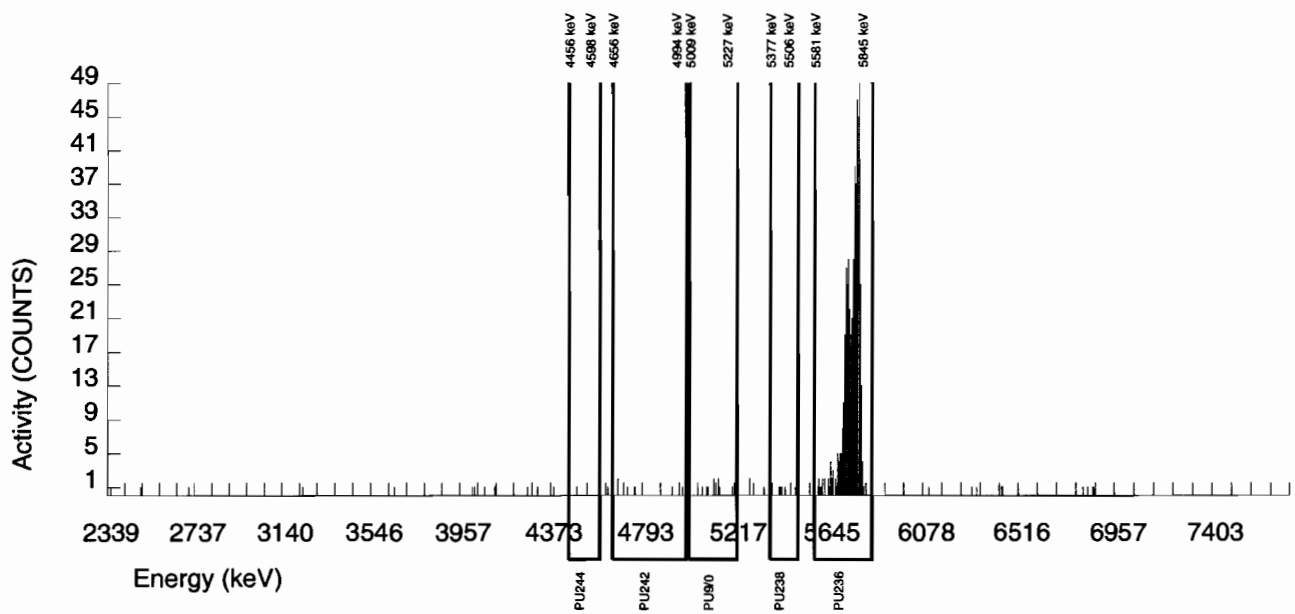
NUCLIDE ACTIVITY SUMMARY

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	5757.809	60.262	511.000	510.280	0.720	0.8485	100.0000	1.09E+00	8.19E-02	3.82E-03	1.33E-02	4.82E-02
PU-238	5499.000	5448.765	73.568	5.000	4.280	0.720	2.4495	99.90000	8.96E-03	4.95E-03	1.11E-02	2.78E-02	4.92E-03
PU-9/0	5155.000	5119.923	27.202	10.000	2.080	7.920	1.9732	99.90000	4.35E-03	8.29E-03	8.90E-03	2.35E-02	8.29E-03
PU242	4890.000	4817.688	4.946	8.000	2.960	5.040	*******	100.0000	6.18E-03	7.13E-03	5.62E-01	1.13E+00	7.12E-03
PU-244	4589.000	4498.299	4.946	1.000	-0.440	1.440	6.4609	99.90000	-9.20E-04	2.99E-03	2.92E-02	6.40E-02	2.98E-03

NOTES:

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 036	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248521002_PU	DETECTOR S/N : 78203	BKG FILE : B036.CNF;1116
SAMPLE QTY : 1.251 G	AVERAGE %EFFICIENCY : 34.5971	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 18:40:50	BKG LIVE TIME(SEC) : 59999.99
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W036.CNF;333
% YIELD : 72.305		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0160E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.1807E+00 dpm		

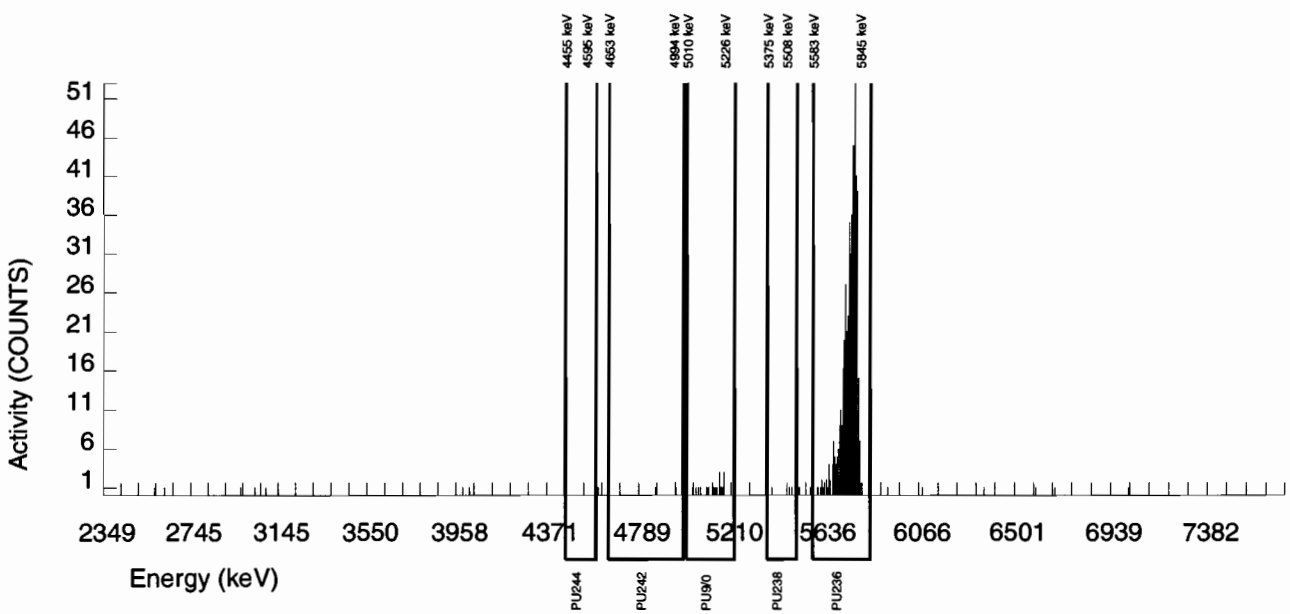
NUCLIDE ACTIVITY SUMMARY

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	5756.344	52.093	535.000	532.840	2.160	1.4697	100.0000	1.09E+00	8.07E-02	6.34E-03	1.81E-02	4.72E-02
PU-238	5499.000	5458.183	88.601	3.000	0.840	2.160	2.4495	99.90000	1.68E-03	4.28E-03	1.06E-02	2.66E-02	4.27E-03
PU-9/0	5155.000	5138.855	24.571	22.000	19.840	2.160	1.9732	99.90000	3.97E-02	1.00E-02	8.52E-03	2.25E-02	9.71E-03
PU242	4890.000	4920.005	93.523	2.000	-0.880	2.880	*******	100.0000	-1.76E-03	4.04E-03	5.38E-01	1.08E+00	4.03E-03
PU-244	4589.000	4524.802	0.000	0.000	0.000	0.000	6.4609	99.90000	0.00E+00	2.00E-03	2.79E-02	6.12E-02	2.00E-03

NOTES:

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 013	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248521003_PU	DETECTOR S/N : 78790	BKG FILE : B013.CNF;1105
SAMPLE QTY : 1.258 G	AVERAGE %EFFICIENCY : 35.8414	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 20:23:05	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43199.99	EFF FILE : W013.CNF;330
% YIELD : 79.308		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0160E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.3919E+00 dpm		

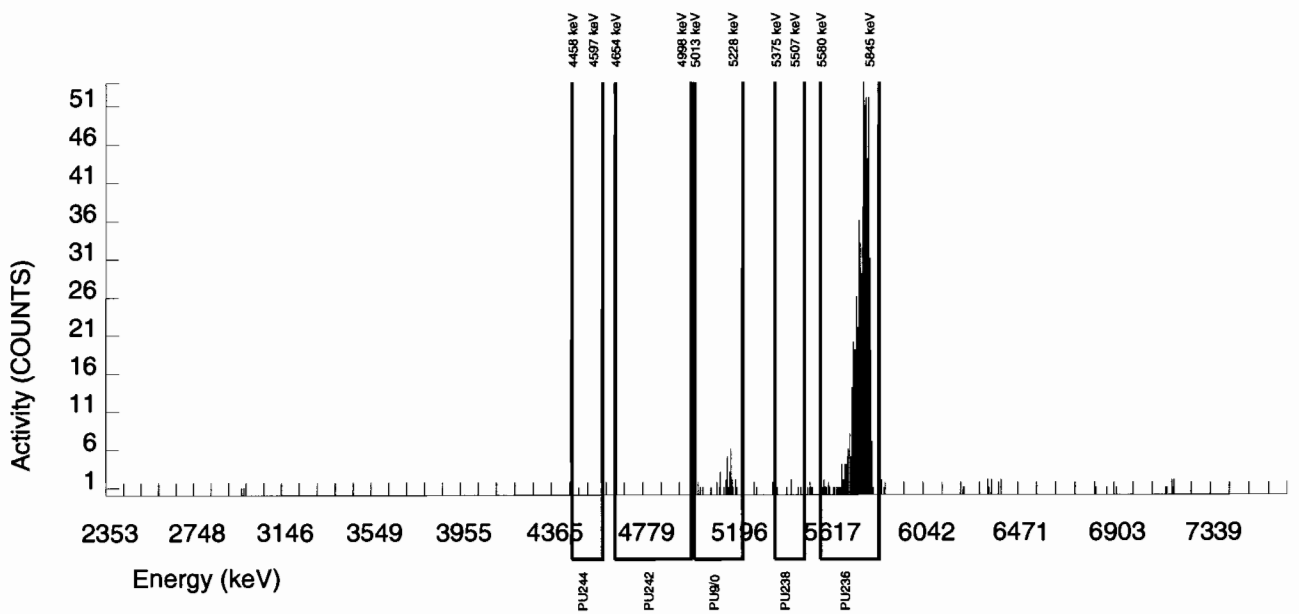
NUCLIDE ACTIVITY SUMMARY

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	5769.668	48.532	622.000	605.440	16.560	4.0694	100.0000	1.08E+00	7.78E-02	1.54E-02	3.55E-02	4.49E-02
PU-238	5499.000	5452.023	4.914	6.000	0.960	5.040	2.4495	99.90000	1.68E-03	5.44E-03	9.25E-03	2.33E-02	5.44E-03
PU-9/0	5155.000	5160.094	21.678	31.000	28.120	2.880	1.9732	99.90000	4.92E-02	1.05E-02	7.46E-03	1.97E-02	1.01E-02
PU242	4890.000	4784.026	4.914	1.000	0.280	0.720	*******	100.0000	4.90E-04	2.16E-03	4.70E-01	9.46E-01	2.16E-03
PU-244	4589.000	4494.014	4.914	1.000	0.280	0.720	6.4609	99.90000	4.90E-04	2.16E-03	2.44E-02	5.36E-02	2.16E-03

NOTES:

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 014	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248521004_PU	DETECTOR S/N : 67616	BKG FILE : B014.CNF;1106
SAMPLE QTY : 1.259 G	AVERAGE %EFFICIENCY : 33.5532	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 20:23:05	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43199.99	EFF FILE : W014.CNF;328
% YIELD : 73.875		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0160E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.2281E+00 dpm		

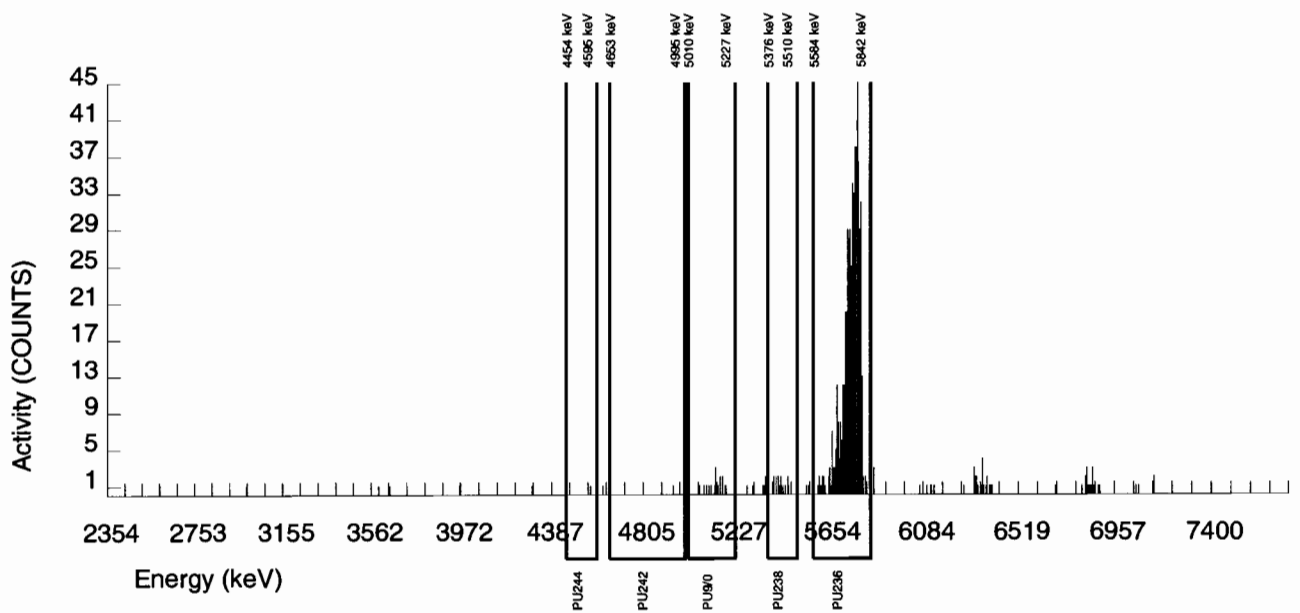
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5759.617	60.546	551.000	527.960	23.040	4.8000	100.0000	1.08E+00	8.22E-02	2.08E-02	4.70E-02	4.87E-02
PU-238	5499.000	5428.108	4.955	19.000	2.440	16.560	2.4495	99.90000	4.90E-03	1.12E-02	1.06E-02	2.66E-02	1.12E-02
PU-9/0	5155.000	5127.919	146.104	18.000	13.680	4.320	1.9732	99.90000	2.75E-02	9.37E-03	8.54E-03	2.25E-02	9.22E-03
PU242	4890.000	4947.112	4.955	1.000	-0.440	1.440	*******	100.0000	-8.82E-04	2.86E-03	5.39E-01	1.08E+00	2.86E-03
PU-244	4589.000	4569.104	4.955	1.000	1.000	0.000	6.4609	99.90000	2.01E-03	2.01E-03	2.80E-02	6.14E-02	2.01E-03

NOTES:

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 016	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248521005_PU	DETECTOR S/N : 78774	BKG FILE : B016.CNF;1101
SAMPLE QTY : 1.256 G	AVERAGE %EFFICIENCY : 33.4863	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 20:23:05	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43199.99	EFF FILE : W016.CNF;313
% YIELD : 86.972		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0160E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.6231E+00 dpm		

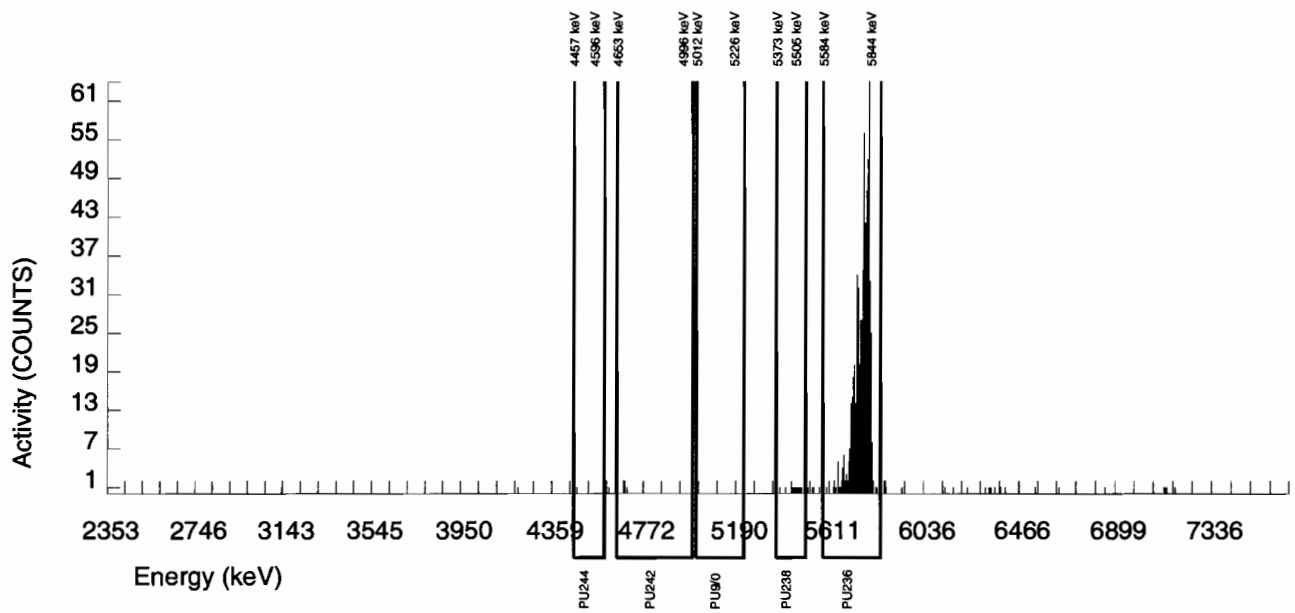
NUCLIDE ACTIVITY SUMMARY

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	5765.592	54.431	634.000	620.320	13.680	3.6986	100.0000	1.08E+00	7.71E-02	1.36E-02	3.19E-02	4.42E-02
PU-238	5499.000	5460.372	97.781	12.000	10.560	1.440	2.4495	99.90000	1.81E-02	6.27E-03	9.05E-03	2.27E-02	6.19E-03
PU-9/0	5155.000	5118.910	0.000	0.000	-0.720	0.720	1.9732	99.90000	-1.23E-03	2.11E-03	7.29E-03	1.92E-02	2.11E-03
PU242	4890.000	4694.518	7.181	4.000	-0.320	4.320	*******	100.0000	-5.47E-04	4.56E-03	4.60E-01	9.24E-01	4.56E-03
PU-244	4589.000	4477.441	4.889	1.000	0.280	0.720	6.4609	99.90000	4.79E-04	2.11E-03	2.39E-02	5.24E-02	2.11E-03

NOTES:

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 017	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248521006_PU	DETECTOR S/N : 78791	BKG FILE : B017.CNF;1948
SAMPLE QTY : 1.258 G	AVERAGE %EFFICIENCY : 29.7179	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 20:23:05	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43199.99	EFF FILE : W017.CNF;1264
% YIELD : 80.736		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0160E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.4350E+00 dpm		

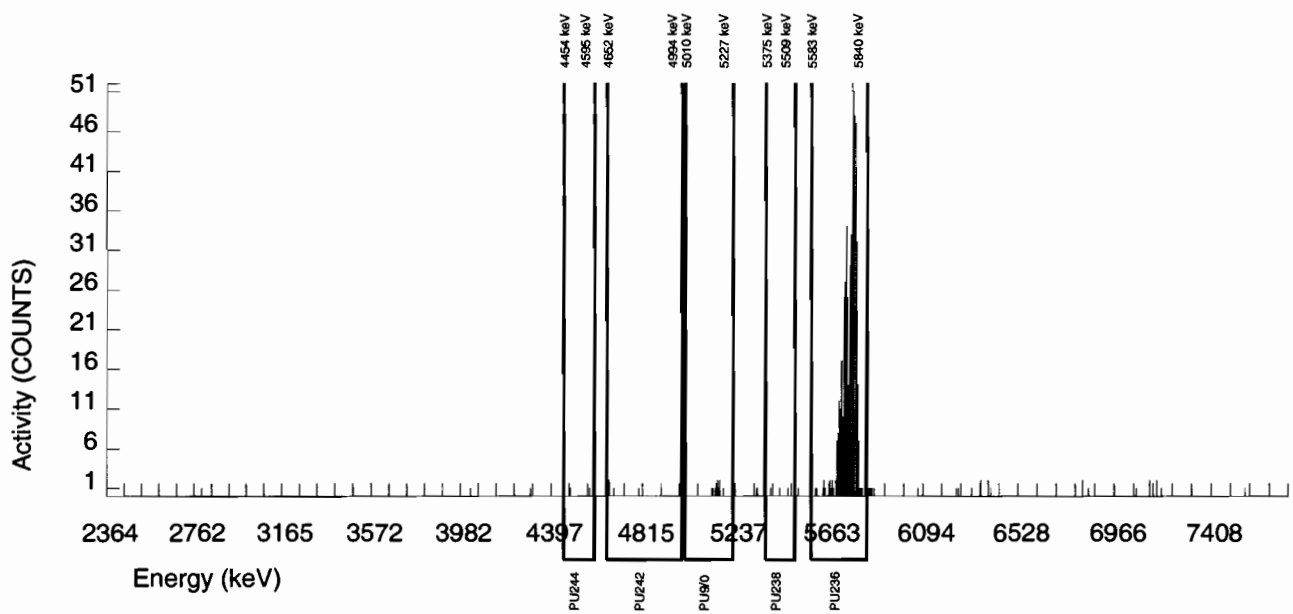
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5764.006	50.956	524.000	511.040	12.960	3.6000	100.0000	1.08E+00	8.24E-02	1.61E-02	3.78E-02	4.88E-02
PU-238	5499.000	5456.529	94.222	4.000	-1.040	5.040	2.4495	99.90000	-2.16E-03	5.74E-03	1.10E-02	2.76E-02	5.73E-03
PU-9/0	5155.000	5161.996	17.357	10.000	9.280	0.720	1.9732	99.90000	1.93E-02	6.83E-03	8.83E-03	2.33E-02	6.73E-03
PU242	4890.000	4802.677	0.000	6.000	4.560	1.440	*******	100.0000	9.45E-03	5.53E-03	5.57E-01	1.12E+00	5.50E-03
PU-244	4589.000	4534.709	89.263	2.000	1.280	0.720	6.4609	99.90000	2.66E-03	3.30E-03	2.89E-02	6.35E-02	3.29E-03

NOTES:

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 018	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248521007_PU	DETECTOR S/N : 78782	BKG FILE : B018.CNF;1100
SAMPLE QTY : 1.256 G	AVERAGE %EFFICIENCY : 33.5036	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 20:23:05	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43199.99	EFF FILE : W018.CNF;308
% YIELD : 78.609		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0160E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.3708E+00 dpm		

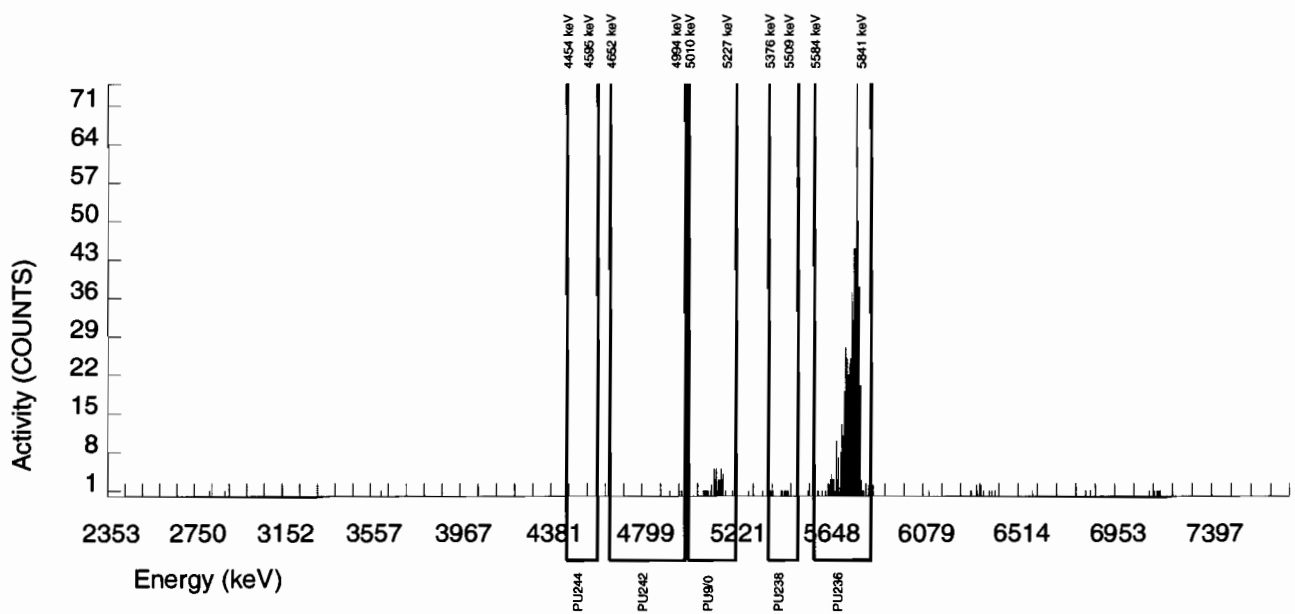
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5759.588	22.710	566.000	560.960	5.040	2.2450	100.0000	1.08E+00	7.92E-02	9.16E-03	2.34E-02	4.60E-02
PU-238	5499.000	5434.148	0.000	11.000	2.360	8.640	2.4495	99.90000	4.47E-03	7.87E-03	1.00E-02	2.51E-02	7.86E-03
PU-9/0	5155.000	5145.127	43.628	42.000	41.280	0.720	1.9732	99.90000	7.82E-02	1.32E-02	8.06E-03	2.12E-02	1.23E-02
PU242	4890.000	4956.879	54.296	2.000	-0.880	2.880	*******	100.0000	-1.66E-03	3.82E-03	5.09E-01	1.02E+00	3.82E-03
PU-244	4589.000	4524.079	0.000	0.000	0.000	0.000	6.4609	99.90000	0.00E+00	1.90E-03	2.64E-02	5.79E-02	1.89E-03

NOTES:

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 019	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248521008_PU	DETECTOR S/N : 78786	BKG FILE : B019.CNF;1112
SAMPLE QTY : 1.253 G	AVERAGE %EFFICIENCY : 30.6248	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 20:23:06	BKG LIVE TIME(SEC) : 59999.99
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W019.CNF;309
% YIELD : 79.995		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0160E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.4126E+00 dpm		

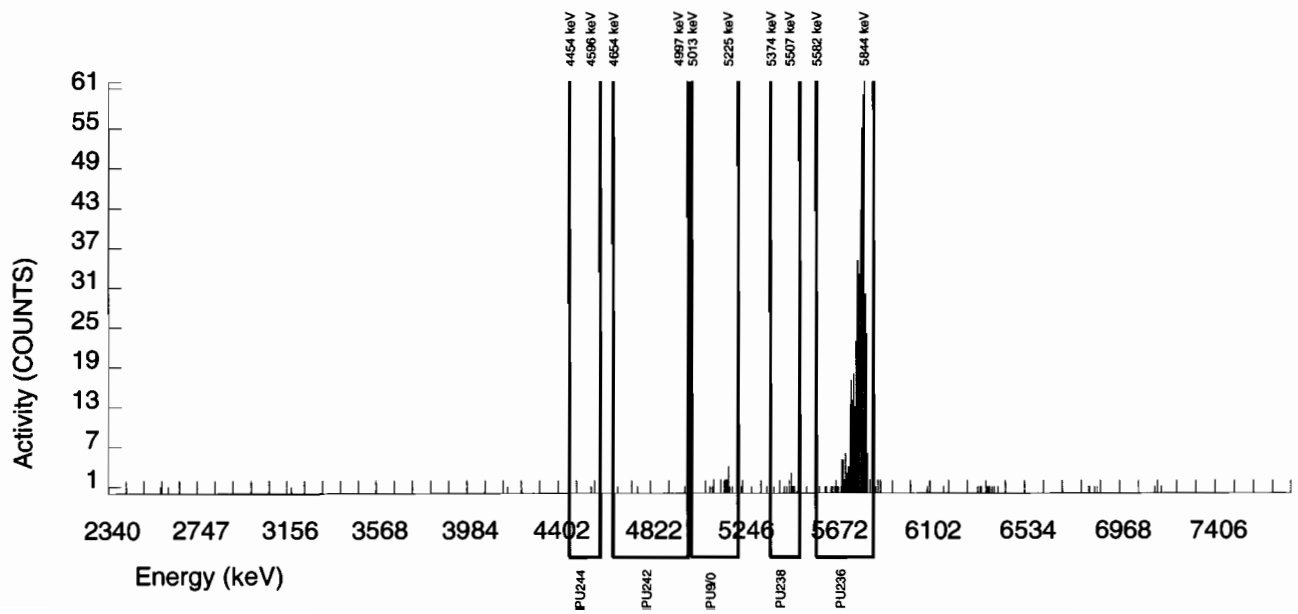
NUCLIDE ACTIVITY SUMMARY

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	5781.703	35.663	529.000	521.800	7.200	2.6833	100.0000	1.08E+00	8.16E-02	1.18E-02	2.91E-02	4.80E-02
PU-238	5499.000	5466.804	15.136	12.000	3.360	8.640	2.4495	99.90000	6.86E-03	8.72E-03	1.08E-02	2.71E-02	8.71E-03
PU-9/0	5155.000	5164.650	8.391	19.000	19.000	0.000	1.9732	99.90000	3.88E-02	9.20E-03	8.68E-03	2.29E-02	8.89E-03
PU242	4890.000	4811.822	298.906	3.000	2.280	0.720	*******	100.0000	4.65E-03	3.83E-03	5.48E-01	1.10E+00	3.82E-03
PU-244	4589.000	4559.060	5.066	1.000	1.000	0.000	6.4609	99.90000	2.04E-03	2.04E-03	2.84E-02	6.24E-02	2.04E-03

NOTES:

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 020	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248521009_PU	DETECTOR S/N : 78787	BKG FILE : B020.CNF;1107
SAMPLE QTY : 1.252 G	AVERAGE %EFFICIENCY : 34.9079	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 20:23:06	BKG LIVE TIME(SEC) : 59999.99
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W020.CNF;322
% YIELD : 83.301		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0160E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.5123E+00 dpm		

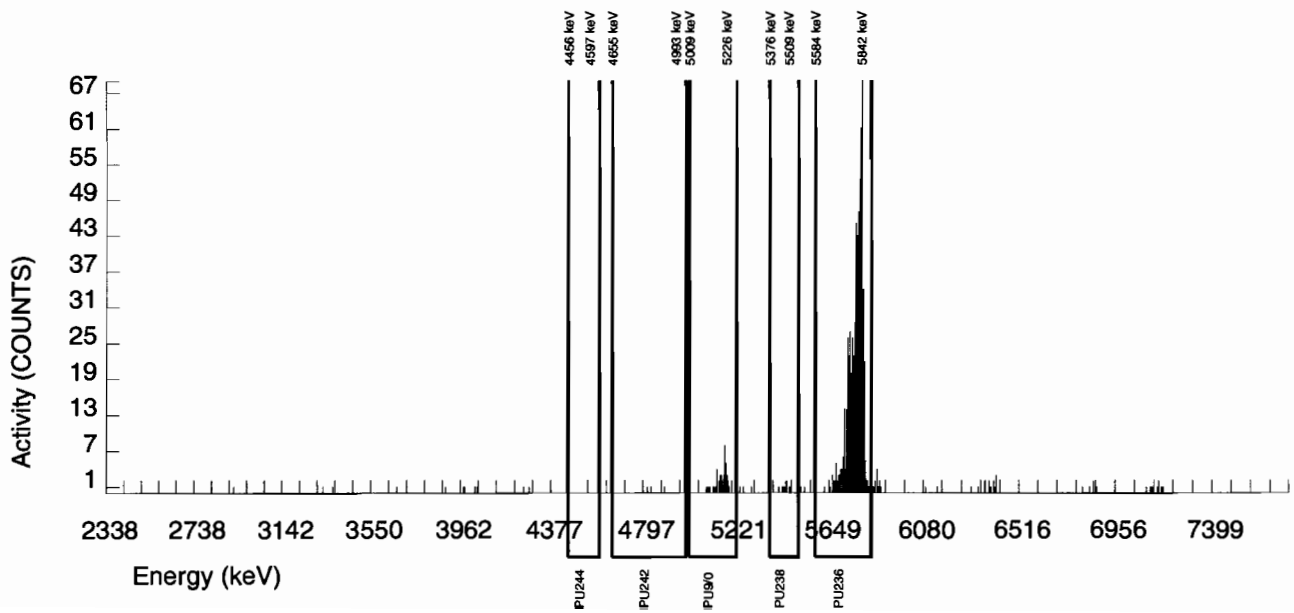
NUCLIDE ACTIVITY SUMMARY

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	5775.971	32.236	628.000	619.360	8.640	2.9394	100.0000	1.09E+00	7.71E-02	1.09E-02	2.65E-02	4.41E-02
PU-238	5499.000	5458.358	11.970	14.000	8.240	5.760	2.4495	99.90000	1.42E-02	7.38E-03	9.09E-03	2.28E-02	7.33E-03
PU-9/0	5155.000	5164.432	11.333	45.000	44.280	0.720	1.9732	99.90000	7.62E-02	1.24E-02	7.32E-03	1.93E-02	1.16E-02
PU242	4890.000	4855.195	79.595	3.000	0.840	2.160	*******	100.0000	1.44E-03	3.67E-03	4.62E-01	9.29E-01	3.67E-03
PU-244	4589.000	4526.460	0.000	0.000	0.000	0.000	6.4609	99.90000	0.00E+00	1.72E-03	2.40E-02	5.26E-02	1.72E-03

NOTES:

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 022	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248521010_PU	DETECTOR S/N : 72530	BKG FILE : B022.CNF;1119
SAMPLE QTY : 1.256 G	AVERAGE %EFFICIENCY : 32.3779	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 20:23:06	BKG LIVE TIME(SEC) : 59999.99
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W022.CNF;320
% YIELD : 79.179		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0160E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.3880E+00 dpm		

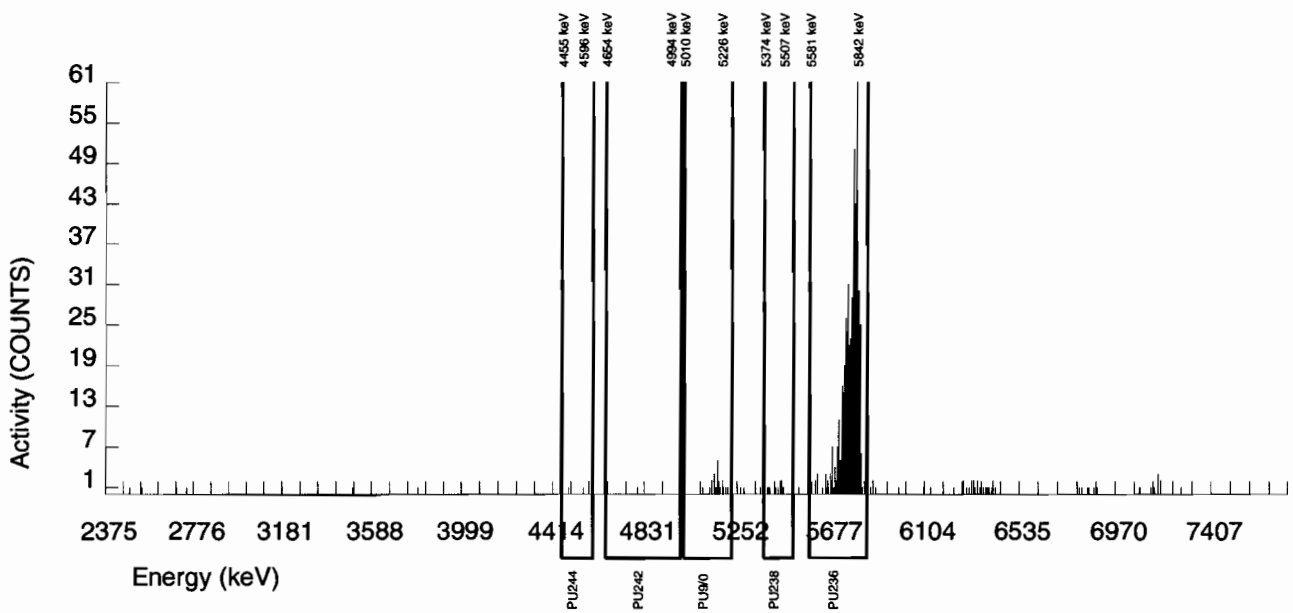
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5772.531	44.920	559.000	546.040	12.960	3.6000	100.0000	1.08E+00	8.06E-02	1.51E-02	3.54E-02	4.72E-02
PU-238	5499.000	5435.806	11.544	14.000	-0.400	14.400	2.4495	99.90000	-7.78E-04	9.61E-03	1.03E-02	2.58E-02	9.61E-03
PU-9/0	5155.000	5165.475	18.928	21.000	18.840	2.160	1.9732	99.90000	3.66E-02	9.50E-03	8.28E-03	2.18E-02	9.24E-03
PU242	4890.000	4899.627	0.000	2.000	0.560	1.440	********	100.0000	1.09E-03	3.39E-03	5.22E-01	1.05E+00	3.39E-03
PU-244	4589.000	4525.674	69.886	2.000	2.000	0.000	6.4609	99.90000	3.89E-03	2.76E-03	2.71E-02	5.95E-02	2.75E-03

NOTES:

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 023	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248521011_PU	DETECTOR S/N : 78264	BKG FILE : B023.CNF;1119
SAMPLE QTY : 1.251 G	AVERAGE %EFFICIENCY : 33.6228	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 20:23:06	BKG LIVE TIME(SEC) : 59999.99
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W023.CNF;303
% YIELD : 82.553		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0160E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.4898E+00 dpm		

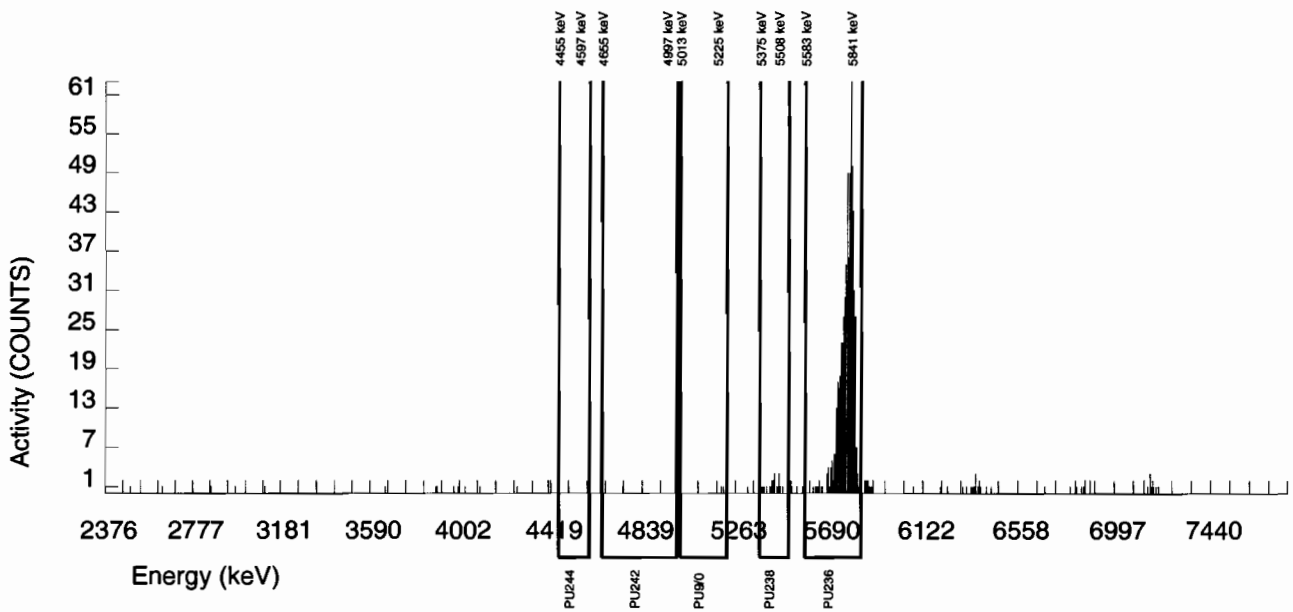
NUCLIDE ACTIVITY SUMMARY

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	5779.484	38.189	602.000	591.200	10.800	3.2863	100.0000	1.09E+00	7.85E-02	1.28E-02	3.04E-02	4.54E-02
PU-238	5499.000	5444.356	29.611	18.000	14.400	3.600	2.4495	99.90000	2.60E-02	8.33E-03	9.53E-03	2.39E-02	8.19E-03
PU-9/0	5155.000	5200.665	34.909	3.000	1.560	1.440	1.9732	99.90000	2.81E-03	3.63E-03	7.68E-03	2.02E-02	3.62E-03
PU242	4890.000	4803.639	0.000	3.000	-1.320	4.320	*******	100.0000	-2.38E-03	4.46E-03	4.84E-01	9.74E-01	4.45E-03
PU-244	4589.000	4525.979	0.000	0.000	-0.720	0.720	6.4609	99.90000	-1.30E-03	2.22E-03	2.51E-02	5.52E-02	2.22E-03

NOTES:

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 024	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S0248526001_PU	DETECTOR S/N : 76542	BKG FILE : B024.CNF;1112
SAMPLE QTY : 1.250 G	AVERAGE %EFFICIENCY : 34.2324	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 20:23:06	BKG LIVE TIME(SEC) : 59999.99
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W024.CNF;303
% YIELD : 91.407		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0160E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.7568E+00 dpm		

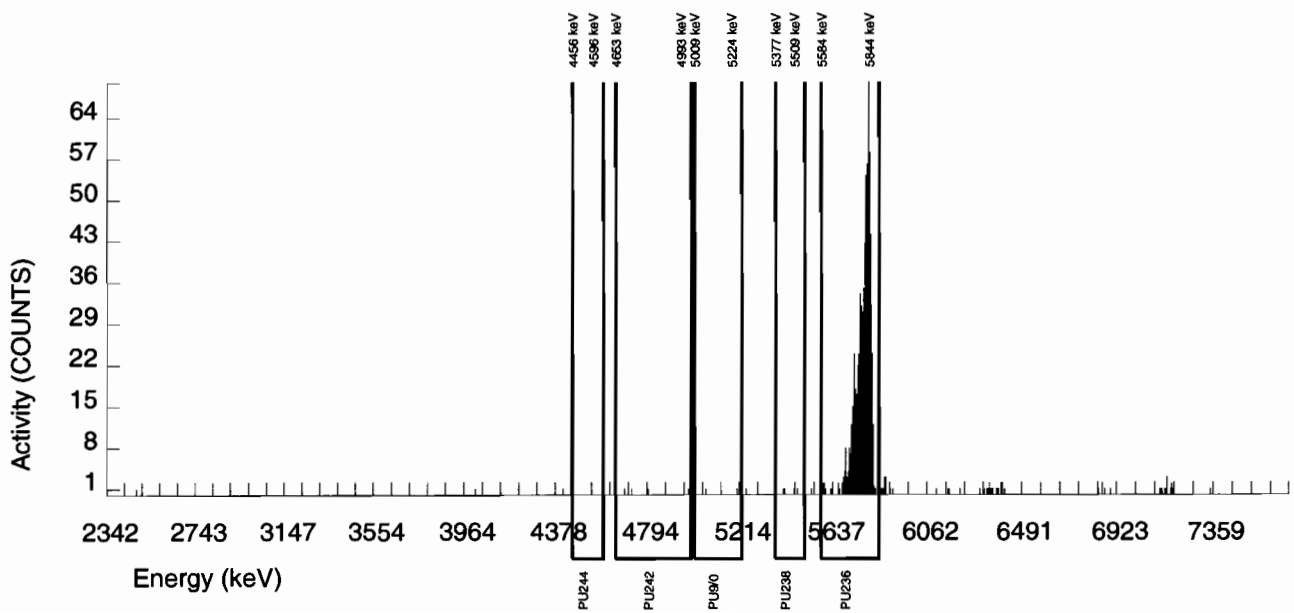
NUCLIDE ACTIVITY SUMMARY

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	5775.805	32.186	678.000	666.480	11.520	3.3941	100.0000	1.09E+00	7.55E-02	1.17E-02	2.78E-02	4.27E-02
PU-238	5499.000	5453.342	64.265	5.000	-1.480	6.480	2.4495	99.90000	-2.37E-03	4.98E-03	8.46E-03	2.13E-02	4.98E-03
PU-9/0	5155.000	5096.377	189.676	3.000	1.560	1.440	1.9732	99.90000	2.50E-03	3.22E-03	6.82E-03	1.80E-02	3.22E-03
PU242	4890.000	4757.658	318.830	6.000	3.840	2.160	*******	100.0000	6.14E-03	4.41E-03	4.30E-01	8.65E-01	4.40E-03
PU-244	4589.000	4525.752	0.000	0.000	-1.440	1.440	6.4609	99.90000	-2.31E-03	2.29E-03	2.23E-02	4.90E-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).



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 025	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S1202071664_PU	DETECTOR S/N : 45-149AA5	BKG FILE : B025.CNF;1123
SAMPLE QTY : 1.000 G	AVERAGE %EFFICIENCY : 34.1770	BKG DATE : 21-MAR-2010
SAMPLE DATE : 22-MAR-2010 00:00:00	COUNT DATE : 25-MAR-2010 20:23:07	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W025.CNF;330
% YIELD : 92.083		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 2.9663E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.7315E+00 dpm		

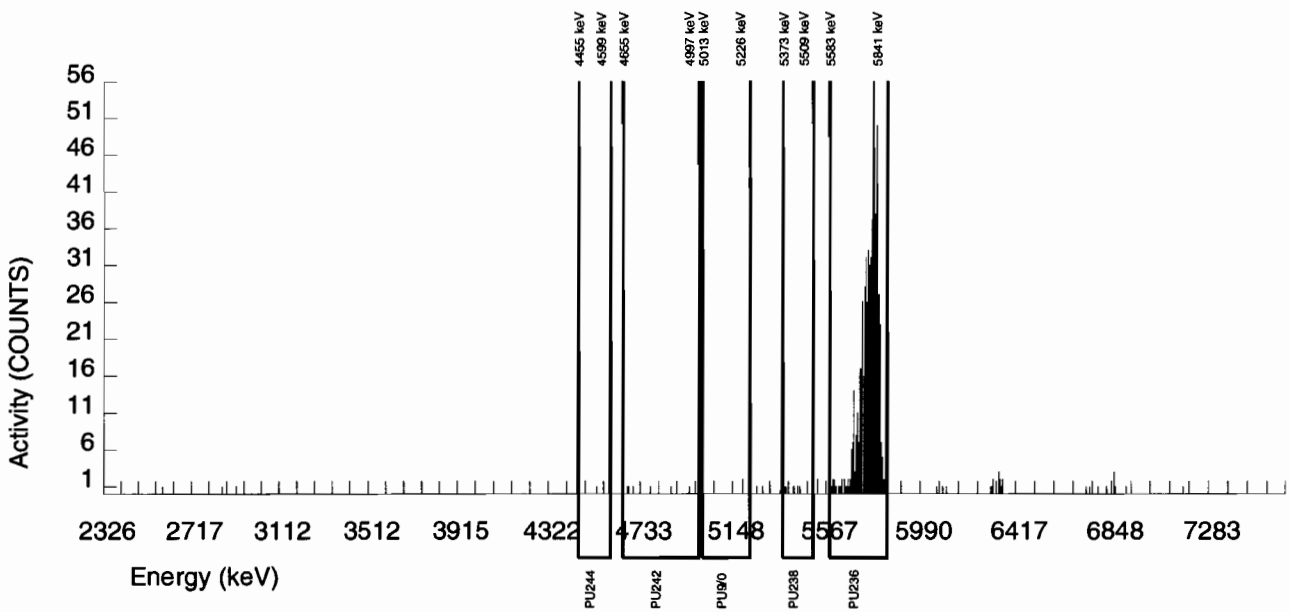
NUCLIDE ACTIVITY SUMMARY

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	5766.323	56.215	684.000	670.320	13.680	3.6986	100.0000	1.34E+00	9.29E-02	1.59E-02	3.71E-02	5.25E-02
PU-238	5499.000	5425.698	107.009	8.000	0.800	7.200	2.4495	99.90000	1.59E-03	7.23E-03	1.05E-02	2.64E-02	7.23E-03
PU-9/0	5155.000	5200.045	4.864	2.000	0.560	1.440	1.9732	99.90000	1.11E-03	3.47E-03	8.47E-03	2.23E-02	3.47E-03
PU242	4890.000	4782.784	266.914	6.000	5.280	0.720	*******	100.0000	1.05E-02	5.11E-03	5.35E-01	1.07E+00	5.08E-03
PU-244	4589.000	4542.234	4.864	1.000	1.000	0.000	6.4609	99.90000	1.99E-03	1.99E-03	2.77E-02	6.09E-02	1.99E-03

NOTES:

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 026	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S1202071665_PU	DETECTOR S/N : 78204	BKG FILE : B026.CNF;1124
SAMPLE QTY : 1.256 G	AVERAGE %EFFICIENCY : 33.6708	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 25-MAR-2010 20:23:07	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W026.CNF;304
% YIELD : 106.608		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 3.0160E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 3.2153E+00 dpm		

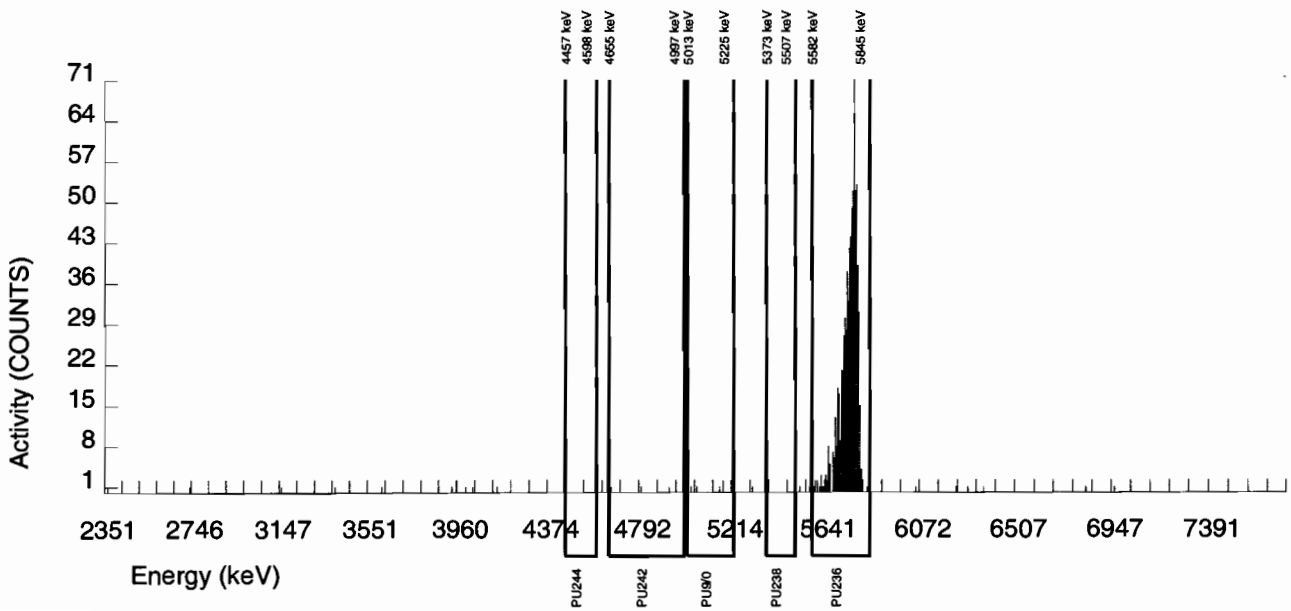
NUCLIDE ACTIVITY SUMMARY

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	5755.764	47.667	766.000	764.560	1.440	1.2000	100.0000	1.08E+00	7.15E-02	3.59E-03	1.09E-02	3.92E-02
PU-238	5499.000	5442.778	0.000	2.000	-0.880	2.880	2.4495	99.90000	-1.22E-03	2.81E-03	7.34E-03	1.84E-02	2.81E-03
PU-9/0	5155.000	5107.159	4.920	6.000	4.560	1.440	1.9732	99.90000	6.33E-03	3.70E-03	5.91E-03	1.56E-02	3.68E-03
PU242	4890.000	4844.314	280.467	4.000	-1.040	5.040	*******	100.0000	-1.44E-03	3.83E-03	3.73E-01	7.50E-01	3.83E-03
PU-244	4589.000	4527.499	0.000	0.000	-0.720	0.720	6.4609	99.90000	-1.00E-03	1.71E-03	1.94E-02	4.25E-02	1.71E-03

NOTES:

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965495	CHAMBER : 027	LIB FILE : ENV_ALPHA_PU
SAMPLE ID : S1202071666_PU	DETECTOR S/N : 42484	BKG FILE : B027.CNF;1130
SAMPLE QTY : 0.107 G	AVERAGE %EFFICIENCY : 34.2191	BKG DATE : 21-MAR-2010
SAMPLE DATE : 22-MAR-2010 00:00:00	COUNT DATE : 25-MAR-2010 20:23:07	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 43200.00	EFF FILE : W027.CNF;331
% YIELD : 81.537		CAL DATE : 4-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1430-C	ID : 0244-B	ID : 0244-B
NUCLIDE : PU-236	NUCLIDE : PU-9/0	NUCLIDE : PU-9/0
NOMINAL : 2.9663E+00 dpm	NOMINAL : 4.1778E+01 pCi/G	NOMINAL : 4.1778E+01 pCi/G
RESULTS : 2.4186E+00 dpm		

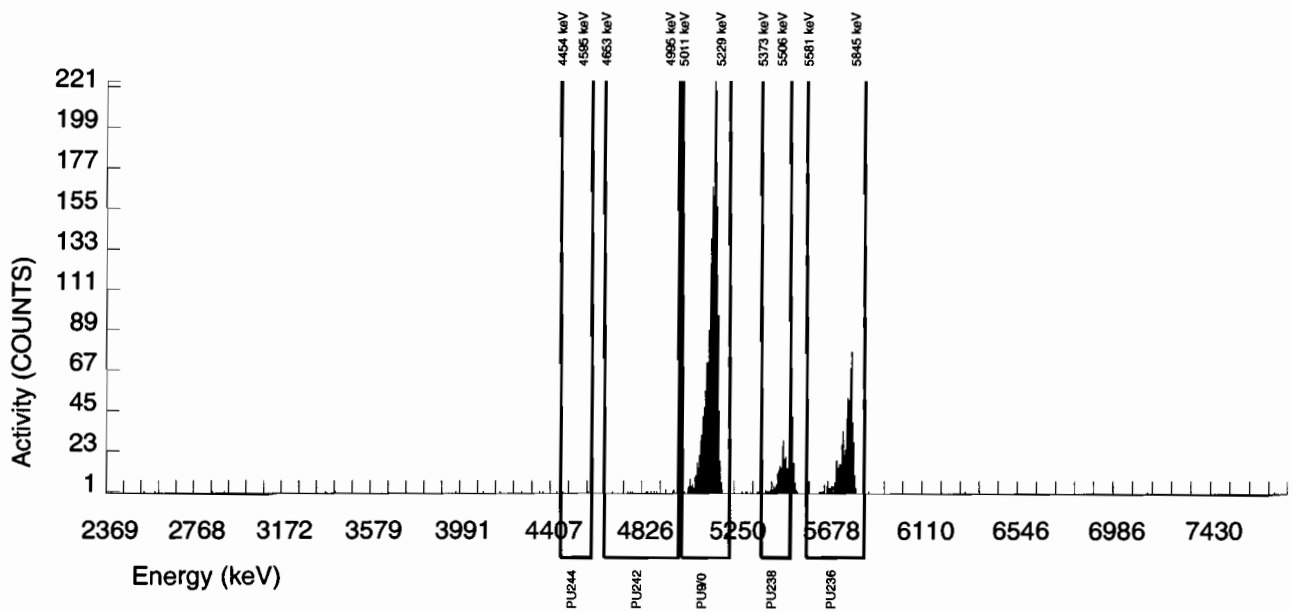
NUCLIDE ACTIVITY SUMMARY

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	5766.654	25.159	595.000	594.280	0.720	0.8485	100.0000	1.25E+01	9.69E-01	3.84E-02	1.34E-01	5.13E-01
PU-238	5499.000	5477.545	0.000	242.000	240.560	1.440	2.4495	99.90000	5.05E+00	4.66E-01	1.11E-01	2.79E-01	3.27E-01
PU-9/0	5155.000	5150.152	34.627	1899.000	1898.280	0.720	1.9732	99.90000	3.98E+01	2.78E+00	8.93E-02	2.35E-01	9.14E-01
PU242	4890.000	4877.799	39.737	16.000	13.840	2.160	*******	100.0000	2.90E-01	8.99E-02	5.64E+00	1.13E+01	8.78E-02
PU-244	4589.000	4526.901	114.244	2.000	2.000	0.000	6.4609	99.90000	4.20E-02	2.98E-02	2.92E-01	6.42E-01	2.97E-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# 965496 Product: U Date: 3/30/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits. Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%. Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.	✓		Case narrative
Method blank is less than the RDL/ LLD. (If rad samples, < 5% of lowest activity)	✓		Case narrative
Sample was run within hold time	✓		
Sample was correctly preserved if required			N/A
Smears Taken for Radioactive batches			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms. All line outs initialed and dated. No transcription errors are apparent.	✓		
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly 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] 3/30/10

Secondary Review Performed By: [signature] 3/30/10

3/31

LANL

Uranium Que Sheet

15-MAR-10

Batch #: 965496 Analyst: MXE1 First Client Due Date:31-MAR-10 Internal Due Date:20-MAR-10 N/A

Tracer Isotope: U-232/U-236 Tracer Code: 1283-H Expiration Date: 12/9/10 Vol: 0.1 Analyzed Sequentially with Pu

LCS Isotope: U-238 LCS Code: / Expiration Date: / Vol: / Pu-236 ID: /

Spike Isotope: U-238 Spike Code: / Expiration Date: / Vol: / Vol.: /

Prep Date: 3/22/10 Initials: MAL Pipet ID: 1971058 Balance ID: 50410272 Witness: JEH 3-22-10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g)(l/f)	U Det #
248515001-1	RE36-10-7501	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	1	1	0.504	1
248515002-1	RE36-10-7524	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	2	2	0.503	2
248515003-1	RE36-10-7525	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	3	3	0.502	3
248517001-1	RE36-10-8292	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	4	4	0.519	4
248521001-1	RE36-10-8288	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	5	5	0.506	5
248521002-1	RE36-10-8279	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	6	6	0.511	6
248521003-1	RE36-10-8277	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	7	7	0.515	7
248521004-1	RE36-10-8280	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	8	8	0.509	8
248521005-1	RE36-10-8278	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	9	9	0.502	9
248521006-1	RE36-10-8274	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	10	10	0.508	10
248521007-1	RE36-10-8291	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	11	11	0.503	126 ~~126~~ 16
248521008-1	RE36-10-8287	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	12	12	0.506	127
248521009-1	RE36-10-8273	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	13	13	0.514	130
248521010-1	RE36-10-8275	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	14	14	0.505	131 ~~131~~
248521011-1	RE36-10-8276	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	15	15	0.503	121
248526001-1	RE36-10-8466	SAMPLE		.1 pCi/g	SOIL	LANL010	25-FEB-10	16	16	0.505	122
1202071667-1	MB for batch 965496	MB		.1 pCi/g	SOIL	QC ACCOUNT		17	17	1	123
1202071668-1	RE36-10-8466(248526001DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	25-FEB-10	18	18	0.516	124
1202071669-1	LCS for batch 965496	LCS		.1 pCi/g	SOIL	QC ACCOUNT		19	19	0.101	125

#SRM 0244-A exp: 10/31/20

Choose SOP used: GL-RAD-A-011 Solid Sample Dissolution by: LEACH or DIGESTION (Circle One) Data Reviewed By: JoLMS - 3/30/10

Blank Correction Report

Batch ID 965496

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202071668	DUP	Uranium-233/234	0.516 g	0.894	0.0889	0.116	.016996124	pCi/g	NO
		Uranium-235/236	0.516 g	0.0709	0.0221	0.0706	.017286822	pCi/g	YES
		Uranium-238	0.516 g	0.967	0.0945	0.0813	.024418605	pCi/g	NO
1202071669	LCS	Uranium-233/234	0.101 g	7.26	0.696	0.586	.086831683	pCi/g	NO
		Uranium-235/236	0.101 g	0.386	0.104	0.358	.088316832	pCi/g	YES
		Uranium-238	0.101 g	6.01	0.593	0.412	.124752475	pCi/g	NO
1202071667	MB	Uranium-233/234	1.00 g	0.00877	0.00477	0.0509	.00877	pCi/g	YES
		Uranium-235/236	1.00 g	0.00892	0.00634	0.0311	.00892	pCi/g	YES
		Uranium-238	1.00 g	0.0126	0.00549	0.0358	.0126	pCi/g	YES
248515001	RE36-10-7501	Uranium-233/234	0.504 g	0.937	0.0894	0.103	.017400794	pCi/g	NO
		Uranium-235/236	0.504 g	0.0226	0.0121	0.0631	.017698413	pCi/g	YES
		Uranium-238	0.504 g	1.06	0.0985	0.0726	.025	pCi/g	NO
248515002	RE36-10-7524	Uranium-233/234	0.503 g	1.25	0.121	0.133	.017435388	pCi/g	NO
		Uranium-235/236	0.503 g	0.0759	0.0218	0.0814	.017733598	pCi/g	YES
		Uranium-238	0.503 g	1.83	0.164	0.0936	.025049702	pCi/g	NO
248515003	RE36-10-7525	Uranium-233/234	0.502 g	1.33	0.136	0.174	.017470120	pCi/g	NO
		Uranium-235/236	0.502 g	0.0456	0.0218	0.106	.017768924	pCi/g	YES
		Uranium-238	0.502 g	1.26	0.130	0.122	.025099602	pCi/g	NO
248517001	RE36-10-8292	Uranium-233/234	0.519 g	0.947	0.093	0.113	.016897881	pCi/g	NO
		Uranium-235/236	0.519 g	0.0744	0.0212	0.0691	.017186898	pCi/g	YES
		Uranium-238	0.519 g	1.07	0.102	0.0796	.024277457	pCi/g	NO
248521001	RE36-10-8288	Uranium-233/234	0.506 g	1.04	0.0961	0.0979	.017332016	pCi/g	NO
		Uranium-235/236	0.506 g	0.0515	0.0186	0.0598	.017628458	pCi/g	YES
		Uranium-238	0.506 g	0.857	0.0821	0.0688	.024901186	pCi/g	NO
248521002	RE36-10-8279	Uranium-233/234	0.511 g	3.43	0.305	0.188	.017162427	pCi/g	NO
		Uranium-235/236	0.511 g	0.157	0.0397	0.115	.017455969	pCi/g	NO
		Uranium-238	0.511 g	3.24	0.290	0.132	.024657534	pCi/g	NO
248521003	RE36-10-8277	Uranium-233/234	0.515 g	1.43	0.130	0.117	.017029126	pCi/g	NO
		Uranium-235/236	0.515 g	0.0976	0.0256	0.0716	.017320388	pCi/g	NO
		Uranium-238	0.515 g	1.40	0.128	0.0824	.024466019	pCi/g	NO
248521004	RE36-10-8280	Uranium-233/234	0.509 g	3.49	0.298	0.157	.017229862	pCi/g	NO
		Uranium-235/236	0.509 g	0.179	0.0389	0.0961	.017524558	pCi/g	NO
		Uranium-238	0.509 g	3.01	0.261	0.111	.024754420	pCi/g	NO
248521005	RE36-10-8278	Uranium-233/234	0.502 g	0.937	0.0891	0.102	.017470120	pCi/g	NO
		Uranium-235/236	0.502 g	0.0582	0.0178	0.0624	.017768924	pCi/g	YES
		Uranium-238	0.502 g	0.974	0.092	0.0718	.025099602	pCi/g	NO
248521006	RE36-10-8274	Uranium-233/234	0.508 g	1.18	0.109	0.107	.017263780	pCi/g	NO
		Uranium-235/236	0.508 g	0.0844	0.0218	0.0653	.017559055	pCi/g	YES
		Uranium-238	0.508 g	1.41	0.125	0.0752	.024803150	pCi/g	NO
248521007	RE36-10-8291	Uranium-233/234	0.503 g	1.66	0.165	0.185	.017435388	pCi/g	NO
		Uranium-235/236	0.503 g	0.114	0.0336	0.113	.017733598	pCi/g	NO

Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
248521007	RE36-10-8291	Uranium-238	0.503 g	2.25	0.211	0.130	.025049702	pCi/g	NO
248521008	RE36-10-8287	Uranium-233/234	0.506 g	1.36	0.132	0.149	.017332016	pCi/g	NO
		Uranium-235/236	0.506 g	0.0521	0.0188	0.0908	.017628458	pCi/g	YES
		Uranium-238	0.506 g	1.58	0.149	0.104	.024901186	pCi/g	NO
248521009	RE36-10-8273	Uranium-233/234	0.514 g	1.65	0.157	0.158	.017062257	pCi/g	NO
		Uranium-235/236	0.514 g	0.111	0.0306	0.0967	.017354086	pCi/g	NO
		Uranium-238	0.514 g	2.11	0.192	0.111	.024513619	pCi/g	NO
248521010	RE36-10-8275	Uranium-233/234	0.505 g	1.26	0.125	0.151	.017366337	pCi/g	NO
		Uranium-235/236	0.505 g	0.0594	0.0203	0.092	.017663366	pCi/g	YES
		Uranium-238	0.505 g	1.54	0.147	0.106	.024950495	pCi/g	NO
248521011	RE36-10-8276	Uranium-233/234	0.503 g	1.05	0.103	0.127	.017435388	pCi/g	NO
		Uranium-235/236	0.503 g	0.0611	0.019	0.0775	.017733598	pCi/g	YES
		Uranium-238	0.503 g	0.971	0.0974	0.0891	.025049702	pCi/g	NO
248526001	RE36-10-8486	Uranium-233/234	0.505 g	0.961	0.0964	0.125	.017366337	pCi/g	NO
		Uranium-235/236	0.505 g	0.0657	0.0196	0.0763	.017663366	pCi/g	YES
		Uranium-238	0.505 g	0.811	0.0844	0.0878	.024950495	pCi/g	NO

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GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 005	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0248521001_UU	DETECTOR S/N : 79454	BKG FILE : B005.CNF;1115
SAMPLE QTY : 0.506 G	AVERAGE %EFFICIENCY : 33.5469	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 27-MAR-2010 13:01:46	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 59999.99	EFF FILE : W005.CNF;339
% YIELD : 76.463		CAL DATE : 4-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 : 4.5027E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 3.4429E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

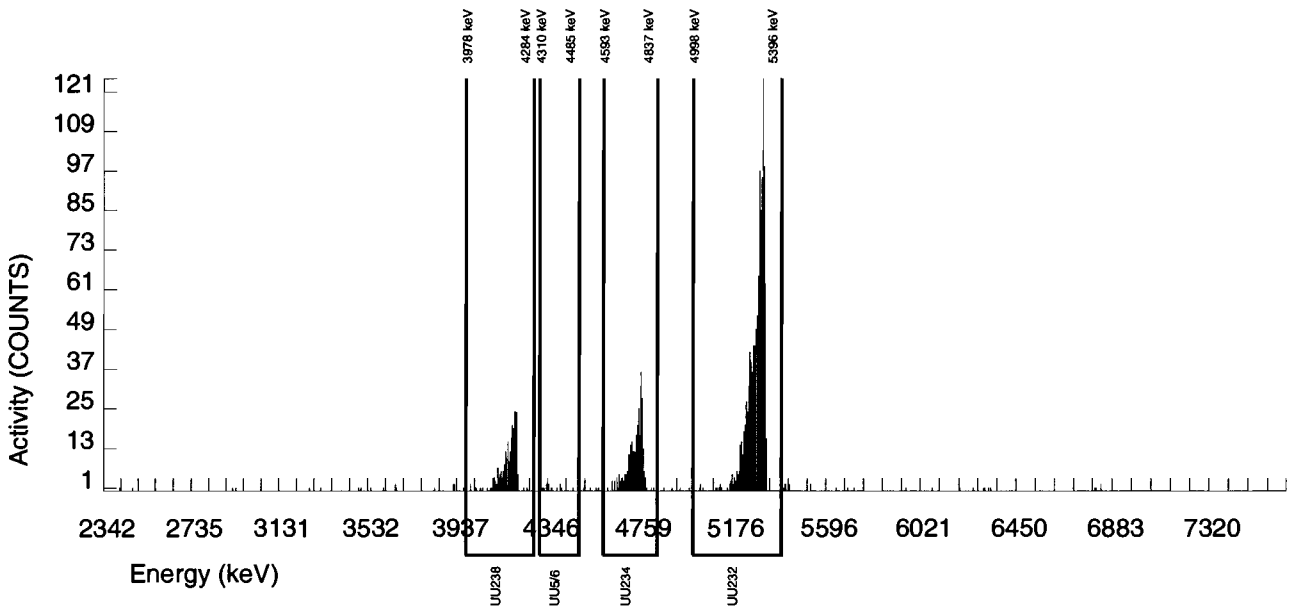
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5287.240	30.364	1159.000	1154.000	5.000	2.2361	100.0000	4.01E+00	3.11E-01	1.81E-02	4.55E-02	1.19E-01
U-3/4	4763.020	4741.704	25.497	303.000	300.831	1.000	5.4790	100.0000	1.04E+00	9.61E-02	4.42E-02	9.79E-02	6.04E-02
U-235	4391.000	4368.806	65.924	15.000	12.000	3.000	2.4127	80.90000	5.15E-02	1.86E-02	2.41E-02	5.98E-02	1.82E-02
U-238	4184.730	4175.304	44.023	247.000	247.000	0.000	3.6781	100.0000	8.57E-01	8.21E-02	2.97E-02	6.88E-02	5.45E-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



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GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 006	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0248521002_UU	DETECTOR S/N : 79455	BKG FILE : B006.CNF;1128
SAMPLE QTY : 0.511 G	AVERAGE %EFFICIENCY : 32.0671	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 27-MAR-2010 13:01:46	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 59999.99	EFF FILE : W006.CNF;363
% YIELD : 41.174		CAL DATE : 4-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 : 4.5027E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 1.8539E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

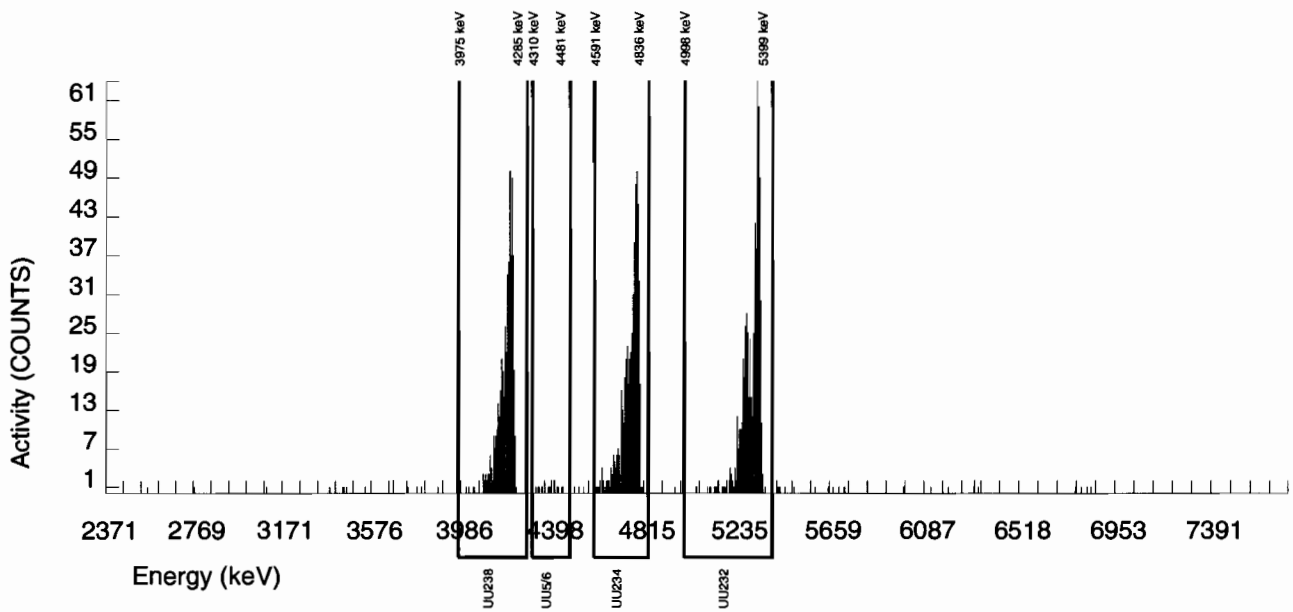
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5306.280	26.599	595.000	594.000	1.000	1.0000	100.0000	3.97E+00	3.47E-01	1.55E-02	4.92E-02	1.63E-01
U-3/4	4763.020	4759.372	32.101	516.000	513.398	2.000	5.4790	100.0000	3.43E+00	3.05E-01	8.51E-02	1.88E-01	1.52E-01
U-235	4391.000	4395.339	49.526	20.000	19.000	1.000	2.4127	80.90000	1.57E-01	3.97E-02	4.63E-02	1.15E-01	3.78E-02
U-238	4184.730	4193.508	38.419	486.000	486.000	0.000	3.6781	100.0000	3.24E+00	2.90E-01	5.71E-02	1.32E-01	1.47E-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



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GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 007	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0248521003_UU	DETECTOR S/N : 67607	BKG FILE : B007.CNF;1123
SAMPLE QTY : 0.515 G	AVERAGE %EFFICIENCY : 30.8124	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 27-MAR-2010 13:01:47	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 59999.99	EFF FILE : W007.CNF;314
% YIELD : 68.316		CAL DATE : 4-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 : 4.5027E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 3.0761E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

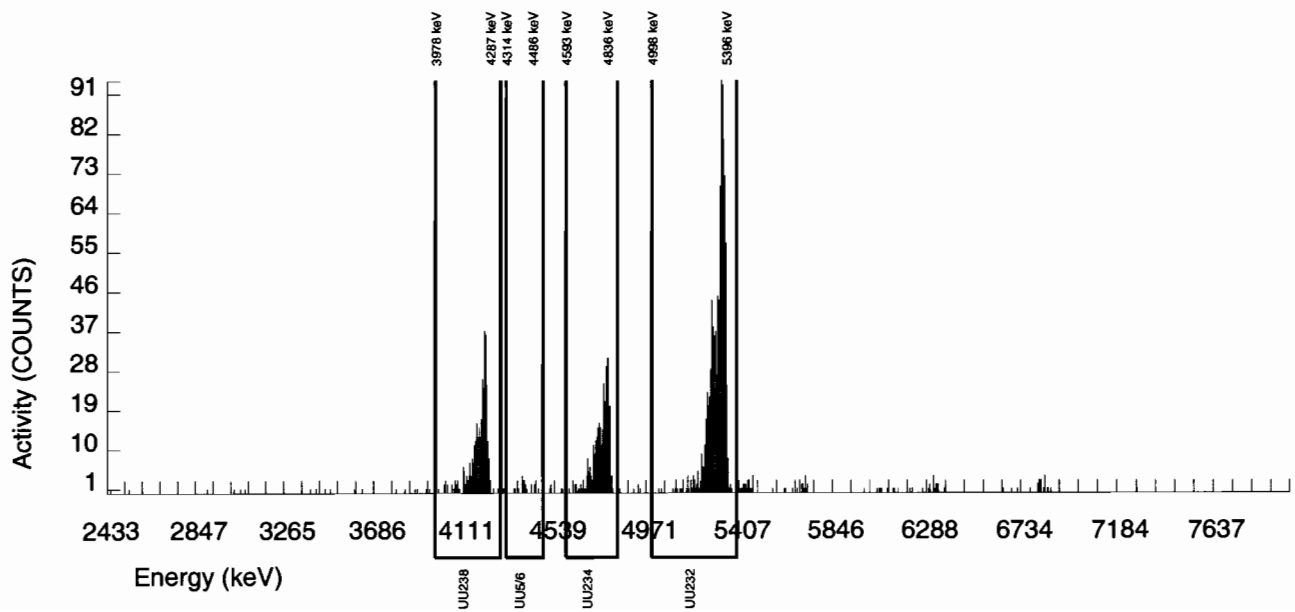
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5310.566	31.513	964.000	947.000	17.000	4.1231	100.0000	3.94E+00	3.16E-01	3.99E-02	9.10E-02	1.30E-01
U-3/4	4763.020	4763.784	54.353	346.000	343.041	2.000	5.4790	100.0000	1.43E+00	1.30E-01	5.30E-02	1.17E-01	7.74E-02
U-235	4391.000	4408.351	17.316	21.000	19.000	2.000	2.4127	80.90000	9.76E-02	2.56E-02	2.88E-02	7.16E-02	2.46E-02
U-238	4184.730	4191.436	26.868	338.000	336.000	2.000	3.6781	100.0000	1.40E+00	1.28E-01	3.56E-02	8.24E-02	7.66E-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



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GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 008	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0248521004_UU	DETECTOR S/N : 78788	BKG FILE : B008.CNF;1125
SAMPLE QTY : 0.509 G	AVERAGE %EFFICIENCY : 33.4538	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 27-MAR-2010 13:01:47	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 59999.99	EFF FILE : W008.CNF;345
% YIELD : 47.441		CAL DATE : 4-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 : 4.5027E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 2.1361E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

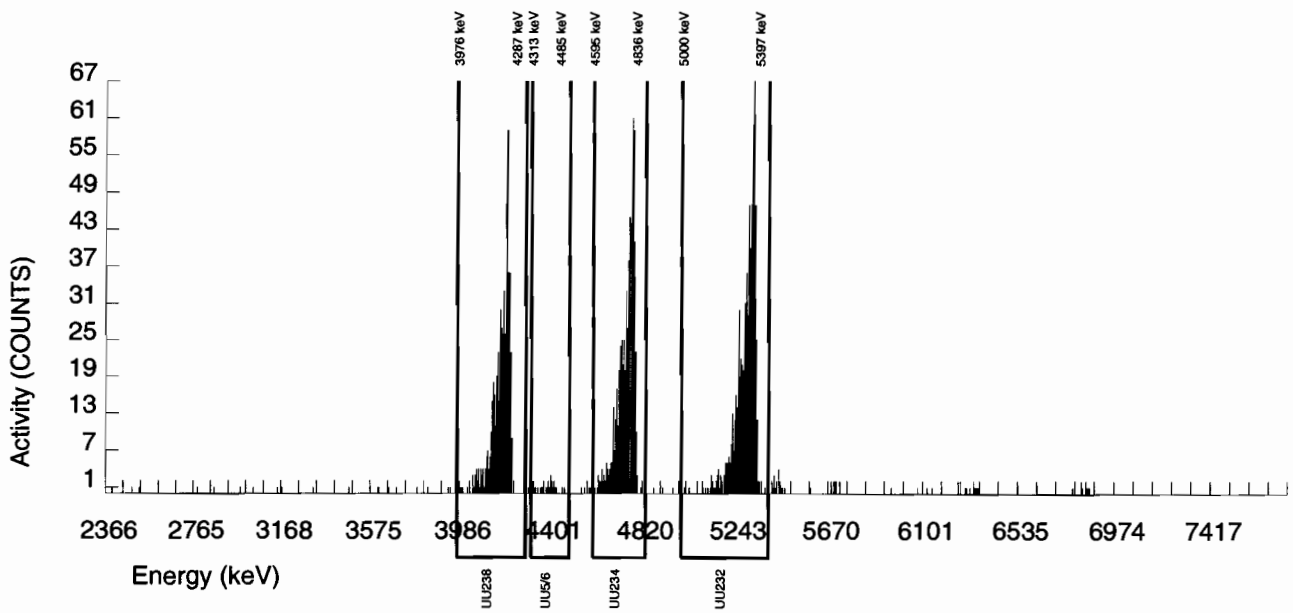
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5294.912	39.796	721.000	714.000	7.000	2.6458	100.0000	3.98E+00	3.36E-01	3.43E-02	8.38E-02	1.51E-01
U-3/4	4763.020	4750.053	38.109	630.000	626.277	3.000	5.4790	100.0000	3.49E+00	2.98E-01	7.11E-02	1.57E-01	1.40E-01
U-235	4391.000	4392.119	92.913	27.000	26.000	1.000	2.4127	80.90000	1.79E-01	3.89E-02	3.87E-02	9.61E-02	3.65E-02
U-238	4184.730	4179.478	42.168	541.000	539.000	2.000	3.6781	100.0000	3.01E+00	2.61E-01	4.77E-02	1.11E-01	1.30E-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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 009	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0248521005_UU	DETECTOR S/N : 72528	BKG FILE : B009.CNF;1116
SAMPLE QTY : 0.502 G	AVERAGE %EFFICIENCY : 34.3260	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 27-MAR-2010 13:01:47	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 59999.99	EFF FILE : W009.CNF;309
% YIELD : 72.202		CAL DATE : 4-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 : 4.5027E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 3.2510E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

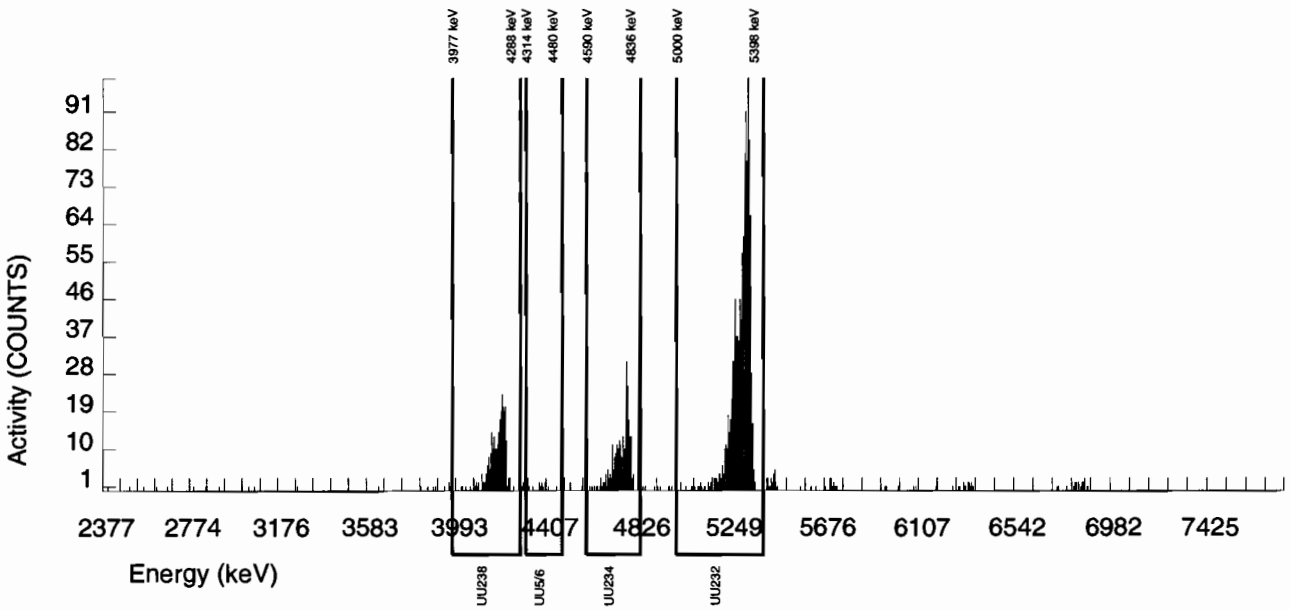
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5301.715	39.068	1125.000	1115.000	10.000	3.1623	100.0000	4.04E+00	3.15E-01	2.66E-02	6.31E-02	1.22E-01
U-3/4	4763.020	4754.892	15.439	260.000	258.870	0.000	5.4790	100.0000	9.37E-01	8.91E-02	4.61E-02	1.02E-01	5.83E-02
U-235	4391.000	4389.467	31.994	14.000	13.000	1.000	2.4127	80.90000	5.82E-02	1.78E-02	2.51E-02	6.24E-02	1.73E-02
U-238	4184.730	4187.282	66.982	270.000	269.000	1.000	3.6781	100.0000	9.74E-01	9.20E-02	3.10E-02	7.18E-02	5.96E-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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 010	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0248521006_UU	DETECTOR S/N : 72529	BKG FILE : B010.CNF;1134
SAMPLE QTY : 0.508 G	AVERAGE %EFFICIENCY : 31.3468	BKG DATE : 21-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 27-MAR-2010 13:01:47	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 59999.99	EFF FILE : W010.CNF;337
% YIELD : 74.597		CAL DATE : 4-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 : 4.5027E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 3.3589E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

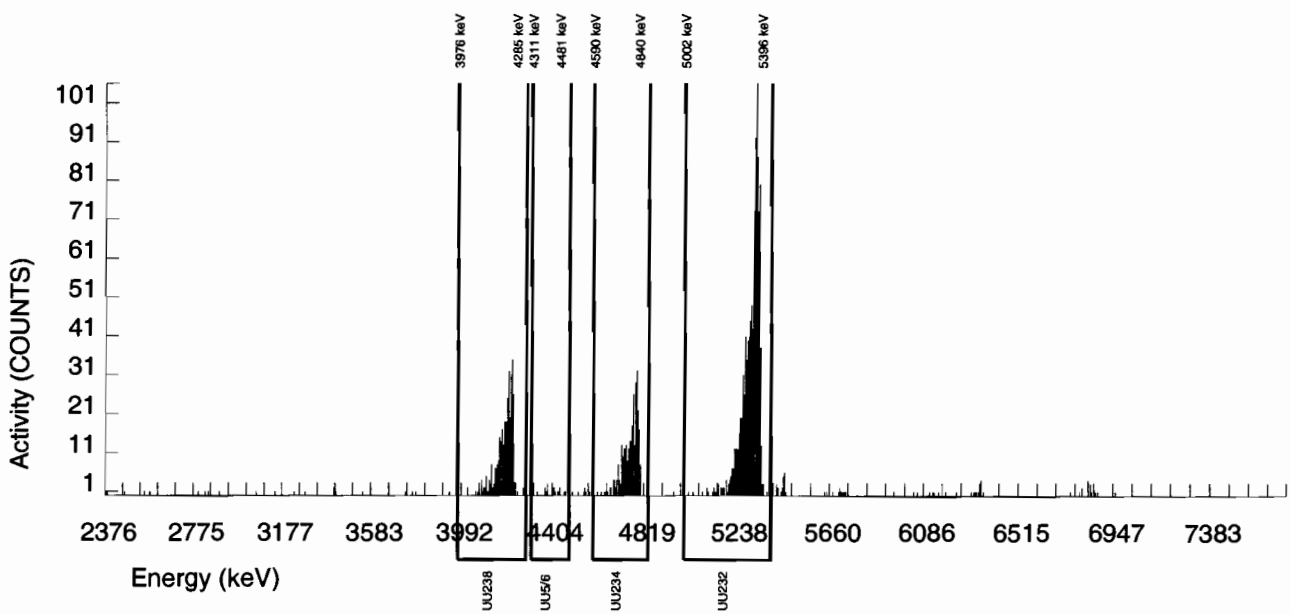
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5308.560	29.641	1060.000	1052.000	8.000	2.8284	100.0000	3.99E+00	3.14E-01	2.50E-02	6.02E-02	1.24E-01
U-3/4	4763.020	4762.159	32.400	315.000	310.934	3.000	5.4790	100.0000	1.18E+00	1.09E-01	4.83E-02	1.07E-01	6.75E-02
U-235	4391.000	4408.632	66.963	19.000	18.000	1.000	2.4127	80.90000	8.44E-02	2.18E-02	2.63E-02	6.53E-02	2.10E-02
U-238	4184.730	4192.909	43.307	373.000	371.000	2.000	3.6781	100.0000	1.41E+00	1.25E-01	3.24E-02	7.52E-02	7.34E-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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 126	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0248521007_UU	DETECTOR S/N : 75548	BKG FILE : B126.CNF;464
SAMPLE QTY : 0.503 G	AVERAGE %EFFICIENCY : 26.6612	BKG DATE : 28-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 29-MAR-2010 12:38:23	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W126.CNF;136
% YIELD : 51.193		CAL DATE : 18-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1283-H	ID : 0244-A	ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5027E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 2.3051E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

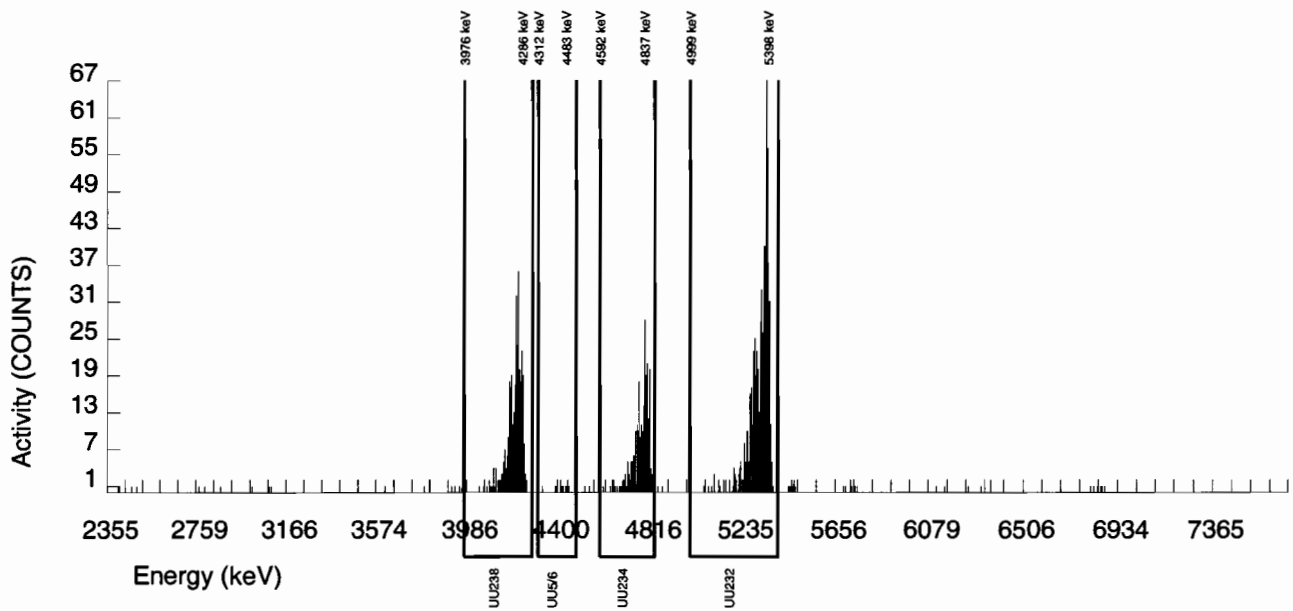
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5319.265	24.471	619.000	614.000	5.000	2.2361	100.0000	4.03E+00	3.51E-01	3.41E-02	8.60E-02	1.64E-01
U-3/4	4763.020	4777.372	49.647	254.000	253.378	0.000	5.4790	100.0000	1.66E+00	1.65E-01	8.36E-02	1.85E-01	1.04E-01
U-235	4391.000	4407.611	37.598	15.000	14.000	1.000	2.4127	80.90000	1.14E-01	3.36E-02	4.55E-02	1.13E-01	3.24E-02
U-238	4184.730	4208.112	53.209	343.000	343.000	0.000	3.6781	100.0000	2.25E+00	2.11E-01	5.61E-02	1.30E-01	1.22E-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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 127	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0248521008_UU	DETECTOR S/N : 78770	BKG FILE : B127.CNF;468
SAMPLE QTY : 0.506 G	AVERAGE %EFFICIENCY : 26.3126	BKG DATE : 28-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 29-MAR-2010 12:38:26	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W127.CNF;127
% YIELD : 64.205		CAL DATE : 18-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1283-H	ID : 0244-A	ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5027E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 2.8910E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

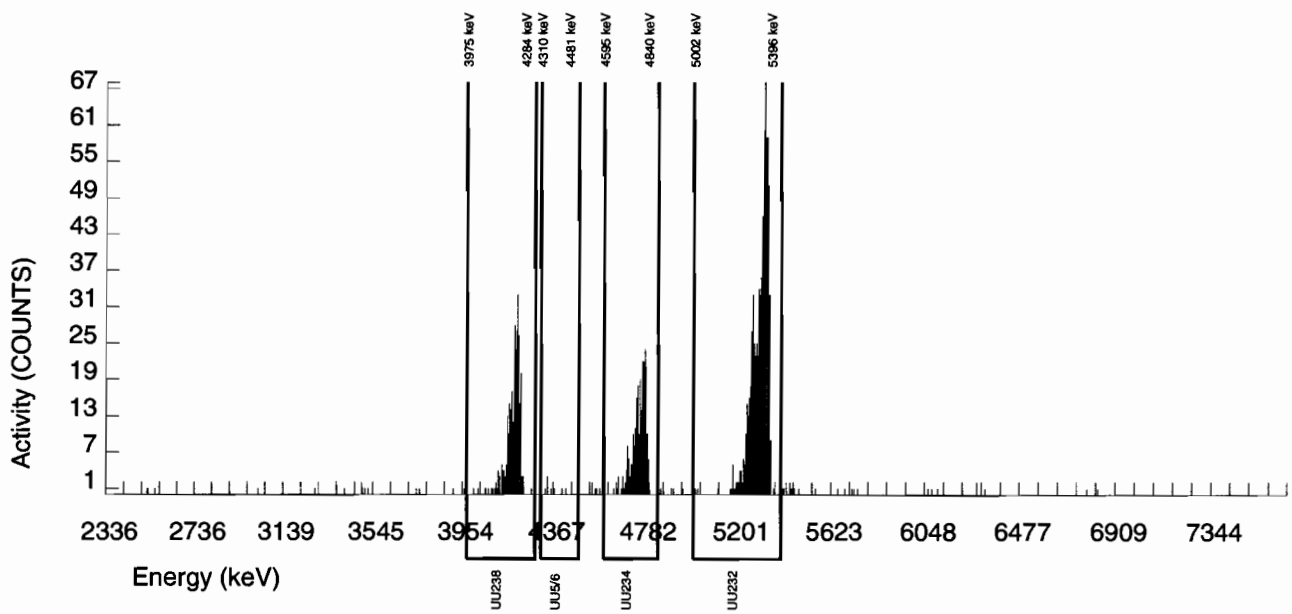
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5303.813	37.808	761.000	760.000	1.000	1.0000	100.0000	4.01E+00	3.33E-01	1.23E-02	3.88E-02	1.46E-01
U-3/4	4763.020	4758.741	47.519	258.000	257.230	0.000	5.4790	100.0000	1.36E+00	1.32E-01	6.72E-02	1.49E-01	8.45E-02
U-235	4391.000	4369.125	4.974	8.000	8.000	0.000	2.4127	80.90000	5.21E-02	1.88E-02	3.66E-02	9.08E-02	1.84E-02
U-238	4184.730	4191.375	41.639	300.000	299.000	1.000	3.6781	100.0000	1.58E+00	1.49E-01	4.51E-02	1.04E-01	9.14E-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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 130	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0248521009_UU	DETECTOR S/N : 76228	BKG FILE : B130.CNF;463
SAMPLE QTY : 0.514 G	AVERAGE %EFFICIENCY : 25.8660	BKG DATE : 28-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 29-MAR-2010 12:38:35	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W130.CNF;134
% YIELD : 60.329		CAL DATE : 18-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1283-H	ID : 0244-A	ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5027E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 2.7164E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

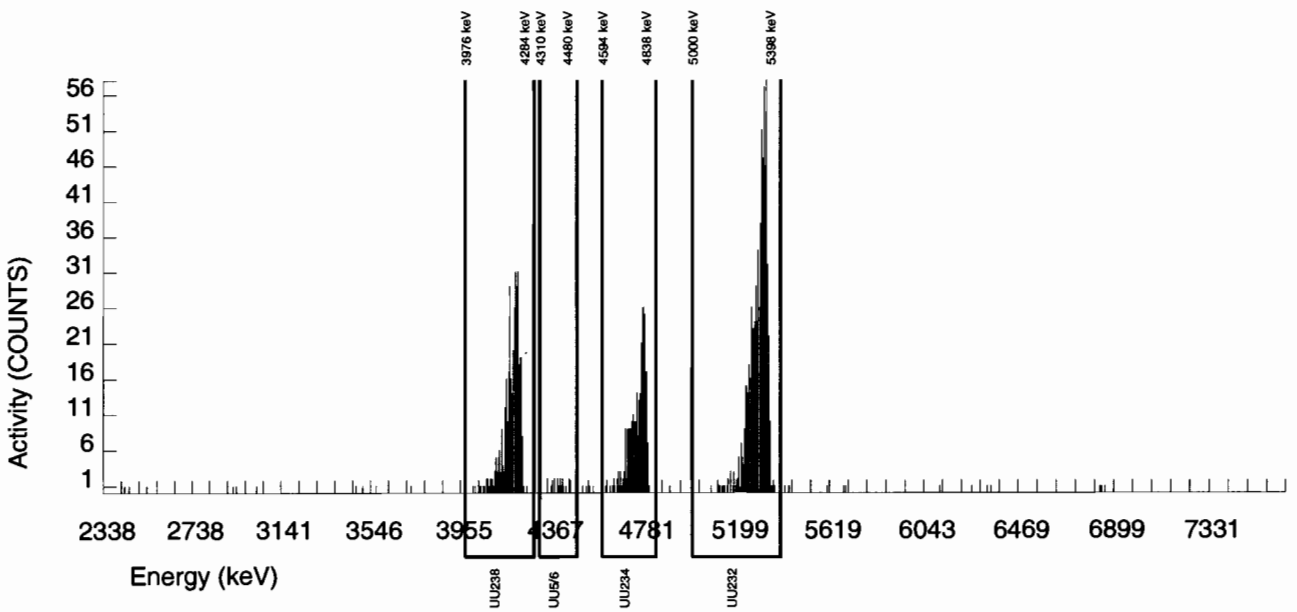
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5302.539	43.477	703.000	702.000	1.000	1.0000	100.0000	3.95E+00	3.33E-01	1.31E-02	4.13E-02	1.49E-01
U-3/4	4763.020	4758.334	46.748	294.000	293.289	0.000	5.4790	100.0000	1.65E+00	1.57E-01	7.16E-02	1.58E-01	9.62E-02
U-235	4391.000	4403.136	99.540	17.000	16.000	1.000	2.4127	80.90000	1.11E-01	3.06E-02	3.90E-02	9.67E-02	2.95E-02
U-238	4184.730	4188.163	66.008	375.000	375.000	0.000	3.6781	100.0000	2.11E+00	1.92E-01	4.81E-02	1.11E-01	1.09E-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



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effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 131	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0248521010_UU	DETECTOR S/N : 80008	BKG FILE : B131.CNF;461
SAMPLE QTY : 0.505 G	AVERAGE %EFFICIENCY : 25.4483	BKG DATE : 28-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 29-MAR-2010 12:38:39	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W131.CNF;136
% YIELD : 65.600		CAL DATE : 18-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1283-H	ID : 0244-A	ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.5027E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 2.9538E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

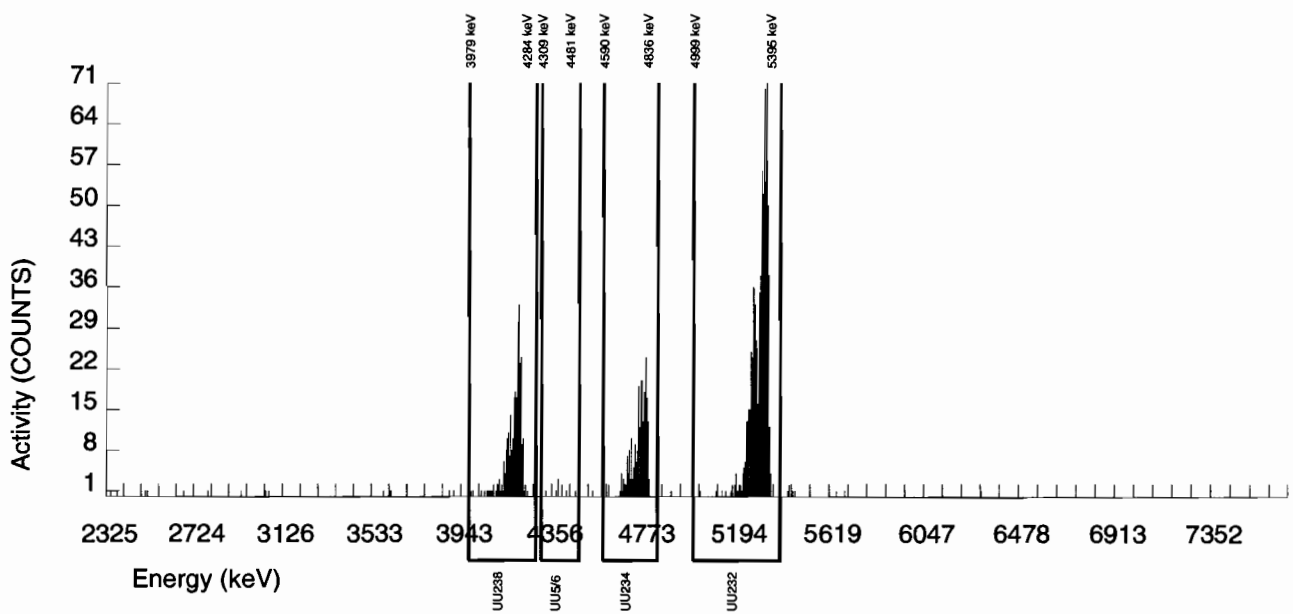
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5306.199	65.210	755.000	751.000	4.000	2.0000	100.0000	4.02E+00	3.35E-01	2.49E-02	6.42E-02	1.47E-01
U-3/4	4763.020	4759.393	43.369	237.000	236.239	0.000	5.4790	100.0000	1.26E+00	1.25E-01	6.81E-02	1.51E-01	8.21E-02
U-235	4391.000	4401.199	18.618	9.000	9.000	0.000	2.4127	80.90000	5.94E-02	2.03E-02	3.71E-02	9.20E-02	1.98E-02
U-238	4184.730	4188.100	32.380	289.000	289.000	0.000	3.6781	100.0000	1.54E+00	1.47E-01	4.57E-02	1.06E-01	9.08E-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



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effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 121	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0248521011_UU	DETECTOR S/N : 75545	BKG FILE : B121.CNF;459
SAMPLE QTY : 0.503 G	AVERAGE %EFFICIENCY : 25.7929	BKG DATE : 28-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 29-MAR-2010 12:38:09	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W121.CNF;121
% YIELD : 77.220		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 : 4.5027E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 3.4770E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

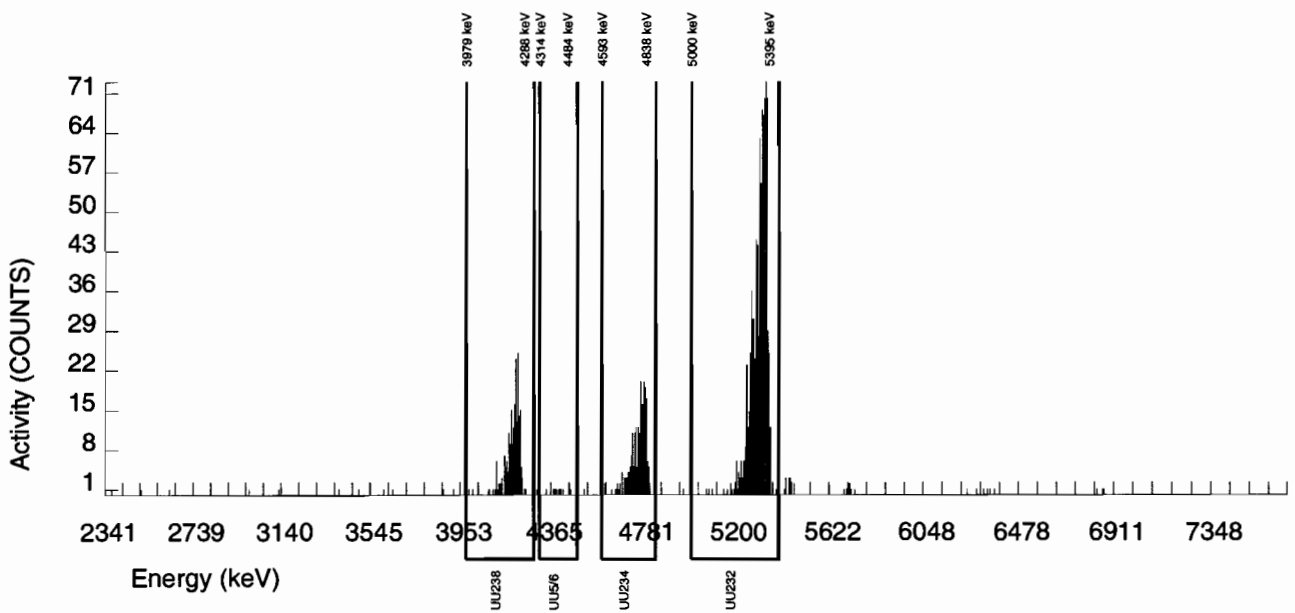
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5312.013	50.606	902.000	896.000	6.000	2.4495	100.0000	4.03E+00	3.26E-01	2.56E-02	6.34E-02	1.36E-01
U-3/4	4763.020	4761.687	63.594	235.000	233.092	1.000	5.4790	100.0000	1.05E+00	1.03E-01	5.73E-02	1.27E-01	6.89E-02
U-235	4391.000	4395.347	133.670	11.000	11.000	0.000	2.4127	80.90000	6.11E-02	1.90E-02	3.12E-02	7.75E-02	1.84E-02
U-238	4184.730	4195.960	42.903	217.000	216.000	1.000	3.6781	100.0000	9.71E-01	9.74E-02	3.85E-02	8.91E-02	6.64E-02

NOTES:

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

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

* Corrections made to the following net area due to tracer impurity:
U-3/4



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effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 122	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S0248526001_UU	DETECTOR S/N : 75546	BKG FILE : B122.CNF;461
SAMPLE QTY : 0.505 G	AVERAGE %EFFICIENCY : 26.3997	BKG DATE : 28-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 29-MAR-2010 12:38:11	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W122.CNF;124
% YIELD : 76.287		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 : 4.5027E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 3.4350E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

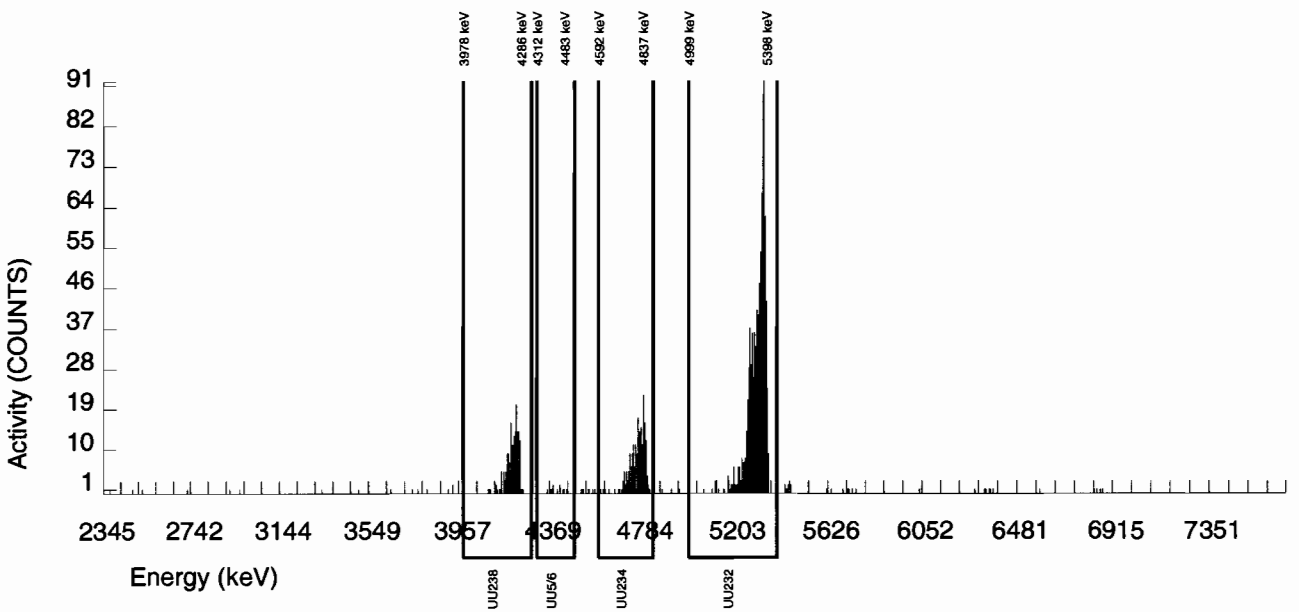
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5314.536	28.294	909.000	906.000	3.000	1.7321	100.0000	4.02E+00	3.23E-01	1.78E-02	4.77E-02	1.34E-01
U-3/4	4763.020	4769.516	38.874	220.000	217.082	2.000	5.4790	100.0000	9.61E-01	9.64E-02	5.65E-02	1.25E-01	6.59E-02
U-235	4391.000	4400.077	36.976	12.000	12.000	0.000	2.4127	80.90000	6.57E-02	1.96E-02	3.07E-02	7.63E-02	1.90E-02
U-238	4184.730	4204.772	43.897	183.000	183.000	0.000	3.6781	100.0000	8.11E-01	8.44E-02	3.79E-02	8.78E-02	5.99E-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



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GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 123	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S1202071667_UU	DETECTOR S/N : 45-142V3	BKG FILE : B123.CNF;459
SAMPLE QTY : 1.000 G	AVERAGE %EFFICIENCY : 27.2378	BKG DATE : 28-MAR-2010
SAMPLE DATE : 22-MAR-2010 00:00:00	COUNT DATE : 29-MAR-2010 12:38:15	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W123.CNF;120
% YIELD : 91.649		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 : 4.4996E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 4.1238E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

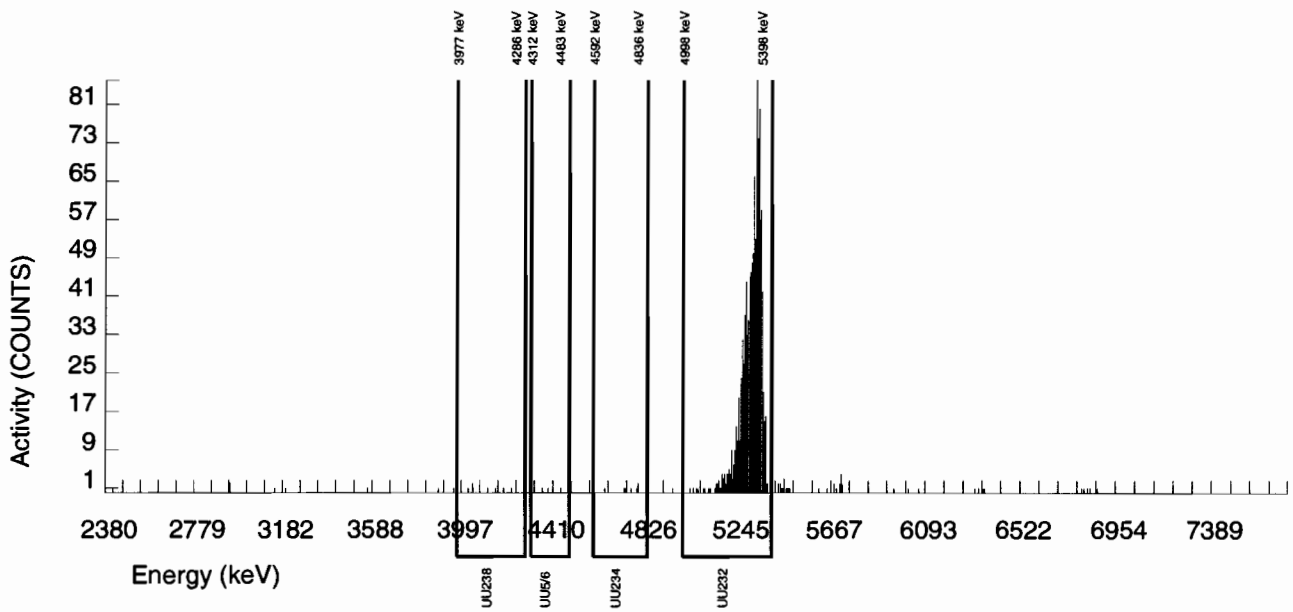
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5311.578	69.448	1127.000	1123.000	4.000	2.0000	100.0000	2.03E+00	1.57E-01	8.40E-03	2.17E-02	6.07E-02
U-3/4	4763.020	4755.920	7.306	7.000	4.862	1.000	5.4790	100.0000	8.77E-03	4.77E-03	2.30E-02	5.09E-02	4.73E-03
U-235	4391.000	4405.786	0.000	6.000	4.000	2.000	2.4127	80.90000	8.92E-03	6.34E-03	1.25E-02	3.11E-02	6.31E-03
U-238	4184.730	4102.917	4.975	8.000	7.000	1.000	3.6781	100.0000	1.26E-02	5.49E-03	1.54E-02	3.58E-02	5.41E-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



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GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 124	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S1202071668_UU	DETECTOR S/N : 45-142V2	BKG FILE : B124.CNF;455
SAMPLE QTY : 0.516 G	AVERAGE %EFFICIENCY : 26.6674	BKG DATE : 28-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 29-MAR-2010 12:38:17	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W124.CNF;116
% YIELD : 79.855		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 : 4.5027E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 3.5956E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

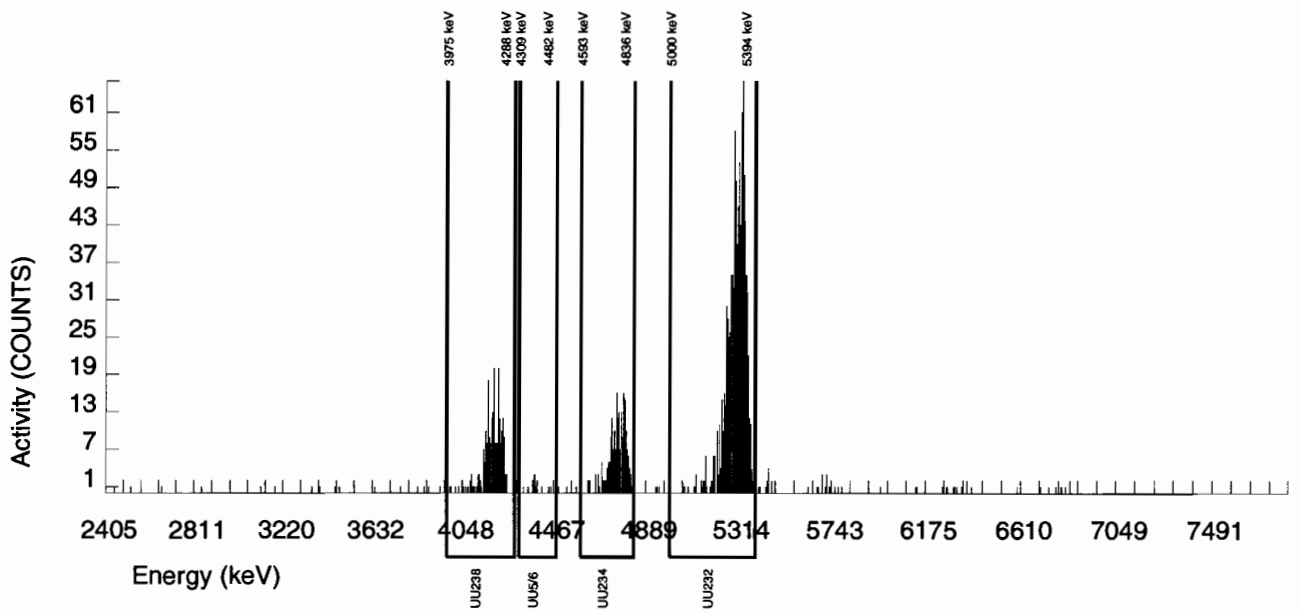
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5309.034	68.031	961.000	958.000	3.000	1.7321	100.0000	3.93E+00	3.13E-01	1.65E-02	4.41E-02	1.27E-01
U-3/4	4763.020	4762.239	69.940	219.000	218.029	0.000	5.4790	100.0000	8.94E-01	8.89E-02	5.23E-02	1.16E-01	6.05E-02
U-235	4391.000	4392.442	22.414	16.000	14.000	2.000	2.4127	80.90000	7.09E-02	2.21E-02	2.84E-02	7.06E-02	2.15E-02
U-238	4184.730	4191.114	72.892	236.000	236.000	0.000	3.6781	100.0000	9.67E-01	9.45E-02	3.51E-02	8.13E-02	6.30E-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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 965496	CHAMBER : 125	LIB FILE : ENV_ALPHA_UU
SAMPLE ID : S1202071669_UU	DETECTOR S/N : 75547	BKG FILE : B125.CNF;465
SAMPLE QTY : 0.101 G	AVERAGE %EFFICIENCY : 27.0077	BKG DATE : 28-MAR-2010
SAMPLE DATE : 22-MAR-2010 00:00:00	COUNT DATE : 29-MAR-2010 12:38:20	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W125.CNF;134
% YIELD : 79.425		CAL DATE : 18-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 1283-H	ID : 0244-A	ID : 0244-A
NUCLIDE : U232	NUCLIDE : U-238	NUCLIDE : U-238
NOMINAL : 4.4996E+00 dpm	NOMINAL : 5.7500E+00 pCi/G	NOMINAL : 5.7500E+00 pCi/G
RESULTS : 3.5738E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

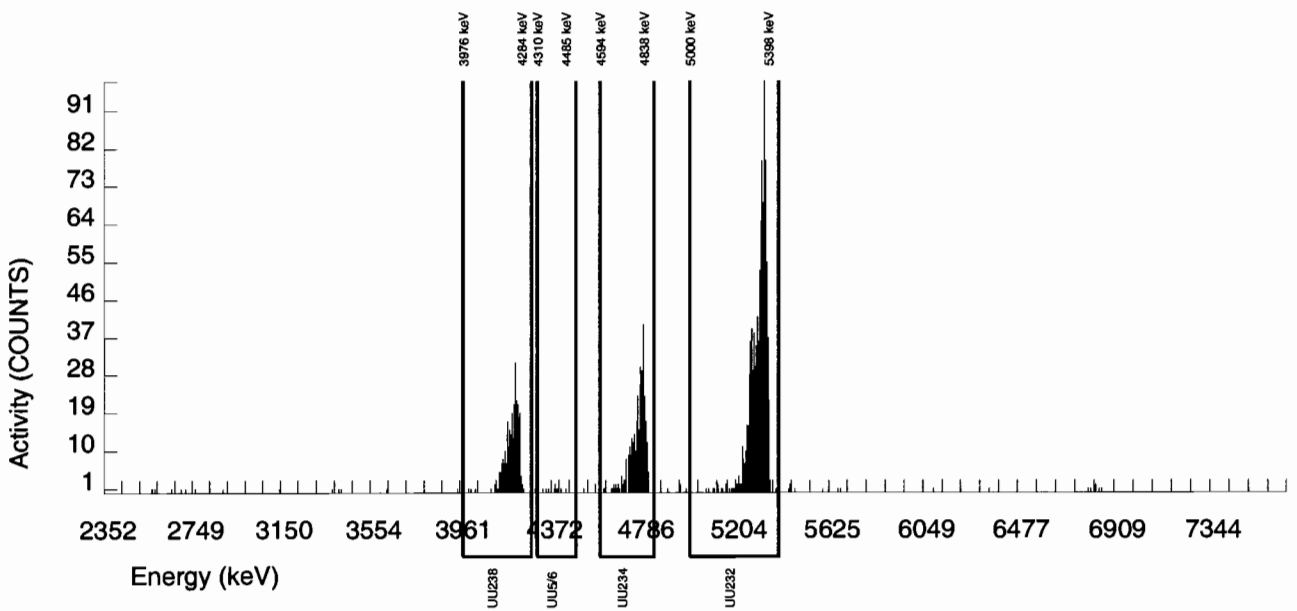
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5312.873	32.379	972.000	965.000	7.000	2.6458	100.0000	2.01E+01	1.72E+00	1.28E-01	3.12E-01	6.51E-01
U-3/4	4763.020	4769.329	34.451	352.000	349.022	2.000	5.4790	100.0000	7.26E+00	6.96E-01	2.65E-01	5.86E-01	3.91E-01
U-235	4391.000	4401.995	19.680	15.000	15.000	0.000	2.4127	80.90000	3.85E-01	1.04E-01	1.44E-01	3.58E-01	9.95E-02
U-238	4184.730	4199.055	56.237	289.000	289.000	0.000	3.6781	100.0000	6.01E+00	5.93E-01	1.78E-01	4.12E-01	3.53E-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# 969981 Product: Am Date: 3/31/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits. Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%. Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.	✓		Case narrative
Method blank is less than the RDL/ LLD. (If rad samples, < 5% of lowest activity)	✓		
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: JoeLMLI 3/31/10

Secondary Review Performed By: [signature] 3/31/10

4/1
LANL

P J

Am/Cm Que Sheet

29-MAR-10

Batch #: 969981 | Analyst: MXE1 | First Client Due Date: ~~31-MAR-10~~ 1-APR-10 JD 3/30/10 | Internal Due Date 25-MAR-10 | Comments:

Tracer(s): Am243/Cm244 | Tracer Code: 445-96-2-VV | Expiration Date: 03/9/11 | Vol: 0.1 JD 3/31/10

LCS Isotope(s): Am241/Cm244 | LCS Code(s): / JD 3/31/10 JD 3/31/10 | Expiration Date: / JD 3/31/10 JD 3/31/10 | Vol(s): / / JD 3/31/10

Spike Isotope(s): Am241/Cm244 | Spike Code(s): / / | Expiration Date: / / | Vol(s): / /

Prep Date: 3/29/10 | Initials: ME | Pipet ID: 16423109 | Balance ID: 50410272 | Witness: JAD 03/29/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l/l)	Am/Cm Det #
248515002-2	RE36-10-7524	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	1	1	1.259	228
248521011-2	RE36-10-8276	SAMPLE		.05 pCi/g	SOIL	LANL010	25-FEB-10	2	2	1.251	229
1202082742-1	MB for batch 969981	MB		UCF pCi/g to pCi/SOIL		QC ACCOUNT		3	3	1.00	231
1202082743-2	RE36-10-8276(248521011DUP)	DUP		.05 pCi/g	SOIL	QC ACCOUNT	25-FEB-10	4	4	1.252	232
1202082744-1	LCS for batch 969981	LCS		UCF pCi/g to pCi/SOIL		QC ACCOUNT		5	5	0.106	233

*SRM 0244-B EXP: 04/30/20

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

Solid Sample Dissolution by: LEACH or DIGESTION (Circle One)

Data Reviewed By: JoLMS 3/31/10

GEL Laboratories LLC, Radiochemistry Division

Blank Correction Report

Batch ID 969981

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202082743	DUP	Americium-241	1.25 g	-0.00742	0.00576	0.0312	-.000236	pCi/g	YES
1202082744	LCS	Americium-241	0.106 g	27.9	2.02	0.188	-.00278302	pCi/g	NO
1202082742	MB	Americium-241	1.00 g	-0.000295	0.0021	0.0232	-.000295	pCi/g	NO
248515002	RE36-10-7524	Americium-241	1.26 g	0.00454	0.00234	0.0186	-.00023413	pCi/g	NO
248521011	RE36-10-8276	Americium-241	1.25 g	0.00427	0.00318	0.0178	-.000236	pCi/g	NO

Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 969981	CHAMBER : 229	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S0248521011_AM	DETECTOR S/N : 79422	BKG FILE : B229.CNF;93
SAMPLE QTY : 1.251 G	AVERAGE %EFFICIENCY : 38.4945	BKG DATE : 28-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 30-MAR-2010 14:31:17	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W229.CNF;33
% YIELD : 82.157		CAL DATE : 30-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 1.8693E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

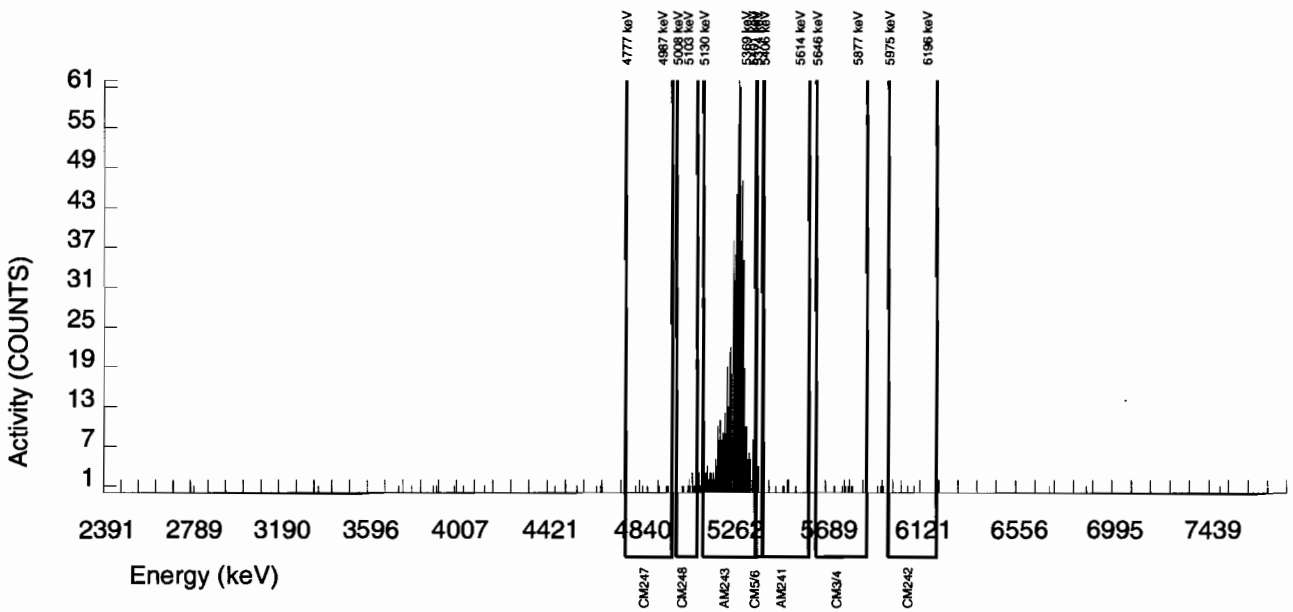
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5529.547	4.944	7.000	3.751	2.000	2.7707	99.94000	4.27E-03	3.18E-03	7.34E-03	1.78E-02	3.17E-03
AM243	5270.000	5282.052	47.002	719.000	718.000	1.000	1.0000	99.78000	8.19E-01	6.02E-02	2.65E-03	8.40E-03	3.06E-02
CM-242	6102.000	6022.245	24.719	6.000	5.000	1.000	4.0092	100.0000	6.58E-03	3.51E-03	1.06E-02	2.43E-02	3.48E-03
CM-3/4	5795.020	5783.871	7.261	10.000	10.000	0.000	4.8510	100.0000	1.14E-02	3.68E-03	1.28E-02	2.88E-02	3.61E-03
CM-5/6	5386.000	5382.974	17.303	9.000	9.000	0.000	6.1294	86.09000	1.19E-02	4.04E-03	1.89E-02	4.13E-02	3.97E-03
CM-247	4946.000	4918.614	143.371	8.000	8.000	0.000	6.3427	79.30000	1.15E-02	4.13E-03	2.12E-02	4.63E-02	4.06E-03
CM-248	5078.600	5068.269	20.919	14.000	14.000	0.000	11.0244	91.00000	1.75E-02	4.81E-03	3.21E-02	6.76E-02	4.68E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 969981	CHAMBER : 231	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S1202082742_AM	DETECTOR S/N : 79424	BKG FILE : B231.CNF;93
SAMPLE QTY : 1.000 G	AVERAGE %EFFICIENCY : 40.5669	BKG DATE : 28-MAR-2010
SAMPLE DATE : 29-MAR-2010 00:00:00	COUNT DATE : 30-MAR-2010 14:31:22	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W231.CNF;33
% YIELD : 74.811		CAL DATE : 30-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3147E+01 pCi/G	NOMINAL : 3.3147E+01 pCi/G
RESULTS : 1.7022E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

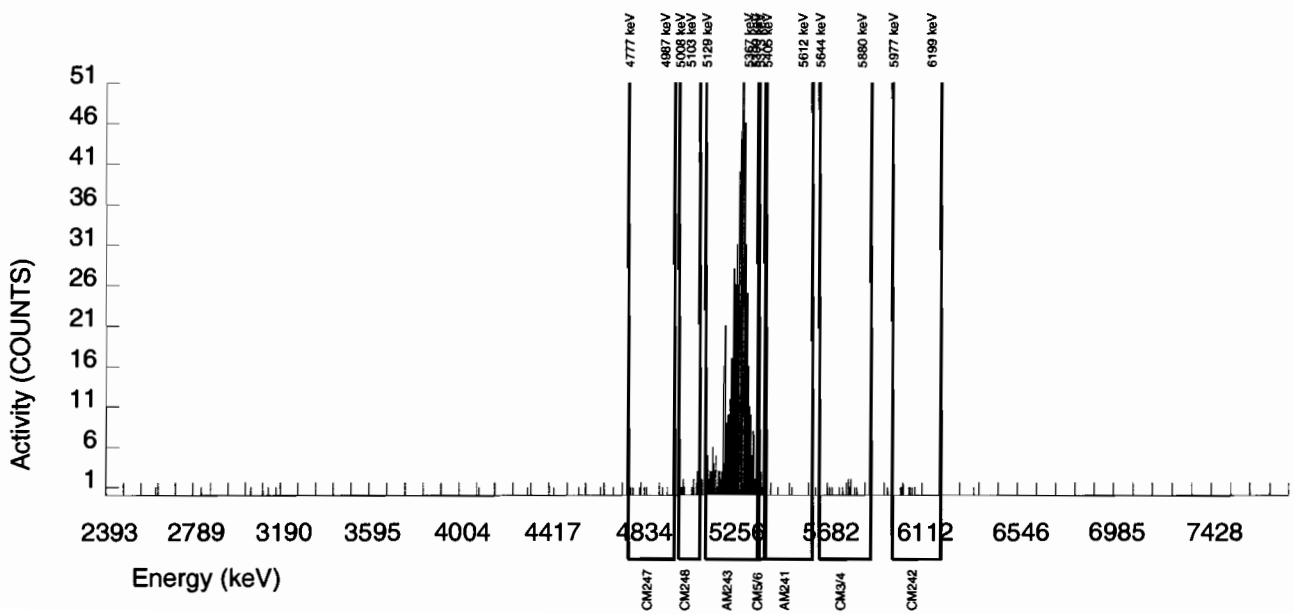
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5495.063	64.051	2.000	-0.199	1.000	2.7707	99.94000	-2.95E-04	2.10E-03	9.57E-03	2.32E-02	2.10E-03
AM243	5270.000	5281.111	58.878	695.000	689.000	6.000	2.4495	99.78000	1.02E+00	7.65E-02	8.48E-03	2.10E-02	3.94E-02
CM-242	6102.000	6051.134	63.435	7.000	7.000	0.000	4.0092	100.0000	1.05E-02	4.02E-03	1.38E-02	3.17E-02	3.96E-03
CM-3/4	5795.020	5771.027	14.678	11.000	10.000	1.000	4.8510	100.0000	1.48E-02	5.23E-03	1.68E-02	3.75E-02	5.14E-03
CM-5/6	5386.000	5380.502	7.134	15.000	15.000	0.000	6.1294	86.09000	2.59E-02	6.88E-03	2.46E-02	5.38E-02	6.68E-03
CM-247	4946.000	4864.291	162.592	7.000	2.000	5.000	6.3427	79.30000	3.74E-03	6.49E-03	2.76E-02	6.03E-02	6.48E-03
CM-248	5078.600	5063.547	0.000	17.000	17.000	0.000	11.0244	91.00000	2.77E-02	6.95E-03	4.18E-02	8.81E-02	6.73E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 969981	CHAMBER : 232	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S1202082743_AM	DETECTOR S/N : 79425	BKG FILE : B232.CNF;95
SAMPLE QTY : 1.252 G	AVERAGE %EFFICIENCY : 38.8663	BKG DATE : 28-MAR-2010
SAMPLE DATE : 25-FEB-2010 00:00:00	COUNT DATE : 30-MAR-2010 14:31:25	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W232.CNF;33
% YIELD : 46.352		CAL DATE : 30-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3152E+01 pCi/G	NOMINAL : 3.3152E+01 pCi/G
RESULTS : 1.0547E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

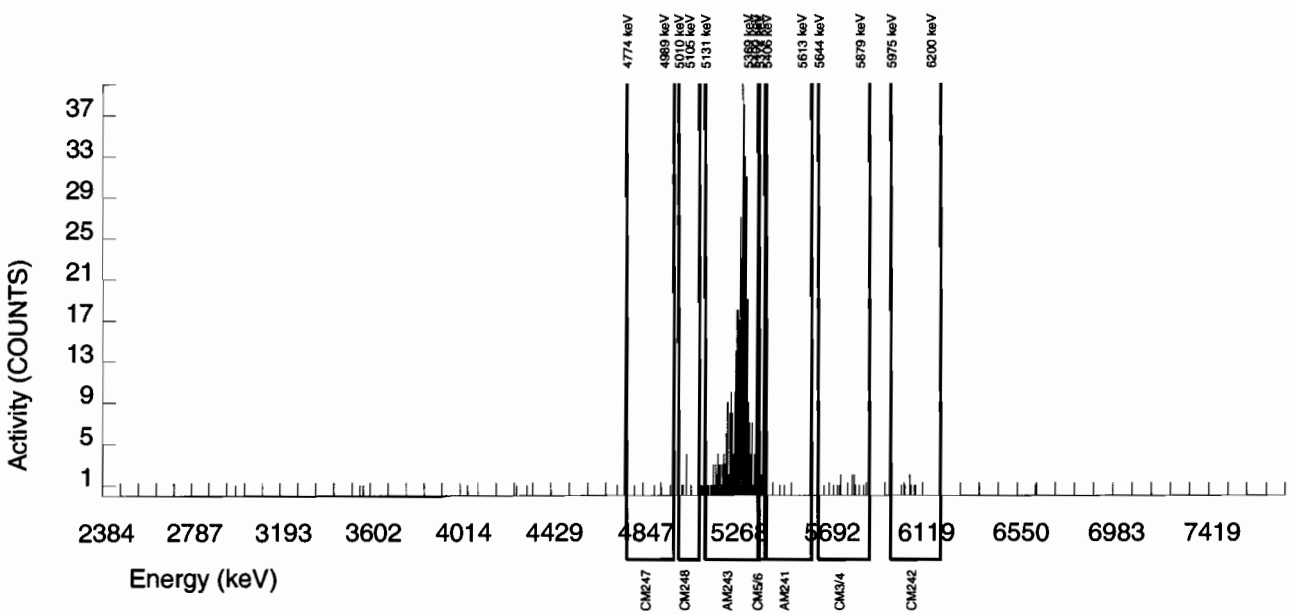
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5460.415	85.277	3.000	-3.712	6.000	2.7707	99.94000	-7.42E-03	5.76E-03	1.29E-02	3.12E-02	5.75E-03
AM243	5270.000	5289.688	32.510	410.000	409.000	1.000	1.0000	99.78000	8.19E-01	7.10E-02	4.66E-03	1.47E-02	4.06E-02
CM-242	6102.000	6055.139	7.368	8.000	8.000	0.000	4.0092	100.0000	1.85E-02	6.66E-03	1.86E-02	4.27E-02	6.53E-03
CM-3/4	5795.020	5779.097	70.019	13.000	12.000	1.000	4.8510	100.0000	2.41E-02	7.69E-03	2.25E-02	5.05E-02	7.50E-03
CM-5/6	5386.000	5386.133	0.000	13.000	13.000	0.000	6.1294	86.09000	3.02E-02	8.64E-03	3.31E-02	7.24E-02	8.36E-03
CM-247	4946.000	4899.589	160.521	3.000	2.000	1.000	6.3427	79.30000	5.04E-03	5.05E-03	3.72E-02	8.11E-02	5.04E-03
CM-248	5078.600	5052.595	5.016	9.000	9.000	0.000	11.0244	91.00000	1.98E-02	6.73E-03	5.63E-02	1.19E-01	6.58E-03

NOTES:

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

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

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



Alpha Spectroscopy Software Version 2.1
effective date: 01-Feb-2010

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 969981	CHAMBER : 233	LIB FILE : ENV_ALPHA_AM
SAMPLE ID : S1202082744_AM	DETECTOR S/N : 79426	BKG FILE : B233.CNF;94
SAMPLE QTY : 0.106 G	AVERAGE %EFFICIENCY : 39.1441	BKG DATE : 28-MAR-2010
SAMPLE DATE : 29-MAR-2010 00:00:00	COUNT DATE : 30-MAR-2010 14:31:27	BKG LIVE TIME(SEC) : 60000.00
ANALYST : MXE1	ELAPSED LIVE TIME(SEC) : 60000.00	EFF FILE : W233.CNF;34
% YIELD : 90.133		CAL DATE : 30-MAR-2010

TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-VV	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.2753E+00 dpm	NOMINAL : 3.3147E+01 pCi/G	NOMINAL : 3.3147E+01 pCi/G
RESULTS : 2.0508E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

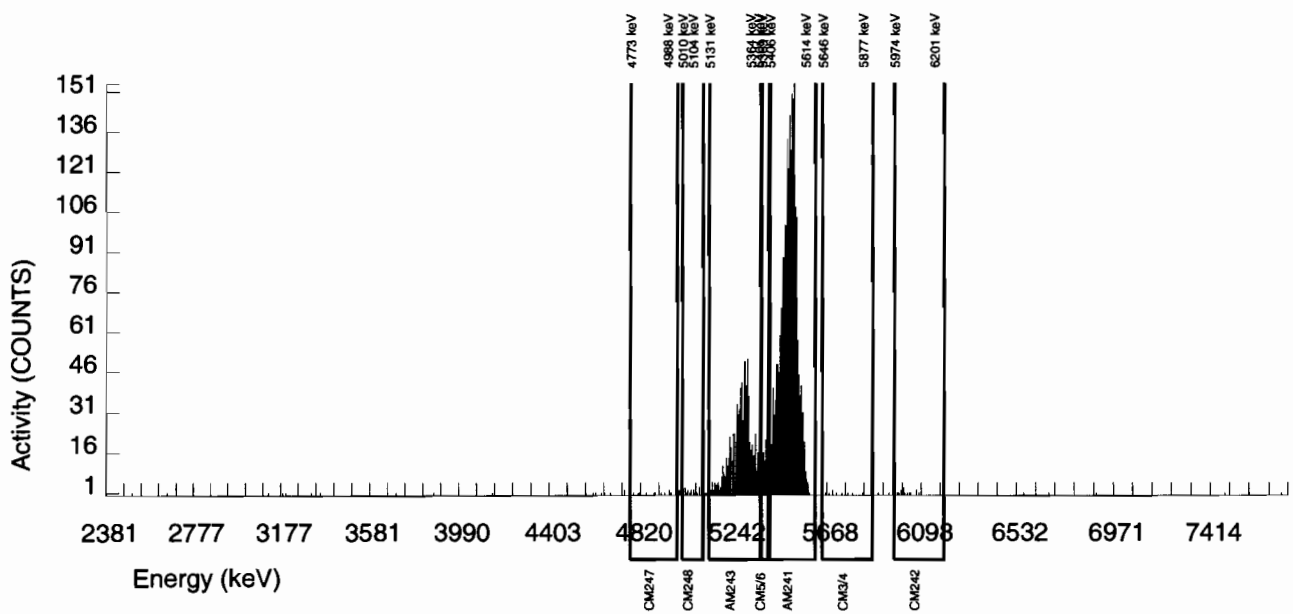
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5497.830	63.901	2321.000	2318.606	1.000	2.7707	99.94000	2.79E+01	2.02E+00	7.77E-02	1.88E-01	5.81E-01
AM243	5270.000	5280.461	55.720	803.000	801.000	2.000	1.4142	99.78000	9.67E+00	7.52E-01	3.97E-02	1.12E-01	3.42E-01
CM-242	6102.000	6035.920	66.423	17.000	17.000	0.000	4.0092	100.0000	2.06E-01	5.21E-02	1.12E-01	2.57E-01	5.01E-02
CM-3/4	5795.020	5734.368	4.920	9.000	9.000	0.000	4.8510	100.0000	1.08E-01	3.69E-02	1.36E-01	3.04E-01	3.61E-02
CM-5/6	5386.000	5386.426	0.000	113.000	113.000	0.000	6.1294	86.09000	1.58E+00	1.85E-01	1.99E-01	4.37E-01	1.49E-01
CM-247	4946.000	4915.207	0.000	15.000	15.000	0.000	6.3427	79.30000	2.28E-01	6.09E-02	2.24E-01	4.89E-01	5.88E-02
CM-248	5078.600	5055.596	73.803	23.000	23.000	0.000	11.0244	91.00000	3.04E-01	6.69E-02	3.39E-01	7.15E-01	6.35E-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# 961099 Product: YS Date: 3/23/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to100 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%. Or meets the client's contract acceptance criteria.			NA
Method blank is less than the RDL/ LLD. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			NA
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms. All line outs initialed and dated. No transcription errors are apparent.	✓		
Aux data is correct.			NA
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			NA
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			NA
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			NA
Aliquot Correction completed if required.			NA
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: [signature] 3/23/10

Secondary Review Performed By: [signature] 3/25/10

LANL
3/31/10

Gamma Spec Que Sheet

I.G.-3/13/10

03/04/2010

Batch #:961099 **Analyst:** MXR1 **First Client DueDate** 03/31/2010 **Internal Due Date:** 03/20/2010

Gamma Spike Isotope: Mixed Gamma **Spike Code:** Na **Expiration Date:** Na **Vol:** Na **Nominal Concentration:** Na

Gamma LCS Isotope: Mixed Gamma **LCS Code:** 1032-A **Expiration Date:** 12/2/10 **Vol:** 1.0mL **Nominal Concentration:** Am241-15.9 Cs137-5.551 Co60-4.337

Initials: MS **Prep Date:** 3/6/10 **Library:** SOLID **Witness:** Na

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date		Geometry	Wet/Dry Aliquot (1/G/F)	Detector	Sealing Date/Time (if Applicable)
248515001-1	RE36-10-7501	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U	can	115.40	1	3/6/10
248515002-1	RE36-10-7524	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		105.04	5	
248515003-1	RE36-10-7525	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		101.89	17	
248517001-1	RE36-10-8292	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		118.57	18	
248521001-1	RE36-10-8288	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		116.74	19	
248521002-1	RE36-10-8279	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		93.79	22	
248521003-1	RE36-10-8277	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		127.78	23	
248521004-1	RE36-10-8280	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		102.78	5	
248521005-1	RE36-10-8278	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		138.24	20	
248521006-1	RE36-10-8274	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		126.55	22	
248521007-1	RE36-10-8291	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		94.55	23	
248521008-1	RE36-10-8287	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		125.43	6	
248521009-1	RE36-10-8273	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		106.26	21	
248521010-1	RE36-10-8275	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		118.51	5	
248521011-1	RE36-10-8276	SAMPLE		LANL010	SOIL	25-FEB-10 12:00:00	U		127.14	6	
248526001-1	RE36-10-8466	SAMPLE		LANL010	SOIL	25 ~~26~~-FEB-10 12:00:00 (MS 3/23/10)	U		133.66	25	
1202061469-1	MB	MB		QC ACCOUNT	SOIL	3/6/10	U		138.24	11	
1202061470-1	DUP RE36-10-8466(248526001)	DUP		QC ACCOUNT	SOIL	25 ~~26~~-FEB-10 12:00:00 (MS 3/23/10)	U		133.66	12	
1202061471-1	LCS	LCS		QC ACCOUNT	SOIL	3/6/10	U		155.44	20	

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: [signature] 3/23/10

Daily Qr

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
961099	248515001	SAMPLE	19-MAR-10		Americium-241	-0.02975	0.3055	0.200
					Cerium-139	0.01085	0.06301	0.050
					Sodium-22	-0.01358	0.09443	0.080
961099	248515002	SAMPLE	19-MAR-10		Cerium-139	-0.01952	0.0634	0.050
					Cesium-134	0.06145	0.1279	0.100
					Europium-152	-0.04487	0.2164	0.200
					Sodium-22	-0.02552	0.09177	0.080
					Tin-113	-0.03998	0.1029	0.100
961099	248515003	SAMPLE	19-MAR-10		Cerium-139	0.0067	0.05995	0.050
					Cesium-134	0.0363	0.1263	0.100
					Cobalt-60	-0.0124	0.1051	0.100
					Europium-152	-0.02114	0.2054	0.200
					Sodium-22	0.04317	0.1158	0.080
961099	248517001	SAMPLE	19-MAR-10		Americium-241	0.01443	0.2962	0.200
961099	248521001	SAMPLE	19-MAR-10		Americium-241	-0.2299	0.2915	0.200
					Cerium-139	0.00736	0.06227	0.050
					Sodium-22	0.0247	0.08407	0.080
					Thorium-234	1.651	2.73	2.00
961099	248521002	SAMPLE	19-MAR-10		Americium-241	0.00107	0.2611	0.200
					Cerium-139	-0.0065	0.05951	0.050
961099	248521003	SAMPLE	19-MAR-10		Americium-241	-0.2094	0.3639	0.200
					Cerium-139	-0.02197	0.05769	0.050
					Sodium-22	0.00419	0.08545	0.080
					Thorium-234	0.4782	3.194	2.00
961099	248521004	SAMPLE	19-MAR-10					
961099	248521005	SAMPLE	19-MAR-10					
961099	248521006	SAMPLE	19-MAR-10					
961099	248521007	SAMPLE	19-MAR-10		Americium-241	0.1365	0.3233	0.200
					Cerium-139	0.00831	0.05244	0.050
961099	248521008	SAMPLE	19-MAR-10		Americium-241	0.06564	0.2296	0.200
961099	248521009	SAMPLE	19-MAR-10					
961099	248521010	SAMPLE	20-MAR-10		Cerium-139	-0.01255	0.06199	0.050
					Cesium-134	0.09313	0.1174	0.100
					Europium-152	-0.016	0.2019	0.200
					Tin-113	0.02304	0.1029	0.100
961099	248521011	SAMPLE	20-MAR-10		Americium-241	-0.03372	0.3132	0.200
					Cerium-139	-0.01403	0.05819	0.050
					Cesium-134	0.073	0.1055	0.100
					Sodium-22	-0.00052	0.08276	0.080
					Thorium-234	1.58	2.849	2.00
961099	248526001	SAMPLE	19-MAR-10		Sodium-22	-0.01771	0.08363	0.080
961099	1202061469	MB	20-MAR-10					
961099	1202061470	DUP	20-MAR-10		Americium-241	0.08004	0.2852	0.200

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
961099	1202061470	DUP	20-MAR-10		Cerium-139	-0.01147	0.05635	0.050
					Cesium-134	0.08606	0.101	0.100
					Sodium-22	0.01471	0.09368	0.080
					Thorium-234	1.87	2.387	2.00
961099	1202061471	LCS	20-MAR-10		Cerium-139	0.00887	0.07493	0.050
					Cesium-134	0.01997	0.148	0.100
					Europium-152	-0.01901	0.2823	0.200
					Mercury-203	0.05997	0.1118	0.100
					Ruthenium-106	-0.214	0.9365	0.800
					Thorium-234	-0.3045	2.669	2.00
					Tin-113	0.00634	0.1341	0.100

Gamma Review Report based on Result > MDA for Batch:961099

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248515001	25-FEB-10 12:00	19-MAR-10 20:40	22.4	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment
Actinium-228 ML	2.061	0.2267	pCi/g	0.2885	N	911.7	3	1.78	IDENTIFIED	9.248	☐	
Annihilation Rad.	0.2414	0.04889	pCi/g	0.05866	N	511.7	1	1.987	IDENTIFIED	19.81	☐	
Bismuth-211 INT	4.504	0.3398	pCi/g	0.3988	Y	352.3	2	1.257	IDENTIFIED	6.026	☑ UI	
Bismuth-212 HE	1.813	0.6057	pCi/g	1.511	N	0	9	0	FAIL_ABUND	0	☐	
Bismuth-214 ✓	1.317	0.1172	pCi/g	0.1379	0.200	609.9	2	1.543	IDENTIFIED	7.391	☐	
Cerium-143	14720	3961	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐	
Cesium-134 LA	0.134	0.04049	pCi/g	0.1158	0.100	0	9	0	FAIL_ABUND	0	☑ UI	Data rejected due to low abundance.
Gross Gamma	9.896	1.578	pCi/g	3.622	N		0				☐	
Iodine-133 HE	2.55E+05	1.14E+06	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐	
Iodine-135	7.11E+22	0	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐	
Lead-212 ✓	1.975	0.1233	pCi/g	0.1097	0.100	239.1	2	1.239	IDENTIFIED	3.618	☐	
Lead-214 ✓	1.634	0.1313	pCi/g	0.1474	0.100	352.3	2	1.257	IDENTIFIED	6.026	☐	
Potassium-40 ✓	31.34	1.736	pCi/g	0.7238	1.00	1461	1	2.073	IDENTIFIED	3.306	☐	
Promethium-149 HE	139.6	544.2	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐	
Radium-224 INT	4.826	0.8251	pCi/g	1.176	Y	242	1	1.708	IDENTIFIED	16.48	☑ UI	
Radium-226 ✓	1.317	0.1172	pCi/g	0.1379	Y	609.9	2	1.543	IDENTIFIED	7.391	☐	
Radium-228 ✓	2.061	0.2267	pCi/g	0.2885	0.500	911.7	3	1.78	IDENTIFIED	9.248	☐	
Sodium-24 HE	7.70E+08	1.27E+09	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐	
Strontium-85 LA	0.1743	0.03097	pCi/g	0.114	Y	0	9	0	NOT_IDENTI	0	☑ UI	Data rejected due to low abundance.
Technetium-99m	5.77E+24	0	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐	
Thallium-208 ✓	0.5484	0.05811	pCi/g	0.07603	0.080	583.7	1	1.388	IDENTIFIED	9.576	☐	
Thorium-228 ML	1.975	0.1233	pCi/g	0.1097	N	239.1	2	1.239	IDENTIFIED	3.618	☐	
Thorium-232 ML	2.061	0.2267	pCi/g	0.2885	N	911.7	3	1.78	IDENTIFIED	9.248	☐	
Thorium-234 ✓	3.632	1.54	pCi/g	2.652	2.00	62.67	2	2.648	IDENTIFIED	41.44	☐	
Total Uranium	10.721	4.58E-06	ug/g	3.9476	N		0				☐	
Uranium-238 HE	3.632	1.54	pCi/g	2.652	N	62.67	2	2.648	IDENTIFIED	41.44	☐	

*** = 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
248515002	25-FEB-10 12:00	19-MAR-10 20:40	22.4	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment
Actinium-228 ML	2.114	0.2232	pCi/g	0.3349	N	910.6	3	1.681	IDENTIFIED	8.432	☐	
Annihilation Rad. HE	0.1218	0.04388	pCi/g	0.0628	N	510.7	1	2.137	IDENTIFIED	35.88	☐	
Barium-137m	0.7043	0.06822	pCi/g	0.08525	N	661.1	2	1.447	IDENTIFIED	9.111	☐	
Bismuth-211 INT	5.269	0.374	pCi/g	0.475	Y	351.6	2	1.308	IDENTIFIED	5.896	☑ UI	
Bismuth-212 LA	2.793	0.5143	pCi/g	1.617	N	0	5	0	FAIL_ABUND	0	☐	
Bismuth-214 ✓	1.45	0.1367	pCi/g	0.1681	0.200	608.8	2	1.489	IDENTIFIED	8.432	☐	
Cadmium-109 INT	4.589	0.5401	pCi/g	1.17	Y	86.88	3	1.311	IDENTIFIED	11.13	☑ UI	
Cerium-143	61180	9713	pCi/g	0	N	0	5	0	SHORT_HLIF	0	☐	
Cesium-135 HE	0.6264	0.171	pCi/g	0.3377	N	269.5	1	1.113	IDENTIFIED	26.77	☐	
Cesium-137 ✓	0.7441	0.0721	pCi/g	0.09006	0.100	661.1	2	1.447	IDENTIFIED	9.111	☐	

Gross Gamma		11.04	1.401	pCi/g	4.956	N		0				☐	
Lead-210	✓	2.518	0.5574	pCi/g	1.047	N	46.16	1	1.123	IDENTIFIED	21.8	☐	
Lead-212	✓	1.982	0.1291	pCi/g	0.124	0.100	238.3	2	1.234	IDENTIFIED	3.623	☐	
Lead-214	✓	1.912	0.1456	pCi/g	0.1728	0.100	351.6	2	1.308	IDENTIFIED	5.896	☐	
Neptunium-237	MU	1.324	0.2087	pCi/g	0.336	N	86.88	3	1.311	IDENTIFIED	11.13	☐	
Niobium-95m	LA	1.298	0.1382	pCi/g	0.4309	N	0	5	0	NOT_IDENTI	0	☐	
Potassium-40	✓	27.67	1.345	pCi/g	0.7029	1.00	1460	1	2.054	IDENTIFIED	3.738	☐	
Radium-224	INT	5.202	0.8554	pCi/g	1.329	Y	241.4	1	1.846	IDENTIFIED	15.7	☑	UI
Radium-226	✓	1.45	0.1367	pCi/g	0.1681	Y	608.8	2	1.489	IDENTIFIED	8.432	☐	
Radium-228	✓	2.114	0.2232	pCi/g	0.3349	0.500	910.6	3	1.681	IDENTIFIED	8.432	☐	
Silver-110m	HE	0.17	0.03451	pCi/g	0.1161	N	0	5	0	NOT_IDENTI	0	☐	
Strontium-85	LA	0.1219	0.03042	pCi/g	0.1014	Y	0	5	0	NOT_IDENTI	0	☑	UI Data rejected due to low abundance.
Thallium-208	✓	0.6067	0.06195	pCi/g	0.08852	0.080	582.8	1	1.596	IDENTIFIED	9.527	☐	
Thorium-228	MU	1.982	0.1291	pCi/g	0.124	N	238.3	2	1.234	IDENTIFIED	3.623	☐	
Thorium-232	MU	2.114	0.2232	pCi/g	0.3349	N	910.6	3	1.681	IDENTIFIED	8.432	☐	
Thorium-234	✓	3.043	0.7412	pCi/g	1.27	2.00	62.68	2	1.232	IDENTIFIED	22.6	☐	
Tin-126	MU	0.4437	0.05223	pCi/g	0.1129	N	86.88	3	1.311	IDENTIFIED	11.13	☐	
Total Uranium		9.0888	2.21E-06	ug/g	1.8936	N		0				☐	
Uranium-238	MU	3.043	0.7412	pCi/g	1.27	N	62.68	2	1.232	IDENTIFIED	22.6	☐	

*** = 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
248515003	25-FEB-10 12:00	19-MAR-10 20:40	22.4	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name		Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment
Actinium-228	MU	1.658	0.2738	pCi/g	0.3669	N	911.1	3	1.431	IDENTIFIED	15.45	☐	
Annihilation Rad.	HE	0.1574	0.04928	pCi/g	0.06246	N	511.2	1	1.937	IDENTIFIED	30.98	☐	
Barium-137m	MU	0.5492	0.06421	pCi/g	0.09338	N	661.7	2	1.443	IDENTIFIED	10.91	☐	
Bismuth-211	INT	5.012	0.399	pCi/g	0.457	Y	351.8	2	1.217	IDENTIFIED	6.453	☑	UI
Bismuth-212	LA	3.37	0.7108	pCi/g	1.904	N	0	3	0	FAIL_ABUND	0	☐	
Bismuth-214	✓	1.64	0.1524	pCi/g	0.1682	0.200	609.3	2	1.502	IDENTIFIED	7.759	☐	
Cadmium-109	INT	4.255	0.4879	pCi/g	1.083	Y	87.32	3	1.077	IDENTIFIED	10.38	☑	UI
Cerium-143		17180	4304	pCi/g	0	N	0	3	0	SHORT_HLIF	0	☐	
Cesium-137	✓	0.5801	0.06785	pCi/g	0.09865	0.100	661.7	2	1.443	IDENTIFIED	10.91	☐	
Gross Gamma		10.59	1.486	pCi/g	4.12	N		0				☐	
Lead-210	✓	2.503	0.5623	pCi/g	0.9075	N	46.79	1	0.9957	IDENTIFIED	21.81	☐	
Lead-212	✓	1.909	0.1218	pCi/g	0.1096	0.100	238.7	2	1.172	IDENTIFIED	3.886	☐	
Lead-214	✓	1.819	0.1533	pCi/g	0.1663	0.100	351.8	2	1.217	IDENTIFIED	6.453	☐	
Mercury-203	INT	0.1081	0.03763	pCi/g	0.08235	0.100	277.7	1	1.348	IDENTIFIED	34.49	☑	UI
Neptunium-237	MU	1.228	0.1907	pCi/g	0.311	N	87.32	3	1.077	IDENTIFIED	10.38	☐	
Potassium-40	✓	26.92	1.638	pCi/g	0.6643	1.00	1460	1	1.811	IDENTIFIED	4.159	☐	
Promethium-149	HE	418.8	556.6	pCi/g	0	N	0	3	0	SHORT_HLIF	0	☐	
Radium-224	INT	6.037	0.9674	pCi/g	1.176	Y	241.5	1	1.928	IDENTIFIED	15.37	☑	UI
Radium-226	✓	1.64	0.1524	pCi/g	0.1682	Y	609.3	2	1.502	IDENTIFIED	7.759	☐	
Radium-228	✓	1.658	0.2738	pCi/g	0.3669	0.500	911.1	3	1.431	IDENTIFIED	15.45	☐	
Thallium-208	✓	0.5493	0.07129	pCi/g	0.0802	0.080	583.3	1	1.562	IDENTIFIED	12.09	☐	
Thorium-228	MU	1.909	0.1218	pCi/g	0.1096	N	238.7	2	1.172	IDENTIFIED	3.886	☐	
Thorium-232	MU	1.658	0.2738	pCi/g	0.3669	N	911.1	3	1.431	IDENTIFIED	15.45	☐	

Thorium-234 ✓	3.205	0.7378	pCi/g	1.172	2.00	63.43	2	1.193	IDENTIFIED	20.96	☐
Tin-126 UL	0.4114	0.04717	pCi/g	0.1046	N	87.32	3	1.077	IDENTIFIED	10.38	☐
Total Uranium	9.4784	2.20E-06	ug/g	1.747	N		0				☐
Uranium-238 UL	3.205	0.7378	pCi/g	1.172	N	63.43	2	1.193	IDENTIFIED	20.96	☐

*** = 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
248517001	25-FEB-10 12:00	19-MAR-10 20:41	22.4	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment
Actinium-228 UL	1.884	0.1995	pCi/g	0.1985	N	910.6	3	1.562	IDENTIFIED	8.139	☐	
Annihilation Rad.	0.127	0.02866	pCi/g	0.04099	N	510.5	1	1.859	IDENTIFIED	22.32	☐	
Barium-137m UL	0.3135	0.03675	pCi/g	0.04627	N	661.5	2	2.039	IDENTIFIED	11.09	☐	
Bismuth-211 INT	4.691	0.2495	pCi/g	0.2913	Y	351.8	2	1.383	IDENTIFIED	4.239	☑ UI	
Bismuth-212 LA	2.586	0.3934	pCi/g	1.046	N	0	5	0	FAIL_ABUND	0	☐	
Bismuth-214 ✓	1.315	0.1017	pCi/g	0.09414	0.200	608.8	2	1.715	IDENTIFIED	6.295	☐	
Cadmium-109 INT	3.718	0.5662	pCi/g	1.262	Y	87.21	3	1.212	IDENTIFIED	14.52	☑ UI	
Cerium-143	33770	5024	pCi/g	0	N	0	5	0	SHORT_HLIF	0	☐	
Cesium-137 ✓	0.3312	0.03883	pCi/g	0.04888	0.100	661.5	2	2.039	IDENTIFIED	11.09	☐	
Gross Gamma	10.09	1.362	pCi/g	2.711	N		0				☐	
Lead-212 ✓	1.776	0.08282	pCi/g	0.08485	0.100	238.7	2	1.167	IDENTIFIED	2.957	☐	
Lead-214 ✓	1.703	0.102	pCi/g	0.1059	0.100	351.8	2	1.383	IDENTIFIED	4.239	☐	
Molybdenum-99 HE	10.94	30.7	pCi/g	0	N	0	5	0	SHORT_HLIF	0	☐	
Neptunium-237 UL	1.073	0.1983	pCi/g	0.3522	N	87.21	3	1.212	IDENTIFIED	14.52	☐	
Niobium-95 HE	0.1048	0.02462	pCi/g	0.0811	N	0	5	0	NOT_IDENTI	0	☐	
Potassium-40 ✓	28.53	1.309	pCi/g	0.4202	1.00	1460	1	2.237	IDENTIFIED	2.576	☐	
Radium-224 INT	4.405	0.4692	pCi/g	0.9083	Y	241.7	1	1.767	IDENTIFIED	10.28	☑ UI	
Radium-226 ✓	1.315	0.1017	pCi/g	0.09414	Y	608.8	2	1.715	IDENTIFIED	6.295	☐	
Radium-228 ✓	1.884	0.1995	pCi/g	0.1985	0.500	910.6	3	1.562	IDENTIFIED	8.139	☐	
Strontium-85 LA	0.1104	0.02005	pCi/g	0.06836	Y	0	5	0	NOT_IDENTI	0	☑ UI	Data rejected due to low abundance.
Thallium-208 ✓	0.5435	0.03947	pCi/g	0.04514	0.080	582.8	1	1.408	IDENTIFIED	6.118	☐	
Thorium-228 UL	1.776	0.08282	pCi/g	0.08485	N	238.7	2	1.167	IDENTIFIED	2.957	☐	
Thorium-232 UL	1.884	0.1995	pCi/g	0.1985	N	910.6	3	1.562	IDENTIFIED	8.139	☐	
Thorium-234 ✓	3.502	1.317	pCi/g	2.342	2.00	62.99	2	1.136	IDENTIFIED	36.52	☐	
Tin-126 UL	0.3595	0.05475	pCi/g	0.1309	N	87.21	3	1.212	IDENTIFIED	14.52	☐	
Total Uranium	10.378	3.92E-06	ug/g	3.4861	N		0				☐	
Uranium-238 HE	3.502	1.317	pCi/g	2.342	N	62.99	2	1.136	IDENTIFIED	36.52	☐	

*** = 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
248521001	25-FEB-10 12:00	19-MAR-10 20:42	22.4	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment
Actinium-228 UL	2.177	0.2372	pCi/g	0.2444	N	911.8	3	1.855	IDENTIFIED	9.21	☐	
Annihilation Rad.	0.1537	0.04123	pCi/g	0.05308	N	510.9	1	1.654	IDENTIFIED	26.66	☐	
Barium-137m UL	0.1568	0.03158	pCi/g	0.06742	N	661.5	2	1.714	IDENTIFIED	19.93	☐	
Bismuth-211 INT	5.105	0.3059	pCi/g	0.4436	Y	351.9	2	1.306	IDENTIFIED	5.071	☑ UI	
Bismuth-212 LA	3.278	0.5471	pCi/g	1.34	N	0	8	0	FAIL_ABUND	0	☐	
Bismuth-214 ✓	1.517	0.11	pCi/g	0.1327	0.200	609.5	2	1.474	IDENTIFIED	6.076	☐	

Cadmium-109 INT	5.614	0.6344	pCi/g	1.282	Y	87.37	3	1.418	IDENTIFIED	10.39	☑ UJ		
Cerium-143	46200	6887	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐		
Cesium-134 LA	0.208	0.06641	pCi/g	0.1033	0.100	0	8	0	FAIL_ABUND	0	☑	UI	Data rejected due to low abundance.
Cesium-137 ✓	0.1657	0.03337	pCi/g	0.07122	0.100	661.5	2	1.714	IDENTIFIED	19.93	☐		
Gross Gamma	11.66	1.543	pCi/g	4.903	N		0				☐		
Iodine-133 HE	2.29E+05	1.06E+06	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐		
Lead-212 ✓	2.024	0.1005	pCi/g	0.111	0.100	238.6	2	1.296	IDENTIFIED	3.376	☐		
Lead-214 ✓	1.853	0.1222	pCi/g	0.1429	0.100	351.9	2	1.306	IDENTIFIED	5.071	☐		
Molybdenum-99 HE	28.6	47.32	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐		
Neptunium-237 MU	1.62	0.2497	pCi/g	0.3755	N	87.37	3	1.418	IDENTIFIED	10.39	☐		
Niobium-95m HE	0.4175	0.1001	pCi/g	0.3132	N	0	8	0	NOT_IDENTI	0	☐		
Potassium-40 ✓	30.41	1.468	pCi/g	0.5449	1.00	1461	1	1.92	IDENTIFIED	3.072	☐		
Radium-224 INT	5.446	0.673	pCi/g	1.189	Y	241.5	1	1.682	IDENTIFIED	12.03	☑ UJ		
Radium-226 ✓	1.517	0.11	pCi/g	0.1327	Y	609.5	2	1.474	IDENTIFIED	6.076	☐		
Radium-228 ✓	2.177	0.2372	pCi/g	0.2444	0.500	911.8	3	1.855	IDENTIFIED	9.21	☐		
Sodium-24 HE	4.73E+08	1.13E+09	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐		
Strontium-85 LA	0.1302	0.02684	pCi/g	0.09239	Y	0	8	0	NOT_IDENTI	0	☑	UI	Data rejected due to low abundance.
Thallium-208 ✓	0.6997	0.05529	pCi/g	0.06798	0.080	583.5	1	1.648	IDENTIFIED	7.137	☐		
Thorium-228 MU	2.024	0.1005	pCi/g	0.111	N	238.6	2	1.296	IDENTIFIED	3.376	☐		
Thorium-232 MU	2.177	0.2372	pCi/g	0.2444	N	911.8	3	1.855	IDENTIFIED	9.21	☐		
Tin-126 MU	0.5429	0.06134	pCi/g	0.1245	N	87.37	3	1.418	IDENTIFIED	10.39	☐		
Total Uranium	4.9762	2.40E-06	ug/g	4.0639	N		0				☐		

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248521002	25-FEB-10 12:00	19-MAR-10 20:42	22.4	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 MU	2.051	0.2415	pCi/g	0.2419	N	911.2	3	2.129	IDENTIFIED	9.627	☐	
Annihilation Rad.	0.1413	0.03758	pCi/g	0.05055	N	510.9	1	1.678	IDENTIFIED	26.12	☐	
Barium-137m MU	0.5919	0.05026	pCi/g	0.07261	N	661.7	2	1.659	IDENTIFIED	6.656	☐	
Bismuth-211 INT	5.373	0.3993	pCi/g	0.3563	Y	352	2	1.369	IDENTIFIED	4.631	☑ UJ	
Bismuth-212 LA	2.306	0.4974	pCi/g	1.272	N	0	7	0	FAIL_ABUND	0	☐	
Bismuth-214 ✓	1.372	0.1149	pCi/g	0.1259	0.200	609.3	2	1.653	IDENTIFIED	6.015	☐	
Cadmium-109 INT	3.184	0.5349	pCi/g	1.408	Y	87.16	3	1.355	IDENTIFIED	16.13	☑ UJ	
Cerium-143	39060	6408	pCi/g	0	N	0	7	0	SHORT_HLIF	0	☐	
Cesium-134 LA	0.1073	0.02825	pCi/g	0.09888	0.100	0	7	0	NOT_IDENTI	0	☑ UI	Data rejected due to low abundance.
Cesium-137 ✓	0.6253	0.05312	pCi/g	0.0767	0.100	661.7	2	1.659	IDENTIFIED	6.656	☐	
Gross Gamma	10.72	1.348	pCi/g	3.033	N		0				☐	
Iodine-135	2.45E+22	0	pCi/g	0	N	0	7	0	SHORT_HLIF	0	☐	
Lead-212 ✓	1.93	0.1431	pCi/g	0.1105	0.100	238.7	2	1.235	IDENTIFIED	3.331	☐	
Lead-214 ✓	1.95	0.1546	pCi/g	0.1295	0.100	352	2	1.369	IDENTIFIED	4.631	☐	
Neptunium-237 MU	0.9185	0.1819	pCi/g	0.3898	N	87.16	3	1.355	IDENTIFIED	16.13	☐	
Potassium-40 ✓	25.99	1.466	pCi/g	0.6113	1.00	1461	1	2.572	IDENTIFIED	3.29	☐	
Promethium-149 HE	760.6	524.1	pCi/g	0	N	0	7	0	SHORT_HLIF	0	☐	
Radium-224 INT	4.717	0.738	pCi/g	1.183	Y	241.7	1	1.619	IDENTIFIED	14.33	☑ UJ	
Radium-226 ✓	1.372	0.1149	pCi/g	0.1259	Y	609.3	2	1.653	IDENTIFIED	6.015	☐	
Radium-228 ✓	2.051	0.2415	pCi/g	0.2419	0.500	911.2	3	2.129	IDENTIFIED	9.627	☐	

Silver-110m	HE	**0.08238**	0.02518	pCi/g	**0.07849**	N	0	7	0	NOT_IDENTI	0	☐		
Strontium-85	LA	**0.1573**	0.02998	pCi/g	**0.09442**	Y	0	7	0	NOT_IDENTI	0	☑	UI	Data rejected due to low abundance.
Thallium-208	✓	**0.6**	0.05139	pCi/g	**0.06154**	**0.080**	583.1	1	1.751	IDENTIFIED	6.635	☐		
Thorium-228	MU	**1.93**	0.1431	pCi/g	**0.1105**	N	238.7	2	1.235	IDENTIFIED	3.331	☐		
Thorium-232	MU	**2.051**	0.2415	pCi/g	**0.2419**	N	911.2	3	2.129	IDENTIFIED	9.627	☐		
Thorium-234	✓	**4.122**	1.039	pCi/g	**2.281**	**2.00**	63.27	2	0.9345	IDENTIFIED	23.58	☐		
Tin-126	MU	**0.3078**	0.05172	pCi/g	**0.1299**	N	87.16	3	1.355	IDENTIFIED	16.13	☐		
Total Uranium		**12.341**	3.09E-06	ug/g	**3.3962**	N		0				☐		
Uranium-238	HE	**4.122**	1.039	pCi/g	**2.281**	N	63.27	2	0.9345	IDENTIFIED	23.58	☐		

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248521003	25-FEB-10 12:00	19-MAR-10 20:43	22.4	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name		Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual		Qual Comment
Actinium-228	MU	**1.667**	0.2423	pCi/g	**0.2666**	N	910.1	3	1.705	IDENTIFIED	13.27	☐		
Annihilation Rad.		**0.1775**	0.03498	pCi/g	**0.05225**	N	510.2	1	1.815	IDENTIFIED	19.49	☐		
Barium-137m	MU	**0.4932**	0.04293	pCi/g	**0.06356**	N	660.9	2	1.664	IDENTIFIED	8.321	☐		
Bismuth-211	INT	**4.193**	0.2729	pCi/g	**0.3842**	Y	351.4	2	1.22	IDENTIFIED	5.634	☑	UI	
Bismuth-212	LA	**2.262**	0.3792	pCi/g	**1.285**	N	0	7	0	FAIL_ABUND	0	☐		
Bismuth-214	✓	**1.3**	0.1094	pCi/g	**0.1346**	**0.200**	608.6	2	1.377	IDENTIFIED	7.513	☐		
Cadmium-109	INT	**4.409**	0.6182	pCi/g	**1.354**	Y	86.97	3	1.321	IDENTIFIED	13.16	☑	UI	
Cerium-143		**53130**	8329	pCi/g	**0**	N	0	7	0	SHORT_HLIF	0	☐		
Cesium-134	LA	**0.1022**	0.03685	pCi/g	**0.09551**	**0.100**	0	7	0	FAIL_ABUND	0	☑	UI	Data rejected due to low abundance.
Cesium-137	✓	**0.521**	0.04537	pCi/g	**0.06714**	**0.100**	660.9	2	1.664	IDENTIFIED	8.321	☐		
Gross Gamma		**9.581**	1.333	pCi/g	**3.104**	N		0				☐		
Lead-212	✓	**1.656**	0.08519	pCi/g	**0.1095**	**0.100**	238.3	2	1.137	IDENTIFIED	3.648	☐		
Lead-214	✓	**1.522**	0.1076	pCi/g	**0.1335**	**0.100**	351.4	2	1.22	IDENTIFIED	5.634	☐		
Molybdenum-99	HE	**58.61**	44.18	pCi/g	**0**	N	0	7	0	SHORT_HLIF	0	☐		
Neptunium-237	MU	**1.272**	0.2227	pCi/g	**0.3991**	N	86.97	3	1.321	IDENTIFIED	13.16	☐		
Niobium-95m	LA	**0.6514**	0.106	pCi/g	**0.3451**	N	0	7	0	NOT_IDENTI	0	☐		
Potassium-40	✓	**26.12**	1.314	pCi/g	**0.6104**	**1.00**	1459	1	2.184	IDENTIFIED	3.362	☐		
Promethium-149	HE	**206.7**	513.2	pCi/g	**0**	N	0	7	0	SHORT_HLIF	0	☐		
Radium-224	INT	**4.331**	0.5972	pCi/g	**1.173**	Y	241.3	1	1.635	IDENTIFIED	13.5	☑	UI	
Radium-226	✓	**1.3**	0.1094	pCi/g	**0.1346**	Y	608.6	2	1.377	IDENTIFIED	7.513	☐		
Radium-228	✓	**1.667**	0.2423	pCi/g	**0.2666**	**0.500**	910.1	3	1.705	IDENTIFIED	13.27	☐		
Silver-110m	HE	**0.1486**	0.02727	pCi/g	**0.09601**	N	0	7	0	NOT_IDENTI	0	☐		
Thallium-208	✓	**0.583**	0.04976	pCi/g	**0.07212**	**0.080**	582.5	1	1.525	IDENTIFIED	7.896	☐		
Thorium-228	MU	**1.656**	0.08519	pCi/g	**0.1095**	N	238.3	2	1.137	IDENTIFIED	3.648	☐		
Thorium-232	MU	**1.667**	0.2423	pCi/g	**0.2666**	N	910.1	3	1.705	IDENTIFIED	13.27	☐		
Tin-126	MU	**0.4263**	0.05978	pCi/g	**0.1318**	N	86.97	3	1.321	IDENTIFIED	13.16	☐		

*** = 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
248521004	25-FEB-10 12:00	19-MAR-10 23:11	22.5	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name		Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual		Qual Comment
Actinium-228	MU	**1.921**	0.1973	pCi/g	**0.2417**	N	910.6	3	1.955	IDENTIFIED	8.073	☐		
Americium-241	LA	**0.107**	0.03193	pCi/g	**0.09709**	**0.200**	0	9	0	NOT_IDENTI	0	☑	UI	Data rejected due to low abundance.
Annihilation Rad.		**0.1944**	0.03885	pCi/g	**0.04491**	N	510.6	1	2.003	IDENTIFIED	19.73	☐		

Barium-137m	NR	0.5812	0.04555	pCi/g	0.05471	N	661.2	2	1.785	IDENTIFIED	7.113	☐	
Bismuth-211	INT	4.587	0.2853	pCi/g	0.3044	Y	351.4	2	1.394	IDENTIFIED	4.796	☑ UI	
Bismuth-212	LA	2.305	0.5307	pCi/g	1.173	N	0	9	0	FAIL_ABUND	0	☐	
Bismuth-214	✓	1.397	0.0979	pCi/g	0.1118	0.200	608.7	2	1.532	IDENTIFIED	5.597	☐	
Cadmium-109	INT	4.995	0.4236	pCi/g	0.9021	Y	86.81	3	1.32	IDENTIFIED	7.574	☑ UI	
Cerium-143		59290	8200	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐	
Cesium-134	LA	0.1036	0.03654	pCi/g	0.09115	0.100	0	9	0	FAIL_ABUND	0	☑ UI	Data rejected due to low abundance.
Cesium-135	NR	0.4916	0.1058	pCi/g	0.2294	N	269.6	1	1.523	IDENTIFIED	20.85	☐	
Cesium-137	✓	0.614	0.04814	pCi/g	0.0578	0.100	661.2	2	1.785	IDENTIFIED	7.113	☐	
Europium-155	HE	0.2292	0.06356	pCi/g	0.1552	N	104.9	1	1.287	IDENTIFIED	27.2	☐	
Gadolinium-153	HE	0.1476	0.03948	pCi/g	0.1194	N	0	9	0	NOT_IDENTI	0	☐	
Gross Gamma		11.57	1.313	pCi/g	4.163	N		0				☐	
Lead-210	✓	2.163	0.3999	pCi/g	0.7808	N	45.95	1	1.003	IDENTIFIED	18.09	☐	
Lead-212	✓	2.011	0.1201	pCi/g	0.08495	0.100	238.2	2	1.243	IDENTIFIED	2.528	☐	
Lead-214	✓	1.665	0.1133	pCi/g	0.1124	0.100	351.4	2	1.394	IDENTIFIED	4.796	☐	
Neptunium-237	NR	1.441	0.1943	pCi/g	0.259	N	86.81	3	1.32	IDENTIFIED	7.574	☐	
Niobium-95m	LA	1.605	0.1223	pCi/g	0.3204	N	0	9	0	NOT_IDENTI	0	☐	
Potassium-40	✓	27.47	1.129	pCi/g	0.5061	1.00	1460	1	1.872	IDENTIFIED	2.685	☐	
Promethium-149	HE	309.3	427.3	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐	
Radium-224	INT	6.031	0.6936	pCi/g	0.9106	Y	241.3	1	2.031	IDENTIFIED	10.41	☑ UI	
Radium-226	✓	1.397	0.0979	pCi/g	0.1118	Y	608.7	2	1.532	IDENTIFIED	5.597	☐	
Radium-228	✓	1.921	0.1973	pCi/g	0.2417	0.500	910.6	3	1.955	IDENTIFIED	8.073	☐	
Silver-110m	HE	0.1126	0.02384	pCi/g	0.076	N	0	9	0	NOT_IDENTI	0	☐	
Strontium-85	LA	0.07362	0.02366	pCi/g	0.07282	Y	0	9	0	NOT_IDENTI	0	☑ UI	Data rejected due to low abundance.
Thallium-208	✓	0.5884	0.04538	pCi/g	0.05938	0.080	582.7	1	1.487	IDENTIFIED	6.782	☐	
Thorium-228	NR	2.011	0.1201	pCi/g	0.08495	N	238.2	2	1.243	IDENTIFIED	2.528	☐	
Thorium-232	NR	1.921	0.1973	pCi/g	0.2417	N	910.6	3	1.955	IDENTIFIED	8.073	☐	
Thorium-234	✓	3.653	0.5685	pCi/g	0.9482	2.00	62.75	2	1.245	IDENTIFIED	12.64	☐	
Tin-126	NR	0.4829	0.04095	pCi/g	0.08708	N	86.81	3	1.32	IDENTIFIED	7.574	☐	
Total Uranium		10.976	1.69E-06	ug/g	1.4132	N		0				☐	
Uranium-238	NR	3.653	0.5685	pCi/g	0.9482	N	62.75	2	1.245	IDENTIFIED	12.64	☐	

*** = 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
248521005	25-FEB-10 12:00	19-MAR-10 23:11	22.5	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name		Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment
Actinium-228	NR	1.827	0.158	pCi/g	0.1467	N	911.8	3	1.608	IDENTIFIED	5.943	☐	
Annihilation Rad.		0.178	0.02592	pCi/g	0.02889	N	511.4	1	2.203	IDENTIFIED	13.8	☐	
Bismuth-211	INT	4.719	0.2768	pCi/g	0.2043	Y	352.1	2	1.288	IDENTIFIED	3.395	☑ UI	
Bismuth-212	LA	2.139	0.2886	pCi/g	0.8238	N	0	6	0	FAIL_ABUND	0	☐	
Bismuth-214	✓	1.493	0.1014	pCi/g	0.07108	0.200	609.7	2	1.357	IDENTIFIED	3.865	☐	
Cadmium-109	INT	3.733	0.3586	pCi/g	0.7644	Y	87.36	3	1.168	IDENTIFIED	8.381	☑ UI	
Cerium-143		20760	3328	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Cesium-134	LA	0.1205	0.02417	pCi/g	0.06161	0.100	0	6	0	FAIL_ABUND	0	☑ UI	Data rejected due to low abundance.
Gross Gamma		11.05	1.186	pCi/g	3.523	N		0				☐	
Iodine-133	HE	7.58E+05	6.89E+05	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Lead-212	✓	1.97	0.1128	pCi/g	0.0636	0.100	238.7	2	1.148	IDENTIFIED	2.066	☐	

Lead-214 ✓	1.713	0.111	pCi/g	0.07429	0.100	352.1	2	1.288	IDENTIFIED	3.395	☐		
Molybdenum-99 HE	44.89	25.35	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐		
Neptunium-237 MU	1.077	0.1531	pCi/g	0.2228	N	87.36	3	1.168	IDENTIFIED	8.381	☐		
Potassium-40 ✓	30.52	1.455	pCi/g	0.3585	1.00	1462	1	1.865	IDENTIFIED	1.924	☐		
Radium-224 INT	5.433	0.4916	pCi/g	0.6814	Y	241.7	1	1.79	IDENTIFIED	7.648	☑ UI		
Radium-226 ✓	1.493	0.1014	pCi/g	0.07108	Y	609.7	2	1.357	IDENTIFIED	3.865	☐		
Radium-228 ✓	1.827	0.158	pCi/g	0.1467	0.500	911.8	3	1.608	IDENTIFIED	5.943	☐		
Strontium-85 LA	0.09741	0.01466	pCi/g	0.05308	Y	0	6	0	NOT_IDENTI	0	☑ UI	Data rejected due to low abundance.	
Thallium-208 ✓	0.6278	0.04295	pCi/g	0.03523	0.080	583.5	1	1.422	IDENTIFIED	4.519	☐		
Thorium-228 MU	1.97	0.1128	pCi/g	0.0636	N	238.7	2	1.148	IDENTIFIED	2.066	☐		
Thorium-232 MU	1.827	0.158	pCi/g	0.1467	N	911.8	3	1.608	IDENTIFIED	5.943	☐		
Tin-126 MU	0.3609	0.03466	pCi/g	0.07411	N	87.36	3	1.168	IDENTIFIED	8.381	☐		
Total Uranium	3.4298	1.56E-06	ug/g	1.7911	N		0				☐		

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248521006	25-FEB-10 12:00	19-MAR-10 23:12	22.5	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment
Actinium-228 MU	2.167	0.1798	pCi/g	0.1518	N	911.2	3	2.199	IDENTIFIED	4.79	☐	
Annihilation Rad.	0.1476	0.02705	pCi/g	0.03048	N	511	1	2.413	IDENTIFIED	17.64	☐	
Barium-137m MU	0.3588	0.029	pCi/g	0.04158	N	661.8	2	1.721	IDENTIFIED	6.126	☐	
Bismuth-211 INT	4.922	0.3307	pCi/g	0.235	Y	352	2	1.381	IDENTIFIED	3.366	☑ UI	
Bismuth-212 MU	2.099	0.328	pCi/g	0.5598	N	727.1	1	1.84	IDENTIFIED	13.96	☐	
Bismuth-214 ✓	1.572	0.1058	pCi/g	0.07538	0.200	609.4	2	1.706	IDENTIFIED	3.355	☐	
Cadmium-109 INT	5.066	0.4434	pCi/g	0.791	Y	87.29	3	1.306	IDENTIFIED	7.381	☑ UI	
Cerium-143	41880	6059	pCi/g	0	N	0	7	0	SHORT_HLIF	0	☐	
Cesium-134 LA	0.1063	0.02045	pCi/g	0.06082	0.100	0	7	0	FAIL_ABUND	0	☑ UI	Data rejected due to low abundance.
Cesium-135 HE	0.2347	0.06888	pCi/g	0.2043	N	0	7	0	NOT_IDENTI	0	☐	
Cesium-137 ✓	0.379	0.03065	pCi/g	0.04393	0.100	661.8	2	1.721	IDENTIFIED	6.126	☐	
Europium-155 HE	0.1471	0.04297	pCi/g	0.1246	N	105.6	1	1.708	IDENTIFIED	28.9	☐	
Gross Gamma	12.28	1.195	pCi/g	2.625	N		0				☐	
Lead-212 ✓	2.177	0.1501	pCi/g	0.06912	0.100	238.7	2	1.188	IDENTIFIED	1.901	☐	
Lead-214 ✓	1.786	0.1297	pCi/g	0.08543	0.100	352	2	1.381	IDENTIFIED	3.366	☐	
Molybdenum-99 HE	48.14	26.28	pCi/g	0	N	0	7	0	SHORT_HLIF	0	☐	
Neptunium-237 MU	1.461	0.1996	pCi/g	0.2315	N	87.29	3	1.306	IDENTIFIED	7.381	☐	
Niobium-95 HE	0.08611	0.01898	pCi/g	0.05798	N	0	7	0	NOT_IDENTI	0	☐	
Niobium-95m HE	0.2421	0.05889	pCi/g	0.1766	N	0	7	0	NOT_IDENTI	0	☐	
Potassium-40 ✓	32.2	1.572	pCi/g	0.3487	1.00	1461	1	2.688	IDENTIFIED	1.684	☐	
Radium-224 INT	5.22	0.5364	pCi/g	0.74	Y	241.7	1	1.674	IDENTIFIED	8.138	☑ UI	
Radium-226 ✓	1.572	0.1058	pCi/g	0.07538	Y	609.4	2	1.706	IDENTIFIED	3.355	☐	
Radium-228 ✓	2.167	0.1798	pCi/g	0.1518	0.500	911.2	3	2.199	IDENTIFIED	4.79	☐	
Strontium-85 LA	0.1787	0.01907	pCi/g	0.05842	Y	0	7	0	NOT_IDENTI	0	☑ UI	Data rejected due to low abundance.
Thallium-208 ✓	0.6325	0.04379	pCi/g	0.03833	0.080	583.2	1	1.576	IDENTIFIED	4.312	☐	
Thorium-228 MU	2.177	0.1501	pCi/g	0.06912	N	238.7	2	1.188	IDENTIFIED	1.901	☐	
Thorium-232 MU	2.167	0.1798	pCi/g	0.1518	N	911.2	3	2.199	IDENTIFIED	4.79	☐	
Thorium-234 ✓	3.229	0.8001	pCi/g	1.448	2.00	63.17	2	0.9484	IDENTIFIED	23.13	☐	
Tin-126 MU	0.4897	0.04286	pCi/g	0.07678	N	87.29	3	1.306	IDENTIFIED	7.381	☐	

Total Uranium		9.6309	2.38E-06	ug/g	2.1565	N		0				☐
Uranium-238	MU	3.229	0.8001	pCi/g	1.448	N	63.17	2	0.9484	IDENTIFIED	23.13	☐

*** = 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
248521007	25-FEB-10 12:00	19-MAR-10 23:12	22.5	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name		Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	MU	1.977	0.2154	pCi/g	0.2093	N	910.3	3	1.527	IDENTIFIED	9.137	☐	
Annihilation Rad.		0.1673	0.04281	pCi/g	0.05096	N	510.2	1	2.064	IDENTIFIED	25.41	☐	
Barium-137m	MU	1.951	0.07746	pCi/g	0.06504	N	660.8	2	1.476	IDENTIFIED	3.037	☐	
Bismuth-211	INT	4.632	0.2763	pCi/g	0.3451	Y	351.5	2	1.315	IDENTIFIED	4.996	☑ UI	
Bismuth-212	LA	2.017	0.4434	pCi/g	1.127	N	0	7	0	FAIL_ABUND	0	☐	
Bismuth-214	✓	1.645	0.1057	pCi/g	0.1177	0.200	608.5	2	1.39	IDENTIFIED	5.191	☐	
Cadmium-109	INT	4.777	0.5164	pCi/g	1.282	Y	87.01	3	1.015	IDENTIFIED	9.664	☑ UI	
Cerium-143		64820	8633	pCi/g	0	N	0	7	0	SHORT_HLIF	0	☐	
Cesium-135	HE	0.4062	0.09846	pCi/g	0.2964	N	0	7	0	NOT_IDENTI	0	☐	
Cesium-137	✓	2.061	0.08201	pCi/g	0.06871	0.100	660.8	2	1.476	IDENTIFIED	3.037	☐	
Gross Gamma		12.15	1.386	pCi/g	3.352	N		0				☐	
Lead-212	✓	2.044	0.09296	pCi/g	0.09473	0.100	238.3	2	1.149	IDENTIFIED	2.744	☐	
Lead-214	✓	1.681	0.1105	pCi/g	0.1291	0.100	351.5	2	1.315	IDENTIFIED	4.996	☐	
Molybdenum-99	HE	18.3	39.34	pCi/g	0	N	0	7	0	SHORT_HLIF	0	☐	
Neptunium-237	MU	1.378	0.2075	pCi/g	0.3776	N	87.01	3	1.015	IDENTIFIED	9.664	☐	
Niobium-95m	LA	0.9483	0.09864	pCi/g	0.3055	N	0	7	0	NOT_IDENTI	0	☐	
Potassium-40	✓	26.82	1.308	pCi/g	0.5841	1.00	1459	1	2.091	IDENTIFIED	3.13	☐	
Radium-224	INT	5.83	0.6703	pCi/g	1.015	Y	241.3	1	1.861	IDENTIFIED	11.15	☑ UI	
Radium-226	✓	1.645	0.1057	pCi/g	0.1177	Y	608.5	2	1.39	IDENTIFIED	5.191	☐	
Radium-228	✓	1.977	0.2154	pCi/g	0.2093	0.500	910.3	3	1.527	IDENTIFIED	9.137	☐	
Silver-110m	LA	0.5118	0.03556	pCi/g	0.1253	N	0	7	0	NOT_IDENTI	0	☐	
Sodium-24	HE	1.74E+09	1.39E+09	pCi/g	0	N	0	7	0	SHORT_HLIF	0	☐	
Thallium-208	✓	0.6406	0.0475	pCi/g	0.05843	0.080	582.5	1	1.409	IDENTIFIED	6.671	☐	
Thorium-228	MU	2.044	0.09296	pCi/g	0.09473	N	238.3	2	1.149	IDENTIFIED	2.744	☐	
Thorium-232	MU	1.977	0.2154	pCi/g	0.2093	N	910.3	3	1.527	IDENTIFIED	9.137	☐	
Thorium-234	✓	2.65	1.089	pCi/g	2.582	2.00	63.2	2	0.9613	IDENTIFIED	40.07	☐	
Tin-126	MU	0.4618	0.04992	pCi/g	0.1246	N	87.01	3	1.015	IDENTIFIED	9.664	☐	
Total Uranium		7.9582	3.24E-06	ug/g	3.8431	N		0				☐	
Uranium-238	HE	2.65	1.089	pCi/g	2.582	N	63.2	2	0.9613	IDENTIFIED	40.07	☐	

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248521008	25-FEB-10 12:00	19-MAR-10 23:14	22.5	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name		Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	MU	1.675	0.1806	pCi/g	0.1791	N	911.3	3	1.594	IDENTIFIED	8.931	☐	
Annihilation Rad.		0.15	0.03425	pCi/g	0.03717	N	511.2	1	2.022	IDENTIFIED	22.43	☐	
Barium-137m	MU	0.5489	0.03648	pCi/g	0.05592	N	661.8	2	1.414	IDENTIFIED	5.272	☐	
Bismuth-211	INT	4.385	0.2767	pCi/g	0.2858	Y	352.1	2	1.298	IDENTIFIED	4.225	☑ UI	
Bismuth-212	LA	1.887	0.3782	pCi/g	0.9763	N	0	6	0	FAIL_ABUND	0	☐	
Bismuth-214	✓	1.463	0.09931	pCi/g	0.095	0.200	609.5	2	1.555	IDENTIFIED	4.631	☐	

Cadmium-109	INT	4.177	0.4924	pCi/g	0.9226	Y	87.21	3	1.265	IDENTIFIED	10.42	☑ UI	
Cadmium-115	HE	76.11	44.67	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Cerium-143		24530	4160	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Cesium-134	LA	0.1038	0.02592	pCi/g	0.08073	0.100	0	6	0	FAIL_ABUND	0	☑ UI	Data rejected due to low abundance.
Cesium-137	✓	0.5799	0.03857	pCi/g	0.05907	0.100	661.8	2	1.414	IDENTIFIED	5.272	☐	
Gross Gamma		10.53	1.386	pCi/g	3.507	N		0				☐	
Iodine-135		9.22E+22	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Lead-212	✓	1.62	0.09896	pCi/g	0.09645	0.100	238.7	2	1.135	IDENTIFIED	3.311	☐	
Lead-214	✓	1.591	0.1096	pCi/g	0.1071	0.100	352.1	2	1.298	IDENTIFIED	4.225	☐	
Neptunium-237	NA	1.205	0.1901	pCi/g	0.2709	N	87.21	3	1.265	IDENTIFIED	10.42	☐	
Potassium-40	✓	25.95	1.401	pCi/g	0.4777	1.00	1461	1	2.066	IDENTIFIED	2.63	☐	
Radium-224	INT	3.537	0.4052	pCi/g	1.155	Y	241.9	1	1.426	IDENTIFIED	10.49	☑ UI	
Radium-226	✓	1.463	0.09931	pCi/g	0.095	Y	609.5	2	1.555	IDENTIFIED	4.631	☐	
Radium-228	✓	1.675	0.1806	pCi/g	0.1791	0.500	911.3	3	1.594	IDENTIFIED	8.931	☐	
Strontium-85	LA	0.1142	0.01823	pCi/g	0.06779	Y	0	6	0	NOT_IDENTI	0	☑ UI	Data rejected due to low abundance.
Thallium-208	✓	0.531	0.04343	pCi/g	0.0505	0.080	583.3	1	1.53	IDENTIFIED	6.788	☐	
Thorium-228	MU	1.62	0.09896	pCi/g	0.09645	N	238.7	2	1.135	IDENTIFIED	3.311	☐	
Thorium-232	MU	1.675	0.1806	pCi/g	0.1791	N	911.3	3	1.594	IDENTIFIED	8.931	☐	
Tin-126	MU	0.4037	0.0476	pCi/g	0.08964	N	87.21	3	1.265	IDENTIFIED	10.42	☐	
Total Uranium		5.4946	2.21E-06	ug/g	2.7715	N		0				☐	

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248521009	25-FEB-10 12:00	19-MAR-10 23:15	22.5	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name		Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment
Actinium-228	MU	1.95	0.221	pCi/g	0.2257	N	910.7	3	1.394	IDENTIFIED	9.704	☐	
Annihilation Rad.		0.1408	0.03757	pCi/g	0.04847	N	510.8	1	1.384	IDENTIFIED	26.26	☐	
Barium-137m	MU	1.916	0.1196	pCi/g	0.06621	N	661.5	2	1.297	IDENTIFIED	2.913	☐	
Bismuth-211	INT	5.66	0.3482	pCi/g	0.2948	Y	351.8	2	1.084	IDENTIFIED	4.185	☑ UI	
Bismuth-212	LA	3.053	0.4943	pCi/g	1.315	N	0	8	0	FAIL_ABUND	0	☐	
Bismuth-214	✓	1.75	0.1434	pCi/g	0.1119	0.200	609.2	2	1.371	IDENTIFIED	5.654	☐	
Cadmium-109	INT	5.036	0.3852	pCi/g	0.5997	Y	87.22	3	0.998	IDENTIFIED	6.056	☑ UI	
Cerium-143		19720	3467	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐	
Cesium-134	LA	0.1567	0.02712	pCi/g	0.1001	0.100	0	8	0	NOT_IDENTI	0	☑ UI	Data rejected due to low abundance.
Cesium-135	HE	0.2591	0.07092	pCi/g	0.2273	N	0	8	0	NOT_IDENTI	0	☐	
Cesium-137	✓	2.024	0.1265	pCi/g	0.06995	0.100	661.5	2	1.297	IDENTIFIED	2.913	☐	
Gross Gamma		14.04	1.412	pCi/g	3.858	N		0				☐	
Iodine-133	HE	1.59E+06	1.18E+06	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐	
Lead-210	✓	4.249	0.3612	pCi/g	0.5287	N	46.57	1	0.6929	IDENTIFIED	7.065	☐	
Lead-212	✓	2.22	0.1222	pCi/g	0.0783	0.100	238.5	2	0.8572	IDENTIFIED	2.309	☐	
Lead-214	✓	2.054	0.1385	pCi/g	0.1073	0.100	351.8	2	1.084	IDENTIFIED	4.185	☐	
Neptunium-237	MU	1.453	0.1885	pCi/g	0.172	N	87.22	3	0.998	IDENTIFIED	6.056	☐	
Potassium-40	✓	31.66	1.629	pCi/g	0.615	1.00	1460	1	1.976	IDENTIFIED	2.871	☐	
Radium-224	INT	6.999	0.7294	pCi/g	0.8416	Y	241.5	1	1.828	IDENTIFIED	9.426	☑ UI	
Radium-226	✓	1.75	0.1434	pCi/g	0.1119	Y	609.2	2	1.371	IDENTIFIED	5.654	☐	
Radium-228	✓	1.95	0.221	pCi/g	0.2257	0.500	910.7	3	1.394	IDENTIFIED	9.704	☐	
Sodium-24	HE	3.78E+07	1.41E+09	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐	

Strontium-85 LA	0.07993	0.02168	pCi/g	0.07145	Y	0	8	0	NOT_IDENTI	0	☑	UI	Data rejected due to low abundance.
Technetium-99m	4.60E+24	0	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐		
Thallium-208 ✓	0.6997	0.05641	pCi/g	0.05521	0.080	583	1	1.173	IDENTIFIED	5.949	☐		
Thorium-228 MU	2.22	0.1222	pCi/g	0.0783	N	238.5	2	0.8572	IDENTIFIED	2.309	☐		
Thorium-232 MU	1.95	0.221	pCi/g	0.2257	N	910.7	3	1.394	IDENTIFIED	9.704	☐		
Thorium-234 ✓	3.386	0.4538	pCi/g	0.6663	2.00	63.33	2	0.9187	IDENTIFIED	9.91	☐		
Tin-126 MU	0.4868	0.03724	pCi/g	0.05787	N	87.22	3	0.998	IDENTIFIED	6.056	☐		
Total Uranium	10.087	1.35E-06	ug/g	0.99335	N		0				☐		
Uranium-238 MU	3.386	0.4538	pCi/g	0.6663	N	63.33	2	0.9187	IDENTIFIED	9.91	☐		

*** = 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
248521010	25-FEB-10 12:00	20-MAR-10 11:10	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 MU		2.076	0.2232	pCi/g	0.3223	N	910.5	3	1.982	IDENTIFIED	8.675	☐	
Annihilation Rad.	HE	0.1066	0.04122	pCi/g	0.05843	N	510.3	1	1.581	IDENTIFIED	38.54	☐	
Barium-137m MU		0.7057	0.05184	pCi/g	0.07988	N	661.1	2	1.559	IDENTIFIED	6.57	☐	
Bismuth-211 INT		4.287	0.3257	pCi/g	0.4195	Y	351.6	2	1.398	IDENTIFIED	6.489	☑ UF	
Bismuth-212	HE	2.062	0.5509	pCi/g	1.483	N	0	7	0	FAIL_ABUND	0	☐	
Bismuth-214 ✓		1.43	0.1175	pCi/g	0.1466	0.200	608.8	2	1.271	IDENTIFIED	7.047	☐	
Cadmium-109 INT		3.442	0.4885	pCi/g	1.274	Y	86.76	3	1.229	IDENTIFIED	13.67	☑ UI	
Cerium-143		80520	12500	pCi/g	0	N	0	7	0	SHORT_HLIF	0	☐	
Cesium-137 ✓		0.7455	0.0548	pCi/g	0.08439	0.100	661.1	2	1.559	IDENTIFIED	6.57	☐	
Gross Gamma		10.5	1.578	pCi/g	4.676	N		0				☐	
Lead-210 ✓		3.274	0.509	pCi/g	0.9593	N	45.96	1	1.166	IDENTIFIED	15.06	☐	
Lead-212 ✓		1.904	0.1221	pCi/g	0.1208	0.100	238.3	2	1.233	IDENTIFIED	3.434	☐	
Lead-214 ✓		1.556	0.1258	pCi/g	0.1515	0.100	351.6	2	1.398	IDENTIFIED	6.489	☐	
Molybdenum-99	HE	77.02	54.61	pCi/g	0	N	0	7	0	SHORT_HLIF	0	☐	
Neptunium-237 MU		0.9922	0.1751	pCi/g	0.4119	N	86.76	3	1.229	IDENTIFIED	13.67	☐	
Niobium-95m LA		1.374	0.1344	pCi/g	0.4162	N	0	7	0	NOT_IDENTI	0	☐	
Potassium-40 ✓		25.45	1.262	pCi/g	0.6669	1.00	1460	1	2.064	IDENTIFIED	3.86	☐	
Promethium-149	HE	262.1	649.6	pCi/g	0	N	0	7	0	SHORT_HLIF	0	☐	
Radium-224 INT		4.668	0.7589	pCi/g	1.295	Y	241.3	1	1.846	IDENTIFIED	15.5	☑ UI	
Radium-226 ✓		1.43	0.1175	pCi/g	0.1466	Y	608.8	2	1.271	IDENTIFIED	7.047	☐	
Radium-228 ✓		2.076	0.2232	pCi/g	0.3223	0.500	910.5	3	1.982	IDENTIFIED	8.675	☐	
Silver-110m	HE	0.1696	0.03305	pCi/g	0.1115	N	0	7	0	NOT_IDENTI	0	☐	
Sodium-24	HE	4.53E+09	3.11E+09	pCi/g	0	N	0	7	0	SHORT_HLIF	0	☐	
Thallium-208 ✓		0.5144	0.05183	pCi/g	0.06734	0.080	582.9	1	1.723	IDENTIFIED	9.383	☐	
Thorium-228 MU		1.904	0.1221	pCi/g	0.1208	N	238.3	2	1.233	IDENTIFIED	3.434	☐	
Thorium-232 MU		2.076	0.2232	pCi/g	0.3223	N	910.5	3	1.982	IDENTIFIED	8.675	☐	
Thorium-234 ✓		1.743	0.6294	pCi/g	1.245	2.00	63.09	2	1.125	IDENTIFIED	34.96	☐	
Tin-126 MU		0.3325	0.04719	pCi/g	0.1229	N	86.76	3	1.229	IDENTIFIED	13.67	☐	
Total Uranium		5.1884	1.87E-06	ug/g	1.8557	N		0				☐	
Uranium-238	HE	1.743	0.6294	pCi/g	1.245	N	63.09	2	1.125	IDENTIFIED	34.96	☐	

*** = 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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248521011	25-FEB-10 12:00	20-MAR-10 11:10	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	LW	1.711	0.216	pCi/g	0.2763	N	911.5	3	1.175	IDENTIFIED	11.08	☐	
Annihilation Rad.	HE	0.1023	0.04065	pCi/g	0.06058	N	510.9	1	1.617	IDENTIFIED	39.49	☐	
Bismuth-211	INT	4.255	0.3395	pCi/g	0.3795	Y	352	2	1.157	IDENTIFIED	6.456	☑ UI	
Bismuth-212	LA	2.596	0.4984	pCi/g	1.452	N	0	4	0	FAIL_ABUND	0	☐	
Bismuth-214	✓	1.369	0.1162	pCi/g	0.1327	0.200	609.3	2	1.412	IDENTIFIED	6.888	☐	
Cadmium-109	INT	2.148	0.6	pCi/g	1.421	Y	87.1	3	1.041	IDENTIFIED	27.38	☑ UI	
Cerium-143		34270	6473	pCi/g	0	N	0	4	0	SHORT_HLIF	0	☐	
Gross Gamma		9.127	1.265	pCi/g	3.452	N		0				☐	
Iodine-133	HE	25810	1.67E+06	pCi/g	0	N	0	4	0	SHORT_HLIF	0	☐	
Lead-212	✓	1.915	0.1192	pCi/g	0.1051	0.100	238.7	2	1.216	IDENTIFIED	3.517	☐	
Lead-214	✓	1.544	0.1304	pCi/g	0.138	0.100	352	2	1.157	IDENTIFIED	6.456	☐	
Neptunium-237	HE	0.6193	0.1847	pCi/g	0.4686	N	87.1	3	1.041	IDENTIFIED	27.38	☐	
Potassium-40	✓	25.22	1.536	pCi/g	0.6358	1.00	1461	1	2.172	IDENTIFIED	3.859	☐	
Radium-224	INT	5.134	0.7034	pCi/g	1.127	Y	241.7	1	1.678	IDENTIFIED	12.91	☑ UI	
Radium-226	✓	1.369	0.1162	pCi/g	0.1327	Y	609.3	2	1.412	IDENTIFIED	6.888	☐	
Radium-228	✓	1.711	0.216	pCi/g	0.2763	0.500	911.5	3	1.175	IDENTIFIED	11.08	☐	
Strontium-85	LA	0.1084	0.02902	pCi/g	0.09834	Y	0	4	0	NOT_IDENTI	0	☑ UI	Data rejected due to low abundance.
Thallium-208	✓	0.5851	0.05811	pCi/g	0.06641	0.080	583.3	1	1.6	IDENTIFIED	8.82	☐	
Thorium-228	LW	1.915	0.1192	pCi/g	0.1051	N	238.7	2	1.216	IDENTIFIED	3.517	☐	
Thorium-232	LW	1.711	0.216	pCi/g	0.2763	N	911.5	3	1.175	IDENTIFIED	11.08	☐	
Tin-126	HE	0.2075	0.05797	pCi/g	0.138	N	87.1	3	1.041	IDENTIFIED	27.38	☐	
Total Uranium		4.6975	2.43E-06	ug/g	4.242	N		0				☐	

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248526001	25-FEB-10 12:00	19-MAR-10 20:43	22.4	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name		Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	LW	2.387	0.2205	pCi/g	0.2442	N	911.1	3	1.655	IDENTIFIED	6.929	☐	
Annihilation Rad.		0.1527	0.03356	pCi/g	0.04431	N	510.9	1	1.311	IDENTIFIED	21.37	☐	
Bismuth-211	INT	4.708	0.3377	pCi/g	0.3446	Y	351.9	2	1.182	IDENTIFIED	4.877	☑ UI	
Bismuth-212	HE	1.825	0.4591	pCi/g	1.294	N	0	6	0	FAIL_ABUND	0	☐	
Bismuth-214	✓	1.617	0.1275	pCi/g	0.1048	0.200	609.4	2	1.472	IDENTIFIED	5.057	☐	
Cadmium-109	INT	4.543	0.4458	pCi/g	0.7675	Y	87.26	3	1.16	IDENTIFIED	8.224	☑ UI	
Cerium-143		18600	3613	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Gross Gamma		11.48	1.313	pCi/g	3.131	N		0				☐	
Iodine-133	HE	6.48E+05	1.00E+06	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Lead-210	✓	1.651	0.3284	pCi/g	0.6164	N	46.41	1	0.9663	IDENTIFIED	19.22	☐	
Lead-212	✓	2.145	0.1357	pCi/g	0.08657	0.100	238.6	2	0.9452	IDENTIFIED	2.721	☐	
Lead-214	✓	1.709	0.1313	pCi/g	0.1254	0.100	351.9	2	1.182	IDENTIFIED	4.877	☐	
Molybdenum-99	HE	20.71	41.8	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Neptunium-237	NW	1.311	0.1882	pCi/g	0.2371	N	87.26	3	1.16	IDENTIFIED	8.224	☐	
Potassium-40	✓	35.76	1.797	pCi/g	0.5575	1.00	1461	1	2.064	IDENTIFIED	2.668	☐	
Promethium-149	HE	152.1	421.7	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐	
Radium-224	INT	4.759	0.7375	pCi/g	0.9289	Y	241.4	1	1.769	IDENTIFIED	14.58	☑ UI	
Radium-226	✓	1.617	0.1275	pCi/g	0.1048	Y	609.4	2	1.472	IDENTIFIED	5.057	☐	

Radium-228	✓	2.387	0.2205	pCi/g	0.2442	0.500	911.1	3	1.655	IDENTIFIED	6.929	☐
Technetium-99m		1.31E+25	0	pCi/g	0	N	0	6	0	SHORT_HLIF	0	☐
Thallium-208	✓	0.6515	0.05532	pCi/g	0.05534	0.080	583.2	1	1.307	IDENTIFIED	6.355	☐
Thorium-228	MU	2.145	0.1357	pCi/g	0.08657	N	238.6	2	0.9452	IDENTIFIED	2.721	☐
Thorium-232	MU	2.387	0.2205	pCi/g	0.2442	N	911.1	3	1.655	IDENTIFIED	6.929	☐
Thorium-234	✓	1.538	0.4724	pCi/g	0.811	2.00	63.48	2	0.8933	IDENTIFIED	29.2	☐
Tin-126	MU	0.4393	0.04311	pCi/g	0.07406	N	87.26	3	1.16	IDENTIFIED	8.224	☐
Total Uranium		4.5652	1.41E-06	ug/g	1.2089	N		0				☐
Uranium-238	HE	1.538	0.4724	pCi/g	0.811	N	63.48	2	0.8933	IDENTIFIED	29.2	☐

*** = 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
1202061469		20-MAR-10 11:11	0	MB	LOAD	1		GEL	N	RGSP

Name		Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Iodine-135	HE	2.11E+14	2.77E+14	pCi/g	0	N	0	1	0	SHORT_HLIF	0	☐	

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202061470	25-FEB-10 12:00	20-MAR-10 11:11	23	DUP	LOAD	1		LANL01004GEL	N	RGSP

Name		Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	MU	2.44	0.2357	pCi/g	0.2463	N	911.4	3	1.836	IDENTIFIED	7.218	☐	
Annihilation Rad.		0.1513	0.03866	pCi/g	0.04946	N	510.9	1	1.931	IDENTIFIED	25.18	☐	
Bismuth-211	INT	4.802	0.3187	pCi/g	0.3548	Y	351.9	2	1.289	IDENTIFIED	4.922	☑ UI	
Bismuth-212	U	2.345	0.4383	pCi/g	1.327	N	0	5	0	FAIL_ABUND	0	☐	
Bismuth-214	✓	1.51	0.1185	pCi/g	0.114	0.200	609.4	2	1.333	IDENTIFIED	5.888	☐	
Cadmium-109	INT	3.907	0.5889	pCi/g	1.293	Y	87.29	3	1.131	IDENTIFIED	14.33	☑ UI	
Cadmium-115	HE	50.96	68.49	pCi/g	0	N	0	5	0	SHORT_HLIF	0	☐	
Cerium-143		37560	6564	pCi/g	0	N	0	5	0	SHORT_HLIF	0	☐	
Gross Gamma		11.85	1.665	pCi/g	4.182	N		0				☐	
Iodine-133	HE	8.59E+05	1.70E+06	pCi/g	0	N	0	5	0	SHORT_HLIF	0	☐	
Lead-212	✓	1.976	0.1133	pCi/g	0.1011	0.100	238.7	2	1.077	IDENTIFIED	3.072	☐	
Lead-214	✓	1.743	0.1253	pCi/g	0.129	0.100	351.9	2	1.289	IDENTIFIED	4.922	☐	
Neptunium-237	MU	1.126	0.2068	pCi/g	0.3787	N	87.29	3	1.131	IDENTIFIED	14.33	☐	
Potassium-40	✓	36.53	1.928	pCi/g	0.4204	1.00	1461	1	2.025	IDENTIFIED	2.701	☐	
Promethium-149	HE	259.8	556.8	pCi/g	0	N	0	5	0	SHORT_HLIF	0	☐	
Radium-224	INT	4.837	0.7097	pCi/g	1.084	Y	241.6	1	1.726	IDENTIFIED	14.04	☑ UI	
Radium-226	✓	1.51	0.1185	pCi/g	0.114	Y	609.4	2	1.333	IDENTIFIED	5.888	☐	
Radium-228	✓	2.44	0.2357	pCi/g	0.2463	0.500	911.4	3	1.836	IDENTIFIED	7.218	☐	
Thallium-208	✓	0.759	0.05396	pCi/g	0.05889	0.080	583.2	1	1.608	IDENTIFIED	5.284	☐	
Thorium-228	MU	1.976	0.1133	pCi/g	0.1011	N	238.7	2	1.077	IDENTIFIED	3.072	☐	
Thorium-232	MU	2.44	0.2357	pCi/g	0.2463	N	911.4	3	1.836	IDENTIFIED	7.218	☐	
Tin-126	MU	0.3774	0.05689	pCi/g	0.1255	N	87.29	3	1.131	IDENTIFIED	14.33	☐	
Total Uranium		5.5535	3.04E-06	ug/g	3.5542	N		0				☐	

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202061471		20-MAR-10 11:12	0	LCS	LOAD	1		GEL	N	RGSP

Name		Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment
Actinium-228		**1.111**	0.2752	pCi/g	**0.5166**	N	911.5	3	2.109	IDENTIFIED	23.97	☐	
Americium-241		**13.77**	0.6143	pCi/g	**0.4066**	**0.200**	59.65	1	1.107	IDENTIFIED	2.138	☐	
Barium-137m		**5.837**	0.3191	pCi/g	**0.08916**	N	662.1	2	1.531	IDENTIFIED	2.167	☐	
Bismuth-211		**2.426**	0.3402	pCi/g	**0.5728**	Y	352.1	2	1.203	IDENTIFIED	13.18	☐	
Bismuth-212	HE	**1.997**	0.5395	pCi/g	**1.655**	N	0	6	0	FAIL_ABUND	0	☐	
Bismuth-214		**0.8831**	0.1309	pCi/g	**0.1951**	**0.200**	609.6	2	1.305	IDENTIFIED	13.73	☐	
Cadmium-109		**32.07**	1.942	pCi/g	**1.932**	Y	88.19	2	1.132	IDENTIFIED	3.79	☐	
Cerium-143		**442.3**	132.7	pCi/g	**0**	N	0	6	0	SHORT_HLIF	0	☐	
Cesium-137		**6.166**	0.3375	pCi/g	**0.09419**	**0.100**	662.1	2	1.531	IDENTIFIED	2.167	☐	
Cobalt-57		**0.1504**	0.02677	pCi/g	**0.06066**	N	122.2	1	1.1	IDENTIFIED	17.3	☐	
Cobalt-60		**6.106**	0.2979	pCi/g	**0.07525**	**0.100**	1333	1	1.736	IDENTIFIED	2.501	☐	
Gross Gamma		**27.06**	2.36	pCi/g	**3.804**	N		0				☐	
Iodine-133	HE	**498.1**	3094	pCi/g	**0**	N	0	6	0	SHORT_HLIF	0	☐	
Lead-212		**0.9728**	0.09787	pCi/g	**0.1825**	**0.100**	238.6	2	1.052	IDENTIFIED	8.527	☐	
Lead-214		**0.8804**	0.1258	pCi/g	**0.1993**	**0.100**	352.1	2	1.203	IDENTIFIED	13.18	☐	
Neptunium-237		**3.39**	0.454	pCi/g	**0.9202**	N	0	6	0	NOT_IDENTI	0	☐	
Potassium-40		**1.158**	0.4351	pCi/g	**0.6965**	**1.00**	1462	1	1.231	IDENTIFIED	37.32	☐	
Radium-224		**4.19**	0.6582	pCi/g	**2.284**	Y	0	6	0	NOT_IDENTI	0	☐	
Radium-226		**0.8831**	0.1309	pCi/g	**0.1951**	Y	609.6	2	1.305	IDENTIFIED	13.73	☐	
Radium-228		**1.111**	0.2752	pCi/g	**0.5166**	**0.500**	911.5	3	2.109	IDENTIFIED	23.97	☐	
Technetium-99m	HE	**1.68E+15**	4.14E+15	pCi/g	**0**	N	0	6	0	SHORT_HLIF	0	☐	
Thallium-208		**0.2851**	0.06265	pCi/g	**0.1038**	**0.080**	583.8	1	1.43	IDENTIFIED	21.36	☐	
Thorium-228		**0.9728**	0.09787	pCi/g	**0.1825**	N	238.6	2	1.052	IDENTIFIED	8.527	☐	
Thorium-232		**1.111**	0.2752	pCi/g	**0.5166**	N	911.5	3	2.109	IDENTIFIED	23.97	☐	
Tin-126		**3.138**	0.19	pCi/g	**0.1896**	N	88.19	2	1.132	IDENTIFIED	3.79	☐	

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

Result Greater Than DL

Batch Id	Sample Id	Sample Type	Run Date	Parmname	Result	Uncertanty	Units	DL	RDL
961099	248526001	SAMPLE	19-MAR-10	Molybdenum-99	20.71	41.8	pCi/g	0	N
				Potassium-40	35.76	1.797	pCi/g	0.2789	1.00
				Promethium-149	152.1	421.7	pCi/g	0	N
				Radium-224	4.759	0.7375	pCi/g	0.4647	Y
				Radium-226	1.617	0.1275	pCi/g	0.05245	Y
				Radium-228	2.387	0.2205	pCi/g	0.1222	0.500
				Strontium-85	0.04462	0.02191	pCi/g	0.03467	Y
				Technetium-99m	1.31E+25	0	pCi/g	0	N
				Thallium-208	0.6515	0.05532	pCi/g	0.02768	0.080
				Thorium-234	1.538	0.4724	pCi/g	0.4057	2.00
				Yttrium-91	27.27	14.22	pCi/g	25.2	N
961099	1202061469	MB	20-MAR-10	Americium-241	0.04797	0.0212	pCi/g	0.04012	0.200
				Iodine-135	2.11E+14	2.77E+14	pCi/g	0	N
961099	1202061470	DUP	20-MAR-10	Bismuth-211	4.802	0.3187	pCi/g	0.1775	Y
				Bismuth-214	1.51	0.1185	pCi/g	0.05706	0.200
				Cadmium-109	3.907	0.5889	pCi/g	0.6471	Y
				Cadmium-115	50.96	68.49	pCi/g	0	N
				Cerium-143	37560	6564	pCi/g	0	N
				Cesium-134	0.08606	0.03105	pCi/g	0.05054	0.100
				Gross Gamma	11.85	1.665	pCi/g	2.033	N
				Iodine-133	8.59E+05	1.70E+06	pCi/g	0	N
				Lead-212	1.976	0.1133	pCi/g	0.0506	0.100
				Lead-214	1.743	0.1253	pCi/g	0.06456	0.100
				Mercury-203	0.0801	0.02563	pCi/g	0.04216	0.100
				Potassium-40	36.53	1.928	pCi/g	0.2103	1.00
				Promethium-149	259.8	556.8	pCi/g	0	N
				Radium-224	4.837	0.7097	pCi/g	0.5422	Y
				Radium-226	1.51	0.1185	pCi/g	0.05706	Y
				Radium-228	2.44	0.2357	pCi/g	0.1232	0.500
				Strontium-85	0.07766	0.02346	pCi/g	0.03981	Y
				Thallium-208	0.759	0.05396	pCi/g	0.02946	0.080
				Thorium-234	1.87	1.02	pCi/g	1.194	2.00
961099	1202061471	LCS	20-MAR-10	Americium-241	13.77	0.6143	pCi/g	0.2034	0.200
				Barium-137m	5.837	0.3191	pCi/g	0.04461	N
				Bismuth-211	2.426	0.3402	pCi/g	0.2866	Y
				Bismuth-214	0.8831	0.1309	pCi/g	0.09762	0.200
				Cadmium-109	32.07	1.942	pCi/g	0.9664	Y

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 22:43:26.82

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*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
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Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521001.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 20:42:06
Sample ID         : G248521001           Sample quantity  : 1.16740E+02 GRAM
Detector name     : GAM19                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.62  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	6	75.00*	437	444	1.04	149.84	146	18	6.08E-02	9.0	1.50E+00
2	6	77.27	800	513	1.30	154.39	146	18	1.11E-01	6.4	
3	2	87.37	381	386	1.42	174.57	163	40	5.29E-02	10.4	1.74E+00
4	2	89.95	242	317	1.25	179.71	163	40	3.36E-02	14.3	
5	2	92.96*	311	422	1.64	185.73	163	40	4.32E-02	14.9	
6	0	185.73*	267	387	1.78	371.13	365	12	3.71E-02	16.3	
7	0	209.36	107	332	1.21	418.36	413	10	1.49E-02	33.3	
8	2	238.61*	1377	234	1.30	476.81	468	21	1.91E-01	3.4	1.25E+00
9	2	241.52	345	294	1.68	482.63	468	21	4.80E-02	12.0	
10	0	270.11	110	197	1.48	539.78	536	9	1.53E-02	24.7	
11	3	295.13	434	181	1.22	589.78	584	20	6.03E-02	6.9	2.05E+00
12	3	300.07	90	190	1.56	599.65	584	20	1.25E-02	30.6	
13	0	328.38	69	230	1.47	656.24	649	13	9.54E-03	47.2	
14	0	338.24	299	176	1.54	675.96	671	9	4.15E-02	9.9	
15	0	351.90*	777	181	1.31	703.25	698	12	1.08E-01	5.1	
16	0	409.70	31	98	0.57	818.80	815	7	4.26E-03	57.2	
17	0	462.50	60	107	1.58	924.35	921	9	8.37E-03	33.4	
18	0	510.91*	136	166	1.65	1021.13	1012	18	1.89E-02	26.7	
19	0	568.36*	159	128	2.39	1135.99	1129	15	2.21E-02	17.7	
20	0	583.46*	472	120	1.65	1166.17	1158	17	6.56E-02	7.1	
21	0	609.49*	529	114	1.47	1218.21	1211	14	7.34E-02	6.1	
22	0	661.53	101	70	1.71	1322.26	1316	13	1.40E-02	19.9	
23	0	727.78	144	68	1.63	1454.72	1446	18	2.01E-02	15.7	
24	0	796.65	96	107	6.15	1592.45	1582	26	1.33E-02	31.7	
25	0	861.00	76	23	1.87	1721.12	1717	9	1.05E-02	16.1	
26	0	911.76*	305	93	1.86	1822.64	1816	17	4.23E-02	9.2	
27	1	965.26	78	29	2.01	1929.64	1922	22	1.09E-02	19.7	2.23E+00
28	1	969.26*	187	40	2.01	1937.64	1922	22	2.59E-02	9.8	
29	0	1120.77	101	96	1.64	2240.68	2234	15	1.40E-02	23.2	
30	0	1238.42	50	68	1.65	2476.04	2468	17	6.94E-03	40.3	
31	0	1379.12	41	19	4.83	2757.53	2752	14	5.63E-03	28.5	
32	0	1461.48*	1178	21	1.92	2922.31	2913	17	1.64E-01	3.1	
33	0	1559.84	18	3	0.98	3119.14	3112	13	2.47E-03	31.6	
34	0	1588.68	32	16	1.29	3176.86	3170	13	4.44E-03	31.4	
35	0	1730.48	30	9	2.01	3460.63	3454	12	4.19E-03	27.0	
36	0	1765.07	94	5	2.98	3529.87	3523	16	1.31E-02	11.4	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 22:43:29

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521001.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 20:42:06
Sample ID : G248521001 Sample quantity : 116.74 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA19 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.62 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.041E+01	2.936E+00	5.468E-01	4.072E-02	55.623
CD-109	+	88.03	*	5.614E+00	1.269E+00	1.250E+00	1.119E-01	4.492
SN-126		64.28		6.597E-01	6.027E-01	9.960E-01	1.455E-01	0.662
	+	86.94		2.257E+00	1.046E+00	5.076E-01	2.102E-01	4.446
	+	87.57	*	5.429E-01	1.227E-01	1.214E-01	1.083E-02	4.473
BA-137M	+	661.66	*	1.568E-01	6.317E-02	6.709E-02	3.907E-03	2.338
CS-137	+	661.66	*	1.657E-01	6.674E-02	7.088E-02	4.145E-03	2.338
TL-208		277.37		3.195E-01	4.594E-01	7.835E-01	8.443E-02	0.408
	+	583.19	*	6.997E-01	1.106E-01	6.756E-02	4.584E-03	10.356
	+	860.56		1.058E+00	3.546E-01	5.598E-01	5.012E-02	1.890
BI-211		72.87		1.069E+01	4.495E+00	6.943E+00	5.440E-01	1.539
	+	351.06	*	5.105E+00	6.119E-01	4.386E-01	2.801E-02	11.641
PB-212	+	74.82		2.690E+00	5.890E-01	6.959E-01	8.738E-02	3.865
	+	77.11		2.831E+00	4.305E-01	3.951E-01	3.191E-02	7.166
	+	238.63	*	2.024E+00	2.010E-01	1.093E-01	7.963E-03	18.510
	+	300.09		2.055E+00	1.270E+00	1.456E+00	1.223E-01	1.412
BI-214	+	609.32	*	1.517E+00	2.200E-01	1.320E-01	1.046E-02	11.492
	+	1120.29		1.496E+00	7.074E-01	5.495E-01	5.059E-02	2.722
	+	1764.49		1.929E+00	4.532E-01	2.889E-01	1.751E-02	6.677
PB-214	+	74.82		4.767E+00	1.009E+00	1.233E+00	1.384E-01	3.865
	+	77.11		4.991E+00	8.634E-01	6.965E-01	8.041E-02	7.166
	+	242.00		3.080E+00	7.818E-01	6.645E-01	5.387E-02	4.635
	+	295.22		1.758E+00	2.876E-01	2.661E-01	2.323E-02	6.606
	+	351.93	*	1.853E+00	2.445E-01	1.413E-01	1.192E-02	13.113
RA-224	+	240.99	*	5.446E+00	1.346E+00	1.171E+00	6.637E-02	4.650
RA-226	+	609.32	*	1.517E+00	2.200E-01	1.320E-01	1.046E-02	11.492
	+	1120.29		1.496E+00	7.074E-01	5.495E-01	5.059E-02	2.722
	+	1764.49		1.929E+00	4.532E-01	2.889E-01	1.751E-02	6.677
AC-228	+	338.32		2.184E+00	9.981E-01	4.222E-01	1.741E-01	5.171
	+	911.20	*	2.177E+00	4.745E-01	2.440E-01	2.845E-02	8.920
	+	968.97		2.298E+00	7.169E-01	3.784E-01	9.162E-02	6.072
RA-228	+	338.32		2.184E+00	9.981E-01	4.222E-01	1.741E-01	5.171
	+	911.20	*	2.177E+00	4.745E-01	2.440E-01	2.845E-02	8.920
	+	968.97		2.298E+00	7.169E-01	3.784E-01	9.162E-02	6.072

Sample ID : G248521001 Acquisition date : 19-MAR-2010 20:42:06

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.690E+00	5.286E-01	6.959E-01	5.584E-02	3.865
	+	77.11		2.831E+00	4.305E-01	3.951E-01	3.191E-02	7.166
	+	238.63	*	2.024E+00	2.010E-01	1.093E-01	7.963E-03	18.510
	+	300.09		2.055E+00	1.775E+00	1.456E+00	8.863E-01	1.412
TH-232	+	338.32		2.184E+00	4.493E-01	4.222E-01	2.441E-02	5.171
	+	911.20	*	2.177E+00	4.745E-01	2.440E-01	2.845E-02	8.920
	+	968.97		2.298E+00	7.169E-01	3.784E-01	9.162E-02	6.072
U-235	+	89.96		3.587E+00	1.356E+00	1.267E+00	3.122E-01	2.830
	+	93.35		2.791E+00	1.049E+00	7.663E-01	1.759E-01	3.642
		143.76	*	1.376E-01	2.480E-01	4.074E-01	6.362E-02	0.338
		163.33		-1.160E-01	5.355E-01	8.463E-01	1.405E-01	-0.137
	+	185.72		2.551E-01	8.444E-02	7.908E-02	4.226E-03	3.226
		205.31		2.384E-02	6.478E-01	9.103E-01	1.537E-01	0.026
NP-237	+	86.48	*	1.620E+00	4.993E-01	3.660E-01	8.326E-02	4.425
		95.86		1.659E+00	1.221E+00	1.775E+00	4.217E-01	0.935
ANH-511	+	511.00	*	1.537E-01	8.246E-02	5.269E-02	3.109E-03	2.918

---- 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	*	8.833E-02	3.932E-01	6.607E-01	4.483E-02	0.134
NA-22		1274.54	*	2.470E-02	4.836E-02	8.424E-02	5.619E-03	0.293
NA-24		1368.63	*	4.731E+02	4.836E-02	Half-Life too short		
SC-46		889.28	*	-3.627E-02	4.931E-02	7.363E-02	6.399E-03	-0.493
	+	1120.55		2.686E-01	1.258E-01	1.640E-01	1.034E-02	1.638
V-48		944.13		6.344E-01	1.394E+00	2.341E+00	1.972E-01	0.271
		983.53	*	-5.511E-02	1.166E-01	1.782E-01	1.433E-02	-0.309
		1312.11		2.520E-03	1.261E-01	2.096E-01	1.491E-02	0.012
CR-51		320.08	*	-2.167E-01	5.072E-01	8.083E-01	5.223E-02	-0.268
MN-54		834.85	*	1.187E-02	4.384E-02	7.258E-02	5.774E-03	0.164
CO-56		846.77	*	-1.023E-02	4.899E-02	7.695E-02	6.243E-03	-0.133
		1037.84		-2.440E-01	3.872E-01	6.126E-01	4.867E-02	-0.398
	+	1238.28		2.201E-01	1.782E-01	1.966E-01	1.292E-02	1.119
		1771.35		-1.186E-01	3.097E-01	3.832E-01	2.310E-02	-0.309
CO-57		122.06	*	-2.836E-03	2.889E-02	4.683E-02	2.795E-03	-0.061
		136.47		-1.753E-01	2.626E-01	4.151E-01	2.735E-02	-0.422
CO-58		810.76	*	-1.294E-02	5.000E-02	7.912E-02	6.063E-03	-0.163
FE-59		1099.45	*	7.506E-03	1.179E-01	1.982E-01	1.487E-02	0.038
		1291.59		6.478E-02	1.481E-01	2.567E-01	2.126E-02	0.252
CO-60		1173.23		-3.697E-03	5.183E-02	8.457E-02	4.634E-03	-0.044
		1332.49	*	1.768E-02	4.374E-02	7.572E-02	5.580E-03	0.234
ZN-65		1115.54	*	-3.308E-02	1.142E-01	1.581E-01	1.011E-02	-0.209
SE-75		121.12		-9.955E-02	1.569E-01	2.481E-01	2.285E-02	-0.401
		136.00		-2.079E-02	5.104E-02	8.155E-02	4.698E-03	-0.255
		264.66	*	1.146E-02	5.443E-02	8.480E-02	4.933E-03	0.135
		279.54		5.319E-02	1.349E-01	2.277E-01	1.427E-02	0.234
		400.66		2.005E-01	3.220E-01	5.535E-01	4.951E-02	0.362
SR-85		514.00	*	1.302E-01	5.367E-02	9.170E-02	5.415E-03	1.419

---- 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		-1.120E-02	5.065E-02	7.992E-02	7.074E-03	-0.140
		1836.06	*	1.126E-03	3.447E-02	5.654E-02	3.228E-03	0.020
Y-91		1204.77	*	-8.923E+00	2.608E+01	4.212E+01	2.459E+00	-0.212
NB-94		702.65	*	-1.215E-03	3.761E-02	6.116E-02	3.852E-03	-0.020
		871.09		-2.193E-02	3.973E-02	6.061E-02	5.116E-03	-0.362
NB-95		765.81	*	1.262E-02	5.616E-02	9.275E-02	6.554E-03	0.136
NB-95M		235.69	*	4.175E-01	2.003E-01	3.084E-01	2.292E-02	1.354
ZR-95		724.19		-6.036E-02	1.310E-01	1.741E-01	1.303E-02	-0.347
		756.73	*	2.015E-02	8.896E-02	1.474E-01	1.185E-02	0.137
MO-99		140.51		-1.628E-04	8.896E-02	Half-Life too short		
		181.07		8.213E-06	8.896E-02	Half-Life too short		
		366.42		4.904E-05	8.896E-02	Half-Life too short		
		739.50	*	2.860E-05	8.896E-02	Half-Life too short		
		777.92		-1.561E-04	8.896E-02	Half-Life too short		
TC-99M		140.51	*	-2.234E+19	8.896E-02	Half-Life too short		
RU-103		497.08	*	3.459E-02	4.892E-02	8.459E-02	1.054E-02	0.409
	+	610.33		1.779E+01	3.448E+00	3.853E+00	5.816E-01	4.617
RH-106		621.93	*	-1.319E-01	3.593E-01	5.709E-01	6.662E-02	-0.231
		1050.41		1.184E-01	2.848E+00	4.791E+00	3.483E-01	0.025
RU-106		621.93	*	-1.319E-01	3.590E-01	5.709E-01	3.366E-02	-0.231
		1050.41		1.184E-01	2.848E+00	4.791E+00	3.483E-01	0.025
AG-108M		433.94	*	1.050E-02	3.266E-02	5.535E-02	3.397E-03	0.190
		614.28		1.437E-02	4.581E-02	6.715E-02	4.238E-03	0.214
		722.91		1.729E-03	4.458E-02	6.303E-02	4.350E-03	0.027
AG-110M		657.76	*	2.714E-02	4.458E-02	6.744E-02	4.185E-03	0.402
		677.62		2.141E-01	3.668E-01	6.260E-01	3.979E-02	0.342
		706.68		-1.534E-01	2.522E-01	3.905E-01	2.608E-02	-0.393
		763.94		-1.833E-01	2.029E-01	3.051E-01	2.237E-02	-0.601
		884.68		4.437E-02	5.757E-02	9.949E-02	8.858E-03	0.446
		937.49		-1.253E-01	1.359E-01	1.981E-01	1.744E-02	-0.633
		1384.29		2.704E-02	1.942E-01	2.834E-01	2.146E-02	0.095
		1505.03		-1.323E-01	2.702E-01	4.078E-01	2.873E-02	-0.325
SN-113		391.69	*	-5.971E-03	5.517E-02	9.140E-02	5.453E-03	-0.065
CD-115		260.90		-1.198E-04	5.517E-02	Half-Life too short		
		492.35		-3.037E-04	5.517E-02	Half-Life too short		
		527.90	*	-1.960E-05	5.517E-02	Half-Life too short		
SN-117M		156.02		-2.008E+00	4.103E+00	6.512E+00	3.490E-01	-0.308
		158.56	*	1.097E-02	9.656E-02	1.569E-01	8.351E-03	0.070
TE-123M		159.00	*	4.707E-04	3.608E-02	5.840E-02	3.154E-03	0.008
SB-124		602.73		-1.449E-02	5.584E-02	7.715E-02	4.568E-03	-0.188
		645.85		4.089E-02	5.685E-01	9.359E-01	6.144E-02	0.044
		722.78		4.240E-02	4.885E-01	6.949E-01	4.724E-02	0.061
		1690.97	*	-9.579E-03	7.683E-02	1.222E-01	8.403E-03	-0.078
SB-125		427.87	*	6.872E-02	9.991E-02	1.731E-01	1.029E-02	0.397
	+	463.37		6.063E-01	4.070E-01	6.291E-01	4.238E-02	0.964
		600.60		1.312E-01	1.999E-01	3.433E-01	2.340E-02	0.382
		635.95		-2.637E-01	3.089E-01	4.689E-01	3.217E-02	-0.562
TE-125M		109.28	*	-3.143E+00	1.308E+01	2.115E+01	1.913E+00	-0.149
I-126		388.63		-2.445E-01	2.836E-01	4.483E-01	2.502E-02	-0.545

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		666.33	*	9.316E-02	4.115E-01	5.967E-01	3.506E-02	0.156
		753.82		1.938E+00	3.046E+00	5.210E+00	3.604E-01	0.372
SB-126		414.70		-6.891E-02	1.380E-01	2.002E-01	1.132E-02	-0.344
		666.50		3.257E-02	1.438E-01	2.086E-01	1.226E-02	0.156
		695.00		3.480E-02	1.308E-01	2.179E-01	1.353E-02	0.160
		697.00		-2.332E-01	4.637E-01	7.253E-01	4.520E-02	-0.321
		720.70	*	1.052E-01	2.640E-01	3.900E-01	2.540E-02	0.270
		856.80		-2.483E-01	9.259E-01	1.243E+00	1.025E-01	-0.200
SB-127		252.40		5.767E+00	1.946E+01	3.131E+01	1.307E+01	0.184
		473.00		-2.002E+00	7.057E+00	1.146E+01	1.547E+00	-0.175
		685.70	*	3.249E+00	5.472E+00	9.338E+00	1.150E+00	0.348
		783.70		1.066E+01	1.515E+01	2.588E+01	3.577E+00	0.412
I-131		80.19		2.059E+01	1.384E+01	1.604E+01	1.350E+00	1.284
		284.31		-6.759E-01	3.093E+00	5.151E+00	3.360E-01	-0.131
		364.49	*	-2.535E-01	2.416E-01	3.774E-01	2.442E-02	-0.672
		636.99		-2.659E+00	3.293E+00	5.019E+00	3.344E-01	-0.530
TE-132		49.72		-1.602E+01	9.315E+01	1.531E+02	1.896E+01	-0.105
		111.76		-1.119E+02	1.962E+02	3.124E+02	3.771E+01	-0.358
		116.30		2.576E+01	1.675E+02	2.745E+02	3.269E+01	0.094
		228.16	*	-4.384E+00	4.360E+00	6.556E+00	1.063E+00	-0.669
BA-133		81.00		1.597E-01	1.520E-01	1.697E-01	2.609E-02	0.941
		276.40		4.496E-01	4.412E-01	7.328E-01	9.220E-02	0.614
		302.85		2.204E-02	1.851E-01	2.730E-01	3.115E-02	0.081
		356.01	*	-1.760E-02	5.097E-02	7.186E-02	8.077E-03	-0.245
		383.85		-1.858E-01	3.281E-01	5.277E-01	5.573E-02	-0.352
I-133		529.87	*	2.292E-01	3.281E-01	Half-Life too short		
		875.33		2.327E+01	3.281E-01	Half-Life too short		
		1298.22		-8.707E+01	3.281E-01	Half-Life too short		
CS-134		563.25		2.917E-01	4.608E-01	6.996E-01	4.237E-02	0.417
	+	569.33		1.305E+00	4.692E-01	5.873E-01	3.586E-02	2.222
		604.72		1.205E-02	4.110E-02	6.022E-02	3.582E-03	0.200
	+	795.86	*	2.080E-01	1.328E-01	1.030E-01	7.744E-03	2.020
		801.95		-4.728E-01	5.473E-01	6.766E-01	5.129E-02	-0.699
		1365.19		-6.784E-01	1.319E+00	2.029E+00	1.581E-01	-0.334
CS-135		268.22	*	2.994E-01	2.046E-01	3.259E-01	2.487E-02	0.919
I-135		546.56		4.802E+17	2.046E-01	Half-Life too short		
		836.80		9.597E+17	2.046E-01	Half-Life too short		
		1038.76		9.169E+17	2.046E-01	Half-Life too short		
		1131.51		-7.286E+17	2.046E-01	Half-Life too short		
		1260.41	*	-4.219E+17	2.046E-01	Half-Life too short		
		1457.56		1.978E+19	2.046E-01	Half-Life too short		
		1678.03		-8.479E+17	2.046E-01	Half-Life too short		
		1791.20		3.854E+16	2.046E-01	Half-Life too short		
CS-136		153.25		9.102E-01	1.554E+00	2.570E+00	1.997E-01	0.354
		176.60		-5.554E-02	8.828E-01	1.420E+00	9.443E-02	-0.039
		273.65		-9.360E-01	1.038E+00	1.437E+00	9.816E-02	-0.651
		340.55		9.789E-01	3.042E-01	5.201E-01	3.259E-02	1.882
		818.51		9.927E-02	1.195E-01	2.082E-01	1.615E-02	0.477
		1048.07	*	1.233E-01	1.713E-01	3.050E-01	2.359E-02	0.404

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1235.36		-5.733E-01	1.111E+00	1.490E+00	1.510E-01	-0.385
CE-139		165.86	*	7.364E-03	3.751E-02	6.109E-02	3.189E-03	0.121
BA-140		162.66		-1.472E+00	1.489E+00	2.274E+00	1.403E-01	-0.647
		304.85		-3.539E-01	2.563E+00	3.708E+00	1.059E+00	-0.095
		423.72		-1.081E+00	3.285E+00	5.318E+00	1.715E+00	-0.203
		537.26	*	-2.897E-03	4.442E-01	7.317E-01	2.439E-01	-0.004
LA-140	+	328.76		9.224E-01	8.719E-01	9.647E-01	6.279E-02	0.956
		487.02		1.006E-01	2.197E-01	3.750E-01	2.483E-02	0.268
		815.77		-2.936E-01	5.443E-01	8.345E-01	7.361E-02	-0.352
		1596.21	*	-6.968E-03	1.555E-01	2.343E-01	1.585E-02	-0.030
CE-141		145.44	*	2.655E-02	8.931E-02	1.464E-01	8.434E-03	0.181
CE-143		57.36		2.234E-03	8.931E-02	Half-Life too short		
		293.27	*	4.620E-02	8.931E-02	Half-Life too short		
		664.57		8.273E-02	8.931E-02	Half-Life too short		
		721.93		2.981E-02	8.931E-02	Half-Life too short		
CE-144		80.12		6.499E+00	4.090E+00	4.766E+00	3.950E-01	1.364
		133.52	*	-8.839E-02	2.586E-01	4.143E-01	5.740E-02	-0.213
PM-144		476.78		-2.679E-02	7.405E-02	1.195E-01	8.244E-03	-0.224
		618.01		-9.148E-03	3.845E-02	6.189E-02	3.870E-03	-0.148
		696.49	*	5.411E-03	3.831E-02	6.320E-02	3.940E-03	0.086
PR-144		696.51	*	3.973E-01	2.877E+00	4.745E+00	2.954E-01	0.084
		1489.16		-1.369E+00	1.461E+01	2.374E+01	1.682E+00	-0.058
PM-146		453.88	*	7.955E-03	4.918E-02	8.237E-02	6.957E-03	0.097
		633.25		1.289E-01	1.586E+00	2.613E+00	9.845E-01	0.049
		735.93		-5.196E-02	1.905E-01	2.716E-01	7.468E-02	-0.191
		747.24		-2.794E-02	1.187E-01	1.891E-01	2.574E-02	-0.148
ND-147	+	91.11		1.835E+00	5.539E-01	1.008E+00	9.317E-02	1.821
		319.41		-1.712E+00	5.854E+00	9.666E+00	5.623E-01	-0.177
		531.02	*	8.786E-02	9.651E-01	1.602E+00	2.175E-01	0.055
PM-149		285.90	*	-3.378E-04	9.651E-01	Half-Life too short		
EU-152		121.78		-3.191E-02	8.259E-02	1.322E-01	1.020E-02	-0.241
		244.70		4.898E-01	4.437E-01	6.626E-01	3.765E-02	0.739
		344.28	*	-1.498E-01	1.285E-01	1.797E-01	1.168E-02	-0.834
		778.90		-9.669E-02	3.064E-01	4.836E-01	3.497E-02	-0.200
	+	964.08		1.038E+00	4.182E-01	6.488E-01	5.343E-02	1.600
		1085.87		-1.015E-01	4.423E-01	7.247E-01	4.930E-02	-0.140
		1112.07		7.868E-02	3.296E-01	5.395E-01	3.470E-02	0.146
		1408.01		7.352E-02	2.159E-01	3.703E-01	2.690E-02	0.199
GD-153		69.67		-4.800E-02	2.275E+00	3.463E+00	2.665E-01	-0.014
		97.43	*	7.707E-02	1.105E-01	1.638E-01	1.274E-02	0.471
		103.18		-1.364E-01	1.579E-01	2.153E-01	1.559E-02	-0.633
EU-154		123.07		-2.156E-02	5.787E-02	9.264E-02	8.776E-03	-0.233
		723.31		-8.576E-02	2.137E-01	2.855E-01	2.186E-02	-0.300
		873.19		-6.374E-02	3.114E-01	4.923E-01	5.803E-02	-0.129
		996.26		-2.612E-01	4.348E-01	6.523E-01	1.117E-01	-0.401
		1004.73		-2.204E-02	2.444E-01	4.072E-01	4.500E-02	-0.054
		1274.44	*	5.175E-02	1.388E-01	2.386E-01	2.380E-02	0.217
EU-155	+	86.55		6.601E-01	1.494E-01	2.395E-01	2.134E-02	2.757
		105.31	*	1.441E-01	1.354E-01	2.217E-01	1.594E-02	0.650

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	86.79		1.872E+00	4.231E-01	6.718E-01	5.943E-02	2.786
		197.04		2.382E-01	7.603E-01	1.221E+00	6.618E-02	0.195
		215.65		-2.011E-01	9.278E-01	1.473E+00	8.153E-02	-0.137
	+	298.57		3.102E-01	1.908E-01	2.652E-01	1.542E-02	1.170
		879.36	*	5.121E-02	1.734E-01	2.877E-01	2.461E-02	0.178
		962.29		6.783E-01	6.735E-01	1.056E+00	8.716E-02	0.642
	+	966.15		7.764E-01	3.128E-01	5.744E-01	4.719E-02	1.352
		1177.93		-9.011E-02	4.429E-01	7.253E-01	4.013E-02	-0.124
		1271.85		2.844E-01	8.588E-01	1.471E+00	9.747E-02	0.193
HO-166M		80.57		4.995E-01	4.310E-01	4.892E-01	4.071E-02	1.021
	+	184.41		2.027E-01	6.709E-02	8.175E-02	4.361E-03	2.479
		280.46		-2.416E-02	9.659E-02	1.607E-01	9.311E-03	-0.150
	+	410.95		2.607E-01	2.983E-01	4.980E-01	2.810E-02	0.523
		711.68	*	1.853E-02	6.963E-02	1.159E-01	7.424E-03	0.160
		752.31		-1.074E-01	3.243E-01	5.123E-01	3.534E-02	-0.210
		810.29		5.428E-03	6.891E-02	1.124E-01	8.582E-03	0.048
TA-182		67.75		-1.314E-01	1.415E-01	2.251E-01	1.717E-02	-0.584
		100.11		1.293E-01	2.395E-01	3.504E-01	2.633E-02	0.369
		152.43		4.886E-01	4.494E-01	7.564E-01	4.094E-02	0.646
		222.11		1.342E-01	4.383E-01	7.126E-01	3.970E-02	0.188
	+	1121.30		7.323E-01	3.429E-01	4.451E-01	2.803E-02	1.645
		1189.05		1.668E-01	3.699E-01	6.391E-01	3.616E-02	0.261
		1221.41	*	3.664E-02	2.432E-01	4.094E-01	2.468E-02	0.090
		1231.02		-2.722E-01	7.072E-01	9.682E-01	5.947E-02	-0.281
IR-192	+	295.96		1.391E+00	2.093E-01	3.795E-01	2.242E-02	3.666
		308.46		1.612E-02	1.170E-01	1.978E-01	1.164E-02	0.081
		316.51	*	-6.907E-03	4.173E-02	6.941E-02	4.056E-03	-0.100
		468.07		-4.759E-02	9.709E-02	1.331E-01	8.939E-03	-0.357
HG-203		70.83		3.835E-01	2.013E+00	2.926E+00	4.567E-01	0.131
		72.87		2.964E+00	1.304E+00	1.925E+00	2.910E-01	1.539
		279.20	*	4.471E-02	5.056E-02	8.703E-02	5.321E-03	0.514
BI-207		72.81		4.994E-01	2.575E-01	3.941E-01	3.087E-02	1.267
	+	74.97		7.755E-01	1.521E-01	2.921E-01	2.322E-02	2.655
	+	569.70		2.012E-01	7.230E-02	8.880E-02	5.271E-03	2.266
		1063.66	*	2.750E-02	6.316E-02	1.095E-01	7.774E-03	0.251
		1770.23		3.877E-02	5.762E-01	8.205E-01	4.949E-02	0.047
PB-210		46.54	*	-2.136E+00	3.598E+00	5.747E+00	4.332E-01	-0.372
PB-211		404.85	*	-5.597E-01	1.019E+00	1.354E+00	6.494E-01	-0.413
		427.09		1.939E+00	1.869E+00	2.935E+00	1.345E+00	0.661
		832.01		-4.606E-01	1.167E+00	1.780E+00	9.210E-01	-0.259
BI-212	+	727.33	*	3.278E+00	1.094E+00	1.335E+00	1.489E-01	2.455
		785.37		2.777E+00	3.642E+00	6.272E+00	4.587E-01	0.443
		1620.50		1.806E+00	2.598E+00	4.698E+00	3.138E-01	0.384
RN-219	+	271.23		7.145E-01	3.575E-01	5.299E-01	4.246E-02	1.348
		401.81	*	1.157E-01	4.857E-01	8.191E-01	1.094E-01	0.141
RA-223		81.07		3.643E-01	3.406E-01	3.843E-01	3.212E-02	0.948
		83.79		6.247E-01	1.622E-01	2.571E-01	2.205E-02	2.430
		94.87		2.384E+00	6.260E-01	1.004E+00	8.088E-02	2.375
		144.24		5.664E-01	8.281E-01	1.370E+00	9.588E-02	0.413

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

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		154.21		2.929E-01	4.800E-01	7.945E-01	5.264E-02	0.369
	+	269.46		5.552E-01	2.762E-01	4.059E-01	2.444E-02	1.368
		323.87	*	-1.621E-01	8.063E-01	1.158E+00	1.866E-01	-0.140
	+	338.28		8.665E+00	1.928E+00	2.954E+00	3.024E-01	2.934
AC-227		79.69		1.484E+00	1.760E+00	2.592E+00	4.421E-01	0.572
		235.96		1.176E+00	2.603E-01	4.168E-01	3.347E-02	2.822
		256.23	*	-1.428E-01	3.062E-01	4.762E-01	4.850E-02	-0.300
	+	299.98		2.261E+00	1.406E+00	1.908E+00	2.098E-01	1.185
		304.50		5.549E-01	2.033E+00	3.031E+00	4.624E-01	0.183
		334.37		-1.124E+00	2.958E+00	3.250E+00	4.621E-01	-0.346
TH-227		79.80		2.878E-01	2.254E+00	3.260E+00	7.054E-01	0.088
		235.96		1.176E+00	2.572E-01	4.168E-01	3.027E-02	2.822
		256.23	*	-1.428E-01	3.063E-01	4.762E-01	5.707E-02	-0.300
	+	299.98		2.261E+00	1.406E+00	1.908E+00	2.098E-01	1.185
		304.50		5.549E-01	2.033E+00	3.031E+00	4.624E-01	0.183
		334.37		-1.124E+00	2.958E+00	3.250E+00	4.621E-01	-0.346
TH-229		85.43		1.648E+00	3.064E-01	4.791E-01	4.178E-02	3.440
	+	88.47		8.369E-01	1.891E-01	3.120E-01	2.773E-02	2.683
		193.51	*	-6.259E-02	6.553E-01	1.050E+00	5.666E-02	-0.060
	+	210.85		2.245E+00	1.501E+00	1.902E+00	1.047E-01	1.181
PA-231		283.69	*	-4.289E-01	1.608E+00	2.669E+00	3.501E-01	-0.161
	+	301.36		1.452E+00	9.019E-01	1.219E+00	1.262E-01	1.192
TH-231		81.07		3.643E-01	3.406E-01	3.843E-01	3.212E-02	0.948
		83.79		6.247E-01	1.622E-01	2.571E-01	2.205E-02	2.430
		94.87		2.384E+00	6.260E-01	1.004E+00	8.088E-02	2.375
		144.24		5.664E-01	8.281E-01	1.370E+00	9.588E-02	0.413
		154.21		2.929E-01	4.800E-01	7.945E-01	5.264E-02	0.369
	+	269.46		5.552E-01	2.762E-01	4.059E-01	2.444E-02	1.368
		323.87	*	-1.621E-01	8.063E-01	1.158E+00	1.866E-01	-0.140
	+	338.28		8.665E+00	1.928E+00	2.954E+00	3.024E-01	2.934
PA-233	+	300.13		1.023E+00	6.412E-01	8.658E-01	1.160E-01	1.181
		311.90	*	1.272E-02	7.429E-02	1.258E-01	7.767E-03	0.101
		340.48		3.122E+00	1.140E+00	1.551E+00	3.598E-01	2.013
PA-234		94.67		9.923E-01	2.502E-01	3.761E-01	4.525E-02	2.638
		98.44		6.287E-02	1.239E-01	1.740E-01	9.682E-02	0.361
		111.00		-2.339E-01	2.281E-01	3.556E-01	3.829E-02	-0.658
		131.20		1.095E-01	1.332E-01	2.226E-01	1.281E-02	0.492
	+	569.50		1.786E+00	6.417E-01	7.966E-01	4.728E-02	2.242
		733.00		6.938E-02	4.823E-01	6.898E-01	1.484E-01	0.101
		880.51		-8.485E-02	3.373E-01	5.295E-01	4.537E-02	-0.160
		883.24		1.365E-01	3.550E-01	5.737E-01	3.856E-01	0.238
		926.50		1.043E-02	2.146E-01	3.471E-01	8.770E-02	0.030
		946.00	*	-1.781E-01	3.753E-01	5.743E-01	1.072E-01	-0.310
		949.00		4.033E-01	5.412E-01	9.281E-01	7.777E-02	0.435
PA-234M		766.42		9.396E+00	1.469E+01	2.369E+01	1.196E+01	0.397
		1001.03	*	1.173E+00	5.550E+00	9.524E+00	8.865E-01	0.123
TH-234		63.29	*	1.651E+00	1.614E+00	2.653E+00	4.744E-01	0.623
	+	92.59		3.695E+00	1.367E+00	1.556E+00	3.418E-01	2.375
U-238		63.29	*	1.651E+00	1.614E+00	2.653E+00	4.744E-01	0.623

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	+	92.59		3.695E+00	1.142E+00	1.556E+00	1.295E-01	2.375
NP-239		99.53		2.039E-01	2.085E-01	3.115E-01	2.358E-02	0.655
		103.37		-7.674E-02	1.392E-01	1.933E-01	1.397E-02	-0.397
		106.12		1.805E-01	1.035E-01	1.780E-01	1.246E-02	1.014
		117.23	*	-9.172E-02	4.742E-01	7.666E-01	4.783E-02	-0.120
		228.18		-2.708E-01	2.657E-01	4.042E-01	2.265E-02	-0.670
		277.60		1.166E-01	2.082E-01	3.539E-01	2.048E-02	0.329
AM-241		59.54	*	-2.299E-01	1.802E-01	2.831E-01	2.331E-02	-0.812
CM-247		278.00		3.800E-01	8.866E-01	1.499E+00	8.675E-02	0.254
		287.50		-1.879E-01	1.454E+00	2.368E+00	1.374E-01	-0.079
		402.40	*	-7.438E-03	4.520E-02	7.458E-02	4.183E-03	-0.100
CF-249		252.80		3.222E-01	1.155E+00	1.870E+00	1.069E-01	0.172
		333.37		-2.151E-01	3.766E-01	3.386E-01	1.961E-02	-0.635
		388.16	*	-2.248E-02	4.528E-02	7.326E-02	4.090E-03	-0.307
CF-251		177.52	*	-1.269E-01	1.614E-01	2.516E-01	1.331E-02	-0.504
		227.38		-2.468E-01	4.293E-01	6.686E-01	3.744E-02	-0.369
		285.41		-1.562E+00	2.447E+00	3.988E+00	2.314E-01	-0.392

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521001      *
* Acquisition date : 19-MAR-2010 20:42:06 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 02:00:01.62      Half life ratio :  8.000        *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G248521001           Analyst initials: MXR1         *
* Batch Number       : 961099               Sample Quantity : 1.1674E+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	3.041E+01	2.877E+00	5.449E-01	0.000E+00
CD-109	5.614E+00	1.243E+00	1.282E+00	0.000E+00
SN-126	5.429E-01	1.202E-01	1.245E-01	0.000E+00
BA-137M	1.568E-01	6.190E-02	6.742E-02	0.000E+00
CS-137	1.657E-01	6.540E-02	7.122E-02	0.000E+00
TL-208	6.997E-01	1.084E-01	6.798E-02	0.000E+00
BI-211	5.105E+00	5.996E-01	4.436E-01	0.000E+00
PB-212	2.024E+00	1.970E-01	1.110E-01	0.000E+00
BI-214	1.517E+00	2.156E-01	1.327E-01	0.000E+00
PB-214	1.853E+00	2.396E-01	1.429E-01	0.000E+00
RA-224	5.446E+00	1.319E+00	1.189E+00	0.000E+00
RA-226	1.517E+00	2.156E-01	1.327E-01	0.000E+00
AC-228	2.177E+00	4.650E-01	2.444E-01	0.000E+00
RA-228	2.177E+00	4.650E-01	2.444E-01	0.000E+00
TH-228	2.024E+00	1.970E-01	1.110E-01	0.000E+00
TH-232	2.177E+00	4.650E-01	2.444E-01	0.000E+00
U-235	1.376E-01	2.430E-01	4.158E-01	0.000E+00
NP-237	1.620E+00	4.894E-01	3.755E-01	0.000E+00
ANH-511	1.537E-01	8.081E-02	5.308E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)		
BE-7	8.833E-02	3.853E-01	6.661E-01	0.000E+00	NOT IDENT.
NA-22	2.470E-02	4.739E-02	8.407E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.221E+09	0.000E+00	0.000E+00	SHORT HLIF
SC-46	-3.627E-02	4.833E-02	7.376E-02	0.000E+00	FAIL ABUN
V-48	-5.511E-02	1.143E-01	1.784E-01	0.000E+00	NOT IDENT.
CR-51	-2.167E-01	4.970E-01	8.184E-01	0.000E+00	NOT IDENT.
MN-54	1.187E-02	4.297E-02	7.276E-02	0.000E+00	NOT IDENT.
CO-56	-1.023E-02	4.801E-02	7.712E-02	0.000E+00	FAIL ABUN

CO-57	-2.836E-03	2.831E-02	4.788E-02	0.000E+00	NOT IDENT.
CO-58	-1.294E-02	4.900E-02	7.934E-02	0.000E+00	NOT IDENT.
FE-59	7.506E-03	1.155E-01	1.981E-01	0.000E+00	NOT IDENT.
CO-60	1.768E-02	4.287E-02	7.553E-02	0.000E+00	NOT IDENT.
ZN-65	-3.308E-02	1.119E-01	1.581E-01	0.000E+00	NOT IDENT.
SE-75	1.146E-02	5.334E-02	8.601E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.260E-02	9.239E-02	0.000E+00	NOT IDENT.
Y-88	1.126E-03	3.378E-02	5.621E-02	0.000E+00	NOT IDENT.
Y-91	-8.923E+00	2.556E+01	4.206E+01	0.000E+00	NOT IDENT.
NB-94	-1.215E-03	3.686E-02	6.142E-02	0.000E+00	NOT IDENT.
NB-95	1.262E-02	5.503E-02	9.305E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.963E-01	3.132E-01	0.000E+00	NOT IDENT.
ZR-95	2.015E-02	8.718E-02	1.479E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.275E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	2.476E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.459E-02	4.794E-02	8.526E-02	0.000E+00	FAIL ABUN
RH-106	-1.319E-01	3.521E-01	5.740E-01	0.000E+00	NOT IDENT.
RU-106	-1.319E-01	3.518E-01	5.740E-01	0.000E+00	NOT IDENT.
AG-108M	1.050E-02	3.201E-02	5.587E-02	0.000E+00	NOT IDENT.
AG-110M	2.714E-02	4.369E-02	6.777E-02	0.000E+00	NOT IDENT.
SN-113	-5.971E-03	5.407E-02	9.234E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.146E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.097E-02	9.462E-02	1.600E-01	0.000E+00	NOT IDENT.
TE-123M	4.707E-04	3.536E-02	5.955E-02	0.000E+00	NOT IDENT.
SB-124	-9.579E-03	7.530E-02	1.216E-01	0.000E+00	NOT IDENT.
SB-125	6.872E-02	9.791E-02	1.747E-01	0.000E+00	FAIL ABUN
TE-125M	-3.143E+00	1.282E+01	2.165E+01	0.000E+00	NOT IDENT.
I-126	9.316E-02	4.032E-01	5.995E-01	0.000E+00	NOT IDENT.
SB-126	1.052E-01	2.587E-01	3.915E-01	0.000E+00	NOT IDENT.
SB-127	3.249E+00	5.362E+00	9.380E+00	0.000E+00	NOT IDENT.
I-131	-2.535E-01	2.367E-01	3.816E-01	0.000E+00	NOT IDENT.
TE-132	-4.384E+00	4.273E+00	6.661E+00	0.000E+00	NOT IDENT.
BA-133	-1.760E-02	4.995E-02	7.267E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.070E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	1.302E-01	1.033E-01	0.000E+00	FAIL ABUN
CS-135	2.994E-01	2.005E-01	3.305E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.424E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.233E-01	1.679E-01	3.050E-01	0.000E+00	NOT IDENT.
CE-139	7.364E-03	3.676E-02	6.227E-02	0.000E+00	NOT IDENT.
BA-140	-2.897E-03	4.353E-01	7.368E-01	0.000E+00	NOT IDENT.
LA-140	-6.968E-03	1.524E-01	2.333E-01	0.000E+00	FAIL ABUN
CE-141	2.655E-02	8.752E-02	1.494E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.350E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-8.839E-02	2.534E-01	4.231E-01	0.000E+00	NOT IDENT.
PM-144	5.411E-03	3.754E-02	6.347E-02	0.000E+00	NOT IDENT.
PR-144	3.973E-01	2.819E+00	4.766E+00	0.000E+00	NOT IDENT.
PM-146	7.955E-03	4.820E-02	8.309E-02	0.000E+00	NOT IDENT.
ND-147	8.786E-02	9.458E-01	1.613E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	9.805E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.498E-01	1.259E-01	1.817E-01	0.000E+00	FAIL ABUN
GD-153	7.707E-02	1.082E-01	1.678E-01	0.000E+00	NOT IDENT.
EU-154	5.175E-02	1.360E-01	2.381E-01	0.000E+00	NOT IDENT.
EU-155	1.441E-01	1.327E-01	2.270E-01	0.000E+00	FAIL ABUN
TB-160	5.121E-02	1.700E-01	2.883E-01	0.000E+00	FAIL ABUN
HO-166M	1.853E-02	6.824E-02	1.164E-01	0.000E+00	FAIL ABUN
TA-182	3.664E-02	2.383E-01	4.087E-01	0.000E+00	FAIL ABUN
IR-192	-6.907E-03	4.089E-02	7.027E-02	0.000E+00	FAIL ABUN
HG-203	4.471E-02	4.955E-02	8.823E-02	0.000E+00	NOT IDENT.
BI-207	2.750E-02	6.190E-02	1.095E-01	0.000E+00	FAIL ABUN
PB-210	-2.136E+00	3.526E+00	5.931E+00	0.000E+00	NOT IDENT.
PB-211	-5.597E-01	9.982E-01	1.368E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.072E+00	1.340E+00	0.000E+00	FAIL ABUN
RN-219	1.157E-01	4.760E-01	8.273E-01	0.000E+00	FAIL ABUN
RA-223	-1.621E-01	7.902E-01	1.172E+00	0.000E+00	FAIL ABUN
AC-227	-1.428E-01	3.000E-01	4.832E-01	0.000E+00	FAIL ABUN
TH-227	-1.428E-01	3.002E-01	4.832E-01	0.000E+00	FAIL ABUN
TH-229	-6.259E-02	6.422E-01	1.069E+00	0.000E+00	FAIL ABUN
PA-231	-4.289E-01	1.575E+00	2.706E+00	0.000E+00	FAIL ABUN
TH-231	-1.621E-01	7.902E-01	1.172E+00	0.000E+00	FAIL ABUN
PA-233	1.272E-02	7.281E-02	1.274E-01	0.000E+00	FAIL ABUN
PA-234	-1.781E-01	3.678E-01	5.749E-01	0.000E+00	FAIL ABUN
PA-234M	1.173E+00	5.439E+00	9.529E+00	0.000E+00	NOT IDENT.
TH-234	1.651E+00	1.582E+00	2.730E+00	0.000E+00	FAIL ABUN
U-238	1.651E+00	1.582E+00	2.730E+00	0.000E+00	FAIL ABUN
NP-239	-9.172E-02	4.647E-01	7.840E-01	0.000E+00	NOT IDENT.
AM-241	-2.299E-01	1.766E-01	2.915E-01	0.000E+00	NOT IDENT.
CM-247	-7.438E-03	4.430E-02	7.532E-02	0.000E+00	NOT IDENT.
CF-249	-2.248E-02	4.437E-02	7.402E-02	0.000E+00	NOT IDENT.

CF-251	-1.269E-01	1.582E-01	2.563E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 22:43:27.62

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*****************************************************************************
*                              GEL Laboratories LLC                         *
*                                2040 Savage Road                           *
*                              Charleston, SC 29414                         *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521001.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 20:42:06
Sample ID         : G248521001           Sample quantity  : 1.16740E+02 GRAM
Detector name     : GAM19                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.62  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID         : 961099                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	1178	10.66*	1.168E+00	3.041E+01	3.041E+01	9.65
CD-109	88.03	381	3.70*	6.102E+00	5.429E+00	5.614E+00	22.60
SN-126	64.28	------	9.60	3.765E+00	------ Line Not Found		------
	86.94	381	8.90	6.102E+00	2.257E+00	2.257E+00	46.33
	87.57	381	37.00*	6.102E+00	5.429E-01	5.429E-01	22.60
BA-137M	661.66	101	89.90*	2.302E+00	1.566E-01	1.568E-01	40.28
CS-137	661.66	101	85.10*	2.302E+00	1.655E-01	1.657E-01	40.28
TL-208	277.37	------	6.60	4.511E+00	------ Line Not Found		------
	583.19	472	85.00*	2.554E+00	6.997E-01	6.997E-01	15.80
	860.56	76	12.50	1.835E+00	1.058E+00	1.058E+00	33.51
BI-211	72.87	------	1.23	4.857E+00	------ Line Not Found		------
	351.06	777	12.92*	3.787E+00	5.105E+00	5.105E+00	11.98
PB-212	74.82	437	10.28	5.088E+00	2.690E+00	2.690E+00	21.90
	77.11	800	17.10	5.315E+00	2.831E+00	2.831E+00	15.21
	238.63	1377	43.60*	5.016E+00	2.024E+00	2.024E+00	9.93
	300.09	90	3.30	4.261E+00	2.055E+00	2.055E+00	61.81
BI-214	609.32	529	45.49*	2.464E+00	1.517E+00	1.517E+00	14.51
	1120.29	101	14.92	1.455E+00	1.496E+00	1.496E+00	47.30
	1764.49	94	15.30	1.029E+00	1.929E+00	1.929E+00	23.49
PB-214	74.82	437	5.80	5.088E+00	4.767E+00	4.767E+00	21.16
	77.11	800	9.70	5.315E+00	4.991E+00	4.991E+00	17.30
	242.00	345	7.25	4.974E+00	3.080E+00	3.080E+00	25.38
	295.22	434	18.42	4.313E+00	1.758E+00	1.758E+00	16.36
	351.93	777	35.60*	3.787E+00	1.853E+00	1.853E+00	13.19
RA-224	240.99	345	4.10*	4.974E+00	5.446E+00	5.446E+00	24.71
RA-226	609.32	529	45.49*	2.464E+00	1.517E+00	1.517E+00	14.51
	1120.29	101	14.92	1.455E+00	1.496E+00	1.496E+00	47.30
	1764.49	94	15.30	1.029E+00	1.929E+00	1.929E+00	23.49
AC-228	338.32	299	11.27	3.900E+00	2.184E+00	2.184E+00	45.71
	911.20	305	25.80*	1.745E+00	2.177E+00	2.177E+00	21.80
	968.97	187	15.80	1.653E+00	2.298E+00	2.298E+00	31.20
RA-228	338.32	299	11.27	3.900E+00	2.184E+00	2.184E+00	45.71

Sample ID : G248521001 Acquisition date : 19-MAR-2010 20:42:06

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	305	25.80*	1.745E+00	2.177E+00	2.177E+00	21.80
	968.97	187	15.80	1.653E+00	2.298E+00	2.298E+00	31.20
TH-228	74.82	437	10.28	5.088E+00	2.690E+00	2.690E+00	19.65
	77.11	800	17.10	5.315E+00	2.831E+00	2.831E+00	15.21
	238.63	1377	43.60*	5.016E+00	2.024E+00	2.024E+00	9.93
	300.09	90	3.30	4.261E+00	2.055E+00	2.055E+00	86.35
TH-232	338.32	299	11.27	3.900E+00	2.184E+00	2.184E+00	20.58
	911.20	305	25.80*	1.745E+00	2.177E+00	2.177E+00	21.80
	968.97	187	15.80	1.653E+00	2.298E+00	2.298E+00	31.20
U-235	89.96	242	3.47	6.248E+00	3.587E+00	3.587E+00	37.81
	93.35	311	5.60	6.396E+00	2.791E+00	2.791E+00	37.60
	143.76	------	10.96*	6.636E+00	------	Line Not Found	------
	163.33	------	5.08	6.300E+00	------	Line Not Found	------
	185.72	267	57.20	5.887E+00	2.551E-01	2.551E-01	33.10
	205.31	------	5.01	5.540E+00	------	Line Not Found	------
NP-237	86.48	381	12.40*	6.102E+00	1.620E+00	1.620E+00	30.83
	95.86	------	2.68	6.514E+00	------	Line Not Found	------
ANH-511	511.00	136	100.00*	2.842E+00	1.537E-01	1.537E-01	53.64

Flag: "*" = Keyline

Sample ID : G248521001 Acquisition date : 19-MAR-2010 20:42:06

Total number of lines in spectrum 36
Number of unidentified lines 4
Number of lines tentatively identified by NID 32 88.89%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.041E+01	3.041E+01	0.294E+01	9.65	
CD-109	461.40D	1.03	5.429E+00	5.614E+00	1.269E+00	22.60	
SN-126	2.30E+05Y	1.00	5.429E-01	5.429E-01	1.227E-01	22.60	
BA-137M	30.08Y	1.00	1.566E-01	1.568E-01	0.632E-01	40.28	
CS-137	30.08Y	1.00	1.655E-01	1.657E-01	0.667E-01	40.28	
TL-208	1.41E+10Y	1.00	6.997E-01	6.997E-01	1.106E-01	15.80	
BI-211	7.04E+08Y	1.00	5.105E+00	5.105E+00	0.612E+00	11.98	
PB-212	1.41E+10Y	1.00	2.024E+00	2.024E+00	0.201E+00	9.93	
BI-214	1600.00Y	1.00	1.517E+00	1.517E+00	0.220E+00	14.51	
PB-214	1600.00Y	1.00	1.853E+00	1.853E+00	0.244E+00	13.19	
RA-224	1.41E+10Y	1.00	5.446E+00	5.446E+00	1.346E+00	24.71	
RA-226	1600.00Y	1.00	1.517E+00	1.517E+00	0.220E+00	14.51	
AC-228	1.41E+10Y	1.00	2.177E+00	2.177E+00	0.474E+00	21.80	
RA-228	1.41E+10Y	1.00	2.177E+00	2.177E+00	0.474E+00	21.80	
TH-228	1.41E+10Y	1.00	2.024E+00	2.024E+00	0.201E+00	9.93	
TH-232	1.41E+10Y	1.00	2.177E+00	2.177E+00	0.474E+00	21.80	
U-235	7.04E+08Y	1.00	2.551E-01	2.551E-01	0.844E-01	33.10	K
NP-237	2.14E+06Y	1.00	1.620E+00	1.620E+00	0.499E+00	30.83	
ANH-511	1.00E+09Y	1.00	1.537E-01	1.537E-01	0.825E-01	53.64	
		Total Activity :	6.545E+01	6.564E+01			

Grand Total Activity : 6.545E+01 6.564E+01

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

Sample ID : G248521001 Acquisition date : 19-MAR-2010 20:42:06

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.36	107	332	1.21	418.36	413	10	1.49E-02	66.6	5.47E+00	T
0	270.11	110	197	1.48	539.78	536	9	1.53E-02	49.4	4.60E+00	T
0	328.38	69	230	1.47	656.24	649	13	9.54E-03	94.3	3.99E+00	T
0	409.70	31	98	0.57	818.80	815	7	4.26E-03	****	3.37E+00	T
0	462.50	60	107	1.58	924.35	921	9	8.37E-03	66.8	3.07E+00	T
0	568.36	159	128	2.39	1135.99	1129	15	2.21E-02	35.4	2.61E+00	T
0	727.78	144	68	1.63	1454.72	1446	18	2.01E-02	31.5	2.12E+00	T
0	796.65	96	107	6.15	1592.45	1582	26	1.33E-02	63.4	1.96E+00	T
1	965.26	78	29	2.01	1929.64	1922	22	1.09E-02	39.4	1.66E+00	T
0	1238.42	50	68	1.65	2476.04	2468	17	6.94E-03	80.7	1.34E+00	T
0	1379.12	41	19	4.83	2757.53	2752	14	5.63E-03	57.0	1.22E+00	
0	1559.84	18	3	0.98	3119.14	3112	13	2.47E-03	63.2	1.11E+00	
0	1588.68	32	16	1.29	3176.86	3170	13	4.44E-03	62.8	1.10E+00	
0	1730.48	30	9	2.01	3460.63	3454	12	4.19E-03	53.9	1.04E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 22:43:30.90

```
*****************************************************************************
*                            GEL Laboratories LLC                            *
*                              2040 Savage Road                              *
*                            Charleston, SC 29414                            *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521001.CNF;1  *
* Acquisition date : 19-MAR-2010 20:42:06  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 02:00:01.62         Half life ratio : 8.00000        *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date      : 25-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID        : G248521001            Analyst initials: MXR1           *
* Batch Number     : 961099                Sample Quantity : 1.16740E+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	3.041E+01	2.936E+00	5.468E-01	4.072E-02	55.623
CD-109	5.614E+00	1.269E+00	1.250E+00	1.119E-01	4.492
SN-126	5.429E-01	1.227E-01	1.214E-01	1.083E-02	4.473
BA-137M	1.568E-01	6.317E-02	6.709E-02	3.907E-03	2.338
CS-137	1.657E-01	6.674E-02	7.088E-02	4.145E-03	2.338
TL-208	6.997E-01	1.106E-01	6.756E-02	4.584E-03	10.356
BI-211	5.105E+00	6.119E-01	4.386E-01	2.801E-02	11.641
PB-212	2.024E+00	2.010E-01	1.093E-01	7.963E-03	18.510
BI-214	1.517E+00	2.200E-01	1.320E-01	1.046E-02	11.492
PB-214	1.853E+00	2.445E-01	1.413E-01	1.192E-02	13.113
RA-224	5.446E+00	1.346E+00	1.171E+00	6.637E-02	4.650
RA-226	1.517E+00	2.200E-01	1.320E-01	1.046E-02	11.492
AC-228	2.177E+00	4.745E-01	2.440E-01	2.845E-02	8.920
RA-228	2.177E+00	4.745E-01	2.440E-01	2.845E-02	8.920
TH-228	2.024E+00	2.010E-01	1.093E-01	7.963E-03	18.510
TH-232	2.177E+00	4.745E-01	2.440E-01	2.845E-02	8.920
U-235	2.551E-01	8.444E-02	4.074E-01	6.362E-02	0.626
NP-237	1.620E+00	4.993E-01	3.660E-01	8.326E-02	4.425

Sample ID : G248521001 Acquisition date : 19-MAR-2010 20:42:06

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.537E-01	8.246E-02	5.269E-02	3.109E-03	2.918

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	8.833E-02		3.932E-01	6.607E-01	4.483E-02	0.134
NA-22	2.470E-02		4.836E-02	8.424E-02	5.619E-03	0.293
NA-24	4.731E+02		1.133E+03	Half-Life too short		
SC-46	-3.627E-02		4.931E-02	7.363E-02	6.399E-03	-0.493
V-48	-5.511E-02		1.166E-01	1.782E-01	1.433E-02	-0.309
CR-51	-2.167E-01		5.072E-01	8.083E-01	5.223E-02	-0.268
MN-54	1.187E-02		4.384E-02	7.258E-02	5.774E-03	0.164
CO-56	-1.023E-02		4.899E-02	7.695E-02	6.243E-03	-0.133
CO-57	-2.836E-03		2.889E-02	4.683E-02	2.795E-03	-0.061
CO-58	-1.294E-02		5.000E-02	7.912E-02	6.063E-03	-0.163
FE-59	7.506E-03		1.179E-01	1.982E-01	1.487E-02	0.038
CO-60	1.768E-02		4.374E-02	7.572E-02	5.580E-03	0.234
ZN-65	-3.308E-02		1.142E-01	1.581E-01	1.011E-02	-0.209
SE-75	1.146E-02		5.443E-02	8.480E-02	4.933E-03	0.135
SR-85	1.302E-01		5.367E-02	9.170E-02	5.415E-03	1.419
Y-88	1.126E-03		3.447E-02	5.654E-02	3.228E-03	0.020
Y-91	-8.923E+00		2.608E+01	4.212E+01	2.459E+00	-0.212
NB-94	-1.215E-03		3.761E-02	6.116E-02	3.852E-03	-0.020
NB-95	1.262E-02		5.616E-02	9.275E-02	6.554E-03	0.136
NB-95M	4.175E-01		2.003E-01	3.084E-01	2.292E-02	1.354
ZR-95	2.015E-02		8.896E-02	1.474E-01	1.185E-02	0.137
MO-99	2.860E-05		4.732E-05	Half-Life too short		
TC-99M	-2.234E+19		1.263E+19	Half-Life too short		
RU-103	3.459E-02		4.892E-02	8.459E-02	1.054E-02	0.409
RH-106	-1.319E-01		3.593E-01	5.709E-01	6.662E-02	-0.231
RU-106	-1.319E-01		3.590E-01	5.709E-01	3.366E-02	-0.231
AG-108M	1.050E-02		3.266E-02	5.535E-02	3.397E-03	0.190
AG-110M	2.714E-02		4.458E-02	6.744E-02	4.185E-03	0.402
SN-113	-5.971E-03		5.517E-02	9.140E-02	5.453E-03	-0.065
CD-115	-1.960E-05		5.849E-05	Half-Life too short		
SN-117M	1.097E-02		9.656E-02	1.569E-01	8.351E-03	0.070
TE-123M	4.707E-04		3.608E-02	5.840E-02	3.154E-03	0.008
SB-124	-9.579E-03		7.683E-02	1.222E-01	8.403E-03	-0.078
SB-125	6.872E-02		9.991E-02	1.731E-01	1.029E-02	0.397
TE-125M	-3.143E+00		1.308E+01	2.115E+01	1.913E+00	-0.149
I-126	9.316E-02		4.115E-01	5.967E-01	3.506E-02	0.156
SB-126	1.052E-01		2.640E-01	3.900E-01	2.540E-02	0.270
SB-127	3.249E+00		5.472E+00	9.338E+00	1.150E+00	0.348
I-131	-2.535E-01		2.416E-01	3.774E-01	2.442E-02	-0.672
TE-132	-4.384E+00		4.360E+00	6.556E+00	1.063E+00	-0.669
BA-133	-1.760E-02		5.097E-02	7.186E-02	8.077E-03	-0.245
I-133	2.292E-01		1.056E+00	Half-Life too short		

Sample ID : G248521001 Acquisition date : 19-MAR-2010 20:42:06

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	2.080E-01	+	1.328E-01	1.030E-01	7.744E-03	2.020
CS-135	2.994E-01		2.046E-01	3.259E-01	2.487E-02	0.919
I-135	-4.219E+17		3.277E+17	Half-Life too short		
CS-136	1.233E-01		1.713E-01	3.050E-01	2.359E-02	0.404
CE-139	7.364E-03		3.751E-02	6.109E-02	3.189E-03	0.121
BA-140	-2.897E-03		4.442E-01	7.317E-01	2.439E-01	-0.004
LA-140	-6.968E-03		1.555E-01	2.343E-01	1.585E-02	-0.030
CE-141	2.655E-02		8.931E-02	1.464E-01	8.434E-03	0.181
CE-143	4.620E-02		6.887E-03	Half-Life too short		
CE-144	-8.839E-02		2.586E-01	4.143E-01	5.740E-02	-0.213
PM-144	5.411E-03		3.831E-02	6.320E-02	3.940E-03	0.086
PR-144	3.973E-01		2.877E+00	4.745E+00	2.954E-01	0.084
PM-146	7.955E-03		4.918E-02	8.237E-02	6.957E-03	0.097
ND-147	8.786E-02		9.651E-01	1.602E+00	2.175E-01	0.055
PM-149	-3.378E-04		5.002E-04	Half-Life too short		
EU-152	-1.498E-01		1.285E-01	1.797E-01	1.168E-02	-0.834
GD-153	7.707E-02		1.105E-01	1.638E-01	1.274E-02	0.471
EU-154	5.175E-02		1.388E-01	2.386E-01	2.380E-02	0.217
EU-155	1.441E-01		1.354E-01	2.217E-01	1.594E-02	0.650
TB-160	5.121E-02		1.734E-01	2.877E-01	2.461E-02	0.178
HO-166M	1.853E-02		6.963E-02	1.159E-01	7.424E-03	0.160
TA-182	3.664E-02		2.432E-01	4.094E-01	2.468E-02	0.090
IR-192	-6.907E-03		4.173E-02	6.941E-02	4.056E-03	-0.100
HG-203	4.471E-02		5.056E-02	8.703E-02	5.321E-03	0.514
BI-207	2.750E-02		6.316E-02	1.095E-01	7.774E-03	0.251
PB-210	-2.136E+00		3.598E+00	5.747E+00	4.332E-01	-0.372
PB-211	-5.597E-01		1.019E+00	1.354E+00	6.494E-01	-0.413
BI-212	3.278E+00	+	1.094E+00	1.335E+00	1.489E-01	2.455
RN-219	1.157E-01		4.857E-01	8.191E-01	1.094E-01	0.141
RA-223	-1.621E-01		8.063E-01	1.158E+00	1.866E-01	-0.140
AC-227	-1.428E-01		3.062E-01	4.762E-01	4.850E-02	-0.300
TH-227	-1.428E-01		3.063E-01	4.762E-01	5.707E-02	-0.300
TH-229	-6.259E-02		6.553E-01	1.050E+00	5.666E-02	-0.060
PA-231	-4.289E-01		1.608E+00	2.669E+00	3.501E-01	-0.161
TH-231	-1.621E-01		8.063E-01	1.158E+00	1.866E-01	-0.140
PA-233	1.272E-02		7.429E-02	1.258E-01	7.767E-03	0.101
PA-234	-1.781E-01		3.753E-01	5.743E-01	1.072E-01	-0.310
PA-234M	1.173E+00		5.550E+00	9.524E+00	8.865E-01	0.123
TH-234	1.651E+00		1.614E+00	2.653E+00	4.744E-01	0.623
U-238	1.651E+00		1.614E+00	2.653E+00	4.744E-01	0.623
NP-239	-9.172E-02		4.742E-01	7.666E-01	4.783E-02	-0.120
AM-241	-2.299E-01		1.802E-01	2.831E-01	2.331E-02	-0.812
CM-247	-7.438E-03		4.520E-02	7.458E-02	4.183E-03	-0.100
CF-249	-2.248E-02		4.528E-02	7.326E-02	4.090E-03	-0.307
CF-251	-1.269E-01		1.614E-01	2.516E-01	1.331E-02	-0.504

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration     : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248521001           *
* Acquisition date  : 19-MAR-2010 20:42:06 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 02:00:01.62      Half life ratio : 8.000          *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248521001           Analyst initials: MXR1           *
* Batch Number      : 961099               Sample Quantity : 1.1674E+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	3.041E+01	2.877E+00	2.726E-01	1.468E+00
CD-109	5.614E+00	1.243E+00	6.414E-01	6.344E-01
SN-126	5.429E-01	1.202E-01	6.228E-02	6.134E-02
BA-137M	1.568E-01	6.190E-02	3.373E-02	3.158E-02
CS-137	1.657E-01	6.540E-02	3.563E-02	3.337E-02
TL-208	6.997E-01	1.084E-01	3.401E-02	5.529E-02
BI-211	5.105E+00	5.996E-01	2.219E-01	3.059E-01
PB-212	2.024E+00	1.970E-01	5.555E-02	1.005E-01
BI-214	1.517E+00	2.156E-01	6.641E-02	1.100E-01
PB-214	1.853E+00	2.396E-01	7.150E-02	1.222E-01
RA-224	5.446E+00	1.319E+00	5.950E-01	6.730E-01
RA-226	1.517E+00	2.156E-01	6.641E-02	1.100E-01
AC-228	2.177E+00	4.650E-01	1.223E-01	2.372E-01
RA-228	2.177E+00	4.650E-01	1.223E-01	2.372E-01
TH-228	2.024E+00	1.970E-01	5.555E-02	1.005E-01
TH-232	2.177E+00	4.650E-01	1.223E-01	2.372E-01
U-235	1.376E-01	2.430E-01	2.080E-01	1.240E-01
NP-237	1.620E+00	4.894E-01	1.879E-01	2.497E-01
ANH-511	1.537E-01	8.081E-02	2.656E-02	4.123E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	8.833E-02	3.853E-01	3.333E-01	1.966E-01	NOT IDENT.
NA-22	2.470E-02	4.739E-02	4.206E-02	2.418E-02	NOT IDENT.
NA-24	4.731E+08	2.221E+09	0.000E+00	1.133E+09	SHORT HLIF
SC-46	-3.627E-02	4.833E-02	3.690E-02	2.466E-02	FAIL ABUN
V-48	-5.511E-02	1.143E-01	8.924E-02	5.831E-02	NOT IDENT.
CR-51	-2.167E-01	4.970E-01	4.094E-01	2.536E-01	NOT IDENT.
MN-54	1.187E-02	4.297E-02	3.640E-02	2.192E-02	NOT IDENT.
CO-56	-1.023E-02	4.801E-02	3.859E-02	2.450E-02	FAIL ABUN

CO-57	-2.836E-03	2.831E-02	2.395E-02	1.445E-02	NOT IDENT.
CO-58	-1.294E-02	4.900E-02	3.969E-02	2.500E-02	NOT IDENT.
FE-59	7.506E-03	1.155E-01	9.911E-02	5.894E-02	NOT IDENT.
CO-60	1.768E-02	4.287E-02	3.779E-02	2.187E-02	NOT IDENT.
ZN-65	-3.308E-02	1.119E-01	7.907E-02	5.709E-02	NOT IDENT.
SE-75	1.146E-02	5.334E-02	4.303E-02	2.722E-02	NOT IDENT.
SR-85	1.302E-01	5.260E-02	4.622E-02	2.684E-02	NOT IDENT.
Y-88	1.126E-03	3.378E-02	2.812E-02	1.723E-02	NOT IDENT.
Y-91	-8.923E+00	2.556E+01	2.104E+01	1.304E+01	NOT IDENT.
NB-94	-1.215E-03	3.686E-02	3.073E-02	1.881E-02	NOT IDENT.
NB-95	1.262E-02	5.503E-02	4.655E-02	2.808E-02	NOT IDENT.
NB-95M	4.175E-01	1.963E-01	1.567E-01	1.001E-01	NOT IDENT.
ZR-95	2.015E-02	8.718E-02	7.398E-02	4.448E-02	NOT IDENT.
MO-99	2.860E+01	9.275E+01	0.000E+00	4.732E+01	SHORT HLIF
TC-99M	-2.234E+25	2.476E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.459E-02	4.794E-02	4.265E-02	2.446E-02	FAIL ABUN
RH-106	-1.319E-01	3.521E-01	2.872E-01	1.796E-01	NOT IDENT.
RU-106	-1.319E-01	3.518E-01	2.872E-01	1.795E-01	NOT IDENT.
AG-108M	1.050E-02	3.201E-02	2.795E-02	1.633E-02	NOT IDENT.
AG-110M	2.714E-02	4.369E-02	3.390E-02	2.229E-02	NOT IDENT.
SN-113	-5.971E-03	5.407E-02	4.620E-02	2.759E-02	NOT IDENT.
CD-115	-1.960E+01	1.146E+02	0.000E+00	5.849E+01	SHORT HLIF
SN-117M	1.097E-02	9.462E-02	8.004E-02	4.828E-02	NOT IDENT.
TE-123M	4.707E-04	3.536E-02	2.979E-02	1.804E-02	NOT IDENT.
SB-124	-9.579E-03	7.530E-02	6.083E-02	3.842E-02	NOT IDENT.
SB-125	6.872E-02	9.791E-02	8.740E-02	4.996E-02	FAIL ABUN
TE-125M	-3.143E+00	1.282E+01	1.083E+01	6.541E+00	NOT IDENT.
I-126	9.316E-02	4.032E-01	2.999E-01	2.057E-01	NOT IDENT.
SB-126	1.052E-01	2.587E-01	1.959E-01	1.320E-01	NOT IDENT.
SB-127	3.249E+00	5.362E+00	4.693E+00	2.736E+00	NOT IDENT.
I-131	-2.535E-01	2.367E-01	1.909E-01	1.208E-01	NOT IDENT.
TE-132	-4.384E+00	4.273E+00	3.332E+00	2.180E+00	NOT IDENT.
BA-133	-1.760E-02	4.995E-02	3.636E-02	2.549E-02	NOT IDENT.
I-133	2.292E+05	2.070E+06	0.000E+00	1.056E+06	SHORT HLIF
CS-134	2.080E-01	1.302E-01	5.167E-02	6.641E-02	FAIL ABUN
CS-135	2.994E-01	2.005E-01	1.654E-01	1.023E-01	NOT IDENT.
I-135	-4.219E+23	6.424E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.233E-01	1.679E-01	1.526E-01	8.565E-02	NOT IDENT.
CE-139	7.364E-03	3.676E-02	3.115E-02	1.875E-02	NOT IDENT.
BA-140	-2.897E-03	4.353E-01	3.686E-01	2.221E-01	NOT IDENT.
LA-140	-6.968E-03	1.524E-01	1.167E-01	7.774E-02	FAIL ABUN
CE-141	2.655E-02	8.752E-02	7.475E-02	4.466E-02	NOT IDENT.
CE-143	4.620E+04	1.350E+04	0.000E+00	6.887E+03	SHORT HLIF
CE-144	-8.839E-02	2.534E-01	2.117E-01	1.293E-01	NOT IDENT.
PM-144	5.411E-03	3.754E-02	3.175E-02	1.915E-02	NOT IDENT.
PR-144	3.973E-01	2.819E+00	2.384E+00	1.438E+00	NOT IDENT.
PM-146	7.955E-03	4.820E-02	4.157E-02	2.459E-02	NOT IDENT.
ND-147	8.786E-02	9.458E-01	8.072E-01	4.825E-01	FAIL ABUN
PM-149	-3.378E+02	9.805E+02	0.000E+00	5.002E+02	SHORT HLIF
EU-152	-1.498E-01	1.259E-01	9.093E-02	6.424E-02	FAIL ABUN
GD-153	7.707E-02	1.082E-01	8.395E-02	5.523E-02	NOT IDENT.
EU-154	5.175E-02	1.360E-01	1.191E-01	6.940E-02	NOT IDENT.
EU-155	1.441E-01	1.327E-01	1.136E-01	6.772E-02	FAIL ABUN
TB-160	5.121E-02	1.700E-01	1.442E-01	8.672E-02	FAIL ABUN
HO-166M	1.853E-02	6.824E-02	5.822E-02	3.482E-02	FAIL ABUN
TA-182	3.664E-02	2.383E-01	2.045E-01	1.216E-01	FAIL ABUN
IR-192	-6.907E-03	4.089E-02	3.516E-02	2.086E-02	FAIL ABUN
HG-203	4.471E-02	4.955E-02	4.414E-02	2.528E-02	NOT IDENT.
BI-207	2.750E-02	6.190E-02	5.477E-02	3.158E-02	FAIL ABUN
PB-210	-2.136E+00	3.526E+00	2.967E+00	1.799E+00	NOT IDENT.
PB-211	-5.597E-01	9.982E-01	6.844E-01	5.093E-01	NOT IDENT.
BI-212	3.278E+00	1.072E+00	6.705E-01	5.471E-01	FAIL ABUN
RN-219	1.157E-01	4.760E-01	4.139E-01	2.429E-01	FAIL ABUN
RA-223	-1.621E-01	7.902E-01	5.864E-01	4.031E-01	FAIL ABUN
AC-227	-1.428E-01	3.000E-01	2.417E-01	1.531E-01	FAIL ABUN
TH-227	-1.428E-01	3.002E-01	2.417E-01	1.531E-01	FAIL ABUN
TH-229	-6.259E-02	6.422E-01	5.347E-01	3.276E-01	FAIL ABUN
PA-231	-4.289E-01	1.575E+00	1.354E+00	8.038E-01	FAIL ABUN
TH-231	-1.621E-01	7.902E-01	5.864E-01	4.031E-01	FAIL ABUN
PA-233	1.272E-02	7.281E-02	6.371E-02	3.715E-02	FAIL ABUN
PA-234	-1.781E-01	3.678E-01	2.876E-01	1.877E-01	FAIL ABUN
PA-234M	1.173E+00	5.439E+00	4.767E+00	2.775E+00	NOT IDENT.
TH-234	1.651E+00	1.582E+00	1.366E+00	8.072E-01	FAIL ABUN
U-238	1.651E+00	1.582E+00	1.366E+00	8.072E-01	FAIL ABUN
NP-239	-9.172E-02	4.647E-01	3.922E-01	2.371E-01	NOT IDENT.
AM-241	-2.299E-01	1.766E-01	1.458E-01	9.008E-02	NOT IDENT.
CM-247	-7.438E-03	4.430E-02	3.768E-02	2.260E-02	NOT IDENT.
CF-249	-2.248E-02	4.437E-02	3.703E-02	2.264E-02	NOT IDENT.

CF-251	-1.269E-01	1.582E-01	1.282E-01	8.072E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	380.9717
49.72	378.5296
57.36	0.0000
59.54	514.9001
63.29	470.3867
63.29	470.3867
64.28	478.7954
67.75	577.9570
69.67	555.4666
70.83	557.1560
72.81	585.4078
72.87	571.0453
72.87	571.0453
74.82	588.1229
74.82	588.1229
74.82	588.1229
74.97	572.1783
77.11	573.3179
77.11	573.3179
77.11	573.3179
79.69	574.6689
79.80	574.7277
80.12	378.4312
80.19	378.4556
80.57	378.5847
81.00	378.7310
81.07	378.7539
81.07	378.7539
83.79	332.8175
83.79	332.8175
85.43	336.5299
86.48	336.8371
86.55	336.8574
86.79	336.9260
86.94	336.9704
87.57	337.1532
88.03	337.2852
88.47	337.4122
89.96	337.8387
91.11	338.1650
92.59	338.5827
92.59	338.5827
93.35	338.7960
94.67	339.1642
94.87	339.2200
94.87	339.2200
95.86	339.4942
97.43	339.9259
98.44	340.2026
99.53	307.7582
100.11	327.5537
103.18	423.5647
103.37	408.8500
105.31	377.0465
106.12	350.6884
109.28	409.2624
111.00	427.3387
111.76	410.0241
116.30	363.7268
117.23	353.6036
121.12	328.5945
121.78	320.4249
122.06	306.9612
123.07	313.4284
131.20	379.0682
133.52	407.9793
136.00	377.1374

136.47	393.0179
140.51	0.0000
140.51	0.0000
143.76	345.2645
144.24	340.0909
144.24	340.0909
145.44	359.3771
152.43	335.4800
153.25	354.7705
154.21	349.6654
154.21	349.6654
156.02	383.0383
158.56	335.6776
159.00	336.8325
162.66	355.7332
163.33	330.2268
165.86	323.2298
176.60	315.5508
177.52	350.1972
181.07	0.0000
184.41	340.9504
185.72	317.1648
193.51	321.7740
197.04	311.4902
205.31	283.5297
210.85	252.7453
215.65	260.6183
222.11	254.8399
227.38	275.4099
228.16	291.0052
228.18	291.0072
235.69	284.2871
235.96	284.3242
235.96	284.3242
238.63	255.7722
238.63	255.7722
240.99	256.0565
242.00	256.1775
244.70	217.6908
252.40	218.2428
252.80	214.9241
256.23	228.7132
256.23	228.7132
260.90	0.0000
264.66	178.7749
268.22	190.8669
269.46	174.4295
269.46	174.4295
271.23	215.1953
273.65	268.1480
276.40	204.7463
277.37	209.1323
277.60	209.1520
278.00	212.8110
279.20	192.0810
279.54	203.8898
280.46	209.4086
283.69	191.5433
284.31	190.6842
285.41	201.6753
285.90	0.0000
287.50	199.0254
293.27	0.0000
295.22	199.7693
295.96	199.8295
298.57	200.0460
299.98	187.3653
299.98	187.3653
300.09	187.3753
300.09	187.3753
300.13	187.3778
301.36	181.3762
302.85	193.6859
304.50	166.3474
304.50	166.3474
304.85	181.6353
308.46	171.5049
311.90	173.5791

316.51	168.3792
319.41	165.8090
320.08	169.9469
323.87	163.0242
323.87	163.0242
328.76	169.4983
333.37	208.3914
334.37	194.5730
334.37	194.5730
338.28	154.0363
338.28	154.0363
338.32	154.0384
338.32	154.0384
338.32	154.0384
340.48	153.2353
340.55	153.2393
344.28	197.9660
351.06	206.6814
351.93	162.2903
356.01	137.0041
364.49	154.6069
366.42	0.0000
383.85	142.4731
388.16	145.5217
388.63	155.9423
391.69	150.4328
400.66	142.3572
401.81	145.2604
402.40	156.6855
404.85	158.4005
410.95	120.6333
414.70	129.4123
423.72	129.1168
427.09	92.8758
427.87	102.4781
433.94	107.4787
453.88	117.8256
463.37	117.2084
468.07	127.7273
473.00	120.4731
476.78	111.8597
477.60	100.2125
487.02	86.8391
492.35	0.0000
497.08	82.2086
511.00	100.2357
514.00	85.2421
527.90	0.0000
529.87	0.0000
531.02	85.9911
537.26	93.0751
546.56	0.0000
563.25	81.4513
569.33	89.9121
569.50	89.9165
569.70	84.9253
583.19	96.2672
600.60	82.6086
602.73	102.4783
604.72	82.3625
609.32	97.9449
609.32	97.9449
610.33	111.1011
614.28	87.6230
618.01	96.1411
621.93	87.1212
621.93	87.1212
633.25	77.2135
635.95	90.4841
636.99	88.4741
645.85	69.3065
657.76	68.1494
661.66	85.9523
661.66	85.9523
664.57	0.0000
666.33	75.1237
666.50	75.1273
677.62	72.9345

685.70	67.9304
695.00	76.3351
696.49	75.3312
696.51	75.3312
697.00	90.8209
702.65	80.6089
706.68	92.0637
711.68	75.6021
720.70	62.2705
721.93	0.0000
722.78	65.7609
722.91	65.7640
723.31	77.8857
724.19	88.2871
727.33	60.2869
733.00	69.3864
735.93	80.3446
739.50	0.0000
747.24	84.5813
752.31	81.5420
753.82	64.8381
756.73	69.0664
763.94	102.7182
765.81	91.2268
766.42	87.0446
777.92	0.0000
778.90	77.8229
783.70	67.3781
785.37	65.2953
795.86	70.7246
801.95	81.0353
810.29	66.7099
810.76	73.0716
815.77	66.7883
818.51	48.7953
832.01	72.3397
834.85	69.1895
836.80	0.0000
846.77	61.8940
856.80	65.9439
860.56	73.8431
871.09	66.4971
873.19	56.8689
875.33	0.0000
879.36	56.9401
880.51	63.4020
883.24	59.1357
884.68	49.4736
889.28	69.9734
898.04	63.6267
911.20	54.0637
911.20	54.0637
911.20	54.0637
926.50	63.9882
937.49	73.9085
944.13	52.2375
946.00	71.8540
949.00	55.5559
962.29	47.3250
964.08	43.6992
966.15	43.7168
968.97	43.7402
968.97	43.7402
968.97	43.7402
983.53	64.6955
996.26	68.1485
1001.03	55.0073
1004.73	62.3845
1037.84	68.3061
1038.76	0.0000
1048.07	45.3134
1050.41	53.6576
1050.41	53.6576
1063.66	59.3516
1085.87	59.5859
1099.45	59.7292
1112.07	47.1393
1115.54	60.9654

1120.29	63.6919
1120.29	63.6919
1120.55	63.6947
1121.30	63.7030
1131.51	0.0000
1173.23	59.5419
1177.93	66.2089
1189.05	59.6982
1204.77	66.5051
1221.41	72.4004
1231.02	86.6906
1235.36	81.8394
1238.28	55.4040
1260.41	0.0000
1271.85	46.0996
1274.44	45.1564
1274.54	42.2759
1291.59	37.5718
1298.22	0.0000
1312.11	43.4912
1332.49	32.9624
1365.19	32.1527
1368.63	0.0000
1384.29	26.8013
1408.01	33.3387
1457.56	0.0000
1460.82	20.7505
1489.16	24.8027
1505.03	21.8756
1596.21	24.1650
1620.50	16.1621
1678.03	0.0000
1690.97	11.2148
1764.49	9.2622
1764.49	9.2622
1770.23	14.1239
1771.35	15.8913
1791.20	0.0000
1836.06	10.3825

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248521001

Total Uranium Activity	4.9762E+00	ug/g
Total Uranium Counting Unc.	4.7081E+00	ug/g
Total Uranium Tpu	2.4021E-06	ug/g
Total Uranium Mda	4.0639E+00	ug/g

```
*****************************************************************************
*                                                                           *
*                          GEL Laboratories LLC                           *
*                               2040 SAVAGE ROAD                            *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID      : 961099                    SAMPLE ID  : G248521001       *
*   ANALYST       : MXR1                      DETECTOR   : GAM19            *
*   SAMPLE DATE   : 25-FEB-2010 12:00:00.00   COUNT TIME :    0 02:00:00.00 *
*   ANALYSIS DATE: 19-MAR-2010 20:42:06.87    SAMPLE ALQT:  116.740 GRAM    *
*                                                                           *
*****************************************************************************


         GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 1.166E+01
         GROSS GAMMA ERROR  (pCi/GRAM  )   : 1.543E+00
         GROSS GAMMA MDA    (pCi/GRAM  )   : 4.903E+00
         GROSS GAMMA DLC    (pCi/GRAM  )   : 2.384E+00
```

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 22:44:09.82

```
*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521002.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 20:42:40
Sample ID         : G248521002           Sample quantity  : 9.33900E+01 GRAM
Detector name     : GAM22                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.93  0.0%
Energy tolerance  : 1.50000 keV          Analyst Initials : MXR1
Abundance limit   : 75.00000             Sensitivity      : 5.00000
Batch ID          : 961099               Detector SN#     :
Matrix Spike ID   :                      LCS ID           : 1032-A
*****************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.27*	164	440	0.93	126.80	123	7	2.28E-02	23.6	
2	3	74.87	417	536	1.16	149.97	146	15	5.79E-02	10.2	1.39E+00
3	3	77.18*	816	460	1.21	154.59	146	15	1.13E-01	5.9	
4	0	84.28*	103	365	1.21	168.78	166	6	1.43E-02	31.6	
5	0	87.16	212	384	1.35	174.52	172	6	2.94E-02	16.1	
6	4	89.92	181	256	0.92	180.04	178	17	2.51E-02	14.2	1.66E+00
7	4	92.81*	524	500	1.52	185.82	178	17	7.27E-02	9.5	
8	0	185.89*	299	417	1.22	371.79	368	10	4.16E-02	14.9	
9	0	209.03	132	329	1.02	418.03	414	9	1.83E-02	26.2	
10	4	238.70*	1405	228	1.24	477.32	470	18	1.95E-01	3.3	1.20E+00
11	4	241.66	321	340	1.62	483.23	470	18	4.45E-02	14.3	
12	0	270.00*	93	273	1.86	539.86	536	10	1.29E-02	35.6	
13	0	295.38*	411	284	1.32	590.59	585	10	5.71E-02	9.3	
14	0	300.86	128	275	3.73	601.54	596	13	1.78E-02	28.2	
15	0	328.12	65	157	1.03	656.01	653	7	9.08E-03	33.6	
16	0	338.16*	302	260	1.31	676.07	670	12	4.19E-02	12.4	
17	0	352.02*	933	187	1.37	703.78	697	14	1.30E-01	4.6	
18	0	510.89*	151	187	1.68	1021.28	1013	17	2.10E-02	26.1	
19	0	583.14*	499	105	1.75	1165.69	1158	16	6.93E-02	6.6	
20	0	609.33*	592	133	1.65	1218.05	1211	14	8.22E-02	6.0	
21	0	661.75	475	121	1.66	1322.82	1315	13	6.59E-02	6.7	
22	0	727.60	128	123	2.06	1454.46	1446	14	1.78E-02	20.4	
23	0	798.99	109	183	9.29	1597.18	1580	30	1.52E-02	37.7	
24	0	860.84	132	90	1.70	1720.83	1712	18	1.83E-02	19.0	
25	0	911.25*	367	120	2.13	1821.61	1811	23	5.10E-02	9.6	
26	0	969.77*	131	170	1.81	1938.62	1930	15	1.81E-02	25.4	
27	0	1120.38*	131	81	1.72	2239.78	2234	15	1.81E-02	18.0	
28	0	1377.55	90	35	1.55	2754.10	2743	20	1.25E-02	19.2	
29	0	1460.88*	1316	78	2.57	2920.79	2909	22	1.83E-01	3.3	
30	0	1729.54	63	0	0.81	3458.25	3451	14	8.75E-03	12.6	
31	0	1764.36*	116	28	2.65	3527.91	3517	22	1.61E-02	16.1	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 22:44:12

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521002.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 20:42:40
Sample ID : G248521002 Sample quantity : 93.390 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.93 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.599E+01	2.932E+00	6.179E-01	5.661E-02	42.064
CD-109	+	88.03	*	3.184E+00	1.070E+00	1.425E+00	1.352E-01	2.234
SN-126	+	64.28		1.589E+00	7.838E-01	8.616E-01	1.251E-01	1.844
	+	86.94		1.280E+00	6.730E-01	5.764E-01	2.393E-01	2.220
	+	87.57	*	3.078E-01	1.034E-01	1.315E-01	1.241E-02	2.341
BA-137M	+	661.66	*	5.919E-01	1.005E-01	7.343E-02	7.743E-03	8.061
CS-137	+	661.66	*	6.253E-01	1.062E-01	7.757E-02	8.191E-03	8.061
TL-208		277.37		2.241E-01	4.504E-01	7.358E-01	1.224E-01	0.305
	+	583.19	*	6.000E-01	1.028E-01	6.224E-02	6.743E-03	9.640
	+	860.56		1.453E+00	5.765E-01	4.657E-01	5.425E-02	3.119
BI-211		72.87		4.564E+00	3.891E+00	5.972E+00	4.780E-01	0.764
	+	351.06	*	5.373E+00	7.987E-01	3.604E-01	4.206E-02	14.907
PB-212	+	74.82		2.642E+00	6.340E-01	6.223E-01	7.903E-02	4.245
	+	77.11		2.965E+00	4.272E-01	3.584E-01	2.997E-02	8.271
	+	238.63	*	1.930E+00	2.863E-01	1.118E-01	1.482E-02	17.260
	+	300.09		2.635E+00	1.537E+00	1.356E+00	1.988E-01	1.944
BI-214	+	609.32	*	1.372E+00	2.299E-01	1.273E-01	1.486E-02	10.775
	+	1120.29		1.499E+00	5.651E-01	5.385E-01	5.976E-02	2.784
	+	1764.49		1.770E+00	5.882E-01	4.126E-01	3.438E-02	4.291
PB-214	+	74.82		4.683E+00	1.092E+00	1.103E+00	1.255E-01	4.245
	+	77.11		5.226E+00	8.677E-01	6.319E-01	7.422E-02	8.271
	+	242.00		2.668E+00	8.489E-01	6.749E-01	9.334E-02	3.953
	+	295.22		1.502E+00	3.586E-01	2.400E-01	3.600E-02	6.260
	+	351.93	*	1.950E+00	3.092E-01	1.311E-01	1.687E-02	14.880
RA-224	+	240.99	*	4.717E+00	1.476E+00	1.197E+00	1.499E-01	3.939
RA-226	+	609.32	*	1.372E+00	2.299E-01	1.273E-01	1.486E-02	10.775
	+	1120.29		1.499E+00	5.651E-01	5.385E-01	5.976E-02	2.784
	+	1764.49		1.770E+00	5.882E-01	4.126E-01	3.438E-02	4.291
AC-228	+	338.32		1.946E+00	9.583E-01	4.585E-01	1.949E-01	4.245
	+	911.20	*	2.051E+00	4.829E-01	2.446E-01	3.313E-02	8.387
	+	968.97		1.255E+00	7.112E-01	5.066E-01	1.274E-01	2.478
RA-228	+	338.32		1.946E+00	9.583E-01	4.585E-01	1.949E-01	4.245
	+	911.20	*	2.051E+00	4.829E-01	2.446E-01	3.313E-02	8.387
	+	968.97		1.255E+00	7.112E-01	5.066E-01	1.274E-01	2.478

Sample ID : G248521002 Acquisition date : 19-MAR-2010 20:42:40

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.642E+00	5.804E-01	6.223E-01	5.132E-02	4.245
	+	77.11		2.965E+00	4.272E-01	3.584E-01	2.997E-02	8.271
	+	238.63	*	1.930E+00	2.863E-01	1.118E-01	1.482E-02	17.260
	+	300.09		2.635E+00	2.210E+00	1.356E+00	8.413E-01	1.944
TH-229	+	85.43		3.894E-01	2.484E-01	3.364E-01	3.095E-02	1.158
	+	88.47		4.746E-01	1.595E-01	2.117E-01	1.999E-02	2.242
		193.51	*	-4.546E-01	6.241E-01	9.962E-01	1.071E-01	-0.456
		210.85		1.675E+00	1.206E+00	1.836E+00	2.089E-01	0.913
TH-232	+	338.32		1.946E+00	5.359E-01	4.585E-01	5.453E-02	4.245
	+	911.20	*	2.051E+00	4.829E-01	2.446E-01	3.313E-02	8.387
	+	968.97		1.255E+00	7.112E-01	5.066E-01	1.274E-01	2.478
TH-234	+	63.29	*	4.122E+00	2.078E+00	2.310E+00	4.110E-01	1.784
	+	92.59		6.327E+00	1.854E+00	1.091E+00	2.431E-01	5.797
U-235	+	89.96		2.728E+00	1.029E+00	1.605E+00	3.991E-01	1.699
	+	93.35		4.779E+00	1.437E+00	8.206E-01	1.909E-01	5.824
		143.76	*	1.722E-01	2.502E-01	4.183E-01	7.149E-02	0.412
		163.33		-1.748E-01	5.372E-01	8.630E-01	1.596E-01	-0.203
	+	185.72		2.765E-01	8.718E-02	8.272E-02	8.662E-03	3.343
		205.31		6.021E-01	6.509E-01	9.680E-01	1.887E-01	0.622
NP-237	+	86.48	*	9.185E-01	3.638E-01	3.947E-01	9.055E-02	2.327
		95.86		-7.424E-01	1.197E+00	1.646E+00	3.965E-01	-0.451
U-238	+	63.29	*	4.122E+00	2.078E+00	2.310E+00	4.110E-01	1.784
	+	92.59		6.327E+00	1.335E+00	1.091E+00	9.928E-02	5.797
ANH-511	+	511.00	*	1.413E-01	7.516E-02	5.113E-02	5.123E-03	2.764

---- 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	*	-2.586E-01	4.354E-01	6.672E-01	6.962E-02	-0.388
NA-22		1274.54	*	-1.631E-02	4.819E-02	7.759E-02	6.687E-03	-0.210
NA-24		1368.63	*	-4.848E+02	4.819E-02	Half-Life too short		
SC-46		889.28	*	-4.167E-02	4.708E-02	7.270E-02	8.138E-03	-0.573
	+	1120.55		2.693E-01	9.987E-02	1.460E-01	1.291E-02	1.845
V-48		944.13		-1.557E+00	1.366E+00	2.041E+00	2.214E-01	-0.763
		983.53	*	-4.550E-02	1.085E-01	1.723E-01	1.807E-02	-0.264
		1312.11		-1.337E-02	1.094E-01	1.784E-01	1.572E-02	-0.075
CR-51		320.08	*	1.298E-01	5.144E-01	8.699E-01	1.126E-01	0.149
MN-54		834.85	*	-3.508E-03	4.554E-02	7.565E-02	8.404E-03	-0.046
CO-56		846.77	*	-5.360E-02	4.943E-02	7.583E-02	8.441E-03	-0.707
		1037.84		2.110E-01	3.335E-01	5.724E-01	5.898E-02	0.369
		1238.28		1.340E-01	1.067E-01	1.892E-01	1.640E-02	0.708
		1771.35		1.384E-01	3.356E-01	5.041E-01	4.188E-02	0.275
CO-57		122.06	*	-1.685E-02	3.218E-02	4.984E-02	4.110E-03	-0.338
		136.47		-3.166E-01	2.448E-01	3.920E-01	3.633E-02	-0.808
CO-58		810.76	*	-2.022E-02	4.733E-02	7.170E-02	7.940E-03	-0.282
FE-59		1099.45	*	-2.321E-02	1.064E-01	1.696E-01	1.661E-02	-0.137
		1291.59		-9.172E-02	1.413E-01	2.194E-01	2.163E-02	-0.418
CO-60		1173.23		-2.829E-02	5.203E-02	8.361E-02	6.724E-03	-0.338

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1332.49	*	-8.828E-03	4.385E-02	7.093E-02	6.325E-03	-0.124
ZN-65		1115.54	*	8.910E-02	1.266E-01	1.865E-01	1.664E-02	0.478
SE-75		121.12		7.278E-02	1.669E-01	2.694E-01	2.908E-02	0.270
		136.00		-4.371E-02	4.837E-02	7.898E-02	6.855E-03	-0.553
		264.66	*	7.981E-03	6.131E-02	8.674E-02	1.168E-02	0.092
		279.54		1.430E-01	1.307E-01	2.180E-01	3.095E-02	0.656
		400.66		1.205E-01	3.162E-01	5.285E-01	6.172E-02	0.228
SR-85		514.00	*	1.573E-01	5.996E-02	9.550E-02	9.582E-03	1.647
Y-88		898.04		-2.248E-02	4.917E-02	7.875E-02	8.848E-03	-0.285
		1836.06	*	2.724E-02	4.085E-02	7.283E-02	5.889E-03	0.374
Y-91		1204.77	*	-7.318E+00	2.557E+01	4.171E+01	3.429E+00	-0.175
NB-94		702.65	*	-2.277E-02	3.971E-02	6.240E-02	6.687E-03	-0.365
		871.09		1.699E-02	3.736E-02	6.184E-02	6.909E-03	0.275
NB-95		765.81	*	5.598E-02	5.264E-02	9.033E-02	9.878E-03	0.620
NB-95M		235.69	*	2.402E-01	1.799E-01	2.703E-01	3.577E-02	0.889
ZR-95		724.19		2.463E-01	1.338E-01	2.121E-01	2.416E-02	1.161
		756.73	*	-3.505E-02	8.942E-02	1.408E-01	1.638E-02	-0.249
MO-99		140.51		-1.440E-04	8.942E-02	Half-Life too short		
		181.07		-6.335E-05	8.942E-02	Half-Life too short		
		366.42		6.139E-04	8.942E-02	Half-Life too short		
		739.50	*	-3.460E-05	8.942E-02	Half-Life too short		
		777.92		-2.536E-05	8.942E-02	Half-Life too short		
TC-99M		140.51	*	-1.979E+19	8.942E-02	Half-Life too short		
RU-103		497.08	*	-2.222E-02	5.126E-02	8.003E-02	1.186E-02	-0.278
	+	610.33		1.609E+01	3.398E+00	3.433E+00	5.959E-01	4.687
RH-106		621.93	*	1.654E-01	3.592E-01	6.084E-01	8.828E-02	0.272
		1050.41		2.804E+00	2.861E+00	4.994E+00	4.875E-01	0.561
RU-106		621.93	*	1.654E-01	3.588E-01	6.084E-01	6.355E-02	0.272
		1050.41		2.804E+00	2.861E+00	4.994E+00	4.875E-01	0.561
AG-108M		433.94	*	-1.520E-02	3.531E-02	5.613E-02	5.524E-03	-0.271
		614.28		-9.018E-03	4.624E-02	6.459E-02	6.884E-03	-0.140
		722.91		2.307E-02	4.499E-02	6.589E-02	7.258E-03	0.350
AG-110M		657.76	*	8.238E-02	5.036E-02	7.938E-02	8.532E-03	1.038
		677.62		-1.467E-02	3.434E-01	5.609E-01	6.068E-02	-0.026
		706.68		6.994E-02	2.601E-01	4.310E-01	4.712E-02	0.162
		763.94		-1.925E-01	1.972E-01	2.969E-01	3.301E-02	-0.648
		884.68		5.506E-03	6.175E-02	9.351E-02	1.066E-02	0.059
		937.49		6.234E-02	1.324E-01	2.251E-01	2.510E-02	0.277
		1384.29		-9.393E-03	2.112E-01	2.921E-01	2.676E-02	-0.032
		1505.03		-2.813E-01	3.409E-01	5.040E-01	4.481E-02	-0.558
SN-113		391.69	*	-1.991E-02	5.537E-02	8.936E-02	8.534E-03	-0.223
CD-115		260.90		-9.979E-04	5.537E-02	Half-Life too short		
		492.35		-4.191E-04	5.537E-02	Half-Life too short		
		527.90	*	-9.586E-05	5.537E-02	Half-Life too short		
SN-117M		156.02		2.523E+00	3.757E+00	6.431E+00	6.029E-01	0.392
		158.56	*	-5.429E-02	9.402E-02	1.538E-01	1.458E-02	-0.353
TE-123M		159.00	*	-1.705E-02	3.505E-02	5.754E-02	5.495E-03	-0.296
SB-124		602.73		1.858E-02	5.320E-02	7.798E-02	8.101E-03	0.238
		645.85		-4.606E-01	6.190E-01	9.670E-01	1.056E-01	-0.476

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		722.78		2.369E-01	4.903E-01	7.162E-01	7.844E-02	0.331
		1690.97	*	2.215E-02	9.292E-02	1.586E-01	1.414E-02	0.140
SB-125		427.87	*	-7.946E-03	1.031E-01	1.675E-01	1.624E-02	-0.047
		463.37		5.351E-01	3.694E-01	6.213E-01	6.428E-02	0.861
		600.60		2.970E-02	2.340E-01	3.393E-01	3.704E-02	0.088
		635.95		-1.128E-01	3.039E-01	4.884E-01	5.405E-02	-0.231
TE-125M		109.28	*	9.222E+00	1.283E+01	2.103E+01	2.168E+00	0.438
I-126		388.63		3.605E-01	2.945E-01	5.103E-01	4.832E-02	0.706
		666.33	*	3.653E-01	4.317E-01	6.505E-01	6.873E-02	0.562
		753.82		2.556E+00	2.945E+00	5.041E+00	5.493E-01	0.507
SB-126		414.70		-9.146E-02	1.335E-01	2.100E-01	1.987E-02	-0.436
		666.50		1.009E-01	1.493E-01	2.223E-01	2.349E-02	0.454
		695.00		5.141E-02	1.327E-01	2.219E-01	2.372E-02	0.232
		697.00		-4.195E-01	4.637E-01	7.097E-01	7.590E-02	-0.591
		720.70	*	-1.144E-01	2.865E-01	3.750E-01	4.045E-02	-0.305
		856.80		3.609E-01	9.011E-01	1.333E+00	1.487E-01	0.271
SB-127		252.40		-2.739E+00	1.903E+01	3.044E+01	1.319E+01	-0.090
		473.00		4.294E+00	7.162E+00	1.193E+01	1.866E+00	0.360
		685.70	*	-3.073E+00	5.342E+00	8.361E+00	1.262E+00	-0.368
		783.70		1.778E+01	1.427E+01	2.460E+01	3.955E+00	0.723
I-131		80.19		-7.464E-01	1.272E+01	1.457E+01	1.278E+00	-0.051
		284.31		-1.678E-01	3.245E+00	5.169E+00	7.325E-01	-0.032
		364.49	*	-1.379E-01	2.441E-01	3.912E-01	4.354E-02	-0.353
		636.99		-2.391E+00	3.348E+00	5.247E+00	5.744E-01	-0.456
TE-132		49.72		-1.741E+01	8.919E+01	1.486E+02	1.917E+01	-0.117
		111.76		-5.264E+01	1.942E+02	3.063E+02	4.012E+01	-0.172
		116.30		9.281E+01	1.640E+02	2.664E+02	3.480E+01	0.348
		228.16	*	-3.139E+00	4.271E+00	6.661E+00	1.292E+00	-0.471
BA-133		81.00		3.559E-02	1.352E-01	1.584E-01	2.467E-02	0.225
		276.40		-4.281E-02	4.578E-01	6.723E-01	1.199E-01	-0.064
		302.85		2.007E-01	1.844E-01	2.834E-01	4.676E-02	0.708
		356.01	*	-2.515E-02	5.365E-02	7.435E-02	1.095E-02	-0.338
		383.85		-4.732E-01	3.598E-01	5.442E-01	7.190E-02	-0.870
I-133		529.87	*	-5.243E-01	3.598E-01	Half-Life too short		
		875.33		-9.617E+00	3.598E-01	Half-Life too short		
		1298.22		-3.062E+01	3.598E-01	Half-Life too short		
CS-134		563.25		1.905E-01	4.062E-01	6.939E-01	7.159E-02	0.275
		569.33		-1.387E-01	2.437E-01	3.748E-01	3.887E-02	-0.370
		604.72		2.858E-03	4.279E-02	6.127E-02	6.379E-03	0.047
		795.86	*	1.073E-01	5.650E-02	9.999E-02	1.107E-02	1.073
		801.95		-3.058E-01	5.565E-01	7.327E-01	8.113E-02	-0.417
		1365.19		1.536E-01	1.327E+00	2.095E+00	1.952E-01	0.073
CS-135		268.22	*	1.960E-01	2.183E-01	3.205E-01	4.635E-02	0.612
I-135		546.56		-1.352E+17	2.183E-01	Half-Life too short		
		836.80		6.753E+17	2.183E-01	Half-Life too short		
		1038.76		6.178E+17	2.183E-01	Half-Life too short		
		1131.51		6.536E+17	2.183E-01	Half-Life too short		
		1260.41	*	2.449E+16	2.183E-01	Half-Life too short		
		1457.56		9.770E+19	2.183E-01	Half-Life too short		

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1678.03		7.942E+16	2.183E-01	Half-Life too short		
		1791.20		-1.547E+18	2.183E-01	Half-Life too short		
CS-136		153.25		-8.833E-01	1.452E+00	2.377E+00	2.572E-01	-0.372
		176.60		8.825E-02	8.675E-01	1.445E+00	1.580E-01	0.061
		273.65		-8.732E-01	1.058E+00	1.389E+00	1.980E-01	-0.629
		340.55		1.007E+00	3.404E-01	5.355E-01	6.450E-02	1.881
		818.51		-1.399E-02	1.189E-01	1.971E-01	2.185E-02	-0.071
		1048.07	*	1.072E-01	1.705E-01	2.914E-01	2.949E-02	0.368
		1235.36		1.393E+00	9.859E-01	1.747E+00	2.028E-01	0.797
CE-139		165.86	*	-6.504E-03	3.636E-02	6.023E-02	5.907E-03	-0.108
BA-140		162.66		1.007E-01	1.487E+00	2.430E+00	2.475E-01	0.041
		304.85		1.764E+00	2.493E+00	3.729E+00	1.153E+00	0.473
		423.72		-1.065E+00	3.304E+00	5.268E+00	1.746E+00	-0.202
		537.26	*	1.128E-01	4.384E-01	7.414E-01	2.545E-01	0.152
LA-140	+	328.76		7.778E-01	5.320E-01	9.349E-01	1.182E-01	0.832
		487.02		1.639E-01	2.424E-01	4.056E-01	4.204E-02	0.404
		815.77		-6.180E-03	5.079E-01	8.487E-01	1.008E-01	-0.007
		1596.21	*	-1.111E-01	1.516E-01	2.342E-01	2.053E-02	-0.475
CE-141		145.44	*	1.133E-01	8.541E-02	1.491E-01	1.358E-02	0.760
CE-143		57.36		1.747E-02	8.541E-02	Half-Life too short		
		293.27	*	3.906E-02	8.541E-02	Half-Life too short		
		664.57		5.072E-01	8.541E-02	Half-Life too short		
		721.93		1.495E-02	8.541E-02	Half-Life too short		
CE-144		80.12		-1.420E-01	3.747E+00	4.299E+00	3.716E-01	-0.033
		133.52	*	1.799E-01	2.357E-01	4.066E-01	6.197E-02	0.443
PM-144		476.78		-8.370E-02	8.171E-02	1.214E-01	1.275E-02	-0.690
		618.01		1.198E-02	3.742E-02	6.170E-02	6.563E-03	0.194
		696.49	*	-2.510E-02	4.005E-02	6.267E-02	6.704E-03	-0.400
PR-144		696.51	*	-1.900E+00	3.008E+00	4.705E+00	5.030E-01	-0.404
		1489.16		-7.533E+00	1.509E+01	2.316E+01	2.063E+00	-0.325
PM-146		453.88	*	-3.796E-03	5.004E-02	8.088E-02	9.300E-03	-0.047
		633.25		7.111E-01	1.567E+00	2.619E+00	1.012E+00	0.272
		735.93		2.823E-02	1.625E-01	2.612E-01	7.519E-02	0.108
		747.24		-2.140E-02	1.088E-01	1.740E-01	2.788E-02	-0.123
ND-147	+	91.11		1.396E+00	4.197E-01	1.020E+00	1.008E-01	1.369
		319.41		8.588E-02	6.132E+00	1.027E+01	1.300E+00	0.008
		531.02	*	-6.256E-01	9.793E-01	1.571E+00	2.491E-01	-0.398
PM-149		285.90	*	7.606E-04	9.793E-01	Half-Life too short		
EU-152		121.78		-1.004E-02	8.931E-02	1.409E-01	1.349E-02	-0.071
		244.70		3.921E-01	4.529E-01	6.692E-01	8.473E-02	0.586
		344.28	*	5.835E-02	1.370E-01	1.926E-01	2.314E-02	0.303
		778.90		9.764E-02	2.873E-01	4.754E-01	5.216E-02	0.205
		964.08		4.903E-01	4.102E-01	6.293E-01	6.715E-02	0.779
		1085.87		-3.616E-01	4.381E-01	6.629E-01	6.176E-02	-0.545
		1112.07		1.565E-01	3.813E-01	5.689E-01	5.098E-02	0.275
		1408.01		1.030E-01	2.272E-01	3.864E-01	3.455E-02	0.267
GD-153		69.67		-1.091E+00	2.002E+00	3.074E+00	2.386E-01	-0.355
		97.43	*	4.114E-02	1.105E-01	1.617E-01	1.422E-02	0.254
		103.18		-7.826E-02	1.308E-01	2.044E-01	1.747E-02	-0.383

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154		123.07		-2.007E-02	6.416E-02	1.003E-01	1.111E-02	-0.200
		723.31		1.351E-01	2.131E-01	3.145E-01	3.618E-02	0.429
		873.19		-9.397E-02	2.908E-01	4.708E-01	6.525E-02	-0.200
		996.26		-5.374E-01	4.253E-01	6.115E-01	1.125E-01	-0.879
		1004.73		6.413E-02	2.510E-01	4.167E-01	5.379E-02	0.154
		1274.44	*	-4.821E-02	1.359E-01	2.184E-01	2.484E-02	-0.221
EU-155	+	86.55		3.743E-01	1.259E-01	2.063E-01	1.940E-02	1.815
		105.31	*	9.672E-02	1.229E-01	2.028E-01	1.740E-02	0.477
TB-160	+	86.79		1.062E+00	3.567E-01	5.808E-01	5.431E-02	1.828
		197.04		-5.063E-01	7.882E-01	1.233E+00	1.341E-01	-0.411
		215.65		-1.679E-02	9.181E-01	1.500E+00	1.733E-01	-0.011
		298.57		2.321E-01	2.245E-01	2.468E-01	3.307E-02	0.941
		879.36	*	-6.211E-02	1.601E-01	2.579E-01	2.884E-02	-0.241
		962.29		4.066E-01	7.932E-01	1.163E+00	1.243E-01	0.350
		966.15		1.526E+00	3.898E-01	6.403E-01	6.820E-02	2.383
		1177.93		2.108E-01	4.399E-01	7.559E-01	6.100E-02	0.279
		1271.85		-2.359E-01	8.419E-01	1.277E+00	1.098E-01	-0.185
HO-166M		80.57		-7.190E-02	3.995E-01	4.530E-01	3.936E-02	-0.159
	+	184.41		2.197E-01	6.926E-02	8.881E-02	9.260E-03	2.474
		280.46		1.211E-02	9.631E-02	1.550E-01	2.164E-02	0.078
		410.95		1.885E-01	2.874E-01	4.855E-01	4.582E-02	0.388
		711.68	*	-3.086E-03	7.039E-02	1.144E-01	1.230E-02	-0.027
		752.31		-3.074E-02	3.060E-01	4.927E-01	5.367E-02	-0.062
		810.29		-1.819E-02	6.925E-02	1.036E-01	1.145E-02	-0.176
TA-182		67.75		2.801E-02	1.253E-01	2.082E-01	1.588E-02	0.135
		100.11		1.794E-01	2.202E-01	3.489E-01	3.023E-02	0.514
		152.43		2.355E-02	4.200E-01	7.061E-01	6.515E-02	0.033
		222.11		-3.645E-01	4.457E-01	6.986E-01	8.244E-02	-0.522
	+	1121.30		7.342E-01	2.723E-01	3.955E-01	3.493E-02	1.856
		1189.05		7.529E-03	3.512E-01	5.861E-01	4.766E-02	0.013
		1221.41	*	-1.194E-02	2.282E-01	3.780E-01	3.143E-02	-0.032
		1231.02		-3.793E-01	5.984E-01	9.541E-01	7.985E-02	-0.398
IR-192	+	295.96		1.189E+00	2.733E-01	3.454E-01	4.673E-02	3.443
		308.46		-1.018E-01	1.223E-01	1.838E-01	2.407E-02	-0.554
		316.51	*	-6.739E-03	4.351E-02	7.235E-02	9.246E-03	-0.093
		468.07		-1.739E-01	9.752E-02	1.402E-01	1.451E-02	-1.240
HG-203		70.83		-2.815E-01	1.782E+00	2.603E+00	4.076E-01	-0.108
		72.87		1.266E+00	1.091E+00	1.656E+00	2.517E-01	0.764
		279.20	*	6.503E-02	4.984E-02	8.347E-02	1.180E-02	0.779
BI-207		72.81		2.191E-01	2.227E-01	3.397E-01	2.717E-02	0.645
	+	74.97		7.617E-01	1.671E-01	2.598E-01	2.124E-02	2.932
		569.70		-7.039E-03	3.738E-02	5.890E-02	6.050E-03	-0.120
		1063.66	*	1.006E-01	5.893E-02	1.068E-01	1.026E-02	0.942
		1770.23		9.924E-01	6.659E-01	1.148E+00	9.544E-02	0.864
PB-210		46.54	*	1.502E+00	3.628E+00	6.024E+00	5.548E-01	0.249
PB-211		404.85	*	-4.774E-01	9.207E-01	1.423E+00	6.907E-01	-0.335
		427.09		-7.730E-01	1.756E+00	2.733E+00	1.269E+00	-0.283
		832.01		-1.265E+00	1.363E+00	1.858E+00	9.725E-01	-0.680
BI-212	+	727.33	*	2.306E+00	9.948E-01	1.286E+00	1.809E-01	1.793

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		785.37		-9.754E-01	3.791E+00	5.522E+00	6.070E-01	-0.177
		1620.50		3.086E+00	2.547E+00	4.767E+00	4.156E-01	0.647
RN-219	+	271.23		5.498E-01	3.995E-01	5.163E-01	7.628E-02	1.065
		401.81	*	3.655E-01	4.932E-01	8.337E-01	1.278E-01	0.438
RA-223		81.07		8.000E-02	3.056E-01	3.582E-01	3.130E-02	0.223
	+	83.79		2.318E-01	1.478E-01	2.350E-01	2.120E-02	0.986
		94.87		1.272E+00	6.065E-01	9.407E-01	8.411E-02	1.352
		144.24		4.478E-01	8.324E-01	1.392E+00	1.376E-01	0.322
		154.21		6.191E-02	4.524E-01	7.620E-01	7.673E-02	0.081
	+	269.46		4.272E-01	3.096E-01	3.962E-01	5.440E-02	1.078
		323.87	*	1.065E-01	8.388E-01	1.229E+00	2.402E-01	0.087
	+	338.28		7.724E+00	2.224E+00	2.732E+00	3.986E-01	2.827
AC-227		79.69		3.806E-01	1.566E+00	2.112E+00	3.638E-01	0.180
		235.96		6.983E-01	2.312E-01	3.490E-01	4.742E-02	2.001
		256.23	*	-1.921E-01	3.141E-01	4.897E-01	7.628E-02	-0.392
	+	299.98		2.899E+00	1.703E+00	1.835E+00	2.990E-01	1.579
		304.50		1.198E+00	2.018E+00	3.047E+00	5.886E-01	0.393
		334.37		2.073E-01	2.441E+00	3.358E+00	5.951E-01	0.062
TH-227		79.80		5.018E-01	2.065E+00	2.783E+00	6.060E-01	0.180
		235.96		6.983E-01	2.300E-01	3.490E-01	4.588E-02	2.001
		256.23	*	-1.921E-01	3.143E-01	4.897E-01	8.231E-02	-0.392
	+	299.98		2.899E+00	1.703E+00	1.835E+00	2.990E-01	1.579
		304.50		1.198E+00	2.018E+00	3.047E+00	5.886E-01	0.393
		334.37		2.073E-01	2.441E+00	3.358E+00	5.951E-01	0.062
PA-231		283.69	*	-8.147E-01	1.693E+00	2.626E+00	4.776E-01	-0.310
	+	301.36		1.862E+00	1.092E+00	1.223E+00	1.936E-01	1.523
TH-231		81.07		8.000E-02	3.056E-01	3.582E-01	3.130E-02	0.223
	+	83.79		2.318E-01	1.478E-01	2.350E-01	2.120E-02	0.986
		94.87		1.272E+00	6.065E-01	9.407E-01	8.411E-02	1.352
		144.24		4.478E-01	8.324E-01	1.392E+00	1.376E-01	0.322
		154.21		6.191E-02	4.524E-01	7.620E-01	7.673E-02	0.081
	+	269.46		4.272E-01	3.096E-01	3.962E-01	5.440E-02	1.078
		323.87	*	1.065E-01	8.388E-01	1.229E+00	2.402E-01	0.087
	+	338.28		7.724E+00	2.224E+00	2.732E+00	3.986E-01	2.827
PA-233	+	300.13		1.312E+00	7.770E-01	8.334E-01	1.500E-01	1.574
		311.90	*	1.682E-02	7.233E-02	1.225E-01	1.605E-02	0.137
		340.48		3.090E+00	1.222E+00	1.583E+00	4.019E-01	1.951
PA-234		94.67		6.621E-01	2.372E-01	3.611E-01	4.563E-02	1.833
		98.44		1.238E-01	1.344E-01	1.748E-01	9.753E-02	0.709
		111.00		1.063E-01	2.221E-01	3.608E-01	4.291E-02	0.295
		131.20		-1.196E-01	1.242E-01	2.031E-01	1.720E-02	-0.589
		569.50		-1.703E-01	3.346E-01	5.170E-01	5.310E-02	-0.329
		733.00		-1.851E-01	4.795E-01	6.374E-01	1.475E-01	-0.290
		880.51		1.978E-02	2.897E-01	4.834E-01	5.406E-02	0.041
		883.24		4.083E-02	3.570E-01	5.417E-01	3.662E-01	0.075
		926.50		-8.471E-02	1.904E-01	3.018E-01	7.900E-02	-0.281
		946.00	*	-1.622E-01	3.300E-01	5.212E-01	1.036E-01	-0.311
		949.00		2.622E-01	4.908E-01	8.389E-01	9.064E-02	0.312
PA-234M		766.42		1.263E+01	1.461E+01	2.247E+01	1.150E+01	0.562

Sample ID : G248521002 Acquisition date : 19-MAR-2010 20:42:40

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1001.03	*	2.130E+00	5.441E+00	8.984E+00	1.030E+00	0.237
NP-239		99.53		2.634E-01	2.095E-01	3.185E-01	2.768E-02	0.827
		103.37		-1.552E-02	1.148E-01	1.832E-01	1.564E-02	-0.085
		106.12		1.542E-02	9.847E-02	1.587E-01	1.342E-02	0.097
		117.23	*	-3.055E-01	4.845E-01	7.486E-01	6.186E-02	-0.408
		228.18		-1.934E-01	2.617E-01	4.107E-01	4.941E-02	-0.471
		277.60		1.406E-01	2.047E-01	3.370E-01	4.697E-02	0.417
AM-241		59.54	*	1.067E-03	1.773E-01	2.644E-01	2.067E-02	0.004
CM-247		278.00		6.372E-01	8.646E-01	1.426E+00	1.990E-01	0.447
		287.50		1.011E+00	1.472E+00	2.419E+00	3.328E-01	0.418
		402.40	*	2.168E-02	4.476E-02	7.515E-02	7.049E-03	0.288
CF-249		252.80		-4.216E-01	1.159E+00	1.837E+00	2.383E-01	-0.230
		333.37		7.708E-03	3.032E-01	3.470E-01	4.199E-02	0.022
		388.16	*	6.178E-02	4.737E-02	8.235E-02	7.818E-03	0.750
CF-251		177.52	*	6.449E-02	1.549E-01	2.607E-01	2.656E-02	0.247
		227.38		-9.807E-02	4.260E-01	6.864E-01	8.237E-02	-0.143
		285.41		4.134E-01	2.549E+00	4.103E+00	5.670E-01	0.101

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]G248521002      *
* Acquisition date : 19-MAR-2010 20:42:40 Detector SN#    :                 *
* Detector ID        : GAM22               Sensitivity     : 5.000          *
* Geometry           : CAN                 Energy tolerance: 1.500          *
* Elapsed live time:    0 02:00:00.00      Abundance limit : 75.000         *
* Elapsed real time:    0 02:00:01.93      Half life ratio :  8.000         *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248521002           Analyst initials: MXR1          *
* Batch Number       : 961099               Sample Quantity : 9.3390E+01 GRAM *
* Recovery           :    1.00000           Carrier Weight :    0.00000     *
*****************************************************************************
*                                                                           *
*                                  QC DATA                                  *
* Standard Weight  :   0.00000                                              *
* CALIB. DATE/TIME :  2-DEC-2009 16:47:28 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.599E+01	2.873E+00	6.113E-01	0.000E+00
CD-109	3.184E+00	1.048E+00	1.408E+00	0.000E+00
SN-126	3.078E-01	1.014E-01	1.299E-01	0.000E+00
BA-137M	5.919E-01	9.850E-02	7.261E-02	0.000E+00
CS-137	6.253E-01	1.041E-01	7.670E-02	0.000E+00
TL-208	6.000E-01	1.007E-01	6.154E-02	0.000E+00
BI-211	5.373E+00	7.827E-01	3.563E-01	0.000E+00
PB-212	1.930E+00	2.805E-01	1.105E-01	0.000E+00
BI-214	1.372E+00	2.253E-01	1.259E-01	0.000E+00
PB-214	1.950E+00	3.030E-01	1.295E-01	0.000E+00
RA-224	4.717E+00	1.446E+00	1.183E+00	0.000E+00
RA-226	1.372E+00	2.253E-01	1.259E-01	0.000E+00
AC-228	2.051E+00	4.732E-01	2.419E-01	0.000E+00
RA-228	2.051E+00	4.732E-01	2.419E-01	0.000E+00
TH-228	1.930E+00	2.805E-01	1.105E-01	0.000E+00
TH-229	-4.546E-01	6.117E-01	9.844E-01	0.000E+00
TH-232	2.051E+00	4.732E-01	2.419E-01	0.000E+00
TH-234	4.122E+00	2.036E+00	2.281E+00	0.000E+00
U-235	1.722E-01	2.452E-01	4.132E-01	0.000E+00
NP-237	9.185E-01	3.565E-01	3.898E-01	0.000E+00
U-238	4.122E+00	2.036E+00	2.281E+00	0.000E+00
ANH-511	1.413E-01	7.366E-02	5.055E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)		
BE-7	-2.586E-01	4.267E-01	6.596E-01	0.000E+00	NOT IDENT.
NA-22	-1.631E-02	4.723E-02	7.675E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.667E+09	0.000E+00	0.000E+00	SHORT HLIF
SC-46	-4.167E-02	4.614E-02	7.190E-02	0.000E+00	FAIL ABUN
V-48	-4.550E-02	1.063E-01	1.704E-01	0.000E+00	NOT IDENT.

CR-51	1.298E-01	5.041E-01	8.598E-01	0.000E+00	NOT IDENT.
MN-54	-3.508E-03	4.463E-02	7.481E-02	0.000E+00	NOT IDENT.
CO-56	-5.360E-02	4.844E-02	7.499E-02	0.000E+00	NOT IDENT.
CO-57	-1.685E-02	3.154E-02	4.924E-02	0.000E+00	NOT IDENT.
CO-58	-2.022E-02	4.638E-02	7.091E-02	0.000E+00	NOT IDENT.
FE-59	-2.321E-02	1.042E-01	1.677E-01	0.000E+00	NOT IDENT.
CO-60	-8.828E-03	4.298E-02	7.016E-02	0.000E+00	NOT IDENT.
ZN-65	8.910E-02	1.240E-01	1.845E-01	0.000E+00	NOT IDENT.
SE-75	7.981E-03	6.008E-02	8.573E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.876E-02	9.442E-02	0.000E+00	NOT IDENT.
Y-88	2.724E-02	4.003E-02	7.206E-02	0.000E+00	NOT IDENT.
Y-91	-7.318E+00	2.506E+01	4.126E+01	0.000E+00	NOT IDENT.
NB-94	-2.277E-02	3.892E-02	6.170E-02	0.000E+00	NOT IDENT.
NB-95	5.598E-02	5.158E-02	8.933E-02	0.000E+00	NOT IDENT.
NB-95M	2.402E-01	1.763E-01	2.672E-01	0.000E+00	NOT IDENT.
ZR-95	-3.505E-02	8.763E-02	1.393E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	8.378E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	2.467E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.222E-02	5.023E-02	7.912E-02	0.000E+00	FAIL ABUN
RH-106	1.654E-01	3.520E-01	6.016E-01	0.000E+00	NOT IDENT.
RU-106	1.654E-01	3.516E-01	6.016E-01	0.000E+00	NOT IDENT.
AG-108M	-1.520E-02	3.460E-02	5.549E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	4.935E-02	7.849E-02	0.000E+00	NOT IDENT.
SN-113	-1.991E-02	5.426E-02	8.833E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.168E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-5.429E-02	9.213E-02	1.519E-01	0.000E+00	NOT IDENT.
TE-123M	-1.705E-02	3.435E-02	5.685E-02	0.000E+00	NOT IDENT.
SB-124	2.215E-02	9.106E-02	1.569E-01	0.000E+00	NOT IDENT.
SB-125	-7.946E-03	1.010E-01	1.656E-01	0.000E+00	NOT IDENT.
TE-125M	9.222E+00	1.257E+01	2.078E+01	0.000E+00	NOT IDENT.
I-126	3.653E-01	4.230E-01	6.432E-01	0.000E+00	NOT IDENT.
SB-126	-1.144E-01	2.807E-01	3.709E-01	0.000E+00	NOT IDENT.
SB-127	-3.073E+00	5.235E+00	8.268E+00	0.000E+00	NOT IDENT.
I-131	-1.379E-01	2.392E-01	3.867E-01	0.000E+00	NOT IDENT.
TE-132	-3.139E+00	4.186E+00	6.582E+00	0.000E+00	NOT IDENT.
BA-133	-2.515E-02	5.258E-02	7.349E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.057E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.537E-02	9.888E-02	0.000E+00	NOT IDENT.
CS-135	1.960E-01	2.140E-01	3.167E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.263E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.072E-01	1.671E-01	2.882E-01	0.000E+00	NOT IDENT.
CE-139	-6.504E-03	3.563E-02	5.951E-02	0.000E+00	NOT IDENT.
BA-140	1.128E-01	4.296E-01	7.330E-01	0.000E+00	NOT IDENT.
LA-140	-1.111E-01	1.486E-01	2.317E-01	0.000E+00	FAIL ABUN
CE-141	1.133E-01	8.370E-02	1.473E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.256E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.799E-01	2.310E-01	4.017E-01	0.000E+00	NOT IDENT.
PM-144	-2.510E-02	3.925E-02	6.197E-02	0.000E+00	NOT IDENT.
PR-144	-1.900E+00	2.948E+00	4.652E+00	0.000E+00	NOT IDENT.
PM-146	-3.796E-03	4.904E-02	7.996E-02	0.000E+00	NOT IDENT.
ND-147	-6.256E-01	9.597E-01	1.553E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.027E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	5.835E-02	1.343E-01	1.904E-01	0.000E+00	NOT IDENT.
GD-153	4.114E-02	1.083E-01	1.597E-01	0.000E+00	NOT IDENT.
EU-154	-4.821E-02	1.332E-01	2.161E-01	0.000E+00	NOT IDENT.
EU-155	9.672E-02	1.204E-01	2.003E-01	0.000E+00	FAIL ABUN
TB-160	-6.211E-02	1.569E-01	2.550E-01	0.000E+00	FAIL ABUN
HO-166M	-3.086E-03	6.899E-02	1.132E-01	0.000E+00	FAIL ABUN
TA-182	-1.194E-02	2.236E-01	3.739E-01	0.000E+00	FAIL ABUN
IR-192	-6.739E-03	4.264E-02	7.151E-02	0.000E+00	FAIL ABUN
HG-203	6.503E-02	4.884E-02	8.250E-02	0.000E+00	NOT IDENT.
BI-207	1.006E-01	5.775E-02	1.057E-01	0.000E+00	FAIL ABUN
PB-210	1.502E+00	3.556E+00	5.948E+00	0.000E+00	NOT IDENT.
PB-211	-4.774E-01	9.023E-01	1.407E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.749E-01	1.272E+00	0.000E+00	FAIL ABUN
RN-219	3.655E-01	4.833E-01	8.241E-01	0.000E+00	FAIL ABUN
RA-223	1.065E-01	8.220E-01	1.215E+00	0.000E+00	FAIL ABUN
AC-227	-1.921E-01	3.078E-01	4.839E-01	0.000E+00	FAIL ABUN
TH-227	-1.921E-01	3.080E-01	4.839E-01	0.000E+00	FAIL ABUN
PA-231	-8.147E-01	1.659E+00	2.595E+00	0.000E+00	FAIL ABUN
TH-231	1.065E-01	8.220E-01	1.215E+00	0.000E+00	FAIL ABUN
PA-233	1.682E-02	7.088E-02	1.211E-01	0.000E+00	FAIL ABUN
PA-234	-1.622E-01	3.234E-01	5.154E-01	0.000E+00	NOT IDENT.
PA-234M	2.130E+00	5.332E+00	8.886E+00	0.000E+00	NOT IDENT.
NP-239	-3.055E-01	4.748E-01	7.395E-01	0.000E+00	NOT IDENT.
AM-241	1.067E-03	1.738E-01	2.611E-01	0.000E+00	NOT IDENT.
CM-247	2.168E-02	4.387E-02	7.429E-02	0.000E+00	NOT IDENT.
CF-249	6.178E-02	4.642E-02	8.140E-02	0.000E+00	NOT IDENT.

CF-251	6.449E-02	1.518E-01	2.576E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 22:44:10.73

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*****************************************************************************
*                            GEL Laboratories LLC                           *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
Configuration    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521002.CNF;1
Sample date      : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 20:42:40
Sample ID        : G248521002           Sample quantity  : 9.33900E+01 GRAM
Detector name    : GAM22                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.93  0.0%
Energy tolerance : 1.50000 keV          Analyst Initials : MXR1
Abundance limit  : 75.00000             Sensitivity      : 5.00000
Batch ID         : 961099               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	1316	10.66*	1.909E+00	2.599E+01	2.599E+01	11.28
CD-109	88.03	212	3.70*	7.475E+00	3.078E+00	3.184E+00	33.60
SN-126	64.28	164	9.60	4.331E+00	1.589E+00	1.589E+00	49.34
	86.94	212	8.90	7.475E+00	1.280E+00	1.280E+00	52.59
	87.57	212	37.00*	7.475E+00	3.078E-01	3.078E-01	33.60
BA-137M	661.66	475	89.90*	3.589E+00	5.910E-01	5.919E-01	16.98
CS-137	661.66	475	85.10*	3.589E+00	6.244E-01	6.253E-01	16.99
TL-208	277.37	------	6.60	6.182E+00	------ Line Not Found		------
	583.19	499	85.00*	3.931E+00	6.000E-01	6.000E-01	17.13
	860.56	132	12.50	2.922E+00	1.453E+00	1.453E+00	39.69
BI-211	72.87	------	1.23	5.897E+00	------ Line Not Found		------
	351.06	933	12.92*	5.400E+00	5.373E+00	5.373E+00	14.86
PB-212	74.82	417	10.28	6.174E+00	2.642E+00	2.642E+00	24.00
	77.11	816	17.10	6.470E+00	2.965E+00	2.965E+00	14.41
	238.63	1405	43.60*	6.709E+00	1.930E+00	1.930E+00	14.83
	300.09	128	3.30	5.907E+00	2.635E+00	2.635E+00	58.31
BI-214	609.32	592	45.49*	3.811E+00	1.372E+00	1.372E+00	16.76
	1120.29	131	14.92	2.345E+00	1.499E+00	1.499E+00	37.68
	1764.49	116	15.30	1.716E+00	1.770E+00	1.770E+00	33.22
PB-214	74.82	417	5.80	6.174E+00	4.683E+00	4.683E+00	23.33
	77.11	816	9.70	6.470E+00	5.226E+00	5.226E+00	16.60
	242.00	321	7.25	6.665E+00	2.668E+00	2.668E+00	31.82
	295.22	411	18.42	5.968E+00	1.502E+00	1.502E+00	23.87
	351.93	933	35.60*	5.400E+00	1.950E+00	1.950E+00	15.85
RA-224	240.99	321	4.10*	6.665E+00	4.717E+00	4.717E+00	31.29
RA-226	609.32	592	45.49*	3.811E+00	1.372E+00	1.372E+00	16.76
	1120.29	131	14.92	2.345E+00	1.499E+00	1.499E+00	37.68
	1764.49	116	15.30	1.716E+00	1.770E+00	1.770E+00	33.22
AC-228	338.32	302	11.27	5.527E+00	1.946E+00	1.946E+00	49.23
	911.20	367	25.80*	2.788E+00	2.051E+00	2.051E+00	23.54
	968.97	131	15.80	2.647E+00	1.255E+00	1.255E+00	56.66
RA-228	338.32	302	11.27	5.527E+00	1.946E+00	1.946E+00	49.23

Sample ID : G248521002 Acquisition date : 19-MAR-2010 20:42:40

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	367	25.80*	2.788E+00	2.051E+00	2.051E+00	23.54
	968.97	131	15.80	2.647E+00	1.255E+00	1.255E+00	56.66
TH-228	74.82	417	10.28	6.174E+00	2.642E+00	2.642E+00	21.97
	77.11	816	17.10	6.470E+00	2.965E+00	2.965E+00	14.41
	238.63	1405	43.60*	6.709E+00	1.930E+00	1.930E+00	14.83
	300.09	128	3.30	5.907E+00	2.635E+00	2.635E+00	83.88
TH-229	85.43	103	14.70	7.229E+00	3.894E-01	3.894E-01	63.79
	88.47	212	24.00	7.475E+00	4.746E-01	4.746E-01	33.60
	193.51	------	4.41*	7.465E+00	------	Line Not Found	------
	210.85	------	2.80	7.157E+00	------	Line Not Found	------
TH-232	338.32	302	11.27	5.527E+00	1.946E+00	1.946E+00	27.53
	911.20	367	25.80*	2.788E+00	2.051E+00	2.051E+00	23.54
	968.97	131	15.80	2.647E+00	1.255E+00	1.255E+00	56.66
TH-234	63.29	164	3.70*	4.331E+00	4.122E+00	4.122E+00	50.41
	92.59	524	4.23	7.866E+00	6.327E+00	6.327E+00	29.30
U-235	89.96	181	3.47	7.681E+00	2.728E+00	2.728E+00	37.72
	93.35	524	5.60	7.866E+00	4.779E+00	4.779E+00	30.07
	143.76	------	10.96*	8.364E+00	------	Line Not Found	------
	163.33	------	5.08	8.031E+00	------	Line Not Found	------
	185.72	299	57.20	7.607E+00	2.765E-01	2.765E-01	31.52
	205.31	------	5.01	7.253E+00	------	Line Not Found	------
NP-237	86.48	212	12.40*	7.475E+00	9.185E-01	9.185E-01	39.61
	95.86	------	2.68	8.032E+00	------	Line Not Found	------
U-238	63.29	164	3.70*	4.331E+00	4.122E+00	4.122E+00	50.41
	92.59	524	4.23	7.866E+00	6.327E+00	6.327E+00	21.10
ANH-511	511.00	151	100.00*	4.298E+00	1.413E-01	1.413E-01	53.18

Flag: "*" = Keyline

Sample ID : G248521002 Acquisition date : 19-MAR-2010 20:42:40

Total number of lines in spectrum 31
Number of unidentified lines 4
Number of lines tentatively identified by NID 27 87.10%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.599E+01	2.599E+01	0.293E+01	11.28	
CD-109	461.40D	1.03	3.078E+00	3.184E+00	1.070E+00	33.60	
SN-126	2.30E+05Y	1.00	3.078E-01	3.078E-01	1.034E-01	33.60	
BA-137M	30.08Y	1.00	5.910E-01	5.919E-01	1.005E-01	16.98	
CS-137	30.08Y	1.00	6.244E-01	6.253E-01	1.062E-01	16.99	
TL-208	1.41E+10Y	1.00	6.000E-01	6.000E-01	1.028E-01	17.13	
BI-211	7.04E+08Y	1.00	5.373E+00	5.373E+00	0.799E+00	14.86	
PB-212	1.41E+10Y	1.00	1.930E+00	1.930E+00	0.286E+00	14.83	
BI-214	1600.00Y	1.00	1.372E+00	1.372E+00	0.230E+00	16.76	
PB-214	1600.00Y	1.00	1.950E+00	1.950E+00	0.309E+00	15.85	
RA-224	1.41E+10Y	1.00	4.717E+00	4.717E+00	1.476E+00	31.29	
RA-226	1600.00Y	1.00	1.372E+00	1.372E+00	0.230E+00	16.76	
AC-228	1.41E+10Y	1.00	2.051E+00	2.051E+00	0.483E+00	23.54	
RA-228	1.41E+10Y	1.00	2.051E+00	2.051E+00	0.483E+00	23.54	
TH-228	1.41E+10Y	1.00	1.930E+00	1.930E+00	0.286E+00	14.83	
TH-229	7340.00Y	1.00	4.746E-01	4.746E-01	1.595E-01	33.60	K
TH-232	1.41E+10Y	1.00	2.051E+00	2.051E+00	0.483E+00	23.54	
TH-234	4.47E+09Y	1.00	4.122E+00	4.122E+00	2.078E+00	50.41	
U-235	7.04E+08Y	1.00	2.765E-01	2.765E-01	0.872E-01	31.52	K
NP-237	2.14E+06Y	1.00	9.185E-01	9.185E-01	3.638E-01	39.61	
U-238	4.47E+09Y	1.00	4.122E+00	4.122E+00	2.078E+00	50.41	
ANH-511	1.00E+09Y	1.00	1.413E-01	1.413E-01	0.752E-01	53.18	
			---	---			
	Total Activity :		6.605E+01	6.615E+01			

Grand Total Activity : 6.605E+01 6.615E+01

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

Sample ID : G248521002 Acquisition date : 19-MAR-2010 20:42:40

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.03	132	329	1.02	418.03	414	9	1.83E-02	52.5	7.19E+00	
0	270.00	93	273	1.86	539.86	536	10	1.29E-02	71.2	6.27E+00	T
0	328.12	65	157	1.03	656.01	653	7	9.08E-03	67.2	5.62E+00	T
0	727.60	128	123	2.06	1454.46	1446	14	1.78E-02	40.8	3.34E+00	T
0	798.99	109	183	9.29	1597.18	1580	30	1.52E-02	75.4	3.10E+00	
0	1377.55	90	35	1.55	2754.10	2743	20	1.25E-02	38.3	1.99E+00	
0	1729.54	63	0	0.81	3458.25	3451	14	8.75E-03	25.2	1.73E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 22:44:14.06

```
*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
*                                                                           *
*                                DETECTOR DATA                              *
*                                                                           *
* Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521002.CNF;1 *
* Acquisition date  : 19-MAR-2010 20:42:40  Detector SN#     :              *
* Detector ID       : GAM22                 Sensitivity      : 5.00000      *
* Geometry          : CAN                   Energy tolerance: 1.50000       *
* Elapsed live time: 0 02:00:00.00          Abundance limit : 75.00000      *
* Elapsed real time: 0 02:00:01.93          Half life ratio : 8.00000       *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00  Nuclide Library : SOLID         *
* Sample ID         : G248521002            Analyst initials: MXR1          *
* Batch Number      : 961099                Sample Quantity : 9.33900E+01 GRAM *
*****************************************************************************
*                                                                           *
*                                  QC DATA                                  *
*                                                                           *
* CALIB. DATE/TIME : 2-DEC-2009 16:47:28.08MS Isotope      :                *
* MSD ID           :                      MSD Isotope     :                *
* LCS ID           : 1032-A               LCS Isotope     :                *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.599E+01	2.932E+00	6.179E-01	5.661E-02	42.064
CD-109	3.184E+00	1.070E+00	1.425E+00	1.352E-01	2.234
SN-126	3.078E-01	1.034E-01	1.315E-01	1.241E-02	2.341
BA-137M	5.919E-01	1.005E-01	7.343E-02	7.743E-03	8.061
CS-137	6.253E-01	1.062E-01	7.757E-02	8.191E-03	8.061
TL-208	6.000E-01	1.028E-01	6.224E-02	6.743E-03	9.640
BI-211	5.373E+00	7.987E-01	3.604E-01	4.206E-02	14.907
PB-212	1.930E+00	2.863E-01	1.118E-01	1.482E-02	17.260
BI-214	1.372E+00	2.299E-01	1.273E-01	1.486E-02	10.775
PB-214	1.950E+00	3.092E-01	1.311E-01	1.687E-02	14.880
RA-224	4.717E+00	1.476E+00	1.197E+00	1.499E-01	3.939
RA-226	1.372E+00	2.299E-01	1.273E-01	1.486E-02	10.775
AC-228	2.051E+00	4.829E-01	2.446E-01	3.313E-02	8.387
RA-228	2.051E+00	4.829E-01	2.446E-01	3.313E-02	8.387
TH-228	1.930E+00	2.863E-01	1.118E-01	1.482E-02	17.260
TH-229	4.746E-01	1.595E-01	9.962E-01	1.071E-01	0.476
TH-232	2.051E+00	4.829E-01	2.446E-01	3.313E-02	8.387
TH-234	4.122E+00	2.078E+00	2.310E+00	4.110E-01	1.784

Sample ID : G248521002 Acquisition date : 19-MAR-2010 20:42:40

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	2.765E-01	8.718E-02	4.183E-01	7.149E-02	0.661
NP-237	9.185E-01	3.638E-01	3.947E-01	9.055E-02	2.327
U-238	4.122E+00	2.078E+00	2.310E+00	4.110E-01	1.784
ANH-511	1.413E-01	7.516E-02	5.113E-02	5.123E-03	2.764

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.586E-01		4.354E-01	6.672E-01	6.962E-02	-0.388
NA-22	-1.631E-02		4.819E-02	7.759E-02	6.687E-03	-0.210
NA-24	-4.848E+02		1.361E+03	Half-Life too short		
SC-46	-4.167E-02		4.708E-02	7.270E-02	8.138E-03	-0.573
V-48	-4.550E-02		1.085E-01	1.723E-01	1.807E-02	-0.264
CR-51	1.298E-01		5.144E-01	8.699E-01	1.126E-01	0.149
MN-54	-3.508E-03		4.554E-02	7.565E-02	8.404E-03	-0.046
CO-56	-5.360E-02		4.943E-02	7.583E-02	8.441E-03	-0.707
CO-57	-1.685E-02		3.218E-02	4.984E-02	4.110E-03	-0.338
CO-58	-2.022E-02		4.733E-02	7.170E-02	7.940E-03	-0.282
FE-59	-2.321E-02		1.064E-01	1.696E-01	1.661E-02	-0.137
CO-60	-8.828E-03		4.385E-02	7.093E-02	6.325E-03	-0.124
ZN-65	8.910E-02		1.266E-01	1.865E-01	1.664E-02	0.478
SE-75	7.981E-03		6.131E-02	8.674E-02	1.168E-02	0.092
SR-85	1.573E-01		5.996E-02	9.550E-02	9.582E-03	1.647
Y-88	2.724E-02		4.085E-02	7.283E-02	5.889E-03	0.374
Y-91	-7.318E+00		2.557E+01	4.171E+01	3.429E+00	-0.175
NB-94	-2.277E-02		3.971E-02	6.240E-02	6.687E-03	-0.365
NB-95	5.598E-02		5.264E-02	9.033E-02	9.878E-03	0.620
NB-95M	2.402E-01		1.799E-01	2.703E-01	3.577E-02	0.889
ZR-95	-3.505E-02		8.942E-02	1.408E-01	1.638E-02	-0.249
MO-99	-3.460E-05		4.274E-05	Half-Life too short		
TC-99M	-1.979E+19		1.259E+19	Half-Life too short		
RU-103	-2.222E-02		5.126E-02	8.003E-02	1.186E-02	-0.278
RH-106	1.654E-01		3.592E-01	6.084E-01	8.828E-02	0.272
RU-106	1.654E-01		3.588E-01	6.084E-01	6.355E-02	0.272
AG-108M	-1.520E-02		3.531E-02	5.613E-02	5.524E-03	-0.271
AG-110M	8.238E-02		5.036E-02	7.938E-02	8.532E-03	1.038
SN-113	-1.991E-02		5.537E-02	8.936E-02	8.534E-03	-0.223
CD-115	-9.586E-05		5.961E-05	Half-Life too short		
SN-117M	-5.429E-02		9.402E-02	1.538E-01	1.458E-02	-0.353
TE-123M	-1.705E-02		3.505E-02	5.754E-02	5.495E-03	-0.296
SB-124	2.215E-02		9.292E-02	1.586E-01	1.414E-02	0.140
SB-125	-7.946E-03		1.031E-01	1.675E-01	1.624E-02	-0.047
TE-125M	9.222E+00		1.283E+01	2.103E+01	2.168E+00	0.438
I-126	3.653E-01		4.317E-01	6.505E-01	6.873E-02	0.562
SB-126	-1.144E-01		2.865E-01	3.750E-01	4.045E-02	-0.305
SB-127	-3.073E+00		5.342E+00	8.361E+00	1.262E+00	-0.368
I-131	-1.379E-01		2.441E-01	3.912E-01	4.354E-02	-0.353

Sample ID : G248521002 Acquisition date : 19-MAR-2010 20:42:40

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	-3.139E+00		4.271E+00	6.661E+00	1.292E+00	-0.471
BA-133	-2.515E-02		5.365E-02	7.435E-02	1.095E-02	-0.338
I-133	-5.243E-01		1.049E+00	Half-Life too short		
CS-134	1.073E-01		5.650E-02	9.999E-02	1.107E-02	1.073
CS-135	1.960E-01		2.183E-01	3.205E-01	4.635E-02	0.612
I-135	2.449E+16		3.196E+17	Half-Life too short		
CS-136	1.072E-01		1.705E-01	2.914E-01	2.949E-02	0.368
CE-139	-6.504E-03		3.636E-02	6.023E-02	5.907E-03	-0.108
BA-140	1.128E-01		4.384E-01	7.414E-01	2.545E-01	0.152
LA-140	-1.111E-01		1.516E-01	2.342E-01	2.053E-02	-0.475
CE-141	1.133E-01		8.541E-02	1.491E-01	1.358E-02	0.760
CE-143	3.906E-02		6.408E-03	Half-Life too short		
CE-144	1.799E-01		2.357E-01	4.066E-01	6.197E-02	0.443
PM-144	-2.510E-02		4.005E-02	6.267E-02	6.704E-03	-0.400
PR-144	-1.900E+00		3.008E+00	4.705E+00	5.030E-01	-0.404
PM-146	-3.796E-03		5.004E-02	8.088E-02	9.300E-03	-0.047
ND-147	-6.256E-01		9.793E-01	1.571E+00	2.491E-01	-0.398
PM-149	7.606E-04		5.241E-04	Half-Life too short		
EU-152	5.835E-02		1.370E-01	1.926E-01	2.314E-02	0.303
GD-153	4.114E-02		1.105E-01	1.617E-01	1.422E-02	0.254
EU-154	-4.821E-02		1.359E-01	2.184E-01	2.484E-02	-0.221
EU-155	9.672E-02		1.229E-01	2.028E-01	1.740E-02	0.477
TB-160	-6.211E-02		1.601E-01	2.579E-01	2.884E-02	-0.241
HO-166M	-3.086E-03		7.039E-02	1.144E-01	1.230E-02	-0.027
TA-182	-1.194E-02		2.282E-01	3.780E-01	3.143E-02	-0.032
IR-192	-6.739E-03		4.351E-02	7.235E-02	9.246E-03	-0.093
HG-203	6.503E-02		4.984E-02	8.347E-02	1.180E-02	0.779
BI-207	1.006E-01		5.893E-02	1.068E-01	1.026E-02	0.942
PB-210	1.502E+00		3.628E+00	6.024E+00	5.548E-01	0.249
PB-211	-4.774E-01		9.207E-01	1.423E+00	6.907E-01	-0.335
BI-212	2.306E+00	+	9.948E-01	1.286E+00	1.809E-01	1.793
RN-219	3.655E-01		4.932E-01	8.337E-01	1.278E-01	0.438
RA-223	1.065E-01		8.388E-01	1.229E+00	2.402E-01	0.087
AC-227	-1.921E-01		3.141E-01	4.897E-01	7.628E-02	-0.392
TH-227	-1.921E-01		3.143E-01	4.897E-01	8.231E-02	-0.392
PA-231	-8.147E-01		1.693E+00	2.626E+00	4.776E-01	-0.310
TH-231	1.065E-01		8.388E-01	1.229E+00	2.402E-01	0.087
PA-233	1.682E-02		7.233E-02	1.225E-01	1.605E-02	0.137
PA-234	-1.622E-01		3.300E-01	5.212E-01	1.036E-01	-0.311
PA-234M	2.130E+00		5.441E+00	8.984E+00	1.030E+00	0.237
NP-239	-3.055E-01		4.845E-01	7.486E-01	6.186E-02	-0.408
AM-241	1.067E-03		1.773E-01	2.644E-01	2.067E-02	0.004
CM-247	2.168E-02		4.476E-02	7.515E-02	7.049E-03	0.288
CF-249	6.178E-02		4.737E-02	8.235E-02	7.818E-03	0.750
CF-251	6.449E-02		1.549E-01	2.607E-01	2.656E-02	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]G248521002       *
* Acquisition date : 19-MAR-2010 20:42:40 Detector SN#    :             *
* Detector ID      : GAM22                Sensitivity     : 5.000      *
* Geometry         : CAN                  Energy tolerance: 1.500      *
* Elapsed live time:    0 02:00:00.00     Abundance limit : 75.000     *
* Elapsed real time:    0 02:00:01.93     Half life ratio : 8.000      *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 25-FEB-2010 12:00:00 Nuclide Library : SOLID      *
* Sample ID        : G248521002           Analyst initials: MXR1       *
* Batch Number     : 961099               Sample Quantity : 9.3390E+01 GRAM *
* Recovery         :    1.00000           Carrier Weight :    0.00000  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
*                                                                       *
* CALIB. DATE/TIME :  2-DEC-2009 16:47:28 MS Isotope      :             *
* MSD DPM          :    0.000             MSD Isotope     :             *
* LCS DPM          :    0.000             LCS Isotope     :             *
* LCSD DPM         :    0.000             LCSD Isotope    :             *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.599E+01	2.873E+00	3.058E-01	1.466E+00
CD-109	3.184E+00	1.048E+00	7.042E-01	5.349E-01
SN-126	3.078E-01	1.014E-01	6.497E-02	5.172E-02
BA-137M	5.919E-01	9.850E-02	3.633E-02	5.026E-02
CS-137	6.253E-01	1.041E-01	3.837E-02	5.312E-02
TL-208	6.000E-01	1.007E-01	3.079E-02	5.139E-02
BI-211	5.373E+00	7.827E-01	1.782E-01	3.993E-01
PB-212	1.930E+00	2.805E-01	5.529E-02	1.431E-01
BI-214	1.372E+00	2.253E-01	6.298E-02	1.149E-01
PB-214	1.950E+00	3.030E-01	6.481E-02	1.546E-01
RA-224	4.717E+00	1.446E+00	5.920E-01	7.380E-01
RA-226	1.372E+00	2.253E-01	6.298E-02	1.149E-01
AC-228	2.051E+00	4.732E-01	1.210E-01	2.415E-01
RA-228	2.051E+00	4.732E-01	1.210E-01	2.415E-01
TH-228	1.930E+00	2.805E-01	5.529E-02	1.431E-01
TH-229	-4.546E-01	6.117E-01	4.925E-01	3.121E-01
TH-232	2.051E+00	4.732E-01	1.210E-01	2.415E-01
TH-234	4.122E+00	2.036E+00	1.141E+00	1.039E+00
U-235	1.722E-01	2.452E-01	2.067E-01	1.251E-01
NP-237	9.185E-01	3.565E-01	1.950E-01	1.819E-01
U-238	4.122E+00	2.036E+00	1.141E+00	1.039E+00
ANH-511	1.413E-01	7.366E-02	2.529E-02	3.758E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-2.586E-01	4.267E-01	3.300E-01	2.177E-01	NOT IDENT.
NA-22	-1.631E-02	4.723E-02	3.840E-02	2.410E-02	NOT IDENT.
NA-24	-4.848E+08	2.667E+09	0.000E+00	1.361E+09	SHORT HLIF
SC-46	-4.167E-02	4.614E-02	3.597E-02	2.354E-02	FAIL ABUN
V-48	-4.550E-02	1.063E-01	8.525E-02	5.424E-02	NOT IDENT.

CR-51	1.298E-01	5.041E-01	4.301E-01	2.572E-01	NOT IDENT.
MN-54	-3.508E-03	4.463E-02	3.743E-02	2.277E-02	NOT IDENT.
CO-56	-5.360E-02	4.844E-02	3.752E-02	2.471E-02	NOT IDENT.
CO-57	-1.685E-02	3.154E-02	2.463E-02	1.609E-02	NOT IDENT.
CO-58	-2.022E-02	4.638E-02	3.547E-02	2.366E-02	NOT IDENT.
FE-59	-2.321E-02	1.042E-01	8.390E-02	5.318E-02	NOT IDENT.
CO-60	-8.828E-03	4.298E-02	3.510E-02	2.193E-02	NOT IDENT.
ZN-65	8.910E-02	1.240E-01	9.231E-02	6.328E-02	NOT IDENT.
SE-75	7.981E-03	6.008E-02	4.289E-02	3.065E-02	NOT IDENT.
SR-85	1.573E-01	5.876E-02	4.724E-02	2.998E-02	NOT IDENT.
Y-88	2.724E-02	4.003E-02	3.605E-02	2.043E-02	NOT IDENT.
Y-91	-7.318E+00	2.506E+01	2.064E+01	1.279E+01	NOT IDENT.
NB-94	-2.277E-02	3.892E-02	3.087E-02	1.986E-02	NOT IDENT.
NB-95	5.598E-02	5.158E-02	4.469E-02	2.632E-02	NOT IDENT.
NB-95M	2.402E-01	1.763E-01	1.337E-01	8.993E-02	NOT IDENT.
ZR-95	-3.505E-02	8.763E-02	6.967E-02	4.471E-02	NOT IDENT.
MO-99	-3.460E+01	8.378E+01	0.000E+00	4.274E+01	SHORT HLIF
TC-99M	-1.979E+25	2.467E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.222E-02	5.023E-02	3.958E-02	2.563E-02	FAIL ABUN
RH-106	1.654E-01	3.520E-01	3.010E-01	1.796E-01	NOT IDENT.
RU-106	1.654E-01	3.516E-01	3.010E-01	1.794E-01	NOT IDENT.
AG-108M	-1.520E-02	3.460E-02	2.776E-02	1.765E-02	NOT IDENT.
AG-110M	8.238E-02	4.935E-02	3.927E-02	2.518E-02	NOT IDENT.
SN-113	-1.991E-02	5.426E-02	4.419E-02	2.769E-02	NOT IDENT.
CD-115	-9.586E+01	1.168E+02	0.000E+00	5.961E+01	SHORT HLIF
SN-117M	-5.429E-02	9.213E-02	7.602E-02	4.701E-02	NOT IDENT.
TE-123M	-1.705E-02	3.435E-02	2.844E-02	1.753E-02	NOT IDENT.
SB-124	2.215E-02	9.106E-02	7.848E-02	4.646E-02	NOT IDENT.
SB-125	-7.946E-03	1.010E-01	8.282E-02	5.153E-02	NOT IDENT.
TE-125M	9.222E+00	1.257E+01	1.039E+01	6.415E+00	NOT IDENT.
I-126	3.653E-01	4.230E-01	3.218E-01	2.158E-01	NOT IDENT.
SB-126	-1.144E-01	2.807E-01	1.855E-01	1.432E-01	NOT IDENT.
SB-127	-3.073E+00	5.235E+00	4.136E+00	2.671E+00	NOT IDENT.
I-131	-1.379E-01	2.392E-01	1.935E-01	1.220E-01	NOT IDENT.
TE-132	-3.139E+00	4.186E+00	3.293E+00	2.135E+00	NOT IDENT.
BA-133	-2.515E-02	5.258E-02	3.677E-02	2.682E-02	NOT IDENT.
I-133	-5.243E+05	2.057E+06	0.000E+00	1.049E+06	SHORT HLIF
CS-134	1.073E-01	5.537E-02	4.947E-02	2.825E-02	NOT IDENT.
CS-135	1.960E-01	2.140E-01	1.585E-01	1.092E-01	NOT IDENT.
I-135	2.449E+22	6.263E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.072E-01	1.671E-01	1.442E-01	8.527E-02	NOT IDENT.
CE-139	-6.504E-03	3.563E-02	2.977E-02	1.818E-02	NOT IDENT.
BA-140	1.128E-01	4.296E-01	3.667E-01	2.192E-01	NOT IDENT.
LA-140	-1.111E-01	1.486E-01	1.159E-01	7.579E-02	FAIL ABUN
CE-141	1.133E-01	8.370E-02	7.372E-02	4.270E-02	NOT IDENT.
CE-143	3.906E+04	1.256E+04	0.000E+00	6.408E+03	SHORT HLIF
CE-144	1.799E-01	2.310E-01	2.010E-01	1.178E-01	NOT IDENT.
PM-144	-2.510E-02	3.925E-02	3.100E-02	2.003E-02	NOT IDENT.
PR-144	-1.900E+00	2.948E+00	2.328E+00	1.504E+00	NOT IDENT.
PM-146	-3.796E-03	4.904E-02	4.000E-02	2.502E-02	NOT IDENT.
ND-147	-6.256E-01	9.597E-01	7.769E-01	4.897E-01	FAIL ABUN
PM-149	7.606E+02	1.027E+03	0.000E+00	5.241E+02	SHORT HLIF
EU-152	5.835E-02	1.343E-01	9.524E-02	6.851E-02	NOT IDENT.
GD-153	4.114E-02	1.083E-01	7.989E-02	5.525E-02	NOT IDENT.
EU-154	-4.821E-02	1.332E-01	1.081E-01	6.796E-02	NOT IDENT.
EU-155	9.672E-02	1.204E-01	1.002E-01	6.145E-02	FAIL ABUN
TB-160	-6.211E-02	1.569E-01	1.276E-01	8.003E-02	FAIL ABUN
HO-166M	-3.086E-03	6.899E-02	5.662E-02	3.520E-02	FAIL ABUN
TA-182	-1.194E-02	2.236E-01	1.871E-01	1.141E-01	FAIL ABUN
IR-192	-6.739E-03	4.264E-02	3.577E-02	2.176E-02	FAIL ABUN
HG-203	6.503E-02	4.884E-02	4.127E-02	2.492E-02	NOT IDENT.
BI-207	1.006E-01	5.775E-02	5.287E-02	2.946E-02	FAIL ABUN
PB-210	1.502E+00	3.556E+00	2.976E+00	1.814E+00	NOT IDENT.
PB-211	-4.774E-01	9.023E-01	7.038E-01	4.604E-01	NOT IDENT.
BI-212	2.306E+00	9.749E-01	6.363E-01	4.974E-01	FAIL ABUN
RN-219	3.655E-01	4.833E-01	4.123E-01	2.466E-01	FAIL ABUN
RA-223	1.065E-01	8.220E-01	6.078E-01	4.194E-01	FAIL ABUN
AC-227	-1.921E-01	3.078E-01	2.421E-01	1.570E-01	FAIL ABUN
TH-227	-1.921E-01	3.080E-01	2.421E-01	1.572E-01	FAIL ABUN
PA-231	-8.147E-01	1.659E+00	1.298E+00	8.463E-01	FAIL ABUN
TH-231	1.065E-01	8.220E-01	6.078E-01	4.194E-01	FAIL ABUN
PA-233	1.682E-02	7.088E-02	6.057E-02	3.616E-02	FAIL ABUN
PA-234	-1.622E-01	3.234E-01	2.579E-01	1.650E-01	NOT IDENT.
PA-234M	2.130E+00	5.332E+00	4.446E+00	2.720E+00	NOT IDENT.
NP-239	-3.055E-01	4.748E-01	3.700E-01	2.422E-01	NOT IDENT.
AM-241	1.067E-03	1.738E-01	1.306E-01	8.867E-02	NOT IDENT.
CM-247	2.168E-02	4.387E-02	3.717E-02	2.238E-02	NOT IDENT.
CF-249	6.178E-02	4.642E-02	4.073E-02	2.368E-02	NOT IDENT.

CF-251	6.449E-02	1.518E-01	1.289E-01	7.743E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	278.2305
49.72	296.1195
57.36	0.0000
59.54	341.2008
63.29	392.7563
63.29	392.7563
64.28	398.6068
67.75	406.1953
69.67	441.9528
70.83	435.0836
72.81	454.6313
72.87	454.7258
72.87	454.7258
74.82	445.6117
74.82	445.6117
74.82	445.6117
74.97	445.8360
77.11	449.0054
77.11	449.0054
77.11	449.0054
79.69	390.1432
79.80	390.2805
80.12	410.2126
80.19	410.3039
80.57	410.7990
81.00	374.2440
81.07	374.3271
81.07	374.3271
83.79	402.4735
83.79	402.4735
85.43	376.2744
86.48	377.4683
86.55	377.5470
86.79	418.7483
86.94	418.9391
87.57	381.8564
88.03	423.4609
88.47	424.0130
89.96	524.3929
91.11	374.6801
92.59	376.2740
92.59	376.2740
93.35	377.0880
94.67	378.4954
94.87	378.7069
94.87	378.7069
95.86	399.1457
97.43	340.8286
98.44	310.8486
99.53	306.8712
100.11	311.2739
103.18	356.0164
103.37	335.3064
105.31	319.3247
106.12	343.2440
109.28	344.8935
111.00	347.4981
111.76	372.8600
116.30	316.8139
117.23	358.4862
121.12	323.8752
121.78	346.2247
122.06	369.4680
123.07	361.0975
131.20	407.9474
133.52	336.5009
136.00	382.7949

136.47	387.6310
140.51	0.0000
140.51	0.0000
143.76	353.7143
144.24	355.8684
144.24	355.8684
145.44	326.7773
152.43	350.6327
153.25	372.3882
154.21	355.5299
154.21	355.5299
156.02	323.4012
158.56	369.6493
159.00	364.3610
162.66	354.6432
163.33	360.7148
165.86	347.2798
176.60	336.6085
177.52	329.4338
181.07	0.0000
184.41	358.6198
185.72	371.1198
193.51	345.1818
197.04	369.0017
205.31	299.8092
210.85	303.9458
215.65	289.5335
222.11	331.4917
227.38	306.9196
228.16	319.7534
228.18	319.7628
235.69	282.8868
235.96	281.3069
235.96	281.3069
238.63	306.4147
238.63	306.4147
240.99	307.3860
242.00	303.9788
244.70	274.3918
252.40	261.4486
252.80	272.3468
256.23	287.5981
256.23	287.5981
260.90	0.0000
264.66	225.5295
268.22	249.3459
269.46	230.3790
269.46	230.3790
271.23	232.6371
273.65	295.1815
276.40	257.1414
277.37	235.2457
277.60	227.5376
278.00	223.2052
279.20	200.1709
279.54	200.2505
280.46	218.2869
283.69	233.6485
284.31	224.8675
285.41	220.6751
285.90	0.0000
287.50	215.5957
293.27	0.0000
295.22	199.3777
295.96	217.6846
298.57	218.3232
299.98	200.4438
299.98	200.4438
300.09	200.4707
300.09	200.4707
300.13	212.6290
301.36	212.9195
302.85	211.7465
304.50	195.3464
304.50	195.3464
304.85	187.7882
308.46	225.3181
311.90	204.0042

316.51	228.2046
319.41	220.5356
320.08	215.1018
323.87	215.0270
323.87	215.0270
328.76	245.2514
333.37	226.5879
334.37	232.4868
334.37	232.4868
338.28	233.4087
338.28	233.4087
338.32	233.4207
338.32	233.4207
338.32	233.4207
340.48	242.4835
340.55	239.3322
344.28	202.3601
351.06	181.6149
351.93	181.7695
356.01	194.7196
364.49	191.7600
366.42	0.0000
383.85	230.9038
388.16	168.1315
388.63	173.1780
391.69	203.5916
400.66	188.1071
401.81	186.2827
402.40	189.3999
404.85	227.1588
410.95	179.6382
414.70	196.5033
423.72	173.3756
427.09	169.7474
427.87	162.6501
433.94	184.1535
453.88	170.2958
463.37	176.8524
468.07	250.8278
473.00	151.4886
476.78	184.0182
477.60	173.4262
487.02	143.3841
492.35	0.0000
497.08	146.6164
511.00	138.2155
514.00	146.5698
527.90	0.0000
529.87	0.0000
531.02	146.4631
537.26	133.1228
546.56	0.0000
563.25	133.5501
569.33	142.6361
569.50	142.6514
569.70	134.1095
583.19	123.7589
600.60	130.3477
602.73	133.1808
604.72	141.6795
609.32	139.4302
609.32	139.4302
610.33	145.5108
614.28	145.8597
618.01	126.1764
621.93	120.8454
621.93	120.8454
633.25	108.8005
635.95	126.8073
636.99	137.7868
645.85	141.4886
657.76	118.6684
661.66	160.3011
661.66	160.3011
664.57	0.0000
666.33	119.2459
666.50	119.2579
677.62	111.5957

685.70	121.2637
695.00	122.9053
696.49	142.4812
696.51	142.4840
697.00	146.6221
702.65	150.1556
706.68	137.0805
711.68	128.1449
720.70	119.2643
721.93	0.0000
722.78	98.0110
722.91	98.0167
723.31	105.1678
724.19	103.4318
727.33	98.2431
733.00	112.8647
735.93	101.6183
739.50	0.0000
747.24	111.5877
752.31	110.8212
753.82	94.0048
756.73	120.5892
763.94	150.7508
765.81	112.6379
766.42	120.1108
777.92	0.0000
778.90	98.3958
783.70	85.7617
785.37	113.0117
795.86	94.8965
801.95	111.2423
810.29	101.6342
810.76	100.7092
815.77	91.4460
818.51	99.9729
832.01	143.8537
834.85	135.5700
836.80	0.0000
846.77	128.7404
856.80	96.5209
860.56	82.8718
871.09	79.2755
873.19	86.2144
875.33	0.0000
879.36	93.1737
880.51	80.7275
883.24	86.5974
884.68	83.7639
889.28	109.0155
898.04	105.5576
911.20	88.6260
911.20	88.6260
911.20	88.6260
926.50	92.1444
937.49	97.4928
944.13	108.6246
946.00	94.8733
949.00	83.1167
962.29	125.3562
964.08	123.7040
966.15	118.5767
968.97	128.6873
968.97	128.6873
968.97	128.6873
983.53	94.3229
996.26	114.9702
1001.03	80.8329
1004.73	84.9976
1037.84	63.5439
1038.76	0.0000
1048.07	74.0792
1050.41	72.0850
1050.41	72.0850
1063.66	63.1275
1085.87	98.0784
1099.45	79.6897
1112.07	83.5640
1115.54	99.6614

1120.29	101.6782
1120.29	101.6782
1120.55	91.9156
1121.30	95.1102
1131.51	0.0000
1173.23	115.8080
1177.93	98.0776
1189.05	97.4992
1204.77	104.6759
1221.41	110.0375
1231.02	143.0160
1235.36	108.6170
1238.28	103.9098
1260.41	0.0000
1271.85	71.9675
1274.44	82.7328
1274.54	82.7354
1291.59	70.4597
1298.22	0.0000
1312.11	56.1355
1332.49	63.4238
1365.19	41.8794
1368.63	0.0000
1384.29	53.6768
1408.01	61.8191
1457.56	0.0000
1460.82	45.2649
1489.16	47.6944
1505.03	58.3157
1596.21	51.2065
1620.50	24.8088
1678.03	0.0000
1690.97	26.2192
1764.49	33.6043
1764.49	33.6043
1770.23	23.1588
1771.35	26.7290
1791.20	0.0000
1836.06	22.1068

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248521002

Total Uranium Activity	1.2341E+01	ug/g
Total Uranium Counting Unc.	6.0586E+00	ug/g
Total Uranium Tpu	3.0911E-06	ug/g
Total Uranium Mda	3.3962E+00	ug/g

```
*****************************************************************************
*                                                                           *
*                          GEL Laboratories LLC                           *
*                               2040 SAVAGE ROAD                            *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID      : 961099                    SAMPLE ID  : G248521002       *
*   ANALYST       : MXR1                      DETECTOR   : GAM22            *
*   SAMPLE DATE   : 25-FEB-2010 12:00:00.00   COUNT TIME :    0 02:00:00.00 *
*   ANALYSIS DATE: 19-MAR-2010 20:42:40.70    SAMPLE ALQT:   93.390 GRAM    *
*                                                                           *
*****************************************************************************
```

```
GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 1.072E+01
GROSS GAMMA ERROR   (pCi/GRAM  )  : 1.348E+00
GROSS GAMMA MDA     (pCi/GRAM  )  : 3.033E+00
GROSS GAMMA DLC     (pCi/GRAM  )  : 1.473E+00
```

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 22:44:51.89

```
*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521003.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 20:43:07
Sample ID         : G248521003           Sample quantity  : 1.27780E+02 GRAM
Detector name     : GAM23                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.75  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	74.62*	427	449	1.38	149.24	141	20	5.94E-02	10.0	1.48E+00
2	3	76.96	656	292	1.06	153.92	141	20	9.11E-02	5.9	
3	2	86.97	280	348	1.32	173.94	160	33	3.88E-02	13.2	1.91E+00
4	2	89.79	213	299	1.14	179.59	160	33	2.96E-02	15.3	
5	2	92.58*	278	335	1.27	185.17	160	33	3.87E-02	14.0	
6	0	128.93	59	343	0.77	257.87	253	8	8.21E-03	55.7	
7	0	185.48*	232	436	1.45	370.97	364	13	3.22E-02	20.1	
8	0	209.45	102	330	1.34	418.91	413	10	1.41E-02	35.0	
9	3	238.32*	1140	196	1.14	476.64	469	19	1.58E-01	3.6	1.38E+00
10	3	241.27	278	256	1.63	482.55	469	19	3.86E-02	13.5	
11	0	270.24	100	191	1.00	540.48	537	9	1.39E-02	27.0	
12	0	294.73	386	255	1.11	589.46	582	14	5.36E-02	10.2	
13	0	300.00	102	167	1.44	599.99	596	10	1.42E-02	25.7	
14	0	337.78*	248	246	1.02	675.56	670	12	3.45E-02	14.3	
15	0	351.44*	635	153	1.22	702.88	698	12	8.81E-02	5.6	
16	0	462.31	82	86	1.70	924.62	920	10	1.14E-02	23.7	
17	0	510.16*	154	106	1.81	1020.32	1012	17	2.14E-02	19.5	
18	0	582.52*	384	106	1.53	1165.03	1158	16	5.34E-02	7.9	
19	0	608.55	442	138	1.38	1217.11	1210	15	6.13E-02	7.5	
20	0	660.88	308	87	1.66	1321.77	1315	12	4.28E-02	8.3	
21	0	726.44	96	38	1.31	1452.87	1448	10	1.34E-02	15.9	
22	0	768.71	31	66	1.06	1537.42	1529	11	4.33E-03	53.6	
23	0	794.65	45	51	1.22	1589.29	1583	13	6.30E-03	35.9	
24	0	859.88	46	60	1.37	1719.75	1715	13	6.42E-03	37.9	
25	0	910.10	224	114	1.70	1820.19	1811	19	3.11E-02	13.3	
26	0	967.99	137	133	2.13	1935.97	1922	21	1.90E-02	22.7	
27	0	1120.40	65	100	2.21	2240.80	2231	20	9.03E-03	39.7	
28	0	1459.33	945	10	2.18	2918.67	2909	21	1.31E-01	3.4	
29	0	1762.29	92	4	3.28	3524.58	3515	18	1.28E-02	11.7	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 22:44:54

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521003.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 20:43:07
Sample ID : G248521003 Sample quantity : 127.78 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.75 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.612E+01	2.628E+00	6.104E-01	4.566E-02	42.788
CD-109	+	88.03	*	4.409E+00	1.236E+00	1.298E+00	1.267E-01	3.396
SN-126		64.28		5.223E-01	6.667E-01	1.136E+00	1.728E-01	0.460
	+	86.94		1.772E+00	8.724E-01	5.295E-01	2.202E-01	3.347
	+	87.57	*	4.263E-01	1.196E-01	1.263E-01	1.229E-02	3.376
BA-137M	+	661.66	*	4.932E-01	8.586E-02	6.279E-02	3.207E-03	7.855
CS-137	+	661.66	*	5.210E-01	9.075E-02	6.633E-02	3.407E-03	7.855
TL-208		277.37		6.208E-01	4.401E-01	7.468E-01	8.058E-02	0.831
	+	583.19	*	5.830E-01	9.952E-02	7.111E-02	4.605E-03	8.199
	+	860.56		6.747E-01	5.149E-01	5.550E-01	5.016E-02	1.216
BI-211		72.87		2.068E+01	4.948E+00	7.898E+00	6.967E-01	2.619
	+	351.06	*	4.193E+00	5.457E-01	3.758E-01	2.450E-02	11.155
PB-212	+	74.82		3.029E+00	7.232E-01	6.641E-01	8.753E-02	4.560
	+	77.11		2.625E+00	3.880E-01	3.764E-01	3.387E-02	6.972
	+	238.63	*	1.656E+00	1.704E-01	1.065E-01	7.725E-03	15.553
	+	300.09		2.338E+00	1.220E+00	1.417E+00	1.196E-01	1.650
BI-214	+	609.32	*	1.300E+00	2.187E-01	1.328E-01	1.007E-02	9.784
	+	1120.29		1.018E+00	8.130E-01	5.644E-01	5.277E-02	1.803
		1764.49		1.273E+00	4.435E-01	8.918E-01	5.545E-02	1.427
PB-214	+	74.82		5.368E+00	1.246E+00	1.177E+00	1.403E-01	4.560
	+	77.11		4.627E+00	7.832E-01	6.636E-01	8.100E-02	6.972
	+	242.00		2.449E+00	6.902E-01	5.794E-01	4.684E-02	4.228
	+	295.22		1.557E+00	3.446E-01	2.471E-01	2.166E-02	6.302
	+	351.93	*	1.522E+00	2.151E-01	1.306E-01	1.115E-02	11.652
RA-224	+	240.99	*	4.331E+00	1.194E+00	1.141E+00	6.432E-02	3.794
RA-226	+	609.32	*	1.300E+00	2.187E-01	1.328E-01	1.007E-02	9.784
	+	1120.29		1.018E+00	8.130E-01	5.644E-01	5.277E-02	1.803
		1764.49		1.273E+00	4.435E-01	8.918E-01	5.545E-02	1.427
AC-228	+	338.32		1.822E+00	9.144E-01	4.065E-01	1.677E-01	4.481
	+	911.20	*	1.667E+00	4.846E-01	2.646E-01	3.143E-02	6.299
	+	968.97		1.763E+00	9.065E-01	5.009E-01	1.218E-01	3.520
RA-228	+	338.32		1.822E+00	9.144E-01	4.065E-01	1.677E-01	4.481
	+	911.20	*	1.667E+00	4.846E-01	2.646E-01	3.143E-02	6.299
	+	968.97		1.763E+00	9.065E-01	5.009E-01	1.218E-01	3.520

Sample ID : G248521003 Acquisition date : 19-MAR-2010 20:43:07

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		3.029E+00	6.614E-01	6.641E-01	5.957E-02	4.560
	+	77.11		2.625E+00	3.880E-01	3.764E-01	3.387E-02	6.972
	+	238.63	*	1.656E+00	1.704E-01	1.065E-01	7.725E-03	15.553
	+	300.09		2.338E+00	1.864E+00	1.417E+00	8.628E-01	1.650
TH-232	+	338.32		1.822E+00	5.322E-01	4.065E-01	2.401E-02	4.481
	+	911.20	*	1.667E+00	4.846E-01	2.646E-01	3.143E-02	6.299
	+	968.97		1.763E+00	9.065E-01	5.009E-01	1.218E-01	3.520
U-235	+	89.96		3.337E+00	1.318E+00	1.307E+00	3.253E-01	2.553
	+	93.35		2.617E+00	9.497E-01	7.819E-01	1.810E-01	3.347
		143.76	*	7.911E-02	2.393E-01	3.934E-01	6.126E-02	0.201
		163.33		1.002E-01	4.990E-01	8.190E-01	1.356E-01	0.122
	+	185.72		2.168E-01	8.793E-02	7.415E-02	3.883E-03	2.924
		205.31		2.154E-02	6.497E-01	9.119E-01	1.537E-01	0.024
NP-237	+	86.48	*	1.272E+00	4.454E-01	3.825E-01	8.827E-02	3.326
		95.86		-1.171E+00	1.204E+00	1.615E+00	3.862E-01	-0.725
ANH-511	+	511.00	*	1.775E-01	6.996E-02	5.141E-02	2.986E-03	3.453

---- 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	*	3.359E-01	3.931E-01	6.844E-01	4.649E-02	0.491
NA-22		1274.54	*	4.189E-03	5.188E-02	8.527E-02	5.726E-03	0.049
NA-24		1368.63	*	-7.173E+02	5.188E-02	Half-Life too short		
SC-46		889.28	*	1.567E-02	4.680E-02	8.031E-02	7.175E-03	0.195
	+	1120.55		1.828E-01	1.455E-01	1.488E-01	9.695E-03	1.228
V-48		944.13		-1.741E-01	1.370E+00	2.247E+00	1.957E-01	-0.077
		983.53	*	7.402E-03	1.169E-01	1.947E-01	1.620E-02	0.038
		1312.11		2.589E-03	1.392E-01	2.269E-01	1.614E-02	0.011
CR-51		320.08	*	4.171E-01	5.012E-01	8.746E-01	5.726E-02	0.477
MN-54		834.85	*	2.252E-02	4.220E-02	7.355E-02	5.824E-03	0.306
CO-56		846.77	*	6.251E-03	4.459E-02	7.545E-02	6.138E-03	0.083
		1037.84		1.249E-01	3.611E-01	6.166E-01	5.048E-02	0.202
		1238.28		-1.929E-02	1.170E-01	1.884E-01	1.253E-02	-0.102
		1771.35		-2.504E-01	2.862E-01	3.913E-01	2.421E-02	-0.640
CO-57		122.06	*	7.534E-03	2.921E-02	4.851E-02	2.860E-03	0.155
		136.47		-2.688E-02	2.460E-01	4.015E-01	2.606E-02	-0.067
CO-58		810.76	*	-3.710E-02	4.504E-02	6.953E-02	5.224E-03	-0.534
FE-59		1099.45	*	4.169E-02	1.202E-01	2.041E-01	1.572E-02	0.204
		1291.59		-8.988E-03	1.470E-01	2.375E-01	1.971E-02	-0.038
CO-60		1173.23		9.638E-03	5.258E-02	8.763E-02	4.944E-03	0.110
		1332.49	*	2.410E-02	4.711E-02	8.115E-02	5.957E-03	0.297
ZN-65		1115.54	*	2.871E-02	1.274E-01	1.850E-01	1.222E-02	0.155
SE-75		121.12		1.555E-02	1.567E-01	2.587E-01	2.372E-02	0.060
		136.00		8.314E-03	4.787E-02	7.898E-02	4.462E-03	0.105
		264.66	*	3.003E-02	5.813E-02	8.860E-02	5.159E-03	0.339
		279.54		-1.635E-01	1.303E-01	2.061E-01	1.298E-02	-0.793
		400.66		1.136E-01	3.280E-01	5.547E-01	5.029E-02	0.205
SR-85		514.00	*	3.971E-02	4.916E-02	7.544E-02	4.378E-03	0.526

---- 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		-2.211E-02	5.066E-02	8.099E-02	7.405E-03	-0.273
		1836.06	*	9.670E-03	3.902E-02	6.762E-02	3.981E-03	0.143
Y-91		1204.77	*	-3.143E+00	2.961E+01	4.799E+01	2.862E+00	-0.065
NB-94		702.65	*	-1.589E-02	3.951E-02	6.156E-02	3.518E-03	-0.258
		871.09		-1.159E-02	3.798E-02	6.154E-02	5.285E-03	-0.188
NB-95		765.81	*	3.708E-02	6.843E-02	1.001E-01	6.726E-03	0.371
NB-95M		235.69	*	6.514E-01	2.120E-01	3.356E-01	2.484E-02	1.941
ZR-95		724.19		3.099E-01	1.470E-01	2.451E-01	1.727E-02	1.265
		756.73	*	-4.135E-02	9.386E-02	1.447E-01	1.116E-02	-0.286
MO-99		140.51		-1.059E-04	9.386E-02	Half-Life too short		
		181.07		-5.081E-05	9.386E-02	Half-Life too short		
		366.42		4.111E-04	9.386E-02	Half-Life too short		
		739.50	*	5.861E-05	9.386E-02	Half-Life too short		
		777.92		-1.001E-04	9.386E-02	Half-Life too short		
TC-99M		140.51	*	-1.456E+19	9.386E-02	Half-Life too short		
RU-103		497.08	*	1.178E-02	5.377E-02	8.966E-02	1.115E-02	0.131
		610.33		1.320E+01	2.643E+00	3.522E+00	5.253E-01	3.748
RH-106		621.93	*	-1.712E-01	3.887E-01	6.086E-01	6.947E-02	-0.281
		1050.41		-3.556E-01	2.932E+00	4.779E+00	3.595E-01	-0.074
RU-106		621.93	*	-1.712E-01	3.883E-01	6.086E-01	3.270E-02	-0.281
		1050.41		-3.556E-01	2.932E+00	4.779E+00	3.595E-01	-0.074
AG-108M		433.94	*	-2.134E-02	3.603E-02	5.740E-02	3.587E-03	-0.372
		614.28		-3.402E-02	4.980E-02	6.462E-02	3.785E-03	-0.526
		722.91		1.658E-02	4.882E-02	7.060E-02	4.530E-03	0.235
AG-110M		657.76	*	1.486E-01	5.455E-02	9.483E-02	5.270E-03	1.567
		677.62		3.163E-01	3.602E-01	6.249E-01	3.582E-02	0.506
		706.68		-1.876E-01	2.609E-01	3.946E-01	2.423E-02	-0.475
		763.94		-3.081E-02	2.250E-01	3.056E-01	2.137E-02	-0.101
		884.68		-1.008E-02	5.955E-02	9.776E-02	8.912E-03	-0.103
		937.49		-7.860E-02	1.300E-01	2.034E-01	1.847E-02	-0.386
		1384.29		-1.975E-01	1.730E-01	2.271E-01	1.719E-02	-0.870
		1505.03		7.096E-02	3.349E-01	5.568E-01	3.954E-02	0.127
SN-113		391.69	*	1.462E-02	5.360E-02	9.049E-02	5.574E-03	0.162
CD-115		260.90		6.368E-04	5.360E-02	Half-Life too short		
		492.35		6.850E-05	5.360E-02	Half-Life too short		
		527.90	*	-7.416E-05	5.360E-02	Half-Life too short		
SN-117M		156.02		-2.071E-01	3.866E+00	6.294E+00	3.293E-01	-0.033
		158.56	*	-9.058E-02	9.324E-02	1.459E-01	7.580E-03	-0.621
TE-123M		159.00	*	-2.628E-02	3.477E-02	5.492E-02	2.898E-03	-0.478
SB-124		602.73		9.156E-04	5.687E-02	8.007E-02	4.390E-03	0.011
		645.85		-7.874E-02	6.304E-01	1.011E+00	6.072E-02	-0.078
		722.78		1.518E-01	5.309E-01	7.631E-01	4.812E-02	0.199
		1690.97	*	7.630E-02	8.317E-02	1.619E-01	1.133E-02	0.471
SB-125		427.87	*	1.185E-02	1.053E-01	1.756E-01	1.067E-02	0.068
	+	463.37		8.416E-01	4.031E-01	6.419E-01	4.351E-02	1.311
		600.60		-1.218E-02	2.260E-01	3.447E-01	2.222E-02	-0.035
		635.95		1.493E-02	3.070E-01	5.001E-01	3.183E-02	0.030
TE-125M		109.28	*	1.609E+01	1.260E+01	2.159E+01	1.969E+00	0.746
I-126		388.63		-1.884E-03	2.868E-01	4.768E-01	2.757E-02	-0.004

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		666.33	*	4.826E-02	4.142E-01	5.866E-01	3.035E-02	0.082
		753.82		1.990E+00	3.157E+00	5.348E+00	3.488E-01	0.372
SB-126		414.70		4.263E-02	1.315E-01	2.222E-01	1.293E-02	0.192
		666.50		-1.334E-02	1.497E-01	2.067E-01	1.070E-02	-0.065
		695.00		7.519E-03	1.342E-01	2.176E-01	1.218E-02	0.035
		697.00		4.913E-01	4.644E-01	8.127E-01	4.574E-02	0.605
		720.70	*	-7.958E-03	2.848E-01	3.939E-01	2.361E-02	-0.020
		856.80		1.220E+00	1.015E+00	1.645E+00	1.369E-01	0.742
SB-127		252.40		-4.134E+00	1.813E+01	2.854E+01	1.191E+01	-0.145
		473.00		-2.796E-01	6.940E+00	1.140E+01	1.541E+00	-0.025
		685.70	*	-6.058E-01	5.210E+00	8.323E+00	9.999E-01	-0.073
		783.70		1.714E+01	1.475E+01	2.662E+01	3.642E+00	0.644
I-131		80.19		1.352E+01	1.308E+01	1.515E+01	1.407E+00	0.892
		284.31		1.318E+00	3.199E+00	5.490E+00	3.600E-01	0.240
		364.49	*	6.709E-02	2.415E-01	4.091E-01	2.706E-02	0.164
		636.99		1.534E-01	3.373E+00	5.492E+00	3.375E-01	0.028
TE-132		49.72		-3.850E+01	1.407E+02	2.342E+02	3.077E+01	-0.164
		111.76		-7.935E+01	1.880E+02	3.048E+02	3.689E+01	-0.260
		116.30		2.367E+01	1.590E+02	2.632E+02	3.135E+01	0.090
		228.16	*	1.766E+00	4.229E+00	6.915E+00	1.120E+00	0.255
BA-133		81.00		1.450E-01	1.447E-01	1.659E-01	2.631E-02	0.874
		276.40		5.589E-01	4.437E-01	6.979E-01	8.789E-02	0.801
		302.85		7.111E-02	1.754E-01	2.639E-01	3.021E-02	0.270
		356.01	*	6.256E-03	4.976E-02	7.301E-02	8.264E-03	0.086
		383.85		-1.102E-01	3.474E-01	5.672E-01	6.049E-02	-0.194
I-133		529.87	*	-4.344E-01	3.474E-01	Half-Life too short		
		875.33		-5.078E+01	3.474E-01	Half-Life too short		
		1298.22		4.120E+01	3.474E-01	Half-Life too short		
CS-134		563.25		2.877E-01	4.272E-01	7.310E-01	4.228E-02	0.394
		569.33		8.524E-02	2.420E-01	3.905E-01	2.270E-02	0.218
		604.72		3.448E-02	4.794E-02	7.204E-02	3.965E-03	0.479
	+	795.86	*	1.022E-01	7.370E-02	9.461E-02	6.910E-03	1.080
		801.95		-3.112E-02	5.043E-01	7.583E-01	5.606E-02	-0.041
		1365.19		-1.071E+00	1.296E+00	1.812E+00	1.410E-01	-0.591
CS-135		268.22	*	2.015E-01	2.177E-01	3.217E-01	2.458E-02	0.627
I-135		546.56		-1.652E+18	2.177E-01	Half-Life too short		
		836.80		1.891E+18	2.177E-01	Half-Life too short		
		1038.76		2.260E+17	2.177E-01	Half-Life too short		
		1131.51		-1.038E+17	2.177E-01	Half-Life too short		
		1260.41	*	-2.972E+17	2.177E-01	Half-Life too short		
		1457.56		1.152E+20	2.177E-01	Half-Life too short		
		1678.03		-1.711E+17	2.177E-01	Half-Life too short		
		1791.20		-3.444E+17	2.177E-01	Half-Life too short		
CS-136		153.25		2.027E+00	1.451E+00	2.481E+00	1.907E-01	0.817
		176.60		-2.561E-01	8.534E-01	1.368E+00	8.973E-02	-0.187
		273.65		-1.287E+00	1.066E+00	1.347E+00	9.226E-02	-0.955
		340.55		4.650E-01	2.702E-01	4.382E-01	2.798E-02	1.061
		818.51		-1.726E-02	1.193E-01	1.972E-01	1.507E-02	-0.088
		1048.07	*	8.359E-02	1.710E-01	2.958E-01	2.359E-02	0.283

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

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		1235.36		4.782E-01	1.064E+00	1.797E+00	1.831E-01	0.266
CE-139		165.86	*	-2.197E-02	3.523E-02	5.582E-02	2.846E-03	-0.394
BA-140		162.66		7.595E-01	1.362E+00	2.268E+00	1.375E-01	0.335
		304.85		-3.873E-01	2.547E+00	3.683E+00	1.053E+00	-0.105
		423.72		-1.783E+00	3.182E+00	4.985E+00	1.609E+00	-0.358
		537.26	*	-3.191E-01	4.676E-01	7.054E-01	2.349E-01	-0.452
LA-140		328.76		4.831E-01	5.157E-01	9.006E-01	5.950E-02	0.536
		487.02		3.860E-02	2.237E-01	3.726E-01	2.461E-02	0.104
		815.77		1.853E-01	5.151E-01	8.898E-01	7.750E-02	0.208
		1596.21	*	1.539E-03	1.420E-01	2.372E-01	1.628E-02	0.006
CE-141		145.44	*	2.789E-02	8.398E-02	1.391E-01	7.845E-03	0.201
CE-143		57.36		-3.709E-02	8.398E-02	Half-Life too short		
	+	293.27	*	5.313E-02	8.398E-02	Half-Life too short		
		664.57		-1.543E-02	8.398E-02	Half-Life too short		
		721.93		-6.543E-03	8.398E-02	Half-Life too short		
CE-144		80.12		4.060E+00	3.856E+00	4.473E+00	4.100E-01	0.908
		133.52	*	-1.851E-01	2.583E-01	3.768E-01	5.205E-02	-0.491
PM-144		476.78		-6.554E-03	7.520E-02	1.231E-01	8.502E-03	-0.053
		618.01		2.987E-03	3.855E-02	6.302E-02	3.641E-03	0.047
		696.49	*	5.796E-02	3.948E-02	7.112E-02	4.005E-03	0.815
PR-144		696.51	*	4.350E+00	2.965E+00	5.342E+00	3.003E-01	0.814
		1489.16		-8.823E+00	1.416E+01	2.022E+01	1.443E+00	-0.436
PM-146		453.88	*	-2.049E-02	5.147E-02	8.280E-02	7.034E-03	-0.247
		633.25		-1.283E+00	1.763E+00	2.579E+00	9.693E-01	-0.497
		735.93		-8.490E-02	1.640E-01	2.480E-01	6.790E-02	-0.342
		747.24		-5.820E-03	1.127E-01	1.803E-01	2.416E-02	-0.032
ND-147	+	91.11		1.707E+00	5.513E-01	1.028E+00	1.011E-01	1.661
		319.41		4.336E+00	5.981E+00	1.039E+01	6.142E-01	0.417
		531.02	*	1.102E-01	9.901E-01	1.635E+00	2.209E-01	0.067
PM-149		285.90	*	2.067E-04	9.901E-01	Half-Life too short		
EU-152		121.78		2.404E-02	8.272E-02	1.376E-01	1.054E-02	0.175
		244.70		-2.046E-01	4.238E-01	5.718E-01	3.235E-02	-0.358
		344.28	*	-6.039E-02	1.227E-01	1.711E-01	1.133E-02	-0.353
		778.90		-5.672E-02	2.814E-01	4.642E-01	3.221E-02	-0.122
		964.08		6.564E-01	3.654E-01	6.749E-01	5.751E-02	0.973
		1085.87		-5.591E-03	4.803E-01	7.899E-01	5.558E-02	-0.007
		1112.07		1.240E-01	4.122E-01	6.058E-01	4.026E-02	0.205
		1408.01		1.954E-01	2.197E-01	3.945E-01	2.868E-02	0.495
GD-153		69.67		-1.385E+00	2.521E+00	3.610E+00	3.154E-01	-0.384
		97.43	*	-1.284E-02	1.089E-01	1.574E-01	1.286E-02	-0.082
		103.18		-9.182E-02	1.312E-01	2.109E-01	1.576E-02	-0.435
EU-154		123.07		-2.747E-02	6.396E-02	9.527E-02	8.979E-03	-0.288
		723.31		1.658E-01	2.335E-01	3.503E-01	2.531E-02	0.473
		873.19		-6.864E-02	3.160E-01	5.163E-01	6.144E-02	-0.133
		996.26		1.924E-01	4.409E-01	7.553E-01	1.303E-01	0.255
		1004.73		-3.393E-01	2.289E-01	3.106E-01	3.493E-02	-1.092
		1274.44	*	1.182E-02	1.464E-01	2.407E-01	2.408E-02	0.049
EU-155	+	86.55		5.184E-01	1.455E-01	2.232E-01	2.169E-02	2.323
		105.31	*	1.231E-02	1.230E-01	2.040E-01	1.503E-02	0.060

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TB-160	+	86.79		1.470E+00	4.123E-01	6.247E-01	6.036E-02	2.354
		197.04		9.508E-02	6.837E-01	1.106E+00	5.890E-02	0.086
		215.65		3.112E-01	9.363E-01	1.532E+00	8.369E-02	0.203
	+	298.57		3.529E-01	1.829E-01	2.562E-01	1.506E-02	1.377
		879.36	*	3.159E-02	1.787E-01	3.023E-01	2.644E-02	0.104
		962.29		1.441E+00	7.479E-01	1.285E+00	1.097E-01	1.122
		966.15		1.468E+00	3.599E-01	6.898E-01	5.864E-02	2.128
		1177.93		-4.206E-02	4.385E-01	7.115E-01	4.048E-02	-0.059
		1271.85		-5.096E-01	9.222E-01	1.413E+00	9.429E-02	-0.361
HO-166M		80.57		4.219E-01	4.109E-01	4.756E-01	4.373E-02	0.887
	+	184.41		1.723E-01	6.986E-02	7.999E-02	4.180E-03	2.154
		280.46		-8.950E-02	9.644E-02	1.553E-01	9.047E-03	-0.576
		410.95		-2.036E-02	2.919E-01	4.822E-01	2.803E-02	-0.042
		711.68	*	5.332E-02	7.493E-02	1.275E-01	7.464E-03	0.418
		752.31		3.025E-01	3.333E-01	5.757E-01	3.741E-02	0.525
		810.29		-8.122E-02	6.622E-02	9.815E-02	7.342E-03	-0.827
TA-182		67.75		-2.440E-02	1.665E-01	2.431E-01	2.117E-02	-0.100
		100.11		2.104E-01	2.139E-01	3.548E-01	2.777E-02	0.593
		152.43		3.634E-01	4.163E-01	7.021E-01	3.710E-02	0.518
		222.11		4.161E-01	4.333E-01	7.269E-01	4.006E-02	0.572
	+	1121.30		4.983E-01	3.967E-01	3.962E-01	2.577E-02	1.257
		1189.05		2.182E-01	3.711E-01	6.405E-01	3.716E-02	0.341
		1221.41	*	-1.194E-01	2.346E-01	3.644E-01	2.236E-02	-0.328
		1231.02		8.853E-02	6.562E-01	1.083E+00	6.758E-02	0.082
IR-192	+	295.96		1.232E+00	2.610E-01	3.448E-01	2.056E-02	3.575
		308.46		-4.100E-02	1.185E-01	1.955E-01	1.165E-02	-0.210
		316.51	*	-6.475E-02	4.256E-02	6.535E-02	3.877E-03	-0.991
		468.07		-7.079E-04	9.764E-02	1.394E-01	9.404E-03	-0.005
HG-203		70.83		1.817E+00	2.118E+00	3.199E+00	5.162E-01	0.568
		72.87		5.736E+00	1.560E+00	2.190E+00	3.427E-01	2.619
		279.20	*	-1.345E-02	4.851E-02	8.076E-02	4.960E-03	-0.167
BI-207		72.81		1.127E+00	2.815E-01	4.497E-01	3.966E-02	2.506
	+	74.97		8.732E-01	1.904E-01	3.127E-01	2.783E-02	2.792
		569.70		1.253E-02	3.768E-02	6.073E-02	3.421E-03	0.206
		1063.66	*	2.789E-02	6.032E-02	1.038E-01	7.625E-03	0.269
		1770.23		-1.099E+00	6.438E-01	7.421E-01	4.595E-02	-1.481
PB-210		46.54	*	-3.558E+00	5.948E+00	9.497E+00	7.337E-01	-0.375
PB-211		404.85	*	-9.871E-01	1.011E+00	1.390E+00	6.668E-01	-0.710
		427.09		-2.178E-01	1.722E+00	2.822E+00	1.293E+00	-0.077
		832.01		5.907E-01	1.102E+00	1.857E+00	9.605E-01	0.318
BI-212	+	727.33	*	2.262E+00	7.584E-01	1.271E+00	1.382E-01	1.779
		785.37		2.832E+00	3.578E+00	6.356E+00	4.481E-01	0.446
		1620.50		7.150E-01	2.410E+00	4.214E+00	2.858E-01	0.170
RN-219	+	271.23		6.426E-01	3.510E-01	5.043E-01	4.046E-02	1.274
		401.81	*	2.378E-01	4.987E-01	8.479E-01	1.139E-01	0.280
RA-223		81.07		3.244E-01	3.244E-01	3.747E-01	3.457E-02	0.866
		83.79		4.149E-01	1.590E-01	2.513E-01	2.367E-02	1.651
		94.87		1.067E+00	5.849E-01	9.134E-01	7.797E-02	1.168
		144.24		1.485E-01	8.013E-01	1.311E+00	9.048E-02	0.113

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		154.21		7.581E-01	4.540E-01	7.832E-01	5.109E-02	0.968
	+	269.46		4.993E-01	2.715E-01	3.866E-01	2.333E-02	1.291
		323.87	*	-1.126E+00	8.058E-01	1.223E+00	1.977E-01	-0.921
	+	338.28		7.229E+00	2.199E+00	2.834E+00	2.921E-01	2.551
AC-227		79.69		2.337E+00	1.941E+00	2.242E+00	3.923E-01	1.043
		235.96		1.522E+00	2.781E-01	4.450E-01	3.561E-02	3.421
		256.23	*	-8.167E-02	2.809E-01	4.421E-01	4.501E-02	-0.185
	+	299.98		2.571E+00	1.354E+00	1.884E+00	2.078E-01	1.365
		304.50		-7.662E-01	2.050E+00	2.912E+00	4.451E-01	-0.263
		334.37		1.506E+00	2.130E+00	3.252E+00	4.640E-01	0.463
TH-227		79.80		2.973E+00	2.580E+00	2.940E+00	6.465E-01	1.011
		235.96		1.522E+00	2.732E-01	4.450E-01	3.218E-02	3.421
		256.23	*	-8.167E-02	2.810E-01	4.421E-01	5.296E-02	-0.185
	+	299.98		2.571E+00	1.354E+00	1.884E+00	2.078E-01	1.365
		304.50		-7.662E-01	2.050E+00	2.912E+00	4.451E-01	-0.263
		334.37		1.506E+00	2.130E+00	3.252E+00	4.640E-01	0.463
TH-229		85.43		1.394E+00	3.044E-01	4.795E-01	4.578E-02	2.907
	+	88.47		4.825E-01	1.548E-01	2.897E-01	2.802E-02	1.665
		193.51	*	1.071E-01	6.056E-01	9.878E-01	5.232E-02	0.108
	+	210.85		2.096E+00	1.472E+00	1.829E+00	9.931E-02	1.146
PA-231		283.69	*	5.934E-01	1.662E+00	2.843E+00	3.734E-01	0.209
	+	301.36		1.652E+00	8.677E-01	1.176E+00	1.222E-01	1.404
TH-231		81.07		3.244E-01	3.244E-01	3.747E-01	3.457E-02	0.866
		83.79		4.149E-01	1.590E-01	2.513E-01	2.367E-02	1.651
		94.87		1.067E+00	5.849E-01	9.134E-01	7.797E-02	1.168
		144.24		1.485E-01	8.013E-01	1.311E+00	9.048E-02	0.113
		154.21		7.581E-01	4.540E-01	7.832E-01	5.109E-02	0.968
	+	269.46		4.993E-01	2.715E-01	3.866E-01	2.333E-02	1.291
		323.87	*	-1.126E+00	8.058E-01	1.223E+00	1.977E-01	-0.921
	+	338.28		7.229E+00	2.199E+00	2.834E+00	2.921E-01	2.551
PA-233	+	300.13		1.163E+00	6.192E-01	8.485E-01	1.139E-01	1.371
		311.90	*	3.066E-03	7.322E-02	1.232E-01	7.704E-03	0.025
		340.48		1.549E+00	8.922E-01	1.326E+00	3.082E-01	1.168
PA-234		94.67		6.301E-01	2.225E-01	3.453E-01	4.270E-02	1.824
		98.44		1.152E-01	1.301E-01	1.735E-01	9.662E-02	0.664
		111.00		-7.790E-02	2.173E-01	3.534E-01	3.822E-02	-0.220
		131.20		2.348E-02	1.400E-01	2.031E-01	1.148E-02	0.116
		569.50		1.245E-01	3.319E-01	5.365E-01	3.023E-02	0.232
		733.00		-4.341E-02	4.073E-01	6.084E-01	1.300E-01	-0.071
		880.51		2.981E-01	3.333E-01	5.954E-01	5.220E-02	0.501
		883.24		-5.331E-04	3.409E-01	5.682E-01	3.821E-01	-0.001
		926.50		-6.695E-02	2.013E-01	3.229E-01	8.191E-02	-0.207
		946.00	*	-1.656E-01	3.421E-01	5.392E-01	1.014E-01	-0.307
		949.00		2.295E-01	4.906E-01	8.495E-01	7.363E-02	0.270
PA-234M		766.42		1.130E+01	1.751E+01	2.459E+01	1.241E+01	0.459
		1001.03	*	1.735E+00	5.268E+00	8.955E+00	8.545E-01	0.194
TH-234		63.29	*	4.782E-01	1.807E+00	3.047E+00	5.606E-01	0.157
	+	92.59		3.464E+00	1.235E+00	1.558E+00	3.458E-01	2.223
U-238		63.29	*	4.782E-01	1.807E+00	3.047E+00	5.606E-01	0.157

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	92.59		3.464E+00	1.015E+00	1.558E+00	1.387E-01	2.223
NP-239		99.53		2.021E-01	1.967E-01	3.149E-01	2.486E-02	0.642
		103.37		-5.172E-02	1.161E-01	1.885E-01	1.405E-02	-0.274
		106.12		6.129E-03	9.926E-02	1.643E-01	1.178E-02	0.037
		117.23	*	-2.001E-01	4.585E-01	7.420E-01	4.619E-02	-0.270
		228.18		1.106E-01	2.603E-01	4.266E-01	2.369E-02	0.259
		277.60		1.752E-01	2.031E-01	3.384E-01	1.967E-02	0.518
AM-241		59.54	*	-2.094E-01	2.150E-01	3.469E-01	3.228E-02	-0.604
CM-247		278.00		2.049E-01	8.362E-01	1.426E+00	8.291E-02	0.144
		287.50		-1.083E-01	1.681E+00	2.456E+00	1.436E-01	-0.044
		402.40	*	3.049E-02	4.491E-02	7.732E-02	4.482E-03	0.394
CF-249		252.80		-5.068E-02	1.074E+00	1.715E+00	9.778E-02	-0.030
		333.37		1.440E-01	2.257E-01	3.443E-01	2.034E-02	0.418
		388.16	*	1.241E-02	4.648E-02	7.847E-02	4.540E-03	0.158
CF-251		177.52	*	-4.260E-02	1.496E-01	2.400E-01	1.242E-02	-0.177
		227.38		1.307E-01	4.264E-01	6.954E-01	3.857E-02	0.188
		285.41		8.443E-01	2.480E+00	4.244E+00	2.479E-01	0.199

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]G248521003      *
* Acquisition date : 19-MAR-2010 20:43:07 Detector SN#    :                 *
* Detector ID        : GAM23               Sensitivity     : 5.000          *
* Geometry           : CAN                 Energy tolerance: 1.500          *
* Elapsed live time:    0 02:00:00.00      Abundance limit : 75.000         *
* Elapsed real time:    0 02:00:01.75      Half life ratio :  8.000         *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248521003           Analyst initials: MXR1          *
* Batch Number       : 961099               Sample Quantity : 1.2778E+02 GRAM *
* Recovery           :    1.00000           Carrier Weight :    0.00000     *
*****************************************************************************
*                                                                           *
*                                 QC DATA                                   *
* Standard Weight  :   0.00000                                              *
* CALIB. DATE/TIME :  2-JUN-2009 11:17:00 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.612E+01	2.575E+00	6.104E-01	0.000E+00
CD-109	4.409E+00	1.212E+00	1.354E+00	0.000E+00
SN-126	4.263E-01	1.172E-01	1.318E-01	0.000E+00
BA-137M	4.932E-01	8.415E-02	6.356E-02	0.000E+00
CS-137	5.210E-01	8.893E-02	6.714E-02	0.000E+00
TL-208	5.830E-01	9.753E-02	7.212E-02	0.000E+00
BI-211	4.193E+00	5.348E-01	3.842E-01	0.000E+00
PB-212	1.656E+00	1.670E-01	1.095E-01	0.000E+00
BI-214	1.300E+00	2.143E-01	1.346E-01	0.000E+00
PB-214	1.522E+00	2.108E-01	1.335E-01	0.000E+00
RA-224	4.331E+00	1.171E+00	1.173E+00	0.000E+00
RA-226	1.300E+00	2.143E-01	1.346E-01	0.000E+00
AC-228	1.667E+00	4.749E-01	2.666E-01	0.000E+00
RA-228	1.667E+00	4.749E-01	2.666E-01	0.000E+00
TH-228	1.656E+00	1.670E-01	1.095E-01	0.000E+00
TH-232	1.667E+00	4.749E-01	2.666E-01	0.000E+00
U-235	7.911E-02	2.346E-01	4.074E-01	0.000E+00
NP-237	1.272E+00	4.365E-01	3.991E-01	0.000E+00
ANH-511	1.775E-01	6.856E-02	5.225E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)		
BE-7	3.359E-01	3.853E-01	6.963E-01	0.000E+00	NOT IDENT.
NA-22	4.189E-03	5.084E-02	8.545E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.180E+09	0.000E+00	0.000E+00	SHORT HLIF
SC-46	1.567E-02	4.587E-02	8.093E-02	0.000E+00	FAIL ABUN
V-48	7.402E-03	1.146E-01	1.959E-01	0.000E+00	NOT IDENT.
CR-51	4.171E-01	4.912E-01	8.952E-01	0.000E+00	NOT IDENT.
MN-54	2.252E-02	4.136E-02	7.419E-02	0.000E+00	NOT IDENT.
CO-56	6.251E-03	4.369E-02	7.609E-02	0.000E+00	NOT IDENT.

CO-57	7.534E-03	2.862E-02	5.037E-02	0.000E+00	NOT IDENT.
CO-58	-3.710E-02	4.414E-02	7.017E-02	0.000E+00	NOT IDENT.
FE-59	4.169E-02	1.178E-01	2.050E-01	0.000E+00	NOT IDENT.
CO-60	2.410E-02	4.617E-02	8.126E-02	0.000E+00	NOT IDENT.
ZN-65	2.871E-02	1.249E-01	1.858E-01	0.000E+00	NOT IDENT.
SE-75	3.003E-02	5.697E-02	9.094E-02	0.000E+00	NOT IDENT.
SR-85	3.971E-02	4.818E-02	7.666E-02	0.000E+00	NOT IDENT.
Y-88	9.670E-03	3.824E-02	6.737E-02	0.000E+00	NOT IDENT.
Y-91	-3.143E+00	2.902E+01	4.813E+01	0.000E+00	NOT IDENT.
NB-94	-1.589E-02	3.872E-02	6.227E-02	0.000E+00	NOT IDENT.
NB-95	3.708E-02	6.706E-02	1.011E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.077E-01	3.451E-01	0.000E+00	NOT IDENT.
ZR-95	-4.135E-02	9.199E-02	1.461E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	8.659E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	2.284E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.178E-02	5.270E-02	9.117E-02	0.000E+00	NOT IDENT.
RH-106	-1.712E-01	3.809E-01	6.167E-01	0.000E+00	NOT IDENT.
RU-106	-1.712E-01	3.805E-01	6.167E-01	0.000E+00	NOT IDENT.
AG-108M	-2.134E-02	3.531E-02	5.848E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	5.345E-02	9.601E-02	0.000E+00	NOT IDENT.
SN-113	1.462E-02	5.252E-02	9.234E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.196E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-9.058E-02	9.138E-02	1.509E-01	0.000E+00	NOT IDENT.
TE-123M	-2.628E-02	3.408E-02	5.680E-02	0.000E+00	NOT IDENT.
SB-124	7.630E-02	8.151E-02	1.616E-01	0.000E+00	NOT IDENT.
SB-125	1.185E-02	1.032E-01	1.789E-01	0.000E+00	FAIL ABUN
TE-125M	1.609E+01	1.235E+01	2.245E+01	0.000E+00	NOT IDENT.
I-126	4.826E-02	4.059E-01	5.937E-01	0.000E+00	NOT IDENT.
SB-126	-7.958E-03	2.791E-01	3.983E-01	0.000E+00	NOT IDENT.
SB-127	-6.058E-01	5.106E+00	8.422E+00	0.000E+00	NOT IDENT.
I-131	6.709E-02	2.366E-01	4.179E-01	0.000E+00	NOT IDENT.
TE-132	1.766E+00	4.144E+00	7.114E+00	0.000E+00	NOT IDENT.
BA-133	6.256E-03	4.877E-02	7.461E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.134E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.223E-02	9.551E-02	0.000E+00	FAIL ABUN
CS-135	2.015E-01	2.134E-01	3.301E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.963E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.359E-02	1.676E-01	2.974E-01	0.000E+00	NOT IDENT.
CE-139	-2.197E-02	3.453E-02	5.769E-02	0.000E+00	NOT IDENT.
BA-140	-3.191E-01	4.583E-01	7.164E-01	0.000E+00	NOT IDENT.
LA-140	1.539E-03	1.391E-01	2.369E-01	0.000E+00	NOT IDENT.
CE-141	2.789E-02	8.230E-02	1.440E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.633E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.851E-01	2.532E-01	3.907E-01	0.000E+00	NOT IDENT.
PM-144	5.796E-02	3.869E-02	7.195E-02	0.000E+00	NOT IDENT.
PR-144	4.350E+00	2.906E+00	5.404E+00	0.000E+00	NOT IDENT.
PM-146	-2.049E-02	5.044E-02	8.430E-02	0.000E+00	NOT IDENT.
ND-147	1.102E-01	9.703E-01	1.661E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.006E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-6.039E-02	1.203E-01	1.750E-01	0.000E+00	NOT IDENT.
GD-153	-1.284E-02	1.067E-01	1.640E-01	0.000E+00	NOT IDENT.
EU-154	1.182E-02	1.435E-01	2.412E-01	0.000E+00	NOT IDENT.
EU-155	1.231E-02	1.206E-01	2.122E-01	0.000E+00	FAIL ABUN
TB-160	3.159E-02	1.751E-01	3.047E-01	0.000E+00	FAIL ABUN
HO-166M	5.332E-02	7.343E-02	1.290E-01	0.000E+00	FAIL ABUN
TA-182	-1.194E-01	2.299E-01	3.654E-01	0.000E+00	FAIL ABUN
IR-192	-6.475E-02	4.171E-02	6.690E-02	0.000E+00	FAIL ABUN
HG-203	-1.345E-02	4.754E-02	8.283E-02	0.000E+00	NOT IDENT.
BI-207	2.789E-02	5.911E-02	1.043E-01	0.000E+00	FAIL ABUN
PB-210	-3.558E+00	5.829E+00	9.997E+00	0.000E+00	NOT IDENT.
PB-211	-9.871E-01	9.905E-01	1.418E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.433E-01	1.285E+00	0.000E+00	FAIL ABUN
RN-219	2.378E-01	4.887E-01	8.649E-01	0.000E+00	FAIL ABUN
RA-223	-1.126E+00	7.897E-01	1.252E+00	0.000E+00	FAIL ABUN
AC-227	-8.167E-02	2.753E-01	4.540E-01	0.000E+00	FAIL ABUN
TH-227	-8.167E-02	2.754E-01	4.540E-01	0.000E+00	FAIL ABUN
TH-229	1.071E-01	5.935E-01	1.019E+00	0.000E+00	FAIL ABUN
PA-231	5.934E-01	1.629E+00	2.916E+00	0.000E+00	FAIL ABUN
TH-231	-1.126E+00	7.897E-01	1.252E+00	0.000E+00	FAIL ABUN
PA-233	3.066E-03	7.175E-02	1.261E-01	0.000E+00	FAIL ABUN
PA-234	-1.656E-01	3.353E-01	5.429E-01	0.000E+00	NOT IDENT.
PA-234M	1.735E+00	5.163E+00	9.008E+00	0.000E+00	NOT IDENT.
TH-234	4.782E-01	1.770E+00	3.194E+00	0.000E+00	FAIL ABUN
U-238	4.782E-01	1.770E+00	3.194E+00	0.000E+00	FAIL ABUN
NP-239	-2.001E-01	4.494E-01	7.708E-01	0.000E+00	NOT IDENT.
AM-241	-2.094E-01	2.107E-01	3.639E-01	0.000E+00	NOT IDENT.
CM-247	3.049E-02	4.402E-02	7.887E-02	0.000E+00	NOT IDENT.
CF-249	1.241E-02	4.555E-02	8.009E-02	0.000E+00	NOT IDENT.

CF-251	-4.260E-02	1.466E-01	2.478E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 22:44:52.75

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*****************************************************************************
*                            GEL Laboratories LLC                           *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521003.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 20:43:07
Sample ID         : G248521003           Sample quantity  : 1.27780E+02 GRAM
Detector name     : GAM23                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.75  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               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	945	10.66*	9.975E-01	2.612E+01	2.612E+01	10.06
CD-109	88.03	280	3.70*	5.208E+00	4.263E+00	4.409E+00	28.04
SN-126	64.28	------	9.60	2.723E+00	------ Line Not Found		------
	86.94	280	8.90	5.208E+00	1.772E+00	1.772E+00	49.22
	87.57	280	37.00*	5.208E+00	4.263E-01	4.263E-01	28.04
BA-137M	661.66	308	89.90*	2.042E+00	4.925E-01	4.932E-01	17.41
CS-137	661.66	308	85.10*	2.042E+00	5.203E-01	5.210E-01	17.42
TL-208	277.37	------	6.60	4.139E+00	------ Line Not Found		------
	583.19	384	85.00*	2.278E+00	5.830E-01	5.830E-01	17.07
	860.56	46	12.50	1.610E+00	6.747E-01	6.747E-01	76.32
BI-211	72.87	------	1.23	3.829E+00	------ Line Not Found		------
	351.06	635	12.92*	3.442E+00	4.193E+00	4.193E+00	13.02
PB-212	74.82	427	10.28	4.034E+00	3.029E+00	3.029E+00	23.88
	77.11	656	17.10	4.294E+00	2.625E+00	2.625E+00	14.78
	238.63	1140	43.60*	4.638E+00	1.656E+00	1.656E+00	10.29
	300.09	102	3.30	3.896E+00	2.338E+00	2.338E+00	52.18
BI-214	609.32	442	45.49*	2.194E+00	1.299E+00	1.300E+00	16.83
	1120.29	65	14.92	1.258E+00	1.018E+00	1.018E+00	79.90
	1764.49	------	15.30	8.740E-01	------ Line Not Found		------
PB-214	74.82	427	5.80	4.034E+00	5.368E+00	5.368E+00	23.20
	77.11	656	9.70	4.294E+00	4.627E+00	4.627E+00	16.93
	242.00	278	7.25	4.597E+00	2.449E+00	2.449E+00	28.18
	295.22	386	18.42	3.950E+00	1.557E+00	1.557E+00	22.13
	351.93	635	35.60*	3.442E+00	1.522E+00	1.522E+00	14.14
RA-224	240.99	278	4.10*	4.597E+00	4.331E+00	4.331E+00	27.58
RA-226	609.32	442	45.49*	2.194E+00	1.299E+00	1.300E+00	16.83
	1120.29	65	14.92	1.258E+00	1.018E+00	1.018E+00	79.90
	1764.49	------	15.30	8.740E-01	------ Line Not Found		------
AC-228	338.32	248	11.27	3.551E+00	1.822E+00	1.822E+00	50.19
	911.20	224	25.80*	1.527E+00	1.667E+00	1.667E+00	29.07
	968.97	137	15.80	1.442E+00	1.763E+00	1.763E+00	51.42
RA-228	338.32	248	11.27	3.551E+00	1.822E+00	1.822E+00	50.19

Sample ID : G248521003 Acquisition date : 19-MAR-2010 20:43:07

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	224	25.80*	1.527E+00	1.667E+00	1.667E+00	29.07
	968.97	137	15.80	1.442E+00	1.763E+00	1.763E+00	51.42
TH-228	74.82	427	10.28	4.034E+00	3.029E+00	3.029E+00	21.84
	77.11	656	17.10	4.294E+00	2.625E+00	2.625E+00	14.78
	238.63	1140	43.60*	4.638E+00	1.656E+00	1.656E+00	10.29
	300.09	102	3.30	3.896E+00	2.338E+00	2.338E+00	79.75
TH-232	338.32	248	11.27	3.551E+00	1.822E+00	1.822E+00	29.22
	911.20	224	25.80*	1.527E+00	1.667E+00	1.667E+00	29.07
	968.97	137	15.80	1.442E+00	1.763E+00	1.763E+00	51.42
U-235	89.96	213	3.47	5.407E+00	3.337E+00	3.337E+00	39.51
	93.35	278	5.60	5.581E+00	2.617E+00	2.617E+00	36.29
	143.76	------	10.96*	6.189E+00	------	Line Not Found	------
	163.33	------	5.08	5.887E+00	------	Line Not Found	------
	185.72	232	57.20	5.494E+00	2.168E-01	2.168E-01	40.55
	205.31	------	5.01	5.150E+00	------	Line Not Found	------
NP-237	86.48	280	12.40*	5.208E+00	1.272E+00	1.272E+00	35.01
	95.86	------	2.68	5.757E+00	------	Line Not Found	------
ANH-511	511.00	154	100.00*	2.547E+00	1.775E-01	1.775E-01	39.41

Flag: "*" = Keyline

Sample ID : G248521003 Acquisition date : 19-MAR-2010 20:43:07

Total number of lines in spectrum 29
Number of unidentified lines 3
Number of lines tentatively identified by NID 26 89.66%

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	2.612E+01	2.612E+01	0.263E+01	10.06	
CD-109	461.40D	1.03	4.263E+00	4.409E+00	1.236E+00	28.04	
SN-126	2.30E+05Y	1.00	4.263E-01	4.263E-01	1.196E-01	28.04	
BA-137M	30.08Y	1.00	4.925E-01	4.932E-01	0.859E-01	17.41	
CS-137	30.08Y	1.00	5.203E-01	5.210E-01	0.907E-01	17.42	
TL-208	1.41E+10Y	1.00	5.830E-01	5.830E-01	0.995E-01	17.07	
BI-211	7.04E+08Y	1.00	4.193E+00	4.193E+00	0.546E+00	13.02	
PB-212	1.41E+10Y	1.00	1.656E+00	1.656E+00	0.170E+00	10.29	
BI-214	1600.00Y	1.00	1.299E+00	1.300E+00	0.219E+00	16.83	
PB-214	1600.00Y	1.00	1.522E+00	1.522E+00	0.215E+00	14.14	
RA-224	1.41E+10Y	1.00	4.331E+00	4.331E+00	1.194E+00	27.58	
RA-226	1600.00Y	1.00	1.299E+00	1.300E+00	0.219E+00	16.83	
AC-228	1.41E+10Y	1.00	1.667E+00	1.667E+00	0.485E+00	29.07	
RA-228	1.41E+10Y	1.00	1.667E+00	1.667E+00	0.485E+00	29.07	
TH-228	1.41E+10Y	1.00	1.656E+00	1.656E+00	0.170E+00	10.29	
TH-232	1.41E+10Y	1.00	1.667E+00	1.667E+00	0.485E+00	29.07	
U-235	7.04E+08Y	1.00	2.168E-01	2.168E-01	0.879E-01	40.55	K
NP-237	2.14E+06Y	1.00	1.272E+00	1.272E+00	0.445E+00	35.01	
ANH-511	1.00E+09Y	1.00	1.775E-01	1.775E-01	0.700E-01	39.41	
	Total Activity :		5.503E+01	5.518E+01			

Grand Total Activity : 5.503E+01 5.518E+01

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

Sample ID : G248521003 Acquisition date : 19-MAR-2010 20:43:07

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.93	59	343	0.77	257.87	253	8	8.21E-03	****	6.32E+00	
0	209.45	102	330	1.34	418.91	413	10	1.41E-02	70.0	5.08E+00	T
0	270.24	100	191	1.00	540.48	537	9	1.39E-02	54.0	4.22E+00	T
0	462.31	82	86	1.70	924.62	920	10	1.14E-02	47.4	2.76E+00	T
0	726.44	96	38	1.31	1452.87	1448	10	1.34E-02	31.7	1.88E+00	T
0	768.71	31	66	1.06	1537.42	1529	11	4.33E-03	****	1.78E+00	
0	794.65	45	51	1.22	1589.29	1583	13	6.30E-03	71.8	1.73E+00	T
0	1762.29	92	4	3.28	3524.58	3515	18	1.28E-02	23.5	8.75E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 22:44:56.30

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*****************************************************************************
*                            GEL Laboratories LLC                            *
*                              2040 Savage Road                              *
*                            Charleston, SC 29414                            *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521003.CNF;1  *
* Acquisition date : 19-MAR-2010 20:43:07  Detector SN#    :                *
* Detector ID      : GAM23                 Sensitivity     : 5.00000        *
* Geometry         : CAN                   Energy tolerance: 1.50000        *
* Elapsed live time: 0 02:00:00.00         Abundance limit : 75.00000       *
* Elapsed real time: 0 02:00:01.75         Half life ratio : 8.00000        *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date      : 25-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID        : G248521003            Analyst initials: MXR1           *
* Batch Number     : 961099                Sample Quantity : 1.27780E+02 GRAM *
*****************************************************************************
*                                                                           *
*                                 QC DATA                                   *
*                                                                           *
* CALIB. DATE/TIME : 2-JUN-2009 11:17:00.62MS Isotope      :                *
* MSD ID           :                       MSD Isotope     :                *
* LCS ID           : 1032-A                LCS Isotope     :                *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.612E+01	2.628E+00	6.104E-01	4.566E-02	42.788
CD-109	4.409E+00	1.236E+00	1.298E+00	1.267E-01	3.396
SN-126	4.263E-01	1.196E-01	1.263E-01	1.229E-02	3.376
BA-137M	4.932E-01	8.586E-02	6.279E-02	3.207E-03	7.855
CS-137	5.210E-01	9.075E-02	6.633E-02	3.407E-03	7.855
TL-208	5.830E-01	9.952E-02	7.111E-02	4.605E-03	8.199
BI-211	4.193E+00	5.457E-01	3.758E-01	2.450E-02	11.155
PB-212	1.656E+00	1.704E-01	1.065E-01	7.725E-03	15.553
BI-214	1.300E+00	2.187E-01	1.328E-01	1.007E-02	9.784
PB-214	1.522E+00	2.151E-01	1.306E-01	1.115E-02	11.652
RA-224	4.331E+00	1.194E+00	1.141E+00	6.432E-02	3.794
RA-226	1.300E+00	2.187E-01	1.328E-01	1.007E-02	9.784
AC-228	1.667E+00	4.846E-01	2.646E-01	3.143E-02	6.299
RA-228	1.667E+00	4.846E-01	2.646E-01	3.143E-02	6.299
TH-228	1.656E+00	1.704E-01	1.065E-01	7.725E-03	15.553
TH-232	1.667E+00	4.846E-01	2.646E-01	3.143E-02	6.299
U-235	2.168E-01	8.793E-02	3.934E-01	6.126E-02	0.551
NP-237	1.272E+00	4.454E-01	3.825E-01	8.827E-02	3.326

Sample ID : G248521003 Acquisition date : 19-MAR-2010 20:43:07

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.775E-01	6.996E-02	5.141E-02	2.986E-03	3.453

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	3.359E-01		3.931E-01	6.844E-01	4.649E-02	0.491
NA-22	4.189E-03		5.188E-02	8.527E-02	5.726E-03	0.049
NA-24	-7.173E+02		1.112E+03	Half-Life too short		
SC-46	1.567E-02		4.680E-02	8.031E-02	7.175E-03	0.195
V-48	7.402E-03		1.169E-01	1.947E-01	1.620E-02	0.038
CR-51	4.171E-01		5.012E-01	8.746E-01	5.726E-02	0.477
MN-54	2.252E-02		4.220E-02	7.355E-02	5.824E-03	0.306
CO-56	6.251E-03		4.459E-02	7.545E-02	6.138E-03	0.083
CO-57	7.534E-03		2.921E-02	4.851E-02	2.860E-03	0.155
CO-58	-3.710E-02		4.504E-02	6.953E-02	5.224E-03	-0.534
FE-59	4.169E-02		1.202E-01	2.041E-01	1.572E-02	0.204
CO-60	2.410E-02		4.711E-02	8.115E-02	5.957E-03	0.297
ZN-65	2.871E-02		1.274E-01	1.850E-01	1.222E-02	0.155
SE-75	3.003E-02		5.813E-02	8.860E-02	5.159E-03	0.339
SR-85	3.971E-02		4.916E-02	7.544E-02	4.378E-03	0.526
Y-88	9.670E-03		3.902E-02	6.762E-02	3.981E-03	0.143
Y-91	-3.143E+00		2.961E+01	4.799E+01	2.862E+00	-0.065
NB-94	-1.589E-02		3.951E-02	6.156E-02	3.518E-03	-0.258
NB-95	3.708E-02		6.843E-02	1.001E-01	6.726E-03	0.371
NB-95M	6.514E-01		2.120E-01	3.356E-01	2.484E-02	1.941
ZR-95	-4.135E-02		9.386E-02	1.447E-01	1.116E-02	-0.286
MO-99	5.861E-05		4.418E-05	Half-Life too short		
TC-99M	-1.456E+19		1.165E+19	Half-Life too short		
RU-103	1.178E-02		5.377E-02	8.966E-02	1.115E-02	0.131
RH-106	-1.712E-01		3.887E-01	6.086E-01	6.947E-02	-0.281
RU-106	-1.712E-01		3.883E-01	6.086E-01	3.270E-02	-0.281
AG-108M	-2.134E-02		3.603E-02	5.740E-02	3.587E-03	-0.372
AG-110M	1.486E-01		5.455E-02	9.483E-02	5.270E-03	1.567
SN-113	1.462E-02		5.360E-02	9.049E-02	5.574E-03	0.162
CD-115	-7.416E-05		6.103E-05	Half-Life too short		
SN-117M	-9.058E-02		9.324E-02	1.459E-01	7.580E-03	-0.621
TE-123M	-2.628E-02		3.477E-02	5.492E-02	2.898E-03	-0.478
SB-124	7.630E-02		8.317E-02	1.619E-01	1.133E-02	0.471
SB-125	1.185E-02		1.053E-01	1.756E-01	1.067E-02	0.068
TE-125M	1.609E+01		1.260E+01	2.159E+01	1.969E+00	0.746
I-126	4.826E-02		4.142E-01	5.866E-01	3.035E-02	0.082
SB-126	-7.958E-03		2.848E-01	3.939E-01	2.361E-02	-0.020
SB-127	-6.058E-01		5.210E+00	8.323E+00	9.999E-01	-0.073
I-131	6.709E-02		2.415E-01	4.091E-01	2.706E-02	0.164
TE-132	1.766E+00		4.229E+00	6.915E+00	1.120E+00	0.255
BA-133	6.256E-03		4.976E-02	7.301E-02	8.264E-03	0.086
I-133	-4.344E-01		1.089E+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	1.022E-01	+	7.370E-02	9.461E-02	6.910E-03	1.080
CS-135	2.015E-01		2.177E-01	3.217E-01	2.458E-02	0.627
I-135	-2.972E+17		3.553E+17	Half-Life too short		
CS-136	8.359E-02		1.710E-01	2.958E-01	2.359E-02	0.283
CE-139	-2.197E-02		3.523E-02	5.582E-02	2.846E-03	-0.394
BA-140	-3.191E-01		4.676E-01	7.054E-01	2.349E-01	-0.452
LA-140	1.539E-03		1.420E-01	2.372E-01	1.628E-02	0.006
CE-141	2.789E-02		8.398E-02	1.391E-01	7.845E-03	0.201
CE-143	5.313E-02	+	8.329E-03	Half-Life too short		
CE-144	-1.851E-01		2.583E-01	3.768E-01	5.205E-02	-0.491
PM-144	5.796E-02		3.948E-02	7.112E-02	4.005E-03	0.815
PR-144	4.350E+00		2.965E+00	5.342E+00	3.003E-01	0.814
PM-146	-2.049E-02		5.147E-02	8.280E-02	7.034E-03	-0.247
ND-147	1.102E-01		9.901E-01	1.635E+00	2.209E-01	0.067
PM-149	2.067E-04		5.132E-04	Half-Life too short		
EU-152	-6.039E-02		1.227E-01	1.711E-01	1.133E-02	-0.353
GD-153	-1.284E-02		1.089E-01	1.574E-01	1.286E-02	-0.082
EU-154	1.182E-02		1.464E-01	2.407E-01	2.408E-02	0.049
EU-155	1.231E-02		1.230E-01	2.040E-01	1.503E-02	0.060
TB-160	3.159E-02		1.787E-01	3.023E-01	2.644E-02	0.104
HO-166M	5.332E-02		7.493E-02	1.275E-01	7.464E-03	0.418
TA-182	-1.194E-01		2.346E-01	3.644E-01	2.236E-02	-0.328
IR-192	-6.475E-02		4.256E-02	6.535E-02	3.877E-03	-0.991
HG-203	-1.345E-02		4.851E-02	8.076E-02	4.960E-03	-0.167
BI-207	2.789E-02		6.032E-02	1.038E-01	7.625E-03	0.269
PB-210	-3.558E+00		5.948E+00	9.497E+00	7.337E-01	-0.375
PB-211	-9.871E-01		1.011E+00	1.390E+00	6.668E-01	-0.710
BI-212	2.262E+00	+	7.584E-01	1.271E+00	1.382E-01	1.779
RN-219	2.378E-01		4.987E-01	8.479E-01	1.139E-01	0.280
RA-223	-1.126E+00		8.058E-01	1.223E+00	1.977E-01	-0.921
AC-227	-8.167E-02		2.809E-01	4.421E-01	4.501E-02	-0.185
TH-227	-8.167E-02		2.810E-01	4.421E-01	5.296E-02	-0.185
TH-229	1.071E-01		6.056E-01	9.878E-01	5.232E-02	0.108
PA-231	5.934E-01		1.662E+00	2.843E+00	3.734E-01	0.209
TH-231	-1.126E+00		8.058E-01	1.223E+00	1.977E-01	-0.921
PA-233	3.066E-03		7.322E-02	1.232E-01	7.704E-03	0.025
PA-234	-1.656E-01		3.421E-01	5.392E-01	1.014E-01	-0.307
PA-234M	1.735E+00		5.268E+00	8.955E+00	8.545E-01	0.194
TH-234	4.782E-01		1.807E+00	3.047E+00	5.606E-01	0.157
U-238	4.782E-01		1.807E+00	3.047E+00	5.606E-01	0.157
NP-239	-2.001E-01		4.585E-01	7.420E-01	4.619E-02	-0.270
AM-241	-2.094E-01		2.150E-01	3.469E-01	3.228E-02	-0.604
CM-247	3.049E-02		4.491E-02	7.732E-02	4.482E-03	0.394
CF-249	1.241E-02		4.648E-02	7.847E-02	4.540E-03	0.158
CF-251	-4.260E-02		1.496E-01	2.400E-01	1.242E-02	-0.177

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration     : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248521003           *
* Acquisition date  : 19-MAR-2010 20:43:07 Detector SN#     :               *
* Detector ID       : GAM23                Sensitivity      : 5.000         *
* Geometry          : CAN                  Energy tolerance: 1.500          *
* Elapsed live time:    0 02:00:00.00      Abundance limit : 75.000         *
* Elapsed real time:    0 02:00:01.75      Half life ratio : 8.000          *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248521003           Analyst initials: MXR1           *
* Batch Number      : 961099               Sample Quantity : 1.2778E+02 GRAM *
* Recovery          :    1.00000           Carrier Weight :    0.00000      *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
*                                                                           *
* CALIB. DATE/TIME :  2-JUN-2009 11:17:00 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.612E+01	2.575E+00	3.054E-01	1.314E+00
CD-109	4.409E+00	1.212E+00	6.775E-01	6.182E-01
SN-126	4.263E-01	1.172E-01	6.591E-02	5.978E-02
BA-137M	4.932E-01	8.415E-02	3.180E-02	4.293E-02
CS-137	5.210E-01	8.893E-02	3.359E-02	4.537E-02
TL-208	5.830E-01	9.753E-02	3.608E-02	4.976E-02
BI-211	4.193E+00	5.348E-01	1.922E-01	2.729E-01
PB-212	1.656E+00	1.670E-01	5.477E-02	8.519E-02
BI-214	1.300E+00	2.143E-01	6.736E-02	1.094E-01
PB-214	1.522E+00	2.108E-01	6.677E-02	1.076E-01
RA-224	4.331E+00	1.171E+00	5.870E-01	5.972E-01
RA-226	1.300E+00	2.143E-01	6.736E-02	1.094E-01
AC-228	1.667E+00	4.749E-01	1.334E-01	2.423E-01
RA-228	1.667E+00	4.749E-01	1.334E-01	2.423E-01
TH-228	1.656E+00	1.670E-01	5.477E-02	8.519E-02
TH-232	1.667E+00	4.749E-01	1.334E-01	2.423E-01
U-235	7.911E-02	2.346E-01	2.038E-01	1.197E-01
NP-237	1.272E+00	4.365E-01	1.997E-01	2.227E-01
ANH-511	1.775E-01	6.856E-02	2.614E-02	3.498E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	3.359E-01	3.853E-01	3.484E-01	1.966E-01	NOT IDENT.
NA-22	4.189E-03	5.084E-02	4.275E-02	2.594E-02	NOT IDENT.
NA-24	-7.173E+08	2.180E+09	0.000E+00	1.112E+09	SHORT HLIF
SC-46	1.567E-02	4.587E-02	4.049E-02	2.340E-02	FAIL ABUN
V-48	7.402E-03	1.146E-01	9.803E-02	5.845E-02	NOT IDENT.
CR-51	4.171E-01	4.912E-01	4.479E-01	2.506E-01	NOT IDENT.
MN-54	2.252E-02	4.136E-02	3.712E-02	2.110E-02	NOT IDENT.
CO-56	6.251E-03	4.369E-02	3.807E-02	2.229E-02	NOT IDENT.

CO-57	7.534E-03	2.862E-02	2.520E-02	1.460E-02	NOT IDENT.
CO-58	-3.710E-02	4.414E-02	3.510E-02	2.252E-02	NOT IDENT.
FE-59	4.169E-02	1.178E-01	1.026E-01	6.010E-02	NOT IDENT.
CO-60	2.410E-02	4.617E-02	4.065E-02	2.355E-02	NOT IDENT.
ZN-65	2.871E-02	1.249E-01	9.294E-02	6.370E-02	NOT IDENT.
SE-75	3.003E-02	5.697E-02	4.550E-02	2.907E-02	NOT IDENT.
SR-85	3.971E-02	4.818E-02	3.836E-02	2.458E-02	NOT IDENT.
Y-88	9.670E-03	3.824E-02	3.371E-02	1.951E-02	NOT IDENT.
Y-91	-3.143E+00	2.902E+01	2.408E+01	1.481E+01	NOT IDENT.
NB-94	-1.589E-02	3.872E-02	3.115E-02	1.976E-02	NOT IDENT.
NB-95	3.708E-02	6.706E-02	5.058E-02	3.421E-02	NOT IDENT.
NB-95M	6.514E-01	2.077E-01	1.726E-01	1.060E-01	NOT IDENT.
ZR-95	-4.135E-02	9.199E-02	7.312E-02	4.693E-02	NOT IDENT.
MO-99	5.861E+01	8.659E+01	0.000E+00	4.418E+01	SHORT HLIF
TC-99M	-1.456E+25	2.284E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.178E-02	5.270E-02	4.561E-02	2.689E-02	NOT IDENT.
RH-106	-1.712E-01	3.809E-01	3.085E-01	1.943E-01	NOT IDENT.
RU-106	-1.712E-01	3.805E-01	3.085E-01	1.942E-01	NOT IDENT.
AG-108M	-2.134E-02	3.531E-02	2.926E-02	1.802E-02	NOT IDENT.
AG-110M	1.486E-01	5.345E-02	4.803E-02	2.727E-02	NOT IDENT.
SN-113	1.462E-02	5.252E-02	4.620E-02	2.680E-02	NOT IDENT.
CD-115	-7.416E+01	1.196E+02	0.000E+00	6.103E+01	SHORT HLIF
SN-117M	-9.058E-02	9.138E-02	7.548E-02	4.662E-02	NOT IDENT.
TE-123M	-2.628E-02	3.408E-02	2.841E-02	1.739E-02	NOT IDENT.
SB-124	7.630E-02	8.151E-02	8.082E-02	4.159E-02	NOT IDENT.
SB-125	1.185E-02	1.032E-01	8.952E-02	5.266E-02	FAIL ABUN
TE-125M	1.609E+01	1.235E+01	1.123E+01	6.299E+00	NOT IDENT.
I-126	4.826E-02	4.059E-01	2.970E-01	2.071E-01	NOT IDENT.
SB-126	-7.958E-03	2.791E-01	1.993E-01	1.424E-01	NOT IDENT.
SB-127	-6.058E-01	5.106E+00	4.213E+00	2.605E+00	NOT IDENT.
I-131	6.709E-02	2.366E-01	2.091E-01	1.207E-01	NOT IDENT.
TE-132	1.766E+00	4.144E+00	3.559E+00	2.114E+00	NOT IDENT.
BA-133	6.256E-03	4.877E-02	3.733E-02	2.488E-02	NOT IDENT.
I-133	-4.344E+05	2.134E+06	0.000E+00	1.089E+06	SHORT HLIF
CS-134	1.022E-01	7.223E-02	4.778E-02	3.685E-02	FAIL ABUN
CS-135	2.015E-01	2.134E-01	1.652E-01	1.089E-01	NOT IDENT.
I-135	-2.972E+23	6.963E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.359E-02	1.676E-01	1.488E-01	8.552E-02	NOT IDENT.
CE-139	-2.197E-02	3.453E-02	2.886E-02	1.762E-02	NOT IDENT.
BA-140	-3.191E-01	4.583E-01	3.584E-01	2.338E-01	NOT IDENT.
LA-140	1.539E-03	1.391E-01	1.185E-01	7.098E-02	NOT IDENT.
CE-141	2.789E-02	8.230E-02	7.205E-02	4.199E-02	NOT IDENT.
CE-143	5.313E+04	1.633E+04	0.000E+00	8.329E+03	SHORT HLIF
CE-144	-1.851E-01	2.532E-01	1.955E-01	1.292E-01	NOT IDENT.
PM-144	5.796E-02	3.869E-02	3.599E-02	1.974E-02	NOT IDENT.
PR-144	4.350E+00	2.906E+00	2.703E+00	1.483E+00	NOT IDENT.
PM-146	-2.049E-02	5.044E-02	4.218E-02	2.574E-02	NOT IDENT.
ND-147	1.102E-01	9.703E-01	8.311E-01	4.951E-01	FAIL ABUN
PM-149	2.067E+02	1.006E+03	0.000E+00	5.132E+02	SHORT HLIF
EU-152	-6.039E-02	1.203E-01	8.753E-02	6.135E-02	NOT IDENT.
GD-153	-1.284E-02	1.067E-01	8.204E-02	5.446E-02	NOT IDENT.
EU-154	1.182E-02	1.435E-01	1.207E-01	7.322E-02	NOT IDENT.
EU-155	1.231E-02	1.206E-01	1.062E-01	6.152E-02	FAIL ABUN
TB-160	3.159E-02	1.751E-01	1.524E-01	8.933E-02	FAIL ABUN
HO-166M	5.332E-02	7.343E-02	6.452E-02	3.746E-02	FAIL ABUN
TA-182	-1.194E-01	2.299E-01	1.828E-01	1.173E-01	FAIL ABUN
IR-192	-6.475E-02	4.171E-02	3.347E-02	2.128E-02	FAIL ABUN
HG-203	-1.345E-02	4.754E-02	4.144E-02	2.425E-02	NOT IDENT.
BI-207	2.789E-02	5.911E-02	5.218E-02	3.016E-02	FAIL ABUN
PB-210	-3.558E+00	5.829E+00	5.002E+00	2.974E+00	NOT IDENT.
PB-211	-9.871E-01	9.905E-01	7.093E-01	5.054E-01	NOT IDENT.
BI-212	2.262E+00	7.433E-01	6.430E-01	3.792E-01	FAIL ABUN
RN-219	2.378E-01	4.887E-01	4.327E-01	2.493E-01	FAIL ABUN
RA-223	-1.126E+00	7.897E-01	6.264E-01	4.029E-01	FAIL ABUN
AC-227	-8.167E-02	2.753E-01	2.271E-01	1.405E-01	FAIL ABUN
TH-227	-8.167E-02	2.754E-01	2.271E-01	1.405E-01	FAIL ABUN
TH-229	1.071E-01	5.935E-01	5.096E-01	3.028E-01	FAIL ABUN
PA-231	5.934E-01	1.629E+00	1.459E+00	8.309E-01	FAIL ABUN
TH-231	-1.126E+00	7.897E-01	6.264E-01	4.029E-01	FAIL ABUN
PA-233	3.066E-03	7.175E-02	6.310E-02	3.661E-02	FAIL ABUN
PA-234	-1.656E-01	3.353E-01	2.716E-01	1.711E-01	NOT IDENT.
PA-234M	1.735E+00	5.163E+00	4.507E+00	2.634E+00	NOT IDENT.
TH-234	4.782E-01	1.770E+00	1.598E+00	9.033E-01	FAIL ABUN
U-238	4.782E-01	1.770E+00	1.598E+00	9.033E-01	FAIL ABUN
NP-239	-2.001E-01	4.494E-01	3.856E-01	2.293E-01	NOT IDENT.
AM-241	-2.094E-01	2.107E-01	1.820E-01	1.075E-01	NOT IDENT.
CM-247	3.049E-02	4.402E-02	3.946E-02	2.246E-02	NOT IDENT.
CF-249	1.241E-02	4.555E-02	4.007E-02	2.324E-02	NOT IDENT.

CF-251	-4.260E-02	1.466E-01	1.240E-01	7.481E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	320.7410
49.72	328.9325
57.36	0.0000
59.54	412.8557
63.29	397.6111
63.29	397.6111
64.28	382.3916
67.75	409.9899
69.67	460.6518
70.83	432.8578
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72.87	409.9889
72.87	409.9889
74.82	411.0995
74.82	411.0995
74.82	411.0995
74.97	411.1842
77.11	412.3861
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77.11	412.3861
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80.19	296.8632
80.57	297.0120
81.00	297.1798
81.07	297.2072
81.07	297.2072
83.79	321.2023
83.79	321.2023
85.43	321.8752
86.48	322.3033
86.55	322.3328
86.79	322.4290
86.94	322.4905
87.57	322.7455
88.03	322.9314
88.47	323.1083
89.96	323.7043
91.11	324.1619
92.59	324.7451
92.59	324.7451
93.35	325.0437
94.67	319.3566
94.87	353.5475
94.87	353.5475
95.86	394.3279
97.43	340.6209
98.44	300.5365
99.53	307.9332
100.11	308.6965
103.18	378.6988
103.37	368.0137
105.31	359.0079
106.12	373.0768
109.28	337.9259
111.00	381.9895
111.76	381.3146
116.30	337.4994
117.23	347.7650
121.12	323.2300
121.78	317.4578
122.06	317.5487
123.07	342.5320
131.20	356.3301
133.52	374.3685
136.00	336.1135

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140.51	0.0000
143.76	348.7632
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144.24	351.9778
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152.43	310.3938
153.25	303.4175
154.21	300.5859
154.21	300.5859
156.02	350.5550
158.56	359.5972
159.00	351.4629
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163.33	311.2656
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176.60	317.8481
177.52	307.5861
181.07	0.0000
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185.72	290.5720
193.51	282.7569
197.04	260.0635
205.31	284.8282
210.85	291.1433
215.65	263.6210
222.11	243.1133
227.38	261.4270
228.16	257.2067
228.18	257.2103
235.69	297.9545
235.96	285.7375
235.96	285.7375
238.63	248.0513
238.63	248.0513
240.99	248.4393
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244.70	232.7354
252.40	204.8801
252.80	196.0704
256.23	194.2788
256.23	194.2788
260.90	0.0000
264.66	184.5191
268.22	209.3817
269.46	218.4950
269.46	218.4950
271.23	191.8398
273.65	260.3522
276.40	172.3573
277.37	165.3346
277.60	183.3551
278.00	205.2278
279.20	213.4823
279.54	236.0495
280.46	224.4587
283.69	193.2792
284.31	192.4462
285.41	188.9547
285.90	0.0000
287.50	212.7220
293.27	0.0000
295.22	172.7627
295.96	172.8369
298.57	173.0944
299.98	183.8707
299.98	183.8707
300.09	177.8042
300.09	177.8042
300.13	177.8090
301.36	180.9743
302.85	168.9503
304.50	179.7728
304.50	179.7728
304.85	179.8088
308.46	185.0598
311.90	170.7286

316.51	198.7690
319.41	153.0009
320.08	150.2915
323.87	228.2127
323.87	228.2127
328.76	170.4516
333.37	148.5840
334.37	144.0164
334.37	144.0164
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338.28	141.5222
338.32	141.5240
338.32	141.5240
338.32	141.5240
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340.55	142.9339
344.28	154.1074
351.06	149.9609
351.93	136.8999
356.01	122.1511
364.49	130.2240
366.42	0.0000
383.85	151.4731
388.16	136.5116
388.63	141.3172
391.69	131.9608
400.66	148.8469
401.81	144.1223
402.40	135.5128
404.85	178.9637
410.95	146.6637
414.70	124.6853
423.72	118.4034
427.09	118.5822
427.87	119.5962
433.94	141.3697
453.88	132.7703
463.37	125.0787
468.07	117.0824
473.00	108.0713
476.78	106.2542
477.60	86.4233
487.02	89.7506
492.35	0.0000
497.08	103.1358
511.00	91.6271
514.00	85.6874
527.90	0.0000
529.87	0.0000
531.02	85.2428
537.26	101.7212
546.56	0.0000
563.25	86.2846
569.33	86.4773
569.50	86.4835
569.70	88.5489
583.19	101.3999
600.60	97.6067
602.73	95.5092
604.72	99.0496
609.32	93.9880
609.32	93.9880
610.33	97.5033
614.28	108.0989
618.01	85.8938
621.93	95.4500
621.93	95.4500
633.25	92.6600
635.95	72.7212
636.99	75.9094
645.85	81.4234
657.76	67.2375
661.66	70.8675
661.66	70.8675
664.57	0.0000
666.33	70.9766
666.50	78.0778
677.62	60.9076

685.70	64.2803
695.00	76.2921
696.49	56.9776
696.51	56.9776
697.00	64.5132
702.65	86.1699
706.68	91.6718
711.68	74.5338
720.70	70.4098
721.93	0.0000
722.78	68.6477
722.91	68.6508
723.31	72.2738
724.19	68.6786
727.33	50.6543
733.00	55.7256
735.93	68.5633
739.50	0.0000
747.24	67.7065
752.31	63.4347
753.82	63.4644
756.73	77.7568
763.94	76.8257
765.81	87.8496
766.42	84.2042
777.92	0.0000
778.90	64.3048
783.70	56.1152
785.37	61.6648
795.86	49.0592
801.95	62.4229
810.29	75.0855
810.76	64.8973
815.77	50.1350
818.51	58.5357
832.01	51.2973
834.85	59.7383
836.80	0.0000
846.77	51.5066
856.80	61.1735
860.56	66.7416
871.09	57.5052
873.19	57.5375
875.33	0.0000
879.36	60.4674
880.51	51.0359
883.24	61.4757
884.68	62.4457
889.28	51.1545
898.04	64.5662
911.20	58.1208
911.20	58.1208
911.20	58.1208
926.50	58.3516
937.49	63.3118
944.13	54.7711
946.00	58.6432
949.00	46.1807
962.29	46.3350
964.08	61.8073
966.15	61.8398
968.97	69.6182
968.97	69.6182
968.97	69.6182
983.53	57.2547
996.26	56.4601
1001.03	41.9073
1004.73	60.4788
1037.84	43.2624
1038.76	0.0000
1048.07	41.3950
1050.41	51.2806
1050.41	51.2806
1063.66	46.4932
1085.87	58.6639
1099.45	50.8651
1112.07	51.4390
1115.54	60.0586

1120.29	60.1245
1120.29	60.1245
1120.55	60.1270
1121.30	60.1367
1131.51	0.0000
1173.23	54.7449
1177.93	54.7998
1189.05	49.8454
1204.77	70.4235
1221.41	64.5253
1231.02	80.0503
1235.36	74.9872
1238.28	79.1431
1260.41	0.0000
1271.85	53.8175
1274.44	45.5612
1274.54	45.5630
1291.59	35.3281
1298.22	0.0000
1312.11	44.8634
1332.49	31.4270
1365.19	28.4645
1368.63	0.0000
1384.29	32.8013
1408.01	24.4459
1457.56	0.0000
1460.82	22.5398
1489.16	22.6560
1505.03	22.7201
1596.21	20.7294
1620.50	14.1922
1678.03	0.0000
1690.97	6.7009
1764.49	11.8659
1764.49	11.8659
1770.23	32.9636
1771.35	19.3938
1791.20	0.0000
1836.06	10.7744

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248521003

Total Uranium Activity	1.4593E+00	ug/g
Total Uranium Counting Unc.	5.2682E+00	ug/g
Total Uranium Tpu	2.6879E-06	ug/g
Total Uranium Mda	4.7546E+00	ug/g

```
*******************************************************************************
*                                                                             *
*                          GEL Laboratories LLC                          *
*                               2040 SAVAGE ROAD                              *
*                             CHARLESTON ,SC 29417                            *
*                              GROSS GAMMA REPORT                             *
*                                                                             *
*                                                                             *
*******************************************************************************
*                                                                             *
*   BATCH ID      : 961099                    SAMPLE ID  : G248521003         *
*   ANALYST       : MXR1                      DETECTOR   : GAM23              *
*   SAMPLE DATE   : 25-FEB-2010 12:00:00.00   COUNT TIME :    0 02:00:00.00   *
*   ANALYSIS DATE: 19-MAR-2010 20:43:07.37    SAMPLE ALQT:  127.780 GRAM      *
*                                                                             *
*******************************************************************************
```

```
GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 9.581E+00
GROSS GAMMA ERROR   (pCi/GRAM  )  : 1.333E+00
GROSS GAMMA MDA     (pCi/GRAM  )  : 3.104E+00
GROSS GAMMA DLC     (pCi/GRAM  )  : 1.505E+00
```

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:11:45.27

```
*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521004.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:11:18
Sample ID         : G248521004           Sample quantity  : 1.02780E+02 GRAM
Detector name     : GAM05                Detector geometry: CAN
Elapsed live time: 0 04:00:00.00         Elapsed real time: 0 04:00:03.43  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	45.95*	382	1014	1.00	92.89	88	10	2.65E-02	18.1	
2	0	62.75*	597	1360	1.25	126.48	122	10	4.14E-02	12.6	
3	4	74.36*	1453	1257	1.46	149.70	143	17	1.01E-01	5.3	4.58E+00
4	4	76.65*	2019	916	1.13	154.27	143	17	1.40E-01	3.5	
5	3	83.74	361	890	1.38	168.46	164	28	2.51E-02	15.0	1.94E+00
6	3	86.81	770	869	1.32	174.60	164	28	5.34E-02	7.6	
7	3	89.39	505	851	1.38	179.76	164	28	3.50E-02	11.2	
8	3	92.35*	1121	827	1.37	185.67	164	28	7.79E-02	5.8	
9	0	104.92	196	760	1.29	210.81	206	10	1.36E-02	27.2	
10	0	128.33	229	728	1.44	257.63	253	10	1.59E-02	23.0	
11	0	185.60*	501	716	1.58	372.14	367	11	3.48E-02	11.9	
12	0	208.90	246	468	1.23	418.73	415	10	1.71E-02	17.6	
13	3	238.23*	2294	289	1.24	477.39	471	20	1.59E-01	2.5	3.05E+00
14	3	241.28	641	441	2.03	483.48	471	20	4.45E-02	10.4	
15	0	269.62	188	385	1.52	540.15	536	10	1.30E-02	20.8	
16	0	277.11	76	423	1.50	555.13	550	10	5.25E-03	52.5	
17	2	294.78*	722	276	1.39	590.45	584	20	5.01E-02	5.6	1.80E+00
18	2	299.57	171	236	1.49	600.04	584	20	1.19E-02	16.5	
19	0	327.85	97	371	0.86	656.58	651	11	6.73E-03	39.8	
20	0	337.93*	454	378	1.36	676.73	671	12	3.15E-02	10.0	
21	0	351.37*	1142	393	1.39	703.61	696	14	7.93E-02	4.8	
22	0	409.48	69	208	2.29	819.79	815	9	4.81E-03	39.7	
23	0	462.67*	150	252	1.53	926.12	920	13	1.04E-02	25.0	
24	0	510.60*	271	317	2.00	1021.94	1013	20	1.88E-02	19.7	
25	0	582.65*	619	221	1.49	1165.98	1160	14	4.30E-02	6.8	
26	0	608.74*	756	208	1.53	1218.13	1212	14	5.25E-02	5.6	
27	0	661.20	576	224	1.78	1322.98	1317	16	4.00E-02	7.1	
28	0	726.51	156	200	1.53	1453.53	1446	17	1.08E-02	22.3	
29	0	767.45	74	106	1.50	1535.36	1531	10	5.11E-03	28.6	
30	0	794.88*	73	121	1.43	1590.18	1585	13	5.07E-03	35.0	
31	0	859.80*	89	121	2.01	1719.92	1714	14	6.17E-03	28.7	
32	0	910.56*	410	135	1.95	1821.38	1814	15	2.85E-02	8.1	
33	5	964.04	84	85	2.20	1928.24	1923	29	5.80E-03	23.5	2.17E+00
34	5	968.34	293	82	2.06	1936.84	1923	29	2.03E-02	8.5	
35	0	1119.95*	207	122	1.96	2239.79	2233	18	1.44E-02	14.7	
36	0	1459.98*	1610	39	1.87	2919.12	2910	17	1.12E-01	2.7	
37	0	1587.60	30	38	1.43	3174.03	3168	12	2.05E-03	46.1	
38	0	1660.22	15	14	0.65	3319.07	3315	9	1.01E-03	52.7	

Sample ID : G248521004 Acquisition date : 19-MAR-2010 23:11:18

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1763.66	170	4	1.93	3525.64	3518	17	1.18E-02	8.1	

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

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 03:11:48

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521004.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:11:18
Sample ID : G248521004 Sample quantity : 102.78 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA5 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:03.43 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.747E+01	2.257E+00	5.101E-01	3.173E-02	53.850
CD-109	+	88.03	*	4.995E+00	8.471E-01	8.992E-01	6.848E-02	5.555
SN-126		64.28		1.308E+00	3.370E-01	4.473E-01	6.666E-02	2.924
	+	86.94		2.007E+00	8.805E-01	3.602E-01	1.483E-01	5.573
	+	87.57	*	4.829E-01	8.189E-02	8.681E-02	6.611E-03	5.562
CS-135	+	268.22	*	4.916E-01	2.116E-01	2.297E-01	2.457E-02	2.140
BA-137M	+	661.66	*	5.812E-01	9.110E-02	5.497E-02	3.615E-03	10.573
CS-137	+	661.66	*	6.140E-01	9.629E-02	5.807E-02	3.831E-03	10.573
EU-155	+	86.55		5.872E-01	9.985E-02	1.053E-01	8.136E-03	5.579
	+	105.31	*	2.292E-01	1.271E-01	1.549E-01	1.677E-02	1.480
TL-208	+	277.37		4.906E-01	5.188E-01	5.804E-01	7.552E-02	0.845
	+	583.19	*	5.884E-01	9.076E-02	5.963E-02	4.379E-03	9.868
	+	860.56		8.155E-01	4.760E-01	4.056E-01	4.116E-02	2.011
PB-210	+	46.54	*	2.163E+00	7.999E-01	7.765E-01	5.989E-02	2.785
BI-211	+	72.87		2.683E+01	3.535E+00	2.827E+00	2.226E-01	9.489
	+	351.06	*	4.587E+00	5.705E-01	3.051E-01	2.418E-02	15.034
PB-212	+	74.82		3.210E+00	5.257E-01	3.394E-01	4.238E-02	9.457
	+	77.11		2.690E+00	2.826E-01	2.050E-01	1.595E-02	13.123
	+	238.63	*	2.011E+00	2.403E-01	8.502E-02	9.203E-03	23.649
	+	300.09		2.362E+00	8.210E-01	1.133E+00	1.217E-01	2.084
BI-214	+	609.32	*	1.397E+00	1.958E-01	1.122E-01	9.474E-03	12.442
	+	1120.29		2.014E+00	6.225E-01	4.750E-01	4.564E-02	4.241
	+	1764.49		2.358E+00	4.075E-01	2.871E-01	1.659E-02	8.216
PB-214	+	74.82		5.690E+00	8.749E-01	6.016E-01	6.705E-02	9.457
	+	77.11		4.742E+00	6.334E-01	3.613E-01	4.098E-02	13.123
	+	242.00		3.411E+00	8.091E-01	5.171E-01	5.876E-02	6.596
	+	295.22		1.761E+00	2.787E-01	2.018E-01	2.238E-02	8.725
	+	351.93	*	1.665E+00	2.265E-01	1.127E-01	1.085E-02	14.777
RA-224	+	240.99	*	6.031E+00	1.387E+00	9.113E-01	8.916E-02	6.618
RA-226	+	609.32	*	1.397E+00	1.958E-01	1.122E-01	9.474E-03	12.442
	+	1120.29		2.014E+00	6.225E-01	4.750E-01	4.564E-02	4.241
	+	1764.49		2.358E+00	4.075E-01	2.871E-01	1.659E-02	8.216
AC-228	+	338.32		2.023E+00	9.333E-01	3.682E-01	1.530E-01	5.495
	+	911.20	*	1.921E+00	3.946E-01	2.432E-01	3.086E-02	7.900

Sample ID : G248521004 Acquisition date : 19-MAR-2010 23:11:18

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	968.97		2.367E+00	7.079E-01	3.694E-01	9.099E-02	6.407
RA-228	+	338.32		2.023E+00	9.333E-01	3.682E-01	1.530E-01	5.495
	+	911.20	*	1.921E+00	3.946E-01	2.432E-01	3.086E-02	7.900
	+	968.97		2.367E+00	7.079E-01	3.694E-01	9.099E-02	6.407
TH-228	+	74.82		3.210E+00	4.246E-01	3.394E-01	2.687E-02	9.457
	+	77.11		2.690E+00	2.826E-01	2.050E-01	1.595E-02	13.123
	+	238.63	*	2.011E+00	2.403E-01	8.502E-02	9.203E-03	23.649
	+	300.09		2.362E+00	1.644E+00	1.133E+00	6.941E-01	2.084
TH-229	+	85.43		1.215E+00	2.061E-01	2.172E-01	1.660E-02	5.596
	+	88.47		4.910E-01	1.170E-01	1.342E-01	1.032E-02	3.659
		193.51	*	-3.729E-01	5.128E-01	7.993E-01	7.983E-02	-0.467
		210.85		1.366E+00	9.820E-01	1.438E+00	1.432E-01	0.950
TH-232	+	338.32		2.023E+00	4.349E-01	3.682E-01	2.886E-02	5.495
	+	911.20	*	1.921E+00	3.946E-01	2.432E-01	3.086E-02	7.900
	+	968.97		2.367E+00	7.079E-01	3.694E-01	9.099E-02	6.407
TH-234	+	63.29	*	3.653E+00	1.137E+00	9.440E-01	1.713E-01	3.870
	+	92.59		6.238E+00	1.549E+00	7.711E-01	1.696E-01	8.089
U-235	+	89.96		3.396E+00	1.126E+00	9.323E-01	2.273E-01	3.643
	+	93.35		4.712E+00	1.213E+00	5.504E-01	1.270E-01	8.561
		143.76	*	2.320E-01	2.061E-01	3.251E-01	6.201E-02	0.714
		163.33		3.321E-01	4.313E-01	7.033E-01	1.320E-01	0.472
	+	185.72		2.823E-01	7.263E-02	6.280E-02	6.268E-03	4.495
		205.31		-3.427E-01	5.256E-01	7.035E-01	1.325E-01	-0.487
NP-237	+	86.48	*	1.441E+00	3.886E-01	2.582E-01	5.762E-02	5.580
		95.86		-3.218E-01	8.382E-01	1.182E+00	2.850E-01	-0.272
U-238	+	63.29	*	3.653E+00	1.137E+00	9.440E-01	1.713E-01	3.870
	+	92.59		6.238E+00	8.900E-01	7.711E-01	6.480E-02	8.089
ANH-511	+	511.00	*	1.944E-01	7.770E-02	4.508E-02	2.885E-03	4.312

---- 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	*	-1.658E-01	3.671E-01	5.857E-01	4.194E-02	-0.283
NA-22		1274.54	*	-2.369E-02	4.306E-02	6.646E-02	3.871E-03	-0.357
NA-24		1368.63	*	-8.212E+02	4.306E-02	Half-Life too short		
SC-46		889.28	*	-2.904E-02	3.880E-02	6.044E-02	6.071E-03	-0.481
	+	1120.55		3.622E-01	1.093E-01	1.379E-01	9.487E-03	2.626
V-48		944.13		-2.875E-02	1.164E+00	1.916E+00	1.853E-01	-0.015
		983.53	*	-8.595E-03	9.772E-02	1.597E-01	1.463E-02	-0.054
		1312.11		1.825E-01	1.146E-01	2.078E-01	1.205E-02	0.878
CR-51		320.08	*	-3.991E-01	4.436E-01	6.887E-01	6.086E-02	-0.579
MN-54		834.85	*	-8.428E-03	4.038E-02	6.622E-02	6.067E-03	-0.127
CO-56		846.77	*	1.970E-02	4.163E-02	7.105E-02	6.644E-03	0.277
		1037.84		-8.306E-02	3.322E-01	5.346E-01	4.711E-02	-0.155
		1238.28		1.045E-01	1.051E-01	1.763E-01	1.090E-02	0.593
		1771.35		-3.508E-03	2.643E-01	3.703E-01	2.139E-02	-0.009
CO-57		122.06	*	1.053E-04	2.421E-02	3.802E-02	5.394E-03	0.003
		136.47		-5.775E-02	2.015E-01	3.236E-01	4.333E-02	-0.178

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-58		810.76	*	-4.433E-02	4.050E-02	6.206E-02	5.462E-03	-0.714
FE-59		1099.45	*	3.067E-02	1.026E-01	1.711E-01	1.385E-02	0.179
		1291.59		6.728E-02	1.310E-01	2.210E-01	1.642E-02	0.304
CO-60		1173.23		-4.533E-02	4.697E-02	7.113E-02	4.126E-03	-0.637
		1332.49	*	1.038E-02	3.891E-02	6.435E-02	3.724E-03	0.161
ZN-65		1115.54	*	2.487E-02	1.201E-01	1.711E-01	1.195E-02	0.145
SE-75		121.12		2.017E-02	1.247E-01	2.037E-01	3.182E-02	0.099
		136.00		-1.960E-02	3.979E-02	6.346E-02	8.277E-03	-0.309
		264.66	*	1.890E-02	4.943E-02	7.332E-02	7.000E-03	0.258
		279.54		5.057E-02	1.217E-01	1.804E-01	1.728E-02	0.280
		400.66		-1.876E-02	2.734E-01	4.486E-01	4.090E-02	-0.042
SR-85		514.00	*	7.362E-02	4.732E-02	7.309E-02	4.685E-03	1.007
Y-88		898.04		-2.777E-02	4.179E-02	6.567E-02	6.715E-03	-0.423
		1836.06	*	-2.732E-03	3.652E-02	5.937E-02	3.397E-03	-0.046
Y-91		1204.77	*	-6.123E+00	2.446E+01	3.905E+01	2.269E+00	-0.157
NB-94		702.65	*	-1.557E-02	3.369E-02	5.502E-02	3.937E-03	-0.283
		871.09		3.295E-02	3.402E-02	5.962E-02	5.810E-03	0.553
NB-95		765.81	*	6.990E-02	5.349E-02	8.413E-02	6.805E-03	0.831
NB-95M		235.69	*	1.605E+00	2.445E-01	3.206E-01	3.512E-02	5.006
ZR-95		724.19		1.871E-01	1.290E-01	2.030E-01	1.684E-02	0.922
		756.73	*	2.190E-03	8.403E-02	1.404E-01	1.253E-02	0.016
MO-99		140.51		-1.689E-04	8.403E-02	Half-Life too short		
		181.07		-1.911E-05	8.403E-02	Half-Life too short		
		366.42		7.077E-04	8.403E-02	Half-Life too short		
		739.50	*	-6.293E-06	8.403E-02	Half-Life too short		
		777.92		-1.436E-04	8.403E-02	Half-Life too short		
TC-99M		140.51	*	-3.317E+19	8.403E-02	Half-Life too short		
RU-103		497.08	*	-9.609E-03	4.735E-02	7.634E-02	9.689E-03	-0.126
		610.33		1.613E+01	2.889E+00	3.021E+00	4.643E-01	5.340
RH-106		621.93	*	-1.191E-01	3.371E-01	5.312E-01	6.394E-02	-0.224
		1050.41		-5.973E-02	2.721E+00	4.451E+00	3.624E-01	-0.013
RU-106		621.93	*	-1.191E-01	3.369E-01	5.312E-01	3.502E-02	-0.224
		1050.41		-5.973E-02	2.721E+00	4.451E+00	3.624E-01	-0.013
AG-108M		433.94	*	-2.724E-02	2.931E-02	4.581E-02	2.958E-03	-0.595
		614.28		-1.848E-02	4.092E-02	5.465E-02	3.801E-03	-0.338
		722.91		-9.788E-03	4.313E-02	6.107E-02	4.744E-03	-0.160
AG-110M		657.76	*	1.126E-01	4.767E-02	7.636E-02	5.279E-03	1.475
		677.62		8.374E-02	3.206E-01	5.454E-01	3.878E-02	0.154
		706.68		-1.306E-01	2.138E-01	3.456E-01	2.595E-02	-0.378
		763.94		-2.901E-02	1.849E-01	2.621E-01	2.179E-02	-0.111
		884.68		-3.683E-03	4.830E-02	7.949E-02	8.115E-03	-0.046
		937.49		-1.456E-01	1.163E-01	1.738E-01	1.743E-02	-0.838
		1384.29		-3.874E-02	1.585E-01	2.594E-01	1.599E-02	-0.149
		1505.03		-1.686E-01	2.836E-01	4.435E-01	2.607E-02	-0.380
SN-113		391.69	*	-7.017E-03	4.730E-02	7.744E-02	4.804E-03	-0.091
CD-115		260.90		-1.500E-04	4.730E-02	Half-Life too short		
		492.35		-1.930E-04	4.730E-02	Half-Life too short		
		527.90	*	-1.011E-04	4.730E-02	Half-Life too short		
SN-117M		156.02		-1.764E+00	3.050E+00	4.824E+00	5.319E-01	-0.366

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		158.56	*	-1.845E-02	7.498E-02	1.200E-01	1.290E-02	-0.154
TE-123M		159.00	*	-1.836E-02	2.831E-02	4.462E-02	4.795E-03	-0.411
SB-124		602.73		-1.336E-02	4.959E-02	6.746E-02	4.443E-03	-0.198
		645.85		1.125E-01	5.504E-01	8.958E-01	6.471E-02	0.126
		722.78		-1.470E-01	4.698E-01	6.602E-01	5.068E-02	-0.223
		1690.97	*	-6.168E-03	8.007E-02	1.309E-01	8.321E-03	-0.047
SB-125		427.87	*	-2.872E-02	9.128E-02	1.476E-01	9.241E-03	-0.195
	+	463.37		9.466E-01	4.774E-01	5.627E-01	3.988E-02	1.682
		600.60		-1.975E-01	1.926E-01	2.825E-01	2.090E-02	-0.699
		635.95		7.186E-02	2.991E-01	4.877E-01	3.649E-02	0.147
TE-125M		109.28	*	1.011E+01	1.114E+01	1.563E+01	2.032E+00	0.647
I-126		388.63		-7.050E-02	2.494E-01	4.061E-01	2.417E-02	-0.174
		666.33	*	1.855E-01	4.033E-01	5.781E-01	3.839E-02	0.321
		753.82		1.420E+00	2.810E+00	4.815E+00	3.808E-01	0.295
SB-126		414.70		-2.163E-04	1.315E-01	1.871E-01	1.115E-02	-0.001
		666.50		5.828E-02	1.407E-01	2.010E-01	1.335E-02	0.290
		695.00		-6.418E-02	1.267E-01	2.069E-01	1.458E-02	-0.310
		697.00		5.706E-02	4.346E-01	7.330E-01	5.185E-02	0.078
		720.70	*	4.912E-02	2.490E-01	3.651E-01	2.708E-02	0.135
		856.80		1.008E+00	7.977E-01	1.260E+00	1.199E-01	0.799
SB-127		252.40		8.247E+00	1.583E+01	2.634E+01	1.119E+01	0.313
		473.00		2.874E+00	6.159E+00	1.027E+01	1.411E+00	0.280
		685.70	*	3.904E-01	5.152E+00	8.676E+00	1.110E+00	0.045
		783.70		2.619E+01	1.461E+01	2.577E+01	3.727E+00	1.016
I-131		80.19		1.571E+00	8.415E+00	8.854E+00	6.961E-01	0.177
		284.31		-3.899E-01	2.710E+00	4.397E+00	4.248E-01	-0.089
		364.49	*	-6.909E-02	2.248E-01	3.668E-01	2.781E-02	-0.188
		636.99		1.370E+00	3.259E+00	5.365E+00	3.919E-01	0.255
TE-132		49.72		-3.101E+01	2.056E+01	2.808E+01	3.482E+00	-1.104
		111.76		-6.391E+01	1.448E+02	2.327E+02	3.666E+01	-0.275
		116.30		1.787E+01	1.248E+02	2.040E+02	3.361E+01	0.088
		228.16	*	2.012E+00	3.282E+00	5.594E+00	1.017E+00	0.360
BA-133		81.00		2.259E-02	9.304E-02	9.810E-02	1.475E-02	0.230
	+	276.40		4.541E-01	4.811E-01	6.139E-01	8.935E-02	0.740
		302.85		-7.252E-02	1.476E-01	2.074E-01	2.735E-02	-0.350
		356.01	*	7.226E-03	4.598E-02	6.660E-02	8.047E-03	0.109
		383.85		2.552E-01	2.940E-01	5.002E-01	5.433E-02	0.510
I-133		529.87	*	-1.208E+00	2.940E-01	Half-Life too short		
		875.33		5.610E+00	2.940E-01	Half-Life too short		
		1298.22		-1.081E+02	2.940E-01	Half-Life too short		
CS-134		563.25		3.518E-02	4.109E-01	6.356E-01	4.222E-02	0.055
		569.33		-6.819E-02	2.381E-01	3.538E-01	2.370E-02	-0.193
		604.72		7.411E-03	3.928E-02	5.543E-02	3.666E-03	0.134
	+	795.86	*	1.036E-01	7.308E-02	9.165E-02	7.893E-03	1.130
		801.95		-2.439E-01	4.774E-01	6.509E-01	5.658E-02	-0.375
		1365.19		2.447E-01	1.281E+00	2.102E+00	1.343E-01	0.116
I-135		546.56		2.508E+18	1.281E+00	Half-Life too short		
		836.80		2.931E+18	1.281E+00	Half-Life too short		
		1038.76		-4.341E+17	1.281E+00	Half-Life too short		

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		1131.51		1.224E+17	1.281E+00	Half-Life too short		
		1260.41	*	-2.209E+17	1.281E+00	Half-Life too short		
		1457.56		1.594E+20	1.281E+00	Half-Life too short		
		1678.03		-2.200E+17	1.281E+00	Half-Life too short		
		1791.20		1.344E+18	1.281E+00	Half-Life too short		
CS-136		153.25		3.689E-01	1.171E+00	1.908E+00	2.409E-01	0.193
		176.60		1.070E-01	7.101E-01	1.146E+00	1.232E-01	0.093
		273.65		-5.856E-01	1.252E+00	1.167E+00	1.174E-01	-0.502
		340.55		8.165E-01	2.495E-01	4.030E-01	3.281E-02	2.026
		818.51		2.296E-02	1.104E-01	1.857E-01	1.656E-02	0.124
		1048.07	*	8.825E-02	1.651E-01	2.800E-01	2.400E-02	0.315
		1235.36		1.698E+00	8.933E-01	1.585E+00	1.570E-01	1.071
CE-139		165.86	*	-3.362E-03	3.069E-02	4.925E-02	4.889E-03	-0.068
BA-140		162.66		8.202E-01	1.184E+00	1.941E+00	2.094E-01	0.423
		304.85		9.671E-01	1.976E+00	3.035E+00	8.896E-01	0.319
		423.72		5.117E-01	2.972E+00	4.910E+00	1.586E+00	0.104
		537.26	*	-1.962E-01	4.146E-01	6.470E-01	2.163E-01	-0.303
LA-140	+	328.76		7.970E-01	6.382E-01	7.910E-01	6.842E-02	1.008
		487.02		7.370E-02	2.126E-01	3.526E-01	2.476E-02	0.209
		815.77		2.766E-01	4.857E-01	8.345E-01	8.216E-02	0.332
		1596.21	*	-1.561E-01	1.349E-01	1.759E-01	1.034E-02	-0.888
CE-141		145.44	*	5.815E-02	7.052E-02	1.161E-01	1.420E-02	0.501
CE-143		57.36		-8.792E-03	7.052E-02	Half-Life too short		
		293.27	*	5.929E-02	7.052E-02	Half-Life too short		
		664.57		1.210E-01	7.052E-02	Half-Life too short		
		721.93		-3.084E-02	7.052E-02	Half-Life too short		
CE-144		80.12		5.537E-01	2.446E+00	2.579E+00	1.993E-01	0.215
		133.52	*	1.455E-01	2.174E-01	3.141E-01	5.742E-02	0.463
PM-144		476.78		-1.204E-02	6.789E-02	1.099E-01	7.983E-03	-0.110
		618.01		1.014E-02	3.585E-02	5.532E-02	3.821E-03	0.183
		696.49	*	-1.241E-02	3.721E-02	6.131E-02	4.337E-03	-0.202
PR-144		696.51	*	-9.082E-01	2.797E+00	4.610E+00	3.258E-01	-0.197
		1489.16		-7.695E+00	1.216E+01	1.879E+01	1.104E+00	-0.410
PM-146		453.88	*	3.170E-02	4.399E-02	7.423E-02	6.467E-03	0.427
		633.25		6.933E-01	1.531E+00	2.493E+00	9.420E-01	0.278
		735.93		-1.376E-01	1.516E-01	2.186E-01	6.064E-02	-0.630
		747.24		-5.992E-02	1.007E-01	1.619E-01	2.287E-02	-0.370
ND-147	+	91.11		3.926E+00	5.777E-01	7.890E-01	7.023E-02	4.976
		319.41		-5.742E+00	5.091E+00	8.047E+00	6.755E-01	-0.714
		531.02	*	8.983E-02	1.085E+00	1.547E+00	2.138E-01	0.058
PM-149		285.90	*	3.093E-04	1.085E+00	Half-Life too short		
EU-152		121.78		1.744E-02	6.833E-02	1.081E-01	1.615E-02	0.161
		244.70		1.863E-01	3.227E-01	4.842E-01	4.721E-02	0.385
		344.28	*	-7.558E-02	1.389E-01	1.490E-01	1.224E-02	-0.507
		778.90		-2.035E-01	2.749E-01	4.377E-01	3.628E-02	-0.465
	+	964.08		7.279E-01	3.489E-01	5.563E-01	5.241E-02	1.309
		1085.87		8.593E-02	3.941E-01	6.542E-01	4.925E-02	0.131
		1112.07		2.170E-01	3.658E-01	5.605E-01	3.947E-02	0.387
		1408.01		7.568E-02	1.677E-01	2.918E-01	1.705E-02	0.259

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GD-153		69.67		-5.000E-01	1.095E+00	1.548E+00	1.231E-01	-0.323
		97.43	*	1.476E-01	7.895E-02	1.190E-01	1.104E-02	1.240
		103.18		1.644E-03	1.107E-01	1.585E-01	1.639E-02	0.010
EU-154		123.07		5.115E-03	5.289E-02	7.552E-02	1.203E-02	0.068
		723.31		-2.753E-02	2.036E-01	2.907E-01	2.456E-02	-0.095
		873.19		-1.483E-01	2.852E-01	4.548E-01	5.804E-02	-0.326
		996.26		-4.987E-01	4.451E-01	5.666E-01	1.000E-01	-0.880
		1004.73		-2.767E-01	2.355E-01	3.530E-01	4.170E-02	-0.784
		1274.44	*	-7.061E-02	1.214E-01	1.866E-01	1.760E-02	-0.378
TB-160	+	86.79		1.668E+00	2.828E-01	4.159E-01	3.171E-02	4.010
		197.04		1.842E-01	6.442E-01	9.843E-01	9.830E-02	0.187
		215.65		5.232E-01	7.732E-01	1.259E+00	1.252E-01	0.416
	+	298.57		3.570E-01	1.222E-01	2.135E-01	1.900E-02	1.672
		879.36	*	1.278E-01	1.502E-01	2.614E-01	2.583E-02	0.489
		962.29		1.349E+00	6.359E-01	1.048E+00	9.896E-02	1.287
		966.15		1.997E+00	3.468E-01	6.094E-01	5.725E-02	3.277
		1177.93		-1.909E-01	4.298E-01	6.545E-01	3.798E-02	-0.292
		1271.85		-7.123E-01	7.605E-01	1.133E+00	6.583E-02	-0.629
HO-166M		80.57		2.975E-02	2.630E-01	2.755E-01	2.127E-02	0.108
	+	184.41		2.243E-01	5.770E-02	7.136E-02	7.120E-03	3.143
		280.46		2.585E-02	8.786E-02	1.295E-01	1.199E-02	0.200
	+	410.95		3.658E-01	2.913E-01	4.245E-01	2.520E-02	0.862
		711.68	*	9.093E-03	6.168E-02	1.041E-01	7.582E-03	0.087
		752.31		9.676E-02	2.868E-01	4.875E-01	3.844E-02	0.198
		810.29		-7.307E-02	5.706E-02	8.608E-02	7.552E-03	-0.849
TA-182		67.75		-6.496E-02	8.145E-02	9.612E-02	7.694E-03	-0.676
		100.11		7.868E-02	1.734E-01	2.523E-01	2.463E-02	0.312
		152.43		2.877E-01	3.400E-01	5.602E-01	6.390E-02	0.513
		222.11		6.166E-03	3.340E-01	5.631E-01	5.585E-02	0.011
	+	1121.30		9.872E-01	2.978E-01	3.746E-01	2.571E-02	2.635
		1189.05		-6.854E-02	3.303E-01	5.293E-01	3.074E-02	-0.129
		1221.41	*	2.099E-01	2.085E-01	3.599E-01	2.093E-02	0.583
		1231.02		-4.972E-01	5.170E-01	7.836E-01	4.556E-02	-0.634
IR-192	+	295.96		1.396E+00	2.019E-01	2.896E-01	2.612E-02	4.818
		308.46		-8.473E-02	9.484E-02	1.518E-01	1.323E-02	-0.558
		316.51	*	-8.830E-03	3.540E-02	5.828E-02	4.947E-03	-0.152
		468.07		-2.509E-02	7.913E-02	1.091E-01	7.722E-03	-0.230
HG-203		70.83		6.688E-01	9.519E-01	1.384E+00	2.172E-01	0.483
	+	72.87		7.456E+00	1.376E+00	1.130E+00	1.710E-01	6.599
		279.20	*	9.321E-03	4.700E-02	6.893E-02	6.538E-03	0.135
BI-207		72.81		1.176E+00	1.546E-01	2.324E-01	1.830E-02	5.062
	+	74.97		9.255E-01	1.219E-01	1.847E-01	1.445E-02	5.012
		569.70		-2.624E-03	3.646E-02	5.476E-02	3.584E-03	-0.048
		1063.66	*	4.201E-03	5.822E-02	9.575E-02	7.583E-03	0.044
		1770.23		-1.092E-01	4.921E-01	6.571E-01	3.795E-02	-0.166
PB-211		404.85	*	-5.956E-01	8.943E-01	1.155E+00	5.541E-01	-0.516
		427.09		2.274E-01	1.516E+00	2.499E+00	1.146E+00	0.091
		832.01		7.447E-01	1.114E+00	1.806E+00	9.379E-01	0.412
BI-212	+	727.33	*	2.305E+00	1.061E+00	1.179E+00	1.382E-01	1.955

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		785.37		2.927E+00	3.364E+00	5.847E+00	4.904E-01	0.501
		1620.50		2.924E+00	2.431E+00	4.509E+00	2.646E-01	0.648
RN-219		271.23		3.691E-01	4.018E-01	4.222E-01	4.614E-02	0.874
		401.81	*	-8.991E-02	4.165E-01	6.788E-01	9.145E-02	-0.132
RA-223		81.07		6.061E-02	2.107E-01	2.229E-01	1.719E-02	0.272
	+	83.79		3.369E-01	1.042E-01	1.525E-01	1.170E-02	2.209
		94.87		8.300E-01	4.309E-01	6.464E-01	5.694E-02	1.284
		144.24		1.066E+00	6.874E-01	1.100E+00	1.425E-01	0.970
		154.21		-3.816E-03	3.598E-01	5.806E-01	6.889E-02	-0.007
	+	269.46		5.659E-01	2.421E-01	3.285E-01	3.152E-02	1.722
		323.87	*	1.905E-01	7.064E-01	1.033E+00	1.772E-01	0.184
	+	338.28		8.028E+00	1.854E+00	2.298E+00	2.649E-01	3.493
AC-227		79.69		7.219E-01	1.204E+00	1.290E+00	2.168E-01	0.560
		235.96		2.746E+00	3.761E-01	4.148E-01	4.715E-02	6.620
		256.23	*	-8.620E-02	2.408E-01	3.985E-01	5.095E-02	-0.216
	+	299.98		2.598E+00	9.218E-01	1.523E+00	1.960E-01	1.707
		304.50		5.491E-01	1.657E+00	2.439E+00	4.049E-01	0.225
		334.37		2.160E-01	2.129E+00	2.700E+00	4.113E-01	0.080
TH-227		79.80		6.420E-01	1.583E+00	1.680E+00	3.603E-01	0.382
		235.96		2.746E+00	3.641E-01	4.148E-01	4.496E-02	6.620
		256.23	*	-8.620E-02	2.409E-01	3.985E-01	5.683E-02	-0.216
	+	299.98		2.598E+00	9.218E-01	1.523E+00	1.960E-01	1.707
		304.50		5.491E-01	1.657E+00	2.439E+00	4.049E-01	0.225
		334.37		2.160E-01	2.129E+00	2.700E+00	4.113E-01	0.080
PA-231		283.69	*	-1.118E+00	1.449E+00	2.223E+00	3.321E-01	-0.503
		301.36		1.225E+00	6.232E-01	9.618E-01	1.184E-01	1.273
TH-231		81.07		6.061E-02	2.107E-01	2.229E-01	1.719E-02	0.272
	+	83.79		3.369E-01	1.042E-01	1.525E-01	1.170E-02	2.209
		94.87		8.300E-01	4.309E-01	6.464E-01	5.694E-02	1.284
		144.24		1.066E+00	6.874E-01	1.100E+00	1.425E-01	0.970
		154.21		-3.816E-03	3.598E-01	5.806E-01	6.889E-02	-0.007
	+	269.46		5.659E-01	2.421E-01	3.285E-01	3.152E-02	1.722
		323.87	*	1.905E-01	7.064E-01	1.033E+00	1.772E-01	0.184
	+	338.28		8.028E+00	1.854E+00	2.298E+00	2.649E-01	3.493
PA-233	+	300.13		1.176E+00	4.267E-01	6.899E-01	1.033E-01	1.704
		311.90	*	8.855E-04	6.088E-02	1.013E-01	8.951E-03	0.009
		340.48		2.610E+00	9.378E-01	1.191E+00	2.832E-01	2.191
PA-234		94.67		5.575E-01	1.715E-01	2.487E-01	3.111E-02	2.242
		98.44		1.349E-01	1.130E-01	1.275E-01	7.131E-02	1.058
		111.00		-7.023E-02	1.798E-01	2.636E-01	3.845E-02	-0.266
		131.20		3.246E-02	1.124E-01	1.611E-01	2.163E-02	0.201
		569.50		-7.871E-02	3.266E-01	4.868E-01	3.186E-02	-0.162
		733.00		-2.544E-02	4.087E-01	5.857E-01	1.278E-01	-0.043
		880.51		1.937E-01	2.812E-01	4.851E-01	4.802E-02	0.399
		883.24		2.398E-02	2.820E-01	4.686E-01	3.158E-01	0.051
		926.50		1.225E-02	1.576E-01	2.616E-01	6.733E-02	0.047
		946.00	*	2.962E-02	2.917E-01	4.842E-01	9.324E-02	0.061
		949.00		6.903E-02	4.449E-01	7.409E-01	7.122E-02	0.093
PA-234M	+	766.42		2.383E+01	1.820E+01	2.084E+01	1.056E+01	1.143

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1001.03	*	6.883E+00	5.162E+00	8.755E+00	8.946E-01	0.786
NP-239		99.53		6.198E-02	1.549E-01	2.250E-01	2.173E-02	0.275
		103.37		1.079E-01	9.659E-02	1.430E-01	1.484E-02	0.755
	+	106.12		1.822E-01	1.010E-01	1.236E-01	1.348E-02	1.475
		117.23	*	-7.027E-02	3.537E-01	5.725E-01	7.528E-02	-0.123
		228.18		1.214E-01	1.953E-01	3.344E-01	3.305E-02	0.363
	+	277.60		2.242E-01	2.362E-01	2.999E-01	2.791E-02	0.748
AM-241		59.54	*	1.070E-01	6.387E-02	9.664E-02	8.647E-03	1.107
CM-247	+	278.00		9.524E-01	1.003E+00	1.262E+00	1.174E-01	0.754
		287.50		-2.798E-01	1.249E+00	1.877E+00	1.713E-01	-0.149
		402.40	*	-9.440E-03	4.063E-02	6.231E-02	3.666E-03	-0.151
CF-249		252.80		5.186E-01	9.087E-01	1.550E+00	1.497E-01	0.335
		333.37		2.865E-02	2.890E-01	2.816E-01	2.251E-02	0.102
		388.16	*	-2.035E-02	4.075E-02	6.572E-02	3.925E-03	-0.310
CF-251		177.52	*	9.540E-02	1.263E-01	2.070E-01	2.062E-02	0.461
		227.38		-9.341E-02	3.192E-01	5.323E-01	5.263E-02	-0.175
		285.41		-1.134E+00	2.098E+00	3.349E+00	3.070E-01	-0.339

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]G248521004       *
* Acquisition date : 19-MAR-2010 23:11:18 Detector SN#    :                 *
* Detector ID      : GAM05                Sensitivity     : 5.000           *
* Geometry         : CAN                  Energy tolerance: 1.500           *
* Elapsed live time:    0 04:00:00.00     Abundance limit : 75.000          *
* Elapsed real time:    0 04:00:03.43     Half life ratio :  8.000          *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date      : 25-FEB-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID        : G248521004           Analyst initials: MXR1            *
* Batch Number     : 961099               Sample Quantity : 1.0278E+02 GRAM *
* Recovery         :    1.00000           Carrier Weight :    0.00000       *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
* Standard Weight  :   0.00000                                              *
* CALIB. DATE/TIME : 11-JUN-2009 16:41:00 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.747E+01	2.212E+00	5.061E-01	0.000E+00
CD-109	4.995E+00	8.302E-01	9.021E-01	0.000E+00
SN-126	4.829E-01	8.025E-02	8.708E-02	0.000E+00
CS-135	4.916E-01	2.073E-01	2.294E-01	0.000E+00
BA-137M	5.812E-01	8.927E-02	5.471E-02	0.000E+00
CS-137	6.140E-01	9.436E-02	5.780E-02	0.000E+00
EU-155	2.292E-01	1.246E-01	1.552E-01	0.000E+00
TL-208	5.884E-01	8.894E-02	5.938E-02	0.000E+00
PB-210	2.163E+00	7.839E-01	7.808E-01	0.000E+00
BI-211	4.587E+00	5.591E-01	3.044E-01	0.000E+00
PB-212	2.011E+00	2.355E-01	8.495E-02	0.000E+00
BI-214	1.397E+00	1.919E-01	1.118E-01	0.000E+00
PB-214	1.665E+00	2.220E-01	1.124E-01	0.000E+00
RA-224	6.031E+00	1.360E+00	9.106E-01	0.000E+00
RA-226	1.397E+00	1.919E-01	1.118E-01	0.000E+00
AC-228	1.921E+00	3.867E-01	2.417E-01	0.000E+00
RA-228	1.921E+00	3.867E-01	2.417E-01	0.000E+00
TH-228	2.011E+00	2.355E-01	8.495E-02	0.000E+00
TH-229	-3.729E-01	5.025E-01	7.994E-01	0.000E+00
TH-232	1.921E+00	3.867E-01	2.417E-01	0.000E+00
TH-234	3.653E+00	1.114E+00	9.482E-01	0.000E+00
U-235	2.320E-01	2.020E-01	3.255E-01	0.000E+00
NP-237	1.441E+00	3.808E-01	2.590E-01	0.000E+00
U-238	3.653E+00	1.114E+00	9.482E-01	0.000E+00
ANH-511	1.944E-01	7.614E-02	4.491E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)		
BE-7	-1.658E-01	3.598E-01	5.837E-01	0.000E+00	NOT IDENT.
NA-22	-2.369E-02	4.220E-02	6.597E-02	0.000E+00	NOT IDENT.

NA-24	0.000E+00	2.732E+09	0.000E+00	0.000E+00	SHORT HLIF
SC-46	-2.904E-02	3.802E-02	6.008E-02	0.000E+00	FAIL ABUN
V-48	-8.595E-03	9.577E-02	1.587E-01	0.000E+00	NOT IDENT.
CR-51	-3.991E-01	4.348E-01	6.874E-01	0.000E+00	NOT IDENT.
MN-54	-8.428E-03	3.957E-02	6.585E-02	0.000E+00	NOT IDENT.
CO-56	1.970E-02	4.079E-02	7.064E-02	0.000E+00	NOT IDENT.
CO-57	1.053E-04	2.373E-02	3.809E-02	0.000E+00	NOT IDENT.
CO-58	-4.433E-02	3.969E-02	6.172E-02	0.000E+00	NOT IDENT.
FE-59	3.067E-02	1.005E-01	1.699E-01	0.000E+00	NOT IDENT.
CO-60	1.038E-02	3.814E-02	6.387E-02	0.000E+00	NOT IDENT.
ZN-65	2.487E-02	1.177E-01	1.699E-01	0.000E+00	NOT IDENT.
SE-75	1.890E-02	4.844E-02	7.323E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.637E-02	7.282E-02	0.000E+00	NOT IDENT.
Y-88	-2.732E-03	3.579E-02	5.885E-02	0.000E+00	NOT IDENT.
Y-91	-6.123E+00	2.397E+01	3.878E+01	0.000E+00	NOT IDENT.
NB-94	-1.557E-02	3.302E-02	5.475E-02	0.000E+00	NOT IDENT.
NB-95	6.990E-02	5.242E-02	8.369E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.396E-01	3.204E-01	0.000E+00	NOT IDENT.
ZR-95	2.190E-03	8.235E-02	1.397E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.449E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	3.117E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-9.609E-03	4.640E-02	7.606E-02	0.000E+00	NOT IDENT.
RH-106	-1.191E-01	3.303E-01	5.289E-01	0.000E+00	NOT IDENT.
RU-106	-1.191E-01	3.301E-01	5.289E-01	0.000E+00	NOT IDENT.
AG-108M	-2.724E-02	2.872E-02	4.567E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	4.672E-02	7.600E-02	0.000E+00	NOT IDENT.
SN-113	-7.017E-03	4.635E-02	7.723E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.158E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.845E-02	7.348E-02	1.201E-01	0.000E+00	NOT IDENT.
TE-123M	-1.836E-02	2.774E-02	4.466E-02	0.000E+00	NOT IDENT.
SB-124	-6.168E-03	7.847E-02	1.298E-01	0.000E+00	NOT IDENT.
SB-125	-2.872E-02	8.946E-02	1.471E-01	0.000E+00	FAIL ABUN
TE-125M	1.011E+01	1.092E+01	1.567E+01	0.000E+00	NOT IDENT.
I-126	1.855E-01	3.952E-01	5.754E-01	0.000E+00	NOT IDENT.
SB-126	4.912E-02	2.440E-01	3.632E-01	0.000E+00	NOT IDENT.
SB-127	3.904E-01	5.049E+00	8.634E+00	0.000E+00	NOT IDENT.
I-131	-6.909E-02	2.203E-01	3.659E-01	0.000E+00	NOT IDENT.
TE-132	2.012E+00	3.216E+00	5.591E+00	0.000E+00	NOT IDENT.
BA-133	7.226E-03	4.506E-02	6.644E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	2.606E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.162E-02	9.115E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	8.870E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.825E-02	1.618E-01	2.782E-01	0.000E+00	NOT IDENT.
CE-139	-3.362E-03	3.007E-02	4.928E-02	0.000E+00	NOT IDENT.
BA-140	-1.962E-01	4.063E-01	6.445E-01	0.000E+00	NOT IDENT.
LA-140	-1.561E-01	1.322E-01	1.745E-01	0.000E+00	FAIL ABUN
CE-141	5.815E-02	6.911E-02	1.163E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.607E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.455E-01	2.130E-01	3.145E-01	0.000E+00	NOT IDENT.
PM-144	-1.241E-02	3.647E-02	6.101E-02	0.000E+00	NOT IDENT.
PR-144	-9.082E-01	2.741E+00	4.588E+00	0.000E+00	NOT IDENT.
PM-146	3.170E-02	4.311E-02	7.399E-02	0.000E+00	NOT IDENT.
ND-147	8.983E-02	1.064E+00	1.541E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	8.375E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-7.558E-02	1.361E-01	1.486E-01	0.000E+00	FAIL ABUN
GD-153	0.000E+00	7.738E-02	1.194E-01	0.000E+00	NOT IDENT.
EU-154	-7.061E-02	1.189E-01	1.852E-01	0.000E+00	NOT IDENT.
TB-160	1.278E-01	1.472E-01	2.599E-01	0.000E+00	FAIL ABUN
HO-166M	9.093E-03	6.045E-02	1.036E-01	0.000E+00	FAIL ABUN
TA-182	2.099E-01	2.043E-01	3.574E-01	0.000E+00	FAIL ABUN
IR-192	-8.830E-03	3.469E-02	5.817E-02	0.000E+00	FAIL ABUN
HG-203	9.321E-03	4.606E-02	6.884E-02	0.000E+00	FAIL ABUN
BI-207	4.201E-03	5.706E-02	9.513E-02	0.000E+00	FAIL ABUN
PB-211	-5.956E-01	8.764E-01	1.152E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.040E+00	1.173E+00	0.000E+00	FAIL ABUN
RN-219	-8.991E-02	4.081E-01	6.769E-01	0.000E+00	NOT IDENT.
RA-223	1.905E-01	6.923E-01	1.031E+00	0.000E+00	FAIL ABUN
AC-227	-8.620E-02	2.360E-01	3.981E-01	0.000E+00	FAIL ABUN
TH-227	-8.620E-02	2.360E-01	3.981E-01	0.000E+00	FAIL ABUN
PA-231	-1.118E+00	1.420E+00	2.220E+00	0.000E+00	NOT IDENT.
TH-231	1.905E-01	6.923E-01	1.031E+00	0.000E+00	FAIL ABUN
PA-233	8.855E-04	5.966E-02	1.012E-01	0.000E+00	FAIL ABUN
PA-234	2.962E-02	2.859E-01	4.812E-01	0.000E+00	NOT IDENT.
PA-234M	6.883E+00	5.059E+00	8.699E+00	0.000E+00	FAIL ABUN
NP-239	-7.027E-02	3.466E-01	5.736E-01	0.000E+00	FAIL ABUN
AM-241	0.000E+00	6.259E-02	9.709E-02	0.000E+00	NOT IDENT.
CM-247	-9.440E-03	3.982E-02	6.214E-02	0.000E+00	FAIL ABUN
CF-249	-2.035E-02	3.993E-02	6.555E-02	0.000E+00	NOT IDENT.

CF-251	9.540E-02	1.237E-01	2.071E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:11:46.53

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*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521004.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:11:18
Sample ID         : G248521004           Sample quantity  : 1.02780E+02 GRAM
Detector name     : GAM05                Detector geometry: CAN
Elapsed live time: 0 04:00:00.00         Elapsed real time: 0 04:00:03.43  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               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	1610	10.66*	1.004E+00	2.747E+01	2.747E+01	8.22
CD-109	88.03	770	3.70*	7.867E+00	4.829E+00	4.995E+00	16.96
SN-126	64.28	------	9.60	8.070E+00	------	Line Not Found	------
	86.94	770	8.90	7.867E+00	2.007E+00	2.007E+00	43.86
	87.57	770	37.00*	7.867E+00	4.829E-01	4.829E-01	16.96
CS-135	268.22	188	16.00*	4.356E+00	4.916E-01	4.916E-01	43.04
BA-137M	661.66	576	89.90*	2.017E+00	5.804E-01	5.812E-01	15.67
CS-137	661.66	576	85.10*	2.017E+00	6.131E-01	6.140E-01	15.68
EU-155	86.55	770	30.70	7.867E+00	5.820E-01	5.872E-01	17.00
	105.31	196	21.10*	7.485E+00	2.271E-01	2.292E-01	55.46
TL-208	277.37	76	6.60	4.264E+00	4.906E-01	4.906E-01	105.74
	583.19	619	85.00*	2.261E+00	5.884E-01	5.884E-01	15.42
	860.56	89	12.50	1.591E+00	8.155E-01	8.155E-01	58.37
PB-210	46.54	382	4.25*	7.602E+00	2.158E+00	2.163E+00	36.99
BI-211	72.87	1453	1.23	8.040E+00	2.683E+01	2.683E+01	13.17
	351.06	1142	12.92*	3.520E+00	4.587E+00	4.587E+00	12.44
PB-212	74.82	1453	10.28	8.040E+00	3.210E+00	3.210E+00	16.38
	77.11	2019	17.10	8.017E+00	2.690E+00	2.690E+00	10.51
	238.63	2294	43.60*	4.778E+00	2.011E+00	2.011E+00	11.95
	300.09	171	3.30	4.010E+00	2.362E+00	2.362E+00	34.76
BI-214	609.32	756	45.49*	2.173E+00	1.397E+00	1.397E+00	14.02
	1120.29	207	14.92	1.258E+00	2.014E+00	2.014E+00	30.90
	1764.49	170	15.30	8.615E-01	2.358E+00	2.358E+00	17.28
PB-214	74.82	1453	5.80	8.040E+00	5.689E+00	5.690E+00	15.38
	77.11	2019	9.70	8.017E+00	4.742E+00	4.742E+00	13.36
	242.00	641	7.25	4.734E+00	3.411E+00	3.411E+00	23.72
	295.22	722	18.42	4.062E+00	1.761E+00	1.761E+00	15.83
	351.93	1142	35.60*	3.520E+00	1.665E+00	1.665E+00	13.61
RA-224	240.99	641	4.10*	4.734E+00	6.031E+00	6.031E+00	23.00
RA-226	609.32	756	45.49*	2.173E+00	1.397E+00	1.397E+00	14.02
	1120.29	207	14.92	1.258E+00	2.014E+00	2.014E+00	30.90
	1764.49	170	15.30	8.615E-01	2.358E+00	2.358E+00	17.28

Sample ID : G248521004 Acquisition date : 19-MAR-2010 23:11:18

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AC-228	338.32	454	11.27	3.636E+00	2.023E+00	2.023E+00	46.13
	911.20	410	25.80*	1.511E+00	1.921E+00	1.921E+00	20.54
	968.97	293	15.80	1.430E+00	2.367E+00	2.367E+00	29.91
RA-228	338.32	454	11.27	3.636E+00	2.023E+00	2.023E+00	46.13
	911.20	410	25.80*	1.511E+00	1.921E+00	1.921E+00	20.54
	968.97	293	15.80	1.430E+00	2.367E+00	2.367E+00	29.91
TH-228	74.82	1453	10.28	8.040E+00	3.210E+00	3.210E+00	13.23
	77.11	2019	17.10	8.017E+00	2.690E+00	2.690E+00	10.51
	238.63	2294	43.60*	4.778E+00	2.011E+00	2.011E+00	11.95
	300.09	171	3.30	4.010E+00	2.362E+00	2.362E+00	69.60
TH-229	85.43	770	14.70	7.867E+00	1.215E+00	1.215E+00	16.96
	88.47	505	24.00	7.819E+00	4.910E-01	4.910E-01	23.83
	193.51	------	4.41*	5.516E+00	------	Line Not Found	------
	210.85	------	2.80	5.209E+00	------	Line Not Found	------
TH-232	338.32	454	11.27	3.636E+00	2.023E+00	2.023E+00	21.49
	911.20	410	25.80*	1.511E+00	1.921E+00	1.921E+00	20.54
	968.97	293	15.80	1.430E+00	2.367E+00	2.367E+00	29.91
TH-234	63.29	597	3.70*	8.062E+00	3.653E+00	3.653E+00	31.13
	92.59	1121	4.23	7.761E+00	6.238E+00	6.238E+00	24.84
U-235	89.96	505	3.47	7.819E+00	3.396E+00	3.396E+00	33.16
	93.35	1121	5.60	7.761E+00	4.712E+00	4.712E+00	25.74
	143.76	------	10.96*	6.557E+00	------	Line Not Found	------
	163.33	------	5.08	6.119E+00	------	Line Not Found	------
	185.72	501	57.20	5.665E+00	2.823E-01	2.823E-01	25.73
	205.31	------	5.01	5.304E+00	------	Line Not Found	------
NP-237	86.48	770	12.40*	7.867E+00	1.441E+00	1.441E+00	26.97
	95.86	------	2.68	7.688E+00	------	Line Not Found	------
U-238	63.29	597	3.70*	8.062E+00	3.653E+00	3.653E+00	31.13
	92.59	1121	4.23	7.761E+00	6.238E+00	6.238E+00	14.27
ANH-511	511.00	271	100.00*	2.545E+00	1.944E-01	1.944E-01	39.97

Flag: "*" = Keyline

Sample ID : G248521004 Acquisition date : 19-MAR-2010 23:11:18

Total number of lines in spectrum 39
Number of unidentified lines 4
Number of lines tentatively identified by NID 35 89.74%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.747E+01	2.747E+01	0.226E+01	8.22	
CD-109	461.40D	1.03	4.829E+00	4.995E+00	0.847E+00	16.96	
SN-126	2.30E+05Y	1.00	4.829E-01	4.829E-01	0.819E-01	16.96	
CS-135	2.30E+06Y	1.00	4.916E-01	4.916E-01	2.116E-01	43.04	
BA-137M	30.08Y	1.00	5.804E-01	5.812E-01	0.911E-01	15.67	
CS-137	30.08Y	1.00	6.131E-01	6.140E-01	0.963E-01	15.68	
EU-155	4.75Y	1.01	2.271E-01	2.292E-01	1.271E-01	55.46	
TL-208	1.41E+10Y	1.00	5.884E-01	5.884E-01	0.908E-01	15.42	
PB-210	22.20Y	1.00	2.158E+00	2.163E+00	0.800E+00	36.99	
BI-211	7.04E+08Y	1.00	4.587E+00	4.587E+00	0.571E+00	12.44	
PB-212	1.41E+10Y	1.00	2.011E+00	2.011E+00	0.240E+00	11.95	
BI-214	1600.00Y	1.00	1.397E+00	1.397E+00	0.196E+00	14.02	
PB-214	1600.00Y	1.00	1.665E+00	1.665E+00	0.227E+00	13.61	
RA-224	1.41E+10Y	1.00	6.031E+00	6.031E+00	1.387E+00	23.00	
RA-226	1600.00Y	1.00	1.397E+00	1.397E+00	0.196E+00	14.02	
AC-228	1.41E+10Y	1.00	1.921E+00	1.921E+00	0.395E+00	20.54	
RA-228	1.41E+10Y	1.00	1.921E+00	1.921E+00	0.395E+00	20.54	
TH-228	1.41E+10Y	1.00	2.011E+00	2.011E+00	0.240E+00	11.95	
TH-229	7340.00Y	1.00	4.910E-01	4.910E-01	1.170E-01	23.83	K
TH-232	1.41E+10Y	1.00	1.921E+00	1.921E+00	0.395E+00	20.54	
TH-234	4.47E+09Y	1.00	3.653E+00	3.653E+00	1.137E+00	31.13	
U-235	7.04E+08Y	1.00	2.823E-01	2.823E-01	0.726E-01	25.73	K
NP-237	2.14E+06Y	1.00	1.441E+00	1.441E+00	0.389E+00	26.97	
U-238	4.47E+09Y	1.00	3.653E+00	3.653E+00	1.137E+00	31.13	
ANH-511	1.00E+09Y	1.00	1.944E-01	1.944E-01	0.777E-01	39.97	
	Total Activity :		7.202E+01	7.219E+01			

Grand Total Activity : 7.202E+01 7.219E+01

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

Sample ID : G248521004 Acquisition date : 19-MAR-2010 23:11:18

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	83.74	361	890	1.38	168.46	164	28	2.51E-02	30.0	7.92E+00	T
0	128.33	229	728	1.44	257.63	253	10	1.59E-02	46.0	6.92E+00	
0	208.90	246	468	1.23	418.73	415	10	1.71E-02	35.2	5.24E+00	
0	327.85	97	371	0.86	656.58	651	11	6.73E-03	79.6	3.73E+00	T
0	409.48	69	208	2.29	819.79	815	9	4.81E-03	79.4	3.09E+00	T
0	462.67	150	252	1.53	926.12	920	13	1.04E-02	49.9	2.78E+00	T
0	726.51	156	200	1.53	1453.53	1446	17	1.08E-02	44.5	1.85E+00	T
0	767.45	74	106	1.50	1535.36	1531	10	5.11E-03	57.2	1.76E+00	T
0	794.88	73	121	1.43	1590.18	1585	13	5.07E-03	70.0	1.71E+00	T
5	964.04	84	85	2.20	1928.24	1923	29	5.80E-03	47.0	1.44E+00	T
0	1587.60	30	38	1.43	3174.03	3168	12	2.05E-03	92.2	9.37E-01	
0	1660.22	15	14	0.65	3319.07	3315	9	1.01E-03	****	9.04E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:11:50.49

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*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
*                                                                            *
*                                DETECTOR DATA                               *
*                                                                            *
* Configuration    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521004.CNF;1   *
* Acquisition date : 19-MAR-2010 23:11:18  Detector SN#    :                 *
* Detector ID      : GAM05                 Sensitivity     : 5.00000         *
* Geometry         : CAN                   Energy tolerance: 1.50000         *
* Elapsed live time: 0 04:00:00.00         Abundance limit : 75.00000        *
* Elapsed real time: 0 04:00:03.43         Half life ratio : 8.00000         *
*****************************************************************************
*                                                                            *
*                                SAMPLE DATA                                 *
*                                                                            *
* Sample date      : 25-FEB-2010 12:00:00  Nuclide Library : SOLID           *
* Sample ID        : G248521004            Analyst initials: MXR1            *
* Batch Number     : 961099                Sample Quantity : 1.02780E+02 GRAM *
*****************************************************************************
*                                                                            *
*                                  QC DATA                                   *
*                                                                            *
* CALIB. DATE/TIME : 11-JUN-2009 16:41:00.5MS Isotope      :                 *
* MSD ID           :                       MSD Isotope     :                 *
* LCS ID           : 1032-A                LCS Isotope     :                 *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.747E+01	2.257E+00	5.101E-01	3.173E-02	53.850
CD-109	4.995E+00	8.471E-01	8.992E-01	6.848E-02	5.555
SN-126	4.829E-01	8.189E-02	8.681E-02	6.611E-03	5.562
CS-135	4.916E-01	2.116E-01	2.297E-01	2.457E-02	2.140
BA-137M	5.812E-01	9.110E-02	5.497E-02	3.615E-03	10.573
CS-137	6.140E-01	9.629E-02	5.807E-02	3.831E-03	10.573
EU-155	2.292E-01	1.271E-01	1.549E-01	1.677E-02	1.480
TL-208	5.884E-01	9.076E-02	5.963E-02	4.379E-03	9.868
PB-210	2.163E+00	7.999E-01	7.765E-01	5.989E-02	2.785
BI-211	4.587E+00	5.705E-01	3.051E-01	2.418E-02	15.034
PB-212	2.011E+00	2.403E-01	8.502E-02	9.203E-03	23.649
BI-214	1.397E+00	1.958E-01	1.122E-01	9.474E-03	12.442
PB-214	1.665E+00	2.265E-01	1.127E-01	1.085E-02	14.777
RA-224	6.031E+00	1.387E+00	9.113E-01	8.916E-02	6.618
RA-226	1.397E+00	1.958E-01	1.122E-01	9.474E-03	12.442
AC-228	1.921E+00	3.946E-01	2.432E-01	3.086E-02	7.900
RA-228	1.921E+00	3.946E-01	2.432E-01	3.086E-02	7.900
TH-228	2.011E+00	2.403E-01	8.502E-02	9.203E-03	23.649

Sample ID : G248521004 Acquisition date : 19-MAR-2010 23:11:18

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229	4.910E-01	1.170E-01	7.993E-01	7.983E-02	0.614
TH-232	1.921E+00	3.946E-01	2.432E-01	3.086E-02	7.900
TH-234	3.653E+00	1.137E+00	9.440E-01	1.713E-01	3.870
U-235	2.823E-01	7.263E-02	3.251E-01	6.201E-02	0.868
NP-237	1.441E+00	3.886E-01	2.582E-01	5.762E-02	5.580
U-238	3.653E+00	1.137E+00	9.440E-01	1.713E-01	3.870
ANH-511	1.944E-01	7.770E-02	4.508E-02	2.885E-03	4.312

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.658E-01		3.671E-01	5.857E-01	4.194E-02	-0.283
NA-22	-2.369E-02		4.306E-02	6.646E-02	3.871E-03	-0.357
NA-24	-8.212E+02		1.394E+03	Half-Life too short		
SC-46	-2.904E-02		3.880E-02	6.044E-02	6.071E-03	-0.481
V-48	-8.595E-03		9.772E-02	1.597E-01	1.463E-02	-0.054
CR-51	-3.991E-01		4.436E-01	6.887E-01	6.086E-02	-0.579
MN-54	-8.428E-03		4.038E-02	6.622E-02	6.067E-03	-0.127
CO-56	1.970E-02		4.163E-02	7.105E-02	6.644E-03	0.277
CO-57	1.053E-04		2.421E-02	3.802E-02	5.394E-03	0.003
CO-58	-4.433E-02		4.050E-02	6.206E-02	5.462E-03	-0.714
FE-59	3.067E-02		1.026E-01	1.711E-01	1.385E-02	0.179
CO-60	1.038E-02		3.891E-02	6.435E-02	3.724E-03	0.161
ZN-65	2.487E-02		1.201E-01	1.711E-01	1.195E-02	0.145
SE-75	1.890E-02		4.943E-02	7.332E-02	7.000E-03	0.258
SR-85	7.362E-02		4.732E-02	7.309E-02	4.685E-03	1.007
Y-88	-2.732E-03		3.652E-02	5.937E-02	3.397E-03	-0.046
Y-91	-6.123E+00		2.446E+01	3.905E+01	2.269E+00	-0.157
NB-94	-1.557E-02		3.369E-02	5.502E-02	3.937E-03	-0.283
NB-95	6.990E-02		5.349E-02	8.413E-02	6.805E-03	0.831
NB-95M	1.605E+00		2.445E-01	3.206E-01	3.512E-02	5.006
ZR-95	2.190E-03		8.403E-02	1.404E-01	1.253E-02	0.016
MO-99	-6.293E-06		3.800E-05	Half-Life too short		
TC-99M	-3.317E+19		1.590E+19	Half-Life too short		
RU-103	-9.609E-03		4.735E-02	7.634E-02	9.689E-03	-0.126
RH-106	-1.191E-01		3.371E-01	5.312E-01	6.394E-02	-0.224
RU-106	-1.191E-01		3.369E-01	5.312E-01	3.502E-02	-0.224
AG-108M	-2.724E-02		2.931E-02	4.581E-02	2.958E-03	-0.595
AG-110M	1.126E-01		4.767E-02	7.636E-02	5.279E-03	1.475
SN-113	-7.017E-03		4.730E-02	7.744E-02	4.804E-03	-0.091
CD-115	-1.011E-04		5.908E-05	Half-Life too short		
SN-117M	-1.845E-02		7.498E-02	1.200E-01	1.290E-02	-0.154
TE-123M	-1.836E-02		2.831E-02	4.462E-02	4.795E-03	-0.411
SB-124	-6.168E-03		8.007E-02	1.309E-01	8.321E-03	-0.047
SB-125	-2.872E-02		9.128E-02	1.476E-01	9.241E-03	-0.195
TE-125M	1.011E+01		1.114E+01	1.563E+01	2.032E+00	0.647
I-126	1.855E-01		4.033E-01	5.781E-01	3.839E-02	0.321

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	4.912E-02		2.490E-01	3.651E-01	2.708E-02	0.135
SB-127	3.904E-01		5.152E+00	8.676E+00	1.110E+00	0.045
I-131	-6.909E-02		2.248E-01	3.668E-01	2.781E-02	-0.188
TE-132	2.012E+00		3.282E+00	5.594E+00	1.017E+00	0.360
BA-133	7.226E-03		4.598E-02	6.660E-02	8.047E-03	0.109
I-133	-1.208E+00		1.329E+00	Half-Life too short		
CS-134	1.036E-01	+	7.308E-02	9.165E-02	7.893E-03	1.130
I-135	-2.209E+17		4.525E+17	Half-Life too short		
CS-136	8.825E-02		1.651E-01	2.800E-01	2.400E-02	0.315
CE-139	-3.362E-03		3.069E-02	4.925E-02	4.889E-03	-0.068
BA-140	-1.962E-01		4.146E-01	6.470E-01	2.163E-01	-0.303
LA-140	-1.561E-01		1.349E-01	1.759E-01	1.034E-02	-0.888
CE-141	5.815E-02		7.052E-02	1.161E-01	1.420E-02	0.501
CE-143	5.929E-02		8.200E-03	Half-Life too short		
CE-144	1.455E-01		2.174E-01	3.141E-01	5.742E-02	0.463
PM-144	-1.241E-02		3.721E-02	6.131E-02	4.337E-03	-0.202
PR-144	-9.082E-01		2.797E+00	4.610E+00	3.258E-01	-0.197
PM-146	3.170E-02		4.399E-02	7.423E-02	6.467E-03	0.427
ND-147	8.983E-02		1.085E+00	1.547E+00	2.138E-01	0.058
PM-149	3.093E-04		4.273E-04	Half-Life too short		
EU-152	-7.558E-02		1.389E-01	1.490E-01	1.224E-02	-0.507
GD-153	1.476E-01		7.895E-02	1.190E-01	1.104E-02	1.240
EU-154	-7.061E-02		1.214E-01	1.866E-01	1.760E-02	-0.378
TB-160	1.278E-01		1.502E-01	2.614E-01	2.583E-02	0.489
HO-166M	9.093E-03		6.168E-02	1.041E-01	7.582E-03	0.087
TA-182	2.099E-01		2.085E-01	3.599E-01	2.093E-02	0.583
IR-192	-8.830E-03		3.540E-02	5.828E-02	4.947E-03	-0.152
HG-203	9.321E-03		4.700E-02	6.893E-02	6.538E-03	0.135
BI-207	4.201E-03		5.822E-02	9.575E-02	7.583E-03	0.044
PB-211	-5.956E-01		8.943E-01	1.155E+00	5.541E-01	-0.516
BI-212	2.305E+00	+	1.061E+00	1.179E+00	1.382E-01	1.955
RN-219	-8.991E-02		4.165E-01	6.788E-01	9.145E-02	-0.132
RA-223	1.905E-01		7.064E-01	1.033E+00	1.772E-01	0.184
AC-227	-8.620E-02		2.408E-01	3.985E-01	5.095E-02	-0.216
TH-227	-8.620E-02		2.409E-01	3.985E-01	5.683E-02	-0.216
PA-231	-1.118E+00		1.449E+00	2.223E+00	3.321E-01	-0.503
TH-231	1.905E-01		7.064E-01	1.033E+00	1.772E-01	0.184
PA-233	8.855E-04		6.088E-02	1.013E-01	8.951E-03	0.009
PA-234	2.962E-02		2.917E-01	4.842E-01	9.324E-02	0.061
PA-234M	6.883E+00		5.162E+00	8.755E+00	8.946E-01	0.786
NP-239	-7.027E-02		3.537E-01	5.725E-01	7.528E-02	-0.123
AM-241	1.070E-01		6.387E-02	9.664E-02	8.647E-03	1.107
CM-247	-9.440E-03		4.063E-02	6.231E-02	3.666E-03	-0.151
CF-249	-2.035E-02		4.075E-02	6.572E-02	3.925E-03	-0.310
CF-251	9.540E-02		1.263E-01	2.070E-01	2.062E-02	0.461

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration     : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248521004           *
* Acquisition date  : 19-MAR-2010 23:11:18 Detector SN#     :               *
* Detector ID       : GAM05                Sensitivity      : 5.000         *
* Geometry          : CAN                  Energy tolerance: 1.500          *
* Elapsed live time:    0 04:00:00.00      Abundance limit : 75.000         *
* Elapsed real time:    0 04:00:03.43      Half life ratio : 8.000          *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248521004           Analyst initials: MXR1           *
* Batch Number      : 961099               Sample Quantity : 1.0278E+02 GRAM *
* Recovery          :    1.00000           Carrier Weight :    0.00000      *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
*                                                                           *
* CALIB. DATE/TIME : 11-JUN-2009 16:41:00 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.747E+01	2.212E+00	2.532E-01	1.129E+00
CD-109	4.995E+00	8.302E-01	4.513E-01	4.236E-01
SN-126	4.829E-01	8.025E-02	4.357E-02	4.095E-02
CS-135	4.916E-01	2.073E-01	1.148E-01	1.058E-01
BA-137M	5.812E-01	8.927E-02	2.737E-02	4.555E-02
CS-137	6.140E-01	9.436E-02	2.892E-02	4.814E-02
EU-155	2.292E-01	1.246E-01	7.767E-02	6.356E-02
TL-208	5.884E-01	8.894E-02	2.971E-02	4.538E-02
PB-210	2.163E+00	7.839E-01	3.906E-01	3.999E-01
BI-211	4.587E+00	5.591E-01	1.523E-01	2.853E-01
PB-212	2.011E+00	2.355E-01	4.250E-02	1.201E-01
BI-214	1.397E+00	1.919E-01	5.591E-02	9.790E-02
PB-214	1.665E+00	2.220E-01	5.624E-02	1.133E-01
RA-224	6.031E+00	1.360E+00	4.556E-01	6.936E-01
RA-226	1.397E+00	1.919E-01	5.591E-02	9.790E-02
AC-228	1.921E+00	3.867E-01	1.209E-01	1.973E-01
RA-228	1.921E+00	3.867E-01	1.209E-01	1.973E-01
TH-228	2.011E+00	2.355E-01	4.250E-02	1.201E-01
TH-229	-3.729E-01	5.025E-01	3.999E-01	2.564E-01
TH-232	1.921E+00	3.867E-01	1.209E-01	1.973E-01
TH-234	3.653E+00	1.114E+00	4.744E-01	5.685E-01
U-235	2.320E-01	2.020E-01	1.628E-01	1.031E-01
NP-237	1.441E+00	3.808E-01	1.296E-01	1.943E-01
U-238	3.653E+00	1.114E+00	4.744E-01	5.685E-01
ANH-511	1.944E-01	7.614E-02	2.247E-02	3.885E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-1.658E-01	3.598E-01	2.920E-01	1.836E-01	NOT IDENT.
NA-22	-2.369E-02	4.220E-02	3.301E-02	2.153E-02	NOT IDENT.

NA-24	-8.212E+08	2.732E+09	0.000E+00	1.394E+09	SHORT HLIF
SC-46	-2.904E-02	3.802E-02	3.006E-02	1.940E-02	FAIL ABUN
V-48	-8.595E-03	9.577E-02	7.940E-02	4.886E-02	NOT IDENT.
CR-51	-3.991E-01	4.348E-01	3.439E-01	2.218E-01	NOT IDENT.
MN-54	-8.428E-03	3.957E-02	3.294E-02	2.019E-02	NOT IDENT.
CO-56	1.970E-02	4.079E-02	3.534E-02	2.081E-02	NOT IDENT.
CO-57	1.053E-04	2.373E-02	1.906E-02	1.211E-02	NOT IDENT.
CO-58	-4.433E-02	3.969E-02	3.088E-02	2.025E-02	NOT IDENT.
FE-59	3.067E-02	1.005E-01	8.501E-02	5.128E-02	NOT IDENT.
CO-60	1.038E-02	3.814E-02	3.195E-02	1.946E-02	NOT IDENT.
ZN-65	2.487E-02	1.177E-01	8.502E-02	6.007E-02	NOT IDENT.
SE-75	1.890E-02	4.844E-02	3.664E-02	2.471E-02	NOT IDENT.
SR-85	7.362E-02	4.637E-02	3.643E-02	2.366E-02	NOT IDENT.
Y-88	-2.732E-03	3.579E-02	2.944E-02	1.826E-02	NOT IDENT.
Y-91	-6.123E+00	2.397E+01	1.940E+01	1.223E+01	NOT IDENT.
NB-94	-1.557E-02	3.302E-02	2.739E-02	1.685E-02	NOT IDENT.
NB-95	6.990E-02	5.242E-02	4.187E-02	2.675E-02	NOT IDENT.
NB-95M	1.605E+00	2.396E-01	1.603E-01	1.223E-01	NOT IDENT.
ZR-95	2.190E-03	8.235E-02	6.989E-02	4.202E-02	NOT IDENT.
MO-99	-6.293E+00	7.449E+01	0.000E+00	3.800E+01	SHORT HLIF
TC-99M	-3.317E+25	3.117E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-9.609E-03	4.640E-02	3.805E-02	2.368E-02	NOT IDENT.
RH-106	-1.191E-01	3.303E-01	2.646E-01	1.685E-01	NOT IDENT.
RU-106	-1.191E-01	3.301E-01	2.646E-01	1.684E-01	NOT IDENT.
AG-108M	-2.724E-02	2.872E-02	2.285E-02	1.465E-02	NOT IDENT.
AG-110M	1.126E-01	4.672E-02	3.802E-02	2.384E-02	NOT IDENT.
SN-113	-7.017E-03	4.635E-02	3.864E-02	2.365E-02	NOT IDENT.
CD-115	-1.011E+02	1.158E+02	0.000E+00	5.908E+01	SHORT HLIF
SN-117M	-1.845E-02	7.348E-02	6.007E-02	3.749E-02	NOT IDENT.
TE-123M	-1.836E-02	2.774E-02	2.234E-02	1.415E-02	NOT IDENT.
SB-124	-6.168E-03	7.847E-02	6.493E-02	4.003E-02	NOT IDENT.
SB-125	-2.872E-02	8.946E-02	7.360E-02	4.564E-02	FAIL ABUN
TE-125M	1.011E+01	1.092E+01	7.840E+00	5.572E+00	NOT IDENT.
I-126	1.855E-01	3.952E-01	2.879E-01	2.016E-01	NOT IDENT.
SB-126	4.912E-02	2.440E-01	1.817E-01	1.245E-01	NOT IDENT.
SB-127	3.904E-01	5.049E+00	4.319E+00	2.576E+00	NOT IDENT.
I-131	-6.909E-02	2.203E-01	1.831E-01	1.124E-01	NOT IDENT.
TE-132	2.012E+00	3.216E+00	2.797E+00	1.641E+00	NOT IDENT.
BA-133	7.226E-03	4.506E-02	3.324E-02	2.299E-02	FAIL ABUN
I-133	-1.208E+06	2.606E+06	0.000E+00	1.329E+06	SHORT HLIF
CS-134	1.036E-01	7.162E-02	4.560E-02	3.654E-02	FAIL ABUN
I-135	-2.209E+23	8.870E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.825E-02	1.618E-01	1.392E-01	8.255E-02	NOT IDENT.
CE-139	-3.362E-03	3.007E-02	2.466E-02	1.534E-02	NOT IDENT.
BA-140	-1.962E-01	4.063E-01	3.224E-01	2.073E-01	NOT IDENT.
LA-140	-1.561E-01	1.322E-01	8.729E-02	6.747E-02	FAIL ABUN
CE-141	5.815E-02	6.911E-02	5.817E-02	3.526E-02	NOT IDENT.
CE-143	5.929E+04	1.607E+04	0.000E+00	8.200E+03	SHORT HLIF
CE-144	1.455E-01	2.130E-01	1.574E-01	1.087E-01	NOT IDENT.
PM-144	-1.241E-02	3.647E-02	3.052E-02	1.861E-02	NOT IDENT.
PR-144	-9.082E-01	2.741E+00	2.295E+00	1.398E+00	NOT IDENT.
PM-146	3.170E-02	4.311E-02	3.701E-02	2.200E-02	NOT IDENT.
ND-147	8.983E-02	1.064E+00	7.711E-01	5.427E-01	FAIL ABUN
PM-149	3.093E+02	8.375E+02	0.000E+00	4.273E+02	SHORT HLIF
EU-152	-7.558E-02	1.361E-01	7.436E-02	6.943E-02	FAIL ABUN
GD-153	1.476E-01	7.738E-02	5.972E-02	3.948E-02	NOT IDENT.
EU-154	-7.061E-02	1.189E-01	9.267E-02	6.069E-02	NOT IDENT.
TB-160	1.278E-01	1.472E-01	1.300E-01	7.511E-02	FAIL ABUN
HO-166M	9.093E-03	6.045E-02	5.181E-02	3.084E-02	FAIL ABUN
TA-182	2.099E-01	2.043E-01	1.788E-01	1.042E-01	FAIL ABUN
IR-192	-8.830E-03	3.469E-02	2.910E-02	1.770E-02	FAIL ABUN
HG-203	9.321E-03	4.606E-02	3.444E-02	2.350E-02	FAIL ABUN
BI-207	4.201E-03	5.706E-02	4.759E-02	2.911E-02	FAIL ABUN
PB-211	-5.956E-01	8.764E-01	5.762E-01	4.472E-01	NOT IDENT.
BI-212	2.305E+00	1.040E+00	5.869E-01	5.307E-01	FAIL ABUN
RN-219	-8.991E-02	4.081E-01	3.387E-01	2.082E-01	NOT IDENT.
RA-223	1.905E-01	6.923E-01	5.156E-01	3.532E-01	FAIL ABUN
AC-227	-8.620E-02	2.360E-01	1.992E-01	1.204E-01	FAIL ABUN
TH-227	-8.620E-02	2.360E-01	1.992E-01	1.204E-01	FAIL ABUN
PA-231	-1.118E+00	1.420E+00	1.111E+00	7.244E-01	NOT IDENT.
TH-231	1.905E-01	6.923E-01	5.156E-01	3.532E-01	FAIL ABUN
PA-233	8.855E-04	5.966E-02	5.061E-02	3.044E-02	FAIL ABUN
PA-234	2.962E-02	2.859E-01	2.407E-01	1.458E-01	NOT IDENT.
PA-234M	6.883E+00	5.059E+00	4.352E+00	2.581E+00	FAIL ABUN
NP-239	-7.027E-02	3.466E-01	2.870E-01	1.769E-01	FAIL ABUN
AM-241	1.070E-01	6.259E-02	4.857E-02	3.193E-02	NOT IDENT.
CM-247	-9.440E-03	3.982E-02	3.109E-02	2.032E-02	FAIL ABUN
CF-249	-2.035E-02	3.993E-02	3.280E-02	2.037E-02	NOT IDENT.

CF-251	9.540E-02	1.237E-01	1.036E-01	6.313E-02	NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	876.5248
49.72	1001.9135
57.36	0.0000
59.54	907.3856
63.29	1100.5234
63.29	1100.5234
64.28	1110.4829
67.75	1182.3527
69.67	1133.0244
70.83	1093.8252
72.81	1087.4382
72.87	1087.5265
72.87	1087.5265
74.82	1090.3195
74.82	1090.3195
74.82	1090.3195
74.97	1090.5294
77.11	1093.5492
77.11	1093.5492
77.11	1093.5492
79.69	940.6870
79.80	940.8167
80.12	941.1948
80.19	941.2776
80.57	941.7241
81.00	942.2283
81.07	942.3111
81.07	942.3111
83.79	878.3683
83.79	878.3683
85.43	880.1146
86.48	881.2253
86.55	881.2990
86.79	881.5499
86.94	881.7104
87.57	882.3695
88.03	882.8513
88.47	883.3096
89.96	884.8552
91.11	886.0428
92.59	887.5550
92.59	887.5550
93.35	789.2646
94.67	887.8367
94.87	915.6360
94.87	915.6360
95.86	858.1483
97.43	682.1895
98.44	704.1437
99.53	760.4753
100.11	729.9327
103.18	770.0496
103.37	691.5479
105.31	812.8557
106.12	774.1085
109.28	674.4356
111.00	733.9229
111.76	731.5429
116.30	649.7916
117.23	664.9390
121.12	648.7147
121.78	644.0610
122.06	654.9748
123.07	633.6406
131.20	678.9605
133.52	639.8956
136.00	701.2053

136.47	689.8649
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140.51	0.0000
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144.24	613.6699
144.24	613.6699
145.44	646.3115
152.43	582.5965
153.25	601.2506
154.21	607.1060
154.21	607.1060
156.02	609.1003
158.56	596.3635
159.00	624.6275
162.66	604.8555
163.33	606.2665
165.86	638.9566
176.60	567.7830
177.52	550.6666
181.07	0.0000
184.41	600.4255
185.72	573.9141
193.51	573.8856
197.04	546.4694
205.31	534.4807
210.85	500.6470
215.65	472.5801
222.11	472.8228
227.38	460.8587
228.16	431.1414
228.18	431.1472
235.69	425.6396
235.96	425.7137
235.96	425.7137
238.63	434.0521
238.63	434.0521
240.99	434.6986
242.00	434.9741
244.70	374.5581
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252.80	402.8594
256.23	427.7169
256.23	427.7169
260.90	0.0000
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268.22	358.2117
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269.46	398.8174
271.23	447.3867
273.65	448.0137
276.40	418.3459
277.37	369.4735
277.60	374.1992
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279.20	390.1469
279.54	363.6880
280.46	340.4520
283.69	369.2397
284.31	343.7013
285.41	352.3727
285.90	0.0000
287.50	348.0809
293.27	0.0000
295.22	315.5631
295.96	315.6936
298.57	316.1462
299.98	311.0189
299.98	311.0189
300.09	311.0389
300.09	311.0389
300.13	311.0469
301.36	320.7352
302.85	343.1330
304.50	295.9578
304.50	295.9578
304.85	290.3614
308.46	326.4069
311.90	317.4719

316.51	323.0227
319.41	343.6137
320.08	348.9449
323.87	318.1887
323.87	318.1887
328.76	338.2302
333.37	308.4961
334.37	315.8864
334.37	315.8864
338.28	315.0604
338.28	315.0604
338.32	315.0683
338.32	315.0683
338.32	315.0683
340.48	278.9674
340.55	278.9780
344.28	316.6537
351.06	267.4670
351.93	275.6897
356.01	276.2362
364.49	309.3498
366.42	0.0000
383.85	252.9031
388.16	296.9568
388.63	283.1617
391.69	282.5647
400.66	283.7128
401.81	284.8584
402.40	286.4261
404.85	295.8808
410.95	233.3476
414.70	250.4272
423.72	249.3986
427.09	231.6340
427.87	243.8020
433.94	245.4442
453.88	222.0369
463.37	187.4557
468.07	201.4705
473.00	196.0548
476.78	223.0793
477.60	229.3209
487.02	202.3068
492.35	0.0000
497.08	213.4660
511.00	182.3123
514.00	192.9492
527.90	0.0000
529.87	0.0000
531.02	178.4377
537.26	194.6249
546.56	0.0000
563.25	189.0250
569.33	200.0759
569.50	200.0851
569.70	191.5840
583.19	181.7954
600.60	205.5938
602.73	184.8099
604.72	177.7537
609.32	170.4749
609.32	170.4749
610.33	149.3061
614.28	174.7231
618.01	153.6588
621.93	174.4429
621.93	174.4429
633.25	155.5195
635.95	168.7177
636.99	165.5078
645.85	147.4189
657.76	149.8095
661.66	137.1918
661.66	137.1918
664.57	0.0000
666.33	159.3761
666.50	159.3832
677.62	148.9103

685.70	157.5780
695.00	193.1439
696.49	187.6858
696.51	187.6858
697.00	179.3924
702.65	168.5848
706.68	161.3727
711.68	151.3998
720.70	140.4986
721.93	0.0000
722.78	156.5635
722.91	156.5669
723.31	167.7722
724.19	171.0127
727.33	141.8413
733.00	126.5896
735.93	141.4547
739.50	0.0000
747.24	154.8755
752.31	143.8235
753.82	141.0645
756.73	157.1843
763.94	140.6650
765.81	134.2700
766.42	137.5291
777.92	0.0000
778.90	159.1270
783.70	122.3521
785.37	140.4362
795.86	114.2017
801.95	124.1998
810.29	131.8569
810.76	128.0514
815.77	108.1307
818.51	115.8722
832.01	126.8679
834.85	153.8965
836.80	0.0000
846.77	107.1067
856.80	94.5375
860.56	90.0654
871.09	93.2266
873.19	119.5116
875.33	0.0000
879.36	96.3453
880.51	98.3205
883.24	103.2611
884.68	100.3764
889.28	103.4207
898.04	110.4964
911.20	124.4621
911.20	124.4621
911.20	124.4621
926.50	83.7151
937.49	131.3440
944.13	95.9501
946.00	96.9832
949.00	102.9971
962.29	88.5679
964.08	88.6060
966.15	96.4652
968.97	96.5303
968.97	96.5303
968.97	96.5303
983.53	101.8589
996.26	131.2159
1001.03	90.2490
1004.73	142.5171
1037.84	103.1580
1038.76	0.0000
1048.07	99.3438
1050.41	109.5381
1050.41	109.5381
1063.66	120.0406
1085.87	97.1222
1099.45	96.3867
1112.07	109.5074
1115.54	137.5936

1120.29	110.2175
1120.29	110.2175
1120.55	110.2218
1121.30	110.2393
1131.51	0.0000
1173.23	130.2134
1177.93	125.1270
1189.05	117.0540
1204.77	124.7718
1221.41	104.1563
1231.02	145.4683
1235.36	107.6155
1238.28	130.9023
1260.41	0.0000
1271.85	96.7097
1274.44	89.3149
1274.54	89.3149
1291.59	65.0781
1298.22	0.0000
1312.11	57.8386
1332.49	60.2132
1365.19	56.2572
1368.63	0.0000
1384.29	61.4215
1408.01	46.7337
1457.56	0.0000
1460.82	41.2811
1489.16	44.5690
1505.03	54.2009
1596.21	51.6200
1620.50	30.0561
1678.03	0.0000
1690.97	26.4764
1764.49	19.8382
1764.49	19.8382
1770.23	24.3231
1771.35	22.5897
1791.20	0.0000
1836.06	26.0698

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248521004

Total Uranium Activity	1.0976E+01	ug/g
Total Uranium Counting Unc.	3.3164E+00	ug/g
Total Uranium Tpu	1.6921E-06	ug/g
Total Uranium Mda	1.4132E+00	ug/g

```
*****************************************************************************
*                                                                           *
*                          GEL Laboratories LLC                           *
*                               2040 SAVAGE ROAD                            *
*                             CHARLESTON ,SC 29417                          *
*                               GROSS GAMMA REPORT                          *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 961099                    SAMPLE ID  : G248521004        *
*   ANALYST      : MXR1                      DETECTOR   : GAM05             *
*   SAMPLE DATE  : 25-FEB-2010 12:00:00.00   COUNT TIME :    0 04:00:00.00 *
*   ANALYSIS DATE: 19-MAR-2010 23:11:18.11   SAMPLE ALQT:  102.780 GRAM     *
*                                                                           *
*****************************************************************************


        GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 1.157E+01
        GROSS GAMMA ERROR  (pCi/GRAM  )   : 1.313E+00
        GROSS GAMMA MDA    (pCi/GRAM  )   : 4.163E+00
        GROSS GAMMA DLC    (pCi/GRAM  )   : 2.044E+00
```

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:14:19.84

```
*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521005.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:11:45
Sample ID         : G248521005           Sample quantity  : 1.38240E+02 GRAM
Detector name     : GAM20                Detector geometry: CAN
Elapsed live time: 0 04:00:00.00         Elapsed real time: 0 04:01:06.46  0.5%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.47*	145	1281	0.93	126.92	123	8	1.00E-02	45.2	
2	4	75.01*	1199	1173	1.14	149.97	144	15	8.33E-02	5.7	7.19E-01
3	4	77.28	1951	933	1.03	154.50	144	15	1.36E-01	3.5	
4	4	87.36*	683	919	1.17	174.63	165	27	4.74E-02	8.4	1.62E+00
5	4	90.03	459	989	1.38	179.95	165	27	3.19E-02	13.0	
6	4	92.97*	628	921	1.41	185.83	165	27	4.36E-02	10.2	
7	0	129.16	184	861	1.17	258.10	254	9	1.28E-02	29.7	
8	0	185.94*	501	823	1.27	371.50	366	11	3.48E-02	12.5	
9	0	209.38	350	684	1.00	418.32	414	10	2.43E-02	15.0	
10	7	238.74*	3320	431	1.15	476.97	469	21	2.31E-01	2.1	2.19E+00
11	7	241.73	854	639	1.79	482.93	469	21	5.93E-02	7.6	
12	0	270.40	307	511	1.33	540.22	534	12	2.13E-02	15.8	
13	0	277.78	78	510	1.06	554.95	550	10	5.43E-03	55.4	
14	0	295.45	1102	461	1.17	590.25	584	12	7.65E-02	4.9	
15	0	300.56	271	456	1.53	600.46	596	13	1.88E-02	17.3	
16	0	328.19	138	322	1.15	655.67	652	8	9.57E-03	24.1	
17	0	338.44	620	438	1.34	676.15	671	11	4.30E-02	7.7	
18	0	352.11	1782	441	1.29	703.45	697	13	1.24E-01	3.4	
19	0	409.66*	87	245	1.23	818.43	813	9	6.06E-03	35.1	
20	0	463.19	175	272	1.47	925.40	919	12	1.22E-02	20.3	
21	0	511.36*	392	323	2.20	1021.68	1014	19	2.72E-02	13.8	
22	0	583.55*	1059	228	1.42	1165.96	1158	16	7.36E-02	4.5	
23	0	609.72*	1301	256	1.36	1218.26	1211	14	9.04E-02	3.9	
24	0	727.92	236	150	1.46	1454.56	1450	10	1.64E-02	11.7	
25	0	768.78	79	169	1.27	1536.26	1532	9	5.52E-03	31.5	
26	0	795.23	140	140	2.29	1589.14	1583	13	9.70E-03	19.4	
27	0	841.39	86	162	4.16	1681.46	1675	14	5.96E-03	34.0	
28	0	861.70*	144	141	1.81	1722.08	1714	16	9.97E-03	20.7	
29	0	911.78*	645	173	1.61	1822.24	1816	14	4.48E-02	5.9	
30	0	935.94	81	215	2.78	1870.55	1858	21	5.64E-03	46.5	
31	2	965.45	172	116	1.98	1929.58	1923	23	1.19E-02	15.0	6.28E-01
32	2	969.61*	372	102	1.61	1937.90	1923	23	2.58E-02	7.6	
33	0	1121.38	316	129	1.48	2241.53	2234	14	2.19E-02	9.5	
34	0	1239.05	134	138	1.57	2476.99	2472	12	9.31E-03	19.5	
35	0	1281.83	45	46	1.37	2562.61	2558	8	3.13E-03	30.0	
36	0	1378.97	63	52	1.57	2757.04	2752	11	4.40E-03	25.7	
37	0	1461.71	3001	63	1.86	2922.70	2915	17	2.08E-01	1.9	
38	0	1590.94	98	44	1.94	3181.46	3173	19	6.84E-03	18.9	

Sample ID : G248521005 Acquisition date : 19-MAR-2010 23:11:45

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1622.26	28	25	1.61	3244.18	3238	10	1.94E-03	38.4	
40	0	1631.76	37	28	1.73	3263.20	3255	16	2.57E-03	35.9	
41	0	1730.38	57	19	2.32	3460.73	3455	11	3.94E-03	20.0	
42	0	1765.44	259	17	1.73	3530.98	3522	17	1.80E-02	7.2	
43	0	1848.16	41	4	0.77	3696.68	3689	13	2.87E-03	18.0	

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

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 03:14:22

```
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521005.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:11:45
Sample ID         : G248521005           Sample quantity  : 138.24 GRAM
Sample type       : SOLID                Sample geometry  :
Detector name     : GAMMA20              Detector geometry: CAN
Elapsed live time: 0 04:00:00.00         Elapsed real time: 0 04:01:06.46   0.5%
Peak Width (FWHM):     3.00              Confidence level :     5.00 %
Energy tolerance :     1.50 keV          Half life ratio  :     8.00
Errors propagated: Yes                   Systematic Error :     0.00 %
Efficiency type  : Empirical             Efficiencies at  : Peak Energy
Abundance limit  :    75.00              WTM error limit  :     3.00
```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.052E+01	2.909E+00	3.574E-01	3.117E-02	85.401
CD-109	+	88.03	*	3.733E+00	7.171E-01	7.215E-01	6.823E-02	5.174
SN-126	+	64.28		4.387E-01	4.018E-01	4.255E-01	6.161E-02	1.031
	+	86.94		1.500E+00	6.718E-01	2.920E-01	1.212E-01	5.139
	+	87.57	*	3.609E-01	6.932E-02	6.995E-02	6.579E-03	5.160
HG-203		70.83		7.703E-01	9.491E-01	1.410E+00	2.200E-01	0.546
		72.87		8.671E-01	5.831E-01	8.651E-01	1.310E-01	1.002
	+	279.20	*	3.860E-02	4.294E-02	4.319E-02	4.383E-03	0.894
TL-208	+	277.37		3.410E-01	3.806E-01	3.951E-01	5.324E-02	0.863
	+	583.19	*	6.278E-01	8.590E-02	3.447E-02	3.541E-03	18.211
	+	860.56		7.987E-01	3.417E-01	2.780E-01	2.945E-02	2.873
BI-211		72.87		3.120E+00	2.059E+00	3.113E+00	2.458E-01	1.002
	+	351.06	*	4.719E+00	5.535E-01	1.979E-01	1.896E-02	23.844
PB-212	+	74.82		2.614E+00	4.458E-01	3.232E-01	4.083E-02	8.089
	+	77.11		2.472E+00	2.682E-01	1.881E-01	1.556E-02	13.145
	+	238.63	*	1.970E+00	2.256E-01	6.116E-02	6.531E-03	32.212
	+	300.09		2.501E+00	9.120E-01	7.537E-01	8.695E-02	3.318
BI-214	+	609.32	*	1.493E+00	2.028E-01	6.961E-02	7.776E-03	21.445
	+	1120.29		1.845E+00	4.038E-01	2.963E-01	3.220E-02	6.228
	+	1764.49		2.090E+00	3.467E-01	1.830E-01	1.503E-02	11.420
PB-214	+	74.82		4.634E+00	7.459E-01	5.728E-01	6.478E-02	8.089
	+	77.11		4.359E+00	5.939E-01	3.316E-01	3.873E-02	13.145
	+	242.00		3.073E+00	5.838E-01	3.719E-01	4.194E-02	8.262
	+	295.22		1.801E+00	2.770E-01	1.345E-01	1.589E-02	13.382
	+	351.93	*	1.713E+00	2.220E-01	7.198E-02	7.949E-03	23.794
RA-224	+	240.99	*	5.433E+00	9.832E-01	6.554E-01	6.335E-02	8.289
RA-226	+	609.32	*	1.493E+00	2.028E-01	6.961E-02	7.776E-03	21.445
	+	1120.29		1.845E+00	4.038E-01	2.963E-01	3.220E-02	6.228
	+	1764.49		2.090E+00	3.467E-01	1.830E-01	1.503E-02	11.420
AC-228	+	338.32		1.828E+00	8.153E-01	2.418E-01	1.013E-01	7.558
	+	911.20	*	1.827E+00	3.160E-01	1.449E-01	1.821E-02	12.607
	+	968.97		1.813E+00	5.261E-01	2.400E-01	5.937E-02	7.553
RA-228	+	338.32		1.828E+00	8.153E-01	2.418E-01	1.013E-01	7.558
	+	911.20	*	1.827E+00	3.160E-01	1.449E-01	1.821E-02	12.607

Sample ID : G248521005 Acquisition date : 19-MAR-2010 23:11:45

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	968.97		1.813E+00	5.261E-01	2.400E-01	5.937E-02	7.553
TH-228	+	74.82		2.614E+00	3.674E-01	3.232E-01	2.633E-02	8.089
	+	77.11		2.472E+00	2.682E-01	1.881E-01	1.556E-02	13.145
	+	238.63	*	1.970E+00	2.256E-01	6.116E-02	6.531E-03	32.212
	+	300.09		2.501E+00	1.762E+00	7.537E-01	4.628E-01	3.318
TH-232	+	338.32		1.828E+00	3.289E-01	2.418E-01	2.266E-02	7.558
	+	911.20	*	1.827E+00	3.160E-01	1.449E-01	1.821E-02	12.607
	+	968.97		1.813E+00	5.261E-01	2.400E-01	5.937E-02	7.553
TH-234	+	63.29	*	1.138E+00	1.049E+00	1.129E+00	2.005E-01	1.009
	+	92.59		2.808E+00	8.498E-01	5.962E-01	1.329E-01	4.709
U-235	+	89.96		2.544E+00	9.153E-01	7.357E-01	1.829E-01	3.457
	+	93.35		2.121E+00	6.578E-01	4.490E-01	1.045E-01	4.723
		143.76	*	9.468E-02	1.385E-01	2.211E-01	3.731E-02	0.428
		163.33		-6.903E-04	2.919E-01	4.635E-01	8.338E-02	-0.001
	+	185.72		1.925E-01	5.113E-02	4.253E-02	3.828E-03	4.525
		205.31		-1.578E-01	3.546E-01	5.092E-01	9.399E-02	-0.310
NP-237	+	86.48	*	1.077E+00	3.062E-01	2.102E-01	4.819E-02	5.123
		95.86		-2.921E-01	6.156E-01	8.687E-01	2.094E-01	-0.336
U-238	+	63.29	*	1.138E+00	1.049E+00	1.129E+00	2.005E-01	1.009
	+	92.59		2.808E+00	6.296E-01	5.962E-01	5.442E-02	4.709
ANH-511	+	511.00	*	1.780E-01	5.184E-02	2.820E-02	2.628E-03	6.313

---- 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	*	-1.476E-01	2.310E-01	3.617E-01	3.515E-02	-0.408
NA-22		1274.54	*	3.571E-03	2.600E-02	4.125E-02	3.417E-03	0.087
NA-24		1368.63	*	-2.031E+03	2.600E-02	Half-Life too short		
SC-46		889.28	*	3.371E-03	2.716E-02	4.521E-02	4.507E-03	0.075
	+	1120.55		3.318E-01	6.912E-02	9.813E-02	8.393E-03	3.381
V-48		944.13		-2.959E-01	8.545E-01	1.291E+00	1.260E-01	-0.229
		983.53	*	6.291E-02	6.158E-02	1.074E-01	1.026E-02	0.586
		1312.11		5.344E-02	7.284E-02	1.237E-01	1.032E-02	0.432
CR-51		320.08	*	-5.398E-02	2.799E-01	4.604E-01	4.612E-02	-0.117
MN-54		834.85	*	-6.721E-03	2.762E-02	3.895E-02	3.935E-03	-0.173
CO-56		846.77	*	-2.021E-02	2.771E-02	3.680E-02	3.709E-03	-0.549
		1037.84		5.886E-02	2.048E-01	3.416E-01	3.293E-02	0.172
	+	1238.28		2.328E-01	9.312E-02	1.310E-01	1.109E-02	1.777
		1771.35		2.049E-02	1.482E-01	2.160E-01	1.772E-02	0.095
CO-57		122.06	*	-4.165E-03	1.670E-02	2.663E-02	2.223E-03	-0.156
		136.47		-8.876E-02	1.400E-01	2.194E-01	1.984E-02	-0.405
CO-58		810.76	*	-2.423E-02	2.648E-02	4.133E-02	4.197E-03	-0.586
FE-59		1099.45	*	1.835E-02	6.701E-02	1.111E-01	1.048E-02	0.165
		1291.59		-1.212E-02	8.771E-02	1.396E-01	1.328E-02	-0.087
CO-60		1173.23		2.173E-03	3.054E-02	4.974E-02	3.999E-03	0.044
		1332.49	*	-3.581E-03	2.639E-02	4.190E-02	3.510E-03	-0.085
ZN-65		1115.54	*	-4.051E-02	6.605E-02	8.705E-02	7.493E-03	-0.465
SE-75		121.12		-6.847E-02	8.940E-02	1.399E-01	1.521E-02	-0.490

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.00		-2.420E-02	2.763E-02	4.292E-02	3.627E-03	-0.564
		264.66	*	4.362E-03	3.270E-02	4.847E-02	4.799E-03	0.090
		279.54		6.888E-02	8.089E-02	1.232E-01	1.261E-02	0.559
		400.66		3.354E-02	1.696E-01	2.803E-01	3.068E-02	0.120
SR-85		514.00	*	9.741E-02	2.931E-02	5.181E-02	4.838E-03	1.880
Y-88		898.04		-2.287E-02	2.917E-02	4.569E-02	4.559E-03	-0.501
		1836.06	*	5.779E-03	2.171E-02	3.692E-02	2.979E-03	0.157
Y-91		1204.77	*	-1.169E+00	1.645E+01	2.650E+01	2.152E+00	-0.044
NB-94		702.65	*	8.613E-03	2.148E-02	3.670E-02	3.713E-03	0.235
		871.09		-7.291E-03	2.153E-02	3.338E-02	3.345E-03	-0.218
NB-95		765.81	*	2.147E-02	3.380E-02	5.119E-02	5.202E-03	0.419
NB-95M		235.69	*	6.279E-02	9.605E-02	1.457E-01	1.568E-02	0.431
ZR-95		724.19		-1.536E-02	6.845E-02	9.787E-02	1.054E-02	-0.157
		756.73	*	7.601E-02	5.181E-02	9.193E-02	1.006E-02	0.827
MO-99		140.51		-3.563E-05	5.181E-02	Half-Life too short		
		181.07		-1.909E-05	5.181E-02	Half-Life too short		
		366.42		1.531E-04	5.181E-02	Half-Life too short		
		739.50	*	4.489E-05	5.181E-02	Half-Life too short		
		777.92		-1.416E-04	5.181E-02	Half-Life too short		
TC-99M		140.51	*	-7.009E+18	5.181E-02	Half-Life too short		
RU-103		497.08	*	-1.356E-02	2.882E-02	4.535E-02	6.506E-03	-0.299
	+	610.33		1.755E+01	3.282E+00	2.390E+00	4.069E-01	7.346
RH-106		621.93	*	-1.709E-03	2.142E-01	3.420E-01	4.828E-02	-0.005
		1050.41		-4.540E-01	1.770E+00	2.843E+00	2.595E-01	-0.160
RU-106		621.93	*	-1.709E-03	2.142E-01	3.420E-01	3.385E-02	-0.005
		1050.41		-4.540E-01	1.770E+00	2.843E+00	2.595E-01	-0.160
AG-108M		433.94	*	5.627E-04	1.822E-02	2.977E-02	2.683E-03	0.019
		614.28		-1.506E-02	2.491E-02	3.282E-02	3.320E-03	-0.459
		722.91		-3.800E-03	2.620E-02	3.771E-02	3.914E-03	-0.101
AG-110M		657.76	*	-2.572E-02	2.296E-02	3.617E-02	3.706E-03	-0.711
		677.62		1.035E-01	1.971E-01	3.399E-01	3.496E-02	0.305
		706.68		7.802E-02	1.396E-01	2.402E-01	2.482E-02	0.325
		763.94		7.050E-02	1.172E-01	1.775E-01	1.840E-02	0.397
		884.68		-2.217E-02	3.145E-02	4.941E-02	5.051E-03	-0.449
		937.49		2.848E-02	8.618E-02	1.265E-01	1.273E-02	0.225
		1384.29		8.656E-03	1.054E-01	1.542E-01	1.336E-02	0.056
		1505.03		-1.959E-01	1.871E-01	2.804E-01	2.377E-02	-0.699
SN-113		391.69	*	1.227E-03	3.017E-02	4.957E-02	4.276E-03	0.025
CD-115		260.90		1.945E-04	3.017E-02	Half-Life too short		
		492.35		2.654E-05	3.017E-02	Half-Life too short		
		527.90	*	-5.697E-05	3.017E-02	Half-Life too short		
SN-117M		156.02		-1.253E+00	2.206E+00	3.444E+00	2.961E-01	-0.364
		158.56	*	-2.131E-02	5.262E-02	8.252E-02	7.122E-03	-0.258
TE-123M		159.00	*	1.361E-03	1.942E-02	3.094E-02	2.689E-03	0.044
SB-124		602.73		-1.360E-02	3.255E-02	4.320E-02	4.242E-03	-0.315
		645.85		-1.148E-01	3.261E-01	5.387E-01	5.611E-02	-0.213
		722.78		-3.030E-02	2.871E-01	4.146E-01	4.275E-02	-0.073
		1690.97	*	-5.516E-03	4.290E-02	6.952E-02	6.057E-03	-0.079
SB-125		427.87	*	-4.632E-03	5.798E-02	9.430E-02	8.341E-03	-0.049

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	463.37		7.091E-01	2.958E-01	3.551E-01	3.410E-02	1.997
		600.60		-7.956E-02	1.188E-01	1.824E-01	1.893E-02	-0.436
		635.95		-1.162E-01	1.733E-01	2.814E-01	2.973E-02	-0.413
TE-125M		109.28	*	-4.387E+00	6.738E+00	1.064E+01	1.107E+00	-0.412
I-126		388.63		5.448E-02	1.589E-01	2.645E-01	2.228E-02	0.206
		666.33	*	1.014E-01	2.243E-01	3.847E-01	3.865E-02	0.263
		753.82		-6.891E-01	1.710E+00	2.789E+00	2.834E-01	-0.247
SB-126		414.70		1.073E-02	7.986E-02	1.217E-01	1.043E-02	0.088
		666.50		4.017E-02	7.871E-02	1.353E-01	1.359E-02	0.297
		695.00		2.367E-02	7.345E-02	1.252E-01	1.265E-02	0.189
		697.00		9.682E-02	2.496E-01	4.269E-01	4.315E-02	0.227
		720.70	*	2.554E-02	1.399E-01	2.306E-01	2.338E-02	0.111
		856.80		-3.941E-01	4.931E-01	6.522E-01	6.559E-02	-0.604
SB-127		252.40		-3.952E+00	1.015E+01	1.654E+01	7.031E+00	-0.239
		473.00		-1.920E+00	3.926E+00	6.193E+00	9.424E-01	-0.310
		685.70	*	1.495E+00	2.970E+00	5.111E+00	7.541E-01	0.292
		783.70		2.406E+00	9.028E+00	1.523E+01	2.371E+00	0.158
I-131		80.19		-6.922E-01	6.945E+00	7.933E+00	6.899E-01	-0.087
		284.31		-1.552E+00	1.758E+00	2.822E+00	2.927E-01	-0.550
		364.49	*	-3.505E-02	1.381E-01	2.248E-01	2.122E-02	-0.156
		636.99		1.105E-01	1.853E+00	3.134E+00	3.273E-01	0.035
TE-132		49.72		-1.372E+01	3.698E+01	6.044E+01	7.768E+00	-0.227
		111.76		-9.175E+01	1.068E+02	1.669E+02	2.207E+01	-0.550
		116.30		5.310E+01	9.231E+01	1.506E+02	1.986E+01	0.353
		228.16	*	-9.839E-02	2.290E+00	3.849E+00	6.923E-01	-0.026
BA-133		81.00		2.870E-02	7.447E-02	8.696E-02	1.351E-02	0.330
	+	276.40		3.156E-01	3.528E-01	4.066E-01	6.081E-02	0.776
		302.85		6.776E-02	9.567E-02	1.444E-01	2.002E-02	0.469
		356.01	*	5.149E-03	2.712E-02	3.970E-02	5.267E-03	0.130
		383.85		-9.205E-03	1.846E-01	3.025E-01	3.739E-02	-0.030
I-133		529.87	*	7.575E-01	1.846E-01	Half-Life too short		
		875.33		-1.530E+01	1.846E-01	Half-Life too short		
		1298.22		2.978E+01	1.846E-01	Half-Life too short		
CS-134		563.25		1.462E-01	2.347E-01	3.893E-01	3.777E-02	0.376
		569.33		5.419E-02	1.276E-01	2.096E-01	2.046E-02	0.259
		604.72		9.513E-03	2.444E-02	3.509E-02	3.455E-03	0.271
	+	795.86	*	1.205E-01	4.833E-02	6.066E-02	6.189E-03	1.987
		801.95		-1.956E-02	2.857E-01	4.300E-01	4.380E-02	-0.045
		1365.19		5.589E-01	7.231E-01	1.291E+00	1.139E-01	0.433
CS-135		268.22	*	9.659E-02	1.113E-01	1.696E-01	1.880E-02	0.569
I-135		546.56		5.392E+16	1.113E-01	Half-Life too short		
		836.80		1.023E+18	1.113E-01	Half-Life too short		
		1038.76		4.638E+17	1.113E-01	Half-Life too short		
		1131.51		-6.254E+17	1.113E-01	Half-Life too short		
		1260.41	*	-1.913E+17	1.113E-01	Half-Life too short		
		1457.56		1.315E+19	1.113E-01	Half-Life too short		
		1678.03		7.111E+16	1.113E-01	Half-Life too short		
		1791.20		-6.484E+17	1.113E-01	Half-Life too short		
CS-136		153.25		1.231E+00	8.608E-01	1.414E+00	1.446E-01	0.871

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		176.60		-5.772E-01	4.971E-01	7.510E-01	7.322E-02	-0.769
		273.65		1.097E-01	6.996E-01	7.563E-01	7.996E-02	0.145
		340.55		8.146E-01	1.794E-01	2.875E-01	2.774E-02	2.833
		818.51		-5.679E-03	6.568E-02	1.085E-01	1.100E-02	-0.052
		1048.07	*	3.592E-02	1.101E-01	1.834E-01	1.742E-02	0.196
		1235.36		2.560E-01	6.369E-01	9.168E-01	1.051E-01	0.279
BA-137M		661.66	*	-5.154E-03	2.430E-02	4.047E-02	4.061E-03	-0.127
CS-137		661.66	*	-5.445E-03	2.567E-02	4.275E-02	4.296E-03	-0.127
CE-139		165.86	*	6.196E-04	2.117E-02	3.362E-02	2.935E-03	0.018
BA-140		162.66		-9.110E-02	8.101E-01	1.282E+00	1.187E-01	-0.071
		304.85		-1.544E-01	1.362E+00	1.976E+00	5.854E-01	-0.078
		423.72		7.768E-01	1.884E+00	3.107E+00	1.022E+00	0.250
		537.26	*	-2.011E-01	2.757E-01	4.010E-01	1.369E-01	-0.501
LA-140	+	328.76		7.514E-01	3.700E-01	5.443E-01	5.417E-02	1.380
		487.02		6.893E-02	1.315E-01	2.186E-01	2.111E-02	0.315
		815.77		2.728E-01	2.858E-01	5.011E-01	5.513E-02	0.544
		1596.21	*	5.560E-02	9.496E-02	1.427E-01	1.205E-02	0.390
CE-141		145.44	*	1.154E-03	4.967E-02	7.931E-02	6.849E-03	0.015
CE-143		57.36		-5.772E-04	4.967E-02	Half-Life too short		
		293.27	*	2.076E-02	4.967E-02	Half-Life too short		
		664.57		3.809E-02	4.967E-02	Half-Life too short		
		721.93		3.974E-03	4.967E-02	Half-Life too short		
CE-144		80.12		-2.150E-01	2.019E+00	2.306E+00	1.975E-01	-0.093
		133.52	*	5.006E-02	1.481E-01	2.137E-01	3.236E-02	0.234
PM-144		476.78		-5.399E-03	4.183E-02	6.742E-02	6.601E-03	-0.080
		618.01		-1.321E-02	2.151E-02	3.304E-02	3.336E-03	-0.400
		696.49	*	7.513E-03	2.136E-02	3.647E-02	3.689E-03	0.206
PR-144		696.51	*	5.883E-01	1.607E+00	2.745E+00	2.774E-01	0.214
		1489.16		1.773E+00	7.219E+00	1.236E+01	1.047E+00	0.143
PM-146		453.88	*	6.291E-03	2.699E-02	4.441E-02	4.806E-03	0.142
		633.25		4.407E-01	9.487E-01	1.531E+00	5.896E-01	0.288
		735.93		-5.095E-02	9.682E-02	1.555E-01	4.436E-02	-0.328
		747.24		4.559E-02	5.947E-02	1.030E-01	1.601E-02	0.443
ND-147	+	91.11		1.313E+00	3.660E-01	4.928E-01	4.879E-02	2.665
		319.41		-7.262E-01	3.361E+00	5.522E+00	5.314E-01	-0.132
		531.02	*	1.407E-01	5.778E-01	9.263E-01	1.430E-01	0.152
PM-149		285.90	*	-4.737E-04	5.778E-01	Half-Life too short		
EU-152		121.78		-1.733E-02	4.715E-02	7.488E-02	7.235E-03	-0.231
		244.70		2.755E-01	2.245E-01	3.479E-01	3.375E-02	0.792
		344.28	*	-7.083E-02	6.667E-02	9.585E-02	9.349E-03	-0.739
		778.90		-9.949E-03	1.649E-01	2.738E-01	2.782E-02	-0.036
	+	964.08		9.019E-01	2.836E-01	3.861E-01	3.731E-02	2.336
		1085.87		7.996E-02	2.583E-01	4.295E-01	3.802E-02	0.186
		1112.07		1.016E-01	1.930E-01	3.249E-01	2.804E-02	0.313
		1408.01		-2.863E-02	1.175E-01	1.929E-01	1.630E-02	-0.148
GD-153		69.67		4.371E-01	1.105E+00	1.635E+00	1.251E-01	0.267
		97.43	*	-4.731E-02	6.065E-02	8.352E-02	7.407E-03	-0.567
		103.18		-9.550E-02	7.056E-02	1.088E-01	9.414E-03	-0.877
EU-154		123.07		4.104E-04	3.355E-02	5.391E-02	6.006E-03	0.008

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		723.31		-4.979E-02	1.204E-01	1.694E-01	1.846E-02	-0.294
		873.19		3.151E-02	1.718E-01	2.756E-01	3.566E-02	0.114
		996.26		-1.568E-01	2.382E-01	3.710E-01	6.645E-02	-0.423
		1004.73		-3.649E-02	1.478E-01	2.385E-01	2.922E-02	-0.153
		1274.44	*	-1.364E-02	7.550E-02	1.164E-01	1.294E-02	-0.117
EU-155	+	86.55		4.389E-01	8.448E-02	1.171E-01	1.097E-02	3.748
		105.31	*	1.184E-01	6.709E-02	1.124E-01	9.765E-03	1.054
TB-160	+	86.79		1.246E+00	2.394E-01	3.336E-01	3.107E-02	3.736
		197.04		-7.830E-02	3.722E-01	6.266E-01	5.735E-02	-0.125
		215.65		2.548E-01	5.279E-01	8.742E-01	8.208E-02	0.291
		298.57		2.544E-01	1.062E-01	1.341E-01	1.318E-02	1.896
		879.36	*	1.532E-02	9.014E-02	1.507E-01	1.507E-02	0.102
		962.29		3.458E-01	3.853E-01	5.898E-01	5.703E-02	0.586
	+	966.15		6.756E-01	2.124E-01	3.157E-01	3.047E-02	2.140
		1177.93		-1.657E-01	2.685E-01	4.177E-01	3.363E-02	-0.397
		1271.85		-5.360E-01	4.837E-01	7.066E-01	5.842E-02	-0.759
HO-166M		80.57		9.285E-02	2.114E-01	2.478E-01	2.135E-02	0.375
		184.41		6.511E-02	2.714E-02	4.308E-02	3.869E-03	1.511
		280.46		6.540E-03	5.975E-02	8.817E-02	8.773E-03	0.074
	+	410.95		2.984E-01	2.109E-01	2.809E-01	2.398E-02	1.062
		711.68	*	-1.605E-02	3.733E-02	6.100E-02	6.179E-03	-0.263
		752.31		-1.759E-01	1.715E-01	2.677E-01	2.721E-02	-0.657
		810.29		-4.287E-02	3.704E-02	5.668E-02	5.746E-03	-0.756
TA-182		67.75		-7.438E-02	7.419E-02	1.041E-01	7.824E-03	-0.715
		100.11		1.630E-01	1.138E-01	1.900E-01	1.664E-02	0.858
		152.43		1.980E-01	2.474E-01	4.025E-01	3.442E-02	0.492
		222.11		5.725E-02	2.394E-01	4.061E-01	3.844E-02	0.141
	+	1121.30		9.043E-01	1.884E-01	2.695E-01	2.303E-02	3.356
		1189.05		4.862E-03	2.148E-01	3.484E-01	2.815E-02	0.014
		1221.41	*	-3.132E-02	1.453E-01	2.318E-01	1.891E-02	-0.135
		1231.02		-2.383E-01	3.554E-01	5.510E-01	4.508E-02	-0.433
IR-192	+	295.96		1.427E+00	1.994E-01	2.243E-01	2.221E-02	6.363
		308.46		-2.062E-02	6.501E-02	1.028E-01	1.006E-02	-0.201
		316.51	*	-1.418E-03	2.354E-02	3.894E-02	3.766E-03	-0.036
		468.07		-1.632E-02	4.912E-02	6.800E-02	6.538E-03	-0.240
BI-207		72.81		1.439E-01	1.177E-01	1.770E-01	1.397E-02	0.813
	+	74.97		7.537E-01	1.056E-01	1.418E-01	1.145E-02	5.317
		569.70		1.884E-02	1.940E-02	3.270E-02	3.159E-03	0.576
		1063.66	*	-5.399E-03	3.551E-02	5.740E-02	5.183E-03	-0.094
		1770.23		1.741E-01	2.906E-01	4.597E-01	3.771E-02	0.379
PB-210		46.54	*	1.171E-01	1.352E+00	2.184E+00	2.007E-01	0.054
PB-211		404.85	*	-1.583E-01	5.343E-01	7.446E-01	3.602E-01	-0.213
		427.09		-3.284E-01	9.890E-01	1.570E+00	7.265E-01	-0.209
		832.01		-2.509E-01	6.444E-01	1.022E+00	5.329E-01	-0.245
BI-212	+	727.33	*	2.139E+00	5.772E-01	8.097E-01	1.098E-01	2.642
		785.37		3.808E+00	2.169E+00	3.870E+00	3.931E-01	0.984
		1620.50		2.245E+00	1.625E+00	2.776E+00	2.337E-01	0.809
RN-219	+	271.23		8.032E-01	2.698E-01	2.970E-01	3.374E-02	2.704
		401.81	*	2.680E-03	2.592E-01	4.249E-01	6.278E-02	0.006

Sample ID : G248521005 Acquisition date : 19-MAR-2010 23:11:45

---- 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		6.147E-02	1.682E-01	1.965E-01	1.703E-02	0.313
		83.79		1.503E-01	8.651E-02	1.291E-01	1.157E-02	1.164
		94.87		1.083E+00	3.184E-01	4.894E-01	4.402E-02	2.213
		144.24		1.703E-01	4.686E-01	7.461E-01	7.076E-02	0.228
		154.21		2.482E-01	2.627E-01	4.282E-01	4.027E-02	0.580
	+	269.46		6.241E-01	2.070E-01	2.292E-01	2.303E-02	2.723
		323.87	*	-7.186E-02	4.651E-01	6.710E-01	1.196E-01	-0.107
	+	338.28		7.253E+00	1.442E+00	1.669E+00	2.106E-01	4.346
AC-227		79.69		1.710E-02	8.725E-01	1.159E+00	1.992E-01	0.015
		235.96		1.484E-01	1.127E-01	1.734E-01	1.939E-02	0.856
		256.23	*	2.515E-02	1.557E-01	2.621E-01	3.387E-02	0.096
	+	299.98		2.751E+00	1.022E+00	1.055E+00	1.429E-01	2.607
		304.50		3.351E-01	1.085E+00	1.610E+00	2.763E-01	0.208
		334.37		-5.968E-02	1.241E+00	1.798E+00	2.886E-01	-0.033
TH-227		79.80		-4.613E-02	1.306E+00	1.496E+00	3.254E-01	-0.031
		235.96		1.484E-01	1.125E-01	1.734E-01	1.846E-02	0.856
		256.23	*	2.515E-02	1.557E-01	2.621E-01	3.770E-02	0.096
	+	299.98		2.751E+00	1.022E+00	1.055E+00	1.429E-01	2.607
		304.50		3.351E-01	1.085E+00	1.610E+00	2.763E-01	0.208
		334.37		-5.968E-02	1.241E+00	1.798E+00	2.886E-01	-0.033
TH-229		85.43		5.749E-01	1.373E-01	2.228E-01	2.038E-02	2.581
	+	88.47		5.564E-01	1.069E-01	1.497E-01	1.410E-02	3.716
		193.51	*	-6.207E-03	3.295E-01	5.582E-01	5.083E-02	-0.011
	+	210.85		2.959E+00	9.306E-01	1.062E+00	9.909E-02	2.787
PA-231		283.69	*	-7.890E-01	9.338E-01	1.440E+00	2.218E-01	-0.548
	+	301.36		1.767E+00	6.533E-01	6.956E-01	9.056E-02	2.541
TH-231		81.07		6.147E-02	1.682E-01	1.965E-01	1.703E-02	0.313
		83.79		1.503E-01	8.651E-02	1.291E-01	1.157E-02	1.164
		94.87		1.083E+00	3.184E-01	4.894E-01	4.402E-02	2.213
		144.24		1.703E-01	4.686E-01	7.461E-01	7.076E-02	0.228
		154.21		2.482E-01	2.627E-01	4.282E-01	4.027E-02	0.580
	+	269.46		6.241E-01	2.070E-01	2.292E-01	2.303E-02	2.723
		323.87	*	-7.186E-02	4.651E-01	6.710E-01	1.196E-01	-0.107
	+	338.28		7.253E+00	1.442E+00	1.669E+00	2.106E-01	4.346
PA-233	+	300.13		1.245E+00	4.722E-01	4.814E-01	7.488E-02	2.586
		311.90	*	3.947E-03	4.059E-02	6.760E-02	6.709E-03	0.058
		340.48		2.598E+00	7.902E-01	8.547E-01	2.080E-01	3.040
PA-234		94.67		5.923E-01	1.340E-01	1.876E-01	2.378E-02	3.157
		98.44		7.311E-02	7.219E-02	9.352E-02	5.220E-02	0.782
		111.00		-3.950E-02	1.154E-01	1.841E-01	2.205E-02	-0.215
		131.20		5.203E-02	7.732E-02	1.130E-01	9.441E-03	0.461
		569.50		1.001E-01	1.761E-01	2.913E-01	2.814E-02	0.344
		733.00		1.793E-01	2.731E-01	4.130E-01	9.431E-02	0.434
		880.51		2.028E-01	1.655E-01	2.938E-01	2.937E-02	0.690
		883.24		-1.684E-01	2.153E-01	2.842E-01	1.916E-01	-0.592
		926.50		-6.977E-02	1.310E-01	1.758E-01	4.522E-02	-0.397
		946.00	*	-1.220E-01	2.066E-01	3.253E-01	6.281E-02	-0.375
		949.00		2.934E-01	3.038E-01	5.263E-01	5.124E-02	0.558
PA-234M		766.42		8.862E+00	9.752E+00	1.341E+01	6.844E+00	0.661

Sample ID : G248521005 Acquisition date : 19-MAR-2010 23:11:45

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1001.03	*	4.928E-01	3.264E+00	5.357E+00	5.730E-01	0.092
NP-239		99.53		1.799E-01	1.032E-01	1.693E-01	1.486E-02	1.063
		103.37		-9.344E-02	6.328E-02	9.711E-02	8.395E-03	-0.962
		106.12		5.118E-02	5.350E-02	8.840E-02	7.573E-03	0.579
		117.23	*	-2.409E-01	2.592E-01	4.043E-01	3.387E-02	-0.596
		228.18		6.898E-03	1.366E-01	2.302E-01	2.195E-02	0.030
	+	277.60		1.559E-01	1.734E-01	2.010E-01	1.999E-02	0.776
AM-241		59.54	*	6.442E-02	8.458E-02	1.273E-01	9.962E-03	0.506
CM-247	+	278.00		6.620E-01	7.363E-01	8.570E-01	8.527E-02	0.772
		287.50		6.306E-01	7.655E-01	1.309E+00	1.297E-01	0.482
		402.40	*	-7.972E-03	2.406E-02	3.881E-02	3.281E-03	-0.205
CF-249		252.80		-2.218E-01	5.920E-01	9.787E-01	9.565E-02	-0.227
		333.37		1.156E-02	1.539E-01	1.895E-01	1.789E-02	0.061
		388.16	*	8.412E-03	2.545E-02	4.235E-02	3.571E-03	0.199
CF-251		177.52	*	-2.492E-02	8.757E-02	1.372E-01	1.219E-02	-0.182
		227.38		-1.550E-01	2.229E-01	3.666E-01	3.492E-02	-0.423
		285.41		-1.647E+00	1.360E+00	2.148E+00	2.131E-01	-0.767

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]G248521005       *
* Acquisition date : 19-MAR-2010 23:11:45 Detector SN#    :                 *
* Detector ID      : GAM20                Sensitivity     : 5.000           *
* Geometry         : CAN                  Energy tolerance: 1.500           *
* Elapsed live time:    0 04:00:00.00     Abundance limit : 75.000          *
* Elapsed real time:    0 04:01:06.46     Half life ratio :  8.000          *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date      : 25-FEB-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID        : G248521005           Analyst initials: MXR1            *
* Batch Number     : 961099               Sample Quantity : 1.3824E+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	3.052E+01	2.851E+00	3.585E-01	0.000E+00
CD-109	3.733E+00	7.028E-01	7.644E-01	0.000E+00
SN-126	3.609E-01	6.794E-02	7.411E-02	0.000E+00
HG-203	3.860E-02	4.208E-02	4.477E-02	0.000E+00
TL-208	6.278E-01	8.418E-02	3.523E-02	0.000E+00
BI-211	4.719E+00	5.425E-01	2.043E-01	0.000E+00
PB-212	1.970E+00	2.211E-01	6.360E-02	0.000E+00
BI-214	1.493E+00	1.987E-01	7.108E-02	0.000E+00
PB-214	1.713E+00	2.176E-01	7.429E-02	0.000E+00
RA-224	5.433E+00	9.636E-01	6.814E-01	0.000E+00
RA-226	1.493E+00	1.987E-01	7.108E-02	0.000E+00
AC-228	1.827E+00	3.096E-01	1.467E-01	0.000E+00
RA-228	1.827E+00	3.096E-01	1.467E-01	0.000E+00
TH-228	1.970E+00	2.211E-01	6.360E-02	0.000E+00
TH-232	1.827E+00	3.096E-01	1.467E-01	0.000E+00
TH-234	1.138E+00	1.028E+00	1.203E+00	0.000E+00
U-235	9.468E-02	1.357E-01	2.321E-01	0.000E+00
NP-237	1.077E+00	3.001E-01	2.228E-01	0.000E+00
U-238	1.138E+00	1.028E+00	1.203E+00	0.000E+00
ANH-511	1.780E-01	5.080E-02	2.889E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)		
BE-7	-1.476E-01	2.264E-01	3.711E-01	0.000E+00	NOT IDENT.
NA-22	3.571E-03	2.548E-02	4.149E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.485E+09	0.000E+00	0.000E+00	SHORT HLIF
SC-46	3.371E-03	2.661E-02	4.582E-02	0.000E+00	FAIL ABUN
V-48	6.291E-02	6.035E-02	1.086E-01	0.000E+00	NOT IDENT.
CR-51	-5.398E-02	2.743E-01	4.760E-01	0.000E+00	NOT IDENT.
MN-54	-6.721E-03	2.707E-02	3.952E-02	0.000E+00	NOT IDENT.

CO-56	-2.021E-02	2.716E-02	3.732E-02	0.000E+00	FAIL ABUN
CO-57	-4.165E-03	1.637E-02	2.804E-02	0.000E+00	NOT IDENT.
CO-58	-2.423E-02	2.595E-02	4.196E-02	0.000E+00	NOT IDENT.
FE-59	1.835E-02	6.567E-02	1.121E-01	0.000E+00	NOT IDENT.
CO-60	-3.581E-03	2.586E-02	4.211E-02	0.000E+00	NOT IDENT.
ZN-65	-4.051E-02	6.473E-02	8.781E-02	0.000E+00	NOT IDENT.
SE-75	4.362E-03	3.205E-02	5.030E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	2.872E-02	5.308E-02	0.000E+00	NOT IDENT.
Y-88	5.779E-03	2.128E-02	3.687E-02	0.000E+00	NOT IDENT.
Y-91	-1.169E+00	1.612E+01	2.669E+01	0.000E+00	NOT IDENT.
NB-94	8.613E-03	2.105E-02	3.737E-02	0.000E+00	NOT IDENT.
NB-95	2.147E-02	3.313E-02	5.203E-02	0.000E+00	NOT IDENT.
NB-95M	6.279E-02	9.413E-02	1.515E-01	0.000E+00	NOT IDENT.
ZR-95	7.601E-02	5.077E-02	9.346E-02	0.000E+00	NOT IDENT.
MO-99	0.000E+00	4.969E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.947E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.356E-02	2.824E-02	4.649E-02	0.000E+00	FAIL ABUN
RH-106	-1.709E-03	2.100E-01	3.490E-01	0.000E+00	NOT IDENT.
RU-106	-1.709E-03	2.100E-01	3.490E-01	0.000E+00	NOT IDENT.
AG-108M	5.627E-04	1.786E-02	3.060E-02	0.000E+00	NOT IDENT.
AG-110M	-2.572E-02	2.250E-02	3.688E-02	0.000E+00	NOT IDENT.
SN-113	1.227E-03	2.956E-02	5.106E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	7.120E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-2.131E-02	5.156E-02	8.647E-02	0.000E+00	NOT IDENT.
TE-123M	1.361E-03	1.903E-02	3.243E-02	0.000E+00	NOT IDENT.
SB-124	-5.516E-03	4.204E-02	6.954E-02	0.000E+00	NOT IDENT.
SB-125	-4.632E-03	5.682E-02	9.695E-02	0.000E+00	FAIL ABUN
TE-125M	-4.387E+00	6.603E+00	1.123E+01	0.000E+00	NOT IDENT.
I-126	1.014E-01	2.198E-01	3.921E-01	0.000E+00	NOT IDENT.
SB-126	2.554E-02	1.371E-01	2.346E-01	0.000E+00	NOT IDENT.
SB-127	1.495E+00	2.910E+00	5.206E+00	0.000E+00	NOT IDENT.
I-131	-3.505E-02	1.353E-01	2.318E-01	0.000E+00	NOT IDENT.
TE-132	-9.839E-02	2.244E+00	4.006E+00	0.000E+00	NOT IDENT.
BA-133	5.149E-03	2.657E-02	4.097E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.350E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.736E-02	6.161E-02	0.000E+00	FAIL ABUN
CS-135	9.659E-02	1.091E-01	1.760E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.387E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.592E-02	1.079E-01	1.853E-01	0.000E+00	NOT IDENT.
BA-137M	-5.154E-03	2.381E-02	4.125E-02	0.000E+00	NOT IDENT.
CS-137	-5.445E-03	2.515E-02	4.358E-02	0.000E+00	NOT IDENT.
CE-139	6.196E-04	2.074E-02	3.520E-02	0.000E+00	NOT IDENT.
BA-140	-2.011E-01	2.702E-01	4.105E-01	0.000E+00	NOT IDENT.
LA-140	5.560E-02	9.306E-02	1.429E-01	0.000E+00	FAIL ABUN
CE-141	1.154E-03	4.868E-02	8.325E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	6.524E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	5.006E-02	1.452E-01	2.246E-01	0.000E+00	NOT IDENT.
PM-144	7.513E-03	2.094E-02	3.714E-02	0.000E+00	NOT IDENT.
PR-144	5.883E-01	1.574E+00	2.795E+00	0.000E+00	NOT IDENT.
PM-146	6.291E-03	2.645E-02	4.560E-02	0.000E+00	NOT IDENT.
ND-147	1.407E-01	5.663E-01	9.484E-01	0.000E+00	FAIL ABUN
PM-149	0.000E+00	5.641E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-7.083E-02	6.533E-02	9.897E-02	0.000E+00	FAIL ABUN
GD-153	-4.731E-02	5.943E-02	8.832E-02	0.000E+00	NOT IDENT.
EU-154	-1.364E-02	7.399E-02	1.171E-01	0.000E+00	NOT IDENT.
EU-155	1.184E-01	6.574E-02	1.187E-01	0.000E+00	FAIL ABUN
TB-160	1.532E-02	8.834E-02	1.528E-01	0.000E+00	FAIL ABUN
HO-166M	-1.605E-02	3.658E-02	6.209E-02	0.000E+00	FAIL ABUN
TA-182	-3.132E-02	1.424E-01	2.334E-01	0.000E+00	FAIL ABUN
IR-192	-1.418E-03	2.307E-02	4.027E-02	0.000E+00	FAIL ABUN
BI-207	-5.399E-03	3.480E-02	5.796E-02	0.000E+00	FAIL ABUN
PB-210	1.171E-01	1.325E+00	2.341E+00	0.000E+00	NOT IDENT.
PB-211	-1.583E-01	5.237E-01	7.664E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.656E-01	8.238E-01	0.000E+00	FAIL ABUN
RN-219	2.680E-03	2.541E-01	4.374E-01	0.000E+00	FAIL ABUN
RA-223	-7.186E-02	4.558E-01	6.936E-01	0.000E+00	FAIL ABUN
AC-227	2.515E-02	1.526E-01	2.722E-01	0.000E+00	FAIL ABUN
TH-227	2.515E-02	1.526E-01	2.722E-01	0.000E+00	FAIL ABUN
TH-229	-6.207E-03	3.229E-01	5.827E-01	0.000E+00	FAIL ABUN
PA-231	-7.890E-01	9.151E-01	1.493E+00	0.000E+00	FAIL ABUN
TH-231	-7.186E-02	4.558E-01	6.936E-01	0.000E+00	FAIL ABUN
PA-233	3.947E-03	3.978E-02	6.994E-02	0.000E+00	FAIL ABUN
PA-234	-1.220E-01	2.025E-01	3.292E-01	0.000E+00	NOT IDENT.
PA-234M	4.928E-01	3.199E+00	5.416E+00	0.000E+00	NOT IDENT.
NP-239	-2.409E-01	2.540E-01	4.261E-01	0.000E+00	FAIL ABUN
AM-241	6.442E-02	8.289E-02	1.358E-01	0.000E+00	NOT IDENT.
CM-247	-7.972E-03	2.358E-02	3.995E-02	0.000E+00	FAIL ABUN
CF-249	8.412E-03	2.494E-02	4.363E-02	0.000E+00	NOT IDENT.

CF-251	-2.492E-02	8.582E-02	1.435E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:14:20.74

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*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521005.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:11:45
Sample ID         : G248521005           Sample quantity  : 1.38240E+02 GRAM
Detector name     : GAM20                Detector geometry: CAN
Elapsed live time: 0 04:00:00.00         Elapsed real time: 0 04:01:06.46  0.5%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               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	3001	10.66*	1.252E+00	3.052E+01	3.052E+01	9.53
CD-109	88.03	683	3.70*	6.942E+00	3.609E+00	3.733E+00	19.21
SN-126	64.28	145	9.60	4.662E+00	4.387E-01	4.387E-01	91.59
	86.94	683	8.90	6.942E+00	1.500E+00	1.500E+00	44.78
	87.57	683	37.00*	6.942E+00	3.609E-01	3.609E-01	19.21
HG-203	70.83	------	3.69	5.621E+00	------ Line Not Found		------
	72.87	------	6.19	5.845E+00	------ Line Not Found		------
	279.20	78	81.56*	4.716E+00	2.760E-02	3.860E-02	111.24
TL-208	277.37	78	6.60	4.716E+00	3.410E-01	3.410E-01	111.59
	583.19	1059	85.00*	2.695E+00	6.278E-01	6.278E-01	13.68
	860.56	144	12.50	1.952E+00	7.987E-01	7.987E-01	42.79
BI-211	72.87	------	1.23	5.845E+00	------ Line Not Found		------
	351.06	1782	12.92*	3.968E+00	4.719E+00	4.719E+00	11.73
PB-212	74.82	1199	10.28	6.060E+00	2.614E+00	2.614E+00	17.05
	77.11	1951	17.10	6.266E+00	2.472E+00	2.472E+00	10.85
	238.63	3320	43.60*	5.247E+00	1.970E+00	1.970E+00	11.45
	300.09	271	3.30	4.456E+00	2.501E+00	2.501E+00	36.47
BI-214	609.32	1301	45.49*	2.602E+00	1.493E+00	1.493E+00	13.59
	1120.29	316	14.92	1.556E+00	1.845E+00	1.845E+00	21.88
	1764.49	259	15.30	1.100E+00	2.090E+00	2.090E+00	16.59
PB-214	74.82	1199	5.80	6.060E+00	4.633E+00	4.634E+00	16.10
	77.11	1951	9.70	6.266E+00	4.359E+00	4.359E+00	13.63
	242.00	854	7.25	5.202E+00	3.072E+00	3.073E+00	19.00
	295.22	1102	18.42	4.512E+00	1.801E+00	1.801E+00	15.38
	351.93	1782	35.60*	3.968E+00	1.713E+00	1.713E+00	12.96
RA-224	240.99	854	4.10*	5.202E+00	5.433E+00	5.433E+00	18.10
RA-226	609.32	1301	45.49*	2.602E+00	1.493E+00	1.493E+00	13.59
	1120.29	316	14.92	1.556E+00	1.845E+00	1.845E+00	21.88
	1764.49	259	15.30	1.100E+00	2.090E+00	2.090E+00	16.59
AC-228	338.32	620	11.27	4.085E+00	1.828E+00	1.828E+00	44.61
	911.20	645	25.80*	1.859E+00	1.827E+00	1.827E+00	17.30
	968.97	372	15.80	1.763E+00	1.813E+00	1.813E+00	29.03

Sample ID : G248521005 Acquisition date : 19-MAR-2010 23:11:45

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	620	11.27	4.085E+00	1.828E+00	1.828E+00	44.61
	911.20	645	25.80*	1.859E+00	1.827E+00	1.827E+00	17.30
	968.97	372	15.80	1.763E+00	1.813E+00	1.813E+00	29.03
TH-228	74.82	1199	10.28	6.060E+00	2.614E+00	2.614E+00	14.06
	77.11	1951	17.10	6.266E+00	2.472E+00	2.472E+00	10.85
	238.63	3320	43.60*	5.247E+00	1.970E+00	1.970E+00	11.45
	300.09	271	3.30	4.456E+00	2.501E+00	2.501E+00	70.47
TH-232	338.32	620	11.27	4.085E+00	1.828E+00	1.828E+00	18.00
	911.20	645	25.80*	1.859E+00	1.827E+00	1.827E+00	17.30
	968.97	372	15.80	1.763E+00	1.813E+00	1.813E+00	29.03
TH-234	63.29	145	3.70*	4.662E+00	1.138E+00	1.138E+00	92.18
	92.59	628	4.23	7.174E+00	2.808E+00	2.808E+00	30.27
U-235	89.96	459	3.47	7.063E+00	2.544E+00	2.544E+00	35.99
	93.35	628	5.60	7.174E+00	2.121E+00	2.121E+00	31.02
	143.76	------	10.96*	7.037E+00	------	Line Not Found	------
	163.33	------	5.08	6.638E+00	------	Line Not Found	------
	185.72	501	57.20	6.174E+00	1.925E-01	1.925E-01	26.56
	205.31	------	5.01	5.804E+00	------	Line Not Found	------
NP-237	86.48	683	12.40*	6.942E+00	1.077E+00	1.077E+00	28.44
	95.86	------	2.68	7.260E+00	------	Line Not Found	------
U-238	63.29	145	3.70*	4.662E+00	1.138E+00	1.138E+00	92.18
	92.59	628	4.23	7.174E+00	2.808E+00	2.808E+00	22.42
ANH-511	511.00	392	100.00*	2.991E+00	1.780E-01	1.780E-01	29.12

Flag: "*" = Keyline

Sample ID : G248521005 Acquisition date : 19-MAR-2010 23:11:45

Total number of lines in spectrum	43	
Number of unidentified lines	11	
Number of lines tentatively identified by NID	32	74.42%

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	3.052E+01	3.052E+01	0.291E+01	9.53	
CD-109	461.40D	1.03	3.609E+00	3.733E+00	0.717E+00	19.21	
SN-126	2.30E+05Y	1.00	3.609E-01	3.609E-01	0.693E-01	19.21	
HG-203	46.59D	1.40	2.760E-02	3.860E-02	4.294E-02	111.24	
TL-208	1.41E+10Y	1.00	6.278E-01	6.278E-01	0.859E-01	13.68	
BI-211	7.04E+08Y	1.00	4.719E+00	4.719E+00	0.554E+00	11.73	
PB-212	1.41E+10Y	1.00	1.970E+00	1.970E+00	0.226E+00	11.45	
BI-214	1600.00Y	1.00	1.493E+00	1.493E+00	0.203E+00	13.59	
PB-214	1600.00Y	1.00	1.713E+00	1.713E+00	0.222E+00	12.96	
RA-224	1.41E+10Y	1.00	5.433E+00	5.433E+00	0.983E+00	18.10	
RA-226	1600.00Y	1.00	1.493E+00	1.493E+00	0.203E+00	13.59	
AC-228	1.41E+10Y	1.00	1.827E+00	1.827E+00	0.316E+00	17.30	
RA-228	1.41E+10Y	1.00	1.827E+00	1.827E+00	0.316E+00	17.30	
TH-228	1.41E+10Y	1.00	1.970E+00	1.970E+00	0.226E+00	11.45	
TH-232	1.41E+10Y	1.00	1.827E+00	1.827E+00	0.316E+00	17.30	
TH-234	4.47E+09Y	1.00	1.138E+00	1.138E+00	1.049E+00	92.18	
U-235	7.04E+08Y	1.00	1.925E-01	1.925E-01	0.511E-01	26.56	K
NP-237	2.14E+06Y	1.00	1.077E+00	1.077E+00	0.306E+00	28.44	
U-238	4.47E+09Y	1.00	1.138E+00	1.138E+00	1.049E+00	92.18	
ANH-511	1.00E+09Y	1.00	1.780E-01	1.780E-01	0.518E-01	29.12	
		Total Activity :	6.314E+01	6.328E+01			
		Grand Total Activity :	6.314E+01	6.328E+01			

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

Sample ID : G248521005 Acquisition date : 19-MAR-2010 23:11:45

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.16	184	861	1.17	258.10	254	9	1.28E-02	59.4	7.29E+00	
0	209.38	350	684	1.00	418.32	414	10	2.43E-02	30.0	5.73E+00	T
0	270.40	307	511	1.33	540.22	534	12	2.13E-02	31.6	4.81E+00	T
0	328.19	138	322	1.15	655.67	652	8	9.57E-03	48.2	4.18E+00	T
0	409.66	87	245	1.23	818.43	813	9	6.06E-03	70.2	3.54E+00	T
0	463.19	175	272	1.47	925.40	919	12	1.22E-02	40.6	3.23E+00	T
0	727.92	236	150	1.46	1454.56	1450	10	1.64E-02	23.3	2.25E+00	T
0	768.78	79	169	1.27	1536.26	1532	9	5.52E-03	63.1	2.15E+00	
0	795.23	140	140	2.29	1589.14	1583	13	9.70E-03	38.8	2.09E+00	T
0	841.39	86	162	4.16	1681.46	1675	14	5.96E-03	67.9	1.99E+00	
0	935.94	81	215	2.78	1870.55	1858	21	5.64E-03	92.9	1.82E+00	
2	965.45	172	116	1.98	1929.58	1923	23	1.19E-02	29.9	1.77E+00	T
0	1239.05	134	138	1.57	2476.99	2472	12	9.31E-03	39.1	1.43E+00	T
0	1281.83	45	46	1.37	2562.61	2558	8	3.13E-03	60.1	1.39E+00	
0	1378.97	63	52	1.57	2757.04	2752	11	4.40E-03	51.4	1.31E+00	
0	1590.94	98	44	1.94	3181.46	3173	19	6.84E-03	37.7	1.18E+00	
0	1622.26	28	25	1.61	3244.18	3238	10	1.94E-03	76.8	1.16E+00	
0	1631.76	37	28	1.73	3263.20	3255	16	2.57E-03	71.8	1.16E+00	
0	1730.38	57	19	2.32	3460.73	3455	11	3.94E-03	40.0	1.11E+00	
0	1848.16	41	4	0.77	3696.68	3689	13	2.87E-03	36.1	1.07E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:14:24.12

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*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
*                                                                           *
*                                DETECTOR DATA                              *
*                                                                           *
* Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521005.CNF;1 *
* Acquisition date  : 19-MAR-2010 23:11:45  Detector SN#     :              *
* Detector ID       : GAM20                 Sensitivity      : 5.00000      *
* Geometry          : CAN                   Energy tolerance: 1.50000       *
* Elapsed live time: 0 04:00:00.00          Abundance limit : 75.00000      *
* Elapsed real time: 0 04:01:06.46          Half life ratio : 8.00000       *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00  Nuclide Library : SOLID         *
* Sample ID         : G248521005            Analyst initials: MXR1          *
* Batch Number      : 961099                Sample Quantity : 1.38240E+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	3.052E+01	2.909E+00	3.574E-01	3.117E-02	85.401
CD-109	3.733E+00	7.171E-01	7.215E-01	6.823E-02	5.174
SN-126	3.609E-01	6.932E-02	6.995E-02	6.579E-03	5.160
HG-203	3.860E-02	4.294E-02	4.319E-02	4.383E-03	0.894
TL-208	6.278E-01	8.590E-02	3.447E-02	3.541E-03	18.211
BI-211	4.719E+00	5.535E-01	1.979E-01	1.896E-02	23.844
PB-212	1.970E+00	2.256E-01	6.116E-02	6.531E-03	32.212
BI-214	1.493E+00	2.028E-01	6.961E-02	7.776E-03	21.445
PB-214	1.713E+00	2.220E-01	7.198E-02	7.949E-03	23.794
RA-224	5.433E+00	9.832E-01	6.554E-01	6.335E-02	8.289
RA-226	1.493E+00	2.028E-01	6.961E-02	7.776E-03	21.445
AC-228	1.827E+00	3.160E-01	1.449E-01	1.821E-02	12.607
RA-228	1.827E+00	3.160E-01	1.449E-01	1.821E-02	12.607
TH-228	1.970E+00	2.256E-01	6.116E-02	6.531E-03	32.212
TH-232	1.827E+00	3.160E-01	1.449E-01	1.821E-02	12.607
TH-234	1.138E+00	1.049E+00	1.129E+00	2.005E-01	1.009
U-235	1.925E-01	5.113E-02	2.211E-01	3.731E-02	0.870
NP-237	1.077E+00	3.062E-01	2.102E-01	4.819E-02	5.123

Sample ID : G248521005 Acquisition date : 19-MAR-2010 23:11:45

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	1.138E+00	1.049E+00	1.129E+00	2.005E-01	1.009
ANH-511	1.780E-01	5.184E-02	2.820E-02	2.628E-03	6.313

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.476E-01		2.310E-01	3.617E-01	3.515E-02	-0.408
NA-22	3.571E-03		2.600E-02	4.125E-02	3.417E-03	0.087
NA-24	-2.031E+03		7.574E+02	Half-Life too short		
SC-46	3.371E-03		2.716E-02	4.521E-02	4.507E-03	0.075
V-48	6.291E-02		6.158E-02	1.074E-01	1.026E-02	0.586
CR-51	-5.398E-02		2.799E-01	4.604E-01	4.612E-02	-0.117
MN-54	-6.721E-03		2.762E-02	3.895E-02	3.935E-03	-0.173
CO-56	-2.021E-02		2.771E-02	3.680E-02	3.709E-03	-0.549
CO-57	-4.165E-03		1.670E-02	2.663E-02	2.223E-03	-0.156
CO-58	-2.423E-02		2.648E-02	4.133E-02	4.197E-03	-0.586
FE-59	1.835E-02		6.701E-02	1.111E-01	1.048E-02	0.165
CO-60	-3.581E-03		2.639E-02	4.190E-02	3.510E-03	-0.085
ZN-65	-4.051E-02		6.605E-02	8.705E-02	7.493E-03	-0.465
SE-75	4.362E-03		3.270E-02	4.847E-02	4.799E-03	0.090
SR-85	9.741E-02		2.931E-02	5.181E-02	4.838E-03	1.880
Y-88	5.779E-03		2.171E-02	3.692E-02	2.979E-03	0.157
Y-91	-1.169E+00		1.645E+01	2.650E+01	2.152E+00	-0.044
NB-94	8.613E-03		2.148E-02	3.670E-02	3.713E-03	0.235
NB-95	2.147E-02		3.380E-02	5.119E-02	5.202E-03	0.419
NB-95M	6.279E-02		9.605E-02	1.457E-01	1.568E-02	0.431
ZR-95	7.601E-02		5.181E-02	9.193E-02	1.006E-02	0.827
MO-99	4.489E-05		2.535E-05	Half-Life too short		
TC-99M	-7.009E+18		9.934E+18	Half-Life too short		
RU-103	-1.356E-02		2.882E-02	4.535E-02	6.506E-03	-0.299
RH-106	-1.709E-03		2.142E-01	3.420E-01	4.828E-02	-0.005
RU-106	-1.709E-03		2.142E-01	3.420E-01	3.385E-02	-0.005
AG-108M	5.627E-04		1.822E-02	2.977E-02	2.683E-03	0.019
AG-110M	-2.572E-02		2.296E-02	3.617E-02	3.706E-03	-0.711
SN-113	1.227E-03		3.017E-02	4.957E-02	4.276E-03	0.025
CD-115	-5.697E-05		3.633E-05	Half-Life too short		
SN-117M	-2.131E-02		5.262E-02	8.252E-02	7.122E-03	-0.258
TE-123M	1.361E-03		1.942E-02	3.094E-02	2.689E-03	0.044
SB-124	-5.516E-03		4.290E-02	6.952E-02	6.057E-03	-0.079
SB-125	-4.632E-03		5.798E-02	9.430E-02	8.341E-03	-0.049
TE-125M	-4.387E+00		6.738E+00	1.064E+01	1.107E+00	-0.412
I-126	1.014E-01		2.243E-01	3.847E-01	3.865E-02	0.263
SB-126	2.554E-02		1.399E-01	2.306E-01	2.338E-02	0.111
SB-127	1.495E+00		2.970E+00	5.111E+00	7.541E-01	0.292
I-131	-3.505E-02		1.381E-01	2.248E-01	2.122E-02	-0.156
TE-132	-9.839E-02		2.290E+00	3.849E+00	6.923E-01	-0.026
BA-133	5.149E-03		2.712E-02	3.970E-02	5.267E-03	0.130

Sample ID : G248521005 Acquisition date : 19-MAR-2010 23:11:45

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	7.575E-01		6.888E-01	Half-Life too short		
CS-134	1.205E-01	+	4.833E-02	6.066E-02	6.189E-03	1.987
CS-135	9.659E-02		1.113E-01	1.696E-01	1.880E-02	0.569
I-135	-1.913E+17		2.749E+17	Half-Life too short		
CS-136	3.592E-02		1.101E-01	1.834E-01	1.742E-02	0.196
BA-137M	-5.154E-03		2.430E-02	4.047E-02	4.061E-03	-0.127
CS-137	-5.445E-03		2.567E-02	4.275E-02	4.296E-03	-0.127
CE-139	6.196E-04		2.117E-02	3.362E-02	2.935E-03	0.018
BA-140	-2.011E-01		2.757E-01	4.010E-01	1.369E-01	-0.501
LA-140	5.560E-02		9.496E-02	1.427E-01	1.205E-02	0.390
CE-141	1.154E-03		4.967E-02	7.931E-02	6.849E-03	0.015
CE-143	2.076E-02		3.328E-03	Half-Life too short		
CE-144	5.006E-02		1.481E-01	2.137E-01	3.236E-02	0.234
PM-144	7.513E-03		2.136E-02	3.647E-02	3.689E-03	0.206
PR-144	5.883E-01		1.607E+00	2.745E+00	2.774E-01	0.214
PM-146	6.291E-03		2.699E-02	4.441E-02	4.806E-03	0.142
ND-147	1.407E-01		5.778E-01	9.263E-01	1.430E-01	0.152
PM-149	-4.737E-04		2.878E-04	Half-Life too short		
EU-152	-7.083E-02		6.667E-02	9.585E-02	9.349E-03	-0.739
GD-153	-4.731E-02		6.065E-02	8.352E-02	7.407E-03	-0.567
EU-154	-1.364E-02		7.550E-02	1.164E-01	1.294E-02	-0.117
EU-155	1.184E-01		6.709E-02	1.124E-01	9.765E-03	1.054
TB-160	1.532E-02		9.014E-02	1.507E-01	1.507E-02	0.102
HO-166M	-1.605E-02		3.733E-02	6.100E-02	6.179E-03	-0.263
TA-182	-3.132E-02		1.453E-01	2.318E-01	1.891E-02	-0.135
IR-192	-1.418E-03		2.354E-02	3.894E-02	3.766E-03	-0.036
BI-207	-5.399E-03		3.551E-02	5.740E-02	5.183E-03	-0.094
PB-210	1.171E-01		1.352E+00	2.184E+00	2.007E-01	0.054
PB-211	-1.583E-01		5.343E-01	7.446E-01	3.602E-01	-0.213
BI-212	2.139E+00	+	5.772E-01	8.097E-01	1.098E-01	2.642
RN-219	2.680E-03		2.592E-01	4.249E-01	6.278E-02	0.006
RA-223	-7.186E-02		4.651E-01	6.710E-01	1.196E-01	-0.107
AC-227	2.515E-02		1.557E-01	2.621E-01	3.387E-02	0.096
TH-227	2.515E-02		1.557E-01	2.621E-01	3.770E-02	0.096
TH-229	-6.207E-03		3.295E-01	5.582E-01	5.083E-02	-0.011
PA-231	-7.890E-01		9.338E-01	1.440E+00	2.218E-01	-0.548
TH-231	-7.186E-02		4.651E-01	6.710E-01	1.196E-01	-0.107
PA-233	3.947E-03		4.059E-02	6.760E-02	6.709E-03	0.058
PA-234	-1.220E-01		2.066E-01	3.253E-01	6.281E-02	-0.375
PA-234M	4.928E-01		3.264E+00	5.357E+00	5.730E-01	0.092
NP-239	-2.409E-01		2.592E-01	4.043E-01	3.387E-02	-0.596
AM-241	6.442E-02		8.458E-02	1.273E-01	9.962E-03	0.506
CM-247	-7.972E-03		2.406E-02	3.881E-02	3.281E-03	-0.205
CF-249	8.412E-03		2.545E-02	4.235E-02	3.571E-03	0.199
CF-251	-2.492E-02		8.757E-02	1.372E-01	1.219E-02	-0.182

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration    : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248521005            *
* Acquisition date : 19-MAR-2010 23:11:45 Detector SN#    :                 *
* Detector ID      : GAM20                Sensitivity     : 5.000           *
* Geometry         : CAN                  Energy tolerance: 1.500           *
* Elapsed live time:    0 04:00:00.00     Abundance limit : 75.000          *
* Elapsed real time:    0 04:01:06.46     Half life ratio : 8.000           *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date      : 25-FEB-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID        : G248521005           Analyst initials: MXR1            *
* Batch Number     : 961099               Sample Quantity : 1.3824E+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    :                 *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.052E+01	2.851E+00	1.794E-01	1.455E+00
CD-109	3.733E+00	7.028E-01	3.824E-01	3.586E-01
SN-126	3.609E-01	6.794E-02	3.708E-02	3.466E-02
HG-203	3.860E-02	4.208E-02	2.240E-02	2.147E-02
TL-208	6.278E-01	8.418E-02	1.762E-02	4.295E-02
BI-211	4.719E+00	5.425E-01	1.022E-01	2.768E-01
PB-212	1.970E+00	2.211E-01	3.182E-02	1.128E-01
BI-214	1.493E+00	1.987E-01	3.556E-02	1.014E-01
PB-214	1.713E+00	2.176E-01	3.716E-02	1.110E-01
RA-224	5.433E+00	9.636E-01	3.409E-01	4.916E-01
RA-226	1.493E+00	1.987E-01	3.556E-02	1.014E-01
AC-228	1.827E+00	3.096E-01	7.342E-02	1.580E-01
RA-228	1.827E+00	3.096E-01	7.342E-02	1.580E-01
TH-228	1.970E+00	2.211E-01	3.182E-02	1.128E-01
TH-232	1.827E+00	3.096E-01	7.342E-02	1.580E-01
TH-234	1.138E+00	1.028E+00	6.018E-01	5.245E-01
U-235	9.468E-02	1.357E-01	1.161E-01	6.923E-02
NP-237	1.077E+00	3.001E-01	1.115E-01	1.531E-01
U-238	1.138E+00	1.028E+00	6.018E-01	5.245E-01
ANH-511	1.780E-01	5.080E-02	1.445E-02	2.592E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-1.476E-01	2.264E-01	1.857E-01	1.155E-01	NOT IDENT.
NA-22	3.571E-03	2.548E-02	2.076E-02	1.300E-02	NOT IDENT.
NA-24	-2.031E+09	1.485E+09	0.000E+00	7.574E+08	SHORT HLIF
SC-46	3.371E-03	2.661E-02	2.292E-02	1.358E-02	FAIL ABUN
V-48	6.291E-02	6.035E-02	5.434E-02	3.079E-02	NOT IDENT.
CR-51	-5.398E-02	2.743E-01	2.381E-01	1.400E-01	NOT IDENT.
MN-54	-6.721E-03	2.707E-02	1.977E-02	1.381E-02	NOT IDENT.

CO-56	-2.021E-02	2.716E-02	1.867E-02	1.386E-02	FAIL ABUN
CO-57	-4.165E-03	1.637E-02	1.403E-02	8.352E-03	NOT IDENT.
CO-58	-2.423E-02	2.595E-02	2.099E-02	1.324E-02	NOT IDENT.
FE-59	1.835E-02	6.567E-02	5.608E-02	3.351E-02	NOT IDENT.
CO-60	-3.581E-03	2.586E-02	2.107E-02	1.320E-02	NOT IDENT.
ZN-65	-4.051E-02	6.473E-02	4.393E-02	3.302E-02	NOT IDENT.
SE-75	4.362E-03	3.205E-02	2.516E-02	1.635E-02	NOT IDENT.
SR-85	9.741E-02	2.872E-02	2.656E-02	1.466E-02	NOT IDENT.
Y-88	5.779E-03	2.128E-02	1.844E-02	1.085E-02	NOT IDENT.
Y-91	-1.169E+00	1.612E+01	1.335E+01	8.224E+00	NOT IDENT.
NB-94	8.613E-03	2.105E-02	1.869E-02	1.074E-02	NOT IDENT.
NB-95	2.147E-02	3.313E-02	2.603E-02	1.690E-02	NOT IDENT.
NB-95M	6.279E-02	9.413E-02	7.581E-02	4.803E-02	NOT IDENT.
ZR-95	7.601E-02	5.077E-02	4.676E-02	2.590E-02	NOT IDENT.
MO-99	4.489E+01	4.969E+01	0.000E+00	2.535E+01	SHORT HLIF
TC-99M	-7.009E+24	1.947E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.356E-02	2.824E-02	2.326E-02	1.441E-02	FAIL ABUN
RH-106	-1.709E-03	2.100E-01	1.746E-01	1.071E-01	NOT IDENT.
RU-106	-1.709E-03	2.100E-01	1.746E-01	1.071E-01	NOT IDENT.
AG-108M	5.627E-04	1.786E-02	1.531E-02	9.111E-03	NOT IDENT.
AG-110M	-2.572E-02	2.250E-02	1.845E-02	1.148E-02	NOT IDENT.
SN-113	1.227E-03	2.956E-02	2.554E-02	1.508E-02	NOT IDENT.
CD-115	-5.697E+01	7.120E+01	0.000E+00	3.633E+01	SHORT HLIF
SN-117M	-2.131E-02	5.156E-02	4.326E-02	2.631E-02	NOT IDENT.
TE-123M	1.361E-03	1.903E-02	1.622E-02	9.711E-03	NOT IDENT.
SB-124	-5.516E-03	4.204E-02	3.479E-02	2.145E-02	NOT IDENT.
SB-125	-4.632E-03	5.682E-02	4.851E-02	2.899E-02	FAIL ABUN
TE-125M	-4.387E+00	6.603E+00	5.618E+00	3.369E+00	NOT IDENT.
I-126	1.014E-01	2.198E-01	1.962E-01	1.122E-01	NOT IDENT.
SB-126	2.554E-02	1.371E-01	1.174E-01	6.996E-02	NOT IDENT.
SB-127	1.495E+00	2.910E+00	2.605E+00	1.485E+00	NOT IDENT.
I-131	-3.505E-02	1.353E-01	1.160E-01	6.905E-02	NOT IDENT.
TE-132	-9.839E-02	2.244E+00	2.004E+00	1.145E+00	NOT IDENT.
BA-133	5.149E-03	2.657E-02	2.050E-02	1.356E-02	FAIL ABUN
I-133	7.575E+05	1.350E+06	0.000E+00	6.888E+05	SHORT HLIF
CS-134	1.205E-01	4.736E-02	3.082E-02	2.417E-02	FAIL ABUN
CS-135	9.659E-02	1.091E-01	8.805E-02	5.565E-02	NOT IDENT.
I-135	-1.913E+23	5.387E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.592E-02	1.079E-01	9.270E-02	5.503E-02	NOT IDENT.
BA-137M	-5.154E-03	2.381E-02	2.064E-02	1.215E-02	NOT IDENT.
CS-137	-5.445E-03	2.515E-02	2.180E-02	1.283E-02	NOT IDENT.
CE-139	6.196E-04	2.074E-02	1.761E-02	1.058E-02	NOT IDENT.
BA-140	-2.011E-01	2.702E-01	2.054E-01	1.379E-01	NOT IDENT.
LA-140	5.560E-02	9.306E-02	7.148E-02	4.748E-02	FAIL ABUN
CE-141	1.154E-03	4.868E-02	4.165E-02	2.484E-02	NOT IDENT.
CE-143	2.076E+04	6.524E+03	0.000E+00	3.328E+03	SHORT HLIF
CE-144	5.006E-02	1.452E-01	1.124E-01	7.407E-02	NOT IDENT.
PM-144	7.513E-03	2.094E-02	1.858E-02	1.068E-02	NOT IDENT.
PR-144	5.883E-01	1.574E+00	1.398E+00	8.033E-01	NOT IDENT.
PM-146	6.291E-03	2.645E-02	2.282E-02	1.349E-02	NOT IDENT.
ND-147	1.407E-01	5.663E-01	4.745E-01	2.889E-01	FAIL ABUN
PM-149	-4.737E+02	5.641E+02	0.000E+00	2.878E+02	SHORT HLIF
EU-152	-7.083E-02	6.533E-02	4.951E-02	3.333E-02	FAIL ABUN
GD-153	-4.731E-02	5.943E-02	4.419E-02	3.032E-02	NOT IDENT.
EU-154	-1.364E-02	7.399E-02	5.857E-02	3.775E-02	NOT IDENT.
EU-155	1.184E-01	6.574E-02	5.937E-02	3.354E-02	FAIL ABUN
TB-160	1.532E-02	8.834E-02	7.643E-02	4.507E-02	FAIL ABUN
HO-166M	-1.605E-02	3.658E-02	3.106E-02	1.866E-02	FAIL ABUN
TA-182	-3.132E-02	1.424E-01	1.168E-01	7.263E-02	FAIL ABUN
IR-192	-1.418E-03	2.307E-02	2.015E-02	1.177E-02	FAIL ABUN
BI-207	-5.399E-03	3.480E-02	2.900E-02	1.776E-02	FAIL ABUN
PB-210	1.171E-01	1.325E+00	1.171E+00	6.759E-01	NOT IDENT.
PB-211	-1.583E-01	5.237E-01	3.834E-01	2.672E-01	NOT IDENT.
BI-212	2.139E+00	5.656E-01	4.122E-01	2.886E-01	FAIL ABUN
RN-219	2.680E-03	2.541E-01	2.188E-01	1.296E-01	FAIL ABUN
RA-223	-7.186E-02	4.558E-01	3.470E-01	2.326E-01	FAIL ABUN
AC-227	2.515E-02	1.526E-01	1.362E-01	7.784E-02	FAIL ABUN
TH-227	2.515E-02	1.526E-01	1.362E-01	7.785E-02	FAIL ABUN
TH-229	-6.207E-03	3.229E-01	2.915E-01	1.648E-01	FAIL ABUN
PA-231	-7.890E-01	9.151E-01	7.469E-01	4.669E-01	FAIL ABUN
TH-231	-7.186E-02	4.558E-01	3.470E-01	2.326E-01	FAIL ABUN
PA-233	3.947E-03	3.978E-02	3.499E-02	2.029E-02	FAIL ABUN
PA-234	-1.220E-01	2.025E-01	1.647E-01	1.033E-01	NOT IDENT.
PA-234M	4.928E-01	3.199E+00	2.709E+00	1.632E+00	NOT IDENT.
NP-239	-2.409E-01	2.540E-01	2.132E-01	1.296E-01	FAIL ABUN
AM-241	6.442E-02	8.289E-02	6.796E-02	4.229E-02	NOT IDENT.
CM-247	-7.972E-03	2.358E-02	1.999E-02	1.203E-02	FAIL ABUN
CF-249	8.412E-03	2.494E-02	2.183E-02	1.272E-02	NOT IDENT.

CF-251	-2.492E-02	8.582E-02	7.178E-02	4.378E-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	658.4539
49.72	698.1622
57.36	0.0000
59.54	793.6454
63.29	939.8341
63.29	939.8341
64.28	956.1018
67.75	1048.5450
69.67	998.6312
70.83	1012.8009
72.81	1091.2386
72.87	1091.3473
72.87	1091.3473
74.82	1010.7693
74.82	1010.7693
74.82	1010.7693
74.97	1011.0151
77.11	1014.4905
77.11	1014.4905
77.11	1014.4905
79.69	979.3608
79.80	945.4321
80.12	945.9021
80.19	946.0045
80.57	887.5967
81.00	894.3970
81.07	894.4937
81.07	894.4937
83.79	952.7902
83.79	952.7902
85.43	809.7584
86.48	811.0190
86.55	811.1060
86.79	811.3906
86.94	811.5723
87.57	812.3232
88.03	812.8726
88.47	813.3942
89.96	815.1568
91.11	816.5045
92.59	818.2275
92.59	818.2275
93.35	819.1088
94.67	641.6125
94.87	689.3319
94.87	689.3319
95.86	758.5157
97.43	741.0770
98.44	642.0925
99.53	607.1086
100.11	632.0586
103.18	738.2961
103.37	751.3069
105.31	626.7934
106.12	673.5776
109.28	714.0179
111.00	681.0399
111.76	735.7098
116.30	646.4354
117.23	693.9412
121.12	666.6073
121.78	652.9141
122.06	650.9446
123.07	645.1534
131.20	645.1716
133.52	630.2344
136.00	689.2316

136.47	678.4686
140.51	0.0000
140.51	0.0000
143.76	645.7441
144.24	678.6064
144.24	678.6064
145.44	688.4589
152.43	639.1999
153.25	613.6922
154.21	625.6326
154.21	625.6326
156.02	655.1706
158.56	610.1755
159.00	585.3871
162.66	616.0964
163.33	613.0707
165.86	624.9061
176.60	615.1193
177.52	588.9769
181.07	0.0000
184.41	568.4495
185.72	566.8457
193.51	553.1455
197.04	558.3882
205.31	567.5241
210.85	505.6923
215.65	509.5409
222.11	521.3743
227.38	500.8733
228.16	484.8379
228.18	480.3063
235.69	515.8143
235.96	545.1483
235.96	545.1483
238.63	491.5276
238.63	491.5276
240.99	492.4084
242.00	492.7853
244.70	385.4681
252.40	397.6595
252.80	402.4029
256.23	379.2998
256.23	379.2998
260.90	0.0000
264.66	367.2343
268.22	377.1387
269.46	368.8520
269.46	368.8520
271.23	380.5569
273.65	360.5449
276.40	346.1792
277.37	380.2973
277.60	380.3589
278.00	380.4637
279.20	351.3658
279.54	351.4511
280.46	362.2354
283.69	370.5924
284.31	374.5311
285.41	379.5415
285.90	0.0000
287.50	321.3093
293.27	0.0000
295.22	314.0092
295.96	314.1601
298.57	248.2449
299.98	248.4750
299.98	248.4750
300.09	308.8933
300.09	308.8933
300.13	308.9032
301.36	309.1498
302.85	301.7861
304.50	291.3735
304.50	291.3735
304.85	308.3112
308.46	308.5884
311.90	314.9052

316.51	316.7891
319.41	317.3596
320.08	315.5588
323.87	329.1072
323.87	329.1072
328.76	348.7805
333.37	322.6946
334.37	329.6617
334.37	329.6617
338.28	311.2505
338.28	311.2505
338.32	311.2602
338.32	311.2602
338.32	311.2602
340.48	254.0347
340.55	254.0426
344.28	319.5699
351.06	259.3682
351.93	259.5006
356.01	224.7074
364.49	268.3397
366.42	0.0000
383.85	254.1697
388.16	251.7471
388.63	253.8265
391.69	264.3387
400.66	250.4033
401.81	254.6116
402.40	267.8833
404.85	269.8554
410.95	283.7653
414.70	246.4667
423.72	228.8016
427.09	240.4984
427.87	229.2848
433.94	208.3279
453.88	211.4315
463.37	179.9654
468.07	192.9507
473.00	212.3225
476.78	205.3278
477.60	224.3689
487.02	185.1498
492.35	0.0000
497.08	198.7588
511.00	178.6161
514.00	178.8543
527.90	0.0000
529.87	0.0000
531.02	162.9305
537.26	188.2522
546.56	0.0000
563.25	170.6440
569.33	172.1691
569.50	172.1787
569.70	155.7415
583.19	156.6039
600.60	204.3384
602.73	190.2855
604.72	176.1987
609.32	170.4955
609.32	170.4955
610.33	170.5655
614.28	171.4969
618.01	183.3739
621.93	174.6954
621.93	174.6954
633.25	152.9585
635.95	179.2360
636.99	160.3869
645.85	159.1133
657.76	195.2374
661.66	204.6149
661.66	204.6149
664.57	0.0000
666.33	192.2130
666.50	192.2233
677.62	144.5222

685.70	131.1857
695.00	158.3148
696.49	152.8732
696.51	152.8732
697.00	152.8975
702.65	166.1265
706.68	160.8141
711.68	158.3211
720.70	151.6974
721.93	0.0000
722.78	156.4522
722.91	156.4604
723.31	164.2275
724.19	156.5262
727.33	147.3899
733.00	139.9036
735.93	168.9849
739.50	0.0000
747.24	121.8369
752.31	160.5338
753.82	156.8561
756.73	130.6858
763.94	142.9355
765.81	160.3130
766.42	169.7783
777.92	0.0000
778.90	143.9547
783.70	166.9465
785.37	137.6155
795.86	130.4644
801.95	147.2118
810.29	147.3264
810.76	144.4785
815.77	94.8742
818.51	116.0578
832.01	144.4812
834.85	147.8229
836.80	0.0000
846.77	112.8870
856.80	129.4075
860.56	115.6270
871.09	112.0969
873.19	96.5612
875.33	0.0000
879.36	105.5347
880.51	84.0642
883.24	135.0048
884.68	125.2750
889.28	123.4837
898.04	147.3853
911.20	121.3184
911.20	121.3184
911.20	121.3184
926.50	125.4854
937.49	124.2218
944.13	130.6796
946.00	143.4480
949.00	117.6485
962.29	111.7485
964.08	121.8152
966.15	112.1996
968.97	112.2871
968.97	112.2871
968.97	112.2871
983.53	93.6130
996.26	133.3309
1001.03	126.4221
1004.73	140.7205
1037.84	100.0911
1038.76	0.0000
1048.07	125.9609
1050.41	131.1563
1050.41	131.1563
1063.66	126.4654
1085.87	113.7437
1099.45	114.1304
1112.07	105.1229
1115.54	126.7460

1120.29	118.8984
1120.29	118.8984
1120.55	118.9040
1121.30	118.9263
1131.51	0.0000
1173.23	134.1685
1177.93	152.2969
1189.05	132.5500
1204.77	152.1958
1221.41	164.5424
1231.02	182.0361
1235.36	144.7031
1238.28	139.4326
1260.41	0.0000
1271.85	109.1569
1274.44	85.3102
1274.54	76.8993
1291.59	90.0963
1298.22	0.0000
1312.11	77.4170
1332.49	82.1411
1365.19	47.7936
1368.63	0.0000
1384.29	53.7843
1408.01	74.1895
1457.56	0.0000
1460.82	57.1801
1489.16	36.7640
1505.03	70.9198
1596.21	39.5893
1620.50	28.1693
1678.03	0.0000
1690.97	22.5180
1764.49	23.8018
1764.49	23.8018
1770.23	20.4216
1771.35	20.4258
1791.20	0.0000
1836.06	25.0966

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248521005

Total Uranium Activity	3.4298E+00	ug/g
Total Uranium Counting Unc.	3.0593E+00	ug/g
Total Uranium Tpu	1.5609E-06	ug/g
Total Uranium Mda	1.7911E+00	ug/g

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*****************************************************************************
*                                                                           *
*                          GEL Laboratories LLC                           *
*                               2040 SAVAGE ROAD                            *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 961099                    SAMPLE ID  : G248521005        *
*   ANALYST      : MXR1                      DETECTOR   : GAM20             *
*   SAMPLE DATE  : 25-FEB-2010 12:00:00.00   COUNT TIME :    0 04:00:00.00 *
*   ANALYSIS DATE: 19-MAR-2010 23:11:45.86   SAMPLE ALQT:  138.240 GRAM    *
*                                                                           *
*****************************************************************************


        GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 1.105E+01
        GROSS GAMMA ERROR  (pCi/GRAM  )   : 1.186E+00
        GROSS GAMMA MDA    (pCi/GRAM  )   : 3.523E+00
        GROSS GAMMA DLC    (pCi/GRAM  )   : 1.728E+00
```

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:12:54.65

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*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521006.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:12:15
Sample ID         : G248521006           Sample quantity  : 1.26550E+02 GRAM
Detector name     : GAM22                Detector geometry: CAN
Elapsed live time: 0 04:00:00.00         Elapsed real time: 0 04:00:04.90  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.17*	347	1645	0.95	126.59	122	10	2.41E-02	23.1	
2	3	74.85	1314	1190	1.08	149.93	145	21	9.13E-02	4.9	2.04E+00
3	3	77.13*	1948	1081	1.08	154.48	145	21	1.35E-01	3.7	
4	4	84.28*	406	1072	1.50	168.77	165	28	2.82E-02	14.4	1.19E+00
5	4	87.29	914	1203	1.31	174.78	165	28	6.35E-02	7.4	
6	4	89.98	527	1035	1.10	180.15	165	28	3.66E-02	11.2	
7	4	92.82*	905	1308	1.57	185.84	165	28	6.28E-02	8.7	
8	0	105.62	174	851	1.71	211.40	209	7	1.21E-02	28.9	
9	0	129.04	225	1068	1.12	258.20	255	8	1.56E-02	26.0	
10	0	185.84*	687	1148	1.43	371.68	367	11	4.77E-02	10.9	
11	0	209.55	249	1121	1.05	419.06	413	10	1.73E-02	25.9	
12	3	238.70*	4294	676	1.19	477.32	470	19	2.98E-01	1.9	1.98E+00
13	3	241.69	962	906	1.67	483.29	470	19	6.68E-02	8.1	
14	0	270.15*	371	678	1.32	540.17	536	10	2.58E-02	14.5	
15	0	277.61	165	583	1.56	555.07	551	9	1.15E-02	27.5	
16	2	295.30*	1337	452	1.23	590.42	582	24	9.28E-02	3.9	1.02E+00
17	2	300.23	272	553	1.55	600.28	582	24	1.89E-02	16.8	
18	0	328.23	220	708	1.43	656.23	652	11	1.53E-02	24.4	
19	0	338.60*	932	736	1.33	676.95	671	14	6.47E-02	7.2	
20	0	351.95*	2316	776	1.38	703.64	696	14	1.61E-01	3.4	
21	0	462.89*	275	479	1.41	925.35	919	13	1.91E-02	18.0	
22	0	510.96*	428	661	2.41	1021.42	1012	21	2.97E-02	17.6	
23	0	562.11	88	384	1.97	1123.66	1116	14	6.09E-03	48.6	
24	0	583.19*	1425	425	1.58	1165.79	1157	16	9.89E-02	4.3	
25	0	609.45*	1837	381	1.71	1218.28	1212	14	1.28E-01	3.4	
26	0	661.80	779	376	1.72	1322.93	1317	12	5.41E-02	6.1	
27	0	727.15	315	362	1.84	1453.56	1447	14	2.19E-02	14.0	
28	0	768.53	117	250	1.63	1536.29	1532	9	8.10E-03	26.1	
29	0	786.45	142	200	1.14	1572.10	1567	12	9.88E-03	21.7	
30	0	795.31	168	211	1.98	1589.82	1585	11	1.17E-02	18.4	
31	0	861.11	171	321	1.42	1721.37	1713	16	1.18E-02	24.8	
32	0	911.23*	1051	247	2.20	1821.57	1812	17	7.30E-02	4.8	
33	4	964.79	257	234	3.20	1928.66	1921	24	1.78E-02	14.9	8.26E-01
34	4	969.16*	581	190	2.06	1937.41	1921	24	4.03E-02	7.0	
35	0	1120.36*	407	254	2.01	2239.74	2231	17	2.83E-02	10.5	
36	0	1237.52	250	300	2.39	2474.04	2463	20	1.74E-02	18.1	
37	0	1378.35	95	158	1.29	2755.72	2747	16	6.57E-03	30.4	
38	0	1460.93*	4418	152	2.69	2920.89	2909	22	3.07E-01	1.7	

Sample ID : G248521006 Acquisition date : 19-MAR-2010 23:12:15

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1588.55	81	124	1.39	3176.18	3165	17	5.64E-03	33.2	
40	6	1620.73	111	15	4.78	3240.55	3232	53	7.72E-03	13.7	1.66E+00
41	6	1630.93	121	54	5.09	3260.97	3232	53	8.43E-03	19.1	
42	0	1729.41	130	23	3.19	3458.00	3445	22	9.01E-03	12.8	
43	0	1764.56*	426	48	2.94	3528.32	3514	23	2.96E-02	7.0	

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

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 03:12:57

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521006.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:12:15
Sample ID : G248521006 Sample quantity : 126.55 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA22 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:04.90 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.220E+01	3.143E+00	3.489E-01	3.196E-02	92.307
CD-109	+	88.03	*	5.066E+00	8.868E-01	7.597E-01	7.209E-02	6.668
SN-126	+	64.28		1.244E+00	6.032E-01	5.422E-01	7.874E-02	2.295
	+	86.94		2.036E+00	8.973E-01	3.083E-01	1.280E-01	6.603
	+	87.57	*	4.897E-01	8.573E-02	7.373E-02	6.962E-03	6.641
BA-137M	+	661.66	*	3.588E-01	5.800E-02	4.111E-02	4.335E-03	8.727
CS-137	+	661.66	*	3.790E-01	6.130E-02	4.343E-02	4.585E-03	8.727
EU-155	+	86.55		5.955E-01	1.045E-01	9.052E-02	8.515E-03	6.579
	+	105.31	*	1.471E-01	8.594E-02	1.199E-01	1.029E-02	1.227
TL-208	+	277.37		6.001E-01	3.448E-01	4.259E-01	7.084E-02	1.409
	+	583.19	*	6.325E-01	8.759E-02	3.783E-02	4.098E-03	16.722
	+	860.56		6.928E-01	3.528E-01	2.883E-01	3.359E-02	2.403
BI-211		72.87		7.737E+00	2.421E+00	3.725E+00	2.981E-01	2.077
	+	351.06	*	4.922E+00	6.614E-01	2.301E-01	2.685E-02	21.387
BI-212	+	727.33	*	2.099E+00	6.559E-01	5.542E-01	7.793E-02	3.787
	+	785.37		6.104E+00	2.733E+00	3.533E+00	3.883E-01	1.728
	+	1620.50		6.268E+00	1.797E+00	2.081E+00	1.814E-01	3.012
PB-212	+	74.82		3.072E+00	4.933E-01	3.759E-01	4.774E-02	8.172
	+	77.11		2.613E+00	2.920E-01	2.165E-01	1.811E-02	12.069
	+	238.63	*	2.177E+00	3.001E-01	6.733E-02	8.919E-03	32.340
	+	300.09		2.065E+00	7.584E-01	8.967E-01	1.315E-01	2.303
BI-214	+	609.32	*	1.572E+00	2.116E-01	7.443E-02	8.685E-03	21.120
	+	1120.29		1.726E+00	4.115E-01	3.196E-01	3.547E-02	5.401
	+	1764.49		2.406E+00	3.907E-01	2.072E-01	1.727E-02	11.611
PB-214	+	74.82		5.445E+00	8.188E-01	6.663E-01	7.584E-02	8.172
	+	77.11		4.607E+00	6.398E-01	3.817E-01	4.484E-02	12.069
	+	242.00		2.952E+00	6.303E-01	4.089E-01	5.654E-02	7.220
	+	295.22		1.803E+00	3.053E-01	1.587E-01	2.381E-02	11.359
	+	351.93	*	1.786E+00	2.595E-01	8.368E-02	1.077E-02	21.348
RA-224	+	240.99	*	5.220E+00	1.073E+00	7.209E-01	9.024E-02	7.241
RA-226	+	609.32	*	1.572E+00	2.116E-01	7.443E-02	8.685E-03	21.120
	+	1120.29		1.726E+00	4.115E-01	3.196E-01	3.547E-02	5.401
	+	1764.49		2.406E+00	3.907E-01	2.072E-01	1.727E-02	11.611
AC-228	+	338.32		2.220E+00	9.958E-01	2.557E-01	1.087E-01	8.681

Sample ID : G248521006 Acquisition date : 19-MAR-2010 23:12:15

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	911.20	*	2.167E+00	3.596E-01	1.508E-01	2.042E-02	14.374
	+	968.97		2.058E+00	5.929E-01	2.413E-01	6.067E-02	8.529
RA-228	+	338.32		2.220E+00	9.958E-01	2.557E-01	1.087E-01	8.681
	+	911.20	*	2.167E+00	3.596E-01	1.508E-01	2.042E-02	14.374
	+	968.97		2.058E+00	5.929E-01	2.413E-01	6.067E-02	8.529
TH-228	+	74.82		3.072E+00	3.941E-01	3.759E-01	3.100E-02	8.172
	+	77.11		2.613E+00	2.920E-01	2.165E-01	1.811E-02	12.069
	+	238.63	*	2.177E+00	3.001E-01	6.733E-02	8.919E-03	32.340
	+	300.09		2.065E+00	1.458E+00	8.967E-01	5.565E-01	2.303
TH-229	+	85.43		5.663E-01	1.707E-01	1.894E-01	1.743E-02	2.989
	+	88.47		7.550E-01	1.322E-01	1.128E-01	1.065E-02	6.693
		193.51	*	1.908E-01	3.916E-01	6.518E-01	7.005E-02	0.293
	+	210.85		1.837E+00	9.753E-01	1.032E+00	1.174E-01	1.780
TH-232	+	338.32		2.220E+00	4.130E-01	2.557E-01	3.041E-02	8.681
	+	911.20	*	2.167E+00	3.596E-01	1.508E-01	2.042E-02	14.374
	+	968.97		2.058E+00	5.929E-01	2.413E-01	6.067E-02	8.529
TH-234	+	63.29	*	3.229E+00	1.600E+00	1.385E+00	2.464E-01	2.332
	+	92.59		4.032E+00	1.141E+00	6.211E-01	1.383E-01	6.491
U-235	+	89.96		2.932E+00	9.793E-01	7.709E-01	1.917E-01	3.803
	+	93.35		3.045E+00	8.865E-01	4.670E-01	1.086E-01	6.521
		143.76	*	5.628E-02	1.519E-01	2.456E-01	4.198E-02	0.229
		163.33		2.847E-01	3.272E-01	5.265E-01	9.736E-02	0.541
	+	185.72		2.342E-01	5.677E-02	4.783E-02	5.008E-03	4.898
		205.31		1.565E-02	4.026E-01	5.800E-01	1.130E-01	0.027
NP-237	+	86.48	*	1.461E+00	3.991E-01	2.222E-01	5.099E-02	6.575
		95.86		-9.223E-02	6.937E-01	9.924E-01	2.390E-01	-0.093
U-238	+	63.29	*	3.229E+00	1.600E+00	1.385E+00	2.464E-01	2.332
	+	92.59		4.032E+00	7.944E-01	6.211E-01	5.650E-02	6.491
ANH-511	+	511.00	*	1.476E-01	5.411E-02	3.002E-02	3.008E-03	4.916

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-6.921E-02	2.516E-01	3.894E-01	4.063E-02	-0.178
NA-22		1274.54	*	-2.735E-02	3.058E-02	4.835E-02	4.167E-03	-0.566
NA-24		1368.63	*	-9.933E+01	3.058E-02	Half-Life too short		
SC-46		889.28	*	1.683E-02	2.710E-02	4.607E-02	5.157E-03	0.365
	+	1120.55		3.104E-01	7.100E-02	9.090E-02	8.036E-03	3.415
V-48		944.13		-6.005E-01	8.175E-01	1.299E+00	1.409E-01	-0.462
		983.53	*	-4.329E-06	5.929E-02	9.739E-02	1.021E-02	0.000
		1312.11		1.239E-02	6.998E-02	1.166E-01	1.027E-02	0.106
CR-51		320.08	*	-2.029E-01	3.073E-01	5.027E-01	6.507E-02	-0.404
MN-54		834.85	*	2.867E-03	2.561E-02	4.291E-02	4.767E-03	0.067
CO-56		846.77	*	5.377E-04	2.784E-02	4.643E-02	5.169E-03	0.012
		1037.84		-1.659E-01	2.143E-01	3.355E-01	3.457E-02	-0.495
	+	1238.28		3.137E-01	1.169E-01	1.251E-01	1.084E-02	2.508
		1771.35		2.014E-01	1.861E-01	2.930E-01	2.435E-02	0.687
CO-57		122.06	*	4.078E-03	1.866E-02	2.975E-02	2.454E-03	0.137

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.47		-2.863E-02	1.493E-01	2.513E-01	2.329E-02	-0.114
CO-58		810.76	*	-3.235E-02	2.720E-02	4.279E-02	4.738E-03	-0.756
FE-59		1099.45	*	-4.307E-02	6.944E-02	1.092E-01	1.070E-02	-0.394
		1291.59		8.953E-02	9.471E-02	1.629E-01	1.605E-02	0.550
CO-60		1173.23		-1.109E-02	2.931E-02	4.809E-02	3.868E-03	-0.231
		1332.49	*	3.330E-02	2.630E-02	4.600E-02	4.102E-03	0.724
ZN-65		1115.54	*	6.826E-02	7.447E-02	1.083E-01	9.663E-03	0.630
SE-75		121.12		-1.709E-02	1.002E-01	1.582E-01	1.708E-02	-0.108
		136.00		-5.583E-03	2.920E-02	4.917E-02	4.268E-03	-0.114
		264.66	*	2.475E-02	3.846E-02	5.514E-02	7.423E-03	0.449
		279.54		9.633E-02	9.332E-02	1.343E-01	1.907E-02	0.717
		400.66		5.359E-02	1.866E-01	3.089E-01	3.608E-02	0.173
SR-85		514.00	*	1.787E-01	3.815E-02	5.755E-02	5.774E-03	3.105
Y-88		898.04		-5.434E-02	2.794E-02	4.081E-02	4.585E-03	-1.331
		1836.06	*	3.907E-03	2.287E-02	3.811E-02	3.082E-03	0.102
Y-91		1204.77	*	4.124E-01	1.551E+01	2.584E+01	2.124E+00	0.016
NB-94		702.65	*	1.433E-03	2.201E-02	3.602E-02	3.860E-03	0.040
		871.09		7.568E-03	2.238E-02	3.707E-02	4.141E-03	0.204
NB-95		765.81	*	8.611E-02	3.795E-02	5.745E-02	6.282E-03	1.499
NB-95M		235.69	*	2.421E-01	1.178E-01	1.720E-01	2.276E-02	1.408
ZR-95		724.19		2.176E-01	8.588E-02	1.303E-01	1.484E-02	1.670
		756.73	*	2.974E-02	5.218E-02	8.646E-02	1.006E-02	0.344
MO-99		140.51		-1.209E-04	5.218E-02	Half-Life too short		
		181.07		-5.119E-05	5.218E-02	Half-Life too short		
		366.42		4.351E-04	5.218E-02	Half-Life too short		
		739.50	*	4.814E-05	5.218E-02	Half-Life too short		
		777.92		-1.968E-04	5.218E-02	Half-Life too short		
TC-99M		140.51	*	-2.378E+19	5.218E-02	Half-Life too short		
RU-103		497.08	*	1.287E-02	3.040E-02	4.966E-02	7.362E-03	0.259
	+	610.33		1.849E+01	3.440E+00	2.201E+00	3.820E-01	8.399
RH-106		621.93	*	-4.122E-02	2.126E-01	3.483E-01	5.053E-02	-0.118
		1050.41		1.186E-01	1.640E+00	2.686E+00	2.621E-01	0.044
RU-106		621.93	*	-4.122E-02	2.125E-01	3.483E-01	3.638E-02	-0.118
		1050.41		1.186E-01	1.640E+00	2.686E+00	2.621E-01	0.044
AG-108M		433.94	*	-1.817E-02	2.003E-02	3.144E-02	3.095E-03	-0.578
		614.28		-1.390E-03	2.588E-02	3.666E-02	3.907E-03	-0.038
		722.91		1.130E-02	2.931E-02	4.174E-02	4.598E-03	0.271
AG-110M		657.76	*	2.873E-02	2.970E-02	4.378E-02	4.705E-03	0.656
		677.62		-1.376E-01	2.088E-01	3.317E-01	3.588E-02	-0.415
		706.68		4.010E-02	1.430E-01	2.359E-01	2.579E-02	0.170
		763.94		1.480E-01	1.263E-01	1.859E-01	2.066E-02	0.796
		884.68		-1.341E-02	3.920E-02	5.464E-02	6.231E-03	-0.245
		937.49		1.964E-02	7.877E-02	1.313E-01	1.464E-02	0.150
		1384.29		6.911E-02	1.250E-01	1.824E-01	1.671E-02	0.379
		1505.03		-1.128E-01	1.921E-01	2.996E-01	2.664E-02	-0.377
SN-113		391.69	*	-1.245E-02	3.216E-02	5.221E-02	4.986E-03	-0.239
CD-115		260.90		-3.581E-04	3.216E-02	Half-Life too short		
		492.35		7.795E-06	3.216E-02	Half-Life too short		
		527.90	*	-2.241E-05	3.216E-02	Half-Life too short		

Sample ID : G248521006 Acquisition date : 19-MAR-2010 23:12:15

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-117M		156.02		6.293E-01	2.385E+00	4.016E+00	3.765E-01	0.157
		158.56	*	-6.007E-02	5.685E-02	9.240E-02	8.763E-03	-0.650
TE-123M		159.00	*	-2.657E-02	2.113E-02	3.409E-02	3.256E-03	-0.779
SB-124		602.73		2.283E-02	3.286E-02	4.835E-02	5.023E-03	0.472
		645.85		-2.431E-01	3.548E-01	5.659E-01	6.179E-02	-0.430
		722.78		1.042E-01	3.198E-01	4.541E-01	4.973E-02	0.230
		1690.97	*	-4.587E-02	5.234E-02	7.960E-02	7.097E-03	-0.576
SB-125		427.87	*	1.647E-02	6.226E-02	1.025E-01	9.941E-03	0.161
	+	463.37		8.562E-01	3.206E-01	3.793E-01	3.924E-02	2.257
		600.60		-2.055E-02	1.484E-01	2.048E-01	2.235E-02	-0.100
		635.95		-3.623E-02	1.845E-01	3.016E-01	3.338E-02	-0.120
TE-125M		109.28	*	4.286E+00	8.518E+00	1.230E+01	1.267E+00	0.349
I-126		388.63		-1.865E-02	1.692E-01	2.775E-01	2.627E-02	-0.067
		666.33	*	2.206E-01	2.601E-01	3.818E-01	4.034E-02	0.578
		753.82		8.110E-01	1.770E+00	2.923E+00	3.186E-01	0.277
SB-126		414.70		-6.903E-02	8.073E-02	1.280E-01	1.211E-02	-0.539
		666.50		7.066E-02	9.070E-02	1.327E-01	1.403E-02	0.532
		695.00		5.856E-02	7.767E-02	1.303E-01	1.393E-02	0.449
		697.00		1.665E-01	2.710E-01	4.525E-01	4.839E-02	0.368
		720.70	*	3.783E-02	1.759E-01	2.402E-01	2.590E-02	0.158
		856.80		5.913E-01	5.347E-01	8.079E-01	9.007E-02	0.732
SB-127		252.40		-5.672E+00	1.211E+01	1.887E+01	8.179E+00	-0.301
		473.00		-2.489E+00	4.230E+00	6.660E+00	1.045E+00	-0.374
		685.70	*	-3.268E+00	3.315E+00	5.136E+00	7.777E-01	-0.636
		783.70		1.007E+01	1.115E+01	1.603E+01	2.585E+00	0.628
I-131		80.19		-4.877E+00	6.390E+00	9.095E+00	7.979E-01	-0.536
		284.31		-6.058E-01	2.053E+00	3.247E+00	4.602E-01	-0.187
		364.49	*	2.150E-02	1.529E-01	2.542E-01	2.829E-02	0.085
		636.99		-2.152E-01	2.007E+00	3.293E+00	3.606E-01	-0.065
TE-132		49.72		-7.013E+01	5.444E+01	8.721E+01	1.129E+01	-0.804
		111.76		-6.244E+01	1.229E+02	1.932E+02	2.541E+01	-0.323
		116.30		4.717E+01	1.046E+02	1.680E+02	2.204E+01	0.281
		228.16	*	-1.747E+00	2.776E+00	4.413E+00	8.573E-01	-0.396
BA-133		81.00		-8.897E-02	7.022E-02	9.654E-02	1.504E-02	-0.922
	+	276.40		5.554E-01	3.212E-01	4.212E-01	7.509E-02	1.319
		302.85		9.156E-02	1.104E-01	1.651E-01	2.725E-02	0.554
		356.01	*	1.144E-02	3.419E-02	4.985E-02	7.339E-03	0.229
		383.85		3.869E-02	1.994E-01	3.305E-01	4.367E-02	0.117
I-133		529.87	*	-4.667E-01	1.994E-01	Half-Life too short		
		875.33		1.361E+01	1.994E-01	Half-Life too short		
		1298.22		-8.182E+01	1.994E-01	Half-Life too short		
CS-134	+	563.25		3.950E-01	3.863E-01	4.168E-01	4.301E-02	0.948
		569.33		-2.728E-02	1.619E-01	2.243E-01	2.326E-02	-0.122
		604.72		-2.854E-04	2.682E-02	3.816E-02	3.973E-03	-0.007
	+	795.86	*	1.063E-01	4.091E-02	6.029E-02	6.674E-03	1.763
		801.95		-3.101E-01	3.467E-01	4.438E-01	4.914E-02	-0.699
		1365.19		5.672E-01	7.850E-01	1.346E+00	1.254E-01	0.422
CS-135		268.22	*	2.347E-01	1.378E-01	1.993E-01	2.883E-02	1.178
I-135		546.56		3.549E+17	1.378E-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
		836.80		4.231E+17	1.378E-01	Half-Life too short		
		1038.76		4.288E+17	1.378E-01	Half-Life too short		
		1131.51		-1.897E+17	1.378E-01	Half-Life too short		
		1260.41	*	-4.824E+16	1.378E-01	Half-Life too short		
		1457.56		1.616E+20	1.378E-01	Half-Life too short		
		1678.03		-1.418E+17	1.378E-01	Half-Life too short		
		1791.20		4.762E+17	1.378E-01	Half-Life too short		
CS-136		153.25		1.728E+00	9.400E-01	1.604E+00	1.735E-01	1.077
		176.60		2.878E-01	5.367E-01	9.000E-01	9.837E-02	0.320
		273.65		2.984E-01	8.035E-01	8.241E-01	1.175E-01	0.362
		340.55		1.354E+00	2.475E-01	3.318E-01	3.997E-02	4.079
		818.51		2.537E-02	6.869E-02	1.166E-01	1.293E-02	0.218
		1048.07	*	-3.005E-02	1.015E-01	1.632E-01	1.651E-02	-0.184
		1235.36		1.477E+00	7.202E-01	1.097E+00	1.273E-01	1.347
CE-139		165.86	*	-2.286E-02	2.233E-02	3.620E-02	3.550E-03	-0.632
BA-140		162.66		5.401E-01	8.988E-01	1.454E+00	1.481E-01	0.371
		304.85		1.408E+00	1.566E+00	2.282E+00	7.058E-01	0.617
		423.72		-2.140E-01	1.998E+00	3.249E+00	1.077E+00	-0.066
		537.26	*	4.791E-02	2.574E-01	4.326E-01	1.485E-01	0.111
LA-140	+	328.76		9.737E-01	4.909E-01	5.941E-01	7.509E-02	1.639
		487.02		1.384E-01	1.411E-01	2.349E-01	2.435E-02	0.589
		815.77		8.313E-02	3.025E-01	5.116E-01	6.074E-02	0.163
		1596.21	*	3.674E-02	9.573E-02	1.410E-01	1.236E-02	0.260
CE-141		145.44	*	4.117E-02	5.255E-02	8.965E-02	8.162E-03	0.459
CE-143		57.36		2.093E-02	5.255E-02	Half-Life too short		
		293.27	*	4.188E-02	5.255E-02	Half-Life too short		
		664.57		3.643E-01	5.255E-02	Half-Life too short		
		721.93		-1.096E-03	5.255E-02	Half-Life too short		
CE-144		80.12		-1.383E+00	1.859E+00	2.648E+00	2.289E-01	-0.522
		133.52	*	-1.230E-01	1.623E-01	2.356E-01	3.591E-02	-0.522
PM-144		476.78		-4.254E-02	4.662E-02	6.999E-02	7.352E-03	-0.608
		618.01		8.468E-03	2.207E-02	3.535E-02	3.760E-03	0.240
		696.49	*	1.159E-02	2.338E-02	3.888E-02	4.159E-03	0.298
PR-144		696.51	*	8.846E-01	1.757E+00	2.923E+00	3.125E-01	0.303
		1489.16		-9.542E+00	8.533E+00	1.265E+01	1.127E+00	-0.754
PM-146		453.88	*	-4.660E-03	2.970E-02	4.794E-02	5.512E-03	-0.097
		633.25		5.595E-01	9.716E-01	1.597E+00	6.174E-01	0.350
		735.93		-4.461E-02	1.037E-01	1.558E-01	4.486E-02	-0.286
		747.24		1.774E-02	6.301E-02	1.034E-01	1.657E-02	0.171
ND-147	+	91.11		1.514E+00	3.699E-01	5.736E-01	5.671E-02	2.639
		319.41		-1.933E+00	3.686E+00	6.063E+00	7.675E-01	-0.319
		531.02	*	-3.203E-01	5.791E-01	9.466E-01	1.501E-01	-0.338
PM-149		285.90	*	-9.928E-05	5.791E-01	Half-Life too short		
EU-152		121.78		-2.363E-02	5.346E-02	8.370E-02	8.014E-03	-0.282
		244.70		1.953E-01	2.687E-01	3.886E-01	4.920E-02	0.503
		344.28	*	-1.973E-02	9.513E-02	1.066E-01	1.281E-02	-0.185
		778.90		-9.222E-02	1.969E-01	2.861E-01	3.140E-02	-0.322
	+	964.08		9.811E-01	3.096E-01	3.887E-01	4.148E-02	2.524
		1085.87		-1.209E-01	2.655E-01	4.221E-01	3.932E-02	-0.286

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

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		1112.07		7.051E-02	2.404E-01	3.382E-01	3.030E-02	0.208
		1408.01		1.003E-01	1.242E-01	2.124E-01	1.899E-02	0.472
GD-153		69.67		-7.165E-01	1.293E+00	1.874E+00	1.454E-01	-0.382
		97.43	*	-4.343E-02	6.713E-02	9.416E-02	8.279E-03	-0.461
		103.18		-2.899E-02	9.003E-02	1.272E-01	1.087E-02	-0.228
EU-154		123.07		-8.722E-03	3.807E-02	5.994E-02	6.641E-03	-0.146
		723.31		1.102E-01	1.362E-01	1.977E-01	2.274E-02	0.557
		873.19		4.743E-02	1.815E-01	3.048E-01	4.224E-02	0.156
		996.26		-1.814E-01	2.383E-01	3.729E-01	6.858E-02	-0.486
		1004.73		-8.570E-02	1.481E-01	2.280E-01	2.943E-02	-0.376
		1274.44	*	-7.638E-02	8.652E-02	1.366E-01	1.553E-02	-0.559
TB-160	+	86.79		1.691E+00	2.960E-01	3.745E-01	3.503E-02	4.515
		197.04		-2.545E-01	4.741E-01	7.259E-01	7.893E-02	-0.351
		215.65		1.286E-01	5.892E-01	9.679E-01	1.119E-01	0.133
		298.57		1.939E-01	8.947E-02	1.518E-01	2.034E-02	1.277
		879.36	*	-4.906E-02	9.727E-02	1.576E-01	1.762E-02	-0.311
		962.29		1.320E+00	4.645E-01	7.249E-01	7.746E-02	1.821
	+	966.15		7.349E-01	2.319E-01	4.019E-01	4.281E-02	1.829
		1177.93		1.016E-01	2.499E-01	4.239E-01	3.420E-02	0.240
		1271.85		1.513E-01	5.527E-01	8.531E-01	7.332E-02	0.177
HO-166M		80.57		-1.942E-01	1.982E-01	2.797E-01	2.431E-02	-0.694
	+	184.41		1.861E-01	4.510E-02	4.869E-02	5.077E-03	3.822
		280.46		4.525E-02	6.802E-02	9.709E-02	1.356E-02	0.466
		410.95		2.516E-01	1.765E-01	2.990E-01	2.822E-02	0.842
		711.68	*	4.507E-04	4.066E-02	6.633E-02	7.131E-03	0.007
		752.31		-4.666E-02	1.804E-01	2.891E-01	3.149E-02	-0.161
		810.29		-3.841E-02	3.791E-02	6.029E-02	6.665E-03	-0.637
TA-182		67.75		3.300E-02	8.450E-02	1.261E-01	9.616E-03	0.262
		100.11		1.559E-01	1.297E-01	2.135E-01	1.850E-02	0.730
		152.43		2.007E-01	2.646E-01	4.498E-01	4.150E-02	0.446
		222.11		-1.076E-01	2.729E-01	4.402E-01	5.195E-02	-0.244
	+	1121.30		8.460E-01	1.935E-01	2.476E-01	2.187E-02	3.416
		1189.05		-4.295E-02	2.062E-01	3.404E-01	2.768E-02	-0.126
		1221.41	*	-9.801E-02	1.408E-01	2.272E-01	1.889E-02	-0.431
		1231.02		1.446E-01	3.889E-01	5.615E-01	4.699E-02	0.258
IR-192	+	295.96		1.429E+00	2.238E-01	2.188E-01	2.961E-02	6.530
		308.46		-5.895E-02	6.981E-02	1.136E-01	1.487E-02	-0.519
		316.51	*	2.992E-03	2.597E-02	4.361E-02	5.574E-03	0.069
		468.07		4.389E-02	5.703E-02	8.255E-02	8.546E-03	0.532
HG-203		70.83		8.141E-01	1.085E+00	1.620E+00	2.536E-01	0.503
		72.87		2.150E+00	7.280E-01	1.035E+00	1.574E-01	2.077
		279.20	*	4.824E-02	3.563E-02	5.152E-02	7.285E-03	0.936
BI-207		72.81		4.062E-01	1.381E-01	2.123E-01	1.698E-02	1.913
	+	74.97		8.858E-01	1.132E-01	1.615E-01	1.321E-02	5.485
		569.70		-8.317E-03	2.452E-02	3.462E-02	3.556E-03	-0.240
		1063.66	*	1.659E-02	3.782E-02	6.278E-02	6.027E-03	0.264
		1770.23		1.409E+00	4.309E-01	7.618E-01	6.332E-02	1.850
PB-210		46.54	*	5.644E-01	2.167E+00	3.467E+00	3.193E-01	0.163
PB-211		404.85	*	-7.437E-01	6.323E-01	8.132E-01	3.947E-01	-0.914

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

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		427.09		2.093E-01	1.048E+00	1.715E+00	7.966E-01	0.122
		832.01		5.674E-02	6.700E-01	1.121E+00	5.866E-01	0.051
RN-219	+	271.23		8.120E-01	2.648E-01	3.158E-01	4.666E-02	2.571
		401.81	*	-2.555E-02	2.829E-01	4.629E-01	7.094E-02	-0.055
RA-223		81.07		-2.083E-01	1.566E-01	2.179E-01	1.904E-02	-0.956
	+	83.79		3.370E-01	1.016E-01	1.419E-01	1.280E-02	2.375
		94.87		1.458E+00	3.624E-01	5.480E-01	4.899E-02	2.660
		144.24		4.500E-01	5.083E-01	8.285E-01	8.187E-02	0.543
		154.21		6.374E-01	2.894E-01	4.948E-01	4.982E-02	1.288
	+	269.46		6.309E-01	2.030E-01	2.453E-01	3.368E-02	2.572
		323.87	*	-5.629E-02	5.066E-01	7.330E-01	1.433E-01	-0.077
	+	338.28		8.810E+00	1.800E+00	1.663E+00	2.426E-01	5.298
AC-227		79.69		-8.297E-01	9.183E-01	1.289E+00	2.220E-01	-0.644
		235.96		6.649E-01	1.641E-01	2.216E-01	3.011E-02	3.001
		256.23	*	-2.921E-02	1.861E-01	2.985E-01	4.649E-02	-0.098
	+	299.98		2.272E+00	8.496E-01	1.102E+00	1.796E-01	2.061
		304.50		7.024E-01	1.229E+00	1.827E+00	3.530E-01	0.384
		334.37		-9.739E-01	2.044E+00	1.902E+00	3.370E-01	-0.512
TH-227		79.80		-1.038E+00	1.218E+00	1.702E+00	3.707E-01	-0.610
		235.96		6.649E-01	1.625E-01	2.216E-01	2.913E-02	3.001
		256.23	*	-2.921E-02	1.861E-01	2.985E-01	5.017E-02	-0.098
	+	299.98		2.272E+00	8.496E-01	1.102E+00	1.796E-01	2.061
		304.50		7.024E-01	1.229E+00	1.827E+00	3.530E-01	0.384
		334.37		-9.739E-01	2.044E+00	1.902E+00	3.370E-01	-0.512
PA-231		283.69	*	-2.053E-01	1.083E+00	1.657E+00	3.014E-01	-0.124
	+	301.36		1.459E+00	5.431E-01	7.121E-01	1.127E-01	2.049
TH-231		81.07		-2.083E-01	1.566E-01	2.179E-01	1.904E-02	-0.956
	+	83.79		3.370E-01	1.016E-01	1.419E-01	1.280E-02	2.375
		94.87		1.458E+00	3.624E-01	5.480E-01	4.899E-02	2.660
		144.24		4.500E-01	5.083E-01	8.285E-01	8.187E-02	0.543
		154.21		6.374E-01	2.894E-01	4.948E-01	4.982E-02	1.288
	+	269.46		6.309E-01	2.030E-01	2.453E-01	3.368E-02	2.572
		323.87	*	-5.629E-02	5.066E-01	7.330E-01	1.433E-01	-0.077
	+	338.28		8.810E+00	1.800E+00	1.663E+00	2.426E-01	5.298
PA-233	+	300.13		1.028E+00	3.924E-01	4.981E-01	8.964E-02	2.064
		311.90	*	-1.631E-02	4.372E-02	7.243E-02	9.491E-03	-0.225
		340.48		4.223E+00	1.201E+00	9.764E-01	2.478E-01	4.325
PA-234		94.67		6.663E-01	1.510E-01	2.075E-01	2.622E-02	3.211
		98.44		4.451E-03	7.106E-02	1.021E-01	5.697E-02	0.044
		111.00		6.749E-02	1.345E-01	2.170E-01	2.581E-02	0.311
		131.20		8.370E-02	8.166E-02	1.255E-01	1.063E-02	0.667
		569.50		-5.326E-02	2.166E-01	3.071E-01	3.154E-02	-0.173
		733.00		-2.315E-01	3.005E-01	3.912E-01	9.055E-02	-0.592
		880.51		-2.041E-02	1.817E-01	3.002E-01	3.357E-02	-0.068
		883.24		-9.370E-02	2.286E-01	3.034E-01	2.051E-01	-0.309
		926.50		-1.148E-01	1.200E-01	1.832E-01	4.796E-02	-0.627
		946.00	*	-3.337E-02	2.009E-01	3.286E-01	6.531E-02	-0.102
		949.00		3.152E-01	2.962E-01	5.080E-01	5.488E-02	0.621
PA-234M		766.42		2.338E+01	1.510E+01	1.447E+01	7.408E+00	1.615

Sample ID : G248521006 Acquisition date : 19-MAR-2010 23:12:15

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1001.03	*	-4.498E-02	3.275E+00	5.053E+00	5.790E-01	-0.009
NP-239		99.53		1.163E-01	1.149E-01	1.886E-01	1.639E-02	0.617
		103.37		1.403E-02	7.925E-02	1.139E-01	9.722E-03	0.123
	+	106.12		1.170E-01	6.831E-02	9.774E-02	8.263E-03	1.197
		117.23	*	-2.884E-01	2.937E-01	4.535E-01	3.747E-02	-0.636
		228.18		-1.039E-01	1.651E-01	2.637E-01	3.173E-02	-0.394
	+	277.60		2.743E-01	1.556E-01	2.103E-01	2.931E-02	1.304
AM-241		59.54	*	-5.946E-03	1.058E-01	1.574E-01	1.230E-02	-0.038
CM-247	+	278.00		1.165E+00	6.610E-01	8.916E-01	1.244E-01	1.307
		287.50		7.274E-01	9.726E-01	1.463E+00	2.013E-01	0.497
		402.40	*	5.977E-04	2.619E-02	4.301E-02	4.034E-03	0.014
CF-249		252.80		-5.011E-01	7.007E-01	1.103E+00	1.431E-01	-0.454
		333.37		-6.254E-02	2.151E-01	2.041E-01	2.469E-02	-0.306
		388.16	*	-2.014E-03	2.728E-02	4.480E-02	4.253E-03	-0.045
CF-251		177.52	*	7.400E-02	9.539E-02	1.605E-01	1.636E-02	0.461
		227.38		-1.408E-01	2.699E-01	4.328E-01	5.193E-02	-0.325
		285.41		-1.020E+00	1.605E+00	2.503E+00	3.459E-01	-0.408

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]G248521006      *
* Acquisition date : 19-MAR-2010 23:12:15 Detector SN#     :               *
* Detector ID        : GAM22                Sensitivity      : 5.000       *
* Geometry           : CAN                  Energy tolerance: 1.500        *
* Elapsed live time:    0 04:00:00.00       Abundance limit : 75.000       *
* Elapsed real time:    0 04:00:04.90       Half life ratio :  8.000       *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248521006           Analyst initials: MXR1          *
* Batch Number       : 961099               Sample Quantity : 1.2655E+02 GRAM *
* Recovery           :    1.00000           Carrier Weight :    0.00000    *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
* Standard Weight  :   0.00000                                              *
* CALIB. DATE/TIME :  2-DEC-2009 16:47:28 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.220E+01	3.080E+00	3.487E-01	0.000E+00
CD-109	5.066E+00	8.691E-01	7.910E-01	0.000E+00
SN-126	4.897E-01	8.401E-02	7.678E-02	0.000E+00
BA-137M	3.588E-01	5.684E-02	4.158E-02	0.000E+00
CS-137	3.790E-01	6.008E-02	4.393E-02	0.000E+00
EU-155	1.471E-01	8.422E-02	1.246E-01	0.000E+00
TL-208	6.325E-01	8.583E-02	3.833E-02	0.000E+00
BI-211	4.922E+00	6.482E-01	2.350E-01	0.000E+00
BI-212	2.099E+00	6.428E-01	5.598E-01	0.000E+00
PB-212	2.177E+00	2.941E-01	6.912E-02	0.000E+00
BI-214	1.572E+00	2.074E-01	7.538E-02	0.000E+00
PB-214	1.786E+00	2.543E-01	8.543E-02	0.000E+00
RA-224	5.220E+00	1.051E+00	7.400E-01	0.000E+00
RA-226	1.572E+00	2.074E-01	7.538E-02	0.000E+00
AC-228	2.167E+00	3.524E-01	1.518E-01	0.000E+00
RA-228	2.167E+00	3.524E-01	1.518E-01	0.000E+00
TH-228	2.177E+00	2.941E-01	6.912E-02	0.000E+00
TH-229	1.908E-01	3.837E-01	6.711E-01	0.000E+00
TH-232	2.167E+00	3.524E-01	1.518E-01	0.000E+00
TH-234	3.229E+00	1.568E+00	1.448E+00	0.000E+00
U-235	5.628E-02	1.489E-01	2.540E-01	0.000E+00
NP-237	1.461E+00	3.911E-01	2.315E-01	0.000E+00
U-238	3.229E+00	1.568E+00	1.448E+00	0.000E+00
ANH-511	1.476E-01	5.303E-02	3.048E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)		
BE-7	-6.921E-02	2.466E-01	3.958E-01	0.000E+00	NOT IDENT.
NA-22	-2.735E-02	2.996E-02	4.843E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.885E+09	0.000E+00	0.000E+00	SHORT HLIF

SC-46	1.683E-02	2.655E-02	4.640E-02	0.000E+00	FAIL ABUN
V-48	-4.329E-06	5.811E-02	9.794E-02	0.000E+00	NOT IDENT.
CR-51	-2.029E-01	3.012E-01	5.139E-01	0.000E+00	NOT IDENT.
MN-54	2.867E-03	2.510E-02	4.326E-02	0.000E+00	NOT IDENT.
CO-56	5.377E-04	2.729E-02	4.680E-02	0.000E+00	FAIL ABUN
CO-57	4.078E-03	1.829E-02	3.084E-02	0.000E+00	NOT IDENT.
CO-58	-3.235E-02	2.666E-02	4.315E-02	0.000E+00	NOT IDENT.
FE-59	-4.307E-02	6.805E-02	1.097E-01	0.000E+00	NOT IDENT.
CO-60	3.330E-02	2.577E-02	4.605E-02	0.000E+00	NOT IDENT.
ZN-65	6.826E-02	7.298E-02	1.087E-01	0.000E+00	NOT IDENT.
SE-75	2.475E-02	3.769E-02	5.653E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.738E-02	5.842E-02	0.000E+00	NOT IDENT.
Y-88	3.907E-03	2.241E-02	3.797E-02	0.000E+00	NOT IDENT.
Y-91	4.124E-01	1.520E+01	2.590E+01	0.000E+00	NOT IDENT.
NB-94	1.433E-03	2.157E-02	3.641E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	3.719E-02	5.798E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.154E-01	1.766E-01	0.000E+00	NOT IDENT.
ZR-95	2.974E-02	5.113E-02	8.728E-02	0.000E+00	NOT IDENT.
MO-99	0.000E+00	5.151E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	2.288E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.287E-02	2.979E-02	5.044E-02	0.000E+00	FAIL ABUN
RH-106	-4.122E-02	2.083E-01	3.526E-01	0.000E+00	NOT IDENT.
RU-106	-4.122E-02	2.083E-01	3.526E-01	0.000E+00	NOT IDENT.
AG-108M	-1.817E-02	1.963E-02	3.200E-02	0.000E+00	NOT IDENT.
AG-110M	2.873E-02	2.910E-02	4.428E-02	0.000E+00	NOT IDENT.
SN-113	-1.245E-02	3.152E-02	5.322E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	7.278E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-6.007E-02	5.571E-02	9.542E-02	0.000E+00	NOT IDENT.
TE-123M	-2.657E-02	2.070E-02	3.520E-02	0.000E+00	NOT IDENT.
SB-124	-4.587E-02	5.129E-02	7.940E-02	0.000E+00	NOT IDENT.
SB-125	1.647E-02	6.101E-02	1.043E-01	0.000E+00	FAIL ABUN
TE-125M	4.286E+00	8.348E+00	1.276E+01	0.000E+00	NOT IDENT.
I-126	2.206E-01	2.549E-01	3.862E-01	0.000E+00	NOT IDENT.
SB-126	3.783E-02	1.724E-01	2.426E-01	0.000E+00	NOT IDENT.
SB-127	-3.268E+00	3.248E+00	5.192E+00	0.000E+00	NOT IDENT.
I-131	2.150E-02	1.499E-01	2.594E-01	0.000E+00	NOT IDENT.
TE-132	-1.747E+00	2.721E+00	4.534E+00	0.000E+00	NOT IDENT.
BA-133	1.144E-02	3.351E-02	5.088E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.393E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.009E-02	6.082E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.350E-01	2.043E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.625E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.005E-02	9.948E-02	1.639E-01	0.000E+00	NOT IDENT.
CE-139	-2.286E-02	2.188E-02	3.735E-02	0.000E+00	NOT IDENT.
BA-140	4.791E-02	2.522E-01	4.389E-01	0.000E+00	NOT IDENT.
LA-140	3.674E-02	9.381E-02	1.408E-01	0.000E+00	FAIL ABUN
CE-141	4.117E-02	5.150E-02	9.269E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.188E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.230E-01	1.590E-01	2.439E-01	0.000E+00	NOT IDENT.
PM-144	1.159E-02	2.291E-02	3.930E-02	0.000E+00	NOT IDENT.
PR-144	8.846E-01	1.722E+00	2.954E+00	0.000E+00	NOT IDENT.
PM-146	-4.660E-03	2.911E-02	4.876E-02	0.000E+00	NOT IDENT.
ND-147	-3.203E-01	5.675E-01	9.606E-01	0.000E+00	FAIL ABUN
PM-149	0.000E+00	6.671E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.973E-02	9.323E-02	1.088E-01	0.000E+00	FAIL ABUN
GD-153	-4.343E-02	6.579E-02	9.790E-02	0.000E+00	NOT IDENT.
EU-154	-7.638E-02	8.479E-02	1.368E-01	0.000E+00	NOT IDENT.
TB-160	-4.906E-02	9.533E-02	1.587E-01	0.000E+00	FAIL ABUN
HO-166M	4.507E-04	3.985E-02	6.702E-02	0.000E+00	FAIL ABUN
TA-182	-9.801E-02	1.380E-01	2.277E-01	0.000E+00	FAIL ABUN
IR-192	2.992E-03	2.545E-02	4.459E-02	0.000E+00	FAIL ABUN
HG-203	4.824E-02	3.492E-02	5.278E-02	0.000E+00	NOT IDENT.
BI-207	1.659E-02	3.707E-02	6.306E-02	0.000E+00	FAIL ABUN
PB-210	5.644E-01	2.124E+00	3.642E+00	0.000E+00	NOT IDENT.
PB-211	-7.437E-01	6.197E-01	8.285E-01	0.000E+00	NOT IDENT.
RN-219	-2.555E-02	2.772E-01	4.717E-01	0.000E+00	FAIL ABUN
RA-223	-5.629E-02	4.965E-01	7.492E-01	0.000E+00	FAIL ABUN
AC-227	-2.921E-02	1.823E-01	3.061E-01	0.000E+00	FAIL ABUN
TH-227	-2.921E-02	1.824E-01	3.061E-01	0.000E+00	FAIL ABUN
PA-231	-2.053E-01	1.062E+00	1.697E+00	0.000E+00	FAIL ABUN
TH-231	-5.629E-02	4.965E-01	7.492E-01	0.000E+00	FAIL ABUN
PA-233	-1.631E-02	4.284E-02	7.408E-02	0.000E+00	FAIL ABUN
PA-234	-3.337E-02	1.969E-01	3.306E-01	0.000E+00	NOT IDENT.
PA-234M	-4.498E-02	3.209E+00	5.080E+00	0.000E+00	NOT IDENT.
NP-239	-2.884E-01	2.878E-01	4.703E-01	0.000E+00	FAIL ABUN
AM-241	-5.946E-03	1.037E-01	1.648E-01	0.000E+00	NOT IDENT.
CM-247	5.977E-04	2.566E-02	4.382E-02	0.000E+00	FAIL ABUN
CF-249	-2.014E-03	2.674E-02	4.567E-02	0.000E+00	NOT IDENT.

CF-251	7.400E-02	9.348E-02	1.655E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:12:55.54

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*****************************************************************************
*                            GEL Laboratories LLC                           *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521006.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:12:15
Sample ID         : G248521006           Sample quantity  : 1.26550E+02 GRAM
Detector name     : GAM22                Detector geometry: CAN
Elapsed live time: 0 04:00:00.00         Elapsed real time: 0 04:00:04.90  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               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	4418	10.66*	1.909E+00	3.220E+01	3.220E+01	9.76
CD-109	88.03	914	3.70*	7.485E+00	4.897E+00	5.066E+00	17.51
SN-126	64.28	347	9.60	4.312E+00	1.244E+00	1.244E+00	48.48
	86.94	914	8.90	7.485E+00	2.036E+00	2.036E+00	44.08
	87.57	914	37.00*	7.485E+00	4.897E-01	4.897E-01	17.51
BA-137M	661.66	779	89.90*	3.589E+00	3.583E-01	3.588E-01	16.17
CS-137	661.66	779	85.10*	3.589E+00	3.785E-01	3.790E-01	16.17
EU-155	86.55	914	30.70	7.485E+00	5.902E-01	5.955E-01	17.55
	105.31	174	21.10*	8.386E+00	1.458E-01	1.471E-01	58.42
TL-208	277.37	165	6.60	6.179E+00	6.001E-01	6.001E-01	57.46
	583.19	1425	85.00*	3.930E+00	6.325E-01	6.325E-01	13.85
	860.56	171	12.50	2.921E+00	6.928E-01	6.928E-01	50.92
BI-211	72.87	------	1.23	5.897E+00	------	Line Not Found	------
	351.06	2316	12.92*	5.401E+00	4.922E+00	4.922E+00	13.44
BI-212	727.33	315	6.67*	3.343E+00	2.099E+00	2.099E+00	31.25
	785.37	142	1.10	3.144E+00	6.104E+00	6.104E+00	44.78
	1620.50	111	1.47	1.789E+00	6.268E+00	6.268E+00	28.67
PB-212	74.82	1314	10.28	6.171E+00	3.072E+00	3.072E+00	16.06
	77.11	1948	17.10	6.463E+00	2.613E+00	2.613E+00	11.17
	238.63	4294	43.60*	6.709E+00	2.177E+00	2.177E+00	13.79
	300.09	272	3.30	5.914E+00	2.065E+00	2.065E+00	36.72
BI-214	609.32	1837	45.49*	3.810E+00	1.572E+00	1.572E+00	13.46
	1120.29	407	14.92	2.345E+00	1.726E+00	1.726E+00	23.83
	1764.49	426	15.30	1.716E+00	2.406E+00	2.406E+00	16.24
PB-214	74.82	1314	5.80	6.171E+00	5.445E+00	5.445E+00	15.04
	77.11	1948	9.70	6.463E+00	4.607E+00	4.607E+00	13.89
	242.00	962	7.25	6.664E+00	2.952E+00	2.952E+00	21.35
	295.22	1337	18.42	5.969E+00	1.803E+00	1.803E+00	16.93
	351.93	2316	35.60*	5.401E+00	1.786E+00	1.786E+00	14.53
RA-224	240.99	962	4.10*	6.664E+00	5.220E+00	5.220E+00	20.55
RA-226	609.32	1837	45.49*	3.810E+00	1.572E+00	1.572E+00	13.46
	1120.29	407	14.92	2.345E+00	1.726E+00	1.726E+00	23.83

Sample ID : G248521006 Acquisition date : 19-MAR-2010 23:12:15

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	1764.49	426	15.30	1.716E+00	2.406E+00	2.406E+00	16.24
AC-228	338.32	932	11.27	5.523E+00	2.220E+00	2.220E+00	44.85
	911.20	1051	25.80*	2.788E+00	2.167E+00	2.167E+00	16.59
	968.97	581	15.80	2.648E+00	2.058E+00	2.058E+00	28.81
RA-228	338.32	932	11.27	5.523E+00	2.220E+00	2.220E+00	44.85
	911.20	1051	25.80*	2.788E+00	2.167E+00	2.167E+00	16.59
	968.97	581	15.80	2.648E+00	2.058E+00	2.058E+00	28.81
TH-228	74.82	1314	10.28	6.171E+00	3.072E+00	3.072E+00	12.83
	77.11	1948	17.10	6.463E+00	2.613E+00	2.613E+00	11.17
	238.63	4294	43.60*	6.709E+00	2.177E+00	2.177E+00	13.79
	300.09	272	3.30	5.914E+00	2.065E+00	2.065E+00	70.60
TH-229	85.43	406	14.70	7.229E+00	5.663E-01	5.663E-01	30.14
	88.47	914	24.00	7.485E+00	7.549E-01	7.550E-01	17.51
	193.51	------	4.41*	7.465E+00	------ Line Not Found		------
	210.85	249	2.80	7.180E+00	1.837E+00	1.837E+00	53.10
TH-232	338.32	932	11.27	5.523E+00	2.220E+00	2.220E+00	18.60
	911.20	1051	25.80*	2.788E+00	2.167E+00	2.167E+00	16.59
	968.97	581	15.80	2.648E+00	2.058E+00	2.058E+00	28.81
TH-234	63.29	347	3.70*	4.312E+00	3.229E+00	3.229E+00	49.57
	92.59	905	4.23	7.867E+00	4.032E+00	4.032E+00	28.31
U-235	89.96	527	3.47	7.685E+00	2.932E+00	2.932E+00	33.40
	93.35	905	5.60	7.867E+00	3.045E+00	3.045E+00	29.11
	143.76	------	10.96*	8.364E+00	------ Line Not Found		------
	163.33	------	5.08	8.031E+00	------ Line Not Found		------
	185.72	687	57.20	7.608E+00	2.342E-01	2.342E-01	24.24
	205.31	------	5.01	7.253E+00	------ Line Not Found		------
NP-237	86.48	914	12.40*	7.485E+00	1.461E+00	1.461E+00	27.31
	95.86	------	2.68	8.032E+00	------ Line Not Found		------
U-238	63.29	347	3.70*	4.312E+00	3.229E+00	3.229E+00	49.57
	92.59	905	4.23	7.867E+00	4.032E+00	4.032E+00	19.70
ANH-511	511.00	428	100.00*	4.298E+00	1.476E-01	1.476E-01	36.67

Flag: "*" = Keyline

Sample ID : G248521006 Acquisition date : 19-MAR-2010 23:12:15

Total number of lines in spectrum 43
Number of unidentified lines 6
Number of lines tentatively identified by NID 37 86.05%

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	3.220E+01	3.220E+01	0.314E+01	9.76	
CD-109	461.40D	1.03	4.897E+00	5.066E+00	0.887E+00	17.51	
SN-126	2.30E+05Y	1.00	4.897E-01	4.897E-01	0.857E-01	17.51	
BA-137M	30.08Y	1.00	3.583E-01	3.588E-01	0.580E-01	16.17	
CS-137	30.08Y	1.00	3.785E-01	3.790E-01	0.613E-01	16.17	
EU-155	4.75Y	1.01	1.458E-01	1.471E-01	0.859E-01	58.42	
TL-208	1.41E+10Y	1.00	6.325E-01	6.325E-01	0.876E-01	13.85	
BI-211	7.04E+08Y	1.00	4.922E+00	4.922E+00	0.661E+00	13.44	
BI-212	1.41E+10Y	1.00	2.099E+00	2.099E+00	0.656E+00	31.25	
PB-212	1.41E+10Y	1.00	2.177E+00	2.177E+00	0.300E+00	13.79	
BI-214	1600.00Y	1.00	1.572E+00	1.572E+00	0.212E+00	13.46	
PB-214	1600.00Y	1.00	1.786E+00	1.786E+00	0.259E+00	14.53	
RA-224	1.41E+10Y	1.00	5.220E+00	5.220E+00	1.073E+00	20.55	
RA-226	1600.00Y	1.00	1.572E+00	1.572E+00	0.212E+00	13.46	
AC-228	1.41E+10Y	1.00	2.167E+00	2.167E+00	0.360E+00	16.59	
RA-228	1.41E+10Y	1.00	2.167E+00	2.167E+00	0.360E+00	16.59	
TH-228	1.41E+10Y	1.00	2.177E+00	2.177E+00	0.300E+00	13.79	
TH-229	7340.00Y	1.00	7.549E-01	7.550E-01	1.322E-01	17.51	K
TH-232	1.41E+10Y	1.00	2.167E+00	2.167E+00	0.360E+00	16.59	
TH-234	4.47E+09Y	1.00	3.229E+00	3.229E+00	1.600E+00	49.57	
U-235	7.04E+08Y	1.00	2.342E-01	2.342E-01	0.568E-01	24.24	K
NP-237	2.14E+06Y	1.00	1.461E+00	1.461E+00	0.399E+00	27.31	
U-238	4.47E+09Y	1.00	3.229E+00	3.229E+00	1.600E+00	49.57	
ANH-511	1.00E+09Y	1.00	1.476E-01	1.476E-01	0.541E-01	36.67	
	Total Activity :		7.619E+01	7.636E+01			

Grand Total Activity : 7.619E+01 7.636E+01

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

Sample ID : G248521006 Acquisition date : 19-MAR-2010 23:12:15

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.04	225	1068	1.12	258.20	255	8	1.56E-02	52.1	8.53E+00	
0	270.15	371	678	1.32	540.17	536	10	2.58E-02	29.1	6.27E+00	T
0	328.23	220	708	1.43	656.23	652	11	1.53E-02	48.8	5.62E+00	T
0	462.89	275	479	1.41	925.35	919	13	1.91E-02	36.0	4.58E+00	T
0	562.11	88	384	1.97	1123.66	1116	14	6.09E-03	97.3	4.03E+00	T
0	768.53	117	250	1.63	1536.29	1532	9	8.10E-03	52.2	3.20E+00	
0	795.31	168	211	1.98	1589.82	1585	11	1.17E-02	36.9	3.12E+00	T
4	964.79	257	234	3.20	1928.66	1921	24	1.78E-02	29.7	2.66E+00	T
0	1237.52	250	300	2.39	2474.04	2463	20	1.74E-02	36.2	2.16E+00	T
0	1378.35	95	158	1.29	2755.72	2747	16	6.57E-03	60.9	1.99E+00	
0	1588.55	81	124	1.39	3176.18	3165	17	5.64E-03	66.5	1.81E+00	
6	1630.93	121	54	5.09	3260.97	3232	53	8.43E-03	38.2	1.78E+00	
0	1729.41	130	23	3.19	3458.00	3445	22	9.01E-03	25.5	1.73E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:12:59.77

```
*****************************************************************************
*                            GEL Laboratories LLC                            *
*                              2040 Savage Road                              *
*                            Charleston, SC 29414                            *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521006.CNF;1 *
* Acquisition date  : 19-MAR-2010 23:12:15  Detector SN#     :             *
* Detector ID       : GAM22                 Sensitivity      : 5.00000     *
* Geometry          : CAN                   Energy tolerance: 1.50000      *
* Elapsed live time: 0 04:00:00.00          Abundance limit : 75.00000     *
* Elapsed real time: 0 04:00:04.90          Half life ratio : 8.00000      *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00  Nuclide Library : SOLID        *
* Sample ID         : G248521006            Analyst initials: MXR1         *
* Batch Number      : 961099                Sample Quantity : 1.26550E+02 GRAM *
*****************************************************************************
*                                                                           *
*                                  QC DATA                                  *
*                                                                           *
* CALIB. DATE/TIME : 2-DEC-2009 16:47:28.08MS Isotope      :                *
* MSD ID           :                      MSD Isotope     :                *
* LCS ID           : 1032-A               LCS Isotope     :                *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.220E+01	3.143E+00	3.489E-01	3.196E-02	92.307
CD-109	5.066E+00	8.868E-01	7.597E-01	7.209E-02	6.668
SN-126	4.897E-01	8.573E-02	7.373E-02	6.962E-03	6.641
BA-137M	3.588E-01	5.800E-02	4.111E-02	4.335E-03	8.727
CS-137	3.790E-01	6.130E-02	4.343E-02	4.585E-03	8.727
EU-155	1.471E-01	8.594E-02	1.199E-01	1.029E-02	1.227
TL-208	6.325E-01	8.759E-02	3.783E-02	4.098E-03	16.722
BI-211	4.922E+00	6.614E-01	2.301E-01	2.685E-02	21.387
BI-212	2.099E+00	6.559E-01	5.542E-01	7.793E-02	3.787
PB-212	2.177E+00	3.001E-01	6.733E-02	8.919E-03	32.340
BI-214	1.572E+00	2.116E-01	7.443E-02	8.685E-03	21.120
PB-214	1.786E+00	2.595E-01	8.368E-02	1.077E-02	21.348
RA-224	5.220E+00	1.073E+00	7.209E-01	9.024E-02	7.241
RA-226	1.572E+00	2.116E-01	7.443E-02	8.685E-03	21.120
AC-228	2.167E+00	3.596E-01	1.508E-01	2.042E-02	14.374
RA-228	2.167E+00	3.596E-01	1.508E-01	2.042E-02	14.374
TH-228	2.177E+00	3.001E-01	6.733E-02	8.919E-03	32.340
TH-229	7.550E-01	1.322E-01	6.518E-01	7.005E-02	1.158

Sample ID : G248521006 Acquisition date : 19-MAR-2010 23:12:15

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	2.167E+00	3.596E-01	1.508E-01	2.042E-02	14.374
TH-234	3.229E+00	1.600E+00	1.385E+00	2.464E-01	2.332
U-235	2.342E-01	5.677E-02	2.456E-01	4.198E-02	0.954
NP-237	1.461E+00	3.991E-01	2.222E-01	5.099E-02	6.575
U-238	3.229E+00	1.600E+00	1.385E+00	2.464E-01	2.332
ANH-511	1.476E-01	5.411E-02	3.002E-02	3.008E-03	4.916

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-6.921E-02		2.516E-01	3.894E-01	4.063E-02	-0.178
NA-22	-2.735E-02		3.058E-02	4.835E-02	4.167E-03	-0.566
NA-24	-9.933E+01		9.616E+02	Half-Life too short		
SC-46	1.683E-02		2.710E-02	4.607E-02	5.157E-03	0.365
V-48	-4.329E-06		5.929E-02	9.739E-02	1.021E-02	0.000
CR-51	-2.029E-01		3.073E-01	5.027E-01	6.507E-02	-0.404
MN-54	2.867E-03		2.561E-02	4.291E-02	4.767E-03	0.067
CO-56	5.377E-04		2.784E-02	4.643E-02	5.169E-03	0.012
CO-57	4.078E-03		1.866E-02	2.975E-02	2.454E-03	0.137
CO-58	-3.235E-02		2.720E-02	4.279E-02	4.738E-03	-0.756
FE-59	-4.307E-02		6.944E-02	1.092E-01	1.070E-02	-0.394
CO-60	3.330E-02		2.630E-02	4.600E-02	4.102E-03	0.724
ZN-65	6.826E-02		7.447E-02	1.083E-01	9.663E-03	0.630
SE-75	2.475E-02		3.846E-02	5.514E-02	7.423E-03	0.449
SR-85	1.787E-01		3.815E-02	5.755E-02	5.774E-03	3.105
Y-88	3.907E-03		2.287E-02	3.811E-02	3.082E-03	0.102
Y-91	4.124E-01		1.551E+01	2.584E+01	2.124E+00	0.016
NB-94	1.433E-03		2.201E-02	3.602E-02	3.860E-03	0.040
NB-95	8.611E-02		3.795E-02	5.745E-02	6.282E-03	1.499
NB-95M	2.421E-01		1.178E-01	1.720E-01	2.276E-02	1.408
ZR-95	2.974E-02		5.218E-02	8.646E-02	1.006E-02	0.344
MO-99	4.814E-05		2.628E-05	Half-Life too short		
TC-99M	-2.378E+19		1.168E+19	Half-Life too short		
RU-103	1.287E-02		3.040E-02	4.966E-02	7.362E-03	0.259
RH-106	-4.122E-02		2.126E-01	3.483E-01	5.053E-02	-0.118
RU-106	-4.122E-02		2.125E-01	3.483E-01	3.638E-02	-0.118
AG-108M	-1.817E-02		2.003E-02	3.144E-02	3.095E-03	-0.578
AG-110M	2.873E-02		2.970E-02	4.378E-02	4.705E-03	0.656
SN-113	-1.245E-02		3.216E-02	5.221E-02	4.986E-03	-0.239
CD-115	-2.241E-05		3.713E-05	Half-Life too short		
SN-117M	-6.007E-02		5.685E-02	9.240E-02	8.763E-03	-0.650
TE-123M	-2.657E-02		2.113E-02	3.409E-02	3.256E-03	-0.779
SB-124	-4.587E-02		5.234E-02	7.960E-02	7.097E-03	-0.576
SB-125	1.647E-02		6.226E-02	1.025E-01	9.941E-03	0.161
TE-125M	4.286E+00		8.518E+00	1.230E+01	1.267E+00	0.349
I-126	2.206E-01		2.601E-01	3.818E-01	4.034E-02	0.578
SB-126	3.783E-02		1.759E-01	2.402E-01	2.590E-02	0.158

Sample ID : G248521006 Acquisition date : 19-MAR-2010 23:12:15

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	-3.268E+00		3.315E+00	5.136E+00	7.777E-01	-0.636
I-131	2.150E-02		1.529E-01	2.542E-01	2.829E-02	0.085
TE-132	-1.747E+00		2.776E+00	4.413E+00	8.573E-01	-0.396
BA-133	1.144E-02		3.419E-02	4.985E-02	7.339E-03	0.229
I-133	-4.667E-01		7.106E-01	Half-Life too short		
CS-134	1.063E-01	+	4.091E-02	6.029E-02	6.674E-03	1.763
CS-135	2.347E-01		1.378E-01	1.993E-01	2.883E-02	1.178
I-135	-4.824E+16		2.870E+17	Half-Life too short		
CS-136	-3.005E-02		1.015E-01	1.632E-01	1.651E-02	-0.184
CE-139	-2.286E-02		2.233E-02	3.620E-02	3.550E-03	-0.632
BA-140	4.791E-02		2.574E-01	4.326E-01	1.485E-01	0.111
LA-140	3.674E-02		9.573E-02	1.410E-01	1.236E-02	0.260
CE-141	4.117E-02		5.255E-02	8.965E-02	8.162E-03	0.459
CE-143	4.188E-02		6.059E-03	Half-Life too short		
CE-144	-1.230E-01		1.623E-01	2.356E-01	3.591E-02	-0.522
PM-144	1.159E-02		2.338E-02	3.888E-02	4.159E-03	0.298
PR-144	8.846E-01		1.757E+00	2.923E+00	3.125E-01	0.303
PM-146	-4.660E-03		2.970E-02	4.794E-02	5.512E-03	-0.097
ND-147	-3.203E-01		5.791E-01	9.466E-01	1.501E-01	-0.338
PM-149	-9.928E-05		3.404E-04	Half-Life too short		
EU-152	-1.973E-02		9.513E-02	1.066E-01	1.281E-02	-0.185
GD-153	-4.343E-02		6.713E-02	9.416E-02	8.279E-03	-0.461
EU-154	-7.638E-02		8.652E-02	1.366E-01	1.553E-02	-0.559
TB-160	-4.906E-02		9.727E-02	1.576E-01	1.762E-02	-0.311
HO-166M	4.507E-04		4.066E-02	6.633E-02	7.131E-03	0.007
TA-182	-9.801E-02		1.408E-01	2.272E-01	1.889E-02	-0.431
IR-192	2.992E-03		2.597E-02	4.361E-02	5.574E-03	0.069
HG-203	4.824E-02		3.563E-02	5.152E-02	7.285E-03	0.936
BI-207	1.659E-02		3.782E-02	6.278E-02	6.027E-03	0.264
PB-210	5.644E-01		2.167E+00	3.467E+00	3.193E-01	0.163
PB-211	-7.437E-01		6.323E-01	8.132E-01	3.947E-01	-0.914
RN-219	-2.555E-02		2.829E-01	4.629E-01	7.094E-02	-0.055
RA-223	-5.629E-02		5.066E-01	7.330E-01	1.433E-01	-0.077
AC-227	-2.921E-02		1.861E-01	2.985E-01	4.649E-02	-0.098
TH-227	-2.921E-02		1.861E-01	2.985E-01	5.017E-02	-0.098
PA-231	-2.053E-01		1.083E+00	1.657E+00	3.014E-01	-0.124
TH-231	-5.629E-02		5.066E-01	7.330E-01	1.433E-01	-0.077
PA-233	-1.631E-02		4.372E-02	7.243E-02	9.491E-03	-0.225
PA-234	-3.337E-02		2.009E-01	3.286E-01	6.531E-02	-0.102
PA-234M	-4.498E-02		3.275E+00	5.053E+00	5.790E-01	-0.009
NP-239	-2.884E-01		2.937E-01	4.535E-01	3.747E-02	-0.636
AM-241	-5.946E-03		1.058E-01	1.574E-01	1.230E-02	-0.038
CM-247	5.977E-04		2.619E-02	4.301E-02	4.034E-03	0.014
CF-249	-2.014E-03		2.728E-02	4.480E-02	4.253E-03	-0.045
CF-251	7.400E-02		9.539E-02	1.605E-01	1.636E-02	0.461

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration     : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248521006           *
* Acquisition date  : 19-MAR-2010 23:12:15 Detector SN#     :               *
* Detector ID       : GAM22                 Sensitivity     : 5.000         *
* Geometry          : CAN                   Energy tolerance: 1.500         *
* Elapsed live time:    0 04:00:00.00       Abundance limit : 75.000        *
* Elapsed real time:    0 04:00:04.90       Half life ratio : 8.000         *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248521006           Analyst initials: MXR1           *
* Batch Number      : 961099               Sample Quantity : 1.2655E+02 GRAM *
* Recovery          :    1.00000           Carrier Weight :    0.00000      *
*****************************************************************************
*                                                                           *
*                                 QC DATA                                   *
*                                                                           *
* CALIB. DATE/TIME :  2-DEC-2009 16:47:28 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.220E+01	3.080E+00	1.745E-01	1.572E+00
CD-109	5.066E+00	8.691E-01	3.957E-01	4.434E-01
SN-126	4.897E-01	8.401E-02	3.841E-02	4.286E-02
BA-137M	3.588E-01	5.684E-02	2.080E-02	2.900E-02
CS-137	3.790E-01	6.008E-02	2.198E-02	3.065E-02
EU-155	1.471E-01	8.422E-02	6.231E-02	4.297E-02
TL-208	6.325E-01	8.583E-02	1.918E-02	4.379E-02
BI-211	4.922E+00	6.482E-01	1.176E-01	3.307E-01
BI-212	2.099E+00	6.428E-01	2.801E-01	3.280E-01
PB-212	2.177E+00	2.941E-01	3.458E-02	1.501E-01
BI-214	1.572E+00	2.074E-01	3.771E-02	1.058E-01
PB-214	1.786E+00	2.543E-01	4.274E-02	1.297E-01
RA-224	5.220E+00	1.051E+00	3.702E-01	5.364E-01
RA-226	1.572E+00	2.074E-01	3.771E-02	1.058E-01
AC-228	2.167E+00	3.524E-01	7.594E-02	1.798E-01
RA-228	2.167E+00	3.524E-01	7.594E-02	1.798E-01
TH-228	2.177E+00	2.941E-01	3.458E-02	1.501E-01
TH-229	1.908E-01	3.837E-01	3.358E-01	1.958E-01
TH-232	2.167E+00	3.524E-01	7.594E-02	1.798E-01
TH-234	3.229E+00	1.568E+00	7.246E-01	8.001E-01
U-235	5.628E-02	1.489E-01	1.271E-01	7.597E-02
NP-237	1.461E+00	3.911E-01	1.158E-01	1.996E-01
U-238	3.229E+00	1.568E+00	7.246E-01	8.001E-01
ANH-511	1.476E-01	5.303E-02	1.525E-02	2.705E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-6.921E-02	2.466E-01	1.980E-01	1.258E-01	NOT IDENT.
NA-22	-2.735E-02	2.996E-02	2.423E-02	1.529E-02	NOT IDENT.
NA-24	-9.933E+07	1.885E+09	0.000E+00	9.616E+08	SHORT HLIF

SC-46	1.683E-02	2.655E-02	2.321E-02	1.355E-02	FAIL ABUN
V-48	-4.329E-06	5.811E-02	4.900E-02	2.965E-02	NOT IDENT.
CR-51	-2.029E-01	3.012E-01	2.571E-01	1.537E-01	NOT IDENT.
MN-54	2.867E-03	2.510E-02	2.164E-02	1.280E-02	NOT IDENT.
CO-56	5.377E-04	2.729E-02	2.341E-02	1.392E-02	FAIL ABUN
CO-57	4.078E-03	1.829E-02	1.543E-02	9.332E-03	NOT IDENT.
CO-58	-3.235E-02	2.666E-02	2.159E-02	1.360E-02	NOT IDENT.
FE-59	-4.307E-02	6.805E-02	5.486E-02	3.472E-02	NOT IDENT.
CO-60	3.330E-02	2.577E-02	2.304E-02	1.315E-02	NOT IDENT.
ZN-65	6.826E-02	7.298E-02	5.440E-02	3.723E-02	NOT IDENT.
SE-75	2.475E-02	3.769E-02	2.828E-02	1.923E-02	NOT IDENT.
SR-85	1.787E-01	3.738E-02	2.923E-02	1.907E-02	NOT IDENT.
Y-88	3.907E-03	2.241E-02	1.899E-02	1.143E-02	NOT IDENT.
Y-91	4.124E-01	1.520E+01	1.296E+01	7.754E+00	NOT IDENT.
NB-94	1.433E-03	2.157E-02	1.821E-02	1.100E-02	NOT IDENT.
NB-95	8.611E-02	3.719E-02	2.901E-02	1.898E-02	NOT IDENT.
NB-95M	2.421E-01	1.154E-01	8.836E-02	5.889E-02	NOT IDENT.
ZR-95	2.974E-02	5.113E-02	4.366E-02	2.609E-02	NOT IDENT.
MO-99	4.814E+01	5.151E+01	0.000E+00	2.628E+01	SHORT HLIF
TC-99M	-2.378E+25	2.288E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.287E-02	2.979E-02	2.523E-02	1.520E-02	FAIL ABUN
RH-106	-4.122E-02	2.083E-01	1.764E-01	1.063E-01	NOT IDENT.
RU-106	-4.122E-02	2.083E-01	1.764E-01	1.063E-01	NOT IDENT.
AG-108M	-1.817E-02	1.963E-02	1.601E-02	1.001E-02	NOT IDENT.
AG-110M	2.873E-02	2.910E-02	2.216E-02	1.485E-02	NOT IDENT.
SN-113	-1.245E-02	3.152E-02	2.662E-02	1.608E-02	NOT IDENT.
CD-115	-2.241E+01	7.278E+01	0.000E+00	3.713E+01	SHORT HLIF
SN-117M	-6.007E-02	5.571E-02	4.774E-02	2.843E-02	NOT IDENT.
TE-123M	-2.657E-02	2.070E-02	1.761E-02	1.056E-02	NOT IDENT.
SB-124	-4.587E-02	5.129E-02	3.972E-02	2.617E-02	NOT IDENT.
SB-125	1.647E-02	6.101E-02	5.221E-02	3.113E-02	FAIL ABUN
TE-125M	4.286E+00	8.348E+00	6.386E+00	4.259E+00	NOT IDENT.
I-126	2.206E-01	2.549E-01	1.932E-01	1.301E-01	NOT IDENT.
SB-126	3.783E-02	1.724E-01	1.214E-01	8.794E-02	NOT IDENT.
SB-127	-3.268E+00	3.248E+00	2.598E+00	1.657E+00	NOT IDENT.
I-131	2.150E-02	1.499E-01	1.298E-01	7.647E-02	NOT IDENT.
TE-132	-1.747E+00	2.721E+00	2.268E+00	1.388E+00	NOT IDENT.
BA-133	1.144E-02	3.351E-02	2.546E-02	1.710E-02	FAIL ABUN
I-133	-4.667E+05	1.393E+06	0.000E+00	7.106E+05	SHORT HLIF
CS-134	1.063E-01	4.009E-02	3.043E-02	2.045E-02	FAIL ABUN
CS-135	2.347E-01	1.350E-01	1.022E-01	6.888E-02	NOT IDENT.
I-135	-4.824E+22	5.625E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.005E-02	9.948E-02	8.200E-02	5.075E-02	NOT IDENT.
CE-139	-2.286E-02	2.188E-02	1.869E-02	1.116E-02	NOT IDENT.
BA-140	4.791E-02	2.522E-01	2.196E-01	1.287E-01	NOT IDENT.
LA-140	3.674E-02	9.381E-02	7.044E-02	4.786E-02	FAIL ABUN
CE-141	4.117E-02	5.150E-02	4.637E-02	2.628E-02	NOT IDENT.
CE-143	4.188E+04	1.188E+04	0.000E+00	6.059E+03	SHORT HLIF
CE-144	-1.230E-01	1.590E-01	1.220E-01	8.114E-02	NOT IDENT.
PM-144	1.159E-02	2.291E-02	1.966E-02	1.169E-02	NOT IDENT.
PR-144	8.846E-01	1.722E+00	1.478E+00	8.785E-01	NOT IDENT.
PM-146	-4.660E-03	2.911E-02	2.439E-02	1.485E-02	NOT IDENT.
ND-147	-3.203E-01	5.675E-01	4.806E-01	2.895E-01	FAIL ABUN
PM-149	-9.928E+01	6.671E+02	0.000E+00	3.404E+02	SHORT HLIF
EU-152	-1.973E-02	9.323E-02	5.445E-02	4.756E-02	FAIL ABUN
GD-153	-4.343E-02	6.579E-02	4.898E-02	3.356E-02	NOT IDENT.
EU-154	-7.638E-02	8.479E-02	6.845E-02	4.326E-02	NOT IDENT.
TB-160	-4.906E-02	9.533E-02	7.942E-02	4.864E-02	FAIL ABUN
HO-166M	4.507E-04	3.985E-02	3.353E-02	2.033E-02	FAIL ABUN
TA-182	-9.801E-02	1.380E-01	1.139E-01	7.042E-02	FAIL ABUN
IR-192	2.992E-03	2.545E-02	2.231E-02	1.298E-02	FAIL ABUN
HG-203	4.824E-02	3.492E-02	2.640E-02	1.782E-02	NOT IDENT.
BI-207	1.659E-02	3.707E-02	3.155E-02	1.891E-02	FAIL ABUN
PB-210	5.644E-01	2.124E+00	1.822E+00	1.084E+00	NOT IDENT.
PB-211	-7.437E-01	6.197E-01	4.145E-01	3.162E-01	NOT IDENT.
RN-219	-2.555E-02	2.772E-01	2.360E-01	1.415E-01	FAIL ABUN
RA-223	-5.629E-02	4.965E-01	3.748E-01	2.533E-01	FAIL ABUN
AC-227	-2.921E-02	1.823E-01	1.531E-01	9.303E-02	FAIL ABUN
TH-227	-2.921E-02	1.824E-01	1.531E-01	9.304E-02	FAIL ABUN
PA-231	-2.053E-01	1.062E+00	8.491E-01	5.416E-01	FAIL ABUN
TH-231	-5.629E-02	4.965E-01	3.748E-01	2.533E-01	FAIL ABUN
PA-233	-1.631E-02	4.284E-02	3.706E-02	2.186E-02	FAIL ABUN
PA-234	-3.337E-02	1.969E-01	1.654E-01	1.005E-01	NOT IDENT.
PA-234M	-4.498E-02	3.209E+00	2.541E+00	1.637E+00	NOT IDENT.
NP-239	-2.884E-01	2.878E-01	2.353E-01	1.468E-01	FAIL ABUN
AM-241	-5.946E-03	1.037E-01	8.244E-02	5.290E-02	NOT IDENT.
CM-247	5.977E-04	2.566E-02	2.192E-02	1.309E-02	FAIL ABUN
CF-249	-2.014E-03	2.674E-02	2.285E-02	1.364E-02	NOT IDENT.

CF-251	7.400E-02	9.348E-02	8.279E-02	4.770E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	714.5464
49.72	779.2618
57.36	0.0000
59.54	894.5768
63.29	1036.6826
63.29	1036.6826
64.28	1159.3180
67.75	1085.4880
69.67	1173.3789
70.83	1121.3494
72.81	1156.1484
72.87	1156.3887
72.87	1156.3887
74.82	1194.3606
74.82	1194.3606
74.82	1194.3606
74.97	1194.9618
77.11	1203.4567
77.11	1203.4567
77.11	1203.4567
79.69	1213.5508
79.80	1213.9777
80.12	1215.2161
80.19	1215.4867
80.57	1216.9536
81.00	1218.6129
81.07	1218.8834
81.07	1218.8834
83.79	870.4659
83.79	870.4659
85.43	876.4058
86.48	879.1865
86.55	879.3699
86.79	880.0011
86.94	880.4020
87.57	882.0567
88.03	883.2637
88.47	884.4152
89.96	888.2898
91.11	891.2603
92.59	895.0517
92.59	895.0517
93.35	896.9879
94.67	855.2385
94.87	855.7165
94.87	855.7165
95.86	972.8166
97.43	968.9271
98.44	932.5458
99.53	894.4969
100.11	873.0056
103.18	952.6734
103.37	913.5725
105.31	928.1409
106.12	955.5470
109.28	912.4609
111.00	948.3334
111.76	1028.7343
116.30	911.8335
117.23	961.6534
121.12	893.5280
121.78	920.1985
122.06	871.3000
123.07	922.9329
131.20	900.8325
133.52	1001.7098
136.00	970.3405

136.47	982.8895
140.51	0.0000
140.51	0.0000
143.76	975.2021
144.24	939.0217
144.24	939.0217
145.44	978.5166
152.43	984.7164
153.25	953.0925
154.21	922.5308
154.21	922.5308
156.02	986.8833
158.56	976.7308
159.00	979.3948
162.66	880.9788
163.33	867.9701
165.86	983.3303
176.60	912.6899
177.52	910.2777
181.07	0.0000
184.41	891.8718
185.72	911.1969
193.51	925.7596
197.04	915.0446
205.31	930.0533
210.85	898.8342
215.65	862.4620
222.11	877.7817
227.38	907.2334
228.16	910.3077
228.18	910.3344
235.69	857.0797
235.96	911.2997
235.96	911.2997
238.63	815.6971
238.63	815.6971
240.99	818.2828
242.00	819.3842
244.70	734.5519
252.40	718.7147
252.80	730.9227
256.23	716.8328
256.23	716.8328
260.90	0.0000
264.66	632.8813
268.22	688.3351
269.46	692.8956
269.46	692.8956
271.23	641.0739
273.65	592.1305
276.40	599.9965
277.37	634.7196
277.60	628.2258
278.00	642.9642
279.20	603.1816
279.54	603.4217
280.46	589.8200
283.69	636.2648
284.31	651.1089
285.41	669.8666
285.90	0.0000
287.50	601.8713
293.27	0.0000
295.22	640.7274
295.96	641.2625
298.57	643.1439
299.98	644.1536
299.98	644.1536
300.09	644.2399
300.09	644.2399
300.13	644.2658
301.36	596.1747
302.85	595.6322
304.50	544.8332
304.50	544.8332
304.85	526.7230
308.46	586.7466
311.90	572.3193

316.51	582.5712
319.41	590.8864
320.08	593.1596
323.87	585.8706
323.87	585.8706
328.76	593.8655
333.37	613.6755
334.37	614.2944
334.37	614.2944
338.28	533.2346
338.28	533.2346
338.32	533.2620
338.32	533.2620
338.32	533.2620
340.48	505.5701
340.55	515.1190
344.28	521.8091
351.06	543.8837
351.93	544.3466
356.01	548.7552
364.49	506.1685
366.42	0.0000
383.85	467.7536
388.16	482.5075
388.63	481.7135
391.69	498.0010
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401.81	495.4113
402.40	500.7008
404.85	585.5649
410.95	479.0351
414.70	510.0941
423.72	450.3662
427.09	432.0842
427.87	424.1256
433.94	439.6924
453.88	441.5076
463.37	427.1286
468.07	391.4756
473.00	410.7262
476.78	409.7614
477.60	395.0264
487.02	351.4528
492.35	0.0000
497.08	347.5352
511.00	349.9265
514.00	337.1106
527.90	0.0000
529.87	0.0000
531.02	357.8149
537.26	338.8580
546.56	0.0000
563.25	353.9687
569.33	346.6057
569.50	351.2394
569.70	357.6253
583.19	335.7798
600.60	380.8860
602.73	367.9120
604.72	411.7040
609.32	350.0381
609.32	350.0381
610.33	314.4371
614.28	330.2801
618.01	309.3460
621.93	336.0092
621.93	336.0092
633.25	305.6304
635.95	332.8691
636.99	330.0936
645.85	328.8116
657.76	349.1257
661.66	369.0085
661.66	369.0085
664.57	0.0000
666.33	324.9019
666.50	324.9347
677.62	315.5114

685.70	322.0112
695.00	299.0695
696.49	318.7889
696.51	318.7952
697.00	311.7002
702.65	316.7665
706.68	307.1428
711.68	312.0949
720.70	299.0508
721.93	0.0000
722.78	317.1991
722.91	317.2177
723.31	320.8510
724.19	312.0789
727.33	320.9273
733.00	320.6792
735.93	301.4297
739.50	0.0000
747.24	261.0731
752.31	284.9689
753.82	269.3396
756.73	271.8547
763.94	271.1694
765.81	291.4621
766.42	302.4787
777.92	0.0000
778.90	313.7256
783.70	308.7422
785.37	314.5119
795.86	276.4546
801.95	311.4785
810.29	278.2842
810.76	283.9323
815.77	227.6820
818.51	228.9099
832.01	291.4683
834.85	308.7984
836.80	0.0000
846.77	264.1071
856.80	232.9816
860.56	233.3746
871.09	226.7469
873.19	228.9472
875.33	0.0000
879.36	248.7834
880.51	238.3384
883.24	231.8885
884.68	238.7752
889.28	221.8900
898.04	266.3151
911.20	247.3736
911.20	247.3736
911.20	247.3736
926.50	260.7490
937.49	265.8896
944.13	259.7116
946.00	246.0777
949.00	215.7076
962.29	240.2661
964.08	243.9233
966.15	214.2351
968.97	214.4788
968.97	214.4788
968.97	214.4788
983.53	192.6596
996.26	248.0935
1001.03	220.2696
1004.73	231.7195
1037.84	230.6030
1038.76	0.0000
1048.07	217.0933
1050.41	204.9272
1050.41	204.9272
1063.66	255.6147
1085.87	246.2394
1099.45	252.7003
1112.07	234.1020
1115.54	256.5358

1120.29	263.0427
1120.29	263.0427
1120.55	297.6692
1121.30	282.9529
1131.51	0.0000
1173.23	259.8618
1177.93	239.5358
1189.05	251.7941
1204.77	270.2542
1221.41	321.5010
1231.02	290.0847
1235.36	309.2967
1238.28	261.6987
1260.41	0.0000
1271.85	202.2871
1274.44	250.1452
1274.54	250.1530
1291.59	186.9140
1298.22	0.0000
1312.11	159.5429
1332.49	136.7576
1365.19	111.0881
1368.63	0.0000
1384.29	128.8242
1408.01	132.7590
1457.56	0.0000
1460.82	105.9610
1489.16	116.1255
1505.03	126.0035
1596.21	87.0511
1620.50	62.9761
1678.03	0.0000
1690.97	74.7734
1764.49	62.2668
1764.49	62.2668
1770.23	57.0063
1771.35	55.2399
1791.20	0.0000
1836.06	60.2913

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248521006

Total Uranium Activity	9.6309E+00	ug/g
Total Uranium Counting Unc.	4.6660E+00	ug/g
Total Uranium Tpu	2.3806E-06	ug/g
Total Uranium Mda	2.1565E+00	ug/g

```
*****************************************************************************
*                                                                           *
*                          GEL Laboratories LLC                           *
*                               2040 SAVAGE ROAD                            *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID      : 961099                    SAMPLE ID  : G248521006       *
*   ANALYST       : MXR1                      DETECTOR   : GAM22            *
*   SAMPLE DATE   : 25-FEB-2010 12:00:00.00   COUNT TIME :    0 04:00:00.00 *
*   ANALYSIS DATE: 19-MAR-2010 23:12:15.86    SAMPLE ALQT:  126.550 GRAM    *
*                                                                           *
*****************************************************************************


        GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 1.228E+01
        GROSS GAMMA ERROR   (pCi/GRAM  )  : 1.195E+00
        GROSS GAMMA MDA     (pCi/GRAM  )  : 2.625E+00
        GROSS GAMMA DLC     (pCi/GRAM  )  : 1.289E+00
```

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:13:39.14

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*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521007.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:12:44
Sample ID         : G248521007           Sample quantity  : 9.45500E+01 GRAM
Detector name     : GAM23                Detector geometry: CAN
Elapsed live time: 0 04:00:00.00         Elapsed real time: 0 04:00:03.33  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID         : 961099                Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.20*	127	744	0.96	126.40	123	8	8.84E-03	40.1	
2	4	74.64*	758	872	1.37	149.29	145	14	5.26E-02	7.7	5.86E+00
3	4	76.97	1035	643	0.99	153.94	145	14	7.19E-02	5.0	
4	3	87.01	448	566	1.01	174.01	164	27	3.11E-02	9.7	6.80E-01
5	3	89.79	255	575	1.00	179.59	164	27	1.77E-02	16.1	
6	3	92.62*	612	780	1.30	185.25	164	27	4.25E-02	9.4	
7	0	128.74	127	504	1.18	257.49	254	7	8.80E-03	30.7	
8	0	185.49*	347	811	1.30	370.98	365	12	2.41E-02	17.9	
9	0	208.95	196	441	0.99	417.89	415	8	1.36E-02	20.0	
10	4	238.30*	2082	382	1.15	476.61	471	18	1.45E-01	2.7	2.91E+00
11	4	241.32	553	523	1.86	482.65	471	18	3.84E-02	11.1	
12	0	269.89	169	377	1.64	539.78	535	10	1.17E-02	22.9	
13	2	294.81	768	252	1.33	589.62	583	22	5.33E-02	5.1	2.88E+00
14	2	299.56	137	396	1.84	599.11	583	22	9.50E-03	28.4	
15	0	327.01	83	350	1.18	654.01	651	10	5.76E-03	43.5	
16	0	337.86*	439	423	1.28	675.73	670	13	3.05E-02	11.0	
17	0	351.47*	1038	394	1.32	702.95	698	12	7.21E-02	5.0	
18	0	462.25	122	341	1.16	924.50	919	13	8.50E-03	32.3	
19	0	510.21*	215	381	2.06	1020.42	1011	20	1.49E-02	25.4	
20	0	582.53*	625	211	1.41	1165.07	1157	16	4.34E-02	6.7	
21	0	608.51	827	215	1.39	1217.02	1210	15	5.74E-02	5.2	
22	0	660.84	1802	251	1.48	1321.68	1314	15	1.25E-01	3.0	
23	0	726.62	127	143	1.39	1453.24	1446	13	8.84E-03	21.3	
24	0	769.59	128	167	5.86	1539.19	1530	21	8.92E-03	26.7	
25	0	902.45	48	50	3.26	1804.89	1800	9	3.30E-03	30.4	
26	0	910.30	392	170	1.53	1820.60	1812	17	2.72E-02	9.1	
27	0	968.00	217	115	2.08	1936.00	1931	12	1.51E-02	12.3	
28	0	1119.53	165	152	2.35	2239.06	2232	20	1.15E-02	19.6	
29	0	1459.43	1437	89	2.09	2918.87	2909	21	9.98E-02	3.1	
30	0	1728.29	38	19	2.03	3456.58	3448	15	2.65E-03	29.5	
31	0	1763.07*	119	23	2.51	3526.14	3515	18	8.26E-03	13.7	

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

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 03:13:41

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521007.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:12:44
Sample ID : G248521007 Sample quantity : 94.550 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA23 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:03.33 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.682E+01	2.617E+00	5.902E-01	4.415E-02	45.439
CD-109	+	88.03	*	4.777E+00	1.033E+00	1.295E+00	1.264E-01	3.689
SN-126	+	64.28		1.021E+00	8.330E-01	9.671E-01	1.472E-01	1.056
	+	86.94		1.920E+00	8.806E-01	5.281E-01	2.197E-01	3.635
	+	87.57	*	4.618E-01	9.983E-02	1.260E-01	1.226E-02	3.667
BA-137M	+	661.66	*	1.951E+00	1.549E-01	6.573E-02	3.358E-03	29.681
CS-137	+	661.66	*	2.061E+00	1.640E-01	6.943E-02	3.566E-03	29.681
TL-208		277.37		5.767E-01	4.262E-01	7.072E-01	7.632E-02	0.815
	+	583.19	*	6.406E-01	9.500E-02	5.905E-02	3.824E-03	10.848
		860.56		5.372E-01	3.212E-01	5.801E-01	5.243E-02	0.926
BI-211		72.87		1.595E+01	4.478E+00	6.907E+00	6.092E-01	2.309
	+	351.06	*	4.632E+00	5.526E-01	3.487E-01	2.273E-02	13.283
PB-212	+	74.82		3.626E+00	7.348E-01	6.421E-01	8.463E-02	5.647
	+	77.11		2.797E+00	3.766E-01	3.640E-01	3.275E-02	7.685
	+	238.63	*	2.044E+00	1.859E-01	9.573E-02	6.945E-03	21.352
	+	300.09		2.108E+00	1.210E+00	1.270E+00	1.073E-01	1.660
BI-214	+	609.32	*	1.645E+00	2.115E-01	1.189E-01	9.016E-03	13.833
	+	1120.29		1.745E+00	7.018E-01	4.774E-01	4.464E-02	3.654
	+	1764.49		1.765E+00	4.959E-01	3.363E-01	2.091E-02	5.248
PB-214	+	74.82		6.427E+00	1.251E+00	1.138E+00	1.356E-01	5.647
	+	77.11		4.931E+00	7.786E-01	6.416E-01	7.831E-02	7.685
	+	242.00		3.297E+00	7.818E-01	5.823E-01	4.708E-02	5.662
	+	295.22		2.095E+00	2.818E-01	2.237E-01	1.961E-02	9.369
	+	351.93	*	1.681E+00	2.210E-01	1.304E-01	1.114E-02	12.889
RA-224	+	240.99	*	5.830E+00	1.341E+00	1.026E+00	5.782E-02	5.681
RA-226	+	609.32	*	1.645E+00	2.115E-01	1.189E-01	9.016E-03	13.833
	+	1120.29		1.745E+00	7.018E-01	4.774E-01	4.464E-02	3.654
	+	1764.49		1.765E+00	4.959E-01	3.363E-01	2.091E-02	5.248
AC-228	+	338.32		2.180E+00	1.018E+00	4.169E-01	1.719E-01	5.229
	+	911.20	*	1.977E+00	4.309E-01	2.115E-01	2.512E-02	9.347
	+	968.97		1.890E+00	6.534E-01	3.873E-01	9.415E-02	4.881
RA-228	+	338.32		2.180E+00	1.018E+00	4.169E-01	1.719E-01	5.229
	+	911.20	*	1.977E+00	4.309E-01	2.115E-01	2.512E-02	9.347
	+	968.97		1.890E+00	6.534E-01	3.873E-01	9.415E-02	4.881

Sample ID : G248521007 Acquisition date : 19-MAR-2010 23:12:44

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		3.626E+00	6.460E-01	6.421E-01	5.759E-02	5.647
	+	77.11		2.797E+00	3.766E-01	3.640E-01	3.275E-02	7.685
	+	238.63	*	2.044E+00	1.859E-01	9.573E-02	6.945E-03	21.352
	+	300.09		2.108E+00	1.755E+00	1.270E+00	7.736E-01	1.660
TH-232	+	338.32		2.180E+00	4.954E-01	4.169E-01	2.462E-02	5.229
	+	911.20	*	1.977E+00	4.309E-01	2.115E-01	2.512E-02	9.347
	+	968.97		1.890E+00	6.534E-01	3.873E-01	9.415E-02	4.881
TH-234	+	63.29	*	2.650E+00	2.179E+00	2.609E+00	4.799E-01	1.016
	+	92.59		5.146E+00	1.497E+00	1.040E+00	2.308E-01	4.948
U-235	+	89.96		2.699E+00	1.099E+00	1.304E+00	3.245E-01	2.070
	+	93.35		3.887E+00	1.161E+00	7.445E-01	1.724E-01	5.221
		143.76	*	1.615E-01	2.120E-01	3.429E-01	5.339E-02	0.471
		163.33		-1.111E-01	4.572E-01	7.386E-01	1.223E-01	-0.150
	+	185.72		2.194E-01	7.935E-02	7.028E-02	3.680E-03	3.122
		205.31		1.405E-01	6.181E-01	8.580E-01	1.446E-01	0.164
NP-237	+	86.48	*	1.378E+00	4.150E-01	3.815E-01	8.804E-02	3.612
		95.86		-1.559E+00	1.190E+00	1.562E+00	3.734E-01	-0.998
U-238	+	63.29	*	2.650E+00	2.179E+00	2.609E+00	4.799E-01	1.016
	+	92.59		5.146E+00	1.070E+00	1.040E+00	9.255E-02	4.948
ANH-511	+	511.00	*	1.673E-01	8.561E-02	5.150E-02	2.991E-03	3.249

---- 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	*	3.264E-02	4.115E-01	6.801E-01	4.620E-02	0.048
NA-22		1274.54	*	-4.422E-02	4.795E-02	7.214E-02	4.845E-03	-0.613
NA-24		1368.63	*	1.738E+03	4.795E-02	Half-Life too short		
SC-46		889.28	*	-1.439E-02	4.123E-02	6.695E-02	5.982E-03	-0.215
	+	1120.55		3.137E-01	1.244E-01	1.409E-01	9.182E-03	2.226
V-48		944.13		-1.645E+00	1.231E+00	1.824E+00	1.589E-01	-0.902
		983.53	*	6.405E-02	1.015E-01	1.752E-01	1.458E-02	0.365
		1312.11		-1.835E-02	1.155E-01	1.851E-01	1.317E-02	-0.099
CR-51		320.08	*	-3.333E-01	4.646E-01	7.569E-01	4.956E-02	-0.440
MN-54		834.85	*	1.817E-02	3.926E-02	6.741E-02	5.337E-03	0.270
CO-56		846.77	*	-3.651E-03	4.083E-02	6.781E-02	5.516E-03	-0.054
		1037.84		-1.231E-02	3.318E-01	5.462E-01	4.472E-02	-0.023
		1238.28		1.426E-01	1.037E-01	1.826E-01	1.215E-02	0.781
		1771.35		-4.522E-01	2.780E-01	3.511E-01	2.172E-02	-1.288
CO-57		122.06	*	-2.725E-04	2.701E-02	4.441E-02	2.618E-03	-0.006
		136.47		8.460E-02	2.147E-01	3.558E-01	2.309E-02	0.238
CO-58		810.76	*	-1.516E-02	4.148E-02	6.776E-02	5.091E-03	-0.224
FE-59		1099.45	*	2.694E-02	1.070E-01	1.792E-01	1.380E-02	0.150
		1291.59		-6.685E-03	1.571E-01	2.549E-01	2.116E-02	-0.026
CO-60		1173.23		-6.733E-03	4.823E-02	7.824E-02	4.414E-03	-0.086
		1332.49	*	-2.280E-02	3.944E-02	6.025E-02	4.423E-03	-0.378
ZN-65		1115.54	*	1.651E-01	1.082E-01	1.748E-01	1.154E-02	0.944
SE-75		121.12		1.008E-01	1.434E-01	2.401E-01	2.201E-02	0.420
		136.00		1.428E-02	4.238E-02	7.013E-02	3.962E-03	0.204

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		264.66	*	4.871E-03	5.732E-02	8.023E-02	4.672E-03	0.061
		279.54		-6.519E-02	1.215E-01	2.011E-01	1.266E-02	-0.324
		400.66		2.564E-01	2.916E-01	5.002E-01	4.535E-02	0.513
SR-85		514.00	*	5.940E-02	5.094E-02	7.776E-02	4.513E-03	0.764
Y-88		898.04		-1.553E-03	5.115E-02	7.314E-02	6.688E-03	-0.021
		1836.06	*	2.129E-02	3.624E-02	6.479E-02	3.815E-03	0.329
Y-91		1204.77	*	-3.845E+00	2.665E+01	4.317E+01	2.575E+00	-0.089
NB-94		702.65	*	1.347E-02	3.677E-02	6.059E-02	3.463E-03	0.222
		871.09		1.983E-02	3.545E-02	6.123E-02	5.258E-03	0.324
NB-95		765.81	*	6.394E-02	5.885E-02	8.859E-02	5.953E-03	0.722
NB-95M		235.69	*	9.483E-01	1.973E-01	3.087E-01	2.285E-02	3.072
ZR-95		724.19		2.313E-01	1.365E-01	2.125E-01	1.497E-02	1.088
		756.73	*	4.431E-03	8.096E-02	1.305E-01	1.007E-02	0.034
MO-99		140.51		-1.570E-04	8.096E-02	Half-Life too short		
		181.07		5.003E-05	8.096E-02	Half-Life too short		
		366.42		-1.308E-04	8.096E-02	Half-Life too short		
		739.50	*	1.830E-05	8.096E-02	Half-Life too short		
		777.92		-5.382E-05	8.096E-02	Half-Life too short		
TC-99M		140.51	*	-3.091E+19	8.096E-02	Half-Life too short		
RU-103		497.08	*	-3.414E-03	5.006E-02	8.198E-02	1.020E-02	-0.042
		610.33		1.671E+01	2.971E+00	3.247E+00	4.843E-01	5.147
RH-106		621.93	*	7.320E-02	3.293E-01	5.420E-01	6.187E-02	0.135
		1050.41		-3.752E-01	2.669E+00	4.357E+00	3.278E-01	-0.086
RU-106		621.93	*	7.320E-02	3.293E-01	5.420E-01	2.912E-02	0.135
		1050.41		-3.752E-01	2.669E+00	4.357E+00	3.278E-01	-0.086
AG-108M		433.94	*	-1.400E-02	3.301E-02	5.354E-02	3.346E-03	-0.261
		614.28		3.844E-03	4.163E-02	5.889E-02	3.449E-03	0.065
		722.91		3.985E-03	4.718E-02	6.597E-02	4.234E-03	0.060
AG-110M		657.76	*	5.118E-01	7.113E-02	1.266E-01	7.035E-03	4.044
		677.62		-2.434E-01	3.279E-01	5.033E-01	2.885E-02	-0.484
		706.68		6.124E-02	2.366E-01	3.875E-01	2.379E-02	0.158
		763.94		1.691E-01	1.932E-01	2.887E-01	2.019E-02	0.586
		884.68		2.294E-02	4.978E-02	8.554E-02	7.798E-03	0.268
		937.49		-1.456E-01	1.227E-01	1.861E-01	1.690E-02	-0.782
		1384.29		1.173E-01	1.713E-01	2.958E-01	2.239E-02	0.396
		1505.03		1.640E-01	2.899E-01	4.973E-01	3.531E-02	0.330
SN-113		391.69	*	-3.168E-02	5.149E-02	8.333E-02	5.133E-03	-0.380
CD-115		260.90		1.828E-03	5.149E-02	Half-Life too short		
		492.35		1.976E-04	5.149E-02	Half-Life too short		
		527.90	*	-1.002E-04	5.149E-02	Half-Life too short		
SN-117M		156.02		-3.007E+00	3.515E+00	5.585E+00	2.922E-01	-0.538
		158.56	*	-2.728E-02	8.303E-02	1.340E-01	6.964E-03	-0.204
TE-123M		159.00	*	-1.122E-02	3.089E-02	4.980E-02	2.628E-03	-0.225
SB-124		602.73		-4.954E-02	5.352E-02	6.953E-02	3.812E-03	-0.713
		645.85		4.480E-01	5.634E-01	9.566E-01	5.743E-02	0.468
		722.78		2.049E-02	5.149E-01	7.171E-01	4.522E-02	0.029
		1690.97	*	4.819E-02	7.624E-02	1.382E-01	9.671E-03	0.349
SB-125		427.87	*	7.659E-02	1.035E-01	1.766E-01	1.073E-02	0.434
	+	463.37		8.461E-01	5.492E-01	6.337E-01	4.295E-02	1.335

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		600.60		-1.512E-01	2.119E-01	3.095E-01	1.995E-02	-0.488
		635.95		-6.374E-02	2.960E-01	4.739E-01	3.015E-02	-0.135
TE-125M		109.28	*	-6.911E+00	1.152E+01	1.868E+01	1.704E+00	-0.370
I-126		388.63		3.170E-01	2.764E-01	4.796E-01	2.774E-02	0.661
		666.33	*	4.112E-02	4.050E-01	5.703E-01	2.951E-02	0.072
		753.82		8.846E-01	2.832E+00	4.645E+00	3.029E-01	0.190
SB-126		414.70		6.271E-02	1.269E-01	2.147E-01	1.250E-02	0.292
		666.50		8.031E-03	1.413E-01	1.982E-01	1.026E-02	0.041
		695.00		3.270E-02	1.287E-01	2.110E-01	1.181E-02	0.155
		697.00		6.955E-02	4.473E-01	7.286E-01	4.101E-02	0.095
		720.70	*	-4.670E-03	2.782E-01	3.856E-01	2.311E-02	-0.012
		856.80		1.547E-01	7.573E-01	1.280E+00	1.065E-01	0.121
SB-127		252.40		-2.113E-01	1.740E+01	2.785E+01	1.163E+01	-0.008
		473.00		-1.552E+00	7.288E+00	1.189E+01	1.612E+00	-0.131
		685.70	*	-3.823E+00	5.333E+00	8.179E+00	9.874E-01	-0.467
		783.70		1.552E+01	1.300E+01	2.308E+01	3.170E+00	0.672
I-131		80.19		8.600E+00	1.352E+01	1.490E+01	1.383E+00	0.577
		284.31		-2.834E-01	2.953E+00	4.960E+00	3.253E-01	-0.057
		364.49	*	-1.411E-02	2.335E-01	3.884E-01	2.570E-02	-0.036
		636.99		-1.230E+00	3.240E+00	5.133E+00	3.155E-01	-0.240
TE-132		49.72		-1.736E+02	1.356E+02	2.169E+02	2.862E+01	-0.800
		111.76		-2.974E+01	1.793E+02	2.943E+02	3.578E+01	-0.101
		116.30		-2.284E+02	1.527E+02	2.366E+02	2.831E+01	-0.965
		228.16	*	2.430E+00	3.903E+00	6.380E+00	1.036E+00	0.381
BA-133		81.00		7.941E-02	1.467E-01	1.603E-01	2.542E-02	0.495
		276.40		4.642E-01	4.092E-01	6.526E-01	8.219E-02	0.711
		302.85		1.808E-02	1.614E-01	2.377E-01	2.721E-02	0.076
		356.01	*	2.416E-02	5.168E-02	7.688E-02	8.702E-03	0.314
		383.85		-2.590E-01	3.261E-01	5.228E-01	5.576E-02	-0.495
I-133		529.87	*	-6.564E-03	3.261E-01	Half-Life too short		
		875.33		-4.175E+01	3.261E-01	Half-Life too short		
		1298.22		-2.067E+01	3.261E-01	Half-Life too short		
CS-134		563.25		2.426E-01	3.996E-01	6.730E-01	3.893E-02	0.360
		569.33		1.378E-01	2.311E-01	3.574E-01	2.078E-02	0.386
		604.72		3.372E-02	4.241E-02	6.308E-02	3.472E-03	0.535
		795.86	*	3.291E-02	4.950E-02	8.597E-02	6.279E-03	0.383
		801.95		4.394E-02	4.141E-01	6.824E-01	5.044E-02	0.064
		1365.19		-8.242E-02	1.304E+00	2.101E+00	1.635E-01	-0.039
CS-135		268.22	*	4.062E-01	1.969E-01	2.996E-01	2.289E-02	1.356
I-135		546.56		-1.892E+16	1.969E-01	Half-Life too short		
		836.80		1.309E+18	1.969E-01	Half-Life too short		
		1038.76		9.528E+17	1.969E-01	Half-Life too short		
		1131.51		6.545E+17	1.969E-01	Half-Life too short		
		1260.41	*	-1.460E+17	1.969E-01	Half-Life too short		
		1457.56		1.755E+20	1.969E-01	Half-Life too short		
		1678.03		-5.397E+16	1.969E-01	Half-Life too short		
		1791.20		-6.657E+17	1.969E-01	Half-Life too short		
CS-136		153.25		1.356E+00	1.361E+00	2.277E+00	1.750E-01	0.595
		176.60		-3.362E-02	7.801E-01	1.265E+00	8.298E-02	-0.027

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		273.65		-1.195E+00	9.668E-01	1.250E+00	8.559E-02	-0.956
		340.55		7.619E-01	2.680E-01	4.368E-01	2.789E-02	1.744
		818.51		-7.687E-02	1.090E-01	1.734E-01	1.326E-02	-0.443
		1048.07	*	1.654E-02	1.635E-01	2.718E-01	2.168E-02	0.061
		1235.36		1.422E+00	9.393E-01	1.655E+00	1.686E-01	0.859
CE-139		165.86	*	8.314E-03	3.230E-02	5.299E-02	2.702E-03	0.157
BA-140		162.66		2.764E-01	1.258E+00	2.063E+00	1.251E-01	0.134
		304.85		-1.553E+00	2.415E+00	3.352E+00	9.581E-01	-0.463
		423.72		-7.015E-01	3.244E+00	5.309E+00	1.714E+00	-0.132
		537.26	*	1.951E-02	4.233E-01	6.945E-01	2.313E-01	0.028
LA-140		328.76		6.665E-01	5.532E-01	8.524E-01	5.632E-02	0.782
		487.02		-8.060E-03	2.374E-01	3.900E-01	2.576E-02	-0.021
		815.77		9.320E-02	4.804E-01	8.146E-01	7.095E-02	0.114
		1596.21	*	-8.688E-02	1.161E-01	1.747E-01	1.198E-02	-0.497
CE-141		145.44	*	6.136E-02	7.453E-02	1.247E-01	7.034E-03	0.492
CE-143		57.36		-1.450E-03	7.453E-02	Half-Life too short		
		293.27	*	6.482E-02	7.453E-02	Half-Life too short		
		664.57		2.124E-01	7.453E-02	Half-Life too short		
		721.93		1.407E-02	7.453E-02	Half-Life too short		
CE-144		80.12		2.509E+00	3.935E+00	4.335E+00	3.974E-01	0.579
		133.52	*	-1.429E-01	2.261E-01	3.340E-01	4.613E-02	-0.428
PM-144		476.78		3.717E-02	7.657E-02	1.288E-01	8.896E-03	0.289
		618.01		7.261E-03	3.427E-02	5.637E-02	3.257E-03	0.129
		696.49	*	2.393E-02	3.819E-02	6.388E-02	3.597E-03	0.375
PR-144		696.51	*	1.778E+00	2.868E+00	4.796E+00	2.696E-01	0.371
		1489.16		2.816E+00	1.345E+01	2.224E+01	1.587E+00	0.127
PM-146		453.88	*	3.242E-02	5.103E-02	8.635E-02	7.337E-03	0.375
		633.25		8.083E-01	1.581E+00	2.595E+00	9.752E-01	0.312
		735.93		-1.125E-01	1.544E-01	2.305E-01	6.313E-02	-0.488
		747.24		2.323E-02	1.039E-01	1.694E-01	2.270E-02	0.137
ND-147	+	91.11		1.394E+00	4.703E-01	9.810E-01	9.651E-02	1.421
		319.41		-2.443E+00	5.558E+00	9.163E+00	5.417E-01	-0.267
		531.02	*	-4.110E-01	9.709E-01	1.551E+00	2.096E-01	-0.265
PM-149		285.90	*	-5.869E-05	9.709E-01	Half-Life too short		
EU-152		121.78		7.823E-03	7.662E-02	1.264E-01	9.679E-03	0.062
		244.70		7.431E-02	3.857E-01	5.448E-01	3.082E-02	0.136
		344.28	*	-4.559E-03	1.232E-01	1.687E-01	1.117E-02	-0.027
		778.90		-5.009E-02	2.970E-01	4.235E-01	2.939E-02	-0.118
		964.08		1.140E+00	3.689E-01	6.341E-01	5.403E-02	1.798
		1085.87		-1.233E-01	4.099E-01	6.598E-01	4.642E-02	-0.187
		1112.07		-3.446E-02	3.688E-01	5.151E-01	3.424E-02	-0.067
		1408.01		2.172E-01	1.967E-01	3.508E-01	2.551E-02	0.619
GD-153		69.67		9.021E-01	2.316E+00	3.446E+00	3.011E-01	0.262
		97.43	*	6.016E-02	1.040E-01	1.543E-01	1.260E-02	0.390
		103.18		-1.477E-01	1.235E-01	1.967E-01	1.470E-02	-0.751
EU-154		123.07		-2.833E-02	5.651E-02	8.825E-02	8.317E-03	-0.321
		723.31		1.131E-01	2.203E-01	3.187E-01	2.303E-02	0.355
		873.19		1.529E-01	2.852E-01	4.918E-01	5.853E-02	0.311
		996.26		-3.535E-01	3.686E-01	5.578E-01	9.626E-02	-0.634

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1004.73		-2.126E-01	2.192E-01	3.343E-01	3.759E-02	-0.636
		1274.44	*	-1.289E-01	1.354E-01	2.025E-01	2.026E-02	-0.636
EU-155	+	86.55		5.616E-01	1.216E-01	2.029E-01	1.972E-02	2.768
		105.31	*	2.875E-02	1.138E-01	1.892E-01	1.394E-02	0.152
TB-160	+	86.79		1.595E+00	3.448E-01	5.708E-01	5.515E-02	2.794
		197.04		-1.520E-01	6.647E-01	1.036E+00	5.516E-02	-0.147
		215.65		4.166E-01	8.771E-01	1.435E+00	7.842E-02	0.290
	+	298.57		3.187E-01	1.819E-01	2.292E-01	1.347E-02	1.390
		879.36	*	4.448E-02	1.468E-01	2.498E-01	2.184E-02	0.178
		962.29		1.188E+00	6.901E-01	1.119E+00	9.550E-02	1.062
		966.15		1.522E+00	3.697E-01	6.235E-01	5.299E-02	2.441
		1177.93		-9.006E-03	3.859E-01	6.310E-01	3.590E-02	-0.014
		1271.85		-7.362E-01	8.111E-01	1.219E+00	8.139E-02	-0.604
HO-166M		80.57		2.540E-01	4.192E-01	4.609E-01	4.238E-02	0.551
	+	184.41		1.743E-01	6.304E-02	7.360E-02	3.846E-03	2.369
		280.46		-7.324E-02	9.028E-02	1.479E-01	8.616E-03	-0.495
		410.95		-6.248E-02	2.742E-01	4.505E-01	2.619E-02	-0.139
		711.68	*	-2.587E-02	6.483E-02	1.018E-01	5.957E-03	-0.254
		752.31		-3.590E-02	2.993E-01	4.770E-01	3.100E-02	-0.075
		810.29		-1.412E-02	5.808E-02	9.570E-02	7.159E-03	-0.148
TA-182		67.75		-1.147E-01	1.608E-01	2.278E-01	1.983E-02	-0.504
		100.11		3.155E-01	1.987E-01	3.400E-01	2.660E-02	0.928
		152.43		3.898E-01	3.912E-01	6.557E-01	3.465E-02	0.595
		222.11		-1.685E-01	3.993E-01	6.335E-01	3.491E-02	-0.266
		1121.30		7.316E-01	1.943E-01	3.700E-01	2.406E-02	1.977
		1189.05		-1.738E-01	3.310E-01	5.205E-01	3.020E-02	-0.334
		1221.41	*	1.605E-01	2.098E-01	3.606E-01	2.213E-02	0.445
		1231.02		-4.001E-01	5.380E-01	8.336E-01	5.201E-02	-0.480
IR-192	+	295.96		1.661E+00	1.962E-01	3.273E-01	1.951E-02	5.075
		308.46		7.948E-02	1.069E-01	1.843E-01	1.098E-02	0.431
		316.51	*	3.559E-02	3.870E-02	6.705E-02	3.978E-03	0.531
		468.07		3.488E-02	9.554E-02	1.396E-01	9.420E-03	0.250
HG-203		70.83		1.151E+00	1.925E+00	2.871E+00	4.633E-01	0.401
		72.87		4.432E+00	1.370E+00	1.920E+00	3.004E-01	2.309
		279.20	*	-5.672E-03	4.573E-02	7.681E-02	4.717E-03	-0.074
BI-207		72.81		8.414E-01	2.546E-01	3.930E-01	3.466E-02	2.141
	+	74.97		1.046E+00	1.859E-01	2.772E-01	2.467E-02	3.772
		569.70		2.235E-02	3.634E-02	5.640E-02	3.177E-03	0.396
		1063.66	*	5.124E-02	5.616E-02	9.821E-02	7.215E-03	0.522
		1770.23		-1.833E+00	6.389E-01	6.615E-01	4.096E-02	-2.772
PB-210		46.54	*	5.765E+00	5.855E+00	9.445E+00	7.296E-01	0.610
PB-211		404.85	*	-7.286E-01	8.790E-01	1.289E+00	6.181E-01	-0.565
		427.09		9.951E-01	1.799E+00	2.952E+00	1.353E+00	0.337
		832.01		5.356E-01	1.060E+00	1.766E+00	9.135E-01	0.303
BI-212	+	727.33	*	2.017E+00	8.869E-01	1.139E+00	1.238E-01	1.771
		785.37		9.821E-01	3.034E+00	5.192E+00	3.660E-01	0.189
		1620.50		2.120E+00	2.449E+00	4.457E+00	3.023E-01	0.476
RN-219	+	271.23		7.337E-01	3.408E-01	4.496E-01	3.607E-02	1.632
		401.81	*	1.026E-01	4.457E-01	7.467E-01	1.003E-01	0.137

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

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RA-223		81.07		1.780E-01	3.308E-01	3.623E-01	3.343E-02	0.491
		83.79		2.525E-01	1.350E-01	2.239E-01	2.109E-02	1.128
		94.87		1.042E+00	5.710E-01	8.707E-01	7.432E-02	1.197
		144.24		5.281E-01	7.076E-01	1.150E+00	7.937E-02	0.459
		154.21		3.960E-01	4.112E-01	6.883E-01	4.490E-02	0.575
	+	269.46		5.700E-01	2.631E-01	3.518E-01	2.123E-02	1.620
		323.87	*	5.852E-01	7.528E-01	1.136E+00	1.836E-01	0.515
	+	338.28		8.650E+00	2.097E+00	2.508E+00	2.586E-01	3.449
AC-227		79.69		1.531E-02	2.022E+00	2.146E+00	3.755E-01	0.007
		235.96		1.948E+00	2.754E-01	4.079E-01	3.264E-02	4.775
		256.23	*	-1.463E-01	2.783E-01	4.359E-01	4.437E-02	-0.336
	+	299.98		2.319E+00	1.341E+00	1.668E+00	1.840E-01	1.390
		304.50		-1.177E+00	1.920E+00	2.706E+00	4.135E-01	-0.435
		334.37		6.131E-01	2.345E+00	3.044E+00	4.344E-01	0.201
TH-227		79.80		-9.912E-02	2.661E+00	2.816E+00	6.193E-01	-0.035
		235.96		1.948E+00	2.672E-01	4.079E-01	2.950E-02	4.775
		256.23	*	-1.463E-01	2.785E-01	4.359E-01	5.222E-02	-0.336
	+	299.98		2.319E+00	1.341E+00	1.668E+00	1.840E-01	1.390
		304.50		-1.177E+00	1.920E+00	2.706E+00	4.135E-01	-0.435
		334.37		6.131E-01	2.345E+00	3.044E+00	4.344E-01	0.201
TH-229		85.43		1.287E+00	2.678E-01	4.295E-01	4.101E-02	2.997
	+	88.47		3.903E-01	1.309E-01	2.640E-01	2.553E-02	1.478
		193.51	*	-4.418E-02	5.612E-01	9.061E-01	4.799E-02	-0.049
		210.85		9.610E-01	1.125E+00	1.640E+00	8.905E-02	0.586
PA-231		283.69	*	1.975E-01	1.511E+00	2.558E+00	3.359E-01	0.077
		301.36		1.415E+00	6.703E-01	1.058E+00	1.099E-01	1.337
TH-231		81.07		1.780E-01	3.308E-01	3.623E-01	3.343E-02	0.491
		83.79		2.525E-01	1.350E-01	2.239E-01	2.109E-02	1.128
		94.87		1.042E+00	5.710E-01	8.707E-01	7.432E-02	1.197
		144.24		5.281E-01	7.076E-01	1.150E+00	7.937E-02	0.459
		154.21		3.960E-01	4.112E-01	6.883E-01	4.490E-02	0.575
	+	269.46		5.700E-01	2.631E-01	3.518E-01	2.123E-02	1.620
		323.87	*	5.852E-01	7.528E-01	1.136E+00	1.836E-01	0.515
	+	338.28		8.650E+00	2.097E+00	2.508E+00	2.586E-01	3.449
PA-233	+	300.13		1.049E+00	6.122E-01	7.533E-01	1.011E-01	1.393
		311.90	*	-4.097E-02	6.785E-02	1.113E-01	6.958E-03	-0.368
		340.48		2.302E+00	9.672E-01	1.292E+00	3.002E-01	1.782
PA-234		94.67		7.643E-01	2.247E-01	3.322E-01	4.107E-02	2.301
		98.44		1.020E-01	1.197E-01	1.666E-01	9.280E-02	0.612
		111.00		1.286E-01	1.983E-01	3.319E-01	3.590E-02	0.388
		131.20		1.702E-02	1.223E-01	1.769E-01	1.000E-02	0.096
		569.50		2.204E-01	3.181E-01	4.947E-01	2.787E-02	0.446
		733.00		2.732E-01	4.237E-01	6.452E-01	1.379E-01	0.423
		880.51		1.074E-01	2.845E-01	4.861E-01	4.261E-02	0.221
		883.24		2.050E-01	3.181E-01	5.009E-01	3.369E-01	0.409
		926.50		-2.137E-01	1.841E-01	2.659E-01	6.745E-02	-0.803
		946.00	*	-2.341E-01	3.053E-01	4.730E-01	8.891E-02	-0.495
		949.00		4.382E-01	4.522E-01	7.978E-01	6.914E-02	0.549
PA-234M		766.42		1.628E+01	1.649E+01	2.167E+01	1.093E+01	0.752

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1001.03	*	1.603E-01	5.081E+00	8.003E+00	7.636E-01	0.020
NP-239		99.53		2.001E-01	1.773E-01	3.008E-01	2.376E-02	0.665
		103.37		-4.555E-02	1.075E-01	1.755E-01	1.308E-02	-0.260
		106.12		1.585E-03	9.028E-02	1.492E-01	1.069E-02	0.011
		117.23	*	-8.281E-01	4.226E-01	6.510E-01	4.052E-02	-1.272
		228.18		1.436E-01	2.320E-01	3.810E-01	2.115E-02	0.377
		277.60		2.469E-01	1.942E-01	3.237E-01	1.882E-02	0.763
AM-241		59.54	*	1.365E-01	2.166E-01	3.267E-01	3.040E-02	0.418
CM-247		278.00		1.006E+00	7.893E-01	1.381E+00	8.033E-02	0.728
		287.50		5.492E-01	1.391E+00	2.174E+00	1.271E-01	0.253
		402.40	*	-5.409E-03	4.076E-02	6.729E-02	3.900E-03	-0.080
CF-249		252.80		-1.525E-01	1.026E+00	1.634E+00	9.314E-02	-0.093
		333.37		-7.847E-02	3.228E-01	3.074E-01	1.816E-02	-0.255
		388.16	*	5.072E-02	4.468E-02	7.748E-02	4.483E-03	0.655
CF-251		177.52	*	-7.404E-02	1.386E-01	2.213E-01	1.145E-02	-0.335
		227.38		-3.336E-02	3.831E-01	6.144E-01	3.408E-02	-0.054
		285.41		-5.190E-01	2.248E+00	3.758E+00	2.195E-01	-0.138

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521007      *
* Acquisition date : 19-MAR-2010 23:12:44 Detector SN#    :                 *
* Detector ID      : GAM23                Sensitivity     : 5.000           *
* Geometry         : CAN                  Energy tolerance: 1.500           *
* Elapsed live time:    0 04:00:00.00     Abundance limit : 75.000          *
* Elapsed real time:    0 04:00:03.33     Half life ratio :  8.000          *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date      : 25-FEB-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID        : G248521007           Analyst initials: MXR1            *
* Batch Number     : 961099               Sample Quantity : 9.4550E+01 GRAM *
* Recovery         :    1.00000           Carrier Weight :    0.00000       *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
* Standard Weight  :   0.00000                                              *
* CALIB. DATE/TIME :  2-JUN-2009 11:17:00 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.682E+01	2.564E+00	5.841E-01	0.000E+00
CD-109	4.777E+00	1.012E+00	1.282E+00	0.000E+00
SN-126	4.618E-01	9.784E-02	1.246E-01	0.000E+00
BA-137M	1.951E+00	1.518E-01	6.504E-02	0.000E+00
CS-137	2.061E+00	1.607E-01	6.871E-02	0.000E+00
TL-208	6.406E-01	9.310E-02	5.843E-02	0.000E+00
BI-211	4.632E+00	5.416E-01	3.451E-01	0.000E+00
PB-212	2.044E+00	1.822E-01	9.473E-02	0.000E+00
BI-214	1.645E+00	2.073E-01	1.177E-01	0.000E+00
PB-214	1.681E+00	2.165E-01	1.291E-01	0.000E+00
RA-224	5.830E+00	1.314E+00	1.015E+00	0.000E+00
RA-226	1.645E+00	2.073E-01	1.177E-01	0.000E+00
AC-228	1.977E+00	4.222E-01	2.093E-01	0.000E+00
RA-228	1.977E+00	4.222E-01	2.093E-01	0.000E+00
TH-228	2.044E+00	1.822E-01	9.473E-02	0.000E+00
TH-232	1.977E+00	4.222E-01	2.093E-01	0.000E+00
TH-234	2.650E+00	2.135E+00	2.582E+00	0.000E+00
U-235	1.615E-01	2.078E-01	3.393E-01	0.000E+00
NP-237	1.378E+00	4.067E-01	3.776E-01	0.000E+00
U-238	2.650E+00	2.135E+00	2.582E+00	0.000E+00
ANH-511	1.673E-01	8.390E-02	5.096E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)		
BE-7	3.264E-02	4.033E-01	6.731E-01	0.000E+00	NOT IDENT.
NA-22	-4.422E-02	4.699E-02	7.139E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.718E+09	0.000E+00	0.000E+00	SHORT HLIF
SC-46	-1.439E-02	4.041E-02	6.626E-02	0.000E+00	FAIL ABUN
V-48	6.405E-02	9.944E-02	1.734E-01	0.000E+00	NOT IDENT.
CR-51	-3.333E-01	4.553E-01	7.491E-01	0.000E+00	NOT IDENT.

MN-54	1.817E-02	3.848E-02	6.671E-02	0.000E+00	NOT IDENT.
CO-56	-3.651E-03	4.002E-02	6.710E-02	0.000E+00	NOT IDENT.
CO-57	-2.725E-04	2.647E-02	4.395E-02	0.000E+00	NOT IDENT.
CO-58	-1.516E-02	4.065E-02	6.706E-02	0.000E+00	NOT IDENT.
FE-59	2.694E-02	1.049E-01	1.774E-01	0.000E+00	NOT IDENT.
CO-60	-2.280E-02	3.865E-02	5.962E-02	0.000E+00	NOT IDENT.
ZN-65	1.651E-01	1.061E-01	1.730E-01	0.000E+00	NOT IDENT.
SE-75	4.871E-03	5.618E-02	7.939E-02	0.000E+00	NOT IDENT.
SR-85	5.940E-02	4.992E-02	7.695E-02	0.000E+00	NOT IDENT.
Y-88	2.129E-02	3.551E-02	6.412E-02	0.000E+00	NOT IDENT.
Y-91	-3.845E+00	2.611E+01	4.272E+01	0.000E+00	NOT IDENT.
NB-94	1.347E-02	3.603E-02	5.996E-02	0.000E+00	NOT IDENT.
NB-95	6.394E-02	5.768E-02	8.767E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.933E-01	3.055E-01	0.000E+00	NOT IDENT.
ZR-95	4.431E-03	7.934E-02	1.292E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.710E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	3.082E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.414E-03	4.906E-02	8.113E-02	0.000E+00	NOT IDENT.
RH-106	7.320E-02	3.227E-01	5.364E-01	0.000E+00	NOT IDENT.
RU-106	7.320E-02	3.227E-01	5.364E-01	0.000E+00	NOT IDENT.
AG-108M	-1.400E-02	3.234E-02	5.299E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	6.970E-02	1.253E-01	0.000E+00	NOT IDENT.
SN-113	-3.168E-02	5.046E-02	8.246E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.237E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-2.728E-02	8.137E-02	1.326E-01	0.000E+00	NOT IDENT.
TE-123M	-1.122E-02	3.028E-02	4.928E-02	0.000E+00	NOT IDENT.
SB-124	4.819E-02	7.472E-02	1.368E-01	0.000E+00	NOT IDENT.
SB-125	7.659E-02	1.014E-01	1.747E-01	0.000E+00	FAIL ABUN
TE-125M	-6.911E+00	1.129E+01	1.849E+01	0.000E+00	NOT IDENT.
I-126	4.112E-02	3.969E-01	5.644E-01	0.000E+00	NOT IDENT.
SB-126	-4.670E-03	2.727E-01	3.816E-01	0.000E+00	NOT IDENT.
SB-127	-3.823E+00	5.226E+00	8.094E+00	0.000E+00	NOT IDENT.
I-131	-1.411E-02	2.288E-01	3.844E-01	0.000E+00	NOT IDENT.
TE-132	2.430E+00	3.825E+00	6.313E+00	0.000E+00	NOT IDENT.
BA-133	2.416E-02	5.064E-02	7.608E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.303E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	3.291E-02	4.851E-02	8.508E-02	0.000E+00	NOT IDENT.
CS-135	0.000E+00	1.930E-01	2.964E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	9.052E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.654E-02	1.603E-01	2.690E-01	0.000E+00	NOT IDENT.
CE-139	8.314E-03	3.165E-02	5.244E-02	0.000E+00	NOT IDENT.
BA-140	1.951E-02	4.148E-01	6.873E-01	0.000E+00	NOT IDENT.
LA-140	-8.688E-02	1.138E-01	1.728E-01	0.000E+00	NOT IDENT.
CE-141	6.136E-02	7.304E-02	1.234E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.692E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.429E-01	2.216E-01	3.305E-01	0.000E+00	NOT IDENT.
PM-144	2.393E-02	3.743E-02	6.322E-02	0.000E+00	NOT IDENT.
PR-144	1.778E+00	2.811E+00	4.746E+00	0.000E+00	NOT IDENT.
PM-146	3.242E-02	5.001E-02	8.546E-02	0.000E+00	NOT IDENT.
ND-147	-4.110E-01	9.515E-01	1.535E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	9.376E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-4.559E-03	1.207E-01	1.669E-01	0.000E+00	NOT IDENT.
GD-153	6.016E-02	1.019E-01	1.527E-01	0.000E+00	NOT IDENT.
EU-154	-1.289E-01	1.327E-01	2.004E-01	0.000E+00	NOT IDENT.
EU-155	2.875E-02	1.115E-01	1.872E-01	0.000E+00	FAIL ABUN
TB-160	4.448E-02	1.438E-01	2.472E-01	0.000E+00	FAIL ABUN
HO-166M	-2.587E-02	6.354E-02	1.007E-01	0.000E+00	FAIL ABUN
TA-182	1.605E-01	2.056E-01	3.568E-01	0.000E+00	NOT IDENT.
IR-192	3.559E-02	3.792E-02	6.635E-02	0.000E+00	FAIL ABUN
HG-203	-5.672E-03	4.482E-02	7.601E-02	0.000E+00	NOT IDENT.
BI-207	5.124E-02	5.504E-02	9.719E-02	0.000E+00	FAIL ABUN
PB-210	5.765E+00	5.738E+00	9.346E+00	0.000E+00	NOT IDENT.
PB-211	-7.286E-01	8.615E-01	1.275E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.691E-01	1.127E+00	0.000E+00	FAIL ABUN
RN-219	1.026E-01	4.367E-01	7.390E-01	0.000E+00	FAIL ABUN
RA-223	5.852E-01	7.377E-01	1.124E+00	0.000E+00	FAIL ABUN
AC-227	-1.463E-01	2.728E-01	4.313E-01	0.000E+00	FAIL ABUN
TH-227	-1.463E-01	2.729E-01	4.313E-01	0.000E+00	FAIL ABUN
TH-229	-4.418E-02	5.499E-01	8.967E-01	0.000E+00	FAIL ABUN
PA-231	1.975E-01	1.481E+00	2.531E+00	0.000E+00	NOT IDENT.
TH-231	5.852E-01	7.377E-01	1.124E+00	0.000E+00	FAIL ABUN
PA-233	-4.097E-02	6.649E-02	1.101E-01	0.000E+00	FAIL ABUN
PA-234	-2.341E-01	2.992E-01	4.680E-01	0.000E+00	NOT IDENT.
PA-234M	1.603E-01	4.979E+00	7.920E+00	0.000E+00	NOT IDENT.
NP-239	-8.281E-01	4.142E-01	6.442E-01	0.000E+00	NOT IDENT.
AM-241	1.365E-01	2.123E-01	3.233E-01	0.000E+00	NOT IDENT.
CM-247	-5.409E-03	3.994E-02	6.659E-02	0.000E+00	NOT IDENT.
CF-249	5.072E-02	4.379E-02	7.668E-02	0.000E+00	NOT IDENT.

CF-251	-7.404E-02	1.358E-01	2.190E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:13:39.98

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                            2040 Savage Road                               *
*                          Charleston, SC 29414                             *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521007.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:12:44
Sample ID         : G248521007           Sample quantity  : 9.45500E+01 GRAM
Detector name     : GAM23                Detector geometry: CAN
Elapsed live time: 0 04:00:00.00         Elapsed real time: 0 04:00:03.33  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               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	1437	10.66*	9.974E-01	2.682E+01	2.682E+01	9.76
CD-109	88.03	448	3.70*	5.210E+00	4.618E+00	4.777E+00	21.62
SN-126	64.28	127	9.60	2.577E+00	1.021E+00	1.021E+00	81.56
	86.94	448	8.90	5.210E+00	1.920E+00	1.920E+00	45.86
	87.57	448	37.00*	5.210E+00	4.618E-01	4.618E-01	21.62
BA-137M	661.66	1802	89.90*	2.042E+00	1.948E+00	1.951E+00	7.94
CS-137	661.66	1802	85.10*	2.042E+00	2.058E+00	2.061E+00	7.96
TL-208	277.37	------	6.60	4.139E+00	------	Line Not Found	------
	583.19	625	85.00*	2.278E+00	6.406E-01	6.406E-01	14.83
	860.56	------	12.50	1.609E+00	------	Line Not Found	------
BI-211	72.87	------	1.23	3.829E+00	------	Line Not Found	------
	351.06	1038	12.92*	3.442E+00	4.632E+00	4.632E+00	11.93
PB-212	74.82	758	10.28	4.037E+00	3.626E+00	3.626E+00	20.26
	77.11	1035	17.10	4.295E+00	2.797E+00	2.797E+00	13.47
	238.63	2082	43.60*	4.639E+00	2.044E+00	2.044E+00	9.10
	300.09	137	3.30	3.901E+00	2.108E+00	2.108E+00	57.39
BI-214	609.32	827	45.49*	2.194E+00	1.645E+00	1.645E+00	12.86
	1120.29	165	14.92	1.259E+00	1.745E+00	1.745E+00	40.22
	1764.49	119	15.30	8.744E-01	1.765E+00	1.765E+00	28.10
PB-214	74.82	758	5.80	4.037E+00	6.427E+00	6.427E+00	19.47
	77.11	1035	9.70	4.295E+00	4.931E+00	4.931E+00	15.79
	242.00	553	7.25	4.596E+00	3.297E+00	3.297E+00	23.71
	295.22	768	18.42	3.949E+00	2.095E+00	2.095E+00	13.45
	351.93	1038	35.60*	3.442E+00	1.681E+00	1.681E+00	13.14
RA-224	240.99	553	4.10*	4.596E+00	5.830E+00	5.830E+00	22.99
RA-226	609.32	827	45.49*	2.194E+00	1.645E+00	1.645E+00	12.86
	1120.29	165	14.92	1.259E+00	1.745E+00	1.745E+00	40.22
	1764.49	119	15.30	8.744E-01	1.765E+00	1.765E+00	28.10
AC-228	338.32	439	11.27	3.551E+00	2.180E+00	2.180E+00	46.72
	911.20	392	25.80*	1.527E+00	1.977E+00	1.977E+00	21.80
	968.97	217	15.80	1.442E+00	1.890E+00	1.890E+00	34.57
RA-228	338.32	439	11.27	3.551E+00	2.180E+00	2.180E+00	46.72

Sample ID : G248521007 Acquisition date : 19-MAR-2010 23:12:44

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	392	25.80*	1.527E+00	1.977E+00	1.977E+00	21.80
	968.97	217	15.80	1.442E+00	1.890E+00	1.890E+00	34.57
TH-228	74.82	758	10.28	4.037E+00	3.626E+00	3.626E+00	17.81
	77.11	1035	17.10	4.295E+00	2.797E+00	2.797E+00	13.47
	238.63	2082	43.60*	4.639E+00	2.044E+00	2.044E+00	9.10
	300.09	137	3.30	3.901E+00	2.108E+00	2.108E+00	83.25
TH-232	338.32	439	11.27	3.551E+00	2.180E+00	2.180E+00	22.73
	911.20	392	25.80*	1.527E+00	1.977E+00	1.977E+00	21.80
	968.97	217	15.80	1.442E+00	1.890E+00	1.890E+00	34.57
TH-234	63.29	127	3.70*	2.577E+00	2.650E+00	2.650E+00	82.22
	92.59	612	4.23	5.583E+00	5.146E+00	5.146E+00	29.08
U-235	89.96	255	3.47	5.407E+00	2.699E+00	2.699E+00	40.71
	93.35	612	5.60	5.583E+00	3.887E+00	3.887E+00	29.86
	143.76	------	10.96*	6.189E+00	------ Line Not Found		------
	163.33	------	5.08	5.887E+00	------ Line Not Found		------
	185.72	347	57.20	5.494E+00	2.194E-01	2.194E-01	36.16
	205.31	------	5.01	5.150E+00	------ Line Not Found		------
NP-237	86.48	448	12.40*	5.210E+00	1.378E+00	1.378E+00	30.12
	95.86	------	2.68	5.757E+00	------ Line Not Found		------
U-238	63.29	127	3.70*	2.577E+00	2.650E+00	2.650E+00	82.22
	92.59	612	4.23	5.583E+00	5.146E+00	5.146E+00	20.80
ANH-511	511.00	215	100.00*	2.547E+00	1.673E-01	1.673E-01	51.16

Flag: "*" = Keyline

Sample ID : G248521007 Acquisition date : 19-MAR-2010 23:12:44

Total number of lines in spectrum 31
Number of unidentified lines 6
Number of lines tentatively identified by NID 25 80.65%

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	2.682E+01	2.682E+01	0.262E+01	9.76	
CD-109	461.40D	1.03	4.618E+00	4.777E+00	1.033E+00	21.62	
SN-126	2.30E+05Y	1.00	4.618E-01	4.618E-01	0.998E-01	21.62	
BA-137M	30.08Y	1.00	1.948E+00	1.951E+00	0.155E+00	7.94	
CS-137	30.08Y	1.00	2.058E+00	2.061E+00	0.164E+00	7.96	
TL-208	1.41E+10Y	1.00	6.406E-01	6.406E-01	0.950E-01	14.83	
BI-211	7.04E+08Y	1.00	4.632E+00	4.632E+00	0.553E+00	11.93	
PB-212	1.41E+10Y	1.00	2.044E+00	2.044E+00	0.186E+00	9.10	
BI-214	1600.00Y	1.00	1.645E+00	1.645E+00	0.211E+00	12.86	
PB-214	1600.00Y	1.00	1.681E+00	1.681E+00	0.221E+00	13.14	
RA-224	1.41E+10Y	1.00	5.830E+00	5.830E+00	1.341E+00	22.99	
RA-226	1600.00Y	1.00	1.645E+00	1.645E+00	0.211E+00	12.86	
AC-228	1.41E+10Y	1.00	1.977E+00	1.977E+00	0.431E+00	21.80	
RA-228	1.41E+10Y	1.00	1.977E+00	1.977E+00	0.431E+00	21.80	
TH-228	1.41E+10Y	1.00	2.044E+00	2.044E+00	0.186E+00	9.10	
TH-232	1.41E+10Y	1.00	1.977E+00	1.977E+00	0.431E+00	21.80	
TH-234	4.47E+09Y	1.00	2.650E+00	2.650E+00	2.179E+00	82.22	
U-235	7.04E+08Y	1.00	2.194E-01	2.194E-01	0.793E-01	36.16	K
NP-237	2.14E+06Y	1.00	1.378E+00	1.378E+00	0.415E+00	30.12	
U-238	4.47E+09Y	1.00	2.650E+00	2.650E+00	2.179E+00	82.22	
ANH-511	1.00E+09Y	1.00	1.673E-01	1.673E-01	0.856E-01	51.16	
	Total Activity :		6.906E+01	6.923E+01			

Grand Total Activity : 6.906E+01 6.923E+01

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

Sample ID : G248521007 Acquisition date : 19-MAR-2010 23:12:44

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.74	127	504	1.18	257.49	254	7	8.80E-03	61.3	6.33E+00	
0	208.95	196	441	0.99	417.89	415	8	1.36E-02	40.0	5.09E+00	
0	269.89	169	377	1.64	539.78	535	10	1.17E-02	45.8	4.23E+00	T
0	327.01	83	350	1.18	654.01	651	10	5.76E-03	86.9	3.64E+00	
0	462.25	122	341	1.16	924.50	919	13	8.50E-03	64.6	2.76E+00	T
0	726.62	127	143	1.39	1453.24	1446	13	8.84E-03	42.6	1.88E+00	T
0	769.59	128	167	5.86	1539.19	1530	21	8.92E-03	53.4	1.78E+00	
0	902.45	48	50	3.26	1804.89	1800	9	3.30E-03	60.8	1.54E+00	
0	1728.29	38	19	2.03	3456.58	3448	15	2.65E-03	59.1	8.85E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:13:43.80

```
*****************************************************************************
*                            GEL Laboratories LLC                            *
*                              2040 Savage Road                              *
*                            Charleston, SC 29414                            *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521007.CNF;1  *
* Acquisition date : 19-MAR-2010 23:12:44  Detector SN#    :                *
* Detector ID      : GAM23                 Sensitivity     : 5.00000        *
* Geometry         : CAN                   Energy tolerance: 1.50000        *
* Elapsed live time: 0 04:00:00.00         Abundance limit : 75.00000       *
* Elapsed real time: 0 04:00:03.33         Half life ratio : 8.00000        *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date      : 25-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID        : G248521007            Analyst initials: MXR1           *
* Batch Number     : 961099                Sample Quantity : 9.45500E+01 GRAM *
*****************************************************************************
*                                                                           *
*                                 QC DATA                                   *
*                                                                           *
* CALIB. DATE/TIME : 2-JUN-2009 11:17:00.62MS Isotope      :                *
* MSD ID           :                       MSD Isotope     :                *
* LCS ID           : 1032-A                LCS Isotope     :                *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.682E+01	2.617E+00	5.902E-01	4.415E-02	45.439
CD-109	4.777E+00	1.033E+00	1.295E+00	1.264E-01	3.689
SN-126	4.618E-01	9.983E-02	1.260E-01	1.226E-02	3.667
BA-137M	1.951E+00	1.549E-01	6.573E-02	3.358E-03	29.681
CS-137	2.061E+00	1.640E-01	6.943E-02	3.566E-03	29.681
TL-208	6.406E-01	9.500E-02	5.905E-02	3.824E-03	10.848
BI-211	4.632E+00	5.526E-01	3.487E-01	2.273E-02	13.283
PB-212	2.044E+00	1.859E-01	9.573E-02	6.945E-03	21.352
BI-214	1.645E+00	2.115E-01	1.189E-01	9.016E-03	13.833
PB-214	1.681E+00	2.210E-01	1.304E-01	1.114E-02	12.889
RA-224	5.830E+00	1.341E+00	1.026E+00	5.782E-02	5.681
RA-226	1.645E+00	2.115E-01	1.189E-01	9.016E-03	13.833
AC-228	1.977E+00	4.309E-01	2.115E-01	2.512E-02	9.347
RA-228	1.977E+00	4.309E-01	2.115E-01	2.512E-02	9.347
TH-228	2.044E+00	1.859E-01	9.573E-02	6.945E-03	21.352
TH-232	1.977E+00	4.309E-01	2.115E-01	2.512E-02	9.347
TH-234	2.650E+00	2.179E+00	2.609E+00	4.799E-01	1.016
U-235	2.194E-01	7.935E-02	3.429E-01	5.339E-02	0.640

Sample ID : G248521007 Acquisition date : 19-MAR-2010 23:12:44

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.378E+00	4.150E-01	3.815E-01	8.804E-02	3.612
U-238	2.650E+00	2.179E+00	2.609E+00	4.799E-01	1.016
ANH-511	1.673E-01	8.561E-02	5.150E-02	2.991E-03	3.249

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	3.264E-02		4.115E-01	6.801E-01	4.620E-02	0.048
NA-22	-4.422E-02		4.795E-02	7.214E-02	4.845E-03	-0.613
NA-24	1.738E+03		1.387E+03	Half-Life too short		
SC-46	-1.439E-02		4.123E-02	6.695E-02	5.982E-03	-0.215
V-48	6.405E-02		1.015E-01	1.752E-01	1.458E-02	0.365
CR-51	-3.333E-01		4.646E-01	7.569E-01	4.956E-02	-0.440
MN-54	1.817E-02		3.926E-02	6.741E-02	5.337E-03	0.270
CO-56	-3.651E-03		4.083E-02	6.781E-02	5.516E-03	-0.054
CO-57	-2.725E-04		2.701E-02	4.441E-02	2.618E-03	-0.006
CO-58	-1.516E-02		4.148E-02	6.776E-02	5.091E-03	-0.224
FE-59	2.694E-02		1.070E-01	1.792E-01	1.380E-02	0.150
CO-60	-2.280E-02		3.944E-02	6.025E-02	4.423E-03	-0.378
ZN-65	1.651E-01		1.082E-01	1.748E-01	1.154E-02	0.944
SE-75	4.871E-03		5.732E-02	8.023E-02	4.672E-03	0.061
SR-85	5.940E-02		5.094E-02	7.776E-02	4.513E-03	0.764
Y-88	2.129E-02		3.624E-02	6.479E-02	3.815E-03	0.329
Y-91	-3.845E+00		2.665E+01	4.317E+01	2.575E+00	-0.089
NB-94	1.347E-02		3.677E-02	6.059E-02	3.463E-03	0.222
NB-95	6.394E-02		5.885E-02	8.859E-02	5.953E-03	0.722
NB-95M	9.483E-01		1.973E-01	3.087E-01	2.285E-02	3.072
ZR-95	4.431E-03		8.096E-02	1.305E-01	1.007E-02	0.034
MO-99	1.830E-05		3.934E-05	Half-Life too short		
TC-99M	-3.091E+19		1.572E+19	Half-Life too short		
RU-103	-3.414E-03		5.006E-02	8.198E-02	1.020E-02	-0.042
RH-106	7.320E-02		3.293E-01	5.420E-01	6.187E-02	0.135
RU-106	7.320E-02		3.293E-01	5.420E-01	2.912E-02	0.135
AG-108M	-1.400E-02		3.301E-02	5.354E-02	3.346E-03	-0.261
AG-110M	5.118E-01		7.113E-02	1.266E-01	7.035E-03	4.044
SN-113	-3.168E-02		5.149E-02	8.333E-02	5.133E-03	-0.380
CD-115	-1.002E-04		6.309E-05	Half-Life too short		
SN-117M	-2.728E-02		8.303E-02	1.340E-01	6.964E-03	-0.204
TE-123M	-1.122E-02		3.089E-02	4.980E-02	2.628E-03	-0.225
SB-124	4.819E-02		7.624E-02	1.382E-01	9.671E-03	0.349
SB-125	7.659E-02		1.035E-01	1.766E-01	1.073E-02	0.434
TE-125M	-6.911E+00		1.152E+01	1.868E+01	1.704E+00	-0.370
I-126	4.112E-02		4.050E-01	5.703E-01	2.951E-02	0.072
SB-126	-4.670E-03		2.782E-01	3.856E-01	2.311E-02	-0.012
SB-127	-3.823E+00		5.333E+00	8.179E+00	9.874E-01	-0.467
I-131	-1.411E-02		2.335E-01	3.884E-01	2.570E-02	-0.036
TE-132	2.430E+00		3.903E+00	6.380E+00	1.036E+00	0.381

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	2.416E-02		5.168E-02	7.688E-02	8.702E-03	0.314
I-133	-6.564E-03		1.175E+00	Half-Life too short		
CS-134	3.291E-02		4.950E-02	8.597E-02	6.279E-03	0.383
CS-135	4.062E-01		1.969E-01	2.996E-01	2.289E-02	1.356
I-135	-1.460E+17		4.619E+17	Half-Life too short		
CS-136	1.654E-02		1.635E-01	2.718E-01	2.168E-02	0.061
CE-139	8.314E-03		3.230E-02	5.299E-02	2.702E-03	0.157
BA-140	1.951E-02		4.233E-01	6.945E-01	2.313E-01	0.028
LA-140	-8.688E-02		1.161E-01	1.747E-01	1.198E-02	-0.497
CE-141	6.136E-02		7.453E-02	1.247E-01	7.034E-03	0.492
CE-143	6.482E-02		8.633E-03	Half-Life too short		
CE-144	-1.429E-01		2.261E-01	3.340E-01	4.613E-02	-0.428
PM-144	2.393E-02		3.819E-02	6.388E-02	3.597E-03	0.375
PR-144	1.778E+00		2.868E+00	4.796E+00	2.696E-01	0.371
PM-146	3.242E-02		5.103E-02	8.635E-02	7.337E-03	0.375
ND-147	-4.110E-01		9.709E-01	1.551E+00	2.096E-01	-0.265
PM-149	-5.869E-05		4.784E-04	Half-Life too short		
EU-152	-4.559E-03		1.232E-01	1.687E-01	1.117E-02	-0.027
GD-153	6.016E-02		1.040E-01	1.543E-01	1.260E-02	0.390
EU-154	-1.289E-01		1.354E-01	2.025E-01	2.026E-02	-0.636
EU-155	2.875E-02		1.138E-01	1.892E-01	1.394E-02	0.152
TB-160	4.448E-02		1.468E-01	2.498E-01	2.184E-02	0.178
HO-166M	-2.587E-02		6.483E-02	1.018E-01	5.957E-03	-0.254
TA-182	1.605E-01		2.098E-01	3.606E-01	2.213E-02	0.445
IR-192	3.559E-02		3.870E-02	6.705E-02	3.978E-03	0.531
HG-203	-5.672E-03		4.573E-02	7.681E-02	4.717E-03	-0.074
BI-207	5.124E-02		5.616E-02	9.821E-02	7.215E-03	0.522
PB-210	5.765E+00		5.855E+00	9.445E+00	7.296E-01	0.610
PB-211	-7.286E-01		8.790E-01	1.289E+00	6.181E-01	-0.565
BI-212	2.017E+00	+	8.869E-01	1.139E+00	1.238E-01	1.771
RN-219	1.026E-01		4.457E-01	7.467E-01	1.003E-01	0.137
RA-223	5.852E-01		7.528E-01	1.136E+00	1.836E-01	0.515
AC-227	-1.463E-01		2.783E-01	4.359E-01	4.437E-02	-0.336
TH-227	-1.463E-01		2.785E-01	4.359E-01	5.222E-02	-0.336
TH-229	-4.418E-02		5.612E-01	9.061E-01	4.799E-02	-0.049
PA-231	1.975E-01		1.511E+00	2.558E+00	3.359E-01	0.077
TH-231	5.852E-01		7.528E-01	1.136E+00	1.836E-01	0.515
PA-233	-4.097E-02		6.785E-02	1.113E-01	6.958E-03	-0.368
PA-234	-2.341E-01		3.053E-01	4.730E-01	8.891E-02	-0.495
PA-234M	1.603E-01		5.081E+00	8.003E+00	7.636E-01	0.020
NP-239	-8.281E-01		4.226E-01	6.510E-01	4.052E-02	-1.272
AM-241	1.365E-01		2.166E-01	3.267E-01	3.040E-02	0.418
CM-247	-5.409E-03		4.076E-02	6.729E-02	3.900E-03	-0.080
CF-249	5.072E-02		4.468E-02	7.748E-02	4.483E-03	0.655
CF-251	-7.404E-02		1.386E-01	2.213E-01	1.145E-02	-0.335

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration     : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248521007           *
* Acquisition date  : 19-MAR-2010 23:12:44 Detector SN#     :               *
* Detector ID       : GAM23                Sensitivity      : 5.000         *
* Geometry          : CAN                  Energy tolerance: 1.500          *
* Elapsed live time:    0 04:00:00.00      Abundance limit : 75.000         *
* Elapsed real time:    0 04:00:03.33      Half life ratio : 8.000          *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248521007           Analyst initials: MXR1           *
* Batch Number      : 961099               Sample Quantity : 9.4550E+01 GRAM *
* Recovery          :    1.00000           Carrier Weight :    0.00000      *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
*                                                                           *
* CALIB. DATE/TIME :  2-JUN-2009 11:17:00 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.682E+01	2.564E+00	2.922E-01	1.308E+00
CD-109	4.777E+00	1.012E+00	6.412E-01	5.164E-01
SN-126	4.618E-01	9.784E-02	6.236E-02	4.992E-02
BA-137M	1.951E+00	1.518E-01	3.254E-02	7.746E-02
CS-137	2.061E+00	1.607E-01	3.438E-02	8.201E-02
TL-208	6.406E-01	9.310E-02	2.923E-02	4.750E-02
BI-211	4.632E+00	5.416E-01	1.727E-01	2.763E-01
PB-212	2.044E+00	1.822E-01	4.739E-02	9.296E-02
BI-214	1.645E+00	2.073E-01	5.888E-02	1.057E-01
PB-214	1.681E+00	2.165E-01	6.458E-02	1.105E-01
RA-224	5.830E+00	1.314E+00	5.080E-01	6.703E-01
RA-226	1.645E+00	2.073E-01	5.888E-02	1.057E-01
AC-228	1.977E+00	4.222E-01	1.047E-01	2.154E-01
RA-228	1.977E+00	4.222E-01	1.047E-01	2.154E-01
TH-228	2.044E+00	1.822E-01	4.739E-02	9.296E-02
TH-232	1.977E+00	4.222E-01	1.047E-01	2.154E-01
TH-234	2.650E+00	2.135E+00	1.292E+00	1.089E+00
U-235	1.615E-01	2.078E-01	1.698E-01	1.060E-01
NP-237	1.378E+00	4.067E-01	1.889E-01	2.075E-01
U-238	2.650E+00	2.135E+00	1.292E+00	1.089E+00
ANH-511	1.673E-01	8.390E-02	2.550E-02	4.281E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	3.264E-02	4.033E-01	3.367E-01	2.058E-01	NOT IDENT.
NA-22	-4.422E-02	4.699E-02	3.572E-02	2.398E-02	NOT IDENT.
NA-24	1.738E+09	2.718E+09	0.000E+00	1.387E+09	SHORT HLIF
SC-46	-1.439E-02	4.041E-02	3.315E-02	2.062E-02	FAIL ABUN
V-48	6.405E-02	9.944E-02	8.676E-02	5.073E-02	NOT IDENT.
CR-51	-3.333E-01	4.553E-01	3.747E-01	2.323E-01	NOT IDENT.

MN-54	1.817E-02	3.848E-02	3.337E-02	1.963E-02	NOT IDENT.
CO-56	-3.651E-03	4.002E-02	3.357E-02	2.042E-02	NOT IDENT.
CO-57	-2.725E-04	2.647E-02	2.199E-02	1.351E-02	NOT IDENT.
CO-58	-1.516E-02	4.065E-02	3.355E-02	2.074E-02	NOT IDENT.
FE-59	2.694E-02	1.049E-01	8.874E-02	5.352E-02	NOT IDENT.
CO-60	-2.280E-02	3.865E-02	2.983E-02	1.972E-02	NOT IDENT.
ZN-65	1.651E-01	1.061E-01	8.653E-02	5.411E-02	NOT IDENT.
SE-75	4.871E-03	5.618E-02	3.972E-02	2.866E-02	NOT IDENT.
SR-85	5.940E-02	4.992E-02	3.850E-02	2.547E-02	NOT IDENT.
Y-88	2.129E-02	3.551E-02	3.208E-02	1.812E-02	NOT IDENT.
Y-91	-3.845E+00	2.611E+01	2.137E+01	1.332E+01	NOT IDENT.
NB-94	1.347E-02	3.603E-02	3.000E-02	1.838E-02	NOT IDENT.
NB-95	6.394E-02	5.768E-02	4.386E-02	2.943E-02	NOT IDENT.
NB-95M	9.483E-01	1.933E-01	1.528E-01	9.864E-02	NOT IDENT.
ZR-95	4.431E-03	7.934E-02	6.463E-02	4.048E-02	NOT IDENT.
MO-99	1.830E+01	7.710E+01	0.000E+00	3.934E+01	SHORT HLIF
TC-99M	-3.091E+25	3.082E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.414E-03	4.906E-02	4.059E-02	2.503E-02	NOT IDENT.
RH-106	7.320E-02	3.227E-01	2.684E-01	1.647E-01	NOT IDENT.
RU-106	7.320E-02	3.227E-01	2.684E-01	1.646E-01	NOT IDENT.
AG-108M	-1.400E-02	3.234E-02	2.651E-02	1.650E-02	NOT IDENT.
AG-110M	5.118E-01	6.970E-02	6.267E-02	3.556E-02	NOT IDENT.
SN-113	-3.168E-02	5.046E-02	4.126E-02	2.574E-02	NOT IDENT.
CD-115	-1.002E+02	1.237E+02	0.000E+00	6.309E+01	SHORT HLIF
SN-117M	-2.728E-02	8.137E-02	6.634E-02	4.151E-02	NOT IDENT.
TE-123M	-1.122E-02	3.028E-02	2.466E-02	1.545E-02	NOT IDENT.
SB-124	4.819E-02	7.472E-02	6.842E-02	3.812E-02	NOT IDENT.
SB-125	7.659E-02	1.014E-01	8.741E-02	5.175E-02	FAIL ABUN
TE-125M	-6.911E+00	1.129E+01	9.249E+00	5.762E+00	NOT IDENT.
I-126	4.112E-02	3.969E-01	2.824E-01	2.025E-01	NOT IDENT.
SB-126	-4.670E-03	2.727E-01	1.909E-01	1.391E-01	NOT IDENT.
SB-127	-3.823E+00	5.226E+00	4.050E+00	2.666E+00	NOT IDENT.
I-131	-1.411E-02	2.288E-01	1.923E-01	1.167E-01	NOT IDENT.
TE-132	2.430E+00	3.825E+00	3.159E+00	1.951E+00	NOT IDENT.
BA-133	2.416E-02	5.064E-02	3.806E-02	2.584E-02	NOT IDENT.
I-133	-6.564E+03	2.303E+06	0.000E+00	1.175E+06	SHORT HLIF
CS-134	3.291E-02	4.851E-02	4.256E-02	2.475E-02	NOT IDENT.
CS-135	4.062E-01	1.930E-01	1.483E-01	9.846E-02	NOT IDENT.
I-135	-1.460E+23	9.052E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.654E-02	1.603E-01	1.346E-01	8.177E-02	NOT IDENT.
CE-139	8.314E-03	3.165E-02	2.623E-02	1.615E-02	NOT IDENT.
BA-140	1.951E-02	4.148E-01	3.439E-01	2.116E-01	NOT IDENT.
LA-140	-8.688E-02	1.138E-01	8.647E-02	5.806E-02	NOT IDENT.
CE-141	6.136E-02	7.304E-02	6.173E-02	3.727E-02	NOT IDENT.
CE-143	6.482E+04	1.692E+04	0.000E+00	8.633E+03	SHORT HLIF
CE-144	-1.429E-01	2.216E-01	1.653E-01	1.130E-01	NOT IDENT.
PM-144	2.393E-02	3.743E-02	3.163E-02	1.910E-02	NOT IDENT.
PR-144	1.778E+00	2.811E+00	2.375E+00	1.434E+00	NOT IDENT.
PM-146	3.242E-02	5.001E-02	4.275E-02	2.551E-02	NOT IDENT.
ND-147	-4.110E-01	9.515E-01	7.681E-01	4.855E-01	FAIL ABUN
PM-149	-5.869E+01	9.376E+02	0.000E+00	4.784E+02	SHORT HLIF
EU-152	-4.559E-03	1.207E-01	8.352E-02	6.159E-02	NOT IDENT.
GD-153	6.016E-02	1.019E-01	7.638E-02	5.198E-02	NOT IDENT.
EU-154	-1.289E-01	1.327E-01	1.003E-01	6.770E-02	NOT IDENT.
EU-155	2.875E-02	1.115E-01	9.368E-02	5.690E-02	FAIL ABUN
TB-160	4.448E-02	1.438E-01	1.237E-01	7.339E-02	FAIL ABUN
HO-166M	-2.587E-02	6.354E-02	5.039E-02	3.242E-02	FAIL ABUN
TA-182	1.605E-01	2.056E-01	1.785E-01	1.049E-01	NOT IDENT.
IR-192	3.559E-02	3.792E-02	3.320E-02	1.935E-02	FAIL ABUN
HG-203	-5.672E-03	4.482E-02	3.803E-02	2.287E-02	NOT IDENT.
BI-207	5.124E-02	5.504E-02	4.862E-02	2.808E-02	FAIL ABUN
PB-210	5.765E+00	5.738E+00	4.676E+00	2.927E+00	NOT IDENT.
PB-211	-7.286E-01	8.615E-01	6.379E-01	4.395E-01	NOT IDENT.
BI-212	2.017E+00	8.691E-01	5.639E-01	4.434E-01	FAIL ABUN
RN-219	1.026E-01	4.367E-01	3.697E-01	2.228E-01	FAIL ABUN
RA-223	5.852E-01	7.377E-01	5.625E-01	3.764E-01	FAIL ABUN
AC-227	-1.463E-01	2.728E-01	2.158E-01	1.392E-01	FAIL ABUN
TH-227	-1.463E-01	2.729E-01	2.158E-01	1.392E-01	FAIL ABUN
TH-229	-4.418E-02	5.499E-01	4.486E-01	2.806E-01	FAIL ABUN
PA-231	1.975E-01	1.481E+00	1.266E+00	7.555E-01	NOT IDENT.
TH-231	5.852E-01	7.377E-01	5.625E-01	3.764E-01	FAIL ABUN
PA-233	-4.097E-02	6.649E-02	5.508E-02	3.393E-02	FAIL ABUN
PA-234	-2.341E-01	2.992E-01	2.342E-01	1.526E-01	NOT IDENT.
PA-234M	1.603E-01	4.979E+00	3.962E+00	2.541E+00	NOT IDENT.
NP-239	-8.281E-01	4.142E-01	3.223E-01	2.113E-01	NOT IDENT.
AM-241	1.365E-01	2.123E-01	1.617E-01	1.083E-01	NOT IDENT.
CM-247	-5.409E-03	3.994E-02	3.331E-02	2.038E-02	NOT IDENT.
CF-249	5.072E-02	4.379E-02	3.836E-02	2.234E-02	NOT IDENT.

CF-251	-7.404E-02	1.358E-01	1.095E-01	6.930E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	558.3604
49.72	644.2352
57.36	0.0000
59.54	647.2690
63.29	732.9794
63.29	732.9794
64.28	750.2691
67.75	833.4466
69.67	810.2670
70.83	808.6024
72.81	863.6163
72.87	863.6898
72.87	863.6898
74.82	841.6583
74.82	841.6583
74.82	841.6583
74.97	841.8316
77.11	844.2924
77.11	844.2924
77.11	844.2924
79.69	787.3082
79.80	787.4219
80.12	704.0338
80.19	704.0987
80.57	704.4515
81.00	704.8495
81.07	704.9145
81.07	704.9145
83.79	699.7622
83.79	699.7622
85.43	701.2282
86.48	702.1609
86.55	702.2251
86.79	702.4345
86.94	702.5685
87.57	703.1242
88.03	703.5291
88.47	703.9145
89.96	705.2129
91.11	706.2098
92.59	707.4803
92.59	707.4803
93.35	645.4439
94.67	691.4225
94.87	767.5703
94.87	767.5703
95.86	802.6280
97.43	653.2456
98.44	648.8266
99.53	646.0750
100.11	608.4776
103.18	738.8052
103.37	684.1531
105.31	667.9902
106.12	678.4107
109.28	711.3192
111.00	652.4420
111.76	699.4061
116.30	680.9547
117.23	686.5874
121.12	569.6430
121.78	606.9633
122.06	607.1372
123.07	635.1789
131.20	598.1831
133.52	619.4586
136.00	572.0004

136.47	567.1948
140.51	0.0000
140.51	0.0000
143.76	550.6787
144.24	551.9420
144.24	551.9420
145.44	561.7409
152.43	606.3984
153.25	613.0062
154.21	589.8483
154.21	589.8483
156.02	651.6198
158.56	584.8621
159.00	586.1160
162.66	564.1086
163.33	589.3295
165.86	556.2780
176.60	561.2169
177.52	582.6289
181.07	0.0000
184.41	571.0482
185.72	571.6343
193.51	542.1279
197.04	525.4562
205.31	537.0555
210.85	565.0593
215.65	504.5533
222.11	505.7625
227.38	477.1043
228.16	445.7523
228.18	445.7586
235.69	488.9958
235.96	503.1083
235.96	503.1083
238.63	439.0289
238.63	439.0289
240.99	439.7156
242.00	440.0085
244.70	401.9975
252.40	387.6110
252.80	394.3563
256.23	419.6422
256.23	419.6422
260.90	0.0000
264.66	366.0621
268.22	347.1800
269.46	363.5613
269.46	363.5613
271.23	351.4075
273.65	452.4741
276.40	368.6947
277.37	358.7874
277.60	364.4604
278.00	370.8503
279.20	406.2468
279.54	416.2399
280.46	417.3669
283.69	360.3664
284.31	368.6294
285.41	358.9235
285.90	0.0000
287.50	337.5103
293.27	0.0000
295.22	310.0636
295.96	310.1968
298.57	310.6588
299.98	313.0360
299.98	313.0360
300.09	313.0569
300.09	313.0569
300.13	313.0653
301.36	302.6378
302.85	324.2018
304.50	345.8342
304.50	345.8342
304.85	347.4272
308.46	297.7448
311.90	337.7856

316.51	285.2704
319.41	320.7488
320.08	328.2440
323.87	281.8011
323.87	281.8011
328.76	325.7725
333.37	325.0275
334.37	313.5841
334.37	313.5841
338.28	325.8734
338.28	325.8734
338.32	325.8777
338.32	325.8777
338.32	325.8777
340.48	287.4102
340.55	287.4215
344.28	289.5352
351.06	282.7388
351.93	299.1170
356.01	281.8872
364.49	270.8282
366.42	0.0000
383.85	299.1356
388.16	256.7945
388.63	253.9891
391.69	289.7401
400.66	245.8375
401.81	262.3026
402.40	269.1035
404.85	305.9702
410.95	286.5731
414.70	249.3706
423.72	258.1583
427.09	248.8281
427.87	239.1924
433.94	251.5405
453.88	256.6893
463.37	266.6151
468.07	237.4629
473.00	250.8443
476.78	227.4038
477.60	234.4357
487.02	224.3765
492.35	0.0000
497.08	202.2663
511.00	201.3782
514.00	201.6174
527.90	0.0000
529.87	0.0000
531.02	186.7223
537.26	170.8916
546.56	0.0000
563.25	171.5419
569.33	152.3649
569.50	152.3757
569.70	159.5940
583.19	153.1345
600.60	199.1176
602.73	199.7011
604.72	172.0334
609.32	165.0012
609.32	165.0012
610.33	174.1129
614.28	151.6871
618.01	146.6479
621.93	137.4061
621.93	137.4061
633.25	143.2018
635.95	152.8199
636.99	157.0902
645.85	125.8361
657.76	152.1692
661.66	170.0820
661.66	170.0820
664.57	0.0000
666.33	147.2764
666.50	147.2831
677.62	141.0492

685.70	147.8446
695.00	148.2860
696.49	142.9815
696.51	142.9815
697.00	152.6812
702.65	147.5660
706.68	144.5178
711.68	143.6666
720.70	144.4303
721.93	0.0000
722.78	146.3280
722.91	146.3346
723.31	148.1612
724.19	150.0086
727.33	144.7266
733.00	108.7329
735.93	130.5967
739.50	0.0000
747.24	121.2166
752.31	133.4315
753.82	118.1751
756.73	117.1828
763.94	109.7510
765.81	135.4348
766.42	133.6284
777.92	0.0000
778.90	114.9613
783.70	94.7520
785.37	107.6832
795.86	125.5493
801.95	103.5758
810.29	107.5299
810.76	109.3982
815.77	98.4132
818.51	112.4257
832.01	109.1234
834.85	117.6097
836.80	0.0000
846.77	98.3307
856.80	117.3833
860.56	105.2825
871.09	95.2135
873.19	90.5508
875.33	0.0000
879.36	87.8668
880.51	92.6207
883.24	85.1202
884.68	86.0993
889.28	97.5725
898.04	99.2909
911.20	81.3056
911.20	81.3056
911.20	81.3056
926.50	109.0505
937.49	127.5828
944.13	110.5031
946.00	102.8660
949.00	80.8162
962.29	99.2892
964.08	89.3998
966.15	145.7654
968.97	91.1666
968.97	91.1666
968.97	91.1666
983.53	85.3968
996.26	105.1326
1001.03	81.8655
1004.73	107.3010
1037.84	86.5247
1038.76	0.0000
1048.07	89.6892
1050.41	92.6995
1050.41	92.6995
1063.66	84.0835
1085.87	97.4417
1099.45	90.7593
1112.07	96.0195
1115.54	78.9342

1120.29	94.1951
1120.29	94.1951
1120.55	94.1989
1121.30	94.2142
1131.51	0.0000
1173.23	106.4484
1177.93	91.3330
1189.05	104.7770
1204.77	124.5169
1221.41	92.1790
1231.02	131.3646
1235.36	107.8583
1238.28	108.9502
1260.41	0.0000
1271.85	93.1458
1274.44	98.3708
1274.54	98.3746
1291.59	87.2813
1298.22	0.0000
1312.11	68.8601
1332.49	60.7589
1365.19	51.6578
1368.63	0.0000
1384.29	46.5566
1408.01	43.5775
1457.56	0.0000
1460.82	46.1529
1489.16	35.6023
1505.03	34.6211
1596.21	35.8052
1620.50	28.3845
1678.03	0.0000
1690.97	16.2737
1764.49	23.7318
1764.49	23.7318
1770.23	73.6833
1771.35	42.6664
1791.20	0.0000
1836.06	18.6104

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248521007

Total Uranium Activity	7.9582E+00	ug/g
Total Uranium Counting Unc.	6.3526E+00	ug/g
Total Uranium Tpu	3.2411E-06	ug/g
Total Uranium Mda	3.8431E+00	ug/g

```
*****************************************************************************
*                                                                           *
*                          GEL Laboratories LLC                           *
*                               2040 SAVAGE ROAD                            *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID      : 961099                    SAMPLE ID  : G248521007       *
*   ANALYST       : MXR1                      DETECTOR   : GAM23            *
*   SAMPLE DATE   : 25-FEB-2010 12:00:00.00   COUNT TIME :    0 04:00:00.00 *
*   ANALYSIS DATE: 19-MAR-2010 23:12:44.38    SAMPLE ALQT:   94.550 GRAM    *
*                                                                           *
*****************************************************************************


        GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 1.215E+01
        GROSS GAMMA ERROR  (pCi/GRAM  )   : 1.386E+00
        GROSS GAMMA MDA    (pCi/GRAM  )   : 3.352E+00
        GROSS GAMMA DLC    (pCi/GRAM  )   : 1.641E+00
```

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:15:02.74

```
*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521008.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:14:37
Sample ID         : G248521008           Sample quantity  : 1.25430E+02 GRAM
Detector name     : GAM06                Detector geometry: CAN
Elapsed live time: 0 04:00:00.00         Elapsed real time: 0 04:00:02.61  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.31*	123	741	0.73	126.20	123	7	8.53E-03	39.4	
2	1	72.81	148	834	1.09	145.20	142	20	1.03E-02	34.4	4.62E+00
3	1	74.81	710	815	1.10	149.20	142	20	4.93E-02	7.9	
4	1	77.12*	1182	782	1.09	153.80	142	20	8.21E-02	5.0	
5	5	87.21	517	799	1.27	173.98	163	27	3.59E-02	10.4	5.49E+00
6	5	89.88	347	757	1.37	179.32	163	27	2.41E-02	15.3	
7	5	92.83*	532	791	1.53	185.21	163	27	3.69E-02	11.5	
8	0	105.97	87	767	0.84	211.47	206	9	6.01E-03	58.7	
9	0	128.98	212	766	1.35	257.48	253	10	1.47E-02	25.3	
10	0	185.97*	382	549	1.34	371.39	367	8	2.65E-02	12.5	
11	0	209.35	276	497	1.23	418.13	414	9	1.92E-02	15.8	
12	0	238.67*	1979	697	1.13	476.76	473	8	1.37E-01	3.3	
13	0	241.88	402	464	1.43	483.17	481	7	2.79E-02	10.5	
14	0	270.51	219	475	1.93	540.40	535	12	1.52E-02	21.0	
15	0	277.86	75	343	0.76	555.10	551	8	5.22E-03	44.3	
16	0	295.37*	792	443	1.32	590.11	583	13	5.50E-02	6.7	
17	0	300.42	194	318	1.33	600.21	596	10	1.35E-02	18.6	
18	0	328.11	93	292	1.15	655.56	652	8	6.47E-03	33.4	
19	0	338.42*	451	455	1.25	676.18	669	14	3.13E-02	11.3	
20	0	352.06*	1190	355	1.30	703.44	698	10	8.26E-02	4.2	
21	0	463.13	230	299	1.89	925.52	919	17	1.60E-02	18.3	
22	0	511.18*	237	331	2.02	1021.60	1013	20	1.65E-02	22.4	
23	0	583.33*	641	234	1.53	1165.87	1160	15	4.45E-02	6.8	
24	0	609.46*	912	172	1.56	1218.12	1212	14	6.33E-02	4.6	
25	0	661.79	630	134	1.41	1322.77	1317	10	4.37E-02	5.3	
26	0	727.16	148	153	1.20	1453.51	1447	13	1.03E-02	19.1	
27	0	768.92*	60	123	0.77	1537.01	1531	11	4.17E-03	40.1	
28	0	794.69	85	101	1.18	1588.57	1584	10	5.90E-03	24.6	
29	0	861.84	130	113	3.28	1722.86	1712	19	9.01E-03	21.6	
30	0	911.27*	414	161	1.59	1821.73	1813	18	2.87E-02	8.9	
31	0	934.90	48	105	1.85	1868.99	1863	13	3.35E-03	46.0	
32	1	964.86	105	110	2.04	1928.91	1919	26	7.26E-03	21.9	1.86E+00
33	1	969.09*	297	85	1.74	1937.37	1919	26	2.06E-02	8.7	
34	0	1120.95	228	143	2.18	2241.15	2234	18	1.59E-02	14.1	
35	0	1237.93	91	119	1.13	2475.18	2467	16	6.32E-03	28.9	
36	0	1378.17	53	50	1.17	2755.76	2750	14	3.66E-03	32.2	
37	0	1460.86*	1726	55	2.07	2921.21	2913	17	1.20E-01	2.6	
38	0	1588.37	40	30	0.81	3176.38	3170	12	2.76E-03	31.8	

Sample ID : G248521008 Acquisition date : 19-MAR-2010 23:14:37

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1730.00	38	8	2.57	3459.83	3454	11	2.62E-03	21.9	
40	0	1765.02	145	24	2.01	3529.91	3522	19	1.00E-02	11.6	

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

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 03:15:05

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521008.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:14:37
Sample ID : G248521008 Sample quantity : 125.43 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA6 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:02.61 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.595E+01	2.802E+00	4.780E-01	4.506E-02	54.289
CD-109	+	88.03	*	4.177E+00	9.848E-01	8.876E-01	9.876E-02	4.705
SN-126	+	64.28		7.059E-01	5.668E-01	6.620E-01	1.025E-01	1.066
	+	86.94		1.678E+00	7.859E-01	3.610E-01	1.513E-01	4.649
	+	87.57	*	4.037E-01	9.520E-02	8.623E-02	9.552E-03	4.682
BA-137M	+	661.66	*	5.489E-01	7.295E-02	5.532E-02	4.477E-03	9.922
CS-137	+	661.66	*	5.799E-01	7.713E-02	5.844E-02	4.740E-03	9.922
EU-155	+	86.55		4.910E-01	1.159E-01	1.061E-01	1.169E-02	4.628
	+	105.31	*	1.054E-01	1.240E-01	1.340E-01	1.247E-02	0.786
HG-203		70.83		5.217E-01	1.344E+00	2.006E+00	3.316E-01	0.260
	+	72.87		1.281E+00	9.040E-01	1.095E+00	1.763E-01	1.170
	+	279.20	*	5.143E-02	4.588E-02	5.928E-02	5.642E-03	0.868
TL-208	+	277.37		4.544E-01	4.073E-01	5.001E-01	6.508E-02	0.909
	+	583.19	*	5.310E-01	8.687E-02	4.987E-02	4.553E-03	10.648
	+	860.56		1.029E+00	4.554E-01	3.577E-01	3.478E-02	2.876
BI-211	+	72.87		4.608E+00	3.198E+00	3.939E+00	3.786E-01	1.170
	+	351.06	*	4.385E+00	5.535E-01	2.802E-01	2.630E-02	15.649
PB-212	+	74.82		2.505E+00	5.236E-01	4.479E-01	6.171E-02	5.593
	+	77.11		2.371E+00	3.332E-01	2.555E-01	2.540E-02	9.280
	+	238.63	*	1.620E+00	1.979E-01	9.406E-02	9.654E-03	17.228
	+	300.09		2.489E+00	9.666E-01	9.973E-01	1.106E-01	2.496
BI-214	+	609.32	*	1.463E+00	1.986E-01	9.387E-02	9.314E-03	15.588
	+	1120.29		1.943E+00	5.874E-01	3.840E-01	4.148E-02	5.058
	+	1764.49		1.716E+00	4.249E-01	2.609E-01	2.249E-02	6.574
PB-214	+	74.82		4.440E+00	8.937E-01	7.939E-01	9.981E-02	5.593
	+	77.11		4.179E+00	6.811E-01	4.503E-01	5.818E-02	9.280
	+	242.00		2.001E+00	4.728E-01	4.869E-01	5.294E-02	4.109
	+	295.22		1.796E+00	3.144E-01	1.816E-01	2.062E-02	9.889
	+	351.93	*	1.591E+00	2.192E-01	1.050E-01	1.142E-02	15.160
RA-224	+	240.99	*	3.537E+00	8.104E-01	1.126E+00	1.036E-01	3.141
RA-226	+	609.32	*	1.463E+00	1.986E-01	9.387E-02	9.314E-03	15.588
	+	1120.29		1.943E+00	5.874E-01	3.840E-01	4.148E-02	5.058
	+	1764.49		1.716E+00	4.249E-01	2.609E-01	2.249E-02	6.574
AC-228	+	338.32		1.849E+00	8.791E-01	3.048E-01	1.275E-01	6.067

Sample ID : G248521008 Acquisition date : 19-MAR-2010 23:14:37

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	911.20	*	1.675E+00	3.611E-01	1.780E-01	2.150E-02	9.407
	+	968.97		2.082E+00	6.255E-01	3.214E-01	7.889E-02	6.479
RA-228	+	338.32		1.849E+00	8.791E-01	3.048E-01	1.275E-01	6.067
	+	911.20	*	1.675E+00	3.611E-01	1.780E-01	2.150E-02	9.407
	+	968.97		2.082E+00	6.255E-01	3.214E-01	7.889E-02	6.479
TH-228	+	74.82		2.505E+00	4.643E-01	4.479E-01	4.401E-02	5.593
	+	77.11		2.371E+00	3.332E-01	2.555E-01	2.540E-02	9.280
	+	238.63	*	1.620E+00	1.979E-01	9.406E-02	9.654E-03	17.228
	+	300.09		2.489E+00	1.785E+00	9.973E-01	6.115E-01	2.496
TH-232	+	338.32		1.849E+00	4.506E-01	3.048E-01	2.767E-02	6.067
	+	911.20	*	1.675E+00	3.611E-01	1.780E-01	2.150E-02	9.407
	+	968.97		2.082E+00	6.255E-01	3.214E-01	7.889E-02	6.479
TH-234	+	63.29	*	1.831E+00	1.483E+00	1.783E+00	3.314E-01	1.027
	+	92.59		3.429E+00	1.114E+00	7.201E-01	1.645E-01	4.763
U-235	+	89.96		2.806E+00	1.118E+00	8.975E-01	2.285E-01	3.127
	+	93.35		2.590E+00	8.594E-01	5.408E-01	1.287E-01	4.790
		143.76	*	9.969E-02	1.684E-01	2.723E-01	4.578E-02	0.366
		163.33		-1.338E-01	3.677E-01	5.739E-01	1.025E-01	-0.233
	+	185.72		2.007E-01	5.331E-02	5.509E-02	4.785E-03	3.644
		205.31		7.280E-02	4.502E-01	6.720E-01	1.229E-01	0.108
NP-237	+	86.48	*	1.205E+00	3.801E-01	2.605E-01	6.161E-02	4.624
		95.86		-1.151E-01	7.395E-01	1.067E+00	2.617E-01	-0.108
U-238	+	63.29	*	1.831E+00	1.483E+00	1.783E+00	3.314E-01	1.027
	+	92.59		3.429E+00	8.686E-01	7.201E-01	7.511E-02	4.763
ANH-511	+	511.00	*	1.500E-01	6.851E-02	3.664E-02	3.180E-03	4.093

---- 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	*	-1.280E-02	3.019E-01	5.082E-01	4.747E-02	-0.025
NA-22		1274.54	*	-3.285E-03	3.714E-02	6.040E-02	5.307E-03	-0.054
NA-24		1368.63	*	-2.555E+03	3.714E-02	Half-Life too short		
SC-46		889.28	*	-3.165E-02	3.587E-02	5.366E-02	4.959E-03	-0.590
	+	1120.55		3.493E-01	1.030E-01	1.249E-01	1.058E-02	2.796
V-48		944.13		5.256E-01	9.527E-01	1.658E+00	1.525E-01	0.317
		983.53	*	1.059E-02	7.771E-02	1.312E-01	1.194E-02	0.081
		1312.11		6.039E-03	9.485E-02	1.558E-01	1.405E-02	0.039
CR-51		320.08	*	5.015E-02	3.718E-01	6.128E-01	5.900E-02	0.082
MN-54		834.85	*	6.399E-03	3.197E-02	5.245E-02	4.727E-03	0.122
CO-56		846.77	*	-7.905E-03	3.548E-02	5.645E-02	5.117E-03	-0.140
		1037.84		-1.364E-01	2.745E-01	4.404E-01	4.113E-02	-0.310
	+	1238.28		2.316E-01	1.353E-01	1.555E-01	1.367E-02	1.490
		1771.35		1.848E-01	2.036E-01	3.444E-01	2.961E-02	0.537
CO-57		122.06	*	-1.109E-02	2.051E-02	3.238E-02	2.726E-03	-0.343
		136.47		5.677E-02	1.742E-01	2.814E-01	2.527E-02	0.202
CO-58		810.76	*	-1.602E-02	3.602E-02	5.661E-02	5.050E-03	-0.283
FE-59		1099.45	*	-1.643E-02	9.399E-02	1.541E-01	1.432E-02	-0.107
		1291.59		-4.641E-03	1.239E-01	2.021E-01	2.026E-02	-0.023

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60		1173.23		-7.506E-03	3.950E-02	6.431E-02	5.214E-03	-0.117
		1332.49	*	-3.740E-03	3.322E-02	5.363E-02	4.905E-03	-0.070
ZN-65		1115.54	*	-3.732E-02	9.105E-02	1.243E-01	1.058E-02	-0.300
SE-75		121.12		-1.166E-01	1.091E-01	1.680E-01	1.840E-02	-0.694
		136.00		2.660E-02	3.398E-02	5.564E-02	4.666E-03	0.478
		264.66	*	-4.981E-02	4.416E-02	6.008E-02	5.607E-03	-0.829
		279.54		1.925E-02	1.094E-01	1.602E-01	1.540E-02	0.120
		400.66		1.206E-01	2.290E-01	3.786E-01	4.161E-02	0.318
SR-85		514.00	*	1.142E-01	3.647E-02	6.683E-02	5.798E-03	1.709
Y-88		898.04		-4.668E-02	3.892E-02	5.663E-02	5.275E-03	-0.824
		1836.06	*	3.230E-03	2.687E-02	4.515E-02	3.774E-03	0.072
Y-91		1204.77	*	5.764E+00	2.100E+01	3.517E+01	2.925E+00	0.164
NB-94		702.65	*	1.723E-02	2.902E-02	4.917E-02	4.097E-03	0.351
		871.09		-1.643E-02	2.919E-02	4.504E-02	4.129E-03	-0.365
NB-95		765.81	*	5.205E-02	4.053E-02	6.349E-02	5.510E-03	0.820
NB-95M		235.69	*	8.756E-02	1.247E-01	1.883E-01	1.951E-02	0.465
ZR-95		724.19		8.766E-02	9.297E-02	1.419E-01	1.304E-02	0.618
		756.73	*	8.395E-02	6.607E-02	1.156E-01	1.102E-02	0.726
MO-99		140.51		-6.885E-05	6.607E-02	Half-Life too short		
		181.07		3.029E-05	6.607E-02	Half-Life too short		
		366.42		1.836E-04	6.607E-02	Half-Life too short		
		739.50	*	-8.694E-06	6.607E-02	Half-Life too short		
		777.92		-1.236E-04	6.607E-02	Half-Life too short		
TC-99M		140.51	*	-1.360E+19	6.607E-02	Half-Life too short		
RU-103		497.08	*	-4.830E-03	3.638E-02	6.077E-02	8.512E-03	-0.079
	+	610.33		1.721E+01	3.216E+00	2.833E+00	4.598E-01	6.074
RH-106		621.93	*	4.125E-02	2.524E-01	4.220E-01	5.517E-02	0.098
		1050.41		-1.070E-01	2.233E+00	3.705E+00	3.277E-01	-0.029
RU-106		621.93	*	4.125E-02	2.524E-01	4.220E-01	3.519E-02	0.098
		1050.41		-1.070E-01	2.233E+00	3.705E+00	3.277E-01	-0.029
AG-108M		433.94	*	1.639E-02	2.642E-02	4.369E-02	3.882E-03	0.375
		614.28		8.346E-03	3.088E-02	4.542E-02	3.937E-03	0.184
		722.91		4.804E-03	3.400E-02	4.880E-02	4.260E-03	0.098
AG-110M		657.76	*	3.929E-02	3.157E-02	4.979E-02	4.178E-03	0.789
		677.62		-4.316E-02	2.613E-01	4.255E-01	3.595E-02	-0.101
		706.68		1.319E-02	1.891E-01	3.114E-01	2.682E-02	0.042
		763.94		2.302E-02	1.427E-01	2.043E-01	1.819E-02	0.113
		884.68		2.742E-02	4.175E-02	7.049E-02	6.684E-03	0.389
		937.49		-6.646E-03	1.079E-01	1.555E-01	1.478E-02	-0.043
		1384.29		-5.271E-02	1.744E-01	2.326E-01	2.187E-02	-0.227
		1505.03		-2.358E-01	2.485E-01	3.547E-01	3.254E-02	-0.665
SN-113		391.69	*	-1.072E-02	4.139E-02	6.610E-02	5.765E-03	-0.162
CD-115		260.90		7.041E-04	4.139E-02	Half-Life too short		
		492.35		-7.309E-05	4.139E-02	Half-Life too short		
		527.90	*	7.611E-05	4.139E-02	Half-Life too short		
SN-117M		156.02		-1.565E+00	2.754E+00	4.284E+00	3.593E-01	-0.365
		158.56	*	-1.356E-03	6.555E-02	1.039E-01	8.735E-03	-0.013
TE-123M		159.00	*	3.459E-03	2.450E-02	3.905E-02	3.304E-03	0.089
SB-124		602.73		8.770E-03	3.887E-02	5.952E-02	5.021E-03	0.147

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		645.85		1.289E-01	4.245E-01	7.139E-01	6.224E-02	0.181
		722.78		4.725E-02	3.716E-01	5.326E-01	4.607E-02	0.089
		1690.97	*	-2.094E-02	6.972E-02	1.111E-01	1.022E-02	-0.188
SB-125		427.87	*	6.451E-02	8.035E-02	1.340E-01	1.173E-02	0.481
	+	463.37		1.299E+00	4.900E-01	4.954E-01	4.613E-02	2.622
		600.60		-3.404E-02	1.637E-01	2.535E-01	2.305E-02	-0.134
		635.95		8.975E-02	2.247E-01	3.800E-01	3.415E-02	0.236
TE-125M		109.28	*	-1.672E+00	9.756E+00	1.373E+01	1.482E+00	-0.122
I-126		388.63		2.414E-01	2.210E-01	3.739E-01	3.177E-02	0.646
		666.33	*	2.370E-01	3.185E-01	4.813E-01	3.908E-02	0.492
		753.82		1.638E+00	2.265E+00	3.859E+00	3.325E-01	0.425
SB-126		414.70		1.118E-01	1.027E-01	1.733E-01	1.481E-02	0.645
		666.50		8.288E-02	1.114E-01	1.683E-01	1.367E-02	0.492
		695.00		1.228E-01	9.774E-02	1.713E-01	1.420E-02	0.716
		697.00		1.197E-01	3.445E-01	5.768E-01	4.788E-02	0.208
		720.70	*	1.129E-01	1.964E-01	2.929E-01	2.471E-02	0.386
		856.80		-3.924E-01	6.457E-01	8.361E-01	7.615E-02	-0.469
SB-127		252.40		-7.521E+00	1.380E+01	2.187E+01	9.269E+00	-0.344
		473.00		-1.942E+00	5.315E+00	8.291E+00	1.244E+00	-0.234
		685.70	*	2.018E-04	4.020E+00	6.610E+00	8.960E-01	0.000
		783.70		1.338E+01	1.099E+01	1.901E+01	2.795E+00	0.704
I-131		80.19		2.986E-01	9.156E+00	1.063E+01	1.099E+00	0.028
		284.31		1.591E-01	2.345E+00	3.883E+00	3.798E-01	0.041
		364.49	*	2.352E-02	1.919E-01	3.135E-01	2.927E-02	0.075
		636.99		4.992E-01	2.392E+00	4.003E+00	3.536E-01	0.125
TE-132		49.72		-5.946E+01	9.093E+01	1.485E+02	2.066E+01	-0.401
		111.76		-3.023E+01	1.337E+02	2.144E+02	2.889E+01	-0.141
		116.30		-9.391E+01	1.155E+02	1.802E+02	2.404E+01	-0.521
		228.16	*	-7.656E-01	2.993E+00	4.959E+00	8.811E-01	-0.154
BA-133		81.00		-2.947E-02	9.900E-02	1.125E-01	1.859E-02	-0.262
	+	276.40		4.205E-01	3.780E-01	5.411E-01	7.870E-02	0.777
		302.85		1.259E-01	1.271E-01	1.922E-01	2.596E-02	0.655
		356.01	*	2.565E-02	3.973E-02	5.873E-02	7.723E-03	0.437
		383.85		2.744E-02	2.560E-01	4.166E-01	5.161E-02	0.066
I-133		529.87	*	-1.534E+00	2.560E-01	Half-Life too short		
		875.33		4.357E+01	2.560E-01	Half-Life too short		
		1298.22		1.529E+01	2.560E-01	Half-Life too short		
CS-134		563.25		3.588E-01	3.053E-01	5.368E-01	4.652E-02	0.668
		569.33		2.210E-02	1.793E-01	2.874E-01	2.496E-02	0.077
		604.72		-1.521E-05	3.194E-02	4.600E-02	3.886E-03	0.000
	+	795.86	*	1.038E-01	5.183E-02	8.008E-02	7.119E-03	1.296
		801.95		-1.379E-01	3.650E-01	5.610E-01	4.996E-02	-0.246
		1365.19		1.070E+00	1.015E+00	1.819E+00	1.738E-01	0.588
CS-135		268.22	*	1.579E-01	1.476E-01	2.251E-01	2.377E-02	0.702
I-135		546.56		-3.121E+16	1.476E-01	Half-Life too short		
		836.80		2.480E+16	1.476E-01	Half-Life too short		
		1038.76		-2.046E+18	1.476E-01	Half-Life too short		
		1131.51		5.241E+17	1.476E-01	Half-Life too short		
		1260.41	*	9.215E+16	1.476E-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
		1457.56		8.216E+19	1.476E-01	Half-Life too short		
		1678.03		-4.198E+17	1.476E-01	Half-Life too short		
		1791.20		-3.884E+17	1.476E-01	Half-Life too short		
CS-136		153.25		6.682E-01	1.035E+00	1.678E+00	1.689E-01	0.398
		176.60		3.018E-01	6.113E-01	1.049E+00	9.949E-02	0.288
		273.65		4.296E-02	9.724E-01	1.026E+00	1.026E-01	0.042
		340.55		5.262E-01	2.329E-01	3.625E-01	3.400E-02	1.451
		818.51		1.798E-02	9.327E-02	1.533E-01	1.372E-02	0.117
		1048.07	*	1.319E-02	1.374E-01	2.301E-01	2.121E-02	0.057
		1235.36		1.516E+00	8.392E-01	1.345E+00	1.574E-01	1.127
CE-139		165.86	*	1.334E-02	2.680E-02	4.310E-02	3.645E-03	0.310
BA-140		162.66		-5.528E-01	1.010E+00	1.567E+00	1.414E-01	-0.353
		304.85		3.367E-01	1.795E+00	2.614E+00	7.702E-01	0.129
		423.72		2.060E-01	2.593E+00	4.186E+00	1.376E+00	0.049
		537.26	*	-2.437E-01	3.414E-01	5.326E-01	1.807E-01	-0.458
LA-140	+	328.76		7.061E-01	4.759E-01	7.120E-01	6.845E-02	0.992
		487.02		-5.346E-02	1.763E-01	2.926E-01	2.696E-02	-0.183
		815.77		-1.395E-01	4.008E-01	6.331E-01	6.270E-02	-0.220
		1596.21	*	1.509E-02	1.258E-01	1.951E-01	1.768E-02	0.077
CE-141		145.44	*	3.423E-02	6.038E-02	9.792E-02	8.324E-03	0.350
CE-143		57.36		-1.433E-02	6.038E-02	Half-Life too short		
		293.27	*	2.453E-02	6.038E-02	Half-Life too short		
		664.57		2.905E-01	6.038E-02	Half-Life too short		
		721.93		3.703E-02	6.038E-02	Half-Life too short		
CE-144		80.12		1.116E-01	2.664E+00	3.094E+00	3.164E-01	0.036
		133.52	*	-1.158E-01	1.856E-01	2.560E-01	3.871E-02	-0.452
PM-144		476.78		-1.047E-02	5.526E-02	9.237E-02	8.703E-03	-0.113
		618.01		-8.976E-03	2.684E-02	4.235E-02	3.647E-03	-0.212
		696.49	*	1.566E-02	2.947E-02	4.983E-02	4.138E-03	0.314
PR-144		696.51	*	1.174E+00	2.214E+00	3.743E+00	3.106E-01	0.314
		1489.16		-2.570E+00	9.857E+00	1.536E+01	1.411E+00	-0.167
PM-146		453.88	*	1.222E-03	3.838E-02	6.153E-02	6.532E-03	0.020
		633.25		-1.690E-01	1.186E+00	1.942E+00	7.403E-01	-0.087
		735.93		8.969E-02	1.218E-01	2.044E-01	5.721E-02	0.439
		747.24		1.366E-02	7.610E-02	1.258E-01	1.832E-02	0.109
ND-147	+	91.11		1.449E+00	4.735E-01	6.301E-01	7.074E-02	2.300
		319.41		1.257E+00	4.514E+00	7.484E+00	6.893E-01	0.168
		531.02	*	-2.935E-01	7.226E-01	1.181E+00	1.769E-01	-0.248
PM-149		285.90	*	-7.002E-04	7.226E-01	Half-Life too short		
EU-152		121.78		-3.297E-02	5.753E-02	9.064E-02	8.822E-03	-0.364
		244.70		1.081E-01	2.920E-01	4.355E-01	4.014E-02	0.248
		344.28	*	4.495E-03	9.472E-02	1.357E-01	1.291E-02	0.033
		778.90		-1.633E-01	2.031E-01	3.102E-01	2.712E-02	-0.526
	+	964.08		7.889E-01	3.536E-01	4.931E-01	4.513E-02	1.600
		1085.87		-1.418E-01	3.196E-01	5.112E-01	4.432E-02	-0.277
		1112.07		3.257E-02	2.787E-01	4.444E-01	3.786E-02	0.073
		1408.01		8.873E-03	1.450E-01	2.371E-01	2.181E-02	0.037
GD-153		69.67		8.657E-01	1.574E+00	2.366E+00	2.225E-01	0.366
		97.43	*	-6.774E-02	7.443E-02	1.035E-01	1.021E-02	-0.655

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		103.18		2.658E-02	9.593E-02	1.404E-01	1.315E-02	0.189
EU-154		123.07		2.161E-02	4.076E-02	6.658E-02	7.447E-03	0.325
		723.31		8.454E-04	1.584E-01	2.246E-01	2.097E-02	0.004
		873.19		2.030E-01	2.397E-01	4.083E-01	5.024E-02	0.497
		996.26		-4.338E-01	3.058E-01	4.422E-01	7.823E-02	-0.981
		1004.73		-1.383E-01	1.793E-01	2.822E-01	3.370E-02	-0.490
		1274.44	*	3.017E-03	1.038E-01	1.704E-01	1.960E-02	0.018
TB-160	+	86.79		1.394E+00	3.288E-01	4.251E-01	4.667E-02	3.280
		197.04		-1.258E-01	5.258E-01	8.344E-01	7.355E-02	-0.151
		215.65		-1.304E-01	6.453E-01	1.076E+00	9.685E-02	-0.121
		298.57		2.869E-01	1.466E-01	1.792E-01	1.665E-02	1.601
		879.36	*	-8.589E-02	1.276E-01	1.947E-01	1.791E-02	-0.441
		962.29		8.064E-01	5.610E-01	8.992E-01	8.234E-02	0.897
	+	966.15		5.910E-01	2.649E-01	4.720E-01	4.317E-02	1.252
		1177.93		-2.301E-01	3.433E-01	5.396E-01	4.392E-02	-0.426
		1271.85		-2.546E-01	6.389E-01	1.012E+00	8.864E-02	-0.252
HO-166M		80.57		-1.491E-02	2.838E-01	3.278E-01	3.367E-02	-0.045
		184.41		1.077E-01	3.454E-02	5.509E-02	4.777E-03	1.954
		280.46		8.462E-03	7.815E-02	1.141E-01	1.062E-02	0.074
		410.95		-1.316E-01	2.449E-01	3.692E-01	3.150E-02	-0.356
		711.68	*	-1.868E-02	5.071E-02	8.120E-02	6.808E-03	-0.230
		752.31		-1.315E-01	2.305E-01	3.617E-01	3.113E-02	-0.364
		810.29		-1.512E-02	5.046E-02	8.017E-02	7.133E-03	-0.189
TA-182		67.75		-3.568E-02	1.034E-01	1.578E-01	1.468E-02	-0.226
		100.11		-5.477E-03	1.496E-01	2.311E-01	2.222E-02	-0.024
		152.43		-3.109E-02	2.987E-01	4.733E-01	3.960E-02	-0.066
		222.11		1.513E-01	3.070E-01	5.216E-01	4.726E-02	0.290
	+	1121.30		9.520E-01	2.807E-01	3.445E-01	2.916E-02	2.763
		1189.05		-1.087E-02	2.828E-01	4.647E-01	3.817E-02	-0.023
		1221.41	*	2.980E-02	1.865E-01	3.096E-01	2.610E-02	0.096
		1231.02		-6.094E-02	5.022E-01	6.998E-01	5.943E-02	-0.087
IR-192	+	295.96		1.423E+00	2.318E-01	2.717E-01	2.542E-02	5.238
		308.46		-2.697E-02	8.514E-02	1.379E-01	1.283E-02	-0.196
		316.51	*	6.304E-03	3.152E-02	5.213E-02	4.817E-03	0.121
		468.07		4.911E-02	6.721E-02	9.873E-02	9.177E-03	0.497
BI-207	+	72.81		2.652E-01	1.840E-01	2.657E-01	2.552E-02	0.998
	+	74.97		7.223E-01	1.336E-01	1.858E-01	1.815E-02	3.887
		569.70		5.566E-03	2.778E-02	4.472E-02	3.829E-03	0.124
		1063.66	*	-1.358E-02	4.359E-02	7.082E-02	6.221E-03	-0.192
		1770.23		6.909E-01	3.762E-01	7.247E-01	6.233E-02	0.953
PB-210		46.54	*	2.658E+00	3.843E+00	6.204E+00	5.969E-01	0.428
PB-211		404.85	*	-6.387E-01	7.122E-01	9.860E-01	4.769E-01	-0.648
		427.09		2.163E-01	1.377E+00	2.225E+00	1.029E+00	0.097
		832.01		-1.479E-01	8.276E-01	1.318E+00	6.842E-01	-0.112
BI-212	+	727.33	*	1.887E+00	7.563E-01	9.672E-01	1.195E-01	1.951
		785.37		3.500E+00	2.583E+00	4.540E+00	3.985E-01	0.771
		1620.50		-1.306E-01	1.999E+00	3.308E+00	2.982E-01	-0.039
RN-219	+	271.23		7.939E-01	3.450E-01	3.771E-01	4.087E-02	2.105
		401.81	*	-1.328E-01	3.576E-01	5.660E-01	8.379E-02	-0.235

---- 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		-7.048E-02	2.237E-01	2.542E-01	2.624E-02	-0.277
		83.79		3.993E-01	1.137E-01	1.714E-01	1.819E-02	2.330
		94.87		7.206E-01	3.769E-01	5.778E-01	5.862E-02	1.247
		144.24		6.116E-01	5.598E-01	9.191E-01	8.611E-02	0.665
		154.21		3.200E-01	3.189E-01	5.217E-01	4.812E-02	0.613
	+	269.46		6.168E-01	2.660E-01	2.903E-01	2.747E-02	2.125
		323.87	*	1.216E-01	6.102E-01	8.856E-01	1.560E-01	0.137
	+	338.28		7.338E+00	1.893E+00	2.072E+00	2.570E-01	3.542
AC-227		79.69		5.753E-01	1.289E+00	1.527E+00	2.759E-01	0.377
		235.96		2.659E-01	1.467E-01	2.273E-01	2.455E-02	1.170
		256.23	*	-1.224E-01	2.151E-01	3.492E-01	4.373E-02	-0.351
	+	299.98		2.738E+00	1.081E+00	1.368E+00	1.801E-01	2.002
		304.50		7.484E-02	1.450E+00	2.098E+00	3.541E-01	0.036
		334.37		-6.345E-01	1.596E+00	2.225E+00	3.529E-01	-0.285
TH-227		79.80		7.366E-01	1.700E+00	2.010E+00	4.512E-01	0.366
		235.96		2.659E-01	1.464E-01	2.273E-01	2.328E-02	1.170
		256.23	*	-1.224E-01	2.152E-01	3.492E-01	4.897E-02	-0.351
	+	299.98		2.738E+00	1.081E+00	1.368E+00	1.801E-01	2.002
		304.50		7.484E-02	1.450E+00	2.098E+00	3.541E-01	0.036
		334.37		-6.345E-01	1.596E+00	2.225E+00	3.529E-01	-0.285
TH-229		85.43		7.431E-01	1.930E-01	2.882E-01	3.116E-02	2.578
	+	88.47		6.224E-01	1.468E-01	1.875E-01	2.073E-02	3.319
		193.51	*	-3.200E-01	4.247E-01	6.990E-01	6.134E-02	-0.458
		210.85		1.876E+00	8.332E-01	1.320E+00	1.182E-01	1.422
PA-231		283.69	*	4.393E-01	1.206E+00	2.016E+00	3.026E-01	0.218
	+	301.36		1.759E+00	6.913E-01	8.790E-01	1.110E-01	2.001
TH-231		81.07		-7.048E-02	2.237E-01	2.542E-01	2.624E-02	-0.277
		83.79		3.993E-01	1.137E-01	1.714E-01	1.819E-02	2.330
		94.87		7.206E-01	3.769E-01	5.778E-01	5.862E-02	1.247
		144.24		6.116E-01	5.598E-01	9.191E-01	8.611E-02	0.665
		154.21		3.200E-01	3.189E-01	5.217E-01	4.812E-02	0.613
	+	269.46		6.168E-01	2.660E-01	2.903E-01	2.747E-02	2.125
		323.87	*	1.216E-01	6.102E-01	8.856E-01	1.560E-01	0.137
	+	338.28		7.338E+00	1.893E+00	2.072E+00	2.570E-01	3.542
PA-233	+	300.13		1.239E+00	4.982E-01	6.210E-01	9.456E-02	1.995
		311.90	*	-1.333E-02	5.438E-02	8.834E-02	8.370E-03	-0.151
		340.48		1.980E+00	8.133E-01	1.077E+00	2.609E-01	1.839
PA-234		94.67		3.879E-01	1.470E-01	2.206E-01	2.983E-02	1.759
		98.44		7.070E-02	7.894E-02	1.146E-01	6.416E-02	0.617
		111.00		-7.773E-02	1.523E-01	2.356E-01	2.891E-02	-0.330
		131.20		1.809E-02	9.324E-02	1.341E-01	1.118E-02	0.135
		569.50		3.241E-02	2.456E-01	3.939E-01	3.373E-02	0.082
		733.00		-1.433E-01	3.569E-01	4.838E-01	1.072E-01	-0.296
		880.51		-1.073E-01	2.341E-01	3.636E-01	3.348E-02	-0.295
		883.24		9.435E-03	2.452E-01	3.962E-01	2.666E-01	0.024
		926.50		-3.079E-03	1.412E-01	2.199E-01	5.606E-02	-0.014
		946.00	*	-9.044E-02	2.407E-01	3.922E-01	7.465E-02	-0.231
		949.00		1.570E-01	3.482E-01	6.018E-01	5.530E-02	0.261
PA-234M		766.42		1.045E+01	1.242E+01	1.631E+01	8.279E+00	0.641

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1001.03	*	3.915E+00	3.979E+00	6.908E+00	7.138E-01	0.567
NP-239		99.53		6.118E-02	1.252E-01	2.063E-01	1.994E-02	0.296
		103.37		2.763E-02	8.552E-02	1.254E-01	1.172E-02	0.220
	+	106.12		8.376E-02	9.859E-02	1.138E-01	1.042E-02	0.736
		117.23	*	-1.646E-01	3.164E-01	5.009E-01	4.302E-02	-0.329
		228.18		-9.557E-03	1.773E-01	2.960E-01	2.697E-02	-0.032
	+	277.60		2.077E-01	1.852E-01	2.603E-01	2.424E-02	0.798
AM-241		59.54	*	6.564E-02	1.453E-01	2.197E-01	2.086E-02	0.299
CM-247	+	278.00		8.820E-01	7.866E-01	1.105E+00	1.029E-01	0.798
		287.50		1.053E+00	1.048E+00	1.788E+00	1.665E-01	0.589
		402.40	*	-2.474E-02	3.322E-02	5.160E-02	4.385E-03	-0.479
CF-249		252.80		-4.201E-01	7.891E-01	1.285E+00	1.189E-01	-0.327
		333.37		-1.480E-01	2.063E-01	2.327E-01	2.121E-02	-0.636
		388.16	*	4.285E-02	3.531E-02	6.002E-02	5.104E-03	0.714
CF-251		177.52	*	2.588E-02	1.079E-01	1.841E-01	1.581E-02	0.141
		227.38		-4.005E-02	2.929E-01	4.877E-01	4.440E-02	-0.082
		285.41		-1.897E+00	1.886E+00	2.980E+00	2.775E-01	-0.637

VAX/VMS Nuclide Identification Report Generated

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*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521008      *
* Acquisition date : 19-MAR-2010 23:14:37 Detector SN#     :               *
* Detector ID        : GAM06               Sensitivity      : 5.000        *
* Geometry           : CAN                 Energy tolerance: 1.500         *
* Elapsed live time:    0 04:00:00.00      Abundance limit : 75.000        *
* Elapsed real time:    0 04:00:02.61      Half life ratio :  8.000        *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248521008           Analyst initials: MXR1          *
* Batch Number       : 961099               Sample Quantity : 1.2543E+02 GRAM *
* Recovery           :    1.00000           Carrier Weight :    0.00000     *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
* Standard Weight  :    0.00000                                             *
* CALIB. DATE/TIME : 16-FEB-2010 15:10:04 MS Isotope      :                 *
* MSD DPM            :    0.000             MSD Isotope      :              *
* LCS DPM            :    0.000             LCS Isotope      :              *
* LCSD DPM           :    0.000             LCSD Isotope     :              *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.595E+01	2.746E+00	4.777E-01	0.000E+00
CD-109	4.177E+00	9.652E-01	9.226E-01	0.000E+00
SN-126	4.037E-01	9.330E-02	8.964E-02	0.000E+00
BA-137M	5.489E-01	7.150E-02	5.592E-02	0.000E+00
CS-137	5.799E-01	7.559E-02	5.907E-02	0.000E+00
EU-155	1.054E-01	1.215E-01	1.390E-01	0.000E+00
HG-203	5.143E-02	4.496E-02	6.065E-02	0.000E+00
TL-208	5.310E-01	8.513E-02	5.050E-02	0.000E+00
BI-211	4.385E+00	5.424E-01	2.858E-01	0.000E+00
PB-212	1.620E+00	1.940E-01	9.645E-02	0.000E+00
BI-214	1.463E+00	1.947E-01	9.500E-02	0.000E+00
PB-214	1.591E+00	2.148E-01	1.071E-01	0.000E+00
RA-224	3.537E+00	7.942E-01	1.155E+00	0.000E+00
RA-226	1.463E+00	1.947E-01	9.500E-02	0.000E+00
AC-228	1.675E+00	3.539E-01	1.791E-01	0.000E+00
RA-228	1.675E+00	3.539E-01	1.791E-01	0.000E+00
TH-228	1.620E+00	1.940E-01	9.645E-02	0.000E+00
TH-232	1.675E+00	3.539E-01	1.791E-01	0.000E+00
TH-234	1.831E+00	1.453E+00	1.862E+00	0.000E+00
U-235	9.969E-02	1.650E-01	2.812E-01	0.000E+00
NP-237	1.205E+00	3.725E-01	2.709E-01	0.000E+00
U-238	1.831E+00	1.453E+00	1.862E+00	0.000E+00
ANH-511	1.500E-01	6.714E-02	3.717E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)		
BE-7	-1.280E-02	2.959E-01	5.161E-01	0.000E+00	NOT IDENT.
NA-22	-3.285E-03	3.640E-02	6.048E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.353E+09	0.000E+00	0.000E+00	SHORT HLIF
SC-46	-3.165E-02	3.516E-02	5.401E-02	0.000E+00	FAIL ABUN

V-48	1.059E-02	7.616E-02	1.319E-01	0.000E+00	NOT IDENT.
CR-51	5.015E-02	3.643E-01	6.258E-01	0.000E+00	NOT IDENT.
MN-54	6.399E-03	3.133E-02	5.284E-02	0.000E+00	NOT IDENT.
CO-56	-7.905E-03	3.477E-02	5.686E-02	0.000E+00	FAIL ABUN
CO-57	-1.109E-02	2.010E-02	3.350E-02	0.000E+00	NOT IDENT.
CO-58	-1.602E-02	3.530E-02	5.705E-02	0.000E+00	NOT IDENT.
FE-59	-1.643E-02	9.211E-02	1.546E-01	0.000E+00	NOT IDENT.
CO-60	-3.740E-03	3.255E-02	5.366E-02	0.000E+00	NOT IDENT.
ZN-65	-3.732E-02	8.923E-02	1.247E-01	0.000E+00	NOT IDENT.
SE-75	-4.981E-02	4.328E-02	6.151E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.574E-02	6.779E-02	0.000E+00	NOT IDENT.
Y-88	3.230E-03	2.633E-02	4.496E-02	0.000E+00	NOT IDENT.
Y-91	5.764E+00	2.058E+01	3.524E+01	0.000E+00	NOT IDENT.
NB-94	1.723E-02	2.844E-02	4.965E-02	0.000E+00	NOT IDENT.
NB-95	5.205E-02	3.972E-02	6.404E-02	0.000E+00	NOT IDENT.
NB-95M	8.756E-02	1.222E-01	1.931E-01	0.000E+00	NOT IDENT.
ZR-95	8.395E-02	6.475E-02	1.166E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	6.302E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	2.369E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.830E-03	3.565E-02	6.168E-02	0.000E+00	FAIL ABUN
RH-106	4.125E-02	2.474E-01	4.269E-01	0.000E+00	NOT IDENT.
RU-106	4.125E-02	2.473E-01	4.269E-01	0.000E+00	NOT IDENT.
AG-108M	1.639E-02	2.589E-02	4.443E-02	0.000E+00	NOT IDENT.
AG-110M	3.929E-02	3.094E-02	5.033E-02	0.000E+00	NOT IDENT.
SN-113	-1.072E-02	4.056E-02	6.731E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	8.755E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.356E-03	6.424E-02	1.072E-01	0.000E+00	NOT IDENT.
TE-123M	3.459E-03	2.401E-02	4.026E-02	0.000E+00	NOT IDENT.
SB-124	-2.094E-02	6.833E-02	1.107E-01	0.000E+00	NOT IDENT.
SB-125	6.451E-02	7.874E-02	1.363E-01	0.000E+00	FAIL ABUN
TE-125M	-1.672E+00	9.561E+00	1.423E+01	0.000E+00	NOT IDENT.
I-126	2.370E-01	3.121E-01	4.864E-01	0.000E+00	NOT IDENT.
SB-126	1.129E-01	1.925E-01	2.957E-01	0.000E+00	NOT IDENT.
SB-127	2.018E-04	3.940E+00	6.678E+00	0.000E+00	NOT IDENT.
I-131	2.352E-02	1.880E-01	3.196E-01	0.000E+00	NOT IDENT.
TE-132	-7.656E-01	2.933E+00	5.088E+00	0.000E+00	NOT IDENT.
BA-133	2.565E-02	3.894E-02	5.988E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.745E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.080E-02	8.073E-02	0.000E+00	FAIL ABUN
CS-135	1.579E-01	1.447E-01	2.304E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.262E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.319E-02	1.346E-01	2.311E-01	0.000E+00	NOT IDENT.
CE-139	1.334E-02	2.627E-02	4.441E-02	0.000E+00	NOT IDENT.
BA-140	-2.437E-01	3.345E-01	5.400E-01	0.000E+00	NOT IDENT.
LA-140	1.509E-02	1.233E-01	1.947E-01	0.000E+00	FAIL ABUN
CE-141	3.423E-02	5.917E-02	1.011E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	8.153E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.158E-01	1.819E-01	2.646E-01	0.000E+00	NOT IDENT.
PM-144	1.566E-02	2.888E-02	5.033E-02	0.000E+00	NOT IDENT.
PR-144	1.174E+00	2.170E+00	3.781E+00	0.000E+00	NOT IDENT.
PM-146	1.222E-03	3.761E-02	6.253E-02	0.000E+00	NOT IDENT.
ND-147	-2.935E-01	7.081E-01	1.198E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	7.935E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	4.495E-03	9.282E-02	1.384E-01	0.000E+00	FAIL ABUN
GD-153	-6.774E-02	7.294E-02	1.074E-01	0.000E+00	NOT IDENT.
EU-154	3.017E-03	1.017E-01	1.707E-01	0.000E+00	NOT IDENT.
TB-160	-8.589E-02	1.250E-01	1.960E-01	0.000E+00	FAIL ABUN
HO-166M	-1.868E-02	4.970E-02	8.199E-02	0.000E+00	NOT IDENT.
TA-182	2.980E-02	1.828E-01	3.102E-01	0.000E+00	FAIL ABUN
IR-192	6.304E-03	3.089E-02	5.324E-02	0.000E+00	FAIL ABUN
BI-207	-1.358E-02	4.272E-02	7.110E-02	0.000E+00	FAIL ABUN
PB-210	2.658E+00	3.766E+00	6.504E+00	0.000E+00	NOT IDENT.
PB-211	-6.387E-01	6.980E-01	1.004E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.412E-01	9.763E-01	0.000E+00	FAIL ABUN
RN-219	-1.328E-01	3.504E-01	5.762E-01	0.000E+00	FAIL ABUN
RA-223	1.216E-01	5.980E-01	9.042E-01	0.000E+00	FAIL ABUN
AC-227	-1.224E-01	2.108E-01	3.577E-01	0.000E+00	FAIL ABUN
TH-227	-1.224E-01	2.109E-01	3.577E-01	0.000E+00	FAIL ABUN
TH-229	-3.200E-01	4.162E-01	7.188E-01	0.000E+00	FAIL ABUN
PA-231	4.393E-01	1.182E+00	2.063E+00	0.000E+00	FAIL ABUN
TH-231	1.216E-01	5.980E-01	9.042E-01	0.000E+00	FAIL ABUN
PA-233	-1.333E-02	5.330E-02	9.025E-02	0.000E+00	FAIL ABUN
PA-234	-9.044E-02	2.359E-01	3.943E-01	0.000E+00	NOT IDENT.
PA-234M	3.915E+00	3.900E+00	6.940E+00	0.000E+00	NOT IDENT.
NP-239	-1.646E-01	3.101E-01	5.187E-01	0.000E+00	FAIL ABUN
AM-241	6.564E-02	1.424E-01	2.296E-01	0.000E+00	NOT IDENT.
CM-247	-2.474E-02	3.256E-02	5.252E-02	0.000E+00	FAIL ABUN
CF-249	4.285E-02	3.461E-02	6.112E-02	0.000E+00	NOT IDENT.

CF-251	2.588E-02	1.057E-01	1.895E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:15:03.72

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*****************************************************************************
*                            GEL Laboratories LLC                           *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521008.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:14:37
Sample ID         : G248521008           Sample quantity  : 1.25430E+02 GRAM
Detector name     : GAM06                Detector geometry: CAN
Elapsed live time: 0 04:00:00.00         Elapsed real time: 0 04:00:02.61  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               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	1726	10.66*	9.337E-01	2.595E+01	2.595E+01	10.80
CD-109	88.03	517	3.70*	5.176E+00	4.037E+00	4.177E+00	23.58
SN-126	64.28	123	9.60	2.711E+00	7.059E-01	7.059E-01	80.30
	86.94	517	8.90	5.176E+00	1.678E+00	1.678E+00	46.82
	87.57	517	37.00*	5.176E+00	4.037E-01	4.037E-01	23.58
BA-137M	661.66	630	89.90*	1.912E+00	5.481E-01	5.489E-01	13.29
CS-137	661.66	630	85.10*	1.912E+00	5.790E-01	5.799E-01	13.30
EU-155	86.55	517	30.70	5.176E+00	4.866E-01	4.910E-01	23.61
	105.31	87	21.10*	5.881E+00	1.044E-01	1.054E-01	117.71
HG-203	70.83	------	3.69	3.677E+00	------	Line Not Found	------
	72.87	148	6.19	3.907E+00	9.157E-01	1.281E+00	70.58
	279.20	75	81.56*	3.749E+00	3.677E-02	5.143E-02	89.21
TL-208	277.37	75	6.60	3.749E+00	4.544E-01	4.544E-01	89.65
	583.19	641	85.00*	2.126E+00	5.310E-01	5.310E-01	16.36
	860.56	130	12.50	1.509E+00	1.029E+00	1.029E+00	44.28
BI-211	72.87	148	1.23	3.907E+00	4.608E+00	4.608E+00	69.39
	351.06	1190	12.92*	3.143E+00	4.385E+00	4.385E+00	12.62
PB-212	74.82	710	10.28	4.127E+00	2.505E+00	2.505E+00	20.90
	77.11	1182	17.10	4.362E+00	2.371E+00	2.371E+00	14.05
	238.63	1979	43.60*	4.192E+00	1.620E+00	1.620E+00	12.21
	300.09	194	3.30	3.538E+00	2.489E+00	2.489E+00	38.83
BI-214	609.32	912	45.49*	2.050E+00	1.463E+00	1.463E+00	13.57
	1120.29	228	14.92	1.179E+00	1.943E+00	1.943E+00	30.24
	1764.49	145	15.30	8.243E-01	1.715E+00	1.716E+00	24.77
PB-214	74.82	710	5.80	4.127E+00	4.440E+00	4.440E+00	20.13
	77.11	1182	9.70	4.362E+00	4.179E+00	4.179E+00	16.30
	242.00	402	7.25	4.151E+00	2.000E+00	2.001E+00	23.63
	295.22	792	18.42	3.582E+00	1.796E+00	1.796E+00	17.51
	351.93	1190	35.60*	3.143E+00	1.591E+00	1.591E+00	13.77
RA-224	240.99	402	4.10*	4.151E+00	3.537E+00	3.537E+00	22.91
RA-226	609.32	912	45.49*	2.050E+00	1.463E+00	1.463E+00	13.57
	1120.29	228	14.92	1.179E+00	1.943E+00	1.943E+00	30.24

Sample ID : G248521008 Acquisition date : 19-MAR-2010 23:14:37

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	1764.49	145	15.30	8.243E-01	1.715E+00	1.716E+00	24.77
AC-228	338.32	451	11.27	3.237E+00	1.849E+00	1.849E+00	47.54
	911.20	414	25.80*	1.433E+00	1.675E+00	1.675E+00	21.56
	968.97	297	15.80	1.352E+00	2.082E+00	2.082E+00	30.04
RA-228	338.32	451	11.27	3.237E+00	1.849E+00	1.849E+00	47.54
	911.20	414	25.80*	1.433E+00	1.675E+00	1.675E+00	21.56
	968.97	297	15.80	1.352E+00	2.082E+00	2.082E+00	30.04
TH-228	74.82	710	10.28	4.127E+00	2.505E+00	2.505E+00	18.54
	77.11	1182	17.10	4.362E+00	2.371E+00	2.371E+00	14.05
	238.63	1979	43.60*	4.192E+00	1.620E+00	1.620E+00	12.21
	300.09	194	3.30	3.538E+00	2.489E+00	2.489E+00	71.72
TH-232	338.32	451	11.27	3.237E+00	1.849E+00	1.849E+00	24.37
	911.20	414	25.80*	1.433E+00	1.675E+00	1.675E+00	21.56
	968.97	297	15.80	1.352E+00	2.082E+00	2.082E+00	30.04
TH-234	63.29	123	3.70*	2.711E+00	1.831E+00	1.831E+00	80.97
	92.59	532	4.23	5.483E+00	3.429E+00	3.429E+00	32.48
U-235	89.96	347	3.47	5.334E+00	2.806E+00	2.806E+00	39.83
	93.35	532	5.60	5.483E+00	2.590E+00	2.590E+00	33.18
	143.76	------	10.96*	5.718E+00	------	Line Not Found	------
	163.33	------	5.08	5.383E+00	------	Line Not Found	------
	185.72	382	57.20	4.982E+00	2.007E-01	2.007E-01	26.56
	205.31	------	5.01	4.664E+00	------	Line Not Found	------
NP-237	86.48	517	12.40*	5.176E+00	1.205E+00	1.205E+00	31.55
	95.86	------	2.68	5.611E+00	------	Line Not Found	------
U-238	63.29	123	3.70*	2.711E+00	1.831E+00	1.831E+00	80.97
	92.59	532	4.23	5.483E+00	3.429E+00	3.429E+00	25.33
ANH-511	511.00	237	100.00*	2.364E+00	1.500E-01	1.500E-01	45.68

Flag: "*" = Keyline

Sample ID : G248521008 Acquisition date : 19-MAR-2010 23:14:37

Total number of lines in spectrum 40
Number of unidentified lines 7
Number of lines tentatively identified by NID 33 82.50%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.595E+01	2.595E+01	0.280E+01	10.80	
CD-109	461.40D	1.03	4.037E+00	4.177E+00	0.985E+00	23.58	
SN-126	2.30E+05Y	1.00	4.037E-01	4.037E-01	0.952E-01	23.58	
BA-137M	30.08Y	1.00	5.481E-01	5.489E-01	0.730E-01	13.29	
CS-137	30.08Y	1.00	5.790E-01	5.799E-01	0.771E-01	13.30	
EU-155	4.75Y	1.01	1.044E-01	1.054E-01	1.240E-01	117.71	
HG-203	46.59D	1.40	3.677E-02	5.143E-02	4.588E-02	89.21	
TL-208	1.41E+10Y	1.00	5.310E-01	5.310E-01	0.869E-01	16.36	
BI-211	7.04E+08Y	1.00	4.385E+00	4.385E+00	0.553E+00	12.62	
PB-212	1.41E+10Y	1.00	1.620E+00	1.620E+00	0.198E+00	12.21	
BI-214	1600.00Y	1.00	1.463E+00	1.463E+00	0.199E+00	13.57	
PB-214	1600.00Y	1.00	1.591E+00	1.591E+00	0.219E+00	13.77	
RA-224	1.41E+10Y	1.00	3.537E+00	3.537E+00	0.810E+00	22.91	
RA-226	1600.00Y	1.00	1.463E+00	1.463E+00	0.199E+00	13.57	
AC-228	1.41E+10Y	1.00	1.675E+00	1.675E+00	0.361E+00	21.56	
RA-228	1.41E+10Y	1.00	1.675E+00	1.675E+00	0.361E+00	21.56	
TH-228	1.41E+10Y	1.00	1.620E+00	1.620E+00	0.198E+00	12.21	
TH-232	1.41E+10Y	1.00	1.675E+00	1.675E+00	0.361E+00	21.56	
TH-234	4.47E+09Y	1.00	1.831E+00	1.831E+00	1.483E+00	80.97	
U-235	7.04E+08Y	1.00	2.007E-01	2.007E-01	0.533E-01	26.56	K
NP-237	2.14E+06Y	1.00	1.205E+00	1.205E+00	0.380E+00	31.55	
U-238	4.47E+09Y	1.00	1.831E+00	1.831E+00	1.483E+00	80.97	
ANH-511	1.00E+09Y	1.00	1.500E-01	1.500E-01	0.685E-01	45.68	
		Total Activity :	5.812E+01	5.827E+01			

Grand Total Activity : 5.812E+01 5.827E+01

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

Sample ID : G248521008 Acquisition date : 19-MAR-2010 23:14:37

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.98	212	766	1.35	257.48	253	10	1.47E-02	50.7	5.91E+00	
0	209.35	276	497	1.23	418.13	414	9	1.92E-02	31.7	4.60E+00	
0	270.51	219	475	1.93	540.40	535	12	1.52E-02	42.1	3.82E+00	T
0	328.11	93	292	1.15	655.56	652	8	6.47E-03	66.7	3.31E+00	T
0	463.13	230	299	1.89	925.52	919	17	1.60E-02	36.6	2.55E+00	T
0	727.16	148	153	1.20	1453.51	1447	13	1.03E-02	38.1	1.76E+00	T
0	768.92	60	123	0.77	1537.01	1531	11	4.17E-03	80.1	1.68E+00	
0	794.69	85	101	1.18	1588.57	1584	10	5.90E-03	49.1	1.63E+00	T
0	934.90	48	105	1.85	1868.99	1863	13	3.35E-03	92.0	1.40E+00	
1	964.86	105	110	2.04	1928.91	1919	26	7.26E-03	43.9	1.36E+00	T
0	1237.93	91	119	1.13	2475.18	2467	16	6.32E-03	57.8	1.08E+00	T
0	1378.17	53	50	1.17	2755.76	2750	14	3.66E-03	64.3	9.79E-01	
0	1588.37	40	30	0.81	3176.38	3170	12	2.76E-03	63.7	8.78E-01	
0	1730.00	38	8	2.57	3459.83	3454	11	2.62E-03	43.9	8.33E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:15:07.40

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*****************************************************************************
*                            GEL Laboratories LLC                           *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521008.CNF;1 *
* Acquisition date  : 19-MAR-2010 23:14:37  Detector SN#     :             *
* Detector ID       : GAM06                 Sensitivity      : 5.00000     *
* Geometry          : CAN                   Energy tolerance: 1.50000      *
* Elapsed live time: 0 04:00:00.00          Abundance limit : 75.00000     *
* Elapsed real time: 0 04:00:02.61          Half life ratio : 8.00000      *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00  Nuclide Library : SOLID        *
* Sample ID         : G248521008            Analyst initials: MXR1         *
* Batch Number      : 961099                Sample Quantity : 1.25430E+02 GRAM *
*****************************************************************************
*                                                                           *
*                                  QC DATA                                  *
*                                                                           *
* CALIB. DATE/TIME : 16-FEB-2010 15:10:04.7MS Isotope      :               *
* MSD ID           :                      MSD Isotope     :               *
* LCS ID           : 1032-A               LCS Isotope     :               *
*****************************************************************************
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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	2.595E+01	2.802E+00	4.780E-01	4.506E-02	54.289
CD-109	4.177E+00	9.848E-01	8.876E-01	9.876E-02	4.705
SN-126	4.037E-01	9.520E-02	8.623E-02	9.552E-03	4.682
BA-137M	5.489E-01	7.295E-02	5.532E-02	4.477E-03	9.922
CS-137	5.799E-01	7.713E-02	5.844E-02	4.740E-03	9.922
EU-155	1.054E-01	1.240E-01	1.340E-01	1.247E-02	0.786
HG-203	5.143E-02	4.588E-02	5.928E-02	5.642E-03	0.868
TL-208	5.310E-01	8.687E-02	4.987E-02	4.553E-03	10.648
BI-211	4.385E+00	5.535E-01	2.802E-01	2.630E-02	15.649
PB-212	1.620E+00	1.979E-01	9.406E-02	9.654E-03	17.228
BI-214	1.463E+00	1.986E-01	9.387E-02	9.314E-03	15.588
PB-214	1.591E+00	2.192E-01	1.050E-01	1.142E-02	15.160
RA-224	3.537E+00	8.104E-01	1.126E+00	1.036E-01	3.141
RA-226	1.463E+00	1.986E-01	9.387E-02	9.314E-03	15.588
AC-228	1.675E+00	3.611E-01	1.780E-01	2.150E-02	9.407
RA-228	1.675E+00	3.611E-01	1.780E-01	2.150E-02	9.407
TH-228	1.620E+00	1.979E-01	9.406E-02	9.654E-03	17.228
TH-232	1.675E+00	3.611E-01	1.780E-01	2.150E-02	9.407

Sample ID : G248521008 Acquisition date : 19-MAR-2010 23:14:37

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	1.831E+00	1.483E+00	1.783E+00	3.314E-01	1.027
U-235	2.007E-01	5.331E-02	2.723E-01	4.578E-02	0.737
NP-237	1.205E+00	3.801E-01	2.605E-01	6.161E-02	4.624
U-238	1.831E+00	1.483E+00	1.783E+00	3.314E-01	1.027
ANH-511	1.500E-01	6.851E-02	3.664E-02	3.180E-03	4.093

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.280E-02		3.019E-01	5.082E-01	4.747E-02	-0.025
NA-22	-3.285E-03		3.714E-02	6.040E-02	5.307E-03	-0.054
NA-24	-2.555E+03		1.201E+03	Half-Life too short		
SC-46	-3.165E-02		3.587E-02	5.366E-02	4.959E-03	-0.590
V-48	1.059E-02		7.771E-02	1.312E-01	1.194E-02	0.081
CR-51	5.015E-02		3.718E-01	6.128E-01	5.900E-02	0.082
MN-54	6.399E-03		3.197E-02	5.245E-02	4.727E-03	0.122
CO-56	-7.905E-03		3.548E-02	5.645E-02	5.117E-03	-0.140
CO-57	-1.109E-02		2.051E-02	3.238E-02	2.726E-03	-0.343
CO-58	-1.602E-02		3.602E-02	5.661E-02	5.050E-03	-0.283
FE-59	-1.643E-02		9.399E-02	1.541E-01	1.432E-02	-0.107
CO-60	-3.740E-03		3.322E-02	5.363E-02	4.905E-03	-0.070
ZN-65	-3.732E-02		9.105E-02	1.243E-01	1.058E-02	-0.300
SE-75	-4.981E-02		4.416E-02	6.008E-02	5.607E-03	-0.829
SR-85	1.142E-01		3.647E-02	6.683E-02	5.798E-03	1.709
Y-88	3.230E-03		2.687E-02	4.515E-02	3.774E-03	0.072
Y-91	5.764E+00		2.100E+01	3.517E+01	2.925E+00	0.164
NB-94	1.723E-02		2.902E-02	4.917E-02	4.097E-03	0.351
NB-95	5.205E-02		4.053E-02	6.349E-02	5.510E-03	0.820
NB-95M	8.756E-02		1.247E-01	1.883E-01	1.951E-02	0.465
ZR-95	8.395E-02		6.607E-02	1.156E-01	1.102E-02	0.726
MO-99	-8.694E-06		3.215E-05	Half-Life too short		
TC-99M	-1.360E+19		1.209E+19	Half-Life too short		
RU-103	-4.830E-03		3.638E-02	6.077E-02	8.512E-03	-0.079
RH-106	4.125E-02		2.524E-01	4.220E-01	5.517E-02	0.098
RU-106	4.125E-02		2.524E-01	4.220E-01	3.519E-02	0.098
AG-108M	1.639E-02		2.642E-02	4.369E-02	3.882E-03	0.375
AG-110M	3.929E-02		3.157E-02	4.979E-02	4.178E-03	0.789
SN-113	-1.072E-02		4.139E-02	6.610E-02	5.765E-03	-0.162
CD-115	7.611E-05		4.467E-05	Half-Life too short		
SN-117M	-1.356E-03		6.555E-02	1.039E-01	8.735E-03	-0.013
TE-123M	3.459E-03		2.450E-02	3.905E-02	3.304E-03	0.089
SB-124	-2.094E-02		6.972E-02	1.111E-01	1.022E-02	-0.188
SB-125	6.451E-02		8.035E-02	1.340E-01	1.173E-02	0.481
TE-125M	-1.672E+00		9.756E+00	1.373E+01	1.482E+00	-0.122
I-126	2.370E-01		3.185E-01	4.813E-01	3.908E-02	0.492
SB-126	1.129E-01		1.964E-01	2.929E-01	2.471E-02	0.386
SB-127	2.018E-04		4.020E+00	6.610E+00	8.960E-01	0.000

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	2.352E-02		1.919E-01	3.135E-01	2.927E-02	0.075
TE-132	-7.656E-01		2.993E+00	4.959E+00	8.811E-01	-0.154
BA-133	2.565E-02		3.973E-02	5.873E-02	7.723E-03	0.437
I-133	-1.534E+00		8.903E-01	Half-Life too short		
CS-134	1.038E-01	+	5.183E-02	8.008E-02	7.119E-03	1.296
CS-135	1.579E-01		1.476E-01	2.251E-01	2.377E-02	0.702
I-135	9.215E+16		3.705E+17	Half-Life too short		
CS-136	1.319E-02		1.374E-01	2.301E-01	2.121E-02	0.057
CE-139	1.334E-02		2.680E-02	4.310E-02	3.645E-03	0.310
BA-140	-2.437E-01		3.414E-01	5.326E-01	1.807E-01	-0.458
LA-140	1.509E-02		1.258E-01	1.951E-01	1.768E-02	0.077
CE-141	3.423E-02		6.038E-02	9.792E-02	8.324E-03	0.350
CE-143	2.453E-02		4.160E-03	Half-Life too short		
CE-144	-1.158E-01		1.856E-01	2.560E-01	3.871E-02	-0.452
PM-144	1.566E-02		2.947E-02	4.983E-02	4.138E-03	0.314
PR-144	1.174E+00		2.214E+00	3.743E+00	3.106E-01	0.314
PM-146	1.222E-03		3.838E-02	6.153E-02	6.532E-03	0.020
ND-147	-2.935E-01		7.226E-01	1.181E+00	1.769E-01	-0.248
PM-149	-7.002E-04		4.048E-04	Half-Life too short		
EU-152	4.495E-03		9.472E-02	1.357E-01	1.291E-02	0.033
GD-153	-6.774E-02		7.443E-02	1.035E-01	1.021E-02	-0.655
EU-154	3.017E-03		1.038E-01	1.704E-01	1.960E-02	0.018
TB-160	-8.589E-02		1.276E-01	1.947E-01	1.791E-02	-0.441
HO-166M	-1.868E-02		5.071E-02	8.120E-02	6.808E-03	-0.230
TA-182	2.980E-02		1.865E-01	3.096E-01	2.610E-02	0.096
IR-192	6.304E-03		3.152E-02	5.213E-02	4.817E-03	0.121
BI-207	-1.358E-02		4.359E-02	7.082E-02	6.221E-03	-0.192
PB-210	2.658E+00		3.843E+00	6.204E+00	5.969E-01	0.428
PB-211	-6.387E-01		7.122E-01	9.860E-01	4.769E-01	-0.648
BI-212	1.887E+00	+	7.563E-01	9.672E-01	1.195E-01	1.951
RN-219	-1.328E-01		3.576E-01	5.660E-01	8.379E-02	-0.235
RA-223	1.216E-01		6.102E-01	8.856E-01	1.560E-01	0.137
AC-227	-1.224E-01		2.151E-01	3.492E-01	4.373E-02	-0.351
TH-227	-1.224E-01		2.152E-01	3.492E-01	4.897E-02	-0.351
TH-229	-3.200E-01		4.247E-01	6.990E-01	6.134E-02	-0.458
PA-231	4.393E-01		1.206E+00	2.016E+00	3.026E-01	0.218
TH-231	1.216E-01		6.102E-01	8.856E-01	1.560E-01	0.137
PA-233	-1.333E-02		5.438E-02	8.834E-02	8.370E-03	-0.151
PA-234	-9.044E-02		2.407E-01	3.922E-01	7.465E-02	-0.231
PA-234M	3.915E+00		3.979E+00	6.908E+00	7.138E-01	0.567
NP-239	-1.646E-01		3.164E-01	5.009E-01	4.302E-02	-0.329
AM-241	6.564E-02		1.453E-01	2.197E-01	2.086E-02	0.299
CM-247	-2.474E-02		3.322E-02	5.160E-02	4.385E-03	-0.479
CF-249	4.285E-02		3.531E-02	6.002E-02	5.104E-03	0.714
CF-251	2.588E-02		1.079E-01	1.841E-01	1.581E-02	0.141

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]G248521008           *
* Acquisition date  : 19-MAR-2010 23:14:37 Detector SN#     :               *
* Detector ID       : GAM06                Sensitivity      : 5.000         *
* Geometry          : CAN                  Energy tolerance: 1.500          *
* Elapsed live time:    0 04:00:00.00      Abundance limit : 75.000         *
* Elapsed real time:    0 04:00:02.61      Half life ratio : 8.000          *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248521008           Analyst initials: MXR1           *
* Batch Number      : 961099               Sample Quantity : 1.2543E+02 GRAM *
* Recovery          :    1.00000           Carrier Weight :    0.00000      *
*****************************************************************************
*                                                                           *
*                                  QC DATA                                  *
*                                                                           *
* CALIB. DATE/TIME : 16-FEB-2010 15:10:04 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.595E+01	2.746E+00	2.390E-01	1.401E+00
CD-109	4.177E+00	9.652E-01	4.616E-01	4.924E-01
SN-126	4.037E-01	9.330E-02	4.485E-02	4.760E-02
BA-137M	5.489E-01	7.150E-02	2.798E-02	3.648E-02
CS-137	5.799E-01	7.559E-02	2.955E-02	3.857E-02
EU-155	1.054E-01	1.215E-01	6.952E-02	6.200E-02
HG-203	5.143E-02	4.496E-02	3.034E-02	2.294E-02
TL-208	5.310E-01	8.513E-02	2.526E-02	4.343E-02
BI-211	4.385E+00	5.424E-01	1.430E-01	2.767E-01
PB-212	1.620E+00	1.940E-01	4.825E-02	9.896E-02
BI-214	1.463E+00	1.947E-01	4.753E-02	9.931E-02
PB-214	1.591E+00	2.148E-01	5.356E-02	1.096E-01
RA-224	3.537E+00	7.942E-01	5.777E-01	4.052E-01
RA-226	1.463E+00	1.947E-01	4.753E-02	9.931E-02
AC-228	1.675E+00	3.539E-01	8.962E-02	1.806E-01
RA-228	1.675E+00	3.539E-01	8.962E-02	1.806E-01
TH-228	1.620E+00	1.940E-01	4.825E-02	9.896E-02
TH-232	1.675E+00	3.539E-01	8.962E-02	1.806E-01
TH-234	1.831E+00	1.453E+00	9.313E-01	7.414E-01
U-235	9.969E-02	1.650E-01	1.407E-01	8.419E-02
NP-237	1.205E+00	3.725E-01	1.355E-01	1.901E-01
U-238	1.831E+00	1.453E+00	9.313E-01	7.414E-01
ANH-511	1.500E-01	6.714E-02	1.860E-02	3.425E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-1.280E-02	2.959E-01	2.582E-01	1.510E-01	NOT IDENT.
NA-22	-3.285E-03	3.640E-02	3.026E-02	1.857E-02	NOT IDENT.
NA-24	-2.555E+09	2.353E+09	0.000E+00	1.201E+09	SHORT HLIF
SC-46	-3.165E-02	3.516E-02	2.702E-02	1.794E-02	FAIL ABUN

V-48	1.059E-02	7.616E-02	6.599E-02	3.886E-02	NOT IDENT.
CR-51	5.015E-02	3.643E-01	3.131E-01	1.859E-01	NOT IDENT.
MN-54	6.399E-03	3.133E-02	2.644E-02	1.599E-02	NOT IDENT.
CO-56	-7.905E-03	3.477E-02	2.844E-02	1.774E-02	FAIL ABUN
CO-57	-1.109E-02	2.010E-02	1.676E-02	1.026E-02	NOT IDENT.
CO-58	-1.602E-02	3.530E-02	2.854E-02	1.801E-02	NOT IDENT.
FE-59	-1.643E-02	9.211E-02	7.734E-02	4.700E-02	NOT IDENT.
CO-60	-3.740E-03	3.255E-02	2.685E-02	1.661E-02	NOT IDENT.
ZN-65	-3.732E-02	8.923E-02	6.240E-02	4.553E-02	NOT IDENT.
SE-75	-4.981E-02	4.328E-02	3.078E-02	2.208E-02	NOT IDENT.
SR-85	1.142E-01	3.574E-02	3.392E-02	1.823E-02	NOT IDENT.
Y-88	3.230E-03	2.633E-02	2.250E-02	1.343E-02	NOT IDENT.
Y-91	5.764E+00	2.058E+01	1.763E+01	1.050E+01	NOT IDENT.
NB-94	1.723E-02	2.844E-02	2.484E-02	1.451E-02	NOT IDENT.
NB-95	5.205E-02	3.972E-02	3.204E-02	2.027E-02	NOT IDENT.
NB-95M	8.756E-02	1.222E-01	9.660E-02	6.233E-02	NOT IDENT.
ZR-95	8.395E-02	6.475E-02	5.833E-02	3.304E-02	NOT IDENT.
MO-99	-8.694E+00	6.302E+01	0.000E+00	3.215E+01	SHORT HLIF
TC-99M	-1.360E+25	2.369E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.830E-03	3.565E-02	3.086E-02	1.819E-02	FAIL ABUN
RH-106	4.125E-02	2.474E-01	2.136E-01	1.262E-01	NOT IDENT.
RU-106	4.125E-02	2.473E-01	2.136E-01	1.262E-01	NOT IDENT.
AG-108M	1.639E-02	2.589E-02	2.223E-02	1.321E-02	NOT IDENT.
AG-110M	3.929E-02	3.094E-02	2.518E-02	1.578E-02	NOT IDENT.
SN-113	-1.072E-02	4.056E-02	3.367E-02	2.069E-02	NOT IDENT.
CD-115	7.611E+01	8.755E+01	0.000E+00	4.467E+01	SHORT HLIF
SN-117M	-1.356E-03	6.424E-02	5.362E-02	3.278E-02	NOT IDENT.
TE-123M	3.459E-03	2.401E-02	2.014E-02	1.225E-02	NOT IDENT.
SB-124	-2.094E-02	6.833E-02	5.541E-02	3.486E-02	NOT IDENT.
SB-125	6.451E-02	7.874E-02	6.820E-02	4.017E-02	FAIL ABUN
TE-125M	-1.672E+00	9.561E+00	7.121E+00	4.878E+00	NOT IDENT.
I-126	2.370E-01	3.121E-01	2.433E-01	1.592E-01	NOT IDENT.
SB-126	1.129E-01	1.925E-01	1.479E-01	9.819E-02	NOT IDENT.
SB-127	2.018E-04	3.940E+00	3.341E+00	2.010E+00	NOT IDENT.
I-131	2.352E-02	1.880E-01	1.599E-01	9.593E-02	NOT IDENT.
TE-132	-7.656E-01	2.933E+00	2.546E+00	1.496E+00	NOT IDENT.
BA-133	2.565E-02	3.894E-02	2.996E-02	1.987E-02	FAIL ABUN
I-133	-1.534E+06	1.745E+06	0.000E+00	8.903E+05	SHORT HLIF
CS-134	1.038E-01	5.080E-02	4.039E-02	2.592E-02	FAIL ABUN
CS-135	1.579E-01	1.447E-01	1.153E-01	7.382E-02	NOT IDENT.
I-135	9.215E+22	7.262E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.319E-02	1.346E-01	1.156E-01	6.868E-02	NOT IDENT.
CE-139	1.334E-02	2.627E-02	2.222E-02	1.340E-02	NOT IDENT.
BA-140	-2.437E-01	3.345E-01	2.701E-01	1.707E-01	NOT IDENT.
LA-140	1.509E-02	1.233E-01	9.741E-02	6.288E-02	FAIL ABUN
CE-141	3.423E-02	5.917E-02	5.058E-02	3.019E-02	NOT IDENT.
CE-143	2.453E+04	8.153E+03	0.000E+00	4.160E+03	SHORT HLIF
CE-144	-1.158E-01	1.819E-01	1.324E-01	9.279E-02	NOT IDENT.
PM-144	1.566E-02	2.888E-02	2.518E-02	1.474E-02	NOT IDENT.
PR-144	1.174E+00	2.170E+00	1.892E+00	1.107E+00	NOT IDENT.
PM-146	1.222E-03	3.761E-02	3.128E-02	1.919E-02	NOT IDENT.
ND-147	-2.935E-01	7.081E-01	5.992E-01	3.613E-01	FAIL ABUN
PM-149	-7.002E+02	7.935E+02	0.000E+00	4.048E+02	SHORT HLIF
EU-152	4.495E-03	9.282E-02	6.925E-02	4.736E-02	FAIL ABUN
GD-153	-6.774E-02	7.294E-02	5.375E-02	3.721E-02	NOT IDENT.
EU-154	3.017E-03	1.017E-01	8.538E-02	5.191E-02	NOT IDENT.
TB-160	-8.589E-02	1.250E-01	9.805E-02	6.378E-02	FAIL ABUN
HO-166M	-1.868E-02	4.970E-02	4.102E-02	2.536E-02	NOT IDENT.
TA-182	2.980E-02	1.828E-01	1.552E-01	9.325E-02	FAIL ABUN
IR-192	6.304E-03	3.089E-02	2.664E-02	1.576E-02	FAIL ABUN
BI-207	-1.358E-02	4.272E-02	3.557E-02	2.180E-02	FAIL ABUN
PB-210	2.658E+00	3.766E+00	3.254E+00	1.921E+00	NOT IDENT.
PB-211	-6.387E-01	6.980E-01	5.021E-01	3.561E-01	NOT IDENT.
BI-212	1.887E+00	7.412E-01	4.884E-01	3.782E-01	FAIL ABUN
RN-219	-1.328E-01	3.504E-01	2.883E-01	1.788E-01	FAIL ABUN
RA-223	1.216E-01	5.980E-01	4.524E-01	3.051E-01	FAIL ABUN
AC-227	-1.224E-01	2.108E-01	1.790E-01	1.075E-01	FAIL ABUN
TH-227	-1.224E-01	2.109E-01	1.790E-01	1.076E-01	FAIL ABUN
TH-229	-3.200E-01	4.162E-01	3.596E-01	2.123E-01	FAIL ABUN
PA-231	4.393E-01	1.182E+00	1.032E+00	6.029E-01	FAIL ABUN
TH-231	1.216E-01	5.980E-01	4.524E-01	3.051E-01	FAIL ABUN
PA-233	-1.333E-02	5.330E-02	4.515E-02	2.719E-02	FAIL ABUN
PA-234	-9.044E-02	2.359E-01	1.973E-01	1.203E-01	NOT IDENT.
PA-234M	3.915E+00	3.900E+00	3.472E+00	1.990E+00	NOT IDENT.
NP-239	-1.646E-01	3.101E-01	2.595E-01	1.582E-01	FAIL ABUN
AM-241	6.564E-02	1.424E-01	1.149E-01	7.267E-02	NOT IDENT.
CM-247	-2.474E-02	3.256E-02	2.628E-02	1.661E-02	FAIL ABUN
CF-249	4.285E-02	3.461E-02	3.058E-02	1.766E-02	NOT IDENT.

CF-251	2.588E-02	1.057E-01	9.482E-02	5.395E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	523.6613
49.72	574.4492
57.36	0.0000
59.54	585.2326
63.29	659.6743
63.29	659.6743
64.28	673.9247
67.75	723.7023
69.67	697.4200
70.83	748.1761
72.81	742.6257
72.87	742.7285
72.87	742.7285
74.82	745.9683
74.82	745.9683
74.82	745.9683
74.97	746.2158
77.11	749.7220
77.11	749.7220
77.11	749.7220
79.69	664.7501
79.80	664.9045
80.12	701.6499
80.19	701.7526
80.57	702.3154
81.00	702.9526
81.07	703.0553
81.07	703.0553
83.79	563.7989
83.79	563.7989
85.43	565.6874
86.48	566.8871
86.55	566.9690
86.79	567.2400
86.94	567.4122
87.57	568.1264
88.03	568.6458
88.47	569.1426
89.96	570.8138
91.11	572.0953
92.59	573.7298
92.59	573.7298
93.35	574.5654
94.67	540.2020
94.87	540.4058
94.87	540.4058
95.86	542.9747
97.43	594.6401
98.44	500.6394
99.53	534.1060
100.11	554.8003
103.18	520.2423
103.37	520.4180
105.31	558.7146
106.12	591.2999
109.28	572.1685
111.00	580.2600
111.76	597.0556
116.30	580.0230
117.23	545.2750
121.12	542.1899
121.78	529.7086
122.06	537.5612
123.07	494.8260
131.20	521.4929
133.52	559.8635
136.00	515.7885

136.47	541.7320
140.51	0.0000
140.51	0.0000
143.76	559.8245
144.24	532.0817
144.24	532.0817
145.44	532.9815
152.43	532.4652
153.25	509.1364
154.21	493.8333
154.21	493.8333
156.02	553.3376
158.56	501.2982
159.00	500.4393
162.66	528.2161
163.33	533.2899
165.86	523.4481
176.60	528.1860
177.52	535.8269
181.07	0.0000
184.41	555.9293
185.72	509.9740
193.51	508.3300
197.04	495.0475
205.31	497.9916
210.85	430.6856
215.65	445.4157
222.11	438.2482
227.38	435.9721
228.16	436.3185
228.18	424.2054
235.69	446.3955
235.96	452.5288
235.96	452.5288
238.63	610.4910
238.63	610.4910
240.99	762.9926
242.00	443.1231
244.70	359.3709
252.40	373.2864
252.80	372.4745
256.23	390.9201
256.23	390.9201
260.90	0.0000
264.66	367.7088
268.22	331.6948
269.46	304.1350
269.46	304.1350
271.23	340.9471
273.65	354.3412
276.40	355.2021
277.37	316.9990
277.60	329.2044
278.00	341.0493
279.20	344.3408
279.54	344.4429
280.46	314.9507
283.69	312.2986
284.31	319.3466
285.41	368.8259
285.90	0.0000
287.50	301.5036
293.27	0.0000
295.22	296.7393
295.96	296.9264
298.57	250.6311
299.98	250.9233
299.98	250.9233
300.09	280.4227
300.09	280.4227
300.13	280.4312
301.36	287.0991
302.85	260.3026
304.50	268.6523
304.50	268.6523
304.85	263.9315
308.46	287.7708
311.90	294.6095

316.51	281.5714
319.41	278.1723
320.08	274.2709
323.87	277.7331
323.87	277.7331
328.76	304.8794
333.37	302.6891
334.37	280.0000
334.37	280.0000
338.28	255.5844
338.28	255.5844
338.32	255.5920
338.32	255.5920
338.32	255.5920
340.48	302.6881
340.55	320.7979
344.28	270.5559
351.06	268.6091
351.93	285.1631
356.01	231.3115
364.49	252.1976
366.42	0.0000
383.85	241.8604
388.16	221.2983
388.63	227.7538
391.69	255.9595
400.66	221.0250
401.81	250.1863
402.40	264.2503
404.85	275.4375
410.95	289.5100
414.70	215.4973
423.72	227.6434
427.09	227.0430
427.87	200.9440
433.94	206.0983
453.88	217.5242
463.37	184.1673
468.07	161.1782
473.00	191.9549
476.78	200.7054
477.60	202.6016
487.02	201.8950
492.35	0.0000
497.08	171.1851
511.00	155.0851
514.00	155.3399
527.90	0.0000
529.87	0.0000
531.02	165.1324
537.26	181.5033
546.56	0.0000
563.25	147.1831
569.33	170.3540
569.50	170.3716
569.70	170.3848
583.19	167.7328
600.60	167.2541
602.73	169.0778
604.72	170.1581
609.32	158.3064
609.32	158.3064
610.33	158.3825
614.28	132.2357
618.01	145.3967
621.93	130.1298
621.93	130.1298
633.25	144.4915
635.95	130.9870
636.99	128.1152
645.85	121.7658
657.76	103.6696
661.66	186.2734
661.66	186.2734
664.57	0.0000
666.33	137.1074
666.50	137.1209
677.62	134.4792

685.70	124.9603
695.00	118.4408
696.49	137.6004
696.51	137.6021
697.00	141.6506
702.65	143.0019
706.68	151.3184
711.68	140.5203
720.70	108.2448
721.93	0.0000
722.78	121.8838
722.91	121.8896
723.31	130.3761
724.19	120.2603
727.33	116.0095
733.00	129.2025
735.93	107.2328
739.50	0.0000
747.24	104.6546
752.31	133.6594
753.82	114.1923
756.73	104.0280
763.94	105.0200
765.81	98.2076
766.42	115.4643
777.92	0.0000
778.90	114.3076
783.70	98.9058
785.37	96.8871
795.86	80.1986
801.95	135.1445
810.29	118.8652
810.76	120.9915
815.77	107.5184
818.51	106.5752
832.01	113.4837
834.85	117.8508
836.80	0.0000
846.77	109.8424
856.80	101.6843
860.56	94.3207
871.09	109.7446
873.19	88.2921
875.33	0.0000
879.36	110.0708
880.51	102.5587
883.24	100.4972
884.68	85.4130
889.28	113.7107
898.04	128.1838
911.20	89.4873
911.20	89.4873
911.20	89.4873
926.50	81.6726
937.49	102.2562
944.13	80.9388
946.00	97.5548
949.00	82.9138
962.29	109.4586
964.08	97.2220
966.15	97.2882
968.97	97.3779
968.97	97.3779
968.97	97.3779
983.53	85.7315
996.26	116.9662
1001.03	79.6598
1004.73	110.7162
1037.84	99.5569
1038.76	0.0000
1048.07	99.8773
1050.41	100.9019
1050.41	100.9019
1063.66	96.5328
1085.87	89.4883
1099.45	116.9036
1112.07	103.5711
1115.54	114.8299

1120.29	94.2963
1120.29	94.2963
1120.55	94.3042
1121.30	94.3240
1131.51	0.0000
1173.23	112.5249
1177.93	122.5570
1189.05	112.0344
1204.77	114.5133
1221.41	125.0458
1231.02	122.0758
1235.36	94.6770
1238.28	111.5465
1260.41	0.0000
1271.85	84.1618
1274.44	79.1458
1274.54	82.1898
1291.59	84.5975
1298.22	0.0000
1312.11	69.6768
1332.49	61.8018
1365.19	37.3872
1368.63	0.0000
1384.29	66.1850
1408.01	46.1771
1457.56	0.0000
1460.82	46.7643
1489.16	33.1658
1505.03	53.6886
1596.21	44.7113
1620.50	37.7706
1678.03	0.0000
1690.97	28.7528
1764.49	22.3767
1764.49	22.3767
1770.23	8.5226
1771.35	13.6396
1791.20	0.0000
1836.06	18.7475

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248521008

Total Uranium Activity	5.4946E+00	ug/g
Total Uranium Counting Unc.	4.3238E+00	ug/g
Total Uranium Tpu	2.2060E-06	ug/g
Total Uranium Mda	2.7715E+00	ug/g

```
*****************************************************************************
*                                                                           *
*                          GEL Laboratories LLC                           *
*                               2040 SAVAGE ROAD                            *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID      : 961099                    SAMPLE ID  : G248521008       *
*   ANALYST       : MXR1                      DETECTOR   : GAM06            *
*   SAMPLE DATE   : 25-FEB-2010 12:00:00.00   COUNT TIME :    0 04:00:00.00 *
*   ANALYSIS DATE: 19-MAR-2010 23:14:37.09    SAMPLE ALQT:  125.430 GRAM    *
*                                                                           *
*****************************************************************************


        GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 1.053E+01
        GROSS GAMMA ERROR   (pCi/GRAM  )  : 1.386E+00
        GROSS GAMMA MDA     (pCi/GRAM  )  : 3.507E+00
        GROSS GAMMA DLC     (pCi/GRAM  )  : 1.714E+00
```

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:16:18.79

```
*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521009.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:15:00
Sample ID         : G248521009           Sample quantity  : 1.06260E+02 GRAM
Detector name     : GAM21                Detector geometry: CAN
Elapsed live time: 0 04:00:00.00         Elapsed real time: 0 04:00:50.60  0.4%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.57*	750	731	0.69	93.11	89	7	5.21E-02	7.1	
2	0	53.22	137	949	0.87	106.42	103	8	9.54E-03	39.7	
3	0	63.33	580	991	0.92	126.62	123	7	4.03E-02	9.9	
4	3	74.87*	1475	832	0.82	149.68	145	20	1.02E-01	3.9	4.36E+00
5	3	77.12*	2433	583	0.74	154.19	145	20	1.69E-01	2.5	
6	6	84.24*	315	849	1.14	168.42	165	26	2.19E-02	16.4	3.19E+00
7	6	87.22	830	703	1.00	174.39	165	26	5.76E-02	6.1	
8	6	89.92	459	675	0.92	179.77	165	26	3.19E-02	10.1	
9	6	92.80*	971	861	1.27	185.53	165	26	6.74E-02	6.3	
10	0	128.91	130	508	0.87	257.73	255	6	9.01E-03	28.8	
11	0	154.17	109	488	0.67	308.22	305	7	7.60E-03	34.8	
12	0	185.79*	450	518	1.04	371.44	367	8	3.12E-02	10.3	
13	0	209.20	194	419	0.78	418.24	414	7	1.35E-02	18.9	
14	8	238.51*	2404	281	0.86	476.83	472	16	1.67E-01	2.3	4.49E+00
15	8	241.54	704	474	1.83	482.90	472	16	4.89E-02	9.4	
16	0	270.04	319	469	1.52	539.87	533	15	2.22E-02	15.8	
17	0	276.49	125	309	0.75	552.78	548	9	8.66E-03	26.9	
18	2	295.10*	836	168	1.05	589.98	583	29	5.80E-02	4.3	3.62E+00
19	2	300.01	201	204	1.26	599.79	583	29	1.40E-02	14.8	
20	0	327.58	153	241	1.39	654.92	650	9	1.06E-02	20.0	
21	0	338.07	427	335	1.06	675.89	671	11	2.97E-02	9.6	
22	0	351.77*	1241	342	1.08	703.29	697	12	8.62E-02	4.2	
23	0	409.55	91	276	1.83	818.84	813	12	6.29E-03	38.1	
24	0	462.91	115	170	1.44	925.54	921	8	7.99E-03	21.7	
25	0	510.76*	162	277	1.38	1021.22	1014	15	1.13E-02	26.3	
26	0	583.00*	599	149	1.17	1165.68	1159	12	4.16E-02	5.9	
27	0	609.16*	766	215	1.37	1218.02	1211	15	5.32E-02	5.7	
28	0	661.46	1522	118	1.30	1322.61	1317	11	1.06E-01	2.9	
29	0	727.10	164	101	1.76	1453.90	1448	12	1.14E-02	14.6	
30	0	767.49	79	97	1.44	1534.69	1529	11	5.49E-03	25.9	
31	0	860.49	66	79	1.57	1720.74	1715	12	4.58E-03	29.9	
32	0	910.72	324	142	1.39	1821.22	1815	15	2.25E-02	9.7	
33	2	964.64	73	112	1.77	1929.08	1924	20	5.04E-03	29.2	4.68E+00
34	2	968.79	201	75	1.53	1937.38	1924	20	1.40E-02	10.6	
35	0	1001.08	34	32	1.46	2002.00	1999	7	2.33E-03	33.6	
36	0	1120.84*	160	105	2.15	2241.63	2235	18	1.11E-02	18.2	
37	0	1377.87	65	40	3.10	2755.98	2745	23	4.53E-03	28.1	
38	0	1460.46*	1377	29	1.98	2921.30	2913	19	9.56E-02	2.9	

Sample ID : G248521009 Acquisition date : 19-MAR-2010 23:15:00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1764.30*	90	25	2.25	3529.54	3523	11	6.26E-03	15.4	
40	0	1846.54	26	3	1.19	3694.20	3688	13	1.81E-03	24.1	

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

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 03:16:21

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521009.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:15:00
Sample ID : G248521009 Sample quantity : 106.26 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA21 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:50.60 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

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	*	3.166E+01	3.258E+00	6.192E-01	5.287E-02	51.134
CD-109	+	88.03	*	5.036E+00	7.705E-01	5.944E-01	5.593E-02	8.472
SN-126	+	64.28		1.305E+00	3.228E-01	2.514E-01	3.725E-02	5.190
	+	86.94		2.024E+00	8.753E-01	2.379E-01	9.875E-02	8.507
	+	87.57	*	4.868E-01	7.448E-02	5.736E-02	5.377E-03	8.487
BA-137M	+	661.66	*	1.916E+00	2.393E-01	6.637E-02	7.330E-03	28.874
CS-137	+	661.66	*	2.024E+00	2.530E-01	7.011E-02	7.752E-03	28.874
TL-208	+	277.37		8.756E-01	4.844E-01	4.958E-01	6.314E-02	1.766
	+	583.19	*	6.997E-01	1.128E-01	5.530E-02	6.019E-03	12.653
	+	860.56		7.763E-01	4.699E-01	4.436E-01	4.401E-02	1.750
PB-210	+	46.54	*	4.249E+00	7.225E-01	5.223E-01	4.939E-02	8.136
BI-211		72.87		1.506E+00	1.430E+00	2.235E+00	1.871E-01	0.674
	+	351.06	*	5.660E+00	6.965E-01	2.945E-01	2.658E-02	19.223
PB-212	+	74.82		3.063E+00	4.609E-01	2.374E-01	3.064E-02	12.902
	+	77.11		3.041E+00	3.029E-01	1.435E-01	1.238E-02	21.195
	+	238.63	*	2.220E+00	2.443E-01	7.804E-02	7.796E-03	28.447
	+	300.09		3.064E+00	9.644E-01	1.028E+00	1.109E-01	2.980
BI-214	+	609.32	*	1.750E+00	2.868E-01	1.121E-01	1.329E-02	15.617
	+	1120.29		2.043E+00	7.749E-01	5.134E-01	5.538E-02	3.980
	+	1764.49		1.738E+00	5.529E-01	4.312E-01	3.585E-02	4.031
PB-214	+	74.82		5.429E+00	7.576E-01	4.207E-01	4.886E-02	12.902
	+	77.11		5.361E+00	6.933E-01	2.529E-01	3.018E-02	21.195
	+	242.00		3.958E+00	8.562E-01	4.766E-01	5.057E-02	8.305
	+	295.22		2.240E+00	3.140E-01	1.807E-01	1.997E-02	12.395
	+	351.93	*	2.054E+00	2.770E-01	1.072E-01	1.133E-02	19.166
RA-224	+	240.99	*	6.999E+00	1.459E+00	8.388E-01	7.454E-02	8.343
RA-226	+	609.32	*	1.750E+00	2.868E-01	1.121E-01	1.329E-02	15.617
	+	1120.29		2.043E+00	7.749E-01	5.134E-01	5.538E-02	3.980
	+	1764.49		1.738E+00	5.529E-01	4.312E-01	3.585E-02	4.031
AC-228	+	338.32		2.145E+00	9.851E-01	3.311E-01	1.382E-01	6.477
	+	911.20	*	1.950E+00	4.420E-01	2.267E-01	2.651E-02	8.605
	+	968.97		2.101E+00	6.790E-01	4.092E-01	9.989E-02	5.134
RA-228	+	338.32		2.145E+00	9.851E-01	3.311E-01	1.382E-01	6.477
	+	911.20	*	1.950E+00	4.420E-01	2.267E-01	2.651E-02	8.605

Sample ID : G248521009 Acquisition date : 19-MAR-2010 23:15:00

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	968.97		2.101E+00	6.790E-01	4.092E-01	9.989E-02	5.134
TH-228	+	74.82		3.063E+00	3.535E-01	2.374E-01	2.033E-02	12.902
	+	77.11		3.041E+00	3.029E-01	1.435E-01	1.238E-02	21.195
	+	238.63	*	2.220E+00	2.443E-01	7.804E-02	7.796E-03	28.447
	+	300.09		3.064E+00	2.084E+00	1.028E+00	6.298E-01	2.980
TH-229	+	85.43		4.622E-01	1.572E-01	1.432E-01	1.319E-02	3.227
	+	88.47		7.505E-01	1.148E-01	8.874E-02	8.367E-03	8.457
		193.51	*	2.963E-02	3.939E-01	6.665E-01	5.657E-02	0.044
		210.85		2.204E-01	7.506E-01	1.145E+00	9.934E-02	0.192
TH-232	+	338.32		2.145E+00	4.518E-01	3.311E-01	2.887E-02	6.477
	+	911.20	*	1.950E+00	4.420E-01	2.267E-01	2.651E-02	8.605
	+	968.97		2.101E+00	6.790E-01	4.092E-01	9.989E-02	5.134
PA-234M	+	766.42		3.243E+01	2.358E+01	1.879E+01	9.598E+00	1.726
	+	1001.03	*	6.808E+00	4.630E+00	8.105E+00	8.155E-01	0.840
TH-234	+	63.29	*	3.386E+00	9.075E-01	6.594E-01	1.190E-01	5.135
	+	92.59		5.053E+00	1.305E+00	5.120E-01	1.152E-01	9.868
U-235	+	89.96		2.892E+00	9.282E-01	6.174E-01	1.540E-01	4.684
	+	93.35		3.817E+00	1.019E+00	3.880E-01	9.121E-02	9.836
		143.76	*	3.119E-02	1.528E-01	2.399E-01	4.247E-02	0.130
		163.33		2.884E-01	3.200E-01	5.550E-01	9.898E-02	0.520
	+	185.72		2.550E-01	5.652E-02	5.123E-02	4.300E-03	4.977
		205.31		1.753E-01	4.102E-01	6.296E-01	1.142E-01	0.278
NP-237	+	86.48	*	1.453E+00	3.770E-01	1.705E-01	3.909E-02	8.522
		95.86		-5.758E-01	5.649E-01	7.740E-01	1.891E-01	-0.744
U-238	+	63.29	*	3.386E+00	9.075E-01	6.594E-01	1.190E-01	5.135
	+	92.59		5.053E+00	8.041E-01	5.120E-01	4.929E-02	9.868
ANH-511	+	511.00	*	1.408E-01	7.515E-02	4.851E-02	4.651E-03	2.902

---- 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	*	-2.026E-02	3.617E-01	6.047E-01	5.923E-02	-0.034
NA-22		1274.54	*	-3.543E-02	4.971E-02	7.425E-02	6.091E-03	-0.477
NA-24		1368.63	*	3.784E+01	4.971E-02	Half-Life too short		
SC-46		889.28	*	-5.648E-04	4.125E-02	6.882E-02	6.119E-03	-0.008
	+	1120.55		3.674E-01	1.371E-01	1.621E-01	1.370E-02	2.267
V-48		944.13		-1.268E-01	1.257E+00	2.070E+00	1.815E-01	-0.061
		983.53	*	7.435E-03	1.087E-01	1.807E-01	1.581E-02	0.041
		1312.11		4.097E-02	1.179E-01	1.964E-01	1.600E-02	0.209
CR-51		320.08	*	1.156E-01	4.039E-01	6.627E-01	6.156E-02	0.174
MN-54		834.85	*	2.553E-03	4.051E-02	6.836E-02	6.625E-03	0.037
CO-56		846.77	*	5.926E-03	4.106E-02	6.968E-02	6.642E-03	0.085
		1037.84		3.252E-02	3.475E-01	5.762E-01	5.256E-02	0.056
		1238.28		2.265E-01	1.189E-01	2.126E-01	1.804E-02	1.066
		1771.35		2.291E-01	2.828E-01	4.979E-01	4.137E-02	0.460
CO-57		122.06	*	5.595E-03	1.736E-02	2.775E-02	3.189E-03	0.202
		136.47		1.916E-02	1.561E-01	2.455E-01	2.718E-02	0.078
CO-58		810.76	*	-3.489E-02	4.154E-02	6.513E-02	6.518E-03	-0.536

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
FE-59		1099.45	*	-1.082E-01	1.194E-01	1.798E-01	1.659E-02	-0.602
		1291.59		9.508E-02	1.634E-01	2.766E-01	2.599E-02	0.344
CO-60		1173.23		1.539E-03	5.402E-02	8.793E-02	7.246E-03	0.018
		1332.49	*	1.281E-02	4.050E-02	7.009E-02	5.689E-03	0.183
ZN-65		1115.54	*	5.068E-02	1.163E-01	1.723E-01	1.461E-02	0.294
SE-75		121.12		6.533E-03	9.309E-02	1.475E-01	1.973E-02	0.044
		136.00		1.876E-02	3.006E-02	4.814E-02	5.117E-03	0.390
		264.66	*	-1.669E-02	4.130E-02	5.921E-02	5.316E-03	-0.282
		279.54		-7.792E-02	1.076E-01	1.500E-01	1.385E-02	-0.519
		400.66		7.485E-02	2.723E-01	4.379E-01	4.676E-02	0.171
SR-85		514.00	*	7.993E-02	4.335E-02	7.151E-02	6.882E-03	1.118
Y-88		898.04		-1.638E-02	4.298E-02	6.938E-02	6.098E-03	-0.236
		1836.06	*	-1.376E-02	4.121E-02	6.260E-02	5.168E-03	-0.220
Y-91		1204.77	*	-1.563E+01	2.826E+01	4.374E+01	3.603E+00	-0.357
NB-94		702.65	*	1.675E-02	3.554E-02	5.931E-02	6.459E-03	0.282
		871.09		2.856E-02	3.596E-02	6.361E-02	5.839E-03	0.449
NB-95		765.81	*	1.199E-02	6.045E-02	8.609E-02	8.997E-03	0.139
NB-95M		235.69	*	8.975E-03	1.192E-01	1.781E-01	1.798E-02	0.050
ZR-95		724.19		1.902E-01	1.111E-01	1.812E-01	2.058E-02	1.050
		756.73	*	2.419E-02	8.340E-02	1.368E-01	1.543E-02	0.177
MO-99		140.51		2.327E-05	8.340E-02	Half-Life too short		
		181.07		-4.686E-05	8.340E-02	Half-Life too short		
		366.42		-3.575E-05	8.340E-02	Half-Life too short		
		739.50	*	-1.952E-05	8.340E-02	Half-Life too short		
		777.92		-2.117E-04	8.340E-02	Half-Life too short		
TC-99M		140.51	*	4.604E+18	8.340E-02	Half-Life too short		
RU-103		497.08	*	-1.892E-02	4.578E-02	7.454E-02	1.079E-02	-0.254
	+	610.33		2.059E+01	4.286E+00	3.707E+00	6.484E-01	5.552
RH-106		621.93	*	-6.752E-02	3.202E-01	5.157E-01	7.589E-02	-0.131
		1050.41		1.250E+00	2.672E+00	4.566E+00	3.949E-01	0.274
RU-106		621.93	*	-6.752E-02	3.201E-01	5.157E-01	5.533E-02	-0.131
		1050.41		1.250E+00	2.672E+00	4.566E+00	3.949E-01	0.274
AG-108M		433.94	*	-8.068E-03	2.977E-02	4.965E-02	4.396E-03	-0.162
		614.28		-6.215E-03	3.966E-02	5.607E-02	6.108E-03	-0.111
		722.91		-3.183E-03	4.368E-02	6.099E-02	6.708E-03	-0.052
AG-110M		657.76	*	6.174E-02	4.233E-02	6.779E-02	7.604E-03	0.911
		677.62		-2.643E-01	3.423E-01	5.215E-01	5.836E-02	-0.507
		706.68		-7.339E-02	2.392E-01	3.778E-01	4.181E-02	-0.194
		763.94		5.173E-02	1.937E-01	2.787E-01	2.972E-02	0.186
		884.68		-6.688E-03	4.889E-02	8.074E-02	7.454E-03	-0.083
		937.49		-1.692E-01	1.248E-01	1.791E-01	1.625E-02	-0.945
		1384.29		-4.090E-02	1.910E-01	2.651E-01	2.237E-02	-0.154
		1505.03		-1.262E-01	3.073E-01	4.821E-01	4.012E-02	-0.262
SN-113		391.69	*	-7.600E-02	4.908E-02	7.042E-02	5.799E-03	-1.079
CD-115		260.90		-8.958E-04	4.908E-02	Half-Life too short		
		492.35		1.007E-04	4.908E-02	Half-Life too short		
		527.90	*	-5.960E-06	4.908E-02	Half-Life too short		
SN-117M		156.02		1.831E-01	2.462E+00	3.822E+00	3.450E-01	0.048
		158.56	*	-2.796E-03	5.726E-02	9.370E-02	8.248E-03	-0.030

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-123M		159.00	*	-3.217E-03	2.048E-02	3.490E-02	3.076E-03	-0.092
SB-124		602.73		-2.076E-02	4.762E-02	6.563E-02	6.931E-03	-0.316
		645.85		-2.371E-01	5.932E-01	9.244E-01	1.046E-01	-0.257
		722.78		-7.739E-02	4.751E-01	6.567E-01	7.182E-02	-0.118
		1690.97	*	8.400E-03	9.769E-02	1.621E-01	1.414E-02	0.052
SB-125		427.87	*	1.655E-02	9.404E-02	1.605E-01	1.388E-02	0.103
	+	463.37		8.660E-01	3.855E-01	5.826E-01	5.596E-02	1.487
		600.60		-2.079E-02	1.785E-01	2.908E-01	3.219E-02	-0.072
		635.95		-8.877E-02	3.049E-01	4.878E-01	5.566E-02	-0.182
TE-125M		109.28	*	1.057E+00	6.785E+00	1.087E+01	1.323E+00	0.097
I-126		388.63		3.907E-01	2.486E-01	4.258E-01	3.410E-02	0.918
		666.33	*	5.330E-01	3.580E-01	5.790E-01	6.387E-02	0.921
		753.82		9.668E-01	2.916E+00	4.798E+00	5.063E-01	0.202
SB-126		414.70		4.154E-02	1.220E-01	1.872E-01	1.553E-02	0.222
		666.50		1.511E-01	1.293E-01	2.037E-01	2.247E-02	0.742
		695.00		-3.182E-02	1.226E-01	1.946E-01	2.126E-02	-0.164
		697.00		-2.433E-01	4.141E-01	6.384E-01	6.970E-02	-0.381
		720.70	*	4.756E-02	2.352E-01	3.570E-01	3.852E-02	0.133
		856.80		7.585E-02	7.886E-01	1.163E+00	1.092E-01	0.065
SB-127		252.40		1.749E+00	1.316E+01	2.183E+01	9.240E+00	0.080
		473.00		2.854E+00	6.496E+00	1.112E+01	1.696E+00	0.257
		685.70	*	-3.548E+00	5.179E+00	7.898E+00	1.214E+00	-0.449
		783.70		2.186E+01	1.547E+01	2.664E+01	4.170E+00	0.820
I-131		80.19		-7.702E-01	4.371E+00	6.543E+00	5.855E-01	-0.118
		284.31		2.398E-01	2.291E+00	3.766E+00	3.544E-01	0.064
		364.49	*	5.728E-02	2.045E-01	3.320E-01	2.973E-02	0.173
		636.99		1.496E+00	3.182E+00	5.352E+00	6.049E-01	0.280
TE-132		49.72		1.357E+01	1.265E+01	2.036E+01	2.683E+00	0.667
		111.76		2.573E+01	1.056E+02	1.695E+02	2.509E+01	0.152
		116.30		-4.594E+01	9.362E+01	1.451E+02	2.181E+01	-0.317
		228.16	*	1.665E+00	2.740E+00	4.649E+00	8.190E-01	0.358
BA-133		81.00		-2.400E-02	4.803E-02	7.075E-02	1.108E-02	-0.339
	+	276.40		8.104E-01	4.514E-01	5.568E-01	7.962E-02	1.456
		302.85		2.249E-02	1.166E-01	1.914E-01	2.539E-02	0.117
		356.01	*	1.382E-02	4.220E-02	6.161E-02	7.943E-03	0.224
		383.85		-1.451E-02	2.871E-01	4.555E-01	5.497E-02	-0.032
I-133		529.87	*	1.590E+00	2.871E-01	Half-Life too short		
		875.33		-5.220E+01	2.871E-01	Half-Life too short		
		1298.22		-3.121E+01	2.871E-01	Half-Life too short		
CS-134		563.25		-1.623E-03	3.885E-01	6.112E-01	6.261E-02	-0.003
		569.33		1.870E-01	2.054E-01	3.561E-01	3.680E-02	0.525
		604.72		1.165E-02	3.506E-02	5.204E-02	5.514E-03	0.224
		795.86	*	1.567E-01	5.425E-02	1.004E-01	1.025E-02	1.560
		801.95		-4.244E-01	4.220E-01	6.414E-01	6.498E-02	-0.662
		1365.19		-2.862E-01	1.158E+00	1.877E+00	1.612E-01	-0.152
CS-135		268.22	*	2.591E-01	1.418E-01	2.267E-01	2.322E-02	1.143
I-135		546.56		8.524E+17	1.418E-01	Half-Life too short		
		836.80		2.204E+18	1.418E-01	Half-Life too short		
		1038.76		6.851E+17	1.418E-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
		1131.51		-5.834E+17	1.418E-01	Half-Life too short		
		1260.41	*	-8.479E+16	1.418E-01	Half-Life too short		
		1457.56		1.061E+20	1.418E-01	Half-Life too short		
		1678.03		7.130E+17	1.418E-01	Half-Life too short		
		1791.20		-5.646E+17	1.418E-01	Half-Life too short		
CS-136	+	153.25		1.760E+00	1.241E+00	1.565E+00	1.694E-01	1.124
		176.60		-1.022E-01	5.231E-01	8.829E-01	8.127E-02	-0.116
		273.65		4.201E-01	7.664E-01	9.378E-01	9.045E-02	0.448
		340.55		2.379E-02	2.096E-01	3.028E-01	2.734E-02	0.079
		818.51		4.220E-02	1.087E-01	1.882E-01	1.865E-02	0.224
		1048.07	*	7.930E-03	1.688E-01	2.786E-01	2.514E-02	0.028
		1235.36		-4.523E-01	1.095E+00	1.718E+00	1.973E-01	-0.263
CE-139		165.86	*	-1.007E-02	2.248E-02	3.781E-02	3.074E-03	-0.266
BA-140		162.66		6.564E-01	8.826E-01	1.540E+00	1.389E-01	0.426
		304.85		2.913E-01	1.855E+00	2.717E+00	7.977E-01	0.107
		423.72		1.046E+00	3.027E+00	5.177E+00	1.700E+00	0.202
		537.26	*	-1.069E-01	3.937E-01	6.390E-01	2.189E-01	-0.167
LA-140	+	328.76		1.410E+00	5.780E-01	7.429E-01	6.893E-02	1.897
		487.02		1.582E-01	2.054E-01	3.574E-01	3.498E-02	0.443
		815.77		-1.956E-02	4.875E-01	8.184E-01	8.854E-02	-0.024
		1596.21	*	-8.162E-02	1.538E-01	2.358E-01	1.972E-02	-0.346
CE-141		145.44	*	-2.736E-03	5.536E-02	8.602E-02	8.625E-03	-0.032
CE-143		57.36		-1.381E-03	5.536E-02	Half-Life too short		
		293.27	*	1.972E-02	5.536E-02	Half-Life too short		
		664.57		7.905E-02	5.536E-02	Half-Life too short		
		721.93		2.132E-03	5.536E-02	Half-Life too short		
CE-144		80.12		-3.147E-01	1.267E+00	1.892E+00	1.669E-01	-0.166
		133.52	*	-3.401E-02	1.462E-01	2.270E-01	3.763E-02	-0.150
PM-144		476.78		-5.166E-06	6.677E-02	1.120E-01	1.105E-02	0.000
		618.01		-1.359E-03	3.225E-02	5.264E-02	5.734E-03	-0.026
		696.49	*	-1.861E-02	3.546E-02	5.497E-02	6.006E-03	-0.339
PR-144		696.51	*	-1.410E+00	2.663E+00	4.127E+00	4.507E-01	-0.342
		1489.16		8.465E+00	1.344E+01	2.409E+01	2.002E+00	0.351
PM-146		453.88	*	4.482E-03	4.272E-02	7.234E-02	7.799E-03	0.062
		633.25		5.659E-01	1.585E+00	2.625E+00	1.017E+00	0.216
		735.93		-8.954E-02	1.659E-01	2.527E-01	7.261E-02	-0.354
		747.24		-6.333E-02	1.042E-01	1.583E-01	2.507E-02	-0.400
ND-147	+	91.11		1.494E+00	3.378E-01	4.135E-01	4.220E-02	3.612
		319.41		2.401E-01	4.826E+00	7.831E+00	6.936E-01	0.031
		531.02	*	9.862E-01	9.584E-01	1.663E+00	2.607E-01	0.593
PM-149		285.90	*	-6.744E-04	9.584E-01	Half-Life too short		
EU-152		121.78		4.125E-03	4.939E-02	7.828E-02	9.751E-03	0.053
		244.70		1.722E-01	2.752E-01	4.222E-01	3.758E-02	0.408
		344.28	*	1.292E-02	9.027E-02	1.462E-01	1.340E-02	0.088
		778.90		-1.846E-01	2.660E-01	3.980E-01	4.111E-02	-0.464
	+	964.08		8.166E-01	4.817E-01	6.630E-01	5.809E-02	1.232
		1085.87		-1.020E-01	4.243E-01	6.799E-01	5.820E-02	-0.150
		1112.07		7.132E-02	3.488E-01	5.790E-01	4.910E-02	0.123
		1408.01		1.826E-01	1.907E-01	3.495E-01	2.875E-02	0.522

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153		69.67		-3.143E-01	6.917E-01	1.123E+00	9.206E-02	-0.280
		97.43	*	-4.870E-02	5.096E-02	7.872E-02	7.776E-03	-0.619
		103.18		-7.707E-02	7.095E-02	1.083E-01	1.105E-02	-0.712
EU-154		123.07		-9.792E-03	3.506E-02	5.467E-02	7.439E-03	-0.179
		723.31		1.300E-01	1.895E-01	2.858E-01	3.283E-02	0.455
		873.19		-7.418E-03	2.942E-01	4.912E-01	6.034E-02	-0.015
		996.26		1.810E-01	4.191E-01	6.304E-01	1.105E-01	0.287
		1004.73		2.208E-01	2.390E-01	3.794E-01	4.445E-02	0.582
		1274.44	*	-7.481E-02	1.376E-01	2.091E-01	2.312E-02	-0.358
EU-155	+	86.55		5.920E-01	9.087E-02	1.118E-01	1.048E-02	5.295
		105.31	*	8.447E-02	6.806E-02	1.126E-01	1.174E-02	0.750
TB-160	+	86.79		1.681E+00	2.572E-01	3.323E-01	3.094E-02	5.060
		197.04		-3.627E-01	4.638E-01	7.591E-01	6.475E-02	-0.478
		215.65		1.435E-01	6.329E-01	1.068E+00	9.306E-02	0.134
	+	298.57		4.632E-01	1.431E-01	1.912E-01	1.706E-02	2.422
		879.36	*	4.320E-02	1.550E-01	2.647E-01	2.396E-02	0.163
		962.29		6.836E-01	7.293E-01	1.140E+00	9.987E-02	0.600
		966.15		1.408E+00	3.203E-01	6.054E-01	5.303E-02	2.326
		1177.93		-1.264E-01	4.475E-01	7.096E-01	5.848E-02	-0.178
		1271.85		4.028E-01	8.623E-01	1.448E+00	1.187E-01	0.278
HO-166M		80.57		-3.297E-02	1.366E-01	2.038E-01	1.805E-02	-0.162
	+	184.41		2.026E-01	4.490E-02	4.891E-02	4.097E-03	4.141
		280.46		-3.897E-02	7.989E-02	1.133E-01	1.010E-02	-0.344
	+	410.95		5.577E-01	4.280E-01	4.243E-01	3.496E-02	1.314
		711.68	*	2.060E-02	6.553E-02	1.082E-01	1.173E-02	0.190
		752.31		-1.178E-01	3.016E-01	4.689E-01	4.954E-02	-0.251
		810.29		-7.015E-02	6.044E-02	9.209E-02	9.203E-03	-0.762
TA-182		67.75		1.433E-02	4.249E-02	7.066E-02	5.727E-03	0.203
		100.11		1.247E-02	1.143E-01	1.839E-01	1.845E-02	0.068
		152.43		4.401E-02	2.910E-01	4.178E-01	3.898E-02	0.105
		222.11		-1.785E-01	2.875E-01	4.679E-01	4.104E-02	-0.381
	+	1121.30		1.001E+00	3.738E-01	4.408E-01	3.724E-02	2.272
		1189.05		1.615E-01	3.687E-01	6.186E-01	5.098E-02	0.261
		1221.41	*	2.610E-02	2.528E-01	4.120E-01	3.392E-02	0.063
		1231.02		2.315E-01	5.890E-01	9.792E-01	8.057E-02	0.236
IR-192	+	295.96		1.775E+00	2.211E-01	3.103E-01	2.788E-02	5.723
		308.46		1.945E-02	9.067E-02	1.420E-01	1.270E-02	0.137
		316.51	*	-1.634E-02	3.487E-02	5.435E-02	4.831E-03	-0.301
		468.07		2.021E-02	7.917E-02	1.304E-01	1.257E-02	0.155
HG-203		70.83		-2.500E-01	6.412E-01	9.606E-01	1.524E-01	-0.260
		72.87		4.185E-01	4.010E-01	6.212E-01	9.566E-02	0.674
		279.20	*	-1.341E-02	3.973E-02	5.691E-02	5.196E-03	-0.236
BI-207		72.81		8.329E-02	8.215E-02	1.283E-01	1.074E-02	0.649
	+	74.97		8.831E-01	1.014E-01	1.272E-01	1.081E-02	6.940
		569.70		3.905E-02	3.148E-02	5.541E-02	5.674E-03	0.705
		1063.66	*	8.879E-03	5.891E-02	9.786E-02	8.434E-03	0.091
		1770.23		-3.391E-01	6.492E-01	7.846E-01	6.519E-02	-0.432
PB-211		404.85	*	-5.880E-01	8.683E-01	1.088E+00	5.258E-01	-0.540
		427.09		-2.336E-01	1.577E+00	2.645E+00	1.223E+00	-0.088

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		832.01		-1.532E-01	1.027E+00	1.703E+00	8.862E-01	-0.090
BI-212	+	727.33	*	3.053E+00	9.887E-01	1.319E+00	1.848E-01	2.315
		785.37		3.321E+00	3.684E+00	6.246E+00	6.411E-01	0.532
		1620.50		9.497E-01	2.641E+00	4.553E+00	3.808E-01	0.209
RN-219	+	271.23		1.337E+00	4.458E-01	3.836E-01	4.036E-02	3.486
		401.81	*	1.661E-01	4.199E-01	6.787E-01	9.895E-02	0.245
RA-223		81.07		-5.778E-02	1.085E-01	1.599E-01	1.421E-02	-0.361
	+	83.79		2.751E-01	9.354E-02	1.146E-01	1.041E-02	2.400
		94.87		2.988E-01	2.568E-01	3.984E-01	3.881E-02	0.750
		144.24		1.728E-01	5.115E-01	8.069E-01	8.763E-02	0.214
	+	154.21		5.412E-01	3.809E-01	4.923E-01	4.903E-02	1.099
	+	269.46		1.039E+00	3.420E-01	3.101E-01	2.822E-02	3.351
		323.87	*	-3.184E-01	6.359E-01	8.809E-01	1.536E-01	-0.361
	+	338.28		8.511E+00	1.932E+00	2.304E+00	2.797E-01	3.694
AC-227		79.69		-3.989E-01	6.142E-01	8.977E-01	1.555E-01	-0.444
		235.96		-5.810E-03	1.333E-01	1.981E-01	2.089E-02	-0.029
		256.23	*	-2.306E-02	2.089E-01	3.430E-01	4.211E-02	-0.067
	+	299.98		3.371E+00	1.087E+00	1.528E+00	1.973E-01	2.206
		304.50		8.757E-01	1.471E+00	2.210E+00	3.687E-01	0.396
		334.37		-1.681E+00	1.805E+00	2.400E+00	3.759E-01	-0.700
TH-227		79.80		-4.726E-01	8.139E-01	1.191E+00	2.602E-01	-0.397
		235.96		-5.810E-03	1.333E-01	1.981E-01	1.975E-02	-0.029
		256.23	*	-2.306E-02	2.089E-01	3.430E-01	4.736E-02	-0.067
	+	299.98		3.371E+00	1.087E+00	1.528E+00	1.973E-01	2.206
		304.50		8.757E-01	1.471E+00	2.210E+00	3.687E-01	0.396
		334.37		-1.681E+00	1.805E+00	2.400E+00	3.759E-01	-0.700
PA-231		283.69	*	2.376E-01	1.191E+00	1.966E+00	2.903E-01	0.121
	+	301.36		2.165E+00	6.940E-01	9.078E-01	1.123E-01	2.385
TH-231		81.07		-5.778E-02	1.085E-01	1.599E-01	1.421E-02	-0.361
	+	83.79		2.751E-01	9.354E-02	1.146E-01	1.041E-02	2.400
		94.87		2.988E-01	2.568E-01	3.984E-01	3.881E-02	0.750
		144.24		1.728E-01	5.115E-01	8.069E-01	8.763E-02	0.214
	+	154.21		5.412E-01	3.809E-01	4.923E-01	4.903E-02	1.099
	+	269.46		1.039E+00	3.420E-01	3.101E-01	2.822E-02	3.351
		323.87	*	-3.184E-01	6.359E-01	8.809E-01	1.536E-01	-0.361
	+	338.28		8.511E+00	1.932E+00	2.304E+00	2.797E-01	3.694
PA-233	+	300.13		1.525E+00	5.057E-01	6.912E-01	1.037E-01	2.207
		311.90	*	-1.712E-02	5.772E-02	9.221E-02	8.416E-03	-0.186
		340.48		1.403E-01	6.098E-01	8.864E-01	2.136E-01	0.158
PA-234		94.67		2.252E-01	9.969E-02	1.551E-01	2.048E-02	1.452
		98.44		7.654E-02	6.871E-02	9.054E-02	5.071E-02	0.845
		111.00		-4.765E-02	1.188E-01	1.859E-01	2.538E-02	-0.256
		131.20		-1.847E-02	8.204E-02	1.172E-01	1.278E-02	-0.158
		569.50		3.358E-01	2.784E-01	4.895E-01	5.012E-02	0.686
		733.00		1.353E-01	4.662E-01	6.736E-01	1.555E-01	0.201
		880.51		1.372E-01	2.905E-01	5.031E-01	4.544E-02	0.273
		883.24		-1.841E-01	3.233E-01	4.743E-01	3.190E-01	-0.388
		926.50		-9.378E-02	1.759E-01	2.763E-01	6.997E-02	-0.339
		946.00	*	-1.048E-01	3.071E-01	4.939E-01	9.300E-02	-0.212

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		949.00		3.405E-01	4.341E-01	7.670E-01	6.723E-02	0.444
NP-239		99.53		1.126E-01	1.002E-01	1.660E-01	1.659E-02	0.679
		103.37		-6.832E-02	6.327E-02	9.656E-02	9.869E-03	-0.708
		106.12		3.621E-02	5.336E-02	8.709E-02	9.047E-03	0.416
		117.23	*	-1.140E-01	2.680E-01	4.171E-01	4.642E-02	-0.273
		228.18		9.905E-02	1.629E-01	2.776E-01	2.447E-02	0.357
	+	277.60		4.002E-01	2.184E-01	2.687E-01	2.397E-02	1.489
AM-241		59.54	*	1.613E-02	4.481E-02	6.986E-02	5.926E-03	0.231
CM-247		278.00		1.442E+00	7.117E-01	1.144E+00	1.020E-01	1.261
		287.50		3.940E-02	1.040E+00	1.702E+00	1.519E-01	0.023
		402.40	*	1.747E-02	3.771E-02	6.126E-02	4.969E-03	0.285
CF-249		252.80		7.583E-02	7.708E-01	1.279E+00	1.141E-01	0.059
		333.37		7.242E-02	1.820E-01	2.683E-01	2.350E-02	0.270
		388.16	*	4.613E-02	4.043E-02	6.797E-02	5.449E-03	0.679
CF-251		177.52	*	7.190E-02	9.198E-02	1.601E-01	1.326E-02	0.449
		227.38		-1.647E-01	2.719E-01	4.414E-01	3.888E-02	-0.373
		285.41		-1.898E+00	1.829E+00	2.827E+00	2.523E-01	-0.672

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]G248521009      *
* Acquisition date : 19-MAR-2010 23:15:00 Detector SN#    :                 *
* Detector ID        : GAM21               Sensitivity     : 5.000          *
* Geometry           : CAN                 Energy tolerance: 1.500          *
* Elapsed live time:    0 04:00:00.00      Abundance limit : 75.000         *
* Elapsed real time:    0 04:00:50.60      Half life ratio :  8.000         *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248521009           Analyst initials: MXR1          *
* Batch Number       : 961099               Sample Quantity : 1.0626E+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	3.166E+01	3.193E+00	6.150E-01	0.000E+00
CD-109	5.036E+00	7.551E-01	5.997E-01	0.000E+00
SN-126	4.868E-01	7.299E-02	5.787E-02	0.000E+00
BA-137M	1.916E+00	2.345E-01	6.621E-02	0.000E+00
CS-137	2.024E+00	2.479E-01	6.995E-02	0.000E+00
TL-208	6.997E-01	1.106E-01	5.521E-02	0.000E+00
PB-210	4.249E+00	7.080E-01	5.287E-01	0.000E+00
BI-211	5.660E+00	6.826E-01	2.948E-01	0.000E+00
PB-212	2.220E+00	2.394E-01	7.830E-02	0.000E+00
BI-214	1.750E+00	2.811E-01	1.119E-01	0.000E+00
PB-214	2.054E+00	2.715E-01	1.073E-01	0.000E+00
RA-224	6.999E+00	1.430E+00	8.416E-01	0.000E+00
RA-226	1.750E+00	2.811E-01	1.119E-01	0.000E+00
AC-228	1.950E+00	4.331E-01	2.257E-01	0.000E+00
RA-228	1.950E+00	4.331E-01	2.257E-01	0.000E+00
TH-228	2.220E+00	2.394E-01	7.830E-02	0.000E+00
TH-229	2.963E-02	3.860E-01	6.694E-01	0.000E+00
TH-232	1.950E+00	4.331E-01	2.257E-01	0.000E+00
PA-234M	6.808E+00	4.537E+00	8.068E+00	0.000E+00
TH-234	3.386E+00	8.894E-01	6.663E-01	0.000E+00
U-235	3.119E-02	1.498E-01	2.413E-01	0.000E+00
NP-237	1.453E+00	3.695E-01	1.720E-01	0.000E+00
U-238	3.386E+00	8.894E-01	6.663E-01	0.000E+00
ANH-511	1.408E-01	7.364E-02	4.847E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)		
BE-7	-2.026E-02	3.544E-01	6.044E-01	0.000E+00	NOT IDENT.
NA-22	-3.543E-02	4.872E-02	7.380E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.761E+09	0.000E+00	0.000E+00	SHORT HLIF

SC-46	-5.648E-04	4.043E-02	6.855E-02	0.000E+00	FAIL ABUN
V-48	7.435E-03	1.065E-01	1.799E-01	0.000E+00	NOT IDENT.
CR-51	1.156E-01	3.958E-01	6.638E-01	0.000E+00	NOT IDENT.
MN-54	2.553E-03	3.970E-02	6.811E-02	0.000E+00	NOT IDENT.
CO-56	5.926E-03	4.024E-02	6.942E-02	0.000E+00	NOT IDENT.
CO-57	5.595E-03	1.701E-02	2.795E-02	0.000E+00	NOT IDENT.
CO-58	-3.489E-02	4.071E-02	6.491E-02	0.000E+00	NOT IDENT.
FE-59	-1.082E-01	1.170E-01	1.789E-01	0.000E+00	NOT IDENT.
CO-60	1.281E-02	3.969E-02	6.965E-02	0.000E+00	NOT IDENT.
ZN-65	5.068E-02	1.140E-01	1.714E-01	0.000E+00	NOT IDENT.
SE-75	-1.669E-02	4.047E-02	5.937E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.249E-02	7.145E-02	0.000E+00	NOT IDENT.
Y-88	-1.376E-02	4.039E-02	6.210E-02	0.000E+00	NOT IDENT.
Y-91	-1.563E+01	2.770E+01	4.349E+01	0.000E+00	NOT IDENT.
NB-94	1.675E-02	3.483E-02	5.915E-02	0.000E+00	NOT IDENT.
NB-95	1.199E-02	5.924E-02	8.582E-02	0.000E+00	NOT IDENT.
NB-95M	8.975E-03	1.168E-01	1.787E-01	0.000E+00	NOT IDENT.
ZR-95	2.419E-02	8.173E-02	1.364E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	8.863E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	2.092E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.892E-02	4.486E-02	7.449E-02	0.000E+00	FAIL ABUN
RH-106	-6.752E-02	3.138E-01	5.147E-01	0.000E+00	NOT IDENT.
RU-106	-6.752E-02	3.137E-01	5.147E-01	0.000E+00	NOT IDENT.
AG-108M	-8.068E-03	2.917E-02	4.966E-02	0.000E+00	NOT IDENT.
AG-110M	6.174E-02	4.149E-02	6.763E-02	0.000E+00	NOT IDENT.
SN-113	-7.600E-02	4.810E-02	7.046E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.156E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-2.796E-03	5.611E-02	9.422E-02	0.000E+00	NOT IDENT.
TE-123M	-3.217E-03	2.007E-02	3.509E-02	0.000E+00	NOT IDENT.
SB-124	8.400E-03	9.574E-02	1.609E-01	0.000E+00	NOT IDENT.
SB-125	1.655E-02	9.216E-02	1.605E-01	0.000E+00	FAIL ABUN
TE-125M	1.057E+00	6.649E+00	1.095E+01	0.000E+00	NOT IDENT.
I-126	5.330E-01	3.508E-01	5.776E-01	0.000E+00	NOT IDENT.
SB-126	4.756E-02	2.305E-01	3.560E-01	0.000E+00	NOT IDENT.
SB-127	-3.548E+00	5.075E+00	7.878E+00	0.000E+00	NOT IDENT.
I-131	5.728E-02	2.004E-01	3.324E-01	0.000E+00	NOT IDENT.
TE-132	1.665E+00	2.685E+00	4.665E+00	0.000E+00	NOT IDENT.
BA-133	1.382E-02	4.136E-02	6.168E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	2.316E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.316E-02	1.001E-01	0.000E+00	NOT IDENT.
CS-135	0.000E+00	1.390E-01	2.273E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	9.615E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	7.930E-03	1.655E-01	2.772E-01	0.000E+00	FAIL ABUN
CE-139	-1.007E-02	2.203E-02	3.801E-02	0.000E+00	NOT IDENT.
BA-140	-1.069E-01	3.858E-01	6.383E-01	0.000E+00	NOT IDENT.
LA-140	-8.162E-02	1.507E-01	2.341E-01	0.000E+00	FAIL ABUN
CE-141	-2.736E-03	5.426E-02	8.654E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	6.794E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.401E-02	1.433E-01	2.285E-01	0.000E+00	NOT IDENT.
PM-144	-1.861E-02	3.475E-02	5.483E-02	0.000E+00	NOT IDENT.
PR-144	-1.410E+00	2.610E+00	4.116E+00	0.000E+00	NOT IDENT.
PM-146	4.482E-03	4.187E-02	7.232E-02	0.000E+00	NOT IDENT.
ND-147	9.862E-01	9.392E-01	1.661E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	7.616E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	1.292E-02	8.846E-02	1.464E-01	0.000E+00	FAIL ABUN
GD-153	-4.870E-02	4.994E-02	7.936E-02	0.000E+00	NOT IDENT.
EU-154	-7.481E-02	1.348E-01	2.078E-01	0.000E+00	NOT IDENT.
EU-155	8.447E-02	6.670E-02	1.135E-01	0.000E+00	FAIL ABUN
TB-160	4.320E-02	1.519E-01	2.637E-01	0.000E+00	FAIL ABUN
HO-166M	2.060E-02	6.422E-02	1.079E-01	0.000E+00	FAIL ABUN
TA-182	2.610E-02	2.478E-01	4.097E-01	0.000E+00	FAIL ABUN
IR-192	-1.634E-02	3.417E-02	5.445E-02	0.000E+00	FAIL ABUN
HG-203	-1.341E-02	3.893E-02	5.705E-02	0.000E+00	NOT IDENT.
BI-207	8.879E-03	5.773E-02	9.737E-02	0.000E+00	FAIL ABUN
PB-211	-5.880E-01	8.509E-01	1.089E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.689E-01	1.315E+00	0.000E+00	FAIL ABUN
RN-219	1.661E-01	4.115E-01	6.790E-01	0.000E+00	FAIL ABUN
RA-223	-3.184E-01	6.232E-01	8.823E-01	0.000E+00	FAIL ABUN
AC-227	-2.306E-02	2.047E-01	3.440E-01	0.000E+00	FAIL ABUN
TH-227	-2.306E-02	2.047E-01	3.440E-01	0.000E+00	FAIL ABUN
PA-231	2.376E-01	1.167E+00	1.970E+00	0.000E+00	FAIL ABUN
TH-231	-3.184E-01	6.232E-01	8.823E-01	0.000E+00	FAIL ABUN
PA-233	-1.712E-02	5.657E-02	9.238E-02	0.000E+00	FAIL ABUN
PA-234	-1.048E-01	3.010E-01	4.917E-01	0.000E+00	NOT IDENT.
NP-239	-1.140E-01	2.627E-01	4.201E-01	0.000E+00	FAIL ABUN
AM-241	1.613E-02	4.391E-02	7.062E-02	0.000E+00	NOT IDENT.
CM-247	1.747E-02	3.696E-02	6.129E-02	0.000E+00	NOT IDENT.
CF-249	4.613E-02	3.962E-02	6.801E-02	0.000E+00	NOT IDENT.

CF-251	7.190E-02	9.014E-02	1.609E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:16:19.66

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*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521009.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 23:15:00
Sample ID         : G248521009           Sample quantity  : 1.06260E+02 GRAM
Detector name     : GAM21                Detector geometry: CAN
Elapsed live time: 0 04:00:00.00         Elapsed real time: 0 04:00:50.60  0.4%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               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	1377	10.66*	7.204E-01	3.166E+01	3.166E+01	10.29
CD-109	88.03	830	3.70*	8.136E+00	4.868E+00	5.036E+00	15.30
SN-126	64.28	580	9.60	8.182E+00	1.305E+00	1.305E+00	24.73
	86.94	830	8.90	8.136E+00	2.024E+00	2.024E+00	43.25
	87.57	830	37.00*	8.136E+00	4.868E-01	4.868E-01	15.30
BA-137M	661.66	1522	89.90*	1.562E+00	1.914E+00	1.916E+00	12.49
CS-137	661.66	1522	85.10*	1.562E+00	2.022E+00	2.024E+00	12.50
TL-208	277.37	125	6.60	3.813E+00	8.756E-01	8.756E-01	55.32
	583.19	599	85.00*	1.778E+00	6.997E-01	6.997E-01	16.12
	860.56	66	12.50	1.201E+00	7.763E-01	7.763E-01	60.52
PB-210	46.54	750	4.25*	7.354E+00	4.241E+00	4.249E+00	17.00
BI-211	72.87	------	1.23	8.278E+00	------	Line Not Found	------
	351.06	1241	12.92*	2.997E+00	5.660E+00	5.660E+00	12.30
PB-212	74.82	1475	10.28	8.275E+00	3.063E+00	3.063E+00	15.05
	77.11	2433	17.10	8.264E+00	3.041E+00	3.041E+00	9.96
	238.63	2404	43.60*	4.387E+00	2.220E+00	2.220E+00	11.01
	300.09	201	3.30	3.519E+00	3.064E+00	3.064E+00	31.47
BI-214	609.32	766	45.49*	1.699E+00	1.750E+00	1.750E+00	16.38
	1120.29	160	14.92	9.290E-01	2.043E+00	2.043E+00	37.92
	1764.49	90	15.30	5.983E-01	1.738E+00	1.738E+00	31.81
PB-214	74.82	1475	5.80	8.275E+00	5.428E+00	5.429E+00	13.96
	77.11	2433	9.70	8.264E+00	5.361E+00	5.361E+00	12.93
	242.00	704	7.25	4.336E+00	3.958E+00	3.958E+00	21.63
	295.22	836	18.42	3.577E+00	2.240E+00	2.240E+00	14.02
	351.93	1241	35.60*	2.997E+00	2.054E+00	2.054E+00	13.48
RA-224	240.99	704	4.10*	4.336E+00	6.999E+00	6.999E+00	20.84
RA-226	609.32	766	45.49*	1.699E+00	1.750E+00	1.750E+00	16.38
	1120.29	160	14.92	9.290E-01	2.043E+00	2.043E+00	37.92
	1764.49	90	15.30	5.983E-01	1.738E+00	1.738E+00	31.81
AC-228	338.32	427	11.27	3.121E+00	2.145E+00	2.145E+00	45.93
	911.20	324	25.80*	1.136E+00	1.950E+00	1.950E+00	22.66
	968.97	201	15.80	1.070E+00	2.101E+00	2.101E+00	32.32

Sample ID : G248521009 Acquisition date : 19-MAR-2010 23:15:00

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	427	11.27	3.121E+00	2.145E+00	2.145E+00	45.93
	911.20	324	25.80*	1.136E+00	1.950E+00	1.950E+00	22.66
	968.97	201	15.80	1.070E+00	2.101E+00	2.101E+00	32.32
TH-228	74.82	1475	10.28	8.275E+00	3.063E+00	3.063E+00	11.54
	77.11	2433	17.10	8.264E+00	3.041E+00	3.041E+00	9.96
	238.63	2404	43.60*	4.387E+00	2.220E+00	2.220E+00	11.01
	300.09	201	3.30	3.519E+00	3.064E+00	3.064E+00	68.02
TH-229	85.43	315	14.70	8.186E+00	4.622E-01	4.622E-01	34.00
	88.47	830	24.00	8.136E+00	7.505E-01	7.505E-01	15.30
	193.51	------	4.41*	5.271E+00	------	Line Not Found	------
	210.85	------	2.80	4.900E+00	------	Line Not Found	------
TH-232	338.32	427	11.27	3.121E+00	2.145E+00	2.145E+00	21.07
	911.20	324	25.80*	1.136E+00	1.950E+00	1.950E+00	22.66
	968.97	201	15.80	1.070E+00	2.101E+00	2.101E+00	32.32
PA-234M	766.42	79	0.32	1.345E+00	3.243E+01	3.243E+01	72.70
	1001.03	34	0.84*	1.036E+00	6.808E+00	6.808E+00	68.00
TH-234	63.29	580	3.70*	8.182E+00	3.386E+00	3.386E+00	26.81
	92.59	971	4.23	8.024E+00	5.053E+00	5.053E+00	25.82
U-235	89.96	459	3.47	8.085E+00	2.892E+00	2.892E+00	32.09
	93.35	971	5.60	8.024E+00	3.817E+00	3.817E+00	26.69
	143.76	------	10.96*	6.567E+00	------	Line Not Found	------
	163.33	------	5.08	6.017E+00	------	Line Not Found	------
	185.72	450	57.20	5.450E+00	2.550E-01	2.550E-01	22.17
	205.31	------	5.01	5.015E+00	------	Line Not Found	------
NP-237	86.48	830	12.40*	8.136E+00	1.453E+00	1.453E+00	25.96
	95.86	------	2.68	7.953E+00	------	Line Not Found	------
U-238	63.29	580	3.70*	8.182E+00	3.386E+00	3.386E+00	26.81
	92.59	971	4.23	8.024E+00	5.053E+00	5.053E+00	15.91
ANH-511	511.00	162	100.00*	2.038E+00	1.408E-01	1.408E-01	53.38

Flag: "*" = Keyline

Sample ID : G248521009 Acquisition date : 19-MAR-2010 23:15:00

Total number of lines in spectrum 40
Number of unidentified lines 5
Number of lines tentatively identified by NID 35 87.50%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.166E+01	3.166E+01	0.326E+01	10.29	
CD-109	461.40D	1.03	4.868E+00	5.036E+00	0.770E+00	15.30	
SN-126	2.30E+05Y	1.00	4.868E-01	4.868E-01	0.745E-01	15.30	
BA-137M	30.08Y	1.00	1.914E+00	1.916E+00	0.239E+00	12.49	
CS-137	30.08Y	1.00	2.022E+00	2.024E+00	0.253E+00	12.50	
TL-208	1.41E+10Y	1.00	6.997E-01	6.997E-01	1.128E-01	16.12	
PB-210	22.20Y	1.00	4.241E+00	4.249E+00	0.722E+00	17.00	
BI-211	7.04E+08Y	1.00	5.660E+00	5.660E+00	0.696E+00	12.30	
PB-212	1.41E+10Y	1.00	2.220E+00	2.220E+00	0.244E+00	11.01	
BI-214	1600.00Y	1.00	1.750E+00	1.750E+00	0.287E+00	16.38	
PB-214	1600.00Y	1.00	2.054E+00	2.054E+00	0.277E+00	13.48	
RA-224	1.41E+10Y	1.00	6.999E+00	6.999E+00	1.459E+00	20.84	
RA-226	1600.00Y	1.00	1.750E+00	1.750E+00	0.287E+00	16.38	
AC-228	1.41E+10Y	1.00	1.950E+00	1.950E+00	0.442E+00	22.66	
RA-228	1.41E+10Y	1.00	1.950E+00	1.950E+00	0.442E+00	22.66	
TH-228	1.41E+10Y	1.00	2.220E+00	2.220E+00	0.244E+00	11.01	
TH-229	7340.00Y	1.00	7.505E-01	7.505E-01	1.148E-01	15.30	K
TH-232	1.41E+10Y	1.00	1.950E+00	1.950E+00	0.442E+00	22.66	
PA-234M	4.47E+09Y	1.00	6.808E+00	6.808E+00	4.630E+00	68.00	
TH-234	4.47E+09Y	1.00	3.386E+00	3.386E+00	0.908E+00	26.81	
U-235	7.04E+08Y	1.00	2.550E-01	2.550E-01	0.565E-01	22.17	K
NP-237	2.14E+06Y	1.00	1.453E+00	1.453E+00	0.377E+00	25.96	
U-238	4.47E+09Y	1.00	3.386E+00	3.386E+00	0.908E+00	26.81	
ANH-511	1.00E+09Y	1.00	1.408E-01	1.408E-01	0.751E-01	53.38	
	Total Activity :		9.058E+01	9.076E+01			

Grand Total Activity : 9.058E+01 9.076E+01

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

Sample ID : G248521009 Acquisition date : 19-MAR-2010 23:15:00

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	53.22	137	949	0.87	106.42	103	8	9.54E-03	79.4	7.81E+00	
0	128.91	130	508	0.87	257.73	255	6	9.01E-03	57.7	7.01E+00	
0	154.17	109	488	0.67	308.22	305	7	7.60E-03	69.7	6.27E+00	T
0	209.20	194	419	0.78	418.24	414	7	1.35E-02	37.8	4.93E+00	
0	270.04	319	469	1.52	539.87	533	15	2.22E-02	31.6	3.90E+00	T
0	327.58	153	241	1.39	654.92	650	9	1.06E-02	39.9	3.22E+00	T
0	409.55	91	276	1.83	818.84	813	12	6.29E-03	76.3	2.56E+00	T
0	462.91	115	170	1.44	925.54	921	8	7.99E-03	43.5	2.26E+00	T
0	727.10	164	101	1.76	1453.90	1448	12	1.14E-02	29.2	1.42E+00	T
2	964.64	73	112	1.77	1929.08	1924	20	5.04E-03	58.3	1.07E+00	T
0	1377.87	65	40	3.10	2755.98	2745	23	4.53E-03	56.2	7.62E-01	
0	1846.54	26	3	1.19	3694.20	3688	13	1.81E-03	48.2	5.71E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 03:16:23.05

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*****************************************************************************
*                            GEL Laboratories LLC                           *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521009.CNF;1 *
* Acquisition date  : 19-MAR-2010 23:15:00  Detector SN#     :             *
* Detector ID       : GAM21                 Sensitivity      : 5.00000     *
* Geometry          : CAN                   Energy tolerance: 1.50000      *
* Elapsed live time: 0 04:00:00.00          Abundance limit : 75.00000     *
* Elapsed real time: 0 04:00:50.60          Half life ratio : 8.00000      *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00  Nuclide Library : SOLID        *
* Sample ID         : G248521009            Analyst initials: MXR1         *
* Batch Number      : 961099                Sample Quantity : 1.06260E+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	3.166E+01	3.258E+00	6.192E-01	5.287E-02	51.134
CD-109	5.036E+00	7.705E-01	5.944E-01	5.593E-02	8.472
SN-126	4.868E-01	7.448E-02	5.736E-02	5.377E-03	8.487
BA-137M	1.916E+00	2.393E-01	6.637E-02	7.330E-03	28.874
CS-137	2.024E+00	2.530E-01	7.011E-02	7.752E-03	28.874
TL-208	6.997E-01	1.128E-01	5.530E-02	6.019E-03	12.653
PB-210	4.249E+00	7.225E-01	5.223E-01	4.939E-02	8.136
BI-211	5.660E+00	6.965E-01	2.945E-01	2.658E-02	19.223
PB-212	2.220E+00	2.443E-01	7.804E-02	7.796E-03	28.447
BI-214	1.750E+00	2.868E-01	1.121E-01	1.329E-02	15.617
PB-214	2.054E+00	2.770E-01	1.072E-01	1.133E-02	19.166
RA-224	6.999E+00	1.459E+00	8.388E-01	7.454E-02	8.343
RA-226	1.750E+00	2.868E-01	1.121E-01	1.329E-02	15.617
AC-228	1.950E+00	4.420E-01	2.267E-01	2.651E-02	8.605
RA-228	1.950E+00	4.420E-01	2.267E-01	2.651E-02	8.605
TH-228	2.220E+00	2.443E-01	7.804E-02	7.796E-03	28.447
TH-229	7.505E-01	1.148E-01	6.665E-01	5.657E-02	1.126
TH-232	1.950E+00	4.420E-01	2.267E-01	2.651E-02	8.605

Sample ID : G248521009 Acquisition date : 19-MAR-2010 23:15:00

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234M	6.808E+00	4.630E+00	8.105E+00	8.155E-01	0.840
TH-234	3.386E+00	9.075E-01	6.594E-01	1.190E-01	5.135
U-235	2.550E-01	5.652E-02	2.399E-01	4.247E-02	1.063
NP-237	1.453E+00	3.770E-01	1.705E-01	3.909E-02	8.522
U-238	3.386E+00	9.075E-01	6.594E-01	1.190E-01	5.135
ANH-511	1.408E-01	7.515E-02	4.851E-02	4.651E-03	2.902

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.026E-02		3.617E-01	6.047E-01	5.923E-02	-0.034
NA-22	-3.543E-02		4.971E-02	7.425E-02	6.091E-03	-0.477
NA-24	3.784E+01		1.409E+03	Half-Life too short		
SC-46	-5.648E-04		4.125E-02	6.882E-02	6.119E-03	-0.008
V-48	7.435E-03		1.087E-01	1.807E-01	1.581E-02	0.041
CR-51	1.156E-01		4.039E-01	6.627E-01	6.156E-02	0.174
MN-54	2.553E-03		4.051E-02	6.836E-02	6.625E-03	0.037
CO-56	5.926E-03		4.106E-02	6.968E-02	6.642E-03	0.085
CO-57	5.595E-03		1.736E-02	2.775E-02	3.189E-03	0.202
CO-58	-3.489E-02		4.154E-02	6.513E-02	6.518E-03	-0.536
FE-59	-1.082E-01		1.194E-01	1.798E-01	1.659E-02	-0.602
CO-60	1.281E-02		4.050E-02	7.009E-02	5.689E-03	0.183
ZN-65	5.068E-02		1.163E-01	1.723E-01	1.461E-02	0.294
SE-75	-1.669E-02		4.130E-02	5.921E-02	5.316E-03	-0.282
SR-85	7.993E-02		4.335E-02	7.151E-02	6.882E-03	1.118
Y-88	-1.376E-02		4.121E-02	6.260E-02	5.168E-03	-0.220
Y-91	-1.563E+01		2.826E+01	4.374E+01	3.603E+00	-0.357
NB-94	1.675E-02		3.554E-02	5.931E-02	6.459E-03	0.282
NB-95	1.199E-02		6.045E-02	8.609E-02	8.997E-03	0.139
NB-95M	8.975E-03		1.192E-01	1.781E-01	1.798E-02	0.050
ZR-95	2.419E-02		8.340E-02	1.368E-01	1.543E-02	0.177
MO-99	-1.952E-05		4.522E-05	Half-Life too short		
TC-99M	4.604E+18		1.067E+19	Half-Life too short		
RU-103	-1.892E-02		4.578E-02	7.454E-02	1.079E-02	-0.254
RH-106	-6.752E-02		3.202E-01	5.157E-01	7.589E-02	-0.131
RU-106	-6.752E-02		3.201E-01	5.157E-01	5.533E-02	-0.131
AG-108M	-8.068E-03		2.977E-02	4.965E-02	4.396E-03	-0.162
AG-110M	6.174E-02		4.233E-02	6.779E-02	7.604E-03	0.911
SN-113	-7.600E-02		4.908E-02	7.042E-02	5.799E-03	-1.079
CD-115	-5.960E-06		5.900E-05	Half-Life too short		
SN-117M	-2.796E-03		5.726E-02	9.370E-02	8.248E-03	-0.030
TE-123M	-3.217E-03		2.048E-02	3.490E-02	3.076E-03	-0.092
SB-124	8.400E-03		9.769E-02	1.621E-01	1.414E-02	0.052
SB-125	1.655E-02		9.404E-02	1.605E-01	1.388E-02	0.103
TE-125M	1.057E+00		6.785E+00	1.087E+01	1.323E+00	0.097
I-126	5.330E-01		3.580E-01	5.790E-01	6.387E-02	0.921
SB-126	4.756E-02		2.352E-01	3.570E-01	3.852E-02	0.133

Sample ID : G248521009 Acquisition date : 19-MAR-2010 23:15:00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	-3.548E+00		5.179E+00	7.898E+00	1.214E+00	-0.449
I-131	5.728E-02		2.045E-01	3.320E-01	2.973E-02	0.173
TE-132	1.665E+00		2.740E+00	4.649E+00	8.190E-01	0.358
BA-133	1.382E-02		4.220E-02	6.161E-02	7.943E-03	0.224
I-133	1.590E+00		1.182E+00	Half-Life too short		
CS-134	1.567E-01		5.425E-02	1.004E-01	1.025E-02	1.560
CS-135	2.591E-01		1.418E-01	2.267E-01	2.322E-02	1.143
I-135	-8.479E+16		4.906E+17	Half-Life too short		
CS-136	7.930E-03		1.688E-01	2.786E-01	2.514E-02	0.028
CE-139	-1.007E-02		2.248E-02	3.781E-02	3.074E-03	-0.266
BA-140	-1.069E-01		3.937E-01	6.390E-01	2.189E-01	-0.167
LA-140	-8.162E-02		1.538E-01	2.358E-01	1.972E-02	-0.346
CE-141	-2.736E-03		5.536E-02	8.602E-02	8.625E-03	-0.032
CE-143	1.972E-02		3.467E-03	Half-Life too short		
CE-144	-3.401E-02		1.462E-01	2.270E-01	3.763E-02	-0.150
PM-144	-1.861E-02		3.546E-02	5.497E-02	6.006E-03	-0.339
PR-144	-1.410E+00		2.663E+00	4.127E+00	4.507E-01	-0.342
PM-146	4.482E-03		4.272E-02	7.234E-02	7.799E-03	0.062
ND-147	9.862E-01		9.584E-01	1.663E+00	2.607E-01	0.593
PM-149	-6.744E-04		3.886E-04	Half-Life too short		
EU-152	1.292E-02		9.027E-02	1.462E-01	1.340E-02	0.088
GD-153	-4.870E-02		5.096E-02	7.872E-02	7.776E-03	-0.619
EU-154	-7.481E-02		1.376E-01	2.091E-01	2.312E-02	-0.358
EU-155	8.447E-02		6.806E-02	1.126E-01	1.174E-02	0.750
TB-160	4.320E-02		1.550E-01	2.647E-01	2.396E-02	0.163
HO-166M	2.060E-02		6.553E-02	1.082E-01	1.173E-02	0.190
TA-182	2.610E-02		2.528E-01	4.120E-01	3.392E-02	0.063
IR-192	-1.634E-02		3.487E-02	5.435E-02	4.831E-03	-0.301
HG-203	-1.341E-02		3.973E-02	5.691E-02	5.196E-03	-0.236
BI-207	8.879E-03		5.891E-02	9.786E-02	8.434E-03	0.091
PB-211	-5.880E-01		8.683E-01	1.088E+00	5.258E-01	-0.540
BI-212	3.053E+00	+	9.887E-01	1.319E+00	1.848E-01	2.315
RN-219	1.661E-01		4.199E-01	6.787E-01	9.895E-02	0.245
RA-223	-3.184E-01		6.359E-01	8.809E-01	1.536E-01	-0.361
AC-227	-2.306E-02		2.089E-01	3.430E-01	4.211E-02	-0.067
TH-227	-2.306E-02		2.089E-01	3.430E-01	4.736E-02	-0.067
PA-231	2.376E-01		1.191E+00	1.966E+00	2.903E-01	0.121
TH-231	-3.184E-01		6.359E-01	8.809E-01	1.536E-01	-0.361
PA-233	-1.712E-02		5.772E-02	9.221E-02	8.416E-03	-0.186
PA-234	-1.048E-01		3.071E-01	4.939E-01	9.300E-02	-0.212
NP-239	-1.140E-01		2.680E-01	4.171E-01	4.642E-02	-0.273
AM-241	1.613E-02		4.481E-02	6.986E-02	5.926E-03	0.231
CM-247	1.747E-02		3.771E-02	6.126E-02	4.969E-03	0.285
CF-249	4.613E-02		4.043E-02	6.797E-02	5.449E-03	0.679
CF-251	7.190E-02		9.198E-02	1.601E-01	1.326E-02	0.449

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]G248521009           *
* Acquisition date  : 19-MAR-2010 23:15:00 Detector SN#    :                *
* Detector ID       : GAM21                Sensitivity     : 5.000          *
* Geometry          : CAN                  Energy tolerance: 1.500          *
* Elapsed live time:    0 04:00:00.00      Abundance limit : 75.000         *
* Elapsed real time:    0 04:00:50.60      Half life ratio : 8.000          *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248521009           Analyst initials: MXR1           *
* Batch Number      : 961099               Sample Quantity : 1.0626E+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	3.166E+01	3.193E+00	3.077E-01	1.629E+00
CD-109	5.036E+00	7.551E-01	3.000E-01	3.852E-01
SN-126	4.868E-01	7.299E-02	2.895E-02	3.724E-02
BA-137M	1.916E+00	2.345E-01	3.313E-02	1.196E-01
CS-137	2.024E+00	2.479E-01	3.499E-02	1.265E-01
TL-208	6.997E-01	1.106E-01	2.762E-02	5.641E-02
PB-210	4.249E+00	7.080E-01	2.645E-01	3.612E-01
BI-211	5.660E+00	6.826E-01	1.475E-01	3.482E-01
PB-212	2.220E+00	2.394E-01	3.917E-02	1.222E-01
BI-214	1.750E+00	2.811E-01	5.597E-02	1.434E-01
PB-214	2.054E+00	2.715E-01	5.369E-02	1.385E-01
RA-224	6.999E+00	1.430E+00	4.210E-01	7.294E-01
RA-226	1.750E+00	2.811E-01	5.597E-02	1.434E-01
AC-228	1.950E+00	4.331E-01	1.129E-01	2.210E-01
RA-228	1.950E+00	4.331E-01	1.129E-01	2.210E-01
TH-228	2.220E+00	2.394E-01	3.917E-02	1.222E-01
TH-229	2.963E-02	3.860E-01	3.349E-01	1.969E-01
TH-232	1.950E+00	4.331E-01	1.129E-01	2.210E-01
PA-234M	6.808E+00	4.537E+00	4.036E+00	2.315E+00
TH-234	3.386E+00	8.894E-01	3.334E-01	4.538E-01
U-235	3.119E-02	1.498E-01	1.207E-01	7.640E-02
NP-237	1.453E+00	3.695E-01	8.604E-02	1.885E-01
U-238	3.386E+00	8.894E-01	3.334E-01	4.538E-01
ANH-511	1.408E-01	7.364E-02	2.425E-02	3.757E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-2.026E-02	3.544E-01	3.024E-01	1.808E-01	NOT IDENT.
NA-22	-3.543E-02	4.872E-02	3.692E-02	2.486E-02	NOT IDENT.
NA-24	3.784E+07	2.761E+09	0.000E+00	1.409E+09	SHORT HLIF

SC-46	-5.648E-04	4.043E-02	3.429E-02	2.063E-02	FAIL ABUN
V-48	7.435E-03	1.065E-01	8.999E-02	5.433E-02	NOT IDENT.
CR-51	1.156E-01	3.958E-01	3.321E-01	2.020E-01	NOT IDENT.
MN-54	2.553E-03	3.970E-02	3.407E-02	2.025E-02	NOT IDENT.
CO-56	5.926E-03	4.024E-02	3.473E-02	2.053E-02	NOT IDENT.
CO-57	5.595E-03	1.701E-02	1.398E-02	8.679E-03	NOT IDENT.
CO-58	-3.489E-02	4.071E-02	3.247E-02	2.077E-02	NOT IDENT.
FE-59	-1.082E-01	1.170E-01	8.949E-02	5.972E-02	NOT IDENT.
CO-60	1.281E-02	3.969E-02	3.485E-02	2.025E-02	NOT IDENT.
ZN-65	5.068E-02	1.140E-01	8.576E-02	5.817E-02	NOT IDENT.
SE-75	-1.669E-02	4.047E-02	2.970E-02	2.065E-02	NOT IDENT.
SR-85	7.993E-02	4.249E-02	3.575E-02	2.168E-02	NOT IDENT.
Y-88	-1.376E-02	4.039E-02	3.107E-02	2.061E-02	NOT IDENT.
Y-91	-1.563E+01	2.770E+01	2.176E+01	1.413E+01	NOT IDENT.
NB-94	1.675E-02	3.483E-02	2.959E-02	1.777E-02	NOT IDENT.
NB-95	1.199E-02	5.924E-02	4.293E-02	3.022E-02	NOT IDENT.
NB-95M	8.975E-03	1.168E-01	8.942E-02	5.958E-02	NOT IDENT.
ZR-95	2.419E-02	8.173E-02	6.824E-02	4.170E-02	NOT IDENT.
MO-99	-1.952E+01	8.863E+01	0.000E+00	4.522E+01	SHORT HLIF
TC-99M	4.604E+24	2.092E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.892E-02	4.486E-02	3.727E-02	2.289E-02	FAIL ABUN
RH-106	-6.752E-02	3.138E-01	2.575E-01	1.601E-01	NOT IDENT.
RU-106	-6.752E-02	3.137E-01	2.575E-01	1.600E-01	NOT IDENT.
AG-108M	-8.068E-03	2.917E-02	2.484E-02	1.488E-02	NOT IDENT.
AG-110M	6.174E-02	4.149E-02	3.384E-02	2.117E-02	NOT IDENT.
SN-113	-7.600E-02	4.810E-02	3.525E-02	2.454E-02	NOT IDENT.
CD-115	-5.960E+00	1.156E+02	0.000E+00	5.900E+01	SHORT HLIF
SN-117M	-2.796E-03	5.611E-02	4.714E-02	2.863E-02	NOT IDENT.
TE-123M	-3.217E-03	2.007E-02	1.756E-02	1.024E-02	NOT IDENT.
SB-124	8.400E-03	9.574E-02	8.048E-02	4.885E-02	NOT IDENT.
SB-125	1.655E-02	9.216E-02	8.031E-02	4.702E-02	FAIL ABUN
TE-125M	1.057E+00	6.649E+00	5.480E+00	3.392E+00	NOT IDENT.
I-126	5.330E-01	3.508E-01	2.890E-01	1.790E-01	NOT IDENT.
SB-126	4.756E-02	2.305E-01	1.781E-01	1.176E-01	NOT IDENT.
SB-127	-3.548E+00	5.075E+00	3.941E+00	2.589E+00	NOT IDENT.
I-131	5.728E-02	2.004E-01	1.663E-01	1.022E-01	NOT IDENT.
TE-132	1.665E+00	2.685E+00	2.334E+00	1.370E+00	NOT IDENT.
BA-133	1.382E-02	4.136E-02	3.086E-02	2.110E-02	FAIL ABUN
I-133	1.590E+06	2.316E+06	0.000E+00	1.182E+06	SHORT HLIF
CS-134	1.567E-01	5.316E-02	5.007E-02	2.712E-02	NOT IDENT.
CS-135	2.591E-01	1.390E-01	1.137E-01	7.092E-02	NOT IDENT.
I-135	-8.479E+22	9.615E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	7.930E-03	1.655E-01	1.387E-01	8.442E-02	FAIL ABUN
CE-139	-1.007E-02	2.203E-02	1.902E-02	1.124E-02	NOT IDENT.
BA-140	-1.069E-01	3.858E-01	3.193E-01	1.968E-01	NOT IDENT.
LA-140	-8.162E-02	1.507E-01	1.171E-01	7.690E-02	FAIL ABUN
CE-141	-2.736E-03	5.426E-02	4.329E-02	2.768E-02	NOT IDENT.
CE-143	1.972E+04	6.794E+03	0.000E+00	3.467E+03	SHORT HLIF
CE-144	-3.401E-02	1.433E-01	1.143E-01	7.312E-02	NOT IDENT.
PM-144	-1.861E-02	3.475E-02	2.743E-02	1.773E-02	NOT IDENT.
PR-144	-1.410E+00	2.610E+00	2.059E+00	1.332E+00	NOT IDENT.
PM-146	4.482E-03	4.187E-02	3.618E-02	2.136E-02	NOT IDENT.
ND-147	9.862E-01	9.392E-01	8.312E-01	4.792E-01	FAIL ABUN
PM-149	-6.744E+02	7.616E+02	0.000E+00	3.886E+02	SHORT HLIF
EU-152	1.292E-02	8.846E-02	7.323E-02	4.513E-02	FAIL ABUN
GD-153	-4.870E-02	4.994E-02	3.971E-02	2.548E-02	NOT IDENT.
EU-154	-7.481E-02	1.348E-01	1.040E-01	6.880E-02	NOT IDENT.
EU-155	8.447E-02	6.670E-02	5.678E-02	3.403E-02	FAIL ABUN
TB-160	4.320E-02	1.519E-01	1.319E-01	7.751E-02	FAIL ABUN
HO-166M	2.060E-02	6.422E-02	5.397E-02	3.276E-02	FAIL ABUN
TA-182	2.610E-02	2.478E-01	2.050E-01	1.264E-01	FAIL ABUN
IR-192	-1.634E-02	3.417E-02	2.724E-02	1.743E-02	FAIL ABUN
HG-203	-1.341E-02	3.893E-02	2.854E-02	1.986E-02	NOT IDENT.
BI-207	8.879E-03	5.773E-02	4.871E-02	2.946E-02	FAIL ABUN
PB-211	-5.880E-01	8.509E-01	5.447E-01	4.341E-01	NOT IDENT.
BI-212	3.053E+00	9.689E-01	6.578E-01	4.943E-01	FAIL ABUN
RN-219	1.661E-01	4.115E-01	3.397E-01	2.099E-01	FAIL ABUN
RA-223	-3.184E-01	6.232E-01	4.414E-01	3.180E-01	FAIL ABUN
AC-227	-2.306E-02	2.047E-01	1.721E-01	1.044E-01	FAIL ABUN
TH-227	-2.306E-02	2.047E-01	1.721E-01	1.044E-01	FAIL ABUN
PA-231	2.376E-01	1.167E+00	9.857E-01	5.955E-01	FAIL ABUN
TH-231	-3.184E-01	6.232E-01	4.414E-01	3.180E-01	FAIL ABUN
PA-233	-1.712E-02	5.657E-02	4.622E-02	2.886E-02	FAIL ABUN
PA-234	-1.048E-01	3.010E-01	2.460E-01	1.535E-01	NOT IDENT.
NP-239	-1.140E-01	2.627E-01	2.102E-01	1.340E-01	FAIL ABUN
AM-241	1.613E-02	4.391E-02	3.533E-02	2.240E-02	NOT IDENT.
CM-247	1.747E-02	3.696E-02	3.066E-02	1.886E-02	NOT IDENT.
CF-249	4.613E-02	3.962E-02	3.402E-02	2.021E-02	NOT IDENT.

CF-251	7.190E-02	9.014E-02	8.048E-02	4.599E-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	393.2040
49.72	389.7012
57.36	0.0000
59.54	582.4270
63.29	590.5795
63.29	590.5795
64.28	580.8925
67.75	626.8135
69.67	690.2736
70.83	682.5861
72.81	680.8512
72.87	680.9979
72.87	680.9979
74.82	604.4801
74.82	604.4801
74.82	604.4801
74.97	604.8068
77.11	609.3800
77.11	609.3800
77.11	609.3800
79.69	614.8152
79.80	615.0466
80.12	615.7136
80.19	615.8588
80.57	616.6527
81.00	617.5420
81.07	617.6871
81.07	617.6871
83.79	436.0142
83.79	436.0142
85.43	438.3406
86.48	439.8164
86.55	439.9148
86.79	440.2480
86.94	440.4639
87.57	441.3430
88.03	441.9841
88.47	442.5935
89.96	444.6533
91.11	446.2307
92.59	448.2429
92.59	448.2429
93.35	449.2712
94.67	400.4502
94.87	407.9224
94.87	407.9224
95.86	472.9494
97.43	484.2372
98.44	401.2410
99.53	424.4934
100.11	460.4467
103.18	476.6583
103.37	476.9103
105.31	411.2906
106.12	417.8009
109.28	417.9748
111.00	430.0906
111.76	402.5200
116.30	402.6394
117.23	411.6537
121.12	381.8801
121.78	382.4969
122.06	369.9220
123.07	389.5459
131.20	422.9147
133.52	411.1698
136.00	378.5095

136.47	410.2817
140.51	0.0000
140.51	0.0000
143.76	429.1100
144.24	422.1842
144.24	422.1842
145.44	418.3386
152.43	367.8567
153.25	385.1410
154.21	379.2062
154.21	379.2062
156.02	369.6892
158.56	371.0544
159.00	376.9380
162.66	385.5795
163.33	376.7240
165.86	406.7528
176.60	355.6470
177.52	323.0575
181.07	0.0000
184.41	377.8416
185.72	378.2597
193.51	351.8924
197.04	400.9161
205.31	345.9271
210.85	348.9648
215.65	336.6831
222.11	334.3511
227.38	309.5197
228.16	267.2293
228.18	267.2379
235.69	344.8645
235.96	352.1856
235.96	352.1856
238.63	329.9505
238.63	329.9505
240.99	331.0426
242.00	331.5102
244.70	247.3788
252.40	256.8455
252.80	256.9841
256.23	269.9863
256.23	269.9863
260.90	0.0000
264.66	239.1064
268.22	208.6739
269.46	209.0048
269.46	209.0048
271.23	209.4714
273.65	190.4612
276.40	244.2072
277.37	229.3110
277.60	229.3801
278.00	217.3322
279.20	249.6185
279.54	264.9507
280.46	256.1067
283.69	220.3857
284.31	216.4684
285.41	251.5204
285.90	0.0000
287.50	229.6055
293.27	0.0000
295.22	210.0004
295.96	210.1821
298.57	210.8264
299.98	211.1692
299.98	211.1692
300.09	211.1981
300.09	211.1981
300.13	211.2064
301.36	211.5079
302.85	211.8713
304.50	185.0880
304.50	185.0880
304.85	200.8516
308.46	192.8562
311.90	226.7184

316.51	223.6466
319.41	216.9202
320.08	212.8255
323.87	217.9827
323.87	217.9827
328.76	261.0302
333.37	208.8849
334.37	248.0087
334.37	248.0087
338.28	200.7441
338.28	200.7441
338.32	200.7516
338.32	200.7516
338.32	200.7516
340.48	210.4517
340.55	210.4675
344.28	203.0931
351.06	193.5098
351.93	193.6816
356.01	174.0376
364.49	173.8369
366.42	0.0000
383.85	185.0497
388.16	172.1176
388.63	158.5101
391.69	235.5806
400.66	186.7885
401.81	186.9829
402.40	177.8463
404.85	201.3857
410.95	178.0455
414.70	169.5300
423.72	194.1684
427.09	199.1581
427.87	190.4313
433.94	184.2962
453.88	167.4558
463.37	179.5031
468.07	177.8739
473.00	160.8421
476.78	156.7084
477.60	158.6517
487.02	129.1481
492.35	0.0000
497.08	148.8611
511.00	144.7332
514.00	107.6969
527.90	0.0000
529.87	0.0000
531.02	121.8840
537.26	124.3507
546.56	0.0000
563.25	114.8148
569.33	112.3301
569.50	104.4570
569.70	104.4699
583.19	103.4160
600.60	117.6570
602.73	122.4498
604.72	96.7910
609.32	111.2286
609.32	111.2286
610.33	111.2991
614.28	111.9801
618.01	102.6829
621.93	104.9709
621.93	104.9709
633.25	112.8870
635.95	124.3788
636.99	102.8564
645.85	102.3717
657.76	83.3081
661.66	128.3790
661.66	128.3790
664.57	0.0000
666.33	65.3060
666.50	75.3618
677.62	114.8212

685.70	103.7093
695.00	105.3174
696.49	104.3403
696.51	104.3433
697.00	105.4352
702.65	98.2891
706.68	115.6399
711.68	97.7039
720.70	83.4411
721.93	0.0000
722.78	95.0549
722.91	95.0630
723.31	77.7964
724.19	65.7244
727.33	93.1229
733.00	93.8408
735.93	108.7830
739.50	0.0000
747.24	97.3954
752.31	100.9451
753.82	88.9448
756.73	85.7814
763.94	86.5419
765.81	114.9116
766.42	97.2625
777.92	0.0000
778.90	86.7598
783.70	81.3943
785.37	93.7386
795.86	56.0898
801.95	88.2120
810.29	94.8999
810.76	84.9787
815.77	75.2167
818.51	68.0566
832.01	85.8530
834.85	94.1987
836.80	0.0000
846.77	68.0598
856.80	69.3018
860.56	65.7201
871.09	65.1089
873.19	74.4824
875.33	0.0000
879.36	69.0896
880.51	66.3233
883.24	80.4339
884.68	64.5763
889.28	65.6472
898.04	70.6128
911.20	65.3428
911.20	65.3428
911.20	65.3428
926.50	69.5924
937.49	91.9523
944.13	69.1594
946.00	70.1752
949.00	51.9776
962.29	87.1150
964.08	90.4075
966.15	70.7722
968.97	70.8560
968.97	70.8560
968.97	70.8560
983.53	74.2113
996.26	58.8926
1001.03	73.7585
1004.73	49.2456
1037.84	63.8656
1038.76	0.0000
1048.07	66.1257
1050.41	57.1586
1050.41	57.1586
1063.66	71.5616
1085.87	71.1484
1099.45	90.9165
1112.07	75.9476
1115.54	73.6473

1120.29	75.1458
1120.29	75.1458
1120.55	75.1529
1121.30	75.1743
1131.51	0.0000
1173.23	88.1180
1177.93	86.1601
1189.05	75.9445
1204.77	99.6868
1221.41	99.1849
1231.02	90.9434
1235.36	129.6496
1238.28	78.2932
1260.41	0.0000
1271.85	56.3900
1274.44	65.1182
1274.54	69.4625
1291.59	55.6567
1298.22	0.0000
1312.11	42.8410
1332.49	38.6931
1365.19	30.7079
1368.63	0.0000
1384.29	36.9033
1408.01	28.2776
1457.56	0.0000
1460.82	33.5004
1489.16	21.2275
1505.03	33.9205
1596.21	36.7546
1620.50	22.9934
1678.03	0.0000
1690.97	19.3386
1764.49	23.0946
1764.49	23.0946
1770.23	23.1263
1771.35	11.0720
1791.20	0.0000
1836.06	17.9172

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248521009

Total Uranium Activity	1.0087E+01	ug/g
Total Uranium Counting Unc.	2.6469E+00	ug/g
Total Uranium Tpu	1.3504E-06	ug/g
Total Uranium Mda	9.9335E-01	ug/g

```
*******************************************************************************
*                                                                             *
*                          GEL Laboratories LLC                          *
*                               2040 SAVAGE ROAD                              *
*                             CHARLESTON ,SC 29417                            *
*                              GROSS GAMMA REPORT                             *
*                                                                             *
*                                                                             *
*******************************************************************************
*                                                                             *
*   BATCH ID      : 961099                    SAMPLE ID  : G248521009         *
*   ANALYST       : MXR1                      DETECTOR   : GAM21              *
*   SAMPLE DATE   : 25-FEB-2010 12:00:00.00   COUNT TIME :    0 04:00:00.00   *
*   ANALYSIS DATE: 19-MAR-2010 23:15:00.56    SAMPLE ALQT:  106.260 GRAM      *
*                                                                             *
*******************************************************************************


        GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 1.404E+01
        GROSS GAMMA ERROR  (pCi/GRAM  )   : 1.412E+00
        GROSS GAMMA MDA    (pCi/GRAM  )   : 3.858E+00
        GROSS GAMMA DLC    (pCi/GRAM  )   : 1.881E+00
```

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:10:41.54

```
*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521010.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:10:12
Sample ID         : G248521010           Sample quantity  : 1.18510E+02 GRAM
Detector name     : GAM05                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.79  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	45.96*	333	528	1.17	92.90	88	10	4.63E-02	15.1	
2	0	63.09*	164	797	1.13	127.17	121	11	2.28E-02	35.0	
3	4	74.37*	766	591	1.38	149.71	144	22	1.06E-01	6.7	3.04E+00
4	4	76.73*	1130	516	1.30	154.43	144	22	1.57E-01	4.8	
5	0	86.76	306	520	1.23	174.49	171	7	4.24E-02	13.7	
6	2	89.50	125	620	1.14	179.97	177	13	1.74E-02	32.3	6.09E+00
7	2	92.49*	325	581	1.36	185.96	177	13	4.51E-02	14.9	
8	0	128.36	84	379	1.72	257.68	254	9	1.17E-02	42.9	
9	0	185.63*	187	362	1.21	372.21	368	10	2.60E-02	21.0	
10	0	208.80	133	237	1.28	418.54	414	9	1.84E-02	22.7	
11	2	238.26*	1252	193	1.23	477.45	473	17	1.74E-01	3.4	1.76E+00
12	2	241.27	286	262	1.85	483.46	473	17	3.97E-02	15.5	
13	0	270.36	155	245	1.16	541.63	535	14	2.16E-02	22.9	
14	0	294.71*	412	230	1.48	590.32	583	13	5.72E-02	9.2	
15	0	299.01	48	164	1.56	598.91	597	8	6.64E-03	48.2	
16	0	328.08	86	207	0.93	657.03	652	12	1.19E-02	35.3	
17	0	337.84*	235	185	1.84	676.55	670	13	3.27E-02	13.8	
18	0	351.62*	615	221	1.40	704.11	699	13	8.54E-02	6.5	
19	0	411.35	90	230	6.87	823.53	812	21	1.25E-02	44.3	
20	0	462.87*	94	167	1.85	926.52	921	16	1.30E-02	33.1	
21	0	510.25*	86	145	1.58	1021.25	1013	17	1.19E-02	38.5	
22	0	582.86*	312	115	1.72	1166.40	1160	13	4.33E-02	9.4	
23	0	608.75*	446	115	1.27	1218.16	1211	14	6.20E-02	7.0	
24	0	661.07	403	80	1.56	1322.73	1317	11	5.60E-02	6.6	
25	0	727.06	80	84	1.19	1454.64	1449	13	1.12E-02	26.1	
26	0	794.88*	38	73	0.97	1590.19	1585	14	5.25E-03	52.1	
27	0	860.39*	43	42	1.07	1721.11	1717	9	5.97E-03	31.9	
28	0	910.52*	255	53	1.98	1821.30	1815	13	3.55E-02	8.7	
29	1	963.75	63	53	2.19	1927.67	1919	23	8.72E-03	25.3	2.68E+00
30	1	968.22	159	35	2.12	1936.60	1919	23	2.21E-02	10.9	
31	0	1120.46*	124	58	2.16	2240.80	2231	22	1.72E-02	18.5	
32	0	1460.00*	860	41	2.06	2919.15	2911	17	1.19E-01	3.9	
33	0	1763.32	89	0	1.83	3524.97	3517	15	1.24E-02	10.6	

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

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 13:10:44

```
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521010.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:10:12
Sample ID         : G248521010           Sample quantity  : 118.51 GRAM
Sample type       : SOLID                Sample geometry  :
Detector name     : GAMMA5               Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.79   0.0%
Peak Width (FWHM):     3.00              Confidence level :     5.00 %
Energy tolerance :     1.50 keV          Half life ratio  :     8.00
Errors propagated: Yes                   Systematic Error :     0.00 %
Efficiency type  : Empirical             Efficiencies at  : Peak Energy
Abundance limit  :    75.00              WTM error limit  :     3.00
```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.545E+01	2.523E+00	6.689E-01	4.160E-02	38.052
CD-109	+	88.03	*	3.442E+00	9.769E-01	1.238E+00	9.430E-02	2.780
SN-126	+	64.28		6.717E-01	4.802E-01	4.607E-01	6.866E-02	1.458
	+	86.94		1.382E+00	6.831E-01	5.693E-01	2.343E-01	2.428
	+	87.57	*	3.325E-01	9.437E-02	1.195E-01	9.098E-03	2.784
BA-137M	+	661.66	*	7.057E-01	1.037E-01	7.940E-02	5.221E-03	8.888
CS-137	+	661.66	*	7.455E-01	1.096E-01	8.388E-02	5.534E-03	8.888
TL-208		277.37		3.835E-01	5.073E-01	8.020E-01	1.044E-01	0.478
	+	583.19	*	5.144E-01	1.037E-01	6.684E-02	4.909E-03	7.695
	+	860.56		6.847E-01	4.428E-01	5.972E-01	6.059E-02	1.147
PB-210	+	46.54	*	3.274E+00	1.018E+00	9.264E-01	7.145E-02	3.535
BI-211	+	72.87		2.453E+01	3.814E+00	3.720E+00	2.929E-01	6.593
	+	351.06	*	4.287E+00	6.515E-01	4.141E-01	3.282E-02	10.353
PB-212	+	74.82		2.935E+00	5.383E-01	4.422E-01	5.521E-02	6.637
	+	77.11		2.610E+00	3.228E-01	2.670E-01	2.078E-02	9.777
	+	238.63	*	1.904E+00	2.441E-01	1.187E-01	1.285E-02	16.033
	+	300.09		1.143E+00	1.109E+00	1.584E+00	1.701E-01	0.722
BI-214	+	609.32	*	1.430E+00	2.349E-01	1.456E-01	1.229E-02	9.824
	+	1120.29		2.085E+00	7.977E-01	5.632E-01	5.411E-02	3.702
	+	1764.49		2.138E+00	4.699E-01	5.102E-01	2.949E-02	4.191
PB-214	+	74.82		5.201E+00	9.080E-01	7.837E-01	8.734E-02	6.637
	+	77.11		4.602E+00	6.840E-01	4.707E-01	5.338E-02	9.777
	+	242.00		2.640E+00	8.719E-01	6.678E-01	7.588E-02	3.953
	+	295.22		1.743E+00	3.738E-01	2.498E-01	2.769E-02	6.978
	+	351.93	*	1.556E+00	2.515E-01	1.496E-01	1.441E-02	10.401
RA-224	+	240.99	*	4.668E+00	1.518E+00	1.273E+00	1.245E-01	3.667
RA-226	+	609.32	*	1.430E+00	2.349E-01	1.456E-01	1.229E-02	9.824
	+	1120.29		2.085E+00	7.977E-01	5.632E-01	5.411E-02	3.702
	+	1764.49		2.138E+00	4.699E-01	5.102E-01	2.949E-02	4.191
AC-228	+	338.32		1.818E+00	9.068E-01	4.543E-01	1.888E-01	4.001
	+	911.20	*	2.076E+00	4.463E-01	3.215E-01	4.081E-02	6.456
	+	968.97		2.228E+00	7.332E-01	4.665E-01	1.149E-01	4.775
RA-228	+	338.32		1.818E+00	9.068E-01	4.543E-01	1.888E-01	4.001
	+	911.20	*	2.076E+00	4.463E-01	3.215E-01	4.081E-02	6.456

Sample ID : G248521010 Acquisition date : 20-MAR-2010 11:10:12

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	968.97		2.228E+00	7.332E-01	4.665E-01	1.149E-01	4.775
TH-228	+	74.82		2.935E+00	4.577E-01	4.422E-01	3.500E-02	6.637
	+	77.11		2.610E+00	3.228E-01	2.670E-01	2.078E-02	9.777
	+	238.63	*	1.904E+00	2.441E-01	1.187E-01	1.285E-02	16.033
	+	300.09		1.143E+00	1.306E+00	1.584E+00	9.704E-01	0.722
TH-229	+	85.43		8.370E-01	2.375E-01	3.102E-01	2.371E-02	2.698
	+	88.47		2.109E-01	1.372E-01	1.847E-01	1.420E-02	1.142
		193.51	*	-4.772E-01	6.633E-01	1.026E+00	1.024E-01	-0.465
		210.85		1.690E+00	1.213E+00	1.817E+00	1.810E-01	0.930
TH-232	+	338.32		1.818E+00	5.212E-01	4.543E-01	3.562E-02	4.001
	+	911.20	*	2.076E+00	4.463E-01	3.215E-01	4.081E-02	6.456
	+	968.97		2.228E+00	7.332E-01	4.665E-01	1.149E-01	4.775
TH-234	+	63.29	*	1.743E+00	1.259E+00	1.207E+00	2.190E-01	1.444
	+	92.59		3.136E+00	1.159E+00	8.239E-01	1.813E-01	3.806
U-235	+	89.96		1.459E+00	1.007E+00	1.176E+00	2.868E-01	1.240
	+	93.35		2.369E+00	8.901E-01	6.224E-01	1.436E-01	3.806
		143.76	*	8.005E-03	2.396E-01	3.835E-01	7.315E-02	0.021
		163.33		1.748E-01	5.377E-01	8.762E-01	1.645E-01	0.200
	+	185.72		1.830E-01	7.909E-02	8.169E-02	8.153E-03	2.241
		205.31		-1.417E-01	6.812E-01	9.355E-01	1.761E-01	-0.151
NP-237	+	86.48	*	9.922E-01	3.501E-01	4.004E-01	8.934E-02	2.478
		95.86		-1.571E+00	1.101E+00	1.370E+00	3.306E-01	-1.147
U-238	+	63.29	*	1.743E+00	1.259E+00	1.207E+00	2.190E-01	1.444
	+	92.59		3.136E+00	9.680E-01	8.239E-01	6.924E-02	3.806
ANH-511	+	511.00	*	1.066E-01	8.244E-02	5.792E-02	3.707E-03	1.840

---- 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	*	-2.687E-01	4.689E-01	7.351E-01	5.264E-02	-0.366
NA-22		1274.54	*	-2.077E-02	5.141E-02	7.910E-02	4.608E-03	-0.263
NA-24		1368.63	*	4.531E+03	5.141E-02	Half-Life too short		
SC-46		889.28	*	1.043E-02	5.438E-02	9.146E-02	9.187E-03	0.114
	+	1120.55		3.763E-01	1.418E-01	1.683E-01	1.158E-02	2.236
V-48		944.13		-5.175E-01	1.630E+00	2.607E+00	2.522E-01	-0.198
		983.53	*	-4.260E-02	1.261E-01	2.003E-01	1.835E-02	-0.213
		1312.11		-3.487E-02	1.323E-01	2.064E-01	1.197E-02	-0.169
CR-51		320.08	*	7.783E-02	5.142E-01	8.617E-01	7.614E-02	0.090
MN-54		834.85	*	-3.356E-02	4.745E-02	7.384E-02	6.764E-03	-0.455
CO-56		846.77	*	-5.273E-03	4.883E-02	8.015E-02	7.495E-03	-0.066
		1037.84		-1.772E-01	4.195E-01	6.579E-01	5.798E-02	-0.269
		1238.28		2.478E-01	1.328E-01	2.429E-01	1.501E-02	1.020
		1771.35		-2.805E-01	3.887E-01	5.661E-01	3.269E-02	-0.495
CO-57		122.06	*	8.560E-03	3.026E-02	4.971E-02	7.052E-03	0.172
		136.47		-2.655E-03	2.448E-01	3.965E-01	5.309E-02	-0.007
CO-58		810.76	*	-3.431E-02	5.537E-02	8.711E-02	7.667E-03	-0.394
FE-59		1099.45	*	6.068E-02	1.398E-01	2.371E-01	1.920E-02	0.256
		1291.59		-9.070E-02	1.601E-01	2.396E-01	1.780E-02	-0.379

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60		1173.23		5.780E-02	6.102E-02	1.073E-01	6.224E-03	0.539
		1332.49	*	-6.864E-03	5.281E-02	8.390E-02	4.855E-03	-0.082
ZN-65		1115.54	*	5.313E-02	1.324E-01	1.953E-01	1.364E-02	0.272
SE-75		121.12		8.729E-02	1.620E-01	2.679E-01	4.186E-02	0.326
		136.00		-2.357E-03	4.882E-02	7.898E-02	1.030E-02	-0.030
		264.66	*	2.441E-02	6.359E-02	9.495E-02	9.066E-03	0.257
		279.54		-3.023E-02	1.388E-01	2.295E-01	2.199E-02	-0.132
		400.66		-7.783E-03	3.549E-01	5.678E-01	5.177E-02	-0.014
SR-85		514.00	*	7.174E-02	5.563E-02	8.780E-02	5.628E-03	0.817
Y-88		898.04		3.181E-02	6.329E-02	1.086E-01	1.110E-02	0.293
		1836.06	*	2.337E-02	4.293E-02	7.807E-02	4.467E-03	0.299
Y-91		1204.77	*	-4.392E+00	3.310E+01	5.316E+01	3.089E+00	-0.083
NB-94		702.65	*	5.052E-02	4.323E-02	7.797E-02	5.579E-03	0.648
		871.09		-6.429E-03	4.263E-02	6.961E-02	6.784E-03	-0.092
NB-95		765.81	*	-3.840E-03	6.372E-02	1.058E-01	8.560E-03	-0.036
NB-95M		235.69	*	1.374E+00	2.687E-01	4.090E-01	4.481E-02	3.360
ZR-95		724.19		2.224E-01	1.607E-01	2.601E-01	2.158E-02	0.855
		756.73	*	-2.857E-02	9.887E-02	1.611E-01	1.437E-02	-0.177
MO-99		140.51		-8.118E-05	9.887E-02	Half-Life too short		
		181.07		1.227E-04	9.887E-02	Half-Life too short		
		366.42		2.399E-04	9.887E-02	Half-Life too short		
		739.50	*	7.702E-05	9.887E-02	Half-Life too short		
		777.92		-2.446E-05	9.887E-02	Half-Life too short		
TC-99M		140.51	*	-5.063E+19	9.887E-02	Half-Life too short		
RU-103		497.08	*	-7.266E-05	6.135E-02	9.995E-02	1.269E-02	-0.001
		610.33		1.618E+01	3.171E+00	4.003E+00	6.154E-01	4.042
RH-106		621.93	*	2.209E-02	4.162E-01	6.733E-01	8.104E-02	0.033
		1050.41		-7.667E-01	3.240E+00	5.180E+00	4.218E-01	-0.148
RU-106		621.93	*	2.209E-02	4.162E-01	6.733E-01	4.438E-02	0.033
		1050.41		-7.667E-01	3.240E+00	5.180E+00	4.218E-01	-0.148
AG-108M		433.94	*	1.049E-02	3.876E-02	6.462E-02	4.172E-03	0.162
		614.28		3.222E-02	4.877E-02	7.289E-02	5.070E-03	0.442
		722.91		2.335E-02	5.352E-02	8.085E-02	6.281E-03	0.289
AG-110M		657.76	*	1.696E-01	6.609E-02	1.108E-01	7.660E-03	1.531
		677.62		-6.345E-02	3.965E-01	6.574E-01	4.674E-02	-0.097
		706.68		-6.156E-02	2.666E-01	4.386E-01	3.293E-02	-0.140
		763.94		-1.037E-01	2.172E-01	3.491E-01	2.902E-02	-0.297
		884.68		1.067E-02	6.430E-02	1.080E-01	1.102E-02	0.099
		937.49		-5.674E-02	1.524E-01	2.429E-01	2.436E-02	-0.234
		1384.29		-4.722E-02	1.959E-01	3.179E-01	1.959E-02	-0.149
		1505.03		-2.178E-01	3.482E-01	5.266E-01	3.095E-02	-0.414
SN-113		391.69	*	2.304E-02	6.041E-02	1.017E-01	6.306E-03	0.227
CD-115		260.90		-1.058E-03	6.041E-02	Half-Life too short		
		492.35		-1.885E-04	6.041E-02	Half-Life too short		
		527.90	*	-1.275E-04	6.041E-02	Half-Life too short		
SN-117M		156.02		-1.777E+00	4.146E+00	6.567E+00	7.241E-01	-0.271
		158.56	*	1.578E-02	1.014E-01	1.646E-01	1.770E-02	0.096
TE-123M		159.00	*	3.315E-02	3.684E-02	6.127E-02	6.584E-03	0.541
SB-124		602.73		-2.209E-02	6.436E-02	8.613E-02	5.672E-03	-0.257

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		645.85		3.040E-01	6.633E-01	1.108E+00	8.006E-02	0.274
		722.78		2.398E-01	5.872E-01	8.847E-01	6.791E-02	0.271
		1690.97	*	-6.744E-02	1.033E-01	1.484E-01	9.435E-03	-0.455
SB-125		427.87	*	-7.024E-02	1.211E-01	1.915E-01	1.199E-02	-0.367
	+	463.37		1.031E+00	6.856E-01	7.240E-01	5.130E-02	1.424
		600.60		-2.741E-03	2.496E-01	3.786E-01	2.801E-02	-0.007
		635.95		2.149E-01	3.493E-01	5.901E-01	4.416E-02	0.364
TE-125M		109.28	*	-6.895E+00	1.224E+01	1.898E+01	2.466E+00	-0.363
I-126		388.63		-2.075E-01	3.449E-01	5.492E-01	3.268E-02	-0.378
		666.33	*	3.315E-01	4.692E-01	7.042E-01	4.676E-02	0.471
		753.82		-1.089E+00	3.445E+00	5.601E+00	4.429E-01	-0.194
SB-126		414.70		-4.914E-02	1.683E-01	2.331E-01	1.389E-02	-0.211
		666.50		1.102E-01	1.639E-01	2.450E-01	1.628E-02	0.450
		695.00		7.381E-02	1.624E-01	2.805E-01	1.976E-02	0.263
		697.00		-3.412E-02	5.543E-01	9.250E-01	6.543E-02	-0.037
		720.70	*	1.923E-01	3.035E-01	4.697E-01	3.484E-02	0.409
		856.80		5.145E-01	1.047E+00	1.584E+00	1.507E-01	0.325
SB-127		252.40		5.882E+00	2.094E+01	3.531E+01	1.502E+01	0.167
		473.00		1.409E+00	9.237E+00	1.523E+01	2.117E+00	0.093
		685.70	*	3.199E+00	7.345E+00	1.267E+01	1.643E+00	0.252
		783.70		7.429E+00	1.931E+01	3.303E+01	4.829E+00	0.225
I-131		80.19		-8.105E+00	7.563E+00	1.200E+01	9.444E-01	-0.675
		284.31		-7.017E-01	3.646E+00	6.006E+00	5.806E-01	-0.117
		364.49	*	-3.841E-02	2.918E-01	4.787E-01	3.632E-02	-0.080
		636.99		1.810E+00	4.070E+00	6.780E+00	4.956E-01	0.267
TE-132		49.72		-2.924E+01	2.744E+01	3.781E+01	4.753E+00	-0.773
		111.76		-7.163E+01	2.009E+02	3.227E+02	5.126E+01	-0.222
		116.30		-1.342E+02	1.838E+02	2.888E+02	4.795E+01	-0.465
		228.16	*	2.821E-01	4.665E+00	7.872E+00	1.440E+00	0.036
BA-133		81.00		-8.594E-02	9.906E-02	1.263E-01	1.899E-02	-0.680
		276.40		1.774E-01	4.958E-01	7.365E-01	1.072E-01	0.241
		302.85		-3.958E-02	2.002E-01	2.856E-01	3.767E-02	-0.139
		356.01	*	3.762E-03	6.039E-02	8.708E-02	1.052E-02	0.043
		383.85		1.104E-01	3.960E-01	6.626E-01	7.197E-02	0.167
I-133		529.87	*	-2.585E+00	3.960E-01	Half-Life too short		
		875.33		9.262E+01	3.960E-01	Half-Life too short		
		1298.22		-3.253E+00	3.960E-01	Half-Life too short		
CS-134		563.25		1.800E-01	4.817E-01	7.858E-01	5.220E-02	0.229
		569.33		2.228E-02	2.751E-01	4.372E-01	2.929E-02	0.051
		604.72		2.437E-02	5.049E-02	7.374E-02	4.877E-03	0.331
	+	795.86	*	9.313E-02	9.738E-02	1.169E-01	1.007E-02	0.796
		801.95		-1.514E-01	5.777E-01	8.164E-01	7.096E-02	-0.185
		1365.19		1.263E+00	1.730E+00	3.031E+00	1.937E-01	0.417
CS-135		268.22	*	3.484E-01	2.304E-01	3.610E-01	3.862E-02	0.965
I-135		546.56		2.862E+18	2.304E-01	Half-Life too short		
		836.80		3.853E+18	2.304E-01	Half-Life too short		
		1038.76		-4.611E+18	2.304E-01	Half-Life too short		
		1131.51		3.027E+18	2.304E-01	Half-Life too short		
		1260.41	*	-2.701E+17	2.304E-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
		1457.56		4.821E+20	2.304E-01	Half-Life too short		
		1678.03		-1.141E+18	2.304E-01	Half-Life too short		
		1791.20		4.531E+18	2.304E-01	Half-Life too short		
CS-136		153.25		1.330E+00	1.578E+00	2.618E+00	3.305E-01	0.508
		176.60		3.315E-01	9.314E-01	1.518E+00	1.631E-01	0.218
		273.65		-3.732E-01	1.035E+00	1.468E+00	1.476E-01	-0.254
		340.55		6.074E-01	3.211E-01	5.147E-01	4.190E-02	1.180
		818.51		6.416E-02	1.422E-01	2.452E-01	2.187E-02	0.262
		1048.07	*	1.438E-01	1.874E-01	3.309E-01	2.837E-02	0.435
		1235.36		1.112E+00	1.203E+00	2.085E+00	2.065E-01	0.533
CE-139		165.86	*	-1.255E-02	3.824E-02	6.069E-02	6.025E-03	-0.207
BA-140		162.66		6.074E-01	1.535E+00	2.511E+00	2.708E-01	0.242
		304.85		-1.468E+00	3.043E+00	4.210E+00	1.234E+00	-0.349
		423.72		2.310E+00	4.002E+00	6.678E+00	2.158E+00	0.346
		537.26	*	5.014E-02	5.123E-01	8.372E-01	2.799E-01	0.060
LA-140	+	328.76		1.254E+00	8.911E-01	1.079E+00	9.329E-02	1.162
		487.02		1.499E-01	2.918E-01	4.913E-01	3.450E-02	0.305
		815.77		5.093E-01	6.523E-01	1.150E+00	1.132E-01	0.443
		1596.21	*	-1.290E-01	1.663E-01	2.427E-01	1.426E-02	-0.532
CE-141		145.44	*	5.284E-02	8.937E-02	1.475E-01	1.803E-02	0.358
CE-143		57.36		9.871E-03	8.937E-02	Half-Life too short		
	+	293.27	*	8.052E-02	8.937E-02	Half-Life too short		
		664.57		1.784E-01	8.937E-02	Half-Life too short		
		721.93		4.372E-02	8.937E-02	Half-Life too short		
CE-144		80.12		-2.102E+00	2.118E+00	3.372E+00	2.606E-01	-0.623
		133.52	*	1.235E-01	2.714E-01	3.932E-01	7.188E-02	0.314
PM-144		476.78		-3.360E-02	8.512E-02	1.352E-01	9.820E-03	-0.249
		618.01		-1.977E-02	4.278E-02	6.450E-02	4.456E-03	-0.307
		696.49	*	4.678E-03	4.671E-02	7.882E-02	5.576E-03	0.059
PR-144		696.51	*	3.463E-01	3.510E+00	5.922E+00	4.185E-01	0.058
		1489.16		-1.454E+01	1.530E+01	2.149E+01	1.263E+00	-0.677
PM-146		453.88	*	2.044E-02	5.571E-02	9.322E-02	8.122E-03	0.219
		633.25		-5.194E-01	1.856E+00	2.899E+00	1.095E+00	-0.179
		735.93		-5.746E-02	1.888E-01	2.997E-01	8.314E-02	-0.192
		747.24		-1.735E-02	1.184E-01	1.953E-01	2.757E-02	-0.089
ND-147	+	91.11		2.032E+00	6.314E-01	9.447E-01	8.410E-02	2.151
		319.41		-1.926E+00	6.437E+00	1.052E+01	8.831E-01	-0.183
		531.02	*	1.192E-01	1.246E+00	1.911E+00	2.640E-01	0.062
PM-149		285.90	*	2.621E-04	1.246E+00	Half-Life too short		
EU-152		121.78		4.777E-02	8.586E-02	1.421E-01	2.123E-02	0.336
		244.70		2.302E-01	4.308E-01	6.499E-01	6.336E-02	0.354
		344.28	*	-1.600E-02	1.398E-01	1.992E-01	1.637E-02	-0.080
		778.90		1.910E-01	3.239E-01	5.647E-01	4.680E-02	0.338
	+	964.08		9.479E-01	4.876E-01	7.348E-01	6.923E-02	1.290
		1085.87		2.078E-01	5.037E-01	8.556E-01	6.441E-02	0.243
		1112.07		2.629E-01	4.126E-01	6.316E-01	4.448E-02	0.416
		1408.01		-3.713E-02	2.133E-01	3.485E-01	2.036E-02	-0.107
GD-153		69.67		-8.500E-01	1.387E+00	1.956E+00	1.555E-01	-0.434
		97.43	*	-5.249E-02	9.368E-02	1.381E-01	1.280E-02	-0.380

Sample ID : G248521010 Acquisition date : 20-MAR-2010 11:10:12

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		103.18		-7.804E-02	1.231E-01	1.961E-01	2.028E-02	-0.398
EU-154		123.07		-4.878E-02	6.755E-02	9.739E-02	1.551E-02	-0.501
		723.31		6.132E-02	2.567E-01	3.795E-01	3.207E-02	0.162
		873.19		1.913E-01	3.424E-01	5.947E-01	7.589E-02	0.322
		996.26		-6.306E-02	5.147E-01	7.813E-01	1.379E-01	-0.081
		1004.73		-5.561E-02	2.771E-01	4.464E-01	5.274E-02	-0.125
		1274.44	*	-5.862E-02	1.451E-01	2.232E-01	2.105E-02	-0.263
EU-155	+	86.55		4.045E-01	1.149E-01	1.846E-01	1.427E-02	2.191
		105.31	*	8.394E-02	1.149E-01	1.920E-01	2.079E-02	0.437
TB-160	+	86.79		1.153E+00	3.273E-01	5.269E-01	4.018E-02	2.189
		197.04		-8.274E-01	7.874E-01	1.175E+00	1.173E-01	-0.704
		215.65		1.228E-01	9.332E-01	1.582E+00	1.574E-01	0.078
	+	298.57		1.736E-01	1.681E-01	2.661E-01	2.368E-02	0.652
		879.36	*	-1.034E-01	1.894E-01	2.970E-01	2.935E-02	-0.348
	+	962.29		1.918E+00	9.864E-01	1.383E+00	1.306E-01	1.386
		966.15		1.794E+00	4.145E-01	7.804E-01	7.331E-02	2.299
		1177.93		-1.949E-01	5.403E-01	8.403E-01	4.876E-02	-0.232
		1271.85		3.101E-02	8.677E-01	1.411E+00	8.199E-02	0.022
HO-166M		80.57		-2.974E-01	2.609E-01	3.571E-01	2.757E-02	-0.833
	+	184.41		1.454E-01	6.283E-02	8.460E-02	8.442E-03	1.719
		280.46		-5.654E-02	1.071E-01	1.745E-01	1.615E-02	-0.324
	+	410.95		8.259E-01	7.339E-01	5.618E-01	3.334E-02	1.470
		711.68	*	6.376E-02	7.087E-02	1.268E-01	9.238E-03	0.503
		752.31		1.010E-01	3.432E-01	5.860E-01	4.621E-02	0.172
		810.29		-6.145E-02	7.720E-02	1.193E-01	1.047E-02	-0.515
TA-182		67.75		2.570E-02	9.157E-02	1.253E-01	1.003E-02	0.205
		100.11		3.326E-01	1.930E-01	3.304E-01	3.226E-02	1.007
		152.43		5.369E-01	4.500E-01	7.537E-01	8.596E-02	0.712
		222.11		-1.532E-01	4.317E-01	7.165E-01	7.106E-02	-0.214
	+	1121.30		1.025E+00	3.860E-01	4.562E-01	3.132E-02	2.246
		1189.05		2.634E-01	4.491E-01	7.664E-01	4.450E-02	0.344
		1221.41	*	1.474E-01	2.716E-01	4.615E-01	2.683E-02	0.319
		1231.02		-1.049E+00	6.900E-01	9.611E-01	5.589E-02	-1.091
IR-192	+	295.96		1.387E+00	2.838E-01	3.738E-01	3.370E-02	3.711
		308.46		-3.665E-03	1.268E-01	2.108E-01	1.837E-02	-0.017
		316.51	*	-2.168E-02	4.389E-02	7.094E-02	6.021E-03	-0.306
		468.07		-3.755E-02	1.181E-01	1.622E-01	1.148E-02	-0.232
HG-203		70.83		4.689E-01	1.208E+00	1.770E+00	2.779E-01	0.265
	+	72.87		6.863E+00	1.388E+00	1.449E+00	2.193E-01	4.735
		279.20	*	-2.876E-03	5.323E-02	8.872E-02	8.415E-03	-0.032
BI-207		72.81		1.034E+00	1.915E-01	2.963E-01	2.333E-02	3.491
	+	74.97		8.462E-01	1.316E-01	2.305E-01	1.804E-02	3.670
		569.70		9.759E-03	4.265E-02	6.852E-02	4.484E-03	0.142
		1063.66	*	2.752E-02	6.876E-02	1.167E-01	9.243E-03	0.236
		1770.23		-2.020E+00	9.393E-01	1.089E+00	6.292E-02	-1.854
PB-211		404.85	*	3.202E-01	1.063E+00	1.537E+00	7.375E-01	0.208
		427.09		-5.718E-01	2.037E+00	3.258E+00	1.494E+00	-0.176
		832.01		1.955E-01	1.219E+00	2.045E+00	1.062E+00	0.096
BI-212	+	727.33	*	2.062E+00	1.102E+00	1.475E+00	1.729E-01	1.398

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		785.37		-4.089E-01	4.176E+00	6.903E+00	5.789E-01	-0.059
		1620.50		3.750E-01	2.878E+00	4.865E+00	2.855E-01	0.077
RN-219	+	271.23		1.048E+00	4.944E-01	5.357E-01	5.855E-02	1.957
		401.81	*	3.249E-02	5.886E-01	8.827E-01	1.189E-01	0.037
RA-223		81.07		-1.894E-01	2.230E-01	2.865E-01	2.210E-02	-0.661
		83.79		1.098E-01	1.727E-01	1.876E-01	1.439E-02	0.585
		94.87		5.889E-01	5.086E-01	7.645E-01	6.733E-02	0.770
		144.24		1.529E-01	8.261E-01	1.330E+00	1.724E-01	0.115
		154.21		-4.289E-02	4.813E-01	7.741E-01	9.185E-02	-0.055
	+	269.46		8.144E-01	3.817E-01	4.216E-01	4.046E-02	1.932
		323.87	*	-2.508E-01	8.655E-01	1.218E+00	2.090E-01	-0.206
	+	338.28		7.214E+00	2.156E+00	2.765E+00	3.187E-01	2.609
AC-227		79.69		-3.970E-01	1.048E+00	1.702E+00	2.861E-01	-0.233
		235.96		2.457E+00	3.908E-01	5.299E-01	6.023E-02	4.637
		256.23	*	1.690E-01	3.017E-01	5.171E-01	6.612E-02	0.327
	+	299.98		1.258E+00	1.223E+00	1.931E+00	2.486E-01	0.651
		304.50		-1.071E-01	2.323E+00	3.350E+00	5.563E-01	-0.032
		334.37		1.889E+00	3.113E+00	3.289E+00	5.010E-01	0.574
TH-227		79.80		-8.673E-01	1.383E+00	2.214E+00	4.747E-01	-0.392
		235.96		2.457E+00	3.816E-01	5.299E-01	5.743E-02	4.637
		256.23	*	1.690E-01	3.019E-01	5.171E-01	7.374E-02	0.327
	+	299.98		1.258E+00	1.223E+00	1.931E+00	2.486E-01	0.651
		304.50		-1.071E-01	2.323E+00	3.350E+00	5.563E-01	-0.032
		334.37		1.889E+00	3.113E+00	3.289E+00	5.010E-01	0.574
PA-231		283.69	*	-6.661E-01	1.796E+00	2.930E+00	4.376E-01	-0.227
		301.36		5.724E-01	8.243E-01	1.242E+00	1.528E-01	0.461
TH-231		81.07		-1.894E-01	2.230E-01	2.865E-01	2.210E-02	-0.661
		83.79		1.098E-01	1.727E-01	1.876E-01	1.439E-02	0.585
		94.87		5.889E-01	5.086E-01	7.645E-01	6.733E-02	0.770
		144.24		1.529E-01	8.261E-01	1.330E+00	1.724E-01	0.115
		154.21		-4.289E-02	4.813E-01	7.741E-01	9.185E-02	-0.055
	+	269.46		8.144E-01	3.817E-01	4.216E-01	4.046E-02	1.932
		323.87	*	-2.508E-01	8.655E-01	1.218E+00	2.090E-01	-0.206
	+	338.28		7.214E+00	2.156E+00	2.765E+00	3.187E-01	2.609
PA-233	+	300.13		5.690E-01	5.553E-01	8.751E-01	1.310E-01	0.650
		311.90	*	-7.251E-02	7.820E-02	1.232E-01	1.089E-02	-0.588
		340.48		1.893E+00	1.009E+00	1.479E+00	3.516E-01	1.280
PA-234		94.67		4.760E-01	1.922E-01	2.924E-01	3.658E-02	1.628
		98.44		1.329E-01	1.172E-01	1.562E-01	8.735E-02	0.851
		111.00		2.476E-02	2.063E-01	3.285E-01	4.791E-02	0.075
		131.20		5.432E-02	1.435E-01	2.075E-01	2.786E-02	0.262
		569.50		5.169E-02	3.779E-01	6.031E-01	3.947E-02	0.086
		733.00		-3.308E-03	5.245E-01	7.554E-01	1.648E-01	-0.004
		880.51		-1.538E-01	3.548E-01	5.629E-01	5.573E-02	-0.273
		883.24		1.472E-01	3.680E-01	6.088E-01	4.104E-01	0.242
		926.50		-6.707E-02	2.322E-01	3.722E-01	9.577E-02	-0.180
		946.00	*	6.750E-03	3.968E-01	6.551E-01	1.262E-01	0.010
		949.00		4.920E-02	5.648E-01	9.383E-01	9.020E-02	0.052
PA-234M		766.42		2.092E+00	1.569E+01	2.633E+01	1.334E+01	0.079

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1001.03	*	2.102E+00	6.321E+00	1.057E+01	1.080E+00	0.199
NP-239		99.53		3.788E-01	1.680E-01	2.902E-01	2.802E-02	1.305
		103.37		9.819E-03	1.071E-01	1.756E-01	1.823E-02	0.056
		106.12		1.242E-01	9.055E-02	1.535E-01	1.674E-02	0.809
		117.23	*	-8.535E-02	4.595E-01	7.427E-01	9.767E-02	-0.115
		228.18		1.388E-02	2.524E-01	4.258E-01	4.208E-02	0.033
		277.60		1.239E-01	2.339E-01	3.663E-01	3.409E-02	0.338
AM-241		59.54	*	1.225E-01	8.114E-02	1.244E-01	1.113E-02	0.985
CM-247		278.00		1.008E+00	9.360E-01	1.555E+00	1.446E-01	0.648
		287.50		6.339E-01	1.689E+00	2.514E+00	2.294E-01	0.252
		402.40	*	5.690E-03	5.773E-02	8.294E-02	4.880E-03	0.069
CF-249		252.80		5.112E-01	1.138E+00	1.944E+00	1.879E-01	0.263
		333.37		1.750E-01	3.254E-01	3.416E-01	2.730E-02	0.512
		388.16	*	-6.757E-03	5.376E-02	8.799E-02	5.255E-03	-0.077
CF-251		177.52	*	5.074E-02	1.591E-01	2.590E-01	2.581E-02	0.196
		227.38		-8.869E-02	4.177E-01	6.969E-01	6.891E-02	-0.127
		285.41		-1.085E+00	2.717E+00	4.429E+00	4.060E-01	-0.245

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]G248521010      *
* Acquisition date : 20-MAR-2010 11:10:12 Detector SN#    :                 *
* Detector ID        : GAM05                Sensitivity     : 5.000         *
* Geometry           : CAN                  Energy tolerance: 1.500         *
* Elapsed live time:     0 02:00:00.00      Abundance limit : 75.000        *
* Elapsed real time:     0 02:00:01.79      Half life ratio :  8.000        *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248521010           Analyst initials: MXR1          *
* Batch Number       : 961099               Sample Quantity : 1.1851E+02 GRAM *
* Recovery           :    1.00000           Carrier Weight :    0.00000     *
*****************************************************************************
*                                                                           *
*                                 QC DATA                                   *
* Standard Weight  :   0.00000                                              *
* CALIB. DATE/TIME : 11-JUN-2009 16:41:00 MS Isotope      :                 *
* MSD DPM            :    0.000             MSD Isotope     :               *
* LCS DPM            :    0.000             LCS Isotope     :               *
* LCSD DPM           :    0.000             LCSD Isotope    :               *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.545E+01	2.473E+00	6.669E-01	0.000E+00
CD-109	3.442E+00	9.574E-01	1.274E+00	0.000E+00
SN-126	3.325E-01	9.249E-02	1.229E-01	0.000E+00
BA-137M	7.057E-01	1.016E-01	7.988E-02	0.000E+00
CS-137	7.455E-01	1.074E-01	8.439E-02	0.000E+00
TL-208	5.144E-01	1.016E-01	6.734E-02	0.000E+00
PB-210	3.274E+00	9.976E-01	9.593E-01	0.000E+00
BI-211	4.287E+00	6.384E-01	4.195E-01	0.000E+00
PB-212	1.904E+00	2.392E-01	1.208E-01	0.000E+00
BI-214	1.430E+00	2.302E-01	1.466E-01	0.000E+00
PB-214	1.556E+00	2.465E-01	1.515E-01	0.000E+00
RA-224	4.668E+00	1.487E+00	1.295E+00	0.000E+00
RA-226	1.430E+00	2.302E-01	1.466E-01	0.000E+00
AC-228	2.076E+00	4.374E-01	3.223E-01	0.000E+00
RA-228	2.076E+00	4.374E-01	3.223E-01	0.000E+00
TH-228	1.904E+00	2.392E-01	1.208E-01	0.000E+00
TH-229	-4.772E-01	6.500E-01	1.046E+00	0.000E+00
TH-232	2.076E+00	4.374E-01	3.223E-01	0.000E+00
TH-234	1.743E+00	1.234E+00	1.245E+00	0.000E+00
U-235	8.005E-03	2.348E-01	3.923E-01	0.000E+00
NP-237	9.922E-01	3.431E-01	4.119E-01	0.000E+00
U-238	1.743E+00	1.234E+00	1.245E+00	0.000E+00
ANH-511	1.066E-01	8.079E-02	5.843E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)		
BE-7	-2.687E-01		4.595E-01	7.422E-01	0.000E+00	NOT IDENT.
NA-22	-2.077E-02		5.038E-02	7.900E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00		6.090E+09	0.000E+00	0.000E+00	SHORT HLIF
SC-46	1.043E-02		5.329E-02	9.171E-02	0.000E+00	FAIL ABUN

V-48	-4.260E-02	1.235E-01	2.006E-01	0.000E+00	NOT IDENT.
CR-51	7.783E-02	5.040E-01	8.739E-01	0.000E+00	NOT IDENT.
MN-54	-3.356E-02	4.650E-02	7.409E-02	0.000E+00	NOT IDENT.
CO-56	-5.273E-03	4.785E-02	8.041E-02	0.000E+00	NOT IDENT.
CO-57	8.560E-03	2.966E-02	5.094E-02	0.000E+00	NOT IDENT.
CO-58	-3.431E-02	5.426E-02	8.743E-02	0.000E+00	NOT IDENT.
FE-59	6.068E-02	1.370E-01	2.372E-01	0.000E+00	NOT IDENT.
CO-60	-6.864E-03	5.176E-02	8.374E-02	0.000E+00	NOT IDENT.
ZN-65	5.313E-02	1.298E-01	1.953E-01	0.000E+00	NOT IDENT.
SE-75	2.441E-02	6.232E-02	9.650E-02	0.000E+00	NOT IDENT.
SR-85	7.174E-02	5.452E-02	8.858E-02	0.000E+00	NOT IDENT.
Y-88	2.337E-02	4.208E-02	7.764E-02	0.000E+00	NOT IDENT.
Y-91	-4.392E+00	3.244E+01	5.312E+01	0.000E+00	NOT IDENT.
NB-94	5.052E-02	4.236E-02	7.839E-02	0.000E+00	NOT IDENT.
NB-95	-3.840E-03	6.244E-02	1.063E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.634E-01	4.162E-01	0.000E+00	NOT IDENT.
ZR-95	-2.857E-02	9.690E-02	1.618E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.070E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.177E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-7.266E-05	6.012E-02	1.009E-01	0.000E+00	NOT IDENT.
RH-106	2.209E-02	4.079E-01	6.779E-01	0.000E+00	NOT IDENT.
RU-106	2.209E-02	4.079E-01	6.779E-01	0.000E+00	NOT IDENT.
AG-108M	1.049E-02	3.799E-02	6.531E-02	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	6.477E-02	1.115E-01	0.000E+00	NOT IDENT.
SN-113	2.304E-02	5.920E-02	1.029E-01	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.725E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.578E-02	9.941E-02	1.682E-01	0.000E+00	NOT IDENT.
TE-123M	3.315E-02	3.610E-02	6.262E-02	0.000E+00	NOT IDENT.
SB-124	-6.744E-02	1.012E-01	1.477E-01	0.000E+00	NOT IDENT.
SB-125	-7.024E-02	1.187E-01	1.936E-01	0.000E+00	FAIL ABUN
TE-125M	-6.895E+00	1.199E+01	1.947E+01	0.000E+00	NOT IDENT.
I-126	3.315E-01	4.598E-01	7.084E-01	0.000E+00	NOT IDENT.
SB-126	1.923E-01	2.974E-01	4.721E-01	0.000E+00	NOT IDENT.
SB-127	3.199E+00	7.198E+00	1.274E+01	0.000E+00	NOT IDENT.
I-131	-3.841E-02	2.859E-01	4.847E-01	0.000E+00	NOT IDENT.
TE-132	2.821E-01	4.572E+00	8.014E+00	0.000E+00	NOT IDENT.
BA-133	3.762E-03	5.918E-02	8.821E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.364E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	9.313E-02	9.544E-02	1.174E-01	0.000E+00	FAIL ABUN
CS-135	3.484E-01	2.258E-01	3.668E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.336E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.438E-01	1.837E-01	3.312E-01	0.000E+00	NOT IDENT.
CE-139	-1.255E-02	3.747E-02	6.199E-02	0.000E+00	NOT IDENT.
BA-140	5.014E-02	5.020E-01	8.443E-01	0.000E+00	NOT IDENT.
LA-140	-1.290E-01	1.630E-01	2.417E-01	0.000E+00	FAIL ABUN
CE-141	5.284E-02	8.758E-02	1.509E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.449E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.235E-01	2.660E-01	4.026E-01	0.000E+00	NOT IDENT.
PM-144	4.678E-03	4.578E-02	7.925E-02	0.000E+00	NOT IDENT.
PR-144	3.463E-01	3.440E+00	5.954E+00	0.000E+00	NOT IDENT.
PM-146	2.044E-02	5.460E-02	9.418E-02	0.000E+00	NOT IDENT.
ND-147	1.192E-01	1.221E+00	1.927E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.273E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.600E-02	1.370E-01	2.019E-01	0.000E+00	FAIL ABUN
GD-153	-5.249E-02	9.180E-02	1.419E-01	0.000E+00	NOT IDENT.
EU-154	-5.862E-02	1.422E-01	2.229E-01	0.000E+00	NOT IDENT.
EU-155	8.394E-02	1.126E-01	1.971E-01	0.000E+00	FAIL ABUN
TB-160	-1.034E-01	1.856E-01	2.978E-01	0.000E+00	FAIL ABUN
HO-166M	6.376E-02	6.946E-02	1.275E-01	0.000E+00	FAIL ABUN
TA-182	1.474E-01	2.662E-01	4.611E-01	0.000E+00	FAIL ABUN
IR-192	-2.168E-02	4.302E-02	7.195E-02	0.000E+00	FAIL ABUN
HG-203	-2.876E-03	5.216E-02	9.011E-02	0.000E+00	FAIL ABUN
BI-207	2.752E-02	6.738E-02	1.168E-01	0.000E+00	FAIL ABUN
PB-211	3.202E-01	1.042E+00	1.555E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.080E+00	1.483E+00	0.000E+00	FAIL ABUN
RN-219	3.249E-02	5.768E-01	8.930E-01	0.000E+00	FAIL ABUN
RA-223	-2.508E-01	8.482E-01	1.235E+00	0.000E+00	FAIL ABUN
AC-227	1.690E-01	2.957E-01	5.257E-01	0.000E+00	FAIL ABUN
TH-227	1.690E-01	2.959E-01	5.257E-01	0.000E+00	FAIL ABUN
PA-231	-6.661E-01	1.761E+00	2.976E+00	0.000E+00	NOT IDENT.
TH-231	-2.508E-01	8.482E-01	1.235E+00	0.000E+00	FAIL ABUN
PA-233	-7.251E-02	7.664E-02	1.250E-01	0.000E+00	FAIL ABUN
PA-234	6.750E-03	3.889E-01	6.564E-01	0.000E+00	NOT IDENT.
PA-234M	2.102E+00	6.195E+00	1.059E+01	0.000E+00	NOT IDENT.
NP-239	-8.535E-02	4.503E-01	7.615E-01	0.000E+00	NOT IDENT.
AM-241	1.225E-01	7.952E-02	1.284E-01	0.000E+00	NOT IDENT.
CM-247	5.690E-03	5.658E-02	8.391E-02	0.000E+00	NOT IDENT.
CF-249	-6.757E-03	5.268E-02	8.905E-02	0.000E+00	NOT IDENT.

CF-251	5.074E-02	1.560E-01	2.644E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:10:42.66

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*****************************************************************************
*                            GEL Laboratories LLC                           *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521010.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:10:12
Sample ID         : G248521010           Sample quantity  : 1.18510E+02 GRAM
Detector name     : GAM05                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.79  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID         : 961099                Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
```

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	860	10.66*	1.004E+00	2.545E+01	2.545E+01	9.91
CD-109	88.03	306	3.70*	7.867E+00	3.325E+00	3.442E+00	28.38
SN-126	64.28	164	9.60	8.064E+00	6.717E-01	6.717E-01	71.49
	86.94	306	8.90	7.867E+00	1.382E+00	1.382E+00	49.41
	87.57	306	37.00*	7.867E+00	3.325E-01	3.325E-01	28.38
BA-137M	661.66	403	89.90*	2.017E+00	7.047E-01	7.057E-01	14.69
CS-137	661.66	403	85.10*	2.017E+00	7.444E-01	7.455E-01	14.70
TL-208	277.37	------	6.60	4.261E+00	------	Line Not Found	------
	583.19	312	85.00*	2.260E+00	5.144E-01	5.144E-01	20.15
	860.56	43	12.50	1.590E+00	6.847E-01	6.847E-01	64.67
PB-210	46.54	333	4.25*	7.602E+00	3.268E+00	3.274E+00	31.09
BI-211	72.87	766	1.23	8.040E+00	2.453E+01	2.453E+01	15.55
	351.06	615	12.92*	3.518E+00	4.287E+00	4.287E+00	15.20
PB-212	74.82	766	10.28	8.040E+00	2.935E+00	2.935E+00	18.34
	77.11	1130	17.10	8.016E+00	2.610E+00	2.610E+00	12.36
	238.63	1252	43.60*	4.778E+00	1.904E+00	1.904E+00	12.82
	300.09	48	3.30	4.016E+00	1.143E+00	1.143E+00	97.03
BI-214	609.32	446	45.49*	2.173E+00	1.430E+00	1.430E+00	16.43
	1120.29	124	14.92	1.258E+00	2.085E+00	2.085E+00	38.26
	1764.49	89	15.30	8.616E-01	2.138E+00	2.138E+00	21.97
PB-214	74.82	766	5.80	8.040E+00	5.201E+00	5.201E+00	17.46
	77.11	1130	9.70	8.016E+00	4.602E+00	4.602E+00	14.86
	242.00	286	7.25	4.734E+00	2.640E+00	2.640E+00	33.03
	295.22	412	18.42	4.063E+00	1.743E+00	1.743E+00	21.45
	351.93	615	35.60*	3.518E+00	1.556E+00	1.556E+00	16.17
RA-224	240.99	286	4.10*	4.734E+00	4.668E+00	4.668E+00	32.52
RA-226	609.32	446	45.49*	2.173E+00	1.430E+00	1.430E+00	16.43
	1120.29	124	14.92	1.258E+00	2.085E+00	2.085E+00	38.26
	1764.49	89	15.30	8.616E-01	2.138E+00	2.138E+00	21.97
AC-228	338.32	235	11.27	3.637E+00	1.818E+00	1.818E+00	49.88
	911.20	255	25.80*	1.511E+00	2.076E+00	2.076E+00	21.50
	968.97	159	15.80	1.430E+00	2.228E+00	2.228E+00	32.91

Sample ID : G248521010 Acquisition date : 20-MAR-2010 11:10:12

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	235	11.27	3.637E+00	1.818E+00	1.818E+00	49.88
	911.20	255	25.80*	1.511E+00	2.076E+00	2.076E+00	21.50
	968.97	159	15.80	1.430E+00	2.228E+00	2.228E+00	32.91
TH-228	74.82	766	10.28	8.040E+00	2.935E+00	2.935E+00	15.60
	77.11	1130	17.10	8.016E+00	2.610E+00	2.610E+00	12.36
	238.63	1252	43.60*	4.778E+00	1.904E+00	1.904E+00	12.82
	300.09	48	3.30	4.016E+00	1.143E+00	1.143E+00	114.24
TH-229	85.43	306	14.70	7.867E+00	8.370E-01	8.370E-01	28.38
	88.47	125	24.00	7.817E+00	2.109E-01	2.109E-01	65.05
	193.51	------	4.41*	5.516E+00	------ Line Not Found		------
	210.85	------	2.80	5.209E+00	------ Line Not Found		------
TH-232	338.32	235	11.27	3.637E+00	1.818E+00	1.818E+00	28.67
	911.20	255	25.80*	1.511E+00	2.076E+00	2.076E+00	21.50
	968.97	159	15.80	1.430E+00	2.228E+00	2.228E+00	32.91
TH-234	63.29	164	3.70*	8.064E+00	1.743E+00	1.743E+00	72.23
	92.59	325	4.23	7.758E+00	3.136E+00	3.136E+00	36.96
U-235	89.96	125	3.47	7.817E+00	1.459E+00	1.459E+00	69.02
	93.35	325	5.60	7.758E+00	2.369E+00	2.369E+00	37.58
	143.76	------	10.96*	6.557E+00	------ Line Not Found		------
	163.33	------	5.08	6.119E+00	------ Line Not Found		------
	185.72	187	57.20	5.664E+00	1.830E-01	1.830E-01	43.21
	205.31	------	5.01	5.304E+00	------ Line Not Found		------
NP-237	86.48	306	12.40*	7.867E+00	9.922E-01	9.922E-01	35.29
	95.86	------	2.68	7.688E+00	------ Line Not Found		------
U-238	63.29	164	3.70*	8.064E+00	1.743E+00	1.743E+00	72.23
	92.59	325	4.23	7.758E+00	3.136E+00	3.136E+00	30.87
ANH-511	511.00	86	100.00*	2.547E+00	1.066E-01	1.066E-01	77.34

Flag: "*" = Keyline

Sample ID : G248521010 Acquisition date : 20-MAR-2010 11:10:12

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	2.545E+01	2.545E+01	0.252E+01	9.91	
CD-109	461.40D	1.04	3.325E+00	3.442E+00	0.977E+00	28.38	
SN-126	2.30E+05Y	1.00	3.325E-01	3.325E-01	0.944E-01	28.38	
BA-137M	30.08Y	1.00	7.047E-01	7.057E-01	1.037E-01	14.69	
CS-137	30.08Y	1.00	7.444E-01	7.455E-01	1.096E-01	14.70	
TL-208	1.41E+10Y	1.00	5.144E-01	5.144E-01	1.037E-01	20.15	
PB-210	22.20Y	1.00	3.268E+00	3.274E+00	1.018E+00	31.09	
BI-211	7.04E+08Y	1.00	4.287E+00	4.287E+00	0.651E+00	15.20	
PB-212	1.41E+10Y	1.00	1.904E+00	1.904E+00	0.244E+00	12.82	
BI-214	1600.00Y	1.00	1.430E+00	1.430E+00	0.235E+00	16.43	
PB-214	1600.00Y	1.00	1.556E+00	1.556E+00	0.252E+00	16.17	
RA-224	1.41E+10Y	1.00	4.668E+00	4.668E+00	1.518E+00	32.52	
RA-226	1600.00Y	1.00	1.430E+00	1.430E+00	0.235E+00	16.43	
AC-228	1.41E+10Y	1.00	2.076E+00	2.076E+00	0.446E+00	21.50	
RA-228	1.41E+10Y	1.00	2.076E+00	2.076E+00	0.446E+00	21.50	
TH-228	1.41E+10Y	1.00	1.904E+00	1.904E+00	0.244E+00	12.82	
TH-229	7340.00Y	1.00	2.109E-01	2.109E-01	1.372E-01	65.05	K
TH-232	1.41E+10Y	1.00	2.076E+00	2.076E+00	0.446E+00	21.50	
TH-234	4.47E+09Y	1.00	1.743E+00	1.743E+00	1.259E+00	72.23	
U-235	7.04E+08Y	1.00	1.830E-01	1.830E-01	0.791E-01	43.21	K
NP-237	2.14E+06Y	1.00	9.922E-01	9.922E-01	3.501E-01	35.29	
U-238	4.47E+09Y	1.00	1.743E+00	1.743E+00	1.259E+00	72.23	
ANH-511	1.00E+09Y	1.00	1.066E-01	1.066E-01	0.824E-01	77.34	
			---	---			
	Total Activity :		6.273E+01	6.285E+01			

Grand Total Activity : 6.273E+01 6.285E+01

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

Sample ID : G248521010 Acquisition date : 20-MAR-2010 11:10:12

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.36	84	379	1.72	257.68	254	9	1.17E-02	85.8	6.92E+00	
0	208.80	133	237	1.28	418.54	414	9	1.84E-02	45.4	5.24E+00	
0	270.36	155	245	1.16	541.63	535	14	2.16E-02	45.9	4.35E+00	T
0	328.08	86	207	0.93	657.03	652	12	1.19E-02	70.6	3.73E+00	T
0	411.35	90	230	6.87	823.53	812	21	1.25E-02	88.7	3.08E+00	T
0	462.87	94	167	1.85	926.52	921	16	1.30E-02	66.1	2.78E+00	T
0	727.06	80	84	1.19	1454.64	1449	13	1.12E-02	52.1	1.85E+00	T
0	794.88	38	73	0.97	1590.19	1585	14	5.25E-03	****	1.71E+00	T
1	963.75	63	53	2.19	1927.67	1919	23	8.72E-03	50.6	1.44E+00	T

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:10:46.82

```
*****************************************************************************
*                            GEL Laboratories LLC                            *
*                              2040 Savage Road                              *
*                            Charleston, SC 29414                            *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521010.CNF;1  *
* Acquisition date : 20-MAR-2010 11:10:12  Detector SN#    :                *
* Detector ID      : GAM05                 Sensitivity     : 5.00000        *
* Geometry         : CAN                   Energy tolerance: 1.50000        *
* Elapsed live time: 0 02:00:00.00         Abundance limit : 75.00000       *
* Elapsed real time: 0 02:00:01.79         Half life ratio : 8.00000        *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date      : 25-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID        : G248521010            Analyst initials: MXR1           *
* Batch Number     : 961099                Sample Quantity : 1.18510E+02 GRAM *
*****************************************************************************
*                                                                           *
*                                 QC DATA                                   *
*                                                                           *
* CALIB. DATE/TIME : 11-JUN-2009 16:41:00.5MS Isotope      :                *
* MSD ID           :                       MSD Isotope     :                *
* LCS ID           : 1032-A                LCS Isotope     :                *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.545E+01	2.523E+00	6.689E-01	4.160E-02	38.052
CD-109	3.442E+00	9.769E-01	1.238E+00	9.430E-02	2.780
SN-126	3.325E-01	9.437E-02	1.195E-01	9.098E-03	2.784
BA-137M	7.057E-01	1.037E-01	7.940E-02	5.221E-03	8.888
CS-137	7.455E-01	1.096E-01	8.388E-02	5.534E-03	8.888
TL-208	5.144E-01	1.037E-01	6.684E-02	4.909E-03	7.695
PB-210	3.274E+00	1.018E+00	9.264E-01	7.145E-02	3.535
BI-211	4.287E+00	6.515E-01	4.141E-01	3.282E-02	10.353
PB-212	1.904E+00	2.441E-01	1.187E-01	1.285E-02	16.033
BI-214	1.430E+00	2.349E-01	1.456E-01	1.229E-02	9.824
PB-214	1.556E+00	2.515E-01	1.496E-01	1.441E-02	10.401
RA-224	4.668E+00	1.518E+00	1.273E+00	1.245E-01	3.667
RA-226	1.430E+00	2.349E-01	1.456E-01	1.229E-02	9.824
AC-228	2.076E+00	4.463E-01	3.215E-01	4.081E-02	6.456
RA-228	2.076E+00	4.463E-01	3.215E-01	4.081E-02	6.456
TH-228	1.904E+00	2.441E-01	1.187E-01	1.285E-02	16.033
TH-229	2.109E-01	1.372E-01	1.026E+00	1.024E-01	0.206
TH-232	2.076E+00	4.463E-01	3.215E-01	4.081E-02	6.456

Sample ID : G248521010 Acquisition date : 20-MAR-2010 11:10:12

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	1.743E+00	1.259E+00	1.207E+00	2.190E-01	1.444
U-235	1.830E-01	7.909E-02	3.835E-01	7.315E-02	0.477
NP-237	9.922E-01	3.501E-01	4.004E-01	8.934E-02	2.478
U-238	1.743E+00	1.259E+00	1.207E+00	2.190E-01	1.444
ANH-511	1.066E-01	8.244E-02	5.792E-02	3.707E-03	1.840

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.687E-01		4.689E-01	7.351E-01	5.264E-02	-0.366
NA-22	-2.077E-02		5.141E-02	7.910E-02	4.608E-03	-0.263
NA-24	4.531E+03		3.107E+03	Half-Life too short		
SC-46	1.043E-02		5.438E-02	9.146E-02	9.187E-03	0.114
V-48	-4.260E-02		1.261E-01	2.003E-01	1.835E-02	-0.213
CR-51	7.783E-02		5.142E-01	8.617E-01	7.614E-02	0.090
MN-54	-3.356E-02		4.745E-02	7.384E-02	6.764E-03	-0.455
CO-56	-5.273E-03		4.883E-02	8.015E-02	7.495E-03	-0.066
CO-57	8.560E-03		3.026E-02	4.971E-02	7.052E-03	0.172
CO-58	-3.431E-02		5.537E-02	8.711E-02	7.667E-03	-0.394
FE-59	6.068E-02		1.398E-01	2.371E-01	1.920E-02	0.256
CO-60	-6.864E-03		5.281E-02	8.390E-02	4.855E-03	-0.082
ZN-65	5.313E-02		1.324E-01	1.953E-01	1.364E-02	0.272
SE-75	2.441E-02		6.359E-02	9.495E-02	9.066E-03	0.257
SR-85	7.174E-02		5.563E-02	8.780E-02	5.628E-03	0.817
Y-88	2.337E-02		4.293E-02	7.807E-02	4.467E-03	0.299
Y-91	-4.392E+00		3.310E+01	5.316E+01	3.089E+00	-0.083
NB-94	5.052E-02		4.323E-02	7.797E-02	5.579E-03	0.648
NB-95	-3.840E-03		6.372E-02	1.058E-01	8.560E-03	-0.036
NB-95M	1.374E+00		2.687E-01	4.090E-01	4.481E-02	3.360
ZR-95	-2.857E-02		9.887E-02	1.611E-01	1.437E-02	-0.177
MO-99	7.702E-05		5.461E-05	Half-Life too short		
TC-99M	-5.063E+19		6.006E+19	Half-Life too short		
RU-103	-7.266E-05		6.135E-02	9.995E-02	1.269E-02	-0.001
RH-106	2.209E-02		4.162E-01	6.733E-01	8.104E-02	0.033
RU-106	2.209E-02		4.162E-01	6.733E-01	4.438E-02	0.033
AG-108M	1.049E-02		3.876E-02	6.462E-02	4.172E-03	0.162
AG-110M	1.696E-01		6.609E-02	1.108E-01	7.660E-03	1.531
SN-113	2.304E-02		6.041E-02	1.017E-01	6.306E-03	0.227
CD-115	-1.275E-04		8.800E-05	Half-Life too short		
SN-117M	1.578E-02		1.014E-01	1.646E-01	1.770E-02	0.096
TE-123M	3.315E-02		3.684E-02	6.127E-02	6.584E-03	0.541
SB-124	-6.744E-02		1.033E-01	1.484E-01	9.435E-03	-0.455
SB-125	-7.024E-02		1.211E-01	1.915E-01	1.199E-02	-0.367
TE-125M	-6.895E+00		1.224E+01	1.898E+01	2.466E+00	-0.363
I-126	3.315E-01		4.692E-01	7.042E-01	4.676E-02	0.471
SB-126	1.923E-01		3.035E-01	4.697E-01	3.484E-02	0.409
SB-127	3.199E+00		7.345E+00	1.267E+01	1.643E+00	0.252

Sample ID : G248521010 Acquisition date : 20-MAR-2010 11:10:12

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	-3.841E-02		2.918E-01	4.787E-01	3.632E-02	-0.080
TE-132	2.821E-01		4.665E+00	7.872E+00	1.440E+00	0.036
BA-133	3.762E-03		6.039E-02	8.708E-02	1.052E-02	0.043
I-133	-2.585E+00		2.227E+00	Half-Life too short		
CS-134	9.313E-02	+	9.738E-02	1.169E-01	1.007E-02	0.796
CS-135	3.484E-01		2.304E-01	3.610E-01	3.862E-02	0.965
I-135	-2.701E+17		1.702E+18	Half-Life too short		
CS-136	1.438E-01		1.874E-01	3.309E-01	2.837E-02	0.435
CE-139	-1.255E-02		3.824E-02	6.069E-02	6.025E-03	-0.207
BA-140	5.014E-02		5.123E-01	8.372E-01	2.799E-01	0.060
LA-140	-1.290E-01		1.663E-01	2.427E-01	1.426E-02	-0.532
CE-141	5.284E-02		8.937E-02	1.475E-01	1.803E-02	0.358
CE-143	8.052E-02	+	1.250E-02	Half-Life too short		
CE-144	1.235E-01		2.714E-01	3.932E-01	7.188E-02	0.314
PM-144	4.678E-03		4.671E-02	7.882E-02	5.576E-03	0.059
PR-144	3.463E-01		3.510E+00	5.922E+00	4.185E-01	0.058
PM-146	2.044E-02		5.571E-02	9.322E-02	8.122E-03	0.219
ND-147	1.192E-01		1.246E+00	1.911E+00	2.640E-01	0.062
PM-149	2.621E-04		6.496E-04	Half-Life too short		
EU-152	-1.600E-02		1.398E-01	1.992E-01	1.637E-02	-0.080
GD-153	-5.249E-02		9.368E-02	1.381E-01	1.280E-02	-0.380
EU-154	-5.862E-02		1.451E-01	2.232E-01	2.105E-02	-0.263
EU-155	8.394E-02		1.149E-01	1.920E-01	2.079E-02	0.437
TB-160	-1.034E-01		1.894E-01	2.970E-01	2.935E-02	-0.348
HO-166M	6.376E-02		7.087E-02	1.268E-01	9.238E-03	0.503
TA-182	1.474E-01		2.716E-01	4.615E-01	2.683E-02	0.319
IR-192	-2.168E-02		4.389E-02	7.094E-02	6.021E-03	-0.306
HG-203	-2.876E-03		5.323E-02	8.872E-02	8.415E-03	-0.032
BI-207	2.752E-02		6.876E-02	1.167E-01	9.243E-03	0.236
PB-211	3.202E-01		1.063E+00	1.537E+00	7.375E-01	0.208
BI-212	2.062E+00	+	1.102E+00	1.475E+00	1.729E-01	1.398
RN-219	3.249E-02		5.886E-01	8.827E-01	1.189E-01	0.037
RA-223	-2.508E-01		8.655E-01	1.218E+00	2.090E-01	-0.206
AC-227	1.690E-01		3.017E-01	5.171E-01	6.612E-02	0.327
TH-227	1.690E-01		3.019E-01	5.171E-01	7.374E-02	0.327
PA-231	-6.661E-01		1.796E+00	2.930E+00	4.376E-01	-0.227
TH-231	-2.508E-01		8.655E-01	1.218E+00	2.090E-01	-0.206
PA-233	-7.251E-02		7.820E-02	1.232E-01	1.089E-02	-0.588
PA-234	6.750E-03		3.968E-01	6.551E-01	1.262E-01	0.010
PA-234M	2.102E+00		6.321E+00	1.057E+01	1.080E+00	0.199
NP-239	-8.535E-02		4.595E-01	7.427E-01	9.767E-02	-0.115
AM-241	1.225E-01		8.114E-02	1.244E-01	1.113E-02	0.985
CM-247	5.690E-03		5.773E-02	8.294E-02	4.880E-03	0.069
CF-249	-6.757E-03		5.376E-02	8.799E-02	5.255E-03	-0.077
CF-251	5.074E-02		1.591E-01	2.590E-01	2.581E-02	0.196

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration     : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248521010           *
* Acquisition date  : 20-MAR-2010 11:10:12 Detector SN#     :               *
* Detector ID       : GAM05                Sensitivity      : 5.000         *
* Geometry          : CAN                  Energy tolerance: 1.500          *
* Elapsed live time:    0 02:00:00.00      Abundance limit : 75.000         *
* Elapsed real time:    0 02:00:01.79      Half life ratio : 8.000          *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248521010           Analyst initials: MXR1           *
* Batch Number      : 961099               Sample Quantity : 1.1851E+02 GRAM *
* Recovery          :    1.00000           Carrier Weight :    0.00000      *
*****************************************************************************
*                                                                           *
*                                 QC DATA                                   *
*                                                                           *
* CALIB. DATE/TIME : 11-JUN-2009 16:41:00 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.545E+01	2.473E+00	3.337E-01	1.262E+00
CD-109	3.442E+00	9.574E-01	6.372E-01	4.885E-01
SN-126	3.325E-01	9.249E-02	6.147E-02	4.719E-02
BA-137M	7.057E-01	1.016E-01	3.996E-02	5.184E-02
CS-137	7.455E-01	1.074E-01	4.222E-02	5.480E-02
TL-208	5.144E-01	1.016E-01	3.369E-02	5.183E-02
PB-210	3.274E+00	9.976E-01	4.799E-01	5.090E-01
BI-211	4.287E+00	6.384E-01	2.099E-01	3.257E-01
PB-212	1.904E+00	2.392E-01	6.045E-02	1.221E-01
BI-214	1.430E+00	2.302E-01	7.334E-02	1.175E-01
PB-214	1.556E+00	2.465E-01	7.582E-02	1.258E-01
RA-224	4.668E+00	1.487E+00	6.478E-01	7.589E-01
RA-226	1.430E+00	2.302E-01	7.334E-02	1.175E-01
AC-228	2.076E+00	4.374E-01	1.613E-01	2.232E-01
RA-228	2.076E+00	4.374E-01	1.613E-01	2.232E-01
TH-228	1.904E+00	2.392E-01	6.045E-02	1.221E-01
TH-229	-4.772E-01	6.500E-01	5.233E-01	3.316E-01
TH-232	2.076E+00	4.374E-01	1.613E-01	2.232E-01
TH-234	1.743E+00	1.234E+00	6.230E-01	6.294E-01
U-235	8.005E-03	2.348E-01	1.963E-01	1.198E-01
NP-237	9.922E-01	3.431E-01	2.061E-01	1.751E-01
U-238	1.743E+00	1.234E+00	6.230E-01	6.294E-01
ANH-511	1.066E-01	8.079E-02	2.923E-02	4.122E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-2.687E-01	4.595E-01	3.713E-01	2.345E-01	NOT IDENT.
NA-22	-2.077E-02	5.038E-02	3.952E-02	2.570E-02	NOT IDENT.
NA-24	4.531E+09	6.090E+09	0.000E+00	3.107E+09	SHORT HLIF
SC-46	1.043E-02	5.329E-02	4.588E-02	2.719E-02	FAIL ABUN

V-48	-4.260E-02	1.235E-01	1.004E-01	6.303E-02	NOT IDENT.
CR-51	7.783E-02	5.040E-01	4.372E-01	2.571E-01	NOT IDENT.
MN-54	-3.356E-02	4.650E-02	3.707E-02	2.373E-02	NOT IDENT.
CO-56	-5.273E-03	4.785E-02	4.023E-02	2.441E-02	NOT IDENT.
CO-57	8.560E-03	2.966E-02	2.549E-02	1.513E-02	NOT IDENT.
CO-58	-3.431E-02	5.426E-02	4.374E-02	2.769E-02	NOT IDENT.
FE-59	6.068E-02	1.370E-01	1.187E-01	6.988E-02	NOT IDENT.
CO-60	-6.864E-03	5.176E-02	4.190E-02	2.641E-02	NOT IDENT.
ZN-65	5.313E-02	1.298E-01	9.772E-02	6.620E-02	NOT IDENT.
SE-75	2.441E-02	6.232E-02	4.828E-02	3.180E-02	NOT IDENT.
SR-85	7.174E-02	5.452E-02	4.432E-02	2.781E-02	NOT IDENT.
Y-88	2.337E-02	4.208E-02	3.884E-02	2.147E-02	NOT IDENT.
Y-91	-4.392E+00	3.244E+01	2.658E+01	1.655E+01	NOT IDENT.
NB-94	5.052E-02	4.236E-02	3.922E-02	2.161E-02	NOT IDENT.
NB-95	-3.840E-03	6.244E-02	5.318E-02	3.186E-02	NOT IDENT.
NB-95M	1.374E+00	2.634E-01	2.082E-01	1.344E-01	NOT IDENT.
ZR-95	-2.857E-02	9.690E-02	8.096E-02	4.944E-02	NOT IDENT.
MO-99	7.702E+01	1.070E+02	0.000E+00	5.461E+01	SHORT HLIF
TC-99M	-5.063E+25	1.177E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-7.266E-05	6.012E-02	5.047E-02	3.067E-02	NOT IDENT.
RH-106	2.209E-02	4.079E-01	3.391E-01	2.081E-01	NOT IDENT.
RU-106	2.209E-02	4.079E-01	3.391E-01	2.081E-01	NOT IDENT.
AG-108M	1.049E-02	3.799E-02	3.268E-02	1.938E-02	NOT IDENT.
AG-110M	1.696E-01	6.477E-02	5.577E-02	3.305E-02	NOT IDENT.
SN-113	2.304E-02	5.920E-02	5.146E-02	3.021E-02	NOT IDENT.
CD-115	-1.275E+02	1.725E+02	0.000E+00	8.800E+01	SHORT HLIF
SN-117M	1.578E-02	9.941E-02	8.415E-02	5.072E-02	NOT IDENT.
TE-123M	3.315E-02	3.610E-02	3.133E-02	1.842E-02	NOT IDENT.
SB-124	-6.744E-02	1.012E-01	7.390E-02	5.163E-02	NOT IDENT.
SB-125	-7.024E-02	1.187E-01	9.687E-02	6.056E-02	FAIL ABUN
TE-125M	-6.895E+00	1.199E+01	9.742E+00	6.120E+00	NOT IDENT.
I-126	3.315E-01	4.598E-01	3.544E-01	2.346E-01	NOT IDENT.
SB-126	1.923E-01	2.974E-01	2.362E-01	1.517E-01	NOT IDENT.
SB-127	3.199E+00	7.198E+00	6.374E+00	3.672E+00	NOT IDENT.
I-131	-3.841E-02	2.859E-01	2.425E-01	1.459E-01	NOT IDENT.
TE-132	2.821E-01	4.572E+00	4.009E+00	2.333E+00	NOT IDENT.
BA-133	3.762E-03	5.918E-02	4.413E-02	3.019E-02	NOT IDENT.
I-133	-2.585E+06	4.364E+06	0.000E+00	2.227E+06	SHORT HLIF
CS-134	9.313E-02	9.544E-02	5.874E-02	4.869E-02	FAIL ABUN
CS-135	3.484E-01	2.258E-01	1.835E-01	1.152E-01	NOT IDENT.
I-135	-2.701E+23	3.336E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.438E-01	1.837E-01	1.657E-01	9.372E-02	NOT IDENT.
CE-139	-1.255E-02	3.747E-02	3.102E-02	1.912E-02	NOT IDENT.
BA-140	5.014E-02	5.020E-01	4.224E-01	2.561E-01	NOT IDENT.
LA-140	-1.290E-01	1.630E-01	1.209E-01	8.317E-02	FAIL ABUN
CE-141	5.284E-02	8.758E-02	7.548E-02	4.468E-02	NOT IDENT.
CE-143	8.052E+04	2.449E+04	0.000E+00	1.250E+04	SHORT HLIF
CE-144	1.235E-01	2.660E-01	2.014E-01	1.357E-01	NOT IDENT.
PM-144	4.678E-03	4.578E-02	3.965E-02	2.335E-02	NOT IDENT.
PR-144	3.463E-01	3.440E+00	2.979E+00	1.755E+00	NOT IDENT.
PM-146	2.044E-02	5.460E-02	4.712E-02	2.786E-02	NOT IDENT.
ND-147	1.192E-01	1.221E+00	9.640E-01	6.232E-01	FAIL ABUN
PM-149	2.621E+02	1.273E+03	0.000E+00	6.496E+02	SHORT HLIF
EU-152	-1.600E-02	1.370E-01	1.010E-01	6.990E-02	FAIL ABUN
GD-153	-5.249E-02	9.180E-02	7.099E-02	4.684E-02	NOT IDENT.
EU-154	-5.862E-02	1.422E-01	1.115E-01	7.257E-02	NOT IDENT.
EU-155	8.394E-02	1.126E-01	9.859E-02	5.744E-02	FAIL ABUN
TB-160	-1.034E-01	1.856E-01	1.490E-01	9.471E-02	FAIL ABUN
HO-166M	6.376E-02	6.946E-02	6.377E-02	3.544E-02	FAIL ABUN
TA-182	1.474E-01	2.662E-01	2.307E-01	1.358E-01	FAIL ABUN
IR-192	-2.168E-02	4.302E-02	3.600E-02	2.195E-02	FAIL ABUN
HG-203	-2.876E-03	5.216E-02	4.508E-02	2.661E-02	FAIL ABUN
BI-207	2.752E-02	6.738E-02	5.844E-02	3.438E-02	FAIL ABUN
PB-211	3.202E-01	1.042E+00	7.779E-01	5.315E-01	NOT IDENT.
BI-212	2.062E+00	1.080E+00	7.417E-01	5.509E-01	FAIL ABUN
RN-219	3.249E-02	5.768E-01	4.468E-01	2.943E-01	FAIL ABUN
RA-223	-2.508E-01	8.482E-01	6.180E-01	4.327E-01	FAIL ABUN
AC-227	1.690E-01	2.957E-01	2.630E-01	1.509E-01	FAIL ABUN
TH-227	1.690E-01	2.959E-01	2.630E-01	1.510E-01	FAIL ABUN
PA-231	-6.661E-01	1.761E+00	1.489E+00	8.982E-01	NOT IDENT.
TH-231	-2.508E-01	8.482E-01	6.180E-01	4.327E-01	FAIL ABUN
PA-233	-7.251E-02	7.664E-02	6.255E-02	3.910E-02	FAIL ABUN
PA-234	6.750E-03	3.889E-01	3.284E-01	1.984E-01	NOT IDENT.
PA-234M	2.102E+00	6.195E+00	5.297E+00	3.161E+00	NOT IDENT.
NP-239	-8.535E-02	4.503E-01	3.810E-01	2.298E-01	NOT IDENT.
AM-241	1.225E-01	7.952E-02	6.426E-02	4.057E-02	NOT IDENT.
CM-247	5.690E-03	5.658E-02	4.198E-02	2.887E-02	NOT IDENT.
CF-249	-6.757E-03	5.268E-02	4.455E-02	2.688E-02	NOT IDENT.

CF-251	5.074E-02	1.560E-01	1.323E-01	7.957E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	414.7162
49.72	494.8475
57.36	0.0000
59.54	480.8368
63.29	597.5385
63.29	597.5385
64.28	587.2596
67.75	582.6749
69.67	623.1634
70.83	598.9244
72.81	625.7955
72.87	625.8463
72.87	625.8463
74.82	614.9758
74.82	614.9758
74.82	614.9758
74.97	615.0942
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77.11	616.7975
77.11	616.7975
79.69	618.8206
79.80	618.9059
80.12	619.1546
80.19	619.2091
80.57	624.0917
81.00	610.8514
81.07	610.9051
81.07	610.9051
83.79	552.8613
83.79	552.8613
85.43	596.7786
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86.55	704.2352
86.79	731.7769
86.94	731.9102
87.57	555.3797
88.03	555.6829
88.47	555.9714
89.96	468.1560
91.11	468.7844
92.59	336.8054
92.59	336.8054
93.35	335.4780
94.67	396.0368
94.87	436.7129
94.87	436.7129
95.86	469.7061
97.43	413.8182
98.44	341.2733
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103.37	391.2489
105.31	373.5852
106.12	341.0351
109.28	399.8793
111.00	355.1620
111.76	385.4033
116.30	401.7083
117.23	374.0282
121.12	348.3452
121.78	350.6554
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123.07	398.4636
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136.00	342.6704

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140.51	0.0000
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144.24	348.3855
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152.43	319.7307
153.25	326.3932
154.21	363.1891
154.21	363.1891
156.02	357.2815
158.56	337.5439
159.00	312.8532
162.66	325.6914
163.33	324.7856
165.86	334.1233
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197.04	320.9952
205.31	296.7351
210.85	245.8374
215.65	262.8446
222.11	269.4095
227.38	262.1814
228.16	249.6082
228.18	249.6115
235.69	264.5046
235.96	264.5507
235.96	264.5507
238.63	281.4485
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244.70	220.1484
252.40	208.2927
252.80	209.2656
256.23	205.0824
256.23	205.0824
260.90	0.0000
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268.22	217.0980
269.46	215.0821
269.46	215.0821
271.23	215.3049
273.65	217.7844
276.40	215.0157
277.37	200.4377
277.60	209.8188
278.00	187.1411
279.20	220.9792
279.54	217.2763
280.46	238.0041
283.69	204.6464
284.31	201.9011
285.41	205.7857
285.90	0.0000
287.50	183.4481
293.27	0.0000
295.22	160.6160
295.96	160.6824
298.57	160.9127
299.98	202.0833
299.98	202.0833
300.09	202.0964
300.09	202.0964
300.13	202.1016
301.36	213.2968
302.85	207.1448
304.50	199.4154
304.50	199.4154
304.85	215.2835
308.46	180.8085
311.90	190.6738

316.51	169.1569
319.41	164.6283
320.08	148.4080
323.87	166.2896
323.87	166.2896
328.76	142.3452
333.37	125.3265
334.37	125.3900
334.37	125.3900
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338.32	159.4671
338.32	159.4671
338.32	159.4671
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340.55	164.4841
344.28	169.6359
351.06	163.7223
351.93	161.5217
356.01	159.2420
364.49	158.5907
366.42	0.0000
383.85	161.0282
388.16	167.2857
388.63	178.2136
391.69	143.7610
400.66	149.3225
401.81	152.2470
402.40	157.7419
404.85	139.6292
410.95	147.0090
414.70	133.5612
423.72	130.7332
427.09	144.0159
427.87	148.0946
433.94	127.2674
453.88	121.2036
463.37	131.9006
468.07	148.5418
473.00	128.3081
476.78	120.2778
477.60	126.4864
487.02	116.6361
492.35	0.0000
497.08	115.0229
511.00	100.0113
514.00	85.1758
527.90	0.0000
529.87	0.0000
531.02	83.9707
537.26	90.4743
546.56	0.0000
563.25	87.0790
569.33	92.5883
569.50	92.5926
569.70	91.5346
583.19	75.9263
600.60	98.1650
602.73	104.0677
604.72	93.3656
609.32	95.3077
609.32	95.3077
610.33	86.3457
614.28	72.0508
618.01	86.5684
621.93	84.5127
621.93	84.5127
633.25	84.8288
635.95	70.7526
636.99	77.3096
645.85	66.6115
657.76	85.8664
661.66	95.1196
661.66	95.1196
664.57	0.0000
666.33	64.1168
666.50	64.1197
677.62	79.9704

685.70	84.7788
695.00	88.7168
696.49	93.3806
696.51	93.3806
697.00	94.3197
702.65	71.3243
706.68	80.6863
711.68	56.6588
720.70	60.6698
721.93	0.0000
722.78	73.4890
722.91	73.4906
723.31	84.6850
724.19	83.1090
727.33	74.6533
733.00	68.9032
735.93	76.5447
739.50	0.0000
747.24	68.5207
752.31	67.6816
753.82	75.2344
756.73	75.2979
763.94	91.4861
765.81	99.0848
766.42	98.1580
777.92	0.0000
778.90	60.6198
783.70	76.8257
785.37	81.6048
795.86	69.4727
801.95	62.0999
810.29	78.3498
810.76	76.4486
815.77	57.4146
818.51	57.4573
832.01	60.5506
834.85	76.9482
836.80	0.0000
846.77	53.0709
856.80	56.3908
860.56	64.8858
871.09	58.2666
873.19	47.6103
875.33	0.0000
879.36	63.2570
880.51	62.3021
883.24	50.6564
884.68	56.5226
889.28	58.5400
898.04	70.4048
911.20	72.3225
911.20	72.3225
911.20	72.3225
926.50	64.0174
937.49	69.1284
944.13	63.3073
946.00	60.3671
949.00	55.4600
962.29	59.6130
964.08	59.6387
966.15	59.6692
968.97	51.1795
968.97	51.1795
968.97	51.1795
983.53	56.9211
996.26	61.1005
1001.03	57.1577
1004.73	60.2185
1037.84	56.6357
1038.76	0.0000
1048.07	36.4937
1050.41	53.7548
1050.41	53.7548
1063.66	51.8820
1085.87	50.0946
1099.45	56.3965
1112.07	40.5420
1115.54	52.9206

1120.29	51.5035
1120.29	51.5035
1120.55	51.5055
1121.30	51.5137
1131.51	0.0000
1173.23	54.1688
1177.93	68.8198
1189.05	62.7075
1204.77	74.4437
1221.41	61.0208
1231.02	94.8706
1235.36	70.6886
1238.28	55.9502
1260.41	0.0000
1271.85	36.1333
1274.44	42.5309
1274.54	42.5309
1291.59	39.4736
1298.22	0.0000
1312.11	35.3458
1332.49	39.7837
1365.19	29.2104
1368.63	0.0000
1384.29	31.6414
1408.01	28.9749
1457.56	0.0000
1460.82	23.5892
1489.16	26.5518
1505.03	28.5268
1596.21	28.0047
1620.50	18.4215
1678.03	0.0000
1690.97	17.6509
1764.49	20.8301
1764.49	20.8301
1770.23	56.5885
1771.35	26.8098
1791.20	0.0000
1836.06	9.0242

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248521010

Total Uranium Activity	5.1884E+00	ug/g
Total Uranium Counting Unc.	3.6717E+00	ug/g
Total Uranium Tpu	1.8733E-06	ug/g
Total Uranium Mda	1.8557E+00	ug/g

```
*****************************************************************************
*                                                                           *
*                          GEL Laboratories LLC                          *
*                               2040 SAVAGE ROAD                            *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID      : 961099                    SAMPLE ID  : G248521010       *
*   ANALYST       : MXR1                      DETECTOR   : GAM05            *
*   SAMPLE DATE   : 25-FEB-2010 12:00:00.00   COUNT TIME :    0 02:00:00.00 *
*   ANALYSIS DATE: 20-MAR-2010 11:10:12.77    SAMPLE ALQT:  118.510 GRAM    *
*                                                                           *
*****************************************************************************


        GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 1.050E+01
        GROSS GAMMA ERROR   (pCi/GRAM  )  : 1.578E+00
        GROSS GAMMA MDA     (pCi/GRAM  )  : 4.676E+00
        GROSS GAMMA DLC     (pCi/GRAM  )  : 2.285E+00
```

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:11:31.99

```
*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521011.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:10:38
Sample ID         : G248521011           Sample quantity  : 1.27140E+02 GRAM
Detector name     : GAM06                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.23  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	74.89	380	355	1.02	149.35	143	17	5.27E-02	9.3	1.25E+00
2	3	77.10*	582	369	1.19	153.77	143	17	8.09E-02	7.3	
3	0	87.10	134	446	1.04	173.76	171	7	1.87E-02	27.4	
4	0	90.02	147	294	1.27	179.59	177	6	2.04E-02	20.4	
5	0	93.03*	112	394	1.07	185.60	182	7	1.56E-02	32.5	
6	0	208.99	84	214	0.76	417.42	414	7	1.17E-02	30.6	
7	3	238.75*	1185	180	1.22	476.90	469	19	1.65E-01	3.5	1.42E+00
8	3	241.67	296	215	1.68	482.76	469	19	4.11E-02	12.9	
9	0	270.37	107	202	1.02	540.13	535	10	1.49E-02	26.6	
10	0	295.21*	384	180	1.11	589.78	585	11	5.33E-02	8.6	
11	0	300.14	97	146	1.54	599.64	595	10	1.35E-02	25.5	
12	0	338.40*	197	155	1.17	676.14	672	10	2.73E-02	14.1	
13	0	352.02*	585	191	1.16	703.36	697	13	8.13E-02	6.5	
14	0	463.13	80	104	1.55	925.52	919	13	1.12E-02	28.4	
15	0	510.90*	82	158	1.62	1021.05	1014	15	1.14E-02	39.5	
16	0	583.28*	358	115	1.60	1165.77	1158	17	4.97E-02	8.8	
17	0	609.35*	433	96	1.41	1217.90	1212	14	6.01E-02	6.9	
18	0	727.53	103	59	1.55	1454.24	1448	13	1.43E-02	18.2	
19	0	769.24	45	92	1.11	1537.65	1531	13	6.32E-03	45.2	
20	0	861.37	33	55	1.37	1721.92	1714	13	4.58E-03	50.6	
21	0	911.52*	214	75	1.17	1822.22	1816	13	2.97E-02	11.1	
22	1	964.72	61	29	2.04	1928.63	1920	28	8.43E-03	21.4	1.73E+00
23	1	969.09*	171	26	2.04	1937.37	1920	28	2.38E-02	10.1	
24	0	1120.85	110	57	2.28	2240.95	2230	19	1.53E-02	19.0	
25	0	1460.77*	850	35	2.17	2921.04	2911	20	1.18E-01	3.9	
26	0	1764.83	88	9	1.78	3529.52	3523	12	1.22E-02	12.7	
27	0	1847.16	21	7	0.62	3694.32	3687	13	2.85E-03	33.8	

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

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 13:11:35

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521011.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:10:38
Sample ID : G248521011 Sample quantity : 127.14 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA6 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.23 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.522E+01	3.073E+00	6.359E-01	5.995E-02	39.662
CD-109	+	88.03	*	2.148E+00	1.200E+00	1.364E+00	1.517E-01	1.576
SN-126		64.28		4.896E-01	5.956E-01	9.949E-01	1.540E-01	0.492
	+	86.94		8.628E-01	5.951E-01	6.404E-01	2.684E-01	1.347
	+	87.57	*	2.075E-01	1.159E-01	1.324E-01	1.466E-02	1.568
TL-208		277.37		4.469E-01	4.437E-01	7.656E-01	9.963E-02	0.584
	+	583.19	*	5.851E-01	1.162E-01	6.550E-02	5.981E-03	8.932
	+	860.56		5.159E-01	5.241E-01	5.528E-01	5.375E-02	0.933
BI-211		72.87		1.780E+00	4.022E+00	6.041E+00	5.806E-01	0.295
	+	351.06	*	4.255E+00	6.790E-01	3.715E-01	3.486E-02	11.454
PB-212	+	74.82		2.638E+00	6.116E-01	6.120E-01	8.432E-02	4.310
	+	77.11		2.306E+00	4.082E-01	3.491E-01	3.471E-02	6.607
	+	238.63	*	1.915E+00	2.383E-01	1.023E-01	1.050E-02	18.716
	+	300.09		2.448E+00	1.279E+00	1.335E+00	1.480E-01	1.834
BI-214	+	609.32	*	1.369E+00	2.325E-01	1.310E-01	1.300E-02	10.456
	+	1120.29		1.854E+00	7.305E-01	4.680E-01	5.055E-02	3.961
	+	1764.49		2.054E+00	5.506E-01	3.221E-01	2.776E-02	6.377
PB-214	+	74.82		4.676E+00	1.052E+00	1.085E+00	1.364E-01	4.310
	+	77.11		4.066E+00	7.940E-01	6.154E-01	7.950E-02	6.607
	+	242.00		2.904E+00	8.132E-01	6.227E-01	6.771E-02	4.663
	+	295.22		1.718E+00	3.535E-01	2.458E-01	2.790E-02	6.990
	+	351.93	*	1.544E+00	2.607E-01	1.351E-01	1.470E-02	11.430
RA-224	+	240.99	*	5.134E+00	1.407E+00	1.097E+00	1.009E-01	4.679
RA-226	+	609.32	*	1.369E+00	2.325E-01	1.310E-01	1.300E-02	10.456
	+	1120.29		1.854E+00	7.305E-01	4.680E-01	5.055E-02	3.961
	+	1764.49		2.054E+00	5.506E-01	3.221E-01	2.776E-02	6.377
AC-228	+	338.32		1.590E+00	8.026E-01	4.542E-01	1.899E-01	3.502
	+	911.20	*	1.711E+00	4.320E-01	2.743E-01	3.313E-02	6.238
	+	968.97		2.364E+00	7.508E-01	4.010E-01	9.845E-02	5.896
RA-228	+	338.32		1.590E+00	8.026E-01	4.542E-01	1.899E-01	3.502
	+	911.20	*	1.711E+00	4.320E-01	2.743E-01	3.313E-02	6.238
	+	968.97		2.364E+00	7.508E-01	4.010E-01	9.845E-02	5.896
TH-228	+	74.82		2.638E+00	5.560E-01	6.120E-01	6.013E-02	4.310
	+	77.11		2.306E+00	4.082E-01	3.491E-01	3.471E-02	6.607

Sample ID : G248521011 Acquisition date : 20-MAR-2010 11:10:38

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	1.915E+00	2.383E-01	1.023E-01	1.050E-02	18.716
	+	300.09		2.448E+00	1.953E+00	1.335E+00	8.185E-01	1.834
TH-232	+	338.32		1.590E+00	4.720E-01	4.542E-01	4.123E-02	3.502
	+	911.20	*	1.711E+00	4.320E-01	2.743E-01	3.313E-02	6.238
	+	968.97		2.364E+00	7.508E-01	4.010E-01	9.845E-02	5.896
NP-237	+	86.48	*	6.193E-01	3.695E-01	4.496E-01	1.063E-01	1.378
		95.86		-1.024E-01	1.044E+00	1.507E+00	3.698E-01	-0.068
ANH-511	+	511.00	*	1.023E-01	8.131E-02	5.964E-02	5.176E-03	1.716

---- 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	*	-1.676E-01	3.959E-01	6.471E-01	6.044E-02	-0.259
NA-22		1274.54	*	-5.211E-04	5.049E-02	8.261E-02	7.258E-03	-0.006
NA-24		1368.63	*	-2.752E+03	5.049E-02	Half-Life too short		
SC-46		889.28	*	-5.667E-03	5.427E-02	8.653E-02	7.997E-03	-0.065
	+	1120.55		3.346E-01	1.299E-01	1.657E-01	1.404E-02	2.019
V-48		944.13		-4.640E-01	1.468E+00	2.389E+00	2.198E-01	-0.194
		983.53	*	-1.217E-02	1.162E-01	1.924E-01	1.751E-02	-0.063
		1312.11		-1.040E-01	1.216E-01	1.737E-01	1.566E-02	-0.599
CR-51		320.08	*	-8.359E-03	5.465E-01	8.949E-01	8.615E-02	-0.009
MN-54		834.85	*	1.498E-02	4.407E-02	7.362E-02	6.634E-03	0.204
CO-56		846.77	*	-2.640E-02	4.220E-02	6.282E-02	5.694E-03	-0.420
		1037.84		3.354E-01	3.819E-01	6.879E-01	6.424E-02	0.488
		1238.28		1.099E-01	1.218E-01	2.139E-01	1.881E-02	0.514
		1771.35		-3.263E-02	2.670E-01	3.602E-01	3.097E-02	-0.091
CO-57		122.06	*	-3.438E-03	2.692E-02	4.304E-02	3.624E-03	-0.080
		136.47		4.309E-02	2.303E-01	3.717E-01	3.338E-02	0.116
CO-58		810.76	*	-4.816E-02	5.158E-02	7.560E-02	6.744E-03	-0.637
FE-59		1099.45	*	5.376E-02	1.269E-01	2.186E-01	2.032E-02	0.246
		1291.59		8.011E-02	1.782E-01	3.051E-01	3.057E-02	0.263
CO-60		1173.23		-9.959E-03	5.284E-02	8.551E-02	6.933E-03	-0.116
		1332.49	*	-2.021E-02	4.340E-02	6.596E-02	6.033E-03	-0.306
ZN-65		1115.54	*	-8.419E-02	1.320E-01	1.711E-01	1.456E-02	-0.492
SE-75		121.12		-8.692E-02	1.440E-01	2.242E-01	2.455E-02	-0.388
		136.00		7.432E-03	4.523E-02	7.294E-02	6.118E-03	0.102
		264.66	*	-3.442E-02	6.517E-02	9.129E-02	8.520E-03	-0.377
		279.54		-7.402E-02	1.324E-01	2.118E-01	2.037E-02	-0.349
		400.66		3.224E-01	3.142E-01	5.397E-01	5.931E-02	0.597
SR-85		514.00	*	1.084E-01	5.804E-02	9.681E-02	8.399E-03	1.120
Y-88		898.04		-6.447E-03	5.357E-02	8.516E-02	7.932E-03	-0.076
		1836.06	*	1.697E-02	4.481E-02	7.897E-02	6.601E-03	0.215
Y-91		1204.77	*	-7.532E+00	2.757E+01	4.413E+01	3.671E+00	-0.171
NB-94		702.65	*	1.485E-02	4.108E-02	6.931E-02	5.775E-03	0.214
		871.09		-2.194E-02	3.792E-02	5.699E-02	5.225E-03	-0.385
NB-95		765.81	*	3.336E-02	6.124E-02	9.197E-02	7.980E-03	0.363
NB-95M		235.69	*	1.377E-01	1.670E-01	2.574E-01	2.667E-02	0.535
ZR-95		724.19		3.820E-02	1.254E-01	1.845E-01	1.696E-02	0.207

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		756.73	*	4.393E-02	9.275E-02	1.576E-01	1.502E-02	0.279
MO-99		140.51		-1.540E-05	9.275E-02	Half-Life too short		
		181.07		1.205E-05	9.275E-02	Half-Life too short		
		366.42		-6.278E-04	9.275E-02	Half-Life too short		
		739.50	*	-2.170E-05	9.275E-02	Half-Life too short		
		777.92		-3.031E-04	9.275E-02	Half-Life too short		
TC-99M		140.51	*	-9.611E+18	9.275E-02	Half-Life too short		
RU-103		497.08	*	-3.452E-02	5.153E-02	8.204E-02	1.149E-02	-0.421
	+	610.33		1.623E+01	3.457E+00	3.883E+00	6.303E-01	4.181
RH-106		621.93	*	1.602E-01	3.827E-01	6.533E-01	8.542E-02	0.245
		1050.41		-7.044E-02	2.843E+00	4.720E+00	4.175E-01	-0.015
RU-106		621.93	*	1.602E-01	3.824E-01	6.533E-01	5.448E-02	0.245
		1050.41		-7.044E-02	2.843E+00	4.720E+00	4.175E-01	-0.015
AG-108M		433.94	*	-3.672E-03	3.679E-02	5.865E-02	5.211E-03	-0.063
		614.28		-2.703E-02	4.647E-02	6.225E-02	5.397E-03	-0.434
		722.91		-3.655E-03	4.612E-02	6.464E-02	5.643E-03	-0.057
AG-110M		657.76	*	-2.726E-02	4.722E-02	7.445E-02	6.248E-03	-0.366
		677.62		-3.380E-02	3.588E-01	5.854E-01	4.946E-02	-0.058
		706.68		-2.470E-02	2.629E-01	4.279E-01	3.685E-02	-0.058
		763.94		2.102E-02	2.039E-01	2.915E-01	2.595E-02	0.072
		884.68		5.456E-04	6.177E-02	9.964E-02	9.448E-03	0.005
		937.49		-1.699E-02	1.373E-01	2.280E-01	2.167E-02	-0.075
		1384.29		-6.606E-02	2.060E-01	3.205E-01	3.014E-02	-0.206
		1505.03		-3.725E-01	3.903E-01	5.370E-01	4.927E-02	-0.694
SN-113		391.69	*	-2.684E-02	5.539E-02	8.644E-02	7.539E-03	-0.311
CD-115		260.90		7.773E-04	5.539E-02	Half-Life too short		
		492.35		3.788E-05	5.539E-02	Half-Life too short		
		527.90	*	-8.369E-05	5.539E-02	Half-Life too short		
SN-117M		156.02		-8.456E-01	3.815E+00	5.991E+00	5.026E-01	-0.141
		158.56	*	1.231E-02	9.324E-02	1.489E-01	1.251E-02	0.083
TE-123M		159.00	*	1.236E-02	3.341E-02	5.395E-02	4.565E-03	0.229
SB-124		602.73		1.205E-02	5.277E-02	8.138E-02	6.865E-03	0.148
		645.85		2.476E-01	6.152E-01	1.049E+00	9.149E-02	0.236
		722.78		-5.071E-02	5.062E-01	7.075E-01	6.119E-02	-0.072
		1690.97	*	4.754E-02	1.040E-01	1.860E-01	1.712E-02	0.256
SB-125		427.87	*	5.229E-03	1.079E-01	1.741E-01	1.524E-02	0.030
	+	463.37		8.940E-01	5.150E-01	6.279E-01	5.846E-02	1.424
		600.60		-2.441E-01	2.201E-01	3.256E-01	2.961E-02	-0.750
		635.95		1.706E-01	3.229E-01	5.558E-01	4.995E-02	0.307
TE-125M		109.28	*	1.205E+01	1.149E+01	1.917E+01	2.069E+00	0.628
I-126		388.63		1.253E-01	3.033E-01	5.041E-01	4.284E-02	0.249
		666.33	*	-4.924E-01	4.329E-01	6.470E-01	5.254E-02	-0.761
		753.82		2.782E+00	3.248E+00	5.686E+00	4.898E-01	0.489
SB-126		414.70		-2.113E-02	1.344E-01	2.139E-01	1.828E-02	-0.099
		666.50		-1.705E-01	1.517E-01	2.270E-01	1.844E-02	-0.751
		695.00		3.733E-02	1.398E-01	2.347E-01	1.946E-02	0.159
		697.00		-5.310E-01	5.129E-01	7.666E-01	6.363E-02	-0.693
		720.70	*	-1.744E-01	3.135E-01	4.127E-01	3.482E-02	-0.422
		856.80		4.862E-01	8.870E-01	1.340E+00	1.220E-01	0.363

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		252.40		4.031E-01	1.960E+01	3.263E+01	1.385E+01	0.012
		473.00		1.818E+00	7.285E+00	1.187E+01	1.798E+00	0.153
		685.70	*	5.400E+00	6.390E+00	1.117E+01	1.533E+00	0.483
		783.70		1.553E+01	1.755E+01	3.049E+01	4.530E+00	0.509
I-131		80.19		4.141E+00	9.632E+00	1.445E+01	1.494E+00	0.287
		284.31		-2.155E+00	3.347E+00	5.312E+00	5.199E-01	-0.406
		364.49	*	7.304E-02	2.646E-01	4.379E-01	4.090E-02	0.167
		636.99		2.561E+00	3.664E+00	6.381E+00	5.640E-01	0.401
TE-132		49.72		4.217E+01	1.390E+02	2.349E+02	3.304E+01	0.179
		111.76		-1.428E+02	1.936E+02	3.005E+02	4.096E+01	-0.475
		116.30		4.630E+01	1.730E+02	2.823E+02	3.810E+01	0.164
		228.16	*	4.057E+00	4.739E+00	8.134E+00	1.455E+00	0.499
BA-133		81.00		-1.867E-01	1.146E-01	1.474E-01	2.434E-02	-1.267
		276.40		5.060E-01	4.265E-01	7.173E-01	1.043E-01	0.705
		302.85		-2.689E-02	1.774E-01	2.526E-01	3.413E-02	-0.106
		356.01	*	-2.717E-02	5.489E-02	7.433E-02	9.774E-03	-0.366
		383.85		-2.062E-02	3.541E-01	5.713E-01	7.077E-02	-0.036
I-133		529.87	*	2.581E-02	3.541E-01	Half-Life too short		
		875.33		6.608E+01	3.541E-01	Half-Life too short		
		1298.22		6.526E+01	3.541E-01	Half-Life too short		
CS-134		563.25		4.014E-01	3.950E-01	7.073E-01	6.129E-02	0.568
		569.33		1.989E-01	2.463E-01	4.249E-01	3.689E-02	0.468
		604.72		1.703E-02	4.188E-02	6.304E-02	5.326E-03	0.270
		795.86	*	7.300E-02	5.867E-02	1.045E-01	9.293E-03	0.698
		801.95		-1.663E-01	4.611E-01	7.217E-01	6.427E-02	-0.230
		1365.19		1.196E+00	1.434E+00	2.599E+00	2.482E-01	0.460
CS-135		268.22	*	1.162E-01	2.111E-01	3.185E-01	3.364E-02	0.365
I-135		546.56		6.699E+18	2.111E-01	Half-Life too short		
		836.80		6.431E+18	2.111E-01	Half-Life too short		
		1038.76		1.160E+19	2.111E-01	Half-Life too short		
		1131.51		1.797E+18	2.111E-01	Half-Life too short		
		1260.41	*	-3.407E+18	2.111E-01	Half-Life too short		
		1457.56		2.748E+20	2.111E-01	Half-Life too short		
		1678.03		-1.632E+18	2.111E-01	Half-Life too short		
		1791.20		1.680E+17	2.111E-01	Half-Life too short		
CS-136		153.25		8.339E-01	1.452E+00	2.368E+00	2.384E-01	0.352
		176.60		5.485E-02	7.775E-01	1.322E+00	1.254E-01	0.041
		273.65		-1.333E+00	1.064E+00	1.393E+00	1.392E-01	-0.957
		340.55		8.012E-01	3.064E-01	5.088E-01	4.772E-02	1.575
		818.51		-8.300E-02	1.336E-01	2.025E-01	1.813E-02	-0.410
		1048.07	*	-1.883E-01	1.808E-01	2.648E-01	2.441E-02	-0.711
		1235.36		-1.639E-02	1.137E+00	1.866E+00	2.183E-01	-0.009
BA-137M		661.66	*	6.680E-02	4.825E-02	8.650E-02	7.000E-03	0.772
CS-137		661.66	*	7.057E-02	5.097E-02	9.138E-02	7.411E-03	0.772
CE-139		165.86	*	-1.403E-02	3.632E-02	5.635E-02	4.765E-03	-0.249
BA-140		162.66		9.077E-02	1.421E+00	2.258E+00	2.038E-01	0.040
		304.85		-6.145E-01	2.806E+00	3.967E+00	1.169E+00	-0.155
		423.72		-7.796E-01	3.440E+00	5.422E+00	1.783E+00	-0.144
		537.26	*	4.828E-02	4.506E-01	7.596E-01	2.577E-01	0.064

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LA-140		328.76		8.420E-01	5.677E-01	9.931E-01	9.549E-02	0.848
		487.02		-1.068E-01	2.466E-01	4.026E-01	3.709E-02	-0.265
		815.77		1.019E-01	5.611E-01	9.273E-01	9.184E-02	0.110
		1596.21	*	-1.665E-02	1.709E-01	2.815E-01	2.551E-02	-0.059
CE-141		145.44	*	2.756E-02	8.162E-02	1.322E-01	1.124E-02	0.208
CE-143		57.36		-4.017E-02	8.162E-02	Half-Life too short		
		293.27	*	3.427E-02	8.162E-02	Half-Life too short		
		664.57		-7.559E-02	8.162E-02	Half-Life too short		
		721.93		-5.406E-03	8.162E-02	Half-Life too short		
CE-144		80.12		1.104E+00	2.694E+00	4.038E+00	4.129E-01	0.273
		133.52	*	-9.740E-02	2.209E-01	3.453E-01	5.222E-02	-0.282
PM-144		476.78		1.016E-02	7.308E-02	1.244E-01	1.173E-02	0.082
		618.01		1.228E-02	3.932E-02	6.508E-02	5.605E-03	0.189
		696.49	*	-5.047E-02	4.275E-02	6.289E-02	5.223E-03	-0.803
PR-144		696.51	*	-3.783E+00	3.213E+00	4.729E+00	3.924E-01	-0.800
		1489.16		7.104E+00	1.473E+01	2.573E+01	2.363E+00	0.276
PM-146		453.88	*	5.645E-03	4.933E-02	7.966E-02	8.457E-03	0.071
		633.25		-4.327E-01	1.694E+00	2.731E+00	1.041E+00	-0.158
		735.93		2.574E-02	1.599E-01	2.653E-01	7.427E-02	0.097
		747.24		-6.107E-02	1.143E-01	1.767E-01	2.574E-02	-0.346
ND-147	+	91.11		1.244E+00	5.268E-01	8.629E-01	9.688E-02	1.442
		319.41		-5.023E-01	6.524E+00	1.065E+01	9.806E-01	-0.047
		531.02	*	-8.089E-01	9.816E-01	1.519E+00	2.274E-01	-0.533
PM-149		285.90	*	-4.398E-04	9.816E-01	Half-Life too short		
EU-152		121.78		-1.410E-03	7.529E-02	1.210E-01	1.178E-02	-0.012
		244.70		3.072E-01	3.876E-01	5.991E-01	5.521E-02	0.513
		344.28	*	-4.214E-03	1.244E-01	1.872E-01	1.781E-02	-0.023
		778.90		-1.176E-01	3.035E-01	4.754E-01	4.157E-02	-0.247
	+	964.08		9.036E-01	3.959E-01	6.358E-01	5.820E-02	1.421
		1085.87		-1.951E-01	4.578E-01	7.304E-01	6.333E-02	-0.267
		1112.07		1.521E-02	4.350E-01	6.228E-01	5.307E-02	0.024
		1408.01		1.625E-01	2.156E-01	3.851E-01	3.542E-02	0.422
GD-153		69.67		1.992E+00	2.155E+00	3.317E+00	3.120E-01	0.600
		97.43	*	-5.232E-02	9.295E-02	1.395E-01	1.377E-02	-0.375
		103.18		-3.053E-02	1.212E-01	1.943E-01	1.820E-02	-0.157
EU-154		123.07		7.835E-04	5.374E-02	8.650E-02	9.675E-03	0.009
		723.31		3.014E-02	2.040E-01	2.948E-01	2.753E-02	0.102
		873.19		3.417E-01	3.051E-01	5.479E-01	6.741E-02	0.624
		996.26		-4.590E-01	4.391E-01	6.461E-01	1.143E-01	-0.710
		1004.73		-1.755E-02	2.519E-01	4.178E-01	4.990E-02	-0.042
		1274.44	*	-1.140E-02	1.432E-01	2.325E-01	2.673E-02	-0.049
EU-155	+	86.55		2.525E-01	1.410E-01	2.027E-01	2.233E-02	1.246
		105.31	*	1.757E-01	1.151E-01	1.970E-01	1.833E-02	0.892
TB-160	+	86.79		7.199E-01	4.021E-01	5.765E-01	6.329E-02	1.249
		197.04		-7.406E-01	6.834E-01	1.069E+00	9.419E-02	-0.693
		215.65		2.678E-01	9.218E-01	1.566E+00	1.410E-01	0.171
		298.57		3.306E-01	1.960E-01	2.500E-01	2.323E-02	1.322
		879.36	*	-1.033E-01	1.710E-01	2.563E-01	2.358E-02	-0.403
		962.29		8.466E-01	7.022E-01	1.164E+00	1.066E-01	0.727

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	966.15		6.799E-01	2.978E-01	6.518E-01	5.963E-02	1.043
		1177.93		-7.054E-02	4.477E-01	7.264E-01	5.913E-02	-0.097
		1271.85		-3.786E-01	8.983E-01	1.399E+00	1.225E-01	-0.271
HO-166M		80.57		-1.522E-01	3.029E-01	4.316E-01	4.433E-02	-0.353
		184.41		1.007E-01	4.228E-02	7.574E-02	6.567E-03	1.330
		280.46		-1.053E-01	9.967E-02	1.543E-01	1.437E-02	-0.682
		410.95		1.058E-01	3.104E-01	5.032E-01	4.294E-02	0.210
		711.68	*	-4.267E-02	7.005E-02	1.084E-01	9.087E-03	-0.394
		752.31		9.245E-02	3.277E-01	5.483E-01	4.719E-02	0.169
		810.29		-5.119E-02	7.201E-02	1.085E-01	9.650E-03	-0.472
TA-182		67.75		-1.448E-01	1.336E-01	2.086E-01	1.940E-02	-0.694
		100.11		3.409E-02	1.876E-01	3.072E-01	2.954E-02	0.111
		152.43		2.056E-01	4.046E-01	6.587E-01	5.512E-02	0.312
		222.11		-2.734E-02	4.082E-01	6.817E-01	6.177E-02	-0.040
	+	1121.30		9.109E-01	3.538E-01	4.523E-01	3.828E-02	2.014
		1189.05		-8.073E-02	3.979E-01	6.428E-01	5.280E-02	-0.126
		1221.41	*	-1.689E-01	2.376E-01	3.618E-01	3.050E-02	-0.467
		1231.02		2.627E-01	6.456E-01	1.096E+00	9.310E-02	0.240
IR-192	+	295.96		1.367E+00	2.673E-01	3.746E-01	3.505E-02	3.651
		308.46		2.394E-02	1.249E-01	2.075E-01	1.929E-02	0.115
		316.51	*	7.838E-03	4.526E-02	7.497E-02	6.928E-03	0.105
		468.07		1.780E-02	8.684E-02	1.239E-01	1.151E-02	0.144
HG-203		70.83		1.432E+00	1.879E+00	2.852E+00	4.716E-01	0.502
		72.87		4.981E-01	1.127E+00	1.690E+00	2.723E-01	0.295
		279.20	*	-1.170E-02	4.960E-02	8.092E-02	7.702E-03	-0.145
BI-207		72.81		8.474E-02	2.313E-01	3.463E-01	3.327E-02	0.245
	+	74.97		7.606E-01	1.601E-01	2.601E-01	2.540E-02	2.925
		569.70		4.172E-02	3.831E-02	6.714E-02	5.749E-03	0.621
		1063.66	*	7.755E-03	5.955E-02	1.003E-01	8.812E-03	0.077
		1770.23		-3.101E-01	5.373E-01	5.955E-01	5.121E-02	-0.521
PB-210		46.54	*	-2.479E+00	5.189E+00	8.291E+00	7.977E-01	-0.299
PB-211		404.85	*	-7.620E-01	9.022E-01	1.237E+00	5.984E-01	-0.616
		427.09		-1.067E+00	1.897E+00	2.816E+00	1.303E+00	-0.379
		832.01		-6.243E-01	1.220E+00	1.804E+00	9.368E-01	-0.346
BI-212	+	727.33	*	2.596E+00	9.968E-01	1.437E+00	1.775E-01	1.807
		785.37		5.783E-01	3.918E+00	6.456E+00	5.667E-01	0.090
		1620.50		2.282E+00	2.842E+00	5.282E+00	4.762E-01	0.432
RN-219	+	271.23		7.675E-01	4.165E-01	5.295E-01	5.739E-02	1.450
		401.81	*	1.916E-01	4.803E-01	7.956E-01	1.178E-01	0.241
RA-223		81.07		-4.258E-01	2.534E-01	3.328E-01	3.435E-02	-1.280
		83.79		1.304E-01	1.466E-01	2.217E-01	2.354E-02	0.588
		94.87		5.946E-01	5.226E-01	8.015E-01	8.133E-02	0.742
		144.24		2.078E-01	7.553E-01	1.220E+00	1.143E-01	0.170
		154.21		3.125E-01	4.337E-01	7.117E-01	6.565E-02	0.439
	+	269.46		5.963E-01	3.221E-01	4.145E-01	3.922E-02	1.439
		323.87	*	-3.363E-01	7.863E-01	1.252E+00	2.206E-01	-0.269
	+	338.28		6.312E+00	1.947E+00	2.746E+00	3.406E-01	2.298
AC-227		79.69		8.400E-01	1.344E+00	2.026E+00	3.661E-01	0.415
		235.96		3.330E-01	1.938E-01	3.091E-01	3.339E-02	1.077

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

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		256.23	*	-5.161E-02	2.867E-01	4.717E-01	5.907E-02	-0.109
	+	299.98		2.693E+00	1.420E+00	1.888E+00	2.486E-01	1.426
		304.50		-4.059E-01	2.173E+00	3.086E+00	5.208E-01	-0.132
		334.37		1.687E+00	2.166E+00	3.286E+00	5.213E-01	0.513
TH-227		79.80		9.029E-01	1.764E+00	2.642E+00	5.932E-01	0.342
		235.96		3.330E-01	1.935E-01	3.091E-01	3.166E-02	1.077
		256.23	*	-5.161E-02	2.867E-01	4.717E-01	6.616E-02	-0.109
	+	299.98		2.693E+00	1.420E+00	1.888E+00	2.486E-01	1.426
		304.50		-4.059E-01	2.173E+00	3.086E+00	5.208E-01	-0.132
		334.37		1.687E+00	2.166E+00	3.286E+00	5.213E-01	0.513
TH-229		85.43		4.396E-01	2.495E-01	3.867E-01	4.180E-02	1.137
	+	88.47		3.200E-01	1.787E-01	2.537E-01	2.804E-02	1.261
		193.51	*	5.168E-01	5.723E-01	9.999E-01	8.775E-02	0.517
		210.85		1.932E+00	1.165E+00	1.866E+00	1.672E-01	1.036
PA-231		283.69	*	-4.040E-01	1.612E+00	2.622E+00	3.934E-01	-0.154
	+	301.36		1.730E+00	9.100E-01	1.158E+00	1.463E-01	1.493
TH-231		81.07		-4.258E-01	2.534E-01	3.328E-01	3.435E-02	-1.280
		83.79		1.304E-01	1.466E-01	2.217E-01	2.354E-02	0.588
		94.87		5.946E-01	5.226E-01	8.015E-01	8.133E-02	0.742
		144.24		2.078E-01	7.553E-01	1.220E+00	1.143E-01	0.170
		154.21		3.125E-01	4.337E-01	7.117E-01	6.565E-02	0.439
	+	269.46		5.963E-01	3.221E-01	4.145E-01	3.922E-02	1.439
		323.87	*	-3.363E-01	7.863E-01	1.252E+00	2.206E-01	-0.269
	+	338.28		6.312E+00	1.947E+00	2.746E+00	3.406E-01	2.298
PA-233	+	300.13		1.218E+00	6.493E-01	8.533E-01	1.299E-01	1.428
		311.90	*	-3.230E-02	7.729E-02	1.237E-01	1.172E-02	-0.261
		340.48		2.466E+00	1.041E+00	1.472E+00	3.568E-01	1.675
PA-234		94.67		3.156E-01	1.966E-01	3.032E-01	4.100E-02	1.041
		98.44		1.211E-02	9.313E-02	1.519E-01	8.504E-02	0.080
		111.00		-1.824E-01	1.994E-01	3.034E-01	3.723E-02	-0.601
		131.20		2.379E-03	1.207E-01	1.936E-01	1.614E-02	0.012
		569.50		3.185E-01	3.408E-01	5.920E-01	5.070E-02	0.538
		733.00		-1.137E-03	4.650E-01	6.577E-01	1.457E-01	-0.002
		880.51		-4.245E-01	3.315E-01	4.517E-01	4.158E-02	-0.940
		883.24		7.610E-02	3.244E-01	5.300E-01	3.567E-01	0.144
		926.50		-7.980E-02	1.965E-01	2.985E-01	7.609E-02	-0.267
		946.00	*	1.805E-01	3.610E-01	6.299E-01	1.199E-01	0.287
		949.00		3.366E-02	5.440E-01	9.175E-01	8.431E-02	0.037
PA-234M		766.42		2.264E+01	1.967E+01	2.567E+01	1.303E+01	0.882
		1001.03	*	7.906E-01	5.510E+00	9.352E+00	9.663E-01	0.085
TH-234		63.29	*	1.580E+00	1.633E+00	2.722E+00	5.059E-01	0.581
	+	92.59		1.429E+00	9.854E-01	1.370E+00	3.130E-01	1.043
U-235	+	89.96		2.341E+00	1.125E+00	1.573E+00	4.007E-01	1.488
	+	93.35		1.079E+00	7.479E-01	1.052E+00	2.502E-01	1.026
		143.76	*	-8.174E-03	2.262E-01	3.602E-01	6.054E-02	-0.023
		163.33		3.269E-01	4.947E-01	8.040E-01	1.436E-01	0.407
		185.72		1.438E-01	5.733E-02	1.021E-01	8.868E-03	1.408
		205.31		-2.163E-01	5.831E-01	8.425E-01	1.540E-01	-0.257
U-238		63.29	*	1.580E+00	1.633E+00	2.722E+00	5.059E-01	0.581

Sample ID : G248521011 Acquisition date : 20-MAR-2010 11:10:38

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	92.59		1.429E+00	9.416E-01	1.370E+00	1.429E-01	1.043
NP-239		99.53		-8.641E-03	1.661E-01	2.693E-01	2.603E-02	-0.032
		103.37		-2.534E-02	1.078E-01	1.730E-01	1.618E-02	-0.146
		106.12		1.764E-02	9.270E-02	1.514E-01	1.386E-02	0.117
		117.23	*	4.916E-03	4.369E-01	7.048E-01	6.052E-02	0.007
		228.18		2.243E-01	2.540E-01	4.400E-01	4.008E-02	0.510
		277.60		1.562E-01	2.042E-01	3.501E-01	3.260E-02	0.446
AM-241		59.54	*	-3.372E-02	1.814E-01	2.989E-01	2.838E-02	-0.113
CM-247		278.00		6.700E-01	8.760E-01	1.501E+00	1.398E-01	0.446
		287.50		1.492E-01	1.429E+00	2.371E+00	2.207E-01	0.063
		402.40	*	-9.878E-04	4.364E-02	7.033E-02	5.977E-03	-0.014
CF-249		252.80		-2.786E-01	1.078E+00	1.767E+00	1.635E-01	-0.158
		333.37		6.089E-02	2.356E-01	3.447E-01	3.143E-02	0.177
		388.16	*	2.988E-02	4.872E-02	8.191E-02	6.966E-03	0.365
CF-251		177.52	*	-8.791E-02	1.349E-01	2.217E-01	1.904E-02	-0.397
		227.38		2.488E-01	4.101E-01	7.037E-01	6.406E-02	0.354
		285.41		-8.034E-01	2.484E+00	4.023E+00	3.746E-01	-0.200

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]G248521011      *
* Acquisition date : 20-MAR-2010 11:10:38 Detector SN#    :                 *
* Detector ID        : GAM06               Sensitivity     : 5.000         *
* Geometry           : CAN                 Energy tolerance: 1.500         *
* Elapsed live time:    0 02:00:00.00      Abundance limit : 75.000        *
* Elapsed real time:    0 02:00:01.23      Half life ratio :  8.000        *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248521011           Analyst initials: MXR1          *
* Batch Number       : 961099               Sample Quantity : 1.2714E+02 GRAM *
* Recovery           :    1.00000           Carrier Weight :    0.00000     *
*****************************************************************************
*                                                                           *
*                                 QC DATA                                   *
* Standard Weight  :   0.00000                                              *
* CALIB. DATE/TIME : 16-FEB-2010 15:10:04 MS Isotope      :                 *
* MSD DPM            :    0.000             MSD Isotope     :               *
* LCS DPM            :    0.000             LCS Isotope     :               *
* LCSD DPM           :    0.000             LCSD Isotope    :               *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.522E+01	3.011E+00	6.358E-01	0.000E+00
CD-109	2.148E+00	1.176E+00	1.421E+00	0.000E+00
SN-126	2.075E-01	1.136E-01	1.380E-01	0.000E+00
TL-208	5.851E-01	1.139E-01	6.641E-02	0.000E+00
BI-211	4.255E+00	6.654E-01	3.795E-01	0.000E+00
PB-212	1.915E+00	2.335E-01	1.051E-01	0.000E+00
BI-214	1.369E+00	2.278E-01	1.327E-01	0.000E+00
PB-214	1.544E+00	2.555E-01	1.380E-01	0.000E+00
RA-224	5.134E+00	1.379E+00	1.127E+00	0.000E+00
RA-226	1.369E+00	2.278E-01	1.327E-01	0.000E+00
AC-228	1.711E+00	4.233E-01	2.763E-01	0.000E+00
RA-228	1.711E+00	4.233E-01	2.763E-01	0.000E+00
TH-228	1.915E+00	2.335E-01	1.051E-01	0.000E+00
TH-232	1.711E+00	4.233E-01	2.763E-01	0.000E+00
NP-237	6.193E-01	3.621E-01	4.686E-01	0.000E+00
ANH-511	1.023E-01	7.968E-02	6.058E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)		
BE-7	-1.676E-01		3.880E-01	6.580E-01	0.000E+00	NOT IDENT.
NA-22	-5.211E-04		4.948E-02	8.276E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00		5.220E+09	0.000E+00	0.000E+00	SHORT HLIF
SC-46	-5.667E-03		5.318E-02	8.717E-02	0.000E+00	FAIL ABUN
V-48	-1.217E-02		1.139E-01	1.935E-01	0.000E+00	NOT IDENT.
CR-51	-8.359E-03		5.356E-01	9.154E-01	0.000E+00	NOT IDENT.
MN-54	1.498E-02		4.318E-02	7.424E-02	0.000E+00	NOT IDENT.
CO-56	-2.640E-02		4.136E-02	6.333E-02	0.000E+00	NOT IDENT.
CO-57	-3.438E-03		2.638E-02	4.464E-02	0.000E+00	NOT IDENT.
CO-58	-4.816E-02		5.055E-02	7.627E-02	0.000E+00	NOT IDENT.
FE-59	5.376E-02		1.244E-01	2.195E-01	0.000E+00	NOT IDENT.

CO-60	-2.021E-02	4.253E-02	6.604E-02	0.000E+00	NOT IDENT.
ZN-65	-8.419E-02	1.294E-01	1.718E-01	0.000E+00	NOT IDENT.
SE-75	-3.442E-02	6.387E-02	9.364E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.688E-02	9.834E-02	0.000E+00	NOT IDENT.
Y-88	1.697E-02	4.391E-02	7.867E-02	0.000E+00	NOT IDENT.
Y-91	-7.532E+00	2.702E+01	4.425E+01	0.000E+00	NOT IDENT.
NB-94	1.485E-02	4.026E-02	7.007E-02	0.000E+00	NOT IDENT.
NB-95	3.336E-02	6.001E-02	9.286E-02	0.000E+00	NOT IDENT.
NB-95M	1.377E-01	1.637E-01	2.645E-01	0.000E+00	NOT IDENT.
ZR-95	4.393E-02	9.089E-02	1.591E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.976E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.132E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.452E-02	5.050E-02	8.337E-02	0.000E+00	FAIL ABUN
RH-106	1.602E-01	3.751E-01	6.617E-01	0.000E+00	NOT IDENT.
RU-106	1.602E-01	3.748E-01	6.617E-01	0.000E+00	NOT IDENT.
AG-108M	-3.672E-03	3.605E-02	5.972E-02	0.000E+00	NOT IDENT.
AG-110M	-2.726E-02	4.628E-02	7.535E-02	0.000E+00	NOT IDENT.
SN-113	-2.684E-02	5.428E-02	8.815E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.334E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.231E-02	9.137E-02	1.539E-01	0.000E+00	NOT IDENT.
TE-123M	1.236E-02	3.274E-02	5.575E-02	0.000E+00	NOT IDENT.
SB-124	4.754E-02	1.019E-01	1.856E-01	0.000E+00	NOT IDENT.
SB-125	5.229E-03	1.058E-01	1.773E-01	0.000E+00	FAIL ABUN
TE-125M	1.205E+01	1.126E+01	1.992E+01	0.000E+00	NOT IDENT.
I-126	-4.924E-01	4.243E-01	6.546E-01	0.000E+00	NOT IDENT.
SB-126	-1.744E-01	3.073E-01	4.171E-01	0.000E+00	NOT IDENT.
SB-127	5.400E+00	6.262E+00	1.130E+01	0.000E+00	NOT IDENT.
I-131	7.304E-02	2.593E-01	4.471E-01	0.000E+00	NOT IDENT.
TE-132	4.057E+00	4.645E+00	8.361E+00	0.000E+00	NOT IDENT.
BA-133	-2.717E-02	5.379E-02	7.591E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.265E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	7.300E-02	5.749E-02	1.055E-01	0.000E+00	NOT IDENT.
CS-135	1.162E-01	2.069E-01	3.267E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.445E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.883E-01	1.772E-01	2.660E-01	0.000E+00	NOT IDENT.
BA-137M	6.680E-02	4.729E-02	8.753E-02	0.000E+00	NOT IDENT.
CS-137	7.057E-02	4.995E-02	9.247E-02	0.000E+00	NOT IDENT.
CE-139	-1.403E-02	3.560E-02	5.819E-02	0.000E+00	NOT IDENT.
BA-140	4.828E-02	4.415E-01	7.710E-01	0.000E+00	NOT IDENT.
LA-140	-1.665E-02	1.675E-01	2.811E-01	0.000E+00	NOT IDENT.
CE-141	2.756E-02	7.999E-02	1.368E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.269E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-9.740E-02	2.164E-01	3.577E-01	0.000E+00	NOT IDENT.
PM-144	-5.047E-02	4.190E-02	6.359E-02	0.000E+00	NOT IDENT.
PR-144	-3.783E+00	3.149E+00	4.781E+00	0.000E+00	NOT IDENT.
PM-146	5.645E-03	4.834E-02	8.107E-02	0.000E+00	NOT IDENT.
ND-147	-8.089E-01	9.620E-01	1.542E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.217E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-4.214E-03	1.219E-01	1.913E-01	0.000E+00	FAIL ABUN
GD-153	-5.232E-02	9.109E-02	1.452E-01	0.000E+00	NOT IDENT.
EU-154	-1.140E-02	1.404E-01	2.329E-01	0.000E+00	NOT IDENT.
EU-155	1.757E-01	1.128E-01	2.048E-01	0.000E+00	FAIL ABUN
TB-160	-1.033E-01	1.676E-01	2.582E-01	0.000E+00	FAIL ABUN
HO-166M	-4.267E-02	6.865E-02	1.095E-01	0.000E+00	NOT IDENT.
TA-182	-1.689E-01	2.328E-01	3.627E-01	0.000E+00	FAIL ABUN
IR-192	7.838E-03	4.436E-02	7.670E-02	0.000E+00	FAIL ABUN
HG-203	-1.170E-02	4.861E-02	8.294E-02	0.000E+00	NOT IDENT.
BI-207	7.755E-03	5.836E-02	1.008E-01	0.000E+00	FAIL ABUN
PB-210	-2.479E+00	5.085E+00	8.719E+00	0.000E+00	NOT IDENT.
PB-211	-7.620E-01	8.842E-01	1.261E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.768E-01	1.452E+00	0.000E+00	FAIL ABUN
RN-219	1.916E-01	4.707E-01	8.110E-01	0.000E+00	FAIL ABUN
RA-223	-3.363E-01	7.706E-01	1.281E+00	0.000E+00	FAIL ABUN
AC-227	-5.161E-02	2.809E-01	4.841E-01	0.000E+00	FAIL ABUN
TH-227	-5.161E-02	2.810E-01	4.841E-01	0.000E+00	FAIL ABUN
TH-229	5.168E-01	5.608E-01	1.030E+00	0.000E+00	FAIL ABUN
PA-231	-4.040E-01	1.580E+00	2.687E+00	0.000E+00	FAIL ABUN
TH-231	-3.363E-01	7.706E-01	1.281E+00	0.000E+00	FAIL ABUN
PA-233	-3.230E-02	7.574E-02	1.266E-01	0.000E+00	FAIL ABUN
PA-234	1.805E-01	3.538E-01	6.340E-01	0.000E+00	NOT IDENT.
PA-234M	7.906E-01	5.399E+00	9.404E+00	0.000E+00	NOT IDENT.
TH-234	1.580E+00	1.601E+00	2.849E+00	0.000E+00	FAIL ABUN
U-235	-8.174E-03	2.217E-01	3.728E-01	0.000E+00	FAIL ABUN
U-238	1.580E+00	1.601E+00	2.849E+00	0.000E+00	FAIL ABUN
NP-239	4.916E-03	4.282E-01	7.315E-01	0.000E+00	NOT IDENT.
AM-241	-3.372E-02	1.778E-01	3.132E-01	0.000E+00	NOT IDENT.
CM-247	-9.878E-04	4.276E-02	7.170E-02	0.000E+00	NOT IDENT.
CF-249	2.988E-02	4.774E-02	8.354E-02	0.000E+00	NOT IDENT.

CF-251	-8.791E-02	1.322E-01	2.287E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:11:32.96

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*****************************************************************************
*                            GEL Laboratories LLC                           *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521011.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:10:38
Sample ID         : G248521011           Sample quantity  : 1.27140E+02 GRAM
Detector name     : GAM06                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.23  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               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	850	10.66*	9.338E-01	2.522E+01	2.522E+01	12.18
CD-109	88.03	134	3.70*	5.169E+00	2.075E+00	2.148E+00	55.86
SN-126	64.28	------	9.60	2.842E+00	------ Line Not Found		------
	86.94	134	8.90	5.169E+00	8.628E-01	8.628E-01	68.96
	87.57	134	37.00*	5.169E+00	2.075E-01	2.075E-01	55.86
TL-208	277.37	------	6.60	3.754E+00	------ Line Not Found		------
	583.19	358	85.00*	2.126E+00	5.851E-01	5.851E-01	19.86
	860.56	33	12.50	1.510E+00	5.159E-01	5.159E-01	101.59
BI-211	72.87	------	1.23	3.914E+00	------ Line Not Found		------
	351.06	585	12.92*	3.143E+00	4.255E+00	4.255E+00	15.96
PB-212	74.82	380	10.28	4.135E+00	2.638E+00	2.638E+00	23.19
	77.11	582	17.10	4.361E+00	2.306E+00	2.306E+00	17.70
	238.63	1185	43.60*	4.191E+00	1.915E+00	1.915E+00	12.44
	300.09	97	3.30	3.540E+00	2.448E+00	2.448E+00	52.26
BI-214	609.32	433	45.49*	2.050E+00	1.369E+00	1.369E+00	16.98
	1120.29	110	14.92	1.179E+00	1.854E+00	1.854E+00	39.41
	1764.49	88	15.30	8.243E-01	2.054E+00	2.054E+00	26.81
PB-214	74.82	380	5.80	4.135E+00	4.676E+00	4.676E+00	22.49
	77.11	582	9.70	4.361E+00	4.066E+00	4.066E+00	19.53
	242.00	296	7.25	4.154E+00	2.904E+00	2.904E+00	28.01
	295.22	384	18.42	3.584E+00	1.718E+00	1.718E+00	20.58
	351.93	585	35.60*	3.143E+00	1.544E+00	1.544E+00	16.88
RA-224	240.99	296	4.10*	4.154E+00	5.134E+00	5.134E+00	27.40
RA-226	609.32	433	45.49*	2.050E+00	1.369E+00	1.369E+00	16.98
	1120.29	110	14.92	1.179E+00	1.854E+00	1.854E+00	39.41
	1764.49	88	15.30	8.243E-01	2.054E+00	2.054E+00	26.81
AC-228	338.32	197	11.27	3.237E+00	1.590E+00	1.590E+00	50.46
	911.20	214	25.80*	1.432E+00	1.711E+00	1.711E+00	25.24
	968.97	171	15.80	1.352E+00	2.364E+00	2.364E+00	31.76
RA-228	338.32	197	11.27	3.237E+00	1.590E+00	1.590E+00	50.46
	911.20	214	25.80*	1.432E+00	1.711E+00	1.711E+00	25.24
	968.97	171	15.80	1.352E+00	2.364E+00	2.364E+00	31.76

Sample ID : G248521011 Acquisition date : 20-MAR-2010 11:10:38

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	380	10.28	4.135E+00	2.638E+00	2.638E+00	21.08
	77.11	582	17.10	4.361E+00	2.306E+00	2.306E+00	17.70
	238.63	1185	43.60*	4.191E+00	1.915E+00	1.915E+00	12.44
	300.09	97	3.30	3.540E+00	2.448E+00	2.448E+00	79.80
TH-232	338.32	197	11.27	3.237E+00	1.590E+00	1.590E+00	29.67
	911.20	214	25.80*	1.432E+00	1.711E+00	1.711E+00	25.24
	968.97	171	15.80	1.352E+00	2.364E+00	2.364E+00	31.76
NP-237	86.48	134	12.40*	5.169E+00	6.193E-01	6.193E-01	59.66
	95.86	------	2.68	5.611E+00	------ Line Not Found		------
ANH-511	511.00	82	100.00*	2.365E+00	1.023E-01	1.023E-01	79.46

Flag: "*" = Keyline

Sample ID : G248521011 Acquisition date : 20-MAR-2010 11:10:38

Total number of lines in spectrum 27
Number of unidentified lines 3
Number of lines tentatively identified by NID 24 88.89%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.522E+01	2.522E+01	0.307E+01	12.18	
CD-109	461.40D	1.04	2.075E+00	2.148E+00	1.200E+00	55.86	
SN-126	2.30E+05Y	1.00	2.075E-01	2.075E-01	1.159E-01	55.86	
TL-208	1.41E+10Y	1.00	5.851E-01	5.851E-01	1.162E-01	19.86	
BI-211	7.04E+08Y	1.00	4.255E+00	4.255E+00	0.679E+00	15.96	
PB-212	1.41E+10Y	1.00	1.915E+00	1.915E+00	0.238E+00	12.44	
BI-214	1600.00Y	1.00	1.369E+00	1.369E+00	0.232E+00	16.98	
PB-214	1600.00Y	1.00	1.544E+00	1.544E+00	0.261E+00	16.88	
RA-224	1.41E+10Y	1.00	5.134E+00	5.134E+00	1.407E+00	27.40	
RA-226	1600.00Y	1.00	1.369E+00	1.369E+00	0.232E+00	16.98	
AC-228	1.41E+10Y	1.00	1.711E+00	1.711E+00	0.432E+00	25.24	
RA-228	1.41E+10Y	1.00	1.711E+00	1.711E+00	0.432E+00	25.24	
TH-228	1.41E+10Y	1.00	1.915E+00	1.915E+00	0.238E+00	12.44	
TH-232	1.41E+10Y	1.00	1.711E+00	1.711E+00	0.432E+00	25.24	
NP-237	2.14E+06Y	1.00	6.193E-01	6.193E-01	3.695E-01	59.66	
ANH-511	1.00E+09Y	1.00	1.023E-01	1.023E-01	0.813E-01	79.46	
	Total Activity :		5.145E+01	5.152E+01			

Grand Total Activity : 5.145E+01 5.152E+01

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

Sample ID : G248521011 Acquisition date : 20-MAR-2010 11:10:38

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	90.02	147	294	1.27	179.59	177	6	2.04E-02	40.8	5.34E+00	T
0	93.03	112	394	1.07	185.60	182	7	1.56E-02	65.1	5.49E+00	T
0	208.99	84	214	0.76	417.42	414	7	1.17E-02	61.3	4.61E+00	
0	270.37	107	202	1.02	540.13	535	10	1.49E-02	53.2	3.83E+00	T
0	463.13	80	104	1.55	925.52	919	13	1.12E-02	56.9	2.55E+00	T
0	727.53	103	59	1.55	1454.24	1448	13	1.43E-02	36.3	1.76E+00	T
0	769.24	45	92	1.11	1537.65	1531	13	6.32E-03	90.4	1.67E+00	
1	964.72	61	29	2.04	1928.63	1920	28	8.43E-03	42.8	1.36E+00	T
0	1847.16	21	7	0.62	3694.32	3687	13	2.85E-03	67.7	8.07E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:11:37.16

```
*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
*                                                                            *
*                                DETECTOR DATA                               *
*                                                                            *
* Configuration    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248521011.CNF;1   *
* Acquisition date : 20-MAR-2010 11:10:38  Detector SN#    :                 *
* Detector ID      : GAM06                 Sensitivity     : 5.00000         *
* Geometry         : CAN                   Energy tolerance: 1.50000         *
* Elapsed live time: 0 02:00:00.00         Abundance limit : 75.00000        *
* Elapsed real time: 0 02:00:01.23         Half life ratio : 8.00000         *
*****************************************************************************
*                                                                            *
*                                SAMPLE DATA                                 *
*                                                                            *
* Sample date      : 25-FEB-2010 12:00:00  Nuclide Library : SOLID           *
* Sample ID        : G248521011            Analyst initials: MXR1            *
* Batch Number     : 961099                Sample Quantity : 1.27140E+02 GRAM *
*****************************************************************************
*                                                                            *
*                                  QC DATA                                   *
*                                                                            *
* CALIB. DATE/TIME : 16-FEB-2010 15:10:04.7MS Isotope      :                 *
* MSD ID           :                       MSD Isotope     :                 *
* LCS ID           : 1032-A                LCS Isotope     :                 *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.522E+01	3.073E+00	6.359E-01	5.995E-02	39.662
CD-109	2.148E+00	1.200E+00	1.364E+00	1.517E-01	1.576
SN-126	2.075E-01	1.159E-01	1.324E-01	1.466E-02	1.568
TL-208	5.851E-01	1.162E-01	6.550E-02	5.981E-03	8.932
BI-211	4.255E+00	6.790E-01	3.715E-01	3.486E-02	11.454
PB-212	1.915E+00	2.383E-01	1.023E-01	1.050E-02	18.716
BI-214	1.369E+00	2.325E-01	1.310E-01	1.300E-02	10.456
PB-214	1.544E+00	2.607E-01	1.351E-01	1.470E-02	11.430
RA-224	5.134E+00	1.407E+00	1.097E+00	1.009E-01	4.679
RA-226	1.369E+00	2.325E-01	1.310E-01	1.300E-02	10.456
AC-228	1.711E+00	4.320E-01	2.743E-01	3.313E-02	6.238
RA-228	1.711E+00	4.320E-01	2.743E-01	3.313E-02	6.238
TH-228	1.915E+00	2.383E-01	1.023E-01	1.050E-02	18.716
TH-232	1.711E+00	4.320E-01	2.743E-01	3.313E-02	6.238
NP-237	6.193E-01	3.695E-01	4.496E-01	1.063E-01	1.378
ANH-511	1.023E-01	8.131E-02	5.964E-02	5.176E-03	1.716

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.676E-01		3.959E-01	6.471E-01	6.044E-02	-0.259

Sample ID : G248521011 Acquisition date : 20-MAR-2010 11:10:38

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-5.211E-04		5.049E-02	8.261E-02	7.258E-03	-0.006
NA-24	-2.752E+03		2.663E+03	Half-Life too short		
SC-46	-5.667E-03		5.427E-02	8.653E-02	7.997E-03	-0.065
V-48	-1.217E-02		1.162E-01	1.924E-01	1.751E-02	-0.063
CR-51	-8.359E-03		5.465E-01	8.949E-01	8.615E-02	-0.009
MN-54	1.498E-02		4.407E-02	7.362E-02	6.634E-03	0.204
CO-56	-2.640E-02		4.220E-02	6.282E-02	5.694E-03	-0.420
CO-57	-3.438E-03		2.692E-02	4.304E-02	3.624E-03	-0.080
CO-58	-4.816E-02		5.158E-02	7.560E-02	6.744E-03	-0.637
FE-59	5.376E-02		1.269E-01	2.186E-01	2.032E-02	0.246
CO-60	-2.021E-02		4.340E-02	6.596E-02	6.033E-03	-0.306
ZN-65	-8.419E-02		1.320E-01	1.711E-01	1.456E-02	-0.492
SE-75	-3.442E-02		6.517E-02	9.129E-02	8.520E-03	-0.377
SR-85	1.084E-01		5.804E-02	9.681E-02	8.399E-03	1.120
Y-88	1.697E-02		4.481E-02	7.897E-02	6.601E-03	0.215
Y-91	-7.532E+00		2.757E+01	4.413E+01	3.671E+00	-0.171
NB-94	1.485E-02		4.108E-02	6.931E-02	5.775E-03	0.214
NB-95	3.336E-02		6.124E-02	9.197E-02	7.980E-03	0.363
NB-95M	1.377E-01		1.670E-01	2.574E-01	2.667E-02	0.535
ZR-95	4.393E-02		9.275E-02	1.576E-01	1.502E-02	0.279
MO-99	-2.170E-05		5.090E-05	Half-Life too short		
TC-99M	-9.611E+18		5.774E+19	Half-Life too short		
RU-103	-3.452E-02		5.153E-02	8.204E-02	1.149E-02	-0.421
RH-106	1.602E-01		3.827E-01	6.533E-01	8.542E-02	0.245
RU-106	1.602E-01		3.824E-01	6.533E-01	5.448E-02	0.245
AG-108M	-3.672E-03		3.679E-02	5.865E-02	5.211E-03	-0.063
AG-110M	-2.726E-02		4.722E-02	7.445E-02	6.248E-03	-0.366
SN-113	-2.684E-02		5.539E-02	8.644E-02	7.539E-03	-0.311
CD-115	-8.369E-05		6.808E-05	Half-Life too short		
SN-117M	1.231E-02		9.324E-02	1.489E-01	1.251E-02	0.083
TE-123M	1.236E-02		3.341E-02	5.395E-02	4.565E-03	0.229
SB-124	4.754E-02		1.040E-01	1.860E-01	1.712E-02	0.256
SB-125	5.229E-03		1.079E-01	1.741E-01	1.524E-02	0.030
TE-125M	1.205E+01		1.149E+01	1.917E+01	2.069E+00	0.628
I-126	-4.924E-01		4.329E-01	6.470E-01	5.254E-02	-0.761
SB-126	-1.744E-01		3.135E-01	4.127E-01	3.482E-02	-0.422
SB-127	5.400E+00		6.390E+00	1.117E+01	1.533E+00	0.483
I-131	7.304E-02		2.646E-01	4.379E-01	4.090E-02	0.167
TE-132	4.057E+00		4.739E+00	8.134E+00	1.455E+00	0.499
BA-133	-2.717E-02		5.489E-02	7.433E-02	9.774E-03	-0.366
I-133	2.581E-02		1.666E+00	Half-Life too short		
CS-134	7.300E-02		5.867E-02	1.045E-01	9.293E-03	0.698
CS-135	1.162E-01		2.111E-01	3.185E-01	3.364E-02	0.365
I-135	-3.407E+18		1.758E+18	Half-Life too short		
CS-136	-1.883E-01		1.808E-01	2.648E-01	2.441E-02	-0.711
BA-137M	6.680E-02		4.825E-02	8.650E-02	7.000E-03	0.772
CS-137	7.057E-02		5.097E-02	9.138E-02	7.411E-03	0.772
CE-139	-1.403E-02		3.632E-02	5.635E-02	4.765E-03	-0.249

Sample ID : G248521011 Acquisition date : 20-MAR-2010 11:10:38

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-140	4.828E-02		4.506E-01	7.596E-01	2.577E-01	0.064
LA-140	-1.665E-02		1.709E-01	2.815E-01	2.551E-02	-0.059
CE-141	2.756E-02		8.162E-02	1.322E-01	1.124E-02	0.208
CE-143	3.427E-02		6.473E-03	Half-Life too short		
CE-144	-9.740E-02		2.209E-01	3.453E-01	5.222E-02	-0.282
PM-144	-5.047E-02		4.275E-02	6.289E-02	5.223E-03	-0.803
PR-144	-3.783E+00		3.213E+00	4.729E+00	3.924E-01	-0.800
PM-146	5.645E-03		4.933E-02	7.966E-02	8.457E-03	0.071
ND-147	-8.089E-01		9.816E-01	1.519E+00	2.274E-01	-0.533
PM-149	-4.398E-04		6.210E-04	Half-Life too short		
EU-152	-4.214E-03		1.244E-01	1.872E-01	1.781E-02	-0.023
GD-153	-5.232E-02		9.295E-02	1.395E-01	1.377E-02	-0.375
EU-154	-1.140E-02		1.432E-01	2.325E-01	2.673E-02	-0.049
EU-155	1.757E-01		1.151E-01	1.970E-01	1.833E-02	0.892
TB-160	-1.033E-01		1.710E-01	2.563E-01	2.358E-02	-0.403
HO-166M	-4.267E-02		7.005E-02	1.084E-01	9.087E-03	-0.394
TA-182	-1.689E-01		2.376E-01	3.618E-01	3.050E-02	-0.467
IR-192	7.838E-03		4.526E-02	7.497E-02	6.928E-03	0.105
HG-203	-1.170E-02		4.960E-02	8.092E-02	7.702E-03	-0.145
BI-207	7.755E-03		5.955E-02	1.003E-01	8.812E-03	0.077
PB-210	-2.479E+00		5.189E+00	8.291E+00	7.977E-01	-0.299
PB-211	-7.620E-01		9.022E-01	1.237E+00	5.984E-01	-0.616
BI-212	2.596E+00	+	9.968E-01	1.437E+00	1.775E-01	1.807
RN-219	1.916E-01		4.803E-01	7.956E-01	1.178E-01	0.241
RA-223	-3.363E-01		7.863E-01	1.252E+00	2.206E-01	-0.269
AC-227	-5.161E-02		2.867E-01	4.717E-01	5.907E-02	-0.109
TH-227	-5.161E-02		2.867E-01	4.717E-01	6.616E-02	-0.109
TH-229	5.168E-01		5.723E-01	9.999E-01	8.775E-02	0.517
PA-231	-4.040E-01		1.612E+00	2.622E+00	3.934E-01	-0.154
TH-231	-3.363E-01		7.863E-01	1.252E+00	2.206E-01	-0.269
PA-233	-3.230E-02		7.729E-02	1.237E-01	1.172E-02	-0.261
PA-234	1.805E-01		3.610E-01	6.299E-01	1.199E-01	0.287
PA-234M	7.906E-01		5.510E+00	9.352E+00	9.663E-01	0.085
TH-234	1.580E+00		1.633E+00	2.722E+00	5.059E-01	0.581
U-235	-8.174E-03		2.262E-01	3.602E-01	6.054E-02	-0.023
U-238	1.580E+00		1.633E+00	2.722E+00	5.059E-01	0.581
NP-239	4.916E-03		4.369E-01	7.048E-01	6.052E-02	0.007
AM-241	-3.372E-02		1.814E-01	2.989E-01	2.838E-02	-0.113
CM-247	-9.878E-04		4.364E-02	7.033E-02	5.977E-03	-0.014
CF-249	2.988E-02		4.872E-02	8.191E-02	6.966E-03	0.365
CF-251	-8.791E-02		1.349E-01	2.217E-01	1.904E-02	-0.397

VAX/VMS Nuclide Identification Report Generated

```
*************************************************************************
*                        GEL Laboratories LLC                           *
*                            2040 Savage Road                           *
*                          Charleston, SC 29414                         *
*************************************************************************
*                                                                       *
*                             DETECTOR DATA                             *
*                                                                       *
* Configuration     : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248521011       *
* Acquisition date  : 20-MAR-2010 11:10:38 Detector SN#     :           *
* Detector ID       : GAM06                Sensitivity      : 5.000     *
* Geometry          : CAN                  Energy tolerance: 1.500      *
* Elapsed live time:    0 02:00:00.00      Abundance limit : 75.000     *
* Elapsed real time:    0 02:00:01.23      Half life ratio : 8.000      *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date       : 25-FEB-2010 12:00:00 Nuclide Library : SOLID      *
* Sample ID         : G248521011           Analyst initials: MXR1       *
* Batch Number      : 961099               Sample Quantity : 1.2714E+02 GRAM *
* Recovery          :    1.00000           Carrier Weight :    0.00000  *
*************************************************************************
*                                                                       *
*                                 QC DATA                               *
*                                                                       *
* CALIB. DATE/TIME : 16-FEB-2010 15:10:04 MS Isotope      :             *
* MSD DPM          :    0.000             MSD Isotope     :             *
* LCS DPM          :    0.000             LCS Isotope     :             *
* LCSD DPM         :    0.000             LCSD Isotope    :             *
*************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.522E+01	3.011E+00	3.181E-01	1.536E+00
CD-109	2.148E+00	1.176E+00	7.110E-01	6.000E-01
SN-126	2.075E-01	1.136E-01	6.903E-02	5.797E-02
TL-208	5.851E-01	1.139E-01	3.322E-02	5.811E-02
BI-211	4.255E+00	6.654E-01	1.898E-01	3.395E-01
PB-212	1.915E+00	2.335E-01	5.259E-02	1.192E-01
BI-214	1.369E+00	2.278E-01	6.639E-02	1.162E-01
PB-214	1.544E+00	2.555E-01	6.904E-02	1.304E-01
RA-224	5.134E+00	1.379E+00	5.639E-01	7.034E-01
RA-226	1.369E+00	2.278E-01	6.639E-02	1.162E-01
AC-228	1.711E+00	4.233E-01	1.382E-01	2.160E-01
RA-228	1.711E+00	4.233E-01	1.382E-01	2.160E-01
TH-228	1.915E+00	2.335E-01	5.259E-02	1.192E-01
TH-232	1.711E+00	4.233E-01	1.382E-01	2.160E-01
NP-237	6.193E-01	3.621E-01	2.345E-01	1.847E-01
ANH-511	1.023E-01	7.968E-02	3.031E-02	4.065E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-1.676E-01	3.880E-01	3.292E-01	1.979E-01	NOT IDENT.
NA-22	-5.211E-04	4.948E-02	4.141E-02	2.525E-02	NOT IDENT.
NA-24	-2.752E+09	5.220E+09	0.000E+00	2.663E+09	SHORT HLIF
SC-46	-5.667E-03	5.318E-02	4.361E-02	2.714E-02	FAIL ABUN
V-48	-1.217E-02	1.139E-01	9.682E-02	5.810E-02	NOT IDENT.
CR-51	-8.359E-03	5.356E-01	4.580E-01	2.732E-01	NOT IDENT.
MN-54	1.498E-02	4.318E-02	3.714E-02	2.203E-02	NOT IDENT.
CO-56	-2.640E-02	4.136E-02	3.168E-02	2.110E-02	NOT IDENT.
CO-57	-3.438E-03	2.638E-02	2.233E-02	1.346E-02	NOT IDENT.
CO-58	-4.816E-02	5.055E-02	3.816E-02	2.579E-02	NOT IDENT.
FE-59	5.376E-02	1.244E-01	1.098E-01	6.347E-02	NOT IDENT.

CO-60	-2.021E-02	4.253E-02	3.304E-02	2.170E-02	NOT IDENT.
ZN-65	-8.419E-02	1.294E-01	8.593E-02	6.600E-02	NOT IDENT.
SE-75	-3.442E-02	6.387E-02	4.685E-02	3.259E-02	NOT IDENT.
SR-85	1.084E-01	5.688E-02	4.920E-02	2.902E-02	NOT IDENT.
Y-88	1.697E-02	4.391E-02	3.936E-02	2.241E-02	NOT IDENT.
Y-91	-7.532E+00	2.702E+01	2.214E+01	1.378E+01	NOT IDENT.
NB-94	1.485E-02	4.026E-02	3.505E-02	2.054E-02	NOT IDENT.
NB-95	3.336E-02	6.001E-02	4.646E-02	3.062E-02	NOT IDENT.
NB-95M	1.377E-01	1.637E-01	1.323E-01	8.350E-02	NOT IDENT.
ZR-95	4.393E-02	9.089E-02	7.962E-02	4.637E-02	NOT IDENT.
MO-99	-2.170E+01	9.976E+01	0.000E+00	5.090E+01	SHORT HLIF
TC-99M	-9.611E+24	1.132E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.452E-02	5.050E-02	4.171E-02	2.577E-02	FAIL ABUN
RH-106	1.602E-01	3.751E-01	3.311E-01	1.914E-01	NOT IDENT.
RU-106	1.602E-01	3.748E-01	3.311E-01	1.912E-01	NOT IDENT.
AG-108M	-3.672E-03	3.605E-02	2.988E-02	1.840E-02	NOT IDENT.
AG-110M	-2.726E-02	4.628E-02	3.769E-02	2.361E-02	NOT IDENT.
SN-113	-2.684E-02	5.428E-02	4.410E-02	2.769E-02	NOT IDENT.
CD-115	-8.369E+01	1.334E+02	0.000E+00	6.808E+01	SHORT HLIF
SN-117M	1.231E-02	9.137E-02	7.698E-02	4.662E-02	NOT IDENT.
TE-123M	1.236E-02	3.274E-02	2.789E-02	1.670E-02	NOT IDENT.
SB-124	4.754E-02	1.019E-01	9.285E-02	5.199E-02	NOT IDENT.
SB-125	5.229E-03	1.058E-01	8.871E-02	5.396E-02	FAIL ABUN
TE-125M	1.205E+01	1.126E+01	9.964E+00	5.747E+00	NOT IDENT.
I-126	-4.924E-01	4.243E-01	3.275E-01	2.165E-01	NOT IDENT.
SB-126	-1.744E-01	3.073E-01	2.087E-01	1.568E-01	NOT IDENT.
SB-127	5.400E+00	6.262E+00	5.652E+00	3.195E+00	NOT IDENT.
I-131	7.304E-02	2.593E-01	2.237E-01	1.323E-01	NOT IDENT.
TE-132	4.057E+00	4.645E+00	4.183E+00	2.370E+00	NOT IDENT.
BA-133	-2.717E-02	5.379E-02	3.798E-02	2.744E-02	NOT IDENT.
I-133	2.581E+04	3.265E+06	0.000E+00	1.666E+06	SHORT HLIF
CS-134	7.300E-02	5.749E-02	5.278E-02	2.933E-02	NOT IDENT.
CS-135	1.162E-01	2.069E-01	1.634E-01	1.055E-01	NOT IDENT.
I-135	-3.407E+24	3.445E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.883E-01	1.772E-01	1.331E-01	9.039E-02	NOT IDENT.
BA-137M	6.680E-02	4.729E-02	4.379E-02	2.413E-02	NOT IDENT.
CS-137	7.057E-02	4.995E-02	4.626E-02	2.549E-02	NOT IDENT.
CE-139	-1.403E-02	3.560E-02	2.911E-02	1.816E-02	NOT IDENT.
BA-140	4.828E-02	4.415E-01	3.857E-01	2.253E-01	NOT IDENT.
LA-140	-1.665E-02	1.675E-01	1.406E-01	8.545E-02	NOT IDENT.
CE-141	2.756E-02	7.999E-02	6.842E-02	4.081E-02	NOT IDENT.
CE-143	3.427E+04	1.269E+04	0.000E+00	6.473E+03	SHORT HLIF
CE-144	-9.740E-02	2.164E-01	1.790E-01	1.104E-01	NOT IDENT.
PM-144	-5.047E-02	4.190E-02	3.181E-02	2.138E-02	NOT IDENT.
PR-144	-3.783E+00	3.149E+00	2.392E+00	1.607E+00	NOT IDENT.
PM-146	5.645E-03	4.834E-02	4.056E-02	2.466E-02	NOT IDENT.
ND-147	-8.089E-01	9.620E-01	7.715E-01	4.908E-01	FAIL ABUN
PM-149	-4.398E+02	1.217E+03	0.000E+00	6.210E+02	SHORT HLIF
EU-152	-4.214E-03	1.219E-01	9.570E-02	6.220E-02	FAIL ABUN
GD-153	-5.232E-02	9.109E-02	7.264E-02	4.647E-02	NOT IDENT.
EU-154	-1.140E-02	1.404E-01	1.165E-01	7.162E-02	NOT IDENT.
EU-155	1.757E-01	1.128E-01	1.024E-01	5.756E-02	FAIL ABUN
TB-160	-1.033E-01	1.676E-01	1.292E-01	8.550E-02	FAIL ABUN
HO-166M	-4.267E-02	6.865E-02	5.481E-02	3.503E-02	NOT IDENT.
TA-182	-1.689E-01	2.328E-01	1.815E-01	1.188E-01	FAIL ABUN
IR-192	7.838E-03	4.436E-02	3.837E-02	2.263E-02	FAIL ABUN
HG-203	-1.170E-02	4.861E-02	4.150E-02	2.480E-02	NOT IDENT.
BI-207	7.755E-03	5.836E-02	5.042E-02	2.978E-02	FAIL ABUN
PB-210	-2.479E+00	5.085E+00	4.362E+00	2.594E+00	NOT IDENT.
PB-211	-7.620E-01	8.842E-01	6.308E-01	4.511E-01	NOT IDENT.
BI-212	2.596E+00	9.768E-01	7.264E-01	4.984E-01	FAIL ABUN
RN-219	1.916E-01	4.707E-01	4.058E-01	2.401E-01	FAIL ABUN
RA-223	-3.363E-01	7.706E-01	6.408E-01	3.932E-01	FAIL ABUN
AC-227	-5.161E-02	2.809E-01	2.422E-01	1.433E-01	FAIL ABUN
TH-227	-5.161E-02	2.810E-01	2.422E-01	1.433E-01	FAIL ABUN
TH-229	5.168E-01	5.608E-01	5.155E-01	2.861E-01	FAIL ABUN
PA-231	-4.040E-01	1.580E+00	1.344E+00	8.061E-01	FAIL ABUN
TH-231	-3.363E-01	7.706E-01	6.408E-01	3.932E-01	FAIL ABUN
PA-233	-3.230E-02	7.574E-02	6.332E-02	3.864E-02	FAIL ABUN
PA-234	1.805E-01	3.538E-01	3.172E-01	1.805E-01	NOT IDENT.
PA-234M	7.906E-01	5.399E+00	4.705E+00	2.755E+00	NOT IDENT.
TH-234	1.580E+00	1.601E+00	1.426E+00	8.166E-01	FAIL ABUN
U-235	-8.174E-03	2.217E-01	1.865E-01	1.131E-01	FAIL ABUN
U-238	1.580E+00	1.601E+00	1.426E+00	8.166E-01	FAIL ABUN
NP-239	4.916E-03	4.282E-01	3.660E-01	2.185E-01	NOT IDENT.
AM-241	-3.372E-02	1.778E-01	1.567E-01	9.070E-02	NOT IDENT.
CM-247	-9.878E-04	4.276E-02	3.587E-02	2.182E-02	NOT IDENT.
CF-249	2.988E-02	4.774E-02	4.180E-02	2.436E-02	NOT IDENT.

CF-251	-8.791E-02	1.322E-01	1.144E-01	6.744E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	284.5381
49.72	266.6417
57.36	0.0000
59.54	303.6675
63.29	323.0464
63.29	323.0464
64.28	327.7239
67.75	366.7543
69.67	320.6359
70.83	354.0873
72.81	419.6803
72.87	419.7383
72.87	419.7383
74.82	357.7857
74.82	357.7857
74.82	357.7857
74.97	357.9044
77.11	359.5861
77.11	359.5861
77.11	359.5861
79.69	287.0512
79.80	287.1179
80.12	285.8014
80.19	285.8432
80.57	339.0488
81.00	396.9258
81.07	396.9838
81.07	396.9838
83.79	327.6129
83.79	327.6129
85.43	321.0658
86.48	433.5920
86.55	436.7194
86.79	436.9281
86.94	458.5304
87.57	343.9468
88.03	344.2612
88.47	344.5620
89.96	543.0444
91.11	247.3926
92.59	288.4155
92.59	288.4155
93.35	277.9654
94.67	278.6633
94.87	278.7684
94.87	278.7684
95.86	277.7285
97.43	271.6566
98.44	250.8423
99.53	250.2967
100.11	241.1263
103.18	277.2517
103.37	277.3453
105.31	237.0304
106.12	281.8741
109.28	226.9495
111.00	273.5664
111.76	274.9879
116.30	258.7463
117.23	259.1406
121.12	241.2148
121.78	226.2411
122.06	232.8707
123.07	228.8843
131.20	285.8553
133.52	259.1653
136.00	242.3316

136.47	243.6125
140.51	0.0000
140.51	0.0000
143.76	272.0432
144.24	262.1037
144.24	262.1037
145.44	246.7715
152.43	236.6512
153.25	242.6086
154.21	234.9415
154.21	234.9415
156.02	257.2334
158.56	245.4870
159.00	231.8549
162.66	246.8084
163.33	226.2442
165.86	261.7240
176.60	214.7957
177.52	231.7804
181.07	0.0000
184.41	272.8105
185.72	265.2221
193.51	205.6671
197.04	244.3677
205.31	222.7857
210.85	219.7375
215.65	221.7876
222.11	206.6160
227.38	204.0126
228.16	203.2424
228.18	202.3134
235.69	196.8950
235.96	193.9409
235.96	193.9409
238.63	185.5968
238.63	185.5968
240.99	186.0267
242.00	186.2100
244.70	153.1496
252.40	166.1172
252.80	176.6866
256.23	175.3392
256.23	175.3392
260.90	0.0000
264.66	200.8494
268.22	179.7972
269.46	184.6534
269.46	184.6534
271.23	170.9592
273.65	218.0562
276.40	150.5566
277.37	153.3371
277.60	162.1600
278.00	165.1499
279.20	171.1922
279.54	179.0712
280.46	189.9889
283.69	152.2210
284.31	166.0602
285.41	159.3328
285.90	0.0000
287.50	155.6783
293.27	0.0000
295.22	139.6420
295.96	139.7301
298.57	111.3916
299.98	132.2326
299.98	132.2326
300.09	129.0582
300.09	129.0582
300.13	129.0621
301.36	141.9546
302.85	145.3223
304.50	158.3130
304.50	158.3130
304.85	163.1577
308.46	150.4028
311.90	156.8569

316.51	147.3456
319.41	145.6611
320.08	150.7984
323.87	163.4321
323.87	163.4321
328.76	138.5815
333.37	134.1649
334.37	116.2573
334.37	116.2573
338.28	145.7550
338.28	145.7550
338.32	145.7593
338.32	145.7593
338.32	145.7593
340.48	116.7981
340.55	115.1582
344.28	134.7281
351.06	121.2472
351.93	121.3239
356.01	126.4725
364.49	110.9251
366.42	0.0000
383.85	120.9302
388.16	112.7770
388.63	110.6841
391.69	121.5807
400.66	95.4914
401.81	106.3023
402.40	110.6414
404.85	120.5039
410.95	113.4274
414.70	102.8756
423.72	101.2959
427.09	113.5215
427.87	100.4720
433.94	110.7230
453.88	91.0050
463.37	85.9447
468.07	71.6348
473.00	72.9653
476.78	86.4023
477.60	93.6470
487.02	99.5895
492.35	0.0000
497.08	93.7876
511.00	105.5313
514.00	90.3852
527.90	0.0000
529.87	0.0000
531.02	79.7831
537.26	74.4629
546.56	0.0000
563.25	60.3828
569.33	76.6593
569.50	76.6672
569.70	73.8334
583.19	74.3361
600.60	96.1230
602.73	78.3531
604.72	70.6317
609.32	79.1532
609.32	79.1532
610.33	79.1913
614.28	85.4694
618.01	73.2369
621.93	72.8339
621.93	72.8339
633.25	77.1272
635.95	66.4710
636.99	64.5466
645.85	62.8469
657.76	100.7076
661.66	78.1359
661.66	78.1359
664.57	0.0000
666.33	104.0695
666.50	104.0797
677.62	64.7493

685.70	57.9816
695.00	67.2503
696.49	93.4076
696.51	93.4087
697.00	92.4245
702.65	74.5221
706.68	76.6680
711.68	72.7875
720.70	77.8009
721.93	0.0000
722.78	59.2491
722.91	59.2519
723.31	54.1823
724.19	59.2832
727.33	56.9871
733.00	54.4010
735.93	53.1058
739.50	0.0000
747.24	67.7177
752.31	61.6890
753.82	53.4955
756.73	57.6789
763.94	55.0924
765.81	62.0259
766.42	56.8705
777.92	0.0000
778.90	63.3888
783.70	56.2201
785.37	68.7586
795.86	56.4877
801.95	59.7665
810.29	67.3219
810.76	69.4386
815.77	47.4346
818.51	61.2016
832.01	63.6357
834.85	55.2094
836.80	0.0000
846.77	43.7237
856.80	39.2466
860.56	57.8786
871.09	49.4927
873.19	31.2253
875.33	0.0000
879.36	51.7980
880.51	61.5352
883.24	42.1440
884.68	52.9777
889.28	60.6457
898.04	55.4015
911.20	54.5654
911.20	54.5654
911.20	54.5654
926.50	46.0780
937.49	57.8141
944.13	55.1855
946.00	47.8571
949.00	55.2759
962.29	41.2453
964.08	38.8888
966.15	38.9153
968.97	38.9512
968.97	38.9512
968.97	38.9512
983.53	49.3888
996.26	63.6296
1001.03	47.7959
1004.73	51.6050
1037.84	36.9783
1038.76	0.0000
1048.07	52.3167
1050.41	41.8838
1050.41	41.8838
1063.66	43.0096
1085.87	49.0742
1099.45	48.3073
1112.07	53.1987
1115.54	64.9039

1120.29	35.9687
1120.29	35.9687
1120.55	35.9717
1121.30	35.9792
1131.51	0.0000
1173.23	52.3142
1177.93	50.4065
1189.05	58.4958
1204.77	54.7673
1221.41	60.0220
1231.02	64.1901
1235.36	76.3154
1238.28	61.3003
1260.41	0.0000
1271.85	43.6019
1274.44	39.5729
1274.54	38.5582
1291.59	39.7506
1298.22	0.0000
1312.11	34.8384
1332.49	29.8709
1365.19	18.6936
1368.63	0.0000
1384.29	33.3906
1408.01	20.9896
1457.56	0.0000
1460.82	21.2565
1489.16	14.9781
1505.03	35.4344
1596.21	25.3615
1620.50	14.1640
1678.03	0.0000
1690.97	12.4595
1764.49	8.7561
1764.49	8.7561
1770.23	11.9317
1771.35	8.5248
1791.20	0.0000
1836.06	11.8405

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248521011

Total Uranium Activity	4.6975E+00	ug/g
Total Uranium Counting Unc.	4.7627E+00	ug/g
Total Uranium Tpu	2.4300E-06	ug/g
Total Uranium Mda	4.2420E+00	ug/g

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*****************************************************************************
*                                                                           *
*                          GEL Laboratories LLC                           *
*                               2040 SAVAGE ROAD                            *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID      : 961099                    SAMPLE ID  : G248521011       *
*   ANALYST       : MXR1                      DETECTOR   : GAM06            *
*   SAMPLE DATE   : 25-FEB-2010 12:00:00.00   COUNT TIME :    0 02:00:00.00 *
*   ANALYSIS DATE: 20-MAR-2010 11:10:38.23    SAMPLE ALQT:  127.140 GRAM    *
*                                                                           *
*****************************************************************************


         GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 9.127E+00
         GROSS GAMMA ERROR   (pCi/GRAM  )  : 1.265E+00
         GROSS GAMMA MDA     (pCi/GRAM  )  : 3.452E+00
         GROSS GAMMA DLC     (pCi/GRAM  )  : 1.674E+00
```

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 22:45:33.63

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*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248526001.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 20:43:36
Sample ID         : G248526001           Sample quantity  : 1.33660E+02 GRAM
Detector name     : GAM25                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:02.22  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.41*	229	519	0.97	92.37	88	8	3.18E-02	19.2	
2	0	63.48*	198	923	0.89	126.52	122	9	2.75E-02	29.2	
3	2	74.81*	1008	570	0.93	149.19	144	17	1.40E-01	4.9	2.65E+00
4	2	77.14*	1611	435	0.83	153.83	144	17	2.24E-01	3.2	
5	0	84.20*	186	467	1.12	167.95	165	6	2.58E-02	20.2	
6	4	87.26*	544	550	1.16	174.07	171	21	7.56E-02	8.2	4.51E+00
7	4	90.02	352	516	1.13	179.59	171	21	4.88E-02	11.9	
8	4	92.88*	426	477	1.22	185.31	171	21	5.91E-02	10.8	
9	0	154.02*	82	384	0.99	307.59	305	8	1.14E-02	43.1	
10	0	185.90*	240	511	1.15	371.34	366	12	3.33E-02	20.5	
11	0	209.35	180	288	0.86	418.24	415	8	2.50E-02	18.0	
12	5	238.64*	1778	187	0.95	476.82	471	17	2.47E-01	2.7	2.69E+00
13	5	241.41*	368	312	1.77	482.34	471	17	5.11E-02	14.6	
14	0	270.30	189	224	1.63	540.13	536	10	2.62E-02	16.7	
15	0	295.18*	536	218	1.13	589.88	585	10	7.45E-02	6.8	
16	0	299.98	74	223	0.95	599.48	595	9	1.03E-02	38.1	
17	0	327.45	106	165	1.46	654.42	650	10	1.47E-02	24.6	
18	0	338.24	362	287	1.12	675.99	669	14	5.02E-02	11.2	
19	0	351.87*	842	218	1.18	703.26	698	11	1.17E-01	4.9	
20	0	462.61	77	90	1.49	924.71	921	8	1.07E-02	24.3	
21	0	510.92*	153	156	1.31	1021.35	1014	14	2.12E-02	21.4	
22	0	583.22*	492	106	1.31	1165.94	1160	13	6.84E-02	6.4	
23	0	609.35*	629	73	1.47	1218.20	1211	15	8.73E-02	5.1	
24	0	727.41	89	99	1.39	1454.30	1448	11	1.23E-02	24.1	
25	0	860.86	73	45	1.02	1721.21	1717	10	1.01E-02	20.8	
26	0	911.14*	368	56	1.65	1821.76	1816	14	5.11E-02	6.9	
27	0	934.76	39	50	1.15	1869.01	1863	10	5.48E-03	37.1	
28	1	964.63	59	75	1.97	1928.75	1922	22	8.14E-03	32.9	6.56E-01
29	1	968.90*	194	64	1.81	1937.29	1922	22	2.69E-02	10.9	
30	0	1120.10*	122	87	2.06	2239.69	2230	16	1.69E-02	19.7	
31	0	1378.22	52	39	1.82	2755.95	2749	15	7.27E-03	29.1	
32	0	1460.75	1505	16	2.06	2921.03	2910	22	2.09E-01	2.7	
33	0	1764.31*	101	11	1.45	3528.20	3520	15	1.40E-02	12.7	

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

VMS Nuclide Identification Report V3.1 Generated 19-MAR-2010 22:45:36

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248526001.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 20:43:36
Sample ID : G248526001 Sample quantity : 133.66 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA25 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.22 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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	*	3.576E+01	3.594E+00	5.565E-01	4.739E-02	64.266
CD-109	+	88.03	*	4.543E+00	8.917E-01	7.293E-01	7.837E-02	6.230
SN-126	+	64.28		5.929E-01	3.589E-01	2.958E-01	4.714E-02	2.004
	+	86.94		1.826E+00	8.211E-01	2.917E-01	1.221E-01	6.260
	+	87.57	*	4.393E-01	8.622E-02	7.037E-02	7.546E-03	6.243
TL-208		277.37		3.772E-01	3.868E-01	6.388E-01	9.181E-02	0.591
	+	583.19	*	6.515E-01	1.106E-01	5.432E-02	6.119E-03	11.993
	+	860.56		9.295E-01	3.986E-01	4.766E-01	4.980E-02	1.950
PB-210	+	46.54	*	1.651E+00	6.567E-01	5.796E-01	5.936E-02	2.848
BI-211		72.87		5.943E-01	1.739E+00	2.555E+00	2.580E-01	0.233
	+	351.06	*	4.708E+00	6.754E-01	3.352E-01	3.533E-02	14.043
PB-212	+	74.82		2.841E+00	4.870E-01	2.835E-01	3.988E-02	10.021
	+	77.11		2.741E+00	3.315E-01	1.718E-01	1.761E-02	15.951
	+	238.63	*	2.145E+00	2.714E-01	8.367E-02	9.559E-03	25.635
	+	300.09		1.419E+00	1.097E+00	1.091E+00	1.369E-01	1.300
BI-214	+	609.32	*	1.617E+00	2.550E-01	1.030E-01	1.247E-02	15.695
	+	1120.29		1.638E+00	6.690E-01	5.478E-01	5.973E-02	2.990
	+	1764.49		1.969E+00	5.256E-01	3.559E-01	2.932E-02	5.534
PB-214	+	74.82		5.036E+00	8.153E-01	5.025E-01	6.478E-02	10.021
	+	77.11		4.832E+00	7.074E-01	3.029E-01	3.984E-02	15.951
	+	242.00		2.692E+00	8.486E-01	5.098E-01	6.126E-02	5.280
	+	295.22		1.815E+00	3.389E-01	2.038E-01	2.612E-02	8.907
	+	351.93	*	1.709E+00	2.626E-01	1.220E-01	1.449E-02	14.007
RA-224	+	240.99	*	4.759E+00	1.475E+00	8.979E-01	9.436E-02	5.300
RA-226	+	609.32	*	1.617E+00	2.550E-01	1.030E-01	1.247E-02	15.695
	+	1120.29		1.638E+00	6.690E-01	5.478E-01	5.973E-02	2.990
	+	1764.49		1.969E+00	5.256E-01	3.559E-01	2.932E-02	5.534
AC-228	+	338.32		2.243E+00	1.071E+00	3.543E-01	1.493E-01	6.330
	+	911.20	*	2.387E+00	4.411E-01	2.417E-01	2.954E-02	9.876
	+	968.97		2.165E+00	7.126E-01	4.738E-01	1.166E-01	4.569
RA-228	+	338.32		2.243E+00	1.071E+00	3.543E-01	1.493E-01	6.330
	+	911.20	*	2.387E+00	4.411E-01	2.417E-01	2.954E-02	9.876
	+	968.97		2.165E+00	7.126E-01	4.738E-01	1.166E-01	4.569
TH-228	+	74.82		2.841E+00	4.024E-01	2.835E-01	2.900E-02	10.021

Sample ID : G248526001 Acquisition date : 19-MAR-2010 20:43:36

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	77.11		2.741E+00	3.315E-01	1.718E-01	1.761E-02	15.951
	+	238.63	*	2.145E+00	2.714E-01	8.367E-02	9.559E-03	25.635
	+	300.09		1.419E+00	1.391E+00	1.091E+00	6.720E-01	1.300
TH-229	+	85.43		3.742E-01	1.563E-01	1.891E-01	2.008E-02	1.978
	+	88.47		6.773E-01	1.329E-01	1.089E-01	1.173E-02	6.217
		193.51	*	-2.339E-02	4.533E-01	7.385E-01	7.043E-02	-0.032
	+	210.85		3.063E+00	1.141E+00	1.312E+00	1.300E-01	2.335
TH-232	+	338.32		2.243E+00	5.558E-01	3.543E-01	3.693E-02	6.330
	+	911.20	*	2.387E+00	4.411E-01	2.417E-01	2.954E-02	9.876
	+	968.97		2.165E+00	7.126E-01	4.738E-01	1.166E-01	4.569
TH-234	+	63.29	*	1.538E+00	9.447E-01	7.664E-01	1.455E-01	2.007
	+	92.59		3.061E+00	9.673E-01	6.187E-01	1.430E-01	4.946
U-235	+	89.96		3.052E+00	1.062E+00	7.585E-01	1.933E-01	4.023
	+	93.35		2.312E+00	7.473E-01	4.691E-01	1.130E-01	4.929
		143.76	*	-2.476E-02	1.670E-01	2.738E-01	5.029E-02	-0.090
		163.33		-3.507E-02	3.605E-01	5.936E-01	1.083E-01	-0.059
	+	185.72		1.835E-01	7.702E-02	5.784E-02	5.416E-03	3.173
		205.31		2.765E-01	4.734E-01	7.073E-01	1.325E-01	0.391
NP-237	+	86.48	*	1.311E+00	3.765E-01	2.253E-01	5.299E-02	5.819
		95.86		-9.406E-02	6.296E-01	9.654E-01	2.415E-01	-0.097
U-238	+	63.29	*	1.538E+00	9.447E-01	7.664E-01	1.455E-01	2.007
	+	92.59		3.061E+00	7.407E-01	6.187E-01	6.798E-02	4.946
ANH-511	+	511.00	*	1.527E-01	6.712E-02	4.340E-02	4.467E-03	3.518

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-6.946E-02	3.410E-01	5.471E-01	5.791E-02	-0.127
NA-22		1274.54	*	-1.771E-02	5.224E-02	8.327E-02	6.828E-03	-0.213
NA-24		1368.63	*	-3.806E+02	5.224E-02	Half-Life too short		
SC-46		889.28	*	3.852E-05	4.781E-02	7.778E-02	7.448E-03	0.000
	+	1120.55		2.942E-01	1.185E-01	1.523E-01	1.310E-02	1.931
V-48		944.13		9.152E-02	1.387E+00	2.256E+00	2.116E-01	0.041
		983.53	*	-4.263E-02	1.113E-01	1.727E-01	1.600E-02	-0.247
		1312.11		1.500E-02	1.268E-01	2.103E-01	1.714E-02	0.071
CR-51		320.08	*	-2.134E-01	4.230E-01	6.933E-01	7.695E-02	-0.308
MN-54		834.85	*	3.742E-02	4.195E-02	7.308E-02	7.416E-03	0.512
CO-56		846.77	*	-1.965E-04	4.203E-02	6.867E-02	6.890E-03	-0.003
		1037.84		-2.509E-02	3.588E-01	5.982E-01	5.671E-02	-0.042
		1238.28		2.074E-01	1.266E-01	2.269E-01	1.924E-02	0.914
		1771.35		-1.691E+00	4.732E-01	3.613E-01	2.974E-02	-4.682
CO-57		122.06	*	-2.910E-03	1.958E-02	3.285E-02	4.236E-03	-0.089
		136.47		3.409E-02	1.726E-01	2.911E-01	3.567E-02	0.117
CO-58		810.76	*	-1.997E-02	4.552E-02	7.185E-02	7.455E-03	-0.278
FE-59		1099.45	*	-5.837E-02	1.199E-01	1.920E-01	1.808E-02	-0.304
		1291.59		-3.211E-02	1.571E-01	2.528E-01	2.375E-02	-0.127
CO-60		1173.23		1.325E-02	5.159E-02	8.721E-02	7.179E-03	0.152
		1332.49	*	-1.644E-02	4.762E-02	7.515E-02	6.104E-03	-0.219

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZN-65		1115.54	*	-1.361E-02	1.198E-01	1.696E-01	1.465E-02	-0.080
SE-75		121.12		2.658E-02	1.043E-01	1.776E-01	2.593E-02	0.150
		136.00		2.132E-02	3.329E-02	5.698E-02	6.761E-03	0.374
		264.66	*	1.695E-02	4.478E-02	7.273E-02	7.972E-03	0.233
		279.54		3.608E-03	1.144E-01	1.816E-01	2.072E-02	0.020
		400.66		-1.317E-02	2.644E-01	4.361E-01	5.034E-02	-0.030
SR-85		514.00	*	4.462E-02	4.382E-02	6.789E-02	7.004E-03	0.657
Y-88		898.04		6.123E-03	4.902E-02	8.052E-02	7.659E-03	0.076
		1836.06	*	7.491E-03	3.800E-02	6.485E-02	5.299E-03	0.116
Y-91		1204.77	*	2.727E+01	2.845E+01	5.011E+01	4.124E+00	0.544
NB-94		702.65	*	-3.605E-03	3.732E-02	6.167E-02	6.773E-03	-0.058
		871.09		1.500E-03	3.691E-02	6.038E-02	5.907E-03	0.025
NB-95		765.81	*	-1.351E-02	5.230E-02	8.473E-02	9.050E-03	-0.159
NB-95M		235.69	*	-6.003E-02	1.373E-01	1.907E-01	2.189E-02	-0.315
ZR-95		724.19		7.362E-02	1.190E-01	1.819E-01	2.088E-02	0.405
		756.73	*	-2.862E-02	9.019E-02	1.454E-01	1.669E-02	-0.197
MO-99		140.51		9.527E-05	9.019E-02	Half-Life too short		
		181.07		6.728E-05	9.019E-02	Half-Life too short		
		366.42		2.761E-04	9.019E-02	Half-Life too short		
		739.50	*	2.071E-05	9.019E-02	Half-Life too short		
		777.92		-3.720E-04	9.019E-02	Half-Life too short		
TC-99M		140.51	*	1.311E+19	9.019E-02	Half-Life too short		
RU-103		497.08	*	-4.630E-02	4.967E-02	7.456E-02	1.117E-02	-0.621
	+	610.33		1.896E+01	3.858E+00	3.570E+00	6.304E-01	5.311
RH-106		621.93	*	-4.713E-02	3.366E-01	5.605E-01	8.339E-02	-0.084
		1050.41		1.588E+00	2.920E+00	5.095E+00	4.581E-01	0.312
RU-106		621.93	*	-4.713E-02	3.366E-01	5.605E-01	6.138E-02	-0.084
		1050.41		1.588E+00	2.920E+00	5.095E+00	4.581E-01	0.312
AG-108M		433.94	*	1.872E-03	2.818E-02	4.651E-02	4.569E-03	0.040
		614.28		-4.469E-03	3.763E-02	5.450E-02	6.074E-03	-0.082
		722.91		2.674E-02	4.320E-02	6.623E-02	7.369E-03	0.404
AG-110M		657.76	*	-4.345E-02	4.001E-02	6.145E-02	6.925E-03	-0.707
		677.62		7.122E-02	3.397E-01	5.752E-01	6.468E-02	0.124
		706.68		1.421E-01	2.381E-01	4.112E-01	4.590E-02	0.346
		763.94		-2.057E-01	1.916E-01	2.896E-01	3.152E-02	-0.710
		884.68		-1.637E-02	5.685E-02	9.014E-02	8.904E-03	-0.182
		937.49		-1.268E-02	1.451E-01	2.002E-01	1.939E-02	-0.063
		1384.29		4.696E-02	2.045E-01	2.970E-01	2.504E-02	0.158
		1505.03		-1.536E-01	3.238E-01	4.885E-01	4.050E-02	-0.315
SN-113		391.69	*	-4.363E-02	4.729E-02	7.384E-02	6.896E-03	-0.591
CD-115		260.90		-2.714E-04	4.729E-02	Half-Life too short		
		492.35		1.652E-04	4.729E-02	Half-Life too short		
		527.90	*	-2.575E-06	4.729E-02	Half-Life too short		
SN-117M		156.02		1.473E+00	3.196E+00	4.860E+00	4.847E-01	0.303
		158.56	*	-3.190E-03	7.571E-02	1.121E-01	1.089E-02	-0.028
TE-123M		159.00	*	-2.071E-02	2.656E-02	4.030E-02	3.913E-03	-0.514
SB-124		602.73		-1.378E-02	4.890E-02	6.991E-02	7.599E-03	-0.197
		645.85		-5.293E-02	5.487E-01	9.132E-01	1.043E-01	-0.058
		722.78		2.920E-01	4.717E-01	7.232E-01	8.001E-02	0.404

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1690.97	*	4.762E-02	7.524E-02	1.397E-01	1.210E-02	0.341
SB-125		427.87	*	5.241E-02	8.841E-02	1.508E-01	1.456E-02	0.348
	+	463.37		6.768E-01	3.358E-01	5.434E-01	5.676E-02	1.246
		600.60		7.743E-02	1.828E-01	3.163E-01	3.597E-02	0.245
		635.95		-1.203E-01	2.830E-01	4.598E-01	5.314E-02	-0.262
TE-125M		109.28	*	2.288E+00	7.754E+00	1.330E+01	1.785E+00	0.172
I-126		388.63		2.838E-01	2.411E-01	4.245E-01	3.898E-02	0.669
		666.33	*	-3.413E-01	3.748E-01	5.854E-01	6.481E-02	-0.583
		753.82		2.053E+00	2.989E+00	5.172E+00	5.561E-01	0.397
SB-126		414.70		-5.203E-02	1.099E-01	1.756E-01	1.643E-02	-0.296
		666.50		-6.423E-02	1.282E-01	2.068E-01	2.289E-02	-0.311
		695.00		-2.579E-02	1.295E-01	2.127E-01	2.341E-02	-0.121
		697.00		-1.748E-01	4.470E-01	7.233E-01	7.955E-02	-0.242
		720.70	*	8.782E-02	2.527E-01	3.778E-01	4.123E-02	0.232
		856.80		-5.173E-01	9.120E-01	1.195E+00	1.187E-01	-0.433
SB-127		252.40		-6.053E+00	1.543E+01	2.380E+01	1.017E+01	-0.254
		473.00		-1.752E+00	6.019E+00	9.602E+00	1.511E+00	-0.182
		685.70	*	-2.638E-01	5.334E+00	8.861E+00	1.362E+00	-0.030
		783.70		8.547E+00	1.523E+01	2.597E+01	4.101E+00	0.329
I-131		80.19		4.604E+00	5.111E+00	7.639E+00	8.001E-01	0.603
		284.31		-2.555E+00	2.679E+00	3.945E+00	4.545E-01	-0.648
		364.49	*	-8.983E-02	2.176E-01	3.543E-01	3.654E-02	-0.254
		636.99		-7.220E-01	3.055E+00	5.038E+00	5.766E-01	-0.143
TE-132		49.72		6.232E+00	1.448E+01	2.197E+01	3.053E+00	0.284
		111.76		-5.544E+01	1.178E+02	1.927E+02	3.048E+01	-0.288
		116.30		2.025E+00	9.850E+01	1.668E+02	2.680E+01	0.012
		228.16	*	-3.411E-01	3.269E+00	5.241E+00	9.617E-01	-0.065
BA-133		81.00		5.024E-02	6.174E-02	8.109E-02	1.344E-02	0.620
		276.40		1.546E-01	3.545E-01	5.741E-01	9.049E-02	0.269
		302.85		3.958E-02	1.366E-01	2.082E-01	3.063E-02	0.190
		356.01	*	-1.954E-03	4.627E-02	6.785E-02	9.464E-03	-0.029
		383.85		-8.755E-02	2.818E-01	4.589E-01	5.930E-02	-0.191
I-133		529.87	*	6.484E-01	2.818E-01	Half-Life too short		
		875.33		-2.791E+01	2.818E-01	Half-Life too short		
		1298.22		-9.796E-01	2.818E-01	Half-Life too short		
CS-134		563.25		-2.793E-02	3.892E-01	6.212E-01	6.662E-02	-0.045
		569.33		-4.593E-02	2.141E-01	3.376E-01	3.642E-02	-0.136
		604.72		-3.232E-02	3.786E-02	5.058E-02	5.511E-03	-0.639
		795.86	*	5.237E-02	5.291E-02	9.275E-02	9.764E-03	0.565
		801.95		-2.890E-01	4.432E-01	6.940E-01	7.266E-02	-0.416
		1365.19		-2.342E-01	1.203E+00	1.910E+00	1.640E-01	-0.123
CS-135		268.22	*	6.567E-02	1.847E-01	2.670E-01	3.223E-02	0.246
I-135		546.56		-5.497E+17	1.847E-01	Half-Life too short		
		836.80		2.700E+18	1.847E-01	Half-Life too short		
		1038.76		-5.525E+17	1.847E-01	Half-Life too short		
		1131.51		-4.133E+17	1.847E-01	Half-Life too short		
		1260.41	*	-2.730E+17	1.847E-01	Half-Life too short		
		1457.56		7.845E+19	1.847E-01	Half-Life too short		
		1678.03		1.323E+17	1.847E-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
		1791.20		9.235E+17	1.847E-01	Half-Life too short		
CS-136	+	153.25		1.801E+00	1.568E+00	1.868E+00	2.181E-01	0.964
		176.60		1.296E-01	6.193E-01	1.028E+00	1.028E-01	0.126
		273.65		1.388E-01	7.379E-01	1.056E+00	1.231E-01	0.131
		340.55		4.735E-01	2.406E-01	3.924E-01	4.183E-02	1.207
		818.51		-1.202E-01	1.104E-01	1.609E-01	1.658E-02	-0.747
		1048.07	*	-1.570E-01	1.783E-01	2.758E-01	2.582E-02	-0.569
		1235.36		3.086E-01	1.109E+00	1.861E+00	2.136E-01	0.166
BA-137M		661.66	*	-4.158E-02	4.322E-02	7.081E-02	7.844E-03	-0.587
CS-137		661.66	*	-4.392E-02	4.566E-02	7.480E-02	8.296E-03	-0.587
CE-139		165.86	*	-3.378E-03	2.559E-02	4.203E-02	3.747E-03	-0.080
BA-140		162.66		1.124E+00	9.758E-01	1.683E+00	1.652E-01	0.668
		304.85		-1.115E+00	1.865E+00	2.768E+00	8.314E-01	-0.403
		423.72		3.063E-01	2.818E+00	4.669E+00	1.547E+00	0.066
		537.26	*	1.380E-01	4.065E-01	6.677E-01	2.299E-01	0.207
LA-140	+	328.76		1.195E+00	6.035E-01	7.792E-01	8.571E-02	1.533
		487.02		9.246E-02	1.921E-01	3.236E-01	3.414E-02	0.286
		815.77		-1.620E-01	4.754E-01	7.540E-01	8.426E-02	-0.215
		1596.21	*	-1.824E-01	1.502E-01	2.092E-01	1.740E-02	-0.872
CE-141		145.44	*	-5.060E-02	6.170E-02	9.797E-02	1.090E-02	-0.516
CE-143		57.36		-8.435E-03	6.170E-02	Half-Life too short		
		293.27	*	1.860E-02	6.170E-02	Half-Life too short		
		664.57		1.210E-03	6.170E-02	Half-Life too short		
		721.93		3.620E-02	6.170E-02	Half-Life too short		
CE-144		80.12		1.381E+00	1.504E+00	2.249E+00	2.332E-01	0.614
		133.52	*	-1.390E-01	1.629E-01	2.610E-01	4.550E-02	-0.533
PM-144		476.78		4.763E-02	6.268E-02	1.074E-01	1.144E-02	0.443
		618.01		1.506E-02	3.294E-02	5.709E-02	6.354E-03	0.264
		696.49	*	-6.136E-03	3.851E-02	6.340E-02	6.978E-03	-0.097
PR-144		696.51	*	-4.569E-01	2.894E+00	4.764E+00	5.241E-01	-0.096
		1489.16		-3.795E+00	1.296E+01	1.996E+01	1.653E+00	-0.190
PM-146		453.88	*	2.349E-02	4.361E-02	7.372E-02	8.518E-03	0.319
		633.25		-4.053E-01	1.475E+00	2.414E+00	9.366E-01	-0.168
		735.93		1.126E-02	1.580E-01	2.631E-01	7.575E-02	0.043
		747.24		6.950E-02	1.056E-01	1.824E-01	2.911E-02	0.381
ND-147	+	91.11		1.562E+00	4.111E-01	5.281E-01	6.065E-02	2.957
		319.41		-1.801E+00	5.034E+00	8.323E+00	8.945E-01	-0.216
		531.02	*	5.941E-01	9.071E-01	1.528E+00	2.456E-01	0.389
PM-149		285.90	*	1.521E-04	9.071E-01	Half-Life too short		
EU-152		121.78		1.139E-03	5.483E-02	9.260E-02	1.274E-02	0.012
		244.70		-1.143E-02	3.272E-01	4.655E-01	4.924E-02	-0.025
		344.28	*	-3.557E-03	1.044E-01	1.537E-01	1.650E-02	-0.023
		778.90		-2.129E-01	3.020E-01	4.694E-01	4.974E-02	-0.454
	+	964.08		7.063E-01	4.691E-01	6.577E-01	6.135E-02	1.074
		1085.87		1.699E-01	4.258E-01	7.342E-01	6.465E-02	0.231
		1112.07		1.341E-01	3.922E-01	5.856E-01	5.065E-02	0.229
		1408.01		1.967E-01	1.931E-01	3.513E-01	2.886E-02	0.560
GD-153		69.67		-5.040E-01	8.482E-01	1.309E+00	1.309E-01	-0.385
		97.43	*	-7.134E-02	6.574E-02	9.483E-02	1.068E-02	-0.752

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		103.18		-7.103E-02	7.851E-02	1.288E-01	1.495E-02	-0.551
EU-154		123.07		9.137E-03	3.952E-02	6.719E-02	9.943E-03	0.136
		723.31		1.082E-01	1.951E-01	2.974E-01	3.452E-02	0.364
		873.19		1.457E-01	2.946E-01	5.009E-01	6.384E-02	0.291
		996.26		-3.580E-01	4.407E-01	6.498E-01	1.155E-01	-0.551
		1004.73		-2.630E-01	2.494E-01	3.572E-01	4.310E-02	-0.736
		1274.44	*	-4.227E-02	1.470E-01	2.354E-01	2.603E-02	-0.180
EU-155	+	86.55		5.342E-01	1.051E-01	1.327E-01	1.425E-02	4.026
		105.31	*	8.287E-02	7.845E-02	1.372E-01	1.622E-02	0.604
TB-160	+	86.79		1.515E+00	2.973E-01	3.880E-01	4.145E-02	3.905
		197.04		1.208E-01	5.157E-01	8.499E-01	8.171E-02	0.142
		215.65		-3.218E-01	7.495E-01	1.170E+00	1.171E-01	-0.275
	+	298.57		2.141E-01	1.650E-01	2.005E-01	2.206E-02	1.068
		879.36	*	3.389E-02	1.553E-01	2.581E-01	2.501E-02	0.131
		962.29		8.421E-01	7.839E-01	1.209E+00	1.128E-01	0.697
		966.15		1.166E+00	3.317E-01	6.113E-01	5.699E-02	1.907
		1177.93		-1.194E-01	4.426E-01	7.174E-01	5.905E-02	-0.166
		1271.85		-2.251E-02	8.830E-01	1.449E+00	1.187E-01	-0.016
HO-166M		80.57		7.967E-02	1.817E-01	2.347E-01	2.439E-02	0.339
	+	184.41		1.458E-01	6.119E-02	5.737E-02	5.355E-03	2.542
		280.46		-6.442E-02	8.580E-02	1.297E-01	1.447E-02	-0.497
		410.95		3.439E-01	2.543E-01	4.479E-01	4.173E-02	0.768
		711.68	*	-4.516E-02	6.555E-02	1.030E-01	1.128E-02	-0.438
		752.31		-8.404E-02	2.999E-01	4.848E-01	5.217E-02	-0.173
		810.29		-5.307E-02	6.549E-02	9.975E-02	1.034E-02	-0.532
TA-182		67.75		4.965E-02	5.246E-02	8.522E-02	8.479E-03	0.583
		100.11		1.200E-01	1.254E-01	2.198E-01	2.511E-02	0.546
		152.43		1.567E-01	3.459E-01	5.210E-01	5.383E-02	0.301
		222.11		2.215E-01	3.456E-01	5.738E-01	5.819E-02	0.386
	+	1121.30		8.020E-01	3.231E-01	4.129E-01	3.547E-02	1.943
		1189.05		4.632E-01	3.867E-01	6.926E-01	5.701E-02	0.669
		1221.41	*	-4.747E-02	2.414E-01	3.925E-01	3.228E-02	-0.121
		1231.02		-1.032E-01	6.073E-01	9.896E-01	8.135E-02	-0.104
IR-192	+	295.96		1.437E+00	2.519E-01	3.285E-01	3.639E-02	4.374
		308.46		-1.410E-02	8.923E-02	1.495E-01	1.634E-02	-0.094
		316.51	*	-1.676E-03	3.422E-02	5.756E-02	6.218E-03	-0.029
		468.07		-2.135E-02	7.357E-02	1.133E-01	1.186E-02	-0.188
HG-203		70.83		4.385E-01	7.764E-01	1.150E+00	1.939E-01	0.381
		72.87		1.648E-01	4.828E-01	7.087E-01	1.162E-01	0.233
		279.20	*	4.834E-02	4.162E-02	6.962E-02	7.889E-03	0.694
BI-207		72.81		1.126E-02	9.940E-02	1.447E-01	1.461E-02	0.078
	+	74.97		8.192E-01	1.156E-01	1.446E-01	1.470E-02	5.667
		569.70		-3.747E-03	3.327E-02	5.288E-02	5.656E-03	-0.071
		1063.66	*	-3.170E-02	6.075E-02	9.724E-02	8.679E-03	-0.326
		1770.23		-9.101E-02	5.168E-01	6.912E-01	5.691E-02	-0.132
PB-211		404.85	*	-2.406E-01	7.152E-01	1.142E+00	5.542E-01	-0.211
		427.09		1.272E-01	1.491E+00	2.464E+00	1.144E+00	0.052
		832.01		-7.709E-01	1.196E+00	1.741E+00	9.078E-01	-0.443
BI-212	+	727.33	*	1.825E+00	9.182E-01	1.275E+00	1.801E-01	1.431

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		785.37		4.146E-01	3.766E+00	6.248E+00	6.593E-01	0.066
		1620.50		2.346E+00	2.551E+00	4.758E+00	3.955E-01	0.493
RN-219	+	271.23		1.016E+00	3.614E-01	4.407E-01	5.445E-02	2.304
		401.81	*	-1.216E-01	3.991E-01	6.473E-01	9.854E-02	-0.188
RA-223		81.07		1.097E-01	1.389E-01	1.832E-01	1.907E-02	0.599
	+	83.79		2.227E-01	9.301E-02	1.334E-01	1.406E-02	1.669
		94.87		7.306E-01	3.197E-01	5.253E-01	5.838E-02	1.391
		144.24		1.740E-01	5.565E-01	9.284E-01	1.105E-01	0.187
	+	154.21		5.582E-01	4.853E-01	6.083E-01	6.609E-02	0.918
	+	269.46		7.891E-01	2.777E-01	3.559E-01	3.966E-02	2.217
		323.87	*	2.341E-01	6.537E-01	9.945E-01	1.834E-01	0.235
	+	338.28		8.899E+00	2.330E+00	2.580E+00	3.462E-01	3.449
AC-227		79.69		5.353E-01	7.478E-01	1.104E+00	2.005E-01	0.485
		235.96		-9.120E-03	1.548E-01	2.208E-01	2.623E-02	-0.041
		256.23	*	-6.988E-02	2.423E-01	3.805E-01	5.207E-02	-0.184
	+	299.98		1.560E+00	1.211E+00	1.533E+00	2.210E-01	1.018
		304.50		-4.964E-01	1.581E+00	2.303E+00	4.110E-01	-0.216
		334.37		7.666E-01	1.677E+00	2.564E+00	4.281E-01	0.299
TH-227		79.80		9.437E-01	9.872E-01	1.453E+00	3.271E-01	0.650
		235.96		-9.120E-03	1.548E-01	2.208E-01	2.512E-02	-0.041
		256.23	*	-6.988E-02	2.424E-01	3.805E-01	5.734E-02	-0.184
	+	299.98		1.560E+00	1.211E+00	1.533E+00	2.210E-01	1.018
		304.50		-4.964E-01	1.581E+00	2.303E+00	4.110E-01	-0.216
		334.37		7.666E-01	1.677E+00	2.564E+00	4.281E-01	0.299
PA-231		283.69	*	-4.256E-01	1.343E+00	2.071E+00	3.354E-01	-0.205
	+	301.36		1.002E+00	7.774E-01	9.858E-01	1.372E-01	1.017
TH-231		81.07		1.097E-01	1.389E-01	1.832E-01	1.907E-02	0.599
	+	83.79		2.227E-01	9.301E-02	1.334E-01	1.406E-02	1.669
		94.87		7.306E-01	3.197E-01	5.253E-01	5.838E-02	1.391
		144.24		1.740E-01	5.565E-01	9.284E-01	1.105E-01	0.187
	+	154.21		5.582E-01	4.853E-01	6.083E-01	6.609E-02	0.918
	+	269.46		7.891E-01	2.777E-01	3.559E-01	3.966E-02	2.217
		323.87	*	2.341E-01	6.537E-01	9.945E-01	1.834E-01	0.235
	+	338.28		8.899E+00	2.330E+00	2.580E+00	3.462E-01	3.449
PA-233	+	300.13		7.061E-01	5.508E-01	6.956E-01	1.135E-01	1.015
		311.90	*	8.910E-03	5.627E-02	9.581E-02	1.058E-02	0.093
		340.48		1.637E+00	8.064E-01	1.181E+00	2.923E-01	1.387
PA-234		94.67		2.852E-01	1.254E-01	2.009E-01	2.861E-02	1.419
		98.44		6.371E-02	7.308E-02	1.070E-01	6.023E-02	0.595
		111.00		-9.676E-02	1.336E-01	2.194E-01	3.244E-02	-0.441
		131.20		-2.451E-02	8.555E-02	1.420E-01	1.734E-02	-0.173
		569.50		-4.927E-02	2.941E-01	4.654E-01	4.978E-02	-0.106
		733.00		-1.185E-01	4.481E-01	6.560E-01	1.519E-01	-0.181
		880.51		2.903E-01	2.833E-01	5.032E-01	4.869E-02	0.577
		883.24		-2.571E-01	3.628E-01	4.805E-01	3.236E-01	-0.535
		926.50		-4.820E-03	1.899E-01	2.985E-01	7.630E-02	-0.016
		946.00	*	-3.081E-04	3.454E-01	5.585E-01	1.068E-01	-0.001
		949.00		1.355E-01	5.017E-01	8.303E-01	7.779E-02	0.163
PA-234M		766.42		8.951E+00	1.354E+01	2.203E+01	1.126E+01	0.406

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1001.03	*	7.095E-01	5.451E+00	8.690E+00	9.102E-01	0.082
NP-239		99.53		1.577E-01	1.137E-01	1.982E-01	2.257E-02	0.796
		103.37		-3.045E-02	6.950E-02	1.165E-01	1.354E-02	-0.261
		106.12		5.028E-02	6.245E-02	1.087E-01	1.282E-02	0.463
		117.23	*	-2.668E-01	2.887E-01	4.669E-01	5.857E-02	-0.572
		228.18		-2.157E-02	2.015E-01	3.230E-01	3.315E-02	-0.067
		277.60		1.933E-01	1.775E-01	2.953E-01	3.289E-02	0.655
AM-241		59.54	*	-6.442E-03	5.261E-02	7.643E-02	7.941E-03	-0.084
CM-247		278.00		1.195E+00	7.503E-01	1.270E+00	1.415E-01	0.942
		287.50		2.298E-01	1.213E+00	1.938E+00	2.152E-01	0.119
		402.40	*	-1.448E-02	3.723E-02	6.010E-02	5.539E-03	-0.241
CF-249		252.80		-1.284E-01	8.989E-01	1.425E+00	1.529E-01	-0.090
		333.37		1.406E-01	1.855E-01	2.731E-01	2.872E-02	0.515
		388.16	*	3.611E-02	3.962E-02	6.890E-02	6.336E-03	0.524
CF-251		177.52	*	-3.415E-02	1.086E-01	1.759E-01	1.614E-02	-0.194
		227.38		-1.040E-02	3.277E-01	5.276E-01	5.407E-02	-0.020
		285.41		-4.839E-01	2.058E+00	3.207E+00	3.566E-01	-0.151

VAX/VMS Nuclide Identification Report Generated

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*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
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*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248526001      *
* Acquisition date : 19-MAR-2010 20:43:36 Detector SN#    :                 *
* Detector ID        : GAM25               Sensitivity     : 5.000          *
* Geometry           : CAN                 Energy tolerance: 1.500          *
* Elapsed live time:    0 02:00:00.00      Abundance limit : 75.000         *
* Elapsed real time:    0 02:00:02.22      Half life ratio :  8.000         *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248526001           Analyst initials: MXR1          *
* Batch Number       : 961099               Sample Quantity : 1.3366E+02 GRAM *
* Recovery           :    1.00000           Carrier Weight :    0.00000     *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
* Standard Weight  :   0.00000                                              *
* CALIB. DATE/TIME :  7-OCT-2009 09:38:43 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.576E+01	3.522E+00	5.575E-01	0.000E+00
CD-109	4.543E+00	8.738E-01	7.675E-01	0.000E+00
SN-126	4.393E-01	8.449E-02	7.406E-02	0.000E+00
TL-208	6.515E-01	1.084E-01	5.534E-02	0.000E+00
PB-210	1.651E+00	6.436E-01	6.164E-01	0.000E+00
BI-211	4.708E+00	6.619E-01	3.446E-01	0.000E+00
PB-212	2.145E+00	2.660E-01	8.657E-02	0.000E+00
BI-214	1.617E+00	2.499E-01	1.048E-01	0.000E+00
PB-214	1.709E+00	2.574E-01	1.254E-01	0.000E+00
RA-224	4.759E+00	1.445E+00	9.289E-01	0.000E+00
RA-226	1.617E+00	2.499E-01	1.048E-01	0.000E+00
AC-228	2.387E+00	4.322E-01	2.442E-01	0.000E+00
RA-228	2.387E+00	4.322E-01	2.442E-01	0.000E+00
TH-228	2.145E+00	2.660E-01	8.657E-02	0.000E+00
TH-229	-2.339E-02	4.442E-01	7.669E-01	0.000E+00
TH-232	2.387E+00	4.322E-01	2.442E-01	0.000E+00
TH-234	1.538E+00	9.258E-01	8.110E-01	0.000E+00
U-235	-2.476E-02	1.636E-01	2.857E-01	0.000E+00
NP-237	1.311E+00	3.689E-01	2.371E-01	0.000E+00
U-238	1.538E+00	9.258E-01	8.110E-01	0.000E+00
ANH-511	1.527E-01	6.578E-02	4.431E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)		
BE-7	-6.946E-02	3.342E-01	5.592E-01	0.000E+00	NOT IDENT.
NA-22	-1.771E-02	5.120E-02	8.363E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.098E+09	0.000E+00	0.000E+00	SHORT HLIF
SC-46	3.852E-05	4.685E-02	7.863E-02	0.000E+00	FAIL ABUN
V-48	-4.263E-02	1.091E-01	1.742E-01	0.000E+00	NOT IDENT.
CR-51	-2.134E-01	4.145E-01	7.137E-01	0.000E+00	NOT IDENT.

MN-54	3.742E-02	4.111E-02	7.397E-02	0.000E+00	NOT IDENT.
CO-56	-1.965E-04	4.119E-02	6.948E-02	0.000E+00	NOT IDENT.
CO-57	-2.910E-03	1.919E-02	3.438E-02	0.000E+00	NOT IDENT.
CO-58	-1.997E-02	4.461E-02	7.276E-02	0.000E+00	NOT IDENT.
FE-59	-5.837E-02	1.175E-01	1.933E-01	0.000E+00	NOT IDENT.
CO-60	-1.644E-02	4.667E-02	7.542E-02	0.000E+00	NOT IDENT.
ZN-65	-1.361E-02	1.174E-01	1.707E-01	0.000E+00	NOT IDENT.
SE-75	1.695E-02	4.389E-02	7.512E-02	0.000E+00	NOT IDENT.
SR-85	4.462E-02	4.295E-02	6.931E-02	0.000E+00	NOT IDENT.
Y-88	7.491E-03	3.724E-02	6.469E-02	0.000E+00	NOT IDENT.
Y-91	2.727E+01	2.788E+01	5.038E+01	0.000E+00	NOT IDENT.
NB-94	-3.605E-03	3.658E-02	6.261E-02	0.000E+00	NOT IDENT.
NB-95	-1.351E-02	5.125E-02	8.588E-02	0.000E+00	NOT IDENT.
NB-95M	-6.003E-02	1.345E-01	1.974E-01	0.000E+00	NOT IDENT.
ZR-95	-2.862E-02	8.839E-02	1.475E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	8.194E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.604E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.630E-02	4.868E-02	7.616E-02	0.000E+00	FAIL ABUN
RH-106	-4.713E-02	3.299E-01	5.703E-01	0.000E+00	NOT IDENT.
RU-106	-4.713E-02	3.298E-01	5.703E-01	0.000E+00	NOT IDENT.
AG-108M	1.872E-03	2.761E-02	4.762E-02	0.000E+00	NOT IDENT.
AG-110M	-4.345E-02	3.921E-02	6.246E-02	0.000E+00	NOT IDENT.
SN-113	-4.363E-02	4.634E-02	7.574E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.094E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-3.190E-03	7.419E-02	1.169E-01	0.000E+00	NOT IDENT.
TE-123M	-2.071E-02	2.602E-02	4.199E-02	0.000E+00	NOT IDENT.
SB-124	4.762E-02	7.373E-02	1.395E-01	0.000E+00	NOT IDENT.
SB-125	5.241E-02	8.664E-02	1.544E-01	0.000E+00	FAIL ABUN
TE-125M	2.288E+00	7.599E+00	1.395E+01	0.000E+00	NOT IDENT.
I-126	-3.413E-01	3.673E-01	5.949E-01	0.000E+00	NOT IDENT.
SB-126	8.782E-02	2.476E-01	3.834E-01	0.000E+00	NOT IDENT.
SB-127	-2.638E-01	5.228E+00	9.000E+00	0.000E+00	NOT IDENT.
I-131	-8.983E-02	2.133E-01	3.639E-01	0.000E+00	NOT IDENT.
TE-132	-3.411E-01	3.203E+00	5.427E+00	0.000E+00	NOT IDENT.
BA-133	-1.954E-03	4.535E-02	6.972E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.969E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	5.237E-02	5.185E-02	9.395E-02	0.000E+00	NOT IDENT.
CS-135	6.567E-02	1.810E-01	2.757E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.550E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.570E-01	1.748E-01	2.780E-01	0.000E+00	FAIL ABUN
BA-137M	-4.158E-02	4.236E-02	7.196E-02	0.000E+00	NOT IDENT.
CS-137	-4.392E-02	4.475E-02	7.602E-02	0.000E+00	NOT IDENT.
CE-139	-3.378E-03	2.508E-02	4.376E-02	0.000E+00	NOT IDENT.
BA-140	1.380E-01	3.983E-01	6.812E-01	0.000E+00	NOT IDENT.
LA-140	-1.824E-01	1.472E-01	2.093E-01	0.000E+00	FAIL ABUN
CE-141	-5.060E-02	6.047E-02	1.022E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	7.081E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.390E-01	1.596E-01	2.727E-01	0.000E+00	NOT IDENT.
PM-144	-6.136E-03	3.774E-02	6.438E-02	0.000E+00	NOT IDENT.
PR-144	-4.569E-01	2.836E+00	4.837E+00	0.000E+00	NOT IDENT.
PM-146	2.349E-02	4.274E-02	7.542E-02	0.000E+00	NOT IDENT.
ND-147	5.941E-01	8.890E-01	1.559E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	8.265E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-3.557E-03	1.023E-01	1.580E-01	0.000E+00	FAIL ABUN
GD-153	-7.134E-02	6.443E-02	9.963E-02	0.000E+00	NOT IDENT.
EU-154	-4.227E-02	1.441E-01	2.365E-01	0.000E+00	NOT IDENT.
EU-155	8.287E-02	7.688E-02	1.440E-01	0.000E+00	FAIL ABUN
TB-160	3.389E-02	1.522E-01	2.609E-01	0.000E+00	FAIL ABUN
HO-166M	-4.516E-02	6.424E-02	1.045E-01	0.000E+00	FAIL ABUN
TA-182	-4.747E-02	2.365E-01	3.945E-01	0.000E+00	FAIL ABUN
IR-192	-1.676E-03	3.353E-02	5.927E-02	0.000E+00	FAIL ABUN
HG-203	4.834E-02	4.079E-02	7.184E-02	0.000E+00	NOT IDENT.
BI-207	-3.170E-02	5.953E-02	9.799E-02	0.000E+00	FAIL ABUN
PB-211	-2.406E-01	7.009E-01	1.171E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.998E-01	1.294E+00	0.000E+00	FAIL ABUN
RN-219	-1.216E-01	3.912E-01	6.637E-01	0.000E+00	FAIL ABUN
RA-223	2.341E-01	6.407E-01	1.024E+00	0.000E+00	FAIL ABUN
AC-227	-6.988E-02	2.375E-01	3.933E-01	0.000E+00	FAIL ABUN
TH-227	-6.988E-02	2.375E-01	3.933E-01	0.000E+00	FAIL ABUN
PA-231	-4.256E-01	1.317E+00	2.137E+00	0.000E+00	FAIL ABUN
TH-231	2.341E-01	6.407E-01	1.024E+00	0.000E+00	FAIL ABUN
PA-233	8.910E-03	5.515E-02	9.868E-02	0.000E+00	FAIL ABUN
PA-234	-3.081E-04	3.385E-01	5.639E-01	0.000E+00	NOT IDENT.
PA-234M	7.095E-01	5.342E+00	8.766E+00	0.000E+00	NOT IDENT.
NP-239	-2.668E-01	2.829E-01	4.890E-01	0.000E+00	NOT IDENT.
AM-241	-6.442E-03	5.155E-02	8.096E-02	0.000E+00	NOT IDENT.
CM-247	-1.448E-02	3.648E-02	6.162E-02	0.000E+00	NOT IDENT.
CF-249	3.611E-02	3.883E-02	7.069E-02	0.000E+00	NOT IDENT.

CF-251	-3.415E-02	1.064E-01	1.829E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 22:45:34.41

```
*****************************************************************************
*                            GEL Laboratories LLC                           *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248526001.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 19-MAR-2010 20:43:36
Sample ID         : G248526001           Sample quantity  : 1.33660E+02 GRAM
Detector name     : GAM25                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:02.22  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               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	1505	10.66*	1.108E+00	3.576E+01	3.576E+01	10.05
CD-109	88.03	544	3.70*	9.403E+00	4.393E+00	4.543E+00	19.63
SN-126	64.28	198	9.60	9.779E+00	5.929E-01	5.929E-01	60.54
	86.94	544	8.90	9.403E+00	1.826E+00	1.826E+00	44.96
	87.57	544	37.00*	9.403E+00	4.393E-01	4.393E-01	19.63
TL-208	277.37	------	6.60	4.738E+00	------ Line Not Found		------
	583.19	492	85.00*	2.496E+00	6.515E-01	6.515E-01	16.98
	860.56	73	12.50	1.765E+00	9.295E-01	9.295E-01	42.89
PB-210	46.54	229	4.25*	9.181E+00	1.648E+00	1.651E+00	39.79
BI-211	72.87	------	1.23	9.724E+00	------ Line Not Found		------
	351.06	842	12.92*	3.886E+00	4.708E+00	4.708E+00	14.35
PB-212	74.82	1008	10.28	9.694E+00	2.841E+00	2.841E+00	17.14
	77.11	1611	17.10	9.651E+00	2.741E+00	2.741E+00	12.10
	238.63	1778	43.60*	5.339E+00	2.145E+00	2.145E+00	12.66
	300.09	74	3.30	4.444E+00	1.419E+00	1.419E+00	77.31
BI-214	609.32	629	45.49*	2.401E+00	1.617E+00	1.617E+00	15.78
	1120.29	122	14.92	1.398E+00	1.638E+00	1.638E+00	40.84
	1764.49	101	15.30	9.413E-01	1.969E+00	1.969E+00	26.69
PB-214	74.82	1008	5.80	9.694E+00	5.036E+00	5.036E+00	16.19
	77.11	1611	9.70	9.651E+00	4.832E+00	4.832E+00	14.64
	242.00	368	7.25	5.291E+00	2.691E+00	2.692E+00	31.53
	295.22	536	18.42	4.503E+00	1.815E+00	1.815E+00	18.67
	351.93	842	35.60*	3.886E+00	1.709E+00	1.709E+00	15.37
RA-224	240.99	368	4.10*	5.291E+00	4.759E+00	4.759E+00	30.99
RA-226	609.32	629	45.49*	2.401E+00	1.617E+00	1.617E+00	15.78
	1120.29	122	14.92	1.398E+00	1.638E+00	1.638E+00	40.84
	1764.49	101	15.30	9.413E-01	1.969E+00	1.969E+00	26.69
AC-228	338.32	362	11.27	4.019E+00	2.243E+00	2.243E+00	47.75
	911.20	368	25.80*	1.678E+00	2.387E+00	2.387E+00	18.48
	968.97	194	15.80	1.589E+00	2.165E+00	2.165E+00	32.92
RA-228	338.32	362	11.27	4.019E+00	2.243E+00	2.243E+00	47.75
	911.20	368	25.80*	1.678E+00	2.387E+00	2.387E+00	18.48

Sample ID : G248526001 Acquisition date : 19-MAR-2010 20:43:36

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	968.97	194	15.80	1.589E+00	2.165E+00	2.165E+00	32.92
TH-228	74.82	1008	10.28	9.694E+00	2.841E+00	2.841E+00	14.16
	77.11	1611	17.10	9.651E+00	2.741E+00	2.741E+00	12.10
	238.63	1778	43.60*	5.339E+00	2.145E+00	2.145E+00	12.66
	300.09	74	3.30	4.444E+00	1.419E+00	1.419E+00	98.05
TH-229	85.43	186	14.70	9.487E+00	3.742E-01	3.742E-01	41.77
	88.47	544	24.00	9.403E+00	6.773E-01	6.773E-01	19.63
	193.51	------	4.41*	6.239E+00	------	Line Not Found	------
	210.85	180	2.80	5.894E+00	3.063E+00	3.063E+00	37.24
TH-232	338.32	362	11.27	4.019E+00	2.243E+00	2.243E+00	24.79
	911.20	368	25.80*	1.678E+00	2.387E+00	2.387E+00	18.48
	968.97	194	15.80	1.589E+00	2.165E+00	2.165E+00	32.92
TH-234	63.29	198	3.70*	9.779E+00	1.538E+00	1.538E+00	61.41
	92.59	426	4.23	9.237E+00	3.061E+00	3.061E+00	31.61
U-235	89.96	352	3.47	9.323E+00	3.052E+00	3.052E+00	34.81
	93.35	426	5.60	9.237E+00	2.312E+00	2.312E+00	32.32
	143.76	------	10.96*	7.568E+00	------	Line Not Found	------
	163.33	------	5.08	6.998E+00	------	Line Not Found	------
	185.72	240	57.20	6.417E+00	1.835E-01	1.835E-01	41.97
	205.31	------	5.01	5.979E+00	------	Line Not Found	------
NP-237	86.48	544	12.40*	9.403E+00	1.311E+00	1.311E+00	28.72
	95.86	------	2.68	9.143E+00	------	Line Not Found	------
U-238	63.29	198	3.70*	9.779E+00	1.538E+00	1.538E+00	61.41
	92.59	426	4.23	9.237E+00	3.061E+00	3.061E+00	24.20
ANH-511	511.00	153	100.00*	2.808E+00	1.527E-01	1.527E-01	43.96

Flag: "*" = Keyline

Sample ID : G248526001 Acquisition date : 19-MAR-2010 20:43:36

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	3.576E+01	3.576E+01	0.359E+01	10.05	
CD-109	461.40D	1.03	4.393E+00	4.543E+00	0.892E+00	19.63	
SN-126	2.30E+05Y	1.00	4.393E-01	4.393E-01	0.862E-01	19.63	
TL-208	1.41E+10Y	1.00	6.515E-01	6.515E-01	1.106E-01	16.98	
PB-210	22.20Y	1.00	1.648E+00	1.651E+00	0.657E+00	39.79	
BI-211	7.04E+08Y	1.00	4.708E+00	4.708E+00	0.675E+00	14.35	
PB-212	1.41E+10Y	1.00	2.145E+00	2.145E+00	0.271E+00	12.66	
BI-214	1600.00Y	1.00	1.617E+00	1.617E+00	0.255E+00	15.78	
PB-214	1600.00Y	1.00	1.709E+00	1.709E+00	0.263E+00	15.37	
RA-224	1.41E+10Y	1.00	4.759E+00	4.759E+00	1.475E+00	30.99	
RA-226	1600.00Y	1.00	1.617E+00	1.617E+00	0.255E+00	15.78	
AC-228	1.41E+10Y	1.00	2.387E+00	2.387E+00	0.441E+00	18.48	
RA-228	1.41E+10Y	1.00	2.387E+00	2.387E+00	0.441E+00	18.48	
TH-228	1.41E+10Y	1.00	2.145E+00	2.145E+00	0.271E+00	12.66	
TH-229	7340.00Y	1.00	6.773E-01	6.773E-01	1.329E-01	19.63	K
TH-232	1.41E+10Y	1.00	2.387E+00	2.387E+00	0.441E+00	18.48	
TH-234	4.47E+09Y	1.00	1.538E+00	1.538E+00	0.945E+00	61.41	
U-235	7.04E+08Y	1.00	1.835E-01	1.835E-01	0.770E-01	41.97	K
NP-237	2.14E+06Y	1.00	1.311E+00	1.311E+00	0.376E+00	28.72	
U-238	4.47E+09Y	1.00	1.538E+00	1.538E+00	0.945E+00	61.41	
ANH-511	1.00E+09Y	1.00	1.527E-01	1.527E-01	0.671E-01	43.96	
	Total Activity :		7.415E+01	7.431E+01			

Grand Total Activity : 7.415E+01 7.431E+01

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

Sample ID : G248526001 Acquisition date : 19-MAR-2010 20:43:36

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	154.02	82	384	0.99	307.59	305	8	1.14E-02	86.3	7.26E+00	T
0	270.30	189	224	1.63	540.13	536	10	2.62E-02	33.4	4.84E+00	T
0	327.45	106	165	1.46	654.42	650	10	1.47E-02	49.3	4.13E+00	T
0	462.61	77	90	1.49	924.71	921	8	1.07E-02	48.5	3.06E+00	T
0	727.41	89	99	1.39	1454.30	1448	11	1.23E-02	48.3	2.05E+00	T
0	934.76	39	50	1.15	1869.01	1863	10	5.48E-03	74.2	1.64E+00	
1	964.63	59	75	1.97	1928.75	1922	22	8.14E-03	65.8	1.60E+00	T
0	1378.22	52	39	1.82	2755.95	2749	15	7.27E-03	58.2	1.17E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 19-MAR-2010 22:45:38.13

```
*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
*                                                                            *
*                                DETECTOR DATA                               *
*                                                                            *
* Configuration    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248526001.CNF;1  *
* Acquisition date : 19-MAR-2010 20:43:36  Detector SN#    :                 *
* Detector ID      : GAM25                 Sensitivity     : 5.00000         *
* Geometry         : CAN                   Energy tolerance: 1.50000         *
* Elapsed live time: 0 02:00:00.00         Abundance limit : 75.00000        *
* Elapsed real time: 0 02:00:02.22         Half life ratio : 8.00000         *
*****************************************************************************
*                                                                            *
*                                SAMPLE DATA                                 *
*                                                                            *
* Sample date      : 25-FEB-2010 12:00:00  Nuclide Library : SOLID           *
* Sample ID        : G248526001            Analyst initials: MXR1            *
* Batch Number     : 961099                Sample Quantity : 1.33660E+02 GRAM *
*****************************************************************************
*                                                                            *
*                                  QC DATA                                   *
*                                                                            *
* CALIB. DATE/TIME : 7-OCT-2009 09:38:43.34MS Isotope      :                 *
* MSD ID           :                       MSD Isotope     :                 *
* LCS ID           : 1032-A                LCS Isotope     :                 *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.576E+01	3.594E+00	5.565E-01	4.739E-02	64.266
CD-109	4.543E+00	8.917E-01	7.293E-01	7.837E-02	6.230
SN-126	4.393E-01	8.622E-02	7.037E-02	7.546E-03	6.243
TL-208	6.515E-01	1.106E-01	5.432E-02	6.119E-03	11.993
PB-210	1.651E+00	6.567E-01	5.796E-01	5.936E-02	2.848
BI-211	4.708E+00	6.754E-01	3.352E-01	3.533E-02	14.043
PB-212	2.145E+00	2.714E-01	8.367E-02	9.559E-03	25.635
BI-214	1.617E+00	2.550E-01	1.030E-01	1.247E-02	15.695
PB-214	1.709E+00	2.626E-01	1.220E-01	1.449E-02	14.007
RA-224	4.759E+00	1.475E+00	8.979E-01	9.436E-02	5.300
RA-226	1.617E+00	2.550E-01	1.030E-01	1.247E-02	15.695
AC-228	2.387E+00	4.411E-01	2.417E-01	2.954E-02	9.876
RA-228	2.387E+00	4.411E-01	2.417E-01	2.954E-02	9.876
TH-228	2.145E+00	2.714E-01	8.367E-02	9.559E-03	25.635
TH-229	6.773E-01	1.329E-01	7.385E-01	7.043E-02	0.917
TH-232	2.387E+00	4.411E-01	2.417E-01	2.954E-02	9.876
TH-234	1.538E+00	9.447E-01	7.664E-01	1.455E-01	2.007
U-235	1.835E-01	7.702E-02	2.738E-01	5.029E-02	0.670

Sample ID : G248526001 Acquisition date : 19-MAR-2010 20:43:36

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.311E+00	3.765E-01	2.253E-01	5.299E-02	5.819
U-238	1.538E+00	9.447E-01	7.664E-01	1.455E-01	2.007
ANH-511	1.527E-01	6.712E-02	4.340E-02	4.467E-03	3.518

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-6.946E-02		3.410E-01	5.471E-01	5.791E-02	-0.127
NA-22	-1.771E-02		5.224E-02	8.327E-02	6.828E-03	-0.213
NA-24	-3.806E+02		1.070E+03	Half-Life too short		
SC-46	3.852E-05		4.781E-02	7.778E-02	7.448E-03	0.000
V-48	-4.263E-02		1.113E-01	1.727E-01	1.600E-02	-0.247
CR-51	-2.134E-01		4.230E-01	6.933E-01	7.695E-02	-0.308
MN-54	3.742E-02		4.195E-02	7.308E-02	7.416E-03	0.512
CO-56	-1.965E-04		4.203E-02	6.867E-02	6.890E-03	-0.003
CO-57	-2.910E-03		1.958E-02	3.285E-02	4.236E-03	-0.089
CO-58	-1.997E-02		4.552E-02	7.185E-02	7.455E-03	-0.278
FE-59	-5.837E-02		1.199E-01	1.920E-01	1.808E-02	-0.304
CO-60	-1.644E-02		4.762E-02	7.515E-02	6.104E-03	-0.219
ZN-65	-1.361E-02		1.198E-01	1.696E-01	1.465E-02	-0.080
SE-75	1.695E-02		4.478E-02	7.273E-02	7.972E-03	0.233
SR-85	4.462E-02		4.382E-02	6.789E-02	7.004E-03	0.657
Y-88	7.491E-03		3.800E-02	6.485E-02	5.299E-03	0.116
Y-91	2.727E+01		2.845E+01	5.011E+01	4.124E+00	0.544
NB-94	-3.605E-03		3.732E-02	6.167E-02	6.773E-03	-0.058
NB-95	-1.351E-02		5.230E-02	8.473E-02	9.050E-03	-0.159
NB-95M	-6.003E-02		1.373E-01	1.907E-01	2.189E-02	-0.315
ZR-95	-2.862E-02		9.019E-02	1.454E-01	1.669E-02	-0.197
MO-99	2.071E-05		4.180E-05	Half-Life too short		
TC-99M	1.311E+19		8.185E+18	Half-Life too short		
RU-103	-4.630E-02		4.967E-02	7.456E-02	1.117E-02	-0.621
RH-106	-4.713E-02		3.366E-01	5.605E-01	8.339E-02	-0.084
RU-106	-4.713E-02		3.366E-01	5.605E-01	6.138E-02	-0.084
AG-108M	1.872E-03		2.818E-02	4.651E-02	4.569E-03	0.040
AG-110M	-4.345E-02		4.001E-02	6.145E-02	6.925E-03	-0.707
SN-113	-4.363E-02		4.729E-02	7.384E-02	6.896E-03	-0.591
CD-115	-2.575E-06		5.580E-05	Half-Life too short		
SN-117M	-3.190E-03		7.571E-02	1.121E-01	1.089E-02	-0.028
TE-123M	-2.071E-02		2.656E-02	4.030E-02	3.913E-03	-0.514
SB-124	4.762E-02		7.524E-02	1.397E-01	1.210E-02	0.341
SB-125	5.241E-02		8.841E-02	1.508E-01	1.456E-02	0.348
TE-125M	2.288E+00		7.754E+00	1.330E+01	1.785E+00	0.172
I-126	-3.413E-01		3.748E-01	5.854E-01	6.481E-02	-0.583
SB-126	8.782E-02		2.527E-01	3.778E-01	4.123E-02	0.232
SB-127	-2.638E-01		5.334E+00	8.861E+00	1.362E+00	-0.030
I-131	-8.983E-02		2.176E-01	3.543E-01	3.654E-02	-0.254
TE-132	-3.411E-01		3.269E+00	5.241E+00	9.617E-01	-0.065

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	-1.954E-03		4.627E-02	6.785E-02	9.464E-03	-0.029
I-133	6.484E-01		1.004E+00	Half-Life too short		
CS-134	5.237E-02		5.291E-02	9.275E-02	9.764E-03	0.565
CS-135	6.567E-02		1.847E-01	2.670E-01	3.223E-02	0.246
I-135	-2.730E+17		3.342E+17	Half-Life too short		
CS-136	-1.570E-01		1.783E-01	2.758E-01	2.582E-02	-0.569
BA-137M	-4.158E-02		4.322E-02	7.081E-02	7.844E-03	-0.587
CS-137	-4.392E-02		4.566E-02	7.480E-02	8.296E-03	-0.587
CE-139	-3.378E-03		2.559E-02	4.203E-02	3.747E-03	-0.080
BA-140	1.380E-01		4.065E-01	6.677E-01	2.299E-01	0.207
LA-140	-1.824E-01		1.502E-01	2.092E-01	1.740E-02	-0.872
CE-141	-5.060E-02		6.170E-02	9.797E-02	1.090E-02	-0.516
CE-143	1.860E-02		3.613E-03	Half-Life too short		
CE-144	-1.390E-01		1.629E-01	2.610E-01	4.550E-02	-0.533
PM-144	-6.136E-03		3.851E-02	6.340E-02	6.978E-03	-0.097
PR-144	-4.569E-01		2.894E+00	4.764E+00	5.241E-01	-0.096
PM-146	2.349E-02		4.361E-02	7.372E-02	8.518E-03	0.319
ND-147	5.941E-01		9.071E-01	1.528E+00	2.456E-01	0.389
PM-149	1.521E-04		4.217E-04	Half-Life too short		
EU-152	-3.557E-03		1.044E-01	1.537E-01	1.650E-02	-0.023
GD-153	-7.134E-02		6.574E-02	9.483E-02	1.068E-02	-0.752
EU-154	-4.227E-02		1.470E-01	2.354E-01	2.603E-02	-0.180
EU-155	8.287E-02		7.845E-02	1.372E-01	1.622E-02	0.604
TB-160	3.389E-02		1.553E-01	2.581E-01	2.501E-02	0.131
HO-166M	-4.516E-02		6.555E-02	1.030E-01	1.128E-02	-0.438
TA-182	-4.747E-02		2.414E-01	3.925E-01	3.228E-02	-0.121
IR-192	-1.676E-03		3.422E-02	5.756E-02	6.218E-03	-0.029
HG-203	4.834E-02		4.162E-02	6.962E-02	7.889E-03	0.694
BI-207	-3.170E-02		6.075E-02	9.724E-02	8.679E-03	-0.326
PB-211	-2.406E-01		7.152E-01	1.142E+00	5.542E-01	-0.211
BI-212	1.825E+00	+	9.182E-01	1.275E+00	1.801E-01	1.431
RN-219	-1.216E-01		3.991E-01	6.473E-01	9.854E-02	-0.188
RA-223	2.341E-01		6.537E-01	9.945E-01	1.834E-01	0.235
AC-227	-6.988E-02		2.423E-01	3.805E-01	5.207E-02	-0.184
TH-227	-6.988E-02		2.424E-01	3.805E-01	5.734E-02	-0.184
PA-231	-4.256E-01		1.343E+00	2.071E+00	3.354E-01	-0.205
TH-231	2.341E-01		6.537E-01	9.945E-01	1.834E-01	0.235
PA-233	8.910E-03		5.627E-02	9.581E-02	1.058E-02	0.093
PA-234	-3.081E-04		3.454E-01	5.585E-01	1.068E-01	-0.001
PA-234M	7.095E-01		5.451E+00	8.690E+00	9.102E-01	0.082
NP-239	-2.668E-01		2.887E-01	4.669E-01	5.857E-02	-0.572
AM-241	-6.442E-03		5.261E-02	7.643E-02	7.941E-03	-0.084
CM-247	-1.448E-02		3.723E-02	6.010E-02	5.539E-03	-0.241
CF-249	3.611E-02		3.962E-02	6.890E-02	6.336E-03	0.524
CF-251	-3.415E-02		1.086E-01	1.759E-01	1.614E-02	-0.194

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration     : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248526001           *
* Acquisition date  : 19-MAR-2010 20:43:36 Detector SN#     :               *
* Detector ID       : GAM25                Sensitivity      : 5.000         *
* Geometry          : CAN                  Energy tolerance: 1.500          *
* Elapsed live time:    0 02:00:00.00      Abundance limit : 75.000         *
* Elapsed real time:    0 02:00:02.22      Half life ratio : 8.000          *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date       : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248526001           Analyst initials: MXR1           *
* Batch Number      : 961099               Sample Quantity : 1.3366E+02 GRAM *
* Recovery          :    1.00000           Carrier Weight :    0.00000      *
*****************************************************************************
*                                                                           *
*                                  QC DATA                                  *
*                                                                           *
* CALIB. DATE/TIME :  7-OCT-2009 09:38:43 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.576E+01	3.522E+00	2.789E-01	1.797E+00
CD-109	4.543E+00	8.738E-01	3.840E-01	4.458E-01
SN-126	4.393E-01	8.449E-02	3.705E-02	4.311E-02
TL-208	6.515E-01	1.084E-01	2.768E-02	5.532E-02
PB-210	1.651E+00	6.436E-01	3.084E-01	3.284E-01
BI-211	4.708E+00	6.619E-01	1.724E-01	3.377E-01
PB-212	2.145E+00	2.660E-01	4.331E-02	1.357E-01
BI-214	1.617E+00	2.499E-01	5.245E-02	1.275E-01
PB-214	1.709E+00	2.574E-01	6.272E-02	1.313E-01
RA-224	4.759E+00	1.445E+00	4.647E-01	7.375E-01
RA-226	1.617E+00	2.499E-01	5.245E-02	1.275E-01
AC-228	2.387E+00	4.322E-01	1.222E-01	2.205E-01
RA-228	2.387E+00	4.322E-01	1.222E-01	2.205E-01
TH-228	2.145E+00	2.660E-01	4.331E-02	1.357E-01
TH-229	-2.339E-02	4.442E-01	3.837E-01	2.267E-01
TH-232	2.387E+00	4.322E-01	1.222E-01	2.205E-01
TH-234	1.538E+00	9.258E-01	4.057E-01	4.724E-01
U-235	-2.476E-02	1.636E-01	1.430E-01	8.348E-02
NP-237	1.311E+00	3.689E-01	1.186E-01	1.882E-01
U-238	1.538E+00	9.258E-01	4.057E-01	4.724E-01
ANH-511	1.527E-01	6.578E-02	2.217E-02	3.356E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-6.946E-02	3.342E-01	2.798E-01	1.705E-01	NOT IDENT.
NA-22	-1.771E-02	5.120E-02	4.184E-02	2.612E-02	NOT IDENT.
NA-24	-3.806E+08	2.098E+09	0.000E+00	1.070E+09	SHORT HLIF
SC-46	3.852E-05	4.685E-02	3.934E-02	2.390E-02	FAIL ABUN
V-48	-4.263E-02	1.091E-01	8.717E-02	5.564E-02	NOT IDENT.
CR-51	-2.134E-01	4.145E-01	3.571E-01	2.115E-01	NOT IDENT.

MN-54	3.742E-02	4.111E-02	3.701E-02	2.098E-02	NOT IDENT.
CO-56	-1.965E-04	4.119E-02	3.476E-02	2.101E-02	NOT IDENT.
CO-57	-2.910E-03	1.919E-02	1.720E-02	9.792E-03	NOT IDENT.
CO-58	-1.997E-02	4.461E-02	3.640E-02	2.276E-02	NOT IDENT.
FE-59	-5.837E-02	1.175E-01	9.673E-02	5.994E-02	NOT IDENT.
CO-60	-1.644E-02	4.667E-02	3.773E-02	2.381E-02	NOT IDENT.
ZN-65	-1.361E-02	1.174E-01	8.540E-02	5.988E-02	NOT IDENT.
SE-75	1.695E-02	4.389E-02	3.758E-02	2.239E-02	NOT IDENT.
SR-85	4.462E-02	4.295E-02	3.467E-02	2.191E-02	NOT IDENT.
Y-88	7.491E-03	3.724E-02	3.236E-02	1.900E-02	NOT IDENT.
Y-91	2.727E+01	2.788E+01	2.520E+01	1.422E+01	NOT IDENT.
NB-94	-3.605E-03	3.658E-02	3.133E-02	1.866E-02	NOT IDENT.
NB-95	-1.351E-02	5.125E-02	4.297E-02	2.615E-02	NOT IDENT.
NB-95M	-6.003E-02	1.345E-01	9.873E-02	6.863E-02	NOT IDENT.
ZR-95	-2.862E-02	8.839E-02	7.378E-02	4.510E-02	NOT IDENT.
MO-99	2.071E+01	8.194E+01	0.000E+00	4.180E+01	SHORT HLIF
TC-99M	1.311E+25	1.604E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.630E-02	4.868E-02	3.810E-02	2.484E-02	FAIL ABUN
RH-106	-4.713E-02	3.299E-01	2.853E-01	1.683E-01	NOT IDENT.
RU-106	-4.713E-02	3.298E-01	2.853E-01	1.683E-01	NOT IDENT.
AG-108M	1.872E-03	2.761E-02	2.383E-02	1.409E-02	NOT IDENT.
AG-110M	-4.345E-02	3.921E-02	3.125E-02	2.001E-02	NOT IDENT.
SN-113	-4.363E-02	4.634E-02	3.789E-02	2.364E-02	NOT IDENT.
CD-115	-2.575E+00	1.094E+02	0.000E+00	5.580E+01	SHORT HLIF
SN-117M	-3.190E-03	7.419E-02	5.846E-02	3.785E-02	NOT IDENT.
TE-123M	-2.071E-02	2.602E-02	2.101E-02	1.328E-02	NOT IDENT.
SB-124	4.762E-02	7.373E-02	6.981E-02	3.762E-02	NOT IDENT.
SB-125	5.241E-02	8.664E-02	7.726E-02	4.420E-02	FAIL ABUN
TE-125M	2.288E+00	7.599E+00	6.977E+00	3.877E+00	NOT IDENT.
I-126	-3.413E-01	3.673E-01	2.976E-01	1.874E-01	NOT IDENT.
SB-126	8.782E-02	2.476E-01	1.918E-01	1.263E-01	NOT IDENT.
SB-127	-2.638E-01	5.228E+00	4.503E+00	2.667E+00	NOT IDENT.
I-131	-8.983E-02	2.133E-01	1.820E-01	1.088E-01	NOT IDENT.
TE-132	-3.411E-01	3.203E+00	2.715E+00	1.634E+00	NOT IDENT.
BA-133	-1.954E-03	4.535E-02	3.488E-02	2.314E-02	NOT IDENT.
I-133	6.484E+05	1.969E+06	0.000E+00	1.004E+06	SHORT HLIF
CS-134	5.237E-02	5.185E-02	4.700E-02	2.646E-02	NOT IDENT.
CS-135	6.567E-02	1.810E-01	1.379E-01	9.237E-02	NOT IDENT.
I-135	-2.730E+23	6.550E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.570E-01	1.748E-01	1.391E-01	8.916E-02	FAIL ABUN
BA-137M	-4.158E-02	4.236E-02	3.600E-02	2.161E-02	NOT IDENT.
CS-137	-4.392E-02	4.475E-02	3.803E-02	2.283E-02	NOT IDENT.
CE-139	-3.378E-03	2.508E-02	2.189E-02	1.279E-02	NOT IDENT.
BA-140	1.380E-01	3.983E-01	3.408E-01	2.032E-01	NOT IDENT.
LA-140	-1.824E-01	1.472E-01	1.047E-01	7.511E-02	FAIL ABUN
CE-141	-5.060E-02	6.047E-02	5.115E-02	3.085E-02	NOT IDENT.
CE-143	1.860E+04	7.081E+03	0.000E+00	3.613E+03	SHORT HLIF
CE-144	-1.390E-01	1.596E-01	1.364E-01	8.145E-02	NOT IDENT.
PM-144	-6.136E-03	3.774E-02	3.221E-02	1.926E-02	NOT IDENT.
PR-144	-4.569E-01	2.836E+00	2.420E+00	1.447E+00	NOT IDENT.
PM-146	2.349E-02	4.274E-02	3.773E-02	2.181E-02	NOT IDENT.
ND-147	5.941E-01	8.890E-01	7.801E-01	4.536E-01	FAIL ABUN
PM-149	1.521E+02	8.265E+02	0.000E+00	4.217E+02	SHORT HLIF
EU-152	-3.557E-03	1.023E-01	7.907E-02	5.221E-02	FAIL ABUN
GD-153	-7.134E-02	6.443E-02	4.984E-02	3.287E-02	NOT IDENT.
EU-154	-4.227E-02	1.441E-01	1.183E-01	7.352E-02	NOT IDENT.
EU-155	8.287E-02	7.688E-02	7.204E-02	3.923E-02	FAIL ABUN
TB-160	3.389E-02	1.522E-01	1.305E-01	7.766E-02	FAIL ABUN
HO-166M	-4.516E-02	6.424E-02	5.230E-02	3.278E-02	FAIL ABUN
TA-182	-4.747E-02	2.365E-01	1.974E-01	1.207E-01	FAIL ABUN
IR-192	-1.676E-03	3.353E-02	2.965E-02	1.711E-02	FAIL ABUN
HG-203	4.834E-02	4.079E-02	3.594E-02	2.081E-02	NOT IDENT.
BI-207	-3.170E-02	5.953E-02	4.902E-02	3.037E-02	FAIL ABUN
PB-211	-2.406E-01	7.009E-01	5.859E-01	3.576E-01	NOT IDENT.
BI-212	1.825E+00	8.998E-01	6.473E-01	4.591E-01	FAIL ABUN
RN-219	-1.216E-01	3.912E-01	3.321E-01	1.996E-01	FAIL ABUN
RA-223	2.341E-01	6.407E-01	5.121E-01	3.269E-01	FAIL ABUN
AC-227	-6.988E-02	2.375E-01	1.967E-01	1.212E-01	FAIL ABUN
TH-227	-6.988E-02	2.375E-01	1.967E-01	1.212E-01	FAIL ABUN
PA-231	-4.256E-01	1.317E+00	1.069E+00	6.717E-01	FAIL ABUN
TH-231	2.341E-01	6.407E-01	5.121E-01	3.269E-01	FAIL ABUN
PA-233	8.910E-03	5.515E-02	4.937E-02	2.814E-02	FAIL ABUN
PA-234	-3.081E-04	3.385E-01	2.821E-01	1.727E-01	NOT IDENT.
PA-234M	7.095E-01	5.342E+00	4.386E+00	2.725E+00	NOT IDENT.
NP-239	-2.668E-01	2.829E-01	2.446E-01	1.443E-01	NOT IDENT.
AM-241	-6.442E-03	5.155E-02	4.050E-02	2.630E-02	NOT IDENT.
CM-247	-1.448E-02	3.648E-02	3.083E-02	1.861E-02	NOT IDENT.
CF-249	3.611E-02	3.883E-02	3.537E-02	1.981E-02	NOT IDENT.

CF-251	-3.415E-02	1.064E-01	9.152E-02	5.431E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	299.4243
49.72	318.5103
57.36	0.0000
59.54	418.6689
63.29	450.8852
63.29	450.8852
64.28	452.5238
67.75	450.0518
69.67	532.4720
70.83	475.1825
72.81	522.4109
72.87	522.5156
72.87	522.5156
74.82	468.0644
74.82	468.0644
74.82	468.0644
74.97	468.2928
77.11	471.5333
77.11	471.5333
77.11	471.5333
79.69	410.2246
79.80	391.0534
80.12	391.4415
80.19	391.5255
80.57	391.9853
81.00	348.8928
81.07	348.9675
81.07	348.9675
83.79	379.5494
83.79	379.5494
85.43	405.1408
86.48	406.3921
86.55	406.4752
86.79	350.0576
86.94	350.2137
87.57	350.8550
88.03	351.3209
88.47	351.7672
89.96	353.2666
91.11	354.4171
92.59	343.3529
92.59	343.3529
93.35	344.0762
94.67	345.3263
94.87	305.1624
94.87	305.1624
95.86	336.3295
97.43	375.8445
98.44	294.3553
99.53	287.7129
100.11	300.9391
103.18	346.3035
103.37	331.8562
105.31	322.2619
106.12	329.8442
109.28	318.4727
111.00	328.5713
111.76	311.6181
116.30	272.3976
117.23	293.4396
121.12	279.0186
121.78	280.3331
122.06	289.5000
123.07	282.0452
131.20	326.5253
133.52	315.2221
136.00	274.2360

136.47	297.6884
140.51	0.0000
140.51	0.0000
143.76	296.4532
144.24	279.7789
144.24	279.7789
145.44	312.5449
152.43	278.4961
153.25	294.7407
154.21	303.4344
154.21	303.4344
156.02	300.6060
158.56	287.4982
159.00	301.0970
162.66	225.2781
163.33	265.5807
165.86	259.9132
176.60	248.7822
177.52	252.1692
181.07	0.0000
184.41	277.8229
185.72	264.7197
193.51	244.3989
197.04	240.5775
205.31	233.6787
210.85	271.9624
215.65	253.6871
222.11	233.5233
227.38	233.0750
228.16	236.5638
228.18	236.5705
235.69	256.9888
235.96	257.0798
235.96	257.0798
238.63	222.3885
238.63	222.3885
240.99	223.0782
242.00	223.3735
244.70	202.0718
252.40	212.9884
252.80	199.7089
256.23	207.2904
256.23	207.2904
260.90	0.0000
264.66	185.6711
268.22	235.3640
269.46	222.0490
269.46	222.0490
271.23	199.6948
273.65	166.5086
276.40	203.2122
277.37	191.9488
277.60	191.9997
278.00	175.9849
279.20	168.1679
279.54	205.1063
280.46	219.1695
283.69	162.0943
284.31	184.2222
285.41	174.0143
285.90	0.0000
287.50	179.0776
293.27	0.0000
295.22	167.4948
295.96	172.5647
298.57	173.0612
299.98	149.9812
299.98	149.9812
300.09	149.9993
300.09	149.9993
300.13	150.0071
301.36	151.6260
302.85	153.2909
304.50	157.8281
304.50	157.8281
304.85	161.2067
308.46	148.1502
311.90	142.4221

316.51	159.3151
319.41	175.1465
320.08	177.9781
323.87	146.5684
323.87	146.5684
328.76	157.5097
333.37	124.5428
334.37	133.4674
334.37	133.4674
338.28	150.9197
338.28	150.9197
338.32	150.9247
338.32	150.9247
338.32	150.9247
340.48	154.9365
340.55	154.9468
344.28	154.0322
351.06	166.7855
351.93	166.9248
356.01	154.2812
364.49	159.4767
366.42	0.0000
383.85	137.3399
388.16	124.3664
388.63	115.7391
391.69	160.5364
400.66	138.3967
401.81	138.5332
402.40	144.4590
404.85	140.8491
410.95	123.8813
414.70	130.1873
423.72	118.2446
427.09	116.5769
427.87	105.6830
433.94	107.2041
453.88	111.9537
463.37	101.6976
468.07	112.8767
473.00	110.4907
476.78	84.9141
477.60	100.5078
487.02	82.4235
492.35	0.0000
497.08	130.3158
511.00	87.0280
514.00	86.7847
527.90	0.0000
529.87	0.0000
531.02	83.9271
537.26	88.6039
546.56	0.0000
563.25	102.2154
569.33	104.8195
569.50	104.8311
569.70	104.8427
583.19	77.9105
600.60	94.5000
602.73	105.1367
604.72	106.7658
609.32	74.1904
609.32	74.1904
610.33	74.2344
614.28	83.1826
618.01	82.7598
621.93	96.6241
621.93	96.6241
633.25	90.8427
635.95	92.8233
636.99	91.0408
645.85	85.9592
657.76	118.1788
661.66	106.3128
661.66	106.3128
664.57	0.0000
666.33	123.4181
666.50	113.1451
677.62	85.6147

685.70	92.6071
695.00	102.5684
696.49	101.6996
696.51	101.7022
697.00	105.5313
702.65	102.0340
706.68	86.9610
711.68	97.7292
720.70	73.8029
721.93	0.0000
722.78	72.2772
722.91	72.2827
723.31	72.2974
724.19	80.3670
727.33	85.3271
733.00	88.5737
735.93	81.4980
739.50	0.0000
747.24	72.2078
752.31	87.0640
753.82	78.3203
756.73	97.0616
763.94	116.1015
765.81	106.3600
766.42	91.6150
777.92	0.0000
778.90	99.1138
783.70	88.4155
785.37	98.4296
795.86	75.9406
801.95	78.1657
810.29	85.5146
810.76	77.4831
815.77	61.5257
818.51	72.7137
832.01	90.4428
834.85	70.2095
836.80	0.0000
846.77	59.3353
856.80	82.2109
860.56	64.8488
871.09	64.1161
873.19	54.8594
875.33	0.0000
879.36	57.0840
880.51	44.6513
883.24	76.9322
884.68	72.8198
889.28	71.9227
898.04	69.0551
911.20	64.1811
911.20	64.1811
911.20	64.1811
926.50	58.8284
937.49	67.3690
944.13	68.2641
946.00	69.3831
949.00	64.1250
962.29	80.5884
964.08	82.7957
966.15	82.8652
968.97	82.9583
968.97	82.9583
968.97	82.9583
983.53	70.4352
996.26	86.0340
1001.03	61.0996
1004.73	81.9470
1037.84	64.5455
1038.76	0.0000
1048.07	79.6032
1050.41	62.0710
1050.41	62.0710
1063.66	78.2031
1085.87	59.1292
1099.45	77.3354
1112.07	64.9609
1115.54	78.0502

1120.29	76.5520
1120.29	76.5520
1120.55	76.5586
1121.30	78.2076
1131.51	0.0000
1173.23	72.5677
1177.93	79.4642
1189.05	68.0888
1204.77	75.2893
1221.41	89.4633
1231.02	99.6027
1235.36	117.5183
1238.28	91.9291
1260.41	0.0000
1271.85	61.9420
1274.44	67.9917
1274.54	68.9916
1291.59	57.2969
1298.22	0.0000
1312.11	50.5778
1332.49	53.9446
1365.19	28.7770
1368.63	0.0000
1384.29	33.6622
1408.01	24.9736
1457.56	0.0000
1460.82	25.3477
1489.16	23.4162
1505.03	34.2070
1596.21	40.3515
1620.50	16.9955
1678.03	0.0000
1690.97	8.6469
1764.49	15.3990
1764.49	15.3990
1770.23	13.7061
1771.35	82.2568
1791.20	0.0000
1836.06	12.9197

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248526001

Total Uranium Activity	4.5652E+00	ug/g
Total Uranium Counting Unc.	2.7554E+00	ug/g
Total Uranium Tpu	1.4058E-06	ug/g
Total Uranium Mda	1.2089E+00	ug/g

```
*****************************************************************************
*                                                                           *
*                          GEL Laboratories LLC                           *
*                               2040 SAVAGE ROAD                            *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID      : 961099                    SAMPLE ID  : G248526001       *
*   ANALYST       : MXR1                      DETECTOR   : GAM25            *
*   SAMPLE DATE   : 25-FEB-2010 12:00:00.00   COUNT TIME :    0 02:00:00.00 *
*   ANALYSIS DATE: 19-MAR-2010 20:43:36.05    SAMPLE ALQT:  133.660 GRAM    *
*                                                                           *
*****************************************************************************


        GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 1.148E+01
        GROSS GAMMA ERROR   (pCi/GRAM  )  : 1.313E+00
        GROSS GAMMA MDA     (pCi/GRAM  )  : 3.131E+00
        GROSS GAMMA DLC     (pCi/GRAM  )  : 1.522E+00
```

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:12:19.58

```
*****************************************************************************
*                            GEL Laboratories LLC                            *
*                              2040 Savage Road                              *
*                            Charleston, SC 29414                            *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061469.CNF;1
Sample date       : 6-MAR-2010 00:00:00. Acquisition date : 20-MAR-2010 11:11:16
Sample ID         : G1202061469          Sample quantity  : 1.38240E+02 GRAM
Detector name     : GAM11                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:00.56  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
No peaks were found
```

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 13:12:22

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061469.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 6-MAR-2010 00:00:00 Acquisition date : 20-MAR-2010 11:11:16
Sample ID : G1202061469 Sample quantity : 138.24 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA11 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.56 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

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

Nuclide	Line Energy Ided (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	477.60	*	9.426E-02	1.450E-01	2.612E-01	2.956E-02	0.361
NA-22	1274.54	*	9.310E-03	1.870E-02	3.360E-02	2.759E-03	0.277
NA-24	1368.63	*	-1.795E-01	1.870E-02	Half-Life too short		
K-40	1460.82	*	-2.250E-02	2.243E-01	4.088E-01	3.535E-02	-0.055
SC-46	889.28	*	-1.295E-02	1.603E-02	2.236E-02	2.202E-03	-0.579
	1120.55		1.607E-02	2.265E-02	4.160E-02	3.547E-03	0.386
V-48	944.13		-1.366E-01	3.401E-01	5.194E-01	5.024E-02	-0.263
	983.53	*	7.674E-03	2.485E-02	4.414E-02	4.187E-03	0.174
	1312.11		8.131E-03	1.970E-02	3.701E-02	3.052E-03	0.220
CR-51	320.08	*	5.011E-02	1.583E-01	2.632E-01	3.818E-02	0.190
MN-54	834.85	*	6.626E-03	1.473E-02	2.669E-02	2.628E-03	0.248
CO-56	846.77	*	-2.389E-03	1.771E-02	2.918E-02	2.875E-03	-0.082
	1037.84		-7.518E-02	1.112E-01	1.520E-01	1.458E-02	-0.495
	1238.28		-1.627E-02	2.643E-02	3.555E-02	2.991E-03	-0.458
	1771.35		-1.277E-01	1.336E-01	1.507E-01	1.240E-02	-0.847
CO-57	122.06	*	-2.695E-03	9.455E-03	1.567E-02	1.326E-03	-0.172
	136.47		-4.773E-02	8.230E-02	1.321E-01	1.240E-02	-0.361
CO-58	810.76	*	4.226E-04	1.589E-02	2.555E-02	2.515E-03	0.017
FE-59	1099.45	*	-2.503E-02	3.219E-02	4.191E-02	3.939E-03	-0.597
	1291.59		-4.963E-02	5.388E-02	6.337E-02	5.981E-03	-0.783
CO-60	1173.23		-1.909E-03	1.801E-02	2.884E-02	2.317E-03	-0.066
	1332.49	*	1.309E-03	1.534E-02	2.544E-02	2.102E-03	0.051
ZN-65	1115.54	*	-1.702E-02	3.190E-02	4.562E-02	3.915E-03	-0.373
SE-75	121.12		-2.253E-02	4.916E-02	8.020E-02	8.788E-03	-0.281
	136.00		-9.724E-03	1.594E-02	2.554E-02	2.249E-03	-0.381
	264.66	*	-9.117E-04	1.924E-02	3.101E-02	4.558E-03	-0.029
	279.54		-2.662E-02	4.948E-02	7.471E-02	1.170E-02	-0.356
	400.66		7.079E-02	1.113E-01	2.009E-01	2.565E-02	0.352
SR-85	514.00	*	-7.521E-02	2.981E-02	3.709E-02	3.962E-03	-2.028
Y-88	898.04		-8.296E-04	1.754E-02	2.915E-02	2.881E-03	-0.028
	1836.06	*	1.113E-02	1.806E-02	3.503E-02	2.844E-03	0.318
Y-91	1204.77	*	2.309E+00	8.706E+00	1.497E+01	1.212E+00	0.154
NB-94	702.65	*	4.577E-03	1.566E-02	2.651E-02	2.546E-03	0.173
	871.09		1.909E-02	1.724E-02	3.333E-02	3.284E-03	0.573

Sample ID : G1202061469 Acquisition date : 20-MAR-2010 11:11:16

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95		765.81	*	1.868E-02	1.845E-02	3.444E-02	3.362E-03	0.542
NB-95M		235.69	*	-6.843E-02	5.271E-02	7.313E-02	1.022E-02	-0.936
ZR-95		724.19		-3.074E-02	4.485E-02	6.410E-02	6.615E-03	-0.480
		756.73	*	-1.087E-02	3.097E-02	4.631E-02	4.886E-03	-0.235
MO-99		140.51		-1.749E+00	8.840E+00	1.360E+01	3.242E+00	-0.129
		181.07		2.225E-01	5.949E+00	9.917E+00	1.950E+00	0.022
		366.42		7.230E-01	4.045E+01	6.417E+01	7.775E+00	0.011
		739.50	*	-3.362E+00	5.887E+00	8.618E+00	1.411E+00	-0.390
		777.92		-1.627E+01	1.530E+01	1.946E+01	1.904E+00	-0.836
TC-99M		140.51	*	-5.873E+08	1.530E+01	Half-Life too short		
RU-103		497.08	*	-5.291E-03	2.026E-02	3.261E-02	5.010E-03	-0.162
		610.33		-2.369E-01	4.209E-01	6.235E-01	1.068E-01	-0.380
RH-106		621.93	*	-4.821E-02	1.530E-01	2.380E-01	3.364E-02	-0.203
		1050.41		-5.931E-01	1.115E+00	1.642E+00	1.490E-01	-0.361
RU-106		621.93	*	-4.821E-02	1.530E-01	2.380E-01	2.361E-02	-0.203
		1050.41		-5.931E-01	1.115E+00	1.642E+00	1.490E-01	-0.361
AG-108M		433.94	*	5.453E-04	1.216E-02	2.056E-02	2.262E-03	0.027
		614.28		2.493E-03	1.765E-02	2.944E-02	3.015E-03	0.085
		722.91		1.101E-02	1.535E-02	2.786E-02	2.761E-03	0.395
CD-109		88.03	*	-8.629E-02	2.711E-01	4.091E-01	3.879E-02	-0.211
AG-110M		657.76	*	1.135E-02	1.593E-02	2.872E-02	2.798E-03	0.395
		677.62		-2.105E-02	1.297E-01	2.042E-01	1.991E-02	-0.103
		706.68		-3.412E-02	9.017E-02	1.355E-01	1.333E-02	-0.252
		763.94		-3.785E-02	7.770E-02	1.143E-01	1.139E-02	-0.331
		884.68		8.445E-03	2.150E-02	3.848E-02	3.884E-03	0.219
		937.49		3.539E-02	5.027E-02	9.342E-02	9.322E-03	0.379
		1384.29		1.112E-02	6.795E-02	1.146E-01	9.819E-03	0.097
		1505.03		3.369E-02	1.318E-01	2.341E-01	1.970E-02	0.144
SN-113		391.69	*	-2.236E-03	2.136E-02	3.576E-02	3.890E-03	-0.063
CD-115		260.90		3.571E+00	4.962E+01	8.116E+01	1.174E+01	0.044
		492.35		-1.049E+01	1.478E+01	2.213E+01	2.379E+00	-0.474
		527.90	*	8.162E-01	4.095E+00	6.980E+00	7.416E-01	0.117
SN-117M		156.02		2.330E-01	8.095E-01	1.391E+00	1.302E-01	0.168
		158.56	*	-1.422E-02	2.212E-02	3.309E-02	3.128E-03	-0.430
TE-123M		159.00	*	-1.063E-02	1.193E-02	1.736E-02	1.652E-03	-0.612
SB-124		602.73		-9.576E-03	2.131E-02	3.166E-02	3.200E-03	-0.302
		645.85		-1.069E-01	2.463E-01	3.744E-01	3.782E-02	-0.285
		722.78		1.028E-01	1.518E-01	2.741E-01	2.697E-02	0.375
		1690.97	*	2.324E-02	4.780E-02	8.823E-02	7.686E-03	0.263
SB-125		427.87	*	1.212E-02	4.215E-02	7.324E-02	7.983E-03	0.165
		463.37		-2.253E-02	1.037E-01	1.678E-01	1.899E-02	-0.134
		600.60		2.049E-02	9.679E-02	1.628E-01	1.738E-02	0.126
		635.95		3.789E-02	1.410E-01	2.388E-01	2.482E-02	0.159
TE-125M		109.28	*	3.669E-01	3.417E+00	5.886E+00	6.129E-01	0.062
I-126		388.63		5.973E-02	7.642E-02	1.393E-01	1.511E-02	0.429
		666.33	*	-6.981E-02	9.763E-02	1.389E-01	1.317E-02	-0.503
		753.82		4.332E-01	7.945E-01	1.397E+00	1.360E-01	0.310
SB-126		414.70		-5.234E-03	3.220E-02	5.322E-02	5.716E-03	-0.098
		666.50		-2.392E-02	3.346E-02	4.760E-02	4.512E-03	-0.503

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		695.00		-2.258E-02	3.987E-02	5.754E-02	5.512E-03	-0.392
		697.00		-1.289E-02	1.378E-01	2.153E-01	2.064E-02	-0.060
		720.70	*	2.423E-02	6.283E-02	1.080E-01	1.043E-02	0.224
		856.80		3.315E-02	2.125E-01	3.660E-01	3.607E-02	0.091
SN-126		64.28		-2.079E-01	1.773E-01	2.713E-01	3.936E-02	-0.766
		86.94		-4.894E-02	1.147E-01	1.685E-01	6.997E-02	-0.290
		87.57	*	-2.048E-03	2.592E-02	4.010E-02	3.783E-03	-0.051
SB-127		252.40		4.487E-01	1.704E+00	2.830E+00	1.215E+00	0.159
		473.00		-1.827E-02	6.950E-01	1.157E+00	1.640E-01	-0.016
		685.70	*	-4.564E-01	5.987E-01	8.469E-01	1.009E-01	-0.539
		783.70		-2.811E-01	1.336E+00	2.053E+00	2.676E-01	-0.137
I-131		80.19		5.625E-01	1.306E+00	2.138E+00	1.851E-01	0.263
		284.31		-6.937E-01	6.154E-01	8.316E-01	1.298E-01	-0.834
		364.49	*	-1.744E-02	5.843E-02	8.905E-02	1.117E-02	-0.196
		636.99		9.231E-02	7.709E-01	1.279E+00	1.304E-01	0.072
TE-132		49.72		-1.347E+00	3.796E+00	5.822E+00	5.992E-01	-0.231
		111.76		4.428E+00	1.100E+01	1.932E+01	2.073E+00	0.229
		116.30		-8.178E+00	8.660E+00	1.340E+01	1.434E+00	-0.610
		228.16	*	1.160E-01	2.652E-01	4.519E-01	8.255E-02	0.257
BA-133		81.00		-8.866E-03	2.871E-02	4.344E-02	6.758E-03	-0.204
		276.40		1.657E-02	1.563E-01	2.555E-01	4.847E-02	0.065
		302.85		-2.839E-02	6.549E-02	9.950E-02	1.770E-02	-0.285
		356.01	*	1.063E-02	1.702E-02	2.933E-02	4.671E-03	0.362
		383.85		1.036E-01	1.298E-01	2.377E-01	3.395E-02	0.436
I-133		529.87	*	-1.519E-04	1.298E-01	Half-Life too short		
		875.33		-2.568E-02	1.298E-01	Half-Life too short		
		1298.22		-6.466E-02	1.298E-01	Half-Life too short		
CS-134		563.25		1.579E-01	1.689E-01	3.118E-01	3.270E-02	0.506
		569.33		-9.350E-02	1.039E-01	1.454E-01	1.523E-02	-0.643
		604.72		-7.403E-04	1.667E-02	2.715E-02	2.744E-03	-0.027
		795.86	*	-1.419E-02	2.359E-02	3.243E-02	3.200E-03	-0.438
		801.95		9.761E-02	1.995E-01	3.448E-01	3.400E-02	0.283
		1365.19		3.724E-02	6.709E-01	1.098E+00	9.571E-02	0.034
CS-135		268.22	*	-2.514E-02	6.699E-02	1.036E-01	1.626E-02	-0.243
I-135		546.56		-2.576E+08	6.699E-02	Half-Life too short		
		836.80		-1.089E+09	6.699E-02	Half-Life too short		
		1038.76		-8.709E+08	6.699E-02	Half-Life too short		
		1131.51		-4.703E+08	6.699E-02	Half-Life too short		
		1260.41	*	2.112E+08	6.699E-02	Half-Life too short		
		1457.56		-2.170E+09	6.699E-02	Half-Life too short		
		1678.03		-4.010E+08	6.699E-02	Half-Life too short		
		1791.20		-1.102E+09	6.699E-02	Half-Life too short		
CS-136		153.25		-2.195E-02	2.979E-01	4.964E-01	5.369E-02	-0.044
		176.60		-3.271E-02	2.021E-01	3.315E-01	3.630E-02	-0.099
		273.65		-5.945E-02	2.132E-01	3.336E-01	5.204E-02	-0.178
		340.55		2.723E-03	5.592E-02	8.960E-02	1.218E-02	0.030
		818.51		2.346E-02	3.032E-02	5.577E-02	5.489E-03	0.421
		1048.07	*	5.252E-02	4.357E-02	8.746E-02	8.253E-03	0.601
		1235.36		-1.194E-01	1.622E-01	2.057E-01	2.350E-02	-0.581

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BA-137M		661.66	*	-6.444E-03	1.496E-02	2.241E-02	2.121E-03	-0.288
CS-137		661.66	*	-6.807E-03	1.581E-02	2.368E-02	2.244E-03	-0.288
CE-139		165.86	*	-5.789E-03	1.173E-02	1.870E-02	1.817E-03	-0.310
BA-140		162.66		2.519E-01	3.135E-01	5.576E-01	5.644E-02	0.452
		304.85		-2.879E-01	6.132E-01	9.181E-01	2.904E-01	-0.314
		423.72		-5.365E-02	8.461E-01	1.414E+00	4.738E-01	-0.038
		537.26	*	-1.597E-02	1.100E-01	1.776E-01	6.121E-02	-0.090
LA-140		328.76		1.252E-02	1.371E-01	2.211E-01	3.140E-02	0.057
		487.02		2.439E-02	6.487E-02	1.130E-01	1.265E-02	0.216
		815.77		-3.862E-03	1.458E-01	2.317E-01	2.486E-02	-0.017
		1596.21	*	6.798E-03	4.610E-02	7.935E-02	6.674E-03	0.086
CE-141		145.44	*	-6.737E-03	2.421E-02	3.978E-02	3.646E-03	-0.169
CE-143		57.36		-1.310E-04	2.421E-02	Half-Life too short		
		293.27	*	-3.063E-05	2.421E-02	Half-Life too short		
		664.57		-1.382E-04	2.421E-02	Half-Life too short		
		721.93		3.022E-04	2.421E-02	Half-Life too short		
CE-144		80.12		3.120E-01	7.450E-01	1.218E+00	1.048E-01	0.256
		133.52	*	5.378E-02	7.630E-02	1.355E-01	2.077E-02	0.397
PM-144		476.78		-1.102E-02	2.927E-02	4.634E-02	5.275E-03	-0.238
		618.01		4.747E-03	1.512E-02	2.587E-02	2.631E-03	0.183
		696.49	*	-1.840E-03	1.826E-02	2.850E-02	2.733E-03	-0.065
PR-144		696.51	*	-1.303E-01	1.367E+00	2.136E+00	2.047E-01	-0.061
		1489.16		2.441E+00	4.782E+00	9.236E+00	7.768E-01	0.264
PM-146		453.88	*	-2.053E-03	1.701E-02	2.801E-02	3.480E-03	-0.073
		633.25		-2.688E-01	7.201E-01	1.097E+00	4.222E-01	-0.245
		735.93		1.685E-02	7.281E-02	1.215E-01	3.448E-02	0.139
		747.24		1.225E-02	4.778E-02	8.012E-02	1.223E-02	0.153
ND-147		91.11		-5.967E-02	9.858E-02	1.449E-01	1.436E-02	-0.412
		319.41		2.777E-02	1.414E+00	2.267E+00	3.231E-01	0.012
		531.02	*	7.839E-02	2.256E-01	3.926E-01	6.352E-02	0.200
PM-149		285.90	*	2.917E+00	3.237E+01	5.274E+01	1.057E+01	0.055
EU-152		121.78		-1.740E-03	2.660E-02	4.493E-02	4.385E-03	-0.039
		244.70		-6.993E-03	1.456E-01	2.361E-01	3.209E-02	-0.030
		344.28	*	-2.917E-02	4.497E-02	6.490E-02	8.797E-03	-0.450
		778.90		-1.314E-01	1.308E-01	1.695E-01	1.659E-02	-0.775
		964.08		-1.272E-01	1.065E-01	1.418E-01	1.359E-02	-0.897
		1085.87		1.077E-01	1.589E-01	2.966E-01	2.615E-02	0.363
		1112.07		3.980E-03	1.158E-01	1.921E-01	1.652E-02	0.021
		1408.01		3.840E-02	6.645E-02	1.259E-01	1.052E-02	0.305
GD-153		69.67		-2.291E-01	5.079E-01	7.630E-01	5.876E-02	-0.300
		97.43	*	-5.991E-03	2.988E-02	4.364E-02	3.877E-03	-0.137
		103.18		-4.690E-02	3.566E-02	5.324E-02	4.619E-03	-0.881
EU-154		123.07		-6.405E-05	1.912E-02	3.246E-02	3.647E-03	-0.002
		723.31		2.440E-02	7.642E-02	1.299E-01	1.357E-02	0.188
		873.19		1.896E-03	1.321E-01	2.225E-01	2.852E-02	0.009
		996.26		1.745E-01	1.543E-01	3.020E-01	5.399E-02	0.578
		1004.73		-5.165E-02	9.278E-02	1.367E-01	1.668E-02	-0.378
		1274.44	*	2.639E-02	5.302E-02	9.522E-02	1.054E-02	0.277
EU-155		86.55		-1.387E-02	3.248E-02	4.847E-02	4.553E-03	-0.286

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		105.31	*	2.835E-02	3.334E-02	6.108E-02	5.327E-03	0.464
TB-160		86.79		-4.084E-02	8.671E-02	1.288E-01	1.203E-02	-0.317
		197.04		-6.145E-02	2.404E-01	3.679E-01	4.100E-02	-0.167
		215.65		3.843E-02	2.992E-01	4.979E-01	6.011E-02	0.077
		298.57		-2.811E-02	4.818E-02	7.159E-02	1.071E-02	-0.393
		879.36	*	-1.266E-03	5.508E-02	9.209E-02	9.074E-03	-0.014
		962.29		4.685E-02	1.542E-01	2.950E-01	2.829E-02	0.159
		966.15		-7.299E-02	8.546E-02	1.115E-01	1.067E-02	-0.655
		1177.93		2.116E-02	1.383E-01	2.340E-01	1.882E-02	0.090
		1271.85		-1.031E-01	3.356E-01	5.106E-01	4.187E-02	-0.202
HO-166M		80.57		5.678E-02	7.920E-02	1.332E-01	1.152E-02	0.426
		184.41		-3.672E-02	1.785E-02	2.553E-02	2.691E-03	-1.439
		280.46		-2.016E-02	3.799E-02	5.732E-02	8.858E-03	-0.352
		410.95		6.947E-03	1.036E-01	1.762E-01	1.891E-02	0.039
		711.68	*	1.054E-02	2.731E-02	4.700E-02	4.526E-03	0.224
		752.31		-9.057E-04	1.289E-01	2.072E-01	2.017E-02	-0.004
		810.29		-2.194E-03	2.564E-02	4.028E-02	3.958E-03	-0.054
TA-182		67.75		4.547E-03	3.111E-02	4.997E-02	3.783E-03	0.091
		100.11		3.419E-02	5.812E-02	1.043E-01	9.156E-03	0.328
		152.43		1.584E-02	1.277E-01	2.167E-01	2.003E-02	0.073
		222.11		6.157E-02	1.431E-01	2.445E-01	3.032E-02	0.252
		1121.30		3.022E-02	6.417E-02	1.137E-01	9.693E-03	0.266
		1189.05		-3.238E-02	1.184E-01	1.818E-01	1.466E-02	-0.178
		1221.41	*	-8.205E-02	7.980E-02	9.508E-02	7.724E-03	-0.863
		1231.02		1.398E-01	1.566E-01	3.051E-01	2.484E-02	0.458
IR-192		295.96		1.832E-02	4.713E-02	7.716E-02	1.163E-02	0.237
		308.46		2.769E-02	4.965E-02	8.400E-02	1.232E-02	0.330
		316.51	*	3.065E-04	1.466E-02	2.352E-02	3.381E-03	0.013
		468.07		7.792E-03	2.936E-02	5.074E-02	5.731E-03	0.154
HG-203		70.83		-1.488E-02	3.888E-01	6.110E-01	9.549E-02	-0.024
		72.87		-5.434E-02	2.359E-01	3.630E-01	5.507E-02	-0.150
		279.20	*	-2.358E-03	1.712E-02	2.722E-02	4.248E-03	-0.087
BI-207		72.81		-1.132E-02	5.519E-02	8.518E-02	6.762E-03	-0.133
		74.97		-2.349E-02	3.719E-02	5.277E-02	4.284E-03	-0.445
		569.70		-2.016E-03	1.531E-02	2.417E-02	2.508E-03	-0.083
		1063.66	*	-1.339E-02	2.369E-02	3.468E-02	3.115E-03	-0.386
		1770.23		-2.882E-01	2.932E-01	3.442E-01	2.833E-02	-0.837
TL-208		277.37		3.581E-02	1.696E-01	2.802E-01	5.006E-02	0.128
		583.19	*	-9.926E-03	1.609E-02	2.459E-02	2.653E-03	-0.404
		860.56		-1.454E-02	1.270E-01	2.097E-01	2.184E-02	-0.069
PB-210		46.54	*	-7.069E-02	1.051E+00	1.689E+00	1.558E-01	-0.042
BI-211		72.87		-2.204E-01	9.564E-01	1.472E+00	1.169E-01	-0.150
		351.06	*	2.328E-02	1.081E-01	1.744E-01	2.302E-02	0.133
PB-211		404.85	*	-2.172E-01	2.983E-01	4.205E-01	2.052E-01	-0.517
		427.09		3.094E-01	7.131E-01	1.235E+00	5.770E-01	0.250
		832.01		1.937E-02	4.202E-01	6.765E-01	3.523E-01	0.029
BI-212		727.33	*	6.570E-02	2.242E-01	3.713E-01	4.906E-02	0.177
		785.37		-1.560E+00	1.524E+00	1.648E+00	1.614E-01	-0.946
		1620.50		-4.483E-01	8.327E-01	1.072E+00	8.998E-02	-0.418

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PB-212		74.82		-7.896E-02	1.298E-01	1.843E-01	2.334E-02	-0.428
		77.11		-2.669E-02	7.163E-02	1.070E-01	8.892E-03	-0.249
		238.63	*	-3.344E-04	3.052E-02	4.865E-02	6.830E-03	-0.007
		300.09		1.196E-01	3.287E-01	5.506E-01	8.865E-02	0.217
BI-214		609.32	*	-4.773E-02	4.179E-02	5.657E-02	6.419E-03	-0.844
		1120.29		9.549E-02	1.347E-01	2.472E-01	2.682E-02	0.386
		1764.49		1.670E-01	1.407E-01	2.884E-01	2.376E-02	0.579
PB-214		74.82		-1.399E-01	2.299E-01	3.267E-01	3.704E-02	-0.428
		77.11		-4.705E-02	1.263E-01	1.886E-01	2.208E-02	-0.249
		242.00		-1.009E-01	1.515E-01	2.289E-01	3.351E-02	-0.441
		295.22		-1.364E-03	6.504E-02	1.019E-01	1.672E-02	-0.013
		351.93	*	-2.292E-02	4.102E-02	6.035E-02	8.607E-03	-0.380
RN-219		271.23		-6.067E-03	9.854E-02	1.583E-01	2.538E-02	-0.038
		401.81	*	7.636E-03	1.605E-01	2.729E-01	4.413E-02	0.028
RA-223		81.07		-2.288E-02	6.476E-02	9.754E-02	8.485E-03	-0.235
		83.79		2.187E-02	4.288E-02	6.929E-02	6.231E-03	0.316
		94.87		-5.184E-01	2.014E-01	2.260E-01	2.036E-02	-2.294
		144.24		-3.671E-01	3.067E-01	4.309E-01	4.286E-02	-0.852
		154.21		-2.630E-02	1.414E-01	2.331E-01	2.347E-02	-0.113
		269.46		1.210E-02	7.404E-02	1.221E-01	1.836E-02	0.099
		323.87	*	-1.828E-01	2.963E-01	4.318E-01	8.896E-02	-0.423
		338.28		-2.991E-01	4.885E-01	6.269E-01	9.978E-02	-0.477
RA-224		240.99	*	-2.243E-01	2.877E-01	4.316E-01	5.781E-02	-0.520
RA-226		609.32	*	-4.773E-02	4.179E-02	5.657E-02	6.419E-03	-0.844
		1120.29		9.549E-02	1.347E-01	2.472E-01	2.682E-02	0.386
		1764.49		1.670E-01	1.407E-01	2.884E-01	2.376E-02	0.579
AC-227		79.69		5.741E-02	3.634E-01	5.793E-01	9.967E-02	0.099
		235.96		-9.492E-02	6.655E-02	9.087E-02	1.301E-02	-1.045
		256.23	*	1.449E-03	1.044E-01	1.699E-01	2.807E-02	0.009
		299.98		3.337E-02	3.710E-01	6.024E-01	1.060E-01	0.055
		304.50		-3.965E-01	7.765E-01	1.165E+00	2.380E-01	-0.340
		334.37		4.872E-01	7.366E-01	1.264E+00	2.383E-01	0.385
TH-227		79.80		1.091E-01	4.825E-01	7.739E-01	1.684E-01	0.141
		235.96		-9.492E-02	6.647E-02	9.087E-02	1.263E-02	-1.045
		256.23	*	1.449E-03	1.044E-01	1.699E-01	3.005E-02	0.009
		299.98		3.337E-02	3.710E-01	6.024E-01	1.060E-01	0.055
		304.50		-3.965E-01	7.765E-01	1.165E+00	2.380E-01	-0.340
		334.37		4.872E-01	7.366E-01	1.264E+00	2.383E-01	0.385
AC-228		338.32		-7.560E-02	1.268E-01	1.579E-01	6.788E-02	-0.479
		911.20	*	9.420E-03	8.195E-02	1.380E-01	1.725E-02	0.068
		968.97		6.695E-02	1.076E-01	1.959E-01	4.839E-02	0.342
RA-228		338.32		-7.560E-02	1.268E-01	1.579E-01	6.788E-02	-0.479
		911.20	*	9.420E-03	8.195E-02	1.380E-01	1.725E-02	0.068
		968.97		6.695E-02	1.076E-01	1.959E-01	4.839E-02	0.342
TH-228		74.82		-7.896E-02	1.295E-01	1.843E-01	1.509E-02	-0.428
		77.11		-2.669E-02	7.163E-02	1.070E-01	8.892E-03	-0.249
		238.63	*	-3.344E-04	3.052E-02	4.865E-02	6.830E-03	-0.007
		300.09		1.196E-01	3.366E-01	5.506E-01	3.437E-01	0.217
TH-229		85.43		-5.287E-03	7.177E-02	1.099E-01	1.009E-02	-0.048

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		88.47		9.680E-03	3.932E-02	6.281E-02	5.933E-03	0.154
		193.51	*	-1.569E-01	2.211E-01	3.405E-01	3.737E-02	-0.461
		210.85		3.266E-02	3.731E-01	6.189E-01	7.321E-02	0.053
PA-231		283.69	*	-2.910E-01	6.195E-01	9.366E-01	1.813E-01	-0.311
		301.36		2.186E-01	2.372E-01	4.173E-01	7.164E-02	0.524
TH-231		81.07		-2.288E-02	6.476E-02	9.754E-02	8.485E-03	-0.235
		83.79		2.187E-02	4.288E-02	6.929E-02	6.231E-03	0.316
		94.87		-5.184E-01	2.014E-01	2.260E-01	2.036E-02	-2.294
		144.24		-3.671E-01	3.067E-01	4.309E-01	4.286E-02	-0.852
		154.21		-2.630E-02	1.414E-01	2.331E-01	2.347E-02	-0.113
		269.46		1.210E-02	7.404E-02	1.221E-01	1.836E-02	0.099
		323.87	*	-1.828E-01	2.963E-01	4.318E-01	8.896E-02	-0.423
		338.28		-2.991E-01	4.885E-01	6.269E-01	9.978E-02	-0.477
TH-232		338.32		-7.560E-02	1.229E-01	1.579E-01	2.129E-02	-0.479
		911.20	*	9.420E-03	8.195E-02	1.380E-01	1.725E-02	0.068
		968.97		6.695E-02	1.076E-01	1.959E-01	4.839E-02	0.342
PA-233		300.13		6.103E-02	1.640E-01	2.746E-01	5.269E-02	0.222
		311.90	*	-1.733E-02	3.000E-02	4.439E-02	6.514E-03	-0.390
		340.48		2.266E-02	2.483E-01	4.000E-01	1.046E-01	0.057
PA-234		94.67		-1.783E-01	7.520E-02	8.502E-02	1.078E-02	-2.097
		98.44		-9.800E-03	3.177E-02	4.981E-02	2.780E-02	-0.197
		111.00		6.710E-02	6.720E-02	1.227E-01	1.474E-02	0.547
		131.20		-5.291E-02	3.968E-02	5.883E-02	5.075E-03	-0.899
		569.50		-3.247E-02	1.340E-01	2.078E-01	2.156E-02	-0.156
		733.00		-4.512E-04	1.724E-01	2.779E-01	6.290E-02	-0.002
		880.51		4.677E-02	1.177E-01	2.114E-01	2.083E-02	0.221
		883.24		2.677E-02	1.298E-01	2.234E-01	1.506E-01	0.120
		926.50		-2.287E-02	6.120E-02	9.274E-02	2.382E-02	-0.247
		946.00	*	6.777E-02	9.775E-02	1.876E-01	3.615E-02	0.361
		949.00		-8.779E-02	1.644E-01	2.404E-01	2.321E-02	-0.365
PA-234M		766.42		2.641E+00	5.282E+00	8.903E+00	4.536E+00	0.297
		1001.03	*	-8.553E-01	2.007E+00	3.060E+00	3.255E-01	-0.280
TH-234		63.29	*	-1.166E-01	4.516E-01	7.597E-01	1.351E-01	-0.154
		92.59		-3.464E-02	2.971E-01	5.222E-01	1.164E-01	-0.066
U-235		89.96		-2.336E-01	2.983E-01	4.199E-01	1.044E-01	-0.556
		93.35		-1.117E-01	2.174E-01	3.731E-01	8.686E-02	-0.299
		143.76	*	-8.138E-02	9.251E-02	1.337E-01	2.290E-02	-0.609
		163.33		6.314E-02	1.743E-01	2.997E-01	5.531E-02	0.211
		185.72		-9.785E-03	2.238E-02	3.716E-02	3.941E-03	-0.263
		205.31		-1.697E-01	2.477E-01	3.547E-01	6.991E-02	-0.478
NP-237		86.48	*	-6.488E-02	8.440E-02	1.197E-01	2.745E-02	-0.542
		95.86		-2.275E-01	3.154E-01	4.402E-01	1.061E-01	-0.517
U-238		63.29	*	-1.166E-01	4.516E-01	7.597E-01	1.351E-01	-0.154
		92.59		-3.464E-02	2.970E-01	5.222E-01	4.775E-02	-0.066
NP-239		99.53		3.856E-02	5.667E-02	9.783E-02	8.607E-03	0.394
		103.37		-4.338E-02	3.244E-02	4.829E-02	4.187E-03	-0.898
		106.12		8.328E-03	2.687E-02	4.719E-02	4.059E-03	0.176
		117.23	*	-5.864E-03	1.402E-01	2.378E-01	2.011E-02	-0.025
		228.18		4.438E-02	8.990E-02	1.542E-01	1.961E-02	0.288

Sample ID : G1202061469 Acquisition date : 20-MAR-2010 11:11:16

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		277.60		2.832E-02	7.610E-02	1.278E-01	1.968E-02	0.222
AM-241		59.54	*	4.797E-02	4.240E-02	7.516E-02	5.906E-03	0.638
CM-247		278.00		1.543E-01	3.195E-01	5.426E-01	8.364E-02	0.284
		287.50		4.242E-01	5.575E-01	9.686E-01	1.480E-01	0.438
		402.40	*	-7.848E-03	1.533E-02	2.416E-02	2.586E-03	-0.325
CF-249		252.80		-1.698E-02	4.241E-01	6.866E-01	9.632E-02	-0.025
		333.37		1.300E-02	8.130E-02	1.322E-01	1.810E-02	0.098
		388.16	*	1.085E-02	1.864E-02	3.343E-02	3.636E-03	0.325
CF-251		177.52	*	3.438E-02	5.362E-02	9.391E-02	9.605E-03	0.366
		227.38		-1.562E-02	1.422E-01	2.301E-01	2.917E-02	-0.068
		285.41		-5.015E-01	9.689E-01	1.459E+00	2.237E-01	-0.344
ANH-511		511.00	*	-3.779E-02	2.985E-02	5.531E-02	5.914E-03	-0.683

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]G1202061469    *
* Acquisition date : 20-MAR-2010 11:11:16 Detector SN#     :               *
* Detector ID        : GAM11               Sensitivity     : 5.000         *
* Geometry           : CAN                 Energy tolerance: 1.500         *
* Elapsed live time:     0 02:00:00.00     Abundance limit : 75.000        *
* Elapsed real time:     0 02:00:00.56     Half life ratio :  8.000        *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date        :  6-MAR-2010 00:00:00 Nuclide Library : SOLID         *
* Sample ID          : G1202061469          Analyst initials: MXR1          *
* Batch Number       : 961099               Sample Quantity : 1.3824E+02 GRAM *
* Recovery           :    1.00000           Carrier Weight :    0.00000     *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
* Standard Weight  :    0.00000                                             *
* CALIB. DATE/TIME : 18-NOV-2009 15:33:22 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
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Combined Activity-MDA Report

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)	
BE-7	9.426E-02	1.421E-01	2.680E-01	0.000E+00 NOT IDENT.
NA-22	9.310E-03	1.832E-02	3.380E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.081E+05	0.000E+00	0.000E+00 SHORT HLIF
K-40	-2.250E-02	2.198E-01	4.101E-01	0.000E+00 NOT IDENT.
SC-46	-1.295E-02	1.571E-02	2.265E-02	0.000E+00 NOT IDENT.
V-48	7.674E-03	2.435E-02	4.464E-02	0.000E+00 NOT IDENT.
CR-51	5.011E-02	1.551E-01	2.721E-01	0.000E+00 NOT IDENT.
MN-54	6.626E-03	1.444E-02	2.709E-02	0.000E+00 NOT IDENT.
CO-56	-2.389E-03	1.736E-02	2.960E-02	0.000E+00 NOT IDENT.
CO-57	-2.695E-03	9.266E-03	1.650E-02	0.000E+00 NOT IDENT.
CO-58	4.226E-04	1.557E-02	2.594E-02	0.000E+00 NOT IDENT.
FE-59	-2.503E-02	3.155E-02	4.229E-02	0.000E+00 NOT IDENT.
CO-60	1.309E-03	1.503E-02	2.557E-02	0.000E+00 NOT IDENT.
ZN-65	-1.702E-02	3.126E-02	4.602E-02	0.000E+00 NOT IDENT.
SE-75	-9.117E-04	1.885E-02	3.218E-02	0.000E+00 NOT IDENT.
SR-85	-7.521E-02	2.922E-02	3.800E-02	0.000E+00 NOT IDENT.
Y-88	1.113E-02	1.770E-02	3.498E-02	0.000E+00 NOT IDENT.
Y-91	2.309E+00	8.532E+00	1.508E+01	0.000E+00 NOT IDENT.
NB-94	4.577E-03	1.535E-02	2.700E-02	0.000E+00 NOT IDENT.
NB-95	1.868E-02	1.808E-02	3.500E-02	0.000E+00 NOT IDENT.
NB-95M	-6.843E-02	5.166E-02	7.606E-02	0.000E+00 NOT IDENT.
ZR-95	-1.087E-02	3.035E-02	4.708E-02	0.000E+00 NOT IDENT.
MO-99	-3.362E+00	5.770E+00	8.765E+00	0.000E+00 NOT IDENT.
TC-99M	0.000E+00	2.910E+15	0.000E+00	0.000E+00 SHORT HLIF
RU-103	-5.291E-03	1.985E-02	3.343E-02	0.000E+00 NOT IDENT.
RH-106	-4.821E-02	1.500E-01	2.429E-01	0.000E+00 NOT IDENT.

RU-106	-4.821E-02	1.499E-01	2.429E-01	0.000E+00	NOT IDENT.
AG-108M	5.453E-04	1.192E-02	2.113E-02	0.000E+00	NOT IDENT.
CD-109	-8.629E-02	2.657E-01	4.334E-01	0.000E+00	NOT IDENT.
AG-110M	1.135E-02	1.561E-02	2.928E-02	0.000E+00	NOT IDENT.
SN-113	-2.236E-03	2.093E-02	3.683E-02	0.000E+00	NOT IDENT.
CD-115	8.162E-01	4.013E+00	7.148E+00	0.000E+00	NOT IDENT.
SN-117M	-1.422E-02	2.168E-02	3.468E-02	0.000E+00	NOT IDENT.
TE-123M	-1.063E-02	1.169E-02	1.819E-02	0.000E+00	NOT IDENT.
SB-124	2.324E-02	4.684E-02	8.825E-02	0.000E+00	NOT IDENT.
SB-125	1.212E-02	4.131E-02	7.530E-02	0.000E+00	NOT IDENT.
TE-125M	3.669E-01	3.348E+00	6.211E+00	0.000E+00	NOT IDENT.
I-126	-6.981E-02	9.568E-02	1.416E-01	0.000E+00	NOT IDENT.
SB-126	2.423E-02	6.157E-02	1.099E-01	0.000E+00	NOT IDENT.
SN-126	-2.048E-03	2.540E-02	4.249E-02	0.000E+00	NOT IDENT.
SB-127	-4.564E-01	5.867E-01	8.627E-01	0.000E+00	NOT IDENT.
I-131	-1.744E-02	5.726E-02	9.185E-02	0.000E+00	NOT IDENT.
TE-132	1.160E-01	2.599E-01	4.703E-01	0.000E+00	NOT IDENT.
BA-133	1.063E-02	1.668E-02	3.027E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.524E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	-1.419E-02	2.312E-02	3.294E-02	0.000E+00	NOT IDENT.
CS-135	-2.514E-02	6.565E-02	1.075E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.430E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.252E-02	4.270E-02	8.833E-02	0.000E+00	NOT IDENT.
BA-137M	-6.444E-03	1.466E-02	2.285E-02	0.000E+00	NOT IDENT.
CS-137	-6.807E-03	1.549E-02	2.413E-02	0.000E+00	NOT IDENT.
CE-139	-5.789E-03	1.150E-02	1.958E-02	0.000E+00	NOT IDENT.
BA-140	-1.597E-02	1.078E-01	1.818E-01	0.000E+00	NOT IDENT.
LA-140	6.798E-03	4.518E-02	7.947E-02	0.000E+00	NOT IDENT.
CE-141	-6.737E-03	2.373E-02	4.176E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.881E+01	0.000E+00	0.000E+00	SHORT HLIF
CE-144	5.378E-02	7.478E-02	1.425E-01	0.000E+00	NOT IDENT.
PM-144	-1.840E-03	1.789E-02	2.903E-02	0.000E+00	NOT IDENT.
PR-144	-1.303E-01	1.340E+00	2.175E+00	0.000E+00	NOT IDENT.
PM-146	-2.053E-03	1.667E-02	2.877E-02	0.000E+00	NOT IDENT.
ND-147	7.839E-02	2.210E-01	4.020E-01	0.000E+00	NOT IDENT.
PM-149	2.917E+00	3.172E+01	5.465E+01	0.000E+00	NOT IDENT.
EU-152	-2.917E-02	4.407E-02	6.701E-02	0.000E+00	NOT IDENT.
GD-153	-5.991E-03	2.928E-02	4.614E-02	0.000E+00	NOT IDENT.
EU-154	2.639E-02	5.196E-02	9.580E-02	0.000E+00	NOT IDENT.
EU-155	2.835E-02	3.268E-02	6.450E-02	0.000E+00	NOT IDENT.
TB-160	-1.266E-03	5.398E-02	9.334E-02	0.000E+00	NOT IDENT.
HO-166M	1.054E-02	2.676E-02	4.784E-02	0.000E+00	NOT IDENT.
TA-182	-8.205E-02	7.821E-02	9.573E-02	0.000E+00	NOT IDENT.
IR-192	3.065E-04	1.437E-02	2.433E-02	0.000E+00	NOT IDENT.
HG-203	-2.358E-03	1.678E-02	2.822E-02	0.000E+00	NOT IDENT.
BI-207	-1.339E-02	2.321E-02	3.502E-02	0.000E+00	NOT IDENT.
TL-208	-9.926E-03	1.577E-02	2.513E-02	0.000E+00	NOT IDENT.
PB-210	-7.069E-02	1.030E+00	1.810E+00	0.000E+00	NOT IDENT.
BI-211	2.328E-02	1.059E-01	1.801E-01	0.000E+00	NOT IDENT.
PB-211	-2.172E-01	2.924E-01	4.328E-01	0.000E+00	NOT IDENT.
BI-212	6.570E-02	2.198E-01	3.778E-01	0.000E+00	NOT IDENT.
PB-212	-3.344E-04	2.991E-02	5.059E-02	0.000E+00	NOT IDENT.
BI-214	-4.773E-02	4.096E-02	5.776E-02	0.000E+00	NOT IDENT.
PB-214	-2.292E-02	4.020E-02	6.229E-02	0.000E+00	NOT IDENT.
RN-219	7.636E-03	1.573E-01	2.810E-01	0.000E+00	NOT IDENT.
RA-223	-1.828E-01	2.904E-01	4.463E-01	0.000E+00	NOT IDENT.
RA-224	-2.243E-01	2.819E-01	4.487E-01	0.000E+00	NOT IDENT.
RA-226	-4.773E-02	4.096E-02	5.776E-02	0.000E+00	NOT IDENT.
AC-227	1.449E-03	1.023E-01	1.764E-01	0.000E+00	NOT IDENT.
TH-227	1.449E-03	1.023E-01	1.764E-01	0.000E+00	NOT IDENT.
AC-228	9.420E-03	8.031E-02	1.398E-01	0.000E+00	NOT IDENT.
RA-228	9.420E-03	8.031E-02	1.398E-01	0.000E+00	NOT IDENT.
TH-228	-3.344E-04	2.991E-02	5.059E-02	0.000E+00	NOT IDENT.
TH-229	-1.569E-01	2.167E-01	3.555E-01	0.000E+00	NOT IDENT.
PA-231	-2.910E-01	6.072E-01	9.707E-01	0.000E+00	NOT IDENT.
TH-231	-1.828E-01	2.904E-01	4.463E-01	0.000E+00	NOT IDENT.
TH-232	9.420E-03	8.031E-02	1.398E-01	0.000E+00	NOT IDENT.
PA-233	-1.733E-02	2.940E-02	4.592E-02	0.000E+00	NOT IDENT.
PA-234	6.777E-02	9.579E-02	1.899E-01	0.000E+00	NOT IDENT.
PA-234M	-8.553E-01	1.967E+00	3.093E+00	0.000E+00	NOT IDENT.
TH-234	-1.166E-01	4.426E-01	8.097E-01	0.000E+00	NOT IDENT.
U-235	-8.138E-02	9.066E-02	1.403E-01	0.000E+00	NOT IDENT.
NP-237	-6.488E-02	8.271E-02	1.268E-01	0.000E+00	NOT IDENT.
U-238	-1.166E-01	4.426E-01	8.097E-01	0.000E+00	NOT IDENT.
NP-239	-5.864E-03	1.374E-01	2.506E-01	0.000E+00	NOT IDENT.
AM-241	4.797E-02	4.155E-02	8.020E-02	0.000E+00	NOT IDENT.
CM-247	-7.848E-03	1.502E-02	2.487E-02	0.000E+00	NOT IDENT.
CF-249	1.085E-02	1.827E-02	3.444E-02	0.000E+00	NOT IDENT.

CF-251	3.438E-02	5.254E-02	9.821E-02	0.000E+00	NOT IDENT.
ANH-511	-3.779E-02	2.925E-02	5.667E-02	0.000E+00	NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:12:20.59

```
*****************************************************************************
*                            GEL Laboratories LLC                            *
*                              2040 Savage Road                              *
*                            Charleston, SC 29414                            *
*****************************************************************************
Configuration    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061469.CNF;1
Sample date      : 6-MAR-2010 00:00:00. Acquisition date : 20-MAR-2010 11:11:16
Sample ID        : G1202061469          Sample quantity  : 1.38240E+02 GRAM
Detector name    : GAM11                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:00.56  0.0%
Energy tolerance : 1.50000 keV          Analyst Initials : MXR1
Abundance limit  : 75.00000             Sensitivity      : 5.00000
Batch ID         : 961099               Detector SN#     :
Matrix Spike ID  :                      LCS ID           : 1032-A
*****************************************************************************
```

Nuclide Line Activity Report

Flag: "*" = Keyline

Sample ID : G1202061469 Acquisition date : 20-MAR-2010 11:11:16

**** There are no nuclides meeting summary criteria ****

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

Sample ID : G1202061469
Acquisition date : 20-MAR-2010 11:11:16

None

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:12:24.68

```
*****************************************************************************
*                            GEL Laboratories LLC                            *
*                              2040 Savage Road                              *
*                            Charleston, SC 29414                            *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061469.CNF;1 *
* Acquisition date : 20-MAR-2010 11:11:16  Detector SN#    :                *
* Detector ID      : GAM11                 Sensitivity     : 5.00000        *
* Geometry         : CAN                   Energy tolerance: 1.50000        *
* Elapsed live time: 0 02:00:00.00         Abundance limit : 75.00000       *
* Elapsed real time: 0 02:00:00.56         Half life ratio : 8.00000        *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date      : 6-MAR-2010 00:00:00.  Nuclide Library : SOLID          *
* Sample ID        : G1202061469           Analyst initials: MXR1           *
* Batch Number     : 961099                Sample Quantity : 1.38240E+02 GRAM *
*****************************************************************************
*                                                                           *
*                                  QC DATA                                  *
*                                                                           *
* CALIB. DATE/TIME : 18-NOV-2009 15:33:22.2MS Isotope      :                *
* MSD ID           :                       MSD Isotope     :                *
* LCS ID           : 1032-A                LCS Isotope     :                *
*****************************************************************************
```

Combined Activity-MDA Report

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	9.426E-02		1.450E-01	2.612E-01	2.956E-02	0.361
NA-22	9.310E-03		1.870E-02	3.360E-02	2.759E-03	0.277
NA-24	-1.795E-01		1.062E-01	Half-Life too short		
K-40	-2.250E-02		2.243E-01	4.088E-01	3.535E-02	-0.055
SC-46	-1.295E-02		1.603E-02	2.236E-02	2.202E-03	-0.579
V-48	7.674E-03		2.485E-02	4.414E-02	4.187E-03	0.174
CR-51	5.011E-02		1.583E-01	2.632E-01	3.818E-02	0.190
MN-54	6.626E-03		1.473E-02	2.669E-02	2.628E-03	0.248
CO-56	-2.389E-03		1.771E-02	2.918E-02	2.875E-03	-0.082
CO-57	-2.695E-03		9.455E-03	1.567E-02	1.326E-03	-0.172
CO-58	4.226E-04		1.589E-02	2.555E-02	2.515E-03	0.017
FE-59	-2.503E-02		3.219E-02	4.191E-02	3.939E-03	-0.597
CO-60	1.309E-03		1.534E-02	2.544E-02	2.102E-03	0.051
ZN-65	-1.702E-02		3.190E-02	4.562E-02	3.915E-03	-0.373
SE-75	-9.117E-04		1.924E-02	3.101E-02	4.558E-03	-0.029
SR-85	-7.521E-02		2.981E-02	3.709E-02	3.962E-03	-2.028
Y-88	1.113E-02		1.806E-02	3.503E-02	2.844E-03	0.318

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	2.309E+00		8.706E+00	1.497E+01	1.212E+00	0.154
NB-94	4.577E-03		1.566E-02	2.651E-02	2.546E-03	0.173
NB-95	1.868E-02		1.845E-02	3.444E-02	3.362E-03	0.542
NB-95M	-6.843E-02		5.271E-02	7.313E-02	1.022E-02	-0.936
ZR-95	-1.087E-02		3.097E-02	4.631E-02	4.886E-03	-0.235
MO-99	-3.362E+00		5.887E+00	8.618E+00	1.411E+00	-0.390
TC-99M	-5.873E+08		1.485E+09	Half-Life too short		
RU-103	-5.291E-03		2.026E-02	3.261E-02	5.010E-03	-0.162
RH-106	-4.821E-02		1.530E-01	2.380E-01	3.364E-02	-0.203
RU-106	-4.821E-02		1.530E-01	2.380E-01	2.361E-02	-0.203
AG-108M	5.453E-04		1.216E-02	2.056E-02	2.262E-03	0.027
CD-109	-8.629E-02		2.711E-01	4.091E-01	3.879E-02	-0.211
AG-110M	1.135E-02		1.593E-02	2.872E-02	2.798E-03	0.395
SN-113	-2.236E-03		2.136E-02	3.576E-02	3.890E-03	-0.063
CD-115	8.162E-01		4.095E+00	6.980E+00	7.416E-01	0.117
SN-117M	-1.422E-02		2.212E-02	3.309E-02	3.128E-03	-0.430
TE-123M	-1.063E-02		1.193E-02	1.736E-02	1.652E-03	-0.612
SB-124	2.324E-02		4.780E-02	8.823E-02	7.686E-03	0.263
SB-125	1.212E-02		4.215E-02	7.324E-02	7.983E-03	0.165
TE-125M	3.669E-01		3.417E+00	5.886E+00	6.129E-01	0.062
I-126	-6.981E-02		9.763E-02	1.389E-01	1.317E-02	-0.503
SB-126	2.423E-02		6.283E-02	1.080E-01	1.043E-02	0.224
SN-126	-2.048E-03		2.592E-02	4.010E-02	3.783E-03	-0.051
SB-127	-4.564E-01		5.987E-01	8.469E-01	1.009E-01	-0.539
I-131	-1.744E-02		5.843E-02	8.905E-02	1.117E-02	-0.196
TE-132	1.160E-01		2.652E-01	4.519E-01	8.255E-02	0.257
BA-133	1.063E-02		1.702E-02	2.933E-02	4.671E-03	0.362
I-133	-1.519E-04		7.778E-04	Half-Life too short		
CS-134	-1.419E-02		2.359E-02	3.243E-02	3.200E-03	-0.438
CS-135	-2.514E-02		6.699E-02	1.036E-01	1.626E-02	-0.243
I-135	2.112E+08		2.770E+08	Half-Life too short		
CS-136	5.252E-02		4.357E-02	8.746E-02	8.253E-03	0.601
BA-137M	-6.444E-03		1.496E-02	2.241E-02	2.121E-03	-0.288
CS-137	-6.807E-03		1.581E-02	2.368E-02	2.244E-03	-0.288
CE-139	-5.789E-03		1.173E-02	1.870E-02	1.817E-03	-0.310
BA-140	-1.597E-02		1.100E-01	1.776E-01	6.121E-02	-0.090
LA-140	6.798E-03		4.610E-02	7.935E-02	6.674E-03	0.086
CE-141	-6.737E-03		2.421E-02	3.978E-02	3.646E-03	-0.169
CE-143	-3.063E-05		1.980E-05	Half-Life too short		
CE-144	5.378E-02		7.630E-02	1.355E-01	2.077E-02	0.397
PM-144	-1.840E-03		1.826E-02	2.850E-02	2.733E-03	-0.065
PR-144	-1.303E-01		1.367E+00	2.136E+00	2.047E-01	-0.061
PM-146	-2.053E-03		1.701E-02	2.801E-02	3.480E-03	-0.073
ND-147	7.839E-02		2.256E-01	3.926E-01	6.352E-02	0.200
PM-149	2.917E+00		3.237E+01	5.274E+01	1.057E+01	0.055
EU-152	-2.917E-02		4.497E-02	6.490E-02	8.797E-03	-0.450
GD-153	-5.991E-03		2.988E-02	4.364E-02	3.877E-03	-0.137
EU-154	2.639E-02		5.302E-02	9.522E-02	1.054E-02	0.277

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	2.835E-02		3.334E-02	6.108E-02	5.327E-03	0.464
TB-160	-1.266E-03		5.508E-02	9.209E-02	9.074E-03	-0.014
HO-166M	1.054E-02		2.731E-02	4.700E-02	4.526E-03	0.224
TA-182	-8.205E-02		7.980E-02	9.508E-02	7.724E-03	-0.863
IR-192	3.065E-04		1.466E-02	2.352E-02	3.381E-03	0.013
HG-203	-2.358E-03		1.712E-02	2.722E-02	4.248E-03	-0.087
BI-207	-1.339E-02		2.369E-02	3.468E-02	3.115E-03	-0.386
TL-208	-9.926E-03		1.609E-02	2.459E-02	2.653E-03	-0.404
PB-210	-7.069E-02		1.051E+00	1.689E+00	1.558E-01	-0.042
BI-211	2.328E-02		1.081E-01	1.744E-01	2.302E-02	0.133
PB-211	-2.172E-01		2.983E-01	4.205E-01	2.052E-01	-0.517
BI-212	6.570E-02		2.242E-01	3.713E-01	4.906E-02	0.177
PB-212	-3.344E-04		3.052E-02	4.865E-02	6.830E-03	-0.007
BI-214	-4.773E-02		4.179E-02	5.657E-02	6.419E-03	-0.844
PB-214	-2.292E-02		4.102E-02	6.035E-02	8.607E-03	-0.380
RN-219	7.636E-03		1.605E-01	2.729E-01	4.413E-02	0.028
RA-223	-1.828E-01		2.963E-01	4.318E-01	8.896E-02	-0.423
RA-224	-2.243E-01		2.877E-01	4.316E-01	5.781E-02	-0.520
RA-226	-4.773E-02		4.179E-02	5.657E-02	6.419E-03	-0.844
AC-227	1.449E-03		1.044E-01	1.699E-01	2.807E-02	0.009
TH-227	1.449E-03		1.044E-01	1.699E-01	3.005E-02	0.009
AC-228	9.420E-03		8.195E-02	1.380E-01	1.725E-02	0.068
RA-228	9.420E-03		8.195E-02	1.380E-01	1.725E-02	0.068
TH-228	-3.344E-04		3.052E-02	4.865E-02	6.830E-03	-0.007
TH-229	-1.569E-01		2.211E-01	3.405E-01	3.737E-02	-0.461
PA-231	-2.910E-01		6.195E-01	9.366E-01	1.813E-01	-0.311
TH-231	-1.828E-01		2.963E-01	4.318E-01	8.896E-02	-0.423
TH-232	9.420E-03		8.195E-02	1.380E-01	1.725E-02	0.068
PA-233	-1.733E-02		3.000E-02	4.439E-02	6.514E-03	-0.390
PA-234	6.777E-02		9.775E-02	1.876E-01	3.615E-02	0.361
PA-234M	-8.553E-01		2.007E+00	3.060E+00	3.255E-01	-0.280
TH-234	-1.166E-01		4.516E-01	7.597E-01	1.351E-01	-0.154
U-235	-8.138E-02		9.251E-02	1.337E-01	2.290E-02	-0.609
NP-237	-6.488E-02		8.440E-02	1.197E-01	2.745E-02	-0.542
U-238	-1.166E-01		4.516E-01	7.597E-01	1.351E-01	-0.154
NP-239	-5.864E-03		1.402E-01	2.378E-01	2.011E-02	-0.025
AM-241	4.797E-02		4.240E-02	7.516E-02	5.906E-03	0.638
CM-247	-7.848E-03		1.533E-02	2.416E-02	2.586E-03	-0.325
CF-249	1.085E-02		1.864E-02	3.343E-02	3.636E-03	0.325
CF-251	3.438E-02		5.362E-02	9.391E-02	9.605E-03	0.366
ANH-511	-3.779E-02		2.985E-02	5.531E-02	5.914E-03	-0.683

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration    : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202061469           *
* Acquisition date : 20-MAR-2010 11:11:16 Detector SN#    :                 *
* Detector ID      : GAM11                Sensitivity     : 5.000           *
* Geometry         : CAN                  Energy tolerance: 1.500           *
* Elapsed live time:    0 02:00:00.00     Abundance limit : 75.000          *
* Elapsed real time:    0 02:00:00.56     Half life ratio : 8.000           *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date      :  6-MAR-2010 00:00:00 Nuclide Library : SOLID           *
* Sample ID        : G1202061469          Analyst initials: MXR1            *
* Batch Number     : 961099               Sample Quantity : 1.3824E+02 GRAM *
* Recovery         :    1.00000           Carrier Weight :    0.00000       *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
*                                                                           *
* CALIB. DATE/TIME : 18-NOV-2009 15:33:22 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
*****************************************************************************
```

Combined Activity-MDA Report

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act Error	DLC (pCi/GRAM)	TPU

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	9.426E-02	1.421E-01	1.341E-01	7.250E-02	NOT IDENT.
NA-22	9.310E-03	1.832E-02	1.691E-02	9.348E-03	NOT IDENT.
NA-24	-1.795E+05	2.081E+05	0.000E+00	1.062E+05	SHORT HLIF
K-40	-2.250E-02	2.198E-01	2.052E-01	1.122E-01	NOT IDENT.
SC-46	-1.295E-02	1.571E-02	1.133E-02	8.017E-03	NOT IDENT.
V-48	7.674E-03	2.435E-02	2.233E-02	1.242E-02	NOT IDENT.
CR-51	5.011E-02	1.551E-01	1.361E-01	7.914E-02	NOT IDENT.
MN-54	6.626E-03	1.444E-02	1.355E-02	7.367E-03	NOT IDENT.
CO-56	-2.389E-03	1.736E-02	1.481E-02	8.856E-03	NOT IDENT.
CO-57	-2.695E-03	9.266E-03	8.257E-03	4.727E-03	NOT IDENT.
CO-58	4.226E-04	1.557E-02	1.298E-02	7.944E-03	NOT IDENT.
FE-59	-2.503E-02	3.155E-02	2.116E-02	1.610E-02	NOT IDENT.
CO-60	1.309E-03	1.503E-02	1.279E-02	7.671E-03	NOT IDENT.
ZN-65	-1.702E-02	3.126E-02	2.303E-02	1.595E-02	NOT IDENT.
SE-75	-9.117E-04	1.885E-02	1.610E-02	9.618E-03	NOT IDENT.
SR-85	-7.521E-02	2.922E-02	1.901E-02	1.491E-02	NOT IDENT.
Y-88	1.113E-02	1.770E-02	1.750E-02	9.032E-03	NOT IDENT.
Y-91	2.309E+00	8.532E+00	7.545E+00	4.353E+00	NOT IDENT.
NB-94	4.577E-03	1.535E-02	1.351E-02	7.831E-03	NOT IDENT.
NB-95	1.868E-02	1.808E-02	1.751E-02	9.226E-03	NOT IDENT.
NB-95M	-6.843E-02	5.166E-02	3.805E-02	2.636E-02	NOT IDENT.
ZR-95	-1.087E-02	3.035E-02	2.355E-02	1.548E-02	NOT IDENT.
MO-99	-3.362E+00	5.770E+00	4.385E+00	2.944E+00	NOT IDENT.
TC-99M	-5.873E+14	2.910E+15	0.000E+00	1.485E+15	SHORT HLIF
RU-103	-5.291E-03	1.985E-02	1.672E-02	1.013E-02	NOT IDENT.
RH-106	-4.821E-02	1.500E-01	1.215E-01	7.652E-02	NOT IDENT.

RU-106	-4.821E-02	1.499E-01	1.215E-01	7.648E-02	NOT IDENT.
AG-108M	5.453E-04	1.192E-02	1.057E-02	6.079E-03	NOT IDENT.
CD-109	-8.629E-02	2.657E-01	2.168E-01	1.356E-01	NOT IDENT.
AG-110M	1.135E-02	1.561E-02	1.465E-02	7.966E-03	NOT IDENT.
SN-113	-2.236E-03	2.093E-02	1.843E-02	1.068E-02	NOT IDENT.
CD-115	8.162E-01	4.013E+00	3.576E+00	2.048E+00	NOT IDENT.
SN-117M	-1.422E-02	2.168E-02	1.735E-02	1.106E-02	NOT IDENT.
TE-123M	-1.063E-02	1.169E-02	9.102E-03	5.963E-03	NOT IDENT.
SB-124	2.324E-02	4.684E-02	4.415E-02	2.390E-02	NOT IDENT.
SB-125	1.212E-02	4.131E-02	3.767E-02	2.107E-02	NOT IDENT.
TE-125M	3.669E-01	3.348E+00	3.107E+00	1.708E+00	NOT IDENT.
I-126	-6.981E-02	9.568E-02	7.082E-02	4.882E-02	NOT IDENT.
SB-126	2.423E-02	6.157E-02	5.499E-02	3.141E-02	NOT IDENT.
SN-126	-2.048E-03	2.540E-02	2.126E-02	1.296E-02	NOT IDENT.
SB-127	-4.564E-01	5.867E-01	4.316E-01	2.994E-01	NOT IDENT.
I-131	-1.744E-02	5.726E-02	4.595E-02	2.922E-02	NOT IDENT.
TE-132	1.160E-01	2.599E-01	2.353E-01	1.326E-01	NOT IDENT.
BA-133	1.063E-02	1.668E-02	1.514E-02	8.511E-03	NOT IDENT.
I-133	-1.519E+02	1.524E+03	0.000E+00	7.778E+02	SHORT HLIF
CS-134	-1.419E-02	2.312E-02	1.648E-02	1.180E-02	NOT IDENT.
CS-135	-2.514E-02	6.565E-02	5.379E-02	3.350E-02	NOT IDENT.
I-135	2.112E+14	5.430E+14	0.000E+00	2.770E+14	SHORT HLIF
CS-136	5.252E-02	4.270E-02	4.419E-02	2.179E-02	NOT IDENT.
BA-137M	-6.444E-03	1.466E-02	1.143E-02	7.482E-03	NOT IDENT.
CS-137	-6.807E-03	1.549E-02	1.207E-02	7.904E-03	NOT IDENT.
CE-139	-5.789E-03	1.150E-02	9.793E-03	5.867E-03	NOT IDENT.
BA-140	-1.597E-02	1.078E-01	9.095E-02	5.499E-02	NOT IDENT.
LA-140	6.798E-03	4.518E-02	3.976E-02	2.305E-02	NOT IDENT.
CE-141	-6.737E-03	2.373E-02	2.089E-02	1.211E-02	NOT IDENT.
CE-143	-3.063E+01	3.881E+01	0.000E+00	1.980E+01	SHORT HLIF
CE-144	5.378E-02	7.478E-02	7.129E-02	3.815E-02	NOT IDENT.
PM-144	-1.840E-03	1.789E-02	1.452E-02	9.129E-03	NOT IDENT.
PR-144	-1.303E-01	1.340E+00	1.088E+00	6.834E-01	NOT IDENT.
PM-146	-2.053E-03	1.667E-02	1.439E-02	8.507E-03	NOT IDENT.
ND-147	7.839E-02	2.210E-01	2.011E-01	1.128E-01	NOT IDENT.
PM-149	2.917E+00	3.172E+01	2.734E+01	1.618E+01	NOT IDENT.
EU-152	-2.917E-02	4.407E-02	3.353E-02	2.248E-02	NOT IDENT.
GD-153	-5.991E-03	2.928E-02	2.309E-02	1.494E-02	NOT IDENT.
EU-154	2.639E-02	5.196E-02	4.793E-02	2.651E-02	NOT IDENT.
EU-155	2.835E-02	3.268E-02	3.227E-02	1.667E-02	NOT IDENT.
TB-160	-1.266E-03	5.398E-02	4.670E-02	2.754E-02	NOT IDENT.
HO-166M	1.054E-02	2.676E-02	2.393E-02	1.366E-02	NOT IDENT.
TA-182	-8.205E-02	7.821E-02	4.790E-02	3.990E-02	NOT IDENT.
IR-192	3.065E-04	1.437E-02	1.217E-02	7.329E-03	NOT IDENT.
HG-203	-2.358E-03	1.678E-02	1.412E-02	8.561E-03	NOT IDENT.
BI-207	-1.339E-02	2.321E-02	1.752E-02	1.184E-02	NOT IDENT.
TL-208	-9.926E-03	1.577E-02	1.257E-02	8.044E-03	NOT IDENT.
PB-210	-7.069E-02	1.030E+00	9.057E-01	5.253E-01	NOT IDENT.
BI-211	2.328E-02	1.059E-01	9.008E-02	5.404E-02	NOT IDENT.
PB-211	-2.172E-01	2.924E-01	2.165E-01	1.492E-01	NOT IDENT.
BI-212	6.570E-02	2.198E-01	1.890E-01	1.121E-01	NOT IDENT.
PB-212	-3.344E-04	2.991E-02	2.531E-02	1.526E-02	NOT IDENT.
BI-214	-4.773E-02	4.096E-02	2.890E-02	2.090E-02	NOT IDENT.
PB-214	-2.292E-02	4.020E-02	3.116E-02	2.051E-02	NOT IDENT.
RN-219	7.636E-03	1.573E-01	1.406E-01	8.026E-02	NOT IDENT.
RA-223	-1.828E-01	2.904E-01	2.233E-01	1.482E-01	NOT IDENT.
RA-224	-2.243E-01	2.819E-01	2.245E-01	1.438E-01	NOT IDENT.
RA-226	-4.773E-02	4.096E-02	2.890E-02	2.090E-02	NOT IDENT.
AC-227	1.449E-03	1.023E-01	8.827E-02	5.221E-02	NOT IDENT.
TH-227	1.449E-03	1.023E-01	8.827E-02	5.221E-02	NOT IDENT.
AC-228	9.420E-03	8.031E-02	6.995E-02	4.097E-02	NOT IDENT.
RA-228	9.420E-03	8.031E-02	6.995E-02	4.097E-02	NOT IDENT.
TH-228	-3.344E-04	2.991E-02	2.531E-02	1.526E-02	NOT IDENT.
TH-229	-1.569E-01	2.167E-01	1.778E-01	1.106E-01	NOT IDENT.
PA-231	-2.910E-01	6.072E-01	4.856E-01	3.098E-01	NOT IDENT.
TH-231	-1.828E-01	2.904E-01	2.233E-01	1.482E-01	NOT IDENT.
TH-232	9.420E-03	8.031E-02	6.995E-02	4.097E-02	NOT IDENT.
PA-233	-1.733E-02	2.940E-02	2.297E-02	1.500E-02	NOT IDENT.
PA-234	6.777E-02	9.579E-02	9.500E-02	4.887E-02	NOT IDENT.
PA-234M	-8.553E-01	1.967E+00	1.548E+00	1.004E+00	NOT IDENT.
TH-234	-1.166E-01	4.426E-01	4.051E-01	2.258E-01	NOT IDENT.
U-235	-8.138E-02	9.066E-02	7.021E-02	4.625E-02	NOT IDENT.
NP-237	-6.488E-02	8.271E-02	6.344E-02	4.220E-02	NOT IDENT.
U-238	-1.166E-01	4.426E-01	4.051E-01	2.258E-01	NOT IDENT.
NP-239	-5.864E-03	1.374E-01	1.254E-01	7.010E-02	NOT IDENT.
AM-241	4.797E-02	4.155E-02	4.012E-02	2.120E-02	NOT IDENT.
CM-247	-7.848E-03	1.502E-02	1.244E-02	7.664E-03	NOT IDENT.
CF-249	1.085E-02	1.827E-02	1.723E-02	9.320E-03	NOT IDENT.

CF-251	3.438E-02	5.254E-02	4.913E-02	2.681E-02	NOT IDENT.
ANH-511	-3.779E-02	2.925E-02	2.835E-02	1.492E-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	42.4178
49.72	42.8892
57.36	0.0000
59.54	38.5829
63.29	43.6016
63.29	43.6016
64.28	62.1369
67.75	51.1254
69.67	63.0753
70.83	59.7567
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72.87	69.5048
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74.82	80.5139
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74.97	80.5451
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77.11	76.2212
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80.57	48.0493
81.00	62.5300
81.07	62.5407
81.07	62.5407
83.79	50.8453
83.79	50.8453
85.43	59.5498
86.48	82.8439
86.55	73.1094
86.79	75.5880
86.94	75.6145
87.57	65.9538
88.03	72.1372
88.47	61.1950
89.96	84.7360
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92.59	53.1188
93.35	50.7332
94.67	130.3039
94.87	130.3608
94.87	130.3608
95.86	60.9659
97.43	47.4397
98.44	54.2146
99.53	42.6357
100.11	48.5469
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103.37	64.8877
105.31	39.7638
106.12	46.6082
109.28	58.8413
111.00	50.4838
111.76	63.4123
116.30	63.1008
117.23	54.5522
121.12	64.5407
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122.06	62.9044
123.07	58.6434
131.20	76.3637
133.52	53.4900
136.00	74.3060

136.47	72.5724
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140.51	0.0000
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144.24	78.9517
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153.25	53.3879
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154.21	55.3101
156.02	50.8419
158.56	55.6775
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163.33	56.0736
165.86	62.8479
176.60	63.8151
177.52	52.4521
181.07	56.5417
184.41	70.2754
185.72	49.1832
193.51	66.2534
197.04	47.9592
205.31	68.2419
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215.65	48.0737
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228.16	44.7175
228.18	43.7021
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235.96	75.8729
235.96	75.8729
238.63	53.4742
238.63	53.4742
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242.00	59.8662
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252.40	43.8397
252.80	46.9908
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256.23	39.8249
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269.46	38.2456
269.46	38.2456
271.23	42.5708
273.65	46.9407
276.40	43.8603
277.37	42.8312
277.60	39.6279
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279.54	50.4338
280.46	48.3316
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284.31	48.5129
285.41	45.3265
285.90	37.7899
287.50	34.6042
293.27	0.0000
295.22	34.8587
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298.57	45.8956
299.98	38.2962
299.98	38.2962
300.09	33.9233
300.09	33.9233
300.13	33.9245
301.36	29.5807
302.85	48.2718
304.50	49.4440
304.50	49.4440
304.85	47.2613
308.46	44.1089
311.90	44.2464

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320.08	31.1986
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323.87	43.6005
328.76	42.6634
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334.37	28.2033
338.28	31.6925
338.28	31.6925
338.32	31.6937
338.32	31.6937
338.32	31.6937
340.48	30.6178
340.55	30.6194
344.28	40.9534
351.06	34.3195
351.93	45.7918
356.01	21.8238
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366.42	34.7473
383.85	25.5361
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388.63	30.0478
391.69	38.9753
400.66	25.8604
401.81	24.9901
402.40	31.2509
404.85	30.4125
410.95	28.7510
414.70	31.5318
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427.87	29.0996
433.94	23.7438
453.88	23.1426
463.37	22.3572
468.07	24.2949
473.00	29.9971
476.78	29.1306
477.60	21.6243
487.02	26.4837
492.35	32.2667
497.08	34.2658
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514.00	117.3340
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529.87	0.0000
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537.26	21.4528
546.56	0.0000
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569.33	28.8000
569.50	19.8639
569.70	19.8663
583.19	14.0098
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604.72	29.3584
609.32	35.5191
609.32	35.5191
610.33	29.4452
614.28	26.4539
618.01	20.3888
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621.93	25.5379
633.25	26.7149
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636.99	24.7068
645.85	26.8855
657.76	15.6029
661.66	19.8019
661.66	19.8019
664.57	0.0000
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666.50	25.0723
677.62	16.8052

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695.00	24.3589
696.49	21.1963
696.51	21.1969
697.00	21.2018
702.65	19.1321
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711.68	16.0107
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722.91	11.8020
723.31	17.1694
724.19	27.9114
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733.00	18.3229
735.93	19.4266
739.50	30.2678
747.24	18.4407
752.31	18.4822
753.82	14.1426
756.73	17.4287
763.94	24.0403
765.81	12.0299
766.42	16.4090
777.92	26.3855
778.90	26.3965
783.70	16.5317
785.37	19.8523
795.86	21.0486
801.95	16.6599
810.29	14.4889
810.76	12.2622
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818.51	8.9465
832.01	13.4941
834.85	11.7086
836.80	0.0000
846.77	17.1946
856.80	17.2637
860.56	17.2893
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873.19	16.4610
875.33	0.0000
879.36	11.9171
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883.24	13.7710
884.68	11.9415
889.28	16.5639
898.04	13.8494
911.20	16.7025
911.20	16.7025
911.20	16.7025
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944.13	13.1506
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949.00	12.2329
962.29	2.8366
964.08	15.1383
966.15	16.0960
968.97	11.3736
968.97	11.3736
968.97	11.3736
983.53	7.6217
996.26	6.6989
1001.03	16.2957
1004.73	16.3164
1037.84	11.6490
1038.76	0.0000
1048.07	5.8444
1050.41	15.5977
1050.41	15.5977
1063.66	16.6456
1085.87	7.8902
1099.45	11.8875
1112.07	9.9463
1115.54	11.9484

1120.29	11.9666
1120.29	11.9666
1120.55	11.9672
1121.30	13.9651
1131.51	0.0000
1173.23	12.1646
1177.93	10.1514
1189.05	12.2227
1204.77	11.2567
1221.41	14.3972
1231.02	5.1565
1235.36	10.3257
1238.28	10.3345
1260.41	0.0000
1271.85	14.6084
1274.44	8.3539
1274.54	8.3539
1291.59	12.5912
1298.22	0.0000
1312.11	2.1105
1332.49	6.3671
1365.19	10.7056
1368.63	0.0000
1384.29	6.4562
1408.01	3.2481
1457.56	0.0000
1460.82	5.4871
1489.16	2.7629
1505.03	6.4722
1596.21	8.5045
1620.50	4.7514
1678.03	0.0000
1690.97	5.7930
1764.49	3.9242
1764.49	3.9242
1770.23	11.7871
1771.35	9.8246
1791.20	0.0000
1836.06	2.9877

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202061469

Total Uranium Activity	-3.8465E-01	ug/g
Total Uranium Counting Unc.	1.3173E+00	ug/g
Total Uranium Tpu	6.7208E-07	ug/g
Total Uranium Mda	1.2056E+00	ug/g

THERE ARE NO PEAKS !

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:13:06.61

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*****************************************************************************
*                              GEL Laboratories LLC                          *
*                                2040 Savage Road                            *
*                              Charleston, SC 29414                          *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061470.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:11:45
Sample ID         : G1202061470          Sample quantity  : 1.33660E+02 GRAM
Detector name     : GAM12                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.69  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               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	63.42*	79	553	0.99	126.05	122	8	1.10E-02	53.8	
2	3	74.75*	627	557	1.33	148.71	142	19	8.71E-02	7.8	5.22E+00
3	3	77.09	749	413	1.03	153.41	142	19	1.04E-01	5.8	
4	1	87.29*	276	474	1.13	173.80	162	29	3.83E-02	14.3	1.64E+00
5	1	89.98	163	381	1.01	179.19	162	29	2.26E-02	20.8	
6	1	92.84*	301	409	1.10	184.91	162	29	4.18E-02	13.7	
7	0	185.87*	199	470	1.01	371.00	365	12	2.77E-02	23.7	
8	0	209.80	197	366	1.10	418.88	414	12	2.73E-02	20.8	
9	4	238.66*	1434	187	1.08	476.61	472	15	1.99E-01	3.1	1.39E+00
10	4	241.56	327	251	1.73	482.41	472	15	4.55E-02	14.0	
11	0	270.07*	131	207	1.35	539.43	535	10	1.82E-02	22.5	
12	0	277.41	89	252	1.32	554.12	549	11	1.24E-02	36.2	
13	0	295.29*	425	263	1.19	589.88	585	11	5.91E-02	8.9	
14	0	300.12	69	143	0.88	599.54	596	7	9.62E-03	31.1	
15	0	328.29	50	188	1.08	655.89	650	9	6.93E-03	51.6	
16	0	338.29*	298	177	0.86	675.89	671	9	4.13E-02	10.1	
17	0	351.90*	778	178	1.29	703.11	697	11	1.08E-01	4.9	
18	0	409.11	52	151	1.55	817.53	812	11	7.21E-03	48.5	
19	0	463.47	97	142	1.86	926.27	920	14	1.34E-02	28.2	
20	0	510.85*	142	172	1.93	1021.02	1013	17	1.97E-02	25.2	
21	0	583.16*	543	69	1.61	1165.63	1160	11	7.54E-02	5.3	
22	0	609.41*	557	108	1.33	1218.14	1212	14	7.74E-02	5.9	
23	0	727.28	109	69	1.51	1453.84	1448	11	1.52E-02	17.5	
24	0	768.10	80	71	1.31	1535.47	1530	11	1.10E-02	23.4	
25	0	794.33	71	67	0.81	1587.94	1581	14	9.88E-03	27.1	
26	0	861.35	64	85	2.01	1721.95	1713	13	8.92E-03	32.1	
27	0	911.39*	361	57	1.84	1822.01	1815	16	5.01E-02	7.2	
28	1	964.34	59	46	2.00	1927.87	1921	24	8.25E-03	27.1	2.06E+00
29	1	969.05*	206	40	2.01	1937.30	1921	24	2.86E-02	9.8	
30	0	1120.65*	96	74	1.14	2240.41	2234	14	1.34E-02	22.2	
31	0	1238.30*	59	100	1.55	2475.61	2468	18	8.15E-03	42.3	
32	0	1460.75*	1490	21	2.03	2920.29	2909	19	2.07E-01	2.7	
33	0	1630.80	18	14	1.81	3260.19	3254	11	2.52E-03	46.1	
34	0	1729.50	33	0	2.36	3457.45	3452	11	4.58E-03	17.4	
35	0	1764.31*	109	0	2.04	3527.02	3519	16	1.51E-02	10.0	

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

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 13:13:10

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Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061470.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:11:45
Sample ID         : G1202061470          Sample quantity  : 133.66 GRAM
Sample type       : SOLID                Sample geometry  :
Detector name     : GAMMA12              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.69   0.0%
Peak Width (FWHM):     3.00              Confidence level :     5.00 %
Energy tolerance :     1.50 keV          Half life ratio  :     8.00
Errors propagated: Yes                   Systematic Error :     0.00 %
Efficiency type  : Empirical             Efficiencies at  : Peak Energy
Abundance limit  :    75.00              WTM error limit  :     3.00
```

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	*	3.653E+01	3.855E+00	4.196E-01	3.806E-02	87.039
CD-109	+	88.03	*	3.907E+00	1.178E+00	1.229E+00	1.157E-01	3.179
SN-126	+	64.28		7.208E-01	7.830E-01	8.337E-01	1.213E-01	0.865
	+	86.94		1.569E+00	7.916E-01	4.989E-01	2.071E-01	3.145
	+	87.57	*	3.774E-01	1.138E-01	1.193E-01	1.117E-02	3.165
TL-208	+	277.37		9.019E-01	6.619E-01	6.415E-01	8.057E-02	1.406
	+	583.19	*	7.590E-01	1.079E-01	5.782E-02	5.498E-03	13.128
	+	860.56		8.521E-01	5.538E-01	4.699E-01	5.006E-02	1.813
BI-211		72.87		7.364E+00	3.832E+00	6.002E+00	4.806E-01	1.227
	+	351.06	*	4.802E+00	6.374E-01	3.452E-01	3.076E-02	13.910
PB-212	+	74.82		3.768E+00	7.576E-01	6.030E-01	7.655E-02	6.248
	+	77.11		2.575E+00	3.688E-01	3.466E-01	2.892E-02	7.428
	+	238.63	*	1.976E+00	2.265E-01	9.774E-02	9.463E-03	20.214
	+	300.09		1.485E+00	9.367E-01	1.281E+00	1.355E-01	1.160
BI-214	+	609.32	*	1.510E+00	2.370E-01	1.120E-01	1.163E-02	13.474
	+	1120.29		1.350E+00	6.160E-01	4.859E-01	5.324E-02	2.778
	+	1764.49		2.111E+00	4.586E-01	3.179E-01	2.690E-02	6.642
PB-214	+	74.82		6.678E+00	1.289E+00	1.069E+00	1.216E-01	6.248
	+	77.11		4.539E+00	7.502E-01	6.111E-01	7.170E-02	7.428
	+	242.00		2.736E+00	8.183E-01	5.589E-01	5.769E-02	4.895
	+	295.22		1.616E+00	3.377E-01	2.440E-01	2.647E-02	6.622
	+	351.93	*	1.743E+00	2.505E-01	1.256E-01	1.315E-02	13.880
RA-224	+	240.99	*	4.837E+00	1.419E+00	1.048E+00	8.946E-02	4.617
RA-226	+	609.32	*	1.510E+00	2.370E-01	1.120E-01	1.163E-02	13.474
	+	1120.29		1.350E+00	6.160E-01	4.859E-01	5.324E-02	2.778
	+	1764.49		2.111E+00	4.586E-01	3.179E-01	2.690E-02	6.642
AC-228	+	338.32		2.044E+00	9.478E-01	4.433E-01	1.848E-01	4.612
	+	911.20	*	2.440E+00	4.713E-01	2.438E-01	3.129E-02	10.010
	+	968.97		2.401E+00	7.612E-01	3.971E-01	9.868E-02	6.048
RA-228	+	338.32		2.044E+00	9.478E-01	4.433E-01	1.848E-01	4.612
	+	911.20	*	2.440E+00	4.713E-01	2.438E-01	3.129E-02	10.010
	+	968.97		2.401E+00	7.612E-01	3.971E-01	9.868E-02	6.048
TH-228	+	74.82		3.768E+00	6.645E-01	6.030E-01	4.968E-02	6.248
	+	77.11		2.575E+00	3.688E-01	3.466E-01	2.892E-02	7.428

Sample ID : G1202061470 Acquisition date : 20-MAR-2010 11:11:45

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	1.976E+00	2.265E-01	9.774E-02	9.463E-03	20.214
	+	300.09		1.485E+00	1.296E+00	1.281E+00	7.840E-01	1.160
TH-232	+	338.32		2.044E+00	4.494E-01	4.433E-01	3.787E-02	4.612
	+	911.20	*	2.440E+00	4.713E-01	2.438E-01	3.129E-02	10.010
	+	968.97		2.401E+00	7.612E-01	3.971E-01	9.868E-02	6.048
TH-234	+	63.29	*	1.870E+00	2.041E+00	2.256E+00	4.019E-01	0.829
	+	92.59		3.423E+00	1.210E+00	1.001E+00	2.227E-01	3.420
U-235	+	89.96		2.310E+00	1.118E+00	1.245E+00	3.091E-01	1.856
	+	93.35		2.585E+00	9.304E-01	7.521E-01	1.748E-01	3.437
		143.76	*	-2.305E-02	2.241E-01	3.550E-01	5.914E-02	-0.065
		163.33		-4.212E-01	5.094E-01	7.624E-01	1.345E-01	-0.552
	+	185.72		1.784E-01	8.576E-02	6.669E-02	5.418E-03	2.675
		205.31		2.742E-01	5.673E-01	8.463E-01	1.523E-01	0.324
NP-237	+	86.48	*	1.126E+00	4.136E-01	3.597E-01	8.244E-02	3.131
		95.86		3.349E-01	1.034E+00	1.522E+00	3.662E-01	0.220
U-238	+	63.29	*	1.870E+00	2.041E+00	2.256E+00	4.019E-01	0.829
	+	92.59		3.423E+00	9.896E-01	1.001E+00	9.042E-02	3.420
ANH-511	+	511.00	*	1.513E-01	7.732E-02	4.845E-02	4.239E-03	3.122

---- 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	*	8.917E-02	4.206E-01	6.822E-01	6.330E-02	0.131
NA-22		1274.54	*	1.471E-02	5.546E-02	9.328E-02	7.954E-03	0.158
NA-24		1368.63	*	-4.548E+02	5.546E-02	Half-Life too short		
SC-46		889.28	*	3.950E-02	5.096E-02	8.753E-02	8.967E-03	0.451
	+	1120.55		2.436E-01	1.100E-01	1.507E-01	1.305E-02	1.617
V-48		944.13		-1.144E-01	1.426E+00	2.277E+00	2.292E-01	-0.050
		983.53	*	1.305E-02	1.062E-01	1.802E-01	1.772E-02	0.072
		1312.11		3.993E-02	1.291E-01	2.186E-01	1.896E-02	0.183
CR-51		320.08	*	4.916E-01	4.903E-01	8.447E-01	7.667E-02	0.582
MN-54		834.85	*	2.827E-02	4.421E-02	7.532E-02	7.517E-03	0.375
CO-56		846.77	*	-1.096E-02	4.514E-02	7.158E-02	7.187E-03	-0.153
		1037.84		-7.782E-02	3.546E-01	5.812E-01	5.724E-02	-0.134
	+	1238.28		2.462E-01	2.092E-01	2.209E-01	1.904E-02	1.115
		1771.35		7.421E-02	2.234E-01	3.812E-01	3.220E-02	0.195
CO-57		122.06	*	-1.904E-03	2.850E-02	4.569E-02	3.789E-03	-0.042
		136.47		-9.810E-02	2.323E-01	3.644E-01	3.191E-02	-0.269
CO-58		810.76	*	-2.883E-03	4.617E-02	7.480E-02	7.383E-03	-0.039
FE-59		1099.45	*	-1.056E-01	1.176E-01	1.796E-01	1.717E-02	-0.588
		1291.59		-9.149E-02	1.543E-01	2.373E-01	2.316E-02	-0.386
CO-60		1173.23		-1.060E-02	5.393E-02	8.793E-02	7.096E-03	-0.121
		1332.49	*	1.448E-02	4.070E-02	6.952E-02	6.085E-03	0.208
ZN-65		1115.54	*	-4.124E-02	1.183E-01	1.620E-01	1.413E-02	-0.255
SE-75		121.12		-1.343E-01	1.529E-01	2.355E-01	2.550E-02	-0.570
		136.00		-2.716E-02	4.551E-02	7.080E-02	5.771E-03	-0.384
		264.66	*	1.698E-02	4.938E-02	7.766E-02	6.739E-03	0.219
		279.54		1.580E-01	1.328E-01	2.080E-01	1.871E-02	0.760

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		400.66		4.850E-03	3.135E-01	5.078E-01	5.449E-02	0.010
SR-85		514.00	*	7.766E-02	4.692E-02	7.794E-02	6.827E-03	0.996
Y-88		898.04		-6.352E-03	5.026E-02	8.028E-02	8.284E-03	-0.079
		1836.06	*	5.351E-03	4.248E-02	7.186E-02	5.950E-03	0.074
Y-91		1204.77	*	-1.781E+01	2.892E+01	4.543E+01	3.732E+00	-0.392
NB-94		702.65	*	2.068E-02	3.629E-02	6.221E-02	5.724E-03	0.332
		871.09		-7.244E-03	3.967E-02	6.319E-02	6.420E-03	-0.115
NB-95		765.81	*	6.259E-02	5.744E-02	9.041E-02	8.677E-03	0.692
NB-95M		235.69	*	-3.498E-02	1.577E-01	2.289E-01	2.240E-02	-0.153
ZR-95		724.19		-2.533E-03	1.269E-01	1.802E-01	1.805E-02	-0.014
		756.73	*	3.813E-02	9.066E-02	1.515E-01	1.570E-02	0.252
MO-99		140.51		-2.441E-04	9.066E-02	Half-Life too short		
		181.07		1.195E-04	9.066E-02	Half-Life too short		
		366.42		-1.711E-04	9.066E-02	Half-Life too short		
		739.50	*	-6.280E-05	9.066E-02	Half-Life too short		
		777.92		-3.416E-04	9.066E-02	Half-Life too short		
TC-99M		140.51	*	-1.527E+20	9.066E-02	Half-Life too short		
RU-103		497.08	*	-2.450E-02	4.943E-02	8.050E-02	1.128E-02	-0.304
	+	610.33		1.790E+01	3.631E+00	3.771E+00	6.230E-01	4.746
RH-106		621.93	*	-3.394E-02	3.362E-01	5.542E-01	7.465E-02	-0.061
		1050.41		5.037E+00	2.890E+00	5.447E+00	5.082E-01	0.925
RU-106		621.93	*	-3.394E-02	3.362E-01	5.542E-01	4.957E-02	-0.061
		1050.41		5.037E+00	2.890E+00	5.447E+00	5.082E-01	0.925
AG-108M		433.94	*	-7.539E-04	3.051E-02	4.902E-02	4.248E-03	-0.015
		614.28		2.275E-02	4.015E-02	6.139E-02	5.659E-03	0.371
		722.91		3.217E-02	4.231E-02	6.548E-02	6.278E-03	0.491
AG-110M		657.76	*	-2.608E-02	3.870E-02	6.058E-02	5.558E-03	-0.430
		677.62		-2.589E-04	3.481E-01	5.746E-01	5.326E-02	0.000
		706.68		-1.423E-01	2.360E-01	3.694E-01	3.494E-02	-0.385
		763.94		3.276E-02	1.833E-01	2.654E-01	2.600E-02	0.123
		884.68		-1.645E-02	6.093E-02	9.620E-02	1.006E-02	-0.171
		937.49		-2.429E-02	1.433E-01	2.274E-01	2.357E-02	-0.107
		1384.29		-2.144E-02	1.929E-01	3.113E-01	2.810E-02	-0.069
		1505.03		-3.322E-01	3.134E-01	4.234E-01	3.737E-02	-0.785
SN-113		391.69	*	-5.189E-02	5.258E-02	7.955E-02	6.659E-03	-0.652
CD-115		260.90		1.639E-04	5.258E-02	Half-Life too short		
		492.35		3.479E-04	5.258E-02	Half-Life too short		
		527.90	*	5.096E-05	5.258E-02	Half-Life too short		
SN-117M		156.02		1.408E+00	3.671E+00	5.927E+00	4.729E-01	0.237
		158.56	*	-1.184E-02	8.931E-02	1.408E-01	1.123E-02	-0.084
TE-123M		159.00	*	8.438E-03	3.257E-02	5.226E-02	4.196E-03	0.161
SB-124		602.73		-1.319E-02	5.061E-02	7.120E-02	6.366E-03	-0.185
		645.85		3.277E-01	5.680E-01	9.808E-01	9.235E-02	0.334
		722.78		3.358E-01	4.638E-01	7.153E-01	6.806E-02	0.469
		1690.97	*	9.716E-03	8.745E-02	1.487E-01	1.336E-02	0.065
SB-125		427.87	*	2.364E-02	1.024E-01	1.674E-01	1.425E-02	0.141
	+	463.37		9.170E-01	5.239E-01	5.847E-01	5.379E-02	1.568
		600.60		2.893E-02	1.868E-01	3.144E-01	3.004E-02	0.092
		635.95		-2.465E-02	3.083E-01	5.083E-01	4.890E-02	-0.048

---- 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	*	2.358E+00	1.177E+01	1.917E+01	1.974E+00	0.123
I-126		388.63		3.384E-01	2.789E-01	4.834E-01	3.927E-02	0.700
		666.33	*	1.209E-01	3.770E-01	6.371E-01	5.705E-02	0.190
		753.82		3.211E-02	3.106E+00	5.092E+00	4.850E-01	0.006
SB-126		414.70		1.125E-02	1.404E-01	1.995E-01	1.647E-02	0.056
		666.50		3.742E-02	1.316E-01	2.219E-01	1.987E-02	0.169
		695.00		-3.737E-02	1.327E-01	2.139E-01	1.957E-02	-0.175
		697.00		-6.270E-02	4.489E-01	7.316E-01	6.704E-02	-0.086
		720.70	*	-2.386E-02	2.640E-01	3.716E-01	3.462E-02	-0.064
		856.80		1.749E-01	9.630E-01	1.378E+00	1.391E-01	0.127
SB-127		252.40		2.697E+00	1.817E+01	3.041E+01	1.286E+01	0.089
		473.00		-1.764E+00	7.157E+00	1.123E+01	1.695E+00	-0.157
		685.70	*	1.660E+00	5.598E+00	9.448E+00	1.346E+00	0.176
		783.70		1.623E+01	1.694E+01	2.936E+01	4.528E+00	0.553
I-131		80.19		-9.924E+00	1.354E+01	1.480E+01	1.294E+00	-0.670
		284.31		2.663E+00	3.024E+00	5.210E+00	4.782E-01	0.511
		364.49	*	7.050E-02	2.293E-01	3.807E-01	3.392E-02	0.185
		636.99		1.341E+00	3.413E+00	5.816E+00	5.517E-01	0.231
TE-132		49.72		-1.408E+00	1.008E+02	1.679E+02	2.207E+01	-0.008
		111.76		5.774E+01	2.003E+02	3.226E+02	4.294E+01	0.179
		116.30		9.969E+01	1.712E+02	2.817E+02	3.742E+01	0.354
		228.16	*	-3.294E+00	4.469E+00	7.190E+00	1.263E+00	-0.458
BA-133		81.00		-1.248E-01	1.423E-01	1.525E-01	2.372E-02	-0.819
	+	276.40		8.349E-01	6.151E-01	6.995E-01	9.890E-02	1.193
		302.85		-7.004E-02	1.668E-01	2.330E-01	3.052E-02	-0.301
		356.01	*	-3.942E-02	5.285E-02	7.035E-02	9.024E-03	-0.560
		383.85		-1.040E-01	3.199E-01	5.079E-01	6.157E-02	-0.205
I-133		529.87	*	8.586E-01	3.199E-01	Half-Life too short		
		875.33		3.316E+01	3.199E-01	Half-Life too short		
		1298.22		2.322E+01	3.199E-01	Half-Life too short		
CS-134		563.25		2.341E-01	3.955E-01	6.861E-01	6.155E-02	0.341
		569.33		2.292E-01	1.913E-01	3.458E-01	3.117E-02	0.663
		604.72		5.565E-03	3.708E-02	5.447E-02	4.882E-03	0.102
		795.86	*	8.606E-02	6.211E-02	9.972E-02	9.798E-03	0.863
		801.95		-2.562E-01	4.692E-01	6.786E-01	6.682E-02	-0.378
		1365.19		1.107E+00	1.351E+00	2.423E+00	2.224E-01	0.457
CS-135		268.22	*	1.739E-01	1.802E-01	2.768E-01	2.764E-02	0.628
I-135		546.56		4.570E+18	1.802E-01	Half-Life too short		
		836.80		3.089E+18	1.802E-01	Half-Life too short		
		1038.76		1.119E+18	1.802E-01	Half-Life too short		
		1131.51		2.340E+18	1.802E-01	Half-Life too short		
		1260.41	*	-1.273E+18	1.802E-01	Half-Life too short		
		1457.56		3.829E+20	1.802E-01	Half-Life too short		
		1678.03		-9.926E+17	1.802E-01	Half-Life too short		
		1791.20		-4.358E+18	1.802E-01	Half-Life too short		
CS-136		153.25		-7.899E-01	1.417E+00	2.194E+00	2.139E-01	-0.360
		176.60		-2.188E-01	7.441E-01	1.247E+00	1.122E-01	-0.175
		273.65		2.480E-01	1.240E+00	1.337E+00	1.256E-01	0.185
		340.55		5.902E-01	2.920E-01	4.614E-01	4.093E-02	1.279

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		818.51		-1.005E-01	1.221E-01	1.826E-01	1.810E-02	-0.550
		1048.07	*	8.955E-02	1.855E-01	3.220E-01	3.122E-02	0.278
		1235.36		1.608E+00	1.138E+00	1.835E+00	2.125E-01	0.876
BA-137M		661.66	*	-8.205E-03	3.986E-02	6.492E-02	5.792E-03	-0.126
CS-137		661.66	*	-8.667E-03	4.211E-02	6.858E-02	6.129E-03	-0.126
CE-139		165.86	*	-1.147E-02	3.473E-02	5.413E-02	4.309E-03	-0.212
BA-140		162.66		-8.540E-01	1.414E+00	2.158E+00	1.854E-01	-0.396
		304.85		-9.494E-01	2.331E+00	3.430E+00	1.005E+00	-0.277
		423.72		-1.661E+00	3.445E+00	5.308E+00	1.742E+00	-0.313
		537.26	*	-4.801E-02	4.427E-01	7.369E-01	2.503E-01	-0.065
LA-140	+	328.76		6.501E-01	6.735E-01	9.107E-01	8.274E-02	0.714
		487.02		-9.901E-02	2.354E-01	3.635E-01	3.339E-02	-0.272
		815.77		-9.141E-02	5.224E-01	8.363E-01	9.009E-02	-0.109
		1596.21	*	-8.394E-02	1.473E-01	2.164E-01	1.896E-02	-0.388
CE-141		145.44	*	5.190E-02	8.156E-02	1.333E-01	1.092E-02	0.389
CE-143		57.36		-3.216E-02	8.156E-02	Half-Life too short		
		293.27	*	3.756E-02	8.156E-02	Half-Life too short		
		664.57		9.842E-03	8.156E-02	Half-Life too short		
		721.93		3.600E-02	8.156E-02	Half-Life too short		
CE-144		80.12		-2.731E+00	3.790E+00	4.148E+00	3.572E-01	-0.658
		133.52	*	-8.688E-02	2.279E-01	3.584E-01	5.377E-02	-0.242
PM-144		476.78		-1.851E-02	7.710E-02	1.212E-01	1.134E-02	-0.153
		618.01		-9.478E-03	3.361E-02	5.462E-02	5.015E-03	-0.174
		696.49	*	-1.008E-02	3.807E-02	6.144E-02	5.632E-03	-0.164
PR-144		696.51	*	-7.404E-01	2.862E+00	4.622E+00	4.233E-01	-0.160
		1489.16		8.248E+00	1.207E+01	2.178E+01	1.923E+00	0.379
PM-146		453.88	*	3.378E-02	4.762E-02	7.988E-02	8.379E-03	0.423
		633.25		2.287E-01	1.543E+00	2.583E+00	9.886E-01	0.089
		735.93		-1.463E-02	1.605E-01	2.613E-01	7.391E-02	-0.056
		747.24		1.820E-03	1.151E-01	1.888E-01	2.854E-02	0.010
ND-147	+	91.11		1.228E+00	5.241E-01	8.843E-01	8.689E-02	1.388
		319.41		4.305E-02	6.020E+00	9.887E+00	8.534E-01	0.004
		531.02	*	-2.701E-01	1.017E+00	1.676E+00	2.525E-01	-0.161
PM-149		285.90	*	2.598E-04	1.017E+00	Half-Life too short		
EU-152		121.78		-2.790E-03	7.947E-02	1.276E-01	1.227E-02	-0.022
		244.70		-1.131E-01	3.732E-01	5.364E-01	4.591E-02	-0.211
		344.28	*	-9.983E-02	1.094E-01	1.689E-01	1.524E-02	-0.591
		778.90		-1.807E-01	2.830E-01	4.357E-01	4.214E-02	-0.415
	+	964.08		7.463E-01	4.109E-01	6.526E-01	6.496E-02	1.144
		1085.87		-6.237E-02	4.310E-01	7.092E-01	6.390E-02	-0.088
		1112.07		1.971E-01	3.555E-01	5.937E-01	5.196E-02	0.332
		1408.01		2.515E-01	1.862E-01	3.526E-01	3.109E-02	0.713
GD-153		69.67		5.014E-02	2.050E+00	3.021E+00	2.351E-01	0.017
		97.43	*	-1.226E-01	1.052E-01	1.423E-01	1.245E-02	-0.861
		103.18		-1.331E-01	1.278E-01	1.979E-01	1.685E-02	-0.673
EU-154		123.07		1.017E-02	5.748E-02	9.305E-02	1.031E-02	0.109
		723.31		1.513E-01	1.949E-01	3.017E-01	3.061E-02	0.501
		873.19		2.322E-01	3.328E-01	5.692E-01	7.435E-02	0.408
		996.26		-4.084E-01	3.968E-01	5.928E-01	1.070E-01	-0.689

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1004.73		1.028E-02	2.456E-01	4.131E-01	5.142E-02	0.025
		1274.44	*	3.881E-02	1.563E-01	2.625E-01	2.967E-02	0.148
EU-155	+	86.55		4.591E-01	1.385E-01	2.046E-01	1.911E-02	2.244
		105.31	*	3.799E-02	1.182E-01	1.936E-01	1.657E-02	0.196
TB-160	+	86.79		1.309E+00	3.947E-01	5.827E-01	5.410E-02	2.247
		197.04		2.199E-01	6.620E-01	1.122E+00	9.226E-02	0.196
		215.65		6.383E-01	9.304E-01	1.430E+00	1.197E-01	0.446
		298.57		2.152E-01	1.966E-01	2.320E-01	2.012E-02	0.928
		879.36	*	-6.715E-02	1.831E-01	2.867E-01	2.924E-02	-0.234
		962.29		1.891E+00	6.916E-01	1.232E+00	1.227E-01	1.535
		966.15		1.527E+00	3.479E-01	6.452E-01	6.414E-02	2.367
		1177.93		8.431E-03	4.666E-01	7.738E-01	6.262E-02	0.011
		1271.85		7.555E-01	9.777E-01	1.708E+00	1.453E-01	0.442
HO-166M		80.57		-3.352E-01	4.038E-01	4.377E-01	3.787E-02	-0.766
	+	184.41		1.417E-01	6.813E-02	7.245E-02	5.877E-03	1.956
		280.46		1.438E-02	9.553E-02	1.404E-01	1.217E-02	0.102
		410.95		3.606E-01	2.862E-01	4.482E-01	3.688E-02	0.805
		711.68	*	-3.069E-02	6.524E-02	1.031E-01	9.550E-03	-0.298
		752.31		-1.499E-01	3.097E-01	4.867E-01	4.632E-02	-0.308
		810.29		-4.194E-02	6.577E-02	1.008E-01	9.927E-03	-0.416
TA-182		67.75		-6.236E-02	1.288E-01	1.980E-01	1.516E-02	-0.315
		100.11		1.775E-01	2.003E-01	3.353E-01	2.892E-02	0.529
		152.43		-1.843E-01	4.002E-01	6.229E-01	4.977E-02	-0.296
		222.11		3.990E-02	4.052E-01	6.819E-01	5.742E-02	0.059
	+	1121.30		6.634E-01	2.994E-01	3.998E-01	3.460E-02	1.659
		1189.05		3.151E-01	3.903E-01	6.840E-01	5.570E-02	0.461
		1221.41	*	-5.680E-02	2.212E-01	3.571E-01	2.960E-02	-0.159
		1231.02		1.062E-01	6.081E-01	8.810E-01	7.340E-02	0.121
IR-192	+	295.96		1.286E+00	2.557E-01	3.494E-01	3.053E-02	3.681
		308.46		1.818E-02	1.089E-01	1.808E-01	1.573E-02	0.101
		316.51	*	-2.292E-02	3.964E-02	6.290E-02	5.445E-03	-0.364
		468.07		6.448E-02	7.966E-02	1.208E-01	1.111E-02	0.534
HG-203		70.83		1.216E+00	1.750E+00	2.637E+00	4.131E-01	0.461
		72.87		2.061E+00	1.105E+00	1.679E+00	2.553E-01	1.227
		279.20	*	8.010E-02	5.126E-02	8.167E-02	7.258E-03	0.981
BI-207		72.81		3.717E-01	2.188E-01	3.409E-01	2.728E-02	1.090
	+	74.97		1.086E+00	1.912E-01	2.596E-01	2.120E-02	4.185
		569.70		2.399E-02	2.972E-02	5.247E-02	4.671E-03	0.457
		1063.66	*	3.062E-02	6.255E-02	1.084E-01	9.986E-03	0.283
		1770.23		3.538E-01	3.730E-01	7.462E-01	6.305E-02	0.474
PB-210		46.54	*	9.560E-04	3.352E+00	5.528E+00	5.107E-01	0.000
PB-211		404.85	*	-5.048E-01	1.041E+00	1.372E+00	6.631E-01	-0.368
		427.09		5.674E-01	1.719E+00	2.798E+00	1.293E+00	0.203
		832.01		1.228E-01	1.169E+00	1.914E+00	9.971E-01	0.064
BI-212	+	727.33	*	2.345E+00	8.766E-01	1.308E+00	1.698E-01	1.793
		785.37		4.777E-02	3.704E+00	6.054E+00	5.878E-01	0.008
		1620.50		2.067E+00	2.361E+00	4.342E+00	3.792E-01	0.476
RN-219	+	271.23		7.967E-01	3.678E-01	4.841E-01	4.978E-02	1.646
		401.81	*	1.652E-01	4.728E-01	7.799E-01	1.140E-01	0.212

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-2.843E-01	3.197E-01	3.446E-01	2.998E-02	-0.825
		83.79		2.724E-01	1.424E-01	2.217E-01	1.988E-02	1.229
		94.87		1.186E+00	5.292E-01	8.351E-01	7.420E-02	1.420
		144.24		4.512E-01	7.469E-01	1.216E+00	1.106E-01	0.371
		154.21		2.601E-01	4.215E-01	6.869E-01	6.092E-02	0.379
	+	269.46		6.190E-01	2.839E-01	3.671E-01	3.238E-02	1.686
		323.87	*	1.083E-01	7.959E-01	1.156E+00	2.003E-01	0.094
	+	338.28		8.113E+00	1.911E+00	2.710E+00	3.256E-01	2.994
AC-227		79.69		-1.375E+00	1.868E+00	2.030E+00	3.494E-01	-0.677
		235.96		1.747E-01	1.833E-01	2.824E-01	2.895E-02	0.619
		256.23	*	-8.000E-02	2.467E-01	4.031E-01	4.855E-02	-0.198
	+	299.98		1.634E+00	1.037E+00	1.682E+00	2.142E-01	0.972
		304.50		-8.296E-03	1.880E+00	2.715E+00	4.494E-01	-0.003
		334.37		-1.884E+00	2.230E+00	2.967E+00	4.616E-01	-0.635
TH-227		79.80		-1.799E+00	2.474E+00	2.676E+00	5.825E-01	-0.672
		235.96		1.747E-01	1.832E-01	2.824E-01	2.728E-02	0.619
		256.23	*	-8.000E-02	2.468E-01	4.031E-01	5.482E-02	-0.198
	+	299.98		1.634E+00	1.037E+00	1.682E+00	2.142E-01	0.972
		304.50		-8.296E-03	1.880E+00	2.715E+00	4.494E-01	-0.003
		334.37		-1.884E+00	2.230E+00	2.967E+00	4.616E-01	-0.635
TH-229		85.43		7.028E-01	2.475E-01	3.908E-01	3.571E-02	1.798
	+	88.47		5.819E-01	1.754E-01	2.584E-01	2.422E-02	2.252
		193.51	*	2.917E-02	5.472E-01	9.257E-01	7.583E-02	0.032
	+	210.85		3.874E+00	1.641E+00	1.750E+00	1.459E-01	2.214
PA-231		283.69	*	1.068E+00	1.529E+00	2.529E+00	3.697E-01	0.422
	+	301.36		1.050E+00	6.650E-01	1.099E+00	1.339E-01	0.955
TH-231		81.07		-2.843E-01	3.197E-01	3.446E-01	2.998E-02	-0.825
		83.79		2.724E-01	1.424E-01	2.217E-01	1.988E-02	1.229
		94.87		1.186E+00	5.292E-01	8.351E-01	7.420E-02	1.420
		144.24		4.512E-01	7.469E-01	1.216E+00	1.106E-01	0.371
		154.21		2.601E-01	4.215E-01	6.869E-01	6.092E-02	0.379
	+	269.46		6.190E-01	2.839E-01	3.671E-01	3.238E-02	1.686
		323.87	*	1.083E-01	7.959E-01	1.156E+00	2.003E-01	0.094
	+	338.28		8.113E+00	1.911E+00	2.710E+00	3.256E-01	2.994
PA-233	+	300.13		7.394E-01	4.726E-01	7.635E-01	1.134E-01	0.968
		311.90	*	-2.652E-02	6.644E-02	1.067E-01	9.487E-03	-0.249
		340.48		2.059E+00	9.641E-01	1.358E+00	3.264E-01	1.516
PA-234		94.67		5.649E-01	2.052E-01	3.172E-01	3.996E-02	1.781
		98.44		9.107E-03	1.019E-01	1.581E-01	8.822E-02	0.058
		111.00		3.747E-02	2.017E-01	3.282E-01	3.902E-02	0.114
		131.20		-6.786E-02	1.228E-01	1.922E-01	1.564E-02	-0.353
		569.50		2.298E-01	2.652E-01	4.697E-01	4.181E-02	0.489
		733.00		2.541E-01	4.609E-01	6.919E-01	1.557E-01	0.367
		880.51		2.015E-01	3.195E-01	5.453E-01	5.564E-02	0.370
		883.24		-1.258E-02	3.522E-01	5.680E-01	3.831E-01	-0.022
		926.50		-1.822E-02	2.036E-01	3.254E-01	8.409E-02	-0.056
		946.00	*	-2.195E-01	3.430E-01	5.127E-01	9.981E-02	-0.428
		949.00		-1.266E-01	5.110E-01	8.024E-01	8.056E-02	-0.158
PA-234M		766.42		2.751E+01	2.021E+01	2.450E+01	1.247E+01	1.123

Sample ID : G1202061470 Acquisition date : 20-MAR-2010 11:11:45

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		1001.03	*	-3.737E-01	5.231E+00	8.721E+00	9.527E-01	-0.043
NP-239		99.53		1.049E-01	1.753E-01	2.908E-01	2.515E-02	0.361
		103.37		-7.543E-02	1.115E-01	1.756E-01	1.494E-02	-0.429
		106.12		5.772E-02	9.271E-02	1.535E-01	1.294E-02	0.376
		117.23	*	2.081E-01	4.238E-01	6.965E-01	5.772E-02	0.299
		228.18		-1.797E-01	2.402E-01	3.888E-01	3.290E-02	-0.462
	+	277.60		4.122E-01	3.002E-01	3.463E-01	3.001E-02	1.190
AM-241		59.54	*	8.004E-02	1.777E-01	2.693E-01	2.121E-02	0.297
CM-247	+	278.00		1.751E+00	1.275E+00	1.467E+00	1.272E-01	1.193
		287.50		-8.883E-01	1.280E+00	2.032E+00	1.763E-01	-0.437
		402.40	*	1.096E-02	4.553E-02	7.219E-02	5.896E-03	0.152
CF-249		252.80		5.947E-02	9.718E-01	1.622E+00	1.394E-01	0.037
		333.37		-1.316E-01	2.513E-01	3.199E-01	2.741E-02	-0.411
		388.16	*	2.968E-02	4.491E-02	7.561E-02	6.146E-03	0.393
CF-251		177.52	*	-7.539E-02	1.293E-01	2.138E-01	1.722E-02	-0.353
		227.38		4.979E-02	3.905E-01	6.570E-01	5.556E-02	0.076
		285.41		8.188E-01	2.231E+00	3.756E+00	3.258E-01	0.218

VAX/VMS Nuclide Identification Report Generated

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*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
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*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061470    *
* Acquisition date : 20-MAR-2010 11:11:45 Detector SN#     :               *
* Detector ID        : GAM12                Sensitivity      : 5.000       *
* Geometry           : CAN                  Energy tolerance: 1.500        *
* Elapsed live time:    0 02:00:00.00       Abundance limit : 75.000       *
* Elapsed real time:    0 02:00:01.69       Half life ratio :  8.000       *
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*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date        : 25-FEB-2010 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G1202061470          Analyst initials: MXR1          *
* Batch Number       : 961099               Sample Quantity : 1.3366E+02 GRAM *
* Recovery           :    1.00000           Carrier Weight :    0.00000    *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
* Standard Weight  :   0.00000                                              *
* CALIB. DATE/TIME : 25-FEB-2010 20:55:17 MS Isotope      :                 *
* MSD DPM            :    0.000             MSD Isotope     :              *
* LCS DPM            :    0.000             LCS Isotope     :              *
* LCSD DPM           :    0.000             LCSD Isotope    :              *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.653E+01	3.778E+00	4.204E-01	0.000E+00
CD-109	3.907E+00	1.154E+00	1.293E+00	0.000E+00
SN-126	3.774E-01	1.115E-01	1.255E-01	0.000E+00
TL-208	7.590E-01	1.058E-01	5.889E-02	0.000E+00
BI-211	4.802E+00	6.247E-01	3.548E-01	0.000E+00
PB-212	1.976E+00	2.220E-01	1.011E-01	0.000E+00
BI-214	1.510E+00	2.323E-01	1.140E-01	0.000E+00
PB-214	1.743E+00	2.455E-01	1.290E-01	0.000E+00
RA-224	4.837E+00	1.391E+00	1.084E+00	0.000E+00
RA-226	1.510E+00	2.323E-01	1.140E-01	0.000E+00
AC-228	2.440E+00	4.619E-01	2.463E-01	0.000E+00
RA-228	2.440E+00	4.619E-01	2.463E-01	0.000E+00
TH-228	1.976E+00	2.220E-01	1.011E-01	0.000E+00
TH-232	2.440E+00	4.619E-01	2.463E-01	0.000E+00
TH-234	1.870E+00	2.000E+00	2.387E+00	0.000E+00
U-235	-2.305E-02	2.196E-01	3.705E-01	0.000E+00
NP-237	1.126E+00	4.053E-01	3.787E-01	0.000E+00
U-238	1.870E+00	2.000E+00	2.387E+00	0.000E+00
ANH-511	1.513E-01	7.578E-02	4.946E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)		
BE-7	8.917E-02	4.122E-01	6.974E-01	0.000E+00	NOT IDENT.
NA-22	1.471E-02	5.435E-02	9.368E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	4.935E+09	0.000E+00	0.000E+00	SHORT HLIF
SC-46	3.950E-02	4.994E-02	8.848E-02	0.000E+00	FAIL ABUN
V-48	1.305E-02	1.041E-01	1.819E-01	0.000E+00	NOT IDENT.
CR-51	4.916E-01	4.805E-01	8.696E-01	0.000E+00	NOT IDENT.
MN-54	2.827E-02	4.333E-02	7.623E-02	0.000E+00	NOT IDENT.
CO-56	-1.096E-02	4.424E-02	7.242E-02	0.000E+00	FAIL ABUN

CO-57	-1.904E-03	2.793E-02	4.782E-02	0.000E+00	NOT IDENT.
CO-58	-2.883E-03	4.525E-02	7.574E-02	0.000E+00	NOT IDENT.
FE-59	-1.056E-01	1.153E-01	1.809E-01	0.000E+00	NOT IDENT.
CO-60	1.448E-02	3.988E-02	6.977E-02	0.000E+00	NOT IDENT.
ZN-65	-4.124E-02	1.159E-01	1.631E-01	0.000E+00	NOT IDENT.
SE-75	1.698E-02	4.839E-02	8.021E-02	0.000E+00	NOT IDENT.
SR-85	7.766E-02	4.598E-02	7.957E-02	0.000E+00	NOT IDENT.
Y-88	5.351E-03	4.163E-02	7.169E-02	0.000E+00	NOT IDENT.
Y-91	-1.781E+01	2.834E+01	4.568E+01	0.000E+00	NOT IDENT.
NB-94	2.068E-02	3.556E-02	6.316E-02	0.000E+00	NOT IDENT.
NB-95	6.259E-02	5.629E-02	9.165E-02	0.000E+00	NOT IDENT.
NB-95M	-3.498E-02	1.545E-01	2.369E-01	0.000E+00	NOT IDENT.
ZR-95	3.813E-02	8.885E-02	1.536E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	9.787E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.281E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.450E-02	4.844E-02	8.223E-02	0.000E+00	FAIL ABUN
RH-106	-3.394E-02	3.295E-01	5.638E-01	0.000E+00	NOT IDENT.
RU-106	-3.394E-02	3.295E-01	5.638E-01	0.000E+00	NOT IDENT.
AG-108M	-7.539E-04	2.990E-02	5.020E-02	0.000E+00	NOT IDENT.
AG-110M	-2.608E-02	3.793E-02	6.158E-02	0.000E+00	NOT IDENT.
SN-113	-5.189E-02	5.153E-02	8.160E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.342E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-1.184E-02	8.753E-02	1.468E-01	0.000E+00	NOT IDENT.
TE-123M	8.438E-03	3.192E-02	5.445E-02	0.000E+00	NOT IDENT.
SB-124	9.716E-03	8.570E-02	1.486E-01	0.000E+00	NOT IDENT.
SB-125	2.364E-02	1.003E-01	1.715E-01	0.000E+00	FAIL ABUN
TE-125M	2.358E+00	1.153E+01	2.010E+01	0.000E+00	NOT IDENT.
I-126	1.209E-01	3.695E-01	6.474E-01	0.000E+00	NOT IDENT.
SB-126	-2.386E-02	2.587E-01	3.770E-01	0.000E+00	NOT IDENT.
SB-127	1.660E+00	5.486E+00	9.596E+00	0.000E+00	NOT IDENT.
I-131	7.050E-02	2.247E-01	3.910E-01	0.000E+00	NOT IDENT.
TE-132	-3.294E+00	4.379E+00	7.445E+00	0.000E+00	NOT IDENT.
BA-133	-3.942E-02	5.179E-02	7.229E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.334E+06	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.606E-02	6.086E-02	1.010E-01	0.000E+00	NOT IDENT.
CS-135	1.739E-01	1.766E-01	2.858E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.204E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.955E-02	1.818E-01	3.246E-01	0.000E+00	NOT IDENT.
BA-137M	-8.205E-03	3.906E-02	6.597E-02	0.000E+00	NOT IDENT.
CS-137	-8.667E-03	4.126E-02	6.970E-02	0.000E+00	NOT IDENT.
CE-139	-1.147E-02	3.403E-02	5.635E-02	0.000E+00	NOT IDENT.
BA-140	-4.801E-02	4.339E-01	7.517E-01	0.000E+00	NOT IDENT.
LA-140	-8.394E-02	1.444E-01	2.164E-01	0.000E+00	FAIL ABUN
CE-141	5.190E-02	7.993E-02	1.391E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.287E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-8.688E-02	2.233E-01	3.745E-01	0.000E+00	NOT IDENT.
PM-144	-1.008E-02	3.731E-02	6.239E-02	0.000E+00	NOT IDENT.
PR-144	-7.404E-01	2.805E+00	4.693E+00	0.000E+00	NOT IDENT.
PM-146	3.378E-02	4.667E-02	8.173E-02	0.000E+00	NOT IDENT.
ND-147	-2.701E-01	9.964E-01	1.710E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.091E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-9.983E-02	1.072E-01	1.736E-01	0.000E+00	FAIL ABUN
GD-153	-1.226E-01	1.031E-01	1.495E-01	0.000E+00	NOT IDENT.
EU-154	3.881E-02	1.532E-01	2.636E-01	0.000E+00	NOT IDENT.
EU-155	3.799E-02	1.158E-01	2.032E-01	0.000E+00	FAIL ABUN
TB-160	-6.715E-02	1.794E-01	2.899E-01	0.000E+00	FAIL ABUN
HO-166M	-3.069E-02	6.394E-02	1.047E-01	0.000E+00	FAIL ABUN
TA-182	-5.680E-02	2.168E-01	3.590E-01	0.000E+00	FAIL ABUN
IR-192	-2.292E-02	3.885E-02	6.476E-02	0.000E+00	FAIL ABUN
HG-203	8.010E-02	5.024E-02	8.428E-02	0.000E+00	NOT IDENT.
BI-207	3.062E-02	6.130E-02	1.092E-01	0.000E+00	FAIL ABUN
PB-210	9.560E-04	3.285E+00	5.879E+00	0.000E+00	NOT IDENT.
PB-211	-5.048E-01	1.020E+00	1.407E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.591E-01	1.327E+00	0.000E+00	FAIL ABUN
RN-219	1.652E-01	4.633E-01	7.997E-01	0.000E+00	FAIL ABUN
RA-223	1.083E-01	7.800E-01	1.190E+00	0.000E+00	FAIL ABUN
AC-227	-8.000E-02	2.418E-01	4.166E-01	0.000E+00	FAIL ABUN
TH-227	-8.000E-02	2.418E-01	4.166E-01	0.000E+00	FAIL ABUN
TH-229	2.917E-02	5.363E-01	9.613E-01	0.000E+00	FAIL ABUN
PA-231	1.068E+00	1.499E+00	2.609E+00	0.000E+00	FAIL ABUN
TH-231	1.083E-01	7.800E-01	1.190E+00	0.000E+00	FAIL ABUN
PA-233	-2.652E-02	6.511E-02	1.098E-01	0.000E+00	FAIL ABUN
PA-234	-2.195E-01	3.362E-01	5.178E-01	0.000E+00	NOT IDENT.
PA-234M	-3.737E-01	5.126E+00	8.797E+00	0.000E+00	NOT IDENT.
NP-239	2.081E-01	4.154E-01	7.295E-01	0.000E+00	FAIL ABUN
AM-241	8.004E-02	1.742E-01	2.852E-01	0.000E+00	NOT IDENT.
CM-247	1.096E-02	4.462E-02	7.402E-02	0.000E+00	FAIL ABUN
CF-249	2.968E-02	4.401E-02	7.757E-02	0.000E+00	NOT IDENT.

CF-251	-7.539E-02	1.267E-01	2.224E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:13:08.01

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*****************************************************************************
*                            GEL Laboratories LLC                            *
*                              2040 Savage Road                              *
*                            Charleston, SC 29414                            *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061470.CNF;1
Sample date       : 25-FEB-2010 12:00:00 Acquisition date : 20-MAR-2010 11:11:45
Sample ID         : G1202061470          Sample quantity  : 1.33660E+02 GRAM
Detector name     : GAM12                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:01.69  0.0%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               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	1490	10.66*	1.075E+00	3.653E+01	3.653E+01	10.56
CD-109	88.03	276	3.70*	5.547E+00	3.774E+00	3.907E+00	30.15
SN-126	64.28	79	9.60	3.221E+00	7.208E-01	7.208E-01	108.62
	86.94	276	8.90	5.547E+00	1.569E+00	1.569E+00	50.45
	87.57	276	37.00*	5.547E+00	3.774E-01	3.774E-01	30.15
TL-208	277.37	89	6.60	4.202E+00	9.019E-01	9.019E-01	73.39
	583.19	543	85.00*	2.364E+00	7.590E-01	7.590E-01	14.22
	860.56	64	12.50	1.693E+00	8.521E-01	8.521E-01	64.99
BI-211	72.87	------	1.23	4.356E+00	------	Line Not Found	------
	351.06	778	12.92*	3.521E+00	4.802E+00	4.802E+00	13.27
PB-212	74.82	627	10.28	4.550E+00	3.768E+00	3.768E+00	20.11
	77.11	749	17.10	4.775E+00	2.575E+00	2.575E+00	14.32
	238.63	1434	43.60*	4.675E+00	1.976E+00	1.976E+00	11.47
	300.09	69	3.30	3.967E+00	1.485E+00	1.485E+00	63.06
BI-214	609.32	557	45.49*	2.279E+00	1.510E+00	1.510E+00	15.70
	1120.29	96	14.92	1.341E+00	1.350E+00	1.350E+00	45.64
	1764.49	109	15.30	9.452E-01	2.111E+00	2.111E+00	21.72
PB-214	74.82	627	5.80	4.550E+00	6.678E+00	6.678E+00	19.30
	77.11	749	9.70	4.775E+00	4.539E+00	4.539E+00	16.53
	242.00	327	7.25	4.636E+00	2.736E+00	2.736E+00	29.91
	295.22	425	18.42	4.014E+00	1.616E+00	1.616E+00	20.90
	351.93	778	35.60*	3.521E+00	1.743E+00	1.743E+00	14.37
RA-224	240.99	327	4.10*	4.636E+00	4.837E+00	4.837E+00	29.34
RA-226	609.32	557	45.49*	2.279E+00	1.510E+00	1.510E+00	15.70
	1120.29	96	14.92	1.341E+00	1.350E+00	1.350E+00	45.64
	1764.49	109	15.30	9.452E-01	2.111E+00	2.111E+00	21.72
AC-228	338.32	298	11.27	3.627E+00	2.044E+00	2.044E+00	46.36
	911.20	361	25.80*	1.610E+00	2.440E+00	2.440E+00	19.31
	968.97	206	15.80	1.525E+00	2.401E+00	2.401E+00	31.70
RA-228	338.32	298	11.27	3.627E+00	2.044E+00	2.044E+00	46.36
	911.20	361	25.80*	1.610E+00	2.440E+00	2.440E+00	19.31
	968.97	206	15.80	1.525E+00	2.401E+00	2.401E+00	31.70

Sample ID : G1202061470 Acquisition date : 20-MAR-2010 11:11:45

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	627	10.28	4.550E+00	3.768E+00	3.768E+00	17.64
	77.11	749	17.10	4.775E+00	2.575E+00	2.575E+00	14.32
	238.63	1434	43.60*	4.675E+00	1.976E+00	1.976E+00	11.47
	300.09	69	3.30	3.967E+00	1.485E+00	1.485E+00	87.25
TH-232	338.32	298	11.27	3.627E+00	2.044E+00	2.044E+00	21.98
	911.20	361	25.80*	1.610E+00	2.440E+00	2.440E+00	19.31
	968.97	206	15.80	1.525E+00	2.401E+00	2.401E+00	31.70
TH-234	63.29	79	3.70*	3.221E+00	1.870E+00	1.870E+00	109.11
	92.59	301	4.23	5.838E+00	3.423E+00	3.423E+00	35.34
U-235	89.96	163	3.47	5.699E+00	2.310E+00	2.310E+00	48.38
	93.35	301	5.60	5.838E+00	2.585E+00	2.585E+00	35.99
	143.76	------	10.96*	6.165E+00	------	Line Not Found	------
	163.33	------	5.08	5.865E+00	------	Line Not Found	------
	185.72	199	57.20	5.484E+00	1.784E-01	1.784E-01	48.08
	205.31	------	5.01	5.165E+00	------	Line Not Found	------
NP-237	86.48	276	12.40*	5.547E+00	1.126E+00	1.126E+00	36.72
	95.86	------	2.68	5.962E+00	------	Line Not Found	------
U-238	63.29	79	3.70*	3.221E+00	1.870E+00	1.870E+00	109.11
	92.59	301	4.23	5.838E+00	3.423E+00	3.423E+00	28.91
ANH-511	511.00	142	100.00*	2.633E+00	1.513E-01	1.513E-01	51.12

Flag: "*" = Keyline

Sample ID : G1202061470 Acquisition date : 20-MAR-2010 11:11:45

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	3.653E+01	3.653E+01	0.386E+01	10.56	
CD-109	461.40D	1.04	3.774E+00	3.907E+00	1.178E+00	30.15	
SN-126	2.30E+05Y	1.00	3.774E-01	3.774E-01	1.138E-01	30.15	
TL-208	1.41E+10Y	1.00	7.590E-01	7.590E-01	1.079E-01	14.22	
BI-211	7.04E+08Y	1.00	4.802E+00	4.802E+00	0.637E+00	13.27	
PB-212	1.41E+10Y	1.00	1.976E+00	1.976E+00	0.227E+00	11.47	
BI-214	1600.00Y	1.00	1.510E+00	1.510E+00	0.237E+00	15.70	
PB-214	1600.00Y	1.00	1.743E+00	1.743E+00	0.251E+00	14.37	
RA-224	1.41E+10Y	1.00	4.837E+00	4.837E+00	1.419E+00	29.34	
RA-226	1600.00Y	1.00	1.510E+00	1.510E+00	0.237E+00	15.70	
AC-228	1.41E+10Y	1.00	2.440E+00	2.440E+00	0.471E+00	19.31	
RA-228	1.41E+10Y	1.00	2.440E+00	2.440E+00	0.471E+00	19.31	
TH-228	1.41E+10Y	1.00	1.976E+00	1.976E+00	0.227E+00	11.47	
TH-232	1.41E+10Y	1.00	2.440E+00	2.440E+00	0.471E+00	19.31	
TH-234	4.47E+09Y	1.00	1.870E+00	1.870E+00	2.041E+00	109.11	
U-235	7.04E+08Y	1.00	1.784E-01	1.784E-01	0.858E-01	48.08	K
NP-237	2.14E+06Y	1.00	1.126E+00	1.126E+00	0.414E+00	36.72	
U-238	4.47E+09Y	1.00	1.870E+00	1.870E+00	2.041E+00	109.11	
ANH-511	1.00E+09Y	1.00	1.513E-01	1.513E-01	0.773E-01	51.12	
		Total Activity :	7.231E+01	7.244E+01			

Grand Total Activity : 7.231E+01 7.244E+01

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

Sample ID : G1202061470 Acquisition date : 20-MAR-2010 11:11:45

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.80	197	366	1.10	418.88	414	12	2.73E-02	41.5	5.09E+00	T
0	270.07	131	207	1.35	539.43	535	10	1.82E-02	45.0	4.28E+00	T
0	328.29	50	188	1.08	655.89	650	9	6.93E-03	****	3.71E+00	T
0	409.11	52	151	1.55	817.53	812	11	7.21E-03	97.0	3.14E+00	
0	463.47	97	142	1.86	926.27	920	14	1.34E-02	56.4	2.85E+00	T
0	727.28	109	69	1.51	1453.84	1448	11	1.52E-02	35.1	1.96E+00	T
0	768.10	80	71	1.31	1535.47	1530	11	1.10E-02	46.9	1.87E+00	
0	794.33	71	67	0.81	1587.94	1581	14	9.88E-03	54.1	1.82E+00	
1	964.34	59	46	2.00	1927.87	1921	24	8.25E-03	54.2	1.53E+00	T
0	1238.30	59	100	1.55	2475.61	2468	18	8.15E-03	84.5	1.23E+00	T
0	1630.80	18	14	1.81	3260.19	3254	11	2.52E-03	92.2	9.93E-01	
0	1729.50	33	0	2.36	3457.45	3452	11	4.58E-03	34.8	9.56E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 13:13:12.27

```
*****************************************************************************
*                            GEL Laboratories LLC                            *
*                              2040 Savage Road                              *
*                            Charleston, SC 29414                            *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061470.CNF;1  *
* Acquisition date : 20-MAR-2010 11:11:45  Detector SN#    :                *
* Detector ID      : GAM12                 Sensitivity     : 5.00000        *
* Geometry         : CAN                   Energy tolerance: 1.50000        *
* Elapsed live time: 0 02:00:00.00         Abundance limit : 75.00000       *
* Elapsed real time: 0 02:00:01.69         Half life ratio : 8.00000        *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date      : 25-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID        : G1202061470           Analyst initials: MXR1           *
* Batch Number     : 961099                Sample Quantity : 1.33660E+02 GRAM *
*****************************************************************************
*                                                                           *
*                                  QC DATA                                  *
*                                                                           *
* CALIB. DATE/TIME : 25-FEB-2010 20:55:17.3MS Isotope      :                *
* MSD ID           :                       MSD Isotope     :                *
* LCS ID           : 1032-A                LCS Isotope     :                *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.653E+01	3.855E+00	4.196E-01	3.806E-02	87.039
CD-109	3.907E+00	1.178E+00	1.229E+00	1.157E-01	3.179
SN-126	3.774E-01	1.138E-01	1.193E-01	1.117E-02	3.165
TL-208	7.590E-01	1.079E-01	5.782E-02	5.498E-03	13.128
BI-211	4.802E+00	6.374E-01	3.452E-01	3.076E-02	13.910
PB-212	1.976E+00	2.265E-01	9.774E-02	9.463E-03	20.214
BI-214	1.510E+00	2.370E-01	1.120E-01	1.163E-02	13.474
PB-214	1.743E+00	2.505E-01	1.256E-01	1.315E-02	13.880
RA-224	4.837E+00	1.419E+00	1.048E+00	8.946E-02	4.617
RA-226	1.510E+00	2.370E-01	1.120E-01	1.163E-02	13.474
AC-228	2.440E+00	4.713E-01	2.438E-01	3.129E-02	10.010
RA-228	2.440E+00	4.713E-01	2.438E-01	3.129E-02	10.010
TH-228	1.976E+00	2.265E-01	9.774E-02	9.463E-03	20.214
TH-232	2.440E+00	4.713E-01	2.438E-01	3.129E-02	10.010
TH-234	1.870E+00	2.041E+00	2.256E+00	4.019E-01	0.829
U-235	1.784E-01	8.576E-02	3.550E-01	5.914E-02	0.502
NP-237	1.126E+00	4.136E-01	3.597E-01	8.244E-02	3.131
U-238	1.870E+00	2.041E+00	2.256E+00	4.019E-01	0.829

Sample ID : G1202061470 Acquisition date : 20-MAR-2010 11:11:45

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.513E-01	7.732E-02	4.845E-02	4.239E-03	3.122

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	8.917E-02		4.206E-01	6.822E-01	6.330E-02	0.131
NA-22	1.471E-02		5.546E-02	9.328E-02	7.954E-03	0.158
NA-24	-4.548E+02		2.518E+03	Half-Life too short		
SC-46	3.950E-02		5.096E-02	8.753E-02	8.967E-03	0.451
V-48	1.305E-02		1.062E-01	1.802E-01	1.772E-02	0.072
CR-51	4.916E-01		4.903E-01	8.447E-01	7.667E-02	0.582
MN-54	2.827E-02		4.421E-02	7.532E-02	7.517E-03	0.375
CO-56	-1.096E-02		4.514E-02	7.158E-02	7.187E-03	-0.153
CO-57	-1.904E-03		2.850E-02	4.569E-02	3.789E-03	-0.042
CO-58	-2.883E-03		4.617E-02	7.480E-02	7.383E-03	-0.039
FE-59	-1.056E-01		1.176E-01	1.796E-01	1.717E-02	-0.588
CO-60	1.448E-02		4.070E-02	6.952E-02	6.085E-03	0.208
ZN-65	-4.124E-02		1.183E-01	1.620E-01	1.413E-02	-0.255
SE-75	1.698E-02		4.938E-02	7.766E-02	6.739E-03	0.219
SR-85	7.766E-02		4.692E-02	7.794E-02	6.827E-03	0.996
Y-88	5.351E-03		4.248E-02	7.186E-02	5.950E-03	0.074
Y-91	-1.781E+01		2.892E+01	4.543E+01	3.732E+00	-0.392
NB-94	2.068E-02		3.629E-02	6.221E-02	5.724E-03	0.332
NB-95	6.259E-02		5.744E-02	9.041E-02	8.677E-03	0.692
NB-95M	-3.498E-02		1.577E-01	2.289E-01	2.240E-02	-0.153
ZR-95	3.813E-02		9.066E-02	1.515E-01	1.570E-02	0.252
MO-99	-6.280E-05		4.993E-05	Half-Life too short		
TC-99M	-1.527E+20		6.533E+19	Half-Life too short		
RU-103	-2.450E-02		4.943E-02	8.050E-02	1.128E-02	-0.304
RH-106	-3.394E-02		3.362E-01	5.542E-01	7.465E-02	-0.061
RU-106	-3.394E-02		3.362E-01	5.542E-01	4.957E-02	-0.061
AG-108M	-7.539E-04		3.051E-02	4.902E-02	4.248E-03	-0.015
AG-110M	-2.608E-02		3.870E-02	6.058E-02	5.558E-03	-0.430
SN-113	-5.189E-02		5.258E-02	7.955E-02	6.659E-03	-0.652
CD-115	5.096E-05		6.849E-05	Half-Life too short		
SN-117M	-1.184E-02		8.931E-02	1.408E-01	1.123E-02	-0.084
TE-123M	8.438E-03		3.257E-02	5.226E-02	4.196E-03	0.161
SB-124	9.716E-03		8.745E-02	1.487E-01	1.336E-02	0.065
SB-125	2.364E-02		1.024E-01	1.674E-01	1.425E-02	0.141
TE-125M	2.358E+00		1.177E+01	1.917E+01	1.974E+00	0.123
I-126	1.209E-01		3.770E-01	6.371E-01	5.705E-02	0.190
SB-126	-2.386E-02		2.640E-01	3.716E-01	3.462E-02	-0.064
SB-127	1.660E+00		5.598E+00	9.448E+00	1.346E+00	0.176
I-131	7.050E-02		2.293E-01	3.807E-01	3.392E-02	0.185
TE-132	-3.294E+00		4.469E+00	7.190E+00	1.263E+00	-0.458
BA-133	-3.942E-02		5.285E-02	7.035E-02	9.024E-03	-0.560
I-133	8.586E-01		1.701E+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	8.606E-02		6.211E-02	9.972E-02	9.798E-03	0.863
CS-135	1.739E-01		1.802E-01	2.768E-01	2.764E-02	0.628
I-135	-1.273E+18		1.635E+18	Half-Life too short		
CS-136	8.955E-02		1.855E-01	3.220E-01	3.122E-02	0.278
BA-137M	-8.205E-03		3.986E-02	6.492E-02	5.792E-03	-0.126
CS-137	-8.667E-03		4.211E-02	6.858E-02	6.129E-03	-0.126
CE-139	-1.147E-02		3.473E-02	5.413E-02	4.309E-03	-0.212
BA-140	-4.801E-02		4.427E-01	7.369E-01	2.503E-01	-0.065
LA-140	-8.394E-02		1.473E-01	2.164E-01	1.896E-02	-0.388
CE-141	5.190E-02		8.156E-02	1.333E-01	1.092E-02	0.389
CE-143	3.756E-02		6.564E-03	Half-Life too short		
CE-144	-8.688E-02		2.279E-01	3.584E-01	5.377E-02	-0.242
PM-144	-1.008E-02		3.807E-02	6.144E-02	5.632E-03	-0.164
PR-144	-7.404E-01		2.862E+00	4.622E+00	4.233E-01	-0.160
PM-146	3.378E-02		4.762E-02	7.988E-02	8.379E-03	0.423
ND-147	-2.701E-01		1.017E+00	1.676E+00	2.525E-01	-0.161
PM-149	2.598E-04		5.568E-04	Half-Life too short		
EU-152	-9.983E-02		1.094E-01	1.689E-01	1.524E-02	-0.591
GD-153	-1.226E-01		1.052E-01	1.423E-01	1.245E-02	-0.861
EU-154	3.881E-02		1.563E-01	2.625E-01	2.967E-02	0.148
EU-155	3.799E-02		1.182E-01	1.936E-01	1.657E-02	0.196
TB-160	-6.715E-02		1.831E-01	2.867E-01	2.924E-02	-0.234
HO-166M	-3.069E-02		6.524E-02	1.031E-01	9.550E-03	-0.298
TA-182	-5.680E-02		2.212E-01	3.571E-01	2.960E-02	-0.159
IR-192	-2.292E-02		3.964E-02	6.290E-02	5.445E-03	-0.364
HG-203	8.010E-02		5.126E-02	8.167E-02	7.258E-03	0.981
BI-207	3.062E-02		6.255E-02	1.084E-01	9.986E-03	0.283
PB-210	9.560E-04		3.352E+00	5.528E+00	5.107E-01	0.000
PB-211	-5.048E-01		1.041E+00	1.372E+00	6.631E-01	-0.368
BI-212	2.345E+00	+	8.766E-01	1.308E+00	1.698E-01	1.793
RN-219	1.652E-01		4.728E-01	7.799E-01	1.140E-01	0.212
RA-223	1.083E-01		7.959E-01	1.156E+00	2.003E-01	0.094
AC-227	-8.000E-02		2.467E-01	4.031E-01	4.855E-02	-0.198
TH-227	-8.000E-02		2.468E-01	4.031E-01	5.482E-02	-0.198
TH-229	2.917E-02		5.472E-01	9.257E-01	7.583E-02	0.032
PA-231	1.068E+00		1.529E+00	2.529E+00	3.697E-01	0.422
TH-231	1.083E-01		7.959E-01	1.156E+00	2.003E-01	0.094
PA-233	-2.652E-02		6.644E-02	1.067E-01	9.487E-03	-0.249
PA-234	-2.195E-01		3.430E-01	5.127E-01	9.981E-02	-0.428
PA-234M	-3.737E-01		5.231E+00	8.721E+00	9.527E-01	-0.043
NP-239	2.081E-01		4.238E-01	6.965E-01	5.772E-02	0.299
AM-241	8.004E-02		1.777E-01	2.693E-01	2.121E-02	0.297
CM-247	1.096E-02		4.553E-02	7.219E-02	5.896E-03	0.152
CF-249	2.968E-02		4.491E-02	7.561E-02	6.146E-03	0.393
CF-251	-7.539E-02		1.293E-01	2.138E-01	1.722E-02	-0.353

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration    : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202061470          *
* Acquisition date : 20-MAR-2010 11:11:45 Detector SN#    :                *
* Detector ID      : GAM12                Sensitivity     : 5.000          *
* Geometry         : CAN                  Energy tolerance: 1.500          *
* Elapsed live time:    0 02:00:00.00     Abundance limit : 75.000         *
* Elapsed real time:    0 02:00:01.69     Half life ratio : 8.000          *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date      : 25-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID        : G1202061470          Analyst initials: MXR1           *
* Batch Number     : 961099               Sample Quantity : 1.3366E+02 GRAM *
* Recovery         :    1.00000           Carrier Weight :    0.00000      *
*****************************************************************************
*                                                                           *
*                                  QC DATA                                  *
*                                                                           *
* CALIB. DATE/TIME : 25-FEB-2010 20:55:17 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.653E+01	3.778E+00	2.103E-01	1.928E+00
CD-109	3.907E+00	1.154E+00	6.471E-01	5.889E-01
SN-126	3.774E-01	1.115E-01	6.279E-02	5.689E-02
TL-208	7.590E-01	1.058E-01	2.946E-02	5.396E-02
BI-211	4.802E+00	6.247E-01	1.775E-01	3.187E-01
PB-212	1.976E+00	2.220E-01	5.060E-02	1.133E-01
BI-214	1.510E+00	2.323E-01	5.706E-02	1.185E-01
PB-214	1.743E+00	2.455E-01	6.456E-02	1.253E-01
RA-224	4.837E+00	1.391E+00	5.422E-01	7.097E-01
RA-226	1.510E+00	2.323E-01	5.706E-02	1.185E-01
AC-228	2.440E+00	4.619E-01	1.232E-01	2.357E-01
RA-228	2.440E+00	4.619E-01	1.232E-01	2.357E-01
TH-228	1.976E+00	2.220E-01	5.060E-02	1.133E-01
TH-232	2.440E+00	4.619E-01	1.232E-01	2.357E-01
TH-234	1.870E+00	2.000E+00	1.194E+00	1.020E+00
U-235	-2.305E-02	2.196E-01	1.854E-01	1.121E-01
NP-237	1.126E+00	4.053E-01	1.895E-01	2.068E-01
U-238	1.870E+00	2.000E+00	1.194E+00	1.020E+00
ANH-511	1.513E-01	7.578E-02	2.475E-02	3.866E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	8.917E-02	4.122E-01	3.489E-01	2.103E-01	NOT IDENT.
NA-22	1.471E-02	5.435E-02	4.687E-02	2.773E-02	NOT IDENT.
NA-24	-4.548E+08	4.935E+09	0.000E+00	2.518E+09	SHORT HLIF
SC-46	3.950E-02	4.994E-02	4.427E-02	2.548E-02	FAIL ABUN
V-48	1.305E-02	1.041E-01	9.098E-02	5.310E-02	NOT IDENT.
CR-51	4.916E-01	4.805E-01	4.350E-01	2.452E-01	NOT IDENT.
MN-54	2.827E-02	4.333E-02	3.814E-02	2.211E-02	NOT IDENT.
CO-56	-1.096E-02	4.424E-02	3.623E-02	2.257E-02	FAIL ABUN

CO-57	-1.904E-03	2.793E-02	2.393E-02	1.425E-02	NOT IDENT.
CO-58	-2.883E-03	4.525E-02	3.789E-02	2.309E-02	NOT IDENT.
FE-59	-1.056E-01	1.153E-01	9.049E-02	5.880E-02	NOT IDENT.
CO-60	1.448E-02	3.988E-02	3.490E-02	2.035E-02	NOT IDENT.
ZN-65	-4.124E-02	1.159E-01	8.158E-02	5.914E-02	NOT IDENT.
SE-75	1.698E-02	4.839E-02	4.013E-02	2.469E-02	NOT IDENT.
SR-85	7.766E-02	4.598E-02	3.981E-02	2.346E-02	NOT IDENT.
Y-88	5.351E-03	4.163E-02	3.586E-02	2.124E-02	NOT IDENT.
Y-91	-1.781E+01	2.834E+01	2.285E+01	1.446E+01	NOT IDENT.
NB-94	2.068E-02	3.556E-02	3.160E-02	1.814E-02	NOT IDENT.
NB-95	6.259E-02	5.629E-02	4.585E-02	2.872E-02	NOT IDENT.
NB-95M	-3.498E-02	1.545E-01	1.185E-01	7.884E-02	NOT IDENT.
ZR-95	3.813E-02	8.885E-02	7.685E-02	4.533E-02	NOT IDENT.
MO-99	-6.280E+01	9.787E+01	0.000E+00	4.993E+01	SHORT HLIF
TC-99M	-1.527E+26	1.281E+26	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.450E-02	4.844E-02	4.114E-02	2.472E-02	FAIL ABUN
RH-106	-3.394E-02	3.295E-01	2.821E-01	1.681E-01	NOT IDENT.
RU-106	-3.394E-02	3.295E-01	2.821E-01	1.681E-01	NOT IDENT.
AG-108M	-7.539E-04	2.990E-02	2.511E-02	1.526E-02	NOT IDENT.
AG-110M	-2.608E-02	3.793E-02	3.081E-02	1.935E-02	NOT IDENT.
SN-113	-5.189E-02	5.153E-02	4.083E-02	2.629E-02	NOT IDENT.
CD-115	5.096E+01	1.342E+02	0.000E+00	6.849E+01	SHORT HLIF
SN-117M	-1.184E-02	8.753E-02	7.342E-02	4.466E-02	NOT IDENT.
TE-123M	8.438E-03	3.192E-02	2.724E-02	1.628E-02	NOT IDENT.
SB-124	9.716E-03	8.570E-02	7.435E-02	4.372E-02	NOT IDENT.
SB-125	2.364E-02	1.003E-01	8.580E-02	5.119E-02	FAIL ABUN
TE-125M	2.358E+00	1.153E+01	1.005E+01	5.884E+00	NOT IDENT.
I-126	1.209E-01	3.695E-01	3.239E-01	1.885E-01	NOT IDENT.
SB-126	-2.386E-02	2.587E-01	1.886E-01	1.320E-01	NOT IDENT.
SB-127	1.660E+00	5.486E+00	4.801E+00	2.799E+00	NOT IDENT.
I-131	7.050E-02	2.247E-01	1.956E-01	1.146E-01	NOT IDENT.
TE-132	-3.294E+00	4.379E+00	3.725E+00	2.234E+00	NOT IDENT.
BA-133	-3.942E-02	5.179E-02	3.617E-02	2.643E-02	FAIL ABUN
I-133	8.586E+05	3.334E+06	0.000E+00	1.701E+06	SHORT HLIF
CS-134	8.606E-02	6.086E-02	5.054E-02	3.105E-02	NOT IDENT.
CS-135	1.739E-01	1.766E-01	1.430E-01	9.010E-02	NOT IDENT.
I-135	-1.273E+24	3.204E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.955E-02	1.818E-01	1.624E-01	9.277E-02	NOT IDENT.
BA-137M	-8.205E-03	3.906E-02	3.301E-02	1.993E-02	NOT IDENT.
CS-137	-8.667E-03	4.126E-02	3.487E-02	2.105E-02	NOT IDENT.
CE-139	-1.147E-02	3.403E-02	2.819E-02	1.736E-02	NOT IDENT.
BA-140	-4.801E-02	4.339E-01	3.761E-01	2.214E-01	NOT IDENT.
LA-140	-8.394E-02	1.444E-01	1.083E-01	7.366E-02	FAIL ABUN
CE-141	5.190E-02	7.993E-02	6.960E-02	4.078E-02	NOT IDENT.
CE-143	3.756E+04	1.287E+04	0.000E+00	6.564E+03	SHORT HLIF
CE-144	-8.688E-02	2.233E-01	1.874E-01	1.139E-01	NOT IDENT.
PM-144	-1.008E-02	3.731E-02	3.121E-02	1.904E-02	NOT IDENT.
PR-144	-7.404E-01	2.805E+00	2.348E+00	1.431E+00	NOT IDENT.
PM-146	3.378E-02	4.667E-02	4.089E-02	2.381E-02	NOT IDENT.
ND-147	-2.701E-01	9.964E-01	8.555E-01	5.084E-01	FAIL ABUN
PM-149	2.598E+02	1.091E+03	0.000E+00	5.568E+02	SHORT HLIF
EU-152	-9.983E-02	1.072E-01	8.685E-02	5.470E-02	FAIL ABUN
GD-153	-1.226E-01	1.031E-01	7.481E-02	5.262E-02	NOT IDENT.
EU-154	3.881E-02	1.532E-01	1.319E-01	7.814E-02	NOT IDENT.
EU-155	3.799E-02	1.158E-01	1.016E-01	5.908E-02	FAIL ABUN
TB-160	-6.715E-02	1.794E-01	1.450E-01	9.154E-02	FAIL ABUN
HO-166M	-3.069E-02	6.394E-02	5.237E-02	3.262E-02	FAIL ABUN
TA-182	-5.680E-02	2.168E-01	1.796E-01	1.106E-01	FAIL ABUN
IR-192	-2.292E-02	3.885E-02	3.240E-02	1.982E-02	FAIL ABUN
HG-203	8.010E-02	5.024E-02	4.216E-02	2.563E-02	NOT IDENT.
BI-207	3.062E-02	6.130E-02	5.463E-02	3.128E-02	FAIL ABUN
PB-210	9.560E-04	3.285E+00	2.941E+00	1.676E+00	NOT IDENT.
PB-211	-5.048E-01	1.020E+00	7.039E-01	5.205E-01	NOT IDENT.
BI-212	2.345E+00	8.591E-01	6.639E-01	4.383E-01	FAIL ABUN
RN-219	1.652E-01	4.633E-01	4.001E-01	2.364E-01	FAIL ABUN
RA-223	1.083E-01	7.800E-01	5.952E-01	3.979E-01	FAIL ABUN
AC-227	-8.000E-02	2.418E-01	2.084E-01	1.234E-01	FAIL ABUN
TH-227	-8.000E-02	2.418E-01	2.084E-01	1.234E-01	FAIL ABUN
TH-229	2.917E-02	5.363E-01	4.809E-01	2.736E-01	FAIL ABUN
PA-231	1.068E+00	1.499E+00	1.305E+00	7.647E-01	FAIL ABUN
TH-231	1.083E-01	7.800E-01	5.952E-01	3.979E-01	FAIL ABUN
PA-233	-2.652E-02	6.511E-02	5.495E-02	3.322E-02	FAIL ABUN
PA-234	-2.195E-01	3.362E-01	2.590E-01	1.715E-01	NOT IDENT.
PA-234M	-3.737E-01	5.126E+00	4.401E+00	2.615E+00	NOT IDENT.
NP-239	2.081E-01	4.154E-01	3.650E-01	2.119E-01	FAIL ABUN
AM-241	8.004E-02	1.742E-01	1.427E-01	8.887E-02	NOT IDENT.
CM-247	1.096E-02	4.462E-02	3.703E-02	2.277E-02	FAIL ABUN
CF-249	2.968E-02	4.401E-02	3.881E-02	2.245E-02	NOT IDENT.

CF-251	-7.539E-02	1.267E-01	1.112E-01	6.463E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	309.8411
49.72	328.6732
57.36	0.0000
59.54	370.5654
63.29	419.3703
63.29	419.3703
64.28	417.4040
67.75	437.3249
69.67	429.9810
70.83	423.6166
72.81	465.8855
72.87	465.9448
72.87	465.9448
74.82	467.8810
74.82	467.8810
74.82	467.8810
74.97	468.0304
77.11	470.1255
77.11	470.1255
77.11	470.1255
79.69	486.2891
79.80	486.3965
80.12	486.7114
80.19	486.7798
80.57	487.1509
81.00	487.5732
81.07	487.6416
81.07	487.6416
83.79	350.8502
83.79	350.8502
85.43	351.9718
86.48	352.6829
86.55	352.7301
86.79	352.8908
86.94	352.9939
87.57	353.4167
88.03	353.7260
88.47	354.0195
89.96	355.0118
91.11	355.7719
92.59	356.7415
92.59	356.7415
93.35	357.2377
94.67	322.1281
94.87	322.2428
94.87	322.2428
95.86	327.5176
97.43	388.1499
98.44	341.2989
99.53	328.0707
100.11	322.0869
103.18	399.9773
103.37	377.8780
105.31	354.6949
106.12	338.1613
109.28	345.2772
111.00	339.8147
111.76	319.8398
116.30	307.0224
117.23	292.3132
121.12	343.0861
121.78	316.1742
122.06	325.0349
123.07	324.4404
131.20	389.1644
133.52	347.2025
136.00	330.6143

136.47	330.8349
140.51	0.0000
140.51	0.0000
143.76	325.1809
144.24	301.7481
144.24	301.7481
145.44	310.1303
152.43	325.5322
153.25	329.2967
154.21	293.2007
154.21	293.2007
156.02	295.0266
158.56	300.5735
159.00	291.5558
162.66	320.5721
163.33	336.9983
165.86	312.5803
176.60	270.0210
177.52	279.9968
181.07	0.0000
184.41	256.4932
185.72	256.8769
193.51	277.9480
197.04	284.4246
205.31	254.2606
210.85	260.3034
215.65	232.0336
222.11	274.3838
227.38	267.4578
228.16	289.9673
228.18	289.9720
235.69	266.6198
235.96	266.6893
235.96	266.6893
238.63	232.8198
238.63	232.8198
240.99	233.3382
242.00	206.4365
244.70	219.0417
252.40	193.9721
252.80	192.1413
256.23	182.2407
256.23	182.2407
260.90	0.0000
264.66	164.0651
268.22	165.0898
269.46	151.3665
269.46	151.3665
271.23	211.4096
273.65	193.7653
276.40	209.7576
277.37	185.6345
277.60	185.6695
278.00	185.7336
279.20	160.4195
279.54	160.4648
280.46	166.8244
283.69	158.5663
284.31	158.3687
285.41	165.3640
285.90	0.0000
287.50	188.1943
293.27	0.0000
295.22	190.9650
295.96	191.0772
298.57	170.1182
299.98	166.3491
299.98	166.3491
300.09	164.7801
300.09	164.7801
300.13	156.8628
301.36	161.7731
302.85	182.6102
304.50	162.1790
304.50	162.1790
304.85	176.2726
308.46	159.4946
311.90	160.9238

316.51	170.5266
319.41	170.9053
320.08	148.8627
323.87	169.4689
323.87	169.4689
328.76	197.6305
333.37	197.0905
334.37	201.7089
334.37	201.7089
338.28	192.5019
338.28	192.5019
338.32	192.5077
338.32	192.5077
338.32	192.5077
340.48	155.2285
340.55	155.2378
344.28	184.3314
351.06	145.0964
351.93	145.1868
356.01	165.2271
364.49	115.3055
366.42	0.0000
383.85	141.0398
388.16	132.9983
388.63	116.1465
391.69	158.6998
400.66	154.3059
401.81	144.8362
402.40	150.9780
404.85	179.2639
410.95	99.4057
414.70	115.1023
423.72	141.4503
427.09	120.1021
427.87	122.3247
433.94	104.3071
453.88	107.7542
463.37	111.6662
468.07	76.2715
473.00	104.5007
476.78	124.7781
477.60	119.2631
487.02	110.9294
492.35	0.0000
497.08	115.3766
511.00	95.3594
514.00	83.3834
527.90	0.0000
529.87	0.0000
531.02	108.3030
537.26	102.2062
546.56	0.0000
563.25	92.3605
569.33	62.6947
569.50	69.2503
569.70	69.2576
583.19	79.1355
600.60	90.2454
602.73	96.6752
604.72	79.3152
609.32	79.1681
609.32	79.1681
610.33	79.2046
614.28	74.8890
618.01	85.2344
621.93	84.4271
621.93	84.4271
633.25	82.9367
635.95	92.6930
636.99	82.1093
645.85	71.7688
657.76	94.5703
661.66	95.7103
661.66	95.7103
664.57	0.0000
666.33	89.0538
666.50	89.0605
677.62	82.6055

685.70	69.0754
695.00	91.1420
696.49	90.2091
696.51	90.2091
697.00	86.2608
702.65	77.5201
706.68	91.5890
711.68	84.7946
720.70	71.7594
721.93	0.0000
722.78	60.1289
722.91	60.1318
723.31	61.8112
724.19	88.5727
727.33	76.9736
733.00	67.0866
735.93	77.5771
739.50	0.0000
747.24	87.0351
752.31	86.1974
753.82	80.1592
756.73	74.1567
763.94	61.1221
765.81	69.6630
766.42	67.9801
777.92	0.0000
778.90	78.8968
783.70	72.8825
785.37	87.3097
795.86	67.0313
801.95	77.5214
810.29	76.7262
810.76	67.4073
815.77	61.2989
818.51	72.8010
832.01	78.3875
834.85	74.2831
836.80	0.0000
846.77	64.0962
856.80	70.3027
860.56	58.0776
871.09	69.9510
873.19	61.5174
875.33	0.0000
879.36	78.6575
880.51	57.4225
883.24	75.5710
884.68	75.6091
889.28	63.9961
898.04	68.4688
911.20	60.1795
911.20	60.1795
911.20	60.1795
926.50	65.8907
937.49	81.3098
944.13	64.1034
946.00	68.4910
949.00	66.3822
962.29	34.6099
964.08	53.5854
966.15	53.6213
968.97	53.6703
968.97	53.6703
968.97	53.6703
983.53	55.9390
996.26	72.7365
1001.03	60.8585
1004.73	68.3151
1037.84	58.7574
1038.76	0.0000
1048.07	58.9395
1050.41	40.2565
1050.41	40.2565
1063.66	63.9160
1085.87	61.4982
1099.45	75.0429
1112.07	57.2021
1115.54	71.9819

1120.29	55.4252
1120.29	55.4252
1120.55	55.4299
1121.30	55.4417
1131.51	0.0000
1173.23	78.5643
1177.93	76.7241
1189.05	68.1885
1204.77	90.9792
1221.41	69.7693
1231.02	64.1780
1235.36	64.2496
1238.28	68.1072
1260.41	0.0000
1271.85	59.7437
1274.44	64.7646
1274.54	64.7673
1291.59	54.0417
1298.22	0.0000
1312.11	44.2632
1332.49	31.3444
1365.19	25.4812
1368.63	0.0000
1384.29	40.9587
1408.01	18.5361
1457.56	0.0000
1460.82	13.5528
1489.16	13.6406
1505.03	34.7496
1596.21	29.0039
1620.50	12.9570
1678.03	0.0000
1690.97	15.0251
1764.49	12.3884
1764.49	12.3884
1770.23	1.6696
1771.35	5.0098
1791.20	0.0000
1836.06	17.3910

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202061470

Total Uranium Activity	5.5535E+00	ug/g
Total Uranium Counting Unc.	5.9506E+00	ug/g
Total Uranium Tpu	3.0360E-06	ug/g
Total Uranium Mda	3.5542E+00	ug/g

```
*****************************************************************************
*                                                                           *
*                          GEL Laboratories LLC                           *
*                               2040 SAVAGE ROAD                            *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID      : 961099                    SAMPLE ID  : G1202061470      *
*   ANALYST       : MXR1                      DETECTOR   : GAM12            *
*   SAMPLE DATE   : 25-FEB-2010 12:00:00.00   COUNT TIME :    0 02:00:00.00 *
*   ANALYSIS DATE: 20-MAR-2010 11:11:45.98    SAMPLE ALQT:  133.660 GRAM    *
*                                                                           *
*****************************************************************************
```

```
GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 1.185E+01
GROSS GAMMA ERROR   (pCi/GRAM  )  : 1.665E+00
GROSS GAMMA MDA     (pCi/GRAM  )  : 4.182E+00
GROSS GAMMA DLC     (pCi/GRAM  )  : 2.033E+00
```

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 12:13:11.93

```
*****************************************************************************
*                            GEL Laboratories LLC                            *
*                              2040 Savage Road                              *
*                            Charleston, SC 29414                            *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061471.CNF;1
Sample date       : 6-MAR-2010 00:00:00. Acquisition date : 20-MAR-2010 11:12:22
Sample ID         : G1202061471          Sample quantity  : 1.55440E+02 GRAM
Detector name     : GAM20                Detector geometry: CAN
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:00:17.31  0.5%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID          : 961099               Detector SN#     :
Matrix Spike ID  :                       LCS ID           : 1032-A
*****************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	59.65	4173	1029	1.11	119.30	113	11	1.16E+00	2.1	
2	2	75.02*	204	398	1.24	149.98	146	14	5.65E-02	18.0	2.25E+00
3	2	77.31	304	402	1.25	154.57	146	14	8.43E-02	12.6	
4	0	88.19*	1679	576	1.13	176.28	171	12	4.66E-01	3.8	
5	0	93.02*	78	299	1.05	185.93	183	8	2.16E-02	41.9	
6	0	122.22	189	294	1.10	244.25	240	8	5.26E-02	17.3	
7	0	185.79*	103	306	1.96	371.20	365	12	2.87E-02	35.9	
8	0	238.63*	461	335	1.05	476.74	472	9	1.28E-01	8.5	
9	0	294.72	120	267	1.58	588.79	584	11	3.34E-02	27.7	
10	0	338.03	107	195	1.03	675.31	671	9	2.97E-02	25.4	
11	0	352.13	257	220	1.20	703.50	698	12	7.15E-02	13.2	
12	0	583.75*	135	160	1.43	1166.37	1160	13	3.76E-02	21.4	
13	0	609.61*	216	139	1.30	1218.05	1211	15	6.01E-02	13.7	
14	0	662.08	2642	130	1.53	1322.95	1317	15	7.34E-01	2.2	
15	0	727.49	62	58	1.39	1453.72	1449	10	1.72E-02	26.2	
16	0	911.50*	110	140	2.11	1821.66	1817	13	3.06E-02	24.0	
17	0	970.00*	107	79	1.86	1938.68	1933	14	2.97E-02	20.4	
18	0	1174.06	1963	75	1.74	2346.93	2338	19	5.45E-01	2.5	
19	0	1333.36	1693	20	1.74	2665.74	2658	16	4.70E-01	2.5	
20	0	1378.13	15	12	1.06	2755.36	2749	10	4.05E-03	52.4	
21	0	1461.55	32	25	1.23	2922.37	2915	14	8.89E-03	37.3	
22	0	1765.58	28	8	1.91	3531.25	3525	11	7.69E-03	27.7	

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

VMS Nuclide Identification Report V3.1 Generated 20-MAR-2010 12:13:15

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061471.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 6-MAR-2010 00:00:00 Acquisition date : 20-MAR-2010 11:12:22
Sample ID : G1202061471 Sample quantity : 155.44 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA20 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:17.31 0.5%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	1.158E+00	8.702E-01	6.906E-01	6.023E-02	1.677
CO-57	+	122.06	*	1.504E-01	5.354E-02	5.633E-02	4.702E-03	2.670
		136.47		1.422E-01	3.013E-01	4.925E-01	4.454E-02	0.289
CO-60	+	1173.23		6.377E+00	6.036E-01	1.064E-01	8.555E-03	59.934
	+	1332.49	*	6.106E+00	5.958E-01	7.442E-02	6.234E-03	82.038
CD-109	+	88.03	*	3.207E+01	3.884E+00	1.779E+00	1.682E-01	18.028
SN-126		64.28		3.962E-01	5.796E-01	9.385E-01	1.359E-01	0.422
	+	86.94		1.305E+01	5.509E+00	7.287E-01	3.025E-01	17.904
	+	87.57	*	3.138E+00	3.800E-01	1.746E-01	1.642E-02	17.977
BA-137M	+	661.66	*	5.837E+00	6.381E-01	8.649E-02	8.680E-03	67.486
CS-137	+	661.66	*	6.166E+00	6.749E-01	9.137E-02	9.182E-03	67.486
TL-208		277.37		7.615E-01	6.242E-01	1.086E+00	1.463E-01	0.701
	+	583.19	*	2.851E-01	1.253E-01	1.003E-01	1.030E-02	2.843
		860.56		5.995E-01	5.635E-01	9.965E-01	1.056E-01	0.602
BI-211		72.87		1.570E+00	4.154E+00	6.179E+00	4.879E-01	0.254
	+	351.06	*	2.426E+00	6.804E-01	5.464E-01	5.235E-02	4.440
PB-212	+	74.82		1.578E+00	6.007E-01	6.908E-01	8.728E-02	2.284
	+	77.11		1.367E+00	3.636E-01	4.021E-01	3.325E-02	3.401
	+	238.63	*	9.728E-01	1.957E-01	1.724E-01	1.841E-02	5.644
		300.09		-4.150E-02	1.423E+00	2.077E+00	2.396E-01	-0.020
BI-214	+	609.32	*	8.831E-01	2.617E-01	1.889E-01	2.110E-02	4.676
		1120.29		7.009E-01	6.141E-01	1.069E+00	1.162E-01	0.655
	+	1764.49		7.946E-01	4.447E-01	3.759E-01	3.088E-02	2.114
PB-214	+	74.82		2.796E+00	1.053E+00	1.224E+00	1.385E-01	2.284
	+	77.11		2.411E+00	6.711E-01	7.088E-01	8.279E-02	3.401
		242.00		1.444E+00	6.730E-01	1.083E+00	1.221E-01	1.334
	+	295.22		6.980E-01	3.958E-01	3.557E-01	4.202E-02	1.963
	+	351.93	*	8.804E-01	2.517E-01	1.901E-01	2.100E-02	4.631
RA-226	+	609.32	*	8.831E-01	2.617E-01	1.889E-01	2.110E-02	4.676
		1120.29		7.009E-01	6.141E-01	1.069E+00	1.162E-01	0.655
	+	1764.49		7.946E-01	4.447E-01	3.759E-01	3.088E-02	2.114
AC-228	+	338.32		1.122E+00	7.380E-01	6.430E-01	2.693E-01	1.745
	+	911.20	*	1.111E+00	5.503E-01	5.055E-01	6.354E-02	2.197
	+	968.97		1.852E+00	8.848E-01	9.544E-01	2.361E-01	1.941

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.122E+00	7.380E-01	6.430E-01	2.693E-01	1.745
	+	911.20	*	1.111E+00	5.503E-01	5.055E-01	6.354E-02	2.197
	+	968.97		1.852E+00	8.848E-01	9.544E-01	2.361E-01	1.941
TH-228	+	74.82		1.578E+00	5.811E-01	6.908E-01	5.627E-02	2.284
	+	77.11		1.367E+00	3.636E-01	4.021E-01	3.325E-02	3.401
	+	238.63	*	9.728E-01	1.957E-01	1.724E-01	1.841E-02	5.644
		300.09		-4.150E-02	1.424E+00	2.077E+00	1.275E+00	-0.020
TH-232	+	338.32		1.122E+00	5.788E-01	6.430E-01	6.024E-02	1.745
	+	911.20	*	1.111E+00	5.503E-01	5.055E-01	6.354E-02	2.197
	+	968.97		1.852E+00	8.848E-01	9.544E-01	2.361E-01	1.941
AM-241	+	59.54	*	1.377E+01	1.229E+00	3.710E-01	2.903E-02	37.123

---- 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	*	-2.600E-01	6.021E-01	9.495E-01	9.227E-02	-0.274
NA-22		1274.54	*	-3.988E-02	4.695E-02	6.427E-02	5.324E-03	-0.621
NA-24		1368.63	*	-2.668E-01	4.695E-02	Half-Life too short		
SC-46		889.28	*	4.896E-02	7.913E-02	1.361E-01	1.357E-02	0.360
		1120.55		1.002E-01	1.027E-01	1.777E-01	1.520E-02	0.564
V-48		944.13		1.992E+00	1.927E+00	3.366E+00	3.285E-01	0.592
		983.53	*	-3.443E-02	1.353E-01	2.176E-01	2.080E-02	-0.158
		1312.11		-8.780E-02	9.670E-02	1.317E-01	1.099E-02	-0.667
CR-51		320.08	*	2.410E-02	6.022E-01	1.000E+00	1.002E-01	0.024
MN-54		834.85	*	-2.221E-02	6.895E-02	1.117E-01	1.129E-02	-0.199
CO-56		846.77	*	4.591E-02	7.435E-02	1.284E-01	1.294E-02	0.358
		1037.84		9.858E-02	5.694E-01	9.445E-01	9.105E-02	0.104
		1238.28		5.989E-02	8.355E-02	1.483E-01	1.255E-02	0.404
		1771.35		-3.631E-01	3.464E-01	4.431E-01	3.634E-02	-0.819
CO-58		810.76	*	-2.889E-02	6.642E-02	1.065E-01	1.081E-02	-0.271
FE-59		1099.45	*	-8.838E-02	1.659E-01	2.573E-01	2.426E-02	-0.343
		1291.59		2.493E-02	1.145E-01	1.919E-01	1.825E-02	0.130
ZN-65		1115.54	*	-1.010E-01	1.788E-01	2.781E-01	2.393E-02	-0.363
SE-75	+	121.12		7.844E-01	2.845E-01	3.998E-01	4.348E-02	1.962
		136.00		6.292E-02	5.694E-02	9.553E-02	8.073E-03	0.659
		264.66	*	1.864E-02	6.935E-02	1.174E-01	1.163E-02	0.159
		279.54		7.768E-02	1.743E-01	2.966E-01	3.038E-02	0.262
		400.66		-7.337E-04	4.477E-01	7.334E-01	8.029E-02	-0.001
SR-85		514.00	*	-1.237E-01	7.489E-02	1.075E-01	1.004E-02	-1.151
Y-88		898.04		5.550E-02	8.718E-02	1.498E-01	1.494E-02	0.371
		1836.06	*	4.803E-03	4.346E-02	7.317E-02	5.904E-03	0.066
Y-91		1204.77	*	8.553E+00	2.346E+01	3.980E+01	3.232E+00	0.215
NB-94		702.65	*	-6.958E-02	5.502E-02	8.285E-02	8.382E-03	-0.840
		871.09		4.085E-02	7.371E-02	1.260E-01	1.262E-02	0.324
NB-95		765.81	*	-7.260E-02	6.997E-02	1.071E-01	1.088E-02	-0.678
NB-95M		235.69	*	-2.382E-02	2.002E-01	2.945E-01	3.170E-02	-0.081
ZR-95		724.19		7.597E-03	1.512E-01	2.214E-01	2.384E-02	0.034
		756.73	*	3.718E-02	1.271E-01	2.164E-01	2.367E-02	0.172

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
MO-99		140.51		5.246E+00	2.586E+01	4.152E+01	9.830E+00	0.126
		181.07		-1.813E+00	2.316E+01	3.230E+01	6.117E+00	-0.056
		366.42		-3.972E+00	1.385E+02	2.276E+02	2.023E+01	-0.017
		739.50	*	-3.493E+00	1.618E+01	2.656E+01	4.421E+00	-0.132
		777.92		-6.408E+01	5.260E+01	7.860E+01	7.986E+00	-0.815
TC-99M		140.51	*	1.678E+09	5.260E+01	Half-Life too short		
RU-103		497.08	*	4.960E-02	7.128E-02	1.201E-01	1.723E-02	0.413
	+	610.33		9.007E+00	2.910E+00	3.287E+00	5.597E-01	2.740
RH-106		621.93	*	-2.140E-01	5.850E-01	9.070E-01	1.281E-01	-0.236
		1050.41		1.450E+00	5.213E+00	8.693E+00	7.935E-01	0.167
RU-106		621.93	*	-2.140E-01	5.846E-01	9.070E-01	8.977E-02	-0.236
		1050.41		1.450E+00	5.213E+00	8.693E+00	7.935E-01	0.167
AG-108M		433.94	*	7.854E-03	5.857E-02	9.624E-02	8.674E-03	0.082
		614.28		3.831E-02	6.874E-02	1.012E-01	1.024E-02	0.379
		722.91		-2.196E-02	6.382E-02	8.916E-02	9.254E-03	-0.246
AG-110M		657.76	*	-4.288E-02	6.805E-02	9.329E-02	9.558E-03	-0.460
		677.62		2.474E-01	4.903E-01	8.532E-01	8.775E-02	0.290
		706.68		4.559E-01	3.469E-01	6.286E-01	6.496E-02	0.725
		763.94		-1.696E-01	2.689E-01	4.268E-01	4.423E-02	-0.397
		884.68		2.096E-03	1.000E-01	1.656E-01	1.693E-02	0.013
		937.49		1.305E-01	2.460E-01	4.184E-01	4.210E-02	0.312
		1384.29		-1.455E-01	1.958E-01	2.564E-01	2.222E-02	-0.567
		1505.03		-2.184E-01	2.604E-01	3.437E-01	2.914E-02	-0.635
SN-113		391.69	*	6.344E-03	7.784E-02	1.283E-01	1.106E-02	0.049
CD-115		260.90		1.069E+02	1.783E+02	3.063E+02	3.013E+01	0.349
		492.35		-4.190E+01	5.686E+01	8.728E+01	8.022E+00	-0.480
		527.90	*	6.502E+00	1.655E+01	2.742E+01	2.584E+00	0.237
SN-117M		156.02		-1.938E+00	3.054E+00	4.687E+00	4.030E-01	-0.413
		158.56	*	2.481E-03	7.558E-02	1.204E-01	1.039E-02	0.021
TE-123M		159.00	*	1.691E-03	4.029E-02	6.419E-02	5.577E-03	0.026
SB-124		602.73		-5.296E-02	7.880E-02	1.026E-01	1.008E-02	-0.516
		645.85		4.514E-01	8.554E-01	1.488E+00	1.550E-01	0.303
		722.78		-1.580E-01	6.405E-01	9.059E-01	9.341E-02	-0.174
		1690.97	*	-7.412E-02	9.086E-02	1.184E-01	1.031E-02	-0.626
SB-125		427.87	*	-1.492E-01	1.733E-01	2.678E-01	2.369E-02	-0.557
		463.37		7.715E-01	5.656E-01	9.761E-01	9.373E-02	0.790
		600.60		1.878E-01	3.062E-01	5.113E-01	5.305E-02	0.367
		635.95		8.397E-02	4.494E-01	7.673E-01	8.105E-02	0.109
TE-125M		109.28	*	5.363E+00	1.276E+01	2.098E+01	2.177E+00	0.256
I-126		388.63		1.611E-01	2.836E-01	4.796E-01	4.040E-02	0.336
		666.33	*	3.420E-01	3.506E-01	5.657E-01	5.684E-02	0.605
		753.82		1.902E-01	2.979E+00	4.997E+00	5.078E-01	0.038
SB-126		414.70		8.365E-03	1.391E-01	2.283E-01	1.956E-02	0.037
		666.50		1.080E-01	1.193E-01	1.915E-01	1.924E-02	0.564
		695.00		-1.724E-01	1.206E-01	1.781E-01	1.800E-02	-0.968
		697.00		-2.344E-01	4.132E-01	6.631E-01	6.703E-02	-0.353
		720.70	*	9.943E-03	2.286E-01	3.630E-01	3.681E-02	0.027
		856.80		-6.087E-01	8.832E-01	1.387E+00	1.395E-01	-0.439
SB-127		252.40		1.486E+00	5.906E+00	9.962E+00	4.157E+00	0.149

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

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		473.00		1.210E+00	2.892E+00	4.801E+00	6.190E-01	0.252
		685.70	*	-2.506E-01	1.887E+00	3.137E+00	3.873E-01	-0.080
		783.70		5.279E-01	5.219E+00	8.757E+00	1.165E+00	0.060
I-131		80.19		1.166E+00	6.142E+00	9.024E+00	7.784E-01	0.129
		284.31		-8.822E-01	2.158E+00	3.517E+00	3.626E-01	-0.251
		364.49	*	-7.026E-02	1.818E-01	2.923E-01	2.739E-02	-0.240
		636.99		6.009E-01	2.428E+00	4.163E+00	4.322E-01	0.144
TE-132		49.72		1.829E+01	2.214E+01	3.728E+01	3.808E+00	0.491
		111.76		7.318E+00	3.886E+01	6.319E+01	6.751E+00	0.116
		116.30		8.397E+00	3.395E+01	5.529E+01	5.879E+00	0.152
		228.16	*	2.995E-01	9.734E-01	1.658E+00	2.688E-01	0.181
BA-133		81.00		-8.384E-02	1.375E-01	1.931E-01	3.001E-02	-0.434
		276.40		6.312E-01	5.781E-01	1.000E+00	1.496E-01	0.631
		302.85		-1.736E-01	2.248E-01	3.563E-01	4.942E-02	-0.487
		356.01	*	-1.421E-02	7.786E-02	1.109E-01	1.472E-02	-0.128
		383.85		-2.215E-01	5.224E-01	8.360E-01	1.034E-01	-0.265
I-133		529.87	*	4.981E-04	5.224E-01	Half-Life too short		
		875.33		-6.144E-02	5.224E-01	Half-Life too short		
		1298.22		9.999E-02	5.224E-01	Half-Life too short		
CS-134		563.25		-2.881E-01	6.221E-01	9.634E-01	9.347E-02	-0.299
		569.33		-2.430E-01	3.227E-01	4.849E-01	4.735E-02	-0.501
		604.72		2.155E-02	5.981E-02	8.672E-02	8.538E-03	0.249
		795.86	*	1.997E-02	8.540E-02	1.443E-01	1.472E-02	0.138
		801.95		-9.299E-02	7.157E-01	1.179E+00	1.201E-01	-0.079
		1365.19		-4.447E-01	1.260E+00	1.976E+00	1.743E-01	-0.225
CS-135		268.22	*	-2.272E-01	2.492E-01	3.961E-01	4.390E-02	-0.573
I-135		546.56		-8.222E+07	2.492E-01	Half-Life too short		
		836.80		2.492E+09	2.492E-01	Half-Life too short		
		1038.76		5.848E+09	2.492E-01	Half-Life too short		
		1131.51		9.767E+07	2.492E-01	Half-Life too short		
		1260.41	*	-1.173E+09	2.492E-01	Half-Life too short		
		1457.56		3.055E+09	2.492E-01	Half-Life too short		
		1678.03		2.046E+09	2.492E-01	Half-Life too short		
		1791.20		3.207E+09	2.492E-01	Half-Life too short		
CS-136		153.25		-2.318E-03	1.153E+00	1.836E+00	1.876E-01	-0.001
		176.60		2.388E-01	6.813E-01	1.098E+00	1.070E-01	0.217
		273.65		-1.170E+00	8.161E-01	1.255E+00	1.326E-01	-0.933
		340.55		1.631E-01	2.644E-01	3.996E-01	3.851E-02	0.408
		818.51		-1.197E-01	1.371E-01	2.121E-01	2.149E-02	-0.564
		1048.07	*	-4.048E-02	2.128E-01	3.426E-01	3.250E-02	-0.118
		1235.36		-2.080E-01	5.325E-01	8.089E-01	9.266E-02	-0.257
CE-139		165.86	*	8.870E-03	4.373E-02	7.011E-02	6.121E-03	0.127
BA-140		162.66		3.206E-01	1.139E+00	1.835E+00	1.699E-01	0.175
		304.85		3.793E-01	2.035E+00	3.409E+00	1.010E+00	0.111
		423.72		4.007E+00	3.622E+00	5.885E+00	1.936E+00	0.681
		537.26	*	-2.858E-01	4.735E-01	7.156E-01	2.443E-01	-0.399
LA-140		328.76		7.628E-02	4.491E-01	7.501E-01	7.465E-02	0.102
		487.02		1.496E-01	2.484E-01	4.172E-01	4.029E-02	0.359
		815.77		7.540E-01	5.695E-01	1.027E+00	1.130E-01	0.734

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

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		1596.21	*	-1.583E-02	1.035E-01	1.664E-01	1.405E-02	-0.095
CE-141		145.44	*	-1.501E-02	8.637E-02	1.366E-01	1.179E-02	-0.110
CE-143		57.36		3.384E-03	8.637E-02	Half-Life too short		
	+	293.27	*	4.423E-04	8.637E-02	Half-Life too short		
		664.57		4.955E-02	8.637E-02	Half-Life too short		
		721.93		-9.649E-04	8.637E-02	Half-Life too short		
CE-144		80.12		6.112E-01	3.510E+00	5.154E+00	4.415E-01	0.119
		133.52	*	-2.676E-01	2.917E-01	4.415E-01	6.688E-02	-0.606
PM-144		476.78		-2.173E-02	1.223E-01	1.963E-01	1.921E-02	-0.111
		618.01		-2.463E-02	5.516E-02	8.483E-02	8.562E-03	-0.290
		696.49	*	-4.547E-02	5.503E-02	8.634E-02	8.729E-03	-0.527
PR-144		696.51	*	-3.376E+00	4.119E+00	6.466E+00	6.536E-01	-0.522
		1489.16		-1.815E+00	1.374E+01	2.231E+01	1.892E+00	-0.081
PM-146		453.88	*	8.247E-02	8.528E-02	1.453E-01	1.573E-02	0.567
		633.25		1.420E+00	2.528E+00	4.118E+00	1.586E+00	0.345
		735.93		-1.511E-02	2.223E-01	3.696E-01	1.055E-01	-0.041
		747.24		-1.835E-02	1.596E-01	2.643E-01	4.108E-02	-0.069
ND-147		91.11		4.430E-01	4.021E-01	5.022E-01	4.970E-02	0.882
		319.41		3.074E+00	5.319E+00	9.068E+00	8.725E-01	0.339
		531.02	*	2.916E-01	9.629E-01	1.587E+00	2.450E-01	0.184
PM-149		285.90	*	1.120E+02	1.144E+02	1.979E+02	3.225E+01	0.566
EU-152	+	121.78		4.336E-01	1.558E-01	2.224E-01	2.149E-02	1.949
		244.70		-1.294E+00	5.503E-01	8.021E-01	7.781E-02	-1.613
		344.28	*	-1.901E-02	1.640E-01	2.692E-01	2.625E-02	-0.071
		778.90		-1.766E-01	4.466E-01	7.213E-01	7.329E-02	-0.245
		964.08		6.148E-01	6.342E-01	9.811E-01	9.478E-02	0.627
		1085.87		8.828E-02	7.541E-01	1.241E+00	1.099E-01	0.071
		1112.07		-1.452E-01	6.168E-01	9.855E-01	8.504E-02	-0.147
		1408.01		7.071E-02	2.089E-01	3.680E-01	3.109E-02	0.192
GD-153		69.67		-2.140E-01	2.012E+00	3.281E+00	2.510E-01	-0.065
		97.43	*	3.228E-03	1.145E-01	1.659E-01	1.472E-02	0.019
		103.18		-8.158E-03	1.410E-01	2.272E-01	1.966E-02	-0.036
EU-154	+	123.07		3.066E-01	1.115E-01	1.548E-01	1.725E-02	1.980
		723.31		-1.879E-01	2.956E-01	3.976E-01	4.332E-02	-0.473
		873.19		2.435E-01	6.032E-01	1.021E+00	1.322E-01	0.238
		996.26		-1.921E-01	7.208E-01	1.157E+00	2.072E-01	-0.166
		1004.73		1.959E-02	4.507E-01	7.410E-01	9.078E-02	0.026
		1274.44	*	-1.014E-01	1.316E-01	1.827E-01	2.031E-02	-0.555
EU-155		86.55		1.582E+00	2.454E-01	3.585E-01	3.357E-02	4.413
		105.31	*	1.152E-01	1.368E-01	2.293E-01	1.993E-02	0.502
TB-160	+	86.79		1.003E+01	1.215E+00	1.057E+00	9.842E-02	9.490
		197.04		1.107E-01	8.046E-01	1.370E+00	1.254E-01	0.081
		215.65		-1.331E-01	1.093E+00	1.834E+00	1.722E-01	-0.073
		298.57		3.916E-02	2.020E-01	2.993E-01	2.941E-02	0.131
		879.36	*	-6.478E-02	2.805E-01	4.560E-01	4.559E-02	-0.142
		962.29		-1.317E+00	1.153E+00	1.685E+00	1.630E-01	-0.781
		966.15		4.052E-01	4.431E-01	6.823E-01	6.584E-02	0.594
		1177.93		2.186E+00	7.711E-01	1.372E+00	1.105E-01	1.594
		1271.85		-3.841E-01	7.602E-01	1.120E+00	9.261E-02	-0.343

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		80.57		-7.211E-02	3.875E-01	5.586E-01	4.812E-02	-0.129
	+	184.41		1.123E-01	8.117E-02	8.223E-02	7.386E-03	1.366
		280.46		-8.873E-02	1.369E-01	2.205E-01	2.194E-02	-0.402
		410.95		-1.045E-01	4.501E-01	7.265E-01	6.200E-02	-0.144
		711.68	*	-4.240E-02	9.976E-02	1.618E-01	1.639E-02	-0.262
		752.31		-2.023E-01	4.695E-01	7.581E-01	7.703E-02	-0.267
		810.29		-7.026E-02	1.055E-01	1.660E-01	1.683E-02	-0.423
TA-182		67.75		-5.942E-02	1.289E-01	2.074E-01	1.559E-02	-0.286
		100.11		6.377E-02	2.163E-01	3.551E-01	3.109E-02	0.180
		152.43		-2.131E-01	4.992E-01	7.773E-01	6.648E-02	-0.274
		222.11		2.448E-01	5.378E-01	9.229E-01	8.736E-02	0.265
		1121.30		2.735E-01	2.862E-01	4.945E-01	4.226E-02	0.553
		1189.05		1.422E-01	3.733E-01	6.325E-01	5.111E-02	0.225
		1221.41	*	1.409E-01	1.957E-01	3.479E-01	2.839E-02	0.405
		1231.02		-4.007E-02	4.522E-01	7.207E-01	5.896E-02	-0.056
IR-192	+	295.96		5.129E-01	2.889E-01	3.497E-01	3.463E-02	1.467
		308.46		-6.119E-02	1.538E-01	2.497E-01	2.442E-02	-0.245
		316.51	*	-2.822E-02	5.616E-02	9.047E-02	8.750E-03	-0.312
		468.07		-2.809E-02	1.403E-01	2.254E-01	2.168E-02	-0.125
HG-203		70.83		9.942E-01	1.713E+00	2.569E+00	4.009E-01	0.387
		72.87		3.870E-01	1.025E+00	1.523E+00	2.307E-01	0.254
		279.20	*	5.997E-02	6.102E-02	1.060E-01	1.076E-02	0.566
BI-207		72.81		6.672E-02	2.384E-01	3.530E-01	2.786E-02	0.189
	+	74.97		4.547E-01	1.674E-01	2.551E-01	2.060E-02	1.782
		569.70		-3.734E-02	4.926E-02	7.390E-02	7.140E-03	-0.505
		1063.66	*	4.117E-02	1.009E-01	1.700E-01	1.535E-02	0.242
		1770.23		1.239E-01	5.084E-01	7.906E-01	6.486E-02	0.157
PB-210		46.54	*	-4.060E+00	4.008E+00	6.428E+00	5.906E-01	-0.632
PB-211		404.85	*	6.223E-01	1.330E+00	2.178E+00	1.054E+00	0.286
		427.09		-1.654E+00	2.919E+00	4.439E+00	2.054E+00	-0.373
		832.01		3.597E-02	1.841E+00	3.060E+00	1.595E+00	0.012
BI-212	+	727.33	*	1.997E+00	1.079E+00	1.609E+00	2.182E-01	1.241
		785.37		-4.136E+00	5.449E+00	8.532E+00	8.666E-01	-0.485
		1620.50		-1.363E+00	2.863E+00	4.290E+00	3.612E-01	-0.318
RN-219		271.23		6.829E-01	3.875E-01	6.846E-01	7.778E-02	0.997
		401.81	*	4.036E-02	7.313E-01	1.202E+00	1.776E-01	0.034
RA-223		81.07		-1.941E-01	3.105E-01	4.371E-01	3.788E-02	-0.444
		83.79		5.510E-02	1.875E-01	2.766E-01	2.479E-02	0.199
		94.87		6.634E-01	5.845E-01	9.001E-01	8.097E-02	0.737
		144.24		-4.434E-01	9.388E-01	1.467E+00	1.391E-01	-0.302
		154.21		2.247E-01	5.317E-01	8.644E-01	8.129E-02	0.260
		269.46		3.581E-01	2.949E-01	5.160E-01	5.184E-02	0.694
		323.87	*	-8.963E-01	1.063E+00	1.661E+00	2.960E-01	-0.540
	+	338.28		4.452E+00	2.328E+00	3.250E+00	4.101E-01	1.370
RA-224		240.99	*	4.190E+00	1.316E+00	2.158E+00	2.086E-01	1.942
AC-227		79.69		7.114E-01	1.738E+00	2.576E+00	4.428E-01	0.276
		235.96		-2.463E-02	2.486E-01	3.661E-01	4.095E-02	-0.067
		256.23	*	1.334E-02	3.960E-01	6.643E-01	8.584E-02	0.020
		299.98		4.405E-01	1.531E+00	2.282E+00	3.091E-01	0.193

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		304.50		-3.239E-01	2.540E+00	4.190E+00	7.190E-01	-0.077
		334.37		7.338E-01	3.158E+00	4.663E+00	7.483E-01	0.157
TH-227		79.80		2.896E-01	2.309E+00	3.382E+00	7.353E-01	0.086
		235.96		-2.463E-02	2.486E-01	3.661E-01	3.898E-02	-0.067
		256.23	*	1.334E-02	3.960E-01	6.643E-01	9.554E-02	0.020
		299.98		4.405E-01	1.531E+00	2.282E+00	3.091E-01	0.193
		304.50		-3.239E-01	2.540E+00	4.190E+00	7.190E-01	-0.077
		334.37		7.338E-01	3.158E+00	4.663E+00	7.483E-01	0.157
TH-229		85.43		1.084E-01	3.194E-01	4.716E-01	4.315E-02	0.230
	+	88.47		4.838E+00	5.859E-01	5.867E-01	5.527E-02	8.246
		193.51	*	-7.694E-01	7.593E-01	1.225E+00	1.115E-01	-0.628
		210.85		-2.077E-01	1.241E+00	2.080E+00	1.940E-01	-0.100
PA-231		283.69	*	-1.020E+00	2.231E+00	3.620E+00	5.573E-01	-0.282
		301.36		1.343E-02	9.153E-01	1.472E+00	1.917E-01	0.009
TH-231		81.07		-1.941E-01	3.105E-01	4.371E-01	3.788E-02	-0.444
		83.79		5.510E-02	1.875E-01	2.766E-01	2.479E-02	0.199
		94.87		6.634E-01	5.845E-01	9.001E-01	8.097E-02	0.737
		144.24		-4.434E-01	9.388E-01	1.467E+00	1.391E-01	-0.302
		154.21		2.247E-01	5.317E-01	8.644E-01	8.129E-02	0.260
		269.46		3.581E-01	2.949E-01	5.160E-01	5.184E-02	0.694
		323.87	*	-8.963E-01	1.063E+00	1.661E+00	2.960E-01	-0.540
	+	338.28		4.452E+00	2.328E+00	3.250E+00	4.101E-01	1.370
PA-233		300.13		-1.679E-02	7.088E-01	1.034E+00	1.609E-01	-0.016
		311.90	*	8.059E-02	1.024E-01	1.765E-01	1.752E-02	0.456
		340.48		9.184E-01	1.197E+00	1.798E+00	4.376E-01	0.511
PA-234		94.67		2.065E-01	2.247E-01	3.404E-01	4.314E-02	0.607
		98.44		-1.395E-02	1.132E-01	1.816E-01	1.013E-01	-0.077
		111.00		1.549E-01	2.466E-01	4.084E-01	4.891E-02	0.379
		131.20		-1.469E-01	1.543E-01	2.351E-01	1.965E-02	-0.625
		569.50		-3.515E-01	4.439E-01	6.646E-01	6.420E-02	-0.529
		733.00		5.228E-01	6.548E-01	1.023E+00	2.335E-01	0.511
		880.51		-1.670E-01	5.637E-01	9.117E-01	9.113E-02	-0.183
		883.24		-3.159E-02	5.812E-01	9.564E-01	6.447E-01	-0.033
		926.50		-1.474E-01	3.686E-01	5.869E-01	1.509E-01	-0.251
		946.00	*	6.973E-01	6.939E-01	1.193E+00	2.303E-01	0.585
		949.00		-5.567E-02	9.978E-01	1.636E+00	1.592E-01	-0.034
PA-234M		766.42		1.469E-01	1.839E+01	3.069E+01	1.566E+01	0.005
		1001.03	*	-5.084E-01	9.663E+00	1.590E+01	1.701E+00	-0.032
TH-234		63.29	*	-3.045E-01	1.656E+00	2.439E+00	4.332E-01	-0.125
	+	92.59		1.237E+00	1.072E+00	1.435E+00	3.197E-01	0.862
U-235		89.96		1.182E+01	3.336E+00	2.660E+00	6.613E-01	4.444
	+	93.35		9.341E-01	8.121E-01	1.084E+00	2.523E-01	0.862
		143.76	*	-6.730E-02	2.758E-01	4.362E-01	7.359E-02	-0.154
		163.33		1.065E-02	6.412E-01	1.019E+00	1.833E-01	0.010
	+	185.72		1.414E-01	1.022E-01	1.100E-01	9.900E-03	1.285
		205.31		-7.026E-01	7.204E-01	1.146E+00	2.116E-01	-0.613
NP-237		86.48	*	3.390E+00	9.080E-01	8.471E-01	1.942E-01	4.001
		95.86		2.986E-01	1.217E+00	1.784E+00	4.302E-01	0.167
U-238		63.29	*	-3.045E-01	1.656E+00	2.439E+00	4.332E-01	-0.125

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	92.59		1.237E+00	1.042E+00	1.435E+00	1.310E-01	0.862
NP-239		99.53		-1.402E-01	2.053E-01	3.201E-01	2.810E-02	-0.438
		103.37		2.425E-02	1.273E-01	2.076E-01	1.795E-02	0.117
		106.12		6.928E-02	1.092E-01	1.815E-01	1.555E-02	0.382
		117.23	*	-6.707E-02	6.171E-01	8.781E-01	7.354E-02	-0.076
		228.18		9.495E-02	3.334E-01	5.680E-01	5.415E-02	0.167
		277.60		3.175E-01	2.844E-01	4.961E-01	4.935E-02	0.640
CM-247		278.00		1.467E+00	1.208E+00	2.114E+00	2.104E-01	0.694
		287.50		-5.309E-01	1.885E+00	3.092E+00	3.064E-01	-0.172
		402.40	*	-5.881E-03	6.787E-02	1.106E-01	9.352E-03	-0.053
CF-249		252.80		-1.472E-01	1.467E+00	2.447E+00	2.391E-01	-0.060
		333.37		3.350E-01	3.162E-01	4.942E-01	4.666E-02	0.678
		388.16	*	3.807E-02	7.084E-02	1.196E-01	1.009E-02	0.318
CF-251		177.52	*	-4.752E-02	1.847E-01	2.879E-01	2.558E-02	-0.165
		227.38		5.534E-02	5.452E-01	9.218E-01	8.781E-02	0.060
		285.41		2.086E+00	3.327E+00	5.714E+00	5.670E-01	0.365
ANH-511		511.00	*	4.201E-04	6.195E-02	1.104E-01	1.029E-02	0.004

VAX/VMS Nuclide Identification Report Generated

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*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                                DETECTOR DATA                              *
*                                                                           *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061471     *
* Acquisition date : 20-MAR-2010 11:12:22 Detector SN#     :               *
* Detector ID        : GAM20               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 01:00:17.31      Half life ratio :  8.000        *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date        :  6-MAR-2010 00:00:00 Nuclide Library : SOLID         *
* Sample ID          : G1202061471          Analyst initials: MXR1          *
* Batch Number       : 961099               Sample Quantity : 1.5544E+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	1.158E+00	8.528E-01	6.965E-01	0.000E+00
CO-57	1.504E-01	5.247E-02	6.066E-02	0.000E+00
CO-60	6.106E+00	5.838E-01	7.525E-02	0.000E+00
CD-109	3.207E+01	3.806E+00	1.932E+00	0.000E+00
SN-126	3.138E+00	3.724E-01	1.896E-01	0.000E+00
BA-137M	5.837E+00	6.254E-01	8.916E-02	0.000E+00
CS-137	6.166E+00	6.614E-01	9.419E-02	0.000E+00
TL-208	2.851E-01	1.228E-01	1.038E-01	0.000E+00
BI-211	2.426E+00	6.668E-01	5.728E-01	0.000E+00
PB-212	9.728E-01	1.918E-01	1.825E-01	0.000E+00
BI-214	8.831E-01	2.565E-01	1.951E-01	0.000E+00
PB-214	8.804E-01	2.466E-01	1.993E-01	0.000E+00
RA-226	8.831E-01	2.565E-01	1.951E-01	0.000E+00
AC-228	1.111E+00	5.393E-01	5.166E-01	0.000E+00
RA-228	1.111E+00	5.393E-01	5.166E-01	0.000E+00
TH-228	9.728E-01	1.918E-01	1.825E-01	0.000E+00
TH-232	1.111E+00	5.393E-01	5.166E-01	0.000E+00
AM-241	1.377E+01	1.204E+00	4.066E-01	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error	MDA (pCi/GRAM)		Ided
BE-7	-2.600E-01	5.901E-01	9.875E-01	0.000E+00	NOT IDENT.
NA-22	-3.988E-02	4.601E-02	6.506E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	3.603E+05	0.000E+00	0.000E+00	SHORT HLIF
SC-46	4.896E-02	7.755E-02	1.392E-01	0.000E+00	NOT IDENT.
V-48	-3.443E-02	1.326E-01	2.219E-01	0.000E+00	NOT IDENT.
CR-51	2.410E-02	5.901E-01	1.051E+00	0.000E+00	NOT IDENT.
MN-54	-2.221E-02	6.757E-02	1.145E-01	0.000E+00	NOT IDENT.
CO-56	4.591E-02	7.287E-02	1.315E-01	0.000E+00	NOT IDENT.
CO-58	-2.889E-02	6.509E-02	1.091E-01	0.000E+00	NOT IDENT.

FE-59	-8.838E-02	1.625E-01	2.616E-01	0.000E+00	NOT IDENT.
ZN-65	-1.010E-01	1.752E-01	2.826E-01	0.000E+00	NOT IDENT.
SE-75	1.864E-02	6.796E-02	1.240E-01	0.000E+00	FAIL ABUN
SR-85	-1.237E-01	7.340E-02	1.116E-01	0.000E+00	NOT IDENT.
Y-88	4.803E-03	4.259E-02	7.331E-02	0.000E+00	NOT IDENT.
Y-91	8.553E+00	2.299E+01	4.036E+01	0.000E+00	NOT IDENT.
NB-94	-6.958E-02	5.392E-02	8.527E-02	0.000E+00	NOT IDENT.
NB-95	-7.260E-02	6.857E-02	1.100E-01	0.000E+00	NOT IDENT.
NB-95M	-2.382E-02	1.962E-01	3.120E-01	0.000E+00	NOT IDENT.
ZR-95	3.718E-02	1.246E-01	2.223E-01	0.000E+00	NOT IDENT.
MO-99	-3.493E+00	1.586E+01	2.729E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	8.110E+15	0.000E+00	0.000E+00	SHORT HLIF
RU-103	4.960E-02	6.985E-02	1.247E-01	0.000E+00	FAIL ABUN
RH-106	-2.140E-01	5.733E-01	9.365E-01	0.000E+00	NOT IDENT.
RU-106	-2.140E-01	5.729E-01	9.365E-01	0.000E+00	NOT IDENT.
AG-108M	7.854E-03	5.740E-02	1.003E-01	0.000E+00	NOT IDENT.
AG-110M	-4.288E-02	6.669E-02	9.618E-02	0.000E+00	NOT IDENT.
SN-113	6.344E-03	7.628E-02	1.341E-01	0.000E+00	NOT IDENT.
CD-115	6.502E+00	1.622E+01	2.844E+01	0.000E+00	NOT IDENT.
SN-117M	2.481E-03	7.406E-02	1.288E-01	0.000E+00	NOT IDENT.
TE-123M	1.691E-03	3.948E-02	6.868E-02	0.000E+00	NOT IDENT.
SB-124	-7.412E-02	8.905E-02	1.189E-01	0.000E+00	NOT IDENT.
SB-125	-1.492E-01	1.698E-01	2.793E-01	0.000E+00	NOT IDENT.
TE-125M	5.363E+00	1.251E+01	2.266E+01	0.000E+00	NOT IDENT.
I-126	3.420E-01	3.435E-01	5.831E-01	0.000E+00	NOT IDENT.
SB-126	9.943E-03	2.240E-01	3.733E-01	0.000E+00	NOT IDENT.
SB-127	-2.506E-01	1.849E+00	3.231E+00	0.000E+00	NOT IDENT.
I-131	-7.026E-02	1.781E-01	3.061E-01	0.000E+00	NOT IDENT.
TE-132	2.995E-01	9.539E-01	1.758E+00	0.000E+00	NOT IDENT.
BA-133	-1.421E-02	7.630E-02	1.163E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	6.065E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.997E-02	8.369E-02	1.480E-01	0.000E+00	NOT IDENT.
CS-135	-2.272E-01	2.442E-01	4.182E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.261E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.048E-02	2.085E-01	3.488E-01	0.000E+00	NOT IDENT.
CE-139	8.870E-03	4.286E-02	7.493E-02	0.000E+00	NOT IDENT.
BA-140	-2.858E-01	4.640E-01	7.418E-01	0.000E+00	NOT IDENT.
LA-140	-1.583E-02	1.014E-01	1.674E-01	0.000E+00	NOT IDENT.
CE-141	-1.501E-02	8.464E-02	1.465E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.601E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.676E-01	2.859E-01	4.744E-01	0.000E+00	NOT IDENT.
PM-144	-4.547E-02	5.393E-02	8.888E-02	0.000E+00	NOT IDENT.
PR-144	-3.376E+00	4.036E+00	6.656E+00	0.000E+00	NOT IDENT.
PM-146	8.247E-02	8.358E-02	1.513E-01	0.000E+00	NOT IDENT.
ND-147	2.916E-01	9.436E-01	1.645E+00	0.000E+00	NOT IDENT.
PM-149	1.120E+02	1.122E+02	2.086E+02	0.000E+00	NOT IDENT.
EU-152	-1.901E-02	1.608E-01	2.823E-01	0.000E+00	FAIL ABUN
GD-153	3.228E-03	1.122E-01	1.797E-01	0.000E+00	NOT IDENT.
EU-154	-1.014E-01	1.290E-01	1.849E-01	0.000E+00	FAIL ABUN
EU-155	1.152E-01	1.341E-01	2.479E-01	0.000E+00	NOT IDENT.
TB-160	-6.478E-02	2.749E-01	4.664E-01	0.000E+00	FAIL ABUN
HO-166M	-4.240E-02	9.777E-02	1.664E-01	0.000E+00	FAIL ABUN
TA-182	1.409E-01	1.918E-01	3.526E-01	0.000E+00	NOT IDENT.
IR-192	-2.822E-02	5.504E-02	9.511E-02	0.000E+00	FAIL ABUN
HG-203	5.997E-02	5.980E-02	1.118E-01	0.000E+00	NOT IDENT.
BI-207	4.117E-02	9.888E-02	1.730E-01	0.000E+00	FAIL ABUN
PB-210	-4.060E+00	3.928E+00	7.086E+00	0.000E+00	NOT IDENT.
PB-211	6.223E-01	1.304E+00	2.275E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.058E+00	1.655E+00	0.000E+00	FAIL ABUN
RN-219	4.036E-02	7.167E-01	1.255E+00	0.000E+00	NOT IDENT.
RA-223	-8.963E-01	1.042E+00	1.745E+00	0.000E+00	FAIL ABUN
RA-224	0.000E+00	1.290E+00	2.284E+00	0.000E+00	NOT IDENT.
AC-227	1.334E-02	3.881E-01	7.022E-01	0.000E+00	NOT IDENT.
TH-227	1.334E-02	3.881E-01	7.022E-01	0.000E+00	NOT IDENT.
TH-229	-7.694E-01	7.441E-01	1.304E+00	0.000E+00	FAIL ABUN
PA-231	-1.020E+00	2.186E+00	3.816E+00	0.000E+00	NOT IDENT.
TH-231	-8.963E-01	1.042E+00	1.745E+00	0.000E+00	FAIL ABUN
PA-233	8.059E-02	1.003E-01	1.857E-01	0.000E+00	NOT IDENT.
PA-234	6.973E-01	6.801E-01	1.218E+00	0.000E+00	NOT IDENT.
PA-234M	-5.084E-01	9.469E+00	1.621E+01	0.000E+00	NOT IDENT.
TH-234	-3.045E-01	1.623E+00	2.669E+00	0.000E+00	FAIL ABUN
U-235	-6.730E-02	2.703E-01	4.679E-01	0.000E+00	FAIL ABUN
NP-237	0.000E+00	8.899E-01	9.202E-01	0.000E+00	NOT IDENT.
U-238	-3.045E-01	1.623E+00	2.669E+00	0.000E+00	FAIL ABUN
NP-239	-6.707E-02	6.047E-01	9.466E-01	0.000E+00	NOT IDENT.
CM-247	-5.881E-03	6.651E-02	1.156E-01	0.000E+00	NOT IDENT.
CF-249	3.807E-02	6.942E-02	1.251E-01	0.000E+00	NOT IDENT.
CF-251	-4.752E-02	1.810E-01	3.072E-01	0.000E+00	NOT IDENT.

ANH-511	4.201E-04	6.071E-02	1.146E-01	0.000E+00	NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 12:13:13.02

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*****************************************************************************
*                            GEL Laboratories LLC                            *
*                              2040 Savage Road                              *
*                            Charleston, SC 29414                            *
*****************************************************************************
Configuration     : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061471.CNF;1
Sample date       : 6-MAR-2010 00:00:00. Acquisition date : 20-MAR-2010 11:12:22
Sample ID         : G1202061471          Sample quantity  : 1.55440E+02 GRAM
Detector name     : GAM20                Detector geometry: CAN
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:00:17.31  0.5%
Energy tolerance : 1.50000 keV           Analyst Initials : MXR1
Abundance limit  : 75.00000              Sensitivity      : 5.00000
Batch ID         : 961099                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	32	10.66*	1.253E+00	1.158E+00	1.158E+00	75.14
CO-57	122.06	189	85.60*	7.377E+00	1.449E-01	1.504E-01	35.60
	136.47	------	10.68	7.171E+00	------ Line Not Found		------
CO-60	1173.23	1963	99.85	1.496E+00	6.344E+00	6.377E+00	9.46
	1332.49	1693	99.98*	1.346E+00	6.074E+00	6.106E+00	9.76
CD-109	88.03	1679	3.70*	6.982E+00	3.138E+01	3.207E+01	12.11
SN-126	64.28	------	9.60	4.779E+00	------ Line Not Found		------
	86.94	1679	8.90	6.982E+00	1.305E+01	1.305E+01	42.22
	87.57	1679	37.00*	6.982E+00	3.138E+00	3.138E+00	12.11
BA-137M	661.66	2642	89.90*	2.434E+00	5.831E+00	5.837E+00	10.93
CS-137	661.66	2642	85.10*	2.434E+00	6.160E+00	6.166E+00	10.95
TL-208	277.37	------	6.60	4.721E+00	------ Line Not Found		------
	583.19	135	85.00*	2.694E+00	2.851E-01	2.851E-01	43.94
	860.56	------	12.50	1.954E+00	------ Line Not Found		------
BI-211	72.87	------	1.23	5.845E+00	------ Line Not Found		------
	351.06	257	12.92*	3.968E+00	2.426E+00	2.426E+00	28.05
PB-212	74.82	204	10.28	6.061E+00	1.578E+00	1.578E+00	38.07
	77.11	304	17.10	6.269E+00	1.367E+00	1.367E+00	26.59
	238.63	461	43.60*	5.249E+00	9.728E-01	9.728E-01	20.12
	300.09	------	3.30	4.461E+00	------ Line Not Found		------
BI-214	609.32	216	45.49*	2.602E+00	8.831E-01	8.831E-01	29.64
	1120.29	------	14.92	1.557E+00	------ Line Not Found		------
	1764.49	28	15.30	1.100E+00	7.946E-01	7.946E-01	55.96
PB-214	74.82	204	5.80	6.061E+00	2.796E+00	2.796E+00	37.65
	77.11	304	9.70	6.269E+00	2.411E+00	2.411E+00	27.84
	242.00	------	7.25	5.198E+00	------ Line Not Found		------
	295.22	120	18.42	4.520E+00	6.980E-01	6.980E-01	56.70
	351.93	257	35.60*	3.968E+00	8.804E-01	8.804E-01	28.58
RA-226	609.32	216	45.49*	2.602E+00	8.831E-01	8.831E-01	29.64
	1120.29	------	14.92	1.557E+00	------ Line Not Found		------
	1764.49	28	15.30	1.100E+00	7.946E-01	7.946E-01	55.96
AC-228	338.32	107	11.27	4.089E+00	1.122E+00	1.122E+00	65.79

Sample ID : G1202061471 Acquisition date : 20-MAR-2010 11:12:22

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	911.20	110	25.80*	1.860E+00	1.111E+00	1.111E+00	49.56
	968.97	107	15.80	1.763E+00	1.852E+00	1.852E+00	47.77
RA-228	338.32	107	11.27	4.089E+00	1.122E+00	1.122E+00	65.79
	911.20	110	25.80*	1.860E+00	1.111E+00	1.111E+00	49.56
	968.97	107	15.80	1.763E+00	1.852E+00	1.852E+00	47.77
TH-228	74.82	204	10.28	6.061E+00	1.578E+00	1.578E+00	36.83
	77.11	304	17.10	6.269E+00	1.367E+00	1.367E+00	26.59
	238.63	461	43.60*	5.249E+00	9.728E-01	9.728E-01	20.12
	300.09	------	3.30	4.461E+00	------	Line Not Found	------
TH-232	338.32	107	11.27	4.089E+00	1.122E+00	1.122E+00	51.60
	911.20	110	25.80*	1.860E+00	1.111E+00	1.111E+00	49.56
	968.97	107	15.80	1.763E+00	1.852E+00	1.852E+00	47.77
AM-241	59.54	4173	35.90*	4.076E+00	1.377E+01	1.377E+01	8.92

Flag: "*" = Keyline

Sample ID : G1202061471 Acquisition date : 20-MAR-2010 11:12:22

Total number of lines in spectrum 22
Number of unidentified lines 1
Number of lines tentatively identified by NID 21 95.45%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	1.158E+00	1.158E+00	0.870E+00	75.14	
CO-57	271.74D	1.04	1.449E-01	1.504E-01	0.535E-01	35.60	
CO-60	5.27Y	1.01	6.074E+00	6.106E+00	0.596E+00	9.76	
CD-109	461.40D	1.02	3.138E+01	3.207E+01	0.388E+01	12.11	
SN-126	2.30E+05Y	1.00	3.138E+00	3.138E+00	0.380E+00	12.11	
BA-137M	30.08Y	1.00	5.831E+00	5.837E+00	0.638E+00	10.93	
CS-137	30.08Y	1.00	6.160E+00	6.166E+00	0.675E+00	10.95	
TL-208	1.41E+10Y	1.00	2.851E-01	2.851E-01	1.253E-01	43.94	
BI-211	7.04E+08Y	1.00	2.426E+00	2.426E+00	0.680E+00	28.05	
PB-212	1.41E+10Y	1.00	9.728E-01	9.728E-01	1.957E-01	20.12	
BI-214	1600.00Y	1.00	8.831E-01	8.831E-01	2.617E-01	29.64	
PB-214	1600.00Y	1.00	8.804E-01	8.804E-01	2.517E-01	28.58	
RA-226	1600.00Y	1.00	8.831E-01	8.831E-01	2.617E-01	29.64	
AC-228	1.41E+10Y	1.00	1.111E+00	1.111E+00	0.550E+00	49.56	
RA-228	1.41E+10Y	1.00	1.111E+00	1.111E+00	0.550E+00	49.56	
TH-228	1.41E+10Y	1.00	9.728E-01	9.728E-01	1.957E-01	20.12	
TH-232	1.41E+10Y	1.00	1.111E+00	1.111E+00	0.550E+00	49.56	
AM-241	432.60Y	1.00	1.377E+01	1.377E+01	0.123E+01	8.92	
	Total Activity :		7.830E+01	7.904E+01			

Grand Total Activity : 7.830E+01 7.904E+01

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

Sample ID : G1202061471 Acquisition date : 20-MAR-2010 11:12:22

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	93.02	78	299	1.05	185.93	183	8	2.16E-02	83.8	7.18E+00	T
0	185.79	103	306	1.96	371.20	365	12	2.87E-02	71.7	6.18E+00	T
0	727.49	62	58	1.39	1453.72	1449	10	1.72E-02	52.3	2.25E+00	T
0	1378.13	15	12	1.06	2755.36	2749	10	4.05E-03	****	1.31E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 20-MAR-2010 12:13:17.32

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*****************************************************************************
*                            GEL Laboratories LLC                            *
*                              2040 Savage Road                              *
*                            Charleston, SC 29414                            *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration    : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202061471.CNF;1 *
* Acquisition date : 20-MAR-2010 11:12:22  Detector SN#    :                *
* Detector ID      : GAM20                 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 01:00:17.31         Half life ratio : 8.00000        *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date      : 6-MAR-2010 00:00:00.  Nuclide Library : SOLID          *
* Sample ID        : G1202061471           Analyst initials: MXR1           *
* Batch Number     : 961099                Sample Quantity : 1.55440E+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	1.158E+00	8.702E-01	6.906E-01	6.023E-02	1.677
CO-57	1.504E-01	5.354E-02	5.633E-02	4.702E-03	2.670
CO-60	6.106E+00	5.958E-01	7.442E-02	6.234E-03	82.038
CD-109	3.207E+01	3.884E+00	1.779E+00	1.682E-01	18.028
SN-126	3.138E+00	3.800E-01	1.746E-01	1.642E-02	17.977
BA-137M	5.837E+00	6.381E-01	8.649E-02	8.680E-03	67.486
CS-137	6.166E+00	6.749E-01	9.137E-02	9.182E-03	67.486
TL-208	2.851E-01	1.253E-01	1.003E-01	1.030E-02	2.843
BI-211	2.426E+00	6.804E-01	5.464E-01	5.235E-02	4.440
PB-212	9.728E-01	1.957E-01	1.724E-01	1.841E-02	5.644
BI-214	8.831E-01	2.617E-01	1.889E-01	2.110E-02	4.676
PB-214	8.804E-01	2.517E-01	1.901E-01	2.100E-02	4.631
RA-226	8.831E-01	2.617E-01	1.889E-01	2.110E-02	4.676
AC-228	1.111E+00	5.503E-01	5.055E-01	6.354E-02	2.197
RA-228	1.111E+00	5.503E-01	5.055E-01	6.354E-02	2.197
TH-228	9.728E-01	1.957E-01	1.724E-01	1.841E-02	5.644
TH-232	1.111E+00	5.503E-01	5.055E-01	6.354E-02	2.197
AM-241	1.377E+01	1.229E+00	3.710E-01	2.903E-02	37.123

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.600E-01		6.021E-01	9.495E-01	9.227E-02	-0.274
NA-22	-3.988E-02		4.695E-02	6.427E-02	5.324E-03	-0.621
NA-24	-2.668E-01		1.838E-01	Half-Life too short		
SC-46	4.896E-02		7.913E-02	1.361E-01	1.357E-02	0.360
V-48	-3.443E-02		1.353E-01	2.176E-01	2.080E-02	-0.158
CR-51	2.410E-02		6.022E-01	1.000E+00	1.002E-01	0.024
MN-54	-2.221E-02		6.895E-02	1.117E-01	1.129E-02	-0.199
CO-56	4.591E-02		7.435E-02	1.284E-01	1.294E-02	0.358
CO-58	-2.889E-02		6.642E-02	1.065E-01	1.081E-02	-0.271
FE-59	-8.838E-02		1.659E-01	2.573E-01	2.426E-02	-0.343
ZN-65	-1.010E-01		1.788E-01	2.781E-01	2.393E-02	-0.363
SE-75	1.864E-02		6.935E-02	1.174E-01	1.163E-02	0.159
SR-85	-1.237E-01		7.489E-02	1.075E-01	1.004E-02	-1.151
Y-88	4.803E-03		4.346E-02	7.317E-02	5.904E-03	0.066
Y-91	8.553E+00		2.346E+01	3.980E+01	3.232E+00	0.215
NB-94	-6.958E-02		5.502E-02	8.285E-02	8.382E-03	-0.840
NB-95	-7.260E-02		6.997E-02	1.071E-01	1.088E-02	-0.678
NB-95M	-2.382E-02		2.002E-01	2.945E-01	3.170E-02	-0.081
ZR-95	3.718E-02		1.271E-01	2.164E-01	2.367E-02	0.172
MO-99	-3.493E+00		1.618E+01	2.656E+01	4.421E+00	-0.132
TC-99M	1.678E+09		4.138E+09	Half-Life too short		
RU-103	4.960E-02		7.128E-02	1.201E-01	1.723E-02	0.413
RH-106	-2.140E-01		5.850E-01	9.070E-01	1.281E-01	-0.236
RU-106	-2.140E-01		5.846E-01	9.070E-01	8.977E-02	-0.236
AG-108M	7.854E-03		5.857E-02	9.624E-02	8.674E-03	0.082
AG-110M	-4.288E-02		6.805E-02	9.329E-02	9.558E-03	-0.460
SN-113	6.344E-03		7.784E-02	1.283E-01	1.106E-02	0.049
CD-115	6.502E+00		1.655E+01	2.742E+01	2.584E+00	0.237
SN-117M	2.481E-03		7.558E-02	1.204E-01	1.039E-02	0.021
TE-123M	1.691E-03		4.029E-02	6.419E-02	5.577E-03	0.026
SB-124	-7.412E-02		9.086E-02	1.184E-01	1.031E-02	-0.626
SB-125	-1.492E-01		1.733E-01	2.678E-01	2.369E-02	-0.557
TE-125M	5.363E+00		1.276E+01	2.098E+01	2.177E+00	0.256
I-126	3.420E-01		3.506E-01	5.657E-01	5.684E-02	0.605
SB-126	9.943E-03		2.286E-01	3.630E-01	3.681E-02	0.027
SB-127	-2.506E-01		1.887E+00	3.137E+00	3.873E-01	-0.080
I-131	-7.026E-02		1.818E-01	2.923E-01	2.739E-02	-0.240
TE-132	2.995E-01		9.734E-01	1.658E+00	2.688E-01	0.181
BA-133	-1.421E-02		7.786E-02	1.109E-01	1.472E-02	-0.128
I-133	4.981E-04		3.094E-03	Half-Life too short		
CS-134	1.997E-02		8.540E-02	1.443E-01	1.472E-02	0.138
CS-135	-2.272E-01		2.492E-01	3.961E-01	4.390E-02	-0.573
I-135	-1.173E+09		6.435E+08	Half-Life too short		
CS-136	-4.048E-02		2.128E-01	3.426E-01	3.250E-02	-0.118
CE-139	8.870E-03		4.373E-02	7.011E-02	6.121E-03	0.127
BA-140	-2.858E-01		4.735E-01	7.156E-01	2.443E-01	-0.399
LA-140	-1.583E-02		1.035E-01	1.664E-01	1.405E-02	-0.095
CE-141	-1.501E-02		8.637E-02	1.366E-01	1.179E-02	-0.110

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-143	4.423E-04	+	1.327E-04	Half-Life too short		
CE-144	-2.676E-01		2.917E-01	4.415E-01	6.688E-02	-0.606
PM-144	-4.547E-02		5.503E-02	8.634E-02	8.729E-03	-0.527
PR-144	-3.376E+00		4.119E+00	6.466E+00	6.536E-01	-0.522
PM-146	8.247E-02		8.528E-02	1.453E-01	1.573E-02	0.567
ND-147	2.916E-01		9.629E-01	1.587E+00	2.450E-01	0.184
PM-149	1.120E+02		1.144E+02	1.979E+02	3.225E+01	0.566
EU-152	-1.901E-02		1.640E-01	2.692E-01	2.625E-02	-0.071
GD-153	3.228E-03		1.145E-01	1.659E-01	1.472E-02	0.019
EU-154	-1.014E-01		1.316E-01	1.827E-01	2.031E-02	-0.555
EU-155	1.152E-01		1.368E-01	2.293E-01	1.993E-02	0.502
TB-160	-6.478E-02		2.805E-01	4.560E-01	4.559E-02	-0.142
HO-166M	-4.240E-02		9.976E-02	1.618E-01	1.639E-02	-0.262
TA-182	1.409E-01		1.957E-01	3.479E-01	2.839E-02	0.405
IR-192	-2.822E-02		5.616E-02	9.047E-02	8.750E-03	-0.312
HG-203	5.997E-02		6.102E-02	1.060E-01	1.076E-02	0.566
BI-207	4.117E-02		1.009E-01	1.700E-01	1.535E-02	0.242
PB-210	-4.060E+00		4.008E+00	6.428E+00	5.906E-01	-0.632
PB-211	6.223E-01		1.330E+00	2.178E+00	1.054E+00	0.286
BI-212	1.997E+00	+	1.079E+00	1.609E+00	2.182E-01	1.241
RN-219	4.036E-02		7.313E-01	1.202E+00	1.776E-01	0.034
RA-223	-8.963E-01		1.063E+00	1.661E+00	2.960E-01	-0.540
RA-224	4.190E+00		1.316E+00	2.158E+00	2.086E-01	1.942
AC-227	1.334E-02		3.960E-01	6.643E-01	8.584E-02	0.020
TH-227	1.334E-02		3.960E-01	6.643E-01	9.554E-02	0.020
TH-229	-7.694E-01		7.593E-01	1.225E+00	1.115E-01	-0.628
PA-231	-1.020E+00		2.231E+00	3.620E+00	5.573E-01	-0.282
TH-231	-8.963E-01		1.063E+00	1.661E+00	2.960E-01	-0.540
PA-233	8.059E-02		1.024E-01	1.765E-01	1.752E-02	0.456
PA-234	6.973E-01		6.939E-01	1.193E+00	2.303E-01	0.585
PA-234M	-5.084E-01		9.663E+00	1.590E+01	1.701E+00	-0.032
TH-234	-3.045E-01		1.656E+00	2.439E+00	4.332E-01	-0.125
U-235	-6.730E-02		2.758E-01	4.362E-01	7.359E-02	-0.154
NP-237	3.390E+00		9.080E-01	8.471E-01	1.942E-01	4.001
U-238	-3.045E-01		1.656E+00	2.439E+00	4.332E-01	-0.125
NP-239	-6.707E-02		6.171E-01	8.781E-01	7.354E-02	-0.076
CM-247	-5.881E-03		6.787E-02	1.106E-01	9.352E-03	-0.053
CF-249	3.807E-02		7.084E-02	1.196E-01	1.009E-02	0.318
CF-251	-4.752E-02		1.847E-01	2.879E-01	2.558E-02	-0.165
ANH-511	4.201E-04		6.195E-02	1.104E-01	1.029E-02	0.004

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          GEL Laboratories LLC                             *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration     : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202061471          *
* Acquisition date  : 20-MAR-2010 11:12:22 Detector SN#     :               *
* Detector ID       : GAM20                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 01:00:17.31      Half life ratio : 8.000          *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date       :  6-MAR-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID         : G1202061471          Analyst initials: MXR1           *
* Batch Number      : 961099               Sample Quantity : 1.5544E+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	1.158E+00	8.528E-01	3.485E-01	4.351E-01
CO-57	1.504E-01	5.247E-02	3.035E-02	2.677E-02
CO-60	6.106E+00	5.838E-01	3.765E-02	2.979E-01
CD-109	3.207E+01	3.806E+00	9.664E-01	1.942E+00
SN-126	3.138E+00	3.724E-01	9.484E-02	1.900E-01
BA-137M	5.837E+00	6.254E-01	4.461E-02	3.191E-01
CS-137	6.166E+00	6.614E-01	4.712E-02	3.375E-01
TL-208	2.851E-01	1.228E-01	5.191E-02	6.265E-02
BI-211	2.426E+00	6.668E-01	2.866E-01	3.402E-01
PB-212	9.728E-01	1.918E-01	9.132E-02	9.787E-02
BI-214	8.831E-01	2.565E-01	9.762E-02	1.309E-01
PB-214	8.804E-01	2.466E-01	9.971E-02	1.258E-01
RA-226	8.831E-01	2.565E-01	9.762E-02	1.309E-01
AC-228	1.111E+00	5.393E-01	2.585E-01	2.752E-01
RA-228	1.111E+00	5.393E-01	2.585E-01	2.752E-01
TH-228	9.728E-01	1.918E-01	9.132E-02	9.787E-02
TH-232	1.111E+00	5.393E-01	2.585E-01	2.752E-01
AM-241	1.377E+01	1.204E+00	2.034E-01	6.143E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-2.600E-01	5.901E-01	4.940E-01	3.011E-01	NOT IDENT.
NA-22	-3.988E-02	4.601E-02	3.255E-02	2.347E-02	NOT IDENT.
NA-24	-2.668E+05	3.603E+05	0.000E+00	1.838E+05	SHORT HLIF
SC-46	4.896E-02	7.755E-02	6.965E-02	3.957E-02	NOT IDENT.
V-48	-3.443E-02	1.326E-01	1.110E-01	6.765E-02	NOT IDENT.
CR-51	2.410E-02	5.901E-01	5.259E-01	3.011E-01	NOT IDENT.
MN-54	-2.221E-02	6.757E-02	5.726E-02	3.448E-02	NOT IDENT.
CO-56	4.591E-02	7.287E-02	6.578E-02	3.718E-02	NOT IDENT.
CO-58	-2.889E-02	6.509E-02	5.460E-02	3.321E-02	NOT IDENT.

FE-59	-8.838E-02	1.625E-01	1.309E-01	8.293E-02	NOT IDENT.
ZN-65	-1.010E-01	1.752E-01	1.414E-01	8.938E-02	NOT IDENT.
SE-75	1.864E-02	6.796E-02	6.206E-02	3.467E-02	FAIL ABUN
SR-85	-1.237E-01	7.340E-02	5.584E-02	3.745E-02	NOT IDENT.
Y-88	4.803E-03	4.259E-02	3.668E-02	2.173E-02	NOT IDENT.
Y-91	8.553E+00	2.299E+01	2.019E+01	1.173E+01	NOT IDENT.
NB-94	-6.958E-02	5.392E-02	4.266E-02	2.751E-02	NOT IDENT.
NB-95	-7.260E-02	6.857E-02	5.501E-02	3.498E-02	NOT IDENT.
NB-95M	-2.382E-02	1.962E-01	1.561E-01	1.001E-01	NOT IDENT.
ZR-95	3.718E-02	1.246E-01	1.112E-01	6.356E-02	NOT IDENT.
MO-99	-3.493E+00	1.586E+01	1.365E+01	8.090E+00	NOT IDENT.
TC-99M	1.678E+15	8.110E+15	0.000E+00	4.138E+15	SHORT HLIF
RU-103	4.960E-02	6.985E-02	6.241E-02	3.564E-02	FAIL ABUN
RH-106	-2.140E-01	5.733E-01	4.685E-01	2.925E-01	NOT IDENT.
RU-106	-2.140E-01	5.729E-01	4.685E-01	2.923E-01	NOT IDENT.
AG-108M	7.854E-03	5.740E-02	5.020E-02	2.928E-02	NOT IDENT.
AG-110M	-4.288E-02	6.669E-02	4.812E-02	3.403E-02	NOT IDENT.
SN-113	6.344E-03	7.628E-02	6.709E-02	3.892E-02	NOT IDENT.
CD-115	6.502E+00	1.622E+01	1.423E+01	8.276E+00	NOT IDENT.
SN-117M	2.481E-03	7.406E-02	6.444E-02	3.779E-02	NOT IDENT.
TE-123M	1.691E-03	3.948E-02	3.436E-02	2.014E-02	NOT IDENT.
SB-124	-7.412E-02	8.905E-02	5.949E-02	4.543E-02	NOT IDENT.
SB-125	-1.492E-01	1.698E-01	1.398E-01	8.663E-02	NOT IDENT.
TE-125M	5.363E+00	1.251E+01	1.134E+01	6.381E+00	NOT IDENT.
I-126	3.420E-01	3.435E-01	2.917E-01	1.753E-01	NOT IDENT.
SB-126	9.943E-03	2.240E-01	1.868E-01	1.143E-01	NOT IDENT.
SB-127	-2.506E-01	1.849E+00	1.616E+00	9.435E-01	NOT IDENT.
I-131	-7.026E-02	1.781E-01	1.532E-01	9.089E-02	NOT IDENT.
TE-132	2.995E-01	9.539E-01	8.795E-01	4.867E-01	NOT IDENT.
BA-133	-1.421E-02	7.630E-02	5.817E-02	3.893E-02	NOT IDENT.
I-133	4.981E+02	6.065E+03	0.000E+00	3.094E+03	SHORT HLIF
CS-134	1.997E-02	8.369E-02	7.405E-02	4.270E-02	NOT IDENT.
CS-135	-2.272E-01	2.442E-01	2.092E-01	1.246E-01	NOT IDENT.
I-135	-1.173E+15	1.261E+15	0.000E+00	6.435E+14	SHORT HLIF
CS-136	-4.048E-02	2.085E-01	1.745E-01	1.064E-01	NOT IDENT.
CE-139	8.870E-03	4.286E-02	3.749E-02	2.187E-02	NOT IDENT.
BA-140	-2.858E-01	4.640E-01	3.711E-01	2.367E-01	NOT IDENT.
LA-140	-1.583E-02	1.014E-01	8.377E-02	5.173E-02	NOT IDENT.
CE-141	-1.501E-02	8.464E-02	7.328E-02	4.319E-02	NOT IDENT.
CE-143	4.423E+02	2.601E+02	0.000E+00	1.327E+02	SHORT HLIF
CE-144	-2.676E-01	2.859E-01	2.374E-01	1.459E-01	NOT IDENT.
PM-144	-4.547E-02	5.393E-02	4.447E-02	2.751E-02	NOT IDENT.
PR-144	-3.376E+00	4.036E+00	3.330E+00	2.059E+00	NOT IDENT.
PM-146	8.247E-02	8.358E-02	7.571E-02	4.264E-02	NOT IDENT.
ND-147	2.916E-01	9.436E-01	8.232E-01	4.814E-01	NOT IDENT.
PM-149	1.120E+02	1.122E+02	1.044E+02	5.722E+01	NOT IDENT.
EU-152	-1.901E-02	1.608E-01	1.413E-01	8.202E-02	FAIL ABUN
GD-153	3.228E-03	1.122E-01	8.991E-02	5.727E-02	NOT IDENT.
EU-154	-1.014E-01	1.290E-01	9.252E-02	6.581E-02	FAIL ABUN
EU-155	1.152E-01	1.341E-01	1.240E-01	6.842E-02	NOT IDENT.
TB-160	-6.478E-02	2.749E-01	2.333E-01	1.402E-01	FAIL ABUN
HO-166M	-4.240E-02	9.777E-02	8.327E-02	4.988E-02	FAIL ABUN
TA-182	1.409E-01	1.918E-01	1.764E-01	9.787E-02	NOT IDENT.
IR-192	-2.822E-02	5.504E-02	4.758E-02	2.808E-02	FAIL ABUN
HG-203	5.997E-02	5.980E-02	5.594E-02	3.051E-02	NOT IDENT.
BI-207	4.117E-02	9.888E-02	8.653E-02	5.045E-02	FAIL ABUN
PB-210	-4.060E+00	3.928E+00	3.545E+00	2.004E+00	NOT IDENT.
PB-211	6.223E-01	1.304E+00	1.138E+00	6.652E-01	NOT IDENT.
BI-212	1.997E+00	1.058E+00	8.279E-01	5.395E-01	FAIL ABUN
RN-219	4.036E-02	7.167E-01	6.281E-01	3.657E-01	NOT IDENT.
RA-223	-8.963E-01	1.042E+00	8.731E-01	5.317E-01	FAIL ABUN
RA-224	4.190E+00	1.290E+00	1.143E+00	6.582E-01	NOT IDENT.
AC-227	1.334E-02	3.881E-01	3.513E-01	1.980E-01	NOT IDENT.
TH-227	1.334E-02	3.881E-01	3.513E-01	1.980E-01	NOT IDENT.
TH-229	-7.694E-01	7.441E-01	6.523E-01	3.797E-01	FAIL ABUN
PA-231	-1.020E+00	2.186E+00	1.909E+00	1.115E+00	NOT IDENT.
TH-231	-8.963E-01	1.042E+00	8.731E-01	5.317E-01	FAIL ABUN
PA-233	8.059E-02	1.003E-01	9.289E-02	5.120E-02	NOT IDENT.
PA-234	6.973E-01	6.801E-01	6.093E-01	3.470E-01	NOT IDENT.
PA-234M	-5.084E-01	9.469E+00	8.108E+00	4.831E+00	NOT IDENT.
TH-234	-3.045E-01	1.623E+00	1.335E+00	8.279E-01	FAIL ABUN
U-235	-6.730E-02	2.703E-01	2.341E-01	1.379E-01	FAIL ABUN
NP-237	3.390E+00	8.899E-01	4.604E-01	4.540E-01	NOT IDENT.
U-238	-3.045E-01	1.623E+00	1.335E+00	8.279E-01	FAIL ABUN
NP-239	-6.707E-02	6.047E-01	4.736E-01	3.085E-01	NOT IDENT.
CM-247	-5.881E-03	6.651E-02	5.782E-02	3.393E-02	NOT IDENT.
CF-249	3.807E-02	6.942E-02	6.258E-02	3.542E-02	NOT IDENT.
CF-251	-4.752E-02	1.810E-01	1.537E-01	9.233E-02	NOT IDENT.

ANH-511	4.201E-04	6.071E-02	5.732E-02	3.098E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	552.4398
49.72	604.1600
57.36	0.0000
59.54	579.0117
63.29	334.7217
63.29	334.7217
64.28	306.9193
67.75	353.5674
69.67	351.6808
70.83	331.4899
72.81	367.8333
72.87	367.8699
72.87	367.8699
74.82	364.9431
74.82	364.9431
74.82	364.9431
74.97	365.0318
77.11	366.2866
77.11	366.2866
77.11	366.2866
79.69	357.9626
79.80	371.9733
80.12	372.1582
80.19	372.1985
80.57	389.4874
81.00	406.8264
81.07	406.8704
81.07	406.8704
83.79	396.0863
83.79	396.0863
85.43	417.3851
86.48	435.2573
86.55	435.3040
86.79	435.4567
86.94	399.5192
87.57	399.8889
88.03	400.1593
88.47	400.4161
89.96	242.3439
91.11	242.7446
92.59	243.2568
92.59	243.2568
93.35	230.8685
94.67	247.1396
94.87	215.5153
94.87	215.5153
95.86	226.9200
97.43	219.4606
98.44	227.1954
99.53	240.2917
100.11	212.8143
103.18	231.8528
103.37	222.2928
105.31	215.3598
106.12	220.9506
109.28	229.3904
111.00	226.6535
111.76	240.9153
116.30	230.3266
117.23	238.2024
121.12	229.4878
121.78	232.9492
122.06	233.0273
123.07	244.8078
131.20	285.2687
133.52	273.8222
136.00	217.8861

136.47	240.2446
140.51	222.3163
140.51	0.0000
143.76	227.5800
144.24	238.9143
144.24	238.9143
145.44	235.8505
152.43	246.6293
153.25	225.3224
154.21	206.2774
154.21	206.2774
156.02	231.6375
158.56	220.8471
159.00	218.6660
162.66	224.0350
163.33	233.3329
165.86	224.7369
176.60	195.7724
177.52	208.6926
181.07	198.9103
184.41	223.1445
185.72	223.4090
193.51	252.3120
197.04	234.5054
205.31	258.4516
210.85	225.6276
215.65	224.7219
222.11	222.2844
227.38	225.0300
228.16	219.7205
228.18	220.6322
235.69	222.1070
235.96	232.3822
235.96	232.3822
238.63	308.4633
238.63	308.4633
240.99	236.2093
242.00	217.3027
244.70	300.6872
252.40	186.8075
252.80	192.4133
256.23	195.6779
256.23	195.6779
260.90	183.3108
264.66	181.0047
268.22	222.6166
269.46	187.2345
269.46	187.2345
271.23	176.2184
273.65	249.7525
276.40	182.4966
277.37	177.9114
277.60	181.7061
278.00	178.9310
279.20	174.3634
279.54	185.7186
280.46	207.5307
283.69	178.6785
284.31	176.8619
285.41	154.2775
285.90	145.8084
287.50	170.6067
293.27	0.0000
295.22	173.3910
295.96	196.7313
298.57	189.4300
299.98	172.7857
299.98	172.7857
300.09	186.5593
300.09	186.5593
300.13	186.5653
301.36	184.7465
302.85	194.3610
304.50	169.6484
304.50	169.6484
304.85	163.9341
308.46	172.9633
311.90	144.4519

316.51	173.8477
319.41	159.6474
320.08	169.3951
323.87	186.2871
323.87	186.2871
328.76	159.5982
333.37	134.2826
334.37	164.0497
334.37	164.0497
338.28	173.8304
338.28	173.8304
338.32	173.8359
338.32	173.8359
338.32	173.8359
340.48	175.6289
340.55	175.6344
344.28	168.9529
351.06	156.2126
351.93	143.0707
356.01	151.9149
364.49	151.0653
366.42	145.2604
383.85	167.7721
388.16	149.0343
388.63	146.0509
391.69	152.3479
400.66	154.0944
401.81	159.2591
402.40	165.3976
404.85	154.4353
410.95	170.2184
414.70	171.5735
423.72	127.2260
427.09	163.4156
427.87	176.8475
433.94	168.1062
453.88	152.0640
463.37	161.1318
468.07	187.7075
473.00	151.3586
476.78	144.2560
477.60	147.4725
487.02	122.7278
492.35	135.7559
497.08	110.5397
511.00	126.2077
514.00	200.2740
527.90	104.5219
529.87	0.0000
531.02	104.6640
537.26	119.0100
546.56	0.0000
563.25	109.3872
569.33	101.9855
569.50	101.9912
569.70	98.7094
583.19	104.7702
600.60	93.2849
602.73	119.1507
604.72	83.6499
609.32	99.1771
609.32	99.1771
610.33	99.2178
614.28	91.1077
618.01	98.3958
621.93	110.8644
621.93	110.8644
633.25	82.1027
635.95	87.3663
636.99	84.6987
645.85	92.2134
657.76	104.4293
661.66	70.9332
661.66	70.9332
664.57	0.0000
666.33	59.2125
666.50	59.2157
677.62	72.2611

685.70	83.4818
695.00	104.0091
696.49	96.6969
696.51	96.6969
697.00	93.0280
702.65	106.1364
706.68	68.3922
711.68	90.7337
720.70	75.4617
721.93	0.0000
722.78	75.9025
722.91	75.9065
723.31	82.1138
724.19	69.7394
727.33	80.0560
733.00	59.0704
735.93	69.0877
739.50	72.9098
747.24	79.6626
752.31	91.0630
753.82	84.5332
756.73	87.4373
763.94	96.1280
765.81	104.6750
766.42	88.6620
777.92	98.4648
778.90	88.0775
783.70	81.5761
785.37	97.7544
795.86	97.1341
801.95	90.6443
810.29	91.8398
810.76	81.3290
815.77	64.2078
818.51	103.5888
832.01	92.4680
834.85	102.1906
836.80	0.0000
846.77	82.2462
856.80	108.7023
860.56	84.5340
871.09	100.3999
873.19	101.4381
875.33	0.0000
879.36	99.6716
880.51	98.7265
883.24	96.8513
884.68	95.9137
889.28	87.2226
898.04	96.2917
911.20	116.7155
911.20	116.7155
911.20	116.7155
926.50	105.0114
937.49	107.3276
944.13	97.5741
946.00	100.6129
949.00	115.6545
962.29	146.7741
964.08	95.1160
966.15	96.8390
968.97	140.3589
968.97	140.3589
968.97	140.3589
983.53	87.5735
996.26	93.9377
1001.03	101.1377
1004.73	100.2254
1037.84	71.4937
1038.76	0.0000
1048.07	93.1906
1050.41	86.0713
1050.41	86.0713
1063.66	74.0285
1085.87	78.5865
1099.45	79.8913
1112.07	94.7147
1115.54	104.1748

1120.29	88.6523
1120.29	88.6523
1120.55	90.7425
1121.30	91.8027
1131.51	0.0000
1173.23	49.6529
1177.93	45.8301
1189.05	31.8120
1204.77	26.6077
1221.41	20.3007
1231.02	24.6284
1235.36	28.9406
1238.28	20.3786
1260.41	0.0000
1271.85	24.8575
1274.44	25.9535
1274.54	27.0349
1291.59	14.1115
1298.22	0.0000
1312.11	30.5307
1332.49	19.7139
1365.19	15.6248
1368.63	0.0000
1384.29	22.1465
1408.01	15.7653
1457.56	0.0000
1460.82	16.8728
1489.16	12.2547
1505.03	13.2384
1596.21	15.3958
1620.50	15.4655
1678.03	0.0000
1690.97	12.7276
1764.49	7.9339
1764.49	7.9339
1770.23	5.1054
1771.35	19.8584
1791.20	0.0000
1836.06	9.0348

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202061471

Total Uranium Activity	-9.3706E-01	ug/g
Total Uranium Counting Unc.	4.8294E+00	ug/g
Total Uranium Tpu	2.4640E-06	ug/g
Total Uranium Mda	3.9740E+00	ug/g

```
*****************************************************************************
*                                                                           *
*                          GEL Laboratories LLC                           *
*                               2040 SAVAGE ROAD                            *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID      : 961099                    SAMPLE ID  : G1202061471      *
*   ANALYST       : MXR1                      DETECTOR   : GAM20            *
*   SAMPLE DATE   :  6-MAR-2010 00:00:00.00   COUNT TIME :    0 01:00:00.00 *
*   ANALYSIS DATE: 20-MAR-2010 11:12:22.31    SAMPLE ALQT:  155.440 GRAM    *
*                                                                           *
*****************************************************************************


        GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 2.706E+01
        GROSS GAMMA ERROR  (pCi/GRAM  )   : 2.360E+00
        GROSS GAMMA MDA    (pCi/GRAM  )   : 3.804E+00
        GROSS GAMMA DLC    (pCi/GRAM  )   : 1.846E+00
```

Radiochemistry Batch Checklist, Rev10

Batch# 964063 Product: H3 Date: 3-30-10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to100 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%. Or meets the client's contract acceptance criteria.			NA
Method blank is less than the RDL/ LLD. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms. All line outs initialed and dated. No transcription errors are apparent.	✓		
Aux data is correct.			NA
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			NA
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			NA
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.			NA
Aliquot Correction completed if required.			NA
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: [signature]

Secondary Review Performed By: [signature] 3/30/10

LANL 3-31-10

Tritium Que Sheet

/ 29-MAR-10

Batch #: 964063 **Analyst:** KXK2 **First Client Due Date** 31-MAR-10 **Internal Due Date:** 20-MAR-10

Spike Isotope: Hydrogen-3 **Spike Code:** —— **Expiration Date:** —— **Vol:** ——

LCS Isotope: Hydrogen-3 **LCS Code:** 0134-K **Expiration Date:** 3/11/11 **Vol:** 0.1

Prep Date: 3/26/10 **Initials:** KKW **Pipet ID:** 2970968 **Witness:** 3/29/10

Page 597 of 817

Sample ID	Client Samp ID	Type	Hazard Code	Min CRDL	Matrix	Client	Sample Date	Aliquot in vial (g/mL)	LSC Rack #	Dist Rig #	Vol added for Dist (mL)	Initial Sample Aliquot (g/mL)	Final Wt (g)	Total Moisture Dist Vol (mL) KKW 3/29/10
248515001-1	RE36-10-7501	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	5	1		290.91	221.09	69.82
248515002-1	RE36-10-7524	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	6	2		227.84	191.39	36.45
248515003-1	RE36-10-7525	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	7	3		385.82	308.27	77.55
248517001-1	RE36-10-8292	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	8	4		171.72	133.77	37.95
248521001-1	RE36-10-8288	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	9	5		305.80	255.65	50.15
248521002-1	RE36-10-8279	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	10	6		309.69	287.70	21.99
248521003-1	RE36-10-8277	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	11	7		406.14	302.98	103.16
248521004-1	RE36-10-8280	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	12	8	3/29/10	384.86	348.30	36.56
248521005-1	RE36-10-8278	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	13	9		447.75	419.09	28.66
248521006-1	RE36-10-8274	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	14	10		500.95	449.85	51.10
248521007-1	RE36-10-8291	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	15	11	KKW	252.51	179.53	72.98
248521008-1	RE36-10-8287	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	16	12		405.46	272.06	133.40
248521009-1	RE36-10-8273	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	17	13		242.34	~~106.09~~	70.28 *72.0
248521010-1	RE36-10-8275	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	18	14		167.25	~~368.39~~	67.23 *100.0
248521011-1	RE36-10-8276	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	19	15		431.37	368.39	62.98
248526001-1	RE36-10-8466	SAMPLE		.25 pCi/mL	SOIL	LANL010	25-FEB-10	10	20	16		606.80	531.56	75.24
1202068228-1	MB for batch 964063	MB		.25 pCi/mL	SOIL	QC ACCOUNT		10	21	17		20.00	0.00	20.00
1202068229-1	RE36-10-8466(248526001DUP)	DUP		.25 pCi/mL	SOIL	QC ACCOUNT	25-FEB-10	10	22	16		606.80	531.56	75.24
1202068230-1	LCS for batch 964063	LCS		.25 pCi/mL	SOIL	QC ACCOUNT		10	23	18		20.00	0.00	20.00

Bkg Rack #: 4

Comments:

Bkg prepared with dead water? Yes/No

Instrument Used (circle as appropriate): *LS6000 (Red) 7065155, LS6500 (Blue) 7067083, LS6500 (Gold) 7070506, LS6500 (Green) 7067404, Wallac (Yellow) 4140127, LS6000 (Brown) 7060655, Wallac (Pink) 2200082, Wallac (White) 4140299, Purple 7069123, Silver 7060656, Orange DG06095168*

Calibration Used : *Ecoscint Ultra (10 mL sample/13 mL Econscint Ultra)*

Data Reviewed By: 3-30-10

GEL Laboratories LLC, Radiochemistry Division

DATE	3/29/2010	INITIALS	KXK2	BATCH NUMBER	964063

Sample #	Flask (g)	Sample Wet (g)	Flask and Sample Wet (g)	% Moisture of Sample (Balance Interface using % Moisture Batch)	Total Moisture in Sample (mL)	Sample Dry (g)	Flask and Sample Dry (g)	mLs aliquoted into LSC vial
248515001	200	290.91	490.91	0.240	69.82	221.09	421.09	10
248515002	200	227.84	427.84	0.160	36.45	191.39	391.39	10
248515003	200	385.82	585.82	0.201	77.55	308.27	508.27	10
248517001	200	171.72	371.72	0.221	37.95	133.77	333.77	10
248521001	200	305.80	505.80	0.164	50.15	255.65	455.65	10
248521002	200	309.69	509.69	0.071	21.99	287.70	487.70	10
248521003	200	406.14	606.14	0.254	103.16	302.98	502.98	10
248521004	200	384.86	584.86	0.095	36.56	348.30	548.30	10
248521005	200	447.75	647.75	0.064	28.66	419.09	619.09	10
248521006	200	500.95	700.95	0.102	51.10	449.85	649.85	10
248521007	200	252.51	452.51	0.289	72.98	179.53	379.53	10
248521008	200	405.46	605.46	0.329	133.40	272.06	472.06	10
248521009	200	242.34	442.34	0.290	70.28	172.06	372.06	10
248521010	200	167.25	367.25	0.402	67.23	100.02	300.02	10
248521011	200	431.37	631.37	0.146	62.98	368.39	568.39	10
248526001	200	606.80	806.80	0.124	75.24	531.56	731.56	10
MB	200	20.00	220.00	1.000	20.00	0.00	200.00	10
DUP	200	606.80	806.80	0.124	75.24	531.56	731.56	10
LCS	200	20.00	220.00	1.000	20.00	0.00	200.00	10

Tritium Solid

Filename :	H3VAC.XLS	Spike S/N :	N/A	LCS S/N :	0134-K
File type :	Excel	Spike Exp Date :	N/A	LCS Exp Date :	3/11/2011
Version # :	1.2.7	Spike Activity (dpm/ml):	N/A	LCS Activity (dpm/ml):	2451.91
		Spike Volume Added:	N/A	LCS Volume Added:	0.10
Batch :	964063				
Analyst :	KXK2				
Prep Date :	3/26/2010				

					Procedure Code :	LSC_VH3S	
H-3 Abundance :	1	Pipet, 0.1 ml Stdev : +/-	0.000701	ml	Parmname :	Tritium	
Method Uncertainty :	0.0691	Pipet, 0.5 ml Stdev : +/-	0.002564	ml	Required MDC :	250	pCi/L
Geometry:	10mL DW/13mL Ecoscint Ultra	Pipet, 1.0 ml Stdev : +/-	0.005480	ml	Halflife of Tritium :	12.32	years
		Pipet, 5.0 ml Stdev : +/-	0.025729	ml			

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	248515001.1	290.91	0.0698	0.0100	2.5729E-05	221.09	24.00%	1	2/25/2010 12:00
2	248515002.1	227.84	0.0365	0.0100	2.5729E-05	191.39	16.00%	2	2/25/2010 12:00
3	248515003.1	385.82	0.0776	0.0100	2.5729E-05	308.27	20.10%	3	2/25/2010 12:00
4	248517001.1	171.72	0.0380	0.0100	2.5729E-05	133.77	22.10%	4	2/25/2010 12:00
5	248521001.1	305.80	0.0502	0.0100	2.5729E-05	255.65	16.40%	5	2/25/2010 12:00
6	248521002.1	309.69	0.0220	0.0100	2.5729E-05	287.70	7.10%	6	2/25/2010 12:00
7	248521003.1	406.14	0.1032	0.0100	2.5729E-05	302.98	25.40%	7	2/25/2010 12:00
8	248521004.1	384.86	0.0366	0.0100	2.5729E-05	348.30	9.50%	8	2/25/2010 12:00
9	248521005.1	447.75	0.0287	0.0100	2.5729E-05	419.09	6.40%	9	2/25/2010 12:00
10	248521006.1	500.95	0.0511	0.0100	2.5729E-05	449.85	10.20%	10	2/25/2010 12:00
11	248521007.1	252.51	0.0730	0.0100	2.5729E-05	179.53	28.90%	11	2/25/2010 12:00
12	248521008.1	405.46	0.1334	0.0100	2.5729E-05	272.06	32.90%	12	2/25/2010 12:00
13	248521009.1	242.34	0.0703	0.0100	2.5729E-05	172.06	29.00%	13	2/25/2010 12:00
14	248521010.1	167.25	0.0672	0.0100	2.5729E-05	100.02	40.20%	14	2/25/2010 12:00
15	248521011.1	431.37	0.0630	0.0100	2.5729E-05	368.39	14.60%	15	2/25/2010 12:00
16	248526001.1	606.80	0.0752	0.0100	2.5729E-05	531.56	12.40%	16	2/25/2010 12:00
17	1202068228.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	17	3/26/2010 0:00
18	1202068229.1	606.80	0.0752	0.0100	2.5729E-05	531.56	12.40%	16	2/25/2010 12:00
19	1202068230.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	18	3/26/2010 0:00

Analytical SOP: GL-RAD-A-002
Instrument SOP: GL-RAD-I-017

Count raw Data					Background				Calibration Data					Backgrounds	
Pos.	Rack Position #	Counting Time (min.)	Quench#	Gross cpm	cpm	Count Time (min.)	Count Start Date/Time	Sample Decay	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Rack Position #	Count Start Date/Time
1	5	50.0298	805.32	1.11	1.14	120	3/29/2010 14:07	0.995	LSCPINK	8/21/2009	8/31/2010	0.1690	0.00792	4	3/29/2010 12:05
2	6	50.0298	806.43	1.21	1.14	120	3/29/2010 15:00	0.995	LSCPINK	8/21/2009	8/31/2010	0.1702	0.00792	4	3/29/2010 12:05
3	7	50.0298	806.56	1.03	1.14	120	3/29/2010 15:53	0.995	LSCPINK	8/21/2009	8/31/2010	0.1703	0.00792	4	3/29/2010 12:05
4	8	50.0298	808.02	1.31	1.14	120	3/29/2010 16:45	0.995	LSCPINK	8/21/2009	8/31/2010	0.1717	0.00792	4	3/29/2010 12:05
5	9	50.0298	807.39	1.01	1.14	120	3/29/2010 17:38	0.995	LSCPINK	8/21/2009	8/31/2010	0.1711	0.00792	4	3/29/2010 12:05
6	10	50.0298	804.89	1.61	1.14	120	3/29/2010 18:30	0.995	LSCPINK	8/21/2009	8/31/2010	0.1686	0.00792	4	3/29/2010 12:05
7	11	50.0297	804.82	0.99	1.14	120	3/29/2010 19:23	0.995	LSCPINK	8/21/2009	8/31/2010	0.1685	0.00792	4	3/29/2010 12:05
8	12	50.0297	805.23	1.09	1.14	120	3/29/2010 20:15	0.995	LSCPINK	8/21/2009	8/31/2010	0.1690	0.00792	4	3/29/2010 12:05
9	13	50.0297	806.27	1.05	1.14	120	3/29/2010 21:08	0.995	LSCPINK	8/21/2009	8/31/2010	0.1700	0.00792	4	3/29/2010 12:05
10	14	50.0297	806.41	1.03	1.14	120	3/29/2010 22:00	0.995	LSCPINK	8/21/2009	8/31/2010	0.1701	0.00792	4	3/29/2010 12:05
11	15	50.0297	805.72	0.76	1.14	120	3/29/2010 22:53	0.995	LSCPINK	8/21/2009	8/31/2010	0.1695	0.00792	4	3/29/2010 12:05
12	16	50.0297	804.12	0.78	1.14	120	3/29/2010 23:45	0.995	LSCPINK	8/21/2009	8/31/2010	0.1678	0.00792	4	3/29/2010 12:05
13	17	50.0298	804.4	0.99	1.14	120	3/30/2010 1:53	0.995	LSCPINK	8/21/2009	8/31/2010	0.1681	0.00792	4	3/29/2010 12:05
14	18	50.0298	807.57	0.97	1.14	120	3/30/2010 2:46	0.995	LSCPINK	8/21/2009	8/31/2010	0.1713	0.00792	4	3/29/2010 12:05
15	19	50.0298	806.26	0.89	1.14	120	3/30/2010 3:38	0.995	LSCPINK	8/21/2009	8/31/2010	0.1700	0.00792	4	3/29/2010 12:05
16	20	50.0296	804.58	0.78	1.14	120	3/30/2010 4:31	0.995	LSCPINK	8/21/2009	8/31/2010	0.1683	0.00792	4	3/29/2010 12:05
17	21	50.0298	806.03	0.85	1.14	120	3/30/2010 5:24	0.999	LSCPINK	8/21/2009	8/31/2010	0.1698	0.00792	4	3/29/2010 12:05
18	22	50.0298	805.34	0.95	1.14	120	3/30/2010 6:17	0.995	LSCPINK	8/21/2009	8/31/2010	0.1691	0.00792	4	3/29/2010 12:05
19	23	15.0296	806.36	24.93	1.14	120	3/30/2010 7:09	0.999	LSCPINK	8/21/2009	8/31/2010	0.1701	0.00792	4	3/29/2010 12:05

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 1202068229.1

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDC pCi/L	MDC pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error pCi/L	Net Count Rate CPM	Net Count Rate Error CPM	1 SIGMA Counting Uncertainty pCi/L	1 SIGMA Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	112.1098	79.1505	250	174.3588	**-8.0337**	5.933	-0.030	0.178	47.6669	47.6683		SAMPLE				
2	111.3728	78.6302	250	173.2126	**18.6220**	2.622	0.070	0.184	48.8243	48.8415		SAMPLE				
3	111.2885	78.5706	250	173.0815	**-29.2410**	1.577	-0.110	0.173	46.1082	46.1097		SAMPLE				
4	110.3560	77.9123	250	171.6312	**44.8121**	1.111	0.170	0.189	49.7933	49.8910		SAMPLE				
5	110.7546	78.1937	250	172.2511	**-34.3918**	1.325	-0.130	0.172	45.5811	45.5826		SAMPLE				
6	112.4047	79.3587	250	174.8174	**126.1921**	0.434	0.470	0.204	54.8139	55.5140		SAMPLE				
7	112.4532	79.3929	250	174.8928	**-40.2914**	1.141	-0.150	0.171	45.9675	45.9690		SAMPLE				
8	112.1750	79.1965	250	174.4602	**-13.3973**	3.538	-0.050	0.177	47.3928	47.3942		SAMPLE				
9	111.4822	78.7074	250	173.3827	**-23.9661**	1.940	-0.090	0.175	46.4943	46.4958		SAMPLE				
10	111.3909	78.6430	250	173.2407	**-29.2679**	1.577	-0.110	0.173	46.1506	46.1521		SAMPLE				
11	111.8478	78.9655	250	173.9512	**-101.5221**	0.414	-0.380	0.157	41.9784	41.9800		SAMPLE				
12	112.9393	79.7361	250	175.6489	**-97.1175**	0.440	-0.360	0.158	42.7298	42.7315		SAMPLE				
13	112.7466	79.6001	250	175.3492	**-40.3966**	1.141	-0.150	0.171	46.0874	46.0889		SAMPLE				
14	110.6467	78.1175	250	172.0832	**-44.9301**	1.000	-0.170	0.170	44.9193	44.9208		SAMPLE				
15	111.4934	78.7153	250	173.4001	**-66.5793**	0.661	-0.250	0.165	43.9924	43.9939		SAMPLE				
16	112.6245	79.5138	250	175.1592	**-96.8467**	0.440	-0.360	0.158	42.6107	42.6124		SAMPLE				
17	111.1573	78.4780	250	172.8774	**-76.9991**	0.561	-0.290	0.163	43.2124	43.2140		MB				
18	112.1080	79.1492	250	174.3559	**-50.8792**	0.888	-0.190	0.169	45.1965	45.1980	248526001.1	DUP	0.0%	0.2617		
19	180.3838	127.3525	250	307.6005	**6304.3427**	0.055	23.790	1.292	342.2726	556.7256		LCS			5522.3133	114.2%

REGISTRY

MON 29 MAR 2010 12:03

*** DIRECTORY PATH :S:\LSC\Q\DA\964063A0 ***

PARAMETER GROUP: 8
ID: H-3(3)

00A PROGRAM MODE 6 ->

ORDER	POS	ID	CTIME	COUNTS	CUCNTS	MCW	REP	STD	STMS	STIME
1	4	BKG	120:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
2	5	248515001	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
3	6	248515002	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
4	7	248515003	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
5	8	248517001	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
6	9	248521001	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
7	10	248521002	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
8	11	248521003	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
9	12	248521004	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
10	13	248521005	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
11	14	248521006	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
12	15	248521007	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
13	16	248521008	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00

NUMBER OF CYCLES 1
COINCIDENCE BIAS (L/H) L

MCA	INPUT	TRIGG.	INHIBIT	MEMORY SPLIT
1	LRSUM	DCOS	G	L*R
2	GSUM	G		L*R

WINDOW	CHANNELS	MCA	HALF
1	1- 174	1	2
2	1- 174	1	2
3	60- 220	1	2
4	50- 320	1	1
5	50- 270	1	1
6	60- 220	1	1
7	1- 1024	2	1
8	1- 1024	2	2

SELECTED PRINTOUT FOR TERMINAL 1 (A)

SELECTED PRINTOUT FOR TERMINAL 2 (B)

1.	2.	3.	4.	5.	6.	7.
POS	ID	CTIME	SQP	CPM1	CPM2	CPM3

SEND SPECTRA 12
RESOLUTION OF SPECTRA 1024
LISTING Y
INSTRUMENT NUMBER 1

POS	ID	CTIME	SQP	CPM1	CPM2	CPM3

Q010401N.001 29 MAR 2010 14:06

4	BKG	120:01.785	810.26	1.14	1.14	1.30

Page 1

Q020501N.001 29 MAR 2010 14:58						
5	248515001	50:01.785	805.32	1.11	1.11	1.43
Q030601N.001 29 MAR 2010 15:51						
6	248515002	50:01.785	806.43	1.21	1.21	1.35
Q040701N.001 29 MAR 2010 16:44						
7	248515003	50:01.785	806.56	1.03	1.03	1.41
Q050801N.001 29 MAR 2010 17:36						
8	248517001	50:01.785	808.02	1.31	1.31	1.72
Q060901N.001 29 MAR 2010 18:29						
9	248521001	50:01.785	807.39	1.01	1.01	1.35
Q071001N.001 29 MAR 2010 19:21						
10	248521002	50:01.785	804.89	1.61	1.61	1.72
Q081101N.001 29 MAR 2010 20:14						
11	248521003	50:01.784	804.82	.99	.99	1.25
Q091201N.001 29 MAR 2010 21:06						
12	248521004	50:01.784	805.23	1.09	1.09	1.43
Q101301N.001 29 MAR 2010 21:59						
13	248521005	50:01.784	806.27	1.05	1.05	1.37
Q111401N.001 29 MAR 2010 22:51						
14	248521006	50:01.784	806.41	1.03	1.03	1.23
Q121501N.001 29 MAR 2010 23:44						
15	248521007	50:01.784	805.72	.76	.76	1.15
Q131601N.001 30 MAR 2010 0:36						
16	248521008	50:01.784	804.12	.78	.78	1.11

REGISTRY

TUE 30 MAR 2010 1:52

*** DIRECTORY PATH :S:\LSC\Q\DA\964063A1 ***

PARAMETER GROUP: 8
ID: H-3(4)

00A PROGRAM MODE 6 ->

ORDER	POS	ID	CTIME	COUNTS	CUCNTS	MCW	REP	STD	STMS	STIME
1	17	248521009	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
2	18	248521010	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
3	19	248521011	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
4	20	248526001	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
5	21	1202068228	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
6	22	1202068229	50:00	1.0E04	NO LIM	1	1	Y	1/10	1:00
7	23	1202068230	15:00	1.0E04	NO LIM	1	1	Y	1/10	1:00

NUMBER OF CYCLES 1
COINCIDENCE BIAS (L/H) L

MCA	INPUT	TRIGG.	INHIBIT	MEMORY SPLIT
1	LRSUM	DCOS	G	L*R
2	GSUM	G		L*R

WINDOW	CHANNELS	MCA	HALF
1	1- 174	1	2
2	1- 174	1	2
3	60- 220	1	2
4	50- 320	1	1
5	50- 270	1	1
6	60- 220	1	1
7	1- 1024	2	1
8	1- 1024	2	2

SELECTED PRINTOUT FOR TERMINAL 1 (A)

SELECTED PRINTOUT FOR TERMINAL 2 (B)

1.	2.	3.	4.	5.	6.	7.
POS	ID	CTIME	SQP	CPM1	CPM2	CPM3

SEND SPECTRA 12
RESOLUTION OF SPECTRA 1024
LISTING Y
INSTRUMENT NUMBER 1

POS	ID	CTIME	SQP	CPM1	CPM2	CPM3
Q011701N.001 30 MAR 2010 2:44						
17	248521009	50:01.785	804.40	.99	.99	1.31
Q021801N.001 30 MAR 2010 3:37						
18	248521010	50:01.785	807.57	.97	.97	1.21
Q031901N.001 30 MAR 2010 4:29						
19	248521011	50:01.785	806.26	.89	.89	1.17
Q042001N.001 30 MAR 2010 5:22						
20	248526001	50:01.778	804.58	.78	.78	1.07

Q052101N.001 30 MAR 2010 6:15						
21	1202068228	50:01.785	806.03	.85	.85	1.27
Q062201N.001 30 MAR 2010 7:08						
22	1202068229	50:01.785	805.34	.95	.95	1.35
Q072301N.001 30 MAR 2010 7:25						
23	1202068230	15:01.778	806.36	24.93	24.93	27.62

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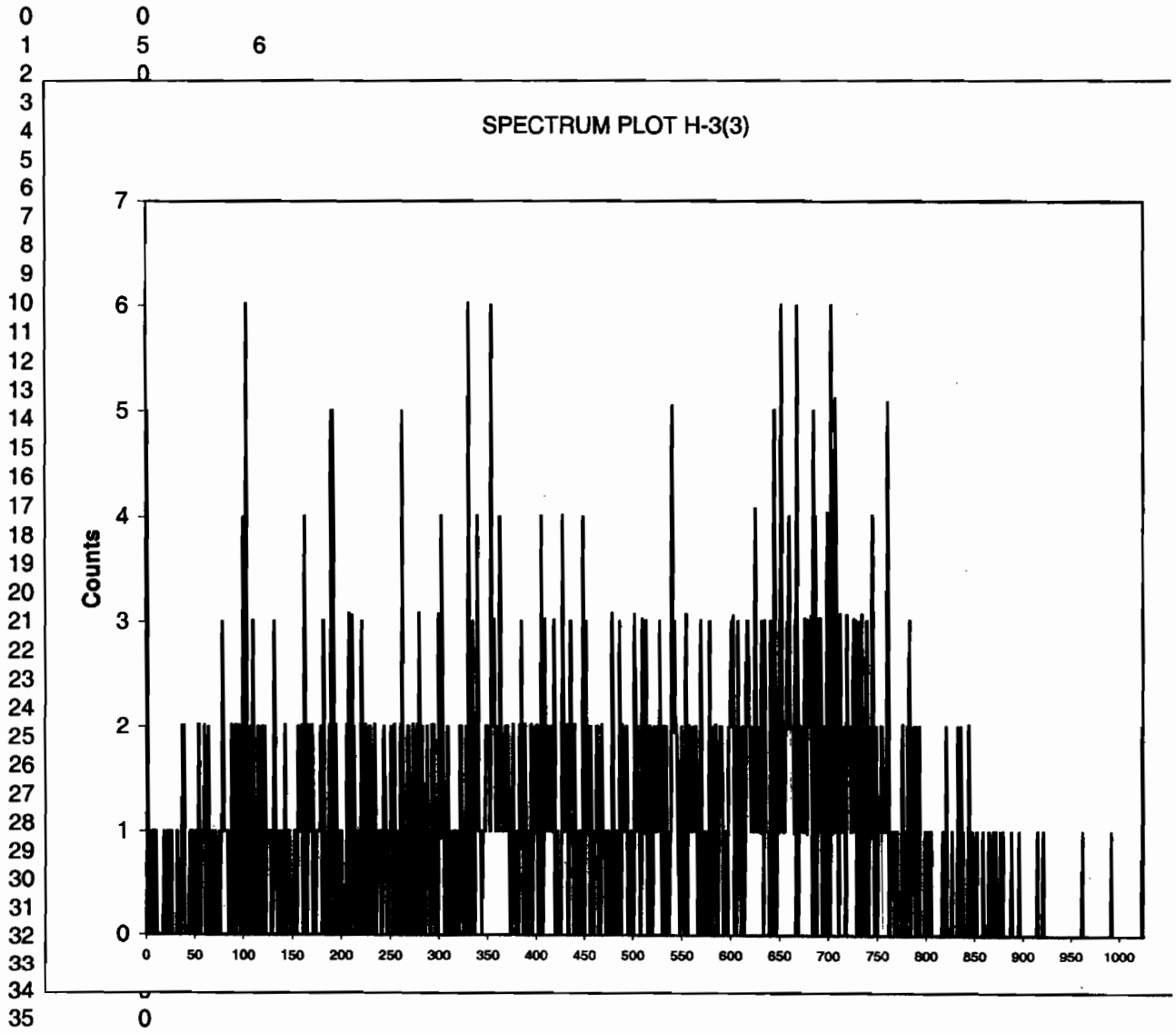
Data Capture Date:	MON 29 MAR 2010 12:03
FileName:	s:\lsc\files\pink\964063A0\SQ010401N.001.xls
File Info:	s:\lsc\files\pink\964063A0\U964063A0.xls

ID:	H-3(3)
Comments:	PINK

Sample, Rack-Pos, Time:	1, BKG, 120.0297:
Quench:	810.26
Start, End, X-Axis	1-174

Channel Counts



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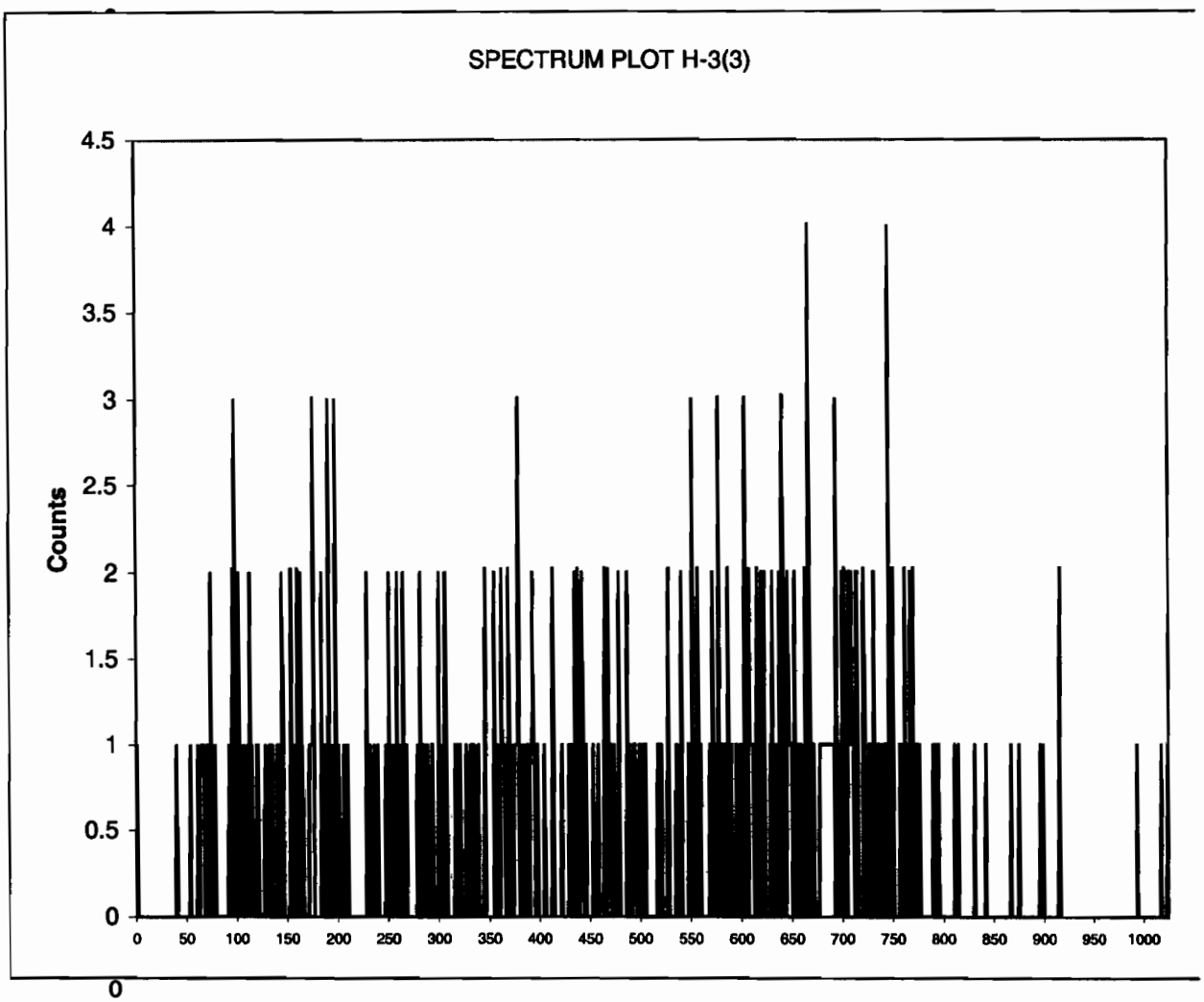
File Info:	s:\lsc\files\pink\964063A0\U964063A0.xls

ID:	H-3(3)
Comments:	PINK

Sample, Rack-Pos, Time:	2, 248515001, 50.02975:
Quench:	805.32
Start, End, X-Axis	1-174

Channel	Counts
0	0
1	1
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	0
35	0



Instrument Type:	Quantulus
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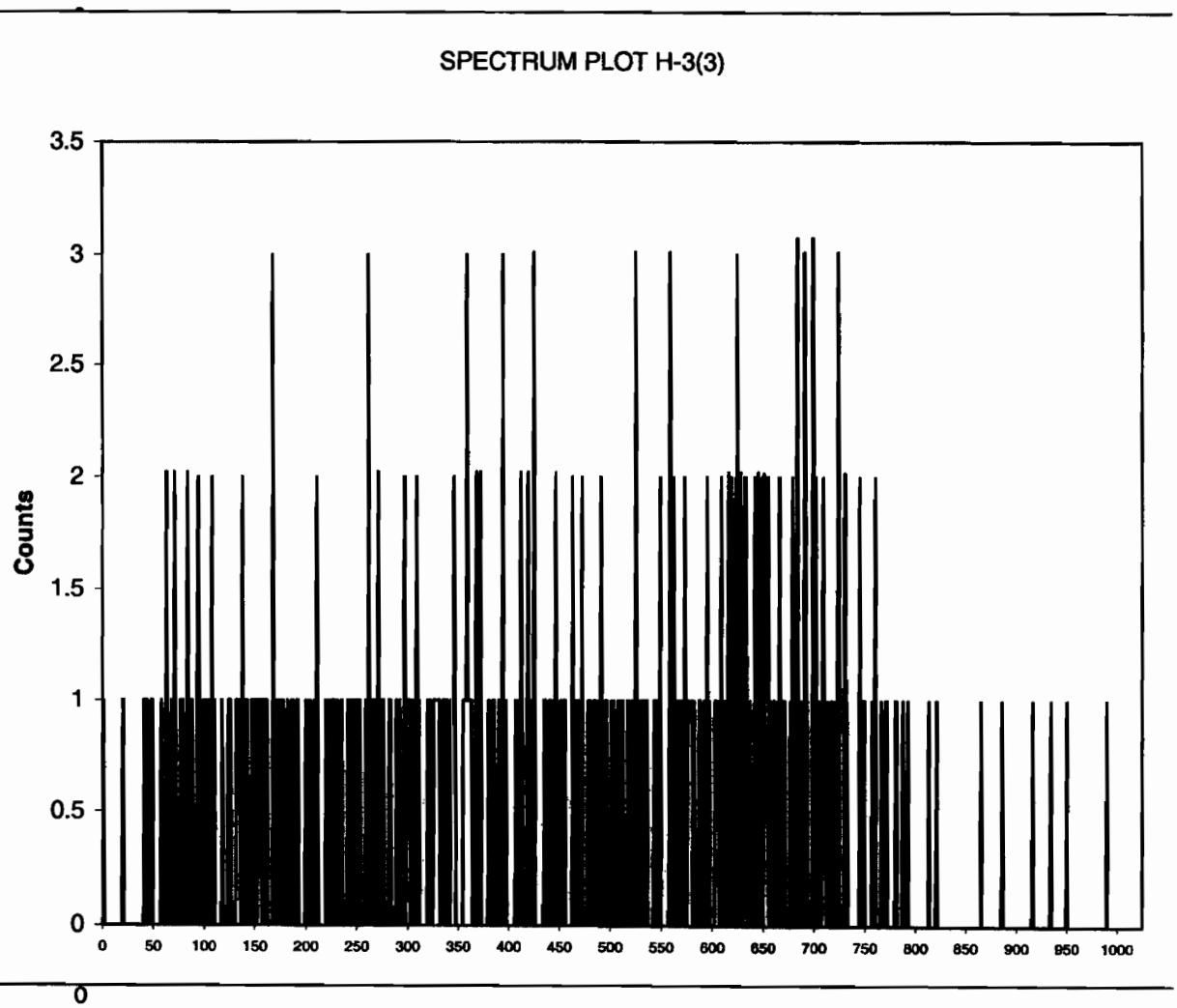
ID:	H-3(3)
Comments:	PINK
Sample, Rack-Pos, Time:	3, 248515002, 50.02975:
Quench:	806.43
Start, End, X-Axis	1-174

Channel	Counts
0	0
1	1
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	0
35	0



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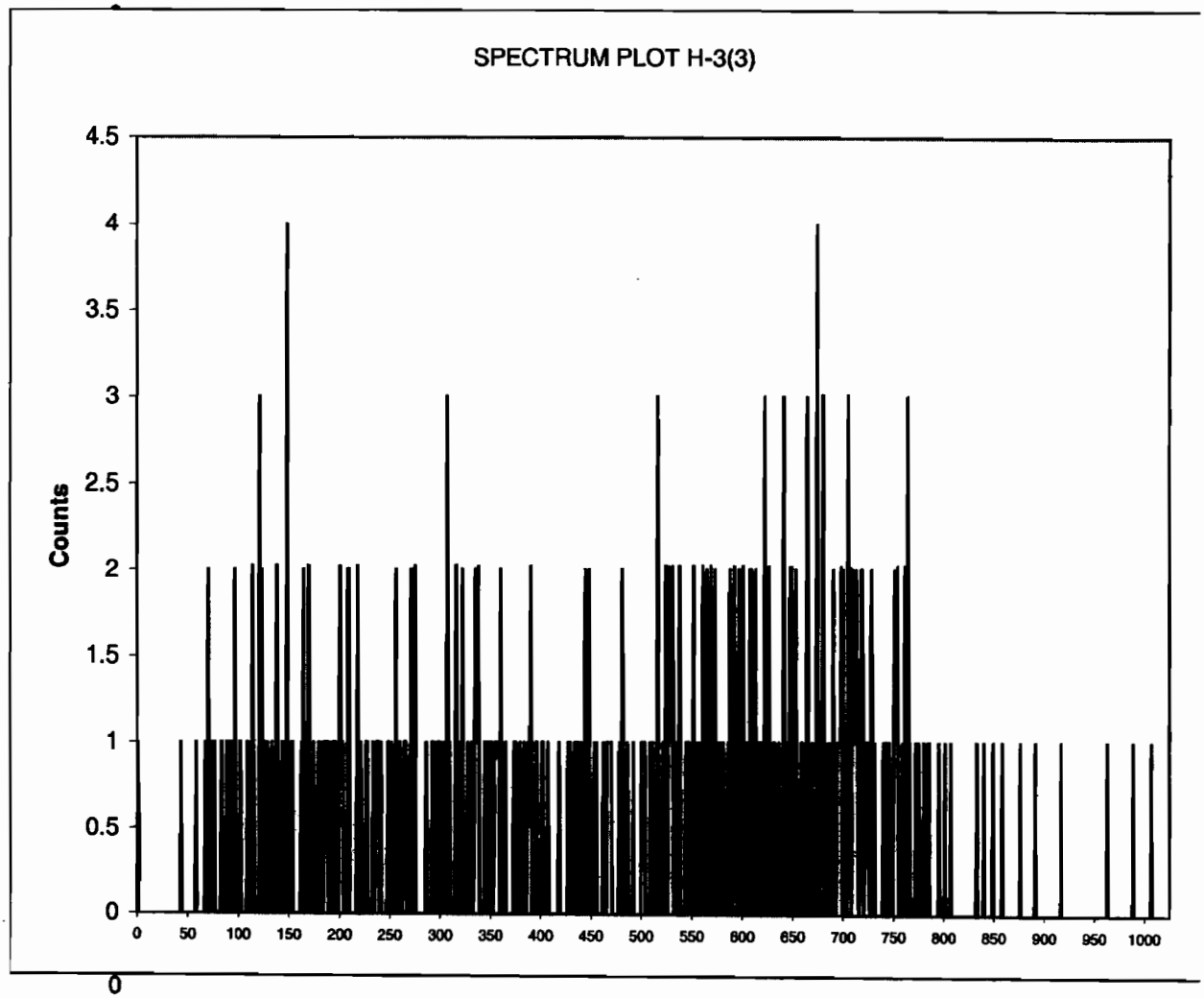
File Info:	s:\lsc\files\pink\964063A0\U964063A0.xls
ID:	H-3(3)
Comments:	PINK
Sample, Rack-Pos, Time:	4, 248515003, 50.02975:
Quench:	806.56
Start, End, X-Axis	1-174

Channel	Counts
0	0
1	1
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	0
35	0



Instrument Type:	Quantulus
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File Info:	s:\lsc\files\pink\964063A0\U964063A0.xls

ID:	H-3(3)
Comments:	PINK

Sample, Rack-Pos, Time:	5, 248517001, 50.02975:
Quench:	808.02
Start, End, X-Axis	1-174

Channel Counts

Channel	Counts
0	0
1	0
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
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27	
28	
29	
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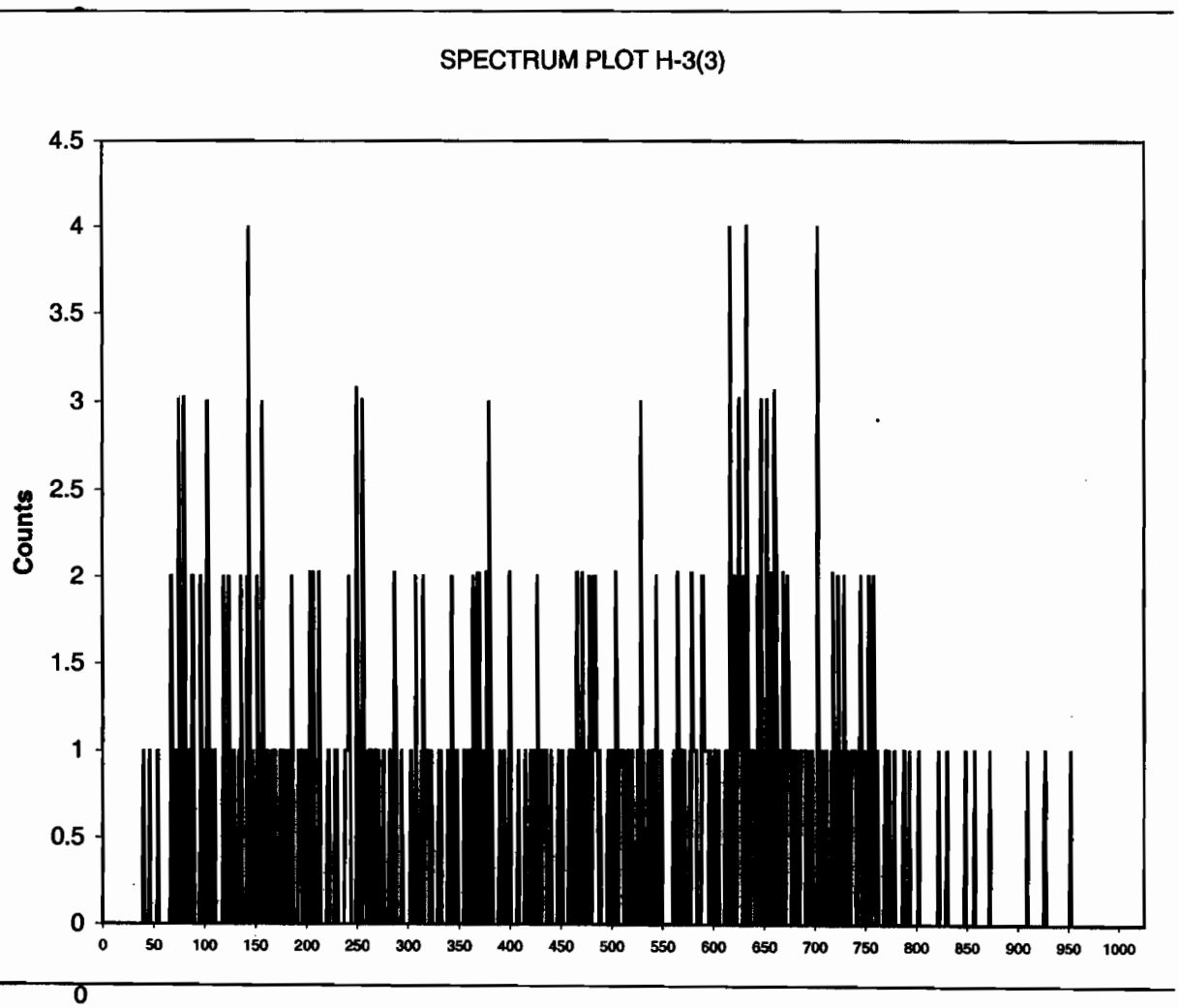
31	
32	
33	
34	0
35	0



Instrument Type:	Quantulus
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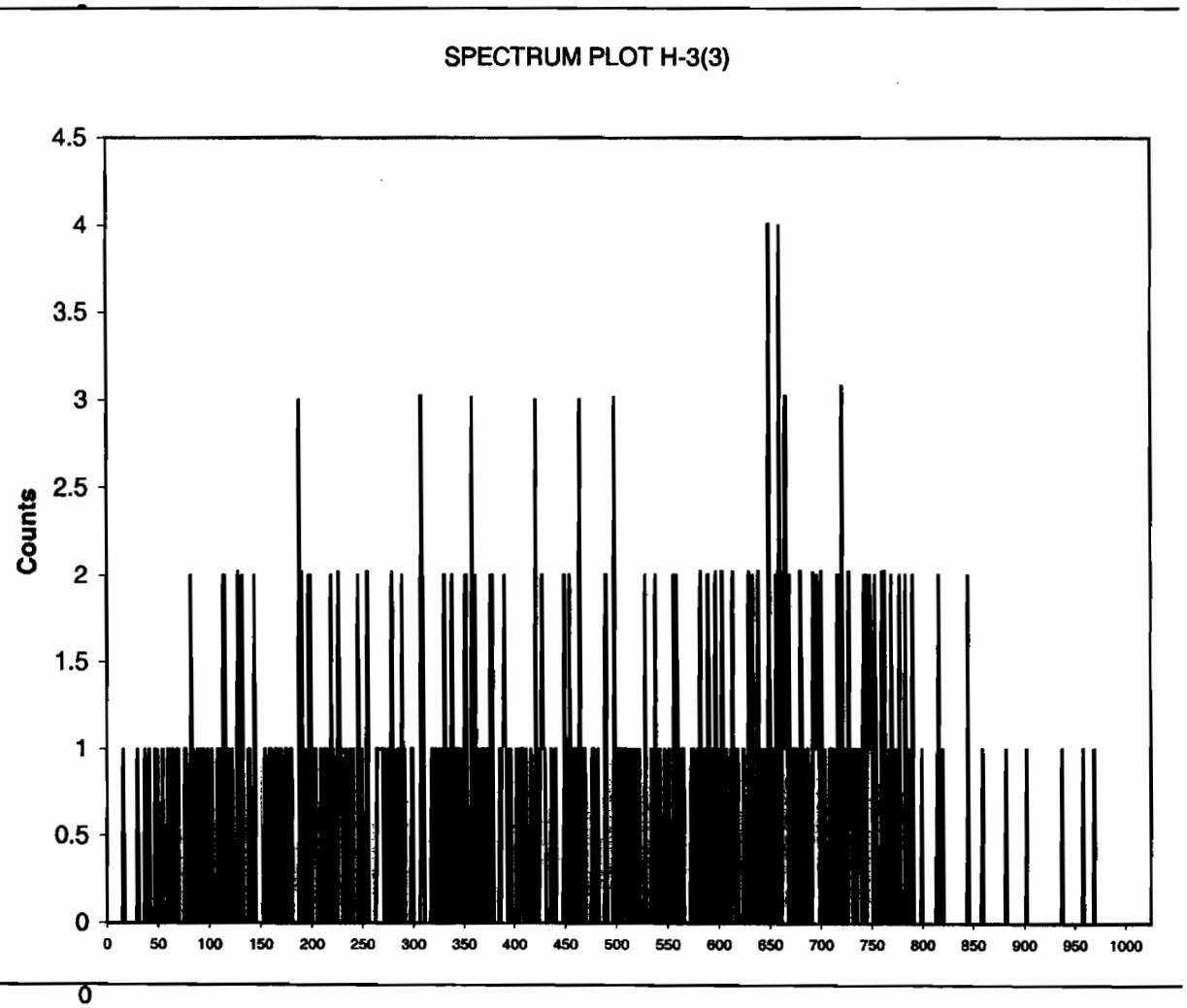
FileName:	s:\lsc\files\pink\964063A0\SQ060901N.001.xls
File Info:	s:\lsc\files\pink\964063A0\U964063A0.xls

ID:	H-3(3)
Comments:	PINK

Sample, Rack-Pos, Time:	6, 248521001, 50.02975:
Quench:	807.39
Start, End, X-Axis	1-174

Channel Counts

Channel	Counts
0	0
1	0
2	4
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	0
35	0



Instrument Type:	Quantulus
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File Info:	s:\lsc\files\pink\964063A0\U964063A0.xls

ID:	H-3(3)
Comments:	PINK

Sample, Rack-Pos, Time:	7, 248521002, 50.02975:
Quench:	804.89
Start, End, X-Axis	1-174

Channel	Counts
0	0
1	1
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
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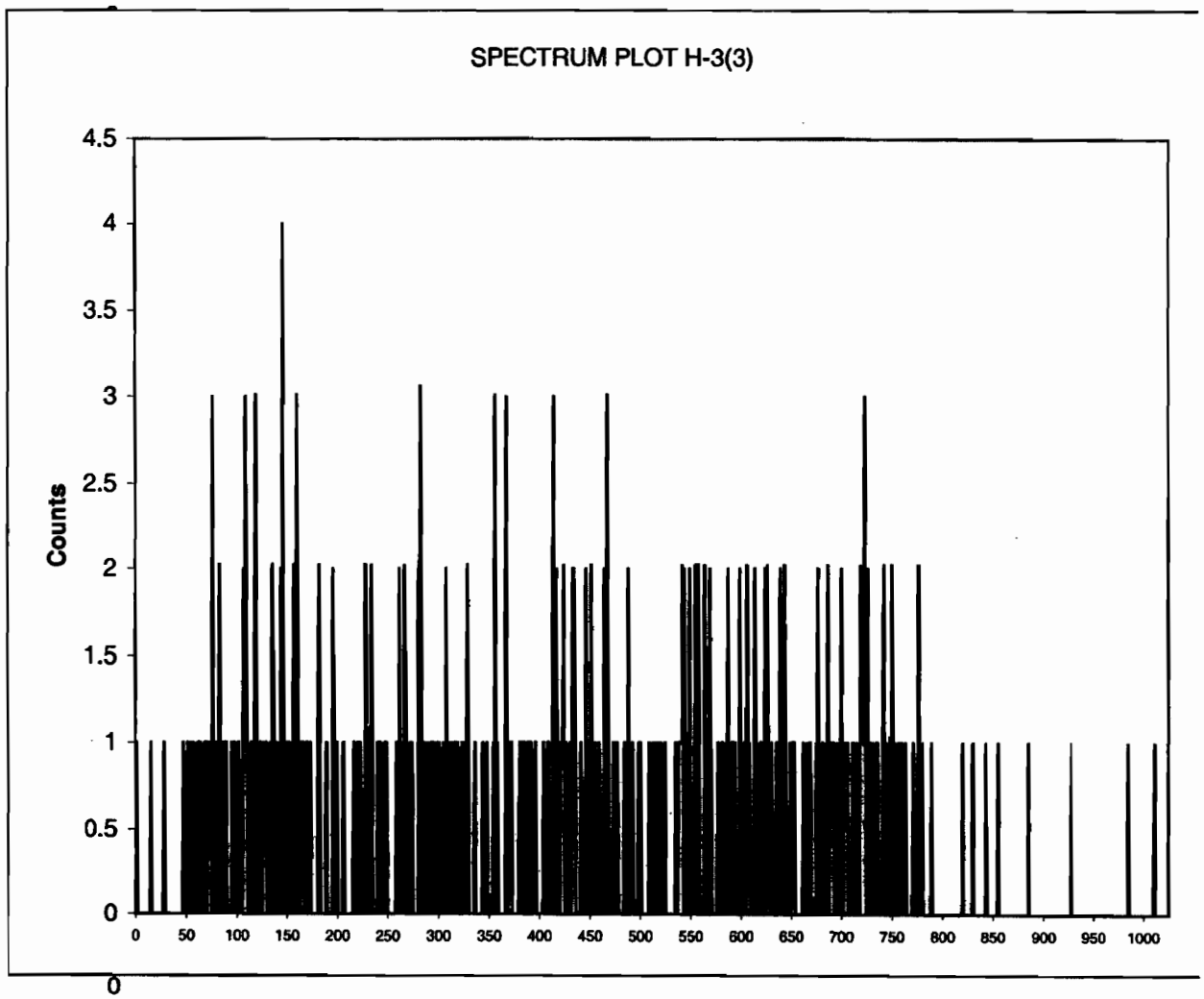
26	
27	
28	
29	
30	
31	
32	
33	
34	0
35	0



Instrument Type:	Quantulus
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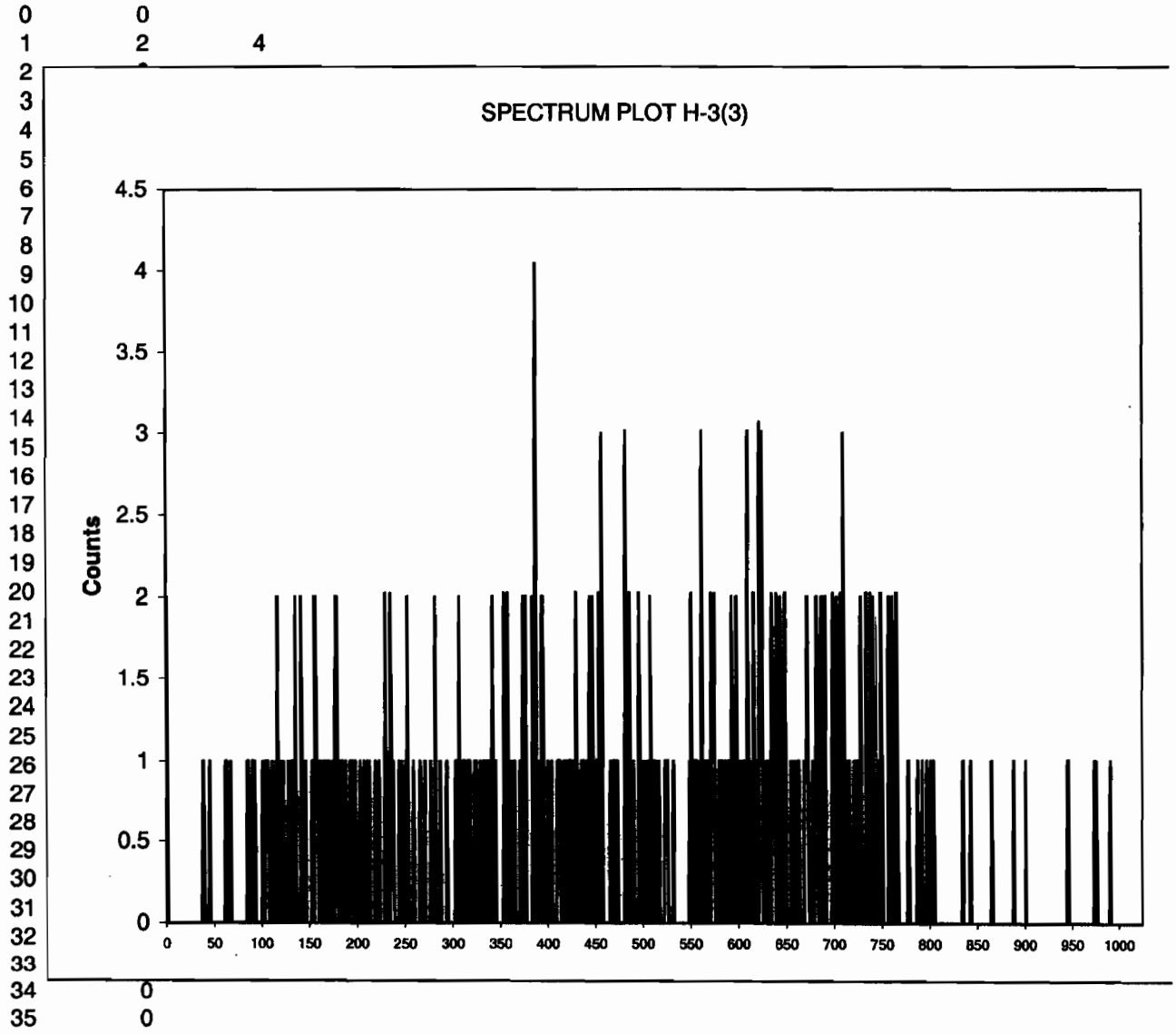
FileName:	s:\lsc\files\pink\964063A0\SQ081101N.001.xls
File Info:	s:\lsc\files\pink\964063A0\U964063A0.xls
ID:	H-3(3)
Comments:	PINK
Sample, Rack-Pos, Time:	8, 248521003, 50.02973:
Quench:	804.82
Start, End, X-Axis	1-174

Channel Counts



Instrument Type:	Quantulus
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FileName:	s:\lsc\files\pink\964063A0\SQ091201N.001.xls
File Info:	s:\lsc\files\pink\964063A0\U964063A0.xls

ID:	H-3(3)
Comments:	PINK

Sample, Rack-Pos, Time:	9, 248521004, 50.02973:
Quench:	805.23
Start, End, X-Axis	1-174

Channel Counts

Channel	Counts
0	0
1	0
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
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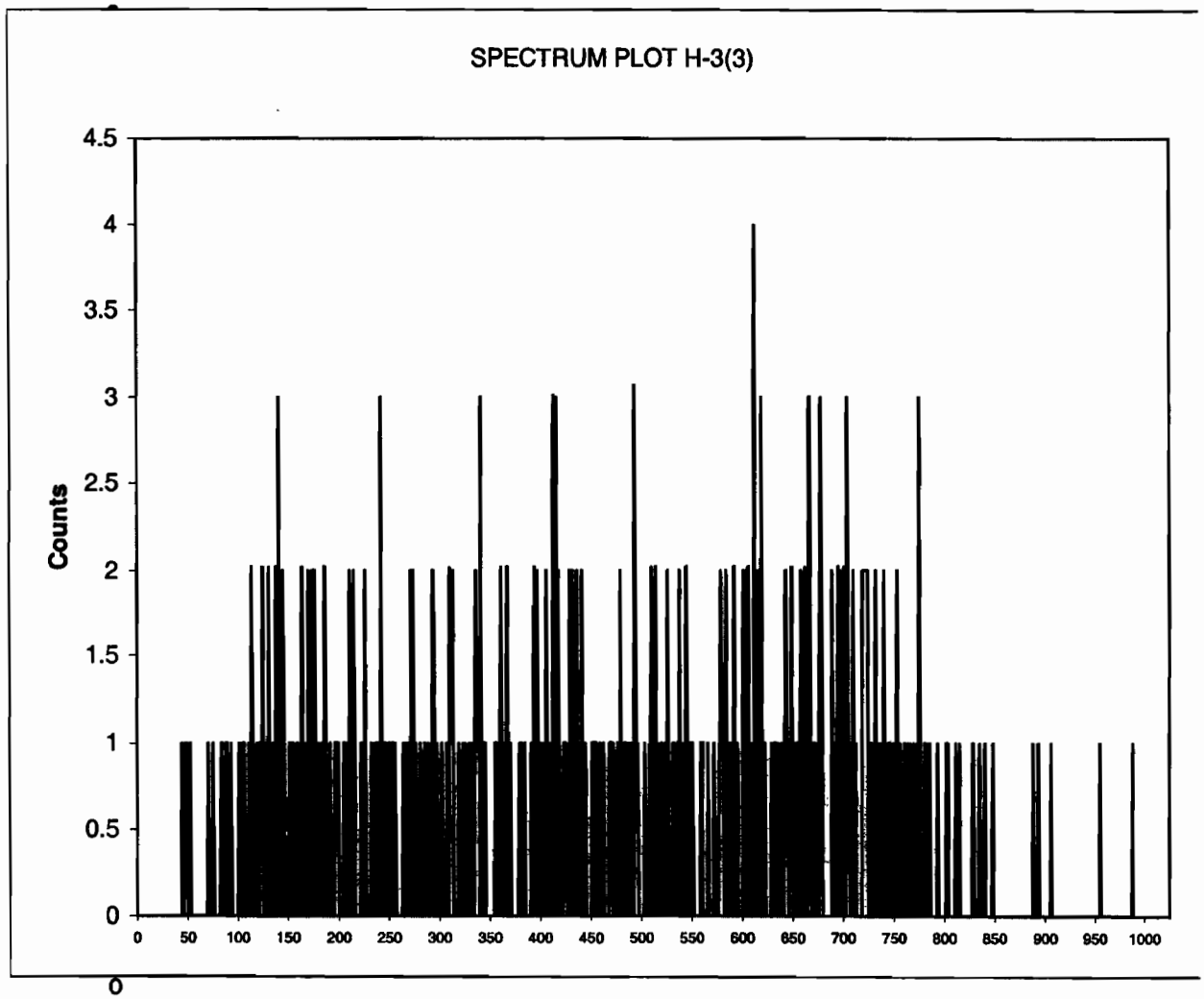
26	
27	
28	
29	
30	
31	
32	
33	
34	0
35	0



Instrument Type:	Quantulus
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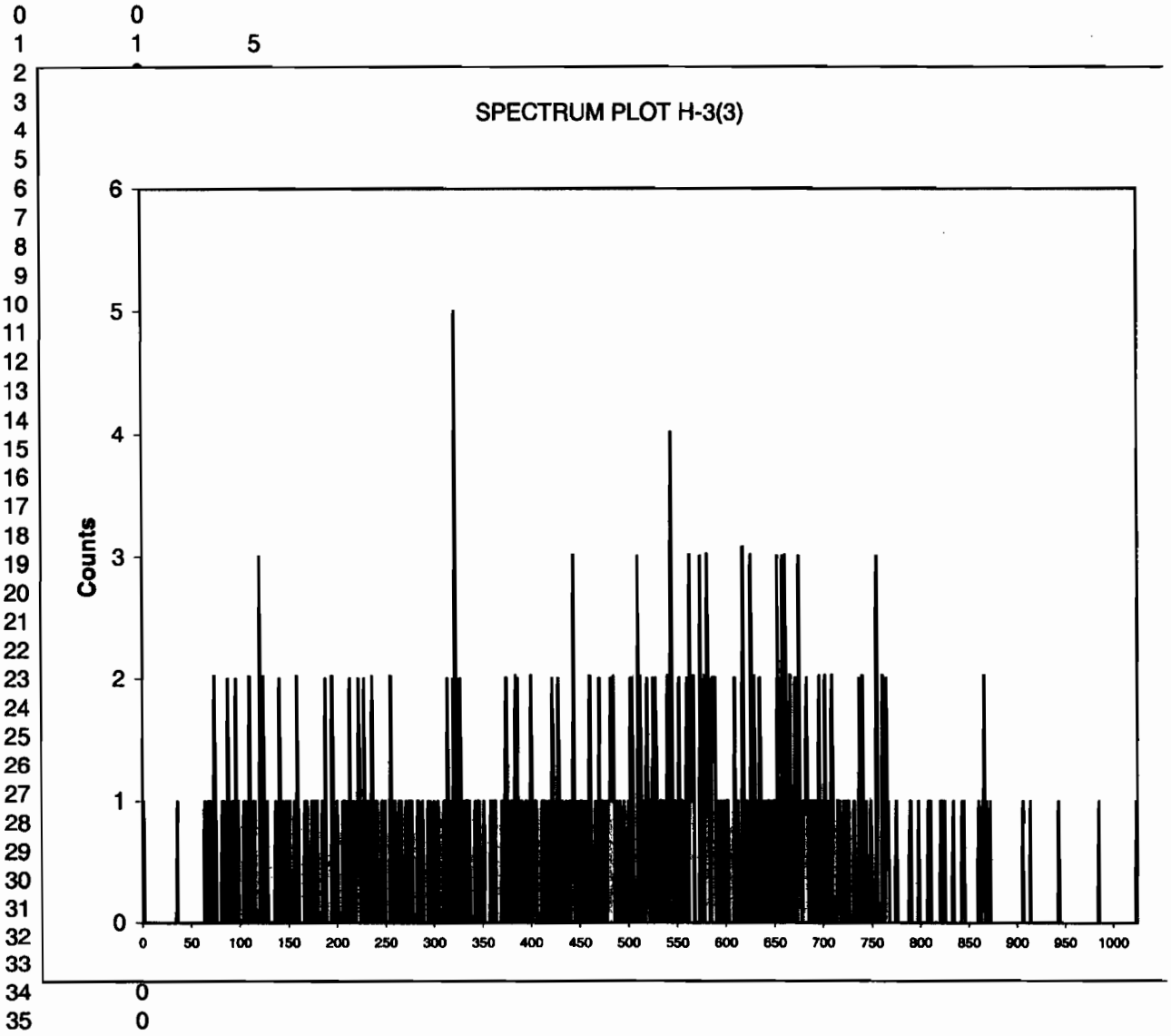
File Info:	s:\lsc\files\pink\964063A0\U964063A0.xls
ID:	H-3(3)
Comments:	PINK
Sample, Rack-Pos, Time:	10, 248521005, 50.02973:
Quench:	806.27
Start, End, X-Axis	1-174

Channel Counts



Instrument Type:	Quantulus
Data Capture Date:	MON 29 MAR 2010 12:03
FileName:	s:\lsc\files\pink\964063A0\SQ111401N.001.xls
File Info:	s:\lsc\files\pink\964063A0\U964063A0.xls
ID:	H-3(3)
Comments:	PINK
Sample, Rack-Pos, Time:	11, 248521006, 50.02973:
Quench:	806.41
Start, End, X-Axis	1-174

Channel	Counts
0	0
1	0
2	
3	
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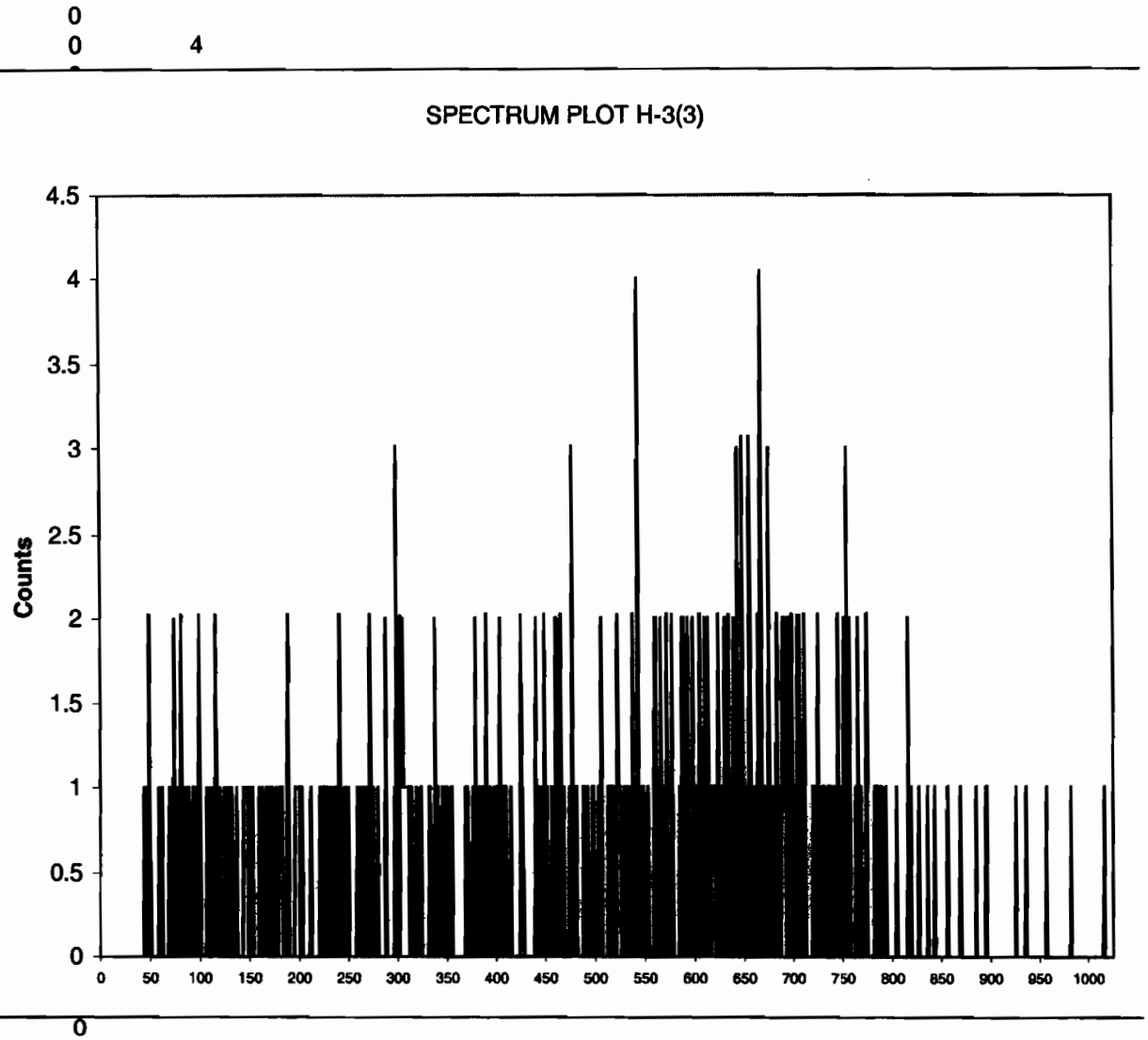
30	
31	
32	
33	
34	0
35	0



Instrument Type:	Quantulus
Data Capture Date:	MON 29 MAR 2010 12:03
FileName:	s:\lsc\files\pink\964063A0\SQ121501N.001.xls
File Info:	s:\lsc\files\pink\964063A0\U964063A0.xls

ID:	H-3(3)
Comments:	PINK

Sample, Rack-Pos, Time:	12, 248521007, 50.02973:
Quench:	805.72
Start, End, X-Axis	1-174

Channel	Counts
0	0
1	0
2	
3	
4	
5	
6	
7	
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29	
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31	
32	
33	
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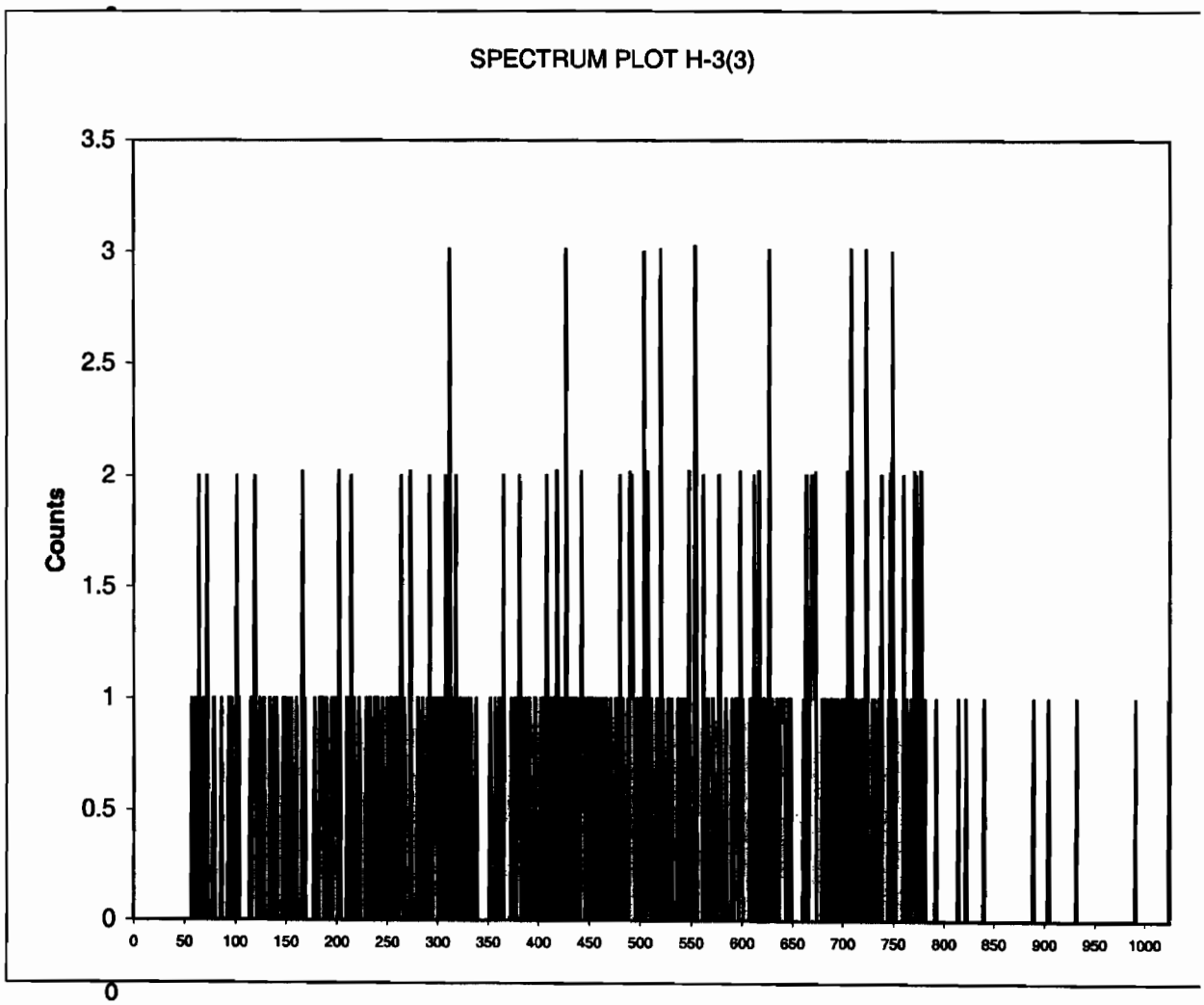
35	0

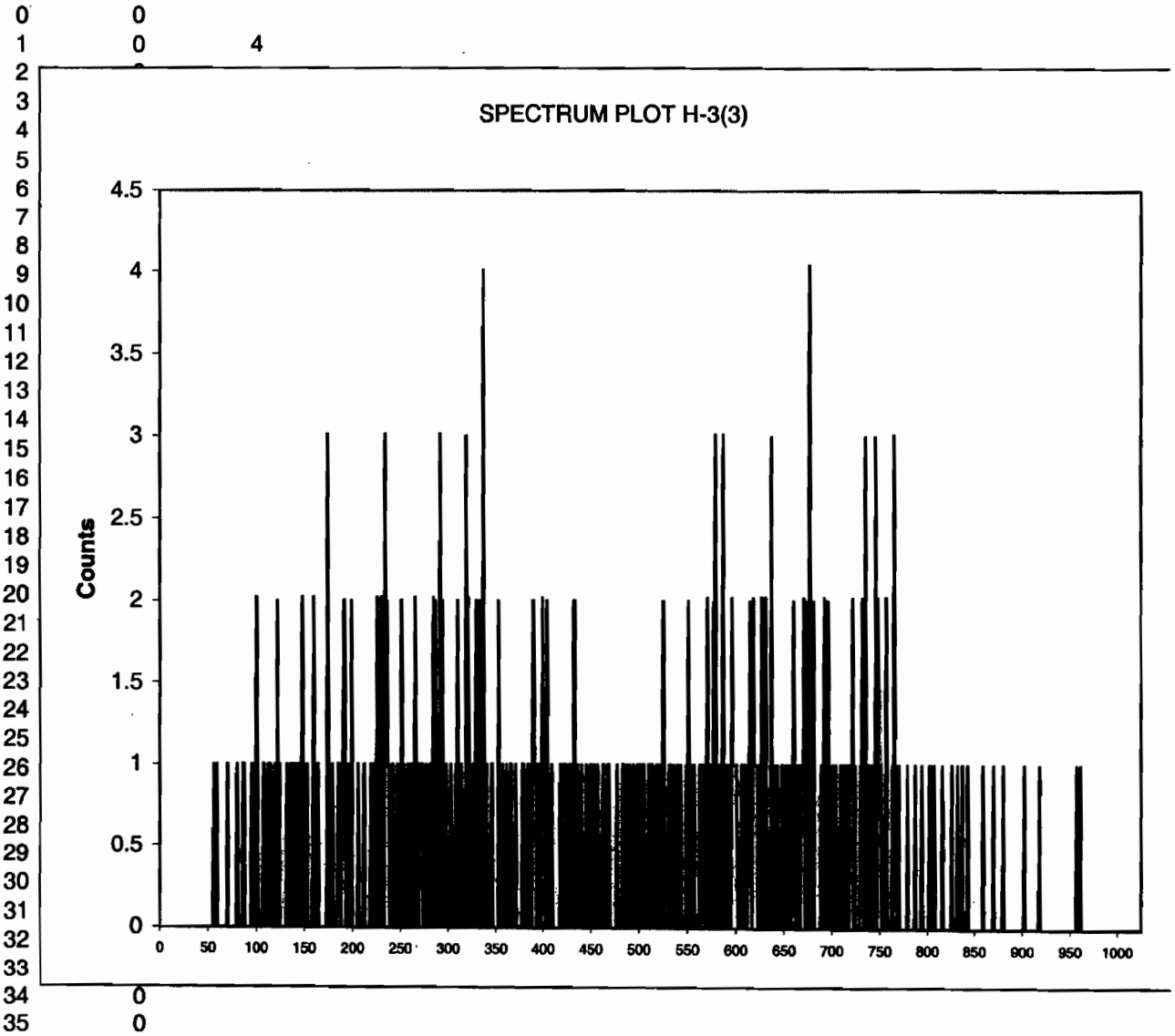


Instrument Type:	Quantulus
Data Capture Date:	MON 29 MAR 2010 12:03
FileName:	s:\lsc\files\pink\964063A0\SQ131601N.001.xls
File Info:	s:\lsc\files\pink\964063A0\U964063A0.xls

ID:	H-3(3)
Comments:	PINK

Sample, Rack-Pos, Time:	13, 248521008, 50.02973:
Quench:	804.12
Start, End, X-Axis	1-174

Channel Counts



Instrument Type:	Quantulus
Data Capture Date:	TUE 30 MAR 2010 1:52
FileName:	s:\lsc\files\pink\964063A1\SQ011701N.001.xls
File Info:	s:\lsc\files\pink\964063A1\U964063A1.xls

ID:	H-3(4)
Comments:	PINK

Sample, Rack-Pos, Time:	1, 248521009, 50.02975:
Quench:	804.4
Start, End, X-Axis	1-174

Channel	Counts
0	0
1	1
2	0
3	
4	
5	
6	
7	
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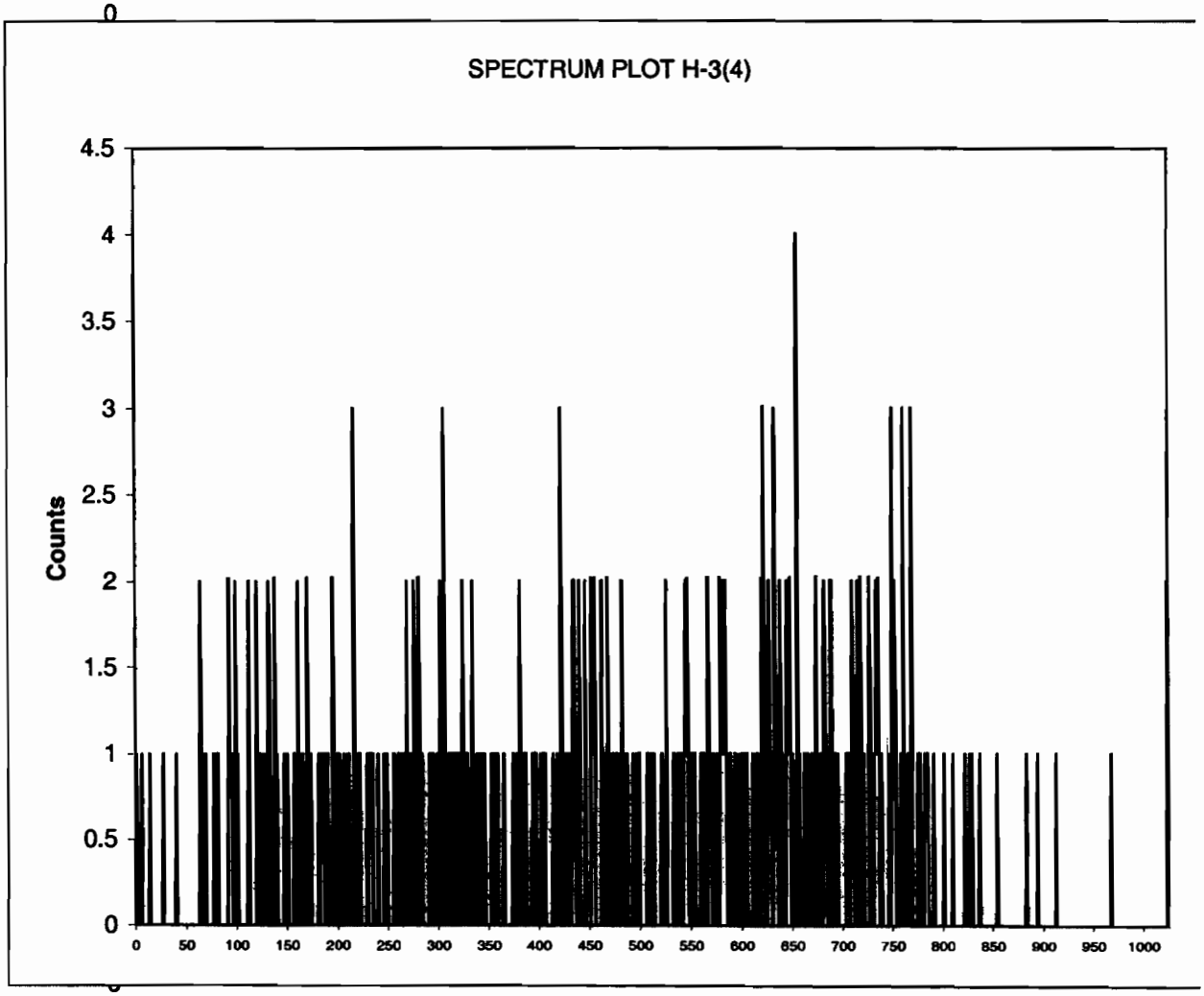
31	
32	
33	
34	
35	0

4



Instrument Type:	Quantulus
Data Capture Date:	TUE 30 MAR 2010 1:52
FileName:	s:\lsc\files\pink\964063A1\SQ021801N.001.xls
File Info:	s:\lsc\files\pink\964063A1\U964063A1.xls

ID:	H-3(4)
Comments:	PINK

Sample, Rack-Pos, Time:	2, 248521010, 50.02975:
Quench:	807.57
Start, End, X-Axis	1-174

Channel	Counts
0	0
1	0
2	
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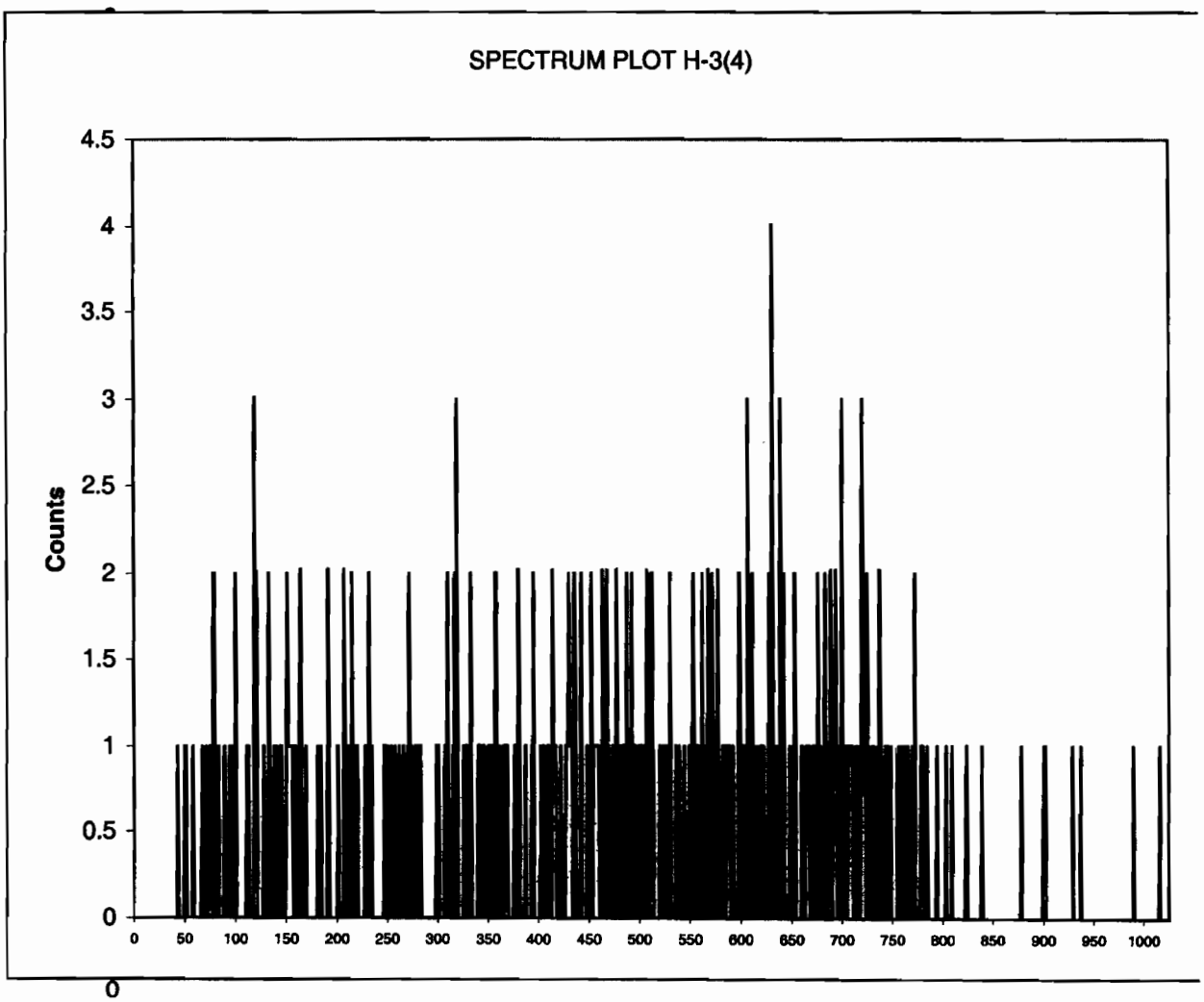
32	
33	
34	0
35	0

4



Instrument Type:	Quantulus
Data Capture Date:	TUE 30 MAR 2010 1:52
FileName:	s:\lsc\files\pink\964063A1\SQ031901N.001.xls
File Info:	s:\lsc\files\pink\964063A1\U964063A1.xls
ID:	H-3(4)
Comments:	PINK
Sample, Rack-Pos, Time:	3, 248521011, 50.02975:
Quench:	806.26
Start, End, X-Axis	1-174

Channel	Counts
0	0
1	0
2	
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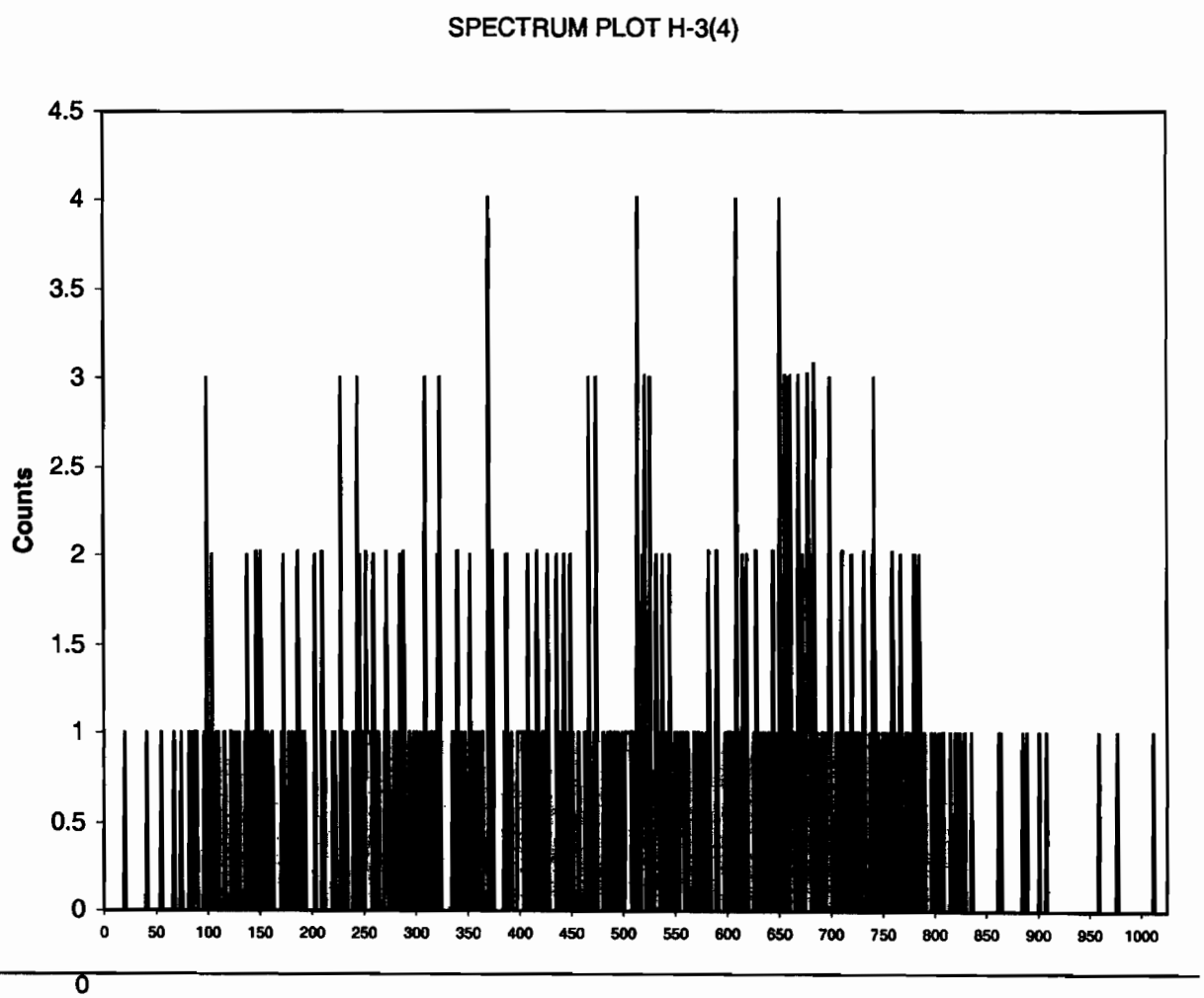
34	0
35	0



Instrument Type:	Quantulus
Data Capture Date:	TUE 30 MAR 2010 1:52
FileName:	s:\lsc\files\pink\964063A1\SQ042001N.001.xls
File Info:	s:\lsc\files\pink\964063A1\U964063A1.xls
ID:	H-3(4)
Comments:	PINK
Sample, Rack-Pos, Time:	4, 248526001, 50.02963:
Quench:	804.58
Start, End, X-Axis	1-174

Channel	Counts
0	0
1	0
2	
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31	
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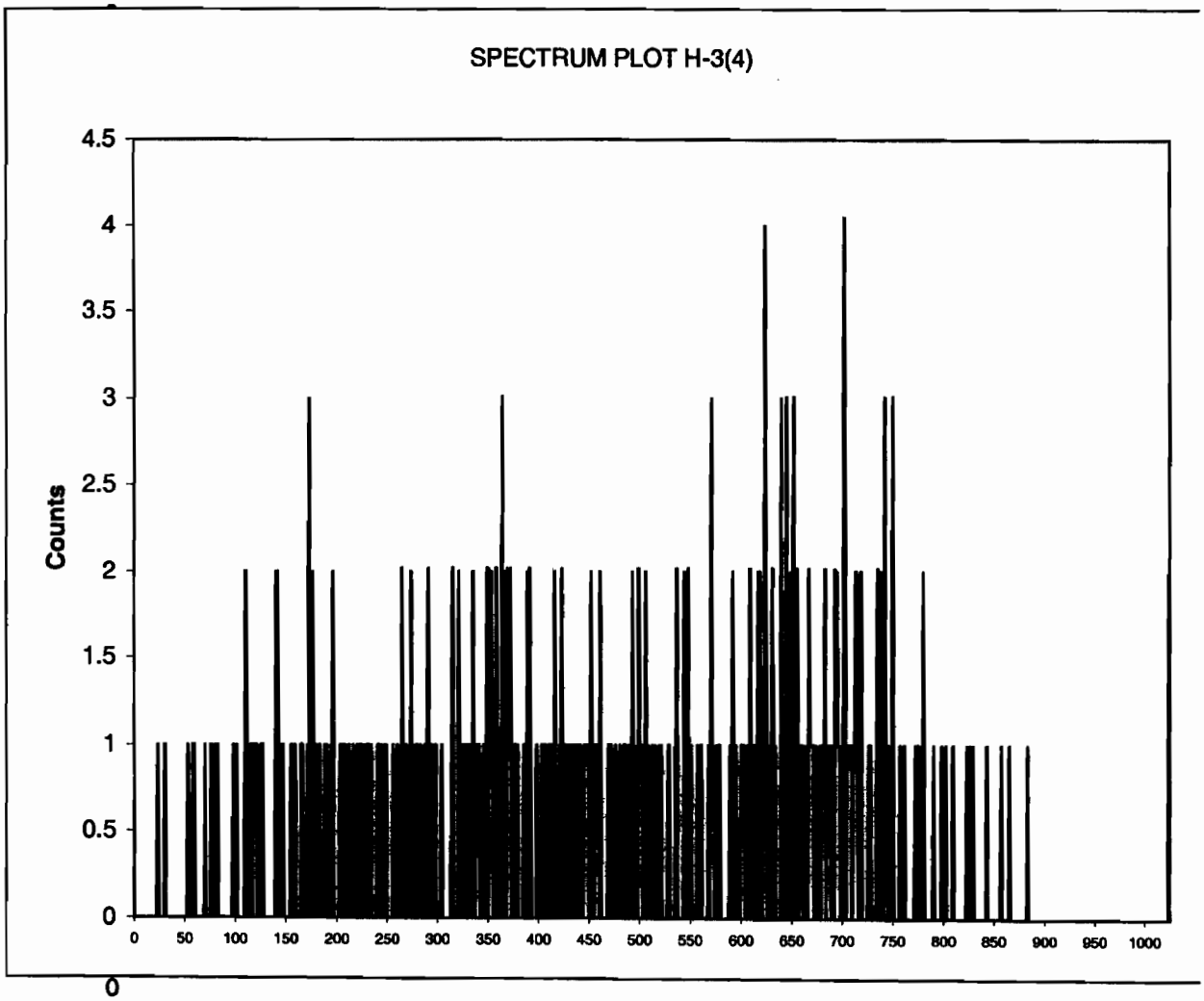
33	
34	0
35	0

4



Instrument Type:	Quantulus
Data Capture Date:	TUE 30 MAR 2010 1:52
FileName:	s:\lsc\files\pink\964063A1\SQ052101N.001.xls
File Info:	s:\lsc\files\pink\964063A1\U964063A1.xls

ID:	H-3(4)
Comments:	PINK

Sample, Rack-Pos, Time:	5, 1202068228, 50.02975:
Quench:	806.03
Start, End, X-Axis	1-174

Channel	Counts
0	0
1	0
2	
3	
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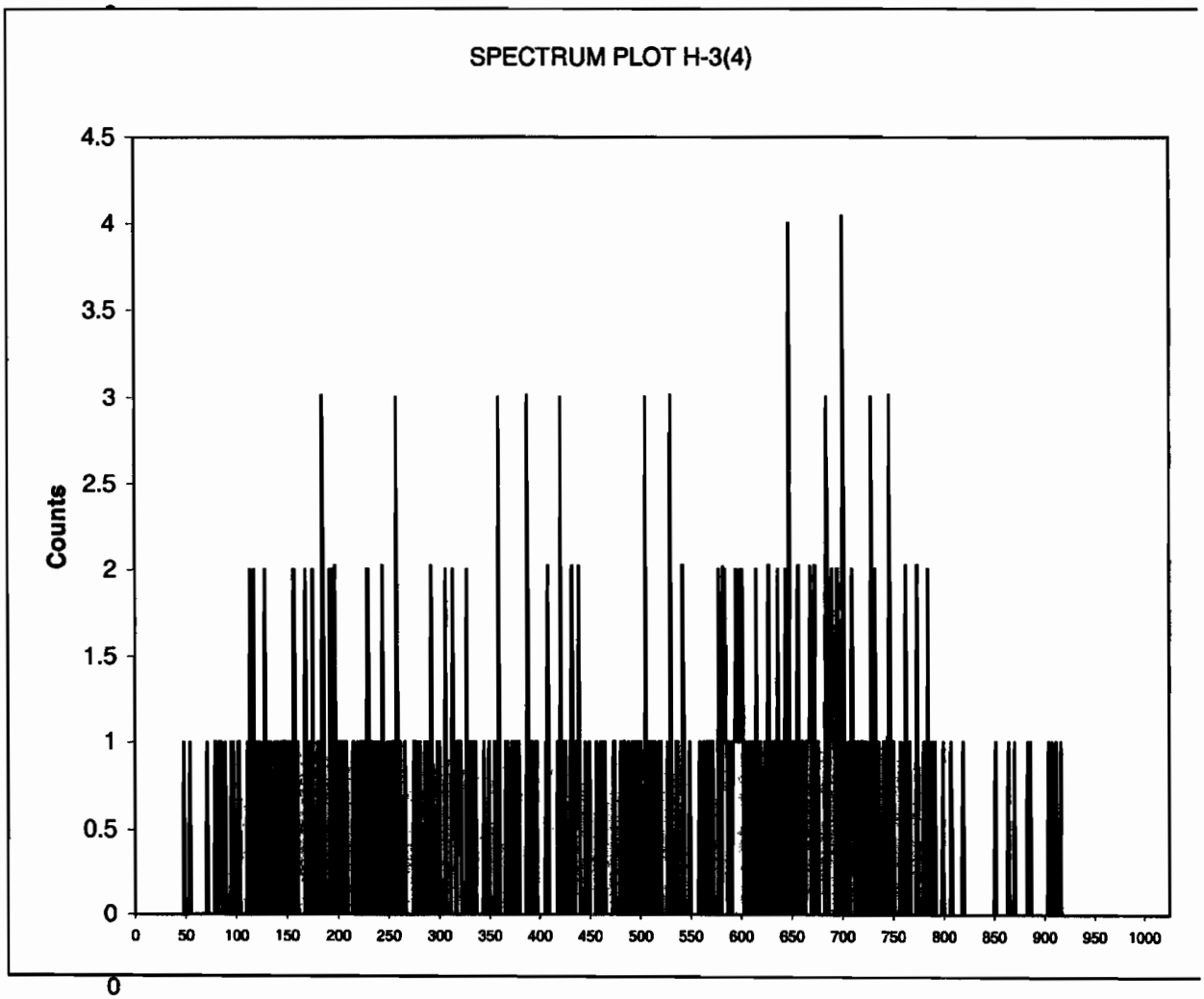
31	
32	
33	
34	0
35	0



Instrument Type:	Quantulus
Data Capture Date:	TUE 30 MAR 2010 1:52
FileName:	s:\lsc\files\pink\964063A1\SQ062201N.001.xls
File Info:	s:\lsc\files\pink\964063A1\U964063A1.xls
ID:	H-3(4)
Comments:	PINK
Sample, Rack-Pos, Time:	6, 1202068229, 50.02975:
Quench:	805.34
Start, End, X-Axis	1-174

Channel	Counts
0	0
1	0
2	
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29	
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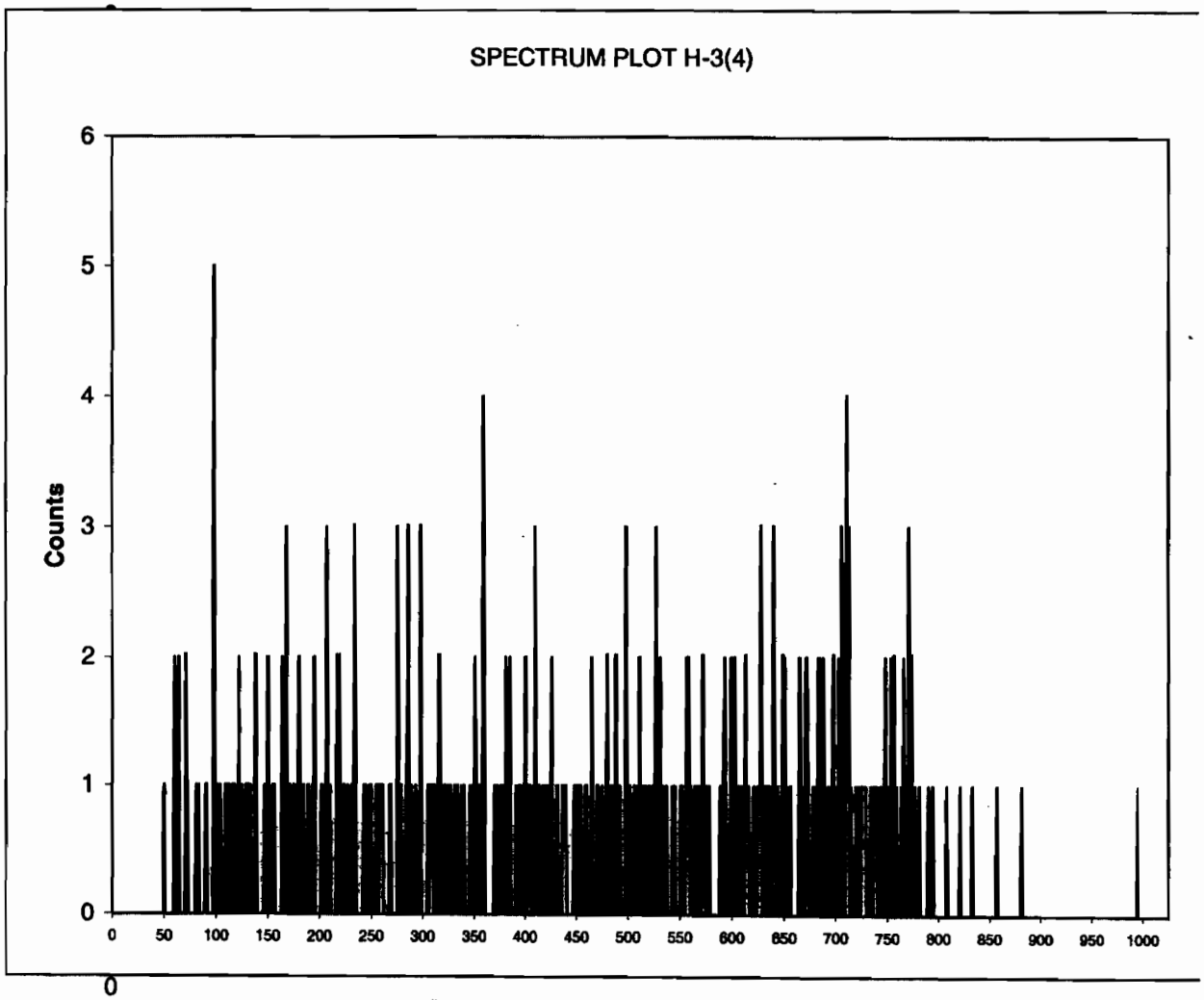
31	
32	
33	
34	0
35	0



Instrument Type:	Quantulus
Data Capture Date:	TUE 30 MAR 2010 1:52
FileName:	s:\lsc\files\pink\964063A1\SQ072301N.001.xls
File Info:	s:\lsc\files\pink\964063A1\U964063A1.xls

ID:	H-3(4)
Comments:	PINK

Sample, Rack-Pos, Time:	7, 1202068230, 15.02963:
Quench:	806.36
Start, End, X-Axis	1-174

Channel	Counts
0	0
1	0
2	
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26	
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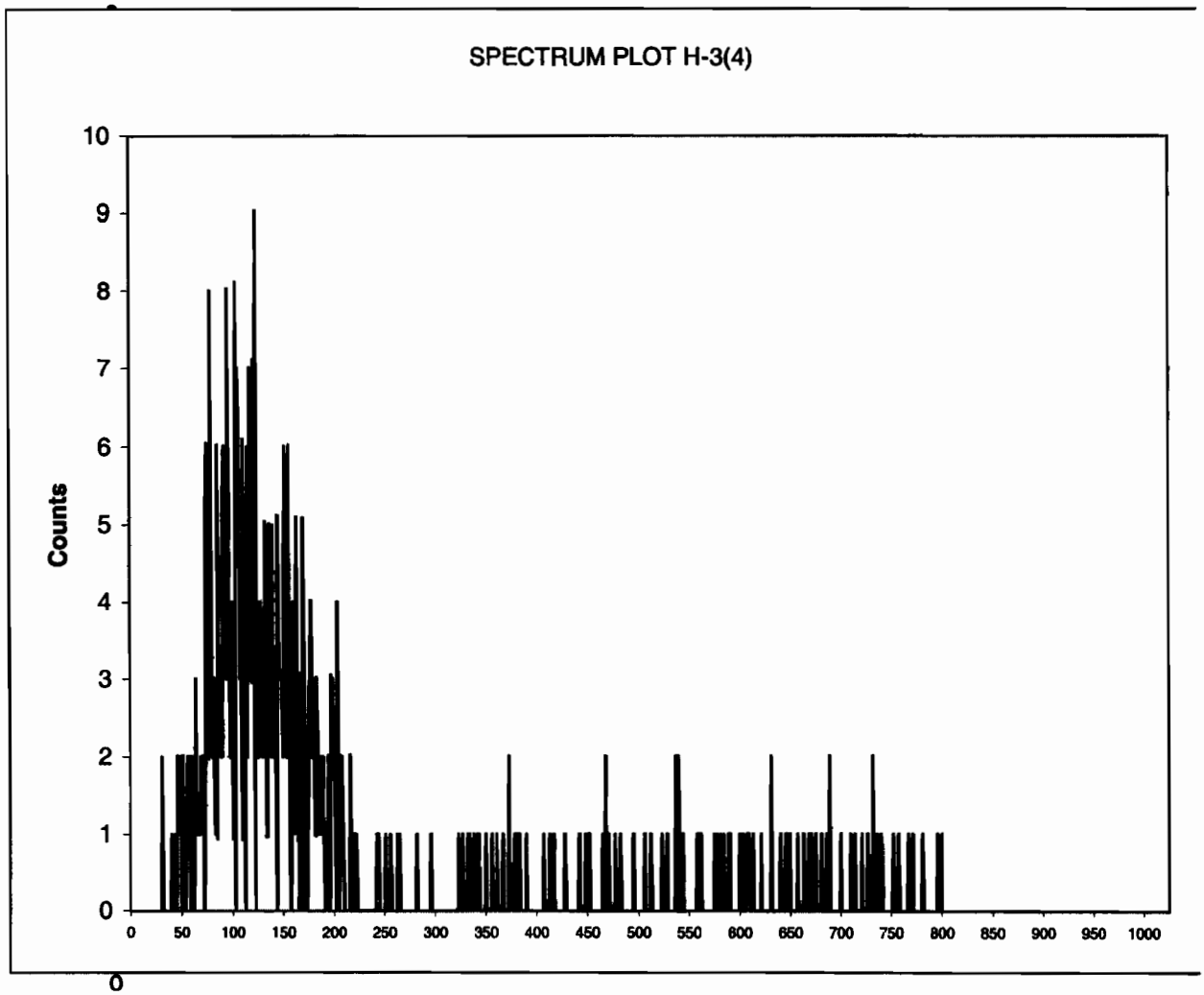
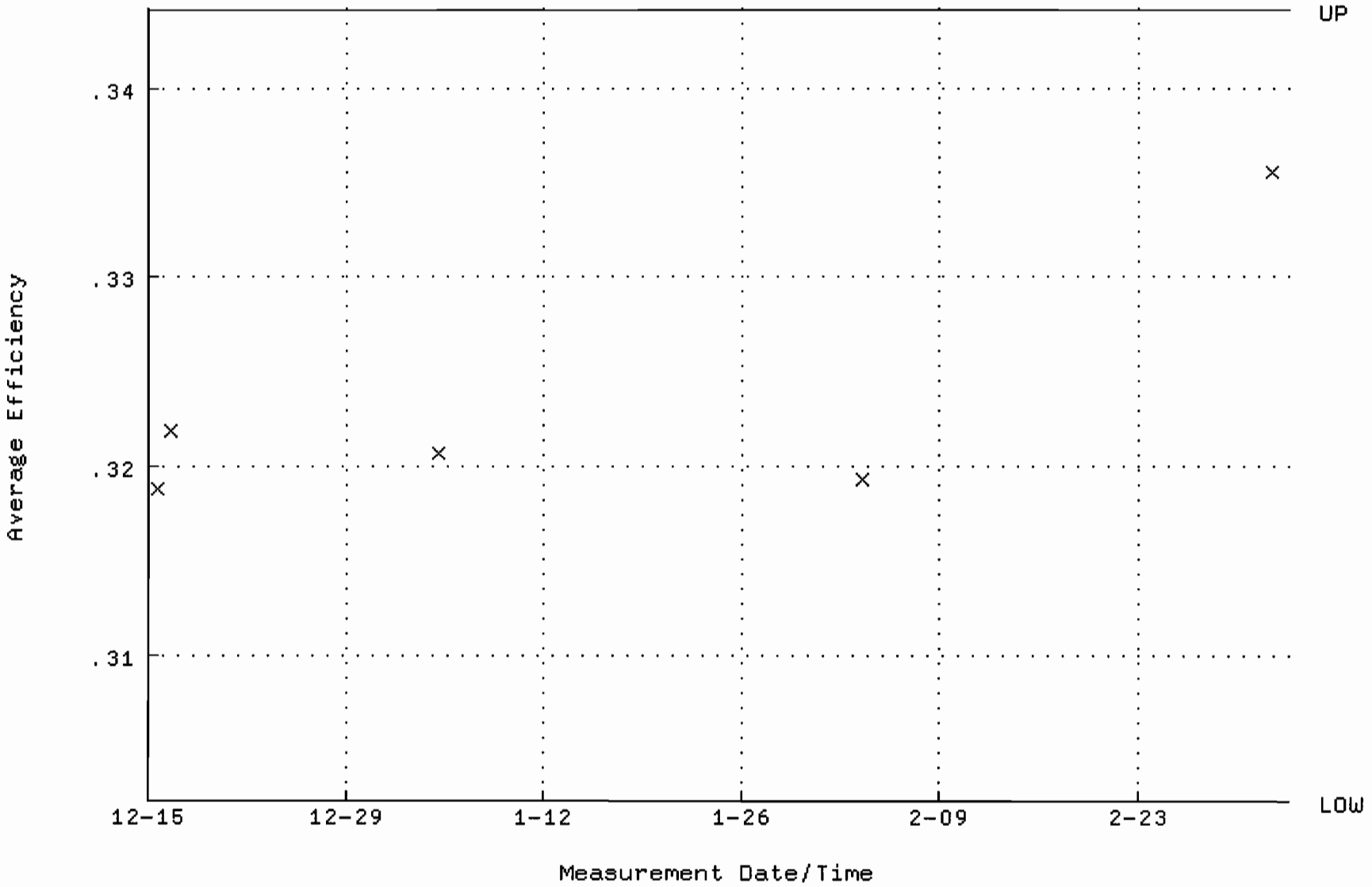
29	
30	
31	
32	
33	
34	0
35	0

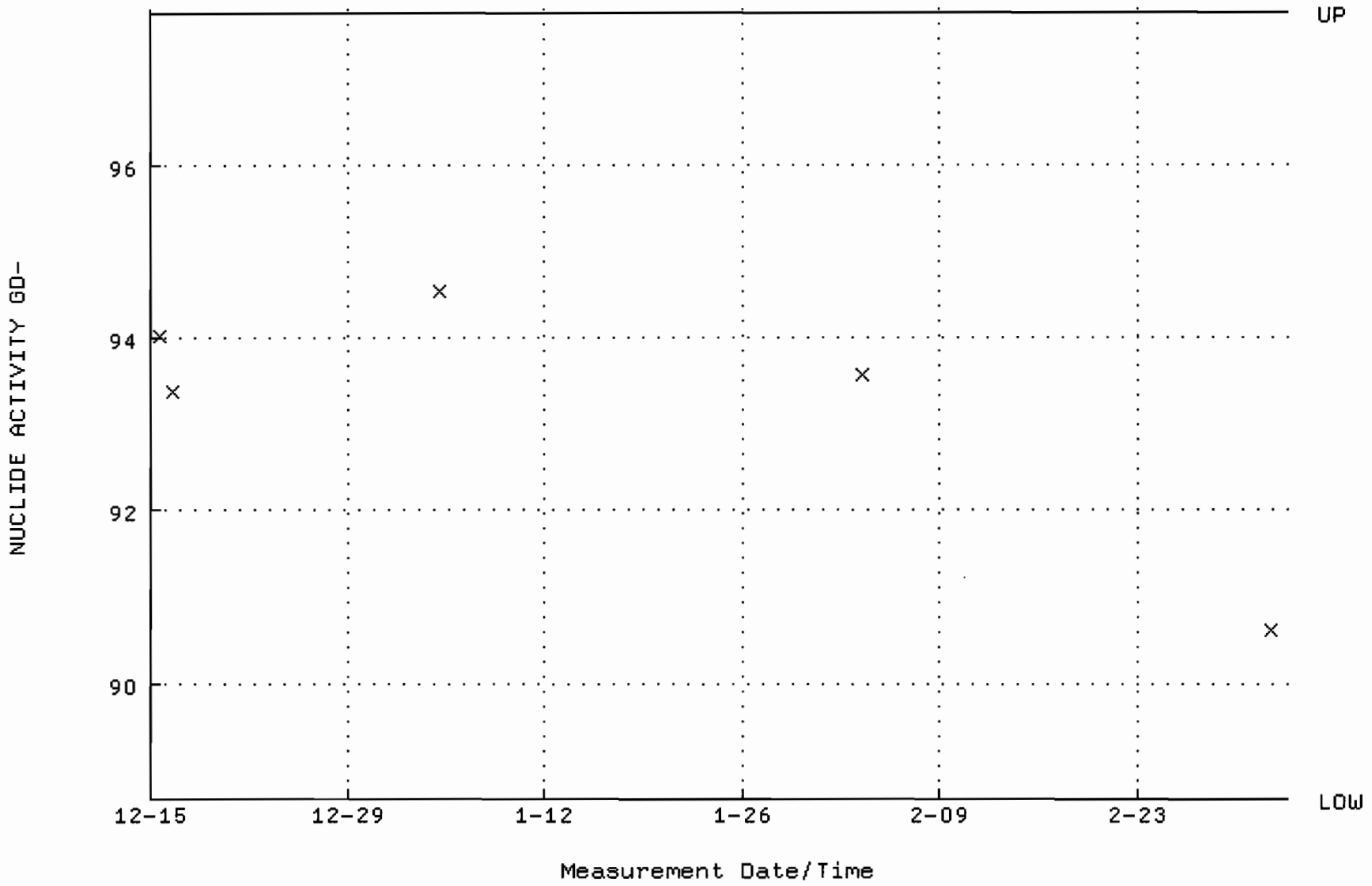


BACKGROUND AND EFFICIENCY DATA

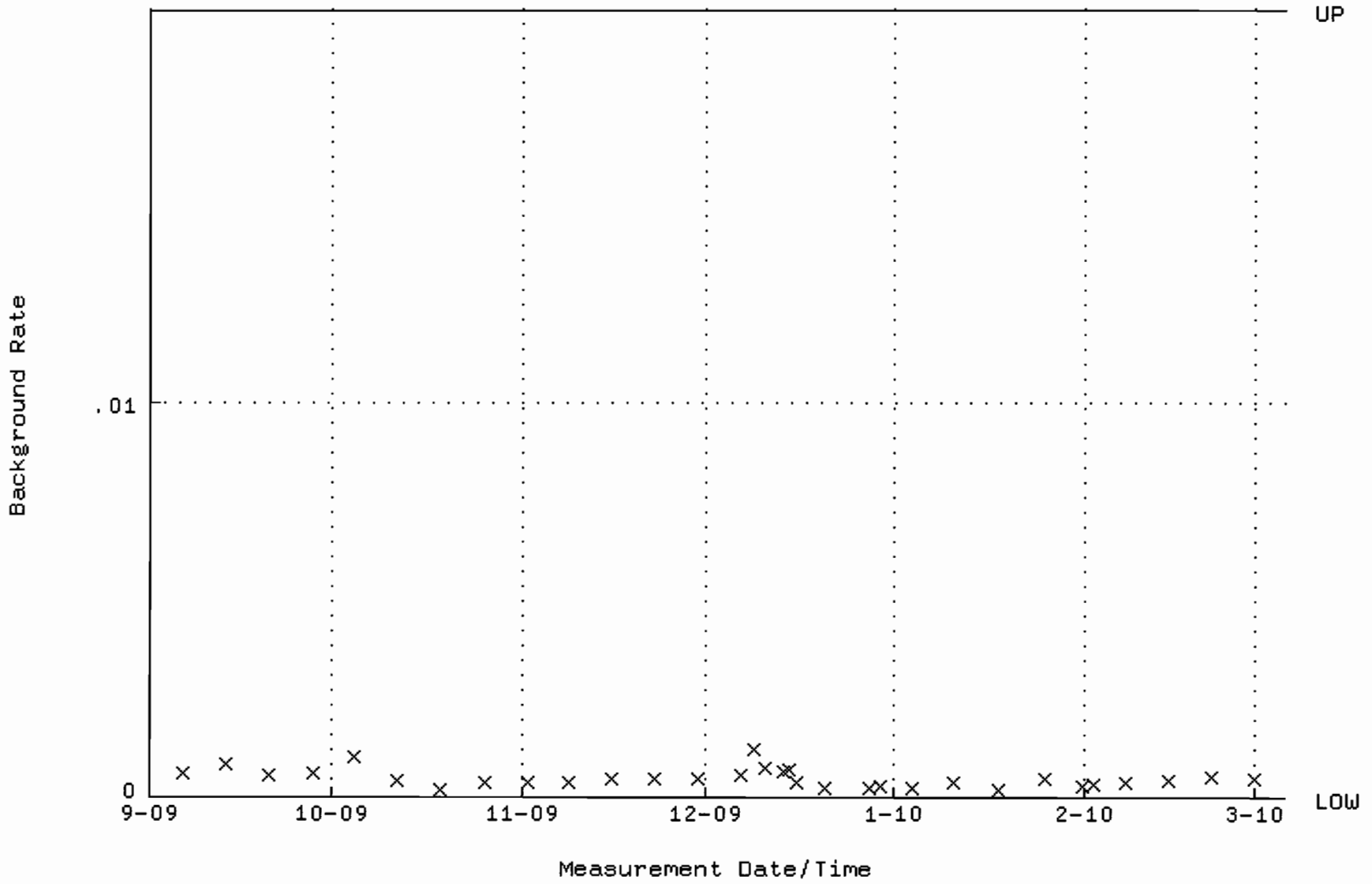
QA filename : DKA100:[ENV_ALPHA.QA.W]W005.QAF;6
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.302314 through 0.344088



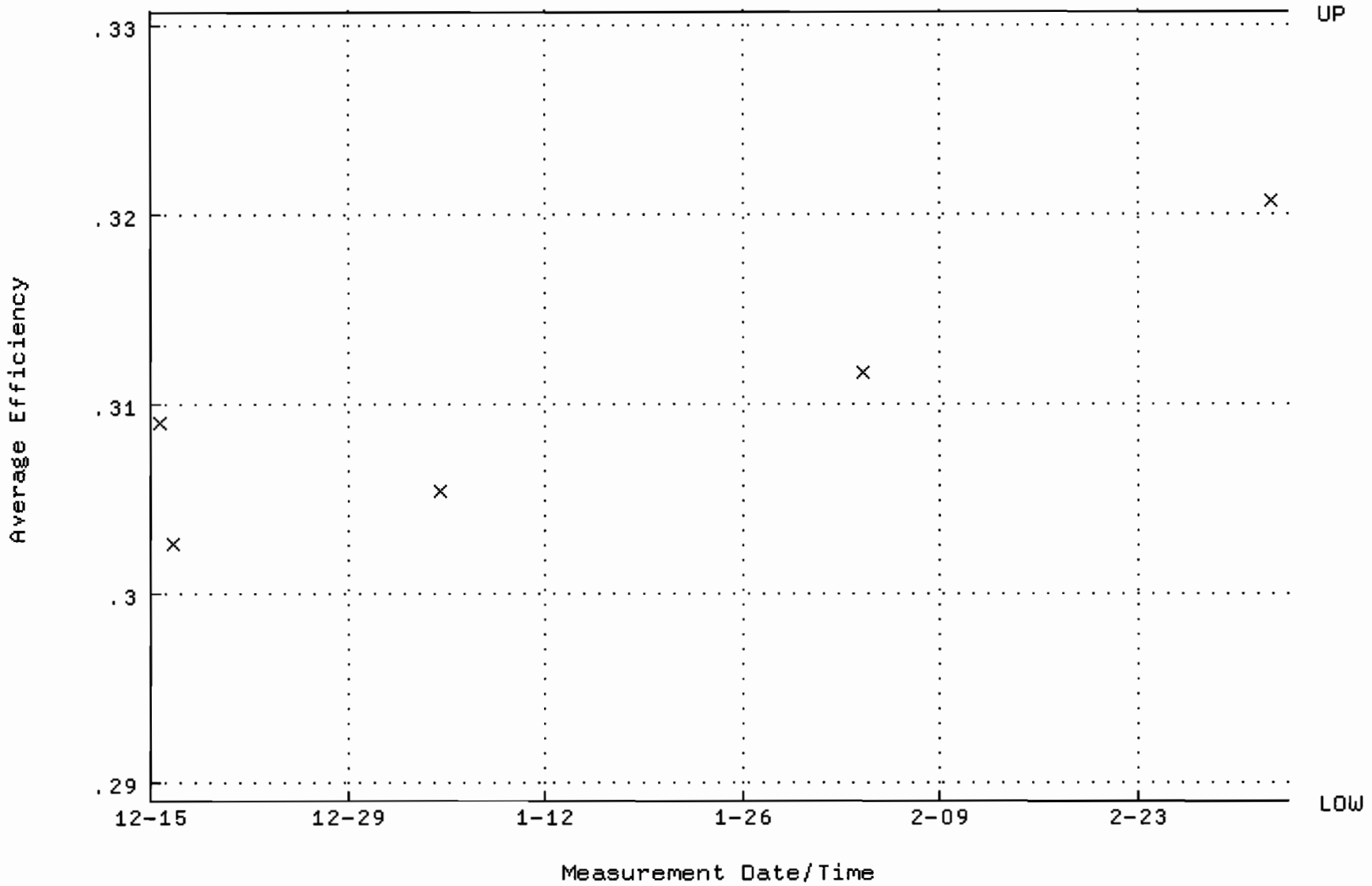
QA filename : DKA100:[ENV_ALPHA.QA.W]W005.QAF;6
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 88.6685 through 97.7693



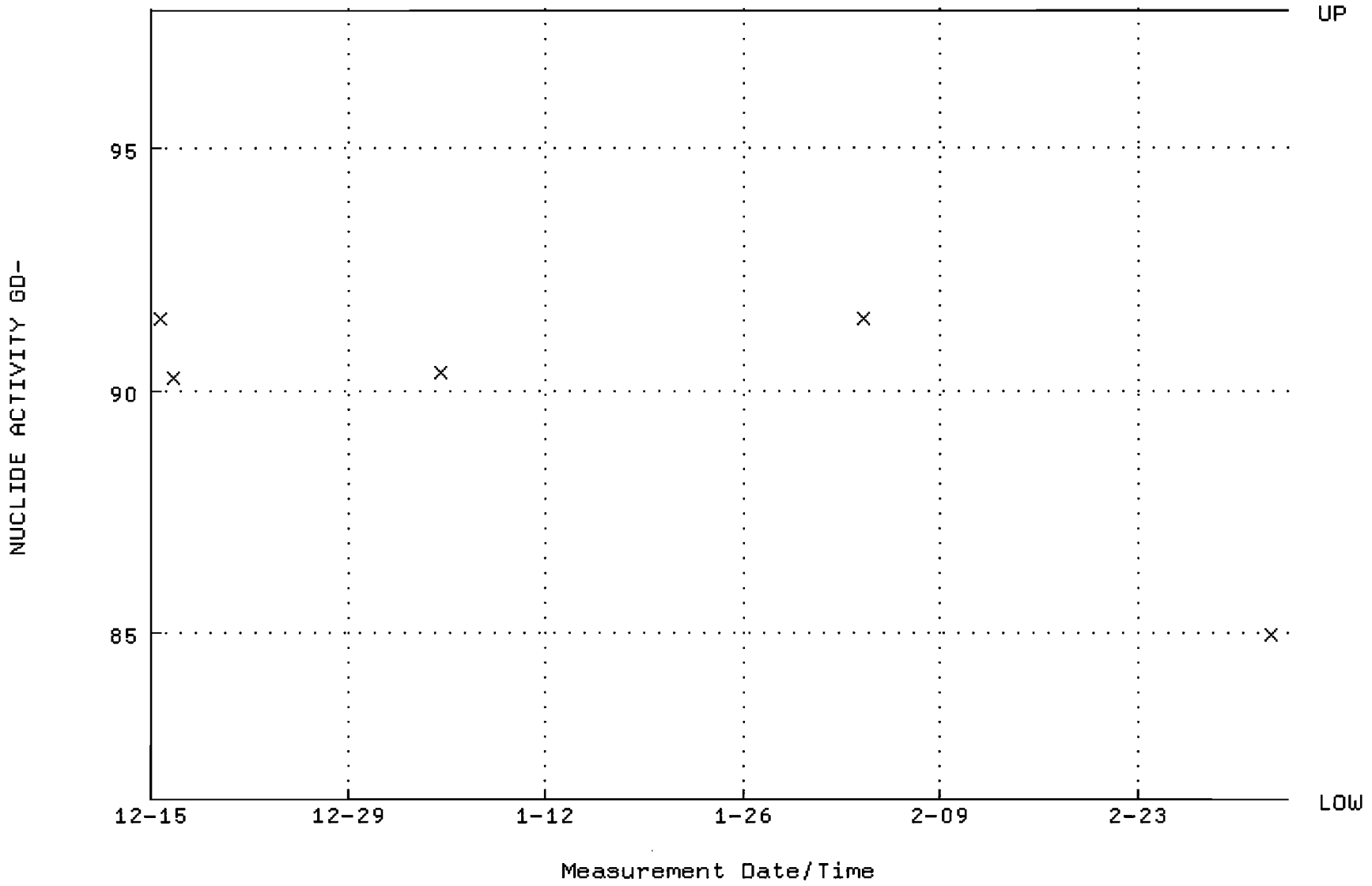
QA filename : DKA100:[ENV_ALPHA.QA.B]B005.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:00 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



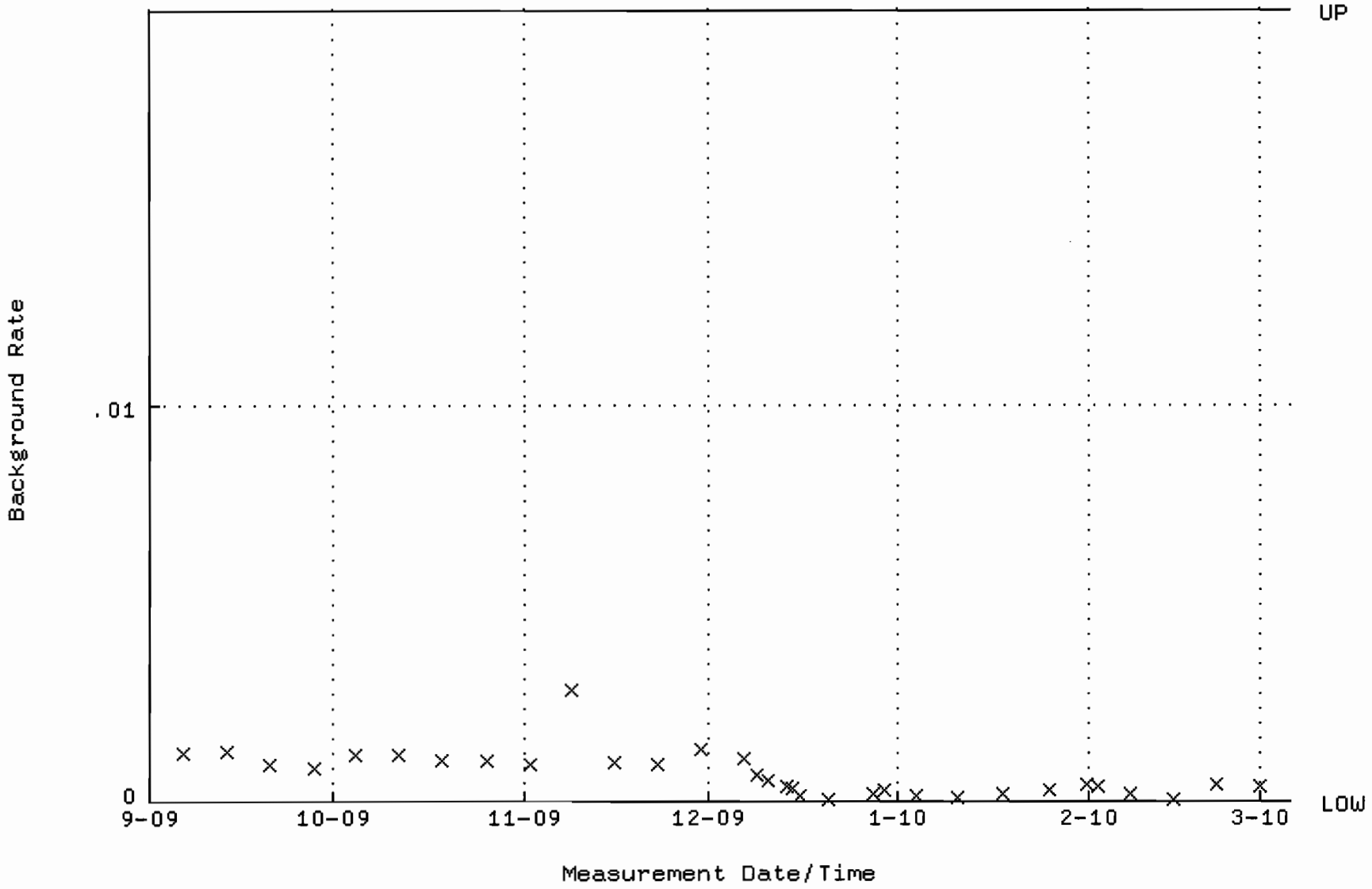
QA filename : DKA100:[ENV_ALPHA.QA.W]W006.QAF;6
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.288996 through 0.330714



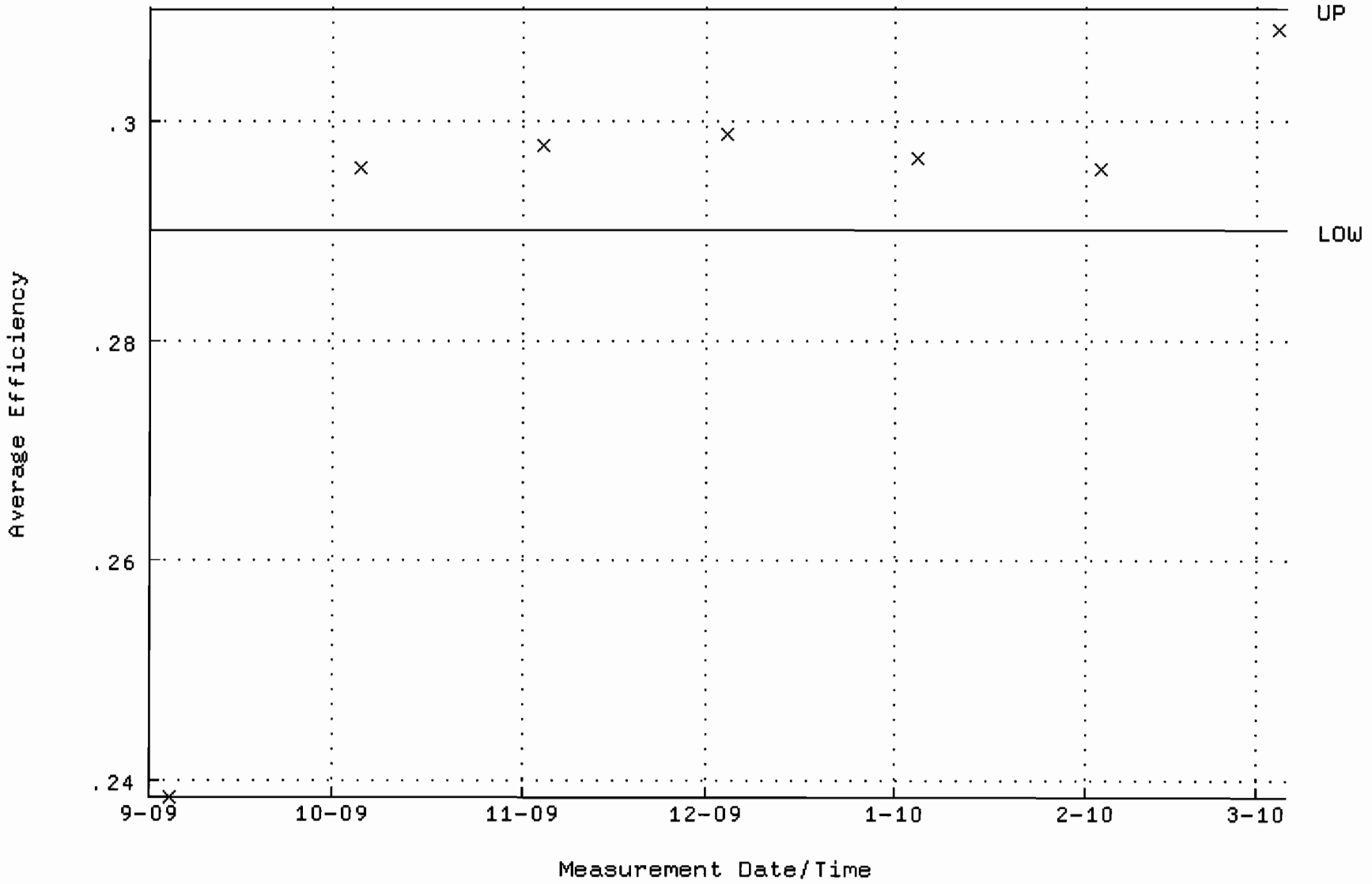
QA filename : DKA100:[ENV_ALPHA.QA.W]W006.QAF;6
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 15-DEC-2009 14:48:34 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 81.5567 through 97.8515



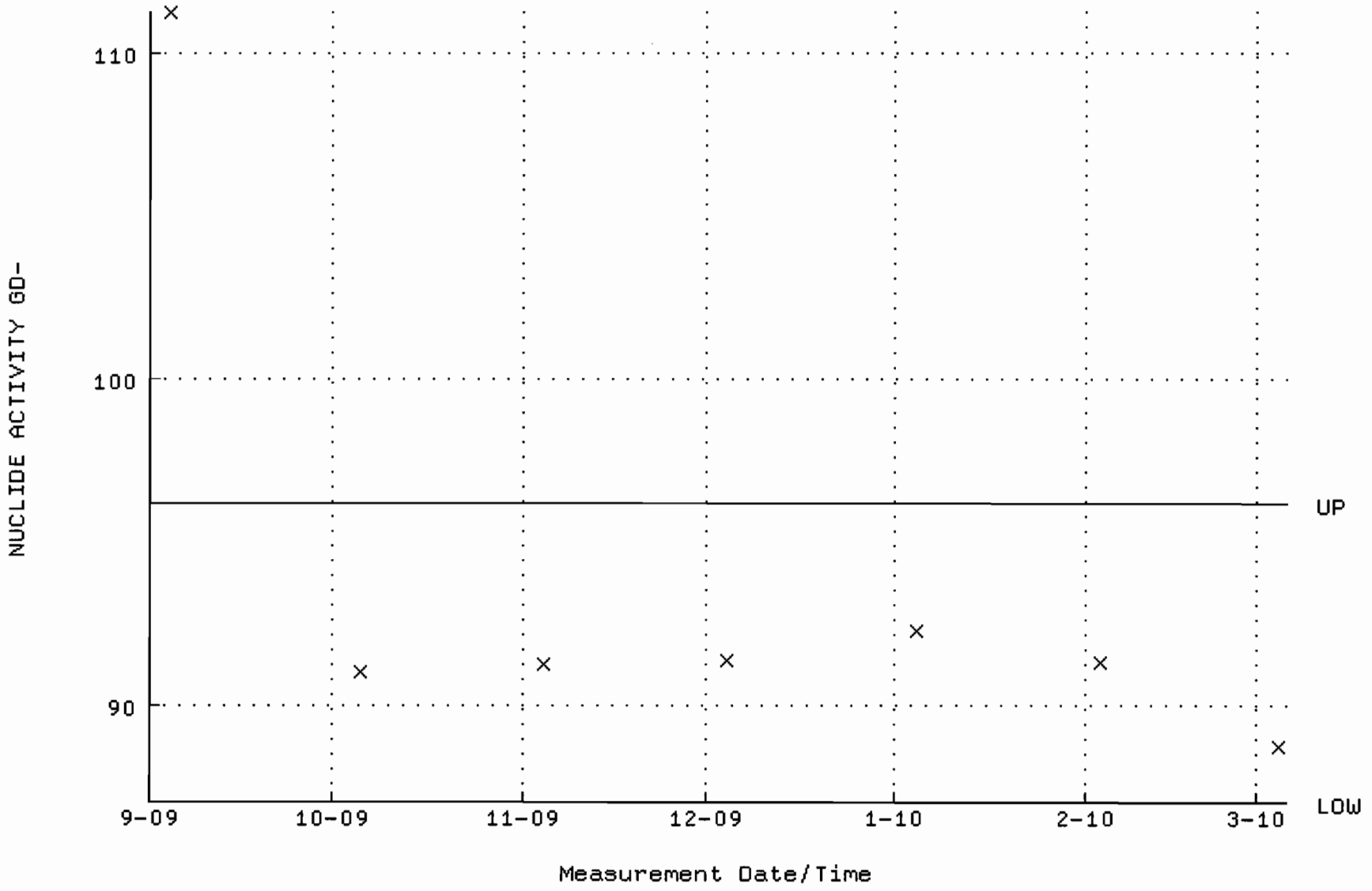
QA filename : DKA100:[ENV_ALPHA.QA.B]B006.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:00 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



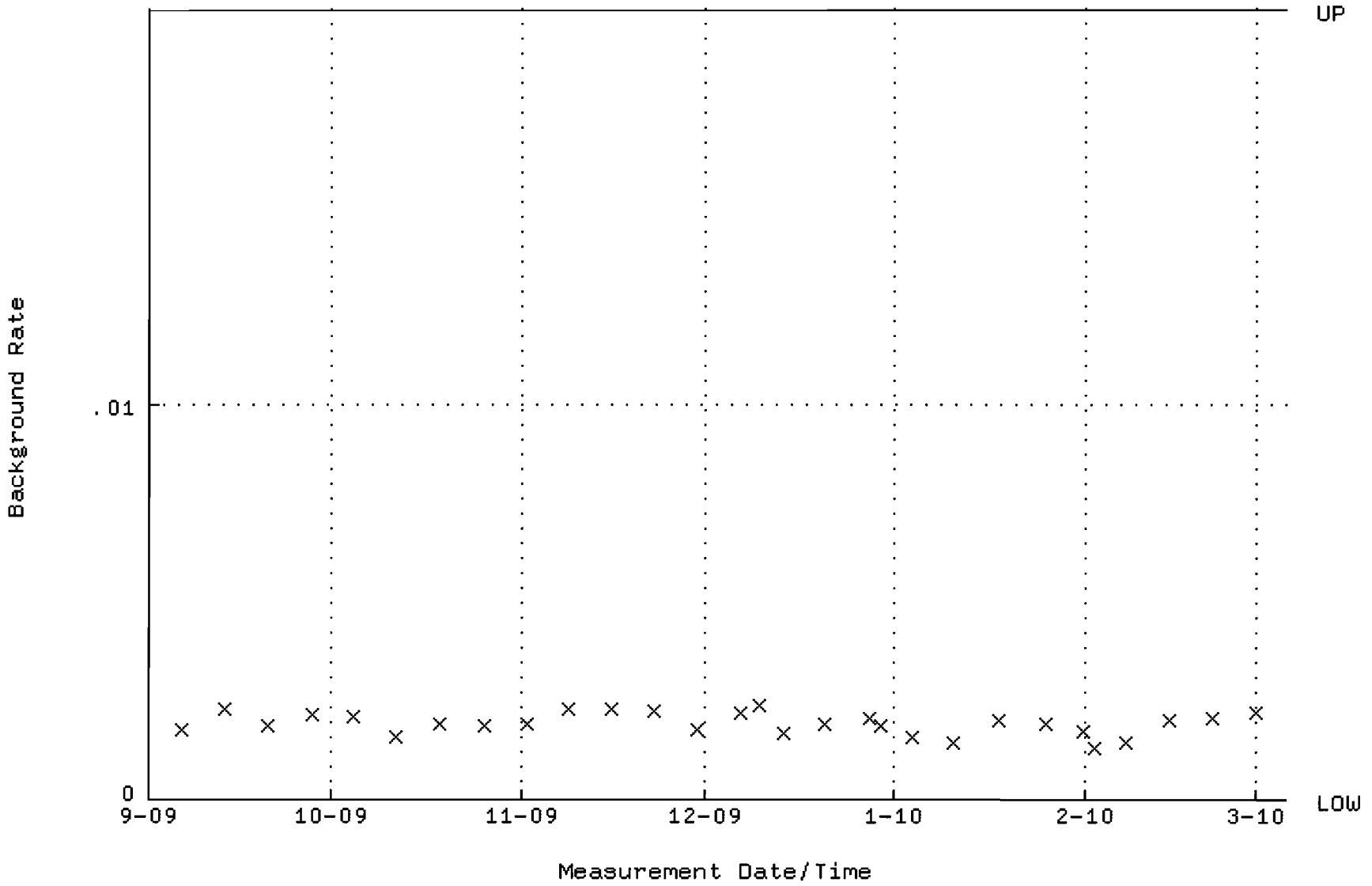
QA filename : DKA100:[ENV_ALPHA.QA.W]W007.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.290108 through 0.310108



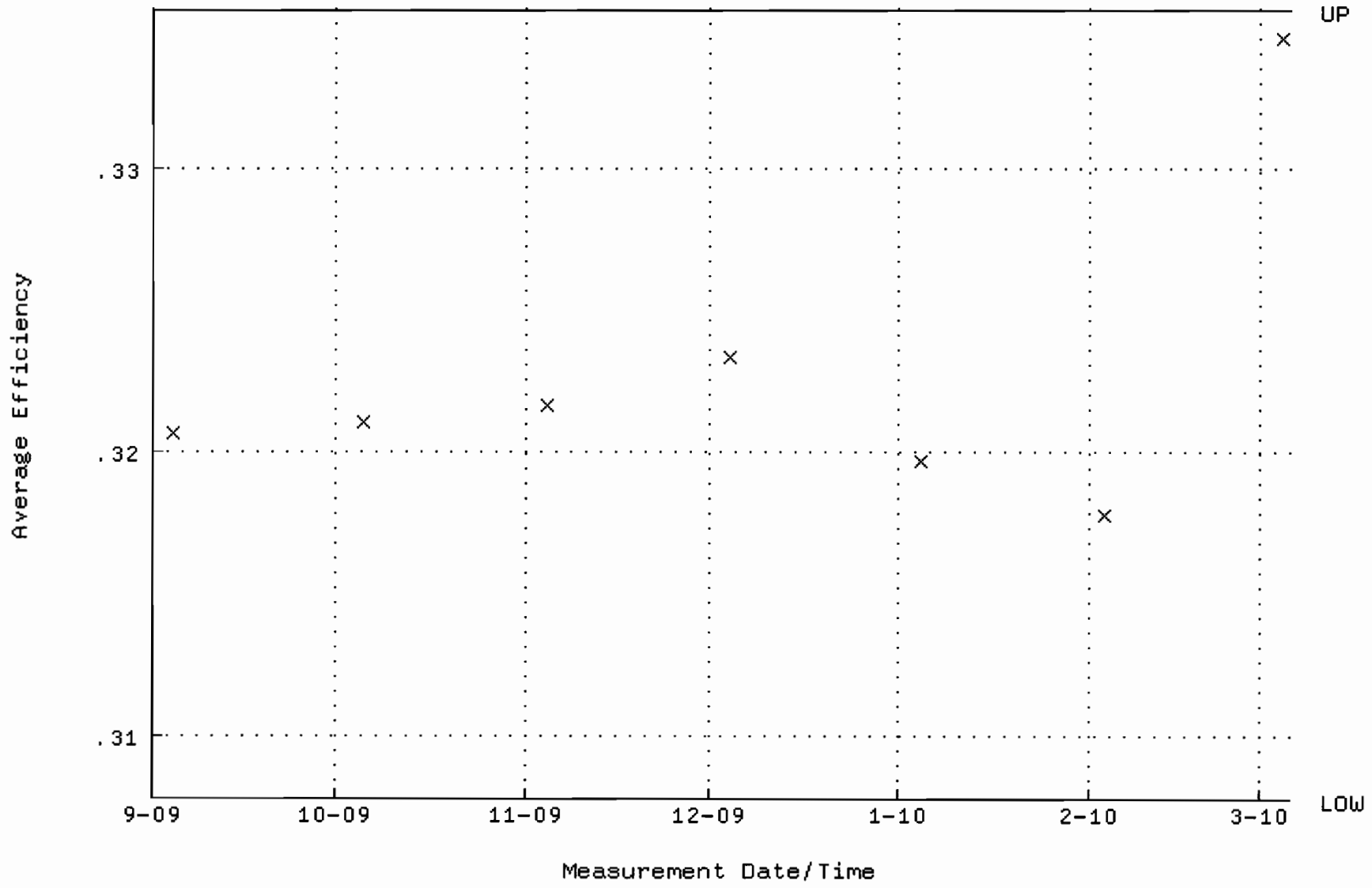
QA filename : DKA100:[ENV_ALPHA.QA.W]W007.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 87.0687 through 96.2339



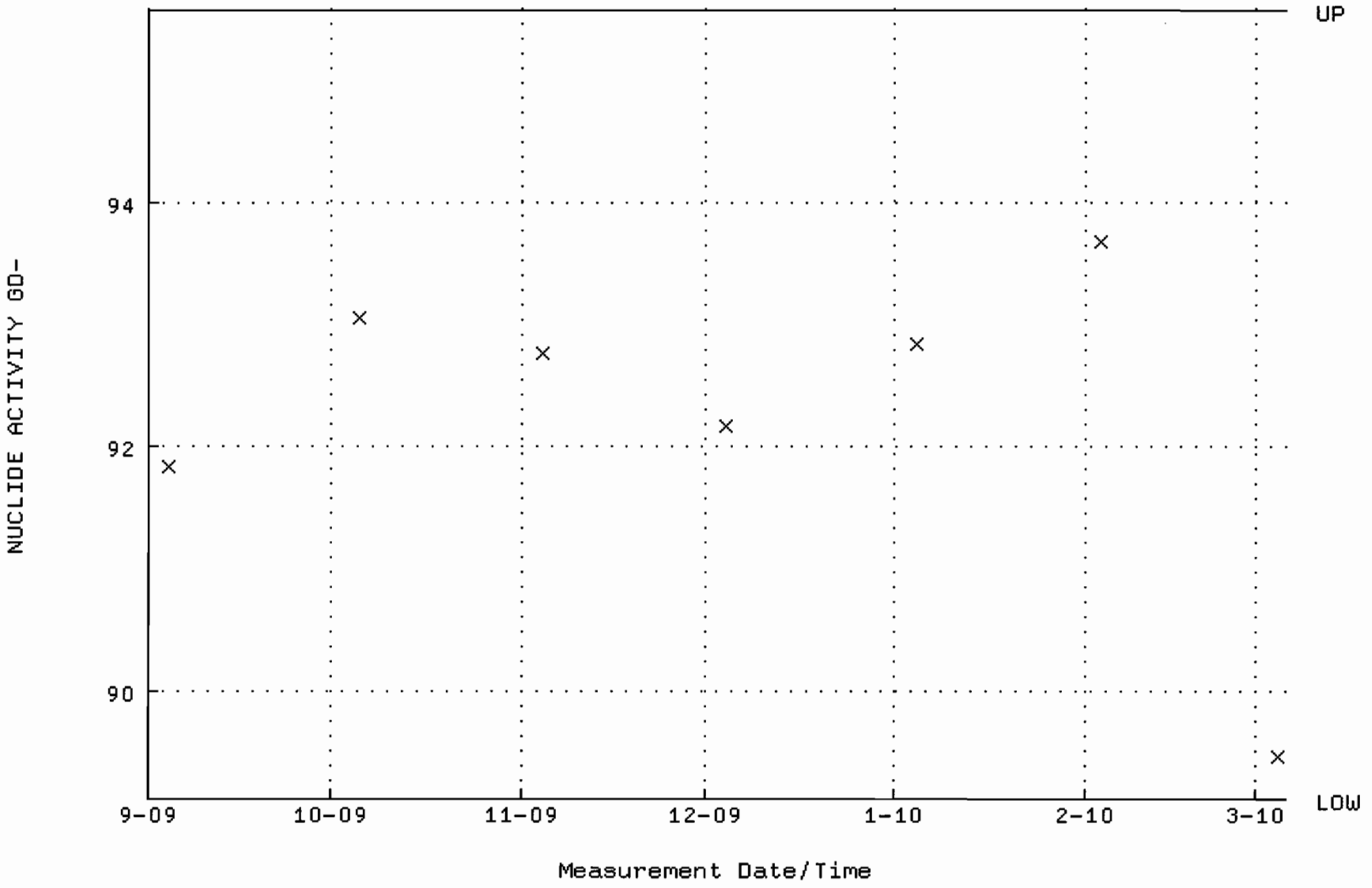
QA filename : DKA100:[ENV_ALPHA.QA.B]B007.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:01 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



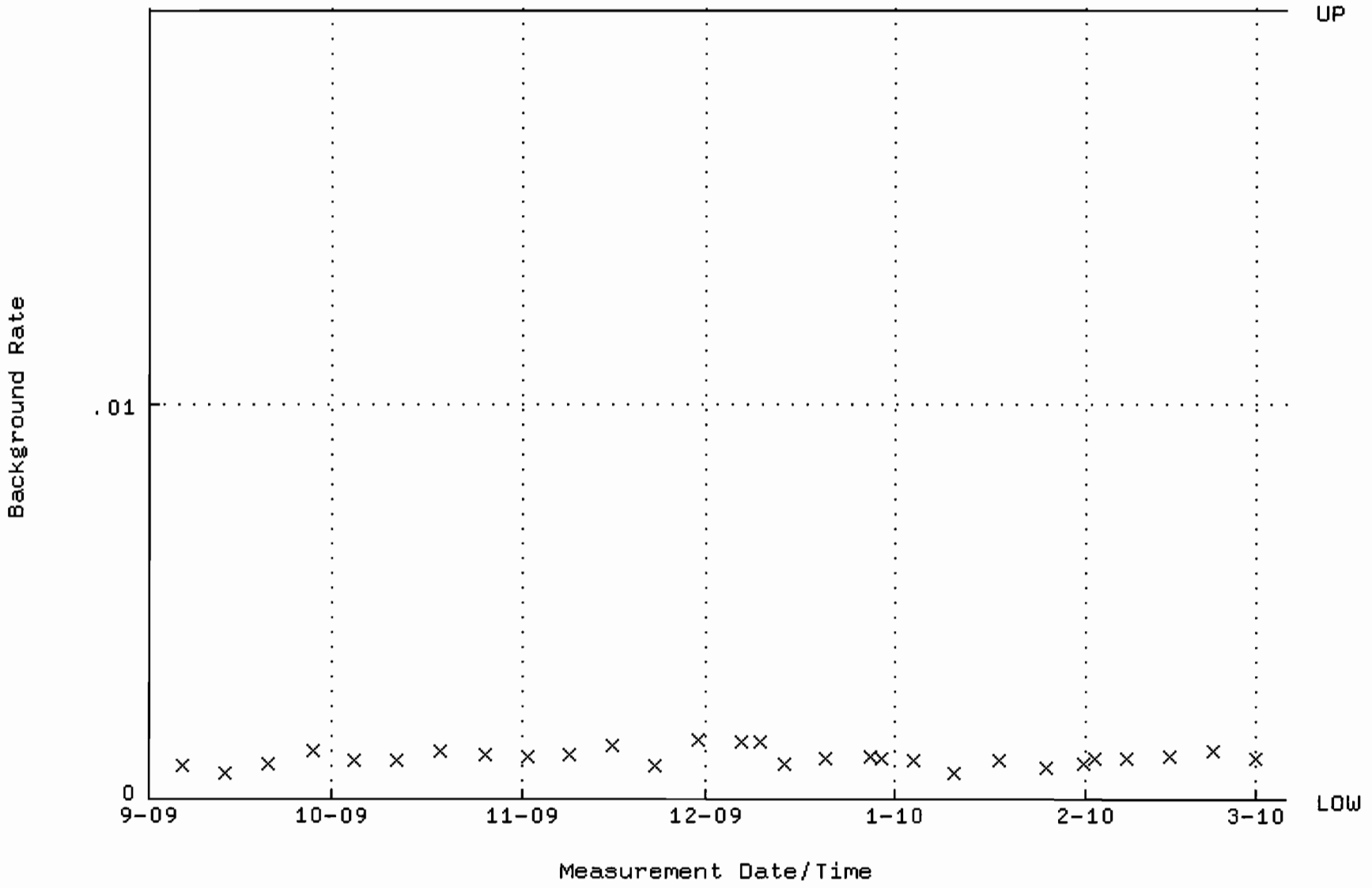
QA filename : DKA100:[ENV_ALPHA.QA.W]W008.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.307754 through 0.335576



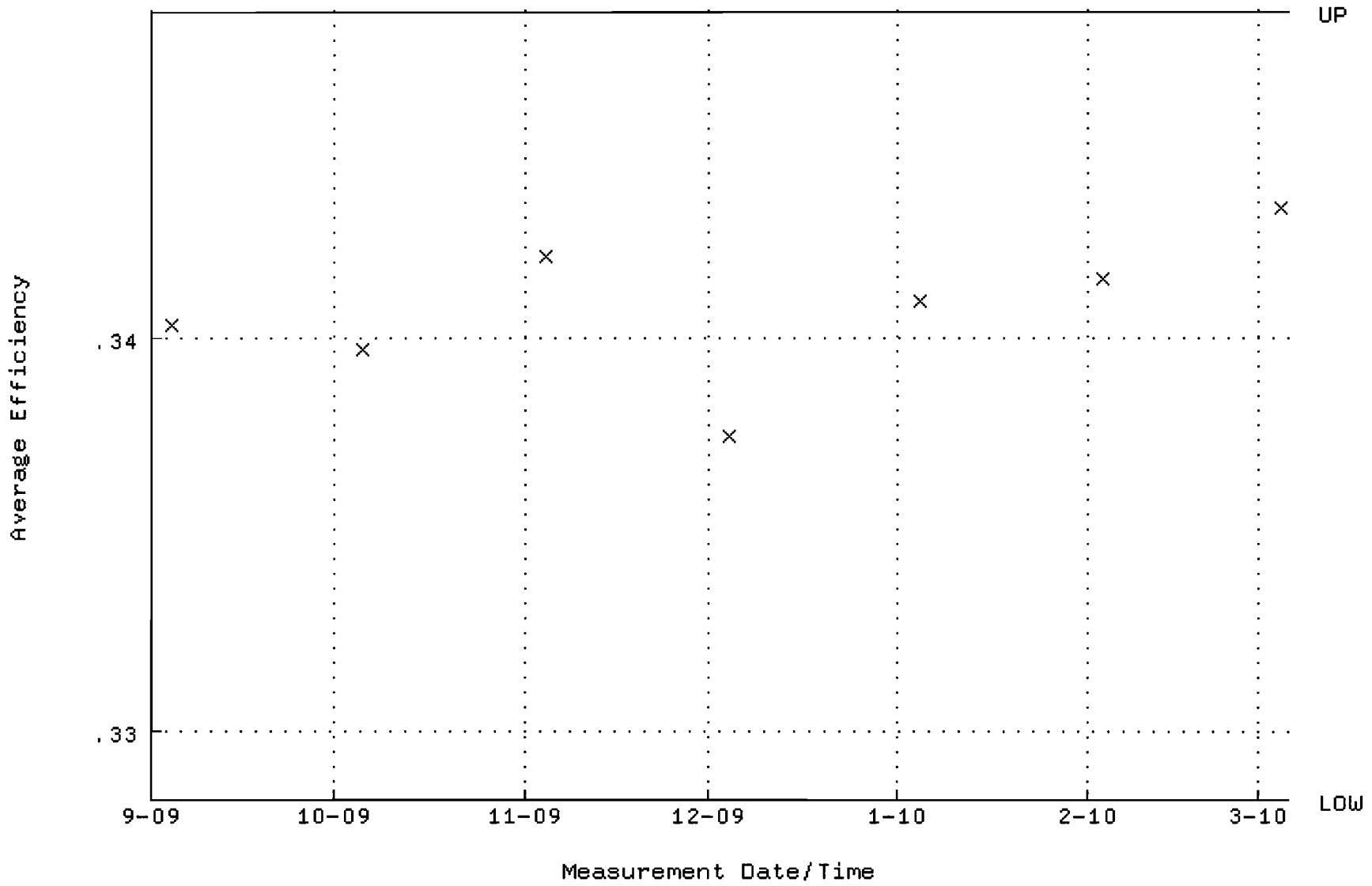
QA filename : DKA100:[ENV_ALPHA.QA.W]W008.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 89.1115 through 95.5851



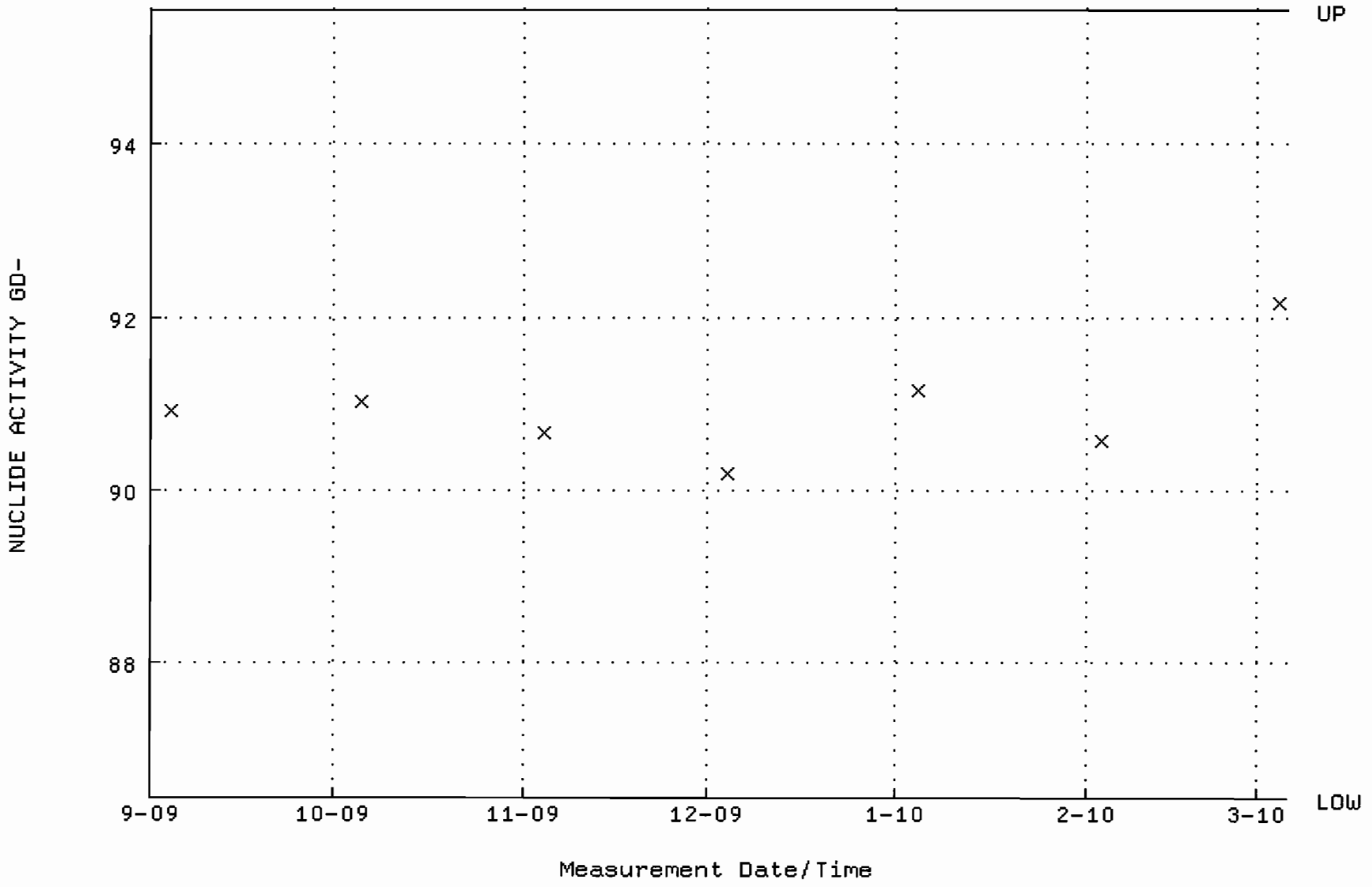
QA filename : DKA100:[ENV_ALPHA.QA.B]B008.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:01 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



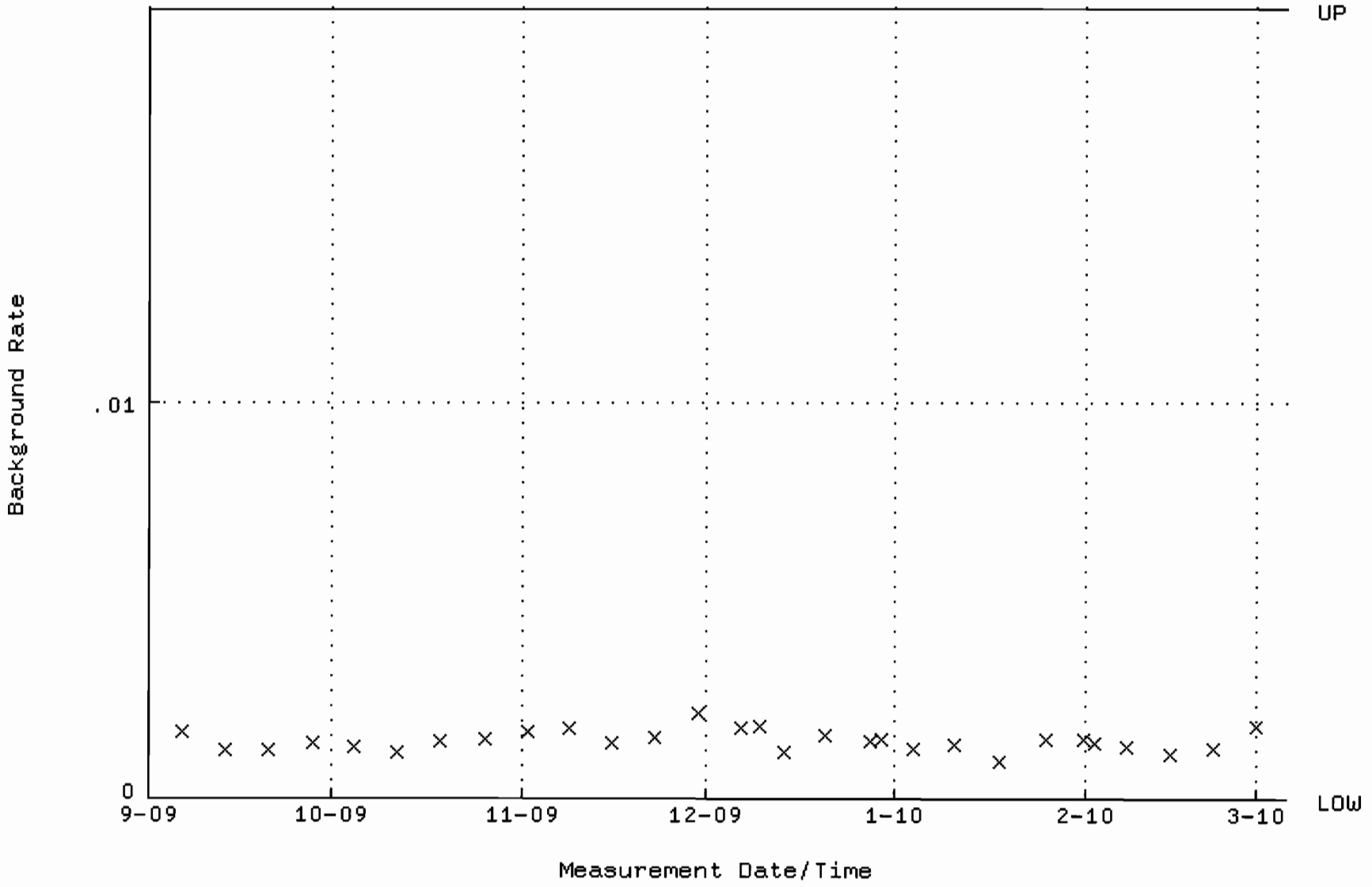
QA filename : DKA100:[ENV_ALPHA.QA.W]W009.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.328261 through 0.348261



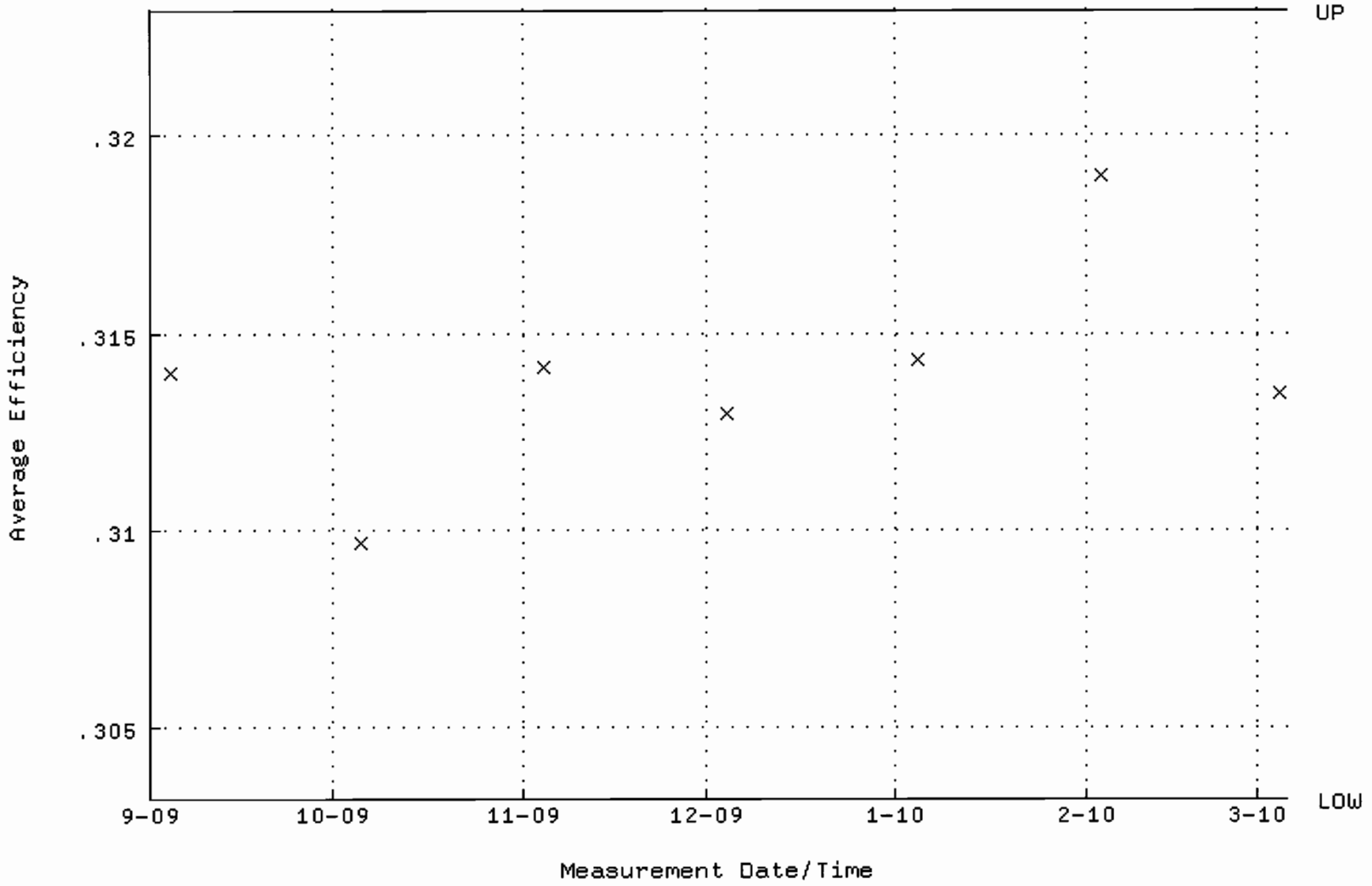
QA filename : DKA100:[ENV_ALPHA.QA.W]W009.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 86.4475 through 95.5473



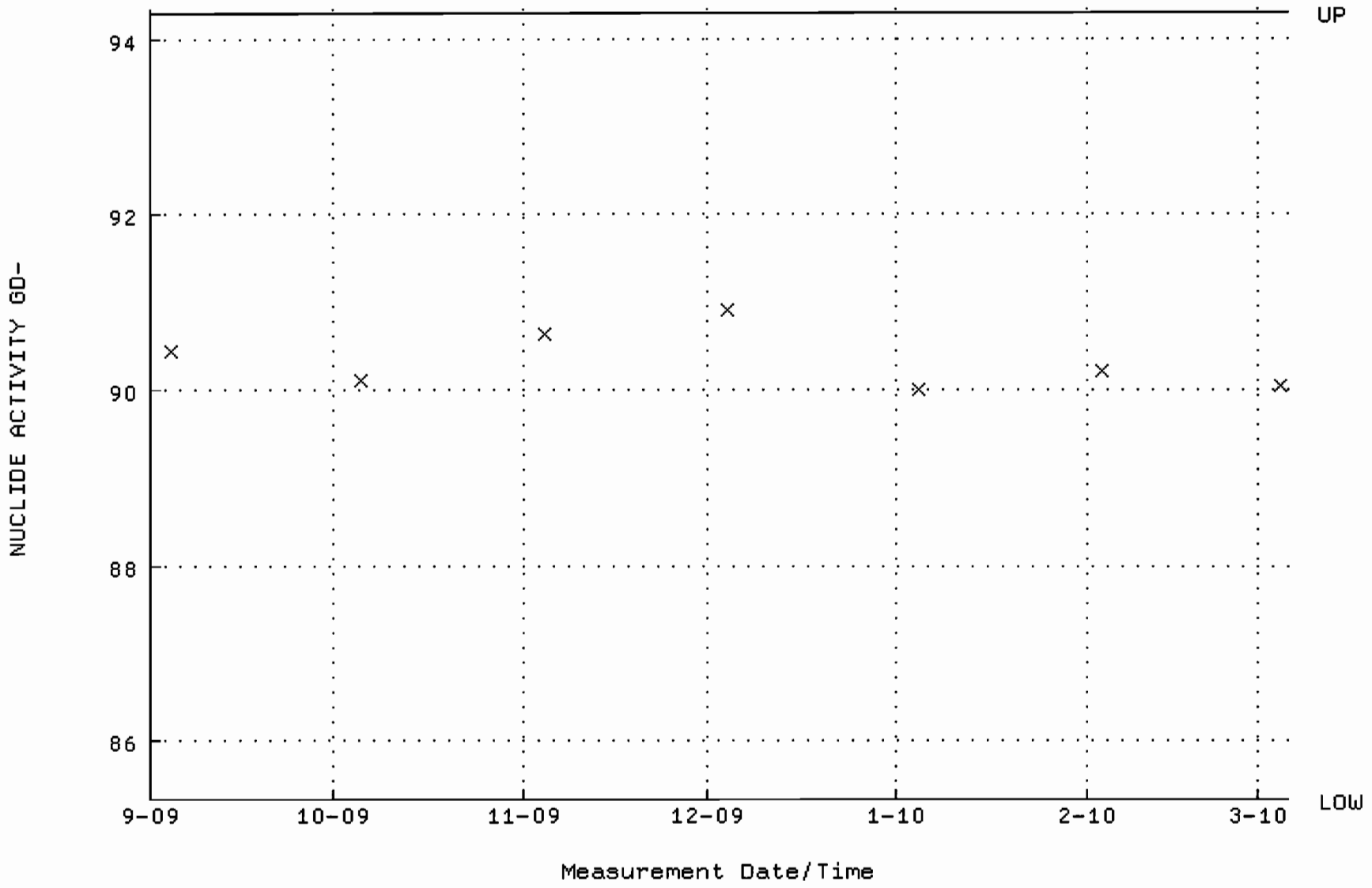
QA filename : DKA100:[ENV_ALPHA.QA.B]B009.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:01 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



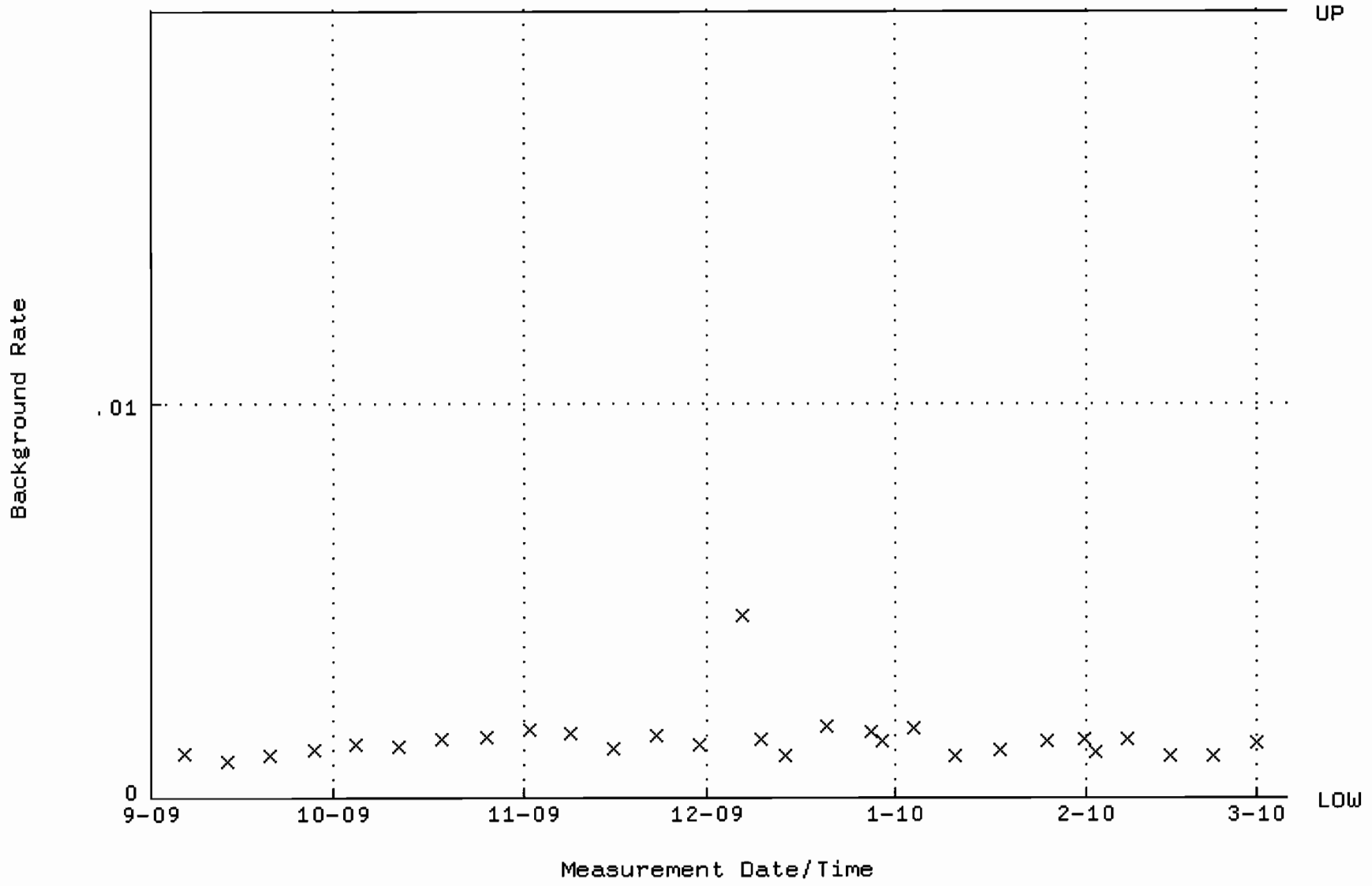
QA filename : DKA100:[ENV_ALPHA.QA.W]W010.QAF;5
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.303169 through 0.323169



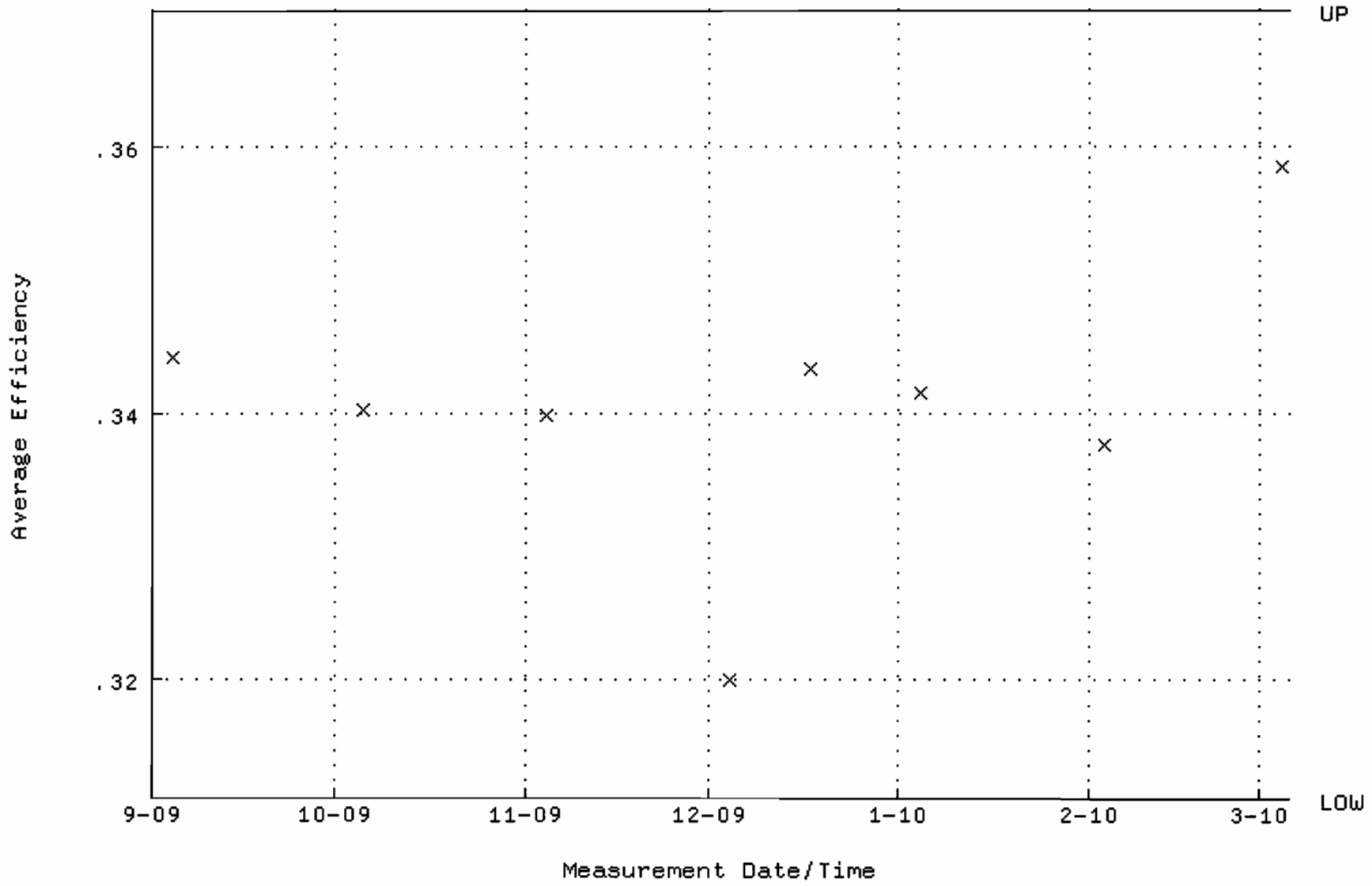
QA filename : DKA100:[ENV_ALPHA.QA.W]W010.QAF;5
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:40 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 85.3273 through 94.3091



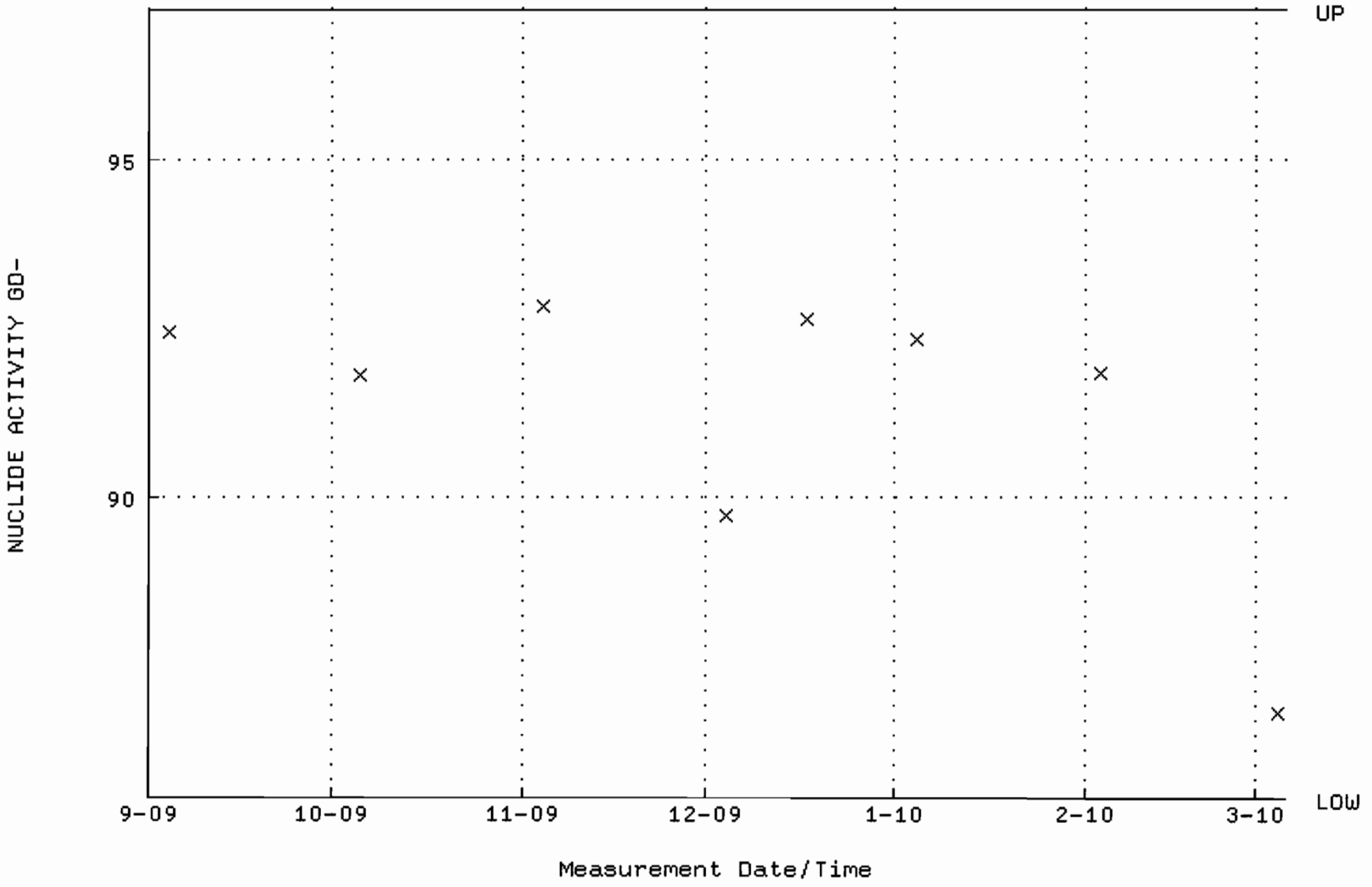
QA filename : DKA100:[ENV_ALPHA.QA.B]B010.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:01 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



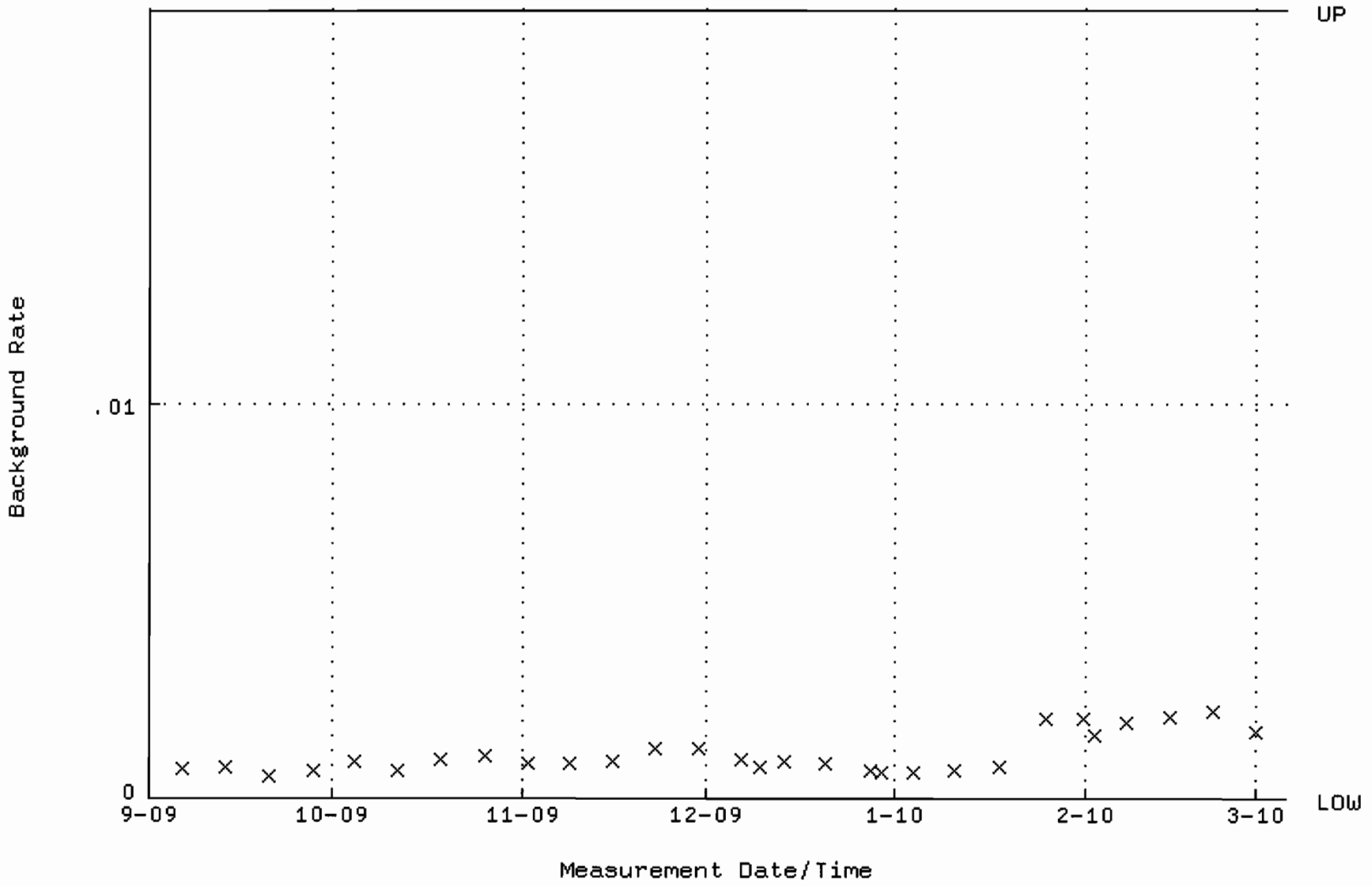
QA filename : DKA100:[ENV_ALPHA.QA.W]W013.QAF;2
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.311179 through 0.370113



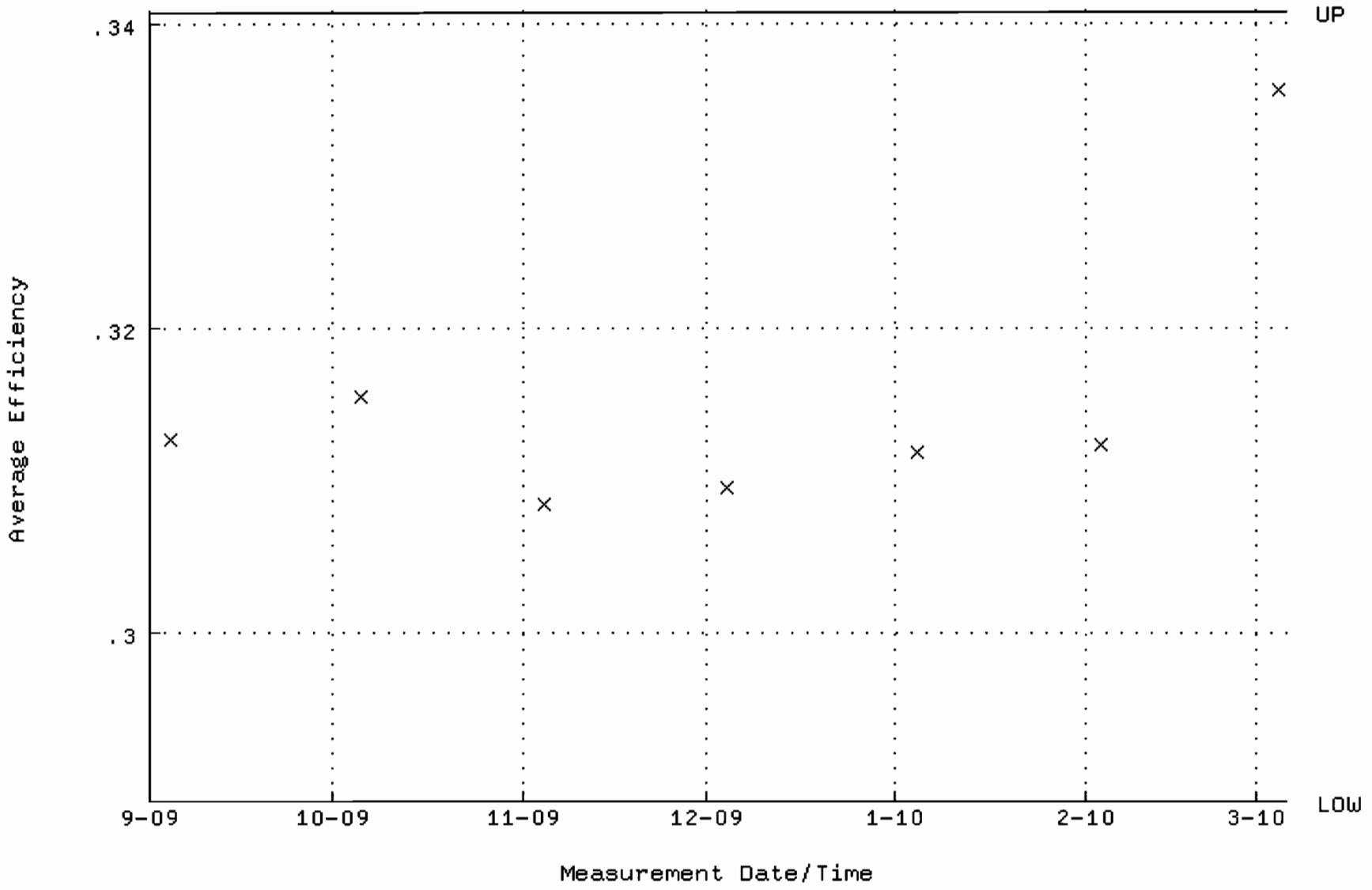
QA filename : DKA100:[ENV_ALPHA.QA.W]W013.QAF;2
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 85.5651 through 97.2315



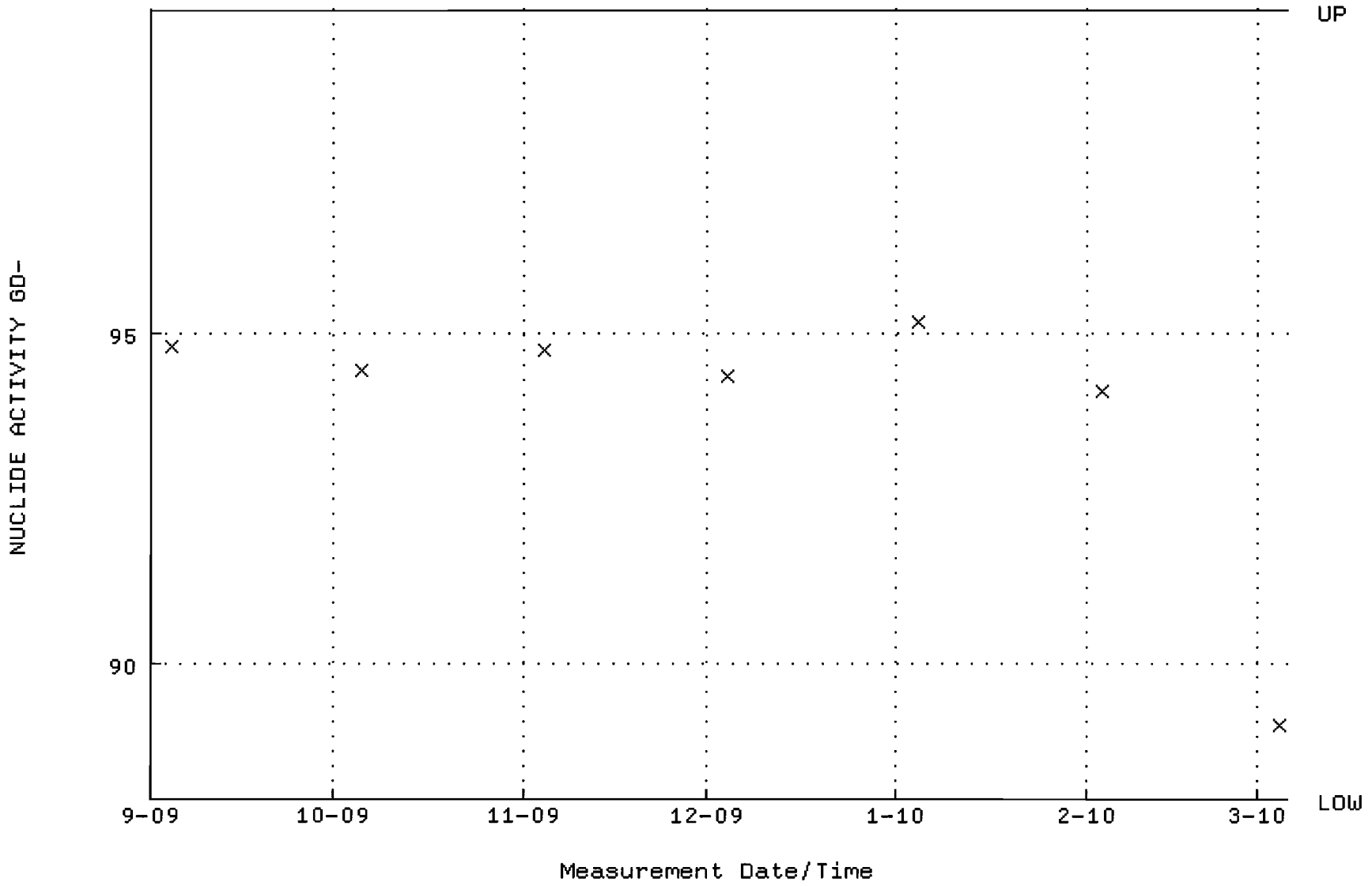
QA filename : DKA100:[ENV_ALPHA.QA.B]B013.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:02 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



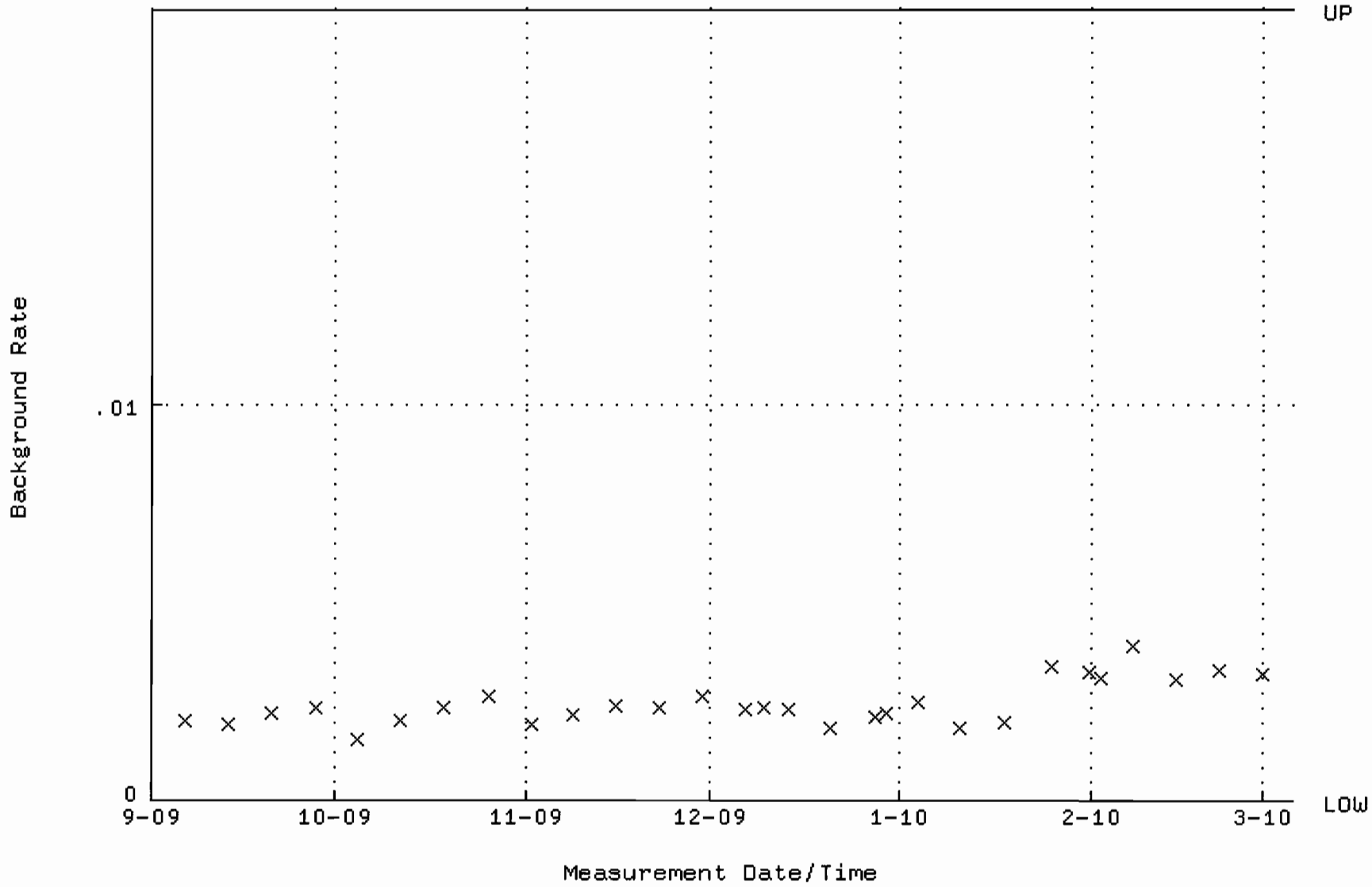
QA filename : DKA100:[ENV_ALPHA.QA.W]W014.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.288973 through 0.340739



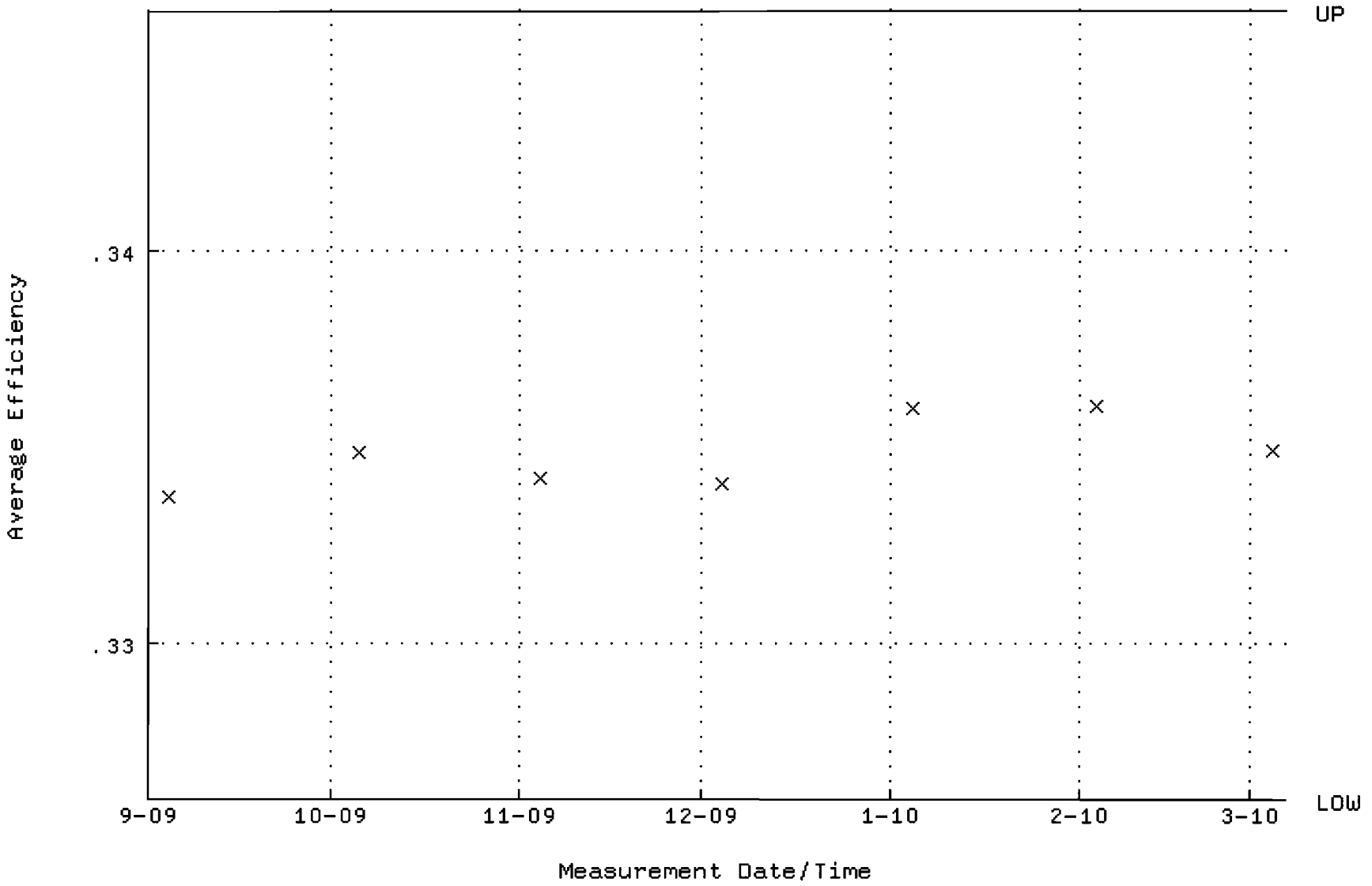
QA filename : DKA100:[ENV_ALPHA.QA.W]W014.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 87.9529 through 99.8771



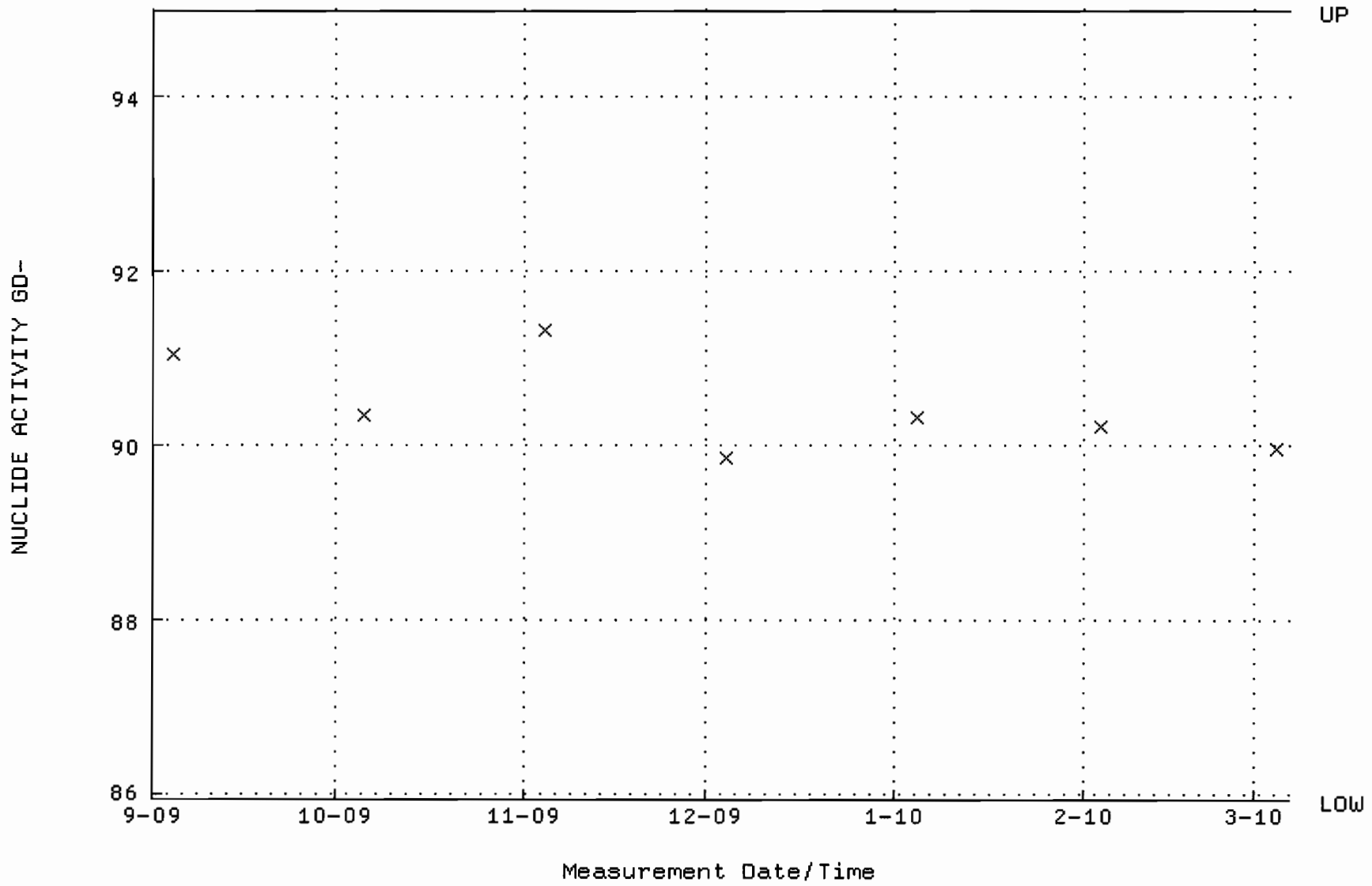
QA filename : DKA100:[ENV_ALPHA.QA.B]B014.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:02 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



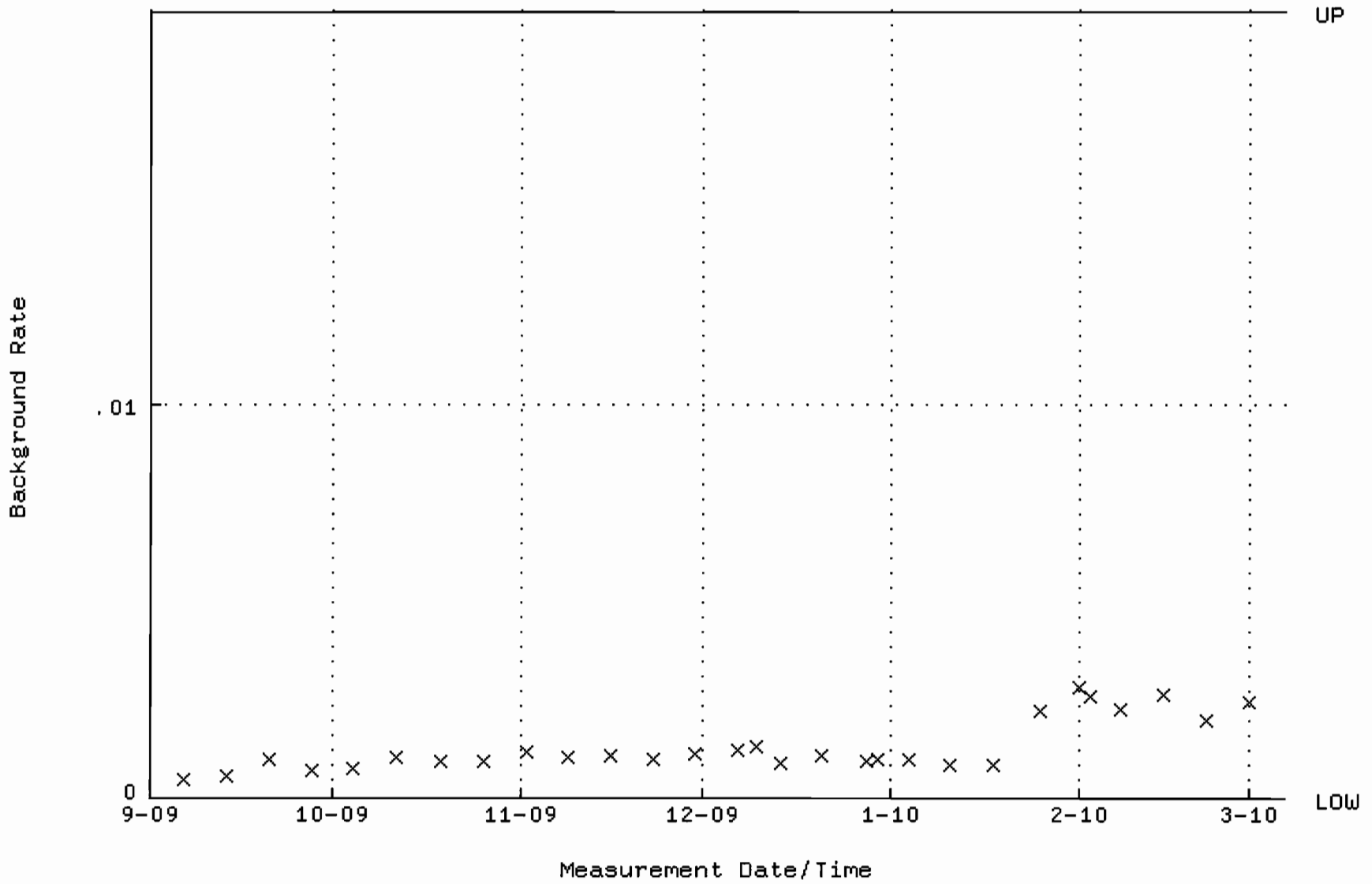
QA filename : DKA100:[ENV_ALPHA.QA.W]W016.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:41 through 6-MAR-2010 12:00:00
Lower/Upper Lmts: 0.326058 through 0.346058



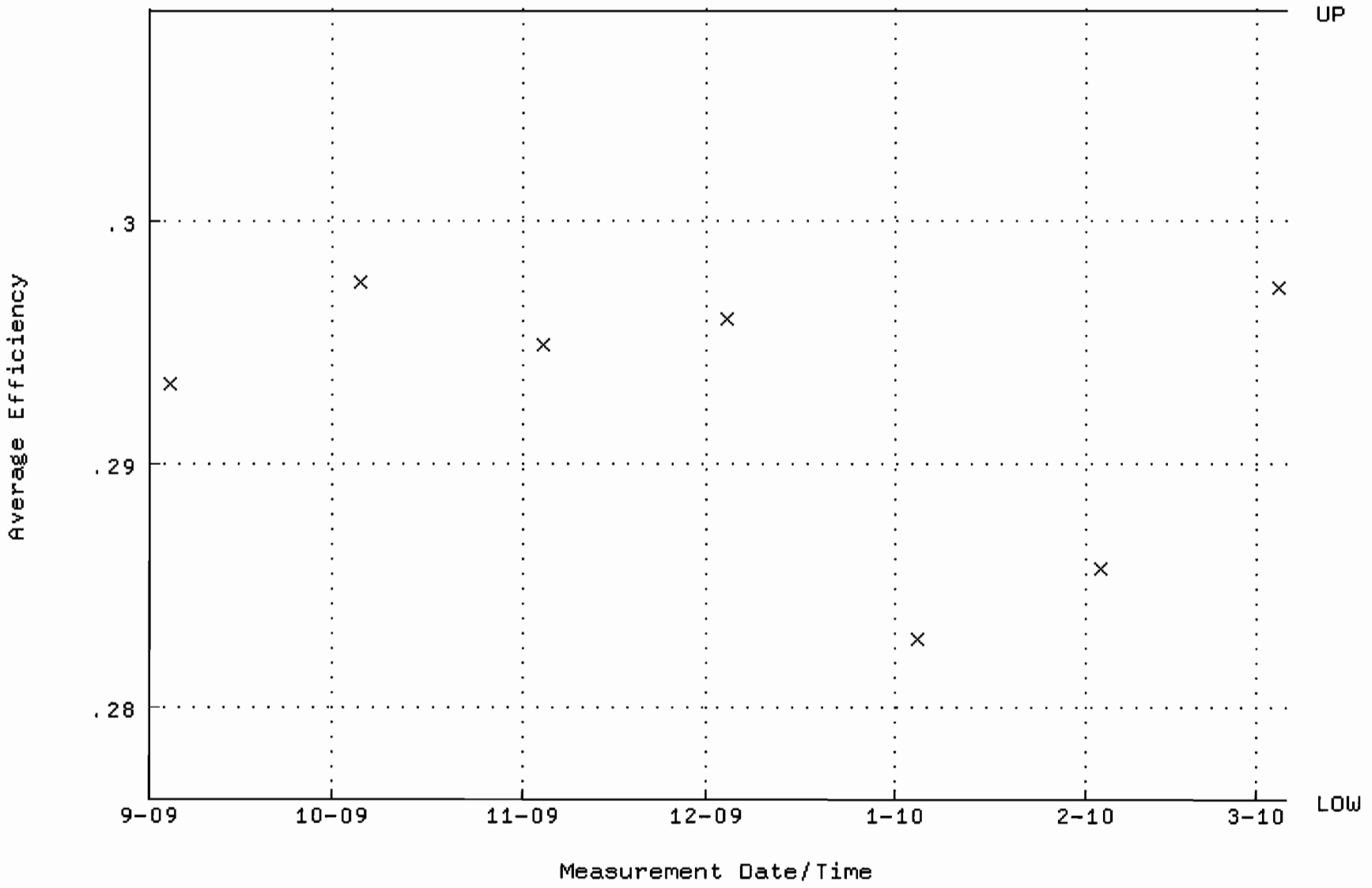
QA filename : DKA100:[ENV_ALPHA.QA.W]W016.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:41 through 6-MAR-2010 12:00:00
Lower/Upper Lmts: 85.9280 through 94.9730



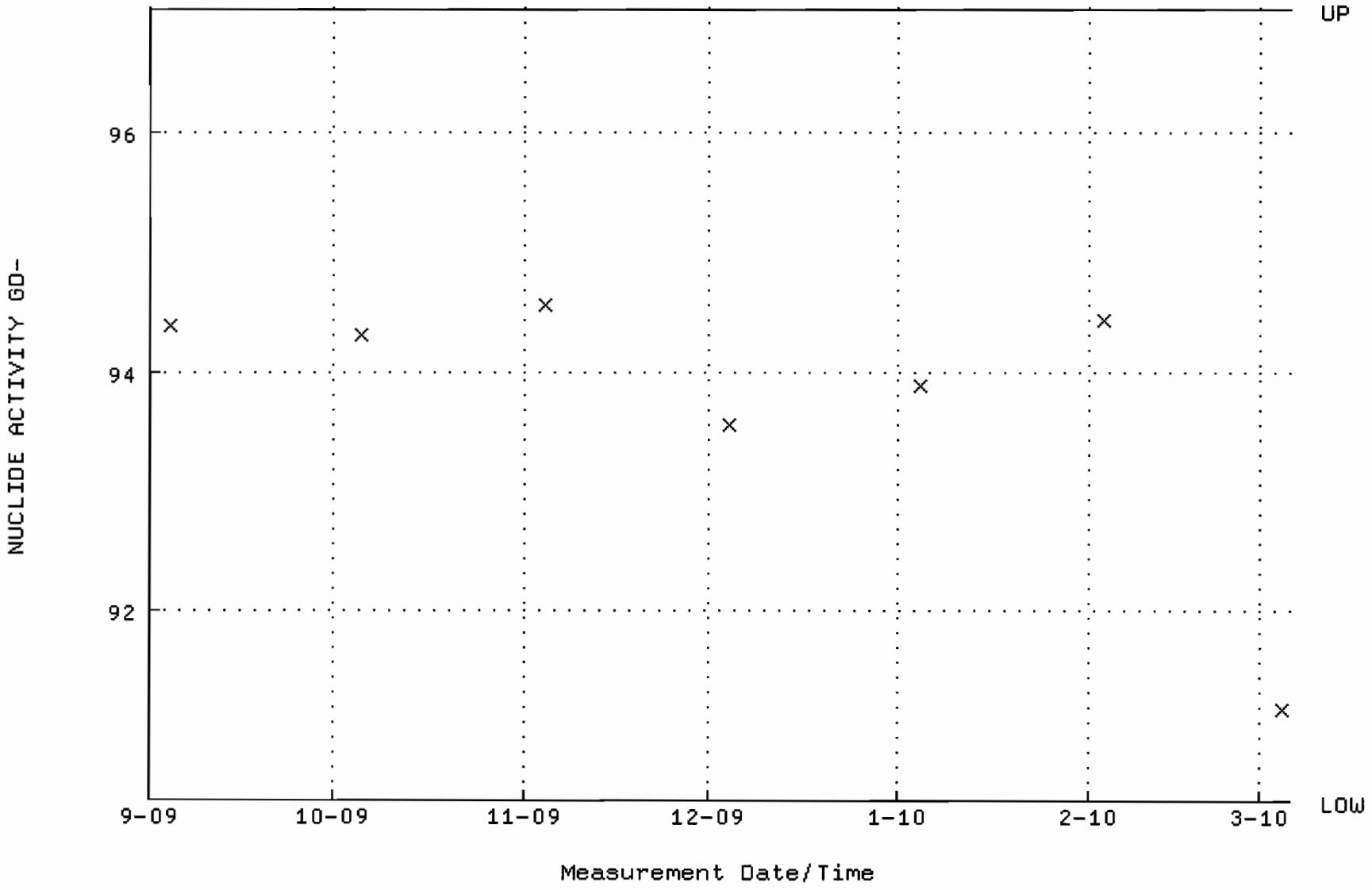
QA filename : DKA100:[ENV_ALPHA.QA.B]B016.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:02 through 6-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



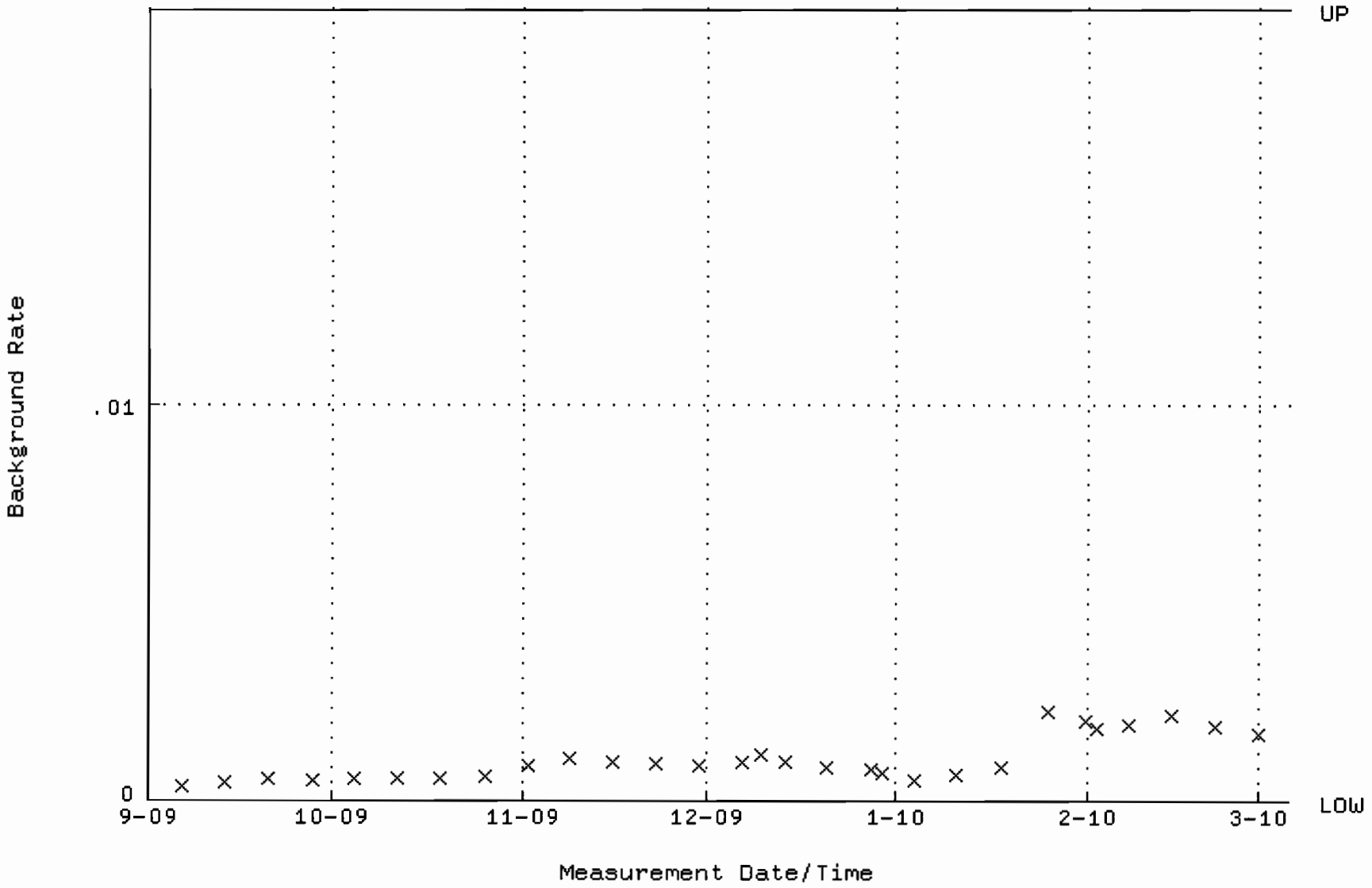
QA filename : DKA100:[ENV_ALPHA.QA.W]W017.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.276155 through 0.308631



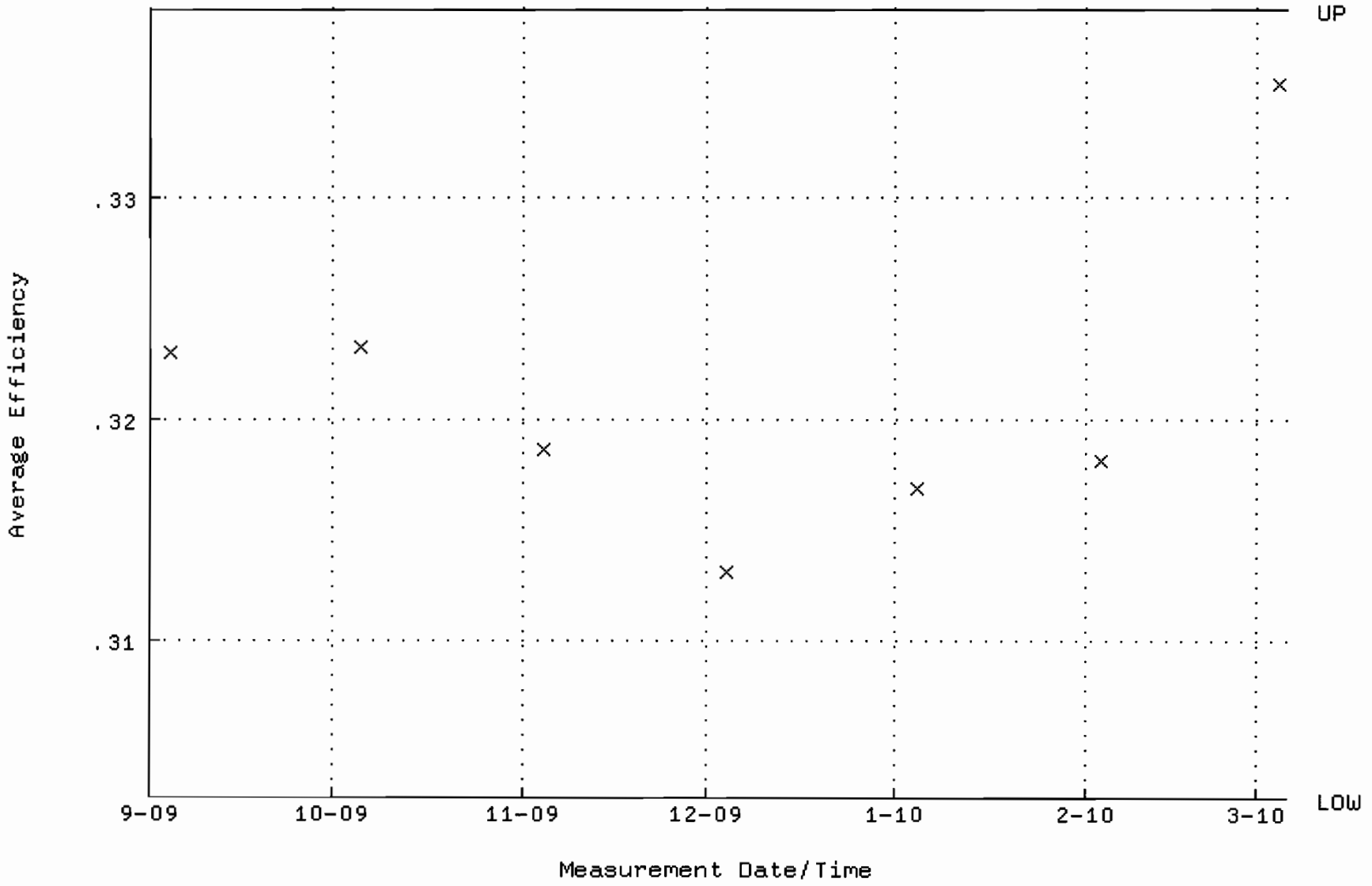
QA filename : DKA100:[ENV_ALPHA.QA.W]W017.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 90.4251 through 97.0169



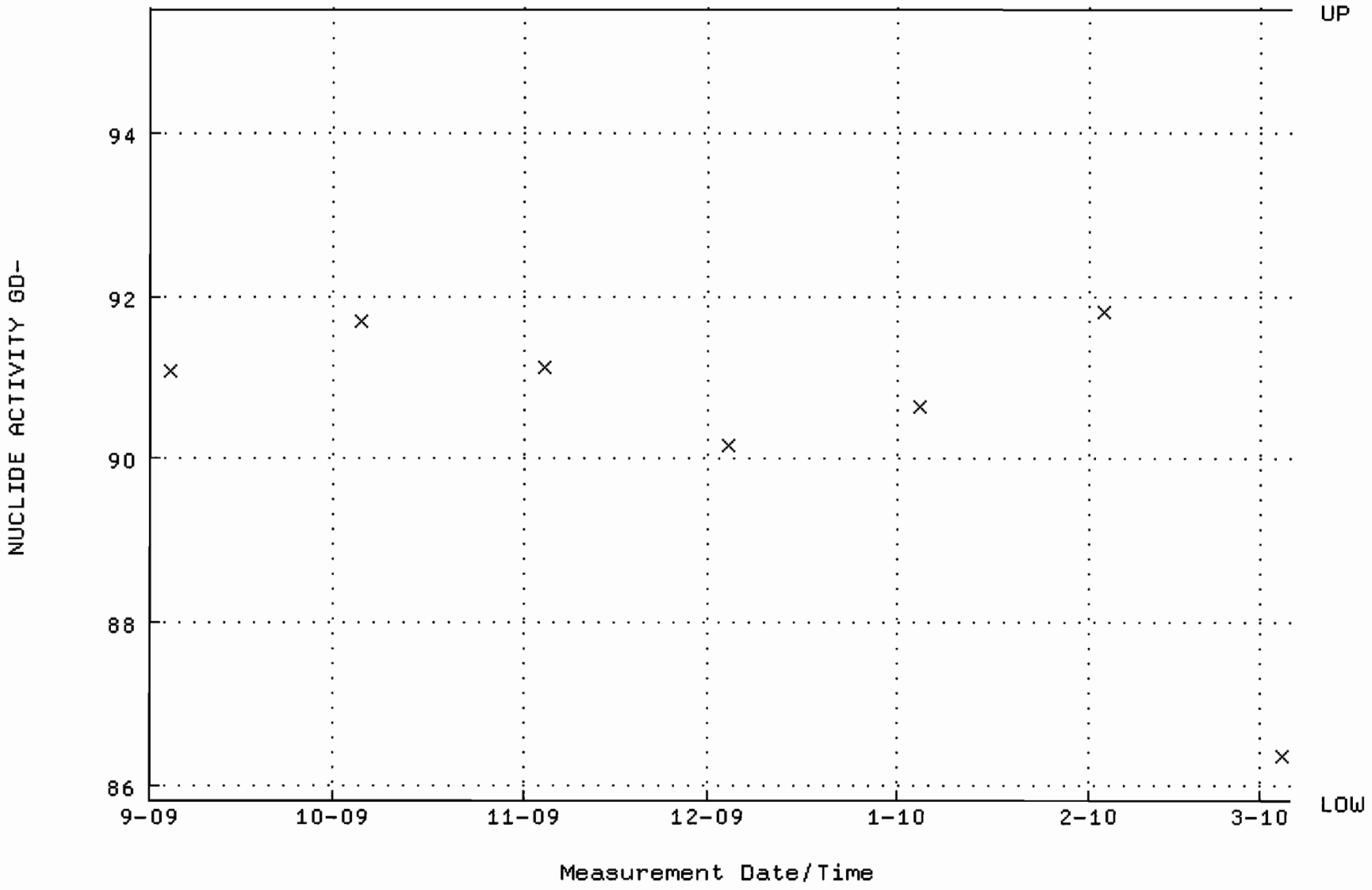
QA filename : DKA100:[ENV_ALPHA.QA.B]B017.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:02 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



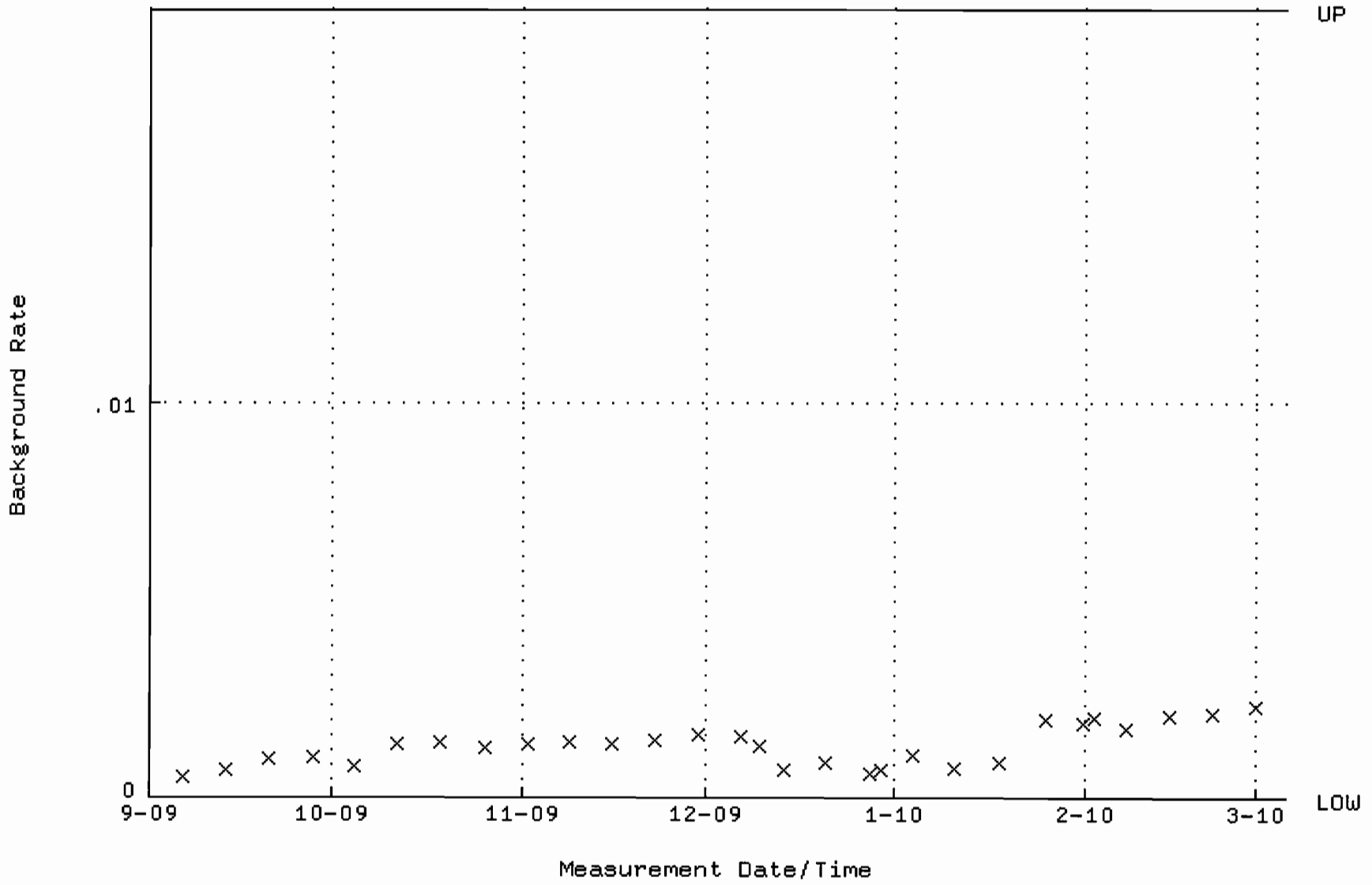
QA filename : DKA100:[ENV_ALPHA.QA.W]W018.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.302900 through 0.338496



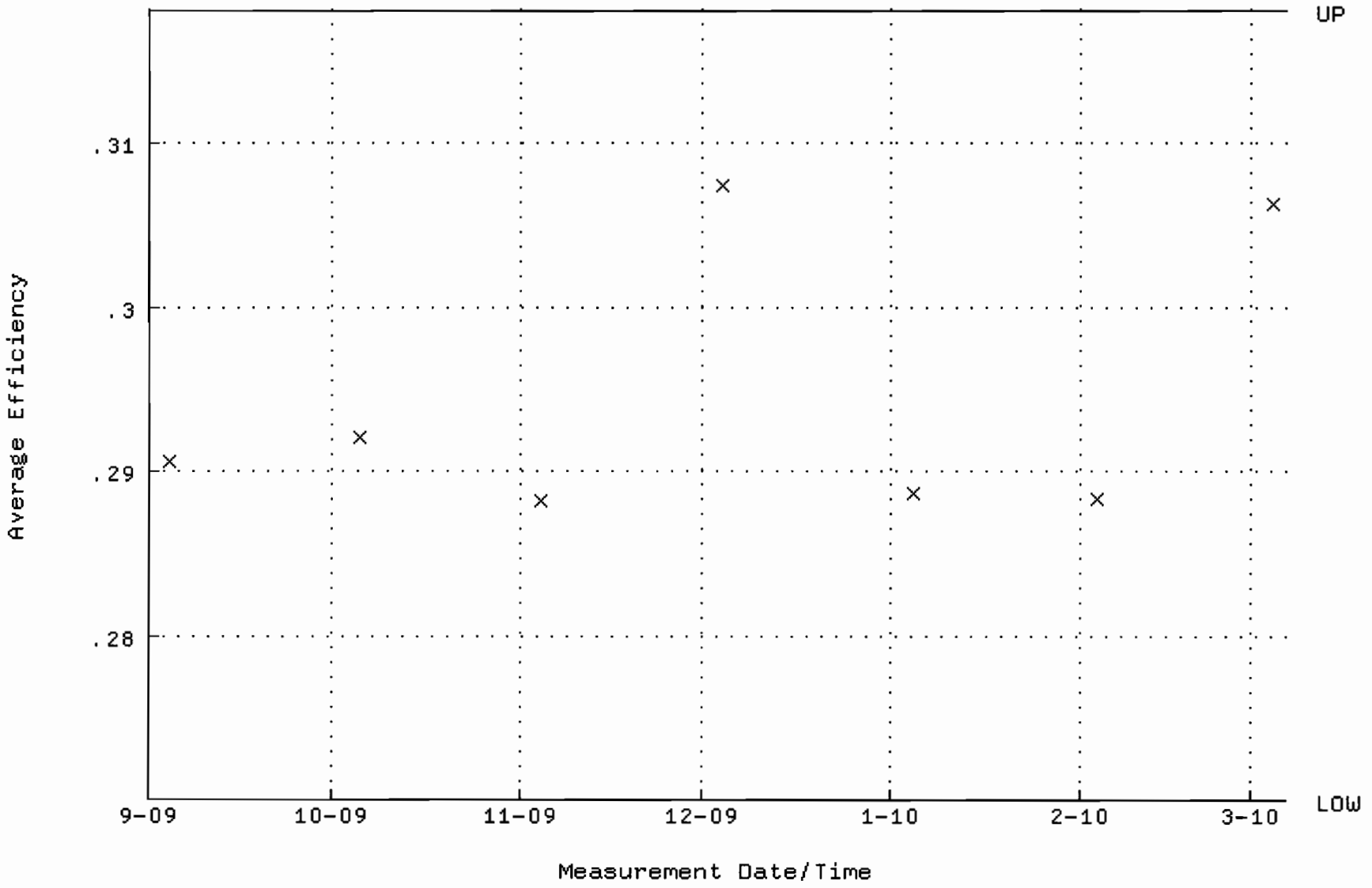
QA filename : DKA100:[ENV_ALPHA.QA.W]W018.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:41 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 85.8111 through 95.5079



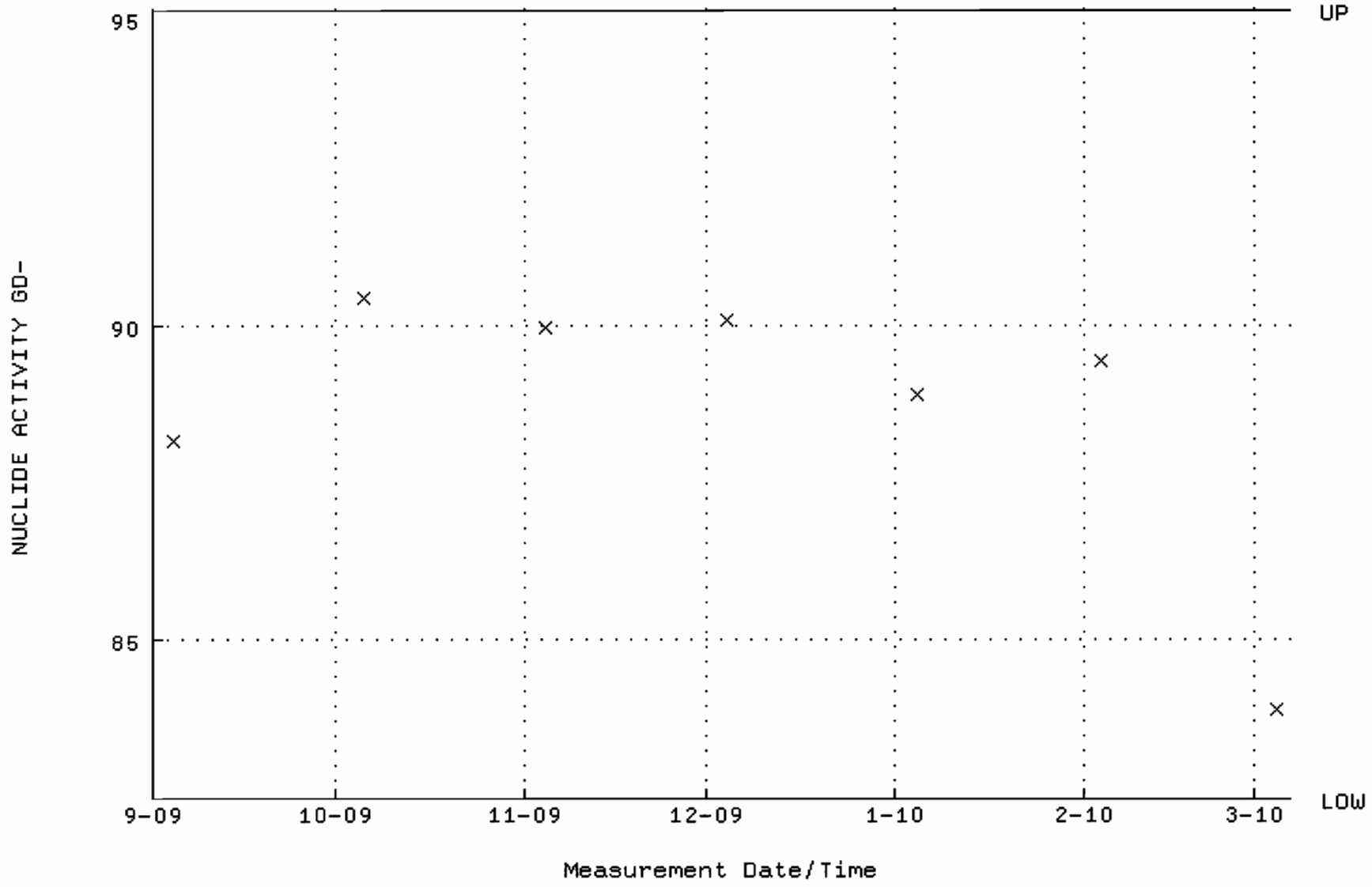
QA filename : DKA100:[ENV_ALPHA.QA.B]B018.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:02 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



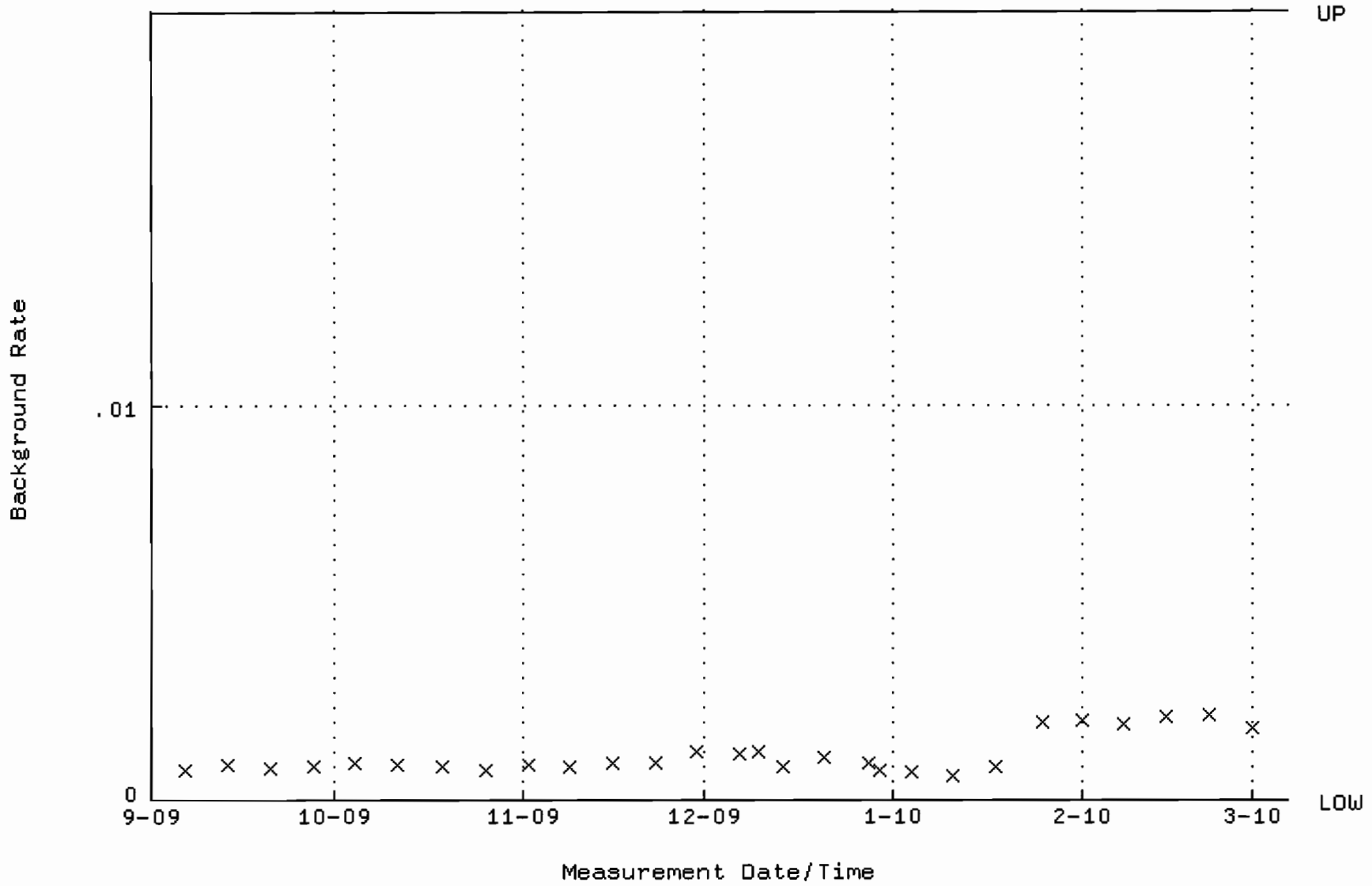
QA filename : DKA100:[ENV_ALPHA.QA.W]W019.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:42 through 6-MAR-2010 12:00:00
Lower/Upper Lmts: 0.270093 through 0.318005



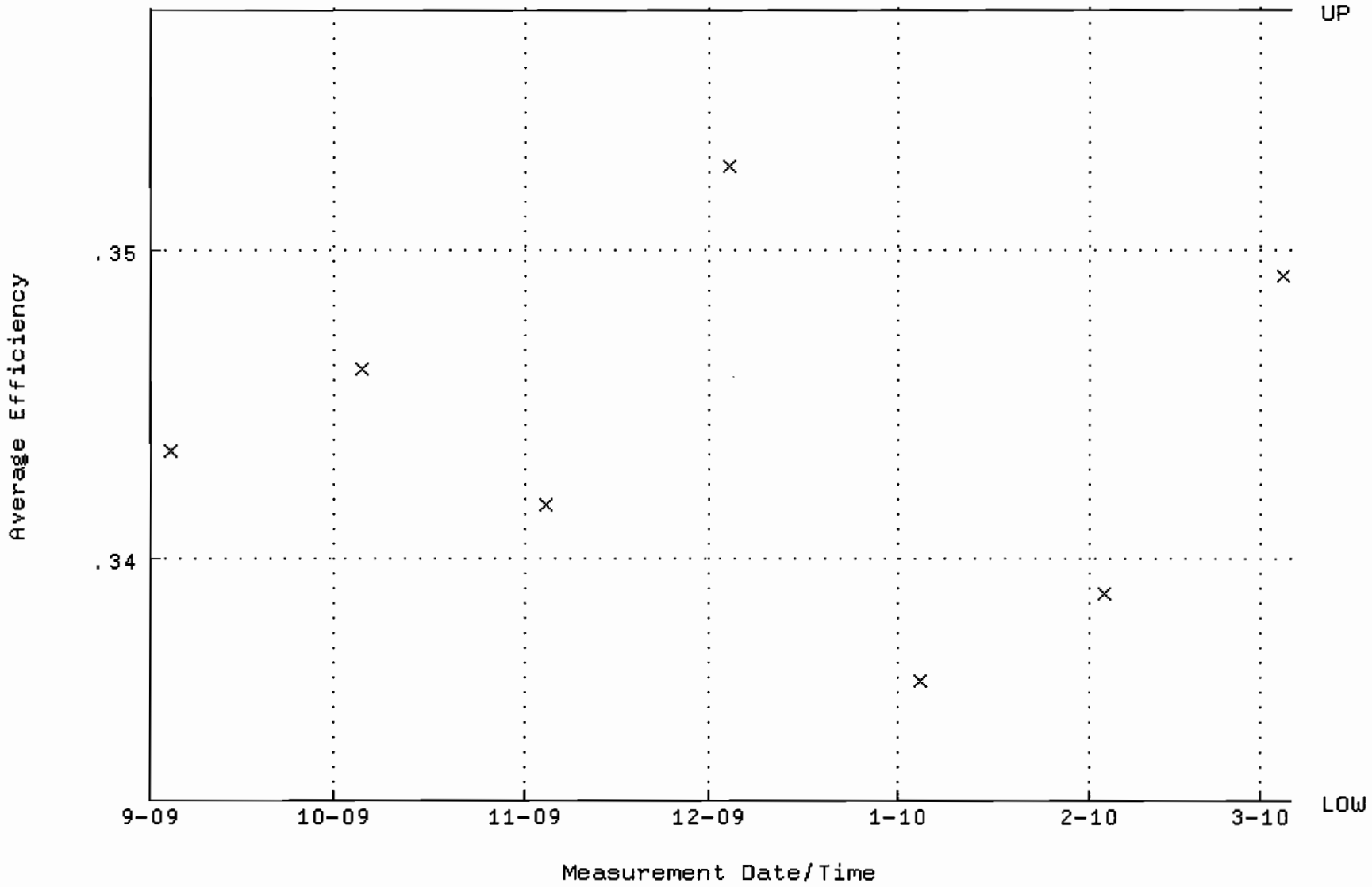
QA filename : DKA100:[ENV_ALPHA.QA.W]W019.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:42 through 6-MAR-2010 12:00:00
Lower/Upper Lmts: 82.4717 through 95.0017



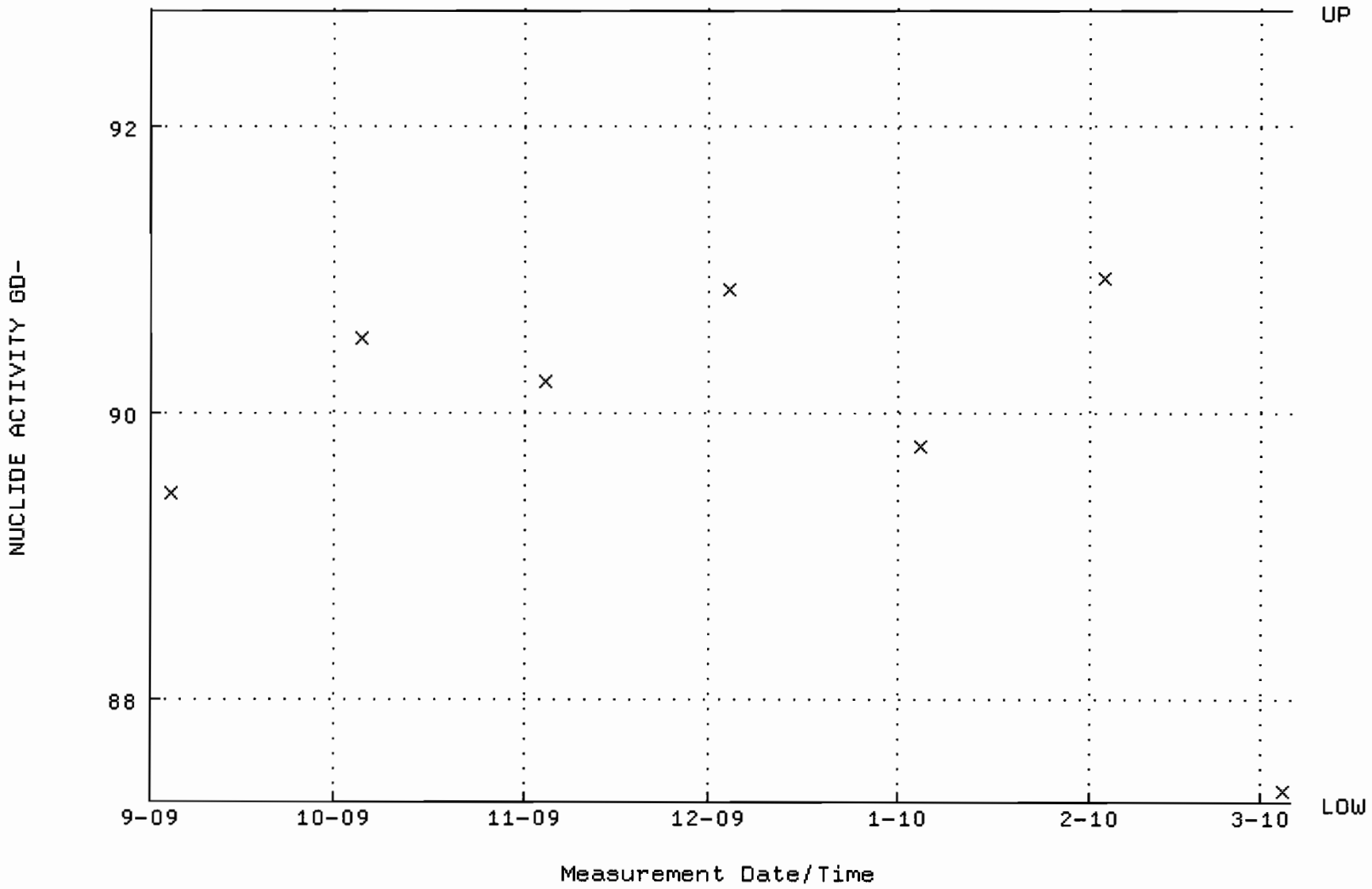
QA filename : DKA100:[ENV_ALPHA.QA.B]B019.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:03 through 6-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



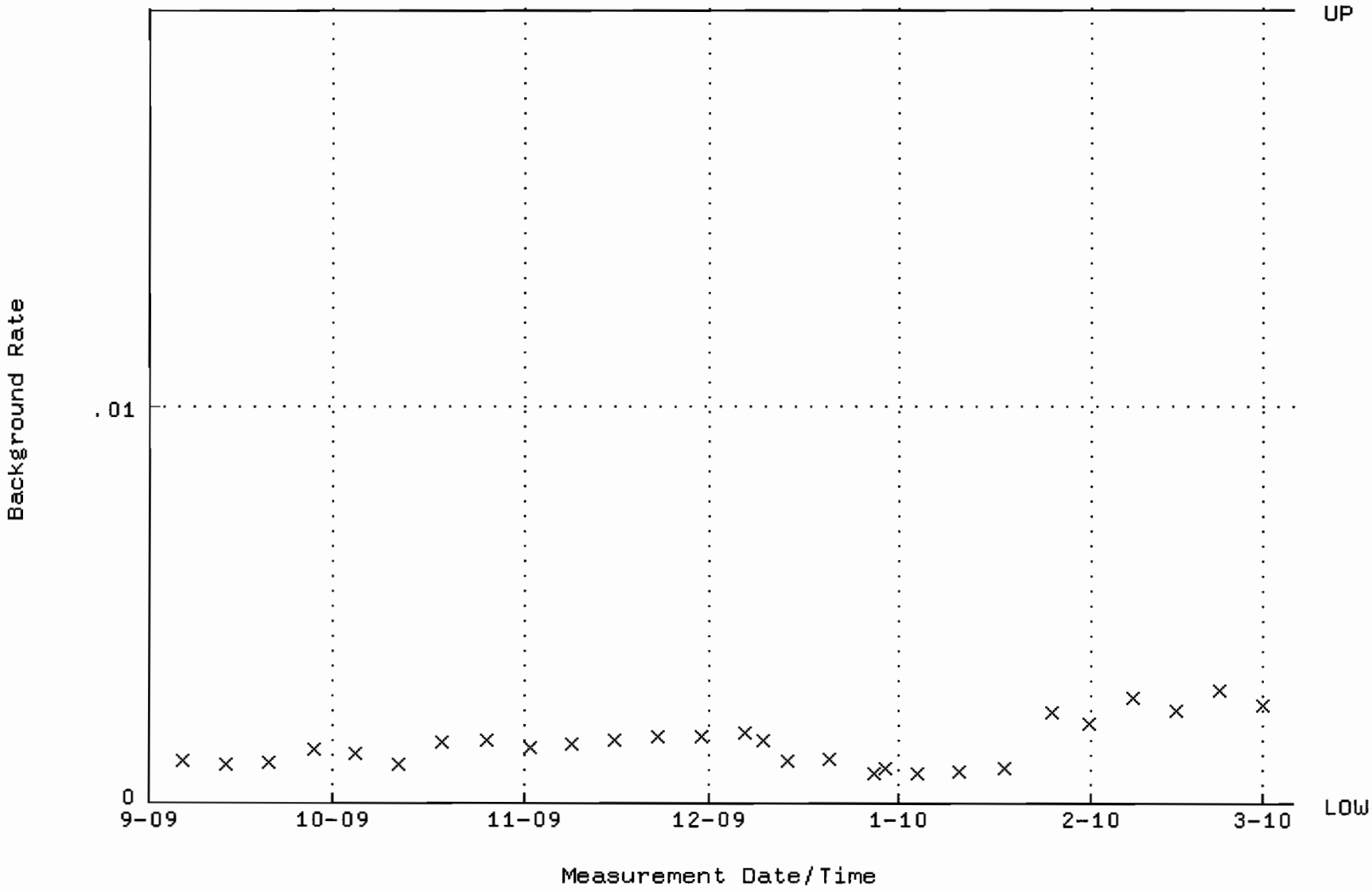
QA filename : DKA100:[ENV_ALPHA.QA.W]W020.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.332206 through 0.357714



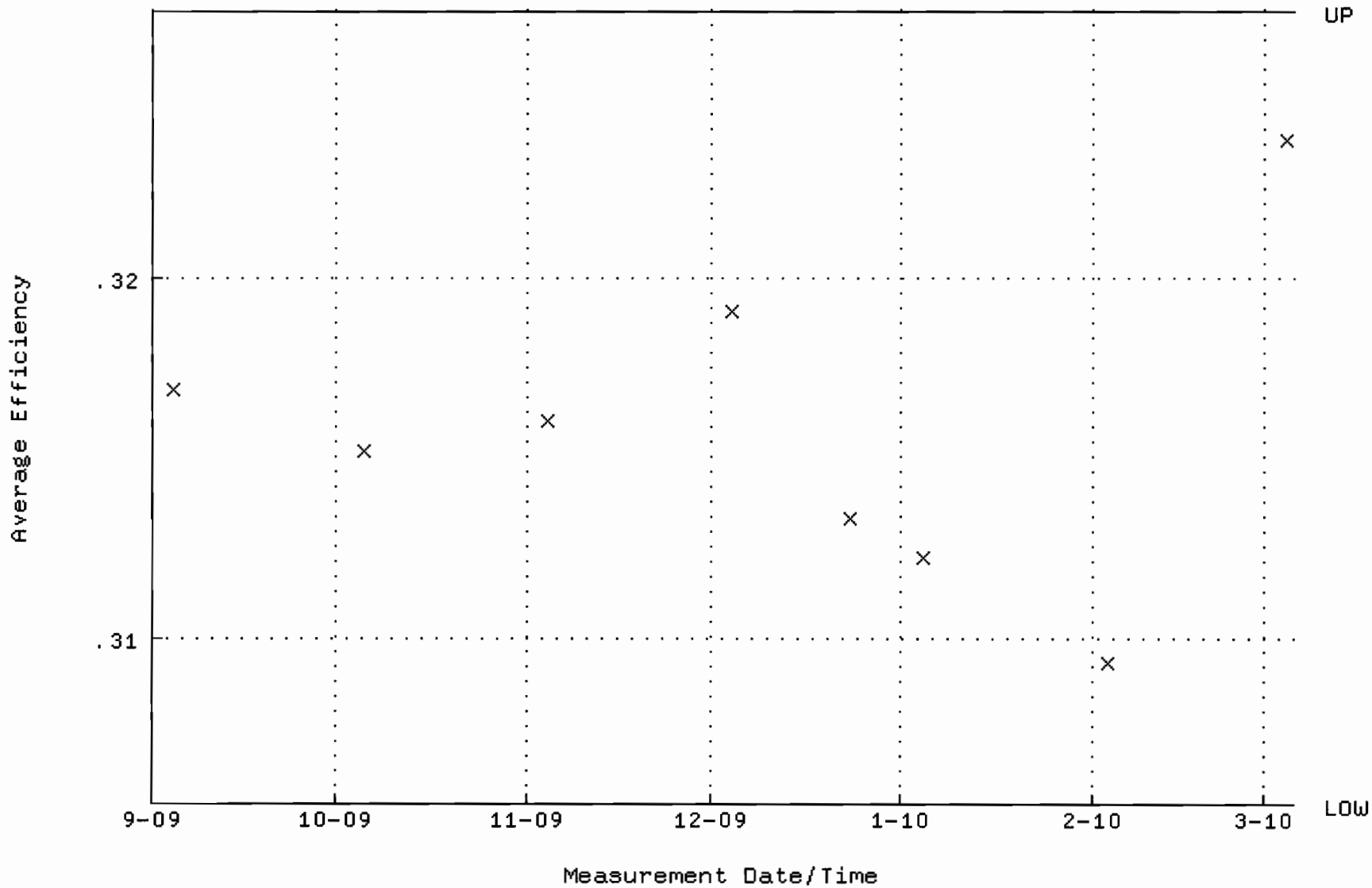
QA filename : DKA100:[ENV_ALPHA.QA.W]W020.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 87.2879 through 92.8099



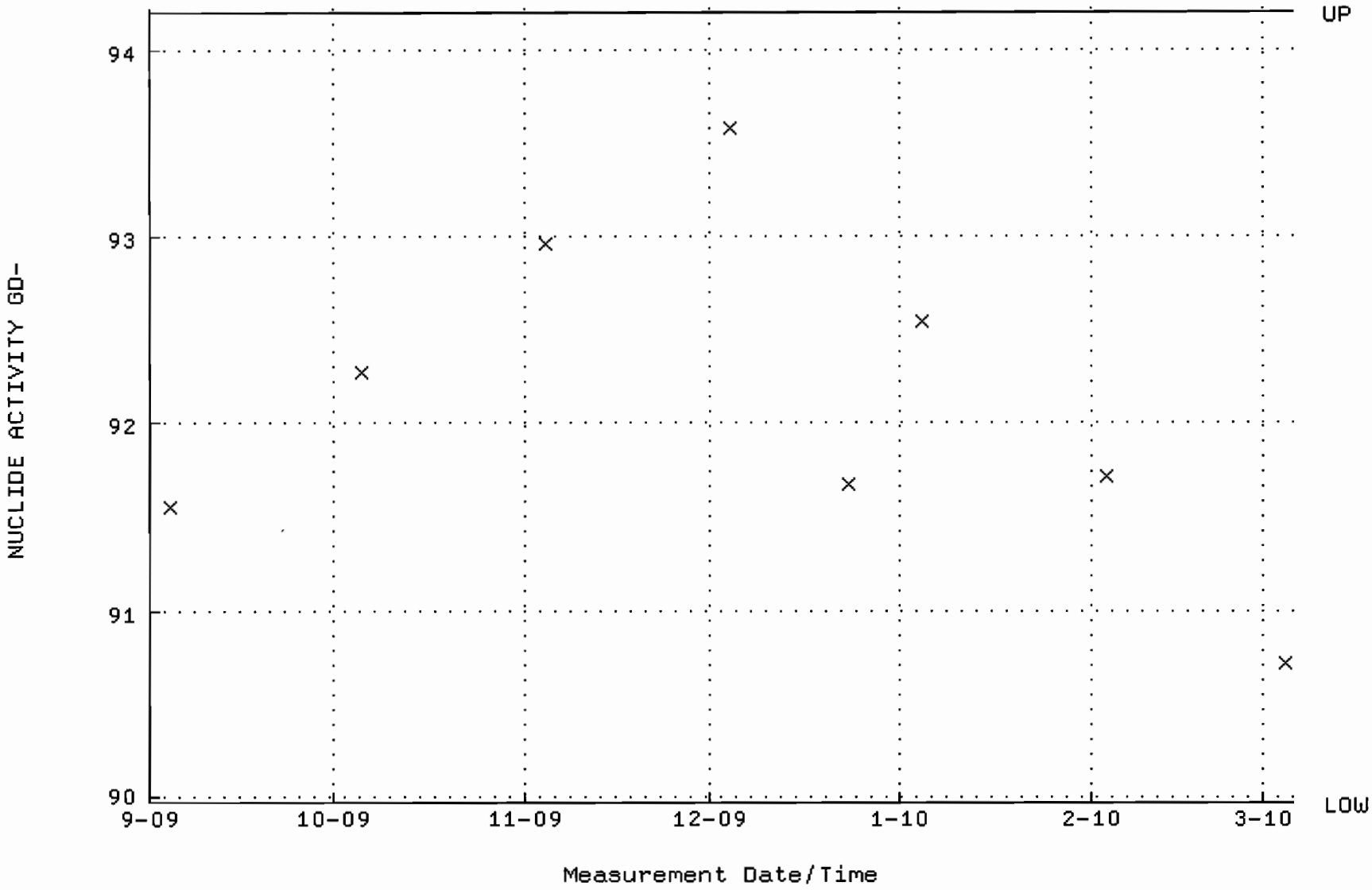
QA filename : DKA100:[ENV_ALPHA.QA.B]B020.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



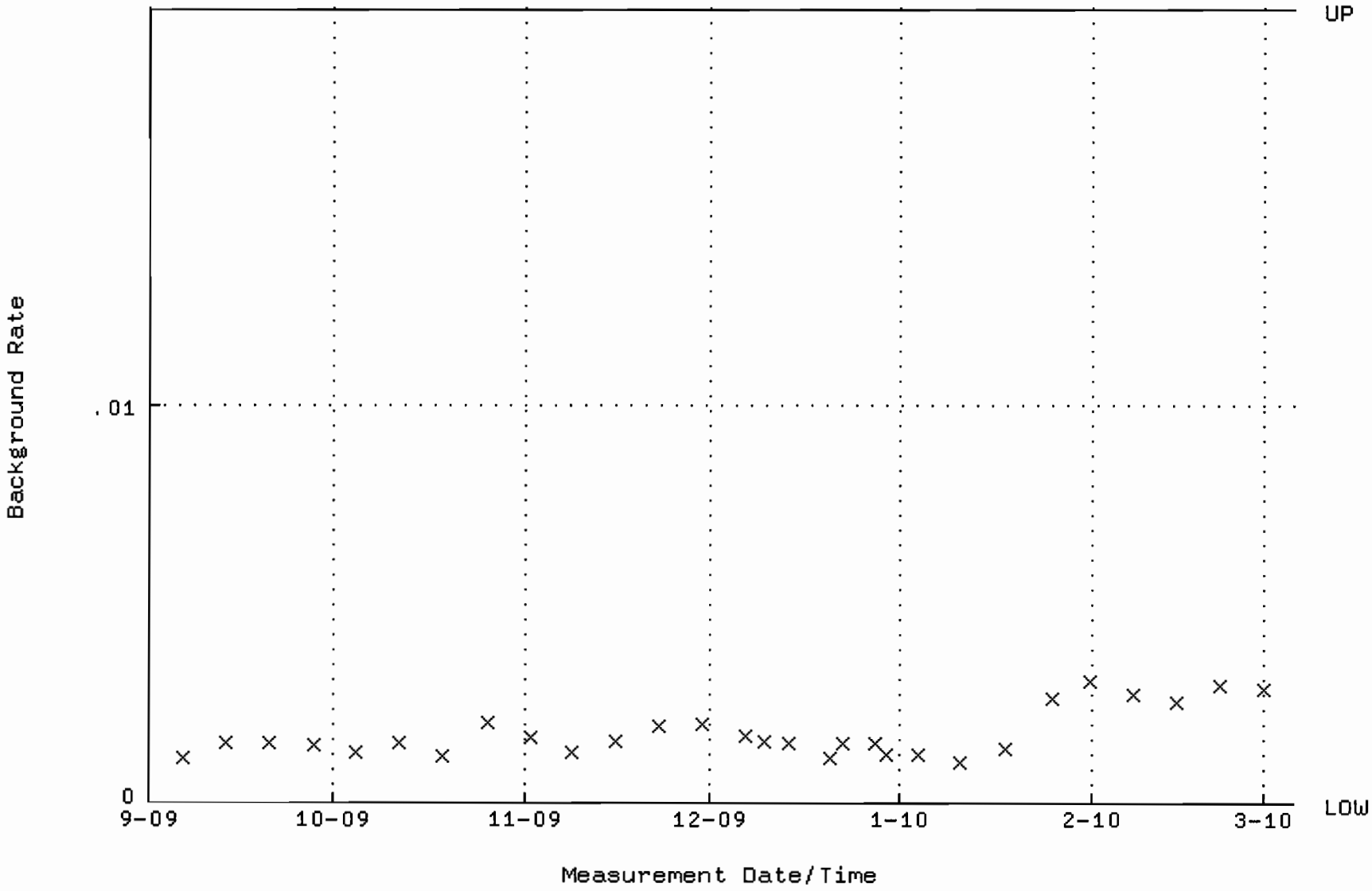
QA filename : DKA100:[ENV_ALPHA.QA.W]W022.QAF;5
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.305380 through 0.327376



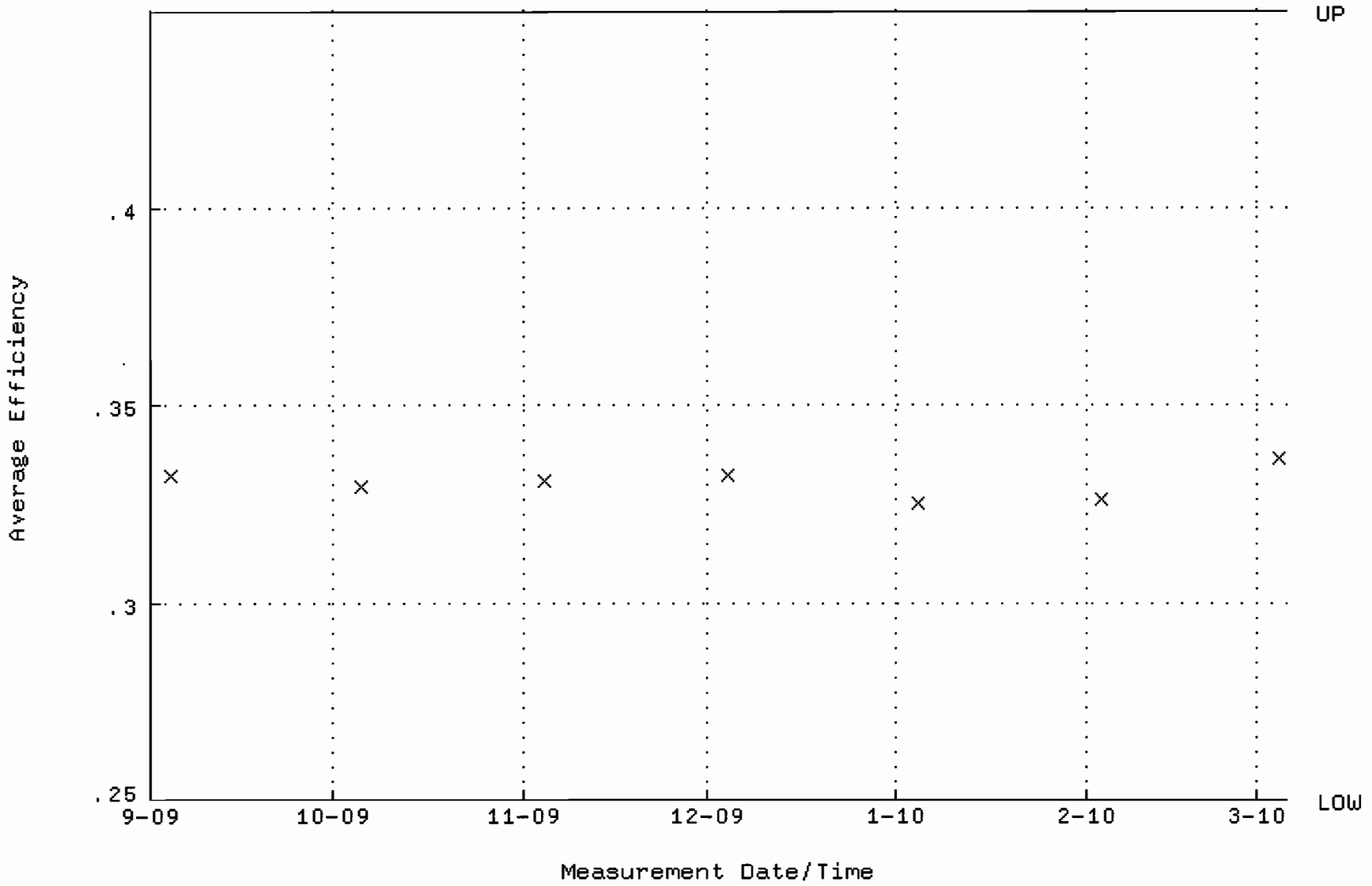
QA filename : DKA100:[ENV_ALPHA.QA.W]W022.QAF;5
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 89.9706 through 94.2088



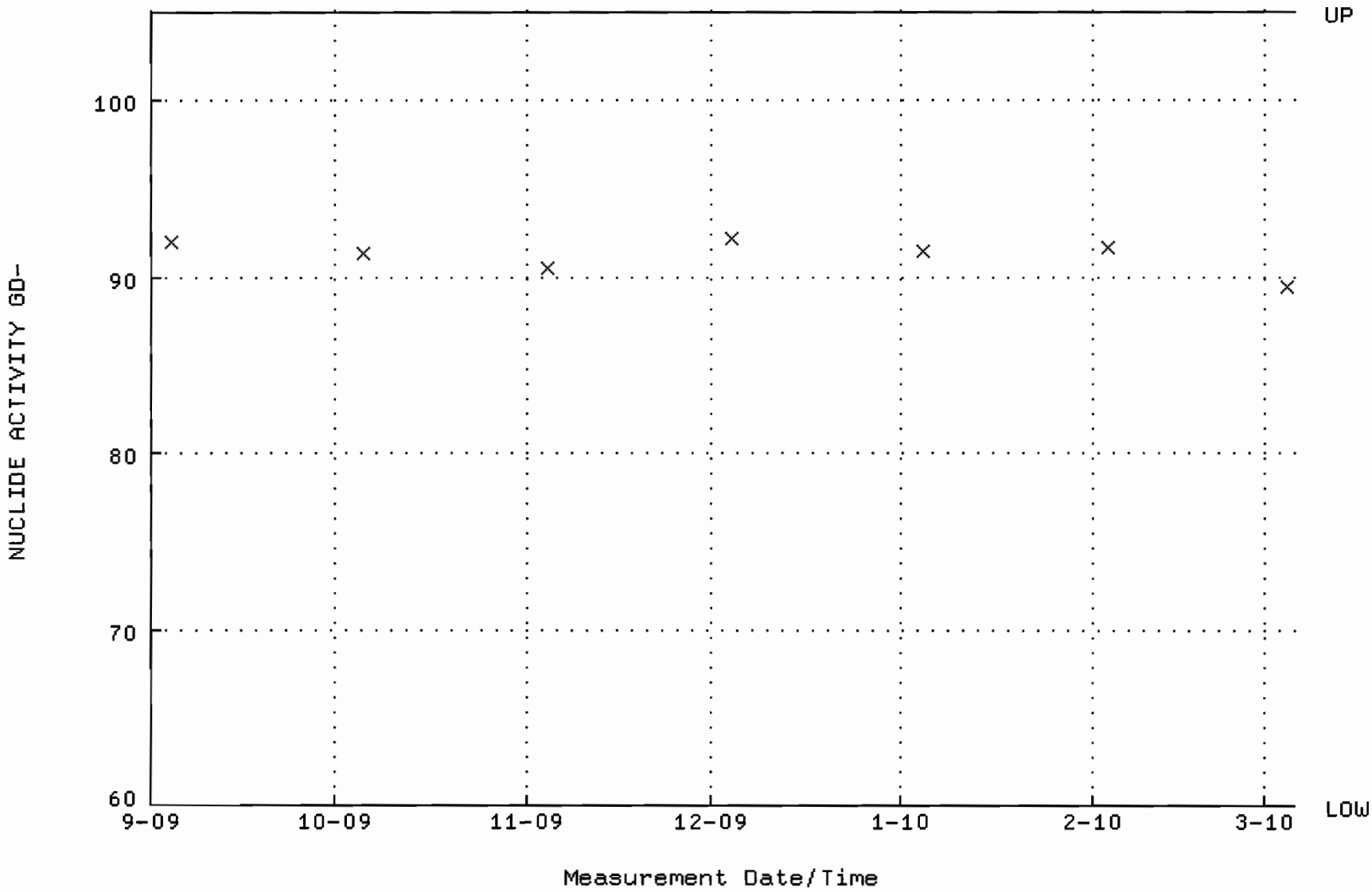
QA filename : DKA100:[ENV_ALPHA.QA.B]B022.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



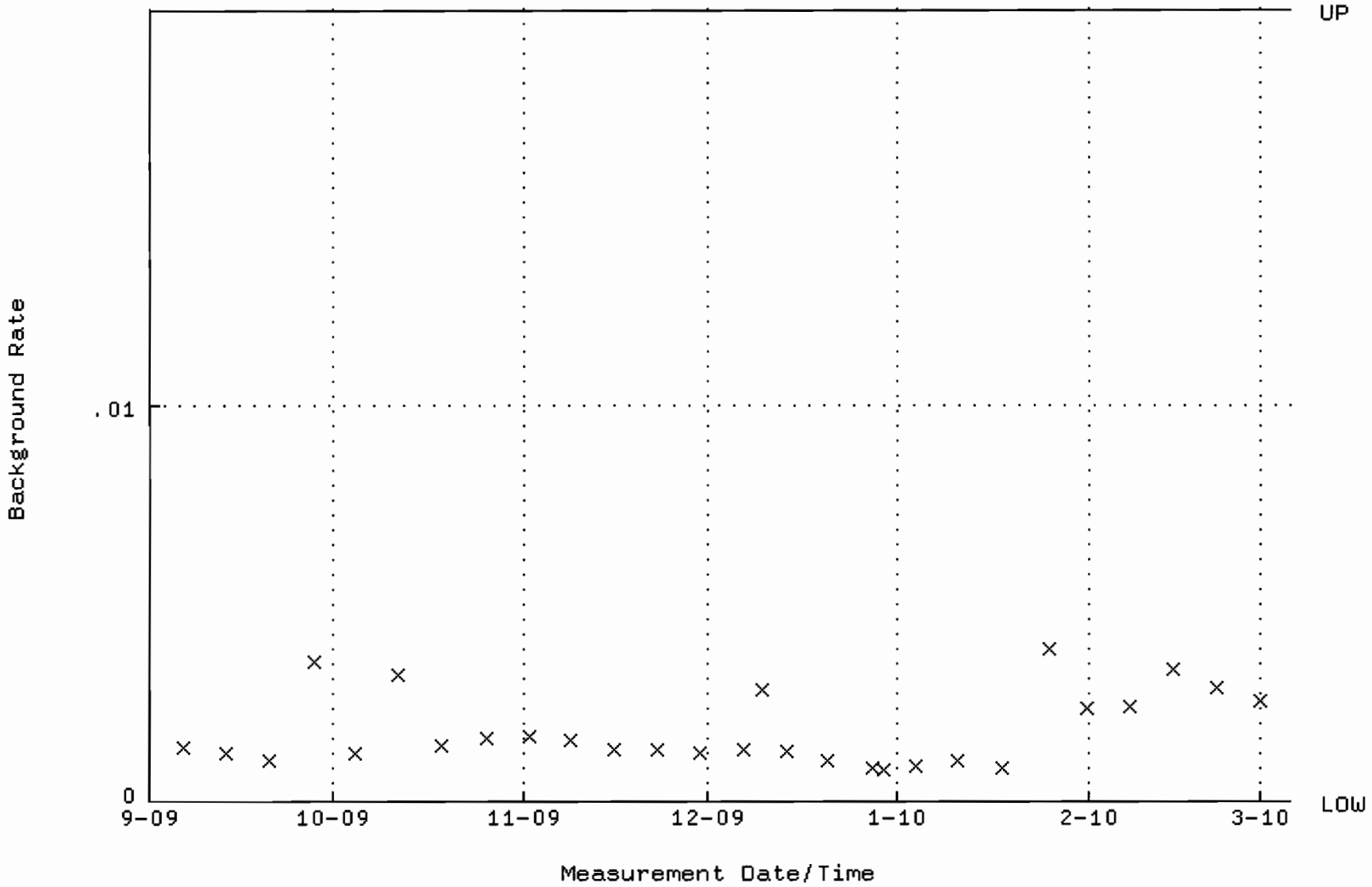
QA filename : DKA100:[ENV_ALPHA.QA.W]W023.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.250000 through 0.450000



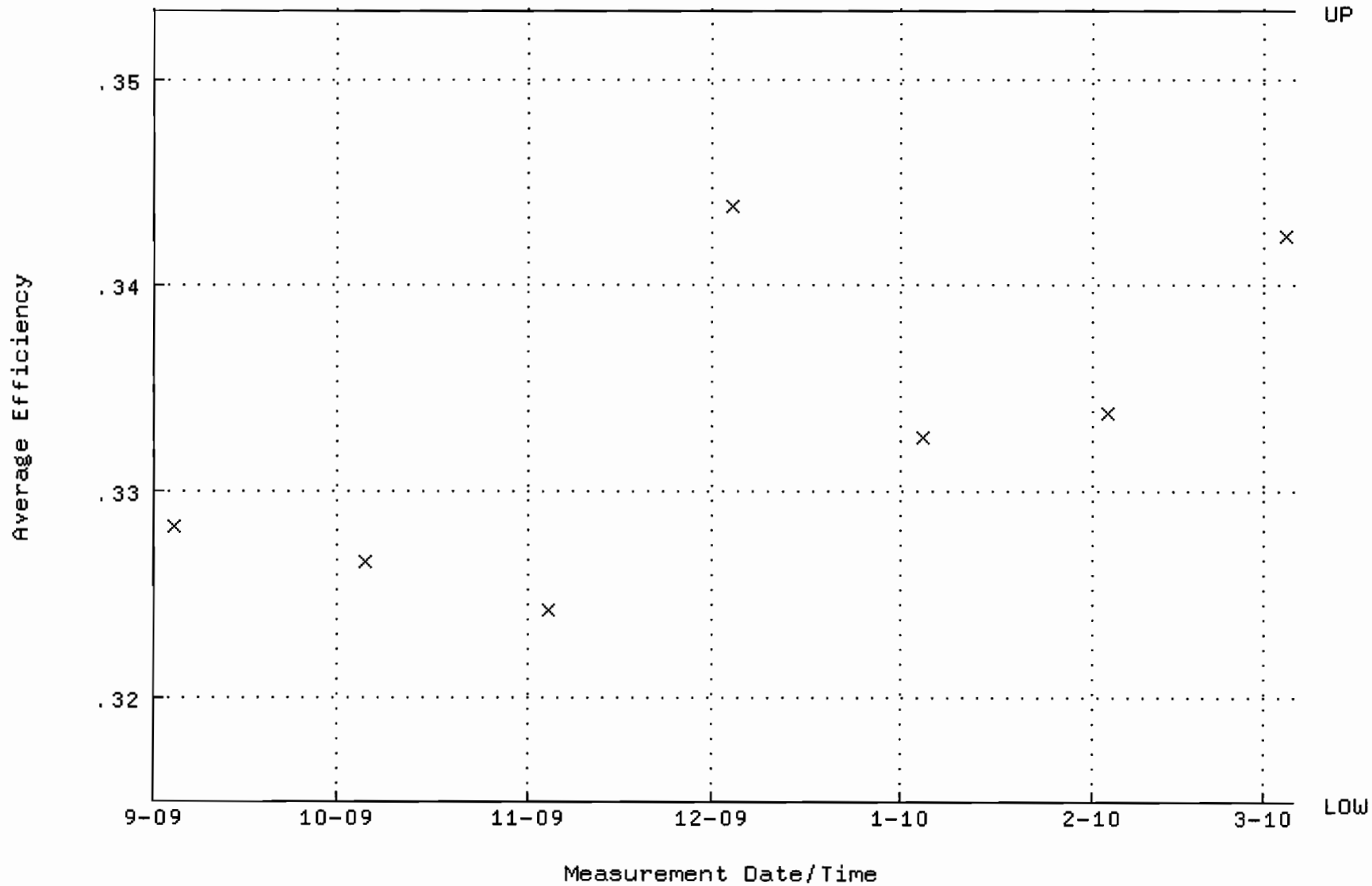
QA filename : DKA100:[ENV_ALPHA.QA.W]W023.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 60.0000 through 105.000



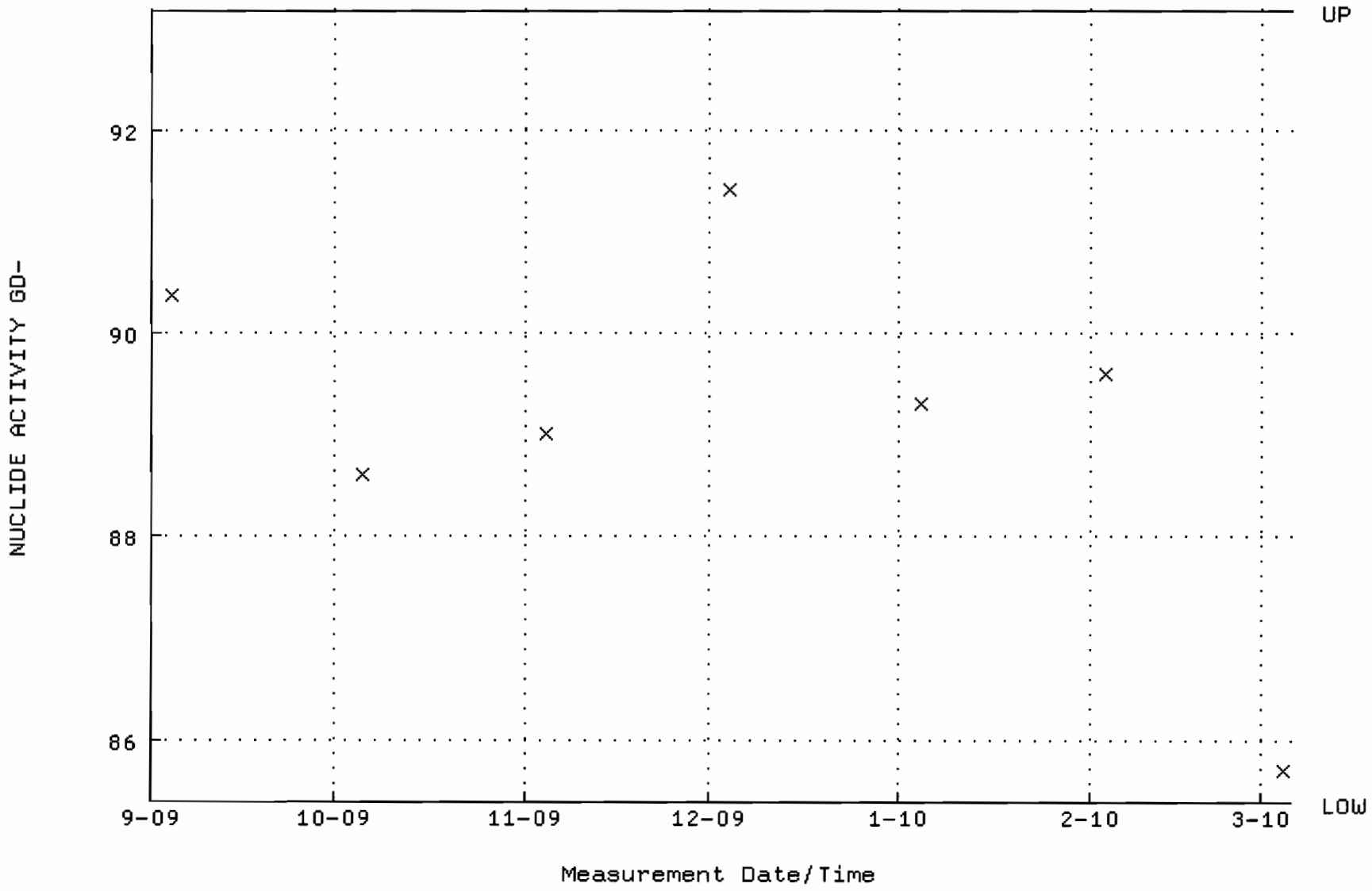
QA filename : DKA100:[ENV_ALPHA.QA.B]B023.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



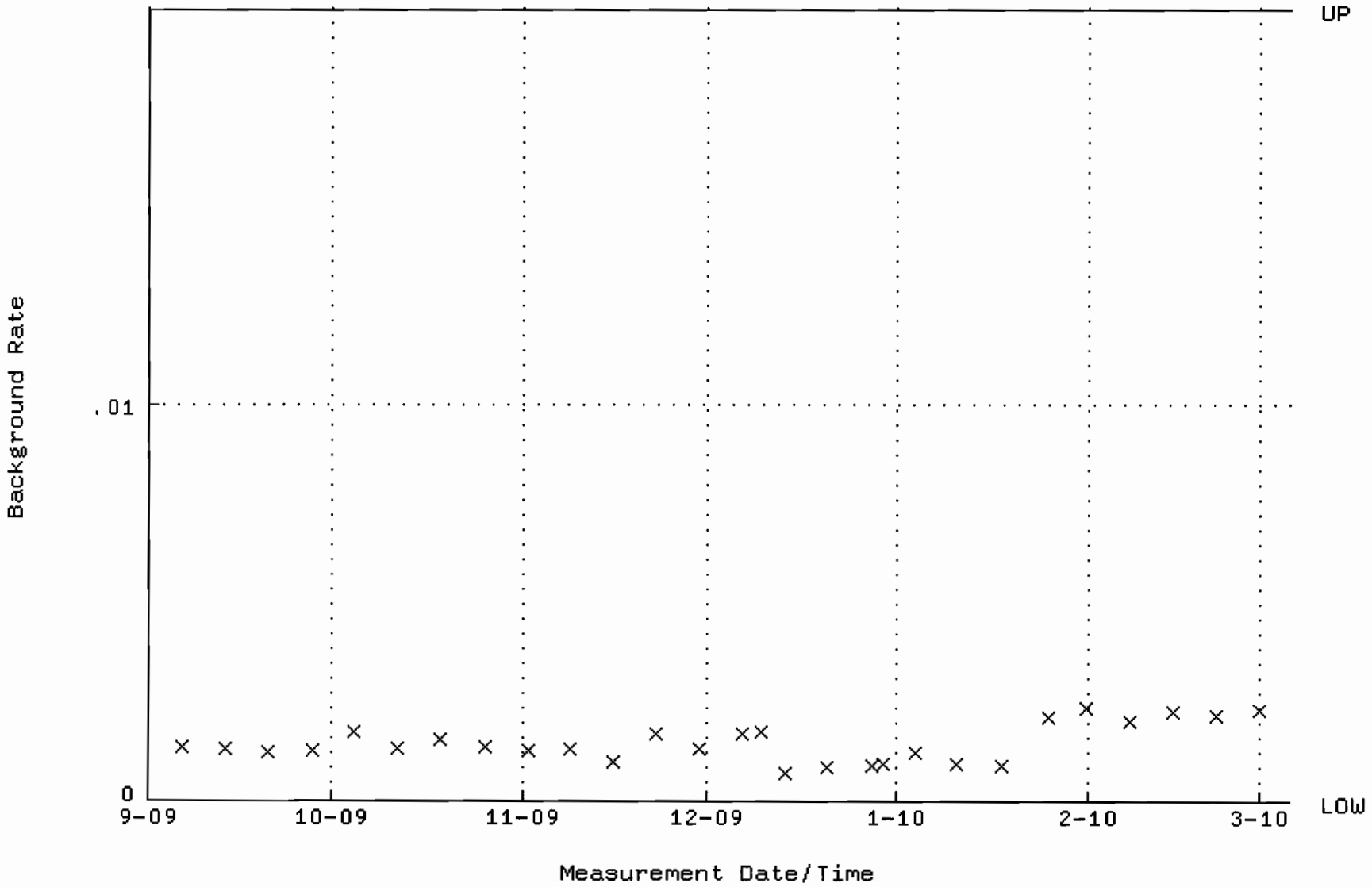
QA filename : DKA100:[ENV_ALPHA.QA.W]W024.QAF;2
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.314917 through 0.353325



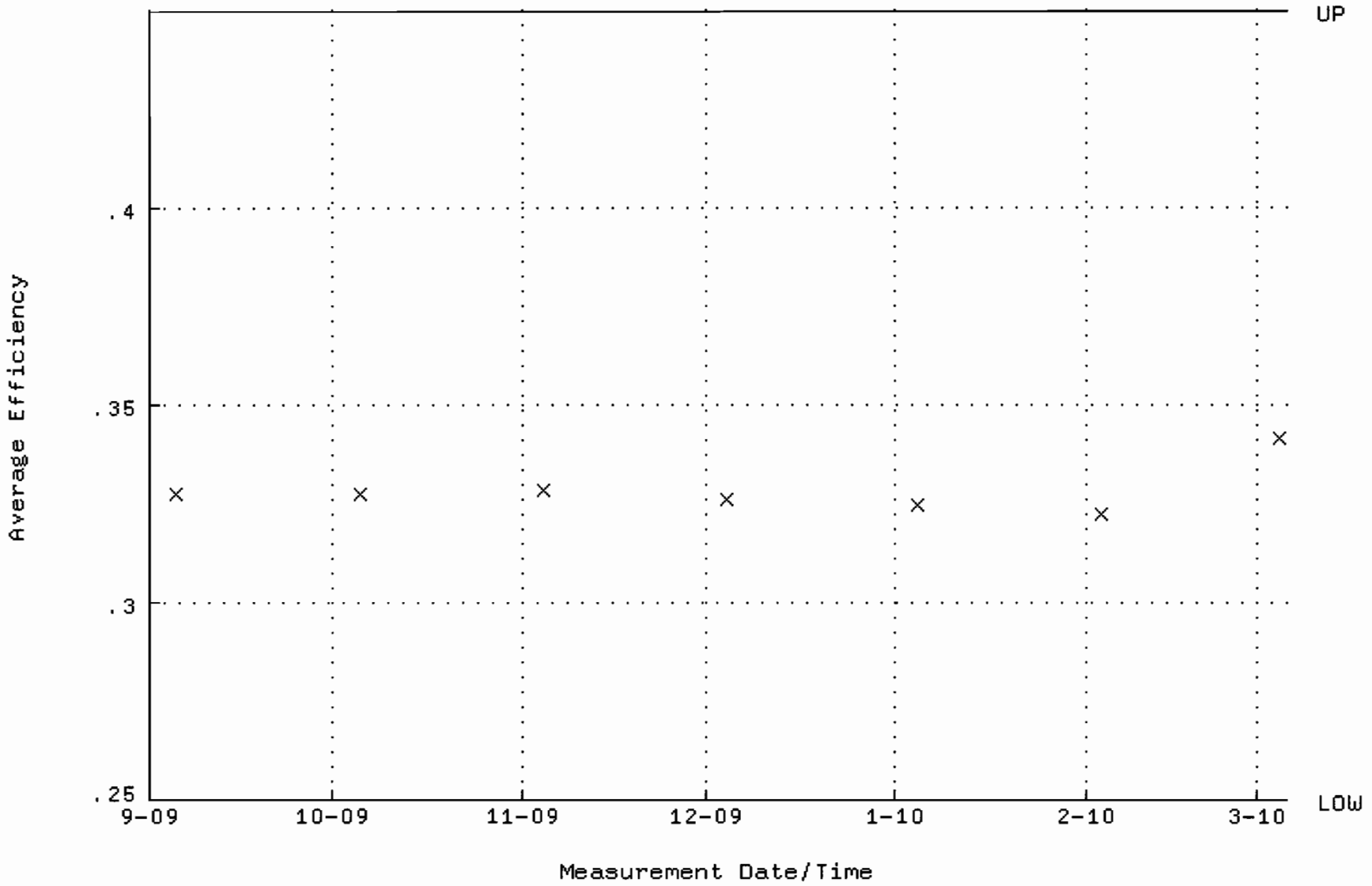
QA filename : DKA100:[ENV_ALPHA.QA.W]W024.QAF;2
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-SEP-2009 07:36:42 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 85.3858 through 93.1784



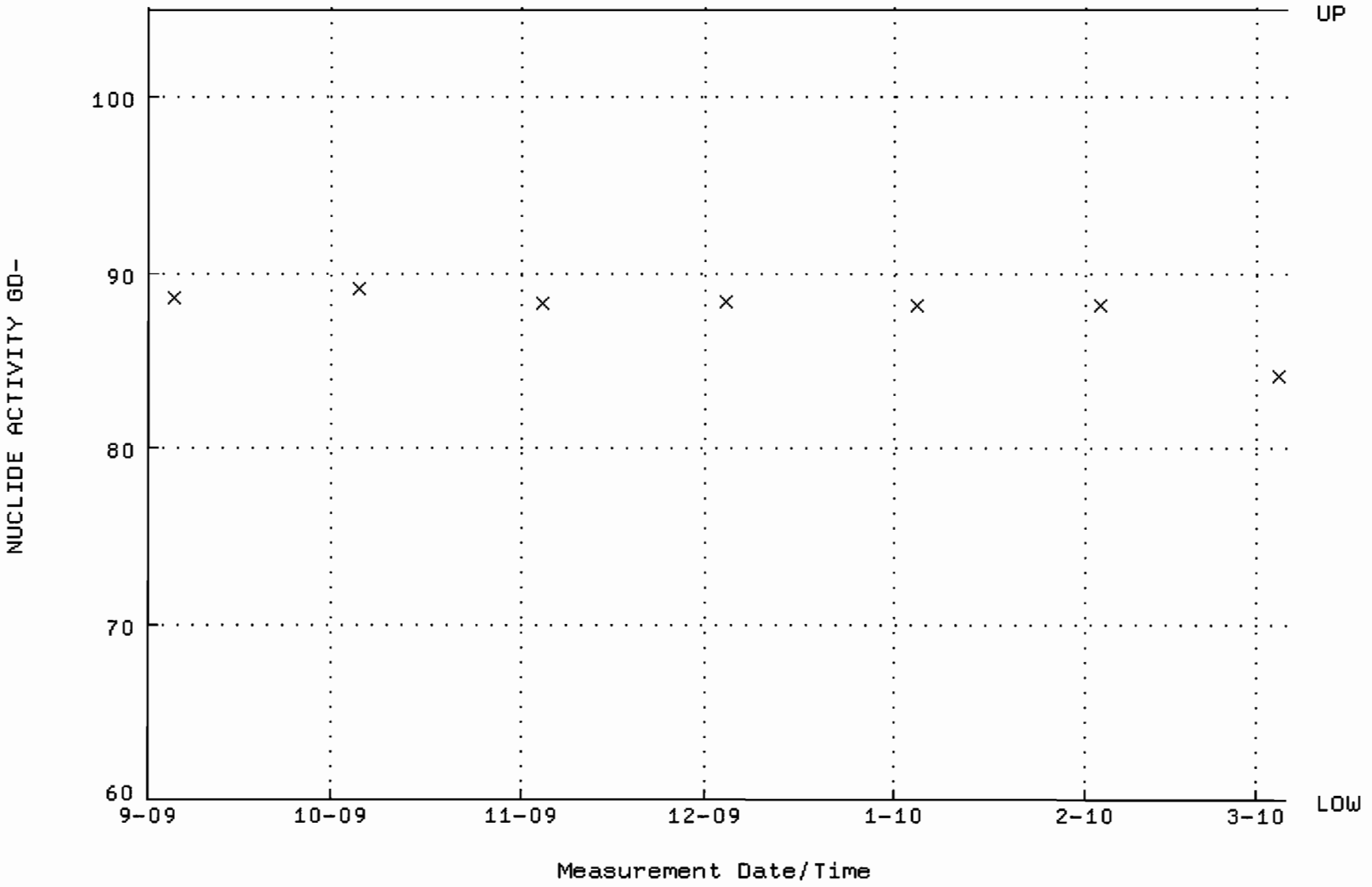
QA filename : DKA100:[ENV_ALPHA.QA.B]B024.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



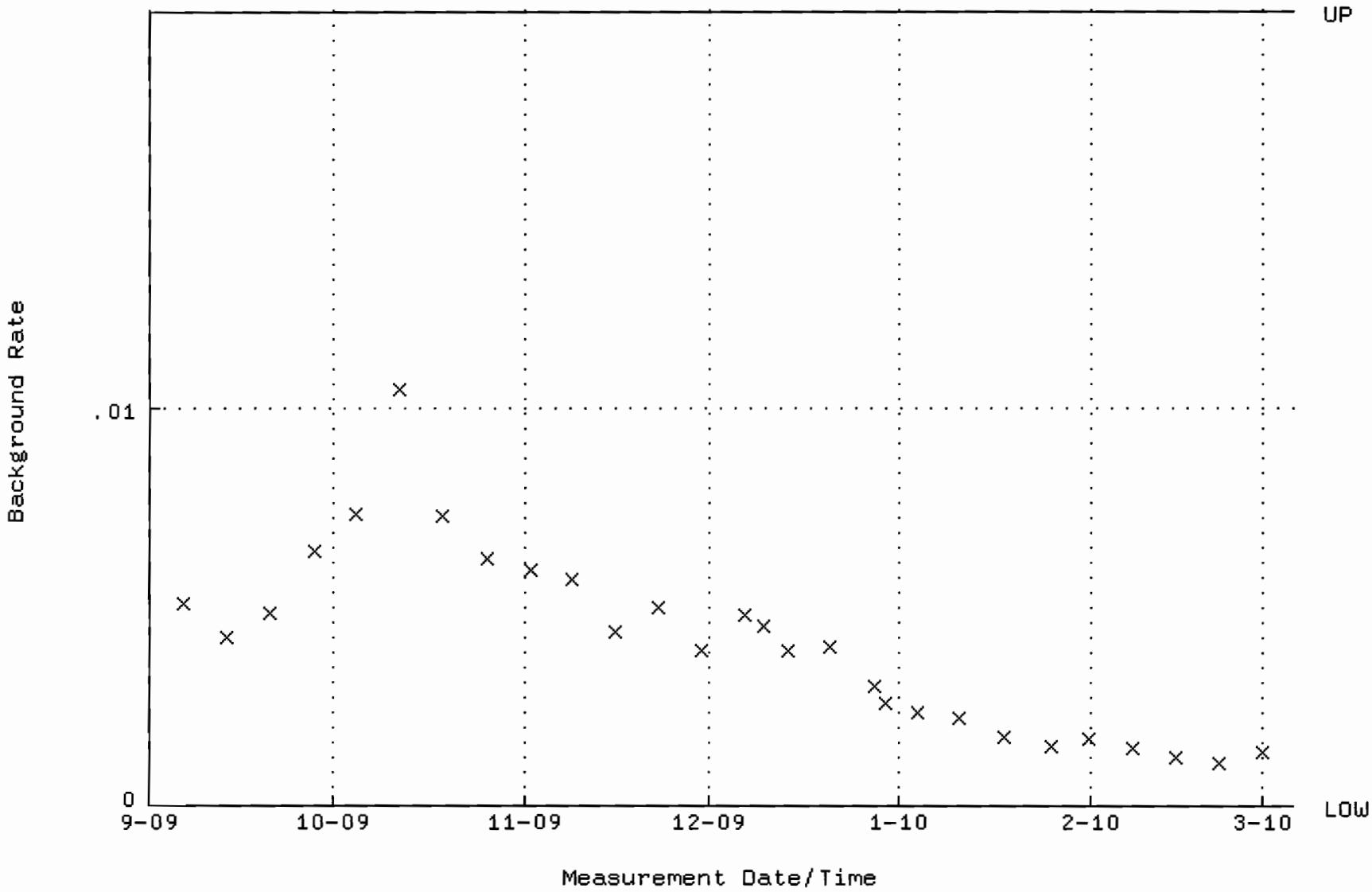
QA filename : DKA100:[ENV_ALPHA.QA.W]W025.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.250000 through 0.450000



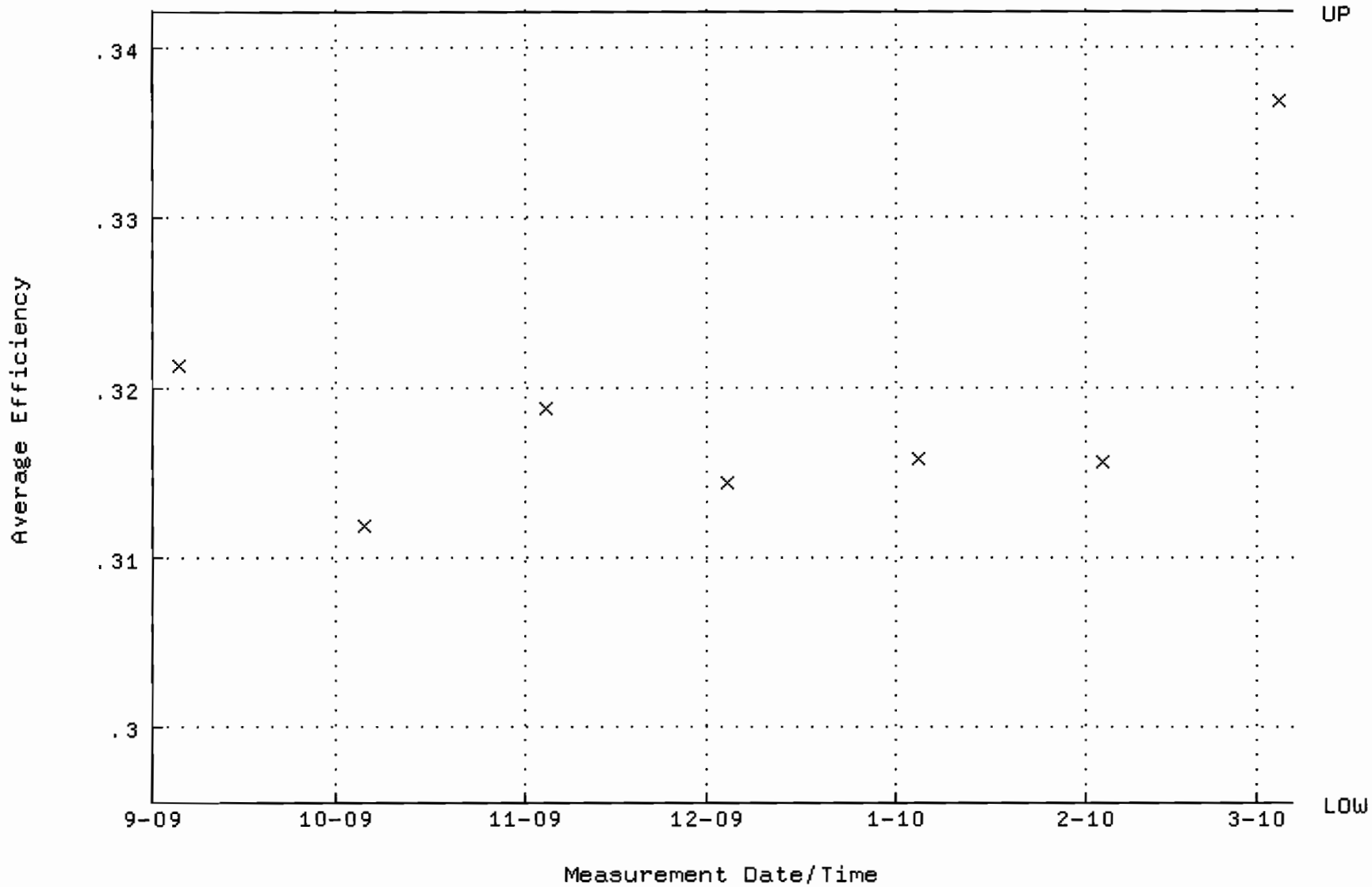
QA filename : DKA100:[ENV_ALPHA.QA.W]W025.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 60.0000 through 105.000



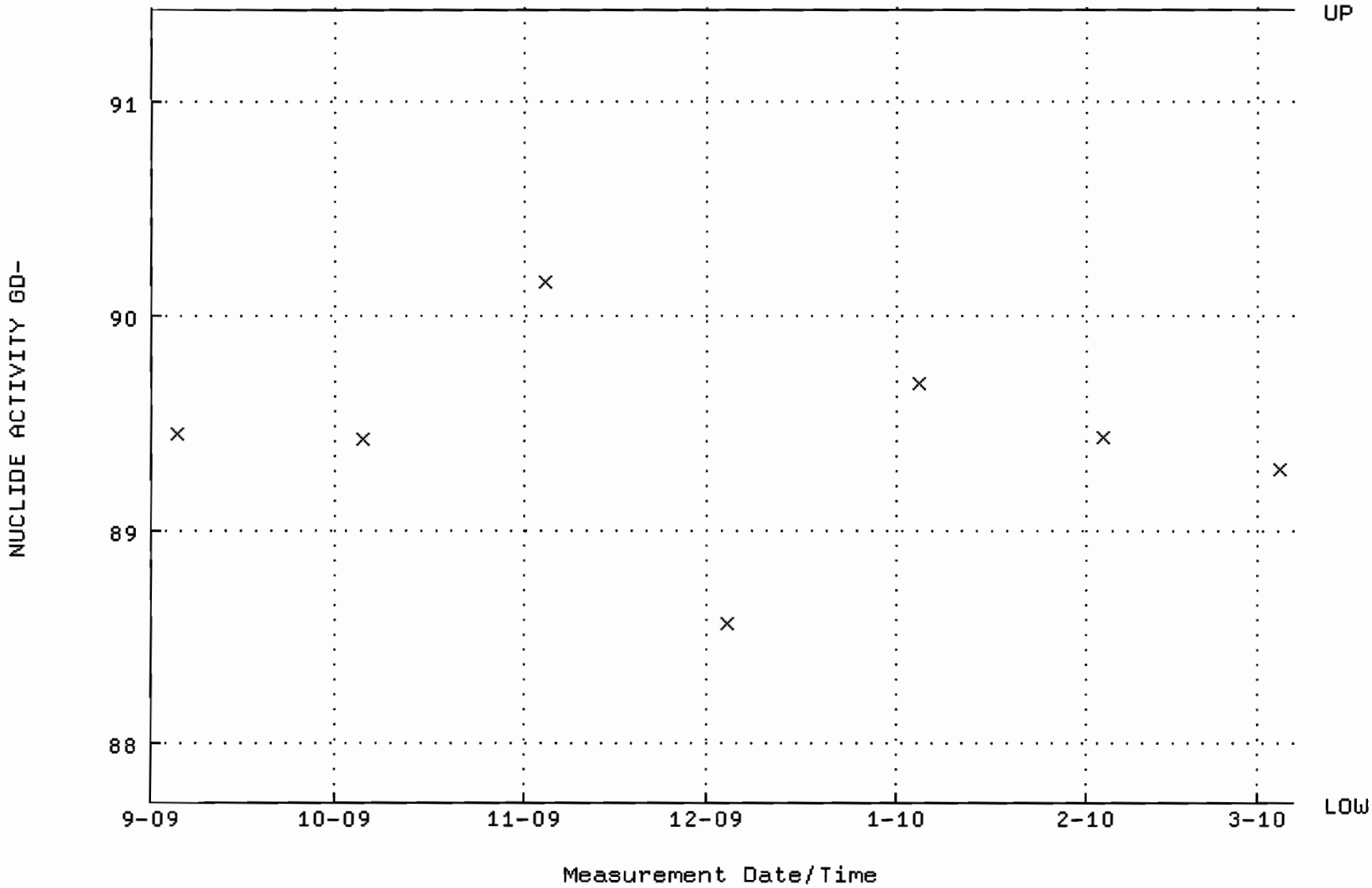
QA filename : DKA100:[ENV_ALPHA.QA.B]B025.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



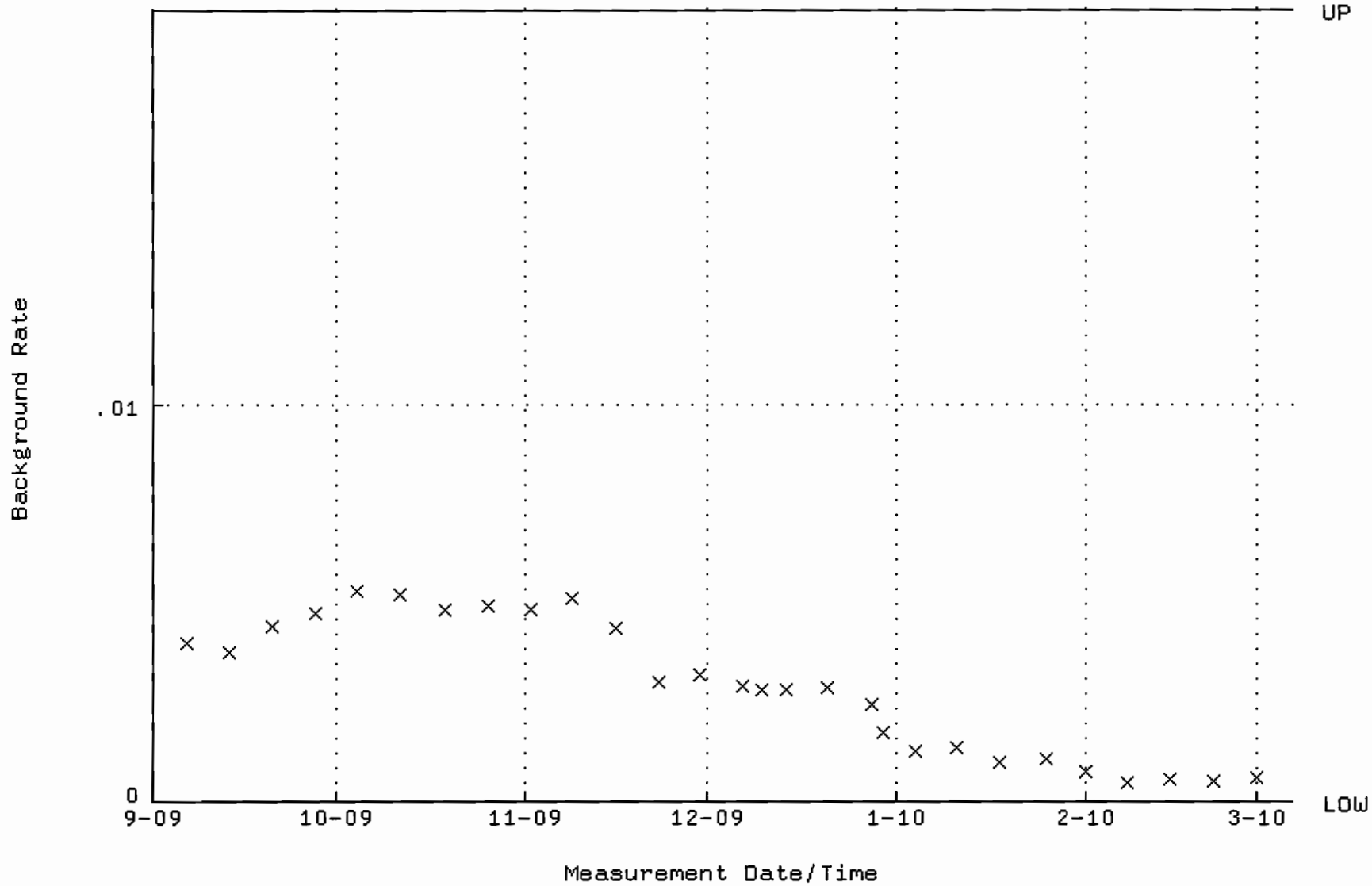
QA filename : DKA100:[ENV_ALPHA.QA.W]W026.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-SEP-2009 09:03:08 through 6-MAR-2010 12:00:00
Lower/Upper Lmts: 0.295501 through 0.342091



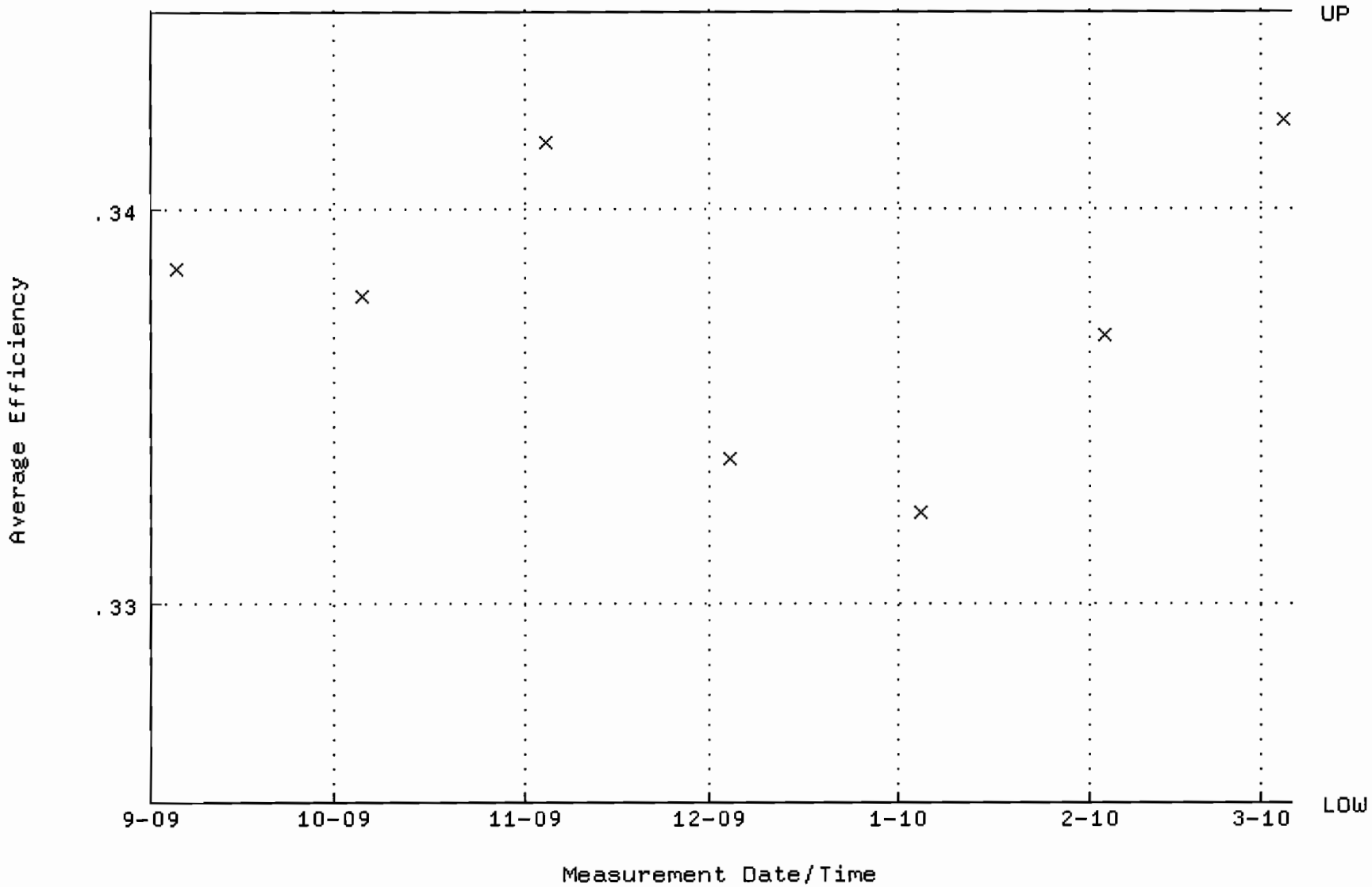
QA filename : DKA100:[ENV_ALPHA.QA.W]W026.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-SEP-2009 09:03:08 through 6-MAR-2010 12:00:00
Lower/Upper Lmts: 87.7241 through 91.4271



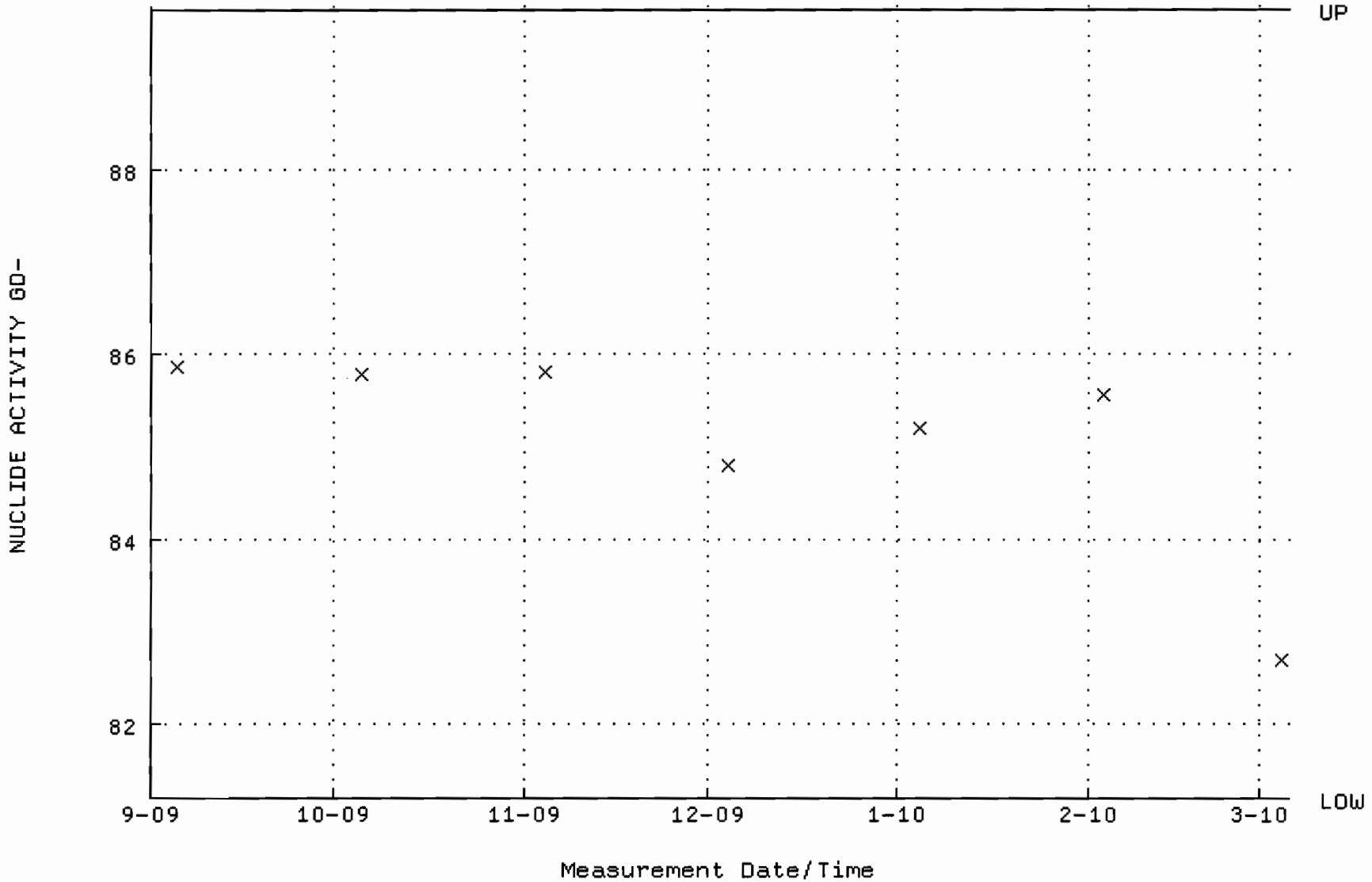
QA filename : DKA100:[ENV_ALPHA.QA.B]B026.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:03 through 6-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



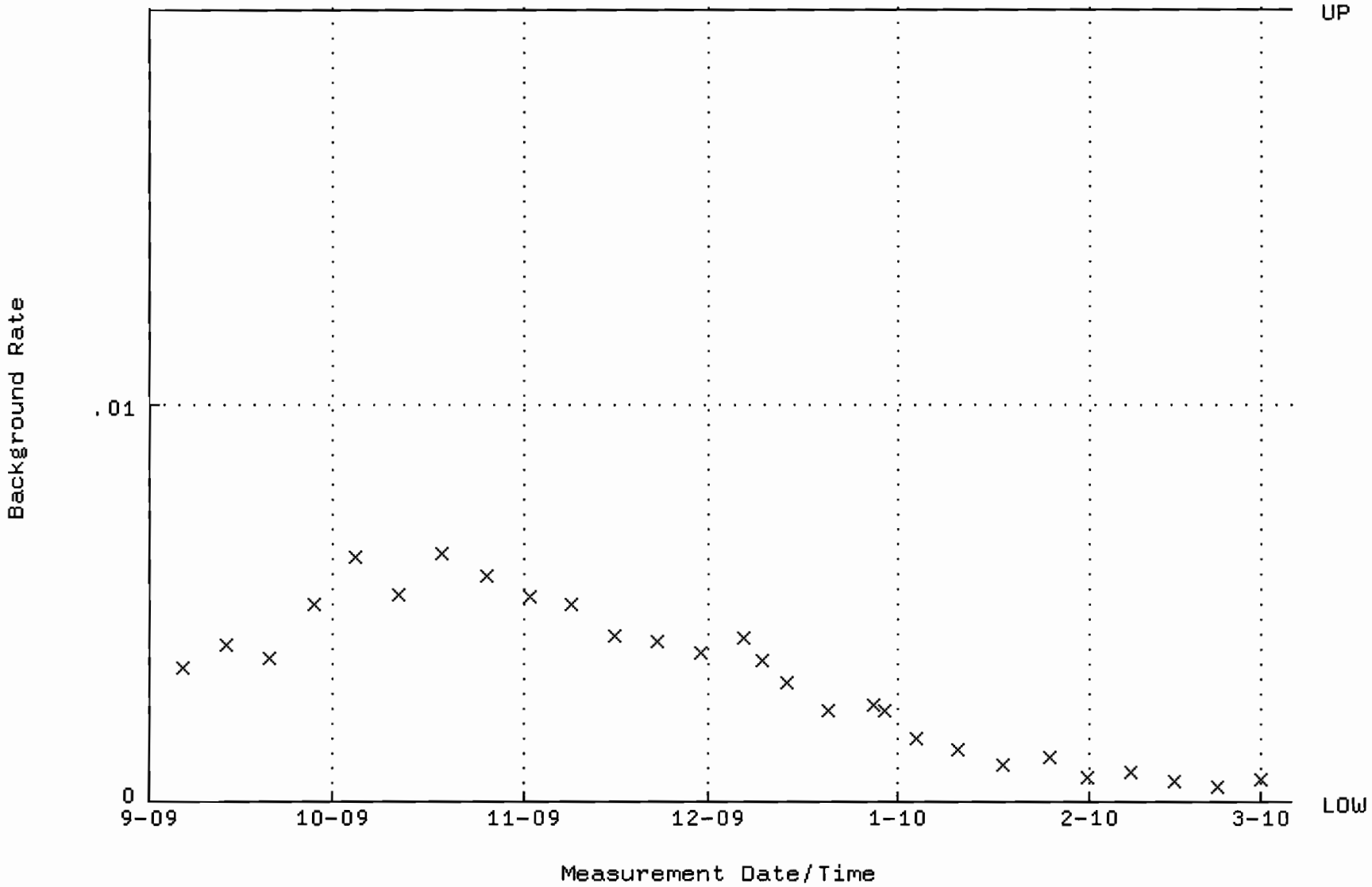
QA filename : DKA100:[ENV_ALPHA.QA.W]W027.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.324980 through 0.344980



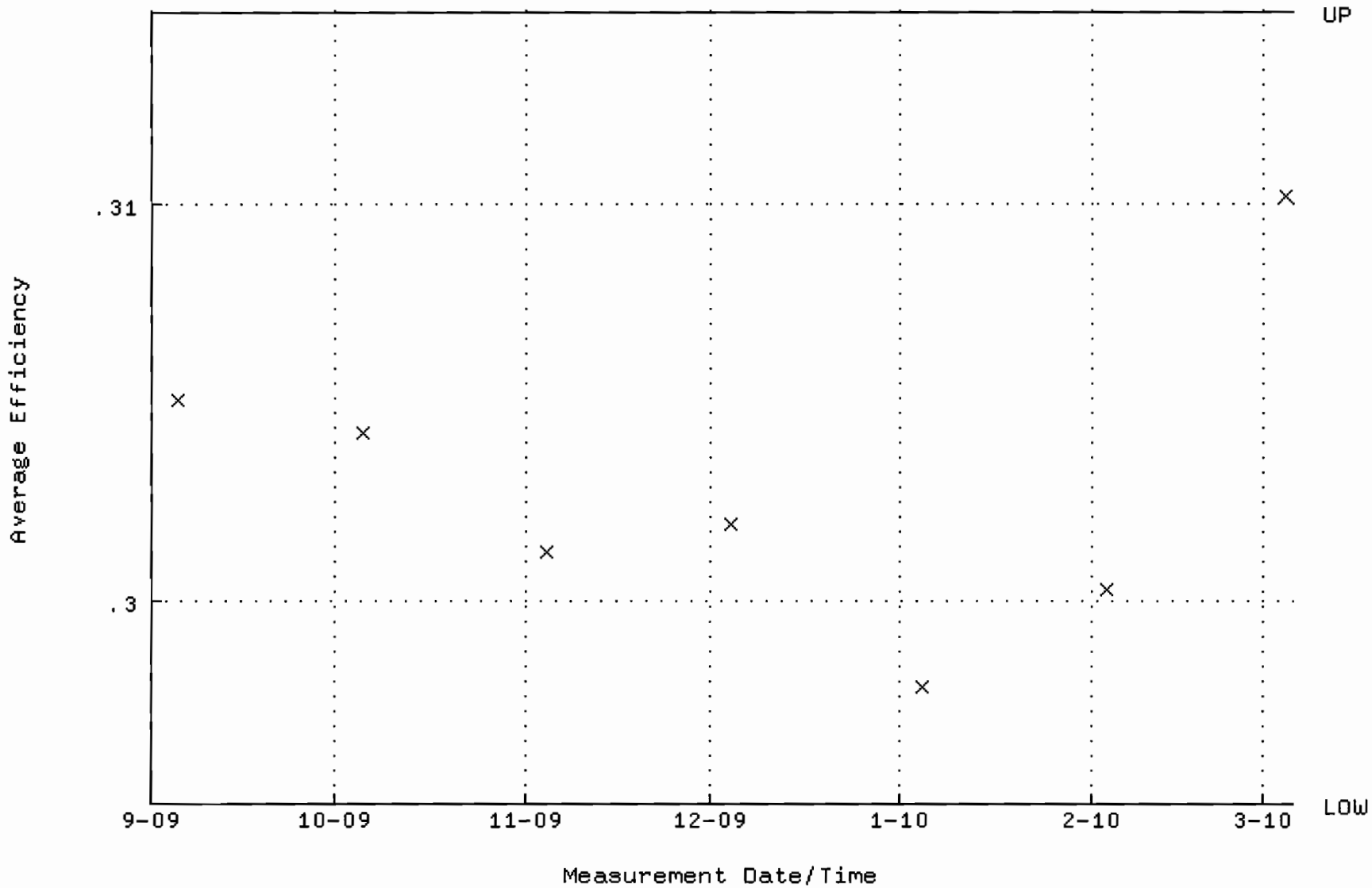
QA filename : DKA100:[ENV_ALPHA.QA.W]W027.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 81.2030 through 89.7506



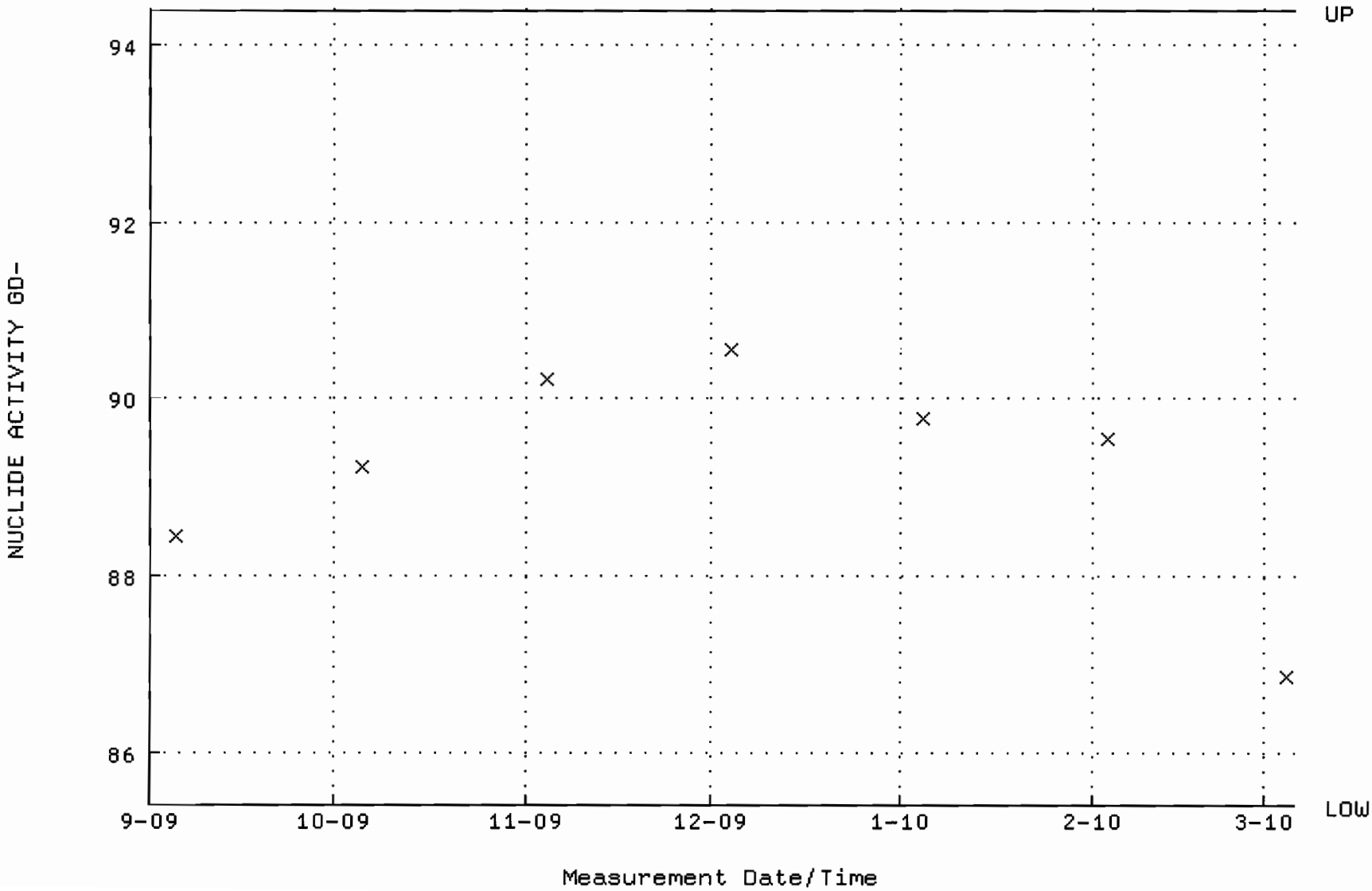
QA filename : DKA100:[ENV_ALPHA.QA.B]B027.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



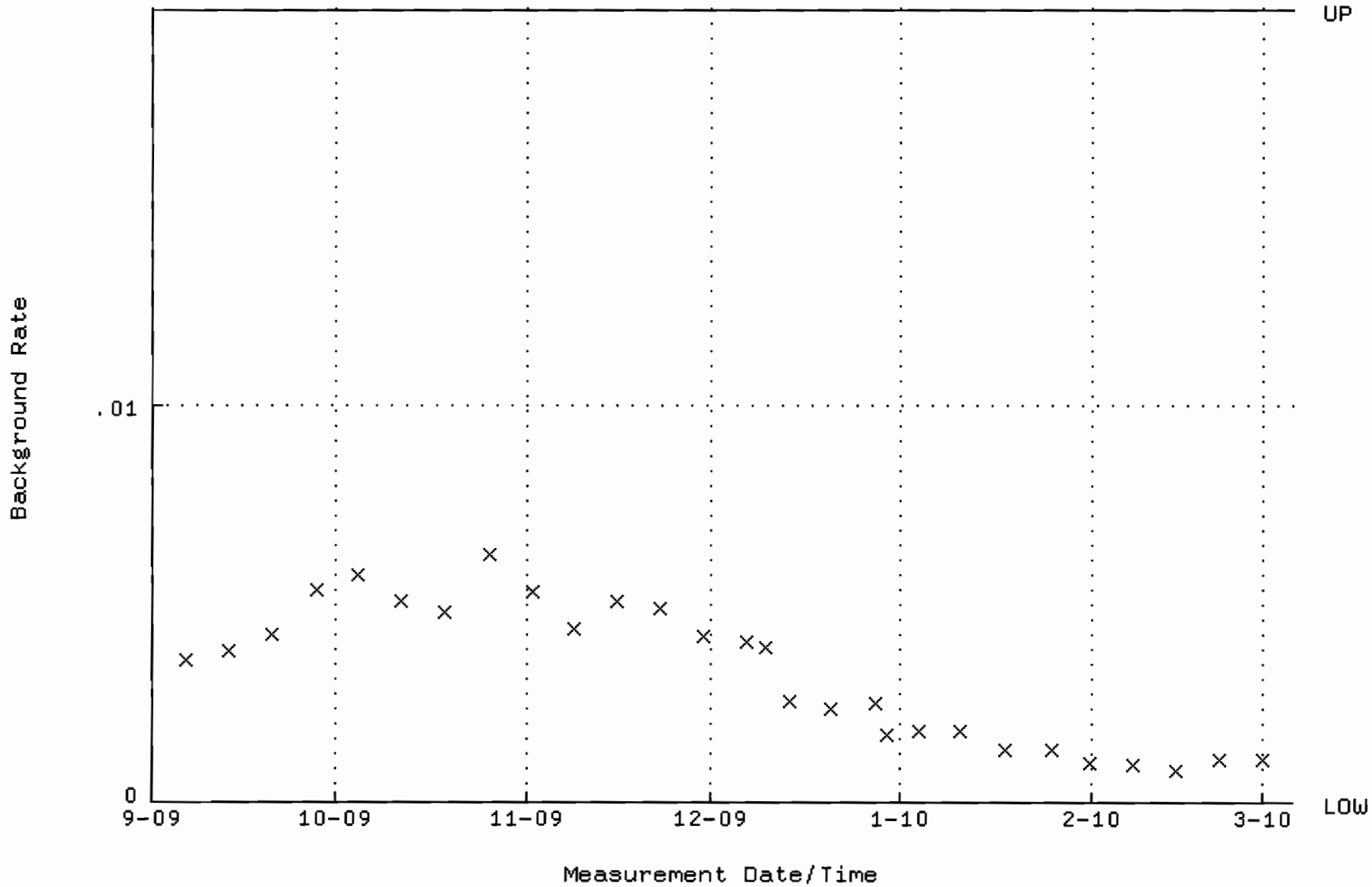
QA filename : DKA100:[ENV_ALPHA.QA.W]W035.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-SEP-2009 09:03:09 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.294859 through 0.314859



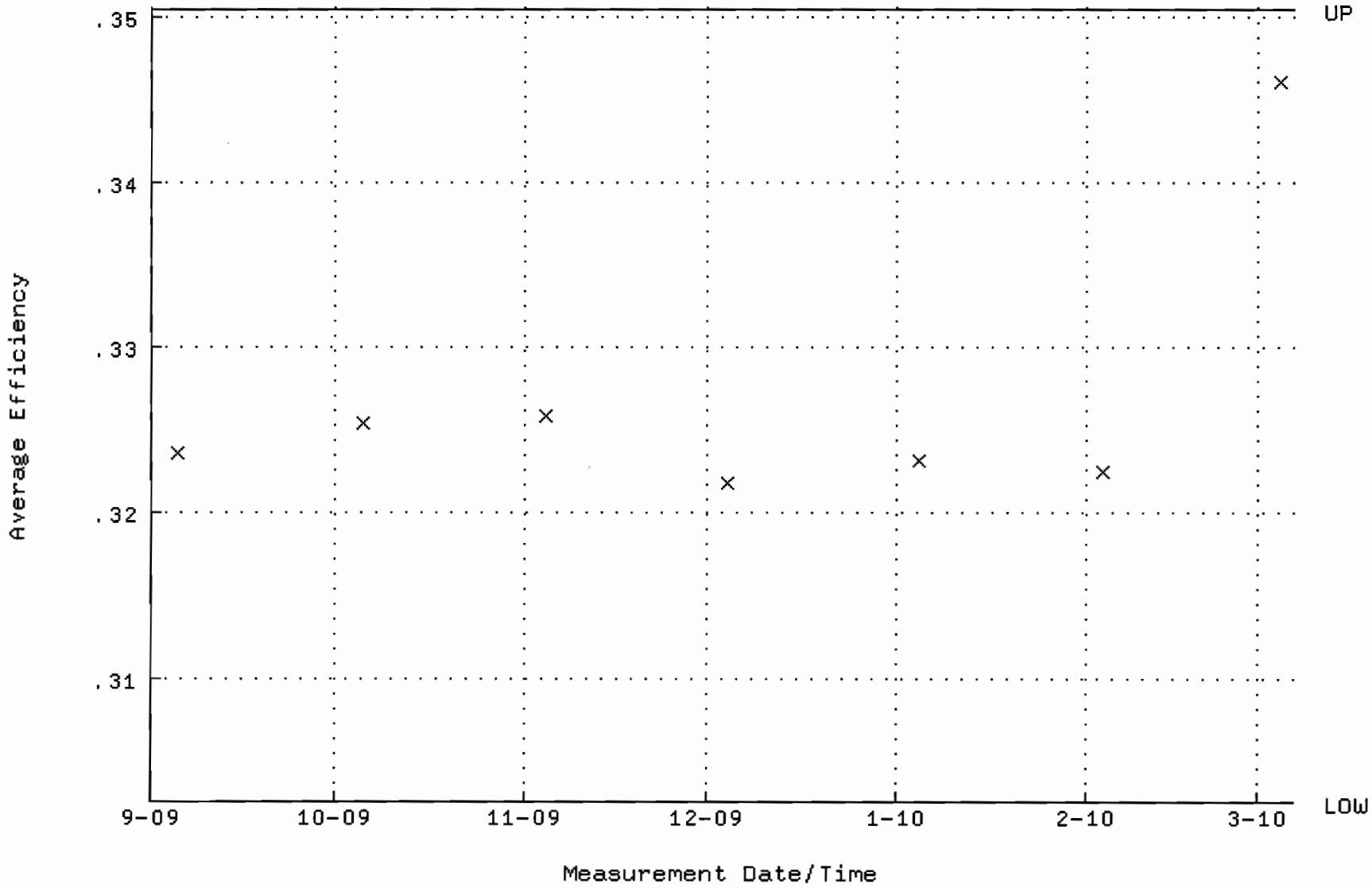
QA filename : DKA100:[ENV_ALPHA.QA.W]W035.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-SEP-2009 09:03:09 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 85.3984 through 94.3878



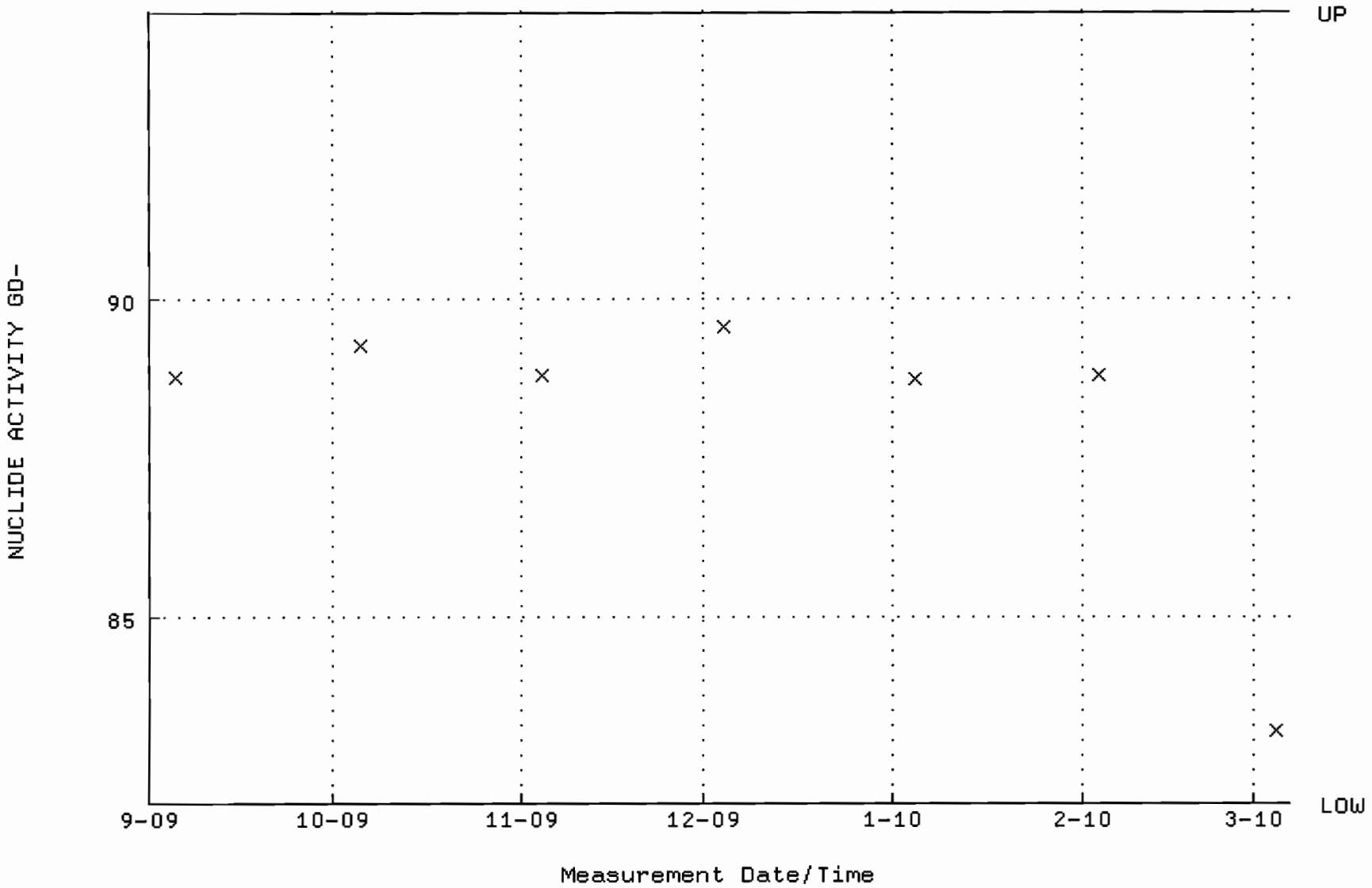
QA filename : DKA100:[ENV_ALPHA.QA.B]B035.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:04 through 5-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



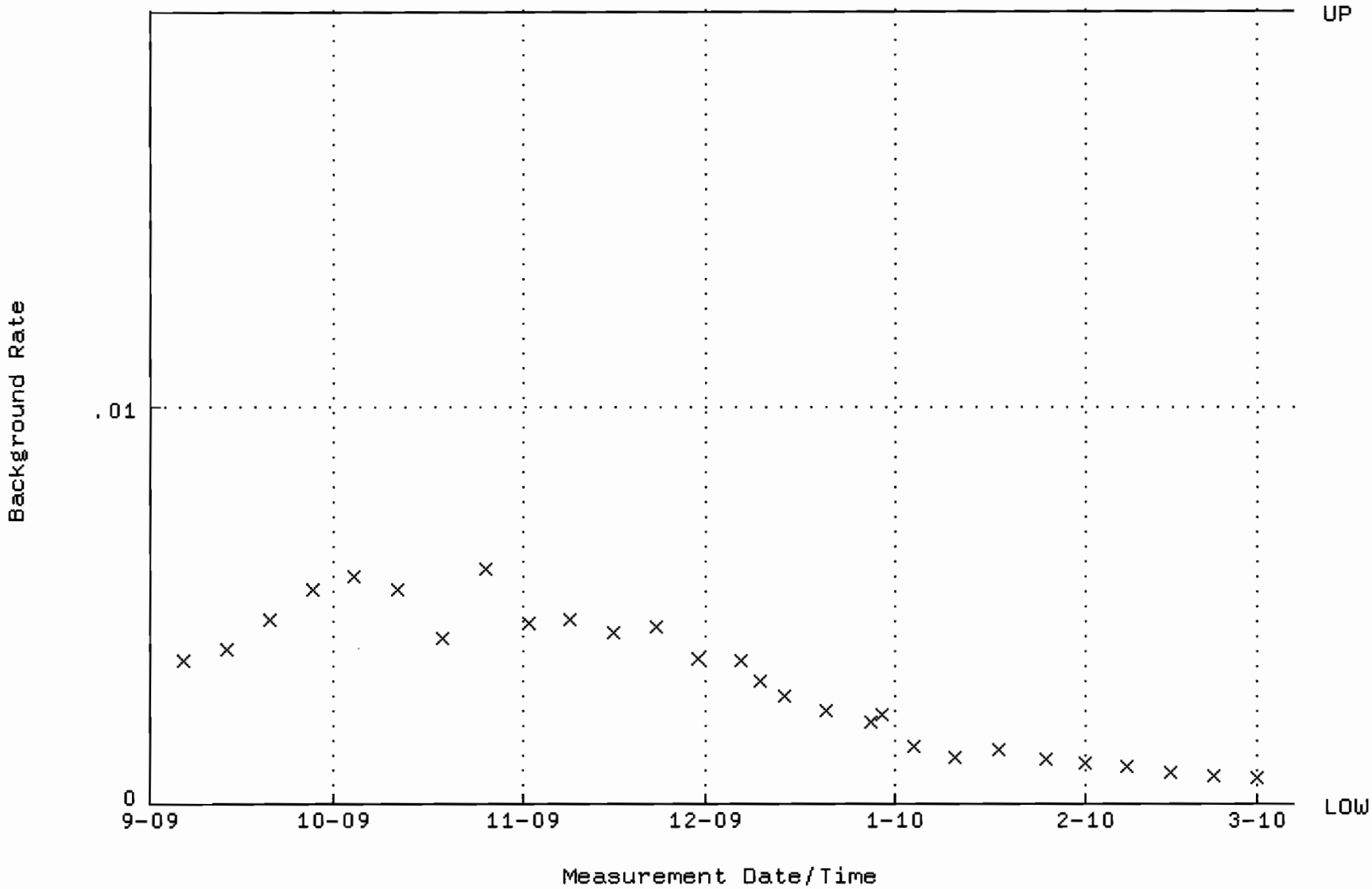
QA filename : DKA100:[ENV_ALPHA.QA.W]W036.QAF;2
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-SEP-2009 09:03:09 through 6-MAR-2010 12:00:00
Lower/Upper Lmts: 0.302527 through 0.350457



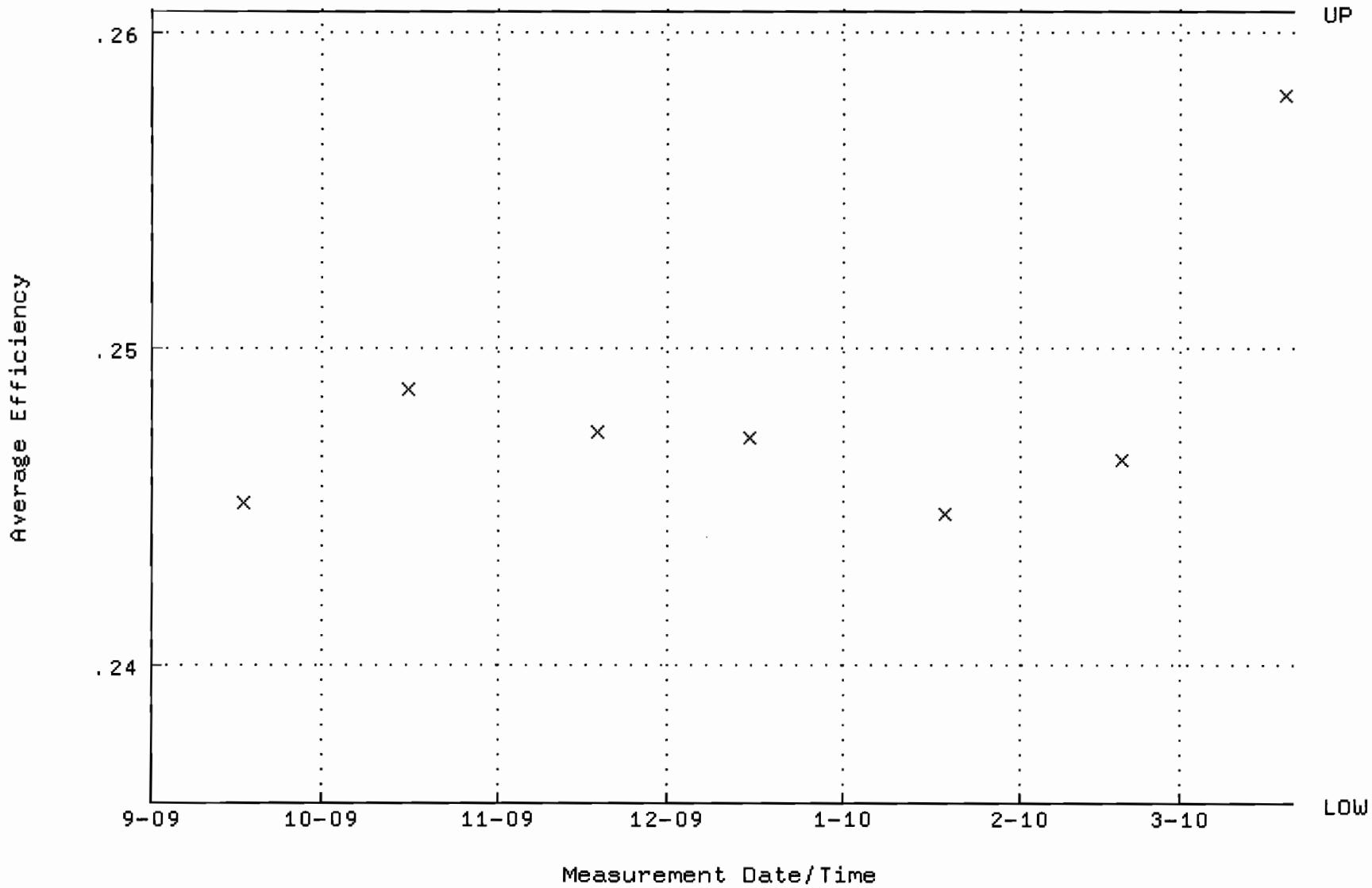
QA filename : DKA100:[ENV_ALPHA.QA.W]W036.QAF;2
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-SEP-2009 09:03:09 through 6-MAR-2010 12:00:00
Lower/Upper Lmts: 82.0564 through 94.5140



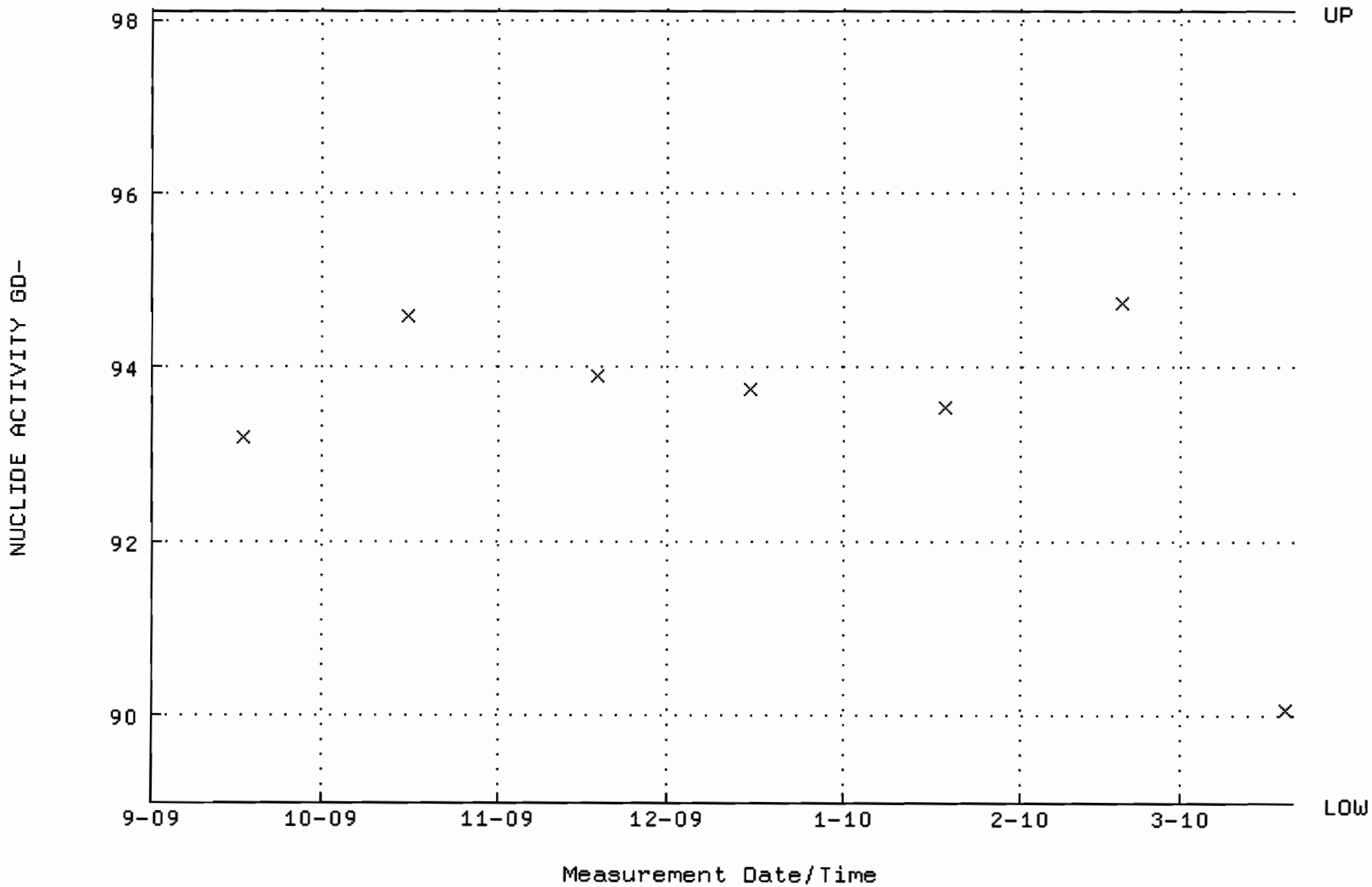
QA filename : DKA100:[ENV_ALPHA.QA.B]B036.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 14:27:04 through 6-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



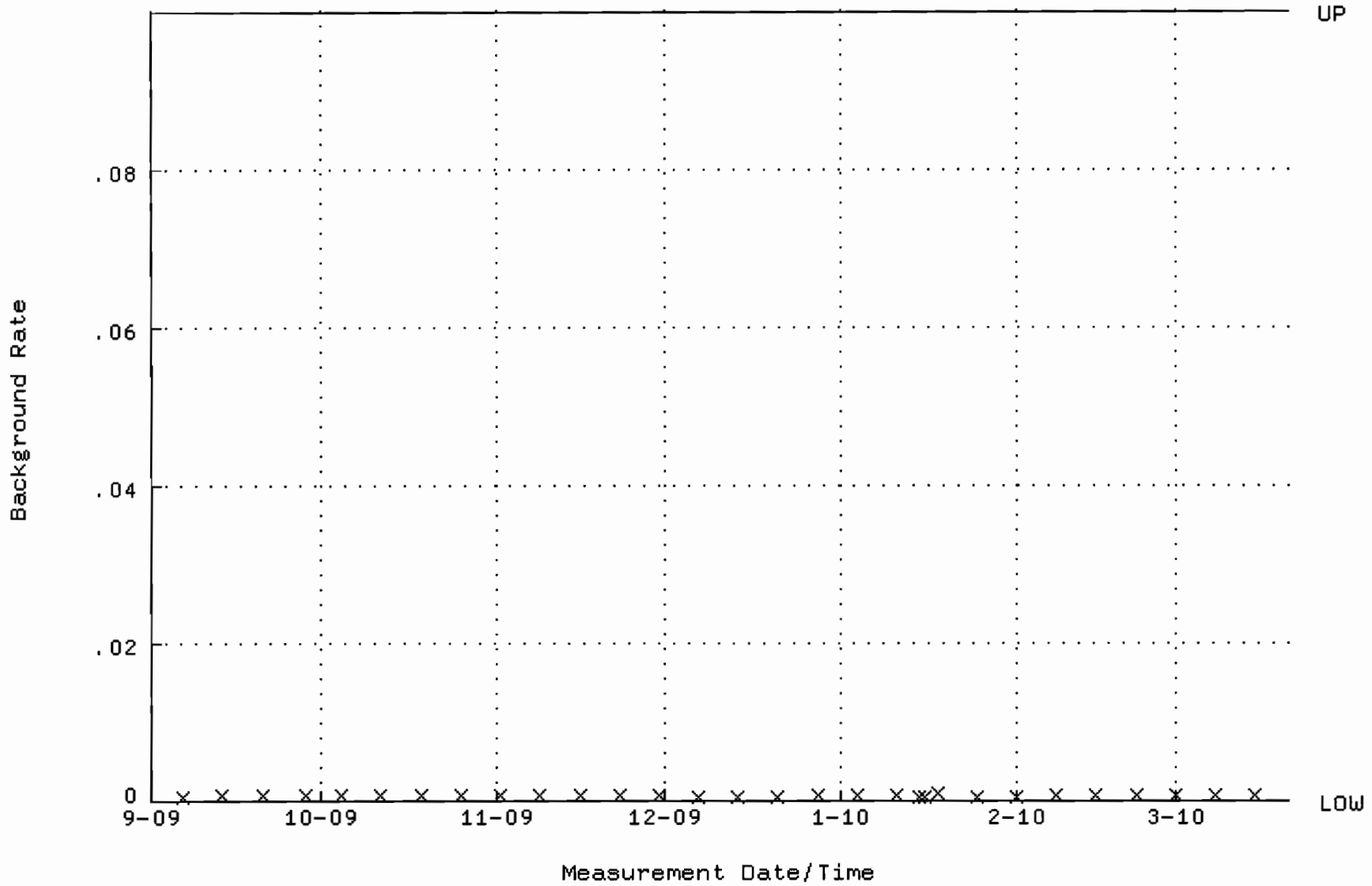
QA filename : DKA100:[ENV_ALPHA.QA.W]W121.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 17-SEP-2009 07:23:26 through 20-MAR-2010 12:00:00
Lower/Upper Lmts: 0.235679 through 0.260639



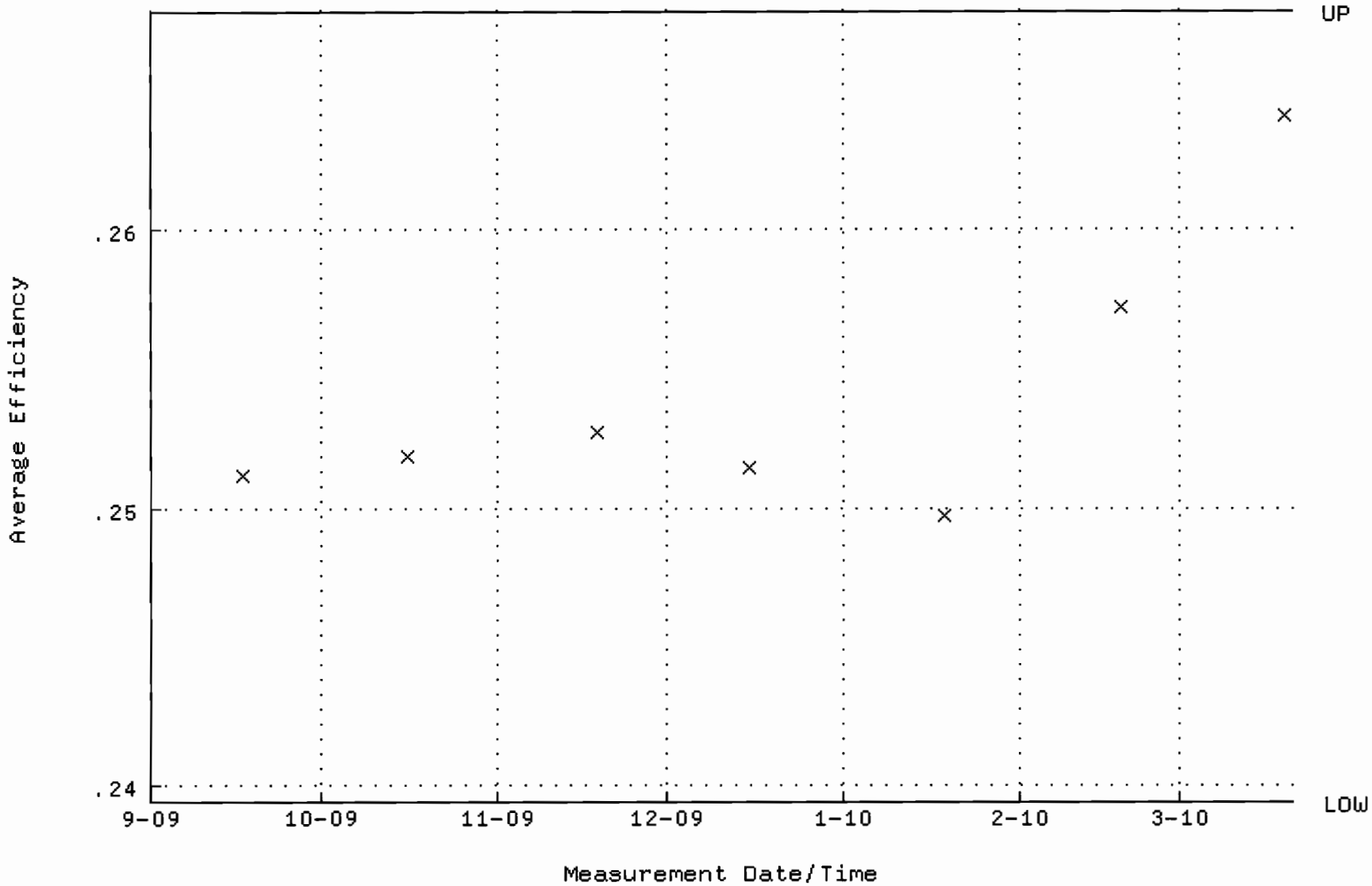
QA filename : DKA100:[ENV_ALPHA.QA.W]W121.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 17-SEP-2009 07:23:26 through 20-MAR-2010 12:00:00
Lower/Upper Lmts: 88.9962 through 98.1012



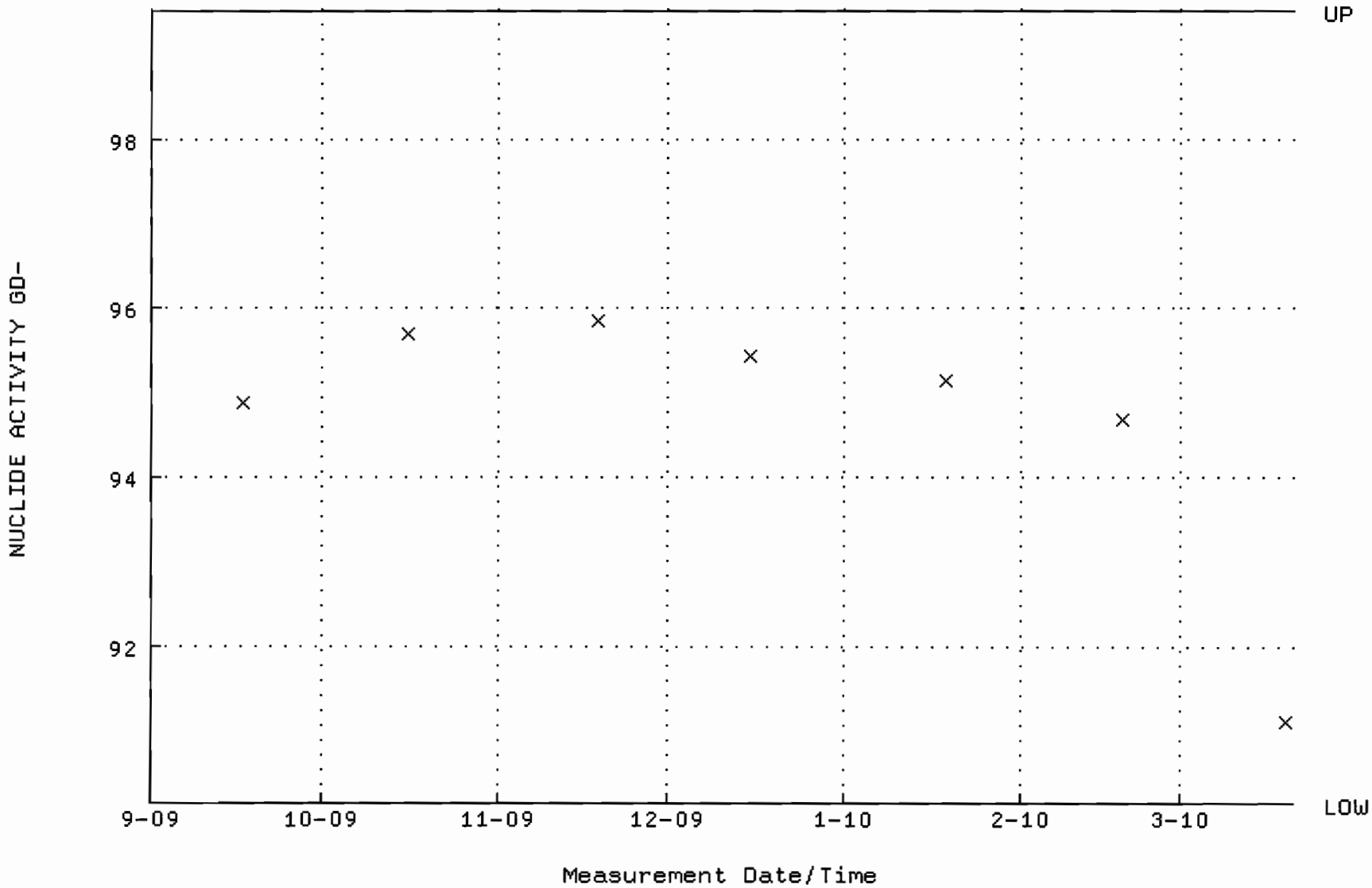
QA filename : DKA100:[ENV_ALPHA.QA.B]B121.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:40:43 through 20-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



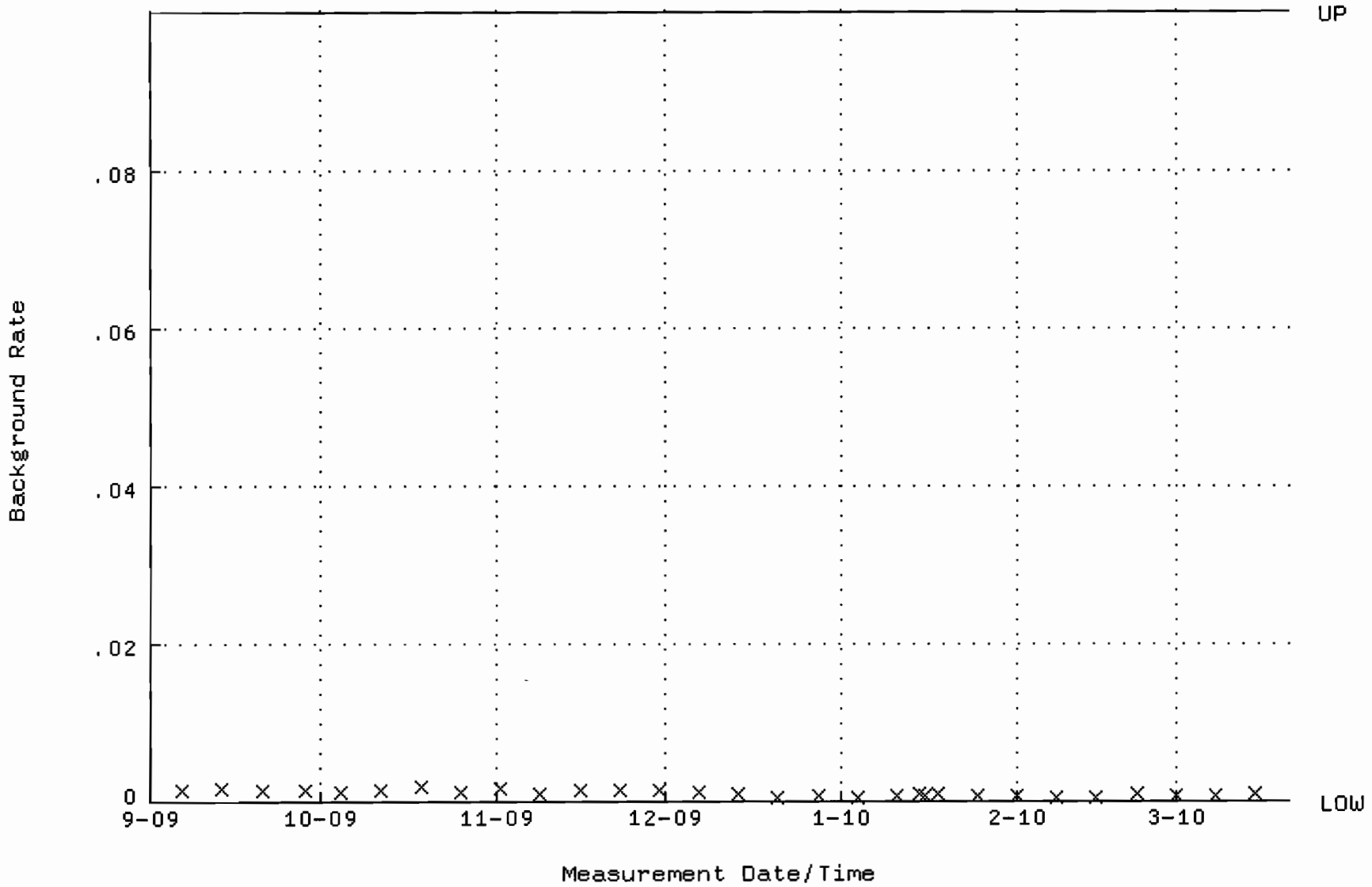
QA filename : DKA100:[ENV_ALPHA.QA.W]W122.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 17-SEP-2009 07:23:33 through 20-MAR-2010 12:00:00
Lower/Upper Lmts: 0.239412 through 0.267828



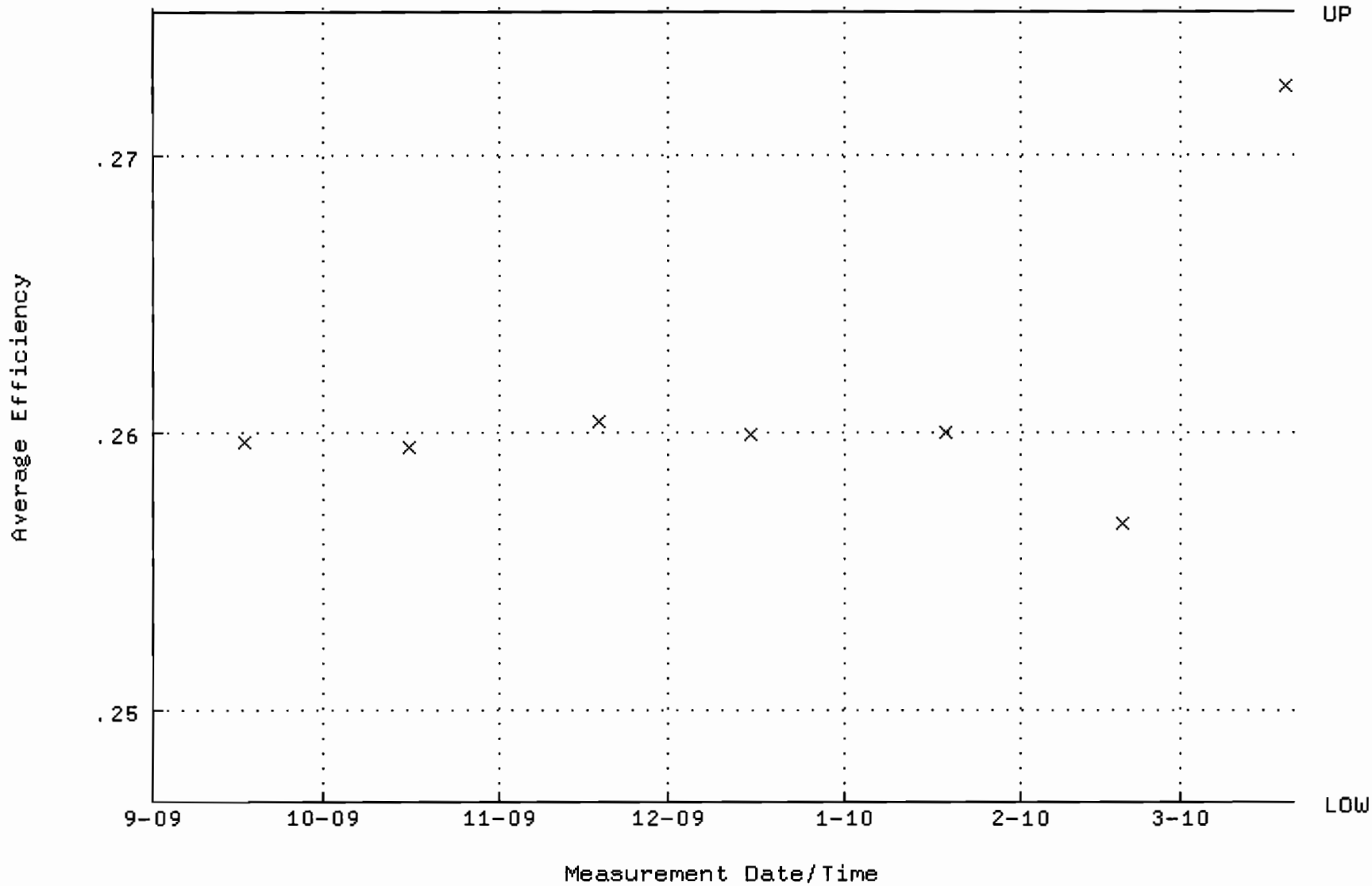
QA filename : DKA100:[ENV_ALPHA.QA.W]W122.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 17-SEP-2009 07:23:33 through 20-MAR-2010 12:00:00
Lower/Upper Lmts: 90.1506 through 99.5122



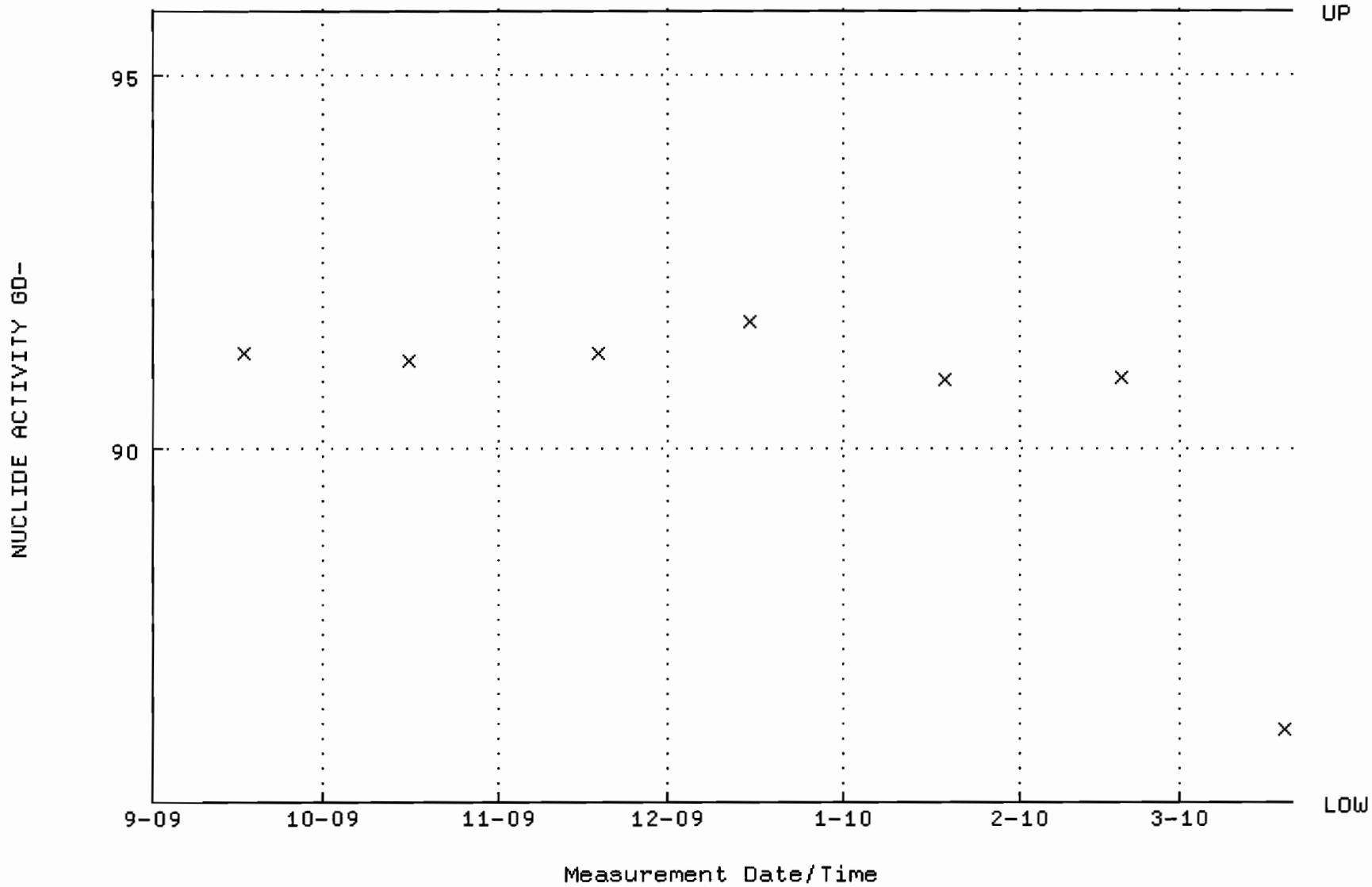
QA filename : DKA100:[ENV_ALPHA.QA.B]B122.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:40:48 through 20-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



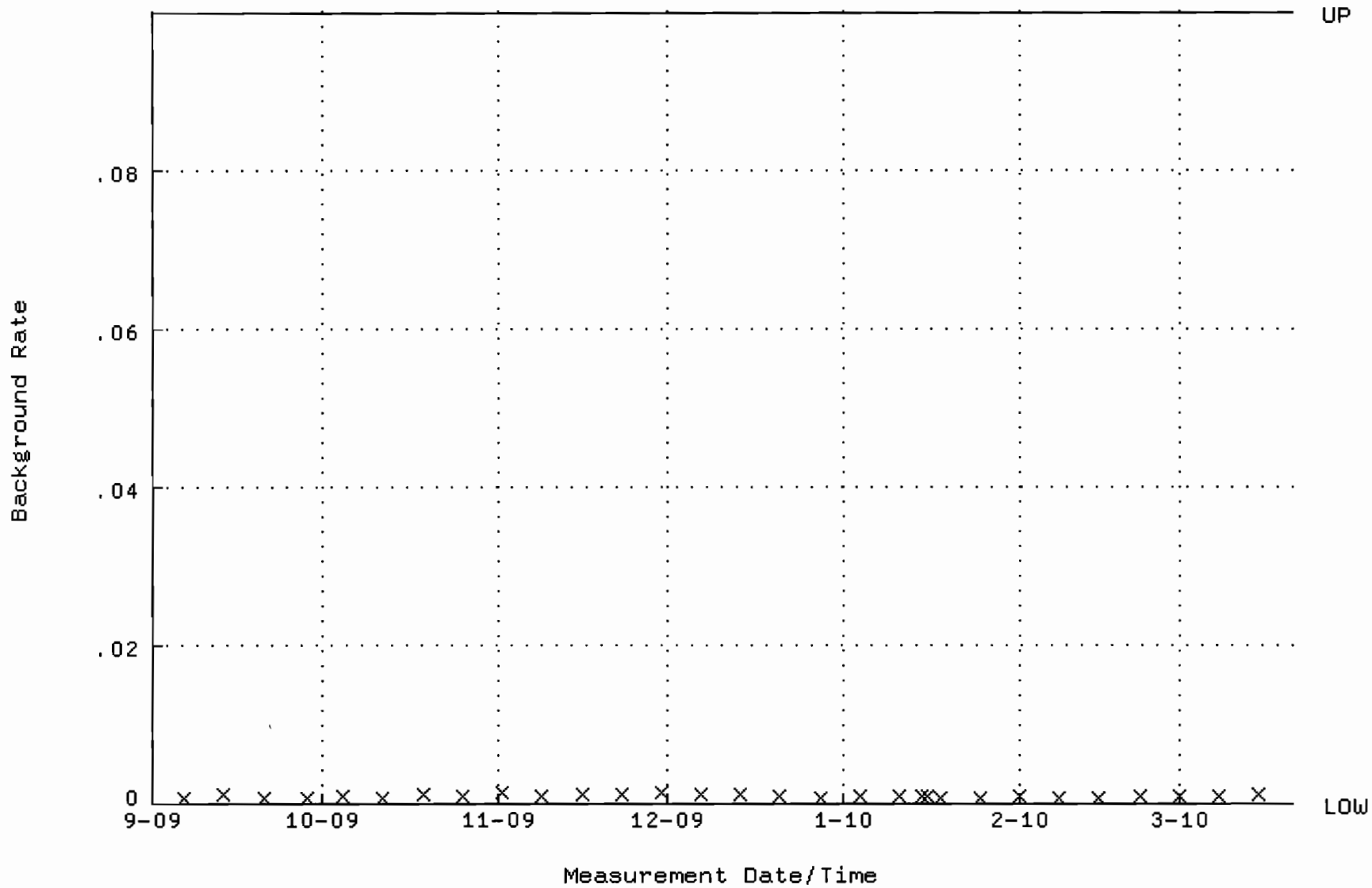
QA filename : DKA100:[ENV_ALPHA.QA.W]W123.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 17-SEP-2009 07:23:40 through 20-MAR-2010 12:00:00
Lower/Upper Lmts: 0.246718 through 0.275204



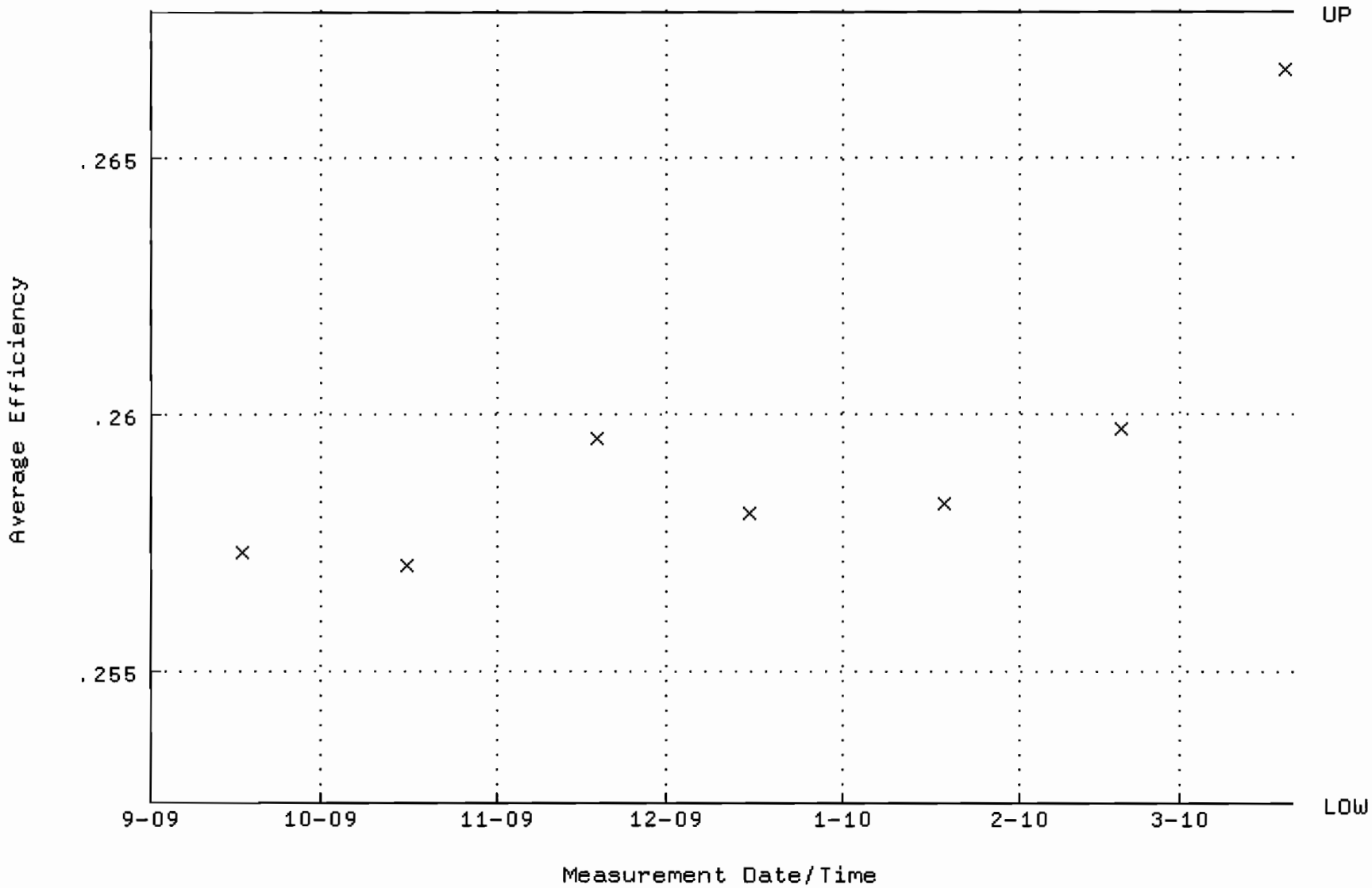
QA filename : DKA100:[ENV_ALPHA.QA.W]W123.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 17-SEP-2009 07:23:40 through 20-MAR-2010 12:00:00
Lower/Upper Lmts: 85.2791 through 95.8339



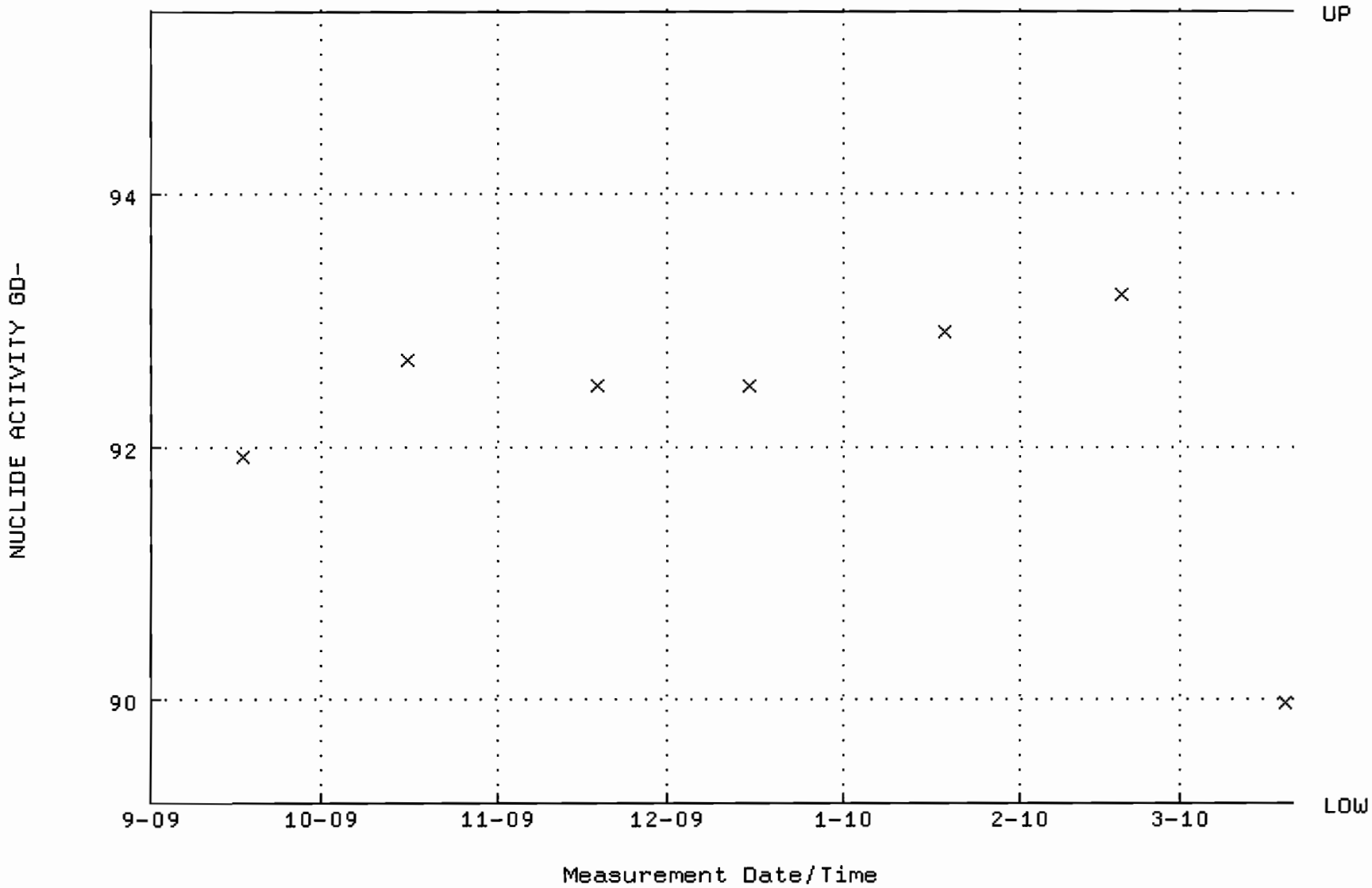
QA filename : DKA100:[ENV_ALPHA.QA.B]B123.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:40:52 through 20-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



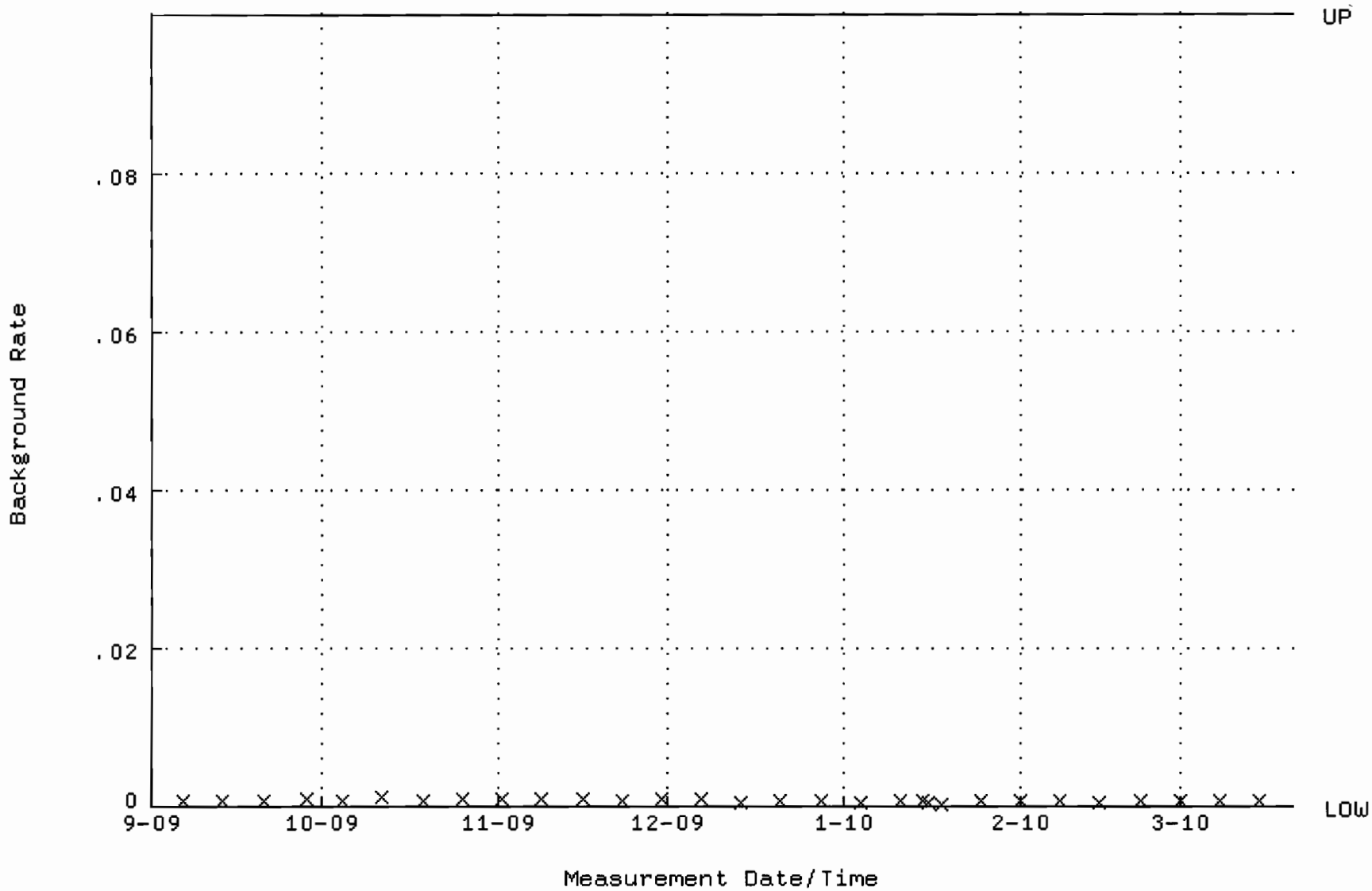
QA filename : DKA100:[ENV_ALPHA.QA.W]W124.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 17-SEP-2009 07:23:47 through 20-MAR-2010 12:00:00
Lower/Upper Lmts: 0.252448 through 0.267830



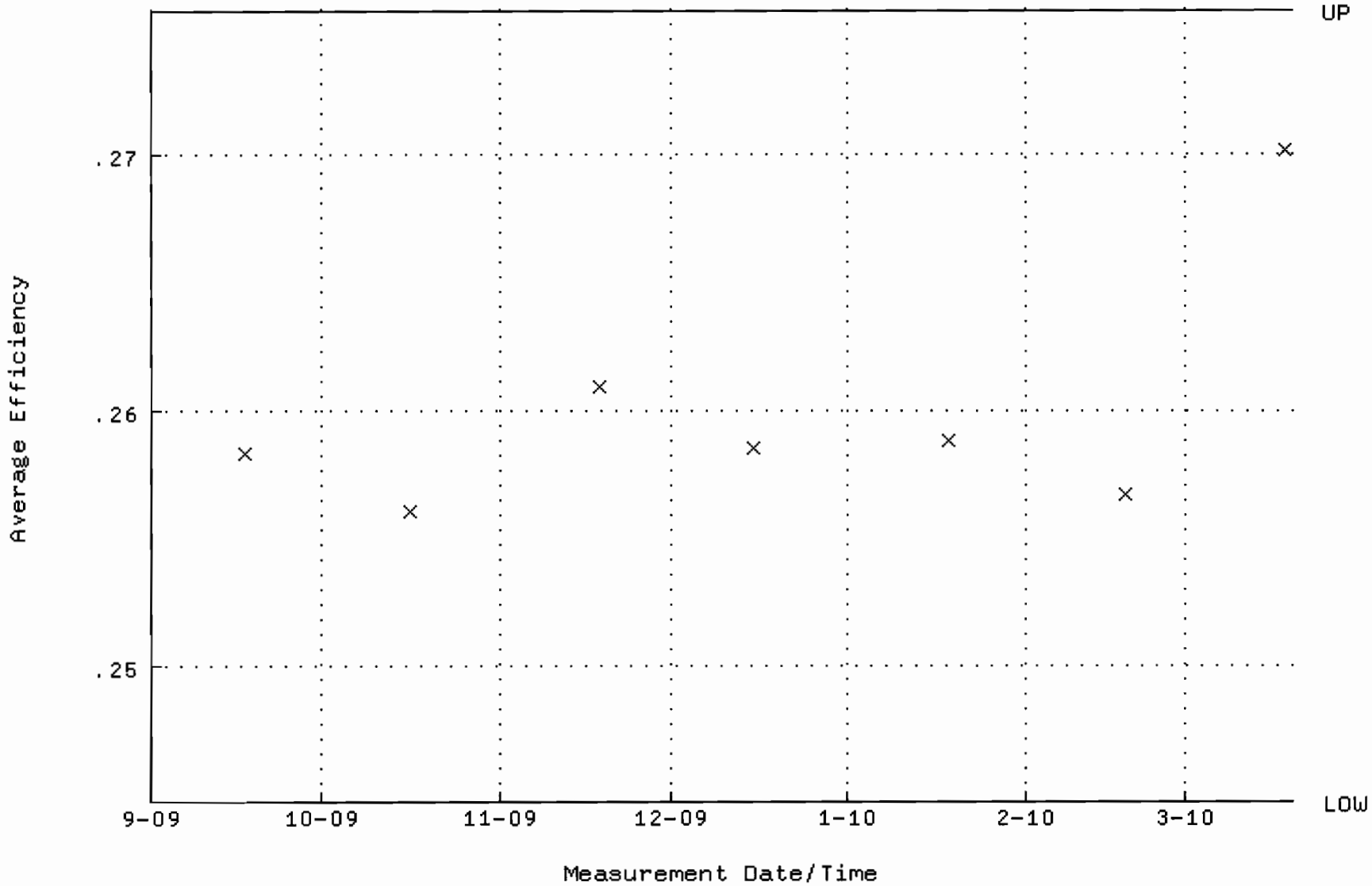
QA filename : DKA100:[ENV_ALPHA.QA.W]W124.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 17-SEP-2009 07:23:47 through 20-MAR-2010 12:00:00
Lower/Upper Lmts: 89.1805 through 95.4483



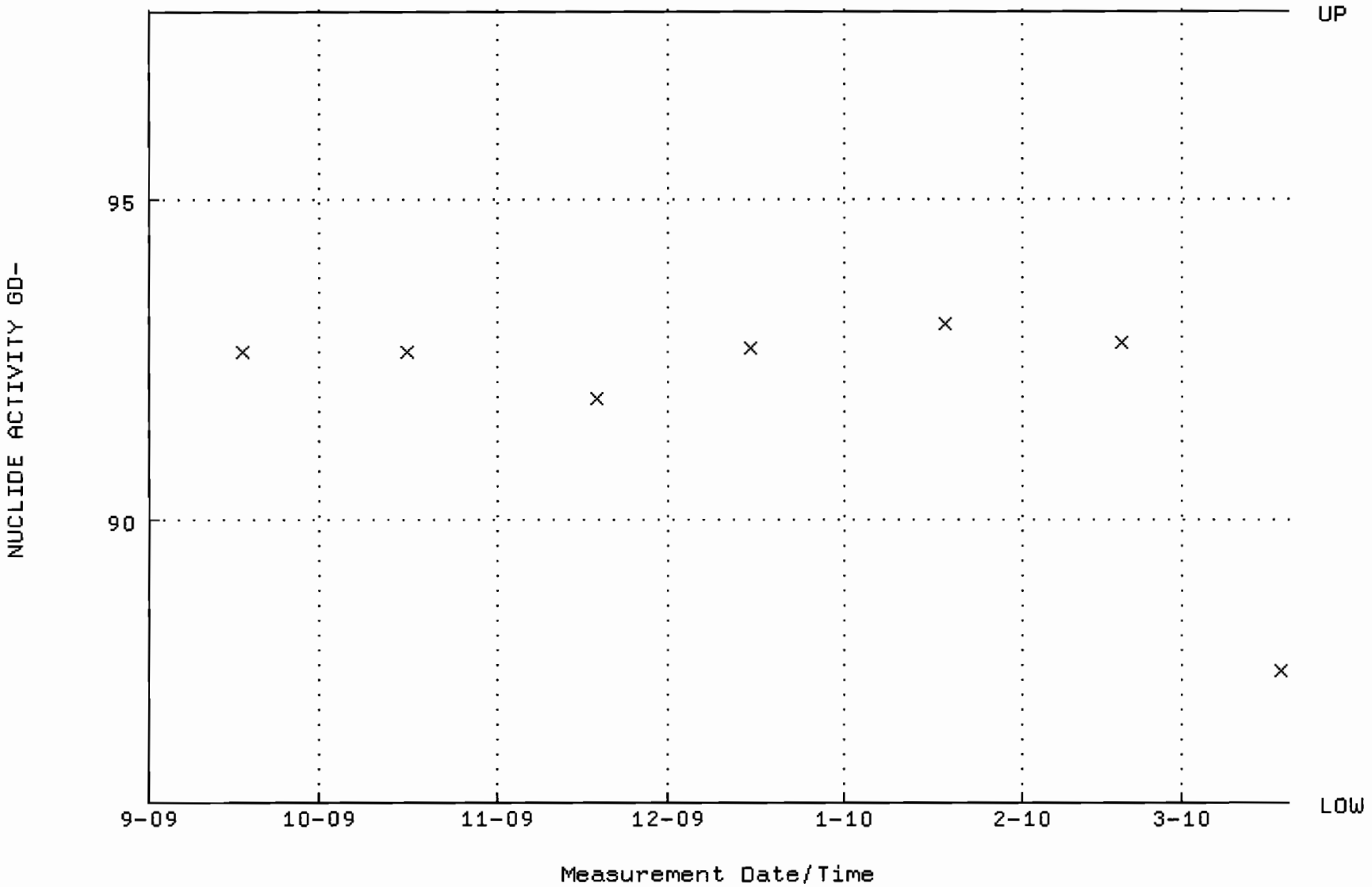
QA filename : DKA100:[ENV_ALPHA.QA.B]B124.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:40:56 through 20-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



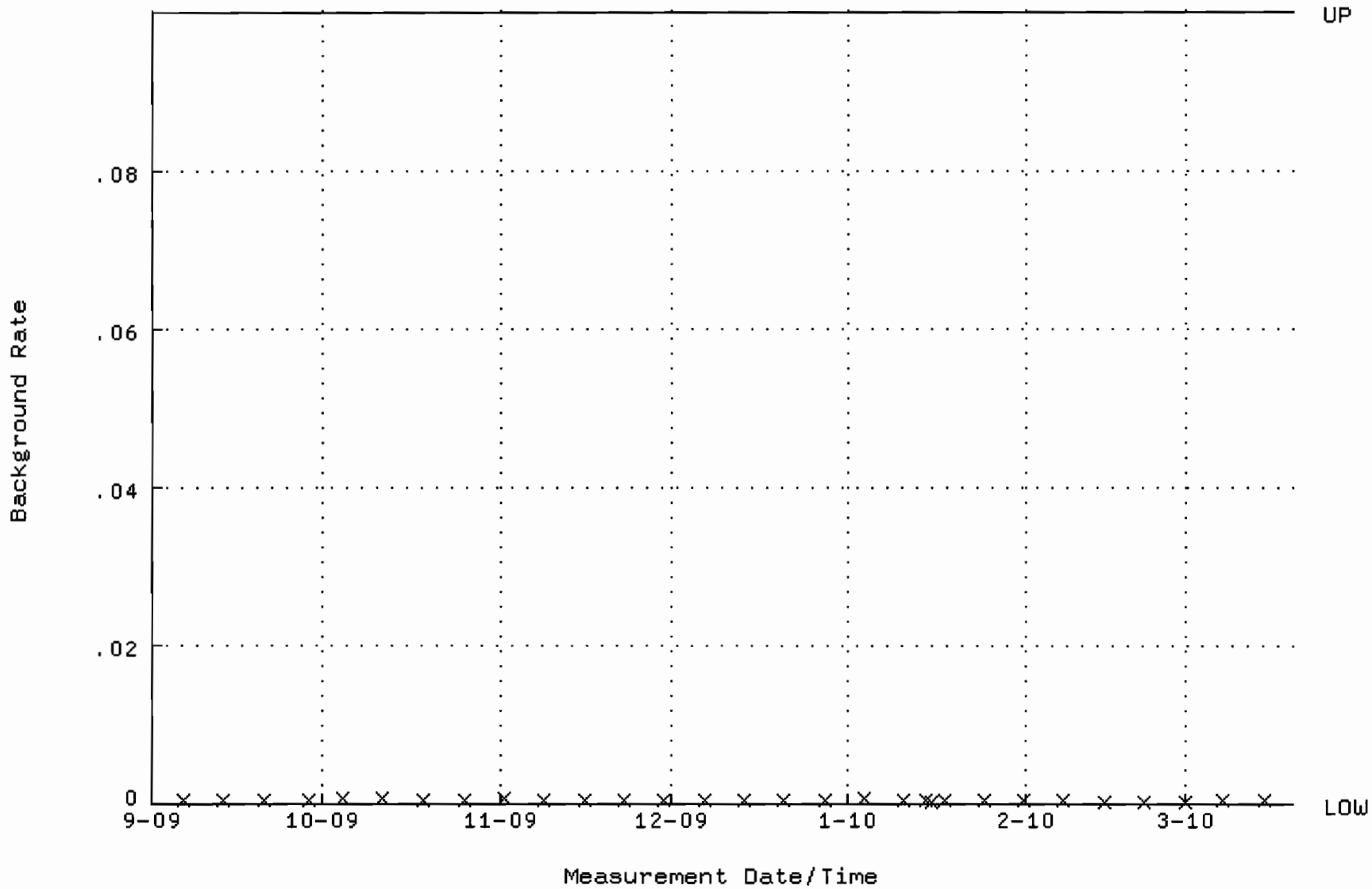
QA filename : DKA100:[ENV_ALPHA.QA.W]W125.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 17-SEP-2009 07:23:54 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 0.244676 through 0.275622



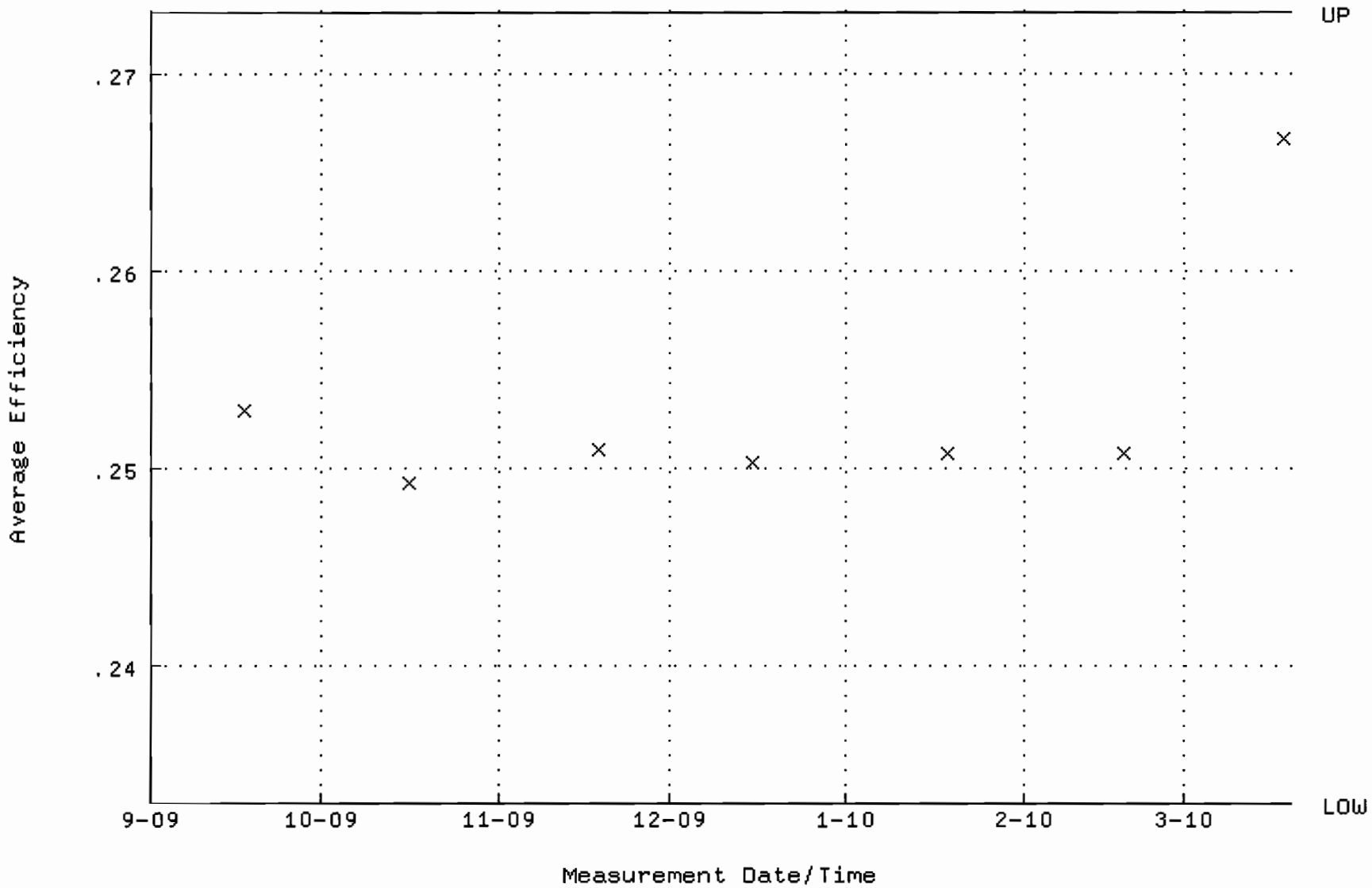
QA filename : DKA100:[ENV_ALPHA.QA.W]W125.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 17-SEP-2009 07:23:54 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 85.5532 through 97.9632



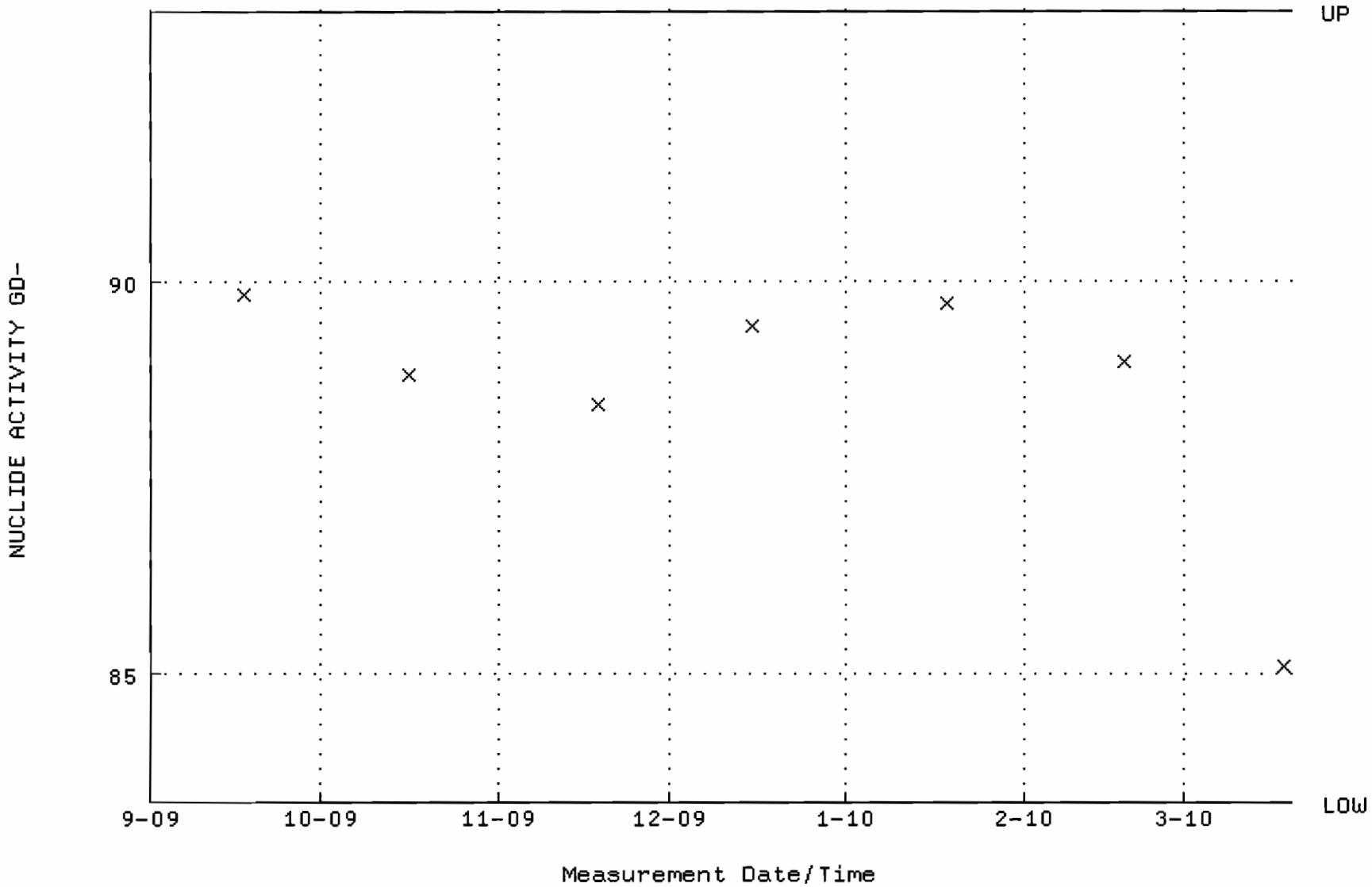
QA filename : DKA100:[ENV_ALPHA.QA.B]B125.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:41:01 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



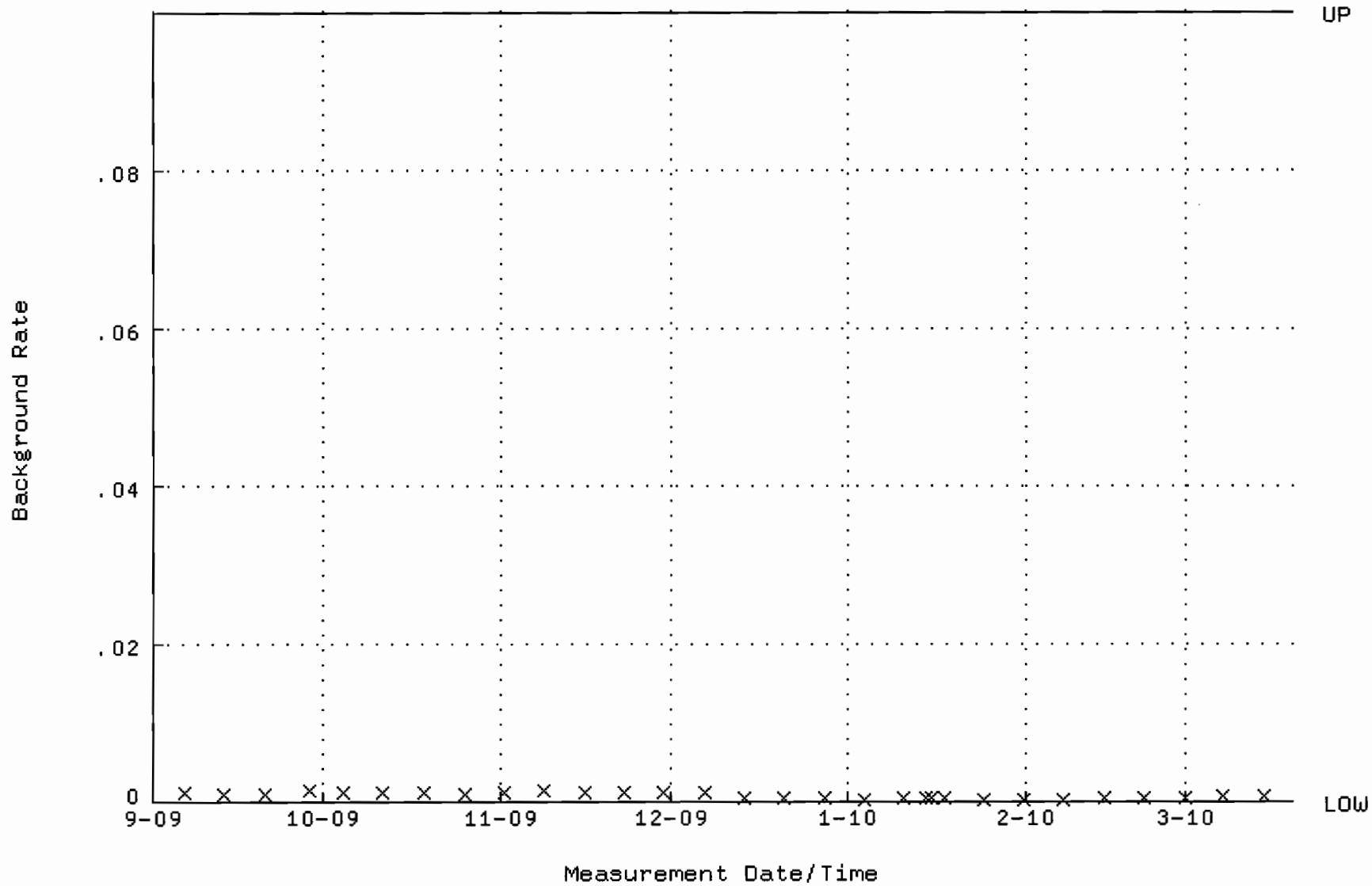
QA filename : DKA100:[ENV_ALPHA.QA.W]W126.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 17-SEP-2009 07:24:03 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 0.233045 through 0.273065



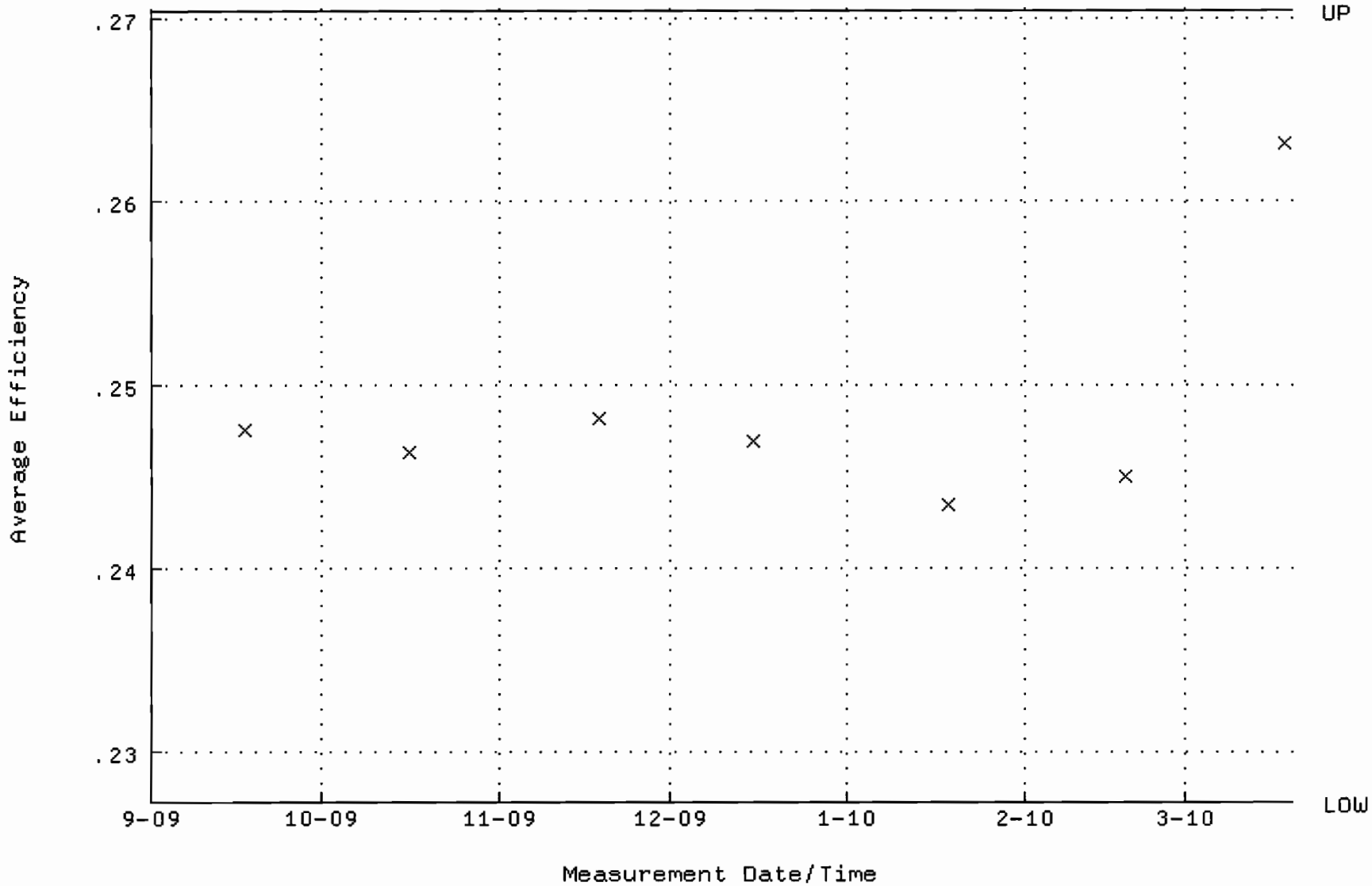
QA filename : DKA100:[ENV_ALPHA.QA.W]W126.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 17-SEP-2009 07:24:03 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 83.3533 through 93.4269



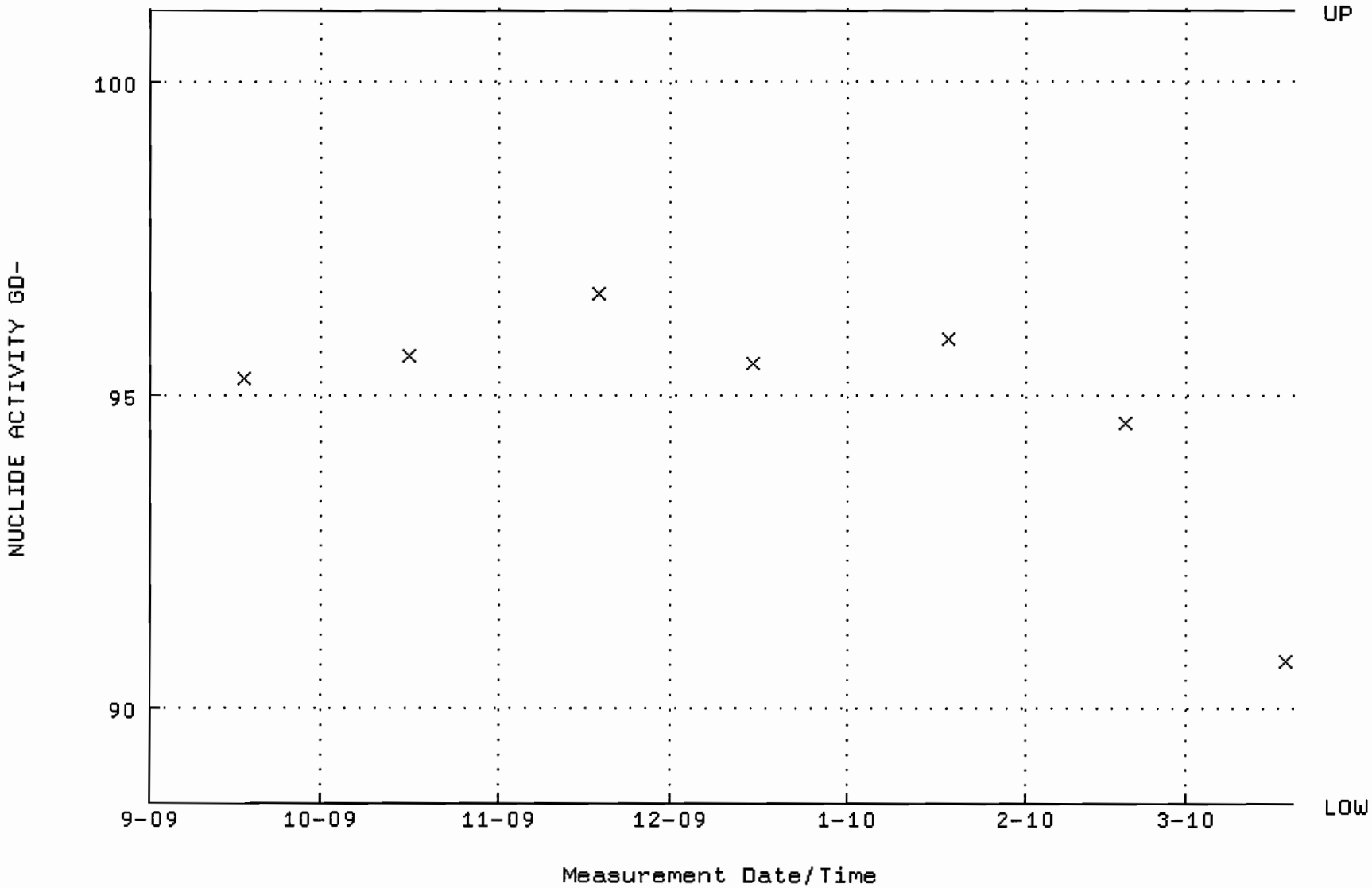
QA filename : DKA100:[ENV_ALPHA.QA.B]B126.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:41:05 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



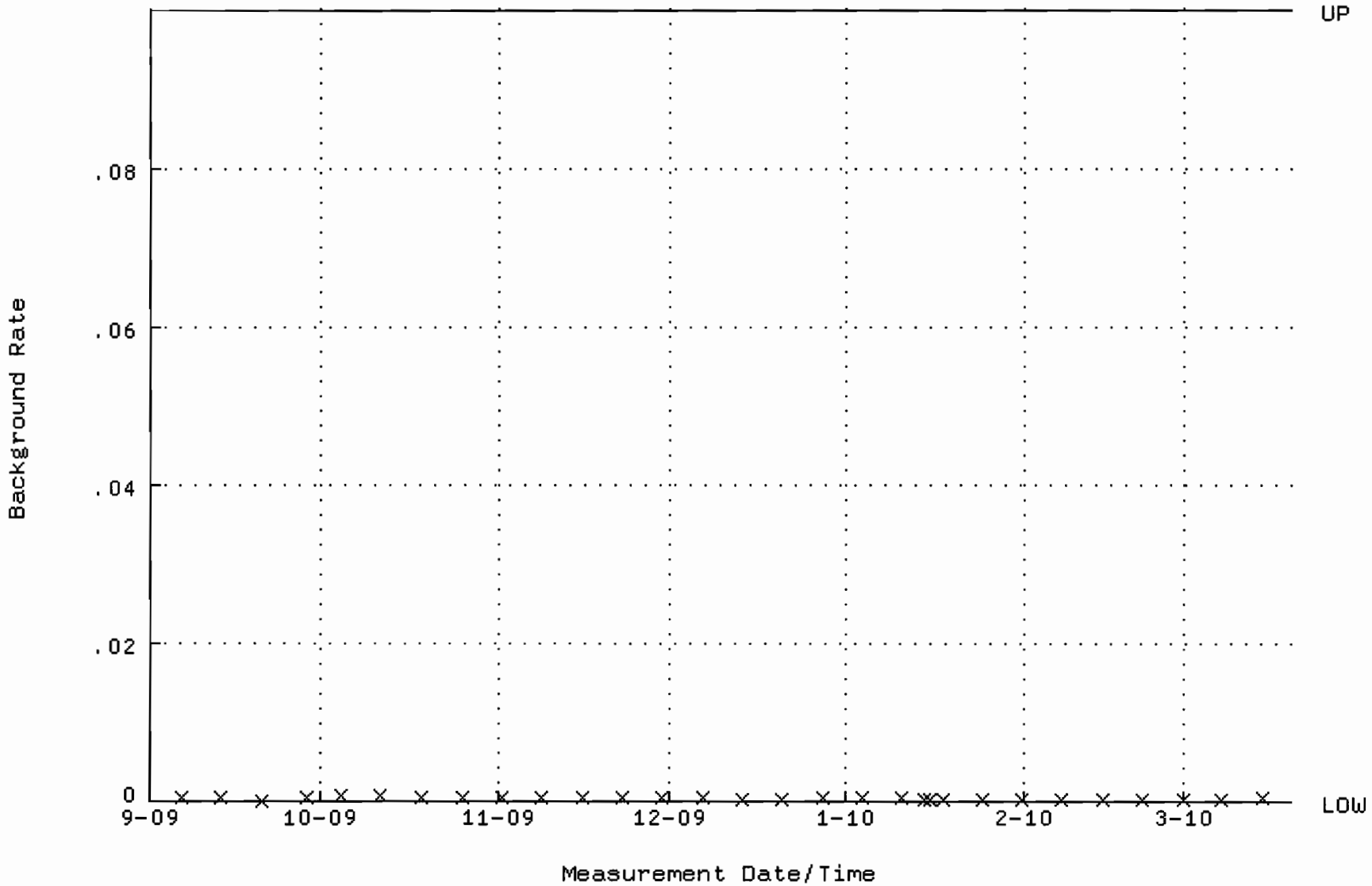
QA filename : DKA100:[ENV_ALPHA.QA.W]W127.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 17-SEP-2009 07:24:09 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 0.227212 through 0.270396



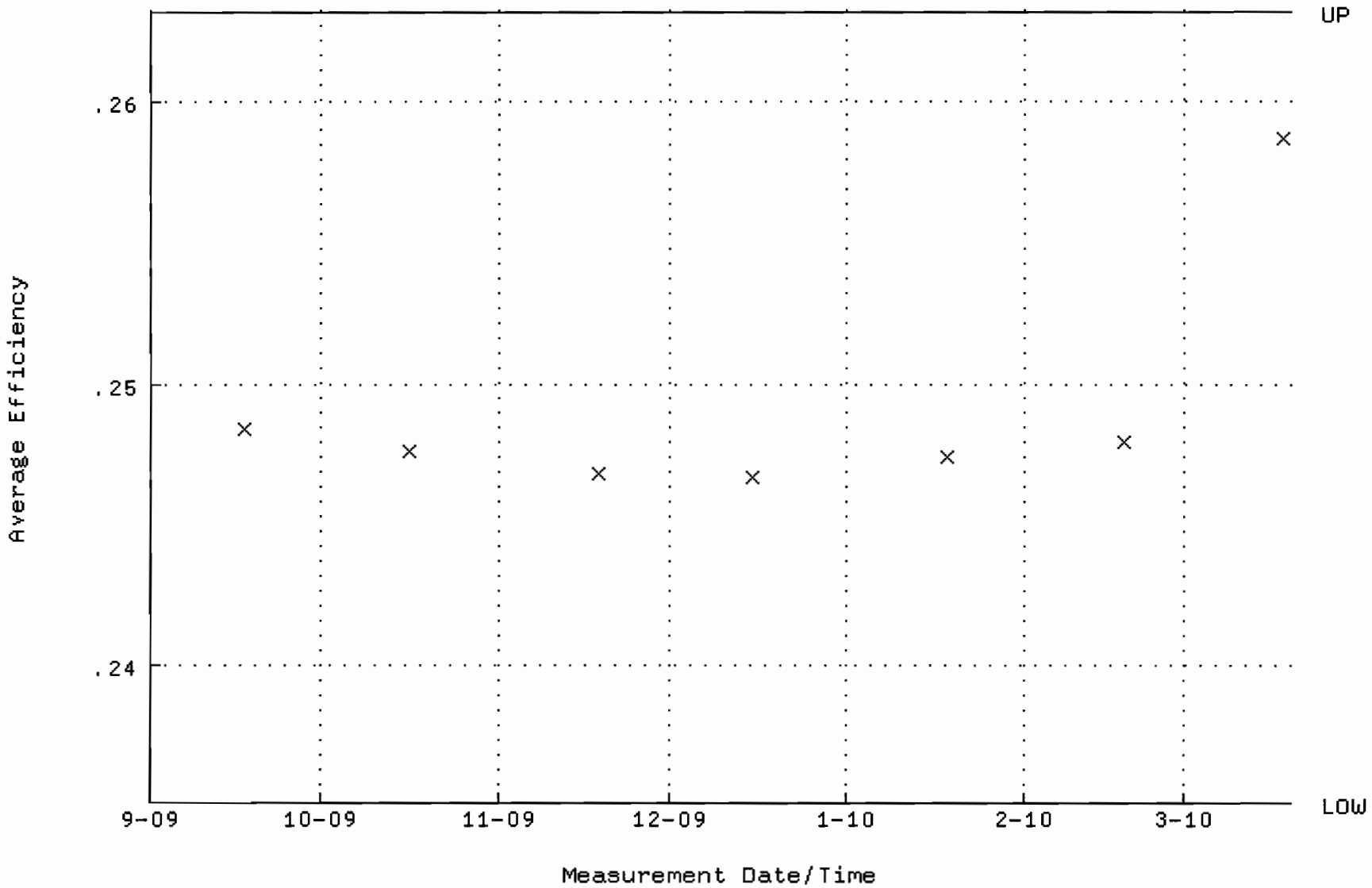
QA filename : DKA100:[ENV_ALPHA.QA.W]W127.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 17-SEP-2009 07:24:09 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 88.4641 through 101.145



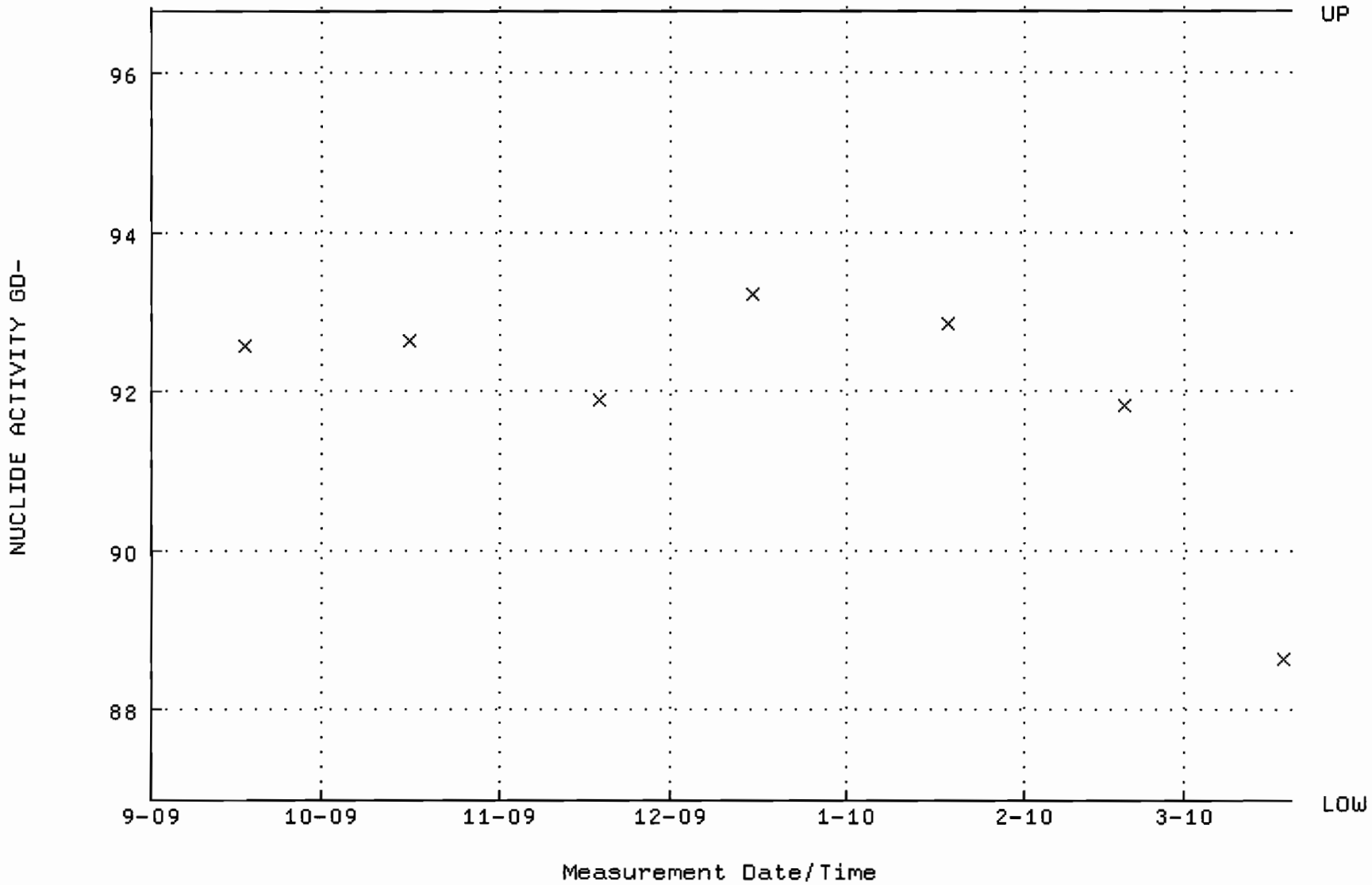
QA filename : DKA100:[ENV_ALPHA.QA.B]B127.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:41:09 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



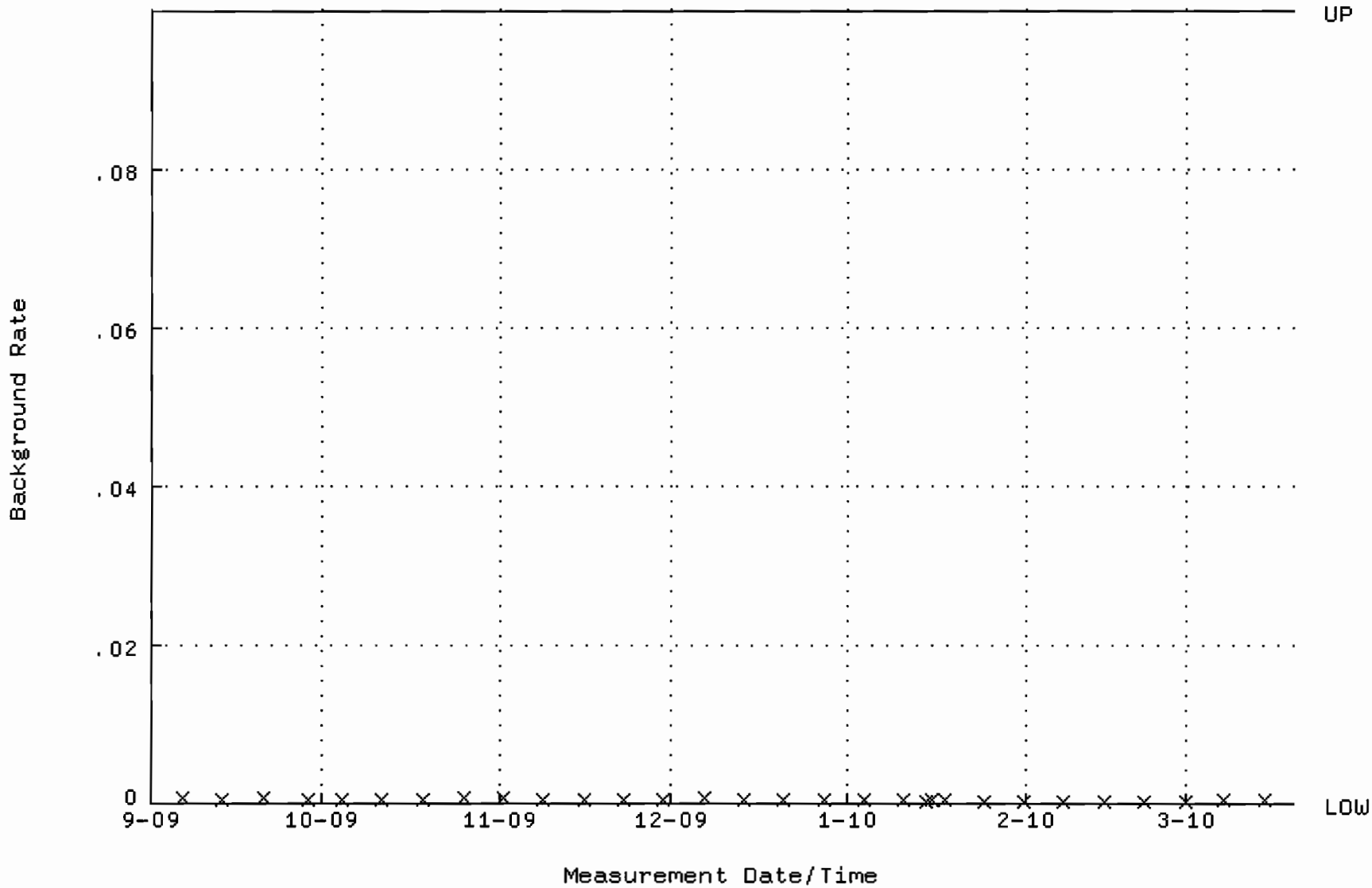
QA filename : DKA100:[ENV_ALPHA.QA.W]W130.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 17-SEP-2009 07:24:25 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 0.235120 through 0.263192



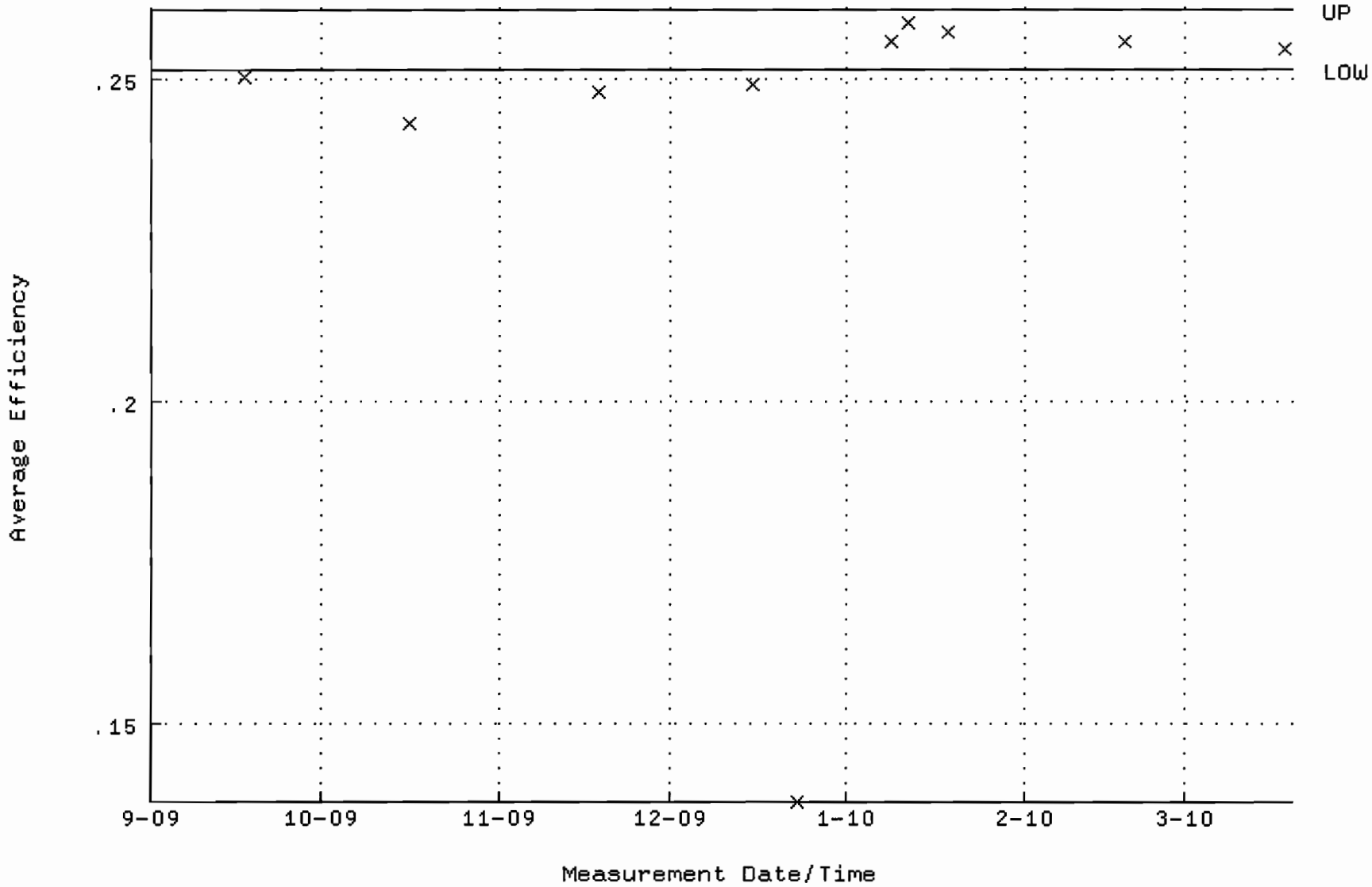
QA filename : DKA100:[ENV_ALPHA.QA.W]W130.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 17-SEP-2009 07:24:25 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 86.8592 through 96.7952



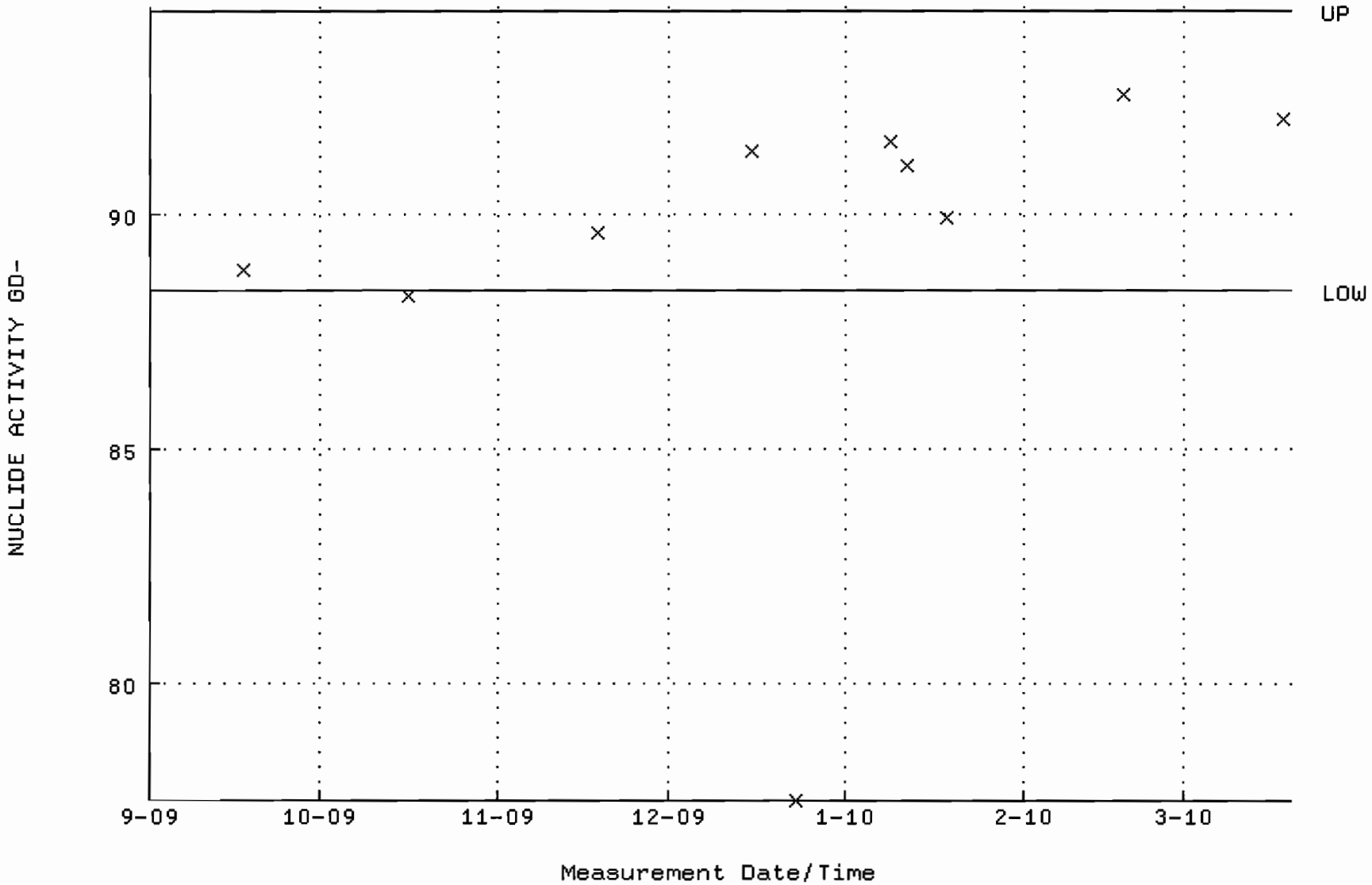
QA filename : DKA100:[ENV_ALPHA.QA.B]B130.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:41:24 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



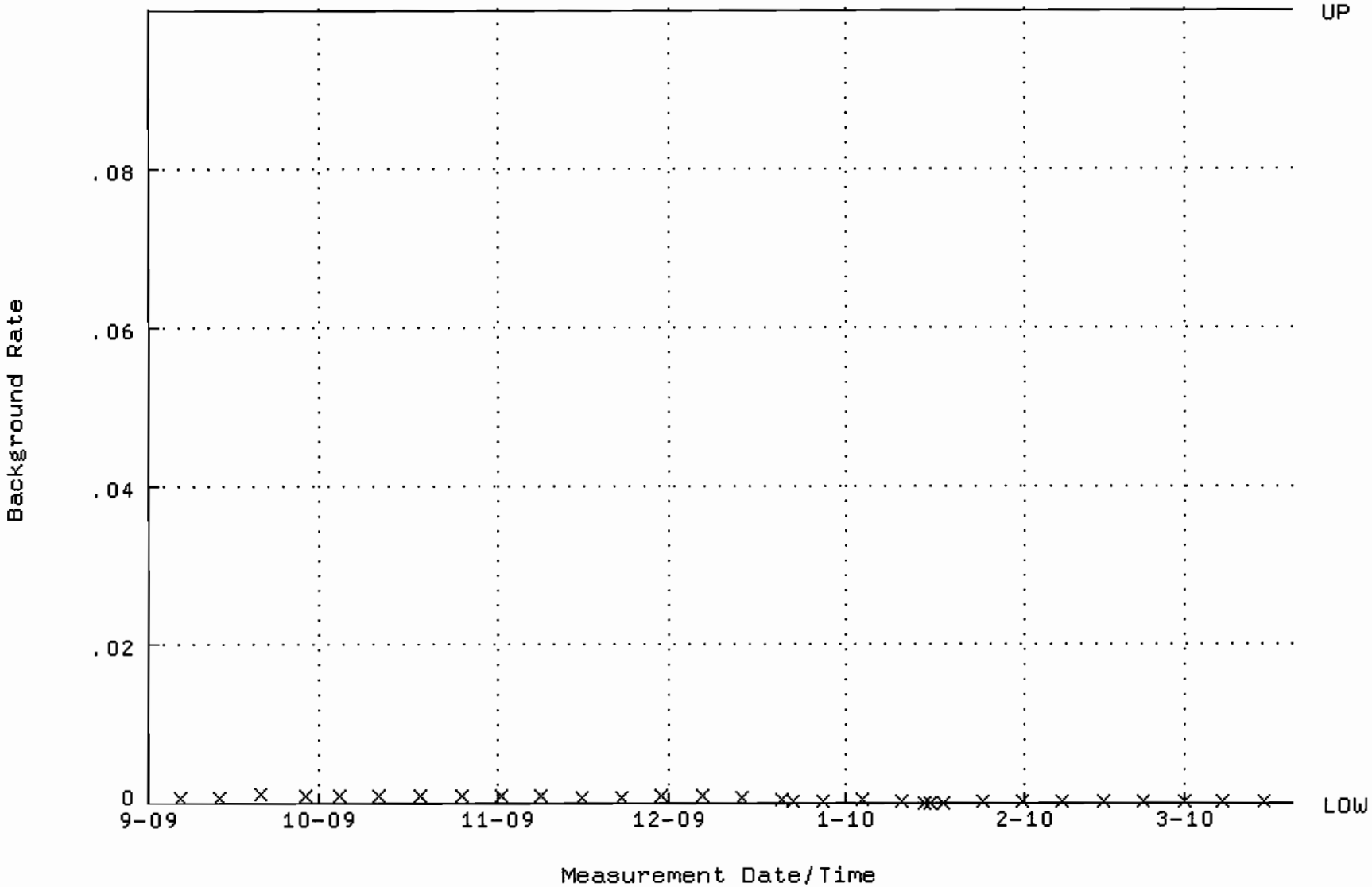
QA filename : DKA100:[ENV_ALPHA.QA.W]W131.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 17-SEP-2009 07:24:30 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 0.251694 through 0.260714



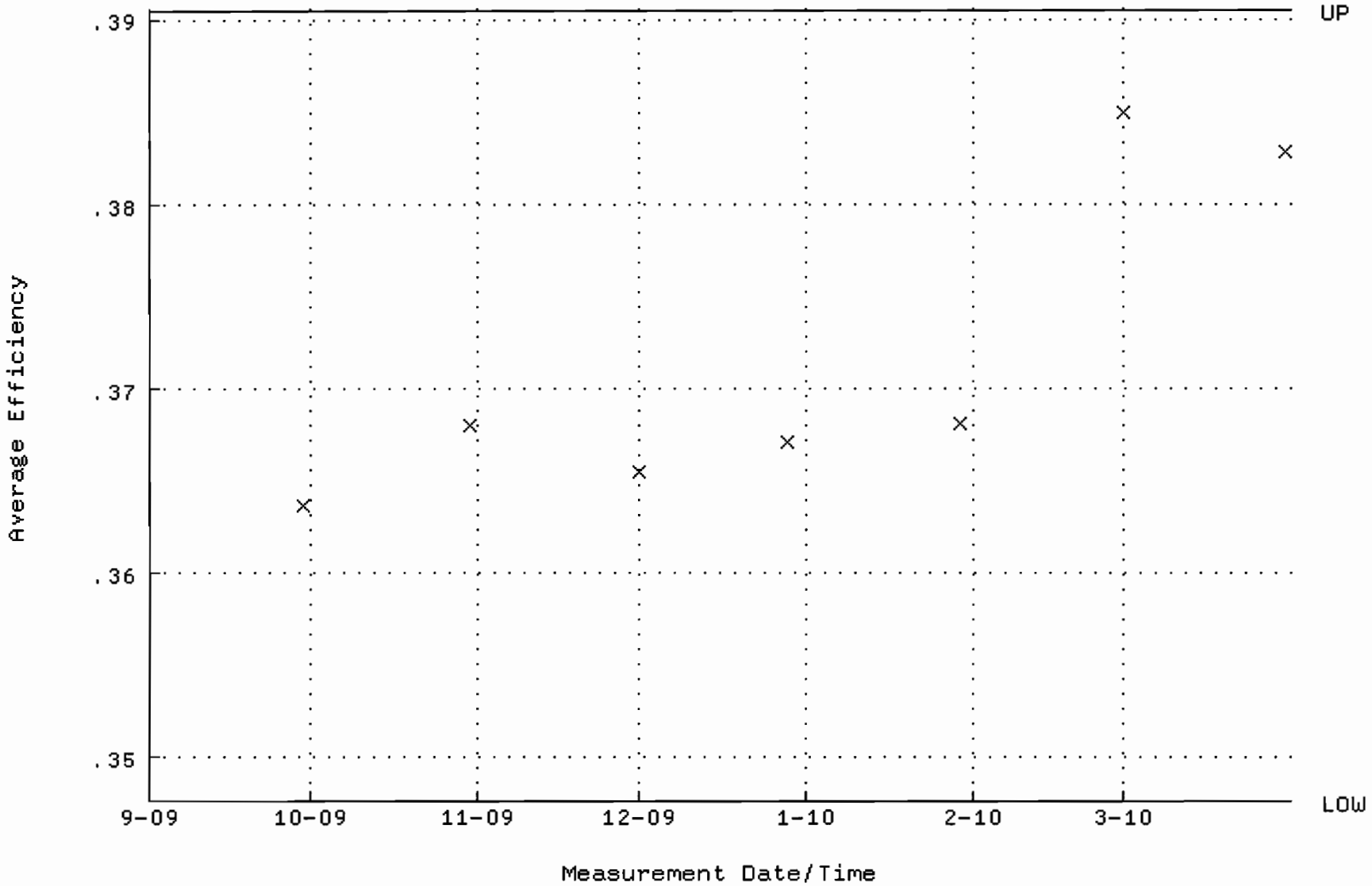
QA filename : DKA100:[ENV_ALPHA.QA.W]W131.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 17-SEP-2009 07:24:30 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 88.4061 through 94.3891



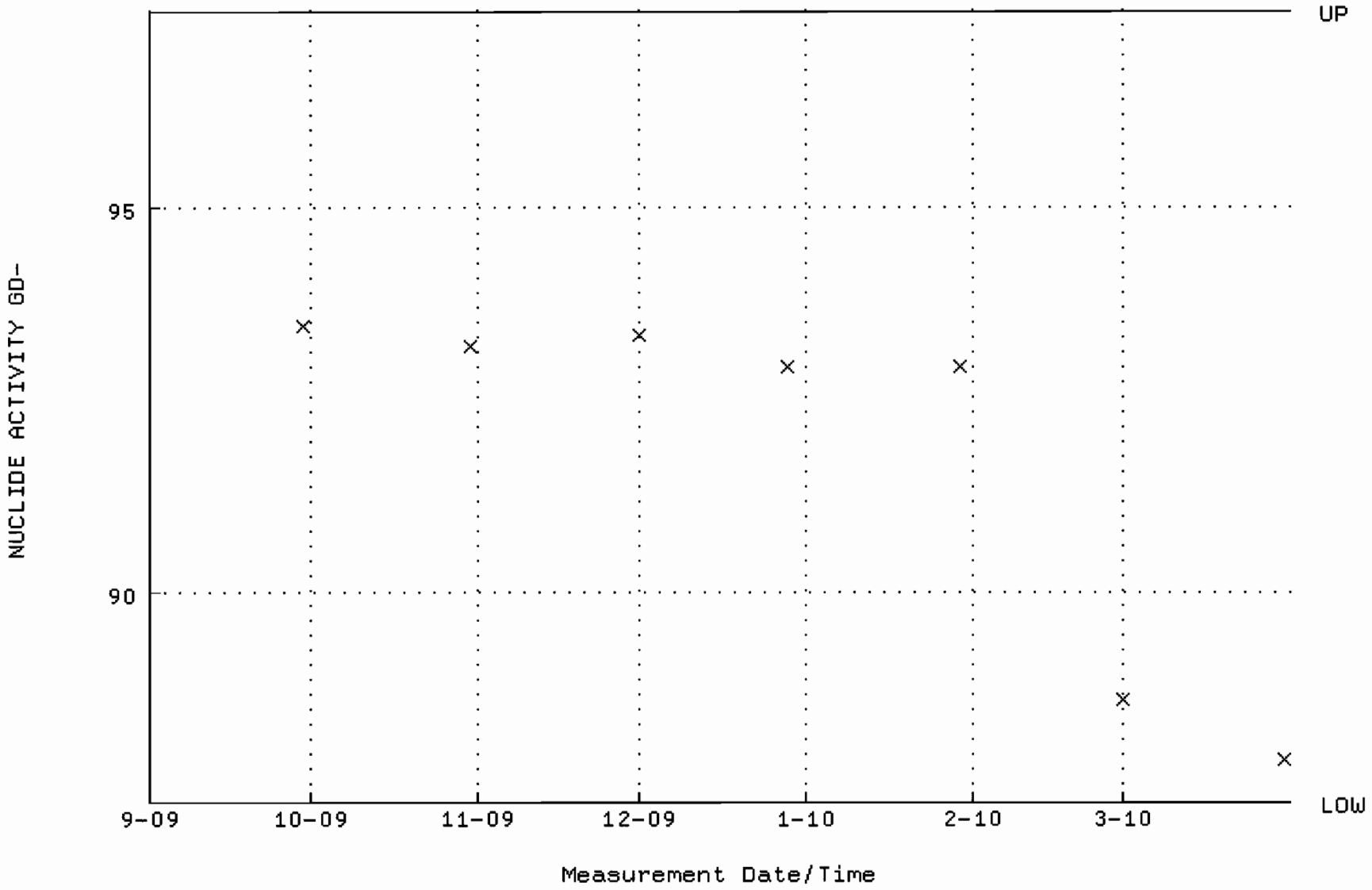
QA filename : DKA100:[ENV_ALPHA.QA.B]B131.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:41:28 through 19-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



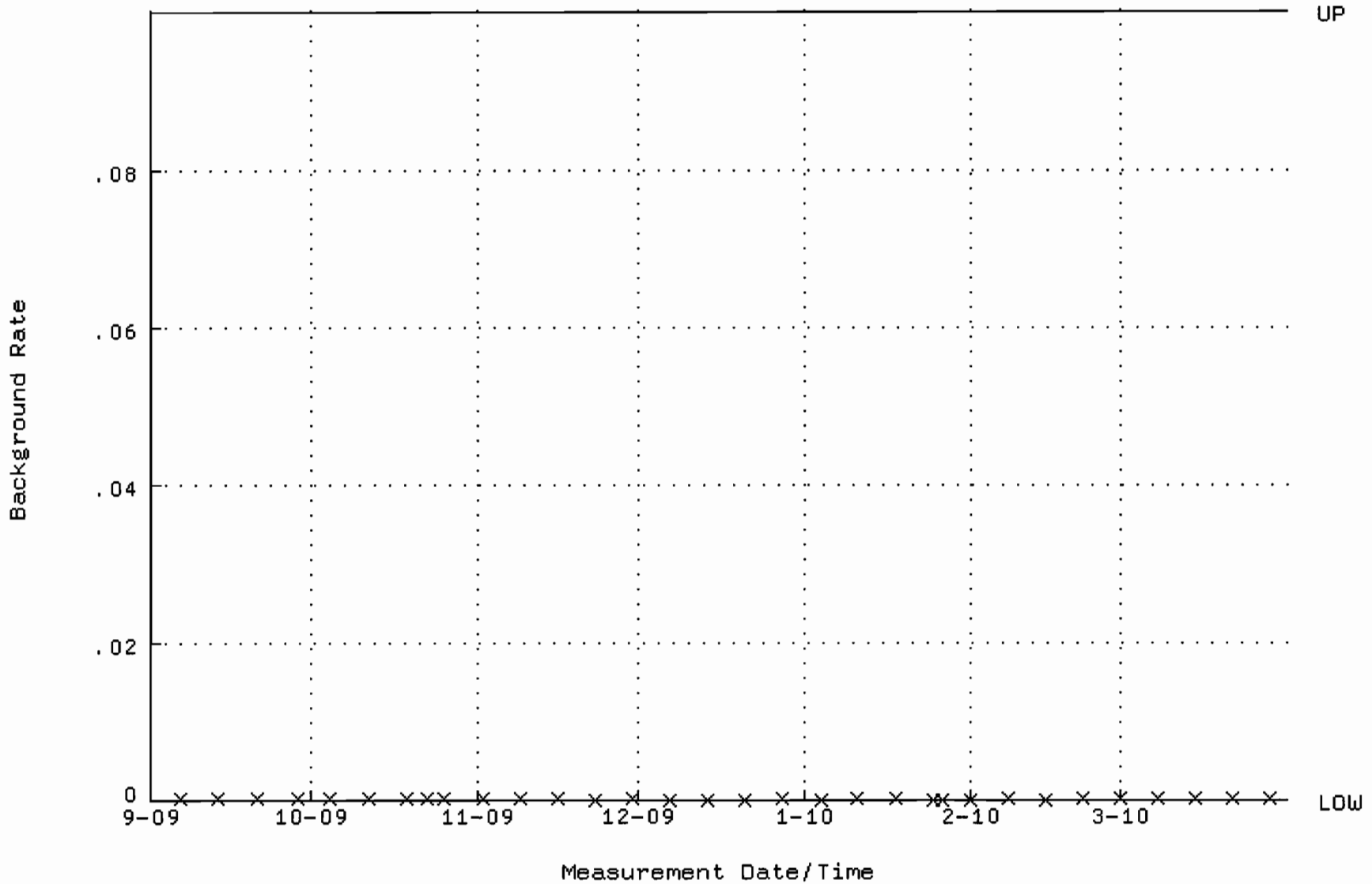
QA filename : DKA100:[ENV_ALPHA.QA.W]W217.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:37:06 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.347554 through 0.390494



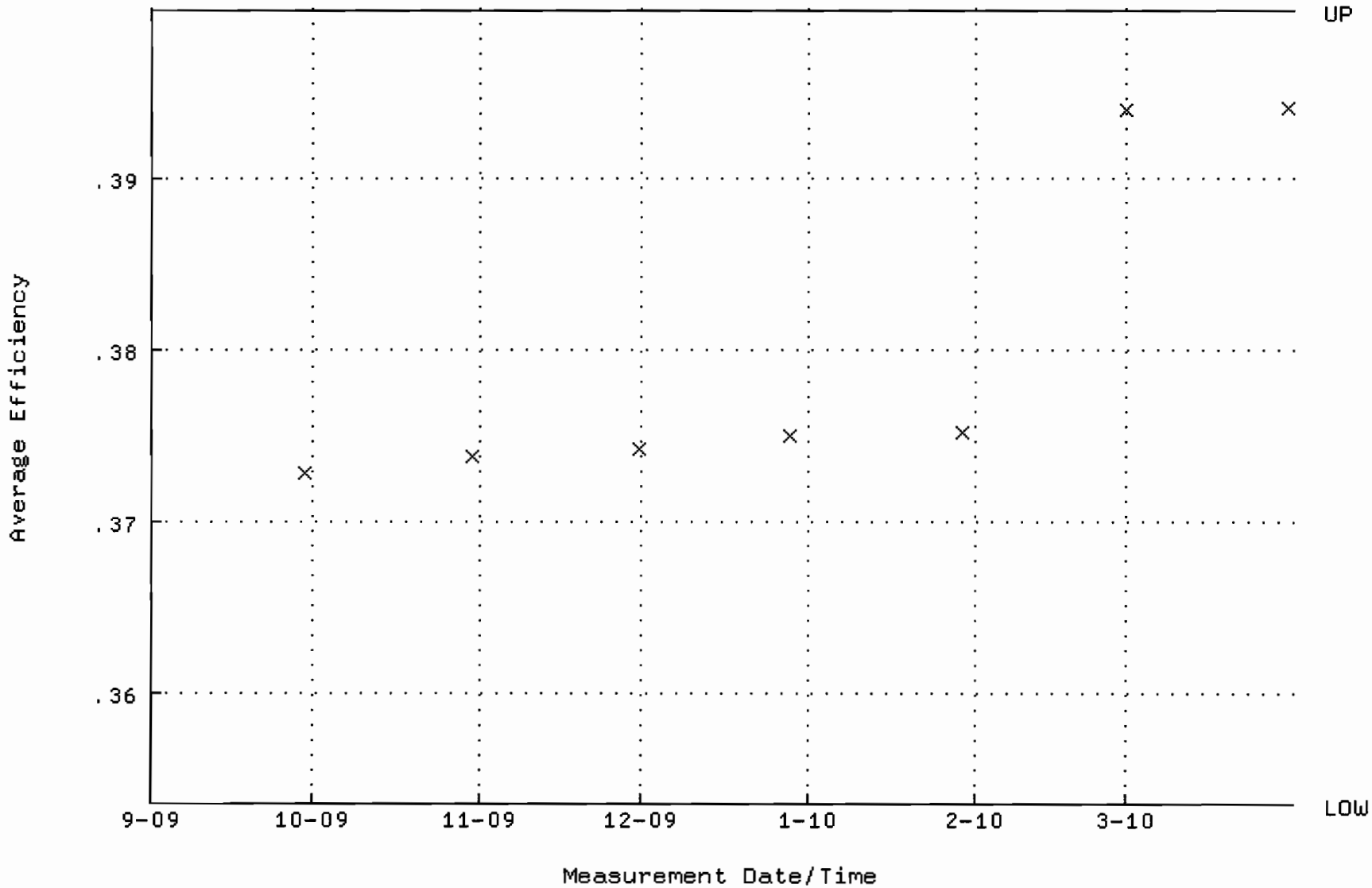
QA filename : DKA100:[ENV_ALPHA.QA.W]W217.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:37:06 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 87.2610 through 97.5406



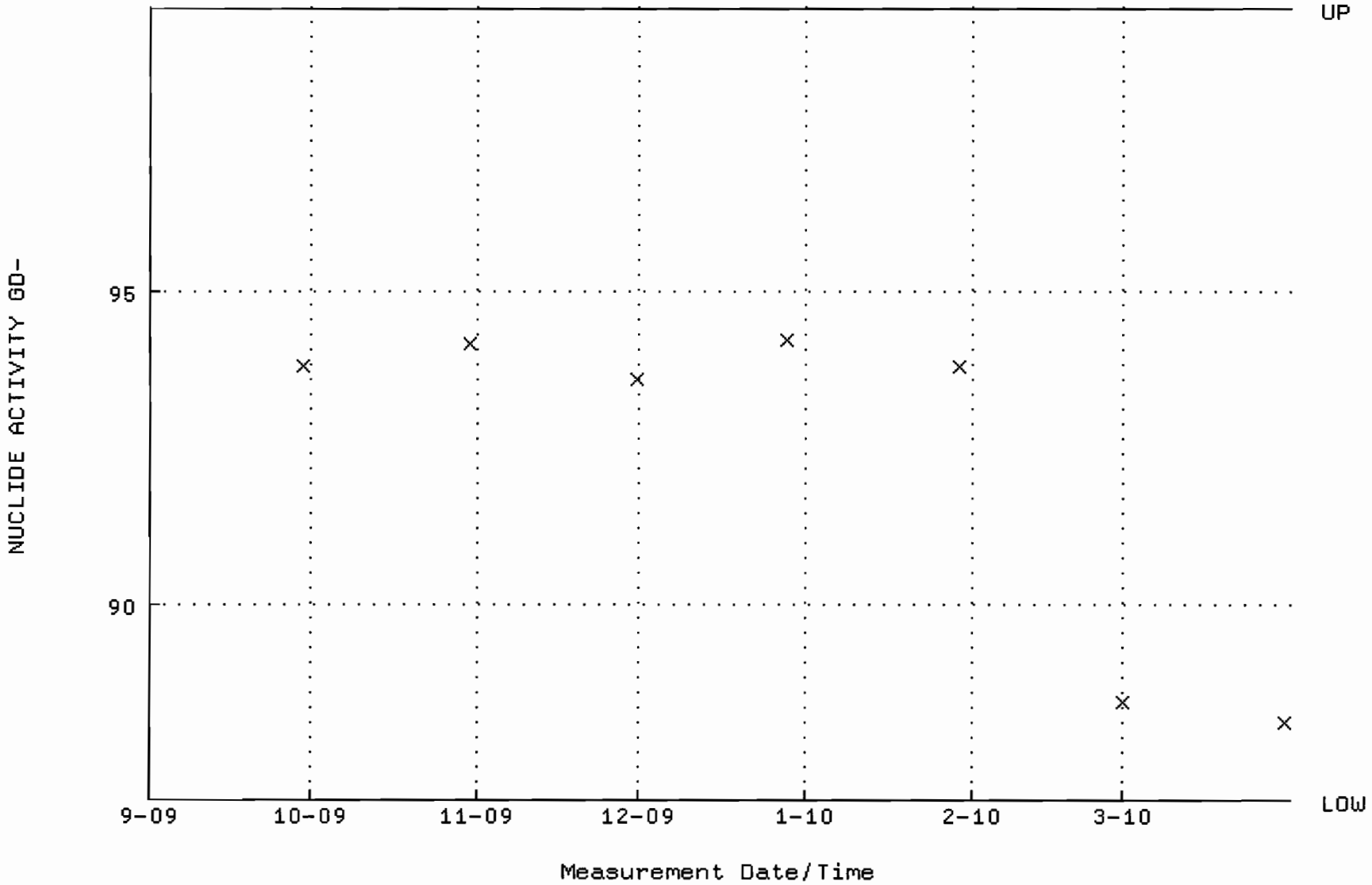
QA filename : DKA100:[ENV_ALPHA.QA.B]B217.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:48:58 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



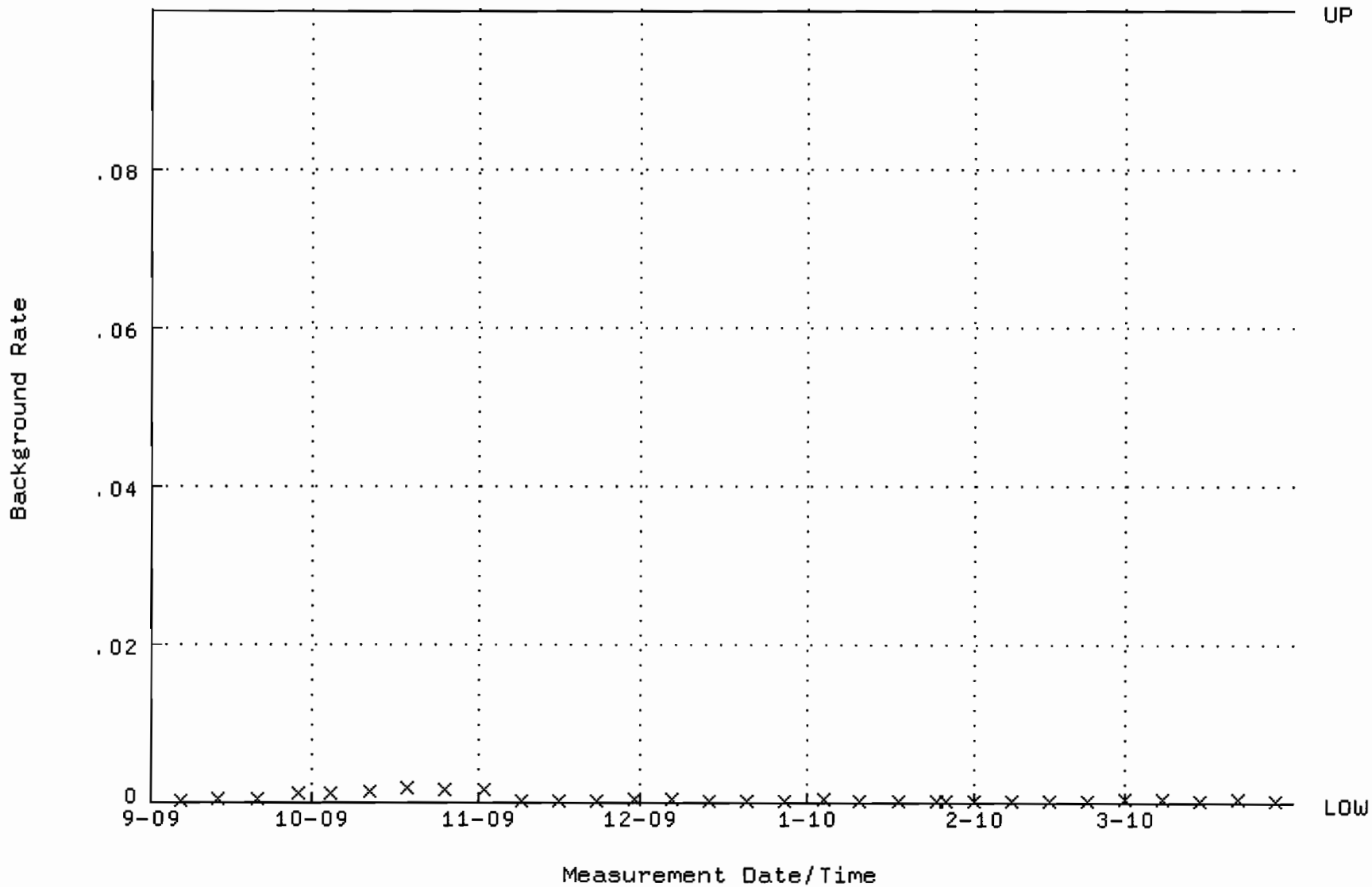
QA filename : DKA100:[ENV_ALPHA.QA.W]W218.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:37:13 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.353641 through 0.399809



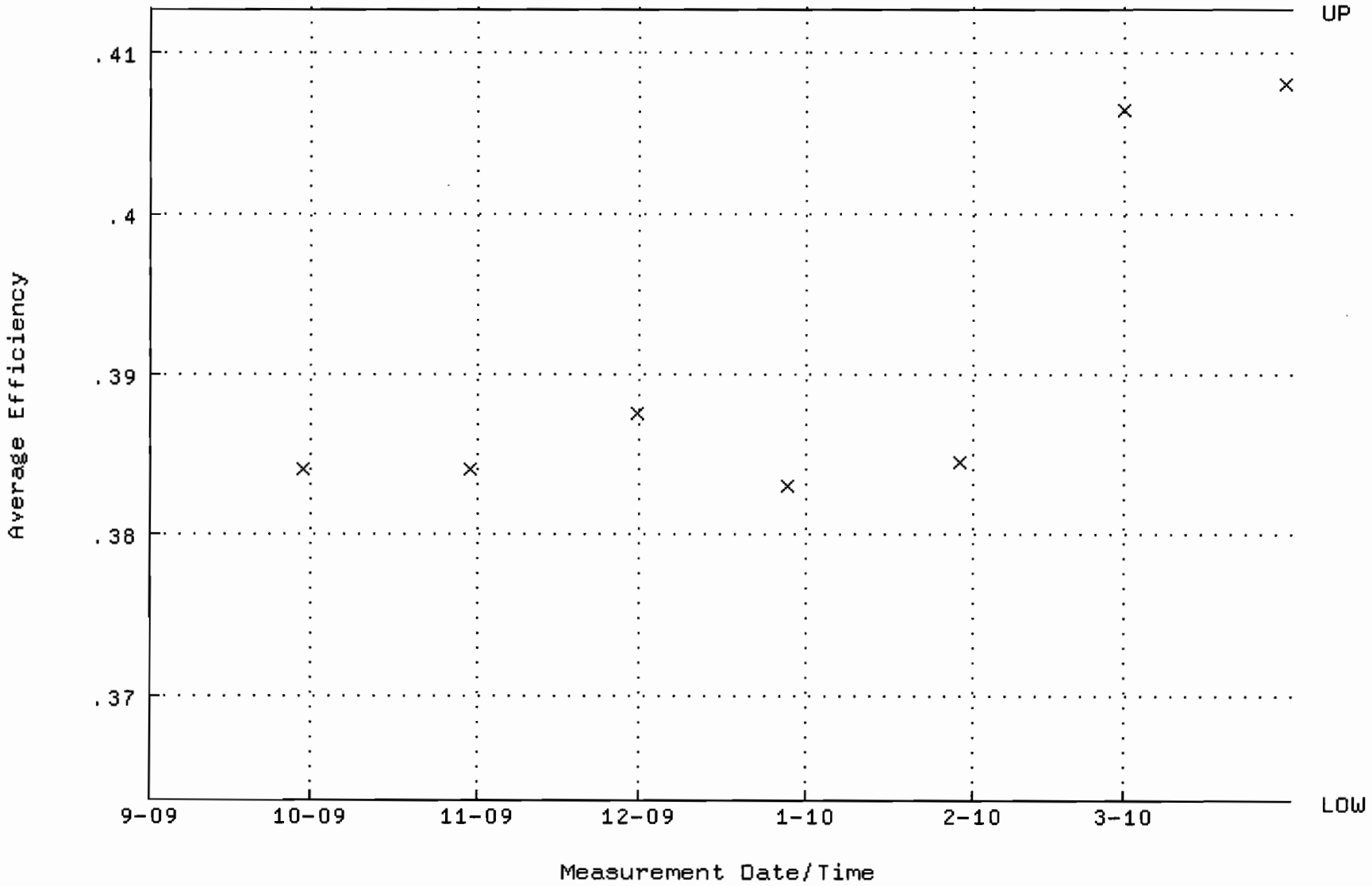
QA filename : DKA100:[ENV_ALPHA.QA.W]W218.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:37:13 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 86.8733 through 99.5183



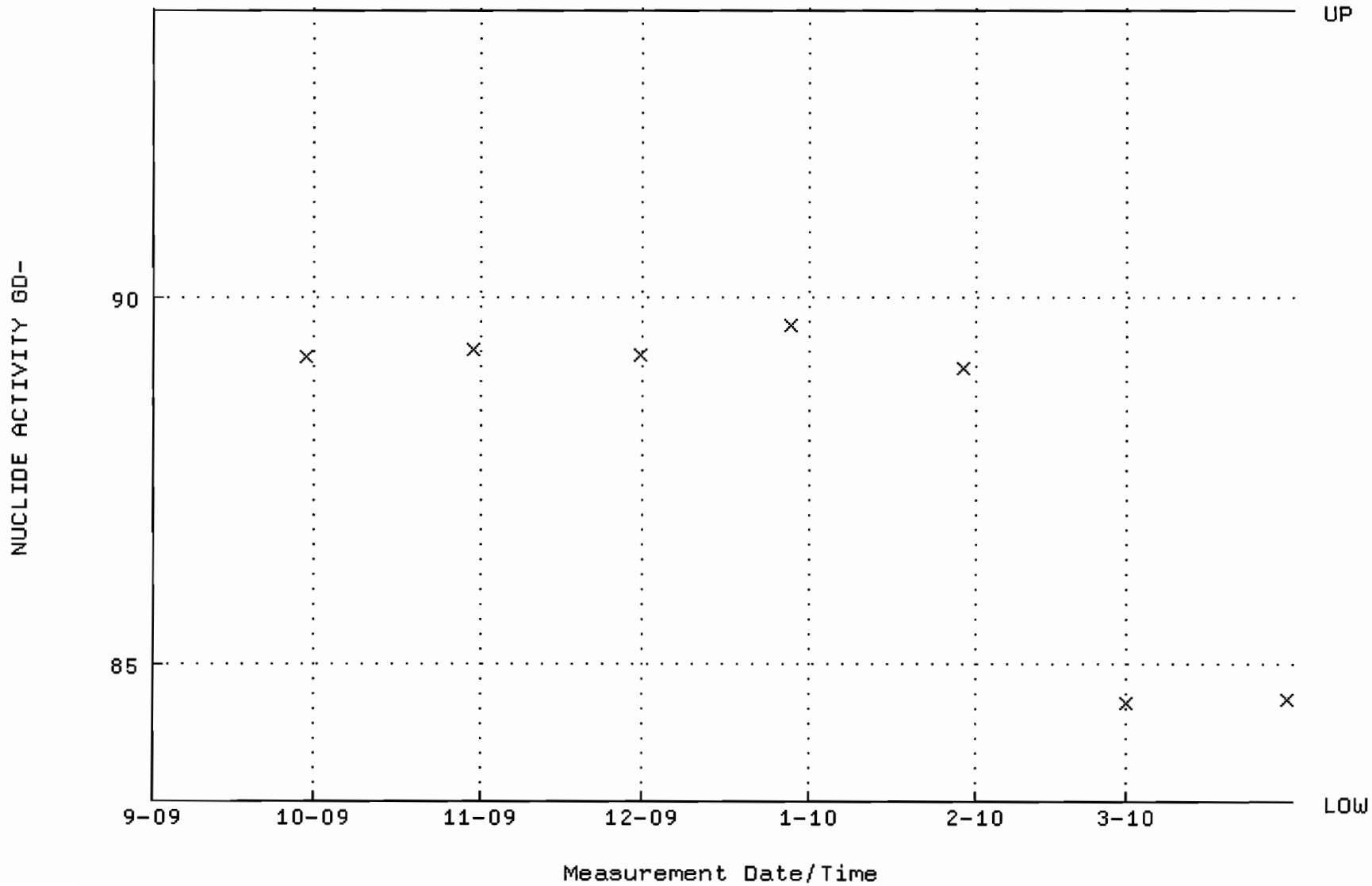
QA filename : DKA100:[ENV_ALPHA.QA.B]B218.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:49:02 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



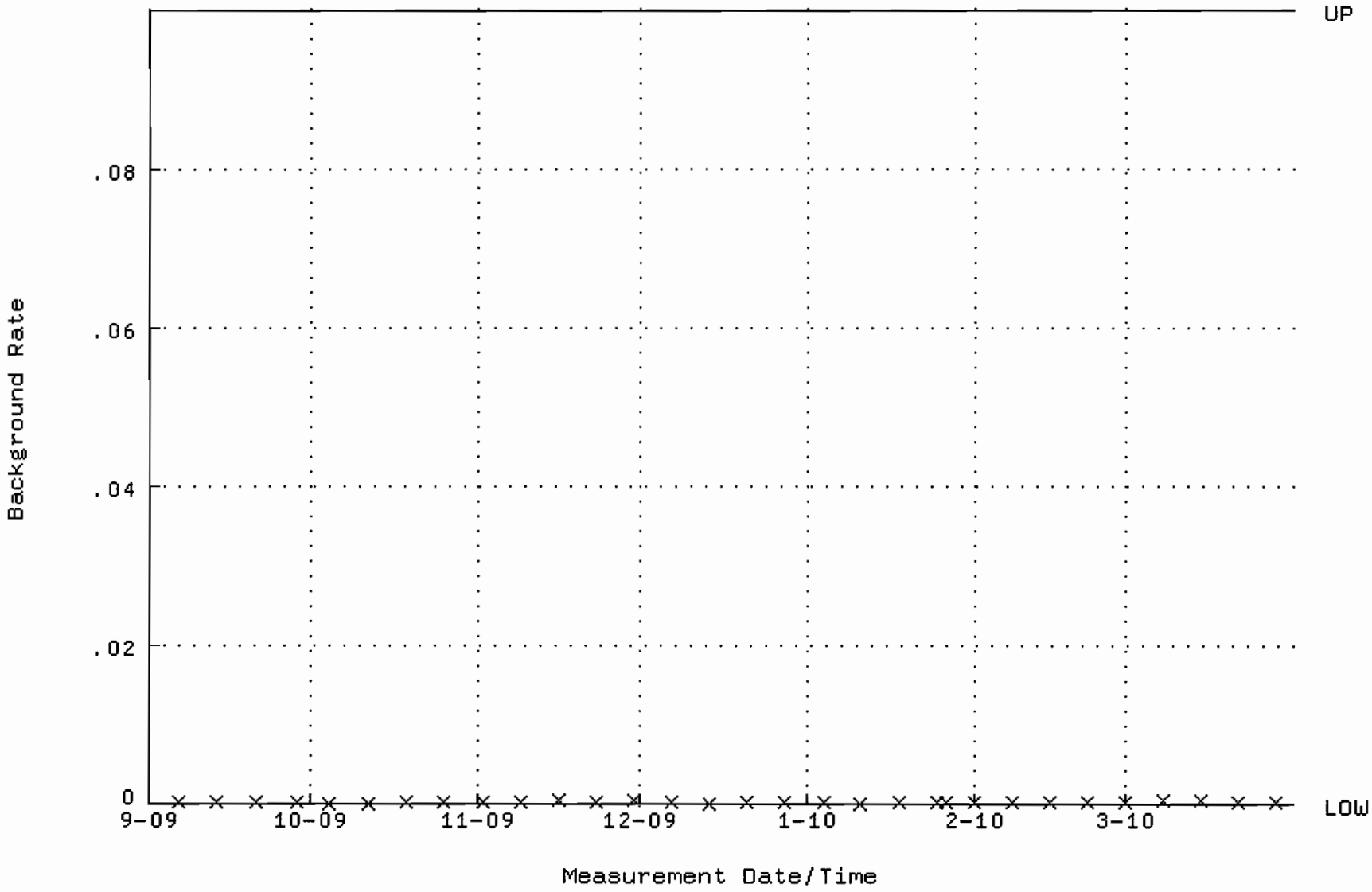
QA filename : DKA100:[ENV_ALPHA.QA.W]W219.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:37:19 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.363471 through 0.412689



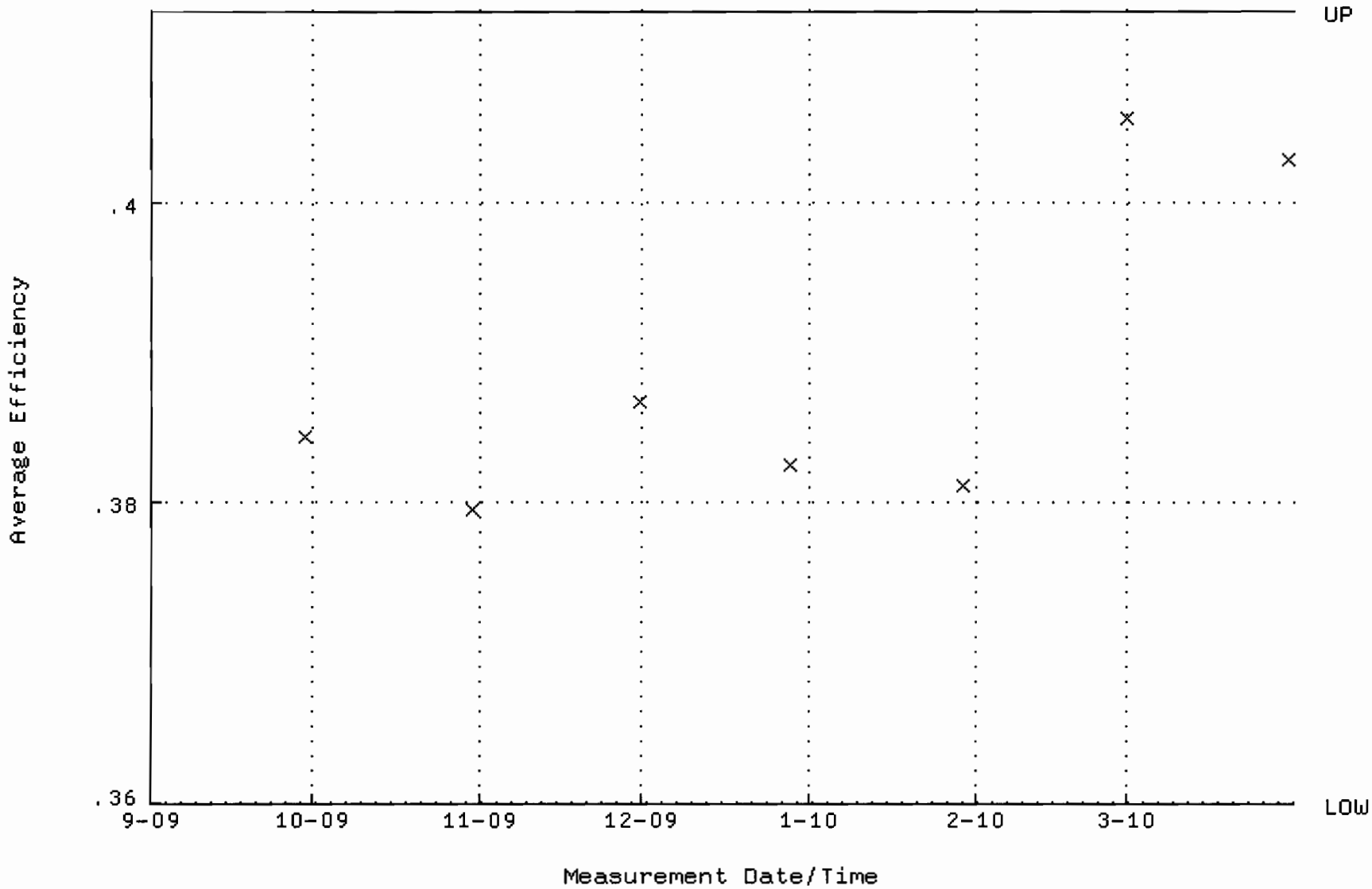
QA filename : DKA100:[ENV_ALPHA.QA.W]W219.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:37:19 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 83.1251 through 93.8923



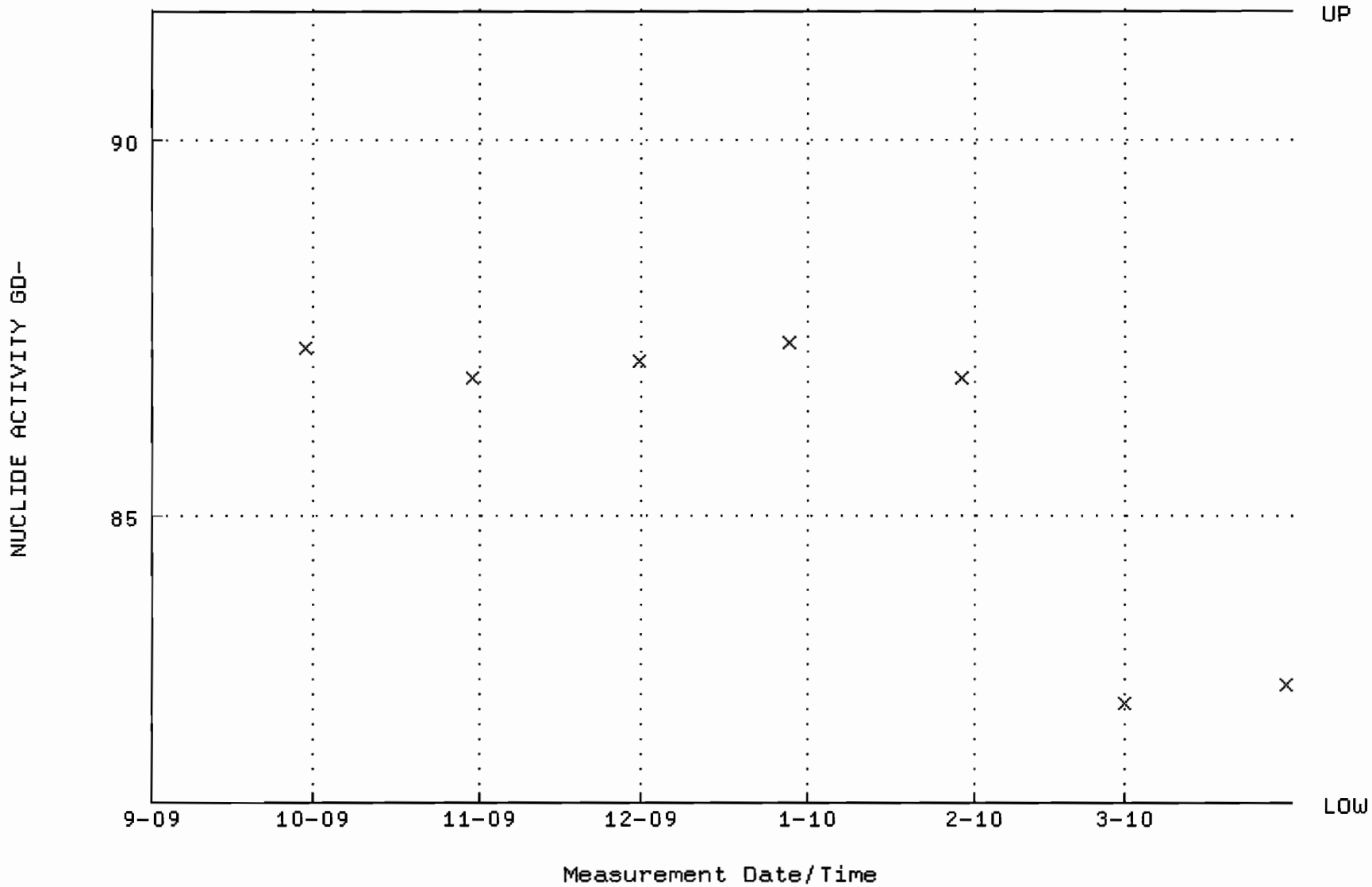
QA filename : DKA100:[ENV_ALPHA.QA.B]B219.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:49:07 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



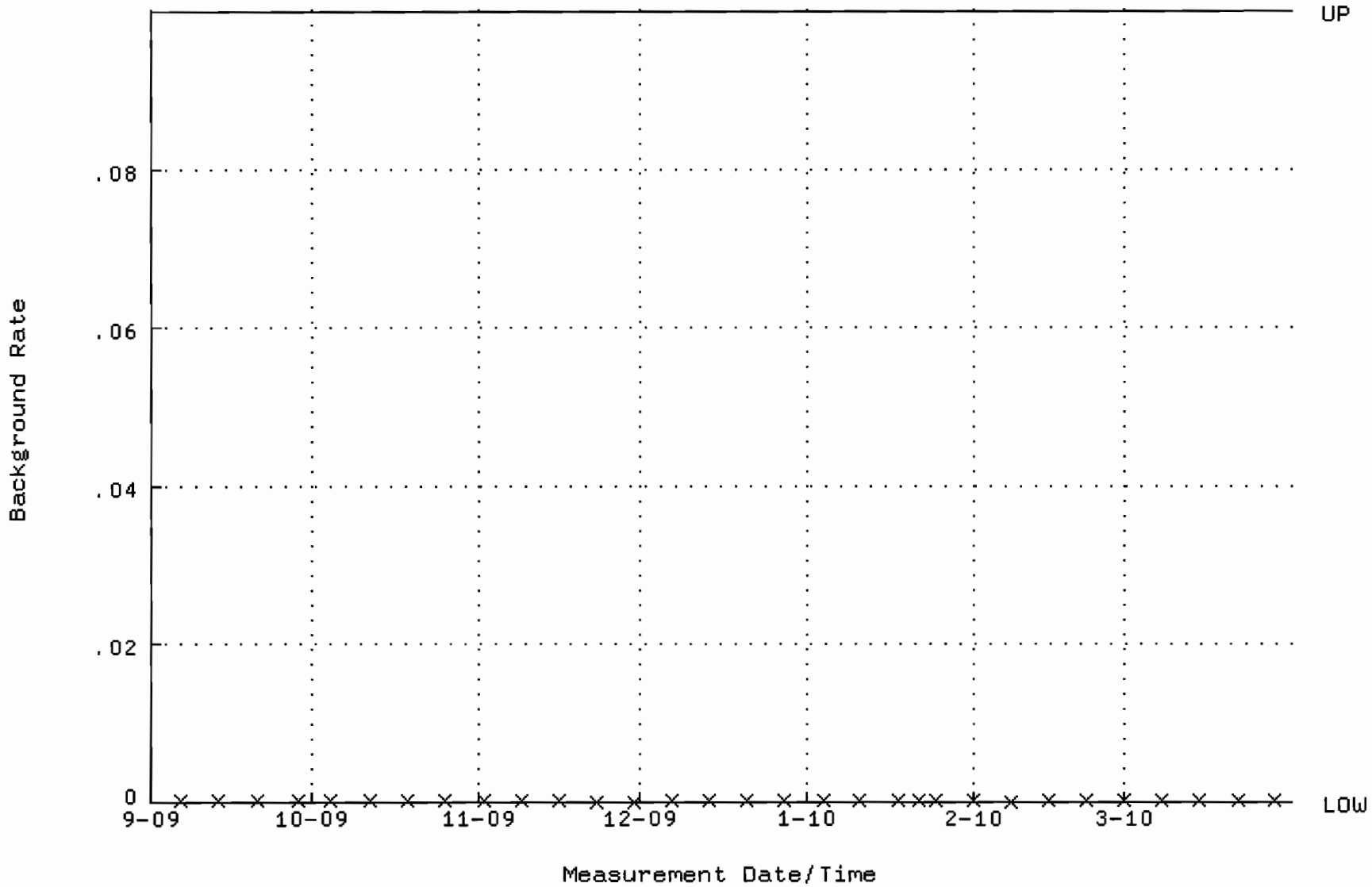
QA filename : DKA100:[ENV_ALPHA.QA.W]W245.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:39:42 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.359838 through 0.412714



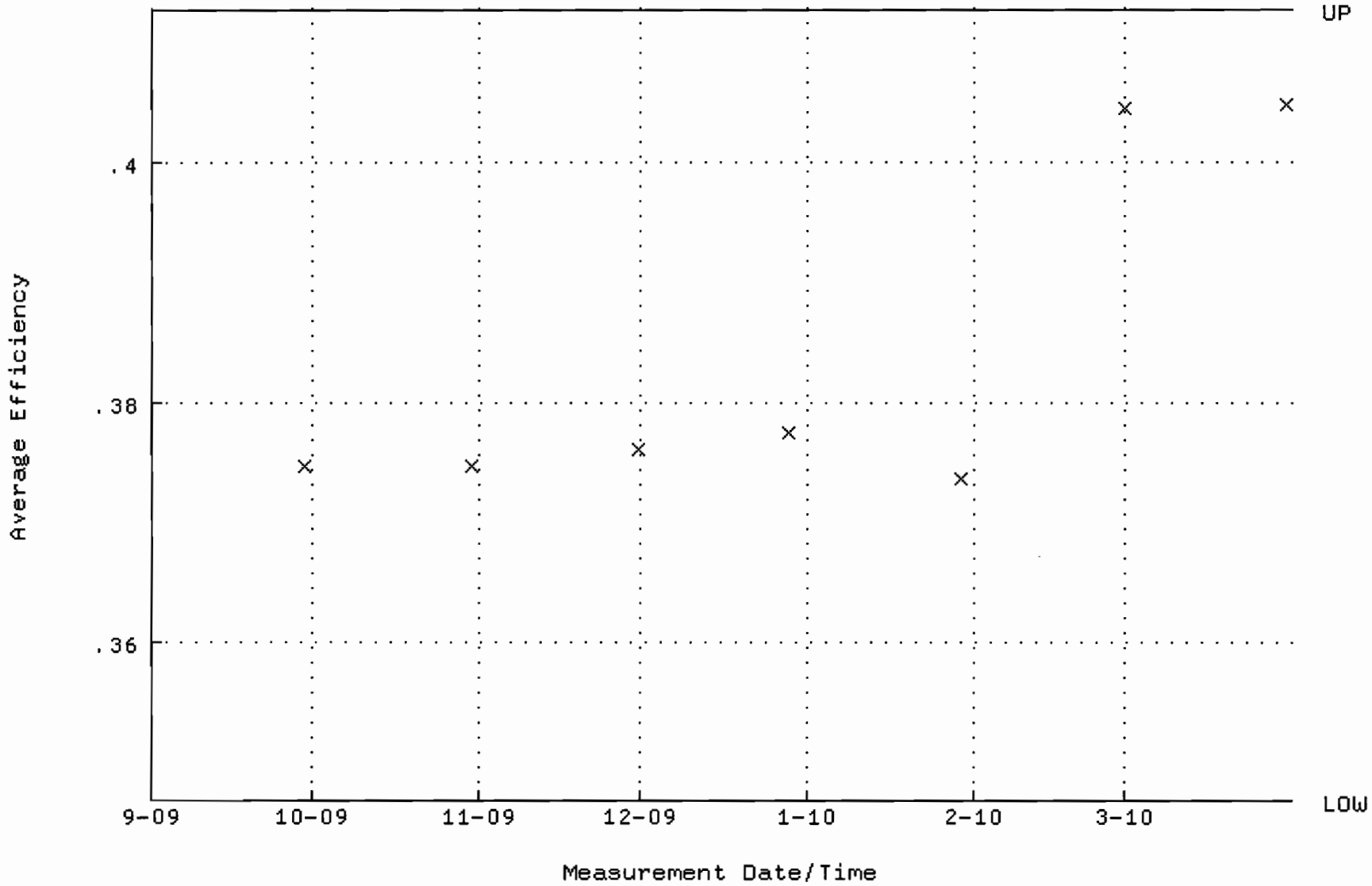
QA filename : DKA100:[ENV_ALPHA.QA.W]W245.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:39:42 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 81.1644 through 91.7216



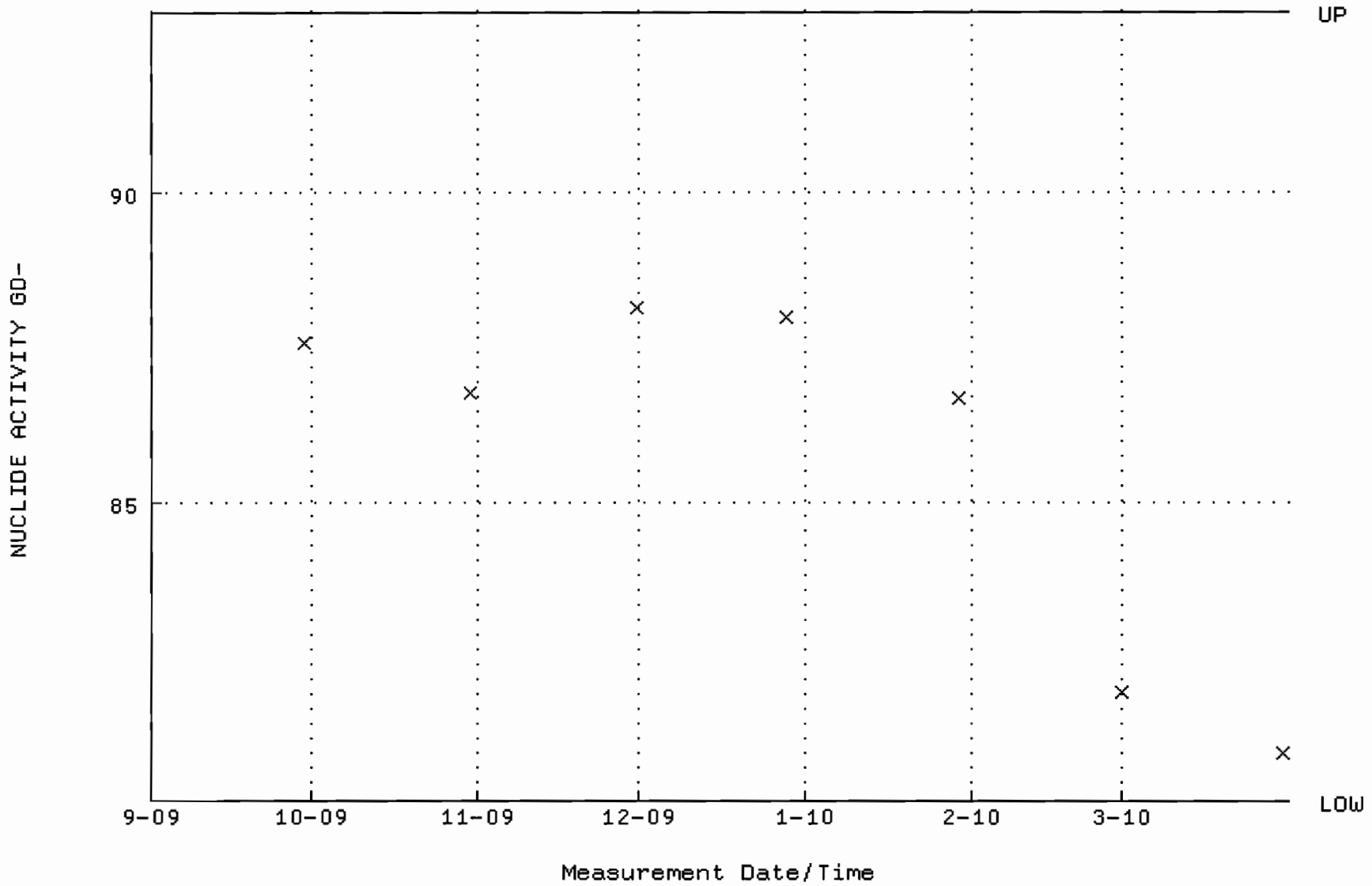
QA filename : DKA100:[ENV_ALPHA.QA.B]B245.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:51:07 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



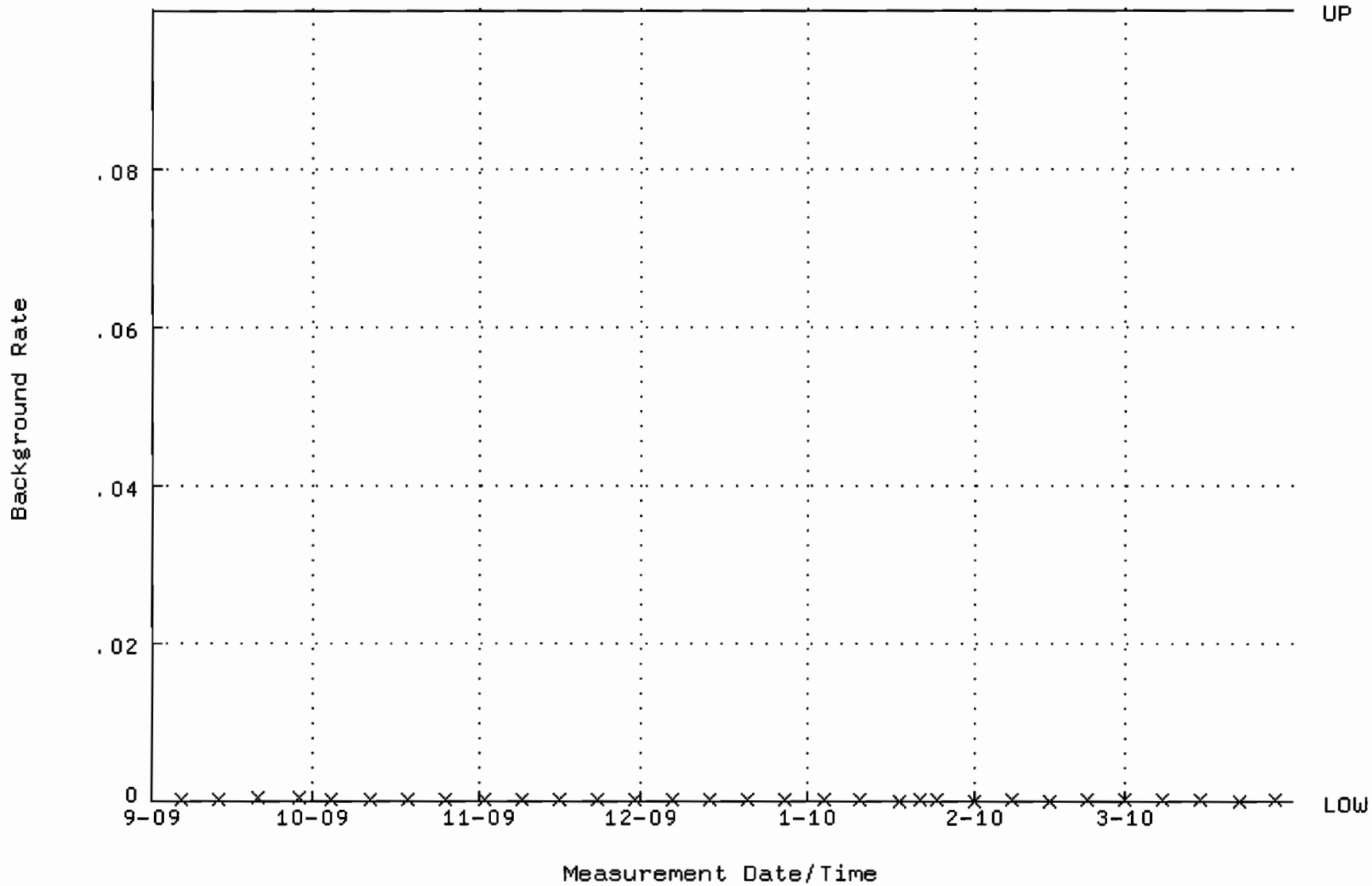
QA filename : DKA100:[ENV_ALPHA.QA.W]W246.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:39:48 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.346753 through 0.412735



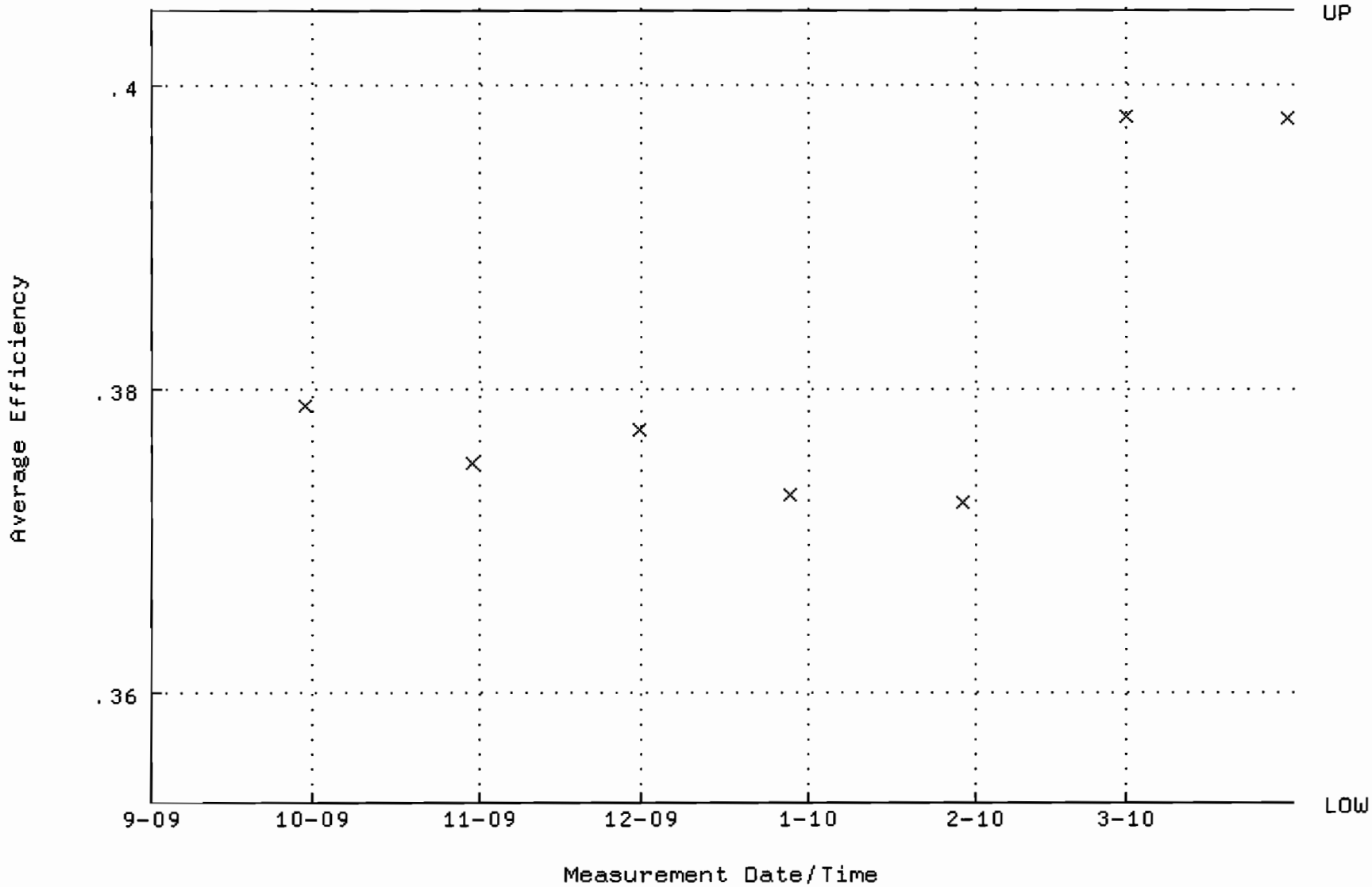
QA filename : DKA100:[ENV_ALPHA.QA.W]W246.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:39:48 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 80.1657 through 92.9177



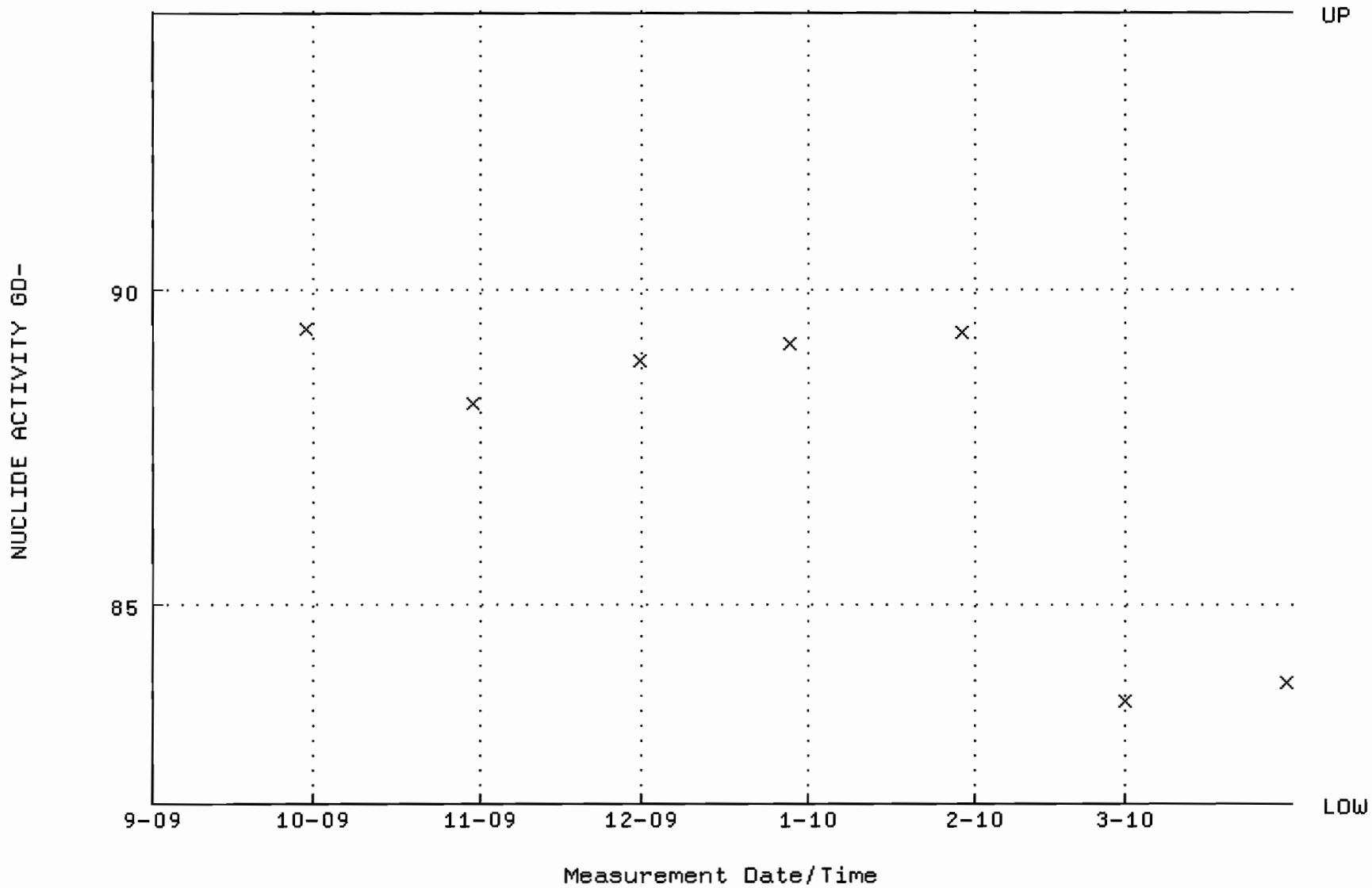
QA filename : DKA100:[ENV_ALPHA.QA.B]B246.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:51:12 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



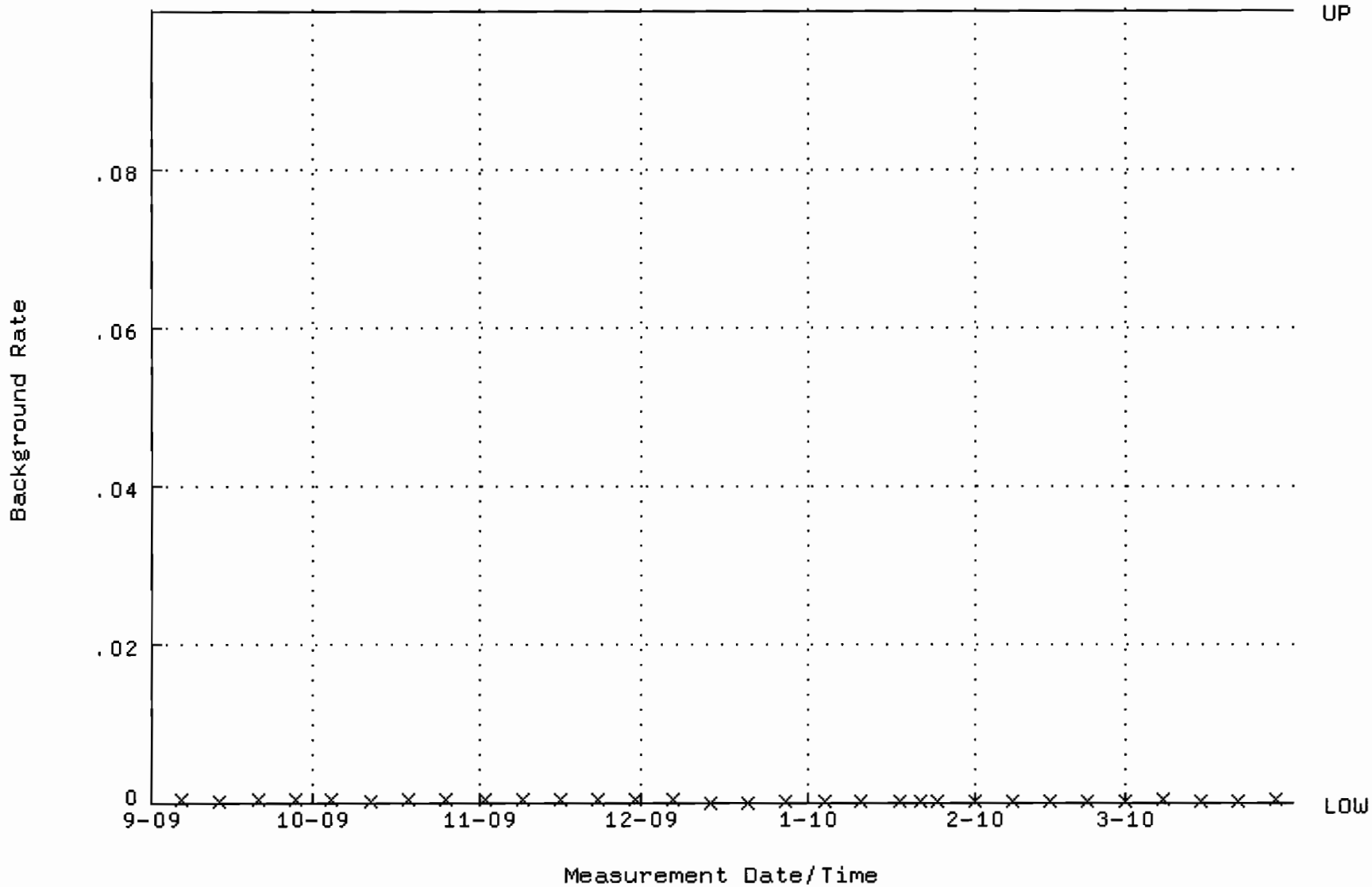
QA filename : DKA100:[ENV_ALPHA.QA.W]W247.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:39:55 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.352698 through 0.404942



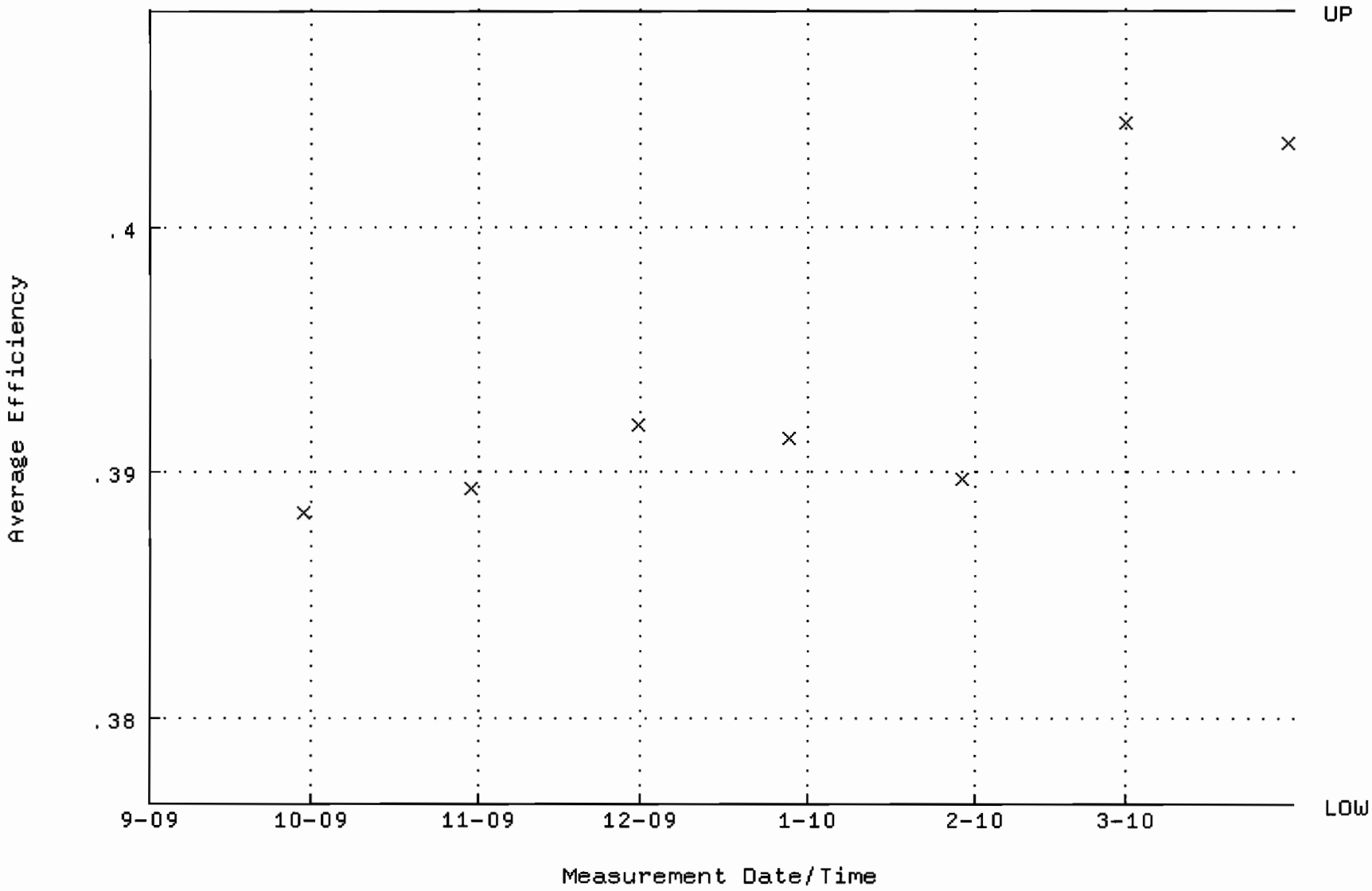
QA filename : DKA100:[ENV_ALPHA.QA.W]W247.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:39:55 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 81.8318 through 94.4164



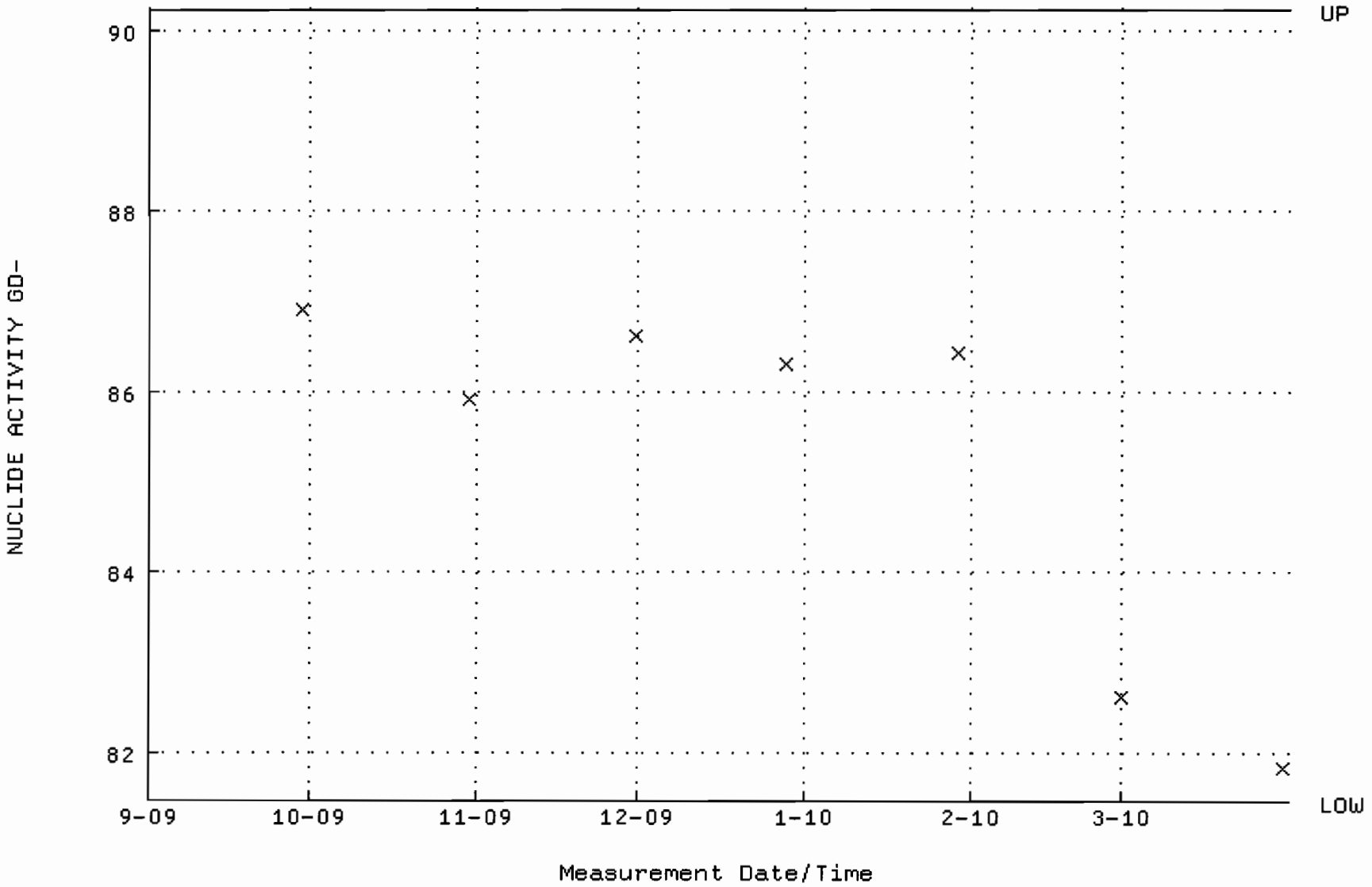
QA filename : DKA100:[ENV_ALPHA.QA.B]B247.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:51:16 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



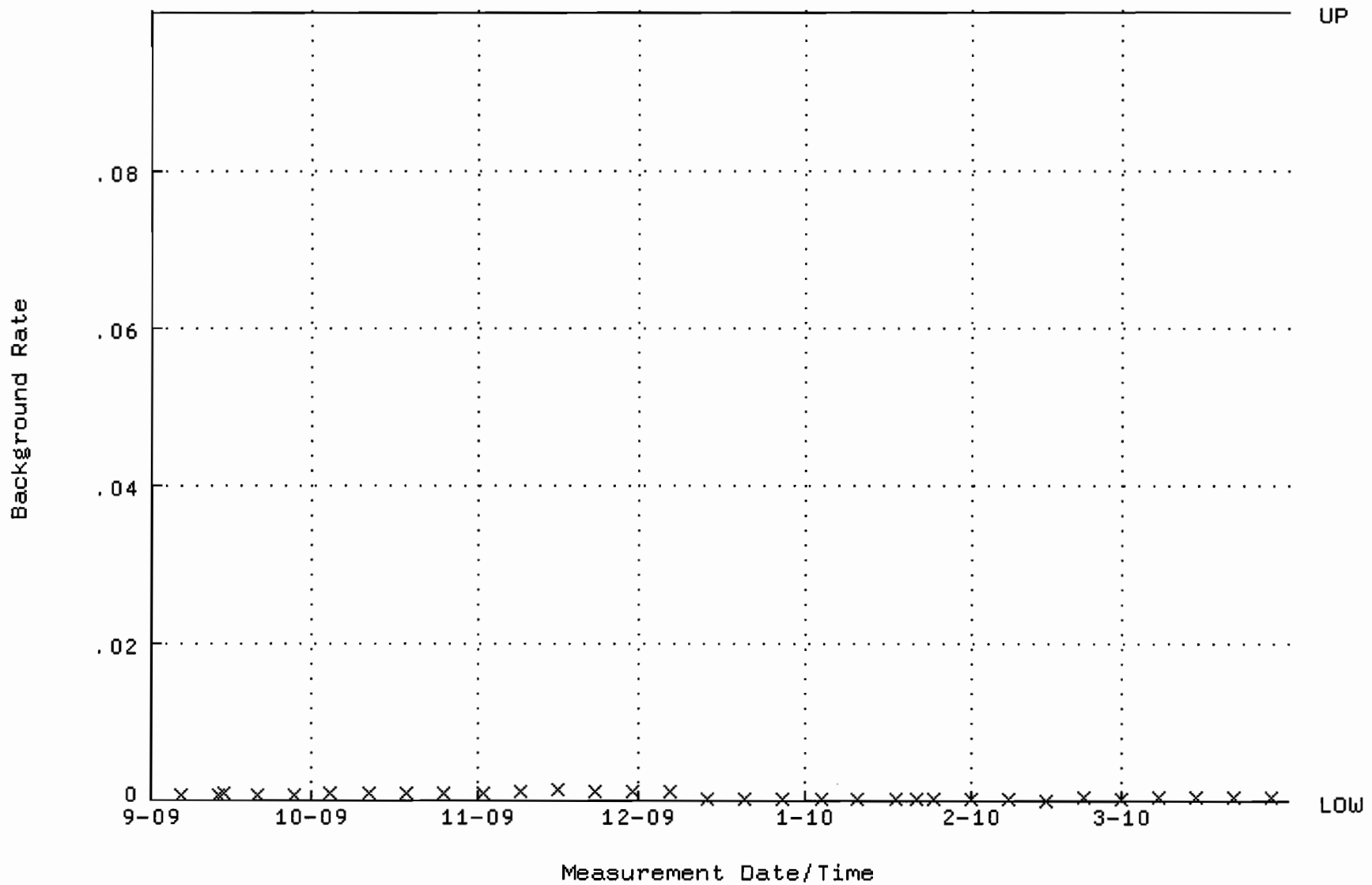
QA filename : DKA100:[ENV_ALPHA.QA.W]W248.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:40:01 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.376481 through 0.408807



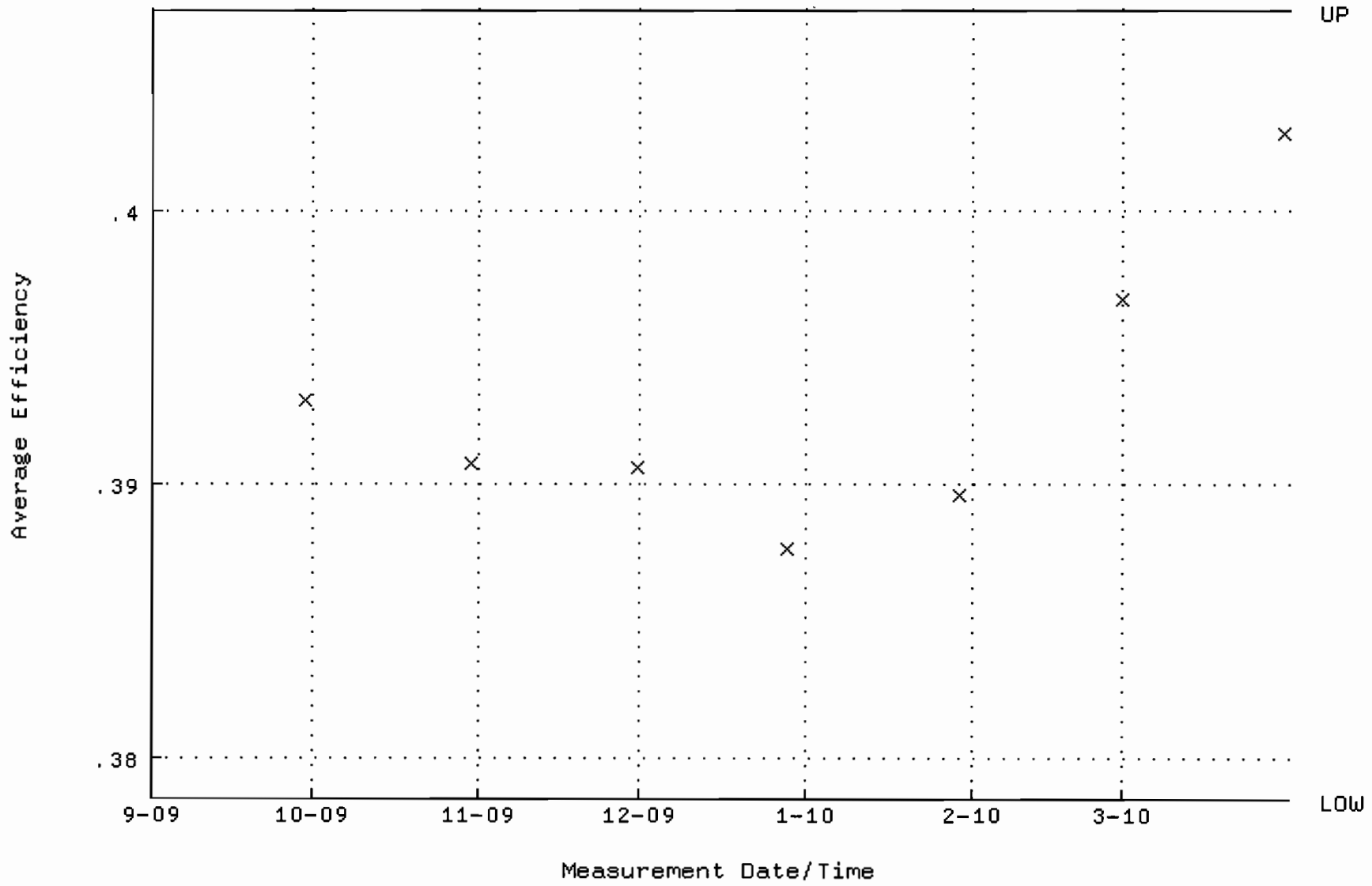
QA filename : DKA100:[ENV_ALPHA.QA.W]W248.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:40:01 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 81.4745 through 90.2275



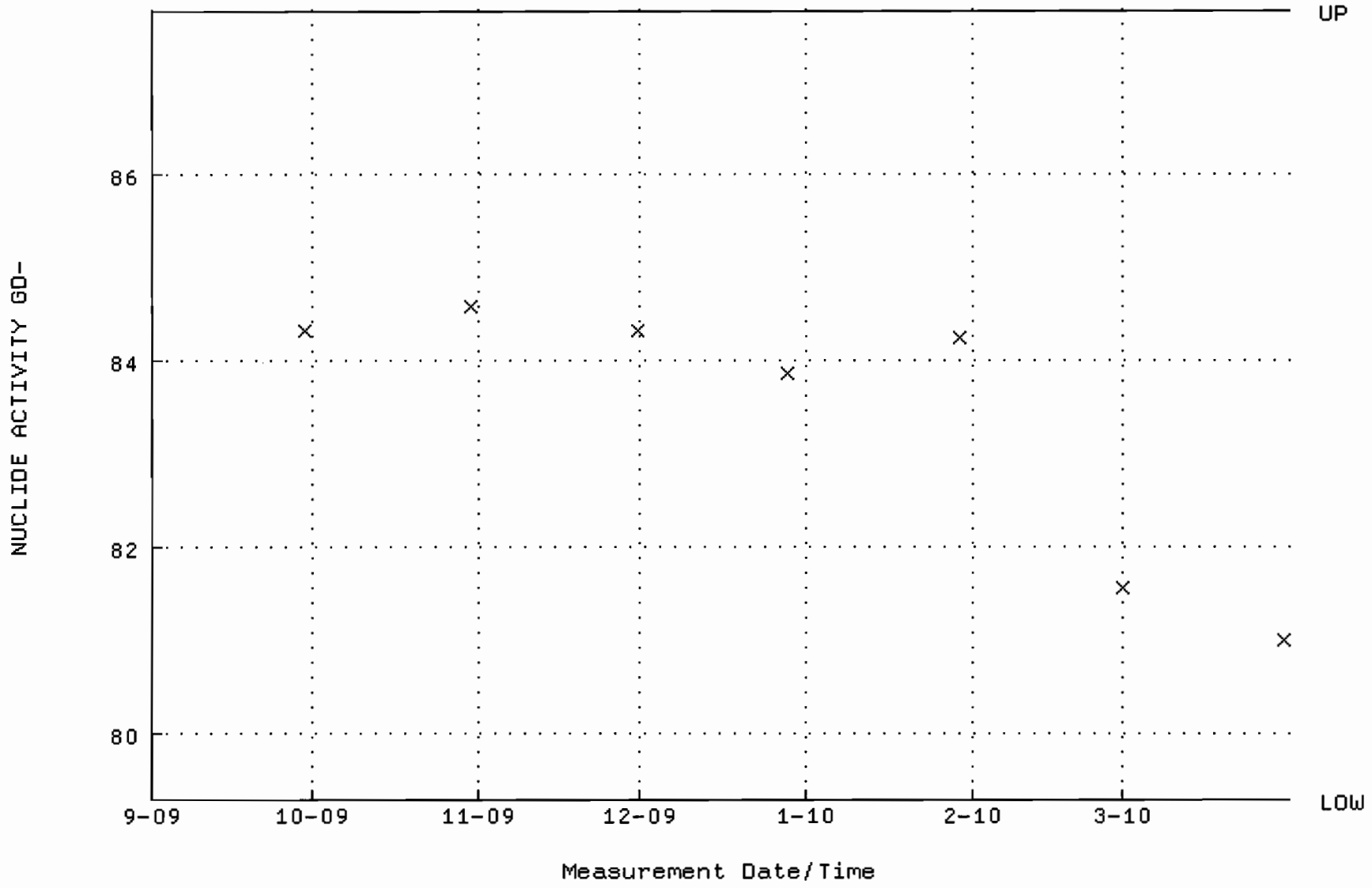
QA filename : DKA100:[ENV_ALPHA.QA.B]B248.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:51:21 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



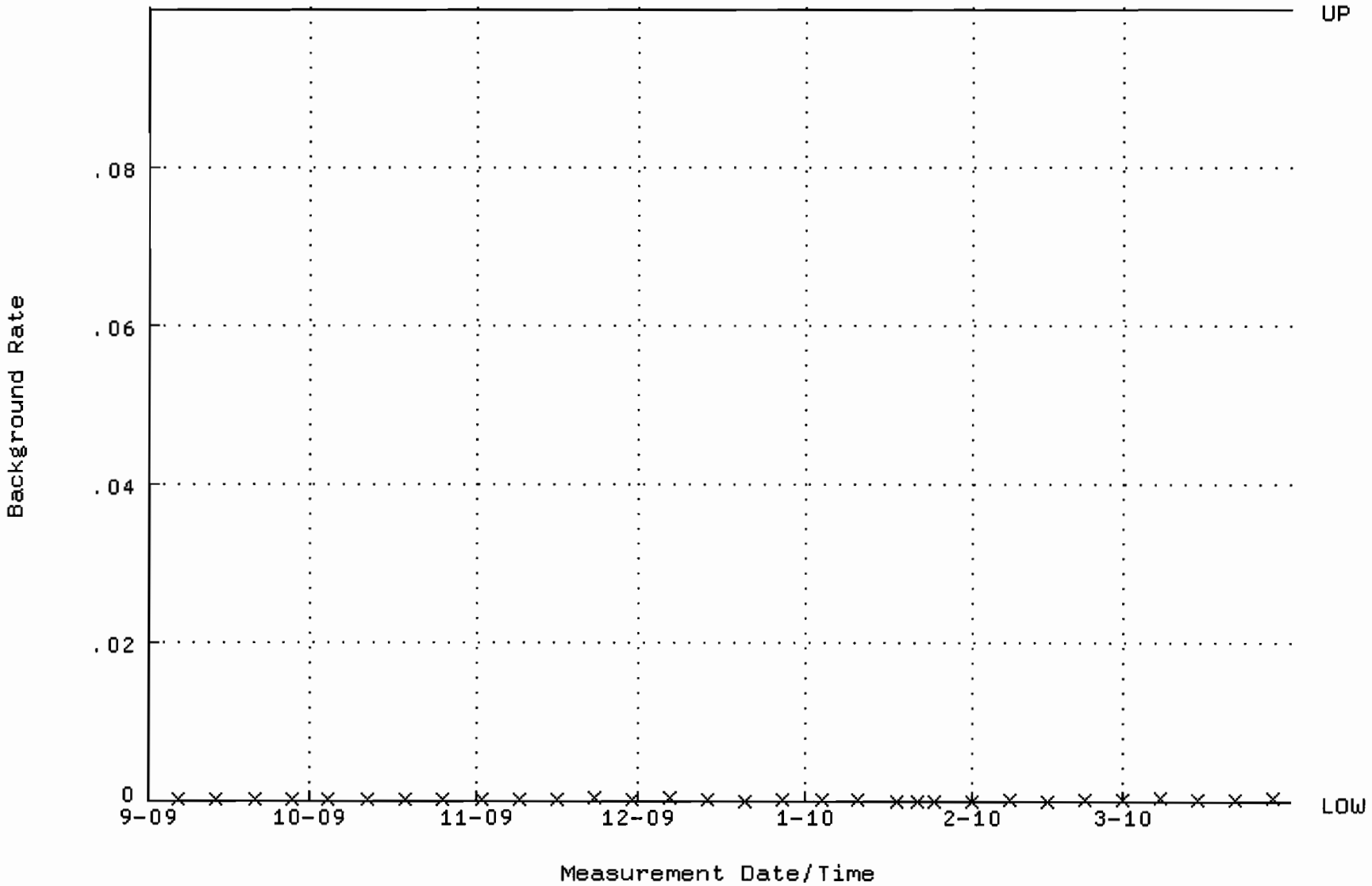
QA filename : DKA100:[ENV_ALPHA.QA.W]W249.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:40:07 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.378480 through 0.407308



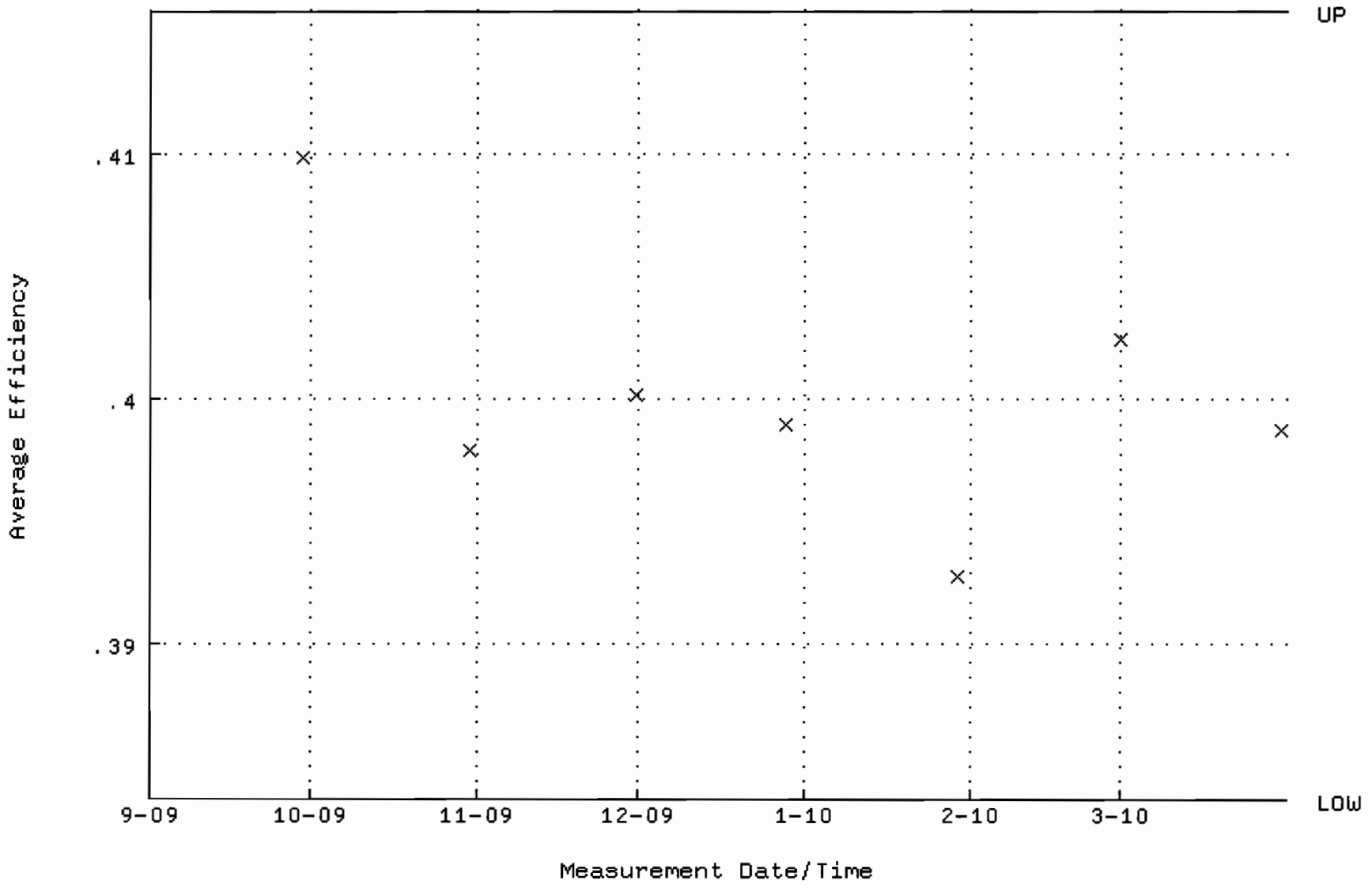
QA filename : DKA100:[ENV_ALPHA.QA.W]W249.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:40:07 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 79.2865 through 87.7423



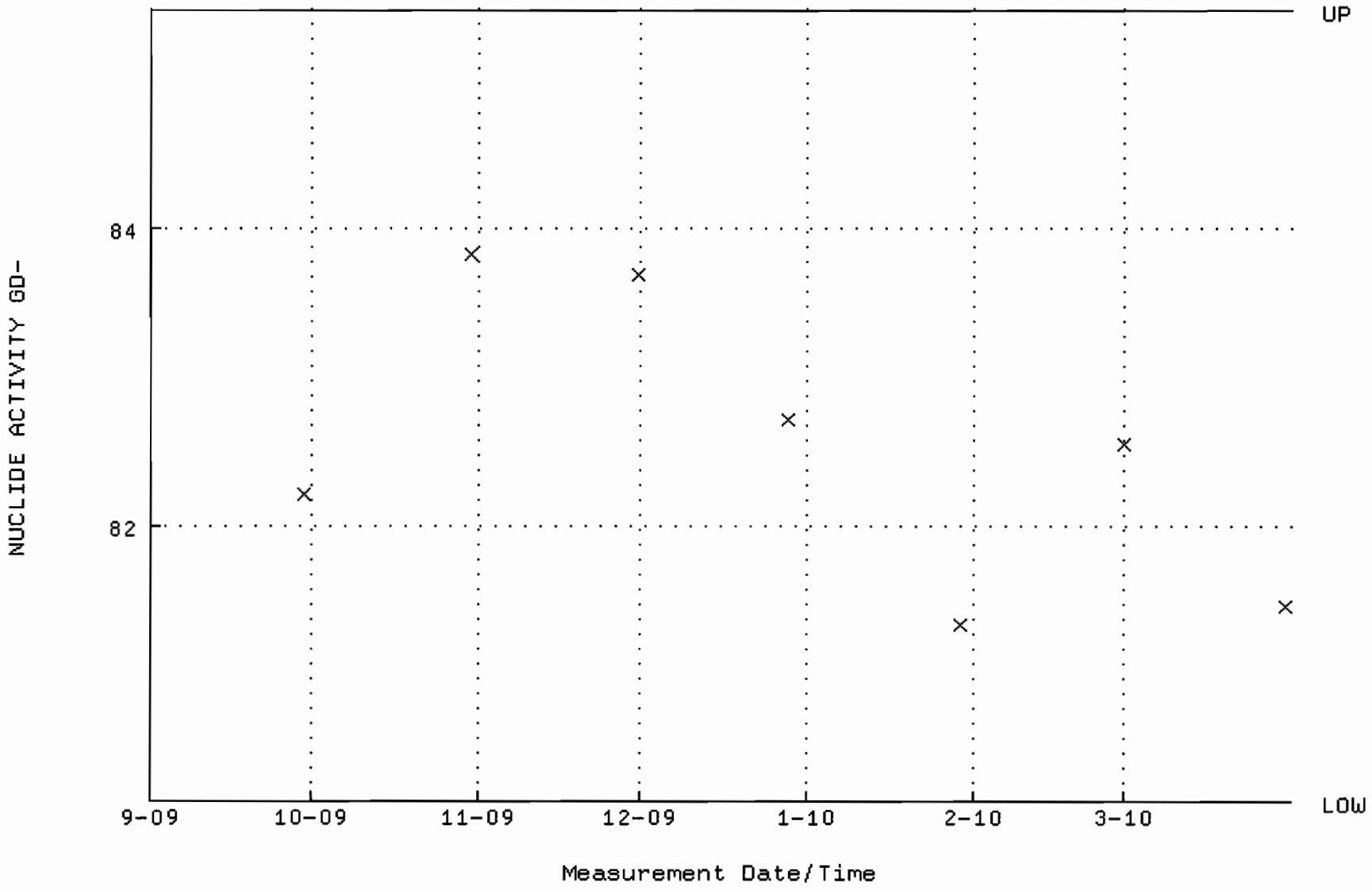
QA filename : DKA100:[ENV_ALPHA.QA.B]B249.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:51:26 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



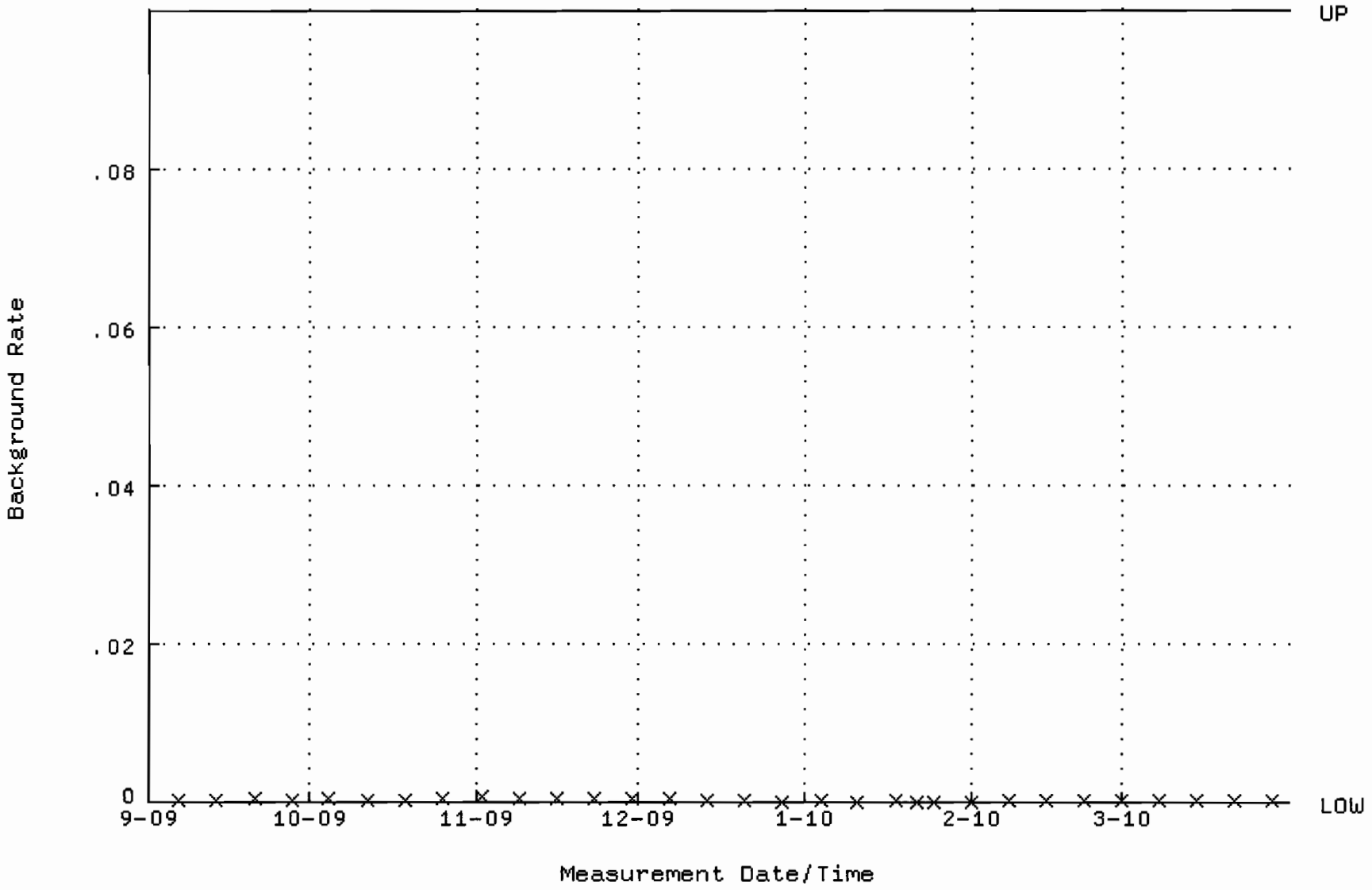
QA filename : DKA100:[ENV_ALPHA.QA.W]W250.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:40:12 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.383673 through 0.415835



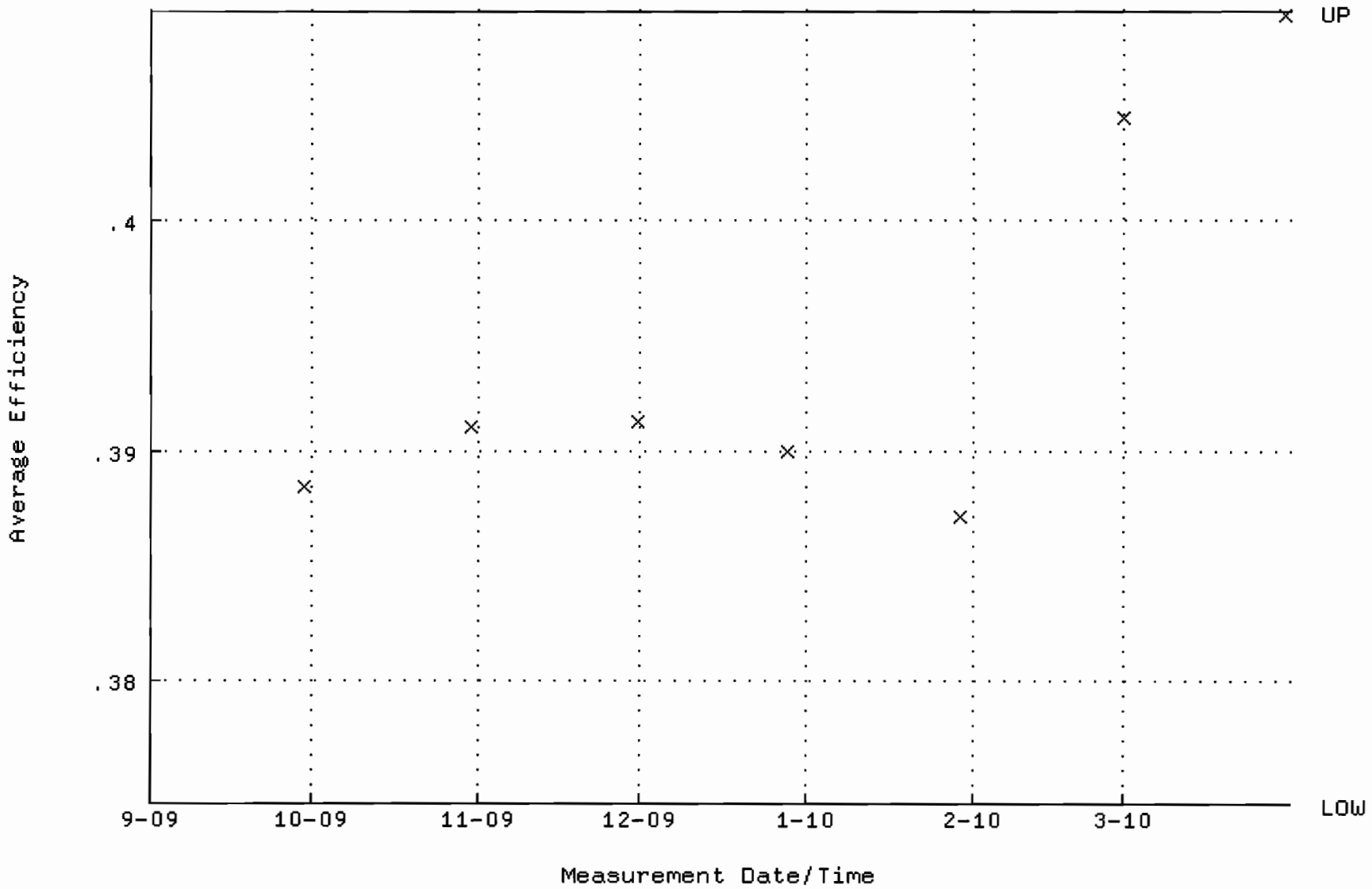
QA filename : DKA100:[ENV_ALPHA.QA.W]W250.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:40:12 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 80.1497 through 85.4585



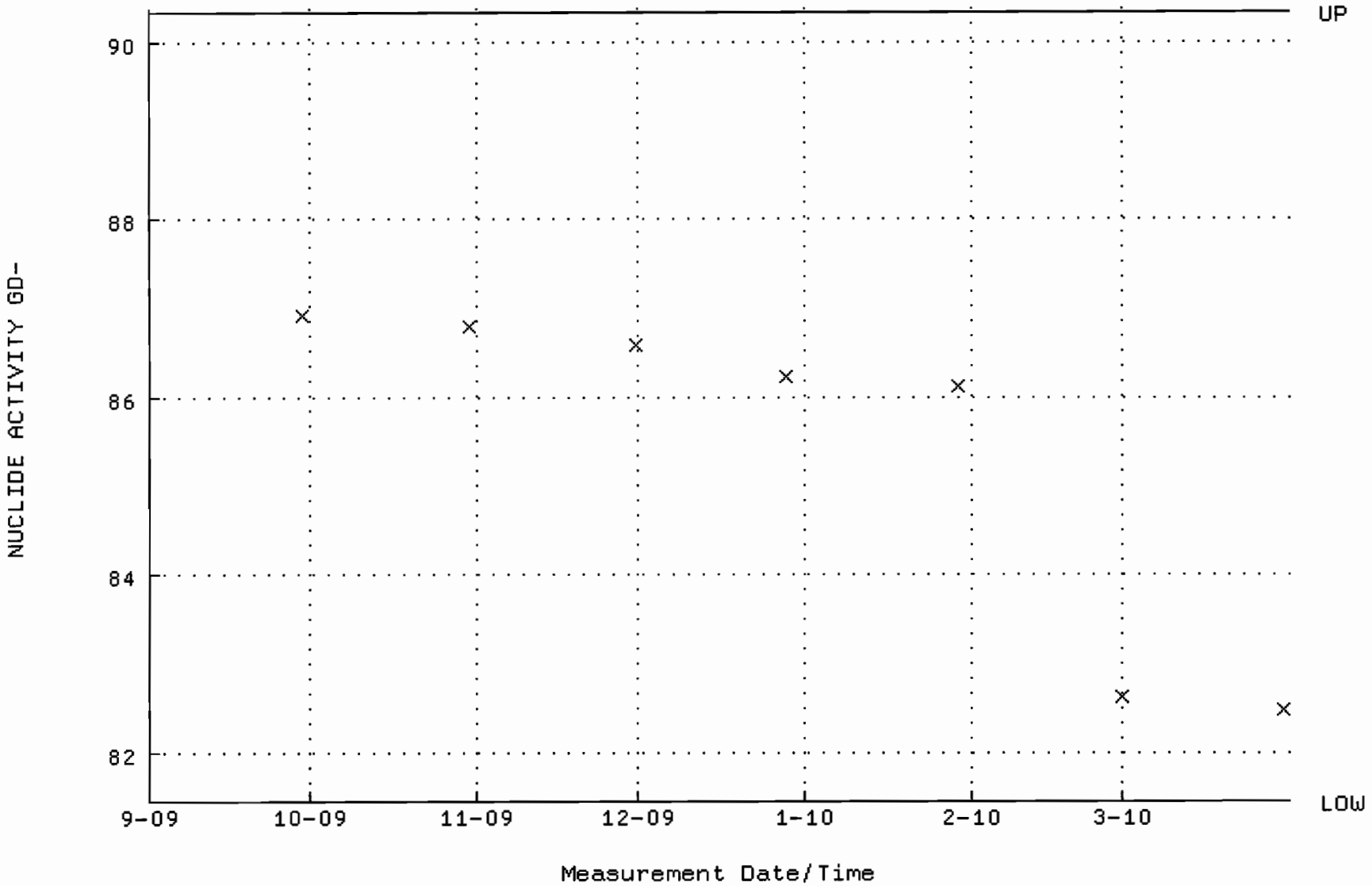
QA filename : DKA100:[ENV_ALPHA.QA.B]B250.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:51:30 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



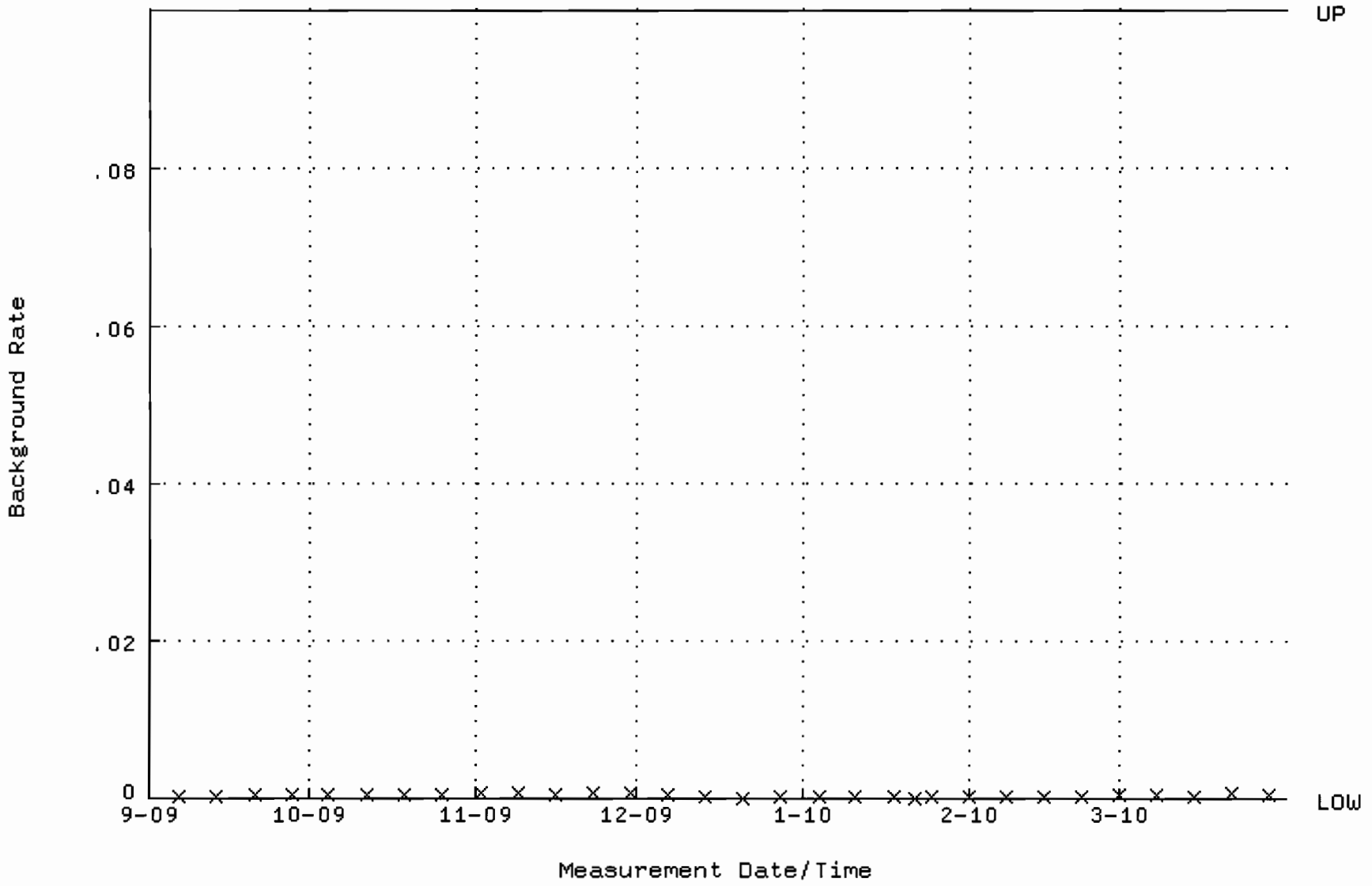
QA filename : DKA100:[ENV_ALPHA.QA.W]W251.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:40:16 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.374659 through 0.409089



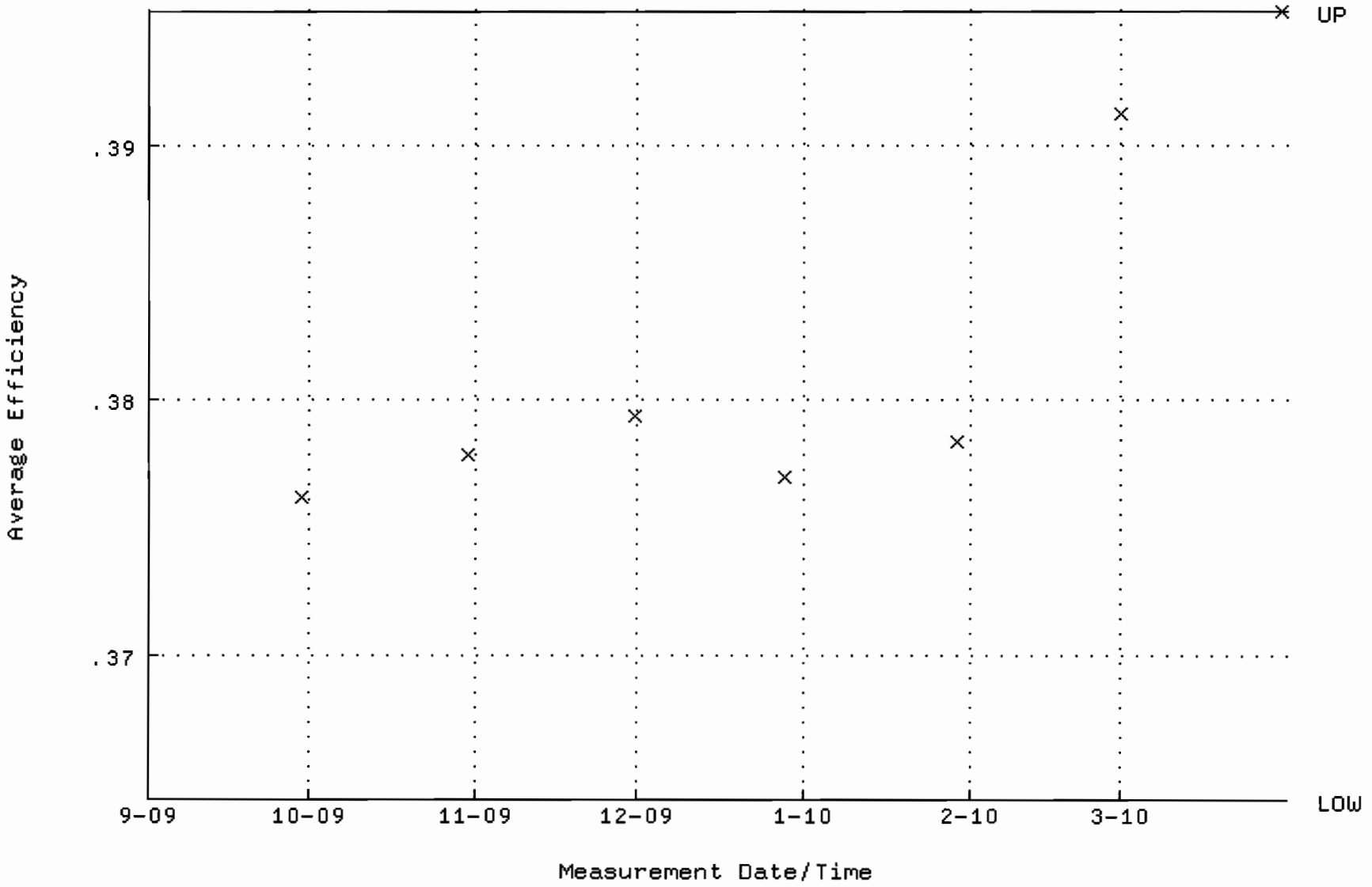
QA filename : DKA100:[ENV_ALPHA.QA.W]W251.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:40:16 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 81.4582 through 90.3490



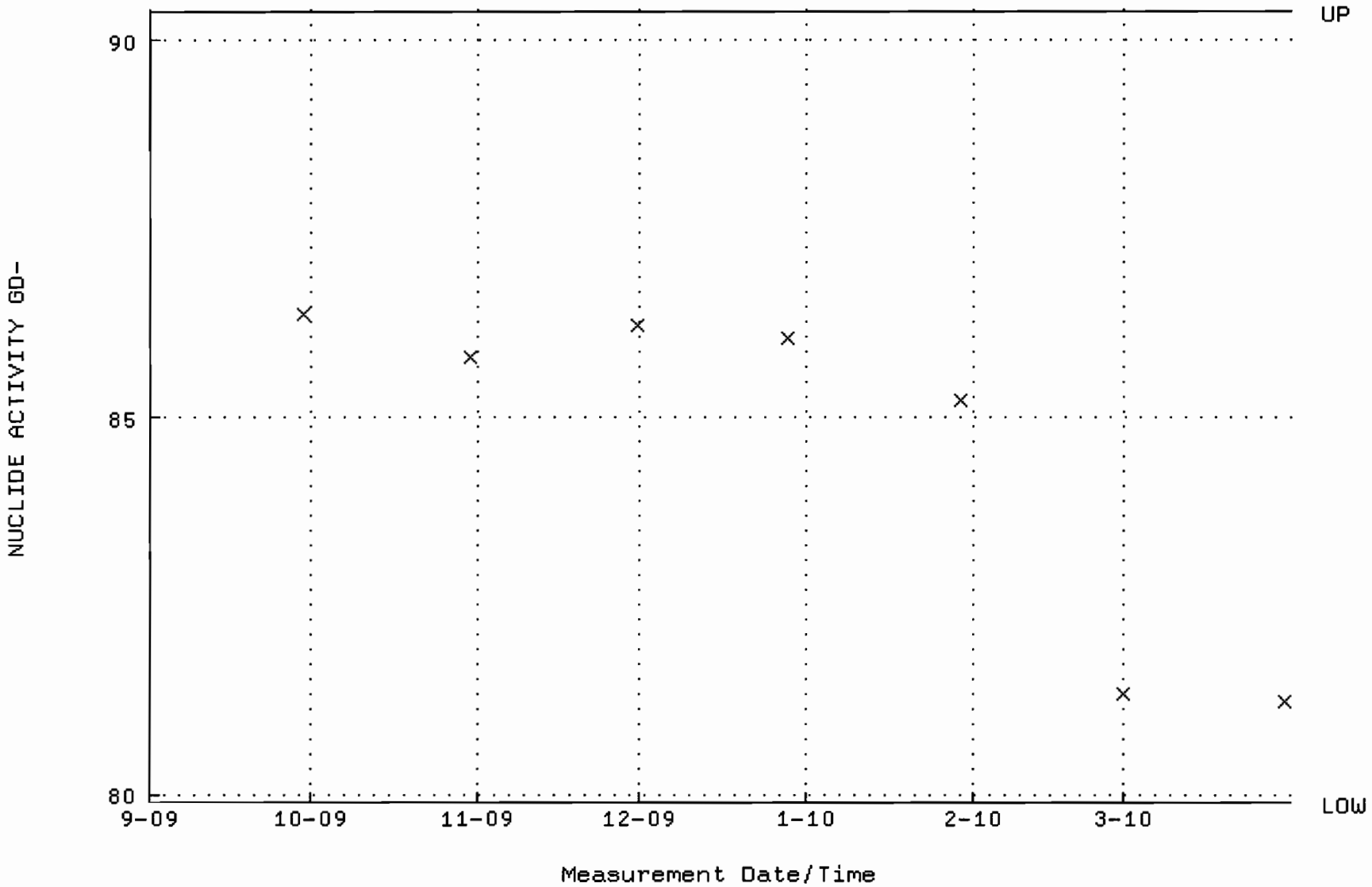
QA filename : DKA100:[ENV_ALPHA.QA.B]B251.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:51:35 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



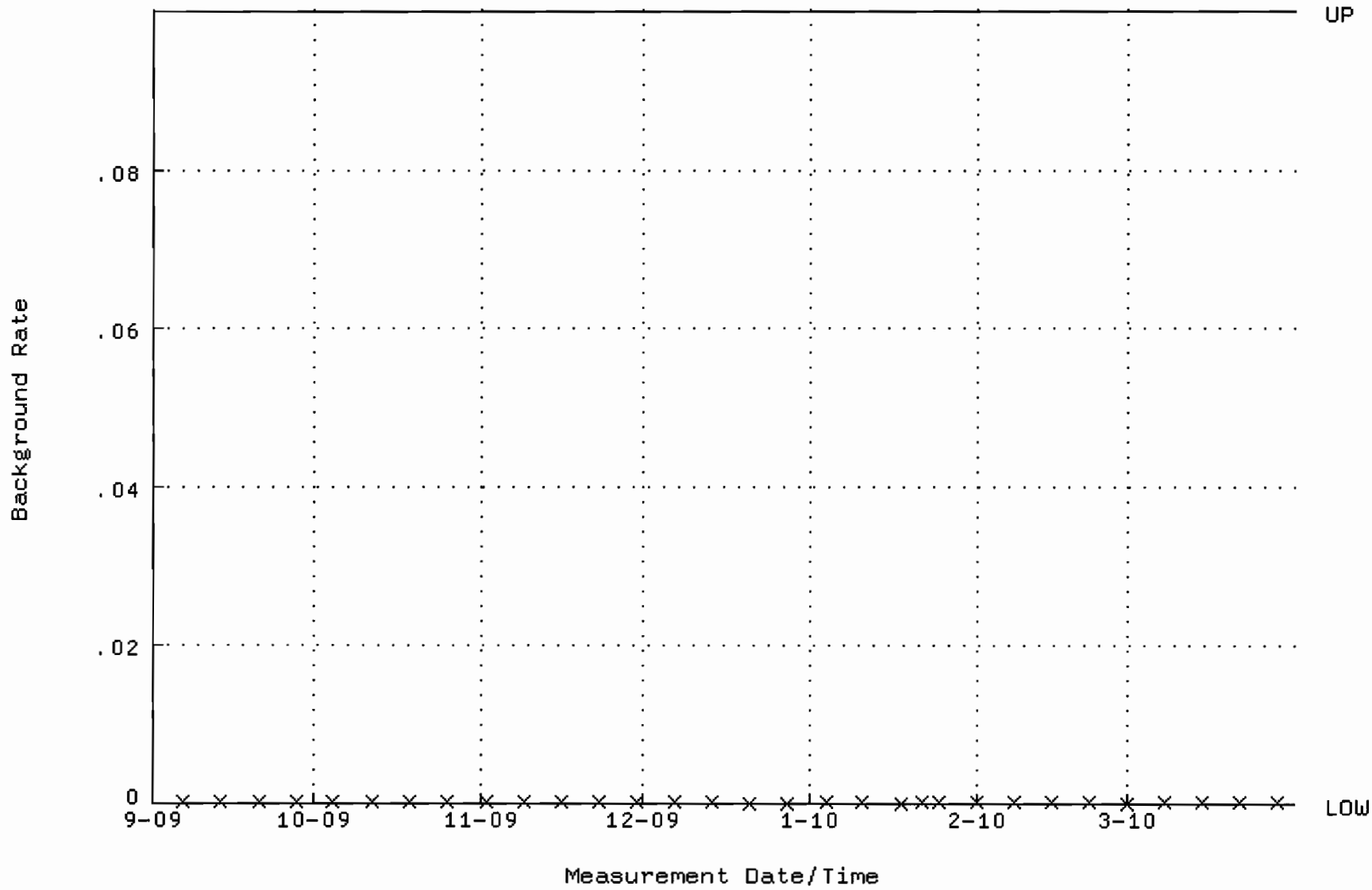
QA filename : DKA100:[ENV_ALPHA.QA.W]W252.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:40:23 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.364281 through 0.395267



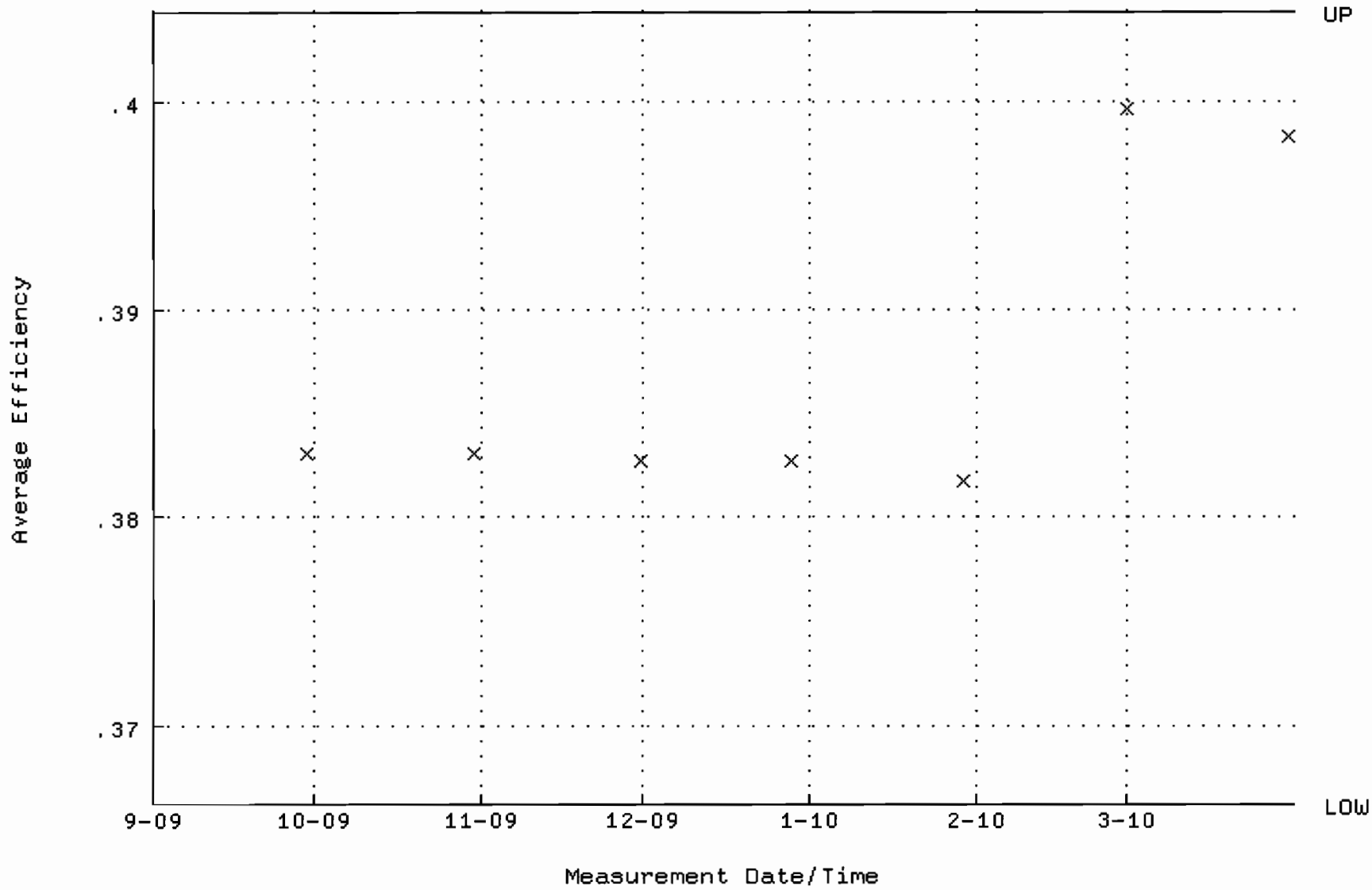
QA filename : DKA100:[ENV_ALPHA.QA.W]W252.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:40:23 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 79.9099 through 90.3785



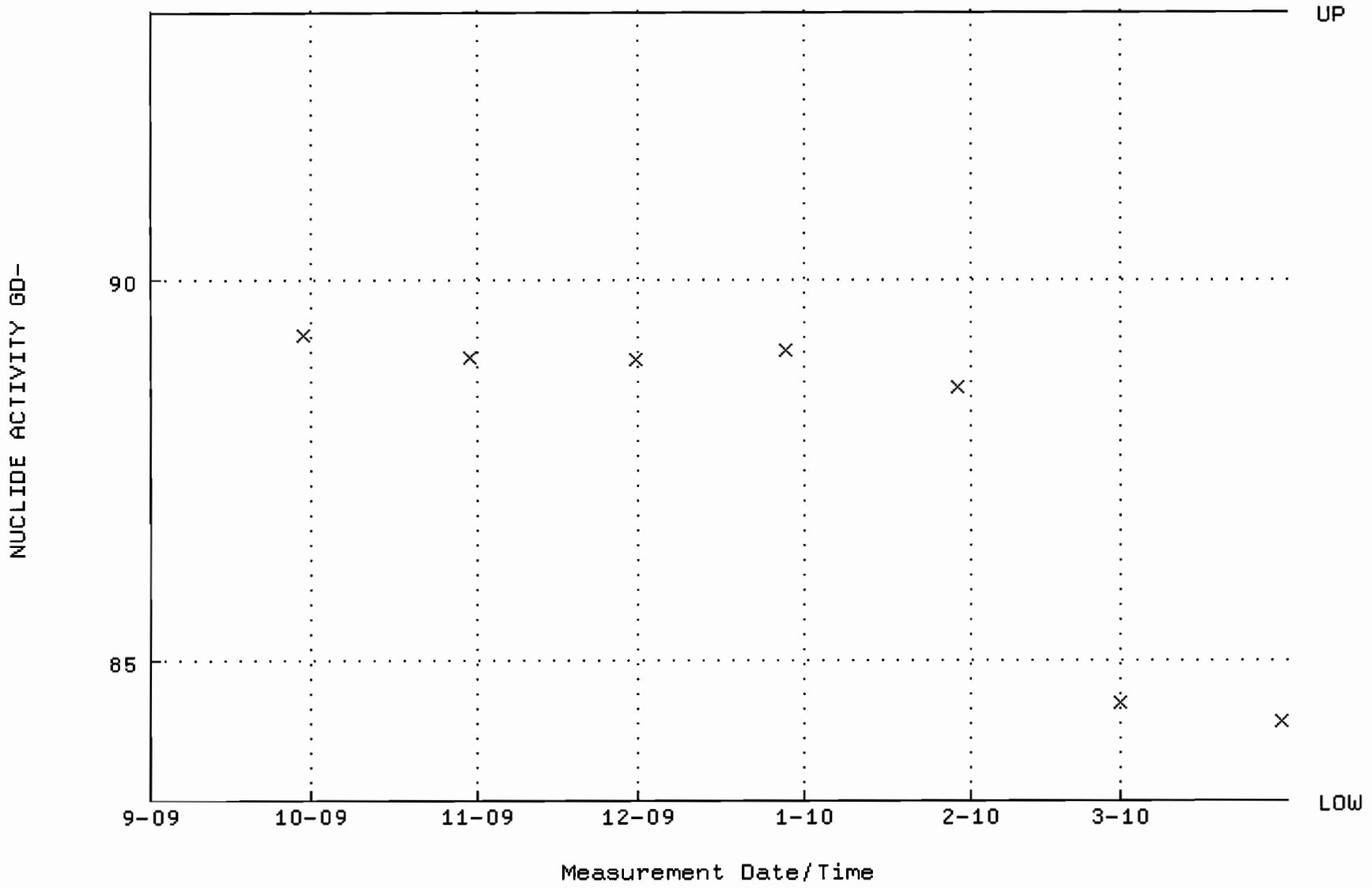
QA filename : DKA100:[ENV_ALPHA.QA.B]B252.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:51:40 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



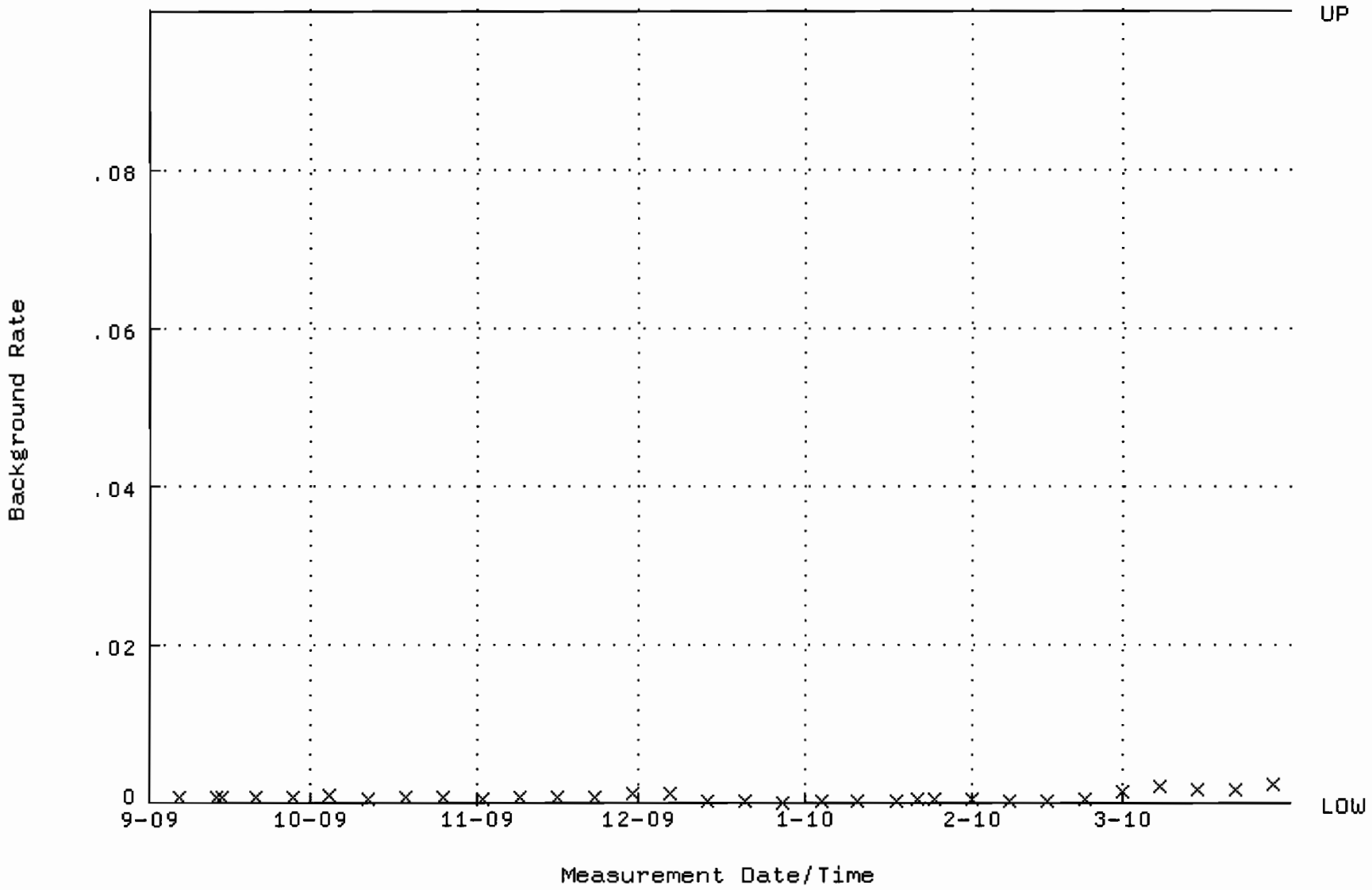
QA filename : DKA100:[ENV_ALPHA.QA.W]W253.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:40:28 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.366220 through 0.404308



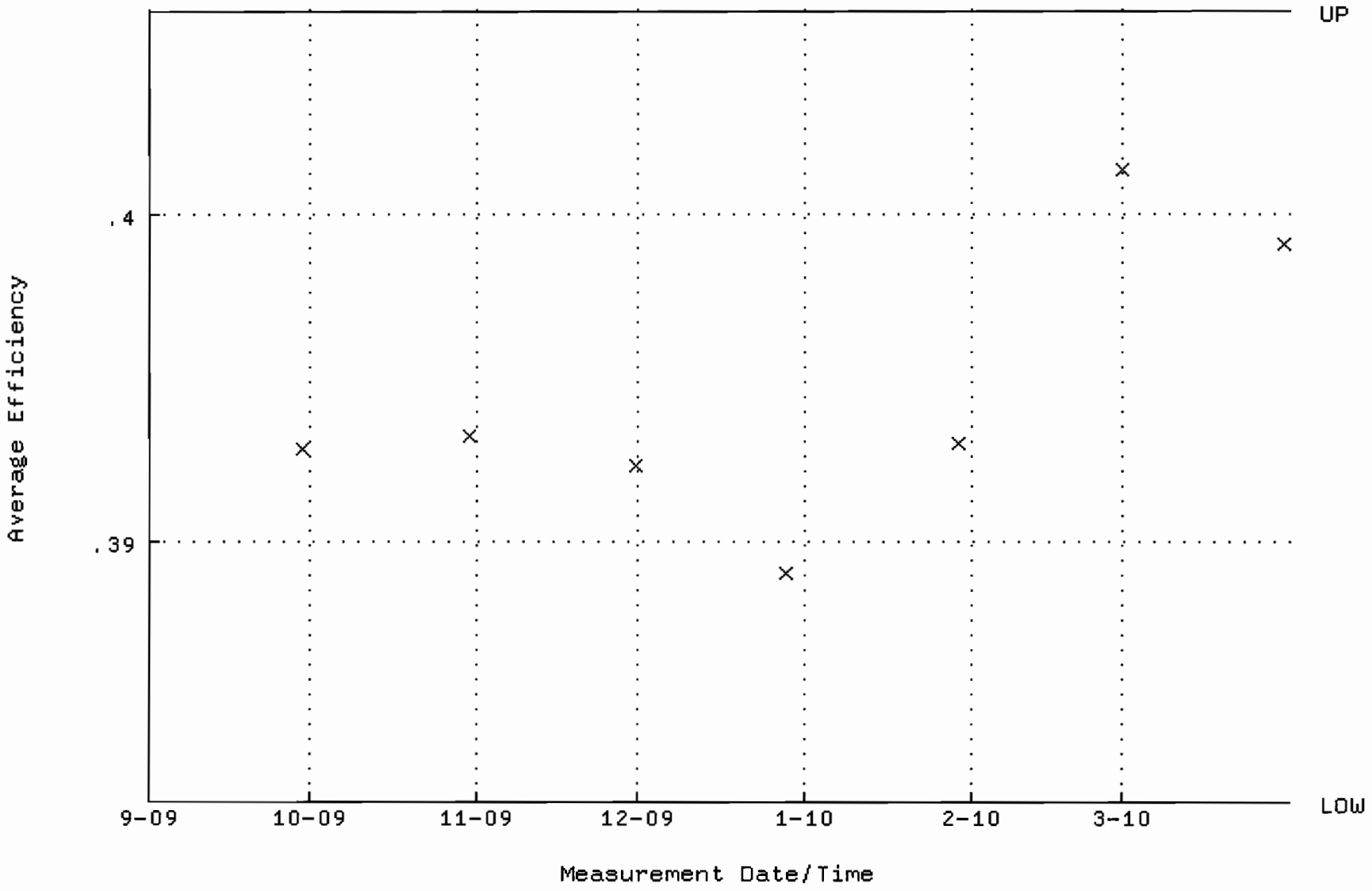
QA filename : DKA100:[ENV_ALPHA.QA.W]W253.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:40:28 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 83.1439 through 93.5297



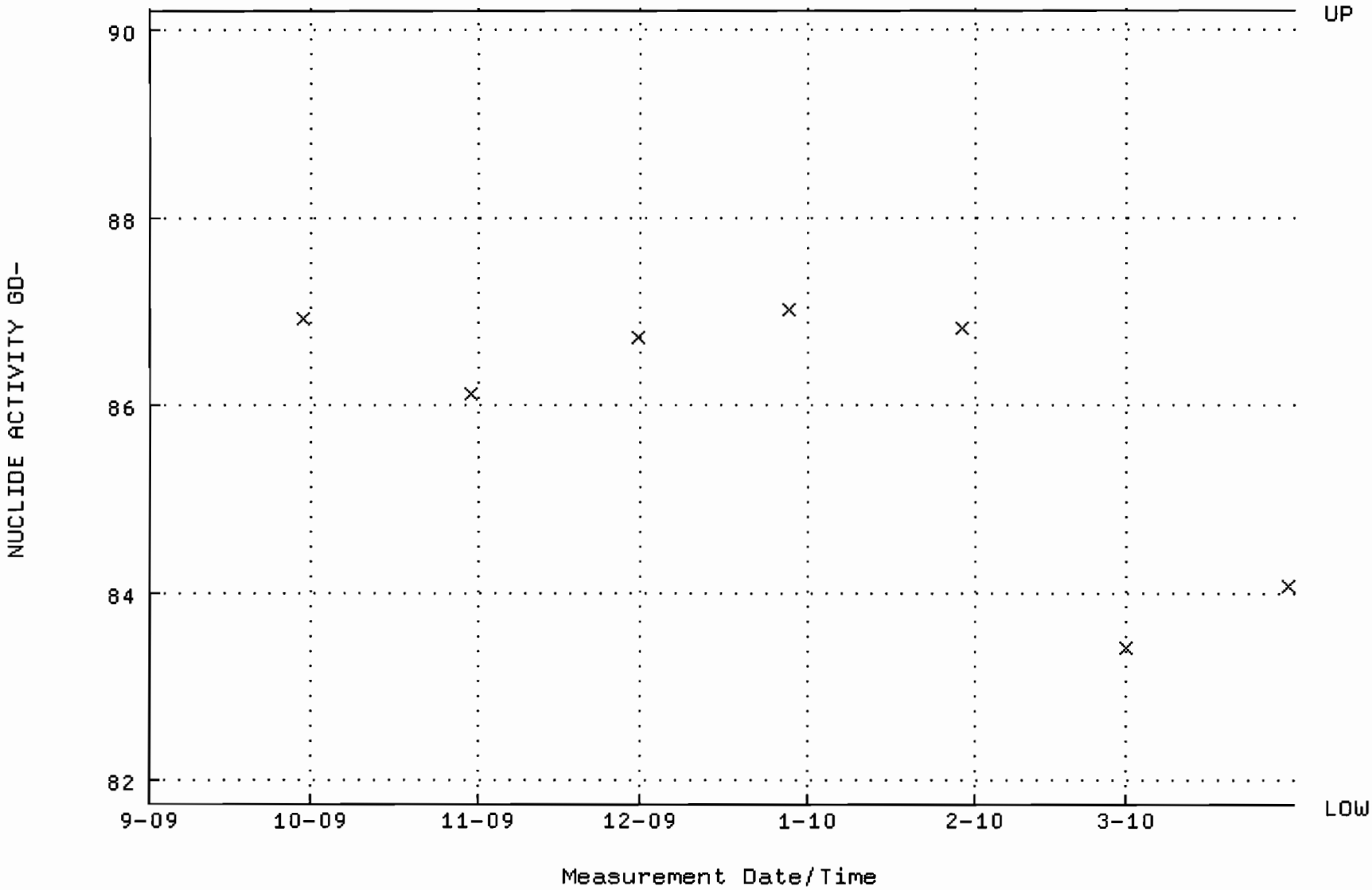
QA filename : DKA100:[ENV_ALPHA.QA.B]B253.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:51:45 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



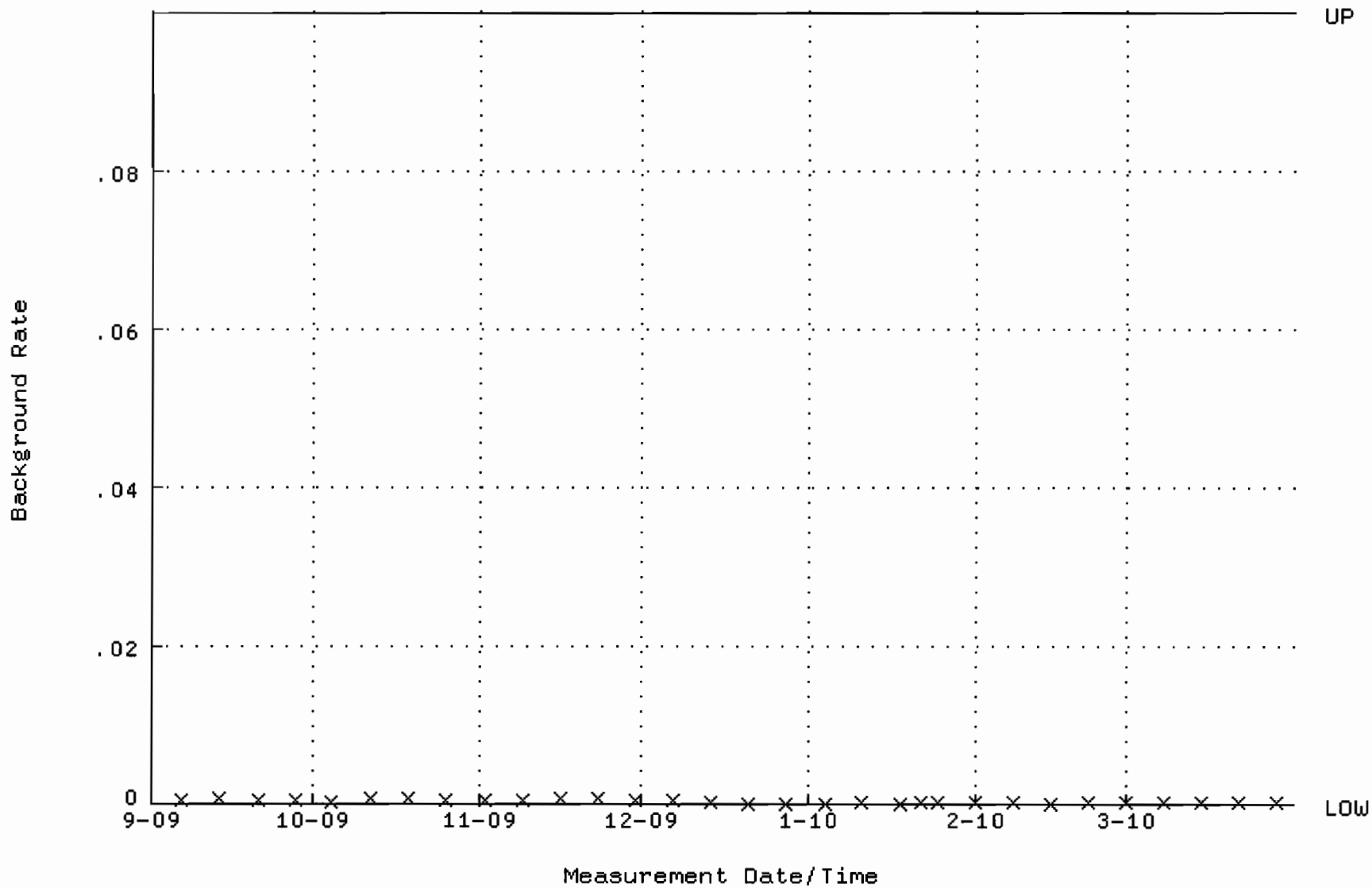
QA filename : DKA100:[ENV_ALPHA.QA.W]W254.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:40:33 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.382017 through 0.406169



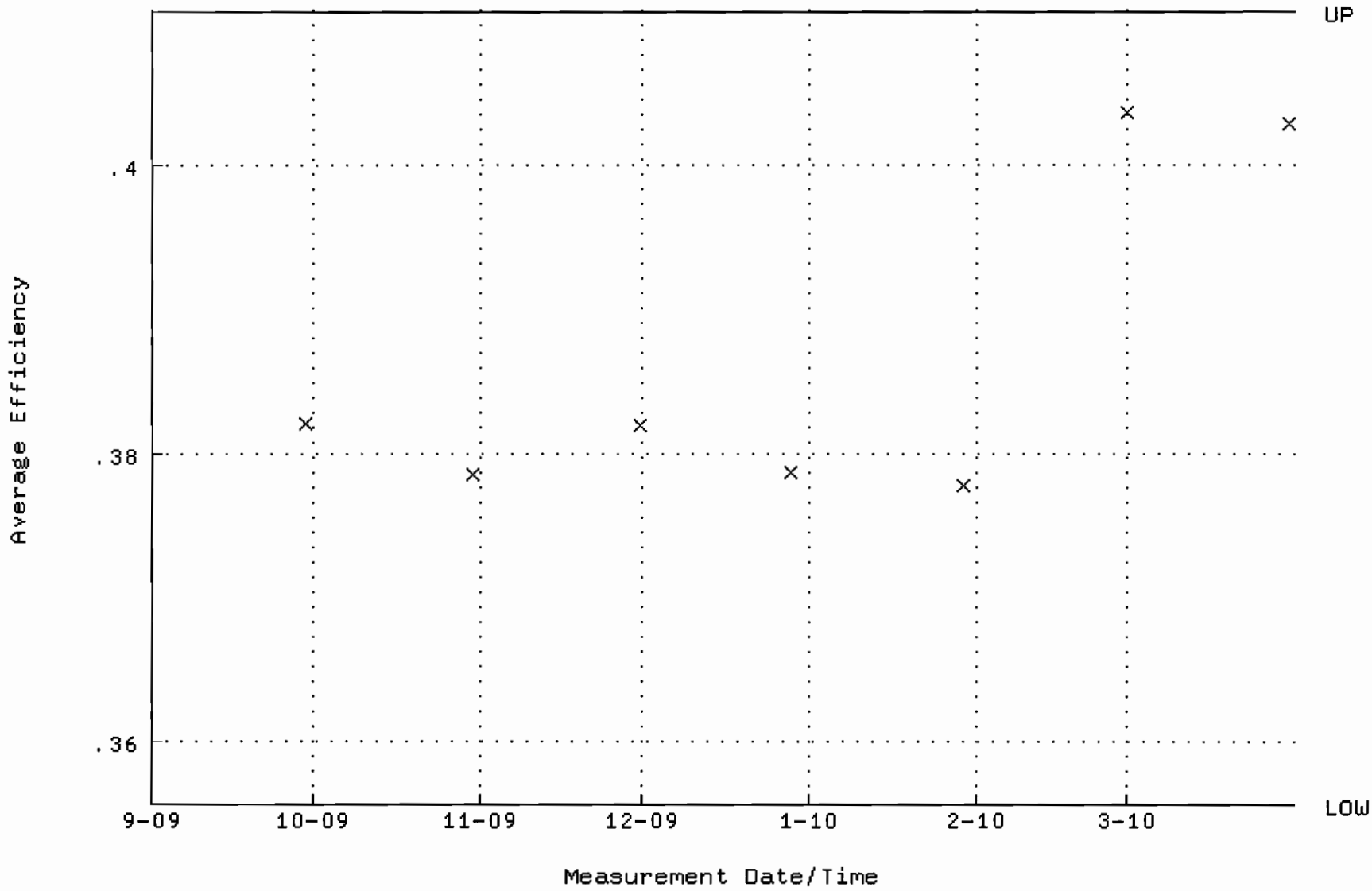
QA filename : DKA100:[ENV_ALPHA.QA.W]W254.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:40:33 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 81.7478 through 90.1974



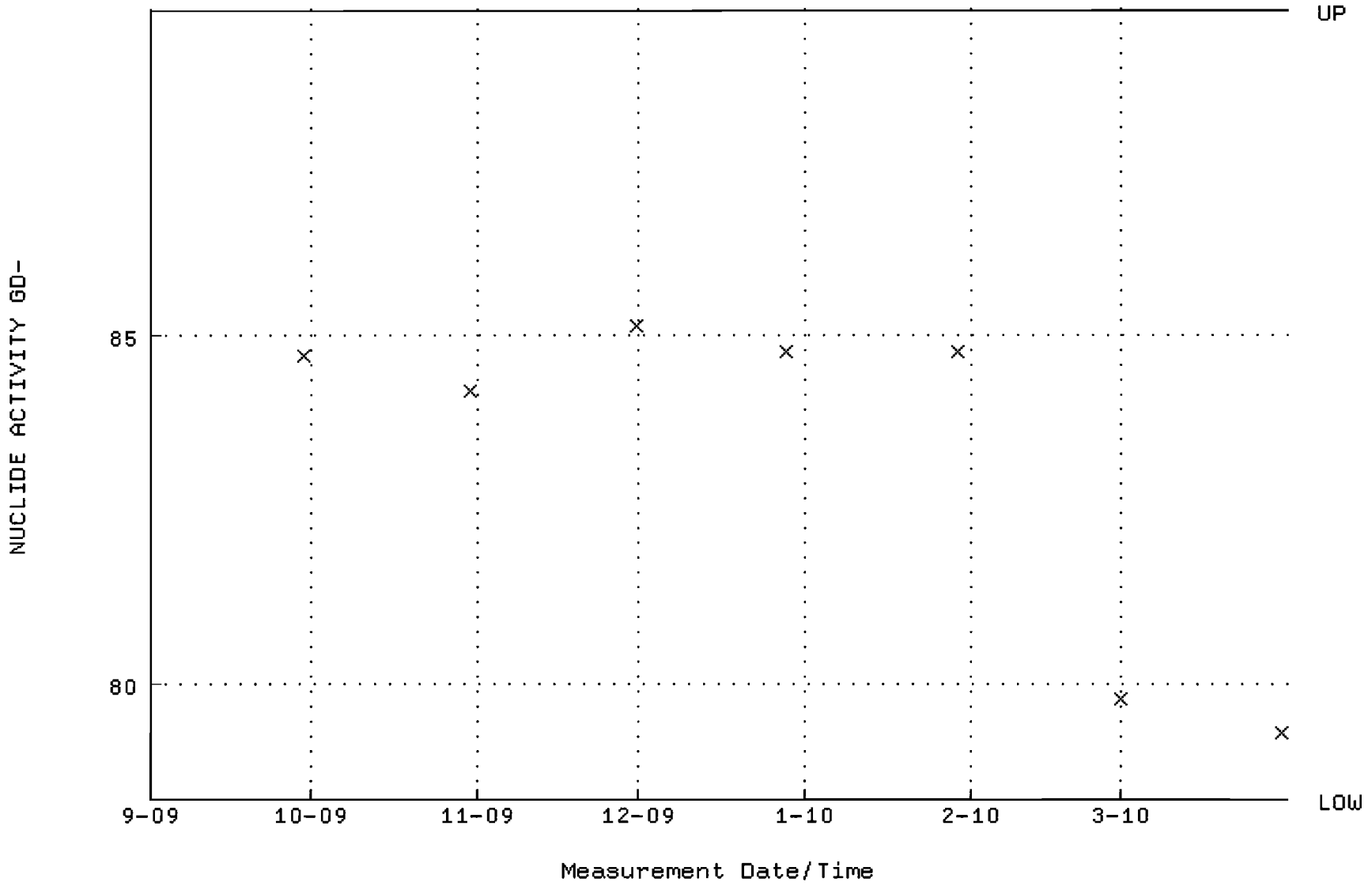
QA filename : DKA100:[ENV_ALPHA.QA.B]B254.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:51:50 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



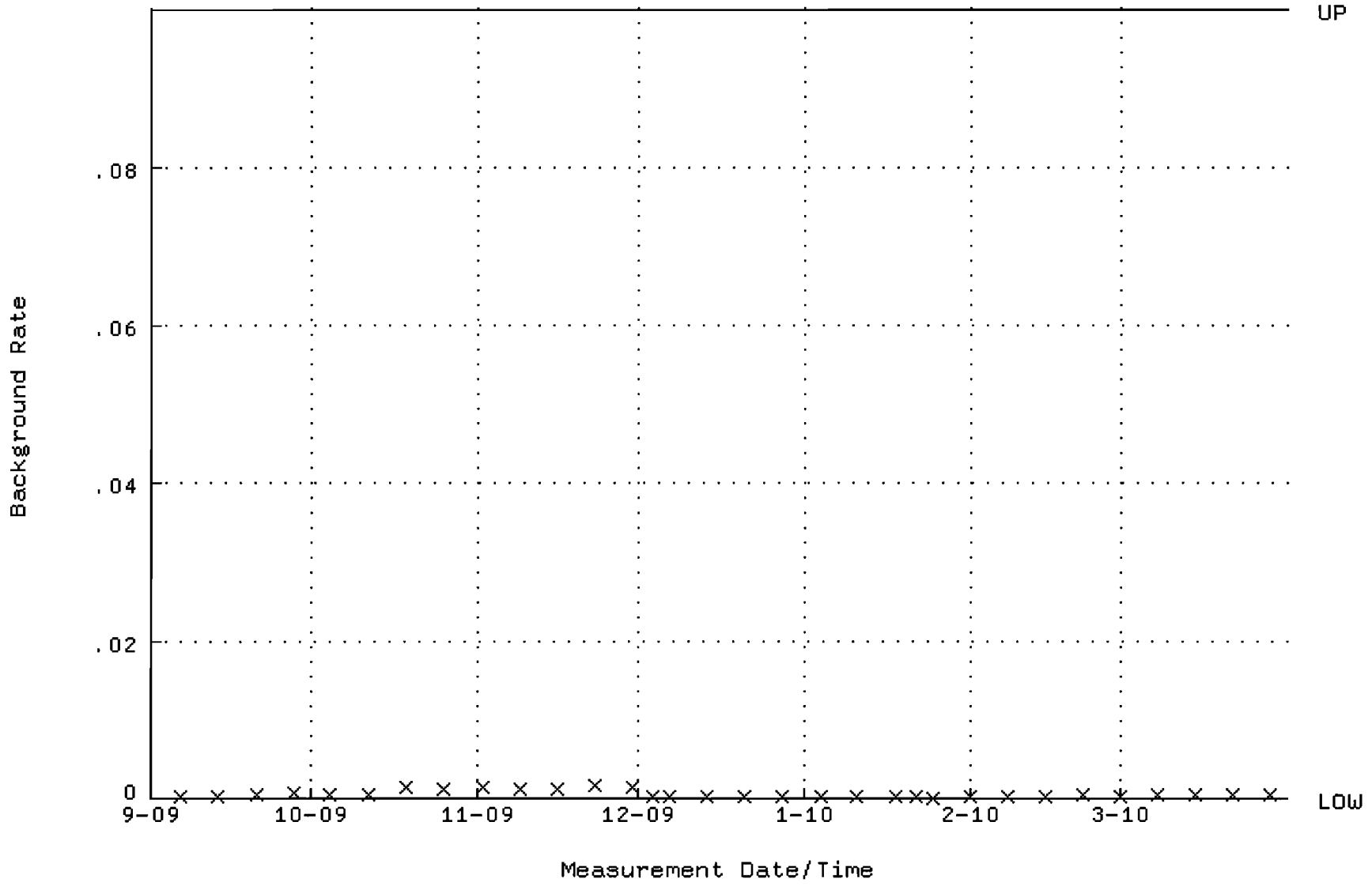
QA filename : DKA100:[ENV_ALPHA.QA.W]W256.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 29-SEP-2009 08:40:43 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.355610 through 0.410626



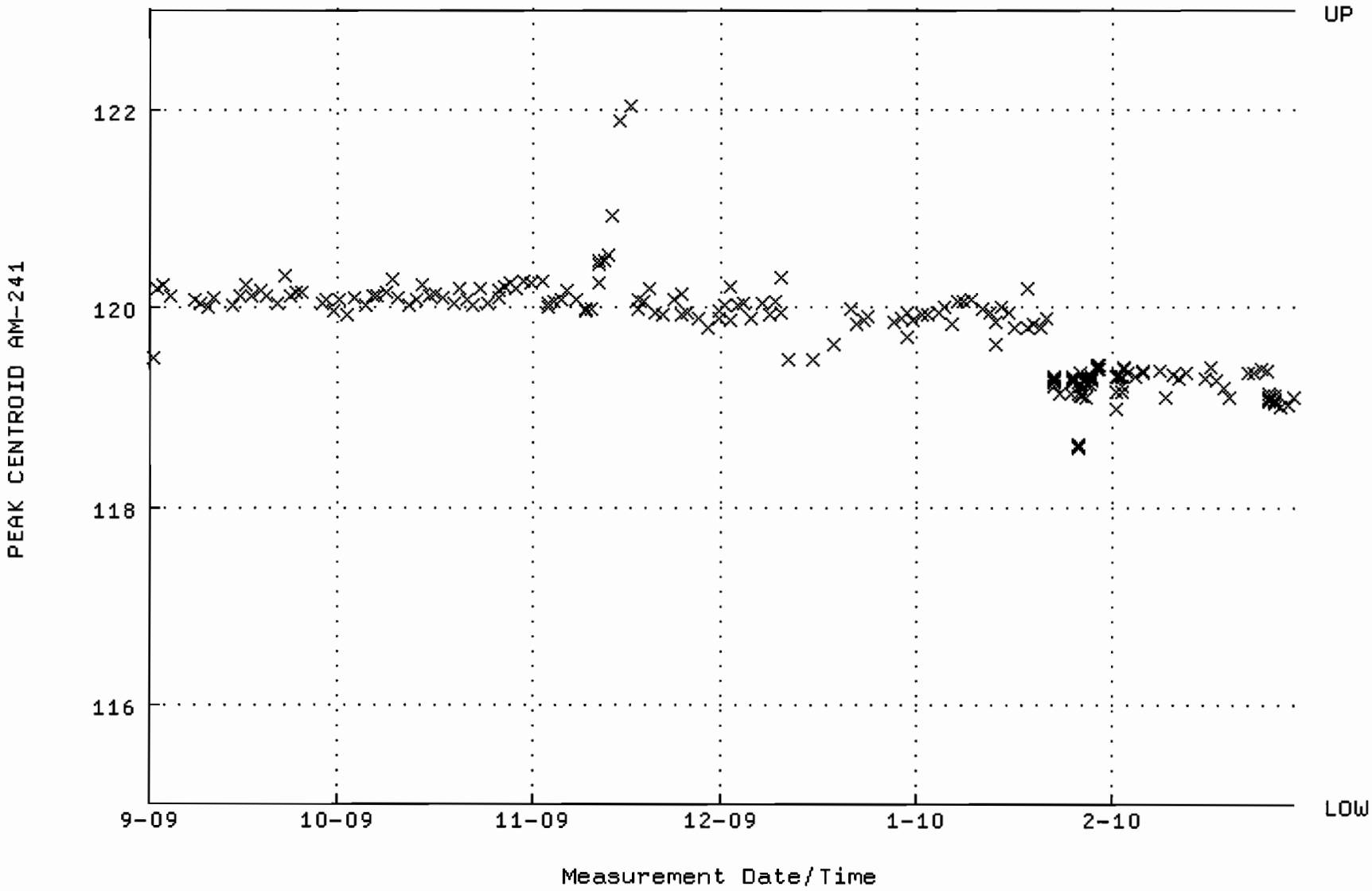
QA filename : DKA100:[ENV_ALPHA.QA.W]W256.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 29-SEP-2009 08:40:43 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 78.3575 through 89.6335



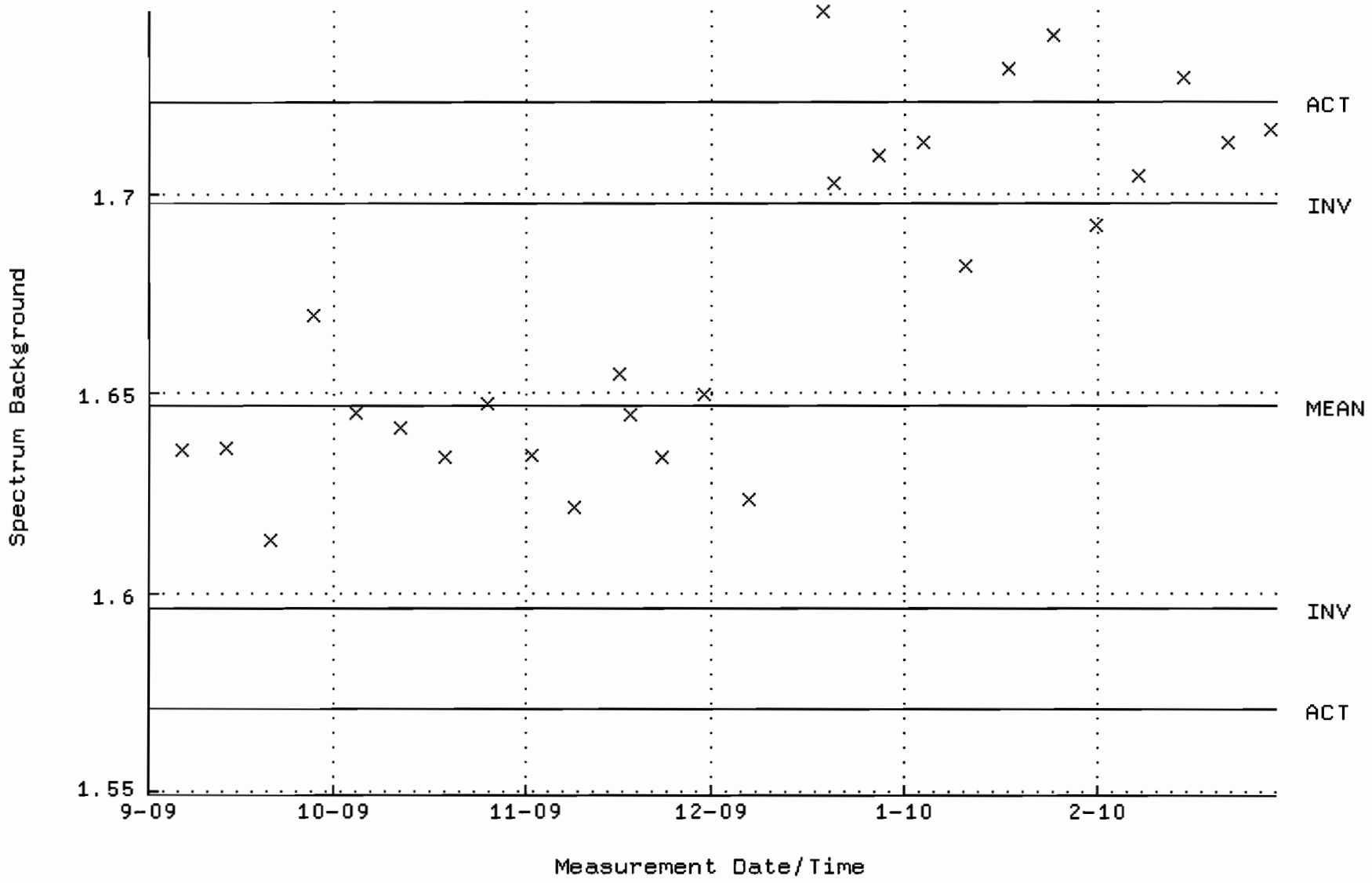
QA filename : DKA100:[ENV_ALPHA.QA.B]B256.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:51:59 through 31-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



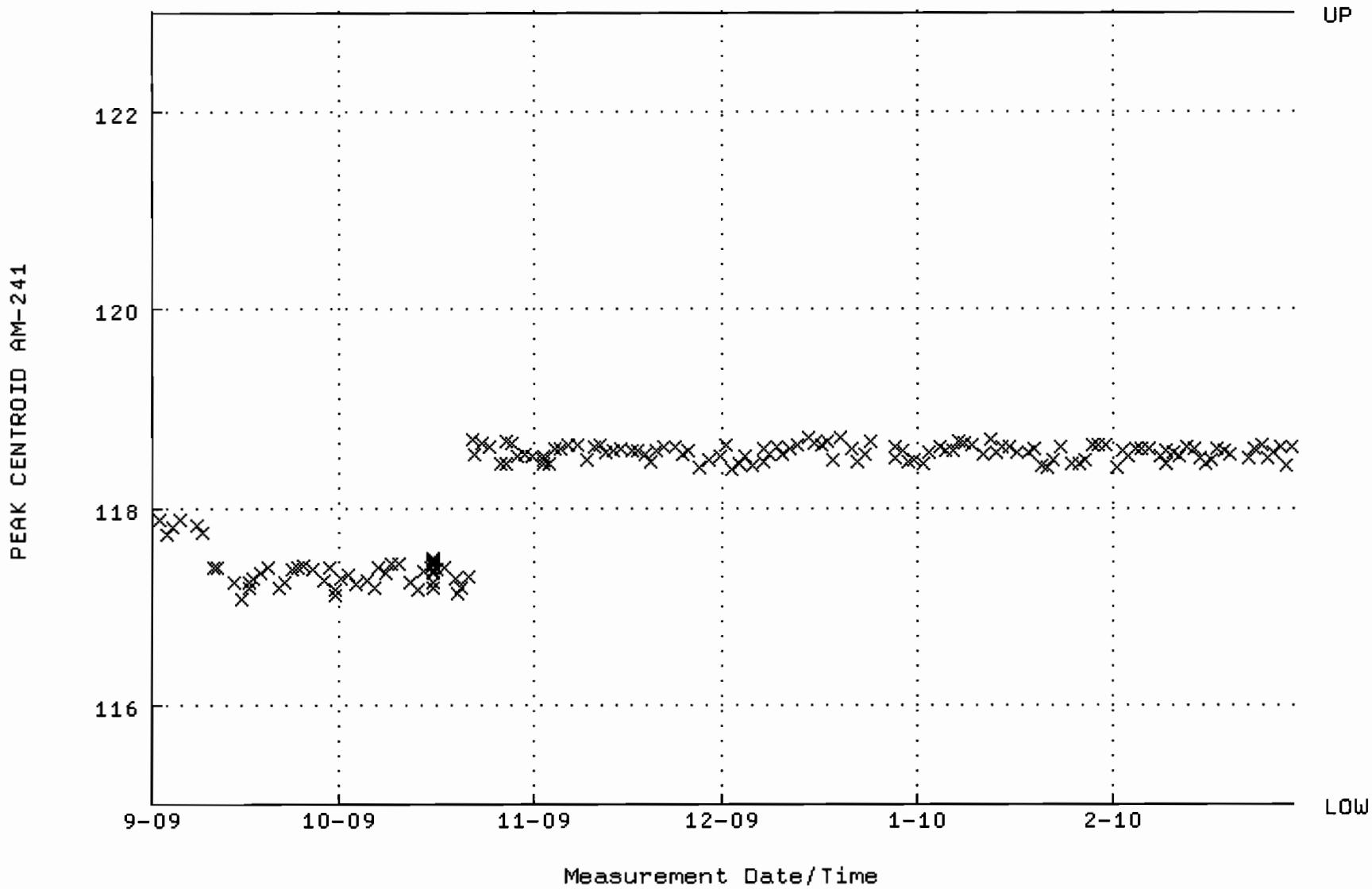
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM05_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 1-SEP-2009 14:54:46 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



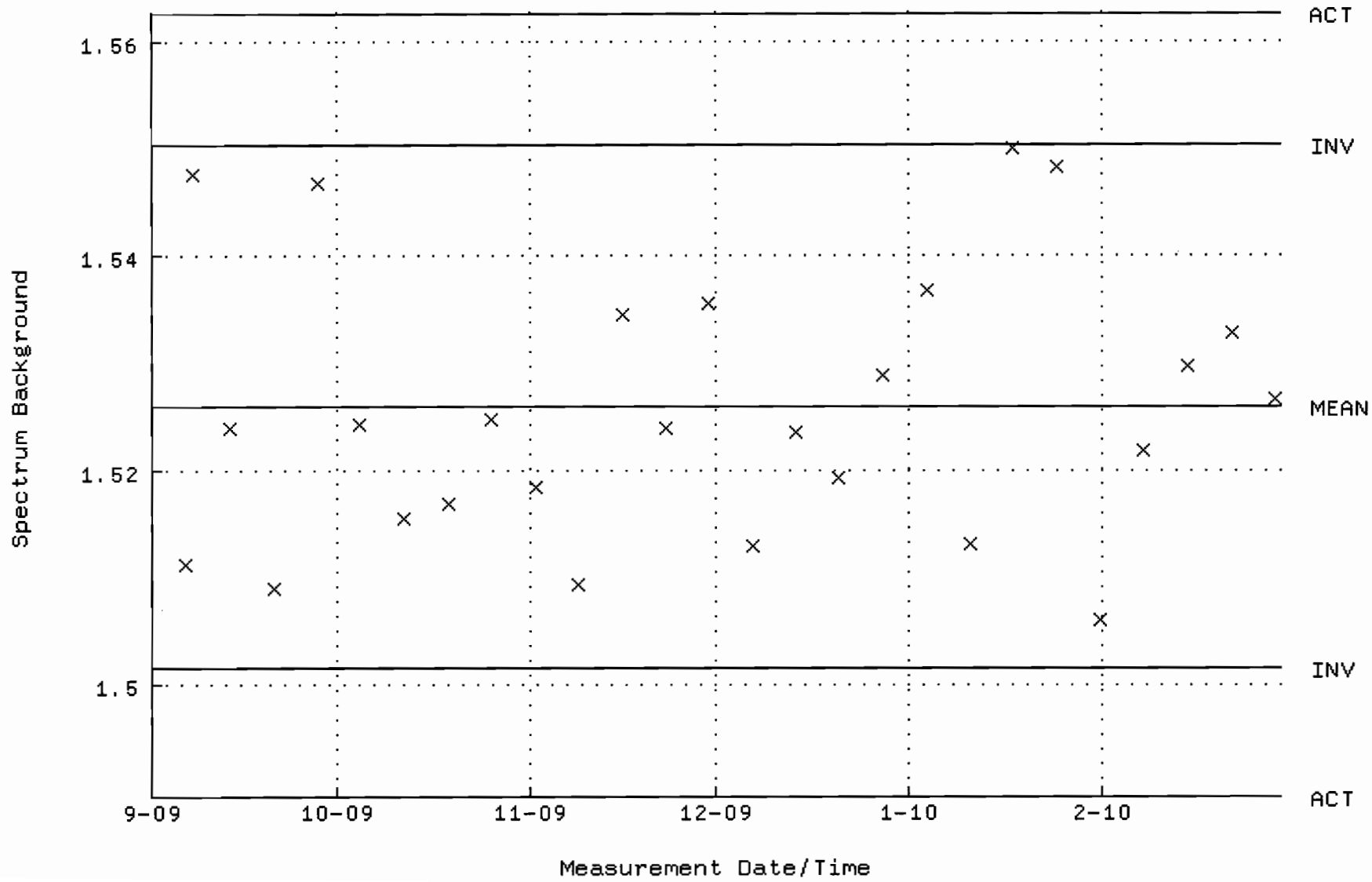
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM05.QAF;1
Parameter Name : BACKRATE (Spectrum Background Rate)
Start/End Dates : 6-SEP-2009 11:39:04 through 1-MAR-2010 12:00:00
Mean +- Std Dev : 1.64719 +- 2.547087E-02 (1.55 %)



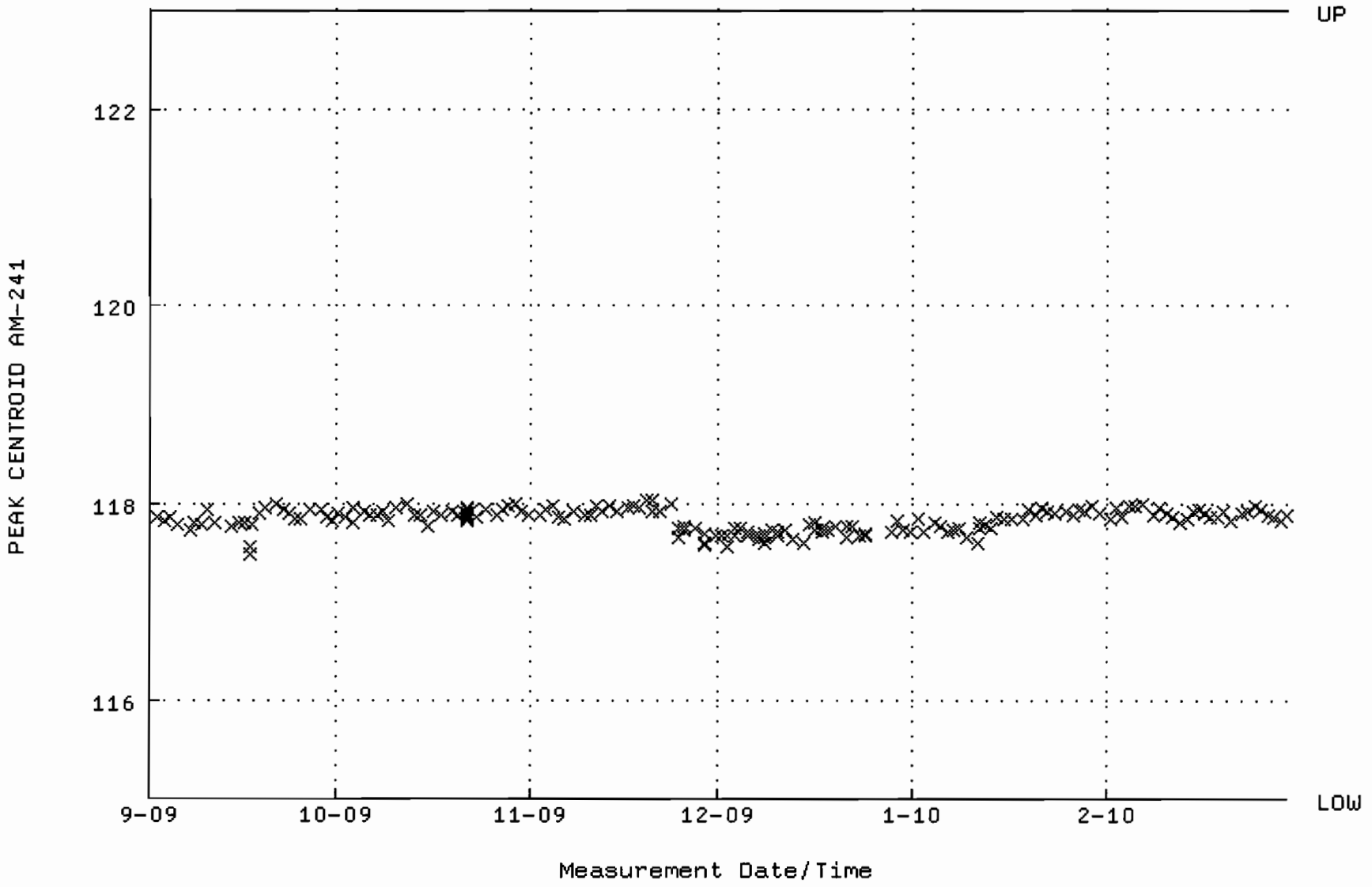
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM06_500MLMB.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 04:40:19 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



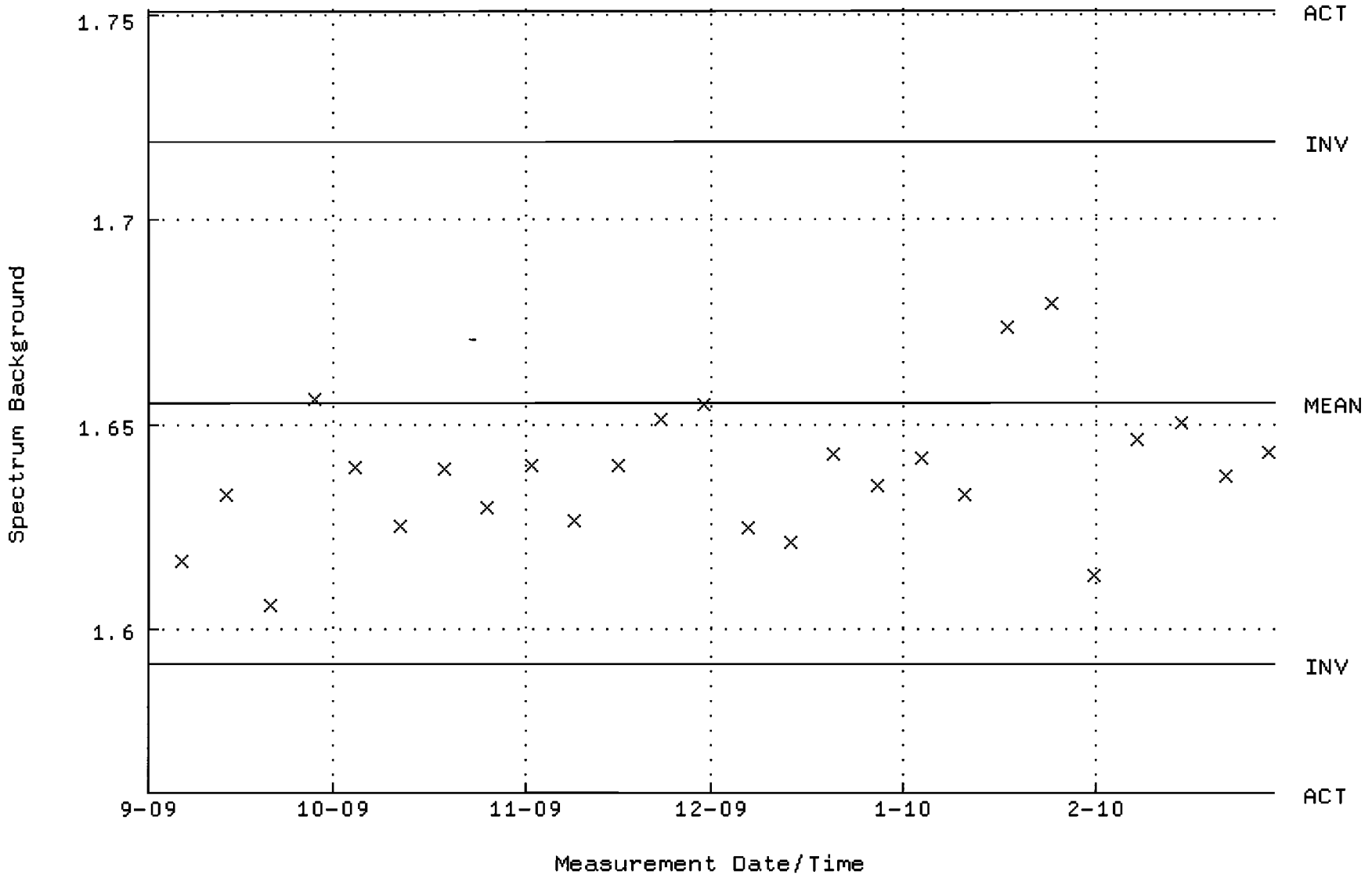
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM06.QAF;1
Parameter Name : BACKRATE (Spectrum Background Rate)
Start/End Dates : 6-SEP-2009 11:39:28 through 1-MAR-2010 12:00:00
Mean +- Std Dev : 1.52603 +- 1.215987E-02 (0.80 %)



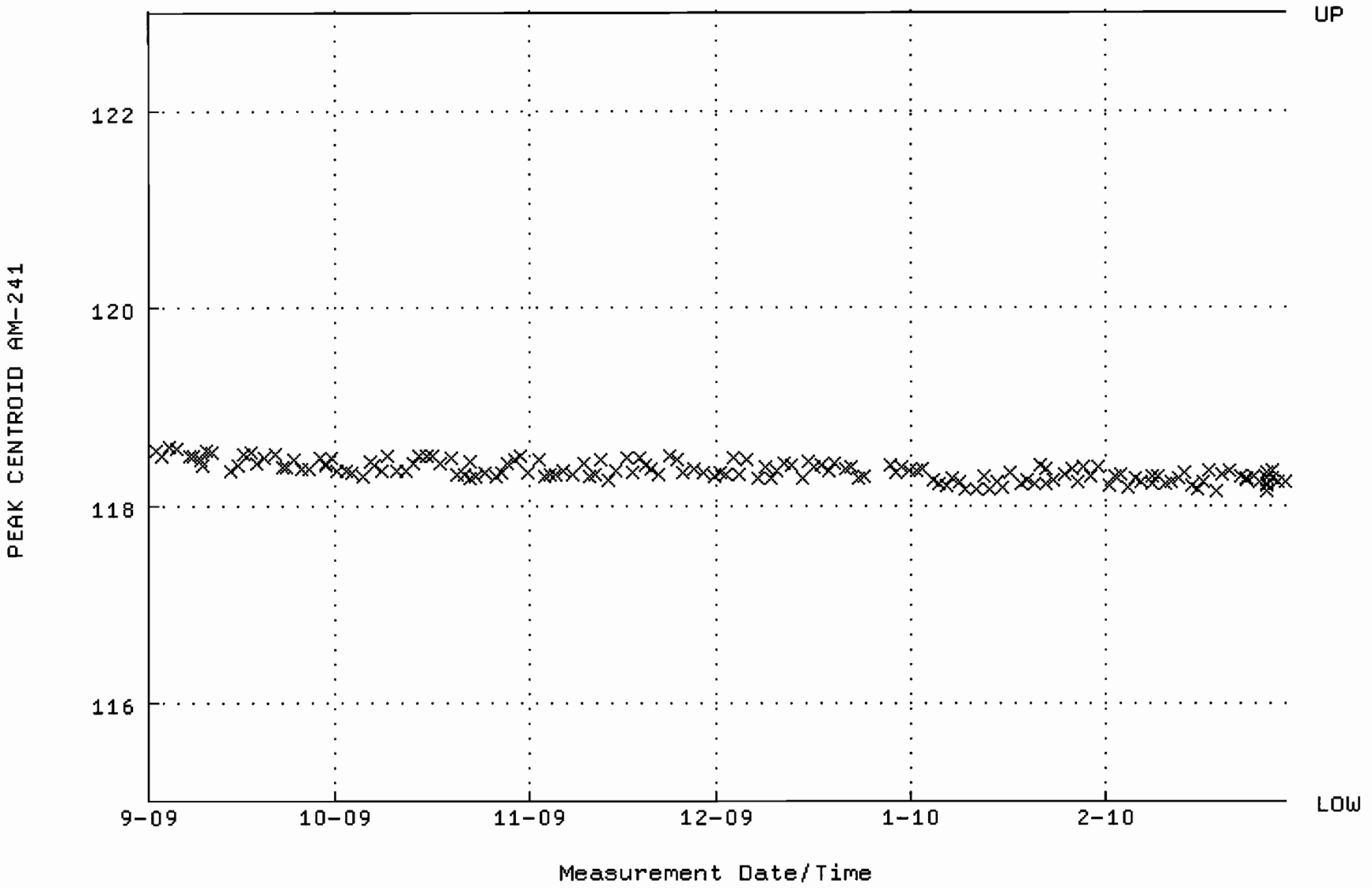
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM11_JAR.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 06:47:51 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



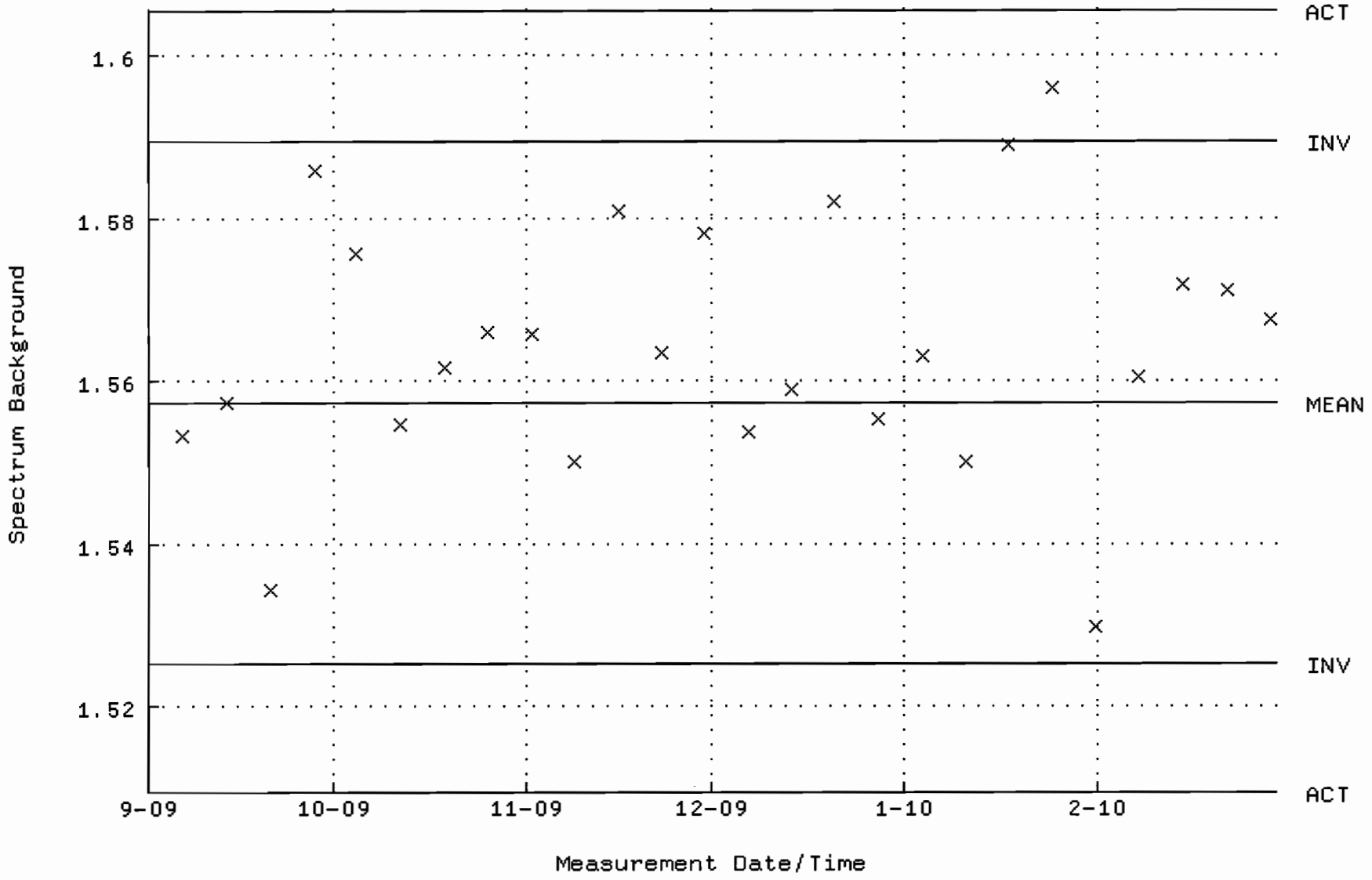
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM11.QAF;1
Parameter Name : BACKRATE (Spectrum Background Rate)
Start/End Dates : 6-SEP-2009 11:41:47 through 1-MAR-2010 12:00:00
Mean +- Std Dev : 1.65552 +- 3.175806E-02 (1.92 %)



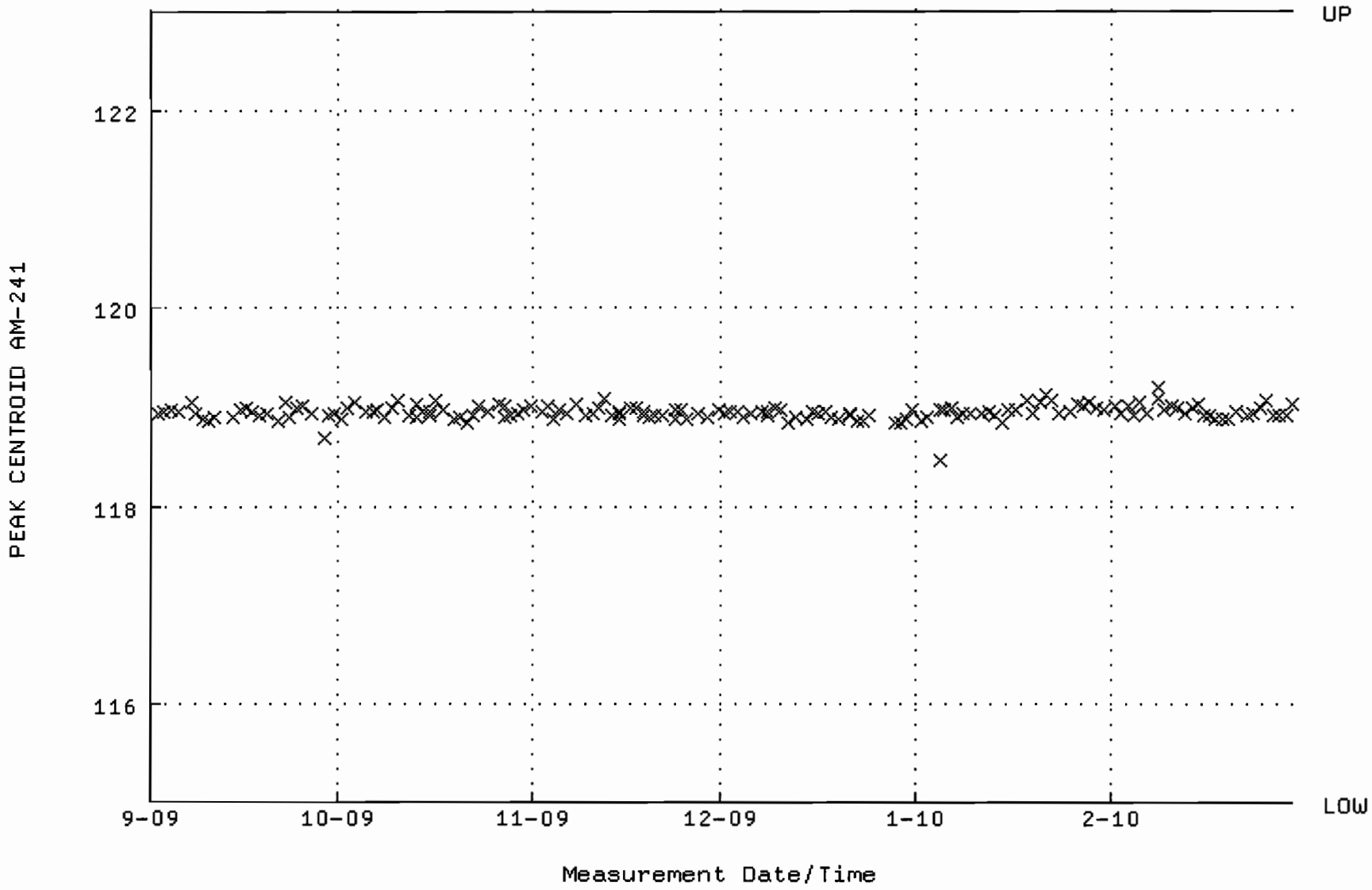
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM12_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 07:07:38 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



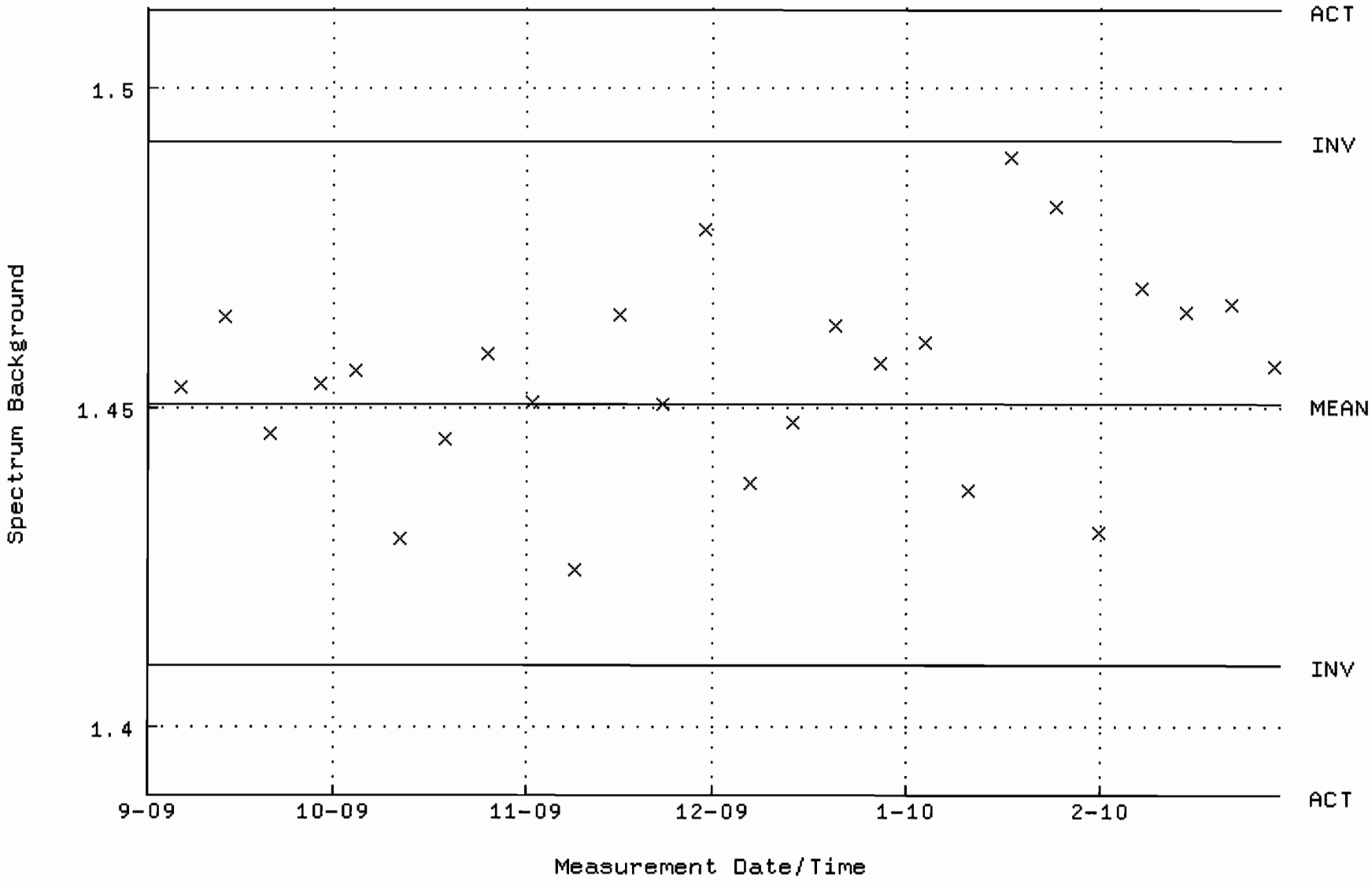
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM12.QAF;1
Parameter Name : BACKRATE (Spectrum Background Rate)
Start/End Dates : 6-SEP-2009 11:42:20 through 1-MAR-2010 12:00:00
Mean +- Std Dev : 1.55746 +- 1.601675E-02 (1.03 %)



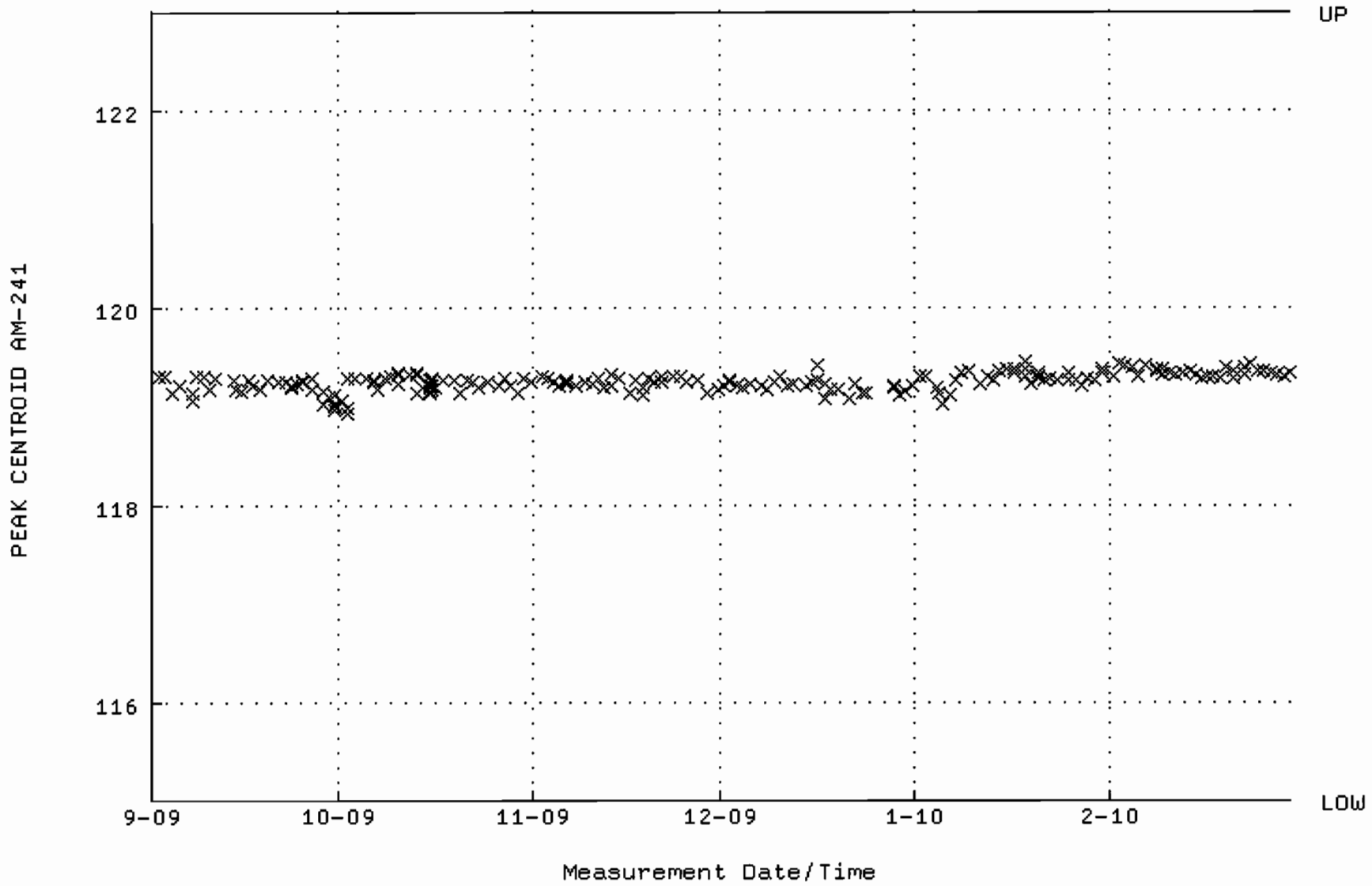
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM19_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 05:06:58 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



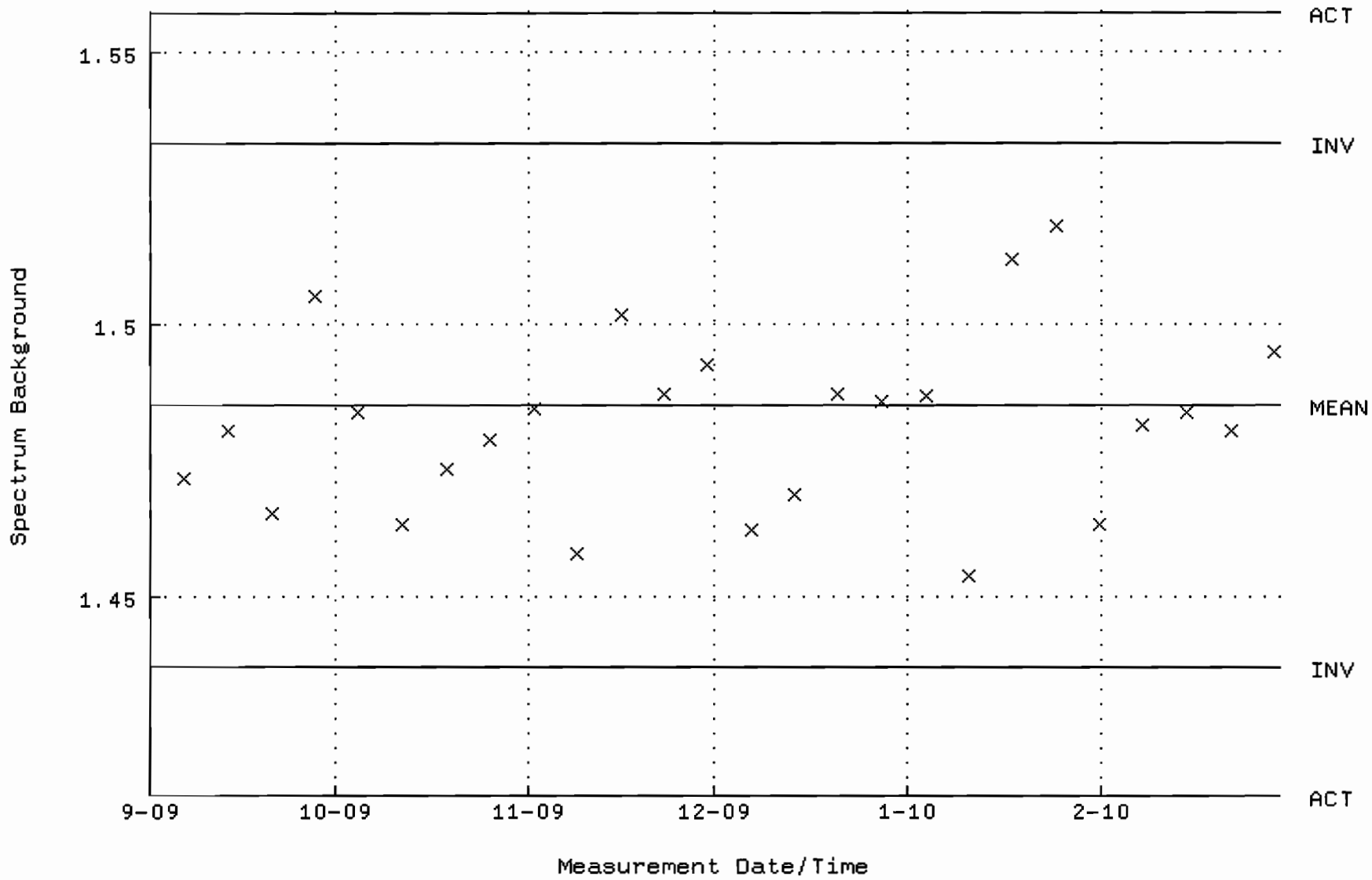
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM19.QAF;1
Parameter Name : BACKRATE (Spectrum Background Rate)
Start/End Dates : 6-SEP-2009 11:45:39 through 1-MAR-2010 12:00:00
Mean +- Std Dev : 1.45067 +- 2.046038E-02 (1.41 %)



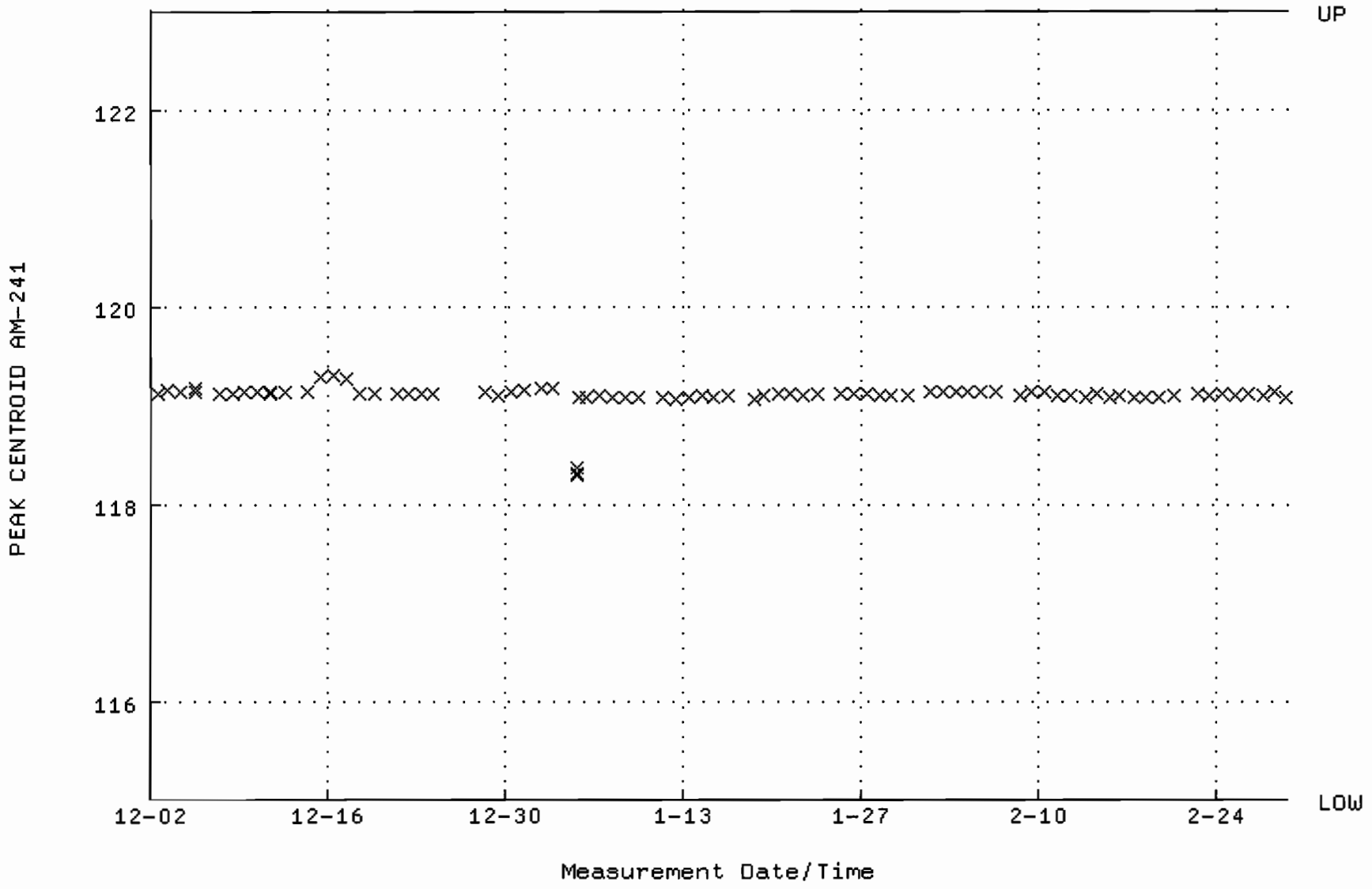
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM20_500MLMB.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-SEP-2009 04:53:11 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



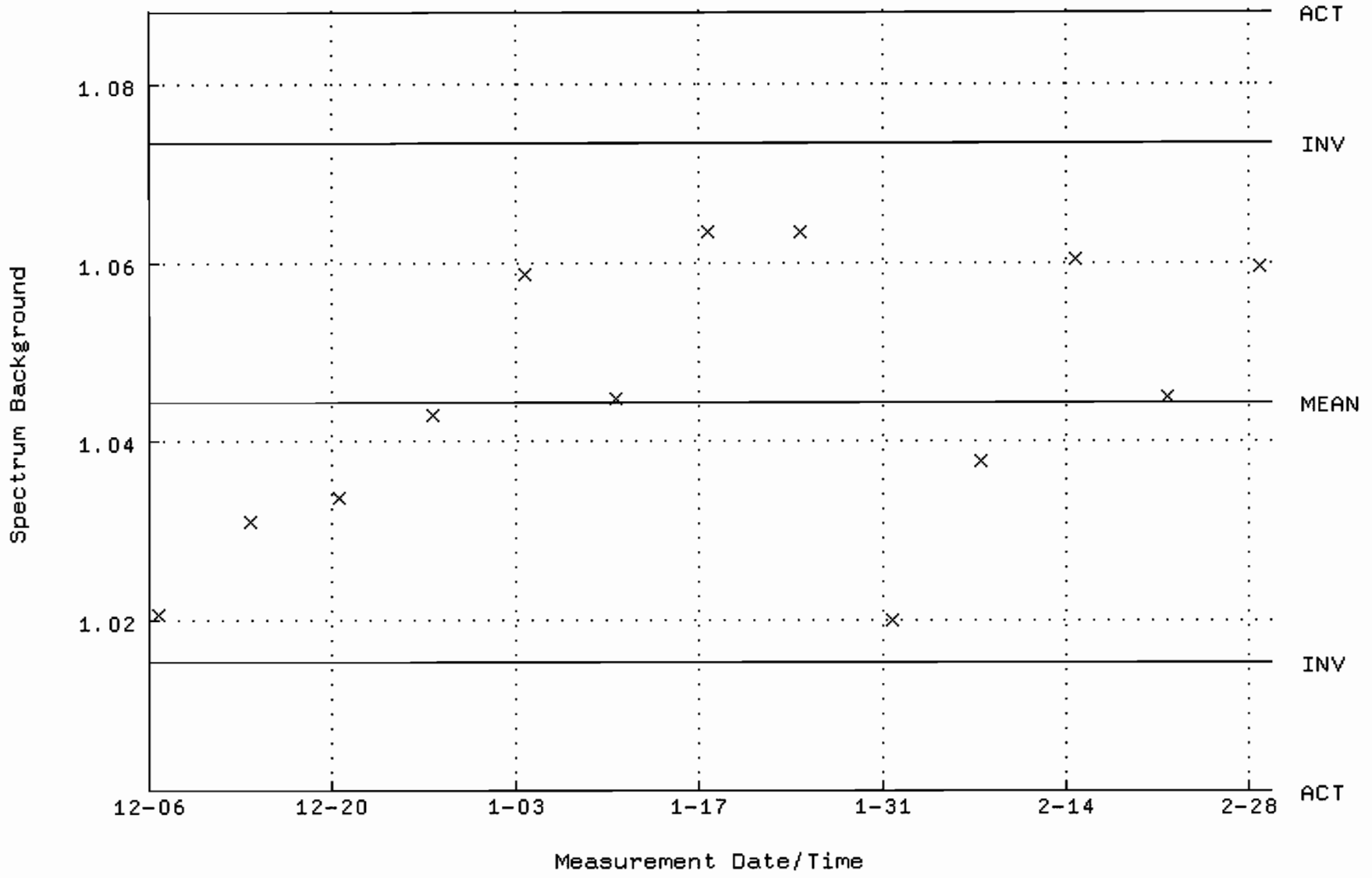
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM20.QAF;1
Parameter Name : BACKRATE (Spectrum Background Rate)
Start/End Dates : 6-SEP-2009 11:46:04 through 1-MAR-2010 12:00:00
Mean +- Std Dev : 1.48527 +- 2.388665E-02 (1.61 %)



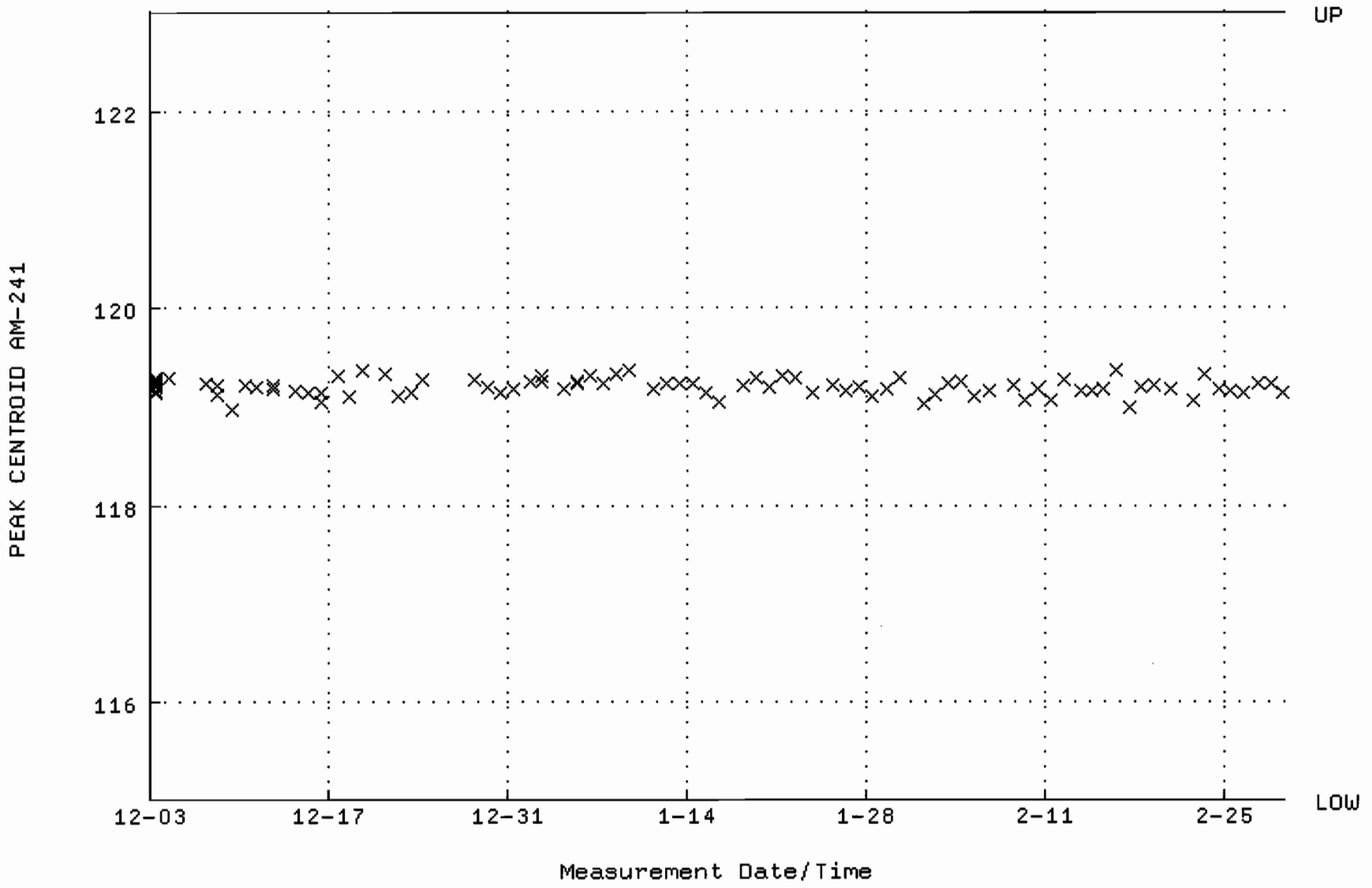
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM21_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-DEC-2009 13:07:42 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



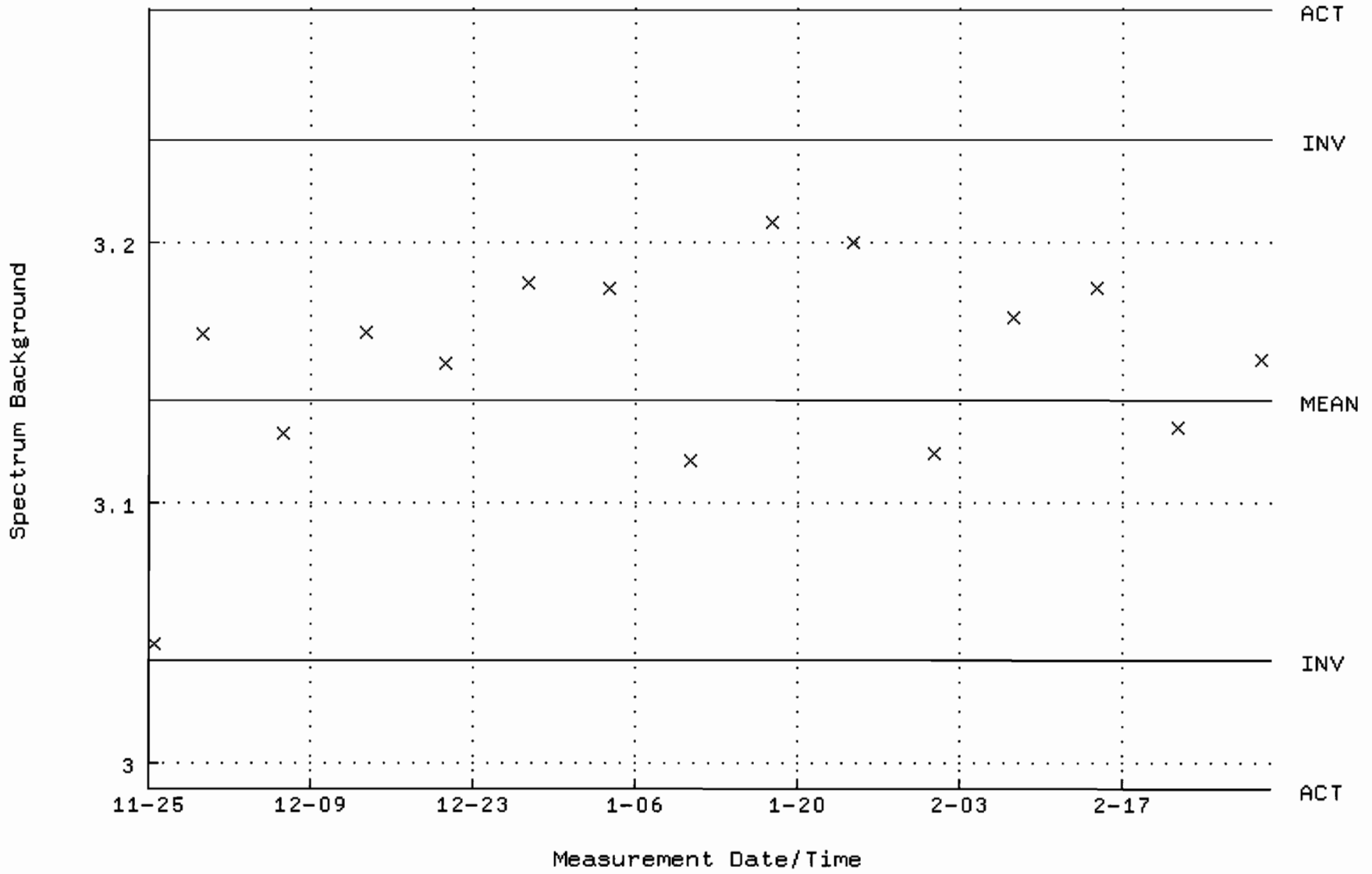
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM21.QAF;1
Parameter Name : BACKRATE (Spectrum Background Rate)
Start/End Dates : 6-DEC-2009 15:25:38 through 1-MAR-2010 12:00:00
Mean +- Std Dev : 1.04443 +- 1.452671E-02 (1.39 %)



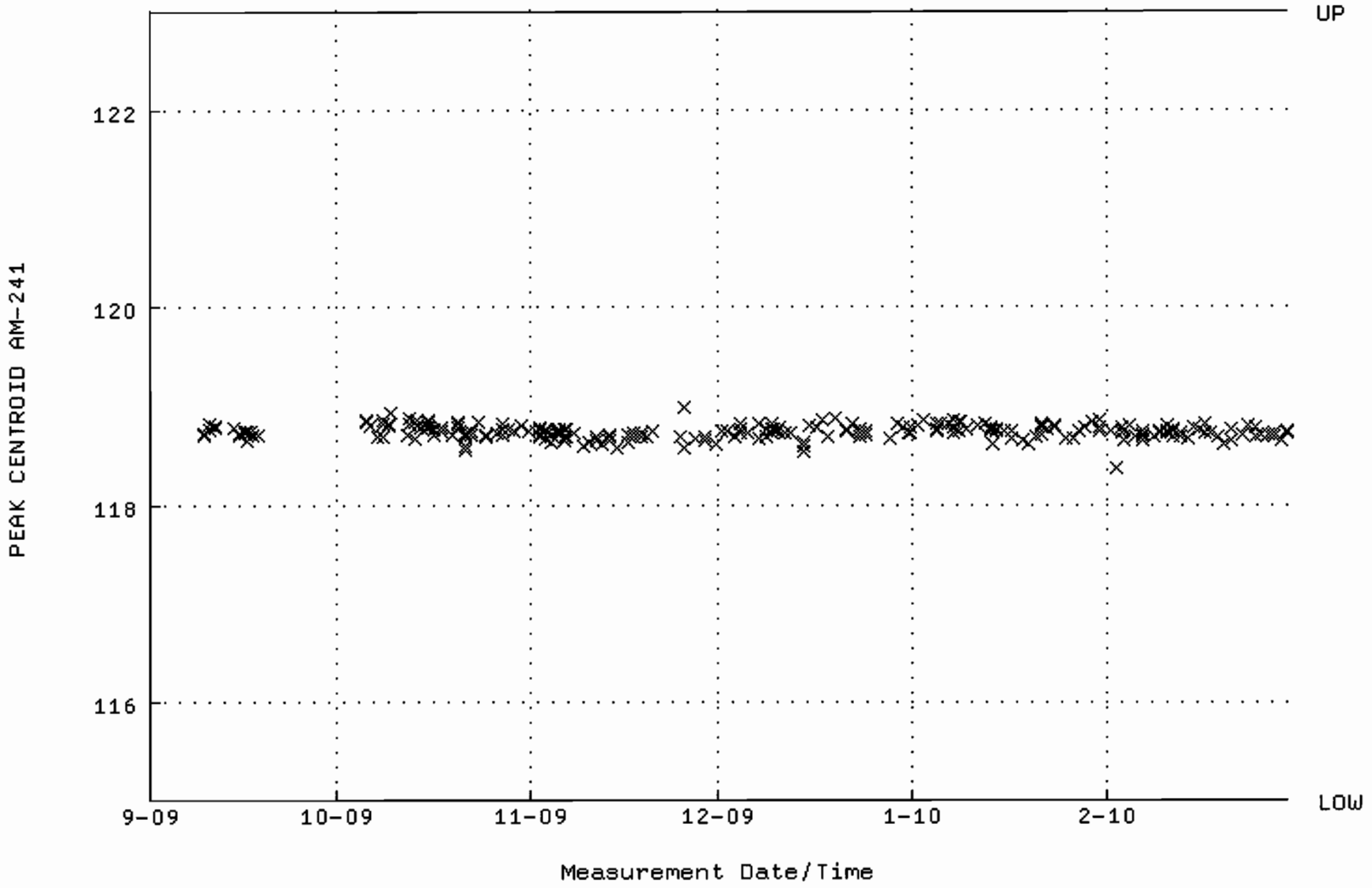
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM22_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 3-DEC-2009 09:11:39 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



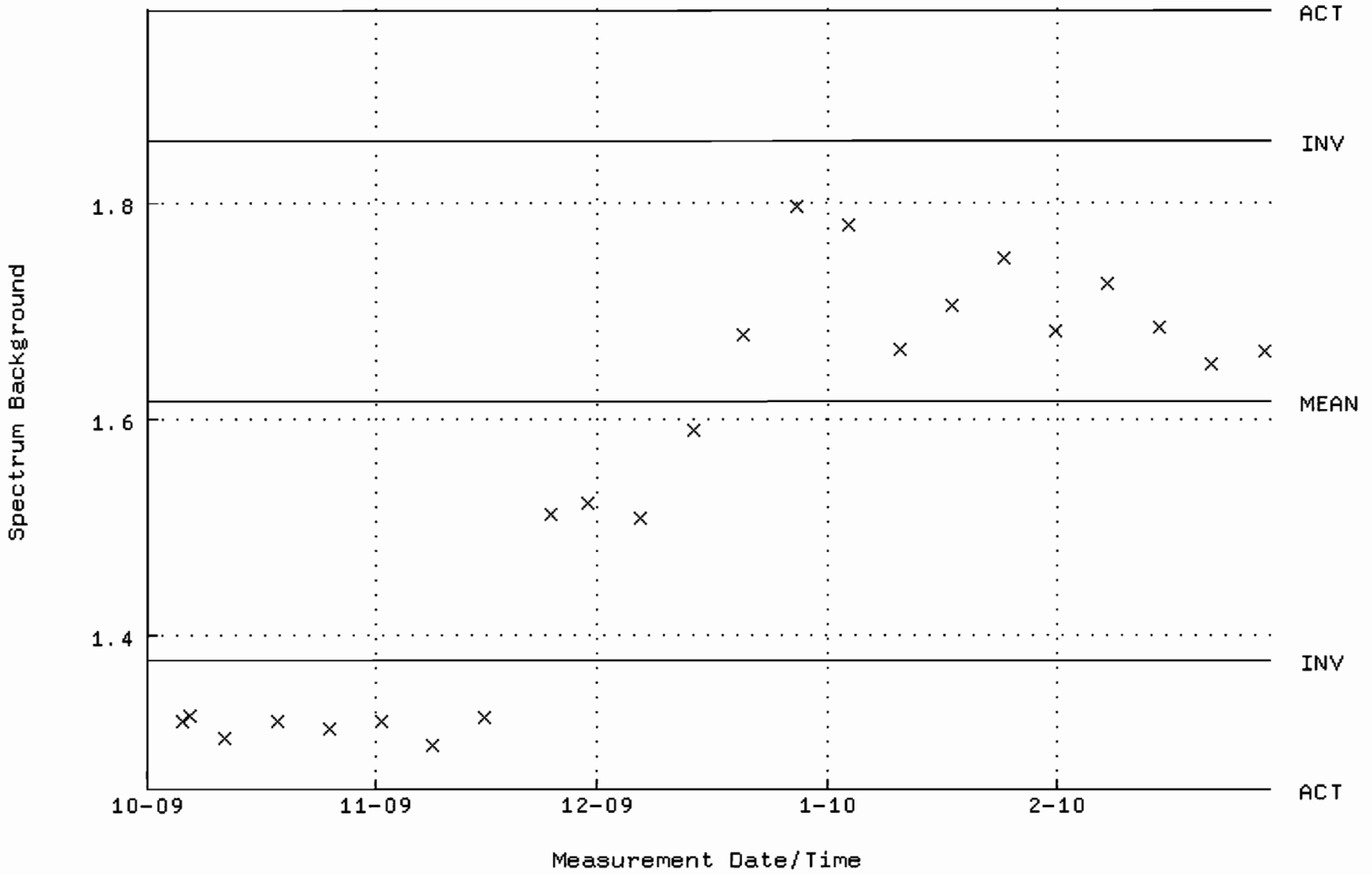
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM22.QAF;1
Parameter Name : BACKRATE (Spectrum Background Rate)
Start/End Dates : 25-NOV-2009 10:28:37 through 1-MAR-2010 12:00:00
Mean +- Std Dev : 3.13961 +- 4.985064E-02 (1.59 %)



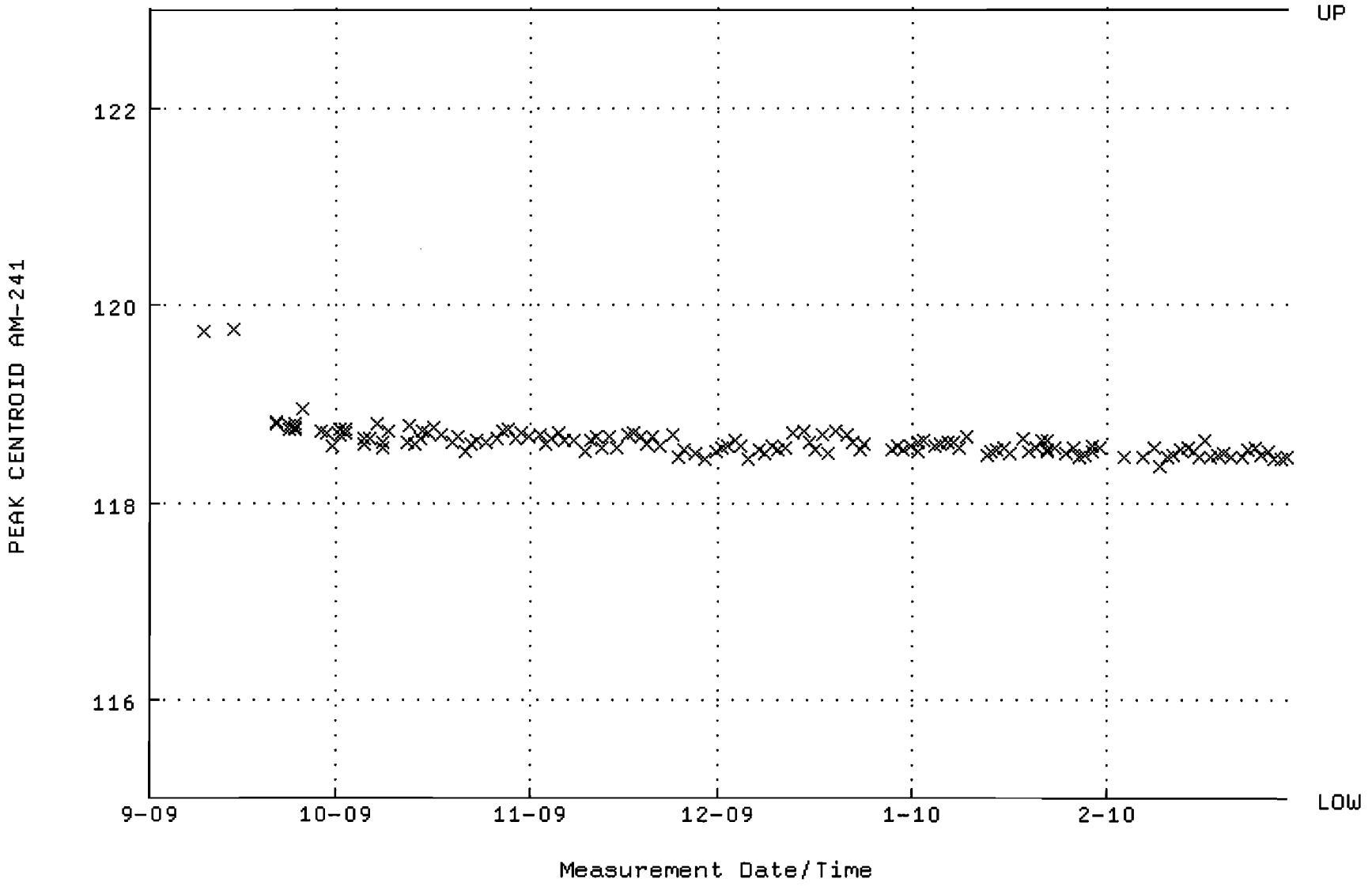
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM23_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 9-SEP-2009 16:19:12 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



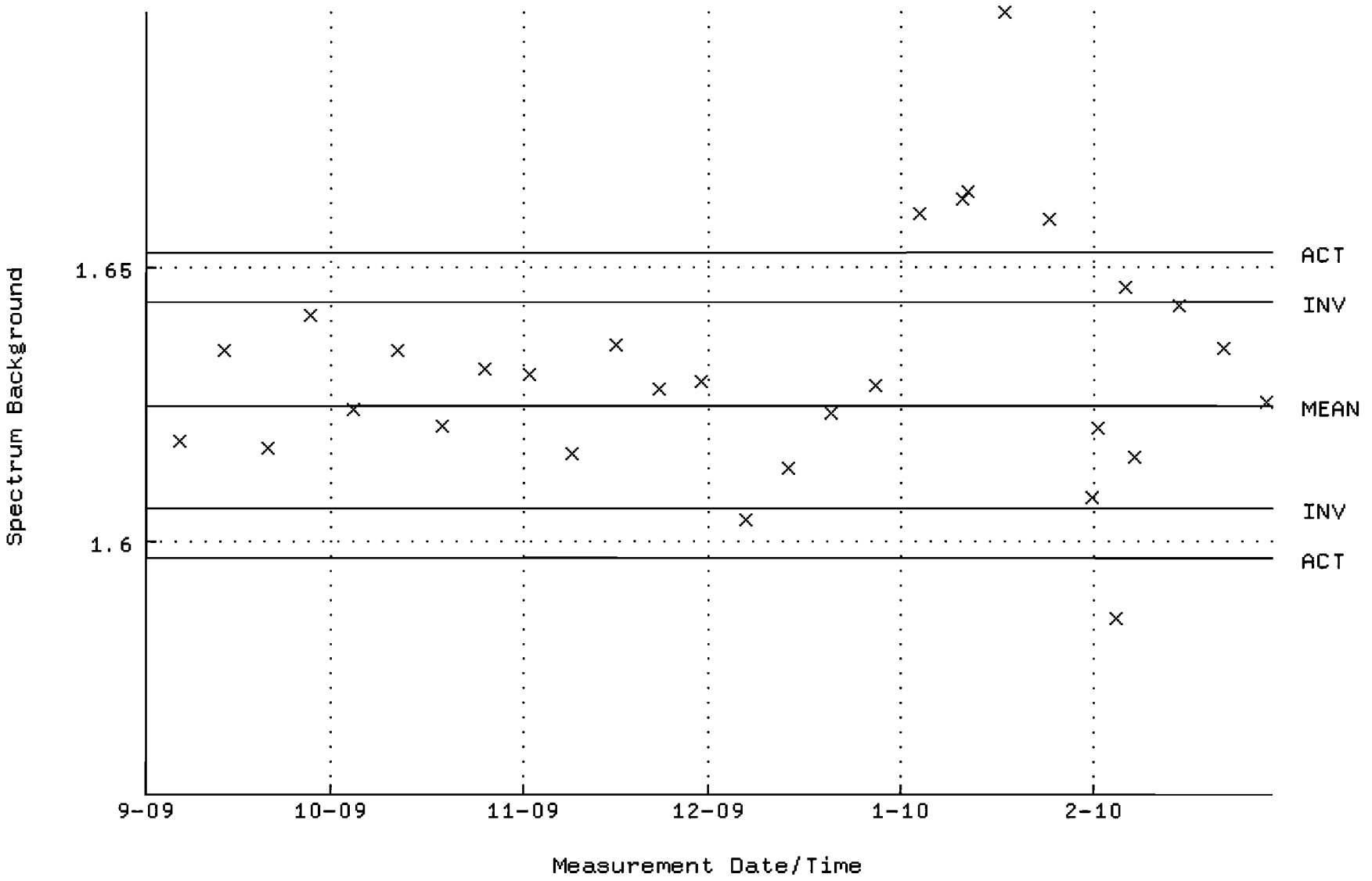
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM23.QAF;1
Parameter Name : BACKRATE (Spectrum Background Rate)
Start/End Dates : 5-OCT-2009 15:13:53 through 1-MAR-2010 12:00:00
Mean +- Std Dev : 1.61827 +- 0.119991 (7.41 %)

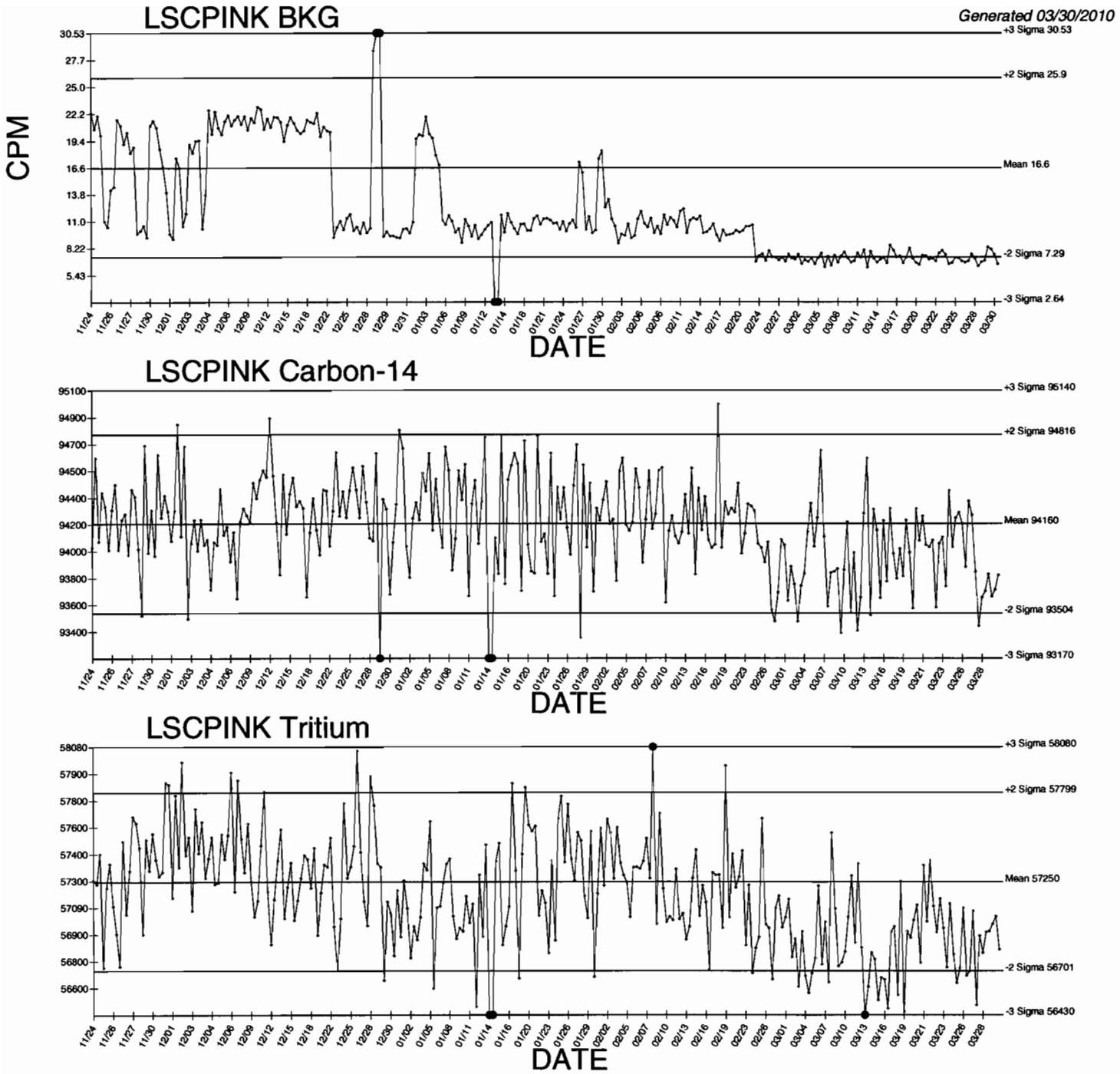


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM25_2LMB.QAF;1
Parameter Name : PSCENTRD-59 (PEAK CENTROID AM-241)
Start/End Dates : 9-SEP-2009 16:18:34 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM25.QAF;1
Parameter Name : BACKRATE (Spectrum Background Rate)
Start/End Dates : 6-SEP-2009 11:47:27 through 1-MAR-2010 12:00:00
Mean +- Std Dev : 1.62502 +- 9.370414E-03 (0.58 %)





● Denotes Outlier

STANDARDS DATA

Amersham International plc
Amersham Laboratories

0134

[redacted]

NAMAS
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 ±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) = $3{\cdot}7 \times 10^{10}$ becquerels exactly.

Useful conversion factors are:

1 microcurie (µCi) = $3{\cdot}7 \times 10^4$ 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

RC-5-023-061a

W.F. Case

Amersham
The Health Science Group

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:	03/27/2009
Expiration Date:	03/11/2011
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

(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(3.3659 g) * (488 kBq/g) * (60000 dpm/kBq) / (100 mL) = 985535.5200 dpm/mL
(3.3659 g) * (488 kBq/g) * (60000 dpm/kBq) / (1.0004 g/mL) / (100 mL) = 985180.3116 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	03/11/2010	03/11/2011

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for H-3 Standard 0134-K

G. Ramsay	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff	Standard Mass. Used (mL)	Source DPM/mL
3/11/2010	0134-K N1	1081.2000	38.6000	1042.6000	0.44203446	1.0000	2358.639627
	0134-K N2	1132.6000	38.6000	1094.0000	0.44203446	1.0000	2474.920154
	0134-K N3	1142.0000	38.6000	1103.4000	0.44203446	1.0000	2496.185464
						Average =	2443.248415
Mean Value (Counting) =	2443.248415		**99.4273605**	**Pass**			
Stdev =	74.04078992		0.03030424	**Rule 3 (Pass/Fail)**			

Certificate Value =	2457.32	dpm/mL
Lower Limit =	2295.166835	dpm/mL
Upper Limit =	2591.329995	dpm/mL
Rule 1 Pass/Fail	**Pass**	
Two sigma =	148.0815798	dpm/mL
10 % of Mean =	244.3248415	dpm/mL
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 10% of the certificate value.

The analyst prepared three standard verification sources for H-3 source 0134-K by transferring 1.0 mL portions of the standard into glass liquid scintillation vials. Ten mL of Ecoscint 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 Ecoscint Ultra liquid scintillation cocktail. The standard verification vials and Background source were dark adapted for two hours and counted on Brown for H-3 source standard verification. The H-3 efficiency calibration which was used for verification calculations was performed on 3/11/10 using 1222 A (H-3).
Each verification source calculation was performed as follows:

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

3/18/10
3/18/10

ANALYTICS
Isotope Products Laboratories Company

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

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: 11-2-06

This standard will expire one year after the calibration date.

rec'd 11/30/06
RC-S-045-073-0

Corporate Office
24937 Avenue Tibbitts, Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd., Atlanta, Georgia 30318

ANALYTICS
An Isotope Products Laboratories Company

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318

Tel 404•352•8677
Fax 404•352•2837

www.analyticsinc.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 Uncertinty (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

[1]Calibration Methods:

4π LS (4 pi Liquid Scintillation Counting)
HPGe (High Purity Germanium Gamma Ray Spectrometer)
IC (Gamma Ray Ionization Chamber)

[2]As Percent (%)from counting data

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

Operations Manual Forms, ANA-QA-06 Form 1, Rev. 2, 6/7/2005

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

(Mass of parent(g)) * (Parm Activity (dpm)) * (conversion dpm to dpm) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (dpm)) * (conversion dpm to dpm) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(5.2579 g) * (218817 dpm) * (1 dpm/dpm) / (5.31725 g * 100 mL) = 2163.7461 dpm/mL
(5.2579 g) * (218817 dpm) * (1 dpm/dpm) / (1.0611 g/mL)/ (5.31725 g * 100 mL) = 2039.2400 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Am-241	Isotope	Result	
	Mixed Gamma N1	2534	pCi/L - VER. JAR. 1
	Mixed Gamma N2	2510	pCi/L - VER. JAR. 3
	Mixed Gamma N3	2413	pCi/L - VER. JAR. 5
Mean Value (Counting) =	2485.67	**100.00**	**Pass**
Stdev =	64.065		**Rule 3 (Pass/Fail)**
Certificate Value =	2485.68018	pCi/L	
Lower Limit =	2357.536524	pCi/L	
Upper Limit =	2613.796809	pCi/L	
Rule 1 (Pass/Fail)	**Pass**		
Two sigma =	128.1301422		
10 % of Mean =	248.56666667		
Rule 2 (Pass/Fail)	**Pass**		

M. Stamps 12/2/09 [illegible] 12/4/09

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		
	Mixed Gamma N1	854.2	pCi/L	- VER-JAR-1
	Mixed Gamma N2	907.6	pCi/L	- VER-JAR-3
	Mixed Gamma N3	898.9	pCi/L	- VER-JAR-2
Mean Value (Counting) =	886.90	**95.01**	**Pass**	
Sidev =	28.651	**Rule 3 (Pass/Fail)**		
Certificate Value =	933.44144	pCi/L		
Lower Limit =	829.597644	pCi/L		
Upper Limit =	944.202356	pCi/L		
Rule 1 (Pass/Fail)	**Pass**			
Two sigma =	57.30235597			
10 % of Mean =	88.69000000			
Rule 2 (Pass/Fail)	**Pass**			

M. Stamps 12/2/09

12/4/09

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

Co-60 (1332.5)	Isotope	Result	
	Mixed Gamma N1	1572	pCi/L - VER-JAR-5
	Mixed Gamma N2	1495	pCi/L - VER-JAR-2
	Mixed Gamma N3	1501	pCi/L - VER-JAR-3
Mean Value (Counting) =	1522.67	**98.50**	**Pass**
Stdev =	42.829	**Rule 3 (Pass/Fail)**	
Certificate Value =	1545.8378	pCi/L	
Lower Limit =	1437.008431	pCi/L	
Upper Limit =	1608.324902	pCi/L	
Rule 1 (Pass/Fail)	**Pass**		
Two sigma =	85.65823564		
10 % of Mean =	152.26666667		
Rule 2 (Pass/Fail)	**Pass**		

M. Stamps 12/2/09 [illegible] 12/4/09

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
Rule 3 = The determined mean value shall be within 5% of the certificate value.

0244-A Characterization

Sample #	Uranium-233/234 Result (pCi/g)	Uranium-238 Result (pCi/g)	Thorium-230 Result (pCi/g)
0244-A 1	6.59	6.12	25.3
0244-A 2	6.36	6.07	28.5
0244-A 3	5.78	5.53	26.5
0244-A 4	6.48	5.97	25.5
0244-A 5	5.65	5.59	26.2
0244-A 6	6.96	5.78	27.0
0244-A 7	5.95	5.75	24.2
0244-A 8	5.29	5.67	27.2
0244-A 9	5.51	6.05	24.3
0244-A 10	6.37	5.57	25.6
0244-A 11	6.50	5.80	25.8
0244-A 12	6.13	5.42	22.4
0244-A 13	5.49	5.24	24.7
0244-A 14	6.19	5.21	26.9
0244-A 15	6.50	6.27	27.6
0244-A 16	6.50	5.24	24.9
0244-A 17	6.25	6.05	24.7
0244-A 18	6.14	6.00	25.4
0244-A 19	6.19	6.14	26.4
0244-A 20	5.67	5.61	23.2
Mean Value	6.13	5.75	25.62
1 sigma	0.439	0.325	1.493
2 sigma	0.878	0.650	2.986
75% Limit	4.60	4.31	19.22
125% Limit	7.66	7.19	32.03
Expected Result	6.2 +/- 4.0	6.0 +/- 4.0	24.5 +/- 0.6
Achieved Results	6.13 +/- 0.439	5.75 +/- 0.325	25.62 +/- 1.493

REFERENCE DATA 4/14/2000 Jeff C Neff 12/1/04

Angela D. Johnson 12/3/04

TRM

Invoice:

5 boxes of TRM-1
10 " " TRM-2 and 3
5 " each of NRM-1 through 6
7 " baghouse dirt

Use 1/4 gm x 10 Samples WITH Together for TRM-2

Table 7. Recommended Concentrations of Tailings Reference Materials (pCi/g)

	TRM–1	TRM–2	TRM–3	TRM–4
U–238	99 ± 6	6.0 ± 4.0	19.6 ± 1.4	44.9 ± 1.6
U–234	105 ± 6	6.2 ± 4.0	19.6 ± 1.9	44.6 ± 1.2
Th–230	471 ± 11	24.5 ± 0.6	58.5 ± 2.1	44.0 ± 1.6
Ra–226	489 ± 17	25.4 ± 0.9	60.3 ± 2.3	42.9 ± 1.2
Pb–210	485 ± 24	22.1 ± 1.2	56.0 ± 2.1	38.9 ± 2.0

Attention Nancy Slater At GEL
Not For Log-In

9911627-01 -> 0

SF 2001-COC (10-97)
Supersedes (5-97) issue

Internal Lab Batch No.

ANALYSIS REQUEST AND CHAIN OF CUSTODY

SAR/WR No. N/A

Press F1 for instructions for each field.

AR/COC- 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
Carrier/Waybill No.: 726794
Lab Contact: EDIE KENT
Lab Destination: G.E.L.
SMO Contact/Phone: Doug Salmi / 844-3110
Send Report to SMO: Suzi Jensen/844-3184

Contract No.: AJ-2480A
Case No.: 10204 1.3
SMO Authorization: Doug Salmi
Bill to: Sandia National Laboratories
Supplier Services, Dept.
P.O. Box 5800 MS 0154

Location — Tech Area VI — Building N/A — Room N/A

Reference LOV (available at SMO)

Sample No. - Fraction	ER Sample ID or Sample Location Detail	Beginning Depth in Ft.	ER Site No.	Date/Time Collected	Sample Matrix	Container Type	Container Volume	Preservative	Sample Collection Method	Sample Type	Parameter & Method Requested	LAB USE Lab Sample ID
050484 - 001	PEM-1	N/A	N/A	11/15/9 1100	S	P	1 L	4 C	G	SA	See Special	
050485 - 001	TRM-2	N/A	N/A	11/15/9 1100	S	G	1 L	4 C	G	SA	Instructions	
050486 - 001	~~NRM-2~~ NBHD	N/A	N/A	11/15/9 1100	S	G	1 L	4 C	G	SA	Below	
-												
-												
-												
-												
-												
-												
-												

RMMA ☐Yes ☒No Ref. No.
Sample Disposal ☐Return to Client ☒Disposal by lab

Sample Tracking (SMO USE)
Data Entered (mm/dd/yy)
Entered by

Special Instructions/QC Requirements
EDD ☐Yes ☒No
Raw data package ☐Yes ☒No
These "samples" are well characterized rad materials being sent to GEL on behalf of Hank Mistaer

Please list as separate report.

Abnormal Conditions on Receipt (LAB USE)

Turnaround Time ☒Normal ☐Rush Required Report Date
QC limits

Sample Team Members	Name	Signature	Init	Company/Organization/Phone
	Douglas E. Perry		DP	Weston / 7577 / 845-0867

1. Relinquished by	Org. 7577	Date 11-16-99	Time 0900	4. Relinquished by	Org.	Date
1. Received by	Org.	Date	Time	4. Received by	Org.	Date
2. Relinquished by	Org.	Date	Time	5. Relinquished by	Org.	Date
2. Received by	Org.	Date	Time	5. Received by	Org.	Date
3. Relinquished by	Org.	Date	Time	6. Relinquished by	Org.	Date
3. Received by	Org.	Date	Time	6. Received by	Org.	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)

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. Fehr 4/30/04
[illegible] 5/1/04

PEM-1

PREPARATION AND CHARACTERIZATION OF THE PERFORMANCE EVALUATION SOIL SAMPLE PEM-1

INTRODUCTION

Rust Geotech (Rust) was contracted by Los Alamos National Laboratory (LANL) to prepare and characterize a soil performance evaluation sample designated PEM-1. This report describes sample preparation, homogeneity assessment, and determination of the concentrations of 28 elements and radioactive isotopes in the sample.

SAMPLE PREPARATION

Rust received nine five-gallon buckets of soil from LANL. The soils were dried overnight in ovens at 103 °C. The large pieces of leaves and sticks were removed and the soils were ground with ceramic-plate grinders to a particle size that passed through a 325 mesh screen. The samples were blended at the proportions specified by LANL for 48 hours in a 3-cubic-foot cross-flow blender. The sample identifications and the amounts used are listed in Table 1.

Table 1. Sample Identifications and Amounts Used to Prepare PEM-1

LANL Sample ID	Amount Used (kg)
AAA 1592	1.7
AAA 2505-1	10.9
AAA 2505-2	12.8
AAA 2750-1	8.4
AAA 2750-2	8.4
AAA 3205	12.6
AAA 8581	4.2
AAB 3417	12.8
AAB 3475	12.6

The blended sample was transferred to three five-gallon plastic containers. While the sample was being transferred, 10 samples were taken at pre-determined time intervals to be used for homogeneity assessment and sample characterization. These samples are believed to be representative of the bulk material.

Attention Nancy Slater At GEL
Not For Log-In

9911627-01->0

SF 2001-COC (10-97)
Supersedes (5-97) issue

Internal Lab Batch No.

ANALYSIS REQUEST AND CHAIN OF CUSTODY

SAR/WR No. N/A

Press F1 for instructions for each field.

AR/COC- 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
Carrier/Waybill No. 7-2-6-7-9-4
Lab Contact: EDIE KENT
Lab Destination: G.E.L.
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: Doug Salmi
Bill to: Sandia National Laboratories
Supplier Services, Dept.
P.O. Box 5800 MS 0154

Location — Tech Area VI
Building N/A — Room N/A

Reference LOV (available at SMO)

Sample No. - Fraction	ER Sample ID or Sample Location Detail	Beginning Depth in Ft.	ER Site No.	Date/Time Collected	Sample Matrix	Container Type	Container Volume	Preservative	Sample Collection Method	Sample Type	Parameter & Method Requested	LAB USE Lab Sample ID
050484 - 001	PEM-1	N/A	N/A	11/15/9 1100	S	P	1 L	4 C	G	SA	See Special	
050485 - 001	TRM-2	N/A	N/A	11/15/9 1100	S	G	1 L	4 C	G	SA	Instructions	
050486 - 001	~~NRM-2~~ NBHD	N/A	N/A	11/15/9 1100	S	G	1 L	4 C	G	SA	Below	
-												
-												
-												
-												
-												
-												
-												

RMMA ☐Yes ☒No Ref. No.
Sample Disposal ☐Return to Client ☒Disposal by lab
Turnaround Time ☒Normal ☐Rush Required Report Date

Sample Tracking SMO USE
Date Entered (mm/dd/yy)
Entered by

QC Initials

Special Instructions/QC Requirements
EDD ☐Yes ☒No
Raw data package ☐Yes ☒No
These "samples" are well interceptors and materials being sent to GEL on behalf of Hank Mistaer-
Please list as separate report.

Abnormal Conditions on Receipt LAB USE

Sample Team Members	Name	Signature	Init	Company/Organization/Phone
	Douglas E. Perry	Douglas E. Perry	DEP	Weston / 7577 / 845-0667

1. Relinquished by	Douglas E. Perry Sms	Org. EST	Date 11-16-99	Time 0900	4. Relinquished by	Org.	Date
1. Received by	Org.	Date	Time		4. Received by	Org.	Date
2. Relinquished by	Org.	Date	Time		5. Relinquished by	Org.	Date
2. Received by	Org.	Date	Time		5. Received by	Org.	Date
3. Relinquished by	Org.	Date	Time		6. Relinquished by	Org.	Date
3. Received by	Org.	Date	Time		6. Received by	Org.	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	Customer:	GENERAL ENGINEERING LABS
Half Life:	7380 ± 40 years	P.O.No.:	9290-RAD
Catalog No.:	7243	Reference Date:	January 1 1994 12:00 PST.
Source No.:	445-96-2	Contained Radioactivity:	(Am-243) 101.2 μCi
		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 μCi/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: ±3.0%

b. Random uncertainty in assay: ±0.4%

c. Random uncertainty in weighing(s): ±0.0%

d. Total uncertainty at the 99% confidence level: ±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).

Anna U. Khan
QUALITY CONTROL

Jan 3, 1994
Date Signed

ISOTOPE PRODUCTS LABORATORIES
1800 North Keystone Street
Burbank, California 91504
(818) 843 - 7000

RC-S-005-32

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 ± 10° 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 ± 10° C for 20 minutes. The entire surface of the source is then wiped with a moistened cotton swab or filter paper disk. After drying, the swab or disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

☐ **4. GAS SOURCE TEST (Radioactive Gas)**

The source is placed in a vacuum desiccator and maintained at a pressure of less than 1 mm Hg for not less than 12 hours. The activity is checked by introducing air into the desiccator and monitoring the air with an end-window G.M. tube. Activity levels exceeding 1000 cpm are cause for rejection of the source.

☑ **5. OTHER LEAK TEST**

The ampoule is kept in an inverted position on a filter paper disk for a minimum of 16 hours. The filter paper disk is then checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

☐ **6. LEAK TEST NOT APPLICABLE**

The active area of this source is uncovered or is protected by a very thin coating. Although the deposit is adherent, it is not designed or certified to pass a standard leak test. The inactive portions of the source have been checked using the standard wipe test. Levels of removable activity did not exceed 0.001 μCi beta-gamma or 0.0001 μCi alpha at the time of shipment.

Standard Traceability Log Rad

Source Material Info	
Parent Code:	445-96-2
Prepared By:	Genie Bost
Carrier Conc:	2M HNO3
Reference Date:	01/01/1994
Ampoule Mass (g):	5.3739 g
Uncertainty:	+/- 3 %
LogBook No:	RC S 005 032

A Solution Material Info	
Isotope:	Americium-243
Prepared By:	Angela Johnson
Prep Date:	01/05/1994
Verification Date:	03/09/2010
Expiration Date:	03/09/2011
Primary Code:	445-96-2-A
Dilution(mL):	100 mL
Mass of Parent(g):	5.3419 g
Density(g/mL):	1.0785
Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(5.3419 g) * (18.84 uCi/g) * (2220000 dpm/uCi) / (100 mL) = 2234238.9912 dpm/mL
(5.3419 g) * (18.84 uCi/g) * (2220000 dpm/uCi) / (1.0785 g/mL) / (100 mL) = 2071617.0528 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-VV*

A.Drochter	Isotope	Value	Uncertainty
3/15/2010	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-241certified 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.

3/15/10
3/16/10

1430

NATIONAL PHYSICAL LABORATORY

Teddington Middlesex UK TW11 0LW Telephone +44 20 8977 3222

Certificate of Calibration

UKAS CALIBRATION 0478

PLUTONIUM-236 SOLUTION
R37-02

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

FOR:	GEL Laboratories LLC 2040 Savage Road Charleston, SC 29407 USA
FOR THE ATTENTION OF:	Mr Tim Winters
NPL PRODUCT CODE:	R37-02
IDENTIFICATION:	A09881
DESCRIPTION:	An aqueous solution of ^{236}Pu also containing 2 mol dm^{-3} of nitric acid. The solution is contained in a flame sealed ampoule of type Q and nominal volume 5 ml (squat) as defined in BS 795:1983.
DATE(S) OF CALIBRATION:	26 June 2009 to 1 July 2009
INTENDED USE:	Calibration of instruments for response to ^{236}Pu
STORAGE:	The material may be stored at room temperature in a suitably sealed container. Flame-sealed glass ampoules are recommended for long-term storage. Regulatory conditions may apply to the manner in which this material is stored.

RECEIVED 11/12/09 AM.

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.

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:	±0.6 Bq g^{-1} (±0.36 %)
Contaminants present:	^{226}Ra, ^{232}U, ^{228}Th, ^{237}Np
Activity concentration of ^{226}Ra:	11.0 mBq g^{-1}
Expanded uncertainty:	±4.0 mBq g^{-1} (±36 %)
Activity concentration of ^{232}U:	0.67 Bq g^{-1}
Expanded uncertainty:	±0.12 Bq g^{-1} (±18 %)
Activity concentration of ^{228}Th:	11.38 mBq g^{-1}
Expanded uncertainty:	±0.46 mBq g^{-1} (±4 %)
Activity concentration of ^{237}Np:	5.00 mBq g^{-1}
Expanded uncertainty:	±0.34 mBq g^{-1} (±8 %)
Sample Mass:	4.97 g ± 0.02 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) × 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) × 10^8 days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.

[6]. The recommended half life of ^{228}Th is 698.60 (46) days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm

UNCERTAINTIES

The reported uncertainties are based on standard uncertainties multiplied by a coverage factor k=2, providing a level of confidence of approximately 95 %. The uncertainty evaluations have been carried out in accordance with UKAS requirements.

Standard Traceability Log Rad

Source Material Info	
Parent Code:	1430
Prepared By:	Ashley Drochter
Carrier Conc:	2 M HNO3
Reference Date:	07/01/2009
Ampoule Mass (g):	4.97 g
Uncertainty:	+/- .36 %
LogBook No:	RC-S-051-149

A Solution Material Info	
Isotope:	Plutonium-236
Prepared By:	Ashley Drochter
Prep Date:	01/27/2010
Verification Date:	01/27/2010
Expiration Date:	01/27/2011
Primary Code:	1430-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.8051 g
Density(g/mL):	1.0610
Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (Bq/g)) * (conversion dpm to Bq) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (Bq/g)) * (conversion dpm to Bq) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(4.8051 g) * (170.8 Bq/g) * (60 dpm/Bq) / (100 mL) = 492.4266 dpm/mL
(4.8051 g) * (170.8 Bq/g) * (60 dpm/Bq) / (1.0610 g/mL) / (100 mL) = 464.1156 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
03/04/2010	Ashley Drochter	15.2331	200	1430-C	35.3496 dpm/mL	03/04/2010	03/04/2011
03/17/2010	Ashley Drochter	15.0683	200	1430-D	34.9672 dpm/mL	03/17/2010	03/17/2011

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Plutonium-236 Standard 1430-C

	Isotope	Value	Uncertainty
A. Drochter	1430-C	2.760	0.4480
3/4/2010	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.

3/5/10

3/5/10

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404-352-8677
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www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

1283

78747-278

U-232 5 mL Liquid in Flame Sealed Vial

Customer: GEL Laboratories, LLC
P.O. No.: 7319 RD, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

Isotope:	U-232
Activity (Bq):	3.754 E3
Half-Life:	68.9 years
Calibration Date:	December 9, 2008 12:00 EST
Relative Expanded Uncertainty (k=2):	5.0%

Comments:
Impurities: U-233 <0.3%, Am-241 <0.15%
5.20453 grams 1M HNO_3 solution.

Source Prepared By: _____
W. Mao, Radiochemist

QA Approved: _____ Date: 12-11-08
D. M. Montgomery, QA Manager

End of Certificate

RECEIVED 12/15/08
RC-S-05

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

(Mass of parent(g)) * (Parm Activity (Bq)) * (conversion dpm to Bq) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (Bq)) * (conversion dpm to Bq) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(5.0245 g) * (3754 Bq) * (60 dpm/Bq) / (5.20453 g * 100 mL) = 2174.4872 dpm/mL
(5.0245 g) * (3754 Bq) * (60 dpm/Bq) / (1.0285 g/mL)/ (5.20453 g * 100 mL) = 2114.1700 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
12/16/2008	Daniel Roy	25.1813	1000	1283-B	53.2375 dpm/ml	12/16/2008	12/16/2009
12/30/2008	Tina Schoneman	2.05	250	1283-C	17.336 dpm/mL	12/02/2009	12/02/2010
12/30/2008	Tina Schoneman	.49	250	1283-D	4.1438 dpm/mL	01/09/2009	01/09/2010
01/14/2009	Mary Aders	25.0528	1000	1283-E	52.9659 dpm/ml	01/15/2009	01/15/2010
12/02/2009	Julie Strock	2.076	250	1283-F	17.5561 dpm/mL	01/09/2009	12/30/2009
12/02/2009	Julie Strock	.517	250	1283-G	4.3721 dpm/mL	01/08/2010	12/02/2010
12/09/2009	Ashley Drochter	21.56	1000	1283-H	45.58 dpm/mL	12/09/2009	12/09/2010

Verification for Uranium-232 Standard *1283-H*

Analyst: A. Drochter	**Serial #**	**Value**		**Uncertainty**	
Date: 12/10/09	1283-H N1	2.020	pCi/L	0.238	pCi/L
	1283-H N2	2.000	pCi/L	0.234	pCi/L
	1283-H N3	2.060	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 AD 12/14/09

RUNLOGS

Instrument Run Log

Instrument Type: GAMMA SPECTROMETER **Batch ID: 961099**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248515001	SAMPLE	MXR1	GAM01	19-MAR-10 20:40	DONE	CAN	12-JAN-10 00:00
248515002	SAMPLE	MXR1	GAM05	19-MAR-10 20:40	DONE	CAN	11-JUN-09 00:00
248515003	SAMPLE	MXR1	GAM17	19-MAR-10 20:40	DONE	CAN	06-JAN-10 00:00
248517001	SAMPLE	MXR1	GAM18	19-MAR-10 20:41	DONE	CAN	23-APR-09 00:00
248521001	SAMPLE	MXR1	GAM19	19-MAR-10 20:42	DONE	CAN	12-MAR-09 00:00
248521002	SAMPLE	MXR1	GAM22	19-MAR-10 20:42	DONE	CAN	02-DEC-09 00:00
248521003	SAMPLE	MXR1	GAM23	19-MAR-10 20:43	DONE	CAN	02-JUN-09 00:00
248526001	SAMPLE	MXR1	GAM25	19-MAR-10 20:43	DONE	CAN	07-OCT-09 00:00
248521004	SAMPLE	MXR1	GAM05	19-MAR-10 23:11	DONE	CAN	11-JUN-09 00:00
248521005	SAMPLE	MXR1	GAM20	19-MAR-10 23:11	DONE	CAN	26-AUG-09 00:00
248521006	SAMPLE	MXR1	GAM22	19-MAR-10 23:12	DONE	CAN	02-DEC-09 00:00
248521007	SAMPLE	MXR1	GAM23	19-MAR-10 23:12	DONE	CAN	02-JUN-09 00:00
248521008	SAMPLE	MXR1	GAM06	19-MAR-10 23:14	DONE	CAN	16-FEB-10 00:00
248521009	SAMPLE	MXR1	GAM21	19-MAR-10 23:15	DONE	CAN	28-JUL-09 00:00
248521010	SAMPLE	MXR1	GAM05	20-MAR-10 11:10	DONE	CAN	11-JUN-09 00:00
248521011	SAMPLE	MXR1	GAM06	20-MAR-10 11:10	DONE	CAN	16-FEB-10 00:00
1202061469	MB	MXR1	GAM11	20-MAR-10 11:11	DONE	CAN	18-NOV-09 00:00
1202061470	DUP	MXR1	GAM12	20-MAR-10 11:11	DONE	CAN	25-FEB-10 00:00
1202061471	LCS	MXR1	GAM20	20-MAR-10 11:12	DONE	CAN	26-AUG-09 00:00

Instrument Run Log

Instrument Type: LSC **Batch ID: 964063**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248515001	SAMPLE	KXK2	LSCPINK	29-MAR-10 14:07	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248515002	SAMPLE	KXK2	LSCPINK	29-MAR-10 15:00	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248515003	SAMPLE	KXK2	LSCPINK	29-MAR-10 15:53	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248517001	SAMPLE	KXK2	LSCPINK	29-MAR-10 16:45	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248521001	SAMPLE	KXK2	LSCPINK	29-MAR-10 17:38	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248521002	SAMPLE	KXK2	LSCPINK	29-MAR-10 18:30	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248521003	SAMPLE	KXK2	LSCPINK	29-MAR-10 19:23	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248521004	SAMPLE	KXK2	LSCPINK	29-MAR-10 20:15	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248521005	SAMPLE	KXK2	LSCPINK	29-MAR-10 21:08	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248521006	SAMPLE	KXK2	LSCPINK	29-MAR-10 22:00	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248521007	SAMPLE	KXK2	LSCPINK	29-MAR-10 22:53	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248521008	SAMPLE	KXK2	LSCPINK	29-MAR-10 23:45	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248521009	SAMPLE	KXK2	LSCPINK	30-MAR-10 01:53	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248521010	SAMPLE	KXK2	LSCPINK	30-MAR-10 02:46	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248521011	SAMPLE	KXK2	LSCPINK	30-MAR-10 03:38	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
248526001	SAMPLE	KXK2	LSCPINK	30-MAR-10 04:31	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
1202068228	MB	KXK2	LSCPINK	30-MAR-10 05:24	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
1202068229	DUP	KXK2	LSCPINK	30-MAR-10 06:17	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00
1202068230	LCS	KXK2	LSCPINK	30-MAR-10 07:09	DONE	10mL DW/13mL Ecoscint Ultra	21-AUG-09 00:00

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER **Batch ID: 965494**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248515001	SAMPLE	MXE1	1241	25-MAR-10 22:12	DONE		
248515002	SAMPLE	MXE1	1242	25-MAR-10 22:12	DUSE		
248515003	SAMPLE	MXE1	1243	25-MAR-10 22:12	DONE		
248517001	SAMPLE	MXE1	1244	25-MAR-10 22:12	DONE		
248521001	SAMPLE	MXE1	1245	25-MAR-10 22:12	DONE		
248521002	SAMPLE	MXE1	1246	25-MAR-10 22:12	DONE		
248521003	SAMPLE	MXE1	1247	25-MAR-10 22:12	DONE		
248521004	SAMPLE	MXE1	1248	25-MAR-10 22:12	DONE		
248521005	SAMPLE	MXE1	1249	25-MAR-10 22:13	DONE		
248521006	SAMPLE	MXE1	1250	25-MAR-10 22:13	DONE		
248521007	SAMPLE	MXE1	1251	25-MAR-10 22:13	DONE		
248521008	SAMPLE	MXE1	1252	25-MAR-10 22:13	DONE		
248521009	SAMPLE	MXE1	1253	25-MAR-10 22:13	DONE		
248521010	SAMPLE	MXE1	1254	25-MAR-10 22:13	DONE		
248521011	SAMPLE	MXE1	1255	25-MAR-10 22:13	DUSE		
248526001	SAMPLE	MXE1	1256	25-MAR-10 22:13	DONE		
1202071661	MB	MXE1	1217	26-MAR-10 07:43	DONE		
1202071662	DUP	MXE1	1218	26-MAR-10 07:43	DONE		
1202071663	LCS	MXE1	1219	26-MAR-10 07:43	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER **Batch ID: 965495**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248515001	SAMPLE	MXE1	1075	25-MAR-10 16:55	DONE		
248515002	SAMPLE	MXE1	1076	25-MAR-10 16:55	DONE		
248515003	SAMPLE	MXE1	1031	25-MAR-10 18:40	DONE		
248517001	SAMPLE	MXE1	1033	25-MAR-10 18:40	DONE		
248521001	SAMPLE	MXE1	1035	25-MAR-10 18:40	DONE		
248521002	SAMPLE	MXE1	1036	25-MAR-10 18:40	DONE		
248521003	SAMPLE	MXE1	1013	25-MAR-10 20:23	DONE		
248521004	SAMPLE	MXE1	1014	25-MAR-10 20:23	DONE		
248521005	SAMPLE	MXE1	1016	25-MAR-10 20:23	DONE		
248521006	SAMPLE	MXE1	1017	25-MAR-10 20:23	DONE		
248521007	SAMPLE	MXE1	1018	25-MAR-10 20:23	DONE		
248521008	SAMPLE	MXE1	1019	25-MAR-10 20:23	DONE		
248521009	SAMPLE	MXE1	1020	25-MAR-10 20:23	DONE		
248521010	SAMPLE	MXE1	1022	25-MAR-10 20:23	DONE		
248521011	SAMPLE	MXE1	1023	25-MAR-10 20:23	DONE		
248526001	SAMPLE	MXE1	1024	25-MAR-10 20:23	DONE		
1202071664	MB	MXE1	1025	25-MAR-10 20:23	DONE		
1202071665	DUP	MXE1	1026	25-MAR-10 20:23	DONE		
1202071666	LCS	MXE1	1027	25-MAR-10 20:23	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER **Batch ID: 965496**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248515001	SAMPLE	MXE1	1001	27-MAR-10 13:01	DONE		
248515002	SAMPLE	MXE1	1002	27-MAR-10 13:01	DONE		
248515003	SAMPLE	MXE1	1003	27-MAR-10 13:01	DONE		
248517001	SAMPLE	MXE1	1004	27-MAR-10 13:01	DONE		
248521001	SAMPLE	MXE1	1005	27-MAR-10 13:01	DONE		
248521002	SAMPLE	MXE1	1006	27-MAR-10 13:01	DONE		
248521003	SAMPLE	MXE1	1007	27-MAR-10 13:01	DONE		
248521004	SAMPLE	MXE1	1008	27-MAR-10 13:01	DONE		
248521005	SAMPLE	MXE1	1009	27-MAR-10 13:01	DONE		
248521006	SAMPLE	MXE1	1010	27-MAR-10 13:01	DONE		
248521011	SAMPLE	MXE1	1121	29-MAR-10 12:38	DONE		
248526001	SAMPLE	MXE1	1122	29-MAR-10 12:38	DONE		
1202071667	MB	MXE1	1123	29-MAR-10 12:38	DONE		
1202071668	DUP	MXE1	1124	29-MAR-10 12:38	DONE		
1202071669	LCS	MXE1	1125	29-MAR-10 12:38	DONE		
248521007	SAMPLE	MXE1	1126	29-MAR-10 12:38	DONE		
248521008	SAMPLE	MXE1	1127	29-MAR-10 12:38	DONE		
248521009	SAMPLE	MXE1	1130	29-MAR-10 12:38	DONE		
248521010	SAMPLE	MXE1	1131	29-MAR-10 12:38	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER **Batch ID: 969981**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248515002	SAMPLE	MXE1	1228	30-MAR-10 14:31	DONE		
248521011	SAMPLE	MXE1	1229	30-MAR-10 14:31	DONE		
1202082742	MB	MXE1	1231	30-MAR-10 14:31	DONE		
1202082743	DUP	MXE1	1232	30-MAR-10 14:31	DONE		
1202082744	LCS	MXE1	1233	30-MAR-10 14:31	DONE		