

Friday, January 22, 2010

Page 1 of 3
REQUEST NUMBER: 10-1385

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: 10-1385
Per Agreement Number: 126310011
Project Cost Code: MR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 1/22/2010
TURNAROUND/REPORT DUE: 2/21/2010
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 | RE14-10-7679 | R | 1/15/2010 | |
| | | 1 | RE14-10-7680 | R | 1/15/2010 | |
| | | 1 | RE14-10-7681 | R | 1/15/2010 | |
| | | 1 | RE14-10-7682 | R | 1/15/2010 | |
| | | 1 | RE14-10-7683 | R | 1/15/2010 | |
| | | 1 | RE14-10-7684 | R | 1/15/2010 | |
| | | 1 | RE14-10-7685 | R | 1/15/2010 | |
| | | 1 | RE14-10-7686 | R | 1/15/2010 | |
| | | 1 | RE14-10-7687 | R | 1/15/2010 | |

Friday, January 22, 2010

REQUEST NUMBER: 10-1385

| PRIORITY | METHOD CODE | CNTNR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|-----------------|-------------|-------|--------------|---------------|--------------|----------------------|
| EPA:901.1 | | 1 | RE14-10-7688 | R | 1/15/2010 | |
| | | 1 | RE14-10-7689 | R | 1/15/2010 | |
| HASL-300:AM-241 | | 1 | RE14-10-7679 | R | 1/15/2010 | |
| | | 1 | RE14-10-7680 | R | 1/15/2010 | |
| | | 1 | RE14-10-7681 | R | 1/15/2010 | |
| | | 1 | RE14-10-7682 | R | 1/15/2010 | |
| | | 1 | RE14-10-7683 | R | 1/15/2010 | |
| | | 1 | RE14-10-7684 | R | 1/15/2010 | |
| | | 1 | RE14-10-7685 | R | 1/15/2010 | |
| | | 1 | RE14-10-7686 | R | 1/15/2010 | |
| | | 1 | RE14-10-7687 | R | 1/15/2010 | |
| | | 1 | RE14-10-7688 | R | 1/15/2010 | |
| HASL-300:ISOPU | | 1 | RE14-10-7689 | R | 1/15/2010 | |
| | | 1 | RE14-10-7682 | R | 1/15/2010 | |
| | | 1 | RE14-10-7681 | R | 1/15/2010 | |
| | | 1 | RE14-10-7680 | R | 1/15/2010 | |
| | | 1 | RE14-10-7679 | R | 1/15/2010 | |
| | | 1 | RE14-10-7683 | R | 1/15/2010 | |
| | | 1 | RE14-10-7684 | R | 1/15/2010 | |
| | | 1 | RE14-10-7685 | R | 1/15/2010 | |
| | | 1 | RE14-10-7686 | R | 1/15/2010 | |
| | | 1 | RE14-10-7687 | R | 1/15/2010 | |
| HASL-300:ISOU | | 1 | RE14-10-7689 | R | 1/15/2010 | |
| | | 1 | RE14-10-7679 | R | 1/15/2010 | |
| | | 1 | RE14-10-7680 | R | 1/15/2010 | |
| | | 1 | RE14-10-7681 | R | 1/15/2010 | |
| | | 1 | RE14-10-7682 | R | 1/15/2010 | |
| | | 1 | RE14-10-7683 | R | 1/15/2010 | |
| | | 1 | RE14-10-7684 | R | 1/15/2010 | |
| | | 1 | RE14-10-7685 | R | 1/15/2010 | |
| | | 1 | RE14-10-7686 | R | 1/15/2010 | |
| | | 1 | RE14-10-7687 | R | 1/15/2010 | |

Friday, January 22, 2010

| PRIORITY | METHOD CODE | CNTNR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|---------------|-------------|-------|--------------|---------------|--------------|----------------------|
| HASL-300:ISOU | | | | | | |
| | | 1 | RE14-10-7683 | R | 1/15/2010 | |
| | | 1 | RE14-10-7684 | R | 1/15/2010 | |
| | | 1 | RE14-10-7685 | R | 1/15/2010 | |
| | | 1 | RE14-10-7686 | R | 1/15/2010 | |
| | | 1 | RE14-10-7687 | R | 1/15/2010 | |
| | | 1 | RE14-10-7688 | R | 1/15/2010 | |
| | | 1 | RE14-10-7689 | R | 1/15/2010 | |

Final Page of REQUEST NUMBER 10-1385

Friday, January 22, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1385C

LOS ALAMOS

REQUEST NUMBER: 10-1385

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 2/21/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

| SAMPLE ID | CTNR | CTNR DESC | ORDER | PRESERV | MATRIX |
|--------------|------|-----------|-------------------------|---------|--------|
| RE14-10-7689 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7679 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7680 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7686 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7688 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7684 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7687 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7681 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7682 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7685 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7683 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |

Relinquished By:**Date****Time****Received By:****Date****Time**

 1/22/10 3:00

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

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

Printed Name

Signature

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2492

EVENT NAME: 4th Qtr. FY09 - AOC C-14-006 - Threemile Canyon

SAMPLE ID: RE14-10-7681

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|-----------------------|----|--------------------------|--------|--------------|--------------------------|
| DATE COLLECTED(MM/DD/YYYY): | | 01/15/2010 | | MEDIA: | OBT3 | | A11h |
| TIME COLLECTED(HH:MM) | | 1328 | | SUB-MEDIA: | TUFF 1 | | NA |
| PRS ID: | C-14-006 | OK | | SAMPLE TECH CODE: | HA | | OK |
| LOCATION ID: | 14-610662 | ↓ | | 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 | 8260B | 125 ML SEPTUM AMBER GLASS | Ice | Y | |
| 1 | | 8270C+NMED Exp | 500 ML AMBER GLASS | Ice | Y | |
| 1 | | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | 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 moist sandy silt

SAMPLE COMMENTS:

NA

LOCATION DESC:

G-4 Westside of AOC

FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ 16 dpm
 Bg ≤ 2080 dpm

HE negative

PID reading 0.0
 ambient 0.0 ppm

COLLECTED BY (PRINT)

TLMCFarland

REVIEWED BY (PRINT)

R50115-10
~~Gregory A.~~

R Saunders

| | | | |
|--|------------------------------|--|------------------------------|
| RELINQUISHED BY (Printed Name) TLMCFarland (Signature) TLMCFarland | Date/Time 1/15/10 1550 | RECEIVED BY (Printed Name) S. MARRAZZO (Signature) [Signature] | Date/Time 1/15/10 1550 |
| RELINQUISHED BY (Printed Name) | Date/Time | RECEIVED BY (Printed Name) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2492

EVENT NAME: 4th Qtr. FY09 - AOC C-14-006 - Threemile Canyon

SAMPLE ID: RE14-10-7680

WORK ORDER:

| AS PLANNED | | AS COLLECTED | AS PLANNED | | AS COLLECTED |
|-----------------------------|-----------|--------------|--------------------------|--------|--------------|
| DATE COLLECTED(MM/DD/YYYY): | | 01/15/2010 | MEDIA: | OBT3 | Alh |
| TIME COLLECTED (HH:MM) | | 1316 | SUB-MEDIA: | TUFF 1 | NA |
| PRS ID: | C-14-006 | OK | SAMPLE TECH CODE: | HA | OK |
| LOCATION ID: | 14-610661 | ↓ | FIELD QC TYPE: | NA | ↓ |
| LOCATION TYPE: | GENERIC | ↓ | FIELD PREP: | NA | ↓ |
| TOP DEPTH: | 0 | 2.0 | SAMPLE USAGE: | INV | ↓ |
| BOTTOM DEPTH: | 0 | 3.1 | SCREEN/PORT DESC: | | NA |
| FIELD MATRIX: | R | S | EXCAVATED: YES/NO/NA | | |
| COMPOSITE TYPE: | NA | | COMPOSITE TIME INTERVAL: | NA | |
| BOREHOLE: YES/NO/NA | | | BOREHOLE DECLINATION: | NA | |
| | | | BOREHOLE DIRECTION: | NA | |

| # | PRIORITY | ORDER | CNTNR | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|---|----------|------------------------|-------------------------------|--------------|---------------|----------------------|
| 1 | Normal | 8082+8270+NME D-EXP | 500 ML AMBER GLASS | Ice | Y | |
| 1 | | 8260B | 125 ML SEPTUM AMBER GLASS | Ice | Y | |
| 1 | | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | 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, few rocks

SAMPLE COMMENTS:

NA

LOCATION DESC:

6-3, South West side of AOC
LA 1/15/10

FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ 11 dpm
BX ≤ 1845 dpmPID ambient reading 0.0 ppm
0.0 ppm

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

R Saunders

| | | | |
|--|-------------------------------|---|------------------------------|
| RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy [Signature] | Date/Time 01/15/10 1550 | RECEIVED BY (Printed Name) S. MARCZAK (Signature) [Signature] | Date/Time 1/15/10 1550 |
| RELINQUISHED BY (Printed Name) | Date/Time | RECEIVED BY (Printed Name) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2492

EVENT NAME: 4th Qtr. FY09 - AOC C-14-006 - Threemile Canyon

SAMPLE ID: RE14-10-7685

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|--|-----------------------------|--|--------------------------|--|--------------|--|
| DATE COLLECTED(MM/DD/YYYY): | | 01/15/2010 | | MEDIA: | | OBT3 | |
| TIME COLLECTED(HH:MM) | | 1406 | | SUB-MEDIA: | | TUFF 1 | |
| PRS ID: C-14-006 | | OK | | SAMPLE TECH CODE: HA | | NA | |
| LOCATION ID: 14-610664 | | ↓ | | 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 | Regular | 8260B | 125 ML SEPTUM AMBER GLASS | Ice | Y | |
| 1 | | 8270C+NMED Exp | 500 ML AMBER GLASS | Ice | Y | |
| 1 | | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | 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 silty clay, moist, roots and rocks, grass, bark

SAMPLE COMMENTS:

NA

LOCATION DESC:

6-2 east side of AOC

FIELD SCREENING/MEASUREMENT RESULTS:

α ± 33 dpm
 Bγ ± 1935 dpm

PID reading 1.8
 ambient 0.0 ppm

HE negative

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Nicholas Gallegos

| | | | |
|---|------------------------------|---|------------------------------|
| RELINQUISHED BY (Printed Name) TL McFarland (Signature) <i>TL McFarland</i> | Date/Time 1/15/10 1550 | RECEIVED BY (Printed Name) S. MARZAY (Signature) <i>S. Marzay</i> | Date/Time 1/15/10 1550 |
| RELINQUISHED BY (Printed Name) | Date/Time | RECEIVED BY (Printed Name) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2492

EVENT NAME: 4th Qtr. FY09 - AOC C-14-006 - Threemile Canyon

SAMPLE ID: RE14-10-7684

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|--------------|--|--------------------------|--------|--------------|--------------------------|
| DATE COLLECTED(MM/DD/YYYY): | | 01/15/2010 | | MEDIA: | QBT3 | | A11h |
| TIME COLLECTED (HH:MM) | | 1403 | | SUB-MEDIA: | TUFF.1 | | NA |
| PRS ID: | C-14-006 | ok | | SAMPLE TECH CODE: | HA | | ok |
| LOCATION ID: | 14-610663 | ↓ | | FIELD QC TYPE: | NA | | ↓ |
| LOCATION TYPE: | GENERIC | ↓ | | FIELD PREP: | NA | | ↓ |
| TOP DEPTH: | 0 | 2.0 | | SAMPLE USAGE: | INV | | ↓ |
| BOTTOM DEPTH: | 0 | 3.3 | | 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 | Regular | 8260B | 125 ML SEPTUM AMBER GLASS | Ice | Y | |
| 1 | | 8270C+NMED Exp | 500 ML AMBER GLASS | Ice | Y | |
| 1 | | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | 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:

Light brown silty sand, some white pumice

SAMPLE COMMENTS:

NA

LOCATION DESC:

G-1, north side of AOC

FIELD SCREENING/MEASUREMENT RESULTS:

$\alpha \leq 27$ dpm PID ambient 0.0
 B8 ≤ 2120 dpm reading 0.0 ppm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Nicholas Gallegas

| | | | |
|---|------------------------------|--|------------------------------|
| RELINQUISHED BY (Printed Name) TL McFarland (Signature) <i>TL McFarland</i> | Date/Time 1/15/10 1550 | RECEIVED BY S. M42244 (Printed Name) (Signature) <i>[Signature]</i> | Date/Time 1/15/10 1550 |
| RELINQUISHED BY (Printed Name) | Date/Time | RECEIVED BY (Printed Name) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2492

EVENT NAME: 4th Qtr. FY09 - AOC C-14-006 - Threemile Canyon

SAMPLE ID: RE14-10-7679

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|--------------|--|--------------------------|-------|--------------|-------|
| DATE COLLECTED(MM/DD/YYYY): | | 01/15/2010 | | MEDIA: | QBT3 | | All h |
| TIME COLLECTED (HH:MM) | | 1305 | | SUB-MEDIA: | TUFF1 | | NA |
| PRS ID: | C-14-006 | OK | | SAMPLE TECH CODE: | HA | | OK |
| LOCATION ID: | 14-610661 | ↓ | | 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 | | |
| BOREHOLE: YES | NO/NA | | | BOREHOLE DECLINATION: | NA | | |
| | | | | BOREHOLE DIRECTION: | NA | | |

| # | PRIORITY | ORDER | CNTNR | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|---|----------|-----------------------|-------------------------------|--------------|---------------|----------------------|
| 1 | Regular | 8082+8270+NME D-EXP | 500 ML AMBER GLASS | Ice | Y | |
| 1 | | 8260B | 125 ML SEPTUM AMBER GLASS | Ice | Y | |
| 1 | | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | 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 wet silty clay

FTB RE14-10-7691

SAMPLE COMMENTS:

NA

LOCATION DESC:

G-3, South West side of AOC
1/15/10

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 16$ dpm
 $\text{BX} \leq 1852$ dpm

 PID ambient reading 0.0 ppm
 HE negative

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

LARRY A. Lopez

| | | | |
|---|------------------------------|--|------------------------------|
| RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy Lutz | Date/Time 1/15/10 1550 | RECEIVED BY (Printed Name) G. MAROZ AV (Signature) [Signature] | Date/Time 1/15/10 1550 |
| RELINQUISHED BY (Printed Name) | Date/Time | RECEIVED BY (Printed Name) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2492

EVENT NAME: 4th Qtr. FY09 - AOC C-14-006 - Threemile Canyon

SAMPLE ID: RE14-10-7691

WORK ORDER:

| AS PLANNED | | AS COLLECTED | AS PLANNED | | AS COLLECTED |
|-----------------------------|----------|--------------|--------------------------|-------|--------------|
| DATE COLLECTED(MM/DD/YYYY): | | 01/15/2010 | MEDIA: | NA | OK |
| TIME COLLECTED (HH:MM) | | 1302 | SUB-MEDIA: | OTHER | |
| PRS ID: | C-14-006 | OK | SAMPLE TECH CODE: | DC | |
| LOCATION ID: | UNK | | FIELD QC TYPE: | FTB | |
| LOCATION TYPE: | GENERIC | | 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 | Regular | 8260B Trip Blank | 40 ML SEPTUM AMBER GLASS | Ice | Y | |

SAMPLE DESC: QC Sample of RE14-10-7679

SAMPLE COMMENTS:

FTB

LOCATION DESC: none

FIELD SCREENING/MEASUREMENT RESULTS:

NA

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Larry A. Lopez

| | | | |
|----------------------------|-----------|----------------|-----------|
| RELINQUISHED BY | Date/Time | RECEIVED BY | Date/Time |
| (Printed Name) TLMcFarland | 1/15/10 | S. MARTIN | 1/15/10 |
| (Signature) TLMcFarland | 1550 | | 1550 |
| RELINQUISHED BY | Date/Time | RECEIVED BY | Date/Time |
| (Printed Name) | | (Printed Name) | |
| (Signature) | | (Signature) | |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2492

EVENT NAME: 4th Qtr. FY09 - AOC C-14-006 - Threemile Canyon

SAMPLE ID: RE14-10-7687

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|--------------|--|--------------------------|--------|--------------|------|
| DATE COLLECTED(MM/DD/YYYY): | | 01/15/2010 | | MEDIA: | OBT3 | | Allh |
| TIME COLLECTED (HH:MM) | | 1439 | | SUB-MEDIA: | TUFF 1 | | NA |
| PRS ID: | C-14-006 | ok | | SAMPLE TECH CODE: | HA | | ok |
| LOCATION ID: | 14-610665 | ↓ | | FIELD QC TYPE: | NA | | ↓ |
| LOCATION TYPE: | GENERIC | ↓ | | FIELD PREP: | NA | | ↓ |
| TOP DEPTH: | 0 | 0.0 | | SAMPLE USAGE: | INV | | ↓ |
| BOTTOM DEPTH: | 0 | 0.8 | | SCREEN/PORT DESC: | | | NA |
| FIELD MATRIX: | R | 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 | Regular | 8260B | 125 ML SEPTUM AMBER GLASS | Ice | Y | |
| 1 | | 8270C+NMED Exp | 500 ML AMBER GLASS | Ice | Y | |
| 1 | | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | 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 clay

SAMPLE COMMENTS:

NA

LOCATION DESC:

6-5, center of AOC

FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ 14 dpm
 BX ≤ 1769 dpm

PID ambient 0.0
 reading 0.0 ppm

HE negative

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT)

Nikolas Gallegos

| | | | |
|--|------------------------------|--|------------------------------|
| RELINQUISHED BY (Printed Name) Th McFarland (Signature) Tray 217 | Date/Time 1/15/10 1550 | RECEIVED BY (Printed Name) S. MARQUE (Signature) [Signature] | Date/Time 1/15/10 1550 |
| RELINQUISHED BY (Printed Name) | Date/Time | RECEIVED BY (Printed Name) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2492

EVENT NAME: 4th Qtr. FY09 - AOC C-14-006 - Threemile Canyon

SAMPLE ID: RE14-10-7686

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|--------------|--|--------------------------|-------|--------------|------|
| DATE COLLECTED(MM/DD/YYYY): | | 01/15/2010 | | MEDIA: | QBT3 | | Allh |
| TIME COLLECTED(HH:MM) | | 1421 | | SUB-MEDIA: | TUFF1 | | NA |
| PRS ID: | C-14-006 | OK | | SAMPLE TECH CODE: | HA | | OK |
| LOCATION ID: | 14-610664 | ↓ | | FIELD QC TYPE: | NA | | ↓ |
| LOCATION TYPE: | GENERIC | ↓ | | FIELD PREP: | NA | | ↓ |
| TOP DEPTH: | 0 | 2.0 | | SAMPLE USAGE: | INV | | ↓ |
| BOTTOM DEPTH: | 0 | 4.0 | | SCREEN/PORT DESC: | | | NA |
| FIELD MATRIX: | R | S | | EXCAVATED: YES/NO/NA | | | |
| COMPOSITE TYPE: | NA | | | COMPOSITE TIME INTERVAL: | NA | | |
| | | | | WATER FLOWING: YES/NO/NA | | | |
| BOREHOLE: YES/NO/NA | | | | BOREHOLE DECLINATION: | NA | | |
| | | | | BOREHOLE DIRECTION: | NA | | |

| # | PRIORITY | ORDER | CNTNR | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|---|----------|-----------------------|-------------------------------|--------------|---------------|----------------------|
| 1 | Normal | 8260B | 125 ML SEPTUM AMBER GLASS | Ice | Y | |
| 1 | ↓ | 8270C+NMED Exp | 500 ML AMBER GLASS | Ice | Y | |
| 1 | ↓ | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | ↓ | 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 clay, moist, few white pumice fragments

SAMPLE COMMENTS:

NA

LOCATION DESC:

G-2 east side of AOC

FIELD SCREENING/MEASUREMENT RESULTS:

A ± 22 dpm
B8 ± 2100 dpmPID ambient reading 0.0
0.0 ppm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Nicholas Gallegos

| | | | |
|---|------------------------------|---|------------------------------|
| RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tray 7-2 | Date/Time 1/15/10 1550 | RECEIVED BY (Printed Name) S. MAR 02 Ay (Signature) [Signature] | Date/Time 1/15/10 1550 |
| RELINQUISHED BY (Printed Name) | Date/Time | RECEIVED BY (Printed Name) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2492

EVENT NAME: 4th Qtr. FY09 - AOC C-14-006 - Threemile Canyon

SAMPLE ID: RE14-10-7689

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|----------|-----------------------------|--|--------------------------|--------|--------------|------|
| DATE COLLECTED(MM/DD/YYYY): | | 01/15/2010 | | MEDIA: | QBT3 | | A11h |
| TIME COLLECTED (HH:MM) | | 1340 | | SUB-MEDIA: | TUFF 1 | | NA |
| PRS ID: | C-14-006 | OK | | SAMPLE TECH CODE: | HA | | OK |
| LOCATION ID: | UNK | 14-G10662 | | FIELD QC TYPE: | FD | | |
| LOCATION TYPE: | GENERIC | OK | | FIELD PREP: | NA | | |
| TOP DEPTH: | 0 | 2.0 | | SAMPLE USAGE: | QC | | |
| BOTTOM DEPTH: | 0 | 4.5 | | 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 | 13m 1/15/10 8082+8270+NME D-EXP | 500 ML AMBER GLASS | Ice | Y | |
| 1 | | 8260B | 125 ML SEPTUM AMBER GLASS | Ice | Y | |
| 1 | | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | 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: QC Sample of RE14-10-7682

Orangy brown sand and white pumice fragments

SAMPLE COMMENTS:

Pumice at 3'7"

LOCATION DESC:

G-4, West side of AOC

FIELD SCREENING/MEASUREMENT RESULTS:


 $\alpha \leq 38$ dpmBX ≤ 2090 dpmPID $\frac{\text{reading}}{\text{ambient}} = \frac{0.0}{0.0}$ ppm

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Larry A. Lopez

| | | | |
|--|------------------------------|--|------------------------------|
| RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Troy Zait | Date/Time 1/15/10 1550 | RECEIVED BY (Printed Name) S. MARIT AU (Signature)  | Date/Time 1/15/10 1550 |
| RELINQUISHED BY (Printed Name) | Date/Time | RECEIVED BY (Printed Name) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2492

EVENT NAME: 4th Qtr. FY09 - AOC C-14-006 - Threemile Canyon

SAMPLE ID: RE14-10-7688

WORK ORDER:

| AS PLANNED | | AS COLLECTED | AS PLANNED | | AS COLLECTED |
|-----------------------------|-----------|-----------------------------|--------------------------|--|--------------|
| DATE COLLECTED(MM/DD/YYYY): | | 01/15/2010 | MEDIA: | | OBT3 |
| TIME COLLECTED(HH:MM) | | 1447 | SUB-MEDIA: | | TUFF 1 |
| PRS ID: | C-14-006 | ok | SAMPLE TECH CODE: | | HA |
| LOCATION ID: | 14-610665 | ↓ | FIELD QC TYPE: | | NA |
| LOCATION TYPE: | GENERIC | ↓ | FIELD PREP: | | NA |
| TOP DEPTH: | 0 | 2.4 | SAMPLE USAGE: | | INV |
| BOTTOM DEPTH: | 0 | 3.5 | SCREEN/PORT DESC: | | NA |
| FIELD MATRIX: | R | S | EXCAVATED: YES/NO/NA | | NO/NA |
| COMPOSITE TYPE: NA | | COMPOSITE TIME INTERVAL: NA | WATER FLOWING: YES/NO/NA | | NO/NA |
| BOREHOLE: YES/NO/NA | | BOREHOLE DECLINATION: NA | BOREHOLE DIRECTION: NA | | |

| # | PRIORITY | ORDER | CNTNR | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|---|----------|------------------------|-------------------------------|--------------|---------------|----------------------|
| 1 | Normal | 8260B | 125 ML SEPTUM AMBER GLASS | Ice | Y | |
| 1 | | 8270C+NMED Exp | 500 ML AMBER GLASS | Ice | Y | |
| 1 | | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | 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 moist clayey silt, few rocks and roots

FD RE14-10-7693

SAMPLE COMMENTS:

NA

LOCATION DESC:

G-5, center of AOC

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 16$ dpm
 $\text{BY} \leq 2000$ dpm

PID ambient reading 0.0 ppm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Nicholas Gallegos

| | | | |
|---|-------------------------------|--|-------------------------------|
| RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy Z... | Date/Time 11/15/10 1550 | RECEIVED BY (Printed Name) S. MARRAM (Signature) M | Date/Time 11/15/10 1550 |
| RELINQUISHED BY (Printed Name) | Date/Time | RECEIVED BY (Printed Name) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2492

EVENT NAME: 4th Qtr. FY09 - AOC C-14-006 - Threemile Canyon

SAMPLE ID: RE14-10-7682

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|--------------|--|--------------------------|--------|--------------|--------------------------|
| DATE COLLECTED(MM/DD/YYYY): | | 01/15/2010 | | MEDIA: | QBT3 | | Alh |
| TIME COLLECTED (HH:MM) | | 1340 | | SUB-MEDIA: | TUFF 1 | | NA |
| PRS ID: | C-14-006 | OK | | SAMPLE TECH CODE: | HA | | OK |
| LOCATION ID: | 14-610662 | ↓ | | FIELD QC TYPE: | NA | | ↓ |
| LOCATION TYPE: | GENERIC | ↓ | | FIELD PREP: | NA | | ↓ |
| TOP DEPTH: | 0 | 2.0 | | SAMPLE USAGE: | INV | | ↓ |
| BOTTOM DEPTH: | 0 | 4.5 | | 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 | 8260B | 125 ML SEPTUM AMBER GLASS | Ice | Y | |
| 1 | | 8270C+NMED Exp | 500 ML AMBER GLASS | Ice | Y | |
| 1 | | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | 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:

Orangery brown sand and white pumice fragments
 FD RE14-10-7689

SAMPLE COMMENTS:

Pumice at 3' 7"

LOCATION DESC:

G-4 westside of AOC

FIELD SCREENING/MEASUREMENT RESULTS:

$\alpha \leq 38$ dpm

$\text{BY} \leq 2090$ dpm

PID reading 0.0
 ambient 0.0 ppm

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Larry A. Lopez

| | | | |
|---|------------------------------|---|------------------------------|
| RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy 32 | Date/Time 11/5/10 1550 | RECEIVED BY (Printed Name) S. M4207A4 (Signature) [Signature] | Date/Time 11/5/10 1550 |
| RELINQUISHED BY (Printed Name) | Date/Time | RECEIVED BY (Printed Name) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2492

EVENT NAME: 4th Qtr. FY09 - AOC C-14-006 - Threemile Canyon

SAMPLE ID: RE14-10-7683

WORK ORDER:

| AS PLANNED | | AS COLLECTED | AS PLANNED | | AS COLLECTED |
|-----------------------------|-----------|-----------------------------|--------------------------|--|--------------|
| DATE COLLECTED(MM/DD/YYYY): | | 01/15/2010 | MEDIA: | | QBT3 |
| TIME COLLECTED(HH:MM) | | 1349 | SUB-MEDIA: | | TUFF 1 |
| PRS ID: | C-14-006 | ok | SAMPLE TECH CODE: | | HA |
| LOCATION ID: | 14-610663 | ↓ | FIELD QC TYPE: | | NA |
| LOCATION TYPE: | GENERIC | ↓ | FIELD PREP: | | NA |
| TOP DEPTH: | 0 | 0.0 | SAMPLE USAGE: | | INV |
| BOTTOM DEPTH: | 0 | 0.3 | 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 | Regular | 8260B | 125 ML SEPTUM AMBER GLASS | Ice | Y | |
| 1 | | 8270C+NMED Exp | 500 ML AMBER GLASS | Ice | Y | |
| 1 | | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | 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 clay, slightly ~~root~~ moist, roots and rocks

SAMPLE COMMENTS:

NA

LOCATION DESC:

G-1, north side of AOC

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \pm 16$ dpm
 $\beta \pm 2050$ dpm

 PID $\frac{\text{ambient}}{\text{reading}} \frac{0.0}{0.0}$ ppm
 HE negative

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Nicholas Gallegos

| | | | |
|---|------------------------------|---|------------------------------|
| RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tray 227 | Date/Time 1/15/10 1550 | RECEIVED BY S. MARY (Printed Name) (Signature) M | Date/Time 1/15/10 1550 |
| RELINQUISHED BY (Printed Name) | Date/Time | RECEIVED BY (Printed Name) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2492

EVENT NAME: 4th Qtr. FY09 - AOC C-14-006 - Threemile Canyon

SAMPLE ID: RE14-10-7693

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|--|-----------------------------|--|--------------------------|--|--------------|--|
| DATE COLLECTED(MM/DD/YYYY): | | 01/15/2010 | | MEDIA: NA | | ok | |
| TIME COLLECTED (HH:MM) | | 1456 | | SUB-MEDIA: OTHER | | | |
| PRS ID: C-14-006 | | OK | | SAMPLE TECH CODE: DC | | | |
| LOCATION ID: UNK | | 14-610665 | | FIELD QC TYPE: ER | | | |
| LOCATION TYPE: GENERIC | | ok | | FIELD PREP: UF | | | |
| TOP DEPTH: 0 | | | | SAMPLE USAGE: QC | | | |
| BOTTOM DEPTH: 0 | | | | SCREEN/PORT DESC: | | NA | |
| FIELD MATRIX: W | | | | EXCAVATED: YES/NO/NA | | | |
| COMPOSITE TYPE: NA | | COMPOSITE TIME INTERVAL: NA | | WATER FLOWING: YES/NO/NA | | | |
| BOREHOLE: YES/NO/NA | | BOREHOLE DECLINATION: NA | | BOREHOLE DIRECTION: NA | | | |

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

SAMPLE DESC: QC Sample of RE14-10-7688

SAMPLE COMMENTS:

Rinsate

LOCATION DESC:

NA

FIELD SCREENING/MEASUREMENT RESULTS:

NA

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Nicholas Gallegos

| | | | |
|---|-------------------------------|---|-----------------------------|
| RELINQUISHED BY (Printed Name) MARIN (Signature) <i>John A. Marin</i> | Date/Time 1/20/10 09:42 | RECEIVED BY (Printed Name) Sherri Sheppard (Signature) <i>Sherri Sheppard</i> | Date/Time 1/20/10 942 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

DATA VALIDATION COVER SHEET

5119-1

Data Validation Cover Sheet

Records Use only



Section I.

REQUEST NUMBER: 10-1385 VALIDATION DATE: 3/2/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Eyda Hergenreder ORGANIZATION: Analytical Quality Associates, Inc

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

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

Section II. Completeness Check

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

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

1. The gamma spec results that were rejected by the laboratory due to either high counting uncertainty, high peak-width, interference or low abundance were qualified R,R5a. In the duplicate sample several results were also rejected by the laboratory. No data were qualified as a result.
2. It should be noted that the matrix QC for isotopic -Am, -Pu and -U were performed on a sample from another LANL RN. No data were qualified as a result.

Reviewed by: Charissa Lewis


Level: 1

Date: 3/3/10


VALIDATOR'S SIGNATURE:

A handwritten signature of Eyda Hergenreder.


DATE: 3/2/10

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

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

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

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

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

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

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7689
 Sample ID: 245388001
 Matrix: R
 Collect Date: 15-JAN-10
 Receive Date: 23-JAN-10
 Collector: Client
 Moisture: 13%

Project: LANL01004
 Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|-----------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.000885 | 0.023 | +/-0.00136 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00315 | 0.0171 | +/-0.00638 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1250 | 944980 | 2 |
| Plutonium-239/240 | U | 0.00314 | 0.0129 | +/-0.00315 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.07 | 0.0643 | +/-0.0903 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1357 | 949544 | 3 |
| Uranium-235/236 | | 0.145 | 0.041 | +/-0.024 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.08 | 0.0439 | +/-0.0909 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0375 | 0.220 | +/-0.0778 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1028 | 944964 | 5 |
| Bismuth-211 | UI | 5.32 | R,R5a | 0.325 | +/-0.379 | pCi/g | | | | | | |
| Bismuth-214 | | 1.59 | | 0.109 | +/-0.118 | pCi/g | | | | | | |
| Cadmium-109 | UI | 2.96 | R,R5a | 1.06 | +/-0.568 | pCi/g | | | | | | |
| Cerium-139 | U | -0.0129 | | 0.0453 | +/-0.0143 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.133 | R,R5a | 0.0948 | +/-0.0398 | pCi/g | | | | | | |
| Cesium-137 | U | -0.014 | | 0.0609 | +/-0.0197 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0684 | | 0.0486 | +/-0.0202 | pCi/g | | | | | | |
| Europium-152 | U | -0.0688 | | 0.149 | +/-0.0507 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.16 | | 0.151 | +/-0.0582 | pCi/g | | | | | | |
| Lead-212 | | 2.37 | | 0.0897 | +/-0.154 | pCi/g | | | | | | |
| Lead-214 | | 1.85 | | 0.113 | +/-0.140 | pCi/g | | | | | | |
| Mercury-203 | U | -0.0157 | | 0.0685 | +/-0.0252 | pCi/g | | | | | | |
| Potassium-40 | | 22.1 | | 0.478 | +/-1.26 | pCi/g | | | | | | |
| Radium-223 | U | 0.262 | | 0.990 | +/-0.349 | pCi/g | | | | | | |
| Radium-224 | UI | 5.82 | R,R5a | 1.02 | +/-0.798 | pCi/g | | | | | | |
| Radium-226 | | 1.59 | | 0.109 | +/-0.118 | pCi/g | | | | | | |
| Radium-228 | | 2.26 | | 0.213 | +/-0.211 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.197 | | 0.496 | +/-0.163 | pCi/g | | | | | | |
| Sodium-22 | U | -0.00155 | | 0.0669 | +/-0.021 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.0882 | R,R5a | 0.0712 | +/-0.0218 | pCi/g | | | | | | |

EH
3/2/10

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7689
Sample ID: 245388001
Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|----------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thallium-208 | | 0.673 | 0.0585 | +/-0.0566 | 0.080 | pCi/g | | | | | |
| Thorium-227 | U | -0.16 | 0.576 | +/-0.212 | | pCi/g | | | | | |
| Thorium-231 | U | 0.262 | 0.990 | +/-0.349 | | pCi/g | | | | | |
| Thorium-234 | | 2.49 | 1.85 | +/-0.886 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | -0.0116 | 0.0735 | +/-0.0226 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | 0.0417 | 0.330 | +/-0.105 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | -0.00367 | 0.0553 | +/-0.0174 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 90.5 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 95.8 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 94.9 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7679
Sample ID: 245388002
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 21.4%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|---------|--------|------------|-----------|-------|-------|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.00698 | 0.0213 | +/-0.00299 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00226 | 0.0185 | +/-0.00505 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1250 | 944980 | 2 |
| Plutonium-239/240 | U | 0.0079 | 0.0139 | +/-0.00341 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.08 | 0.064 | +/-0.0906 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1357 | 949544 | 3 |
| Uranium-235/236 | | 0.116 | 0.0408 | +/-0.0206 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.04 | 0.0437 | +/-0.0875 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.164 | 0.288 | +/-0.0875 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1029 | 944964 | 5 |
| Bismuth-211 | UI | 3.96 | R,R5a | 0.273 | +/-0.218 | pCi/g | | | | | | |
| Bismuth-214 | | 1.21 | | 0.0816 | +/-0.0906 | pCi/g | 0.200 | | | | | |
| Cadmium-109 | UI | 2.24 | R,R5a | 1.17 | +/-0.506 | pCi/g | | | | | | |
| Cerium-139 | U | 0.0018 | | 0.0424 | +/-0.0121 | pCi/g | 0.050 | | | | | |
| Cesium-134 | U | 0.0575 | | 0.0689 | +/-0.0191 | pCi/g | 0.100 | | | | | |
| Cesium-137 | UI | 0.118 | R,R5a | 0.0462 | +/-0.0369 | pCi/g | 0.100 | | | | | |
| Cobalt-60 | U | 0.0121 | | 0.0486 | +/-0.0142 | pCi/g | 0.100 | | | | | |
| Europium-152 | U | -0.101 | | 0.126 | +/-0.0481 | pCi/g | 0.200 | | | | | |
| Lanthanum-140 | U | -0.0554 | | 0.134 | +/-0.0437 | pCi/g | | | | | | |
| Lead-212 | | 1.58 | | 0.0729 | +/-0.0733 | pCi/g | 0.100 | | | | | |
| Lead-214 | | 1.38 | | 0.0901 | +/-0.0839 | pCi/g | 0.100 | | | | | |
| Mercury-203 | U | 0.0516 | | 0.0643 | +/-0.0182 | pCi/g | 0.100 | | | | | |
| Potassium-40 | | 21.2 | | 0.469 | +/-1.01 | pCi/g | 1.00 | | | | | |
| Radium-223 | U | -0.0277 | | 0.820 | +/-0.287 | pCi/g | | | | | | |
| Radium-224 | UI | 3.14 | R,R5a | 0.829 | +/-0.467 | pCi/g | | | | | | |
| Radium-226 | | 1.21 | | 0.0816 | +/-0.0906 | pCi/g | | | | | | |
| Radium-228 | | 1.40 | | 0.147 | +/-0.144 | pCi/g | 0.500 | | | | | |
| Ruthenium-106 | U | 0.0679 | | 0.428 | +/-0.129 | pCi/g | 0.800 | | | | | |
| Sodium-22 | U | -0.0483 | | 0.0519 | +/-0.0179 | pCi/g | 0.080 | | | | | |
| Strontium-85 | UI | 0.0669 | R,R5a | 0.057 | +/-0.0173 | pCi/g | | | | | | |
| Thallium-208 | | 0.442 | | 0.0454 | +/-0.0345 | pCi/g | 0.080 | | | | | |

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7679
Sample ID: 245388002
Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|----------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thorium-227 | U | -0.0652 | 0.501 | +/-0.150 | | pCi/g | | | | | |
| Thorium-231 | U | -0.0277 | 0.820 | +/-0.287 | | pCi/g | | | | | |
| Thorium-234 | U | 2.14 | 2.22 | +/-1.25 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | -0.0312 | 0.053 | +/-0.0164 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | -0.00649 | 0.298 | +/-0.0909 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | 0.0135 | 0.0495 | +/-0.0142 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 87.3 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 94.0 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 93.1 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7680
Sample ID: 245388003
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 12%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|-----------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.000668 | 0.021 | +/-0.00124 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00451 | 0.0184 | +/-0.00618 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1250 | 944980 | 2 |
| Plutonium-239/240 | U | -0.00226 | 0.0139 | +/-0.00195 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.03 | 0.0685 | +/-0.0888 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.0906 | 0.0437 | +/-0.0185 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 0.996 | 0.0468 | +/-0.0863 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0773 | 0.197 | +/-0.0628 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1029 | 944964 | 5 |
| Bismuth-211 | UI | 5.21 | R,R5a | 0.322 | +/-0.346 | pCi/g | | | | | | |
| Bismuth-214 | | 1.39 | | 0.105 | +/-0.117 | pCi/g | | | | | | |
| Cadmium-109 | UI | 1.65 | R,R5a | 1.15 | +/-0.529 | pCi/g | | | | | | |
| Cerium-139 | U | -0.00819 | | 0.0496 | +/-0.0155 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.139 | R,R5a | 0.0987 | +/-0.0324 | pCi/g | | | | | | |
| Cesium-137 | U | -0.0252 | | 0.0607 | +/-0.019 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0118 | | 0.0585 | +/-0.0191 | pCi/g | | | | | | |
| Europium-152 | U | -0.0366 | | 0.155 | +/-0.0476 | pCi/g | | | | | | |
| Lanthanum-140 | U | 0.0562 | | 0.187 | +/-0.0597 | pCi/g | | | | | | |
| Lead-212 | | 2.05 | | 0.0832 | +/-0.125 | pCi/g | | | | | | |
| Lead-214 | | 1.81 | | 0.110 | +/-0.129 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0698 | | 0.0808 | +/-0.025 | pCi/g | | | | | | |
| Potassium-40 | | 19.6 | | 0.479 | +/-1.13 | pCi/g | | | | | | |
| Radium-223 | U | 0.443 | | 1.08 | +/-0.349 | pCi/g | | | | | | |
| Radium-224 | UI | 6.77 | R,R5a | 0.946 | +/-0.839 | pCi/g | | | | | | |
| Radium-226 | | 1.39 | | 0.105 | +/-0.117 | pCi/g | | | | | | |
| Radium-228 | | 2.03 | | 0.192 | +/-0.188 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.325 | | 0.574 | +/-0.165 | pCi/g | | | | | | |
| Sodium-22 | U | 0.00693 | | 0.0557 | +/-0.0168 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.114 | R,R5a | 0.0788 | +/-0.0212 | pCi/g | | | | | | |
| Thallium-208 | | 0.651 | | 0.0544 | +/-0.0515 | pCi/g | | | | | | |

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Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7680
Sample ID: 245388003
Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|---------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thorium-227 | U | -0.226 | 0.614 | +/-0.187 | | pCi/g | | | | | |
| Thorium-231 | U | 0.443 | 1.08 | +/-0.349 | | pCi/g | | | | | |
| Thorium-234 | | 1.99 | 1.69 | +/-0.823 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | 0.0208 | 0.0738 | +/-0.0215 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | 0.00471 | 0.358 | +/-0.110 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | -0.0176 | 0.0441 | +/-0.0156 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 83.2 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 88.4 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 83.6 | (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
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7686
Sample ID: 245388004
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 22.9%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|-----------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.00222 | 0.0229 | +/-0.00173 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00121 | 0.0198 | +/-0.00121 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1250 | 944980 | 2 |
| Plutonium-239/240 | U | 0.00242 | 0.0149 | +/-0.00242 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.18 | 0.0636 | +/-0.0975 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.115 | 0.0406 | +/-0.021 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.18 | 0.0434 | +/-0.0973 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.00329 | 0.238 | +/-0.0793 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1030 | 944964 | 5 |
| Bismuth-211 | UI | 5.12 | R,R5a | 0.357 | +/-0.387 | pCi/g | | | | | | |
| Bismuth-214 | | 1.30 | | 0.115 | +/-0.115 | pCi/g | | | | | | |
| Cadmium-109 | UI | 3.30 | R,R5a | 1.18 | +/-0.508 | pCi/g | | | | | | |
| Cerium-139 | U | 0.037 | | 0.058 | +/-0.0168 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.140 | R,R5a | 0.0954 | +/-0.0354 | pCi/g | | | | | | |
| Cesium-137 | U | -0.0111 | | 0.0628 | +/-0.0195 | pCi/g | | | | | | |
| Cobalt-60 | U | 0.0219 | | 0.0656 | +/-0.0191 | pCi/g | | | | | | |
| Europium-152 | U | 0.0335 | | 0.173 | +/-0.0743 | pCi/g | | | | | | |
| Lanthanum-140 | U | 0.0358 | | 0.163 | +/-0.0546 | pCi/g | | | | | | |
| Lead-212 | | 2.10 | | 0.0989 | +/-0.152 | pCi/g | | | | | | |
| Lead-214 | | 1.78 | | 0.124 | +/-0.142 | pCi/g | | | | | | |
| Mercury-203 | U | 0.047 | | 0.084 | +/-0.0254 | pCi/g | | | | | | |
| Potassium-40 | | 23.9 | | 0.562 | +/-1.31 | pCi/g | | | | | | |
| Radium-223 | U | 0.110 | | 1.19 | +/-0.406 | pCi/g | | | | | | |
| Radium-224 | UI | 4.76 | R,R5a | 1.12 | +/-0.727 | pCi/g | | | | | | |
| Radium-226 | | 1.30 | | 0.115 | +/-0.115 | pCi/g | | | | | | |
| Radium-228 | | 2.03 | | 0.190 | +/-0.197 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.251 | | 0.512 | +/-0.164 | pCi/g | | | | | | |
| Sodium-22 | U | -0.00761 | | 0.076 | +/-0.0234 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.174 | R,R5a | 0.0854 | +/-0.0265 | pCi/g | | | | | | |
| Thallium-208 | | 0.582 | | 0.0586 | +/-0.0497 | pCi/g | | | | | | |

EH
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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: February 16, 2010

Client Sample ID:
Sample ID:

RE14-10-7686
245388004

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|----------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thorium-227 | U | -0.0395 | 0.641 | +/-0.200 | | pCi/g | | | | | |
| Thorium-231 | U | 0.110 | 1.19 | +/-0.406 | | pCi/g | | | | | |
| Thorium-234 | U | 1.17 | 1.96 | +/-0.984 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | 0.0263 | 0.0822 | +/-0.0244 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | 0.104 | 0.384 | +/-0.115 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | -0.00585 | 0.0598 | +/-0.0187 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 84.9 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 92.6 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 91.9 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7688
Sample ID: 245388005
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 21.1%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|----------|-------|-------|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.00322 | 0.0213 | +/-0.00269 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00232 | 0.0189 | +/-0.00284 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1250 | 944980 | 2 |
| Plutonium-239/240 | U | -0.00347 | 0.0142 | +/-0.00347 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.11 | 0.0619 | +/-0.0923 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.0939 | 0.0394 | +/-0.0185 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.26 | 0.0422 | +/-0.102 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.206 | 0.404 | +/-0.125 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1030 | 944964 | 5 |
| Bismuth-211 | UI | 4.58 | R,R5a | 0.416 | +/-0.345 | pCi/g | | | | | | |
| Bismuth-214 | | 1.41 | | 0.164 | +/-0.118 | 0.200 | pCi/g | | | | | |
| Cadmium-109 | UI | 3.00 | R,R5a | 1.71 | +/-0.777 | pCi/g | | | | | | |
| Cerium-139 | U | -0.0223 | 0.0648 | +/-0.0205 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0743 | 0.122 | +/-0.0339 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | | 0.119 | 0.0848 | +/-0.0397 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0218 | 0.083 | +/-0.0273 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.067 | 0.201 | +/-0.0834 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0487 | 0.205 | +/-0.0665 | | pCi/g | | | | | | |
| Lead-212 | | 2.04 | 0.117 | +/-0.103 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.59 | 0.145 | +/-0.127 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0787 | 0.102 | +/-0.032 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 20.1 | 0.825 | +/-1.22 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.177 | 1.52 | +/-0.460 | | pCi/g | | | | | | |
| Radium-224 | UI | 5.58 | R,R5a | 1.33 | +/-0.714 | pCi/g | | | | | | |
| Radium-226 | | 1.41 | 0.164 | +/-0.118 | | pCi/g | | | | | | |
| Radium-228 | | 2.05 | 0.251 | +/-0.214 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.239 | 0.735 | +/-0.218 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.0189 | 0.089 | +/-0.0288 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0413 | 0.0939 | +/-0.0313 | | pCi/g | | | | | | |
| Thallium-208 | | 0.589 | 0.0745 | +/-0.0555 | 0.080 | pCi/g | | | | | | |

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7688
Sample ID: 245388005

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|---------|--------|-----------|-------|-------|----|---------|------|------|-------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Thorium-227 | U | 0.369 | 0.860 | +/-0.262 | | pCi/g | | | | | | |
| Thorium-231 | U | -0.177 | 1.52 | +/-0.460 | | pCi/g | | | | | | |
| Thorium-234 | U | 0.275 | 3.56 | +/-1.08 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.0335 | 0.102 | +/-0.0321 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.260 | 0.507 | +/-0.156 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | 0.00608 | 0.0748 | +/-0.0222 | 0.100 | pCi/g | | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 88.8 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 93.1 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 97.3 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7684
Sample ID: 245388006
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 12.8%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|-----------|--------|------------|-----------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.000524 | 0.0217 | +/-0.00128 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | -0.00372 | 0.0203 | +/-0.00277 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1250 | 944980 | 2 |
| Plutonium-239/240 | U | -2.96E-10 | 0.0152 | +/-0.00248 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.01 | 0.0611 | +/-0.0848 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.105 | 0.0389 | +/-0.0204 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.07 | 0.0417 | +/-0.0895 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.0207 | 0.385 | +/-0.112 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1041 | 944964 | 5 |
| Bismuth-211 | UI | 4.57 | R,R5a | 0.294 | +/-0.291 | pCi/g | | | | | | |
| Bismuth-214 | | 1.43 | | 0.106 | +/-0.099 | pCi/g | | | | | | |
| Cadmium-109 | UI | 4.41 | R,R5a | 1.24 | +/-0.574 | pCi/g | | | | | | |
| Cerium-139 | U | 0.007 | | 0.0514 | +/-0.0154 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.100 | R,R5a | 0.0975 | +/-0.0255 | pCi/g | | | | | | |
| Cesium-137 | U | -0.0166 | | 0.0655 | +/-0.0193 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0105 | | 0.0632 | +/-0.0197 | pCi/g | | | | | | |
| Europium-152 | U | 0.0255 | | 0.157 | +/-0.049 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.266 | | 0.141 | +/-0.0672 | pCi/g | | | | | | |
| Lead-212 | | 1.69 | | 0.0912 | +/-0.0901 | pCi/g | | | | | | |
| Lead-214 | | 1.59 | | 0.102 | +/-0.110 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0197 | | 0.0761 | +/-0.0217 | pCi/g | | | | | | |
| Potassium-40 | | 19.7 | | 0.521 | +/-1.05 | pCi/g | | | | | | |
| Radium-223 | U | 0.107 | | 1.11 | +/-0.366 | pCi/g | | | | | | |
| Radium-224 | UI | 4.65 | R,R5a | 1.04 | +/-0.699 | pCi/g | | | | | | |
| Radium-226 | | 1.43 | | 0.106 | +/-0.099 | pCi/g | | | | | | |
| Radium-228 | | 1.73 | | 0.177 | +/-0.185 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.0788 | | 0.547 | +/-0.174 | pCi/g | | | | | | |
| Sodium-22 | U | -0.031 | | 0.0648 | +/-0.0213 | pCi/g | | | | | | |
| Strontium-85 | U | 0.042 | | 0.0698 | +/-0.0222 | pCi/g | | | | | | |
| Thallium-208 | | 0.615 | | 0.0561 | +/-0.0466 | pCi/g | | | | | | |

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7684
Sample ID: 245388006

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|----------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thorium-227 | U | 0.0381 | 0.645 | +/-0.186 | | pCi/g | | | | | |
| Thorium-231 | U | 0.107 | 1.11 | +/-0.366 | | pCi/g | | | | | |
| Thorium-234 | U | 1.19 | 3.07 | +/-0.873 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | -0.0236 | 0.0719 | +/-0.0224 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | 0.0534 | 0.326 | +/-0.0974 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | -0.00622 | 0.0566 | +/-0.0182 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 90.5 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 86.5 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 96.5 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7687
Sample ID: 245388007
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 26.7%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|-----------|-------|-------|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.00224 | 0.0229 | +/-0.00258 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00327 | 0.0178 | +/-0.0019 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1251 | 944980 | 2 |
| Plutonium-239/240 | U | -0.00218 | 0.0134 | +/-0.00218 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.948 | 0.0703 | +/-0.0832 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1357 | 949544 | 3 |
| Uranium-235/236 | | 0.0998 | 0.0448 | +/-0.0198 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.15 | 0.048 | +/-0.0973 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.0786 | 0.218 | +/-0.0761 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1042 | 944964 | 5 |
| Bismuth-211 | UI | 4.14 | R,R5a | 0.331 | +/-0.280 | pCi/g | | | | | | |
| Bismuth-214 | | 1.08 | | 0.113 | +/-0.0899 | 0.200 | pCi/g | | | | | |
| Cadmium-109 | UI | 3.15 | R,R5a | 1.15 | +/-0.538 | pCi/g | | | | | | |
| Cerium-139 | U | 0.000172 | 0.0516 | +/-0.0157 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.111 | R,R5a | 0.0897 | +/-0.033 | 0.100 | pCi/g | | | | | |
| Cesium-137 | | 0.0849 | 0.0692 | +/-0.0253 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0319 | 0.0575 | +/-0.0196 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | 0.0538 | 0.159 | +/-0.0657 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | 0.0334 | 0.191 | +/-0.0565 | | pCi/g | | | | | | |
| Lead-212 | | 1.61 | 0.090 | +/-0.0801 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.44 | 0.115 | +/-0.104 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | UI | 0.0933 | R,R5a | 0.0696 | +/-0.0457 | 0.100 | pCi/g | | | | | |
| Potassium-40 | | 22.7 | 0.528 | +/-1.12 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.134 | 1.18 | +/-0.352 | | pCi/g | | | | | | |
| Radium-224 | UI | 4.66 | R,R5a | 1.02 | +/-0.718 | pCi/g | | | | | | |
| Radium-226 | | 1.08 | 0.113 | +/-0.0899 | | pCi/g | | | | | | |
| Radium-228 | | 1.56 | 0.201 | +/-0.170 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.262 | 0.463 | +/-0.153 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.033 | 0.0678 | +/-0.0224 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0606 | 0.0738 | +/-0.0232 | | pCi/g | | | | | | |
| Thallium-208 | | 0.549 | 0.055 | +/-0.0487 | 0.080 | pCi/g | | | | | | |

EH
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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: February 16, 2010

Client Sample ID:
Sample ID:

RE14-10-7687
245388007

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|---------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thorium-227 | U | -0.039 | 0.654 | +/-0.193 | | pCi/g | | | | | |
| Thorium-231 | U | -0.134 | 1.18 | +/-0.352 | | pCi/g | | | | | |
| Thorium-234 | U | 0.897 | 1.93 | +/-0.838 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | -0.0192 | 0.0729 | +/-0.0224 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | 0.159 | 0.372 | +/-0.111 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | 0.0157 | 0.0577 | +/-0.0163 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 85.5 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 97.4 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 86.6 | (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
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure

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Certificate of Analysis

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7681
Sample ID: 245388008
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 22.5%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|-----------|--------|------------|-----------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.000687 | 0.0193 | +/-0.00161 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00232 | 0.0189 | +/-0.00232 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1251 | 944980 | 2 |
| Plutonium-239/240 | U | 0.00464 | 0.0142 | +/-0.00329 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.980 | 0.0624 | +/-0.0832 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.110 | 0.0398 | +/-0.0198 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.01 | 0.0426 | +/-0.085 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.0938 | 0.365 | +/-0.109 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1244 | 944964 | 5 |
| Bismuth-211 | UI | 4.23 | R,R5a | 0.329 | +/-0.272 | pCi/g | | | | | | |
| Bismuth-214 | | 1.22 | | 0.107 | +/-0.0965 | pCi/g | | | | | | |
| Cadmium-109 | UI | 2.34 | R,R5a | 1.50 | +/-0.550 | pCi/g | | | | | | |
| Cerium-139 | U | -0.0229 | 0.0481 | +/-0.0153 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.076 | 0.0943 | +/-0.0253 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | -0.0393 | 0.0735 | +/-0.0225 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.039 | 0.0584 | +/-0.0204 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | 0.022 | 0.167 | +/-0.0555 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0303 | 0.205 | +/-0.0652 | pCi/g | | | | | | | |
| Lead-212 | | 1.47 | 0.0941 | +/-0.0822 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.47 | 0.114 | +/-0.102 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0629 | 0.0728 | +/-0.0367 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 22.3 | 0.541 | +/-1.16 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.456 | 1.13 | +/-0.351 | pCi/g | | | | | | | |
| Radium-224 | UI | 4.58 | R,R5a | 1.07 | +/-0.728 | pCi/g | | | | | | |
| Radium-226 | | 1.22 | 0.107 | +/-0.0965 | pCi/g | | | | | | | |
| Radium-228 | | 1.33 | 0.248 | +/-0.164 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.132 | 0.507 | +/-0.165 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.0443 | 0.0666 | +/-0.0227 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0195 | 0.0653 | +/-0.0218 | pCi/g | | | | | | | |
| Thallium-208 | | 0.441 | 0.0636 | +/-0.0511 | 0.080 | pCi/g | | | | | | |

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7681
Sample ID: 245388008

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|---------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thorium-227 | U | 0.0344 | 0.619 | +/-0.179 | | pCi/g | | | | | |
| Thorium-231 | U | -0.456 | 1.13 | +/-0.351 | | pCi/g | | | | | |
| Thorium-234 | U | 1.11 | 3.07 | +/-0.878 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | -0.0236 | 0.0739 | +/-0.0231 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | -0.129 | 0.346 | +/-0.109 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | 0.0172 | 0.0635 | +/-0.0178 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 93.0 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 90.7 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 91.4 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7682
Sample ID: 245388009
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 12.8%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|-----------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0034 | 0.0221 | +/-0.00211 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00119 | 0.0194 | +/-0.00265 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1251 | 944980 | 2 |
| Plutonium-239/240 | U | 0.00118 | 0.0146 | +/-0.00205 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.05 | 0.065 | +/-0.0889 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.0986 | 0.0414 | +/-0.019 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.12 | 0.0443 | +/-0.0936 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0293 | 0.252 | +/-0.0858 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1331 | 944964 | 5 |
| Bismuth-211 | UI | 4.83 | R,R5a | 0.341 | +/-0.352 | pCi/g | | | | | | |
| Bismuth-214 | | 1.39 | | 0.121 | +/-0.114 | pCi/g | | | | | | |
| Cadmium-109 | UI | 3.76 | R,R5a | 1.47 | +/-0.558 | pCi/g | | | | | | |
| Cerium-139 | U | -0.0302 | | 0.0491 | +/-0.0156 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.121 | R,R5a | 0.105 | +/-0.0404 | pCi/g | | | | | | |
| Cesium-137 | U | 0.00985 | | 0.067 | +/-0.0203 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0296 | | 0.0627 | +/-0.0216 | pCi/g | | | | | | |
| Europium-152 | U | 0.0286 | | 0.163 | +/-0.0507 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0423 | | 0.180 | +/-0.0579 | pCi/g | | | | | | |
| Lead-212 | | 2.26 | | 0.0898 | +/-0.149 | pCi/g | | | | | | |
| Lead-214 | | 1.68 | | 0.119 | +/-0.130 | pCi/g | | | | | | |
| Mercury-203 | U | -0.00413 | | 0.0743 | +/-0.0233 | pCi/g | | | | | | |
| Potassium-40 | | 21.3 | | 0.432 | +/-1.23 | pCi/g | | | | | | |
| Radium-223 | U | 0.192 | | 1.18 | +/-0.410 | pCi/g | | | | | | |
| Radium-224 | UI | 6.19 | R,R5a | 1.02 | +/-0.698 | pCi/g | | | | | | |
| Radium-226 | | 1.39 | | 0.121 | +/-0.114 | pCi/g | | | | | | |
| Radium-228 | | 2.13 | | 0.228 | +/-0.218 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.133 | | 0.515 | +/-0.165 | pCi/g | | | | | | |
| Sodium-22 | U | -0.023 | | 0.0753 | +/-0.0245 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0474 | | 0.0707 | +/-0.0222 | pCi/g | | | | | | |
| Thallium-208 | | 0.679 | | 0.0597 | +/-0.0593 | pCi/g | | | | | | |

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7682
Sample ID: 245388009
Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|--------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thorium-227 | U | -0.283 | 0.616 | +/-0.201 | | pCi/g | | | | | |
| Thorium-231 | U | 0.192 | 1.18 | +/-0.410 | | pCi/g | | | | | |
| Thorium-234 | UI | 2.25 | R,R5a | +/-1.05 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | 0.0112 | 0.0743 | +/-0.0217 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | 0.112 | 0.365 | +/-0.109 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | 0.027 | 0.0691 | +/-0.0186 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 78.7 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 89.4 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 88.5 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7685
Sample ID: 245388010
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 15.3%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|----------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0077 | 0.0231 | +/-0.00634 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | -0.00137 | 0.0224 | +/-0.00194 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1251 | 944980 | 2 |
| Plutonium-239/240 | U | 0.00549 | 0.0169 | +/-0.00337 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.25 | 0.0728 | +/-0.105 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.114 | 0.0464 | +/-0.0217 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.28 | 0.0497 | +/-0.107 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0157 | 0.297 | +/-0.0995 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1342 | 944964 | 5 |
| Bismuth-211 | UI | 3.91 | R,R5a | 0.377 | +/-0.341 | pCi/g | | | | | | |
| Bismuth-214 | | 1.21 | | 0.121 | +/-0.108 | pCi/g | | | | | | |
| Cadmium-109 | UI | 4.81 | R,R5a | 1.54 | +/-0.799 | pCi/g | | | | | | |
| Cerium-139 | U | 0.0018 | 0.0597 | +/-0.0174 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0749 | 0.106 | +/-0.0371 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | | 0.224 | 0.0718 | +/-0.0346 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0332 | 0.0641 | +/-0.0218 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.0225 | 0.181 | +/-0.0639 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0442 | 0.222 | +/-0.0717 | pCi/g | | | | | | | |
| Lead-212 | | 1.50 | 0.108 | +/-0.100 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.36 | 0.132 | +/-0.124 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.057 | 0.0886 | +/-0.0251 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 22.0 | 0.536 | +/-1.33 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.0372 | 1.25 | +/-0.432 | pCi/g | | | | | | | |
| Radium-224 | UI | 3.45 | R,R5a | 1.22 | +/-0.770 | pCi/g | | | | | | |
| Radium-226 | | 1.21 | 0.121 | +/-0.108 | pCi/g | | | | | | | |
| Radium-228 | | 1.38 | 0.235 | +/-0.197 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.0899 | 0.577 | +/-0.168 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | 0.0245 | 0.0789 | +/-0.0221 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.107 | R,R5a | 0.0925 | +/-0.028 | pCi/g | | | | | | |
| Thallium-208 | | 0.486 | 0.0647 | +/-0.0542 | 0.080 | pCi/g | | | | | | |

EH
3/2/10

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: February 16, 2010

Client Sample ID: RE14-10-7685
Sample ID: 245388010
Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|-----------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thorium-227 | U | -0.0692 | 0.720 | +/-0.217 | | pCi/g | | | | | |
| Thorium-231 | U | -0.0372 | 1.25 | +/-0.432 | | pCi/g | | | | | |
| Thorium-234 | U | 1.56 | 2.44 | +/-1.14 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | -0.000202 | 0.0907 | +/-0.0278 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | 0.118 | 0.422 | +/-0.123 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | 0.0494 | 0.0767 | +/-0.0181 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 82.1 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 77.4 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 78.2 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

EH
3/2/10

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: February 16, 2010

Client Sample ID: RE14-10-7683
Sample ID: 245388011
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-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 | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.00234 | 0.0236 | +/-0.00181 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00349 | 0.019 | +/-0.0045 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1251 | 944980 | 2 |
| Plutonium-239/240 | U | 0.00116 | 0.0143 | +/-0.00348 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.07 | 0.0681 | +/-0.0911 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.0833 | 0.0434 | +/-0.0182 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.40 | 0.0465 | +/-0.114 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.103 | 0.182 | +/-0.0651 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1441 | 944964 | 5 |
| Bismuth-211 | UI | 3.99 | R,R5a | 0.300 | +/-0.362 | pCi/g | | | | | | |
| Bismuth-214 | | 1.17 | | 0.119 | +/-0.104 | pCi/g | | | | | | |
| Cadmium-109 | UI | 2.24 | R,R5a | 1.25 | +/-0.539 | pCi/g | | | | | | |
| Cerium-139 | U | -0.0057 | 0.0455 | +/-0.0137 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0789 | 0.0891 | +/-0.0244 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | | 0.147 | 0.0593 | +/-0.0391 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0274 | 0.0657 | +/-0.0221 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.00526 | 0.152 | +/-0.0479 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0821 | 0.182 | +/-0.0633 | pCi/g | | | | | | | |
| Lead-212 | | 1.74 | 0.0868 | +/-0.136 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.39 | 0.104 | +/-0.131 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | -0.0113 | 0.0702 | +/-0.0224 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 23.4 | 0.478 | +/-1.31 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | 0.0336 | 1.06 | +/-0.371 | pCi/g | | | | | | | |
| Radium-224 | UI | 5.73 | R,R5a | 0.988 | +/-0.855 | pCi/g | | | | | | |
| Radium-226 | | 1.17 | 0.119 | +/-0.104 | pCi/g | | | | | | | |
| Radium-228 | | 1.67 | 0.172 | +/-0.183 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.121 | 0.558 | +/-0.166 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.0275 | 0.0665 | +/-0.0224 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.0786 | R,R5a | 0.0704 | +/-0.0205 | pCi/g | | | | | | |
| Thallium-208 | | 0.436 | 0.0575 | +/-0.0499 | 0.080 | pCi/g | | | | | | |

EH
3/2/10

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: February 16, 2010

Client Sample ID: RE14-10-7683
Sample ID: 245388011

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|-----------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thorium-227 | U | 0.187 | 0.604 | +/-0.181 | | pCi/g | | | | | |
| Thorium-231 | U | 0.0336 | 1.06 | +/-0.371 | | pCi/g | | | | | |
| Thorium-234 | | 1.69 | 1.69 | +/-0.745 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | -0.000632 | 0.0705 | +/-0.0209 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | 0.156 | 0.333 | +/-0.0974 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | -0.0232 | 0.0408 | +/-0.0157 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 77.2 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 90.2 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 90.1 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

EH
3/2/10

Friday, January 22, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1385C

LOS ALAMOS

REQUEST NUMBER: 10-1385

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 2/21/2010

General Engineering Laboratories, Inc.,
Charleston, SC

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

245300 %

| SAMPLE ID | CTNR | CTNR DESC | ORDER | PRESERV | MATRIX |
|--------------|------|-----------|-------------------------|---------|--------|
| RE14-10-7689 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7679 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7680 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7686 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7688 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7684 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7687 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7681 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7682 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7685 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7683 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |

Relinquished By:

Date

Time

Received By:

Date

Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature

Friday, January 22, 2010

LOS ALAMOS

NATIONAL LABORATORY

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

These Samples are on:

LANL Request Number: 10-1385

Per Agreement Number: 126310011

Project Cost Code: MR3A03529E00

Please analyse the enclosed samples
according to the schedule indicated.

SHIP DATE: 1/22/2010

TURNAROUND/REPORT DUE: 2/21/2010

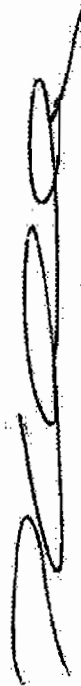
TURNAROUND REQ'D: 30 Days

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 | RE14-10-7679 | R | 1/15/2010 | |
| | | 1 | RE14-10-7680 | R | 1/15/2010 | |
| | | 1 | RE14-10-7681 | R | 1/15/2010 | |
| | | 1 | RE14-10-7682 | R | 1/15/2010 | |
| | | 1 | RE14-10-7683 | R | 1/15/2010 | |
| | | 1 | RE14-10-7684 | R | 1/15/2010 | |
| | | 1 | RE14-10-7685 | R | 1/15/2010 | |
| | | 1 | RE14-10-7686 | R | 1/15/2010 | |
| | | 1 | RE14-10-7687 | R | 1/15/2010 | |

Friday, January 22, 2010

Page 2 of 3

REQUEST NUMBER: 10-1385

| PRIORITY | METHOD CODE | CNTNR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|----------|-----------------|-------|--------------|---------------|--------------|----------------------|
| | EPA-301.1 | 1 | RE14-10-7688 | R | 1/15/2010 | |
| | | 1 | RE14-10-7689 | R | 1/15/2010 | |
| | HASL-300:AM-241 | 1 | RE14-10-7679 | R | 1/15/2010 | |
| | | 1 | RE14-10-7680 | R | 1/15/2010 | |
| | | 1 | RE14-10-7681 | R | 1/15/2010 | |
| | | 1 | RE14-10-7682 | R | 1/15/2010 | |
| | | 1 | RE14-10-7683 | R | 1/15/2010 | |
| | | 1 | RE14-10-7684 | R | 1/15/2010 | |
| | | 1 | RE14-10-7685 | R | 1/15/2010 | |
| | | 1 | RE14-10-7686 | R | 1/15/2010 | |
| | | 1 | RE14-10-7687 | R | 1/15/2010 | |
| | | 1 | RE14-10-7688 | R | 1/15/2010 | |
| | | 1 | RE14-10-7689 | R | 1/15/2010 | |
| | HASL-300:ISOPU | 1 | RE14-10-7679 | R | 1/15/2010 | |
| | | 1 | RE14-10-7680 | R | 1/15/2010 | |
| | | 1 | RE14-10-7681 | R | 1/15/2010 | |
| | | 1 | RE14-10-7682 | R | 1/15/2010 | |
| | | 1 | RE14-10-7683 | R | 1/15/2010 | |
| | | 1 | RE14-10-7684 | R | 1/15/2010 | |
| | | 1 | RE14-10-7685 | R | 1/15/2010 | |
| | | 1 | RE14-10-7686 | R | 1/15/2010 | |
| | | 1 | RE14-10-7687 | R | 1/15/2010 | |
| | | 1 | RE14-10-7688 | R | 1/15/2010 | |
| | | 1 | RE14-10-7689 | R | 1/15/2010 | |
| | HASL-300:ISOU | 1 | RE14-10-7679 | R | 1/15/2010 | |
| | | 1 | RE14-10-7680 | R | 1/15/2010 | |
| | | 1 | RE14-10-7681 | R | 1/15/2010 | |
| | | 1 | RE14-10-7682 | R | 1/15/2010 | |

REQUEST NUMBER: 10-1385

Friday, January 22, 2010

| PRIORITY | METHOD CODE | CNTNR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|----------|---------------|-------|--------------|---------------|--------------|----------------------|
| | HASL-300:ISOU | 1 | RE14-10-7683 | R | 1/15/2010 | |
| | | 1 | RE14-10-7684 | R | 1/15/2010 | |
| | | 1 | RE14-10-7685 | R | 1/15/2010 | |
| | | 1 | RE14-10-7686 | R | 1/15/2010 | |
| | | 1 | RE14-10-7687 | R | 1/15/2010 | |
| | | 1 | RE14-10-7688 | R | 1/15/2010 | |
| | | 1 | RE14-10-7689 | R | 1/15/2010 | |

Final Page of REQUEST NUMBER 10-1385



January 26, 2010

www.gel.com

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

Re: LANL ER Project
Work Order: 245388
SDG: 10-1385

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on January 23, 2010, and analyzed for Radiochemistry. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4485.

Sincerely,

Valerie Davis
Project Manager

Purchase Order: 72733-001-09
Chain of Custody: 10-1385
Enclosures

Los Alamos National Laboratory (72733-001-09)

LANL ER Project

Work Order #: 245388

SDG: 10-1385

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| Radiological Analysis..... | 18 |
| Sample Data Summary..... | 28 |
| Quality Control Data..... | 63 |
| Raw Data..... | 70 |
| Background and Efficiency Data..... | 769 |
| Standards Data..... | 924 |
| Runlogs..... | 956 |

Case Narrative

**Case Narrative for
Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Workorder #: 245388
SDG # : 10-1385**

January 26, 2010

Laboratory Identification:

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

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on January 23, 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 12,13,15C temperatures. Shipping container temperature was within specification (0 - 6C).

Sample Identification The laboratory received the following samples:

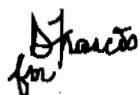
| <u>Laboratory ID</u> | <u>Client ID</u> |
|-----------------------------|-------------------------|
| 245388001 | RE14-10-7689 |
| 245388002 | RE14-10-7679 |
| 245388003 | RE14-10-7680 |
| 245388004 | RE14-10-7686 |
| 245388005 | RE14-10-7688 |
| 245388006 | RE14-10-7684 |
| 245388007 | RE14-10-7687 |
| 245388008 | RE14-10-7681 |
| 245388009 | RE14-10-7682 |
| 245388010 | RE14-10-7685 |
| 245388011 | RE14-10-7683 |

Case Narrative

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

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

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

A handwritten signature in black ink, appearing to read "Valerie Davis", written over the printed name.

Valerie Davis

Project Manager

List of current GEL Certifications as of 26 January 2010

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

Chain of Custody and Supporting Documentation

Friday, January 22, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1385C

LOS ALAMOS

REQUEST NUMBER: 10-1385

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 2/21/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

245300 %

| SAMPLE ID | CTNR | CTNR DESC | ORDER | PRESERV | MATRIX |
|--------------|------|-----------|-------------------------|---------|--------|
| RE14-10-7689 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7679 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7680 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7686 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7688 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7684 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7687 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7681 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7682 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7685 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE14-10-7683 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |

Relinquished By:

Date

Time

Received By:

Date

Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature

REQUEST NUMBER: 10-1385

Friday, January 22, 2010

LOS ALAMOS
NATIONAL LABORATORY

ATTN: Valerie Davis

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

These Samples are on:
LANL Request Number: 10-1385
Per Agreement Number: 126310011
Project Cost Code: MR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 1/22/2010
TURNAROUND/REPORT DUE: 2/21/2010
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 | RE14-10-7679 | R | 1/15/2010 | |
| | | 1 | RE14-10-7680 | R | 1/15/2010 | |
| | | 1 | RE14-10-7681 | R | 1/15/2010 | |
| | | 1 | RE14-10-7682 | R | 1/15/2010 | |
| | | 1 | RE14-10-7683 | R | 1/15/2010 | |
| | | 1 | RE14-10-7684 | R | 1/15/2010 | |
| | | 1 | RE14-10-7685 | R | 1/15/2010 | |
| | | 1 | RE14-10-7686 | R | 1/15/2010 | |
| | | 1 | RE14-10-7687 | R | 1/15/2010 | |

Friday, January 22, 2010

REQUEST NUMBER: 10-1385

| PRIORITY | METHOD CODE | CNTNR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|----------|-----------------|-------|--------------|---------------|--------------|----------------------|
| | EPA:901.1 | 1 | RE14-10-7688 | R | 1/15/2010 | |
| | | 1 | RE14-10-7689 | R | 1/15/2010 | |
| | HASL-300:AM-241 | 1 | RE14-10-7679 | R | 1/15/2010 | |
| | | 1 | RE14-10-7680 | R | 1/15/2010 | |
| | | 1 | RE14-10-7681 | R | 1/15/2010 | |
| | | 1 | RE14-10-7682 | R | 1/15/2010 | |
| | | 1 | RE14-10-7683 | R | 1/15/2010 | |
| | | 1 | RE14-10-7684 | R | 1/15/2010 | |
| | | 1 | RE14-10-7685 | R | 1/15/2010 | |
| | | 1 | RE14-10-7686 | R | 1/15/2010 | |
| | | 1 | RE14-10-7687 | R | 1/15/2010 | |
| | | 1 | RE14-10-7688 | R | 1/15/2010 | |
| | | 1 | RE14-10-7689 | R | 1/15/2010 | |
| | HASL-300:ISOPU | 1 | RE14-10-7679 | R | 1/15/2010 | |
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| | | 1 | RE14-10-7682 | R | 1/15/2010 | |
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| | | 1 | RE14-10-7687 | R | 1/15/2010 | |
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| | | 1 | RE14-10-7681 | R | 1/15/2010 | |
| | | 1 | RE14-10-7682 | R | 1/15/2010 | |

Friday, January 22, 2010

REQUEST NUMBER: 10-1385

| PRIORITY | METHOD CODE | CNTNR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|----------|---------------|-------|--------------|---------------|--------------|----------------------|
| | HASL-300:ISOU | 1 | RE14-10-7683 | R | 1/15/2010 | |
| | | 1 | RE14-10-7684 | R | 1/15/2010 | |
| | | 1 | RE14-10-7685 | R | 1/15/2010 | |
| | | 1 | RE14-10-7686 | R | 1/15/2010 | |
| | | 1 | RE14-10-7687 | R | 1/15/2010 | |
| | | 1 | RE14-10-7688 | R | 1/15/2010 | |
| | | 1 | RE14-10-7689 | R | 1/15/2010 | |

Final Page of REQUEST NUMBER 10-1385



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

| | | | |
|-------------------------------------|-----|---------------------------------|---|
| Client: LANL | | SDG/ARCOC/Work Order: 10-1385 | |
| Received By: Patricia Dover-Dent | | Date Received: January 23, 2009 | |
| 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*: 60 CPM |
| Classified Radioactive II by RSO? | | X | |
| COC/Samples marked containing PCBs? | | X | |
| Shipped as a DOT Hazardous? | | X | Hazard Class Shipped: UN#: |
| Samples identified as Foreign Soil? | | X | |

| Sample Receipt Criteria | Yes | NA | No | Comments/Qualifiers (Required for Non-Conforming Items) |
|---|-----|----|----|---|
| 1 Shipping containers received intact and sealed? | X | | | Circle Applicable: seals broken damaged container leaking container other (describe) |
| 2 Samples requiring cold preservation within $0 \leq 6$ deg. C? | X | | | Preservation Method: ice bags blue ice dry ice none other (describe) 1-4 12,13,15C |
| 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: time written on containers, not on COC |
| 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: FEDEX#S

| | |
|-------------------|--------------------|
| 7209 7849 6695 1C | 7209 7849 6560 4C |
| 7209 7849 6776 1C | 7209 7849 6559 4C |
| 7209 7849 6526 2C | 7209 7849 6684 4C |
| 7209 7849 6700 2C | 7209 7849 6732 12C |
| 7209 7849 6710 2C | 7209 7849 6504 13C |
| 7209 7849 6548 2C | 7209 7849 6743 13C |
| 7209 7849 6537 3C | 7209 7849 6765 13C |
| 7209 7849 6570 3C | 7209 7849 6754 15C |
| 7209 7849 6515 4C | |

ORIGIN ID: SAFA (505) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGO BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 22JAN18
ACTWGT: 55.0 LB MAX
CAD: 0014176/CAFE2449

BILL SENDER

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

SHIP DATE: 22JAN18
ACTWGT: 55.0 LB MAX
CAD: 0014176/CAFE2449

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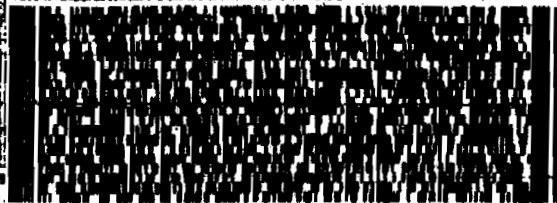
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GENERAL ENGINEERING LAB
2040 SAVAGE RD

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GENERAL ENGINEERING LAB
2040 SAVAGE RD

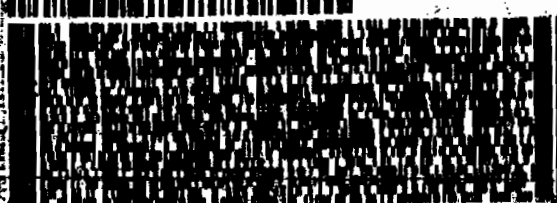
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PRIORITY OVERNIGHT

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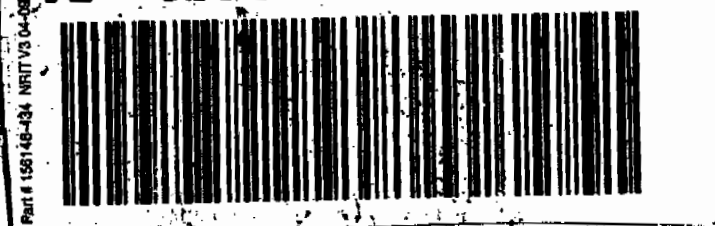
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JOYLENE VALDEZ
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TAGO BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 22JAN18
ACTWGT: 55.0 LB MAX
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JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGO BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 22JAN10
ACTWGT: 57.0 LB HAN
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(843) 556-8171
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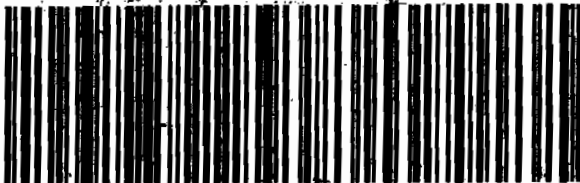
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Matr# 7209 7849 6537

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Page 12 of 960

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGO BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 22JAN10
ACTWGT: 58.0 LB HAN
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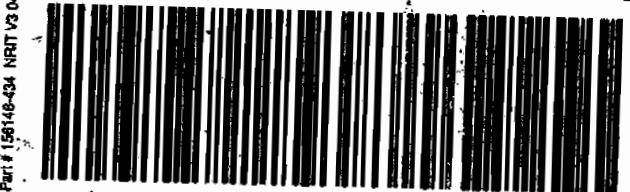


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JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGO BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 22JAN10
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SATURDAY ###
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UNITED STATES US

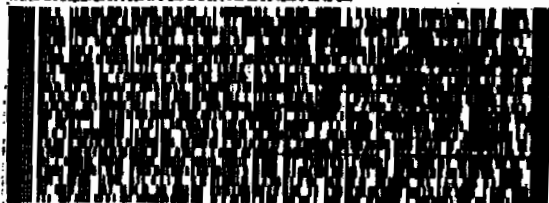
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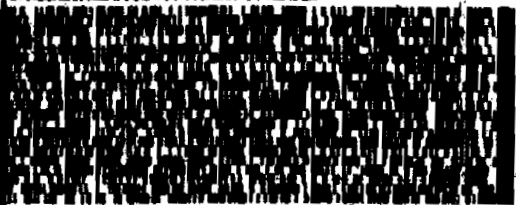
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PRIORITY OVERNIGHT

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SATURDAY ### A1
PRIORITY OVERNIGHT

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JOYLENE VALDEZ
LOS ALAMOS NATL LAB
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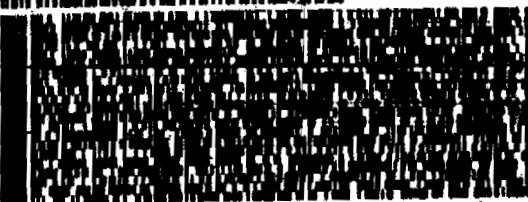
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JOYLENE VALDEZ
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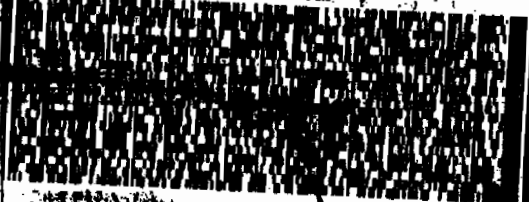
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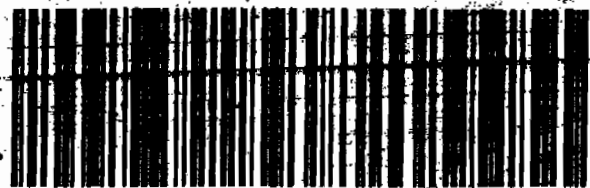
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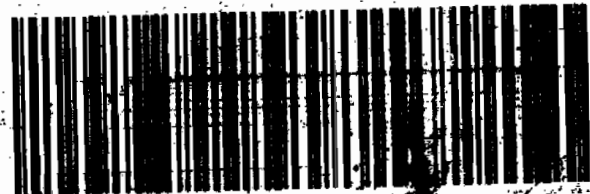
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PRIORITY OVERNIGHT

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Orig 133998 22JAN10 SAFA

ORIGIN ID: SAFA (505) 665-9998
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGO BLDG 1237 DPU 83
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 22JAN10
ACTGCT: 00 0 LB MAN
CAD: 0014176/CAFE2449
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PRIORITY OVERNIGHT

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7209 7849 6765

MatrN 7209 7849 6754 6201

2 of 2
SATURDAY ### A1
PRIORITY OVERNIGHT

X0 CHSA

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CHS



ORIGIN ID: SAFA (505) 666-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGG BLDG 1237 CPU 83

LOS ALAMOS NM 87545
UNITED STATES US

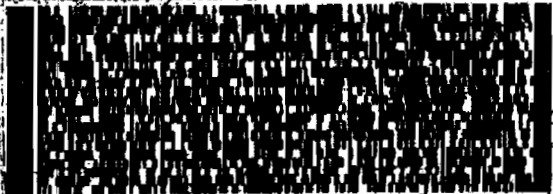
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VALERIE DAVIS
GENERAL ENGINEERING LAB
2840 SAVAGE RD

CHARLESTON SC 29407
(843) 666-8171
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SATURDAY ### A1 2
PRIORITY OVERNIGHT

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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 10-1385**

Method/Analysis Information

Product: AM241
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 944979
Prep Batch Number: 944894

| Sample ID | Client ID |
|------------------|--|
| 245388001 | RE14-10-7689 |
| 245388002 | RE14-10-7679 |
| 245388003 | RE14-10-7680 |
| 245388004 | RE14-10-7686 |
| 245388005 | RE14-10-7688 |
| 245388006 | RE14-10-7684 |
| 245388007 | RE14-10-7687 |
| 245388008 | RE14-10-7681 |
| 245388009 | RE14-10-7682 |
| 245388010 | RE14-10-7685 |
| 245388011 | RE14-10-7683 |
| 1202023757 | Method Blank (MB) |
| 1202023758 | 245393001(RE15-10-7918) Sample Duplicate (DUP) |
| 1202023759 | Laboratory Control Sample (LCS) |

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 18.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

Aliquot for sample 1202023757 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 245393001 (RE15-10-7918). The QC was from LANL work order 245393.

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: | ISOPU |
| Analytical Method: | DOE EML HASL-300, Pu-11-RC Modified |
| Prep Method: | Dry Soil Prep |
| Analytical Batch Number: | 944980 |
| Prep Batch Number: | 944894 |

| Sample ID | Client ID |
|------------------|--|
| 245388001 | RE14-10-7689 |
| 245388002 | RE14-10-7679 |
| 245388003 | RE14-10-7680 |
| 245388004 | RE14-10-7686 |
| 245388005 | RE14-10-7688 |
| 245388006 | RE14-10-7684 |
| 245388007 | RE14-10-7687 |
| 245388008 | RE14-10-7681 |
| 245388009 | RE14-10-7682 |
| 245388010 | RE14-10-7685 |
| 245388011 | RE14-10-7683 |
| 1202023760 | Method Blank (MB) |
| 1202023761 | 245393001(RE15-10-7918) Sample Duplicate (DUP) |
| 1202023762 | Laboratory Control Sample (LCS) |

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 18.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

Aliquot for sample 1202023760 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 245393001 (RE15-10-7918). The QC was from LANL work order 245393.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank result is less than 1.65 times the CSU.

Technical Information:**Holding Time**

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

Sample Re-prep/Re-analysis

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

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

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

| | |
|---------------------------------|------------------------------------|
| Product: | ISOU |
| Analytical Method: | DOE EML HASL-300, U-02-RC Modified |
| Prep Method: | Dry Soil Prep |
| Analytical Batch Number: | 949544 |
| Prep Batch Number: | 944894 |

| Sample ID | Client ID |
|------------------|--|
| 245388001 | RE14-10-7689 |
| 245388002 | RE14-10-7679 |
| 245388003 | RE14-10-7680 |
| 245388004 | RE14-10-7686 |
| 245388005 | RE14-10-7688 |
| 245388006 | RE14-10-7684 |
| 245388007 | RE14-10-7687 |
| 245388008 | RE14-10-7681 |
| 245388009 | RE14-10-7682 |
| 245388010 | RE14-10-7685 |
| 245388011 | RE14-10-7683 |
| 1202034406 | Method Blank (MB) |
| 1202034407 | 245393001(RE15-10-7918) Sample Duplicate (DUP) |

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 18.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

Aliquot for sample 1202034406 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 245393001 (RE15-10-7918). The QC was from LANL work order 245393.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The U-233/234 and U-238 blank, 1202034406 (MB), result is greater than 1.65 times the CSU but less than the MDC.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

Samples were reprepared due to high recovery.

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 U-238 blank, 1202034406 (MB), result is greater than the decision level but less than the MDC.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

| | |
|--------------------------|-------------------------------|
| Product: | GAMMA SPEC |
| Analytical Method: | DOE HASL 300, 4.5.2.3/Ga-01-R |
| Prep Method: | Dry Soil Prep |
| Analytical Batch Number: | 944964 |
| Prep Batch Number: | 944894 |

| Sample ID | Client ID |
|------------------|--|
| 245388001 | RE14-10-7689 |
| 245388002 | RE14-10-7679 |
| 245388003 | RE14-10-7680 |
| 245388004 | RE14-10-7686 |
| 245388005 | RE14-10-7688 |
| 245388006 | RE14-10-7684 |
| 245388007 | RE14-10-7687 |
| 245388008 | RE14-10-7681 |
| 245388009 | RE14-10-7682 |
| 245388010 | RE14-10-7685 |
| 245388011 | RE14-10-7683 |
| 1202023713 | Method Blank (MB) |
| 1202023714 | 245388002(RE14-10-7679) Sample Duplicate (DUP) |
| 1202023715 | Laboratory Control Sample (LCS) |

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 18.

Calibration Information:

Calibration Information

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

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 245388002 (RE14-10-7679). The QC was from LANL work order 245388.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank, 1202023713 (MB), results for K-40, Ru-106 and Sr-85 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 prep 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, 1202023713 (MB), results for Ru-106 and Sr-85 are greater than the decision level but less than the MDC.

Qualifier information

| Qualifier | Reason | Analyte | Sample | Client Sample |
|-----------|---|-------------|-----------|---------------|
| UI | Data rejected due to high counting uncertainty. | Thorium-234 | 245388009 | RE14-10-7682 |
| UI | Data rejected due to high peak-width. | Cesium-137 | 245388002 | RE14-10-7679 |
| | | Mercury-203 | 245388007 | RE14-10-7687 |

| | | | | |
|----|------------------------------------|-------------|------------|----------------------------|
| UI | Data rejected due to interference. | Bismuth-211 | 245388001 | RE14-10-7689 |
| | | | 245388002 | RE14-10-7679 |
| | | | 245388003 | RE14-10-7680 |
| | | | 245388004 | RE14-10-7686 |
| | | | 245388005 | RE14-10-7688 |
| | | | 245388006 | RE14-10-7684 |
| | | | 245388007 | RE14-10-7687 |
| | | | 245388008 | RE14-10-7681 |
| | | | 245388009 | RE14-10-7682 |
| | | | 245388010 | RE14-10-7685 |
| | | | 245388011 | RE14-10-7683 |
| | | | 1202023714 | RE14-10-7679(245388002DUP) |
| | | Cadmium-109 | 245388001 | RE14-10-7689 |
| | | | 245388002 | RE14-10-7679 |
| | | | 245388003 | RE14-10-7680 |
| | | | 245388004 | RE14-10-7686 |
| | | | 245388005 | RE14-10-7688 |
| | | | 245388006 | RE14-10-7684 |
| | | | 245388007 | RE14-10-7687 |
| | | | 245388008 | RE14-10-7681 |
| | | | 245388009 | RE14-10-7682 |
| | | | 245388010 | RE14-10-7685 |
| | | | 245388011 | RE14-10-7683 |
| | | | 1202023714 | RE14-10-7679(245388002DUP) |
| | | Radium-224 | 245388001 | RE14-10-7689 |
| | | | 245388002 | RE14-10-7679 |
| | | | 245388003 | RE14-10-7680 |
| | | | 245388004 | RE14-10-7686 |
| | | | 245388005 | RE14-10-7688 |
| | | | 245388006 | RE14-10-7684 |
| | | | 245388007 | RE14-10-7687 |
| | | | 245388008 | RE14-10-7681 |

| | | | | |
|----|-------------------------------------|--------------|------------|----------------------------|
| | | | 245388009 | RE14-10-7682 |
| | | | 245388010 | RE14-10-7685 |
| | | | 245388011 | RE14-10-7683 |
| | | | 1202023714 | RE14-10-7679(245388002DUP) |
| UI | Data rejected due to low abundance. | Cesium-134 | 245388001 | RE14-10-7689 |
| | | | 245388003 | RE14-10-7680 |
| | | | 245388004 | RE14-10-7686 |
| | | | 245388006 | RE14-10-7684 |
| | | | 245388007 | RE14-10-7687 |
| | | | 245388009 | RE14-10-7682 |
| | | Strontium-85 | 245388001 | RE14-10-7689 |
| | | | 245388002 | RE14-10-7679 |
| | | | 245388003 | RE14-10-7680 |
| | | | 245388004 | RE14-10-7686 |
| | | | 245388010 | RE14-10-7685 |
| | | | 245388011 | RE14-10-7683 |

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:  7/14/13

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: 10-1385 GEL Work Order: 245388

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: February 16, 2010

Client Sample ID: RE14-10-7689
Sample ID: 245388001
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 13%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|-------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.000885 | 0.023 | +/-0.00136 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00315 | 0.0171 | +/-0.00638 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1250 | 944980 | 2 |
| Plutonium-239/240 | U | 0.00314 | 0.0129 | +/-0.00315 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.07 | 0.0643 | +/-0.0903 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1357 | 949544 | 3 |
| Uranium-235/236 | | 0.145 | 0.041 | +/-0.024 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.08 | 0.0439 | +/-0.0909 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0375 | 0.220 | +/-0.0778 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1028 | 944964 | 5 |
| Bismuth-211 | UI | 5.32 | 0.325 | +/-0.379 | | pCi/g | | | | | | |
| Bismuth-214 | | 1.59 | 0.109 | +/-0.118 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 2.96 | 1.06 | +/-0.568 | | pCi/g | | | | | | |
| Cerium-139 | U | -0.0129 | 0.0453 | +/-0.0143 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.133 | 0.0948 | +/-0.0398 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | -0.014 | 0.0609 | +/-0.0197 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0684 | 0.0486 | +/-0.0202 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.0688 | 0.149 | +/-0.0507 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.16 | 0.151 | +/-0.0582 | | pCi/g | | | | | | |
| Lead-212 | | 2.37 | 0.0897 | +/-0.154 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.85 | 0.113 | +/-0.140 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | -0.0157 | 0.0685 | +/-0.0252 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 22.1 | 0.478 | +/-1.26 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | 0.262 | 0.990 | +/-0.349 | | pCi/g | | | | | | |
| Radium-224 | UI | 5.82 | 1.02 | +/-0.798 | | pCi/g | | | | | | |
| Radium-226 | | 1.59 | 0.109 | +/-0.118 | | pCi/g | | | | | | |
| Radium-228 | | 2.26 | 0.213 | +/-0.211 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.197 | 0.496 | +/-0.163 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.00155 | 0.0669 | +/-0.021 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.0882 | 0.0712 | +/-0.0218 | | 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: February 16, 2010

Client Sample ID: RE14-10-7689
Sample ID: 245388001

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|-----------|-------|-------|----|---------|------|------|-------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Thallium-208 | | 0.673 | 0.0585 | +/-0.0566 | 0.080 | pCi/g | | | | | | |
| Thorium-227 | U | -0.16 | 0.576 | +/-0.212 | | pCi/g | | | | | | |
| Thorium-231 | U | 0.262 | 0.990 | +/-0.349 | | pCi/g | | | | | | |
| Thorium-234 | | 2.49 | 1.85 | +/-0.886 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.0116 | 0.0735 | +/-0.0226 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.0417 | 0.330 | +/-0.105 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | -0.00367 | 0.0553 | +/-0.0174 | 0.100 | pCi/g | | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 90.5 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 95.8 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 94.9 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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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: February 16, 2010

Client Sample ID: RE14-10-7689
Sample ID: 245388001

Project: LANL01004
Client ID: LANL010

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

M Matrix Related Failure

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy--Uncertain identification

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

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Los Alamos National Laboratory
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: February 16, 2010

Client Sample ID: RE14-10-7679
Sample ID: 245388002
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 21.4%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|---------|--------|------------|-------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.00698 | 0.0213 | +/-0.00299 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00226 | 0.0185 | +/-0.00505 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1250 | 944980 | 2 |
| Plutonium-239/240 | U | 0.0079 | 0.0139 | +/-0.00341 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.08 | 0.064 | +/-0.0906 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1357 | 949544 | 3 |
| Uranium-235/236 | | 0.116 | 0.0408 | +/-0.0206 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.04 | 0.0437 | +/-0.0875 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.164 | 0.288 | +/-0.0875 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1029 | 944964 | 5 |
| Bismuth-211 | UI | 3.96 | 0.273 | +/-0.218 | | pCi/g | | | | | | |
| Bismuth-214 | | 1.21 | 0.0816 | +/-0.0906 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 2.24 | 1.17 | +/-0.506 | | pCi/g | | | | | | |
| Cerium-139 | U | 0.0018 | 0.0424 | +/-0.0121 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0575 | 0.0689 | +/-0.0191 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | UI | 0.118 | 0.0462 | +/-0.0369 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | 0.0121 | 0.0486 | +/-0.0142 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.101 | 0.126 | +/-0.0481 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0554 | 0.134 | +/-0.0437 | | pCi/g | | | | | | |
| Lead-212 | | 1.58 | 0.0729 | +/-0.0733 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.38 | 0.0901 | +/-0.0839 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0516 | 0.0643 | +/-0.0182 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 21.2 | 0.469 | +/-1.01 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.0277 | 0.820 | +/-0.287 | | pCi/g | | | | | | |
| Radium-224 | UI | 3.14 | 0.829 | +/-0.467 | | pCi/g | | | | | | |
| Radium-226 | | 1.21 | 0.0816 | +/-0.0906 | | pCi/g | | | | | | |
| Radium-228 | | 1.40 | 0.147 | +/-0.144 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.0679 | 0.428 | +/-0.129 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.0483 | 0.0519 | +/-0.0179 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.0669 | 0.057 | +/-0.0173 | | pCi/g | | | | | | |
| Thallium-208 | | 0.442 | 0.0454 | +/-0.0345 | 0.080 | pCi/g | | | | | | |

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7679
Sample ID: 245388002

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|-----------|-------|-------|----|---------|------|------|-------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Thorium-227 | U | -0.0652 | 0.501 | +/-0.150 | | pCi/g | | | | | | |
| Thorium-231 | U | -0.0277 | 0.820 | +/-0.287 | | pCi/g | | | | | | |
| Thorium-234 | U | 2.14 | 2.22 | +/-1.25 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.0312 | 0.053 | +/-0.0164 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | -0.00649 | 0.298 | +/-0.0909 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | 0.0135 | 0.0495 | +/-0.0142 | 0.100 | pCi/g | | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 87.3 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 94.0 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 93.1 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7679 Project: LANL01004
Sample ID: 245388002 Client ID: LANL010

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

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy--Uncertain identification

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

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7680
Sample ID: 245388003
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 12%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|-------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.000668 | 0.021 | +/-0.00124 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00451 | 0.0184 | +/-0.00618 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1250 | 944980 | 2 |
| Plutonium-239/240 | U | -0.00226 | 0.0139 | +/-0.00195 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.03 | 0.0685 | +/-0.0888 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.0906 | 0.0437 | +/-0.0185 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 0.996 | 0.0468 | +/-0.0863 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0773 | 0.197 | +/-0.0628 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1029 | 944964 | 5 |
| Bismuth-211 | UI | 5.21 | 0.322 | +/-0.346 | | pCi/g | | | | | | |
| Bismuth-214 | | 1.39 | 0.105 | +/-0.117 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 1.65 | 1.15 | +/-0.529 | | pCi/g | | | | | | |
| Cerium-139 | U | -0.00819 | 0.0496 | +/-0.0155 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.139 | 0.0987 | +/-0.0324 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | -0.0252 | 0.0607 | +/-0.019 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0118 | 0.0585 | +/-0.0191 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.0366 | 0.155 | +/-0.0476 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | 0.0562 | 0.187 | +/-0.0597 | | pCi/g | | | | | | |
| Lead-212 | | 2.05 | 0.0832 | +/-0.125 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.81 | 0.110 | +/-0.129 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0698 | 0.0808 | +/-0.025 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 19.6 | 0.479 | +/-1.13 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | 0.443 | 1.08 | +/-0.349 | | pCi/g | | | | | | |
| Radium-224 | UI | 6.77 | 0.946 | +/-0.839 | | pCi/g | | | | | | |
| Radium-226 | | 1.39 | 0.105 | +/-0.117 | | pCi/g | | | | | | |
| Radium-228 | | 2.03 | 0.192 | +/-0.188 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.325 | 0.574 | +/-0.165 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | 0.00693 | 0.0557 | +/-0.0168 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.114 | 0.0788 | +/-0.0212 | | pCi/g | | | | | | |
| Thallium-208 | | 0.651 | 0.0544 | +/-0.0515 | 0.080 | pCi/g | | | | | | |

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID:
Sample ID:

RE14-10-7680
245388003

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|---------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thorium-227 | U | -0.226 | 0.614 | +/-0.187 | | pCi/g | | | | | |
| Thorium-231 | U | 0.443 | 1.08 | +/-0.349 | | pCi/g | | | | | |
| Thorium-234 | | 1.99 | 1.69 | +/-0.823 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | 0.0208 | 0.0738 | +/-0.0215 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | 0.00471 | 0.358 | +/-0.110 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | -0.0176 | 0.0441 | +/-0.0156 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 83.2 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 88.4 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 83.6 | (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
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7680
Sample ID: 245388003

Project: LANL01004
Client ID: LANL010

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

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

U1 Gamma Spectroscopy--Uncertain identification

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: February 16, 2010

Client Sample ID: RE14-10-7686
Sample ID: 245388004
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 22.9%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|-------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.00222 | 0.0229 | +/-0.00173 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00121 | 0.0198 | +/-0.00121 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1250 | 944980 | 2 |
| Plutonium-239/240 | U | 0.00242 | 0.0149 | +/-0.00242 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.18 | 0.0636 | +/-0.0975 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.115 | 0.0406 | +/-0.021 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.18 | 0.0434 | +/-0.0973 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.00329 | 0.238 | +/-0.0793 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1030 | 944964 | 5 |
| Bismuth-211 | UI | 5.12 | 0.357 | +/-0.387 | | pCi/g | | | | | | |
| Bismuth-214 | | 1.30 | 0.115 | +/-0.115 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 3.30 | 1.18 | +/-0.508 | | pCi/g | | | | | | |
| Cerium-139 | U | 0.037 | 0.058 | +/-0.0168 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.140 | 0.0954 | +/-0.0354 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | -0.0111 | 0.0628 | +/-0.0195 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | 0.0219 | 0.0656 | +/-0.0191 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | 0.0335 | 0.173 | +/-0.0743 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | 0.0358 | 0.163 | +/-0.0546 | | pCi/g | | | | | | |
| Lead-212 | | 2.10 | 0.0989 | +/-0.152 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.78 | 0.124 | +/-0.142 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.047 | 0.084 | +/-0.0254 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 23.9 | 0.562 | +/-1.31 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | 0.110 | 1.19 | +/-0.406 | | pCi/g | | | | | | |
| Radium-224 | UI | 4.76 | 1.12 | +/-0.727 | | pCi/g | | | | | | |
| Radium-226 | | 1.30 | 0.115 | +/-0.115 | | pCi/g | | | | | | |
| Radium-228 | | 2.03 | 0.190 | +/-0.197 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.251 | 0.512 | +/-0.164 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.00761 | 0.076 | +/-0.0234 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.174 | 0.0854 | +/-0.0265 | | pCi/g | | | | | | |
| Thallium-208 | | 0.582 | 0.0586 | +/-0.0497 | 0.080 | pCi/g | | | | | | |

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7686
Sample ID: 245388004

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|-----------|-------|-------|----|---------|------|------|-------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Thorium-227 | U | -0.0395 | 0.641 | +/-0.200 | | pCi/g | | | | | | |
| Thorium-231 | U | 0.110 | 1.19 | +/-0.406 | | pCi/g | | | | | | |
| Thorium-234 | U | 1.17 | 1.96 | +/-0.984 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | 0.0263 | 0.0822 | +/-0.0244 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.104 | 0.384 | +/-0.115 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | -0.00585 | 0.0598 | +/-0.0187 | 0.100 | pCi/g | | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 84.9 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 92.6 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 91.9 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7686
Sample ID: 245388004
Project: LANL01004
Client ID: LANL010

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

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy--Uncertain identification

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

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7688
Sample ID: 245388005
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 21.1%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|-------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.00322 | 0.0213 | +/-0.00269 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00232 | 0.0189 | +/-0.00284 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1250 | 944980 | 2 |
| Plutonium-239/240 | U | -0.00347 | 0.0142 | +/-0.00347 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.11 | 0.0619 | +/-0.0923 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.0939 | 0.0394 | +/-0.0185 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.26 | 0.0422 | +/-0.102 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.206 | 0.404 | +/-0.125 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1030 | 944964 | 5 |
| Bismuth-211 | UI | 4.58 | 0.416 | +/-0.345 | | pCi/g | | | | | | |
| Bismuth-214 | | 1.41 | 0.164 | +/-0.118 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 3.00 | 1.71 | +/-0.777 | | pCi/g | | | | | | |
| Cerium-139 | U | -0.0223 | 0.0648 | +/-0.0205 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0743 | 0.122 | +/-0.0339 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | | 0.119 | 0.0848 | +/-0.0397 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0218 | 0.083 | +/-0.0273 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.067 | 0.201 | +/-0.0834 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0487 | 0.205 | +/-0.0665 | | pCi/g | | | | | | |
| Lead-212 | | 2.04 | 0.117 | +/-0.103 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.59 | 0.145 | +/-0.127 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0787 | 0.102 | +/-0.032 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 20.1 | 0.825 | +/-1.22 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.177 | 1.52 | +/-0.460 | | pCi/g | | | | | | |
| Radium-224 | UI | 5.58 | 1.33 | +/-0.714 | | pCi/g | | | | | | |
| Radium-226 | | 1.41 | 0.164 | +/-0.118 | | pCi/g | | | | | | |
| Radium-228 | | 2.05 | 0.251 | +/-0.214 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.239 | 0.735 | +/-0.218 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.0189 | 0.089 | +/-0.0288 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0413 | 0.0939 | +/-0.0313 | | pCi/g | | | | | | |
| Thallium-208 | | 0.589 | 0.0745 | +/-0.0555 | 0.080 | pCi/g | | | | | | |

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7688
Sample ID: 245388005

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 | 0.369 | 0.860 | +/-0.262 | | pCi/g | | | | | | |
| Thorium-231 | U | -0.177 | 1.52 | +/-0.460 | | pCi/g | | | | | | |
| Thorium-234 | U | 0.275 | 3.56 | +/-1.08 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.0335 | 0.102 | +/-0.0321 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.260 | 0.507 | +/-0.156 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | 0.00608 | 0.0748 | +/-0.0222 | 0.100 | pCi/g | | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 88.8 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 93.1 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 97.3 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7688 Project: LANL01004
Sample ID: 245388005 Client ID: LANL010

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

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy--Uncertain identification

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

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7684
Sample ID: 245388006
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 12.8%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|-----------|--------|------------|-------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.000524 | 0.0217 | +/-0.00128 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | -0.00372 | 0.0203 | +/-0.00277 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1250 | 944980 | 2 |
| Plutonium-239/240 | U | -2.96E-10 | 0.0152 | +/-0.00248 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.01 | 0.0611 | +/-0.0848 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.105 | 0.0389 | +/-0.0204 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.07 | 0.0417 | +/-0.0895 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.0207 | 0.385 | +/-0.112 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1041 | 944964 | 5 |
| Bismuth-211 | UI | 4.57 | 0.294 | +/-0.291 | | pCi/g | | | | | | |
| Bismuth-214 | | 1.43 | 0.106 | +/-0.099 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 4.41 | 1.24 | +/-0.574 | | pCi/g | | | | | | |
| Cerium-139 | U | 0.007 | 0.0514 | +/-0.0154 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.100 | 0.0975 | +/-0.0255 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | -0.0166 | 0.0655 | +/-0.0193 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0105 | 0.0632 | +/-0.0197 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | 0.0255 | 0.157 | +/-0.049 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.266 | 0.141 | +/-0.0672 | | pCi/g | | | | | | |
| Lead-212 | | 1.69 | 0.0912 | +/-0.0901 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.59 | 0.102 | +/-0.110 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0197 | 0.0761 | +/-0.0217 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 19.7 | 0.521 | +/-1.05 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | 0.107 | 1.11 | +/-0.366 | | pCi/g | | | | | | |
| Radium-224 | UI | 4.65 | 1.04 | +/-0.699 | | pCi/g | | | | | | |
| Radium-226 | | 1.43 | 0.106 | +/-0.099 | | pCi/g | | | | | | |
| Radium-228 | | 1.73 | 0.177 | +/-0.185 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.0788 | 0.547 | +/-0.174 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.031 | 0.0648 | +/-0.0213 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.042 | 0.0698 | +/-0.0222 | | pCi/g | | | | | | |
| Thallium-208 | | 0.615 | 0.0561 | +/-0.0466 | 0.080 | pCi/g | | | | | | |

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7684
Sample ID: 245388006

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|-----------|-------|-------|----|---------|------|------|-------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Thorium-227 | U | 0.0381 | 0.645 | +/-0.186 | | pCi/g | | | | | | |
| Thorium-231 | U | 0.107 | 1.11 | +/-0.366 | | pCi/g | | | | | | |
| Thorium-234 | U | 1.19 | 3.07 | +/-0.873 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.0236 | 0.0719 | +/-0.0224 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.0534 | 0.326 | +/-0.0974 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | -0.00622 | 0.0566 | +/-0.0182 | 0.100 | pCi/g | | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 90.5 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 86.5 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 96.5 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7684
Sample ID: 245388006

Project: LANL01004
Client ID: LANL010

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

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy--Uncertain identification

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

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7687
Sample ID: 245388007
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 26.7%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|-------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.00224 | 0.0229 | +/-0.00258 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00327 | 0.0178 | +/-0.0019 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1251 | 944980 | 2 |
| Plutonium-239/240 | U | -0.00218 | 0.0134 | +/-0.00218 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.948 | 0.0703 | +/-0.0832 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1357 | 949544 | 3 |
| Uranium-235/236 | | 0.0998 | 0.0448 | +/-0.0198 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.15 | 0.048 | +/-0.0973 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.0786 | 0.218 | +/-0.0761 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1042 | 944964 | 5 |
| Bismuth-211 | UI | 4.14 | 0.331 | +/-0.280 | | pCi/g | | | | | | |
| Bismuth-214 | | 1.08 | 0.113 | +/-0.0899 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 3.15 | 1.15 | +/-0.538 | | pCi/g | | | | | | |
| Cerium-139 | U | 0.000172 | 0.0516 | +/-0.0157 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.111 | 0.0897 | +/-0.033 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | | 0.0849 | 0.0692 | +/-0.0253 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0319 | 0.0575 | +/-0.0196 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | 0.0538 | 0.159 | +/-0.0657 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | 0.0334 | 0.191 | +/-0.0565 | | pCi/g | | | | | | |
| Lead-212 | | 1.61 | 0.090 | +/-0.0801 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.44 | 0.115 | +/-0.104 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | UI | 0.0933 | 0.0696 | +/-0.0457 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 22.7 | 0.528 | +/-1.12 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.134 | 1.18 | +/-0.352 | | pCi/g | | | | | | |
| Radium-224 | UI | 4.66 | 1.02 | +/-0.718 | | pCi/g | | | | | | |
| Radium-226 | | 1.08 | 0.113 | +/-0.0899 | | pCi/g | | | | | | |
| Radium-228 | | 1.56 | 0.201 | +/-0.170 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.262 | 0.463 | +/-0.153 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.033 | 0.0678 | +/-0.0224 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0606 | 0.0738 | +/-0.0232 | | pCi/g | | | | | | |
| Thallium-208 | | 0.549 | 0.055 | +/-0.0487 | 0.080 | pCi/g | | | | | | |

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Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7687
Sample ID: 245388007

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|---------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thorium-227 | U | -0.039 | 0.654 | +/-0.193 | | pCi/g | | | | | |
| Thorium-231 | U | -0.134 | 1.18 | +/-0.352 | | pCi/g | | | | | |
| Thorium-234 | U | 0.897 | 1.93 | +/-0.838 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | -0.0192 | 0.0729 | +/-0.0224 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | 0.159 | 0.372 | +/-0.111 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | 0.0157 | 0.0577 | +/-0.0163 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 85.5 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 97.4 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 86.6 | (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
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure

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Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7687
Sample ID: 245388007
Project: LANL01004
Client ID: LANL010

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

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy--Uncertain identification

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

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7681
Sample ID: 245388008
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 22.5%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|-----------|--------|------------|-------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.000687 | 0.0193 | +/-0.00161 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00232 | 0.0189 | +/-0.00232 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1251 | 944980 | 2 |
| Plutonium-239/240 | U | 0.00464 | 0.0142 | +/-0.00329 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.980 | 0.0624 | +/-0.0832 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.110 | 0.0398 | +/-0.0198 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.01 | 0.0426 | +/-0.085 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.0938 | 0.365 | +/-0.109 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1244 | 944964 | 5 |
| Bismuth-211 | UI | 4.23 | 0.329 | +/-0.272 | | pCi/g | | | | | | |
| Bismuth-214 | | 1.22 | 0.107 | +/-0.0965 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 2.34 | 1.50 | +/-0.550 | | pCi/g | | | | | | |
| Cerium-139 | U | -0.0229 | 0.0481 | +/-0.0153 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.076 | 0.0943 | +/-0.0253 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | -0.0393 | 0.0735 | +/-0.0225 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.039 | 0.0584 | +/-0.0204 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | 0.022 | 0.167 | +/-0.0555 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0303 | 0.205 | +/-0.0652 | | pCi/g | | | | | | |
| Lead-212 | | 1.47 | 0.0941 | +/-0.0822 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.47 | 0.114 | +/-0.102 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0629 | 0.0728 | +/-0.0367 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 22.3 | 0.541 | +/-1.16 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.456 | 1.13 | +/-0.351 | | pCi/g | | | | | | |
| Radium-224 | UI | 4.58 | 1.07 | +/-0.728 | | pCi/g | | | | | | |
| Radium-226 | | 1.22 | 0.107 | +/-0.0965 | | pCi/g | | | | | | |
| Radium-228 | | 1.33 | 0.248 | +/-0.164 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.132 | 0.507 | +/-0.165 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.0443 | 0.0666 | +/-0.0227 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0195 | 0.0653 | +/-0.0218 | | pCi/g | | | | | | |
| Thallium-208 | | 0.441 | 0.0636 | +/-0.0511 | 0.080 | pCi/g | | | | | | |

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Certificate of Analysis

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7681
Sample ID: 245388008
Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|---------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thorium-227 | U | 0.0344 | 0.619 | +/-0.179 | | pCi/g | | | | | |
| Thorium-231 | U | -0.456 | 1.13 | +/-0.351 | | pCi/g | | | | | |
| Thorium-234 | U | 1.11 | 3.07 | +/-0.878 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | -0.0236 | 0.0739 | +/-0.0231 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | -0.129 | 0.346 | +/-0.109 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | 0.0172 | 0.0635 | +/-0.0178 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 93.0 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 90.7 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 91.4 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7681
Sample ID: 245388008

Project: LANL01004
Client ID: LANL010

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

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy--Uncertain identification

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

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7682
Sample ID: 245388009
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 12.8%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|-------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0034 | 0.0221 | +/-0.00211 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00119 | 0.0194 | +/-0.00265 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1251 | 944980 | 2 |
| Plutonium-239/240 | U | 0.00118 | 0.0146 | +/-0.00205 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.05 | 0.065 | +/-0.0889 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.0986 | 0.0414 | +/-0.019 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.12 | 0.0443 | +/-0.0936 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0293 | 0.252 | +/-0.0858 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1331 | 944964 | 5 |
| Bismuth-211 | UI | 4.83 | 0.341 | +/-0.352 | | pCi/g | | | | | | |
| Bismuth-214 | | 1.39 | 0.121 | +/-0.114 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 3.76 | 1.47 | +/-0.558 | | pCi/g | | | | | | |
| Cerium-139 | U | -0.0302 | 0.0491 | +/-0.0156 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.121 | 0.105 | +/-0.0404 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | 0.00985 | 0.067 | +/-0.0203 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0296 | 0.0627 | +/-0.0216 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | 0.0286 | 0.163 | +/-0.0507 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0423 | 0.180 | +/-0.0579 | | pCi/g | | | | | | |
| Lead-212 | | 2.26 | 0.0898 | +/-0.149 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.68 | 0.119 | +/-0.130 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | -0.00413 | 0.0743 | +/-0.0233 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 21.3 | 0.432 | +/-1.23 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | 0.192 | 1.18 | +/-0.410 | | pCi/g | | | | | | |
| Radium-224 | UI | 6.19 | 1.02 | +/-0.698 | | pCi/g | | | | | | |
| Radium-226 | | 1.39 | 0.121 | +/-0.114 | | pCi/g | | | | | | |
| Radium-228 | | 2.13 | 0.228 | +/-0.218 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.133 | 0.515 | +/-0.165 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.023 | 0.0753 | +/-0.0245 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0474 | 0.0707 | +/-0.0222 | | pCi/g | | | | | | |
| Thallium-208 | | 0.679 | 0.0597 | +/-0.0593 | 0.080 | pCi/g | | | | | | |

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7682
Sample ID: 245388009

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|--------|--------|-----------|-------|-------|----|---------|------|------|-------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Thorium-227 | U | -0.283 | 0.616 | +/-0.201 | | pCi/g | | | | | | |
| Thorium-231 | U | 0.192 | 1.18 | +/-0.410 | | pCi/g | | | | | | |
| Thorium-234 | UI | 2.25 | 1.94 | +/-1.05 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | 0.0112 | 0.0743 | +/-0.0217 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.112 | 0.365 | +/-0.109 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | 0.027 | 0.0691 | +/-0.0186 | 0.100 | pCi/g | | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 78.7 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 89.4 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 88.5 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 16, 2010

Client Sample ID: RE14-10-7682
Sample ID: 245388009

Project: LANL01004
Client ID: LANL010

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

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy--Uncertain identification

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

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7685
Sample ID: 245388010
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-10
Collector: Client
Moisture: 15.3%

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|----------|--------|------------|-------|-------|----|---------|----------|------|--------|------|
| Rad Alpha Spec Analysis | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0077 | 0.0231 | +/-0.00634 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | -0.00137 | 0.0224 | +/-0.00194 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1251 | 944980 | 2 |
| Plutonium-239/240 | U | 0.00549 | 0.0169 | +/-0.00337 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.25 | 0.0728 | +/-0.105 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.114 | 0.0464 | +/-0.0217 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.28 | 0.0497 | +/-0.107 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0157 | 0.297 | +/-0.0995 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1342 | 944964 | 5 |
| Bismuth-211 | UI | 3.91 | 0.377 | +/-0.341 | | pCi/g | | | | | | |
| Bismuth-214 | | 1.21 | 0.121 | +/-0.108 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 4.81 | 1.54 | +/-0.799 | | pCi/g | | | | | | |
| Cerium-139 | U | 0.0018 | 0.0597 | +/-0.0174 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0749 | 0.106 | +/-0.0371 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | | 0.224 | 0.0718 | +/-0.0346 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0332 | 0.0641 | +/-0.0218 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.0225 | 0.181 | +/-0.0639 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0442 | 0.222 | +/-0.0717 | | pCi/g | | | | | | |
| Lead-212 | | 1.50 | 0.108 | +/-0.100 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.36 | 0.132 | +/-0.124 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.057 | 0.0886 | +/-0.0251 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 22.0 | 0.536 | +/-1.33 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.0372 | 1.25 | +/-0.432 | | pCi/g | | | | | | |
| Radium-224 | UI | 3.45 | 1.22 | +/-0.770 | | pCi/g | | | | | | |
| Radium-226 | | 1.21 | 0.121 | +/-0.108 | | pCi/g | | | | | | |
| Radium-228 | | 1.38 | 0.235 | +/-0.197 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.0899 | 0.577 | +/-0.168 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | 0.0245 | 0.0789 | +/-0.0221 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.107 | 0.0925 | +/-0.028 | | pCi/g | | | | | | |
| Thallium-208 | | 0.486 | 0.0647 | +/-0.0542 | 0.080 | pCi/g | | | | | | |

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7685
Sample ID: 245388010

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|-----------|--------|-----------|-------|-------|----|---------|------|------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Thorium-227 | U | -0.0692 | 0.720 | +/-0.217 | | pCi/g | | | | | |
| Thorium-231 | U | -0.0372 | 1.25 | +/-0.432 | | pCi/g | | | | | |
| Thorium-234 | U | 1.56 | 2.44 | +/-1.14 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | -0.000202 | 0.0907 | +/-0.0278 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | 0.118 | 0.422 | +/-0.123 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | 0.0494 | 0.0767 | +/-0.0181 | 0.100 | pCi/g | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 82.1 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 77.4 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 78.2 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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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: February 16, 2010

Client Sample ID: RE14-10-7685
Sample ID: 245388010

Project: LANL01004
Client ID: LANL010

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

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy--Uncertain identification

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

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7683
Sample ID: 245388011
Matrix: R
Collect Date: 15-JAN-10
Receive Date: 23-JAN-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 | | | | | | | | | | | | |
| <i>AM241 "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.00234 | 0.0236 | +/-0.00181 | 0.050 | pCi/g | | HAKB | 02/04/10 | 1450 | 944979 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00349 | 0.019 | +/-0.0045 | 0.050 | pCi/g | | HAKB | 02/12/10 | 1251 | 944980 | 2 |
| Plutonium-239/240 | U | 0.00116 | 0.0143 | +/-0.00348 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.07 | 0.0681 | +/-0.0911 | 0.100 | pCi/g | | HAKB | 02/12/10 | 1358 | 949544 | 3 |
| Uranium-235/236 | | 0.0833 | 0.0434 | +/-0.0182 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.40 | 0.0465 | +/-0.114 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.103 | 0.182 | +/-0.0651 | 0.200 | pCi/g | | MXR1 | 02/04/10 | 1441 | 944964 | 5 |
| Bismuth-211 | UI | 3.99 | 0.300 | +/-0.362 | | pCi/g | | | | | | |
| Bismuth-214 | | 1.17 | 0.119 | +/-0.104 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 2.24 | 1.25 | +/-0.539 | | pCi/g | | | | | | |
| Cerium-139 | U | -0.0057 | 0.0455 | +/-0.0137 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0789 | 0.0891 | +/-0.0244 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | | 0.147 | 0.0593 | +/-0.0391 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0274 | 0.0657 | +/-0.0221 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.00526 | 0.152 | +/-0.0479 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0821 | 0.182 | +/-0.0633 | | pCi/g | | | | | | |
| Lead-212 | | 1.74 | 0.0868 | +/-0.136 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.39 | 0.104 | +/-0.131 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | -0.0113 | 0.0702 | +/-0.0224 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 23.4 | 0.478 | +/-1.31 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | 0.0336 | 1.06 | +/-0.371 | | pCi/g | | | | | | |
| Radium-224 | UI | 5.73 | 0.988 | +/-0.855 | | pCi/g | | | | | | |
| Radium-226 | | 1.17 | 0.119 | +/-0.104 | | pCi/g | | | | | | |
| Radium-228 | | 1.67 | 0.172 | +/-0.183 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.121 | 0.558 | +/-0.166 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.0275 | 0.0665 | +/-0.0224 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.0786 | 0.0704 | +/-0.0205 | | pCi/g | | | | | | |
| Thallium-208 | | 0.436 | 0.0575 | +/-0.0499 | 0.080 | pCi/g | | | | | | |

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

Report Date: February 16, 2010

Client Sample ID:
Sample ID:

RE14-10-7683
245388011

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|-----------|--------|-----------|-------|-------|----|---------|------|------|-------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Thorium-227 | U | 0.187 | 0.604 | +/-0.181 | | pCi/g | | | | | | |
| Thorium-231 | U | 0.0336 | 1.06 | +/-0.371 | | pCi/g | | | | | | |
| Thorium-234 | | 1.69 | 1.69 | +/-0.745 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.000632 | 0.0705 | +/-0.0209 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.156 | 0.333 | +/-0.0974 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | -0.0232 | 0.0408 | +/-0.0157 | 0.100 | pCi/g | | | | | | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 77.2 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 90.2 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 90.1 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Certificate of Analysis

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

Report Date: February 16, 2010

Client Sample ID: RE14-10-7683 Project: LANL01004
Sample ID: 245388011 Client ID: LANL010

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

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy--Uncertain identification

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

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

QUALITY CONTROL DATA

GEL LABORATORIES LLC

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

QC Summary

Report Date: February 16, 2010

Page 1 of 6

Client : Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm
Los Alamos, New Mexico
Contact: Ms. Joylene Valdez
Workorder: 245388

| Parmname | NOM | Sample | Qual | QC | Units | RER | REC% | Range | Anlst | Date | Time |
|-----------------------|-----------|--------|------------|------------|------------|-------|--------|------------|-------|----------|-------|
| Rad Alpha Spec | | | | | | | | | | | |
| Batch | 944979 | | | | | | | | | | |
| QC1202023758 | 245393001 | DUP | | | | | | | | | |
| Americium-241 | | U | 0.00196 | U | -0.00331 | pCi/g | 0.306 | (0-1) | HAKB | 02/02/10 | 15:01 |
| | | TPU: | +/-0.00295 | | +/-0.00565 | | | | | | |
| | | Yield: | 89.5 | | 77.3 | | | | | | |
| QC1202023759 | LCS | | | | | | | | | | |
| Americium-241 | | 33.2 | | | 28.7 | pCi/g | 86.5 | (75%-125%) | | 02/02/10 | 15:01 |
| | | TPU: | | | +/-2.01 | | | | | | |
| | | Yield: | | | 94.0 | | | | | | |
| QC1202023757 | MB | | | | | | | | | | |
| Americium-241 | | | U | -0.00754 | pCi/g | | | | | 02/02/10 | 15:01 |
| | | TPU: | | +/-0.00486 | | | | | | | |
| | | Yield: | | 81.8 | | | | | | | |
| Batch | 944980 | | | | | | | | | | |
| QC1202023761 | 245393001 | DUP | | | | | | | | | |
| Plutonium-238 | | U | 0.00257 | U | 0.00707 | pCi/g | 0.231 | (0-1) | HAKB | 02/02/10 | 15:01 |
| | | TPU: | +/-0.00681 | | +/-0.00291 | | | | | | |
| | | Yield: | 85.9 | | 88.5 | | | | | | |
| Plutonium-239/240 | | U | 0.00 | U | -0.00118 | pCi/g | 0.0757 | (0-1) | | | |
| | | TPU: | +/-0.00515 | | +/-0.00263 | | | | | | |
| | | Yield: | 85.9 | | 88.5 | | | | | | |
| QC1202023762 | LCS | | | | | | | | | | |
| Plutonium-238 | | | | | 7.06 | pCi/g | | (75%-125%) | | | |
| | | TPU: | | | +/-0.535 | | | | | | |
| | | Yield: | | | 72.0 | | | | | | |
| Plutonium-239/240 | | 41.8 | | | 39.0 | pCi/g | 93.3 | (75%-125%) | | | |
| | | TPU: | | | +/-2.44 | | | | | | |
| | | Yield: | | | 72.0 | | | | | | |
| QC1202023760 | MB | | | | | | | | | | |
| Plutonium-238 | | | U | -0.00442 | pCi/g | | | | | | |
| | | TPU: | | +/-0.0039 | | | | | | | |
| | | Yield: | | 88.3 | | | | | | | |
| Plutonium-239/240 | | | U | 0.00294 | pCi/g | | | | | | |
| | | TPU: | | +/-0.00295 | | | | | | | |
| | | Yield: | | 88.3 | | | | | | | |
| Batch | 949544 | | | | | | | | | | |
| QC1202034407 | 245393001 | DUP | | | | | | | | | |
| Uranium-233/234 | | | 0.699 | | 0.818 | pCi/g | 0.417 | (0-1) | HAKB | 02/12/10 | 13:57 |
| | | TPU: | +/-0.0629 | | +/-0.0802 | | | | | | |
| | | Yield: | 94.6 | | 95.2 | | | | | | |
| Uranium-235/236 | | | 0.0677 | U | 0.0552 | pCi/g | 0.197 | (0-1) | | | |
| | | TPU: | +/-0.0154 | | +/-0.0164 | | | | | | |
| | | Yield: | 94.6 | | 95.2 | | | | | | |
| Uranium-238 | | | 0.845 | | 0.956 | pCi/g | 0.337 | (0-1) | | | |
| | | TPU: | +/-0.0732 | | +/-0.0904 | | | | | | |

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QC Summary

Workorder: 245388

Page 2 of 6

| Parmname | NOM | Sample | Qual | QC | Units | RER | REC% | Range | Anlst | Date | Time |
|-----------------|-----------|--------|-----------|------------|-----------|-------|--------|------------|-------|---------------|------|
| Rad Alpha Spec | | | | | | | | | | | |
| Batch | 949544 | | | | | | | | | | |
| QC1202034408 | LCS | Yield: | 94.6 | 95.2 | | | | | | | |
| Uranium-233/234 | | | | 7.33 | pCi/g | | | (75%-125%) | | 02/12/1013:57 | |
| | | TPU: | | +/-0.677 | | | | | | | |
| | | Yield: | | 93.4 | | | | | | | |
| Uranium-235/236 | | | | 0.396 | pCi/g | | | (75%-125%) | | | |
| | | TPU: | | +/-0.101 | | | | | | | |
| | | Yield: | | 93.4 | | | | | | | |
| Uranium-238 | 5.75 | | | 5.97 | pCi/g | | 104 | (75%-125%) | | | |
| | | TPU: | | +/-0.570 | | | | | | | |
| | | Yield: | | 93.4 | | | | | | | |
| QC1202034406 | MB | | | | | | | | | | |
| Uranium-233/234 | | | U | 0.0169 | pCi/g | | | | | 02/12/1013:57 | |
| | | TPU: | | +/-0.00639 | | | | | | | |
| | | Yield: | | 97.5 | | | | | | | |
| Uranium-235/236 | | | U | 0.0047 | pCi/g | | | | | | |
| | | TPU: | | +/-0.00576 | | | | | | | |
| | | Yield: | | 97.5 | | | | | | | |
| Uranium-238 | | | U | 0.0171 | pCi/g | | | | | | |
| | | TPU: | | +/-0.00696 | | | | | | | |
| | | Yield: | | 97.5 | | | | | | | |
| Rad Gamma Spec | | | | | | | | | | | |
| Batch | 944964 | | | | | | | | | | |
| QC1202023714 | 245388002 | DUP | | | | | | | | | |
| Americium-241 | | U | 0.164 | U | 0.0585 | pCi/g | 0.435 | (0-1) | MXR1 | 02/04/1017:09 | |
| | | TPU: | +/-0.0875 | | +/-0.0334 | | | | | | |
| Bismuth-211 | | UI | 3.96 | UI | 3.95 | pCi/g | 0.0119 | (0-1) | | | |
| | | TPU: | +/-0.218 | | +/-0.288 | | | | | | |
| Bismuth-214 | | | 1.21 | | 1.22 | pCi/g | 0.0375 | (0-1) | | | |
| | | TPU: | +/-0.0906 | | +/-0.109 | | | | | | |
| Cadmium-109 | | UI | 2.24 | UI | 2.16 | pCi/g | 0.0455 | (0-1) | | | |
| | | TPU: | +/-0.506 | | +/-0.384 | | | | | | |
| Cerium-139 | | U | 0.0018 | U | -0.0149 | pCi/g | 0.289 | (0-1) | | | |
| | | TPU: | +/-0.0121 | | +/-0.0168 | | | | | | |
| Cesium-134 | | U | 0.0575 | U | 0.0529 | pCi/g | 0.0456 | (0-1) | | | |
| | | TPU: | +/-0.0191 | | +/-0.032 | | | | | | |
| Cesium-137 | | UI | 0.118 | U | 0.0676 | pCi/g | 0.383 | (0-1) | | | |
| | | TPU: | +/-0.0369 | | +/-0.0288 | | | | | | |
| Cobalt-60 | | U | 0.0121 | U | -0.0257 | pCi/g | 0.477 | (0-1) | | | |
| | | TPU: | +/-0.0142 | | +/-0.0254 | | | | | | |
| Europium-152 | | U | -0.101 | U | -0.0447 | pCi/g | 0.252 | (0-1) | | | |
| | | TPU: | +/-0.0481 | | +/-0.0641 | | | | | | |
| Lanthanum-140 | | U | -0.0554 | U | -0.156 | pCi/g | 0.412 | (0-1) | | | |
| | | TPU: | +/-0.0437 | | +/-0.0778 | | | | | | |
| Lead-212 | | | 1.58 | | 1.58 | pCi/g | 0.012 | (0-1) | | | |
| | | TPU: | +/-0.0733 | | +/-0.0936 | | | | | | |
| Lead-214 | | | 1.38 | | 1.37 | pCi/g | 0.0105 | (0-1) | | | |
| | | TPU: | +/-0.0839 | | +/-0.106 | | | | | | |
| Mercury-203 | | U | 0.0516 | U | -0.00951 | pCi/g | 0.709 | (0-1) | | | |
| | | TPU: | +/-0.0182 | | +/-0.025 | | | | | | |

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QC Summary

Workorder: 245388

Page 3 of 6

| Parmname | NOM | Sample | Qual | QC | Units | RER | REC% | Range | Anlst | Date | Time |
|-----------------------|--------|-----------|------|-----------|-------|----------|------|------------|-------|----------|-------|
| Rad Gamma Spec | | | | | | | | | | | |
| Batch | 944964 | | | | | | | | | | |
| Potassium-40 | | 21.2 | | 20.3 | pCi/g | 0.199 | | (0-1) | | | |
| | TPU: | +/-1.01 | | +/-1.08 | | | | | | | |
| Radium-223 | U | -0.0277 | U | -0.667 | pCi/g | 0.462 | | (0-1) | | | |
| | TPU: | +/-0.287 | | +/-0.406 | | | | | | | |
| Radium-224 | UI | 3.14 | UI | 4.63 | pCi/g | 0.620 | | (0-1) | | | |
| | TPU: | +/-0.467 | | +/-0.737 | | | | | | | |
| Radium-226 | | 1.21 | | 1.22 | pCi/g | 0.0375 | | (0-1) | | | |
| | TPU: | +/-0.0906 | | +/-0.109 | | | | | | | |
| Radium-228 | | 1.40 | | 1.64 | pCi/g | 0.309 | | (0-1) | | | |
| | TPU: | +/-0.144 | | +/-0.241 | | | | | | | |
| Ruthenium-106 | U | 0.0679 | U | -0.0637 | pCi/g | 0.190 | | (0-1) | | | |
| | TPU: | +/-0.129 | | +/-0.218 | | | | | | | |
| Sodium-22 | U | -0.0483 | U | -0.00484 | pCi/g | 0.493 | | (0-1) | | | |
| | TPU: | +/-0.0179 | | +/-0.0261 | | | | | | | |
| Strontium-85 | UI | 0.0669 | U | 0.0604 | pCi/g | 0.0737 | | (0-1) | | | |
| | TPU: | +/-0.0173 | | +/-0.0268 | | | | | | | |
| Thallium-208 | | 0.442 | | 0.572 | pCi/g | 0.680 | | (0-1) | | | |
| | TPU: | +/-0.0345 | | +/-0.0613 | | | | | | | |
| Thorium-227 | U | -0.0652 | U | -0.0203 | pCi/g | 0.063 | | (0-1) | | | |
| | TPU: | +/-0.150 | | +/-0.206 | | | | | | | |
| Thorium-231 | U | -0.0277 | U | -0.667 | pCi/g | 0.462 | | (0-1) | | | |
| | TPU: | +/-0.287 | | +/-0.406 | | | | | | | |
| Thorium-234 | U | 2.14 | | 1.47 | pCi/g | 0.183 | | (0-1) | | | |
| | TPU: | +/-1.25 | | +/-0.582 | | | | | | | |
| Tin-113 | U | -0.0312 | U | -0.0252 | pCi/g | 0.0688 | | (0-1) | | | |
| | TPU: | +/-0.0164 | | +/-0.0275 | | | | | | | |
| Uranium-235 | U | -0.00649 | U | 0.381 | pCi/g | 0.798 | | (0-1) | | | |
| | TPU: | +/-0.0909 | | +/-0.152 | | | | | | | |
| Yttrium-88 | U | 0.0135 | U | 0.0136 | pCi/g | 0.000705 | | (0-1) | | | |
| | TPU: | +/-0.0142 | | +/-0.0213 | | | | | | | |
| QC1202023715 | LCS | | | | | | | | | | |
| Americium-241 | 16.3 | | | 14.4 | pCi/g | | 88.4 | (75%-125%) | | 02/04/10 | 17:10 |
| | TPU: | | | +/-0.847 | | | | | | | |
| Bismuth-211 | | | | 3.21 | pCi/g | | | | | | |
| | TPU: | | | +/-0.427 | | | | | | | |
| Bismuth-214 | | | | 0.964 | pCi/g | | | | | | |
| | TPU: | | | +/-0.136 | | | | | | | |
| Cadmium-109 | | | | 31.6 | pCi/g | | | | | | |
| | TPU: | | | +/-2.25 | | | | | | | |
| Cerium-139 | | | U | -0.000416 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0271 | | | | | | | |
| Cesium-134 | | | U | -0.00613 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0542 | | | | | | | |
| Cesium-137 | 5.70 | | | 5.78 | pCi/g | | 101 | (75%-125%) | | | |
| | TPU: | | | +/-0.205 | | | | | | | |
| Cobalt-60 | 6.58 | | | 6.82 | pCi/g | | 104 | (75%-125%) | | | |
| | TPU: | | | +/-0.284 | | | | | | | |
| Europium-152 | | | U | -0.139 | pCi/g | | | | | | |
| | TPU: | | | +/-0.118 | | | | | | | |
| Lanthanum-140 | | | U | -0.0169 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0531 | | | | | | | |

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QC Summary

Workorder: 245388

Page 4 of 6

| Parmname | NOM | Sample Qual | QC | Units | RER | REC% | Range | Anlst | Date Time |
|-----------------------|--------|-------------|------------|-------|-----|------|-------|-------|---------------|
| Rad Gamma Spec | | | | | | | | | |
| Batch | 944964 | | | | | | | | |
| Lead-212 | | | 0.937 | pCi/g | | | | | |
| | TPU: | | +/-0.111 | | | | | | |
| Lead-214 | | | 1.12 | pCi/g | | | | | |
| | TPU: | | +/-0.152 | | | | | | |
| Mercury-203 | | U | 0.0176 | pCi/g | | | | | |
| | TPU: | | +/-0.0385 | | | | | | |
| Potassium-40 | | | 1.06 | pCi/g | | | | | |
| | TPU: | | +/-0.358 | | | | | | |
| Radium-223 | | U | -1.36 | pCi/g | | | | | |
| | TPU: | | +/-0.720 | | | | | | |
| Radium-224 | | | 4.86 | pCi/g | | | | | |
| | TPU: | | +/-0.927 | | | | | | |
| Radium-226 | | | 0.964 | pCi/g | | | | | |
| | TPU: | | +/-0.136 | | | | | | |
| Radium-228 | | | 1.58 | pCi/g | | | | | |
| | TPU: | | +/-0.301 | | | | | | |
| Ruthenium-106 | | U | -0.0253 | pCi/g | | | | | |
| | TPU: | | +/-0.367 | | | | | | |
| Sodium-22 | | U | -0.0194 | pCi/g | | | | | |
| | TPU: | | +/-0.0322 | | | | | | |
| Strontium-85 | | U | 0.0459 | pCi/g | | | | | |
| | TPU: | | +/-0.0416 | | | | | | |
| Thallium-208 | | | 0.586 | pCi/g | | | | | |
| | TPU: | | +/-0.0675 | | | | | | |
| Thorium-227 | | U | -0.365 | pCi/g | | | | | |
| | TPU: | | +/-0.420 | | | | | | |
| Thorium-231 | | U | -1.36 | pCi/g | | | | | |
| | TPU: | | +/-0.720 | | | | | | |
| Thorium-234 | | U | 1.35 | pCi/g | | | | | |
| | TPU: | | +/-1.49 | | | | | | |
| Tin-113 | | U | -0.0451 | pCi/g | | | | | |
| | TPU: | | +/-0.0501 | | | | | | |
| Uranium-235 | | U | -0.135 | pCi/g | | | | | |
| | TPU: | | +/-0.192 | | | | | | |
| Yttrium-88 | | U | 0.0525 | pCi/g | | | | | |
| | TPU: | | +/-0.0286 | | | | | | |
| QC1202023713 | MB | | | | | | | | |
| Americium-241 | | U | -0.0574 | pCi/g | | | | | 02/04/1017:08 |
| | TPU: | | +/-0.0436 | | | | | | |
| Bismuth-211 | | U | -0.0401 | pCi/g | | | | | |
| | TPU: | | +/-0.0498 | | | | | | |
| Bismuth-214 | | U | -0.00792 | pCi/g | | | | | |
| | TPU: | | +/-0.0203 | | | | | | |
| Cadmium-109 | | U | 0.102 | pCi/g | | | | | |
| | TPU: | | +/-0.131 | | | | | | |
| Cerium-139 | | U | -0.00366 | pCi/g | | | | | |
| | TPU: | | +/-0.00598 | | | | | | |
| Cesium-134 | | U | 0.0101 | pCi/g | | | | | |
| | TPU: | | +/-0.00791 | | | | | | |
| Cesium-137 | | U | -0.0177 | pCi/g | | | | | |
| | TPU: | | +/-0.00983 | | | | | | |

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QC Summary

Workorder: 245388

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| Parmname | NOM | Sample | Qual | QC | Units | RER | REC% | Range | Anlst | Date | Time |
|-----------------------|--------|--------|------|------------|-------|-----|------|-------|-------|------|------|
| Rad Gamma Spec | | | | | | | | | | | |
| Batch | 944964 | | | | | | | | | | |
| Cobalt-60 | | | U | 0.00421 | pCi/g | | | | | | |
| | TPU: | | | +/-0.00823 | | | | | | | |
| Europium-152 | | | U | 0.00751 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0202 | | | | | | | |
| Lanthanum-140 | | | U | 0.000603 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0186 | | | | | | | |
| Lead-212 | | | U | -0.0207 | pCi/g | | | | | | |
| | TPU: | | | +/-0.014 | | | | | | | |
| Lead-214 | | | U | 0.014 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0172 | | | | | | | |
| Mercury-203 | | | U | -0.00794 | pCi/g | | | | | | |
| | TPU: | | | +/-0.00778 | | | | | | | |
| Potassium-40 | | | U | 0.171 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0984 | | | | | | | |
| Radium-223 | | | U | 0.152 | pCi/g | | | | | | |
| | TPU: | | | +/-0.146 | | | | | | | |
| Radium-224 | | | U | -0.216 | pCi/g | | | | | | |
| | TPU: | | | +/-0.164 | | | | | | | |
| Radium-226 | | | U | -0.00792 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0203 | | | | | | | |
| Radium-228 | | | U | -0.0269 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0294 | | | | | | | |
| Ruthenium-106 | | | U | 0.154 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0717 | | | | | | | |
| Sodium-22 | | | U | 0.0113 | pCi/g | | | | | | |
| | TPU: | | | +/-0.00832 | | | | | | | |
| Strontium-85 | | | U | 0.0257 | pCi/g | | | | | | |
| | TPU: | | | +/-0.00902 | | | | | | | |
| Thallium-208 | | | U | 0.0134 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0092 | | | | | | | |
| Thorium-227 | | | U | -0.109 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0823 | | | | | | | |
| Thorium-231 | | | U | 0.152 | pCi/g | | | | | | |
| | TPU: | | | +/-0.146 | | | | | | | |
| Thorium-234 | | | U | 0.0417 | pCi/g | | | | | | |
| | TPU: | | | +/-0.342 | | | | | | | |
| Tin-113 | | | U | 0.00162 | pCi/g | | | | | | |
| | TPU: | | | +/-0.00894 | | | | | | | |
| Uranium-235 | | | U | 0.0348 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0422 | | | | | | | |
| Yttrium-88 | | | U | -0.000465 | pCi/g | | | | | | |
| | TPU: | | | +/-0.00707 | | | | | | | |

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

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QC Summary

Workorder: 245388

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| Parmname | NOM | Sample Qual | QC | Units | RER | REC% | Range | Anlst | Date | Time |
|----------|--|-------------|----|-------|-----|------|-------|-------|------|------|
| A | The TIC is a suspected aldol-condensation product | | | | | | | | | |
| B | For General Chemistry and Organic analysis the target analyte was detected in the associated blank. | | | | | | | | | |
| BD | Results are either below the MDC or tracer recovery is low | | | | | | | | | |
| C | Analyte has been confirmed by GC/MS analysis | | | | | | | | | |
| D | Results are reported from a diluted aliquot of the sample | | | | | | | | | |
| F | Estimated Value | | | | | | | | | |
| H | Analytical holding time was exceeded | | | | | | | | | |
| J | Value is estimated | | | | | | | | | |
| M | M if above MDC and less than LLD | | | | | | | | | |
| M | Matrix Related Failure | | | | | | | | | |
| N/A | RPD or %Recovery limits do not apply. | | | | | | | | | |
| ND | Analyte concentration is not detected above the detection limit | | | | | | | | | |
| NJ | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier | | | | | | | | | |
| R | Sample results are rejected | | | | | | | | | |
| U | Analyte was analyzed for, but not detected above the MDL, MDA, or LOD. | | | | | | | | | |
| UI | Gamma Spectroscopy--Uncertain identification | | | | | | | | | |
| X | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier | | | | | | | | | |
| Y | QC Samples were not spiked with this compound | | | | | | | | | |
| ^ | RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry. | | | | | | | | | |
| h | Preparation or preservation holding time was exceeded | | | | | | | | | |

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

** Indicates analyte is a surrogate compound.

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

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

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

RAW DATA

Radiochemistry Batch Checklist, Rev10

Batch#

944979

Product:

AM

Date:

2/6/10

| Criteria: | Yes | No | Comments |
|---|-----|----|----------|
| Sample Solids are less than or equal to 100 mg for GAB. | | | N/A |
| Samples have been blank corrected (if required) | ✓ | | |
| If activity less 10 ⁶ MDA/ MDC, error is 150% or less of sample activity. If greater 10 ⁶ MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay. | ✓ | | |
| Instrument source check is within limits. | ✓ | | |
| Instrument big check is within limits. | ✓ | | |
| Method RDL/ LLD has been met. | ✓ | | |
| If duplicate activities are less 5 ⁶ MDA/ MDC, then RPD is 100% or less. If greater 5 ⁶ 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. | ✓ | | |
| Smears Taken for Radioactive batches. | | | MA |
| Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria. | ✓ | | |
| No blank spaces on data forms. | ✓ | | |
| All line outs initialed and dated. | ✓ | | |
| No transcription errors are apparent. | | | MA |
| Aux data is correct. | | | MA |
| Client Special requirements page has been checked. | ✓ | | |
| Raw Data and/ or spectrum are included and properly statused. | ✓ | | |
| QC data entered into QC database and batch is in REVW | ✓ | | |
| HR notification complete (if necessary) | | | N/A |
| Batch entered into Case Narrative. | ✓ | | |
| Batch Data Exception Reports (DER) completed, if applicable. | | | MA |
| Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed. | | | MA |
| Aliquot Correction completed if required. | | | MA |
| Review sample historical results if available (If REMF, results above MDC have been verified by historical results, recount or re-analysis.) | ✓ | | |

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By:

Debbie Green 2/6/10

Secondary Review Performed By:

Jed M L 2/6/10

2/20
LANC

Am/Cm Que Sheet

25-JAN-10

Batch #: 944979
 Analyst: HAKB
 Tracer Code: 445-96-2-SS
 LCS Isotope(s): Am241/Cm244
 Spike Code(s): SEM 0244-B / NA
 Prep Date: 1/22/10 Initials: HAKB
 Internal Due Date: 09-FEB-10
 Expiration Date: 5/11/10
 Vol(s): 0.119 / NA
 Vol(s): NA / NA
 Witness: MDA 1/29/10

First Client Due Date: 20-FEB-10
 Expiration Date: 5/11/10
 Expiration Date: 4/30/20 / NA
 Expiration Date: NA / NA
 Balance ID: 19350208

| Sample ID | Client Description | Type | Hazard | | Matrix | Client | Collection | | Label # | Aliquot (g) (1/1) | WebQI | Am/Cm Det # |
|--------------|----------------------------|----------|-----------|----------|--------|------------|------------|------|---------|-------------------|-------|-------------|
| | | | Code | Min CRDL | | | Date | Pos. | | | | |
| 245388001-1 | RE14-10-7689 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 15-JAN-10 | 1 | 1 | 1.250 | | 89 |
| 245388002-1 | RE14-10-7679 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 15-JAN-10 | 2 | 2 | 1.264 | | 90 |
| 245388003-1 | RE14-10-7680 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 15-JAN-10 | 3 | 3 | 1.264 | | 91 |
| 245388004-1 | RE14-10-7686 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 15-JAN-10 | 4 | 4 | 1.253 | | 92 |
| 245388005-1 | RE14-10-7688 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 15-JAN-10 | 5 | 5 | 1.265 | | 93 |
| 245388006-1 | RE14-10-7684 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 15-JAN-10 | 6 | 6 | 1.267 | | 94 |
| 245388007-1 | RE14-10-7687 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 15-JAN-10 | 7 | 7 | 1.263 | | 107 |
| 245388008-1 | RE14-10-7681 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 15-JAN-10 | 8 | 8 | 1.251 | | 108 |
| 245388009-1 | RE14-10-7682 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 15-JAN-10 | 9 | 9 | 1.265 | | 109 |
| 245388010-1 | RE14-10-7685 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 15-JAN-10 | 10 | 10 | 1.270 | | 110 |
| 245388011-1 | RE14-10-7683 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 15-JAN-10 | 11 | 11 | 1.251 | | 111 |
| 245393001-1 | RE15-10-7918 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 19-JAN-10 | 12 | 12 | 1.272 | | 112 |
| 245393002-1 | RE15-10-7915 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 19-JAN-10 | 13 | 13 | 1.254 | | 87 |
| 245393003-1 | RE15-10-7920 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 19-JAN-10 | 14 | 14 | 1.273 | | 88 |
| 245393004-1 | RE15-10-7914 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 19-JAN-10 | 15 | 15 | 1.259 | | 95 |
| 245393005-1 | RE15-10-7919 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 19-JAN-10 | 16 | 16 | 1.250 | | 97 |
| 245393006-1 | RE15-10-7921 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 19-JAN-10 | 17 | 17 | 1.254 | | 99 |
| 245393007-1 | RE15-10-7916 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 19-JAN-10 | 18 | 18 | 1.266 | | 100 |
| 245393008-1 | RE15-10-7917 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 19-JAN-10 | 19 | 19 | 1.262 | | 101 |
| 245393009-1 | RE15-10-7923 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 19-JAN-10 | 20 | 20 | 1.274 | | 102 |
| 1202023757-1 | MB for batch 944979 | MB | .05 pCi/g | | SOIL | QC ACCOUNT | | 21 | 21 | 1.0 | | 87 |
| 1202023758-1 | RE15-10-7918(245393001DUP) | DUP | .05 pCi/g | | SOIL | QC ACCOUNT | 19-JAN-10 | 22 | 22 | 1.273 | | 88 |
| 1202023759-1 | LCS for batch 944979 | LCS *SEM | .05 pCi/g | | SOIL | QC ACCOUNT | | 23 | 23 | 0.119 | | 89 |

Choose SOP Used (GL-RAD-A-01)
 GL-RAD-A-036

Solid Sample Dissolution by LEACH or DIGESTION
 Circle One

Data Reviewed By: [Signature] 2/16/10

Blank Correction Report

Batch ID 944979

| GEL Sample ID | Client sample ID | Parameter | Aliquot | Result | TPU | MDA | Aliquot Corrected Blank Result | Units | Activity <5X Corrected Blank |
|---------------|------------------|---------------|---------|-----------|---------|--------|--------------------------------|-------|------------------------------|
| 1202023758 | DUP | Americium-241 | 1.27 g | -0.00331 | 0.00565 | 0.0258 | -.00593701 | pCi/g | NO |
| 1202023759 | LCS | Americium-241 | 0.119 g | 28.7 | 2.01 | 0.233 | -.06336134 | pCi/g | NO |
| 1202023757 | MB | Americium-241 | 1.00 g | -0.00754 | 0.00486 | 0.0298 | -.00754 | pCi/g | NO |
| 245388001 | RE14-10-7689 | Americium-241 | 1.25 g | 0.000885 | 0.00136 | 0.023 | -.006032 | pCi/g | NO |
| 245388002 | RE14-10-7679 | Americium-241 | 1.26 g | 0.00698 | 0.00299 | 0.0213 | -.00598413 | pCi/g | NO |
| 245388003 | RE14-10-7680 | Americium-241 | 1.26 g | 0.000668 | 0.00124 | 0.021 | -.00598413 | pCi/g | NO |
| 245388004 | RE14-10-7686 | Americium-241 | 1.25 g | 0.00222 | 0.00173 | 0.0229 | -.006032 | pCi/g | NO |
| 245388005 | RE14-10-7688 | Americium-241 | 1.27 g | 0.00322 | 0.00269 | 0.0213 | -.00593701 | pCi/g | NO |
| 245388006 | RE14-10-7684 | Americium-241 | 1.27 g | -0.000524 | 0.00128 | 0.0217 | -.00593701 | pCi/g | NO |
| 245388007 | RE14-10-7687 | Americium-241 | 1.26 g | 0.00224 | 0.00258 | 0.0229 | -.00598413 | pCi/g | NO |
| 245388008 | RE14-10-7681 | Americium-241 | 1.25 g | -0.000687 | 0.00161 | 0.0193 | -.006032 | pCi/g | NO |
| 245388009 | RE14-10-7682 | Americium-241 | 1.27 g | 0.0034 | 0.00211 | 0.0221 | -.00593701 | pCi/g | NO |
| 245388010 | RE14-10-7685 | Americium-241 | 1.27 g | 0.0077 | 0.00634 | 0.0231 | -.00593701 | pCi/g | NO |
| 245388011 | RE14-10-7683 | Americium-241 | 1.25 g | 0.00234 | 0.00181 | 0.0236 | -.006032 | pCi/g | NO |
| 245393001 | RE15-10-7918 | Americium-241 | 1.27 g | 0.00196 | 0.00295 | 0.0212 | -.00593701 | pCi/g | NO |
| 245393002 | RE15-10-7915 | Americium-241 | 1.25 g | 0.00618 | 0.00545 | 0.0226 | -.006032 | pCi/g | NO |
| 245393003 | RE15-10-7920 | Americium-241 | 1.27 g | 0.00485 | 0.0059 | 0.0226 | -.00593701 | pCi/g | NO |
| 245393004 | RE15-10-7914 | Americium-241 | 1.26 g | 0.00948 | 0.0081 | 0.024 | -.00598413 | pCi/g | NO |
| 245393005 | RE15-10-7919 | Americium-241 | 1.25 g | 0.00181 | 0.00481 | 0.0309 | -.006032 | pCi/g | NO |
| 245393006 | RE15-10-7921 | Americium-241 | 1.25 g | 0.0152 | 0.00545 | 0.0321 | -.006032 | pCi/g | NO |
| 245393007 | RE15-10-7916 | Americium-241 | 1.27 g | 0.00224 | 0.00259 | 0.0229 | -.00593701 | pCi/g | NO |
| 245393008 | RE15-10-7917 | Americium-241 | 1.26 g | 0.00119 | 0.0015 | 0.0255 | -.00598413 | pCi/g | NO |

2/10/10

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | | |
|---|---|--|
| BATCH NUMBER : 944979 SAMPLE ID : S0245388001_AM SAMPLE QTY : 1.250 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 90.496 | CHAMBER : 089 DETECTOR S/N : 78262 AVERAGE %EFFICIENCY : 29.3898 COUNT DATE : 4-FEB-2010 14:50:54 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_AM BKG FILE : B089.CNF:713 BKG DATE : 31-JAN-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W089.CNF:193 CAL DATE : 11-JAN-2010 |
|---|---|--|

| | | |
|---|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.6394E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G |
|---|---|---|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|---------|----------|----------------|-------------|-----------|-----------|-----------|
| AM-241 | 5479.150 | 5473.382 | 94.842 | 2.000 | 0.653 | 0.000 | 3.0704 | 99.94000 | 8.85E-04 | 1.36E-03 | 9.68E-03 | 2.30E-02 | 1.36E-03 |
| AM243 | 5270.000 | 5255.092 | 43.591 | 775.000 | 774.000 | 1.000 | 1.0000 | 99.78000 | 1.05E+00 | 7.45E-02 | 3.16E-03 | 1.00E-02 | 3.78E-02 |
| CM-242 | 6102.000 | 6027.315 | 59.900 | 3.000 | 3.000 | 0.000 | 4.3186 | 100.0000 | 4.44E-03 | 2.58E-03 | 1.36E-02 | 3.09E-02 | 2.57E-03 |
| CM-3/4 | 5795.020 | 5728.858 | 4.992 | 6.000 | 6.000 | 0.000 | 5.2338 | 100.0000 | 8.15E-03 | 3.36E-03 | 1.65E-02 | 3.67E-02 | 3.33E-03 |
| CM-5/6 | 5386.000 | 5384.962 | 0.000 | 1.000 | 1.000 | 0.000 | 19.8463 | 86.09000 | 1.57E-03 | 1.58E-03 | 7.27E-02 | 1.50E-01 | 1.57E-03 |
| CM-247 | 4946.000 | 4823.581 | 4.992 | 1.000 | 1.000 | 0.000 | 15.3366 | 79.30000 | 1.71E-03 | 1.71E-03 | 6.10E-02 | 1.27E-01 | 1.71E-03 |
| CM-248 | 5078.600 | 5067.994 | 9.983 | 11.000 | 11.000 | 0.000 | 22.1555 | 91.00000 | 1.64E-02 | 5.04E-03 | 7.67E-02 | 1.58E-01 | 4.94E-03 |

NOTES:

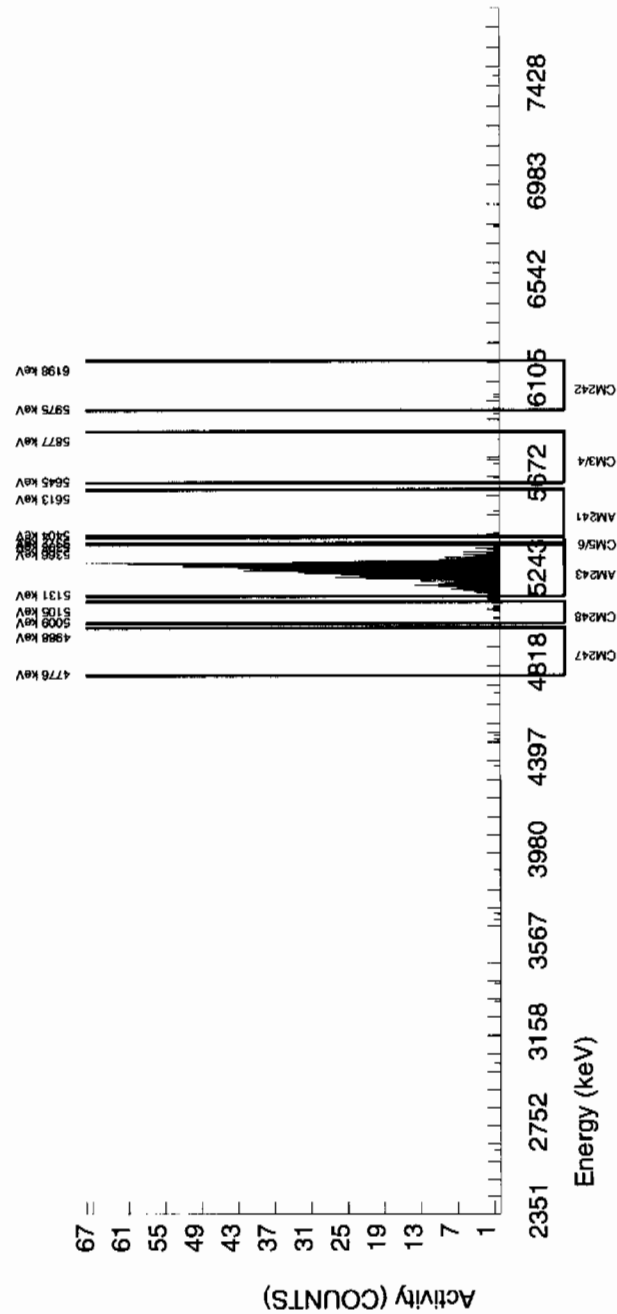
* Sg calculated via blank population.

(Sg updated 5-JAN-2010)

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

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

AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

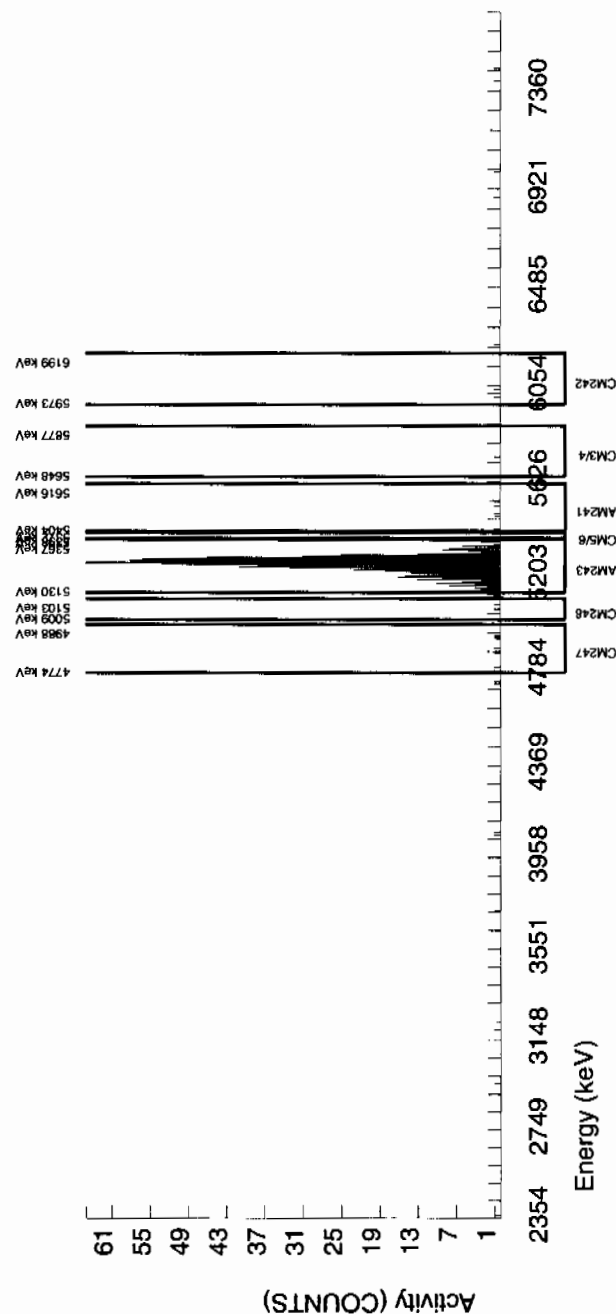
| | | |
|--|--|---|
| <p>BATCH NUMBER : 944979 SAMPLE ID : S0245388002_AM SAMPLE QTY : 1.264 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 87.313</p> | <p>CHAMBER : 090 DETECTOR S/N : 78263 AVERAGE %EFFICIENCY : 32.5470 COUNT DATE : 4-FEB-2010 14:50:54 ELAPSED LIVE TIME(SEC) : 60000.00</p> | <p>LIB FILE : ENV_ALPHA_AM BKG FILE : B090.CNF:721 BKG DATE : 31-JAN-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W090.CNF:199 CAL DATE : 11-JAN-2010</p> |
|--|--|---|

| | | |
|--|--|--|
| <p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.5466E+00 dpm</p> | <p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G</p> | <p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G</p> |
|--|--|--|

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|---------|-----------|----------------|-------------|-----------|-----------|-----------|
| AM-241 | 5479.150 | 5493.021 | 122.736 | 7.000 | 5.561 | 0.000 | 3.0704 | 99.94000 | 6.98E-03 | 2.99E-03 | 8.96E-03 | 2.13E-02 | 2.96E-03 |
| AM243 | 5270.000 | 5260.707 | 48.204 | 827.000 | 827.000 | 0.000 | 0.0000 | 99.78000 | 1.04E+00 | 7.38E-02 | 0.00E+00 | 3.41E-03 | 3.61E-02 |
| CM-242 | 6102.000 | 6026.950 | 4.909 | 4.000 | 3.000 | 1.000 | 4.3186 | 100.00000 | 4.11E-03 | 3.08E-03 | 1.26E-02 | 2.86E-02 | 3.07E-03 |
| CM-3/4 | 5795.020 | 5743.579 | 4.909 | 1.000 | 1.000 | 0.000 | 5.2338 | 100.00000 | 1.26E-03 | 1.26E-03 | 1.53E-02 | 3.39E-02 | 1.26E-03 |
| CM-5/6 | 5386.000 | 5385.261 | 0.000 | 0.000 | 0.000 | 0.000 | 19.8463 | 86.09000 | 0.00E+00 | 1.46E-03 | 6.73E-02 | 1.38E-01 | 1.46E-03 |
| CM-247 | 4946.000 | 4886.378 | 132.554 | 5.000 | 5.000 | 0.000 | 15.3366 | 79.30000 | 7.91E-03 | 3.57E-03 | 5.64E-02 | 1.17E-01 | 3.54E-03 |
| CM-248 | 5078.600 | 5087.556 | 0.000 | 4.000 | 3.000 | 1.000 | 22.1555 | 91.00000 | 4.13E-03 | 3.09E-03 | 7.10E-02 | 1.46E-01 | 3.08E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 5-JAN-2010)
- * Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|---|---|--|
| BATCH NUMBER : 944979 SAMPLE ID : S0245388003_AM SAMPLE QTY : 1.264 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 83.238 | CHAMBER : 091 DETECTOR S/N : 78259 AVERAGE %EFFICIENCY : 34.6360 COUNT DATE : 4-FEB-2010 14:50:54 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_AM BKG FILE : B091.CNF:719 BKG DATE : 31-JAN-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W091.CNF:190 CAL DATE : 11-JAN-2010 |
|---|---|--|

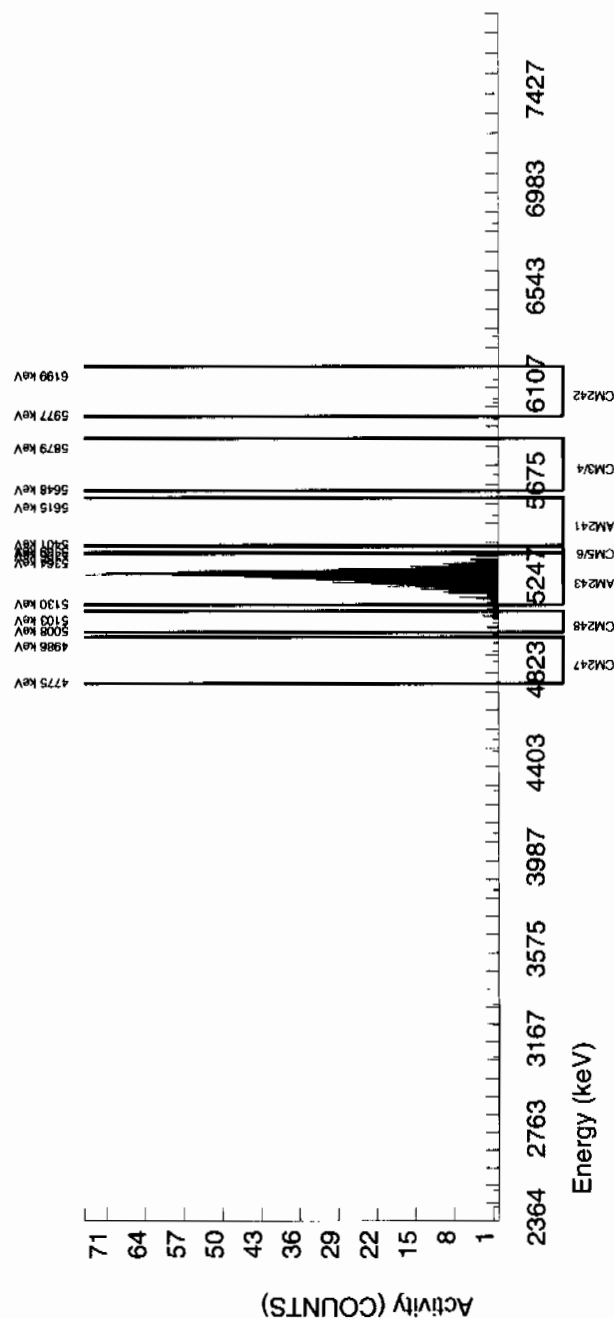
| | | |
|---|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.4277E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G |
|---|---|---|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|---------|----------|----------------|-------------|-----------|-----------|-----------|
| AM-241 | 5479.150 | 5577.913 | 0.000 | 2.000 | 0.540 | 0.000 | 3.0704 | 99.94000 | 6.68E-04 | 1.24E-03 | 8.83E-03 | 2.10E-02 | 1.24E-03 |
| AM243 | 5270.000 | 5263.788 | 37.737 | 839.000 | 839.000 | 0.000 | 0.0000 | 99.78000 | 1.04E+00 | 7.36E-02 | 0.00E+00 | 3.36E-03 | 3.59E-02 |
| CM-242 | 6102.000 | 6081.379 | 99.395 | 3.000 | 3.000 | 0.000 | 4.3186 | 100.0000 | 4.05E-03 | 2.35E-03 | 1.24E-02 | 2.82E-02 | 2.34E-03 |
| CM-3/4 | 5795.020 | 5722.991 | 4.970 | 1.000 | 0.000 | 1.000 | 5.2338 | 100.0000 | -1.48E-10 | 1.75E-03 | 1.51E-02 | 3.35E-02 | 1.75E-03 |
| CM-5/6 | 5386.000 | 5382.523 | 0.000 | 0.000 | 0.000 | 0.000 | 19.8463 | 86.09000 | 0.00E+00 | 1.44E-03 | 6.63E-02 | 1.36E-01 | 1.44E-03 |
| CM-247 | 4946.000 | 4924.612 | 84.486 | 3.000 | 3.000 | 0.000 | 15.3366 | 79.30000 | 4.68E-03 | 2.72E-03 | 5.56E-02 | 1.15E-01 | 2.70E-03 |
| CM-248 | 5078.600 | 5071.126 | 54.564 | 15.000 | 15.000 | 0.000 | 22.1555 | 91.00000 | 2.04E-02 | 5.41E-03 | 7.00E-02 | 1.44E-01 | 5.26E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 5-JAN-2010)
- * Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | | |
|---|---|--|
| BATCH NUMBER : 944979 SAMPLE ID : S0245388004_AM SAMPLE QTY : 1.253 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 84.854 | CHAMBER : 092 DETECTOR S/N : 79457 AVERAGE %EFFICIENCY : 31.5061 COUNT DATE : 4-FEB-2010 14:50:54 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_AM BKG FILE : B092.CNF;722 BKG DATE : 31-JAN-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W092.CNF;233 CAL DATE : 11-JAN-2010 |
|---|---|--|

| | | |
|---|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.4748E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G |
|---|---|---|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|---------|----------|----------------|-------------|-----------|-----------|-----------|
| AM-241 | 5479.150 | 5482.848 | 93.218 | 3.000 | 1.646 | 0.000 | 3.0704 | 99.94000 | 2.22E-03 | 1.73E-03 | 9.61E-03 | 2.29E-02 | 1.73E-03 |
| AM243 | 5270.000 | 5264.240 | 51.697 | 778.000 | 778.000 | 0.000 | 0.0000 | 99.78000 | 1.05E+00 | 7.56E-02 | 0.00E+00 | 3.65E-03 | 3.76E-02 |
| CM-242 | 6102.000 | 6015.311 | 4.906 | 1.000 | 1.000 | 0.000 | 4.3186 | 100.0000 | 1.47E-03 | 1.47E-03 | 1.35E-02 | 3.07E-02 | 1.47E-03 |
| CM-3/4 | 5795.020 | 5750.912 | 196.248 | 6.000 | 6.000 | 0.000 | 5.2338 | 100.0000 | 8.09E-03 | 3.34E-03 | 1.64E-02 | 3.64E-02 | 3.30E-03 |
| CM-5/6 | 5386.000 | 5375.574 | 0.000 | 2.000 | 2.000 | 0.000 | 19.8463 | 86.09000 | 3.12E-03 | 2.22E-03 | 7.21E-02 | 1.48E-01 | 2.21E-03 |
| CM-247 | 4946.000 | 4953.155 | 4.906 | 7.000 | 4.000 | 3.000 | 15.3366 | 79.30000 | 6.78E-03 | 5.38E-03 | 6.05E-02 | 1.26E-01 | 5.36E-03 |
| CM-248 | 5078.600 | 5078.497 | 39.147 | 8.000 | 8.000 | 0.000 | 22.1555 | 91.00000 | 1.18E-02 | 4.24E-03 | 7.62E-02 | 1.56E-01 | 4.18E-03 |

NOTES:

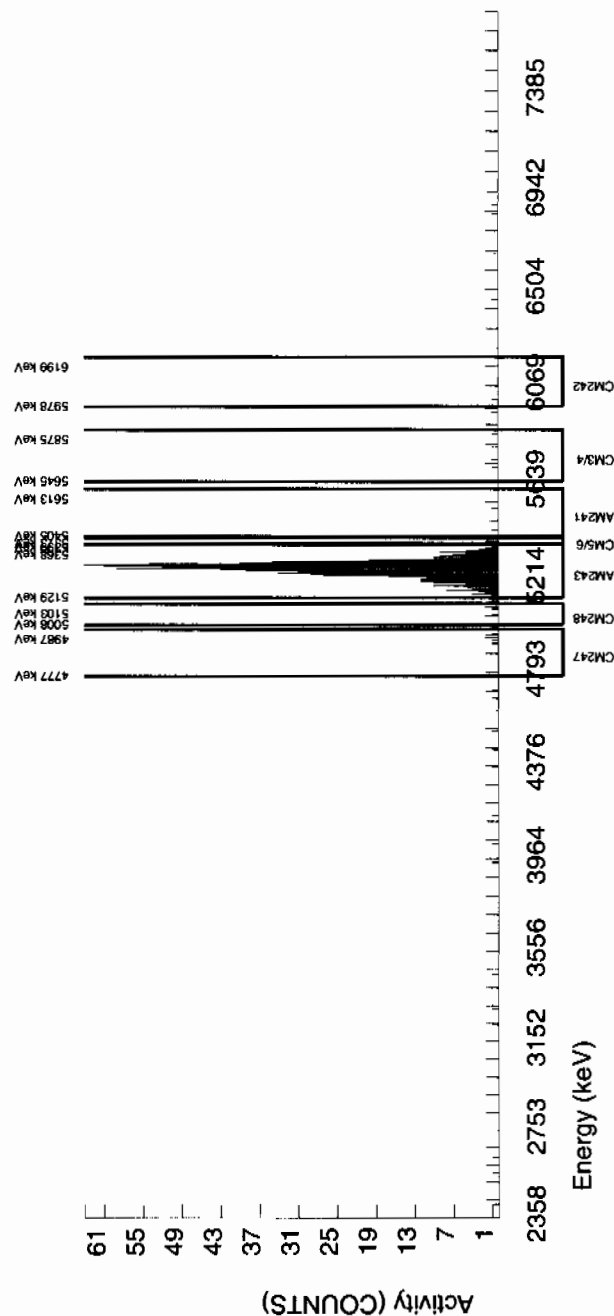
* Sg calculated via blank population.

(Sg updated 5-JAN-2010)

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

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

AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|---|---|--|
| BATCH NUMBER : 944979 SAMPLE ID : S0245388005_AM SAMPLE QTY : 1.265 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 88.750 | CHAMBER : 093 DETECTOR S/N : 33206 AVERAGE %EFFICIENCY : 31.9813 COUNT DATE : 4-FEB-2010 14:50:54 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_AM BKG FILE : B093.CNF;710 BKG DATE : 31-JAN-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W093.CNF;199 CAL DATE : 11-JAN-2010 |
|---|---|--|

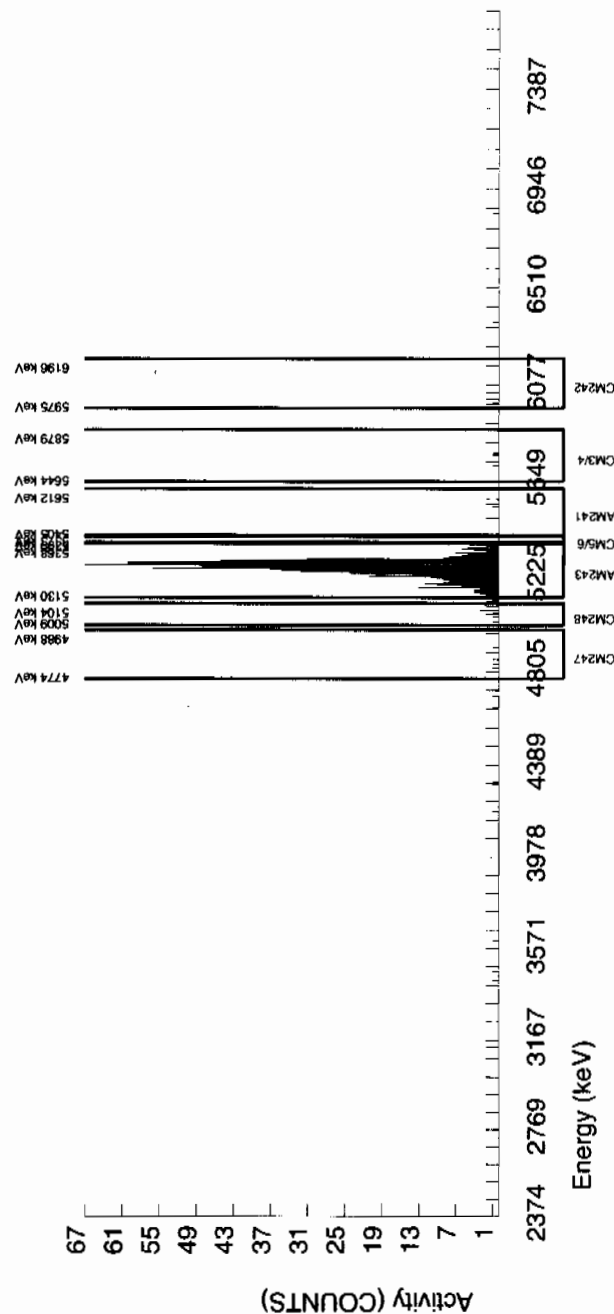
| | | |
|---|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.5885E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G |
|---|---|---|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|---------|----------|----------------|-------------|-----------|-----------|-----------|
| AM-241 | 5479.150 | 5520.282 | 63.792 | 5.000 | 2.563 | 1.000 | 3.0704 | 99.94000 | 3.22E-03 | 2.69E-03 | 8.97E-03 | 2.13E-02 | 2.68E-03 |
| AM243 | 5270.000 | 5264.275 | 49.961 | 827.000 | 826.000 | 1.000 | 1.0000 | 99.78000 | 1.04E+00 | 7.39E-02 | 2.93E-03 | 9.26E-03 | 3.62E-02 |
| CM-242 | 6102.000 | 6027.816 | 34.350 | 5.000 | 4.000 | 1.000 | 4.3186 | 100.0000 | 5.49E-03 | 3.38E-03 | 1.26E-02 | 2.86E-02 | 3.36E-03 |
| CM-3/4 | 5795.020 | 5758.353 | 58.885 | 4.000 | 4.000 | 0.000 | 5.2338 | 100.0000 | 5.03E-03 | 2.53E-03 | 1.53E-02 | 3.40E-02 | 2.51E-03 |
| CM-5/6 | 5386.000 | 5381.702 | 0.000 | 3.000 | 3.000 | 0.000 | 19.8463 | 86.09000 | 4.37E-03 | 2.54E-03 | 6.73E-02 | 1.39E-01 | 2.52E-03 |
| CM-247 | 4946.000 | 4887.814 | 0.000 | 6.000 | 5.000 | 1.000 | 15.3366 | 79.30000 | 7.91E-03 | 4.21E-03 | 5.64E-02 | 1.17E-01 | 4.19E-03 |
| CM-248 | 5078.600 | 5069.083 | 18.402 | 10.000 | 10.000 | 0.000 | 22.1555 | 91.00000 | 1.38E-02 | 4.44E-03 | 7.11E-02 | 1.46E-01 | 4.36E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 5-JAN-2010)
- * Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 944979
 SAMPLE ID : S0245388006_AM
 SAMPLE QTY : 1.267 G
 SAMPLE DATE : 15-JAN-2010 00:00:00
 ANALYST : HAKB
 % YIELD : 90.504

CHAMBER : 094
 DETECTOR S/N : 78267
 AVERAGE %EFFICIENCY : 30.7541
 COUNT DATE : 4-FEB-2010 14:50:54
 ELAPSED LIVE TIME(SEC) : 60000.00

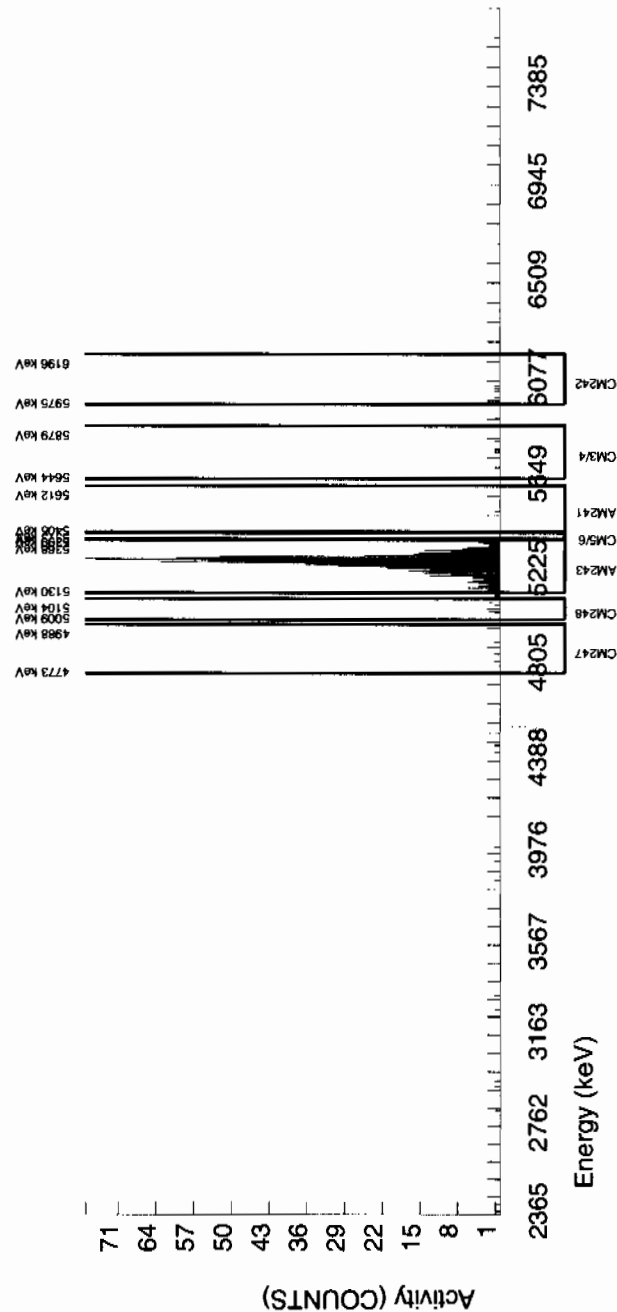
LIB FILE : ENV_ALPHA_AM
 BKG FILE : B094.CNF;711
 BKG DATE : 31-JAN-2010
 BKG LIVE TIME(SEC) : 59999.99
 EFF FILE : W094.CNF;191
 CAL DATE : 11-JAN-2010

| TRACER | | MS/MSD | | LCS/LCSD | |
|---------|------------------|---------|--------------------|----------|--------------------|
| ID | : 445-96-2-SS | ID | : 0244-B | ID | : 0244-B |
| NUCLIDE | : AM243 | NUCLIDE | : AM-241 | NUCLIDE | : AM-241 |
| NOMINAL | : 2.9166E+00 dpm | NOMINAL | : 3.3158E+01 pCi/G | NOMINAL | : 3.3158E+01 pCi/G |
| RESULTS | : 2.6396E+00 dpm | | | | |

| NUCLIDE ACTIVITY SUMMARY | | | | | | | | | |
|--------------------------|----------------|-------------|-----------|------------|----------|----------|---------|----------|----------------|
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G |
| AM-241 | 5479.150 | 5500.267 | 4.935 | 1.000 | -0.410 | 0.000 | 3.0704 | 99.94000 | -5.24E-04 |
| AM243 | 5270.000 | 5270.527 | 47.178 | 810.000 | 810.000 | 0.000 | 0.0000 | 99.78000 | 1.04E+00 |
| CM-242 | 6102.000 | 6039.650 | 54.281 | 4.000 | 4.000 | 0.000 | 4.3186 | 100.0000 | 5.59E-03 |
| CM-3/4 | 5795.020 | 5765.440 | 113.496 | 5.000 | 5.000 | 0.000 | 5.2338 | 100.0000 | 6.40E-03 |
| CM-5/6 | 5386.000 | 5386.253 | 0.000 | 1.000 | 1.000 | 0.000 | 19.8463 | 86.09000 | 1.48E-03 |
| CM-247 | 4946.000 | 4869.272 | 83.888 | 3.000 | 1.000 | 2.000 | 15.3366 | 79.30000 | 1.61E-03 |
| CM-248 | 5078.600 | 5060.180 | 41.790 | 7.000 | 7.000 | 0.000 | 22.1555 | 91.00000 | 9.83E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 5-JAN-2010)
- * Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | |
|----------------|-------------|
| BATCH NUMBER : | 944979 |
| SAMPLE ID : | S024533 |
| SAMPLE QTY : | 1.2g |
| SAMPLE DATE : | 15-JAN-2018 |
| ANALYST : | HAKB |
| % YIELD : | 85.451 |

CHAMBER : 107
DETECTOR S/N : 67578
AVERAGE %EFFICIENCY : 30.9640
COUNT DATE : 4-FEB-2010 14:50:57
ELAPSED LIVE TIME(SEC) : 59999.99

```
LIB FILE      : ENV_ALPHA_AM
BKG FILE     : B107.CNF:680
BKG DATE     : 31-JAN-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE     : W107.CNF:230
CAL DATE     : 11-JAN-2010
```

TRACER

ID : 445-96-2-SS

NUCLIDE : AM243

NOMINAL : 2.9166E+00 dpm

RESULTS : 2.4923E+00 dpm

MS/MSD

ID : 0244-B

NUCLIDE : AM-241

NOMINAL : 3.3158E+01 pCi/G

LCS/LCSD

ID : 0244-B

NUCLIDE : AM-241

NOMINAL : 3.3158E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/g | TPU 1-SIGMA | DLC pCi/g | MDC pCi/g | UNC pCi/g |
|---------|----------------|-------------|-----------|------------|----------|----------|---------|----------|----------------|-------------|-----------|-----------|-----------|
| AM-241 | 5479.150 | 5486.313 | 84.377 | 4.000 | 1.660 | 1.000 | 3.0704 | 99.94000 | 2.24E-03 | 2.58E-03 | 9.63E-03 | 2.29E-02 | 2.58E-03 |
| AM243 | 5270.000 | 5267.347 | 52.467 | 770.000 | 770.000 | 0.000 | 0.0000 | 99.78000 | 1.04E+00 | 7.38E-02 | 0.00E+00 | 3.66E-03 | 3.75E-02 |
| CM-242 | 6102.000 | 6026.329 | 0.000 | 3.000 | 3.000 | 0.000 | 4.3186 | 100.0000 | 4.42E-03 | 2.57E-03 | 1.35E-02 | 3.07E-02 | 2.55E-03 |
| CM-3/4 | 5795.020 | 5750.048 | 138.974 | 7.000 | 7.000 | 0.000 | 5.2338 | 100.0000 | 9.46E-03 | 3.62E-03 | 1.64E-02 | 3.65E-02 | 3.57E-03 |
| CM-5/6 | 5386.000 | 5376.599 | 0.000 | 2.000 | 2.000 | 0.000 | 19.8463 | 86.09000 | 3.13E-03 | 2.22E-03 | 7.23E-02 | 1.49E-01 | 2.21E-03 |
| CM-247 | 4946.000 | 4891.124 | 168.754 | 3.000 | -2.000 | 5.000 | 15.3366 | 79.30000 | -3.40E-03 | 4.81E-03 | 6.06E-02 | 1.26E-01 | 4.81E-03 |
| CM-248 | 5078.600 | 5053.082 | 68.246 | 12.000 | 12.000 | 0.000 | 22.1555 | 91.00000 | 1.78E-02 | 5.24E-03 | 7.63E-02 | 1.57E-01 | 5.13E-03 |

NOTES:

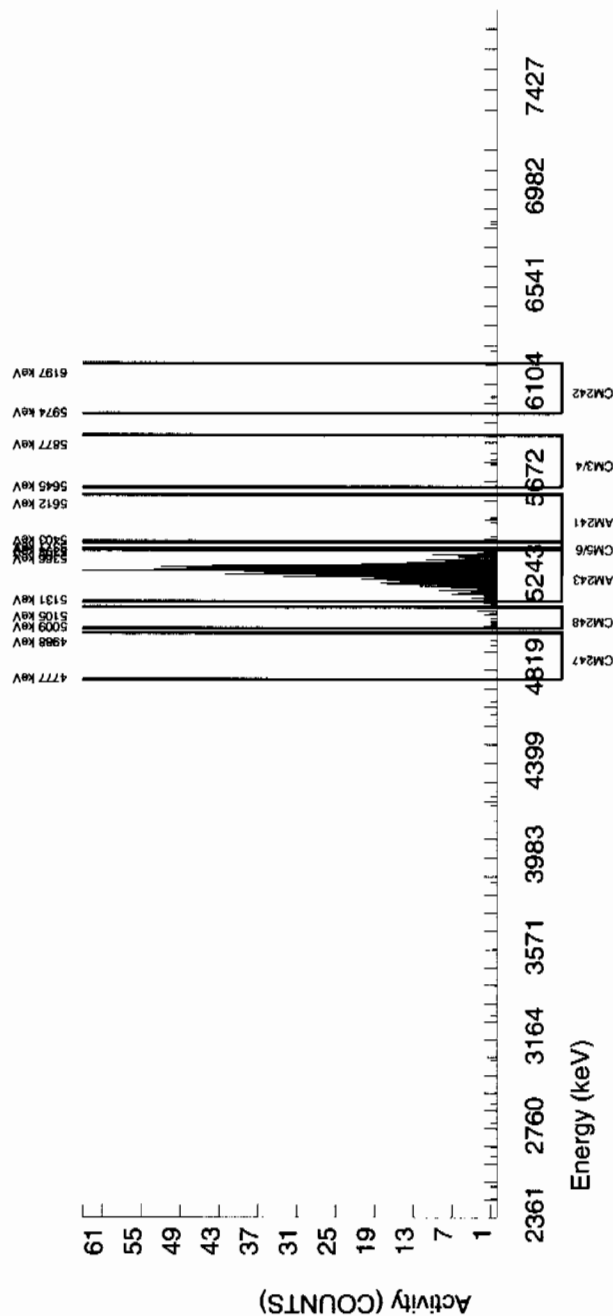
* Sg calculated via blank population.

(Sg updated 5-JAN-2010)

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

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

AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|--|--|---|
| <p>BATCH NUMBER : 944979 SAMPLE ID : S0245388008_AM SAMPLE QTY : 1.251 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 92.970</p> | <p>CHAMBER : 108 DETECTOR S/N : 78778 AVERAGE %EFFICIENCY : 34.0779 COUNT DATE : 4-FEB-2010 14:50:57 ELAPSED LIVE TIME(SEC) : 59999.99</p> | <p>LIB FILE : ENV_ALPHA_AM BKG FILE : B108.CNF:678 BKG DATE : 31-JAN-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W108.CNF:211 CAL DATE : 11-JAN-2010</p> |
|--|--|---|

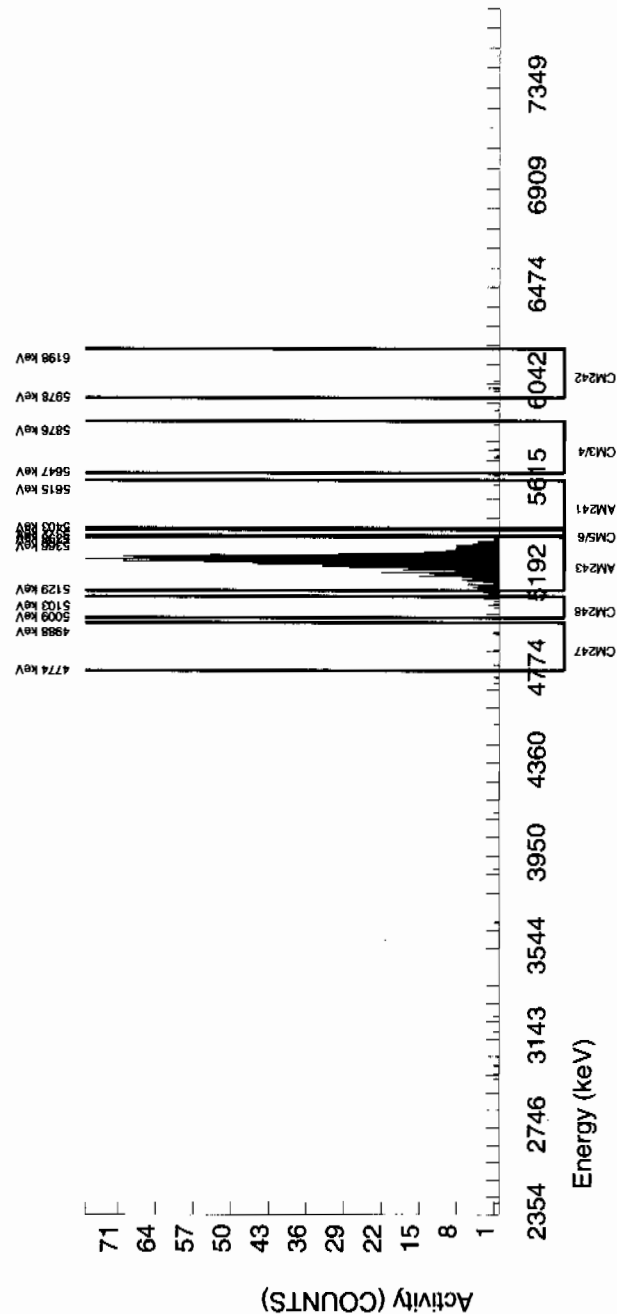
| | | |
|--|--|--|
| <p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.7115E+00 dpm</p> | <p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G</p> | <p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G</p> |
|--|--|--|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|---------|----------|----------------|-------------|-----------|-----------|-----------|
| AM-241 | 5479.150 | 5503.741 | 180.584 | 2.000 | -0.604 | 1.000 | 3.0704 | 99.94000 | -6.87E-04 | 1.61E-03 | 8.12E-03 | 1.93E-02 | 1.61E-03 |
| AM-243 | 5270.000 | 5261.596 | 44.825 | 925.000 | 922.000 | 3.000 | 1.7321 | 99.78000 | 1.05E+00 | 7.13E-02 | 4.59E-03 | 1.23E-02 | 3.47E-02 |
| CM-242 | 6102.000 | 6028.758 | 9.761 | 6.000 | 6.000 | 0.000 | 4.3186 | 100.0000 | 7.46E-03 | 3.08E-03 | 1.14E-02 | 2.59E-02 | 3.04E-03 |
| CM-3/4 | 5795.020 | 5762.326 | 7.168 | 6.000 | 5.000 | 1.000 | 5.2338 | 100.0000 | 5.70E-03 | 3.03E-03 | 1.38E-02 | 3.08E-02 | 3.01E-03 |
| CM-5/6 | 5386.000 | 5373.285 | 0.000 | 3.000 | 3.000 | 0.000 | 19.8463 | 86.09000 | 3.96E-03 | 2.30E-03 | 6.10E-02 | 1.25E-01 | 2.29E-03 |
| CM-247 | 4946.000 | 4910.507 | 0.000 | 5.000 | 3.000 | 2.000 | 15.3366 | 79.30000 | 4.30E-03 | 3.80E-03 | 5.11E-02 | 1.06E-01 | 3.79E-03 |
| CM-248 | 5078.600 | 5075.136 | 0.000 | 12.000 | 12.000 | 0.000 | 22.1555 | 91.00000 | 1.50E-02 | 4.42E-03 | 6.44E-02 | 1.32E-01 | 4.33E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 5-JAN-2010)
- * Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | | | | | | | | | | | | | |
|---|----------------|-------------|-----------|---|----------|----------|---------|--|----------------|-------------|-----------|-----------|-----------|
| BATCH NUMBER : 944979 SAMPLE ID : S0245388009_AM SAMPLE QTY : 1.265 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 78.659 | | | | CHAMBER : 109 DETECTOR S/N : 79463 AVERAGE %EFFICIENCY : 34.8172 COUNT DATE : 4-FEB-2010 14:50:57 ELAPSED LIVE TIME(SEC) : 59999.99 | | | | LIB FILE : ENV_ALPHA_AM BKG FILE : B109.CNF:676 BKG DATE : 31-JAN-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W109.CNF:192 CAL DATE : 11-JAN-2010 | | | | | |
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.2942E+00 dpm | | | | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G | | | | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G | | | | | |
| NUCLIDE ACTIVITY SUMMARY | | | | | | | | | | | | | |
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
| AM-241 | 5479.150 | 5487.175 | 122.914 | 4.000 | 2.613 | 0.000 | 3.0704 | 99.94000 | 3.40E-03 | 2.11E-03 | 9.29E-03 | 2.21E-02 | 2.10E-03 |
| AM243 | 5270.000 | 5257.395 | 55.194 | 799.000 | 797.000 | 2.000 | 1.4142 | 99.78000 | 1.04E+00 | 7.31E-02 | 4.29E-03 | 1.21E-02 | 3.69E-02 |
| CM-242 | 6102.000 | 6042.324 | 4.917 | 8.000 | 8.000 | 0.000 | 4.3186 | 100.0000 | 1.14E-02 | 4.08E-03 | 1.31E-02 | 2.96E-02 | 4.02E-03 |
| CM-3/4 | 5795.020 | 5749.984 | 181.913 | 9.000 | 9.000 | 0.000 | 5.2338 | 100.0000 | 1.17E-02 | 3.97E-03 | 1.58E-02 | 3.52E-02 | 3.91E-03 |
| CM-5/6 | 5386.000 | 5391.471 | 4.917 | 2.000 | 2.000 | 0.000 | 19.8463 | 86.09000 | 3.02E-03 | 2.14E-03 | 6.97E-02 | 1.44E-01 | 2.14E-03 |
| CM-247 | 4946.000 | 4888.179 | 137.049 | 6.000 | 5.000 | 1.000 | 15.3366 | 79.30000 | 8.20E-03 | 4.37E-03 | 5.85E-02 | 1.21E-01 | 4.34E-03 |
| CM-248 | 5078.600 | 5073.680 | 6.556 | 16.000 | 16.000 | 0.000 | 22.1555 | 91.00000 | 2.29E-02 | 5.88E-03 | 7.36E-02 | 1.51E-01 | 5.72E-03 |

NOTES:

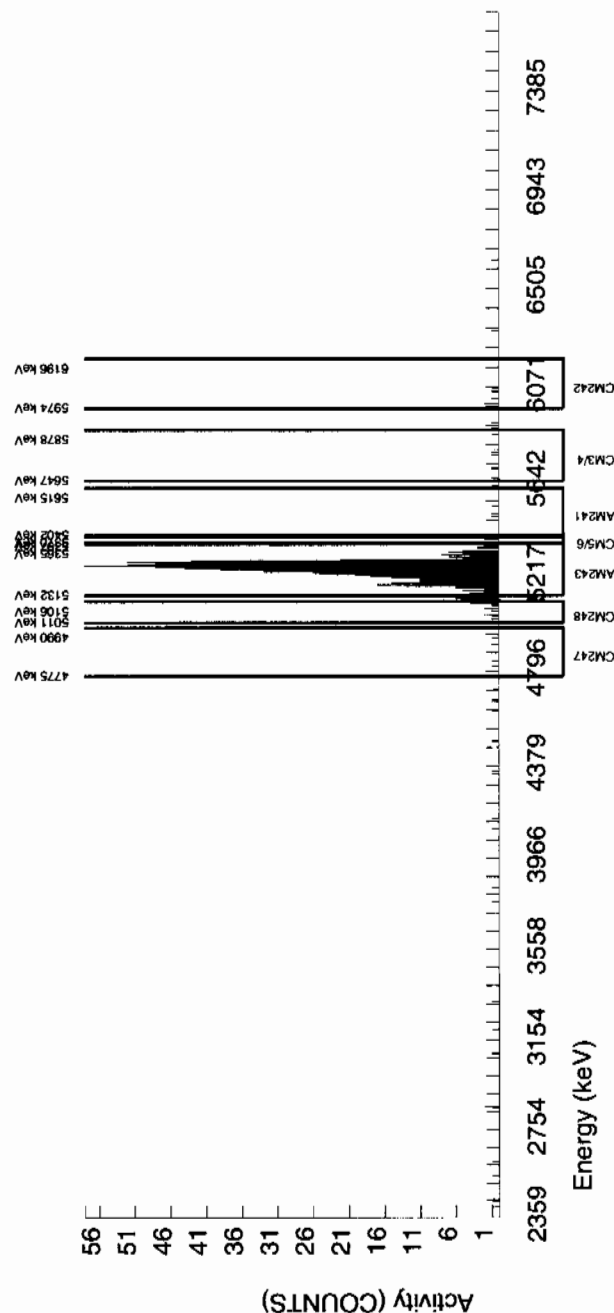
* Sg calculated via blank population.

(Sg updated 5-JAN-2010)

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

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

AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|------------------------------------|-----------------------------------|-------------------------------|
| BATCH NUMBER : 944979 | CHAMBER : 110 | LIB FILE : ENV_ALPHA_AM |
| SAMPLE ID : S0245388010_AM | DETECTOR S/N : 67602 | BKG FILE : B110.CNF:680 |
| SAMPLE QTY : 1.270 G | AVERAGE %EFFICIENCY : 31.8603 | BKG DATE : 31-JAN-2010 |
| SAMPLE DATE : 15-JAN-2010 00:00:00 | COUNT DATE : 4-FEB-2010 14:50:57 | BKG LIVE TIME(SEC) : 59999.99 |
| ANALYST : HAKB | ELAPSED LIVE TIME(SEC) : 59999.99 | EFF FILE : W110.CNF:211 |
| % YIELD : 82.077 | | CAL DATE : 11-JAN-2010 |

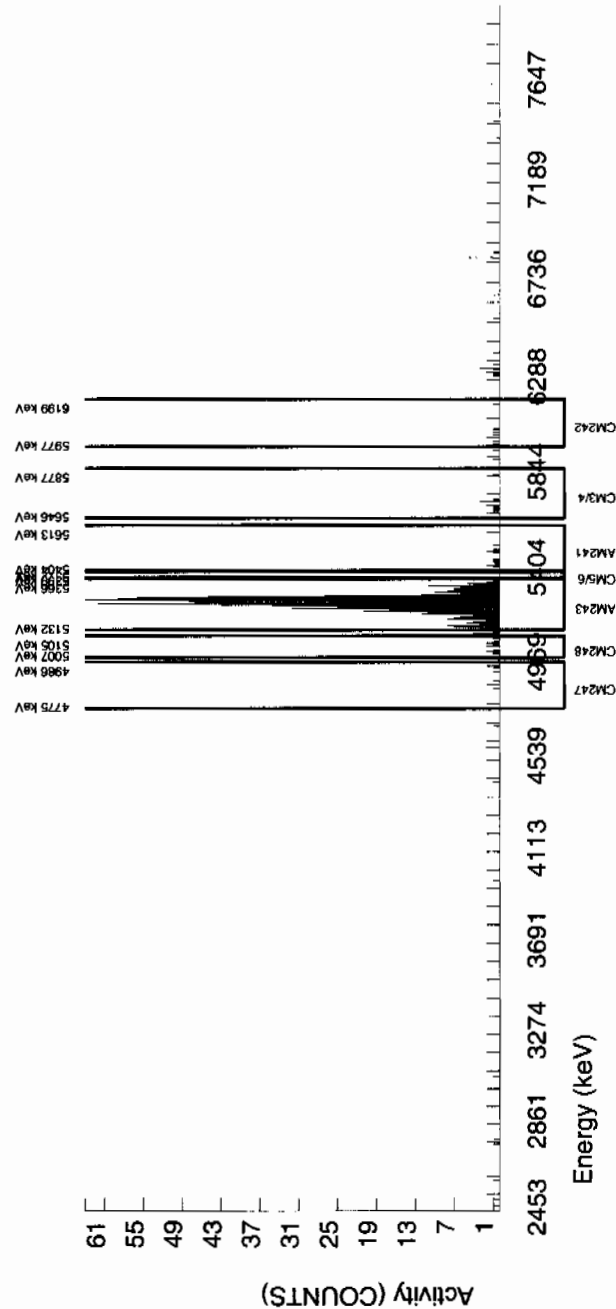
| | | |
|--------------------------|----------------------------|----------------------------|
| TRACER | MS/MSD | LCS/LCSD |
| ID : 445-96-2-SS | ID : 0244-B | ID : 0244-B |
| NUCLIDE : AM243 | NUCLIDE : AM-241 | NUCLIDE : AM-241 |
| NOMINAL : 2.9166E+00 dpm | NOMINAL : 3.3158E+01 pCi/G | NOMINAL : 3.3158E+01 pCi/G |
| RESULTS : 2.3938E+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 | 5469.685 | 7.453 | 15.000 | 5.676 | 8.000 | 3.0704 | 99.94000 | 7.70E-03 | 6.34E-03 | 9.69E-03 | 2.31E-02 | 6.32E-03 |
| AM243 | 5270.000 | 5260.534 | 45.501 | 765.000 | 761.000 | 4.000 | 2.0000 | 99.78000 | 1.03E+00 | 7.38E-02 | 6.32E-03 | 1.63E-02 | 3.77E-02 |
| CM-242 | 6102.000 | 6041.327 | 7.453 | 12.000 | 9.000 | 3.000 | 4.3186 | 100.0000 | 1.33E-02 | 5.80E-03 | 1.36E-02 | 3.09E-02 | 5.74E-03 |
| CM-3/4 | 5795.020 | 5715.491 | 70.983 | 17.000 | 10.000 | 7.000 | 5.2338 | 100.0000 | 1.36E-02 | 6.71E-03 | 1.65E-02 | 3.67E-02 | 6.66E-03 |
| CM-5/6 | 5386.000 | 5385.278 | 0.000 | 2.000 | 1.000 | 1.000 | 19.8463 | 86.09000 | 1.58E-03 | 2.73E-03 | 7.27E-02 | 1.50E-01 | 2.73E-03 |
| CM-247 | 4946.000 | 4893.667 | 177.615 | 5.000 | 5.000 | 0.000 | 15.3366 | 79.30000 | 8.55E-03 | 3.86E-03 | 6.10E-02 | 1.27E-01 | 3.82E-03 |
| CM-248 | 5078.600 | 5057.806 | 45.672 | 15.000 | 14.000 | 1.000 | 22.1555 | 91.00000 | 2.09E-02 | 6.10E-03 | 7.68E-02 | 1.58E-01 | 5.96E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 5-JAN-2010)
- * Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|--|--|---|
| <p>BATCH NUMBER : 944979 SAMPLE ID : S0245388011_AM SAMPLE QTY : 1.251 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 77.185</p> | <p>CHAMBER : 111 DETECTOR S/N : 79462 AVERAGE %EFFICIENCY : 33.6570 COUNT DATE : 4-FEB-2010 14:50:57 ELAPSED LIVE TIME(SEC) : 59999.99</p> | <p>LIB FILE : ENV_ALPHA_AM BKG FILE : B111.CNF:675 BKG DATE : 31-JAN-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W111.CNF:207 CAL DATE : 11-JAN-2010</p> |
|--|--|---|

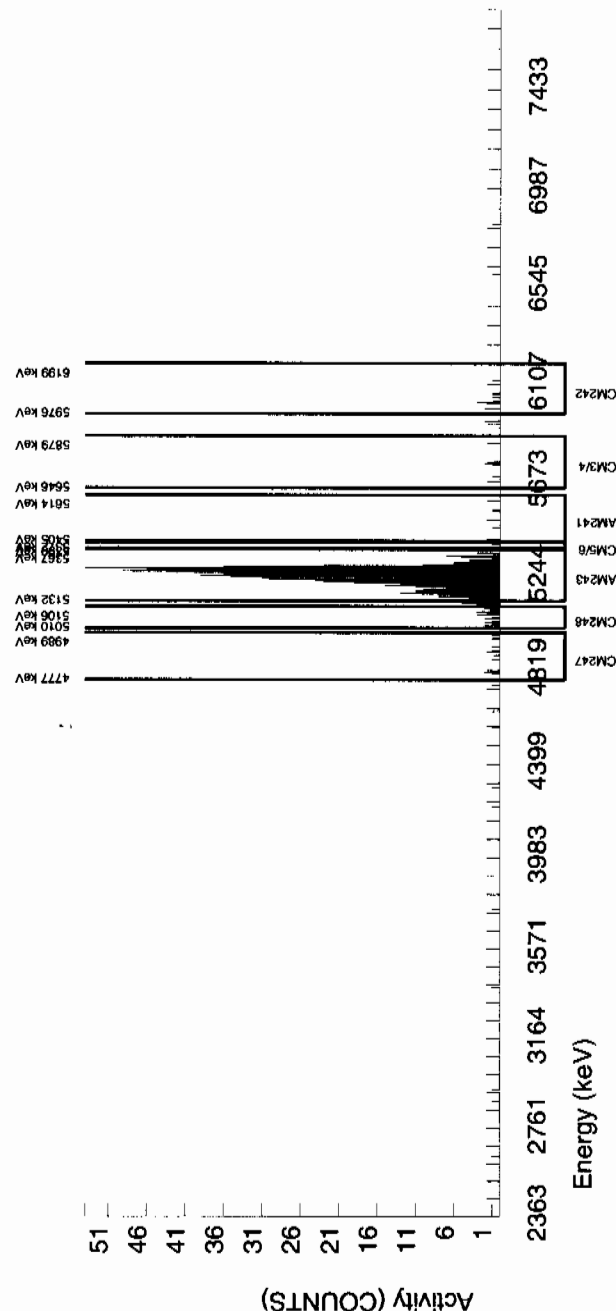
| | | |
|--|--|--|
| <p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.2512E+00 dpm</p> | <p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G</p> | <p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3158E+01 pCi/G</p> |
|--|--|--|

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 | 5522.591 | 84.207 | 3.000 | 1.684 | 0.000 | 3.0704 | 99.94000 | 2.34E-03 | 1.81E-03 | 9.91E-03 | 2.36E-02 | 1.80E-03 |
| AM-243 | 5270.000 | 5252.083 | 60.103 | 756.000 | 756.000 | 0.000 | 0.0000 | 99.78000 | 1.05E+00 | 7.48E-02 | 0.00E+00 | 3.76E-03 | 3.82E-02 |
| CM-242 | 6102.000 | 6036.401 | 29.720 | 14.000 | 14.000 | 0.000 | 4.3186 | 100.0000 | 2.12E-02 | 5.82E-03 | 1.39E-02 | 3.16E-02 | 5.67E-03 |
| CM-3/4 | 5795.020 | 5744.188 | 9.907 | 7.000 | 6.000 | 1.000 | 5.2338 | 100.0000 | 8.33E-03 | 3.96E-03 | 1.69E-02 | 3.75E-02 | 3.93E-03 |
| CM-5/6 | 5386.000 | 5393.859 | 4.953 | 1.000 | 1.000 | 0.000 | 19.8463 | 86.09000 | 1.61E-03 | 1.61E-03 | 7.43E-02 | 1.53E-01 | 1.61E-03 |
| CM-247 | 4946.000 | 4905.477 | 7.275 | 11.000 | 6.000 | 5.000 | 15.3366 | 79.30000 | 1.05E-02 | 7.02E-03 | 6.24E-02 | 1.29E-01 | 6.99E-03 |
| CM-248 | 5078.600 | 5064.963 | 74.177 | 26.000 | 25.000 | 1.000 | 22.1555 | 91.00000 | 3.81E-02 | 8.25E-03 | 7.85E-02 | 1.61E-01 | 7.91E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 5-JAN-2010)
- * Sg of AM243 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
AM-241



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

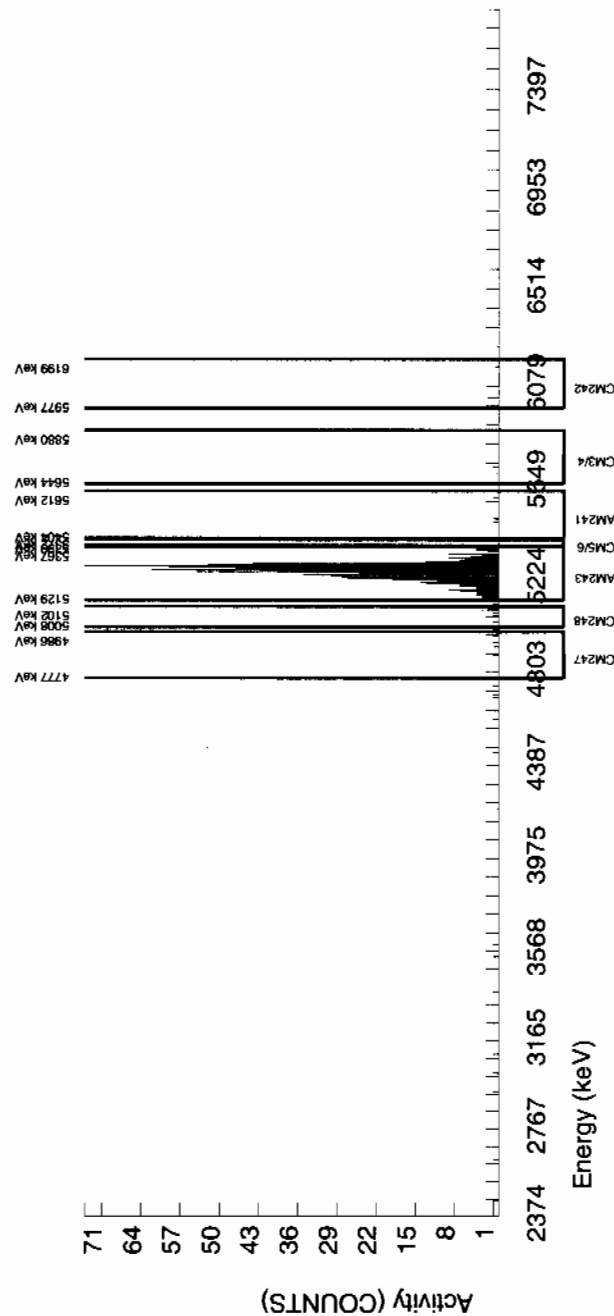
| | | | | | | | | | | | | | |
|---|----------------|---|-----------|---|----------|----------|---------|--|----------------|-------------|-----------|-----------|-----------|
| BATCH NUMBER : 944979 SAMPLE ID : S0245393001_AM SAMPLE QTY : 1.272 G SAMPLE DATE : 19-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 89.520 | | | | CHAMBER : 112 DETECTOR S/N : 78261 AVERAGE %EFFICIENCY : 31.6677 COUNT DATE : 4-FEB-2010 14:50:57 ELAPSED LIVE TIME(SEC) : 59999.99 | | | | LIB FILE : ENV_ALPHA_AM BKG FILE : B112.CNF;683 BKG DATE : 31-JAN-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W112.CNF;218 CAL DATE : 11-JAN-2010 | | | | | |
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.6109E+00 dpm | | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3157E+01 pCi/G | | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3157E+01 pCi/G | | | | | | | | | |
| NUCLIDE ACTIVITY SUMMARY | | | | | | | | | | | | | |
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
| AM-241 | 5479.150 | 5510.532 | 7.178 | 5.000 | 1.564 | 2.000 | 3.0704 | 99.94000 | 1.96E-03 | 2.95E-03 | 8.93E-03 | 2.12E-02 | 2.95E-03 |
| AM243 | 5270.000 | 5263.650 | 56.084 | 825.000 | 825.000 | 0.000 | 0.0000 | 99.78000 | 1.03E+00 | 7.20E-02 | 0.00E+00 | 3.39E-03 | 3.60E-02 |
| CM-242 | 6102.000 | 6047.022 | 4.887 | 3.000 | 3.000 | 0.000 | 4.3186 | 100.0000 | 4.03E-03 | 2.34E-03 | 1.26E-02 | 2.85E-02 | 2.33E-03 |
| CM-3/4 | 5795.020 | 5692.133 | 68.419 | 3.000 | 3.000 | 0.000 | 5.2338 | 100.0000 | 3.75E-03 | 2.18E-03 | 1.52E-02 | 3.38E-02 | 2.17E-03 |
| CM-5/6 | 5386.000 | 5373.992 | 0.000 | 3.000 | 3.000 | 0.000 | 19.8463 | 86.09000 | 4.35E-03 | 2.53E-03 | 6.70E-02 | 1.38E-01 | 2.51E-03 |
| CM-247 | 4946.000 | 4931.317 | 83.080 | 4.000 | 3.000 | 1.000 | 15.3366 | 79.30000 | 4.73E-03 | 3.53E-03 | 5.62E-02 | 1.17E-01 | 3.52E-03 |
| CM-248 | 5078.600 | 5083.159 | 14.254 | 11.000 | 11.000 | 0.000 | 22.1555 | 91.00000 | 1.51E-02 | 4.64E-03 | 7.08E-02 | 1.45E-01 | 4.55E-03 |

NOTES:

* Sg calculated via blank population.

(Sg updated 5-JAN-2010)

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

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

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | |
|----------------|-------------|
| BATCH NUMBER : | 944979 |
| SAMPLE ID : | S120203 |
| SAMPLE QTY : | 1.000 |
| SAMPLE DATE : | 29-JAN-2012 |
| ANALYST : | HAKB |
| % YIELD : | 81.773 |

CHAMBER : 087
DETECTOR S/N : 78199
AVERAGE %EFFICIENCY : 31.4743
COUNT DATE : 2-FEB-2010 15:01:54
ELAPSED LIVE TIME(SEC) : 59999.99

LIB FILE : ENV_ALPHA_AM
BKG FILE : B087.CNF;1026
BKG DATE : 31-JAN-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W087.CNF;274
CAL DATE : 11-JAN-2010

TRACER

ID : 445-96-2-SS
NUCLIDE : AM243
NOMINAL : 2.9166E+00 dpm
RESULTS : 2.3850E+00 dpm

MS/MSD

ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3156E+01 pCi/G

LCS/LCSD

ID : 0244-B
NUCLIDE : AM-241
NOMINAL : 3.3156E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|---------|----------|----------------|-------------|-----------|-----------|-----------|
| AM-241 | 5479.150 | 5450.372 | 69.640 | 3.000 | -4.303 | 6.000 | 3.0704 | 99.94000 | -7.54E-03 | 4.86E-03 | 1.25E-02 | 2.98E-02 | 4.86E-03 |
| AM243 | 5270.000 | 5268.641 | 42.282 | 755.000 | 749.000 | 6.000 | 2.4495 | 99.78000 | 1.31E+00 | 9.42E-02 | 1.00E-02 | 2.47E-02 | 4.84E-02 |
| CM-242 | 6102.000 | 6038.106 | 36.064 | 12.000 | 11.000 | 1.000 | 4.3186 | 100.0000 | 1.97E-02 | 6.56E-03 | 1.76E-02 | 3.99E-02 | 6.45E-03 |
| CM-3/4 | 5795.020 | 5769.447 | 113.787 | 5.000 | 3.000 | 2.000 | 5.2338 | 100.0000 | 5.25E-03 | 4.64E-03 | 2.13E-02 | 4.74E-02 | 4.63E-03 |
| CM-5/6 | 5386.000 | 5392.452 | 4.974 | 2.000 | -1.000 | 3.000 | 19.8463 | 86.09000 | -2.03E-03 | 4.55E-03 | 9.39E-02 | 1.93E-01 | 4.55E-03 |
| CM-247 | 4946.000 | 4957.299 | 44.769 | 3.000 | -2.000 | 5.000 | 15.3366 | 79.30000 | -4.41E-03 | 6.24E-03 | 7.87E-02 | 1.63E-01 | 6.24E-03 |
| CM-248 | 5078.600 | 5064.094 | 63.422 | 14.000 | 11.000 | 3.000 | 22.1555 | 91.00000 | 2.12E-02 | 8.04E-03 | 9.91E-02 | 2.03E-01 | 7.93E-03 |

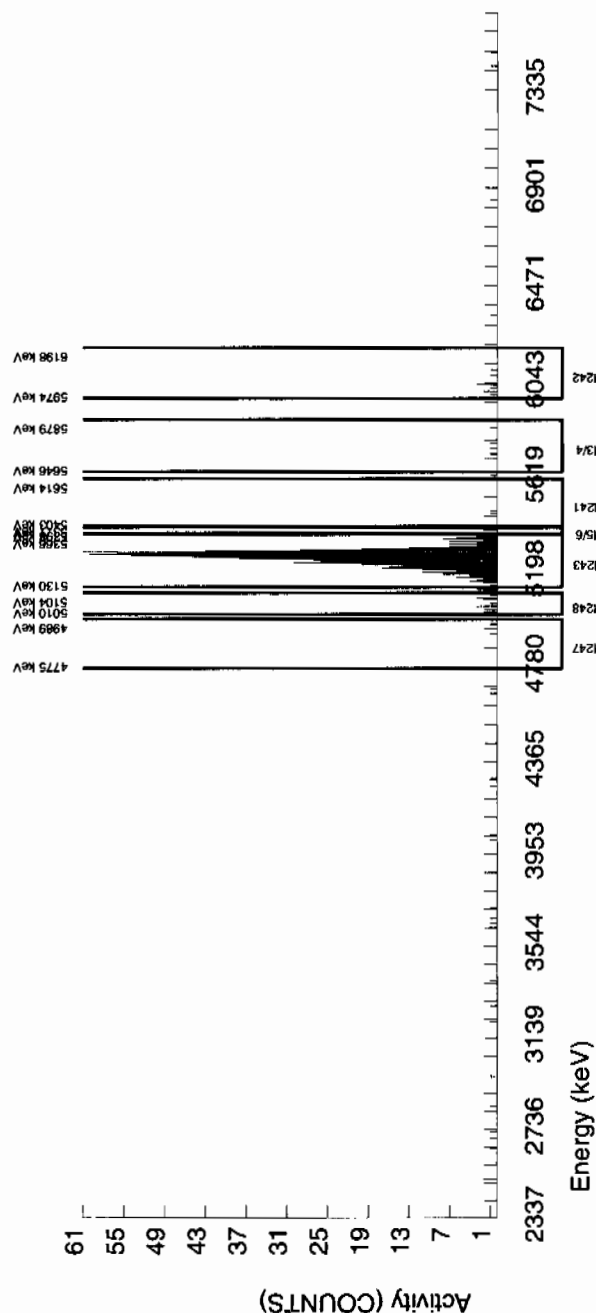
NOTES:

* Sg calculated via blank population.

(Sg updated 5-JAN-2010)

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

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | | |
|---|---|---|
| BATCH NUMBER : 944979 SAMPLE ID : S1202023758_AM SAMPLE QTY : 1.273 G SAMPLE DATE : 19-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 77.315 | CHAMBER : 088 DETECTOR S/N : 33452 AVERAGE %EFFICIENCY : 30.1337 COUNT DATE : 2-FEB-2010 15:01:54 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_AM BKG FILE : B088.CNF;1014 BKG DATE : 31-JAN-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W088.CNF;284 CAL DATE : 11-JAN-2010 |
|---|---|---|

| | | |
|---|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.2549E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3157E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3157E+01 pCi/G |
|---|---|---|

NUCLIDE ACTIVITY SUMMARY

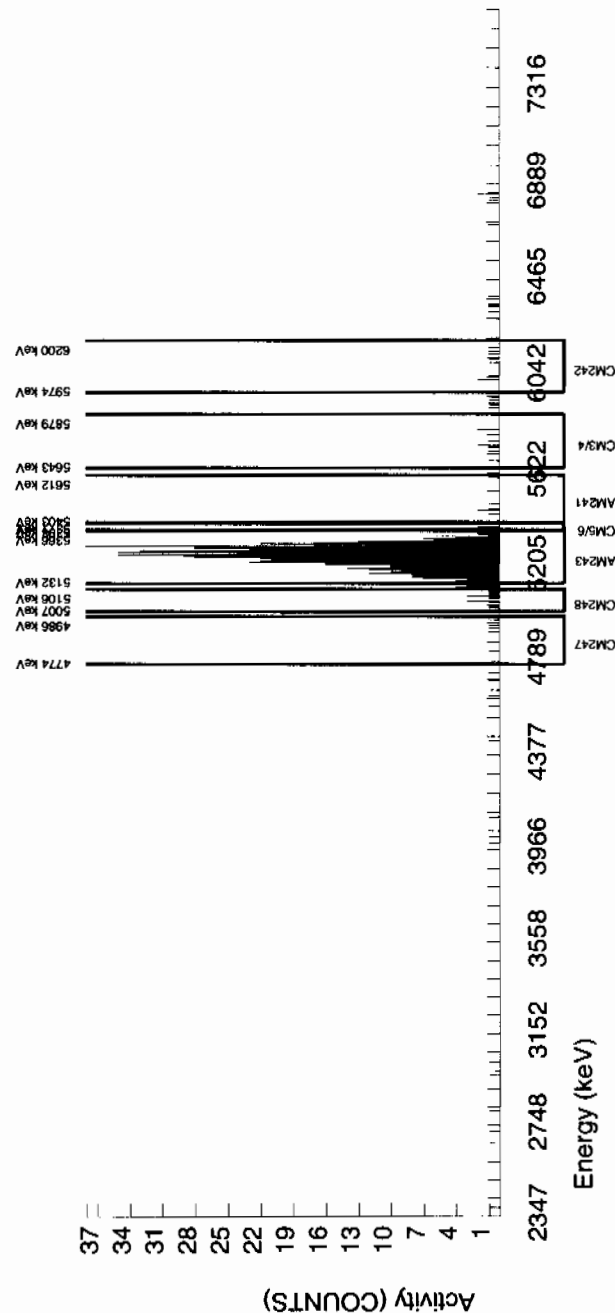
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|---------|-----------|----------------|-------------|-----------|-----------|-----------|
| AM-241 | 5479.150 | 5475.893 | 7.343 | 7.000 | -2.180 | 8.000 | 3.0704 | 99.94000 | -3.31E-03 | 5.65E-03 | 1.09E-02 | 2.58E-02 | 5.65E-03 |
| AM243 | 5270.000 | 5258.754 | 85.434 | 681.000 | 678.000 | 3.000 | 1.7321 | 99.78000 | 1.03E+00 | 7.59E-02 | 6.13E-03 | 1.64E-02 | 3.98E-02 |
| CM-242 | 6102.000 | 6105.448 | 5.000 | 8.000 | 4.000 | 4.000 | 4.3186 | 100.00000 | 6.47E-03 | 5.62E-03 | 1.53E-02 | 3.46E-02 | 5.61E-03 |
| CM-3/4 | 5795.020 | 5748.577 | 72.339 | 10.000 | -1.000 | 11.000 | 5.2338 | 100.00000 | -1.52E-03 | 6.97E-03 | 1.85E-02 | 4.11E-02 | 6.97E-03 |
| CM-5/6 | 5386.000 | 5379.959 | 14.895 | 8.000 | 6.000 | 2.000 | 19.8463 | 86.09000 | 1.06E-02 | 5.62E-03 | 8.15E-02 | 1.68E-01 | 5.58E-03 |
| CM-247 | 4946.000 | 4923.435 | 7.343 | 7.000 | 6.000 | 1.000 | 15.3366 | 79.30000 | 1.15E-02 | 5.46E-03 | 6.83E-02 | 1.42E-01 | 5.42E-03 |
| CM-248 | 5078.600 | 5059.395 | 71.152 | 19.000 | 18.000 | 1.000 | 22.1555 | 91.00000 | 3.00E-02 | 7.70E-03 | 8.60E-02 | 1.77E-01 | 7.46E-03 |

NOTES:

* Sg calculated via blank population.

(Sg updated 5-JAN-2010)

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

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

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|--|--|---|
| <p>BATCH NUMBER : 944979 SAMPLE ID : S1202023759_AM SAMPLE QTY : 0.119 G SAMPLE DATE : 29-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 94.004</p> | <p>CHAMBER : 089 DETECTOR S/N : 78262 AVERAGE %EFFICIENCY : 29.3898 COUNT DATE : 2-FEB-2010 15:01:55 ELAPSED LIVE TIME(SEC) : 60000.00</p> | <p>LIB FILE : ENV_ALPHA_AM BKG FILE : B089.CNF:713 BKG DATE : 31-JAN-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W089.CNF:193 CAL DATE : 11-JAN-2010</p> |
|--|--|---|

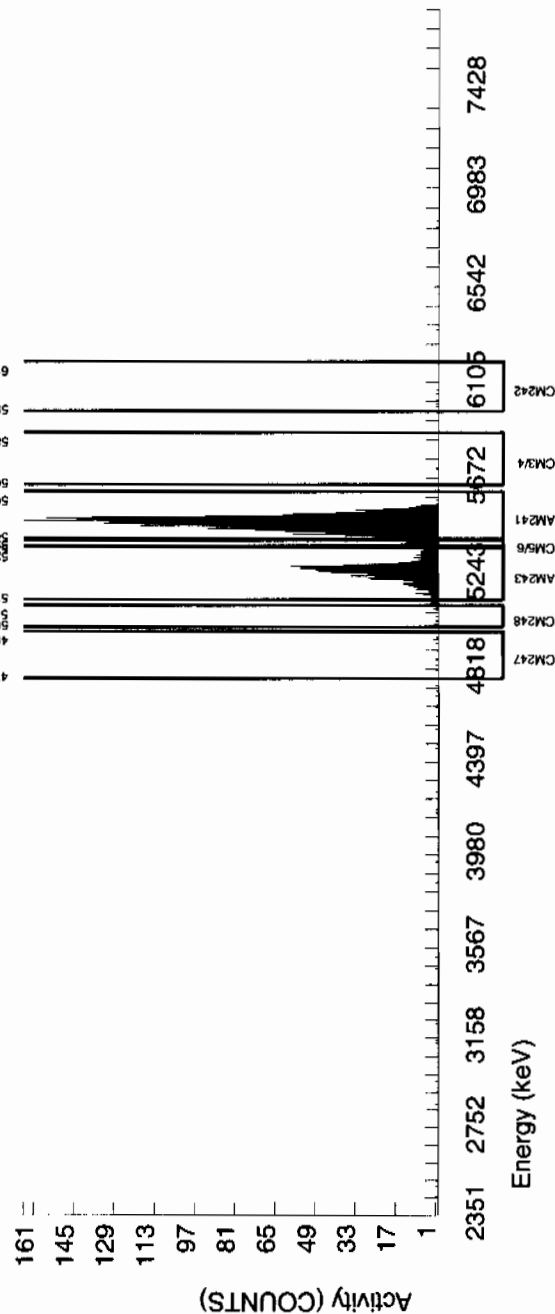
| | | |
|--|--|--|
| <p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.7417E+00 dpm</p> | <p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G</p> | <p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3156E+01 pCi/G</p> |
|--|--|--|

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 | 5480.549 | 59.014 | 2094.000 | 2092.601 | 0.000 | 3.0704 | 99.94000 | 2.87E+01 | 2.01E+00 | 9.79E-02 | 2.33E-01 | 6.27E-01 |
| AM243 | 5270.000 | 5263.248 | 53.117 | 805.000 | 804.000 | 1.000 | 1.0000 | 99.78000 | 1.10E+01 | 8.31E-01 | 3.19E-02 | 1.01E-01 | 3.90E-01 |
| CM-242 | 6102.000 | 6027.315 | 94.842 | 6.000 | 6.000 | 0.000 | 4.3186 | 100.0000 | 8.40E-02 | 3.47E-02 | 1.38E-01 | 3.12E-01 | 3.43E-02 |
| CM-3/4 | 5795.020 | 5723.466 | 9.359 | 2.000 | 2.000 | 0.000 | 5.2338 | 100.0000 | 2.74E-02 | 1.95E-02 | 1.67E-01 | 3.71E-01 | 1.94E-02 |
| CM-5/6 | 5386.000 | 5386.555 | 0.000 | 74.000 | 74.000 | 0.000 | 19.8463 | 86.09000 | 1.18E+00 | 1.58E-01 | 7.35E-01 | 1.51E+00 | 1.37E-01 |
| CM-247 | 4946.000 | 4902.317 | 4.992 | 8.000 | 8.000 | 0.000 | 15.3366 | 79.30000 | 1.38E-01 | 4.97E-02 | 6.16E-01 | 1.28E+00 | 4.89E-02 |
| CM-248 | 5078.600 | 5068.042 | 72.380 | 10.000 | 10.000 | 0.000 | 22.1555 | 91.00000 | 1.51E-01 | 4.87E-02 | 7.76E-01 | 1.59E+00 | 4.76E-02 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 5-JAN-2010)
- * 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# 944980 Product: Pu Date: 2/15/10

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

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: J. L. L. - 2/15/10

Secondary Review Performed By: K. B. Bell - 2/16/10

2/9 2/10

Plutonium Que Sheet

25-JAN-10

Batch #: 944980 Analyst: HAKB First Client Due Date: 20-FEB-10 Internal Due Date: 09-FEB-10
 Tracer Isotope(s): Pu-238 Tracer Code: 1374-A Expiration Date: 12/8/10 Vol: 0.1
 LCS Isotope(s): Pu-239/Pu-238 *LCS Code: SEM 0244-B Expiration Date: 4/30/20 Vol: 0.1193
 Spike Isotope(s): Pu-239/Pu-238 Spike Code: NA Expiration Date: NA Vol: NA
 Prep Date: 1/29/10 Initials: HAKB Pipet ID: 2971056 Balance ID: 19350208 Witness: NDA 1/29/10

| Sample ID | Client Description | Type | Hazard Code | Min CRDL | Matrix | Client | Collection Date | Pos. | Label # | Wet/Dry Aliquot (g / l / f) | Pu Det # |
|-------------|----------------------------|----------|-------------|-----------|--------|------------|-----------------|------|---------|-----------------------------------|-------------|
| 245388001-1 | RE14-10-7689 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 15-JAN-10 | 1 | 1 | 1.250 | 37 |
| 245388002-1 | RE14-10-7679 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 15-JAN-10 | 2 | 2 | 1.264 | 38 |
| 245388003-1 | RE14-10-7680 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 15-JAN-10 | 3 | 3 | 1.264 | 39 |
| 245388004-1 | RE14-10-7686 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 15-JAN-10 | 4 | 4 | 1.253 | 40 |
| 245388005-1 | RE14-10-7688 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 15-JAN-10 | 5 | 5 | 1.267 | 41 |
| 245388006-1 | RE14-10-7684 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 15-JAN-10 | 6 | 6 | 1.267 | 42 |
| 245388007-1 | RE14-10-7687 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 15-JAN-10 | 7 | 7 | 1.263 | 43 |
| 245388008-1 | RE14-10-7681 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 15-JAN-10 | 8 | 8 | 1.251 | 44 |
| 245388009-1 | RE14-10-7682 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 15-JAN-10 | 9 | 9 | 1.265 | 45 |
| 245388010-1 | RE14-10-7685 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 15-JAN-10 | 10 | 10 | 1.270 | 46 |
| 245388011-1 | RE14-10-7683 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 15-JAN-10 | 11 | 11 | 1.251 | 47 |
| 245393001-1 | RE15-10-7918 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 19-JAN-10 | 12 | 12 | 1.272 | 48 |
| 245393002-1 | RE15-10-7915 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 19-JAN-10 | 13 | 13 | 1.254 | 77 |
| 245393003-1 | RE15-10-7920 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 19-JAN-10 | 14 | 14 | 1.273 | 79 |
| 245393004-1 | RE15-10-7914 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 19-JAN-10 | 15 | 15 | 1.259 | 80 |
| 245393005-1 | RE15-10-7919 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 19-JAN-10 | 16 | 16 | 1.250 | 81 |
| 245393006-1 | RE15-10-7921 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 19-JAN-10 | 17 | 17 | 1.254 | 82 |
| 245393007-1 | RE15-10-7916 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 19-JAN-10 | 18 | 18 | 1.266 | 107 |
| 245393008-1 | RE15-10-7917 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 19-JAN-10 | 19 | 19 | 1.262 | 108 |
| 245393009-1 | RE15-10-7922 | SAMPLE | | .05 pCi/g | SOIL | LANL010 | 19-JAN-10 | 20 | 20 | 1.274 | 109 |
| 120203760-1 | MB for batch 944980 | MB | | .05 pCi/g | SOIL | QC ACCOUNT | | 21 | 21 | 1.0 | 97 |
| 120203761-1 | RE15-10-7918(245393001DUP) | DUP | | .05 pCi/g | SOIL | QC ACCOUNT | 19-JAN-10 | 22 | 22 | 1.273 | 99 |
| 120203762-1 | LCS for batch 944980 | LCS *SEM | | .05 pCi/g | SOIL | QC ACCOUNT | | 23 | 23 | 0.119 | 100 |

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

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: J. L. L. 2/15/10

Blank Correction Report

Batch ID 944980

| GEL Sample ID | Client sample ID | Parameter | Aliquot | Result | TPU | MDA | Allquot Corrected Blank Result | Units | Activity <5X Corrected Blank |
|---------------|------------------|-------------------|---------|-----------|---------|--------|--------------------------------|-------|------------------------------|
| 1202023761 | DUP | Plutonium-238 | 1.27 g | 0.00707 | 0.00291 | 0.0193 | -.00348031 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | -0.00118 | 0.00263 | 0.0145 | .002314961 | pCi/g | YES |
| 1202023762 | LCS | Plutonium-238 | 0.119 g | 7.06 | 0.535 | 0.255 | -.03714286 | pCi/g | NO |
| | | Plutonium-239/240 | 0.119 g | 39.0 | 2.44 | 0.192 | .024705882 | pCi/g | NO |
| 1202023760 | MB | Plutonium-238 | 1.00 g | -0.00442 | 0.0039 | 0.0241 | -.00442 | pCi/g | NO |
| | | Plutonium-239/240 | 1.00 g | 0.00294 | 0.00295 | 0.0181 | .00294 | pCi/g | YES |
| 245388001 | RE14-10-7689 | Plutonium-238 | 1.25 g | 0.00315 | 0.00638 | 0.0171 | -.003536 | pCi/g | NO |
| | | Plutonium-239/240 | 1.25 g | 0.00314 | 0.00315 | 0.0129 | .002352 | pCi/g | YES |
| 245388002 | RE14-10-7679 | Plutonium-238 | 1.26 g | 0.00226 | 0.00505 | 0.0185 | -.00350794 | pCi/g | NO |
| | | Plutonium-239/240 | 1.26 g | 0.0079 | 0.00341 | 0.0139 | .002333333 | pCi/g | YES |
| 245388003 | RE14-10-7680 | Plutonium-238 | 1.26 g | 0.00451 | 0.00618 | 0.0184 | -.00350794 | pCi/g | NO |
| | | Plutonium-239/240 | 1.26 g | -0.00226 | 0.00195 | 0.0139 | .002333333 | pCi/g | YES |
| 245388004 | RE14-10-7686 | Plutonium-238 | 1.25 g | 0.00121 | 0.00121 | 0.0198 | -.003536 | pCi/g | NO |
| | | Plutonium-239/240 | 1.25 g | 0.00242 | 0.00242 | 0.0149 | .002352 | pCi/g | YES |
| 245388005 | RE14-10-7688 | Plutonium-238 | 1.27 g | 0.00232 | 0.00284 | 0.0189 | -.00348031 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | -0.00347 | 0.00347 | 0.0142 | .002314961 | pCi/g | YES |
| 245388006 | RE14-10-7684 | Plutonium-238 | 1.27 g | -0.00372 | 0.00277 | 0.0203 | -.00348031 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | -2.96E-10 | 0.00248 | 0.0152 | .002314961 | pCi/g | YES |
| 245388007 | RE14-10-7687 | Plutonium-238 | 1.26 g | 0.00327 | 0.0019 | 0.0178 | -.00350794 | pCi/g | NO |
| | | Plutonium-239/240 | 1.26 g | -0.00218 | 0.00218 | 0.0134 | .002333333 | pCi/g | YES |
| 245388008 | RE14-10-7681 | Plutonium-238 | 1.25 g | 0.00232 | 0.00232 | 0.0189 | -.003536 | pCi/g | NO |
| | | Plutonium-239/240 | 1.25 g | 0.00464 | 0.00329 | 0.0142 | .002352 | pCi/g | YES |
| 245388009 | RE14-10-7682 | Plutonium-238 | 1.27 g | 0.00119 | 0.00265 | 0.0194 | -.00348031 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.00118 | 0.00205 | 0.0146 | .002314961 | pCi/g | YES |
| 245388010 | RE14-10-7685 | Plutonium-238 | 1.27 g | -0.00137 | 0.00194 | 0.0224 | -.00348031 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.00549 | 0.00337 | 0.0169 | .002314961 | pCi/g | YES |
| 245388011 | RE14-10-7683 | Plutonium-238 | 1.25 g | 0.00349 | 0.0045 | 0.019 | -.003536 | pCi/g | NO |
| | | Plutonium-239/240 | 1.25 g | 0.00116 | 0.00348 | 0.0143 | .002352 | pCi/g | YES |
| 245393001 | RE15-10-7918 | Plutonium-238 | 1.27 g | 0.00257 | 0.00681 | 0.021 | -.00348031 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.00 | 0.00515 | 0.0158 | .002314961 | pCi/g | YES |
| 245393002 | RE15-10-7915 | Plutonium-238 | 1.25 g | -0.00138 | 0.00458 | 0.0226 | -.003536 | pCi/g | NO |
| | | Plutonium-239/240 | 1.25 g | 0.0331 | 0.00725 | 0.017 | .002352 | pCi/g | NO |
| 245393003 | RE15-10-7920 | Plutonium-238 | 1.27 g | 0.0024 | 0.0024 | 0.0196 | -.00348031 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.00839 | 0.00362 | 0.0147 | .002314961 | pCi/g | YES |
| 245393004 | RE15-10-7914 | Plutonium-238 | 1.26 g | -0.00113 | 0.00254 | 0.0185 | -.00350794 | pCi/g | NO |
| | | Plutonium-239/240 | 1.26 g | -0.00113 | 0.0016 | 0.0139 | .002333333 | pCi/g | YES |
| 245393005 | RE15-10-7919 | Plutonium-238 | 1.25 g | 0.00245 | 0.00174 | 0.020 | -.003536 | pCi/g | NO |
| | | Plutonium-239/240 | 1.25 g | 0.00979 | 0.0035 | 0.015 | .002352 | pCi/g | YES |
| 245393006 | RE15-10-7921 | Plutonium-238 | 1.25 g | 0.00499 | 0.00251 | 0.0204 | -.003536 | 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 |
|---------------|------------------|-------------------|---------|---------|---------|--------|--------------------------------------|-------|------------------------------------|
| 245393006 | RE15-10-7921 | Plutonium-239/240 | 1.25 g | 0.00873 | 0.00452 | 0.0153 | .002352 | pCi/g | YES |
| 245393007 | RE15-10-7916 | Plutonium-238 | 1.27 g | 0.00374 | 0.00413 | 0.0203 | -.00348031 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.00 | 0.00249 | 0.0153 | .002314961 | pCi/g | YES |
| 245393008 | RE15-10-7917 | Plutonium-238 | 1.26 g | 0.00497 | 0.00352 | 0.0203 | -.00350794 | pCi/g | NO |
| | | Plutonium-239/240 | 1.26 g | 0.00994 | 0.00396 | 0.0153 | .002333333 | pCi/g | YES |
| 245393009 | RE15-10-7922 | Plutonium-238 | 1.27 g | 0.00269 | 0.00329 | 0.0219 | -.00348031 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.0107 | 0.00428 | 0.0165 | .002314961 | pCi/g | YES |

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | | |
|---|--|---|---|
| BATCH NUMBER : 944980 SAMPLE ID : S0245388001_PU SAMPLE QTY : 1.250 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 95.805 | | CHAMBER : 037 DETECTOR S/N : 45-149BB5 AVERAGE %EFFICIENCY : 35.9189 COUNT DATE : 12-FEB-2010 12:50:52 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_PU BKG FILE : B037.CNF;1114 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W037.CNF;307 CAL DATE : 3-FEB-2010 |
|---|--|---|---|

| | | |
|---|---|---|
| TRACER ID : 1374-A NUCLIDE : PU242 NOMINAL : 3.3854E+00 dpm RESULTS : 3.2434E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G |
|---|---|---|

NUCLIDE ACTIVITY SUMMARY

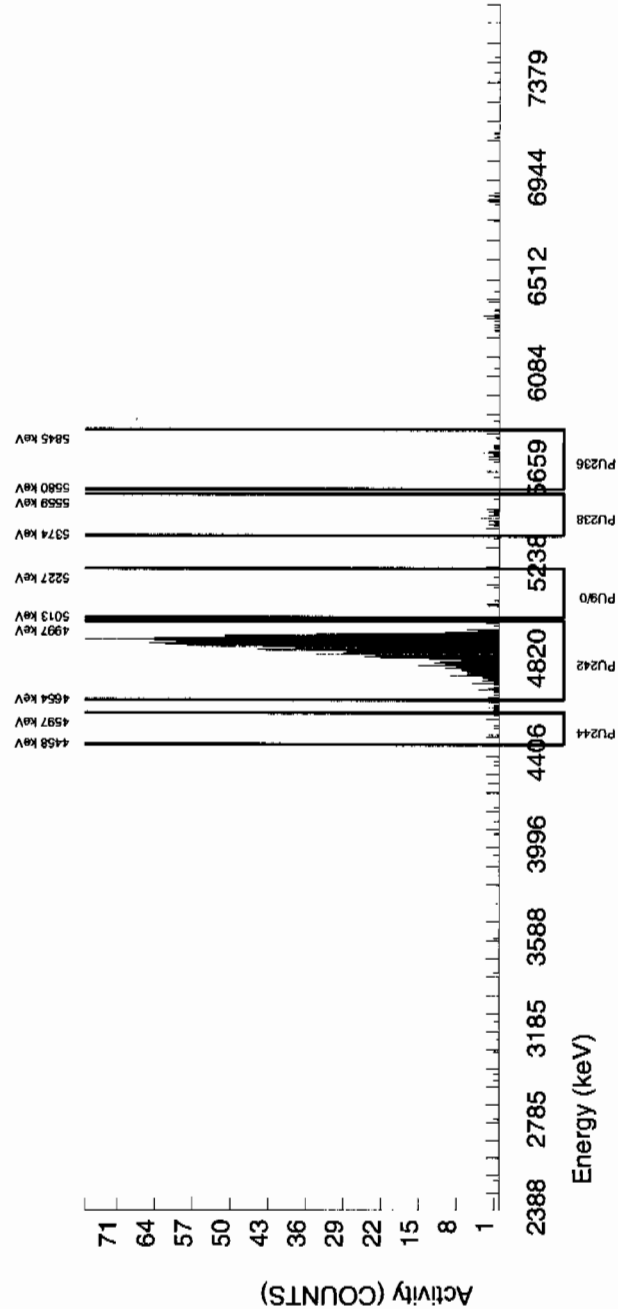
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5747.587 | 36.997 | 21.000 | 9.000 | 12.000 | 2.6925 | 100.0000 | 9.61E-03 | 6.15E-03 | 6.56E-03 | 1.60E-02 | 6.13E-03 |
| PU-238 | 5499.000 | 5460.725 | 4.933 | 20.000 | 3.000 | 17.000 | 2.9312 | 99.900000 | 3.15E-03 | 6.38E-03 | 7.15E-03 | 1.71E-02 | 6.38E-03 |
| PU-9/0 | 5155.000 | 5122.708 | 4.933 | 6.000 | 3.000 | 3.000 | 2.0604 | 99.900000 | 3.14E-03 | 3.15E-03 | 5.02E-03 | 1.29E-02 | 3.14E-03 |
| PU242 | 4890.000 | 4886.815 | 66.029 | 1168.000 | 1165.000 | 3.000 | 1.7321 | 100.0000 | 1.22E+00 | 7.01E-02 | 4.22E-03 | 1.13E-02 | 3.58E-02 |
| PU-244 | 4589.000 | 4523.945 | 4.933 | 6.000 | 4.000 | 2.000 | 3.7241 | 99.900000 | 4.19E-03 | 2.97E-03 | 9.08E-03 | 2.10E-02 | 2.96E-03 |

NOTES:

* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

* Sg of PU242 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|---|---|---|
| BATCH NUMBER : 944980 SAMPLE ID : S0245388002_PU SAMPLE QTY : 1.264 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 93.956 | CHAMBER : 038 DETECTOR S/N : 72532 AVERAGE %EFFICIENCY : 33.6391 COUNT DATE : 12-FEB-2010 12:50:52 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_PU BKG FILE : B038.CNF:1111 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W038.CNF:321 CAL DATE : 3-FEB-2010 |
| | MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G | |

| | | |
|---|--|---|
| TRACER ID : 1374-A NUCLIDE : PU242 NOMINAL : 3.3854E+00 dpm RESULTS : 3.1808E+00 dpm | | LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G |
|---|--|---|

NUCLIDE ACTIVITY SUMMARY

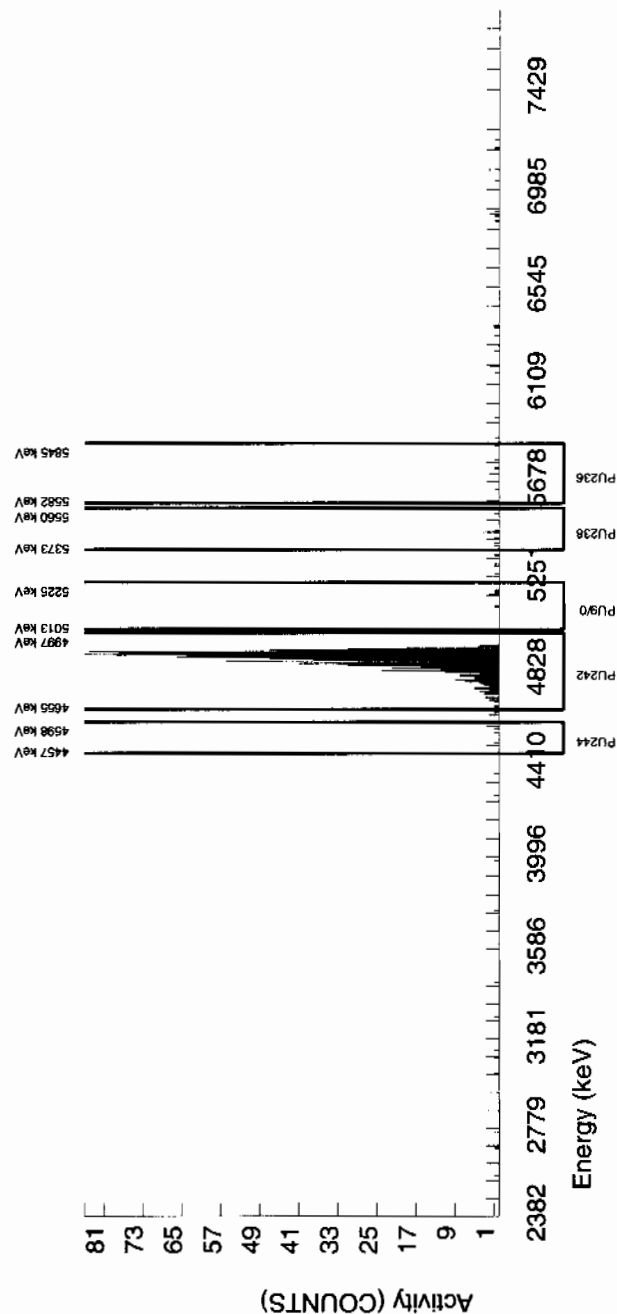
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5739.519 | 4.934 | 7.000 | 1.000 | 6.000 | 2.6925 | 100.0000 | 1.15E-03 | 4.14E-03 | 7.06E-03 | 1.72E-02 | 4.14E-03 |
| PU-238 | 5499.000 | 5454.910 | 6.579 | 11.000 | 2.000 | 9.000 | 2.9312 | 99.900000 | 2.26E-03 | 5.05E-03 | 7.70E-03 | 1.85E-02 | 5.05E-03 |
| PU-9/0 | 5155.000 | 5156.342 | 7.247 | 8.000 | 7.000 | 1.000 | 2.0604 | 99.900000 | 7.90E-03 | 3.41E-03 | 5.41E-03 | 1.39E-02 | 3.39E-03 |
| PU242 | 4890.000 | 4881.953 | 53.195 | 1071.000 | 1070.000 | 1.000 | 1.0000 | 100.0000 | 1.21E+00 | 7.09E-02 | 2.62E-03 | 8.30E-03 | 3.69E-02 |
| PU-244 | 4589.000 | 4540.334 | 0.000 | 5.000 | 4.000 | 1.000 | 3.7241 | 99.900000 | 4.51E-03 | 2.77E-03 | 9.78E-03 | 2.26E-02 | 2.76E-03 |

NOTES:

* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

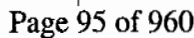
* Sg of PU242 calculated as sqrt(BKG AREA).



NOTES:

* Sg calculated via blank population.
(Sg updated 10-FEB-2010)

* Sg of PU242 calculated as $\sqrt{\text{BKG AREA}}$.



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|------------------------------------|-----------------------------------|-------------------------------|
| BATCH NUMBER : 944980 | CHAMBER : 040 | LIB FILE : ENV_ALPHA_PU |
| SAMPLE ID : S0245388004_PU | DETECTOR S/N : 78773 | BKG FILE : B040.CNF;1114 |
| SAMPLE QTY : 1.253 G | AVERAGE %EFFICIENCY : 32.1221 | BKG DATE : 7-FEB-2010 |
| SAMPLE DATE : 15-JAN-2010 00:00:00 | COUNT DATE : 12-FEB-2010 12:50:52 | BKG LIVE TIME(SEC) : 59999.99 |
| ANALYST : HAKB | ELAPSED LIVE TIME(SEC) : 60000.00 | EFF FILE : W040.CNF;317 |
| % YIELD : 92.600 | | CAL DATE : 3-FEB-2010 |

| | | |
|--------------------------|----------------------------|----------------------------|
| TRACER ID : 1374-A | MS/MSD ID : 0244-B | LCS/LCSD ID : 0244-B |
| NUCLIDE : PU242 | NUCLIDE : PU-9/0 | NUCLIDE : PU-9/0 |
| NOMINAL : 3.3854E+00 dpm | NOMINAL : 4.1778E+01 pCi/G | NOMINAL : 4.1778E+01 pCi/G |
| RESULTS : 3.1349E+00 dpm | | |

NUCLIDE ACTIVITY SUMMARY

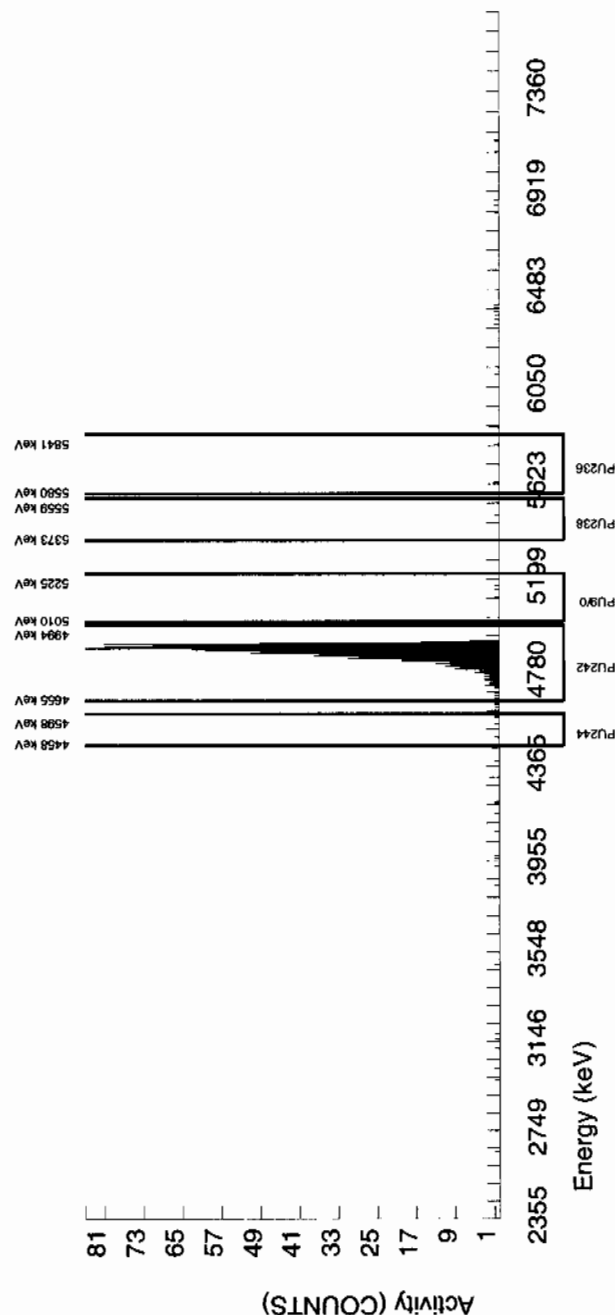
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5718.527 | 156.450 | 3.000 | -1.000 | 4.000 | 2.6925 | 100.0000 | -1.23E-03 | 3.26E-03 | 7.57E-03 | 1.84E-02 | 3.26E-03 |
| PU-238 | 5499.000 | 5489.843 | 4.889 | 1.000 | 1.000 | 0.000 | 2.9312 | 99.900000 | 1.21E-03 | 1.21E-03 | 8.25E-03 | 1.98E-02 | 1.21E-03 |
| PU-9/0 | 5155.000 | 5155.288 | 53.780 | 3.000 | 2.000 | 1.000 | 2.0604 | 99.900000 | 2.42E-03 | 2.42E-03 | 5.80E-03 | 1.49E-02 | 2.42E-03 |
| PU242 | 4890.000 | 4878.425 | 47.649 | 1008.000 | 1007.000 | 1.000 | 1.0000 | 100.0000 | 1.22E+00 | 7.28E-02 | 2.81E-03 | 8.90E-03 | 3.84E-02 |
| PU-244 | 4589.000 | 4559.030 | 92.892 | 4.000 | 4.000 | 0.000 | 3.7241 | 99.900000 | 4.84E-03 | 2.43E-03 | 1.05E-02 | 2.42E-02 | 2.42E-03 |

NOTES:

* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

* Sg of PU242 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|---|--|---|
| BATCH NUMBER : 944980 SAMPLE ID : S0245388005_PU SAMPLE QTY : 1.265 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 93.082 | CHAMBER : 041 DETECTOR S/N : 78205 AVERAGE %EFFICIENCY : 33.0982 COUNT DATE : 12-FEB-2010 12:50:52 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_PU BKG FILE : B041.CNF:1107 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W041.CNF:321 CAL DATE : 3-FEB-2010 |
|---|--|---|

| | | |
|--|---|---|
| TRACER ID : 1374-A NUCLIDE : PU242 NOMINAL : 3.3854E+00 dpm RESULTS : 3.1512E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G |
|--|---|---|

NUCLIDE ACTIVITY SUMMARY

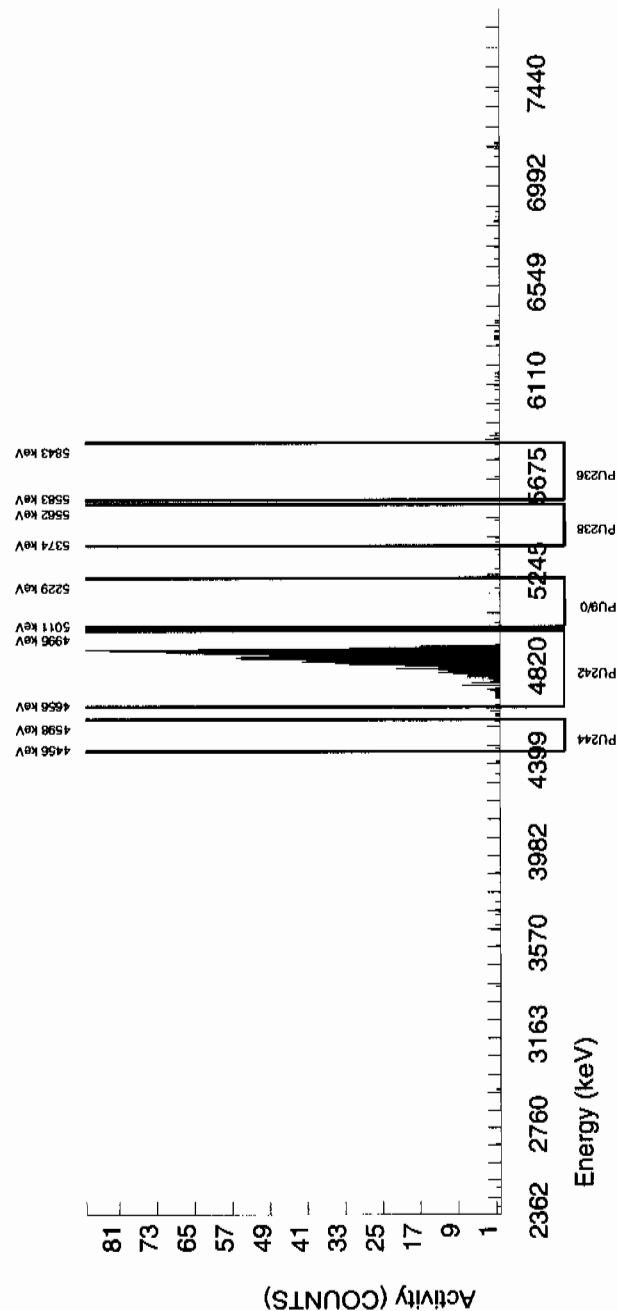
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5768.822 | 138.599 | 3.000 | -8.000 | 11.000 | 2.6925 | 100.0000 | -9.43E-03 | 4.41E-03 | 7.24E-03 | 1.76E-02 | 4.41E-03 |
| PU-238 | 5499.000 | 5423.267 | 108.900 | 4.000 | 2.000 | 2.000 | 2.9312 | 99.900000 | 2.32E-03 | 2.84E-03 | 7.89E-03 | 1.89E-02 | 2.84E-03 |
| PU-9/0 | 5155.000 | 5131.226 | 148.499 | 3.000 | -3.000 | 6.000 | 2.0604 | 99.900000 | -3.47E-03 | 3.47E-03 | 5.55E-03 | 1.42E-02 | 3.47E-03 |
| PU242 | 4890.000 | 4877.825 | 51.137 | 1044.000 | 1043.000 | 1.000 | 1.0000 | 100.0000 | 1.21E+00 | 7.13E-02 | 2.69E-03 | 8.51E-03 | 3.74E-02 |
| PU-244 | 4589.000 | 4533.319 | 113.850 | 3.000 | 1.000 | 2.000 | 3.7241 | 99.900000 | 1.16E-03 | 2.59E-03 | 1.00E-02 | 2.32E-02 | 2.59E-03 |

NOTES:

* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

* Sg of PU242 calculated as sqrt(BKG AREA).



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

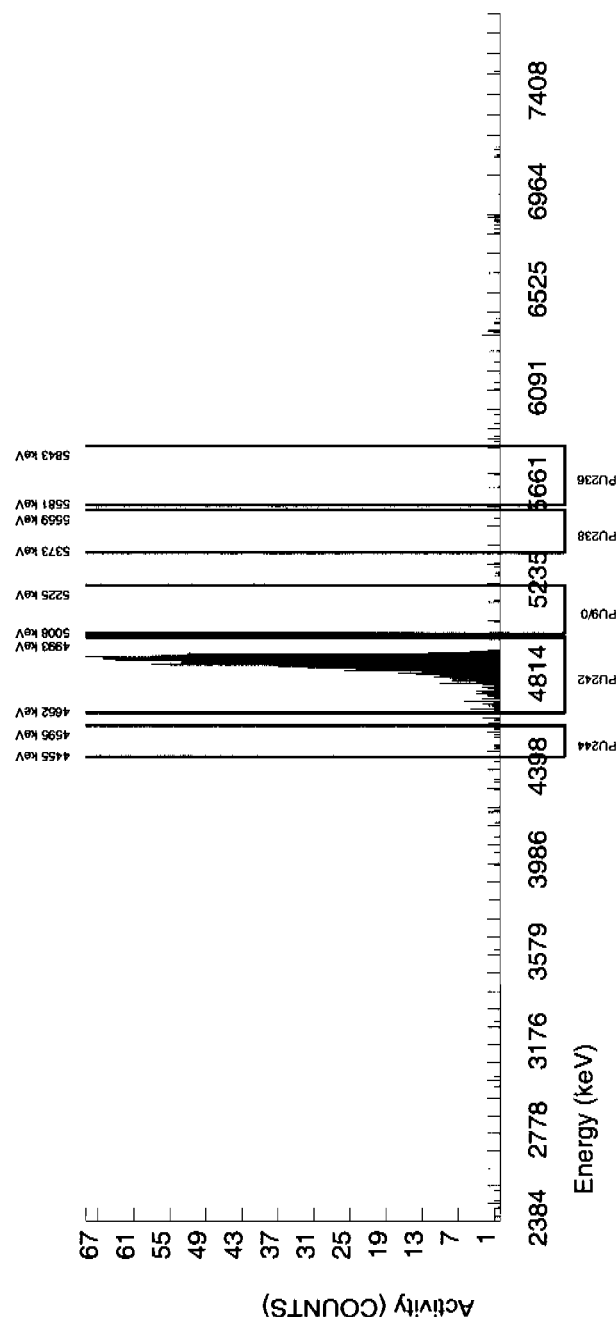
| | | | | | | | | | | | | | |
|---|----------------|-------------|-----------|--|----------|----------|--------|---|----------------|-------------|-----------|-----------|-----------|
| BATCH NUMBER : 944980 SAMPLE ID : S0245388006_PU SAMPLE QTY : 1.267 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 86.455 | | | | CHAMBER : 042 DETECTOR S/N : 78793 AVERAGE %EFFICIENCY : 33.2094 COUNT DATE : 12-FEB-2010 12:50:52 ELAPSED LIVE TIME(SEC) : 60000.00 | | | | LIB FILE : ENV_ALPHA_PU BKG FILE : B042.CNF:1106 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W042.CNF:294 CAL DATE : 3-FEB-2010 | | | | | |
| TRACER ID : 1374-A NUCLIDE : PU242 NOMINAL : 3.3854E+00 dpm RESULTS : 2.9269E+00 dpm | | | | MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G | | | | LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G | | | | | |
| NUCLIDE ACTIVITY SUMMARY | | | | | | | | | | | | | |
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
| PU-236 | 5749.000 | 5782.029 | 0.000 | 6.000 | 1.000 | 5.000 | 2.6925 | 100.0000 | 1.26E-03 | 4.19E-03 | 7.76E-03 | 1.89E-02 | 4.19E-03 |
| PU-238 | 5499.000 | 5527.184 | 4.891 | 1.000 | -3.000 | 4.000 | 2.9312 | 99.900000 | -3.72E-03 | 2.77E-03 | 8.45E-03 | 2.03E-02 | 2.77E-03 |
| PU-9/0 | 5155.000 | 5116.290 | 97.820 | 2.000 | 0.000 | 2.000 | 2.0604 | 99.900000 | -2.96E-10 | 2.48E-03 | 5.94E-03 | 1.52E-02 | 2.48E-03 |
| PU242 | 4890.000 | 4874.264 | 58.072 | 974.000 | 972.000 | 2.000 | 1.4142 | 100.0000 | 1.20E+00 | 7.27E-02 | 4.07E-03 | 1.15E-02 | 3.87E-02 |
| PU-244 | 4589.000 | 4542.280 | 92.929 | 7.000 | 7.000 | 0.000 | 3.7241 | 99.900000 | 8.68E-03 | 3.31E-03 | 1.07E-02 | 2.48E-02 | 3.28E-03 |

NOTES:

* Sq calculated via blank population.

(Sg updated 10-FEB-2010)

* Sg of PU242 calculated as $\text{sqrt}(\text{BKG AREA})$.



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | |
|--------------|-------------------|
| BATCH NUMBER | 944980 |
| SAMPLE ID | S0245388007_PU |
| SAMPLE QTY | 1.263 G |
| SAMPLE DATE | 15-JAN-2010 00:00 |
| ANALYST | HAKB |
| % YIELD | 97.357 |

| | | |
|------------------------|---|----------------------|
| CHAMBER | : | 043 |
| DETECTOR S/N | : | 76543 |
| AVERAGE %EFFICIENCY | : | 33.6471 |
| COUNT DATE | : | 12-FEB-2010 12:51:05 |
| ELAPSED LIVE TIME(SEC) | : | 60000.00 |

| | |
|--------------------|---------------|
| LIB FILE | ENV_ALPHA_PU |
| BKG FILE | B043.CNF:1104 |
| BKG DATE | 7-FEB-2010 |
| BKG LIVE TIME(SEC) | 60000.00 |
| EFF FILE | W043.CNF:286 |
| CAL DATE | 3-FEB-2010 |

TRACER

| | | |
|---------|---|----------------|
| ID | : | 1374-A |
| NUCLIDE | : | PU242 |
| NOMINAL | : | 3.3854E+00 dpm |
| RESULTS | : | 3.2960E+00 dpm |

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

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

NUCLIDE ACTIVITY SUMMARY

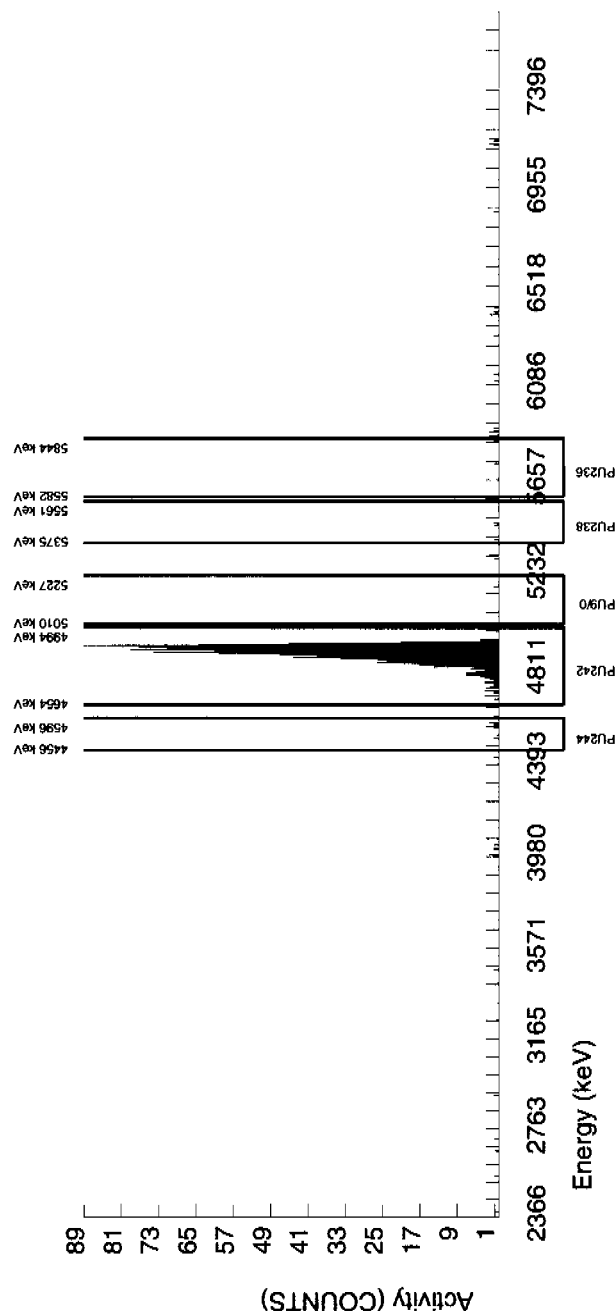
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/g | TPU 1-SIGMA | DLG pCi/g | MDC pCi/g | UNC pCi/g |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5722.659 | 232.552 | 3.000 | -1.000 | 4.000 | 2.6925 | 100.0000 | -1.11E-03 | 2.94E-03 | 6.82E-03 | 1.66E-02 | 2.94E-03 |
| PU-238 | 5499.000 | 5442.043 | 74.219 | 3.000 | 3.000 | 0.000 | 2.9312 | 99.900000 | 3.27E-03 | 1.90E-03 | 7.43E-03 | 1.78E-02 | 1.89E-03 |
| PU-9/0 | 5155.000 | 5184.235 | 4.948 | 1.000 | -2.000 | 3.000 | 2.0604 | 99.900000 | 2.18E-03 | 2.18E-03 | 5.22E-03 | 1.34E-02 | 2.18E-03 |
| PU242 | 4890.000 | 4886.089 | 51.025 | 1110.000 | 1109.000 | 1.000 | 1.0000 | 100.0000 | 1.21E+00 | 7.03E-02 | 2.53E-03 | 8.02E-03 | 3.63E-02 |
| PU-244 | 4589.000 | 4558.403 | 7.267 | 7.000 | 7.000 | 0.000 | 3.7241 | 99.900000 | 7.63E-03 | 2.91E-03 | 9.44E-03 | 2.18E-02 | 2.88E-03 |

NOTES:

* Sq calculated via blank population.

(Sg updated 10-FEB-2010)

* Sg of PU242 calculated as $\sqrt{\text{BKG AREA}}$.



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|--|---|--|
| <p>BATCH NUMBER : 944980 SAMPLE ID : S0245388008_PU SAMPLE QTY : 1.251 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 90.728</p> | <p>CHAMBER : 044 DETECTOR S/N : 79459 AVERAGE %EFFICIENCY : 34.2824 COUNT DATE : 12-FEB-2010 12:51:05 ELAPSED LIVE TIME(SEC) : 60000.00</p> | <p>LIB FILE : ENV_ALPHA_PU BKG FILE : B044.CNF;1114 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W044.CNF;307 CAL DATE : 3-FEB-2010</p> |
|--|---|--|

| | | |
|---|--|--|
| <p>TRACER ID : 1374-A NUCLIDE : PU242 NOMINAL : 3.3854E+00 dpm RESULTS : 3.0715E+00 dpm</p> | <p>MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/g</p> | <p>LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/g</p> |
|---|--|--|

NUCLIDE ACTIVITY SUMMARY

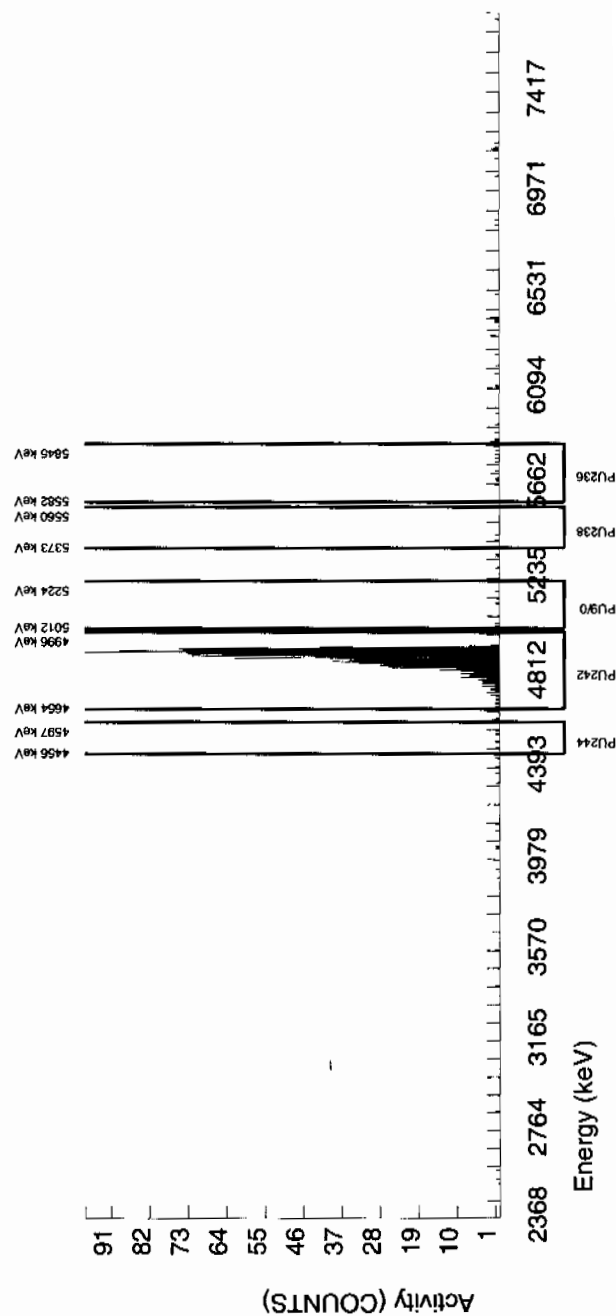
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/g | TPU 1-SIGMA | DLC pCi/g | MDC pCi/g | UNC pCi/g |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5747.849 | 4.923 | 12.000 | 5.000 | 7.000 | 2.6925 | 100.0000 | 5.90E-03 | 5.15E-03 | 7.25E-03 | 1.76E-02 | 5.14E-03 |
| PU-238 | 5499.000 | 5449.794 | 78.765 | 3.000 | 2.000 | 1.000 | 2.9312 | 99.90000 | 2.32E-03 | 2.32E-03 | 7.90E-03 | 1.89E-02 | 2.32E-03 |
| PU-9/0 | 5155.000 | 5110.163 | 147.685 | 6.000 | 4.000 | 2.000 | 2.0604 | 99.90000 | 4.64E-03 | 3.29E-03 | 5.55E-03 | 1.42E-02 | 3.28E-03 |
| PU242 | 4890.000 | 4887.832 | 45.547 | 1056.000 | 1053.000 | 3.000 | 1.7321 | 100.0000 | 1.22E+00 | 7.20E-02 | 4.66E-03 | 1.25E-02 | 3.77E-02 |
| PU-244 | 4589.000 | 4522.701 | 63.997 | 5.000 | 5.000 | 0.000 | 3.7241 | 99.90000 | 5.79E-03 | 2.61E-03 | 1.00E-02 | 2.32E-02 | 2.59E-03 |

NOTES:

* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

* Sg of PU242 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|---|--|---|
| BATCH NUMBER : 944980 SAMPLE ID : S0245388009_PU SAMPLE QTY : 1.265 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 89.432 | CHAMBER : 045 DETECTOR S/N : 78783 AVERAGE %EFFICIENCY : 33.6564 COUNT DATE : 12-FEB-2010 12:51:05 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_PU BKG FILE : B045.CNF:1103 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W045.CNF:298 CAL DATE : 3-FEB-2010 |
|---|--|---|

| | | |
|--|---|---|
| TRACER ID : 1374-A NUCLIDE : PU242 NOMINAL : 3.3854E+00 dpm RESULTS : 3.0277E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G |
|--|---|---|

NUCLIDE ACTIVITY SUMMARY

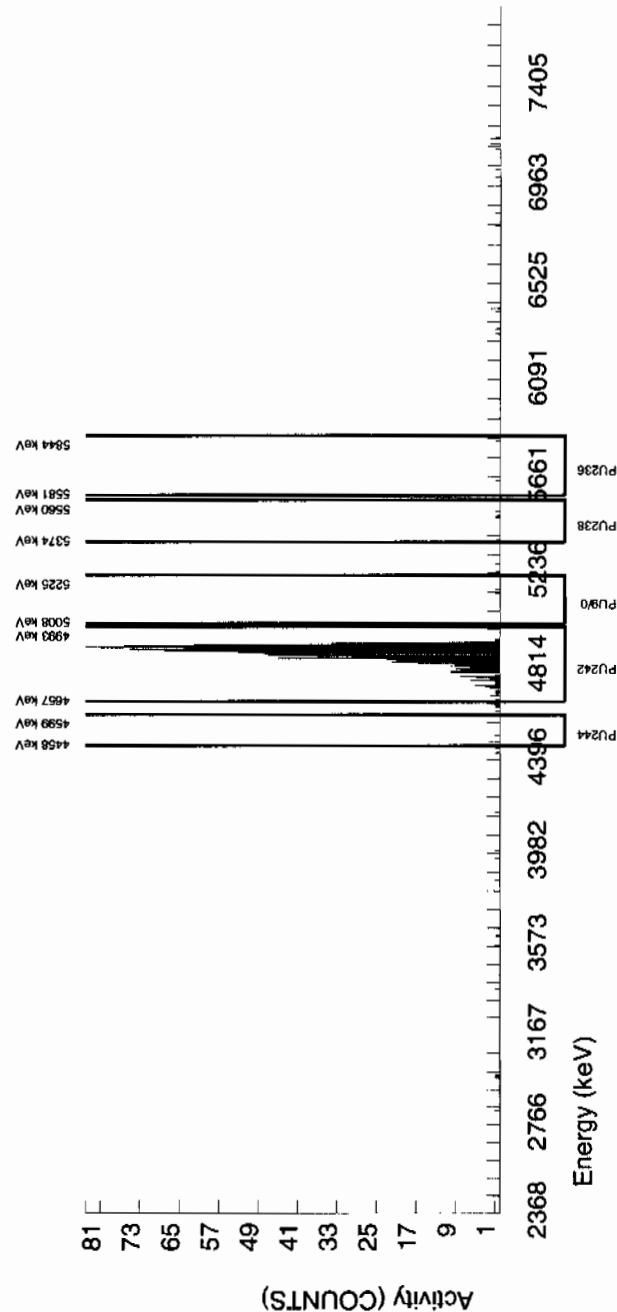
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5725.640 | 0.000 | 4.000 | -3.000 | 7.000 | 2.6925 | 100.0000 | -3.62E-03 | 4.00E-03 | 7.41E-03 | 1.80E-02 | 4.00E-03 |
| PU-238 | 5499.000 | 5463.957 | 123.546 | 3.000 | 1.000 | 2.000 | 2.9312 | 99.900000 | 1.18E-03 | 2.65E-03 | 8.08E-03 | 1.94E-02 | 2.65E-03 |
| PU-9/0 | 5155.000 | 5158.822 | 19.767 | 2.000 | 1.000 | 1.000 | 2.0604 | 99.900000 | 1.18E-03 | 2.05E-03 | 5.68E-03 | 1.46E-02 | 2.05E-03 |
| PU242 | 4890.000 | 4877.837 | 63.449 | 1021.000 | 1019.000 | 2.000 | 1.4142 | 100.0000 | 1.21E+00 | 7.19E-02 | 3.89E-03 | 1.10E-02 | 3.78E-02 |
| PU-244 | 4589.000 | 4487.095 | 49.419 | 2.000 | 2.000 | 0.000 | 3.7241 | 99.900000 | 2.37E-03 | 1.68E-03 | 1.03E-02 | 2.37E-02 | 1.67E-03 |

NOTES:

* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

* Sg of PU242 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

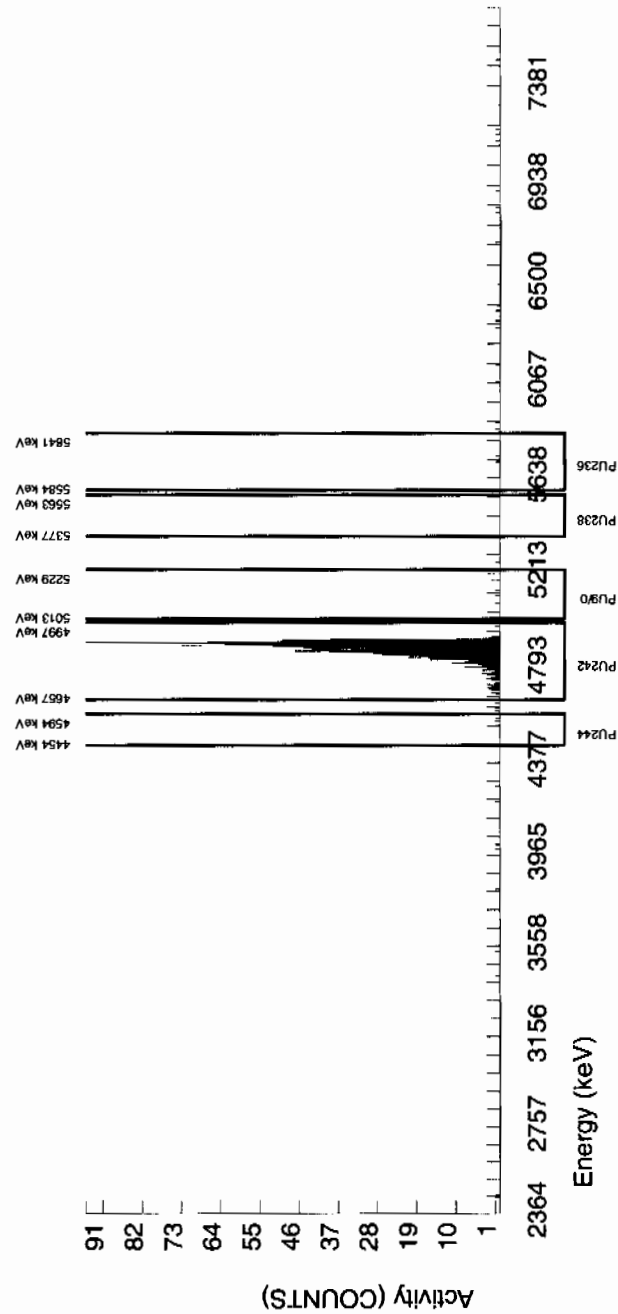
| | | | |
|---|--|---|---|
| BATCH NUMBER : 944980 SAMPLE ID : S0245388010_PU SAMPLE QTY : 1.270 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 77.431 | | CHAMBER : 046 DETECTOR S/N : 76544 AVERAGE %EFFICIENCY : 33.4175 COUNT DATE : 12-FEB-2010 12:51:05 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_PU BKG FILE : B046.CNF;1114 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W046.CNF;289 CAL DATE : 3-FEB-2010 |
|---|--|---|---|

| | | |
|---|---|---|
| TRACER ID : 1374-A NUCLIDE : PU242 NOMINAL : 3.3854E+00 dpm RESULTS : 2.6214E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/g | LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/g |
|---|---|---|

| NUCLIDE ACTIVITY SUMMARY | | | | | | | | | | | |
|--------------------------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/g | TPU 1-SIGMA | UNC pCi/g |
| PU-236 | 5749.000 | 5730.242 | 29.361 | 3.000 | -1.000 | 4.000 | 2.6925 | 100.0000 | -1.40E-03 | 3.70E-03 | 3.70E-03 |
| PU-238 | 5499.000 | 5469.852 | 0.000 | 0.000 | -1.000 | 1.000 | 2.9312 | 99.900000 | -1.37E-03 | 1.94E-03 | 1.94E-03 |
| PU-9/0 | 5155.000 | 5145.322 | 4.894 | 5.000 | 4.000 | 1.000 | 2.0604 | 99.900000 | 5.49E-03 | 3.37E-03 | 3.36E-03 |
| PU242 | 4890.000 | 4883.633 | 28.707 | 879.000 | 876.000 | 3.000 | 1.7321 | 100.0000 | 1.20E+00 | 7.48E-02 | 4.07E-02 |
| PU-244 | 4589.000 | 4573.646 | 14.681 | 2.000 | 2.000 | 0.000 | 3.7241 | 99.900000 | 2.74E-03 | 1.95E-03 | 1.94E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-2010)
- * Sg of PU242 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|---|---|---|
| BATCH NUMBER : 944980 SAMPLE ID : S0245388011_PU SAMPLE QTY : 1.251 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 90.249 | CHAMBER : 047 DETECTOR S/N : 46-089B1 AVERAGE %EFFICIENCY : 34.3991 COUNT DATE : 12-FEB-2010 12:51:05 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_PU BKG FILE : B047.CNF;1109 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W047.CNF;303 CAL DATE : 3-FEB-2010 |
|---|---|---|

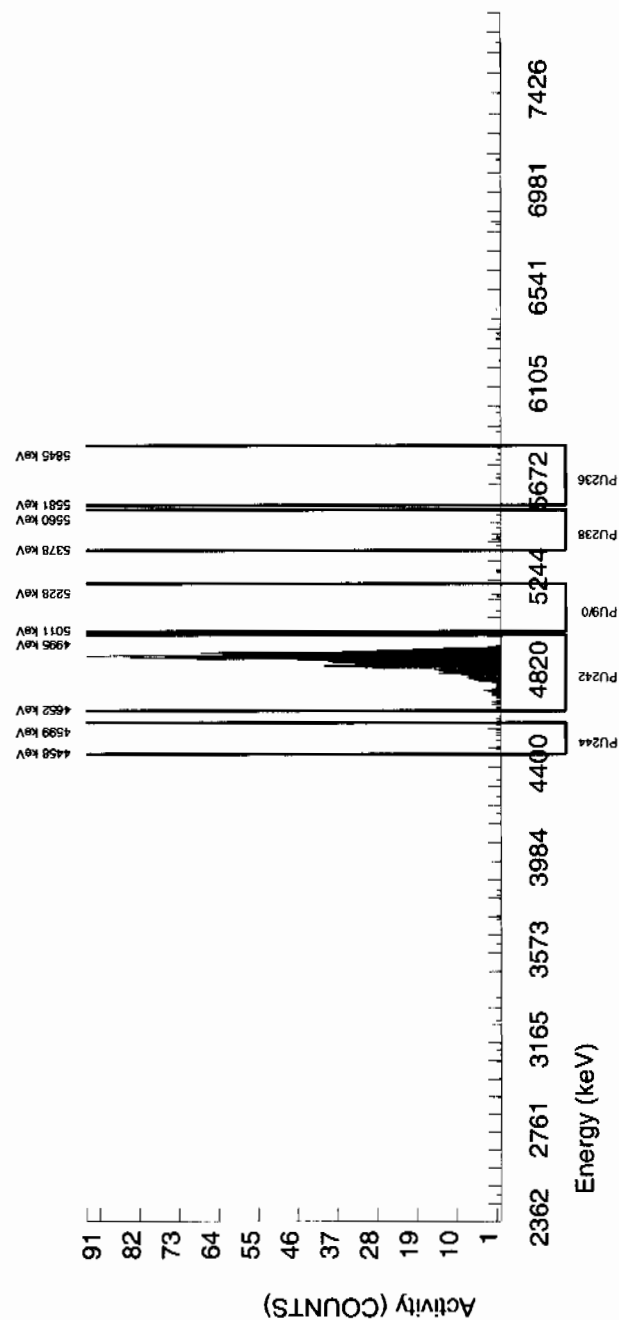
| | | |
|--|---|---|
| TRACER ID : 1374-A NUCLIDE : PU242 NOMINAL : 3.3854E+00 dpm RESULTS : 3.0553E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G |
|--|---|---|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5750.766 | 154.012 | 7.000 | 1.000 | 6.000 | 2.6925 | 100.0000 | 1.18E-03 | 4.26E-03 | 7.27E-03 | 1.77E-02 | 4.26E-03 |
| PU-238 | 5499.000 | 5455.414 | 29.809 | 9.000 | 3.000 | 6.000 | 2.9312 | 99.900000 | 3.49E-03 | 4.50E-03 | 7.92E-03 | 1.90E-02 | 4.50E-03 |
| PU-9/0 | 5155.000 | 5133.616 | 4.968 | 5.000 | 1.000 | 4.000 | 2.0604 | 99.900000 | 1.16E-03 | 3.48E-03 | 5.57E-03 | 1.43E-02 | 3.48E-03 |
| PU242 | 4890.000 | 4882.141 | 37.492 | 1056.000 | 1051.000 | 5.000 | 2.2361 | 100.0000 | 1.22E+00 | 7.21E-02 | 6.03E-03 | 1.52E-02 | 3.78E-02 |
| PU-244 | 4589.000 | 4532.397 | 108.678 | 8.000 | 6.000 | 2.000 | 3.7241 | 99.900000 | 6.97E-03 | 3.69E-03 | 1.01E-02 | 2.33E-02 | 3.67E-03 |

NOTES:

* Sg calculated via blank population.
(Sg updated 10-FEB-2010)
* Sg of PU242 calculated as sqrt(BKG AREA).



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | | |
|---|--|---|
| BATCH NUMBER : 944980 SAMPLE ID : S0245393001_PU SAMPLE QTY : 1.272 G SAMPLE DATE : 19-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 85.857 | CHAMBER : 048 DETECTOR S/N : 42483 AVERAGE %EFFICIENCY : 32.0990 COUNT DATE : 12-FEB-2010 12:51:05 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_PU BKG FILE : B048.CNF;1110 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W048.CNF;316 CAL DATE : 3-FEB-2010 |
|---|--|---|

| | | |
|--------------------------|----------------------------|----------------------------|
| TRACER | MS/MSD | LCS/LCSD |
| ID : 1374-A | ID : 0244-B | ID : 0244-B |
| NUCLIDE : PU242 | NUCLIDE : PU-9/0 | NUCLIDE : PU-9/0 |
| NOMINAL : 3.3854E+00 dpm | NOMINAL : 4.1778E+01 pCi/G | NOMINAL : 4.1778E+01 pCi/G |
| RESULTS : 2.9066E+00 dpm | | |

NUCLIDE ACTIVITY SUMMARY

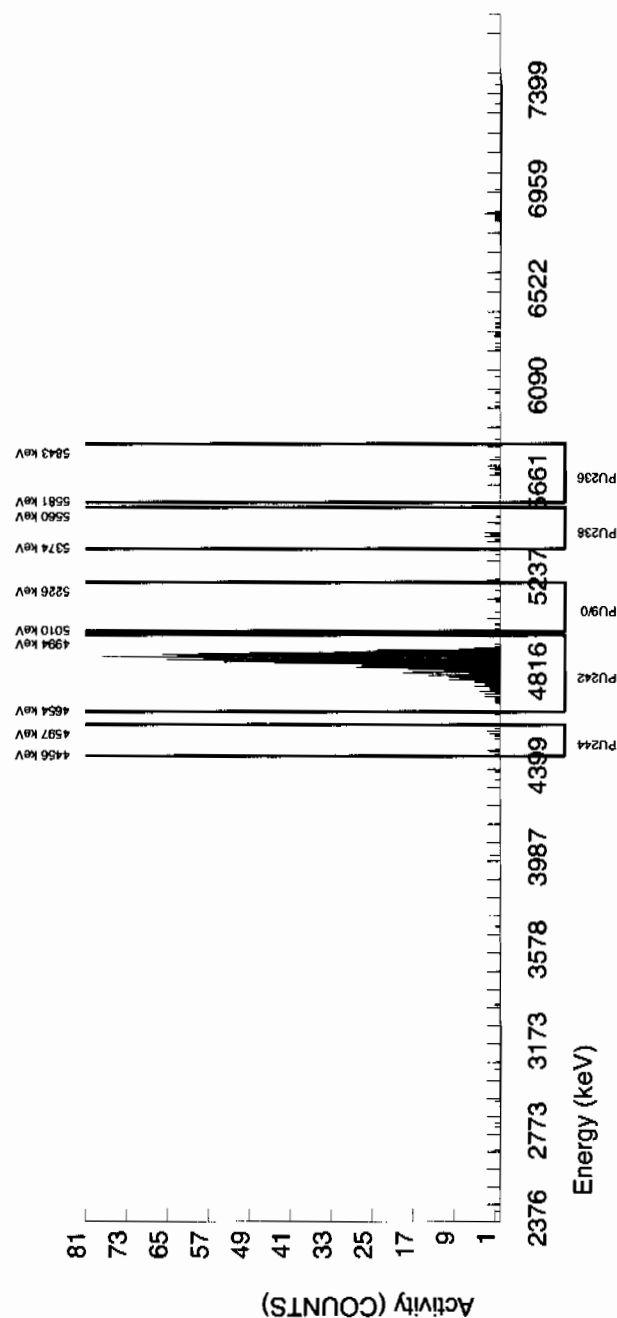
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5726.042 | 68.971 | 14.000 | -7.000 | 21.000 | 2.6925 | 100.0000 | -9.14E-03 | 7.73E-03 | 8.05E-03 | 1.96E-02 | 7.73E-03 |
| PU-238 | 5499.000 | 5448.819 | 24.628 | 15.000 | 2.000 | 13.000 | 2.9312 | 99.900000 | 2.57E-03 | 6.81E-03 | 8.77E-03 | 2.10E-02 | 6.81E-03 |
| PU-9/0 | 5155.000 | 5117.978 | 0.000 | 8.000 | 0.000 | 8.000 | 2.0604 | 99.900000 | 0.00E+00 | 5.15E-03 | 6.17E-03 | 1.58E-02 | 5.15E-03 |
| PU242 | 4890.000 | 4879.716 | 47.398 | 936.000 | 933.000 | 3.000 | 1.7321 | 100.0000 | 1.20E+00 | 7.33E-02 | 5.18E-03 | 1.38E-02 | 3.94E-02 |
| PU-244 | 4589.000 | 4514.823 | 78.839 | 13.000 | 12.000 | 1.000 | 3.7241 | 99.900000 | 1.54E-02 | 4.88E-03 | 1.11E-02 | 2.58E-02 | 4.81E-03 |

NOTES:

* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

* Sg of PU242 calculated as $\sqrt{\text{BKG AREA}}$.



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | |
|----------------|----------------------|
| BATCH NUMBER : | 944980 |
| SAMPLE ID : | S1202023760_PU |
| SAMPLE QTY : | 1.000 G |
| SAMPLE DATE : | 29-JAN-2010 00:00:00 |
| ANALYST : | HAKB |
| % YIELD : | 88.331 |

| | | |
|------------------------|---|---------------------|
| CHAMBER | : | 097 |
| DETECTOR S/N | : | 67599 |
| AVERAGE %EFFICIENCY | : | 34.6778 |
| COUNT DATE | : | 2-FEB-2010 15:01:57 |
| ELAPSED LIVE TIME(SEC) | : | 60000.00 |

```
LIB FILE      : ENV_ALPHA_PU
BKG FILE     : B097.CNF:671
BKG DATE     : 31-JAN-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE     : W097.CNF:191
CAL DATE     : 11-JAN-2010
```

| | | |
|---------|---|----------------|
| TRACER | : | 1374-A |
| ID | : | PU242 |
| NUCLIDE | : | 3.3854E+00 dpm |
| NOMINAL | : | 2.9904E+00 dpm |
| RESULTS | : | |

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

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

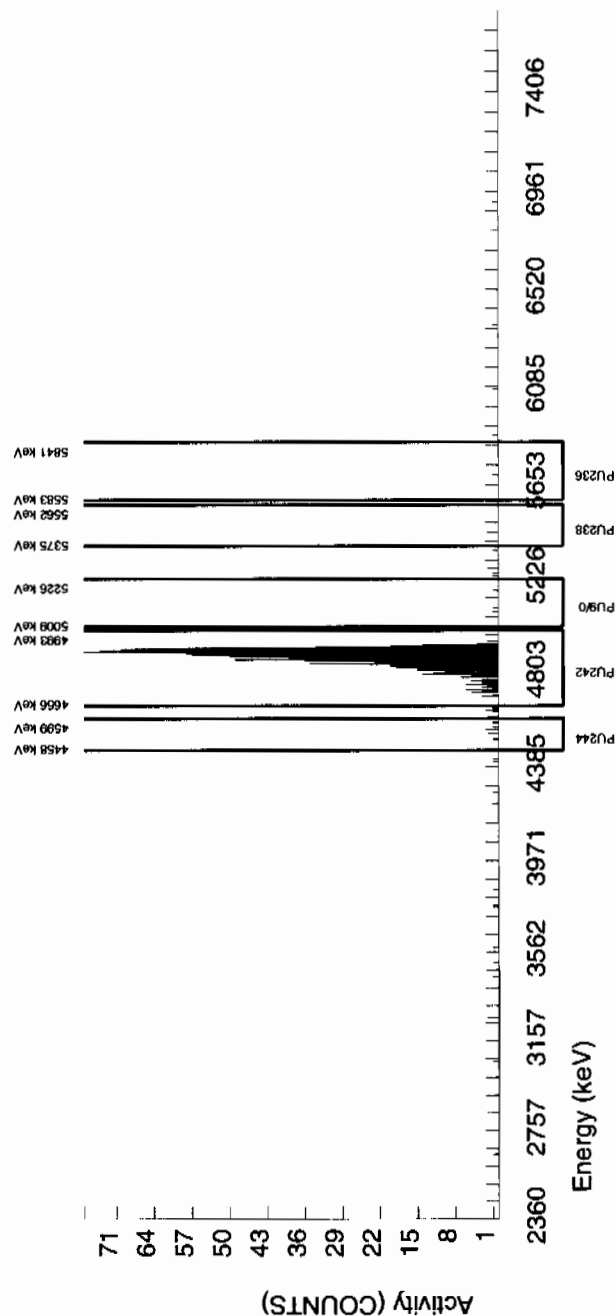
NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG | %ABUN | ACTIVITY pCi/g | TPU 1-SIGMA | DLC pCi/g | MDC pCi/g | UNC pCi/g |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5701.329 | 4.923 | 1.000 | -5.000 | 6.000 | 2.6925 | 100.0000 | -7.38E-03 | 3.90E-03 | 9.21E-03 | 2.24E-02 | 3.90E-03 |
| PU-238 | 5499.000 | 5444.256 | 4.923 | 2.000 | -3.000 | 5.000 | 2.9312 | 99.900000 | -4.42E-03 | 3.90E-03 | 1.00E-02 | 2.41E-02 | 3.90E-03 |
| PU-9/0 | 5155.000 | 5119.860 | 93.528 | 3.000 | 2.000 | 1.000 | 2.0604 | 99.900000 | 2.94E-03 | 2.95E-03 | 7.06E-03 | 1.81E-02 | 2.94E-03 |
| PU242 | 4890.000 | 4875.081 | 57.355 | 1041.000 | 1037.000 | 4.000 | 2.0000 | 100.0000 | 1.52E+00 | 9.06E-02 | 6.84E-03 | 1.77E-02 | 4.75E-02 |
| PU-244 | 4589.000 | 4559.378 | 0.000 | 9.000 | 8.000 | 1.000 | 3.7241 | 99.900000 | 1.18E-02 | 4.69E-03 | 1.28E-02 | 2.95E-02 | 4.65E-03 |

NOTES:

* Sg calculated via blank population.
(Sg updated 10-FEB-2010)

* Sg of PU242 calculated as $\sqrt{\text{BKG AREA}}$.



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | | |
|---|--|--|--|
| BATCH NUMBER : 944980 SAMPLE ID : S1202023761_PU SAMPLE QTY : 1.273 G SAMPLE DATE : 19-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 88.505 | | CHAMBER : 099 DETECTOR S/N : 70317 AVERAGE %EFFICIENCY : 33.9756 COUNT DATE : 2-FEB-2010 15:01:57 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_PU BKG FILE : B099.CNF:674 BKG DATE : 31-JAN-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W099.CNF:191 CAL DATE : 11-JAN-2010 |
|---|--|--|--|

| | | |
|---|---|---|
| TRACER ID : 1374-A NUCLIDE : PU242 NOMINAL : 3.3854E+00 dpm RESULTS : 2.9963E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G |
|---|---|---|

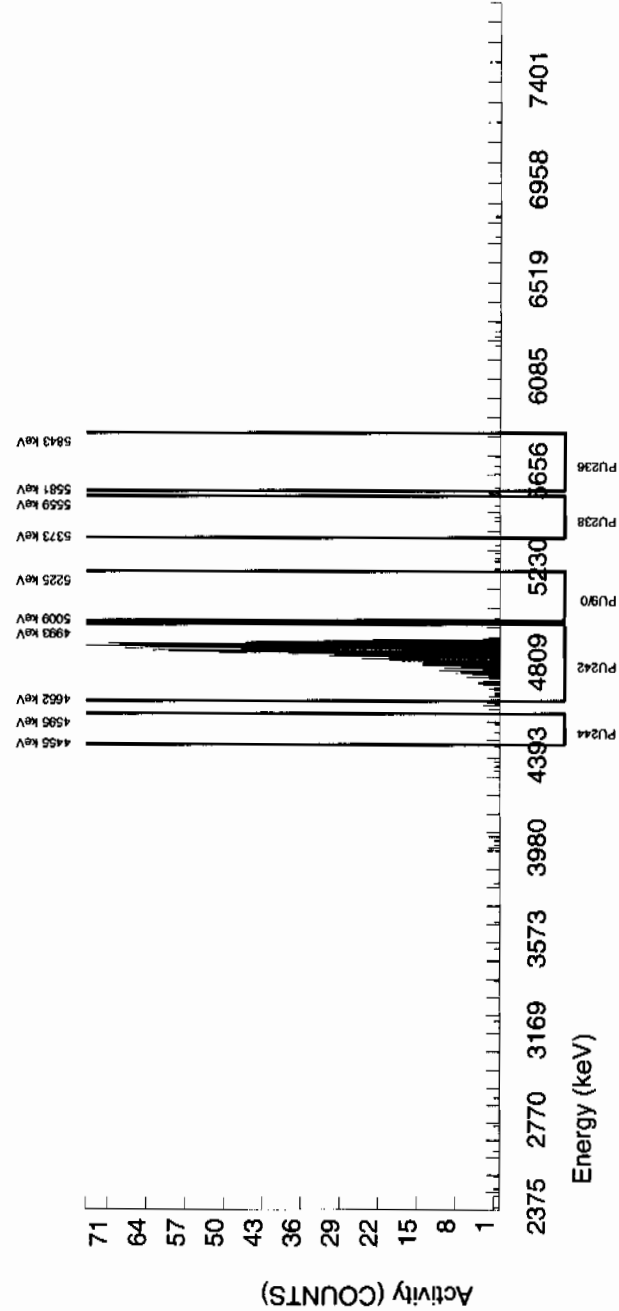
NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5659.829 | 142.258 | 5.000 | 5.000 | 0.000 | 2.6925 | 100.0000 | 5.94E-03 | 2.67E-03 | 7.37E-03 | 1.79E-02 | 2.66E-03 |
| PU-238 | 5499.000 | 5452.956 | 137.352 | 6.000 | 6.000 | 0.000 | 2.9312 | 99.90000 | 7.07E-03 | 2.91E-03 | 8.03E-03 | 1.93E-02 | 2.89E-03 |
| PU-9/0 | 5155.000 | 5124.524 | 0.000 | 2.000 | -1.000 | 3.000 | 2.0604 | 99.90000 | -1.18E-03 | 2.63E-03 | 5.65E-03 | 1.45E-02 | 2.63E-03 |
| PU242 | 4890.000 | 4874.057 | 55.319 | 1018.000 | 1018.000 | 0.000 | 0.0000 | 100.0000 | 1.20E+00 | 7.13E-02 | 0.00E+00 | 3.19E-03 | 3.75E-02 |
| PU-244 | 4589.000 | 4536.605 | 53.347 | 4.000 | 4.000 | 0.000 | 3.7241 | 99.90000 | 4.71E-03 | 2.37E-03 | 1.02E-02 | 2.36E-02 | 2.36E-03 |

NOTES:

* Sg calculated via blank population.
(Sg updated 10-FEB-2010)

* Sg of PU242 calculated as sqrt(BKG AREA).



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

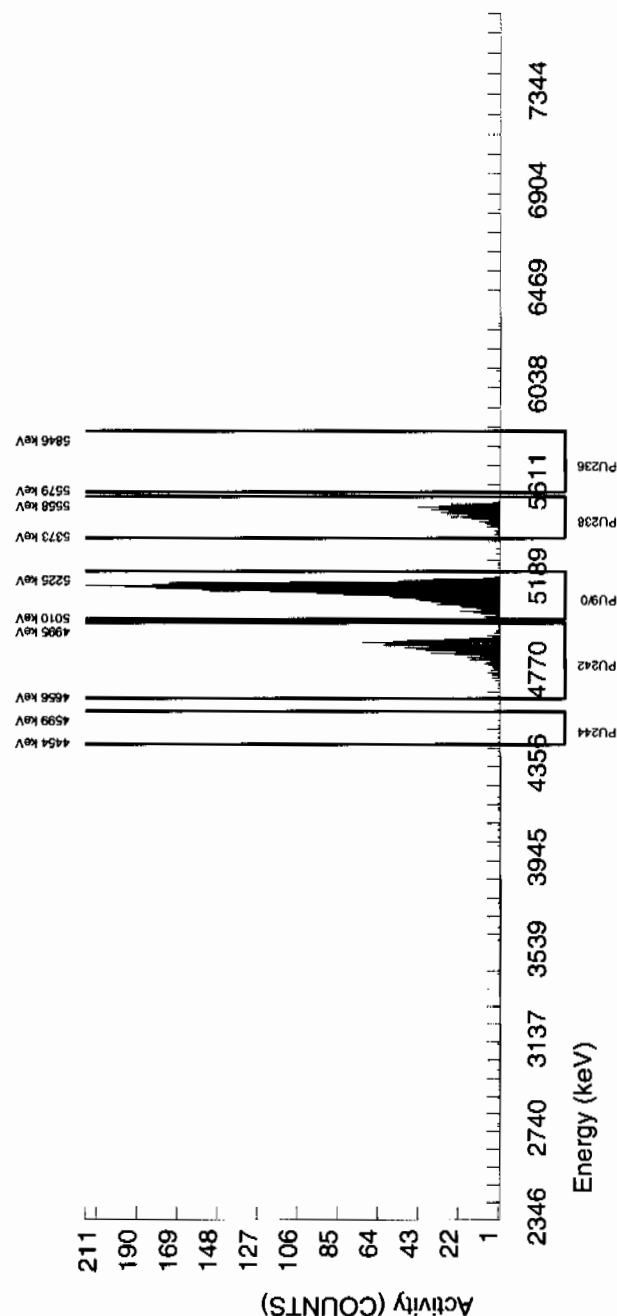
| | | | |
|---|--|---|--|
| BATCH NUMBER : 944980 SAMPLE ID : S1202023762_PU SAMPLE QTY : 0.119 G SAMPLE DATE : 29-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 71.996 | | CHAMBER : 100 DETECTOR S/N : 79456 AVERAGE %EFFICIENCY : 33.7658 COUNT DATE : 2-FEB-2010 15:01:57 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_PU BKG FILE : B100.CNF:675 BKG DATE : 31-JAN-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W100.CNF:199 CAL DATE : 11-JAN-2010 |
|---|--|---|--|

| | | |
|--|---|---|
| TRACER ID : 1374-A NUCLIDE : PU242 NOMINAL : 3.3854E+00 dpm RESULTS : 2.4374E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G |
|--|---|---|

| NUCLIDE ACTIVITY SUMMARY | | | | | | | | | | | |
|--------------------------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | UNC pCi/G |
| PU-236 | 5749.000 | 5781.562 | 4.894 | 1.000 | 1.000 | 0.000 | 2.6925 | 100.0000 | 1.56E-02 | 1.56E-02 | 1.56E-02 |
| PU-238 | 5499.000 | 5490.769 | 57.981 | 454.000 | 453.000 | 1.000 | 2.9312 | 99.900000 | 7.06E+00 | 5.35E-01 | 3.33E-01 |
| PU-9/0 | 5155.000 | 5144.122 | 46.337 | 2500.000 | 2499.000 | 1.000 | 2.0604 | 99.900000 | 3.90E+01 | 2.44E+00 | 7.79E-01 |
| PU242 | 4890.000 | 4883.486 | 48.125 | 824.000 | 823.000 | 1.000 | 1.0000 | 100.0000 | 1.28E+01 | 8.83E-01 | 4.47E-01 |
| PU-244 | 4589.000 | 4507.354 | 102.162 | 8.000 | 8.000 | 0.000 | 3.7241 | 99.900000 | 1.25E-01 | 4.47E-02 | 4.41E-02 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-2010)
- * Sg of PU242 calculated as sqrt(BKG AREA).



Radiochemistry Batch Checklist, Rev10

Batch#

949544

Product: 11

Date:

2/15/10

| Criteria: | Yes | No | Comments |
|---|-----|----|----------|
| Sample Solids are less than or equal to 100 mg for GAS. | | | N/A |
| Samples have been blank corrected (if required) | ✓ | | |
| If activity less 10 ⁶ MDA/ MDC, error is 150% or less of sample activity. If greater 10 ⁶ MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay. | ✓ | | |
| Instrument source check is within limits. | ✓ | | |
| Instrument bug check is within limits. | ✓ | | |
| Method RDL/ LLD has been met. | ✓ | | |
| If duplicate activities are less 5 ⁶ MDA/ MDC, then RPD is 100% or less. If greater 5 ⁶ 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. | ✓ | | |
| 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 out initiated and dated. | ✓ | | |
| No transcription errors are apparent. | | | |
| Aux data is correct. | | | N/A |
| Client Special requirements page has been checked. | ✓ | | |
| Raw Data and/ or spectrum are included and properly stored. | ✓ | | |
| QC data entered into QC database and batch is in REVW | ✓ | | |
| Hlt notification complete (if necessary) | | | N/A |
| Batch entered into Case Narrative. | ✓ | | |
| Batch Data Exception Reports (DER) completed, if applicable. | | | N/A |
| Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed. | | | N/A |
| Aliquot Correction completed if required. | | | N/A |
| Review sample historical results if available (If REMF, results above MDC have been verified by historical results, recount or re-analysis.) | ✓ | | |

GEL Laboratories, LLC

RADcheckRev10, revised 1/13/2010

Primary Review Performed By:

Debbie Brown 2/15/10

Secondary Review Performed By:

Bill Bullitt 2/16/10

2/20
LANC

Uranium Que Sheet

05-FEB-10

Batch #: 949544 Analyst: HAKB First Client Due Date: 20-FEB-10 Internal Due Date: 4-FEB-10
 Tracer Isotope: U-232 U-236 Tracer Code: 1283-H Expiration Date: 12/9/10 Vol: 0.1
 LCS Isotope: U-238 LCS Code: 804W 0244-A Expiration Date: 10/31/20 Vol: 0.1053
 Spike Isotope: U-238 Spike Code: N/A Expiration Date: N/A Vol: N/A
 Prep Date: 2/5/10 Initials: SLK/B Pipet ID: 2977058 Balance ID: 19350708

Witness: QAD 02/15/10

| Sample ID | Client Description | Type | Hazard Code | Min CRDL | Matrix | Client | Collection Date | Pos. | Label # | Wet/Dry | Allyquot (g/l/n) | U Det # |
|--------------|----------------------------|---------|-------------|------------------|--------|------------|-----------------|------|---------|---------|------------------|---------|
| 245388001-2 | RE14-10-7689 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 15-JAN-10 | 1 | 1 | 0.506 | 161 | |
| 245388002-2 | RE14-10-7679 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 15-JAN-10 | 2 | 2 | 0.504 | 163 | |
| 245388003-2 | RE14-10-7680 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 15-JAN-10 | 3 | 3 | 0.529 | 165 | |
| 245388004-2 | RE14-10-7686 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 15-JAN-10 | 4 | 4 | 0.500 | 167 | |
| 245388005-2 | RE14-10-7688 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 15-JAN-10 | 5 | 5 | 0.502 | 169 | |
| 245388006-2 | RE14-10-7684 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 15-JAN-10 | 6 | 6 | 0.506 | 171 | |
| 245388007-2 | RE14-10-7687 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 15-JAN-10 | 7 | 7 | 0.504 | 162 | |
| 245388008-2 | RE14-10-7681 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 15-JAN-10 | 8 | 8 | 0.517 | 164 | |
| 245388009-2 | RE14-10-7682 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 15-JAN-10 | 9 | 9 | 0.506 | 166 | |
| 245388010-2 | RE14-10-7685 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 15-JAN-10 | 10 | 10 | 0.512 | 168 | |
| 245388011-2 | RE14-10-7683 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 15-JAN-10 | 11 | 11 | 0.506 | 170 | |
| 245393001-2 | RE15-10-7918 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 19-JAN-10 | 12 | 12 | 0.522 | 172 | |
| 245393002-2 | RE15-10-7915 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 19-JAN-10 | 13 | 13 | 0.103 | 152 | |
| 245393003-2 | RE15-10-7920 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 19-JAN-10 | 14 | 14 | 0.509 | 153 | |
| 245393004-2 | RE15-10-7914 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 19-JAN-10 | 15 | 15 | 0.516 | 154 | |
| 245393005-2 | RE15-10-7919 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 19-JAN-10 | 16 | 16 | 0.273 | 155 | |
| 245393006-2 | RE15-10-7921 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 19-JAN-10 | 17 | 17 | 0.268 | 156 | |
| 245393007-2 | RE15-10-7916 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 19-JAN-10 | 18 | 18 | 0.534 | 145 | |
| 245393008-2 | RE15-10-7917 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 19-JAN-10 | 19 | 19 | 0.526 | 146 | |
| 245393009-2 | RE15-10-7922 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 19-JAN-10 | 20 | 20 | 0.264 | 148 | |
| 1202034406-1 | MB for batch 949544 | MB | | UCF pCi/g to pCi | SOIL | QC ACCOUNT | | 21 | 21 | 1 | 149 | |
| 1202034407-2 | RE15-10-7918(245393001DUP) | DUP | | .1 pCi/g | SOIL | QC ACCOUNT | 19-JAN-10 | 22 | 22 | 0.520 | 150 | |
| 1202034408-1 | LCS for batch 949544 | LCS SPW | | UCF pCi/g to pCi | SOIL | QC ACCOUNT | | 23 | 23 | 6.105 | 151 | |

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION
 Circle One

Data Reviewed By: QAD 2/15/10

Blank Correction Report

Batch ID 949544

| GEL Sample ID | Client sample ID | Parameter | Aliquot | Result | TPU | MDA | Aliquot Corrected Blank Result | Units | Activity <5X Corrected Blank |
|---------------|------------------|-----------------|---------|--------|---------|--------|--------------------------------|-------|------------------------------|
| 1202034407 | DUP | Uranium-233/234 | 0.520 g | 0.818 | 0.0802 | 0.0939 | .0325 | pCi/g | NO |
| | | Uranium-235/236 | 0.520 g | 0.0552 | 0.0184 | 0.0598 | .009038462 | pCi/g | NO |
| | | Uranium-238 | 0.520 g | 0.956 | 0.0904 | 0.0641 | .032884615 | pCi/g | NO |
| 1202034408 | LCS | Uranium-233/234 | 0.105 g | 7.33 | 0.677 | 0.475 | .160952381 | pCi/g | NO |
| | | Uranium-235/236 | 0.105 g | 0.396 | 0.101 | 0.303 | .044761905 | pCi/g | NO |
| | | Uranium-238 | 0.105 g | 5.97 | 0.570 | 0.325 | .162857143 | pCi/g | NO |
| 1202034406 | MB | Uranium-233/234 | 1.00 g | 0.0169 | 0.00639 | 0.0479 | .0169 | pCi/g | YES |
| | | Uranium-235/236 | 1.00 g | 0.0047 | 0.00576 | 0.0306 | .0047 | pCi/g | YES |
| | | Uranium-238 | 1.00 g | 0.0171 | 0.00696 | 0.0327 | .0171 | pCi/g | YES |
| 245388001 | RE14-10-7689 | Uranium-233/234 | 0.506 g | 1.07 | 0.0903 | 0.0643 | .033399209 | pCi/g | NO |
| | | Uranium-235/236 | 0.506 g | 0.145 | 0.024 | 0.041 | .009288538 | pCi/g | NO |
| | | Uranium-238 | 0.506 g | 1.08 | 0.0909 | 0.0439 | .033794466 | pCi/g | NO |
| 245388002 | RE14-10-7679 | Uranium-233/234 | 0.504 g | 1.08 | 0.0906 | 0.064 | .033531746 | pCi/g | NO |
| | | Uranium-235/236 | 0.504 g | 0.116 | 0.0206 | 0.0408 | .009325397 | pCi/g | NO |
| | | Uranium-238 | 0.504 g | 1.04 | 0.0875 | 0.0437 | .033928571 | pCi/g | NO |
| 245388003 | RE14-10-7680 | Uranium-233/234 | 0.529 g | 1.03 | 0.0888 | 0.0685 | .031947070 | pCi/g | NO |
| | | Uranium-235/236 | 0.529 g | 0.0906 | 0.0185 | 0.0437 | .008884688 | pCi/g | NO |
| | | Uranium-238 | 0.529 g | 0.996 | 0.0863 | 0.0468 | .032325142 | pCi/g | NO |
| 245388004 | RE14-10-7686 | Uranium-233/234 | 0.500 g | 1.18 | 0.0975 | 0.0636 | .0338 | pCi/g | NO |
| | | Uranium-235/236 | 0.500 g | 0.115 | 0.021 | 0.0406 | .0094 | pCi/g | NO |
| | | Uranium-238 | 0.500 g | 1.18 | 0.0973 | 0.0434 | .0342 | pCi/g | NO |
| 245388005 | RE14-10-7688 | Uranium-233/234 | 0.502 g | 1.11 | 0.0923 | 0.0619 | .033665339 | pCi/g | NO |
| | | Uranium-235/236 | 0.502 g | 0.0939 | 0.0185 | 0.0394 | .009362550 | pCi/g | NO |
| | | Uranium-238 | 0.502 g | 1.26 | 0.102 | 0.0422 | .034063745 | pCi/g | NO |
| 245388006 | RE14-10-7684 | Uranium-233/234 | 0.506 g | 1.01 | 0.0848 | 0.0611 | .033399209 | pCi/g | NO |
| | | Uranium-235/236 | 0.506 g | 0.105 | 0.0204 | 0.0389 | .009288538 | pCi/g | NO |
| | | Uranium-238 | 0.506 g | 1.07 | 0.0895 | 0.0417 | .033794466 | pCi/g | NO |
| 245388007 | RE14-10-7687 | Uranium-233/234 | 0.504 g | 0.948 | 0.0832 | 0.0703 | .033531746 | pCi/g | NO |
| | | Uranium-235/236 | 0.504 g | 0.0998 | 0.0198 | 0.0448 | .009325397 | pCi/g | NO |
| | | Uranium-238 | 0.504 g | 1.15 | 0.0973 | 0.048 | .033928571 | pCi/g | NO |
| 245388008 | RE14-10-7681 | Uranium-233/234 | 0.517 g | 0.980 | 0.0832 | 0.0624 | .032688588 | pCi/g | NO |
| | | Uranium-235/236 | 0.517 g | 0.110 | 0.0198 | 0.0398 | .009090909 | pCi/g | NO |
| | | Uranium-238 | 0.517 g | 1.01 | 0.085 | 0.0426 | .033075435 | pCi/g | NO |
| 245388009 | RE14-10-7682 | Uranium-233/234 | 0.506 g | 1.05 | 0.0889 | 0.065 | .033399209 | pCi/g | NO |
| | | Uranium-235/236 | 0.506 g | 0.0986 | 0.019 | 0.0414 | .009288538 | pCi/g | NO |
| | | Uranium-238 | 0.506 g | 1.12 | 0.0936 | 0.0443 | .033794466 | pCi/g | NO |
| 245388010 | RE14-10-7685 | Uranium-233/234 | 0.512 g | 1.25 | 0.105 | 0.0728 | .033007813 | pCi/g | NO |
| | | Uranium-235/236 | 0.512 g | 0.114 | 0.0217 | 0.0464 | .009179688 | pCi/g | NO |
| | | Uranium-238 | 0.512 g | 1.28 | 0.107 | 0.0497 | .033398438 | pCi/g | NO |
| 245388011 | RE14-10-7683 | Uranium-233/234 | 0.506 g | 1.07 | 0.0911 | 0.0681 | .033399209 | pCi/g | NO |
| | | Uranium-235/236 | 0.506 g | 0.0833 | 0.0182 | 0.0434 | .009288538 | 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 |
|---------------|------------------|-----------------|---------|--------|--------|--------|--------------------------------------|-------|------------------------------------|
| 245388011 | RE14-10-7683 | Uranium-238 | 0.506 g | 1.40 | 0.114 | 0.0465 | .033794466 | pCi/g | NO |
| 245393001 | RE15-10-7918 | Uranium-233/234 | 0.522 g | 0.699 | 0.0629 | 0.0601 | .032375479 | pCi/g | NO |
| | | Uranium-235/236 | 0.522 g | 0.0677 | 0.0154 | 0.0383 | .009003831 | pCi/g | NO |
| | | Uranium-238 | 0.522 g | 0.845 | 0.0732 | 0.041 | .032758621 | pCi/g | NO |
| 245393002 | RE15-10-7915 | Uranium-233/234 | 0.103 g | 8.54 | 0.783 | 0.504 | .164077670 | pCi/g | NO |
| | | Uranium-235/236 | 0.103 g | 1.28 | 0.204 | 0.321 | .045631068 | pCi/g | NO |
| | | Uranium-238 | 0.103 g | 68.0 | 5.41 | 0.344 | .168019417 | pCi/g | NO |
| 245393003 | RE15-10-7920 | Uranium-233/234 | 0.509 g | 2.07 | 0.172 | 0.0983 | .033202358 | pCi/g | NO |
| | | Uranium-235/236 | 0.509 g | 0.207 | 0.0348 | 0.0627 | .008233792 | pCi/g | NO |
| | | Uranium-238 | 0.509 g | 10.3 | 0.757 | 0.0671 | .033595285 | pCi/g | NO |
| 245393004 | RE15-10-7914 | Uranium-233/234 | 0.516 g | 1.00 | 0.0954 | 0.101 | .032751938 | pCi/g | NO |
| | | Uranium-235/236 | 0.516 g | 0.0643 | 0.0197 | 0.0644 | .009108527 | pCi/g | NO |
| | | Uranium-238 | 0.516 g | 2.63 | 0.214 | 0.0689 | .033139535 | pCi/g | NO |
| 245393005 | RE15-10-7919 | Uranium-233/234 | 0.273 g | 4.81 | 0.394 | 0.187 | .061904762 | pCi/g | NO |
| | | Uranium-235/236 | 0.273 g | 0.650 | 0.0912 | 0.119 | .017216117 | pCi/g | NO |
| | | Uranium-238 | 0.273 g | 29.4 | 2.16 | 0.128 | .062637363 | pCi/g | NO |
| 245393006 | RE15-10-7921 | Uranium-233/234 | 0.268 g | 4.94 | 0.405 | 0.190 | .063059701 | pCi/g | NO |
| | | Uranium-235/236 | 0.268 g | 0.606 | 0.088 | 0.121 | .017537313 | pCi/g | NO |
| | | Uranium-238 | 0.268 g | 29.2 | 2.15 | 0.130 | .063805970 | pCi/g | NO |
| 245393007 | RE15-10-7916 | Uranium-233/234 | 0.534 g | 1.02 | 0.0945 | 0.088 | .031647940 | pCi/g | NO |
| | | Uranium-235/236 | 0.534 g | 0.0732 | 0.0185 | 0.0561 | .008801498 | pCi/g | NO |
| | | Uranium-238 | 0.534 g | 3.46 | 0.272 | 0.0601 | .032022472 | pCi/g | NO |
| 245393008 | RE15-10-7917 | Uranium-233/234 | 0.526 g | 1.04 | 0.0976 | 0.0976 | .032129278 | pCi/g | NO |
| | | Uranium-235/236 | 0.526 g | 0.115 | 0.0257 | 0.0623 | .008935361 | pCi/g | NO |
| | | Uranium-238 | 0.526 g | 1.83 | 0.155 | 0.0667 | .032509506 | pCi/g | NO |
| 245393009 | RE15-10-7922 | Uranium-233/234 | 0.264 g | 3.27 | 0.285 | 0.196 | .064015152 | pCi/g | NO |
| | | Uranium-235/236 | 0.264 g | 0.471 | 0.0766 | 0.125 | .017803030 | pCi/g | NO |
| | | Uranium-238 | 0.264 g | 16.6 | 1.25 | 0.134 | .064772727 | pCi/g | NO |

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | | |
|---|--|--|--|
| BATCH NUMBER : 949544 SAMPLE ID : S0245388001_UU SAMPLE QTY : 0.506 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 94.906 | | CHAMBER : 161 DETECTOR S/N : 70321 AVERAGE %EFFICIENCY : 36.7974 COUNT DATE : 12-FEB-2010 13:57:54 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_UU BKG FILE : B161.CNF;170 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W161.CNF;60 CAL DATE : 21-JAN-2010 |
|---|--|--|--|

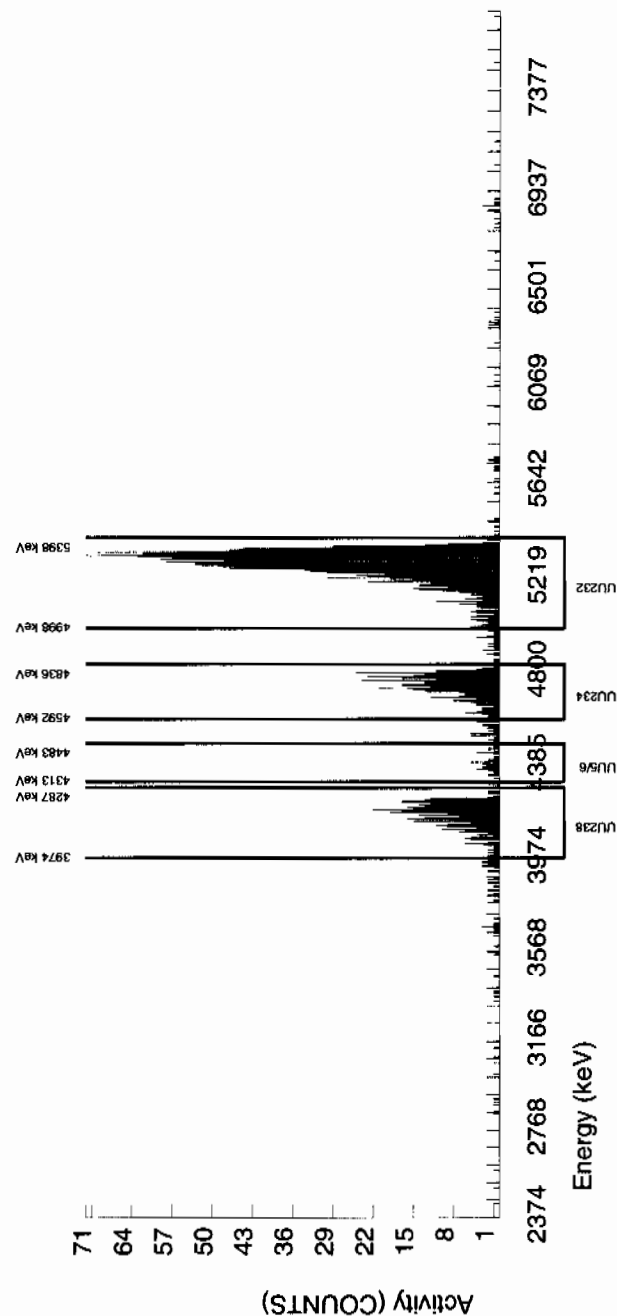
| | | |
|---|--|--|
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5078E+00 dpm RESULTS : 4.2782E+00 dpm | MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G |
|---|--|--|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|----------|----------------|-------------|-----------|-----------|-----------|
| U232 | 5302.100 | 5276.567 | 90.408 | 1578.000 | 1573.000 | 5.000 | 2.2361 | 100.0000 | 4.01E+00 | 2.93E-01 | 1.33E-02 | 3.34E-02 | 1.02E-01 |
| U-3/4 | 4763.020 | 4743.579 | 83.079 | 423.000 | 421.408 | 0.000 | 4.8416 | 100.0000 | 1.07E+00 | 9.03E-02 | 2.87E-02 | 6.43E-02 | 5.23E-02 |
| U-235 | 4391.000 | 4405.381 | 74.613 | 47.000 | 46.000 | 1.000 | 2.2152 | 80.90000 | 1.45E-01 | 2.40E-02 | 1.62E-02 | 4.10E-02 | 2.18E-02 |
| U-238 | 4184.730 | 4166.160 | 100.804 | 425.000 | 425.000 | 0.000 | 3.1208 | 100.0000 | 1.08E+00 | 9.09E-02 | 1.85E-02 | 4.39E-02 | 5.26E-02 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-2010)
- * Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

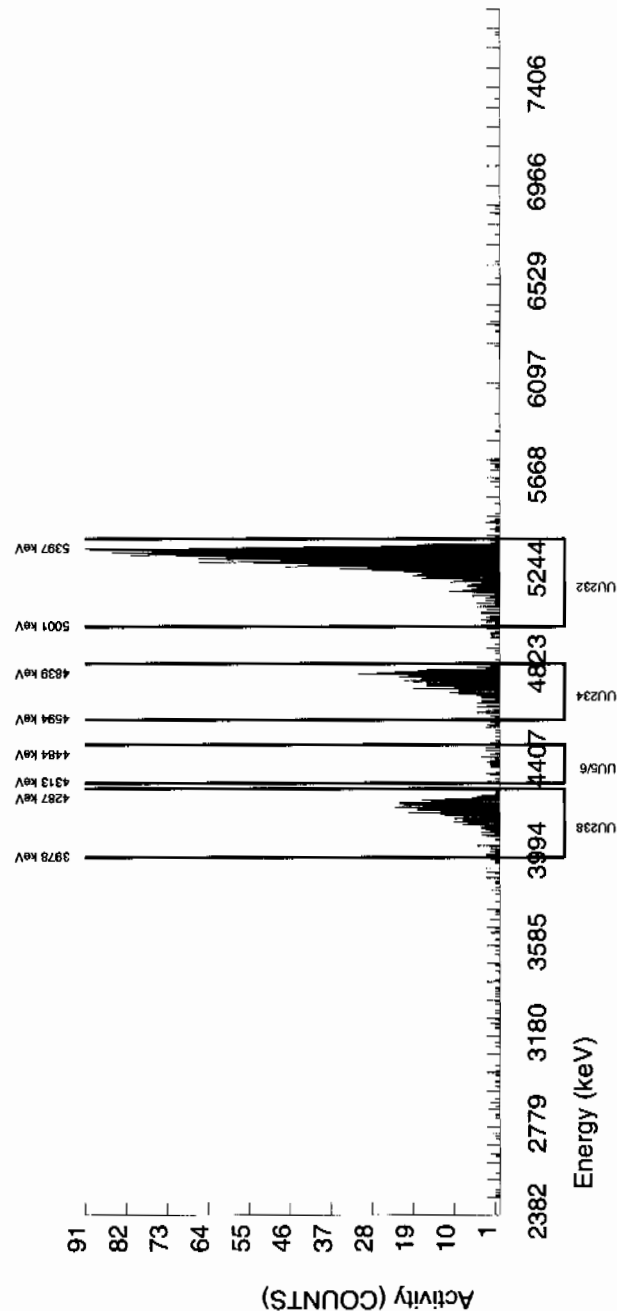
| | | | |
|---|--|--|--|
| BATCH NUMBER : 949544 SAMPLE ID : S0245388002_UU SAMPLE QTY : 0.504 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 93.134 | | CHAMBER : 163 DETECTOR S/N : 70324 AVERAGE %EFFICIENCY : 37.8552 COUNT DATE : 12-FEB-2010 13:57:59 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_UU BKG FILE : B163.CNF;171 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W163.CNF;55 CAL DATE : 21-JAN-2010 |
|---|--|--|--|

| | | |
|---|--|--|
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5078E+00 dpm RESULTS : 4.1983E+00 dpm | MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G |
|---|--|--|

| NUCLIDE ACTIVITY SUMMARY | | | | | | | | | | | |
|--------------------------|----------------|-------------|-----------|------------|----------|----------|--------|----------|----------------|-------------|-----------|
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | UNC pCi/G |
| U232 | 5302.100 | 5298.010 | 83.243 | 1594.000 | 1588.000 | 6.000 | 2.4495 | 100.0000 | 4.03E+00 | 2.94E-01 | 1.01E-01 |
| U-3/4 | 4763.020 | 4761.482 | 80.722 | 428.000 | 426.393 | 0.000 | 4.8416 | 100.0000 | 1.08E+00 | 9.06E-02 | 5.23E-02 |
| U-235 | 4391.000 | 4411.410 | 115.698 | 37.000 | 37.000 | 0.000 | 2.2152 | 80.90000 | 1.16E-01 | 2.06E-02 | 1.91E-02 |
| U-238 | 4184.730 | 4181.677 | 69.496 | 409.000 | 409.000 | 0.000 | 3.1208 | 100.0000 | 1.04E+00 | 8.75E-02 | 5.13E-02 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-2010)
- * Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|--|---|---|
| <p>BATCH NUMBER : 949544 SAMPLE ID : S0245388003_UU SAMPLE QTY : 0.529 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 83.557</p> | <p>CHAMBER : 165 DETECTOR S/N : 72544 AVERAGE %EFFICIENCY : 37.5440 COUNT DATE : 12-FEB-2010 13:58:06 ELAPSED LIVE TIME(SEC) : 60000.00</p> | <p>LIB FILE : ENV_ALPHA_UU BKG FILE : B165.CNF;168 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W165.CNF;55 CAL DATE : 21-JAN-2010</p> |
|--|---|---|

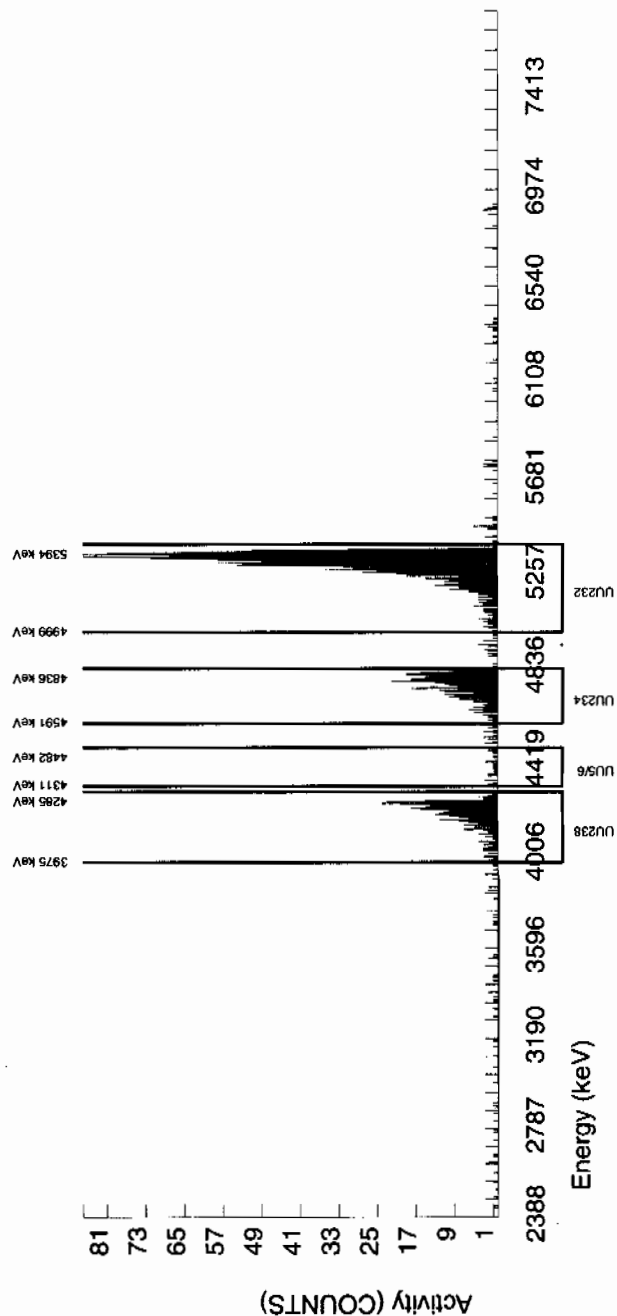
| | | |
|--|---|---|
| <p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5078E+00 dpm RESULTS : 3.7666E+00 dpm</p> | <p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> | <p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> |
|--|---|---|

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 | 5306.678 | 69.565 | 1418.000 | 1413.000 | 5.000 | 2.2361 | 100.0000 | 3.84E+00 | 2.84E-01 | 1.41E-02 | 3.56E-02 | 1.02E-01 |
| U-3/4 | 4763.020 | 4759.530 | 87.289 | 383.000 | 380.570 | 1.000 | 4.8416 | 100.0000 | 1.03E+00 | 8.88E-02 | 3.06E-02 | 6.85E-02 | 5.31E-02 |
| U-235 | 4391.000 | 4407.833 | 153.950 | 27.000 | 27.000 | 0.000 | 2.2152 | 80.90000 | 9.06E-02 | 1.85E-02 | 1.73E-02 | 4.37E-02 | 1.74E-02 |
| U-238 | 4184.730 | 4184.892 | 65.526 | 369.000 | 367.000 | 2.000 | 3.1208 | 100.0000 | 9.96E-01 | 8.63E-02 | 1.97E-02 | 4.68E-02 | 5.23E-02 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-2010)
- * Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



NOTES:

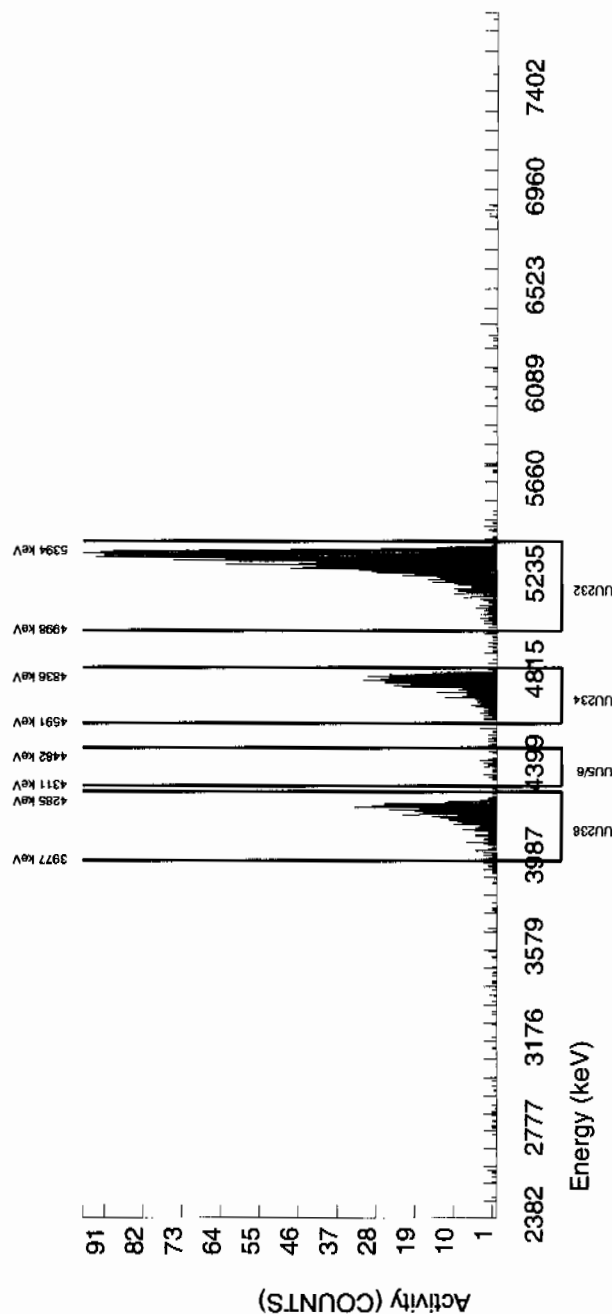
* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

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

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

U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|--|---|---|
| <p>BATCH NUMBER : 949544 SAMPLE ID : S0245388005_UU SAMPLE QTY : 0.502 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 97.299</p> | <p>CHAMBER : 169 DETECTOR S/N : 72548 AVERAGE %EFFICIENCY : 37.6264 COUNT DATE : 12-FEB-2010 13:58:17 ELAPSED LIVE TIME(SEC) : 60000.00</p> | <p>LIB FILE : ENV_ALPHA_UU BKG FILE : B169.CNF;171 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W169.CNF;65 CAL DATE : 21-JAN-2010</p> |
|--|---|---|

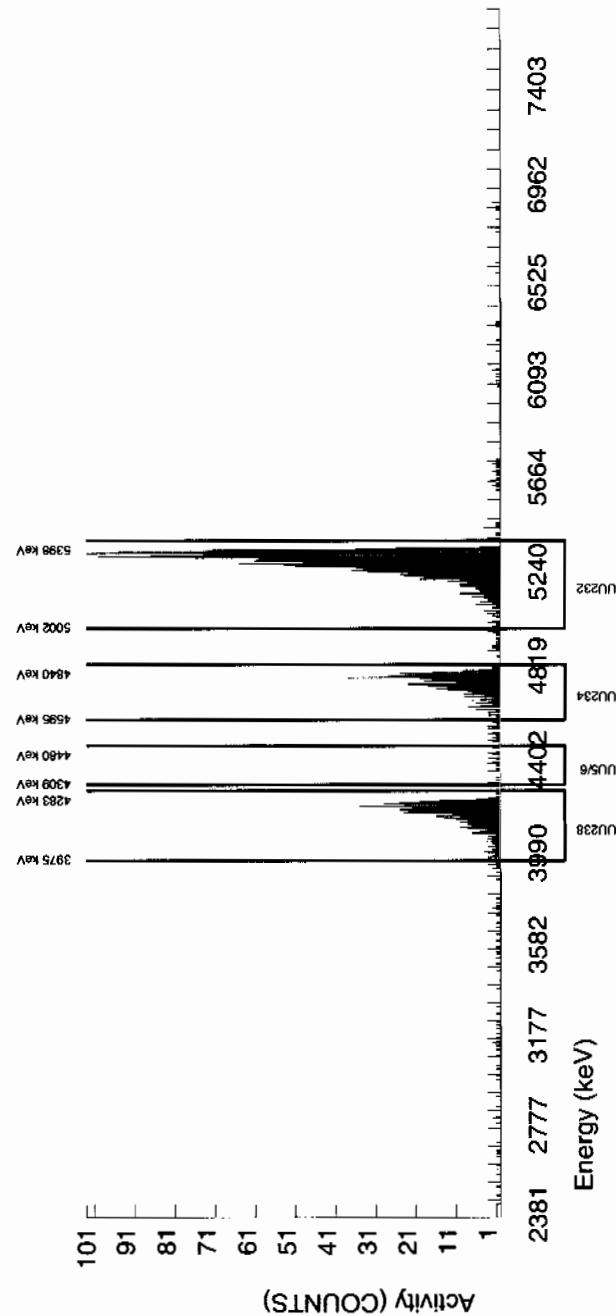
| | | |
|--|---|---|
| <p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5078E+00 dpm RESULTS : 4.3861E+00 dpm</p> | <p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> | <p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> |
|--|---|---|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|----------|----------------|-------------|-----------|-----------|-----------|
| U232 | 5302.100 | 5299.913 | 69.645 | 1652.000 | 1649.000 | 3.000 | 1.7321 | 100.0000 | 4.04E+00 | 2.93E-01 | 9.88E-03 | 2.64E-02 | 9.98E-02 |
| U-3/4 | 4763.020 | 4757.113 | 56.684 | 457.000 | 454.331 | 1.000 | 4.8416 | 100.0000 | 1.11E+00 | 9.23E-02 | 2.76E-02 | 6.19E-02 | 5.24E-02 |
| U-235 | 4391.000 | 4414.477 | 98.468 | 32.000 | 31.000 | 1.000 | 2.2152 | 80.90000 | 9.39E-02 | 1.85E-02 | 1.56E-02 | 3.94E-02 | 1.74E-02 |
| U-238 | 4184.730 | 4182.165 | 54.280 | 515.000 | 513.000 | 2.000 | 3.1208 | 100.0000 | 1.26E+00 | 1.02E-01 | 1.78E-02 | 4.22E-02 | 5.57E-02 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-2010)
- * Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | | |
|--------------|---|----------------------|
| BATCH NUMBER | : | 949544 |
| SAMPLE ID | : | S0245388006_UU |
| SAMPLE QTY | : | 0.506 G |
| SAMPLE DATE | : | 15-JAN-2010 00:00:00 |
| ANALYST | : | HAKB |
| % YIELD | : | 96.473 |

CHAMBER : 171
DETECTOR S/N : 78260
AVERAGE %EFFICIENCY : 38.1329
COUNT DATE : 12-FEB-2010 13:58:21
ELAPSED LIVE TIME(SEC) : 6000.00

| | | |
|--------------------|---|--------------|
| LIB FILE | : | ENV_ALPHA_UU |
| BKG FILE | : | B171.CNF:175 |
| BKG DATE | : | 7-FEB-2010 |
| BKG LIVE TIME(SEC) | : | 60000.00 |
| EFF FILE | : | W171.CNF:72 |
| CAL DATE | : | 21-JAN-2010 |

| | | |
|--------|---------|------------------|
| TRACER | ID | : 1283-H |
| | NUCLIDE | : U232 |
| | NOMINAL | : 4.5078E+00 dpm |
| | RESULTS | : 4.3488E+00 dpm |

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

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

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/g | TPU 1-SIGMA | DLC pCi/g | MDC pCi/g | UNC pCi/g |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|----------|----------------|-------------|-----------|-----------|-----------|
| U232 | 5302.100 | 5299.108 | 63.722 | 1671.000 | 1657.000 | 14.000 | 3.7417 | 100.0000 | 4.01E+00 | 2.91E-01 | 2.11E-02 | 4.87E-02 | 9.94E-02 |
| U-3/4 | 4763.020 | 4757.462 | 65.662 | 420.000 | 416.323 | 2.000 | 4.8416 | 100.0000 | 1.01E+00 | 8.48E-02 | 2.73E-02 | 6.11E-02 | 4.96E-02 |
| U-235 | 4391.000 | 4414.954 | 94.312 | 38.000 | 35.000 | 3.000 | 2.2152 | 80.90000 | 1.05E-01 | 2.04E-02 | 1.54E-02 | 3.89E-02 | 1.92E-02 |
| U-238 | 4184.730 | 4182.149 | 78.126 | 446.000 | 444.000 | 2.000 | 3.1208 | 100.0000 | 1.07E+00 | 8.95E-02 | 1.76E-02 | 4.17E-02 | 5.12E-02 |

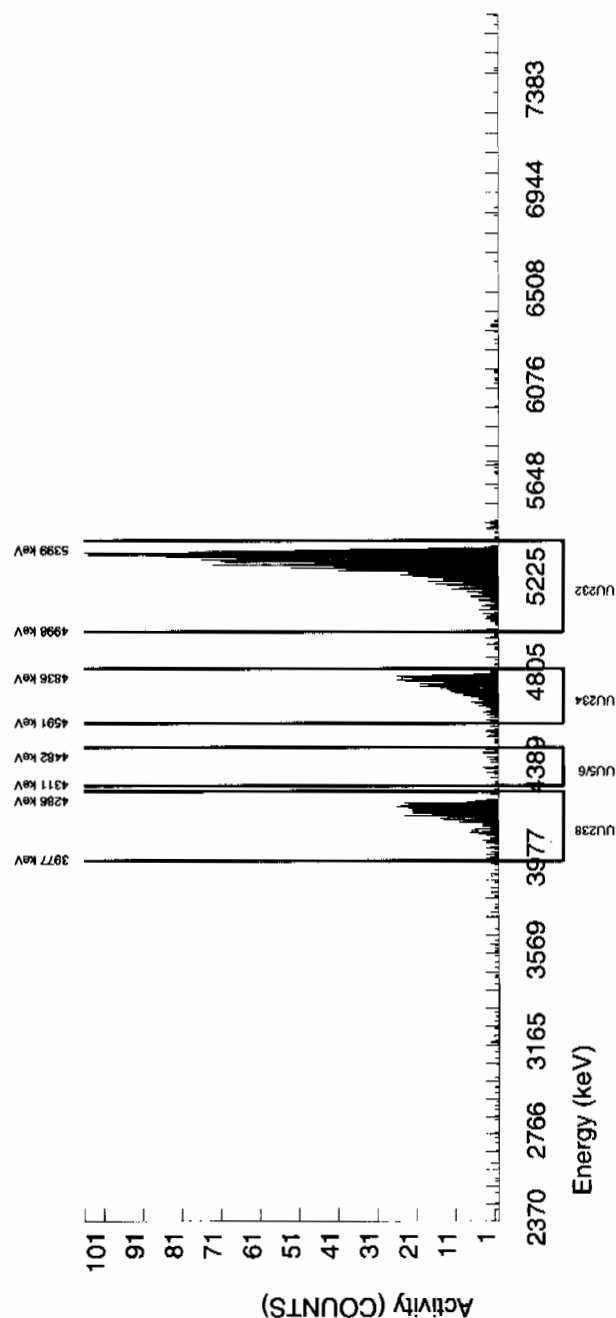
NOTES:

* Sq calculated via blank population.

(Sg updated 10-FEB-2010)

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

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | |
|----------------|----------------------|
| BATCH NUMBER : | 949544 |
| SAMPLE ID : | S0245388007_UU |
| SAMPLE QTY : | 0.504 G |
| SAMPLE DATE : | 15-JAN-2010 00:00:00 |
| ANALYST : | HAKB |
| % YIELD : | 86.568 |

| | |
|--------------------------|-------------|
| CHAMBER : | 162 |
| DETECTOR S/N : | 70323 |
| AVERAGE %EFFICIENCY : | 37.0846 |
| COUNT DATE : | 12-FEB-2000 |
| ELAPSED LIVE TIME(SEC) : | 60000.00 |

LIB FILE : ENV_ALPHA_UU
BKG FILE : B162.CNF;170
BKG DATE : 7-FEB-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : B162.CNF;66
CAL DATE : 21-JAN-2010

| | | |
|---------|---|----------------|
| TRACER | : | 1283-H |
| ID | : | U232 |
| NUCLIDE | : | 4.5078E+00 dpm |
| NOMINAL | : | 3.9023E+00 dpm |
| RESULTS | : | |

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

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

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|----------|----------|-------------|-----------|-----------|-----------|
| U232 | 5302.100 | 5298.439 | 71.498 | 1447.000 | 1446.000 | 1.000 | 1.0000 | 100.0000 | 4.03E+00 | 2.97E-01 | 6.48E-03 | 2.05E-02 | 1.06E-01 |
| U-3/4 | 4763.020 | 4750.217 | 82.433 | 343.000 | 340.537 | 1.000 | 4.8416 | 100.0000 | 9.48E-01 | 8.32E-02 | 3.14E-02 | 7.03E-02 | 5.15E-02 |
| U-235 | 4391.000 | 4417.777 | 7.189 | 29.000 | 29.000 | 0.000 | 2.2152 | 80.90000 | 9.98E-02 | 1.98E-02 | 1.77E-02 | 4.48E-02 | 1.85E-02 |
| U-238 | 4184.730 | 4185.289 | 77.043 | 413.000 | 413.000 | 0.000 | 3.1208 | 100.0000 | 1.15E+00 | 9.73E-02 | 2.02E-02 | 4.80E-02 | 5.66E-02 |

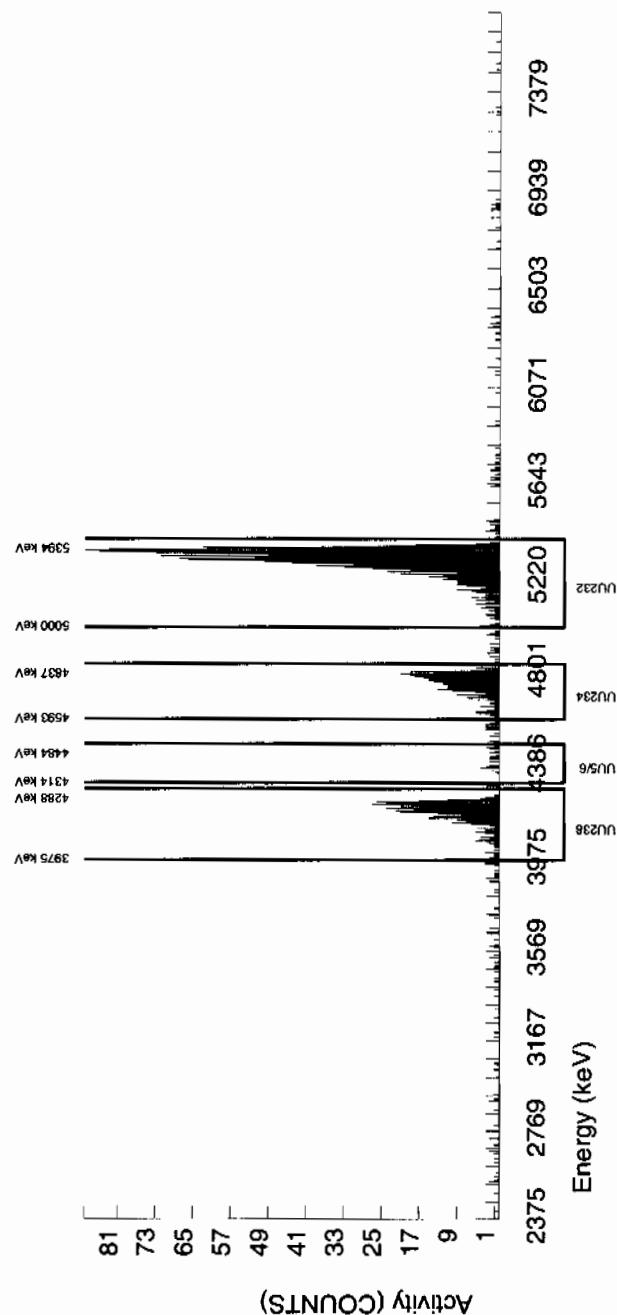
NOTES:

* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

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

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

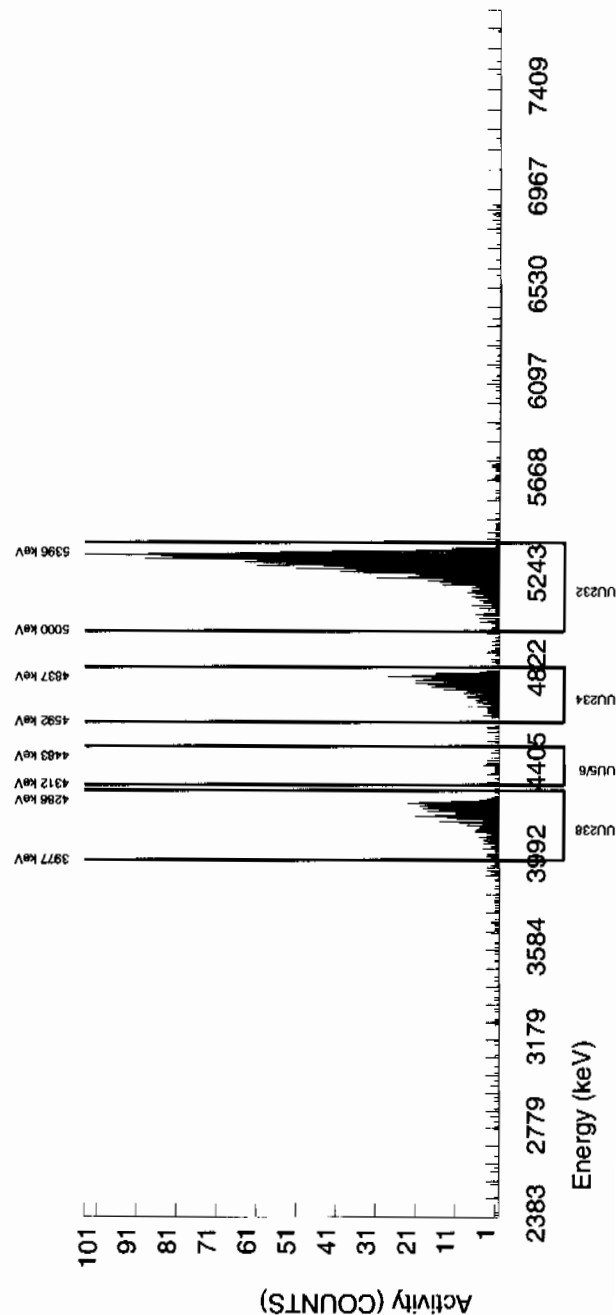
| | | | | | | | | | | | | | |
|---|----------------|--|-----------|--|----------|----------|--------|--|----------------|-------------|-----------|-----------|-----------|
| BATCH NUMBER : 949544 SAMPLE ID : S0245388008_UU SAMPLE QTY : 0.517 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 91.414 | | | | CHAMBER : 164 DETECTOR S/N : 70325 AVERAGE %EFFICIENCY : 38.5433 COUNT DATE : 12-FEB-2010 13:58:03 ELAPSED LIVE TIME(SEC) : 60000.00 | | | | LIB FILE : ENV_ALPHA_UU BKG FILE : B164.CNF:168 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W164.CNF:55 CAL DATE : 21-JAN-2010 | | | | | |
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5078E+00 dpm RESULTS : 4.1207E+00 dpm | | MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | | LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | | | | | | | | | |
| NUCLIDE ACTIVITY SUMMARY | | | | | | | | | | | | | |
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
| U232 | 5302.100 | 5294.853 | 57.880 | 1590.000 | 1587.000 | 3.000 | 1.7321 | 100.0000 | 3.93E+00 | 2.86E-01 | 9.96E-03 | 2.66E-02 | 9.88E-02 |
| U-3/4 | 4763.020 | 4753.418 | 62.362 | 398.000 | 396.394 | 0.000 | 4.8416 | 100.0000 | 9.80E-01 | 8.32E-02 | 2.79E-02 | 6.24E-02 | 4.92E-02 |
| U-235 | 4391.000 | 4397.439 | 62.363 | 36.000 | 36.000 | 0.000 | 2.2152 | 80.90000 | 1.10E-01 | 1.98E-02 | 1.58E-02 | 3.98E-02 | 1.83E-02 |
| U-238 | 4184.730 | 4175.527 | 92.427 | 407.000 | 407.000 | 0.000 | 3.1208 | 100.0000 | 1.01E+00 | 8.50E-02 | 1.80E-02 | 4.26E-02 | 4.99E-02 |

NOTES:

* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

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

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

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

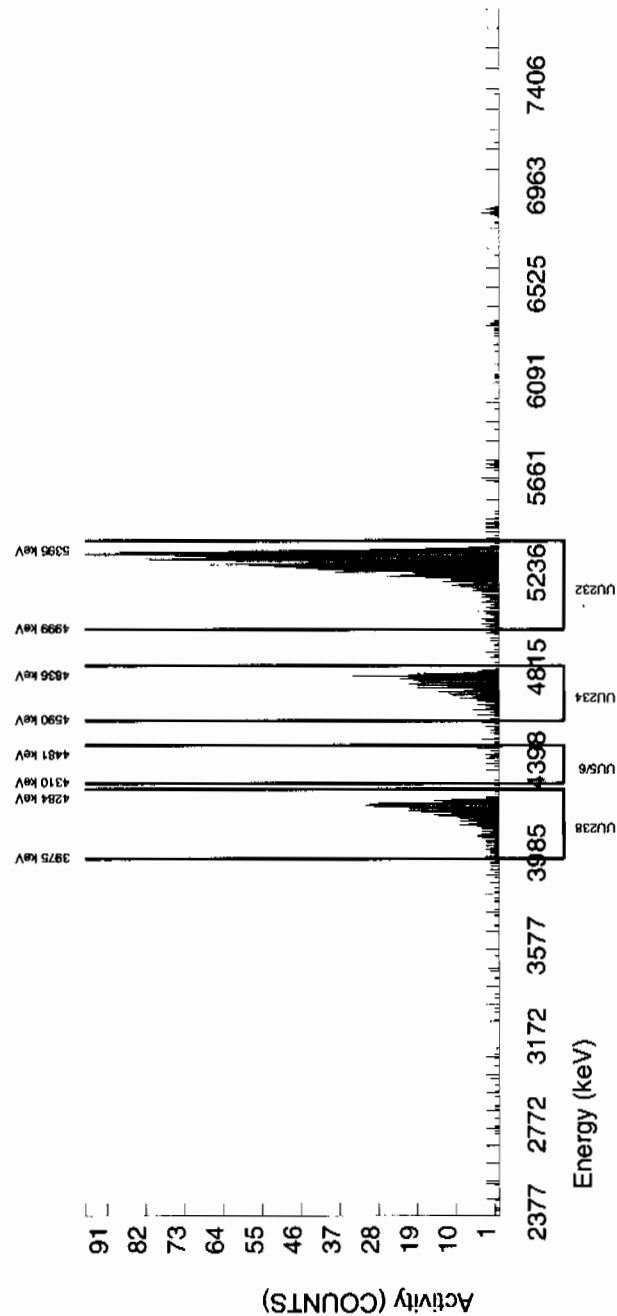
| | | | | | | | | | | | | | |
|---|----------------|-------------|-----------|--|----------|----------|--------|--|----------------|-------------|-----------|-----------|-----------|
| BATCH NUMBER : 949544 SAMPLE ID : S0245388009_UU SAMPLE QTY : 0.506 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 88.477 | | | | CHAMBER : 166 DETECTOR S/N : 74545 AVERAGE %EFFICIENCY : 39.0948 COUNT DATE : 12-FEB-2010 13:58:08 ELAPSED LIVE TIME(SEC) : 60000.00 | | | | LIB FILE : ENV_ALPHA_UU BKG FILE : B166.CNF;169 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W166.CNF;55 CAL DATE : 21-JAN-2010 | | | | | |
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5078E+00 dpm RESULTS : 3.9884E+00 dpm | | | | MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | | | | LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | | | | | |
| NUCLIDE ACTIVITY SUMMARY | | | | | | | | | | | | | |
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
| U232 | 5302.100 | 5296.682 | 74.669 | 1569.000 | 1558.000 | 11.000 | 3.3166 | 100.0000 | 4.01E+00 | 2.93E-01 | 1.99E-02 | 4.67E-02 | 1.02E-01 |
| U-3/4 | 4763.020 | 4751.729 | 65.415 | 411.000 | 408.423 | 1.000 | 4.8416 | 100.0000 | 1.05E+00 | 8.89E-02 | 2.90E-02 | 6.50E-02 | 5.21E-02 |
| U-235 | 4391.000 | 4426.420 | 93.370 | 31.000 | 31.000 | 0.000 | 2.2152 | 80.900000 | 9.86E-02 | 1.90E-02 | 1.64E-02 | 4.14E-02 | 1.77E-02 |
| U-238 | 4184.730 | 4176.088 | 45.192 | 435.000 | 435.000 | 0.000 | 3.1208 | 100.0000 | 1.12E+00 | 9.36E-02 | 1.87E-02 | 4.43E-02 | 5.37E-02 |

NOTES:

* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

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

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

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | | | | | | | | | | | | | |
|---|----------------|-------------|-----------|--|----------|----------|--------|--|----------------|-------------|-----------|-----------|-----------|
| BATCH NUMBER : 949544 SAMPLE ID : S0245388010_UU SAMPLE QTY : 0.512 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 78.233 | | | | CHAMBER : 168 DETECTOR SIN : 72547 AVERAGE %EFFICIENCY : 38.9921 COUNT DATE : 12-FEB-2010 13:58:13 ELAPSED LIVE TIME(SEC) : 60000.00 | | | | LIB FILE : ENV_ALPHA_UU BKG FILE : B168.CNF;169 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W168.CNF;55 CAL DATE : 21-JAN-2010 | | | | | |
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5078E+00 dpm RESULTS : 3.5266E+00 dpm | | | | MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | | | | LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | | | | | |
| NUCLIDE ACTIVITY SUMMARY | | | | | | | | | | | | | |
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
| U232 | 5302.100 | 5295.461 | 61.310 | 1383.000 | 1374.000 | 9.000 | 3.0000 | 100.0000 | 3.97E+00 | 2.95E-01 | 2.01E-02 | 4.81E-02 | 1.08E-01 |
| U-3/4 | 4763.020 | 4756.995 | 51.209 | 436.000 | 433.610 | 1.000 | 4.8416 | 100.0000 | 1.25E+00 | 1.05E-01 | 3.25E-02 | 7.28E-02 | 6.02E-02 |
| U-235 | 4391.000 | 4399.946 | 93.877 | 32.000 | 32.000 | 0.000 | 2.2152 | 80.90000 | 1.14E-01 | 2.17E-02 | 1.84E-02 | 4.64E-02 | 2.02E-02 |
| U-238 | 4184.730 | 4180.469 | 91.558 | 444.000 | 443.000 | 1.000 | 3.1208 | 100.0000 | 1.28E+00 | 1.07E-01 | 2.09E-02 | 4.97E-02 | 6.08E-02 |

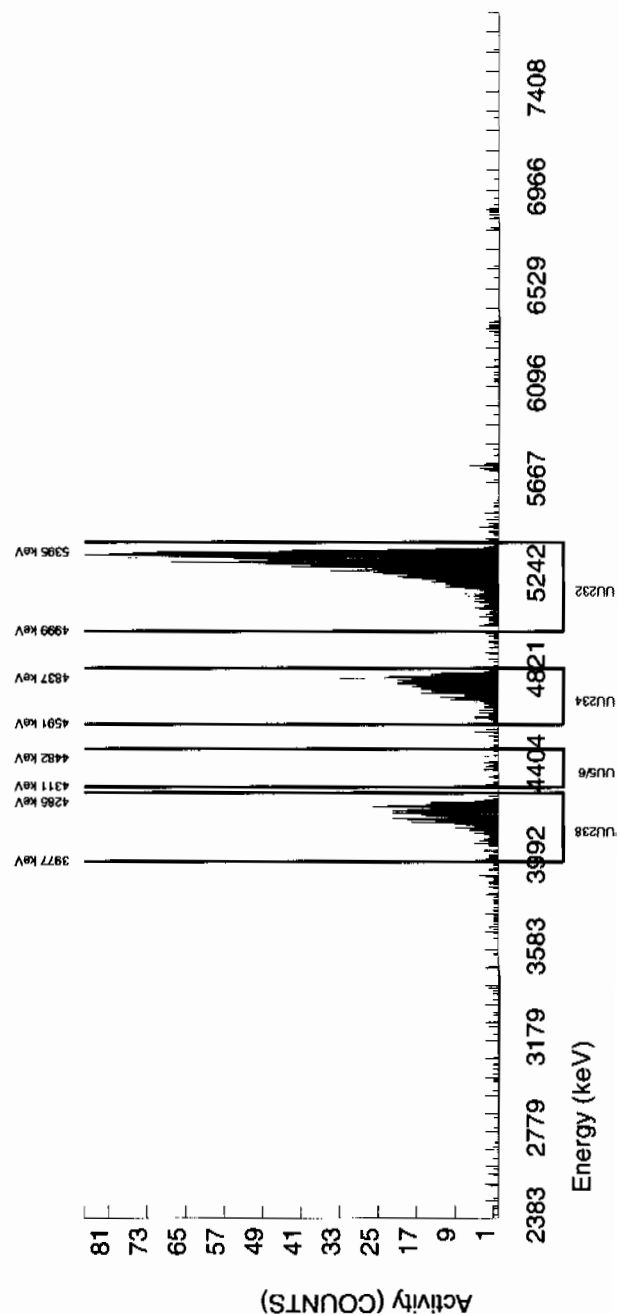
NOTES:

* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

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

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

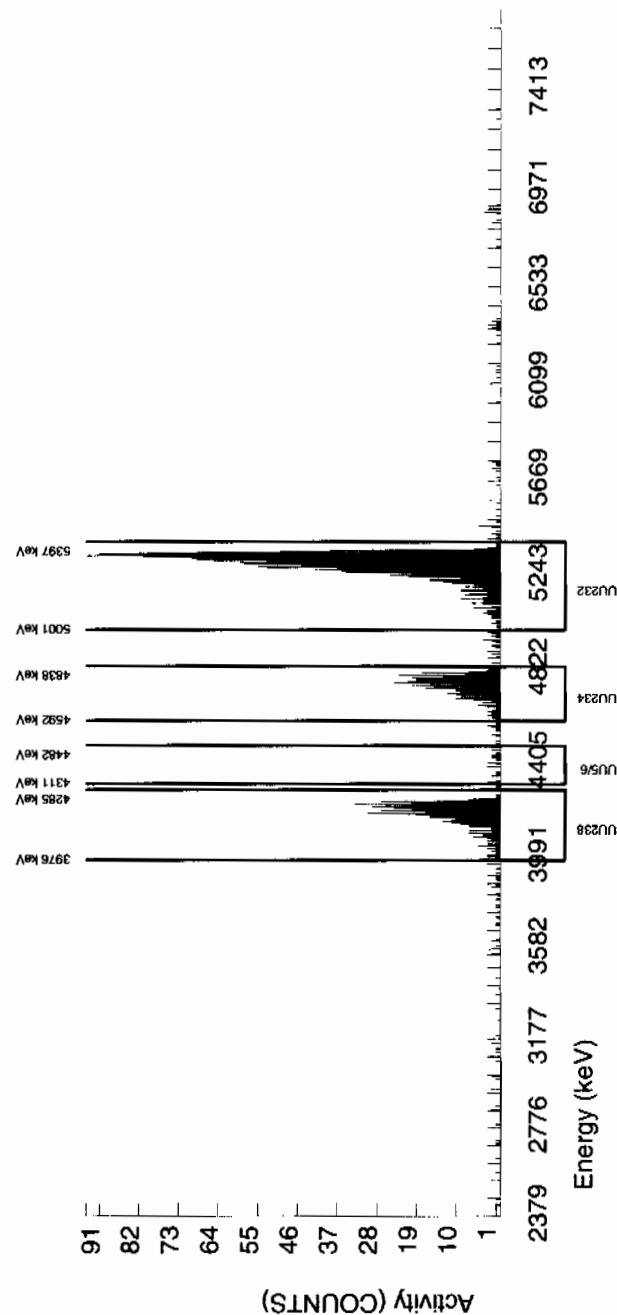
| | | | |
|---|--|--|--|
| BATCH NUMBER : 949544 SAMPLE ID : S0245388011_UU SAMPLE QTY : 0.506 G SAMPLE DATE : 15-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 90.134 | | CHAMBER : 170 DETECTOR S/N : 72549 AVERAGE %EFFICIENCY : 36.6271 COUNT DATE : 12-FEB-2010 13:58:18 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_UU BKG FILE : B170.CNF:169 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W170.CNF:55 CAL DATE : 21-JAN-2010 |
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5078E+00 dpm RESULTS : 4.0631E+00 dpm | MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/g | LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/g | |
| NUCLIDE ACTIVITY SUMMARY | | | |
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM |
| U232 | 5302.100 | 5295.870 | 71.867 |
| U-3/4 | 4763.020 | 4748.693 | 70.766 |
| U-235 | 4391.000 | 4418.704 | 120.864 |
| U-238 | 4184.730 | 4178.168 | 66.542 |
| | GROSS AREA | NET AREA | BKG AREA |
| | 1495.000 | 1487.000 | 8.000 |
| | 399.000 | 396.495 | 1.000 |
| | 26.000 | 25.000 | 1.000 |
| | 519.000 | 518.000 | 1.000 |
| | %ABUN | BKG Sg | ACTIVITY pCi/g |
| | 100.0000 | 2.8284 | 4.01E+00 |
| | 100.0000 | 4.8416 | 1.07E+00 |
| | 80.90000 | 2.2152 | 8.33E-02 |
| | 100.0000 | 3.1208 | 1.40E+00 |
| | TPU 1-SIGMA | DLC pCi/g | MDC pCi/g |
| | 2.95E-01 | 1.77E-02 | 4.28E-02 |
| | 9.11E-02 | 3.04E-02 | 6.81E-02 |
| | 1.82E-02 | 1.72E-02 | 4.34E-02 |
| | 1.14E-01 | 1.96E-02 | 4.65E-02 |
| | UNC pCi/g | | |
| | 1.05E-01 | | |
| | 5.38E-02 | | |
| | 1.73E-02 | | |
| | 6.15E-02 | | |

NOTES:

* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

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

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

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | | |
|---|--|--|--|
| BATCH NUMBER : 949544 SAMPLE ID : S0245393001_UU SAMPLE QTY : 0.522 G SAMPLE DATE : 19-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 94.621 | | CHAMBER : 172 DETECTOR S/N : 78772 AVERAGE %EFFICIENCY : 38.2928 COUNT DATE : 12-FEB-2010 13:58:23 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV ALPHA_UU BKG FILE : B172.CNF;173 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W172.CNF;65 CAL DATE : 21-JAN-2010 |
|---|--|--|--|

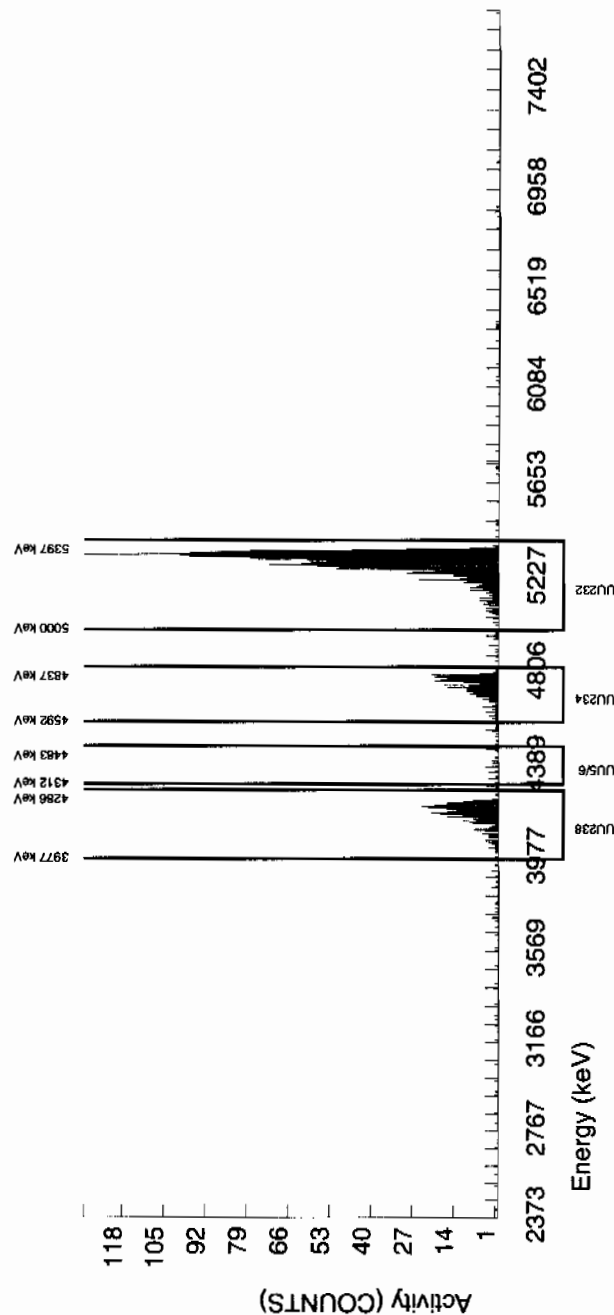
| | | |
|---|--|--|
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5073E+00 dpm RESULTS : 4.2648E+00 dpm | MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G |
|---|--|--|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|----------|----------------|-------------|-----------|-----------|-----------|
| U232 | 5302.100 | 5301.050 | 63.041 | 1634.000 | 1632.000 | 2.000 | 1.4142 | 100.0000 | 3.89E+00 | 2.82E-01 | 7.84E-03 | 2.21E-02 | 9.64E-02 |
| U-3/4 | 4763.020 | 4753.359 | 55.187 | 297.000 | 293.349 | 2.000 | 4.8416 | 100.0000 | 6.99E-01 | 6.29E-02 | 2.68E-02 | 6.01E-02 | 4.11E-02 |
| U-235 | 4391.000 | 4379.666 | 0.000 | 24.000 | 23.000 | 1.000 | 2.2152 | 80.90000 | 6.77E-02 | 1.54E-02 | 1.52E-02 | 3.83E-02 | 1.47E-02 |
| U-238 | 4184.730 | 4180.788 | 64.586 | 356.000 | 355.000 | 1.000 | 3.1208 | 100.0000 | 8.45E-01 | 7.32E-02 | 1.73E-02 | 4.10E-02 | 4.50E-02 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-2010)
- * Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4

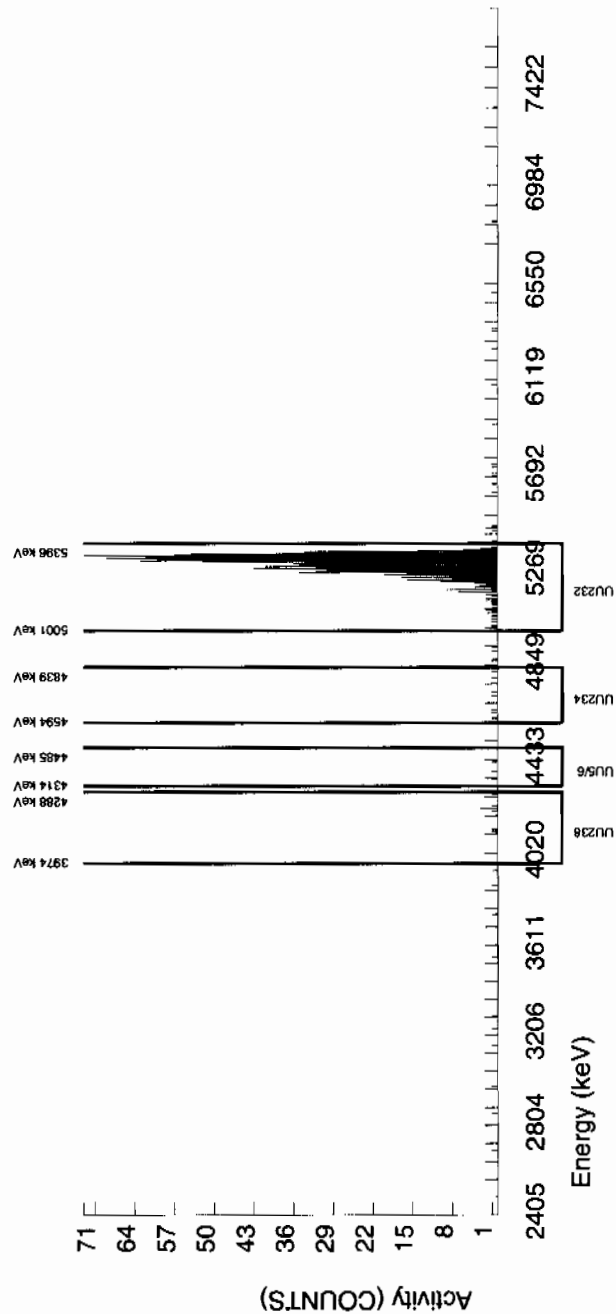


GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | | | | | | | | | | | | |
|---|----------------|-------------|-----------|--|----------|----------|--------|---|----------------|-------------|-----------|-----------|-----------|
| BATCH NUMBER : 949544 SAMPLE ID : S1202034406_UU SAMPLE QTY : 1.000 G SAMPLE DATE : 5-FEB-2010 00:00:00. ANALYST : HAKB % YIELD : 97.519 | | | | CHAMBER : 149 DETECTOR S/N : 33449 AVERAGE %EFFICIENCY : 24.3144 COUNT DATE : 12-FEB-2010 13:57:22 ELAPSED LIVE TIME(SEC) : 60000.00 | | | | LIB FILE : ENV_ALPHA_UU BKG FILE : B149.CNF;399 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W149.CNF;112 CAL DATE : 18-JAN-2010 | | | | | |
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5052E+00 dpm RESULTS : 4.3934E+00 dpm | | | | MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | | | | LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | | | | | |
| NUCLIDE ACTIVITY SUMMARY | | | | | | | | | | | | | |
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
| U232 | 5302.100 | 5305.211 | 71.699 | 1070.000 | 1068.000 | 2.000 | 1.4142 | 100.0000 | 2.03E+00 | 1.56E-01 | 6.25E-03 | 1.76E-02 | 6.22E-02 |
| U-3/4 | 4763.020 | 4696.934 | 0.000 | 11.000 | 8.919 | 1.000 | 4.8416 | 100.0000 | 1.69E-02 | 6.39E-03 | 2.14E-02 | 4.79E-02 | 6.28E-03 |
| U-235 | 4391.000 | 4381.164 | 79.310 | 4.000 | 2.000 | 2.000 | 2.2152 | 80.90000 | 4.70E-03 | 5.76E-03 | 1.21E-02 | 3.06E-02 | 5.75E-03 |
| U-238 | 4184.730 | 4187.726 | 4.957 | 11.000 | 9.000 | 2.000 | 3.1208 | 100.0000 | 1.71E-02 | 6.96E-03 | 1.38E-02 | 3.27E-02 | 6.85E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-2010)
- * Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | | |
|--|--|---|--|
| <p>BATCH NUMBER : 949544 SAMPLE ID : S1202034407_UU SAMPLE QTY : 0.520 G SAMPLE DATE : 19-JAN-2010 00:00:00 ANALYST : HAKB % YIELD : 95.201</p> | | <p>CHAMBER : 150 DETECTOR S/N : 75552 AVERAGE %EFFICIENCY : 24.4633 COUNT DATE : 12-FEB-2010 13:57:24 ELAPSED LIVE TIME(SEC) : 60000.00</p> | <p>LIB FILE : ENV_ALPHA_UU BKG FILE : B150.CNF:400 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W150.CNF:120 CAL DATE : 18-JAN-2010</p> |
|--|--|---|--|

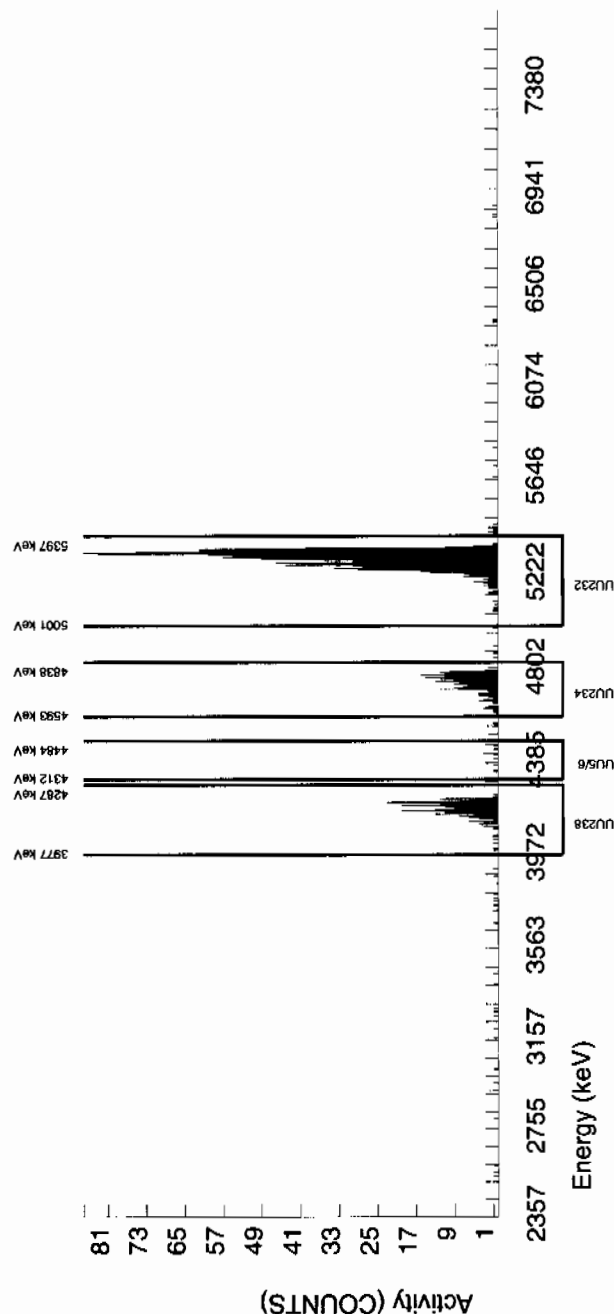
| | | |
|--|---|---|
| <p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5073E+00 dpm RESULTS : 4.2910E+00 dpm</p> | <p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> | <p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> |
|--|---|---|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|----------|----------------|-------------|-----------|-----------|-----------|
| U232 | 5302.100 | 5300.153 | 68.865 | 1054.000 | 1049.000 | 5.000 | 2.2361 | 100.0000 | 3.90E+00 | 3.02E-01 | 1.93E-02 | 4.88E-02 | 1.21E-01 |
| U-3/4 | 4763.020 | 4746.044 | 80.250 | 222.000 | 219.938 | 1.000 | 4.8416 | 100.0000 | 8.18E-01 | 8.02E-02 | 4.19E-02 | 9.39E-02 | 5.54E-02 |
| U-235 | 4391.000 | 4409.227 | 6.140 | 12.000 | 12.000 | 0.000 | 2.2152 | 80.90000 | 5.52E-02 | 1.64E-02 | 2.37E-02 | 5.98E-02 | 1.59E-02 |
| U-238 | 4184.730 | 4183.251 | 57.161 | 258.000 | 257.000 | 1.000 | 3.1208 | 100.0000 | 9.56E-01 | 9.04E-02 | 2.70E-02 | 6.41E-02 | 5.99E-02 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-2010)
- * Sg of U232 calculated as sqrt(BKG AREA).
- * Corrections made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|---|---|---|
| <p>BATCH NUMBER : 949544 SAMPLE ID : S1202034408_UU SAMPLE QTY : 0.105 G SAMPLE DATE : 5-FEB-2010 00:00:00. ANALYST : HAKB % YIELD : 93.403</p> | <p>CHAMBER : 151 DETECTOR S/N : 75556 AVERAGE %EFFICIENCY : 24.3876 COUNT DATE : 12-FEB-2010 13:57:26 ELAPSED LIVE TIME(SEC) : 60000.00</p> | <p>LIB FILE : ENV_ALPHA_UU BKG FILE : B151.CNF:395 BKG DATE : 7-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W151.CNF:118 CAL DATE : 18-JAN-2010</p> |
|---|---|---|

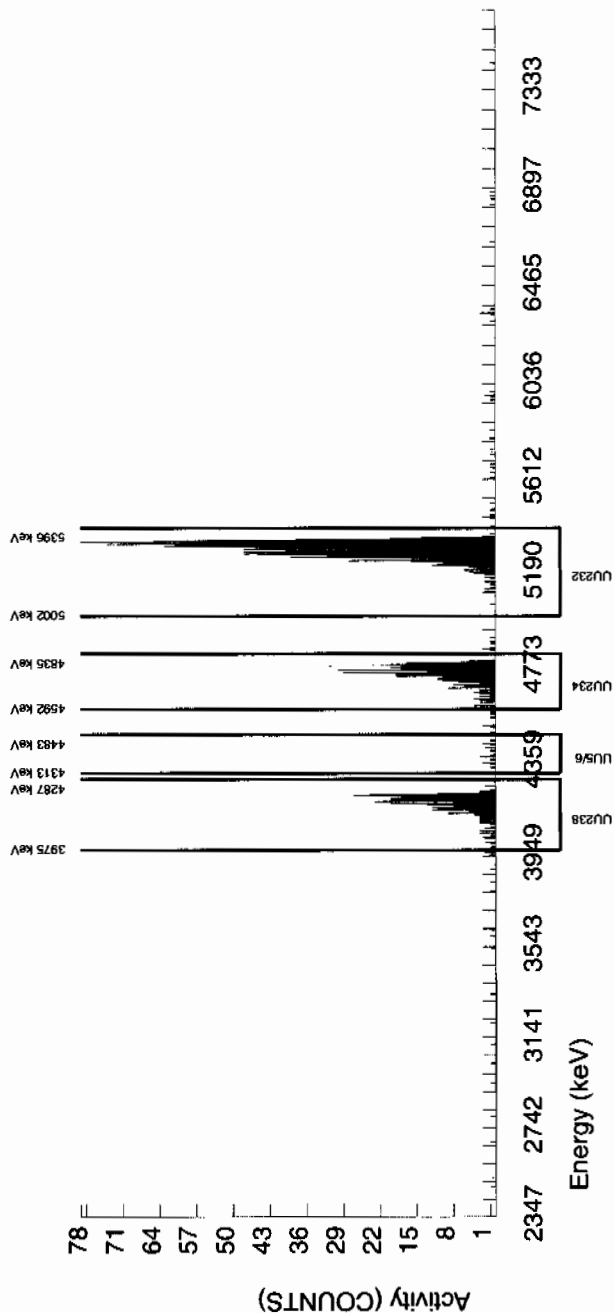
| | | |
|--|--|--|
| <p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5052E+00 dpm RESULTS : 4.2080E+00 dpm</p> | <p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> | <p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> |
|--|--|--|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|----------|----------------|-------------|-----------|-----------|-----------|
| U232 | 5302.100 | 5300.904 | 65.683 | 1027.000 | 1026.000 | 1.000 | 1.0000 | 100.0000 | 1.93E+01 | 1.61E+00 | 4.38E-02 | 1.39E-01 | 6.04E-01 |
| U-3/4 | 4763.020 | 4749.988 | 57.846 | 391.000 | 388.962 | 1.000 | 4.8416 | 100.0000 | 7.33E+00 | 6.77E-01 | 2.12E-01 | 4.75E-01 | 3.72E-01 |
| U-235 | 4391.000 | 4400.651 | 42.960 | 17.000 | 17.000 | 0.000 | 2.2152 | 80.90000 | 3.96E-01 | 1.01E-01 | 1.20E-01 | 3.03E-01 | 9.60E-02 |
| U-238 | 4184.730 | 4182.737 | 47.657 | 318.000 | 317.000 | 1.000 | 3.1208 | 100.0000 | 5.97E+00 | 5.70E-01 | 1.37E-01 | 3.25E-01 | 3.36E-01 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-2010)
- * 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#

944964

Product:

KS

Date:

2/9/10

| Criteria: | Yes | No | Comments |
|---|-----|----|----------------|
| Sample Solids are less than or equal to 100 mg for GAB. | | | NA |
| Samples have been blank corrected (if required) | | | NA |
| If activity less 10% MDA/ MDC, error is 150% or less of sample activity; if greater 10% MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay. | ✓ | | |
| Instrument source check is within limits. | ✓ | | |
| Instrument bkg check is within limits. | ✓ | | |
| Method RDL/ LLD has been met. | ✓ | | |
| If duplicate activities are less 5% MDA/ MDC, then RPD is 100% or less. If greater 5% MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%. | ✓ | | |
| Or meets the client's required RER acceptance criteria. | | | |
| Tracer yield is 15-125%. Carrier yield 25-125%. | | | NA |
| Or meets the client's contract acceptance criteria. | | | |
| Method blank is less than the RDL/ LLD. | ✓ | | |
| (If rad samples, < 5% of lowest activity) | ✓ | | |
| Sample was run within hold time. | | | |
| Sample was correctly preserved if required. | | | NA |
| Smears Taken for Radioactive batches. | | | NA |
| Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria. | ✓ | | |
| No blank spaces on data forms. | | | |
| All line outs initialed and dated. | ✓ | | |
| No transcription errors are apparent. | | | |
| Aux data is correct. | | | NA |
| Client Special requirements page has been checked. | ✓ | | |
| Raw Data and/ or spectrum are included and properly statused. | ✓ | | |
| QC data entered into QC database and batch is in REVW | ✓ | | Amended 2/9/10 |
| HII 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:

L. J. Henry 2/9/10

Secondary Review Performed By:

G. Harty 2/10/10

2/10

Gamma Spec Que Sheet

1.6 - 2/3/10

01/27/2010

Batch #: 944964 Analyst: MXR1 First Client Due Date: 02/20/2010 Internal Due Date: 02/09/2010
 Gamma Spike Isotope: Mixed Gamma Spike Code: n/a Expiration Date: n/a Vol: n/a Nominal Concentration: n/a
 Gamma LCS Isotope: Mixed Gamma LCS Code: 1032-A Expiration Date: 12/2/10 Vol: 1.0 ml Nominal Concentration: Am 16.30 Ci 1.7 S. 700;
 Initials: MS Prep Date: 1/27/10 Library: SOLID Witness: n/a Co 6, 582

| Sample ID | Client Description / Container ID | Type | Hazard Code | Client | Matrix | Collect Date | Geometry | Detector | Sealing Date/Time |
|--------------|-----------------------------------|--------|-------------|--------|--------------------|--------------|----------|----------|-------------------|
| 245388001-1 | RE14-10-7689 | SAMPLE | LANL010 | SOIL | 15-JAN-10 12:00:00 | RF | 85.93 | 16 | 1/27/10 |
| 245388002-1 | RE14-10-7679 | SAMPLE | LANL010 | SOIL | 15-JAN-10 12:00:00 | RF | 127.89 | 18 | |
| 245388003-1 | RE14-10-7680 | SAMPLE | LANL010 | SOIL | 15-JAN-10 12:00:00 | RF | 117.61 | 20 | |
| 245388004-1 | RE14-10-7686 | SAMPLE | LANL010 | SOIL | 15-JAN-10 12:00:00 | RF | 105.23 | 22 | |
| 245388005-1 | RE14-10-7688 | SAMPLE | LANL010 | SOIL | 15-JAN-10 12:00:00 | RF | 97.88 | 23 | |
| 245388006-1 | RE14-10-7684 | SAMPLE | LANL010 | SOIL | 15-JAN-10 12:00:00 | RF | 118.67 | 4 | |
| 245388007-1 | RE14-10-7687 | SAMPLE | LANL010 | SOIL | 15-JAN-10 12:00:00 | RF | 121.07 | 14 | |
| 245388008-1 | RE14-10-7681 | SAMPLE | LANL010 | SOIL | 15-JAN-10 12:00:00 | RF | 114.10 | 4 | |
| 245388009-1 | RE14-10-7682 | SAMPLE | LANL010 | SOIL | 15-JAN-10 12:00:00 | RF | 107.97 | 16 | |
| 245388010-1 | RE14-10-7685 | SAMPLE | LANL010 | SOIL | 15-JAN-10 12:00:00 | RF | 114.46 | 1 | |
| 245388011-1 | RE14-10-7683 | SAMPLE | LANL010 | SOIL | 15-JAN-10 12:00:00 | RF | 104.71 | 11 | RF 1/27/10 |
| 245393001-1 | RE15-10-7918 | SAMPLE | LANL010 | SOIL | 19-JAN-10 12:00:00 | RF | 134.70 | 17 | |
| 245393002-1 | RE15-10-7915 | SAMPLE | LANL010 | SOIL | 19-JAN-10 12:00:00 | RF | 136.96 | 18 | |
| 245393003-1 | RE15-10-7920 | SAMPLE | LANL010 | SOIL | 19-JAN-10 12:00:00 | RF | 151.99 | 22 | |
| 245393004-1 | RE15-10-7914 | SAMPLE | LANL010 | SOIL | 19-JAN-10 12:00:00 | RF | 146.33 | 23 | |
| 245393005-1 | RE15-10-7919 | SAMPLE | LANL010 | SOIL | 19-JAN-10 12:00:00 | RF | 172.49 | 7 | |
| 245393006-1 | RE15-10-7921 | SAMPLE | LANL010 | SOIL | 19-JAN-10 12:00:00 | RF | 139.62 | 21 | |
| 245393007-1 | RE15-10-7916 | SAMPLE | LANL010 | SOIL | 19-JAN-10 12:00:00 | RF | 135.24 | 4 | |
| 245393008-1 | RE15-10-7917 | SAMPLE | LANL010 | SOIL | 19-JAN-10 12:00:00 | RF | 148.86 | 6 | |
| 245393009-1 | RE15-10-7922 | SAMPLE | LANL010 | SOIL | 19-JAN-10 12:00:00 | RF | 147.06 | 14 | |
| 1202023713-1 | MB | MB | QC ACCOUNT | SOIL | 1/27/10 | U | 151.99 | 4 | |
| 1202023714-1 | DUP RE14-10-7679(245388002) | DUP | QC ACCOUNT | SOIL | 15-JAN-10 12:00:00 | U | 127.67 | 13 | |
| 1202023715-1 | LCS | LCS | QC ACCOUNT | SOIL | 1/27/10 | U | 151.73 | 6 | |

GEL Laboratories LLC, Radiochemistry Division
 Data Reviewed By: *[Signature]* 2/9/10 Page 1 of 1

Failed RDL Report

| Batch Id | Samp Id | Sample Type | Run Date | YIELD | Parmname | Result | MDA | RDL |
|----------|-----------|-------------|-----------|-------|---------------|----------|---------|-------|
| 944964 | 245388001 | SAMPLE | 04-FEB-10 | | Americium-241 | 0.03753 | 0.2202 | 0.200 |
| 944964 | 245388002 | SAMPLE | 04-FEB-10 | | Americium-241 | 0.1636 | 0.2882 | 0.200 |
| | | | | | Thorium-234 | 2.144 | 2.224 | 2.00 |
| 944964 | 245388003 | SAMPLE | 04-FEB-10 | | | | | |
| 944964 | 245388004 | SAMPLE | 04-FEB-10 | | Americium-241 | -0.00329 | 0.2382 | 0.200 |
| | | | | | Cerium-139 | 0.03702 | 0.05795 | 0.050 |
| 944964 | 245388005 | SAMPLE | 04-FEB-10 | | Americium-241 | -0.2062 | 0.404 | 0.200 |
| | | | | | Cerium-139 | -0.02229 | 0.06475 | 0.050 |
| | | | | | Cesium-134 | 0.07432 | 0.1217 | 0.100 |
| | | | | | Europium-152 | -0.067 | 0.2008 | 0.200 |
| | | | | | Mercury-203 | 0.07865 | 0.1015 | 0.100 |
| | | | | | Sodium-22 | -0.01893 | 0.08901 | 0.080 |
| | | | | | Thorium-234 | 0.2746 | 3.557 | 2.00 |
| | | | | | Tin-113 | -0.03347 | 0.1024 | 0.100 |
| | | | | | Uranium-235 | 0.2602 | 0.5074 | 0.500 |
| 944964 | 245388006 | SAMPLE | 04-FEB-10 | | Americium-241 | -0.02069 | 0.3846 | 0.200 |
| | | | | | Cerium-139 | 0.007 | 0.05142 | 0.050 |
| | | | | | Thorium-234 | 1.189 | 3.074 | 2.00 |
| 944964 | 245388007 | SAMPLE | 04-FEB-10 | | Americium-241 | -0.07856 | 0.2181 | 0.200 |
| | | | | | Cerium-139 | 0.00017 | 0.05155 | 0.050 |
| 944964 | 245388008 | SAMPLE | 04-FEB-10 | | Americium-241 | -0.09377 | 0.3654 | 0.200 |
| | | | | | Thorium-234 | 1.109 | 3.068 | 2.00 |
| 944964 | 245388009 | SAMPLE | 04-FEB-10 | | Americium-241 | 0.02931 | 0.2523 | 0.200 |
| 944964 | 245388010 | SAMPLE | 04-FEB-10 | | Americium-241 | 0.01566 | 0.2972 | 0.200 |
| | | | | | Cerium-139 | 0.0018 | 0.0597 | 0.050 |
| | | | | | Cesium-134 | 0.07486 | 0.1056 | 0.100 |
| | | | | | Thorium-234 | 1.557 | 2.438 | 2.00 |
| 944964 | 245388011 | SAMPLE | 04-FEB-10 | | | | | |
| 944964 | 245393001 | SAMPLE | 04-FEB-10 | | Cerium-139 | 9.12E-05 | 0.05166 | 0.050 |
| | | | | | Sodium-22 | -0.04244 | 0.09733 | 0.080 |
| 944964 | 245393002 | SAMPLE | 04-FEB-10 | | Americium-241 | 0.2855 | 0.4488 | 0.200 |
| 944964 | 245393003 | SAMPLE | 04-FEB-10 | | Americium-241 | 0.0437 | 0.2318 | 0.200 |
| 944964 | 245393004 | SAMPLE | 04-FEB-10 | | Americium-241 | 0.1178 | 0.3333 | 0.200 |
| | | | | | Cerium-139 | -0.02368 | 0.05194 | 0.050 |
| | | | | | Thorium-234 | 2.504 | 2.782 | 2.00 |
| 944964 | 245393005 | SAMPLE | 04-FEB-10 | | Americium-241 | 0.0689 | 0.2554 | 0.200 |
| | | | | | Cerium-139 | -0.03369 | 0.05394 | 0.050 |
| 944964 | 245393006 | SAMPLE | 04-FEB-10 | | Cesium-134 | 0.07895 | 0.1136 | 0.100 |
| 944964 | 245393007 | SAMPLE | 04-FEB-10 | | Americium-241 | 0.05908 | 0.3924 | 0.200 |
| | | | | | Sodium-22 | 0.03025 | 0.08205 | 0.080 |
| 944964 | 245393008 | SAMPLE | 04-FEB-10 | | Americium-241 | 0.07404 | 0.3248 | 0.200 |
| | | | | | Cerium-139 | -0.0019 | 0.0554 | 0.050 |
| | | | | | Sodium-22 | 0.05923 | 0.08244 | 0.080 |

Failed RDL Report

| Batch Id | Samp Id | Sample Type | Run Date | YIELD | Parmname | Result | MDA | RDL |
|----------|------------|-------------|-----------|-------|---------------|----------|---------|-------|
| 944964 | 245393008 | SAMPLE | 04-FEB-10 | | Thorium-234 | 1.569 | 2.639 | 2.00 |
| 944964 | 245393009 | SAMPLE | 04-FEB-10 | | Americium-241 | 0.2288 | 0.2657 | 0.200 |
| 944964 | 1202023713 | MB | 04-FEB-10 | | | | | |
| 944964 | 1202023714 | DUP | 04-FEB-10 | | Cerium-139 | -0.01493 | 0.05428 | 0.050 |
| | | | | | Cesium-134 | 0.05288 | 0.1137 | 0.100 |
| | | | | | Cesium-137 | 0.06756 | 0.101 | 0.100 |
| | | | | | Sodium-22 | -0.00484 | 0.0862 | 0.080 |
| 944964 | 1202023715 | LCS | 04-FEB-10 | | Cerium-139 | -0.00042 | 0.0937 | 0.050 |
| | | | | | Cesium-134 | -0.00613 | 0.1854 | 0.100 |
| | | | | | Europium-152 | -0.1386 | 0.341 | 0.200 |
| | | | | | Mercury-203 | 0.01764 | 0.1379 | 0.100 |
| | | | | | Ruthenium-106 | -0.02528 | 1.226 | 0.800 |
| | | | | | Sodium-22 | -0.01937 | 0.1011 | 0.080 |
| | | | | | Thorium-234 | 1.354 | 4.899 | 2.00 |
| | | | | | Tin-113 | -0.04505 | 0.1694 | 0.100 |
| | | | | | Uranium-235 | -0.1352 | 0.6587 | 0.500 |
| | | | | | Yttrium-88 | 0.05245 | 0.112 | 0.100 |

Gamma Review Report based on Result > MDA for Batch:944964

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue |
|-------------------|-----------------|-----------------|-----------|-------------|--------|------------|--------|---------------------|------------|--------------|
| 245388001 | 15-JAN-10 12:00 | 04-FEB-10 10:28 | 19.9 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 | 2.257 | 0.2106 | pCi/g | 0.213 | N | 911.3 | 3 | 1.301 IDENTIFIED | 7.2 | |
| Americium-243 | 0.4882 | 0.03978 | pCi/g | 0.08135 | N | 74.85 | 1 | 0.9015 IDENTIFIED | 7.015 | |
| Annihilation Rad. | 0.1855 | 0.04101 | pCi/g | 0.04395 | N | 511.3 | 1 | 1.632 IDENTIFIED | 21.59 | |
| Bismuth-211 | 5.315 | 0.3788 | pCi/g | 0.3246 | Y | 351.9 | 4 | 1.163 IDENTIFIED | 4.588 | |
| Bismuth-212 | 1.369 | 0.2866 | pCi/g | 0.7297 | N | 0 | 15 | 0 | FAIL_ABUND | 0 |
| Bismuth-214 | 1.591 | 0.1181 | pCi/g | 0.1087 | 0.200 | 609.4 | 4 | 1.315 IDENTIFIED | 5.213 | |
| Bromine-77 | 7.509 | 21.43 | pCi/g | 0 | N | 0 | 15 | 0 | SHORT_HLIF | 0 |
| Cadmium-109 | 2.963 | 0.5675 | pCi/g | 1.059 | Y | 87.17 | 3 | 0.8992 IDENTIFIED | 18.55 | |
| Cerium-143 | 5634 | 1140 | pCi/g | 0 | N | 0 | 15 | 0 | SHORT_HLIF | 0 |
| Cesium-134 | 0.1331 | 0.03977 | pCi/g | 0.09477 | 0.100 | 0 | 15 | 0 | FAIL_ABUND | 0 |
| Gold-195 | 0.3958 | 0.1074 | pCi/g | 0.3622 | N | 0 | 15 | 0 | FAIL_ABUND | 0 |
| Gross Gamma | 11.2 | 1.628 | pCi/g | 4.615 | N | 0 | | | | |
| Iodine-133 | 4126 | 1.43E+05 | pCi/g | 0 | N | 0 | 15 | 0 | SHORT_HLIF | 0 |
| Iodine-135 | 7.05E+20 | 0 | pCi/g | 0 | N | 0 | 15 | 0 | SHORT_HLIF | 0 |
| Krypton-85 | 16.36 | 4.034 | pCi/g | 13.21 | N | 0 | 15 | 0 | NOT_IDENTI | 0 |
| Lead-212 | 2.369 | 0.154 | pCi/g | 0.08971 | 0.100 | 238.6 | 4 | 0.9905 IDENTIFIED | 2.687 | |
| Lead-214 | 1.849 | 0.1403 | pCi/g | 0.1132 | 0.100 | 351.9 | 4 | 1.163 IDENTIFIED | 4.588 | |
| Lutetium-177 | 6.295 | 1.383 | pCi/g | 3.403 | N | 0 | 15 | 0 | FAIL_ABUND | 0 |
| Neptunium-237 | 0.8489 | 0.1847 | pCi/g | 0.3326 | N | 87.17 | 3 | 0.8992 IDENTIFIED | 18.55 | |
| Niobium-97 | 4.75E+05 | 5.83E+06 | pCi/g | 0 | N | 0 | 15 | 0 | SHORT_HLIF | 0 |
| Polonium-212 | 2.369 | 0.154 | pCi/g | 0.08971 | N | 238.6 | 4 | 0.9905 IDENTIFIED | 2.687 | |
| Polonium-214 | 1.849 | 0.1403 | pCi/g | 0.1132 | N | 351.9 | 4 | 1.163 IDENTIFIED | 4.588 | |
| Polonium-216 | 2.369 | 0.154 | pCi/g | 0.08971 | N | 238.6 | 4 | 0.9905 IDENTIFIED | 2.687 | |
| Polonium-218 | 1.849 | 0.1403 | pCi/g | 0.1132 | N | 351.9 | 4 | 1.163 IDENTIFIED | 4.588 | |
| Potassium-40 | 22.14 | 1.261 | pCi/g | 0.4777 | 1.00 | 1461 | 1 | 1.775 IDENTIFIED | 3.623 | |
| Radium-224 | 5.823 | 0.7977 | pCi/g | 1.021 | Y | 241.8 | 1 | 1.737 IDENTIFIED | 12.54 | |
| Radium-226 | 1.591 | 0.1181 | pCi/g | 0.1087 | Y | 609.4 | 4 | 1.315 IDENTIFIED | 5.213 | |
| Radium-228 | 2.257 | 0.2106 | pCi/g | 0.213 | 0.500 | 911.3 | 3 | 1.301 IDENTIFIED | 7.2 | |
| Rhenium-188 | 0.3118 | 0.09674 | pCi/g | 0.2576 | N | 153.9 | 1 | 0.9386 IDENTIFIED | 30.72 | |
| Strontium-85 | 0.08824 | 0.02176 | pCi/g | 0.07124 | Y | 0 | 15 | 0 | NOT_IDENTI | 0 |
| Technetium-99m | 3.78E+21 | 0 | pCi/g | 0 | N | 0 | 15 | 0 | SHORT_HLIF | 0 |
| Thallium-200 | 435.4 | 4833 | pCi/g | 0 | N | 0 | 15 | 0 | SHORT_HLIF | 0 |
| Thallium-208 | 0.673 | 0.05661 | pCi/g | 0.05854 | 0.080 | 583.3 | 1 | 1.246 IDENTIFIED | 6.796 | |
| Thorium-228 | 2.416 | 0.1571 | pCi/g | 0.09151 | N | 238.6 | 4 | 0.9905 IDENTIFIED | 2.687 | |
| Thorium-230 | 1.591 | 0.1181 | pCi/g | 0.1087 | N | 609.4 | 4 | 1.315 IDENTIFIED | 5.213 | |
| Thorium-232 | 2.257 | 0.2106 | pCi/g | 0.213 | N | 911.3 | 3 | 1.301 IDENTIFIED | 7.2 | |
| Thorium-234 | 2.488 | 0.8858 | pCi/g | 1.846 | 2.00 | 63.38 | 2 | 0.7217 IDENTIFIED | 34.52 | |
| Tin-126 | 0.2891 | 0.05537 | pCi/g | 0.1211 | N | 87.17 | 3 | 0.8992 IDENTIFIED | 18.55 | |
| Titanium-44 | 0.4896 | 0.03162 | pCi/g | 0.07283 | N | 0 | 15 | 0 | FAIL_ABUND | 0 |
| Total Uranium | 7.4206 | 2.64E-06 | ug/g | 2.7488 | N | 0 | | | | |
| Uranium-234 | 1.591 | 0.1181 | pCi/g | 0.1087 | N | 609.4 | 4 | 1.315 IDENTIFIED | 5.213 | |
| Uranium-238 | 2.488 | 0.8858 | pCi/g | 1.846 | N | 63.38 | 2 | 0.7217 IDENTIFIED | 34.52 | |
| Zirconium-97 | 3.03E+08 | 1.12E+08 | pCi/g | 0 | N | 0 | 15 | 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 |
|-------------------|-----------------|-----------------|-----------|-------------|--------|------------|--------|---------------------|-------|--------------|
| 245388002 | 15-JAN-10 12:00 | 04-FEB-10 10:29 | 19.9 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 | 1.404 | 0.1437 | pCi/g | 0.1465 | N | 910.9 | 3 | 1.804 IDENTIFIED | 7.796 | |
| Americium-243 | 0.3053 | 0.03535 | pCi/g | 0.08324 | N | 75.03 | 1 | 0.9374 IDENTIFIED | 10.8 | |
| Annihilation Rad. | 0.1242 | 0.02475 | pCi/g | 0.03759 | N | 510.9 | 1 | 2.048 IDENTIFIED | 19.65 | |
| Barium-137m | 0.1114 | 0.03487 | pCi/g | 0.04371 | N | 662.7 | 2 | 4.569 IDENTIFIED | 31.06 | |

| | | | | | | | | | | | |
|---------------|-----|----------|----------|-------|---------|-------|-------|----|-------|------------------|--|
| Lutetium-177 | HE | 6.711 | 1.598 | pCi/g | 3.532 | N | 0 | 13 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> |
| Neptunium-237 | HE | 0.4728 | 0.1591 | pCi/g | 0.3926 | N | 86.76 | 3 | 1.242 | IDENTIFIED 31.7 | <input type="checkbox"/> |
| Niobium-97 | HE | 9.39E+05 | 5.24E+06 | pCi/g | 0 | N | 0 | 13 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |
| Polonium-212 | NR | 2.052 | 0.1252 | pCi/g | 0.08317 | N | 238.7 | 4 | 1.093 | IDENTIFIED 2.991 | <input type="checkbox"/> |
| Polonium-214 | NR | 1.812 | 0.1292 | pCi/g | 0.1098 | N | 352.1 | 4 | 1.273 | IDENTIFIED 4.598 | <input type="checkbox"/> |
| Polonium-216 | NR | 2.052 | 0.1252 | pCi/g | 0.08317 | N | 238.7 | 4 | 1.093 | IDENTIFIED 2.991 | <input type="checkbox"/> |
| Polonium-218 | NR | 1.812 | 0.1292 | pCi/g | 0.1098 | N | 352.1 | 4 | 1.273 | IDENTIFIED 4.598 | <input type="checkbox"/> |
| Potassium-40 | ✓ | 19.61 | 1.134 | pCi/g | 0.4791 | 1.00 | 1462 | 1 | 1.819 | IDENTIFIED 3.797 | <input type="checkbox"/> |
| Radium-224 | INT | 6.768 | 0.8394 | pCi/g | 0.9462 | Y | 241.8 | 1 | 2.046 | IDENTIFIED 11.42 | <input checked="" type="checkbox"/> |
| Radium-226 | ✓ | 1.392 | 0.1169 | pCi/g | 0.1046 | Y | 609.7 | 4 | 1.401 | IDENTIFIED 6.289 | <input type="checkbox"/> |
| Radium-228 | ✓ | 2.033 | 0.188 | pCi/g | 0.1922 | 0.500 | 911.9 | 3 | 1.631 | IDENTIFIED 6.93 | <input type="checkbox"/> |
| Rhenium-188 | HE | 0.3525 | 0.08843 | pCi/g | 0.2835 | N | 154.1 | 1 | 1.485 | IDENTIFIED 24.72 | <input type="checkbox"/> |
| Strontium-85 | LA | 0.1142 | 0.02122 | pCi/g | 0.07881 | Y | 0 | 13 | 0 | NOT_IDENTI 0 | <input checked="" type="checkbox"/> UI Data rejected due to low abundance. |
| Thallium-208 | ✓ | 0.6509 | 0.05153 | pCi/g | 0.05442 | 0.080 | 583.5 | 1 | 1.532 | IDENTIFIED 6.02 | <input type="checkbox"/> |
| Thorium-228 | NR | 2.093 | 0.1277 | pCi/g | 0.08484 | N | 238.7 | 4 | 1.093 | IDENTIFIED 2.991 | <input type="checkbox"/> |
| Thorium-230 | NR | 1.392 | 0.1169 | pCi/g | 0.1046 | N | 609.7 | 4 | 1.401 | IDENTIFIED 6.289 | <input type="checkbox"/> |
| Thorium-232 | NR | 2.033 | 0.188 | pCi/g | 0.1922 | N | 911.9 | 3 | 1.631 | IDENTIFIED 6.93 | <input type="checkbox"/> |
| Thorium-234 | ✓ | 1.988 | 0.8225 | pCi/g | 1.686 | 2.00 | 63.26 | 2 | 1.284 | IDENTIFIED 40.46 | <input type="checkbox"/> |
| Tin-126 | HE | 0.161 | 0.05158 | pCi/g | 0.1412 | N | 86.76 | 3 | 1.242 | IDENTIFIED 31.7 | <input type="checkbox"/> |
| Titanium-44 | LA | 0.4496 | 0.03014 | pCi/g | 0.08175 | N | 0 | 13 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> |
| Total Uranium | | 5.9161 | 2.45E-06 | ug/g | 2.5106 | N | 0 | | | | <input type="checkbox"/> |
| Uranium-234 | NR | 1.392 | 0.1169 | pCi/g | 0.1046 | N | 609.7 | 4 | 1.401 | IDENTIFIED 6.289 | <input type="checkbox"/> |
| Uranium-238 | HE | 1.988 | 0.8225 | pCi/g | 1.686 | N | 63.26 | 2 | 1.284 | IDENTIFIED 40.46 | <input type="checkbox"/> |
| Zirconium-97 | | 2.46E+08 | 1.07E+08 | pCi/g | 0 | N | 0 | 13 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue |
|-------------------|-----------------|-----------------|-----------|-------------|--------|------------|--------|---------------------|------------------|--|
| 245388004 | 15-JAN-10 12:00 | 04-FEB-10 10:30 | 19.9 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 | 2.031 | 0.1965 | pCi/g | 0.1898 | N | 911.1 | 3 | 1.685 | IDENTIFIED 7.057 | <input type="checkbox"/> |
| Americium-243 | 0.5251 | 0.04473 | pCi/g | 0.08697 | N | 74.89 | 1 | 1.186 | IDENTIFIED 7.475 | <input type="checkbox"/> |
| Annihilation Rad. | 0.2167 | 0.04084 | pCi/g | 0.04792 | N | 510.8 | 1 | 2.16 | IDENTIFIED 18.17 | <input type="checkbox"/> |
| Bismuth-211 | 5.121 | 0.3865 | pCi/g | 0.357 | Y | 352 | 4 | 1.357 | IDENTIFIED 4.813 | <input checked="" type="checkbox"/> UI |
| Bismuth-212 | 1.858 | 0.3279 | pCi/g | 0.7129 | N | 0 | 13 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> |
| Bismuth-214 | 1.299 | 0.1149 | pCi/g | 0.1153 | 0.200 | 609.4 | 4 | 1.742 | IDENTIFIED 6.665 | <input type="checkbox"/> |
| Bromine-77 | 5.116 | 24.12 | pCi/g | 0 | N | 0 | 13 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |
| Cadmium-109 | 3.301 | 0.5077 | pCi/g | 1.178 | Y | 87.24 | 3 | 0.9872 | IDENTIFIED 14.64 | <input checked="" type="checkbox"/> UI |
| Cadmium-115 | 2.265 | 24.26 | pCi/g | 0 | N | 0 | 13 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |
| Cerium-143 | 11170 | 1794 | pCi/g | 0 | N | 0 | 13 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |
| Cesium-134 | 0.1398 | 0.03538 | pCi/g | 0.0954 | 0.100 | 0 | 13 | 0 | FAIL_ABUND 0 | <input checked="" type="checkbox"/> UI Data rejected due to low abundance. |
| Gross Gamma | 10.07 | 1.331 | pCi/g | 2.396 | N | 0 | | | | <input type="checkbox"/> |
| Iodine-135 | 9.83E+19 | 0 | pCi/g | 0 | N | 0 | 13 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |
| Krypton-85 | 32.17 | 4.92 | pCi/g | 15.84 | N | 0 | 13 | 0 | NOT_IDENTI 0 | <input type="checkbox"/> |
| Lead-212 | 2.102 | 0.1518 | pCi/g | 0.09889 | 0.100 | 238.7 | 4 | 1.24 | IDENTIFIED 2.916 | <input type="checkbox"/> |
| Lead-214 | 1.782 | 0.1423 | pCi/g | 0.1244 | 0.100 | 352 | 4 | 1.357 | IDENTIFIED 4.813 | <input type="checkbox"/> |
| Lutetium-177 | 6.342 | 1.259 | pCi/g | 3.737 | N | 0 | 13 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> |
| Neptunium-237 | 0.9458 | 0.1752 | pCi/g | 0.3423 | N | 87.24 | 3 | 0.9872 | IDENTIFIED 14.64 | <input type="checkbox"/> |
| Niobium-95m | 0.3601 | 0.08594 | pCi/g | 0.2609 | N | 0 | 13 | 0 | NOT_IDENTI 0 | <input type="checkbox"/> |
| Niobium-97 | 2.49E+06 | 5.72E+06 | pCi/g | 0 | N | 0 | 13 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |
| Polonium-212 | 2.102 | 0.1518 | pCi/g | 0.09889 | N | 238.7 | 4 | 1.24 | IDENTIFIED 2.916 | <input type="checkbox"/> |
| Polonium-214 | 1.782 | 0.1423 | pCi/g | 0.1244 | N | 352 | 4 | 1.357 | IDENTIFIED 4.813 | <input type="checkbox"/> |
| Polonium-216 | 2.102 | 0.1518 | pCi/g | 0.09889 | N | 238.7 | 4 | 1.24 | IDENTIFIED 2.916 | <input type="checkbox"/> |
| Polonium-218 | 1.782 | 0.1423 | pCi/g | 0.1244 | N | 352 | 4 | 1.357 | IDENTIFIED 4.813 | <input type="checkbox"/> |
| Potassium-40 | 23.87 | 1.306 | pCi/g | 0.5623 | 1.00 | 1461 | 1 | 2.506 | IDENTIFIED 2.993 | <input type="checkbox"/> |
| Radium-224 | 4.76 | 0.7268 | pCi/g | 1.124 | Y | 241.7 | 1 | 1.714 | IDENTIFIED 13.92 | <input checked="" type="checkbox"/> UI |
| Radium-226 | 1.299 | 0.1149 | pCi/g | 0.1153 | Y | 609.4 | 4 | 1.742 | IDENTIFIED 6.665 | <input type="checkbox"/> |
| Radium-228 | 2.031 | 0.1965 | pCi/g | 0.1898 | 0.500 | 911.1 | 3 | 1.685 | IDENTIFIED 7.057 | <input type="checkbox"/> |
| Strontium-85 | 0.1735 | 0.02654 | pCi/g | 0.08541 | Y | 0 | 13 | 0 | NOT_IDENTI 0 | <input checked="" type="checkbox"/> UI Data rejected due to low abundance. |
| Thallium-208 | 0.5815 | 0.04965 | pCi/g | 0.05856 | 0.080 | 583.2 | 1 | 1.539 | IDENTIFIED 6.596 | <input type="checkbox"/> |

| | | | | | | | | | | | | |
|---------------|-----|----------|----------|-------|---------|---|-------|----|--------|------------|-------|--------------------------|
| Thorium-228 | NR | 2.145 | 0.1549 | pCi/g | 0.1009 | N | 238.7 | 4 | 1.24 | IDENTIFIED | 2.916 | <input type="checkbox"/> |
| Thorium-230 | NR | 1.299 | 0.1149 | pCi/g | 0.1153 | N | 609.4 | 4 | 1.742 | IDENTIFIED | 6.665 | <input type="checkbox"/> |
| Thorium-232 | NR | 2.031 | 0.1965 | pCi/g | 0.1898 | N | 911.1 | 3 | 1.685 | IDENTIFIED | 7.057 | <input type="checkbox"/> |
| Tin-126 | INT | 0.3221 | 0.04954 | pCi/g | 0.1154 | N | 87.24 | 3 | 0.9872 | IDENTIFIED | 14.64 | <input type="checkbox"/> |
| Titanium-44 | LA | 0.4129 | 0.03081 | pCi/g | 0.07875 | N | 0 | 13 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Total Uranium | | 3.5307 | 2.93E-06 | ug/g | 2.9118 | N | 0 | | | | | <input type="checkbox"/> |
| Uranium-234 | NR | 1.299 | 0.1149 | pCi/g | 0.1153 | N | 609.4 | 4 | 1.742 | IDENTIFIED | 6.665 | <input type="checkbox"/> |
| Zirconium-97 | | 8.43E+08 | 1.39E+08 | pCi/g | 0 | N | 0 | 13 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue |
|-----------|-----------------|-----------------|-----------|-------------|--------|----------|--------|---------------|-------|-------|
| 245388005 | 15-JAN-10 12:00 | 04-FEB-10 10:30 | 19.9 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |

| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act | Rpt Err(%) | Qual | Qual Comment |
|-------------------|--------|----------|----------|-------|---------|------------|-------|----------|------------|------------|---|
| Actinium-228 | NR | 2.051 | 0.2141 | pCi/g | 0.2508 | N | 910.4 | 3 | 2.085 | IDENTIFIED | 8.698 <input type="checkbox"/> |
| Americium-243 | INT | 0.5136 | 0.05668 | pCi/g | 0.1291 | N | 74.64 | 1 | 1.228 | IDENTIFIED | 10.1 <input type="checkbox"/> |
| Annihilation Rad. | HE | 0.09786 | 0.05498 | pCi/g | 0.06398 | N | 510.9 | 1 | 2.437 | IDENTIFIED | 56.11 <input type="checkbox"/> |
| Barium-137m | HE | 0.1126 | 0.03756 | pCi/g | 0.08019 | N | 661.3 | 2 | 1.574 | IDENTIFIED | 33.27 <input type="checkbox"/> |
| Bismuth-211 | INT | 4.582 | 0.3449 | pCi/g | 0.416 | Y | 351.6 | 4 | 1.167 | IDENTIFIED | 6.786 <input checked="" type="checkbox"/> |
| Bismuth-212 | HE | 0.8868 | 0.3263 | pCi/g | 0.8651 | N | 0 | 12 | 0 | FAIL_ABUND | 0 <input type="checkbox"/> |
| Bismuth-214 | ✓ | 1.414 | 0.1177 | pCi/g | 0.1642 | 0.200 | 608.7 | 4 | 1.524 | IDENTIFIED | 7.42 <input type="checkbox"/> |
| Cadmium-109 | INT | 2.998 | 0.7768 | pCi/g | 1.71 | Y | 86.9 | 3 | 0.9193 | IDENTIFIED | 25.45 <input checked="" type="checkbox"/> |
| Cadmium-115 | HE | 26.18 | 31.17 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Cerium-143 | | 18760 | 2557 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Cesium-135 | HE | 0.4157 | 0.1263 | pCi/g | 0.3902 | N | 0 | 12 | 0 | NOT_IDENTI | 0 <input type="checkbox"/> |
| Cesium-137 | ✓ | 0.119 | 0.03971 | pCi/g | 0.08477 | 0.100 | 661.3 | 2 | 1.574 | IDENTIFIED | 33.27 <input type="checkbox"/> |
| Gross Gamma | | 9.13 | 1.476 | pCi/g | 3.897 | N | 0 | | | | <input type="checkbox"/> |
| Iodine-123 | HE | 1.15E+09 | 1.73E+09 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Iodine-133 | HE | 1.33E+05 | 1.87E+05 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Lead-212 | ✓ | 2.04 | 0.1026 | pCi/g | 0.1168 | 0.100 | 238.3 | 4 | 1.182 | IDENTIFIED | 3.518 <input type="checkbox"/> |
| Lead-214 | ✓ | 1.594 | 0.127 | pCi/g | 0.145 | 0.100 | 351.6 | 4 | 1.167 | IDENTIFIED | 6.786 <input type="checkbox"/> |
| Lutetium-177 | HE | 6.693 | 1.547 | pCi/g | 4.523 | N | 0 | 12 | 0 | FAIL_ABUND | 0 <input type="checkbox"/> |
| Neptunium-237 | HE | 0.8592 | 0.2396 | pCi/g | 0.5824 | N | 86.9 | 3 | 0.9193 | IDENTIFIED | 25.45 <input type="checkbox"/> |
| Niobium-95m | LA | 0.9099 | 0.1181 | pCi/g | 0.3871 | N | 0 | 12 | 0 | NOT_IDENTI | 0 <input type="checkbox"/> |
| Polonium-212 | NR | 2.04 | 0.1026 | pCi/g | 0.1168 | N | 238.3 | 4 | 1.182 | IDENTIFIED | 3.518 <input type="checkbox"/> |
| Polonium-214 | NR | 1.594 | 0.127 | pCi/g | 0.145 | N | 351.6 | 4 | 1.167 | IDENTIFIED | 6.786 <input type="checkbox"/> |
| Polonium-216 | NR | 2.04 | 0.1026 | pCi/g | 0.1168 | N | 238.3 | 4 | 1.182 | IDENTIFIED | 3.518 <input type="checkbox"/> |
| Polonium-218 | NR | 1.594 | 0.127 | pCi/g | 0.145 | N | 351.6 | 4 | 1.167 | IDENTIFIED | 6.786 <input type="checkbox"/> |
| Potassium-40 | ✓ | 20.14 | 1.22 | pCi/g | 0.8254 | 1.00 | 1460 | 1 | 2.313 | IDENTIFIED | 4.764 <input type="checkbox"/> |
| Promethium-149 | | 697.2 | 261.8 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Radium-224 | INT | 5.577 | 0.7144 | pCi/g | 1.329 | Y | 241.3 | 1 | 1.952 | IDENTIFIED | 12.49 <input checked="" type="checkbox"/> |
| Radium-226 | ✓ | 1.414 | 0.1177 | pCi/g | 0.1642 | Y | 608.7 | 4 | 1.524 | IDENTIFIED | 7.42 <input type="checkbox"/> |
| Radium-228 | ✓ | 2.051 | 0.2141 | pCi/g | 0.2508 | 0.500 | 910.4 | 3 | 2.085 | IDENTIFIED | 8.698 <input type="checkbox"/> |
| Sodium-24 | HE | 2.32E+07 | 1.05E+08 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Thallium-208 | ✓ | 0.5894 | 0.05552 | pCi/g | 0.07454 | 0.080 | 582.5 | 1 | 1.618 | IDENTIFIED | 8.842 <input type="checkbox"/> |
| Thorium-228 | NR | 2.08 | 0.1046 | pCi/g | 0.1191 | N | 238.3 | 4 | 1.182 | IDENTIFIED | 3.518 <input type="checkbox"/> |
| Thorium-230 | NR | 1.414 | 0.1177 | pCi/g | 0.1642 | N | 608.7 | 4 | 1.524 | IDENTIFIED | 7.42 <input type="checkbox"/> |
| Thorium-232 | NR | 2.051 | 0.2141 | pCi/g | 0.2508 | N | 910.4 | 3 | 2.085 | IDENTIFIED | 8.698 <input type="checkbox"/> |
| Tin-126 | HE | 0.2926 | 0.07581 | pCi/g | 0.1679 | N | 86.9 | 3 | 0.9193 | IDENTIFIED | 25.45 <input type="checkbox"/> |
| Titanium-44 | LA | 0.4729 | 0.0386 | pCi/g | 0.1146 | N | 0 | 12 | 0 | FAIL_ABUND | 0 <input type="checkbox"/> |
| Uranium-234 | NR | 1.414 | 0.1177 | pCi/g | 0.1642 | N | 608.7 | 4 | 1.524 | IDENTIFIED | 7.42 <input type="checkbox"/> |
| Zirconium-97 | | 7.03E+08 | 1.65E+08 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue |
|-----------|-----------------|-----------------|-----------|-------------|--------|----------|--------|---------------|-------|-------|
| 245388006 | 15-JAN-10 12:00 | 04-FEB-10 10:41 | 19.9 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |

| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act | Rpt Err(%) | Qual | Qual Comment |
|-------------------|--------|---------|---------|-------|---------|------------|-------|----------|------------|------------|--------------------------------|
| Actinium-228 | NR | 1.734 | 0.1851 | pCi/g | 0.1765 | N | 911.1 | 3 | 1.801 | IDENTIFIED | 9.178 <input type="checkbox"/> |
| Americium-243 | INT | 0.4331 | 0.05312 | pCi/g | 0.1027 | N | 74.79 | 1 | 1.11 | IDENTIFIED | 10.85 <input type="checkbox"/> |
| Annihilation Rad. | | 0.1506 | 0.03311 | pCi/g | 0.04464 | N | 510.6 | 1 | 1.802 | IDENTIFIED | 21.8 <input type="checkbox"/> |

| | | | | | | | | | | | | |
|----------------|-----|----------|----------|-------|---------|-------|-------|----|-------|------------|-------|--|
| Bismuth-211 | INT | 4.57 | 0.2913 | pCi/g | 0.2935 | Y | 351.9 | 4 | 1.158 | IDENTIFIED | 5.407 | <input checked="" type="checkbox"/> UI |
| Bismuth-212 | HE | 1.096 | 0.2811 | pCi/g | 0.6605 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Bismuth-214 | ✓ | 1.43 | 0.09895 | pCi/g | 0.1064 | 0.200 | 609.2 | 4 | 1.257 | IDENTIFIED | 5.865 | <input type="checkbox"/> |
| Cadmium-109 | INT | 4.41 | 0.5744 | pCi/g | 1.239 | Y | 87.18 | 3 | 1.052 | IDENTIFIED | 11.57 | <input checked="" type="checkbox"/> UI |
| Cadmium-115 | HE | 20.09 | 23.65 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Cerium-143 | | 7648 | 1281 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Cesium-134 | LA | 0.1004 | 0.0255 | pCi/g | 0.09748 | 0.100 | 0 | 11 | 0 | NOT_IDENTI | 0 | <input checked="" type="checkbox"/> UI Data rejected due to low abundance. |
| Gross Gamma | | 8.868 | 1.183 | pCi/g | 2.584 | N | 0 | | | | | <input type="checkbox"/> |
| Iodine-123 | HE | 1.87E+09 | 1.24E+09 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Iodine-135 | | 2.37E+20 | 0 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Lead-212 | ✓ | 1.691 | 0.09009 | pCi/g | 0.09122 | 0.100 | 238.6 | 4 | 1.049 | IDENTIFIED | 3.501 | <input type="checkbox"/> |
| Lead-214 | ✓ | 1.59 | 0.1095 | pCi/g | 0.1023 | 0.100 | 351.9 | 4 | 1.158 | IDENTIFIED | 5.407 | <input type="checkbox"/> |
| Lutetium-177 | HE | 4.55 | 1.297 | pCi/g | 3.396 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Neptunium-237 | INT | 1.264 | 0.21 | pCi/g | 0.3646 | N | 87.18 | 3 | 1.052 | IDENTIFIED | 11.57 | <input type="checkbox"/> |
| Polonium-212 | NR | 1.691 | 0.09009 | pCi/g | 0.09122 | N | 238.6 | 4 | 1.049 | IDENTIFIED | 3.501 | <input type="checkbox"/> |
| Polonium-214 | NR | 1.59 | 0.1095 | pCi/g | 0.1023 | N | 351.9 | 4 | 1.158 | IDENTIFIED | 5.407 | <input type="checkbox"/> |
| Polonium-216 | NR | 1.691 | 0.09009 | pCi/g | 0.09122 | N | 238.6 | 4 | 1.049 | IDENTIFIED | 3.501 | <input type="checkbox"/> |
| Polonium-218 | NR | 1.59 | 0.1095 | pCi/g | 0.1023 | N | 351.9 | 4 | 1.158 | IDENTIFIED | 5.407 | <input type="checkbox"/> |
| Potassium-40 | ✓ | 19.74 | 1.048 | pCi/g | 0.5207 | 1.00 | 1461 | 1 | 2.045 | IDENTIFIED | 3.946 | <input type="checkbox"/> |
| Promethium-149 | HE | 45.73 | 205.7 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Radium-224 | INT | 4.649 | 0.6992 | pCi/g | 1.038 | Y | 241.7 | 1 | 1.696 | IDENTIFIED | 14.67 | <input checked="" type="checkbox"/> UI |
| Radium-226 | ✓ | 1.43 | 0.09895 | pCi/g | 0.1064 | Y | 609.2 | 4 | 1.257 | IDENTIFIED | 5.865 | <input type="checkbox"/> |
| Radium-228 | ✓ | 1.734 | 0.1851 | pCi/g | 0.1765 | 0.500 | 911.1 | 3 | 1.801 | IDENTIFIED | 9.178 | <input type="checkbox"/> |
| Sodium-24 | HE | 4.78E+07 | 7.60E+07 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Thallium-208 | ✓ | 0.6154 | 0.04655 | pCi/g | 0.05611 | 0.080 | 583.3 | 1 | 1.459 | IDENTIFIED | 6.879 | <input type="checkbox"/> |
| Thorium-228 | NR | 1.725 | 0.0919 | pCi/g | 0.09305 | N | 238.6 | 4 | 1.049 | IDENTIFIED | 3.501 | <input type="checkbox"/> |
| Thorium-230 | NR | 1.43 | 0.09895 | pCi/g | 0.1064 | N | 609.2 | 4 | 1.257 | IDENTIFIED | 5.865 | <input type="checkbox"/> |
| Thorium-232 | NR | 1.734 | 0.1851 | pCi/g | 0.1765 | N | 911.1 | 3 | 1.801 | IDENTIFIED | 9.178 | <input type="checkbox"/> |
| Tin-126 | INT | 0.4303 | 0.05605 | pCi/g | 0.1219 | N | 87.18 | 3 | 1.052 | IDENTIFIED | 11.57 | <input type="checkbox"/> |
| Titanium-44 | LA | 0.4465 | 0.04057 | pCi/g | 0.08849 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Uranium-234 | NR | 1.43 | 0.09895 | pCi/g | 0.1064 | N | 609.2 | 4 | 1.257 | IDENTIFIED | 5.865 | <input type="checkbox"/> |
| Zirconium-97 | | 3.05E+08 | 1.10E+08 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project | Quals | Zero? | queue |
|-------------------|-----------------|-----------------|-----------|-------------|---------|------------|--------|--------------|------------|------------|--------------|
| 245388007 | 15-JAN-10 12:00 | 04-FEB-10 10:42 | 19.9 | SAMPLE | LOAD | I | LANL | LANL01004GEL | | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act | Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 | NR | 1.561 | 0.1698 | pCi/g | 0.2013 | N | 911.7 | 3 | 1.623 | IDENTIFIED | 9.158 |
| Americium-243 | INT | 0.3979 | 0.03801 | pCi/g | 0.08834 | N | 74.97 | 1 | 1.344 | IDENTIFIED | 8.781 |
| Annihilation Rad. | HE | 0.0967 | 0.02995 | pCi/g | 0.04651 | N | 510.6 | 1 | 2.13 | IDENTIFIED | 30.83 |
| Barium-137m | HE | 0.08027 | 0.02397 | pCi/g | 0.06547 | N | 662 | 2 | 1.163 | IDENTIFIED | 29.72 |
| Bismuth-211 | INT | 4.138 | 0.2801 | pCi/g | 0.3306 | Y | 351.7 | 4 | 1.628 | IDENTIFIED | 5.983 |
| Bismuth-212 | HE | 1.078 | 0.2126 | pCi/g | 0.6542 | N | 0 | 12 | 0 | FAIL_ABUND | 0 |
| Bismuth-214 | ✓ | 1.083 | 0.08989 | pCi/g | 0.1131 | 0.200 | 609.5 | 4 | 1.676 | IDENTIFIED | 7.298 |
| Bromine-77 | HE | 0.7387 | 20.35 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 |
| Cadmium-109 | INT | 3.147 | 0.538 | pCi/g | 1.147 | Y | 87.26 | 3 | 1.553 | IDENTIFIED | 16.53 |
| Cadmium-115 | HE | 2.725 | 23.39 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 |
| Cerium-143 | | 12690 | 1808 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 |
| Cesium-134 | LA | 0.1111 | 0.03302 | pCi/g | 0.08969 | 0.100 | 0 | 12 | 0 | FAIL_ABUND | 0 |
| Cesium-137 | ✓ | 0.08485 | 0.02534 | pCi/g | 0.0692 | 0.100 | 662 | 2 | 1.163 | IDENTIFIED | 29.72 |
| Gross Gamma | | 8.861 | 1.574 | pCi/g | 3.481 | N | 0 | | | | |
| Iodine-123 | HE | 2.68E+09 | 1.38E+09 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 |
| Lead-212 | ✓ | 1.612 | 0.08009 | pCi/g | 0.09002 | 0.100 | 238.6 | 4 | 1.355 | IDENTIFIED | 3.377 |
| Lead-214 | ✓ | 1.439 | 0.1044 | pCi/g | 0.1152 | 0.100 | 351.7 | 4 | 1.628 | IDENTIFIED | 5.983 |
| Lutetium-177 | HE | 4.566 | 1.535 | pCi/g | 3.482 | N | 0 | 12 | 0 | FAIL_ABUND | 0 |
| Mercury-203 | APW | 0.09334 | 0.04573 | pCi/g | 0.0696 | 0.100 | 278.4 | 1 | 4.647 | IDENTIFIED | 48.89 |
| Neptunium-237 | INT | 0.9018 | 0.1801 | pCi/g | 0.3326 | N | 87.26 | 3 | 1.553 | IDENTIFIED | 16.53 |
| Niobium-95m | LA | 0.516 | 0.08599 | pCi/g | 0.2855 | N | 0 | 12 | 0 | NOT_IDENTI | 0 |
| Niobium-97 | HE | 6.11E+06 | 6.00E+06 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 |

| | | | | | | | | | | | | |
|--------------|-----|----------|----------|-------|---------|-------|-------|----|-------|------------|-------|--|
| Polonium-212 | NL | 1.612 | 0.08009 | pCi/g | 0.09002 | N | 238.6 | 4 | 1.355 | IDENTIFIED | 3.377 | <input type="checkbox"/> |
| Polonium-214 | NL | 1.439 | 0.1044 | pCi/g | 0.1152 | N | 351.7 | 4 | 1.628 | IDENTIFIED | 5.983 | <input type="checkbox"/> |
| Polonium-216 | NL | 1.612 | 0.08009 | pCi/g | 0.09002 | N | 238.6 | 4 | 1.355 | IDENTIFIED | 3.377 | <input type="checkbox"/> |
| Polonium-218 | NL | 1.439 | 0.1044 | pCi/g | 0.1152 | N | 351.7 | 4 | 1.628 | IDENTIFIED | 5.983 | <input type="checkbox"/> |
| Potassium-40 | ✓ | 22.73 | 1.118 | pCi/g | 0.5283 | 1.00 | 1461 | 1 | 1.946 | IDENTIFIED | 3.317 | <input type="checkbox"/> |
| Radium-224 | INT | 4.662 | 0.7184 | pCi/g | 1.024 | Y | 241.5 | 1 | 2.217 | IDENTIFIED | 15.14 | <input checked="" type="checkbox"/> UE |
| Radium-226 | ✓ | 1.083 | 0.08989 | pCi/g | 0.1131 | Y | 609.5 | 4 | 1.676 | IDENTIFIED | 7.298 | <input type="checkbox"/> |
| Radium-228 | ✓ | 1.561 | 0.1698 | pCi/g | 0.2013 | 0.500 | 911.7 | 3 | 1.623 | IDENTIFIED | 9.158 | <input type="checkbox"/> |
| Sodium-24 | HE | 7.37E+07 | 6.97E+07 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Thallium-208 | ✓ | 0.549 | 0.04865 | pCi/g | 0.05503 | 0.080 | 583.3 | 1 | 1.585 | IDENTIFIED | 8.175 | <input type="checkbox"/> |
| Thorium-228 | NL | 1.645 | 0.08169 | pCi/g | 0.09182 | N | 238.6 | 4 | 1.355 | IDENTIFIED | 3.377 | <input type="checkbox"/> |
| Thorium-230 | NL | 1.083 | 0.08989 | pCi/g | 0.1131 | N | 609.5 | 4 | 1.676 | IDENTIFIED | 7.298 | <input type="checkbox"/> |
| Thorium-232 | NL | 1.561 | 0.1698 | pCi/g | 0.2013 | N | 911.7 | 3 | 1.623 | IDENTIFIED | 9.158 | <input type="checkbox"/> |
| Tin-126 | INT | 0.3071 | 0.0525 | pCi/g | 0.1123 | N | 87.26 | 3 | 1.553 | IDENTIFIED | 16.53 | <input type="checkbox"/> |
| Titanium-44 | LA | 0.3805 | 0.02779 | pCi/g | 0.08402 | N | 0 | 12 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Uranium-234 | NL | 1.083 | 0.08989 | pCi/g | 0.1131 | N | 609.5 | 4 | 1.676 | IDENTIFIED | 7.298 | <input type="checkbox"/> |
| Zirconium-97 | | 4.52E+08 | 1.17E+08 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue | |
|-------------------|-----------------|-----------------|-----------|-------------|---------|------------|--------|---------------------|-------|------------------|---|
| 245388008 | 15-JAN-10 12:00 | 04-FEB-10 12:44 | 20 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP | |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment | |
| Actinium-228 | NL | 1.329 | 0.1641 | pCi/g | 0.248 | N | 911.2 | 3 | 1.477 | IDENTIFIED 11.08 | <input type="checkbox"/> |
| Americium-243 | INT | 0.3898 | 0.0526 | pCi/g | 0.1011 | N | 74.8 | 1 | 1.11 | IDENTIFIED 12.22 | <input type="checkbox"/> |
| Annihilation Rad. | | 0.1227 | 0.03419 | pCi/g | 0.04479 | N | 510.5 | 1 | 2.246 | IDENTIFIED 27.73 | <input type="checkbox"/> |
| Bismuth-211 | INT | 4.229 | 0.272 | pCi/g | 0.3292 | Y | 351.8 | 4 | 1.216 | IDENTIFIED 5.474 | <input checked="" type="checkbox"/> MUF 11/10 NOT UE |
| Bismuth-212 | ✓ | 1.635 | 0.2806 | pCi/g | 0.7342 | N | 0 | 7 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> |
| Bismuth-214 | ✓ | 1.217 | 0.0965 | pCi/g | 0.1073 | 0.200 | 609.2 | 4 | 1.43 | IDENTIFIED 7.025 | <input type="checkbox"/> |
| Cadmium-109 | INT | 2.339 | 0.5503 | pCi/g | 1.497 | Y | 87.25 | 3 | 1.054 | IDENTIFIED 22.75 | <input checked="" type="checkbox"/> UE |
| Cadmium-115 | HE | 11.62 | 25.24 | pCi/g | 0 | N | 0 | 7 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |
| Cerium-143 | | 9701 | 1515 | pCi/g | 0 | N | 0 | 7 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |
| Gross Gamma | | 8.111 | 1.264 | pCi/g | 2.442 | N | 0 | | | | <input type="checkbox"/> |
| Iodine-135 | | 5.10E+20 | 0 | pCi/g | 0 | N | 0 | 7 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |
| Lead-212 | ✓ | 1.473 | 0.08223 | pCi/g | 0.09407 | 0.100 | 238.6 | 4 | 1.062 | IDENTIFIED 3.879 | <input type="checkbox"/> |
| Lead-214 | ✓ | 1.471 | 0.1021 | pCi/g | 0.1144 | 0.100 | 351.8 | 4 | 1.216 | IDENTIFIED 5.474 | <input type="checkbox"/> |
| Lutetium-177 | HE | 4.161 | 1.555 | pCi/g | 3.505 | N | 0 | 7 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> |
| Neptunium-237 | HE | 0.6701 | 0.1721 | pCi/g | 0.4405 | N | 87.25 | 3 | 1.054 | IDENTIFIED 22.75 | <input type="checkbox"/> |
| Polonium-212 | NL | 1.473 | 0.08223 | pCi/g | 0.09407 | N | 238.6 | 4 | 1.062 | IDENTIFIED 3.879 | <input type="checkbox"/> |
| Polonium-214 | NL | 1.471 | 0.1021 | pCi/g | 0.1144 | N | 351.8 | 4 | 1.216 | IDENTIFIED 5.474 | <input type="checkbox"/> |
| Polonium-216 | NL | 1.473 | 0.08223 | pCi/g | 0.09407 | N | 238.6 | 4 | 1.062 | IDENTIFIED 3.879 | <input type="checkbox"/> |
| Polonium-218 | NL | 1.471 | 0.1021 | pCi/g | 0.1144 | N | 351.8 | 4 | 1.216 | IDENTIFIED 5.474 | <input type="checkbox"/> |
| Potassium-40 | ✓ | 22.28 | 1.164 | pCi/g | 0.5407 | 1.00 | 1461 | 1 | 1.901 | IDENTIFIED 3.83 | <input type="checkbox"/> |
| Radium-224 | INT | 4.578 | 0.7284 | pCi/g | 1.071 | Y | 241.6 | 1 | 1.84 | IDENTIFIED 15.56 | <input checked="" type="checkbox"/> UE |
| Radium-226 | ✓ | 1.217 | 0.0965 | pCi/g | 0.1073 | Y | 609.2 | 4 | 1.43 | IDENTIFIED 7.025 | <input type="checkbox"/> |
| Radium-228 | ✓ | 1.329 | 0.1641 | pCi/g | 0.248 | 0.500 | 911.2 | 3 | 1.477 | IDENTIFIED 11.08 | <input type="checkbox"/> |
| Thallium-208 | ✓ | 0.4408 | 0.05108 | pCi/g | 0.06361 | 0.080 | 583.3 | 1 | 1.412 | IDENTIFIED 11.15 | <input type="checkbox"/> |
| Thorium-228 | NL | 1.502 | 0.08388 | pCi/g | 0.09596 | N | 238.6 | 4 | 1.062 | IDENTIFIED 3.879 | <input type="checkbox"/> |
| Thorium-230 | NL | 1.217 | 0.0965 | pCi/g | 0.1073 | N | 609.2 | 4 | 1.43 | IDENTIFIED 7.025 | <input type="checkbox"/> |
| Thorium-232 | NL | 1.329 | 0.1641 | pCi/g | 0.248 | N | 911.2 | 3 | 1.477 | IDENTIFIED 11.08 | <input type="checkbox"/> |
| Tin-126 | HE | 0.2282 | 0.05369 | pCi/g | 0.1472 | N | 87.25 | 3 | 1.054 | IDENTIFIED 22.75 | <input type="checkbox"/> |
| Titanium-44 | LA | 0.3839 | 0.03456 | pCi/g | 0.08817 | N | 0 | 7 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> |
| Uranium-234 | NL | 1.217 | 0.0965 | pCi/g | 0.1073 | N | 609.2 | 4 | 1.43 | IDENTIFIED 7.025 | <input type="checkbox"/> |
| Zirconium-97 | HE | 1.14E+08 | 1.21E+08 | pCi/g | 0 | N | 0 | 7 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue |
|-----------|-----------------|-----------------|-----------|-------------|--------|----------|--------|---------------|-------|-------|
| 245388009 | 15-JAN-10 12:00 | 04-FEB-10 13:31 | 20.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |

| Name | Result | Uncert. | Units | MDA | RDL | Energy | *** | FWHM | Comb Act | Rpt Err(%) | Qual | Qual Comment | |
|-------------------|--------|----------|----------|-------|---------|--------|-------|------|----------|------------|-------|-------------------------------------|--|
| Actinium-228 | NR | 2.125 | 0.2184 | pCi/g | 0.2277 | N | 911.3 | 3 | 1.333 | IDENTIFIED | 8.387 | <input type="checkbox"/> | |
| Americium-243 | INT | 0.4379 | 0.04022 | pCi/g | 0.08985 | N | 74.9 | 1 | 0.7996 | IDENTIFIED | 8.196 | <input type="checkbox"/> | |
| Annihilation Rad. | | 0.1352 | 0.03543 | pCi/g | 0.04271 | N | 510.7 | 1 | 1.31 | IDENTIFIED | 25.77 | <input type="checkbox"/> | |
| Bismuth-211 | INT | 4.825 | 0.3524 | pCi/g | 0.3409 | Y | 352 | 4 | 1.115 | IDENTIFIED | 4.857 | <input checked="" type="checkbox"/> | ✓ |
| Bismuth-212 | NR | 1.364 | 0.2341 | pCi/g | 0.4689 | N | 727.6 | 1 | 1.546 | IDENTIFIED | 16.35 | <input type="checkbox"/> | |
| Bismuth-214 | ✓ | 1.394 | 0.1139 | pCi/g | 0.1213 | 0.200 | 609.5 | 4 | 1.146 | IDENTIFIED | 6.233 | <input type="checkbox"/> | |
| Bromine-77 | HE | 17.87 | 22.94 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Cadmium-109 | INT | 3.755 | 0.5582 | pCi/g | 1.471 | Y | 87.22 | 3 | 0.9963 | IDENTIFIED | 14.08 | <input checked="" type="checkbox"/> | ✓ |
| Cadmium-115 | HE | 7.164 | 25.58 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Cerium-143 | | 6970 | 1298 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Cesium-134 | LA | 0.121 | 0.04036 | pCi/g | 0.1051 | 0.100 | 0 | 11 | 0 | FAIL_ABUND | 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Gold-195 | HE | 0.4152 | 0.1224 | pCi/g | 0.4029 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Gross Gamma | | 10.33 | 1.459 | pCi/g | 4.216 | N | 0 | | | | | <input type="checkbox"/> | |
| Iodine-123 | HE | 5.07E+08 | 1.51E+09 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Iodine-135 | | 4.09E+20 | 0 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Lead-212 | ✓ | 2.263 | 0.1492 | pCi/g | 0.08976 | 0.100 | 238.6 | 4 | 0.9819 | IDENTIFIED | 2.896 | <input type="checkbox"/> | |
| Lead-214 | ✓ | 1.679 | 0.1302 | pCi/g | 0.119 | 0.100 | 352 | 4 | 1.115 | IDENTIFIED | 4.857 | <input type="checkbox"/> | |
| Lutetium-177 | HE | 6.021 | 1.477 | pCi/g | 3.738 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Neptunium-237 | INT | 1.076 | 0.1947 | pCi/g | 0.414 | N | 87.22 | 3 | 0.9963 | IDENTIFIED | 14.08 | <input type="checkbox"/> | |
| Polonium-212 | NR | 2.263 | 0.1492 | pCi/g | 0.08976 | N | 238.6 | 4 | 0.9819 | IDENTIFIED | 2.896 | <input type="checkbox"/> | |
| Polonium-214 | NR | 1.679 | 0.1302 | pCi/g | 0.119 | N | 352 | 4 | 1.115 | IDENTIFIED | 4.857 | <input type="checkbox"/> | |
| Polonium-216 | NR | 2.263 | 0.1492 | pCi/g | 0.08976 | N | 238.6 | 4 | 0.9819 | IDENTIFIED | 2.896 | <input type="checkbox"/> | |
| Polonium-218 | NR | 1.679 | 0.1302 | pCi/g | 0.119 | N | 352 | 4 | 1.115 | IDENTIFIED | 4.857 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 21.29 | 1.227 | pCi/g | 0.4317 | 1.00 | 1461 | 1 | 1.67 | IDENTIFIED | 3.727 | <input type="checkbox"/> | |
| Promethium-149 | HE | 351.9 | 231.3 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Radium-224 | INT | 6.193 | 0.6975 | pCi/g | 1.022 | Y | 241.7 | 1 | 1.703 | IDENTIFIED | 9.819 | <input checked="" type="checkbox"/> | ✓ |
| Radium-226 | ✓ | 1.394 | 0.1139 | pCi/g | 0.1213 | Y | 609.5 | 4 | 1.146 | IDENTIFIED | 6.233 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 2.125 | 0.2184 | pCi/g | 0.2277 | 0.500 | 911.3 | 3 | 1.333 | IDENTIFIED | 8.387 | <input type="checkbox"/> | |
| Thallium-208 | ✓ | 0.6787 | 0.05929 | pCi/g | 0.05968 | 0.080 | 583.3 | 1 | 1.198 | IDENTIFIED | 7.195 | <input type="checkbox"/> | |
| Thorium-228 | NR | 2.309 | 0.1522 | pCi/g | 0.09157 | N | 238.6 | 4 | 0.9819 | IDENTIFIED | 2.896 | <input type="checkbox"/> | |
| Thorium-230 | NR | 1.394 | 0.1139 | pCi/g | 0.1213 | N | 609.5 | 4 | 1.146 | IDENTIFIED | 6.233 | <input type="checkbox"/> | |
| Thorium-232 | NR | 2.125 | 0.2184 | pCi/g | 0.2277 | N | 911.3 | 3 | 1.333 | IDENTIFIED | 8.387 | <input type="checkbox"/> | |
| Thorium-234 | TUNE | 2.254 | 1.053 | pCi/g | 1.937 | 2.00 | 63.53 | 2 | 0.9931 | IDENTIFIED | 45.89 | <input checked="" type="checkbox"/> | ✓ |
| Tin-126 | INT | 0.3663 | 0.05446 | pCi/g | 0.1442 | N | 87.22 | 3 | 0.9963 | IDENTIFIED | 14.08 | <input type="checkbox"/> | |
| Titanium-44 | LA | 0.4511 | 0.0317 | pCi/g | 0.07872 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Total Uranium | | 6.7572 | 3.13E-06 | ug/g | 2.8848 | N | 0 | | | | | <input type="checkbox"/> | |
| Uranium-234 | NR | 1.394 | 0.1139 | pCi/g | 0.1213 | N | 609.5 | 4 | 1.146 | IDENTIFIED | 6.233 | <input type="checkbox"/> | |
| Uranium-238 | HE | 2.254 | 1.053 | pCi/g | 1.937 | N | 63.53 | 2 | 0.9931 | IDENTIFIED | 45.89 | <input type="checkbox"/> | |
| Zirconium-97 | HE | 3.72E+07 | 1.30E+08 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue | | |
|----------------------|-----------------|-----------------|-----------|-------------|---------|------------|--------|---------------|------------|------------|--------------|-------------------------------------|
| 245388010 | 15-JAN-10 12:00 | 04-FEB-10 13:42 | 20.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP | | |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act | Rpt Err(%) | Qual | Qual Comment | |
| Actinium-228 | NR | 1.382 | 0.1973 | pCi/g | 0.2353 | N | 911.6 | 3 | 1.643 | IDENTIFIED | 13.06 | <input type="checkbox"/> |
| Americium-243 | INT | 0.3494 | 0.04772 | pCi/g | 0.1009 | N | 74.94 | 1 | 1.263 | IDENTIFIED | 13.01 | <input type="checkbox"/> |
| Annihilation Rad. HE | | 0.08857 | 0.03944 | pCi/g | 0.05671 | N | 511.5 | 1 | 1.49 | IDENTIFIED | 44.32 | <input type="checkbox"/> |
| Barium-137m | NR | 0.2122 | 0.03276 | pCi/g | 0.06792 | N | 662 | 2 | 1.108 | IDENTIFIED | 14.88 | <input type="checkbox"/> |
| Bismuth-211 | INT | 3.911 | 0.3411 | pCi/g | 0.3774 | Y | 352.4 | 4 | 1.456 | IDENTIFIED | 7.445 | <input checked="" type="checkbox"/> |
| Bismuth-212 | HE | 0.8643 | 0.3871 | pCi/g | 0.515 | N | 728.4 | 1 | 1.954 | IDENTIFIED | 44.52 | <input type="checkbox"/> |
| Bismuth-214 | ✓ | 1.206 | 0.1082 | pCi/g | 0.1207 | 0.200 | 609.8 | 4 | 1.505 | IDENTIFIED | 7.492 | <input type="checkbox"/> |
| Bromine-77 | HE | 23.52 | 25.01 | pCi/g | 0 | N | 0 | 10 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Cadmium-109 | INT | 4.813 | 0.7993 | pCi/g | 1.537 | Y | 87.84 | 3 | 1.311 | IDENTIFIED | 15.92 | <input checked="" type="checkbox"/> |
| Cadmium-115 | HE | 0.7542 | 28.31 | pCi/g | 0 | N | 0 | 10 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Cerium-143 | | 4310 | 1271 | pCi/g | 0 | N | 0 | 10 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Cesium-137 | ✓ | 0.2244 | 0.03463 | pCi/g | 0.0718 | 0.100 | 662 | 2 | 1.108 | IDENTIFIED | 14.88 | <input type="checkbox"/> |
| Gross Gamma | | 8.324 | 1.512 | pCi/g | 4.075 | N | 0 | | | | | <input type="checkbox"/> |
| Iodine-123 | HE | 9.13E+08 | 1.72E+09 | pCi/g | 0 | N | 0 | 10 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |

| | | | | | | | | | | | | |
|----------------|-----|-----------|----------|-------|---------|-------|-------|----|-------|------------|-------|--|
| Iodine-135 | | 1.69E+210 | | pCi/g | 0 | N | 0 | 10 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Krypton-85 | HE | 19.85 | 5.179 | pCi/g | 17.12 | N | 0 | 10 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> |
| Lead-212 | ✓ | 1.501 | 0.1004 | pCi/g | 0.1075 | 0.100 | 239 | 4 | 1.251 | IDENTIFIED | 4.37 | <input type="checkbox"/> |
| Lead-214 | ✓ | 1.361 | 0.1238 | pCi/g | 0.1316 | 0.100 | 352.4 | 4 | 1.456 | IDENTIFIED | 7.445 | <input type="checkbox"/> |
| Neptunium-237 | INT | 1.379 | 0.2696 | pCi/g | 0.4681 | N | 87.84 | 3 | 1.311 | IDENTIFIED | 15.92 | <input type="checkbox"/> |
| Polonium-212 | NL | 1.501 | 0.1004 | pCi/g | 0.1075 | N | 239 | 4 | 1.251 | IDENTIFIED | 4.37 | <input type="checkbox"/> |
| Polonium-214 | NL | 1.361 | 0.1238 | pCi/g | 0.1316 | N | 352.4 | 4 | 1.456 | IDENTIFIED | 7.445 | <input type="checkbox"/> |
| Polonium-216 | NL | 1.501 | 0.1004 | pCi/g | 0.1075 | N | 239 | 4 | 1.251 | IDENTIFIED | 4.37 | <input type="checkbox"/> |
| Polonium-218 | NL | 1.361 | 0.1238 | pCi/g | 0.1316 | N | 352.4 | 4 | 1.456 | IDENTIFIED | 7.445 | <input type="checkbox"/> |
| Potassium-40 | ✓ | 22.03 | 1.332 | pCi/g | 0.5364 | 1.00 | 1461 | 1 | 2.07 | IDENTIFIED | 4.099 | <input type="checkbox"/> |
| Promethium-149 | HE | 207.3 | 260 | pCi/g | 0 | N | 0 | 10 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Radium-224 | INT | 3.448 | 0.7697 | pCi/g | 1.223 | Y | 241.9 | 1 | 1.879 | IDENTIFIED | 21.86 | <input checked="" type="checkbox"/> UI |
| Radium-226 | ✓ | 1.206 | 0.1082 | pCi/g | 0.1207 | Y | 609.8 | 4 | 1.505 | IDENTIFIED | 7.492 | <input type="checkbox"/> |
| Radium-228 | ✓ | 1.382 | 0.1973 | pCi/g | 0.2353 | 0.500 | 911.6 | 3 | 1.643 | IDENTIFIED | 13.06 | <input type="checkbox"/> |
| Strontium-85 | LA | 0.1072 | 0.02797 | pCi/g | 0.0925 | Y | 0 | 10 | 0 | NOT_IDENTI | 0 | <input checked="" type="checkbox"/> UI |
| Thallium-208 | ✓ | 0.4858 | 0.05415 | pCi/g | 0.06469 | 0.080 | 583.6 | 1 | 1.586 | IDENTIFIED | 10.18 | <input type="checkbox"/> |
| Thorium-228 | NL | 1.531 | 0.1024 | pCi/g | 0.1096 | N | 239 | 4 | 1.251 | IDENTIFIED | 4.37 | <input type="checkbox"/> |
| Thorium-230 | NL | 1.206 | 0.1082 | pCi/g | 0.1207 | N | 609.8 | 4 | 1.505 | IDENTIFIED | 7.492 | <input type="checkbox"/> |
| Thorium-232 | NL | 1.382 | 0.1973 | pCi/g | 0.2353 | N | 911.6 | 3 | 1.643 | IDENTIFIED | 13.06 | <input type="checkbox"/> |
| Tin-126 | INT | 0.4696 | 0.07799 | pCi/g | 0.1508 | N | 87.84 | 3 | 1.311 | IDENTIFIED | 15.92 | <input type="checkbox"/> |
| Titanium-44 | LA | 0.3902 | 0.03536 | pCi/g | 0.0903 | N | 0 | 10 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Total Uranium | | 4.6866 | 3.38E-06 | ug/g | 3.6293 | N | 0 | | | | | <input type="checkbox"/> |
| Uranium-234 | NL | 1.206 | 0.1082 | pCi/g | 0.1207 | N | 609.8 | 4 | 1.505 | IDENTIFIED | 7.492 | <input type="checkbox"/> |
| Zirconium-97 | | 3.10E+08 | 1.48E+08 | pCi/g | 0 | N | 0 | 10 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue | |
|-------------------|-----------------|-----------------|-----------|-------------|---------|------------|--------|---------------------|--------|------------------|--|
| 245388011 | 15-JAN-10 12:00 | 04-FEB-10 14:41 | 20.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP | |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment | |
| Actinium-228 | NL | 1.67 | 0.1826 | pCi/g | 0.1723 | N | 911.5 | 3 | 1.313 | IDENTIFIED 9.084 | |
| Americium-243 | INT | 0.3877 | 0.03675 | pCi/g | 0.07315 | N | 74.9 | 1 | 0.9549 | IDENTIFIED 8.567 | |
| Annihilation Rad. | | 0.1289 | 0.03323 | pCi/g | 0.04967 | N | 510.9 | 1 | 1.895 | IDENTIFIED 25.21 | |
| Barium-137m | NL | 0.1388 | 0.03699 | pCi/g | 0.05608 | N | 662.2 | 2 | 1.419 | IDENTIFIED 26.22 | |
| Bismuth-211 | INT | 3.993 | 0.3619 | pCi/g | 0.2996 | Y | 351.9 | 4 | 1.113 | IDENTIFIED 6.234 | ✓ UI |
| Bismuth-212 | HE | 1.032 | 0.2358 | pCi/g | 0.6961 | N | 0 | 12 | 0 | FAIL_ABUND 0 | |
| Bismuth-214 | ✓ | 1.173 | 0.1039 | pCi/g | 0.1194 | 0.200 | 609.5 | 4 | 1.151 | IDENTIFIED 6.819 | |
| Bromine-77 | HE | 13.08 | 22.56 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF 0 | |
| Cadmium-109 | INT | 2.235 | 0.5387 | pCi/g | 1.249 | Y | 86.77 | 3 | 1.079 | IDENTIFIED 23.64 | ✓ UI |
| Cerium-143 | | 4290 | 1121 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF 0 | |
| Cesium-137 | ✓ | 0.1468 | 0.0391 | pCi/g | 0.05928 | 0.100 | 662.2 | 2 | 1.419 | IDENTIFIED 26.22 | |
| Gross Gamma | | 8.965 | 1.439 | pCi/g | 3.523 | N | 0 | | | | |
| Iodine-123 | HE | 4.20E+08 | 1.40E+09 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF 0 | |
| Iodine-133 | HE | 2786 | 1.51E+05 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF 0 | |
| Krypton-85 | HE | 14.54 | 3.786 | pCi/g | 13.04 | N | 0 | 12 | 0 | NOT_IDENTI 0 | |
| Lead-212 | ✓ | 1.736 | 0.136 | pCi/g | 0.08682 | 0.100 | 238.7 | 4 | 0.9362 | IDENTIFIED 3.506 | |
| Lead-214 | ✓ | 1.389 | 0.131 | pCi/g | 0.1044 | 0.100 | 351.9 | 4 | 1.113 | IDENTIFIED 6.234 | |
| Lutetium-177 | HE | 5.961 | 1.594 | pCi/g | 3.384 | N | 0 | 12 | 0 | FAIL_ABUND 0 | |
| Neptunium-237 | INT | 0.6403 | 0.1679 | pCi/g | 0.297 | N | 86.77 | 3 | 1.079 | IDENTIFIED 23.64 | |
| Niobium-97 | HE | 4.56E+06 | 6.54E+06 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF 0 | |
| Polonium-212 | NL | 1.736 | 0.136 | pCi/g | 0.08682 | N | 238.7 | 4 | 0.9362 | IDENTIFIED 3.506 | |
| Polonium-214 | NL | 1.389 | 0.131 | pCi/g | 0.1044 | N | 351.9 | 4 | 1.113 | IDENTIFIED 6.234 | |
| Polonium-216 | NL | 1.736 | 0.136 | pCi/g | 0.08682 | N | 238.7 | 4 | 0.9362 | IDENTIFIED 3.506 | |
| Polonium-218 | NL | 1.389 | 0.131 | pCi/g | 0.1044 | N | 351.9 | 4 | 1.113 | IDENTIFIED 6.234 | |
| Potassium-40 | ✓ | 23.35 | 1.313 | pCi/g | 0.4781 | 1.00 | 1462 | 1 | 1.636 | IDENTIFIED 3.593 | |
| Radium-224 | INT | 5.732 | 0.8554 | pCi/g | 0.9883 | Y | 241.7 | 1 | 1.778 | IDENTIFIED 13.33 | ui |
| Radium-226 | ✓ | 1.173 | 0.1039 | pCi/g | 0.1194 | Y | 609.5 | 4 | 1.151 | IDENTIFIED 6.819 | |
| Radium-228 | ✓ | 1.67 | 0.1826 | pCi/g | 0.1723 | 0.500 | 911.5 | 3 | 1.313 | IDENTIFIED 9.084 | |
| Sodium-24 | HE | 1.82E+07 | 9.56E+07 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF 0 | |
| Strontium-85 | NL | 0.07857 | 0.02046 | pCi/g | 0.07044 | Y | 0 | 12 | 0 | NOT_IDENTI 0 | ✓ UI Data rejected due to low abundance. |

| | | | | | | | | | | | | |
|---------------|----|----------|----------|-------|---------|-------|-------|----|--------|------------|-------|--------------------------|
| Thallium-208 | ✓ | 0.4364 | 0.04994 | pCi/g | 0.05748 | 0.080 | 583.5 | 1 | 1.284 | IDENTIFIED | 10.09 | <input type="checkbox"/> |
| Thorium-228 | NR | 1.771 | 0.1387 | pCi/g | 0.08858 | N | 238.7 | 4 | 0.9362 | IDENTIFIED | 3.506 | <input type="checkbox"/> |
| Thorium-230 | NR | 1.173 | 0.1039 | pCi/g | 0.1194 | N | 609.5 | 4 | 1.151 | IDENTIFIED | 6.819 | <input type="checkbox"/> |
| Thorium-232 | NR | 1.67 | 0.1826 | pCi/g | 0.1723 | N | 911.5 | 3 | 1.313 | IDENTIFIED | 9.084 | <input type="checkbox"/> |
| Thorium-234 | ✓ | 1.694 | 0.7446 | pCi/g | 1.689 | 2.00 | 62.91 | 2 | 1.019 | IDENTIFIED | 43.09 | <input type="checkbox"/> |
| Tin-126 | HE | 0.2181 | 0.05255 | pCi/g | 0.1222 | N | 86.77 | 3 | 1.079 | IDENTIFIED | 23.64 | <input type="checkbox"/> |
| Titanium-44 | LA | 0.4175 | 0.02931 | pCi/g | 0.06323 | N | 0 | 12 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Total Uranium | | 5.1118 | 2.22E-06 | ug/g | 2.5152 | N | 0 | | | | | <input type="checkbox"/> |
| Uranium-234 | NR | 1.173 | 0.1039 | pCi/g | 0.1194 | N | 609.5 | 4 | 1.151 | IDENTIFIED | 6.819 | <input type="checkbox"/> |
| Uranium-238 | HE | 1.694 | 0.7446 | pCi/g | 1.689 | N | 62.91 | 2 | 1.019 | IDENTIFIED | 43.09 | <input type="checkbox"/> |
| Zirconium-97 | HE | 1.95E+08 | 1.25E+08 | pCi/g | 0 | N | 0 | 12 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue |
|-----------|-----------------|-----------------|-----------|-------------|--------|----------|--------|---------------|-------|-------|
| 245393001 | 19-JAN-10 12:00 | 04-FEB-10 14:42 | 16.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |

| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act | Rpt Err (%) | Qual | Qual Comment |
|-------------------|--------|----------|----------|-------|---------|------------|-------|----------|-------------|------------|--|
| Actinium-228 | NR | 1.748 | 0.1953 | pCi/g | 0.2398 | N | 910.7 | 3 | 1.577 | IDENTIFIED | 9.632 <input type="checkbox"/> |
| Americium-243 | INT | 0.3577 | 0.03181 | pCi/g | 0.06208 | N | 74.88 | 1 | 0.9217 | IDENTIFIED | 7.433 <input type="checkbox"/> |
| Annihilation Rad. | HE | 0.09112 | 0.03246 | pCi/g | 0.05898 | N | 510.6 | 1 | 2.043 | IDENTIFIED | 35.34 <input type="checkbox"/> |
| Bismuth-210 | HE | 1.134 | 0.4039 | pCi/g | 0.8663 | N | 46.59 | 3 | 0.6569 | IDENTIFIED | 35.2 <input type="checkbox"/> |
| Bismuth-211 | INT | 3.828 | 0.3061 | pCi/g | 0.3974 | Y | 351.7 | 4 | 1.191 | IDENTIFIED | 6.495 <input checked="" type="checkbox"/> |
| Bismuth-212 | LA | 1.504 | 0.3072 | pCi/g | 0.8639 | N | 0 | 8 | 0 | FAIL_ABUND | 0 <input type="checkbox"/> |
| Bismuth-214 | ✓ | 1.224 | 0.1173 | pCi/g | 0.1387 | 0.200 | 609 | 4 | 1.455 | IDENTIFIED | 8.126 <input type="checkbox"/> |
| Cadmium-109 | INT | 4.145 | 0.5315 | pCi/g | 0.9718 | Y | 87.27 | 3 | 1.481 | IDENTIFIED | 11.86 <input checked="" type="checkbox"/> |
| Cerium-143 | | 839.7 | 169.8 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Cesium-134 | LA | 0.1487 | 0.04293 | pCi/g | 0.1278 | 0.100 | 0 | 8 | 0 | FAIL_ABUND | 0 <input checked="" type="checkbox"/> UI Data rejected due to low abundance. |
| Gross Gamma | | 10.4 | 1.526 | pCi/g | 4.222 | N | 0 | | | | <input type="checkbox"/> |
| Iodine-135 | | 1.88E+16 | 0 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Lead-210 | HE | 1.134 | 0.4039 | pCi/g | 0.8663 | N | 46.59 | 3 | 0.6569 | IDENTIFIED | 35.2 <input type="checkbox"/> |
| Lead-212 | ✓ | 1.857 | 0.112 | pCi/g | 0.09594 | 0.100 | 238.5 | 4 | 1.043 | IDENTIFIED | 3.309 <input type="checkbox"/> |
| Lead-214 | ✓ | 1.331 | 0.112 | pCi/g | 0.1328 | 0.100 | 351.7 | 4 | 1.191 | IDENTIFIED | 6.495 <input type="checkbox"/> |
| Lutetium-177 | HE | 4.047 | 1.089 | pCi/g | 2.505 | N | 0 | 8 | 0 | FAIL_ABUND | 0 <input type="checkbox"/> |
| Neptunium-237 | INT | 1.195 | 0.1966 | pCi/g | 0.2789 | N | 87.27 | 3 | 1.481 | IDENTIFIED | 11.86 <input type="checkbox"/> |
| Polonium-210 | HE | 1.134 | 0.4033 | pCi/g | 0.8663 | N | 46.59 | 3 | 0.6569 | IDENTIFIED | 35.2 <input type="checkbox"/> |
| Polonium-212 | NR | 1.857 | 0.112 | pCi/g | 0.09594 | N | 238.5 | 4 | 1.043 | IDENTIFIED | 3.309 <input type="checkbox"/> |
| Polonium-214 | NR | 1.331 | 0.112 | pCi/g | 0.1328 | N | 351.7 | 4 | 1.191 | IDENTIFIED | 6.495 <input type="checkbox"/> |
| Polonium-216 | NR | 1.857 | 0.112 | pCi/g | 0.09594 | N | 238.5 | 4 | 1.043 | IDENTIFIED | 3.309 <input type="checkbox"/> |
| Polonium-218 | NR | 1.331 | 0.112 | pCi/g | 0.1328 | N | 351.7 | 4 | 1.191 | IDENTIFIED | 6.495 <input type="checkbox"/> |
| Potassium-40 | ✓ | 32.44 | 1.804 | pCi/g | 0.6323 | 1.00 | 1460 | 1 | 1.813 | IDENTIFIED | 3.35 <input type="checkbox"/> |
| Radium-224 | INT | 5.506 | 0.7002 | pCi/g | 1.093 | Y | 241.6 | 1 | 1.802 | IDENTIFIED | 11.89 <input checked="" type="checkbox"/> |
| Radium-226 | ✓ | 1.224 | 0.1173 | pCi/g | 0.1387 | Y | 609 | 4 | 1.455 | IDENTIFIED | 8.126 <input type="checkbox"/> |
| Radium-228 | ✓ | 1.748 | 0.1953 | pCi/g | 0.2398 | 0.500 | 910.7 | 3 | 1.577 | IDENTIFIED | 9.632 <input type="checkbox"/> |
| Sodium-24 | HE | 8.65E+05 | 1.41E+06 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Thallium-208 | ✓ | 0.5848 | 0.05525 | pCi/g | 0.07271 | 0.080 | 582.8 | 1 | 1.3 | IDENTIFIED | 8.178 <input type="checkbox"/> |
| Thorium-228 | NR | 1.887 | 0.1138 | pCi/g | 0.09749 | N | 238.5 | 4 | 1.043 | IDENTIFIED | 3.309 <input type="checkbox"/> |
| Thorium-230 | NR | 1.224 | 0.1173 | pCi/g | 0.1387 | N | 609 | 4 | 1.455 | IDENTIFIED | 8.126 <input type="checkbox"/> |
| Thorium-232 | NR | 1.748 | 0.1953 | pCi/g | 0.2398 | N | 910.7 | 3 | 1.577 | IDENTIFIED | 9.632 <input type="checkbox"/> |
| Thorium-234 | ✓ | 1.318 | 0.4959 | pCi/g | 1.071 | 2.00 | 63.23 | 2 | 0.9063 | IDENTIFIED | 36.45 <input type="checkbox"/> |
| Tin-126 | INT | 0.4068 | 0.05217 | pCi/g | 0.09525 | N | 87.27 | 3 | 1.481 | IDENTIFIED | 11.86 <input type="checkbox"/> |
| Titanium-44 | LA | 0.3989 | 0.02755 | pCi/g | 0.06146 | N | 0 | 8 | 0 | FAIL_ABUND | 0 <input type="checkbox"/> |
| Total Uranium | | 4.0216 | 1.48E-06 | ug/g | 1.5967 | N | 0 | | | | <input type="checkbox"/> |
| Uranium-234 | NR | 1.224 | 0.1173 | pCi/g | 0.1387 | N | 609 | 4 | 1.455 | IDENTIFIED | 8.126 <input type="checkbox"/> |
| Uranium-238 | HE | 1.318 | 0.4959 | pCi/g | 1.071 | N | 63.23 | 2 | 0.9063 | IDENTIFIED | 36.45 <input type="checkbox"/> |
| Zirconium-97 | HE | 4.15E+06 | 3.35E+06 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue |
|-----------|-----------------|-----------------|-----------|-------------|--------|----------|--------|---------------|-------|-------|
| 245393002 | 19-JAN-10 12:00 | 04-FEB-10 14:42 | 16.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |

| Name | Result | Uncert. | Units | MDA | RDL | Energy | *** | FWHM | Comb Act | Rpt Err(%) | Qual | Qual Comment |
|-------------------|--------|----------|----------|---------------|-------|--------|-----|--------|------------|------------|-------------------------------------|--|
| Actinium-228 | NR | 1.47 | 0.1396 | pCi/g 0.1561 | N | 910.8 | 3 | 1.433 | IDENTIFIED | 6.798 | <input type="checkbox"/> | |
| Americium-243 | INT | 0.7248 | 0.1192 | pCi/g 0.1339 | N | 75.68 | 1 | 3.384 | IDENTIFIED | 15.9 | <input type="checkbox"/> | |
| Annihilation Rad. | | 0.0975 | 0.0244 | pCi/g 0.03626 | N | 510.7 | 1 | 2.484 | IDENTIFIED | 24.81 | <input type="checkbox"/> | |
| Barium-137m | NR | 0.09985 | 0.0205 | pCi/g 0.04466 | N | 661.5 | 2 | 1.449 | IDENTIFIED | 20.18 | <input type="checkbox"/> | |
| Bismuth-211 | INT | 3.279 | 0.1947 | pCi/g 0.2665 | Y | 352 | 4 | 1.255 | IDENTIFIED | 4.996 | <input checked="" type="checkbox"/> | UI |
| Bismuth-212 | NR | 1.056 | 0.2308 | pCi/g 0.3944 | N | 726.7 | 1 | 2.153 | IDENTIFIED | 21.28 | <input type="checkbox"/> | |
| Bismuth-214 | ✓ | 0.8435 | 0.06604 | pCi/g 0.095 | 0.200 | 609 | 4 | 1.509 | IDENTIFIED | 6.431 | <input type="checkbox"/> | |
| Cadmium-109 | INT | 2.235 | 0.6676 | pCi/g 1.903 | Y | 87.27 | 3 | 1.083 | IDENTIFIED | 29.52 | <input checked="" type="checkbox"/> | UI |
| Cerium-141 | NR | 0.3578 | 0.06017 | pCi/g 0.1087 | N | 144.3 | 2 | 1.171 | IDENTIFIED | 16.57 | <input type="checkbox"/> | |
| Cerium-143 | | 937.2 | 155.1 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Cesium-137 | ✓ | 0.1055 | 0.02168 | pCi/g 0.04721 | 0.100 | 661.5 | 2 | 1.449 | IDENTIFIED | 20.18 | <input type="checkbox"/> | |
| Gadolinium-153 | LA | 0.7094 | 0.07635 | pCi/g 0.2014 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Gold-195 | LA | 2.068 | 0.2225 | pCi/g 0.6 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Gross Gamma | | 13.98 | 1.683 | pCi/g 3.618 | N | 0 | | | | | <input type="checkbox"/> | |
| Iodine-123 | HE | 9.23E+06 | 1.05E+07 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Iodine-135 | | 4.25E+16 | 0 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Krypton-85 | HE | 16.08 | 3.278 | pCi/g 11.04 | N | 0 | 11 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> | |
| Lead-212 | ✓ | 1.241 | 0.06129 | pCi/g 0.07948 | 0.100 | 238.7 | 4 | 1.216 | IDENTIFIED | 3.408 | <input type="checkbox"/> | |
| Lead-214 | ✓ | 1.141 | 0.07398 | pCi/g 0.09288 | 0.100 | 352 | 4 | 1.255 | IDENTIFIED | 4.996 | <input type="checkbox"/> | |
| Lutetium-177 | HE | 2.005 | 0.716 | pCi/g 1.701 | N | 209.3 | 1 | 1.443 | IDENTIFIED | 35.6 | <input type="checkbox"/> | |
| Neptunium-237 | HE | 0.644 | 0.2036 | pCi/g 0.5414 | N | 87.27 | 3 | 1.083 | IDENTIFIED | 29.52 | <input type="checkbox"/> | |
| Niobium-95 | NR | 0.2641 | 0.03618 | pCi/g 0.05764 | N | 766.6 | 1 | 1.486 | IDENTIFIED | 12.91 | <input type="checkbox"/> | |
| Polonium-212 | NR | 1.241 | 0.06129 | pCi/g 0.07948 | N | 238.7 | 4 | 1.216 | IDENTIFIED | 3.408 | <input type="checkbox"/> | |
| Polonium-214 | NR | 1.141 | 0.07398 | pCi/g 0.09288 | N | 352 | 4 | 1.255 | IDENTIFIED | 4.996 | <input type="checkbox"/> | |
| Polonium-216 | NR | 1.241 | 0.06129 | pCi/g 0.07948 | N | 238.7 | 4 | 1.216 | IDENTIFIED | 3.408 | <input type="checkbox"/> | |
| Polonium-218 | NR | 1.141 | 0.07398 | pCi/g 0.09288 | N | 352 | 4 | 1.255 | IDENTIFIED | 4.996 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 24.91 | 1.135 | pCi/g 0.3798 | 1.00 | 1460 | 1 | 2.059 | IDENTIFIED | 2.521 | <input type="checkbox"/> | |
| Protactinium-234m | NR | 80.08 | 5.906 | pCi/g 5.204 | N | 1001 | 1 | 1.818 | IDENTIFIED | 5.026 | <input type="checkbox"/> | |
| Radium-224 | INT | 3.285 | 0.4549 | pCi/g 0.9032 | Y | 241.7 | 1 | 1.607 | IDENTIFIED | 13.56 | <input checked="" type="checkbox"/> | UI |
| Radium-226 | ✓ | 0.8435 | 0.06604 | pCi/g 0.095 | Y | 609 | 4 | 1.509 | IDENTIFIED | 6.431 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 1.47 | 0.1396 | pCi/g 0.1561 | 0.500 | 910.8 | 3 | 1.433 | IDENTIFIED | 6.798 | <input type="checkbox"/> | |
| Strontium-85 | LA | 0.08331 | 0.01698 | pCi/g 0.05722 | Y | 0 | 11 | 0 | NOT_IDENTI | 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Thallium-200 | HE | 522.9 | 342.2 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Thallium-208 | ✓ | 0.3446 | 0.03522 | pCi/g 0.0488 | 0.080 | 583.2 | 1 | 1.517 | IDENTIFIED | 9.438 | <input type="checkbox"/> | |
| Thorium-228 | NR | 1.262 | 0.06228 | pCi/g 0.08076 | N | 238.7 | 4 | 1.216 | IDENTIFIED | 3.408 | <input type="checkbox"/> | |
| Thorium-230 | NR | 0.8435 | 0.06604 | pCi/g 0.095 | N | 609 | 4 | 1.509 | IDENTIFIED | 6.431 | <input type="checkbox"/> | |
| Thorium-232 | NR | 1.47 | 0.1396 | pCi/g 0.1561 | N | 910.8 | 3 | 1.433 | IDENTIFIED | 6.798 | <input type="checkbox"/> | |
| Thorium-234 | ✓ | 51 | 5.012 | pCi/g 3.305 | 2.00 | 63.46 | 2 | 0.9064 | IDENTIFIED | 4.343 | <input type="checkbox"/> | |
| Tin-126 | HE | 0.2193 | 0.06552 | pCi/g 0.1997 | N | 87.27 | 3 | 1.083 | IDENTIFIED | 29.52 | <input type="checkbox"/> | |
| Titanium-44 | LA | 0.1712 | 0.02662 | pCi/g 0.09484 | N | 0 | 11 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> | |
| Total Uranium | | 152.26 | 1.49E-05 | ug/g 4.9191 | N | 0 | | | | | <input type="checkbox"/> | |
| Tungsten-181 | LA | 2.958 | 0.3343 | pCi/g 1.122 | N | 0 | 11 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> | |
| Uranium-231 | HE | 4.147 | 1.243 | pCi/g 3.356 | N | 94.92 | 1 | 1.03 | IDENTIFIED | 29.7 | <input type="checkbox"/> | |
| Uranium-234 | NR | 0.8435 | 0.06604 | pCi/g 0.095 | N | 609 | 4 | 1.509 | IDENTIFIED | 6.431 | <input type="checkbox"/> | |
| Uranium-235 | ✓ | 1.168 | 0.2155 | pCi/g 0.3539 | 0.500 | 144.3 | 2 | 1.171 | IDENTIFIED | 16.57 | <input type="checkbox"/> | |
| Uranium-238 | NR | 51 | 5.012 | pCi/g 3.305 | N | 63.46 | 2 | 0.9064 | IDENTIFIED | 4.343 | <input type="checkbox"/> | |
| Zirconium-97 | | 9.66E+06 | 2.15E+06 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project | Quals | Zero? | queue |
|--------------------------|-----------------|-----------------|-----------|-------------|--------|------------|--------|--------------|------------|---|--------------|
| 245393003 | 19-JAN-10 12:00 | 04-FEB-10 14:43 | 16.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act | Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 <i>NR</i> | 1.526 | 0.1494 | pCi/g | 0.172 | N | 911.3 3 | 2.097 | IDENTIFIED | 7.215 | <input type="checkbox"/> | |
| Americium-243 <i>INT</i> | 0.3322 | 0.03493 | pCi/g | 0.08204 | N | 74.75 1 | 1.224 | IDENTIFIED | 9.692 | <input type="checkbox"/> | |
| Annihilation Rad. | 0.1261 | 0.02897 | pCi/g | 0.038 | N | 510.7 1 | 2.273 | IDENTIFIED | 22.41 | <input type="checkbox"/> | |
| Bismuth-211 <i>INT</i> | 3.353 | 0.2633 | pCi/g | 0.2771 | Y | 351.9 4 | 1.23 | IDENTIFIED | 5.279 | <input checked="" type="checkbox"/> <i>UI</i> | |
| Bismuth-212 <i>LA</i> | 0.9829 | 0.2235 | pCi/g | 0.5349 | N | 0 14 0 | | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Bismuth-214 <i>✓</i> | 1.077 | 0.08692 | pCi/g | 0.09759 | 0.200 | 609.3 4 | 1.772 | IDENTIFIED | 5.598 | <input type="checkbox"/> | |

| | | | | | | | | | | | | |
|-------------------|-----|----------|----------|-------|---------|-------|-------|----|-------|------------|-------|--|
| Cadmium-109 | INT | 1.773 | 0.4865 | pCi/g | 1.478 | Y | 86.97 | 3 | 1.005 | IDENTIFIED | 27.03 | ✓ |
| Cerium-141 | HE | 0.1102 | 0.04418 | pCi/g | 0.099 | N | 144 | 2 | 1.013 | IDENTIFIED | 39.83 | □ |
| Cerium-143 | | 1438 | 217.6 | pCi/g | 0 | N | 0 | 14 | 0 | SHORT_HLIF | 0 | □ |
| Gold-195 | HE | 0.5883 | 0.1627 | pCi/g | 0.3958 | N | 0 | 14 | 0 | FAIL_ABUND | 0 | □ |
| Gross Gamma | | 10.39 | 1.385 | pCi/g | 2.397 | N | | 0 | | | | □ |
| Iodine-123 | HE | 6.93E+06 | 9.17E+06 | pCi/g | 0 | N | 0 | 14 | 0 | SHORT_HLIF | 0 | □ |
| Krypton-85 | LA | 21.91 | 3.729 | pCi/g | 12.15 | N | 0 | 14 | 0 | NOT_IDENTI | 0 | □ |
| Lead-212 | ✓ | 1.698 | 0.1216 | pCi/g | 0.08188 | 0.100 | 238.7 | 4 | 1.353 | IDENTIFIED | 2.771 | □ |
| Lead-214 | ✓ | 1.166 | 0.09652 | pCi/g | 0.09697 | 0.100 | 351.9 | 4 | 1.23 | IDENTIFIED | 5.279 | □ |
| Lutetium-177 | HE | 2.695 | 0.6514 | pCi/g | 1.981 | N | 0 | 14 | 0 | FAIL_ABUND | 0 | □ |
| Neptunium-237 | HE | 0.5111 | 0.1498 | pCi/g | 0.3492 | N | 86.97 | 3 | 1.005 | IDENTIFIED | 27.03 | □ |
| Niobium-95 | HE | 0.07643 | 0.01953 | pCi/g | 0.06947 | N | 0 | 14 | 0 | NOT_IDENTI | 0 | □ |
| Polonium-212 | NR | 1.698 | 0.1216 | pCi/g | 0.08188 | N | 238.7 | 4 | 1.353 | IDENTIFIED | 2.771 | □ |
| Polonium-214 | NR | 1.166 | 0.09652 | pCi/g | 0.09697 | N | 351.9 | 4 | 1.23 | IDENTIFIED | 5.279 | □ |
| Polonium-216 | NR | 1.698 | 0.1216 | pCi/g | 0.08188 | N | 238.7 | 4 | 1.353 | IDENTIFIED | 2.771 | □ |
| Polonium-218 | NR | 1.166 | 0.09652 | pCi/g | 0.09697 | N | 351.9 | 4 | 1.23 | IDENTIFIED | 5.279 | □ |
| Potassium-40 | ✓ | 36.17 | 1.813 | pCi/g | 0.3908 | 1.00 | 1461 | 1 | 2.508 | IDENTIFIED | 2.032 | □ |
| Protactinium-234m | HE | 13.13 | 2.848 | pCi/g | 7.591 | N | 0 | 14 | 0 | FAIL_ABUND | 0 | □ |
| Radium-224 | INT | 3.895 | 0.6293 | pCi/g | 0.9306 | Y | 241.6 | 1 | 1.886 | IDENTIFIED | 14.89 | ✓ |
| Radium-226 | ✓ | 1.077 | 0.08692 | pCi/g | 0.09759 | Y | 609.3 | 4 | 1.772 | IDENTIFIED | 5.598 | □ |
| Radium-228 | ✓ | 1.526 | 0.1494 | pCi/g | 0.172 | 0.500 | 911.3 | 3 | 2.097 | IDENTIFIED | 7.215 | □ |
| Sodium-24 | HE | 1.85E+05 | 9.34E+05 | pCi/g | 0 | N | 0 | 14 | 0 | SHORT_HLIF | 0 | □ |
| Strontium-85 | LA | 0.1135 | 0.01932 | pCi/g | 0.06296 | Y | 0 | 14 | 0 | NOT_IDENTI | 0 | □ UI Data rejected due to low abundance. |
| Technetium-99m | | 5.33E+16 | 0 | pCi/g | 0 | N | 0 | 14 | 0 | SHORT_HLIF | 0 | □ |
| Thallium-200 | HE | 89.91 | 343.6 | pCi/g | 0 | N | 0 | 14 | 0 | SHORT_HLIF | 0 | □ |
| Thallium-208 | ✓ | 0.495 | 0.04023 | pCi/g | 0.04783 | 0.080 | 583.2 | 1 | 1.714 | IDENTIFIED | 6.054 | □ |
| Thorium-228 | NR | 1.725 | 0.1236 | pCi/g | 0.0832 | N | 238.7 | 4 | 1.353 | IDENTIFIED | 2.771 | □ |
| Thorium-230 | NR | 1.077 | 0.08692 | pCi/g | 0.09758 | N | 609.3 | 4 | 1.772 | IDENTIFIED | 5.598 | □ |
| Thorium-232 | NR | 1.526 | 0.1494 | pCi/g | 0.172 | N | 911.3 | 3 | 2.097 | IDENTIFIED | 7.215 | □ |
| Thorium-234 | ✓ | 8.781 | 1.224 | pCi/g | 1.899 | 2.00 | 63.29 | 2 | 1.28 | IDENTIFIED | 10.89 | □ |
| Tin-126 | HE | 0.1741 | 0.04774 | pCi/g | 0.1402 | N | 86.97 | 3 | 1.005 | IDENTIFIED | 27.03 | □ |
| Titanium-44 | LA | 0.3668 | 0.02581 | pCi/g | 0.0707 | N | 0 | 14 | 0 | FAIL_ABUND | 0 | □ |
| Total Uranium | | 26.291 | 3.64E-06 | ug/g | 2.8271 | N | | 0 | | | | □ |
| Uranium-234 | NR | 1.077 | 0.08692 | pCi/g | 0.09758 | N | 609.3 | 4 | 1.772 | IDENTIFIED | 5.598 | □ |
| Uranium-235 | ✓ | 0.36 | 0.1469 | pCi/g | 0.3303 | 0.500 | 144 | 2 | 1.013 | IDENTIFIED | 39.83 | □ |
| Uranium-238 | NR | 8.781 | 1.224 | pCi/g | 1.899 | N | 63.29 | 2 | 1.28 | IDENTIFIED | 10.89 | □ |
| Zirconium-97 | | 1.68E+07 | 2.53E+06 | pCi/g | 0 | N | 0 | 14 | 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 | | |
|-------------------|-----------------|-----------------|-----------|-------------|---------|------------|--------|-----------|-------|------------|---------|------|--------------|
| 245393004 | 19-JAN-10 12:00 | 04-FEB-10 14:43 | 16.1 | SAMPLE | LOAD | 1 | LANL | LANL01004 | GEL | N | RGSP | | |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb | Act | Rpt | Err (%) | Qual | Qual Comment |
| Actinium-228 | NR | 1.613 | 0.163 | pCi/g | 0.2076 | N | 910.2 | 3 | 1.989 | IDENTIFIED | 8.292 | ☐ | |
| Americium-243 | NR | 0.3292 | 0.04435 | pCi/g | 0.1035 | N | 74.78 | 1 | 1.271 | IDENTIFIED | 12.72 | ☐ | |
| Annihilation Rad. | HE | 0.09306 | 0.03442 | pCi/g | 0.0518 | N | 510.1 | 1 | 2.315 | IDENTIFIED | 36.88 | ☐ | |
| Bismuth-211 | INT | 3.335 | 0.2381 | pCi/g | 0.3547 | Y | 351.6 | 4 | 1.222 | IDENTIFIED | 6.353 | ☑ | ✓ |
| Bismuth-212 | HE | 1.164 | 0.2396 | pCi/g | 0.7193 | N | 0 | 8 | 0 | FAIL_ABUND | 0 | ☐ | |
| Bismuth-214 | ✓ | 1.026 | 0.08846 | pCi/g | 0.1137 | 0.200 | 608.7 | 4 | 1.652 | IDENTIFIED | 7.757 | ☐ | |
| Cadmium-109 | INT | 2.239 | 0.5327 | pCi/g | 1.423 | Y | 86.99 | 3 | 1.107 | IDENTIFIED | 23.3 | ☑ | ✓ |
| Cerium-143 | | 1605 | 230.9 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF | 0 | ☐ | |
| Cesium-135 | NR | 0.5535 | 0.1341 | pCi/g | 0.2457 | N | 269.3 | 1 | 3.259 | IDENTIFIED | 23.93 | ☐ | |
| Gross Gamma | | 8.54 | 1.574 | pCi/g | 2.994 | N | | 0 | | | | ☐ | |
| Iodine-135 | | 2.05E+16 | | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF | 0 | ☐ | |
| Lead-212 | ✓ | 1.516 | 0.07521 | pCi/g | 0.09907 | 0.100 | 238.3 | 4 | 1.168 | IDENTIFIED | 3.418 | ☐ | |
| Lead-214 | ✓ | 1.16 | 0.08817 | pCi/g | 0.1188 | 0.100 | 351.6 | 4 | 1.222 | IDENTIFIED | 6.353 | ☐ | |
| Lutetium-177 | HE | 2.927 | 0.7479 | pCi/g | 2.241 | N | 0 | 8 | 0 | FAIL_ABUND | 0 | ☐ | |
| Neptunium-237 | HE | 0.6451 | 0.1673 | pCi/g | 0.419 | N | 86.99 | 3 | 1.107 | IDENTIFIED | 23.3 | ☐ | |
| Niobium-95m | LA | 0.5546 | 0.08509 | pCi/g | 0.2845 | N | 0 | 8 | 0 | NOT_IDENTI | 0 | ☐ | |
| Polonium-212 | NR | 1.516 | 0.07521 | pCi/g | 0.09907 | N | 238.3 | 4 | 1.168 | IDENTIFIED | 3.418 | ☐ | |

| | | | | | | | | | | | | |
|----------------|-----|----------|----------|-------|---------|-------|-------|---|-------|------------|-------|-------------------------------------|
| Polonium-214 | NR | 1.16 | 0.08817 | pCi/g | 0.1188 | N | 351.6 | 4 | 1.222 | IDENTIFIED | 6.353 | <input type="checkbox"/> |
| Polonium-216 | NR | 1.516 | 0.07521 | pCi/g | 0.09907 | N | 238.3 | 4 | 1.168 | IDENTIFIED | 3.418 | <input type="checkbox"/> |
| Polonium-218 | NR | 1.16 | 0.08817 | pCi/g | 0.1188 | N | 351.6 | 4 | 1.222 | IDENTIFIED | 6.353 | <input type="checkbox"/> |
| Potassium-40 | ✓ | 30.49 | 1.469 | pCi/g | 0.5726 | 1.00 | 1460 | 1 | 2.159 | IDENTIFIED | 3.037 | <input type="checkbox"/> |
| Radium-224 | INT | 4.533 | 0.7498 | pCi/g | 1.127 | Y | 241.2 | 1 | 2.147 | IDENTIFIED | 16.3 | <input checked="" type="checkbox"/> |
| Radium-226 | ✓ | 1.026 | 0.08846 | pCi/g | 0.1137 | Y | 608.7 | 4 | 1.652 | IDENTIFIED | 7.757 | <input type="checkbox"/> |
| Radium-228 | ✓ | 1.613 | 0.163 | pCi/g | 0.2076 | 0.500 | 910.2 | 3 | 1.989 | IDENTIFIED | 8.292 | <input type="checkbox"/> |
| Technetium-99m | | 1.24E+17 | 0 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Thallium-208 | ✓ | 0.4576 | 0.04106 | pCi/g | 0.05784 | 0.080 | 582.6 | 1 | 1.81 | IDENTIFIED | 8.365 | <input type="checkbox"/> |
| Thorium-228 | NR | 1.541 | 0.07642 | pCi/g | 0.1007 | N | 238.3 | 4 | 1.168 | IDENTIFIED | 3.418 | <input type="checkbox"/> |
| Thorium-230 | NR | 1.026 | 0.08846 | pCi/g | 0.1137 | N | 608.7 | 4 | 1.652 | IDENTIFIED | 7.757 | <input type="checkbox"/> |
| Thorium-232 | NR | 1.613 | 0.163 | pCi/g | 0.2076 | N | 910.2 | 3 | 1.989 | IDENTIFIED | 8.292 | <input type="checkbox"/> |
| Tin-126 | HE | 0.2197 | 0.05228 | pCi/g | 0.1406 | N | 86.99 | 3 | 1.107 | IDENTIFIED | 23.3 | <input type="checkbox"/> |
| Titanium-44 | LA | 0.365 | 0.02876 | pCi/g | 0.0888 | N | 0 | 8 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Total Uranium | | 7.5222 | 3.39E-06 | ug/g | 4.1414 | N | 0 | | | | | <input type="checkbox"/> |
| Uranium-234 | NR | 1.026 | 0.08846 | pCi/g | 0.1137 | N | 608.7 | 4 | 1.652 | IDENTIFIED | 7.757 | <input type="checkbox"/> |
| Zirconium-97 | | 1.81E+07 | 2.98E+06 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue |
|-------------------|-----------------|-----------------|-----------|-------------|--------|------------|--------|---------------------|------------|--|
| 245393005 | 19-JAN-10 12:00 | 04-FEB-10 14:48 | 16.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 | 1.619 | 0.1812 | pCi/g | 0.2061 | N | 911.4 | 3 | 1.78 | IDENTIFIED | 9.555 <input type="checkbox"/> |
| Americium-243 | 0.3405 | 0.04076 | pCi/g | 0.09981 | N | 74.84 | 1 | 1.217 | IDENTIFIED | 11.28 <input type="checkbox"/> |
| Annihilation Rad. | 0.1344 | 0.03768 | pCi/g | 0.04417 | N | 511 | 1 | 1.877 | IDENTIFIED | 27.69 <input type="checkbox"/> |
| Barium-137m | 0.1308 | 0.03095 | pCi/g | 0.06179 | N | 662.1 | 2 | 1.264 | IDENTIFIED | 23.25 <input type="checkbox"/> |
| Bismuth-211 | 3.975 | 0.2998 | pCi/g | 0.3484 | Y | 352.1 | 4 | 1.23 | IDENTIFIED | 6.064 <input checked="" type="checkbox"/> |
| Bismuth-212 | 1.286 | 0.2764 | pCi/g | 0.6943 | N | 0 | 17 | 0 | FAIL_ABUND | 0 <input type="checkbox"/> |
| Bismuth-214 | 1.09 | 0.1112 | pCi/g | 0.1255 | 0.200 | 609.6 | 4 | 1.655 | IDENTIFIED | 8.798 <input type="checkbox"/> |
| Cadmium-109 | 4.147 | 0.5409 | pCi/g | 1.464 | Y | 87.3 | 3 | 1.35 | IDENTIFIED | 12.18 <input checked="" type="checkbox"/> |
| Cerium-143 | 783.8 | 160.2 | pCi/g | 0 | N | 0 | 17 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Cesium-134 | 0.1281 | 0.02698 | pCi/g | 0.1021 | 0.100 | 0 | 17 | 0 | FAIL_ABUND | 0 <input checked="" type="checkbox"/> UI Data rejected due to low abundance. |
| Cesium-137 | 0.1383 | 0.03272 | pCi/g | 0.06532 | 0.100 | 662.1 | 2 | 1.264 | IDENTIFIED | 23.25 <input type="checkbox"/> |
| Gadolinium-153 | 0.4139 | 0.06162 | pCi/g | 0.171 | N | 0 | 17 | 0 | FAIL_ABUND | 0 <input type="checkbox"/> |
| Gold-195 | 1.206 | 0.1796 | pCi/g | 0.5172 | N | 0 | 17 | 0 | FAIL_ABUND | 0 <input type="checkbox"/> |
| Gross Gamma | 12.4 | 1.49 | pCi/g | 5.434 | N | 0 | | | | <input type="checkbox"/> |
| Iodine-123 | 9.37E+06 | 1.15E+07 | pCi/g | 0 | N | 0 | 17 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Iodine-133 | 6480 | 6580 | pCi/g | 0 | N | 0 | 17 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Krypton-85 | 13.53 | 3.945 | pCi/g | 13.43 | N | 0 | 17 | 0 | NOT_IDENTI | 0 <input type="checkbox"/> |
| Lead-212 | 1.712 | 0.1001 | pCi/g | 0.09557 | 0.100 | 238.8 | 4 | 1.129 | IDENTIFIED | 3.366 <input type="checkbox"/> |
| Lead-214 | 1.383 | 0.1104 | pCi/g | 0.1214 | 0.100 | 352.1 | 4 | 1.23 | IDENTIFIED | 6.064 <input type="checkbox"/> |
| Lutetium-177 | 2.694 | 0.7747 | pCi/g | 2.305 | N | 209.5 | 1 | 1.18 | IDENTIFIED | 28.45 <input type="checkbox"/> |
| Neptunium-237 | 1.195 | 0.1987 | pCi/g | 0.5042 | N | 87.3 | 3 | 1.35 | IDENTIFIED | 12.18 <input type="checkbox"/> |
| Niobium-97 | 98010 | 1.51E+05 | pCi/g | 0 | N | 0 | 17 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Polonium-212 | 1.712 | 0.1001 | pCi/g | 0.09557 | N | 238.8 | 4 | 1.129 | IDENTIFIED | 3.366 <input type="checkbox"/> |
| Polonium-214 | 1.383 | 0.1104 | pCi/g | 0.1214 | N | 352.1 | 4 | 1.23 | IDENTIFIED | 6.064 <input type="checkbox"/> |
| Polonium-216 | 1.712 | 0.1001 | pCi/g | 0.09557 | N | 238.8 | 4 | 1.129 | IDENTIFIED | 3.366 <input type="checkbox"/> |
| Polonium-218 | 1.383 | 0.1104 | pCi/g | 0.1214 | N | 352.1 | 4 | 1.23 | IDENTIFIED | 6.064 <input type="checkbox"/> |
| Potassium-40 | 27.45 | 1.446 | pCi/g | 0.5427 | 1.00 | 1461 | 1 | 2.084 | IDENTIFIED | 3.05 <input type="checkbox"/> |
| Protactinium-234m | 32.25 | 5.274 | pCi/g | 14.89 | N | 0 | 17 | 0 | FAIL_ABUND | 0 <input type="checkbox"/> |
| Radium-224 | 4.442 | 0.5527 | pCi/g | 1.088 | Y | 241.8 | 1 | 1.512 | IDENTIFIED | 11.7 <input checked="" type="checkbox"/> |
| Radium-226 | 1.09 | 0.1112 | pCi/g | 0.1255 | Y | 609.6 | 4 | 1.655 | IDENTIFIED | 8.798 <input type="checkbox"/> |
| Radium-228 | 1.619 | 0.1812 | pCi/g | 0.2061 | 0.500 | 911.4 | 3 | 1.78 | IDENTIFIED | 9.555 <input type="checkbox"/> |
| Sodium-24 | 4.62E+05 | 1.01E+06 | pCi/g | 0 | N | 0 | 17 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Strontium-85 | 0.0701 | 0.02044 | pCi/g | 0.06959 | Y | 0 | 17 | 0 | NOT_IDENTI | 0 <input checked="" type="checkbox"/> UI Data rejected due to low abundance. |
| Thallium-200 | 624.7 | 423.6 | pCi/g | 0 | N | 0 | 17 | 0 | SHORT_HLIF | 0 <input type="checkbox"/> |
| Thallium-208 | 0.5181 | 0.0472 | pCi/g | 0.06111 | 0.080 | 583.5 | 1 | 1.338 | IDENTIFIED | 7.754 <input type="checkbox"/> |
| Thorium-228 | 1.74 | 0.1017 | pCi/g | 0.09712 | N | 238.8 | 4 | 1.129 | IDENTIFIED | 3.366 <input type="checkbox"/> |
| Thorium-230 | 1.09 | 0.1112 | pCi/g | 0.1255 | N | 609.6 | 4 | 1.655 | IDENTIFIED | 8.798 <input type="checkbox"/> |

| | | | | | | | | | | | | |
|---------------|-----|----------|----------|-------|---------|-------|-------|----|--------|------------|-------|--------------------------|
| Thorium-232 | NL | 1.619 | 0.1812 | pCi/g | 0.2061 | N | 911.4 | 3 | 1.78 | IDENTIFIED | 9.555 | <input type="checkbox"/> |
| Thorium-234 | ✓ | 25.27 | 2.546 | pCi/g | 2.127 | 2.00 | 63.23 | 2 | 1.048 | IDENTIFIED | 5.085 | <input type="checkbox"/> |
| Tin-126 | INT | 0.407 | 0.05308 | pCi/g | 0.144 | N | 87.3 | 3 | 1.35 | IDENTIFIED | 12.18 | <input type="checkbox"/> |
| Titanium-44 | LA | 0.4315 | 0.03205 | pCi/g | 0.08237 | N | 0 | 17 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Total Uranium | | 75.415 | 7.58E-06 | ug/g | 3.1667 | N | | | | | | <input type="checkbox"/> |
| Tungsten-181 | HE | 0.9154 | 0.2084 | pCi/g | 0.6853 | N | 0 | 17 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> |
| Uranium-231 | HE | 4.357 | 1.46 | pCi/g | 2.529 | N | 0 | 17 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Uranium-234 | NL | 1.09 | 0.1112 | pCi/g | 0.1255 | N | 609.6 | 4 | 1.655 | IDENTIFIED | 8.798 | <input type="checkbox"/> |
| Uranium-235 | ✓ | 0.5121 | 0.1723 | pCi/g | 0.387 | 0.500 | 143.8 | 1 | 0.9825 | IDENTIFIED | 32.51 | <input type="checkbox"/> |
| Uranium-238 | NL | 25.27 | 2.546 | pCi/g | 2.127 | N | 63.23 | 2 | 1.048 | IDENTIFIED | 5.085 | <input type="checkbox"/> |
| Zirconium-97 | HE | 4.03E+06 | 2.67E+06 | pCi/g | 0 | N | 0 | 17 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue |
|-------------------|-----------------|-----------------|-----------|-------------|---------|------------|--------|---------------------|--------|---|
| 245393006 | 19-JAN-10 12:00 | 04-FEB-10 14:48 | 16.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 | NL | 1.726 | 0.1933 | pCi/g | 0.2319 | N | 910.9 | 3 | 1.517 | IDENTIFIED 9.657 <input type="checkbox"/> |
| Americium-243 | INT | 0.2992 | 0.02851 | pCi/g | 0.06724 | N | 74.84 | 1 | 0.8251 | IDENTIFIED 8.531 <input type="checkbox"/> |
| Annihilation Rad. | | 0.1808 | 0.04317 | pCi/g | 0.05579 | N | 511 | 1 | 1.665 | IDENTIFIED 23.39 <input type="checkbox"/> |
| Barium-137m | HE | 0.1001 | 0.04151 | pCi/g | 0.07766 | N | 662.1 | 2 | 1.048 | IDENTIFIED 41.11 <input type="checkbox"/> |
| Bismuth-210 | NL | 1.938 | 0.447 | pCi/g | 0.8888 | N | 46.58 | 3 | 0.6354 | IDENTIFIED 22.57 <input type="checkbox"/> |
| Bismuth-211 | INT | 3.353 | 0.2777 | pCi/g | 0.3606 | Y | 351.7 | 4 | 1.036 | IDENTIFIED 6.949 <input checked="" type="checkbox"/> NL |
| Bismuth-214 | ✓ | 1.272 | 0.1194 | pCi/g | 0.1297 | 0.200 | 608.9 | 4 | 1.178 | IDENTIFIED 7.302 <input type="checkbox"/> |
| Cadmium-109 | INT | 2.633 | 0.4901 | pCi/g | 1.206 | Y | 87.3 | 3 | 1.022 | IDENTIFIED 18.02 <input checked="" type="checkbox"/> NL |
| Cerium-141 | HE | 0.1919 | 0.05238 | pCi/g | 0.09227 | N | 144.1 | 2 | 1.004 | IDENTIFIED 26.82 <input type="checkbox"/> |
| Cerium-143 | | 596.9 | 132.9 | pCi/g | 0 | N | 0 | 7 | 0 | SHORT_HLIF 0 <input type="checkbox"/> |
| Cesium-137 | ✓ | 0.1058 | 0.04388 | pCi/g | 0.08209 | 0.100 | 662.1 | 2 | 1.048 | IDENTIFIED 41.11 <input type="checkbox"/> |
| Gadolinium-153 | LA | 0.4487 | 0.06124 | pCi/g | 0.1395 | N | 0 | 7 | 0 | FAIL_ABUND 0 <input type="checkbox"/> |
| Gold-195 | LA | 1.308 | 0.1785 | pCi/g | 0.4564 | N | 0 | 7 | 0 | FAIL_ABUND 0 <input type="checkbox"/> |
| Gross Gamma | | 12.63 | 1.355 | pCi/g | 5.225 | N | 0 | | | <input type="checkbox"/> |
| Iodine-123 | HE | 6.53E+06 | 8.77E+06 | pCi/g | 0 | N | 0 | 7 | 0 | SHORT_HLIF 0 <input type="checkbox"/> |
| Lead-210 | NL | 1.938 | 0.447 | pCi/g | 0.8888 | N | 46.58 | 3 | 0.6354 | IDENTIFIED 22.57 <input type="checkbox"/> |
| Lead-212 | ✓ | 1.485 | 0.09046 | pCi/g | 0.08881 | 0.100 | 238.5 | 4 | 0.8433 | IDENTIFIED 3.519 <input type="checkbox"/> |
| Lead-214 | ✓ | 1.166 | 0.1013 | pCi/g | 0.1258 | 0.100 | 351.7 | 4 | 1.036 | IDENTIFIED 6.949 <input type="checkbox"/> |
| Lutetium-177 | HE | 2.704 | 0.8265 | pCi/g | 1.931 | N | 209.1 | 1 | 0.7575 | IDENTIFIED 30.25 <input type="checkbox"/> |
| Neptunium-237 | INT | 0.7588 | 0.1615 | pCi/g | 0.3369 | N | 87.3 | 3 | 1.022 | IDENTIFIED 18.02 <input type="checkbox"/> |
| Niobium-95 | NL | 0.3039 | 0.0477 | pCi/g | 0.08334 | N | 767.1 | 1 | 1.329 | IDENTIFIED 14.8 <input type="checkbox"/> |
| Polonium-210 | NL | 1.938 | 0.4454 | pCi/g | 0.8888 | N | 46.58 | 3 | 0.6354 | IDENTIFIED 22.57 <input type="checkbox"/> |
| Polonium-212 | NL | 1.485 | 0.09046 | pCi/g | 0.08881 | N | 238.5 | 4 | 0.8433 | IDENTIFIED 3.519 <input type="checkbox"/> |
| Polonium-214 | NL | 1.166 | 0.1013 | pCi/g | 0.1258 | N | 351.7 | 4 | 1.036 | IDENTIFIED 6.949 <input type="checkbox"/> |
| Polonium-216 | NL | 1.485 | 0.09046 | pCi/g | 0.08881 | N | 238.5 | 4 | 0.8433 | IDENTIFIED 3.519 <input type="checkbox"/> |
| Polonium-218 | NL | 1.166 | 0.1013 | pCi/g | 0.1258 | N | 351.7 | 4 | 1.036 | IDENTIFIED 6.949 <input type="checkbox"/> |
| Potassium-40 | ✓ | 26.06 | 1.484 | pCi/g | 0.5977 | 1.00 | 1460 | 1 | 2.136 | IDENTIFIED 3.768 <input type="checkbox"/> |
| Protactinium-234m | NL | 43.98 | 6.317 | pCi/g | 9.984 | N | 1001 | 1 | 1.404 | IDENTIFIED 13.45 <input type="checkbox"/> |
| Radium-224 | INT | 4.987 | 0.6476 | pCi/g | 1.013 | Y | 241.5 | 1 | 1.664 | IDENTIFIED 12.2 <input checked="" type="checkbox"/> NL |
| Radium-226 | ✓ | 1.272 | 0.1194 | pCi/g | 0.1297 | Y | 608.9 | 4 | 1.178 | IDENTIFIED 7.302 <input type="checkbox"/> |
| Radium-228 | ✓ | 1.726 | 0.1933 | pCi/g | 0.2319 | 0.500 | 910.9 | 3 | 1.517 | IDENTIFIED 9.657 <input type="checkbox"/> |
| Sodium-24 | HE | 2.51E+05 | 1.02E+06 | pCi/g | 0 | N | 0 | 7 | 0 | SHORT_HLIF 0 <input type="checkbox"/> |
| Thallium-208 | ✓ | 0.5641 | 0.05789 | pCi/g | 0.06871 | 0.080 | 582.8 | 1 | 1.295 | IDENTIFIED 8.699 <input type="checkbox"/> |
| Thorium-228 | NL | 1.509 | 0.09192 | pCi/g | 0.09025 | N | 238.5 | 4 | 0.8433 | IDENTIFIED 3.519 <input type="checkbox"/> |
| Thorium-230 | NL | 1.272 | 0.1194 | pCi/g | 0.1296 | N | 608.9 | 4 | 1.178 | IDENTIFIED 7.302 <input type="checkbox"/> |
| Thorium-232 | NL | 1.726 | 0.1933 | pCi/g | 0.2319 | N | 910.9 | 3 | 1.517 | IDENTIFIED 9.657 <input type="checkbox"/> |
| Thorium-234 | ✓ | 31.01 | 2.854 | pCi/g | 1.102 | 2.00 | 63.31 | 2 | 0.866 | IDENTIFIED 2.584 <input type="checkbox"/> |
| Tin-126 | INT | 0.2584 | 0.0481 | pCi/g | 0.1164 | N | 87.3 | 3 | 1.022 | IDENTIFIED 18.02 <input type="checkbox"/> |
| Titanium-44 | LA | 0.3472 | 0.0224 | pCi/g | 0.04962 | N | 0 | 7 | 0 | FAIL_ABUND 0 <input type="checkbox"/> |
| Total Uranium | | 92.552 | 8.49E-06 | ug/g | 1.6411 | N | | | | <input type="checkbox"/> |
| Uranium-231 | NL | 4.674 | 1.017 | pCi/g | 1.883 | N | 94.48 | 1 | 0.84 | IDENTIFIED 21.2 <input type="checkbox"/> |
| Uranium-234 | NL | 1.272 | 0.1194 | pCi/g | 0.1296 | N | 608.9 | 4 | 1.178 | IDENTIFIED 7.302 <input type="checkbox"/> |
| Uranium-235 | ✓ | 0.6268 | 0.1775 | pCi/g | 0.3038 | 0.500 | 144.1 | 2 | 1.004 | IDENTIFIED 26.82 <input type="checkbox"/> |

Uranium-238 *ML* 31.01 2.854 pCi/g 1.102 N 63.31 2 0.866 IDENTIFIED 2.584 ☐
 Zirconium-97 HE 5.97E+06 3.10E+06 pCi/g 0 N 0 7 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 |
|-------------------------|-------------------|-----------------|-----------|-------------|--------|------------|--------|------------------------|-------------------------------------|--|
| 245393007 | 19-JAN-10 12:00 | 04-FEB-10 14:51 | 16.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 <i>NR</i> | 1.364 | 0.1784 | pCi/g | 0.2037 | N | 911.3 | 1.553 | IDENTIFIED 11.89 | <input type="checkbox"/> | |
| Americium-243 <i>NT</i> | 0.3646 | 0.04544 | pCi/g | 0.1053 | N | 74.79 | 1.017 | IDENTIFIED 11.07 | <input type="checkbox"/> | |
| Annihilation Rad. HE | 0.07223 | 0.03344 | pCi/g | 0.04935 | N | 510.9 | 1.719 | IDENTIFIED 46.21 | <input type="checkbox"/> | |
| Bismuth-211 <i>NT</i> | 3.662 | 0.2807 | pCi/g | 0.3286 | Y | 351.8 | 4 | 1.315 IDENTIFIED 6.883 | <input checked="" type="checkbox"/> | <i>VF</i> |
| Bismuth-212 <i>LA</i> | 1.35 | 0.2929 | pCi/g | 0.7138 | N | 0 | 8 | 0 FAIL_ABUND 0 | <input type="checkbox"/> | |
| Bismuth-214 <i>✓</i> | 1.067 | 0.08477 | pCi/g | 0.1178 | 0.200 | 609.4 | 4 | 1.297 IDENTIFIED 7.047 | <input type="checkbox"/> | |
| Cadmium-109 <i>LA</i> | 2.122 | 0.4853 | pCi/g | 1.623 | Y | 0 | 8 | 0 NOT_IDENTI 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Cerium-143 | 518.1 | 138.1 | pCi/g | 0 | N | 0 | 8 | 0 SHORT_HLIF 0 | <input type="checkbox"/> | |
| Cesium-134 <i>LA</i> | 0.1503 | 0.03698 | pCi/g | 0.1042 | 0.100 | 0 | 8 | 0 FAIL_ABUND 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Gross Gamma | 9.827 | 1.438 | pCi/g | 2.702 | N | 0 | 0 | | <input type="checkbox"/> | |
| Iodine-123 HE | 6.02E+06 9.46E+06 | pCi/g | 0 | N | 0 | 8 | 0 | 0 SHORT_HLIF 0 | <input type="checkbox"/> | |
| Iodine-135 | 3.84E+16 0 | pCi/g | 0 | N | 0 | 8 | 0 | 0 SHORT_HLIF 0 | <input type="checkbox"/> | |
| Lead-212 <i>✓</i> | 1.523 | 0.0817 | pCi/g | 0.08708 | 0.100 | 238.6 | 4 | 1.099 IDENTIFIED 3.557 | <input type="checkbox"/> | |
| Lead-214 <i>✓</i> | 1.274 | 0.1032 | pCi/g | 0.1145 | 0.100 | 351.8 | 4 | 1.315 IDENTIFIED 6.883 | <input type="checkbox"/> | |
| Polonium-212 <i>NR</i> | 1.523 | 0.0817 | pCi/g | 0.08708 | N | 238.6 | 4 | 1.099 IDENTIFIED 3.557 | <input type="checkbox"/> | |
| Polonium-214 <i>NR</i> | 1.274 | 0.1032 | pCi/g | 0.1145 | N | 351.8 | 4 | 1.315 IDENTIFIED 6.883 | <input type="checkbox"/> | |
| Polonium-216 <i>NR</i> | 1.523 | 0.0817 | pCi/g | 0.08708 | N | 238.6 | 4 | 1.099 IDENTIFIED 3.557 | <input type="checkbox"/> | |
| Polonium-218 <i>NR</i> | 1.274 | 0.1032 | pCi/g | 0.1145 | N | 351.8 | 4 | 1.315 IDENTIFIED 6.883 | <input type="checkbox"/> | |
| Potassium-40 <i>✓</i> | 37.83 | 1.669 | pCi/g | 0.5104 | 1.00 | 1461 | 1 | 2.123 IDENTIFIED 2.614 | <input type="checkbox"/> | |
| Radium-224 <i>NT</i> | 4.306 | 0.6283 | pCi/g | 0.9911 | Y | 241.7 | 1 | 1.717 IDENTIFIED 14.2 | <input checked="" type="checkbox"/> | <i>VF</i> |
| Radium-226 <i>✓</i> | 1.067 | 0.08477 | pCi/g | 0.1178 | Y | 609.4 | 4 | 1.297 IDENTIFIED 7.047 | <input type="checkbox"/> | |
| Radium-228 <i>✓</i> | 1.364 | 0.1784 | pCi/g | 0.2037 | 0.500 | 911.3 | 3 | 1.553 IDENTIFIED 11.89 | <input type="checkbox"/> | |
| Thallium-208 <i>✓</i> | 0.5178 | 0.04416 | pCi/g | 0.05805 | 0.080 | 583.2 | 1 | 1.566 IDENTIFIED 7.926 | <input type="checkbox"/> | |
| Thorium-228 <i>NR</i> | 1.548 | 0.08302 | pCi/g | 0.08849 | N | 238.6 | 4 | 1.099 IDENTIFIED 3.557 | <input type="checkbox"/> | |
| Thorium-230 <i>NR</i> | 1.067 | 0.08477 | pCi/g | 0.1178 | N | 609.4 | 4 | 1.297 IDENTIFIED 7.047 | <input type="checkbox"/> | |
| Thorium-232 <i>NR</i> | 1.364 | 0.1784 | pCi/g | 0.2037 | N | 911.3 | 3 | 1.553 IDENTIFIED 11.89 | <input type="checkbox"/> | |
| Thorium-234 <i>✓</i> | 4.49 | 1.461 | pCi/g | 2.933 | 2.00 | 63.19 | 2 | 1.087 IDENTIFIED 31 | <input type="checkbox"/> | |
| Titanium-44 <i>LA</i> | 0.3753 | 0.03494 | pCi/g | 0.0844 | N | 0 | 8 | 0 FAIL_ABUND 0 | <input type="checkbox"/> | |
| Total Uranium | 13.454 | 4.35E-06 | ug/g | 4.3656 | N | 0 | 0 | | <input type="checkbox"/> | |
| Uranium-234 <i>NR</i> | 1.067 | 0.08477 | pCi/g | 0.1178 | N | 609.4 | 4 | 1.297 IDENTIFIED 7.047 | <input type="checkbox"/> | |
| Uranium-238 HE | 4.49 | 1.461 | pCi/g | 2.933 | N | 63.19 | 2 | 1.087 IDENTIFIED 31 | <input type="checkbox"/> | |
| Zirconium-97 HE | 5.01E+06 2.55E+06 | pCi/g | 0 | N | 0 | 8 | 0 | 0 SHORT_HLIF 0 | <input type="checkbox"/> | |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue |
|-------------------------|-------------------|-----------------|-----------|-------------|--------|------------|--------|------------------------|-------------------------------------|--------------|
| 245393008 | 19-JAN-10 12:00 | 04-FEB-10 14:52 | 16.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 <i>NR</i> | 1.433 | 0.1688 | pCi/g | 0.2414 | N | 911.1 | 3 | 1.53 IDENTIFIED 10.62 | <input type="checkbox"/> | |
| Americium-243 <i>NT</i> | 0.4098 | 0.04443 | pCi/g | 0.1038 | N | 74.62 | 1 | 1.357 IDENTIFIED 9.856 | <input type="checkbox"/> | |
| Annihilation Rad. HE | 0.07454 | 0.03152 | pCi/g | 0.04433 | N | 511.1 | 1 | 1.584 IDENTIFIED 42.19 | <input type="checkbox"/> | |
| Bismuth-211 <i>NT</i> | 4.041 | 0.2607 | pCi/g | 0.369 | Y | 351.7 | 4 | 1.202 IDENTIFIED 5.588 | <input checked="" type="checkbox"/> | <i>VF</i> |
| Bismuth-212 HE | 0.8816 | 0.2387 | pCi/g | 0.4747 | N | 727.8 | 1 | 1.228 IDENTIFIED 26.81 | <input type="checkbox"/> | |
| Bismuth-214 <i>✓</i> | 1.247 | 0.09142 | pCi/g | 0.1096 | 0.200 | 609 | 4 | 1.441 IDENTIFIED 6.336 | <input type="checkbox"/> | |
| Cadmium-109 <i>NT</i> | 2.102 | 0.6998 | pCi/g | 1.596 | Y | 87.19 | 3 | 1.302 IDENTIFIED 32.94 | <input checked="" type="checkbox"/> | <i>VF</i> |
| Cerium-143 | 1751 | 251.6 | pCi/g | 0 | N | 0 | 9 | 0 SHORT_HLIF 0 | <input type="checkbox"/> | |
| Cesium-135 HE | 0.3413 | 0.0955 | pCi/g | 0.3111 | N | 0 | 9 | 0 NOT_IDENTI 0 | <input type="checkbox"/> | |
| Gross Gamma | 8.382 | 1.338 | pCi/g | 3.402 | N | 0 | 0 | | <input type="checkbox"/> | |
| Iodine-123 HE | 6.22E+06 1.09E+07 | pCi/g | 0 | N | 0 | 9 | 0 | 0 SHORT_HLIF 0 | <input type="checkbox"/> | |
| Iodine-135 | 2.06E+16 0 | pCi/g | 0 | N | 0 | 9 | 0 | 0 SHORT_HLIF 0 | <input type="checkbox"/> | |
| Lead-212 <i>✓</i> | 1.526 | 0.07754 | pCi/g | 0.09457 | 0.100 | 238.4 | 4 | 1.218 IDENTIFIED 3.497 | <input type="checkbox"/> | |
| Lead-214 <i>✓</i> | 1.406 | 0.09783 | pCi/g | 0.1194 | 0.100 | 351.7 | 4 | 1.202 IDENTIFIED 5.588 | <input type="checkbox"/> | |
| Lutetium-177 HE | 3.501 | 0.8542 | pCi/g | 2.423 | N | 0 | 9 | 0 FAIL_ABUND 0 | <input type="checkbox"/> | |

| | | | | | | | | | | | | |
|---------------|-----|----------|----------|-------|---------|-------|-------|---|-------|------------|-------|--|
| Neptunium-237 | HE | 0.6057 | 0.2111 | pCi/g | 0.47 | N | 87.19 | 3 | 1.302 | IDENTIFIED | 32.94 | <input type="checkbox"/> |
| Niobium-95 | HE | 0.08803 | 0.02571 | pCi/g | 0.08659 | N | 0 | 9 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> |
| Niobium-95m | LA | 0.5066 | 0.08166 | pCi/g | 0.2754 | N | 0 | 9 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> |
| Polonium-212 | NR | 1.526 | 0.07754 | pCi/g | 0.09457 | N | 238.4 | 4 | 1.218 | IDENTIFIED | 3.497 | <input type="checkbox"/> |
| Polonium-214 | NR | 1.406 | 0.09783 | pCi/g | 0.1194 | N | 351.7 | 4 | 1.202 | IDENTIFIED | 5.588 | <input type="checkbox"/> |
| Polonium-216 | NR | 1.526 | 0.07754 | pCi/g | 0.09457 | N | 238.4 | 4 | 1.218 | IDENTIFIED | 3.497 | <input type="checkbox"/> |
| Polonium-218 | NR | 1.406 | 0.09783 | pCi/g | 0.1194 | N | 351.7 | 4 | 1.202 | IDENTIFIED | 5.588 | <input type="checkbox"/> |
| Potassium-40 | ✓ | 24.42 | 1.162 | pCi/g | 0.5052 | 1.00 | 1461 | 1 | 2.216 | IDENTIFIED | 3.421 | <input type="checkbox"/> |
| Radium-224 | INT | 4.471 | 0.5975 | pCi/g | 1.076 | Y | 241.5 | 1 | 1.758 | IDENTIFIED | 13.04 | <input checked="" type="checkbox"/> UI |
| Radium-226 | ✓ | 1.247 | 0.09142 | pCi/g | 0.1096 | Y | 609 | 4 | 1.441 | IDENTIFIED | 6.336 | <input type="checkbox"/> |
| Radium-228 | ✓ | 1.433 | 0.1688 | pCi/g | 0.2414 | 0.500 | 911.1 | 3 | 1.53 | IDENTIFIED | 10.62 | <input type="checkbox"/> |
| Thallium-208 | ✓ | 0.4831 | 0.04244 | pCi/g | 0.06378 | 0.080 | 582.9 | 1 | 1.193 | IDENTIFIED | 8.197 | <input type="checkbox"/> |
| Thorium-228 | NR | 1.551 | 0.07879 | pCi/g | 0.0961 | N | 238.4 | 4 | 1.218 | IDENTIFIED | 3.497 | <input type="checkbox"/> |
| Thorium-230 | NR | 1.247 | 0.09141 | pCi/g | 0.1096 | N | 609 | 4 | 1.441 | IDENTIFIED | 6.336 | <input type="checkbox"/> |
| Thorium-232 | NR | 1.433 | 0.1688 | pCi/g | 0.2414 | N | 911.1 | 3 | 1.53 | IDENTIFIED | 10.62 | <input type="checkbox"/> |
| Tin-126 | HE | 0.2063 | 0.06868 | pCi/g | 0.1642 | N | 87.19 | 3 | 1.302 | IDENTIFIED | 32.94 | <input type="checkbox"/> |
| Titanium-44 | LA | 0.3518 | 0.02803 | pCi/g | 0.0878 | N | 0 | 9 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Total Uranium | | 4.7249 | 3.02E-06 | ug/g | 3.9291 | N | | | | | | <input type="checkbox"/> |
| Uranium-234 | NR | 1.247 | 0.09141 | pCi/g | 0.1096 | N | 609 | 4 | 1.441 | IDENTIFIED | 6.336 | <input type="checkbox"/> |
| Zirconium-97 | | 6.39E+06 | 2.77E+06 | pCi/g | 0 | N | 0 | 9 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue | |
|-------------------|-----------------|-----------------|-----------|-------------|---------|------------|--------|---------------------|-------|------------------|--|
| 245393009 | 19-JAN-10 12:00 | 04-FEB-10 14:52 | 16.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP | |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment | |
| Actinium-228 | NR | 1.494 | 0.1565 | pCi/g | 0.18 | N | 911.6 | 3 | 1.928 | IDENTIFIED 8.68 | <input type="checkbox"/> |
| Americium-243 | INT | 0.4329 | 0.04629 | pCi/g | 0.098 | N | 74.96 | 1 | 1.69 | IDENTIFIED 10.01 | <input type="checkbox"/> |
| Annihilation Rad. | | 0.1138 | 0.02981 | pCi/g | 0.04517 | N | 511 | 1 | 1.863 | IDENTIFIED 26.02 | <input type="checkbox"/> |
| Barium-137m | HE | 0.0861 | 0.01769 | pCi/g | 0.05597 | N | 661.8 | 2 | 2.948 | IDENTIFIED 20.33 | <input type="checkbox"/> |
| Bismuth-211 | INT | 3.316 | 0.2282 | pCi/g | 0.3121 | Y | 351.7 | 4 | 1.486 | IDENTIFIED 6.109 | <input checked="" type="checkbox"/> UI |
| Bismuth-212 | HE | 0.6727 | 0.2252 | pCi/g | 0.6 | N | 0 | 17 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> |
| Bismuth-214 | ✓ | 1.135 | 0.0797 | pCi/g | 0.1056 | 0.200 | 609.5 | 4 | 1.722 | IDENTIFIED 5.797 | <input type="checkbox"/> |
| Cadmium-109 | INT | 3.536 | 0.4963 | pCi/g | 1.625 | Y | 87.39 | 3 | 1.553 | IDENTIFIED 13.35 | <input checked="" type="checkbox"/> UI |
| Cerium-141 | HE | 0.1282 | 0.03299 | pCi/g | 0.1186 | N | 0 | 17 | 0 | NOT_IDENTI 0 | <input type="checkbox"/> |
| Cerium-143 | | 1373 | 202.3 | pCi/g | 0 | N | 0 | 17 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |
| Cesium-137 | ✓ | 0.09102 | 0.0187 | pCi/g | 0.05917 | 0.100 | 661.8 | 2 | 2.948 | IDENTIFIED 20.33 | <input type="checkbox"/> |
| Gadolinium-153 | HE | 0.1908 | 0.05357 | pCi/g | 0.1586 | N | 0 | 17 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> |
| Gold-195 | HE | 0.556 | 0.1561 | pCi/g | 0.4485 | N | 0 | 17 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> |
| Gross Gamma | | 10.7 | 1.257 | pCi/g | 4.464 | N | 0 | | | | <input type="checkbox"/> |
| Iodine-133 | HE | 5903 | 5629 | pCi/g | 0 | N | 0 | 17 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |
| Krypton-85 | HE | 12.42 | 3.728 | pCi/g | 12.31 | N | 0 | 17 | 0 | NOT_IDENTI 0 | <input type="checkbox"/> |
| Lead-212 | ✓ | 1.487 | 0.0733 | pCi/g | 0.09128 | 0.100 | 238.6 | 4 | 1.371 | IDENTIFIED 3.321 | <input type="checkbox"/> |
| Lead-214 | ✓ | 1.153 | 0.08488 | pCi/g | 0.1088 | 0.100 | 351.7 | 4 | 1.486 | IDENTIFIED 6.109 | <input type="checkbox"/> |
| Lutetium-177 | HE | 2.31 | 0.7268 | pCi/g | 2.176 | N | 0 | 17 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> |
| Neptunium-237 | INT | 1.019 | 0.1775 | pCi/g | 0.4642 | N | 87.39 | 3 | 1.553 | IDENTIFIED 13.35 | <input type="checkbox"/> |
| Niobium-95m | NR | 0.6104 | 0.0737 | pCi/g | 0.2553 | N | 0 | 17 | 0 | NOT_IDENTI 0 | <input type="checkbox"/> |
| Polonium-212 | NR | 1.487 | 0.0733 | pCi/g | 0.09128 | N | 238.6 | 4 | 1.371 | IDENTIFIED 3.321 | <input type="checkbox"/> |
| Polonium-214 | NR | 1.153 | 0.08488 | pCi/g | 0.1088 | N | 351.7 | 4 | 1.486 | IDENTIFIED 6.109 | <input type="checkbox"/> |
| Polonium-216 | NR | 1.487 | 0.0733 | pCi/g | 0.09128 | N | 238.6 | 4 | 1.371 | IDENTIFIED 3.321 | <input type="checkbox"/> |
| Polonium-218 | NR | 1.153 | 0.08488 | pCi/g | 0.1088 | N | 351.7 | 4 | 1.486 | IDENTIFIED 6.109 | <input type="checkbox"/> |
| Potassium-40 | ✓ | 31.5 | 1.412 | pCi/g | 0.458 | 1.00 | 1461 | 1 | 2.075 | IDENTIFIED 2.631 | <input type="checkbox"/> |
| Protactinium-234m | HE | 16.13 | 3.953 | pCi/g | 10.87 | N | 0 | 17 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> |
| Radium-224 | INT | 3.747 | 0.5748 | pCi/g | 1.038 | Y | 241.6 | 1 | 1.874 | IDENTIFIED 15.07 | <input checked="" type="checkbox"/> UI |
| Radium-226 | ✓ | 1.135 | 0.0797 | pCi/g | 0.1056 | Y | 609.5 | 4 | 1.722 | IDENTIFIED 5.797 | <input type="checkbox"/> |
| Radium-228 | ✓ | 1.494 | 0.1565 | pCi/g | 0.18 | 0.500 | 911.6 | 3 | 1.928 | IDENTIFIED 8.68 | <input type="checkbox"/> |
| Sodium-24 | HE | 6.49E+05 | 9.43E+05 | pCi/g | 0 | N | 0 | 17 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |
| Strontium-85 | LA | 0.06435 | 0.01932 | pCi/g | 0.0638 | Y | 0 | 17 | 0 | NOT_IDENTI 0 | <input checked="" type="checkbox"/> UI Data rejected due to low abundance. |
| Thallium-200 | HE | 576.3 | 375.6 | pCi/g | 0 | N | 0 | 17 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> |
| Thallium-208 | ✓ | 0.4266 | 0.03859 | pCi/g | 0.05284 | 0.080 | 583.4 | 1 | 1.681 | IDENTIFIED 8.374 | <input type="checkbox"/> |

| | | | | | | | | | | | | |
|---------------|-----|----------|----------|-------|---------|------|-------|----|-------|------------|-------|--------------------------|
| Thorium-228 | NR | 1.511 | 0.07449 | pCi/g | 0.09276 | N | 238.6 | 4 | 1.371 | IDENTIFIED | 3.321 | <input type="checkbox"/> |
| Thorium-230 | NR | 1.135 | 0.0797 | pCi/g | 0.1056 | N | 609.5 | 4 | 1.722 | IDENTIFIED | 5.797 | <input type="checkbox"/> |
| Thorium-232 | NR | 1.494 | 0.1565 | pCi/g | 0.18 | N | 911.6 | 3 | 1.928 | IDENTIFIED | 8.68 | <input type="checkbox"/> |
| Thorium-234 | ✓ | 16.03 | 1.862 | pCi/g | 2.138 | 2.00 | 63.39 | 2 | 1.233 | IDENTIFIED | 7.813 | <input type="checkbox"/> |
| Tin-126 | INT | 0.3471 | 0.04871 | pCi/g | 0.1674 | N | 87.39 | 3 | 1.553 | IDENTIFIED | 13.35 | <input type="checkbox"/> |
| Titanium-44 | LA | 0.3451 | 0.02684 | pCi/g | 0.08298 | N | 0 | 17 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Total Uranium | | 47.825 | 5.54E-06 | ug/g | 3.1831 | N | 0 | | | | | <input type="checkbox"/> |
| Tungsten-181 | LA | 2.834 | 0.2479 | pCi/g | 0.8228 | N | 0 | 17 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> |
| Uranium-231 | HE | 2.964 | 1.09 | pCi/g | 2.566 | N | 0 | 17 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Uranium-234 | NR | 1.135 | 0.0797 | pCi/g | 0.1056 | N | 609.5 | 4 | 1.722 | IDENTIFIED | 5.797 | <input type="checkbox"/> |
| Uranium-238 | NR | 16.03 | 1.862 | pCi/g | 2.138 | N | 63.39 | 2 | 1.233 | IDENTIFIED | 7.813 | <input type="checkbox"/> |
| Zirconium-97 | | 9.30E+06 | 2.67E+06 | pCi/g | 0 | N | 0 | 17 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue | |
|-----------------|--------------|-----------------|-----------|-------------|--------|------------|--------|---------------|------------|-------|--------------------------|
| 1202023713 | | 04-FEB-10 17:08 | 0 | MB | LOAD | 1 | | GEL | N | RGSP | |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act | Rpt Err(%) | Qual | Qual Comment |
| Iodine-123 HE | 689.4 | 372 | pCi/g | 0 | N | 0 | 6 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Iodine-133 HE | 12.46 | 7.222 | pCi/g | 0 | N | 0 | 6 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Iodine-135 HE | 8.65E+07 | 9.85E+07 | pCi/g | 0 | N | 0 | 6 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Sodium-24 HE | 81.96 | 131.8 | pCi/g | 0 | N | 0 | 6 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Thallium-200 HE | 0.8062 | 1.664 | pCi/g | 0 | N | 0 | 6 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Zirconium-97 | 2670 | 966.1 | pCi/g | 0 | N | 0 | 6 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue | | |
|----------------------|-----------------|-----------------|-----------|-------------|---------|------------|--------|---------------|------------|------------|--------------|---|
| 1202023714 | 15-JAN-10 12:00 | 04-FEB-10 17:09 | 20.2 | DUP | LOAD | 1 | | LANL01004GEL | N | RGSP | | |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act | Rpt Err(%) | Qual | Qual Comment | |
| Actinium-228 | NR | 1.642 | 0.2414 | pCi/g | 0.2636 | N | 911 | 3 | 2.1 | IDENTIFIED | 13.76 | |
| Americium-243 | INT | 0.3769 | 0.03248 | pCi/g | 0.06404 | N | 74.67 | 1 | 1.219 | IDENTIFIED | 7.457 | |
| Annihilation Rad. HE | | 0.1144 | 0.04378 | pCi/g | 0.06248 | N | 510.6 | 1 | 1.823 | IDENTIFIED | 38.13 | |
| Bismuth-210 | HE | 0.8884 | 0.4047 | pCi/g | 0.8592 | N | 46.33 | 3 | 0.8166 | IDENTIFIED | 45.37 | |
| Bismuth-211 | INT | 3.946 | 0.2876 | pCi/g | 0.4163 | Y | 351.6 | 4 | 1.437 | IDENTIFIED | 6.314 | ✓ |
| Bismuth-214 | ✓ | 1.221 | 0.1094 | pCi/g | 0.1458 | 0.200 | 609 | 4 | 1.453 | IDENTIFIED | 7.649 | |
| Cadmium-109 | WT | 2.155 | 0.3841 | pCi/g | 1.135 | Y | 87.09 | 3 | 0.8548 | IDENTIFIED | 17.37 | ✓ |
| Cadmium-115 | HE | 20.42 | 32.68 | pCi/g | 0 | N | 0 | 7 | 0 | SHORT_HLIF | 0 | |
| Cerium-143 | | 10040 | 1736 | pCi/g | 0 | N | 0 | 7 | 0 | SHORT_HLIF | 0 | |
| Gross Gamma | | 8.028 | 1.269 | pCi/g | 2.828 | N | 0 | | | | | |
| Iodine-133 | HE | 2.49E+05 | 2.15E+05 | pCi/g | 0 | N | 0 | 7 | 0 | SHORT_HLIF | 0 | |
| Lead-210 | HE | 0.8884 | 0.4047 | pCi/g | 0.8592 | N | 46.33 | 3 | 0.8166 | IDENTIFIED | 45.37 | |
| Lead-212 | ✓ | 1.58 | 0.09362 | pCi/g | 0.0995 | 0.100 | 238.4 | 4 | 1.216 | IDENTIFIED | 3.804 | |
| Lead-214 | ✓ | 1.373 | 0.1063 | pCi/g | 0.1451 | 0.100 | 351.6 | 4 | 1.437 | IDENTIFIED | 6.314 | |
| Lutetium-177 | HE | 4.522 | 1.532 | pCi/g | 3.683 | N | 0 | 7 | 0 | FAIL_ABUND | 0 | |
| Neptunium-237 | INT | 0.6173 | 0.1271 | pCi/g | 0.3237 | N | 87.09 | 3 | 0.8548 | IDENTIFIED | 17.37 | |
| Polonium-210 | HE | 0.8884 | 0.4043 | pCi/g | 0.8592 | N | 46.33 | 3 | 0.8166 | IDENTIFIED | 45.37 | |
| Polonium-212 | NR | 1.58 | 0.09362 | pCi/g | 0.0995 | N | 238.4 | 4 | 1.216 | IDENTIFIED | 3.804 | |
| Polonium-214 | NR | 1.373 | 0.1063 | pCi/g | 0.1451 | N | 351.6 | 4 | 1.437 | IDENTIFIED | 6.314 | |
| Polonium-216 | NR | 1.58 | 0.09362 | pCi/g | 0.0995 | N | 238.4 | 4 | 1.216 | IDENTIFIED | 3.804 | |
| Polonium-218 | NR | 1.373 | 0.1063 | pCi/g | 0.1451 | N | 351.6 | 4 | 1.437 | IDENTIFIED | 6.314 | |
| Potassium-40 | ✓ | 20.33 | 1.075 | pCi/g | 0.7206 | 1.00 | 1460 | 1 | 2.172 | IDENTIFIED | 4.312 | |
| Radium-224 | WT | 4.631 | 0.7373 | pCi/g | 1.133 | Y | 241.4 | 1 | 1.74 | IDENTIFIED | 15.42 | ✓ |
| Radium-226 | ✓ | 1.221 | 0.1094 | pCi/g | 0.1458 | Y | 609 | 4 | 1.453 | IDENTIFIED | 7.649 | |
| Radium-228 | ✓ | 1.642 | 0.2414 | pCi/g | 0.2636 | 0.500 | 911 | 3 | 2.1 | IDENTIFIED | 13.76 | |
| Sodium-24 | HE | 4.70E+07 | 1.47E+08 | pCi/g | 0 | N | 0 | 7 | 0 | SHORT_HLIF | 0 | |
| Thallium-208 | ✓ | 0.5719 | 0.06131 | pCi/g | 0.06967 | 0.080 | 582.9 | 1 | 1.62 | IDENTIFIED | 9.889 | |
| Thorium-228 | NR | 1.612 | 0.09553 | pCi/g | 0.1015 | N | 238.4 | 4 | 1.216 | IDENTIFIED | 3.804 | |
| Thorium-230 | NR | 1.221 | 0.1094 | pCi/g | 0.1458 | N | 609 | 4 | 1.453 | IDENTIFIED | 7.649 | |
| Thorium-232 | NR | 1.642 | 0.2414 | pCi/g | 0.2636 | N | 911 | 3 | 2.1 | IDENTIFIED | 13.76 | |
| Thorium-234 | ✓ | 1.471 | 0.5821 | pCi/g | 1.051 | 2.00 | 63.21 | 2 | 1.196 | IDENTIFIED | 38.49 | |

| | | | | | | | | | | | | |
|---------------|-----|----------|----------|-------|---------|---|-------|---|--------|------------|-------|--------------------------|
| Tin-126 | INT | 0.2102 | 0.03746 | pCi/g | 0.1106 | N | 87.09 | 3 | 0.8548 | IDENTIFIED | 17.37 | <input type="checkbox"/> |
| Titanium-44 | LA | 0.4011 | 0.02756 | pCi/g | 0.05994 | N | 0 | 7 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Total Uranium | | 4.5529 | 1.73E-06 | ug/g | 1.5669 | N | | 0 | | | | <input type="checkbox"/> |
| Uranium-234 | NL | 1.221 | 0.1094 | pCi/g | 0.1458 | N | 609 | 4 | 1.453 | IDENTIFIED | 7.649 | <input type="checkbox"/> |
| Uranium-238 | HE | 1.471 | 0.5821 | pCi/g | 1.051 | N | 63.21 | 2 | 1.196 | IDENTIFIED | 38.49 | <input type="checkbox"/> |
| Zirconium-97 | | 8.41E+08 | 2.05E+08 | pCi/g | 0 | N | 0 | 7 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |

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

| Sample ID | Collect Date | Run Date | Days Past | Sample Type | Status | Instance | Client | Project Quals | Zero? | queue |
|------------|--------------|-----------------|-----------|-------------|--------|----------|--------|---------------|-------|-------|
| 1202023715 | | 04-FEB-10 17:10 | 0 | LCS | LOAD | 1 | | GEL | N | RGSP |

| Name | Result | Uncert. | Units | MDA | RDL | Energy | *** | FWHM | Comb | Act | Rpt | Err(%) | Qual | Qual Comment |
|----------------------|--------|---------|-------|--------|-------|--------|-----|-------|------------|-------|-----|--------|--------------------------|--------------|
| Actinium-228 | 1.577 | 0.3009 | pCi/g | 0.6276 | N | 910.7 | 3 | 1.525 | IDENTIFIED | 18.38 | | | <input type="checkbox"/> | |
| Americium-241 | 14.4 | 0.8468 | pCi/g | 0.7697 | 0.200 | 59.28 | 1 | 1.062 | IDENTIFIED | 3.263 | | | <input type="checkbox"/> | |
| Americium-243 | 0.3565 | 0.0716 | pCi/g | 0.1873 | N | 74.54 | 1 | 1.385 | IDENTIFIED | 19.57 | | | <input type="checkbox"/> | |
| Annihilation Rad. HE | 0.1558 | 0.06007 | pCi/g | 0.1093 | N | 511.2 | 1 | 1.662 | IDENTIFIED | 38.46 | | | <input type="checkbox"/> | |
| Barium-137m | 5.47 | 0.1935 | pCi/g | 0.1303 | N | 661.4 | 2 | 1.49 | IDENTIFIED | 2.533 | | | <input type="checkbox"/> | |
| Bismuth-211 | 3.214 | 0.4274 | pCi/g | 0.7555 | Y | 351.7 | 4 | 1.382 | IDENTIFIED | 12.9 | | | <input type="checkbox"/> | |
| Bismuth-214 | 0.9636 | 0.1364 | pCi/g | 0.4044 | 0.200 | 0 | 14 | 0 | FAIL_ABUND | 0 | | | <input type="checkbox"/> | |
| Cadmium-109 | 31.59 | 2.253 | pCi/g | 3.018 | Y | 87.85 | 3 | 1.059 | IDENTIFIED | 5.149 | | | <input type="checkbox"/> | |
| Cerium-143 | 27.98 | 6.981 | pCi/g | 22.05 | N | 0 | 14 | 0 | FAIL_ABUND | 0 | | | <input type="checkbox"/> | |
| Cesium-137 | 5.782 | 0.2051 | pCi/g | 0.1377 | 0.100 | 661.4 | 2 | 1.49 | IDENTIFIED | 2.533 | | | <input type="checkbox"/> | |
| Cobalt-57 | 0.2434 | 0.03541 | pCi/g | 0.0834 | N | 121.8 | 1 | 1.073 | IDENTIFIED | 14.22 | | | <input type="checkbox"/> | |
| Cobalt-60 | 6.818 | 0.2844 | pCi/g | 0.1077 | 0.100 | 1332 | 1 | 2.185 | IDENTIFIED | 2.746 | | | <input type="checkbox"/> | |
| Gross Gamma | 28.66 | 3.009 | pCi/g | 5.654 | N | 0 | | | | | | | <input type="checkbox"/> | |
| Iodine-123 | 31.1 | 1615 | pCi/g | 0 | N | 0 | 14 | 0 | SHORT_HLIF | 0 | | | <input type="checkbox"/> | |
| Iodine-133 | 34.18 | 40.46 | pCi/g | 0 | N | 0 | 14 | 0 | SHORT_HLIF | 0 | | | <input type="checkbox"/> | |
| Lead-212 | 0.9371 | 0.1113 | pCi/g | 0.2296 | 0.100 | 238.3 | 4 | 1.016 | IDENTIFIED | 11.29 | | | <input type="checkbox"/> | |
| Lead-214 | 1.118 | 0.1515 | pCi/g | 0.2634 | 0.100 | 351.7 | 4 | 1.382 | IDENTIFIED | 12.9 | | | <input type="checkbox"/> | |
| Neptunium-237 | 9.206 | 1.155 | pCi/g | 0.9086 | N | 87.85 | 3 | 1.059 | IDENTIFIED | 5.149 | | | <input type="checkbox"/> | |
| Niobium-97 | 2841 | 307 | pCi/g | 0 | N | 0 | 14 | 0 | SHORT_HLIF | 0 | | | <input type="checkbox"/> | |
| Polonium-212 | 0.9371 | 0.1113 | pCi/g | 0.2296 | N | 238.3 | 4 | 1.016 | IDENTIFIED | 11.29 | | | <input type="checkbox"/> | |
| Polonium-214 | 1.118 | 0.1515 | pCi/g | 0.2634 | N | 351.7 | 4 | 1.382 | IDENTIFIED | 12.9 | | | <input type="checkbox"/> | |
| Polonium-216 | 0.9371 | 0.1113 | pCi/g | 0.2296 | N | 238.3 | 4 | 1.016 | IDENTIFIED | 11.29 | | | <input type="checkbox"/> | |
| Polonium-218 | 1.118 | 0.1515 | pCi/g | 0.2634 | N | 351.7 | 4 | 1.382 | IDENTIFIED | 12.9 | | | <input type="checkbox"/> | |
| Potassium-40 | 1.056 | 0.3575 | pCi/g | 0.866 | 1.00 | 1461 | 1 | 3.1 | IDENTIFIED | 33.69 | | | <input type="checkbox"/> | |
| Radium-224 | 4.861 | 0.9265 | pCi/g | 3.076 | Y | 0 | 14 | 0 | NOT_IDENTI | 0 | | | <input type="checkbox"/> | |
| Radium-226 | 0.9636 | 0.1364 | pCi/g | 0.4044 | Y | 0 | 14 | 0 | FAIL_ABUND | 0 | | | <input type="checkbox"/> | |
| Radium-228 | 1.577 | 0.3009 | pCi/g | 0.6276 | 0.500 | 910.7 | 3 | 1.525 | IDENTIFIED | 18.38 | | | <input type="checkbox"/> | |
| Silver-110m | 0.384 | 0.05535 | pCi/g | 0.1997 | N | 0 | 14 | 0 | NOT_IDENTI | 0 | | | <input type="checkbox"/> | |
| Sodium-24 | 441.5 | 358.9 | pCi/g | 0 | N | 0 | 14 | 0 | SHORT_HLIF | 0 | | | <input type="checkbox"/> | |
| Thallium-200 | 7.342 | 8.974 | pCi/g | 0 | N | 0 | 14 | 0 | SHORT_HLIF | 0 | | | <input type="checkbox"/> | |
| Thallium-208 | 0.5856 | 0.0675 | pCi/g | 0.1211 | 0.080 | 583 | 1 | 1.474 | IDENTIFIED | 11.08 | | | <input type="checkbox"/> | |
| Thorium-228 | 0.9453 | 0.1123 | pCi/g | 0.2316 | N | 238.3 | 4 | 1.016 | IDENTIFIED | 11.29 | | | <input type="checkbox"/> | |
| Thorium-230 | 0.9636 | 0.1364 | pCi/g | 0.4044 | N | 0 | 14 | 0 | FAIL_ABUND | 0 | | | <input type="checkbox"/> | |
| Thorium-232 | 1.577 | 0.3009 | pCi/g | 0.6276 | N | 910.7 | 3 | 1.525 | IDENTIFIED | 18.38 | | | <input type="checkbox"/> | |
| Tin-126 | 3.135 | 0.2235 | pCi/g | 0.3011 | N | 87.85 | 3 | 1.059 | IDENTIFIED | 5.149 | | | <input type="checkbox"/> | |
| Titanium-44 | 0.2675 | 0.04166 | pCi/g | 0.1435 | N | 0 | 14 | 0 | NOT_IDENTI | 0 | | | <input type="checkbox"/> | |
| Uranium-234 | 0.9636 | 0.1364 | pCi/g | 0.4044 | N | 0 | 14 | 0 | FAIL_ABUND | 0 | | | <input type="checkbox"/> | |
| Zirconium-97 | 6855 | 3956 | pCi/g | 0 | N | 0 | 14 | 0 | SHORT_HLIF | 0 | | | <input type="checkbox"/> | |

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

GEL QUALS

Batch ID: 944964

Report run on: February 9, 2010 4:02 PM

| Samp Id | Parname | Cofa | Edd | Qual | Comments | Auto | Result | MDA | Uncert | SQL |
|----------------------------------|--------------|------|-----|------|---------------------------------------|------|--------|-----|--------|-----|
| 245388001-1 04-FEB-2010 10:28 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 5.315 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 2.963 | | | |
| | Cesium-134 | UI | UI | UI | Data rejected due to low abundance. | | .1331 | | .1 | .1 |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 5.823 | | | |
| | Strontium-85 | UI | UI | UI | Data rejected due to low abundance. | | .08824 | | | |
| 245388002-1 04-FEB-2010 10:29 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 3.958 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 2.236 | | | |
| | Cesium-137 | UI | UI | UI | Data rejected due to high peak-width. | | .1178 | | .1 | .1 |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 3.138 | | | |
| | Strontium-85 | UI | UI | UI | Data rejected due to low abundance. | | .06694 | | | |
| 245388003-1 04-FEB-2010 10:29 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 5.209 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 1.65 | | | |
| | Cesium-134 | UI | UI | UI | Data rejected due to low abundance. | | .1385 | | .1 | .1 |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 6.768 | | | |
| | Strontium-85 | UI | UI | UI | Data rejected due to low abundance. | | .1142 | | | |
| 245388004-1 04-FEB-2010 10:30 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 5.121 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 3.301 | | | |
| | Cesium-134 | UI | UI | UI | Data rejected due to low abundance. | | .1398 | | .1 | .1 |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 4.76 | | | |
| | Strontium-85 | UI | UI | UI | Data rejected due to low abundance. | | .1735 | | | |

GEL QUALS

Batch ID: 944964

Report run on: February 9, 2010 4:02 PM

| Samp Id | Parname | Cofa | Edd | Qual Comments | Auto | Result | MDA | Uncert | SQL |
|----------------------------------|-------------|------|-----|---|------|--------|-----|--------|-----|
| 245388005-1 04-FEB-2010 10:30 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 4.582 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to interference. | | 2.998 | | | |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 5.577 | | | |
| | | | | | | | | | |
| 245388006-1 04-FEB-2010 10:41 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 4.57 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to interference. | | 4.41 | | | |
| | Cesium-134 | UI | UI | Data rejected due to low abundance. | | .1004 | | .1 | .1 |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 4.649 | | | |
| 245388007-1 04-FEB-2010 10:42 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 4.138 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to interference. | | 3.147 | | | |
| | Cesium-134 | UI | UI | Data rejected due to low abundance. | | .1111 | | .1 | .1 |
| | Mercury-203 | UI | UI | Data rejected due to high peak-width. | | .09334 | | .1 | .1 |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 4.662 | | | |
| 245388008-1 04-FEB-2010 12:44 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 4.229 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to interference. | | 2.339 | | | |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 4.578 | | | |
| | | | | | | | | | |
| 245388009-1 04-FEB-2010 13:31 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 4.825 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to interference. | | 3.755 | | | |
| | Cesium-134 | UI | UI | Data rejected due to low abundance. | | .121 | | .1 | .1 |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 6.193 | | | |
| | Thorium-234 | UI | UI | Data rejected due to high counting uncertainty. | | 2.254 | | 2 | 2 |

GEL QUALS

Batch ID: 944964

Report run on: February 9, 2010 4:02 PM

| Samp Id | Parname | Cofa | Edd | Qual Comments | Auto | Result | MDA | Uncert | SQL |
|----------------------------------|--------------|------|-----|-------------------------------------|------|--------|-----|--------|-----|
| 245388010-1 04-FEB-2010 13:42 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 3.911 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to interference. | | 4.813 | | | |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 3.448 | | | |
| | Strontium-85 | UI | UI | Data rejected due to low abundance. | | .1072 | | | |
| 245388011-1 04-FEB-2010 14:41 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 3.993 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to interference. | | 2.235 | | | |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 5.732 | | | |
| | Strontium-85 | UI | UI | Data rejected due to low abundance. | | .07857 | | | |
| 245393001-1 04-FEB-2010 14:42 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 3.828 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to interference. | | 4.145 | | | |
| | Cesium-134 | UI | UI | Data rejected due to low abundance. | | .1487 | | .1 | .1 |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 5.506 | | | |
| 245393002-1 04-FEB-2010 14:42 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 3.279 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to interference. | | 2.235 | | | |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 3.285 | | | |
| | Strontium-85 | UI | UI | Data rejected due to low abundance. | | .08331 | | | |
| 245393003-1 04-FEB-2010 14:43 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 3.353 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to interference. | | 1.773 | | | |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 3.895 | | | |
| | Strontium-85 | UI | UI | Data rejected due to low abundance. | | .1135 | | | |

GEL QUALS

Batch ID: 944964

Report run on: February 9, 2010 4:02 PM

| Samp Id | Parname | Cofa | Edd | Qual | Comments | Auto | Result | MDA | Uncert | SQL |
|----------------------------------|--------------|------|-----|------|-------------------------------------|------|--------|-----|--------|-----|
| 245393004-1 04-FEB-2010 14:43 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 3.335 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 2.239 | | | |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 4.533 | | | |
| 245393005-1 04-FEB-2010 14:48 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 3.975 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 4.147 | | | |
| | Cesium-134 | UI | UI | UI | Data rejected due to low abundance. | | .1281 | | .1 | .1 |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 4.442 | | | |
| | Strontium-85 | UI | UI | UI | Data rejected due to low abundance. | | .0701 | | | |
| 245393006-1 04-FEB-2010 14:48 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 3.353 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 2.633 | | | |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 4.987 | | | |
| 245393007-1 04-FEB-2010 14:51 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 3.662 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to low abundance. | | 2.122 | | | |
| | Cesium-134 | UI | UI | UI | Data rejected due to low abundance. | | .1503 | | .1 | .1 |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 4.306 | | | |
| 245393008-1 04-FEB-2010 14:52 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 4.041 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 2.102 | | | |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 4.471 | | | |
| 245393009-1 04-FEB-2010 14:52 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 3.316 | | | |

GEL QUALS

Batch ID: 944964

Report run on: February 9, 2010 4:02 PM

| Samp Id | Parmname | Cofa | Edd | Qual | Comments | Auto | Result | MDA | Uncert | SQL |
|---------------------------------------|--------------|------|-----|------|-------------------------------------|------|--------|-----|--------|-----|
| 245393009-1 04-FEB-2010 14:52 | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 3.536 | | | |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 3.747 | | | |
| | Strontium-85 | UI | UI | UI | Data rejected due to low abundance. | | .06435 | | | |
| 1202023714-1 DUP 04-FEB-2010 17:09 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 3.946 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 2.155 | | | |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 4.631 | | | |

Result Greater Than DL

| Batch Id | Sample Id | Sample Type | Run Date | Paramname | Result | Uncertainty | Units | DL | RDL |
|----------|------------|-------------|-----------|-------------------|----------|-------------|-------|---------|-------|
| 944964 | 245393009 | SAMPLE | 04-FEB-10 | Cerium-143 | 1373 | 202.3 | pCi/g | 0 | N |
| | | | | Cesium-134 | 0.06192 | 0.02316 | pCi/g | 0.0415 | 0.100 |
| | | | | Cesium-137 | 0.09102 | 0.0187 | pCi/g | 0.0296 | 0.100 |
| | | | | Europium-152 | 0.08337 | 0.05741 | pCi/g | 0.07356 | 0.200 |
| | | | | Gross Gamma | 10.7 | 1.257 | pCi/g | 2.187 | N |
| | | | | Iodine-133 | 5903 | 5629 | pCi/g | 0 | N |
| | | | | Krypton-85 | 12.42 | 3.728 | pCi/g | 6.16 | N |
| | | | | Lead-212 | 1.487 | 0.0733 | pCi/g | 0.04567 | 0.100 |
| | | | | Lead-214 | 1.153 | 0.08488 | pCi/g | 0.05443 | 0.100 |
| | | | | Potassium-40 | 31.5 | 1.412 | pCi/g | 0.2291 | 1.00 |
| | | | | Protactinium-234m | 16.13 | 3.953 | pCi/g | 5.436 | N |
| | | | | Radium-224 | 3.747 | 0.5748 | pCi/g | 0.5193 | Y |
| | | | | Radium-226 | 1.135 | 0.0787 | pCi/g | 0.05283 | Y |
| | | | | Radium-228 | 1.494 | 0.1565 | pCi/g | 0.09006 | 0.500 |
| | | | | Sodium-24 | 6.49E+05 | 9.43E+05 | pCi/g | 0 | N |
| | | | | Strontium-85 | 0.06435 | 0.01932 | pCi/g | 0.03192 | Y |
| | | | | Thallium-200 | 576.3 | 375.6 | pCi/g | 0 | N |
| | | | | Thallium-208 | 0.4266 | 0.03859 | pCi/g | 0.02644 | 0.080 |
| | | | | Thorium-234 | 16.03 | 1.862 | pCi/g | 1.07 | 2.00 |
| | | | | Uranium-235 | 0.2814 | 0.1113 | pCi/g | 0.1925 | 0.500 |
| | | | | Uranium-238 | 16.03 | 1.862 | pCi/g | 1.07 | N |
| | | | | Zirconium-97 | 9.30E+06 | 2.67E+06 | pCi/g | 0 | N |
| 944964 | 1202023713 | MB | 04-FEB-10 | Iodine-123 | 689.4 | 372 | pCi/g | 0 | N |
| | | | | Iodine-133 | 12.46 | 7.222 | pCi/g | 0 | N |
| | | | | Iodine-135 | 8.65E+07 | 9.85E+07 | pCi/g | 0 | N |
| | | | | Krypton-85 | 5.352 | 1.881 | pCi/g | 3.417 | N |
| | | | | Ruthenium-106 | 0.1542 | 0.07168 | pCi/g | 0.138 | 0.800 |
| | | | | Sodium-24 | 81.96 | 131.8 | pCi/g | 0 | N |
| | | | | Strontium-85 | 0.02565 | 0.00902 | pCi/g | 0.01638 | Y |
| | | | | Zirconium-97 | 2670 | 966.1 | pCi/g | 0 | N |
| 944964 | 1202023714 | DUP | 04-FEB-10 | Americium-241 | 0.05845 | 0.0334 | pCi/g | 0.05545 | 0.200 |
| | | | | Bismuth-211 | 3.946 | 0.2876 | pCi/g | 0.2083 | Y |
| | | | | Bismuth-214 | 1.221 | 0.1094 | pCi/g | 0.07297 | 0.200 |
| | | | | Cadmium-109 | 2.155 | 0.3841 | pCi/g | 0.5678 | Y |
| | | | | Cadmium-115 | 20.42 | 32.68 | pCi/g | 0 | N |
| | | | | Cerium-143 | 10040 | 1736 | pCi/g | 0 | N |
| | | | | Cesium-137 | 0.06756 | 0.02879 | pCi/g | 0.05952 | 0.100 |

MLP
2/19/10

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VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 13:29:16.86

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388001.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:28:40.
Sample ID          : G245388001          Sample quantity  : 8.59300E+01 GRAM
Detector name      : GAM16              Detector geometry: CAN
Elapsed live time  : 0 03:00:00.00      Elapsed real time: 0 03:00:02.48  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 944964             Detector SN#       :
Matrix Spike ID    :                    LCS ID            : 1032-A
*****

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| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 0 | 63.38* | 115 | 464 | 0.72 | 126.95 | 124 | 7 | 1.07E-02 | 34.5 | |
| 2 | 4 | 74.85* | 565 | 423 | 0.90 | 149.90 | 145 | 22 | 5.23E-02 | 7.0 | 1.06E+00 |
| 3 | 4 | 77.17* | 880 | 381 | 0.86 | 154.53 | 145 | 22 | 8.15E-02 | 4.9 | |
| 4 | 0 | 84.16* | 84 | 394 | 1.46 | 168.51 | 166 | 6 | 7.81E-03 | 40.2 | |
| 5 | 0 | 87.17* | 230 | 550 | 0.90 | 174.53 | 172 | 7 | 2.13E-02 | 18.6 | |
| 6 | 5 | 90.00 | 188 | 358 | 0.85 | 180.20 | 178 | 13 | 1.74E-02 | 16.3 | 1.89E+00 |
| 7 | 5 | 92.91* | 341 | 496 | 1.41 | 186.02 | 178 | 13 | 3.16E-02 | 13.7 | |
| 8 | 0 | 128.96 | 139 | 430 | 0.75 | 258.12 | 254 | 9 | 1.29E-02 | 28.2 | |
| 9 | 0 | 153.95 | 89 | 262 | 0.94 | 308.09 | 305 | 6 | 8.24E-03 | 30.7 | |
| 10 | 0 | 185.96* | 213 | 337 | 1.02 | 372.12 | 368 | 8 | 1.97E-02 | 17.8 | |
| 11 | 0 | 209.23 | 172 | 359 | 1.11 | 418.66 | 414 | 9 | 1.59E-02 | 21.4 | |
| 12 | 5 | 238.64* | 1895 | 247 | 0.99 | 477.47 | 473 | 17 | 1.75E-01 | 2.7 | 2.01E+00 |
| 13 | 5 | 241.75 | 409 | 326 | 1.74 | 483.69 | 473 | 17 | 3.79E-02 | 12.5 | |
| 14 | 0 | 259.09 | 50 | 213 | 1.12 | 518.38 | 516 | 8 | 4.61E-03 | 52.5 | |
| 15 | 0 | 270.32 | 206 | 270 | 1.20 | 540.83 | 536 | 11 | 1.91E-02 | 17.0 | |
| 16 | 0 | 277.38 | 62 | 228 | 0.85 | 554.95 | 551 | 8 | 5.78E-03 | 43.8 | |
| 17 | 2 | 295.22 | 609 | 112 | 1.16 | 590.63 | 586 | 19 | 5.64E-02 | 5.0 | 1.52E+00 |
| 18 | 2 | 300.17 | 136 | 153 | 1.38 | 600.52 | 586 | 19 | 1.26E-02 | 17.6 | |
| 19 | 0 | 327.95 | 146 | 184 | 1.27 | 656.08 | 652 | 10 | 1.36E-02 | 19.1 | |
| 20 | 0 | 338.39* | 415 | 189 | 1.04 | 676.96 | 672 | 11 | 3.84E-02 | 8.3 | |
| 21 | 0 | 351.92* | 930 | 220 | 1.16 | 704.03 | 699 | 11 | 8.61E-02 | 4.6 | |
| 22 | 0 | 462.52 | 101 | 178 | 1.21 | 925.21 | 920 | 13 | 9.35E-03 | 28.9 | |
| 23 | 0 | 511.26* | 189 | 202 | 1.63 | 1022.67 | 1015 | 17 | 1.75E-02 | 21.6 | |
| 24 | 0 | 583.32* | 519 | 153 | 1.25 | 1166.78 | 1161 | 13 | 4.81E-02 | 6.8 | |
| 25 | 0 | 609.44* | 651 | 104 | 1.32 | 1219.00 | 1214 | 13 | 6.03E-02 | 5.2 | |
| 26 | 0 | 727.39* | 123 | 113 | 1.32 | 1454.86 | 1450 | 13 | 1.14E-02 | 20.3 | |
| 27 | 0 | 768.96 | 44 | 94 | 1.16 | 1538.00 | 1534 | 9 | 4.03E-03 | 43.6 | |
| 28 | 0 | 795.20 | 71 | 82 | 1.36 | 1590.46 | 1585 | 13 | 6.57E-03 | 29.5 | |
| 29 | 0 | 861.29* | 28 | 86 | 1.81 | 1722.62 | 1717 | 11 | 2.63E-02 | 67.9 | |
| 30 | 0 | 911.29* | 392 | 83 | 1.30 | 1822.58 | 1816 | 14 | 3.63E-02 | 7.2 | |
| 31 | 0 | 934.57 | 64 | 42 | 3.35 | 1869.13 | 1863 | 13 | 5.93E-03 | 24.4 | |
| 32 | 3 | 964.79 | 86 | 39 | 2.13 | 1929.56 | 1921 | 27 | 7.94E-03 | 19.0 | 1.42E+00 |
| 33 | 3 | 969.25* | 285 | 33 | 1.87 | 1938.47 | 1921 | 27 | 2.64E-02 | 7.2 | |
| 34 | 0 | 1120.83* | 103 | 81 | 1.71 | 2241.54 | 2234 | 14 | 9.57E-03 | 21.5 | |
| 35 | 0 | 1238.60 | 47 | 54 | 2.33 | 2476.98 | 2471 | 12 | 4.31E-03 | 34.8 | |
| 36 | 0 | 1246.15 | 30 | 45 | 3.85 | 2492.08 | 2485 | 12 | 2.79E-03 | 48.1 | |
| 37 | 0 | 1379.16* | 17 | 38 | 2.21 | 2757.99 | 2749 | 13 | 1.59E-03 | 83.3 | |
| 38 | 0 | 1402.12 | 20 | 14 | 0.74 | 2803.90 | 2800 | 9 | 1.85E-03 | 40.2 | |

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|-----|
| 39 | 0 | 1461.14* | 980 | 40 | 1.78 | 2921.87 | 2912 | 20 | 9.07E-02 | 3.6 | |
| 40 | 0 | 1662.02 | 13 | 4 | 1.69 | 3323.44 | 3320 | 7 | 1.16E-03 | 37.6 | |
| 41 | 0 | 1730.08 | 36 | 21 | 1.64 | 3459.48 | 3450 | 17 | 3.32E-03 | 33.9 | |
| 42 | 0 | 1764.88* | 100 | 11 | 1.90 | 3529.03 | 3521 | 14 | 9.29E-03 | 13.0 | |
| 43 | 0 | 1848.29* | 25 | 7 | 1.39 | 3695.76 | 3690 | 13 | 2.32E-03 | 31.4 | |

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

VMS Nuclide Identification Report V3.1 Generated 4-FEB-2010 13:29:20

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:28:40
Sample ID         : G245388001 Sample quantity : 85.930 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA16 Detector geometry: CAN
Elapsed live time : 0 03:00:00.00 Elapsed real time: 0 03:00:02.48 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00
  
```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 2.214E+01 | 2.522E+00 | 4.840E-01 | 4.254E-02 | 45.739 |
| CD-109 | + | 88.03 | * | 2.963E+00 | 1.135E+00 | 1.086E+00 | 1.047E-01 | 2.727 |
| SN-126 | + | 64.28 | | 9.848E-01 | 6.948E-01 | 7.247E-01 | 1.056E-01 | 1.359 |
| | + | 86.94 | | 1.202E+00 | 6.696E-01 | 4.806E-01 | 1.997E-01 | 2.500 |
| | + | 87.57 | * | 2.891E-01 | 1.107E-01 | 1.241E-01 | 1.190E-02 | 2.329 |
| RE-188 | + | 155.03 | * | 3.118E-01 | 1.935E-01 | 2.635E-01 | 2.318E-02 | 1.183 |
| | | 477.96 | | -4.223E+00 | 3.109E+00 | 4.600E+00 | 4.374E-01 | -0.918 |
| | | 633.10 | | -2.592E-02 | 2.879E+00 | 4.668E+00 | 4.236E-01 | -0.006 |
| TL-208 | + | 277.35 | | 5.695E-01 | 5.055E-01 | 5.686E-01 | 8.453E-02 | 1.002 |
| | + | 510.84 | | 8.586E-01 | 3.864E-01 | 2.070E-01 | 2.618E-02 | 4.147 |
| | + | 583.14 | * | 6.730E-01 | 1.132E-01 | 5.955E-02 | 5.903E-03 | 11.301 |
| | + | 860.37 | | 3.464E-01 | 4.718E-01 | 4.668E-01 | 4.673E-02 | 0.742 |
| BI-211 | | 72.87 | | 2.666E+00 | 2.984E+00 | 4.762E+00 | 3.871E-01 | 0.560 |
| | + | 351.07 | * | 5.315E+00 | 7.577E-01 | 3.309E-01 | 3.618E-02 | 16.062 |
| PB-212 | + | 74.81 | | 3.011E+00 | 5.658E-01 | 5.133E-01 | 6.413E-02 | 5.866 |
| | + | 77.11 | | 2.653E+00 | 3.427E-01 | 2.912E-01 | 2.474E-02 | 9.108 |
| | + | 87.30 | | 1.337E+00 | 5.294E-01 | 5.757E-01 | 7.963E-02 | 2.322 |
| | + | 238.63 | * | 2.369E+00 | 3.080E-01 | 9.160E-02 | 1.085E-02 | 25.861 |
| | + | 300.09 | | 2.621E+00 | 9.859E-01 | 1.179E+00 | 1.544E-01 | 2.224 |
| PO-212 | + | 74.81 | | 3.011E+00 | 5.658E-01 | 5.133E-01 | 6.413E-02 | 5.866 |
| | + | 77.11 | | 2.653E+00 | 3.427E-01 | 2.912E-01 | 2.474E-02 | 9.108 |
| | + | 87.30 | | 1.337E+00 | 5.294E-01 | 5.757E-01 | 7.963E-02 | 2.322 |
| | | 115.19 | | 5.771E-01 | 3.194E+00 | 5.402E+00 | 4.507E-01 | 0.107 |
| | + | 238.63 | * | 2.369E+00 | 3.080E-01 | 9.160E-02 | 1.085E-02 | 25.861 |
| | + | 300.09 | | 2.621E+00 | 9.859E-01 | 1.179E+00 | 1.544E-01 | 2.224 |
| BI-214 | + | 609.31 | * | 1.591E+00 | 2.362E-01 | 1.106E-01 | 1.169E-02 | 14.388 |
| | + | 1120.29 | | 1.316E+00 | 5.837E-01 | 4.490E-01 | 4.820E-02 | 2.931 |
| | + | 1764.49 | | 1.752E+00 | 4.790E-01 | 3.122E-01 | 2.584E-02 | 5.611 |
| PB-214 | + | 74.81 | | 5.189E+00 | 9.289E-01 | 8.845E-01 | 9.833E-02 | 5.867 |
| | + | 77.11 | | 4.547E+00 | 6.820E-01 | 4.993E-01 | 5.697E-02 | 9.108 |
| | + | 87.30 | | 2.290E+00 | 8.950E-01 | 9.862E-01 | 1.211E-01 | 2.322 |
| | + | 241.98 | | 3.071E+00 | 8.589E-01 | 5.517E-01 | 6.835E-02 | 5.566 |
| | + | 295.21 | | 2.061E+00 | 3.435E-01 | 2.064E-01 | 2.755E-02 | 9.984 |
| | + | 351.92 | * | 1.849E+00 | 2.807E-01 | 1.154E-01 | 1.395E-02 | 16.028 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 74.81 | | 5.189E+00 | 9.289E-01 | 8.845E-01 | 9.833E-02 | 5.867 |
| | + | 77.11 | | 4.547E+00 | 6.820E-01 | 4.993E-01 | 5.697E-02 | 9.108 |
| | + | 87.30 | | 2.290E+00 | 8.950E-01 | 9.862E-01 | 1.211E-01 | 2.322 |
| | + | 241.98 | | 3.071E+00 | 8.589E-01 | 5.517E-01 | 6.835E-02 | 5.566 |
| | + | 295.21 | | 2.061E+00 | 3.435E-01 | 2.064E-01 | 2.755E-02 | 9.984 |
| PO-216 | + | 351.92 | * | 1.849E+00 | 2.807E-01 | 1.154E-01 | 1.395E-02 | 16.028 |
| | + | 74.81 | | 3.011E+00 | 5.658E-01 | 5.133E-01 | 6.413E-02 | 5.866 |
| | + | 77.11 | | 2.653E+00 | 3.427E-01 | 2.912E-01 | 2.474E-02 | 9.108 |
| | + | 87.30 | | 1.337E+00 | 5.294E-01 | 5.757E-01 | 7.963E-02 | 2.322 |
| | + | 238.63 | * | 2.369E+00 | 3.080E-01 | 9.160E-02 | 1.065E-02 | 25.861 |
| PO-218 | + | 300.09 | | 2.621E+00 | 9.859E-01 | 1.179E+00 | 1.544E-01 | 2.224 |
| | + | 74.81 | | 5.189E+00 | 9.289E-01 | 8.845E-01 | 9.833E-02 | 5.867 |
| | + | 77.11 | | 4.547E+00 | 6.820E-01 | 4.993E-01 | 5.697E-02 | 9.108 |
| | + | 87.30 | | 2.290E+00 | 8.950E-01 | 9.862E-01 | 1.211E-01 | 2.322 |
| | + | 241.98 | | 3.071E+00 | 8.589E-01 | 5.517E-01 | 6.835E-02 | 5.566 |
| RA-224 | + | 295.21 | | 2.061E+00 | 3.435E-01 | 2.064E-01 | 2.755E-02 | 9.984 |
| | + | 351.92 | * | 1.849E+00 | 2.807E-01 | 1.154E-01 | 1.395E-02 | 16.028 |
| | + | 240.98 | * | 5.823E+00 | 1.595E+00 | 1.043E+00 | 1.149E-01 | 5.585 |
| | + | 609.31 | * | 1.591E+00 | 2.362E-01 | 1.106E-01 | 1.169E-02 | 14.388 |
| | + | 1120.29 | | 1.316E+00 | 5.837E-01 | 4.490E-01 | 4.820E-02 | 2.931 |
| AC-228 | + | 1764.49 | | 1.752E+00 | 4.790E-01 | 3.122E-01 | 2.584E-02 | 5.611 |
| | + | 338.32 | | 2.613E+00 | 1.176E+00 | 3.411E-01 | 1.426E-01 | 7.661 |
| | + | 911.07 | * | 2.257E+00 | 4.212E-01 | 2.163E-01 | 2.569E-02 | 10.435 |
| | + | 969.11 | | 2.895E+00 | 8.001E-01 | 3.279E-01 | 7.732E-02 | 8.828 |
| | + | 338.32 | | 2.613E+00 | 1.176E+00 | 3.411E-01 | 1.426E-01 | 7.661 |
| RA-228 | + | 911.07 | * | 2.257E+00 | 4.212E-01 | 2.163E-01 | 2.569E-02 | 10.435 |
| | + | 969.11 | | 2.895E+00 | 8.001E-01 | 3.279E-01 | 7.732E-02 | 8.828 |
| | + | 74.81 | | 3.072E+00 | 5.018E-01 | 5.236E-01 | 4.381E-02 | 5.866 |
| | + | 77.11 | | 2.706E+00 | 3.496E-01 | 2.971E-01 | 2.523E-02 | 9.108 |
| | + | 87.30 | | 1.364E+00 | 5.225E-01 | 5.873E-01 | 5.612E-02 | 2.322 |
| TH-228 | + | 238.63 | * | 2.416E+00 | 3.142E-01 | 9.344E-02 | 1.106E-02 | 25.861 |
| | + | 300.09 | | 2.674E+00 | 1.856E+00 | 1.202E+00 | 7.191E-01 | 2.224 |
| | + | 609.31 | * | 1.591E+00 | 2.362E-01 | 1.106E-01 | 1.169E-02 | 14.388 |
| | + | 1120.29 | | 1.316E+00 | 5.836E-01 | 4.490E-01 | 4.820E-02 | 2.931 |
| | + | 1764.49 | | 1.752E+00 | 4.790E-01 | 3.122E-01 | 2.584E-02 | 5.611 |
| TH-232 | + | 338.32 | | 2.613E+00 | 5.206E-01 | 3.411E-01 | 3.723E-02 | 7.661 |
| | + | 911.07 | * | 2.257E+00 | 4.212E-01 | 2.163E-01 | 2.569E-02 | 10.435 |
| | + | 969.11 | | 2.895E+00 | 8.001E-01 | 3.279E-01 | 7.732E-02 | 8.828 |
| | + | 63.29 | * | 2.488E+00 | 1.772E+00 | 1.896E+00 | 3.306E-01 | 1.312 |
| | + | 92.38 | | 2.780E+00 | 9.168E-01 | 6.882E-01 | 1.265E-01 | 4.040 |
| U-234 | + | 609.31 | * | 1.591E+00 | 2.362E-01 | 1.106E-01 | 1.169E-02 | 14.388 |
| | + | 1120.29 | | 1.316E+00 | 5.836E-01 | 4.490E-01 | 4.820E-02 | 2.931 |
| | + | 1764.49 | | 1.752E+00 | 4.790E-01 | 3.122E-01 | 2.584E-02 | 5.611 |
| | + | 86.50 | * | 8.489E-01 | 3.694E-01 | 3.411E-01 | 7.743E-02 | 2.489 |
| | + | 95.87 | | -1.316E+00 | 9.563E-01 | 1.268E+00 | 3.141E-01 | -1.038 |
| U-238 | + | 63.29 | * | 2.488E+00 | 1.772E+00 | 1.896E+00 | 3.306E-01 | 1.312 |
| | + | 92.38 | | 2.780E+00 | 8.033E-01 | 6.882E-01 | 6.350E-02 | 4.040 |
| | + | 74.67 | * | 4.882E-01 | 7.957E-02 | 8.347E-02 | 6.911E-03 | 5.849 |
| | + | 86.72 | | 3.183E+01 | 1.220E+01 | 1.276E+01 | 1.211E+00 | 2.495 |
| | + | | | | | | | |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 117.66 | | 6.830E-01 | 3.347E+00 | 5.661E+00 | 4.710E-01 | 0.121 |
| | | 142.18 | | -2.180E+01 | 1.672E+01 | 2.619E+01 | 2.234E+00 | -0.832 |
| ANH-511 | + | 511.00 | * | 1.855E-01 | 8.202E-02 | 4.473E-02 | 4.254E-03 | 4.146 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| BE-7 | | 477.59 | * | -3.296E-01 | 3.222E-01 | 4.912E-01 | 4.969E-02 | -0.671 |
| NA-22 | | 1274.54 | * | -1.550E-03 | 4.190E-02 | 6.786E-02 | 5.647E-03 | -0.023 |
| NA-24 | | 1368.53 | * | -1.012E+02 | 4.190E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | 1.298E+00 | 1.647E+00 | 2.889E+00 | 2.421E-01 | 0.449 |
| | | 1808.65 | * | 2.841E-03 | 3.114E-02 | 5.208E-02 | 4.259E-03 | 0.055 |
| TI-44 | | 67.85 | | 3.154E-02 | 4.409E-02 | 7.034E-02 | 5.447E-03 | 0.448 |
| | + | 78.38 | * | 4.896E-01 | 6.325E-02 | 7.472E-02 | 6.434E-03 | 6.553 |
| SC-46 | | 889.25 | * | -2.096E-02 | 3.969E-02 | 6.311E-02 | 5.966E-03 | -0.332 |
| | + | 1120.51 | | 2.345E-01 | 1.028E-01 | 1.420E-01 | 1.200E-02 | 1.651 |
| V-48 | | 944.10 | | -1.042E+00 | 1.126E+00 | 1.652E+00 | 1.543E-01 | -0.631 |
| | | 983.50 | * | -9.845E-02 | 8.255E-02 | 1.193E-01 | 1.098E-02 | -0.825 |
| | | 1312.09 | | 6.429E-02 | 9.540E-02 | 1.661E-01 | 1.394E-02 | 0.387 |
| CR-51 | | 320.08 | * | -2.542E-01 | 4.474E-01 | 6.820E-01 | 7.974E-02 | -0.373 |
| MN-52 | | 744.21 | | 3.521E-02 | 4.189E-01 | 6.763E-01 | 6.209E-02 | 0.052 |
| | | 848.13 | | -9.525E+00 | 1.186E+01 | 1.845E+01 | 1.736E+00 | -0.516 |
| | + | 935.52 | | 1.320E+00 | 6.551E-01 | 9.023E-01 | 8.452E-02 | 1.463 |
| | + | 1246.25 | | 1.803E+01 | 1.740E+01 | 2.253E+01 | 1.857E+00 | 0.800 |
| | | 1333.61 | | -8.349E+00 | 9.164E+00 | 1.298E+01 | 1.095E+00 | -0.643 |
| | | 1434.06 | * | -1.443E-01 | 4.205E-01 | 6.392E-01 | 5.454E-02 | -0.226 |
| MN-54 | | 834.83 | * | 2.420E-02 | 3.784E-02 | 6.640E-02 | 6.236E-03 | 0.365 |
| CO-56 | | 846.75 | * | -1.572E-02 | 3.864E-02 | 6.246E-02 | 5.878E-03 | -0.252 |
| | | 977.42 | | 1.447E+00 | 2.979E+00 | 4.764E+00 | 4.397E-01 | 0.304 |
| | | 1037.82 | | -2.225E-01 | 3.008E-01 | 4.570E-01 | 4.296E-02 | -0.487 |
| | | 1175.09 | | 1.171E+00 | 2.212E+00 | 3.790E+00 | 3.050E-01 | 0.309 |
| | + | 1238.25 | | 1.740E-01 | 1.221E-01 | 1.691E-01 | 1.435E-02 | 1.029 |
| | | 1360.21 | | -1.748E+00 | 1.163E+00 | 1.458E+00 | 1.235E-01 | -1.199 |
| | | 1771.40 | | 2.388E-03 | 2.727E-01 | 3.873E-01 | 3.200E-02 | 0.006 |
| CO-57 | | 122.06 | * | 1.094E-02 | 2.308E-02 | 3.936E-02 | 3.271E-03 | 0.278 |
| | | 136.48 | | 1.757E-02 | 1.945E-01 | 3.252E-01 | 2.956E-02 | 0.054 |
| CO-58 | | 810.76 | * | -5.639E-02 | 4.124E-02 | 6.093E-02 | 5.709E-03 | -0.926 |
| FE-59 | | 142.65 | | -3.424E+00 | 2.967E+00 | 4.491E+00 | 3.834E-01 | -0.763 |
| | | 192.34 | | 2.378E-02 | 9.675E-01 | 1.584E+00 | 2.242E-01 | 0.015 |
| | | 1099.22 | * | -9.102E-02 | 9.640E-02 | 1.427E-01 | 1.327E-02 | -0.638 |
| | | 1291.56 | | -5.518E-02 | 1.121E-01 | 1.693E-01 | 1.616E-02 | -0.326 |
| CO-60 | | 1173.22 | | -1.084E-02 | 4.369E-02 | 6.964E-02 | 5.599E-03 | -0.156 |
| | | 1332.49 | * | -6.838E-02 | 4.031E-02 | 4.929E-02 | 4.158E-03 | -1.387 |
| ZN-65 | | 1115.52 | * | -3.057E-02 | 9.786E-02 | 1.328E-01 | 1.128E-02 | -0.230 |
| GE-68 | | 1077.35 | * | 1.019E+00 | 1.249E+00 | 2.203E+00 | 1.924E-01 | 0.463 |
| AS-73 | | 53.44 | * | -3.147E-01 | 8.253E-01 | 1.268E+00 | 9.677E-02 | -0.248 |
| AS-74 | | 595.88 | * | 5.790E-02 | 1.075E-01 | 1.823E-01 | 1.692E-02 | 0.318 |
| | | 634.78 | | -1.496E-01 | 4.304E-01 | 6.779E-01 | 6.145E-02 | -0.221 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SE-75 | | 66.05 | | -2.310E+00 | 5.156E+00 | 7.176E+00 | 6.904E-01 | -0.322 |
| | | 96.73 | | -1.051E+00 | 7.764E-01 | 1.080E+00 | 1.493E-01 | -0.973 |
| | | 121.11 | | -3.571E-02 | 1.253E-01 | 2.074E-01 | 2.278E-02 | -0.172 |
| | | 136.00 | | 1.808E-02 | 3.744E-02 | 6.351E-02 | 5.390E-03 | 0.285 |
| | | 198.60 | | 5.257E-01 | 1.794E+00 | 2.964E+00 | 3.177E-01 | 0.177 |
| | | 264.65 | * | 1.133E-02 | 5.091E-02 | 7.380E-02 | 8.612E-03 | 0.153 |
| | | 279.53 | | -9.086E-02 | 1.288E-01 | 1.728E-01 | 2.115E-02 | -0.526 |
| | | 303.91 | | 1.485E+00 | 2.338E+00 | 3.457E+00 | 4.804E-01 | 0.430 |
| | | 400.65 | | -4.502E-02 | 2.537E-01 | 4.209E-01 | 4.900E-02 | -0.107 |
| BR-77 | + | 87.88 | | 2.607E-03 | 2.537E-01 | Half-Life | too short | |
| | | 200.40 | | -2.834E-04 | 2.537E-01 | Half-Life | too short | |
| | + | 239.00 | | 1.561E-03 | 2.537E-01 | Half-Life | too short | |
| | | 249.79 | | -1.388E-04 | 2.537E-01 | Half-Life | too short | |
| | | 281.68 | | 3.001E-04 | 2.537E-01 | Half-Life | too short | |
| | | 297.23 | | 6.963E-04 | 2.537E-01 | Half-Life | too short | |
| | | 303.76 | | 2.259E-04 | 2.537E-01 | Half-Life | too short | |
| | | 439.47 | | 2.365E-04 | 2.537E-01 | Half-Life | too short | |
| | | 484.57 | | 1.498E-04 | 2.537E-01 | Half-Life | too short | |
| | | 520.65 | * | 7.509E-06 | 2.537E-01 | Half-Life | too short | |
| | | 574.64 | | 1.836E-05 | 2.537E-01 | Half-Life | too short | |
| | | 578.91 | | 9.364E-05 | 2.537E-01 | Half-Life | too short | |
| | | 585.48 | | 5.655E-03 | 2.537E-01 | Half-Life | too short | |
| | | 755.35 | | -1.463E-04 | 2.537E-01 | Half-Life | too short | |
| | | 817.79 | | -1.884E-04 | 2.537E-01 | Half-Life | too short | |
| SR-82 | | 698.33 | | -4.589E-01 | 4.098E+01 | 6.593E+01 | 5.949E+00 | -0.007 |
| | | 776.49 | * | -2.314E-02 | 4.697E-01 | 7.466E-01 | 6.922E-02 | -0.031 |
| | | 1395.20 | | -4.587E-01 | 1.266E+01 | 1.904E+01 | 1.619E+00 | -0.024 |
| RB-83 | | 520.41 | * | 1.136E-02 | 7.172E-02 | 1.194E-01 | 1.135E-02 | 0.095 |
| | | 529.64 | | -1.964E-02 | 1.093E-01 | 1.774E-01 | 1.684E-02 | -0.111 |
| | | 552.65 | | 1.236E-01 | 2.019E-01 | 3.454E-01 | 3.260E-02 | 0.358 |
| RB-84 | | 881.50 | * | -4.081E-02 | 7.125E-02 | 1.125E-01 | 1.063E-02 | -0.363 |
| KR-85 | | 513.99 | * | 1.636E+01 | 8.068E+00 | 1.344E+01 | 1.278E+00 | 1.217 |
| SR-85 | | 513.99 | * | 8.824E-02 | 4.353E-02 | 7.251E-02 | 6.894E-03 | 1.217 |
| RB-86 | | 1076.63 | * | 2.333E-01 | 9.430E-01 | 1.587E+00 | 1.386E-01 | 0.147 |
| Y-88 | | 898.02 | | -3.333E-02 | 4.014E-02 | 6.157E-02 | 5.848E-03 | -0.541 |
| | | 1836.01 | * | -3.671E-03 | 3.477E-02 | 5.602E-02 | 4.548E-03 | -0.066 |
| ZR-88 | | 392.90 | * | 2.345E-03 | 3.029E-02 | 5.109E-02 | 4.725E-03 | 0.046 |
| Y-91 | | 1204.90 | * | 2.121E+00 | 1.867E+01 | 3.076E+01 | 2.501E+00 | 0.069 |
| NB-94 | | 702.63 | * | 1.915E-03 | 3.402E-02 | 5.500E-02 | 4.972E-03 | 0.035 |
| | | 871.10 | | -9.171E-03 | 3.358E-02 | 5.486E-02 | 5.178E-03 | -0.167 |
| NB-95 | | 765.79 | * | 6.343E-02 | 5.490E-02 | 8.532E-02 | 7.887E-03 | 0.743 |
| NB-95M | | 235.69 | * | 2.679E-02 | 1.433E-01 | 2.086E-01 | 2.481E-02 | 0.128 |
| ZR-95 | | 724.18 | | -1.592E-02 | 1.109E-01 | 1.527E-01 | 1.500E-02 | -0.104 |
| | | 756.15 | * | 9.902E-03 | 8.469E-02 | 1.367E-01 | 1.373E-02 | 0.072 |
| NB-97 | | 657.90 | * | 4.747E-01 | 8.469E-02 | Half-Life | too short | |
| | | 1024.50 | | -3.814E+02 | 8.469E-02 | Half-Life | too short | |
| ZR-97 | | 254.15 | | -2.294E+02 | 8.469E-02 | Half-Life | too short | |
| | | 355.39 | | -1.262E+02 | 8.469E-02 | Half-Life | too short | |
| | | 507.63 | * | 3.031E+02 | 8.469E-02 | Half-Life | too short | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 602.52 | | 3.916E+02 | 8.469E-02 | Half-Life | too short | |
| | | 1021.30 | | -6.571E+02 | 8.469E-02 | Half-Life | too short | |
| | | 1147.95 | | 3.248E+02 | 8.469E-02 | Half-Life | too short | |
| | | 1362.66 | | 2.845E+02 | 8.469E-02 | Half-Life | too short | |
| | | 1750.46 | | -5.307E+02 | 8.469E-02 | Half-Life | too short | |
| MO-99 | | 140.51 | | 1.372E+01 | 8.471E+01 | 1.379E+02 | 3.814E+01 | 0.099 |
| | | 181.06 | | 1.299E+01 | 5.694E+01 | 8.998E+01 | 1.681E+01 | 0.144 |
| | | 366.43 | | 1.590E+02 | 2.771E+02 | 4.814E+02 | 4.869E+01 | 0.330 |
| | | 739.58 | * | -4.185E+00 | 3.816E+01 | 6.053E+01 | 9.383E+00 | -0.069 |
| | | 778.00 | | -3.465E+01 | 1.230E+02 | 1.915E+02 | 1.776E+01 | -0.181 |
| TC-99M | | 140.51 | * | 3.784E+15 | 1.230E+02 | Half-Life | too short | |
| RH-101 | | 127.23 | | 4.328E-03 | 3.256E-02 | 4.918E-02 | 4.095E-03 | 0.088 |
| | | 198.01 | * | 6.472E-03 | 3.232E-02 | 5.320E-02 | 5.253E-03 | 0.122 |
| | | 325.23 | | 5.718E-02 | 2.281E-01 | 3.272E-01 | 3.674E-02 | 0.175 |
| RH-102 | | 418.52 | | -2.076E-01 | 2.834E-01 | 4.514E-01 | 4.228E-02 | -0.460 |
| | | 475.06 | * | 6.786E-03 | 2.808E-02 | 4.729E-02 | 4.495E-03 | 0.143 |
| | | 631.29 | | -1.057E-02 | 5.351E-02 | 8.540E-02 | 7.761E-03 | -0.124 |
| | | 697.49 | | 8.435E-02 | 7.717E-02 | 1.344E-01 | 1.212E-02 | 0.628 |
| | | 766.84 | | 2.497E-01 | 1.424E-01 | 2.290E-01 | 2.117E-02 | 1.090 |
| | | 1046.59 | | -9.804E-03 | 1.110E-01 | 1.815E-01 | 1.617E-02 | -0.054 |
| | | 1112.84 | | -1.674E-02 | 2.431E-01 | 3.588E-01 | 3.050E-02 | -0.047 |
| RU-103 | | 497.08 | * | -3.603E-02 | 4.355E-02 | 6.715E-02 | 9.887E-03 | -0.537 |
| | + | 610.33 | | 1.871E+01 | 3.730E+00 | 3.581E+00 | 6.086E-01 | 5.224 |
| RH-106 | + | 511.85 | | 9.349E-01 | 4.134E-01 | 4.861E-01 | 4.622E-02 | 1.923 |
| | | 621.84 | * | -1.968E-01 | 3.271E-01 | 5.042E-01 | 6.908E-02 | -0.390 |
| | | 1050.47 | | 5.335E-02 | 2.228E+00 | 3.681E+00 | 3.273E-01 | 0.014 |
| RU-106 | + | 511.85 | | 9.349E-01 | 4.134E-01 | 4.861E-01 | 4.622E-02 | 1.923 |
| | | 621.84 | * | -1.968E-01 | 3.265E-01 | 5.042E-01 | 4.610E-02 | -0.390 |
| | | 1050.47 | | 5.335E-02 | 2.228E+00 | 3.681E+00 | 3.273E-01 | 0.014 |
| AG-108M | | 433.93 | * | 1.519E-03 | 3.134E-02 | 5.243E-02 | 5.104E-03 | 0.029 |
| | | 614.37 | | -1.321E-02 | 4.226E-02 | 5.802E-02 | 5.515E-03 | -0.228 |
| | | 722.95 | | -2.469E-02 | 4.736E-02 | 6.205E-02 | 5.852E-03 | -0.398 |
| AG-110M | | 657.75 | * | 2.310E-03 | 3.597E-02 | 5.849E-02 | 5.353E-03 | 0.039 |
| | | 677.61 | | 2.919E-01 | 3.082E-01 | 5.344E-01 | 4.903E-02 | 0.546 |
| | | 706.67 | | -2.726E-02 | 2.140E-01 | 3.405E-01 | 3.161E-02 | -0.080 |
| | | 763.93 | | -1.160E-01 | 2.077E-01 | 2.704E-01 | 2.559E-02 | -0.429 |
| | | 884.67 | | 3.031E-02 | 4.664E-02 | 8.228E-02 | 7.984E-03 | 0.368 |
| | | 937.48 | | -1.163E-02 | 1.256E-01 | 1.793E-01 | 1.730E-02 | -0.065 |
| | | 1384.27 | | 2.040E-02 | 1.946E-01 | 2.751E-01 | 2.405E-02 | 0.074 |
| IN-111 | | 171.28 | | 9.996E-01 | 3.167E+00 | 5.280E+00 | 4.854E-01 | 0.189 |
| | | 245.39 | * | 1.609E+00 | 3.588E+00 | 5.311E+00 | 5.915E-01 | 0.303 |
| IN-113M | | 391.69 | * | -1.155E-02 | 4.526E-02 | 7.488E-02 | 7.108E-03 | -0.154 |
| SN-113 | | 391.69 | * | -1.155E-02 | 4.526E-02 | 7.488E-02 | 7.108E-03 | -0.154 |
| IN-114M | | 190.27 | * | -7.942E-02 | 1.907E-01 | 2.907E-01 | 2.811E-02 | -0.273 |
| CD-115 | | 260.90 | | 3.003E-04 | 1.907E-01 | Half-Life | too short | |
| | | 492.35 | | 7.492E-05 | 1.907E-01 | Half-Life | too short | |
| | | 527.90 | * | -9.491E-06 | 1.907E-01 | Half-Life | too short | |
| SN-117M | | 156.02 | | 2.636E-01 | 2.954E+00 | 4.398E+00 | 3.879E-01 | 0.060 |
| | | 158.56 | * | -5.979E-02 | 6.592E-02 | 1.044E-01 | 9.272E-03 | -0.573 |

Sample ID : G245388001

Acquisition date : 4-FEB-2010 10:28:40

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| SB-122 | 563.90 | * | | 3.307E+00 | 7.723E+00 | 1.248E+01 | 1.174E+00 | 0.265 |
| | 692.80 | | | 1.425E+01 | 1.451E+02 | 2.357E+02 | 2.122E+01 | 0.060 |
| I-123 | 159.00 | * | | -2.816E+02 | 1.451E+02 | Half-Life too short | | |
| | 528.96 | | | -2.290E+04 | 1.451E+02 | Half-Life too short | | |
| TE-123M | 159.00 | * | | -3.107E-03 | 2.736E-02 | 4.500E-02 | 4.025E-03 | -0.069 |
| I-124 | 602.71 | * | | 1.011E+00 | 1.487E+00 | 2.463E+00 | 2.278E-01 | 0.410 |
| | 722.78 | | | -1.914E+00 | 1.068E+01 | 1.462E+01 | 1.332E+00 | -0.131 |
| | 1325.50 | | | 2.640E+01 | 8.326E+01 | 1.392E+02 | 1.172E+01 | 0.190 |
| | 1376.25 | | | 7.590E+01 | 8.968E+01 | 1.398E+02 | 1.186E+01 | 0.543 |
| | 1509.49 | | | 1.929E+01 | 4.204E+01 | 7.353E+01 | 6.288E+00 | 0.262 |
| | 1691.02 | | | -1.306E+00 | 8.128E+00 | 1.307E+01 | 1.099E+00 | -0.100 |
| SB-124 | 602.71 | | | 2.784E-02 | 4.094E-02 | 6.783E-02 | 6.274E-03 | 0.410 |
| | 645.85 | | | -2.283E-01 | 5.369E-01 | 8.387E-01 | 7.957E-02 | -0.272 |
| | 709.31 | | | 1.366E+00 | 2.923E+00 | 4.880E+00 | 4.423E-01 | 0.280 |
| | 713.82 | | | -4.556E-01 | 1.777E+00 | 2.793E+00 | 3.456E-01 | -0.163 |
| | 722.78 | | | -7.641E-02 | 4.262E-01 | 5.838E-01 | 5.422E-02 | -0.131 |
| | 968.20 | + | | 3.151E+01 | 5.398E+00 | 9.040E+00 | 8.373E-01 | 3.485 |
| | 1045.16 | | | 7.436E-01 | 2.424E+00 | 4.116E+00 | 3.671E-01 | 0.181 |
| | 1325.50 | | | 1.126E+00 | 3.550E+00 | 5.935E+00 | 4.998E-01 | 0.190 |
| | 1368.21 | | | -1.037E+00 | 2.011E+00 | 3.019E+00 | 4.041E-01 | -0.343 |
| | 1436.60 | | | -1.601E+00 | 3.915E+00 | 6.230E+00 | 5.317E-01 | -0.257 |
| | 1691.02 | | | -1.230E-02 | 7.654E-02 | 1.231E-01 | 1.078E-02 | -0.100 |
| SB-125 | 427.89 | * | | 4.333E-02 | 9.053E-02 | 1.554E-01 | 1.484E-02 | 0.279 |
| | 463.38 | + | | 8.993E-01 | 5.271E-01 | 5.907E-01 | 5.970E-02 | 1.522 |
| | 600.56 | | | -8.449E-02 | 1.812E-01 | 2.846E-01 | 2.805E-02 | -0.297 |
| | 635.90 | | | -2.096E-01 | 2.748E-01 | 4.163E-01 | 4.047E-02 | -0.503 |
| TE-125M | 109.28 | * | | 7.198E+00 | 9.002E+00 | 1.555E+01 | 1.585E+00 | 0.463 |
| I-126 | 388.63 | | | -1.047E-01 | 2.749E-01 | 4.521E-01 | 4.230E-02 | -0.232 |
| | 666.33 | * | | 1.275E-02 | 2.365E-01 | 3.839E-01 | 3.414E-02 | 0.033 |
| | 753.82 | | | 8.065E-01 | 2.129E+00 | 3.507E+00 | 3.230E-01 | 0.230 |
| SB-126 | 223.80 | | | 1.229E+00 | 5.335E+00 | 8.734E+00 | 9.225E-01 | 0.141 |
| | 278.60 | + | | 4.935E+00 | 4.359E+00 | 5.627E+00 | 6.749E-01 | 0.877 |
| | 296.50 | + | | 2.689E+01 | 4.155E+00 | 5.078E+00 | 5.979E-01 | 5.296 |
| | 414.70 | | | 3.542E-02 | 9.412E-02 | 1.609E-01 | 1.505E-02 | 0.220 |
| | 415.30 | | | 3.338E+00 | 7.817E+00 | 1.340E+01 | 1.254E+00 | 0.249 |
| | 555.20 | | | 1.159E+00 | 5.368E+00 | 8.931E+00 | 8.425E-01 | 0.130 |
| | 573.80 | | | -4.591E-01 | 1.339E+00 | 2.130E+00 | 1.997E-01 | -0.216 |
| | 593.00 | | | -7.832E-01 | 1.198E+00 | 1.849E+00 | 1.718E-01 | -0.424 |
| | 656.30 | | | 6.785E-01 | 4.365E+00 | 7.152E+00 | 6.376E-01 | 0.095 |
| | 666.33 | | | 5.387E-03 | 9.992E-02 | 1.622E-01 | 1.443E-02 | 0.033 |
| | 675.00 | | | -1.146E+00 | 2.631E+00 | 4.088E+00 | 3.651E-01 | -0.280 |
| | 695.00 | | | -8.517E-02 | 1.059E-01 | 1.588E-01 | 1.431E-02 | -0.536 |
| | 697.00 | | | 4.245E-01 | 3.496E-01 | 6.139E-01 | 5.537E-02 | 0.691 |
| | 720.50 | * | | 4.588E-02 | 1.885E-01 | 3.089E-01 | 2.812E-02 | 0.149 |
| | 856.80 | | | 1.106E-01 | 6.830E-01 | 1.015E+00 | 9.561E-02 | 0.109 |
| | 989.30 | | | 7.962E-01 | 1.606E+00 | 2.778E+00 | 2.551E-01 | 0.287 |
| | 1034.80 | | | 3.410E+00 | 1.073E+01 | 1.826E+01 | 1.638E+00 | 0.187 |
| | 1213.00 | | | -2.177E-01 | 6.168E+00 | 1.001E+01 | 8.166E-01 | -0.022 |
| SB-127 | 61.10 | | | 5.984E+01 | 1.369E+02 | 2.007E+02 | 2.373E+01 | 0.298 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 252.40 | | 1.044E+01 | 1.130E+01 | 1.754E+01 | 7.561E+00 | 0.595 |
| | | 290.80 | | -2.985E+01 | 5.832E+01 | 7.911E+01 | 1.195E+01 | -0.377 |
| | | 411.60 | | -1.509E+01 | 2.890E+01 | 4.671E+01 | 8.055E+00 | -0.323 |
| | | 444.90 | | 1.733E+00 | 2.411E+01 | 4.032E+01 | 5.834E+00 | 0.043 |
| | | 473.00 | | 2.401E+00 | 3.814E+00 | 6.566E+00 | 9.710E-01 | 0.366 |
| | | 543.00 | | -4.139E+01 | 4.109E+01 | 6.156E+01 | 9.920E+00 | -0.672 |
| | | 603.60 | | 1.356E+01 | 2.930E+01 | 4.586E+01 | 6.563E+00 | 0.296 |
| | | 685.20 | * | 3.025E+00 | 3.308E+00 | 5.691E+00 | 7.486E-01 | 0.532 |
| | | 698.50 | | -4.795E+00 | 3.829E+01 | 6.104E+01 | 1.048E+01 | -0.079 |
| | | 722.20 | | -3.041E+00 | 7.840E+01 | 1.093E+02 | 1.427E+01 | -0.028 |
| | | 783.80 | | 3.058E+00 | 9.316E+00 | 1.525E+01 | 2.175E+00 | 0.201 |
| XE-127 | | 57.60 | | 2.065E+00 | 6.288E+00 | 9.974E+00 | 7.210E-01 | 0.207 |
| | | 145.22 | | 5.933E-01 | 7.191E-01 | 1.229E+00 | 1.055E-01 | 0.483 |
| | | 172.10 | | 1.688E-02 | 1.261E-01 | 2.086E-01 | 1.922E-02 | 0.081 |
| | | 202.84 | * | 1.301E-02 | 5.055E-02 | 8.330E-02 | 8.331E-03 | 0.156 |
| | | 374.96 | | -1.531E-01 | 2.006E-01 | 3.214E-01 | 3.161E-02 | -0.476 |
| I-131 | | 80.18 | | -9.525E+00 | 6.660E+00 | 9.517E+00 | 8.450E-01 | -1.001 |
| | | 284.30 | | -3.219E-02 | 2.278E+00 | 3.632E+00 | 4.469E-01 | -0.009 |
| | | 364.48 | * | -2.118E-02 | 1.725E-01 | 2.890E-01 | 3.066E-02 | -0.073 |
| | | 636.97 | | -1.689E+00 | 2.413E+00 | 3.681E+00 | 3.514E-01 | -0.459 |
| | | 722.89 | | -2.546E+00 | 1.168E+01 | 1.592E+01 | 1.465E+00 | -0.160 |
| TE-132 | | 49.72 | | -3.796E+01 | 5.113E+01 | 7.698E+01 | 9.147E+00 | -0.493 |
| | | 111.76 | | -5.503E+01 | 7.642E+01 | 1.246E+02 | 1.506E+01 | -0.442 |
| | | 116.30 | | -7.786E+00 | 6.887E+01 | 1.151E+02 | 1.387E+01 | -0.068 |
| | | 228.16 | * | -1.037E+00 | 2.023E+00 | 3.183E+00 | 5.684E-01 | -0.326 |
| BA-133 | | 53.15 | | -2.745E+00 | 3.451E+00 | 5.184E+00 | 3.972E-01 | -0.529 |
| | | 79.62 | | -1.820E+00 | 1.255E+00 | 1.759E+00 | 2.689E-01 | -1.034 |
| | | 81.00 | | -1.550E-01 | 9.532E-02 | 1.309E-01 | 2.095E-02 | -1.184 |
| | + | 276.40 | | 5.633E-01 | 5.018E-01 | 6.596E-01 | 1.098E-01 | 0.854 |
| | | 302.84 | | -2.034E-02 | 1.565E-01 | 2.186E-01 | 3.376E-02 | -0.093 |
| | | 356.01 | * | -2.982E-02 | 4.553E-02 | 6.402E-02 | 9.252E-03 | -0.466 |
| | | 383.85 | | 3.012E-02 | 3.132E-01 | 5.294E-01 | 7.010E-02 | 0.057 |
| I-133 | + | 510.53 | | 9.056E+01 | 3.132E-01 | Half-Life | too short | |
| | | 529.87 | * | 4.126E-03 | 3.132E-01 | Half-Life | too short | |
| | | 706.58 | | -2.961E+00 | 3.132E-01 | Half-Life | too short | |
| | | 856.28 | | 5.594E+00 | 3.132E-01 | Half-Life | too short | |
| | | 875.33 | | 2.318E+00 | 3.132E-01 | Half-Life | too short | |
| | | 1236.41 | | 3.192E+01 | 3.132E-01 | Half-Life | too short | |
| | | 1298.22 | | -7.881E+00 | 3.132E-01 | Half-Life | too short | |
| CS-134 | | 475.35 | | 4.277E-01 | 1.802E+00 | 3.034E+00 | 2.884E-01 | 0.141 |
| | | 563.23 | | 3.121E-01 | 3.847E-01 | 6.362E-01 | 6.034E-02 | 0.491 |
| | | 569.32 | | 2.486E-02 | 1.911E-01 | 3.157E-01 | 2.998E-02 | 0.079 |
| | | 604.70 | | -4.892E-03 | 3.887E-02 | 5.469E-02 | 5.064E-03 | -0.089 |
| | + | 795.84 | * | 1.331E-01 | 7.955E-02 | 9.628E-02 | 9.027E-03 | 1.382 |
| | | 801.93 | | -1.677E-01 | 5.117E-01 | 7.272E-01 | 6.818E-02 | -0.231 |
| | | 1038.57 | | -1.324E+00 | 3.593E+00 | 5.702E+00 | 5.105E-01 | -0.232 |
| | | 1167.94 | | -2.349E+00 | 2.373E+00 | 3.469E+00 | 2.805E-01 | -0.677 |
| | | 1365.15 | | 8.738E-01 | 1.281E+00 | 2.235E+00 | 1.984E-01 | 0.391 |
| CS-135 | | 268.24 | * | 1.154E-01 | 1.833E-01 | 2.715E-01 | 3.463E-02 | 0.425 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| I-135 | | 288.45 | 1.270E+15 | 1.833E-01 | Half-Life | too short | |
| | | 417.63 | -3.805E+15 | 1.833E-01 | Half-Life | too short | |
| | | 546.56 | 1.602E+15 | 1.833E-01 | Half-Life | too short | |
| | | 836.80 | 6.884E+14 | 1.833E-01 | Half-Life | too short | |
| | | 1038.76 | -9.829E+14 | 1.833E-01 | Half-Life | too short | |
| | | 1124.00 | 2.125E+15 | 1.833E-01 | Half-Life | too short | |
| | | 1131.51 | 8.791E+14 | 1.833E-01 | Half-Life | too short | |
| | | 1260.41 | * 7.047E+14 | 1.833E-01 | Half-Life | too short | |
| | | 1457.56 | 3.538E+16 | 1.833E-01 | Half-Life | too short | |
| | | 1678.03 | 1.397E+14 | 1.833E-01 | Half-Life | too short | |
| | | 1706.46 | 2.803E+15 | 1.833E-01 | Half-Life | too short | |
| | | 1791.20 | -1.290E+15 | 1.833E-01 | Half-Life | too short | |
| CS-136 | | 66.91 | -1.763E-01 | 1.056E+00 | 1.493E+00 | 2.229E-01 | -0.118 |
| | + | 86.29 | 4.868E+00 | 1.922E+00 | 2.484E+00 | 3.332E-01 | 1.960 |
| | + | 153.22 | 1.472E+00 | 9.157E-01 | 1.440E+00 | 1.406E-01 | 1.022 |
| | | 163.89 | 1.247E+00 | 1.362E+00 | 2.192E+00 | 2.195E-01 | 0.569 |
| | | 176.55 | 2.890E-03 | 4.648E-01 | 7.639E-01 | 7.478E-02 | 0.004 |
| | | 273.65 | 1.036E-02 | 7.783E-01 | 8.703E-01 | 1.070E-01 | 0.012 |
| | | 340.57 | 3.694E-01 | 1.733E-01 | 2.890E-01 | 3.197E-02 | 1.278 |
| | | 818.51 | -6.563E-03 | 1.012E-01 | 1.692E-01 | 1.587E-02 | -0.039 |
| | | 1048.07 | * -1.131E-01 | 1.337E-01 | 2.009E-01 | 1.861E-02 | -0.563 |
| | | 1235.34 | -1.315E-01 | 8.004E-01 | 1.099E+00 | 1.271E-01 | -0.120 |
| | | 661.65 | * -1.323E-02 | 3.725E-02 | 5.853E-02 | 5.194E-03 | -0.226 |
| | | 661.65 | * -1.399E-02 | 3.937E-02 | 6.187E-02 | 5.501E-03 | -0.226 |
| BA-137M | | 165.85 | * -1.288E-02 | 2.865E-02 | 4.629E-02 | 4.198E-03 | -0.278 |
| CE-139 | | 162.64 | -4.462E-01 | 9.967E-01 | 1.523E+00 | 1.442E-01 | -0.293 |
| BA-140 | | 304.84 | -6.744E-01 | 1.941E+00 | 2.598E+00 | 7.559E-01 | -0.260 |
| | | 423.70 | -4.862E-01 | 2.514E+00 | 4.143E+00 | 1.352E+00 | -0.117 |
| LA-140 | | 537.32 | * -2.756E-02 | 3.459E-01 | 5.649E-01 | 1.885E-01 | -0.049 |
| | + | 328.77 | 1.481E+00 | 5.903E-01 | 7.752E-01 | 8.934E-02 | 1.910 |
| | | 432.53 | 4.667E-01 | 2.563E+00 | 4.324E+00 | 4.238E-01 | 0.108 |
| | | 487.03 | 2.919E-02 | 1.701E-01 | 2.849E-01 | 2.848E-02 | 0.102 |
| | | 751.79 | -1.161E-01 | 2.409E+00 | 3.841E+00 | 3.869E-01 | -0.030 |
| | | 815.85 | 1.794E-01 | 4.294E-01 | 7.445E-01 | 7.655E-02 | 0.241 |
| | | 867.82 | 2.439E+00 | 1.834E+00 | 3.247E+00 | 3.200E-01 | 0.751 |
| | | 919.63 | -4.110E-01 | 3.407E+00 | 5.613E+00 | 6.340E-01 | -0.073 |
| | | 925.24 | 9.119E-02 | 1.358E+00 | 2.275E+00 | 2.251E-01 | 0.040 |
| | | 1596.49 | * -1.602E-01 | 1.164E-01 | 1.534E-01 | 1.306E-02 | -1.045 |
| | | 145.44 | * 4.216E-02 | 6.544E-02 | 1.112E-01 | 9.726E-03 | 0.379 |
| CE-141 | | 57.37 | 1.318E-04 | 6.544E-02 | Half-Life | too short | |
| CE-143 | | 231.56 | -4.167E-03 | 6.544E-02 | Half-Life | too short | |
| | | 293.26 | * 5.634E-03 | 6.544E-02 | Half-Life | too short | |
| | + | 350.59 | 4.834E-01 | 6.544E-02 | Half-Life | too short | |
| | | 490.36 | 1.402E-02 | 6.544E-02 | Half-Life | too short | |
| | | 664.57 | 5.874E-03 | 6.544E-02 | Half-Life | too short | |
| | | 721.93 | -5.867E-03 | 6.544E-02 | Half-Life | too short | |
| | | 80.11 | -2.966E+00 | 2.043E+00 | 2.916E+00 | 2.560E-01 | -1.017 |
| CE-144 | | 133.54 | * 1.265E-01 | 2.131E-01 | 3.274E-01 | 5.056E-02 | 0.386 |
| PM-144 | | 476.78 | -3.573E-02 | 6.428E-02 | 1.022E-01 | 1.047E-02 | -0.350 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| | | 618.01 | | 6.721E-03 | 3.205E-02 | 5.295E-02 | 4.974E-03 | 0.127 |
| | | 696.49 | * | 1.958E-02 | 3.543E-02 | 5.949E-02 | 5.367E-03 | 0.329 |
| | | 778.57 | | -7.346E-01 | 2.432E+00 | 3.774E+00 | 3.503E-01 | -0.195 |
| PR-144 | | 696.49 | * | 1.330E+00 | 2.407E+00 | 4.042E+00 | 3.644E-01 | 0.329 |
| | | 1489.15 | | -1.259E+01 | 1.100E+01 | 1.495E+01 | 1.279E+00 | -0.842 |
| PM-146 | | 453.90 | * | 5.915E-02 | 4.290E-02 | 7.656E-02 | 8.743E-03 | 0.773 |
| | | 633.02 | | 4.114E-02 | 1.354E+00 | 2.203E+00 | 8.258E-01 | 0.019 |
| | | 735.90 | | 4.807E-02 | 1.522E-01 | 2.497E-01 | 7.184E-02 | 0.193 |
| | | 747.13 | | -3.923E-02 | 9.204E-02 | 1.413E-01 | 2.034E-02 | -0.278 |
| ND-147 | + | 91.11 | | 1.073E+00 | 3.670E-01 | 6.390E-01 | 6.388E-02 | 1.679 |
| | | 319.41 | | 3.055E-01 | 4.752E+00 | 7.552E+00 | 8.576E-01 | 0.040 |
| | | 439.89 | | 5.343E+00 | 7.877E+00 | 1.364E+01 | 1.288E+00 | 0.392 |
| | | 531.02 | * | 9.667E-02 | 7.401E-01 | 1.228E+00 | 1.900E-01 | 0.079 |
| PM-149 | | 285.90 | * | -3.344E-04 | 7.401E-01 | Half-Life too short | | |
| EU-152 | | 121.78 | | 7.868E-04 | 6.625E-02 | 1.110E-01 | 1.072E-02 | 0.007 |
| | | 244.69 | | 3.240E-01 | 3.452E-01 | 5.252E-01 | 5.840E-02 | 0.617 |
| | | 344.27 | * | -6.884E-02 | 1.015E-01 | 1.522E-01 | 1.701E-02 | -0.452 |
| | | 443.98 | | -4.486E-01 | 9.847E-01 | 1.592E+00 | 1.505E-01 | -0.282 |
| | | 778.89 | | -7.705E-02 | 2.788E-01 | 4.339E-01 | 4.025E-02 | -0.178 |
| | | 867.32 | | 4.599E-01 | 8.797E-01 | 1.415E+00 | 1.335E-01 | 0.325 |
| | + | 964.01 | | 1.003E+00 | 3.926E-01 | 5.957E-01 | 5.526E-02 | 1.684 |
| | | 1085.78 | | 1.730E-01 | 3.810E-01 | 6.532E-01 | 5.670E-02 | 0.265 |
| | | 1112.02 | | -7.601E-03 | 3.191E-01 | 5.083E-01 | 4.324E-02 | -0.015 |
| | | 1407.95 | | 2.064E-01 | 2.098E-01 | 3.412E-01 | 2.906E-02 | 0.605 |
| GD-153 | | 69.67 | | -2.333E-01 | 1.529E+00 | 2.499E+00 | 1.969E-01 | -0.093 |
| | + | 83.37 | | 1.963E+01 | 1.587E+01 | 2.219E+01 | 2.022E+00 | 0.885 |
| | | 97.43 | * | -7.194E-02 | 8.137E-02 | 1.155E-01 | 1.026E-02 | -0.623 |
| | | 103.18 | | -2.319E-02 | 9.602E-02 | 1.606E-01 | 1.384E-02 | -0.144 |
| EU-154 | | 123.07 | | 5.212E-02 | 4.727E-02 | 8.195E-02 | 9.118E-03 | 0.636 |
| | | 247.94 | | -3.756E-01 | 3.435E-01 | 5.123E-01 | 6.928E-02 | -0.733 |
| | | 591.81 | | 1.250E-01 | 5.823E-01 | 9.660E-01 | 1.177E-01 | 0.129 |
| | | 723.30 | | -9.502E-02 | 1.987E-01 | 2.620E-01 | 2.614E-02 | -0.363 |
| | | 756.87 | | 3.026E-01 | 8.534E-01 | 1.403E+00 | 1.742E-01 | 0.216 |
| | | 873.19 | | -2.021E-01 | 2.861E-01 | 4.460E-01 | 5.725E-02 | -0.453 |
| | | 996.32 | | -2.193E-01 | 3.932E-01 | 6.165E-01 | 1.112E-01 | -0.356 |
| | | 1004.76 | | -3.002E-01 | 2.283E-01 | 3.282E-01 | 3.943E-02 | -0.915 |
| | | 1274.45 | * | 3.914E-03 | 1.162E-01 | 1.897E-01 | 2.101E-02 | 0.021 |
| EU-155 | | 48.70 | | -2.711E+00 | 2.398E+00 | 3.544E+00 | 2.911E-01 | -0.765 |
| | | 60.01 | | 3.461E+00 | 5.008E+00 | 7.449E+00 | 5.321E-01 | 0.465 |
| | + | 86.54 | | 3.488E-01 | 1.337E-01 | 1.808E-01 | 1.726E-02 | 1.929 |
| | | 105.31 | * | 7.394E-02 | 9.907E-02 | 1.713E-01 | 1.482E-02 | 0.432 |
| TB-160 | + | 86.79 | | 9.742E-01 | 3.732E-01 | 5.080E-01 | 4.824E-02 | 1.918 |
| | | 197.04 | | -8.328E-02 | 5.798E-01 | 9.406E-01 | 9.263E-02 | -0.089 |
| | | 215.65 | | 4.595E-01 | 7.950E-01 | 1.322E+00 | 1.367E-01 | 0.348 |
| | | 298.57 | | 1.673E-01 | 1.225E-01 | 2.063E-01 | 2.423E-02 | 0.811 |
| | | 879.36 | * | -2.225E-02 | 1.323E-01 | 2.178E-01 | 2.057E-02 | -0.102 |
| | | 962.29 | | 3.949E-01 | 5.608E-01 | 8.882E-01 | 8.245E-02 | 0.445 |
| | + | 966.15 | | 7.211E-01 | 2.822E-01 | 4.922E-01 | 4.563E-02 | 1.465 |
| | | 1177.93 | | 1.218E-01 | 3.667E-01 | 6.171E-01 | 4.970E-02 | 0.197 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| HO-166M | 1271.85 | | | 8.975E-03 | 6.934E-01 | 1.126E+00 | 9.353E-02 | 0.008 |
| | 80.57 | | | -3.699E-01 | 2.584E-01 | 3.692E-01 | 3.258E-02 | -1.002 |
| | 184.41 | | | 2.299E-02 | 4.041E-02 | 6.252E-02 | 5.952E-03 | 0.368 |
| | 280.46 | | | -6.158E-02 | 9.741E-02 | 1.314E-01 | 1.576E-02 | -0.469 |
| | 410.95 | | | 5.416E-02 | 2.392E-01 | 4.056E-01 | 3.786E-02 | 0.134 |
| | 711.68 | * | | 1.356E-03 | 6.025E-02 | 9.706E-02 | 8.806E-03 | 0.014 |
| | 752.31 | | | -1.118E-01 | 3.012E-01 | 4.669E-01 | 4.298E-02 | -0.240 |
| TM-171 | 810.29 | | | -9.084E-02 | 5.960E-02 | 8.653E-02 | 8.089E-03 | -1.050 |
| | 51.35 | | | 2.690E+01 | 2.814E+01 | 4.620E+01 | 3.641E+00 | 0.582 |
| | 52.39 | | | -4.668E+00 | 1.502E+01 | 2.319E+01 | 1.797E+00 | -0.201 |
| | 59.40 | | | -1.242E+01 | 2.542E+01 | 3.874E+01 | 2.751E+00 | -0.321 |
| | 66.72 | * | | -5.601E+00 | 2.971E+01 | 4.194E+01 | 3.213E+00 | -0.134 |
| LU-176 | 88.36 | + | | 6.857E-01 | 2.627E-01 | 3.386E-01 | 3.251E-02 | 2.025 |
| | 201.83 | | | -1.432E-02 | 2.841E-02 | 4.524E-02 | 4.512E-03 | -0.317 |
| | 306.84 | * | | -9.057E-03 | 2.600E-02 | 3.896E-02 | 4.519E-03 | -0.232 |
| LU-177 | 401.10 | | | 1.459E-01 | 6.458E+00 | 1.084E+01 | 1.007E+00 | 0.013 |
| | 112.95 | | | -8.423E-01 | 2.413E+00 | 4.000E+00 | 3.350E-01 | -0.211 |
| | 208.36 | + | * | 6.295E+00 | 2.766E+00 | 3.476E+00 | 3.528E-01 | 1.811 |
| LU-177M | 52.97 | | | -1.479E+00 | 1.587E+00 | 2.366E+00 | 1.817E-01 | -0.625 |
| | 54.07 | | | 2.480E-01 | 8.284E-01 | 1.316E+00 | 9.951E-02 | 0.188 |
| | 61.30 | | | 7.531E-01 | 1.512E+00 | 2.223E+00 | 1.613E-01 | 0.339 |
| | 121.62 | | | -8.359E-02 | 3.476E-01 | 5.766E-01 | 4.786E-02 | -0.145 |
| | 147.16 | | | -3.825E-01 | 6.293E-01 | 1.018E+00 | 8.775E-02 | -0.376 |
| | 171.86 | | | 7.786E-02 | 4.738E-01 | 7.850E-01 | 7.229E-02 | 0.099 |
| | 218.09 | | | -5.147E-01 | 8.933E-01 | 1.409E+00 | 1.467E-01 | -0.365 |
| | 268.79 | | | 1.939E+00 | 1.003E+00 | 1.564E+00 | 1.837E-01 | 1.240 |
| | 319.02 | | | 1.486E-01 | 2.765E-01 | 4.511E-01 | 5.125E-02 | 0.329 |
| | 367.43 | | | 2.643E-01 | 8.615E-01 | 1.478E+00 | 1.490E-01 | 0.179 |
| | 413.65 | * | | -2.751E-02 | 1.743E-01 | 2.889E-01 | 2.701E-02 | -0.095 |
| | 56.28 | | | 1.684E-01 | 9.769E-01 | 1.540E+00 | 1.131E-01 | 0.109 |
| | 57.53 | | | 1.674E-01 | 5.223E-01 | 8.282E-01 | 5.991E-02 | 0.202 |
| | 65.20 | | | -7.744E-02 | 1.045E+00 | 1.485E+00 | 1.122E-01 | -0.052 |
| | 133.02 | | | -3.774E-02 | 7.493E-02 | 1.091E-01 | 9.145E-03 | -0.346 |
| HF-181 | 136.25 | | | 1.073E-01 | 4.584E-01 | 7.705E-01 | 6.495E-02 | 0.139 |
| | 345.85 | | | 5.012E-02 | 2.140E-01 | 3.552E-01 | 3.807E-02 | 0.141 |
| | 482.03 | * | | 1.918E-03 | 4.431E-02 | 7.359E-02 | 6.999E-03 | 0.026 |
| | 56.28 | | | 6.204E-02 | 3.632E-01 | 5.726E-01 | 4.203E-02 | 0.108 |
| | 57.53 | | | 6.224E-02 | 1.943E-01 | 3.082E-01 | 2.230E-02 | 0.202 |
| | 65.20 | * | | -2.859E-02 | 3.856E-01 | 5.484E-01 | 4.141E-02 | -0.052 |
| | 67.75 | | | 7.490E-02 | 1.083E-01 | 1.726E-01 | 1.335E-02 | 0.434 |
| W-181 | 100.10 | | | 6.264E-03 | 1.662E-01 | 2.813E-01 | 2.460E-02 | 0.022 |
| | 152.43 | | | 1.438E-01 | 3.628E-01 | 5.493E-01 | 4.800E-02 | 0.262 |
| | 222.10 | | | -9.357E-02 | 3.597E-01 | 5.759E-01 | 6.056E-02 | -0.162 |
| | 1001.68 | | | 9.574E-01 | 2.342E+00 | 3.903E+00 | 3.563E-01 | 0.245 |
| | 1121.28 | + | | 6.406E-01 | 2.809E-01 | 3.822E-01 | 3.227E-02 | 1.676 |
| TA-182 | 1189.05 | | | 2.398E-02 | 3.059E-01 | 5.027E-01 | 4.065E-02 | 0.048 |
| | 1221.42 | * | | 1.330E-01 | 1.957E-01 | 3.373E-01 | 2.758E-02 | 0.394 |
| | 1230.97 | | | 3.771E-01 | 4.675E-01 | 7.778E-01 | 6.381E-02 | 0.485 |
| RE-183 | 57.98 | | | 2.370E-04 | 1.994E-01 | 3.114E-01 | 2.242E-02 | 0.001 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| RE-184 | | 59.32 | | -7.443E-02 | 1.101E-01 | 1.663E-01 | 1.182E-02 | -0.448 |
| | | 67.20 | | -5.254E-03 | 2.202E-01 | 3.135E-01 | 2.413E-02 | -0.017 |
| | | 162.32 | * | -5.922E-02 | 1.105E-01 | 1.781E-01 | 1.598E-02 | -0.333 |
| | + | 208.81 | | 3.601E+00 | 1.582E+00 | 2.012E+00 | 2.045E-01 | 1.789 |
| | | 291.72 | | -5.758E-01 | 1.060E+00 | 1.432E+00 | 1.696E-01 | -0.402 |
| | | 57.98 | | 8.493E-04 | 7.144E-01 | 1.116E+00 | 8.034E-02 | 0.001 |
| | | 59.32 | | -2.664E-01 | 3.943E-01 | 5.954E-01 | 4.231E-02 | -0.448 |
| | | 67.20 | | -1.882E-02 | 7.888E-01 | 1.123E+00 | 8.643E-02 | -0.017 |
| | | 161.27 | | 3.556E-02 | 3.468E-01 | 5.750E-01 | 5.146E-02 | 0.062 |
| | | 216.55 | | 9.877E-02 | 2.744E-01 | 4.525E-01 | 4.691E-02 | 0.218 |
| OS-185 | | 252.85 | * | 1.947E-01 | 2.364E-01 | 3.949E-01 | 4.476E-02 | 0.493 |
| | | 318.01 | | 7.057E-01 | 4.886E-01 | 8.281E-01 | 9.426E-02 | 0.852 |
| | | 792.07 | | 1.078E+00 | 1.075E+00 | 1.744E+00 | 1.623E-01 | 0.618 |
| | | 903.28 | | 4.036E-01 | 9.792E-01 | 1.652E+00 | 1.561E-01 | 0.244 |
| | | 920.93 | | -1.928E-01 | 4.213E-01 | 6.701E-01 | 6.303E-02 | -0.288 |
| | | 59.72 | | 1.323E-01 | 3.077E-01 | 4.517E-01 | 3.215E-02 | 0.293 |
| | | 61.14 | | 7.588E-02 | 1.688E-01 | 2.477E-01 | 1.793E-02 | 0.306 |
| | | 69.30 | | -5.688E-02 | 2.683E-01 | 4.574E-01 | 3.592E-02 | -0.124 |
| | | 592.07 | | 5.286E-01 | 2.461E+00 | 4.083E+00 | 3.797E-01 | 0.129 |
| | | 646.12 | * | -2.953E-02 | 4.574E-02 | 7.007E-02 | 6.299E-03 | -0.421 |
| W-188 | | 717.42 | | -1.252E-01 | 9.561E-01 | 1.519E+00 | 1.381E-01 | -0.082 |
| | | 874.81 | | 5.877E-02 | 5.636E-01 | 9.516E-01 | 8.985E-02 | 0.062 |
| | | 880.27 | | -6.425E-01 | 7.459E-01 | 1.141E+00 | 1.078E-01 | -0.563 |
| | + | 63.58 | | 1.049E+02 | 7.287E+01 | 9.263E+01 | 6.884E+00 | 1.133 |
| | | 227.08 | | -8.345E-01 | 1.371E+01 | 2.213E+01 | 2.357E+00 | -0.038 |
| | | 290.67 | * | -3.714E+00 | 8.888E+00 | 1.217E+01 | 1.444E+00 | -0.305 |
| | + | 295.96 | | 1.644E+00 | 2.546E-01 | 3.332E-01 | 3.941E-02 | 4.934 |
| | | 308.46 | | -2.888E-02 | 1.018E-01 | 1.586E-01 | 1.841E-02 | -0.182 |
| | | 316.51 | * | 7.191E-03 | 3.931E-02 | 6.291E-02 | 7.189E-03 | 0.114 |
| | | 468.07 | | -4.463E-02 | 8.012E-02 | 1.096E-01 | 1.103E-02 | -0.407 |
| AU-195 | | 604.41 | | 1.963E-01 | 5.239E-01 | 7.746E-01 | 1.041E-01 | 0.253 |
| | | 612.46 | | 5.531E-01 | 7.962E-01 | 1.212E+00 | 1.262E-01 | 0.456 |
| | | 65.12 | | -9.972E-03 | 1.771E-01 | 2.521E-01 | 1.903E-02 | -0.040 |
| | | 66.83 | | -1.317E-02 | 9.967E-02 | 1.411E-01 | 1.082E-02 | -0.093 |
| | + | 75.70 | | 1.609E+00 | 2.623E-01 | 4.495E-01 | 3.761E-02 | 3.580 |
| | | 98.88 | * | 3.958E-01 | 2.147E-01 | 3.712E-01 | 3.268E-02 | 1.066 |
| | + | 129.76 | | 7.564E+00 | 4.316E+00 | 4.953E+00 | 4.135E-01 | 1.527 |
| | | 367.94 | * | 4.354E-04 | 4.316E+00 | Half-Life | too short | |
| | | 579.30 | | 2.169E-02 | 4.316E+00 | Half-Life | too short | |
| | | 828.27 | | 3.480E-03 | 4.316E+00 | Half-Life | too short | |
| TL-201 | | 1205.75 | | 1.535E-02 | 4.316E+00 | Half-Life | too short | |
| TL-202 | | 68.90 | | 6.257E+00 | 1.250E+01 | 2.177E+01 | 1.703E+00 | 0.287 |
| | | 70.82 | | -2.797E+00 | 7.913E+00 | 1.206E+01 | 9.612E-01 | -0.232 |
| | | 80.30 | | -2.007E+01 | 1.440E+01 | 2.063E+01 | 1.815E+00 | -0.973 |
| | | 135.34 | | 4.648E+01 | 7.164E+01 | 1.222E+02 | 1.029E+01 | 0.380 |
| | | 167.43 | * | -1.111E+01 | 1.978E+01 | 3.176E+01 | 2.891E+00 | -0.350 |
| | | 68.90 | | 2.459E-01 | 4.912E-01 | 8.556E-01 | 6.692E-02 | 0.287 |
| | | 70.82 | | -1.096E-01 | 3.102E-01 | 4.729E-01 | 3.767E-02 | -0.232 |
| | | 80.30 | | -7.869E-01 | 5.646E-01 | 8.087E-01 | 7.115E-02 | -0.973 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| HG-203 | | 439.56 | * | 5.660E-02 | 8.929E-02 | 1.544E-01 | 1.457E-02 | 0.367 |
| | | 70.83 | | -3.820E-01 | 1.099E+00 | 1.675E+00 | 2.211E-01 | -0.228 |
| | | 72.87 | | 5.698E-01 | 6.403E-01 | 1.018E+00 | 1.312E-01 | 0.560 |
| | | 82.60 | | 1.177E+00 | 1.261E+00 | 1.647E+00 | 2.307E-01 | 0.715 |
| BI-207 | | 279.20 | * | -1.568E-02 | 5.039E-02 | 6.993E-02 | 8.522E-03 | -0.224 |
| | | 72.80 | | 1.434E-01 | 1.739E-01 | 2.769E-01 | 2.249E-02 | 0.518 |
| | + | 74.97 | | 8.766E-01 | 1.429E-01 | 2.304E-01 | 1.913E-02 | 3.805 |
| | + | 84.90 | | 2.505E-01 | 2.025E-01 | 2.928E-01 | 2.718E-02 | 0.855 |
| TL-207 | | 569.67 | | 2.807E-03 | 3.026E-02 | 4.984E-02 | 4.679E-03 | 0.056 |
| | | 1063.62 | * | 3.506E-02 | 5.181E-02 | 9.044E-02 | 7.973E-03 | 0.388 |
| | | 1770.23 | | -4.324E-01 | 5.650E-01 | 6.328E-01 | 5.230E-02 | -0.683 |
| | | 81.07 | | -3.464E-01 | 2.050E-01 | 2.879E-01 | 2.555E-02 | -1.203 |
| PO-209 | + | 83.78 | | 1.651E-01 | 1.335E-01 | 1.908E-01 | 1.747E-02 | 0.866 |
| | | 94.90 | | 3.162E-01 | 2.126E-01 | 3.441E-01 | 3.111E-02 | 0.919 |
| | | 122.32 | | 6.853E-01 | 1.590E+00 | 2.706E+00 | 2.423E-01 | 0.253 |
| | | 144.24 | | 1.328E-01 | 6.902E-01 | 1.108E+00 | 1.063E-01 | 0.120 |
| BI-210 | + | 154.21 | | 6.864E-01 | 4.268E-01 | 6.639E-01 | 6.388E-02 | 1.034 |
| | + | 269.46 | | 9.226E-01 | 3.321E-01 | 3.828E-01 | 4.553E-02 | 2.410 |
| | | 323.87 | * | 2.616E-01 | 6.980E-01 | 1.010E+00 | 1.932E-01 | 0.259 |
| | + | 338.28 | | 1.091E+01 | 2.376E+00 | 2.864E+00 | 4.014E-01 | 3.811 |
| PB-210 | | 445.03 | | 1.296E-01 | 2.347E+00 | 3.922E+00 | 4.978E-01 | 0.033 |
| | + | 260.50 | | 1.176E+01 | 1.243E+01 | 1.651E+01 | 1.904E+00 | 0.712 |
| | | 262.80 | | -2.130E+01 | 3.085E+01 | 4.168E+01 | 4.831E+00 | -0.511 |
| | | 896.60 | * | -3.467E+00 | 7.257E+00 | 1.159E+01 | 1.096E+00 | -0.299 |
| BI-210 | | 46.50 | * | -2.784E+00 | 3.853E+00 | 5.615E+00 | 5.236E-01 | -0.496 |
| PB-210 | | 46.50 | * | -2.784E+00 | 3.853E+00 | 5.615E+00 | 5.236E-01 | -0.496 |
| PO-210 | | 46.50 | * | -2.784E+00 | 3.851E+00 | 5.615E+00 | 4.743E-01 | -0.496 |
| PB-211 | | 404.84 | * | 8.288E-02 | 9.074E-01 | 1.526E+00 | 9.578E-01 | 0.054 |
| BI-212 | | 427.08 | | 8.643E-01 | 2.148E+00 | 3.557E+00 | 2.215E+00 | 0.243 |
| | | 831.96 | | -1.105E+00 | 1.394E+00 | 1.882E+00 | 1.182E+00 | -0.587 |
| | + | 727.18 | * | 1.369E+00 | 5.732E-01 | 7.415E-01 | 7.747E-02 | 1.846 |
| | | 785.46 | | 2.246E+00 | 1.820E+00 | 3.307E+00 | 3.073E-01 | 0.679 |
| PO-215 | | 1620.62 | | 1.354E+00 | 1.417E+00 | 2.621E+00 | 2.226E-01 | 0.517 |
| | | 81.07 | | -3.464E-01 | 2.050E-01 | 2.879E-01 | 2.555E-02 | -1.203 |
| | + | 83.78 | | 1.651E-01 | 1.335E-01 | 1.908E-01 | 1.747E-02 | 0.866 |
| | | 94.90 | | 3.162E-01 | 2.126E-01 | 3.441E-01 | 3.111E-02 | 0.919 |
| RN-219 | | 122.32 | | 6.853E-01 | 1.590E+00 | 2.706E+00 | 2.423E-01 | 0.253 |
| | | 144.24 | | 1.328E-01 | 6.902E-01 | 1.108E+00 | 1.063E-01 | 0.120 |
| | + | 154.21 | | 6.864E-01 | 4.268E-01 | 6.639E-01 | 6.388E-02 | 1.034 |
| | + | 269.46 | | 9.226E-01 | 3.321E-01 | 3.828E-01 | 4.553E-02 | 2.410 |
| RA-223 | | 323.87 | * | 2.616E-01 | 6.980E-01 | 1.010E+00 | 1.932E-01 | 0.259 |
| | + | 338.28 | | 1.091E+01 | 2.376E+00 | 2.864E+00 | 4.014E-01 | 3.811 |
| | | 445.03 | | 1.296E-01 | 2.347E+00 | 3.922E+00 | 4.978E-01 | 0.033 |
| | + | 271.23 | | 1.184E+00 | 4.308E-01 | 4.937E-01 | 6.465E-02 | 2.398 |
| RN-220 | | 401.81 | * | -2.836E-02 | 3.943E-01 | 6.583E-01 | 1.015E-01 | -0.043 |
| RA-223 | | 549.76 | * | -6.831E+00 | 2.635E+01 | 4.238E+01 | 4.004E+00 | -0.161 |
| RA-223 | | 81.07 | | -3.464E-01 | 2.050E-01 | 2.879E-01 | 2.555E-02 | -1.203 |
| | + | 83.78 | | 1.651E-01 | 1.335E-01 | 1.908E-01 | 1.747E-02 | 0.866 |
| | | 94.90 | | 3.162E-01 | 2.126E-01 | 3.441E-01 | 3.111E-02 | 0.919 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AC-227 | | 122.32 | | 6.853E-01 | 1.590E+00 | 2.706E+00 | 2.423E-01 | 0.253 |
| | | 144.24 | | 1.328E-01 | 6.902E-01 | 1.108E+00 | 1.063E-01 | 0.120 |
| | + | 154.21 | | 6.864E-01 | 4.268E-01 | 6.639E-01 | 6.388E-02 | 1.034 |
| | + | 269.46 | | 9.226E-01 | 3.321E-01 | 3.828E-01 | 4.553E-02 | 2.410 |
| | | 323.87 | * | 2.616E-01 | 6.980E-01 | 1.010E+00 | 1.932E-01 | 0.259 |
| | + | 338.28 | | 1.091E+01 | 2.376E+00 | 2.864E+00 | 4.014E-01 | 3.811 |
| | | 445.03 | | 1.296E-01 | 2.347E+00 | 3.922E+00 | 4.978E-01 | 0.033 |
| | | 79.80 | | -2.361E+00 | 1.630E+00 | 2.221E+00 | 4.788E-01 | -1.063 |
| | | 236.00 | | 7.607E-02 | 2.516E-01 | 3.686E-01 | 5.136E-02 | 0.206 |
| | | 256.20 | * | -1.600E-01 | 4.235E-01 | 5.878E-01 | 1.004E-01 | -0.272 |
| | | 286.10 | | -5.282E-01 | 1.584E+00 | 2.475E+00 | 3.852E-01 | -0.213 |
| | + | 299.80 | | 4.858E+00 | 1.950E+00 | 2.764E+00 | 5.310E-01 | 1.757 |
| TH-227 | | 304.40 | | -1.704E-01 | 2.181E+00 | 3.002E+00 | 6.012E-01 | -0.057 |
| | | 334.20 | | -1.763E+00 | 2.581E+00 | 3.362E+00 | 6.922E-01 | -0.524 |
| | | 79.80 | | -2.361E+00 | 1.632E+00 | 2.221E+00 | 4.849E-01 | -1.063 |
| | + | 94.00 | | 1.074E+01 | 3.775E+00 | 3.561E+00 | 7.824E-01 | 3.017 |
| | | 236.00 | | 7.607E-02 | 2.516E-01 | 3.686E-01 | 4.763E-02 | 0.206 |
| | | 256.20 | * | -1.600E-01 | 4.238E-01 | 5.878E-01 | 1.149E-01 | -0.272 |
| | | 286.10 | | -5.282E-01 | 1.669E+00 | 2.475E+00 | 2.493E+00 | -0.213 |
| | + | 299.80 | | 4.858E+00 | 1.950E+00 | 2.764E+00 | 5.310E-01 | 1.757 |
| | | 304.40 | | -1.704E-01 | 2.181E+00 | 3.002E+00 | 6.012E-01 | -0.057 |
| | | 334.20 | | -1.763E+00 | 2.581E+00 | 3.362E+00 | 6.922E-01 | -0.524 |
| | + | 85.43 | | 2.472E-01 | 1.998E-01 | 2.837E-01 | 2.650E-02 | 0.871 |
| | + | 88.47 | | 3.947E-01 | 1.512E-01 | 1.945E-01 | 1.865E-02 | 2.029 |
| TH-229 | | 100.00 | | -1.124E-02 | 1.749E-01 | 2.864E-01 | 2.506E-02 | -0.039 |
| | | 193.63 | * | 1.527E-01 | 4.951E-01 | 8.196E-01 | 7.998E-02 | 0.186 |
| | | 210.97 | | 7.837E-01 | 8.166E-01 | 1.247E+00 | 1.274E-01 | 0.629 |
| | PA-231 | 283.67 | * | 2.066E-01 | 1.545E+00 | 2.484E+00 | 4.296E-01 | 0.083 |
| | + | 301.29 | | 1.943E+00 | 7.414E-01 | 1.052E+00 | 1.533E-01 | 1.848 |
| | TH-231 | 81.07 | | -3.464E-01 | 2.050E-01 | 2.879E-01 | 2.555E-02 | -1.203 |
| | + | 83.78 | | 1.651E-01 | 1.335E-01 | 1.908E-01 | 1.747E-02 | 0.866 |
| | | 94.90 | | 3.162E-01 | 2.126E-01 | 3.441E-01 | 3.111E-02 | 0.919 |
| | | 122.32 | | 6.853E-01 | 1.590E+00 | 2.706E+00 | 2.423E-01 | 0.253 |
| | | 144.24 | | 1.328E-01 | 6.902E-01 | 1.108E+00 | 1.063E-01 | 0.120 |
| | + | 154.21 | | 6.864E-01 | 4.268E-01 | 6.639E-01 | 6.388E-02 | 1.034 |
| | + | 269.46 | | 9.226E-01 | 3.321E-01 | 3.828E-01 | 4.553E-02 | 2.410 |
| U-231 | | 323.87 | * | 2.616E-01 | 6.980E-01 | 1.010E+00 | 1.932E-01 | 0.259 |
| | + | 338.28 | | 1.091E+01 | 2.376E+00 | 2.864E+00 | 4.014E-01 | 3.811 |
| | | 445.03 | | 1.296E-01 | 2.347E+00 | 3.922E+00 | 4.978E-01 | 0.033 |
| | + | 84.21 | | 1.580E+01 | 1.278E+01 | 1.857E+01 | 1.710E+00 | 0.851 |
| | + | 92.29 | | 2.358E+01 | 6.814E+00 | 8.816E+00 | 8.141E-01 | 2.675 |
| | | 95.87 | * | -3.315E+00 | 2.284E+00 | 3.195E+00 | 2.868E-01 | -1.038 |
| | | 108.00 | | -4.496E+00 | 4.278E+00 | 6.899E+00 | 5.844E-01 | -0.652 |
| | PA-233 | 75.28 | | 2.557E+01 | 5.284E+00 | 6.718E+00 | 1.020E+00 | 3.807 |
| | + | 86.59 | | 5.659E+00 | 2.601E+00 | 2.937E+00 | 7.961E-01 | 1.927 |
| | + | 300.12 | | 1.354E+00 | 5.293E-01 | 7.616E-01 | 1.284E-01 | 1.778 |
| | | 311.98 | * | 4.363E-02 | 6.540E-02 | 1.076E-01 | 1.257E-02 | 0.406 |
| | | 340.50 | | 1.548E+00 | 7.465E-01 | 1.111E+00 | 2.748E-01 | 1.393 |
| | | 398.62 | | -5.503E-01 | 2.018E+00 | 3.322E+00 | 8.920E-01 | -0.166 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| PA-234 | + | 415.76 | 6.035E-01 | 1.579E+00 | 2.693E+00 | 5.887E-01 | 0.224 |
| | | 63.00 | 2.900E+00 | 2.048E+00 | 2.590E+00 | 3.846E-01 | 1.120 |
| | | 94.67 | 4.140E-01 | 1.638E-01 | 2.649E-01 | 3.366E-02 | 1.563 |
| | | 98.44 | 1.076E-01 | 1.032E-01 | 1.441E-01 | 8.046E-02 | 0.747 |
| | | 99.86 | 3.089E-01 | 4.380E-01 | 7.359E-01 | 6.444E-02 | 0.420 |
| | | 111.00 | -4.535E-02 | 1.693E-01 | 2.819E-01 | 3.365E-02 | -0.161 |
| | | 131.20 | -1.973E-02 | 1.040E-01 | 1.540E-01 | 1.288E-02 | -0.128 |
| | | 152.70 | 5.632E-01 | 3.592E-01 | 5.225E-01 | 8.940E-02 | 1.078 |
| | | 186.00 | 5.045E+00 | 2.394E+00 | 2.631E+00 | 8.285E-01 | 1.917 |
| | | 226.40 | 4.778E-02 | 4.112E-01 | 6.693E-01 | 9.768E-02 | 0.071 |
| | | 227.20 | -3.820E-02 | 4.407E-01 | 7.105E-01 | 7.569E-02 | -0.054 |
| | | 248.90 | -7.361E-01 | 8.043E-01 | 1.198E+00 | 2.819E-01 | -0.615 |
| | | 293.70 | 5.441E+00 | 1.375E+00 | 1.680E+00 | 3.209E-01 | 3.238 |
| | | 369.80 | -4.095E-01 | 8.028E-01 | 1.304E+00 | 2.916E-01 | -0.314 |
| | | 568.70 | 1.918E-01 | 9.689E-01 | 1.608E+00 | 1.510E-01 | 0.119 |
| | | 569.50 | 5.176E-02 | 2.646E-01 | 4.391E-01 | 4.122E-02 | 0.118 |
| | | 574.00 | -4.816E-01 | 1.468E+00 | 2.339E+00 | 2.193E-01 | -0.206 |
| | | 699.00 | -7.321E-02 | 7.475E-01 | 1.194E+00 | 2.300E-01 | -0.061 |
| | | 706.10 | -5.698E-01 | 1.079E+00 | 1.609E+00 | 7.189E-01 | -0.354 |
| | | 733.00 | 1.506E-01 | 4.356E-01 | 6.327E-01 | 1.418E-01 | 0.238 |
| | | 742.81 | 5.055E-01 | 1.357E+00 | 2.180E+00 | 1.467E+00 | 0.232 |
| | | 796.30 | 2.575E+00 | 1.674E+00 | 1.816E+00 | 4.954E-01 | 1.418 |
| | | 805.60 | 8.823E-01 | 1.104E+00 | 1.904E+00 | 5.874E-01 | 0.464 |
| | | 819.60 | 7.702E-01 | 1.308E+00 | 2.240E+00 | 8.556E-01 | 0.344 |
| | | 826.30 | -5.783E-01 | 8.419E-01 | 1.264E+00 | 5.673E-01 | -0.458 |
| | | 831.60 | -5.237E-01 | 6.418E-01 | 9.744E-01 | 2.930E-01 | -0.537 |
| | | 876.40 | 3.436E-01 | 8.407E-01 | 1.328E+00 | 1.366E+00 | 0.259 |
| | | 880.51 | -2.313E-01 | 2.573E-01 | 3.915E-01 | 3.698E-02 | -0.591 |
| | | 883.24 | 2.309E-02 | 2.655E-01 | 4.465E-01 | 3.006E-01 | 0.052 |
| | | 899.00 | -2.809E-01 | 7.816E-01 | 1.245E+00 | 5.463E-01 | -0.226 |
| | | 925.00 | 8.556E-02 | 1.066E+00 | 1.790E+00 | 1.681E-01 | 0.048 |
| | | 926.50 | 6.181E-02 | 1.584E-01 | 2.662E-01 | 6.802E-02 | 0.232 |
| | | 946.00 | * -3.788E-01 | 3.008E-01 | 4.249E-01 | 8.118E-02 | -0.891 |
| | | 949.00 | 4.222E-01 | 4.250E-01 | 7.650E-01 | 7.136E-02 | 0.552 |
| | | 980.50 | 3.169E-02 | 6.615E-01 | 1.102E+00 | 1.015E-01 | 0.029 |
| | | 1394.10 | -2.939E-01 | 1.152E+00 | 1.758E+00 | 1.144E+00 | -0.167 |
| PA-234M | | 766.42 | 2.754E+01 | 1.983E+01 | 2.337E+01 | 1.188E+01 | 1.178 |
| | | 1001.03 | * 2.192E+00 | 5.169E+00 | 8.621E+00 | 8.976E-01 | 0.254 |
| U-235 | + | 89.95 | 3.148E+00 | 1.420E+00 | 1.829E+00 | 5.688E-01 | 1.721 |
| | | 93.35 | 3.342E+00 | 1.314E+00 | 1.258E+00 | 3.547E-01 | 2.656 |
| | | 105.00 | 8.916E-01 | 1.005E+00 | 1.689E+00 | 5.037E-01 | 0.528 |
| | | 143.76 | * 4.169E-02 | 2.105E-01 | 3.377E-01 | 5.901E-02 | 0.123 |
| NP-236 | + | 163.35 | 7.513E-02 | 4.751E-01 | 7.447E-01 | 1.434E-01 | 0.101 |
| | | 185.71 | 1.869E-01 | 6.871E-02 | 9.751E-02 | 9.315E-03 | 1.916 |
| | | 205.31 | -5.180E-02 | 6.101E-01 | 8.552E-01 | 1.691E-01 | -0.061 |
| | | 94.67 | 3.167E-01 | 1.212E-01 | 2.012E-01 | 1.822E-02 | 1.574 |
| | | 98.44 | 8.126E-02 | 6.383E-02 | 1.089E-01 | 9.618E-03 | 0.746 |
| | | 111.00 | -3.430E-02 | 1.280E-01 | 2.132E-01 | 1.792E-02 | -0.161 |
| | | 160.31 | * 3.102E-02 | 7.427E-02 | 1.247E-01 | 1.113E-02 | 0.249 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| NP-239 | | 99.55 | | 1.859E-01 | 1.468E-01 | 2.505E-01 | 2.198E-02 | 0.742 |
| | | 117.00 | * | -1.290E-01 | 1.714E-01 | 2.784E-01 | 2.318E-02 | -0.464 |
| | + | 209.75 | | 2.708E+00 | 1.190E+00 | 1.479E+00 | 1.506E-01 | 1.831 |
| | | 228.18 | | -1.213E-01 | 2.356E-01 | 3.717E-01 | 3.970E-02 | -0.326 |
| | + | 277.60 | | 2.747E-01 | 2.426E-01 | 3.271E-01 | 3.916E-02 | 0.840 |
| AM-241 | | 334.30 | | -1.069E+00 | 1.450E+00 | 1.891E+00 | 2.083E-01 | -0.565 |
| | | 59.54 | * | 3.753E-02 | 1.556E-01 | 2.262E-01 | 1.775E-02 | 0.166 |
| | | 99.55 | | 1.913E-01 | 1.511E-01 | 2.579E-01 | 2.262E-02 | 0.742 |
| | | 103.76 | * | 1.595E-02 | 8.777E-02 | 1.491E-01 | 1.282E-02 | 0.107 |
| | | 117.00 | | -1.328E-01 | 1.763E-01 | 2.865E-01 | 2.385E-02 | -0.464 |
| CM-243 | + | 209.75 | | 2.670E+00 | 1.173E+00 | 1.458E+00 | 1.485E-01 | 1.831 |
| | | 228.18 | | -1.226E-01 | 2.382E-01 | 3.757E-01 | 4.012E-02 | -0.326 |
| | + | 277.60 | | 2.770E-01 | 2.446E-01 | 3.299E-01 | 3.949E-02 | 0.840 |
| | | 798.80 | | -7.580E-02 | 1.555E-01 | 2.153E-01 | 2.007E-02 | -0.352 |
| | | 1036.00 | | 5.059E-02 | 2.811E-01 | 4.721E-01 | 4.233E-02 | 0.107 |
| AM-246 | | 1062.04 | | 3.731E-02 | 2.250E-01 | 3.763E-01 | 3.320E-02 | 0.099 |
| | | 1078.86 | * | 2.092E-02 | 1.456E-01 | 2.426E-01 | 2.117E-02 | 0.086 |
| | + | 278.00 | | 1.139E+00 | 1.006E+00 | 1.361E+00 | 1.631E-01 | 0.837 |
| | | 287.40 | | 1.442E+00 | 1.269E+00 | 2.132E+00 | 2.538E-01 | 0.677 |
| | | 402.60 | * | 4.716E-03 | 3.558E-02 | 6.010E-02 | 5.588E-03 | 0.078 |
| CF-249 | | 252.85 | | 7.162E-01 | 8.698E-01 | 1.453E+00 | 1.647E-01 | 0.493 |
| | | 333.44 | | 2.015E-02 | 2.011E-01 | 2.585E-01 | 2.853E-02 | 0.078 |
| | | 387.95 | * | 6.108E-03 | 4.229E-02 | 7.159E-02 | 6.716E-03 | 0.085 |
| CF-251 | | 176.60 | * | 2.430E-04 | 1.242E-01 | 2.041E-01 | 1.903E-02 | 0.001 |
| | | 227.00 | | -5.747E-03 | 3.919E-01 | 6.340E-01 | 6.750E-02 | -0.009 |
| | | 285.00 | | -2.137E+00 | 1.892E+00 | 2.800E+00 | 3.343E-01 | -0.763 |

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]G245388001      *
* Acquisition date   : 4-FEB-2010 10:28:40 Detector SN# :                  *
* Detector ID        : GAM16 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 03:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 03:00:02.48 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 15-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G245388001 Analyst initials: MXR1                  *
* Batch Number      : 944964 Sample Quantity : 8.5930E+01 GRAM           *
* Recovery          : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                               *
*
* Standard Weight   : 0.00000                                             *
* CALIB. DATE/TIME  : 16-NOV-2009 11:22:16 MS Isotope :                  *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.214E+01 | 2.471E+00 | 4.777E-01 | 0.000E+00 |
| CD-109 | 2.963E+00 | 1.112E+00 | 1.059E+00 | 0.000E+00 |
| SN-126 | 2.891E-01 | 1.085E-01 | 1.211E-01 | 0.000E+00 |
| RE-188 | 3.118E-01 | 1.896E-01 | 2.576E-01 | 0.000E+00 |
| TL-208 | 6.730E-01 | 1.109E-01 | 5.854E-02 | 0.000E+00 |
| BI-211 | 5.315E+00 | 7.425E-01 | 3.246E-01 | 0.000E+00 |
| PB-212 | 2.369E+00 | 3.018E-01 | 8.971E-02 | 0.000E+00 |
| PO-212 | 2.369E+00 | 3.018E-01 | 8.971E-02 | 0.000E+00 |
| BI-214 | 1.591E+00 | 2.315E-01 | 1.087E-01 | 0.000E+00 |
| PB-214 | 1.849E+00 | 2.751E-01 | 1.132E-01 | 0.000E+00 |
| PO-214 | 1.849E+00 | 2.751E-01 | 1.132E-01 | 0.000E+00 |
| PO-216 | 2.369E+00 | 3.018E-01 | 8.971E-02 | 0.000E+00 |
| PO-218 | 1.849E+00 | 2.751E-01 | 1.132E-01 | 0.000E+00 |
| RA-224 | 5.823E+00 | 1.564E+00 | 1.021E+00 | 0.000E+00 |
| RA-226 | 1.591E+00 | 2.315E-01 | 1.087E-01 | 0.000E+00 |
| AC-228 | 2.257E+00 | 4.128E-01 | 2.130E-01 | 0.000E+00 |
| RA-228 | 2.257E+00 | 4.128E-01 | 2.130E-01 | 0.000E+00 |
| TH-228 | 2.416E+00 | 3.079E-01 | 9.151E-02 | 0.000E+00 |
| TH-230 | 1.591E+00 | 2.315E-01 | 1.087E-01 | 0.000E+00 |
| TH-232 | 2.257E+00 | 4.128E-01 | 2.130E-01 | 0.000E+00 |
| TH-234 | 2.488E+00 | 1.736E+00 | 1.846E+00 | 0.000E+00 |
| U-234 | 1.591E+00 | 2.315E-01 | 1.087E-01 | 0.000E+00 |
| NP-237 | 8.489E-01 | 3.620E-01 | 3.326E-01 | 0.000E+00 |
| U-238 | 2.488E+00 | 1.736E+00 | 1.846E+00 | 0.000E+00 |
| AM-243 | 4.882E-01 | 7.798E-02 | 8.135E-02 | 0.000E+00 |
| ANH-511 | 1.855E-01 | 8.038E-02 | 4.395E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | -3.296E-01 | 3.158E-01 | 4.825E-01 | 0.000E+00 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-22 | -1.550E-03 | 4.106E-02 | 6.693E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 1.673E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | 2.841E-03 | 3.052E-02 | 5.145E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 6.198E-02 | 7.283E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | -2.096E-02 | 3.890E-02 | 6.215E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | -9.845E-02 | 8.090E-02 | 1.175E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | -2.542E-01 | 4.385E-01 | 6.688E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | -1.443E-01 | 4.121E-01 | 6.307E-01 | 0.000E+00 | FAIL ABUN |
| MN-54 | 2.420E-02 | 3.709E-02 | 6.537E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -1.572E-02 | 3.787E-02 | 6.150E-02 | 0.000E+00 | FAIL ABUN |
| CO-57 | 1.094E-02 | 2.262E-02 | 3.844E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -5.639E-02 | 4.042E-02 | 5.999E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -9.102E-02 | 9.447E-02 | 1.407E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | -6.838E-02 | 3.951E-02 | 4.863E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | -3.057E-02 | 9.590E-02 | 1.309E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | 1.019E+00 | 1.224E+00 | 2.171E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | -3.147E-01 | 8.088E-01 | 1.234E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | 5.790E-02 | 1.054E-01 | 1.793E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | 1.133E-02 | 4.989E-02 | 7.231E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 0.000E+00 | 4.201E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SR-82 | -2.314E-02 | 4.603E-01 | 7.349E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | 1.136E-02 | 7.029E-02 | 1.173E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | -4.081E-02 | 6.982E-02 | 1.108E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 0.000E+00 | 7.907E+00 | 1.321E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 0.000E+00 | 4.266E-02 | 7.124E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 2.333E-01 | 9.241E-01 | 1.564E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | -3.671E-03 | 3.408E-02 | 5.534E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | 2.345E-03 | 2.968E-02 | 5.014E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | 2.121E+00 | 1.830E+01 | 3.033E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | 1.915E-03 | 3.334E-02 | 5.411E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 6.343E-02 | 5.380E-02 | 8.397E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 2.679E-02 | 1.404E-01 | 2.043E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 9.902E-03 | 8.300E-02 | 1.346E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 1.142E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 2.201E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | -4.185E+00 | 3.740E+01 | 5.957E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 2.292E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 6.472E-03 | 3.167E-02 | 5.206E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | 6.786E-03 | 2.752E-02 | 4.645E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | -3.603E-02 | 4.268E-02 | 6.597E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | -1.968E-01 | 3.206E-01 | 4.958E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | -1.968E-01 | 3.200E-01 | 4.958E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | 1.519E-03 | 3.071E-02 | 5.148E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | 2.310E-03 | 3.525E-02 | 5.753E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | 1.609E+00 | 3.517E+00 | 5.202E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -1.155E-02 | 4.435E-02 | 7.349E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | -1.155E-02 | 4.435E-02 | 7.349E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | -7.942E-02 | 1.869E-01 | 2.844E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 0.000E+00 | 4.719E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SN-117M | -5.979E-02 | 6.460E-02 | 1.021E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | 3.307E+00 | 7.569E+00 | 1.226E+01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 2.430E+09 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | -3.107E-03 | 2.682E-02 | 4.400E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | 1.011E+00 | 1.457E+00 | 2.422E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | -1.230E-02 | 7.501E-02 | 1.216E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | 4.333E-02 | 8.872E-02 | 1.525E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | 7.198E+00 | 8.822E+00 | 1.518E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 1.275E-02 | 2.318E-01 | 3.776E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | 4.588E-02 | 1.847E-01 | 3.039E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | 3.025E+00 | 3.242E+00 | 5.599E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 1.301E-02 | 4.954E-02 | 8.153E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | -2.118E-02 | 1.690E-01 | 2.836E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | -1.037E+00 | 1.982E+00 | 3.116E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | -2.982E-02 | 4.462E-02 | 6.281E-02 | 0.000E+00 | FAIL ABUN |
| I-133 | 0.000E+00 | 2.797E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 0.000E+00 | 7.796E-02 | 9.477E-02 | 0.000E+00 | FAIL ABUN |
| CS-135 | 1.154E-01 | 1.796E-01 | 2.661E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 9.484E+20 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -1.131E-01 | 1.310E-01 | 1.980E-01 | 0.000E+00 | FAIL ABUN |
| BA-137M | -1.323E-02 | 3.650E-02 | 5.757E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | -1.399E-02 | 3.859E-02 | 6.086E-02 | 0.000E+00 | NOT IDENT. |
| CE-139 | -1.288E-02 | 2.808E-02 | 4.526E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -2.756E-02 | 3.390E-01 | 5.552E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -1.602E-01 | 1.141E-01 | 1.514E-01 | 0.000E+00 | FAIL ABUN |
| CE-141 | 4.216E-02 | 6.413E-02 | 1.087E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 2.235E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | 1.265E-01 | 2.089E-01 | 3.199E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | 1.958E-02 | 3.473E-02 | 5.853E-02 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | 1.330E+00 | 2.359E+00 | 3.977E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 5.915E-02 | 4.204E-02 | 7.519E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | 9.667E-02 | 7.253E-01 | 1.207E+00 | 0.000E+00 | FAIL ABUN |
| PM-149 | 0.000E+00 | 4.325E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| EU-152 | -6.884E-02 | 9.943E-02 | 1.493E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | -7.194E-02 | 7.974E-02 | 1.127E-01 | 0.000E+00 | FAIL ABUN |
| EU-154 | 3.914E-03 | 1.139E-01 | 1.871E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 7.394E-02 | 9.709E-02 | 1.672E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | -2.225E-02 | 1.297E-01 | 2.145E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | 1.356E-03 | 5.905E-02 | 9.550E-02 | 0.000E+00 | NOT IDENT. |
| TM-171 | -5.601E+00 | 2.911E+01 | 4.085E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | -9.057E-03 | 2.548E-02 | 3.819E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 2.710E+00 | 3.403E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -2.751E-02 | 1.708E-01 | 2.836E-01 | 0.000E+00 | NOT IDENT. |
| HF-181 | 1.918E-03 | 4.342E-02 | 7.229E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | -2.859E-02 | 3.779E-01 | 5.341E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | 1.330E-01 | 1.917E-01 | 3.326E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | -5.922E-02 | 1.083E-01 | 1.741E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | 1.947E-01 | 2.317E-01 | 3.869E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | -2.953E-02 | 4.483E-02 | 6.892E-02 | 0.000E+00 | NOT IDENT. |
| W-188 | -3.714E+00 | 8.710E+00 | 1.193E+01 | 0.000E+00 | FAIL ABUN |
| IR-192 | 7.191E-03 | 3.852E-02 | 6.169E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 0.000E+00 | 2.104E-01 | 3.622E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 9.473E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | -1.111E+01 | 1.938E+01 | 3.106E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 5.660E-02 | 8.751E-02 | 1.516E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | -1.568E-02 | 4.938E-02 | 6.853E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | 3.506E-02 | 5.077E-02 | 8.914E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | 2.616E-01 | 6.841E-01 | 9.904E-01 | 0.000E+00 | FAIL ABUN |
| PO-209 | -3.467E+00 | 7.112E+00 | 1.142E+01 | 0.000E+00 | FAIL ABUN |
| BI-210 | -2.784E+00 | 3.776E+00 | 5.461E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | -2.784E+00 | 3.776E+00 | 5.461E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | -2.784E+00 | 3.774E+00 | 5.461E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | 8.288E-02 | 8.892E-01 | 1.498E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 5.618E-01 | 7.297E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | 2.616E-01 | 6.841E-01 | 9.904E-01 | 0.000E+00 | FAIL ABUN |
| RN-219 | -2.836E-02 | 3.865E-01 | 6.462E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | -6.831E+00 | 2.582E+01 | 4.165E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | 2.616E-01 | 6.841E-01 | 9.904E-01 | 0.000E+00 | FAIL ABUN |
| AC-227 | -1.600E-01 | 4.150E-01 | 5.759E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | -1.600E-01 | 4.153E-01 | 5.759E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | 1.527E-01 | 4.852E-01 | 8.020E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | 2.066E-01 | 1.514E+00 | 2.435E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | 2.616E-01 | 6.841E-01 | 9.904E-01 | 0.000E+00 | FAIL ABUN |
| U-231 | -3.315E+00 | 2.238E+00 | 3.117E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 4.363E-02 | 6.409E-02 | 1.055E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | -3.788E-01 | 2.948E-01 | 4.186E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 2.192E+00 | 5.066E+00 | 8.495E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | 4.169E-02 | 2.063E-01 | 3.300E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | 3.102E-02 | 7.278E-02 | 1.219E-01 | 0.000E+00 | NOT IDENT. |
| NP-239 | -1.290E-01 | 1.679E-01 | 2.718E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | 3.753E-02 | 1.525E-01 | 2.202E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | 1.595E-02 | 8.601E-02 | 1.455E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | 2.092E-02 | 1.427E-01 | 2.392E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 4.716E-03 | 3.487E-02 | 5.899E-02 | 0.000E+00 | FAIL ABUN |
| CF-249 | 6.108E-03 | 4.145E-02 | 7.026E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | 2.430E-04 | 1.217E-01 | 1.996E-01 | 0.000E+00 | NOT IDENT. |

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                             *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388001.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:28:40.
Sample ID          : G245388001 Sample quantity : 8.59300E+01 GRAM
Detector name      : GAM16 Detector geometry: CAN
Elapsed live time  : 0 03:00:00.00 Elapsed real time: 0 03:00:02.48 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 944964 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 | 1460.81 | 980 | 10.67* | 1.208E+00 | 2.214E+01 | 2.214E+01 | 11.39 |
| CD-109 | 88.03 | 230 | 3.72* | 6.253E+00 | 2.875E+00 | 2.963E+00 | 38.31 |
| SN-126 | 64.28 | 115 | 9.60 | 3.544E+00 | 9.848E-01 | 9.848E-01 | 70.55 |
| | 86.94 | 230 | 8.90 | 6.253E+00 | 1.202E+00 | 1.202E+00 | 55.71 |
| | 87.57 | 230 | 37.00* | 6.253E+00 | 2.891E-01 | 2.891E-01 | 38.31 |
| RE-188 | 155.03 | 89 | 15.00* | 6.766E+00 | 2.553E-01 | 3.118E-01 | 62.06 |
| | 477.96 | ----- | 1.04 | 3.122E+00 | ----- | Line Not Found | ----- |
| | 633.10 | ----- | 1.26 | 2.495E+00 | ----- | Line Not Found | ----- |
| TL-208 | 277.35 | 62 | 6.80 | 4.694E+00 | 5.695E-01 | 5.695E-01 | 88.76 |
| | 510.84 | 189 | 21.60 | 2.962E+00 | 8.586E-01 | 8.586E-01 | 45.00 |
| | 583.14 | 519 | 84.20* | 2.667E+00 | 6.730E-01 | 6.730E-01 | 16.82 |
| | 860.37 | 28 | 12.46 | 1.918E+00 | 3.464E-01 | 3.464E-01 | 136.19 |
| BI-211 | 72.87 | ----- | 1.27 | 4.872E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 930 | 12.94* | 3.940E+00 | 5.315E+00 | 5.315E+00 | 14.26 |
| PB-212 | 74.81 | 565 | 10.70 | 5.110E+00 | 3.011E+00 | 3.011E+00 | 18.79 |
| | 77.11 | 880 | 18.00 | 5.369E+00 | 2.653E+00 | 2.653E+00 | 12.92 |
| | 87.30 | 230 | 8.00 | 6.253E+00 | 1.337E+00 | 1.337E+00 | 39.59 |
| | 238.63 | 1895 | 44.60* | 5.224E+00 | 2.369E+00 | 2.369E+00 | 13.00 |
| | 300.09 | 136 | 3.41 | 4.432E+00 | 2.621E+00 | 2.621E+00 | 37.61 |
| PO-212 | 74.81 | 565 | 10.70 | 5.110E+00 | 3.011E+00 | 3.011E+00 | 18.79 |
| | 77.11 | 880 | 18.00 | 5.369E+00 | 2.653E+00 | 2.653E+00 | 12.92 |
| | 87.30 | 230 | 8.00 | 6.253E+00 | 1.337E+00 | 1.337E+00 | 39.59 |
| | 115.19 | ----- | 0.60 | 7.166E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1895 | 44.60* | 5.224E+00 | 2.369E+00 | 2.369E+00 | 13.00 |
| | 300.09 | 136 | 3.41 | 4.432E+00 | 2.621E+00 | 2.621E+00 | 37.61 |
| BI-214 | 609.31 | 651 | 46.30* | 2.574E+00 | 1.591E+00 | 1.591E+00 | 14.85 |
| | 1120.29 | 103 | 15.10 | 1.516E+00 | 1.316E+00 | 1.316E+00 | 44.35 |
| | 1764.49 | 100 | 15.80 | 1.056E+00 | 1.752E+00 | 1.752E+00 | 27.35 |
| PB-214 | 74.81 | 565 | 6.21 | 5.110E+00 | 5.189E+00 | 5.189E+00 | 17.90 |
| | 77.11 | 880 | 10.50 | 5.369E+00 | 4.547E+00 | 4.547E+00 | 15.00 |
| | 87.30 | 230 | 4.67 | 6.253E+00 | 2.290E+00 | 2.290E+00 | 39.08 |
| | 241.98 | 409 | 7.49 | 5.177E+00 | 3.071E+00 | 3.071E+00 | 27.97 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 295.21 | 609 | 19.20 | 4.486E+00 | 2.061E+00 | 2.061E+00 | 16.67 |
| | 351.92 | 930 | 37.20* | 3.940E+00 | 1.849E+00 | 1.849E+00 | 15.18 |
| | 74.81 | 565 | 6.21 | 5.110E+00 | 5.189E+00 | 5.189E+00 | 17.90 |
| | 77.11 | 880 | 10.50 | 5.369E+00 | 4.547E+00 | 4.547E+00 | 15.00 |
| | 87.30 | 230 | 4.67 | 6.253E+00 | 2.290E+00 | 2.290E+00 | 39.08 |
| PO-216 | 241.98 | 409 | 7.49 | 5.177E+00 | 3.071E+00 | 3.071E+00 | 27.97 |
| | 295.21 | 609 | 19.20 | 4.486E+00 | 2.061E+00 | 2.061E+00 | 16.67 |
| | 351.92 | 930 | 37.20* | 3.940E+00 | 1.849E+00 | 1.849E+00 | 15.18 |
| | 74.81 | 565 | 10.70 | 5.110E+00 | 3.011E+00 | 3.011E+00 | 18.79 |
| | 77.11 | 880 | 18.00 | 5.369E+00 | 2.653E+00 | 2.653E+00 | 12.92 |
| PO-218 | 87.30 | 230 | 8.00 | 6.253E+00 | 1.337E+00 | 1.337E+00 | 39.59 |
| | 238.63 | 1895 | 44.60* | 5.224E+00 | 2.369E+00 | 2.369E+00 | 13.00 |
| | 300.09 | 136 | 3.41 | 4.432E+00 | 2.621E+00 | 2.621E+00 | 37.61 |
| | 74.81 | 565 | 6.21 | 5.110E+00 | 5.189E+00 | 5.189E+00 | 17.90 |
| | 77.11 | 880 | 10.50 | 5.369E+00 | 4.547E+00 | 4.547E+00 | 15.00 |
| RA-224 | 87.30 | 230 | 4.67 | 6.253E+00 | 2.290E+00 | 2.290E+00 | 39.08 |
| | 241.98 | 409 | 7.49 | 5.177E+00 | 3.071E+00 | 3.071E+00 | 27.97 |
| | 295.21 | 609 | 19.20 | 4.486E+00 | 2.061E+00 | 2.061E+00 | 16.67 |
| | 351.92 | 930 | 37.20* | 3.940E+00 | 1.849E+00 | 1.849E+00 | 15.18 |
| | 240.98 | 409 | 3.95* | 5.177E+00 | 5.823E+00 | 5.823E+00 | 27.40 |
| RA-226 | 609.31 | 651 | 46.30* | 2.574E+00 | 1.591E+00 | 1.591E+00 | 14.85 |
| | 1120.29 | 103 | 15.10 | 1.516E+00 | 1.316E+00 | 1.316E+00 | 44.35 |
| | 1764.49 | 100 | 15.80 | 1.056E+00 | 1.752E+00 | 1.752E+00 | 27.35 |
| | 338.32 | 415 | 11.40 | 4.056E+00 | 2.613E+00 | 2.613E+00 | 45.00 |
| | 911.07 | 392 | 27.70* | 1.824E+00 | 2.257E+00 | 2.257E+00 | 18.67 |
| RA-228 | 969.11 | 285 | 16.60 | 1.726E+00 | 2.895E+00 | 2.895E+00 | 27.64 |
| | 338.32 | 415 | 11.40 | 4.056E+00 | 2.613E+00 | 2.613E+00 | 45.00 |
| | 911.07 | 392 | 27.70* | 1.824E+00 | 2.257E+00 | 2.257E+00 | 18.67 |
| | 969.11 | 285 | 16.60 | 1.726E+00 | 2.895E+00 | 2.895E+00 | 27.64 |
| | 74.81 | 565 | 10.70 | 5.110E+00 | 3.011E+00 | 3.011E+00 | 16.34 |
| TH-228 | 77.11 | 880 | 18.00 | 5.369E+00 | 2.653E+00 | 2.706E+00 | 12.92 |
| | 87.30 | 230 | 8.00 | 6.253E+00 | 1.337E+00 | 1.364E+00 | 38.31 |
| | 238.63 | 1895 | 44.60* | 5.224E+00 | 2.369E+00 | 2.416E+00 | 13.00 |
| | 300.09 | 136 | 3.41 | 4.432E+00 | 2.621E+00 | 2.674E+00 | 69.43 |
| | 609.31 | 651 | 46.30* | 2.574E+00 | 1.591E+00 | 1.591E+00 | 14.85 |
| TH-230 | 1120.29 | 103 | 15.10 | 1.516E+00 | 1.316E+00 | 1.316E+00 | 44.35 |
| | 1764.49 | 100 | 15.80 | 1.056E+00 | 1.752E+00 | 1.752E+00 | 27.35 |
| | 338.32 | 415 | 11.40 | 4.056E+00 | 2.613E+00 | 2.613E+00 | 19.92 |
| | 911.07 | 392 | 27.70* | 1.824E+00 | 2.257E+00 | 2.257E+00 | 18.67 |
| | 969.11 | 285 | 16.60 | 1.726E+00 | 2.895E+00 | 2.895E+00 | 27.64 |
| TH-234 | 63.29 | 115 | 3.80* | 3.544E+00 | 2.488E+00 | 2.488E+00 | 71.21 |
| | 92.38 | 341 | 5.41 | 6.602E+00 | 2.780E+00 | 2.780E+00 | 32.98 |
| | 609.31 | 651 | 46.30* | 2.574E+00 | 1.591E+00 | 1.591E+00 | 14.85 |
| | 1120.29 | 103 | 15.10 | 1.516E+00 | 1.316E+00 | 1.316E+00 | 44.35 |
| | 1764.49 | 100 | 15.80 | 1.056E+00 | 1.752E+00 | 1.752E+00 | 27.35 |
| NP-237 | 86.50 | 230 | 12.60* | 6.253E+00 | 8.489E-01 | 8.489E-01 | 43.51 |
| | 95.87 | --- | 2.60 | 6.742E+00 | ----- | Line Not Found | ----- |
| | 63.29 | 115 | 3.80* | 3.544E+00 | 2.488E+00 | 2.488E+00 | 71.21 |
| | 92.38 | 341 | 5.41 | 6.602E+00 | 2.780E+00 | 2.780E+00 | 28.90 |
| | | | | | | | |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| AM-243 | 74.67 | 565 | 66.00* | 5.110E+00 | 4.882E-01 | 4.882E-01 | 16.30 |
| | 86.72 | 230 | 0.34 | 6.253E+00 | 3.183E+01 | 3.183E+01 | 38.31 |
| | 117.66 | ----- | 0.55 | 7.175E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 6.968E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 189 | 100.00* | 2.962E+00 | 1.855E-01 | 1.855E-01 | 44.22 |

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G245388001

Page : 4
Acquisition date : 4-FEB-2010 10:28:40

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 | 1.28E+09Y | 1.00 | 2.214E+01 | 2.214E+01 | 0.252E+01 | 11.39 | |
| CD-109 | 464.00D | 1.03 | 2.875E+00 | 2.963E+00 | 1.135E+00 | 38.31 | |
| SN-126 | 1.00E+05Y | 1.00 | 2.891E-01 | 2.891E-01 | 1.107E-01 | 38.31 | |
| RE-188 | 69.40D | 1.22 | 2.553E-01 | 3.118E-01 | 1.935E-01 | 62.06 | |
| TL-208 | 1.41E+10Y | 1.00 | 6.730E-01 | 6.730E-01 | 1.132E-01 | 16.82 | |
| BI-211 | 7.04E+08Y | 1.00 | 5.315E+00 | 5.315E+00 | 0.758E+00 | 14.26 | |
| PB-212 | 1.41E+10Y | 1.00 | 2.369E+00 | 2.369E+00 | 0.308E+00 | 13.00 | |
| PO-212 | 1.41E+10Y | 1.00 | 2.369E+00 | 2.369E+00 | 0.308E+00 | 13.00 | |
| BI-214 | 1600.00Y | 1.00 | 1.591E+00 | 1.591E+00 | 0.236E+00 | 14.85 | |
| PB-214 | 1600.00Y | 1.00 | 1.849E+00 | 1.849E+00 | 0.281E+00 | 15.18 | |
| PO-214 | 1600.00Y | 1.00 | 1.849E+00 | 1.849E+00 | 0.281E+00 | 15.18 | |
| PO-216 | 1.41E+10Y | 1.00 | 2.369E+00 | 2.369E+00 | 0.308E+00 | 13.00 | |
| PO-218 | 1600.00Y | 1.00 | 1.849E+00 | 1.849E+00 | 0.281E+00 | 15.18 | |
| RA-224 | 1.41E+10Y | 1.00 | 5.823E+00 | 5.823E+00 | 1.595E+00 | 27.40 | |
| RA-226 | 1600.00Y | 1.00 | 1.591E+00 | 1.591E+00 | 0.236E+00 | 14.85 | |
| AC-228 | 1.41E+10Y | 1.00 | 2.257E+00 | 2.257E+00 | 0.421E+00 | 18.67 | |
| RA-228 | 1.41E+10Y | 1.00 | 2.257E+00 | 2.257E+00 | 0.421E+00 | 18.67 | |
| TH-228 | 1.91Y | 1.02 | 2.369E+00 | 2.416E+00 | 0.314E+00 | 13.00 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.591E+00 | 1.591E+00 | 0.236E+00 | 14.85 | |
| TH-232 | 1.41E+10Y | 1.00 | 2.257E+00 | 2.257E+00 | 0.421E+00 | 18.67 | |
| TH-234 | 4.47E+09Y | 1.00 | 2.488E+00 | 2.488E+00 | 1.772E+00 | 71.21 | |
| U-234 | 4.47E+09Y | 1.00 | 1.591E+00 | 1.591E+00 | 0.236E+00 | 14.85 | |
| NP-237 | 2.14E+06Y | 1.00 | 8.489E-01 | 8.489E-01 | 3.694E-01 | 43.51 | |
| U-238 | 4.47E+09Y | 1.00 | 2.488E+00 | 2.488E+00 | 1.772E+00 | 71.21 | |
| AM-243 | 7380.00Y | 1.00 | 4.882E-01 | 4.882E-01 | 0.796E-01 | 16.30 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.855E-01 | 1.855E-01 | 0.820E-01 | 44.22 | |

Total Activity : 7.202E+01 7.221E+01

Grand Total Activity : 7.202E+01 7.221E+01

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

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

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 84.16 | 84 | 394 | 1.46 | 168.51 | 166 | 6 | 7.81E-03 | 80.3 | 6.03E+00 | T |
| 5 | 90.00 | 188 | 358 | 0.85 | 180.20 | 178 | 13 | 1.74E-02 | 32.7 | 6.44E+00 | T |
| 0 | 128.96 | 139 | 430 | 0.75 | 258.12 | 254 | 9 | 1.29E-02 | 56.4 | 7.13E+00 | T |
| 0 | 185.96 | 213 | 337 | 1.02 | 372.12 | 368 | 8 | 1.97E-02 | 35.5 | 6.14E+00 | T |
| 0 | 209.23 | 172 | 359 | 1.11 | 418.66 | 414 | 9 | 1.59E-02 | 42.7 | 5.71E+00 | T |
| 0 | 259.09 | 50 | 213 | 1.12 | 518.38 | 516 | 8 | 4.61E-03 | **** | 4.93E+00 | T |
| 0 | 270.32 | 206 | 270 | 1.20 | 540.83 | 536 | 11 | 1.91E-02 | 34.0 | 4.78E+00 | T |
| 0 | 327.95 | 146 | 184 | 1.27 | 656.08 | 652 | 10 | 1.36E-02 | 38.2 | 4.15E+00 | T |
| 0 | 462.52 | 101 | 178 | 1.21 | 925.21 | 920 | 13 | 9.35E-03 | 57.7 | 3.20E+00 | T |
| 0 | 727.39 | 123 | 113 | 1.32 | 1454.86 | 1450 | 13 | 1.14E-02 | 40.5 | 2.22E+00 | T |
| 0 | 768.96 | 44 | 94 | 1.16 | 1538.00 | 1534 | 9 | 4.03E-03 | 87.2 | 2.12E+00 | |
| 0 | 795.20 | 71 | 82 | 1.36 | 1590.46 | 1585 | 13 | 6.57E-03 | 59.0 | 2.06E+00 | T |
| 0 | 934.57 | 64 | 42 | 3.35 | 1869.13 | 1863 | 13 | 5.93E-03 | 48.7 | 1.78E+00 | T |
| 3 | 964.79 | 86 | 39 | 2.13 | 1929.56 | 1921 | 27 | 7.94E-03 | 38.0 | 1.73E+00 | T |
| 0 | 1238.60 | 47 | 54 | 2.33 | 2476.98 | 2471 | 12 | 4.31E-03 | 69.6 | 1.39E+00 | T |
| 0 | 1246.15 | 30 | 45 | 3.85 | 2492.08 | 2485 | 12 | 2.79E-03 | 96.1 | 1.38E+00 | T |
| 0 | 1379.16 | 17 | 38 | 2.21 | 2757.99 | 2749 | 13 | 1.59E-03 | **** | 1.27E+00 | |
| 0 | 1402.12 | 20 | 14 | 0.74 | 2803.90 | 2800 | 9 | 1.85E-03 | 80.5 | 1.25E+00 | |
| 0 | 1662.02 | 13 | 4 | 1.69 | 3323.44 | 3320 | 7 | 1.16E-03 | 75.3 | 1.10E+00 | |
| 0 | 1730.08 | 36 | 21 | 1.64 | 3459.48 | 3450 | 17 | 3.32E-03 | 67.8 | 1.07E+00 | |
| 0 | 1848.29 | 25 | 7 | 1.39 | 3695.76 | 3690 | 13 | 2.32E-03 | 62.8 | 1.03E+00 | |

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388001.CNF;1
* Acquisition date   : 4-FEB-2010 10:28:40.   Detector SN#      :
* Detector ID        : GAM16                  Sensitivity          : 5.00000
* Geometry           : CAN                    Energy tolerance    : 1.50000
* Elapsed live time  : 0 03:00:00.00          Abundance limit      : 75.00000
* Elapsed real time  : 0 03:00:02.48          Half life ratio      : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 15-JAN-2010 12:00:00   Nuclide Library      : SOLID
* Sample ID          : G245388001             Analyst initials     : MXR1
* Batch Number       : 944964                 Sample Quantity      : 8.59300E+01 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16.1MS 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 | 2.214E+01 | 2.522E+00 | 4.840E-01 | 4.254E-02 | 45.739 |
| CD-109 | 2.963E+00 | 1.135E+00 | 1.086E+00 | 1.047E-01 | 2.727 |
| SN-126 | 2.891E-01 | 1.107E-01 | 1.241E-01 | 1.190E-02 | 2.329 |
| RE-188 | 3.118E-01 | 1.935E-01 | 2.635E-01 | 2.318E-02 | 1.183 |
| TL-208 | 6.730E-01 | 1.132E-01 | 5.955E-02 | 5.903E-03 | 11.301 |
| BI-211 | 5.315E+00 | 7.577E-01 | 3.309E-01 | 3.618E-02 | 16.062 |
| PB-212 | 2.369E+00 | 3.080E-01 | 9.160E-02 | 1.085E-02 | 25.861 |
| PO-212 | 2.369E+00 | 3.080E-01 | 9.160E-02 | 1.085E-02 | 25.861 |
| BI-214 | 1.591E+00 | 2.362E-01 | 1.106E-01 | 1.169E-02 | 14.388 |
| PB-214 | 1.849E+00 | 2.807E-01 | 1.154E-01 | 1.395E-02 | 16.028 |
| PO-214 | 1.849E+00 | 2.807E-01 | 1.154E-01 | 1.395E-02 | 16.028 |
| PO-216 | 2.369E+00 | 3.080E-01 | 9.160E-02 | 1.085E-02 | 25.861 |
| PO-218 | 1.849E+00 | 2.807E-01 | 1.154E-01 | 1.395E-02 | 16.028 |
| RA-224 | 5.823E+00 | 1.595E+00 | 1.043E+00 | 1.149E-01 | 5.585 |
| RA-226 | 1.591E+00 | 2.362E-01 | 1.106E-01 | 1.169E-02 | 14.388 |
| AC-228 | 2.257E+00 | 4.212E-01 | 2.163E-01 | 2.569E-02 | 10.435 |
| RA-228 | 2.257E+00 | 4.212E-01 | 2.163E-01 | 2.569E-02 | 10.435 |
| TH-228 | 2.416E+00 | 3.142E-01 | 9.344E-02 | 1.106E-02 | 25.861 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-230 | 1.591E+00 | 2.362E-01 | 1.106E-01 | 1.169E-02 | 14.388 |
| TH-232 | 2.257E+00 | 4.212E-01 | 2.163E-01 | 2.569E-02 | 10.435 |
| TH-234 | 2.488E+00 | 1.772E+00 | 1.896E+00 | 3.306E-01 | 1.312 |
| U-234 | 1.591E+00 | 2.362E-01 | 1.106E-01 | 1.169E-02 | 14.388 |
| NP-237 | 8.489E-01 | 3.694E-01 | 3.411E-01 | 7.743E-02 | 2.489 |
| U-238 | 2.488E+00 | 1.772E+00 | 1.896E+00 | 3.306E-01 | 1.312 |
| AM-243 | 4.882E-01 | 7.957E-02 | 8.347E-02 | 6.911E-03 | 5.849 |
| ANH-511 | 1.855E-01 | 8.202E-02 | 4.473E-02 | 4.254E-03 | 4.146 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | -3.296E-01 | | 3.222E-01 | 4.912E-01 | 4.969E-02 | -0.671 |
| NA-22 | -1.550E-03 | | 4.190E-02 | 6.786E-02 | 5.647E-03 | -0.023 |
| NA-24 | -1.012E+02 | | 8.537E+01 | Half-Life too short | | |
| AL-26 | 2.841E-03 | | 3.114E-02 | 5.208E-02 | 4.259E-03 | 0.055 |
| TI-44 | 4.896E-01 | + | 6.325E-02 | 7.472E-02 | 6.434E-03 | 6.553 |
| SC-46 | -2.096E-02 | | 3.969E-02 | 6.311E-02 | 5.966E-03 | -0.332 |
| V-48 | -9.845E-02 | | 8.255E-02 | 1.193E-01 | 1.098E-02 | -0.825 |
| CR-51 | -2.542E-01 | | 4.474E-01 | 6.820E-01 | 7.974E-02 | -0.373 |
| MN-52 | -1.443E-01 | | 4.205E-01 | 6.392E-01 | 5.454E-02 | -0.226 |
| MN-54 | 2.420E-02 | | 3.784E-02 | 6.640E-02 | 6.236E-03 | 0.365 |
| CO-56 | -1.572E-02 | | 3.864E-02 | 6.246E-02 | 5.878E-03 | -0.252 |
| CO-57 | 1.094E-02 | | 2.308E-02 | 3.936E-02 | 3.271E-03 | 0.278 |
| CO-58 | -5.639E-02 | | 4.124E-02 | 6.093E-02 | 5.709E-03 | -0.926 |
| FE-59 | -9.102E-02 | | 9.640E-02 | 1.427E-01 | 1.327E-02 | -0.638 |
| CO-60 | -6.838E-02 | | 4.031E-02 | 4.929E-02 | 4.158E-03 | -1.387 |
| ZN-65 | -3.057E-02 | | 9.786E-02 | 1.328E-01 | 1.128E-02 | -0.230 |
| GE-68 | 1.019E+00 | | 1.249E+00 | 2.203E+00 | 1.924E-01 | 0.463 |
| AS-73 | -3.147E-01 | | 8.253E-01 | 1.268E+00 | 9.677E-02 | -0.248 |
| AS-74 | 5.790E-02 | | 1.075E-01 | 1.823E-01 | 1.692E-02 | 0.318 |
| SE-75 | 1.133E-02 | | 5.091E-02 | 7.380E-02 | 8.612E-03 | 0.153 |
| BR-77 | 7.509E-06 | | 2.143E-05 | Half-Life too short | | |
| SR-82 | -2.314E-02 | | 4.697E-01 | 7.466E-01 | 6.922E-02 | -0.031 |
| RB-83 | 1.136E-02 | | 7.172E-02 | 1.194E-01 | 1.135E-02 | 0.095 |
| RB-84 | -4.081E-02 | | 7.125E-02 | 1.125E-01 | 1.063E-02 | -0.363 |
| KR-85 | 1.636E+01 | | 8.068E+00 | 1.344E+01 | 1.278E+00 | 1.217 |
| SR-85 | 8.824E-02 | | 4.353E-02 | 7.251E-02 | 6.894E-03 | 1.217 |
| RB-86 | 2.333E-01 | | 9.430E-01 | 1.587E+00 | 1.386E-01 | 0.147 |
| Y-88 | -3.671E-03 | | 3.477E-02 | 5.602E-02 | 4.548E-03 | -0.066 |
| ZR-88 | 2.345E-03 | | 3.029E-02 | 5.109E-02 | 4.725E-03 | 0.046 |
| Y-91 | 2.121E+00 | | 1.867E+01 | 3.076E+01 | 2.501E+00 | 0.069 |
| NB-94 | 1.915E-03 | | 3.402E-02 | 5.500E-02 | 4.972E-03 | 0.035 |
| NB-95 | 6.343E-02 | | 5.490E-02 | 8.532E-02 | 7.887E-03 | 0.743 |
| NB-95M | 2.679E-02 | | 1.433E-01 | 2.086E-01 | 2.481E-02 | 0.128 |
| ZR-95 | 9.902E-03 | | 8.469E-02 | 1.367E-01 | 1.373E-02 | 0.072 |
| NB-97 | 4.747E-01 | | 5.827E+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 |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| ZR-97 | 3.031E+02 | | 1.123E+02 | Half-Life too short | | |
| MO-99 | -4.185E+00 | | 3.816E+01 | 6.053E+01 | 9.383E+00 | -0.069 |
| TC-99M | 3.784E+15 | | 1.169E+16 | Half-Life too short | | |
| RH-101 | 6.472E-03 | | 3.232E-02 | 5.320E-02 | 5.253E-03 | 0.122 |
| RH-102 | 6.786E-03 | | 2.808E-02 | 4.729E-02 | 4.495E-03 | 0.143 |
| RU-103 | -3.603E-02 | | 4.355E-02 | 6.715E-02 | 9.887E-03 | -0.537 |
| RH-106 | -1.968E-01 | | 3.271E-01 | 5.042E-01 | 6.908E-02 | -0.390 |
| RU-106 | -1.968E-01 | | 3.265E-01 | 5.042E-01 | 4.610E-02 | -0.390 |
| AG-108M | 1.519E-03 | | 3.134E-02 | 5.243E-02 | 5.104E-03 | 0.029 |
| AG-110M | 2.310E-03 | | 3.597E-02 | 5.849E-02 | 5.353E-03 | 0.039 |
| IN-111 | 1.609E+00 | | 3.588E+00 | 5.311E+00 | 5.915E-01 | 0.303 |
| IN-113M | -1.155E-02 | | 4.526E-02 | 7.488E-02 | 7.108E-03 | -0.154 |
| SN-113 | -1.155E-02 | | 4.526E-02 | 7.488E-02 | 7.108E-03 | -0.154 |
| IN-114M | -7.942E-02 | | 1.907E-01 | 2.907E-01 | 2.811E-02 | -0.273 |
| CD-115 | -9.491E-06 | | 2.407E-05 | Half-Life too short | | |
| SN-117M | -5.979E-02 | | 6.592E-02 | 1.044E-01 | 9.272E-03 | -0.573 |
| SB-122 | 3.307E+00 | | 7.723E+00 | 1.248E+01 | 1.174E+00 | 0.265 |
| I-123 | -2.816E+02 | | 1.240E+03 | Half-Life too short | | |
| TE-123M | -3.107E-03 | | 2.736E-02 | 4.500E-02 | 4.025E-03 | -0.069 |
| I-124 | 1.011E+00 | | 1.487E+00 | 2.463E+00 | 2.278E-01 | 0.410 |
| SB-124 | -1.230E-02 | | 7.654E-02 | 1.231E-01 | 1.078E-02 | -0.100 |
| SB-125 | 4.333E-02 | | 9.053E-02 | 1.554E-01 | 1.484E-02 | 0.279 |
| TE-125M | 7.198E+00 | | 9.002E+00 | 1.555E+01 | 1.585E+00 | 0.463 |
| I-126 | 1.275E-02 | | 2.365E-01 | 3.839E-01 | 3.414E-02 | 0.033 |
| SB-126 | 4.588E-02 | | 1.885E-01 | 3.089E-01 | 2.812E-02 | 0.149 |
| SB-127 | 3.025E+00 | | 3.308E+00 | 5.691E+00 | 7.486E-01 | 0.532 |
| XE-127 | 1.301E-02 | | 5.055E-02 | 8.330E-02 | 8.331E-03 | 0.156 |
| I-131 | -2.118E-02 | | 1.725E-01 | 2.890E-01 | 3.066E-02 | -0.073 |
| TE-132 | -1.037E+00 | | 2.023E+00 | 3.183E+00 | 5.684E-01 | -0.326 |
| BA-133 | -2.982E-02 | | 4.553E-02 | 6.402E-02 | 9.252E-03 | -0.466 |
| I-133 | 4.126E-03 | | 1.427E-01 | Half-Life too short | | |
| CS-134 | 1.331E-01 | + | 7.955E-02 | 9.628E-02 | 9.027E-03 | 1.382 |
| CS-135 | 1.154E-01 | | 1.833E-01 | 2.715E-01 | 3.463E-02 | 0.425 |
| I-135 | 7.047E+14 | | 4.839E+14 | Half-Life too short | | |
| CS-136 | -1.131E-01 | | 1.337E-01 | 2.009E-01 | 1.861E-02 | -0.563 |
| BA-137M | -1.323E-02 | | 3.725E-02 | 5.853E-02 | 5.194E-03 | -0.226 |
| CS-137 | -1.399E-02 | | 3.937E-02 | 6.187E-02 | 5.501E-03 | -0.226 |
| CE-139 | -1.288E-02 | | 2.865E-02 | 4.629E-02 | 4.198E-03 | -0.278 |
| BA-140 | -2.756E-02 | | 3.459E-01 | 5.649E-01 | 1.885E-01 | -0.049 |
| LA-140 | -1.602E-01 | | 1.164E-01 | 1.534E-01 | 1.306E-02 | -1.045 |
| CE-141 | 4.216E-02 | | 6.544E-02 | 1.112E-01 | 9.726E-03 | 0.379 |
| CE-143 | 5.634E-03 | | 1.140E-03 | Half-Life too short | | |
| CE-144 | 1.265E-01 | | 2.131E-01 | 3.274E-01 | 5.056E-02 | 0.386 |
| PM-144 | 1.958E-02 | | 3.543E-02 | 5.949E-02 | 5.367E-03 | 0.329 |
| PR-144 | 1.330E+00 | | 2.407E+00 | 4.042E+00 | 3.644E-01 | 0.329 |
| PM-146 | 5.915E-02 | | 4.290E-02 | 7.656E-02 | 8.743E-03 | 0.773 |
| ND-147 | 9.667E-02 | | 7.401E-01 | 1.228E+00 | 1.900E-01 | 0.079 |
| PM-149 | -3.344E-04 | | 2.207E-04 | 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 |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| EU-152 | -6.884E-02 | | 1.015E-01 | 1.522E-01 | 1.701E-02 | -0.452 |
| GD-153 | -7.194E-02 | | 8.137E-02 | 1.155E-01 | 1.026E-02 | -0.623 |
| EU-154 | 3.914E-03 | | 1.162E-01 | 1.897E-01 | 2.101E-02 | 0.021 |
| EU-155 | 7.394E-02 | | 9.907E-02 | 1.713E-01 | 1.482E-02 | 0.432 |
| TB-160 | -2.225E-02 | | 1.323E-01 | 2.178E-01 | 2.057E-02 | -0.102 |
| HO-166M | 1.356E-03 | | 6.025E-02 | 9.706E-02 | 8.806E-03 | 0.014 |
| TM-171 | -5.601E+00 | | 2.971E+01 | 4.194E+01 | 3.213E+00 | -0.134 |
| LU-176 | -9.057E-03 | | 2.600E-02 | 3.896E-02 | 4.519E-03 | -0.232 |
| LU-177 | 6.295E+00 | + | 2.766E+00 | 3.476E+00 | 3.528E-01 | 1.811 |
| LU-177M | -2.751E-02 | | 1.743E-01 | 2.889E-01 | 2.701E-02 | -0.095 |
| HF-181 | 1.918E-03 | | 4.431E-02 | 7.359E-02 | 6.999E-03 | 0.026 |
| W-181 | -2.859E-02 | | 3.856E-01 | 5.484E-01 | 4.141E-02 | -0.052 |
| TA-182 | 1.330E-01 | | 1.957E-01 | 3.373E-01 | 2.758E-02 | 0.394 |
| RE-183 | -5.922E-02 | | 1.105E-01 | 1.781E-01 | 1.598E-02 | -0.333 |
| RE-184 | 1.947E-01 | | 2.364E-01 | 3.949E-01 | 4.476E-02 | 0.493 |
| OS-185 | -2.953E-02 | | 4.574E-02 | 7.007E-02 | 6.299E-03 | -0.421 |
| W-188 | -3.714E+00 | | 8.888E+00 | 1.217E+01 | 1.444E+00 | -0.305 |
| IR-192 | 7.191E-03 | | 3.931E-02 | 6.291E-02 | 7.189E-03 | 0.114 |
| AU-195 | 3.958E-01 | | 2.147E-01 | 3.712E-01 | 3.268E-02 | 1.066 |
| TL-200 | 4.354E-04 | | 4.833E-03 | Half-Life too short | | |
| TL-201 | -1.111E+01 | | 1.978E+01 | 3.176E+01 | 2.891E+00 | -0.350 |
| TL-202 | 5.660E-02 | | 8.929E-02 | 1.544E-01 | 1.457E-02 | 0.367 |
| HG-203 | -1.568E-02 | | 5.039E-02 | 6.993E-02 | 8.522E-03 | -0.224 |
| BI-207 | 3.506E-02 | | 5.181E-02 | 9.044E-02 | 7.973E-03 | 0.388 |
| TL-207 | 2.616E-01 | | 6.980E-01 | 1.010E+00 | 1.932E-01 | 0.259 |
| PO-209 | -3.467E+00 | | 7.257E+00 | 1.159E+01 | 1.096E+00 | -0.299 |
| BI-210 | -2.784E+00 | | 3.853E+00 | 5.615E+00 | 5.236E-01 | -0.496 |
| PB-210 | -2.784E+00 | | 3.853E+00 | 5.615E+00 | 5.236E-01 | -0.496 |
| PO-210 | -2.784E+00 | | 3.851E+00 | 5.615E+00 | 4.743E-01 | -0.496 |
| PB-211 | 8.288E-02 | | 9.074E-01 | 1.526E+00 | 9.578E-01 | 0.054 |
| BI-212 | 1.369E+00 | + | 5.732E-01 | 7.415E-01 | 7.747E-02 | 1.846 |
| PO-215 | 2.616E-01 | | 6.980E-01 | 1.010E+00 | 1.932E-01 | 0.259 |
| RN-219 | -2.836E-02 | | 3.943E-01 | 6.583E-01 | 1.015E-01 | -0.043 |
| RN-220 | -6.831E+00 | | 2.635E+01 | 4.238E+01 | 4.004E+00 | -0.161 |
| RA-223 | 2.616E-01 | | 6.980E-01 | 1.010E+00 | 1.932E-01 | 0.259 |
| AC-227 | -1.600E-01 | | 4.235E-01 | 5.878E-01 | 1.004E-01 | -0.272 |
| TH-227 | -1.600E-01 | | 4.238E-01 | 5.878E-01 | 1.149E-01 | -0.272 |
| TH-229 | 1.527E-01 | | 4.951E-01 | 8.196E-01 | 7.998E-02 | 0.186 |
| PA-231 | 2.066E-01 | | 1.545E+00 | 2.484E+00 | 4.296E-01 | 0.083 |
| TH-231 | 2.616E-01 | | 6.980E-01 | 1.010E+00 | 1.932E-01 | 0.259 |
| U-231 | -3.315E+00 | | 2.284E+00 | 3.195E+00 | 2.868E-01 | -1.038 |
| PA-233 | 4.363E-02 | | 6.540E-02 | 1.076E-01 | 1.257E-02 | 0.406 |
| PA-234 | -3.788E-01 | | 3.008E-01 | 4.249E-01 | 8.118E-02 | -0.891 |
| PA-234M | 2.192E+00 | | 5.169E+00 | 8.621E+00 | 8.976E-01 | 0.254 |
| U-235 | 4.169E-02 | | 2.105E-01 | 3.377E-01 | 5.901E-02 | 0.123 |
| NP-236 | 3.102E-02 | | 7.427E-02 | 1.247E-01 | 1.113E-02 | 0.249 |
| NP-239 | -1.290E-01 | | 1.714E-01 | 2.784E-01 | 2.318E-02 | -0.464 |
| AM-241 | 3.753E-02 | | 1.556E-01 | 2.262E-01 | 1.775E-02 | 0.166 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | 1.595E-02 | | 8.777E-02 | 1.491E-01 | 1.282E-02 | 0.107 |
| AM-246 | 2.092E-02 | | 1.456E-01 | 2.426E-01 | 2.117E-02 | 0.086 |
| CM-247 | 4.716E-03 | | 3.558E-02 | 6.010E-02 | 5.588E-03 | 0.078 |
| CF-249 | 6.108E-03 | | 4.229E-02 | 7.159E-02 | 6.716E-03 | 0.085 |
| CF-251 | 2.430E-04 | | 1.242E-01 | 2.041E-01 | 1.903E-02 | 0.001 |

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245388001            *
* Acquisition date   : 4-FEB-2010 10:28:40 Detector SN#      :              *
* Detector ID        : GAM16                      Sensitivity   : 5.000        *
* Geometry           : CAN                          Energy tolerance: 1.500      *
* Elapsed live time  : 0 03:00:00.00              Abundance limit : 75.000      *
* Elapsed real time  : 0 03:00:02.48              Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 15-JAN-2010 12:00:00 Nuclide Library : SOLID            *
* Sample ID         : G245388001              Analyst initials: MXR1          *
* Batch Number      : 944964                  Sample Quantity : 8.5930E+01 GRAM   *
* Recovery          : 1.00000                 Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME  : 16-NOV-2009 11:22:16 MS Isotope       :              *
* MSD DPM           : 0.000                      MSD Isotope   :              *
* LCS DPM           : 0.000                      LCS Isotope   :              *
* LCSD DPM          : 0.000                      LCSD Isotope  :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.214E+01 | 2.471E+00 | 2.390E-01 | 1.261E+00 |
| CD-109 | 2.963E+00 | 1.112E+00 | 5.300E-01 | 5.675E-01 |
| SN-126 | 2.891E-01 | 1.085E-01 | 6.057E-02 | 5.537E-02 |
| RE-188 | 3.118E-01 | 1.896E-01 | 1.289E-01 | 9.674E-02 |
| TL-208 | 6.730E-01 | 1.109E-01 | 2.929E-02 | 5.661E-02 |
| BI-211 | 5.315E+00 | 7.425E-01 | 1.624E-01 | 3.788E-01 |
| PB-212 | 2.369E+00 | 3.018E-01 | 4.488E-02 | 1.540E-01 |
| PO-212 | 2.369E+00 | 3.018E-01 | 4.488E-02 | 1.540E-01 |
| BI-214 | 1.591E+00 | 2.315E-01 | 5.439E-02 | 1.181E-01 |
| PB-214 | 1.849E+00 | 2.751E-01 | 5.661E-02 | 1.403E-01 |
| PO-214 | 1.849E+00 | 2.751E-01 | 5.661E-02 | 1.403E-01 |
| PO-216 | 2.369E+00 | 3.018E-01 | 4.488E-02 | 1.540E-01 |
| PO-218 | 1.849E+00 | 2.751E-01 | 5.661E-02 | 1.403E-01 |
| RA-224 | 5.823E+00 | 1.564E+00 | 5.109E-01 | 7.977E-01 |
| RA-226 | 1.591E+00 | 2.315E-01 | 5.439E-02 | 1.181E-01 |
| AC-228 | 2.257E+00 | 4.128E-01 | 1.066E-01 | 2.106E-01 |
| RA-228 | 2.257E+00 | 4.128E-01 | 1.066E-01 | 2.106E-01 |
| TH-228 | 2.416E+00 | 3.079E-01 | 4.578E-02 | 1.571E-01 |
| TH-230 | 1.591E+00 | 2.315E-01 | 5.439E-02 | 1.181E-01 |
| TH-232 | 2.257E+00 | 4.128E-01 | 1.066E-01 | 2.106E-01 |
| TH-234 | 2.488E+00 | 1.736E+00 | 9.236E-01 | 8.858E-01 |
| U-234 | 1.591E+00 | 2.315E-01 | 5.439E-02 | 1.181E-01 |
| NP-237 | 8.489E-01 | 3.620E-01 | 1.664E-01 | 1.847E-01 |
| U-238 | 2.488E+00 | 1.736E+00 | 9.236E-01 | 8.858E-01 |
| AM-243 | 4.882E-01 | 7.798E-02 | 4.070E-02 | 3.978E-02 |
| ANH-511 | 1.855E-01 | 8.038E-02 | 2.199E-02 | 4.101E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | -3.296E-01 | 3.158E-01 | 2.414E-01 | 1.611E-01 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-22 | -1.550E-03 | 4.106E-02 | 3.349E-02 | 2.095E-02 | NOT IDENT. |
| NA-24 | -1.012E+08 | 1.673E+08 | 0.000E+00 | 8.537E+07 | SHORT HLIF |
| AL-26 | 2.841E-03 | 3.052E-02 | 2.574E-02 | 1.557E-02 | NOT IDENT. |
| TI-44 | 4.896E-01 | 6.198E-02 | 3.644E-02 | 3.162E-02 | FAIL ABUN |
| SC-46 | -2.096E-02 | 3.890E-02 | 3.109E-02 | 1.985E-02 | FAIL ABUN |
| V-48 | -9.845E-02 | 8.090E-02 | 5.880E-02 | 4.128E-02 | NOT IDENT. |
| CR-51 | -2.542E-01 | 4.385E-01 | 3.346E-01 | 2.237E-01 | NOT IDENT. |
| MN-52 | -1.443E-01 | 4.121E-01 | 3.156E-01 | 2.103E-01 | FAIL ABUN |
| MN-54 | 2.420E-02 | 3.709E-02 | 3.271E-02 | 1.892E-02 | NOT IDENT. |
| CO-56 | -1.572E-02 | 3.787E-02 | 3.077E-02 | 1.932E-02 | FAIL ABUN |
| CO-57 | 1.094E-02 | 2.262E-02 | 1.923E-02 | 1.154E-02 | NOT IDENT. |
| CO-58 | -5.639E-02 | 4.042E-02 | 3.001E-02 | 2.062E-02 | NOT IDENT. |
| FE-59 | -9.102E-02 | 9.447E-02 | 7.039E-02 | 4.820E-02 | NOT IDENT. |
| CO-60 | -6.838E-02 | 3.951E-02 | 2.433E-02 | 2.016E-02 | NOT IDENT. |
| ZN-65 | -3.057E-02 | 9.590E-02 | 6.549E-02 | 4.893E-02 | NOT IDENT. |
| GE-68 | 1.019E+00 | 1.224E+00 | 1.086E+00 | 6.245E-01 | NOT IDENT. |
| AS-73 | -3.147E-01 | 8.088E-01 | 6.175E-01 | 4.126E-01 | NOT IDENT. |
| AS-74 | 5.790E-02 | 1.054E-01 | 8.968E-02 | 5.377E-02 | NOT IDENT. |
| SE-75 | 1.133E-02 | 4.989E-02 | 3.618E-02 | 2.546E-02 | NOT IDENT. |
| BR-77 | 7.509E+00 | 4.201E+01 | 0.000E+00 | 2.143E+01 | SHORT HLIF |
| SR-82 | -2.314E-02 | 4.603E-01 | 3.677E-01 | 2.348E-01 | NOT IDENT. |
| RB-83 | 1.136E-02 | 7.029E-02 | 5.870E-02 | 3.586E-02 | NOT IDENT. |
| RB-84 | -4.081E-02 | 6.982E-02 | 5.544E-02 | 3.562E-02 | NOT IDENT. |
| KR-85 | 1.636E+01 | 7.907E+00 | 6.607E+00 | 4.034E+00 | NOT IDENT. |
| SR-85 | 8.824E-02 | 4.266E-02 | 3.564E-02 | 2.176E-02 | NOT IDENT. |
| RB-86 | 2.333E-01 | 9.241E-01 | 7.824E-01 | 4.715E-01 | NOT IDENT. |
| Y-88 | -3.671E-03 | 3.408E-02 | 2.769E-02 | 1.739E-02 | NOT IDENT. |
| ZR-88 | 2.345E-03 | 2.968E-02 | 2.508E-02 | 1.514E-02 | NOT IDENT. |
| Y-91 | 2.121E+00 | 1.830E+01 | 1.517E+01 | 9.336E+00 | NOT IDENT. |
| NB-94 | 1.915E-03 | 3.334E-02 | 2.707E-02 | 1.701E-02 | NOT IDENT. |
| NB-95 | 6.343E-02 | 5.380E-02 | 4.201E-02 | 2.745E-02 | NOT IDENT. |
| NB-95M | 2.679E-02 | 1.404E-01 | 1.022E-01 | 7.164E-02 | NOT IDENT. |
| ZR-95 | 9.902E-03 | 8.300E-02 | 6.733E-02 | 4.235E-02 | NOT IDENT. |
| NB-97 | 4.747E+05 | 1.142E+07 | 0.000E+00 | 5.827E+06 | SHORT HLIF |
| ZR-97 | 3.031E+08 | 2.201E+08 | 0.000E+00 | 1.123E+08 | SHORT HLIF |
| MO-99 | -4.185E+00 | 3.740E+01 | 2.980E+01 | 1.908E+01 | NOT IDENT. |
| TC-99M | 3.784E+21 | 2.292E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 6.472E-03 | 3.167E-02 | 2.605E-02 | 1.616E-02 | NOT IDENT. |
| RH-102 | 6.786E-03 | 2.752E-02 | 2.324E-02 | 1.404E-02 | NOT IDENT. |
| RU-103 | -3.603E-02 | 4.268E-02 | 3.300E-02 | 2.178E-02 | FAIL ABUN |
| RH-106 | -1.968E-01 | 3.206E-01 | 2.480E-01 | 1.636E-01 | FAIL ABUN |
| RU-106 | -1.968E-01 | 3.200E-01 | 2.480E-01 | 1.633E-01 | FAIL ABUN |
| AG-108M | 1.519E-03 | 3.071E-02 | 2.576E-02 | 1.567E-02 | NOT IDENT. |
| AG-110M | 2.310E-03 | 3.525E-02 | 2.878E-02 | 1.798E-02 | NOT IDENT. |
| IN-111 | 1.609E+00 | 3.517E+00 | 2.603E+00 | 1.794E+00 | NOT IDENT. |
| IN-113M | -1.155E-02 | 4.435E-02 | 3.677E-02 | 2.263E-02 | NOT IDENT. |
| SN-113 | -1.155E-02 | 4.435E-02 | 3.677E-02 | 2.263E-02 | NOT IDENT. |
| IN-114M | -7.942E-02 | 1.869E-01 | 1.423E-01 | 9.535E-02 | NOT IDENT. |
| CD-115 | -9.491E+00 | 4.719E+01 | 0.000E+00 | 2.407E+01 | SHORT HLIF |
| SN-117M | -5.979E-02 | 6.460E-02 | 5.106E-02 | 3.296E-02 | NOT IDENT. |
| SB-122 | 3.307E+00 | 7.569E+00 | 6.136E+00 | 3.862E+00 | NOT IDENT. |
| I-123 | -2.816E+08 | 2.430E+09 | 0.000E+00 | 1.240E+09 | SHORT HLIF |
| TE-123M | -3.107E-03 | 2.682E-02 | 2.201E-02 | 1.368E-02 | NOT IDENT. |
| I-124 | 1.011E+00 | 1.457E+00 | 1.212E+00 | 7.434E-01 | NOT IDENT. |
| SB-124 | -1.230E-02 | 7.501E-02 | 6.082E-02 | 3.827E-02 | FAIL ABUN |
| SB-125 | 4.333E-02 | 8.872E-02 | 7.632E-02 | 4.527E-02 | FAIL ABUN |
| TE-125M | 7.198E+00 | 8.822E+00 | 7.594E+00 | 4.501E+00 | NOT IDENT. |
| I-126 | 1.275E-02 | 2.318E-01 | 1.889E-01 | 1.182E-01 | NOT IDENT. |
| SB-126 | 4.588E-02 | 1.847E-01 | 1.521E-01 | 9.423E-02 | FAIL ABUN |
| SB-127 | 3.025E+00 | 3.242E+00 | 2.801E+00 | 1.654E+00 | NOT IDENT. |
| XE-127 | 1.301E-02 | 4.954E-02 | 4.079E-02 | 2.528E-02 | NOT IDENT. |
| I-131 | -2.118E-02 | 1.690E-01 | 1.419E-01 | 8.624E-02 | NOT IDENT. |
| TE-132 | -1.037E+00 | 1.982E+00 | 1.559E+00 | 1.011E+00 | NOT IDENT. |
| BA-133 | -2.982E-02 | 4.462E-02 | 3.142E-02 | 2.277E-02 | FAIL ABUN |
| I-133 | 4.126E+03 | 2.797E+05 | 0.000E+00 | 1.427E+05 | SHORT HLIF |
| CS-134 | 1.331E-01 | 7.796E-02 | 4.741E-02 | 3.977E-02 | FAIL ABUN |
| CS-135 | 1.154E-01 | 1.796E-01 | 1.331E-01 | 9.165E-02 | NOT IDENT. |
| I-135 | 7.047E+20 | 9.484E+20 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -1.131E-01 | 1.310E-01 | 9.905E-02 | 6.684E-02 | FAIL ABUN |
| BA-137M | -1.323E-02 | 3.650E-02 | 2.880E-02 | 1.862E-02 | NOT IDENT. |
| CS-137 | -1.399E-02 | 3.859E-02 | 3.045E-02 | 1.969E-02 | NOT IDENT. |
| CE-139 | -1.288E-02 | 2.808E-02 | 2.265E-02 | 1.432E-02 | NOT IDENT. |
| BA-140 | -2.756E-02 | 3.390E-01 | 2.777E-01 | 1.729E-01 | NOT IDENT. |
| LA-140 | -1.602E-01 | 1.141E-01 | 7.575E-02 | 5.820E-02 | FAIL ABUN |
| CE-141 | 4.216E-02 | 6.413E-02 | 5.436E-02 | 3.272E-02 | NOT IDENT. |
| CE-143 | 5.634E+03 | 2.235E+03 | 0.000E+00 | 1.140E+03 | SHORT HLIF |
| CE-144 | 1.265E-01 | 2.089E-01 | 1.600E-01 | 1.066E-01 | NOT IDENT. |
| PM-144 | 1.958E-02 | 3.473E-02 | 2.928E-02 | 1.772E-02 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | 1.330E+00 | 2.359E+00 | 1.989E+00 | 1.204E+00 | NOT IDENT. |
| PM-146 | 5.915E-02 | 4.204E-02 | 3.762E-02 | 2.145E-02 | NOT IDENT. |
| ND-147 | 9.667E-02 | 7.253E-01 | 6.040E-01 | 3.700E-01 | FAIL ABUN |
| PM-149 | -3.344E+02 | 4.325E+02 | 0.000E+00 | 2.207E+02 | SHORT HLIF |
| EU-152 | -6.884E-02 | 9.943E-02 | 7.468E-02 | 5.073E-02 | FAIL ABUN |
| GD-153 | -7.194E-02 | 7.974E-02 | 5.639E-02 | 4.068E-02 | FAIL ABUN |
| EU-154 | 3.914E-03 | 1.139E-01 | 9.361E-02 | 5.811E-02 | NOT IDENT. |
| EU-155 | 7.394E-02 | 9.709E-02 | 8.363E-02 | 4.954E-02 | FAIL ABUN |
| TB-160 | -2.225E-02 | 1.297E-01 | 1.073E-01 | 6.617E-02 | FAIL ABUN |
| HO-166M | 1.356E-03 | 5.905E-02 | 4.778E-02 | 3.013E-02 | NOT IDENT. |
| TM-171 | -5.601E+00 | 2.911E+01 | 2.044E+01 | 1.485E+01 | NOT IDENT. |
| LU-176 | -9.057E-03 | 2.548E-02 | 1.911E-02 | 1.300E-02 | FAIL ABUN |
| LU-177 | 6.295E+00 | 2.710E+00 | 1.702E+00 | 1.383E+00 | FAIL ABUN |
| LU-177M | -2.751E-02 | 1.708E-01 | 1.419E-01 | 8.716E-02 | NOT IDENT. |
| HF-181 | 1.918E-03 | 4.342E-02 | 3.617E-02 | 2.216E-02 | NOT IDENT. |
| W-181 | -2.859E-02 | 3.779E-01 | 2.672E-01 | 1.928E-01 | NOT IDENT. |
| TA-182 | 1.330E-01 | 1.917E-01 | 1.664E-01 | 9.783E-02 | FAIL ABUN |
| RE-183 | -5.922E-02 | 1.083E-01 | 8.711E-02 | 5.523E-02 | FAIL ABUN |
| RE-184 | 1.947E-01 | 2.317E-01 | 1.936E-01 | 1.182E-01 | NOT IDENT. |
| OS-185 | -2.953E-02 | 4.483E-02 | 3.448E-02 | 2.287E-02 | NOT IDENT. |
| W-188 | -3.714E+00 | 8.710E+00 | 5.970E+00 | 4.444E+00 | FAIL ABUN |
| IR-192 | 7.191E-03 | 3.852E-02 | 3.086E-02 | 1.965E-02 | FAIL ABUN |
| AU-195 | 3.958E-01 | 2.104E-01 | 1.812E-01 | 1.074E-01 | FAIL ABUN |
| TL-200 | 4.354E+02 | 9.473E+03 | 0.000E+00 | 4.833E+03 | SHORT HLIF |
| TL-201 | -1.111E+01 | 1.938E+01 | 1.554E+01 | 9.888E+00 | NOT IDENT. |
| TL-202 | 5.660E-02 | 8.751E-02 | 7.584E-02 | 4.465E-02 | NOT IDENT. |
| HG-203 | -1.568E-02 | 4.938E-02 | 3.429E-02 | 2.520E-02 | NOT IDENT. |
| BI-207 | 3.506E-02 | 5.077E-02 | 4.459E-02 | 2.591E-02 | FAIL ABUN |
| TL-207 | 2.616E-01 | 6.841E-01 | 4.955E-01 | 3.490E-01 | FAIL ABUN |
| PO-209 | -3.467E+00 | 7.112E+00 | 5.712E+00 | 3.629E+00 | FAIL ABUN |
| BI-210 | -2.784E+00 | 3.776E+00 | 2.732E+00 | 1.926E+00 | NOT IDENT. |
| PB-210 | -2.784E+00 | 3.776E+00 | 2.732E+00 | 1.926E+00 | NOT IDENT. |
| PO-210 | -2.784E+00 | 3.774E+00 | 2.732E+00 | 1.926E+00 | NOT IDENT. |
| PB-211 | 8.288E-02 | 8.892E-01 | 7.494E-01 | 4.537E-01 | NOT IDENT. |
| BI-212 | 1.369E+00 | 5.618E-01 | 3.651E-01 | 2.866E-01 | FAIL ABUN |
| PO-215 | 2.616E-01 | 6.841E-01 | 4.955E-01 | 3.490E-01 | FAIL ABUN |
| RN-219 | -2.836E-02 | 3.865E-01 | 3.233E-01 | 1.972E-01 | FAIL ABUN |
| RN-220 | -6.831E+00 | 2.582E+01 | 2.084E+01 | 1.317E+01 | NOT IDENT. |
| RA-223 | 2.616E-01 | 6.841E-01 | 4.955E-01 | 3.490E-01 | FAIL ABUN |
| AC-227 | -1.600E-01 | 4.150E-01 | 2.881E-01 | 2.117E-01 | FAIL ABUN |
| TH-227 | -1.600E-01 | 4.153E-01 | 2.881E-01 | 2.119E-01 | FAIL ABUN |
| TH-229 | 1.527E-01 | 4.852E-01 | 4.012E-01 | 2.475E-01 | FAIL ABUN |
| PA-231 | 2.066E-01 | 1.514E+00 | 1.218E+00 | 7.725E-01 | FAIL ABUN |
| TH-231 | 2.616E-01 | 6.841E-01 | 4.955E-01 | 3.490E-01 | FAIL ABUN |
| U-231 | -3.315E+00 | 2.238E+00 | 1.559E+00 | 1.142E+00 | FAIL ABUN |
| PA-233 | 4.363E-02 | 6.409E-02 | 5.276E-02 | 3.270E-02 | FAIL ABUN |
| PA-234 | -3.788E-01 | 2.948E-01 | 2.094E-01 | 1.504E-01 | FAIL ABUN |
| PA-234M | 2.192E+00 | 5.066E+00 | 4.250E+00 | 2.585E+00 | NOT IDENT. |
| U-235 | 4.169E-02 | 2.063E-01 | 1.651E-01 | 1.053E-01 | FAIL ABUN |
| NP-236 | 3.102E-02 | 7.278E-02 | 6.101E-02 | 3.713E-02 | NOT IDENT. |
| NP-239 | -1.290E-01 | 1.679E-01 | 1.360E-01 | 8.568E-02 | FAIL ABUN |
| AM-241 | 3.753E-02 | 1.525E-01 | 1.102E-01 | 7.778E-02 | NOT IDENT. |
| CM-243 | 1.595E-02 | 8.601E-02 | 7.280E-02 | 4.388E-02 | FAIL ABUN |
| AM-246 | 2.092E-02 | 1.427E-01 | 1.197E-01 | 7.281E-02 | NOT IDENT. |
| CM-247 | 4.716E-03 | 3.487E-02 | 2.951E-02 | 1.779E-02 | FAIL ABUN |
| CF-249 | 6.108E-03 | 4.145E-02 | 3.515E-02 | 2.115E-02 | NOT IDENT. |
| CF-251 | 2.430E-04 | 1.217E-01 | 9.986E-02 | 6.210E-02 | NOT IDENT. |


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*                                     *
*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD      *
*               CHARLESTON ,SC 29417  *
*               GAMMA SPECTROSCOPY BACKGROUND REPORT *
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| ENERGY | MDA COUNTS |
|--------|------------|
|--------|------------|

| | |
|-------|----------|
| 46.50 | 280.9388 |
| 46.50 | 280.9388 |
| 46.50 | 280.9388 |
| 48.70 | 297.0734 |
| 49.72 | 267.1309 |
| 51.35 | 219.5234 |
| 52.39 | 269.2620 |
| 52.97 | 290.0969 |
| 53.15 | 290.2488 |
| 53.44 | 278.4887 |
| 54.07 | 264.5633 |
| 56.28 | 284.3722 |
| 56.28 | 284.3740 |
| 57.37 | 0.0000 |
| 57.53 | 285.3614 |
| 57.53 | 285.3628 |
| 57.60 | 285.4166 |
| 57.98 | 302.7355 |
| 57.98 | 302.7355 |
| 59.32 | 340.4474 |
| 59.32 | 340.4474 |
| 59.40 | 330.7568 |
| 59.54 | 297.9158 |
| 59.72 | 298.0596 |
| 60.01 | 295.0318 |
| 61.10 | 310.6016 |
| 61.14 | 310.6340 |
| 61.30 | 310.7649 |
| 63.00 | 352.4012 |
| 63.29 | 352.6663 |
| 63.29 | 352.6663 |
| 63.58 | 352.9303 |
| 64.28 | 357.6850 |
| 65.12 | 366.7114 |
| 65.20 | 366.7842 |
| 65.20 | 366.7842 |
| 66.05 | 389.0968 |
| 66.72 | 388.0909 |
| 66.83 | 388.1981 |
| 66.91 | 393.2545 |
| 67.20 | 391.8761 |
| 67.20 | 391.8761 |
| 67.75 | 360.4011 |
| 67.85 | 360.4915 |
| 68.90 | 380.1809 |
| 68.90 | 380.1809 |
| 69.30 | 407.2574 |
| 69.67 | 406.9565 |
| 70.82 | 425.9251 |
| 70.82 | 425.9251 |
| 70.83 | 425.9355 |
| 72.80 | 416.5736 |
| 72.87 | 416.6416 |
| 72.87 | 416.6416 |
| 74.67 | 428.5394 |
| 74.81 | 428.6761 |
| 74.81 | 428.6761 |
| 74.81 | 428.6761 |
| 74.81 | 428.6761 |
| 74.81 | 428.6761 |
| 74.81 | 428.6761 |
| 74.81 | 428.6761 |
| 74.97 | 428.8360 |
| 75.28 | 429.1428 |
| 75.70 | 429.5554 |
| 77.11 | 430.9376 |
| 77.11 | 430.9376 |

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|--------|----------|
| 77.11 | 430.9376 |
| 77.11 | 430.9376 |
| 77.11 | 430.9376 |
| 77.11 | 430.9376 |
| 77.11 | 430.9376 |
| 78.38 | 432.1729 |
| 79.62 | 433.3694 |
| 79.80 | 433.5421 |
| 79.80 | 433.5421 |
| 80.11 | 433.8387 |
| 80.18 | 433.9058 |
| 80.30 | 434.0192 |
| 80.30 | 434.0192 |
| 80.57 | 434.2771 |
| 81.00 | 434.6871 |
| 81.07 | 434.7542 |
| 81.07 | 434.7542 |
| 81.07 | 434.7542 |
| 81.07 | 434.7542 |
| 82.60 | 268.4329 |
| 83.37 | 268.8772 |
| 83.78 | 269.1152 |
| 83.78 | 269.1152 |
| 83.78 | 269.1152 |
| 83.78 | 269.1152 |
| 84.21 | 339.2935 |
| 84.90 | 386.4801 |
| 85.43 | 386.9144 |
| 86.29 | 387.6169 |
| 86.50 | 387.7874 |
| 86.54 | 387.8192 |
| 86.59 | 387.8602 |
| 86.72 | 387.9648 |
| 86.79 | 388.0193 |
| 86.94 | 388.1444 |
| 87.30 | 453.6091 |
| 87.30 | 453.6091 |
| 87.30 | 453.6091 |
| 87.30 | 453.6091 |
| 87.30 | 453.6091 |
| 87.30 | 453.6091 |
| 87.30 | 453.6091 |
| 87.57 | 453.8640 |
| 87.88 | 0.0000 |
| 88.03 | 334.1953 |
| 88.36 | 334.4238 |
| 88.47 | 334.5000 |
| 89.95 | 335.5156 |
| 91.11 | 325.7971 |
| 92.29 | 326.5728 |
| 92.38 | 326.6315 |
| 92.38 | 326.6315 |
| 93.35 | 327.2634 |
| 94.00 | 266.9066 |
| 94.67 | 272.5486 |
| 94.67 | 272.5518 |
| 94.90 | 281.9400 |
| 94.90 | 281.9400 |
| 94.90 | 281.9400 |
| 94.90 | 281.9400 |
| 95.87 | 348.7852 |
| 95.87 | 348.7852 |
| 96.73 | 344.0595 |
| 97.43 | 332.5520 |
| 98.44 | 266.5573 |
| 98.44 | 266.5588 |
| 98.88 | 255.2225 |
| 99.55 | 274.2475 |
| 99.55 | 274.2475 |
| 99.86 | 289.5556 |
| 100.00 | 319.0404 |
| 100.10 | 319.1042 |
| 103.18 | 313.7766 |
| 103.76 | 305.1402 |
| 105.00 | 294.1433 |
| 105.31 | 297.9115 |
| 108.00 | 357.2515 |
| 109.28 | 291.8977 |

| | |
|--------|----------|
| 111.00 | 320.0671 |
| 111.00 | 320.0671 |
| 111.76 | 333.2419 |
| 112.95 | 310.2141 |
| 115.19 | 287.6049 |
| 116.30 | 287.2351 |
| 117.00 | 303.1982 |
| 117.00 | 303.1982 |
| 117.66 | 266.7449 |
| 121.11 | 280.3191 |
| 121.62 | 284.2601 |
| 121.78 | 276.9257 |
| 122.06 | 265.0091 |
| 122.32 | 270.6846 |
| 122.32 | 270.6846 |
| 122.32 | 270.6846 |
| 122.32 | 270.6846 |
| 123.07 | 254.3121 |
| 127.23 | 297.1497 |
| 129.76 | 287.0898 |
| 131.20 | 282.1014 |
| 133.02 | 322.5106 |
| 133.54 | 278.8829 |
| 135.34 | 284.8636 |
| 136.00 | 281.3651 |
| 136.25 | 286.2094 |
| 136.48 | 286.3108 |
| 140.51 | 284.2435 |
| 140.51 | 0.0000 |
| 142.18 | 349.0157 |
| 142.65 | 331.0800 |
| 143.76 | 285.6167 |
| 144.24 | 293.4897 |
| 144.24 | 293.4897 |
| 144.24 | 293.4897 |
| 144.24 | 293.4897 |
| 145.22 | 290.0710 |
| 145.44 | 290.1632 |
| 147.16 | 321.7108 |
| 152.43 | 285.3239 |
| 152.70 | 307.2758 |
| 153.22 | 307.9870 |
| 154.21 | 271.4420 |
| 154.21 | 271.4420 |
| 154.21 | 271.4420 |
| 154.21 | 271.4420 |
| 155.03 | 260.0659 |
| 156.02 | 272.1289 |
| 158.56 | 300.4918 |
| 159.00 | 0.0000 |
| 159.00 | 281.0821 |
| 160.31 | 265.8890 |
| 161.27 | 287.8496 |
| 162.32 | 303.9990 |
| 162.64 | 301.1752 |
| 163.35 | 276.8352 |
| 163.89 | 242.5291 |
| 165.85 | 284.6807 |
| 167.43 | 284.2849 |
| 171.28 | 269.7898 |
| 171.86 | 271.9864 |
| 172.10 | 272.0697 |
| 176.55 | 284.6500 |
| 176.60 | 284.6702 |
| 181.06 | 266.1108 |
| 184.41 | 283.9184 |
| 185.71 | 281.8347 |
| 186.00 | 281.9365 |
| 190.27 | 264.2335 |
| 192.34 | 256.5100 |
| 193.63 | 263.0443 |
| 197.04 | 284.6559 |
| 198.01 | 271.6055 |
| 198.60 | 264.5842 |
| 200.40 | 0.0000 |
| 201.83 | 288.3119 |
| 202.84 | 265.8861 |
| 205.31 | 289.4614 |

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|--------|----------|
| 208.36 | 260.2692 |
| 208.81 | 260.4014 |
| 209.75 | 229.9163 |
| 209.75 | 229.9163 |
| 210.97 | 241.1937 |
| 215.65 | 252.9392 |
| 216.55 | 255.2904 |
| 218.09 | 279.9245 |
| 222.10 | 258.9442 |
| 223.80 | 245.6504 |
| 226.40 | 252.7007 |
| 227.00 | 254.9854 |
| 227.08 | 256.0699 |
| 227.20 | 256.1017 |
| 228.16 | 274.4452 |
| 228.18 | 274.4504 |
| 228.18 | 274.4504 |
| 231.56 | 0.0000 |
| 235.69 | 257.3022 |
| 236.00 | 255.7766 |
| 236.00 | 255.7766 |
| 238.63 | 248.4007 |
| 238.63 | 248.4007 |
| 238.63 | 248.4007 |
| 238.63 | 248.4007 |
| 239.00 | 0.0000 |
| 240.98 | 248.9928 |
| 241.98 | 249.2443 |
| 241.98 | 249.2443 |
| 241.98 | 249.2443 |
| 244.69 | 178.5150 |
| 245.39 | 178.6409 |
| 247.94 | 202.9714 |
| 248.90 | 206.4228 |
| 249.79 | 0.0000 |
| 252.40 | 180.9698 |
| 252.85 | 182.1398 |
| 252.85 | 182.1398 |
| 254.15 | 0.0000 |
| 256.20 | 201.8804 |
| 256.20 | 201.8804 |
| 260.50 | 186.2355 |
| 260.90 | 0.0000 |
| 262.80 | 214.7214 |
| 264.65 | 188.6212 |
| 268.24 | 207.5195 |
| 268.79 | 199.3213 |
| 269.46 | 185.0414 |
| 269.46 | 185.0414 |
| 269.46 | 185.0414 |
| 269.46 | 185.0414 |
| 271.23 | 185.3438 |
| 273.65 | 180.1967 |
| 276.40 | 185.6696 |
| 277.35 | 179.6903 |
| 277.60 | 164.1039 |
| 277.60 | 164.1039 |
| 278.00 | 174.2146 |
| 278.60 | 181.0140 |
| 279.20 | 206.2637 |
| 279.53 | 211.3599 |
| 280.46 | 204.8214 |
| 281.68 | 0.0000 |
| 283.67 | 178.4739 |
| 284.30 | 178.5742 |
| 285.00 | 224.7599 |
| 285.90 | 0.0000 |
| 286.10 | 193.4825 |
| 286.10 | 193.4825 |
| 287.40 | 162.1729 |
| 288.45 | 0.0000 |
| 290.67 | 196.5253 |
| 290.80 | 196.5465 |
| 291.72 | 178.0527 |
| 293.26 | 0.0000 |
| 293.70 | 163.0723 |
| 295.21 | 172.3576 |
| 295.21 | 172.3576 |

| | |
|--------|----------|
| 295.21 | 172.3576 |
| 295.96 | 172.4720 |
| 296.50 | 172.5524 |
| 297.23 | 0.0000 |
| 298.57 | 172.8586 |
| 299.80 | 173.0410 |
| 299.80 | 173.0410 |
| 300.09 | 173.0843 |
| 300.09 | 173.0843 |
| 300.09 | 173.0843 |
| 300.09 | 173.0843 |
| 300.12 | 173.0905 |
| 301.29 | 167.5642 |
| 302.84 | 164.3613 |
| 303.76 | 0.0000 |
| 303.91 | 147.3742 |
| 304.40 | 162.8638 |
| 304.40 | 162.8638 |
| 304.84 | 166.3546 |
| 306.84 | 158.0464 |
| 308.46 | 167.4372 |
| 311.98 | 149.5270 |
| 316.51 | 177.7962 |
| 318.01 | 143.3372 |
| 319.02 | 157.3385 |
| 319.41 | 168.9610 |
| 320.08 | 182.9479 |
| 323.87 | 132.4086 |
| 323.87 | 132.4086 |
| 323.87 | 132.4086 |
| 323.87 | 132.4086 |
| 325.23 | 129.0664 |
| 328.77 | 146.9231 |
| 333.44 | 142.7900 |
| 334.20 | 165.1254 |
| 334.20 | 165.1254 |
| 334.30 | 165.1397 |
| 338.28 | 135.6970 |
| 338.28 | 135.6970 |
| 338.28 | 135.6970 |
| 338.28 | 135.6970 |
| 338.32 | 135.7017 |
| 338.32 | 135.7017 |
| 338.32 | 135.7017 |
| 340.50 | 125.6929 |
| 340.57 | 125.6995 |
| 344.27 | 166.4277 |
| 345.85 | 160.0472 |
| 350.59 | 0.0000 |
| 351.07 | 155.7285 |
| 351.92 | 155.8300 |
| 351.92 | 155.8300 |
| 351.92 | 155.8300 |
| 355.39 | 0.0000 |
| 356.01 | 145.7721 |
| 364.48 | 144.7172 |
| 366.43 | 126.9228 |
| 367.43 | 121.6104 |
| 367.94 | 0.0000 |
| 369.80 | 136.2608 |
| 374.96 | 135.8665 |
| 383.85 | 153.1421 |
| 387.95 | 158.1592 |
| 388.63 | 160.9771 |
| 391.69 | 142.0747 |
| 391.69 | 142.0747 |
| 392.90 | 124.7649 |
| 398.62 | 133.5502 |
| 400.65 | 132.8137 |
| 401.10 | 130.0876 |
| 401.81 | 129.2270 |
| 402.60 | 127.4504 |
| 404.84 | 131.3439 |
| 410.95 | 130.9612 |
| 411.60 | 144.9551 |
| 413.65 | 130.2673 |
| 414.70 | 115.4610 |
| 415.30 | 113.6434 |

| | |
|--------|----------|
| 415.76 | 113.6788 |
| 417.63 | 0.0000 |
| 418.52 | 137.2248 |
| 423.70 | 134.8857 |
| 427.08 | 122.0416 |
| 427.89 | 112.7142 |
| 432.53 | 109.2863 |
| 433.93 | 111.2696 |
| 439.47 | 0.0000 |
| 439.56 | 105.9946 |
| 439.89 | 108.8566 |
| 443.98 | 132.8671 |
| 444.90 | 125.3472 |
| 445.03 | 125.3593 |
| 445.03 | 125.3593 |
| 445.03 | 125.3593 |
| 445.03 | 125.3593 |
| 453.90 | 89.7687 |
| 463.38 | 107.5874 |
| 468.07 | 118.6845 |
| 473.00 | 90.8258 |
| 475.06 | 98.6786 |
| 475.35 | 94.8253 |
| 476.78 | 106.5273 |
| 477.59 | 111.4238 |
| 477.96 | 120.1704 |
| 482.03 | 100.0610 |
| 484.57 | 0.0000 |
| 487.03 | 94.5119 |
| 490.36 | 0.0000 |
| 492.35 | 0.0000 |
| 497.08 | 111.7317 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 95.8233 |
| 511.00 | 95.8322 |
| 511.85 | 95.8773 |
| 511.85 | 95.8773 |
| 513.99 | 88.6703 |
| 513.99 | 88.6703 |
| 520.41 | 97.3331 |
| 520.65 | 0.0000 |
| 527.90 | 0.0000 |
| 528.96 | 0.0000 |
| 529.64 | 99.8322 |
| 529.87 | 0.0000 |
| 531.02 | 89.9176 |
| 537.32 | 103.2609 |
| 543.00 | 114.6401 |
| 546.56 | 0.0000 |
| 549.76 | 99.9215 |
| 552.65 | 81.8800 |
| 555.20 | 96.1626 |
| 563.23 | 76.2405 |
| 563.90 | 85.4176 |
| 568.70 | 88.6913 |
| 569.32 | 88.7205 |
| 569.50 | 88.7284 |
| 569.67 | 92.8162 |
| 573.80 | 96.0826 |
| 574.00 | 96.0912 |
| 574.64 | 0.0000 |
| 578.91 | 0.0000 |
| 579.30 | 0.0000 |
| 583.14 | 97.5716 |
| 585.48 | 0.0000 |
| 591.81 | 76.3396 |
| 592.07 | 76.3486 |
| 593.00 | 94.9648 |
| 595.88 | 79.5966 |
| 600.56 | 105.6887 |
| 602.52 | 0.0000 |
| 602.71 | 82.9810 |
| 602.71 | 82.9810 |
| 603.60 | 89.9357 |
| 604.41 | 89.6959 |
| 604.70 | 104.6606 |
| 609.31 | 94.6991 |

| | |
|--------|---------|
| 609.31 | 94.6991 |
| 609.31 | 94.6991 |
| 609.31 | 94.6991 |
| 610.33 | 94.7463 |
| 612.46 | 81.7137 |
| 614.37 | 90.1362 |
| 618.01 | 83.6084 |
| 621.84 | 95.2823 |
| 621.84 | 95.2823 |
| 631.29 | 80.9924 |
| 633.02 | 77.9023 |
| 633.10 | 78.9574 |
| 634.78 | 86.3968 |
| 635.90 | 92.7668 |
| 636.97 | 94.9246 |
| 645.85 | 87.9089 |
| 646.12 | 94.2773 |
| 656.30 | 79.8248 |
| 657.75 | 85.2051 |
| 657.90 | 0.0000 |
| 661.65 | 97.0957 |
| 661.65 | 97.0957 |
| 664.57 | 0.0000 |
| 666.33 | 85.5420 |
| 666.33 | 85.5420 |
| 675.00 | 85.8813 |
| 677.61 | 64.4879 |
| 685.20 | 67.9449 |
| 692.80 | 74.6686 |
| 695.00 | 99.6564 |
| 696.49 | 79.1264 |
| 696.49 | 79.1264 |
| 697.00 | 66.1342 |
| 697.49 | 69.4023 |
| 698.33 | 93.2935 |
| 698.50 | 95.4712 |
| 699.00 | 93.3224 |
| 702.63 | 84.7769 |
| 706.10 | 89.2596 |
| 706.58 | 0.0000 |
| 706.67 | 84.9269 |
| 709.31 | 73.0338 |
| 711.68 | 76.3831 |
| 713.82 | 84.0989 |
| 717.42 | 82.0427 |
| 720.50 | 74.4850 |
| 721.93 | 0.0000 |
| 722.20 | 75.4159 |
| 722.78 | 77.1891 |
| 722.78 | 77.1891 |
| 722.89 | 77.1934 |
| 722.95 | 85.9677 |
| 723.30 | 85.9797 |
| 724.18 | 82.5024 |
| 727.18 | 73.6002 |
| 733.00 | 72.2425 |
| 735.90 | 70.5664 |
| 739.58 | 68.4672 |
| 742.81 | 61.9268 |
| 744.21 | 65.2821 |
| 747.13 | 76.4395 |
| 751.79 | 84.3589 |
| 752.31 | 91.0388 |
| 753.82 | 84.4308 |
| 755.35 | 0.0000 |
| 756.15 | 90.0720 |
| 756.87 | 82.3128 |
| 763.93 | 98.1702 |
| 765.79 | 78.5963 |
| 766.42 | 73.2575 |
| 766.84 | 83.9918 |
| 776.49 | 81.8554 |
| 778.00 | 81.9067 |
| 778.57 | 79.6800 |
| 778.89 | 79.6908 |
| 783.80 | 79.8490 |
| 785.46 | 68.4241 |
| 792.07 | 58.6746 |

| | |
|---------|---------|
| 795.84 | 75.9404 |
| 796.30 | 75.9548 |
| 798.80 | 78.4422 |
| 801.93 | 86.0914 |
| 805.60 | 73.5111 |
| 810.29 | 90.0136 |
| 810.76 | 87.3023 |
| 815.85 | 67.4293 |
| 817.79 | 0.0000 |
| 818.51 | 77.5314 |
| 819.60 | 65.7018 |
| 826.30 | 74.1063 |
| 828.27 | 0.0000 |
| 831.60 | 83.4263 |
| 831.96 | 85.2712 |
| 834.83 | 69.7601 |
| 836.80 | 0.0000 |
| 846.75 | 65.4670 |
| 848.13 | 71.9596 |
| 856.28 | 0.0000 |
| 856.80 | 64.7893 |
| 860.37 | 67.9658 |
| 867.32 | 55.7520 |
| 867.82 | 45.3068 |
| 871.10 | 65.1345 |
| 873.19 | 66.1153 |
| 874.81 | 54.0422 |
| 875.33 | 0.0000 |
| 876.40 | 48.4796 |
| 879.36 | 54.1329 |
| 880.27 | 63.4877 |
| 880.51 | 62.5590 |
| 881.50 | 59.7797 |
| 883.24 | 53.2747 |
| 884.67 | 47.6917 |
| 889.25 | 65.5686 |
| 896.60 | 65.7429 |
| 898.02 | 64.8374 |
| 899.00 | 58.2809 |
| 903.28 | 53.3491 |
| 911.07 | 65.1406 |
| 911.07 | 65.1406 |
| 911.07 | 65.1406 |
| 919.63 | 55.8699 |
| 920.93 | 55.8959 |
| 925.00 | 49.3340 |
| 925.24 | 51.2354 |
| 926.50 | 43.2433 |
| 935.52 | 57.1333 |
| 937.48 | 60.3491 |
| 944.10 | 63.0352 |
| 946.00 | 71.6766 |
| 949.00 | 44.9644 |
| 962.29 | 43.2466 |
| 964.01 | 48.0798 |
| 966.15 | 48.1152 |
| 968.20 | 48.1482 |
| 969.11 | 48.1641 |
| 969.11 | 48.1641 |
| 969.11 | 48.1641 |
| 977.42 | 41.3986 |
| 980.50 | 47.3814 |
| 983.50 | 63.8843 |
| 989.30 | 49.4610 |
| 996.32 | 74.8494 |
| 1001.03 | 57.4415 |
| 1001.68 | 57.4544 |
| 1004.76 | 82.8563 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 45.2790 |
| 1036.00 | 48.2511 |
| 1037.82 | 56.1595 |
| 1038.57 | 52.2314 |
| 1038.76 | 0.0000 |
| 1045.16 | 46.4171 |
| 1046.59 | 54.3420 |
| 1048.07 | 61.2855 |

| | |
|---------|---------|
| 1050.47 | 52.4307 |
| 1050.47 | 52.4307 |
| 1062.04 | 53.6150 |
| 1063.62 | 48.6746 |
| 1076.63 | 53.8576 |
| 1077.35 | 46.8875 |
| 1078.86 | 57.8867 |
| 1085.78 | 47.0092 |
| 1099.22 | 65.2793 |
| 1112.02 | 58.2517 |
| 1112.84 | 59.0691 |
| 1115.52 | 58.8745 |
| 1120.29 | 57.6123 |
| 1120.29 | 57.6123 |
| 1120.29 | 57.6123 |
| 1120.29 | 57.6123 |
| 1120.51 | 57.6151 |
| 1121.28 | 57.6290 |
| 1124.00 | 0.0000 |
| 1129.67 | 47.6380 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 64.5750 |
| 1173.22 | 60.5672 |
| 1175.09 | 49.3031 |
| 1177.93 | 54.4829 |
| 1189.05 | 57.7500 |
| 1204.90 | 55.9380 |
| 1205.75 | 0.0000 |
| 1213.00 | 67.4883 |
| 1221.42 | 55.1583 |
| 1230.97 | 48.2599 |
| 1235.34 | 64.4248 |
| 1236.41 | 0.0000 |
| 1238.25 | 49.2905 |
| 1246.25 | 55.8880 |
| 1260.41 | 0.0000 |
| 1271.85 | 42.2070 |
| 1274.45 | 39.0704 |
| 1274.54 | 40.1264 |
| 1291.56 | 36.0669 |
| 1298.22 | 0.0000 |
| 1312.09 | 31.9966 |
| 1325.50 | 40.6719 |
| 1325.50 | 40.6719 |
| 1332.49 | 52.5386 |
| 1333.61 | 43.9749 |
| 1360.21 | 49.6746 |
| 1362.66 | 0.0000 |
| 1365.15 | 28.1125 |
| 1368.21 | 41.1190 |
| 1368.53 | 0.0000 |
| 1376.25 | 39.7568 |
| 1384.27 | 32.5942 |
| 1394.10 | 29.4073 |
| 1395.20 | 27.2363 |
| 1407.95 | 23.6799 |
| 1434.06 | 28.5987 |
| 1436.60 | 32.1018 |
| 1457.56 | 0.0000 |
| 1460.81 | 21.2190 |
| 1489.15 | 28.7926 |
| 1509.49 | 37.3291 |
| 1596.49 | 37.1243 |
| 1620.62 | 21.0538 |
| 1678.03 | 0.0000 |
| 1691.02 | 16.5172 |
| 1691.02 | 16.5172 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 14.7980 |
| 1764.49 | 14.7980 |
| 1764.49 | 14.7980 |
| 1764.49 | 14.7980 |
| 1770.23 | 22.0110 |
| 1771.40 | 15.2421 |
| 1791.20 | 0.0000 |
| 1808.65 | 14.9304 |

1836.01

15.0116

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G245388001

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 7.4206E+00 | ug/g |
| Total Uranium Counting Unc. | 5.1659E+00 | ug/g |
| Total Uranium Tpu | 2.6357E-06 | ug/g |
| Total Uranium Mda | 2.7488E+00 | ug/g |

```

*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 944964                SAMPLE ID   : G245388001
*  ANALYST       : MXR1                  DETECTOR    : GAM16
*  SAMPLE DATE   : 15-JAN-2010 12:00:00.00 COUNT TIME   : 0 03:00:00.00
*  ANALYSIS DATE : 4-FEB-2010 10:28:40.96 SAMPLE ALQT : 85.930 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.120E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.628E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.615E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.238E+00

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VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 12:30:00.44

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388002.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:29:07.
Sample ID          : G245388002 Sample quantity : 1.27890E+02 GRAM
Detector name      : GAM18 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.57 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 944964 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 0 | 62.73* | 83 | 568 | 1.17 | 124.59 | 120 | 11 | 1.15E-02 | 57.7 | |
| 2 | 2 | 75.03 | 339 | 428 | 0.94 | 149.17 | 145 | 17 | 4.71E-02 | 10.8 | 1.19E+00 |
| 3 | 2 | 77.27* | 655 | 356 | 1.00 | 153.65 | 145 | 17 | 9.10E-02 | 6.2 | |
| 4 | 0 | 87.26 | 177 | 499 | 1.37 | 173.63 | 171 | 7 | 2.46E-02 | 22.1 | |
| 5 | 0 | 89.86 | 108 | 383 | 1.10 | 178.83 | 177 | 6 | 1.50E-02 | 30.3 | |
| 6 | 0 | 93.22* | 334 | 474 | 1.75 | 185.54 | 182 | 10 | 4.64E-02 | 13.9 | |
| 7 | 0 | 129.04 | 122 | 403 | 0.86 | 257.17 | 253 | 9 | 1.69E-02 | 31.0 | |
| 8 | 0 | 186.12* | 273 | 405 | 1.22 | 371.29 | 367 | 11 | 3.79E-02 | 16.1 | |
| 9 | 0 | 209.49 | 229 | 361 | 1.20 | 418.01 | 413 | 12 | 3.18E-02 | 17.9 | |
| 10 | 2 | 238.75* | 1626 | 233 | 1.21 | 476.51 | 470 | 19 | 2.26E-01 | 3.0 | 1.33E+00 |
| 11 | 2 | 241.74* | 285 | 315 | 1.61 | 482.48 | 470 | 19 | 3.96E-02 | 14.6 | |
| 12 | 0 | 270.14 | 162 | 290 | 1.37 | 539.26 | 535 | 12 | 2.25E-02 | 22.3 | |
| 13 | 0 | 295.15* | 497 | 291 | 1.25 | 589.27 | 583 | 12 | 6.91E-02 | 8.3 | |
| 14 | 0 | 300.56 | 80 | 219 | 1.17 | 600.07 | 596 | 10 | 1.11E-02 | 36.8 | |
| 15 | 0 | 328.10 | 77 | 151 | 1.00 | 655.14 | 652 | 8 | 1.07E-02 | 29.8 | |
| 16 | 0 | 338.34* | 275 | 270 | 1.33 | 675.61 | 669 | 12 | 3.82E-02 | 13.7 | |
| 17 | 0 | 351.90* | 951 | 211 | 1.44 | 702.73 | 696 | 11 | 1.32E-01 | 4.5 | |
| 18 | 0 | 409.20 | 27 | 148 | 1.13 | 817.29 | 815 | 9 | 3.69E-03 | 84.4 | |
| 19 | 0 | 462.56 | 139 | 147 | 1.44 | 923.97 | 918 | 13 | 1.93E-02 | 19.9 | |
| 20 | 0 | 510.88* | 182 | 133 | 2.05 | 1020.59 | 1014 | 17 | 2.53E-02 | 19.6 | |
| 21 | 0 | 582.97* | 498 | 136 | 1.65 | 1164.73 | 1157 | 13 | 6.92E-02 | 6.8 | |
| 22 | 0 | 609.28* | 725 | 207 | 1.65 | 1217.34 | 1208 | 18 | 1.01E-01 | 6.0 | |
| 23 | 0 | 662.74 | 122 | 195 | 4.57 | 1324.24 | 1313 | 23 | 1.70E-02 | 31.1 | |
| 24 | 0 | 726.77 | 130 | 112 | 1.84 | 1452.27 | 1444 | 16 | 1.81E-02 | 20.2 | |
| 25 | 0 | 768.50 | 48 | 107 | 1.15 | 1535.70 | 1529 | 11 | 6.69E-03 | 44.0 | |
| 26 | 0 | 860.60* | 78 | 53 | 2.08 | 1719.86 | 1713 | 12 | 1.09E-02 | 22.9 | |
| 27 | 0 | 910.94* | 368 | 106 | 1.80 | 1820.52 | 1814 | 12 | 5.12E-02 | 7.8 | |
| 28 | 5 | 964.40 | 63 | 95 | 1.94 | 1927.42 | 1920 | 23 | 8.77E-03 | 33.8 | 1.19E+00 |
| 29 | 5 | 968.58* | 215 | 92 | 2.04 | 1935.78 | 1920 | 23 | 2.98E-02 | 11.5 | |
| 30 | 0 | 1120.31* | 129 | 95 | 1.55 | 2239.20 | 2233 | 12 | 1.79E-02 | 17.8 | |
| 31 | 0 | 1239.06* | 56 | 163 | 2.04 | 2476.65 | 2464 | 23 | 7.81E-03 | 60.5 | |
| 32 | 0 | 1460.03* | 1457 | 49 | 2.40 | 2918.55 | 2908 | 20 | 2.02E-01 | 2.9 | |
| 33 | 0 | 1728.95 | 51 | 16 | 1.81 | 3456.35 | 3447 | 15 | 7.06E-03 | 21.8 | |
| 34 | 0 | 1763.98* | 122 | 23 | 2.70 | 3526.41 | 3518 | 16 | 1.70E-02 | 13.3 | |

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

VMS Nuclide Identification Report V3.1 Generated 4-FEB-2010 12:30:05

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388002.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:29:07
Sample ID        : G245388002 Sample quantity : 127.89 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA18 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.57 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 2.116E+01 | 2.020E+00 | 4.692E-01 | 3.560E-02 | 45.108 |
| CD-109 | + | 88.03 | * | 2.236E+00 | 1.011E+00 | 1.118E+00 | 1.033E-01 | 2.000 |
| SN-126 | | 64.28 | | -1.933E-01 | 5.786E-01 | 8.581E-01 | 1.269E-01 | -0.225 |
| | + | 86.94 | | 9.070E-01 | 5.503E-01 | 5.199E-01 | 2.156E-01 | 1.745 |
| | + | 87.57 | * | 2.182E-01 | 9.868E-02 | 1.259E-01 | 1.160E-02 | 1.733 |
| BA-137M | + | 661.65 | * | 1.114E-01 | 6.973E-02 | 4.317E-02 | 3.291E-03 | 2.581 |
| CS-137 | + | 661.65 | * | 1.178E-01 | 7.372E-02 | 4.564E-02 | 3.488E-03 | 2.581 |
| TL-208 | | 277.35 | | 1.836E-01 | 3.217E-01 | 5.196E-01 | 5.456E-02 | 0.353 |
| | + | 510.84 | | 5.751E-01 | 2.341E-01 | 1.712E-01 | 1.820E-02 | 3.360 |
| | + | 583.14 | * | 4.416E-01 | 6.905E-02 | 4.476E-02 | 3.509E-03 | 9.864 |
| | + | 860.37 | | 6.326E-01 | 2.988E-01 | 3.422E-01 | 3.828E-02 | 1.848 |
| BI-211 | | 72.87 | | 3.575E+00 | 3.138E+00 | 4.873E+00 | 4.024E-01 | 0.734 |
| | + | 351.07 | * | 3.958E+00 | 4.362E-01 | 2.669E-01 | 1.713E-02 | 14.831 |
| PB-212 | + | 74.81 | | 1.883E+00 | 4.702E-01 | 4.890E-01 | 6.129E-02 | 3.850 |
| | + | 77.11 | | 2.033E+00 | 3.052E-01 | 2.736E-01 | 2.319E-02 | 7.429 |
| | + | 87.30 | | 1.009E+00 | 4.674E-01 | 5.846E-01 | 7.940E-02 | 1.726 |
| | + | 238.63 | * | 1.576E+00 | 1.465E-01 | 7.091E-02 | 5.066E-03 | 22.221 |
| | + | 300.09 | | 1.152E+00 | 8.534E-01 | 9.942E-01 | 8.163E-02 | 1.159 |
| PO-212 | + | 74.81 | | 1.883E+00 | 4.702E-01 | 4.890E-01 | 6.129E-02 | 3.850 |
| | + | 77.11 | | 2.033E+00 | 3.052E-01 | 2.736E-01 | 2.319E-02 | 7.429 |
| | + | 87.30 | | 1.009E+00 | 4.674E-01 | 5.846E-01 | 7.940E-02 | 1.726 |
| | + | 115.19 | | 1.029E+00 | 3.095E+00 | 5.053E+00 | 3.183E-01 | 0.204 |
| | + | 238.63 | * | 1.576E+00 | 1.465E-01 | 7.091E-02 | 5.066E-03 | 22.221 |
| | + | 300.09 | | 1.152E+00 | 8.534E-01 | 9.942E-01 | 8.163E-02 | 1.159 |
| BI-214 | + | 609.31 | * | 1.206E+00 | 1.811E-01 | 8.051E-02 | 7.192E-03 | 14.980 |
| | + | 1120.29 | | 1.075E+00 | 3.960E-01 | 3.345E-01 | 3.203E-02 | 3.213 |
| | + | 1764.49 | | 1.338E+00 | 3.664E-01 | 2.038E-01 | 1.239E-02 | 6.567 |
| PB-214 | + | 74.81 | | 3.244E+00 | 7.889E-01 | 8.426E-01 | 9.407E-02 | 3.850 |
| | + | 77.11 | | 3.484E+00 | 5.867E-01 | 4.690E-01 | 5.345E-02 | 7.429 |
| | + | 87.30 | | 1.729E+00 | 7.931E-01 | 1.001E+00 | 1.201E-01 | 1.726 |
| | + | 241.98 | | 1.655E+00 | 5.017E-01 | 4.263E-01 | 3.371E-02 | 3.882 |
| | + | 295.21 | | 1.259E+00 | 2.353E-01 | 1.785E-01 | 1.514E-02 | 7.052 |
| | + | 351.92 | * | 1.377E+00 | 1.679E-01 | 8.815E-02 | 7.292E-03 | 15.620 |
| PO-214 | + | 74.81 | | 3.244E+00 | 7.889E-01 | 8.426E-01 | 9.407E-02 | 3.850 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-216 | + | 77.11 | | 3.484E+00 | 5.867E-01 | 4.690E-01 | 5.345E-02 | 7.429 |
| | + | 87.30 | | 1.729E+00 | 7.931E-01 | 1.001E+00 | 1.201E-01 | 1.726 |
| | + | 241.98 | | 1.655E+00 | 5.017E-01 | 4.263E-01 | 3.371E-02 | 3.882 |
| | + | 295.21 | | 1.259E+00 | 2.353E-01 | 1.785E-01 | 1.514E-02 | 7.052 |
| | + | 351.92 | * | 1.377E+00 | 1.679E-01 | 8.815E-02 | 7.292E-03 | 15.620 |
| | + | 74.81 | | 1.883E+00 | 4.702E-01 | 4.890E-01 | 6.129E-02 | 3.850 |
| | + | 77.11 | | 2.033E+00 | 3.052E-01 | 2.736E-01 | 2.319E-02 | 7.429 |
| | + | 87.30 | | 1.009E+00 | 4.674E-01 | 5.846E-01 | 7.940E-02 | 1.726 |
| PO-218 | + | 238.63 | * | 1.576E+00 | 1.465E-01 | 7.091E-02 | 5.066E-03 | 22.221 |
| | + | 300.09 | | 1.152E+00 | 8.534E-01 | 9.942E-01 | 8.163E-02 | 1.159 |
| | + | 74.81 | | 3.244E+00 | 7.889E-01 | 8.426E-01 | 9.407E-02 | 3.850 |
| | + | 77.11 | | 3.484E+00 | 5.867E-01 | 4.690E-01 | 5.345E-02 | 7.429 |
| | + | 87.30 | | 1.729E+00 | 7.931E-01 | 1.001E+00 | 1.201E-01 | 1.726 |
| | + | 241.98 | | 1.655E+00 | 5.017E-01 | 4.263E-01 | 3.371E-02 | 3.882 |
| | + | 295.21 | | 1.259E+00 | 2.353E-01 | 1.785E-01 | 1.514E-02 | 7.052 |
| | + | 351.92 | * | 1.377E+00 | 1.679E-01 | 8.815E-02 | 7.292E-03 | 15.620 |
| RA-224 | + | 240.98 | * | 3.138E+00 | 9.348E-01 | 8.060E-01 | 4.490E-02 | 3.893 |
| RA-226 | + | 609.31 | * | 1.206E+00 | 1.811E-01 | 8.051E-02 | 7.192E-03 | 14.980 |
| AC-228 | + | 1120.29 | | 1.075E+00 | 3.960E-01 | 3.345E-01 | 3.203E-02 | 3.213 |
| | + | 1764.49 | | 1.338E+00 | 3.664E-01 | 2.038E-01 | 1.239E-02 | 6.567 |
| | + | 338.32 | | 1.269E+00 | 6.224E-01 | 3.006E-01 | 1.225E-01 | 4.220 |
| | + | 911.07 | * | 1.404E+00 | 2.874E-01 | 1.454E-01 | 1.927E-02 | 9.657 |
| RA-228 | + | 969.11 | | 1.437E+00 | 4.765E-01 | 2.814E-01 | 6.737E-02 | 5.109 |
| | + | 338.32 | | 1.269E+00 | 6.224E-01 | 3.006E-01 | 1.225E-01 | 4.220 |
| | + | 911.07 | * | 1.404E+00 | 2.874E-01 | 1.454E-01 | 1.927E-02 | 9.657 |
| | + | 969.11 | | 1.437E+00 | 4.765E-01 | 2.814E-01 | 6.737E-02 | 5.109 |
| TH-228 | + | 74.81 | | 1.921E+00 | 4.453E-01 | 4.988E-01 | 4.204E-02 | 3.850 |
| | + | 77.11 | | 2.073E+00 | 3.113E-01 | 2.791E-01 | 2.365E-02 | 7.429 |
| | + | 87.30 | | 1.029E+00 | 4.655E-01 | 5.963E-01 | 5.481E-02 | 1.726 |
| | + | 238.63 | * | 1.607E+00 | 1.495E-01 | 7.233E-02 | 5.167E-03 | 22.221 |
| TH-230 | + | 300.09 | | 1.175E+00 | 1.108E+00 | 1.014E+00 | 5.976E-01 | 1.159 |
| | + | 609.31 | * | 1.206E+00 | 1.811E-01 | 8.050E-02 | 7.191E-03 | 14.980 |
| | + | 1120.29 | | 1.075E+00 | 3.960E-01 | 3.345E-01 | 3.203E-02 | 3.213 |
| | + | 1764.49 | | 1.338E+00 | 3.664E-01 | 2.038E-01 | 1.239E-02 | 6.567 |
| TH-232 | + | 338.32 | | 1.269E+00 | 3.541E-01 | 3.006E-01 | 1.739E-02 | 4.220 |
| | + | 911.07 | * | 1.404E+00 | 2.874E-01 | 1.454E-01 | 1.927E-02 | 9.657 |
| | + | 969.11 | | 1.437E+00 | 4.765E-01 | 2.814E-01 | 6.737E-02 | 5.109 |
| | + | 63.29 | * | 2.144E+00 | 2.505E+00 | 2.122E+00 | 3.741E-01 | 1.010 |
| TH-234 | + | 92.38 | | 2.599E+00 | 8.623E-01 | 6.010E-01 | 1.083E-01 | 4.324 |
| | + | 609.31 | * | 1.206E+00 | 1.811E-01 | 8.050E-02 | 7.191E-03 | 14.980 |
| | + | 1120.29 | | 1.075E+00 | 3.960E-01 | 3.345E-01 | 3.203E-02 | 3.213 |
| | + | 1764.49 | | 1.338E+00 | 3.664E-01 | 2.038E-01 | 1.239E-02 | 6.567 |
| NP-237 | + | 86.50 | * | 6.407E-01 | 3.185E-01 | 3.678E-01 | 8.299E-02 | 1.742 |
| | + | 95.87 | | 2.289E-01 | 8.914E-01 | 1.312E+00 | 3.206E-01 | 0.174 |
| | + | 63.29 | * | 2.144E+00 | 2.505E+00 | 2.122E+00 | 3.741E-01 | 1.010 |
| | + | 92.38 | | 2.599E+00 | 7.568E-01 | 6.010E-01 | 5.108E-02 | 4.324 |
| U-238 | + | 74.67 | * | 3.053E-01 | 7.070E-02 | 7.960E-02 | 6.642E-03 | 3.835 |
| | + | 86.72 | | 2.402E+01 | 1.087E+01 | 1.382E+01 | 1.263E+00 | 1.739 |
| | + | 117.66 | | -3.266E+00 | 3.339E+00 | 5.132E+00 | 3.156E-01 | -0.636 |
| | + | | | | | | | |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| ANH-511 | + | 142.18 | * | -1.827E+00 | 1.509E+01 | 2.384E+01 | 1.313E+00 | -0.077 |
| | | 511.00 | | 1.242E-01 | 4.950E-02 | 3.699E-02 | 2.443E-03 | 3.359 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| BE-7 | | 477.59 | * | -2.040E-01 | 2.661E-01 | 4.175E-01 | 3.026E-02 | -0.489 |
| NA-22 | | 1274.54 | * | -4.825E-02 | 3.578E-02 | 5.177E-02 | 3.523E-03 | -0.932 |
| NA-24 | | 1368.53 | * | -6.297E+00 | 3.578E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | -5.123E-01 | 1.274E+00 | 2.006E+00 | 1.340E-01 | -0.255 |
| | | 1808.65 | * | 8.033E-04 | 2.301E-02 | 3.795E-02 | 2.215E-03 | 0.021 |
| TI-44 | | 67.85 | | -2.021E-02 | 4.969E-02 | 7.240E-02 | 5.822E-03 | -0.279 |
| | + | 78.38 | * | 3.752E-01 | 5.633E-02 | 7.592E-02 | 6.491E-03 | 4.941 |
| SC-46 | | 889.25 | * | -1.836E-02 | 3.299E-02 | 5.148E-02 | 5.742E-03 | -0.357 |
| | + | 1120.51 | | 1.914E-01 | 6.940E-02 | 1.062E-01 | 7.336E-03 | 1.803 |
| V-48 | | 944.10 | | 1.019E-01 | 8.315E-01 | 1.365E+00 | 1.445E-01 | 0.075 |
| | | 983.50 | * | 2.257E-02 | 6.778E-02 | 1.127E-01 | 1.115E-02 | 0.200 |
| | | 1312.09 | | -9.137E-03 | 7.398E-02 | 1.197E-01 | 8.719E-03 | -0.076 |
| CR-51 | | 320.08 | * | 2.263E-01 | 3.196E-01 | 5.349E-01 | 3.444E-02 | 0.423 |
| MN-52 | | 744.21 | | 2.468E-02 | 3.135E-01 | 5.236E-01 | 4.618E-02 | 0.047 |
| | | 848.13 | | -1.874E+00 | 9.480E+00 | 1.532E+01 | 1.603E+00 | -0.122 |
| | | 935.52 | | 3.940E-01 | 3.479E-01 | 6.120E-01 | 6.564E-02 | 0.644 |
| | | 1246.25 | | 1.497E+00 | 1.150E+01 | 1.638E+01 | 1.053E+00 | 0.091 |
| | | 1333.61 | | 1.557E+00 | 6.867E+00 | 1.148E+01 | 8.672E-01 | 0.136 |
| | | 1434.06 | * | 7.267E-02 | 3.114E-01 | 5.198E-01 | 3.830E-02 | 0.140 |
| MN-54 | | 834.83 | * | -1.337E-02 | 3.002E-02 | 4.776E-02 | 4.893E-03 | -0.280 |
| CO-56 | | 846.75 | * | -3.026E-02 | 3.268E-02 | 4.962E-02 | 5.180E-03 | -0.610 |
| | | 977.42 | | 1.141E+00 | 2.505E+00 | 4.025E+00 | 4.026E-01 | 0.284 |
| | | 1037.82 | | -1.308E-01 | 2.291E-01 | 3.647E-01 | 3.379E-02 | -0.359 |
| | | 1175.09 | | -5.251E-01 | 1.760E+00 | 2.846E+00 | 1.580E-01 | -0.184 |
| | + | 1238.25 | | 1.368E-01 | 1.659E-01 | 1.410E-01 | 9.401E-03 | 0.970 |
| | | 1360.21 | | 1.883E-01 | 8.215E-01 | 1.371E+00 | 1.031E-01 | 0.137 |
| | | 1771.40 | | -6.547E-02 | 1.798E-01 | 2.442E-01 | 1.476E-02 | -0.268 |
| CO-57 | | 122.06 | * | 6.638E-03 | 2.279E-02 | 3.701E-02 | 2.192E-03 | 0.179 |
| | | 136.48 | | -1.149E-01 | 1.828E-01 | 2.828E-01 | 1.851E-02 | -0.406 |
| CO-58 | | 810.76 | * | -4.859E-03 | 2.926E-02 | 4.757E-02 | 4.697E-03 | -0.102 |
| FE-59 | | 142.65 | | 1.866E-02 | 2.521E+00 | 4.004E+00 | 2.203E-01 | 0.005 |
| | | 192.34 | | 6.402E-01 | 8.773E-01 | 1.405E+00 | 1.629E-01 | 0.456 |
| | | 1099.22 | * | -5.644E-02 | 7.457E-02 | 1.165E-01 | 9.593E-03 | -0.484 |
| | | 1291.56 | | -3.417E-02 | 9.368E-02 | 1.481E-01 | 1.245E-02 | -0.231 |
| CO-60 | | 1173.22 | | 5.459E-03 | 3.446E-02 | 5.770E-02 | 3.189E-03 | 0.095 |
| | | 1332.49 | * | 1.212E-02 | 2.847E-02 | 4.856E-02 | 3.669E-03 | 0.250 |
| ZN-65 | | 1115.52 | * | 3.532E-02 | 8.045E-02 | 1.197E-01 | 8.433E-03 | 0.295 |
| GE-68 | | 1077.35 | * | 7.200E-01 | 9.592E-01 | 1.687E+00 | 1.340E-01 | 0.427 |
| AS-73 | | 53.44 | * | 4.863E-01 | 1.020E+00 | 1.747E+00 | 1.385E-01 | 0.278 |
| AS-74 | | 595.88 | * | 3.869E-03 | 8.365E-02 | 1.358E-01 | 9.756E-03 | 0.028 |
| | | 634.78 | | 5.086E-02 | 3.369E-01 | 5.480E-01 | 4.080E-02 | 0.093 |
| SE-75 | | 66.05 | | -1.883E+00 | 5.397E+00 | 7.898E+00 | 7.822E-01 | -0.238 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| | | 96.73 | | -3.937E-02 | 7.595E-01 | 1.101E+00 | 1.452E-01 | -0.036 |
| | | 121.11 | | 4.294E-02 | 1.241E-01 | 2.021E-01 | 1.886E-02 | 0.213 |
| | | 136.00 | | -2.215E-02 | 3.500E-02 | 5.415E-02 | 3.084E-03 | -0.409 |
| | | 198.60 | | 4.253E-01 | 1.530E+00 | 2.580E+00 | 1.751E-01 | 0.165 |
| | | 264.65 | * | 5.609E-03 | 3.669E-02 | 5.603E-02 | 3.204E-03 | 0.100 |
| | | 279.53 | | 6.882E-02 | 9.286E-02 | 1.562E-01 | 9.651E-03 | 0.441 |
| | | 303.91 | | 5.998E-01 | 1.743E+00 | 2.531E+00 | 2.408E-01 | 0.237 |
| | | 400.65 | | -1.438E-01 | 2.075E-01 | 3.338E-01 | 3.041E-02 | -0.431 |
| BR-77 | + | 87.88 | | 1.956E-03 | 2.075E-01 | Half-Life too short | | |
| | | 200.40 | | 4.788E-04 | 2.075E-01 | Half-Life too short | | |
| | + | 239.00 | | 1.032E-03 | 2.075E-01 | Half-Life too short | | |
| | | 249.79 | | -1.788E-04 | 2.075E-01 | Half-Life too short | | |
| | | 281.68 | | -1.487E-04 | 2.075E-01 | Half-Life too short | | |
| | | 297.23 | | 9.318E-04 | 2.075E-01 | Half-Life too short | | |
| | | 303.76 | | 2.200E-04 | 2.075E-01 | Half-Life too short | | |
| | | 439.47 | | 1.428E-04 | 2.075E-01 | Half-Life too short | | |
| | | 484.57 | | -2.247E-04 | 2.075E-01 | Half-Life too short | | |
| | | 520.65 | * | 1.557E-05 | 2.075E-01 | Half-Life too short | | |
| | | 574.64 | | 1.874E-04 | 2.075E-01 | Half-Life too short | | |
| | | 578.91 | | -1.492E-04 | 2.075E-01 | Half-Life too short | | |
| | | 585.48 | | 4.590E-03 | 2.075E-01 | Half-Life too short | | |
| | | 755.35 | | 4.652E-04 | 2.075E-01 | Half-Life too short | | |
| | | 817.79 | | -3.019E-04 | 2.075E-01 | Half-Life too short | | |
| SR-82 | | 698.33 | | 1.123E+01 | 2.864E+01 | 4.901E+01 | 3.990E+00 | 0.229 |
| | | 776.49 | * | -2.223E-01 | 3.357E-01 | 5.282E-01 | 4.919E-02 | -0.421 |
| | | 1395.20 | | -6.572E+00 | 8.956E+00 | 1.322E+01 | 9.853E-01 | -0.497 |
| RB-83 | | 520.41 | * | 3.469E-02 | 5.442E-02 | 9.058E-02 | 6.041E-03 | 0.383 |
| | | 529.64 | | 2.355E-02 | 8.350E-02 | 1.390E-01 | 9.361E-03 | 0.169 |
| | | 552.65 | | 5.267E-02 | 1.488E-01 | 2.483E-01 | 1.711E-02 | 0.212 |
| RB-84 | | 881.50 | * | 1.228E-02 | 5.849E-02 | 9.725E-02 | 1.072E-02 | 0.126 |
| KR-85 | | 513.99 | * | 1.241E+01 | 6.415E+00 | 1.040E+01 | 6.888E-01 | 1.194 |
| SR-85 | | 513.99 | * | 6.694E-02 | 3.460E-02 | 5.608E-02 | 3.715E-03 | 1.194 |
| RB-86 | | 1076.63 | * | 3.795E-01 | 7.183E-01 | 1.245E+00 | 9.909E-02 | 0.305 |
| Y-88 | | 898.02 | | -4.151E-02 | 3.541E-02 | 5.201E-02 | 5.896E-03 | -0.798 |
| | | 1836.01 | * | 1.350E-02 | 2.842E-02 | 4.963E-02 | 2.827E-03 | 0.272 |
| ZR-88 | | 392.90 | * | -4.675E-03 | 2.316E-02 | 3.836E-02 | 2.206E-03 | -0.122 |
| Y-91 | | 1204.90 | * | -4.435E+00 | 1.528E+01 | 2.469E+01 | 1.460E+00 | -0.180 |
| NB-94 | | 702.63 | * | 4.205E-03 | 2.594E-02 | 4.372E-02 | 3.587E-03 | 0.096 |
| | | 871.10 | | -4.828E-03 | 2.517E-02 | 4.055E-02 | 4.398E-03 | -0.119 |
| NB-95 | | 765.79 | * | 8.477E-02 | 3.848E-02 | 6.472E-02 | 5.920E-03 | 1.310 |
| NB-95M | | 235.69 | * | 2.652E-02 | 1.202E-01 | 1.762E-01 | 1.292E-02 | 0.151 |
| ZR-95 | | 724.18 | | 1.131E-01 | 8.966E-02 | 1.417E-01 | 1.314E-02 | 0.798 |
| | | 756.15 | * | 6.427E-02 | 5.662E-02 | 1.005E-01 | 9.887E-03 | 0.640 |
| NB-97 | | 657.90 | * | 6.215E+00 | 5.662E-02 | Half-Life too short | | |
| | | 1024.50 | | -1.007E+03 | 5.662E-02 | Half-Life too short | | |
| ZR-97 | | 254.15 | | 8.071E+02 | 5.662E-02 | Half-Life too short | | |
| | | 355.39 | | 6.902E+01 | 5.662E-02 | Half-Life too short | | |
| | | 507.63 | * | 5.121E+02 | 5.662E-02 | Half-Life too short | | |
| | | 602.52 | | -9.018E+01 | 5.662E-02 | Half-Life too short | | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 1021.30 | | | 5.562E+02 | 5.662E-02 | Half-Life | too short | |
| | 1147.95 | | | -6.644E+02 | 5.662E-02 | Half-Life | too short | |
| | 1362.66 | | | 6.583E+02 | 5.662E-02 | Half-Life | too short | |
| | 1750.46 | | | 2.295E+02 | 5.662E-02 | Half-Life | too short | |
| MO-99 | 140.51 | | | -5.663E+01 | 8.156E+01 | 1.204E+02 | 3.238E+01 | -0.470 |
| | 181.06 | | | 2.750E+00 | 5.105E+01 | 7.581E+01 | 1.287E+01 | 0.036 |
| | 366.43 | | | -2.248E+01 | 2.214E+02 | 3.710E+02 | 2.144E+01 | -0.061 |
| | 739.58 | * | | 1.118E+01 | 2.807E+01 | 4.790E+01 | 7.308E+00 | 0.233 |
| | 778.00 | | | 7.971E-03 | 8.699E+01 | 1.439E+02 | 1.344E+01 | 0.000 |
| TC-99M | 140.51 | * | | -1.488E+16 | 8.699E+01 | Half-Life | too short | |
| RH-101 | 127.23 | | | 1.426E-02 | 3.131E-02 | 4.570E-02 | 2.640E-03 | 0.312 |
| | 198.01 | * | | -7.716E-03 | 2.719E-02 | 4.491E-02 | 2.414E-03 | -0.172 |
| | 325.23 | | | 1.103E-01 | 1.910E-01 | 2.802E-01 | 1.619E-02 | 0.394 |
| RH-102 | 418.52 | | | 1.118E-02 | 2.296E-01 | 3.781E-01 | 2.247E-02 | 0.030 |
| | 475.06 | * | | -7.476E-03 | 2.229E-02 | 3.601E-02 | 2.287E-03 | -0.208 |
| | 631.29 | | | -6.516E-03 | 4.239E-02 | 6.746E-02 | 5.007E-03 | -0.097 |
| | 697.49 | | | 1.320E-02 | 5.563E-02 | 9.435E-02 | 7.670E-03 | 0.140 |
| | 766.84 | | | 1.841E-01 | 9.851E-02 | 1.610E-01 | 1.475E-02 | 1.143 |
| | 1046.59 | | | -2.914E-02 | 8.521E-02 | 1.386E-01 | 1.196E-02 | -0.210 |
| | 1112.84 | | | -1.622E-01 | 1.985E-01 | 2.548E-01 | 1.809E-02 | -0.637 |
| RU-103 | 497.08 | * | | -1.017E-02 | 3.191E-02 | 5.128E-02 | 6.658E-03 | -0.198 |
| + | 610.33 | | | 1.418E+01 | 2.845E+00 | 2.665E+00 | 4.274E-01 | 5.318 |
| RH-106 | 511.85 | + | | 6.262E-01 | 2.495E-01 | 3.471E-01 | 2.294E-02 | 1.804 |
| | 621.84 | * | | 6.788E-02 | 2.578E-01 | 4.228E-01 | 5.319E-02 | 0.161 |
| | 1050.47 | | | -2.534E-01 | 1.761E+00 | 2.912E+00 | 2.488E-01 | -0.087 |
| RU-106 | 511.85 | + | | 6.262E-01 | 2.495E-01 | 3.471E-01 | 2.294E-02 | 1.804 |
| | 621.84 | * | | 6.788E-02 | 2.577E-01 | 4.228E-01 | 3.111E-02 | 0.161 |
| | 1050.47 | | | -2.534E-01 | 1.761E+00 | 2.912E+00 | 2.488E-01 | -0.087 |
| AG-108M | 433.93 | * | | 2.022E-02 | 2.565E-02 | 4.443E-02 | 2.903E-03 | 0.455 |
| | 614.37 | | | 4.412E-03 | 3.409E-02 | 4.803E-02 | 3.701E-03 | 0.092 |
| | 722.95 | | | 2.304E-02 | 3.398E-02 | 5.192E-02 | 4.592E-03 | 0.444 |
| AG-110M | 657.75 | * | | 1.527E-02 | 2.989E-02 | 4.535E-02 | 3.577E-03 | 0.337 |
| | 677.61 | | | -6.798E-02 | 2.471E-01 | 4.065E-01 | 3.297E-02 | -0.167 |
| | 706.67 | | | -5.452E-02 | 1.646E-01 | 2.688E-01 | 2.288E-02 | -0.203 |
| | 763.93 | | | 4.694E-02 | 1.383E-01 | 2.039E-01 | 1.906E-02 | 0.230 |
| | 884.67 | | | -1.092E-02 | 3.919E-02 | 6.263E-02 | 7.072E-03 | -0.174 |
| | 937.48 | | | -1.199E-01 | 9.055E-02 | 1.245E-01 | 1.363E-02 | -0.963 |
| | 1384.27 | | | -7.689E-02 | 1.395E-01 | 2.145E-01 | 1.663E-02 | -0.358 |
| IN-111 | 171.28 | | | -4.005E+00 | 2.537E+00 | 3.989E+00 | 2.099E-01 | -1.004 |
| | 245.39 | * | | 9.606E-02 | 2.952E+00 | 4.267E+00 | 2.384E-01 | 0.023 |
| IN-113M | 391.69 | * | | -3.122E-02 | 3.284E-02 | 5.190E-02 | 3.184E-03 | -0.602 |
| SN-113 | 391.69 | * | | -3.122E-02 | 3.284E-02 | 5.190E-02 | 3.184E-03 | -0.602 |
| IN-114M | 190.27 | * | | 8.866E-02 | 1.755E-01 | 2.657E-01 | 1.419E-02 | 0.334 |
| CD-115 | 260.90 | | | 1.666E-04 | 1.755E-01 | Half-Life | too short | |
| | 492.35 | | | 1.012E-04 | 1.755E-01 | Half-Life | too short | |
| | 527.90 | * | | -3.612E-06 | 1.755E-01 | Half-Life | too short | |
| SN-117M | 156.02 | | | -4.219E-02 | 2.359E+00 | 3.998E+00 | 2.135E-01 | -0.011 |
| | 158.56 | * | | -2.050E-04 | 5.655E-02 | 9.579E-02 | 5.092E-03 | -0.002 |
| SB-122 | 563.90 | * | | 2.424E+00 | 5.524E+00 | 9.234E+00 | 6.435E-01 | 0.263 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| I-123 | | 692.80 | | -8.532E+01 | 1.077E+02 | 1.698E+02 | 1.369E+01 | -0.502 |
| | | 159.00 | * | 2.127E+02 | 1.077E+02 | Half-Life too short | | |
| | | 528.96 | | 2.836E+04 | 1.077E+02 | Half-Life too short | | |
| TE-123M | | 159.00 | * | 2.407E-03 | 2.346E-02 | 3.989E-02 | 2.152E-03 | 0.060 |
| I-124 | | 602.71 | * | -2.334E-01 | 1.293E+00 | 1.770E+00 | 1.280E-01 | -0.132 |
| | | 722.78 | | 5.519E+00 | 7.903E+00 | 1.210E+01 | 1.028E+00 | 0.456 |
| | | 1325.50 | | 2.565E+00 | 5.655E+01 | 9.294E+01 | 6.935E+00 | 0.028 |
| SB-124 | | 1376.25 | | 7.464E+01 | 5.966E+01 | 1.069E+02 | 8.008E+00 | 0.698 |
| | | 1509.49 | | 2.174E+01 | 2.682E+01 | 4.776E+01 | 3.422E+00 | 0.455 |
| | | 1691.02 | | -4.117E+00 | 6.368E+00 | 9.490E+00 | 6.121E-01 | -0.434 |
| | | 602.71 | | -6.448E-03 | 3.572E-02 | 4.890E-02 | 3.537E-03 | -0.132 |
| | | 645.85 | | 3.977E-01 | 3.960E-01 | 6.815E-01 | 5.525E-02 | 0.584 |
| | | 709.31 | | 1.302E-02 | 2.297E+00 | 3.833E+00 | 3.182E-01 | 0.003 |
| | | 713.82 | | 1.081E+00 | 1.344E+00 | 2.345E+00 | 2.780E-01 | 0.461 |
| | | 722.78 | | 2.210E-01 | 3.165E-01 | 4.845E-01 | 4.209E-02 | 0.456 |
| | + | 968.20 | | 1.564E+01 | 3.922E+00 | 6.187E+00 | 6.292E-01 | 2.528 |
| | | 1045.16 | | 1.881E-01 | 1.869E+00 | 3.151E+00 | 2.728E-01 | 0.060 |
| | | 1325.50 | | 1.097E-01 | 2.419E+00 | 3.975E+00 | 2.966E-01 | 0.028 |
| | | 1368.21 | | -1.741E-01 | 1.562E+00 | 2.519E+00 | 3.222E-01 | -0.069 |
| SB-125 | | 1436.60 | | 1.021E-01 | 2.917E+00 | 4.605E+00 | 3.391E-01 | 0.022 |
| | | 1691.02 | * | -3.889E-02 | 6.016E-02 | 8.964E-02 | 6.185E-03 | -0.434 |
| | | 427.89 | * | -7.507E-03 | 7.414E-02 | 1.227E-01 | 7.668E-03 | -0.061 |
| | + | 463.38 | | 8.662E-01 | 3.504E-01 | 4.556E-01 | 3.266E-02 | 1.901 |
| | | 600.56 | | 2.771E-02 | 1.462E-01 | 2.175E-01 | 1.733E-02 | 0.127 |
| TE-125M | | 635.90 | | -2.372E-02 | 2.098E-01 | 3.346E-01 | 2.760E-02 | -0.071 |
| | | 109.28 | * | -2.188E+00 | 8.627E+00 | 1.379E+01 | 1.215E+00 | -0.159 |
| I-126 | | 388.63 | | -1.251E-01 | 1.838E-01 | 2.957E-01 | 1.700E-02 | -0.423 |
| | | 666.33 | * | 9.341E-02 | 2.144E-01 | 3.217E-01 | 2.473E-02 | 0.290 |
| SB-126 | | 753.82 | | 7.489E-01 | 1.452E+00 | 2.490E+00 | 2.232E-01 | 0.301 |
| | | 223.80 | | -4.262E+00 | 4.125E+00 | 6.504E+00 | 3.575E-01 | -0.655 |
| | | 278.60 | | 4.860E+00 | 2.669E+00 | 4.679E+00 | 2.666E-01 | 1.039 |
| | + | 296.50 | | 1.640E+01 | 2.890E+00 | 4.064E+00 | 2.333E-01 | 4.037 |
| | | 414.70 | | -3.159E-02 | 8.745E-02 | 1.232E-01 | 7.284E-03 | -0.256 |
| | | 415.30 | | -7.412E+00 | 7.575E+00 | 1.012E+01 | 5.991E-01 | -0.732 |
| | | 555.20 | | -1.265E+00 | 3.896E+00 | 6.197E+00 | 4.281E-01 | -0.204 |
| | | 573.80 | | 3.163E-01 | 1.136E+00 | 1.829E+00 | 1.286E-01 | 0.173 |
| | | 593.00 | | -3.431E-01 | 9.378E-01 | 1.478E+00 | 1.059E-01 | -0.232 |
| | | 656.30 | | 1.312E+00 | 3.678E+00 | 5.510E+00 | 4.181E-01 | 0.238 |
| | | 666.33 | | 3.947E-02 | 9.058E-02 | 1.359E-01 | 1.045E-02 | 0.290 |
| | | 675.00 | | 8.692E-01 | 2.059E+00 | 3.536E+00 | 2.762E-01 | 0.246 |
| SB-127 | | 695.00 | | -2.600E-02 | 7.344E-02 | 1.197E-01 | 9.691E-03 | -0.217 |
| | | 697.00 | | 1.467E-01 | 2.526E-01 | 4.375E-01 | 3.554E-02 | 0.335 |
| | | 720.50 | * | 1.227E-01 | 1.601E-01 | 2.464E-01 | 2.086E-02 | 0.498 |
| | | 856.80 | | 4.143E-01 | 5.429E-01 | 8.237E-01 | 8.736E-02 | 0.503 |
| | | 989.30 | | -4.003E-01 | 1.163E+00 | 1.820E+00 | 1.780E-01 | -0.220 |
| | | 1034.80 | | -1.675E+00 | 9.090E+00 | 1.441E+01 | 1.279E+00 | -0.116 |
| | | 1213.00 | | 1.555E+00 | 4.964E+00 | 8.362E+00 | 5.027E-01 | 0.186 |
| | | 61.10 | | -3.956E+01 | 1.527E+02 | 2.258E+02 | 2.735E+01 | -0.175 |
| | | 252.40 | | -3.538E+00 | 8.304E+00 | 1.312E+01 | 5.508E+00 | -0.270 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 290.80 | | | 2.580E+01 | 4.390E+01 | 6.484E+01 | 7.106E+00 | 0.398 |
| | 411.60 | | | 2.118E+01 | 2.565E+01 | 3.923E+01 | 6.137E+00 | 0.540 |
| | 444.90 | | | 8.378E+00 | 1.741E+01 | 2.966E+01 | 3.721E+00 | 0.283 |
| | 473.00 | | | 1.008E+00 | 2.995E+00 | 5.041E+00 | 6.541E-01 | 0.200 |
| | 543.00 | | | -4.181E+00 | 3.058E+01 | 4.943E+01 | 7.273E+00 | -0.085 |
| | 603.60 | | | -1.330E+01 | 2.503E+01 | 3.302E+01 | 4.325E+00 | -0.403 |
| | 685.20 | * | | -2.199E-01 | 2.412E+00 | 4.010E+00 | 5.001E-01 | -0.055 |
| | 698.50 | | | 1.073E+01 | 2.665E+01 | 4.555E+01 | 7.611E+00 | 0.236 |
| | 722.20 | | | 7.366E+01 | 5.693E+01 | 9.105E+01 | 1.149E+01 | 0.809 |
| | 783.80 | | | 2.327E+00 | 6.832E+00 | 1.153E+01 | 1.654E+00 | 0.202 |
| XE-127 | 57.60 | | | 1.101E+01 | 7.560E+00 | 1.279E+01 | 9.860E-01 | 0.860 |
| | 145.22 | | | 5.979E-01 | 6.655E-01 | 1.094E+00 | 5.978E-02 | 0.547 |
| | 172.10 | | | -1.046E-01 | 1.013E-01 | 1.634E-01 | 8.603E-03 | -0.640 |
| | 202.84 | * | | -2.363E-03 | 4.171E-02 | 6.937E-02 | 3.744E-03 | -0.034 |
| | 374.96 | | | 2.988E-02 | 1.608E-01 | 2.730E-01 | 1.575E-02 | 0.109 |
| I-131 | 80.18 | | | -7.029E-01 | 6.434E+00 | 9.424E+00 | 8.253E-01 | -0.075 |
| | 284.30 | | | -4.562E-01 | 1.802E+00 | 2.891E+00 | 1.858E-01 | -0.158 |
| | 364.48 | * | | 1.132E-02 | 1.340E-01 | 2.269E-01 | 1.477E-02 | 0.050 |
| | 636.97 | | | -2.026E-01 | 1.771E+00 | 2.824E+00 | 2.275E-01 | -0.072 |
| | 722.89 | | | 5.944E+00 | 8.674E+00 | 1.326E+01 | 1.140E+00 | 0.448 |
| TE-132 | 49.72 | | | -7.717E+01 | 6.806E+01 | 1.084E+02 | 1.265E+01 | -0.712 |
| | 111.76 | | | 3.565E+01 | 7.292E+01 | 1.199E+02 | 1.303E+01 | 0.297 |
| | 116.30 | | | -9.244E+00 | 6.622E+01 | 1.059E+02 | 1.133E+01 | -0.087 |
| | 228.16 | * | | -3.378E-01 | 1.549E+00 | 2.535E+00 | 3.888E-01 | -0.133 |
| BA-133 | 53.15 | | | 3.120E+00 | 4.255E+00 | 7.353E+00 | 5.835E-01 | 0.424 |
| | 79.62 | | | -4.237E-02 | 1.109E+00 | 1.823E+00 | 2.777E-01 | -0.023 |
| | 81.00 | | | -1.132E-01 | 9.633E-02 | 1.309E-01 | 2.085E-02 | -0.865 |
| | 276.40 | | | 3.379E-02 | 3.571E-01 | 5.123E-01 | 6.617E-02 | 0.066 |
| | 302.84 | | | 1.321E-01 | 1.151E-01 | 1.761E-01 | 2.049E-02 | 0.750 |
| | 356.01 | * | | -8.731E-03 | 4.143E-02 | 5.665E-02 | 6.544E-03 | -0.154 |
| | 383.85 | | | -8.291E-02 | 2.264E-01 | 3.666E-01 | 3.977E-02 | -0.226 |
| I-133 | 510.53 | + | | 5.968E+01 | 2.264E-01 | Half-Life | too short | |
| | 529.87 | * | | 7.366E-02 | 2.264E-01 | Half-Life | too short | |
| | 706.58 | | | -4.298E+00 | 2.264E-01 | Half-Life | too short | |
| | 856.28 | | | 4.814E+00 | 2.264E-01 | Half-Life | too short | |
| | 875.33 | | | 8.838E-01 | 2.264E-01 | Half-Life | too short | |
| | 1236.41 | | | 6.564E+01 | 2.264E-01 | Half-Life | too short | |
| | 1298.22 | | | 1.889E+00 | 2.264E-01 | Half-Life | too short | |
| CS-134 | 475.35 | | | -3.000E-01 | 1.454E+00 | 2.369E+00 | 1.505E-01 | -0.127 |
| | 563.23 | | | -9.416E-02 | 2.750E-01 | 4.366E-01 | 3.085E-02 | -0.216 |
| | 569.32 | | | -1.186E-01 | 1.665E-01 | 2.515E-01 | 1.798E-02 | -0.472 |
| | 604.70 | | | -1.175E-02 | 3.024E-02 | 4.055E-02 | 2.948E-03 | -0.290 |
| | 795.84 | * | | 5.754E-02 | 3.816E-02 | 6.824E-02 | 6.600E-03 | 0.843 |
| | 801.93 | | | 8.667E-02 | 2.978E-01 | 5.016E-01 | 4.893E-02 | 0.173 |
| | 1038.57 | | | -1.807E+00 | 2.784E+00 | 4.403E+00 | 3.874E-01 | -0.410 |
| | 1167.94 | | | -8.308E-01 | 2.032E+00 | 3.264E+00 | 1.851E-01 | -0.255 |
| | 1365.15 | | | 2.311E-01 | 1.015E+00 | 1.693E+00 | 1.346E-01 | 0.137 |
| CS-135 | 268.24 | * | | 2.455E-01 | 1.403E-01 | 2.215E-01 | 1.675E-02 | 1.108 |
| I-135 | 288.45 | | | -8.544E+14 | 1.403E-01 | Half-Life | too short | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| CS-136 | | 417.63 | | -2.213E+13 | 1.403E-01 | Half-Life | too short | |
| | | 546.56 | | 8.829E+14 | 1.403E-01 | Half-Life | too short | |
| | | 836.80 | | -4.621E+14 | 1.403E-01 | Half-Life | too short | |
| | | 1038.76 | | -1.570E+15 | 1.403E-01 | Half-Life | too short | |
| | | 1124.00 | | 6.676E+15 | 1.403E-01 | Half-Life | too short | |
| | | 1131.51 | | -4.397E+14 | 1.403E-01 | Half-Life | too short | |
| | | 1260.41 | * | -7.660E+13 | 1.403E-01 | Half-Life | too short | |
| | | 1457.56 | | 1.549E+17 | 1.403E-01 | Half-Life | too short | |
| | | 1678.03 | | -4.584E+14 | 1.403E-01 | Half-Life | too short | |
| | | 1706.46 | | -2.449E+15 | 1.403E-01 | Half-Life | too short | |
| | | 1791.20 | | -3.759E+14 | 1.403E-01 | Half-Life | too short | |
| | | 66.91 | | -3.887E-02 | 1.074E+00 | 1.596E+00 | 2.411E-01 | -0.024 |
| | + | 86.29 | | 3.670E+00 | 1.696E+00 | 2.351E+00 | 3.101E-01 | 1.561 |
| | | 153.22 | | 1.003E+00 | 6.872E-01 | 1.220E+00 | 8.405E-02 | 0.822 |
| | | 163.89 | | 1.285E-01 | 1.083E+00 | 1.838E+00 | 1.257E-01 | 0.070 |
| | | 176.55 | | 2.098E-01 | 3.767E-01 | 6.469E-01 | 3.925E-02 | 0.324 |
| | | 273.65 | | -5.679E-01 | 5.514E-01 | 7.324E-01 | 4.776E-02 | -0.776 |
| | | 340.57 | | 4.036E-01 | 1.678E-01 | 2.672E-01 | 1.646E-02 | 1.510 |
| | | 818.51 | | -1.141E-02 | 6.345E-02 | 1.028E-01 | 1.027E-02 | -0.111 |
| | | 1048.07 | * | 6.153E-03 | 1.045E-01 | 1.756E-01 | 1.575E-02 | 0.035 |
| | | 1235.34 | | 1.452E+00 | 7.307E-01 | 1.186E+00 | 1.219E-01 | 1.225 |
| CE-139 | | 165.85 | * | 1.802E-03 | 2.422E-02 | 4.104E-02 | 2.154E-03 | 0.044 |
| BA-140 | | 162.64 | | 4.142E-02 | 7.698E-01 | 1.305E+00 | 7.910E-02 | 0.032 |
| | | 304.84 | | -1.358E+00 | 1.498E+00 | 1.898E+00 | 5.178E-01 | -0.716 |
| | | 423.70 | | -1.214E+00 | 1.954E+00 | 3.077E+00 | 9.792E-01 | -0.394 |
| LA-140 | | 537.32 | * | -1.137E-01 | 2.630E-01 | 4.128E-01 | 1.350E-01 | -0.275 |
| | + | 328.77 | | 5.738E-01 | 3.439E-01 | 5.463E-01 | 3.540E-02 | 1.050 |
| | | 432.53 | | 2.268E+00 | 2.086E+00 | 3.665E+00 | 2.430E-01 | 0.619 |
| | | 487.03 | | -9.929E-02 | 1.367E-01 | 2.144E-01 | 1.529E-02 | -0.463 |
| | | 751.79 | | -5.374E-01 | 1.694E+00 | 2.748E+00 | 2.700E-01 | -0.196 |
| | | 815.85 | | -2.074E-01 | 2.824E-01 | 4.336E-01 | 4.686E-02 | -0.478 |
| | | 867.82 | | 7.577E-01 | 1.364E+00 | 2.182E+00 | 2.435E-01 | 0.347 |
| | | 919.63 | | 9.387E-01 | 2.580E+00 | 4.331E+00 | 5.472E-01 | 0.217 |
| | | 925.24 | | -2.876E-01 | 1.013E+00 | 1.605E+00 | 1.818E-01 | -0.179 |
| | | 1596.49 | * | -5.542E-02 | 8.736E-02 | 1.343E-01 | 9.212E-03 | -0.413 |
| CE-141 | | 145.44 | * | 4.938E-02 | 6.084E-02 | 9.965E-02 | 5.689E-03 | 0.496 |
| CE-143 | | 57.37 | | 1.656E-02 | 6.084E-02 | Half-Life | too short | |
| | | 231.56 | | 6.119E-03 | 6.084E-02 | Half-Life | too short | |
| | | 293.26 | * | 8.387E-03 | 6.084E-02 | Half-Life | too short | |
| | + | 350.59 | | 3.564E-01 | 6.084E-02 | Half-Life | too short | |
| | | 490.36 | | -3.304E-03 | 6.084E-02 | Half-Life | too short | |
| | | 664.57 | | 1.795E-02 | 6.084E-02 | Half-Life | too short | |
| | | 721.93 | | 1.577E-02 | 6.084E-02 | Half-Life | too short | |
| CE-144 | | 80.11 | | -1.494E-01 | 1.981E+00 | 2.907E+00 | 2.517E-01 | -0.051 |
| | | 133.54 | * | 3.680E-02 | 2.015E-01 | 2.887E-01 | 4.082E-02 | 0.127 |
| PM-144 | | 476.78 | | -2.596E-02 | 5.234E-02 | 8.365E-02 | 6.209E-03 | -0.310 |
| | | 618.01 | | 1.523E-02 | 2.625E-02 | 4.170E-02 | 3.175E-03 | 0.365 |
| | | 696.49 | * | 9.970E-03 | 2.503E-02 | 4.288E-02 | 3.482E-03 | 0.233 |
| | | 778.57 | | -2.925E-01 | 1.761E+00 | 2.878E+00 | 2.691E-01 | -0.102 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PR-144 | | 696.49 | * | 6.773E-01 | 1.700E+00 | 2.913E+00 | 2.364E-01 | 0.233 |
| | | 1489.15 | | -5.666E+00 | 9.582E+00 | 1.431E+01 | 1.034E+00 | -0.396 |
| PM-146 | | 453.90 | * | 1.869E-02 | 3.192E-02 | 5.466E-02 | 4.863E-03 | 0.342 |
| | | 633.02 | | 8.751E-01 | 1.094E+00 | 1.785E+00 | 6.625E-01 | 0.490 |
| | | 735.90 | | 2.133E-02 | 1.098E-01 | 1.810E-01 | 5.181E-02 | 0.118 |
| | | 747.13 | | -1.842E-02 | 6.643E-02 | 1.080E-01 | 1.532E-02 | -0.171 |
| ND-147 | + | 91.11 | | 5.977E-01 | 3.664E-01 | 6.104E-01 | 5.742E-02 | 0.979 |
| | | 319.41 | | 4.575E+00 | 3.348E+00 | 5.797E+00 | 3.350E-01 | 0.789 |
| | | 439.89 | | 2.012E+00 | 5.835E+00 | 9.885E+00 | 6.033E-01 | 0.204 |
| | | 531.02 | * | 2.595E-01 | 5.841E-01 | 9.805E-01 | 1.368E-01 | 0.265 |
| PM-149 | | 285.90 | * | -8.684E-05 | 5.841E-01 | Half-Life | too short | |
| EU-152 | | 121.78 | | 2.571E-02 | 6.463E-02 | 1.054E-01 | 8.124E-03 | 0.244 |
| | | 244.69 | | 1.909E-01 | 2.827E-01 | 4.253E-01 | 2.376E-02 | 0.449 |
| | | 344.27 | * | -1.013E-01 | 9.624E-02 | 1.231E-01 | 8.031E-03 | -0.823 |
| | | 443.98 | | 2.494E-01 | 7.165E-01 | 1.213E+00 | 7.435E-02 | 0.206 |
| | | 778.89 | | 1.733E-02 | 1.980E-01 | 3.296E-01 | 3.082E-02 | 0.053 |
| | | 867.32 | | 2.439E-01 | 6.470E-01 | 9.867E-01 | 1.064E-01 | 0.247 |
| | + | 964.01 | | 4.870E-01 | 3.329E-01 | 4.727E-01 | 4.842E-02 | 1.030 |
| | | 1085.78 | | -6.787E-02 | 2.923E-01 | 4.782E-01 | 3.705E-02 | -0.142 |
| | | 1112.02 | | -2.216E-01 | 2.571E-01 | 3.558E-01 | 2.533E-02 | -0.623 |
| | | 1407.95 | | 2.515E-01 | 1.640E-01 | 3.009E-01 | 2.235E-02 | 0.836 |
| GD-153 | | 69.67 | | -9.448E-01 | 1.555E+00 | 2.519E+00 | 2.044E-01 | -0.375 |
| | | 83.37 | | 5.176E+00 | 1.883E+01 | 2.220E+01 | 1.972E+00 | 0.233 |
| | | 97.43 | * | -2.370E-02 | 7.756E-02 | 1.108E-01 | 8.660E-03 | -0.214 |
| | | 103.18 | | -7.571E-02 | 9.644E-02 | 1.512E-01 | 1.090E-02 | -0.501 |
| EU-154 | | 123.07 | | -1.316E-02 | 4.617E-02 | 7.311E-02 | 6.914E-03 | -0.180 |
| | | 247.94 | | 1.313E-01 | 2.881E-01 | 4.500E-01 | 4.239E-02 | 0.292 |
| | | 591.81 | | 9.895E-02 | 4.844E-01 | 7.950E-01 | 8.456E-02 | 0.124 |
| | | 723.30 | | 8.279E-02 | 1.484E-01 | 2.239E-01 | 2.110E-02 | 0.370 |
| | | 756.87 | | 7.978E-01 | 5.910E-01 | 1.055E+00 | 1.293E-01 | 0.756 |
| | | 873.19 | | 6.249E-02 | 2.172E-01 | 3.637E-01 | 5.066E-02 | 0.172 |
| | | 996.32 | | -6.088E-02 | 2.694E-01 | 4.264E-01 | 7.797E-02 | -0.143 |
| | | 1004.76 | | -1.620E-01 | 1.754E-01 | 2.601E-01 | 3.197E-02 | -0.623 |
| | | 1274.45 | * | -1.194E-01 | 9.864E-02 | 1.440E-01 | 1.438E-02 | -0.830 |
| EU-155 | | 48.70 | | -2.275E+00 | 3.138E+00 | 5.136E+00 | 3.896E-01 | -0.443 |
| | | 60.01 | | 1.182E+00 | 5.635E+00 | 8.549E+00 | 6.523E-01 | 0.138 |
| | + | 86.54 | | 2.632E-01 | 1.191E-01 | 1.718E-01 | 1.582E-02 | 1.533 |
| | | 105.31 | * | 1.281E-01 | 9.618E-02 | 1.634E-01 | 1.168E-02 | 0.784 |
| TB-160 | + | 86.79 | | 7.351E-01 | 3.325E-01 | 4.837E-01 | 4.425E-02 | 1.520 |
| | | 197.04 | | -3.715E-01 | 4.815E-01 | 7.798E-01 | 4.188E-02 | -0.476 |
| | | 215.65 | | 4.335E-01 | 7.078E-01 | 1.068E+00 | 5.831E-02 | 0.406 |
| | | 298.57 | | -2.226E-02 | 1.669E-01 | 1.669E-01 | 9.588E-03 | -0.133 |
| | | 879.36 | * | -7.523E-03 | 1.127E-01 | 1.833E-01 | 2.014E-02 | -0.041 |
| | | 962.29 | | 1.026E+00 | 5.323E-01 | 8.584E-01 | 8.818E-02 | 1.196 |
| | | 966.15 | | 1.491E+00 | 2.777E-01 | 4.836E-01 | 4.935E-02 | 3.082 |
| | | 1177.93 | | -8.519E-02 | 2.789E-01 | 4.504E-01 | 2.514E-02 | -0.189 |
| | | 1271.85 | | 1.392E-01 | 5.605E-01 | 9.400E-01 | 6.352E-02 | 0.148 |
| HO-166M | | 80.57 | | -1.137E-01 | 2.551E-01 | 3.668E-01 | 3.187E-02 | -0.310 |
| | | 184.41 | | 1.075E-01 | 3.267E-02 | 5.475E-02 | 2.909E-03 | 1.965 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 280.46 | | -4.707E-02 | 7.128E-02 | 1.123E-01 | 6.404E-03 | -0.419 |
| | | 410.95 | | 1.609E-01 | 2.229E-01 | 3.402E-01 | 2.003E-02 | 0.473 |
| | | 711.68 | * | 2.652E-02 | 4.693E-02 | 8.096E-02 | 6.748E-03 | 0.328 |
| | | 752.31 | | 6.885E-02 | 2.094E-01 | 3.550E-01 | 3.174E-02 | 0.194 |
| | | 810.29 | | -2.929E-03 | 4.206E-02 | 6.894E-02 | 6.788E-03 | -0.042 |
| TM-171 | | 51.35 | | -3.623E+00 | 3.774E+01 | 6.335E+01 | 5.021E+00 | -0.057 |
| | | 52.39 | | 1.946E+01 | 1.898E+01 | 3.314E+01 | 2.633E+00 | 0.587 |
| | | 59.40 | | 2.948E+01 | 3.038E+01 | 4.780E+01 | 3.629E+00 | 0.617 |
| | | 66.72 | * | -1.462E+01 | 3.093E+01 | 4.495E+01 | 3.594E+00 | -0.325 |
| LU-176 | + | 88.36 | | 5.175E-01 | 2.340E-01 | 3.369E-01 | 3.094E-02 | 1.536 |
| | | 201.83 | | -9.234E-03 | 2.384E-02 | 3.915E-02 | 2.112E-03 | -0.236 |
| | | 306.84 | * | -9.132E-03 | 2.089E-02 | 3.023E-02 | 1.741E-03 | -0.302 |
| | | 401.10 | | -2.634E+00 | 5.307E+00 | 8.644E+00 | 5.025E-01 | -0.305 |
| LU-177 | | 112.95 | | -1.383E-01 | 2.383E+00 | 3.834E+00 | 2.470E-01 | -0.036 |
| | + | 208.36 | * | 6.626E+00 | 2.395E+00 | 2.719E+00 | 1.475E-01 | 2.437 |
| LU-177M | | 52.97 | | 2.213E+00 | 1.951E+00 | 3.417E+00 | 2.713E-01 | 0.648 |
| | | 54.07 | | 2.490E-02 | 1.016E+00 | 1.709E+00 | 1.351E-01 | 0.015 |
| | + | 61.30 | | 2.338E+00 | 2.706E+00 | 2.530E+00 | 1.955E-01 | 0.924 |
| | | 121.62 | | 1.324E-01 | 3.381E-01 | 5.516E-01 | 3.272E-02 | 0.240 |
| | | 147.16 | | 4.044E-01 | 5.739E-01 | 9.360E-01 | 5.093E-02 | 0.432 |
| | | 171.86 | | -5.777E-01 | 3.860E-01 | 6.095E-01 | 3.208E-02 | -0.948 |
| | + | 218.09 | | 4.814E-02 | 7.020E-01 | 1.168E+00 | 6.386E-02 | 0.041 |
| | | 268.79 | | 2.403E+00 | 1.080E+00 | 1.222E+00 | 6.931E-02 | 1.966 |
| | | 319.02 | | 3.054E-01 | 1.974E-01 | 3.447E-01 | 1.990E-02 | 0.886 |
| | | 367.43 | | 2.391E-01 | 7.001E-01 | 1.200E+00 | 6.927E-02 | 0.199 |
| | | 413.65 | * | -2.206E-02 | 1.599E-01 | 2.294E-01 | 1.355E-02 | -0.096 |
| HF-181 | | 56.28 | | -1.806E+00 | 1.179E+00 | 1.844E+00 | 1.437E-01 | -0.980 |
| | | 57.53 | | 8.288E-01 | 6.294E-01 | 1.060E+00 | 8.176E-02 | 0.782 |
| | | 65.20 | | -6.766E-01 | 1.137E+00 | 1.644E+00 | 1.304E-01 | -0.412 |
| | | 133.02 | | 1.003E-01 | 6.648E-02 | 1.012E-01 | 5.722E-03 | 0.992 |
| | | 136.25 | | -1.744E-01 | 4.230E-01 | 6.612E-01 | 3.702E-02 | -0.264 |
| | | 345.85 | | 1.891E-02 | 1.917E-01 | 2.695E-01 | 1.559E-02 | 0.070 |
| | | 482.03 | * | 2.279E-02 | 3.576E-02 | 6.113E-02 | 3.913E-03 | 0.373 |
| W-181 | | 56.28 | | -6.710E-01 | 4.385E-01 | 6.859E-01 | 5.343E-02 | -0.978 |
| | | 57.53 | | 3.082E-01 | 2.342E-01 | 3.946E-01 | 3.043E-02 | 0.781 |
| | | 65.20 | * | -2.498E-01 | 4.198E-01 | 6.070E-01 | 4.815E-02 | -0.412 |
| TA-182 | | 67.75 | | -4.322E-02 | 1.220E-01 | 1.782E-01 | 1.432E-02 | -0.243 |
| | | 100.10 | | 1.752E-02 | 1.615E-01 | 2.636E-01 | 1.982E-02 | 0.066 |
| | | 152.43 | | 2.004E-01 | 2.995E-01 | 4.867E-01 | 2.618E-02 | 0.412 |
| | | 222.10 | | 1.206E-02 | 2.752E-01 | 4.566E-01 | 2.506E-02 | 0.026 |
| | | 1001.68 | | -2.086E-01 | 1.665E+00 | 2.670E+00 | 2.549E-01 | -0.078 |
| | + | 1121.28 | | 5.231E-01 | 1.896E-01 | 2.886E-01 | 1.988E-02 | 1.812 |
| | | 1189.05 | | 2.616E-02 | 2.326E-01 | 3.878E-01 | 2.217E-02 | 0.067 |
| | | 1221.42 | * | -2.297E-02 | 1.537E-01 | 2.506E-01 | 1.533E-02 | -0.092 |
| | | 1230.97 | | -6.064E-02 | 4.504E-01 | 6.244E-01 | 3.894E-02 | -0.097 |
| RE-183 | | 57.98 | | 4.210E-01 | 2.479E-01 | 4.021E-01 | 3.089E-02 | 1.047 |
| | | 59.32 | | 1.295E-01 | 1.307E-01 | 2.059E-01 | 1.564E-02 | 0.629 |
| | | 67.20 | | 8.490E-02 | 2.214E-01 | 3.355E-01 | 2.689E-02 | 0.253 |
| | | 162.32 | * | -1.128E-02 | 9.075E-02 | 1.528E-01 | 8.066E-03 | -0.074 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| RE-184 | + | 208.81 | | 3.797E+00 | 1.373E+00 | 1.585E+00 | 8.602E-02 | 2.395 |
| | | 291.72 | | 2.626E-01 | 8.616E-01 | 1.249E+00 | 7.157E-02 | 0.210 |
| | | 57.98 | | 1.508E+00 | 8.881E-01 | 1.441E+00 | 1.107E-01 | 1.047 |
| | | 59.32 | | 4.637E-01 | 4.681E-01 | 7.371E-01 | 5.600E-02 | 0.629 |
| | | 67.20 | | 3.041E-01 | 7.931E-01 | 1.202E+00 | 9.633E-02 | 0.253 |
| | | 161.27 | | -2.100E-01 | 2.874E-01 | 4.727E-01 | 2.500E-02 | -0.444 |
| | | 216.55 | | 3.960E-02 | 2.257E-01 | 3.649E-01 | 1.993E-02 | 0.109 |
| | | 252.85 | * | 2.664E-02 | 1.852E-01 | 3.059E-01 | 1.718E-02 | 0.087 |
| | | 318.01 | | 1.771E-01 | 3.559E-01 | 5.893E-01 | 3.401E-02 | 0.301 |
| | | 792.07 | | 2.477E-01 | 8.306E-01 | 1.397E+00 | 1.335E-01 | 0.177 |
| OS-185 | | 903.28 | | 4.648E-01 | 9.085E-01 | 1.389E+00 | 1.559E-01 | 0.335 |
| | | 920.93 | | 2.184E-01 | 3.260E-01 | 5.604E-01 | 6.140E-02 | 0.390 |
| | | 59.72 | | 1.224E-01 | 3.509E-01 | 5.361E-01 | 4.077E-02 | 0.228 |
| | | 61.14 | | -4.262E-02 | 1.890E-01 | 2.801E-01 | 2.161E-02 | -0.152 |
| | | 69.30 | | -2.282E-01 | 2.866E-01 | 4.607E-01 | 3.732E-02 | -0.495 |
| | | 592.07 | | 1.583E-01 | 2.067E+00 | 3.364E+00 | 2.409E-01 | 0.047 |
| | | 646.12 | * | 2.312E-02 | 3.320E-02 | 5.603E-02 | 4.214E-03 | 0.413 |
| | | 717.42 | | -6.307E-01 | 7.707E-01 | 1.147E+00 | 9.660E-02 | -0.550 |
| | | 874.81 | | -1.866E-01 | 4.614E-01 | 7.297E-01 | 7.959E-02 | -0.256 |
| | | 880.27 | | 1.168E-01 | 6.225E-01 | 1.033E+00 | 1.136E-01 | 0.113 |
| RE-188 | | 155.03 | * | 4.843E-02 | 1.503E-01 | 2.577E-01 | 1.379E-02 | 0.188 |
| | | 477.96 | | -1.596E+00 | 2.550E+00 | 4.044E+00 | 2.577E-01 | -0.395 |
| | | 633.10 | | 1.958E+00 | 2.213E+00 | 3.784E+00 | 2.813E-01 | 0.518 |
| W-188 | + | 63.58 | | 9.042E+01 | 1.047E+02 | 9.677E+01 | 7.603E+00 | 0.934 |
| | | 227.08 | | -8.740E-01 | 1.091E+01 | 1.755E+01 | 9.673E-01 | -0.050 |
| IR-192 | | 290.67 | * | 3.782E+00 | 6.681E+00 | 9.869E+00 | 5.653E-01 | 0.383 |
| | + | 295.96 | | 1.004E+00 | 1.772E-01 | 2.529E-01 | 1.475E-02 | 3.970 |
| | | 308.46 | | 8.402E-02 | 7.756E-02 | 1.324E-01 | 7.717E-03 | 0.634 |
| | | 316.51 | * | -2.043E-02 | 2.817E-02 | 4.347E-02 | 2.521E-03 | -0.470 |
| | | 468.07 | | 1.819E-02 | 5.893E-02 | 8.669E-02 | 6.178E-03 | 0.210 |
| AU-195 | | 604.41 | | -1.645E-01 | 4.262E-01 | 5.713E-01 | 6.942E-02 | -0.288 |
| | | 612.46 | | 2.528E+00 | 7.884E-01 | 1.312E+00 | 1.151E-01 | 1.927 |
| | | 65.12 | | -1.552E-01 | 1.935E-01 | 2.800E-01 | 2.220E-02 | -0.554 |
| | | 66.83 | | -8.705E-03 | 1.019E-01 | 1.511E-01 | 1.209E-02 | -0.058 |
| | + | 75.70 | | 1.006E+00 | 2.330E-01 | 4.287E-01 | 3.601E-02 | 2.347 |
| | | 98.88 | * | 1.577E-01 | 2.074E-01 | 3.321E-01 | 2.541E-02 | 0.475 |
| TL-200 | + | 129.76 | | 5.783E+00 | 3.601E+00 | 4.457E+00 | 2.550E-01 | 1.298 |
| | | 367.94 | * | 4.042E-03 | 3.601E+00 | Half-Life | too short | |
| | | 579.30 | | 5.875E-02 | 3.601E+00 | Half-Life | too short | |
| | | 828.27 | | 1.693E-02 | 3.601E+00 | Half-Life | too short | |
| TL-201 | | 1205.75 | | 1.921E-03 | 3.601E+00 | Half-Life | too short | |
| | | 68.90 | | -8.149E+00 | 1.332E+01 | 2.159E+01 | 1.745E+00 | -0.377 |
| | | 70.82 | | -1.811E+00 | 8.281E+00 | 1.217E+01 | 9.935E-01 | -0.149 |
| | | 80.30 | | -6.689E+00 | 1.414E+01 | 2.031E+01 | 1.761E+00 | -0.329 |
| | | 135.34 | | -5.702E+01 | 6.650E+01 | 1.018E+02 | 5.719E+00 | -0.560 |
| TL-202 | | 167.43 | * | 1.780E+01 | 1.642E+01 | 2.880E+01 | 1.512E+00 | 0.618 |
| | | 68.90 | | -3.214E-01 | 5.254E-01 | 8.516E-01 | 6.884E-02 | -0.377 |
| | | 70.82 | | -7.122E-02 | 3.257E-01 | 4.786E-01 | 3.908E-02 | -0.149 |
| | | 80.30 | | -2.632E-01 | 5.565E-01 | 7.992E-01 | 6.929E-02 | -0.329 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| HG-203 | | 439.56 | * | 2.265E-02 | 6.645E-02 | 1.126E-01 | 6.864E-03 | 0.201 |
| | | 70.83 | | -2.472E-01 | 1.154E+00 | 1.696E+00 | 2.259E-01 | -0.146 |
| | | 72.87 | | 7.639E-01 | 6.748E-01 | 1.041E+00 | 1.350E-01 | 0.734 |
| | | 82.60 | | -1.329E+00 | 1.228E+00 | 1.667E+00 | 2.313E-01 | -0.797 |
| BI-207 | | 279.20 | * | 5.164E-02 | 3.631E-02 | 6.273E-02 | 3.804E-03 | 0.823 |
| | | 72.80 | | 1.773E-01 | 1.822E-01 | 2.813E-01 | 2.322E-02 | 0.630 |
| | + | 74.97 | | 5.481E-01 | 1.269E-01 | 2.097E-01 | 1.753E-02 | 2.614 |
| | | 84.90 | | 1.910E-01 | 1.885E-01 | 2.847E-01 | 2.562E-02 | 0.671 |
| TL-207 | | 569.67 | | -2.431E-02 | 2.619E-02 | 3.897E-02 | 2.731E-03 | -0.624 |
| | | 1063.62 | * | 3.296E-03 | 3.785E-02 | 6.365E-02 | 5.255E-03 | 0.052 |
| | | 1770.23 | | -5.111E-02 | 3.495E-01 | 4.687E-01 | 2.836E-02 | -0.109 |
| | | 81.07 | | -2.557E-01 | 2.095E-01 | 2.876E-01 | 2.508E-02 | -0.889 |
| PO-209 | | 83.78 | | 1.868E-01 | 1.324E-01 | 1.887E-01 | 1.682E-02 | 0.990 |
| | | 94.90 | | 4.828E-01 | 2.268E-01 | 3.593E-01 | 2.925E-02 | 1.344 |
| | | 122.32 | | 7.029E-01 | 1.566E+00 | 2.558E+00 | 1.737E-01 | 0.275 |
| | | 144.24 | | 7.734E-02 | 5.975E-01 | 9.530E-01 | 6.650E-02 | 0.081 |
| BI-210 | | 154.21 | | 2.230E-01 | 3.267E-01 | 5.668E-01 | 3.772E-02 | 0.393 |
| | + | 269.46 | | 5.509E-01 | 2.479E-01 | 2.919E-01 | 1.734E-02 | 1.887 |
| | | 323.87 | * | -2.767E-02 | 5.730E-01 | 8.016E-01 | 1.323E-01 | -0.035 |
| | + | 338.28 | | 5.297E+00 | 1.550E+00 | 1.998E+00 | 2.103E-01 | 2.651 |
| PB-210 | | 445.03 | | 2.069E-01 | 1.724E+00 | 2.880E+00 | 3.013E-01 | 0.072 |
| | | 260.50 | | 5.847E+00 | 7.199E+00 | 1.225E+01 | 6.915E-01 | 0.477 |
| | | 262.80 | | -1.132E+01 | 2.051E+01 | 3.258E+01 | 1.842E+00 | -0.347 |
| | | 896.60 | * | -5.048E-01 | 5.792E+00 | 9.393E+00 | 1.059E+00 | -0.054 |
| PB-211 | | 46.50 | * | 1.135E+00 | 4.828E+00 | 8.248E+00 | 6.381E-01 | 0.138 |
| | | 46.50 | * | 1.135E+00 | 4.828E+00 | 8.248E+00 | 6.381E-01 | 0.138 |
| | | 46.50 | * | 1.135E+00 | 4.828E+00 | 8.248E+00 | 5.486E-01 | 0.138 |
| | | 404.84 | * | 1.457E-02 | 8.643E-01 | 1.254E+00 | 7.818E-01 | 0.012 |
| BI-212 | | 427.08 | | -5.673E-01 | 1.672E+00 | 2.669E+00 | 1.650E+00 | -0.213 |
| | | 831.96 | | 3.129E-01 | 9.348E-01 | 1.540E+00 | 9.689E-01 | 0.203 |
| | + | 727.18 | * | 9.693E-01 | 4.031E-01 | 4.924E-01 | 4.904E-02 | 1.969 |
| | | 785.46 | | 1.622E+00 | 1.404E+00 | 2.478E+00 | 2.343E-01 | 0.654 |
| PO-215 | | 1620.62 | | -6.784E-01 | 1.026E+00 | 1.567E+00 | 1.059E-01 | -0.433 |
| | | 81.07 | | -2.557E-01 | 2.095E-01 | 2.876E-01 | 2.508E-02 | -0.889 |
| | | 83.78 | | 1.868E-01 | 1.324E-01 | 1.887E-01 | 1.682E-02 | 0.990 |
| | | 94.90 | | 4.828E-01 | 2.268E-01 | 3.593E-01 | 2.925E-02 | 1.344 |
| RN-219 | | 122.32 | | 7.029E-01 | 1.566E+00 | 2.558E+00 | 1.737E-01 | 0.275 |
| | | 144.24 | | 7.734E-02 | 5.975E-01 | 9.530E-01 | 6.650E-02 | 0.081 |
| | | 154.21 | | 2.230E-01 | 3.267E-01 | 5.668E-01 | 3.772E-02 | 0.393 |
| | + | 269.46 | | 5.509E-01 | 2.479E-01 | 2.919E-01 | 1.734E-02 | 1.887 |
| RA-223 | | 323.87 | * | -2.767E-02 | 5.730E-01 | 8.016E-01 | 1.323E-01 | -0.035 |
| | + | 338.28 | | 5.297E+00 | 1.550E+00 | 1.998E+00 | 2.103E-01 | 2.651 |
| | | 445.03 | | 2.069E-01 | 1.724E+00 | 2.880E+00 | 3.013E-01 | 0.072 |
| | + | 271.23 | | 7.068E-01 | 3.203E-01 | 3.851E-01 | 3.087E-02 | 1.835 |
| RN-220 | | 401.81 | * | 1.264E-02 | 3.214E-01 | 5.386E-01 | 7.333E-02 | 0.023 |
| | | 549.76 | * | -1.032E+01 | 1.979E+01 | 3.106E+01 | 2.134E+00 | -0.332 |
| | | 81.07 | | -2.557E-01 | 2.095E-01 | 2.876E-01 | 2.508E-02 | -0.889 |
| | | 83.78 | | 1.868E-01 | 1.324E-01 | 1.887E-01 | 1.682E-02 | 0.990 |
| RA-223 | | 94.90 | | 4.828E-01 | 2.268E-01 | 3.593E-01 | 2.925E-02 | 1.344 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AC-227 | | 122.32 | | 7.029E-01 | 1.566E+00 | 2.558E+00 | 1.737E-01 | 0.275 |
| | | 144.24 | | 7.734E-02 | 5.975E-01 | 9.530E-01 | 6.650E-02 | 0.081 |
| | | 154.21 | | 2.230E-01 | 3.267E-01 | 5.668E-01 | 3.772E-02 | 0.393 |
| | + | 269.46 | | 5.509E-01 | 2.479E-01 | 2.919E-01 | 1.734E-02 | 1.887 |
| | | 323.87 | * | -2.767E-02 | 5.730E-01 | 8.016E-01 | 1.323E-01 | -0.035 |
| | + | 338.28 | | 5.297E+00 | 1.550E+00 | 1.998E+00 | 2.103E-01 | 2.651 |
| | | 445.03 | | 2.069E-01 | 1.724E+00 | 2.880E+00 | 3.013E-01 | 0.072 |
| | | 79.80 | | 1.124E-01 | 1.527E+00 | 2.258E+00 | 4.858E-01 | 0.050 |
| | | 236.00 | | 4.838E-01 | 2.242E-01 | 3.521E-01 | 3.632E-02 | 1.374 |
| | | 256.20 | * | -6.517E-02 | 3.008E-01 | 4.876E-01 | 6.773E-02 | -0.134 |
| | | 286.10 | | -3.931E-01 | 1.210E+00 | 1.932E+00 | 2.226E-01 | -0.203 |
| | + | 299.80 | | 2.136E+00 | 1.610E+00 | 2.073E+00 | 3.372E-01 | 1.030 |
| TH-227 | | 304.40 | | -2.483E-01 | 1.572E+00 | 2.192E+00 | 3.789E-01 | -0.113 |
| | | 334.20 | | -9.051E-01 | 2.304E+00 | 2.884E+00 | 5.286E-01 | -0.314 |
| | | 79.80 | | 1.124E-01 | 1.527E+00 | 2.258E+00 | 4.920E-01 | 0.050 |
| | + | 94.00 | | 1.004E+01 | 3.548E+00 | 3.464E+00 | 7.496E-01 | 2.899 |
| | | 236.00 | | 4.838E-01 | 2.227E-01 | 3.521E-01 | 3.133E-02 | 1.374 |
| | | 256.20 | * | -6.517E-02 | 3.008E-01 | 4.876E-01 | 8.212E-02 | -0.134 |
| | | 286.10 | | -3.931E-01 | 1.272E+00 | 1.932E+00 | 1.936E+00 | -0.203 |
| | + | 299.80 | | 2.136E+00 | 1.610E+00 | 2.073E+00 | 3.372E-01 | 1.030 |
| | | 304.40 | | -2.483E-01 | 1.572E+00 | 2.192E+00 | 3.789E-01 | -0.113 |
| | | 334.20 | | -9.051E-01 | 2.304E+00 | 2.884E+00 | 5.286E-01 | -0.314 |
| | | 85.43 | | 2.302E-01 | 1.911E-01 | 2.902E-01 | 2.623E-02 | 0.793 |
| | + | 88.47 | | 2.979E-01 | 1.347E-01 | 1.931E-01 | 1.769E-02 | 1.542 |
| PA-231 | | 100.00 | | 1.969E-02 | 1.630E-01 | 2.661E-01 | 2.004E-02 | 0.074 |
| | | 193.63 | * | -1.654E-01 | 4.083E-01 | 6.717E-01 | 3.597E-02 | -0.246 |
| | + | 210.97 | | 2.835E+00 | 1.025E+00 | 1.136E+00 | 6.176E-02 | 2.496 |
| | | 283.67 | * | -1.165E+00 | 1.251E+00 | 1.921E+00 | 2.640E-01 | -0.606 |
| | + | 301.29 | | 8.542E-01 | 6.350E-01 | 8.102E-01 | 8.445E-02 | 1.054 |
| | | 81.07 | | -2.557E-01 | 2.095E-01 | 2.876E-01 | 2.508E-02 | -0.889 |
| | | 83.78 | | 1.868E-01 | 1.324E-01 | 1.887E-01 | 1.682E-02 | 0.990 |
| | | 94.90 | | 4.828E-01 | 2.268E-01 | 3.593E-01 | 2.925E-02 | 1.344 |
| | | 122.32 | | 7.029E-01 | 1.566E+00 | 2.558E+00 | 1.737E-01 | 0.275 |
| | | 144.24 | | 7.734E-02 | 5.975E-01 | 9.530E-01 | 6.650E-02 | 0.081 |
| | | 154.21 | | 2.230E-01 | 3.267E-01 | 5.668E-01 | 3.772E-02 | 0.393 |
| | + | 269.46 | | 5.509E-01 | 2.479E-01 | 2.919E-01 | 1.734E-02 | 1.887 |
| U-231 | | 323.87 | * | -2.767E-02 | 5.730E-01 | 8.016E-01 | 1.323E-01 | -0.035 |
| | + | 338.28 | | 5.297E+00 | 1.550E+00 | 1.998E+00 | 2.103E-01 | 2.651 |
| | | 445.03 | | 2.069E-01 | 1.724E+00 | 2.880E+00 | 3.013E-01 | 0.072 |
| | | 84.21 | | 1.645E+01 | 1.188E+01 | 1.818E+01 | 1.627E+00 | 0.905 |
| | + | 92.29 | | 2.197E+01 | 6.399E+00 | 7.889E+00 | 6.716E-01 | 2.785 |
| | | 95.87 | * | 5.746E-01 | 2.234E+00 | 3.295E+00 | 2.640E-01 | 0.174 |
| | | 108.00 | | -4.628E+00 | 4.079E+00 | 6.266E+00 | 4.261E-01 | -0.739 |
| | + | 75.28 | | 1.599E+01 | 4.223E+00 | 6.233E+00 | 9.481E-01 | 2.565 |
| | + | 86.59 | | 4.271E+00 | 2.215E+00 | 2.797E+00 | 7.548E-01 | 1.527 |
| | + | 300.12 | | 5.954E-01 | 4.454E-01 | 5.712E-01 | 7.662E-02 | 1.042 |
| | | 311.98 | * | -2.581E-02 | 5.051E-02 | 7.914E-02 | 4.848E-03 | -0.326 |
| | | 340.50 | | 1.710E+00 | 7.436E-01 | 1.029E+00 | 2.364E-01 | 1.662 |
| PA-233 | | 398.62 | | -5.256E-02 | 1.604E+00 | 2.680E+00 | 6.928E-01 | -0.020 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|------------|----------------|-----------|-----------|
| PA-234 | | 415.76 | | -8.832E-01 | 1.435E+00 | 2.065E+00 | 4.259E-01 | -0.428 |
| | + | 63.00 | | 2.499E+00 | 2.911E+00 | 2.761E+00 | 4.163E-01 | 0.905 |
| | + | 94.67 | | 8.955E-01 | 2.727E-01 | 2.698E-01 | 3.263E-02 | 3.319 |
| | | 98.44 | | 2.782E-02 | 9.022E-02 | 1.313E-01 | 7.306E-02 | 0.212 |
| | | 99.86 | | 5.677E-02 | 4.130E-01 | 6.750E-01 | 5.092E-02 | 0.084 |
| | | 111.00 | | 7.280E-02 | 1.617E-01 | 2.656E-01 | 2.849E-02 | 0.274 |
| | | 131.20 | | -1.794E-03 | 1.081E-01 | 1.519E-01 | 8.646E-03 | -0.012 |
| | | 152.70 | | 2.391E-01 | 2.834E-01 | 4.601E-01 | 7.204E-02 | 0.520 |
| | + | 186.00 | | 5.231E+00 | 2.319E+00 | 2.208E+00 | 6.726E-01 | 2.370 |
| | | 226.40 | | -1.803E-02 | 3.225E-01 | 5.194E-01 | 5.929E-02 | -0.035 |
| | | 227.20 | | -4.040E-02 | 3.505E-01 | 5.632E-01 | 3.104E-02 | -0.072 |
| | | 248.90 | | -6.343E-02 | 6.218E-01 | 1.016E+00 | 2.178E-01 | -0.062 |
| | + | 293.70 | | 6.041E+00 | 1.398E+00 | 1.443E+00 | 2.317E-01 | 4.186 |
| | | 369.80 | | -1.390E-01 | 6.456E-01 | 1.073E+00 | 2.235E-01 | -0.129 |
| | | 568.70 | | -3.614E-01 | 8.346E-01 | 1.286E+00 | 9.002E-02 | -0.281 |
| | | 569.50 | | -2.179E-01 | 2.322E-01 | 3.452E-01 | 2.419E-02 | -0.631 |
| | | 574.00 | | 4.255E-01 | 1.229E+00 | 1.987E+00 | 1.398E-01 | 0.214 |
| | | 699.00 | | 1.908E-01 | 5.348E-01 | 9.111E-01 | 1.720E-01 | 0.209 |
| | | 706.10 | | 1.561E-01 | 8.061E-01 | 1.356E+00 | 6.039E-01 | 0.115 |
| | | 733.00 | | -2.028E-01 | 3.195E-01 | 4.216E-01 | 9.363E-02 | -0.481 |
| | | 742.81 | | -2.302E-01 | 9.851E-01 | 1.588E+00 | 1.068E+00 | -0.145 |
| | | 796.30 | | 1.040E+00 | 7.885E-01 | 1.321E+00 | 3.617E-01 | 0.787 |
| | | 805.60 | | 3.472E-03 | 7.585E-01 | 1.251E+00 | 3.878E-01 | 0.003 |
| | | 819.60 | | 1.476E-01 | 8.282E-01 | 1.381E+00 | 5.299E-01 | 0.107 |
| | | 826.30 | | -7.888E-01 | 6.947E-01 | 8.732E-01 | 3.934E-01 | -0.903 |
| | | 831.60 | | 1.163E-01 | 4.787E-01 | 7.989E-01 | 2.423E-01 | 0.146 |
| | | 876.40 | | -2.532E-01 | 6.909E-01 | 1.014E+00 | 1.044E+00 | -0.250 |
| | | 880.51 | | 3.174E-02 | 2.178E-01 | 3.603E-01 | 3.965E-02 | 0.088 |
| | | 883.24 | | 1.696E-01 | 2.467E-01 | 3.788E-01 | 2.560E-01 | 0.448 |
| | | 899.00 | | -9.579E-01 | 8.138E-01 | 1.012E+00 | 4.485E-01 | -0.947 |
| | | 925.00 | | -2.172E-01 | 8.049E-01 | 1.277E+00 | 1.391E-01 | -0.170 |
| | | 926.50 | | -1.106E-01 | 1.241E-01 | 1.794E-01 | 4.687E-02 | -0.617 |
| | | 946.00 | * | -7.987E-02 | 2.383E-01 | 3.759E-01 | 7.414E-02 | -0.212 |
| | | 949.00 | | 2.925E-01 | 3.395E-01 | 5.874E-01 | 6.169E-02 | 0.498 |
| | | 980.50 | | -1.717E-02 | 5.970E-01 | 9.645E-01 | 9.593E-02 | -0.018 |
| | PA-234M | | 1394.10 | | -9.459E-01 | 1.033E+00 | 1.151E+00 | 7.477E-01 |
| | | 766.42 | | 2.072E+01 | 1.450E+01 | 1.679E+01 | 8.533E+00 | 1.235 |
| | | 1001.03 | * | 2.898E-01 | 3.636E+00 | 5.927E+00 | 6.393E-01 | 0.049 |
| U-235 | + | 89.95 | | 1.756E+00 | 1.194E+00 | 1.709E+00 | 5.286E-01 | 1.028 |
| | + | 93.35 | | 3.124E+00 | 1.234E+00 | 1.142E+00 | 3.192E-01 | 2.735 |
| | | 105.00 | | 8.594E-01 | 9.772E-01 | 1.585E+00 | 4.664E-01 | 0.542 |
| | | 143.76 | * | -6.490E-03 | 1.818E-01 | 2.880E-01 | 4.665E-02 | -0.023 |
| | | 163.35 | | 5.531E-02 | 3.680E-01 | 6.256E-01 | 1.115E-01 | 0.088 |
| NP-236 | + | 185.71 | | 1.938E-01 | 6.324E-02 | 8.135E-02 | 4.327E-03 | 2.382 |
| | | 205.31 | | -3.225E-01 | 4.718E-01 | 6.530E-01 | 1.166E-01 | -0.494 |
| | + | 94.67 | | 6.792E-01 | 1.978E-01 | 2.049E-01 | 1.674E-02 | 3.315 |
| | | 98.44 | | 2.101E-02 | 6.721E-02 | 9.923E-02 | 7.642E-03 | 0.212 |
| | | 111.00 | | 5.507E-02 | 1.222E-01 | 2.009E-01 | 1.321E-02 | 0.274 |
| | | 160.31 | * | -7.968E-03 | 6.340E-02 | 1.068E-01 | 5.660E-03 | -0.075 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| NP-239 | | 99.55 | | 9.464E-02 | 1.359E-01 | 2.269E-01 | 1.719E-02 | 0.417 |
| | | 117.00 | * | -1.107E-01 | 1.654E-01 | 2.582E-01 | 1.598E-02 | -0.429 |
| | + | 209.75 | | 2.856E+00 | 1.032E+00 | 1.224E+00 | 6.645E-02 | 2.334 |
| | | 228.18 | | -4.073E-02 | 1.816E-01 | 2.973E-01 | 1.640E-02 | -0.137 |
| | | 277.60 | | 1.052E-01 | 1.558E-01 | 2.531E-01 | 1.442E-02 | 0.416 |
| AM-241 | | 334.30 | | -5.387E-01 | 1.302E+00 | 1.630E+00 | 9.427E-02 | -0.330 |
| | | 59.54 | * | 1.636E-01 | 1.750E-01 | 2.747E-01 | 2.278E-02 | 0.595 |
| | | 99.55 | | 9.741E-02 | 1.399E-01 | 2.336E-01 | 1.770E-02 | 0.417 |
| | | 103.76 | * | 1.535E-02 | 8.685E-02 | 1.418E-01 | 1.015E-02 | 0.108 |
| | | 117.00 | | -1.139E-01 | 1.703E-01 | 2.657E-01 | 1.645E-02 | -0.429 |
| CM-243 | + | 209.75 | | 2.817E+00 | 1.018E+00 | 1.207E+00 | 6.553E-02 | 2.334 |
| | | 228.18 | | -4.117E-02 | 1.836E-01 | 3.005E-01 | 1.658E-02 | -0.137 |
| | | 277.60 | | 1.061E-01 | 1.571E-01 | 2.552E-01 | 1.454E-02 | 0.416 |
| | | 798.80 | | -1.754E-01 | 1.160E-01 | 1.694E-01 | 1.637E-02 | -1.035 |
| | | 1036.00 | | -1.875E-01 | 2.193E-01 | 3.405E-01 | 3.015E-02 | -0.550 |
| AM-246 | | 1062.04 | | 5.164E-03 | 1.656E-01 | 2.773E-01 | 2.299E-02 | 0.019 |
| | | 1078.86 | * | 4.211E-02 | 1.076E-01 | 1.848E-01 | 1.461E-02 | 0.228 |
| | | 278.00 | | 8.934E-01 | 6.187E-01 | 1.070E+00 | 6.094E-02 | 0.835 |
| | | 287.40 | | 9.677E-03 | 9.746E-01 | 1.584E+00 | 9.061E-02 | 0.006 |
| | | 402.60 | * | 3.190E-03 | 2.902E-02 | 4.880E-02 | 2.842E-03 | 0.065 |
| CF-249 | | 252.85 | | 9.802E-02 | 6.813E-01 | 1.125E+00 | 6.321E-02 | 0.087 |
| | | 333.44 | | -5.742E-02 | 2.204E-01 | 2.128E-01 | 1.231E-02 | -0.270 |
| | | 387.95 | * | 3.516E-03 | 2.806E-02 | 4.739E-02 | 2.724E-03 | 0.074 |
| CF-251 | | 176.60 | * | 5.635E-02 | 1.008E-01 | 1.731E-01 | 9.140E-03 | 0.326 |
| | | 227.00 | | -1.734E-02 | 3.122E-01 | 5.030E-01 | 2.772E-02 | -0.034 |
| | | 285.00 | | 2.158E-01 | 1.372E+00 | 2.248E+00 | 1.284E-01 | 0.096 |

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]G245388002          *
* Acquisition date   : 4-FEB-2010 10:29:07 Detector SN#      :                 *
* Detector ID        : GAM18 Sensitivity                    : 5.000             *
* Geometry           : CAN Energy tolerance                : 1.500             *
* Elapsed live time  : 0 02:00:00.00 Abundance limit        : 75.000           *
* Elapsed real time  : 0 02:00:01.57 Half life ratio       : 8.000             *
*****
*                               SAMPLE DATA                               *
*                               *                                               *
* Sample date       : 15-JAN-2010 12:00:00 Nuclide Library  : SOLID             *
* Sample ID        : G245388002 Analyst initials         : MXR1              *
* Batch Number     : 944964 Sample Quantity              : 1.2789E+02 GRAM      *
* Recovery         : 1.00000 Carrier Weight              : 0.00000             *
*****
*                               QC DATA                               *
*                               *                                               *
* Standard Weight   : 0.00000                                                *
* CALIB. DATE/TIME  : 23-APR-2009 11:59:23 MS Isotope      :                 *
* MSD DPM           : 0.000 MSD Isotope                    :                 *
* LCS DPM           : 0.000 LCS Isotope                     :                 *
* LCSD DPM          : 0.000 LCSD Isotope                    :                 *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.116E+01 | 1.980E+00 | 4.692E-01 | 0.000E+00 |
| CD-109 | 2.236E+00 | 9.910E-01 | 1.166E+00 | 0.000E+00 |
| SN-126 | 2.182E-01 | 9.670E-02 | 1.314E-01 | 0.000E+00 |
| BA-137M | 1.114E-01 | 6.834E-02 | 4.371E-02 | 0.000E+00 |
| CS-137 | 1.178E-01 | 7.224E-02 | 4.621E-02 | 0.000E+00 |
| TL-208 | 4.416E-01 | 6.767E-02 | 4.541E-02 | 0.000E+00 |
| BI-211 | 3.958E+00 | 4.275E-01 | 2.728E-01 | 0.000E+00 |
| PB-212 | 1.576E+00 | 1.436E-01 | 7.291E-02 | 0.000E+00 |
| PO-212 | 1.576E+00 | 1.436E-01 | 7.291E-02 | 0.000E+00 |
| BI-214 | 1.206E+00 | 1.775E-01 | 8.161E-02 | 0.000E+00 |
| PB-214 | 1.377E+00 | 1.645E-01 | 9.011E-02 | 0.000E+00 |
| PO-214 | 1.377E+00 | 1.645E-01 | 9.011E-02 | 0.000E+00 |
| PO-216 | 1.576E+00 | 1.436E-01 | 7.291E-02 | 0.000E+00 |
| PO-218 | 1.377E+00 | 1.645E-01 | 9.011E-02 | 0.000E+00 |
| RA-224 | 3.138E+00 | 9.161E-01 | 8.286E-01 | 0.000E+00 |
| RA-226 | 1.206E+00 | 1.775E-01 | 8.161E-02 | 0.000E+00 |
| AC-228 | 1.404E+00 | 2.816E-01 | 1.465E-01 | 0.000E+00 |
| RA-228 | 1.404E+00 | 2.816E-01 | 1.465E-01 | 0.000E+00 |
| TH-228 | 1.607E+00 | 1.465E-01 | 7.437E-02 | 0.000E+00 |
| TH-230 | 1.206E+00 | 1.775E-01 | 8.161E-02 | 0.000E+00 |
| TH-232 | 1.404E+00 | 2.816E-01 | 1.465E-01 | 0.000E+00 |
| TH-234 | 2.144E+00 | 2.455E+00 | 2.224E+00 | 0.000E+00 |
| U-234 | 1.206E+00 | 1.775E-01 | 8.161E-02 | 0.000E+00 |
| NP-237 | 6.407E-01 | 3.121E-01 | 3.839E-01 | 0.000E+00 |
| U-238 | 2.144E+00 | 2.455E+00 | 2.224E+00 | 0.000E+00 |
| AM-243 | 3.053E-01 | 6.928E-02 | 8.324E-02 | 0.000E+00 |
| ANH-511 | 1.242E-01 | 4.851E-02 | 3.759E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) |
|---------|-------------------------------------|--------------------------|--------------------|
|---------|-------------------------------------|--------------------------|--------------------|

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| BE-7 | -2.040E-01 | 2.608E-01 | 4.248E-01 | 0.000E+00 | NOT IDENT. |
| NA-22 | -4.825E-02 | 3.506E-02 | 5.188E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 1.288E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | 8.033E-04 | 2.255E-02 | 3.782E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 5.521E-02 | 7.934E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | -1.836E-02 | 3.233E-02 | 5.188E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | 2.257E-02 | 6.643E-02 | 1.134E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | 2.263E-01 | 3.132E-01 | 5.475E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 7.267E-02 | 3.052E-01 | 5.199E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | -1.337E-02 | 2.942E-02 | 4.818E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -3.026E-02 | 3.202E-02 | 5.005E-02 | 0.000E+00 | FAIL ABUN |
| CO-57 | 6.638E-03 | 2.233E-02 | 3.843E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -4.859E-03 | 2.867E-02 | 4.801E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -5.644E-02 | 7.308E-02 | 1.171E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | 1.212E-02 | 2.790E-02 | 4.863E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 3.532E-02 | 7.884E-02 | 1.202E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | 7.200E-01 | 9.400E-01 | 1.695E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | 4.863E-01 | 1.000E+00 | 1.836E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | 3.869E-03 | 8.197E-02 | 1.377E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | 5.609E-03 | 3.596E-02 | 5.752E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 0.000E+00 | 3.132E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SR-82 | -2.223E-01 | 3.290E-01 | 5.335E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | 3.469E-02 | 5.333E-02 | 9.205E-02 | 0.000E+00 | NOT IDENT. |
| RB-84 | 1.228E-02 | 5.732E-02 | 9.803E-02 | 0.000E+00 | NOT IDENT. |
| KR-85 | 0.000E+00 | 6.287E+00 | 1.057E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 0.000E+00 | 3.391E-02 | 5.699E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 3.795E-01 | 7.039E-01 | 1.251E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 1.350E-02 | 2.786E-02 | 4.945E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -4.675E-03 | 2.269E-02 | 3.914E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | -4.435E+00 | 1.498E+01 | 2.476E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | 4.205E-03 | 2.542E-02 | 4.423E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 0.000E+00 | 3.771E-02 | 6.538E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 2.652E-02 | 1.178E-01 | 1.812E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 6.427E-02 | 5.548E-02 | 1.015E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 9.351E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 1.927E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 1.118E+01 | 2.751E+01 | 4.841E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 2.133E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -7.716E-03 | 2.664E-02 | 4.631E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -7.476E-03 | 2.185E-02 | 3.665E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | -1.017E-02 | 3.127E-02 | 5.214E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | 6.788E-02 | 2.526E-01 | 4.284E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | 6.788E-02 | 2.525E-01 | 4.284E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | 2.022E-02 | 2.514E-02 | 4.527E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | 1.527E-02 | 2.929E-02 | 4.592E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | 9.606E-02 | 2.893E+00 | 4.385E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -3.122E-02 | 3.218E-02 | 5.297E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | -3.122E-02 | 3.218E-02 | 5.297E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 8.866E-02 | 1.720E-01 | 2.741E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 0.000E+00 | 3.629E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SN-117M | -2.050E-04 | 5.542E-02 | 9.909E-02 | 0.000E+00 | NOT IDENT. |
| SB-122 | 2.424E+00 | 5.413E+00 | 9.372E+00 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 2.032E+09 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 2.407E-03 | 2.299E-02 | 4.126E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -2.334E-01 | 1.267E+00 | 1.795E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | -3.889E-02 | 5.896E-02 | 8.944E-02 | 0.000E+00 | FAIL ABUN |
| SB-125 | -7.507E-03 | 7.266E-02 | 1.251E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | -2.188E+00 | 8.455E+00 | 1.435E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 9.341E-02 | 2.101E-01 | 3.257E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | 1.227E-01 | 1.569E-01 | 2.491E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | -2.199E-01 | 2.364E+00 | 4.057E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | -2.363E-03 | 4.087E-02 | 7.149E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 1.132E-02 | 1.314E-01 | 2.318E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | -3.378E-01 | 1.518E+00 | 2.609E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | -8.731E-03 | 4.060E-02 | 5.790E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 2.121E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 5.754E-02 | 3.740E-02 | 6.889E-02 | 0.000E+00 | NOT IDENT. |
| CS-135 | 0.000E+00 | 1.375E-01 | 2.274E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 8.228E+20 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | 6.153E-03 | 1.024E-01 | 1.765E-01 | 0.000E+00 | FAIL ABUN |
| CE-139 | 1.802E-03 | 2.374E-02 | 4.242E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -1.137E-01 | 2.578E-01 | 4.193E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -5.542E-02 | 8.561E-02 | 1.341E-01 | 0.000E+00 | FAIL ABUN |
| CE-141 | 4.938E-02 | 5.962E-02 | 1.032E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 2.470E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | 3.680E-02 | 1.975E-01 | 2.994E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | 9.970E-03 | 2.452E-02 | 4.337E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | 6.773E-01 | 1.666E+00 | 2.947E+00 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-146 | 1.869E-02 | 3.128E-02 | 5.566E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | 2.595E-01 | 5.724E-01 | 9.960E-01 | 0.000E+00 | FAIL ABUN |
| PM-149 | 0.000E+00 | 3.215E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| EU-152 | -1.013E-01 | 9.432E-02 | 1.258E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | -2.370E-02 | 7.601E-02 | 1.154E-01 | 0.000E+00 | NOT IDENT. |
| EU-154 | -1.194E-01 | 9.667E-02 | 1.443E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 1.281E-01 | 9.426E-02 | 1.700E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | -7.523E-03 | 1.104E-01 | 1.848E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | 2.652E-02 | 4.599E-02 | 8.187E-02 | 0.000E+00 | NOT IDENT. |
| TM-171 | -1.462E+01 | 3.031E+01 | 4.709E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | -9.132E-03 | 2.047E-02 | 3.097E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 2.347E+00 | 2.801E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -2.206E-02 | 1.567E-01 | 2.340E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | 2.279E-02 | 3.505E-02 | 6.219E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | -2.498E-01 | 4.114E-01 | 6.361E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | -2.297E-02 | 1.506E-01 | 2.514E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | -1.128E-02 | 8.894E-02 | 1.580E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | 2.664E-02 | 1.815E-01 | 3.143E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | 2.312E-02 | 3.253E-02 | 5.675E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 4.843E-02 | 1.473E-01 | 2.667E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | 3.782E+00 | 6.548E+00 | 1.012E+01 | 0.000E+00 | FAIL ABUN |
| IR-192 | -2.043E-02 | 2.760E-02 | 4.450E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 1.577E-01 | 2.032E-01 | 3.459E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 7.257E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | 1.780E+01 | 1.609E+01 | 2.977E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 2.265E-02 | 6.512E-02 | 1.147E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | 5.164E-02 | 3.558E-02 | 6.434E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | 3.296E-03 | 3.709E-02 | 6.397E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | -2.767E-02 | 5.615E-01 | 8.204E-01 | 0.000E+00 | FAIL ABUN |
| PO-209 | -5.048E-01 | 5.676E+00 | 9.465E+00 | 0.000E+00 | NOT IDENT. |
| BI-210 | 1.135E+00 | 4.732E+00 | 8.684E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | 1.135E+00 | 4.732E+00 | 8.684E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | 1.135E+00 | 4.731E+00 | 8.684E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | 1.457E-02 | 8.470E-01 | 1.279E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 3.951E-01 | 4.978E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | -2.767E-02 | 5.615E-01 | 8.204E-01 | 0.000E+00 | FAIL ABUN |
| RN-219 | 1.264E-02 | 3.150E-01 | 5.495E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | -1.032E+01 | 1.939E+01 | 3.153E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -2.767E-02 | 5.615E-01 | 8.204E-01 | 0.000E+00 | FAIL ABUN |
| AC-227 | -6.517E-02 | 2.948E-01 | 5.008E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | -6.517E-02 | 2.948E-01 | 5.008E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | -1.654E-01 | 4.001E-01 | 6.928E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | -1.165E+00 | 1.226E+00 | 1.970E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | -2.767E-02 | 5.615E-01 | 8.204E-01 | 0.000E+00 | FAIL ABUN |
| U-231 | 5.746E-01 | 2.189E+00 | 3.433E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | -2.581E-02 | 4.950E-02 | 8.104E-02 | 0.000E+00 | FAIL ABUN |
| PA-234 | -7.987E-02 | 2.335E-01 | 3.784E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 2.898E-01 | 3.563E+00 | 5.962E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | -6.490E-03 | 1.782E-01 | 2.984E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -7.968E-03 | 6.213E-02 | 1.105E-01 | 0.000E+00 | FAIL ABUN |
| NP-239 | -1.107E-01 | 1.621E-01 | 2.683E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | 1.636E-01 | 1.715E-01 | 2.882E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | 1.535E-02 | 8.511E-02 | 1.476E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | 4.211E-02 | 1.055E-01 | 1.857E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 3.190E-03 | 2.844E-02 | 4.978E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | 3.516E-03 | 2.749E-02 | 4.837E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | 5.635E-02 | 9.876E-02 | 1.788E-01 | 0.000E+00 | NOT IDENT. |

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388002.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:29:07.
Sample ID          : G245388002 Sample quantity      : 1.27890E+02 GRAM
Detector name      : GAM18 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.57 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials    : MXR1
Abundance limit    : 75.00000 Sensitivity           : 5.00000
Batch ID           : 944964 Detector SN#           :
Matrix Spike ID    : LCS ID                          : 1032-A
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Nuclide Line Activity Report

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|----------------------|---------------------|----------------|
| K-40 | 1460.81 | 1457 | 10.67* | 1.893E+00 | 2.116E+01 | 2.116E+01 | 9.55 |
| CD-109 | 88.03 | 177 | 3.72* | 6.443E+00 | 2.170E+00 | 2.236E+00 | 45.23 |
| SN-126 | 64.28 | ----- | 9.60 | 3.245E+00 | ----- | Line Not Found | ----- |
| | 86.94 | 177 | 8.90 | 6.443E+00 | 9.070E-01 | 9.070E-01 | 60.68 |
| | 87.57 | 177 | 37.00* | 6.443E+00 | 2.182E-01 | 2.182E-01 | 45.23 |
| BA-137M | 661.65 | 122 | 89.98* | 3.583E+00 | 1.113E-01 | 1.114E-01 | 62.59 |
| CS-137 | 661.65 | 122 | 85.12* | 3.583E+00 | 1.176E-01 | 1.178E-01 | 62.59 |
| TL-208 | 277.35 | ----- | 6.80 | 6.258E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 182 | 21.60 | 4.310E+00 | 5.751E-01 | 5.751E-01 | 40.71 |
| | 583.14 | 498 | 84.20* | 3.934E+00 | 4.416E-01 | 4.416E-01 | 15.64 |
| | 860.37 | 78 | 12.46 | 2.914E+00 | 6.326E-01 | 6.326E-01 | 47.23 |
| BI-211 | 72.87 | ----- | 1.27 | 4.622E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 951 | 12.94* | 5.451E+00 | 3.958E+00 | 3.958E+00 | 11.02 |
| PB-212 | 74.81 | 339 | 10.70 | 4.940E+00 | 1.883E+00 | 1.883E+00 | 24.97 |
| | 77.11 | 655 | 18.00 | 5.256E+00 | 2.033E+00 | 2.033E+00 | 15.02 |
| | 87.30 | 177 | 8.00 | 6.443E+00 | 1.009E+00 | 1.009E+00 | 46.32 |
| | 238.63 | 1626 | 44.60* | 6.792E+00 | 1.576E+00 | 1.576E+00 | 9.30 |
| | 300.09 | 80 | 3.41 | 5.979E+00 | 1.152E+00 | 1.152E+00 | 74.06 |
| PO-212 | 74.81 | 339 | 10.70 | 4.940E+00 | 1.883E+00 | 1.883E+00 | 24.97 |
| | 77.11 | 655 | 18.00 | 5.256E+00 | 2.033E+00 | 2.033E+00 | 15.02 |
| | 87.30 | 177 | 8.00 | 6.443E+00 | 1.009E+00 | 1.009E+00 | 46.32 |
| | 115.19 | ----- | 0.60 | 8.058E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1626 | 44.60* | 6.792E+00 | 1.576E+00 | 1.576E+00 | 9.30 |
| | 300.09 | 80 | 3.41 | 5.979E+00 | 1.152E+00 | 1.152E+00 | 74.06 |
| BI-214 | 609.31 | 725 | 46.30* | 3.812E+00 | 1.206E+00 | 1.206E+00 | 15.02 |
| | 1120.29 | 129 | 15.10 | 2.334E+00 | 1.075E+00 | 1.075E+00 | 36.85 |
| | 1764.49 | 122 | 15.80 | 1.695E+00 | 1.338E+00 | 1.338E+00 | 27.38 |
| PB-214 | 74.81 | 339 | 6.21 | 4.940E+00 | 3.244E+00 | 3.244E+00 | 24.31 |
| | 77.11 | 655 | 10.50 | 5.256E+00 | 3.484E+00 | 3.484E+00 | 16.84 |
| | 87.30 | 177 | 4.67 | 6.443E+00 | 1.729E+00 | 1.729E+00 | 45.88 |
| | 241.98 | 285 | 7.49 | 6.747E+00 | 1.655E+00 | 1.655E+00 | 30.32 |
| | 295.21 | 497 | 19.20 | 6.042E+00 | 1.259E+00 | 1.259E+00 | 18.69 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 351.92 | 951 | 37.20* | 5.451E+00 | 1.377E+00 | 1.377E+00 | 12.19 |
| | 74.81 | 339 | 6.21 | 4.940E+00 | 3.244E+00 | 3.244E+00 | 24.31 |
| | 77.11 | 655 | 10.50 | 5.256E+00 | 3.484E+00 | 3.484E+00 | 16.84 |
| | 87.30 | 177 | 4.67 | 6.443E+00 | 1.729E+00 | 1.729E+00 | 45.88 |
| | 241.98 | 285 | 7.49 | 6.747E+00 | 1.655E+00 | 1.655E+00 | 30.32 |
| PO-216 | 295.21 | 497 | 19.20 | 6.042E+00 | 1.259E+00 | 1.259E+00 | 18.69 |
| | 351.92 | 951 | 37.20* | 5.451E+00 | 1.377E+00 | 1.377E+00 | 12.19 |
| | 74.81 | 339 | 10.70 | 4.940E+00 | 1.883E+00 | 1.883E+00 | 24.97 |
| | 77.11 | 655 | 18.00 | 5.256E+00 | 2.033E+00 | 2.033E+00 | 15.02 |
| | 87.30 | 177 | 8.00 | 6.443E+00 | 1.009E+00 | 1.009E+00 | 46.32 |
| PO-218 | 238.63 | 1626 | 44.60* | 6.792E+00 | 1.576E+00 | 1.576E+00 | 9.30 |
| | 300.09 | 80 | 3.41 | 5.979E+00 | 1.152E+00 | 1.152E+00 | 74.06 |
| | 74.81 | 339 | 6.21 | 4.940E+00 | 3.244E+00 | 3.244E+00 | 24.31 |
| | 77.11 | 655 | 10.50 | 5.256E+00 | 3.484E+00 | 3.484E+00 | 16.84 |
| | 87.30 | 177 | 4.67 | 6.443E+00 | 1.729E+00 | 1.729E+00 | 45.88 |
| RA-224 | 241.98 | 285 | 7.49 | 6.747E+00 | 1.655E+00 | 1.655E+00 | 30.32 |
| | 295.21 | 497 | 19.20 | 6.042E+00 | 1.259E+00 | 1.259E+00 | 18.69 |
| | 351.92 | 951 | 37.20* | 5.451E+00 | 1.377E+00 | 1.377E+00 | 12.19 |
| | 240.98 | 285 | 3.95* | 6.747E+00 | 3.138E+00 | 3.138E+00 | 29.79 |
| | 609.31 | 725 | 46.30* | 3.812E+00 | 1.206E+00 | 1.206E+00 | 15.02 |
| AC-228 | 1120.29 | 129 | 15.10 | 2.334E+00 | 1.075E+00 | 1.075E+00 | 36.85 |
| | 1764.49 | 122 | 15.80 | 1.695E+00 | 1.338E+00 | 1.338E+00 | 27.38 |
| | 338.32 | 275 | 11.40 | 5.580E+00 | 1.269E+00 | 1.269E+00 | 49.07 |
| | 911.07 | 368 | 27.70* | 2.780E+00 | 1.404E+00 | 1.404E+00 | 20.46 |
| | 969.11 | 215 | 16.60 | 2.640E+00 | 1.437E+00 | 1.437E+00 | 33.15 |
| RA-228 | 338.32 | 275 | 11.40 | 5.580E+00 | 1.269E+00 | 1.269E+00 | 49.07 |
| | 911.07 | 368 | 27.70* | 2.780E+00 | 1.404E+00 | 1.404E+00 | 20.46 |
| | 969.11 | 215 | 16.60 | 2.640E+00 | 1.437E+00 | 1.437E+00 | 33.15 |
| | 74.81 | 339 | 10.70 | 4.940E+00 | 1.883E+00 | 1.921E+00 | 23.19 |
| | 77.11 | 655 | 18.00 | 5.256E+00 | 2.033E+00 | 2.073E+00 | 15.02 |
| TH-228 | 87.30 | 177 | 8.00 | 6.443E+00 | 1.009E+00 | 1.029E+00 | 45.23 |
| | 238.63 | 1626 | 44.60* | 6.792E+00 | 1.576E+00 | 1.607E+00 | 9.30 |
| | 300.09 | 80 | 3.41 | 5.979E+00 | 1.152E+00 | 1.175E+00 | 94.29 |
| | 609.31 | 725 | 46.30* | 3.812E+00 | 1.206E+00 | 1.206E+00 | 15.02 |
| | 1120.29 | 129 | 15.10 | 2.334E+00 | 1.075E+00 | 1.075E+00 | 36.85 |
| TH-232 | 1764.49 | 122 | 15.80 | 1.695E+00 | 1.338E+00 | 1.338E+00 | 27.38 |
| | 338.32 | 275 | 11.40 | 5.580E+00 | 1.269E+00 | 1.269E+00 | 27.92 |
| | 911.07 | 368 | 27.70* | 2.780E+00 | 1.404E+00 | 1.404E+00 | 20.46 |
| | 969.11 | 215 | 16.60 | 2.640E+00 | 1.437E+00 | 1.437E+00 | 33.15 |
| | 63.29 | 83 | 3.80* | 2.988E+00 | 2.144E+00 | 2.144E+00 | 116.83 |
| U-234 | 92.38 | 334 | 5.41 | 6.980E+00 | 2.599E+00 | 2.599E+00 | 33.18 |
| | 609.31 | 725 | 46.30* | 3.812E+00 | 1.206E+00 | 1.206E+00 | 15.02 |
| | 1120.29 | 129 | 15.10 | 2.334E+00 | 1.075E+00 | 1.075E+00 | 36.85 |
| | 1764.49 | 122 | 15.80 | 1.695E+00 | 1.338E+00 | 1.338E+00 | 27.38 |
| | 86.50 | 177 | 12.60* | 6.443E+00 | 6.407E-01 | 6.407E-01 | 49.71 |
| NP-237 | 95.87 | ----- | 2.60 | 7.180E+00 | ----- | Line Not Found | ----- |
| | 63.29 | 83 | 3.80* | 2.988E+00 | 2.144E+00 | 2.144E+00 | 116.83 |
| | 92.38 | 334 | 5.41 | 6.980E+00 | 2.599E+00 | 2.599E+00 | 29.12 |
| | 74.67 | 339 | 66.00* | 4.940E+00 | 3.053E-01 | 3.053E-01 | 23.16 |
| | | | | | | | |

Sample ID : G245388002

Acquisition date : 4-FEB-2010 10:29:07

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| | 86.72 | 177 | 0.34 | 6.443E+00 | 2.402E+01 | 2.402E+01 | 45.23 |
| | 117.66 | ----- | 0.55 | 8.112E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 8.232E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 182 | 100.00* | 4.310E+00 | 1.242E-01 | 1.242E-01 | 39.85 |

Flag: "*" = Keyline

Total number of lines in spectrum 34
Number of unidentified lines 3
Number of lines tentatively identified by NID 31 91.18%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|------------------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 2.116E+01 | 2.116E+01 | 0.202E+01 | 9.55 | |
| CD-109 | 464.00D | 1.03 | 2.170E+00 | 2.236E+00 | 1.011E+00 | 45.23 | |
| SN-126 | 1.00E+05Y | 1.00 | 2.182E-01 | 2.182E-01 | 0.987E-01 | 45.23 | |
| BA-137M | 30.17Y | 1.00 | 1.113E-01 | 1.114E-01 | 0.697E-01 | 62.59 | |
| CS-137 | 30.17Y | 1.00 | 1.176E-01 | 1.178E-01 | 0.737E-01 | 62.59 | |
| TL-208 | 1.41E+10Y | 1.00 | 4.416E-01 | 4.416E-01 | 0.690E-01 | 15.64 | |
| BI-211 | 7.04E+08Y | 1.00 | 3.958E+00 | 3.958E+00 | 0.436E+00 | 11.02 | |
| PB-212 | 1.41E+10Y | 1.00 | 1.576E+00 | 1.576E+00 | 0.147E+00 | 9.30 | |
| PO-212 | 1.41E+10Y | 1.00 | 1.576E+00 | 1.576E+00 | 0.147E+00 | 9.30 | |
| BI-214 | 1600.00Y | 1.00 | 1.206E+00 | 1.206E+00 | 0.181E+00 | 15.02 | |
| PB-214 | 1600.00Y | 1.00 | 1.377E+00 | 1.377E+00 | 0.168E+00 | 12.19 | |
| PO-214 | 1600.00Y | 1.00 | 1.377E+00 | 1.377E+00 | 0.168E+00 | 12.19 | |
| PO-216 | 1.41E+10Y | 1.00 | 1.576E+00 | 1.576E+00 | 0.147E+00 | 9.30 | |
| PO-218 | 1600.00Y | 1.00 | 1.377E+00 | 1.377E+00 | 0.168E+00 | 12.19 | |
| RA-224 | 1.41E+10Y | 1.00 | 3.138E+00 | 3.138E+00 | 0.935E+00 | 29.79 | |
| RA-226 | 1600.00Y | 1.00 | 1.206E+00 | 1.206E+00 | 0.181E+00 | 15.02 | |
| AC-228 | 1.41E+10Y | 1.00 | 1.404E+00 | 1.404E+00 | 0.287E+00 | 20.46 | |
| RA-228 | 1.41E+10Y | 1.00 | 1.404E+00 | 1.404E+00 | 0.287E+00 | 20.46 | |
| TH-228 | 1.91Y | 1.02 | 1.576E+00 | 1.607E+00 | 0.149E+00 | 9.30 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.206E+00 | 1.206E+00 | 0.181E+00 | 15.02 | |
| TH-232 | 1.41E+10Y | 1.00 | 1.404E+00 | 1.404E+00 | 0.287E+00 | 20.46 | |
| TH-234 | 4.47E+09Y | 1.00 | 2.144E+00 | 2.144E+00 | 2.505E+00 | 116.83 | |
| U-234 | 4.47E+09Y | 1.00 | 1.206E+00 | 1.206E+00 | 0.181E+00 | 15.02 | |
| NP-237 | 2.14E+06Y | 1.00 | 6.407E-01 | 6.407E-01 | 3.185E-01 | 49.71 | |
| U-238 | 4.47E+09Y | 1.00 | 2.144E+00 | 2.144E+00 | 2.505E+00 | 116.83 | |
| AM-243 | 7380.00Y | 1.00 | 3.053E-01 | 3.053E-01 | 0.707E-01 | 23.16 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.242E-01 | 1.242E-01 | 0.495E-01 | 39.85 | |
| Total Activity : | | | 5.615E+01 | 5.624E+01 | | | |

Grand Total Activity : 5.615E+01 5.624E+01

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

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

Unidentified Energy Lines
Sample ID : G245388002

Page : 5
Acquisition date : 4-FEB-2010 10:29:07

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 89.86 | 108 | 383 | 1.10 | 178.83 | 177 | 6 | 1.50E-02 | 60.6 | 6.69E+00 | T |
| 0 | 129.04 | 122 | 403 | 0.86 | 257.17 | 253 | 9 | 1.69E-02 | 62.0 | 8.25E+00 | T |
| 0 | 186.12 | 273 | 405 | 1.22 | 371.29 | 367 | 11 | 3.79E-02 | 32.2 | 7.65E+00 | T |
| 0 | 209.49 | 229 | 361 | 1.20 | 418.01 | 413 | 12 | 3.18E-02 | 35.7 | 7.25E+00 | T |
| 0 | 270.14 | 162 | 290 | 1.37 | 539.26 | 535 | 12 | 2.25E-02 | 44.6 | 6.35E+00 | T |
| 0 | 328.10 | 77 | 151 | 1.00 | 655.14 | 652 | 8 | 1.07E-02 | 59.6 | 5.68E+00 | T |
| 0 | 409.20 | 27 | 148 | 1.13 | 817.29 | 815 | 9 | 3.69E-03 | **** | 4.97E+00 | |
| 0 | 462.56 | 139 | 147 | 1.44 | 923.97 | 918 | 13 | 1.93E-02 | 39.8 | 4.60E+00 | T |
| 0 | 726.77 | 130 | 112 | 1.84 | 1452.27 | 1444 | 16 | 1.81E-02 | 40.4 | 3.34E+00 | T |
| 0 | 768.50 | 48 | 107 | 1.15 | 1535.70 | 1529 | 11 | 6.69E-03 | 88.1 | 3.19E+00 | |
| 5 | 964.40 | 63 | 95 | 1.94 | 1927.42 | 1920 | 23 | 8.77E-03 | 67.6 | 2.65E+00 | T |
| 0 | 1239.06 | 56 | 163 | 2.04 | 2476.65 | 2464 | 23 | 7.81E-03 | **** | 2.15E+00 | T |
| 0 | 1728.95 | 51 | 16 | 1.81 | 3456.35 | 3447 | 15 | 7.06E-03 | 43.7 | 1.71E+00 | |

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388002.CNF;1
* Acquisition date   : 4-FEB-2010 10:29:07.  Detector SN#      :
* Detector ID        : GAM18                      Sensitivity      : 5.00000
* Geometry           : CAN                        Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00             Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.57             Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 15-JAN-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G245388002             Analyst initials: MXR1
* Batch Number       : 944964                 Sample Quantity  : 1.27890E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23.2MS Isotope      :
* MSD ID             :                      MSD Isotope      :
* LCS ID             : 1032-A               LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 2.116E+01 | 2.020E+00 | 4.692E-01 | 3.560E-02 | 45.108 |
| CD-109 | 2.236E+00 | 1.011E+00 | 1.118E+00 | 1.033E-01 | 2.000 |
| SN-126 | 2.182E-01 | 9.868E-02 | 1.259E-01 | 1.160E-02 | 1.733 |
| BA-137M | 1.114E-01 | 6.973E-02 | 4.317E-02 | 3.291E-03 | 2.581 |
| CS-137 | 1.178E-01 | 7.372E-02 | 4.564E-02 | 3.488E-03 | 2.581 |
| TL-208 | 4.416E-01 | 6.905E-02 | 4.476E-02 | 3.509E-03 | 9.864 |
| BI-211 | 3.958E+00 | 4.362E-01 | 2.669E-01 | 1.713E-02 | 14.831 |
| PB-212 | 1.576E+00 | 1.465E-01 | 7.091E-02 | 5.066E-03 | 22.221 |
| PO-212 | 1.576E+00 | 1.465E-01 | 7.091E-02 | 5.066E-03 | 22.221 |
| BI-214 | 1.206E+00 | 1.811E-01 | 8.051E-02 | 7.192E-03 | 14.980 |
| PB-214 | 1.377E+00 | 1.679E-01 | 8.815E-02 | 7.292E-03 | 15.620 |
| PO-214 | 1.377E+00 | 1.679E-01 | 8.815E-02 | 7.292E-03 | 15.620 |
| PO-216 | 1.576E+00 | 1.465E-01 | 7.091E-02 | 5.066E-03 | 22.221 |
| PO-218 | 1.377E+00 | 1.679E-01 | 8.815E-02 | 7.292E-03 | 15.620 |
| RA-224 | 3.138E+00 | 9.348E-01 | 8.060E-01 | 4.490E-02 | 3.893 |
| RA-226 | 1.206E+00 | 1.811E-01 | 8.051E-02 | 7.192E-03 | 14.980 |
| AC-228 | 1.404E+00 | 2.874E-01 | 1.454E-01 | 1.927E-02 | 9.657 |
| RA-228 | 1.404E+00 | 2.874E-01 | 1.454E-01 | 1.927E-02 | 9.657 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-228 | 1.607E+00 | 1.495E-01 | 7.233E-02 | 5.167E-03 | 22.221 |
| TH-230 | 1.206E+00 | 1.811E-01 | 8.050E-02 | 7.191E-03 | 14.980 |
| TH-232 | 1.404E+00 | 2.874E-01 | 1.454E-01 | 1.927E-02 | 9.657 |
| TH-234 | 2.144E+00 | 2.505E+00 | 2.122E+00 | 3.741E-01 | 1.010 |
| U-234 | 1.206E+00 | 1.811E-01 | 8.050E-02 | 7.191E-03 | 14.980 |
| NP-237 | 6.407E-01 | 3.185E-01 | 3.678E-01 | 8.299E-02 | 1.742 |
| U-238 | 2.144E+00 | 2.505E+00 | 2.122E+00 | 3.741E-01 | 1.010 |
| AM-243 | 3.053E-01 | 7.070E-02 | 7.960E-02 | 6.642E-03 | 3.835 |
| ANH-511 | 1.242E-01 | 4.950E-02 | 3.699E-02 | 2.443E-03 | 3.359 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| BE-7 | -2.040E-01 | | 2.661E-01 | 4.175E-01 | 3.026E-02 | -0.489 |
| NA-22 | -4.825E-02 | | 3.578E-02 | 5.177E-02 | 3.523E-03 | -0.932 |
| NA-24 | -6.297E+00 | | 6.570E+01 | Half-Life | too short | |
| AL-26 | 8.033E-04 | | 2.301E-02 | 3.795E-02 | 2.215E-03 | 0.021 |
| TI-44 | 3.752E-01 | + | 5.633E-02 | 7.592E-02 | 6.491E-03 | 4.941 |
| SC-46 | -1.836E-02 | | 3.299E-02 | 5.148E-02 | 5.742E-03 | -0.357 |
| V-48 | 2.257E-02 | | 6.778E-02 | 1.127E-01 | 1.115E-02 | 0.200 |
| CR-51 | 2.263E-01 | | 3.196E-01 | 5.349E-01 | 3.444E-02 | 0.423 |
| MN-52 | 7.267E-02 | | 3.114E-01 | 5.198E-01 | 3.830E-02 | 0.140 |
| MN-54 | -1.337E-02 | | 3.002E-02 | 4.776E-02 | 4.893E-03 | -0.280 |
| CO-56 | -3.026E-02 | | 3.268E-02 | 4.962E-02 | 5.180E-03 | -0.610 |
| CO-57 | 6.638E-03 | | 2.279E-02 | 3.701E-02 | 2.192E-03 | 0.179 |
| CO-58 | -4.859E-03 | | 2.926E-02 | 4.757E-02 | 4.697E-03 | -0.102 |
| FE-59 | -5.644E-02 | | 7.457E-02 | 1.165E-01 | 9.593E-03 | -0.484 |
| CO-60 | 1.212E-02 | | 2.847E-02 | 4.856E-02 | 3.669E-03 | 0.250 |
| ZN-65 | 3.532E-02 | | 8.045E-02 | 1.197E-01 | 8.433E-03 | 0.295 |
| GE-68 | 7.200E-01 | | 9.592E-01 | 1.687E+00 | 1.340E-01 | 0.427 |
| AS-73 | 4.863E-01 | | 1.020E+00 | 1.747E+00 | 1.385E-01 | 0.278 |
| AS-74 | 3.869E-03 | | 8.365E-02 | 1.358E-01 | 9.756E-03 | 0.028 |
| SE-75 | 5.609E-03 | | 3.669E-02 | 5.603E-02 | 3.204E-03 | 0.100 |
| BR-77 | 1.557E-05 | | 1.598E-05 | Half-Life | too short | |
| SR-82 | -2.223E-01 | | 3.357E-01 | 5.282E-01 | 4.919E-02 | -0.421 |
| RB-83 | 3.469E-02 | | 5.442E-02 | 9.058E-02 | 6.041E-03 | 0.383 |
| RB-84 | 1.228E-02 | | 5.849E-02 | 9.725E-02 | 1.072E-02 | 0.126 |
| KR-85 | 1.241E+01 | | 6.415E+00 | 1.040E+01 | 6.888E-01 | 1.194 |
| SR-85 | 6.694E-02 | | 3.460E-02 | 5.608E-02 | 3.715E-03 | 1.194 |
| RB-86 | 3.795E-01 | | 7.183E-01 | 1.245E+00 | 9.909E-02 | 0.305 |
| Y-88 | 1.350E-02 | | 2.842E-02 | 4.963E-02 | 2.827E-03 | 0.272 |
| ZR-88 | -4.675E-03 | | 2.316E-02 | 3.836E-02 | 2.206E-03 | -0.122 |
| Y-91 | -4.435E+00 | | 1.528E+01 | 2.469E+01 | 1.460E+00 | -0.180 |
| NB-94 | 4.205E-03 | | 2.594E-02 | 4.372E-02 | 3.587E-03 | 0.096 |
| NB-95 | 8.477E-02 | | 3.848E-02 | 6.472E-02 | 5.920E-03 | 1.310 |
| NB-95M | 2.652E-02 | | 1.202E-01 | 1.762E-01 | 1.292E-02 | 0.151 |
| ZR-95 | 6.427E-02 | | 5.662E-02 | 1.005E-01 | 9.887E-03 | 0.640 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| NB-97 | 6.215E+00 | | 4.771E+00 | Half-Life too short | | |
| ZR-97 | 5.121E+02 | | 9.833E+01 | Half-Life too short | | |
| MO-99 | 1.118E+01 | | 2.807E+01 | 4.790E+01 | 7.308E+00 | 0.233 |
| TC-99M | -1.488E+16 | | 1.088E+16 | Half-Life too short | | |
| RH-101 | -7.716E-03 | | 2.719E-02 | 4.491E-02 | 2.414E-03 | -0.172 |
| RH-102 | -7.476E-03 | | 2.229E-02 | 3.601E-02 | 2.287E-03 | -0.208 |
| RU-103 | -1.017E-02 | | 3.191E-02 | 5.128E-02 | 6.658E-03 | -0.198 |
| RH-106 | 6.788E-02 | | 2.578E-01 | 4.228E-01 | 5.319E-02 | 0.161 |
| RU-106 | 6.788E-02 | | 2.577E-01 | 4.228E-01 | 3.111E-02 | 0.161 |
| AG-108M | 2.022E-02 | | 2.565E-02 | 4.443E-02 | 2.903E-03 | 0.455 |
| AG-110M | 1.527E-02 | | 2.989E-02 | 4.535E-02 | 3.577E-03 | 0.337 |
| IN-111 | 9.606E-02 | | 2.952E+00 | 4.267E+00 | 2.384E-01 | 0.023 |
| IN-113M | -3.122E-02 | | 3.284E-02 | 5.190E-02 | 3.184E-03 | -0.602 |
| SN-113 | -3.122E-02 | | 3.284E-02 | 5.190E-02 | 3.184E-03 | -0.602 |
| IN-114M | 8.866E-02 | | 1.755E-01 | 2.657E-01 | 1.419E-02 | 0.334 |
| CD-115 | -3.612E-06 | | 1.852E-05 | Half-Life too short | | |
| SN-117M | -2.050E-04 | | 5.655E-02 | 9.579E-02 | 5.092E-03 | -0.002 |
| SB-122 | 2.424E+00 | | 5.524E+00 | 9.234E+00 | 6.435E-01 | 0.263 |
| I-123 | 2.127E+02 | | 1.036E+03 | Half-Life too short | | |
| TE-123M | 2.407E-03 | | 2.346E-02 | 3.989E-02 | 2.152E-03 | 0.060 |
| I-124 | -2.334E-01 | | 1.293E+00 | 1.770E+00 | 1.280E-01 | -0.132 |
| SB-124 | -3.889E-02 | | 6.016E-02 | 8.964E-02 | 6.185E-03 | -0.434 |
| SB-125 | -7.507E-03 | | 7.414E-02 | 1.227E-01 | 7.668E-03 | -0.061 |
| TE-125M | -2.188E+00 | | 8.627E+00 | 1.379E+01 | 1.215E+00 | -0.159 |
| I-126 | 9.341E-02 | | 2.144E-01 | 3.217E-01 | 2.473E-02 | 0.290 |
| SB-126 | 1.227E-01 | | 1.601E-01 | 2.464E-01 | 2.086E-02 | 0.498 |
| SB-127 | -2.199E-01 | | 2.412E+00 | 4.010E+00 | 5.001E-01 | -0.055 |
| XE-127 | -2.363E-03 | | 4.171E-02 | 6.937E-02 | 3.744E-03 | -0.034 |
| I-131 | 1.132E-02 | | 1.340E-01 | 2.269E-01 | 1.477E-02 | 0.050 |
| TE-132 | -3.378E-01 | | 1.549E+00 | 2.535E+00 | 3.888E-01 | -0.133 |
| BA-133 | -8.731E-03 | | 4.143E-02 | 5.665E-02 | 6.544E-03 | -0.154 |
| I-133 | 7.366E-02 | | 1.082E-01 | Half-Life too short | | |
| CS-134 | 5.754E-02 | | 3.816E-02 | 6.824E-02 | 6.600E-03 | 0.843 |
| CS-135 | 2.455E-01 | | 1.403E-01 | 2.215E-01 | 1.675E-02 | 1.108 |
| I-135 | -7.660E+13 | | 4.198E+14 | Half-Life too short | | |
| CS-136 | 6.153E-03 | | 1.045E-01 | 1.756E-01 | 1.575E-02 | 0.035 |
| CE-139 | 1.802E-03 | | 2.422E-02 | 4.104E-02 | 2.154E-03 | 0.044 |
| BA-140 | -1.137E-01 | | 2.630E-01 | 4.128E-01 | 1.350E-01 | -0.275 |
| LA-140 | -5.542E-02 | | 8.736E-02 | 1.343E-01 | 9.212E-03 | -0.413 |
| CE-141 | 4.938E-02 | | 6.084E-02 | 9.965E-02 | 5.689E-03 | 0.496 |
| CE-143 | 8.387E-03 | | 1.260E-03 | Half-Life too short | | |
| CE-144 | 3.680E-02 | | 2.015E-01 | 2.887E-01 | 4.082E-02 | 0.127 |
| PM-144 | 9.970E-03 | | 2.503E-02 | 4.288E-02 | 3.482E-03 | 0.233 |
| PR-144 | 6.773E-01 | | 1.700E+00 | 2.913E+00 | 2.364E-01 | 0.233 |
| PM-146 | 1.869E-02 | | 3.192E-02 | 5.466E-02 | 4.863E-03 | 0.342 |
| ND-147 | 2.595E-01 | | 5.841E-01 | 9.805E-01 | 1.368E-01 | 0.265 |
| PM-149 | -8.684E-05 | | 1.641E-04 | Half-Life too short | | |
| EU-152 | -1.013E-01 | | 9.624E-02 | 1.231E-01 | 8.031E-03 | -0.823 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| GD-153 | -2.370E-02 | | 7.756E-02 | 1.108E-01 | 8.660E-03 | -0.214 |
| EU-154 | -1.194E-01 | | 9.864E-02 | 1.440E-01 | 1.438E-02 | -0.830 |
| EU-155 | 1.281E-01 | | 9.618E-02 | 1.634E-01 | 1.168E-02 | 0.784 |
| TB-160 | -7.523E-03 | | 1.127E-01 | 1.833E-01 | 2.014E-02 | -0.041 |
| HO-166M | 2.652E-02 | | 4.693E-02 | 8.096E-02 | 6.748E-03 | 0.328 |
| TM-171 | -1.462E+01 | | 3.093E+01 | 4.495E+01 | 3.594E+00 | -0.325 |
| LU-176 | -9.132E-03 | | 2.089E-02 | 3.023E-02 | 1.741E-03 | -0.302 |
| LU-177 | 6.626E+00 | + | 2.395E+00 | 2.719E+00 | 1.475E-01 | 2.437 |
| LU-177M | -2.206E-02 | | 1.599E-01 | 2.294E-01 | 1.355E-02 | -0.096 |
| HF-181 | 2.279E-02 | | 3.576E-02 | 6.113E-02 | 3.913E-03 | 0.373 |
| W-181 | -2.498E-01 | | 4.198E-01 | 6.070E-01 | 4.815E-02 | -0.412 |
| TA-182 | -2.297E-02 | | 1.537E-01 | 2.506E-01 | 1.533E-02 | -0.092 |
| RE-183 | -1.128E-02 | | 9.075E-02 | 1.528E-01 | 8.066E-03 | -0.074 |
| RE-184 | 2.664E-02 | | 1.852E-01 | 3.059E-01 | 1.718E-02 | 0.087 |
| OS-185 | 2.312E-02 | | 3.320E-02 | 5.603E-02 | 4.214E-03 | 0.413 |
| RE-188 | 4.843E-02 | | 1.503E-01 | 2.577E-01 | 1.379E-02 | 0.188 |
| W-188 | 3.782E+00 | | 6.681E+00 | 9.869E+00 | 5.653E-01 | 0.383 |
| IR-192 | -2.043E-02 | | 2.817E-02 | 4.347E-02 | 2.521E-03 | -0.470 |
| AU-195 | 1.577E-01 | | 2.074E-01 | 3.321E-01 | 2.541E-02 | 0.475 |
| TL-200 | 4.042E-03 | | 3.702E-03 | Half-Life | too short | |
| TL-201 | 1.780E+01 | | 1.642E+01 | 2.880E+01 | 1.512E+00 | 0.618 |
| TL-202 | 2.265E-02 | | 6.645E-02 | 1.126E-01 | 6.864E-03 | 0.201 |
| HG-203 | 5.164E-02 | | 3.631E-02 | 6.273E-02 | 3.804E-03 | 0.823 |
| BI-207 | 3.296E-03 | | 3.785E-02 | 6.365E-02 | 5.255E-03 | 0.052 |
| TL-207 | -2.767E-02 | | 5.730E-01 | 8.016E-01 | 1.323E-01 | -0.035 |
| PO-209 | -5.048E-01 | | 5.792E+00 | 9.393E+00 | 1.059E+00 | -0.054 |
| BI-210 | 1.135E+00 | | 4.828E+00 | 8.248E+00 | 6.381E-01 | 0.138 |
| PB-210 | 1.135E+00 | | 4.828E+00 | 8.248E+00 | 6.381E-01 | 0.138 |
| PO-210 | 1.135E+00 | | 4.828E+00 | 8.248E+00 | 5.486E-01 | 0.138 |
| PB-211 | 1.457E-02 | | 8.643E-01 | 1.254E+00 | 7.818E-01 | 0.012 |
| BI-212 | 9.693E-01 | + | 4.031E-01 | 4.924E-01 | 4.904E-02 | 1.969 |
| PO-215 | -2.767E-02 | | 5.730E-01 | 8.016E-01 | 1.323E-01 | -0.035 |
| RN-219 | 1.264E-02 | | 3.214E-01 | 5.386E-01 | 7.333E-02 | 0.023 |
| RN-220 | -1.032E+01 | | 1.979E+01 | 3.106E+01 | 2.134E+00 | -0.332 |
| RA-223 | -2.767E-02 | | 5.730E-01 | 8.016E-01 | 1.323E-01 | -0.035 |
| AC-227 | -6.517E-02 | | 3.008E-01 | 4.876E-01 | 6.773E-02 | -0.134 |
| TH-227 | -6.517E-02 | | 3.008E-01 | 4.876E-01 | 8.212E-02 | -0.134 |
| TH-229 | -1.654E-01 | | 4.083E-01 | 6.717E-01 | 3.597E-02 | -0.246 |
| PA-231 | -1.165E+00 | | 1.251E+00 | 1.921E+00 | 2.640E-01 | -0.606 |
| TH-231 | -2.767E-02 | | 5.730E-01 | 8.016E-01 | 1.323E-01 | -0.035 |
| U-231 | 5.746E-01 | | 2.234E+00 | 3.295E+00 | 2.640E-01 | 0.174 |
| PA-233 | -2.581E-02 | | 5.051E-02 | 7.914E-02 | 4.848E-03 | -0.326 |
| PA-234 | -7.987E-02 | | 2.383E-01 | 3.759E-01 | 7.414E-02 | -0.212 |
| PA-234M | 2.898E-01 | | 3.636E+00 | 5.927E+00 | 6.393E-01 | 0.049 |
| U-235 | -6.490E-03 | | 1.818E-01 | 2.880E-01 | 4.665E-02 | -0.023 |
| NP-236 | -7.968E-03 | | 6.340E-02 | 1.068E-01 | 5.660E-03 | -0.075 |
| NP-239 | -1.107E-01 | | 1.654E-01 | 2.582E-01 | 1.598E-02 | -0.429 |
| AM-241 | 1.636E-01 | | 1.750E-01 | 2.747E-01 | 2.278E-02 | 0.595 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | 1.535E-02 | | 8.685E-02 | 1.418E-01 | 1.015E-02 | 0.108 |
| AM-246 | 4.211E-02 | | 1.076E-01 | 1.848E-01 | 1.461E-02 | 0.228 |
| CM-247 | 3.190E-03 | | 2.902E-02 | 4.880E-02 | 2.842E-03 | 0.065 |
| CF-249 | 3.516E-03 | | 2.806E-02 | 4.739E-02 | 2.724E-03 | 0.074 |
| CF-251 | 5.635E-02 | | 1.008E-01 | 1.731E-01 | 9.140E-03 | 0.326 |

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245388002          *
* Acquisition date   : 4-FEB-2010 10:29:07 Detector SN#      :              *
* Detector ID        : GAM18                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.57             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245388002              Analyst initials: MXR1          *
* Batch Number       : 944964                  Sample Quantity : 1.2789E+02 GRAM   *
* Recovery           : 1.00000                  Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23 MS Isotope       :              *
* MSD DPM             : 0.000                      MSD Isotope   :              *
* LCS DPM             : 0.000                      LCS Isotope   :              *
* LCSD DPM            : 0.000                      LCSD Isotope  :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.116E+01 | 1.980E+00 | 2.347E-01 | 1.010E+00 |
| CD-109 | 2.236E+00 | 9.910E-01 | 5.835E-01 | 5.056E-01 |
| SN-126 | 2.182E-01 | 9.670E-02 | 6.573E-02 | 4.934E-02 |
| BA-137M | 1.114E-01 | 6.834E-02 | 2.187E-02 | 3.487E-02 |
| CS-137 | 1.178E-01 | 7.224E-02 | 2.312E-02 | 3.686E-02 |
| TL-208 | 4.416E-01 | 6.767E-02 | 2.272E-02 | 3.452E-02 |
| BI-211 | 3.958E+00 | 4.275E-01 | 1.365E-01 | 2.181E-01 |
| PB-212 | 1.576E+00 | 1.436E-01 | 3.648E-02 | 7.327E-02 |
| PO-212 | 1.576E+00 | 1.436E-01 | 3.648E-02 | 7.327E-02 |
| BI-214 | 1.206E+00 | 1.775E-01 | 4.083E-02 | 9.056E-02 |
| PB-214 | 1.377E+00 | 1.645E-01 | 4.508E-02 | 8.394E-02 |
| PO-214 | 1.377E+00 | 1.645E-01 | 4.508E-02 | 8.394E-02 |
| PO-216 | 1.576E+00 | 1.436E-01 | 3.648E-02 | 7.327E-02 |
| PO-218 | 1.377E+00 | 1.645E-01 | 4.508E-02 | 8.394E-02 |
| RA-224 | 3.138E+00 | 9.161E-01 | 4.145E-01 | 4.674E-01 |
| RA-226 | 1.206E+00 | 1.775E-01 | 4.083E-02 | 9.056E-02 |
| AC-228 | 1.404E+00 | 2.816E-01 | 7.330E-02 | 1.437E-01 |
| RA-228 | 1.404E+00 | 2.816E-01 | 7.330E-02 | 1.437E-01 |
| TH-228 | 1.607E+00 | 1.465E-01 | 3.721E-02 | 7.474E-02 |
| TH-230 | 1.206E+00 | 1.775E-01 | 4.083E-02 | 9.056E-02 |
| TH-232 | 1.404E+00 | 2.816E-01 | 7.330E-02 | 1.437E-01 |
| TH-234 | 2.144E+00 | 2.455E+00 | 1.113E+00 | 1.252E+00 |
| U-234 | 1.206E+00 | 1.775E-01 | 4.083E-02 | 9.056E-02 |
| NP-237 | 6.407E-01 | 3.121E-01 | 1.920E-01 | 1.592E-01 |
| U-238 | 2.144E+00 | 2.455E+00 | 1.113E+00 | 1.252E+00 |
| AM-243 | 3.053E-01 | 6.928E-02 | 4.165E-02 | 3.535E-02 |
| ANH-511 | 1.242E-01 | 4.851E-02 | 1.881E-02 | 2.475E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|-----|
|---------|-------------------------------------|---------------|--------------------|-----|

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| BE-7 | -2.040E-01 | 2.608E-01 | 2.125E-01 | 1.331E-01 | NOT IDENT. |
| NA-22 | -4.825E-02 | 3.506E-02 | 2.596E-02 | 1.789E-02 | NOT IDENT. |
| NA-24 | -6.297E+06 | 1.288E+08 | 0.000E+00 | 6.570E+07 | SHORT HLIF |
| AL-26 | 8.033E-04 | 2.255E-02 | 1.892E-02 | 1.150E-02 | NOT IDENT. |
| TI-44 | 3.752E-01 | 5.521E-02 | 3.969E-02 | 2.817E-02 | FAIL ABUN |
| SC-46 | -1.836E-02 | 3.233E-02 | 2.596E-02 | 1.649E-02 | FAIL ABUN |
| V-48 | 2.257E-02 | 6.643E-02 | 5.674E-02 | 3.389E-02 | NOT IDENT. |
| CR-51 | 2.263E-01 | 3.132E-01 | 2.739E-01 | 1.598E-01 | NOT IDENT. |
| MN-52 | 7.267E-02 | 3.052E-01 | 2.601E-01 | 1.557E-01 | NOT IDENT. |
| MN-54 | -1.337E-02 | 2.942E-02 | 2.411E-02 | 1.501E-02 | NOT IDENT. |
| CO-56 | -3.026E-02 | 3.202E-02 | 2.504E-02 | 1.634E-02 | FAIL ABUN |
| CO-57 | 6.638E-03 | 2.233E-02 | 1.922E-02 | 1.139E-02 | NOT IDENT. |
| CO-58 | -4.859E-03 | 2.867E-02 | 2.402E-02 | 1.463E-02 | NOT IDENT. |
| FE-59 | -5.644E-02 | 7.308E-02 | 5.857E-02 | 3.728E-02 | NOT IDENT. |
| CO-60 | 1.212E-02 | 2.790E-02 | 2.433E-02 | 1.424E-02 | NOT IDENT. |
| ZN-65 | 3.532E-02 | 7.884E-02 | 6.015E-02 | 4.022E-02 | NOT IDENT. |
| GE-68 | 7.200E-01 | 9.400E-01 | 8.478E-01 | 4.796E-01 | NOT IDENT. |
| AS-73 | 4.863E-01 | 1.000E+00 | 9.186E-01 | 5.102E-01 | NOT IDENT. |
| AS-74 | 3.869E-03 | 8.197E-02 | 6.889E-02 | 4.182E-02 | NOT IDENT. |
| SE-75 | 5.609E-03 | 3.596E-02 | 2.878E-02 | 1.835E-02 | NOT IDENT. |
| BR-77 | 1.557E+01 | 3.132E+01 | 0.000E+00 | 1.598E+01 | SHORT HLIF |
| SR-82 | -2.223E-01 | 3.290E-01 | 2.669E-01 | 1.678E-01 | NOT IDENT. |
| RB-83 | 3.469E-02 | 5.333E-02 | 4.605E-02 | 2.721E-02 | NOT IDENT. |
| RB-84 | 1.228E-02 | 5.732E-02 | 4.904E-02 | 2.925E-02 | NOT IDENT. |
| KR-85 | 1.241E+01 | 6.287E+00 | 5.286E+00 | 3.208E+00 | NOT IDENT. |
| SR-85 | 6.694E-02 | 3.391E-02 | 2.851E-02 | 1.730E-02 | NOT IDENT. |
| RB-86 | 3.795E-01 | 7.039E-01 | 6.257E-01 | 3.592E-01 | NOT IDENT. |
| Y-88 | 1.350E-02 | 2.786E-02 | 2.474E-02 | 1.421E-02 | NOT IDENT. |
| ZR-88 | -4.675E-03 | 2.269E-02 | 1.958E-02 | 1.158E-02 | NOT IDENT. |
| Y-91 | -4.435E+00 | 1.498E+01 | 1.239E+01 | 7.641E+00 | NOT IDENT. |
| NB-94 | 4.205E-03 | 2.542E-02 | 2.213E-02 | 1.297E-02 | NOT IDENT. |
| NB-95 | 8.477E-02 | 3.771E-02 | 3.271E-02 | 1.924E-02 | NOT IDENT. |
| NB-95M | 2.652E-02 | 1.178E-01 | 9.063E-02 | 6.012E-02 | NOT IDENT. |
| ZR-95 | 6.427E-02 | 5.548E-02 | 5.079E-02 | 2.831E-02 | NOT IDENT. |
| NB-97 | 6.215E+06 | 9.351E+06 | 0.000E+00 | 4.771E+06 | SHORT HLIF |
| ZR-97 | 5.121E+08 | 1.927E+08 | 0.000E+00 | 9.833E+07 | SHORT HLIF |
| MO-99 | 1.118E+01 | 2.751E+01 | 2.422E+01 | 1.403E+01 | NOT IDENT. |
| TC-99M | -1.488E+22 | 2.133E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -7.716E-03 | 2.664E-02 | 2.317E-02 | 1.359E-02 | NOT IDENT. |
| RH-102 | -7.476E-03 | 2.185E-02 | 1.833E-02 | 1.115E-02 | NOT IDENT. |
| RU-103 | -1.017E-02 | 3.127E-02 | 2.609E-02 | 1.596E-02 | FAIL ABUN |
| RH-106 | 6.788E-02 | 2.526E-01 | 2.143E-01 | 1.289E-01 | FAIL ABUN |
| RU-106 | 6.788E-02 | 2.525E-01 | 2.143E-01 | 1.288E-01 | FAIL ABUN |
| AG-108M | 2.022E-02 | 2.514E-02 | 2.265E-02 | 1.282E-02 | NOT IDENT. |
| AG-110M | 1.527E-02 | 2.929E-02 | 2.297E-02 | 1.494E-02 | NOT IDENT. |
| IN-111 | 9.606E-02 | 2.893E+00 | 2.194E+00 | 1.476E+00 | NOT IDENT. |
| IN-113M | -3.122E-02 | 3.218E-02 | 2.650E-02 | 1.642E-02 | NOT IDENT. |
| SN-113 | -3.122E-02 | 3.218E-02 | 2.650E-02 | 1.642E-02 | NOT IDENT. |
| IN-114M | 8.866E-02 | 1.720E-01 | 1.371E-01 | 8.773E-02 | NOT IDENT. |
| CD-115 | -3.612E+00 | 3.629E+01 | 0.000E+00 | 1.852E+01 | SHORT HLIF |
| SN-117M | -2.050E-04 | 5.542E-02 | 4.957E-02 | 2.827E-02 | NOT IDENT. |
| SB-122 | 2.424E+00 | 5.413E+00 | 4.689E+00 | 2.762E+00 | NOT IDENT. |
| I-123 | 2.127E+08 | 2.032E+09 | 0.000E+00 | 1.036E+09 | SHORT HLIF |
| TE-123M | 2.407E-03 | 2.299E-02 | 2.064E-02 | 1.173E-02 | NOT IDENT. |
| I-124 | -2.334E-01 | 1.267E+00 | 8.979E-01 | 6.465E-01 | NOT IDENT. |
| SB-124 | -3.889E-02 | 5.896E-02 | 4.475E-02 | 3.008E-02 | FAIL ABUN |
| SB-125 | -7.507E-03 | 7.266E-02 | 6.257E-02 | 3.707E-02 | FAIL ABUN |
| TE-125M | -2.188E+00 | 8.455E+00 | 7.177E+00 | 4.314E+00 | NOT IDENT. |
| I-126 | 9.341E-02 | 2.101E-01 | 1.629E-01 | 1.072E-01 | NOT IDENT. |
| SB-126 | 1.227E-01 | 1.569E-01 | 1.246E-01 | 8.006E-02 | FAIL ABUN |
| SB-127 | -2.199E-01 | 2.364E+00 | 2.030E+00 | 1.206E+00 | NOT IDENT. |
| XE-127 | -2.363E-03 | 4.087E-02 | 3.577E-02 | 2.085E-02 | NOT IDENT. |
| I-131 | 1.132E-02 | 1.314E-01 | 1.160E-01 | 6.702E-02 | NOT IDENT. |
| TE-132 | -3.378E-01 | 1.518E+00 | 1.305E+00 | 7.746E-01 | NOT IDENT. |
| BA-133 | -8.731E-03 | 4.060E-02 | 2.897E-02 | 2.071E-02 | NOT IDENT. |
| I-133 | 7.366E+04 | 2.121E+05 | 0.000E+00 | 1.082E+05 | SHORT HLIF |
| CS-134 | 5.754E-02 | 3.740E-02 | 3.447E-02 | 1.908E-02 | NOT IDENT. |
| CS-135 | 2.455E-01 | 1.375E-01 | 1.138E-01 | 7.017E-02 | NOT IDENT. |
| I-135 | -7.660E+19 | 8.228E+20 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | 6.153E-03 | 1.024E-01 | 8.830E-02 | 5.226E-02 | FAIL ABUN |
| CE-139 | 1.802E-03 | 2.374E-02 | 2.122E-02 | 1.211E-02 | NOT IDENT. |
| BA-140 | -1.137E-01 | 2.578E-01 | 2.098E-01 | 1.315E-01 | NOT IDENT. |
| LA-140 | -5.542E-02 | 8.561E-02 | 6.708E-02 | 4.368E-02 | FAIL ABUN |
| CE-141 | 4.938E-02 | 5.962E-02 | 5.164E-02 | 3.042E-02 | NOT IDENT. |
| CE-143 | 8.387E+03 | 2.470E+03 | 0.000E+00 | 1.260E+03 | SHORT HLIF |
| CE-144 | 3.680E-02 | 1.975E-01 | 1.498E-01 | 1.008E-01 | NOT IDENT. |
| PM-144 | 9.970E-03 | 2.452E-02 | 2.170E-02 | 1.251E-02 | NOT IDENT. |
| PR-144 | 6.773E-01 | 1.666E+00 | 1.474E+00 | 8.501E-01 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-146 | 1.869E-02 | 3.128E-02 | 2.785E-02 | 1.596E-02 | NOT IDENT. |
| ND-147 | 2.595E-01 | 5.724E-01 | 4.983E-01 | 2.920E-01 | FAIL ABUN |
| PM-149 | -8.684E+01 | 3.215E+02 | 0.000E+00 | 1.641E+02 | SHORT HLIF |
| EU-152 | -1.013E-01 | 9.432E-02 | 6.296E-02 | 4.812E-02 | FAIL ABUN |
| GD-153 | -2.370E-02 | 7.601E-02 | 5.773E-02 | 3.878E-02 | NOT IDENT. |
| EU-154 | -1.194E-01 | 9.667E-02 | 7.219E-02 | 4.932E-02 | NOT IDENT. |
| EU-155 | 1.281E-01 | 9.426E-02 | 8.506E-02 | 4.809E-02 | FAIL ABUN |
| TB-160 | -7.523E-03 | 1.104E-01 | 9.245E-02 | 5.633E-02 | FAIL ABUN |
| HO-166M | 2.652E-02 | 4.599E-02 | 4.096E-02 | 2.346E-02 | NOT IDENT. |
| TM-171 | -1.462E+01 | 3.031E+01 | 2.356E+01 | 1.546E+01 | NOT IDENT. |
| LU-176 | -9.132E-03 | 2.047E-02 | 1.549E-02 | 1.045E-02 | FAIL ABUN |
| LU-177 | 6.626E+00 | 2.347E+00 | 1.401E+00 | 1.197E+00 | FAIL ABUN |
| LU-177M | -2.206E-02 | 1.567E-01 | 1.171E-01 | 7.995E-02 | FAIL ABUN |
| HF-181 | 2.279E-02 | 3.505E-02 | 3.111E-02 | 1.788E-02 | NOT IDENT. |
| W-181 | -2.498E-01 | 4.114E-01 | 3.182E-01 | 2.099E-01 | NOT IDENT. |
| TA-182 | -2.297E-02 | 1.506E-01 | 1.258E-01 | 7.685E-02 | FAIL ABUN |
| RE-183 | -1.128E-02 | 8.894E-02 | 7.906E-02 | 4.538E-02 | FAIL ABUN |
| RE-184 | 2.664E-02 | 1.815E-01 | 1.572E-01 | 9.260E-02 | NOT IDENT. |
| OS-185 | 2.312E-02 | 3.253E-02 | 2.839E-02 | 1.660E-02 | NOT IDENT. |
| RE-188 | 4.843E-02 | 1.473E-01 | 1.334E-01 | 7.514E-02 | NOT IDENT. |
| W-188 | 3.782E+00 | 6.548E+00 | 5.061E+00 | 3.341E+00 | FAIL ABUN |
| IR-192 | -2.043E-02 | 2.760E-02 | 2.226E-02 | 1.408E-02 | FAIL ABUN |
| AU-195 | 1.577E-01 | 2.032E-01 | 1.731E-01 | 1.037E-01 | FAIL ABUN |
| TL-200 | 4.042E+03 | 7.257E+03 | 0.000E+00 | 3.702E+03 | SHORT HLIF |
| TL-201 | 1.780E+01 | 1.609E+01 | 1.489E+01 | 8.209E+00 | NOT IDENT. |
| TL-202 | 2.265E-02 | 6.512E-02 | 5.738E-02 | 3.323E-02 | NOT IDENT. |
| HG-203 | 5.164E-02 | 3.558E-02 | 3.219E-02 | 1.815E-02 | NOT IDENT. |
| BI-207 | 3.296E-03 | 3.709E-02 | 3.200E-02 | 1.893E-02 | FAIL ABUN |
| TL-207 | -2.767E-02 | 5.615E-01 | 4.104E-01 | 2.865E-01 | FAIL ABUN |
| PO-209 | -5.048E-01 | 5.676E+00 | 4.735E+00 | 2.896E+00 | NOT IDENT. |
| BI-210 | 1.135E+00 | 4.732E+00 | 4.345E+00 | 2.414E+00 | NOT IDENT. |
| PB-210 | 1.135E+00 | 4.732E+00 | 4.345E+00 | 2.414E+00 | NOT IDENT. |
| PO-210 | 1.135E+00 | 4.731E+00 | 4.345E+00 | 2.414E+00 | NOT IDENT. |
| PB-211 | 1.457E-02 | 8.470E-01 | 6.399E-01 | 4.321E-01 | NOT IDENT. |
| BI-212 | 9.693E-01 | 3.951E-01 | 2.490E-01 | 2.016E-01 | FAIL ABUN |
| PO-215 | -2.767E-02 | 5.615E-01 | 4.104E-01 | 2.865E-01 | FAIL ABUN |
| RN-219 | 1.264E-02 | 3.150E-01 | 2.749E-01 | 1.607E-01 | FAIL ABUN |
| RN-220 | -1.032E+01 | 1.939E+01 | 1.577E+01 | 9.893E+00 | NOT IDENT. |
| RA-223 | -2.767E-02 | 5.615E-01 | 4.104E-01 | 2.865E-01 | FAIL ABUN |
| AC-227 | -6.517E-02 | 2.948E-01 | 2.505E-01 | 1.504E-01 | FAIL ABUN |
| TH-227 | -6.517E-02 | 2.948E-01 | 2.505E-01 | 1.504E-01 | FAIL ABUN |
| TH-229 | -1.654E-01 | 4.001E-01 | 3.466E-01 | 2.041E-01 | FAIL ABUN |
| PA-231 | -1.165E+00 | 1.226E+00 | 9.854E-01 | 6.255E-01 | FAIL ABUN |
| TH-231 | -2.767E-02 | 5.615E-01 | 4.104E-01 | 2.865E-01 | FAIL ABUN |
| U-231 | 5.746E-01 | 2.189E+00 | 1.718E+00 | 1.117E+00 | FAIL ABUN |
| PA-233 | -2.581E-02 | 4.950E-02 | 4.054E-02 | 2.525E-02 | FAIL ABUN |
| PA-234 | -7.987E-02 | 2.335E-01 | 1.893E-01 | 1.192E-01 | FAIL ABUN |
| PA-234M | 2.898E-01 | 3.563E+00 | 2.983E+00 | 1.818E+00 | NOT IDENT. |
| U-235 | -6.490E-03 | 1.782E-01 | 1.493E-01 | 9.090E-02 | FAIL ABUN |
| NP-236 | -7.968E-03 | 6.213E-02 | 5.528E-02 | 3.170E-02 | FAIL ABUN |
| NP-239 | -1.107E-01 | 1.621E-01 | 1.342E-01 | 8.271E-02 | FAIL ABUN |
| AM-241 | 1.636E-01 | 1.715E-01 | 1.442E-01 | 8.748E-02 | NOT IDENT. |
| CM-243 | 1.535E-02 | 8.511E-02 | 7.385E-02 | 4.342E-02 | FAIL ABUN |
| AM-246 | 4.211E-02 | 1.055E-01 | 9.288E-02 | 5.382E-02 | NOT IDENT. |
| CM-247 | 3.190E-03 | 2.844E-02 | 2.491E-02 | 1.451E-02 | NOT IDENT. |
| CF-249 | 3.516E-03 | 2.749E-02 | 2.420E-02 | 1.403E-02 | NOT IDENT. |
| CF-251 | 5.635E-02 | 9.876E-02 | 8.943E-02 | 5.039E-02 | NOT IDENT. |

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*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON, SC 29417               *
*               GAMMA SPECTROSCOPY BACKGROUND REPORT *
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| ENERGY | MDA COUNTS |
|--------|------------|
|--------|------------|

| | |
|-------|----------|
| 46.50 | 264.0406 |
| 46.50 | 264.0406 |
| 46.50 | 264.0406 |
| 48.70 | 276.2750 |
| 49.72 | 283.6941 |
| 51.35 | 269.2592 |
| 52.39 | 242.2227 |
| 52.97 | 238.2151 |
| 53.15 | 254.7555 |
| 53.44 | 262.3235 |
| 54.07 | 275.7304 |
| 56.28 | 338.7502 |
| 56.28 | 338.7540 |
| 57.37 | 0.0000 |
| 57.53 | 257.4394 |
| 57.53 | 257.4409 |
| 57.60 | 253.0641 |
| 57.98 | 244.5184 |
| 57.98 | 244.5184 |
| 59.32 | 266.6236 |
| 59.32 | 266.6236 |
| 59.40 | 266.6986 |
| 59.54 | 266.8298 |
| 59.72 | 294.9560 |
| 60.01 | 295.2554 |
| 61.10 | 320.2536 |
| 61.14 | 320.2980 |
| 61.30 | 320.4745 |
| 63.00 | 330.8192 |
| 63.29 | 331.1424 |
| 63.29 | 331.1424 |
| 63.58 | 331.4646 |
| 64.28 | 359.2180 |
| 65.12 | 351.6757 |
| 65.20 | 351.7685 |
| 65.20 | 351.7685 |
| 66.05 | 337.0407 |
| 66.72 | 344.9298 |
| 66.83 | 325.0101 |
| 66.91 | 325.0933 |
| 67.20 | 309.6299 |
| 67.20 | 309.6299 |
| 67.75 | 340.3331 |
| 67.85 | 343.3163 |
| 68.90 | 368.9668 |
| 68.90 | 368.9668 |
| 69.30 | 379.0543 |
| 69.67 | 373.7200 |
| 70.82 | 369.7434 |
| 70.82 | 369.7434 |
| 70.83 | 369.7551 |
| 72.80 | 367.6237 |
| 72.87 | 367.7025 |
| 72.87 | 367.7025 |
| 74.67 | 354.0533 |
| 74.81 | 354.2015 |
| 74.81 | 354.2015 |
| 74.81 | 354.2015 |
| 74.81 | 354.2015 |
| 74.81 | 354.2015 |
| 74.81 | 354.2015 |
| 74.97 | 354.3699 |
| 75.28 | 354.6977 |
| 75.70 | 355.1396 |
| 77.11 | 356.6125 |
| 77.11 | 356.6125 |

| | |
|--------|----------|
| 77.11 | 356.6125 |
| 77.11 | 356.6125 |
| 77.11 | 356.6125 |
| 77.11 | 356.6125 |
| 77.11 | 356.6125 |
| 78.38 | 357.9290 |
| 79.62 | 359.2050 |
| 79.80 | 338.0442 |
| 79.80 | 338.0442 |
| 80.11 | 338.3421 |
| 80.18 | 338.4096 |
| 80.30 | 360.8934 |
| 80.30 | 360.8934 |
| 80.57 | 361.1703 |
| 81.00 | 400.4583 |
| 81.07 | 400.5381 |
| 81.07 | 400.5381 |
| 81.07 | 400.5381 |
| 81.07 | 400.5381 |
| 82.60 | 429.2706 |
| 83.37 | 385.0586 |
| 83.78 | 327.2718 |
| 83.78 | 327.2718 |
| 83.78 | 327.2718 |
| 83.78 | 327.2718 |
| 84.21 | 349.7700 |
| 84.90 | 370.0645 |
| 85.43 | 393.2869 |
| 86.29 | 466.9770 |
| 86.50 | 467.2402 |
| 86.54 | 467.2895 |
| 86.59 | 467.3530 |
| 86.72 | 472.0688 |
| 86.79 | 472.1542 |
| 86.94 | 472.3464 |
| 87.30 | 488.0046 |
| 87.30 | 488.0046 |
| 87.30 | 488.0046 |
| 87.30 | 488.0046 |
| 87.30 | 488.0046 |
| 87.30 | 488.0046 |
| 87.57 | 488.3549 |
| 87.88 | 0.0000 |
| 88.03 | 371.6648 |
| 88.36 | 371.9887 |
| 88.47 | 372.0966 |
| 89.95 | 554.1937 |
| 91.11 | 270.2546 |
| 92.29 | 271.0764 |
| 92.38 | 271.1395 |
| 92.38 | 271.1395 |
| 93.35 | 319.6851 |
| 94.00 | 320.2126 |
| 94.67 | 308.3519 |
| 94.67 | 308.3565 |
| 94.90 | 308.5341 |
| 94.90 | 308.5341 |
| 94.90 | 308.5341 |
| 94.90 | 308.5341 |
| 95.87 | 307.7284 |
| 95.87 | 307.7284 |
| 96.73 | 317.7337 |
| 97.43 | 322.9606 |
| 98.44 | 304.9910 |
| 98.44 | 304.9910 |
| 98.88 | 289.3478 |
| 99.55 | 293.7917 |
| 99.55 | 293.7917 |
| 99.86 | 318.0768 |
| 100.00 | 318.1851 |
| 100.10 | 318.2639 |
| 103.18 | 354.3545 |
| 103.76 | 324.2122 |
| 105.00 | 306.0880 |
| 105.31 | 291.4713 |
| 108.00 | 363.6653 |
| 109.28 | 328.3580 |

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| 111.00 | 309.2285 |
| 111.00 | 309.2285 |
| 111.76 | 315.1291 |
| 112.95 | 336.4480 |
| 115.19 | 305.5904 |
| 116.30 | 308.4980 |
| 117.00 | 323.1050 |
| 117.00 | 323.1050 |
| 117.66 | 335.5465 |
| 121.11 | 306.1766 |
| 121.62 | 299.9115 |
| 121.78 | 300.0115 |
| 122.06 | 310.0827 |
| 122.32 | 310.2491 |
| 122.32 | 310.2491 |
| 122.32 | 310.2491 |
| 122.32 | 310.2491 |
| 123.07 | 328.3626 |
| 127.23 | 316.7133 |
| 129.76 | 326.6963 |
| 131.20 | 341.0695 |
| 133.02 | 242.8044 |
| 133.54 | 312.2496 |
| 135.34 | 343.2617 |
| 136.00 | 331.2583 |
| 136.25 | 316.7119 |
| 136.48 | 329.2991 |
| 140.51 | 345.4984 |
| 140.51 | 0.0000 |
| 142.18 | 329.4170 |
| 142.65 | 331.9937 |
| 143.76 | 333.8194 |
| 144.24 | 338.7050 |
| 144.24 | 338.7050 |
| 144.24 | 338.7050 |
| 144.24 | 338.7050 |
| 145.22 | 315.1569 |
| 145.44 | 315.2851 |
| 147.16 | 307.0321 |
| 152.43 | 305.2642 |
| 152.70 | 303.0768 |
| 153.22 | 286.1450 |
| 154.21 | 319.9487 |
| 154.21 | 319.9487 |
| 154.21 | 319.9487 |
| 154.21 | 319.9487 |
| 155.03 | 337.9618 |
| 156.02 | 327.9886 |
| 158.56 | 312.6399 |
| 159.00 | 0.0000 |
| 159.00 | 306.6854 |
| 160.31 | 308.2516 |
| 161.27 | 321.1717 |
| 162.32 | 303.0735 |
| 162.64 | 299.6778 |
| 163.35 | 290.2393 |
| 163.89 | 294.9560 |
| 165.85 | 299.4891 |
| 167.43 | 263.5171 |
| 171.28 | 315.6708 |
| 171.86 | 319.5755 |
| 172.10 | 300.7320 |
| 176.55 | 280.1213 |
| 176.60 | 280.1425 |
| 181.06 | 297.4748 |
| 184.41 | 288.6885 |
| 185.71 | 321.9074 |
| 186.00 | 322.0486 |
| 190.27 | 286.7741 |
| 192.34 | 275.7250 |
| 193.63 | 307.9777 |
| 197.04 | 312.3145 |
| 198.01 | 303.3571 |
| 198.60 | 292.3336 |
| 200.40 | 0.0000 |
| 201.83 | 330.5069 |
| 202.84 | 306.3900 |
| 205.31 | 303.6548 |

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| 208.36 | 277.4967 |
| 208.81 | 277.4771 |
| 209.75 | 277.8345 |
| 209.75 | 277.8345 |
| 210.97 | 280.0199 |
| 215.65 | 261.7776 |
| 216.55 | 276.4090 |
| 218.09 | 277.1160 |
| 222.10 | 250.4355 |
| 223.80 | 278.2299 |
| 226.40 | 245.9803 |
| 227.00 | 253.9856 |
| 227.08 | 254.0114 |
| 227.20 | 254.0511 |
| 228.16 | 272.9526 |
| 228.18 | 272.9590 |
| 228.18 | 272.9590 |
| 231.56 | 0.0000 |
| 235.69 | 303.4172 |
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| 236.00 | 281.4016 |
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| 238.63 | 247.8256 |
| 238.63 | 247.8256 |
| 238.63 | 247.8256 |
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| 240.98 | 248.5428 |
| 241.98 | 248.8480 |
| 241.98 | 248.8480 |
| 241.98 | 248.8480 |
| 244.69 | 210.9212 |
| 245.39 | 215.8978 |
| 247.94 | 188.4891 |
| 248.90 | 209.7845 |
| 249.79 | 0.0000 |
| 252.40 | 230.8188 |
| 252.85 | 213.7970 |
| 252.85 | 213.7970 |
| 254.15 | 0.0000 |
| 256.20 | 225.7775 |
| 256.20 | 225.7775 |
| 260.50 | 179.0830 |
| 260.90 | 0.0000 |
| 262.80 | 214.2458 |
| 264.65 | 190.8423 |
| 268.24 | 188.8824 |
| 268.79 | 185.7134 |
| 269.46 | 199.0090 |
| 269.46 | 199.0090 |
| 269.46 | 199.0090 |
| 269.46 | 199.0090 |
| 271.23 | 207.0267 |
| 273.65 | 277.6060 |
| 276.40 | 256.9042 |
| 277.35 | 235.8405 |
| 277.60 | 235.9030 |
| 277.60 | 235.9030 |
| 278.00 | 212.7325 |
| 278.60 | 201.4508 |
| 279.20 | 207.8156 |
| 279.53 | 223.4805 |
| 280.46 | 254.9255 |
| 281.68 | 0.0000 |
| 283.67 | 232.8406 |
| 284.30 | 210.0109 |
| 285.00 | 195.5316 |
| 285.90 | 0.0000 |
| 286.10 | 207.2752 |
| 286.10 | 207.2752 |
| 287.40 | 202.3237 |
| 288.45 | 0.0000 |
| 290.67 | 181.7754 |
| 290.80 | 181.8018 |
| 291.72 | 195.4583 |
| 293.26 | 0.0000 |
| 293.70 | 202.6172 |
| 295.21 | 229.9980 |
| 295.21 | 229.9980 |

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| 295.21 | 229.9980 |
| 295.96 | 232.7161 |
| 296.50 | 279.4164 |
| 297.23 | 0.0000 |
| 298.57 | 280.0166 |
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| 299.80 | 280.3711 |
| 300.09 | 220.9651 |
| 300.09 | 220.9651 |
| 300.09 | 220.9651 |
| 300.09 | 220.9651 |
| 300.12 | 220.9714 |
| 301.29 | 170.1807 |
| 302.84 | 138.0659 |
| 303.76 | 0.0000 |
| 303.91 | 153.5735 |
| 304.40 | 172.4299 |
| 304.40 | 172.4299 |
| 304.84 | 199.8369 |
| 306.84 | 189.6857 |
| 308.46 | 156.4260 |
| 311.98 | 191.3848 |
| 316.51 | 189.0057 |
| 318.01 | 165.4901 |
| 319.02 | 133.1724 |
| 319.41 | 135.3893 |
| 320.08 | 154.9858 |
| 323.87 | 172.3122 |
| 323.87 | 172.3122 |
| 323.87 | 172.3122 |
| 323.87 | 172.3122 |
| 325.23 | 162.0802 |
| 328.77 | 189.0815 |
| 333.44 | 201.9996 |
| 334.20 | 206.5372 |
| 334.20 | 206.5372 |
| 334.30 | 206.5573 |
| 338.28 | 196.3008 |
| 338.28 | 196.3008 |
| 338.28 | 196.3008 |
| 338.28 | 196.3008 |
| 338.32 | 196.3090 |
| 338.32 | 196.3090 |
| 338.32 | 196.3090 |
| 340.50 | 189.1936 |
| 340.57 | 189.2066 |
| 344.27 | 223.5670 |
| 345.85 | 177.6904 |
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| 351.07 | 190.8121 |
| 351.92 | 171.5297 |
| 351.92 | 171.5297 |
| 351.92 | 171.5297 |
| 355.39 | 0.0000 |
| 356.01 | 190.0935 |
| 364.48 | 162.6174 |
| 366.43 | 170.1363 |
| 367.43 | 153.0758 |
| 367.94 | 0.0000 |
| 369.80 | 163.3755 |
| 374.96 | 149.5179 |
| 383.85 | 149.7324 |
| 387.95 | 134.5777 |
| 388.63 | 144.7995 |
| 391.69 | 156.2631 |
| 391.69 | 156.2631 |
| 392.90 | 146.2387 |
| 398.62 | 159.9462 |
| 400.65 | 181.6318 |
| 401.10 | 180.7691 |
| 401.81 | 165.0225 |
| 402.60 | 166.0602 |
| 404.84 | 169.7891 |
| 410.95 | 161.2288 |
| 411.60 | 145.6512 |
| 413.65 | 161.5745 |
| 414.70 | 161.7086 |
| 415.30 | 183.7766 |

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| 415.76 | 169.7014 |
| 417.63 | 0.0000 |
| 418.52 | 150.2271 |
| 423.70 | 163.1691 |
| 427.08 | 163.5953 |
| 427.89 | 161.7947 |
| 432.53 | 127.9854 |
| 433.93 | 134.8158 |
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| 439.56 | 122.9078 |
| 439.89 | 125.8204 |
| 443.98 | 127.1692 |
| 444.90 | 124.3641 |
| 445.03 | 134.0183 |
| 445.03 | 134.0183 |
| 445.03 | 134.0183 |
| 445.03 | 134.0183 |
| 453.90 | 116.4595 |
| 463.38 | 146.5796 |
| 468.07 | 122.5616 |
| 473.00 | 121.0241 |
| 475.06 | 135.9802 |
| 475.35 | 133.0521 |
| 476.78 | 141.0781 |
| 477.59 | 148.0682 |
| 477.96 | 150.0814 |
| 482.03 | 122.7845 |
| 484.57 | 0.0000 |
| 487.03 | 139.1096 |
| 490.36 | 0.0000 |
| 492.35 | 0.0000 |
| 497.08 | 116.0581 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 136.3217 |
| 511.00 | 136.3357 |
| 511.85 | 136.4131 |
| 511.85 | 136.4131 |
| 513.99 | 121.4268 |
| 513.99 | 121.4268 |
| 520.41 | 102.7453 |
| 520.65 | 0.0000 |
| 527.90 | 0.0000 |
| 528.96 | 0.0000 |
| 529.64 | 113.4715 |
| 529.87 | 0.0000 |
| 531.02 | 111.5254 |
| 537.32 | 127.3876 |
| 543.00 | 121.6587 |
| 546.56 | 0.0000 |
| 549.76 | 121.1418 |
| 552.65 | 97.5020 |
| 555.20 | 114.2781 |
| 563.23 | 123.1971 |
| 563.90 | 115.9348 |
| 568.70 | 136.1794 |
| 569.32 | 142.5178 |
| 569.50 | 149.8672 |
| 569.67 | 149.8847 |
| 573.80 | 127.2583 |
| 574.00 | 122.6025 |
| 574.64 | 0.0000 |
| 578.91 | 0.0000 |
| 579.30 | 0.0000 |
| 583.14 | 117.9915 |
| 585.48 | 0.0000 |
| 591.81 | 112.5784 |
| 592.07 | 116.8455 |
| 593.00 | 117.9700 |
| 595.88 | 110.7184 |
| 600.56 | 109.7980 |
| 602.52 | 0.0000 |
| 602.71 | 121.1333 |
| 602.71 | 121.1333 |
| 603.60 | 137.2346 |
| 604.41 | 133.7341 |
| 604.70 | 133.7555 |
| 609.31 | 108.3605 |

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| 609.31 | 108.3605 |
| 609.31 | 108.3605 |
| 609.31 | 108.3605 |
| 610.33 | 108.4246 |
| 612.46 | 116.4372 |
| 614.37 | 114.7708 |
| 618.01 | 101.0811 |
| 621.84 | 112.3738 |
| 621.84 | 112.3738 |
| 631.29 | 107.5392 |
| 633.02 | 88.0697 |
| 633.10 | 86.9863 |
| 634.78 | 105.5704 |
| 635.90 | 105.6343 |
| 636.97 | 101.3396 |
| 645.85 | 82.1228 |
| 646.12 | 87.6113 |
| 656.30 | 97.5324 |
| 657.75 | 97.6080 |
| 657.90 | 0.0000 |
| 661.65 | 103.9926 |
| 661.65 | 103.9926 |
| 664.57 | 0.0000 |
| 666.33 | 118.6157 |
| 666.33 | 118.6157 |
| 675.00 | 110.2890 |
| 677.61 | 120.6478 |
| 685.20 | 103.4234 |
| 692.80 | 111.3107 |
| 695.00 | 107.6908 |
| 696.49 | 96.5269 |
| 696.49 | 96.5269 |
| 697.00 | 93.7398 |
| 697.49 | 100.3277 |
| 698.33 | 102.2452 |
| 698.50 | 102.2540 |
| 699.00 | 106.0341 |
| 702.63 | 115.6303 |
| 706.10 | 112.0661 |
| 706.58 | 0.0000 |
| 706.67 | 122.4622 |
| 709.31 | 116.0207 |
| 711.68 | 101.9927 |
| 713.82 | 97.3756 |
| 717.42 | 125.0176 |
| 720.50 | 89.4345 |
| 721.93 | 0.0000 |
| 722.20 | 74.8623 |
| 722.78 | 87.9082 |
| 722.78 | 87.9082 |
| 722.89 | 87.9120 |
| 722.95 | 87.9139 |
| 723.30 | 97.7009 |
| 724.18 | 104.2589 |
| 727.18 | 106.5882 |
| 733.00 | 101.4398 |
| 735.90 | 86.5388 |
| 739.58 | 82.3414 |
| 742.81 | 90.1426 |
| 744.21 | 88.2827 |
| 747.13 | 93.2129 |
| 751.79 | 104.0142 |
| 752.31 | 95.3705 |
| 753.82 | 92.5469 |
| 755.35 | 0.0000 |
| 756.15 | 81.0691 |
| 756.87 | 78.2001 |
| 763.93 | 91.3316 |
| 765.79 | 74.7918 |
| 766.42 | 86.4514 |
| 766.84 | 93.1191 |
| 776.49 | 109.1312 |
| 778.00 | 95.5556 |
| 778.57 | 98.5075 |
| 778.89 | 91.6936 |
| 783.80 | 104.6119 |
| 785.46 | 91.9728 |
| 792.07 | 113.8429 |

| | |
|---------|----------|
| 795.84 | 91.4277 |
| 796.30 | 94.3965 |
| 798.80 | 136.8338 |
| 801.93 | 86.7521 |
| 805.60 | 91.8326 |
| 810.29 | 79.1618 |
| 810.76 | 80.1694 |
| 815.85 | 76.3828 |
| 817.79 | 0.0000 |
| 818.51 | 67.5352 |
| 819.60 | 64.5874 |
| 826.30 | 95.6738 |
| 828.27 | 0.0000 |
| 831.60 | 89.9030 |
| 831.96 | 86.9203 |
| 834.83 | 113.0368 |
| 836.80 | 0.0000 |
| 846.75 | 106.5844 |
| 848.13 | 90.5511 |
| 856.28 | 0.0000 |
| 856.80 | 79.6353 |
| 860.37 | 82.9359 |
| 867.32 | 65.4278 |
| 867.82 | 63.5821 |
| 871.10 | 78.2329 |
| 873.19 | 70.1666 |
| 874.81 | 85.4783 |
| 875.33 | 0.0000 |
| 876.40 | 86.5529 |
| 879.36 | 83.6016 |
| 880.27 | 80.5735 |
| 880.51 | 81.6016 |
| 881.50 | 76.5335 |
| 883.24 | 70.4614 |
| 884.67 | 87.8739 |
| 889.25 | 97.2556 |
| 896.60 | 85.2273 |
| 898.02 | 109.9367 |
| 899.00 | 115.1195 |
| 903.28 | 84.9455 |
| 911.07 | 67.2872 |
| 911.07 | 67.2872 |
| 911.07 | 67.2872 |
| 919.63 | 64.2617 |
| 920.93 | 59.1106 |
| 925.00 | 65.4391 |
| 925.24 | 66.4844 |
| 926.50 | 73.7937 |
| 935.52 | 64.6704 |
| 937.48 | 97.0812 |
| 944.10 | 74.3093 |
| 946.00 | 87.9802 |
| 949.00 | 67.1120 |
| 962.29 | 84.9252 |
| 964.01 | 82.2704 |
| 966.15 | 82.3386 |
| 968.20 | 82.4021 |
| 969.11 | 81.5264 |
| 969.11 | 81.5264 |
| 969.11 | 81.5264 |
| 977.42 | 72.5164 |
| 980.50 | 85.9752 |
| 983.50 | 73.3209 |
| 989.30 | 67.0926 |
| 996.32 | 73.6761 |
| 1001.03 | 72.7370 |
| 1001.68 | 77.0332 |
| 1004.76 | 100.6878 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 79.0596 |
| 1036.00 | 82.6553 |
| 1037.82 | 74.3443 |
| 1038.57 | 77.1525 |
| 1038.76 | 0.0000 |
| 1045.16 | 68.9517 |
| 1046.59 | 79.2428 |
| 1048.07 | 76.4861 |

| | |
|---------|----------|
| 1050.47 | 80.2861 |
| 1050.47 | 80.2861 |
| 1062.04 | 71.2420 |
| 1063.62 | 70.3439 |
| 1076.63 | 71.6105 |
| 1077.35 | 68.7990 |
| 1078.86 | 72.6091 |
| 1085.78 | 75.6194 |
| 1099.22 | 89.2659 |
| 1112.02 | 89.4653 |
| 1112.84 | 91.8289 |
| 1115.52 | 83.5571 |
| 1120.29 | 74.6049 |
| 1120.29 | 74.6049 |
| 1120.29 | 74.6049 |
| 1120.29 | 74.6049 |
| 1120.51 | 81.3062 |
| 1121.28 | 65.3007 |
| 1124.00 | 0.0000 |
| 1129.67 | 82.6653 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 102.0300 |
| 1173.22 | 84.6848 |
| 1175.09 | 87.6583 |
| 1177.93 | 84.8153 |
| 1189.05 | 80.2268 |
| 1204.90 | 96.3662 |
| 1205.75 | 0.0000 |
| 1213.00 | 100.5592 |
| 1221.42 | 95.8802 |
| 1230.97 | 105.8341 |
| 1235.34 | 92.0804 |
| 1236.41 | 0.0000 |
| 1238.25 | 83.4668 |
| 1246.25 | 78.4451 |
| 1260.41 | 0.0000 |
| 1271.85 | 64.2522 |
| 1274.45 | 91.4285 |
| 1274.54 | 95.4506 |
| 1291.56 | 58.5725 |
| 1298.22 | 0.0000 |
| 1312.09 | 56.8984 |
| 1325.50 | 48.9609 |
| 1325.50 | 48.9609 |
| 1332.49 | 42.9287 |
| 1333.61 | 48.0540 |
| 1360.21 | 47.3926 |
| 1362.66 | 0.0000 |
| 1365.15 | 49.5234 |
| 1368.21 | 55.7610 |
| 1368.53 | 0.0000 |
| 1376.25 | 53.8191 |
| 1384.27 | 62.2391 |
| 1394.10 | 45.7679 |
| 1395.20 | 43.7007 |
| 1407.95 | 43.8545 |
| 1434.06 | 33.6529 |
| 1436.60 | 31.5716 |
| 1457.56 | 0.0000 |
| 1460.81 | 48.1962 |
| 1489.15 | 41.6225 |
| 1509.49 | 28.1644 |
| 1596.49 | 43.1873 |
| 1620.62 | 42.4786 |
| 1678.03 | 0.0000 |
| 1691.02 | 28.4725 |
| 1691.02 | 28.4725 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 15.9766 |
| 1764.49 | 15.9766 |
| 1764.49 | 15.9766 |
| 1764.49 | 15.9766 |
| 1770.23 | 17.7745 |
| 1771.40 | 16.0015 |
| 1791.20 | 0.0000 |
| 1808.65 | 21.1769 |

1836.01

21.3044

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G245388002

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 6.3754E+00 | ug/g |
| Total Uranium Counting Unc. | 7.3032E+00 | ug/g |
| Total Uranium Tpu | 3.7261E-06 | ug/g |
| Total Uranium Mda | 3.3112E+00 | ug/g |

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*****
*
*               GEL Laboratories LLC                      *
*               2040 SAVAGE ROAD                          *
*               CHARLESTON ,SC 29417                      *
*               GROSS GAMMA REPORT                        *
*
*****
*
*  BATCH ID      : 944964                                SAMPLE ID   : G245388002
*  ANALYST       : MXR1                                  DETECTOR    : GAM18
*  SAMPLE DATE   : 15-JAN-2010 12:00:00.00             COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 4-FEB-2010 10:29:07.65             SAMPLE ALQT  : 127.890 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.027E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.200E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 2.158E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.044E+00

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VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 12:32:09.68

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388003.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:29:32.
Sample ID          : G245388003 Sample quantity : 1.17610E+02 GRAM
Detector name      : GAM20 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:33.03 0.5%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 944964 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 | 63.26* | 110 | 548 | 1.28 | 126.51 | 123 | 9 | 1.52E-02 | 40.5 | |
| 2 | 3 | 75.03 | 550 | 461 | 0.97 | 150.01 | 145 | 21 | 7.65E-02 | 7.4 | 8.73E-01 |
| 3 | 3 | 77.28* | 861 | 399 | 1.05 | 154.49 | 145 | 21 | 1.20E-01 | 5.3 | |
| 4 | 0 | 86.76* | 129 | 560 | 1.24 | 173.44 | 172 | 7 | 1.79E-02 | 31.7 | |
| 5 | 5 | 89.98 | 197 | 228 | 0.94 | 179.87 | 178 | 14 | 2.73E-02 | 12.7 | 1.83E+00 |
| 6 | 5 | 93.17* | 321 | 481 | 1.70 | 186.23 | 178 | 14 | 4.46E-02 | 15.0 | |
| 7 | 0 | 129.03 | 102 | 271 | 0.82 | 257.85 | 255 | 7 | 1.41E-02 | 28.6 | |
| 8 | 0 | 154.09 | 93 | 173 | 1.49 | 307.90 | 305 | 6 | 1.29E-02 | 24.7 | |
| 9 | 0 | 185.91* | 220 | 421 | 1.53 | 371.45 | 367 | 13 | 3.06E-02 | 21.0 | |
| 10 | 0 | 209.42 | 168 | 341 | 1.06 | 418.40 | 412 | 12 | 2.34E-02 | 23.4 | |
| 11 | 8 | 238.71* | 1505 | 152 | 1.09 | 476.90 | 469 | 21 | 2.09E-01 | 3.0 | 1.59E+00 |
| 12 | 8 | 241.85 | 436 | 216 | 2.05 | 483.18 | 469 | 21 | 6.05E-02 | 11.4 | |
| 13 | 0 | 270.55 | 154 | 219 | 2.13 | 540.51 | 536 | 11 | 2.14E-02 | 20.4 | |
| 14 | 0 | 277.23 | 98 | 213 | 1.17 | 553.86 | 547 | 12 | 1.36E-02 | 31.4 | |
| 15 | 4 | 295.33 | 457 | 117 | 1.17 | 590.01 | 583 | 22 | 6.34E-02 | 6.1 | 5.26E-01 |
| 16 | 4 | 300.22 | 122 | 156 | 1.87 | 599.78 | 583 | 22 | 1.69E-02 | 22.7 | |
| 17 | 0 | 327.74 | 95 | 160 | 1.21 | 654.77 | 649 | 11 | 1.32E-02 | 27.6 | |
| 18 | 0 | 338.45 | 242 | 159 | 1.18 | 676.15 | 670 | 10 | 3.35E-02 | 11.7 | |
| 19 | 0 | 352.09* | 838 | 155 | 1.27 | 703.41 | 698 | 12 | 1.16E-01 | 4.6 | |
| 20 | 0 | 463.21 | 66 | 117 | 1.25 | 925.46 | 922 | 10 | 9.16E-03 | 33.1 | |
| 21 | 0 | 511.33* | 164 | 145 | 1.87 | 1021.61 | 1014 | 18 | 2.27E-02 | 21.3 | |
| 22 | 0 | 583.52* | 463 | 74 | 1.53 | 1165.91 | 1160 | 11 | 6.43E-02 | 6.0 | |
| 23 | 0 | 609.68* | 525 | 121 | 1.40 | 1218.19 | 1212 | 14 | 7.30E-02 | 6.3 | |
| 24 | 0 | 727.79 | 111 | 55 | 1.08 | 1454.30 | 1449 | 11 | 1.54E-02 | 16.1 | |
| 25 | 0 | 769.07 | 44 | 53 | 1.83 | 1536.85 | 1533 | 9 | 6.08E-03 | 33.7 | |
| 26 | 0 | 795.20 | 68 | 48 | 1.56 | 1589.10 | 1584 | 11 | 9.50E-03 | 22.9 | |
| 27 | 0 | 860.96* | 36 | 43 | 0.86 | 1720.60 | 1718 | 10 | 5.00E-03 | 40.1 | |
| 28 | 0 | 911.86* | 328 | 34 | 1.63 | 1822.40 | 1816 | 15 | 4.56E-02 | 6.9 | |
| 29 | 0 | 935.41 | 36 | 64 | 0.77 | 1869.49 | 1860 | 17 | 4.99E-03 | 54.9 | |
| 30 | 3 | 965.24 | 65 | 32 | 2.23 | 1929.15 | 1921 | 34 | 8.97E-03 | 22.4 | 9.72E-01 |
| 31 | 3 | 969.61* | 210 | 22 | 1.71 | 1937.89 | 1921 | 34 | 2.92E-02 | 8.3 | |
| 32 | 0 | 1121.09 | 147 | 49 | 1.34 | 2240.95 | 2234 | 15 | 2.04E-02 | 13.3 | |
| 33 | 0 | 1239.55 | 33 | 61 | 1.22 | 2477.98 | 2472 | 12 | 4.65E-03 | 49.5 | |
| 34 | 0 | 1378.04 | 47 | 7 | 3.28 | 2755.18 | 2748 | 14 | 6.53E-03 | 18.9 | |
| 35 | 0 | 1461.60* | 821 | 24 | 1.82 | 2922.48 | 2913 | 19 | 1.14E-01 | 3.8 | |
| 36 | 0 | 1496.33 | 19 | 6 | 1.55 | 2992.00 | 2987 | 11 | 2.57E-03 | 33.8 | |
| 37 | 0 | 1510.23 | 27 | 3 | 1.61 | 3019.84 | 3014 | 12 | 3.78E-03 | 22.9 | |
| 38 | 0 | 1591.02 | 37 | 25 | 5.92 | 3181.61 | 3171 | 20 | 5.12E-03 | 37.1 | |

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|---------|------|-------|------|---------|------|----|----------|------|-----|
| 39 | 0 | 1765.51 | 97 | 11 | 1.41 | 3531.10 | 3525 | 14 | 1.35E-02 | 12.4 | |

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

VMS Nuclide Identification Report V3.1 Generated 4-FEB-2010 12:32:13

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388003.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:29:32
 Sample ID : G245388003 Sample quantity : 117.61 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA20 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:33.03 0.5%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 1.50 keV Half life ratio : 8.00
 Errors propagated: Yes Systematic Error : 0.00 %
 Efficiency type : Empirical Efficiencies at : Peak Energy
 Abundance limit : 75.00 WTM error limit : 3.00

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 1.961E+01 | 2.267E+00 | 4.806E-01 | 4.191E-02 | 40.794 |
| CD-109 | + | 88.03 | * | 1.650E+00 | 1.057E+00 | 1.115E+00 | 1.054E-01 | 1.480 |
| SN-126 | + | 64.28 | | 7.869E-01 | 6.467E-01 | 6.736E-01 | 9.752E-02 | 1.168 |
| | + | 86.94 | | 6.694E-01 | 5.072E-01 | 5.453E-01 | 2.264E-01 | 1.227 |
| | + | 87.57 | * | 1.610E-01 | 1.032E-01 | 1.375E-01 | 1.293E-02 | 1.171 |
| RE-188 | + | 155.03 | * | 3.525E-01 | 1.769E-01 | 2.776E-01 | 2.383E-02 | 1.270 |
| | | 477.96 | | -3.354E+00 | 3.123E+00 | 4.583E+00 | 4.165E-01 | -0.732 |
| | | 633.10 | | 1.636E+00 | 3.095E+00 | 5.158E+00 | 5.127E-01 | 0.317 |
| TL-208 | + | 277.35 | | 9.744E-01 | 6.261E-01 | 6.083E-01 | 8.089E-02 | 1.602 |
| | + | 510.84 | | 8.084E-01 | 3.591E-01 | 1.958E-01 | 2.447E-02 | 4.129 |
| | + | 583.14 | * | 6.509E-01 | 1.031E-01 | 5.405E-02 | 5.557E-03 | 12.043 |
| | + | 860.37 | | 4.717E-01 | 3.816E-01 | 3.720E-01 | 3.943E-02 | 1.268 |
| BI-211 | | 72.87 | | 5.233E+00 | 3.056E+00 | 4.745E+00 | 3.747E-01 | 1.103 |
| | + | 351.07 | * | 5.209E+00 | 6.912E-01 | 3.179E-01 | 3.046E-02 | 16.385 |
| PB-212 | + | 74.81 | | 2.709E+00 | 5.202E-01 | 4.959E-01 | 6.121E-02 | 5.462 |
| | + | 77.11 | | 2.436E+00 | 3.266E-01 | 2.854E-01 | 2.360E-02 | 8.535 |
| | + | 87.30 | | 7.447E-01 | 4.829E-01 | 6.053E-01 | 8.296E-02 | 1.230 |
| | + | 238.63 | * | 2.052E+00 | 2.504E-01 | 8.183E-02 | 8.702E-03 | 25.076 |
| | + | 300.09 | | 2.553E+00 | 1.198E+00 | 1.180E+00 | 1.349E-01 | 2.164 |
| PO-212 | + | 74.81 | | 2.709E+00 | 5.202E-01 | 4.959E-01 | 6.121E-02 | 5.462 |
| | + | 77.11 | | 2.436E+00 | 3.266E-01 | 2.854E-01 | 2.360E-02 | 8.535 |
| | + | 87.30 | | 7.447E-01 | 4.829E-01 | 6.053E-01 | 8.296E-02 | 1.230 |
| | | 115.19 | | 4.950E+00 | 3.450E+00 | 5.865E+00 | 4.926E-01 | 0.844 |
| | + | 238.63 | * | 2.052E+00 | 2.504E-01 | 8.183E-02 | 8.702E-03 | 25.076 |
| | + | 300.09 | | 2.553E+00 | 1.198E+00 | 1.180E+00 | 1.349E-01 | 2.164 |
| BI-214 | + | 609.31 | * | 1.392E+00 | 2.338E-01 | 1.040E-01 | 1.157E-02 | 13.388 |
| | + | 1120.29 | | 1.991E+00 | 5.708E-01 | 3.703E-01 | 4.006E-02 | 5.376 |
| | + | 1764.49 | | 1.783E+00 | 4.657E-01 | 1.928E-01 | 1.584E-02 | 9.246 |
| PB-214 | + | 74.81 | | 4.667E+00 | 8.560E-01 | 8.545E-01 | 9.355E-02 | 5.462 |
| | + | 77.11 | | 4.176E+00 | 6.440E-01 | 4.892E-01 | 5.501E-02 | 8.535 |
| | + | 87.30 | | 1.276E+00 | 8.233E-01 | 1.037E+00 | 1.258E-01 | 1.230 |
| | + | 241.98 | | 3.569E+00 | 9.078E-01 | 4.926E-01 | 5.509E-02 | 7.245 |
| | + | 295.21 | | 1.682E+00 | 2.839E-01 | 2.067E-01 | 2.413E-02 | 8.134 |
| | + | 351.92 | * | 1.812E+00 | 2.584E-01 | 1.085E-01 | 1.182E-02 | 16.708 |

----- Identified Nuclides -----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 74.81 | | 4.667E+00 | 8.560E-01 | 8.545E-01 | 9.355E-02 | 5.462 |
| | + | 77.11 | | 4.176E+00 | 6.440E-01 | 4.892E-01 | 5.501E-02 | 8.535 |
| | + | 87.30 | | 1.276E+00 | 8.233E-01 | 1.037E+00 | 1.258E-01 | 1.230 |
| | + | 241.98 | | 3.569E+00 | 9.078E-01 | 4.926E-01 | 5.509E-02 | 7.245 |
| | + | 295.21 | | 1.682E+00 | 2.839E-01 | 2.067E-01 | 2.413E-02 | 8.134 |
| PO-216 | + | 351.92 | * | 1.812E+00 | 2.584E-01 | 1.085E-01 | 1.182E-02 | 16.708 |
| | + | 74.81 | | 2.709E+00 | 5.202E-01 | 4.959E-01 | 6.121E-02 | 5.462 |
| | + | 77.11 | | 2.436E+00 | 3.266E-01 | 2.854E-01 | 2.360E-02 | 8.535 |
| | + | 87.30 | | 7.447E-01 | 4.829E-01 | 6.053E-01 | 8.296E-02 | 1.230 |
| | + | 238.63 | * | 2.052E+00 | 2.504E-01 | 8.183E-02 | 8.702E-03 | 25.076 |
| PO-218 | + | 300.09 | | 2.553E+00 | 1.198E+00 | 1.180E+00 | 1.349E-01 | 2.164 |
| | + | 74.81 | | 4.667E+00 | 8.560E-01 | 8.545E-01 | 9.355E-02 | 5.462 |
| | + | 77.11 | | 4.176E+00 | 6.440E-01 | 4.892E-01 | 5.501E-02 | 8.535 |
| | + | 87.30 | | 1.276E+00 | 8.233E-01 | 1.037E+00 | 1.258E-01 | 1.230 |
| | + | 241.98 | | 3.569E+00 | 9.078E-01 | 4.926E-01 | 5.509E-02 | 7.245 |
| RA-224 | + | 295.21 | | 1.682E+00 | 2.839E-01 | 2.067E-01 | 2.413E-02 | 8.134 |
| | + | 351.92 | * | 1.812E+00 | 2.584E-01 | 1.085E-01 | 1.182E-02 | 16.708 |
| | + | 240.98 | * | 6.768E+00 | 1.679E+00 | 9.310E-01 | 8.999E-02 | 7.269 |
| | + | 609.31 | * | 1.392E+00 | 2.338E-01 | 1.040E-01 | 1.157E-02 | 13.388 |
| | + | 1120.29 | | 1.991E+00 | 5.708E-01 | 3.703E-01 | 4.006E-02 | 5.376 |
| AC-228 | + | 1764.49 | | 1.783E+00 | 4.657E-01 | 1.928E-01 | 1.584E-02 | 9.246 |
| | + | 338.32 | | 1.655E+00 | 7.878E-01 | 3.697E-01 | 1.532E-01 | 4.477 |
| | + | 911.07 | * | 2.033E+00 | 3.759E-01 | 1.918E-01 | 2.350E-02 | 10.595 |
| | + | 969.11 | | 2.294E+00 | 6.630E-01 | 3.289E-01 | 7.804E-02 | 6.975 |
| | + | 338.32 | | 1.655E+00 | 7.878E-01 | 3.697E-01 | 1.532E-01 | 4.477 |
| RA-228 | + | 911.07 | * | 2.033E+00 | 3.759E-01 | 1.918E-01 | 2.350E-02 | 10.595 |
| | + | 969.11 | | 2.294E+00 | 6.630E-01 | 3.289E-01 | 7.804E-02 | 6.975 |
| | + | 74.81 | | 2.763E+00 | 4.646E-01 | 5.059E-01 | 4.117E-02 | 5.462 |
| | + | 77.11 | | 2.485E+00 | 3.332E-01 | 2.911E-01 | 2.407E-02 | 8.535 |
| | + | 87.30 | | 7.596E-01 | 4.867E-01 | 6.174E-01 | 5.787E-02 | 1.230 |
| TH-228 | + | 238.63 | * | 2.093E+00 | 2.554E-01 | 8.347E-02 | 8.877E-03 | 25.076 |
| | + | 300.09 | | 2.605E+00 | 1.950E+00 | 1.203E+00 | 7.157E-01 | 2.164 |
| | + | 609.31 | * | 1.392E+00 | 2.338E-01 | 1.040E-01 | 1.157E-02 | 13.388 |
| | + | 1120.29 | | 1.990E+00 | 5.708E-01 | 3.703E-01 | 4.006E-02 | 5.376 |
| | + | 1764.49 | | 1.783E+00 | 4.656E-01 | 1.928E-01 | 1.584E-02 | 9.246 |
| TH-232 | + | 338.32 | | 1.655E+00 | 4.178E-01 | 3.697E-01 | 3.464E-02 | 4.477 |
| | + | 911.07 | * | 2.033E+00 | 3.759E-01 | 1.918E-01 | 2.350E-02 | 10.595 |
| | + | 969.11 | | 2.294E+00 | 6.630E-01 | 3.289E-01 | 7.804E-02 | 6.975 |
| | + | 63.29 | * | 1.988E+00 | 1.645E+00 | 1.636E+00 | 2.842E-01 | 1.215 |
| | + | 92.38 | | 2.641E+00 | 9.273E-01 | 6.228E-01 | 1.142E-01 | 4.240 |
| U-234 | + | 609.31 | * | 1.392E+00 | 2.338E-01 | 1.040E-01 | 1.157E-02 | 13.388 |
| | + | 1120.29 | | 1.990E+00 | 5.708E-01 | 3.703E-01 | 4.006E-02 | 5.376 |
| | + | 1764.49 | | 1.783E+00 | 4.656E-01 | 1.928E-01 | 1.584E-02 | 9.246 |
| | + | 86.50 | * | 4.728E-01 | 3.183E-01 | 3.822E-01 | 8.647E-02 | 1.237 |
| | + | 95.87 | | -2.328E-01 | 9.303E-01 | 1.323E+00 | 3.273E-01 | -0.176 |
| U-238 | + | 63.29 | * | 1.988E+00 | 1.645E+00 | 1.636E+00 | 2.842E-01 | 1.215 |
| | + | 92.38 | | 2.641E+00 | 8.268E-01 | 6.228E-01 | 5.693E-02 | 4.240 |
| | + | 74.67 | * | 4.391E-01 | 7.368E-02 | 8.057E-02 | 6.485E-03 | 5.450 |
| | + | 86.72 | | 1.773E+01 | 1.136E+01 | 1.431E+01 | 1.331E+00 | 1.239 |
| | + | | | | | | | |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 117.66 | | -1.227E+00 | 3.720E+00 | 5.892E+00 | 4.932E-01 | -0.208 |
| | | 142.18 | | 2.111E+00 | 1.793E+01 | 2.878E+01 | 2.429E+00 | 0.073 |
| ANH-511 | + | 511.00 | * | 1.746E-01 | 7.619E-02 | 4.230E-02 | 3.941E-03 | 4.128 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| BE-7 | | 477.59 | * | -1.200E-01 | 3.179E-01 | 4.989E-01 | 4.849E-02 | -0.241 |
| NA-22 | | 1274.54 | * | 6.929E-03 | 3.362E-02 | 5.581E-02 | 4.623E-03 | 0.124 |
| NA-24 | | 1368.53 | * | -9.003E-01 | 3.362E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | 7.246E-01 | 1.398E+00 | 2.361E+00 | 2.000E-01 | 0.307 |
| | | 1808.65 | * | -9.144E-03 | 2.944E-02 | 4.528E-02 | 3.678E-03 | -0.202 |
| TI-44 | | 67.85 | | 1.049E-02 | 4.345E-02 | 6.452E-02 | 4.854E-03 | 0.163 |
| | + | 78.38 | * | 4.496E-01 | 6.029E-02 | 7.950E-02 | 6.672E-03 | 5.655 |
| SC-46 | | 889.25 | * | -4.611E-03 | 3.655E-02 | 5.958E-02 | 5.939E-03 | -0.077 |
| | + | 1120.51 | | 3.546E-01 | 9.893E-02 | 1.469E-01 | 1.257E-02 | 2.413 |
| V-48 | | 944.10 | | 7.652E-01 | 1.030E+00 | 1.818E+00 | 1.774E-01 | 0.421 |
| | | 983.50 | * | -1.326E-02 | 8.270E-02 | 1.334E-01 | 1.275E-02 | -0.099 |
| | | 1312.09 | | 6.466E-02 | 9.136E-02 | 1.602E-01 | 1.337E-02 | 0.404 |
| CR-51 | | 320.08 | * | -2.403E-01 | 4.201E-01 | 6.717E-01 | 6.734E-02 | -0.358 |
| MN-52 | | 744.21 | | 2.268E-01 | 4.140E-01 | 7.228E-01 | 7.342E-02 | 0.314 |
| | | 848.13 | | -1.417E+01 | 1.140E+01 | 1.625E+01 | 1.637E+00 | -0.872 |
| | + | 935.52 | | 7.943E-01 | 8.754E-01 | 8.650E-01 | 8.474E-02 | 0.918 |
| | | 1246.25 | | -1.145E+00 | 1.382E+01 | 1.995E+01 | 1.639E+00 | -0.057 |
| | | 1333.61 | | 5.747E+00 | 8.363E+00 | 1.470E+01 | 1.231E+00 | 0.391 |
| | | 1434.06 | * | 2.945E-01 | 3.363E-01 | 6.376E-01 | 5.396E-02 | 0.462 |
| MN-54 | | 834.83 | * | -2.769E-02 | 3.821E-02 | 5.923E-02 | 5.983E-03 | -0.467 |
| CO-56 | | 846.75 | * | 1.233E-02 | 3.330E-02 | 5.739E-02 | 5.784E-03 | 0.215 |
| | | 977.42 | | -2.111E+00 | 3.608E+00 | 4.674E+00 | 4.483E-01 | -0.452 |
| | | 1037.82 | | 6.572E-02 | 2.963E-01 | 4.964E-01 | 4.789E-02 | 0.132 |
| | | 1175.09 | | 1.670E-01 | 2.225E+00 | 3.635E+00 | 2.924E-01 | 0.046 |
| | + | 1238.25 | | 1.330E-01 | 1.320E-01 | 1.718E-01 | 1.454E-02 | 0.774 |
| | | 1360.21 | | -6.263E-01 | 9.194E-01 | 1.393E+00 | 1.171E-01 | -0.450 |
| | | 1771.40 | | -1.309E-01 | 2.668E-01 | 3.198E-01 | 2.623E-02 | -0.409 |
| CO-57 | | 122.06 | * | -1.123E-02 | 2.518E-02 | 3.959E-02 | 3.304E-03 | -0.284 |
| | | 136.48 | | 4.058E-02 | 2.133E-01 | 3.442E-01 | 3.116E-02 | 0.118 |
| CO-58 | | 810.76 | * | -2.067E-02 | 3.652E-02 | 5.707E-02 | 5.795E-03 | -0.362 |
| FE-59 | | 142.65 | | -1.146E+00 | 3.029E+00 | 4.739E+00 | 4.003E-01 | -0.242 |
| | | 192.34 | | 1.131E+00 | 1.115E+00 | 1.750E+00 | 2.403E-01 | 0.646 |
| | | 1099.22 | * | -7.521E-02 | 9.488E-02 | 1.404E-01 | 1.324E-02 | -0.536 |
| | | 1291.56 | | 4.624E-02 | 1.178E-01 | 1.993E-01 | 1.896E-02 | 0.232 |
| CO-60 | | 1173.22 | | -8.554E-03 | 3.961E-02 | 6.261E-02 | 5.034E-03 | -0.137 |
| | | 1332.49 | * | -1.178E-02 | 3.817E-02 | 5.864E-02 | 4.912E-03 | -0.201 |
| ZN-65 | | 1115.52 | * | -5.747E-02 | 9.507E-02 | 1.202E-01 | 1.035E-02 | -0.478 |
| GE-68 | | 1077.35 | * | -4.084E-02 | 1.094E+00 | 1.776E+00 | 1.584E-01 | -0.023 |
| AS-73 | | 53.44 | * | -3.565E-01 | 6.168E-01 | 9.823E-01 | 7.292E-02 | -0.363 |
| AS-74 | | 595.88 | * | -1.936E-02 | 1.114E-01 | 1.756E-01 | 1.719E-02 | -0.110 |
| | | 634.78 | | -1.436E-02 | 4.237E-01 | 7.128E-01 | 7.090E-02 | -0.020 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SE-75 | | 66.05 | | -1.096E+00 | 4.642E+00 | 6.750E+00 | 6.385E-01 | -0.162 |
| | | 96.73 | | -1.527E+00 | 8.657E-01 | 1.084E+00 | 1.497E-01 | -1.408 |
| | | 121.11 | | -3.138E-02 | 1.356E-01 | 2.155E-01 | 2.373E-02 | -0.146 |
| | | 136.00 | | 8.185E-03 | 4.086E-02 | 6.596E-02 | 5.573E-03 | 0.124 |
| | | 198.60 | | 9.104E-01 | 1.831E+00 | 3.092E+00 | 3.112E-01 | 0.294 |
| | | 264.65 | * | -5.502E-02 | 4.475E-02 | 6.640E-02 | 6.574E-03 | -0.829 |
| | | 279.53 | | 1.308E-01 | 1.251E-01 | 1.961E-01 | 2.008E-02 | 0.667 |
| | | 303.91 | | -1.024E+00 | 2.321E+00 | 3.262E+00 | 4.036E-01 | -0.314 |
| | | 400.65 | | 1.394E-01 | 2.556E-01 | 4.336E-01 | 4.759E-02 | 0.322 |
| BR-77 | + | 87.88 | | 1.444E-03 | 2.556E-01 | Half-Life | too short | |
| | | 200.40 | | -7.169E-04 | 2.556E-01 | Half-Life | too short | |
| | + | 239.00 | | 1.344E-03 | 2.556E-01 | Half-Life | too short | |
| | | 249.79 | | 1.674E-04 | 2.556E-01 | Half-Life | too short | |
| | | 281.68 | | 2.641E-04 | 2.556E-01 | Half-Life | too short | |
| | | 297.23 | | 1.274E-03 | 2.556E-01 | Half-Life | too short | |
| | | 303.76 | | -3.273E-04 | 2.556E-01 | Half-Life | too short | |
| | | 439.47 | | 3.002E-04 | 2.556E-01 | Half-Life | too short | |
| | | 484.57 | | 1.654E-04 | 2.556E-01 | Half-Life | too short | |
| | | 520.65 | * | 5.040E-06 | 2.556E-01 | Half-Life | too short | |
| | | 574.64 | | 2.633E-05 | 2.556E-01 | Half-Life | too short | |
| | | 578.91 | | 5.838E-05 | 2.556E-01 | Half-Life | too short | |
| | | 585.48 | | 7.988E-03 | 2.556E-01 | Half-Life | too short | |
| | | 755.35 | | 1.226E-03 | 2.556E-01 | Half-Life | too short | |
| | | 817.79 | | 5.998E-04 | 2.556E-01 | Half-Life | too short | |
| SR-82 | | 698.33 | | -7.194E+01 | 4.708E+01 | 5.872E+01 | 5.937E+00 | -1.225 |
| | | 776.49 | * | -4.459E-01 | 4.389E-01 | 6.624E-01 | 6.730E-02 | -0.673 |
| | | 1395.20 | | -4.730E+00 | 9.459E+00 | 1.448E+01 | 1.222E+00 | -0.327 |
| RB-83 | | 520.41 | * | 1.679E-02 | 6.911E-02 | 1.102E-01 | 1.033E-02 | 0.152 |
| | | 529.64 | | -6.993E-02 | 1.080E-01 | 1.639E-01 | 1.547E-02 | -0.427 |
| | | 552.65 | | -2.181E-01 | 1.928E-01 | 2.740E-01 | 2.622E-02 | -0.796 |
| RB-84 | | 881.50 | * | 7.637E-03 | 7.883E-02 | 1.315E-01 | 1.314E-02 | 0.058 |
| KR-85 | | 513.99 | * | 2.117E+01 | 7.869E+00 | 1.449E+01 | 1.353E+00 | 1.460 |
| SR-85 | | 513.99 | * | 1.142E-01 | 4.244E-02 | 7.817E-02 | 7.300E-03 | 1.460 |
| RB-86 | | 1076.63 | * | -9.114E-02 | 8.127E-01 | 1.308E+00 | 1.167E-01 | -0.070 |
| Y-88 | | 898.02 | | -2.193E-03 | 4.096E-02 | 6.727E-02 | 6.712E-03 | -0.033 |
| | | 1836.01 | * | -1.762E-02 | 3.119E-02 | 4.437E-02 | 3.580E-03 | -0.397 |
| ZR-88 | | 392.90 | * | -9.379E-03 | 2.935E-02 | 4.699E-02 | 3.930E-03 | -0.200 |
| Y-91 | | 1204.90 | * | -5.593E+00 | 1.753E+01 | 2.733E+01 | 2.220E+00 | -0.205 |
| NB-94 | | 702.63 | * | 5.429E-02 | 3.641E-02 | 6.646E-02 | 6.724E-03 | 0.817 |
| | | 871.10 | | -1.473E-02 | 3.189E-02 | 5.018E-02 | 5.029E-03 | -0.294 |
| NB-95 | | 765.79 | * | 4.800E-02 | 4.674E-02 | 7.556E-02 | 7.679E-03 | 0.635 |
| NB-95M | | 235.69 | * | 1.517E-01 | 1.315E-01 | 2.079E-01 | 2.234E-02 | 0.729 |
| ZR-95 | | 724.18 | | 4.543E-02 | 9.827E-02 | 1.511E-01 | 1.629E-02 | 0.301 |
| | | 756.15 | * | 1.278E-01 | 7.521E-02 | 1.401E-01 | 1.529E-02 | 0.912 |
| NB-97 | | 657.90 | * | 9.389E-01 | 7.521E-02 | Half-Life | too short | |
| | | 1024.50 | | -2.791E+02 | 7.521E-02 | Half-Life | too short | |
| ZR-97 | | 254.15 | | -2.798E+02 | 7.521E-02 | Half-Life | too short | |
| | | 355.39 | | 1.073E+02 | 7.521E-02 | Half-Life | too short | |
| | | 507.63 | * | 2.462E+02 | 7.521E-02 | Half-Life | too short | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 602.52 | | | 3.761E+01 | 7.521E-02 | Half-Life | too short | |
| | 1021.30 | | | 3.543E+02 | 7.521E-02 | Half-Life | too short | |
| | 1147.95 | | | -2.804E+02 | 7.521E-02 | Half-Life | too short | |
| | 1362.66 | | | 3.788E+02 | 7.521E-02 | Half-Life | too short | |
| | 1750.46 | | | 4.427E+02 | 7.521E-02 | Half-Life | too short | |
| MO-99 | 140.51 | | | -3.630E+01 | 9.126E+01 | 1.405E+02 | 3.882E+01 | -0.258 |
| | 181.06 | | | 7.704E+01 | 6.699E+01 | 9.886E+01 | 1.823E+01 | 0.779 |
| | 366.43 | | | 2.095E+02 | 2.756E+02 | 4.752E+02 | 4.225E+01 | 0.441 |
| | 739.58 | * | | -1.059E+01 | 3.644E+01 | 5.926E+01 | 9.545E+00 | -0.179 |
| | 778.00 | | | -8.618E+01 | 1.070E+02 | 1.641E+02 | 1.667E+01 | -0.525 |
| TC-99M | 140.51 | * | | -9.547E+15 | 1.070E+02 | Half-Life | too short | |
| RH-101 | 127.23 | | | -2.200E-03 | 3.480E-02 | 4.950E-02 | 4.129E-03 | -0.044 |
| | 198.01 | * | | 7.328E-03 | 3.328E-02 | 5.565E-02 | 5.101E-03 | 0.132 |
| | 325.23 | | | 8.904E-02 | 2.383E-01 | 3.573E-01 | 3.412E-02 | 0.249 |
| RH-102 | 418.52 | | | 5.187E-02 | 2.761E-01 | 4.574E-01 | 3.935E-02 | 0.113 |
| | 475.06 | * | | 6.120E-03 | 2.907E-02 | 4.794E-02 | 4.347E-03 | 0.128 |
| | 631.29 | | | -5.277E-03 | 6.230E-02 | 9.870E-02 | 9.804E-03 | -0.053 |
| | 697.49 | | | -1.340E-01 | 9.189E-02 | 1.147E-01 | 1.160E-02 | -1.168 |
| | 766.84 | | | 2.176E-01 | 1.227E-01 | 2.081E-01 | 2.115E-02 | 1.046 |
| | 1046.59 | | | -3.711E-03 | 1.083E-01 | 1.764E-01 | 1.615E-02 | -0.021 |
| | 1112.84 | | | -6.423E-02 | 2.350E-01 | 3.480E-01 | 3.001E-02 | -0.185 |
| RU-103 | 497.08 | * | | -1.285E-02 | 4.517E-02 | 7.140E-02 | 1.038E-02 | -0.180 |
| + | 610.33 | | | 1.637E+01 | 3.507E+00 | 3.571E+00 | 6.197E-01 | 4.583 |
| RH-106 | 511.85 | + | | 8.801E-01 | 3.840E-01 | 4.786E-01 | 4.462E-02 | 1.839 |
| | 621.84 | * | | 3.246E-01 | 3.322E-01 | 5.700E-01 | 8.103E-02 | 0.569 |
| | 1050.47 | | | -1.505E+00 | 2.145E+00 | 3.213E+00 | 2.932E-01 | -0.468 |
| RU-106 | 511.85 | + | | 8.801E-01 | 3.840E-01 | 4.786E-01 | 4.462E-02 | 1.839 |
| | 621.84 | * | | 3.246E-01 | 3.305E-01 | 5.700E-01 | 5.641E-02 | 0.569 |
| | 1050.47 | | | -1.505E+00 | 2.145E+00 | 3.213E+00 | 2.932E-01 | -0.468 |
| AG-108M | 433.93 | * | | -1.631E-02 | 3.160E-02 | 4.944E-02 | 4.487E-03 | -0.330 |
| | 614.37 | | | -3.231E-03 | 4.173E-02 | 5.754E-02 | 5.848E-03 | -0.056 |
| | 722.95 | | | 1.038E-03 | 4.219E-02 | 6.162E-02 | 6.428E-03 | 0.017 |
| AG-110M | 657.75 | * | | 2.970E-03 | 3.312E-02 | 5.614E-02 | 5.752E-03 | 0.053 |
| | 677.61 | | | -4.357E-02 | 3.287E-01 | 5.468E-01 | 5.622E-02 | -0.080 |
| | 706.67 | | | -1.264E-01 | 2.171E-01 | 3.471E-01 | 3.584E-02 | -0.364 |
| | 763.93 | | | 1.638E-01 | 1.645E-01 | 2.674E-01 | 2.773E-02 | 0.613 |
| | 884.67 | | | 8.211E-03 | 4.585E-02 | 7.717E-02 | 7.889E-03 | 0.106 |
| | 937.48 | | | 7.626E-02 | 1.027E-01 | 1.641E-01 | 1.652E-02 | 0.465 |
| | 1384.27 | | | 1.345E-01 | 1.561E-01 | 2.640E-01 | 2.291E-02 | 0.510 |
| IN-111 | 171.28 | | | 1.804E-01 | 3.225E+00 | 5.125E+00 | 4.511E-01 | 0.035 |
| | 245.39 | * | | -3.743E+00 | 3.623E+00 | 4.917E+00 | 4.773E-01 | -0.761 |
| IN-113M | 391.69 | * | | 2.080E-02 | 4.308E-02 | 7.299E-02 | 6.296E-03 | 0.285 |
| SN-113 | 391.69 | * | | 2.080E-02 | 4.308E-02 | 7.299E-02 | 6.296E-03 | 0.285 |
| IN-114M | 190.27 | * | | 4.937E-02 | 2.157E-01 | 3.273E-01 | 2.966E-02 | 0.151 |
| CD-115 | 260.90 | | | 4.035E-04 | 2.157E-01 | Half-Life | too short | |
| | 492.35 | | | -1.424E-05 | 2.157E-01 | Half-Life | too short | |
| | 527.90 | * | | 1.654E-05 | 2.157E-01 | Half-Life | too short | |
| SN-117M | 156.02 | | | 2.189E+00 | 3.178E+00 | 4.687E+00 | 4.030E-01 | 0.467 |
| | 158.56 | * | | -4.308E-03 | 7.160E-02 | 1.079E-01 | 9.308E-03 | -0.040 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SB-122 | | 563.90 | * | 5.694E+00 | 7.438E+00 | 1.264E+01 | 1.217E+00 | 0.451 |
| | | 692.80 | | -1.204E+01 | 1.390E+02 | 2.316E+02 | 2.339E+01 | -0.052 |
| I-123 | | 159.00 | * | -2.404E+02 | 1.390E+02 | Half-Life | too short | |
| | | 528.96 | | -3.598E+04 | 1.390E+02 | Half-Life | too short | |
| TE-123M | | 159.00 | * | -2.718E-03 | 2.825E-02 | 4.469E-02 | 3.882E-03 | -0.061 |
| I-124 | | 602.71 | * | 7.365E-02 | 1.525E+00 | 2.262E+00 | 2.221E-01 | 0.033 |
| | | 722.78 | | 9.196E-01 | 9.856E+00 | 1.452E+01 | 1.473E+00 | 0.063 |
| | | 1325.50 | | -1.562E+01 | 6.649E+01 | 1.029E+02 | 8.611E+00 | -0.152 |
| | | 1376.25 | | 9.861E+01 | 6.682E+01 | 1.208E+02 | 1.018E+01 | 0.816 |
| | + | 1509.49 | | 6.709E+01 | 3.131E+01 | 6.216E+01 | 5.269E+00 | 1.079 |
| | | 1691.02 | | -3.858E+00 | 6.212E+00 | 8.567E+00 | 7.144E-01 | -0.450 |
| SB-124 | | 602.71 | | 2.034E-03 | 4.212E-02 | 6.248E-02 | 6.136E-03 | 0.033 |
| | | 645.85 | | 2.216E-01 | 5.194E-01 | 9.028E-01 | 9.421E-02 | 0.245 |
| | | 709.31 | | 7.497E-01 | 2.815E+00 | 4.815E+00 | 4.876E-01 | 0.156 |
| | | 713.82 | | -1.018E+00 | 1.682E+00 | 2.665E+00 | 3.508E-01 | -0.382 |
| | | 722.78 | | 3.682E-02 | 3.947E-01 | 5.814E-01 | 5.989E-02 | 0.063 |
| | + | 968.20 | | 2.496E+01 | 4.771E+00 | 8.637E+00 | 8.326E-01 | 2.890 |
| | | 1045.16 | | 1.659E-01 | 2.512E+00 | 4.134E+00 | 3.789E-01 | 0.040 |
| | | 1325.50 | | -6.680E-01 | 2.844E+00 | 4.402E+00 | 3.683E-01 | -0.152 |
| | | 1368.21 | | -4.110E-01 | 1.584E+00 | 2.557E+00 | 3.412E-01 | -0.161 |
| | | 1436.60 | | 6.673E-01 | 3.279E+00 | 5.656E+00 | 4.787E-01 | 0.118 |
| | | 1691.02 | * | -3.644E-02 | 5.868E-02 | 8.092E-02 | 7.032E-03 | -0.450 |
| SB-125 | | 427.89 | * | -1.789E-02 | 8.882E-02 | 1.428E-01 | 1.264E-02 | -0.125 |
| | + | 463.38 | | 6.387E-01 | 4.274E-01 | 5.803E-01 | 5.587E-02 | 1.101 |
| | | 600.56 | | 5.967E-02 | 1.714E-01 | 2.825E-01 | 2.930E-02 | 0.211 |
| | | 635.90 | | -1.490E-01 | 2.586E-01 | 4.149E-01 | 4.381E-02 | -0.359 |
| TE-125M | | 109.28 | * | 2.795E+00 | 9.406E+00 | 1.536E+01 | 1.573E+00 | 0.182 |
| I-126 | | 388.63 | | 1.466E-01 | 2.585E-01 | 4.397E-01 | 3.703E-02 | 0.333 |
| | | 666.33 | * | 8.420E-02 | 2.358E-01 | 4.067E-01 | 4.086E-02 | 0.207 |
| | | 753.82 | | 1.109E+00 | 1.934E+00 | 3.371E+00 | 3.425E-01 | 0.329 |
| SB-126 | | 223.80 | | 3.524E+00 | 5.016E+00 | 8.701E+00 | 8.253E-01 | 0.405 |
| | + | 278.60 | | 8.434E+00 | 5.369E+00 | 5.852E+00 | 5.825E-01 | 1.441 |
| | + | 296.50 | | 2.192E+01 | 3.437E+00 | 5.255E+00 | 5.174E-01 | 4.171 |
| | | 414.70 | | -7.153E-03 | 1.009E-01 | 1.642E-01 | 1.407E-02 | -0.044 |
| | | 415.30 | | 1.639E+00 | 8.144E+00 | 1.350E+01 | 1.158E+00 | 0.121 |
| | | 555.20 | | 1.345E+00 | 4.604E+00 | 7.609E+00 | 7.292E-01 | 0.177 |
| | | 573.80 | | -1.258E+00 | 1.432E+00 | 2.118E+00 | 2.050E-01 | -0.594 |
| | | 593.00 | | -1.896E-01 | 1.216E+00 | 1.920E+00 | 1.877E-01 | -0.099 |
| | | 656.30 | | 2.569E-01 | 3.907E+00 | 6.614E+00 | 6.627E-01 | 0.039 |
| | | 666.33 | | 3.557E-02 | 9.962E-02 | 1.718E-01 | 1.726E-02 | 0.207 |
| | | 675.00 | | 9.654E-01 | 2.669E+00 | 4.603E+00 | 4.634E-01 | 0.210 |
| | | 695.00 | | 1.089E-02 | 9.076E-02 | 1.538E-01 | 1.554E-02 | 0.071 |
| | | 697.00 | | -5.975E-01 | 4.209E-01 | 5.288E-01 | 5.345E-02 | -1.130 |
| | | 720.50 | * | -1.150E-01 | 1.826E-01 | 2.798E-01 | 2.837E-02 | -0.411 |
| | | 856.80 | | -9.640E-01 | 7.133E-01 | 8.169E-01 | 8.215E-02 | -1.180 |
| | | 989.30 | | -5.913E-01 | 1.553E+00 | 2.440E+00 | 2.325E-01 | -0.242 |
| | | 1034.80 | | 5.146E+00 | 9.986E+00 | 1.729E+01 | 1.598E+00 | 0.298 |
| | | 1213.00 | | -2.880E+00 | 5.354E+00 | 8.115E+00 | 6.605E-01 | -0.355 |
| SB-127 | | 61.10 | | 5.109E+01 | 1.105E+02 | 1.660E+02 | 1.953E+01 | 0.308 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| XE-127 | | 252.40 | | -2.230E+00 | 1.033E+01 | 1.705E+01 | 7.283E+00 | -0.131 |
| | | 290.80 | | -2.507E+01 | 5.480E+01 | 7.720E+01 | 1.050E+01 | -0.325 |
| | | 411.60 | | 2.258E+01 | 3.210E+01 | 5.437E+01 | 9.146E+00 | 0.415 |
| | | 444.90 | | -1.203E+01 | 2.030E+01 | 3.124E+01 | 4.393E+00 | -0.385 |
| | | 473.00 | | 2.743E+00 | 4.029E+00 | 6.843E+00 | 9.920E-01 | 0.401 |
| | | 543.00 | | 1.371E+00 | 3.673E+01 | 5.934E+01 | 9.577E+00 | 0.023 |
| | | 603.60 | | 1.218E+01 | 2.957E+01 | 4.325E+01 | 6.351E+00 | 0.282 |
| | * | 685.20 | | -1.999E+00 | 3.195E+00 | 5.070E+00 | 7.063E-01 | -0.394 |
| | | 698.50 | | -6.326E+01 | 4.483E+01 | 5.551E+01 | 9.855E+00 | -1.140 |
| | | 722.20 | | -1.128E+01 | 7.569E+01 | 1.082E+02 | 1.492E+01 | -0.104 |
| | | 783.80 | | 9.560E-01 | 8.299E+00 | 1.396E+01 | 2.070E+00 | 0.069 |
| | | 57.60 | | -8.588E-01 | 4.858E+00 | 7.941E+00 | 5.674E-01 | -0.108 |
| I-131 | | 145.22 | | 3.513E-01 | 7.838E-01 | 1.271E+00 | 1.077E-01 | 0.276 |
| | | 172.10 | | -2.404E-02 | 1.281E-01 | 2.010E-01 | 1.771E-02 | -0.120 |
| | * | 202.84 | | 4.055E-02 | 5.421E-02 | 8.826E-02 | 8.146E-03 | 0.459 |
| | | 374.96 | | -4.014E-02 | 2.121E-01 | 3.333E-01 | 2.906E-02 | -0.120 |
| | | 80.18 | | -9.219E+00 | 6.237E+00 | 9.543E+00 | 8.273E-01 | -0.966 |
| TE-132 | | 284.30 | | -1.838E+00 | 2.243E+00 | 3.555E+00 | 3.682E-01 | -0.517 |
| | * | 364.48 | | 5.624E-02 | 1.748E-01 | 2.936E-01 | 2.765E-02 | 0.192 |
| | | 636.97 | | -2.573E+00 | 2.233E+00 | 3.374E+00 | 3.512E-01 | -0.762 |
| | | 722.89 | | 5.277E-01 | 1.079E+01 | 1.580E+01 | 1.616E+00 | 0.033 |
| | | 49.72 | | -2.100E+01 | 3.416E+01 | 5.486E+01 | 6.427E+00 | -0.383 |
| BA-133 | | 111.76 | | -5.302E+01 | 7.925E+01 | 1.235E+02 | 1.497E+01 | -0.429 |
| | | 116.30 | | 4.026E+01 | 7.537E+01 | 1.239E+02 | 1.497E+01 | 0.325 |
| | * | 228.16 | | -1.778E-01 | 1.883E+00 | 3.156E+00 | 5.427E-01 | -0.056 |
| | | 53.15 | | 7.411E-02 | 2.514E+00 | 4.107E+00 | 3.060E-01 | 0.018 |
| | | 79.62 | | -1.088E+00 | 1.179E+00 | 1.841E+00 | 2.792E-01 | -0.591 |
| I-133 | | 81.00 | | -1.343E-01 | 8.976E-02 | 1.342E-01 | 2.133E-02 | -1.001 |
| | + | 276.40 | | 9.637E-01 | 6.235E-01 | 6.867E-01 | 1.049E-01 | 1.403 |
| | | 302.84 | | 1.621E-02 | 1.551E-01 | 2.285E-01 | 3.217E-02 | 0.071 |
| | * | 356.01 | | -1.441E-02 | 4.606E-02 | 6.461E-02 | 8.728E-03 | -0.223 |
| | | 383.85 | | -6.158E-02 | 2.932E-01 | 4.744E-01 | 5.950E-02 | -0.130 |
| CS-134 | + | 510.53 | | 8.392E+01 | 2.932E-01 | Half-Life | too short | |
| | | 529.87 | * | -1.871E-01 | 2.932E-01 | Half-Life | too short | |
| | | 706.58 | | -1.150E+01 | 2.932E-01 | Half-Life | too short | |
| | | 856.28 | | -2.470E+01 | 2.932E-01 | Half-Life | too short | |
| | | 875.33 | | 2.626E+00 | 2.932E-01 | Half-Life | too short | |
| CS-135 | | 1236.41 | | 1.989E+01 | 2.932E-01 | Half-Life | too short | |
| | | 1298.22 | | -6.629E+00 | 2.932E-01 | Half-Life | too short | |
| | | 475.35 | | 9.060E-01 | 1.840E+00 | 3.099E+00 | 2.810E-01 | 0.292 |
| | | 563.23 | | 4.247E-01 | 3.722E-01 | 6.483E-01 | 6.290E-02 | 0.655 |
| | | 569.32 | | 2.129E-01 | 1.998E-01 | 3.468E-01 | 3.386E-02 | 0.614 |
| CS-135 | | 604.70 | | -8.679E-04 | 3.704E-02 | 5.150E-02 | 5.071E-03 | -0.017 |
| | + | 795.84 | * | 1.385E-01 | 6.487E-02 | 9.832E-02 | 1.003E-02 | 1.409 |
| | | 801.93 | | -3.312E-01 | 4.352E-01 | 6.325E-01 | 6.443E-02 | -0.524 |
| | | 1038.57 | | -1.849E+00 | 3.834E+00 | 5.940E+00 | 5.472E-01 | -0.311 |
| | | 1167.94 | | -2.347E-01 | 2.097E+00 | 3.354E+00 | 2.715E-01 | -0.070 |
| CS-135 | | 1365.15 | | 5.958E-01 | 1.080E+00 | 1.943E+00 | 1.713E-01 | 0.307 |
| | * | 268.24 | | 3.727E-01 | 1.753E-01 | 2.878E-01 | 3.189E-02 | 1.295 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| I-135 | | 288.45 | | 1.530E+15 | 1.753E-01 | Half-Life | too short | |
| | | 417.63 | | -2.754E+15 | 1.753E-01 | Half-Life | too short | |
| | | 546.56 | | -9.686E+14 | 1.753E-01 | Half-Life | too short | |
| | | 836.80 | | 3.631E+15 | 1.753E-01 | Half-Life | too short | |
| | | 1038.76 | | -1.576E+15 | 1.753E-01 | Half-Life | too short | |
| | | 1124.00 | | 1.485E+16 | 1.753E-01 | Half-Life | too short | |
| | | 1131.51 | | -1.734E+14 | 1.753E-01 | Half-Life | too short | |
| | | 1260.41 | * | 5.225E+14 | 1.753E-01 | Half-Life | too short | |
| | | 1457.56 | | 1.239E+16 | 1.753E-01 | Half-Life | too short | |
| | | 1678.03 | | -3.509E+14 | 1.753E-01 | Half-Life | too short | |
| | | 1706.46 | | 2.126E+15 | 1.753E-01 | Half-Life | too short | |
| | | 1791.20 | | 1.787E+15 | 1.753E-01 | Half-Life | too short | |
| CS-136 | | 66.91 | | -4.753E-01 | 9.555E-01 | 1.369E+00 | 2.029E-01 | -0.347 |
| | + | 86.29 | | 2.709E+00 | 1.755E+00 | 2.451E+00 | 3.256E-01 | 1.105 |
| | + | 153.22 | | 1.663E+00 | 8.374E-01 | 1.423E+00 | 1.364E-01 | 1.169 |
| | | 163.89 | | -1.691E-01 | 1.410E+00 | 2.194E+00 | 2.135E-01 | -0.077 |
| | | 176.55 | | -2.783E-02 | 4.773E-01 | 7.531E-01 | 7.051E-02 | -0.037 |
| | | 273.65 | | 3.519E-01 | 7.828E-01 | 8.866E-01 | 9.244E-02 | 0.397 |
| | | 340.57 | | 4.332E-01 | 1.970E-01 | 3.234E-01 | 3.096E-02 | 1.339 |
| | | 818.51 | | 1.072E-01 | 9.587E-02 | 1.736E-01 | 1.760E-02 | 0.617 |
| | | 1048.07 | * | 2.491E-02 | 1.296E-01 | 2.161E-01 | 2.052E-02 | 0.115 |
| | | 1235.34 | | -6.785E-01 | 8.307E-01 | 1.011E+00 | 1.167E-01 | -0.671 |
| | | 661.65 | * | -2.387E-02 | 3.585E-02 | 5.712E-02 | 5.733E-03 | -0.418 |
| | | 661.65 | * | -2.523E-02 | 3.789E-02 | 6.038E-02 | 6.069E-03 | -0.418 |
| | | 165.85 | * | -8.193E-03 | 3.105E-02 | 4.862E-02 | 4.244E-03 | -0.169 |
| BA-137M | | 162.64 | | 5.602E-01 | 9.725E-01 | 1.564E+00 | 1.436E-01 | 0.358 |
| | | 304.84 | | 8.325E-01 | 1.747E+00 | 2.629E+00 | 7.467E-01 | 0.317 |
| | | 423.70 | | -8.041E-01 | 2.340E+00 | 3.698E+00 | 1.199E+00 | -0.217 |
| LA-140 | | 537.32 | * | 1.641E-01 | 3.255E-01 | 5.399E-01 | 1.802E-01 | 0.304 |
| | + | 328.77 | | 1.047E+00 | 5.882E-01 | 7.228E-01 | 7.188E-02 | 1.448 |
| | | 432.53 | | -2.897E-01 | 2.492E+00 | 4.029E+00 | 3.683E-01 | -0.072 |
| | | 487.03 | | -1.264E-01 | 1.643E-01 | 2.472E-01 | 2.388E-02 | -0.511 |
| | | 751.79 | | -2.434E+00 | 2.274E+00 | 3.425E+00 | 3.752E-01 | -0.711 |
| | | 815.85 | | 2.114E-01 | 4.055E-01 | 7.044E-01 | 7.740E-02 | 0.300 |
| | | 867.82 | | 1.766E+00 | 1.887E+00 | 3.051E+00 | 3.180E-01 | 0.579 |
| | | 919.63 | | -3.191E+00 | 3.705E+00 | 4.826E+00 | 5.635E-01 | -0.661 |
| | | 925.24 | | 7.044E-02 | 1.278E+00 | 2.118E+00 | 2.186E-01 | 0.033 |
| | | 1596.49 | * | 5.622E-02 | 1.194E-01 | 1.882E-01 | 1.589E-02 | 0.299 |
| | | 145.44 | * | 4.189E-02 | 7.024E-02 | 1.150E-01 | 9.927E-03 | 0.364 |
| | | 57.37 | | -2.037E-03 | 7.024E-02 | Half-Life | too short | |
| | | 231.56 | | -1.562E-02 | 7.024E-02 | Half-Life | too short | |
| CE-143 | | 293.26 | * | 6.264E-03 | 7.024E-02 | Half-Life | too short | |
| | | 350.59 | | 3.717E-01 | 7.024E-02 | Half-Life | too short | |
| | | 490.36 | | -8.603E-03 | 7.024E-02 | Half-Life | too short | |
| | | 664.57 | | 1.176E-02 | 7.024E-02 | Half-Life | too short | |
| | | 721.93 | | -5.373E-03 | 7.024E-02 | Half-Life | too short | |
| | | 80.11 | | -2.870E+00 | 1.916E+00 | 2.929E+00 | 2.509E-01 | -0.980 |
| | | 133.54 | * | -1.294E-02 | 2.239E-01 | 3.401E-01 | 5.247E-02 | -0.038 |
| PM-144 | | 476.78 | | 2.490E-02 | 6.482E-02 | 1.083E-01 | 1.067E-02 | 0.230 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|---------------------|-----------|---------|
| | | 618.01 | -3.874E-02 | 3.327E-02 | 4.698E-02 | 4.742E-03 | -0.824 |
| | | 696.49 * | -4.102E-02 | 4.045E-02 | 5.270E-02 | 5.329E-03 | -0.778 |
| | | 778.57 | -1.304E+00 | 2.142E+00 | 3.357E+00 | 3.413E-01 | -0.389 |
| PR-144 | | 696.49 * | -2.787E+00 | 2.748E+00 | 3.580E+00 | 3.619E-01 | -0.778 |
| | | 1489.15 | 1.248E+01 | 1.256E+01 | 2.260E+01 | 1.916E+00 | 0.552 |
| PM-146 | | 453.90 * | 8.000E-03 | 4.190E-02 | 6.917E-02 | 7.575E-03 | 0.116 |
| | | 633.02 | 5.584E-01 | 1.501E+00 | 2.448E+00 | 9.227E-01 | 0.228 |
| | | 735.90 | 3.845E-02 | 1.301E-01 | 2.227E-01 | 6.482E-02 | 0.173 |
| | | 747.13 | 4.870E-03 | 8.692E-02 | 1.459E-01 | 2.193E-02 | 0.033 |
| ND-147 | + | 91.11 | 1.121E+00 | 3.052E-01 | 6.564E-01 | 6.494E-02 | 1.708 |
| | | 319.41 | -4.789E-01 | 4.514E+00 | 7.435E+00 | 7.155E-01 | -0.064 |
| | | 439.89 | 1.974E+00 | 7.798E+00 | 1.294E+01 | 1.138E+00 | 0.153 |
| | | 531.02 * | -4.572E-02 | 7.225E-01 | 1.158E+00 | 1.789E-01 | -0.039 |
| PM-149 | | 285.90 * | -1.705E-04 | 7.225E-01 | Half-Life too short | | |
| EU-152 | | 121.78 | -4.563E-02 | 7.245E-02 | 1.128E-01 | 1.092E-02 | -0.405 |
| | | 244.69 | -8.731E-03 | 3.427E-01 | 5.060E-01 | 4.909E-02 | -0.017 |
| | | 344.27 * | -3.661E-02 | 9.523E-02 | 1.534E-01 | 1.496E-02 | -0.239 |
| | | 443.98 | -3.770E-01 | 8.647E-01 | 1.356E+00 | 1.197E-01 | -0.278 |
| | | 778.89 | -1.590E-01 | 2.400E-01 | 3.735E-01 | 3.794E-02 | -0.426 |
| | | 867.32 | 1.024E+00 | 8.254E-01 | 1.388E+00 | 1.392E-01 | 0.738 |
| | + | 964.01 | 8.106E-01 | 3.723E-01 | 5.752E-01 | 5.557E-02 | 1.409 |
| | | 1085.78 | -1.537E-02 | 3.464E-01 | 5.617E-01 | 4.974E-02 | -0.027 |
| | | 1112.02 | 9.094E-02 | 3.095E-01 | 5.186E-01 | 4.476E-02 | 0.175 |
| | | 1407.95 | 4.522E-02 | 1.900E-01 | 3.269E-01 | 2.762E-02 | 0.138 |
| GD-153 | | 69.67 | -9.770E-01 | 1.509E+00 | 2.292E+00 | 1.753E-01 | -0.426 |
| | | 83.37 | 9.062E+00 | 1.854E+01 | 2.218E+01 | 1.977E+00 | 0.409 |
| | | 97.43 * | -1.058E-01 | 8.443E-02 | 1.121E-01 | 9.946E-03 | -0.943 |
| | | 103.18 | -1.408E-01 | 1.048E-01 | 1.583E-01 | 1.369E-02 | -0.890 |
| EU-154 | | 123.07 | -5.572E-03 | 5.061E-02 | 8.087E-02 | 9.018E-03 | -0.069 |
| | | 247.94 | 6.238E-02 | 3.728E-01 | 5.865E-01 | 7.232E-02 | 0.106 |
| | | 591.81 | -7.835E-02 | 6.387E-01 | 1.017E+00 | 1.276E-01 | -0.077 |
| | | 723.30 | -1.903E-02 | 1.747E-01 | 2.508E-01 | 2.740E-02 | -0.076 |
| | | 756.87 | 9.293E-01 | 7.722E-01 | 1.397E+00 | 1.834E-01 | 0.665 |
| | | 873.19 | -3.515E-01 | 2.912E-01 | 4.146E-01 | 5.499E-02 | -0.848 |
| | | 996.32 | -6.932E-02 | 3.344E-01 | 5.353E-01 | 9.743E-02 | -0.129 |
| | | 1004.76 | 4.995E-02 | 2.079E-01 | 3.489E-01 | 4.275E-02 | 0.143 |
| | | 1274.45 * | 3.651E-02 | 9.210E-02 | 1.570E-01 | 1.734E-02 | 0.233 |
| EU-155 | | 48.70 | -1.539E+00 | 1.502E+00 | 2.368E+00 | 1.895E-01 | -0.650 |
| | | 60.01 | 3.892E+00 | 3.940E+00 | 6.080E+00 | 4.314E-01 | 0.640 |
| | + | 86.54 | 1.943E-01 | 1.245E-01 | 1.784E-01 | 1.670E-02 | 1.089 |
| | | 105.31 * | 9.601E-02 | 1.074E-01 | 1.784E-01 | 1.551E-02 | 0.538 |
| TB-160 | + | 86.79 | 5.425E-01 | 3.476E-01 | 5.039E-01 | 4.692E-02 | 1.077 |
| | | 197.04 | 5.357E-02 | 5.604E-01 | 9.527E-01 | 8.720E-02 | 0.056 |
| | | 215.65 | 2.383E-01 | 7.741E-01 | 1.283E+00 | 1.204E-01 | 0.186 |
| | | 298.57 | 1.587E-01 | 1.177E-01 | 2.073E-01 | 2.038E-02 | 0.765 |
| | | 879.36 * | 9.118E-02 | 1.456E-01 | 2.543E-01 | 2.542E-02 | 0.359 |
| | | 962.29 | 3.701E-01 | 5.359E-01 | 8.369E-01 | 8.093E-02 | 0.442 |
| | + | 966.15 | 5.826E-01 | 2.675E-01 | 4.559E-01 | 4.400E-02 | 1.278 |
| | | 1177.93 | 1.352E-01 | 3.540E-01 | 5.967E-01 | 4.804E-02 | 0.227 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| HO-166M | | 1271.85 | | 1.814E-01 | 6.156E-01 | 1.032E+00 | 8.531E-02 | 0.176 |
| | | 80.57 | | -3.591E-01 | 2.429E-01 | 3.716E-01 | 3.201E-02 | -0.966 |
| | + | 184.41 | | 1.581E-01 | 6.791E-02 | 6.733E-02 | 6.047E-03 | 2.348 |
| | | 280.46 | | 8.841E-02 | 9.079E-02 | 1.423E-01 | 1.416E-02 | 0.621 |
| | | 410.95 | | 2.195E-01 | 2.696E-01 | 4.615E-01 | 3.938E-02 | 0.476 |
| | | 711.68 | * | -1.918E-02 | 5.703E-02 | 9.277E-02 | 9.397E-03 | -0.207 |
| | | 752.31 | | -3.008E-01 | 2.800E-01 | 4.219E-01 | 4.287E-02 | -0.713 |
| TM-171 | | 810.29 | | -5.570E-02 | 5.416E-02 | 8.007E-02 | 8.116E-03 | -0.696 |
| | | 51.35 | | 1.355E+01 | 2.032E+01 | 3.441E+01 | 2.629E+00 | 0.394 |
| | | 52.39 | | 6.063E+00 | 1.102E+01 | 1.837E+01 | 1.383E+00 | 0.330 |
| | | 59.40 | | 1.443E+01 | 2.176E+01 | 3.307E+01 | 2.340E+00 | 0.436 |
| LU-176 | | 66.72 | * | -7.339E+00 | 2.679E+01 | 3.888E+01 | 2.896E+00 | -0.189 |
| | | 88.36 | | 9.699E-01 | 2.677E-01 | 3.610E-01 | 3.403E-02 | 2.687 |
| | | 201.83 | | -7.405E-03 | 2.848E-02 | 4.765E-02 | 4.392E-03 | -0.155 |
| | | 306.84 | * | 3.773E-03 | 2.375E-02 | 3.981E-02 | 3.883E-03 | 0.095 |
| LU-177 | | 401.10 | | -4.456E-01 | 6.674E+00 | 1.088E+01 | 9.189E-01 | -0.041 |
| | | 112.95 | | -3.075E+00 | 2.628E+00 | 3.991E+00 | 3.365E-01 | -0.770 |
| | + | 208.36 | * | 6.711E+00 | 3.196E+00 | 3.470E+00 | 3.227E-01 | 1.934 |
| | LU-177M | 52.97 | | 1.588E-01 | 1.163E+00 | 1.908E+00 | 1.425E-01 | 0.083 |
| HF-181 | | 54.07 | | -3.076E-01 | 6.210E-01 | 9.922E-01 | 7.312E-02 | -0.310 |
| | | 61.30 | | 1.017E-01 | 1.254E+00 | 1.850E+00 | 1.324E-01 | 0.055 |
| | | 121.62 | | -1.754E-01 | 3.751E-01 | 5.891E-01 | 4.912E-02 | -0.298 |
| | | 147.16 | | -3.206E-01 | 6.791E-01 | 1.059E+00 | 8.989E-02 | -0.303 |
| | | 171.86 | | -2.707E-02 | 4.838E-01 | 7.644E-01 | 6.733E-02 | -0.035 |
| | | 218.09 | | 5.704E-01 | 8.251E-01 | 1.432E+00 | 1.349E-01 | 0.398 |
| | | 268.79 | | 2.456E+00 | 9.446E-01 | 1.574E+00 | 1.558E-01 | 1.560 |
| | | 319.02 | | -1.193E-03 | 2.639E-01 | 4.374E-01 | 4.210E-02 | -0.003 |
| | | 367.43 | | 1.073E-02 | 8.806E-01 | 1.451E+00 | 1.287E-01 | 0.007 |
| | | 413.65 | * | -1.744E-01 | 1.950E-01 | 2.995E-01 | 2.563E-02 | -0.582 |
| | | 56.28 | | -3.797E-01 | 7.451E-01 | 1.202E+00 | 8.671E-02 | -0.316 |
| | | 57.53 | | -7.778E-02 | 4.030E-01 | 6.584E-01 | 4.706E-02 | -0.118 |
| | | 65.20 | | -7.322E-03 | 9.587E-01 | 1.410E+00 | 1.037E-01 | -0.005 |
| | | 133.02 | | 1.715E-02 | 8.114E-02 | 1.171E-01 | 9.797E-03 | 0.147 |
| | | 136.25 | | 1.521E-01 | 5.019E-01 | 8.137E-01 | 6.827E-02 | 0.187 |
| W-181 | | 345.85 | | -2.608E-02 | 2.097E-01 | 3.175E-01 | 2.938E-02 | -0.082 |
| | | 482.03 | * | 2.752E-02 | 4.198E-02 | 7.169E-02 | 6.536E-03 | 0.384 |
| | | 56.28 | | -1.409E-01 | 2.771E-01 | 4.470E-01 | 3.225E-02 | -0.315 |
| | | 57.53 | | -2.902E-02 | 1.500E-01 | 2.450E-01 | 1.752E-02 | -0.118 |
| TA-182 | | 65.20 | * | -2.704E-03 | 3.540E-01 | 5.205E-01 | 3.830E-02 | -0.005 |
| | | 67.75 | | 1.352E-02 | 1.072E-01 | 1.584E-01 | 1.191E-02 | 0.085 |
| | | 100.10 | | 1.663E-01 | 1.738E-01 | 2.915E-01 | 2.552E-02 | 0.571 |
| | | 152.43 | | 1.045E-01 | 3.837E-01 | 5.526E-01 | 4.726E-02 | 0.189 |
| RE-183 | | 222.10 | | -2.137E-01 | 3.385E-01 | 5.526E-01 | 5.231E-02 | -0.387 |
| | | 1001.68 | | 5.194E-01 | 2.067E+00 | 3.508E+00 | 3.315E-01 | 0.148 |
| | + | 1121.28 | | 9.689E-01 | 2.703E-01 | 4.072E-01 | 3.480E-02 | 2.380 |
| | | 1189.05 | | 3.350E-01 | 3.077E-01 | 5.497E-01 | 4.442E-02 | 0.609 |
| | | 1221.42 | * | -1.733E-01 | 1.925E-01 | 2.803E-01 | 2.287E-02 | -0.618 |
| | | 1230.97 | | -7.519E-02 | 4.561E-01 | 7.243E-01 | 5.926E-02 | -0.104 |
| | | 57.98 | | 4.065E-02 | 1.519E-01 | 2.527E-01 | 1.801E-02 | 0.161 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| RE-184 | | 59.32 | | 6.452E-02 | 9.345E-02 | 1.422E-01 | 1.007E-02 | 0.454 |
| | | 67.20 | | -1.164E-01 | 1.986E-01 | 2.837E-01 | 2.123E-02 | -0.410 |
| | | 162.32 | * | 1.065E-01 | 1.110E-01 | 1.842E-01 | 1.599E-02 | 0.578 |
| | + | 208.81 | | 3.846E+00 | 1.832E+00 | 1.992E+00 | 1.854E-01 | 1.931 |
| | | 291.72 | | -3.830E-01 | 1.042E+00 | 1.480E+00 | 1.462E-01 | -0.259 |
| | | 57.98 | | 1.457E-01 | 5.445E-01 | 9.053E-01 | 6.453E-02 | 0.161 |
| | | 59.32 | | 2.310E-01 | 3.346E-01 | 5.091E-01 | 3.604E-02 | 0.454 |
| | | 67.20 | | -4.171E-01 | 7.115E-01 | 1.016E+00 | 7.603E-02 | -0.410 |
| | | 161.27 | | -7.078E-02 | 3.555E-01 | 5.590E-01 | 4.844E-02 | -0.127 |
| | | 216.55 | | 1.934E-01 | 2.622E-01 | 4.555E-01 | 4.282E-02 | 0.425 |
| | | 252.85 | * | -1.199E-01 | 2.390E-01 | 3.901E-01 | 3.813E-02 | -0.307 |
| | | 318.01 | | 3.806E-01 | 4.552E-01 | 7.882E-01 | 7.596E-02 | 0.483 |
| | | 792.07 | | -5.538E-01 | 1.136E+00 | 1.540E+00 | 1.564E-01 | -0.360 |
| | | 903.28 | | 4.234E-01 | 9.804E-01 | 1.683E+00 | 1.670E-01 | 0.252 |
| OS-185 | | 920.93 | | 6.699E-02 | 3.993E-01 | 6.704E-01 | 6.608E-02 | 0.100 |
| | | 59.72 | | 1.367E-01 | 2.468E-01 | 3.731E-01 | 2.643E-02 | 0.366 |
| | | 61.14 | | 6.345E-02 | 1.367E-01 | 2.056E-01 | 1.469E-02 | 0.309 |
| | | 69.30 | | -2.212E-01 | 2.749E-01 | 4.145E-01 | 3.160E-02 | -0.534 |
| | | 592.07 | | -7.061E-01 | 2.709E+00 | 4.262E+00 | 4.164E-01 | -0.166 |
| | | 646.12 | * | 1.362E-02 | 4.261E-02 | 7.355E-02 | 7.345E-03 | 0.185 |
| | | 717.42 | | 1.990E-01 | 8.835E-01 | 1.507E+00 | 1.527E-01 | 0.132 |
| | | 874.81 | | -1.005E-01 | 5.606E-01 | 9.100E-01 | 9.110E-02 | -0.110 |
| | | 880.27 | | 4.566E-01 | 7.988E-01 | 1.389E+00 | 1.388E-01 | 0.329 |
| | + | 63.58 | | 8.384E+01 | 6.811E+01 | 8.024E+01 | 5.832E+00 | 1.045 |
| W-188 | | 227.08 | | -1.415E+01 | 1.333E+01 | 2.124E+01 | 2.023E+00 | -0.666 |
| | | 290.67 | * | -3.656E+00 | 8.361E+00 | 1.181E+01 | 1.168E+00 | -0.310 |
| IR-192 | + | 295.96 | | 1.342E+00 | 2.108E-01 | 3.293E-01 | 3.261E-02 | 4.074 |
| | | 308.46 | | -3.683E-02 | 9.687E-02 | 1.571E-01 | 1.536E-02 | -0.234 |
| | | 316.51 | * | 1.754E-02 | 3.553E-02 | 6.054E-02 | 5.855E-03 | 0.290 |
| | | 468.07 | | 1.180E-02 | 8.071E-02 | 1.164E-01 | 1.118E-02 | 0.101 |
| | | 604.41 | | 1.957E-01 | 5.059E-01 | 7.381E-01 | 1.022E-01 | 0.265 |
| | | 612.46 | | 2.796E+00 | 9.791E-01 | 1.660E+00 | 1.825E-01 | 1.685 |
| | | 65.12 | | 1.730E-02 | 1.629E-01 | 2.408E-01 | 1.771E-02 | 0.072 |
| | | 66.83 | | -4.294E-02 | 9.055E-02 | 1.301E-01 | 9.703E-03 | -0.330 |
| | + | 75.70 | | 1.447E+00 | 2.428E-01 | 4.536E-01 | 3.693E-02 | 3.190 |
| | | 98.88 | * | 2.651E-01 | 2.283E-01 | 3.681E-01 | 3.242E-02 | 0.720 |
| | + | 129.76 | | 5.917E+00 | 3.418E+00 | 5.154E+00 | 4.304E-01 | 1.148 |
| | | 367.94 | * | -4.524E-03 | 3.418E+00 | Half-Life | too short | |
| TL-200 | | 579.30 | | -8.558E-03 | 3.418E+00 | Half-Life | too short | |
| | | 828.27 | | 3.439E-02 | 3.418E+00 | Half-Life | too short | |
| | | 1205.75 | | 2.898E-02 | 3.418E+00 | Half-Life | too short | |
| TL-201 | | 68.90 | | -8.423E+00 | 1.224E+01 | 1.955E+01 | 1.485E+00 | -0.431 |
| | | 70.82 | | -2.777E+00 | 7.821E+00 | 1.125E+01 | 8.701E-01 | -0.247 |
| | | 80.30 | | -2.001E+01 | 1.344E+01 | 2.056E+01 | 1.765E+00 | -0.973 |
| | | 135.34 | | 1.015E+01 | 7.665E+01 | 1.234E+02 | 1.035E+01 | 0.082 |
| TL-202 | | 167.43 | * | 9.128E+00 | 2.098E+01 | 3.398E+01 | 2.973E+00 | 0.269 |
| | | 68.90 | | -3.322E-01 | 4.828E-01 | 7.709E-01 | 5.855E-02 | -0.431 |
| | | 70.82 | | -1.092E-01 | 3.076E-01 | 4.424E-01 | 3.422E-02 | -0.247 |
| | | 80.30 | | -7.871E-01 | 5.288E-01 | 8.087E-01 | 6.944E-02 | -0.973 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| HG-203 | | 439.56 | * | 4.509E-02 | 8.956E-02 | 1.512E-01 | 1.329E-02 | 0.298 |
| | | 70.83 | | -3.821E-01 | 1.091E+00 | 1.568E+00 | 2.048E-01 | -0.244 |
| | | 72.87 | | 1.118E+00 | 6.625E-01 | 1.014E+00 | 1.292E-01 | 1.103 |
| | | 82.60 | | -1.135E+00 | 1.220E+00 | 1.681E+00 | 2.332E-01 | -0.675 |
| BI-207 | | 279.20 | * | 6.979E-02 | 4.997E-02 | 7.966E-02 | 8.102E-03 | 0.876 |
| | | 72.80 | | 3.048E-01 | 1.751E-01 | 2.724E-01 | 2.150E-02 | 1.119 |
| | + | 74.97 | | 7.885E-01 | 1.323E-01 | 2.180E-01 | 1.760E-02 | 3.617 |
| | | 84.90 | | 2.579E-01 | 2.383E-01 | 2.950E-01 | 2.681E-02 | 0.874 |
| | | 569.67 | | 3.238E-02 | 3.097E-02 | 5.369E-02 | 5.187E-03 | 0.603 |
| | | 1063.62 | * | 7.683E-03 | 5.155E-02 | 8.546E-02 | 7.716E-03 | 0.090 |
| TL-207 | | 1770.23 | | -7.775E-02 | 5.032E-01 | 6.793E-01 | 5.572E-02 | -0.114 |
| | | 81.07 | | -3.003E-01 | 1.939E-01 | 2.954E-01 | 2.560E-02 | -1.017 |
| | | 83.78 | | 1.041E-01 | 1.563E-01 | 1.890E-01 | 1.693E-02 | 0.551 |
| | | 94.90 | | 7.526E-01 | 2.453E-01 | 3.944E-01 | 3.548E-02 | 1.908 |
| | | 122.32 | | -2.966E-01 | 1.700E+00 | 2.709E+00 | 2.435E-01 | -0.109 |
| | | 144.24 | | 2.744E-01 | 6.998E-01 | 1.133E+00 | 1.076E-01 | 0.242 |
| | + | 154.21 | | 7.761E-01 | 3.906E-01 | 6.646E-01 | 6.273E-02 | 1.168 |
| | + | 269.46 | | 7.521E-01 | 3.158E-01 | 3.840E-01 | 3.861E-02 | 1.958 |
| | | 323.87 | * | 4.431E-01 | 6.977E-01 | 1.063E+00 | 1.934E-01 | 0.417 |
| | + | 338.28 | | 6.912E+00 | 1.847E+00 | 2.543E+00 | 3.267E-01 | 2.718 |
| | | 445.03 | | -1.177E+00 | 1.984E+00 | 3.055E+00 | 3.740E-01 | -0.385 |
| | | 260.50 | | 7.404E+00 | 9.173E+00 | 1.594E+01 | 1.568E+00 | 0.464 |
| PO-209 | | 262.80 | | -8.251E+00 | 2.558E+01 | 4.204E+01 | 4.141E+00 | -0.196 |
| | | 896.60 | * | 1.714E+00 | 7.140E+00 | 1.206E+01 | 1.200E+00 | 0.142 |
| | | 46.50 | * | 8.302E-01 | 2.032E+00 | 3.391E+00 | 3.145E-01 | 0.245 |
| PB-210 | | 46.50 | * | 8.302E-01 | 2.032E+00 | 3.391E+00 | 3.145E-01 | 0.245 |
| PO-210 | | 46.50 | * | 8.302E-01 | 2.032E+00 | 3.391E+00 | 2.845E-01 | 0.245 |
| PB-211 | | 404.84 | * | -4.058E-01 | 9.886E-01 | 1.520E+00 | 9.524E-01 | -0.267 |
| | | 427.08 | | 8.288E-01 | 2.031E+00 | 3.307E+00 | 2.055E+00 | 0.251 |
| | | 831.96 | | 5.620E-02 | 1.200E+00 | 1.999E+00 | 1.257E+00 | 0.028 |
| BI-212 | + | 727.18 | * | 1.331E+00 | 4.539E-01 | 6.959E-01 | 7.898E-02 | 1.912 |
| | | 785.46 | | 1.708E+00 | 1.730E+00 | 3.098E+00 | 3.147E-01 | 0.551 |
| | | 1620.62 | | 4.334E-01 | 9.659E-01 | 1.738E+00 | 1.464E-01 | 0.249 |
| PO-215 | | 81.07 | | -3.003E-01 | 1.939E-01 | 2.954E-01 | 2.560E-02 | -1.017 |
| | | 83.78 | | 1.041E-01 | 1.563E-01 | 1.890E-01 | 1.693E-02 | 0.551 |
| | | 94.90 | | 7.526E-01 | 2.453E-01 | 3.944E-01 | 3.548E-02 | 1.908 |
| | | 122.32 | | -2.966E-01 | 1.700E+00 | 2.709E+00 | 2.435E-01 | -0.109 |
| | | 144.24 | | 2.744E-01 | 6.998E-01 | 1.133E+00 | 1.076E-01 | 0.242 |
| | + | 154.21 | | 7.761E-01 | 3.906E-01 | 6.646E-01 | 6.273E-02 | 1.168 |
| | + | 269.46 | | 7.521E-01 | 3.158E-01 | 3.840E-01 | 3.861E-02 | 1.958 |
| | | 323.87 | * | 4.431E-01 | 6.977E-01 | 1.063E+00 | 1.934E-01 | 0.417 |
| | + | 338.28 | | 6.912E+00 | 1.847E+00 | 2.543E+00 | 3.267E-01 | 2.718 |
| | | 445.03 | | -1.177E+00 | 1.984E+00 | 3.055E+00 | 3.740E-01 | -0.385 |
| | + | 271.23 | | 9.649E-01 | 4.085E-01 | 4.963E-01 | 5.663E-02 | 1.944 |
| | | 401.81 | * | -1.341E-01 | 4.159E-01 | 6.656E-01 | 9.937E-02 | -0.201 |
| RN-220 | | 549.76 | * | 1.782E+01 | 2.436E+01 | 4.165E+01 | 3.979E+00 | 0.428 |
| RA-223 | | 81.07 | | -3.003E-01 | 1.939E-01 | 2.954E-01 | 2.560E-02 | -1.017 |
| | | 83.78 | | 1.041E-01 | 1.563E-01 | 1.890E-01 | 1.693E-02 | 0.551 |
| | | 94.90 | | 7.526E-01 | 2.453E-01 | 3.944E-01 | 3.548E-02 | 1.908 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AC-227 | | 122.32 | | -2.966E-01 | 1.700E+00 | 2.709E+00 | 2.435E-01 | -0.109 |
| | | 144.24 | | 2.744E-01 | 6.998E-01 | 1.133E+00 | 1.076E-01 | 0.242 |
| | + | 154.21 | | 7.761E-01 | 3.906E-01 | 6.646E-01 | 6.273E-02 | 1.168 |
| | + | 269.46 | | 7.521E-01 | 3.158E-01 | 3.840E-01 | 3.861E-02 | 1.958 |
| | | 323.87 | * | 4.431E-01 | 6.977E-01 | 1.063E+00 | 1.934E-01 | 0.417 |
| | + | 338.28 | | 6.912E+00 | 1.847E+00 | 2.543E+00 | 3.267E-01 | 2.718 |
| | | 445.03 | | -1.177E+00 | 1.984E+00 | 3.055E+00 | 3.740E-01 | -0.385 |
| | | 79.80 | | -2.169E+00 | 1.526E+00 | 2.242E+00 | 4.813E-01 | -0.967 |
| | | 236.00 | | 4.312E-01 | 2.532E-01 | 4.036E-01 | 5.233E-02 | 1.068 |
| | | 256.20 | * | -2.259E-01 | 3.741E-01 | 6.042E-01 | 9.691E-02 | -0.374 |
| | | 286.10 | | -8.116E-01 | 1.501E+00 | 2.419E+00 | 3.407E-01 | -0.335 |
| | + | 299.80 | | 4.732E+00 | 2.317E+00 | 2.721E+00 | 4.928E-01 | 1.739 |
| TH-227 | | 304.40 | | 1.295E-01 | 1.987E+00 | 2.918E+00 | 5.546E-01 | 0.044 |
| | | 334.20 | | 1.562E+00 | 2.440E+00 | 3.708E+00 | 7.336E-01 | 0.421 |
| | | 79.80 | | -2.169E+00 | 1.528E+00 | 2.242E+00 | 4.875E-01 | -0.967 |
| | + | 94.00 | | 1.020E+01 | 3.791E+00 | 3.848E+00 | 8.447E-01 | 2.651 |
| | | 236.00 | | 4.312E-01 | 2.522E-01 | 4.036E-01 | 4.791E-02 | 1.068 |
| | | 256.20 | * | -2.259E-01 | 3.747E-01 | 6.042E-01 | 1.127E-01 | -0.374 |
| | | 286.10 | | -8.116E-01 | 1.705E+00 | 2.419E+00 | 2.431E+00 | -0.335 |
| | + | 299.80 | | 4.732E+00 | 2.317E+00 | 2.721E+00 | 4.928E-01 | 1.739 |
| | | 304.40 | | 1.295E-01 | 1.987E+00 | 2.918E+00 | 5.546E-01 | 0.044 |
| | | 334.20 | | 1.562E+00 | 2.440E+00 | 3.708E+00 | 7.336E-01 | 0.421 |
| | + | 85.43 | | 3.611E-01 | 2.313E-01 | 3.029E-01 | 2.771E-02 | 1.192 |
| | | 88.47 | | 5.629E-01 | 1.543E-01 | 2.081E-01 | 1.960E-02 | 2.705 |
| PA-231 | | 100.00 | | 1.735E-01 | 1.754E-01 | 2.946E-01 | 2.581E-02 | 0.589 |
| | | 193.63 | * | 1.236E-01 | 5.147E-01 | 8.534E-01 | 7.772E-02 | 0.145 |
| | | 210.97 | | 1.748E+00 | 8.292E-01 | 1.360E+00 | 1.270E-01 | 1.285 |
| | | 283.67 | * | -3.097E-01 | 1.502E+00 | 2.474E+00 | 3.949E-01 | -0.125 |
| | + | 301.29 | | 1.893E+00 | 8.963E-01 | 1.051E+00 | 1.378E-01 | 1.800 |
| | | 81.07 | | -3.003E-01 | 1.939E-01 | 2.954E-01 | 2.560E-02 | -1.017 |
| | | 83.78 | | 1.041E-01 | 1.563E-01 | 1.890E-01 | 1.693E-02 | 0.551 |
| | | 94.90 | | 7.526E-01 | 2.453E-01 | 3.944E-01 | 3.548E-02 | 1.908 |
| | | 122.32 | | -2.966E-01 | 1.700E+00 | 2.709E+00 | 2.435E-01 | -0.109 |
| | | 144.24 | | 2.744E-01 | 6.998E-01 | 1.133E+00 | 1.076E-01 | 0.242 |
| | + | 154.21 | | 7.761E-01 | 3.906E-01 | 6.646E-01 | 6.273E-02 | 1.168 |
| | + | 269.46 | | 7.521E-01 | 3.158E-01 | 3.840E-01 | 3.861E-02 | 1.958 |
| U-231 | | 323.87 | * | 4.431E-01 | 6.977E-01 | 1.063E+00 | 1.934E-01 | 0.417 |
| | + | 338.28 | | 6.912E+00 | 1.847E+00 | 2.543E+00 | 3.267E-01 | 2.718 |
| | | 445.03 | | -1.177E+00 | 1.984E+00 | 3.055E+00 | 3.740E-01 | -0.385 |
| | | 84.21 | | 1.222E+01 | 1.493E+01 | 1.822E+01 | 1.641E+00 | 0.671 |
| | + | 92.29 | | 2.233E+01 | 6.991E+00 | 8.608E+00 | 7.873E-01 | 2.594 |
| | | 95.87 | * | -5.845E-01 | 2.332E+00 | 3.321E+00 | 2.970E-01 | -0.176 |
| | | 108.00 | | -3.288E+00 | 4.536E+00 | 7.079E+00 | 6.033E-01 | -0.464 |
| | + | 75.28 | | 2.300E+01 | 4.840E+00 | 6.539E+00 | 9.850E-01 | 3.518 |
| | + | 86.59 | | 3.152E+00 | 2.172E+00 | 2.904E+00 | 7.854E-01 | 1.085 |
| | + | 300.12 | | 1.319E+00 | 6.345E-01 | 7.627E-01 | 1.190E-01 | 1.730 |
| | | 311.98 | * | -2.546E-03 | 6.054E-02 | 1.002E-01 | 9.941E-03 | -0.025 |
| | | 340.50 | | 1.883E+00 | 8.654E-01 | 1.256E+00 | 3.026E-01 | 1.500 |
| PA-233 | | 398.62 | | 1.482E+00 | 2.075E+00 | 3.503E+00 | 9.305E-01 | 0.423 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| PA-234 | + | 415.76 | -4.884E-02 | 1.629E+00 | 2.658E+00 | 5.724E-01 | -0.018 |
| | | 63.00 | 2.317E+00 | 1.906E+00 | 2.240E+00 | 3.310E-01 | 1.034 |
| | | 94.67 | 7.590E-01 | 1.963E-01 | 2.992E-01 | 3.792E-02 | 2.537 |
| | | 98.44 | 8.446E-02 | 1.004E-01 | 1.425E-01 | 7.954E-02 | 0.593 |
| | | 99.86 | 5.741E-01 | 4.413E-01 | 7.484E-01 | 6.561E-02 | 0.767 |
| | | 111.00 | -5.749E-02 | 1.758E-01 | 2.790E-01 | 3.341E-02 | -0.206 |
| | | 131.20 | 3.524E-02 | 1.207E-01 | 1.750E-01 | 1.463E-02 | 0.201 |
| | | 152.70 | 6.369E-01 | 3.330E-01 | 5.269E-01 | 8.965E-02 | 1.209 |
| | | 186.00 | 5.691E+00 | 2.982E+00 | 2.725E+00 | 8.534E-01 | 2.089 |
| | | 226.40 | -3.262E-01 | 3.998E-01 | 6.438E-01 | 8.887E-02 | -0.507 |
| | | 227.20 | -2.751E-01 | 4.206E-01 | 6.853E-01 | 6.526E-02 | -0.401 |
| | | 248.90 | 7.016E-01 | 8.114E-01 | 1.391E+00 | 3.182E-01 | 0.504 |
| | | 293.70 | 5.567E+00 | 1.320E+00 | 1.760E+00 | 3.159E-01 | 3.164 |
| | | 369.80 | -7.481E-01 | 7.918E-01 | 1.183E+00 | 2.587E-01 | -0.632 |
| | | 568.70 | 8.917E-01 | 9.989E-01 | 1.716E+00 | 1.657E-01 | 0.520 |
| | | 569.50 | 3.009E-01 | 2.759E-01 | 4.796E-01 | 4.633E-02 | 0.627 |
| | | 574.00 | -1.474E+00 | 1.565E+00 | 2.297E+00 | 2.225E-01 | -0.642 |
| | | 699.00 | -1.190E+00 | 9.044E-01 | 1.138E+00 | 2.253E-01 | -1.045 |
| | | 706.10 | -4.600E-01 | 1.119E+00 | 1.786E+00 | 8.019E-01 | -0.258 |
| | | 733.00 | -2.304E-01 | 3.772E-01 | 4.960E-01 | 1.133E-01 | -0.465 |
| | | 742.81 | 6.053E-01 | 1.382E+00 | 2.290E+00 | 1.544E+00 | 0.264 |
| | | 796.30 | 2.680E+00 | 1.431E+00 | 1.897E+00 | 5.232E-01 | 1.413 |
| | | 805.60 | 6.955E-01 | 9.873E-01 | 1.703E+00 | 5.297E-01 | 0.409 |
| | | 819.60 | 1.016E+00 | 1.267E+00 | 2.152E+00 | 8.262E-01 | 0.472 |
| | | 826.30 | -8.580E-01 | 8.879E-01 | 1.188E+00 | 5.351E-01 | -0.722 |
| | | 831.60 | -1.860E-02 | 6.216E-01 | 1.029E+00 | 3.118E-01 | -0.018 |
| | | 876.40 | 7.514E-02 | 8.063E-01 | 1.340E+00 | 1.379E+00 | 0.056 |
| | | 880.51 | 1.170E-01 | 2.769E-01 | 4.757E-01 | 4.755E-02 | 0.246 |
| | | 883.24 | -7.781E-02 | 2.791E-01 | 4.402E-01 | 2.968E-01 | -0.177 |
| | | 899.00 | -2.241E-01 | 8.044E-01 | 1.281E+00 | 5.635E-01 | -0.175 |
| | | 925.00 | 2.232E-01 | 1.041E+00 | 1.756E+00 | 1.728E-01 | 0.127 |
| | | 926.50 | -1.235E-01 | 1.797E-01 | 2.377E-01 | 6.112E-02 | -0.520 |
| | | 946.00 | 3.219E-02 | 2.859E-01 | 4.757E-01 | 9.185E-02 | 0.068 |
| | | 949.00 | -6.251E-02 | 4.238E-01 | 6.866E-01 | 6.684E-02 | -0.091 |
| | | 980.50 | 7.546E-01 | 7.713E-01 | 1.251E+00 | 1.198E-01 | 0.603 |
| | | 1394.10 | -4.950E-01 | 9.645E-01 | 1.383E+00 | 9.001E-01 | -0.358 |
| PA-234M | + | 766.42 | 1.477E+01 | 1.457E+01 | 2.042E+01 | 1.042E+01 | 0.723 |
| | | 1001.03 | 4.528E-01 | 4.660E+00 | 7.793E+00 | 8.336E-01 | 0.058 |
| U-235 | + | 89.95 | 3.294E+00 | 1.320E+00 | 1.836E+00 | 5.703E-01 | 1.794 |
| | | 93.35 | 3.175E+00 | 1.306E+00 | 1.246E+00 | 3.511E-01 | 2.547 |
| | | 105.00 | 8.074E-01 | 1.066E+00 | 1.723E+00 | 5.140E-01 | 0.469 |
| | | 143.76 | 4.714E-03 | 2.200E-01 | 3.506E-01 | 6.110E-02 | 0.013 |
| | | 163.35 | -1.001E-01 | 4.868E-01 | 7.538E-01 | 1.441E-01 | -0.133 |
| NP-236 | + | 185.71 | 2.108E-01 | 9.054E-02 | 1.016E-01 | 9.144E-03 | 2.075 |
| | | 205.31 | -2.018E-01 | 5.893E-01 | 8.563E-01 | 1.659E-01 | -0.236 |
| | | 94.67 | 6.901E-01 | 2.161E-01 | 2.272E-01 | 2.046E-02 | 3.037 |
| | | 98.44 | 6.379E-02 | 6.727E-02 | 1.077E-01 | 9.504E-03 | 0.592 |
| | | 111.00 | -4.349E-02 | 1.329E-01 | 2.110E-01 | 1.786E-02 | -0.206 |
| | | 160.31 | -7.928E-02 | 7.921E-02 | 1.190E-01 | 1.029E-02 | -0.666 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| NP-239 | | 99.55 | | 1.634E-01 | 1.492E-01 | 2.500E-01 | 2.195E-02 | 0.653 |
| | | 117.00 | * | 3.280E-02 | 1.849E-01 | 2.999E-01 | 2.513E-02 | 0.109 |
| | + | 209.75 | | 2.893E+00 | 1.378E+00 | 1.491E+00 | 1.390E-01 | 1.940 |
| | | 228.18 | | 3.924E-02 | 2.182E-01 | 3.702E-01 | 3.530E-02 | 0.106 |
| | + | 277.60 | | 4.699E-01 | 2.991E-01 | 3.278E-01 | 3.261E-02 | 1.434 |
| | | 334.30 | | 8.622E-01 | 1.373E+00 | 2.097E+00 | 1.977E-01 | 0.411 |
| AM-241 | | 59.54 | * | 7.734E-02 | 1.257E-01 | 1.906E-01 | 1.491E-02 | 0.406 |
| CM-243 | | 99.55 | | 1.682E-01 | 1.536E-01 | 2.574E-01 | 2.259E-02 | 0.653 |
| | | 103.76 | * | -1.781E-02 | 9.336E-02 | 1.487E-01 | 1.283E-02 | -0.120 |
| | | 117.00 | | 3.375E-02 | 1.903E-01 | 3.087E-01 | 2.586E-02 | 0.109 |
| | + | 209.75 | | 2.853E+00 | 1.358E+00 | 1.471E+00 | 1.370E-01 | 1.940 |
| | | 228.18 | | 3.967E-02 | 2.205E-01 | 3.742E-01 | 3.568E-02 | 0.106 |
| | + | 277.60 | | 4.739E-01 | 3.016E-01 | 3.306E-01 | 3.288E-02 | 1.434 |
| AM-246 | | 798.80 | | 5.479E-03 | 1.550E-01 | 2.250E-01 | 2.283E-02 | 0.024 |
| | | 1036.00 | | 2.773E-01 | 2.716E-01 | 4.912E-01 | 4.533E-02 | 0.565 |
| | | 1062.04 | | -1.801E-02 | 2.296E-01 | 3.718E-01 | 3.362E-02 | -0.048 |
| | | 1078.86 | * | -3.031E-03 | 1.271E-01 | 2.067E-01 | 1.842E-02 | -0.015 |
| | + | 278.00 | | 1.949E+00 | 1.240E+00 | 1.351E+00 | 1.345E-01 | 1.442 |
| | | 287.40 | | 2.545E-01 | 1.188E+00 | 2.002E+00 | 1.984E-01 | 0.127 |
| | | 402.60 | * | -2.761E-02 | 3.762E-02 | 5.843E-02 | 4.941E-03 | -0.473 |
| CF-249 | | 252.85 | | -4.411E-01 | 8.793E-01 | 1.435E+00 | 1.403E-01 | -0.307 |
| | | 333.44 | | 6.438E-02 | 2.146E-01 | 2.722E-01 | 2.569E-02 | 0.237 |
| | | 387.95 | * | 1.643E-02 | 3.859E-02 | 6.511E-02 | 5.494E-03 | 0.252 |
| CF-251 | | 176.60 | * | -7.730E-03 | 1.277E-01 | 2.014E-01 | 1.787E-02 | -0.038 |
| | | 227.00 | | -4.031E-01 | 3.813E-01 | 6.077E-01 | 5.786E-02 | -0.663 |
| | | 285.00 | | -5.906E-01 | 1.715E+00 | 2.802E+00 | 2.781E-01 | -0.211 |

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388003
* Acquisition date   : 4-FEB-2010 10:29:32 Detector SN#      :
* Detector ID        : GAM20                               Sensitivity      : 5.000
* Geometry           : CAN                                 Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00                      Abundance limit : 75.000
* Elapsed real time  : 0 02:00:33.03                      Half life ratio  : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G245388003           Analyst initials: MXR1
* Batch Number       : 944964               Sample Quantity : 1.1761E+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 | 1.961E+01 | 2.222E+00 | 4.791E-01 | 0.000E+00 |
| CD-109 | 1.650E+00 | 1.036E+00 | 1.145E+00 | 0.000E+00 |
| SN-126 | 1.610E-01 | 1.011E-01 | 1.412E-01 | 0.000E+00 |
| RE-188 | 3.525E-01 | 1.733E-01 | 2.835E-01 | 0.000E+00 |
| TL-208 | 6.509E-01 | 1.010E-01 | 5.442E-02 | 0.000E+00 |
| BI-211 | 5.209E+00 | 6.773E-01 | 3.218E-01 | 0.000E+00 |
| PB-212 | 2.052E+00 | 2.454E-01 | 8.317E-02 | 0.000E+00 |
| PO-212 | 2.052E+00 | 2.454E-01 | 8.317E-02 | 0.000E+00 |
| BI-214 | 1.392E+00 | 2.291E-01 | 1.046E-01 | 0.000E+00 |
| PB-214 | 1.812E+00 | 2.532E-01 | 1.098E-01 | 0.000E+00 |
| PO-214 | 1.812E+00 | 2.532E-01 | 1.098E-01 | 0.000E+00 |
| PO-216 | 2.052E+00 | 2.454E-01 | 8.317E-02 | 0.000E+00 |
| PO-218 | 1.812E+00 | 2.532E-01 | 1.098E-01 | 0.000E+00 |
| RA-224 | 6.768E+00 | 1.645E+00 | 9.462E-01 | 0.000E+00 |
| RA-226 | 1.392E+00 | 2.291E-01 | 1.046E-01 | 0.000E+00 |
| AC-228 | 2.033E+00 | 3.684E-01 | 1.922E-01 | 0.000E+00 |
| RA-228 | 2.033E+00 | 3.684E-01 | 1.922E-01 | 0.000E+00 |
| TH-228 | 2.093E+00 | 2.503E-01 | 8.484E-02 | 0.000E+00 |
| TH-230 | 1.392E+00 | 2.291E-01 | 1.046E-01 | 0.000E+00 |
| TH-232 | 2.033E+00 | 3.684E-01 | 1.922E-01 | 0.000E+00 |
| TH-234 | 1.988E+00 | 1.612E+00 | 1.686E+00 | 0.000E+00 |
| U-234 | 1.392E+00 | 2.291E-01 | 1.046E-01 | 0.000E+00 |
| NP-237 | 4.728E-01 | 3.119E-01 | 3.926E-01 | 0.000E+00 |
| U-238 | 1.988E+00 | 1.612E+00 | 1.686E+00 | 0.000E+00 |
| AM-243 | 4.391E-01 | 7.221E-02 | 8.289E-02 | 0.000E+00 |
| ANH-511 | 1.746E-01 | 7.467E-02 | 4.265E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | -1.200E-01 | 3.115E-01 | 5.033E-01 | 0.000E+00 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-22 | 6.929E-03 | 3.295E-02 | 5.572E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 1.292E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | -9.144E-03 | 2.885E-02 | 4.503E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 5.908E-02 | 8.175E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | -4.611E-03 | 3.582E-02 | 5.971E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | -1.326E-02 | 8.104E-02 | 1.335E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | -2.403E-01 | 4.117E-01 | 6.806E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 2.945E-01 | 3.296E-01 | 6.357E-01 | 0.000E+00 | FAIL ABUN |
| MN-54 | -2.769E-02 | 3.745E-02 | 5.940E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | 1.233E-02 | 3.263E-02 | 5.755E-02 | 0.000E+00 | FAIL ABUN |
| CO-57 | -1.123E-02 | 2.468E-02 | 4.052E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -2.067E-02 | 3.579E-02 | 5.725E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -7.521E-02 | 9.298E-02 | 1.404E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | -1.178E-02 | 3.740E-02 | 5.851E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | -5.747E-02 | 9.317E-02 | 1.202E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | -4.084E-02 | 1.072E+00 | 1.776E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | -3.565E-01 | 6.044E-01 | 1.014E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | -1.936E-02 | 1.092E-01 | 1.768E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -5.502E-02 | 4.386E-02 | 6.741E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 0.000E+00 | 3.878E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SR-82 | -4.459E-01 | 4.301E-01 | 6.648E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | 1.679E-02 | 6.773E-02 | 1.111E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | 7.637E-03 | 7.725E-02 | 1.318E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 0.000E+00 | 7.711E+00 | 1.461E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 0.000E+00 | 4.159E-02 | 7.881E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | -9.114E-02 | 7.964E-01 | 1.308E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | -1.762E-02 | 3.056E-02 | 4.412E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -9.379E-03 | 2.877E-02 | 4.751E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | -5.593E+00 | 1.718E+01 | 2.730E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | 5.429E-02 | 3.568E-02 | 6.678E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 4.800E-02 | 4.580E-02 | 7.585E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 1.517E-01 | 1.289E-01 | 2.114E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 1.278E-01 | 7.370E-02 | 1.406E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 1.027E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 2.100E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | -1.059E+01 | 3.571E+01 | 5.951E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 2.364E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 7.328E-03 | 3.261E-02 | 5.668E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | 6.120E-03 | 2.849E-02 | 4.838E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | -1.285E-02 | 4.427E-02 | 7.201E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | 3.246E-01 | 3.255E-01 | 5.735E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | 3.246E-01 | 3.239E-01 | 5.735E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -1.631E-02 | 3.096E-02 | 4.993E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | 2.970E-03 | 3.245E-02 | 5.645E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | -3.743E+00 | 3.550E+00 | 4.996E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | 2.080E-02 | 4.222E-02 | 7.380E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | 2.080E-02 | 4.222E-02 | 7.380E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 4.937E-02 | 2.113E-01 | 3.334E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 0.000E+00 | 4.489E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SN-117M | -4.308E-03 | 7.017E-02 | 1.101E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | 5.694E+00 | 7.289E+00 | 1.273E+01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 2.448E+09 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | -2.718E-03 | 2.768E-02 | 4.562E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | 7.365E-02 | 1.494E+00 | 2.277E+00 | 0.000E+00 | FAIL ABUN |
| SB-124 | -3.644E-02 | 5.750E-02 | 8.053E-02 | 0.000E+00 | FAIL ABUN |
| SB-125 | -1.789E-02 | 8.704E-02 | 1.442E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | 2.795E+00 | 9.218E+00 | 1.575E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 8.420E-02 | 2.311E-01 | 4.088E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | -1.150E-01 | 1.790E-01 | 2.811E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | -1.999E+00 | 3.131E+00 | 5.096E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 4.055E-02 | 5.313E-02 | 8.987E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 5.624E-02 | 1.713E-01 | 2.971E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | -1.778E-01 | 1.846E+00 | 3.209E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | -1.441E-02 | 4.514E-02 | 6.539E-02 | 0.000E+00 | FAIL ABUN |
| I-133 | 0.000E+00 | 2.764E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 0.000E+00 | 6.357E-02 | 9.866E-02 | 0.000E+00 | FAIL ABUN |
| CS-135 | 0.000E+00 | 1.718E-01 | 2.921E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 9.636E+20 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | 2.491E-02 | 1.270E-01 | 2.162E-01 | 0.000E+00 | FAIL ABUN |
| BA-137M | -2.387E-02 | 3.513E-02 | 5.743E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | -2.523E-02 | 3.713E-02 | 6.071E-02 | 0.000E+00 | NOT IDENT. |
| CE-139 | -8.193E-03 | 3.043E-02 | 4.961E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | 1.641E-01 | 3.190E-01 | 5.441E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | 5.622E-02 | 1.170E-01 | 1.874E-01 | 0.000E+00 | FAIL ABUN |
| CE-141 | 4.189E-02 | 6.883E-02 | 1.175E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 2.340E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | -1.294E-02 | 2.195E-01 | 3.478E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | -4.102E-02 | 3.964E-02 | 5.295E-02 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | -2.787E+00 | 2.693E+00 | 3.597E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 8.000E-03 | 4.106E-02 | 6.982E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | -4.572E-02 | 7.080E-01 | 1.167E+00 | 0.000E+00 | FAIL ABUN |
| PM-149 | 0.000E+00 | 3.990E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| EU-152 | -3.661E-02 | 9.332E-02 | 1.553E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | -1.058E-01 | 8.274E-02 | 1.151E-01 | 0.000E+00 | NOT IDENT. |
| EU-154 | 3.651E-02 | 9.025E-02 | 1.567E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 9.601E-02 | 1.053E-01 | 1.828E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 9.118E-02 | 1.427E-01 | 2.549E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | -1.918E-02 | 5.589E-02 | 9.320E-02 | 0.000E+00 | FAIL ABUN |
| TM-171 | -7.339E+00 | 2.626E+01 | 4.004E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | 3.773E-03 | 2.328E-02 | 4.036E-02 | 0.000E+00 | NOT IDENT. |
| LU-177 | 0.000E+00 | 3.132E+00 | 3.532E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -1.744E-01 | 1.911E-01 | 3.026E-01 | 0.000E+00 | NOT IDENT. |
| HF-181 | 2.752E-02 | 4.114E-02 | 7.232E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | -2.704E-03 | 3.469E-01 | 5.362E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | -1.733E-01 | 1.886E-01 | 2.799E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | 1.065E-01 | 1.088E-01 | 1.880E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | -1.199E-01 | 2.342E-01 | 3.963E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | 1.362E-02 | 4.176E-02 | 7.397E-02 | 0.000E+00 | NOT IDENT. |
| W-188 | -3.656E+00 | 8.194E+00 | 1.198E+01 | 0.000E+00 | FAIL ABUN |
| IR-192 | 1.754E-02 | 3.482E-02 | 6.135E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 2.651E-01 | 2.238E-01 | 3.776E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 9.190E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | 9.128E+00 | 2.056E+01 | 3.467E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 4.509E-02 | 8.777E-02 | 1.527E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | 6.979E-02 | 4.897E-02 | 8.084E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | 7.683E-03 | 5.052E-02 | 8.548E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | 4.431E-01 | 6.837E-01 | 1.077E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | 1.714E+00 | 6.997E+00 | 1.209E+01 | 0.000E+00 | NOT IDENT. |
| BI-210 | 8.302E-01 | 1.991E+00 | 3.506E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | 8.302E-01 | 1.991E+00 | 3.506E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | 8.302E-01 | 1.991E+00 | 3.506E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | -4.058E-01 | 9.688E-01 | 1.537E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 4.449E-01 | 6.990E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | 4.431E-01 | 6.837E-01 | 1.077E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | -1.341E-01 | 4.075E-01 | 6.728E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | 1.782E+01 | 2.387E+01 | 4.196E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | 4.431E-01 | 6.837E-01 | 1.077E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | -2.259E-01 | 3.666E-01 | 6.136E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | -2.259E-01 | 3.672E-01 | 6.136E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | 1.236E-01 | 5.044E-01 | 8.693E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | -3.097E-01 | 1.472E+00 | 2.510E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | 4.431E-01 | 6.837E-01 | 1.077E+00 | 0.000E+00 | FAIL ABUN |
| U-231 | -5.845E-01 | 2.285E+00 | 3.408E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | -2.546E-03 | 5.933E-02 | 1.016E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | 3.219E-02 | 2.801E-01 | 4.765E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 4.528E-01 | 4.567E+00 | 7.800E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | 4.714E-03 | 2.156E-01 | 3.583E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -7.928E-02 | 7.763E-02 | 1.214E-01 | 0.000E+00 | FAIL ABUN |
| NP-239 | 3.280E-02 | 1.812E-01 | 3.071E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | 7.734E-02 | 1.232E-01 | 1.965E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | -1.781E-02 | 9.150E-02 | 1.524E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | -3.031E-03 | 1.246E-01 | 2.068E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | -2.761E-02 | 3.687E-02 | 5.906E-02 | 0.000E+00 | FAIL ABUN |
| CF-249 | 1.643E-02 | 3.782E-02 | 6.584E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -7.730E-03 | 1.251E-01 | 2.054E-01 | 0.000E+00 | NOT IDENT. |

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388003.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:29:32.
Sample ID          : G245388003      Sample quantity      : 1.17610E+02 GRAM
Detector name      : GAM20            Detector geometry   : CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time  : 0 02:00:33.03 0.5%
Energy tolerance   : 1.50000 keV      Analyst Initials   : MXR1
Abundance limit    : 75.00000          Sensitivity         : 5.00000
Batch ID           : 944964            Detector SN#        :
Matrix Spike ID    :                   LCS ID              : 1032-A
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Nuclide Line Activity Report

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| K-40 | 1460.81 | 821 | 10.67* | 1.253E+00 | 1.961E+01 | 1.961E+01 | 11.56 |
| CD-109 | 88.03 | 129 | 3.72* | 6.912E+00 | 1.601E+00 | 1.650E+00 | 64.07 |
| SN-126 | 64.28 | 110 | 9.60 | 4.631E+00 | 7.869E-01 | 7.869E-01 | 82.19 |
| | 86.94 | 129 | 8.90 | 6.912E+00 | 6.694E-01 | 6.694E-01 | 75.77 |
| | 87.57 | 129 | 37.00* | 6.912E+00 | 1.610E-01 | 1.610E-01 | 64.07 |
| RE-188 | 155.03 | 93 | 15.00* | 6.830E+00 | 2.887E-01 | 3.525E-01 | 50.18 |
| | 477.96 | ----- | 1.04 | 3.151E+00 | ----- | Line Not Found | ----- |
| | 633.10 | ----- | 1.26 | 2.524E+00 | ----- | Line Not Found | ----- |
| TL-208 | 277.35 | 98 | 6.80 | 4.723E+00 | 9.744E-01 | 9.744E-01 | 64.26 |
| | 510.84 | 164 | 21.60 | 2.991E+00 | 8.084E-01 | 8.084E-01 | 44.42 |
| | 583.14 | 463 | 84.20* | 2.695E+00 | 6.509E-01 | 6.509E-01 | 15.83 |
| | 860.37 | 36 | 12.46 | 1.953E+00 | 4.717E-01 | 4.717E-01 | 80.89 |
| BI-211 | 72.87 | ----- | 1.27 | 5.845E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 838 | 12.94* | 3.968E+00 | 5.209E+00 | 5.209E+00 | 13.27 |
| PB-212 | 74.81 | 550 | 10.70 | 6.062E+00 | 2.709E+00 | 2.709E+00 | 19.21 |
| | 77.11 | 861 | 18.00 | 6.266E+00 | 2.436E+00 | 2.436E+00 | 13.41 |
| | 87.30 | 129 | 8.00 | 6.912E+00 | 7.447E-01 | 7.447E-01 | 64.85 |
| | 238.63 | 1505 | 44.60* | 5.248E+00 | 2.052E+00 | 2.052E+00 | 12.20 |
| | 300.09 | 122 | 3.41 | 4.460E+00 | 2.553E+00 | 2.553E+00 | 46.91 |
| PO-212 | 74.81 | 550 | 10.70 | 6.062E+00 | 2.709E+00 | 2.709E+00 | 19.21 |
| | 77.11 | 861 | 18.00 | 6.266E+00 | 2.436E+00 | 2.436E+00 | 13.41 |
| | 87.30 | 129 | 8.00 | 6.912E+00 | 7.447E-01 | 7.447E-01 | 64.85 |
| | 115.19 | ----- | 0.60 | 7.430E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1505 | 44.60* | 5.248E+00 | 2.052E+00 | 2.052E+00 | 12.20 |
| | 300.09 | 122 | 3.41 | 4.460E+00 | 2.553E+00 | 2.553E+00 | 46.91 |
| BI-214 | 609.31 | 525 | 46.30* | 2.602E+00 | 1.392E+00 | 1.392E+00 | 16.80 |
| | 1120.29 | 147 | 15.10 | 1.556E+00 | 1.990E+00 | 1.991E+00 | 28.68 |
| | 1764.49 | 97 | 15.80 | 1.100E+00 | 1.783E+00 | 1.783E+00 | 26.12 |
| PB-214 | 74.81 | 550 | 6.21 | 6.062E+00 | 4.667E+00 | 4.667E+00 | 18.34 |
| | 77.11 | 861 | 10.50 | 6.266E+00 | 4.175E+00 | 4.176E+00 | 15.42 |
| | 87.30 | 129 | 4.67 | 6.912E+00 | 1.276E+00 | 1.276E+00 | 64.53 |
| | 241.98 | 436 | 7.49 | 5.200E+00 | 3.569E+00 | 3.569E+00 | 25.43 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 295.21 | 457 | 19.20 | 4.513E+00 | 1.682E+00 | 1.682E+00 | 16.88 |
| | 351.92 | 838 | 37.20* | 3.968E+00 | 1.812E+00 | 1.812E+00 | 14.26 |
| | 74.81 | 550 | 6.21 | 6.062E+00 | 4.667E+00 | 4.667E+00 | 18.34 |
| | 77.11 | 861 | 10.50 | 6.266E+00 | 4.175E+00 | 4.176E+00 | 15.42 |
| | 87.30 | 129 | 4.67 | 6.912E+00 | 1.276E+00 | 1.276E+00 | 64.53 |
| PO-216 | 241.98 | 436 | 7.49 | 5.200E+00 | 3.569E+00 | 3.569E+00 | 25.43 |
| | 295.21 | 457 | 19.20 | 4.513E+00 | 1.682E+00 | 1.682E+00 | 16.88 |
| | 351.92 | 838 | 37.20* | 3.968E+00 | 1.812E+00 | 1.812E+00 | 14.26 |
| | 74.81 | 550 | 10.70 | 6.062E+00 | 2.709E+00 | 2.709E+00 | 19.21 |
| | 77.11 | 861 | 18.00 | 6.266E+00 | 2.436E+00 | 2.436E+00 | 13.41 |
| PO-218 | 87.30 | 129 | 8.00 | 6.912E+00 | 7.447E-01 | 7.447E-01 | 64.85 |
| | 238.63 | 1505 | 44.60* | 5.248E+00 | 2.052E+00 | 2.052E+00 | 12.20 |
| | 300.09 | 122 | 3.41 | 4.460E+00 | 2.553E+00 | 2.553E+00 | 46.91 |
| | 74.81 | 550 | 6.21 | 6.062E+00 | 4.667E+00 | 4.667E+00 | 18.34 |
| | 77.11 | 861 | 10.50 | 6.266E+00 | 4.175E+00 | 4.176E+00 | 15.42 |
| RA-224 | 87.30 | 129 | 4.67 | 6.912E+00 | 1.276E+00 | 1.276E+00 | 64.53 |
| | 241.98 | 436 | 7.49 | 5.200E+00 | 3.569E+00 | 3.569E+00 | 25.43 |
| | 295.21 | 457 | 19.20 | 4.513E+00 | 1.682E+00 | 1.682E+00 | 16.88 |
| | 351.92 | 838 | 37.20* | 3.968E+00 | 1.812E+00 | 1.812E+00 | 14.26 |
| | 240.98 | 436 | 3.95* | 5.200E+00 | 6.768E+00 | 6.768E+00 | 24.81 |
| RA-226 | 609.31 | 525 | 46.30* | 2.602E+00 | 1.392E+00 | 1.392E+00 | 16.80 |
| | 1120.29 | 147 | 15.10 | 1.556E+00 | 1.990E+00 | 1.991E+00 | 28.68 |
| | 1764.49 | 97 | 15.80 | 1.100E+00 | 1.783E+00 | 1.783E+00 | 26.12 |
| | 338.32 | 242 | 11.40 | 4.085E+00 | 1.655E+00 | 1.655E+00 | 47.59 |
| | 911.07 | 328 | 27.70* | 1.859E+00 | 2.033E+00 | 2.033E+00 | 18.50 |
| AC-228 | 969.11 | 210 | 16.60 | 1.763E+00 | 2.294E+00 | 2.294E+00 | 28.91 |
| | 338.32 | 242 | 11.40 | 4.085E+00 | 1.655E+00 | 1.655E+00 | 47.59 |
| | 911.07 | 328 | 27.70* | 1.859E+00 | 2.033E+00 | 2.033E+00 | 18.50 |
| | 969.11 | 210 | 16.60 | 1.763E+00 | 2.294E+00 | 2.294E+00 | 28.91 |
| | 74.81 | 550 | 10.70 | 6.062E+00 | 2.709E+00 | 2.709E+00 | 16.82 |
| TH-228 | 77.11 | 861 | 18.00 | 6.266E+00 | 2.436E+00 | 2.485E+00 | 13.41 |
| | 87.30 | 129 | 8.00 | 6.912E+00 | 7.447E-01 | 7.596E-01 | 64.07 |
| | 238.63 | 1505 | 44.60* | 5.248E+00 | 2.052E+00 | 2.093E+00 | 12.20 |
| | 300.09 | 122 | 3.41 | 4.460E+00 | 2.553E+00 | 2.605E+00 | 74.88 |
| | 609.31 | 525 | 46.30* | 2.602E+00 | 1.392E+00 | 1.392E+00 | 16.80 |
| TH-230 | 1120.29 | 147 | 15.10 | 1.556E+00 | 1.990E+00 | 1.990E+00 | 28.68 |
| | 1764.49 | 97 | 15.80 | 1.100E+00 | 1.783E+00 | 1.783E+00 | 26.12 |
| | 338.32 | 242 | 11.40 | 4.085E+00 | 1.655E+00 | 1.655E+00 | 25.24 |
| | 911.07 | 328 | 27.70* | 1.859E+00 | 2.033E+00 | 2.033E+00 | 18.50 |
| | 969.11 | 210 | 16.60 | 1.763E+00 | 2.294E+00 | 2.294E+00 | 28.91 |
| TH-232 | 63.29 | 110 | 3.80* | 4.631E+00 | 1.988E+00 | 1.988E+00 | 82.76 |
| | 92.38 | 321 | 5.41 | 7.180E+00 | 2.641E+00 | 2.641E+00 | 35.12 |
| | 609.31 | 525 | 46.30* | 2.602E+00 | 1.392E+00 | 1.392E+00 | 16.80 |
| | 1120.29 | 147 | 15.10 | 1.556E+00 | 1.990E+00 | 1.990E+00 | 28.68 |
| | 1764.49 | 97 | 15.80 | 1.100E+00 | 1.783E+00 | 1.783E+00 | 26.12 |
| U-234 | 86.50 | 129 | 12.60* | 6.912E+00 | 4.728E-01 | 4.728E-01 | 67.31 |
| | 95.87 | --- | 2.60 | 7.260E+00 | --- | Line Not Found | --- |
| | 63.29 | 110 | 3.80* | 4.631E+00 | 1.988E+00 | 1.988E+00 | 82.76 |
| | 92.38 | 321 | 5.41 | 7.180E+00 | 2.641E+00 | 2.641E+00 | 31.31 |
| | | | | | | | |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| AM-243 | 74.67 | 550 | 66.00* | 6.062E+00 | 4.391E-01 | 4.391E-01 | 16.78 |
| | 86.72 | 129 | 0.34 | 6.912E+00 | 1.773E+01 | 1.773E+01 | 64.07 |
| | 117.66 | ----- | 0.55 | 7.416E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 7.067E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 164 | 100.00* | 2.991E+00 | 1.746E-01 | 1.746E-01 | 43.63 |

Flag: "*" = Keyline

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 | 1.28E+09Y | 1.00 | 1.961E+01 | 1.961E+01 | 0.227E+01 | 11.56 | |
| CD-109 | 464.00D | 1.03 | 1.601E+00 | 1.650E+00 | 1.057E+00 | 64.07 | |
| SN-126 | 1.00E+05Y | 1.00 | 1.610E-01 | 1.610E-01 | 1.032E-01 | 64.07 | |
| RE-188 | 69.40D | 1.22 | 2.887E-01 | 3.525E-01 | 1.769E-01 | 50.18 | |
| TL-208 | 1.41E+10Y | 1.00 | 6.509E-01 | 6.509E-01 | 1.031E-01 | 15.83 | |
| BI-211 | 7.04E+08Y | 1.00 | 5.209E+00 | 5.209E+00 | 0.691E+00 | 13.27 | |
| PB-212 | 1.41E+10Y | 1.00 | 2.052E+00 | 2.052E+00 | 0.250E+00 | 12.20 | |
| PO-212 | 1.41E+10Y | 1.00 | 2.052E+00 | 2.052E+00 | 0.250E+00 | 12.20 | |
| BI-214 | 1600.00Y | 1.00 | 1.392E+00 | 1.392E+00 | 0.234E+00 | 16.80 | |
| PB-214 | 1600.00Y | 1.00 | 1.812E+00 | 1.812E+00 | 0.258E+00 | 14.26 | |
| PO-214 | 1600.00Y | 1.00 | 1.812E+00 | 1.812E+00 | 0.258E+00 | 14.26 | |
| PO-216 | 1.41E+10Y | 1.00 | 2.052E+00 | 2.052E+00 | 0.250E+00 | 12.20 | |
| PO-218 | 1600.00Y | 1.00 | 1.812E+00 | 1.812E+00 | 0.258E+00 | 14.26 | |
| RA-224 | 1.41E+10Y | 1.00 | 6.768E+00 | 6.768E+00 | 1.679E+00 | 24.81 | |
| RA-226 | 1600.00Y | 1.00 | 1.392E+00 | 1.392E+00 | 0.234E+00 | 16.80 | |
| AC-228 | 1.41E+10Y | 1.00 | 2.033E+00 | 2.033E+00 | 0.376E+00 | 18.50 | |
| RA-228 | 1.41E+10Y | 1.00 | 2.033E+00 | 2.033E+00 | 0.376E+00 | 18.50 | |
| TH-228 | 1.91Y | 1.02 | 2.052E+00 | 2.093E+00 | 0.255E+00 | 12.20 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.392E+00 | 1.392E+00 | 0.234E+00 | 16.80 | |
| TH-232 | 1.41E+10Y | 1.00 | 2.033E+00 | 2.033E+00 | 0.376E+00 | 18.50 | |
| TH-234 | 4.47E+09Y | 1.00 | 1.988E+00 | 1.988E+00 | 1.645E+00 | 82.76 | |
| U-234 | 4.47E+09Y | 1.00 | 1.392E+00 | 1.392E+00 | 0.234E+00 | 16.80 | |
| NP-237 | 2.14E+06Y | 1.00 | 4.728E-01 | 4.728E-01 | 3.183E-01 | 67.31 | |
| U-238 | 4.47E+09Y | 1.00 | 1.988E+00 | 1.988E+00 | 1.645E+00 | 82.76 | |
| AM-243 | 7380.00Y | 1.00 | 4.391E-01 | 4.391E-01 | 0.737E-01 | 16.78 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.746E-01 | 1.746E-01 | 0.762E-01 | 43.63 | |

Total Activity : 6.466E+01 6.481E+01

Grand Total Activity : 6.466E+01 6.481E+01

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

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

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 5 | 89.98 | 197 | 228 | 0.94 | 179.87 | 178 | 14 | 2.73E-02 | 25.3 | 7.06E+00 | T |
| 0 | 129.03 | 102 | 271 | 0.82 | 257.85 | 255 | 7 | 1.41E-02 | 57.2 | 7.29E+00 | T |
| 0 | 185.91 | 220 | 421 | 1.53 | 371.45 | 367 | 13 | 3.06E-02 | 42.0 | 6.17E+00 | T |
| 0 | 209.42 | 168 | 341 | 1.06 | 418.40 | 412 | 12 | 2.34E-02 | 46.7 | 5.73E+00 | T |
| 0 | 270.55 | 154 | 219 | 2.13 | 540.51 | 536 | 11 | 2.14E-02 | 40.8 | 4.81E+00 | T |
| 0 | 327.74 | 95 | 160 | 1.21 | 654.77 | 649 | 11 | 1.32E-02 | 55.3 | 4.18E+00 | T |
| 0 | 463.21 | 66 | 117 | 1.25 | 925.46 | 922 | 10 | 9.16E-03 | 66.2 | 3.23E+00 | T |
| 0 | 727.79 | 111 | 55 | 1.08 | 1454.30 | 1449 | 11 | 1.54E-02 | 32.2 | 2.25E+00 | T |
| 0 | 769.07 | 44 | 53 | 1.83 | 1536.85 | 1533 | 9 | 6.08E-03 | 67.5 | 2.15E+00 | |
| 0 | 795.20 | 68 | 48 | 1.56 | 1589.10 | 1584 | 11 | 9.50E-03 | 45.7 | 2.09E+00 | T |
| 0 | 935.41 | 36 | 64 | 0.77 | 1869.49 | 1860 | 17 | 4.99E-03 | **** | 1.82E+00 | T |
| 3 | 965.24 | 65 | 32 | 2.23 | 1929.15 | 1921 | 34 | 8.97E-03 | 44.9 | 1.77E+00 | T |
| 0 | 1239.55 | 33 | 61 | 1.22 | 2477.98 | 2472 | 12 | 4.65E-03 | 98.9 | 1.43E+00 | T |
| 0 | 1378.04 | 47 | 7 | 3.28 | 2755.18 | 2748 | 14 | 6.53E-03 | 37.7 | 1.31E+00 | |
| 0 | 1496.33 | 19 | 6 | 1.55 | 2992.00 | 2987 | 11 | 2.57E-03 | 67.6 | 1.23E+00 | |
| 0 | 1510.23 | 27 | 3 | 1.61 | 3019.84 | 3014 | 12 | 3.78E-03 | 45.9 | 1.22E+00 | T |
| 0 | 1591.02 | 37 | 25 | 5.92 | 3181.61 | 3171 | 20 | 5.12E-03 | 74.2 | 1.18E+00 | |

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388003.CNF;1
* Acquisition date   : 4-FEB-2010 10:29:32.  Detector SN#      :
* Detector ID        : GAM20                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit     : 75.00000
* Elapsed real time  : 0 02:00:33.03          Half life ratio     : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 15-JAN-2010 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G245388003            Analyst initials    : MXR1
* Batch Number       : 944964                Sample Quantity     : 1.17610E+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 | 1.961E+01 | 2.267E+00 | 4.806E-01 | 4.191E-02 | 40.794 |
| CD-109 | 1.650E+00 | 1.057E+00 | 1.115E+00 | 1.054E-01 | 1.480 |
| SN-126 | 1.610E-01 | 1.032E-01 | 1.375E-01 | 1.293E-02 | 1.171 |
| RE-188 | 3.525E-01 | 1.769E-01 | 2.776E-01 | 2.383E-02 | 1.270 |
| TL-208 | 6.509E-01 | 1.031E-01 | 5.405E-02 | 5.557E-03 | 12.043 |
| BI-211 | 5.209E+00 | 6.912E-01 | 3.179E-01 | 3.046E-02 | 16.385 |
| PB-212 | 2.052E+00 | 2.504E-01 | 8.183E-02 | 8.702E-03 | 25.076 |
| PO-212 | 2.052E+00 | 2.504E-01 | 8.183E-02 | 8.702E-03 | 25.076 |
| BI-214 | 1.392E+00 | 2.338E-01 | 1.040E-01 | 1.157E-02 | 13.388 |
| PB-214 | 1.812E+00 | 2.584E-01 | 1.085E-01 | 1.182E-02 | 16.708 |
| PO-214 | 1.812E+00 | 2.584E-01 | 1.085E-01 | 1.182E-02 | 16.708 |
| PO-216 | 2.052E+00 | 2.504E-01 | 8.183E-02 | 8.702E-03 | 25.076 |
| PO-218 | 1.812E+00 | 2.584E-01 | 1.085E-01 | 1.182E-02 | 16.708 |
| RA-224 | 6.768E+00 | 1.679E+00 | 9.310E-01 | 8.999E-02 | 7.269 |
| RA-226 | 1.392E+00 | 2.338E-01 | 1.040E-01 | 1.157E-02 | 13.388 |
| AC-228 | 2.033E+00 | 3.759E-01 | 1.918E-01 | 2.350E-02 | 10.595 |
| RA-228 | 2.033E+00 | 3.759E-01 | 1.918E-01 | 2.350E-02 | 10.595 |
| TH-228 | 2.093E+00 | 2.554E-01 | 8.347E-02 | 8.877E-03 | 25.076 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-230 | 1.392E+00 | 2.338E-01 | 1.040E-01 | 1.157E-02 | 13.388 |
| TH-232 | 2.033E+00 | 3.759E-01 | 1.918E-01 | 2.350E-02 | 10.595 |
| TH-234 | 1.988E+00 | 1.645E+00 | 1.636E+00 | 2.842E-01 | 1.215 |
| U-234 | 1.392E+00 | 2.338E-01 | 1.040E-01 | 1.157E-02 | 13.388 |
| NP-237 | 4.728E-01 | 3.183E-01 | 3.822E-01 | 8.647E-02 | 1.237 |
| U-238 | 1.988E+00 | 1.645E+00 | 1.636E+00 | 2.842E-01 | 1.215 |
| AM-243 | 4.391E-01 | 7.368E-02 | 8.057E-02 | 6.485E-03 | 5.450 |
| ANH-511 | 1.746E-01 | 7.619E-02 | 4.230E-02 | 3.941E-03 | 4.128 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| BE-7 | -1.200E-01 | | 3.179E-01 | 4.989E-01 | 4.849E-02 | -0.241 |
| NA-22 | 6.929E-03 | | 3.362E-02 | 5.581E-02 | 4.623E-03 | 0.124 |
| NA-24 | -9.003E-01 | | 6.590E+01 | Half-Life | too short | |
| AL-26 | -9.144E-03 | | 2.944E-02 | 4.528E-02 | 3.678E-03 | -0.202 |
| TI-44 | 4.496E-01 | + | 6.029E-02 | 7.950E-02 | 6.672E-03 | 5.655 |
| SC-46 | -4.611E-03 | | 3.655E-02 | 5.958E-02 | 5.939E-03 | -0.077 |
| V-48 | -1.326E-02 | | 8.270E-02 | 1.334E-01 | 1.275E-02 | -0.099 |
| CR-51 | -2.403E-01 | | 4.201E-01 | 6.717E-01 | 6.734E-02 | -0.358 |
| MN-52 | 2.945E-01 | | 3.363E-01 | 6.376E-01 | 5.396E-02 | 0.462 |
| MN-54 | -2.769E-02 | | 3.821E-02 | 5.923E-02 | 5.983E-03 | -0.467 |
| CO-56 | 1.233E-02 | | 3.330E-02 | 5.739E-02 | 5.784E-03 | 0.215 |
| CO-57 | -1.123E-02 | | 2.518E-02 | 3.959E-02 | 3.304E-03 | -0.284 |
| CO-58 | -2.067E-02 | | 3.652E-02 | 5.707E-02 | 5.795E-03 | -0.362 |
| FE-59 | -7.521E-02 | | 9.488E-02 | 1.404E-01 | 1.324E-02 | -0.536 |
| CO-60 | -1.178E-02 | | 3.817E-02 | 5.864E-02 | 4.912E-03 | -0.201 |
| ZN-65 | -5.747E-02 | | 9.507E-02 | 1.202E-01 | 1.035E-02 | -0.478 |
| GE-68 | -4.084E-02 | | 1.094E+00 | 1.776E+00 | 1.584E-01 | -0.023 |
| AS-73 | -3.565E-01 | | 6.168E-01 | 9.823E-01 | 7.292E-02 | -0.363 |
| AS-74 | -1.936E-02 | | 1.114E-01 | 1.756E-01 | 1.719E-02 | -0.110 |
| SE-75 | -5.502E-02 | | 4.475E-02 | 6.640E-02 | 6.574E-03 | -0.829 |
| BR-77 | 5.040E-06 | | 1.979E-05 | Half-Life | too short | |
| SR-82 | -4.459E-01 | | 4.389E-01 | 6.624E-01 | 6.730E-02 | -0.673 |
| RB-83 | 1.679E-02 | | 6.911E-02 | 1.102E-01 | 1.033E-02 | 0.152 |
| RB-84 | 7.637E-03 | | 7.883E-02 | 1.315E-01 | 1.314E-02 | 0.058 |
| KR-85 | 2.117E+01 | | 7.869E+00 | 1.449E+01 | 1.353E+00 | 1.460 |
| SR-85 | 1.142E-01 | | 4.244E-02 | 7.817E-02 | 7.300E-03 | 1.460 |
| RB-86 | -9.114E-02 | | 8.127E-01 | 1.308E+00 | 1.167E-01 | -0.070 |
| Y-88 | -1.762E-02 | | 3.119E-02 | 4.437E-02 | 3.580E-03 | -0.397 |
| ZR-88 | -9.379E-03 | | 2.935E-02 | 4.699E-02 | 3.930E-03 | -0.200 |
| Y-91 | -5.593E+00 | | 1.753E+01 | 2.733E+01 | 2.220E+00 | -0.205 |
| NB-94 | 5.429E-02 | | 3.641E-02 | 6.646E-02 | 6.724E-03 | 0.817 |
| NB-95 | 4.800E-02 | | 4.674E-02 | 7.556E-02 | 7.679E-03 | 0.635 |
| NB-95M | 1.517E-01 | | 1.315E-01 | 2.079E-01 | 2.234E-02 | 0.729 |
| ZR-95 | 1.278E-01 | | 7.521E-02 | 1.401E-01 | 1.529E-02 | 0.912 |
| NB-97 | 9.389E-01 | | 5.239E+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 |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| ZR-97 | 2.462E+02 | | 1.071E+02 | Half-Life too short | | |
| MO-99 | -1.059E+01 | | 3.644E+01 | 5.926E+01 | 9.545E+00 | -0.179 |
| TC-99M | -9.547E+15 | | 1.206E+16 | Half-Life too short | | |
| RH-101 | 7.328E-03 | | 3.328E-02 | 5.565E-02 | 5.101E-03 | 0.132 |
| RH-102 | 6.120E-03 | | 2.907E-02 | 4.794E-02 | 4.347E-03 | 0.128 |
| RU-103 | -1.285E-02 | | 4.517E-02 | 7.140E-02 | 1.038E-02 | -0.180 |
| RH-106 | 3.246E-01 | | 3.322E-01 | 5.700E-01 | 8.103E-02 | 0.569 |
| RU-106 | 3.246E-01 | | 3.305E-01 | 5.700E-01 | 5.641E-02 | 0.569 |
| AG-108M | -1.631E-02 | | 3.160E-02 | 4.944E-02 | 4.487E-03 | -0.330 |
| AG-110M | 2.970E-03 | | 3.312E-02 | 5.614E-02 | 5.752E-03 | 0.053 |
| IN-111 | -3.743E+00 | | 3.623E+00 | 4.917E+00 | 4.773E-01 | -0.761 |
| IN-113M | 2.080E-02 | | 4.308E-02 | 7.299E-02 | 6.296E-03 | 0.285 |
| SN-113 | 2.080E-02 | | 4.308E-02 | 7.299E-02 | 6.296E-03 | 0.285 |
| IN-114M | 4.937E-02 | | 2.157E-01 | 3.273E-01 | 2.966E-02 | 0.151 |
| CD-115 | 1.654E-05 | | 2.290E-05 | Half-Life too short | | |
| SN-117M | -4.308E-03 | | 7.160E-02 | 1.079E-01 | 9.308E-03 | -0.040 |
| SB-122 | 5.694E+00 | | 7.438E+00 | 1.264E+01 | 1.217E+00 | 0.451 |
| I-123 | -2.404E+02 | | 1.249E+03 | Half-Life too short | | |
| TE-123M | -2.718E-03 | | 2.825E-02 | 4.469E-02 | 3.882E-03 | -0.061 |
| I-124 | 7.365E-02 | | 1.525E+00 | 2.262E+00 | 2.221E-01 | 0.033 |
| SB-124 | -3.644E-02 | | 5.868E-02 | 8.092E-02 | 7.032E-03 | -0.450 |
| SB-125 | -1.789E-02 | | 8.882E-02 | 1.428E-01 | 1.264E-02 | -0.125 |
| TE-125M | 2.795E+00 | | 9.406E+00 | 1.536E+01 | 1.573E+00 | 0.182 |
| I-126 | 8.420E-02 | | 2.358E-01 | 4.067E-01 | 4.086E-02 | 0.207 |
| SB-126 | -1.150E-01 | | 1.826E-01 | 2.798E-01 | 2.837E-02 | -0.411 |
| SB-127 | -1.999E+00 | | 3.195E+00 | 5.070E+00 | 7.063E-01 | -0.394 |
| XE-127 | 4.055E-02 | | 5.421E-02 | 8.826E-02 | 8.146E-03 | 0.459 |
| I-131 | 5.624E-02 | | 1.748E-01 | 2.936E-01 | 2.765E-02 | 0.192 |
| TE-132 | -1.778E-01 | | 1.883E+00 | 3.156E+00 | 5.427E-01 | -0.056 |
| BA-133 | -1.441E-02 | | 4.606E-02 | 6.461E-02 | 8.728E-03 | -0.223 |
| I-133 | -1.871E-01 | | 1.410E-01 | Half-Life too short | | |
| CS-134 | 1.385E-01 | + | 6.487E-02 | 9.832E-02 | 1.003E-02 | 1.409 |
| CS-135 | 3.727E-01 | | 1.753E-01 | 2.878E-01 | 3.189E-02 | 1.295 |
| I-135 | 5.225E+14 | | 4.916E+14 | Half-Life too short | | |
| CS-136 | 2.491E-02 | | 1.296E-01 | 2.161E-01 | 2.052E-02 | 0.115 |
| BA-137M | -2.387E-02 | | 3.585E-02 | 5.712E-02 | 5.733E-03 | -0.418 |
| CS-137 | -2.523E-02 | | 3.789E-02 | 6.038E-02 | 6.069E-03 | -0.418 |
| CE-139 | -8.193E-03 | | 3.105E-02 | 4.862E-02 | 4.244E-03 | -0.169 |
| BA-140 | 1.641E-01 | | 3.255E-01 | 5.399E-01 | 1.802E-01 | 0.304 |
| LA-140 | 5.622E-02 | | 1.194E-01 | 1.882E-01 | 1.589E-02 | 0.299 |
| CE-141 | 4.189E-02 | | 7.024E-02 | 1.150E-01 | 9.927E-03 | 0.364 |
| CE-143 | 6.264E-03 | | 1.194E-03 | Half-Life too short | | |
| CE-144 | -1.294E-02 | | 2.239E-01 | 3.401E-01 | 5.247E-02 | -0.038 |
| PM-144 | -4.102E-02 | | 4.045E-02 | 5.270E-02 | 5.329E-03 | -0.778 |
| PR-144 | -2.787E+00 | | 2.748E+00 | 3.580E+00 | 3.619E-01 | -0.778 |
| PM-146 | 8.000E-03 | | 4.190E-02 | 6.917E-02 | 7.575E-03 | 0.116 |
| ND-147 | -4.572E-02 | | 7.225E-01 | 1.158E+00 | 1.789E-01 | -0.039 |
| PM-149 | -1.705E-04 | | 2.036E-04 | 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 |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| EU-152 | -3.661E-02 | | 9.523E-02 | 1.534E-01 | 1.496E-02 | -0.239 |
| GD-153 | -1.058E-01 | | 8.443E-02 | 1.121E-01 | 9.946E-03 | -0.943 |
| EU-154 | 3.651E-02 | | 9.210E-02 | 1.570E-01 | 1.734E-02 | 0.233 |
| EU-155 | 9.601E-02 | | 1.074E-01 | 1.784E-01 | 1.551E-02 | 0.538 |
| TB-160 | 9.118E-02 | | 1.456E-01 | 2.543E-01 | 2.542E-02 | 0.359 |
| HO-166M | -1.918E-02 | | 5.703E-02 | 9.277E-02 | 9.397E-03 | -0.207 |
| TM-171 | -7.339E+00 | | 2.679E+01 | 3.888E+01 | 2.896E+00 | -0.189 |
| LU-176 | 3.773E-03 | | 2.375E-02 | 3.981E-02 | 3.883E-03 | 0.095 |
| LU-177 | 6.711E+00 | + | 3.196E+00 | 3.470E+00 | 3.227E-01 | 1.934 |
| LU-177M | -1.744E-01 | | 1.950E-01 | 2.995E-01 | 2.563E-02 | -0.582 |
| HF-181 | 2.752E-02 | | 4.198E-02 | 7.169E-02 | 6.536E-03 | 0.384 |
| W-181 | -2.704E-03 | | 3.540E-01 | 5.205E-01 | 3.830E-02 | -0.005 |
| TA-182 | -1.733E-01 | | 1.925E-01 | 2.803E-01 | 2.287E-02 | -0.618 |
| RE-183 | 1.065E-01 | | 1.110E-01 | 1.842E-01 | 1.599E-02 | 0.578 |
| RE-184 | -1.199E-01 | | 2.390E-01 | 3.901E-01 | 3.813E-02 | -0.307 |
| OS-185 | 1.362E-02 | | 4.261E-02 | 7.355E-02 | 7.345E-03 | 0.185 |
| W-188 | -3.656E+00 | | 8.361E+00 | 1.181E+01 | 1.168E+00 | -0.310 |
| IR-192 | 1.754E-02 | | 3.553E-02 | 6.054E-02 | 5.855E-03 | 0.290 |
| AU-195 | 2.651E-01 | | 2.283E-01 | 3.681E-01 | 3.242E-02 | 0.720 |
| TL-200 | -4.524E-03 | | 4.689E-03 | Half-Life too short | | |
| TL-201 | 9.128E+00 | | 2.098E+01 | 3.398E+01 | 2.973E+00 | 0.269 |
| TL-202 | 4.509E-02 | | 8.956E-02 | 1.512E-01 | 1.329E-02 | 0.298 |
| HG-203 | 6.979E-02 | | 4.997E-02 | 7.966E-02 | 8.102E-03 | 0.876 |
| BI-207 | 7.683E-03 | | 5.155E-02 | 8.546E-02 | 7.716E-03 | 0.090 |
| TL-207 | 4.431E-01 | | 6.977E-01 | 1.063E+00 | 1.934E-01 | 0.417 |
| PO-209 | 1.714E+00 | | 7.140E+00 | 1.206E+01 | 1.200E+00 | 0.142 |
| BI-210 | 8.302E-01 | | 2.032E+00 | 3.391E+00 | 3.145E-01 | 0.245 |
| PB-210 | 8.302E-01 | | 2.032E+00 | 3.391E+00 | 3.145E-01 | 0.245 |
| PO-210 | 8.302E-01 | | 2.032E+00 | 3.391E+00 | 2.845E-01 | 0.245 |
| PB-211 | -4.058E-01 | | 9.886E-01 | 1.520E+00 | 9.524E-01 | -0.267 |
| BI-212 | 1.331E+00 | + | 4.539E-01 | 6.959E-01 | 7.898E-02 | 1.912 |
| PO-215 | 4.431E-01 | | 6.977E-01 | 1.063E+00 | 1.934E-01 | 0.417 |
| RN-219 | -1.341E-01 | | 4.159E-01 | 6.656E-01 | 9.937E-02 | -0.201 |
| RN-220 | 1.782E+01 | | 2.436E+01 | 4.165E+01 | 3.979E+00 | 0.428 |
| RA-223 | 4.431E-01 | | 6.977E-01 | 1.063E+00 | 1.934E-01 | 0.417 |
| AC-227 | -2.259E-01 | | 3.741E-01 | 6.042E-01 | 9.691E-02 | -0.374 |
| TH-227 | -2.259E-01 | | 3.747E-01 | 6.042E-01 | 1.127E-01 | -0.374 |
| TH-229 | 1.236E-01 | | 5.147E-01 | 8.534E-01 | 7.772E-02 | 0.145 |
| PA-231 | -3.097E-01 | | 1.502E+00 | 2.474E+00 | 3.949E-01 | -0.125 |
| TH-231 | 4.431E-01 | | 6.977E-01 | 1.063E+00 | 1.934E-01 | 0.417 |
| U-231 | -5.845E-01 | | 2.332E+00 | 3.321E+00 | 2.970E-01 | -0.176 |
| PA-233 | -2.546E-03 | | 6.054E-02 | 1.002E-01 | 9.941E-03 | -0.025 |
| PA-234 | 3.219E-02 | | 2.859E-01 | 4.757E-01 | 9.185E-02 | 0.068 |
| PA-234M | 4.528E-01 | | 4.660E+00 | 7.793E+00 | 8.336E-01 | 0.058 |
| U-235 | 4.714E-03 | | 2.200E-01 | 3.506E-01 | 6.110E-02 | 0.013 |
| NP-236 | -7.928E-02 | | 7.921E-02 | 1.190E-01 | 1.029E-02 | -0.666 |
| NP-239 | 3.280E-02 | | 1.849E-01 | 2.999E-01 | 2.513E-02 | 0.109 |
| AM-241 | 7.734E-02 | | 1.257E-01 | 1.906E-01 | 1.491E-02 | 0.406 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | -1.781E-02 | | 9.336E-02 | 1.487E-01 | 1.283E-02 | -0.120 |
| AM-246 | -3.031E-03 | | 1.271E-01 | 2.067E-01 | 1.842E-02 | -0.015 |
| CM-247 | -2.761E-02 | | 3.762E-02 | 5.843E-02 | 4.941E-03 | -0.473 |
| CF-249 | 1.643E-02 | | 3.859E-02 | 6.511E-02 | 5.494E-03 | 0.252 |
| CF-251 | -7.730E-03 | | 1.277E-01 | 2.014E-01 | 1.787E-02 | -0.038 |

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]G245388003          *
* Acquisition date   : 4-FEB-2010 10:29:32 Detector SN# :                  *
* Detector ID        : GAM20                      Sensitivity : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.500      *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000     *
* Elapsed real time  : 0 02:00:33.03             Half life ratio : 8.000     *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 15-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G245388003                 Analyst initials: MXR1       *
* Batch Number      : 944964                     Sample Quantity : 1.1761E+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 | 1.961E+01 | 2.222E+00 | 2.397E-01 | 1.134E+00 |
| CD-109 | 1.650E+00 | 1.036E+00 | 5.728E-01 | 5.286E-01 |
| SN-126 | 1.610E-01 | 1.011E-01 | 7.063E-02 | 5.158E-02 |
| RE-188 | 3.525E-01 | 1.733E-01 | 1.418E-01 | 8.843E-02 |
| TL-208 | 6.509E-01 | 1.010E-01 | 2.723E-02 | 5.153E-02 |
| BI-211 | 5.209E+00 | 6.773E-01 | 1.610E-01 | 3.456E-01 |
| PB-212 | 2.052E+00 | 2.454E-01 | 4.161E-02 | 1.252E-01 |
| PO-212 | 2.052E+00 | 2.454E-01 | 4.161E-02 | 1.252E-01 |
| BI-214 | 1.392E+00 | 2.291E-01 | 5.235E-02 | 1.169E-01 |
| PB-214 | 1.812E+00 | 2.532E-01 | 5.493E-02 | 1.292E-01 |
| PO-214 | 1.812E+00 | 2.532E-01 | 5.493E-02 | 1.292E-01 |
| PO-216 | 2.052E+00 | 2.454E-01 | 4.161E-02 | 1.252E-01 |
| PO-218 | 1.812E+00 | 2.532E-01 | 5.493E-02 | 1.292E-01 |
| RA-224 | 6.768E+00 | 1.645E+00 | 4.734E-01 | 8.394E-01 |
| RA-226 | 1.392E+00 | 2.291E-01 | 5.235E-02 | 1.169E-01 |
| AC-228 | 2.033E+00 | 3.684E-01 | 9.617E-02 | 1.880E-01 |
| RA-228 | 2.033E+00 | 3.684E-01 | 9.617E-02 | 1.880E-01 |
| TH-228 | 2.093E+00 | 2.503E-01 | 4.244E-02 | 1.277E-01 |
| TH-230 | 1.392E+00 | 2.291E-01 | 5.235E-02 | 1.169E-01 |
| TH-232 | 2.033E+00 | 3.684E-01 | 9.617E-02 | 1.880E-01 |
| TH-234 | 1.988E+00 | 1.612E+00 | 8.434E-01 | 8.225E-01 |
| U-234 | 1.392E+00 | 2.291E-01 | 5.235E-02 | 1.169E-01 |
| NP-237 | 4.728E-01 | 3.119E-01 | 1.964E-01 | 1.591E-01 |
| U-238 | 1.988E+00 | 1.612E+00 | 8.434E-01 | 8.225E-01 |
| AM-243 | 4.391E-01 | 7.221E-02 | 4.147E-02 | 3.684E-02 |
| ANH-511 | 1.746E-01 | 7.467E-02 | 2.134E-02 | 3.809E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | -1.200E-01 | 3.115E-01 | 2.518E-01 | 1.589E-01 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-22 | 6.929E-03 | 3.295E-02 | 2.788E-02 | 1.681E-02 | NOT IDENT. |
| NA-24 | -9.003E+05 | 1.292E+08 | 0.000E+00 | 6.590E+07 | SHORT HLIF |
| AL-26 | -9.144E-03 | 2.885E-02 | 2.253E-02 | 1.472E-02 | NOT IDENT. |
| TI-44 | 4.496E-01 | 5.908E-02 | 4.090E-02 | 3.014E-02 | FAIL ABUN |
| SC-46 | -4.611E-03 | 3.582E-02 | 2.987E-02 | 1.828E-02 | FAIL ABUN |
| V-48 | -1.326E-02 | 8.104E-02 | 6.681E-02 | 4.135E-02 | NOT IDENT. |
| CR-51 | -2.403E-01 | 4.117E-01 | 3.405E-01 | 2.101E-01 | NOT IDENT. |
| MN-52 | 2.945E-01 | 3.296E-01 | 3.180E-01 | 1.682E-01 | FAIL ABUN |
| MN-54 | -2.769E-02 | 3.745E-02 | 2.972E-02 | 1.910E-02 | NOT IDENT. |
| CO-56 | 1.233E-02 | 3.263E-02 | 2.879E-02 | 1.665E-02 | FAIL ABUN |
| CO-57 | -1.123E-02 | 2.468E-02 | 2.027E-02 | 1.259E-02 | NOT IDENT. |
| CO-58 | -2.067E-02 | 3.579E-02 | 2.864E-02 | 1.826E-02 | NOT IDENT. |
| FE-59 | -7.521E-02 | 9.298E-02 | 7.025E-02 | 4.744E-02 | NOT IDENT. |
| CO-60 | -1.178E-02 | 3.740E-02 | 2.927E-02 | 1.908E-02 | NOT IDENT. |
| ZN-65 | -5.747E-02 | 9.317E-02 | 6.012E-02 | 4.753E-02 | NOT IDENT. |
| GE-68 | -4.084E-02 | 1.072E+00 | 8.885E-01 | 5.468E-01 | NOT IDENT. |
| AS-73 | -3.565E-01 | 6.044E-01 | 5.073E-01 | 3.084E-01 | NOT IDENT. |
| AS-74 | -1.936E-02 | 1.092E-01 | 8.845E-02 | 5.571E-02 | NOT IDENT. |
| SE-75 | -5.502E-02 | 4.386E-02 | 3.373E-02 | 2.238E-02 | NOT IDENT. |
| BR-77 | 5.040E+00 | 3.878E+01 | 0.000E+00 | 1.979E+01 | SHORT HLIF |
| SR-82 | -4.459E-01 | 4.301E-01 | 3.326E-01 | 2.194E-01 | NOT IDENT. |
| RB-83 | 1.679E-02 | 6.773E-02 | 5.556E-02 | 3.456E-02 | NOT IDENT. |
| RB-84 | 7.637E-03 | 7.725E-02 | 6.594E-02 | 3.942E-02 | NOT IDENT. |
| KR-85 | 2.117E+01 | 7.711E+00 | 7.310E+00 | 3.934E+00 | NOT IDENT. |
| SR-85 | 1.142E-01 | 4.159E-02 | 3.943E-02 | 2.122E-02 | NOT IDENT. |
| RB-86 | -9.114E-02 | 7.964E-01 | 6.543E-01 | 4.063E-01 | NOT IDENT. |
| Y-88 | -1.762E-02 | 3.056E-02 | 2.207E-02 | 1.559E-02 | NOT IDENT. |
| ZR-88 | -9.379E-03 | 2.877E-02 | 2.377E-02 | 1.468E-02 | NOT IDENT. |
| Y-91 | -5.593E+00 | 1.718E+01 | 1.366E+01 | 8.767E+00 | NOT IDENT. |
| NB-94 | 5.429E-02 | 3.568E-02 | 3.341E-02 | 1.820E-02 | NOT IDENT. |
| NB-95 | 4.800E-02 | 4.580E-02 | 3.795E-02 | 2.337E-02 | NOT IDENT. |
| NB-95M | 1.517E-01 | 1.289E-01 | 1.058E-01 | 6.576E-02 | NOT IDENT. |
| ZR-95 | 1.278E-01 | 7.370E-02 | 7.035E-02 | 3.760E-02 | NOT IDENT. |
| NB-97 | 9.389E+05 | 1.027E+07 | 0.000E+00 | 5.239E+06 | SHORT HLIF |
| ZR-97 | 2.462E+08 | 2.100E+08 | 0.000E+00 | 1.071E+08 | SHORT HLIF |
| MO-99 | -1.059E+01 | 3.571E+01 | 2.977E+01 | 1.822E+01 | NOT IDENT. |
| TC-99M | -9.547E+21 | 2.364E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 7.328E-03 | 3.261E-02 | 2.836E-02 | 1.664E-02 | NOT IDENT. |
| RH-102 | 6.120E-03 | 2.849E-02 | 2.420E-02 | 1.454E-02 | NOT IDENT. |
| RU-103 | -1.285E-02 | 4.427E-02 | 3.603E-02 | 2.258E-02 | FAIL ABUN |
| RH-106 | 3.246E-01 | 3.255E-01 | 2.869E-01 | 1.661E-01 | FAIL ABUN |
| RU-106 | 3.246E-01 | 3.239E-01 | 2.869E-01 | 1.652E-01 | FAIL ABUN |
| AG-108M | -1.631E-02 | 3.096E-02 | 2.498E-02 | 1.580E-02 | NOT IDENT. |
| AG-110M | 2.970E-03 | 3.245E-02 | 2.824E-02 | 1.656E-02 | NOT IDENT. |
| IN-111 | -3.743E+00 | 3.550E+00 | 2.499E+00 | 1.811E+00 | NOT IDENT. |
| IN-113M | 2.080E-02 | 4.222E-02 | 3.692E-02 | 2.154E-02 | NOT IDENT. |
| SN-113 | 2.080E-02 | 4.222E-02 | 3.692E-02 | 2.154E-02 | NOT IDENT. |
| IN-114M | 4.937E-02 | 2.113E-01 | 1.668E-01 | 1.078E-01 | NOT IDENT. |
| CD-115 | 1.654E+01 | 4.489E+01 | 0.000E+00 | 2.290E+01 | SHORT HLIF |
| SN-117M | -4.308E-03 | 7.017E-02 | 5.508E-02 | 3.580E-02 | NOT IDENT. |
| SB-122 | 5.694E+00 | 7.289E+00 | 6.369E+00 | 3.719E+00 | NOT IDENT. |
| I-123 | -2.404E+08 | 2.448E+09 | 0.000E+00 | 1.249E+09 | SHORT HLIF |
| TE-123M | -2.718E-03 | 2.768E-02 | 2.282E-02 | 1.412E-02 | NOT IDENT. |
| I-124 | 7.365E-02 | 1.494E+00 | 1.139E+00 | 7.623E-01 | FAIL ABUN |
| SB-124 | -3.644E-02 | 5.750E-02 | 4.029E-02 | 2.934E-02 | FAIL ABUN |
| SB-125 | -1.789E-02 | 8.704E-02 | 7.216E-02 | 4.441E-02 | FAIL ABUN |
| TE-125M | 2.795E+00 | 9.218E+00 | 7.877E+00 | 4.703E+00 | NOT IDENT. |
| I-126 | 8.420E-02 | 2.311E-01 | 2.045E-01 | 1.179E-01 | NOT IDENT. |
| SB-126 | -1.150E-01 | 1.790E-01 | 1.406E-01 | 9.132E-02 | FAIL ABUN |
| SB-127 | -1.999E+00 | 3.131E+00 | 2.549E+00 | 1.597E+00 | NOT IDENT. |
| XE-127 | 4.055E-02 | 5.313E-02 | 4.496E-02 | 2.710E-02 | NOT IDENT. |
| I-131 | 5.624E-02 | 1.713E-01 | 1.487E-01 | 8.741E-02 | NOT IDENT. |
| TE-132 | -1.778E-01 | 1.846E+00 | 1.606E+00 | 9.417E-01 | NOT IDENT. |
| BA-133 | -1.441E-02 | 4.514E-02 | 3.271E-02 | 2.303E-02 | FAIL ABUN |
| I-133 | -1.871E+05 | 2.764E+05 | 0.000E+00 | 1.410E+05 | SHORT HLIF |
| CS-134 | 1.385E-01 | 6.357E-02 | 4.936E-02 | 3.244E-02 | FAIL ABUN |
| CS-135 | 3.727E-01 | 1.718E-01 | 1.462E-01 | 8.767E-02 | NOT IDENT. |
| I-135 | 5.225E+20 | 9.636E+20 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | 2.491E-02 | 1.270E-01 | 1.082E-01 | 6.478E-02 | FAIL ABUN |
| BA-137M | -2.387E-02 | 3.513E-02 | 2.873E-02 | 1.792E-02 | NOT IDENT. |
| CS-137 | -2.523E-02 | 3.713E-02 | 3.037E-02 | 1.895E-02 | NOT IDENT. |
| CE-139 | -8.193E-03 | 3.043E-02 | 2.482E-02 | 1.553E-02 | NOT IDENT. |
| BA-140 | 1.641E-01 | 3.190E-01 | 2.722E-01 | 1.628E-01 | NOT IDENT. |
| LA-140 | 5.622E-02 | 1.170E-01 | 9.376E-02 | 5.972E-02 | FAIL ABUN |
| CE-141 | 4.189E-02 | 6.883E-02 | 5.877E-02 | 3.512E-02 | NOT IDENT. |
| CE-143 | 6.264E+03 | 2.340E+03 | 0.000E+00 | 1.194E+03 | SHORT HLIF |
| CE-144 | -1.294E-02 | 2.195E-01 | 1.740E-01 | 1.120E-01 | NOT IDENT. |
| PM-144 | -4.102E-02 | 3.964E-02 | 2.649E-02 | 2.022E-02 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | -2.787E+00 | 2.693E+00 | 1.800E+00 | 1.374E+00 | NOT IDENT. |
| PM-146 | 8.000E-03 | 4.106E-02 | 3.493E-02 | 2.095E-02 | NOT IDENT. |
| ND-147 | -4.572E-02 | 7.080E-01 | 5.841E-01 | 3.612E-01 | FAIL ABUN |
| PM-149 | -1.705E+02 | 3.990E+02 | 0.000E+00 | 2.036E+02 | SHORT HLIF |
| EU-152 | -3.661E-02 | 9.332E-02 | 7.768E-02 | 4.761E-02 | FAIL ABUN |
| GD-153 | -1.058E-01 | 8.274E-02 | 5.756E-02 | 4.222E-02 | NOT IDENT. |
| EU-154 | 3.651E-02 | 9.025E-02 | 7.839E-02 | 4.605E-02 | NOT IDENT. |
| EU-155 | 9.601E-02 | 1.053E-01 | 9.148E-02 | 5.370E-02 | FAIL ABUN |
| TB-160 | 9.118E-02 | 1.427E-01 | 1.275E-01 | 7.282E-02 | FAIL ABUN |
| HO-166M | -1.918E-02 | 5.589E-02 | 4.663E-02 | 2.852E-02 | FAIL ABUN |
| TM-171 | -7.339E+00 | 2.626E+01 | 2.003E+01 | 1.340E+01 | NOT IDENT. |
| LU-176 | 3.773E-03 | 2.328E-02 | 2.019E-02 | 1.188E-02 | NOT IDENT. |
| LU-177 | 6.711E+00 | 3.132E+00 | 1.767E+00 | 1.598E+00 | FAIL ABUN |
| LU-177M | -1.744E-01 | 1.911E-01 | 1.514E-01 | 9.752E-02 | NOT IDENT. |
| HF-181 | 2.752E-02 | 4.114E-02 | 3.618E-02 | 2.099E-02 | NOT IDENT. |
| W-181 | -2.704E-03 | 3.469E-01 | 2.683E-01 | 1.770E-01 | NOT IDENT. |
| TA-182 | -1.733E-01 | 1.886E-01 | 1.400E-01 | 9.625E-02 | FAIL ABUN |
| RE-183 | 1.065E-01 | 1.088E-01 | 9.405E-02 | 5.549E-02 | FAIL ABUN |
| RE-184 | -1.199E-01 | 2.342E-01 | 1.982E-01 | 1.195E-01 | NOT IDENT. |
| OS-185 | 1.362E-02 | 4.176E-02 | 3.701E-02 | 2.131E-02 | NOT IDENT. |
| W-188 | -3.656E+00 | 8.194E+00 | 5.993E+00 | 4.180E+00 | FAIL ABUN |
| IR-192 | 1.754E-02 | 3.482E-02 | 3.069E-02 | 1.776E-02 | FAIL ABUN |
| AU-195 | 2.651E-01 | 2.238E-01 | 1.889E-01 | 1.142E-01 | FAIL ABUN |
| TL-200 | -4.524E+03 | 9.190E+03 | 0.000E+00 | 4.689E+03 | SHORT HLIF |
| TL-201 | 9.128E+00 | 2.056E+01 | 1.735E+01 | 1.049E+01 | NOT IDENT. |
| TL-202 | 4.509E-02 | 8.777E-02 | 7.640E-02 | 4.478E-02 | NOT IDENT. |
| HG-203 | 6.979E-02 | 4.897E-02 | 4.044E-02 | 2.498E-02 | NOT IDENT. |
| BI-207 | 7.683E-03 | 5.052E-02 | 4.277E-02 | 2.578E-02 | FAIL ABUN |
| TL-207 | 4.431E-01 | 6.837E-01 | 5.390E-01 | 3.488E-01 | FAIL ABUN |
| PO-209 | 1.714E+00 | 6.997E+00 | 6.049E+00 | 3.570E+00 | NOT IDENT. |
| BI-210 | 8.302E-01 | 1.991E+00 | 1.754E+00 | 1.016E+00 | NOT IDENT. |
| PB-210 | 8.302E-01 | 1.991E+00 | 1.754E+00 | 1.016E+00 | NOT IDENT. |
| PO-210 | 8.302E-01 | 1.991E+00 | 1.754E+00 | 1.016E+00 | NOT IDENT. |
| PB-211 | -4.058E-01 | 9.688E-01 | 7.687E-01 | 4.943E-01 | NOT IDENT. |
| BI-212 | 1.331E+00 | 4.449E-01 | 3.497E-01 | 2.270E-01 | FAIL ABUN |
| PO-215 | 4.431E-01 | 6.837E-01 | 5.390E-01 | 3.488E-01 | FAIL ABUN |
| RN-219 | -1.341E-01 | 4.075E-01 | 3.366E-01 | 2.079E-01 | FAIL ABUN |
| RN-220 | 1.782E+01 | 2.387E+01 | 2.099E+01 | 1.218E+01 | NOT IDENT. |
| RA-223 | 4.431E-01 | 6.837E-01 | 5.390E-01 | 3.488E-01 | FAIL ABUN |
| AC-227 | -2.259E-01 | 3.666E-01 | 3.070E-01 | 1.871E-01 | FAIL ABUN |
| TH-227 | -2.259E-01 | 3.672E-01 | 3.070E-01 | 1.874E-01 | FAIL ABUN |
| TH-229 | 1.236E-01 | 5.044E-01 | 4.349E-01 | 2.574E-01 | FAIL ABUN |
| PA-231 | -3.097E-01 | 1.472E+00 | 1.256E+00 | 7.508E-01 | FAIL ABUN |
| TH-231 | 4.431E-01 | 6.837E-01 | 5.390E-01 | 3.488E-01 | FAIL ABUN |
| U-231 | -5.845E-01 | 2.285E+00 | 1.705E+00 | 1.166E+00 | FAIL ABUN |
| PA-233 | -2.546E-03 | 5.933E-02 | 5.081E-02 | 3.027E-02 | FAIL ABUN |
| PA-234 | 3.219E-02 | 2.801E-01 | 2.384E-01 | 1.429E-01 | FAIL ABUN |
| PA-234M | 4.528E-01 | 4.567E+00 | 3.902E+00 | 2.330E+00 | NOT IDENT. |
| U-235 | 4.714E-03 | 2.156E-01 | 1.792E-01 | 1.100E-01 | FAIL ABUN |
| NP-236 | -7.928E-02 | 7.763E-02 | 6.075E-02 | 3.961E-02 | FAIL ABUN |
| NP-239 | 3.280E-02 | 1.812E-01 | 1.537E-01 | 9.245E-02 | FAIL ABUN |
| AM-241 | 7.734E-02 | 1.232E-01 | 9.831E-02 | 6.284E-02 | NOT IDENT. |
| CM-243 | -1.781E-02 | 9.150E-02 | 7.626E-02 | 4.668E-02 | FAIL ABUN |
| AM-246 | -3.031E-03 | 1.246E-01 | 1.034E-01 | 6.356E-02 | NOT IDENT. |
| CM-247 | -2.761E-02 | 3.687E-02 | 2.955E-02 | 1.881E-02 | FAIL ABUN |
| CF-249 | 1.643E-02 | 3.782E-02 | 3.294E-02 | 1.930E-02 | NOT IDENT. |
| CF-251 | -7.730E-03 | 1.251E-01 | 1.028E-01 | 6.384E-02 | NOT IDENT. |

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*                                     *
*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD      *
*               CHARLESTON ,SC 29417  *
*               GAMMA SPECTROSCOPY BACKGROUND REPORT *
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| ENERGY | MDA COUNTS |
|--------|------------|
| 46.50 | 247.0204 |
| 46.50 | 247.0204 |
| 46.50 | 247.0204 |
| 48.70 | 307.7870 |
| 49.72 | 300.6112 |
| 51.35 | 277.0609 |
| 52.39 | 291.4292 |
| 52.97 | 303.5979 |
| 53.15 | 303.7068 |
| 53.44 | 327.5623 |
| 54.07 | 321.0567 |
| 56.28 | 338.3186 |
| 56.28 | 338.3203 |
| 57.37 | 0.0000 |
| 57.53 | 330.1813 |
| 57.53 | 330.1822 |
| 57.60 | 330.2252 |
| 57.98 | 316.5281 |
| 57.98 | 316.5281 |
| 59.32 | 314.3343 |
| 59.32 | 314.3343 |
| 59.40 | 314.3808 |
| 59.54 | 314.4633 |
| 59.72 | 314.5690 |
| 60.01 | 292.2567 |
| 61.10 | 324.3831 |
| 61.14 | 324.4062 |
| 61.30 | 350.0413 |
| 63.00 | 376.7428 |
| 63.29 | 376.9388 |
| 63.29 | 376.9388 |
| 63.58 | 377.1348 |
| 64.28 | 433.4932 |
| 65.12 | 431.1133 |
| 65.20 | 431.1742 |
| 65.20 | 431.1742 |
| 66.05 | 428.7880 |
| 66.72 | 430.8058 |
| 66.83 | 443.0259 |
| 66.91 | 443.0883 |
| 67.20 | 443.3110 |
| 67.20 | 443.3110 |
| 67.75 | 414.8591 |
| 67.85 | 407.3305 |
| 68.90 | 464.9093 |
| 68.90 | 464.9093 |
| 69.30 | 463.1946 |
| 69.67 | 463.4868 |
| 70.82 | 462.8568 |
| 70.82 | 462.8568 |
| 70.83 | 462.8638 |
| 72.80 | 423.0019 |
| 72.87 | 441.4438 |
| 72.87 | 441.4438 |
| 74.67 | 466.3167 |
| 74.81 | 466.4232 |
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| 74.81 | 466.4232 |
| 74.81 | 466.4232 |
| 74.81 | 466.4232 |
| 74.81 | 466.4232 |
| 74.81 | 466.4232 |
| 74.97 | 466.5435 |
| 75.28 | 466.7772 |
| 75.70 | 467.0920 |
| 77.11 | 468.1473 |
| 77.11 | 468.1473 |

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| 77.11 | 468.1473 |
| 77.11 | 468.1473 |
| 77.11 | 468.1473 |
| 77.11 | 468.1473 |
| 77.11 | 468.1473 |
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| 79.80 | 470.1329 |
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| 80.18 | 470.4106 |
| 80.30 | 470.4985 |
| 80.30 | 470.4985 |
| 80.57 | 470.6953 |
| 81.00 | 471.0077 |
| 81.07 | 471.0586 |
| 81.07 | 471.0586 |
| 81.07 | 471.0586 |
| 81.07 | 471.0586 |
| 82.60 | 459.1932 |
| 83.37 | 380.2485 |
| 83.78 | 380.4868 |
| 83.78 | 380.4868 |
| 83.78 | 380.4868 |
| 83.78 | 380.4868 |
| 84.21 | 380.7325 |
| 84.90 | 381.1271 |
| 85.43 | 393.9365 |
| 86.29 | 436.7017 |
| 86.50 | 501.0327 |
| 86.54 | 501.0620 |
| 86.59 | 501.0986 |
| 86.72 | 501.1938 |
| 86.79 | 501.2451 |
| 86.94 | 512.3246 |
| 87.30 | 512.5966 |
| 87.30 | 512.5966 |
| 87.30 | 512.5966 |
| 87.30 | 512.5966 |
| 87.30 | 512.5966 |
| 87.30 | 512.5966 |
| 87.57 | 567.6854 |
| 87.88 | 0.0000 |
| 88.03 | 357.7895 |
| 88.36 | 357.9617 |
| 88.47 | 358.0191 |
| 89.95 | 358.7897 |
| 91.11 | 263.2360 |
| 92.29 | 263.6794 |
| 92.38 | 263.7138 |
| 92.38 | 263.7138 |
| 93.35 | 264.0756 |
| 94.00 | 264.3177 |
| 94.67 | 253.4741 |
| 94.67 | 253.4766 |
| 94.90 | 272.5739 |
| 94.90 | 272.5739 |
| 94.90 | 272.5739 |
| 94.90 | 272.5739 |
| 95.87 | 296.7458 |
| 95.87 | 296.7458 |
| 96.73 | 357.4728 |
| 97.43 | 327.6006 |
| 98.44 | 259.8946 |
| 98.44 | 259.8946 |
| 98.88 | 266.4240 |
| 99.55 | 265.8157 |
| 99.55 | 265.8157 |
| 99.86 | 264.8639 |
| 100.00 | 277.6815 |
| 100.10 | 277.7201 |
| 103.18 | 341.9026 |
| 103.76 | 288.7015 |
| 105.00 | 276.3204 |
| 105.31 | 278.5748 |
| 108.00 | 332.2322 |
| 109.28 | 280.0070 |

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| 111.00 | 288.1738 |
| 111.00 | 288.1738 |
| 111.76 | 299.2535 |
| 112.95 | 322.4211 |
| 115.19 | 243.0312 |
| 116.30 | 268.3522 |
| 117.00 | 268.5821 |
| 117.00 | 268.5821 |
| 117.66 | 281.8572 |
| 121.11 | 265.5477 |
| 121.62 | 273.3625 |
| 121.78 | 282.1639 |
| 122.06 | 276.7882 |
| 122.32 | 264.8352 |
| 122.32 | 264.8352 |
| 122.32 | 264.8352 |
| 122.32 | 264.8352 |
| 123.07 | 267.2622 |
| 127.23 | 272.4177 |
| 129.76 | 291.4248 |
| 131.20 | 288.5858 |
| 133.02 | 282.5327 |
| 133.54 | 292.6736 |
| 135.34 | 274.3800 |
| 136.00 | 273.4693 |
| 136.25 | 271.3204 |
| 136.48 | 271.3900 |
| 140.51 | 285.9948 |
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| 142.18 | 287.6322 |
| 142.65 | 293.3748 |
| 143.76 | 288.1185 |
| 144.24 | 266.9559 |
| 144.24 | 266.9559 |
| 144.24 | 266.9559 |
| 144.24 | 266.9559 |
| 145.22 | 264.9886 |
| 145.44 | 265.0511 |
| 147.16 | 292.5370 |
| 152.43 | 249.4577 |
| 152.70 | 254.6185 |
| 153.22 | 245.6967 |
| 154.21 | 242.5460 |
| 154.21 | 242.5460 |
| 154.21 | 242.5460 |
| 154.21 | 242.5460 |
| 155.03 | 245.0171 |
| 156.02 | 231.6375 |
| 158.56 | 236.3291 |
| 159.00 | 0.0000 |
| 159.00 | 234.6104 |
| 160.31 | 265.7087 |
| 161.27 | 243.1330 |
| 162.32 | 209.1048 |
| 162.64 | 221.7450 |
| 163.35 | 256.2132 |
| 163.89 | 249.4834 |
| 165.85 | 257.9865 |
| 167.43 | 231.9700 |
| 171.28 | 225.9132 |
| 171.86 | 226.0368 |
| 172.10 | 226.0887 |
| 176.55 | 236.3046 |
| 176.60 | 236.3170 |
| 181.06 | 223.3359 |
| 184.41 | 287.0250 |
| 185.71 | 274.2213 |
| 186.00 | 274.2929 |
| 190.27 | 249.1266 |
| 192.34 | 215.7427 |
| 193.63 | 242.0026 |
| 197.04 | 235.3903 |
| 198.01 | 234.7035 |
| 198.60 | 218.8707 |
| 200.40 | 0.0000 |
| 201.83 | 257.6883 |
| 202.84 | 227.6738 |
| 205.31 | 259.5211 |

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| 208.36 | 228.7344 |
| 208.81 | 228.8203 |
| 209.75 | 229.0000 |
| 209.75 | 229.0000 |
| 210.97 | 189.1167 |
| 215.65 | 208.5419 |
| 216.55 | 201.4995 |
| 218.09 | 191.8433 |
| 222.10 | 215.9574 |
| 223.80 | 186.3920 |
| 226.40 | 233.9247 |
| 227.00 | 239.4776 |
| 227.08 | 239.4917 |
| 227.20 | 223.1852 |
| 228.16 | 212.4570 |
| 228.18 | 201.5652 |
| 228.18 | 201.5652 |
| 231.56 | 0.0000 |
| 235.69 | 172.4252 |
| 236.00 | 191.4660 |
| 236.00 | 191.4660 |
| 238.63 | 166.5885 |
| 238.63 | 166.5885 |
| 238.63 | 166.5885 |
| 238.63 | 166.5885 |
| 239.00 | 0.0000 |
| 240.98 | 166.8870 |
| 241.98 | 167.0120 |
| 241.98 | 167.0120 |
| 241.98 | 167.0120 |
| 244.69 | 173.6064 |
| 245.39 | 186.9452 |
| 247.94 | 169.6025 |
| 248.90 | 159.5768 |
| 249.79 | 0.0000 |
| 252.40 | 185.8827 |
| 252.85 | 196.1201 |
| 252.85 | 196.1201 |
| 254.15 | 0.0000 |
| 256.20 | 186.3987 |
| 256.20 | 186.3987 |
| 260.50 | 146.9774 |
| 260.90 | 0.0000 |
| 262.80 | 167.7200 |
| 264.65 | 180.2020 |
| 268.24 | 134.6946 |
| 268.79 | 139.2366 |
| 269.46 | 176.7494 |
| 269.46 | 176.7494 |
| 269.46 | 176.7494 |
| 269.46 | 176.7494 |
| 271.23 | 164.9705 |
| 273.65 | 135.2043 |
| 276.40 | 173.0896 |
| 277.35 | 173.2019 |
| 277.60 | 173.2328 |
| 277.60 | 173.2328 |
| 278.00 | 177.8009 |
| 278.60 | 186.9173 |
| 279.20 | 150.8008 |
| 279.53 | 150.8350 |
| 280.46 | 135.8383 |
| 281.68 | 0.0000 |
| 283.67 | 160.7135 |
| 284.30 | 173.0788 |
| 285.00 | 161.8050 |
| 285.90 | 0.0000 |
| 286.10 | 163.8189 |
| 286.10 | 163.8189 |
| 287.40 | 146.9019 |
| 288.45 | 0.0000 |
| 290.67 | 158.0516 |
| 290.80 | 158.0668 |
| 291.72 | 153.6009 |
| 293.26 | 0.0000 |
| 293.70 | 145.6157 |
| 295.21 | 145.7604 |
| 295.21 | 145.7604 |

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| 295.21 | 145.7604 |
| 295.96 | 145.8328 |
| 296.50 | 145.8842 |
| 297.23 | 0.0000 |
| 298.57 | 146.0826 |
| 299.80 | 146.1993 |
| 299.80 | 146.1993 |
| 300.09 | 146.2273 |
| 300.09 | 146.2273 |
| 300.09 | 146.2273 |
| 300.09 | 146.2273 |
| 300.12 | 146.2297 |
| 301.29 | 139.2638 |
| 302.84 | 142.4676 |
| 303.76 | 0.0000 |
| 303.91 | 147.1641 |
| 304.40 | 134.9434 |
| 304.40 | 134.9434 |
| 304.84 | 124.2448 |
| 306.84 | 133.4282 |
| 308.46 | 142.2142 |
| 311.98 | 129.0498 |
| 316.51 | 128.4541 |
| 318.01 | 124.7070 |
| 319.02 | 141.2303 |
| 319.41 | 144.1664 |
| 320.08 | 151.0036 |
| 323.87 | 114.8771 |
| 323.87 | 114.8771 |
| 323.87 | 114.8771 |
| 323.87 | 114.8771 |
| 325.23 | 125.8486 |
| 328.77 | 133.9089 |
| 333.44 | 124.9199 |
| 334.20 | 117.1655 |
| 334.20 | 117.1655 |
| 334.30 | 117.1729 |
| 338.28 | 134.6794 |
| 338.28 | 134.6794 |
| 338.28 | 134.6794 |
| 338.28 | 134.6794 |
| 338.32 | 134.6837 |
| 338.32 | 134.6837 |
| 338.32 | 134.6837 |
| 340.50 | 131.7217 |
| 340.57 | 131.7278 |
| 344.27 | 133.5886 |
| 345.85 | 117.9822 |
| 350.59 | 0.0000 |
| 351.07 | 121.5006 |
| 351.92 | 116.4299 |
| 351.92 | 116.4299 |
| 351.92 | 116.4299 |
| 355.39 | 0.0000 |
| 356.01 | 115.5186 |
| 364.48 | 113.2972 |
| 366.43 | 98.4985 |
| 367.43 | 106.5184 |
| 367.94 | 0.0000 |
| 369.80 | 110.6477 |
| 374.96 | 104.9696 |
| 383.85 | 112.5178 |
| 387.95 | 101.6951 |
| 388.63 | 101.7320 |
| 391.69 | 93.8302 |
| 391.69 | 93.8302 |
| 392.90 | 99.9487 |
| 398.62 | 96.2046 |
| 400.65 | 98.3351 |
| 401.10 | 113.5688 |
| 401.81 | 119.6979 |
| 402.60 | 127.8669 |
| 404.84 | 125.9867 |
| 410.95 | 124.3512 |
| 411.60 | 124.3940 |
| 413.65 | 142.8989 |
| 414.70 | 114.3823 |
| 415.30 | 103.1807 |

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| 415.76 | 104.2272 |
| 417.63 | 0.0000 |
| 418.52 | 94.1422 |
| 423.70 | 96.4441 |
| 427.08 | 87.3605 |
| 427.89 | 96.6506 |
| 432.53 | 87.6018 |
| 433.93 | 99.0073 |
| 439.47 | 0.0000 |
| 439.56 | 87.9092 |
| 439.89 | 92.0610 |
| 443.98 | 83.9564 |
| 444.90 | 79.8468 |
| 445.03 | 79.8515 |
| 445.03 | 79.8515 |
| 445.03 | 79.8515 |
| 445.03 | 79.8515 |
| 453.90 | 85.4058 |
| 463.38 | 101.4921 |
| 468.07 | 95.6364 |
| 473.00 | 81.9859 |
| 475.06 | 86.2742 |
| 475.35 | 76.8151 |
| 476.78 | 76.8663 |
| 477.59 | 82.1621 |
| 477.96 | 96.9260 |
| 482.03 | 65.4445 |
| 484.57 | 0.0000 |
| 487.03 | 82.5239 |
| 490.36 | 0.0000 |
| 492.35 | 0.0000 |
| 497.08 | 92.4707 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 72.7252 |
| 511.00 | 72.7299 |
| 511.85 | 72.7579 |
| 511.85 | 72.7579 |
| 513.99 | 72.8269 |
| 513.99 | 72.8269 |
| 520.41 | 67.5108 |
| 520.65 | 0.0000 |
| 527.90 | 0.0000 |
| 528.96 | 0.0000 |
| 529.64 | 85.1912 |
| 529.87 | 0.0000 |
| 531.02 | 72.2937 |
| 537.32 | 65.9983 |
| 543.00 | 67.2449 |
| 546.56 | 0.0000 |
| 549.76 | 58.7362 |
| 552.65 | 79.4984 |
| 555.20 | 56.6893 |
| 563.23 | 68.9120 |
| 563.90 | 76.5903 |
| 568.70 | 67.9714 |
| 569.32 | 66.8937 |
| 569.50 | 66.8975 |
| 569.67 | 66.9030 |
| 573.80 | 96.6797 |
| 574.00 | 96.6877 |
| 574.64 | 0.0000 |
| 578.91 | 0.0000 |
| 579.30 | 0.0000 |
| 583.14 | 68.3745 |
| 585.48 | 0.0000 |
| 591.81 | 74.1461 |
| 592.07 | 76.3679 |
| 593.00 | 75.2881 |
| 595.88 | 78.7006 |
| 600.56 | 68.8531 |
| 602.52 | 0.0000 |
| 602.71 | 72.6167 |
| 602.71 | 72.6167 |
| 603.60 | 67.6003 |
| 604.41 | 67.6226 |
| 604.70 | 76.5287 |
| 609.31 | 71.3184 |

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| 609.31 | 71.3184 |
| 609.31 | 71.3184 |
| 609.31 | 71.3184 |
| 610.33 | 71.3477 |
| 612.46 | 64.2656 |
| 614.37 | 69.6744 |
| 618.01 | 89.4507 |
| 621.84 | 61.5897 |
| 621.84 | 61.5897 |
| 631.29 | 88.7858 |
| 633.02 | 73.0992 |
| 633.10 | 68.6027 |
| 634.78 | 73.8240 |
| 635.90 | 74.7567 |
| 636.97 | 81.0945 |
| 645.85 | 65.9958 |
| 646.12 | 65.0988 |
| 656.30 | 59.9011 |
| 657.75 | 66.2899 |
| 657.90 | 0.0000 |
| 661.65 | 87.3000 |
| 661.65 | 87.3000 |
| 664.57 | 0.0000 |
| 666.33 | 74.6989 |
| 666.33 | 74.6989 |
| 675.00 | 72.1936 |
| 677.61 | 82.3228 |
| 685.20 | 77.0458 |
| 692.80 | 66.2186 |
| 695.00 | 59.8282 |
| 696.49 | 71.8320 |
| 696.49 | 71.8320 |
| 697.00 | 83.8173 |
| 697.49 | 83.8329 |
| 698.33 | 88.4648 |
| 698.50 | 88.4695 |
| 699.00 | 91.2511 |
| 702.63 | 68.2946 |
| 706.10 | 89.6326 |
| 706.58 | 0.0000 |
| 706.67 | 86.8766 |
| 709.31 | 64.7551 |
| 711.68 | 67.5874 |
| 713.82 | 74.1230 |
| 717.42 | 61.2272 |
| 720.50 | 71.1993 |
| 721.93 | 0.0000 |
| 722.20 | 66.5944 |
| 722.78 | 58.8632 |
| 722.78 | 58.8632 |
| 722.89 | 58.8647 |
| 722.95 | 58.8663 |
| 723.30 | 58.8740 |
| 724.18 | 54.2417 |
| 727.18 | 71.3640 |
| 733.00 | 57.5159 |
| 735.90 | 47.6133 |
| 739.58 | 60.7598 |
| 742.81 | 57.0833 |
| 744.21 | 54.3014 |
| 747.13 | 59.0410 |
| 751.79 | 81.6602 |
| 752.31 | 81.6751 |
| 753.82 | 61.9910 |
| 755.35 | 0.0000 |
| 756.15 | 45.1195 |
| 756.87 | 50.7713 |
| 763.93 | 43.9801 |
| 765.79 | 51.8660 |
| 766.42 | 58.1648 |
| 766.84 | 53.4556 |
| 776.49 | 77.5997 |
| 778.00 | 64.3825 |
| 778.57 | 61.5532 |
| 778.89 | 59.6654 |
| 783.80 | 61.6580 |
| 785.46 | 53.1494 |
| 792.07 | 69.7490 |

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| 795.84 | 63.4847 |
| 796.30 | 60.3197 |
| 798.80 | 60.3677 |
| 801.93 | 66.7888 |
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| 810.29 | 60.2699 |
| 810.76 | 52.6246 |
| 815.85 | 48.8758 |
| 817.79 | 0.0000 |
| 818.51 | 45.0803 |
| 819.60 | 46.0547 |
| 826.30 | 66.3434 |
| 828.27 | 0.0000 |
| 831.60 | 61.6375 |
| 831.96 | 60.6806 |
| 834.83 | 75.1950 |
| 836.80 | 0.0000 |
| 846.75 | 34.8337 |
| 848.13 | 60.9836 |
| 856.28 | 0.0000 |
| 856.80 | 72.7917 |
| 860.37 | 37.2449 |
| 867.32 | 30.8325 |
| 867.82 | 37.3291 |
| 871.10 | 51.6621 |
| 873.19 | 62.4234 |
| 874.81 | 47.8157 |
| 875.33 | 0.0000 |
| 876.40 | 48.8147 |
| 879.36 | 46.9043 |
| 880.27 | 46.9160 |
| 880.51 | 47.8970 |
| 881.50 | 54.7559 |
| 883.24 | 51.8497 |
| 884.67 | 43.0633 |
| 889.25 | 44.1013 |
| 896.60 | 47.1434 |
| 898.02 | 50.1097 |
| 899.00 | 52.0904 |
| 903.28 | 47.2348 |
| 911.07 | 44.3837 |
| 911.07 | 44.3837 |
| 911.07 | 44.3837 |
| 919.63 | 52.2622 |
| 920.93 | 37.5862 |
| 925.00 | 38.6201 |
| 925.24 | 38.6230 |
| 926.50 | 49.5337 |
| 935.52 | 45.6889 |
| 937.48 | 28.1569 |
| 944.10 | 37.8349 |
| 946.00 | 45.8237 |
| 949.00 | 48.8541 |
| 962.29 | 40.0293 |
| 964.01 | 42.0502 |
| 966.15 | 42.0749 |
| 968.20 | 42.0995 |
| 969.11 | 42.1097 |
| 969.11 | 42.1097 |
| 969.11 | 42.1097 |
| 977.42 | 56.9447 |
| 980.50 | 33.5254 |
| 983.50 | 46.3032 |
| 989.30 | 47.3844 |
| 996.32 | 44.4447 |
| 1001.03 | 46.5233 |
| 1001.68 | 42.4850 |
| 1004.76 | 46.5705 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 31.6357 |
| 1036.00 | 30.6248 |
| 1037.82 | 38.8090 |
| 1038.57 | 52.0982 |
| 1038.76 | 0.0000 |
| 1045.16 | 45.0248 |
| 1046.59 | 44.0162 |
| 1048.07 | 40.9629 |

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| 1050.47 | 48.1612 |
| 1050.47 | 48.1612 |
| 1062.04 | 50.3590 |
| 1063.62 | 46.2678 |
| 1076.63 | 37.1373 |
| 1077.35 | 37.1443 |
| 1078.86 | 39.2228 |
| 1085.78 | 37.2234 |
| 1099.22 | 53.9500 |
| 1112.02 | 46.8369 |
| 1112.84 | 53.3521 |
| 1115.52 | 50.3512 |
| 1120.29 | 34.4180 |
| 1120.29 | 34.4180 |
| 1120.29 | 34.4180 |
| 1120.29 | 34.4180 |
| 1120.51 | 34.4196 |
| 1121.28 | 34.4260 |
| 1124.00 | 0.0000 |
| 1129.67 | 29.0378 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 37.9828 |
| 1173.22 | 43.3143 |
| 1175.09 | 47.5598 |
| 1177.93 | 43.3623 |
| 1189.05 | 40.2952 |
| 1204.90 | 46.8316 |
| 1205.75 | 0.0000 |
| 1213.00 | 49.0524 |
| 1221.42 | 61.9705 |
| 1230.97 | 54.6108 |
| 1235.34 | 66.0990 |
| 1236.41 | 0.0000 |
| 1238.25 | 46.4775 |
| 1246.25 | 47.5855 |
| 1260.41 | 0.0000 |
| 1271.85 | 27.0190 |
| 1274.45 | 21.6279 |
| 1274.54 | 23.7907 |
| 1291.56 | 28.2229 |
| 1298.22 | 0.0000 |
| 1312.09 | 25.0788 |
| 1325.50 | 26.2465 |
| 1325.50 | 26.2465 |
| 1332.49 | 32.8564 |
| 1333.61 | 21.9102 |
| 1360.21 | 29.3802 |
| 1362.66 | 0.0000 |
| 1365.15 | 19.3004 |
| 1368.21 | 23.9116 |
| 1368.53 | 0.0000 |
| 1376.25 | 15.7924 |
| 1384.27 | 15.8189 |
| 1394.10 | 20.3430 |
| 1395.20 | 19.4226 |
| 1407.95 | 30.6018 |
| 1434.06 | 11.1880 |
| 1436.60 | 16.7900 |
| 1457.56 | 0.0000 |
| 1460.81 | 18.7476 |
| 1489.15 | 15.0827 |
| 1509.49 | 14.6024 |
| 1596.49 | 16.4962 |
| 1620.62 | 9.6663 |
| 1678.03 | 0.0000 |
| 1691.02 | 10.7695 |
| 1691.02 | 10.7695 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 5.1004 |
| 1764.49 | 5.1004 |
| 1764.49 | 5.1004 |
| 1764.49 | 5.1004 |
| 1770.23 | 13.6144 |
| 1771.40 | 15.3193 |
| 1791.20 | 0.0000 |
| 1808.65 | 13.9897 |

1836.01

13.0503

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G245388003

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 5.9161E+00 | ug/g |
| Total Uranium Counting Unc. | 4.7973E+00 | ug/g |
| Total Uranium Tpu | 2.4476E-06 | ug/g |
| Total Uranium Mda | 2.5106E+00 | ug/g |

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*   BATCH ID      : 944964                      SAMPLE ID   : G245388003
*   ANALYST       : MXR1                        DETECTOR    : GAM20
*   SAMPLE DATE   : 15-JAN-2010 12:00:00.00    COUNT TIME   : 0 02:00:00.00
*   ANALYSIS DATE : 4-FEB-2010 10:29:32.32    SAMPLE ALQT  : 117.610 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.011E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.425E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.437E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.153E+00

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VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 12:31:15.03

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388004.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:30:00.
Sample ID          : G245388004      Sample quantity   : 1.05230E+02 GRAM
Detector name      : GAM22           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:02.01  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials  : MXR1
Abundance limit    : 75.00000        Sensitivity       : 5.00000
Batch ID           : 944964          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 | 63.10* | 54 | 568 | 0.80 | 126.45 | 122 | 9 | 7.45E-03 | 83.6 | |
| 2 | 2 | 74.89 | 600 | 515 | 1.19 | 150.00 | 143 | 15 | 8.33E-02 | 7.5 | 1.49E+00 |
| 3 | 2 | 77.09* | 729 | 412 | 1.04 | 154.40 | 143 | 15 | 1.01E-01 | 6.2 | |
| 4 | 5 | 87.24* | 250 | 433 | 0.99 | 174.69 | 163 | 29 | 3.47E-02 | 14.6 | 3.74E+00 |
| 5 | 5 | 90.02 | 190 | 392 | 1.08 | 180.24 | 163 | 29 | 2.64E-02 | 18.1 | |
| 6 | 5 | 92.81* | 316 | 452 | 1.39 | 185.81 | 163 | 29 | 4.39E-02 | 14.7 | |
| 7 | 0 | 129.30 | 93 | 460 | 0.91 | 258.71 | 255 | 8 | 1.29E-02 | 41.5 | |
| 8 | 0 | 186.01* | 295 | 421 | 0.89 | 372.03 | 367 | 10 | 4.10E-02 | 15.0 | |
| 9 | 0 | 209.35* | 178 | 300 | 1.44 | 418.66 | 415 | 8 | 2.48E-02 | 19.0 | |
| 10 | 2 | 238.68* | 1764 | 263 | 1.24 | 477.27 | 470 | 20 | 2.45E-01 | 2.9 | 2.60E+00 |
| 11 | 2 | 241.75 | 351 | 375 | 1.71 | 483.41 | 470 | 20 | 4.88E-02 | 13.9 | |
| 12 | 0 | 269.97 | 183 | 327 | 1.38 | 539.80 | 533 | 12 | 2.54E-02 | 21.1 | |
| 13 | 1 | 295.24* | 536 | 233 | 1.47 | 590.30 | 583 | 23 | 7.45E-02 | 6.8 | 2.38E+00 |
| 14 | 1 | 299.94* | 130 | 252 | 1.67 | 599.70 | 583 | 23 | 1.81E-02 | 25.1 | |
| 15 | 0 | 328.31 | 62 | 255 | 1.32 | 656.39 | 650 | 10 | 8.55E-03 | 50.4 | |
| 16 | 0 | 338.42* | 422 | 266 | 1.34 | 676.59 | 670 | 15 | 5.86E-02 | 10.0 | |
| 17 | 0 | 351.95* | 1003 | 277 | 1.36 | 703.64 | 696 | 14 | 1.39E-01 | 4.8 | |
| 18 | 0 | 463.06 | 95 | 161 | 1.22 | 925.69 | 921 | 10 | 1.32E-02 | 26.9 | |
| 19 | 0 | 510.84* | 261 | 239 | 2.16 | 1021.18 | 1011 | 22 | 3.63E-02 | 18.2 | |
| 20 | 0 | 583.25* | 539 | 152 | 1.54 | 1165.90 | 1160 | 13 | 7.49E-02 | 6.6 | |
| 21 | 0 | 609.39* | 643 | 210 | 1.74 | 1218.15 | 1211 | 17 | 8.92E-02 | 6.7 | |
| 22 | 0 | 727.08* | 205 | 155 | 1.93 | 1453.41 | 1443 | 20 | 2.85E-02 | 16.6 | |
| 23 | 0 | 795.33 | 92 | 95 | 2.48 | 1589.87 | 1581 | 14 | 1.28E-02 | 24.7 | |
| 24 | 0 | 860.47 | 105 | 101 | 2.34 | 1720.08 | 1711 | 20 | 1.46E-02 | 25.3 | |
| 25 | 0 | 911.09* | 440 | 85 | 1.68 | 1821.29 | 1813 | 17 | 6.11E-02 | 7.1 | |
| 26 | 1 | 965.19* | 92 | 109 | 2.56 | 1929.46 | 1921 | 24 | 1.28E-02 | 27.7 | 2.09E+00 |
| 27 | 1 | 969.19* | 242 | 78 | 2.10 | 1937.47 | 1921 | 24 | 3.36E-02 | 10.7 | |
| 28 | 0 | 1120.56* | 180 | 103 | 1.73 | 2240.14 | 2232 | 18 | 2.50E-02 | 15.7 | |
| 29 | 0 | 1460.92* | 1363 | 38 | 2.51 | 2920.87 | 2912 | 20 | 1.89E-01 | 3.0 | |
| 30 | 0 | 1587.99 | 50 | 28 | 1.94 | 3175.07 | 3167 | 18 | 7.00E-03 | 28.0 | |
| 31 | 0 | 1764.74* | 138 | 16 | 3.49 | 3528.67 | 3518 | 21 | 1.92E-02 | 12.2 | |

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

VMS Nuclide Identification Report V3.1 Generated 4-FEB-2010 12:31:17

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388004.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:30:00
Sample ID         : G245388004 Sample quantity : 105.23 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA22 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:02.01 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated : Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 2.387E+01 | 2.612E+00 | 5.663E-01 | 5.187E-02 | 42.149 |
| CD-109 | + | 88.03 | * | 3.301E+00 | 1.015E+00 | 1.169E+00 | 1.110E-01 | 2.823 |
| SN-126 | + | 64.28 | | 4.634E-01 | 7.773E-01 | 7.730E-01 | 1.123E-01 | 0.599 |
| | + | 86.94 | | 1.339E+00 | 6.805E-01 | 4.791E-01 | 1.989E-01 | 2.795 |
| | + | 87.57 | * | 3.221E-01 | 9.908E-02 | 1.146E-01 | 1.082E-02 | 2.811 |
| TL-208 | | 277.35 | | 4.053E-01 | 4.291E-01 | 7.067E-01 | 1.165E-01 | 0.574 |
| | + | 510.84 | | 1.003E+00 | 3.873E-01 | 2.222E-01 | 2.895E-02 | 4.515 |
| | + | 583.14 | * | 5.815E-01 | 9.931E-02 | 5.870E-02 | 6.365E-03 | 9.907 |
| | + | 860.37 | | 1.030E+00 | 5.341E-01 | 4.488E-01 | 5.230E-02 | 2.294 |
| BI-211 | | 72.87 | | 5.621E+00 | 3.053E+00 | 5.244E+00 | 4.198E-01 | 1.072 |
| | + | 351.07 | * | 5.121E+00 | 7.731E-01 | 3.569E-01 | 4.164E-02 | 14.350 |
| PB-212 | + | 74.81 | | 3.239E+00 | 6.294E-01 | 5.307E-01 | 6.586E-02 | 6.103 |
| | + | 77.11 | | 2.237E+00 | 3.338E-01 | 3.022E-01 | 2.527E-02 | 7.402 |
| | + | 87.30 | | 1.490E+00 | 4.819E-01 | 5.312E-01 | 7.295E-02 | 2.804 |
| | + | 238.63 | * | 2.102E+00 | 3.037E-01 | 9.868E-02 | 1.304E-02 | 21.305 |
| | + | 300.09 | | 2.301E+00 | 1.201E+00 | 1.249E+00 | 1.821E-01 | 1.843 |
| PO-212 | + | 74.81 | | 3.239E+00 | 6.294E-01 | 5.307E-01 | 6.586E-02 | 6.103 |
| | + | 77.11 | | 2.237E+00 | 3.338E-01 | 3.022E-01 | 2.527E-02 | 7.402 |
| | + | 87.30 | | 1.490E+00 | 4.819E-01 | 5.312E-01 | 7.295E-02 | 2.804 |
| | | 115.19 | | -3.171E+00 | 3.929E+00 | 6.036E+00 | 5.000E-01 | -0.525 |
| | + | 238.63 | * | 2.102E+00 | 3.037E-01 | 9.868E-02 | 1.304E-02 | 21.305 |
| | + | 300.09 | | 2.301E+00 | 1.201E+00 | 1.249E+00 | 1.821E-01 | 1.843 |
| BI-214 | + | 609.31 | * | 1.299E+00 | 2.298E-01 | 1.156E-01 | 1.344E-02 | 11.241 |
| | + | 1120.29 | | 1.812E+00 | 6.042E-01 | 4.412E-01 | 4.875E-02 | 4.107 |
| | + | 1764.49 | | 1.821E+00 | 4.698E-01 | 3.160E-01 | 2.633E-02 | 5.764 |
| PB-214 | + | 74.81 | | 5.581E+00 | 1.037E+00 | 9.145E-01 | 1.008E-01 | 6.103 |
| | + | 77.11 | | 3.835E+00 | 6.426E-01 | 5.181E-01 | 5.861E-02 | 7.402 |
| | + | 87.30 | | 2.552E+00 | 8.093E-01 | 9.100E-01 | 1.107E-01 | 2.804 |
| | + | 241.98 | | 2.510E+00 | 7.794E-01 | 5.934E-01 | 8.160E-02 | 4.231 |
| | + | 295.21 | | 1.668E+00 | 3.358E-01 | 2.191E-01 | 3.262E-02 | 7.614 |
| | + | 351.92 | * | 1.782E+00 | 2.845E-01 | 1.244E-01 | 1.585E-02 | 14.324 |
| PO-214 | + | 74.81 | | 5.581E+00 | 1.037E+00 | 9.145E-01 | 1.008E-01 | 6.103 |
| | + | 77.11 | | 3.835E+00 | 6.426E-01 | 5.181E-01 | 5.861E-02 | 7.402 |
| | + | 87.30 | | 2.552E+00 | 8.093E-01 | 9.100E-01 | 1.107E-01 | 2.804 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-216 | + | 241.98 | | 2.510E+00 | 7.794E-01 | 5.934E-01 | 8.160E-02 | 4.231 |
| | + | 295.21 | | 1.668E+00 | 3.358E-01 | 2.191E-01 | 3.262E-02 | 7.614 |
| | + | 351.92 | * | 1.782E+00 | 2.845E-01 | 1.244E-01 | 1.585E-02 | 14.324 |
| | + | 74.81 | | 3.239E+00 | 6.294E-01 | 5.307E-01 | 6.586E-02 | 6.103 |
| | + | 77.11 | | 2.237E+00 | 3.338E-01 | 3.022E-01 | 2.527E-02 | 7.402 |
| | + | 87.30 | | 1.490E+00 | 4.819E-01 | 5.312E-01 | 7.295E-02 | 2.804 |
| PO-218 | + | 238.63 | * | 2.102E+00 | 3.037E-01 | 9.868E-02 | 1.304E-02 | 21.305 |
| | + | 300.09 | | 2.301E+00 | 1.201E+00 | 1.249E+00 | 1.821E-01 | 1.843 |
| | + | 74.81 | | 5.581E+00 | 1.037E+00 | 9.145E-01 | 1.008E-01 | 6.103 |
| | + | 77.11 | | 3.835E+00 | 6.426E-01 | 5.181E-01 | 5.861E-02 | 7.402 |
| RA-224 | + | 87.30 | | 2.552E+00 | 8.093E-01 | 9.100E-01 | 1.107E-01 | 2.804 |
| | + | 241.98 | | 2.510E+00 | 7.794E-01 | 5.934E-01 | 8.160E-02 | 4.231 |
| | + | 295.21 | | 1.668E+00 | 3.358E-01 | 2.191E-01 | 3.262E-02 | 7.614 |
| | + | 351.92 | * | 1.782E+00 | 2.845E-01 | 1.244E-01 | 1.585E-02 | 14.324 |
| RA-226 | + | 240.98 | * | 4.760E+00 | 1.454E+00 | 1.122E+00 | 1.404E-01 | 4.243 |
| | + | 609.31 | * | 1.299E+00 | 2.298E-01 | 1.156E-01 | 1.344E-02 | 11.241 |
| | + | 1120.29 | | 1.812E+00 | 6.042E-01 | 4.412E-01 | 4.875E-02 | 4.107 |
| AC-228 | + | 1764.49 | | 1.821E+00 | 4.698E-01 | 3.160E-01 | 2.633E-02 | 5.764 |
| | + | 338.32 | | 2.390E+00 | 1.113E+00 | 4.104E-01 | 1.726E-01 | 5.825 |
| | + | 911.07 | * | 2.031E+00 | 3.931E-01 | 1.907E-01 | 2.527E-02 | 10.647 |
| RA-228 | + | 969.11 | | 1.964E+00 | 6.330E-01 | 3.952E-01 | 9.544E-02 | 4.970 |
| | + | 338.32 | | 2.390E+00 | 1.113E+00 | 4.104E-01 | 1.726E-01 | 5.825 |
| | + | 911.07 | * | 2.031E+00 | 3.931E-01 | 1.907E-01 | 2.527E-02 | 10.647 |
| TH-228 | + | 969.11 | | 1.964E+00 | 6.330E-01 | 3.952E-01 | 9.544E-02 | 4.970 |
| | + | 74.81 | | 3.304E+00 | 5.641E-01 | 5.414E-01 | 4.461E-02 | 6.103 |
| | + | 77.11 | | 2.282E+00 | 3.405E-01 | 3.083E-01 | 2.578E-02 | 7.402 |
| TH-230 | + | 87.30 | | 1.520E+00 | 4.675E-01 | 5.419E-01 | 5.100E-02 | 2.804 |
| | + | 238.63 | * | 2.145E+00 | 3.098E-01 | 1.007E-01 | 1.330E-02 | 21.305 |
| | + | 300.09 | | 2.347E+00 | 1.838E+00 | 1.274E+00 | 7.661E-01 | 1.843 |
| TH-232 | + | 609.31 | * | 1.299E+00 | 2.298E-01 | 1.156E-01 | 1.344E-02 | 11.241 |
| | + | 1120.29 | | 1.812E+00 | 6.041E-01 | 4.412E-01 | 4.874E-02 | 4.107 |
| | + | 1764.49 | | 1.821E+00 | 4.698E-01 | 3.160E-01 | 2.633E-02 | 5.764 |
| TH-234 | + | 338.32 | | 2.390E+00 | 5.558E-01 | 4.104E-01 | 4.881E-02 | 5.825 |
| | + | 911.07 | * | 2.031E+00 | 3.931E-01 | 1.907E-01 | 2.527E-02 | 10.647 |
| | + | 969.11 | | 1.964E+00 | 6.330E-01 | 3.952E-01 | 9.544E-02 | 4.970 |
| U-234 | + | 63.29 | * | 1.171E+00 | 1.967E+00 | 1.938E+00 | 3.374E-01 | 0.604 |
| | + | 92.38 | | 2.651E+00 | 9.201E-01 | 7.556E-01 | 1.385E-01 | 3.509 |
| | + | 609.31 | * | 1.299E+00 | 2.298E-01 | 1.156E-01 | 1.344E-02 | 11.241 |
| NP-237 | + | 1120.29 | | 1.812E+00 | 6.041E-01 | 4.412E-01 | 4.874E-02 | 4.107 |
| | + | 1764.49 | | 1.821E+00 | 4.698E-01 | 3.160E-01 | 2.633E-02 | 5.764 |
| | + | 86.50 | * | 9.458E-01 | 3.504E-01 | 3.398E-01 | 7.694E-02 | 2.784 |
| U-238 | + | 95.87 | | -2.874E-01 | 1.079E+00 | 1.527E+00 | 3.775E-01 | -0.188 |
| | + | 63.29 | * | 1.171E+00 | 1.967E+00 | 1.938E+00 | 3.374E-01 | 0.604 |
| | + | 92.38 | | 2.651E+00 | 8.179E-01 | 7.556E-01 | 6.885E-02 | 3.509 |
| AM-243 | + | 74.67 | * | 5.251E-01 | 8.946E-02 | 8.629E-02 | 7.033E-03 | 6.086 |
| | + | 86.72 | | 3.547E+01 | 1.091E+01 | 1.272E+01 | 1.188E+00 | 2.789 |
| | + | 117.66 | | -2.261E+00 | 4.162E+00 | 6.459E+00 | 5.335E-01 | -0.350 |
| ANH-511 | + | 142.18 | | -9.443E+00 | 1.931E+01 | 3.103E+01 | 2.740E+00 | -0.304 |
| | + | 511.00 | * | 2.167E-01 | 8.169E-02 | 4.800E-02 | 4.809E-03 | 4.514 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| BE-7 | | 477.59 | * | -7.315E-02 | 3.415E-01 | 5.443E-01 | 5.680E-02 | -0.134 |
| NA-22 | | 1274.54 | * | -7.607E-03 | 4.674E-02 | 7.645E-02 | 6.589E-03 | -0.099 |
| NA-24 | | 1368.53 | * | -9.647E+01 | 4.674E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | 1.895E+00 | 1.765E+00 | 2.734E+00 | 2.381E-01 | 0.693 |
| | | 1808.65 | * | 1.027E-02 | 2.817E-02 | 4.876E-02 | 3.988E-03 | 0.211 |
| TI-44 | | 67.85 | | -4.791E-02 | 4.714E-02 | 7.074E-02 | 5.400E-03 | -0.677 |
| | + | 78.38 | * | 4.129E-01 | 6.161E-02 | 7.815E-02 | 6.626E-03 | 5.284 |
| SC-46 | | 889.25 | * | -1.568E-02 | 3.877E-02 | 6.229E-02 | 6.973E-03 | -0.252 |
| | + | 1120.51 | | 3.228E-01 | 1.055E-01 | 1.392E-01 | 1.231E-02 | 2.319 |
| V-48 | | 944.10 | | -6.421E-01 | 1.111E+00 | 1.751E+00 | 1.899E-01 | -0.367 |
| | | 983.50 | * | 3.769E-02 | 8.777E-02 | 1.486E-01 | 1.558E-02 | 0.254 |
| | | 1312.09 | | -4.767E-02 | 9.891E-02 | 1.563E-01 | 1.377E-02 | -0.305 |
| CR-51 | | 320.08 | * | 6.688E-02 | 4.597E-01 | 7.543E-01 | 9.767E-02 | 0.089 |
| MN-52 | | 744.21 | | -4.361E-02 | 4.357E-01 | 7.024E-01 | 7.633E-02 | -0.062 |
| | | 848.13 | | -6.655E+00 | 1.227E+01 | 1.964E+01 | 2.187E+00 | -0.339 |
| | | 935.52 | | 5.167E-01 | 4.949E-01 | 8.660E-01 | 9.454E-02 | 0.597 |
| | | 1246.25 | | -4.953E+00 | 1.436E+01 | 2.328E+01 | 1.968E+00 | -0.213 |
| | | 1333.61 | | 3.888E+00 | 8.857E+00 | 1.516E+01 | 1.352E+00 | 0.256 |
| | | 1434.06 | * | 4.643E-01 | 4.357E-01 | 7.839E-01 | 7.006E-02 | 0.592 |
| MN-54 | | 834.83 | * | 3.164E-02 | 3.997E-02 | 6.947E-02 | 7.718E-03 | 0.455 |
| CO-56 | | 846.75 | * | -6.160E-03 | 4.122E-02 | 6.800E-02 | 7.569E-03 | -0.091 |
| | | 977.42 | | -2.307E+00 | 3.556E+00 | 4.811E+00 | 5.073E-01 | -0.480 |
| | | 1037.82 | | -4.586E-02 | 3.280E-01 | 5.302E-01 | 5.467E-02 | -0.087 |
| | | 1175.09 | | 1.095E+00 | 2.140E+00 | 3.697E+00 | 2.977E-01 | 0.296 |
| | | 1238.25 | | 1.297E-01 | 9.972E-02 | 1.727E-01 | 1.497E-02 | 0.751 |
| | | 1360.21 | | -8.346E-01 | 9.846E-01 | 1.470E+00 | 1.313E-01 | -0.568 |
| | | 1771.40 | | 3.807E-01 | 2.468E-01 | 4.481E-01 | 3.723E-02 | 0.850 |
| CO-57 | | 122.06 | * | -4.625E-03 | 2.826E-02 | 4.449E-02 | 3.669E-03 | -0.104 |
| | | 136.48 | | 1.187E-01 | 2.253E-01 | 3.871E-01 | 3.592E-02 | 0.307 |
| CO-58 | | 810.76 | * | -6.074E-03 | 4.137E-02 | 6.856E-02 | 7.592E-03 | -0.089 |
| FE-59 | | 142.65 | | 1.270E+00 | 3.160E+00 | 5.231E+00 | 4.629E-01 | 0.243 |
| | | 192.34 | | -1.861E-01 | 1.074E+00 | 1.759E+00 | 2.612E-01 | -0.106 |
| | | 1099.22 | * | -3.697E-02 | 9.785E-02 | 1.541E-01 | 1.510E-02 | -0.240 |
| | | 1291.56 | | 1.277E-02 | 1.239E-01 | 2.065E-01 | 2.035E-02 | 0.062 |
| CO-60 | | 1173.22 | | 1.295E-02 | 4.161E-02 | 7.095E-02 | 5.706E-03 | 0.183 |
| | | 1332.49 | * | 2.193E-02 | 3.815E-02 | 6.600E-02 | 5.885E-03 | 0.332 |
| ZN-65 | | 1115.52 | * | 3.619E-02 | 1.152E-01 | 1.637E-01 | 1.460E-02 | 0.221 |
| GE-68 | | 1077.35 | * | 1.227E-01 | 1.122E+00 | 1.843E+00 | 1.737E-01 | 0.067 |
| AS-73 | | 53.44 | * | -2.538E-01 | 8.522E-01 | 1.353E+00 | 1.022E-01 | -0.188 |
| AS-74 | | 595.88 | * | 9.746E-02 | 1.161E-01 | 2.005E-01 | 2.079E-02 | 0.486 |
| | | 634.78 | | -1.594E-01 | 4.218E-01 | 6.776E-01 | 7.102E-02 | -0.235 |
| SE-75 | | 66.05 | | 1.029E-01 | 5.167E+00 | 7.651E+00 | 7.300E-01 | 0.013 |
| | | 96.73 | | -1.303E+00 | 9.566E-01 | 1.252E+00 | 1.724E-01 | -1.040 |
| | | 121.11 | | -7.665E-04 | 1.549E-01 | 2.457E-01 | 2.686E-02 | -0.003 |
| | | 136.00 | | 2.128E-02 | 4.291E-02 | 7.369E-02 | 6.394E-03 | 0.289 |
| | | 198.60 | | 5.024E-01 | 2.134E+00 | 3.468E+00 | 4.053E-01 | 0.145 |
| | | 264.65 | * | 2.679E-02 | 5.608E-02 | 8.093E-02 | 1.089E-02 | 0.331 |
| | | 279.53 | | 7.301E-02 | 1.276E-01 | 2.086E-01 | 2.961E-02 | 0.350 |
| | | 303.91 | | 8.004E-01 | 2.461E+00 | 3.671E+00 | 5.593E-01 | 0.218 |

Sample ID : G245388004

Acquisition date : 4-FEB-2010 10:30:00

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

| Nuclide | Line Ided | Energy (keV) | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|---------------------|-----------|----------------|-----------|---------|
| BR-77 | + | 400.65 | -3.677E-02 | 2.759E-01 | 4.498E-01 | 5.265E-02 | -0.082 |
| | | 87.88 | 2.888E-03 | 2.759E-01 | Half-Life | too short | |
| | | 200.40 | -3.915E-04 | 2.759E-01 | Half-Life | too short | |
| | + | 239.00 | 1.377E-03 | 2.759E-01 | Half-Life | too short | |
| | | 249.79 | 8.355E-05 | 2.759E-01 | Half-Life | too short | |
| | | 281.68 | -3.888E-06 | 2.759E-01 | Half-Life | too short | |
| | | 297.23 | 2.054E-03 | 2.759E-01 | Half-Life | too short | |
| | | 303.76 | 3.124E-04 | 2.759E-01 | Half-Life | too short | |
| | | 439.47 | 2.797E-04 | 2.759E-01 | Half-Life | too short | |
| | | 484.57 | 1.035E-04 | 2.759E-01 | Half-Life | too short | |
| | | 520.65 | * 5.116E-06 | 2.759E-01 | Half-Life | too short | |
| | | 574.64 | 1.624E-04 | 2.759E-01 | Half-Life | too short | |
| | | 578.91 | 2.508E-05 | 2.759E-01 | Half-Life | too short | |
| | | 585.48 | 9.295E-03 | 2.759E-01 | Half-Life | too short | |
| | | 755.35 | 7.072E-04 | 2.759E-01 | Half-Life | too short | |
| SR-82 | | 817.79 | -3.320E-04 | 2.759E-01 | Half-Life | too short | |
| | | 698.33 | -1.431E+01 | 4.073E+01 | 6.505E+01 | 6.960E+00 | -0.220 |
| | | 776.49 | * -1.571E-01 | 4.201E-01 | 6.596E-01 | 7.234E-02 | -0.238 |
| RB-83 | | 1395.20 | -3.308E+00 | 1.223E+01 | 1.949E+01 | 1.743E+00 | -0.170 |
| | | 520.41 | * 1.686E-02 | 8.170E-02 | 1.249E-01 | 1.257E-02 | 0.135 |
| | | 529.64 | -6.223E-03 | 1.088E-01 | 1.817E-01 | 1.836E-02 | -0.034 |
| | 552.65 | -8.630E-02 | 2.198E-01 | 3.587E-01 | 3.661E-02 | -0.241 | |
| RB-84 | | 881.50 | * 8.390E-03 | 7.403E-02 | 1.239E-01 | 1.386E-02 | 0.068 |
| KR-85 | | 513.99 | * 3.217E+01 | 9.841E+00 | 1.586E+01 | 1.592E+00 | 2.028 |
| SR-85 | | 513.99 | * 1.735E-01 | 5.308E-02 | 8.556E-02 | 8.585E-03 | 2.028 |
| RB-86 | | 1076.63 | * 4.451E-01 | 8.462E-01 | 1.437E+00 | 1.356E-01 | 0.310 |
| Y-88 | | 898.02 | 8.143E-03 | 4.459E-02 | 7.478E-02 | 8.402E-03 | 0.109 |
| | 1836.01 | * -5.846E-03 | 3.746E-02 | 6.025E-02 | 4.871E-03 | -0.097 | |
| ZR-88 | | 392.90 | * -1.519E-02 | 3.437E-02 | 5.522E-02 | 5.142E-03 | -0.275 |
| Y-91 | | 1204.90 | * 5.380E+00 | 1.871E+01 | 3.174E+01 | 2.610E+00 | 0.169 |
| NB-94 | | 702.63 | * 1.443E-02 | 3.423E-02 | 5.727E-02 | 6.137E-03 | 0.252 |
| | 871.10 | 4.529E-03 | 3.564E-02 | 5.623E-02 | 6.282E-03 | 0.081 | |
| NB-95 | | 765.79 | * 7.804E-02 | 4.774E-02 | 8.357E-02 | 9.139E-03 | 0.934 |
| NB-95M | | 235.69 | * 3.601E-01 | 1.719E-01 | 2.603E-01 | 3.441E-02 | 1.383 |
| ZR-95 | | 724.18 | 2.429E-01 | 1.288E-01 | 2.022E-01 | 2.305E-02 | 1.201 |
| | 756.15 | * 6.195E-02 | 7.554E-02 | 1.287E-01 | 1.494E-02 | 0.481 | |
| NB-97 | | 657.90 | * 2.488E+00 | 7.554E-02 | Half-Life | too short | |
| | 1024.50 | -5.791E+01 | 7.554E-02 | Half-Life | too short | | |
| ZR-97 | | 254.15 | -1.988E+02 | 7.554E-02 | Half-Life | too short | |
| | 355.39 | 4.257E+02 | 7.554E-02 | Half-Life | too short | | |
| | 507.63 | * 8.429E+02 | 7.554E-02 | Half-Life | too short | | |
| | 602.52 | -2.186E+02 | 7.554E-02 | Half-Life | too short | | |
| | 1021.30 | -1.140E+03 | 7.554E-02 | Half-Life | too short | | |
| | 1147.95 | -6.465E+02 | 7.554E-02 | Half-Life | too short | | |
| | 1362.66 | -7.939E+00 | 7.554E-02 | Half-Life | too short | | |
| | 1750.46 | -1.942E+02 | 7.554E-02 | Half-Life | too short | | |
| MO-99 | | 140.51 | -1.083E+02 | 1.017E+02 | 1.535E+02 | 4.259E+01 | -0.705 |
| | 181.06 | 9.684E-01 | 6.973E+01 | 1.016E+02 | 1.945E+01 | 0.010 | |
| | 366.43 | -1.591E+02 | 2.929E+02 | 4.702E+02 | 4.988E+01 | -0.338 | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 739.58 | * | | 1.819E+01 | 3.863E+01 | 6.461E+01 | 1.069E+01 | 0.282 |
| | 778.00 | | | -1.100E+02 | 1.137E+02 | 1.694E+02 | 1.859E+01 | -0.649 |
| TC-99M | 140.51 | * | | -2.849E+16 | 1.137E+02 | Half-Life | too short | |
| RH-101 | 127.23 | | | 2.985E-02 | 4.026E-02 | 5.859E-02 | 4.897E-03 | 0.509 |
| | 198.01 | * | | 1.170E-02 | 3.798E-02 | 6.189E-02 | 6.752E-03 | 0.189 |
| | 325.23 | | | -1.290E-01 | 2.825E-01 | 3.984E-01 | 4.952E-02 | -0.324 |
| RH-102 | 418.52 | | | -4.063E-02 | 2.995E-01 | 4.861E-01 | 4.614E-02 | -0.084 |
| | 475.06 | * | | -2.216E-03 | 2.872E-02 | 4.620E-02 | 4.543E-03 | -0.048 |
| | 631.29 | | | -1.141E-02 | 5.524E-02 | 8.989E-02 | 9.413E-03 | -0.127 |
| | 697.49 | | | 1.994E-02 | 8.006E-02 | 1.327E-01 | 1.419E-02 | 0.150 |
| | 766.84 | | | 1.688E-01 | 1.173E-01 | 2.035E-01 | 2.225E-02 | 0.830 |
| | 1046.59 | | | -1.734E-02 | 1.193E-01 | 1.926E-01 | 1.889E-02 | -0.090 |
| | 1112.84 | | | 1.119E-01 | 2.551E-01 | 3.691E-01 | 3.303E-02 | 0.303 |
| RU-103 | 497.08 | * | | -2.166E-02 | 4.791E-02 | 7.486E-02 | 1.124E-02 | -0.289 |
| | 610.33 | | | 1.527E+01 | 3.381E+00 | 3.170E+00 | 5.603E-01 | 4.818 |
| RH-106 | 511.85 | + | | 1.092E+00 | 4.117E-01 | 4.750E-01 | 4.761E-02 | 2.299 |
| | 621.84 | * | | -2.510E-01 | 3.286E-01 | 5.136E-01 | 7.499E-02 | -0.489 |
| | 1050.47 | | | 1.722E-01 | 2.372E+00 | 3.892E+00 | 3.799E-01 | 0.044 |
| RU-106 | 511.85 | + | | 1.092E+00 | 4.117E-01 | 4.750E-01 | 4.761E-02 | 2.299 |
| | 621.84 | * | | -2.510E-01 | 3.276E-01 | 5.136E-01 | 5.364E-02 | -0.489 |
| | 1050.47 | | | 1.722E-01 | 2.372E+00 | 3.892E+00 | 3.799E-01 | 0.044 |
| AG-108M | 433.93 | * | | -3.710E-02 | 3.470E-02 | 5.280E-02 | 5.227E-03 | -0.703 |
| | 614.37 | | | 3.107E-03 | 4.450E-02 | 6.362E-02 | 6.810E-03 | 0.049 |
| | 722.95 | | | 3.666E-02 | 4.967E-02 | 7.361E-02 | 8.145E-03 | 0.498 |
| AG-110M | 657.75 | * | | 8.860E-03 | 3.623E-02 | 6.038E-02 | 6.490E-03 | 0.147 |
| | 677.61 | | | -2.326E-01 | 3.205E-01 | 4.986E-01 | 5.391E-02 | -0.466 |
| | 706.67 | | | 6.702E-02 | 2.182E-01 | 3.627E-01 | 3.962E-02 | 0.185 |
| | 763.93 | | | -6.738E-02 | 1.798E-01 | 2.840E-01 | 3.159E-02 | -0.237 |
| | 884.67 | | | -3.112E-02 | 4.779E-02 | 7.520E-02 | 8.575E-03 | -0.414 |
| | 937.48 | | | 9.087E-02 | 1.189E-01 | 2.053E-01 | 2.289E-02 | 0.443 |
| | 1384.27 | | | -2.843E-01 | 1.934E-01 | 2.735E-01 | 2.509E-02 | -1.040 |
| IN-111 | 171.28 | | | 2.534E+00 | 3.561E+00 | 6.059E+00 | 6.048E-01 | 0.418 |
| | 245.39 | * | | -1.617E+00 | 4.401E+00 | 6.076E+00 | 7.709E-01 | -0.266 |
| IN-113M | 391.69 | * | | 2.632E-02 | 4.873E-02 | 8.219E-02 | 7.849E-03 | 0.320 |
| SN-113 | 391.69 | * | | 2.632E-02 | 4.873E-02 | 8.219E-02 | 7.849E-03 | 0.320 |
| IN-114M | 190.27 | * | | 2.041E-01 | 2.243E-01 | 3.396E-01 | 3.611E-02 | 0.601 |
| CD-115 | 260.90 | | | 9.395E-05 | 2.243E-01 | Half-Life | too short | |
| | 492.35 | | | -1.624E-05 | 2.243E-01 | Half-Life | too short | |
| | 527.90 | * | | 2.265E-06 | 2.243E-01 | Half-Life | too short | |
| SN-117M | 156.02 | | | -3.428E-01 | 3.165E+00 | 5.282E+00 | 4.952E-01 | -0.065 |
| | 158.56 | * | | -3.753E-02 | 7.543E-02 | 1.239E-01 | 1.175E-02 | -0.303 |
| SB-122 | 563.90 | * | | 4.832E+00 | 7.222E+00 | 1.244E+01 | 1.275E+00 | 0.388 |
| | 692.80 | | | 1.876E+02 | 1.543E+02 | 2.686E+02 | 2.868E+01 | 0.698 |
| I-123 | 159.00 | * | | -5.199E+02 | 1.543E+02 | Half-Life | too short | |
| | 528.96 | | | -1.550E+04 | 1.543E+02 | Half-Life | too short | |
| TE-123M | 159.00 | * | | -5.879E-03 | 3.070E-02 | 5.099E-02 | 4.869E-03 | -0.115 |
| I-124 | 602.71 | * | | -6.493E-01 | 1.801E+00 | 2.488E+00 | 2.584E-01 | -0.261 |
| | 722.78 | | | 7.698E+00 | 1.149E+01 | 1.694E+01 | 1.829E+00 | 0.454 |
| | 1325.50 | | | -6.411E+01 | 7.348E+01 | 1.106E+02 | 9.822E+00 | -0.580 |

Sample ID : G245388004

Acquisition date : 4-FEB-2010 10:30:00

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SB-124 | | 1376.25 | | 2.096E+02 | 7.708E+01 | 1.482E+02 | 1.325E+01 | 1.414 |
| | | 1509.49 | | 3.139E+01 | 3.919E+01 | 6.832E+01 | 6.072E+00 | 0.459 |
| | | 1691.02 | | -2.660E+00 | 9.522E+00 | 1.526E+01 | 1.305E+00 | -0.174 |
| | | 602.71 | | -1.794E-02 | 4.975E-02 | 6.873E-02 | 7.140E-03 | -0.261 |
| | | 645.85 | | 4.164E-02 | 5.147E-01 | 8.514E-01 | 9.312E-02 | 0.049 |
| | | 709.31 | | -1.629E+00 | 3.147E+00 | 4.960E+00 | 5.328E-01 | -0.328 |
| | | 713.82 | | -9.261E-02 | 1.835E+00 | 2.982E+00 | 4.071E-01 | -0.031 |
| | | 722.78 | | 3.083E-01 | 4.600E-01 | 6.785E-01 | 7.424E-02 | 0.454 |
| | + | 968.20 | | 2.137E+01 | 5.095E+00 | 8.413E+00 | 8.946E-01 | 2.540 |
| | | 1045.16 | | -9.093E-01 | 2.770E+00 | 4.412E+00 | 4.334E-01 | -0.206 |
| | | 1325.50 | | -2.742E+00 | 3.143E+00 | 4.730E+00 | 4.201E-01 | -0.580 |
| | | 1368.21 | | -8.246E-01 | 1.854E+00 | 2.907E+00 | 3.977E-01 | -0.284 |
| | | 1436.60 | | 2.377E+00 | 4.094E+00 | 7.071E+00 | 6.318E-01 | 0.336 |
| | | 1691.02 | * | -2.512E-02 | 8.993E-02 | 1.441E-01 | 1.282E-02 | -0.174 |
| SB-125 | | 427.89 | * | 1.186E-01 | 9.392E-02 | 1.627E-01 | 1.579E-02 | 0.729 |
| | + | 463.38 | | 7.272E-01 | 3.981E-01 | 5.795E-01 | 6.009E-02 | 1.255 |
| | | 600.56 | | -1.000E-01 | 1.967E-01 | 3.003E-01 | 3.277E-02 | -0.333 |
| | | 635.90 | | -9.557E-02 | 2.666E-01 | 4.287E-01 | 4.743E-02 | -0.223 |
| TE-125M | | 109.28 | * | 2.400E+00 | 1.077E+01 | 1.737E+01 | 1.761E+00 | 0.138 |
| I-126 | | 388.63 | | 1.134E-01 | 2.870E-01 | 4.811E-01 | 4.555E-02 | 0.236 |
| | | 666.33 | * | -1.028E-01 | 2.391E-01 | 3.815E-01 | 4.030E-02 | -0.269 |
| SB-126 | | 753.82 | | 2.084E+00 | 1.931E+00 | 3.334E+00 | 3.633E-01 | 0.625 |
| | | 223.80 | | 1.608E+00 | 5.857E+00 | 9.645E+00 | 1.144E+00 | 0.167 |
| | | 278.60 | | 3.470E+00 | 3.712E+00 | 6.130E+00 | 8.569E-01 | 0.566 |
| | + | 296.50 | | 2.175E+01 | 4.160E+00 | 5.236E+00 | 7.054E-01 | 4.153 |
| | | 414.70 | | 7.379E-03 | 1.072E-01 | 1.761E-01 | 1.667E-02 | 0.042 |
| | | 415.30 | | 3.998E+00 | 8.684E+00 | 1.453E+01 | 1.376E+00 | 0.275 |
| | | 555.20 | | 2.134E+00 | 5.353E+00 | 9.119E+00 | 9.315E-01 | 0.234 |
| | | 573.80 | | 2.473E-01 | 1.333E+00 | 2.240E+00 | 2.304E-01 | 0.110 |
| | | 593.00 | | -1.689E-01 | 1.302E+00 | 2.143E+00 | 2.219E-01 | -0.079 |
| | | 656.30 | | -8.173E-01 | 4.504E+00 | 7.317E+00 | 7.707E-01 | -0.112 |
| SB-127 | | 666.33 | | -4.342E-02 | 1.010E-01 | 1.612E-01 | 1.703E-02 | -0.269 |
| | | 675.00 | | 1.399E+00 | 2.634E+00 | 4.454E+00 | 4.722E-01 | 0.314 |
| | | 695.00 | | 2.646E-02 | 1.070E-01 | 1.774E-01 | 1.896E-02 | 0.149 |
| | | 697.00 | | 1.816E-01 | 3.677E-01 | 6.177E-01 | 6.606E-02 | 0.294 |
| | | 720.50 | * | 8.841E-02 | 2.273E-01 | 3.281E-01 | 3.538E-02 | 0.269 |
| | | 856.80 | | 5.276E-01 | 7.004E-01 | 1.067E+00 | 1.190E-01 | 0.494 |
| | | 989.30 | | -2.201E-01 | 1.652E+00 | 2.685E+00 | 2.800E-01 | -0.082 |
| | | 1034.80 | | 2.158E+00 | 1.170E+01 | 1.939E+01 | 1.928E+00 | 0.111 |
| | | 1213.00 | | 2.026E+00 | 5.844E+00 | 9.942E+00 | 8.220E-01 | 0.204 |
| | | 61.10 | | 3.852E+01 | 1.372E+02 | 2.069E+02 | 2.437E+01 | 0.186 |
| | | 252.40 | | -3.955E+00 | 1.125E+01 | 1.764E+01 | 7.684E+00 | -0.224 |
| | | 290.80 | | 9.931E-01 | 5.850E+01 | 8.606E+01 | 1.424E+01 | 0.012 |
| | | 411.60 | | -5.048E-02 | 3.233E+01 | 5.295E+01 | 9.159E+00 | -0.001 |
| | | 444.90 | | -4.099E+00 | 2.561E+01 | 4.128E+01 | 6.025E+00 | -0.099 |
| SB-127 | | 473.00 | | -5.571E-01 | 3.945E+00 | 6.323E+00 | 9.479E-01 | -0.088 |
| | | 543.00 | | -1.100E+01 | 4.163E+01 | 6.722E+01 | 1.111E+01 | -0.164 |
| | | 603.60 | | 7.985E+00 | 3.181E+01 | 4.620E+01 | 6.963E+00 | 0.173 |
| | | 685.20 | * | 1.083E+00 | 3.374E+00 | 5.626E+00 | 8.067E-01 | 0.192 |

Sample ID : G245388004

Acquisition date : 4-FEB-2010 10:30:00

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| XE-127 | | 698.50 | | -1.366E+01 | 3.783E+01 | 6.029E+01 | 1.091E+01 | -0.226 |
| | | 722.20 | | 5.162E+01 | 8.549E+01 | 1.252E+02 | 1.787E+01 | 0.412 |
| | | 783.80 | | 7.379E+00 | 9.084E+00 | 1.533E+01 | 2.363E+00 | 0.481 |
| | | 57.60 | | 3.575E+00 | 6.310E+00 | 1.072E+01 | 7.698E-01 | 0.334 |
| | | 145.22 | | 6.539E-01 | 7.973E-01 | 1.375E+00 | 1.230E-01 | 0.476 |
| | | 172.10 | | 8.235E-02 | 1.433E-01 | 2.428E-01 | 2.430E-02 | 0.339 |
| | | 202.84 | * | -4.433E-03 | 5.658E-02 | 9.266E-02 | 1.027E-02 | -0.048 |
| I-131 | | 374.96 | | -1.093E-01 | 2.262E-01 | 3.639E-01 | 3.705E-02 | -0.300 |
| | | 80.18 | | -9.785E+00 | 1.014E+01 | 1.083E+01 | 9.469E-01 | -0.904 |
| | | 284.30 | | -1.041E+00 | 2.487E+00 | 3.884E+00 | 5.501E-01 | -0.268 |
| | | 364.48 | * | -7.250E-03 | 1.786E-01 | 2.950E-01 | 3.278E-02 | -0.025 |
| | | 636.97 | | 5.620E-01 | 2.283E+00 | 3.820E+00 | 4.171E-01 | 0.147 |
| TE-132 | | 722.89 | | 9.038E+00 | 1.265E+01 | 1.872E+01 | 2.035E+00 | 0.483 |
| | | 49.72 | | 6.563E+00 | 4.863E+01 | 8.209E+01 | 9.705E+00 | 0.080 |
| | | 111.76 | | -1.641E+01 | 9.188E+01 | 1.456E+02 | 1.753E+01 | -0.113 |
| | | 116.30 | | -3.505E+01 | 8.345E+01 | 1.303E+02 | 1.564E+01 | -0.269 |
| BA-133 | | 228.16 | * | -1.327E+00 | 2.155E+00 | 3.395E+00 | 6.347E-01 | -0.391 |
| | | 53.15 | | -1.062E+00 | 3.504E+00 | 5.557E+00 | 4.217E-01 | -0.191 |
| | | 79.62 | | -2.177E+00 | 1.896E+00 | 1.970E+00 | 2.997E-01 | -1.105 |
| | | 81.00 | | -1.822E-01 | 1.443E-01 | 1.473E-01 | 2.348E-02 | -1.237 |
| | | 276.40 | | 1.099E-01 | 4.353E-01 | 6.797E-01 | 1.230E-01 | 0.162 |
| I-133 | | 302.84 | | 8.153E-02 | 1.680E-01 | 2.524E-01 | 4.209E-02 | 0.323 |
| | | 356.01 | * | 1.158E-02 | 5.026E-02 | 7.348E-02 | 1.098E-02 | 0.158 |
| | + | 383.85 | | 1.137E-02 | 3.222E-01 | 5.319E-01 | 7.117E-02 | 0.021 |
| | | 510.53 | | 1.042E+02 | 3.222E-01 | Half-Life | too short | |
| | | 529.87 | * | -3.222E-02 | 3.222E-01 | Half-Life | too short | |
| | | 706.58 | | 5.845E+00 | 3.222E-01 | Half-Life | too short | |
| | | 856.28 | | 1.633E+01 | 3.222E-01 | Half-Life | too short | |
| | | 875.33 | | -9.537E-01 | 3.222E-01 | Half-Life | too short | |
| | | 1236.41 | | 4.536E+01 | 3.222E-01 | Half-Life | too short | |
| | | 1298.22 | | -6.248E+00 | 3.222E-01 | Half-Life | too short | |
| CS-134 | | 475.35 | | -4.032E-01 | 1.901E+00 | 3.031E+00 | 2.981E-01 | -0.133 |
| | | 563.23 | | 1.609E-01 | 3.728E-01 | 6.350E-01 | 6.551E-02 | 0.253 |
| | | 569.32 | | -9.077E-02 | 1.953E-01 | 3.159E-01 | 3.275E-02 | -0.287 |
| | | 604.70 | | 3.355E-02 | 3.919E-02 | 5.940E-02 | 6.185E-03 | 0.565 |
| | + | 795.84 | * | 1.398E-01 | 7.076E-02 | 9.578E-02 | 1.060E-02 | 1.459 |
| | | 801.93 | | 8.730E-02 | 4.692E-01 | 6.851E-01 | 7.587E-02 | 0.127 |
| | | 1038.57 | | -1.880E+00 | 3.996E+00 | 6.288E+00 | 6.226E-01 | -0.299 |
| CS-135 | | 1167.94 | | -9.736E-01 | 2.407E+00 | 3.901E+00 | 3.170E-01 | -0.250 |
| | | 1365.15 | | -4.302E-01 | 1.138E+00 | 1.794E+00 | 1.671E-01 | -0.240 |
| | | 268.24 | * | 2.250E-01 | 2.104E-01 | 3.094E-01 | 4.476E-02 | 0.727 |
| | | 288.45 | | 1.572E+15 | 2.104E-01 | Half-Life | too short | |
| | | 417.63 | | 8.940E+14 | 2.104E-01 | Half-Life | too short | |
| | | 546.56 | | -1.107E+15 | 2.104E-01 | Half-Life | too short | |
| | | 836.80 | | 2.301E+15 | 2.104E-01 | Half-Life | too short | |
| | | 1038.76 | | -1.753E+15 | 2.104E-01 | Half-Life | too short | |
| | | 1124.00 | | 3.024E+16 | 2.104E-01 | Half-Life | too short | |
| | | 1131.51 | | 1.466E+15 | 2.104E-01 | Half-Life | too short | |
| I-135 | | 1260.41 | * | 9.825E+13 | 2.104E-01 | Half-Life | too short | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| CS-136 | | 1457.56 | | 1.534E+17 | 2.104E-01 | Half-Life | too short | |
| | | 1678.03 | | -4.990E+14 | 2.104E-01 | Half-Life | too short | |
| | | 1706.46 | | 1.959E+14 | 2.104E-01 | Half-Life | too short | |
| | | 1791.20 | | -1.066E+15 | 2.104E-01 | Half-Life | too short | |
| | | 66.91 | | -1.443E+00 | 1.117E+00 | 1.522E+00 | 2.265E-01 | -0.948 |
| | + | 86.29 | | 5.418E+00 | 1.745E+00 | 2.692E+00 | 3.584E-01 | 2.013 |
| | | 153.22 | | 4.565E-01 | 9.318E-01 | 1.586E+00 | 1.620E-01 | 0.288 |
| | | 163.89 | | -5.078E-01 | 1.469E+00 | 2.421E+00 | 2.579E-01 | -0.210 |
| | | 176.55 | | -4.323E-02 | 5.203E-01 | 8.610E-01 | 9.116E-02 | -0.050 |
| | | 273.65 | | -9.900E-01 | 7.804E-01 | 9.870E-01 | 1.397E-01 | -1.003 |
| BA-137M | | 340.57 | | 7.945E-01 | 2.337E-01 | 3.681E-01 | 4.412E-02 | 2.158 |
| | | 818.51 | | -1.003E-01 | 9.664E-02 | 1.491E-01 | 1.653E-02 | -0.673 |
| | | 1048.07 | * | 1.446E-01 | 1.422E-01 | 2.479E-01 | 2.509E-02 | 0.583 |
| | | 1235.34 | | 9.883E-01 | 7.699E-01 | 1.359E+00 | 1.589E-01 | 0.727 |
| | | 661.65 | * | -1.053E-02 | 3.694E-02 | 5.958E-02 | 6.282E-03 | -0.177 |
| | | 661.65 | * | -1.113E-02 | 3.905E-02 | 6.298E-02 | 6.650E-03 | -0.177 |
| | | 165.85 | * | 3.702E-02 | 3.354E-02 | 5.772E-02 | 5.661E-03 | 0.641 |
| | | 162.64 | | -6.385E-01 | 1.038E+00 | 1.691E+00 | 1.710E-01 | -0.377 |
| | | 304.84 | | -9.137E-01 | 1.978E+00 | 2.781E+00 | 8.273E-01 | -0.329 |
| | | 423.70 | | 5.193E-01 | 2.508E+00 | 4.134E+00 | 1.351E+00 | 0.126 |
| LA-140 | | 537.32 | * | -2.141E-01 | 3.408E-01 | 5.367E-01 | 1.802E-01 | -0.399 |
| | + | 328.77 | | 5.626E-01 | 5.710E-01 | 7.295E-01 | 9.216E-02 | 0.771 |
| | | 432.53 | | -1.819E+00 | 2.726E+00 | 4.262E+00 | 4.245E-01 | -0.427 |
| | | 487.03 | | -4.922E-02 | 1.901E-01 | 3.017E-01 | 3.128E-02 | -0.163 |
| | | 751.79 | | 5.121E-01 | 2.324E+00 | 3.823E+00 | 4.448E-01 | 0.134 |
| | | 815.85 | | 1.662E-02 | 4.149E-01 | 6.956E-01 | 8.248E-02 | 0.024 |
| | | 867.82 | | -4.421E-01 | 2.084E+00 | 2.898E+00 | 3.339E-01 | -0.153 |
| | | 919.63 | | 4.303E-01 | 3.542E+00 | 5.258E+00 | 6.673E-01 | 0.082 |
| | | 925.24 | | -2.514E-01 | 1.423E+00 | 2.320E+00 | 2.652E-01 | -0.108 |
| | | 1596.49 | * | 3.580E-02 | 1.093E-01 | 1.637E-01 | 1.435E-02 | 0.219 |
| CE-141 | | 145.44 | * | 6.103E-02 | 7.330E-02 | 1.264E-01 | 1.151E-02 | 0.483 |
| | | 57.37 | | 7.393E-03 | 7.330E-02 | Half-Life | too short | |
| | | 231.56 | | 1.467E-02 | 7.330E-02 | Half-Life | too short | |
| | | 293.26 | * | 1.117E-02 | 7.330E-02 | Half-Life | too short | |
| | + | 350.59 | | 4.612E-01 | 7.330E-02 | Half-Life | too short | |
| | | 490.36 | | -7.244E-04 | 7.330E-02 | Half-Life | too short | |
| | | 664.57 | | 1.139E-02 | 7.330E-02 | Half-Life | too short | |
| | | 721.93 | | 1.048E-02 | 7.330E-02 | Half-Life | too short | |
| | | 80.11 | | -3.031E+00 | 3.116E+00 | 3.326E+00 | 2.875E-01 | -0.911 |
| | | 133.54 | * | -5.320E-02 | 2.509E-01 | 3.713E-01 | 5.763E-02 | -0.143 |
| PM-144 | | 476.78 | | -6.063E-03 | 6.703E-02 | 1.077E-01 | 1.137E-02 | -0.056 |
| | | 618.01 | | 2.807E-02 | 3.509E-02 | 5.508E-02 | 5.857E-03 | 0.510 |
| | | 696.49 | * | 4.968E-04 | 3.705E-02 | 6.059E-02 | 6.480E-03 | 0.008 |
| | | 778.57 | | -1.958E+00 | 2.239E+00 | 3.359E+00 | 3.687E-01 | -0.583 |
| | | 696.49 | * | 3.375E-02 | 2.517E+00 | 4.116E+00 | 4.401E-01 | 0.008 |
| | | 1489.15 | | -1.147E+01 | 1.293E+01 | 1.890E+01 | 1.683E+00 | -0.607 |
| | | 453.90 | * | 1.894E-02 | 4.640E-02 | 7.694E-02 | 8.941E-03 | 0.246 |
| | | 633.02 | | -1.161E+00 | 1.463E+00 | 2.177E+00 | 8.238E-01 | -0.534 |
| | | 735.90 | | 7.949E-02 | 1.601E-01 | 2.408E-01 | 7.066E-02 | 0.330 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|---------------------|-----------|---------|
| ND-147 | + | 747.13 | | -9.732E-03 | 9.224E-02 | 1.486E-01 | 2.307E-02 | -0.066 |
| | | 91.11 | | 1.114E+00 | 4.174E-01 | 7.423E-01 | 7.335E-02 | 1.500 |
| | | 319.41 | | 1.156E+00 | 4.720E+00 | 7.979E+00 | 1.010E+00 | 0.145 |
| | | 439.89 | | 6.868E+00 | 8.729E+00 | 1.468E+01 | 1.414E+00 | 0.468 |
| PM-149 | * | 531.02 | | 3.392E-01 | 7.561E-01 | 1.295E+00 | 2.053E-01 | 0.262 |
| | | 285.90 | | -1.907E-04 | 7.561E-01 | Half-Life too short | | |
| EU-152 | + | 121.78 | | 3.873E-03 | 8.085E-02 | 1.285E-01 | 1.233E-02 | 0.030 |
| | | 244.69 | | 1.787E-01 | 4.212E-01 | 6.092E-01 | 7.713E-02 | 0.293 |
| | | 344.27 | * | 3.349E-02 | 1.485E-01 | 1.728E-01 | 2.077E-02 | 0.194 |
| | | 443.98 | | -5.852E-02 | 1.058E+00 | 1.716E+00 | 1.656E-01 | -0.034 |
| | | 778.89 | | -2.369E-01 | 2.556E-01 | 3.813E-01 | 4.184E-02 | -0.621 |
| | | 867.32 | | -1.611E-01 | 9.598E-01 | 1.341E+00 | 1.497E-01 | -0.120 |
| | | 964.01 | | 8.624E-01 | 4.873E-01 | 6.187E-01 | 6.603E-02 | 1.394 |
| | | 1085.78 | | -3.918E-02 | 3.752E-01 | 6.049E-01 | 5.636E-02 | -0.065 |
| | | 1112.02 | | 3.089E-01 | 3.518E-01 | 5.321E-01 | 4.769E-02 | 0.581 |
| | | 1407.95 | | -9.673E-03 | 1.808E-01 | 2.947E-01 | 2.635E-02 | -0.033 |
| | | 69.67 | | 1.069E+00 | 1.780E+00 | 2.691E+00 | 2.089E-01 | 0.397 |
| | | 83.37 | | 2.987E+01 | 1.494E+01 | 2.519E+01 | 2.261E+00 | 1.186 |
| EU-154 | + | 97.43 | * | -8.040E-02 | 9.777E-02 | 1.330E-01 | 1.169E-02 | -0.605 |
| | | 103.18 | | -8.804E-02 | 1.173E-01 | 1.824E-01 | 1.559E-02 | -0.483 |
| | | 123.07 | | 7.460E-03 | 5.673E-02 | 9.036E-02 | 1.002E-02 | 0.083 |
| | | 247.94 | | 1.786E-01 | 4.290E-01 | 6.536E-01 | 9.714E-02 | 0.273 |
| | | 591.81 | | -3.864E-01 | 6.939E-01 | 1.056E+00 | 1.373E-01 | -0.366 |
| | | 723.30 | | 1.544E-01 | 2.149E-01 | 3.173E-01 | 3.659E-02 | 0.487 |
| | | 756.87 | | 2.551E-02 | 7.847E-01 | 1.275E+00 | 1.748E-01 | 0.020 |
| | | 873.19 | | -1.066E-01 | 2.954E-01 | 4.777E-01 | 6.763E-02 | -0.223 |
| | | 996.32 | | -3.114E-02 | 3.785E-01 | 6.172E-01 | 1.152E-01 | -0.050 |
| | | 1004.76 | | -8.601E-02 | 2.176E-01 | 3.458E-01 | 4.465E-02 | -0.249 |
| EU-155 | + | 1274.45 | * | -2.033E-02 | 1.303E-01 | 2.132E-01 | 2.410E-02 | -0.095 |
| | | 48.70 | | 6.198E-02 | 2.212E+00 | 3.723E+00 | 3.032E-01 | 0.017 |
| | | 60.01 | | 9.182E-02 | 5.006E+00 | 7.463E+00 | 5.300E-01 | 0.012 |
| | | 86.54 | | 3.886E-01 | 1.197E-01 | 1.948E-01 | 1.832E-02 | 1.995 |
| | | 105.31 | * | 9.590E-02 | 1.177E-01 | 1.940E-01 | 1.666E-02 | 0.494 |
| TB-160 | + | 86.79 | | 1.085E+00 | 3.338E-01 | 5.414E-01 | 5.063E-02 | 2.005 |
| | | 197.04 | | 5.659E-01 | 6.728E-01 | 1.113E+00 | 1.211E-01 | 0.508 |
| | | 215.65 | | 7.963E-02 | 8.607E-01 | 1.412E+00 | 1.632E-01 | 0.056 |
| | | 298.57 | | 3.507E-01 | 1.819E-01 | 2.428E-01 | 3.254E-02 | 1.444 |
| | | 879.36 | * | 9.970E-02 | 1.439E-01 | 2.496E-01 | 2.791E-02 | 0.399 |
| HO-166M | + | 962.29 | | 1.068E+00 | 7.058E-01 | 1.117E+00 | 1.194E-01 | 0.956 |
| | | 966.15 | | 6.198E-01 | 3.502E-01 | 6.221E-01 | 6.626E-02 | 0.996 |
| | | 1177.93 | | -1.333E-02 | 3.526E-01 | 5.866E-01 | 4.733E-02 | -0.023 |
| | | 1271.85 | | 5.225E-01 | 7.479E-01 | 1.300E+00 | 1.117E-01 | 0.402 |
| | | 80.57 | | -1.124E-01 | 3.680E-01 | 4.134E-01 | 3.592E-02 | -0.272 |
| | | 184.41 | | 1.096E-01 | 4.844E-02 | 7.637E-02 | 7.962E-03 | 1.435 |
| | | 280.46 | | -1.988E-02 | 9.859E-02 | 1.562E-01 | 2.181E-02 | -0.127 |
| | | 410.95 | | 3.365E-01 | 2.662E-01 | 4.595E-01 | 4.337E-02 | 0.732 |
| | | 711.68 | * | -1.529E-02 | 6.422E-02 | 1.031E-01 | 1.108E-02 | -0.148 |
| | | 752.31 | | 1.806E-01 | 2.832E-01 | 4.776E-01 | 5.203E-02 | 0.378 |
| | | 810.29 | | -6.532E-03 | 5.879E-02 | 9.765E-02 | 1.080E-02 | -0.067 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TM-171 | | 51.35 | | -1.225E+01 | 2.809E+01 | 4.625E+01 | 3.608E+00 | -0.265 |
| | | 52.39 | | -9.911E-01 | 1.533E+01 | 2.455E+01 | 1.884E+00 | -0.040 |
| | | 59.40 | | 9.122E-02 | 2.746E+01 | 4.094E+01 | 2.894E+00 | 0.002 |
| LU-176 | + | 66.72 | * | -3.982E+01 | 3.123E+01 | 4.328E+01 | 3.270E+00 | -0.920 |
| | | 88.36 | | 7.640E-01 | 2.350E-01 | 3.811E-01 | 3.604E-02 | 2.005 |
| | | 201.83 | | -5.657E-03 | 3.209E-02 | 5.237E-02 | 5.786E-03 | -0.108 |
| | | 306.84 | * | 9.950E-03 | 2.685E-02 | 4.336E-02 | 5.688E-03 | 0.229 |
| | | 401.10 | | 4.903E-01 | 6.937E+00 | 1.143E+01 | 1.071E+00 | 0.043 |
| LU-177 | + | 112.95 | | 5.981E-01 | 2.908E+00 | 4.673E+00 | 3.885E-01 | 0.128 |
| | | 208.36 | * | 6.342E+00 | 2.518E+00 | 3.727E+00 | 4.207E-01 | 1.702 |
| LU-177M | + | 52.97 | | -3.965E-01 | 1.613E+00 | 2.564E+00 | 1.951E-01 | -0.155 |
| | | 54.07 | | 1.939E-01 | 8.584E-01 | 1.391E+00 | 1.042E-01 | 0.139 |
| | | 61.30 | | 6.498E-01 | 1.527E+00 | 2.316E+00 | 1.666E-01 | 0.281 |
| | | 121.62 | | 3.994E-02 | 4.238E-01 | 6.746E-01 | 5.557E-02 | 0.059 |
| | | 147.16 | | -5.170E-01 | 6.995E-01 | 1.144E+00 | 1.032E-01 | -0.452 |
| | | 171.86 | | 3.622E-01 | 5.403E-01 | 9.178E-01 | 9.179E-02 | 0.395 |
| | | 218.09 | | -1.156E+00 | 9.721E-01 | 1.496E+00 | 1.743E-01 | -0.772 |
| | | 268.79 | | 3.340E+00 | 1.480E+00 | 1.684E+00 | 2.289E-01 | 1.984 |
| | | 319.02 | | -4.860E-02 | 2.794E-01 | 4.639E-01 | 5.879E-02 | -0.105 |
| | | 367.43 | | -8.667E-01 | 9.462E-01 | 1.483E+00 | 1.565E-01 | -0.585 |
| | | 413.65 | * | -3.155E-01 | 2.048E-01 | 3.055E-01 | 2.889E-02 | -1.033 |
| HF-181 | | 56.28 | | 1.418E-01 | 9.713E-01 | 1.629E+00 | 1.186E-01 | 0.087 |
| | | 57.53 | | 3.540E-01 | 5.230E-01 | 8.915E-01 | 6.408E-02 | 0.397 |
| | | 65.20 | | 2.231E-01 | 1.068E+00 | 1.596E+00 | 1.190E-01 | 0.140 |
| | | 133.02 | | 2.657E-03 | 8.536E-02 | 1.279E-01 | 1.090E-02 | 0.021 |
| | | 136.25 | | 2.712E-01 | 5.272E-01 | 9.057E-01 | 7.813E-02 | 0.299 |
| W-181 | | 345.85 | | 6.547E-04 | 3.289E-01 | 3.739E-01 | 4.324E-02 | 0.002 |
| | | 482.03 | * | 8.772E-03 | 4.827E-02 | 7.875E-02 | 7.774E-03 | 0.111 |
| | | 56.28 | | 5.284E-02 | 3.612E-01 | 6.057E-01 | 4.412E-02 | 0.087 |
| | | 57.53 | | 1.317E-01 | 1.946E-01 | 3.318E-01 | 2.385E-02 | 0.397 |
| | | 65.20 | * | 8.238E-02 | 3.943E-01 | 5.893E-01 | 4.393E-02 | 0.140 |
| TA-182 | | 67.75 | | -1.257E-01 | 1.156E-01 | 1.729E-01 | 1.319E-02 | -0.727 |
| | | 100.10 | | 2.269E-01 | 1.965E-01 | 3.283E-01 | 2.845E-02 | 0.691 |
| | | 152.43 | | 3.317E-01 | 3.760E-01 | 6.471E-01 | 5.970E-02 | 0.513 |
| | | 222.10 | | 1.351E-01 | 3.982E-01 | 6.575E-01 | 7.758E-02 | 0.206 |
| | | 1001.68 | | 1.971E+00 | 2.125E+00 | 3.639E+00 | 3.750E-01 | 0.542 |
| RE-183 | + | 1121.28 | | 8.820E-01 | 2.882E-01 | 3.750E-01 | 3.312E-02 | 2.352 |
| | | 1189.05 | | -6.117E-02 | 2.957E-01 | 4.854E-01 | 3.948E-02 | -0.126 |
| | | 1221.42 | * | -8.956E-02 | 1.934E-01 | 3.111E-01 | 2.587E-02 | -0.288 |
| | | 1230.97 | | -7.713E-01 | 5.055E-01 | 7.494E-01 | 6.271E-02 | -1.029 |
| | | 57.98 | | 7.208E-02 | 2.053E-01 | 3.310E-01 | 2.369E-02 | 0.218 |
| RE-184 | + | 59.32 | | 2.015E-03 | 1.180E-01 | 1.761E-01 | 1.245E-02 | 0.011 |
| | | 67.20 | | -3.106E-01 | 2.292E-01 | 3.159E-01 | 2.397E-02 | -0.983 |
| | | 162.32 | * | -9.958E-02 | 1.231E-01 | 1.991E-01 | 1.921E-02 | -0.500 |
| | | 208.81 | | 3.635E+00 | 1.443E+00 | 2.125E+00 | 2.402E-01 | 1.711 |
| | | 291.72 | | 1.720E-01 | 1.124E+00 | 1.667E+00 | 2.271E-01 | 0.103 |
| RE-184 | | 57.98 | | 2.583E-01 | 7.355E-01 | 1.186E+00 | 8.487E-02 | 0.218 |
| | | 59.32 | | 7.213E-03 | 4.225E-01 | 6.303E-01 | 4.458E-02 | 0.011 |
| | | 67.20 | | -1.112E+00 | 8.211E-01 | 1.132E+00 | 8.587E-02 | -0.983 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|----------------|-----------|---------|
| OS-185 | | 161.27 | | -3.006E-02 | 3.768E-01 | 6.279E-01 | 6.028E-02 | -0.048 |
| | | 216.55 | | -1.758E-01 | 3.028E-01 | 4.824E-01 | 5.592E-02 | -0.364 |
| | | 252.85 | * | -8.183E-02 | 2.529E-01 | 4.014E-01 | 5.209E-02 | -0.204 |
| | | 318.01 | | -3.058E-01 | 4.782E-01 | 7.746E-01 | 9.846E-02 | -0.395 |
| | | 792.07 | | 2.143E-01 | 1.415E+00 | 1.975E+00 | 2.174E-01 | 0.109 |
| | | 903.28 | | -1.169E-01 | 1.180E+00 | 1.653E+00 | 1.845E-01 | -0.071 |
| | | 920.93 | | -1.330E-01 | 4.452E-01 | 6.707E-01 | 7.400E-02 | -0.198 |
| | | 59.72 | | 1.469E-02 | 3.090E-01 | 4.615E-01 | 3.268E-02 | 0.032 |
| | | 61.14 | | 4.998E-02 | 1.698E-01 | 2.562E-01 | 1.840E-02 | 0.195 |
| | | 69.30 | | 8.355E-02 | 3.249E-01 | 4.844E-01 | 3.747E-02 | 0.172 |
| | | 592.07 | | -1.506E+00 | 2.849E+00 | 4.469E+00 | 4.627E-01 | -0.337 |
| | | 646.12 | * | 1.001E-02 | 4.264E-02 | 7.122E-02 | 7.485E-03 | 0.141 |
| | | 717.42 | | -5.117E-01 | 1.122E+00 | 1.567E+00 | 1.688E-01 | -0.327 |
| | | 874.81 | | -8.023E-03 | 6.004E-01 | 9.965E-01 | 1.114E-01 | -0.008 |
| | | 880.27 | | -1.802E-02 | 7.902E-01 | 1.310E+00 | 1.465E-01 | -0.014 |
| RE-188 | | 155.03 | * | 1.711E-01 | 1.966E-01 | 3.378E-01 | 3.153E-02 | 0.506 |
| | | 477.96 | | -2.603E-01 | 3.226E+00 | 5.186E+00 | 5.108E-01 | -0.050 |
| | | 633.10 | | -3.025E+00 | 3.004E+00 | 4.607E+00 | 4.826E-01 | -0.657 |
| W-188 | + | 63.58 | | 4.937E+01 | 8.259E+01 | 9.331E+01 | 6.856E+00 | 0.529 |
| | | 227.08 | | -1.959E+00 | 1.490E+01 | 2.413E+01 | 2.892E+00 | -0.081 |
| IR-192 | | 290.67 | * | 4.373E-01 | 8.937E+00 | 1.317E+01 | 1.799E+00 | 0.033 |
| | + | 295.96 | | 1.331E+00 | 2.550E-01 | 3.238E-01 | 4.381E-02 | 4.110 |
| | | 308.46 | | 1.180E-03 | 1.046E-01 | 1.756E-01 | 2.299E-02 | 0.007 |
| | | 316.51 | * | -5.265E-03 | 3.730E-02 | 6.206E-02 | 7.931E-03 | -0.085 |
| | | 468.07 | | 3.960E-02 | 8.096E-02 | 1.176E-01 | 1.216E-02 | 0.337 |
| AU-195 | | 604.41 | | 3.410E-01 | 5.543E-01 | 8.254E-01 | 1.177E-01 | 0.413 |
| | | 612.46 | | 6.133E+00 | 1.308E+00 | 2.053E+00 | 2.361E-01 | 2.987 |
| | | 65.12 | | 8.064E-03 | 1.826E-01 | 2.709E-01 | 2.018E-02 | 0.030 |
| | | 66.83 | | -1.355E-01 | 1.046E-01 | 1.447E-01 | 1.095E-02 | -0.936 |
| | + | 75.70 | | 1.731E+00 | 2.948E-01 | 5.015E-01 | 4.132E-02 | 3.451 |
| | | 98.88 | * | 2.964E-01 | 2.513E-01 | 4.144E-01 | 3.614E-02 | 0.715 |
| | + | 129.76 | | 5.154E+00 | 4.297E+00 | 5.802E+00 | 4.890E-01 | 0.888 |
| TL-200 | | 367.94 | * | -1.467E-02 | 4.297E+00 | Half-Life | too short | |
| | | 579.30 | | 6.248E-02 | 4.297E+00 | Half-Life | too short | |
| | | 828.27 | | -6.411E-02 | 4.297E+00 | Half-Life | too short | |
| | | 1205.75 | | 5.508E-03 | 4.297E+00 | Half-Life | too short | |
| TL-201 | | 68.90 | | -5.344E-01 | 1.522E+01 | 2.241E+01 | 1.727E+00 | -0.024 |
| | | 70.82 | | 7.433E+00 | 8.510E+00 | 1.299E+01 | 1.019E+00 | 0.572 |
| | | 80.30 | | -3.628E+00 | 2.044E+01 | 2.321E+01 | 2.010E+00 | -0.156 |
| | | 135.34 | | -4.826E+01 | 8.157E+01 | 1.351E+02 | 1.161E+01 | -0.357 |
| | | 167.43 | * | 1.045E+01 | 2.314E+01 | 3.912E+01 | 3.856E+00 | 0.267 |
| TL-202 | | 68.90 | | -2.108E-02 | 6.003E-01 | 8.839E-01 | 6.812E-02 | -0.024 |
| | | 70.82 | | 2.923E-01 | 3.347E-01 | 5.107E-01 | 4.007E-02 | 0.572 |
| | | 80.30 | | -1.427E-01 | 8.043E-01 | 9.129E-01 | 7.908E-02 | -0.156 |
| | | 439.56 | * | 7.009E-02 | 1.014E-01 | 1.699E-01 | 1.635E-02 | 0.413 |
| HG-203 | | 70.83 | | 1.029E+00 | 1.190E+00 | 1.809E+00 | 2.375E-01 | 0.569 |
| | | 72.87 | | 1.201E+00 | 6.634E-01 | 1.121E+00 | 1.435E-01 | 1.072 |
| | | 82.60 | | 9.745E-01 | 1.317E+00 | 1.955E+00 | 2.721E-01 | 0.498 |
| | | 279.20 | * | 4.701E-02 | 5.084E-02 | 8.391E-02 | 1.188E-02 | 0.560 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| BI-207 | | 72.80 | | 2.752E-01 | 1.761E-01 | 3.011E-01 | 2.408E-02 | 0.914 |
| | + | 74.97 | | 9.429E-01 | 1.606E-01 | 2.434E-01 | 1.990E-02 | 3.874 |
| | | 84.90 | | 4.829E-01 | 1.930E-01 | 3.267E-01 | 2.987E-02 | 1.478 |
| | | 569.67 | | -6.601E-03 | 3.003E-02 | 4.933E-02 | 5.067E-03 | -0.134 |
| | | 1063.62 | * | 8.429E-02 | 6.145E-02 | 1.053E-01 | 1.011E-02 | 0.800 |
| TL-207 | | 1770.23 | | 1.631E+00 | 5.723E-01 | 1.135E+00 | 9.437E-02 | 1.437 |
| | | 81.07 | | -4.075E-01 | 3.135E-01 | 3.241E-01 | 2.832E-02 | -1.257 |
| | | 83.78 | | 2.783E-01 | 1.264E-01 | 2.137E-01 | 1.927E-02 | 1.302 |
| | | 94.90 | | 5.609E-01 | 2.664E-01 | 4.142E-01 | 3.702E-02 | 1.354 |
| | | 122.32 | | -5.344E-01 | 1.923E+00 | 3.011E+00 | 2.680E-01 | -0.177 |
| | | 144.24 | | 4.038E-01 | 7.493E-01 | 1.245E+00 | 1.232E-01 | 0.324 |
| | | 154.21 | | 3.913E-01 | 4.331E-01 | 7.446E-01 | 7.521E-02 | 0.526 |
| | + | 269.46 | | 7.658E-01 | 3.396E-01 | 4.003E-01 | 5.498E-02 | 1.913 |
| | | 323.87 | * | 1.095E-01 | 8.114E-01 | 1.189E+00 | 2.363E-01 | 0.092 |
| | + | 338.28 | | 9.982E+00 | 2.481E+00 | 2.634E+00 | 3.896E-01 | 3.790 |
| PO-209 | | 445.03 | | -4.346E-01 | 2.503E+00 | 4.031E+00 | 5.180E-01 | -0.108 |
| | | 260.50 | | 2.933E+00 | 1.050E+01 | 1.710E+01 | 2.270E+00 | 0.171 |
| | | 262.80 | | 1.693E+00 | 3.222E+01 | 4.797E+01 | 6.409E+00 | 0.035 |
| | | 896.60 | * | 7.068E+00 | 7.561E+00 | 1.325E+01 | 1.484E+00 | 0.534 |
| BI-210 | | 46.50 | * | -1.267E+00 | 3.259E+00 | 5.241E+00 | 4.869E-01 | -0.242 |
| PB-210 | | 46.50 | * | -1.267E+00 | 3.259E+00 | 5.241E+00 | 4.869E-01 | -0.242 |
| PO-210 | | 46.50 | * | -1.267E+00 | 3.259E+00 | 5.241E+00 | 4.407E-01 | -0.242 |
| PB-211 | | 404.84 | * | -6.861E-01 | 1.102E+00 | 1.608E+00 | 1.009E+00 | -0.427 |
| BI-212 | | 427.08 | | 1.741E+00 | 2.392E+00 | 3.634E+00 | 2.263E+00 | 0.479 |
| | | 831.96 | | 9.539E-03 | 1.281E+00 | 2.139E+00 | 1.349E+00 | 0.004 |
| | + | 727.18 | * | 1.858E+00 | 6.559E-01 | 7.154E-01 | 8.545E-02 | 2.597 |
| | | 785.46 | | 2.414E+00 | 2.009E+00 | 3.253E+00 | 3.576E-01 | 0.742 |
| | | 1620.62 | | 4.020E-01 | 1.252E+00 | 2.155E+00 | 1.878E-01 | 0.187 |
| PO-215 | | 81.07 | | -4.075E-01 | 3.135E-01 | 3.241E-01 | 2.832E-02 | -1.257 |
| | | 83.78 | | 2.783E-01 | 1.264E-01 | 2.137E-01 | 1.927E-02 | 1.302 |
| | | 94.90 | | 5.609E-01 | 2.664E-01 | 4.142E-01 | 3.702E-02 | 1.354 |
| | | 122.32 | | -5.344E-01 | 1.923E+00 | 3.011E+00 | 2.680E-01 | -0.177 |
| | | 144.24 | | 4.038E-01 | 7.493E-01 | 1.245E+00 | 1.232E-01 | 0.324 |
| | | 154.21 | | 3.913E-01 | 4.331E-01 | 7.446E-01 | 7.521E-02 | 0.526 |
| | + | 269.46 | | 7.658E-01 | 3.396E-01 | 4.003E-01 | 5.498E-02 | 1.913 |
| | | 323.87 | * | 1.095E-01 | 8.114E-01 | 1.189E+00 | 2.363E-01 | 0.092 |
| | + | 338.28 | | 9.982E+00 | 2.481E+00 | 2.634E+00 | 3.896E-01 | 3.790 |
| | | 445.03 | | -4.346E-01 | 2.503E+00 | 4.031E+00 | 5.180E-01 | -0.108 |
| RN-219 | + | 271.23 | | 9.826E-01 | 4.389E-01 | 5.046E-01 | 7.475E-02 | 1.947 |
| | | 401.81 | * | 3.329E-02 | 4.277E-01 | 7.048E-01 | 1.090E-01 | 0.047 |
| RN-220 | | 549.76 | * | 2.190E+01 | 2.655E+01 | 4.619E+01 | 4.708E+00 | 0.474 |
| RA-223 | | 81.07 | | -4.075E-01 | 3.135E-01 | 3.241E-01 | 2.832E-02 | -1.257 |
| | | 83.78 | | 2.783E-01 | 1.264E-01 | 2.137E-01 | 1.927E-02 | 1.302 |
| | | 94.90 | | 5.609E-01 | 2.664E-01 | 4.142E-01 | 3.702E-02 | 1.354 |
| | | 122.32 | | -5.344E-01 | 1.923E+00 | 3.011E+00 | 2.680E-01 | -0.177 |
| | | 144.24 | | 4.038E-01 | 7.493E-01 | 1.245E+00 | 1.232E-01 | 0.324 |
| | | 154.21 | | 3.913E-01 | 4.331E-01 | 7.446E-01 | 7.521E-02 | 0.526 |
| | + | 269.46 | | 7.658E-01 | 3.396E-01 | 4.003E-01 | 5.498E-02 | 1.913 |
| | | 323.87 | * | 1.095E-01 | 8.114E-01 | 1.189E+00 | 2.363E-01 | 0.092 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AC-227 | + | 338.28 | | 9.982E+00 | 2.481E+00 | 2.634E+00 | 3.896E-01 | 3.790 |
| | | 445.03 | | -4.346E-01 | 2.503E+00 | 4.031E+00 | 5.180E-01 | -0.108 |
| | | 79.80 | | -2.761E+00 | 2.439E+00 | 2.496E+00 | 5.366E-01 | -1.106 |
| | | 236.00 | | 1.453E+00 | 3.883E-01 | 5.454E-01 | 8.228E-02 | 2.664 |
| | | 256.20 | * | -3.949E-02 | 3.990E-01 | 6.399E-01 | 1.168E-01 | -0.062 |
| | | 286.10 | | -1.032E+00 | 1.673E+00 | 2.573E+00 | 4.386E-01 | -0.401 |
| TH-227 | + | 299.80 | | 4.265E+00 | 2.305E+00 | 2.881E+00 | 5.835E-01 | 1.480 |
| | | 304.40 | | -8.510E-01 | 2.216E+00 | 3.153E+00 | 6.613E-01 | -0.270 |
| | | 334.20 | | 2.720E+00 | 3.054E+00 | 4.095E+00 | 8.668E-01 | 0.664 |
| | | 79.80 | | -2.761E+00 | 2.441E+00 | 2.496E+00 | 5.435E-01 | -1.106 |
| | + | 94.00 | | 1.024E+01 | 3.767E+00 | 4.072E+00 | 8.931E-01 | 2.516 |
| | | 236.00 | | 1.453E+00 | 3.808E-01 | 5.454E-01 | 7.720E-02 | 2.664 |
| TH-229 | | 256.20 | * | -3.949E-02 | 3.990E-01 | 6.399E-01 | 1.317E-01 | -0.062 |
| | | 286.10 | | -1.032E+00 | 1.963E+00 | 2.573E+00 | 2.598E+00 | -0.401 |
| | + | 299.80 | | 4.265E+00 | 2.305E+00 | 2.881E+00 | 5.835E-01 | 1.480 |
| | | 304.40 | | -8.510E-01 | 2.216E+00 | 3.153E+00 | 6.613E-01 | -0.270 |
| | | 334.20 | | 2.720E+00 | 3.054E+00 | 4.095E+00 | 8.668E-01 | 0.664 |
| | | 85.43 | | 5.997E-01 | 1.963E-01 | 3.329E-01 | 3.062E-02 | 1.802 |
| PA-231 | + | 88.47 | | 4.398E-01 | 1.353E-01 | 2.187E-01 | 2.066E-02 | 2.011 |
| | | 100.00 | | 1.599E-01 | 2.002E-01 | 3.310E-01 | 2.869E-02 | 0.483 |
| | | 193.63 | * | -6.844E-01 | 5.566E-01 | 8.663E-01 | 9.314E-02 | -0.790 |
| | | 210.97 | | 2.071E+00 | 9.993E-01 | 1.538E+00 | 1.751E-01 | 1.346 |
| | | 283.67 | * | -1.007E+00 | 1.712E+00 | 2.641E+00 | 4.931E-01 | -0.381 |
| | + | 301.29 | | 1.706E+00 | 8.973E-01 | 1.128E+00 | 1.794E-01 | 1.512 |
| TH-231 | | 81.07 | | -4.075E-01 | 3.135E-01 | 3.241E-01 | 2.832E-02 | -1.257 |
| | | 83.78 | | 2.783E-01 | 1.264E-01 | 2.137E-01 | 1.927E-02 | 1.302 |
| | | 94.90 | | 5.609E-01 | 2.664E-01 | 4.142E-01 | 3.702E-02 | 1.354 |
| | | 122.32 | | -5.344E-01 | 1.923E+00 | 3.011E+00 | 2.680E-01 | -0.177 |
| | | 144.24 | | 4.038E-01 | 7.493E-01 | 1.245E+00 | 1.232E-01 | 0.324 |
| | | 154.21 | | 3.913E-01 | 4.331E-01 | 7.446E-01 | 7.521E-02 | 0.526 |
| U-231 | + | 269.46 | | 7.658E-01 | 3.396E-01 | 4.003E-01 | 5.498E-02 | 1.913 |
| | | 323.87 | * | 1.095E-01 | 8.114E-01 | 1.189E+00 | 2.363E-01 | 0.092 |
| | + | 338.28 | | 9.982E+00 | 2.481E+00 | 2.634E+00 | 3.896E-01 | 3.790 |
| | | 445.03 | | -4.346E-01 | 2.503E+00 | 4.031E+00 | 5.180E-01 | -0.108 |
| | | 84.21 | | 2.863E+01 | 1.212E+01 | 2.051E+01 | 1.859E+00 | 1.396 |
| | + | 92.29 | | 2.242E+01 | 6.916E+00 | 9.574E+00 | 8.731E-01 | 2.341 |
| PA-233 | | 95.87 | * | -7.216E-01 | 2.704E+00 | 3.833E+00 | 3.404E-01 | -0.188 |
| | | 108.00 | | -3.226E+00 | 5.007E+00 | 7.795E+00 | 6.552E-01 | -0.414 |
| | + | 75.28 | | 2.751E+01 | 5.845E+00 | 7.417E+00 | 1.121E+00 | 3.709 |
| | + | 86.59 | | 6.306E+00 | 2.515E+00 | 3.162E+00 | 8.555E-01 | 1.994 |
| | + | 300.12 | | 1.189E+00 | 6.334E-01 | 7.981E-01 | 1.439E-01 | 1.490 |
| | | 311.98 | * | -1.671E-02 | 6.639E-02 | 1.100E-01 | 1.441E-02 | -0.152 |
| PA-234 | | 340.50 | | 3.212E+00 | 1.145E+00 | 1.410E+00 | 3.547E-01 | 2.278 |
| | | 398.62 | | -6.514E-01 | 2.220E+00 | 3.579E+00 | 9.619E-01 | -0.182 |
| | | 415.76 | | 1.445E+00 | 1.759E+00 | 2.953E+00 | 6.470E-01 | 0.489 |
| | + | 63.00 | | 1.365E+00 | 2.289E+00 | 2.628E+00 | 3.893E-01 | 0.519 |
| | | 94.67 | | 5.640E-01 | 2.046E-01 | 3.124E-01 | 3.947E-02 | 1.805 |
| | | 98.44 | | 7.962E-02 | 1.129E-01 | 1.625E-01 | 9.069E-02 | 0.490 |
| | | 99.86 | | 3.231E-01 | 5.187E-01 | 8.411E-01 | 7.297E-02 | 0.384 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 111.00 | | 1.464E-01 | 2.000E-01 | 3.274E-01 | 3.893E-02 | 0.447 |
| | | 131.20 | | 1.440E-01 | 1.276E-01 | 1.999E-01 | 1.693E-02 | 0.720 |
| | | 152.70 | | 3.089E-01 | 3.570E-01 | 6.090E-01 | 1.058E-01 | 0.507 |
| | + | 186.00 | | 6.923E+00 | 3.030E+00 | 2.921E+00 | 9.283E-01 | 2.370 |
| | | 226.40 | | -9.434E-03 | 4.462E-01 | 7.260E-01 | 1.132E-01 | -0.013 |
| | | 227.20 | | -7.174E-02 | 4.794E-01 | 7.755E-01 | 9.301E-02 | -0.093 |
| | | 248.90 | | 3.544E-01 | 9.300E-01 | 1.471E+00 | 3.580E-01 | 0.241 |
| | | 293.70 | | 6.954E+00 | 1.667E+00 | 1.827E+00 | 3.694E-01 | 3.807 |
| | | 369.80 | | 4.039E-01 | 8.720E-01 | 1.467E+00 | 3.310E-01 | 0.275 |
| | | 568.70 | | -6.941E-01 | 9.889E-01 | 1.574E+00 | 1.617E-01 | -0.441 |
| | | 569.50 | | -6.408E-02 | 2.661E-01 | 4.365E-01 | 4.484E-02 | -0.147 |
| | | 574.00 | | 2.771E-01 | 1.457E+00 | 2.450E+00 | 2.520E-01 | 0.113 |
| | | 699.00 | | -4.521E-01 | 7.523E-01 | 1.174E+00 | 2.361E-01 | -0.385 |
| | | 706.10 | | 2.347E-01 | 1.091E+00 | 1.795E+00 | 8.084E-01 | 0.131 |
| | | 733.00 | | -2.691E-01 | 4.464E-01 | 5.768E-01 | 1.335E-01 | -0.466 |
| | | 742.81 | | -8.302E-01 | 1.473E+00 | 2.116E+00 | 1.430E+00 | -0.392 |
| | + | 796.30 | | 2.704E+00 | 1.534E+00 | 1.851E+00 | 5.166E-01 | 1.461 |
| | | 805.60 | | 5.504E-01 | 1.025E+00 | 1.748E+00 | 5.491E-01 | 0.315 |
| | | 819.60 | | -6.447E-01 | 1.276E+00 | 2.021E+00 | 7.815E-01 | -0.319 |
| | | 826.30 | | -6.528E-01 | 8.819E-01 | 1.315E+00 | 5.954E-01 | -0.496 |
| | | 831.60 | | -1.854E-01 | 6.631E-01 | 1.084E+00 | 3.323E-01 | -0.171 |
| | | 876.40 | | 5.186E-01 | 9.758E-01 | 1.416E+00 | 1.459E+00 | 0.366 |
| | | 880.51 | | 1.522E-02 | 2.730E-01 | 4.551E-01 | 5.090E-02 | 0.033 |
| | | 883.24 | | -4.802E-02 | 2.751E-01 | 4.476E-01 | 3.026E-01 | -0.107 |
| | | 899.00 | | 3.776E-02 | 8.473E-01 | 1.408E+00 | 6.237E-01 | 0.027 |
| | | 925.00 | | 1.175E-02 | 1.123E+00 | 1.857E+00 | 2.043E-01 | 0.006 |
| | | 926.50 | | -2.693E-02 | 1.753E-01 | 2.862E-01 | 7.493E-02 | -0.094 |
| | | 946.00 | * | -3.310E-02 | 2.966E-01 | 4.849E-01 | 9.638E-02 | -0.068 |
| | | 949.00 | | -7.141E-02 | 4.407E-01 | 7.178E-01 | 7.755E-02 | -0.099 |
| | | 980.50 | | -2.738E-01 | 7.477E-01 | 1.194E+00 | 1.256E-01 | -0.229 |
| PA-234M | | 1394.10 | | -7.419E-01 | 1.278E+00 | 1.815E+00 | 1.182E+00 | -0.409 |
| | | 766.42 | | 1.858E+01 | 1.539E+01 | 2.135E+01 | 1.093E+01 | 0.870 |
| U-235 | | 1001.03 | * | 3.245E+00 | 4.716E+00 | 7.961E+00 | 9.123E-01 | 0.408 |
| | + | 89.95 | | 3.272E+00 | 1.559E+00 | 1.938E+00 | 6.020E-01 | 1.688 |
| | + | 93.35 | | 3.187E+00 | 1.300E+00 | 1.375E+00 | 3.873E-01 | 2.317 |
| | | 105.00 | | 1.069E+00 | 1.184E+00 | 1.894E+00 | 5.644E-01 | 0.565 |
| | | 143.76 | * | 1.037E-01 | 2.308E-01 | 3.817E-01 | 6.734E-02 | 0.272 |
| | | 163.35 | | -4.943E-01 | 5.120E-01 | 8.097E-01 | 1.586E-01 | -0.610 |
| | + | 185.71 | | 2.564E-01 | 8.169E-02 | 1.081E-01 | 1.132E-02 | 2.371 |
| | | 205.31 | | 5.189E-02 | 6.590E-01 | 9.364E-01 | 1.907E-01 | 0.055 |
| NP-236 | | 94.67 | | 4.308E-01 | 1.506E-01 | 2.372E-01 | 2.124E-02 | 1.816 |
| | | 98.44 | | 6.014E-02 | 7.867E-02 | 1.228E-01 | 1.074E-02 | 0.490 |
| | | 111.00 | | 1.108E-01 | 1.510E-01 | 2.476E-01 | 2.066E-02 | 0.447 |
| | | 160.31 | * | 1.743E-02 | 8.345E-02 | 1.405E-01 | 1.343E-02 | 0.124 |
| NP-239 | | 99.55 | | 1.388E-01 | 1.729E-01 | 2.820E-01 | 2.450E-02 | 0.492 |
| | | 117.00 | * | -1.399E-01 | 2.087E-01 | 3.220E-01 | 2.662E-02 | -0.434 |
| | + | 209.75 | | 2.734E+00 | 1.085E+00 | 1.582E+00 | 1.794E-01 | 1.728 |
| | | 228.18 | | -1.574E-01 | 2.518E-01 | 3.981E-01 | 4.789E-02 | -0.395 |
| | | 277.60 | | 2.387E-01 | 2.067E-01 | 3.431E-01 | 4.782E-02 | 0.696 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 334.30 | | 7.920E-01 | 1.637E+00 | 2.313E+00 | 2.790E-01 | 0.342 |
| AM-241 | | 59.54 | * | -3.292E-03 | 1.585E-01 | 2.361E-01 | 1.845E-02 | -0.014 |
| CM-243 | | 99.55 | | 1.429E-01 | 1.780E-01 | 2.903E-01 | 2.522E-02 | 0.492 |
| | | 103.76 | * | 2.011E-02 | 1.046E-01 | 1.690E-01 | 1.441E-02 | 0.119 |
| | | 117.00 | | -1.439E-01 | 2.147E-01 | 3.314E-01 | 2.739E-02 | -0.434 |
| | + | 209.75 | | 2.696E+00 | 1.070E+00 | 1.560E+00 | 1.769E-01 | 1.728 |
| | | 228.18 | | -1.591E-01 | 2.545E-01 | 4.023E-01 | 4.840E-02 | -0.395 |
| | | 277.60 | | 2.408E-01 | 2.084E-01 | 3.460E-01 | 4.823E-02 | 0.696 |
| AM-246 | | 798.80 | | 3.954E-03 | 1.758E-01 | 2.425E-01 | 2.674E-02 | 0.016 |
| | | 1036.00 | | 1.166E-02 | 3.106E-01 | 5.090E-01 | 5.055E-02 | 0.023 |
| | | 1062.04 | | 1.781E-01 | 2.716E-01 | 4.484E-01 | 4.314E-02 | 0.397 |
| | | 1078.86 | * | 4.671E-02 | 1.238E-01 | 2.081E-01 | 1.958E-02 | 0.224 |
| CM-247 | | 278.00 | | 9.053E-01 | 8.622E-01 | 1.428E+00 | 1.992E-01 | 0.634 |
| | | 287.40 | | -6.235E-01 | 1.372E+00 | 2.053E+00 | 2.825E-01 | -0.304 |
| | | 402.60 | * | 1.893E-02 | 3.840E-02 | 6.453E-02 | 6.053E-03 | 0.293 |
| CF-249 | | 252.85 | | -3.011E-01 | 9.302E-01 | 1.477E+00 | 1.916E-01 | -0.204 |
| | | 333.44 | | 2.327E-01 | 2.465E-01 | 3.065E-01 | 3.708E-02 | 0.759 |
| | | 387.95 | * | 2.154E-02 | 4.292E-02 | 7.230E-02 | 6.871E-03 | 0.298 |
| CF-251 | | 176.60 | * | -9.760E-03 | 1.392E-01 | 2.306E-01 | 2.342E-02 | -0.042 |
| | | 227.00 | | -5.068E-02 | 4.263E-01 | 6.906E-01 | 8.278E-02 | -0.073 |
| | | 285.00 | | -1.503E+00 | 1.919E+00 | 2.926E+00 | 4.047E-01 | -0.514 |

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]G245388004      *
* Acquisition date   : 4-FEB-2010 10:30:00 Detector SN# :                   *
* Detector ID        : GAM22                                           Sensitivity : 5.000      *
* Geometry           : CAN                                           Energy tolerance: 1.500  *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000      *
* Elapsed real time  : 0 02:00:02.01 Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date       : 15-JAN-2010 12:00:00 Nuclide Library : SOLID        *
* Sample ID         : G245388004 Analyst initials: MXR1              *
* Batch Number      : 944964 Sample Quantity : 1.0523E+02 GRAM        *
* Recovery          : 1.00000 Carrier Weight : 0.00000              *
*****
*                                     QC DATA                               *
*                                     *                                       *
* Standard Weight   : 0.00000                                           *
* CALIB. DATE/TIME  : 2-DEC-2009 16:47:28 MS Isotope :                 *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.387E+01 | 2.560E+00 | 5.623E-01 | 0.000E+00 |
| CD-109 | 3.301E+00 | 9.951E-01 | 1.178E+00 | 0.000E+00 |
| SN-126 | 3.221E-01 | 9.710E-02 | 1.154E-01 | 0.000E+00 |
| TL-208 | 5.815E-01 | 9.732E-02 | 5.856E-02 | 0.000E+00 |
| BI-211 | 5.121E+00 | 7.576E-01 | 3.570E-01 | 0.000E+00 |
| PB-212 | 2.102E+00 | 2.976E-01 | 9.889E-02 | 0.000E+00 |
| PO-212 | 2.102E+00 | 2.976E-01 | 9.889E-02 | 0.000E+00 |
| BI-214 | 1.299E+00 | 2.252E-01 | 1.153E-01 | 0.000E+00 |
| PB-214 | 1.782E+00 | 2.789E-01 | 1.244E-01 | 0.000E+00 |
| PO-214 | 1.782E+00 | 2.789E-01 | 1.244E-01 | 0.000E+00 |
| PO-216 | 2.102E+00 | 2.976E-01 | 9.889E-02 | 0.000E+00 |
| PO-218 | 1.782E+00 | 2.789E-01 | 1.244E-01 | 0.000E+00 |
| RA-224 | 4.760E+00 | 1.425E+00 | 1.124E+00 | 0.000E+00 |
| RA-226 | 1.299E+00 | 2.252E-01 | 1.153E-01 | 0.000E+00 |
| AC-228 | 2.031E+00 | 3.852E-01 | 1.898E-01 | 0.000E+00 |
| RA-228 | 2.031E+00 | 3.852E-01 | 1.898E-01 | 0.000E+00 |
| TH-228 | 2.145E+00 | 3.036E-01 | 1.009E-01 | 0.000E+00 |
| TH-230 | 1.299E+00 | 2.252E-01 | 1.153E-01 | 0.000E+00 |
| TH-232 | 2.031E+00 | 3.852E-01 | 1.898E-01 | 0.000E+00 |
| TH-234 | 1.171E+00 | 1.928E+00 | 1.955E+00 | 0.000E+00 |
| U-234 | 1.299E+00 | 2.252E-01 | 1.153E-01 | 0.000E+00 |
| NP-237 | 9.458E-01 | 3.434E-01 | 3.423E-01 | 0.000E+00 |
| U-238 | 1.171E+00 | 1.928E+00 | 1.955E+00 | 0.000E+00 |
| AM-243 | 5.251E-01 | 8.767E-02 | 8.697E-02 | 0.000E+00 |
| ANH-511 | 2.167E-01 | 8.005E-02 | 4.792E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | -7.315E-02 | 3.347E-01 | 5.435E-01 | 0.000E+00 NOT IDENT. |
| NA-22 | -7.607E-03 | 4.581E-02 | 7.597E-02 | 0.000E+00 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-24 | 0.000E+00 | 1.568E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | 1.027E-02 | 2.761E-02 | 4.837E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 6.038E-02 | 7.875E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | -1.568E-02 | 3.799E-02 | 6.201E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | 3.769E-02 | 8.602E-02 | 1.478E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | 6.688E-02 | 4.505E-01 | 7.548E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 4.643E-01 | 4.270E-01 | 7.784E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | 3.164E-02 | 3.917E-02 | 6.918E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -6.160E-03 | 4.039E-02 | 6.771E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | -4.625E-03 | 2.769E-02 | 4.473E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -6.074E-03 | 4.055E-02 | 6.828E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -3.697E-02 | 9.589E-02 | 1.533E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | 2.193E-02 | 3.738E-02 | 6.557E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 3.619E-02 | 1.129E-01 | 1.627E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | 1.227E-01 | 1.099E+00 | 1.833E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | -2.538E-01 | 8.352E-01 | 1.366E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | 9.746E-02 | 1.137E-01 | 2.000E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | 2.679E-02 | 5.496E-02 | 8.106E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 0.000E+00 | 4.727E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SR-82 | -1.571E-01 | 4.117E-01 | 6.571E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | 1.686E-02 | 8.007E-02 | 1.247E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | 8.390E-03 | 7.255E-02 | 1.233E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 0.000E+00 | 9.644E+00 | 1.584E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 0.000E+00 | 5.202E-02 | 8.541E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 4.451E-01 | 8.293E-01 | 1.429E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | -5.846E-03 | 3.671E-02 | 5.975E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -1.519E-02 | 3.369E-02 | 5.520E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | 5.380E+00 | 1.833E+01 | 3.155E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | 1.443E-02 | 3.354E-02 | 5.708E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 7.804E-02 | 4.679E-02 | 8.326E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 0.000E+00 | 1.684E-01 | 2.609E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 6.195E-02 | 7.403E-02 | 1.282E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 1.122E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 2.716E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 1.819E+01 | 3.785E+01 | 6.438E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 2.719E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 1.170E-02 | 3.722E-02 | 6.208E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -2.216E-03 | 2.814E-02 | 4.614E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | -2.166E-02 | 4.695E-02 | 7.474E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | -2.510E-01 | 3.220E-01 | 5.122E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | -2.510E-01 | 3.211E-01 | 5.122E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -3.710E-02 | 3.400E-02 | 5.276E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | 8.860E-03 | 3.551E-02 | 6.020E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | -1.617E+00 | 4.313E+00 | 6.088E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | 2.632E-02 | 4.776E-02 | 8.216E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | 2.632E-02 | 4.776E-02 | 8.216E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 2.041E-01 | 2.199E-01 | 3.407E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 0.000E+00 | 4.754E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SN-117M | -3.753E-02 | 7.392E-02 | 1.244E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | 4.832E+00 | 7.077E+00 | 1.242E+01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 2.660E+09 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | -5.879E-03 | 3.008E-02 | 5.120E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -6.493E-01 | 1.765E+00 | 2.482E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | -2.512E-02 | 8.813E-02 | 1.430E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | 1.186E-01 | 9.204E-02 | 1.626E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | 2.400E+00 | 1.056E+01 | 1.747E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | -1.028E-01 | 2.343E-01 | 3.803E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | 8.841E-02 | 2.228E-01 | 3.270E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | 1.083E+00 | 3.306E+00 | 5.608E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | -4.433E-02 | 5.545E-02 | 9.293E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | -7.250E-03 | 1.750E-01 | 2.949E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | -1.327E+00 | 2.112E+00 | 3.403E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | 1.158E-02 | 4.926E-02 | 7.349E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 2.802E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 0.000E+00 | 6.935E-02 | 9.540E-02 | 0.000E+00 | FAIL ABUN |
| CS-135 | 2.250E-01 | 2.062E-01 | 3.099E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 9.247E+20 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | 1.446E-01 | 1.393E-01 | 2.466E-01 | 0.000E+00 | FAIL ABUN |
| BA-137M | -1.053E-02 | 3.620E-02 | 5.939E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | -1.113E-02 | 3.827E-02 | 6.279E-02 | 0.000E+00 | NOT IDENT. |
| CE-139 | 3.702E-02 | 3.287E-02 | 5.795E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -2.141E-01 | 3.340E-01 | 5.357E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | 3.580E-02 | 1.071E-01 | 1.625E-01 | 0.000E+00 | FAIL ABUN |
| CE-141 | 6.103E-02 | 7.183E-02 | 1.270E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 3.516E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | -5.320E-02 | 2.458E-01 | 3.731E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | 4.968E-04 | 3.631E-02 | 6.039E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | 3.375E-02 | 2.467E+00 | 4.102E+00 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-146 | 1.894E-02 | 4.547E-02 | 7.685E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | 3.392E-01 | 7.410E-01 | 1.292E+00 | 0.000E+00 | FAIL ABUN |
| PM-149 | 0.000E+00 | 4.389E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| EU-152 | 3.349E-02 | 1.455E-01 | 1.728E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | -8.040E-02 | 9.581E-02 | 1.339E-01 | 0.000E+00 | NOT IDENT. |
| EU-154 | -2.033E-02 | 1.277E-01 | 2.119E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 9.590E-02 | 1.153E-01 | 1.953E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 9.970E-02 | 1.410E-01 | 2.485E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | -1.529E-02 | 6.294E-02 | 1.028E-01 | 0.000E+00 | NOT IDENT. |
| TM-171 | -3.982E+01 | 3.061E+01 | 4.364E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | 9.950E-03 | 2.631E-02 | 4.339E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 2.468E+00 | 3.737E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -3.155E-01 | 2.007E-01 | 3.053E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | 8.772E-03 | 4.730E-02 | 7.863E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | 8.238E-02 | 3.864E-01 | 5.944E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | -8.956E-02 | 1.896E-01 | 3.092E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | -9.958E-02 | 1.207E-01 | 1.999E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | -8.183E-02 | 2.478E-01 | 4.021E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | 1.001E-02 | 4.179E-02 | 7.101E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 1.711E-01 | 1.927E-01 | 3.393E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | 4.373E-01 | 8.758E+00 | 1.319E+01 | 0.000E+00 | FAIL ABUN |
| IR-192 | -5.265E-03 | 3.656E-02 | 6.210E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 2.964E-01 | 2.462E-01 | 4.171E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 9.976E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | 1.045E+01 | 2.268E+01 | 3.928E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 7.009E-02 | 9.939E-02 | 1.697E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | 4.701E-02 | 4.982E-02 | 8.403E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | 8.429E-02 | 6.022E-02 | 1.048E-01 | 0.000E+00 | FAIL ABUN |
| TL-207 | 1.095E-01 | 7.952E-01 | 1.190E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | 7.068E+00 | 7.410E+00 | 1.319E+01 | 0.000E+00 | NOT IDENT. |
| BI-210 | -1.267E+00 | 3.194E+00 | 5.295E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | -1.267E+00 | 3.194E+00 | 5.295E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | -1.267E+00 | 3.194E+00 | 5.295E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | -6.861E-01 | 1.080E+00 | 1.607E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 6.428E-01 | 7.129E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | 1.095E-01 | 7.952E-01 | 1.190E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | 3.329E-02 | 4.192E-01 | 7.044E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | 2.190E+01 | 2.602E+01 | 4.609E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | 1.095E-01 | 7.952E-01 | 1.190E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | -3.949E-02 | 3.910E-01 | 6.410E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | -3.949E-02 | 3.910E-01 | 6.410E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | -6.844E-01 | 5.455E-01 | 8.691E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | -1.007E+00 | 1.678E+00 | 2.644E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | 1.095E-01 | 7.952E-01 | 1.190E+00 | 0.000E+00 | FAIL ABUN |
| U-231 | -7.216E-01 | 2.650E+00 | 3.858E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | -1.671E-02 | 6.506E-02 | 1.101E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | -3.310E-02 | 2.907E-01 | 4.826E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 3.245E+00 | 4.622E+00 | 7.920E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | 1.037E-01 | 2.262E-01 | 3.835E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | 1.743E-02 | 8.178E-02 | 1.411E-01 | 0.000E+00 | NOT IDENT. |
| NP-239 | -1.399E-01 | 2.045E-01 | 3.239E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | -3.292E-03 | 1.554E-01 | 2.382E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | 2.011E-02 | 1.025E-01 | 1.700E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | 4.671E-02 | 1.214E-01 | 2.069E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 1.893E-02 | 3.763E-02 | 6.450E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | 2.154E-02 | 4.206E-02 | 7.227E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -9.760E-03 | 1.365E-01 | 2.314E-01 | 0.000E+00 | NOT IDENT. |


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388004.CNF;1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:30:00.
Sample ID        : G245388004 Sample quantity : 1.05230E+02 GRAM
Detector name    : GAM22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.01 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 944964 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 | 1460.81 | 1363 | 10.67* | 1.909E+00 | 2.387E+01 | 2.387E+01 | 10.94 |
| CD-109 | 88.03 | 250 | 3.72* | 7.482E+00 | 3.204E+00 | 3.301E+00 | 30.76 |
| SN-126 | 64.28 | 54 | 9.60 | 4.299E+00 | 4.634E-01 | 4.634E-01 | 167.75 |
| | 86.94 | 250 | 8.90 | 7.482E+00 | 1.339E+00 | 1.339E+00 | 50.82 |
| | 87.57 | 250 | 37.00* | 7.482E+00 | 3.221E-01 | 3.221E-01 | 30.76 |
| TL-208 | 277.35 | ----- | 6.80 | 6.182E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 261 | 21.60 | 4.299E+00 | 1.003E+00 | 1.003E+00 | 38.61 |
| | 583.14 | 539 | 84.20* | 3.930E+00 | 5.815E-01 | 5.815E-01 | 17.08 |
| | 860.37 | 105 | 12.46 | 2.923E+00 | 1.030E+00 | 1.030E+00 | 51.88 |
| BI-211 | 72.87 | ----- | 1.27 | 5.897E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 1003 | 12.94* | 5.401E+00 | 5.121E+00 | 5.121E+00 | 15.10 |
| PB-212 | 74.81 | 600 | 10.70 | 6.176E+00 | 3.239E+00 | 3.239E+00 | 19.43 |
| | 77.11 | 729 | 18.00 | 6.458E+00 | 2.237E+00 | 2.237E+00 | 14.92 |
| | 87.30 | 250 | 8.00 | 7.482E+00 | 1.490E+00 | 1.490E+00 | 32.35 |
| | 238.63 | 1764 | 44.60* | 6.709E+00 | 2.102E+00 | 2.102E+00 | 14.44 |
| | 300.09 | 130 | 3.41 | 5.917E+00 | 2.301E+00 | 2.301E+00 | 52.21 |
| PO-212 | 74.81 | 600 | 10.70 | 6.176E+00 | 3.239E+00 | 3.239E+00 | 19.43 |
| | 77.11 | 729 | 18.00 | 6.458E+00 | 2.237E+00 | 2.237E+00 | 14.92 |
| | 87.30 | 250 | 8.00 | 7.482E+00 | 1.490E+00 | 1.490E+00 | 32.35 |
| | 115.19 | ----- | 0.60 | 8.535E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1764 | 44.60* | 6.709E+00 | 2.102E+00 | 2.102E+00 | 14.44 |
| | 300.09 | 130 | 3.41 | 5.917E+00 | 2.301E+00 | 2.301E+00 | 52.21 |
| BI-214 | 609.31 | 643 | 46.30* | 3.811E+00 | 1.299E+00 | 1.299E+00 | 17.69 |
| | 1120.29 | 180 | 15.10 | 2.345E+00 | 1.812E+00 | 1.812E+00 | 33.34 |
| | 1764.49 | 138 | 15.80 | 1.716E+00 | 1.821E+00 | 1.821E+00 | 25.80 |
| PB-214 | 74.81 | 600 | 6.21 | 6.176E+00 | 5.581E+00 | 5.581E+00 | 18.58 |
| | 77.11 | 729 | 10.50 | 6.458E+00 | 3.835E+00 | 3.835E+00 | 16.75 |
| | 87.30 | 250 | 4.67 | 7.482E+00 | 2.552E+00 | 2.552E+00 | 31.71 |
| | 241.98 | 351 | 7.49 | 6.664E+00 | 2.510E+00 | 2.510E+00 | 31.05 |
| | 295.21 | 536 | 19.20 | 5.970E+00 | 1.668E+00 | 1.668E+00 | 20.13 |
| | 351.92 | 1003 | 37.20* | 5.401E+00 | 1.781E+00 | 1.782E+00 | 15.97 |
| PO-214 | 74.81 | 600 | 6.21 | 6.176E+00 | 5.581E+00 | 5.581E+00 | 18.58 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| | 77.11 | 729 | 10.50 | 6.458E+00 | 3.835E+00 | 3.835E+00 | 16.75 |
| | 87.30 | 250 | 4.67 | 7.482E+00 | 2.552E+00 | 2.552E+00 | 31.71 |
| | 241.98 | 351 | 7.49 | 6.664E+00 | 2.510E+00 | 2.510E+00 | 31.05 |
| | 295.21 | 536 | 19.20 | 5.970E+00 | 1.668E+00 | 1.668E+00 | 20.13 |
| | 351.92 | 1003 | 37.20* | 5.401E+00 | 1.781E+00 | 1.782E+00 | 15.97 |
| PO-216 | 74.81 | 600 | 10.70 | 6.176E+00 | 3.239E+00 | 3.239E+00 | 19.43 |
| | 77.11 | 729 | 18.00 | 6.458E+00 | 2.237E+00 | 2.237E+00 | 14.92 |
| | 87.30 | 250 | 8.00 | 7.482E+00 | 1.490E+00 | 1.490E+00 | 32.35 |
| | 238.63 | 1764 | 44.60* | 6.709E+00 | 2.102E+00 | 2.102E+00 | 14.44 |
| | 300.09 | 130 | 3.41 | 5.917E+00 | 2.301E+00 | 2.301E+00 | 52.21 |
| PO-218 | 74.81 | 600 | 6.21 | 6.176E+00 | 5.581E+00 | 5.581E+00 | 18.58 |
| | 77.11 | 729 | 10.50 | 6.458E+00 | 3.835E+00 | 3.835E+00 | 16.75 |
| | 87.30 | 250 | 4.67 | 7.482E+00 | 2.552E+00 | 2.552E+00 | 31.71 |
| | 241.98 | 351 | 7.49 | 6.664E+00 | 2.510E+00 | 2.510E+00 | 31.05 |
| | 295.21 | 536 | 19.20 | 5.970E+00 | 1.668E+00 | 1.668E+00 | 20.13 |
| | 351.92 | 1003 | 37.20* | 5.401E+00 | 1.781E+00 | 1.782E+00 | 15.97 |
| RA-224 | 240.98 | 351 | 3.95* | 6.664E+00 | 4.760E+00 | 4.760E+00 | 30.54 |
| RA-226 | 609.31 | 643 | 46.30* | 3.811E+00 | 1.299E+00 | 1.299E+00 | 17.69 |
| | 1120.29 | 180 | 15.10 | 2.345E+00 | 1.812E+00 | 1.812E+00 | 33.34 |
| | 1764.49 | 138 | 15.80 | 1.716E+00 | 1.821E+00 | 1.821E+00 | 25.80 |
| AC-228 | 338.32 | 422 | 11.40 | 5.525E+00 | 2.390E+00 | 2.390E+00 | 46.57 |
| | 911.07 | 440 | 27.70* | 2.789E+00 | 2.031E+00 | 2.031E+00 | 19.36 |
| | 969.11 | 242 | 16.60 | 2.648E+00 | 1.964E+00 | 1.964E+00 | 32.23 |
| RA-228 | 338.32 | 422 | 11.40 | 5.525E+00 | 2.390E+00 | 2.390E+00 | 46.57 |
| | 911.07 | 440 | 27.70* | 2.789E+00 | 2.031E+00 | 2.031E+00 | 19.36 |
| | 969.11 | 242 | 16.60 | 2.648E+00 | 1.964E+00 | 1.964E+00 | 32.23 |
| TH-228 | 74.81 | 600 | 10.70 | 6.176E+00 | 3.239E+00 | 3.304E+00 | 17.07 |
| | 77.11 | 729 | 18.00 | 6.458E+00 | 2.237E+00 | 2.282E+00 | 14.92 |
| | 87.30 | 250 | 8.00 | 7.482E+00 | 1.490E+00 | 1.520E+00 | 30.76 |
| | 238.63 | 1764 | 44.60* | 6.709E+00 | 2.102E+00 | 2.145E+00 | 14.44 |
| | 300.09 | 130 | 3.41 | 5.917E+00 | 2.301E+00 | 2.347E+00 | 78.30 |
| TH-230 | 609.31 | 643 | 46.30* | 3.811E+00 | 1.299E+00 | 1.299E+00 | 17.69 |
| | 1120.29 | 180 | 15.10 | 2.345E+00 | 1.812E+00 | 1.812E+00 | 33.34 |
| | 1764.49 | 138 | 15.80 | 1.716E+00 | 1.821E+00 | 1.821E+00 | 25.80 |
| TH-232 | 338.32 | 422 | 11.40 | 5.525E+00 | 2.390E+00 | 2.390E+00 | 23.25 |
| | 911.07 | 440 | 27.70* | 2.789E+00 | 2.031E+00 | 2.031E+00 | 19.36 |
| | 969.11 | 242 | 16.60 | 2.648E+00 | 1.964E+00 | 1.964E+00 | 32.23 |
| TH-234 | 63.29 | 54 | 3.80* | 4.299E+00 | 1.171E+00 | 1.171E+00 | 168.03 |
| | 92.38 | 316 | 5.41 | 7.866E+00 | 2.651E+00 | 2.651E+00 | 34.71 |
| U-234 | 609.31 | 643 | 46.30* | 3.811E+00 | 1.299E+00 | 1.299E+00 | 17.69 |
| | 1120.29 | 180 | 15.10 | 2.345E+00 | 1.812E+00 | 1.812E+00 | 33.34 |
| | 1764.49 | 138 | 15.80 | 1.716E+00 | 1.821E+00 | 1.821E+00 | 25.80 |
| NP-237 | 86.50 | 250 | 12.60* | 7.482E+00 | 9.458E-01 | 9.458E-01 | 37.04 |
| | 95.87 | ----- | 2.60 | 8.032E+00 | ----- | Line Not Found | ----- |
| U-238 | 63.29 | 54 | 3.80* | 4.299E+00 | 1.171E+00 | 1.171E+00 | 168.03 |
| | 92.38 | 316 | 5.41 | 7.866E+00 | 2.651E+00 | 2.651E+00 | 30.85 |
| AM-243 | 74.67 | 600 | 66.00* | 6.176E+00 | 5.251E-01 | 5.251E-01 | 17.04 |
| | 86.72 | 250 | 0.34 | 7.482E+00 | 3.547E+01 | 3.547E+01 | 30.76 |
| | 117.66 | ----- | 0.55 | 8.550E+00 | ----- | Line Not Found | ----- |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| | 142.18 | ----- | 0.13 | 8.387E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 261 | 100.00* | 4.299E+00 | 2.167E-01 | 2.167E-01 | 37.70 |

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G245388004

Page : 4
Acquisition date : 4-FEB-2010 10:30:00

Total number of lines in spectrum 31
Number of unidentified lines 1
Number of lines tentatively identified by NID 30 96.77%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|---------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 2.387E+01 | 2.387E+01 | 0.261E+01 | 10.94 | |
| CD-109 | 464.00D | 1.03 | 3.204E+00 | 3.301E+00 | 1.015E+00 | 30.76 | |
| SN-126 | 1.00E+05Y | 1.00 | 3.221E-01 | 3.221E-01 | 0.991E-01 | 30.76 | |
| TL-208 | 1.41E+10Y | 1.00 | 5.815E-01 | 5.815E-01 | 0.993E-01 | 17.08 | |
| BI-211 | 7.04E+08Y | 1.00 | 5.121E+00 | 5.121E+00 | 0.773E+00 | 15.10 | |
| PB-212 | 1.41E+10Y | 1.00 | 2.102E+00 | 2.102E+00 | 0.304E+00 | 14.44 | |
| PO-212 | 1.41E+10Y | 1.00 | 2.102E+00 | 2.102E+00 | 0.304E+00 | 14.44 | |
| BI-214 | 1600.00Y | 1.00 | 1.299E+00 | 1.299E+00 | 0.230E+00 | 17.69 | |
| PB-214 | 1600.00Y | 1.00 | 1.781E+00 | 1.782E+00 | 0.285E+00 | 15.97 | |
| PO-214 | 1600.00Y | 1.00 | 1.781E+00 | 1.782E+00 | 0.285E+00 | 15.97 | |
| PO-216 | 1.41E+10Y | 1.00 | 2.102E+00 | 2.102E+00 | 0.304E+00 | 14.44 | |
| PO-218 | 1600.00Y | 1.00 | 1.781E+00 | 1.782E+00 | 0.285E+00 | 15.97 | |
| RA-224 | 1.41E+10Y | 1.00 | 4.760E+00 | 4.760E+00 | 1.454E+00 | 30.54 | |
| RA-226 | 1600.00Y | 1.00 | 1.299E+00 | 1.299E+00 | 0.230E+00 | 17.69 | |
| AC-228 | 1.41E+10Y | 1.00 | 2.031E+00 | 2.031E+00 | 0.393E+00 | 19.36 | |
| RA-228 | 1.41E+10Y | 1.00 | 2.031E+00 | 2.031E+00 | 0.393E+00 | 19.36 | |
| TH-228 | 1.91Y | 1.02 | 2.102E+00 | 2.145E+00 | 0.310E+00 | 14.44 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.299E+00 | 1.299E+00 | 0.230E+00 | 17.69 | |
| TH-232 | 1.41E+10Y | 1.00 | 2.031E+00 | 2.031E+00 | 0.393E+00 | 19.36 | |
| TH-234 | 4.47E+09Y | 1.00 | 1.171E+00 | 1.171E+00 | 1.967E+00 | 168.03 | |
| U-234 | 4.47E+09Y | 1.00 | 1.299E+00 | 1.299E+00 | 0.230E+00 | 17.69 | |
| NP-237 | 2.14E+06Y | 1.00 | 9.458E-01 | 9.458E-01 | 3.504E-01 | 37.04 | |
| U-238 | 4.47E+09Y | 1.00 | 1.171E+00 | 1.171E+00 | 1.967E+00 | 168.03 | |
| AM-243 | 7380.00Y | 1.00 | 5.251E-01 | 5.251E-01 | 0.895E-01 | 17.04 | |
| ANH-511 | 1.00E+09Y | 1.00 | 2.167E-01 | 2.167E-01 | 0.817E-01 | 37.70 | |

Total Activity : 6.693E+01 6.707E+01

Grand Total Activity : 6.693E+01 6.707E+01

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

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

Unidentified Energy Lines
Sample ID : G245388004

Page : 5
Acquisition date : 4-FEB-2010 10:30:00

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 5 | 90.02 | 190 | 392 | 1.08 | 180.24 | 163 | 29 | 2.64E-02 | 36.1 | 7.69E+00 | T |
| 0 | 129.30 | 93 | 460 | 0.91 | 258.71 | 255 | 8 | 1.29E-02 | 82.9 | 8.53E+00 | T |
| 0 | 186.01 | 295 | 421 | 0.89 | 372.03 | 367 | 10 | 4.10E-02 | 30.1 | 7.60E+00 | T |
| 0 | 209.35 | 178 | 300 | 1.44 | 418.66 | 415 | 8 | 2.48E-02 | 38.1 | 7.18E+00 | T |
| 0 | 269.97 | 183 | 327 | 1.38 | 539.80 | 533 | 12 | 2.54E-02 | 42.2 | 6.27E+00 | T |
| 0 | 328.31 | 62 | 255 | 1.32 | 656.39 | 650 | 10 | 8.55E-03 | **** | 5.62E+00 | T |
| 0 | 463.06 | 95 | 161 | 1.22 | 925.69 | 921 | 10 | 1.32E-02 | 53.8 | 4.58E+00 | T |
| 0 | 727.08 | 205 | 155 | 1.93 | 1453.41 | 1443 | 20 | 2.85E-02 | 33.2 | 3.34E+00 | T |
| 0 | 795.33 | 92 | 95 | 2.48 | 1589.87 | 1581 | 14 | 1.28E-02 | 49.4 | 3.12E+00 | T |
| 1 | 965.19 | 92 | 109 | 2.56 | 1929.46 | 1921 | 24 | 1.28E-02 | 55.5 | 2.66E+00 | T |
| 0 | 1587.99 | 50 | 28 | 1.94 | 3175.07 | 3167 | 18 | 7.00E-03 | 56.0 | 1.81E+00 | |

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388004.CNF;1
* Acquisition date   : 4-FEB-2010 10:30:00. Detector SN#      :
* Detector ID        : GAM22                      Sensitivity    : 5.00000
* Geometry           : CAN                        Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00             Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:02.01             Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G245388004           Analyst initials: MXR1
* Batch Number       : 944964              Sample Quantity  : 1.05230E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28.08MS Isotope      :
* MSD ID             :                          MSD Isotope   :
* LCS ID             : 1032-A                  LCS Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 2.387E+01 | 2.612E+00 | 5.663E-01 | 5.187E-02 | 42.149 |
| CD-109 | 3.301E+00 | 1.015E+00 | 1.169E+00 | 1.110E-01 | 2.823 |
| SN-126 | 3.221E-01 | 9.908E-02 | 1.146E-01 | 1.082E-02 | 2.811 |
| TL-208 | 5.815E-01 | 9.931E-02 | 5.870E-02 | 6.365E-03 | 9.907 |
| BI-211 | 5.121E+00 | 7.731E-01 | 3.569E-01 | 4.164E-02 | 14.350 |
| PB-212 | 2.102E+00 | 3.037E-01 | 9.868E-02 | 1.304E-02 | 21.305 |
| PO-212 | 2.102E+00 | 3.037E-01 | 9.868E-02 | 1.304E-02 | 21.305 |
| BI-214 | 1.299E+00 | 2.298E-01 | 1.156E-01 | 1.344E-02 | 11.241 |
| PB-214 | 1.782E+00 | 2.845E-01 | 1.244E-01 | 1.585E-02 | 14.324 |
| PO-214 | 1.782E+00 | 2.845E-01 | 1.244E-01 | 1.585E-02 | 14.324 |
| PO-216 | 2.102E+00 | 3.037E-01 | 9.868E-02 | 1.304E-02 | 21.305 |
| PO-218 | 1.782E+00 | 2.845E-01 | 1.244E-01 | 1.585E-02 | 14.324 |
| RA-224 | 4.760E+00 | 1.454E+00 | 1.122E+00 | 1.404E-01 | 4.243 |
| RA-226 | 1.299E+00 | 2.298E-01 | 1.156E-01 | 1.344E-02 | 11.241 |
| AC-228 | 2.031E+00 | 3.931E-01 | 1.907E-01 | 2.527E-02 | 10.647 |
| RA-228 | 2.031E+00 | 3.931E-01 | 1.907E-01 | 2.527E-02 | 10.647 |
| TH-228 | 2.145E+00 | 3.098E-01 | 1.007E-01 | 1.330E-02 | 21.305 |
| TH-230 | 1.299E+00 | 2.298E-01 | 1.156E-01 | 1.344E-02 | 11.241 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-232 | 2.031E+00 | 3.931E-01 | 1.907E-01 | 2.527E-02 | 10.647 |
| TH-234 | 1.171E+00 | 1.967E+00 | 1.938E+00 | 3.374E-01 | 0.604 |
| U-234 | 1.299E+00 | 2.298E-01 | 1.156E-01 | 1.344E-02 | 11.241 |
| NP-237 | 9.458E-01 | 3.504E-01 | 3.398E-01 | 7.694E-02 | 2.784 |
| U-238 | 1.171E+00 | 1.967E+00 | 1.938E+00 | 3.374E-01 | 0.604 |
| AM-243 | 5.251E-01 | 8.946E-02 | 8.629E-02 | 7.033E-03 | 6.086 |
| ANH-511 | 2.167E-01 | 8.169E-02 | 4.800E-02 | 4.809E-03 | 4.514 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| BE-7 | -7.315E-02 | | 3.415E-01 | 5.443E-01 | 5.680E-02 | -0.134 |
| NA-22 | -7.607E-03 | | 4.674E-02 | 7.645E-02 | 6.589E-03 | -0.099 |
| NA-24 | -9.647E+01 | | 8.002E+01 | Half-Life | too short | |
| AL-26 | 1.027E-02 | | 2.817E-02 | 4.876E-02 | 3.988E-03 | 0.211 |
| TI-44 | 4.129E-01 | + | 6.161E-02 | 7.815E-02 | 6.626E-03 | 5.284 |
| SC-46 | -1.568E-02 | | 3.877E-02 | 6.229E-02 | 6.973E-03 | -0.252 |
| V-48 | 3.769E-02 | | 8.777E-02 | 1.486E-01 | 1.558E-02 | 0.254 |
| CR-51 | 6.688E-02 | | 4.597E-01 | 7.543E-01 | 9.767E-02 | 0.089 |
| MN-52 | 4.643E-01 | | 4.357E-01 | 7.839E-01 | 7.006E-02 | 0.592 |
| MN-54 | 3.164E-02 | | 3.997E-02 | 6.947E-02 | 7.718E-03 | 0.455 |
| CO-56 | -6.160E-03 | | 4.122E-02 | 6.800E-02 | 7.569E-03 | -0.091 |
| CO-57 | -4.625E-03 | | 2.826E-02 | 4.449E-02 | 3.669E-03 | -0.104 |
| CO-58 | -6.074E-03 | | 4.137E-02 | 6.856E-02 | 7.592E-03 | -0.089 |
| FE-59 | -3.697E-02 | | 9.785E-02 | 1.541E-01 | 1.510E-02 | -0.240 |
| CO-60 | 2.193E-02 | | 3.815E-02 | 6.600E-02 | 5.885E-03 | 0.332 |
| ZN-65 | 3.619E-02 | | 1.152E-01 | 1.637E-01 | 1.460E-02 | 0.221 |
| GE-68 | 1.227E-01 | | 1.122E+00 | 1.843E+00 | 1.737E-01 | 0.067 |
| AS-73 | -2.538E-01 | | 8.522E-01 | 1.353E+00 | 1.022E-01 | -0.188 |
| AS-74 | 9.746E-02 | | 1.161E-01 | 2.005E-01 | 2.079E-02 | 0.486 |
| SE-75 | 2.679E-02 | | 5.608E-02 | 8.093E-02 | 1.089E-02 | 0.331 |
| BR-77 | 5.116E-06 | | 2.412E-05 | Half-Life | too short | |
| SR-82 | -1.571E-01 | | 4.201E-01 | 6.596E-01 | 7.234E-02 | -0.238 |
| RB-83 | 1.686E-02 | | 8.170E-02 | 1.249E-01 | 1.257E-02 | 0.135 |
| RB-84 | 8.390E-03 | | 7.403E-02 | 1.239E-01 | 1.386E-02 | 0.068 |
| KR-85 | 3.217E+01 | | 9.841E+00 | 1.586E+01 | 1.592E+00 | 2.028 |
| SR-85 | 1.735E-01 | | 5.308E-02 | 8.556E-02 | 8.585E-03 | 2.028 |
| RB-86 | 4.451E-01 | | 8.462E-01 | 1.437E+00 | 1.356E-01 | 0.310 |
| Y-88 | -5.846E-03 | | 3.746E-02 | 6.025E-02 | 4.871E-03 | -0.097 |
| ZR-88 | -1.519E-02 | | 3.437E-02 | 5.522E-02 | 5.142E-03 | -0.275 |
| Y-91 | 5.380E+00 | | 1.871E+01 | 3.174E+01 | 2.610E+00 | 0.169 |
| NB-94 | 1.443E-02 | | 3.423E-02 | 5.727E-02 | 6.137E-03 | 0.252 |
| NB-95 | 7.804E-01 | | 4.774E-02 | 8.357E-02 | 9.139E-03 | 0.934 |
| NB-95M | 3.601E-01 | | 1.719E-01 | 2.603E-01 | 3.441E-02 | 1.383 |
| ZR-95 | 6.195E-02 | | 7.554E-02 | 1.287E-01 | 1.494E-02 | 0.481 |
| NB-97 | 2.488E+00 | | 5.723E+00 | Half-Life | too short | |
| ZR-97 | 8.429E+02 | | 1.386E+02 | Half-Life | too short | |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| MO-99 | 1.819E+01 | | 3.863E+01 | 6.461E+01 | 1.069E+01 | 0.282 |
| TC-99M | -2.849E+16 | | 1.387E+16 | Half-Life too short | | |
| RH-101 | 1.170E-02 | | 3.798E-02 | 6.189E-02 | 6.752E-03 | 0.189 |
| RH-102 | -2.216E-03 | | 2.872E-02 | 4.620E-02 | 4.543E-03 | -0.048 |
| RU-103 | -2.166E-02 | | 4.791E-02 | 7.486E-02 | 1.124E-02 | -0.289 |
| RH-106 | -2.510E-01 | | 3.286E-01 | 5.136E-01 | 7.499E-02 | -0.489 |
| RU-106 | -2.510E-01 | | 3.276E-01 | 5.136E-01 | 5.364E-02 | -0.489 |
| AG-108M | -3.710E-02 | | 3.470E-02 | 5.280E-02 | 5.227E-03 | -0.703 |
| AG-110M | 8.860E-03 | | 3.623E-02 | 6.038E-02 | 6.490E-03 | 0.147 |
| IN-111 | -1.617E+00 | | 4.401E+00 | 6.076E+00 | 7.709E-01 | -0.266 |
| IN-113M | 2.632E-02 | | 4.873E-02 | 8.219E-02 | 7.849E-03 | 0.320 |
| SN-113 | 2.632E-02 | | 4.873E-02 | 8.219E-02 | 7.849E-03 | 0.320 |
| IN-114M | 2.041E-01 | | 2.243E-01 | 3.396E-01 | 3.611E-02 | 0.601 |
| CD-115 | 2.265E-06 | | 2.426E-05 | Half-Life too short | | |
| SN-117M | -3.753E-02 | | 7.543E-02 | 1.239E-01 | 1.175E-02 | -0.303 |
| SB-122 | 4.832E+00 | | 7.222E+00 | 1.244E+01 | 1.275E+00 | 0.388 |
| I-123 | -5.199E+02 | | 1.357E+03 | Half-Life too short | | |
| TE-123M | -5.879E-03 | | 3.070E-02 | 5.099E-02 | 4.869E-03 | -0.115 |
| I-124 | -6.493E-01 | | 1.801E+00 | 2.488E+00 | 2.584E-01 | -0.261 |
| SB-124 | -2.512E-02 | | 8.993E-02 | 1.441E-01 | 1.282E-02 | -0.174 |
| SB-125 | 1.186E-01 | | 9.392E-02 | 1.627E-01 | 1.579E-02 | 0.729 |
| TE-125M | 2.400E+00 | | 1.077E+01 | 1.737E+01 | 1.761E+00 | 0.138 |
| I-126 | -1.028E-01 | | 2.391E-01 | 3.815E-01 | 4.030E-02 | -0.269 |
| SB-126 | 8.841E-02 | | 2.273E-01 | 3.281E-01 | 3.538E-02 | 0.269 |
| SB-127 | 1.083E+00 | | 3.374E+00 | 5.626E+00 | 8.067E-01 | 0.192 |
| XE-127 | -4.433E-03 | | 5.658E-02 | 9.266E-02 | 1.027E-02 | -0.048 |
| I-131 | -7.250E-03 | | 1.786E-01 | 2.950E-01 | 3.278E-02 | -0.025 |
| TE-132 | -1.327E+00 | | 2.155E+00 | 3.395E+00 | 6.347E-01 | -0.391 |
| BA-133 | 1.158E-02 | | 5.026E-02 | 7.348E-02 | 1.098E-02 | 0.158 |
| I-133 | -3.222E-02 | | 1.430E-01 | Half-Life too short | | |
| CS-134 | 1.398E-01 | + | 7.076E-02 | 9.578E-02 | 1.060E-02 | 1.459 |
| CS-135 | 2.250E-01 | | 2.104E-01 | 3.094E-01 | 4.476E-02 | 0.727 |
| I-135 | 9.825E+13 | | 4.718E+14 | Half-Life too short | | |
| CS-136 | 1.446E-01 | | 1.422E-01 | 2.479E-01 | 2.509E-02 | 0.583 |
| BA-137M | -1.053E-02 | | 3.694E-02 | 5.958E-02 | 6.282E-03 | -0.177 |
| CS-137 | -1.113E-02 | | 3.905E-02 | 6.298E-02 | 6.650E-03 | -0.177 |
| CE-139 | 3.702E-02 | | 3.354E-02 | 5.772E-02 | 5.661E-03 | 0.641 |
| BA-140 | -2.141E-01 | | 3.408E-01 | 5.367E-01 | 1.802E-01 | -0.399 |
| LA-140 | 3.580E-02 | | 1.093E-01 | 1.637E-01 | 1.435E-02 | 0.219 |
| CE-141 | 6.103E-02 | | 7.330E-02 | 1.264E-01 | 1.151E-02 | 0.483 |
| CE-143 | 1.117E-02 | | 1.794E-03 | Half-Life too short | | |
| CE-144 | -5.320E-02 | | 2.509E-01 | 3.713E-01 | 5.763E-02 | -0.143 |
| PM-144 | 4.968E-04 | | 3.705E-02 | 6.059E-02 | 6.480E-03 | 0.008 |
| PR-144 | 3.375E-02 | | 2.517E+00 | 4.116E+00 | 4.401E-01 | 0.008 |
| PM-146 | 1.894E-02 | | 4.640E-02 | 7.694E-02 | 8.941E-03 | 0.246 |
| ND-147 | 3.392E-01 | | 7.561E-01 | 1.295E+00 | 2.053E-01 | 0.262 |
| PM-149 | -1.907E-04 | | 2.239E-04 | Half-Life too short | | |
| EU-152 | 3.349E-02 | | 1.485E-01 | 1.728E-01 | 2.077E-02 | 0.194 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| GD-153 | -8.040E-02 | | 9.777E-02 | 1.330E-01 | 1.169E-02 | -0.605 |
| EU-154 | -2.033E-02 | | 1.303E-01 | 2.132E-01 | 2.410E-02 | -0.095 |
| EU-155 | 9.590E-02 | | 1.177E-01 | 1.940E-01 | 1.666E-02 | 0.494 |
| TB-160 | 9.970E-02 | | 1.439E-01 | 2.496E-01 | 2.791E-02 | 0.399 |
| HO-166M | -1.529E-02 | | 6.422E-02 | 1.031E-01 | 1.108E-02 | -0.148 |
| TM-171 | -3.982E+01 | | 3.123E+01 | 4.328E+01 | 3.270E+00 | -0.920 |
| LU-176 | 9.950E-03 | | 2.685E-02 | 4.336E-02 | 5.688E-03 | 0.229 |
| LU-177 | 6.342E+00 | + | 2.518E+00 | 3.727E+00 | 4.207E-01 | 1.702 |
| LU-177M | -3.155E-01 | | 2.048E-01 | 3.055E-01 | 2.889E-02 | -1.033 |
| HF-181 | 8.772E-03 | | 4.827E-02 | 7.875E-02 | 7.774E-03 | 0.111 |
| W-181 | 8.238E-02 | | 3.943E-01 | 5.893E-01 | 4.393E-02 | 0.140 |
| TA-182 | -8.956E-02 | | 1.934E-01 | 3.111E-01 | 2.587E-02 | -0.288 |
| RE-183 | -9.958E-02 | | 1.231E-01 | 1.991E-01 | 1.921E-02 | -0.500 |
| RE-184 | -8.183E-02 | | 2.529E-01 | 4.014E-01 | 5.209E-02 | -0.204 |
| OS-185 | 1.001E-02 | | 4.264E-02 | 7.122E-02 | 7.485E-03 | 0.141 |
| RE-188 | 1.711E-01 | | 1.966E-01 | 3.378E-01 | 3.153E-02 | 0.506 |
| W-188 | 4.373E-01 | | 8.937E+00 | 1.317E+01 | 1.799E+00 | 0.033 |
| IR-192 | -5.265E-03 | | 3.730E-02 | 6.206E-02 | 7.931E-03 | -0.085 |
| AU-195 | 2.964E-01 | | 2.513E-01 | 4.144E-01 | 3.614E-02 | 0.715 |
| TL-200 | -1.467E-02 | | 5.090E-03 | Half-Life too short | | |
| TL-201 | 1.045E+01 | | 2.314E+01 | 3.912E+01 | 3.856E+00 | 0.267 |
| TL-202 | 7.009E-02 | | 1.014E-01 | 1.699E-01 | 1.635E-02 | 0.413 |
| HG-203 | 4.701E-02 | | 5.084E-02 | 8.391E-02 | 1.188E-02 | 0.560 |
| BI-207 | 8.429E-02 | | 6.145E-02 | 1.053E-01 | 1.011E-02 | 0.800 |
| TL-207 | 1.095E-01 | | 8.114E-01 | 1.189E+00 | 2.363E-01 | 0.092 |
| PO-209 | 7.068E+00 | | 7.561E+00 | 1.325E+01 | 1.484E+00 | 0.534 |
| BI-210 | -1.267E+00 | | 3.259E+00 | 5.241E+00 | 4.869E-01 | -0.242 |
| PB-210 | -1.267E+00 | | 3.259E+00 | 5.241E+00 | 4.869E-01 | -0.242 |
| PO-210 | -1.267E+00 | | 3.259E+00 | 5.241E+00 | 4.407E-01 | -0.242 |
| PB-211 | -6.861E-01 | | 1.102E+00 | 1.608E+00 | 1.009E+00 | -0.427 |
| BI-212 | 1.858E+00 | + | 6.559E-01 | 7.154E-01 | 8.545E-02 | 2.597 |
| PO-215 | 1.095E-01 | | 8.114E-01 | 1.189E+00 | 2.363E-01 | 0.092 |
| RN-219 | 3.329E-02 | | 4.277E-01 | 7.048E-01 | 1.090E-01 | 0.047 |
| RN-220 | 2.190E+01 | | 2.655E+01 | 4.619E+01 | 4.708E+00 | 0.474 |
| RA-223 | 1.095E-01 | | 8.114E-01 | 1.189E+00 | 2.363E-01 | 0.092 |
| AC-227 | -3.949E-02 | | 3.990E-01 | 6.399E-01 | 1.168E-01 | -0.062 |
| TH-227 | -3.949E-02 | | 3.990E-01 | 6.399E-01 | 1.317E-01 | -0.062 |
| TH-229 | -6.844E-01 | | 5.566E-01 | 8.663E-01 | 9.314E-02 | -0.790 |
| PA-231 | -1.007E+00 | | 1.712E+00 | 2.641E+00 | 4.931E-01 | -0.381 |
| TH-231 | 1.095E-01 | | 8.114E-01 | 1.189E+00 | 2.363E-01 | 0.092 |
| U-231 | -7.216E-01 | | 2.704E+00 | 3.833E+00 | 3.404E-01 | -0.188 |
| PA-233 | -1.671E-02 | | 6.639E-02 | 1.100E-01 | 1.441E-02 | -0.152 |
| PA-234 | -3.310E-02 | | 2.966E-01 | 4.849E-01 | 9.638E-02 | -0.068 |
| PA-234M | 3.245E+00 | | 4.716E+00 | 7.961E+00 | 9.123E-01 | 0.408 |
| U-235 | 1.037E-01 | | 2.308E-01 | 3.817E-01 | 6.734E-02 | 0.272 |
| NP-236 | 1.743E-02 | | 8.345E-02 | 1.405E-01 | 1.343E-02 | 0.124 |
| NP-239 | -1.399E-01 | | 2.087E-01 | 3.220E-01 | 2.662E-02 | -0.434 |
| AM-241 | -3.292E-03 | | 1.585E-01 | 2.361E-01 | 1.845E-02 | -0.014 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | 2.011E-02 | | 1.046E-01 | 1.690E-01 | 1.441E-02 | 0.119 |
| AM-246 | 4.671E-02 | | 1.238E-01 | 2.081E-01 | 1.958E-02 | 0.224 |
| CM-247 | 1.893E-02 | | 3.840E-02 | 6.453E-02 | 6.053E-03 | 0.293 |
| CF-249 | 2.154E-02 | | 4.292E-02 | 7.230E-02 | 6.871E-03 | 0.298 |
| CF-251 | -9.760E-03 | | 1.392E-01 | 2.306E-01 | 2.342E-02 | -0.042 |

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]G245388004          *
* Acquisition date   : 4-FEB-2010 10:30:00 Detector SN#      :              *
* Detector ID        : GAM22                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:02.01           Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245388004           Analyst initials: MXR1          *
* Batch Number       : 944964              Sample Quantity  : 1.0523E+02 GRAM  *
* Recovery           : 1.00000             Carrier Weight   : 0.00000        *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28 MS Isotope        :              *
* MSD DPM             : 0.000                MSD Isotope     :              *
* LCS DPM             : 0.000                LCS Isotope      :              *
* LCSD DPM           : 0.000                LCSD Isotope      :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.387E+01 | 2.560E+00 | 2.813E-01 | 1.306E+00 |
| CD-109 | 3.301E+00 | 9.951E-01 | 5.892E-01 | 5.077E-01 |
| SN-126 | 3.221E-01 | 9.710E-02 | 5.773E-02 | 4.954E-02 |
| TL-208 | 5.815E-01 | 9.732E-02 | 2.930E-02 | 4.965E-02 |
| BI-211 | 5.121E+00 | 7.576E-01 | 1.786E-01 | 3.865E-01 |
| PB-212 | 2.102E+00 | 2.976E-01 | 4.947E-02 | 1.518E-01 |
| PO-212 | 2.102E+00 | 2.976E-01 | 4.947E-02 | 1.518E-01 |
| BI-214 | 1.299E+00 | 2.252E-01 | 5.767E-02 | 1.149E-01 |
| PB-214 | 1.782E+00 | 2.789E-01 | 6.223E-02 | 1.423E-01 |
| PO-214 | 1.782E+00 | 2.789E-01 | 6.223E-02 | 1.423E-01 |
| PO-216 | 2.102E+00 | 2.976E-01 | 4.947E-02 | 1.518E-01 |
| PO-218 | 1.782E+00 | 2.789E-01 | 6.223E-02 | 1.423E-01 |
| RA-224 | 4.760E+00 | 1.425E+00 | 5.624E-01 | 7.268E-01 |
| RA-226 | 1.299E+00 | 2.252E-01 | 5.767E-02 | 1.149E-01 |
| AC-228 | 2.031E+00 | 3.852E-01 | 9.497E-02 | 1.965E-01 |
| RA-228 | 2.031E+00 | 3.852E-01 | 9.497E-02 | 1.965E-01 |
| TH-228 | 2.145E+00 | 3.036E-01 | 5.047E-02 | 1.549E-01 |
| TH-230 | 1.299E+00 | 2.252E-01 | 5.767E-02 | 1.149E-01 |
| TH-232 | 2.031E+00 | 3.852E-01 | 9.497E-02 | 1.965E-01 |
| TH-234 | 1.171E+00 | 1.928E+00 | 9.783E-01 | 9.835E-01 |
| U-234 | 1.299E+00 | 2.252E-01 | 5.767E-02 | 1.149E-01 |
| NP-237 | 9.458E-01 | 3.434E-01 | 1.712E-01 | 1.752E-01 |
| U-238 | 1.171E+00 | 1.928E+00 | 9.783E-01 | 9.835E-01 |
| AM-243 | 5.251E-01 | 8.767E-02 | 4.351E-02 | 4.473E-02 |
| ANH-511 | 2.167E-01 | 8.005E-02 | 2.397E-02 | 4.084E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | -7.315E-02 | 3.347E-01 | 2.719E-01 | 1.707E-01 NOT IDENT. |
| NA-22 | -7.607E-03 | 4.581E-02 | 3.801E-02 | 2.337E-02 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-24 | -9.647E+07 | 1.568E+08 | 0.000E+00 | 8.002E+07 | SHORT HLIF |
| AL-26 | 1.027E-02 | 2.761E-02 | 2.420E-02 | 1.409E-02 | NOT IDENT. |
| TI-44 | 4.129E-01 | 6.038E-02 | 3.940E-02 | 3.081E-02 | FAIL ABUN |
| SC-46 | -1.568E-02 | 3.799E-02 | 3.102E-02 | 1.938E-02 | FAIL ABUN |
| V-48 | 3.769E-02 | 8.602E-02 | 7.395E-02 | 4.389E-02 | NOT IDENT. |
| CR-51 | 6.688E-02 | 4.505E-01 | 3.776E-01 | 2.298E-01 | NOT IDENT. |
| MN-52 | 4.643E-01 | 4.270E-01 | 3.895E-01 | 2.178E-01 | NOT IDENT. |
| MN-54 | 3.164E-02 | 3.917E-02 | 3.461E-02 | 1.998E-02 | NOT IDENT. |
| CO-56 | -6.160E-03 | 4.039E-02 | 3.387E-02 | 2.061E-02 | NOT IDENT. |
| CO-57 | -4.625E-03 | 2.769E-02 | 2.238E-02 | 1.413E-02 | NOT IDENT. |
| CO-58 | -6.074E-03 | 4.055E-02 | 3.416E-02 | 2.069E-02 | NOT IDENT. |
| FE-59 | -3.697E-02 | 9.589E-02 | 7.667E-02 | 4.892E-02 | NOT IDENT. |
| CO-60 | 2.193E-02 | 3.738E-02 | 3.280E-02 | 1.907E-02 | NOT IDENT. |
| ZN-65 | 3.619E-02 | 1.129E-01 | 8.141E-02 | 5.759E-02 | NOT IDENT. |
| GE-68 | 1.227E-01 | 1.099E+00 | 9.169E-01 | 5.608E-01 | NOT IDENT. |
| AS-73 | -2.538E-01 | 8.352E-01 | 6.834E-01 | 4.261E-01 | NOT IDENT. |
| AS-74 | 9.746E-02 | 1.137E-01 | 1.001E-01 | 5.803E-02 | NOT IDENT. |
| SE-75 | 2.679E-02 | 5.496E-02 | 4.056E-02 | 2.804E-02 | NOT IDENT. |
| BR-77 | 5.116E+00 | 4.727E+01 | 0.000E+00 | 2.412E+01 | SHORT HLIF |
| SR-82 | -1.571E-01 | 4.117E-01 | 3.287E-01 | 2.100E-01 | NOT IDENT. |
| RB-83 | 1.686E-02 | 8.007E-02 | 6.238E-02 | 4.085E-02 | NOT IDENT. |
| RB-84 | 8.390E-03 | 7.255E-02 | 6.171E-02 | 3.701E-02 | NOT IDENT. |
| KR-85 | 3.217E+01 | 9.644E+00 | 7.923E+00 | 4.920E+00 | NOT IDENT. |
| SR-85 | 1.735E-01 | 5.202E-02 | 4.273E-02 | 2.654E-02 | NOT IDENT. |
| RB-86 | 4.451E-01 | 8.293E-01 | 7.151E-01 | 4.231E-01 | NOT IDENT. |
| Y-88 | -5.846E-03 | 3.671E-02 | 2.989E-02 | 1.873E-02 | NOT IDENT. |
| ZR-88 | -1.519E-02 | 3.369E-02 | 2.762E-02 | 1.719E-02 | NOT IDENT. |
| Y-91 | 5.380E+00 | 1.833E+01 | 1.578E+01 | 9.354E+00 | NOT IDENT. |
| NB-94 | 1.443E-02 | 3.354E-02 | 2.856E-02 | 1.711E-02 | NOT IDENT. |
| NB-95 | 7.804E-02 | 4.679E-02 | 4.165E-02 | 2.387E-02 | NOT IDENT. |
| NB-95M | 3.601E-01 | 1.684E-01 | 1.305E-01 | 8.594E-02 | NOT IDENT. |
| ZR-95 | 6.195E-02 | 7.403E-02 | 6.414E-02 | 3.777E-02 | NOT IDENT. |
| NB-97 | 2.488E+06 | 1.122E+07 | 0.000E+00 | 5.723E+06 | SHORT HLIF |
| ZR-97 | 8.429E+08 | 2.716E+08 | 0.000E+00 | 1.386E+08 | SHORT HLIF |
| MO-99 | 1.819E+01 | 3.785E+01 | 3.221E+01 | 1.931E+01 | NOT IDENT. |
| TC-99M | -2.849E+22 | 2.719E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 1.170E-02 | 3.722E-02 | 3.106E-02 | 1.899E-02 | NOT IDENT. |
| RH-102 | -2.216E-03 | 2.814E-02 | 2.308E-02 | 1.436E-02 | NOT IDENT. |
| RU-103 | -2.166E-02 | 4.695E-02 | 3.739E-02 | 2.396E-02 | FAIL ABUN |
| RH-106 | -2.510E-01 | 3.220E-01 | 2.562E-01 | 1.643E-01 | FAIL ABUN |
| RU-106 | -2.510E-01 | 3.211E-01 | 2.562E-01 | 1.638E-01 | FAIL ABUN |
| AG-108M | -3.710E-02 | 3.400E-02 | 2.639E-02 | 1.735E-02 | NOT IDENT. |
| AG-110M | 8.860E-03 | 3.551E-02 | 3.012E-02 | 1.812E-02 | NOT IDENT. |
| IN-111 | -1.617E+00 | 4.313E+00 | 3.046E+00 | 2.200E+00 | NOT IDENT. |
| IN-113M | 2.632E-02 | 4.776E-02 | 4.111E-02 | 2.437E-02 | NOT IDENT. |
| SN-113 | 2.632E-02 | 4.776E-02 | 4.111E-02 | 2.437E-02 | NOT IDENT. |
| IN-114M | 2.041E-01 | 2.199E-01 | 1.705E-01 | 1.122E-01 | NOT IDENT. |
| CD-115 | 2.265E+00 | 4.754E+01 | 0.000E+00 | 2.426E+01 | SHORT HLIF |
| SN-117M | -3.753E-02 | 7.392E-02 | 6.222E-02 | 3.772E-02 | NOT IDENT. |
| SB-122 | 4.832E+00 | 7.077E+00 | 6.212E+00 | 3.611E+00 | NOT IDENT. |
| I-123 | -5.199E+08 | 2.660E+09 | 0.000E+00 | 1.357E+09 | SHORT HLIF |
| TE-123M | -5.879E-03 | 3.008E-02 | 2.561E-02 | 1.535E-02 | NOT IDENT. |
| I-124 | -6.493E-01 | 1.765E+00 | 1.242E+00 | 9.005E-01 | NOT IDENT. |
| SB-124 | -2.512E-02 | 8.813E-02 | 7.153E-02 | 4.497E-02 | FAIL ABUN |
| SB-125 | 1.186E-01 | 9.204E-02 | 8.134E-02 | 4.696E-02 | FAIL ABUN |
| TE-125M | 2.400E+00 | 1.056E+01 | 8.741E+00 | 5.387E+00 | NOT IDENT. |
| I-126 | -1.028E-01 | 2.343E-01 | 1.903E-01 | 1.196E-01 | NOT IDENT. |
| SB-126 | 8.841E-02 | 2.228E-01 | 1.636E-01 | 1.136E-01 | FAIL ABUN |
| SB-127 | 1.083E+00 | 3.306E+00 | 2.805E+00 | 1.687E+00 | NOT IDENT. |
| XE-127 | -4.433E-03 | 5.545E-02 | 4.649E-02 | 2.829E-02 | NOT IDENT. |
| I-131 | -7.250E-03 | 1.750E-01 | 1.476E-01 | 8.929E-02 | NOT IDENT. |
| TE-132 | -1.327E+00 | 2.112E+00 | 1.703E+00 | 1.078E+00 | NOT IDENT. |
| BA-133 | 1.158E-02 | 4.926E-02 | 3.677E-02 | 2.513E-02 | NOT IDENT. |
| I-133 | -3.222E+04 | 2.802E+05 | 0.000E+00 | 1.430E+05 | SHORT HLIF |
| CS-134 | 1.398E-01 | 6.935E-02 | 4.773E-02 | 3.538E-02 | FAIL ABUN |
| CS-135 | 2.250E-01 | 2.062E-01 | 1.551E-01 | 1.052E-01 | NOT IDENT. |
| I-135 | 9.825E+19 | 9.247E+20 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | 1.446E-01 | 1.393E-01 | 1.234E-01 | 7.108E-02 | FAIL ABUN |
| BA-137M | -1.053E-02 | 3.620E-02 | 2.972E-02 | 1.847E-02 | NOT IDENT. |
| CS-137 | -1.113E-02 | 3.827E-02 | 3.141E-02 | 1.953E-02 | NOT IDENT. |
| CE-139 | 3.702E-02 | 3.287E-02 | 2.899E-02 | 1.677E-02 | NOT IDENT. |
| BA-140 | -2.141E-01 | 3.340E-01 | 2.680E-01 | 1.704E-01 | NOT IDENT. |
| LA-140 | 3.580E-02 | 1.071E-01 | 8.129E-02 | 5.463E-02 | FAIL ABUN |
| CE-141 | 6.103E-02 | 7.183E-02 | 6.355E-02 | 3.665E-02 | NOT IDENT. |
| CE-143 | 1.117E+04 | 3.516E+03 | 0.000E+00 | 1.794E+03 | SHORT HLIF |
| CE-144 | -5.320E-02 | 2.458E-01 | 1.867E-01 | 1.254E-01 | NOT IDENT. |
| PM-144 | 4.968E-04 | 3.631E-02 | 3.021E-02 | 1.853E-02 | NOT IDENT. |
| PR-144 | 3.375E-02 | 2.467E+00 | 2.052E+00 | 1.259E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-146 | 1.894E-02 | 4.547E-02 | 3.845E-02 | 2.320E-02 | NOT IDENT. |
| ND-147 | 3.392E-01 | 7.410E-01 | 6.466E-01 | 3.781E-01 | FAIL ABUN |
| PM-149 | -1.907E+02 | 4.389E+02 | 0.000E+00 | 2.239E+02 | SHORT HLIF |
| EU-152 | 3.349E-02 | 1.455E-01 | 8.646E-02 | 7.426E-02 | FAIL ABUN |
| GD-153 | -8.040E-02 | 9.581E-02 | 6.697E-02 | 4.888E-02 | NOT IDENT. |
| EU-154 | -2.033E-02 | 1.277E-01 | 1.060E-01 | 6.515E-02 | NOT IDENT. |
| EU-155 | 9.590E-02 | 1.153E-01 | 9.768E-02 | 5.885E-02 | FAIL ABUN |
| TB-160 | 9.970E-02 | 1.410E-01 | 1.243E-01 | 7.194E-02 | FAIL ABUN |
| HO-166M | -1.529E-02 | 6.294E-02 | 5.141E-02 | 3.211E-02 | NOT IDENT. |
| TM-171 | -3.982E+01 | 3.061E+01 | 2.183E+01 | 1.562E+01 | NOT IDENT. |
| LU-176 | 9.950E-03 | 2.631E-02 | 2.171E-02 | 1.342E-02 | FAIL ABUN |
| LU-177 | 6.342E+00 | 2.468E+00 | 1.870E+00 | 1.259E+00 | FAIL ABUN |
| LU-177M | -3.155E-01 | 2.007E-01 | 1.527E-01 | 1.024E-01 | FAIL ABUN |
| HF-181 | 8.772E-03 | 4.730E-02 | 3.934E-02 | 2.413E-02 | NOT IDENT. |
| W-181 | 8.238E-02 | 3.864E-01 | 2.974E-01 | 1.971E-01 | NOT IDENT. |
| TA-182 | -8.956E-02 | 1.896E-01 | 1.547E-01 | 9.671E-02 | FAIL ABUN |
| RE-183 | -9.958E-02 | 1.207E-01 | 1.000E-01 | 6.157E-02 | FAIL ABUN |
| RE-184 | -8.183E-02 | 2.478E-01 | 2.012E-01 | 1.264E-01 | NOT IDENT. |
| OS-185 | 1.001E-02 | 4.179E-02 | 3.553E-02 | 2.132E-02 | NOT IDENT. |
| RE-188 | 1.711E-01 | 1.927E-01 | 1.697E-01 | 9.830E-02 | NOT IDENT. |
| W-188 | 4.373E-01 | 8.758E+00 | 6.598E+00 | 4.468E+00 | FAIL ABUN |
| IR-192 | -5.265E-03 | 3.656E-02 | 3.107E-02 | 1.865E-02 | FAIL ABUN |
| AU-195 | 2.964E-01 | 2.462E-01 | 2.087E-01 | 1.256E-01 | FAIL ABUN |
| TL-200 | -1.467E+04 | 9.976E+03 | 0.000E+00 | 5.090E+03 | SHORT HLIF |
| TL-201 | 1.045E+01 | 2.268E+01 | 1.965E+01 | 1.157E+01 | NOT IDENT. |
| TL-202 | 7.009E-02 | 9.939E-02 | 8.490E-02 | 5.071E-02 | NOT IDENT. |
| HG-203 | 4.701E-02 | 4.982E-02 | 4.204E-02 | 2.542E-02 | NOT IDENT. |
| BI-207 | 8.429E-02 | 6.022E-02 | 5.241E-02 | 3.072E-02 | FAIL ABUN |
| TL-207 | 1.095E-01 | 7.952E-01 | 5.952E-01 | 4.057E-01 | FAIL ABUN |
| PO-209 | 7.068E+00 | 7.410E+00 | 6.598E+00 | 3.780E+00 | NOT IDENT. |
| BI-210 | -1.267E+00 | 3.194E+00 | 2.649E+00 | 1.630E+00 | NOT IDENT. |
| PB-210 | -1.267E+00 | 3.194E+00 | 2.649E+00 | 1.630E+00 | NOT IDENT. |
| PO-210 | -1.267E+00 | 3.194E+00 | 2.649E+00 | 1.629E+00 | NOT IDENT. |
| PB-211 | -6.861E-01 | 1.080E+00 | 8.039E-01 | 5.511E-01 | NOT IDENT. |
| BI-212 | 1.858E+00 | 6.428E-01 | 3.567E-01 | 3.279E-01 | FAIL ABUN |
| PO-215 | 1.095E-01 | 7.952E-01 | 5.952E-01 | 4.057E-01 | FAIL ABUN |
| RN-219 | 3.329E-02 | 4.192E-01 | 3.524E-01 | 2.139E-01 | FAIL ABUN |
| RN-220 | 2.190E+01 | 2.602E+01 | 2.306E+01 | 1.328E+01 | NOT IDENT. |
| RA-223 | 1.095E-01 | 7.952E-01 | 5.952E-01 | 4.057E-01 | FAIL ABUN |
| AC-227 | -3.949E-02 | 3.910E-01 | 3.207E-01 | 1.995E-01 | FAIL ABUN |
| TH-227 | -3.949E-02 | 3.910E-01 | 3.207E-01 | 1.995E-01 | FAIL ABUN |
| TH-229 | -6.844E-01 | 5.455E-01 | 4.348E-01 | 2.783E-01 | FAIL ABUN |
| PA-231 | -1.007E+00 | 1.678E+00 | 1.323E+00 | 8.562E-01 | FAIL ABUN |
| TH-231 | 1.095E-01 | 7.952E-01 | 5.952E-01 | 4.057E-01 | FAIL ABUN |
| U-231 | -7.216E-01 | 2.650E+00 | 1.930E+00 | 1.352E+00 | FAIL ABUN |
| PA-233 | -1.671E-02 | 6.506E-02 | 5.507E-02 | 3.319E-02 | FAIL ABUN |
| PA-234 | -3.310E-02 | 2.907E-01 | 2.414E-01 | 1.483E-01 | FAIL ABUN |
| PA-234M | 3.245E+00 | 4.622E+00 | 3.962E+00 | 2.358E+00 | NOT IDENT. |
| U-235 | 1.037E-01 | 2.262E-01 | 1.919E-01 | 1.154E-01 | FAIL ABUN |
| NP-236 | 1.743E-02 | 8.178E-02 | 7.059E-02 | 4.172E-02 | NOT IDENT. |
| NP-239 | -1.399E-01 | 2.045E-01 | 1.620E-01 | 1.043E-01 | FAIL ABUN |
| AM-241 | -3.292E-03 | 1.554E-01 | 1.192E-01 | 7.927E-02 | NOT IDENT. |
| CM-243 | 2.011E-02 | 1.025E-01 | 8.507E-02 | 5.228E-02 | FAIL ABUN |
| AM-246 | 4.671E-02 | 1.214E-01 | 1.035E-01 | 6.192E-02 | NOT IDENT. |
| CM-247 | 1.893E-02 | 3.763E-02 | 3.227E-02 | 1.920E-02 | NOT IDENT. |
| CF-249 | 2.154E-02 | 4.206E-02 | 3.616E-02 | 2.146E-02 | NOT IDENT. |
| CF-251 | -9.760E-03 | 1.365E-01 | 1.158E-01 | 6.962E-02 | NOT IDENT. |

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

| ENERGY | MDA COUNTS |
|--------|------------|
|--------|------------|

| | |
|-------|----------|
| 46.50 | 287.2090 |
| 46.50 | 287.2090 |
| 46.50 | 287.2090 |
| 48.70 | 283.7925 |
| 49.72 | 276.8671 |
| 51.35 | 299.2132 |
| 52.39 | 292.2339 |
| 52.97 | 303.2025 |
| 53.15 | 307.1620 |
| 53.44 | 314.0692 |
| 54.07 | 302.7695 |
| 56.28 | 331.0567 |
| 56.28 | 331.0602 |
| 57.37 | 0.0000 |
| 57.53 | 324.2319 |
| 57.53 | 324.2345 |
| 57.60 | 329.0665 |
| 57.98 | 331.6643 |
| 57.98 | 331.6643 |
| 59.32 | 346.6324 |
| 59.32 | 346.6324 |
| 59.40 | 346.7423 |
| 59.54 | 346.9352 |
| 59.72 | 340.0103 |
| 60.01 | 340.4009 |
| 61.10 | 347.6299 |
| 61.14 | 347.6837 |
| 61.30 | 347.9002 |
| 63.00 | 370.0426 |
| 63.29 | 370.4516 |
| 63.29 | 370.4516 |
| 63.58 | 370.8586 |
| 64.28 | 407.3674 |
| 65.12 | 392.5367 |
| 65.20 | 380.9328 |
| 65.20 | 380.9328 |
| 66.05 | 383.6006 |
| 66.72 | 459.6830 |
| 66.83 | 459.8687 |
| 66.91 | 460.0043 |
| 67.20 | 460.4899 |
| 67.20 | 460.4899 |
| 67.75 | 442.4769 |
| 67.85 | 442.6378 |
| 68.90 | 432.1307 |
| 68.90 | 432.1307 |
| 69.30 | 420.8489 |
| 69.67 | 415.4476 |
| 70.82 | 406.6615 |
| 70.82 | 406.6615 |
| 70.83 | 406.6760 |
| 72.80 | 442.5724 |
| 72.87 | 442.6801 |
| 72.87 | 442.6801 |
| 74.67 | 445.3874 |
| 74.81 | 445.5960 |
| 74.81 | 445.5960 |
| 74.81 | 445.5960 |
| 74.81 | 445.5960 |
| 74.81 | 445.5960 |
| 74.81 | 445.5960 |
| 74.97 | 445.8360 |
| 75.28 | 446.2981 |
| 75.70 | 446.9216 |
| 77.11 | 449.0054 |
| 77.11 | 449.0054 |

| | |
|--------|----------|
| 77.11 | 449.0054 |
| 77.11 | 449.0054 |
| 77.11 | 449.0054 |
| 77.11 | 449.0054 |
| 77.11 | 449.0054 |
| 78.38 | 437.5763 |
| 79.62 | 520.4172 |
| 79.80 | 520.7163 |
| 79.80 | 520.7163 |
| 80.11 | 521.2321 |
| 80.18 | 521.3481 |
| 80.30 | 444.3948 |
| 80.30 | 444.3948 |
| 80.57 | 444.7749 |
| 81.00 | 522.7045 |
| 81.07 | 522.8206 |
| 81.07 | 522.8206 |
| 81.07 | 522.8206 |
| 81.07 | 522.8206 |
| 82.60 | 411.8729 |
| 83.37 | 363.5188 |
| 83.78 | 363.9816 |
| 83.78 | 363.9816 |
| 83.78 | 363.9816 |
| 83.78 | 363.9816 |
| 84.21 | 364.4641 |
| 84.90 | 365.2331 |
| 85.43 | 365.8223 |
| 86.29 | 366.7729 |
| 86.50 | 367.0044 |
| 86.54 | 367.0489 |
| 86.59 | 367.1041 |
| 86.72 | 367.2483 |
| 86.79 | 367.3230 |
| 86.94 | 367.4904 |
| 87.30 | 367.8856 |
| 87.30 | 367.8856 |
| 87.30 | 367.8856 |
| 87.30 | 367.8856 |
| 87.30 | 367.8856 |
| 87.30 | 367.8856 |
| 87.57 | 368.1811 |
| 87.88 | 0.0000 |
| 88.03 | 368.6849 |
| 88.36 | 369.0445 |
| 88.47 | 369.1655 |
| 89.95 | 370.7713 |
| 91.11 | 372.0227 |
| 92.29 | 373.2867 |
| 92.38 | 373.3828 |
| 92.38 | 373.3828 |
| 93.35 | 374.4135 |
| 94.00 | 375.1025 |
| 94.67 | 357.5522 |
| 94.67 | 357.5573 |
| 94.90 | 357.7877 |
| 94.90 | 357.7877 |
| 94.90 | 357.7877 |
| 94.90 | 357.7877 |
| 95.87 | 386.2288 |
| 95.87 | 386.2288 |
| 96.73 | 432.5081 |
| 97.43 | 410.6173 |
| 98.44 | 352.8359 |
| 98.44 | 352.8376 |
| 98.88 | 344.3518 |
| 99.55 | 360.2130 |
| 99.55 | 360.2130 |
| 99.86 | 367.0477 |
| 100.00 | 367.1865 |
| 100.10 | 347.6715 |
| 103.18 | 410.9572 |
| 103.76 | 369.7644 |
| 105.00 | 349.9821 |
| 105.31 | 359.1021 |
| 108.00 | 406.0859 |
| 109.28 | 377.2621 |

| | |
|--------|----------|
| 111.00 | 349.7400 |
| 111.00 | 349.7400 |
| 111.76 | 397.5676 |
| 112.95 | 368.3207 |
| 115.19 | 395.2451 |
| 116.30 | 367.9129 |
| 117.00 | 376.4896 |
| 117.00 | 376.4896 |
| 117.66 | 370.2452 |
| 121.11 | 356.0251 |
| 121.62 | 349.5471 |
| 121.78 | 349.6755 |
| 122.06 | 356.8072 |
| 122.32 | 357.0200 |
| 122.32 | 357.0200 |
| 122.32 | 357.0200 |
| 122.32 | 357.0200 |
| 123.07 | 346.0999 |
| 127.23 | 363.3422 |
| 129.76 | 396.3009 |
| 131.20 | 367.9456 |
| 133.02 | 386.3823 |
| 133.54 | 395.3170 |
| 135.34 | 406.2625 |
| 136.00 | 366.7709 |
| 136.25 | 366.9658 |
| 136.48 | 367.1450 |
| 140.51 | 424.1633 |
| 140.51 | 0.0000 |
| 142.18 | 394.9626 |
| 142.65 | 358.3335 |
| 143.76 | 365.4746 |
| 144.24 | 364.9236 |
| 144.24 | 364.9236 |
| 144.24 | 364.9236 |
| 144.24 | 364.9236 |
| 145.22 | 357.4803 |
| 145.44 | 358.5474 |
| 147.16 | 398.0350 |
| 152.43 | 367.1980 |
| 152.70 | 372.9144 |
| 153.22 | 390.8006 |
| 154.21 | 371.2286 |
| 154.21 | 371.2286 |
| 154.21 | 371.2286 |
| 154.21 | 371.2286 |
| 155.03 | 370.8864 |
| 156.02 | 398.4599 |
| 158.56 | 384.5470 |
| 159.00 | 0.0000 |
| 159.00 | 358.7698 |
| 160.31 | 346.5699 |
| 161.27 | 349.0586 |
| 162.32 | 387.2379 |
| 162.64 | 379.0243 |
| 163.35 | 391.7297 |
| 163.89 | 373.3082 |
| 165.85 | 347.2742 |
| 167.43 | 369.0855 |
| 171.28 | 341.1286 |
| 171.86 | 347.1985 |
| 172.10 | 347.3457 |
| 176.55 | 370.2371 |
| 176.60 | 370.2693 |
| 181.06 | 361.2666 |
| 184.41 | 372.6527 |
| 185.71 | 346.6960 |
| 186.00 | 346.8639 |
| 190.27 | 291.2395 |
| 192.34 | 336.6371 |
| 193.63 | 385.8076 |
| 197.04 | 330.2117 |
| 198.01 | 351.6319 |
| 198.60 | 356.9402 |
| 200.40 | 0.0000 |
| 201.83 | 379.7836 |
| 202.84 | 364.3155 |
| 205.31 | 353.0012 |

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|--------|----------|
| 208.36 | 375.6859 |
| 208.81 | 390.9298 |
| 209.75 | 391.4806 |
| 209.75 | 391.4806 |
| 210.97 | 333.2626 |
| 215.65 | 335.5724 |
| 216.55 | 360.5991 |
| 218.09 | 367.5678 |
| 222.10 | 328.3888 |
| 223.80 | 322.9735 |
| 226.40 | 329.3562 |
| 227.00 | 332.7539 |
| 227.08 | 332.7905 |
| 227.20 | 332.8467 |
| 228.16 | 343.7089 |
| 228.18 | 343.7190 |
| 228.18 | 343.7190 |
| 231.56 | 0.0000 |
| 235.69 | 318.2477 |
| 236.00 | 335.2295 |
| 236.00 | 335.2295 |
| 238.63 | 316.9807 |
| 238.63 | 316.9807 |
| 238.63 | 316.9807 |
| 238.63 | 316.9807 |
| 239.00 | 0.0000 |
| 240.98 | 317.9810 |
| 241.98 | 318.4067 |
| 241.98 | 318.4067 |
| 241.98 | 318.4067 |
| 244.69 | 305.0648 |
| 245.39 | 312.1700 |
| 247.94 | 268.1444 |
| 248.90 | 265.6229 |
| 249.79 | 0.0000 |
| 252.40 | 270.0559 |
| 252.85 | 264.8284 |
| 252.85 | 264.8284 |
| 254.15 | 0.0000 |
| 256.20 | 250.8286 |
| 256.20 | 250.8286 |
| 260.50 | 258.7146 |
| 260.90 | 0.0000 |
| 262.80 | 271.8143 |
| 264.65 | 246.5056 |
| 268.24 | 289.7369 |
| 268.79 | 288.8361 |
| 269.46 | 289.0729 |
| 269.46 | 289.0729 |
| 269.46 | 289.0729 |
| 269.46 | 289.0729 |
| 271.23 | 259.0732 |
| 273.65 | 344.6730 |
| 276.40 | 291.3424 |
| 277.35 | 272.9663 |
| 277.60 | 266.3855 |
| 277.60 | 266.3855 |
| 278.00 | 273.1765 |
| 278.60 | 273.3717 |
| 279.20 | 273.5669 |
| 279.53 | 273.6720 |
| 280.46 | 298.4739 |
| 281.68 | 0.0000 |
| 283.67 | 269.4150 |
| 284.30 | 257.3076 |
| 285.00 | 261.9967 |
| 285.90 | 0.0000 |
| 286.10 | 255.6059 |
| 286.10 | 255.6059 |
| 287.40 | 246.3650 |
| 288.45 | 0.0000 |
| 290.67 | 241.9258 |
| 290.80 | 241.9619 |
| 291.72 | 239.2084 |
| 293.26 | 0.0000 |
| 293.70 | 228.8890 |
| 295.21 | 229.2813 |
| 295.21 | 229.2813 |

| | |
|--------|----------|
| 295.21 | 229.2813 |
| 295.96 | 229.4758 |
| 296.50 | 229.6148 |
| 297.23 | 0.0000 |
| 298.57 | 230.1491 |
| 299.80 | 230.4641 |
| 299.80 | 230.4641 |
| 300.09 | 230.5413 |
| 300.09 | 230.5413 |
| 300.09 | 230.5413 |
| 300.09 | 230.5413 |
| 300.12 | 230.5475 |
| 301.29 | 228.1097 |
| 302.84 | 228.5034 |
| 303.76 | 0.0000 |
| 303.91 | 218.0959 |
| 304.40 | 245.6829 |
| 304.40 | 245.6829 |
| 304.84 | 247.3275 |
| 306.84 | 216.8874 |
| 308.46 | 229.9164 |
| 311.98 | 229.8691 |
| 316.51 | 223.5663 |
| 318.01 | 237.8625 |
| 319.02 | 235.3252 |
| 319.41 | 222.3966 |
| 320.08 | 232.7942 |
| 323.87 | 241.5158 |
| 323.87 | 241.5158 |
| 323.87 | 241.5158 |
| 323.87 | 241.5158 |
| 325.23 | 274.6240 |
| 328.77 | 269.3694 |
| 333.44 | 198.2772 |
| 334.20 | 200.7933 |
| 334.20 | 200.7933 |
| 334.30 | 223.0217 |
| 338.28 | 242.8969 |
| 338.28 | 242.8969 |
| 338.28 | 242.8969 |
| 338.28 | 242.8969 |
| 338.32 | 242.9094 |
| 338.32 | 242.9094 |
| 338.32 | 242.9094 |
| 340.50 | 220.3011 |
| 340.57 | 220.3152 |
| 344.27 | 213.1754 |
| 345.85 | 232.6311 |
| 350.59 | 0.0000 |
| 351.07 | 226.7813 |
| 351.92 | 226.9685 |
| 351.92 | 226.9685 |
| 351.92 | 226.9685 |
| 355.39 | 0.0000 |
| 356.01 | 191.5011 |
| 364.48 | 187.8664 |
| 366.43 | 198.9398 |
| 367.43 | 203.0311 |
| 367.94 | 0.0000 |
| 369.80 | 176.0889 |
| 374.96 | 203.4776 |
| 383.85 | 202.1647 |
| 387.95 | 194.9545 |
| 388.63 | 201.0457 |
| 391.69 | 187.6236 |
| 391.69 | 187.6236 |
| 392.90 | 210.8042 |
| 398.62 | 200.8252 |
| 400.65 | 195.1462 |
| 401.10 | 187.1739 |
| 401.81 | 187.2897 |
| 402.60 | 179.3580 |
| 404.84 | 223.1177 |
| 410.95 | 181.6680 |
| 411.60 | 218.3253 |
| 413.65 | 250.2401 |
| 414.70 | 198.5396 |
| 415.30 | 179.2850 |

| | |
|--------|----------|
| 415.76 | 167.1270 |
| 417.63 | 0.0000 |
| 418.52 | 180.7941 |
| 423.70 | 163.1147 |
| 427.08 | 157.4003 |
| 427.89 | 140.0043 |
| 432.53 | 173.6068 |
| 433.93 | 193.4624 |
| 439.47 | 0.0000 |
| 439.56 | 168.3657 |
| 439.89 | 163.2133 |
| 443.98 | 187.7388 |
| 444.90 | 187.8772 |
| 445.03 | 187.8970 |
| 445.03 | 187.8970 |
| 445.03 | 187.8970 |
| 445.03 | 187.8970 |
| 453.90 | 163.9904 |
| 463.38 | 163.0874 |
| 468.07 | 145.2534 |
| 473.00 | 144.0209 |
| 475.06 | 141.0396 |
| 475.35 | 146.4154 |
| 476.78 | 142.2931 |
| 477.59 | 147.7318 |
| 477.96 | 145.6322 |
| 482.03 | 153.5941 |
| 484.57 | 0.0000 |
| 487.03 | 163.8676 |
| 490.36 | 0.0000 |
| 492.35 | 0.0000 |
| 497.08 | 169.4234 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 154.6525 |
| 511.00 | 154.6697 |
| 511.85 | 154.7618 |
| 511.85 | 154.7618 |
| 513.99 | 146.5690 |
| 513.99 | 146.5690 |
| 520.41 | 149.0702 |
| 520.65 | 0.0000 |
| 527.90 | 0.0000 |
| 528.96 | 0.0000 |
| 529.64 | 142.6173 |
| 529.87 | 0.0000 |
| 531.02 | 132.5584 |
| 537.32 | 150.8170 |
| 543.00 | 147.6589 |
| 546.56 | 0.0000 |
| 549.76 | 129.5519 |
| 552.65 | 165.5443 |
| 555.20 | 139.4425 |
| 563.23 | 145.8601 |
| 563.90 | 136.4502 |
| 568.70 | 153.0339 |
| 569.32 | 148.3384 |
| 569.50 | 141.7004 |
| 569.67 | 141.7155 |
| 573.80 | 132.5551 |
| 574.00 | 131.6183 |
| 574.64 | 0.0000 |
| 578.91 | 0.0000 |
| 579.30 | 0.0000 |
| 583.14 | 137.1842 |
| 585.48 | 0.0000 |
| 591.81 | 162.0493 |
| 592.07 | 161.0208 |
| 593.00 | 156.3772 |
| 595.88 | 136.3499 |
| 600.56 | 168.7501 |
| 602.52 | 0.0000 |
| 602.71 | 168.1408 |
| 602.71 | 168.1408 |
| 603.60 | 144.9130 |
| 604.41 | 143.3193 |
| 604.70 | 138.3430 |
| 609.31 | 151.1307 |

| | |
|--------|----------|
| 609.31 | 151.1307 |
| 609.31 | 151.1307 |
| 609.31 | 151.1307 |
| 610.33 | 151.2253 |
| 612.46 | 144.0242 |
| 614.37 | 139.1593 |
| 618.01 | 113.2112 |
| 621.84 | 145.4014 |
| 621.84 | 145.4014 |
| 631.29 | 130.4102 |
| 633.02 | 139.4452 |
| 633.10 | 145.3850 |
| 634.78 | 125.7288 |
| 635.90 | 124.8208 |
| 636.97 | 113.9963 |
| 645.85 | 114.5859 |
| 646.12 | 110.6183 |
| 656.30 | 136.3265 |
| 657.75 | 129.4173 |
| 657.90 | 0.0000 |
| 661.65 | 143.7797 |
| 661.65 | 143.7797 |
| 664.57 | 0.0000 |
| 666.33 | 142.1446 |
| 666.33 | 142.1446 |
| 675.00 | 115.4844 |
| 677.61 | 137.9700 |
| 685.20 | 124.2885 |
| 692.80 | 111.5059 |
| 695.00 | 137.2442 |
| 696.49 | 145.5564 |
| 696.49 | 145.5564 |
| 697.00 | 132.2675 |
| 697.49 | 135.3784 |
| 698.33 | 147.7529 |
| 698.50 | 147.7676 |
| 699.00 | 151.9114 |
| 702.63 | 126.4984 |
| 706.10 | 132.9158 |
| 706.58 | 0.0000 |
| 706.67 | 128.8351 |
| 709.31 | 149.6581 |
| 711.68 | 138.4792 |
| 713.82 | 134.4989 |
| 717.42 | 143.0481 |
| 720.50 | 122.8124 |
| 721.93 | 0.0000 |
| 722.20 | 124.7021 |
| 722.78 | 121.1772 |
| 722.78 | 121.1772 |
| 722.89 | 121.1843 |
| 722.95 | 121.1867 |
| 723.30 | 130.1229 |
| 724.18 | 126.6149 |
| 727.18 | 118.7755 |
| 733.00 | 125.4053 |
| 735.90 | 94.1968 |
| 739.58 | 100.6660 |
| 742.81 | 119.7404 |
| 744.21 | 113.5173 |
| 747.13 | 113.6865 |
| 751.79 | 118.1774 |
| 752.31 | 108.7103 |
| 753.82 | 97.1735 |
| 755.35 | 0.0000 |
| 756.15 | 100.4601 |
| 756.87 | 114.2490 |
| 763.93 | 147.5659 |
| 765.79 | 112.6358 |
| 766.42 | 121.1737 |
| 766.84 | 123.3255 |
| 776.49 | 106.8247 |
| 778.00 | 118.6624 |
| 778.57 | 112.2803 |
| 778.89 | 112.2974 |
| 783.80 | 111.4966 |
| 785.46 | 105.8651 |
| 792.07 | 160.5367 |

| | |
|---------|----------|
| 795.84 | 118.3103 |
| 796.30 | 122.0351 |
| 798.80 | 125.8849 |
| 801.93 | 113.5599 |
| 805.60 | 105.8651 |
| 810.29 | 108.8938 |
| 810.76 | 111.7111 |
| 815.85 | 102.6474 |
| 817.79 | 0.0000 |
| 818.51 | 120.5281 |
| 819.60 | 114.9800 |
| 826.30 | 119.0935 |
| 828.27 | 0.0000 |
| 831.60 | 129.7263 |
| 831.96 | 125.9872 |
| 834.83 | 118.6238 |
| 836.80 | 0.0000 |
| 846.75 | 107.9147 |
| 848.13 | 110.8240 |
| 856.28 | 0.0000 |
| 856.80 | 93.1926 |
| 860.37 | 97.1512 |
| 867.32 | 100.3217 |
| 867.82 | 100.3436 |
| 871.10 | 92.5727 |
| 873.19 | 100.5835 |
| 874.81 | 95.8618 |
| 875.33 | 0.0000 |
| 876.40 | 84.4182 |
| 879.36 | 84.5287 |
| 880.27 | 94.1719 |
| 880.51 | 91.2990 |
| 881.50 | 87.4929 |
| 883.24 | 90.4462 |
| 884.67 | 96.2803 |
| 889.25 | 92.6150 |
| 896.60 | 86.1365 |
| 898.02 | 103.6208 |
| 899.00 | 99.7884 |
| 903.28 | 100.2161 |
| 911.07 | 78.8826 |
| 911.07 | 78.8826 |
| 911.07 | 78.8826 |
| 919.63 | 69.9396 |
| 920.93 | 80.9038 |
| 925.00 | 85.2280 |
| 925.24 | 90.1357 |
| 926.50 | 96.0654 |
| 935.52 | 96.4294 |
| 937.48 | 96.5081 |
| 944.10 | 102.6978 |
| 946.00 | 92.8968 |
| 949.00 | 94.9905 |
| 962.29 | 104.4635 |
| 964.01 | 121.9574 |
| 966.15 | 109.6087 |
| 968.20 | 109.6988 |
| 969.11 | 109.7410 |
| 969.11 | 109.7410 |
| 969.11 | 109.7410 |
| 977.42 | 102.7669 |
| 980.50 | 99.2193 |
| 983.50 | 85.2905 |
| 989.30 | 91.5221 |
| 996.32 | 99.8459 |
| 1001.03 | 80.8329 |
| 1001.68 | 75.8004 |
| 1004.76 | 102.2012 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 87.0159 |
| 1036.00 | 94.2236 |
| 1037.82 | 92.2381 |
| 1038.57 | 99.4426 |
| 1038.76 | 0.0000 |
| 1045.16 | 104.8282 |
| 1046.59 | 97.6871 |
| 1048.07 | 78.1947 |

| | |
|---------|----------|
| 1050.47 | 91.6509 |
| 1050.47 | 91.6509 |
| 1062.04 | 101.3564 |
| 1063.62 | 85.8948 |
| 1076.63 | 64.4716 |
| 1077.35 | 68.6495 |
| 1078.86 | 62.4442 |
| 1085.78 | 79.2948 |
| 1099.22 | 94.3631 |
| 1112.02 | 73.7305 |
| 1112.84 | 82.9715 |
| 1115.52 | 112.5804 |
| 1120.29 | 88.7373 |
| 1120.29 | 88.7373 |
| 1120.29 | 88.7373 |
| 1120.29 | 88.7373 |
| 1120.51 | 88.7461 |
| 1121.28 | 88.7695 |
| 1124.00 | 0.0000 |
| 1129.67 | 61.2103 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 99.6241 |
| 1173.22 | 83.7960 |
| 1175.09 | 79.1396 |
| 1177.93 | 90.5332 |
| 1189.05 | 94.6594 |
| 1204.90 | 92.3081 |
| 1205.75 | 0.0000 |
| 1213.00 | 96.3735 |
| 1221.42 | 110.0375 |
| 1230.97 | 147.8152 |
| 1235.34 | 107.6558 |
| 1236.41 | 0.0000 |
| 1238.25 | 112.5689 |
| 1246.25 | 124.4333 |
| 1260.41 | 0.0000 |
| 1271.85 | 73.9126 |
| 1274.45 | 96.3594 |
| 1274.54 | 96.3625 |
| 1291.56 | 65.5646 |
| 1298.22 | 0.0000 |
| 1312.09 | 74.8473 |
| 1325.50 | 67.2446 |
| 1325.50 | 67.2446 |
| 1332.49 | 52.5229 |
| 1333.61 | 53.5320 |
| 1360.21 | 57.9593 |
| 1362.66 | 0.0000 |
| 1365.15 | 49.0374 |
| 1368.21 | 58.0974 |
| 1368.53 | 0.0000 |
| 1376.25 | 41.1664 |
| 1384.27 | 92.5924 |
| 1394.10 | 57.5323 |
| 1395.20 | 51.4918 |
| 1407.95 | 52.6967 |
| 1434.06 | 37.7769 |
| 1436.60 | 43.9356 |
| 1457.56 | 0.0000 |
| 1460.81 | 48.3511 |
| 1489.15 | 54.9522 |
| 1509.49 | 49.0023 |
| 1596.49 | 27.3117 |
| 1620.62 | 35.3058 |
| 1678.03 | 0.0000 |
| 1691.02 | 39.8155 |
| 1691.02 | 39.8155 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 26.6858 |
| 1764.49 | 26.6858 |
| 1764.49 | 26.6858 |
| 1764.49 | 26.6858 |
| 1770.23 | 10.6887 |
| 1771.40 | 12.4735 |
| 1791.20 | 0.0000 |
| 1808.65 | 19.9712 |

1836.01

31.1497

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G245388004

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 3.5307E+00 | ug/g |
| Total Uranium Counting Unc. | 5.7359E+00 | ug/g |
| Total Uranium Tpu | 2.9265E-06 | ug/g |
| Total Uranium Mda | 2.9118E+00 | ug/g |


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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 944964                      SAMPLE ID   : G245388004          *
*  ANALYST       : MXR1                        DETECTOR    : GAM22           *
*  SAMPLE DATE   : 15-JAN-2010 12:00:00.00    COUNT TIME   : 0 02:00:00.00      *
*  ANALYSIS DATE : 4-FEB-2010 10:30:00.25    SAMPLE ALQT  : 105.230 GRAM       *
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.007E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 1.331E+00
GROSS GAMMA MDA (pCi/GRAM )     : 2.396E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.161E+00

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VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 12:33:32.40

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388005.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:30:28.
Sample ID          : G245388005      Sample quantity   : 9.78800E+01 GRAM
Detector name      : GAM23           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.51  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials  : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 944964           Detector SN#      :
Matrix Spike ID    :                  LCS ID           : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 4 | 74.64* | 357 | 339 | 1.23 | 149.28 | 143 | 15 | 4.95E-02 | 10.1 | 2.18E+00 |
| 2 | 4 | 76.94 | 516 | 280 | 0.99 | 153.89 | 143 | 15 | 7.17E-02 | 6.8 | |
| 3 | 0 | 86.90 | 147 | 418 | 0.92 | 173.80 | 170 | 8 | 2.04E-02 | 25.5 | |
| 4 | 0 | 89.70 | 127 | 250 | 1.16 | 179.40 | 177 | 6 | 1.76E-02 | 21.7 | |
| 5 | 0 | 92.85* | 182 | 320 | 1.76 | 185.70 | 182 | 8 | 2.53E-02 | 19.5 | |
| 6 | 0 | 129.19 | 80 | 329 | 1.24 | 258.38 | 251 | 10 | 1.11E-02 | 43.8 | |
| 7 | 0 | 185.98* | 176 | 353 | 1.20 | 371.96 | 366 | 13 | 2.45E-02 | 23.8 | |
| 8 | 0 | 208.98 | 124 | 211 | 1.06 | 417.96 | 414 | 9 | 1.72E-02 | 23.0 | |
| 9 | 3 | 238.35* | 1100 | 134 | 1.18 | 476.69 | 468 | 20 | 1.53E-01 | 3.5 | 1.66E+00 |
| 10 | 3 | 241.27 | 264 | 154 | 1.95 | 482.54 | 468 | 20 | 3.67E-02 | 12.5 | |
| 11 | 0 | 269.87 | 77 | 164 | 1.37 | 539.74 | 535 | 10 | 1.07E-02 | 33.3 | |
| 12 | 0 | 277.19 | 69 | 116 | 1.27 | 554.37 | 552 | 8 | 9.60E-03 | 29.3 | |
| 13 | 0 | 294.94 | 339 | 176 | 1.21 | 589.89 | 585 | 11 | 4.70E-02 | 9.4 | |
| 14 | 0 | 338.13 | 226 | 118 | 1.03 | 676.27 | 671 | 11 | 3.15E-02 | 11.4 | |
| 15 | 0 | 351.57 | 532 | 171 | 1.17 | 703.13 | 696 | 14 | 7.39E-02 | 6.8 | |
| 16 | 0 | 462.78 | 75 | 95 | 1.15 | 925.55 | 921 | 12 | 1.05E-02 | 28.4 | |
| 17 | 0 | 510.91* | 65 | 176 | 2.44 | 1021.82 | 1012 | 21 | 9.02E-03 | 56.1 | |
| 18 | 0 | 582.51* | 295 | 81 | 1.62 | 1165.02 | 1158 | 14 | 4.09E-02 | 8.8 | |
| 19 | 0 | 608.67* | 375 | 86 | 1.52 | 1217.33 | 1209 | 13 | 5.20E-02 | 7.4 | |
| 20 | 0 | 661.25 | 54 | 56 | 1.57 | 1322.50 | 1314 | 15 | 7.48E-03 | 33.3 | |
| 21 | 0 | 726.79 | 51 | 75 | 1.47 | 1453.58 | 1447 | 12 | 7.11E-03 | 36.6 | |
| 22 | 0 | 860.83 | 42 | 60 | 2.49 | 1721.66 | 1714 | 17 | 5.76E-03 | 45.3 | |
| 23 | 0 | 910.40 | 226 | 33 | 2.09 | 1820.80 | 1812 | 16 | 3.14E-02 | 8.7 | |
| 24 | 0 | 933.41 | 24 | 25 | 1.38 | 1866.81 | 1861 | 10 | 3.33E-03 | 44.0 | |
| 25 | 0 | 968.22* | 79 | 66 | 1.64 | 1936.44 | 1930 | 11 | 1.09E-02 | 23.3 | |
| 26 | 0 | 1119.95* | 79 | 48 | 1.05 | 2239.90 | 2233 | 18 | 1.10E-02 | 23.8 | |
| 27 | 0 | 1236.63 | 58 | 54 | 4.50 | 2473.26 | 2465 | 19 | 8.10E-03 | 33.6 | |
| 28 | 0 | 1459.58 | 559 | 25 | 2.31 | 2919.16 | 2909 | 20 | 7.76E-02 | 4.8 | |
| 29 | 0 | 1763.42* | 52 | 10 | 1.85 | 3526.84 | 3519 | 13 | 7.21E-03 | 19.5 | |

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

VMS Nuclide Identification Report V3.1 Generated 4-FEB-2010 12:33:35

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388005.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:30:28
Sample ID        : G245388005 Sample quantity : 97.880 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.51 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 2.014E+01 | 2.440E+00 | 8.332E-01 | 6.232E-02 | 24.178 |
| CD-109 | + | 88.03 | * | 2.998E+00 | 1.554E+00 | 1.719E+00 | 1.678E-01 | 1.744 |
| SN-126 | | 64.28 | | 1.015E+00 | 7.990E-01 | 1.370E+00 | 2.085E-01 | 0.741 |
| | + | 86.94 | | 1.216E+00 | 7.996E-01 | 7.940E-01 | 3.302E-01 | 1.532 |
| | + | 87.57 | * | 2.926E-01 | 1.516E-01 | 1.687E-01 | 1.642E-02 | 1.734 |
| BA-137M | + | 661.65 | * | 1.126E-01 | 7.512E-02 | 8.085E-02 | 4.130E-03 | 1.393 |
| CS-137 | + | 661.65 | * | 1.190E-01 | 7.942E-02 | 8.546E-02 | 4.390E-03 | 1.393 |
| TL-208 | + | 277.35 | | 9.415E-01 | 5.597E-01 | 8.146E-01 | 8.607E-02 | 1.156 |
| | + | 510.84 | | 4.531E-01 | 5.105E-01 | 2.984E-01 | 3.032E-02 | 1.518 |
| | + | 583.14 | * | 5.894E-01 | 1.110E-01 | 7.513E-02 | 4.878E-03 | 7.845 |
| | + | 860.37 | | 7.942E-01 | 7.236E-01 | 5.174E-01 | 4.677E-02 | 1.535 |
| BI-211 | | 72.87 | | 1.752E+01 | 5.590E+00 | 8.905E+00 | 7.855E-01 | 1.968 |
| | + | 351.07 | * | 4.582E+00 | 6.898E-01 | 4.189E-01 | 2.730E-02 | 10.936 |
| PB-212 | + | 74.81 | | 3.168E+00 | 7.593E-01 | 7.968E-01 | 1.028E-01 | 3.976 |
| | + | 77.11 | | 2.562E+00 | 4.183E-01 | 4.502E-01 | 4.051E-02 | 5.691 |
| | + | 87.30 | | 1.353E+00 | 7.141E-01 | 7.833E-01 | 1.092E-01 | 1.728 |
| | + | 238.63 | * | 2.040E+00 | 2.052E-01 | 1.175E-01 | 8.449E-03 | 17.355 |
| | | 300.09 | | 1.603E+00 | 1.163E+00 | 1.862E+00 | 1.546E-01 | 0.861 |
| PO-212 | + | 74.81 | | 3.168E+00 | 7.593E-01 | 7.968E-01 | 1.028E-01 | 3.976 |
| | + | 77.11 | | 2.562E+00 | 4.183E-01 | 4.502E-01 | 4.051E-02 | 5.691 |
| | + | 87.30 | | 1.353E+00 | 7.141E-01 | 7.833E-01 | 1.092E-01 | 1.728 |
| | | 115.19 | | 2.825E+00 | 4.636E+00 | 7.831E+00 | 4.996E-01 | 0.361 |
| | + | 238.63 | * | 2.040E+00 | 2.052E-01 | 1.175E-01 | 8.449E-03 | 17.355 |
| | | 300.09 | | 1.603E+00 | 1.163E+00 | 1.862E+00 | 1.546E-01 | 0.861 |
| BI-214 | + | 609.31 | * | 1.414E+00 | 2.353E-01 | 1.656E-01 | 1.245E-02 | 8.543 |
| | + | 1120.29 | | 1.597E+00 | 7.757E-01 | 6.375E-01 | 5.924E-02 | 2.505 |
| | + | 1764.49 | | 1.441E+00 | 5.683E-01 | 5.044E-01 | 3.136E-02 | 2.857 |
| PB-214 | + | 74.81 | | 5.459E+00 | 1.271E+00 | 1.373E+00 | 1.589E-01 | 3.976 |
| | + | 77.11 | | 4.393E+00 | 7.914E-01 | 7.719E-01 | 9.100E-02 | 5.691 |
| | + | 87.30 | | 2.318E+00 | 1.214E+00 | 1.342E+00 | 1.663E-01 | 1.728 |
| | + | 241.98 | | 2.941E+00 | 7.713E-01 | 6.921E-01 | 5.505E-02 | 4.250 |
| | + | 295.21 | | 1.713E+00 | 3.530E-01 | 3.062E-01 | 2.625E-02 | 5.595 |
| | + | 351.92 | * | 1.594E+00 | 2.540E-01 | 1.460E-01 | 1.219E-02 | 10.913 |
| PO-214 | + | 74.81 | | 5.459E+00 | 1.271E+00 | 1.373E+00 | 1.589E-01 | 3.976 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | + | 77.11 | | 4.393E+00 | 7.914E-01 | 7.719E-01 | 9.100E-02 | 5.691 |
| | + | 87.30 | | 2.318E+00 | 1.214E+00 | 1.342E+00 | 1.663E-01 | 1.728 |
| | + | 241.98 | | 2.941E+00 | 7.713E-01 | 6.921E-01 | 5.505E-02 | 4.250 |
| | + | 295.21 | | 1.713E+00 | 3.530E-01 | 3.062E-01 | 2.625E-02 | 5.595 |
| | + | 351.92 | * | 1.594E+00 | 2.540E-01 | 1.460E-01 | 1.219E-02 | 10.913 |
| PO-216 | + | 74.81 | | 3.168E+00 | 7.593E-01 | 7.968E-01 | 1.028E-01 | 3.976 |
| | + | 77.11 | | 2.562E+00 | 4.183E-01 | 4.502E-01 | 4.051E-02 | 5.691 |
| | + | 87.30 | | 1.353E+00 | 7.141E-01 | 7.833E-01 | 1.092E-01 | 1.728 |
| | + | 238.63 | * | 2.040E+00 | 2.052E-01 | 1.175E-01 | 8.449E-03 | 17.355 |
| | + | 300.09 | | 1.603E+00 | 1.163E+00 | 1.862E+00 | 1.546E-01 | 0.861 |
| PO-218 | + | 74.81 | | 5.459E+00 | 1.271E+00 | 1.373E+00 | 1.589E-01 | 3.976 |
| | + | 77.11 | | 4.393E+00 | 7.914E-01 | 7.719E-01 | 9.100E-02 | 5.691 |
| | + | 87.30 | | 2.318E+00 | 1.214E+00 | 1.342E+00 | 1.663E-01 | 1.728 |
| | + | 241.98 | | 2.941E+00 | 7.713E-01 | 6.921E-01 | 5.505E-02 | 4.250 |
| | + | 295.21 | | 1.713E+00 | 3.530E-01 | 3.062E-01 | 2.625E-02 | 5.595 |
| | + | 351.92 | * | 1.594E+00 | 2.540E-01 | 1.460E-01 | 1.219E-02 | 10.913 |
| RA-224 | + | 240.98 | * | 5.577E+00 | 1.429E+00 | 1.338E+00 | 7.536E-02 | 4.170 |
| RA-226 | + | 609.31 | * | 1.414E+00 | 2.353E-01 | 1.656E-01 | 1.245E-02 | 8.543 |
| | + | 1120.29 | | 1.597E+00 | 7.757E-01 | 6.375E-01 | 5.924E-02 | 2.505 |
| | + | 1764.49 | | 1.441E+00 | 5.683E-01 | 5.044E-01 | 3.136E-02 | 2.857 |
| AC-228 | + | 338.32 | | 2.147E+00 | 1.004E+00 | 5.107E-01 | 2.083E-01 | 4.204 |
| | + | 911.07 | * | 2.051E+00 | 4.282E-01 | 2.529E-01 | 2.919E-02 | 8.109 |
| | + | 969.11 | | 1.260E+00 | 6.559E-01 | 4.802E-01 | 1.118E-01 | 2.623 |
| RA-228 | + | 338.32 | | 2.147E+00 | 1.004E+00 | 5.107E-01 | 2.083E-01 | 4.204 |
| | + | 911.07 | * | 2.051E+00 | 4.282E-01 | 2.529E-01 | 2.919E-02 | 8.109 |
| | + | 969.11 | | 1.260E+00 | 6.559E-01 | 4.802E-01 | 1.118E-01 | 2.623 |
| TH-228 | + | 74.81 | | 3.232E+00 | 7.141E-01 | 8.128E-01 | 7.285E-02 | 3.976 |
| | + | 77.11 | | 2.614E+00 | 4.267E-01 | 4.593E-01 | 4.132E-02 | 5.691 |
| | + | 87.30 | | 1.380E+00 | 7.153E-01 | 7.990E-01 | 7.756E-02 | 1.728 |
| | + | 238.63 | * | 2.080E+00 | 2.093E-01 | 1.199E-01 | 8.619E-03 | 17.355 |
| | + | 300.09 | | 1.635E+00 | 1.522E+00 | 1.899E+00 | 1.119E+00 | 0.861 |
| TH-230 | + | 609.31 | * | 1.414E+00 | 2.353E-01 | 1.656E-01 | 1.245E-02 | 8.543 |
| | + | 1120.29 | | 1.597E+00 | 7.757E-01 | 6.375E-01 | 5.924E-02 | 2.505 |
| | + | 1764.49 | | 1.441E+00 | 5.683E-01 | 5.044E-01 | 3.136E-02 | 2.857 |
| TH-232 | + | 338.32 | | 2.147E+00 | 5.066E-01 | 5.107E-01 | 3.016E-02 | 4.204 |
| | + | 911.07 | * | 2.051E+00 | 4.282E-01 | 2.529E-01 | 2.919E-02 | 8.109 |
| | + | 969.11 | | 1.260E+00 | 6.559E-01 | 4.802E-01 | 1.118E-01 | 2.623 |
| U-234 | + | 609.31 | * | 1.414E+00 | 2.353E-01 | 1.656E-01 | 1.245E-02 | 8.543 |
| | + | 1120.29 | | 1.597E+00 | 7.757E-01 | 6.375E-01 | 5.924E-02 | 2.505 |
| | + | 1764.49 | | 1.441E+00 | 5.683E-01 | 5.044E-01 | 3.136E-02 | 2.857 |
| NP-237 | + | 86.50 | * | 8.592E-01 | 4.792E-01 | 5.853E-01 | 1.333E-01 | 1.468 |
| | + | 95.87 | | -7.815E-01 | 1.460E+00 | 2.043E+00 | 5.015E-01 | -0.383 |
| AM-243 | + | 74.67 | * | 5.136E-01 | 1.134E-01 | 1.297E-01 | 1.152E-02 | 3.961 |
| | + | 86.72 | | 3.222E+01 | 1.670E+01 | 2.162E+01 | 2.088E+00 | 1.490 |
| | + | 117.66 | | -5.619E+00 | 4.982E+00 | 7.766E+00 | 4.809E-01 | -0.724 |
| | + | 142.18 | | 1.129E+01 | 2.525E+01 | 4.104E+01 | 2.234E+00 | 0.275 |
| ANH-511 | + | 511.00 | * | 9.786E-02 | 1.100E-01 | 6.448E-02 | 3.745E-03 | 1.518 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| BE-7 | | 477.59 | * | 1.352E-01 | 4.784E-01 | 8.039E-01 | 5.463E-02 | 0.168 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| NA-22 | 1274.54 | * | | -1.893E-02 | 5.756E-02 | 8.983E-02 | 6.033E-03 | -0.211 |
| NA-24 | 1368.53 | * | | 2.319E+01 | 5.756E-02 | Half-Life too short | | |
| AL-26 | 1129.67 | | | 2.272E-02 | 2.342E+00 | 3.445E+00 | 2.195E-01 | 0.007 |
| | 1808.65 | * | | -1.815E-02 | 3.478E-02 | 4.942E-02 | 2.970E-03 | -0.367 |
| TI-44 | 67.85 | | | -4.026E-02 | 7.188E-02 | 1.135E-01 | 9.882E-03 | -0.355 |
| | 78.38 | * | + | 4.729E-01 | 7.721E-02 | 1.151E-01 | 1.044E-02 | 4.108 |
| SC-46 | 889.25 | * | | -3.693E-02 | 5.299E-02 | 8.148E-02 | 7.280E-03 | -0.453 |
| | 1120.51 | * | + | 2.845E-01 | 1.369E-01 | 1.743E-01 | 1.136E-02 | 1.632 |
| V-48 | 944.10 | | | -4.958E-01 | 1.397E+00 | 2.226E+00 | 1.939E-01 | -0.223 |
| | 983.50 | * | | 9.977E-03 | 1.203E-01 | 2.010E-01 | 1.672E-02 | 0.050 |
| | 1312.09 | | | 6.361E-02 | 1.429E-01 | 2.450E-01 | 1.743E-02 | 0.260 |
| CR-51 | 320.08 | * | | -1.849E-01 | 5.490E-01 | 9.022E-01 | 5.916E-02 | -0.205 |
| MN-52 | 744.21 | | | 2.354E-01 | 5.764E-01 | 9.653E-01 | 6.145E-02 | 0.244 |
| | 848.13 | | | -7.518E+00 | 1.544E+01 | 2.445E+01 | 1.995E+00 | -0.307 |
| | 935.52 | | | 2.015E-01 | 7.467E-01 | 1.108E+00 | 9.740E-02 | 0.182 |
| | 1246.25 | | | -2.357E+00 | 1.860E+01 | 2.656E+01 | 1.700E+00 | -0.089 |
| | 1333.61 | | | -2.755E+00 | 1.238E+01 | 1.947E+01 | 1.429E+00 | -0.141 |
| | 1434.06 | * | | -1.455E-01 | 5.457E-01 | 8.395E-01 | 6.074E-02 | -0.173 |
| MN-54 | 834.83 | * | | 3.920E-02 | 5.377E-02 | 9.512E-02 | 7.532E-03 | 0.412 |
| CO-56 | 846.75 | * | | -5.228E-02 | 5.173E-02 | 7.674E-02 | 6.243E-03 | -0.681 |
| | 977.42 | | | -1.174E+00 | 4.049E+00 | 6.494E+00 | 5.445E-01 | -0.181 |
| | 1037.82 | | | -1.452E-01 | 4.096E-01 | 6.476E-01 | 5.309E-02 | -0.224 |
| | 1175.09 | | | -1.583E+00 | 2.710E+00 | 4.101E+00 | 2.322E-01 | -0.386 |
| | 1238.25 | | | 1.850E-01 | 1.324E-01 | 2.415E-01 | 1.607E-02 | 0.766 |
| | 1360.21 | | | -3.695E-01 | 1.269E+00 | 1.956E+00 | 1.432E-01 | -0.189 |
| | 1771.40 | | | -6.673E-01 | 4.164E-01 | 4.807E-01 | 2.974E-02 | -1.388 |
| CO-57 | 122.06 | * | | 1.142E-02 | 3.658E-02 | 5.662E-02 | 3.338E-03 | 0.202 |
| | 136.48 | | | 8.041E-03 | 2.783E-01 | 4.567E-01 | 2.970E-02 | 0.018 |
| CO-58 | 810.76 | * | | -4.659E-02 | 5.047E-02 | 7.598E-02 | 5.708E-03 | -0.613 |
| FE-59 | 142.65 | | | 2.322E+00 | 4.248E+00 | 6.933E+00 | 3.771E-01 | 0.335 |
| | 192.34 | | | -1.164E-01 | 1.576E+00 | 2.219E+00 | 2.567E-01 | -0.052 |
| | 1099.22 | * | | 7.743E-02 | 1.314E-01 | 2.296E-01 | 1.768E-02 | 0.337 |
| | 1291.56 | | | 6.033E-02 | 1.735E-01 | 2.950E-01 | 2.449E-02 | 0.204 |
| CO-60 | 1173.22 | | | -3.500E-02 | 5.316E-02 | 7.971E-02 | 4.497E-03 | -0.439 |
| | 1332.49 | * | | -2.183E-02 | 5.456E-02 | 8.377E-02 | 6.150E-03 | -0.261 |
| ZN-65 | 1115.52 | * | | 6.689E-02 | 1.375E-01 | 2.083E-01 | 1.376E-02 | 0.321 |
| GE-68 | 1077.35 | * | | -6.701E-02 | 1.639E+00 | 2.688E+00 | 1.923E-01 | -0.025 |
| AS-73 | 53.44 | * | | 1.499E+00 | 1.529E+00 | 2.661E+00 | 2.349E-01 | 0.563 |
| AS-74 | 595.88 | * | | 2.548E-02 | 1.408E-01 | 2.330E-01 | 1.285E-02 | 0.109 |
| | 634.78 | | | 2.787E-01 | 5.389E-01 | 8.993E-01 | 4.760E-02 | 0.310 |
| SE-75 | 66.05 | | | 5.636E-01 | 7.744E+00 | 1.289E+01 | 1.353E+00 | 0.044 |
| | 96.73 | | | -1.205E+00 | 1.253E+00 | 1.709E+00 | 2.291E-01 | -0.705 |
| | 121.11 | | | 6.446E-03 | 1.856E-01 | 3.058E-01 | 2.853E-02 | 0.021 |
| | 136.00 | | | -1.881E-02 | 5.325E-02 | 8.589E-02 | 4.850E-03 | -0.219 |
| | 198.60 | | | -1.808E+00 | 2.601E+00 | 3.920E+00 | 2.647E-01 | -0.461 |
| | 264.65 | * | | -2.172E-02 | 6.796E-02 | 9.195E-02 | 5.352E-03 | -0.236 |
| | 279.53 | | | 1.384E-01 | 1.619E-01 | 2.528E-01 | 1.590E-02 | 0.547 |
| | 303.91 | | | -3.579E+00 | 2.985E+00 | 4.659E+00 | 4.470E-01 | -0.768 |
| | 400.65 | | | -1.018E-01 | 3.670E-01 | 5.984E-01 | 5.445E-02 | -0.170 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|----------------|-----------|---------|
| BR-77 | + | 87.88 | | 2.624E-03 | 3.670E-01 | Half-Life | too short | |
| | | 200.40 | | -1.222E-05 | 3.670E-01 | Half-Life | too short | |
| | + | 239.00 | | 1.336E-03 | 3.670E-01 | Half-Life | too short | |
| | | 249.79 | | 7.283E-06 | 3.670E-01 | Half-Life | too short | |
| | | 281.68 | | 1.468E-05 | 3.670E-01 | Half-Life | too short | |
| | | 297.23 | | 1.009E-03 | 3.670E-01 | Half-Life | too short | |
| | | 303.76 | | -1.192E-03 | 3.670E-01 | Half-Life | too short | |
| | | 439.47 | | 9.726E-05 | 3.670E-01 | Half-Life | too short | |
| | | 484.57 | | -3.056E-04 | 3.670E-01 | Half-Life | too short | |
| | | 520.65 | * | -1.403E-06 | 3.670E-01 | Half-Life | too short | |
| | | 574.64 | | -1.462E-05 | 3.670E-01 | Half-Life | too short | |
| | | 578.91 | | 6.425E-04 | 3.670E-01 | Half-Life | too short | |
| | | 585.48 | | 3.158E-03 | 3.670E-01 | Half-Life | too short | |
| | | 755.35 | | 3.819E-04 | 3.670E-01 | Half-Life | too short | |
| | | 817.79 | | -1.702E-04 | 3.670E-01 | Half-Life | too short | |
| SR-82 | | 698.33 | | -2.349E+01 | 5.529E+01 | 8.576E+01 | 4.844E+00 | -0.274 |
| | | 776.49 | * | -9.134E-01 | 5.707E-01 | 8.016E-01 | 5.530E-02 | -1.139 |
| | | 1395.20 | | -1.078E+01 | 1.719E+01 | 2.494E+01 | 1.817E+00 | -0.432 |
| RB-83 | | 520.41 | * | -1.551E-02 | 1.029E-01 | 1.567E-01 | 9.071E-03 | -0.099 |
| | | 529.64 | | 7.732E-02 | 1.412E-01 | 2.420E-01 | 1.395E-02 | 0.320 |
| | | 552.65 | | 1.984E-01 | 2.764E-01 | 4.783E-01 | 2.725E-02 | 0.415 |
| RB-84 | | 881.50 | * | -7.380E-02 | 1.061E-01 | 1.641E-01 | 1.441E-02 | -0.450 |
| KR-85 | | 513.99 | * | 7.656E+00 | 1.161E+01 | 1.754E+01 | 1.018E+00 | 0.436 |
| SR-85 | | 513.99 | * | 4.130E-02 | 6.261E-02 | 9.461E-02 | 5.490E-03 | 0.436 |
| RB-86 | | 1076.63 | * | 5.012E-01 | 1.197E+00 | 2.064E+00 | 1.479E-01 | 0.243 |
| Y-88 | | 898.02 | | 2.283E-03 | 5.358E-02 | 8.963E-02 | 8.196E-03 | 0.025 |
| | | 1836.01 | * | 6.084E-03 | 4.435E-02 | 7.553E-02 | 4.447E-03 | 0.081 |
| ZR-88 | | 392.90 | * | -3.293E-02 | 4.525E-02 | 7.164E-02 | 4.136E-03 | -0.460 |
| Y-91 | | 1204.90 | * | -6.660E+00 | 2.552E+01 | 4.053E+01 | 2.418E+00 | -0.164 |
| NB-94 | | 702.63 | * | 2.264E-02 | 4.561E-02 | 7.689E-02 | 4.394E-03 | 0.294 |
| | | 871.10 | | 2.044E-02 | 4.692E-02 | 8.145E-02 | 6.995E-03 | 0.251 |
| NB-95 | | 765.79 | * | -6.256E-03 | 6.570E-02 | 1.046E-01 | 7.026E-03 | -0.060 |
| NB-95M | | 235.69 | * | 9.099E-01 | 2.363E-01 | 3.896E-01 | 2.874E-02 | 2.335 |
| ZR-95 | | 724.18 | | 2.979E-01 | 1.725E-01 | 2.836E-01 | 2.005E-02 | 1.050 |
| | | 756.15 | * | 3.044E-03 | 1.051E-01 | 1.693E-01 | 1.299E-02 | 0.018 |
| NB-97 | | 657.90 | * | -1.203E+01 | 1.051E-01 | Half-Life | too short | |
| | | 1024.50 | | -5.959E+02 | 1.051E-01 | Half-Life | too short | |
| ZR-97 | | 254.15 | | -3.543E+01 | 1.051E-01 | Half-Life | too short | |
| | | 355.39 | | 2.233E+02 | 1.051E-01 | Half-Life | too short | |
| | | 507.63 | * | 7.031E+02 | 1.051E-01 | Half-Life | too short | |
| | | 602.52 | | -2.444E+02 | 1.051E-01 | Half-Life | too short | |
| | | 1021.30 | | 8.009E+01 | 1.051E-01 | Half-Life | too short | |
| | | 1147.95 | | -5.863E+02 | 1.051E-01 | Half-Life | too short | |
| | | 1362.66 | | 4.144E+02 | 1.051E-01 | Half-Life | too short | |
| | | 1750.46 | | -6.020E+02 | 1.051E-01 | Half-Life | too short | |
| | | 140.51 | | -1.266E+02 | 1.271E+02 | 1.917E+02 | 5.154E+01 | -0.660 |
| MO-99 | | 181.06 | | 1.344E+01 | 8.605E+01 | 1.233E+02 | 2.090E+01 | 0.109 |
| | | 366.43 | | -2.385E+02 | 3.639E+02 | 5.790E+02 | 3.394E+01 | -0.412 |
| | | 739.58 | * | 1.602E+01 | 5.363E+01 | 8.875E+01 | 1.242E+01 | 0.180 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TC-99M | 778.00 | | | -2.243E+02 | 1.426E+02 | 1.985E+02 | 1.375E+01 | -1.130 |
| RH-101 | 140.51 | * | | -3.333E+16 | 1.426E+02 | Half-Life | too short | |
| | 127.23 | | | 5.081E-02 | 5.003E-02 | 7.606E-02 | 4.368E-03 | 0.668 |
| | 198.01 | * | | -1.078E-02 | 4.559E-02 | 7.035E-02 | 3.750E-03 | -0.153 |
| | 325.23 | | | 2.230E-01 | 3.063E-01 | 5.328E-01 | 3.148E-02 | 0.419 |
| RH-102 | 418.52 | | | 4.488E-02 | 3.825E-01 | 6.391E-01 | 3.724E-02 | 0.070 |
| | 475.06 | * | | -5.644E-03 | 4.020E-02 | 6.551E-02 | 3.835E-03 | -0.086 |
| | 631.29 | | | -1.325E-02 | 6.792E-02 | 1.080E-01 | 5.743E-03 | -0.123 |
| | 697.49 | | | 4.644E-02 | 1.029E-01 | 1.729E-01 | 9.745E-03 | 0.269 |
| | 766.84 | | | 6.105E-02 | 1.614E-01 | 2.674E-01 | 1.801E-02 | 0.228 |
| | 1046.59 | | | -1.469E-01 | 1.516E-01 | 2.210E-01 | 1.674E-02 | -0.665 |
| | 1112.84 | | | 8.540E-02 | 3.355E-01 | 4.928E-01 | 3.269E-02 | 0.173 |
| RU-103 | 497.08 | * | | 3.437E-02 | 6.243E-02 | 1.065E-01 | 1.349E-02 | 0.323 |
| | 610.33 | | | 1.500E+01 | 3.137E+00 | 4.276E+00 | 6.536E-01 | 3.508 |
| RH-106 | 511.85 | + | | 4.933E-01 | 5.543E-01 | 5.679E-01 | 3.298E-02 | 0.869 |
| | 621.84 | * | | 2.385E-01 | 4.360E-01 | 7.412E-01 | 8.548E-02 | 0.322 |
| | 1050.47 | | | 5.989E-02 | 2.737E+00 | 4.527E+00 | 3.406E-01 | 0.013 |
| RU-106 | 511.85 | + | | 4.933E-01 | 5.543E-01 | 5.679E-01 | 3.298E-02 | 0.869 |
| | 621.84 | * | | 2.385E-01 | 4.353E-01 | 7.412E-01 | 3.983E-02 | 0.322 |
| | 1050.47 | | | 5.989E-02 | 2.737E+00 | 4.527E+00 | 3.406E-01 | 0.013 |
| AG-108M | 433.93 | * | | 1.665E-02 | 4.385E-02 | 7.449E-02 | 4.722E-03 | 0.224 |
| | 614.37 | | | 3.028E-02 | 5.681E-02 | 8.849E-02 | 5.257E-03 | 0.342 |
| | 722.95 | | | 2.435E-02 | 6.785E-02 | 9.850E-02 | 6.404E-03 | 0.247 |
| AG-110M | 657.75 | * | | -4.364E-02 | 5.775E-02 | 7.236E-02 | 4.021E-03 | -0.603 |
| | 677.61 | | | -2.126E-01 | 4.519E-01 | 6.986E-01 | 3.998E-02 | -0.304 |
| | 706.67 | | | -1.924E-01 | 2.911E-01 | 4.391E-01 | 2.690E-02 | -0.438 |
| | 763.93 | | | -1.387E-01 | 2.406E-01 | 3.647E-01 | 2.553E-02 | -0.380 |
| | 884.67 | | | 1.481E-02 | 6.431E-02 | 1.097E-01 | 1.000E-02 | 0.135 |
| | 937.48 | | | 8.571E-02 | 1.544E-01 | 2.404E-01 | 2.183E-02 | 0.357 |
| | 1384.27 | | | -9.998E-02 | 2.375E-01 | 3.608E-01 | 2.737E-02 | -0.277 |
| IN-111 | 171.28 | | | 1.481E+00 | 4.470E+00 | 7.377E+00 | 3.784E-01 | 0.201 |
| | 245.39 | * | | -2.514E-01 | 4.984E+00 | 6.939E+00 | 3.928E-01 | -0.036 |
| IN-113M | 391.69 | * | | -3.347E-02 | 6.420E-02 | 1.031E-01 | 6.352E-03 | -0.325 |
| SN-113 | 391.69 | * | | -3.347E-02 | 6.420E-02 | 1.031E-01 | 6.352E-03 | -0.325 |
| IN-114M | 190.27 | * | | 1.588E-01 | 2.877E-01 | 4.225E-01 | 2.227E-02 | 0.376 |
| CD-115 | 260.90 | | | -8.218E-06 | 2.877E-01 | Half-Life | too short | |
| | 492.35 | | | -1.293E-04 | 2.877E-01 | Half-Life | too short | |
| | 527.90 | * | | 2.618E-05 | 2.877E-01 | Half-Life | too short | |
| SN-117M | 156.02 | | | -1.462E+00 | 3.929E+00 | 6.302E+00 | 3.298E-01 | -0.232 |
| | 158.56 | * | | 3.616E-02 | 9.353E-02 | 1.551E-01 | 8.062E-03 | 0.233 |
| SB-122 | 563.90 | * | | 7.511E+00 | 9.749E+00 | 1.689E+01 | 9.552E-01 | 0.445 |
| | 692.80 | | | 1.170E+01 | 1.952E+02 | 3.170E+02 | 1.764E+01 | 0.037 |
| I-123 | 159.00 | * | | 1.154E+03 | 1.952E+02 | Half-Life | too short | |
| | 528.96 | | | 2.168E+05 | 1.952E+02 | Half-Life | too short | |
| TE-123M | 159.00 | * | | 1.305E-02 | 3.917E-02 | 6.481E-02 | 3.420E-03 | 0.201 |
| I-124 | 602.71 | * | | -4.337E-01 | 2.137E+00 | 2.922E+00 | 1.601E-01 | -0.148 |
| | 722.78 | | | 3.896E+00 | 1.563E+01 | 2.240E+01 | 1.350E+00 | 0.174 |
| | 1325.50 | | | 8.964E+01 | 9.795E+01 | 1.793E+02 | 1.302E+01 | 0.500 |
| | 1376.25 | | | 8.698E+01 | 1.107E+02 | 1.953E+02 | 1.427E+01 | 0.445 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SB-124 | | 1509.49 | | 6.689E+01 | 4.897E+01 | 9.469E+01 | 6.715E+00 | 0.706 |
| | | 1691.02 | | 4.037E+00 | 1.142E+01 | 2.024E+01 | 1.321E+00 | 0.199 |
| | | 602.71 | | -1.198E-02 | 5.901E-02 | 8.070E-02 | 4.425E-03 | -0.148 |
| | | 645.85 | | 7.011E-02 | 7.931E-01 | 1.266E+00 | 7.644E-02 | 0.055 |
| | | 709.31 | | 8.473E-01 | 3.870E+00 | 6.373E+00 | 3.707E-01 | 0.133 |
| | | 713.82 | | -1.363E+00 | 2.333E+00 | 3.529E+00 | 3.621E-01 | -0.386 |
| | | 722.78 | | 1.560E-01 | 6.259E-01 | 8.968E-01 | 5.640E-02 | 0.174 |
| | + | 968.20 | | 1.371E+01 | 6.489E+00 | 9.927E+00 | 8.417E-01 | 1.381 |
| | | 1045.16 | | -3.656E-01 | 3.292E+00 | 5.362E+00 | 4.070E-01 | -0.068 |
| | | 1325.50 | | 3.834E+00 | 4.189E+00 | 7.666E+00 | 5.568E-01 | 0.500 |
| | | 1368.21 | | 5.361E-01 | 2.430E+00 | 4.075E+00 | 5.167E-01 | 0.132 |
| | | 1436.60 | | 5.639E+00 | 4.527E+00 | 8.918E+00 | 6.449E-01 | 0.632 |
| SB-125 | | 1691.02 | * | 3.812E-02 | 1.079E-01 | 1.911E-01 | 1.333E-02 | 0.199 |
| | | 427.89 | * | 5.120E-02 | 1.242E-01 | 2.114E-01 | 1.286E-02 | 0.242 |
| | + | 463.38 | | 1.025E+00 | 5.868E-01 | 7.748E-01 | 5.279E-02 | 1.322 |
| | | 600.56 | | -6.839E-02 | 2.515E-01 | 3.588E-01 | 2.312E-02 | -0.191 |
| | | 635.90 | | -1.691E-02 | 3.467E-01 | 5.598E-01 | 3.560E-02 | -0.030 |
| TE-125M | | 109.28 | * | 9.048E+00 | 1.336E+01 | 2.261E+01 | 2.021E+00 | 0.400 |
| I-126 | | 388.63 | | 7.700E-03 | 3.703E-01 | 6.166E-01 | 3.566E-02 | 0.012 |
| | | 666.33 | * | 1.528E-01 | 3.297E-01 | 4.906E-01 | 2.539E-02 | 0.312 |
| SB-126 | | 753.82 | | 6.803E-01 | 2.675E+00 | 4.404E+00 | 2.872E-01 | 0.154 |
| | | 223.80 | | 5.948E-02 | 6.942E+00 | 1.118E+01 | 6.173E-01 | 0.005 |
| | + | 278.60 | | 8.150E+00 | 4.791E+00 | 7.796E+00 | 4.535E-01 | 1.045 |
| | | 296.50 | | 1.484E+01 | 3.812E+00 | 6.510E+00 | 3.822E-01 | 2.279 |
| | | 414.70 | | -2.160E-02 | 1.327E-01 | 2.176E-01 | 1.267E-02 | -0.099 |
| | | 415.30 | | 4.939E+00 | 1.113E+01 | 1.900E+01 | 1.106E+00 | 0.260 |
| | | 555.20 | | -3.135E+00 | 6.931E+00 | 1.087E+01 | 6.184E-01 | -0.288 |
| | | 573.80 | | -1.348E-01 | 1.751E+00 | 2.758E+00 | 1.549E-01 | -0.049 |
| | | 593.00 | | -3.563E-01 | 1.603E+00 | 2.557E+00 | 1.414E-01 | -0.139 |
| | | 656.30 | | -7.680E+00 | 7.296E+00 | 8.718E+00 | 4.488E-01 | -0.881 |
| | | 666.33 | | 6.458E-02 | 1.393E-01 | 2.073E-01 | 1.073E-02 | 0.312 |
| | | 675.00 | | 4.940E+00 | 3.590E+00 | 6.498E+00 | 3.444E-01 | 0.760 |
| SB-127 | | 695.00 | | -9.728E-04 | 1.380E-01 | 2.227E-01 | 1.247E-02 | -0.004 |
| | | 697.00 | | 9.432E-02 | 4.720E-01 | 7.759E-01 | 4.367E-02 | 0.122 |
| | | 720.50 | * | 7.671E-02 | 2.900E-01 | 4.175E-01 | 2.501E-02 | 0.184 |
| | | 856.80 | | 1.444E-01 | 9.682E-01 | 1.422E+00 | 1.183E-01 | 0.102 |
| | | 989.30 | | 5.827E-01 | 2.328E+00 | 3.951E+00 | 3.262E-01 | 0.148 |
| | | 1034.80 | | -2.902E+00 | 1.435E+01 | 2.311E+01 | 1.785E+00 | -0.126 |
| | | 1213.00 | | 1.136E+00 | 7.463E+00 | 1.241E+01 | 7.509E-01 | 0.091 |
| | | 61.10 | | -1.152E+02 | 2.154E+02 | 3.528E+02 | 4.501E+01 | -0.327 |
| | | 252.40 | | -1.153E+01 | 1.471E+01 | 2.111E+01 | 8.863E+00 | -0.546 |
| | | 290.80 | | -8.524E+01 | 7.466E+01 | 9.834E+01 | 1.084E+01 | -0.867 |
| | | 411.60 | | -8.572E+00 | 3.985E+01 | 6.512E+01 | 1.017E+01 | -0.132 |
| | | 444.90 | | 1.162E+01 | 2.966E+01 | 5.041E+01 | 6.257E+00 | 0.230 |
| SB-127 | | 473.00 | | -8.072E-01 | 5.352E+00 | 8.713E+00 | 1.111E+00 | -0.093 |
| | | 543.00 | | 6.047E+00 | 4.969E+01 | 8.216E+01 | 1.170E+01 | 0.074 |
| | | 603.60 | | 3.449E+00 | 3.871E+01 | 5.505E+01 | 6.723E+00 | 0.063 |
| | | 685.20 | * | -8.163E-01 | 4.463E+00 | 7.082E+00 | 7.824E-01 | -0.115 |
| | | 698.50 | | -1.598E+01 | 5.066E+01 | 7.930E+01 | 1.241E+01 | -0.202 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| XE-127 | | 722.20 | | 1.649E+01 | 1.109E+02 | 1.570E+02 | 1.744E+01 | 0.105 |
| | | 783.80 | | 1.586E+01 | 1.104E+01 | 2.051E+01 | 2.645E+00 | 0.773 |
| | | 57.60 | | -3.073E+00 | 1.061E+01 | 1.757E+01 | 1.539E+00 | -0.175 |
| | | 145.22 | | 8.330E-01 | 1.089E+00 | 1.833E+00 | 9.891E-02 | 0.454 |
| | | 172.10 | | 1.957E-02 | 1.792E-01 | 2.928E-01 | 1.504E-02 | 0.067 |
| I-131 | | 202.84 | * | 3.226E-02 | 7.338E-02 | 1.170E-01 | 6.282E-03 | 0.276 |
| | | 374.96 | | -1.199E-01 | 2.728E-01 | 4.403E-01 | 2.569E-02 | -0.272 |
| | | 80.18 | | -1.326E+01 | 1.137E+01 | 1.559E+01 | 1.443E+00 | -0.851 |
| | | 284.30 | | -8.043E-01 | 2.989E+00 | 4.831E+00 | 3.157E-01 | -0.167 |
| | | 364.48 | * | 4.451E-02 | 2.216E-01 | 3.745E-01 | 2.467E-02 | 0.119 |
| TE-132 | | 636.97 | | -2.190E+00 | 2.973E+00 | 4.450E+00 | 2.711E-01 | -0.492 |
| | | 722.89 | | 5.531E+00 | 1.726E+01 | 2.495E+01 | 1.538E+00 | 0.222 |
| | | 49.72 | | -1.216E+02 | 1.049E+02 | 1.662E+02 | 2.009E+01 | -0.731 |
| | | 111.76 | | -7.150E+01 | 1.131E+02 | 1.812E+02 | 1.984E+01 | -0.395 |
| | | 116.30 | | 4.292E+01 | 1.000E+02 | 1.676E+02 | 1.799E+01 | 0.256 |
| BA-133 | | 228.16 | * | 1.233E+00 | 2.596E+00 | 4.269E+00 | 6.552E-01 | 0.289 |
| | | 53.15 | | 5.877E+00 | 6.419E+00 | 1.115E+01 | 9.833E-01 | 0.527 |
| | | 79.62 | | -3.066E-01 | 2.033E+00 | 2.954E+00 | 4.585E-01 | -0.104 |
| | | 81.00 | | -7.986E-02 | 1.673E-01 | 2.213E-01 | 3.587E-02 | -0.361 |
| | + | 276.40 | | 9.312E-01 | 5.580E-01 | 8.674E-01 | 1.125E-01 | 1.073 |
| I-133 | | 302.84 | | -1.350E-01 | 1.974E-01 | 3.187E-01 | 3.728E-02 | -0.424 |
| | | 356.01 | * | 2.891E-02 | 5.848E-02 | 8.888E-02 | 1.031E-02 | 0.325 |
| | | 383.85 | | -3.346E-03 | 4.219E-01 | 7.016E-01 | 7.629E-02 | -0.005 |
| | + | 510.53 | | 4.705E+01 | 4.219E-01 | Half-Life | too short | |
| | | 529.87 | * | 1.328E-01 | 4.219E-01 | Half-Life | too short | |
| CS-134 | | 706.58 | | -1.794E+01 | 4.219E-01 | Half-Life | too short | |
| | | 856.28 | | 8.775E+00 | 4.219E-01 | Half-Life | too short | |
| | | 875.33 | | 5.242E+00 | 4.219E-01 | Half-Life | too short | |
| | + | 1236.41 | | 1.136E+02 | 4.219E-01 | Half-Life | too short | |
| | | 1298.22 | | -3.893E+00 | 4.219E-01 | Half-Life | too short | |
| | | 475.35 | | -2.135E-01 | 2.643E+00 | 4.327E+00 | 2.533E-01 | -0.049 |
| | | 563.23 | | 5.274E-01 | 5.036E-01 | 8.882E-01 | 5.137E-02 | 0.594 |
| | | 569.32 | | -2.703E-01 | 2.711E-01 | 4.037E-01 | 2.347E-02 | -0.670 |
| | | 604.70 | | 1.645E-02 | 5.062E-02 | 7.394E-02 | 4.070E-03 | 0.222 |
| | | 795.84 | * | 7.432E-02 | 6.772E-02 | 1.228E-01 | 8.967E-03 | 0.605 |
| | | 801.93 | | -3.777E-02 | 5.852E-01 | 9.566E-01 | 7.070E-02 | -0.039 |
| | | 1038.57 | | -2.387E+00 | 5.165E+00 | 8.075E+00 | 6.198E-01 | -0.296 |
| | | 1167.94 | | 1.405E+00 | 3.273E+00 | 5.612E+00 | 3.217E-01 | 0.250 |
| | | 1365.15 | | -6.584E-01 | 1.665E+00 | 2.529E+00 | 1.967E-01 | -0.260 |
| | | 268.24 | * | 4.157E-01 | 2.527E-01 | 3.928E-01 | 3.001E-02 | 1.058 |
| CS-135 | | 288.45 | | -5.329E+15 | 2.527E-01 | Half-Life | too short | |
| | | 417.63 | | 5.345E+15 | 2.527E-01 | Half-Life | too short | |
| | | 546.56 | | -3.244E+15 | 2.527E-01 | Half-Life | too short | |
| | | 836.80 | | 3.636E+15 | 2.527E-01 | Half-Life | too short | |
| | | 1038.76 | | -3.282E+15 | 2.527E-01 | Half-Life | too short | |
| I-135 | | 1124.00 | | 1.581E+15 | 2.527E-01 | Half-Life | too short | |
| | | 1131.51 | | -1.089E+15 | 2.527E-01 | Half-Life | too short | |
| | | 1260.41 | * | -1.020E+14 | 2.527E-01 | Half-Life | too short | |
| | | 1457.56 | | 1.482E+17 | 2.527E-01 | Half-Life | too short | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| CS-136 | | 1678.03 | | -1.026E+15 | 2.527E-01 | Half-Life | too short | |
| | | 1706.46 | | -7.222E+14 | 2.527E-01 | Half-Life | too short | |
| | | 1791.20 | | 2.716E+15 | 2.527E-01 | Half-Life | too short | |
| | | 66.91 | | -1.918E+00 | 1.600E+00 | 2.498E+00 | 3.868E-01 | -0.768 |
| | + | 86.29 | | 4.922E+00 | 2.593E+00 | 3.695E+00 | 5.006E-01 | 1.332 |
| | | 153.22 | | 5.471E-01 | 1.133E+00 | 1.888E+00 | 1.287E-01 | 0.290 |
| | | 163.89 | | 3.781E-01 | 1.825E+00 | 3.000E+00 | 2.019E-01 | 0.126 |
| | | 176.55 | | -1.552E-01 | 6.330E-01 | 1.016E+00 | 6.065E-02 | -0.153 |
| | | 273.65 | | 5.302E-01 | 1.091E+00 | 1.169E+00 | 7.738E-02 | 0.454 |
| | | 340.57 | | 5.203E-01 | 2.413E-01 | 4.062E-01 | 2.548E-02 | 1.281 |
| CE-139 | | 818.51 | | -1.606E-02 | 1.102E-01 | 1.815E-01 | 1.387E-02 | -0.088 |
| | | 1048.07 | * | -2.177E-01 | 1.769E-01 | 2.454E-01 | 1.957E-02 | -0.887 |
| | + | 1235.34 | | 2.829E+00 | 1.921E+00 | 2.150E+00 | 2.211E-01 | 1.316 |
| | | 165.85 | * | -2.229E-02 | 4.106E-02 | 6.513E-02 | 3.321E-03 | -0.342 |
| | BA-140 | 162.64 | | 1.992E-02 | 1.305E+00 | 2.127E+00 | 1.264E-01 | 0.009 |
| | | 304.84 | | -1.711E+00 | 2.265E+00 | 3.566E+00 | 9.737E-01 | -0.480 |
| | | 423.70 | | -1.272E+00 | 3.267E+00 | 5.217E+00 | 1.658E+00 | -0.244 |
| | | 537.32 | * | 3.038E-01 | 4.621E-01 | 7.794E-01 | 2.534E-01 | 0.390 |
| | LA-140 | 328.77 | | 2.172E-01 | 5.228E-01 | 8.949E-01 | 5.901E-02 | 0.243 |
| | | 432.53 | | 2.958E-01 | 3.575E+00 | 5.951E+00 | 3.836E-01 | 0.050 |
| CE-141 | | 487.03 | | -6.906E-02 | 2.466E-01 | 3.970E-01 | 2.622E-02 | -0.174 |
| | | 751.79 | | 1.861E+00 | 2.990E+00 | 5.099E+00 | 3.912E-01 | 0.365 |
| | | 815.85 | | 1.357E-01 | 4.684E-01 | 8.093E-01 | 7.034E-02 | 0.168 |
| | | 867.82 | | -2.106E+00 | 2.844E+00 | 3.621E+00 | 3.254E-01 | -0.582 |
| | | 919.63 | | 2.126E+00 | 4.844E+00 | 8.401E+00 | 9.156E-01 | 0.253 |
| | | 925.24 | | -7.796E-01 | 2.057E+00 | 3.112E+00 | 2.928E-01 | -0.251 |
| | | 1596.49 | * | -4.869E-02 | 1.330E-01 | 2.066E-01 | 1.417E-02 | -0.236 |
| | CE-143 | 145.44 | * | 2.327E-02 | 1.009E-01 | 1.666E-01 | 9.395E-03 | 0.140 |
| | | 57.37 | | -1.379E-02 | 1.009E-01 | Half-Life | too short | |
| | | 231.56 | | -6.973E-03 | 1.009E-01 | Half-Life | too short | |
| CE-144 | | 293.26 | * | 1.876E-02 | 1.009E-01 | Half-Life | too short | |
| | + | 350.59 | | 4.127E-01 | 1.009E-01 | Half-Life | too short | |
| | | 490.36 | | 1.149E-02 | 1.009E-01 | Half-Life | too short | |
| | | 664.57 | | 1.580E-02 | 1.009E-01 | Half-Life | too short | |
| | | 721.93 | | 1.205E-02 | 1.009E-01 | Half-Life | too short | |
| | | 80.11 | | -4.040E+00 | 3.496E+00 | 4.798E+00 | 4.398E-01 | -0.842 |
| | | 133.54 | * | -1.369E-01 | 2.944E-01 | 4.344E-01 | 6.135E-02 | -0.315 |
| | PM-144 | 476.78 | | 3.196E-02 | 9.487E-02 | 1.600E-01 | 1.118E-02 | 0.200 |
| | | 618.01 | | -3.552E-02 | 4.549E-02 | 6.870E-02 | 3.965E-03 | -0.517 |
| | | 696.49 | * | -6.491E-03 | 4.696E-02 | 7.480E-02 | 4.210E-03 | -0.087 |
| PR-144 | | 778.57 | | -3.344E+00 | 2.827E+00 | 4.145E+00 | 2.877E-01 | -0.807 |
| | | 696.49 | * | -4.409E-01 | 3.190E+00 | 5.082E+00 | 2.856E-01 | -0.087 |
| | | 1489.15 | | -1.730E+01 | 1.610E+01 | 2.010E+01 | 1.435E+00 | -0.861 |
| | PM-146 | 453.90 | * | 6.623E-02 | 5.896E-02 | 1.046E-01 | 9.060E-03 | 0.633 |
| | | 633.02 | | 1.473E+00 | 1.871E+00 | 3.072E+00 | 1.129E+00 | 0.479 |
| | | 735.90 | | -7.443E-02 | 2.077E-01 | 3.203E-01 | 8.962E-02 | -0.232 |
| | | 747.13 | | -5.115E-02 | 1.240E-01 | 1.904E-01 | 2.438E-02 | -0.269 |
| | ND-147 | 91.11 | + | 1.138E+00 | 5.073E-01 | 9.965E-01 | 9.799E-02 | 1.142 |
| | | 319.41 | | -1.919E+00 | 5.888E+00 | 9.684E+00 | 5.723E-01 | -0.198 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| | | 439.89 | | 1.436E+00 | 1.057E+01 | 1.765E+01 | 1.033E+00 | 0.081 |
| | | 531.02 | * | 6.158E-01 | 9.941E-01 | 1.707E+00 | 2.306E-01 | 0.361 |
| PM-149 | | 285.90 | * | 6.972E-04 | 9.941E-01 | Half-Life too short | | |
| EU-152 | | 121.78 | | 2.439E-02 | 1.046E-01 | 1.612E-01 | 1.240E-02 | 0.151 |
| | | 244.69 | | 2.820E-01 | 4.733E-01 | 6.940E-01 | 3.926E-02 | 0.406 |
| | | 344.27 | * | -6.700E-02 | 1.669E-01 | 2.023E-01 | 1.341E-02 | -0.331 |
| | | 443.98 | | -2.433E-01 | 1.234E+00 | 2.008E+00 | 1.175E-01 | -0.121 |
| | | 778.89 | | -2.732E-01 | 3.344E-01 | 5.154E-01 | 3.577E-02 | -0.530 |
| | | 867.32 | | -1.169E+00 | 1.311E+00 | 1.622E+00 | 1.381E-01 | -0.721 |
| | | 964.01 | | 1.890E-01 | 4.731E-01 | 7.086E-01 | 6.038E-02 | 0.267 |
| | | 1085.78 | | -1.841E-01 | 5.283E-01 | 8.350E-01 | 5.876E-02 | -0.221 |
| | | 1112.02 | | 1.933E-01 | 4.358E-01 | 6.837E-01 | 4.544E-02 | 0.283 |
| | | 1407.95 | | 4.282E-01 | 2.632E-01 | 5.150E-01 | 3.745E-02 | 0.831 |
| GD-153 | | 69.67 | | -1.466E+00 | 2.790E+00 | 3.990E+00 | 3.486E-01 | -0.367 |
| | | 83.37 | | 3.100E+00 | 2.377E+01 | 3.470E+01 | 3.258E+00 | 0.089 |
| | | 97.43 | * | 4.775E-02 | 1.228E-01 | 1.818E-01 | 1.485E-02 | 0.263 |
| | | 103.18 | | -8.202E-02 | 1.473E-01 | 2.378E-01 | 1.777E-02 | -0.345 |
| EU-154 | | 123.07 | | 3.508E-02 | 7.741E-02 | 1.146E-01 | 1.082E-02 | 0.306 |
| | | 247.94 | | 1.942E-01 | 4.824E-01 | 7.652E-01 | 7.244E-02 | 0.254 |
| | | 591.81 | | -4.120E-01 | 8.169E-01 | 1.267E+00 | 1.219E-01 | -0.325 |
| | | 723.30 | | 2.026E-01 | 2.878E-01 | 4.340E-01 | 3.156E-02 | 0.467 |
| | | 756.87 | | 4.674E-02 | 1.099E+00 | 1.772E+00 | 1.878E-01 | 0.026 |
| | | 873.19 | | 1.850E-01 | 4.312E-01 | 7.461E-01 | 9.139E-02 | 0.248 |
| | | 996.32 | | -2.749E-01 | 5.068E-01 | 7.867E-01 | 1.381E-01 | -0.349 |
| | | 1004.76 | | -1.626E-01 | 2.772E-01 | 4.272E-01 | 4.805E-02 | -0.381 |
| | | 1274.45 | * | -5.797E-02 | 1.598E-01 | 2.481E-01 | 2.463E-02 | -0.234 |
| EU-155 | | 48.70 | | -4.131E+00 | 4.734E+00 | 7.659E+00 | 6.177E-01 | -0.539 |
| | | 60.01 | | -5.999E+00 | 7.865E+00 | 1.276E+01 | 1.108E+00 | -0.470 |
| | + | 86.54 | | 3.530E-01 | 1.830E-01 | 2.639E-01 | 2.565E-02 | 1.338 |
| | | 105.31 | * | 5.063E-02 | 1.479E-01 | 2.476E-01 | 1.826E-02 | 0.204 |
| TB-160 | + | 86.79 | | 9.858E-01 | 5.108E-01 | 7.327E-01 | 7.080E-02 | 1.345 |
| | | 197.04 | | 2.516E-01 | 7.731E-01 | 1.270E+00 | 6.762E-02 | 0.198 |
| | | 215.65 | | -5.446E-02 | 1.055E+00 | 1.696E+00 | 9.269E-02 | -0.032 |
| | | 298.57 | | 2.487E-01 | 1.761E-01 | 2.834E-01 | 1.665E-02 | 0.878 |
| | | 879.36 | * | 3.670E-02 | 2.020E-01 | 3.425E-01 | 2.995E-02 | 0.107 |
| | | 962.29 | | 6.702E-01 | 8.499E-01 | 1.336E+00 | 1.141E-01 | 0.502 |
| | | 966.15 | | 1.371E+00 | 4.312E-01 | 7.722E-01 | 6.564E-02 | 1.775 |
| | | 1177.93 | | -3.251E-01 | 4.681E-01 | 7.013E-01 | 3.990E-02 | -0.464 |
| | | 1271.85 | | 2.576E-02 | 9.287E-01 | 1.519E+00 | 1.014E-01 | 0.017 |
| HO-166M | | 80.57 | | -4.000E-01 | 4.377E-01 | 6.097E-01 | 5.606E-02 | -0.656 |
| | | 184.41 | | 1.247E-01 | 5.727E-02 | 9.174E-02 | 4.794E-03 | 1.359 |
| | | 280.46 | | 5.310E-02 | 1.200E-01 | 1.824E-01 | 1.062E-02 | 0.291 |
| | | 410.95 | | 1.356E-02 | 3.451E-01 | 5.738E-01 | 3.336E-02 | 0.024 |
| | | 711.68 | * | -5.035E-03 | 7.966E-02 | 1.276E-01 | 7.468E-03 | -0.039 |
| | | 752.31 | | 2.813E-01 | 3.771E-01 | 6.494E-01 | 4.220E-02 | 0.433 |
| | | 810.29 | | -8.416E-02 | 7.299E-02 | 1.066E-01 | 7.974E-03 | -0.789 |
| TM-171 | | 51.35 | | -3.623E+00 | 5.696E+01 | 9.555E+01 | 8.305E+00 | -0.038 |
| | | 52.39 | | 1.815E+01 | 2.838E+01 | 4.887E+01 | 4.293E+00 | 0.371 |
| | | 59.40 | | -1.005E+01 | 4.232E+01 | 7.028E+01 | 6.106E+00 | -0.143 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| LU-176 | + | 66.72 | * | -4.618E+01 | 4.465E+01 | 7.114E+01 | 6.186E+00 | -0.649 |
| | | 88.36 | | 5.784E-01 | 2.571E-01 | 5.421E-01 | 5.254E-02 | 1.067 |
| | | 201.83 | | -4.905E-03 | 3.958E-02 | 6.359E-02 | 3.409E-03 | -0.077 |
| | | 306.84 | * | 3.106E-03 | 3.191E-02 | 5.391E-02 | 3.176E-03 | 0.058 |
| LU-177 | + | 401.10 | | -7.366E+00 | 9.519E+00 | 1.501E+01 | 8.693E-01 | -0.491 |
| | | 112.95 | | -4.661E-01 | 3.579E+00 | 5.868E+00 | 3.848E-01 | -0.079 |
| | | 208.36 | * | 6.693E+00 | 3.094E+00 | 4.551E+00 | 2.462E-01 | 1.471 |
| | | 52.97 | | 2.501E+00 | 2.980E+00 | 5.162E+00 | 4.550E-01 | 0.485 |
| LU-177M | | 54.07 | | 6.592E-01 | 1.514E+00 | 2.586E+00 | 2.285E-01 | 0.255 |
| | | 61.30 | | -1.859E+00 | 2.485E+00 | 3.975E+00 | 3.453E-01 | -0.468 |
| | | 121.62 | | 1.773E-01 | 5.218E-01 | 8.427E-01 | 4.981E-02 | 0.210 |
| | | 147.16 | | 1.522E-01 | 9.514E-01 | 1.565E+00 | 8.397E-02 | 0.097 |
| HF-181 | | 171.86 | | 9.481E-02 | 6.737E-01 | 1.102E+00 | 5.660E-02 | 0.086 |
| | | 218.09 | | -3.092E-01 | 1.174E+00 | 1.865E+00 | 1.022E-01 | -0.166 |
| | | 268.79 | + | 2.242E+00 | 1.500E+00 | 2.060E+00 | 1.190E-01 | 1.088 |
| | | 319.02 | | -5.770E-02 | 3.479E-01 | 5.779E-01 | 3.413E-02 | -0.100 |
| W-181 | | 367.43 | | -7.761E-01 | 1.188E+00 | 1.891E+00 | 1.107E-01 | -0.410 |
| | | 413.65 | * | -3.443E-01 | 2.592E-01 | 3.908E-01 | 2.274E-02 | -0.881 |
| | | 56.28 | | -8.103E-01 | 1.689E+00 | 2.777E+00 | 2.445E-01 | -0.292 |
| | | 57.53 | | -4.985E-01 | 8.919E-01 | 1.460E+00 | 1.280E-01 | -0.341 |
| TA-182 | | 65.20 | | 2.130E+00 | 1.609E+00 | 2.776E+00 | 2.412E-01 | 0.767 |
| | | 133.02 | | -2.425E-02 | 1.050E-01 | 1.487E-01 | 8.348E-03 | -0.163 |
| | | 136.25 | | -2.521E-02 | 6.460E-01 | 1.057E+00 | 5.866E-02 | -0.024 |
| | | 345.85 | | -1.742E-01 | 3.150E-01 | 4.349E-01 | 2.565E-02 | -0.401 |
| RE-183 | | 482.03 | * | -2.199E-02 | 6.303E-02 | 1.009E-01 | 5.904E-03 | -0.218 |
| | | 56.28 | | -3.019E-01 | 6.282E-01 | 1.033E+00 | 9.092E-02 | -0.292 |
| | | 57.53 | | -1.856E-01 | 3.320E-01 | 5.435E-01 | 4.763E-02 | -0.342 |
| | | 65.20 | * | 7.865E-01 | 5.942E-01 | 1.025E+00 | 8.906E-02 | 0.767 |
| RE-184 | | 67.75 | | -1.320E-01 | 1.794E-01 | 2.793E-01 | 2.432E-02 | -0.472 |
| | | 100.10 | | 1.717E-01 | 2.487E-01 | 4.223E-01 | 3.305E-02 | 0.407 |
| | | 152.43 | | 1.807E-01 | 4.657E-01 | 7.731E-01 | 4.086E-02 | 0.234 |
| | | 222.10 | | -1.943E-01 | 4.836E-01 | 7.619E-01 | 4.198E-02 | -0.255 |
| RE-183 | | 1001.68 | | 1.299E+00 | 2.717E+00 | 4.716E+00 | 3.829E-01 | 0.275 |
| | | 1121.28 | + | 7.774E-01 | 3.741E-01 | 4.747E-01 | 3.087E-02 | 1.638 |
| | | 1189.05 | | -2.511E-01 | 4.068E-01 | 6.179E-01 | 3.586E-02 | -0.406 |
| | | 1221.42 | * | -2.158E-02 | 2.662E-01 | 4.312E-01 | 2.647E-02 | -0.050 |
| RE-183 | | 1230.97 | | -4.565E-01 | 8.274E-01 | 1.065E+00 | 6.644E-02 | -0.429 |
| | | 57.98 | | -1.424E-01 | 3.350E-01 | 5.518E-01 | 4.826E-02 | -0.258 |
| | | 59.32 | | -5.978E-02 | 1.813E-01 | 2.999E-01 | 2.606E-02 | -0.199 |
| | | 67.20 | | -2.953E-01 | 3.231E-01 | 5.172E-01 | 4.500E-02 | -0.571 |
| RE-184 | | 162.32 | * | 4.514E-04 | 1.549E-01 | 2.523E-01 | 1.298E-02 | 0.002 |
| | | 208.81 | + | 3.836E+00 | 1.773E+00 | 2.602E+00 | 1.409E-01 | 1.474 |
| | | 291.72 | | 1.955E-01 | 1.432E+00 | 2.123E+00 | 1.244E-01 | 0.092 |
| | | 57.98 | | -5.101E-01 | 1.200E+00 | 1.977E+00 | 1.729E-01 | -0.258 |
| RE-184 | | 59.32 | | -2.140E-01 | 6.492E-01 | 1.074E+00 | 9.332E-02 | -0.199 |
| | | 67.20 | | -1.058E+00 | 1.157E+00 | 1.853E+00 | 1.612E-01 | -0.571 |
| | | 161.27 | | -1.096E-01 | 4.853E-01 | 7.825E-01 | 4.037E-02 | -0.140 |
| | | 216.55 | | -1.254E-01 | 3.626E-01 | 5.737E-01 | 3.138E-02 | -0.219 |
| | | 252.85 | * | -2.803E-01 | 3.267E-01 | 4.956E-01 | 2.826E-02 | -0.566 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| OS-185 | | 318.01 | | 3.451E-01 | 5.931E-01 | 1.028E+00 | 6.069E-02 | 0.336 |
| | | 792.07 | | 2.145E+00 | 1.405E+00 | 2.627E+00 | 1.882E-01 | 0.817 |
| | | 903.28 | | -8.270E-01 | 1.448E+00 | 1.912E+00 | 1.733E-01 | -0.432 |
| | | 920.93 | | 8.134E-02 | 6.109E-01 | 1.030E+00 | 9.184E-02 | 0.079 |
| | | 59.72 | | -3.825E-01 | 4.882E-01 | 7.915E-01 | 6.874E-02 | -0.483 |
| | | 61.14 | | -1.087E-01 | 2.657E-01 | 4.381E-01 | 3.806E-02 | -0.248 |
| | | 69.30 | | -4.970E-01 | 5.187E-01 | 7.233E-01 | 6.314E-02 | -0.687 |
| | | 592.07 | | -2.712E+00 | 3.450E+00 | 5.199E+00 | 2.877E-01 | -0.522 |
| | | 646.12 | * | 1.741E-03 | 6.676E-02 | 1.060E-01 | 5.534E-03 | 0.016 |
| | | 717.42 | | 6.492E-01 | 1.207E+00 | 2.049E+00 | 1.217E-01 | 0.317 |
| RE-188 | | 874.81 | | 5.337E-01 | 8.771E-01 | 1.541E+00 | 1.334E-01 | 0.346 |
| | | 880.27 | | -2.067E-01 | 1.083E+00 | 1.770E+00 | 1.551E-01 | -0.117 |
| | | 155.03 | * | 4.885E-02 | 2.433E-01 | 4.004E-01 | 2.101E-02 | 0.122 |
| | | 477.96 | | 1.427E+00 | 4.481E+00 | 7.550E+00 | 4.418E-01 | 0.189 |
| W-188 | | 633.10 | | 3.118E+00 | 3.795E+00 | 6.504E+00 | 3.450E-01 | 0.479 |
| | | 63.58 | | 5.267E+01 | 8.958E+01 | 1.506E+02 | 1.308E+01 | 0.350 |
| IR-192 | | 227.08 | | 6.506E+00 | 1.801E+01 | 2.952E+01 | 1.637E+00 | 0.220 |
| | | 290.67 | * | -1.331E+01 | 1.131E+01 | 1.494E+01 | 8.746E-01 | -0.891 |
| | + | 295.96 | | 1.366E+00 | 2.687E-01 | 4.102E-01 | 2.445E-02 | 3.331 |
| | | 308.46 | | -7.283E-02 | 1.299E-01 | 2.109E-01 | 1.257E-02 | -0.345 |
| AU-195 | | 316.51 | * | -1.255E-02 | 4.618E-02 | 7.621E-02 | 4.521E-03 | -0.165 |
| | | 468.07 | | 6.984E-02 | 9.821E-02 | 1.515E-01 | 1.020E-02 | 0.461 |
| | | 604.41 | | 4.560E-03 | 6.963E-01 | 9.793E-01 | 1.095E-01 | 0.005 |
| | | 612.46 | | 6.314E-01 | 1.194E+00 | 1.775E+00 | 1.295E-01 | 0.356 |
| | | 65.12 | | 3.670E-01 | 2.733E-01 | 4.716E-01 | 4.097E-02 | 0.778 |
| | | 66.83 | | -1.576E-01 | 1.493E-01 | 2.376E-01 | 2.067E-02 | -0.663 |
| TL-200 | + | 75.70 | | 1.693E+00 | 3.736E-01 | 7.276E-01 | 6.498E-02 | 2.327 |
| | | 98.88 | * | 2.575E-01 | 3.157E-01 | 5.333E-01 | 4.255E-02 | 0.483 |
| | + | 129.76 | | 6.473E+00 | 5.686E+00 | 7.023E+00 | 3.992E-01 | 0.922 |
| | | 367.94 | * | -6.695E-03 | 5.686E+00 | Half-Life | too short | |
| TL-201 | | 579.30 | | 2.387E-01 | 5.686E+00 | Half-Life | too short | |
| | | 828.27 | | -4.139E-02 | 5.686E+00 | Half-Life | too short | |
| | | 1205.75 | | 1.155E-02 | 5.686E+00 | Half-Life | too short | |
| | | 68.90 | | -2.145E+01 | 2.399E+01 | 3.357E+01 | 2.929E+00 | -0.639 |
| TL-202 | | 70.82 | | 1.014E+01 | 1.294E+01 | 1.972E+01 | 1.728E+00 | 0.514 |
| | | 80.30 | | -2.875E+01 | 2.447E+01 | 3.354E+01 | 3.078E+00 | -0.857 |
| | | 135.34 | | -6.642E+01 | 9.895E+01 | 1.572E+02 | 8.750E+00 | -0.423 |
| | | 167.43 | * | -1.427E+01 | 2.848E+01 | 4.526E+01 | 2.310E+00 | -0.315 |
| | | 68.90 | | -8.458E-01 | 9.461E-01 | 1.324E+00 | 1.155E-01 | -0.639 |
| HG-203 | | 70.82 | | 3.989E-01 | 5.090E-01 | 7.754E-01 | 6.795E-02 | 0.514 |
| | | 80.30 | | -1.131E+00 | 9.626E-01 | 1.319E+00 | 1.211E-01 | -0.857 |
| | | 439.56 | * | 1.679E-02 | 1.211E-01 | 2.023E-01 | 1.184E-02 | 0.083 |
| | | 70.83 | | 1.421E+00 | 1.810E+00 | 2.748E+00 | 3.763E-01 | 0.517 |
| BI-207 | | 72.87 | | 3.745E+00 | 1.252E+00 | 1.903E+00 | 2.538E-01 | 1.968 |
| | | 82.60 | | 1.029E-01 | 2.027E+00 | 2.771E+00 | 3.935E-01 | 0.037 |
| | | 279.20 | * | 7.865E-02 | 6.394E-02 | 1.022E-01 | 6.311E-03 | 0.770 |
| | | 72.80 | | 9.368E-01 | 3.221E-01 | 5.121E-01 | 4.516E-02 | 1.829 |
| | + | 74.97 | | 9.222E-01 | 2.035E-01 | 3.589E-01 | 3.194E-02 | 2.569 |
| | | 84.90 | | 4.026E-01 | 3.018E-01 | 4.617E-01 | 4.389E-02 | 0.872 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TL-207 | | 569.67 | | -1.920E-02 | 3.993E-02 | 6.235E-02 | 3.513E-03 | -0.308 |
| | | 1063.62 | * | 4.183E-02 | 6.765E-02 | 1.190E-01 | 8.742E-03 | 0.352 |
| | | 1770.23 | | -2.748E+00 | 1.015E+00 | 9.296E-01 | 5.755E-02 | -2.956 |
| | | 81.07 | | -1.745E-01 | 3.680E-01 | 4.878E-01 | 4.501E-02 | -0.358 |
| | | 83.78 | | 7.902E-02 | 1.973E-01 | 2.916E-01 | 2.746E-02 | 0.271 |
| | | 94.90 | | 4.751E-01 | 3.570E-01 | 5.515E-01 | 4.705E-02 | 0.861 |
| | | 122.32 | | 1.302E+00 | 2.617E+00 | 3.888E+00 | 2.631E-01 | 0.335 |
| | | 144.24 | | 9.662E-01 | 9.943E-01 | 1.646E+00 | 1.140E-01 | 0.587 |
| | | 154.21 | | 4.607E-01 | 5.349E-01 | 9.039E-01 | 5.941E-02 | 0.510 |
| | + | 269.46 | | 5.139E-01 | 3.441E-01 | 4.704E-01 | 2.844E-02 | 1.093 |
| PO-209 | | 323.87 | * | -1.769E-01 | 9.209E-01 | 1.527E+00 | 2.527E-01 | -0.116 |
| | + | 338.28 | | 8.965E+00 | 2.258E+00 | 3.328E+00 | 3.524E-01 | 2.694 |
| | | 445.03 | | 1.136E+00 | 2.899E+00 | 4.930E+00 | 5.078E-01 | 0.230 |
| | | 260.50 | | 9.095E-01 | 1.342E+01 | 2.154E+01 | 1.237E+00 | 0.042 |
| | | 262.80 | | -1.032E+01 | 3.650E+01 | 5.734E+01 | 3.298E+00 | -0.180 |
| BI-210 | | 896.60 | * | 1.002E+00 | 9.406E+00 | 1.584E+01 | 1.438E+00 | 0.063 |
| | | 46.50 | * | -5.687E-01 | 7.460E+00 | 1.229E+01 | 9.568E-01 | -0.046 |
| PB-210 | | 46.50 | * | -5.687E-01 | 7.460E+00 | 1.229E+01 | 9.568E-01 | -0.046 |
| PO-210 | | 46.50 | * | -5.687E-01 | 7.460E+00 | 1.229E+01 | 8.244E-01 | -0.046 |
| PB-211 | | 404.84 | * | -3.918E-01 | 1.377E+00 | 2.147E+00 | 1.339E+00 | -0.182 |
| BI-212 | | 427.08 | | 7.351E-01 | 2.808E+00 | 4.672E+00 | 2.888E+00 | 0.157 |
| | | 831.96 | | 1.479E-01 | 1.674E+00 | 2.817E+00 | 1.763E+00 | 0.052 |
| | + | 727.18 | * | 8.868E-01 | 6.526E-01 | 8.723E-01 | 6.924E-02 | 1.017 |
| | | 785.46 | | 4.376E-01 | 2.315E+00 | 3.948E+00 | 2.784E-01 | 0.111 |
| | | 1620.62 | | 7.737E-01 | 1.682E+00 | 3.013E+00 | 2.043E-01 | 0.257 |
| PO-215 | | 81.07 | | -1.745E-01 | 3.680E-01 | 4.878E-01 | 4.501E-02 | -0.358 |
| | | 83.78 | | 7.902E-02 | 1.973E-01 | 2.916E-01 | 2.746E-02 | 0.271 |
| | | 94.90 | | 4.751E-01 | 3.570E-01 | 5.515E-01 | 4.705E-02 | 0.861 |
| | | 122.32 | | 1.302E+00 | 2.617E+00 | 3.888E+00 | 2.631E-01 | 0.335 |
| | | 144.24 | | 9.662E-01 | 9.943E-01 | 1.646E+00 | 1.140E-01 | 0.587 |
| RN-219 | | 154.21 | | 4.607E-01 | 5.349E-01 | 9.039E-01 | 5.941E-02 | 0.510 |
| | + | 269.46 | | 5.139E-01 | 3.441E-01 | 4.704E-01 | 2.844E-02 | 1.093 |
| | | 323.87 | * | -1.769E-01 | 9.209E-01 | 1.527E+00 | 2.527E-01 | -0.116 |
| | + | 338.28 | | 8.965E+00 | 2.258E+00 | 3.328E+00 | 3.524E-01 | 2.694 |
| | | 445.03 | | 1.136E+00 | 2.899E+00 | 4.930E+00 | 5.078E-01 | 0.230 |
| RN-220 | + | 271.23 | | 6.594E-01 | 4.429E-01 | 5.958E-01 | 4.824E-02 | 1.107 |
| | | 401.81 | * | -4.062E-01 | 5.682E-01 | 8.942E-01 | 1.216E-01 | -0.454 |
| RA-223 | | 549.76 | * | 1.299E+01 | 3.464E+01 | 5.842E+01 | 3.334E+00 | 0.222 |
| AC-227 | | 81.07 | | -1.745E-01 | 3.680E-01 | 4.878E-01 | 4.501E-02 | -0.358 |
| | | 83.78 | | 7.902E-02 | 1.973E-01 | 2.916E-01 | 2.746E-02 | 0.271 |
| | | 94.90 | | 4.751E-01 | 3.570E-01 | 5.515E-01 | 4.705E-02 | 0.861 |
| | | 122.32 | | 1.302E+00 | 2.617E+00 | 3.888E+00 | 2.631E-01 | 0.335 |
| | | 144.24 | | 9.662E-01 | 9.943E-01 | 1.646E+00 | 1.140E-01 | 0.587 |
| | | 154.21 | | 4.607E-01 | 5.349E-01 | 9.039E-01 | 5.941E-02 | 0.510 |
| | + | 269.46 | | 5.139E-01 | 3.441E-01 | 4.704E-01 | 2.844E-02 | 1.093 |
| | | 323.87 | * | -1.769E-01 | 9.209E-01 | 1.527E+00 | 2.527E-01 | -0.116 |
| | + | 338.28 | | 8.965E+00 | 2.258E+00 | 3.328E+00 | 3.524E-01 | 2.694 |
| | | 445.03 | | 1.136E+00 | 2.899E+00 | 4.930E+00 | 5.078E-01 | 0.230 |
| | | 79.80 | | -7.121E-01 | 2.567E+00 | 3.699E+00 | 8.034E-01 | -0.193 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TH-227 | | 236.00 | | 3.168E+00 | 5.263E-01 | 8.325E-01 | 8.612E-02 | 3.806 |
| | | 256.20 | * | 3.689E-01 | 5.223E-01 | 8.661E-01 | 1.206E-01 | 0.426 |
| | | 286.10 | | 2.089E+00 | 1.937E+00 | 3.429E+00 | 3.971E-01 | 0.609 |
| | | 299.80 | | 2.713E+00 | 2.202E+00 | 3.445E+00 | 5.620E-01 | 0.788 |
| | | 304.40 | | -3.301E+00 | 2.646E+00 | 4.042E+00 | 7.003E-01 | -0.817 |
| | | 334.20 | | 1.083E+00 | 3.396E+00 | 5.069E+00 | 9.311E-01 | 0.214 |
| | | 79.80 | | -7.121E-01 | 2.567E+00 | 3.699E+00 | 8.135E-01 | -0.193 |
| | + | 94.00 | | 8.927E+00 | 3.990E+00 | 5.150E+00 | 1.123E+00 | 1.733 |
| | | 236.00 | | 3.168E+00 | 4.997E-01 | 8.325E-01 | 7.436E-02 | 3.806 |
| | | 256.20 | * | 3.689E-01 | 5.235E-01 | 8.661E-01 | 1.461E-01 | 0.426 |
| | | 286.10 | | 2.089E+00 | 2.842E+00 | 3.429E+00 | 3.435E+00 | 0.609 |
| | | 299.80 | | 2.713E+00 | 2.202E+00 | 3.445E+00 | 5.620E-01 | 0.788 |
| TH-229 | | 304.40 | | -3.301E+00 | 2.646E+00 | 4.042E+00 | 7.003E-01 | -0.817 |
| | | 334.20 | | 1.083E+00 | 3.396E+00 | 5.069E+00 | 9.311E-01 | 0.214 |
| | + | 85.43 | | 6.561E-01 | 3.400E-01 | 4.906E-01 | 4.684E-02 | 1.337 |
| | + | 88.47 | | 3.330E-01 | 1.480E-01 | 3.099E-01 | 2.997E-02 | 1.074 |
| | | 100.00 | | 1.764E-01 | 2.510E-01 | 4.263E-01 | 3.341E-02 | 0.414 |
| PA-231 | | 193.63 | * | 1.373E-02 | 6.725E-01 | 1.090E+00 | 5.772E-02 | 0.013 |
| | | 210.97 | | 1.174E+00 | 1.228E+00 | 1.824E+00 | 9.906E-02 | 0.644 |
| | | 283.67 | * | -1.011E+00 | 2.110E+00 | 3.252E+00 | 4.486E-01 | -0.311 |
| TH-231 | | 301.29 | | 9.105E-01 | 8.443E-01 | 1.375E+00 | 1.443E-01 | 0.662 |
| | | 81.07 | | -1.745E-01 | 3.680E-01 | 4.878E-01 | 4.501E-02 | -0.358 |
| | | 83.78 | | 7.902E-02 | 1.973E-01 | 2.916E-01 | 2.746E-02 | 0.271 |
| | | 94.90 | | 4.751E-01 | 3.570E-01 | 5.515E-01 | 4.705E-02 | 0.861 |
| | | 122.32 | | 1.302E+00 | 2.617E+00 | 3.888E+00 | 2.631E-01 | 0.335 |
| | | 144.24 | | 9.662E-01 | 9.943E-01 | 1.646E+00 | 1.140E-01 | 0.587 |
| | | 154.21 | | 4.607E-01 | 5.349E-01 | 9.039E-01 | 5.941E-02 | 0.510 |
| | + | 269.46 | | 5.139E-01 | 3.441E-01 | 4.704E-01 | 2.844E-02 | 1.093 |
| | | 323.87 | * | -1.769E-01 | 9.209E-01 | 1.527E+00 | 2.527E-01 | -0.116 |
| | + | 338.28 | | 8.965E+00 | 2.258E+00 | 3.328E+00 | 3.524E-01 | 2.694 |
| | | 445.03 | | 1.136E+00 | 2.899E+00 | 4.930E+00 | 5.078E-01 | 0.230 |
| | U-231 | 84.21 | | 1.769E+01 | 1.857E+01 | 2.807E+01 | 2.653E+00 | 0.630 |
| | + | 92.29 | | 1.953E+01 | 7.809E+00 | 1.194E+01 | 1.069E+00 | 1.636 |
| | | 95.87 | * | -1.962E+00 | 3.637E+00 | 5.129E+00 | 4.302E-01 | -0.383 |
| PA-233 | | 108.00 | | -2.552E+00 | 6.303E+00 | 1.023E+01 | 7.150E-01 | -0.249 |
| | + | 75.28 | | 2.690E+01 | 6.850E+00 | 1.115E+01 | 1.729E+00 | 2.414 |
| | + | 86.59 | | 5.728E+00 | 3.305E+00 | 4.278E+00 | 1.162E+00 | 1.339 |
| PA-234 | | 300.12 | | 8.255E-01 | 6.070E-01 | 9.614E-01 | 1.295E-01 | 0.859 |
| | | 311.98 | * | 5.814E-03 | 8.262E-02 | 1.393E-01 | 8.707E-03 | 0.042 |
| | | 340.50 | | 2.228E+00 | 1.048E+00 | 1.573E+00 | 3.618E-01 | 1.416 |
| | | 398.62 | | 2.110E+00 | 2.923E+00 | 4.991E+00 | 1.290E+00 | 0.423 |
| | | 415.76 | | 2.390E+00 | 2.245E+00 | 3.897E+00 | 8.025E-01 | 0.613 |
| | | 63.00 | | 8.205E-01 | 2.520E+00 | 4.200E+00 | 6.526E-01 | 0.195 |
| | | 94.67 | | 5.984E-01 | 2.632E-01 | 4.110E-01 | 5.082E-02 | 1.456 |
| | | 98.44 | | 1.094E-01 | 1.437E-01 | 2.141E-01 | 1.193E-01 | 0.511 |
| | | 99.86 | | 3.202E-01 | 6.473E-01 | 1.081E+00 | 8.493E-02 | 0.296 |
| | | 111.00 | | 4.427E-02 | 2.500E-01 | 4.153E-01 | 4.492E-02 | 0.107 |
| | | 131.20 | | 2.029E-01 | 1.537E-01 | 2.380E-01 | 1.345E-02 | 0.852 |
| | | 152.70 | | 1.310E-01 | 4.393E-01 | 7.257E-01 | 1.134E-01 | 0.181 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | + | 186.00 | | 6.170E+00 | 3.487E+00 | 3.461E+00 | 1.054E+00 | 1.783 |
| | | 226.40 | | -7.550E-02 | 5.425E-01 | 8.662E-01 | 9.902E-02 | -0.087 |
| | | 227.20 | | 2.128E-01 | 5.799E-01 | 9.508E-01 | 5.273E-02 | 0.224 |
| | | 248.90 | | -5.605E-01 | 1.084E+00 | 1.671E+00 | 3.584E-01 | -0.336 |
| | + | 293.70 | | 8.222E+00 | 2.032E+00 | 2.447E+00 | 3.941E-01 | 3.360 |
| | | 369.80 | | 5.051E-01 | 1.039E+00 | 1.782E+00 | 3.713E-01 | 0.283 |
| | | 568.70 | | -1.719E+00 | 1.395E+00 | 2.032E+00 | 1.146E-01 | -0.846 |
| | | 569.50 | | -1.652E-01 | 3.547E-01 | 5.547E-01 | 3.125E-02 | -0.298 |
| | | 574.00 | | -3.524E-01 | 1.956E+00 | 3.049E+00 | 1.712E-01 | -0.116 |
| | | 699.00 | | -2.798E-01 | 9.815E-01 | 1.540E+00 | 2.762E-01 | -0.182 |
| | | 706.10 | | -5.272E-01 | 1.464E+00 | 2.251E+00 | 9.934E-01 | -0.234 |
| | | 733.00 | | 4.133E-02 | 5.703E-01 | 8.373E-01 | 1.789E-01 | 0.049 |
| | | 742.81 | | 7.384E-01 | 1.896E+00 | 3.063E+00 | 2.051E+00 | 0.241 |
| | | 796.30 | | 9.230E-01 | 1.337E+00 | 2.324E+00 | 6.193E-01 | 0.397 |
| | | 805.60 | | 1.197E+00 | 1.381E+00 | 2.409E+00 | 7.306E-01 | 0.497 |
| | | 819.60 | | -3.252E-01 | 1.432E+00 | 2.328E+00 | 8.804E-01 | -0.140 |
| | | 826.30 | | -4.350E-01 | 1.044E+00 | 1.641E+00 | 7.317E-01 | -0.265 |
| | | 831.60 | | -9.977E-02 | 8.486E-01 | 1.403E+00 | 4.158E-01 | -0.071 |
| | | 876.40 | | 3.585E-01 | 1.278E+00 | 2.094E+00 | 2.153E+00 | 0.171 |
| | | 880.51 | | -1.496E-01 | 3.814E-01 | 6.103E-01 | 5.350E-02 | -0.245 |
| | | 883.24 | | -7.409E-02 | 3.819E-01 | 6.184E-01 | 4.159E-01 | -0.120 |
| | | 899.00 | | -2.079E-02 | 1.028E+00 | 1.707E+00 | 7.481E-01 | -0.012 |
| | | 925.00 | | 2.005E-01 | 1.578E+00 | 2.542E+00 | 2.258E-01 | 0.079 |
| | | 926.50 | | -1.567E-01 | 2.818E-01 | 3.644E-01 | 9.243E-02 | -0.430 |
| | | 946.00 | * | -3.440E-02 | 4.042E-01 | 6.231E-01 | 1.171E-01 | -0.055 |
| | | 949.00 | | 1.043E-01 | 5.543E-01 | 9.390E-01 | 8.139E-02 | 0.111 |
| | | 980.50 | | -1.469E-01 | 9.825E-01 | 1.602E+00 | 1.337E-01 | -0.092 |
| | | 1394.10 | | -4.374E-01 | 1.655E+00 | 2.529E+00 | 1.642E+00 | -0.173 |
| PA-234M | | 766.42 | | 4.051E+00 | 1.709E+01 | 2.780E+01 | 1.402E+01 | 0.146 |
| | | 1001.03 | * | 1.590E+00 | 6.052E+00 | 1.028E+01 | 9.812E-01 | 0.155 |
| TH-234 | | 63.29 | * | 2.746E-01 | 2.155E+00 | 3.572E+00 | 6.437E-01 | 0.077 |
| | + | 92.38 | | 2.310E+00 | 9.938E-01 | 1.409E+00 | 2.569E-01 | 1.640 |
| U-235 | | 89.95 | | 3.342E+00 | 1.785E+00 | 2.632E+00 | 8.178E-01 | 1.270 |
| | + | 93.35 | | 2.777E+00 | 1.335E+00 | 1.671E+00 | 4.692E-01 | 1.662 |
| | | 105.00 | | 3.176E-01 | 1.458E+00 | 2.425E+00 | 7.150E-01 | 0.131 |
| | | 143.76 | * | 2.602E-01 | 3.118E-01 | 5.103E-01 | 8.252E-02 | 0.510 |
| | | 163.35 | | 1.928E-01 | 6.249E-01 | 1.031E+00 | 1.832E-01 | 0.187 |
| | + | 185.71 | | 2.285E-01 | 1.094E-01 | 1.285E-01 | 6.727E-03 | 1.779 |
| | | 205.31 | | -2.324E-01 | 8.214E-01 | 1.135E+00 | 2.027E-01 | -0.205 |
| NP-236 | | 94.67 | | 4.564E-01 | 1.956E-01 | 3.120E-01 | 2.673E-02 | 1.463 |
| | | 98.44 | | 8.273E-02 | 9.858E-02 | 1.619E-01 | 1.301E-02 | 0.511 |
| | | 111.00 | | 3.349E-02 | 1.891E-01 | 3.142E-01 | 2.111E-02 | 0.107 |
| | | 160.31 | * | -2.960E-02 | 1.070E-01 | 1.721E-01 | 8.902E-03 | -0.172 |
| U-238 | | 63.29 | * | 2.746E-01 | 2.155E+00 | 3.572E+00 | 6.437E-01 | 0.077 |
| | + | 92.38 | | 2.310E+00 | 9.235E-01 | 1.409E+00 | 1.259E-01 | 1.640 |
| NP-239 | | 99.55 | | 1.475E-01 | 2.148E-01 | 3.613E-01 | 2.852E-02 | 0.408 |
| | | 117.00 | * | -1.480E-01 | 2.493E-01 | 3.995E-01 | 2.493E-02 | -0.371 |
| | + | 209.75 | | 2.885E+00 | 1.334E+00 | 1.965E+00 | 1.065E-01 | 1.468 |
| | | 228.18 | | 1.428E-01 | 3.037E-01 | 5.004E-01 | 2.778E-02 | 0.285 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | + | 277.60 | | 4.540E-01 | 2.669E-01 | 4.271E-01 | 2.483E-02 | 1.063 |
| | | 334.30 | | 6.769E-01 | 1.925E+00 | 2.885E+00 | 1.705E-01 | 0.235 |
| AM-241 | | 59.54 | * | -2.062E-01 | 2.507E-01 | 4.057E-01 | 3.775E-02 | -0.508 |
| CM-243 | | 99.55 | | 1.519E-01 | 2.211E-01 | 3.719E-01 | 2.936E-02 | 0.408 |
| | | 103.76 | * | 6.738E-02 | 1.311E-01 | 2.211E-01 | 1.639E-02 | 0.305 |
| | | 117.00 | | -1.523E-01 | 2.566E-01 | 4.111E-01 | 2.566E-02 | -0.371 |
| | + | 209.75 | | 2.845E+00 | 1.315E+00 | 1.937E+00 | 1.050E-01 | 1.468 |
| | | 228.18 | | 1.444E-01 | 3.069E-01 | 5.058E-01 | 2.808E-02 | 0.285 |
| | + | 277.60 | | 4.579E-01 | 2.692E-01 | 4.308E-01 | 2.504E-02 | 1.063 |
| AM-246 | | 798.80 | | -3.255E-01 | 2.094E-01 | 3.022E-01 | 2.200E-02 | -1.077 |
| | | 1036.00 | | -7.851E-02 | 3.902E-01 | 6.295E-01 | 4.852E-02 | -0.125 |
| | | 1062.04 | | 2.271E-01 | 2.892E-01 | 5.177E-01 | 3.814E-02 | 0.439 |
| | | 1078.86 | * | -1.059E-01 | 1.861E-01 | 2.858E-01 | 2.039E-02 | -0.370 |
| CM-247 | + | 278.00 | | 1.883E+00 | 1.107E+00 | 1.795E+00 | 1.044E-01 | 1.049 |
| | | 287.40 | | 4.135E-01 | 1.537E+00 | 2.627E+00 | 1.536E-01 | 0.157 |
| | | 402.60 | * | -8.555E-02 | 5.373E-02 | 7.689E-02 | 4.457E-03 | -1.113 |
| CF-249 | | 252.85 | | -1.031E+00 | 1.202E+00 | 1.823E+00 | 1.040E-01 | -0.566 |
| | | 333.44 | | 6.684E-03 | 2.559E-01 | 3.735E-01 | 2.207E-02 | 0.018 |
| | | 387.95 | * | -2.318E-02 | 5.539E-02 | 8.964E-02 | 5.187E-03 | -0.259 |
| CF-251 | | 176.60 | * | -4.419E-02 | 1.692E-01 | 2.714E-01 | 1.403E-02 | -0.163 |
| | | 227.00 | | 1.436E-01 | 5.157E-01 | 8.417E-01 | 4.667E-02 | 0.171 |
| | | 285.00 | | 1.740E+00 | 2.181E+00 | 3.831E+00 | 2.237E-01 | 0.454 |

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]G245388005      *
* Acquisition date   : 4-FEB-2010 10:30:28 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 02:00:01.51 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G245388005 Analyst initials: MXR1                  *
* Batch Number       : 944964 Sample Quantity : 9.7880E+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 :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.014E+01 | 2.392E+00 | 8.254E-01 | 0.000E+00 |
| CD-109 | 2.998E+00 | 1.523E+00 | 1.710E+00 | 0.000E+00 |
| SN-126 | 2.926E-01 | 1.486E-01 | 1.679E-01 | 0.000E+00 |
| BA-137M | 1.126E-01 | 7.362E-02 | 8.019E-02 | 0.000E+00 |
| CS-137 | 1.190E-01 | 7.783E-02 | 8.477E-02 | 0.000E+00 |
| TL-208 | 5.894E-01 | 1.088E-01 | 7.454E-02 | 0.000E+00 |
| BI-211 | 4.582E+00 | 6.760E-01 | 4.160E-01 | 0.000E+00 |
| PB-212 | 2.040E+00 | 2.011E-01 | 1.168E-01 | 0.000E+00 |
| PO-212 | 2.040E+00 | 2.011E-01 | 1.168E-01 | 0.000E+00 |
| BI-214 | 1.414E+00 | 2.306E-01 | 1.642E-01 | 0.000E+00 |
| PB-214 | 1.594E+00 | 2.489E-01 | 1.450E-01 | 0.000E+00 |
| PO-214 | 1.594E+00 | 2.489E-01 | 1.450E-01 | 0.000E+00 |
| PO-216 | 2.040E+00 | 2.011E-01 | 1.168E-01 | 0.000E+00 |
| PO-218 | 1.594E+00 | 2.489E-01 | 1.450E-01 | 0.000E+00 |
| RA-224 | 5.577E+00 | 1.400E+00 | 1.329E+00 | 0.000E+00 |
| RA-226 | 1.414E+00 | 2.306E-01 | 1.642E-01 | 0.000E+00 |
| AC-228 | 2.051E+00 | 4.196E-01 | 2.508E-01 | 0.000E+00 |
| RA-228 | 2.051E+00 | 4.196E-01 | 2.508E-01 | 0.000E+00 |
| TH-228 | 2.080E+00 | 2.051E-01 | 1.191E-01 | 0.000E+00 |
| TH-230 | 1.414E+00 | 2.306E-01 | 1.642E-01 | 0.000E+00 |
| TH-232 | 2.051E+00 | 4.196E-01 | 2.508E-01 | 0.000E+00 |
| U-234 | 1.414E+00 | 2.306E-01 | 1.642E-01 | 0.000E+00 |
| NP-237 | 8.592E-01 | 4.696E-01 | 5.824E-01 | 0.000E+00 |
| AM-243 | 5.136E-01 | 1.111E-01 | 1.291E-01 | 0.000E+00 |
| ANH-511 | 9.786E-02 | 1.078E-01 | 6.398E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | 1.352E-01 | 4.688E-01 | 7.978E-01 | 0.000E+00 NOT IDENT. |
| NA-22 | -1.893E-02 | 5.641E-02 | 8.901E-02 | 0.000E+00 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-24 | 0.000E+00 | 2.058E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | -1.815E-02 | 3.408E-02 | 4.895E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 7.566E-02 | 1.146E-01 | 0.000E+00 | FAIL ABUN |
| SC-46 | -3.693E-02 | 5.193E-02 | 8.078E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | 9.977E-03 | 1.179E-01 | 1.992E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | -1.849E-01 | 5.380E-01 | 8.960E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | -1.455E-01 | 5.348E-01 | 8.316E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | 3.920E-02 | 5.270E-02 | 9.432E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -5.228E-02 | 5.070E-02 | 7.609E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | 1.142E-02 | 3.584E-02 | 5.631E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -4.659E-02 | 4.946E-02 | 7.534E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | 7.743E-02 | 1.288E-01 | 2.275E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | -2.183E-02 | 5.347E-02 | 8.300E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 6.689E-02 | 1.348E-01 | 2.064E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | -6.701E-02 | 1.606E+00 | 2.664E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | 1.499E+00 | 1.499E+00 | 2.650E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | 2.548E-02 | 1.380E-01 | 2.312E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -2.172E-02 | 6.660E-02 | 9.134E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 0.000E+00 | 6.044E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SR-82 | -9.134E-01 | 5.593E-01 | 7.949E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | -1.551E-02 | 1.008E-01 | 1.555E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | -7.380E-02 | 1.040E-01 | 1.627E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 7.656E+00 | 1.138E+01 | 1.741E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 4.130E-02 | 6.136E-02 | 9.389E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 5.012E-01 | 1.173E+00 | 2.046E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 6.084E-03 | 4.346E-02 | 7.479E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -3.293E-02 | 4.434E-02 | 7.111E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | -6.660E+00 | 2.501E+01 | 4.016E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | 2.264E-02 | 4.470E-02 | 7.626E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | -6.256E-03 | 6.438E-02 | 1.037E-01 | 0.000E+00 | NOT IDENT. |
| NB-95M | 0.000E+00 | 2.315E-01 | 3.871E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 3.044E-03 | 1.030E-01 | 1.679E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 1.804E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 3.238E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 1.602E+01 | 5.255E+01 | 8.802E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 3.385E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -1.078E-02 | 4.468E-02 | 6.991E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -5.644E-03 | 3.939E-02 | 6.501E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | 3.437E-02 | 6.118E-02 | 1.057E-01 | 0.000E+00 | NOT IDENT. |
| RH-106 | 2.385E-01 | 4.273E-01 | 7.353E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | 2.385E-01 | 4.266E-01 | 7.353E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | 1.665E-02 | 4.298E-02 | 7.393E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | -4.364E-02 | 5.690E-02 | 7.178E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | -2.514E-01 | 4.884E+00 | 6.894E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -3.347E-02 | 6.292E-02 | 1.024E-01 | 0.000E+00 | NOT IDENT. |
| SN-113 | -3.347E-02 | 6.292E-02 | 1.024E-01 | 0.000E+00 | NOT IDENT. |
| IN-114M | 1.588E-01 | 2.819E-01 | 4.199E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 0.000E+00 | 6.109E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SN-117M | 3.616E-02 | 9.166E-02 | 1.542E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | 7.511E+00 | 9.554E+00 | 1.676E+01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 3.396E+09 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 1.305E-02 | 3.839E-02 | 6.443E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -4.337E-01 | 2.094E+00 | 2.898E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | 3.812E-02 | 1.057E-01 | 1.893E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | 5.120E-02 | 1.217E-01 | 2.099E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | 9.048E+00 | 1.309E+01 | 2.249E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 1.528E-01 | 3.231E-01 | 4.866E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | 7.671E-02 | 2.842E-01 | 4.141E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | -8.163E-01 | 4.374E+00 | 7.025E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 3.226E-02 | 7.191E-02 | 1.163E-01 | 0.000E+00 | NOT IDENT. |
| I-131 | 4.451E-02 | 2.172E-01 | 3.719E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | 1.233E+00 | 2.544E+00 | 4.241E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | 2.891E-02 | 5.731E-02 | 8.825E-02 | 0.000E+00 | FAIL ABUN |
| I-133 | 0.000E+00 | 3.657E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 7.432E-02 | 6.636E-02 | 1.217E-01 | 0.000E+00 | NOT IDENT. |
| CS-135 | 0.000E+00 | 2.476E-01 | 3.902E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 1.396E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -2.177E-01 | 1.733E-01 | 2.433E-01 | 0.000E+00 | FAIL ABUN |
| CE-139 | -2.229E-02 | 4.024E-02 | 6.475E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | 3.038E-01 | 4.528E-01 | 7.734E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -4.869E-02 | 1.303E-01 | 2.046E-01 | 0.000E+00 | NOT IDENT. |
| CE-141 | 2.327E-02 | 9.893E-02 | 1.656E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 5.012E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | -1.369E-01 | 2.885E-01 | 4.320E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | -6.491E-03 | 4.602E-02 | 7.419E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | -4.409E-01 | 3.127E+00 | 5.040E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 6.623E-02 | 5.778E-02 | 1.038E-01 | 0.000E+00 | NOT IDENT. |
| ND-147 | 6.158E-01 | 9.742E-01 | 1.694E+00 | 0.000E+00 | FAIL ABUN |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-149 | 0.000E+00 | 5.130E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| EU-152 | -6.700E-02 | 1.636E-01 | 2.008E-01 | 0.000E+00 | NOT IDENT. |
| GD-153 | 4.775E-02 | 1.204E-01 | 1.809E-01 | 0.000E+00 | NOT IDENT. |
| EU-154 | -5.797E-02 | 1.566E-01 | 2.458E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 5.063E-02 | 1.449E-01 | 2.463E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 3.670E-02 | 1.979E-01 | 3.396E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | -5.035E-03 | 7.807E-02 | 1.265E-01 | 0.000E+00 | NOT IDENT. |
| TM-171 | -4.618E+01 | 4.376E+01 | 7.082E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | 3.106E-03 | 3.128E-02 | 5.354E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 3.032E+00 | 4.523E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -3.443E-01 | 2.540E-01 | 3.880E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | -2.199E-02 | 6.177E-02 | 1.002E-01 | 0.000E+00 | NOT IDENT. |
| W-181 | 7.865E-01 | 5.823E-01 | 1.021E+00 | 0.000E+00 | NOT IDENT. |
| TA-182 | -2.158E-02 | 2.608E-01 | 4.273E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | 4.514E-04 | 1.518E-01 | 2.508E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | -2.803E-01 | 3.201E-01 | 4.923E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | 1.741E-03 | 6.543E-02 | 1.052E-01 | 0.000E+00 | NOT IDENT. |
| RE-188 | 4.885E-02 | 2.384E-01 | 3.981E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | -1.331E+01 | 1.108E+01 | 1.483E+01 | 0.000E+00 | NOT IDENT. |
| IR-192 | -1.255E-02 | 4.526E-02 | 7.568E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 2.575E-01 | 3.094E-01 | 5.306E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 1.240E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | -1.427E+01 | 2.791E+01 | 4.500E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 1.679E-02 | 1.187E-01 | 2.008E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | 7.865E-02 | 6.266E-02 | 1.015E-01 | 0.000E+00 | NOT IDENT. |
| BI-207 | 4.183E-02 | 6.630E-02 | 1.179E-01 | 0.000E+00 | FAIL ABUN |
| TL-207 | -1.769E-01 | 9.025E-01 | 1.516E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | 1.002E+00 | 9.218E+00 | 1.570E+01 | 0.000E+00 | NOT IDENT. |
| BI-210 | -5.687E-01 | 7.311E+00 | 1.224E+01 | 0.000E+00 | NOT IDENT. |
| PB-210 | -5.687E-01 | 7.311E+00 | 1.224E+01 | 0.000E+00 | NOT IDENT. |
| PO-210 | -5.687E-01 | 7.311E+00 | 1.224E+01 | 0.000E+00 | NOT IDENT. |
| PB-211 | -3.918E-01 | 1.350E+00 | 2.132E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 6.395E-01 | 8.651E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | -1.769E-01 | 9.025E-01 | 1.516E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | -4.062E-01 | 5.569E-01 | 8.877E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | 1.299E+01 | 3.394E+01 | 5.796E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -1.769E-01 | 9.025E-01 | 1.516E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | 3.689E-01 | 5.119E-01 | 8.604E-01 | 0.000E+00 | NOT IDENT. |
| TH-227 | 3.689E-01 | 5.130E-01 | 8.604E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | 1.373E-02 | 6.591E-01 | 1.083E+00 | 0.000E+00 | FAIL ABUN |
| PA-231 | -1.011E+00 | 2.068E+00 | 3.230E+00 | 0.000E+00 | NOT IDENT. |
| TH-231 | -1.769E-01 | 9.025E-01 | 1.516E+00 | 0.000E+00 | FAIL ABUN |
| U-231 | -1.962E+00 | 3.565E+00 | 5.103E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 5.814E-03 | 8.096E-02 | 1.383E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | -3.440E-02 | 3.961E-01 | 6.177E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 1.590E+00 | 5.931E+00 | 1.019E+01 | 0.000E+00 | NOT IDENT. |
| TH-234 | 2.746E-01 | 2.112E+00 | 3.557E+00 | 0.000E+00 | FAIL ABUN |
| U-235 | 2.602E-01 | 3.056E-01 | 5.074E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -2.960E-02 | 1.048E-01 | 1.711E-01 | 0.000E+00 | NOT IDENT. |
| U-238 | 2.746E-01 | 2.112E+00 | 3.557E+00 | 0.000E+00 | FAIL ABUN |
| NP-239 | -1.480E-01 | 2.443E-01 | 3.974E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | -2.062E-01 | 2.457E-01 | 4.040E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | 6.738E-02 | 1.285E-01 | 2.200E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | -1.059E-01 | 1.823E-01 | 2.833E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | -8.555E-02 | 5.266E-02 | 7.633E-02 | 0.000E+00 | FAIL ABUN |
| CF-249 | -2.318E-02 | 5.429E-02 | 8.899E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -4.419E-02 | 1.658E-01 | 2.698E-01 | 0.000E+00 | NOT IDENT. |

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*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388005.CNF;1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:30:28.
Sample ID        : G245388005 Sample quantity : 9.78800E+01 GRAM
Detector name    : GAM23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.51 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 944964 Detector SN# :
Matrix Spike ID  : LCS ID : 1032-A
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Nuclide Line Activity Report

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| K-40 | 1460.81 | 559 | 10.67* | 9.973E-01 | 2.014E+01 | 2.014E+01 | 12.11 |
| CD-109 | 88.03 | 147 | 3.72* | 5.202E+00 | 2.910E+00 | 2.998E+00 | 51.82 |
| SN-126 | 64.28 | ----- | 9.60 | 2.723E+00 | ----- | Line Not Found | ----- |
| | 86.94 | 147 | 8.90 | 5.202E+00 | 1.216E+00 | 1.216E+00 | 65.74 |
| | 87.57 | 147 | 37.00* | 5.202E+00 | 2.926E-01 | 2.926E-01 | 51.82 |
| BA-137M | 661.65 | 54 | 89.98* | 2.041E+00 | 1.124E-01 | 1.126E-01 | 66.73 |
| CS-137 | 661.65 | 54 | 85.12* | 2.041E+00 | 1.189E-01 | 1.190E-01 | 66.73 |
| TL-208 | 277.35 | 69 | 6.80 | 4.141E+00 | 9.415E-01 | 9.415E-01 | 59.45 |
| | 510.84 | 65 | 21.60 | 2.544E+00 | 4.531E-01 | 4.531E-01 | 112.68 |
| | 583.14 | 295 | 84.20* | 2.278E+00 | 5.894E-01 | 5.894E-01 | 18.84 |
| | 860.37 | 42 | 12.46 | 1.608E+00 | 7.942E-01 | 7.942E-01 | 91.11 |
| BI-211 | 72.87 | ----- | 1.27 | 3.829E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 532 | 12.94* | 3.441E+00 | 4.582E+00 | 4.582E+00 | 15.06 |
| PB-212 | 74.81 | 357 | 10.70 | 4.036E+00 | 3.168E+00 | 3.168E+00 | 23.97 |
| | 77.11 | 516 | 18.00 | 4.292E+00 | 2.562E+00 | 2.562E+00 | 16.32 |
| | 87.30 | 147 | 8.00 | 5.202E+00 | 1.353E+00 | 1.353E+00 | 52.77 |
| | 238.63 | 1100 | 44.60* | 4.638E+00 | 2.040E+00 | 2.040E+00 | 10.06 |
| | 300.09 | ----- | 3.41 | 3.896E+00 | ----- | Line Not Found | ----- |
| PO-212 | 74.81 | 357 | 10.70 | 4.036E+00 | 3.168E+00 | 3.168E+00 | 23.97 |
| | 77.11 | 516 | 18.00 | 4.292E+00 | 2.562E+00 | 2.562E+00 | 16.32 |
| | 87.30 | 147 | 8.00 | 5.202E+00 | 1.353E+00 | 1.353E+00 | 52.77 |
| | 115.19 | ----- | 0.60 | 6.293E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1100 | 44.60* | 4.638E+00 | 2.040E+00 | 2.040E+00 | 10.06 |
| | 300.09 | ----- | 3.41 | 3.896E+00 | ----- | Line Not Found | ----- |
| BI-214 | 609.31 | 375 | 46.30* | 2.194E+00 | 1.414E+00 | 1.414E+00 | 16.64 |
| | 1120.29 | 79 | 15.10 | 1.258E+00 | 1.597E+00 | 1.597E+00 | 48.57 |
| | 1764.49 | 52 | 15.80 | 8.743E-01 | 1.441E+00 | 1.441E+00 | 39.44 |
| PB-214 | 74.81 | 357 | 6.21 | 4.036E+00 | 5.459E+00 | 5.459E+00 | 23.28 |
| | 77.11 | 516 | 10.50 | 4.292E+00 | 4.393E+00 | 4.393E+00 | 18.02 |
| | 87.30 | 147 | 4.67 | 5.202E+00 | 2.318E+00 | 2.318E+00 | 52.39 |
| | 241.98 | 264 | 7.49 | 4.597E+00 | 2.941E+00 | 2.941E+00 | 26.22 |
| | 295.21 | 339 | 19.20 | 3.948E+00 | 1.713E+00 | 1.713E+00 | 20.61 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 351.92 | 532 | 37.20* | 3.441E+00 | 1.594E+00 | 1.594E+00 | 15.93 |
| | 74.81 | 357 | 6.21 | 4.036E+00 | 5.459E+00 | 5.459E+00 | 23.28 |
| | 77.11 | 516 | 10.50 | 4.292E+00 | 4.393E+00 | 4.393E+00 | 18.02 |
| | 87.30 | 147 | 4.67 | 5.202E+00 | 2.318E+00 | 2.318E+00 | 52.39 |
| | 241.98 | 264 | 7.49 | 4.597E+00 | 2.941E+00 | 2.941E+00 | 26.22 |
| PO-216 | 295.21 | 339 | 19.20 | 3.948E+00 | 1.713E+00 | 1.713E+00 | 20.61 |
| | 351.92 | 532 | 37.20* | 3.441E+00 | 1.594E+00 | 1.594E+00 | 15.93 |
| | 74.81 | 357 | 10.70 | 4.036E+00 | 3.168E+00 | 3.168E+00 | 23.97 |
| | 77.11 | 516 | 18.00 | 4.292E+00 | 2.562E+00 | 2.562E+00 | 16.32 |
| | 87.30 | 147 | 8.00 | 5.202E+00 | 1.353E+00 | 1.353E+00 | 52.77 |
| PO-218 | 238.63 | 1100 | 44.60* | 4.638E+00 | 2.040E+00 | 2.040E+00 | 10.06 |
| | 300.09 | ----- | 3.41 | 3.896E+00 | ----- | Line Not Found | ----- |
| | 74.81 | 357 | 6.21 | 4.036E+00 | 5.459E+00 | 5.459E+00 | 23.28 |
| | 77.11 | 516 | 10.50 | 4.292E+00 | 4.393E+00 | 4.393E+00 | 18.02 |
| | 87.30 | 147 | 4.67 | 5.202E+00 | 2.318E+00 | 2.318E+00 | 52.39 |
| RA-224 | 241.98 | 264 | 7.49 | 4.597E+00 | 2.941E+00 | 2.941E+00 | 26.22 |
| | 295.21 | 339 | 19.20 | 3.948E+00 | 1.713E+00 | 1.713E+00 | 20.61 |
| | 351.92 | 532 | 37.20* | 3.441E+00 | 1.594E+00 | 1.594E+00 | 15.93 |
| | 240.98 | 264 | 3.95* | 4.597E+00 | 5.577E+00 | 5.577E+00 | 25.62 |
| | 609.31 | 375 | 46.30* | 2.194E+00 | 1.414E+00 | 1.414E+00 | 16.64 |
| AC-228 | 1120.29 | 79 | 15.10 | 1.258E+00 | 1.597E+00 | 1.597E+00 | 48.57 |
| | 1764.49 | 52 | 15.80 | 8.743E-01 | 1.441E+00 | 1.441E+00 | 39.44 |
| | 338.32 | 226 | 11.40 | 3.548E+00 | 2.147E+00 | 2.147E+00 | 46.74 |
| | 911.07 | 226 | 27.70* | 1.527E+00 | 2.051E+00 | 2.051E+00 | 20.88 |
| | 969.11 | 79 | 16.60 | 1.441E+00 | 1.260E+00 | 1.260E+00 | 52.07 |
| RA-228 | 338.32 | 226 | 11.40 | 3.548E+00 | 2.147E+00 | 2.147E+00 | 46.74 |
| | 911.07 | 226 | 27.70* | 1.527E+00 | 2.051E+00 | 2.051E+00 | 20.88 |
| | 969.11 | 79 | 16.60 | 1.441E+00 | 1.260E+00 | 1.260E+00 | 52.07 |
| | 74.81 | 357 | 10.70 | 4.036E+00 | 3.168E+00 | 3.232E+00 | 22.10 |
| | 77.11 | 516 | 18.00 | 4.292E+00 | 2.562E+00 | 2.614E+00 | 16.32 |
| TH-228 | 87.30 | 147 | 8.00 | 5.202E+00 | 1.353E+00 | 1.380E+00 | 51.82 |
| | 238.63 | 1100 | 44.60* | 4.638E+00 | 2.040E+00 | 2.080E+00 | 10.06 |
| | 300.09 | ----- | 3.41 | 3.896E+00 | ----- | Line Not Found | ----- |
| | 609.31 | 375 | 46.30* | 2.194E+00 | 1.414E+00 | 1.414E+00 | 16.64 |
| | 1120.29 | 79 | 15.10 | 1.258E+00 | 1.597E+00 | 1.597E+00 | 48.57 |
| TH-230 | 1764.49 | 52 | 15.80 | 8.743E-01 | 1.441E+00 | 1.441E+00 | 39.44 |
| | 338.32 | 226 | 11.40 | 3.548E+00 | 2.147E+00 | 2.147E+00 | 23.60 |
| | 911.07 | 226 | 27.70* | 1.527E+00 | 2.051E+00 | 2.051E+00 | 20.88 |
| | 969.11 | 79 | 16.60 | 1.441E+00 | 1.260E+00 | 1.260E+00 | 52.07 |
| | 609.31 | 375 | 46.30* | 2.194E+00 | 1.414E+00 | 1.414E+00 | 16.64 |
| U-234 | 1120.29 | 79 | 15.10 | 1.258E+00 | 1.597E+00 | 1.597E+00 | 48.57 |
| | 1764.49 | 52 | 15.80 | 8.743E-01 | 1.441E+00 | 1.441E+00 | 39.44 |
| | 86.50 | 147 | 12.60* | 5.202E+00 | 8.592E-01 | 8.592E-01 | 55.77 |
| | 95.87 | ----- | 2.60 | 5.757E+00 | ----- | Line Not Found | ----- |
| | 74.67 | 357 | 66.00* | 4.036E+00 | 5.136E-01 | 5.136E-01 | 22.07 |
| AM-243 | 86.72 | 147 | 0.34 | 5.202E+00 | 3.222E+01 | 3.222E+01 | 51.82 |
| | 117.66 | ----- | 0.55 | 6.314E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 6.209E+00 | ----- | Line Not Found | ----- |
| | 511.00 | 65 | 100.00* | 2.544E+00 | 9.786E-02 | 9.786E-02 | 112.37 |

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G245388005

Page : 4
Acquisition date : 4-FEB-2010 10:30:28

Total number of lines in spectrum 29
Number of unidentified lines 1
Number of lines tentatively identified by NID 28 96.55%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|---------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 2.014E+01 | 2.014E+01 | 0.244E+01 | 12.11 | |
| CD-109 | 464.00D | 1.03 | 2.910E+00 | 2.998E+00 | 1.554E+00 | 51.82 | |
| SN-126 | 1.00E+05Y | 1.00 | 2.926E-01 | 2.926E-01 | 1.516E-01 | 51.82 | |
| BA-137M | 30.17Y | 1.00 | 1.124E-01 | 1.126E-01 | 0.751E-01 | 66.73 | |
| CS-137 | 30.17Y | 1.00 | 1.189E-01 | 1.190E-01 | 0.794E-01 | 66.73 | |
| TL-208 | 1.41E+10Y | 1.00 | 5.894E-01 | 5.894E-01 | 1.110E-01 | 18.84 | |
| BI-211 | 7.04E+08Y | 1.00 | 4.582E+00 | 4.582E+00 | 0.690E+00 | 15.06 | |
| PB-212 | 1.41E+10Y | 1.00 | 2.040E+00 | 2.040E+00 | 0.205E+00 | 10.06 | |
| PO-212 | 1.41E+10Y | 1.00 | 2.040E+00 | 2.040E+00 | 0.205E+00 | 10.06 | |
| BI-214 | 1600.00Y | 1.00 | 1.414E+00 | 1.414E+00 | 0.235E+00 | 16.64 | |
| PB-214 | 1600.00Y | 1.00 | 1.594E+00 | 1.594E+00 | 0.254E+00 | 15.93 | |
| PO-214 | 1600.00Y | 1.00 | 1.594E+00 | 1.594E+00 | 0.254E+00 | 15.93 | |
| PO-216 | 1.41E+10Y | 1.00 | 2.040E+00 | 2.040E+00 | 0.205E+00 | 10.06 | |
| PO-218 | 1600.00Y | 1.00 | 1.594E+00 | 1.594E+00 | 0.254E+00 | 15.93 | |
| RA-224 | 1.41E+10Y | 1.00 | 5.577E+00 | 5.577E+00 | 1.429E+00 | 25.62 | |
| RA-226 | 1600.00Y | 1.00 | 1.414E+00 | 1.414E+00 | 0.235E+00 | 16.64 | |
| AC-228 | 1.41E+10Y | 1.00 | 2.051E+00 | 2.051E+00 | 0.428E+00 | 20.88 | |
| RA-228 | 1.41E+10Y | 1.00 | 2.051E+00 | 2.051E+00 | 0.428E+00 | 20.88 | |
| TH-228 | 1.91Y | 1.02 | 2.040E+00 | 2.080E+00 | 0.209E+00 | 10.06 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.414E+00 | 1.414E+00 | 0.235E+00 | 16.64 | |
| TH-232 | 1.41E+10Y | 1.00 | 2.051E+00 | 2.051E+00 | 0.428E+00 | 20.88 | |
| U-234 | 4.47E+09Y | 1.00 | 1.414E+00 | 1.414E+00 | 0.235E+00 | 16.64 | |
| NP-237 | 2.14E+06Y | 1.00 | 8.592E-01 | 8.592E-01 | 4.792E-01 | 55.77 | |
| AM-243 | 7380.00Y | 1.00 | 5.136E-01 | 5.136E-01 | 1.134E-01 | 22.07 | |
| ANH-511 | 1.00E+09Y | 1.00 | 9.786E-02 | 9.786E-02 | 11.00E-02 | 112.37 | |

Total Activity : 6.055E+01 6.068E+01

Grand Total Activity : 6.055E+01 6.068E+01

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

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

Unidentified Energy Lines
Sample ID : G245388005

Page : 5
Acquisition date : 4-FEB-2010 10:30:28

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 89.70 | 127 | 250 | 1.16 | 179.40 | 177 | 6 | 1.76E-02 | 43.4 | 5.40E+00 | T |
| 0 | 92.85 | 182 | 320 | 1.76 | 185.70 | 182 | 8 | 2.53E-02 | 39.0 | 5.60E+00 | T |
| 0 | 129.19 | 80 | 329 | 1.24 | 258.38 | 251 | 10 | 1.11E-02 | 87.7 | 6.32E+00 | T |
| 0 | 185.98 | 176 | 353 | 1.20 | 371.96 | 366 | 13 | 2.45E-02 | 47.6 | 5.49E+00 | T |
| 0 | 208.98 | 124 | 211 | 1.06 | 417.96 | 414 | 9 | 1.72E-02 | 45.9 | 5.09E+00 | T |
| 0 | 269.87 | 77 | 164 | 1.37 | 539.74 | 535 | 10 | 1.07E-02 | 66.7 | 4.23E+00 | T |
| 0 | 462.78 | 75 | 95 | 1.15 | 925.55 | 921 | 12 | 1.05E-02 | 56.9 | 2.76E+00 | T |
| 0 | 726.79 | 51 | 75 | 1.47 | 1453.58 | 1447 | 12 | 7.11E-03 | 73.2 | 1.88E+00 | T |
| 0 | 933.41 | 24 | 25 | 1.38 | 1866.81 | 1861 | 10 | 3.33E-03 | 88.0 | 1.49E+00 | |
| 0 | 1236.63 | 58 | 54 | 4.50 | 2473.26 | 2465 | 19 | 8.10E-03 | 67.1 | 1.15E+00 | T |

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388005.CNF;1  *
* Acquisition date   : 4-FEB-2010 10:30:28.  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 02:00:01.51           Half life ratio  : 8.00000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 15-JAN-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G245388005           Analyst initials: MXR1          *
* Batch Number       : 944964              Sample Quantity : 9.78800E+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 | 2.014E+01 | 2.440E+00 | 8.332E-01 | 6.232E-02 | 24.178 |
| CD-109 | 2.998E+00 | 1.554E+00 | 1.719E+00 | 1.678E-01 | 1.744 |
| SN-126 | 2.926E-01 | 1.516E-01 | 1.687E-01 | 1.642E-02 | 1.734 |
| BA-137M | 1.126E-01 | 7.512E-02 | 8.085E-02 | 4.130E-03 | 1.393 |
| CS-137 | 1.190E-01 | 7.942E-02 | 8.546E-02 | 4.390E-03 | 1.393 |
| TL-208 | 5.894E-01 | 1.110E-01 | 7.513E-02 | 4.878E-03 | 7.845 |
| BI-211 | 4.582E+00 | 6.898E-01 | 4.189E-01 | 2.730E-02 | 10.936 |
| PB-212 | 2.040E+00 | 2.052E-01 | 1.175E-01 | 8.449E-03 | 17.355 |
| PO-212 | 2.040E+00 | 2.052E-01 | 1.175E-01 | 8.449E-03 | 17.355 |
| BI-214 | 1.414E+00 | 2.353E-01 | 1.656E-01 | 1.245E-02 | 8.543 |
| PB-214 | 1.594E+00 | 2.540E-01 | 1.460E-01 | 1.219E-02 | 10.913 |
| PO-214 | 1.594E+00 | 2.540E-01 | 1.460E-01 | 1.219E-02 | 10.913 |
| PO-216 | 2.040E+00 | 2.052E-01 | 1.175E-01 | 8.449E-03 | 17.355 |
| PO-218 | 1.594E+00 | 2.540E-01 | 1.460E-01 | 1.219E-02 | 10.913 |
| RA-224 | 5.577E+00 | 1.429E+00 | 1.338E+00 | 7.536E-02 | 4.170 |
| RA-226 | 1.414E+00 | 2.353E-01 | 1.656E-01 | 1.245E-02 | 8.543 |
| AC-228 | 2.051E+00 | 4.282E-01 | 2.529E-01 | 2.919E-02 | 8.109 |
| RA-228 | 2.051E+00 | 4.282E-01 | 2.529E-01 | 2.919E-02 | 8.109 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-228 | 2.080E+00 | 2.093E-01 | 1.199E-01 | 8.619E-03 | 17.355 |
| TH-230 | 1.414E+00 | 2.353E-01 | 1.656E-01 | 1.245E-02 | 8.543 |
| TH-232 | 2.051E+00 | 4.282E-01 | 2.529E-01 | 2.919E-02 | 8.109 |
| U-234 | 1.414E+00 | 2.353E-01 | 1.656E-01 | 1.245E-02 | 8.543 |
| NP-237 | 8.592E-01 | 4.792E-01 | 5.853E-01 | 1.333E-01 | 1.468 |
| AM-243 | 5.136E-01 | 1.134E-01 | 1.297E-01 | 1.152E-02 | 3.961 |
| ANH-511 | 9.786E-02 | 1.100E-01 | 6.448E-02 | 3.745E-03 | 1.518 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| BE-7 | 1.352E-01 | | 4.784E-01 | 8.039E-01 | 5.463E-02 | 0.168 |
| NA-22 | -1.893E-02 | | 5.756E-02 | 8.983E-02 | 6.033E-03 | -0.211 |
| NA-24 | 2.319E+01 | | 1.050E+02 | Half-Life | too short | |
| AL-26 | -1.815E-02 | | 3.478E-02 | 4.942E-02 | 2.970E-03 | -0.367 |
| TI-44 | 4.729E-01 | + | 7.721E-02 | 1.151E-01 | 1.044E-02 | 4.108 |
| SC-46 | -3.693E-02 | | 5.299E-02 | 8.148E-02 | 7.280E-03 | -0.453 |
| V-48 | 9.977E-03 | | 1.203E-01 | 2.010E-01 | 1.672E-02 | 0.050 |
| CR-51 | -1.849E-01 | | 5.490E-01 | 9.022E-01 | 5.916E-02 | -0.205 |
| MN-52 | -1.455E-01 | | 5.457E-01 | 8.395E-01 | 6.074E-02 | -0.173 |
| MN-54 | 3.920E-02 | | 5.377E-02 | 9.512E-02 | 7.532E-03 | 0.412 |
| CO-56 | -5.228E-02 | | 5.173E-02 | 7.674E-02 | 6.243E-03 | -0.681 |
| CO-57 | 1.142E-02 | | 3.658E-02 | 5.662E-02 | 3.338E-03 | 0.202 |
| CO-58 | -4.659E-02 | | 5.047E-02 | 7.598E-02 | 5.708E-03 | -0.613 |
| FE-59 | 7.743E-02 | | 1.314E-01 | 2.296E-01 | 1.768E-02 | 0.337 |
| CO-60 | -2.183E-02 | | 5.456E-02 | 8.377E-02 | 6.150E-03 | -0.261 |
| ZN-65 | 6.689E-02 | | 1.375E-01 | 2.083E-01 | 1.376E-02 | 0.321 |
| GE-68 | -6.701E-02 | | 1.639E+00 | 2.688E+00 | 1.923E-01 | -0.025 |
| AS-73 | 1.499E+00 | | 1.529E+00 | 2.661E+00 | 2.349E-01 | 0.563 |
| AS-74 | 2.548E-02 | | 1.408E-01 | 2.330E-01 | 1.285E-02 | 0.109 |
| SE-75 | -2.172E-02 | | 6.796E-02 | 9.195E-02 | 5.352E-03 | -0.236 |
| BR-77 | -1.403E-06 | | 3.084E-05 | Half-Life | too short | |
| SR-82 | -9.134E-01 | | 5.707E-01 | 8.016E-01 | 5.530E-02 | -1.139 |
| RB-83 | -1.551E-02 | | 1.029E-01 | 1.567E-01 | 9.071E-03 | -0.099 |
| RB-84 | -7.380E-02 | | 1.061E-01 | 1.641E-01 | 1.441E-02 | -0.450 |
| KR-85 | 7.656E+00 | | 1.161E+01 | 1.754E+01 | 1.018E+00 | 0.436 |
| SR-85 | 4.130E-02 | | 6.261E-02 | 9.461E-02 | 5.490E-03 | 0.436 |
| RB-86 | 5.012E-01 | | 1.197E+00 | 2.064E+00 | 1.479E-01 | 0.243 |
| Y-88 | 6.084E-03 | | 4.435E-02 | 7.553E-02 | 4.447E-03 | 0.081 |
| ZR-88 | -3.293E-02 | | 4.525E-02 | 7.164E-02 | 4.136E-03 | -0.460 |
| Y-91 | -6.660E+00 | | 2.552E+01 | 4.053E+01 | 2.418E+00 | -0.164 |
| NB-94 | 2.264E-02 | | 4.561E-02 | 7.689E-02 | 4.394E-03 | 0.294 |
| NB-95 | -6.256E-03 | | 6.570E-02 | 1.046E-01 | 7.026E-03 | -0.060 |
| NB-95M | 9.099E-01 | | 2.363E-01 | 3.896E-01 | 2.874E-02 | 2.335 |
| ZR-95 | 3.044E-03 | | 1.051E-01 | 1.693E-01 | 1.299E-02 | 0.018 |
| NB-97 | -1.203E+01 | | 9.203E+00 | Half-Life | too short | |
| ZR-97 | 7.031E+02 | | 1.652E+02 | Half-Life | too short | |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| MO-99 | 1.602E+01 | | 5.363E+01 | 8.875E+01 | 1.242E+01 | 0.180 |
| TC-99M | -3.333E+16 | | 1.727E+16 | Half-Life too short | | |
| RH-101 | -1.078E-02 | | 4.559E-02 | 7.035E-02 | 3.750E-03 | -0.153 |
| RH-102 | -5.644E-03 | | 4.020E-02 | 6.551E-02 | 3.835E-03 | -0.086 |
| RU-103 | 3.437E-02 | | 6.243E-02 | 1.065E-01 | 1.349E-02 | 0.323 |
| RH-106 | 2.385E-01 | | 4.360E-01 | 7.412E-01 | 8.548E-02 | 0.322 |
| RU-106 | 2.385E-01 | | 4.353E-01 | 7.412E-01 | 3.983E-02 | 0.322 |
| AG-108M | 1.665E-02 | | 4.385E-02 | 7.449E-02 | 4.722E-03 | 0.224 |
| AG-110M | -4.364E-02 | | 5.775E-02 | 7.236E-02 | 4.021E-03 | -0.603 |
| IN-111 | -2.514E-01 | | 4.984E+00 | 6.939E+00 | 3.928E-01 | -0.036 |
| IN-113M | -3.347E-02 | | 6.420E-02 | 1.031E-01 | 6.352E-03 | -0.325 |
| SN-113 | -3.347E-02 | | 6.420E-02 | 1.031E-01 | 6.352E-03 | -0.325 |
| IN-114M | 1.588E-01 | | 2.877E-01 | 4.225E-01 | 2.227E-02 | 0.376 |
| CD-115 | 2.618E-05 | | 3.117E-05 | Half-Life too short | | |
| SN-117M | 3.616E-02 | | 9.353E-02 | 1.551E-01 | 8.062E-03 | 0.233 |
| SB-122 | 7.511E+00 | | 9.749E+00 | 1.689E+01 | 9.552E-01 | 0.445 |
| I-123 | 1.154E+03 | | 1.733E+03 | Half-Life too short | | |
| TE-123M | 1.305E-02 | | 3.917E-02 | 6.481E-02 | 3.420E-03 | 0.201 |
| I-124 | -4.337E-01 | | 2.137E+00 | 2.922E+00 | 1.601E-01 | -0.148 |
| SB-124 | 3.812E-02 | | 1.079E-01 | 1.911E-01 | 1.333E-02 | 0.199 |
| SB-125 | 5.120E-02 | | 1.242E-01 | 2.114E-01 | 1.286E-02 | 0.242 |
| TE-125M | 9.048E+00 | | 1.336E+01 | 2.261E+01 | 2.021E+00 | 0.400 |
| I-126 | 1.528E-01 | | 3.297E-01 | 4.906E-01 | 2.539E-02 | 0.312 |
| SB-126 | 7.671E-02 | | 2.900E-01 | 4.175E-01 | 2.501E-02 | 0.184 |
| SB-127 | -8.163E-01 | | 4.463E+00 | 7.082E+00 | 7.824E-01 | -0.115 |
| XE-127 | 3.226E-02 | | 7.338E-02 | 1.170E-01 | 6.282E-03 | 0.276 |
| I-131 | 4.451E-02 | | 2.216E-01 | 3.745E-01 | 2.467E-02 | 0.119 |
| TE-132 | 1.233E+00 | | 2.596E+00 | 4.269E+00 | 6.552E-01 | 0.289 |
| BA-133 | 2.891E-02 | | 5.848E-02 | 8.888E-02 | 1.031E-02 | 0.325 |
| I-133 | 1.328E-01 | | 1.866E-01 | Half-Life too short | | |
| CS-134 | 7.432E-02 | | 6.772E-02 | 1.228E-01 | 8.967E-03 | 0.605 |
| CS-135 | 4.157E-01 | | 2.527E-01 | 3.928E-01 | 3.001E-02 | 1.058 |
| I-135 | -1.020E+14 | | 7.125E+14 | Half-Life too short | | |
| CS-136 | -2.177E-01 | | 1.769E-01 | 2.454E-01 | 1.957E-02 | -0.887 |
| CE-139 | -2.229E-02 | | 4.106E-02 | 6.513E-02 | 3.321E-03 | -0.342 |
| BA-140 | 3.038E-01 | | 4.621E-01 | 7.794E-01 | 2.534E-01 | 0.390 |
| LA-140 | -4.869E-02 | | 1.330E-01 | 2.066E-01 | 1.417E-02 | -0.236 |
| CE-141 | 2.327E-02 | | 1.009E-01 | 1.666E-01 | 9.395E-03 | 0.140 |
| CE-143 | 1.876E-02 | | 2.557E-03 | Half-Life too short | | |
| CE-144 | -1.369E-01 | | 2.944E-01 | 4.344E-01 | 6.135E-02 | -0.315 |
| PM-144 | -6.491E-03 | | 4.696E-02 | 7.480E-02 | 4.210E-03 | -0.087 |
| PR-144 | -4.409E-01 | | 3.190E+00 | 5.082E+00 | 2.856E-01 | -0.087 |
| PM-146 | 6.623E-02 | | 5.896E-02 | 1.046E-01 | 9.060E-03 | 0.633 |
| ND-147 | 6.158E-01 | | 9.941E-01 | 1.707E+00 | 2.306E-01 | 0.361 |
| PM-149 | 6.972E-04 | | 2.618E-04 | Half-Life too short | | |
| EU-152 | -6.700E-02 | | 1.669E-01 | 2.023E-01 | 1.341E-02 | -0.331 |
| GD-153 | 4.775E-02 | | 1.228E-01 | 1.818E-01 | 1.485E-02 | 0.263 |
| EU-154 | -5.797E-02 | | 1.598E-01 | 2.481E-01 | 2.463E-02 | -0.234 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| EU-155 | 5.063E-02 | | 1.479E-01 | 2.476E-01 | 1.826E-02 | 0.204 |
| TB-160 | 3.670E-02 | | 2.020E-01 | 3.425E-01 | 2.995E-02 | 0.107 |
| HO-166M | -5.035E-03 | | 7.966E-02 | 1.276E-01 | 7.468E-03 | -0.039 |
| TM-171 | -4.618E+01 | | 4.465E+01 | 7.114E+01 | 6.186E+00 | -0.649 |
| LU-176 | 3.106E-03 | | 3.191E-02 | 5.391E-02 | 3.176E-03 | 0.058 |
| LU-177 | 6.693E+00 | + | 3.094E+00 | 4.551E+00 | 2.462E-01 | 1.471 |
| LU-177M | -3.443E-01 | | 2.592E-01 | 3.908E-01 | 2.274E-02 | -0.881 |
| HF-181 | -2.199E-02 | | 6.303E-02 | 1.009E-01 | 5.904E-03 | -0.218 |
| W-181 | 7.865E-01 | | 5.942E-01 | 1.025E+00 | 8.906E-02 | 0.767 |
| TA-182 | -2.158E-02 | | 2.662E-01 | 4.312E-01 | 2.647E-02 | -0.050 |
| RE-183 | 4.514E-04 | | 1.549E-01 | 2.523E-01 | 1.298E-02 | 0.002 |
| RE-184 | -2.803E-01 | | 3.267E-01 | 4.956E-01 | 2.826E-02 | -0.566 |
| OS-185 | 1.741E-03 | | 6.676E-02 | 1.060E-01 | 5.534E-03 | 0.016 |
| RE-188 | 4.885E-02 | | 2.433E-01 | 4.004E-01 | 2.101E-02 | 0.122 |
| W-188 | -1.331E+01 | | 1.131E+01 | 1.494E+01 | 8.746E-01 | -0.891 |
| IR-192 | -1.255E-02 | | 4.618E-02 | 7.621E-02 | 4.521E-03 | -0.165 |
| AU-195 | 2.575E-01 | | 3.157E-01 | 5.333E-01 | 4.255E-02 | 0.483 |
| TL-200 | -6.695E-03 | | 6.327E-03 | Half-Life too short | | |
| TL-201 | -1.427E+01 | | 2.848E+01 | 4.526E+01 | 2.310E+00 | -0.315 |
| TL-202 | 1.679E-02 | | 1.211E-01 | 2.023E-01 | 1.184E-02 | 0.083 |
| HG-203 | 7.865E-02 | | 6.394E-02 | 1.022E-01 | 6.311E-03 | 0.770 |
| BI-207 | 4.183E-02 | | 6.765E-02 | 1.190E-01 | 8.742E-03 | 0.352 |
| TL-207 | -1.769E-01 | | 9.209E-01 | 1.527E+00 | 2.527E-01 | -0.116 |
| PO-209 | 1.002E+00 | | 9.406E+00 | 1.584E+01 | 1.438E+00 | 0.063 |
| BI-210 | -5.687E-01 | | 7.460E+00 | 1.229E+01 | 9.568E-01 | -0.046 |
| PB-210 | -5.687E-01 | | 7.460E+00 | 1.229E+01 | 9.568E-01 | -0.046 |
| PO-210 | -5.687E-01 | | 7.460E+00 | 1.229E+01 | 8.244E-01 | -0.046 |
| PB-211 | -3.918E-01 | | 1.377E+00 | 2.147E+00 | 1.339E+00 | -0.182 |
| BI-212 | 8.868E-01 | + | 6.526E-01 | 8.723E-01 | 6.924E-02 | 1.017 |
| PO-215 | -1.769E-01 | | 9.209E-01 | 1.527E+00 | 2.527E-01 | -0.116 |
| RN-219 | -4.062E-01 | | 5.682E-01 | 8.942E-01 | 1.216E-01 | -0.454 |
| RN-220 | 1.299E+01 | | 3.464E+01 | 5.842E+01 | 3.334E+00 | 0.222 |
| RA-223 | -1.769E-01 | | 9.209E-01 | 1.527E+00 | 2.527E-01 | -0.116 |
| AC-227 | 3.689E-01 | | 5.223E-01 | 8.661E-01 | 1.206E-01 | 0.426 |
| TH-227 | 3.689E-01 | | 5.235E-01 | 8.661E-01 | 1.461E-01 | 0.426 |
| TH-229 | 1.373E-02 | | 6.725E-01 | 1.090E+00 | 5.772E-02 | 0.013 |
| PA-231 | -1.011E+00 | | 2.110E+00 | 3.252E+00 | 4.486E-01 | -0.311 |
| TH-231 | -1.769E-01 | | 9.209E-01 | 1.527E+00 | 2.527E-01 | -0.116 |
| U-231 | -1.962E+00 | | 3.637E+00 | 5.129E+00 | 4.302E-01 | -0.383 |
| PA-233 | 5.814E-03 | | 8.262E-02 | 1.393E-01 | 8.707E-03 | 0.042 |
| PA-234 | -3.440E-02 | | 4.042E-01 | 6.231E-01 | 1.171E-01 | -0.055 |
| PA-234M | 1.590E+00 | | 6.052E+00 | 1.028E+01 | 9.812E-01 | 0.155 |
| TH-234 | 2.746E-01 | | 2.155E+00 | 3.572E+00 | 6.437E-01 | 0.077 |
| U-235 | 2.602E-01 | | 3.118E-01 | 5.103E-01 | 8.252E-02 | 0.510 |
| NP-236 | -2.960E-02 | | 1.070E-01 | 1.721E-01 | 8.902E-03 | -0.172 |
| U-238 | 2.746E-01 | | 2.155E+00 | 3.572E+00 | 6.437E-01 | 0.077 |
| NP-239 | -1.480E-01 | | 2.493E-01 | 3.995E-01 | 2.493E-02 | -0.371 |
| AM-241 | -2.062E-01 | | 2.507E-01 | 4.057E-01 | 3.775E-02 | -0.508 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | 6.738E-02 | | 1.311E-01 | 2.211E-01 | 1.639E-02 | 0.305 |
| AM-246 | -1.059E-01 | | 1.861E-01 | 2.858E-01 | 2.039E-02 | -0.370 |
| CM-247 | -8.555E-02 | | 5.373E-02 | 7.689E-02 | 4.457E-03 | -1.113 |
| CF-249 | -2.318E-02 | | 5.539E-02 | 8.964E-02 | 5.187E-03 | -0.259 |
| CF-251 | -4.419E-02 | | 1.692E-01 | 2.714E-01 | 1.403E-02 | -0.163 |

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245388005           *
* Acquisition date   : 4-FEB-2010 10:30:28 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 02:00:01.51 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G245388005 Analyst initials: MXR1                 *
* Batch Number       : 944964 Sample Quantity : 9.7880E+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 | 2.014E+01 | 2.392E+00 | 4.129E-01 | 1.220E+00 |
| CD-109 | 2.998E+00 | 1.523E+00 | 8.557E-01 | 7.768E-01 |
| SN-126 | 2.926E-01 | 1.486E-01 | 8.401E-02 | 7.581E-02 |
| BA-137M | 1.126E-01 | 7.362E-02 | 4.012E-02 | 3.756E-02 |
| CS-137 | 1.190E-01 | 7.783E-02 | 4.241E-02 | 3.971E-02 |
| TL-208 | 5.894E-01 | 1.088E-01 | 3.729E-02 | 5.552E-02 |
| BI-211 | 4.582E+00 | 6.760E-01 | 2.081E-01 | 3.449E-01 |
| PB-212 | 2.040E+00 | 2.011E-01 | 5.841E-02 | 1.026E-01 |
| PO-212 | 2.040E+00 | 2.011E-01 | 5.841E-02 | 1.026E-01 |
| BI-214 | 1.414E+00 | 2.306E-01 | 8.217E-02 | 1.177E-01 |
| PB-214 | 1.594E+00 | 2.489E-01 | 7.255E-02 | 1.270E-01 |
| PO-214 | 1.594E+00 | 2.489E-01 | 7.255E-02 | 1.270E-01 |
| PO-216 | 2.040E+00 | 2.011E-01 | 5.841E-02 | 1.026E-01 |
| PO-218 | 1.594E+00 | 2.489E-01 | 7.255E-02 | 1.270E-01 |
| RA-224 | 5.577E+00 | 1.400E+00 | 6.648E-01 | 7.144E-01 |
| RA-226 | 1.414E+00 | 2.306E-01 | 8.217E-02 | 1.177E-01 |
| AC-228 | 2.051E+00 | 4.196E-01 | 1.255E-01 | 2.141E-01 |
| RA-228 | 2.051E+00 | 4.196E-01 | 1.255E-01 | 2.141E-01 |
| TH-228 | 2.080E+00 | 2.051E-01 | 5.958E-02 | 1.046E-01 |
| TH-230 | 1.414E+00 | 2.306E-01 | 8.217E-02 | 1.177E-01 |
| TH-232 | 2.051E+00 | 4.196E-01 | 1.255E-01 | 2.141E-01 |
| U-234 | 1.414E+00 | 2.306E-01 | 8.217E-02 | 1.177E-01 |
| NP-237 | 8.592E-01 | 4.696E-01 | 2.914E-01 | 2.396E-01 |
| AM-243 | 5.136E-01 | 1.111E-01 | 6.458E-02 | 5.668E-02 |
| ANH-511 | 9.786E-02 | 1.078E-01 | 3.201E-02 | 5.498E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | 1.352E-01 | 4.688E-01 | 3.991E-01 | 2.392E-01 NOT IDENT. |
| NA-22 | -1.893E-02 | 5.641E-02 | 4.453E-02 | 2.878E-02 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-24 | 2.319E+07 | 2.058E+08 | 0.000E+00 | 1.050E+08 | SHORT HLIF |
| AL-26 | -1.815E-02 | 3.408E-02 | 2.449E-02 | 1.739E-02 | NOT IDENT. |
| TI-44 | 4.729E-01 | 7.566E-02 | 5.732E-02 | 3.860E-02 | FAIL ABUN |
| SC-46 | -3.693E-02 | 5.193E-02 | 4.042E-02 | 2.650E-02 | FAIL ABUN |
| V-48 | 9.977E-03 | 1.179E-01 | 9.966E-02 | 6.015E-02 | NOT IDENT. |
| CR-51 | -1.849E-01 | 5.380E-01 | 4.483E-01 | 2.745E-01 | NOT IDENT. |
| MN-52 | -1.455E-01 | 5.348E-01 | 4.161E-01 | 2.728E-01 | NOT IDENT. |
| MN-54 | 3.920E-02 | 5.270E-02 | 4.719E-02 | 2.689E-02 | NOT IDENT. |
| CO-56 | -5.228E-02 | 5.070E-02 | 3.807E-02 | 2.587E-02 | NOT IDENT. |
| CO-57 | 1.142E-02 | 3.584E-02 | 2.817E-02 | 1.829E-02 | NOT IDENT. |
| CO-58 | -4.659E-02 | 4.946E-02 | 3.769E-02 | 2.524E-02 | NOT IDENT. |
| FE-59 | 7.743E-02 | 1.288E-01 | 1.138E-01 | 6.572E-02 | NOT IDENT. |
| CO-60 | -2.183E-02 | 5.347E-02 | 4.153E-02 | 2.728E-02 | NOT IDENT. |
| ZN-65 | 6.689E-02 | 1.348E-01 | 1.033E-01 | 6.876E-02 | NOT IDENT. |
| GE-68 | -6.701E-02 | 1.606E+00 | 1.333E+00 | 8.196E-01 | NOT IDENT. |
| AS-73 | 1.499E+00 | 1.499E+00 | 1.326E+00 | 7.646E-01 | NOT IDENT. |
| AS-74 | 2.548E-02 | 1.380E-01 | 1.157E-01 | 7.041E-02 | NOT IDENT. |
| SE-75 | -2.172E-02 | 6.660E-02 | 4.569E-02 | 3.398E-02 | NOT IDENT. |
| BR-77 | -1.403E+00 | 6.044E+01 | 0.000E+00 | 3.084E+01 | SHORT HLIF |
| SR-82 | -9.134E-01 | 5.593E-01 | 3.977E-01 | 2.854E-01 | NOT IDENT. |
| RB-83 | -1.551E-02 | 1.008E-01 | 7.779E-02 | 5.145E-02 | NOT IDENT. |
| RB-84 | -7.380E-02 | 1.040E-01 | 8.138E-02 | 5.306E-02 | NOT IDENT. |
| KR-85 | 7.656E+00 | 1.138E+01 | 8.708E+00 | 5.804E+00 | NOT IDENT. |
| SR-85 | 4.130E-02 | 6.136E-02 | 4.697E-02 | 3.130E-02 | NOT IDENT. |
| RB-86 | 5.012E-01 | 1.173E+00 | 1.024E+00 | 5.983E-01 | NOT IDENT. |
| Y-88 | 6.084E-03 | 4.346E-02 | 3.742E-02 | 2.217E-02 | NOT IDENT. |
| ZR-88 | -3.293E-02 | 4.434E-02 | 3.558E-02 | 2.262E-02 | NOT IDENT. |
| Y-91 | -6.660E+00 | 2.501E+01 | 2.009E+01 | 1.276E+01 | NOT IDENT. |
| NB-94 | 2.264E-02 | 4.470E-02 | 3.815E-02 | 2.280E-02 | NOT IDENT. |
| NB-95 | -6.256E-03 | 6.438E-02 | 5.187E-02 | 3.285E-02 | NOT IDENT. |
| NB-95M | 9.099E-01 | 2.315E-01 | 1.937E-01 | 1.181E-01 | NOT IDENT. |
| ZR-95 | 3.044E-03 | 1.030E-01 | 8.401E-02 | 5.255E-02 | NOT IDENT. |
| NB-97 | -1.203E+07 | 1.804E+07 | 0.000E+00 | 9.203E+06 | SHORT HLIF |
| ZR-97 | 7.031E+08 | 3.238E+08 | 0.000E+00 | 1.652E+08 | SHORT HLIF |
| MO-99 | 1.602E+01 | 5.255E+01 | 4.403E+01 | 2.681E+01 | NOT IDENT. |
| TC-99M | -3.333E+22 | 3.385E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -1.078E-02 | 4.468E-02 | 3.498E-02 | 2.280E-02 | NOT IDENT. |
| RH-102 | -5.644E-03 | 3.939E-02 | 3.253E-02 | 2.010E-02 | NOT IDENT. |
| RU-103 | 3.437E-02 | 6.118E-02 | 5.289E-02 | 3.121E-02 | NOT IDENT. |
| RH-106 | 2.385E-01 | 4.273E-01 | 3.679E-01 | 2.180E-01 | FAIL ABUN |
| RU-106 | 2.385E-01 | 4.266E-01 | 3.679E-01 | 2.177E-01 | FAIL ABUN |
| AG-108M | 1.665E-02 | 4.298E-02 | 3.699E-02 | 2.193E-02 | NOT IDENT. |
| AG-110M | -4.364E-02 | 5.660E-02 | 3.591E-02 | 2.888E-02 | NOT IDENT. |
| IN-111 | -2.514E-01 | 4.884E+00 | 3.449E+00 | 2.492E+00 | NOT IDENT. |
| IN-113M | -3.347E-02 | 6.292E-02 | 5.121E-02 | 3.210E-02 | NOT IDENT. |
| SN-113 | -3.347E-02 | 6.292E-02 | 5.121E-02 | 3.210E-02 | NOT IDENT. |
| IN-114M | 1.588E-01 | 2.819E-01 | 2.101E-01 | 1.438E-01 | NOT IDENT. |
| CD-115 | 2.618E+01 | 6.109E+01 | 0.000E+00 | 3.117E+01 | SHORT HLIF |
| SN-117M | 3.616E-02 | 9.166E-02 | 7.716E-02 | 4.677E-02 | NOT IDENT. |
| SB-122 | 7.511E+00 | 9.554E+00 | 8.383E+00 | 4.875E+00 | NOT IDENT. |
| I-123 | 1.154E+09 | 3.396E+09 | 0.000E+00 | 1.733E+09 | SHORT HLIF |
| TE-123M | 1.305E-02 | 3.839E-02 | 3.223E-02 | 1.959E-02 | NOT IDENT. |
| I-124 | -4.337E-01 | 2.094E+00 | 1.450E+00 | 1.068E+00 | NOT IDENT. |
| SB-124 | 3.812E-02 | 1.057E-01 | 9.472E-02 | 5.393E-02 | FAIL ABUN |
| SB-125 | 5.120E-02 | 1.217E-01 | 1.050E-01 | 6.210E-02 | FAIL ABUN |
| TE-125M | 9.048E+00 | 1.309E+01 | 1.125E+01 | 6.681E+00 | NOT IDENT. |
| I-126 | 1.528E-01 | 3.231E-01 | 2.435E-01 | 1.649E-01 | NOT IDENT. |
| SB-126 | 7.671E-02 | 2.842E-01 | 2.072E-01 | 1.450E-01 | FAIL ABUN |
| SB-127 | -8.163E-01 | 4.374E+00 | 3.514E+00 | 2.232E+00 | NOT IDENT. |
| XE-127 | 3.226E-02 | 7.191E-02 | 5.818E-02 | 3.669E-02 | NOT IDENT. |
| I-131 | 4.451E-02 | 2.172E-01 | 1.860E-01 | 1.108E-01 | NOT IDENT. |
| TE-132 | 1.233E+00 | 2.544E+00 | 2.122E+00 | 1.298E+00 | NOT IDENT. |
| BA-133 | 2.891E-02 | 5.731E-02 | 4.415E-02 | 2.924E-02 | FAIL ABUN |
| I-133 | 1.328E+05 | 3.657E+05 | 0.000E+00 | 1.866E+05 | SHORT HLIF |
| CS-134 | 7.432E-02 | 6.636E-02 | 6.091E-02 | 3.386E-02 | NOT IDENT. |
| CS-135 | 4.157E-01 | 2.476E-01 | 1.952E-01 | 1.263E-01 | NOT IDENT. |
| I-135 | -1.020E+20 | 1.396E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -2.177E-01 | 1.733E-01 | 1.217E-01 | 8.843E-02 | FAIL ABUN |
| CE-139 | -2.229E-02 | 4.024E-02 | 3.239E-02 | 2.053E-02 | NOT IDENT. |
| BA-140 | 3.038E-01 | 4.528E-01 | 3.869E-01 | 2.310E-01 | NOT IDENT. |
| LA-140 | -4.869E-02 | 1.303E-01 | 1.024E-01 | 6.649E-02 | NOT IDENT. |
| CE-141 | 2.327E-02 | 9.893E-02 | 8.286E-02 | 5.047E-02 | NOT IDENT. |
| CE-143 | 1.876E+04 | 5.012E+03 | 0.000E+00 | 2.557E+03 | SHORT HLIF |
| CE-144 | -1.369E-01 | 2.885E-01 | 2.161E-01 | 1.472E-01 | NOT IDENT. |
| PM-144 | -6.491E-03 | 4.602E-02 | 3.712E-02 | 2.348E-02 | NOT IDENT. |
| PR-144 | -4.409E-01 | 3.127E+00 | 2.522E+00 | 1.595E+00 | NOT IDENT. |
| PM-146 | 6.623E-02 | 5.778E-02 | 5.194E-02 | 2.948E-02 | NOT IDENT. |
| ND-147 | 6.158E-01 | 9.742E-01 | 8.474E-01 | 4.970E-01 | FAIL ABUN |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-149 | 6.972E+02 | 5.130E+02 | 0.000E+00 | 2.618E+02 | SHORT HLIF |
| EU-152 | -6.700E-02 | 1.636E-01 | 1.005E-01 | 8.344E-02 | NOT IDENT. |
| GD-153 | 4.775E-02 | 1.204E-01 | 9.051E-02 | 6.141E-02 | NOT IDENT. |
| EU-154 | -5.797E-02 | 1.566E-01 | 1.230E-01 | 7.990E-02 | NOT IDENT. |
| EU-155 | 5.063E-02 | 1.449E-01 | 1.232E-01 | 7.395E-02 | FAIL ABUN |
| TB-160 | 3.670E-02 | 1.979E-01 | 1.699E-01 | 1.010E-01 | FAIL ABUN |
| HO-166M | -5.035E-03 | 7.807E-02 | 6.331E-02 | 3.983E-02 | NOT IDENT. |
| TM-171 | -4.618E+01 | 4.376E+01 | 3.543E+01 | 2.232E+01 | NOT IDENT. |
| LU-176 | 3.106E-03 | 3.128E-02 | 2.679E-02 | 1.596E-02 | FAIL ABUN |
| LU-177 | 6.693E+00 | 3.032E+00 | 2.263E+00 | 1.547E+00 | FAIL ABUN |
| LU-177M | -3.443E-01 | 2.540E-01 | 1.941E-01 | 1.296E-01 | FAIL ABUN |
| HF-181 | -2.199E-02 | 6.177E-02 | 5.012E-02 | 3.152E-02 | NOT IDENT. |
| W-181 | 7.865E-01 | 5.823E-01 | 5.106E-01 | 2.971E-01 | NOT IDENT. |
| TA-182 | -2.158E-02 | 2.608E-01 | 2.138E-01 | 1.331E-01 | FAIL ABUN |
| RE-183 | 4.514E-04 | 1.518E-01 | 1.255E-01 | 7.743E-02 | FAIL ABUN |
| RE-184 | -2.803E-01 | 3.201E-01 | 2.463E-01 | 1.633E-01 | NOT IDENT. |
| OS-185 | 1.741E-03 | 6.543E-02 | 5.263E-02 | 3.338E-02 | NOT IDENT. |
| RE-188 | 4.885E-02 | 2.384E-01 | 1.992E-01 | 1.216E-01 | NOT IDENT. |
| W-188 | -1.331E+01 | 1.108E+01 | 7.421E+00 | 5.655E+00 | NOT IDENT. |
| IR-192 | -1.255E-02 | 4.526E-02 | 3.786E-02 | 2.309E-02 | FAIL ABUN |
| AU-195 | 2.575E-01 | 3.094E-01 | 2.655E-01 | 1.579E-01 | FAIL ABUN |
| TL-200 | -6.695E+03 | 1.240E+04 | 0.000E+00 | 6.327E+03 | SHORT HLIF |
| TL-201 | -1.427E+01 | 2.791E+01 | 2.251E+01 | 1.424E+01 | NOT IDENT. |
| TL-202 | 1.679E-02 | 1.187E-01 | 1.004E-01 | 6.056E-02 | NOT IDENT. |
| HG-203 | 7.865E-02 | 6.266E-02 | 5.077E-02 | 3.197E-02 | NOT IDENT. |
| BI-207 | 4.183E-02 | 6.630E-02 | 5.900E-02 | 3.382E-02 | FAIL ABUN |
| TL-207 | -1.769E-01 | 9.025E-01 | 7.585E-01 | 4.604E-01 | FAIL ABUN |
| PO-209 | 1.002E+00 | 9.218E+00 | 7.857E+00 | 4.703E+00 | NOT IDENT. |
| BI-210 | -5.687E-01 | 7.311E+00 | 6.123E+00 | 3.730E+00 | NOT IDENT. |
| PB-210 | -5.687E-01 | 7.311E+00 | 6.123E+00 | 3.730E+00 | NOT IDENT. |
| PO-210 | -5.687E-01 | 7.311E+00 | 6.123E+00 | 3.730E+00 | NOT IDENT. |
| PB-211 | -3.918E-01 | 1.350E+00 | 1.066E+00 | 6.886E-01 | NOT IDENT. |
| BI-212 | 8.868E-01 | 6.395E-01 | 4.328E-01 | 3.263E-01 | FAIL ABUN |
| PO-215 | -1.769E-01 | 9.025E-01 | 7.585E-01 | 4.604E-01 | FAIL ABUN |
| RN-219 | -4.062E-01 | 5.569E-01 | 4.441E-01 | 2.841E-01 | FAIL ABUN |
| RN-220 | 1.299E+01 | 3.394E+01 | 2.900E+01 | 1.732E+01 | NOT IDENT. |
| RA-223 | -1.769E-01 | 9.025E-01 | 7.585E-01 | 4.604E-01 | FAIL ABUN |
| AC-227 | 3.689E-01 | 5.119E-01 | 4.305E-01 | 2.612E-01 | NOT IDENT. |
| TH-227 | 3.689E-01 | 5.130E-01 | 4.305E-01 | 2.617E-01 | FAIL ABUN |
| TH-229 | 1.373E-02 | 6.591E-01 | 5.418E-01 | 3.363E-01 | FAIL ABUN |
| PA-231 | -1.011E+00 | 2.068E+00 | 1.616E+00 | 1.055E+00 | NOT IDENT. |
| TH-231 | -1.769E-01 | 9.025E-01 | 7.585E-01 | 4.604E-01 | FAIL ABUN |
| U-231 | -1.962E+00 | 3.565E+00 | 2.553E+00 | 1.819E+00 | FAIL ABUN |
| PA-233 | 5.814E-03 | 8.096E-02 | 6.919E-02 | 4.131E-02 | FAIL ABUN |
| PA-234 | -3.440E-02 | 3.961E-01 | 3.090E-01 | 2.021E-01 | FAIL ABUN |
| PA-234M | 1.590E+00 | 5.931E+00 | 5.100E+00 | 3.026E+00 | NOT IDENT. |
| TH-234 | 2.746E-01 | 2.112E+00 | 1.779E+00 | 1.078E+00 | FAIL ABUN |
| U-235 | 2.602E-01 | 3.056E-01 | 2.538E-01 | 1.559E-01 | FAIL ABUN |
| NP-236 | -2.960E-02 | 1.048E-01 | 8.561E-02 | 5.348E-02 | NOT IDENT. |
| U-238 | 2.746E-01 | 2.112E+00 | 1.779E+00 | 1.078E+00 | FAIL ABUN |
| NP-239 | -1.480E-01 | 2.443E-01 | 1.988E-01 | 1.247E-01 | FAIL ABUN |
| AM-241 | -2.062E-01 | 2.457E-01 | 2.021E-01 | 1.253E-01 | NOT IDENT. |
| CM-243 | 6.738E-02 | 1.285E-01 | 1.101E-01 | 6.557E-02 | FAIL ABUN |
| AM-246 | -1.059E-01 | 1.823E-01 | 1.417E-01 | 9.303E-02 | NOT IDENT. |
| CM-247 | -8.555E-02 | 5.266E-02 | 3.819E-02 | 2.687E-02 | FAIL ABUN |
| CF-249 | -2.318E-02 | 5.429E-02 | 4.452E-02 | 2.770E-02 | NOT IDENT. |
| CF-251 | -4.419E-02 | 1.658E-01 | 1.350E-01 | 8.461E-02 | NOT IDENT. |

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

| ENERGY | MDA COUNTS |
|--------|------------|
| 46.50 | 258.3807 |
| 46.50 | 258.3807 |
| 46.50 | 258.3807 |
| 48.70 | 274.8261 |
| 49.72 | 289.8604 |
| 51.35 | 262.4348 |
| 52.39 | 240.9943 |
| 52.97 | 244.8865 |
| 53.15 | 242.2190 |
| 53.44 | 237.7649 |
| 54.07 | 250.8326 |
| 56.28 | 275.6372 |
| 56.28 | 275.6384 |
| 57.37 | 0.0000 |
| 57.53 | 283.5633 |
| 57.53 | 283.5639 |
| 57.60 | 271.6251 |
| 57.98 | 283.7683 |
| 57.98 | 283.7683 |
| 59.32 | 299.1473 |
| 59.32 | 299.1473 |
| 59.40 | 299.1850 |
| 59.54 | 328.8068 |
| 59.72 | 324.2811 |
| 60.01 | 322.5804 |
| 61.10 | 337.9443 |
| 61.14 | 334.2614 |
| 61.30 | 334.3448 |
| 63.00 | 336.1492 |
| 63.29 | 352.0902 |
| 63.29 | 352.0902 |
| 63.58 | 338.3049 |
| 64.28 | 334.0112 |
| 65.12 | 323.2542 |
| 65.20 | 323.2925 |
| 65.20 | 323.2925 |
| 66.05 | 363.8159 |
| 66.72 | 401.5257 |
| 66.83 | 401.5930 |
| 66.91 | 410.0469 |
| 67.20 | 390.5978 |
| 67.20 | 390.5978 |
| 67.75 | 380.4911 |
| 67.85 | 380.5470 |
| 68.90 | 385.1973 |
| 68.90 | 385.1973 |
| 69.30 | 395.9178 |
| 69.67 | 379.6251 |
| 70.82 | 332.1529 |
| 70.82 | 332.1529 |
| 70.83 | 332.1583 |
| 72.80 | 363.2269 |
| 72.87 | 363.2622 |
| 72.87 | 363.2622 |
| 74.67 | 375.8821 |
| 74.81 | 375.9550 |
| 74.81 | 375.9550 |
| 74.81 | 375.9550 |
| 74.81 | 375.9550 |
| 74.81 | 375.9550 |
| 74.81 | 375.9550 |
| 74.81 | 375.9550 |
| 74.97 | 376.0370 |
| 75.28 | 376.1979 |
| 75.70 | 376.4135 |
| 77.11 | 383.5797 |
| 77.11 | 383.5797 |

| | |
|--------|----------|
| 77.11 | 383.5797 |
| 77.11 | 383.5797 |
| 77.11 | 383.5797 |
| 77.11 | 383.5797 |
| 77.11 | 383.5797 |
| 78.38 | 362.9739 |
| 79.62 | 378.7858 |
| 79.80 | 378.8754 |
| 79.80 | 378.8754 |
| 80.11 | 432.3096 |
| 80.18 | 432.3494 |
| 80.30 | 432.4170 |
| 80.30 | 432.4170 |
| 80.57 | 421.9094 |
| 81.00 | 400.0497 |
| 81.07 | 400.0866 |
| 81.07 | 400.0866 |
| 81.07 | 400.0866 |
| 81.07 | 400.0866 |
| 82.60 | 391.3412 |
| 83.37 | 379.1173 |
| 83.78 | 367.0825 |
| 83.78 | 367.0825 |
| 83.78 | 367.0825 |
| 83.78 | 367.0825 |
| 84.21 | 345.8611 |
| 84.90 | 358.4196 |
| 85.43 | 360.1937 |
| 86.29 | 428.1008 |
| 86.50 | 457.3765 |
| 86.54 | 457.3983 |
| 86.59 | 457.4274 |
| 86.72 | 446.7571 |
| 86.79 | 446.7944 |
| 86.94 | 425.3803 |
| 87.30 | 338.0002 |
| 87.30 | 338.0002 |
| 87.30 | 338.0002 |
| 87.30 | 338.0002 |
| 87.30 | 338.0002 |
| 87.30 | 338.0002 |
| 87.30 | 338.0002 |
| 87.57 | 338.1144 |
| 87.88 | 0.0000 |
| 88.03 | 338.3091 |
| 88.36 | 338.4474 |
| 88.47 | 338.4944 |
| 89.95 | 574.1829 |
| 91.11 | 254.6986 |
| 92.29 | 255.0642 |
| 92.38 | 284.4666 |
| 92.38 | 284.4666 |
| 93.35 | 284.8002 |
| 94.00 | 291.2187 |
| 94.67 | 285.2488 |
| 94.67 | 285.2505 |
| 94.90 | 311.6911 |
| 94.90 | 311.6911 |
| 94.90 | 311.6911 |
| 94.90 | 311.6911 |
| 95.87 | 324.4705 |
| 95.87 | 324.4705 |
| 96.73 | 340.3416 |
| 97.43 | 276.8517 |
| 98.44 | 268.0570 |
| 98.44 | 268.0581 |
| 98.88 | 266.8036 |
| 99.55 | 267.0116 |
| 99.55 | 267.0116 |
| 99.86 | 275.8803 |
| 100.00 | 275.9246 |
| 100.10 | 275.9580 |
| 103.18 | 313.1360 |
| 103.76 | 274.1734 |
| 105.00 | 293.1864 |
| 105.31 | 287.4025 |
| 108.00 | 314.8242 |
| 109.28 | 274.8727 |

| | |
|--------|----------|
| 111.00 | 285.2583 |
| 111.00 | 285.2583 |
| 111.76 | 311.1764 |
| 112.95 | 286.8460 |
| 115.19 | 248.8629 |
| 116.30 | 249.1540 |
| 117.00 | 273.1778 |
| 117.00 | 273.1778 |
| 117.66 | 283.3073 |
| 121.11 | 259.3791 |
| 121.62 | 246.3967 |
| 121.78 | 251.5703 |
| 122.06 | 251.6424 |
| 122.32 | 244.5170 |
| 122.32 | 244.5170 |
| 122.32 | 244.5170 |
| 122.32 | 244.5170 |
| 123.07 | 246.3032 |
| 127.23 | 273.0309 |
| 129.76 | 264.0536 |
| 131.20 | 227.3419 |
| 133.02 | 261.6620 |
| 133.54 | 272.0293 |
| 135.34 | 271.1508 |
| 136.00 | 270.3082 |
| 136.25 | 257.2091 |
| 136.48 | 260.3039 |
| 140.51 | 325.3467 |
| 140.51 | 0.0000 |
| 142.18 | 289.1937 |
| 142.65 | 296.4505 |
| 143.76 | 294.7151 |
| 144.24 | 284.6429 |
| 144.24 | 284.6429 |
| 144.24 | 284.6429 |
| 144.24 | 284.6429 |
| 145.22 | 299.1943 |
| 145.44 | 319.6816 |
| 147.16 | 308.9307 |
| 152.43 | 261.0597 |
| 152.70 | 267.2899 |
| 153.22 | 256.0992 |
| 154.21 | 251.1745 |
| 154.21 | 251.1745 |
| 154.21 | 251.1745 |
| 154.21 | 251.1745 |
| 155.03 | 266.8092 |
| 156.02 | 279.4129 |
| 158.56 | 244.8981 |
| 159.00 | 0.0000 |
| 159.00 | 248.0914 |
| 160.31 | 262.8599 |
| 161.27 | 259.9698 |
| 162.32 | 257.0915 |
| 162.64 | 254.0507 |
| 163.35 | 241.7531 |
| 163.89 | 243.9403 |
| 165.85 | 265.1399 |
| 167.43 | 266.5313 |
| 171.28 | 243.3601 |
| 171.86 | 247.6573 |
| 172.10 | 247.7062 |
| 176.55 | 243.3600 |
| 176.60 | 243.3688 |
| 181.06 | 234.1332 |
| 184.41 | 243.1969 |
| 185.71 | 234.5691 |
| 186.00 | 234.6233 |
| 190.27 | 210.3762 |
| 192.34 | 236.1982 |
| 193.63 | 224.3115 |
| 197.04 | 218.4960 |
| 198.01 | 226.1218 |
| 198.60 | 245.4279 |
| 200.40 | 0.0000 |
| 201.83 | 244.9496 |
| 202.84 | 231.2172 |
| 205.31 | 252.2274 |

| | |
|--------|----------|
| 208.36 | 254.5087 |
| 208.81 | 235.4544 |
| 209.75 | 218.6146 |
| 209.75 | 218.6146 |
| 210.97 | 225.6984 |
| 215.65 | 212.8415 |
| 216.55 | 214.0579 |
| 218.09 | 213.2083 |
| 222.10 | 213.8080 |
| 223.80 | 191.2418 |
| 226.40 | 202.4697 |
| 227.00 | 192.7525 |
| 227.08 | 190.5851 |
| 227.20 | 190.6012 |
| 228.16 | 187.4557 |
| 228.18 | 187.4584 |
| 228.18 | 187.4584 |
| 231.56 | 0.0000 |
| 235.69 | 199.8047 |
| 236.00 | 185.1648 |
| 236.00 | 185.1648 |
| 238.63 | 185.4897 |
| 238.63 | 185.4897 |
| 238.63 | 185.4897 |
| 238.63 | 185.4897 |
| 239.00 | 0.0000 |
| 240.98 | 185.7785 |
| 241.98 | 177.7610 |
| 241.98 | 177.7610 |
| 241.98 | 177.7610 |
| 244.69 | 149.8665 |
| 245.39 | 156.9907 |
| 247.94 | 146.3968 |
| 248.90 | 167.9559 |
| 249.79 | 0.0000 |
| 252.40 | 177.1936 |
| 252.85 | 186.1071 |
| 252.85 | 186.1071 |
| 254.15 | 0.0000 |
| 256.20 | 154.3092 |
| 256.20 | 154.3092 |
| 260.50 | 169.1979 |
| 260.90 | 0.0000 |
| 262.80 | 166.0972 |
| 264.65 | 151.7798 |
| 268.24 | 150.3264 |
| 268.79 | 141.4266 |
| 269.46 | 127.1569 |
| 269.46 | 127.1569 |
| 269.46 | 127.1569 |
| 269.46 | 127.1569 |
| 271.23 | 147.0174 |
| 273.65 | 121.1984 |
| 276.40 | 148.3771 |
| 277.35 | 165.3324 |
| 277.60 | 164.2322 |
| 277.60 | 164.2322 |
| 278.00 | 153.9209 |
| 278.60 | 142.5696 |
| 279.20 | 135.1154 |
| 279.53 | 138.1441 |
| 280.46 | 135.2161 |
| 281.68 | 0.0000 |
| 283.67 | 158.0533 |
| 284.30 | 150.5839 |
| 285.00 | 122.9263 |
| 285.90 | 0.0000 |
| 286.10 | 119.3881 |
| 286.10 | 119.3881 |
| 287.40 | 132.1521 |
| 288.45 | 0.0000 |
| 290.67 | 164.7507 |
| 290.80 | 164.7618 |
| 291.72 | 146.7018 |
| 293.26 | 0.0000 |
| 293.70 | 102.9615 |
| 295.21 | 169.1233 |
| 295.21 | 169.1233 |

| | |
|--------|----------|
| 295.21 | 169.1233 |
| 295.96 | 206.1914 |
| 296.50 | 222.9374 |
| 297.23 | 0.0000 |
| 298.57 | 136.6534 |
| 299.80 | 141.3088 |
| 299.80 | 141.3088 |
| 300.09 | 136.7725 |
| 300.09 | 136.7725 |
| 300.09 | 136.7725 |
| 300.09 | 136.7725 |
| 300.12 | 136.7743 |
| 301.29 | 147.2937 |
| 302.84 | 174.4297 |
| 303.76 | 0.0000 |
| 303.91 | 182.7588 |
| 304.40 | 183.7241 |
| 304.40 | 183.7241 |
| 304.84 | 163.6543 |
| 306.84 | 130.8890 |
| 308.46 | 141.0852 |
| 311.98 | 127.5926 |
| 316.51 | 128.8318 |
| 318.01 | 117.8875 |
| 319.02 | 134.5385 |
| 319.41 | 135.4887 |
| 320.08 | 135.5390 |
| 323.87 | 155.2216 |
| 323.87 | 155.2216 |
| 323.87 | 155.2216 |
| 323.87 | 155.2216 |
| 325.23 | 137.7668 |
| 328.77 | 145.4416 |
| 333.44 | 134.6595 |
| 334.20 | 125.4238 |
| 334.20 | 125.4238 |
| 334.30 | 125.4304 |
| 338.28 | 134.0736 |
| 338.28 | 134.0736 |
| 338.28 | 134.0736 |
| 338.28 | 134.0736 |
| 338.32 | 134.0754 |
| 338.32 | 134.0754 |
| 338.32 | 134.0754 |
| 340.50 | 104.0905 |
| 340.57 | 104.0932 |
| 344.27 | 126.0879 |
| 345.85 | 130.8638 |
| 350.59 | 0.0000 |
| 351.07 | 109.6604 |
| 351.92 | 109.7075 |
| 351.92 | 109.7075 |
| 351.92 | 109.7075 |
| 355.39 | 0.0000 |
| 356.01 | 87.6982 |
| 364.48 | 98.1386 |
| 366.43 | 111.4590 |
| 367.43 | 112.4588 |
| 367.94 | 0.0000 |
| 369.80 | 85.1528 |
| 374.96 | 104.3402 |
| 383.85 | 120.0353 |
| 387.95 | 124.0903 |
| 388.63 | 119.3558 |
| 391.69 | 126.2234 |
| 391.69 | 126.2234 |
| 392.90 | 131.0798 |
| 398.62 | 100.7344 |
| 400.65 | 120.0363 |
| 401.10 | 132.5487 |
| 401.81 | 122.9844 |
| 402.60 | 140.3307 |
| 404.84 | 121.2335 |
| 410.95 | 118.6818 |
| 411.60 | 114.8571 |
| 413.65 | 140.0829 |
| 414.70 | 105.3542 |
| 415.30 | 97.6490 |

| | |
|--------|---------|
| 415.76 | 83.1645 |
| 417.63 | 0.0000 |
| 418.52 | 95.8555 |
| 423.70 | 98.9918 |
| 427.08 | 93.3105 |
| 427.89 | 90.4275 |
| 432.53 | 91.5892 |
| 433.93 | 87.7456 |
| 439.47 | 0.0000 |
| 439.56 | 88.9416 |
| 439.89 | 89.9325 |
| 443.98 | 86.1760 |
| 444.90 | 76.4137 |
| 445.03 | 76.4185 |
| 445.03 | 76.4185 |
| 445.03 | 76.4185 |
| 445.03 | 76.4185 |
| 453.90 | 74.7448 |
| 463.38 | 78.0106 |
| 468.07 | 65.9619 |
| 473.00 | 86.2587 |
| 475.06 | 90.3013 |
| 475.35 | 90.3124 |
| 476.78 | 86.3936 |
| 477.59 | 87.4167 |
| 477.96 | 85.4426 |
| 482.03 | 90.5623 |
| 484.57 | 0.0000 |
| 487.03 | 89.7517 |
| 490.36 | 0.0000 |
| 492.35 | 0.0000 |
| 497.08 | 80.1055 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 84.5737 |
| 511.00 | 84.5788 |
| 511.85 | 84.6081 |
| 511.85 | 84.6081 |
| 513.99 | 94.0876 |
| 513.99 | 94.0876 |
| 520.41 | 78.3231 |
| 520.65 | 0.0000 |
| 527.90 | 0.0000 |
| 528.96 | 0.0000 |
| 529.64 | 61.8697 |
| 529.87 | 0.0000 |
| 531.02 | 61.9025 |
| 537.32 | 65.1031 |
| 543.00 | 62.1854 |
| 546.56 | 0.0000 |
| 549.76 | 65.4109 |
| 552.65 | 62.4118 |
| 555.20 | 74.7608 |
| 563.23 | 65.7391 |
| 563.90 | 66.7837 |
| 568.70 | 85.4276 |
| 569.32 | 79.2709 |
| 569.50 | 74.1287 |
| 569.67 | 74.1322 |
| 573.80 | 63.0164 |
| 574.00 | 66.4583 |
| 574.64 | 0.0000 |
| 578.91 | 0.0000 |
| 579.30 | 0.0000 |
| 583.14 | 65.1841 |
| 585.48 | 0.0000 |
| 591.81 | 70.5766 |
| 592.07 | 73.6972 |
| 593.00 | 67.4915 |
| 595.88 | 60.2840 |
| 600.56 | 68.4160 |
| 602.52 | 0.0000 |
| 602.71 | 65.9867 |
| 602.71 | 65.9867 |
| 603.60 | 60.7971 |
| 604.41 | 67.7644 |
| 604.70 | 67.7708 |
| 609.31 | 88.7665 |

| | |
|--------|---------|
| 609.31 | 88.7665 |
| 609.31 | 88.7665 |
| 609.31 | 88.7665 |
| 610.33 | 78.3508 |
| 612.46 | 76.6670 |
| 614.37 | 64.2645 |
| 618.01 | 81.7039 |
| 621.84 | 58.7357 |
| 621.84 | 58.7357 |
| 631.29 | 54.7181 |
| 633.02 | 42.1152 |
| 633.10 | 42.1162 |
| 634.78 | 42.1406 |
| 635.90 | 55.8570 |
| 636.97 | 62.2035 |
| 645.85 | 68.7340 |
| 646.12 | 70.8554 |
| 656.30 | 81.3535 |
| 657.75 | 76.0846 |
| 657.90 | 0.0000 |
| 661.65 | 69.0958 |
| 661.65 | 69.0958 |
| 664.57 | 0.0000 |
| 666.33 | 47.9092 |
| 666.33 | 47.9092 |
| 675.00 | 46.9767 |
| 677.61 | 73.7303 |
| 685.20 | 63.1989 |
| 692.80 | 56.9103 |
| 695.00 | 63.3976 |
| 696.49 | 64.5029 |
| 696.49 | 64.5029 |
| 697.00 | 60.2123 |
| 697.49 | 56.9957 |
| 698.33 | 75.2961 |
| 698.50 | 72.0741 |
| 699.00 | 68.8578 |
| 702.63 | 58.1647 |
| 706.10 | 69.0109 |
| 706.58 | 0.0000 |
| 706.67 | 71.1804 |
| 709.31 | 55.0491 |
| 711.68 | 56.1704 |
| 713.82 | 63.7736 |
| 717.42 | 47.6137 |
| 720.50 | 54.1577 |
| 721.93 | 0.0000 |
| 722.20 | 59.6050 |
| 722.78 | 63.2281 |
| 722.78 | 63.2281 |
| 722.89 | 63.2310 |
| 722.95 | 63.2324 |
| 723.30 | 61.4327 |
| 724.18 | 59.6420 |
| 727.18 | 65.1240 |
| 733.00 | 57.4731 |
| 735.90 | 60.9451 |
| 739.58 | 52.2961 |
| 742.81 | 49.0759 |
| 744.21 | 48.0058 |
| 747.13 | 57.8769 |
| 751.79 | 47.0218 |
| 752.31 | 48.1229 |
| 753.82 | 55.8049 |
| 755.35 | 0.0000 |
| 756.15 | 58.0335 |
| 756.87 | 59.1416 |
| 763.93 | 73.5331 |
| 765.79 | 73.5740 |
| 766.42 | 73.5871 |
| 766.84 | 71.4000 |
| 776.49 | 70.6852 |
| 778.00 | 63.3693 |
| 778.57 | 57.8679 |
| 778.89 | 57.8730 |
| 783.80 | 36.7977 |
| 785.46 | 54.3030 |
| 792.07 | 45.1858 |

| | |
|---------|---------|
| 795.84 | 55.3894 |
| 796.30 | 60.9364 |
| 798.80 | 88.6992 |
| 801.93 | 60.1110 |
| 805.60 | 43.5098 |
| 810.29 | 54.6919 |
| 810.76 | 51.9178 |
| 815.85 | 32.4956 |
| 817.79 | 0.0000 |
| 818.51 | 38.0947 |
| 819.60 | 39.0358 |
| 826.30 | 47.4898 |
| 828.27 | 0.0000 |
| 831.60 | 55.9534 |
| 831.96 | 55.9595 |
| 834.83 | 55.0712 |
| 836.80 | 0.0000 |
| 846.75 | 53.3795 |
| 848.13 | 47.7793 |
| 856.28 | 0.0000 |
| 856.80 | 51.5145 |
| 860.37 | 33.8394 |
| 867.32 | 56.5051 |
| 867.82 | 54.8978 |
| 871.10 | 44.3073 |
| 873.19 | 49.0483 |
| 874.81 | 47.1832 |
| 875.33 | 0.0000 |
| 876.40 | 51.9228 |
| 879.36 | 47.2402 |
| 880.27 | 48.1974 |
| 880.51 | 51.0359 |
| 881.50 | 54.8305 |
| 883.24 | 46.3432 |
| 884.67 | 39.7382 |
| 889.25 | 49.2599 |
| 896.60 | 39.8646 |
| 898.02 | 39.8792 |
| 899.00 | 38.9397 |
| 903.28 | 40.7497 |
| 911.07 | 35.9326 |
| 911.07 | 35.9326 |
| 911.07 | 35.9326 |
| 919.63 | 40.1047 |
| 920.93 | 42.0288 |
| 925.00 | 39.0128 |
| 925.24 | 47.0479 |
| 926.50 | 50.8356 |
| 935.52 | 47.6661 |
| 937.48 | 31.2448 |
| 944.10 | 42.2795 |
| 946.00 | 34.6091 |
| 949.00 | 36.5597 |
| 962.29 | 46.3350 |
| 964.01 | 57.9431 |
| 966.15 | 53.0056 |
| 968.20 | 46.4033 |
| 969.11 | 41.4411 |
| 969.11 | 41.4411 |
| 969.11 | 41.4411 |
| 977.42 | 43.6029 |
| 980.50 | 43.6359 |
| 983.50 | 43.6688 |
| 989.30 | 43.7311 |
| 996.32 | 50.6204 |
| 1001.03 | 40.9327 |
| 1001.68 | 38.0145 |
| 1004.76 | 45.8468 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 36.3541 |
| 1036.00 | 40.2943 |
| 1037.82 | 39.3294 |
| 1038.57 | 44.2529 |
| 1038.76 | 0.0000 |
| 1045.16 | 37.4279 |
| 1046.59 | 48.2782 |
| 1048.07 | 47.3086 |

| | |
|---------|---------|
| 1050.47 | 31.5573 |
| 1050.47 | 31.5573 |
| 1062.04 | 29.6655 |
| 1063.62 | 32.6442 |
| 1076.63 | 32.7422 |
| 1077.35 | 38.7017 |
| 1078.86 | 43.6777 |
| 1085.78 | 42.7533 |
| 1099.22 | 35.9033 |
| 1112.02 | 33.0067 |
| 1112.84 | 37.7296 |
| 1115.52 | 39.4671 |
| 1120.29 | 46.0955 |
| 1120.29 | 46.0955 |
| 1120.29 | 46.0955 |
| 1120.29 | 46.0955 |
| 1120.51 | 46.0973 |
| 1121.28 | 46.1048 |
| 1124.00 | 0.0000 |
| 1129.67 | 36.1494 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 37.4667 |
| 1173.22 | 39.5380 |
| 1175.09 | 37.5254 |
| 1177.93 | 43.6369 |
| 1189.05 | 46.7936 |
| 1204.90 | 44.9095 |
| 1205.75 | 0.0000 |
| 1213.00 | 37.8295 |
| 1221.42 | 47.1156 |
| 1230.97 | 63.3365 |
| 1235.34 | 45.1978 |
| 1236.41 | 0.0000 |
| 1238.25 | 45.2246 |
| 1246.25 | 38.6078 |
| 1260.41 | 0.0000 |
| 1271.85 | 30.0136 |
| 1274.45 | 36.2419 |
| 1274.54 | 36.2433 |
| 1291.56 | 28.0547 |
| 1298.22 | 0.0000 |
| 1312.09 | 30.2567 |
| 1325.50 | 17.7837 |
| 1325.50 | 17.7837 |
| 1332.49 | 28.2843 |
| 1333.61 | 28.2898 |
| 1360.21 | 21.0645 |
| 1362.66 | 0.0000 |
| 1365.15 | 25.3008 |
| 1368.21 | 20.0422 |
| 1368.53 | 0.0000 |
| 1376.25 | 31.6943 |
| 1384.27 | 29.6270 |
| 1394.10 | 24.3813 |
| 1395.20 | 26.5076 |
| 1407.95 | 13.8167 |
| 1434.06 | 19.2246 |
| 1436.60 | 7.4797 |
| 1457.56 | 0.0000 |
| 1460.81 | 24.6864 |
| 1489.15 | 22.6560 |
| 1509.49 | 11.9104 |
| 1596.49 | 16.0187 |
| 1620.62 | 13.2461 |
| 1678.03 | 0.0000 |
| 1691.02 | 10.5300 |
| 1691.02 | 10.5300 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 15.2562 |
| 1764.49 | 15.2562 |
| 1764.49 | 15.2562 |
| 1764.49 | 15.2562 |
| 1770.23 | 52.3539 |
| 1771.40 | 29.0907 |
| 1791.20 | 0.0000 |
| 1808.65 | 9.7538 |

1836.01

8.8154

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G245388005

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 9.3721E-01 | ug/g |
| Total Uranium Counting Unc. | 6.2855E+00 | ug/g |
| Total Uranium Tpu | 3.2069E-06 | ug/g |
| Total Uranium Mda | 5.2948E+00 | ug/g |

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 944964          SAMPLE ID   : G245388005
*  ANALYST       : MXR1            DETECTOR    : GAM23
*  SAMPLE DATE   : 15-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 4-FEB-2010 10:30:28.60  SAMPLE ALQT: 97.880 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.130E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.476E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.897E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.885E+00

```

VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 12:42:08.86

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388006.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:41:41.
Sample ID          : G245388006 Sample quantity : 1.18670E+02 GRAM
Detector name      : GAM04 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.14 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 944964 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 2 | 74.79 | 329 | 346 | 1.11 | 149.61 | 143 | 18 | 4.56E-02 | 10.8 | 1.72E+00 |
| 2 | 2 | 77.05 | 540 | 304 | 1.10 | 154.13 | 143 | 18 | 7.49E-02 | 7.0 | |
| 3 | 3 | 83.80 | 80 | 293 | 1.13 | 167.63 | 164 | 28 | 1.11E-02 | 36.3 | 6.94E+00 |
| 4 | 3 | 87.18 | 252 | 243 | 1.05 | 174.39 | 164 | 28 | 3.50E-02 | 11.6 | |
| 5 | 3 | 89.79 | 139 | 311 | 1.26 | 179.63 | 164 | 28 | 1.93E-02 | 24.2 | |
| 6 | 0 | 128.95 | 95 | 266 | 1.24 | 257.95 | 254 | 8 | 1.32E-02 | 31.7 | |
| 7 | 0 | 186.04* | 181 | 293 | 1.31 | 372.14 | 368 | 11 | 2.51E-02 | 20.2 | |
| 8 | 0 | 209.29 | 106 | 244 | 1.30 | 418.65 | 414 | 9 | 1.47E-02 | 28.3 | |
| 9 | 4 | 238.57* | 1151 | 171 | 1.05 | 477.22 | 472 | 18 | 1.60E-01 | 3.5 | 7.40E-01 |
| 10 | 4 | 241.66* | 278 | 217 | 1.70 | 483.39 | 472 | 18 | 3.86E-02 | 14.7 | |
| 11 | 0 | 270.13 | 68 | 171 | 0.85 | 540.34 | 536 | 9 | 9.44E-03 | 36.7 | |
| 12 | 0 | 295.10* | 416 | 189 | 1.18 | 590.28 | 584 | 13 | 5.78E-02 | 8.5 | |
| 13 | 0 | 327.65 | 55 | 142 | 1.34 | 655.39 | 652 | 9 | 7.65E-03 | 41.0 | |
| 14 | 0 | 338.34 | 252 | 162 | 1.09 | 676.77 | 673 | 10 | 3.50E-02 | 11.4 | |
| 15 | 0 | 351.89* | 678 | 142 | 1.16 | 703.87 | 697 | 14 | 9.42E-02 | 5.4 | |
| 16 | 0 | 462.86 | 74 | 71 | 0.95 | 925.82 | 921 | 10 | 1.03E-02 | 24.0 | |
| 17 | 0 | 510.59* | 130 | 104 | 1.80 | 1021.28 | 1013 | 15 | 1.81E-02 | 21.8 | |
| 18 | 0 | 583.29* | 402 | 73 | 1.46 | 1166.67 | 1161 | 14 | 5.58E-02 | 6.9 | |
| 19 | 0 | 609.20* | 496 | 75 | 1.26 | 1218.49 | 1212 | 13 | 6.88E-02 | 5.9 | |
| 20 | 0 | 727.55 | 83 | 73 | 1.56 | 1455.19 | 1448 | 16 | 1.15E-02 | 25.4 | |
| 21 | 0 | 768.08 | 72 | 28 | 1.79 | 1536.25 | 1530 | 11 | 1.00E-02 | 18.3 | |
| 22 | 0 | 860.60 | 61 | 23 | 1.57 | 1721.28 | 1716 | 13 | 8.42E-03 | 20.7 | |
| 23 | 0 | 911.13* | 251 | 48 | 1.80 | 1822.33 | 1815 | 17 | 3.49E-02 | 9.2 | |
| 24 | 1 | 964.62 | 48 | 39 | 1.87 | 1929.29 | 1922 | 23 | 6.69E-03 | 28.1 | 1.06E+00 |
| 25 | 1 | 968.93* | 113 | 35 | 1.71 | 1937.92 | 1922 | 23 | 1.57E-02 | 14.3 | |
| 26 | 0 | 1120.12 | 112 | 47 | 1.04 | 2240.25 | 2231 | 19 | 1.56E-02 | 17.5 | |
| 27 | 0 | 1240.87 | 88 | 35 | 9.36 | 2481.72 | 2470 | 27 | 1.22E-02 | 22.7 | |
| 28 | 0 | 1460.74* | 715 | 14 | 2.05 | 2921.37 | 2912 | 18 | 9.94E-02 | 3.9 | |
| 29 | 0 | 1764.47* | 95 | 4 | 2.88 | 3528.66 | 3522 | 14 | 1.33E-02 | 11.5 | |

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

VMS Nuclide Identification Report V3.1 Generated 4-FEB-2010 12:42:12

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388006.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:41:41
Sample ID         : G245388006 Sample quantity : 118.67 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA4 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.14 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 1.974E+01 | 2.096E+00 | 5.222E-01 | 3.711E-02 | 37.795 |
| CD-109 | + | 88.03 | * | 4.410E+00 | 1.149E+00 | 1.205E+00 | 1.448E-01 | 3.661 |
| SN-126 | + | 64.28 | | 2.860E-02 | 6.419E-01 | 1.076E+00 | 1.853E-01 | 0.027 |
| | + | 86.94 | | 1.789E+00 | 8.607E-01 | 4.978E-01 | 2.100E-01 | 3.594 |
| | + | 87.57 | * | 4.303E-01 | 1.121E-01 | 1.185E-01 | 1.421E-02 | 3.633 |
| TL-208 | | 277.35 | | -7.745E-02 | 3.922E-01 | 6.462E-01 | 7.141E-02 | -0.120 |
| | + | 510.84 | | 6.974E-01 | 3.121E-01 | 2.047E-01 | 2.055E-02 | 3.406 |
| | + | 583.14 | * | 6.154E-01 | 9.310E-02 | 5.568E-02 | 3.504E-03 | 11.052 |
| | + | 860.37 | | 8.830E-01 | 3.733E-01 | 4.503E-01 | 3.756E-02 | 1.961 |
| BI-211 | | 72.87 | | 5.410E+00 | 3.579E+00 | 6.262E+00 | 7.179E-01 | 0.864 |
| | + | 351.07 | * | 4.570E+00 | 5.825E-01 | 2.896E-01 | 1.957E-02 | 15.780 |
| PB-212 | + | 74.81 | | 2.671E+00 | 7.013E-01 | 6.120E-01 | 9.046E-02 | 4.365 |
| | + | 77.11 | | 2.419E+00 | 4.396E-01 | 3.378E-01 | 3.876E-02 | 7.161 |
| | + | 87.30 | | 1.990E+00 | 5.553E-01 | 5.504E-01 | 8.585E-02 | 3.616 |
| | + | 238.63 | * | 1.691E+00 | 1.802E-01 | 8.964E-02 | 7.199E-03 | 18.865 |
| | | 300.09 | | 1.436E+00 | 8.487E-01 | 1.402E+00 | 1.234E-01 | 1.025 |
| PO-212 | + | 74.81 | | 2.671E+00 | 7.013E-01 | 6.120E-01 | 9.046E-02 | 4.365 |
| | + | 77.11 | | 2.419E+00 | 4.396E-01 | 3.378E-01 | 3.876E-02 | 7.161 |
| | + | 87.30 | | 1.990E+00 | 5.553E-01 | 5.504E-01 | 8.585E-02 | 3.616 |
| | | 115.19 | | 9.595E-01 | 3.430E+00 | 5.727E+00 | 4.309E-01 | 0.168 |
| | + | 238.63 | * | 1.691E+00 | 1.802E-01 | 8.964E-02 | 7.199E-03 | 18.865 |
| | | 300.09 | | 1.436E+00 | 8.487E-01 | 1.402E+00 | 1.234E-01 | 1.025 |
| BI-214 | + | 609.31 | * | 1.430E+00 | 1.979E-01 | 1.057E-01 | 7.766E-03 | 13.529 |
| | + | 1120.29 | | 1.730E+00 | 6.262E-01 | 4.635E-01 | 4.318E-02 | 3.731 |
| | + | 1764.49 | | 2.005E+00 | 4.768E-01 | 3.305E-01 | 2.015E-02 | 6.067 |
| PB-214 | + | 74.81 | | 4.603E+00 | 1.179E+00 | 1.055E+00 | 1.438E-01 | 4.365 |
| | + | 77.11 | | 4.147E+00 | 8.171E-01 | 5.791E-01 | 7.976E-02 | 7.161 |
| | + | 87.30 | | 3.409E+00 | 9.262E-01 | 9.428E-01 | 1.342E-01 | 3.616 |
| | + | 241.98 | | 2.452E+00 | 7.502E-01 | 5.400E-01 | 4.705E-02 | 4.540 |
| | + | 295.21 | | 1.660E+00 | 3.186E-01 | 2.315E-01 | 2.102E-02 | 7.173 |
| | + | 351.92 | * | 1.590E+00 | 2.190E-01 | 1.010E-01 | 8.612E-03 | 15.747 |
| PO-214 | + | 74.81 | | 4.603E+00 | 1.179E+00 | 1.055E+00 | 1.438E-01 | 4.365 |
| | + | 77.11 | | 4.147E+00 | 8.171E-01 | 5.791E-01 | 7.976E-02 | 7.161 |
| | + | 87.30 | | 3.409E+00 | 9.262E-01 | 9.428E-01 | 1.342E-01 | 3.616 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-216 | + | 241.98 | | 2.452E+00 | 7.502E-01 | 5.400E-01 | 4.705E-02 | 4.540 |
| | + | 295.21 | | 1.660E+00 | 3.186E-01 | 2.315E-01 | 2.102E-02 | 7.173 |
| | + | 351.92 | * | 1.590E+00 | 2.190E-01 | 1.010E-01 | 8.612E-03 | 15.747 |
| | + | 74.81 | | 2.671E+00 | 7.013E-01 | 6.120E-01 | 9.046E-02 | 4.365 |
| | + | 77.11 | | 2.419E+00 | 4.396E-01 | 3.378E-01 | 3.876E-02 | 7.161 |
| | + | 87.30 | | 1.990E+00 | 5.553E-01 | 5.504E-01 | 8.585E-02 | 3.616 |
| PO-218 | + | 238.63 | * | 1.691E+00 | 1.802E-01 | 8.964E-02 | 7.199E-03 | 18.865 |
| | | 300.09 | | 1.436E+00 | 8.487E-01 | 1.402E+00 | 1.234E-01 | 1.025 |
| | + | 74.81 | | 4.603E+00 | 1.179E+00 | 1.055E+00 | 1.438E-01 | 4.365 |
| | + | 77.11 | | 4.147E+00 | 8.171E-01 | 5.791E-01 | 7.976E-02 | 7.161 |
| | + | 87.30 | | 3.409E+00 | 9.262E-01 | 9.428E-01 | 1.342E-01 | 3.616 |
| | + | 241.98 | | 2.452E+00 | 7.502E-01 | 5.400E-01 | 4.705E-02 | 4.540 |
| RA-224 | + | 295.21 | | 1.660E+00 | 3.186E-01 | 2.315E-01 | 2.102E-02 | 7.173 |
| | + | 351.92 | * | 1.590E+00 | 2.190E-01 | 1.010E-01 | 8.612E-03 | 15.747 |
| | + | 240.98 | * | 4.649E+00 | 1.398E+00 | 1.020E+00 | 6.803E-02 | 4.556 |
| | + | 609.31 | * | 1.430E+00 | 1.979E-01 | 1.057E-01 | 7.766E-03 | 13.529 |
| | + | 1120.29 | | 1.730E+00 | 6.262E-01 | 4.635E-01 | 4.318E-02 | 3.731 |
| | + | 1764.49 | | 2.005E+00 | 4.768E-01 | 3.305E-01 | 2.015E-02 | 6.067 |
| AC-228 | + | 338.32 | | 1.873E+00 | 8.761E-01 | 3.869E-01 | 1.580E-01 | 4.840 |
| | + | 911.07 | * | 1.734E+00 | 3.702E-01 | 1.761E-01 | 1.920E-02 | 9.848 |
| | + | 969.11 | | 1.379E+00 | 5.061E-01 | 3.767E-01 | 8.687E-02 | 3.660 |
| | + | 338.32 | | 1.873E+00 | 8.761E-01 | 3.869E-01 | 1.580E-01 | 4.840 |
| | + | 911.07 | * | 1.734E+00 | 3.702E-01 | 1.761E-01 | 1.920E-02 | 9.848 |
| | + | 969.11 | | 1.379E+00 | 5.061E-01 | 3.767E-01 | 8.687E-02 | 3.660 |
| TH-228 | + | 74.81 | | 2.725E+00 | 6.691E-01 | 6.243E-01 | 7.184E-02 | 4.365 |
| | + | 77.11 | | 2.468E+00 | 4.484E-01 | 3.446E-01 | 3.953E-02 | 7.161 |
| | + | 87.30 | | 2.030E+00 | 5.288E-01 | 5.614E-01 | 6.721E-02 | 3.616 |
| | + | 238.63 | * | 1.725E+00 | 1.838E-01 | 9.144E-02 | 7.343E-03 | 18.865 |
| | | 300.09 | | 1.465E+00 | 1.217E+00 | 1.430E+00 | 8.438E-01 | 1.025 |
| | + | 609.31 | * | 1.430E+00 | 1.979E-01 | 1.057E-01 | 7.766E-03 | 13.529 |
| TH-230 | + | 1120.29 | | 1.729E+00 | 6.262E-01 | 4.635E-01 | 4.318E-02 | 3.731 |
| | + | 1764.49 | | 2.005E+00 | 4.767E-01 | 3.305E-01 | 2.015E-02 | 6.067 |
| | + | 338.32 | | 1.873E+00 | 4.432E-01 | 3.869E-01 | 2.432E-02 | 4.840 |
| | + | 911.07 | * | 1.734E+00 | 3.702E-01 | 1.761E-01 | 1.920E-02 | 9.848 |
| | + | 969.11 | | 1.379E+00 | 5.061E-01 | 3.767E-01 | 8.687E-02 | 3.660 |
| | + | 609.31 | * | 1.430E+00 | 1.979E-01 | 1.057E-01 | 7.766E-03 | 13.529 |
| U-234 | + | 1120.29 | | 1.729E+00 | 6.262E-01 | 4.635E-01 | 4.318E-02 | 3.731 |
| | + | 1764.49 | | 2.005E+00 | 4.767E-01 | 3.305E-01 | 2.015E-02 | 6.067 |
| | + | 86.50 | * | 1.264E+00 | 4.199E-01 | 3.544E-01 | 8.443E-02 | 3.566 |
| | | 95.87 | | -3.873E-01 | 1.002E+00 | 1.449E+00 | 3.652E-01 | -0.267 |
| | + | 74.67 | * | 4.331E-01 | 1.062E-01 | 9.970E-02 | 1.142E-02 | 4.344 |
| | + | 86.72 | | 4.739E+01 | 1.234E+01 | 1.324E+01 | 1.579E+00 | 3.580 |
| AM-243 | | 117.66 | | -5.714E-01 | 3.605E+00 | 5.888E+00 | 4.298E-01 | -0.097 |
| | | 142.18 | | -4.962E+00 | 1.678E+01 | 2.668E+01 | 1.745E+00 | -0.186 |
| | + | 511.00 | * | 1.506E-01 | 6.623E-02 | 4.424E-02 | 2.474E-03 | 3.405 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| BE-7 | | 477.59 | * | -1.236E-01 | 3.539E-01 | 5.606E-01 | 3.713E-02 | -0.220 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| NA-22 | 1274.54 | * | | -3.098E-02 | 4.263E-02 | 6.493E-02 | 4.245E-03 | -0.477 |
| NA-24 | 1368.53 | * | | 4.782E+01 | 4.263E-02 | Half-Life too short | | |
| AL-26 | 1129.67 | | | 1.639E+00 | 1.792E+00 | 3.114E+00 | 2.009E-01 | 0.526 |
| | 1808.65 | * | | -2.362E-03 | 2.350E-02 | 3.700E-02 | 2.194E-03 | -0.064 |
| TI-44 | 67.85 | | | 1.042E-02 | 5.466E-02 | 9.284E-02 | 1.080E-02 | 0.112 |
| | 78.38 | * | + | 4.465E-01 | 8.113E-02 | 8.591E-02 | 9.879E-03 | 5.197 |
| SC-46 | 889.25 | * | | 2.248E-03 | 4.298E-02 | 6.873E-02 | 5.559E-03 | 0.033 |
| | 1120.51 | * | + | 3.081E-01 | 1.097E-01 | 1.468E-01 | 9.614E-03 | 2.099 |
| V-48 | 944.10 | | | -6.434E-01 | 1.067E+00 | 1.621E+00 | 1.296E-01 | -0.397 |
| | 983.50 | * | | 1.635E-02 | 7.558E-02 | 1.269E-01 | 9.835E-03 | 0.129 |
| | 1312.09 | | | -2.392E-02 | 9.398E-02 | 1.515E-01 | 1.021E-02 | -0.158 |
| CR-51 | 320.08 | * | | 1.374E-01 | 4.096E-01 | 6.994E-01 | 4.925E-02 | 0.197 |
| MN-52 | 744.21 | | | 2.387E-01 | 4.411E-01 | 7.708E-01 | 4.575E-02 | 0.310 |
| | 848.13 | | | -6.959E+00 | 1.258E+01 | 1.959E+01 | 1.457E+00 | -0.355 |
| | 935.52 | | | 4.699E-01 | 5.017E-01 | 8.942E-01 | 7.192E-02 | 0.525 |
| | 1246.25 | | | 4.136E+00 | 1.330E+01 | 2.025E+01 | 1.289E+00 | 0.204 |
| | 1333.61 | | | -4.879E+00 | 9.027E+00 | 1.390E+01 | 9.526E-01 | -0.351 |
| | 1434.06 | * | | 4.609E-02 | 3.901E-01 | 6.595E-01 | 4.500E-02 | 0.070 |
| MN-54 | 834.83 | * | | 1.340E-02 | 4.021E-02 | 6.847E-02 | 4.955E-03 | 0.196 |
| CO-56 | 846.75 | * | | -5.449E-03 | 4.264E-02 | 6.959E-02 | 5.163E-03 | -0.078 |
| | 977.42 | | | -3.506E-01 | 2.710E+00 | 4.354E+00 | 3.391E-01 | -0.081 |
| | 1037.82 | | | 4.964E-01 | 3.189E-01 | 6.049E-01 | 4.761E-02 | 0.821 |
| | 1175.09 | | | -2.048E+00 | 2.458E+00 | 3.560E+00 | 2.121E-01 | -0.575 |
| | 1238.25 | | | 1.445E-01 | 9.656E-02 | 1.811E-01 | 1.205E-02 | 0.798 |
| | 1360.21 | | | 1.420E-01 | 1.030E+00 | 1.748E+00 | 1.198E-01 | 0.081 |
| | 1771.40 | | | -7.239E-01 | 3.657E-01 | 3.803E-01 | 2.309E-02 | -1.904 |
| CO-57 | 122.06 | * | | -2.574E-03 | 2.443E-02 | 3.995E-02 | 2.773E-03 | -0.064 |
| | 136.48 | | | 4.437E-02 | 2.017E-01 | 3.332E-01 | 2.478E-02 | 0.133 |
| CO-58 | 810.76 | * | | -4.259E-03 | 3.878E-02 | 6.357E-02 | 4.389E-03 | -0.067 |
| FE-59 | 142.65 | | | 4.804E-01 | 2.733E+00 | 4.446E+00 | 2.906E-01 | 0.108 |
| | 192.34 | | | 1.103E+00 | 1.003E+00 | 1.624E+00 | 1.975E-01 | 0.679 |
| | 1099.22 | * | | -1.056E-01 | 9.892E-02 | 1.377E-01 | 1.052E-02 | -0.767 |
| | 1291.56 | | | -3.063E-02 | 1.353E-01 | 2.201E-01 | 1.779E-02 | -0.139 |
| CO-60 | 1173.22 | | | 1.719E-02 | 4.495E-02 | 7.555E-02 | 4.493E-03 | 0.227 |
| | 1332.49 | * | | -1.052E-02 | 3.938E-02 | 6.328E-02 | 4.336E-03 | -0.166 |
| ZN-65 | 1115.52 | * | | 4.873E-03 | 1.081E-01 | 1.518E-01 | 1.004E-02 | 0.032 |
| GE-68 | 1077.35 | * | | 1.109E+00 | 1.217E+00 | 2.182E+00 | 1.524E-01 | 0.508 |
| AS-73 | 53.44 | * | | -6.332E-01 | 1.591E+00 | 2.651E+00 | 3.468E-01 | -0.239 |
| AS-74 | 595.88 | * | | -5.304E-02 | 1.136E-01 | 1.742E-01 | 9.195E-03 | -0.305 |
| | 634.78 | | | -3.437E-01 | 4.425E-01 | 6.492E-01 | 3.284E-02 | -0.529 |
| SE-75 | 66.05 | | | -7.934E+00 | 6.312E+00 | 9.817E+00 | 1.288E+00 | -0.808 |
| | 96.73 | | | -7.085E-01 | 8.611E-01 | 1.207E+00 | 1.750E-01 | -0.587 |
| | 121.11 | | | -1.346E-01 | 1.334E-01 | 2.069E-01 | 2.077E-02 | -0.650 |
| | 136.00 | | | 1.518E-02 | 3.816E-02 | 6.359E-02 | 4.262E-03 | 0.239 |
| | 198.60 | | | -1.449E+00 | 1.928E+00 | 2.903E+00 | 2.241E-01 | -0.499 |
| | 264.65 | * | | -8.109E-03 | 4.663E-02 | 7.250E-02 | 4.877E-03 | -0.112 |
| | 279.53 | | | -3.986E-02 | 1.113E-01 | 1.841E-01 | 1.300E-02 | -0.217 |
| | 303.91 | | | -2.786E+00 | 2.224E+00 | 3.435E+00 | 3.439E-01 | -0.811 |
| | 400.65 | | | 2.791E-01 | 2.661E-01 | 4.684E-01 | 4.218E-02 | 0.596 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| BR-77 | + | 87.88 | | 3.868E-03 | 2.661E-01 | Half-Life | too short | |
| | | 200.40 | | -4.039E-04 | 2.661E-01 | Half-Life | too short | |
| | + | 239.00 | | 1.110E-03 | 2.661E-01 | Half-Life | too short | |
| | | 249.79 | | -1.931E-04 | 2.661E-01 | Half-Life | too short | |
| | | 281.68 | | -4.799E-05 | 2.661E-01 | Half-Life | too short | |
| | | 297.23 | | 3.759E-04 | 2.661E-01 | Half-Life | too short | |
| | | 303.76 | | -1.314E-03 | 2.661E-01 | Half-Life | too short | |
| | | 439.47 | | -2.419E-04 | 2.661E-01 | Half-Life | too short | |
| | | 484.57 | | -3.916E-04 | 2.661E-01 | Half-Life | too short | |
| | | 520.65 | * | -1.640E-05 | 2.661E-01 | Half-Life | too short | |
| | | 574.64 | | -6.993E-04 | 2.661E-01 | Half-Life | too short | |
| | | 578.91 | | 1.759E-04 | 2.661E-01 | Half-Life | too short | |
| | | 585.48 | | 4.929E-03 | 2.661E-01 | Half-Life | too short | |
| | | 755.35 | | 6.544E-04 | 2.661E-01 | Half-Life | too short | |
| | | 817.79 | | 7.818E-05 | 2.661E-01 | Half-Life | too short | |
| SR-82 | | 698.33 | | -3.775E+01 | 4.307E+01 | 6.661E+01 | 3.552E+00 | -0.567 |
| | | 776.49 | * | -1.566E-01 | 4.147E-01 | 6.639E-01 | 4.237E-02 | -0.236 |
| | | 1395.20 | | -1.450E+01 | 1.193E+01 | 1.552E+01 | 1.063E+00 | -0.934 |
| RB-83 | | 520.41 | * | -4.606E-02 | 7.201E-02 | 1.098E-01 | 6.116E-03 | -0.419 |
| | | 529.64 | | 1.137E-03 | 1.079E-01 | 1.748E-01 | 9.691E-03 | 0.007 |
| | | 552.65 | | -2.016E-01 | 1.941E-01 | 2.788E-01 | 1.525E-02 | -0.723 |
| RB-84 | | 881.50 | * | -3.242E-03 | 7.701E-02 | 1.238E-01 | 9.856E-03 | -0.026 |
| KR-85 | | 513.99 | * | 7.787E+00 | 8.230E+00 | 1.282E+01 | 7.160E-01 | 0.608 |
| SR-85 | | 513.99 | * | 4.201E-02 | 4.440E-02 | 6.915E-02 | 3.862E-03 | 0.608 |
| RB-86 | | 1076.63 | * | 4.975E-01 | 9.270E-01 | 1.598E+00 | 1.117E-01 | 0.311 |
| Y-88 | | 898.02 | | -1.526E-02 | 4.260E-02 | 6.623E-02 | 5.479E-03 | -0.230 |
| | | 1836.01 | * | -6.218E-03 | 3.649E-02 | 5.687E-02 | 3.318E-03 | -0.109 |
| ZR-88 | | 392.90 | * | -1.798E-02 | 3.171E-02 | 5.021E-02 | 2.826E-03 | -0.358 |
| Y-91 | | 1204.90 | * | 3.666E+00 | 1.930E+01 | 3.168E+01 | 1.942E+00 | 0.116 |
| NB-94 | | 702.63 | * | -4.777E-03 | 3.514E-02 | 5.826E-02 | 3.139E-03 | -0.082 |
| | | 871.10 | | -1.416E-02 | 3.173E-02 | 4.956E-02 | 3.865E-03 | -0.286 |
| NB-95 | | 765.79 | * | 7.082E-03 | 5.235E-02 | 7.700E-02 | 4.799E-03 | 0.092 |
| NB-95M | | 235.69 | * | 3.962E-02 | 1.526E-01 | 2.188E-01 | 1.796E-02 | 0.181 |
| ZR-95 | | 724.18 | | -9.849E-04 | 9.920E-02 | 1.441E-01 | 9.723E-03 | -0.007 |
| | | 756.15 | * | 1.009E-01 | 7.580E-02 | 1.402E-01 | 1.021E-02 | 0.720 |
| NB-97 | | 657.90 | * | -6.916E+00 | 7.580E-02 | Half-Life | too short | |
| | | 1024.50 | | 4.482E+01 | 7.580E-02 | Half-Life | too short | |
| ZR-97 | | 254.15 | | -5.342E+00 | 7.580E-02 | Half-Life | too short | |
| | | 355.39 | | -1.066E+02 | 7.580E-02 | Half-Life | too short | |
| | | 507.63 | * | 3.045E+02 | 7.580E-02 | Half-Life | too short | |
| | | 602.52 | | -3.876E+02 | 7.580E-02 | Half-Life | too short | |
| | | 1021.30 | | 4.871E+02 | 7.580E-02 | Half-Life | too short | |
| | | 1147.95 | | -2.210E+02 | 7.580E-02 | Half-Life | too short | |
| | | 1362.66 | | 2.884E+01 | 7.580E-02 | Half-Life | too short | |
| | | 1750.46 | | -6.631E+01 | 7.580E-02 | Half-Life | too short | |
| MO-99 | | 140.51 | | -3.997E+01 | 8.378E+01 | 1.323E+02 | 3.589E+01 | -0.302 |
| | | 181.06 | | -3.695E+00 | 6.039E+01 | 9.220E+01 | 1.601E+01 | -0.040 |
| | | 366.43 | | -1.947E+02 | 2.817E+02 | 4.443E+02 | 2.656E+01 | -0.438 |
| | | 739.58 | * | 8.735E+00 | 3.715E+01 | 6.339E+01 | 8.755E+00 | 0.138 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| | 778.00 | | | -1.136E+02 | 1.106E+02 | 1.642E+02 | 1.052E+01 | -0.692 |
| TC-99M | 140.51 | * | | -1.073E+16 | 1.106E+02 | Half-Life too short | | |
| RH-101 | 127.23 | | | 2.395E-02 | 3.559E-02 | 5.426E-02 | 3.685E-03 | 0.441 |
| | 198.01 | * | | -2.531E-03 | 3.335E-02 | 5.219E-02 | 3.399E-03 | -0.048 |
| | 325.23 | | | 9.888E-02 | 2.462E-01 | 3.746E-01 | 2.398E-02 | 0.264 |
| RH-102 | 418.52 | | | -9.267E-03 | 3.149E-01 | 5.170E-01 | 2.927E-02 | -0.018 |
| | 475.06 | * | | -7.880E-03 | 3.076E-02 | 4.916E-02 | 2.779E-03 | -0.160 |
| | 631.29 | | | -4.105E-03 | 5.704E-02 | 9.046E-02 | 4.596E-03 | -0.045 |
| | 697.49 | | | -4.354E-02 | 8.285E-02 | 1.319E-01 | 7.017E-03 | -0.330 |
| | + | 766.84 | | 3.519E-01 | 1.309E-01 | 2.174E-01 | 1.358E-02 | 1.618 |
| | 1046.59 | | | 1.675E-02 | 1.064E-01 | 1.764E-01 | 1.281E-02 | 0.095 |
| | 1112.84 | | | -1.118E-01 | 2.967E-01 | 3.898E-01 | 2.585E-02 | -0.287 |
| RU-103 | 497.08 | * | | -1.587E-03 | 4.290E-02 | 6.952E-02 | 8.734E-03 | -0.023 |
| | + | 610.33 | | 1.681E+01 | 3.228E+00 | 3.602E+00 | 5.476E-01 | 4.667 |
| RH-106 | + | 511.85 | | 7.593E-01 | 3.338E-01 | 4.545E-01 | 2.541E-02 | 1.671 |
| | 621.84 | * | | -7.880E-02 | 3.473E-01 | 5.433E-01 | 6.207E-02 | -0.145 |
| | 1050.47 | | | -1.059E+00 | 2.353E+00 | 3.614E+00 | 2.613E-01 | -0.293 |
| RU-106 | + | 511.85 | | 7.593E-01 | 3.338E-01 | 4.545E-01 | 2.541E-02 | 1.671 |
| | 621.84 | * | | -7.880E-02 | 3.472E-01 | 5.433E-01 | 2.791E-02 | -0.145 |
| | 1050.47 | | | -1.059E+00 | 2.353E+00 | 3.614E+00 | 2.613E-01 | -0.293 |
| AG-108M | 433.93 | * | | -1.322E-02 | 3.162E-02 | 5.011E-02 | 3.096E-03 | -0.264 |
| | 614.37 | | | -4.001E-03 | 4.582E-02 | 6.323E-02 | 3.620E-03 | -0.063 |
| | 722.95 | | | -9.307E-03 | 4.167E-02 | 5.869E-02 | 3.612E-03 | -0.159 |
| AG-110M | 657.75 | * | | -2.024E-02 | 3.375E-02 | 5.381E-02 | 2.875E-03 | -0.376 |
| | 677.61 | | | 8.675E-02 | 3.074E-01 | 5.289E-01 | 2.895E-02 | 0.164 |
| | 706.67 | | | 1.213E-01 | 2.150E-01 | 3.765E-01 | 2.187E-02 | 0.322 |
| | 763.93 | | | 5.815E-02 | 1.730E-01 | 2.620E-01 | 1.714E-02 | 0.222 |
| | 884.67 | | | -1.353E-02 | 4.728E-02 | 7.528E-02 | 6.257E-03 | -0.180 |
| | 937.48 | | | -1.013E-01 | 1.238E-01 | 1.852E-01 | 1.549E-02 | -0.547 |
| | 1384.27 | | | 6.956E-02 | 1.614E-01 | 2.844E-01 | 2.034E-02 | 0.245 |
| IN-111 | 171.28 | | | 4.500E-01 | 3.261E+00 | 5.304E+00 | 3.381E-01 | 0.085 |
| | 245.39 | * | | -1.671E-01 | 3.849E+00 | 5.383E+00 | 3.592E-01 | -0.031 |
| IN-113M | 391.69 | * | | -2.360E-02 | 4.475E-02 | 7.104E-02 | 4.281E-03 | -0.332 |
| SN-113 | 391.69 | * | | -2.360E-02 | 4.475E-02 | 7.104E-02 | 4.281E-03 | -0.332 |
| IN-114M | 190.27 | * | | 5.351E-02 | 2.075E-01 | 3.022E-01 | 1.956E-02 | 0.177 |
| CD-115 | 260.90 | | | -1.614E-04 | 2.075E-01 | Half-Life too short | | |
| | 492.35 | | | 1.286E-04 | 2.075E-01 | Half-Life too short | | |
| | 527.90 | * | | 2.009E-05 | 2.075E-01 | Half-Life too short | | |
| SN-117M | 156.02 | | | -4.159E+00 | 2.951E+00 | 4.436E+00 | 2.846E-01 | -0.937 |
| | 158.56 | * | | 5.100E-02 | 6.703E-02 | 1.128E-01 | 7.214E-03 | 0.452 |
| SB-122 | 563.90 | * | | -6.699E-01 | 7.713E+00 | 1.233E+01 | 6.691E-01 | -0.054 |
| | 692.80 | | | 8.431E+01 | 1.484E+02 | 2.606E+02 | 1.371E+01 | 0.323 |
| I-123 | 159.00 | * | | 1.869E+03 | 1.484E+02 | Half-Life too short | | |
| | 528.96 | | | 5.545E+04 | 1.484E+02 | Half-Life too short | | |
| TE-123M | 159.00 | * | | 2.092E-02 | 2.773E-02 | 4.664E-02 | 3.015E-03 | 0.449 |
| I-124 | 602.71 | * | | -7.877E-01 | 1.735E+00 | 2.282E+00 | 1.197E-01 | -0.345 |
| | 722.78 | | | -1.764E+00 | 9.730E+00 | 1.379E+01 | 7.791E-01 | -0.128 |
| | 1325.50 | | | 1.830E+01 | 7.629E+01 | 1.312E+02 | 8.939E+00 | 0.139 |
| | 1376.25 | | | 1.120E+02 | 7.583E+01 | 1.462E+02 | 1.002E+01 | 0.766 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| SB-124 | | 1509.49 | | 3.023E+01 | 3.522E+01 | 6.551E+01 | 4.417E+00 | 0.462 |
| | | 1691.02 | | -5.619E+00 | 8.440E+00 | 1.164E+01 | 7.375E-01 | -0.483 |
| | | 602.71 | | -2.173E-02 | 4.787E-02 | 6.295E-02 | 3.303E-03 | -0.345 |
| | | 645.85 | | 8.232E-02 | 5.479E-01 | 9.349E-01 | 5.455E-02 | 0.088 |
| | | 709.31 | | 8.728E-01 | 3.094E+00 | 5.299E+00 | 2.900E-01 | 0.165 |
| | | 713.82 | | 6.209E-01 | 1.830E+00 | 3.147E+00 | 3.166E-01 | 0.197 |
| | | 722.78 | | -7.056E-02 | 3.891E-01 | 5.516E-01 | 3.270E-02 | -0.128 |
| | + | 968.20 | | 1.501E+01 | 4.443E+00 | 8.133E+00 | 6.383E-01 | 1.845 |
| | | 1045.16 | | 9.413E-01 | 2.444E+00 | 4.159E+00 | 3.026E-01 | 0.226 |
| | | 1325.50 | | 7.817E-01 | 3.259E+00 | 5.604E+00 | 3.818E-01 | 0.139 |
| SB-125 | | 1368.21 | | 8.006E-01 | 1.756E+00 | 3.113E+00 | 3.867E-01 | 0.257 |
| | | 1436.60 | | -2.668E+00 | 3.727E+00 | 5.378E+00 | 3.669E-01 | -0.496 |
| | | 1691.02 | * | -5.301E-02 | 7.962E-02 | 1.098E-01 | 7.458E-03 | -0.483 |
| | | 427.89 | * | 9.548E-03 | 9.782E-02 | 1.598E-01 | 9.457E-03 | 0.060 |
| | + | 463.38 | | 7.818E-01 | 3.795E-01 | 5.572E-01 | 3.704E-02 | 1.403 |
| | | 600.56 | | 3.055E-03 | 1.820E-01 | 2.923E-01 | 1.825E-02 | 0.010 |
| TE-125M | | 635.90 | | -7.828E-02 | 2.715E-01 | 4.204E-01 | 2.592E-02 | -0.186 |
| | | 109.28 | * | 1.168E-01 | 1.010E+01 | 1.636E+01 | 1.626E+00 | 0.007 |
| | I-126 | 388.63 | | 1.598E-01 | 2.620E-01 | 4.511E-01 | 2.559E-02 | 0.354 |
| SB-126 | | 666.33 | * | -2.449E-04 | 2.190E-01 | 3.684E-01 | 1.817E-02 | -0.001 |
| | | 753.82 | | -4.954E-01 | 1.948E+00 | 3.173E+00 | 1.925E-01 | -0.156 |
| | | 223.80 | | -3.795E+00 | 5.519E+00 | 8.418E+00 | 5.576E-01 | -0.451 |
| | | 278.60 | | 2.890E+00 | 3.198E+00 | 5.637E+00 | 3.748E-01 | 0.513 |
| | + | 296.50 | | 2.165E+01 | 3.928E+00 | 5.217E+00 | 3.434E-01 | 4.151 |
| | | 414.70 | | -2.187E-02 | 1.084E-01 | 1.760E-01 | 9.960E-03 | -0.124 |
| | | 415.30 | | 1.614E+00 | 8.828E+00 | 1.471E+01 | 8.325E-01 | 0.110 |
| | | 555.20 | | 3.499E+00 | 4.928E+00 | 8.478E+00 | 4.628E-01 | 0.413 |
| | | 573.80 | | -6.701E-01 | 1.309E+00 | 1.998E+00 | 1.075E-01 | -0.335 |
| | | 593.00 | | -7.125E-01 | 1.234E+00 | 1.868E+00 | 9.890E-02 | -0.381 |
| SB-127 | | 656.30 | | -2.216E-01 | 3.916E+00 | 6.561E+00 | 3.225E-01 | -0.034 |
| | | 666.33 | | -1.035E-04 | 9.253E-02 | 1.557E-01 | 7.679E-03 | -0.001 |
| | | 675.00 | | -1.046E+00 | 2.547E+00 | 4.126E+00 | 2.079E-01 | -0.254 |
| | | 695.00 | | 4.483E-02 | 1.061E-01 | 1.838E-01 | 9.724E-03 | 0.244 |
| | | 697.00 | | 8.998E-02 | 3.701E-01 | 6.268E-01 | 3.331E-02 | 0.144 |
| | | 720.50 | * | -3.578E-02 | 2.122E-01 | 3.020E-01 | 1.697E-02 | -0.118 |
| | | 856.80 | | 2.772E-02 | 6.280E-01 | 9.056E-01 | 6.859E-02 | 0.031 |
| | | 989.30 | | -4.231E-01 | 1.652E+00 | 2.616E+00 | 2.016E-01 | -0.162 |
| | | 1034.80 | | -4.646E+00 | 1.200E+01 | 1.862E+01 | 1.371E+00 | -0.250 |
| | | 1213.00 | | 3.819E+00 | 6.625E+00 | 1.126E+01 | 6.953E-01 | 0.339 |
| SB-127 | | 61.10 | | -8.817E+01 | 1.971E+02 | 3.228E+02 | 4.931E+01 | -0.273 |
| | | 252.40 | | 9.389E-01 | 9.474E+00 | 1.615E+01 | 6.803E+00 | 0.058 |
| | | 290.80 | | -6.512E+01 | 5.671E+01 | 7.549E+01 | 8.641E+00 | -0.863 |
| | | 411.60 | | 1.547E+01 | 3.127E+01 | 5.302E+01 | 8.250E+00 | 0.292 |
| | | 444.90 | | 1.552E+01 | 2.308E+01 | 3.966E+01 | 4.890E+00 | 0.391 |
| | | 473.00 | | 1.125E+00 | 4.190E+00 | 6.975E+00 | 8.831E-01 | 0.161 |
| | | 543.00 | | 1.407E+01 | 3.717E+01 | 6.213E+01 | 8.792E+00 | 0.226 |
| | | 603.60 | | -1.194E+01 | 3.105E+01 | 4.113E+01 | 4.982E+00 | -0.290 |
| | | 685.20 | * | 3.673E+00 | 3.373E+00 | 6.113E+00 | 6.671E-01 | 0.601 |
| | | 698.50 | | -2.221E+01 | 3.954E+01 | 6.257E+01 | 9.723E+00 | -0.355 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| XE-127 | | 722.20 | | -3.412E+01 | 7.544E+01 | 1.028E+02 | 1.123E+01 | -0.332 |
| | | 783.80 | | 8.202E+00 | 8.646E+00 | 1.548E+01 | 1.952E+00 | 0.530 |
| | | 57.60 | | -5.528E+00 | 1.033E+01 | 1.704E+01 | 2.133E+00 | -0.324 |
| | | 145.22 | | -6.245E-01 | 7.258E-01 | 1.130E+00 | 7.352E-02 | -0.553 |
| | | 172.10 | | 1.848E-02 | 1.304E-01 | 2.121E-01 | 1.353E-02 | 0.087 |
| I-131 | | 202.84 | * | 6.628E-02 | 5.234E-02 | 8.895E-02 | 5.814E-03 | 0.745 |
| | | 374.96 | | 1.577E-02 | 2.114E-01 | 3.521E-01 | 2.065E-02 | 0.045 |
| | | 80.18 | | 7.631E+00 | 9.226E+00 | 1.182E+01 | 1.374E+00 | 0.646 |
| | | 284.30 | | 4.531E-01 | 2.242E+00 | 3.820E+00 | 2.772E-01 | 0.119 |
| | | 364.48 | * | 7.291E-02 | 1.716E-01 | 2.931E-01 | 1.966E-02 | 0.249 |
| TE-132 | | 636.97 | | 1.337E+00 | 2.319E+00 | 3.914E+00 | 2.305E-01 | 0.342 |
| | | 722.89 | | -2.319E+00 | 1.065E+01 | 1.501E+01 | 8.697E-01 | -0.155 |
| | | 49.72 | | 2.327E+01 | 1.194E+02 | 2.052E+02 | 3.096E+01 | 0.113 |
| | | 111.76 | | -1.304E+01 | 8.111E+01 | 1.328E+02 | 1.558E+01 | -0.098 |
| | | 116.30 | | 3.167E+01 | 7.406E+01 | 1.243E+02 | 1.422E+01 | 0.255 |
| BA-133 | | 228.16 | * | 3.139E-02 | 1.951E+00 | 3.101E+00 | 4.893E-01 | 0.010 |
| | | 53.15 | | -2.608E+00 | 6.750E+00 | 1.126E+01 | 1.474E+00 | -0.232 |
| | | 79.62 | | 4.272E-01 | 1.776E+00 | 2.169E+00 | 3.697E-01 | 0.197 |
| | | 81.00 | | -2.957E-03 | 1.314E-01 | 1.566E-01 | 2.767E-02 | -0.019 |
| | | 276.40 | | 3.995E-01 | 3.877E-01 | 6.723E-01 | 8.987E-02 | 0.594 |
| I-133 | | 302.84 | | -2.293E-01 | 1.530E-01 | 2.311E-01 | 2.784E-02 | -0.992 |
| | | 356.01 | * | -1.091E-02 | 4.562E-02 | 6.508E-02 | 7.623E-03 | -0.168 |
| | | 383.85 | | 6.596E-02 | 2.892E-01 | 4.862E-01 | 5.271E-02 | 0.136 |
| | + | 510.53 | | 7.288E+01 | 2.892E-01 | Half-Life | too short | |
| | | 529.87 | * | -6.714E-02 | 2.892E-01 | Half-Life | too short | |
| CS-134 | | 706.58 | | 1.012E+01 | 2.892E-01 | Half-Life | too short | |
| | | 856.28 | | 5.853E-01 | 2.892E-01 | Half-Life | too short | |
| | | 875.33 | | -2.311E+00 | 2.892E-01 | Half-Life | too short | |
| | | 1236.41 | | 3.004E+01 | 2.892E-01 | Half-Life | too short | |
| | | 1298.22 | | -7.296E+00 | 2.892E-01 | Half-Life | too short | |
| I-135 | | 475.35 | | -4.178E-02 | 1.989E+00 | 3.238E+00 | 1.831E-01 | -0.013 |
| | | 563.23 | | 2.457E-01 | 3.832E-01 | 6.502E-01 | 3.613E-02 | 0.378 |
| | | 569.32 | | 2.125E-01 | 2.123E-01 | 3.678E-01 | 2.055E-02 | 0.578 |
| | | 604.70 | | 1.510E-02 | 3.588E-02 | 5.293E-02 | 2.789E-03 | 0.285 |
| | | 795.84 | * | 1.004E-01 | 5.099E-02 | 9.708E-02 | 6.543E-03 | 1.035 |
| CS-135 | | 801.93 | | 4.297E-02 | 3.898E-01 | 6.607E-01 | 4.499E-02 | 0.065 |
| | | 1038.57 | | 3.245E+00 | 3.978E+00 | 7.044E+00 | 5.164E-01 | 0.461 |
| | | 1167.94 | | -1.648E-01 | 2.558E+00 | 4.087E+00 | 2.457E-01 | -0.040 |
| | | 1365.15 | | -9.525E-01 | 1.236E+00 | 1.812E+00 | 1.330E-01 | -0.526 |
| | | 268.24 | * | 1.647E-01 | 1.693E-01 | 2.699E-01 | 2.250E-02 | 0.610 |
| I-135 | | 288.45 | | 3.265E+15 | 1.693E-01 | Half-Life | too short | |
| | | 417.63 | | 1.826E+15 | 1.693E-01 | Half-Life | too short | |
| | | 546.56 | | 1.699E+15 | 1.693E-01 | Half-Life | too short | |
| | | 836.80 | | 4.407E+15 | 1.693E-01 | Half-Life | too short | |
| | | 1038.76 | | 1.394E+15 | 1.693E-01 | Half-Life | too short | |
| I-135 | | 1124.00 | | -2.269E+15 | 1.693E-01 | Half-Life | too short | |
| | | 1131.51 | | 1.057E+15 | 1.693E-01 | Half-Life | too short | |
| | | 1260.41 | * | 2.367E+14 | 1.693E-01 | Half-Life | too short | |
| | | 1457.56 | | 6.260E+16 | 1.693E-01 | Half-Life | too short | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| CS-136 | | 1678.03 | | 1.452E+15 | 1.693E-01 | Half-Life | too short | |
| | | 1706.46 | | -5.748E+14 | 1.693E-01 | Half-Life | too short | |
| | | 1791.20 | | 4.594E+14 | 1.693E-01 | Half-Life | too short | |
| | | 66.91 | | -2.323E-01 | 1.232E+00 | 2.037E+00 | 3.531E-01 | -0.114 |
| | + | 86.29 | | 7.242E+00 | 2.009E+00 | 2.873E+00 | 4.380E-01 | 2.520 |
| | | 153.22 | | 1.498E+00 | 8.650E-01 | 1.504E+00 | 1.165E-01 | 0.996 |
| | | 163.89 | | 1.181E+00 | 1.356E+00 | 2.285E+00 | 1.763E-01 | 0.517 |
| | | 176.55 | | 2.495E-01 | 4.680E-01 | 7.749E-01 | 5.473E-02 | 0.322 |
| | | 273.65 | | -3.859E-01 | 6.737E-01 | 9.628E-01 | 7.113E-02 | -0.401 |
| | | 340.57 | | 3.007E-01 | 1.877E-01 | 3.077E-01 | 2.035E-02 | 0.977 |
| | | 818.51 | | 4.909E-02 | 9.036E-02 | 1.581E-01 | 1.108E-02 | 0.311 |
| | | 1048.07 | * | -6.747E-03 | 1.356E-01 | 2.190E-01 | 1.684E-02 | -0.031 |
| | | 1235.34 | | 6.616E-01 | 8.550E-01 | 1.359E+00 | 1.399E-01 | 0.487 |
| BA-137M | | 661.65 | * | -1.568E-02 | 3.642E-02 | 6.156E-02 | 3.002E-03 | -0.255 |
| CS-137 | | 661.65 | * | -1.658E-02 | 3.850E-02 | 6.508E-02 | 3.193E-03 | -0.255 |
| CE-139 | | 165.85 | * | 6.995E-03 | 3.076E-02 | 5.033E-02 | 3.198E-03 | 0.139 |
| BA-140 | | 162.64 | | -2.041E-01 | 9.341E-01 | 1.496E+00 | 1.052E-01 | -0.136 |
| | | 304.84 | | 9.057E-01 | 1.653E+00 | 2.829E+00 | 7.768E-01 | 0.320 |
| | | 423.70 | | -2.777E+00 | 2.662E+00 | 3.778E+00 | 1.200E+00 | -0.735 |
| LA-140 | | 537.32 | * | 1.809E-01 | 3.327E-01 | 5.559E-01 | 1.805E-01 | 0.326 |
| | + | 328.77 | | 6.568E-01 | 5.408E-01 | 7.362E-01 | 5.162E-02 | 0.892 |
| | | 432.53 | | -5.717E-01 | 2.685E+00 | 4.334E+00 | 2.726E-01 | -0.132 |
| | | 487.03 | | 2.866E-02 | 1.751E-01 | 2.890E-01 | 1.856E-02 | 0.099 |
| | | 751.79 | | -1.577E+00 | 2.184E+00 | 3.383E+00 | 2.468E-01 | -0.466 |
| | | 815.85 | | 4.368E-02 | 4.151E-01 | 6.953E-01 | 5.668E-02 | 0.063 |
| | | 867.82 | | 1.206E-01 | 1.815E+00 | 2.746E+00 | 2.265E-01 | 0.044 |
| | | 919.63 | | 1.230E+00 | 3.612E+00 | 5.660E+00 | 5.802E-01 | 0.217 |
| | | 925.24 | | -3.291E-01 | 1.436E+00 | 2.294E+00 | 1.990E-01 | -0.143 |
| | | 1596.49 | * | -2.658E-01 | 1.344E-01 | 1.412E-01 | 9.301E-03 | -1.883 |
| CE-141 | | 145.44 | * | -9.022E-02 | 6.786E-02 | 1.028E-01 | 6.901E-03 | -0.878 |
| CE-143 | | 57.37 | | 1.040E-03 | 6.786E-02 | Half-Life | too short | |
| | | 231.56 | | 1.242E-02 | 6.786E-02 | Half-Life | too short | |
| | | 293.26 | * | 7.648E-03 | 6.786E-02 | Half-Life | too short | |
| | + | 350.59 | | 4.132E-01 | 6.786E-02 | Half-Life | too short | |
| | | 490.36 | | -2.903E-02 | 6.786E-02 | Half-Life | too short | |
| | | 664.57 | | -2.517E-03 | 6.786E-02 | Half-Life | too short | |
| | | 721.93 | | -1.086E-02 | 6.786E-02 | Half-Life | too short | |
| CE-144 | | 80.11 | | 2.367E+00 | 2.837E+00 | 3.636E+00 | 4.201E-01 | 0.651 |
| | | 133.54 | * | -1.275E-01 | 2.093E-01 | 3.139E-01 | 4.576E-02 | -0.406 |
| PM-144 | | 476.78 | | 9.546E-03 | 6.936E-02 | 1.143E-01 | 7.801E-03 | 0.083 |
| | | 618.01 | | -1.764E-03 | 3.506E-02 | 5.584E-02 | 3.100E-03 | -0.032 |
| | | 696.49 | * | 6.139E-03 | 3.780E-02 | 6.363E-02 | 3.383E-03 | 0.096 |
| | | 778.57 | | -2.268E+00 | 2.294E+00 | 3.432E+00 | 2.203E-01 | -0.661 |
| PR-144 | | 696.49 | * | 4.171E-01 | 2.568E+00 | 4.323E+00 | 2.295E-01 | 0.096 |
| | | 1489.15 | | -1.832E+00 | 1.240E+01 | 1.998E+01 | 1.352E+00 | -0.092 |
| PM-146 | | 453.90 | * | 2.864E-02 | 4.553E-02 | 7.788E-02 | 6.647E-03 | 0.368 |
| | | 633.02 | | -6.221E-01 | 1.433E+00 | 2.157E+00 | 7.921E-01 | -0.288 |
| | | 735.90 | | -3.876E-02 | 1.489E-01 | 2.273E-01 | 6.340E-02 | -0.171 |
| | | 747.13 | | 2.353E-02 | 9.151E-02 | 1.562E-01 | 1.966E-02 | 0.151 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| ND-147 | + | 91.11 | 1.061E+00 | 5.285E-01 | 6.782E-01 | 7.954E-02 | 1.564 |
| | | 319.41 | 3.404E-01 | 4.242E+00 | 7.136E+00 | 4.603E-01 | 0.048 |
| | | 439.89 | -2.089E+00 | 7.821E+00 | 1.255E+01 | 7.125E-01 | -0.166 |
| | | 531.02 | -2.974E-01 | 7.517E-01 | 1.170E+00 | 1.569E-01 | -0.254 |
| PM-149 | | 285.90 | * 4.573E-05 | 7.517E-01 | Half-Life | too short | |
| EU-152 | | 121.78 | -2.573E-02 | 6.922E-02 | 1.116E-01 | 9.511E-03 | -0.231 |
| | | 244.69 | 1.165E-01 | 3.617E-01 | 5.216E-01 | 3.480E-02 | 0.223 |
| | | 344.27 | * 2.546E-02 | 9.806E-02 | 1.548E-01 | 1.071E-02 | 0.164 |
| | | 443.98 | 4.631E-01 | 9.424E-01 | 1.603E+00 | 9.094E-02 | 0.289 |
| | | 778.89 | -1.356E-01 | 2.475E-01 | 3.882E-01 | 2.491E-02 | -0.349 |
| | | 867.32 | 2.771E-01 | 8.505E-01 | 1.282E+00 | 9.918E-02 | 0.216 |
| | | + 964.01 | 6.774E-01 | 3.843E-01 | 5.622E-01 | 4.427E-02 | 1.205 |
| | | 1085.78 | 3.513E-02 | 3.773E-01 | 6.184E-01 | 4.270E-02 | 0.057 |
| | | 1112.02 | 5.809E-03 | 4.036E-01 | 5.641E-01 | 3.746E-02 | 0.010 |
| | | 1407.95 | 2.337E-01 | 2.157E-01 | 4.022E-01 | 2.751E-02 | 0.581 |
| | | 69.67 | 5.006E-01 | 2.180E+00 | 3.339E+00 | 3.856E-01 | 0.150 |
| | | + 83.37 | 2.607E+01 | 1.918E+01 | 2.675E+01 | 3.132E+00 | 0.975 |
| GD-153 | | 97.43 | * -4.769E-02 | 8.572E-02 | 1.229E-01 | 1.206E-02 | -0.388 |
| | | 103.18 | -1.549E-01 | 1.087E-01 | 1.667E-01 | 1.484E-02 | -0.929 |
| | | 123.07 | 4.723E-02 | 4.883E-02 | 8.362E-02 | 8.464E-03 | 0.565 |
| | | 247.94 | -3.764E-03 | 3.695E-01 | 5.544E-01 | 5.598E-02 | -0.007 |
| | | 591.81 | 4.357E-01 | 5.893E-01 | 1.012E+00 | 9.599E-02 | 0.431 |
| | | 723.30 | -5.694E-02 | 1.728E-01 | 2.393E-01 | 1.666E-02 | -0.238 |
| | | 756.87 | 9.795E-01 | 8.065E-01 | 1.471E+00 | 1.518E-01 | 0.666 |
| | | 873.19 | 5.284E-02 | 2.689E-01 | 4.535E-01 | 5.307E-02 | 0.117 |
| | | 996.32 | -4.581E-01 | 3.719E-01 | 4.993E-01 | 8.648E-02 | -0.917 |
| | | 1004.76 | -8.970E-02 | 2.118E-01 | 3.278E-01 | 3.574E-02 | -0.274 |
| EU-154 | | 1274.45 | * -3.396E-02 | 1.134E-01 | 1.827E-01 | 1.792E-02 | -0.186 |
| | | 48.70 | -3.734E+00 | 5.817E+00 | 9.397E+00 | 1.083E+00 | -0.397 |
| | | 60.01 | -1.136E+00 | 7.217E+00 | 1.199E+01 | 1.456E+00 | -0.095 |
| | | + 86.54 | 5.192E-01 | 1.354E-01 | 2.089E-01 | 2.502E-02 | 2.485 |
| | | 105.31 | * 1.374E-01 | 1.084E-01 | 1.883E-01 | 1.641E-02 | 0.730 |
| | | 86.79 | 1.450E+00 | 3.777E-01 | 5.889E-01 | 7.027E-02 | 2.462 |
| | | 197.04 | 7.156E-02 | 5.903E-01 | 9.339E-01 | 6.077E-02 | 0.077 |
| | | 215.65 | 2.479E-01 | 7.966E-01 | 1.291E+00 | 8.516E-02 | 0.192 |
| | | 298.57 | 1.360E-01 | 1.299E-01 | 2.071E-01 | 1.361E-02 | 0.657 |
| | | 879.36 | * 5.521E-02 | 1.425E-01 | 2.444E-01 | 1.938E-02 | 0.226 |
| EU-155 | | 962.29 | 1.318E-01 | 6.576E-01 | 9.566E-01 | 7.543E-02 | 0.138 |
| | | 966.15 | 8.542E-01 | 2.747E-01 | 5.333E-01 | 4.192E-02 | 1.602 |
| | | 1177.93 | -2.200E-01 | 4.214E-01 | 6.391E-01 | 3.818E-02 | -0.344 |
| | | 1271.85 | -3.675E-01 | 7.135E-01 | 1.118E+00 | 7.282E-02 | -0.329 |
| | | 80.57 | 8.861E-02 | 3.681E-01 | 4.493E-01 | 5.199E-02 | 0.197 |
| | | 184.41 | 4.181E-02 | 4.098E-02 | 6.272E-02 | 4.040E-03 | 0.667 |
| | | 280.46 | -1.067E-01 | 8.544E-02 | 1.337E-01 | 8.885E-03 | -0.798 |
| | | 410.95 | 2.497E-01 | 2.635E-01 | 4.598E-01 | 2.600E-02 | 0.543 |
| | | 711.68 | * -2.725E-02 | 6.520E-02 | 1.054E-01 | 5.802E-03 | -0.258 |
| | | 752.31 | -2.902E-01 | 2.741E-01 | 4.095E-01 | 2.476E-02 | -0.709 |
| HO-166M | | 810.29 | -2.901E-02 | 5.632E-02 | 8.824E-02 | 6.062E-03 | -0.329 |
| | | 51.35 | 1.297E+01 | 6.277E+01 | 1.078E+02 | 1.396E+01 | 0.120 |
| TM-171 | | 51.35 | 1.297E+01 | 6.277E+01 | 1.078E+02 | 1.396E+01 | 0.120 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| LU-176 | + | 52.39 | | -4.906E+00 | 3.110E+01 | 5.250E+01 | 6.867E+00 | -0.093 |
| | | 59.40 | | -1.636E+01 | 3.933E+01 | 6.446E+01 | 7.861E+00 | -0.254 |
| | | 66.72 | * | -2.970E+00 | 3.468E+01 | 5.762E+01 | 6.736E+00 | -0.052 |
| | | 88.36 | | 1.021E+00 | 2.659E-01 | 3.921E-01 | 4.673E-02 | 2.603 |
| | | 201.83 | | 3.284E-02 | 2.931E-02 | 4.949E-02 | 3.233E-03 | 0.664 |
| LU-177 | + | 306.84 | * | 1.122E-02 | 2.444E-02 | 4.209E-02 | 2.748E-03 | 0.267 |
| | | 401.10 | | 8.115E+00 | 6.584E+00 | 1.176E+01 | 6.636E-01 | 0.690 |
| | | 112.95 | | -1.894E-01 | 2.607E+00 | 4.286E+00 | 3.318E-01 | -0.044 |
| LU-177M | + | 208.36 | * | 4.550E+00 | 2.593E+00 | 3.332E+00 | 2.187E-01 | 1.365 |
| | | 52.97 | | -1.436E+00 | 3.175E+00 | 5.277E+00 | 6.910E-01 | -0.272 |
| | | 54.07 | | -5.064E-01 | 1.566E+00 | 2.619E+00 | 3.415E-01 | -0.193 |
| | | 61.30 | | -9.081E-01 | 2.120E+00 | 3.516E+00 | 4.243E-01 | -0.258 |
| | | 121.62 | | -2.497E-01 | 3.649E-01 | 5.785E-01 | 4.029E-02 | -0.432 |
| HF-181 | + | 147.16 | | 5.596E-01 | 6.361E-01 | 1.078E+00 | 6.994E-02 | 0.519 |
| | | 171.86 | | 1.433E-01 | 4.932E-01 | 8.081E-01 | 5.153E-02 | 0.177 |
| | | 218.09 | | 2.017E-01 | 8.996E-01 | 1.451E+00 | 9.579E-02 | 0.139 |
| | | 268.79 | | 1.564E+00 | 1.153E+00 | 1.461E+00 | 9.744E-02 | 1.070 |
| | | 319.02 | | -1.960E-01 | 2.565E-01 | 4.079E-01 | 2.630E-02 | -0.481 |
| | | 367.43 | | -1.505E-01 | 8.941E-01 | 1.466E+00 | 8.742E-02 | -0.103 |
| | | 413.65 | * | -2.366E-01 | 2.013E-01 | 3.045E-01 | 1.723E-02 | -0.777 |
| | | 56.28 | | 4.769E-01 | 1.646E+00 | 2.828E+00 | 3.605E-01 | 0.169 |
| | | 57.53 | | -5.562E-02 | 8.408E-01 | 1.421E+00 | 1.781E-01 | -0.039 |
| | | 65.20 | | -1.697E+00 | 1.299E+00 | 2.017E+00 | 2.377E-01 | -0.841 |
| W-181 | + | 133.02 | | -3.148E-02 | 7.641E-02 | 1.087E-01 | 7.254E-03 | -0.290 |
| | | 136.25 | | 1.262E-01 | 4.712E-01 | 7.802E-01 | 5.166E-02 | 0.162 |
| | | 345.85 | | -2.400E-02 | 2.172E-01 | 3.149E-01 | 1.956E-02 | -0.076 |
| | | 482.03 | * | 1.052E-02 | 4.592E-02 | 7.623E-02 | 4.304E-03 | 0.138 |
| | | 56.28 | | 1.770E-01 | 6.119E-01 | 1.051E+00 | 1.340E-01 | 0.168 |
| TA-182 | + | 57.53 | | -2.027E-02 | 3.130E-01 | 5.290E-01 | 6.630E-02 | -0.038 |
| | | 65.20 | * | -6.264E-01 | 4.796E-01 | 7.447E-01 | 8.777E-02 | -0.841 |
| | | 67.75 | | -6.652E-03 | 1.374E-01 | 2.285E-01 | 2.659E-02 | -0.029 |
| | | 100.10 | | 2.241E-01 | 1.816E-01 | 3.158E-01 | 2.956E-02 | 0.710 |
| | | 152.43 | | 3.296E-01 | 3.496E-01 | 5.921E-01 | 3.814E-02 | 0.557 |
| RE-183 | + | 222.10 | | 9.974E-02 | 3.535E-01 | 5.717E-01 | 3.784E-02 | 0.174 |
| | | 1001.68 | | 6.679E-03 | 2.020E+00 | 3.372E+00 | 2.569E-01 | 0.002 |
| | | 1121.28 | | 8.419E-01 | 2.997E-01 | 3.943E-01 | 2.579E-02 | 2.135 |
| | | 1189.05 | | 6.813E-02 | 3.289E-01 | 5.411E-01 | 3.267E-02 | 0.126 |
| | | 1221.42 | * | -4.429E-02 | 1.984E-01 | 3.258E-01 | 2.028E-02 | -0.136 |
| | | 1230.97 | | 1.803E-01 | 5.517E-01 | 8.646E-01 | 5.428E-02 | 0.209 |
| | | 57.98 | | -2.585E-01 | 3.227E-01 | 5.242E-01 | 6.527E-02 | -0.493 |
| | | 59.32 | | -6.842E-02 | 1.694E-01 | 2.779E-01 | 3.393E-02 | -0.246 |
| | | 67.20 | | 4.904E-02 | 2.520E-01 | 4.235E-01 | 4.939E-02 | 0.116 |
| | | 162.32 | * | -4.759E-02 | 1.125E-01 | 1.782E-01 | 1.136E-02 | -0.267 |
| RE-184 | + | 208.81 | | 2.606E+00 | 1.485E+00 | 1.944E+00 | 1.276E-01 | 1.341 |
| | | 291.72 | | -6.267E-01 | 1.058E+00 | 1.492E+00 | 9.857E-02 | -0.420 |
| | | 57.98 | | -9.264E-01 | 1.156E+00 | 1.878E+00 | 2.339E-01 | -0.493 |
| | | 59.32 | | -2.450E-01 | 6.066E-01 | 9.949E-01 | 1.215E-01 | -0.246 |
| | | 67.20 | | 1.757E-01 | 9.027E-01 | 1.517E+00 | 1.769E-01 | 0.116 |
| | | 161.27 | | -4.127E-01 | 3.536E-01 | 5.363E-01 | 3.421E-02 | -0.770 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| OS-185 | | 216.55 | | 6.507E-02 | 2.758E-01 | 4.452E-01 | 2.937E-02 | 0.146 |
| | | 252.85 | * | 3.947E-02 | 2.165E-01 | 3.710E-01 | 2.478E-02 | 0.106 |
| | | 318.01 | | -4.024E-01 | 4.511E-01 | 7.115E-01 | 4.593E-02 | -0.565 |
| | | 792.07 | | -8.960E-01 | 1.128E+00 | 1.690E+00 | 1.116E-01 | -0.530 |
| | | 903.28 | | -3.563E-01 | 1.064E+00 | 1.509E+00 | 1.238E-01 | -0.236 |
| | | 920.93 | | 2.450E-01 | 4.178E-01 | 7.326E-01 | 5.948E-02 | 0.334 |
| | | 59.72 | | -8.087E-03 | 4.403E-01 | 7.357E-01 | 8.949E-02 | -0.011 |
| | | 61.14 | | -1.134E-01 | 2.429E-01 | 3.978E-01 | 4.804E-02 | -0.285 |
| | | 69.30 | | -1.656E-01 | 4.082E-01 | 6.035E-01 | 6.977E-02 | -0.274 |
| | | 592.07 | | 1.096E-01 | 2.614E+00 | 4.212E+00 | 2.232E-01 | 0.026 |
| | | 646.12 | * | -1.201E-02 | 4.680E-02 | 7.731E-02 | 3.854E-03 | -0.155 |
| | | 717.42 | | 1.464E-02 | 9.451E-01 | 1.584E+00 | 8.836E-02 | 0.009 |
| | | 874.81 | | -8.054E-03 | 5.783E-01 | 9.520E-01 | 7.480E-02 | -0.008 |
| | | 880.27 | | 5.155E-01 | 7.912E-01 | 1.392E+00 | 1.105E-01 | 0.370 |
| | | 155.03 | * | 1.211E-01 | 1.804E-01 | 3.019E-01 | 1.939E-02 | 0.401 |
| RE-188 | | 477.96 | | -1.081E+00 | 3.329E+00 | 5.283E+00 | 2.985E-01 | -0.205 |
| | | 633.10 | | -1.274E+00 | 3.000E+00 | 4.582E+00 | 2.323E-01 | -0.278 |
| W-188 | | 63.58 | | -2.814E+00 | 7.220E+01 | 1.207E+02 | 1.436E+01 | -0.023 |
| | | 227.08 | | 1.161E+01 | 1.350E+01 | 2.248E+01 | 1.491E+00 | 0.517 |
| IR-192 | + | 290.67 | * | -1.022E+01 | 8.575E+00 | 1.143E+01 | 7.557E-01 | -0.894 |
| | | 295.96 | | 1.325E+00 | 2.407E-01 | 3.343E-01 | 2.229E-02 | 3.962 |
| | | 308.46 | | -9.328E-02 | 1.005E-01 | 1.587E-01 | 1.044E-02 | -0.588 |
| | | 316.51 | * | 8.024E-03 | 3.420E-02 | 5.812E-02 | 3.773E-03 | 0.138 |
| | | 468.07 | | 2.713E-03 | 8.019E-02 | 1.151E-01 | 7.557E-03 | 0.024 |
| AU-195 | | 604.41 | | 1.481E-01 | 5.151E-01 | 7.467E-01 | 8.268E-02 | 0.198 |
| | | 612.46 | | 2.289E-02 | 8.937E-01 | 1.251E+00 | 8.906E-02 | 0.018 |
| | | 65.12 | | -2.832E-01 | 2.207E-01 | 3.432E-01 | 4.047E-02 | -0.825 |
| | | 66.83 | | -5.729E-03 | 1.161E-01 | 1.932E-01 | 2.257E-02 | -0.030 |
| | + | 75.70 | | 1.427E+00 | 3.501E-01 | 5.559E-01 | 6.368E-02 | 2.568 |
| | | 98.88 | * | 1.006E-01 | 2.269E-01 | 3.838E-01 | 3.670E-02 | 0.262 |
| | + | 129.76 | | 6.140E+00 | 3.910E+00 | 5.108E+00 | 3.441E-01 | 1.202 |
| TL-200 | | 367.94 | * | -4.958E-03 | 3.910E+00 | Half-Life | too short | |
| | | 579.30 | | 5.092E-02 | 3.910E+00 | Half-Life | too short | |
| | | 828.27 | | -3.743E-02 | 3.910E+00 | Half-Life | too short | |
| | | 1205.75 | | 2.668E-02 | 3.910E+00 | Half-Life | too short | |
| TL-201 | | 68.90 | | 1.213E-01 | 1.887E+01 | 2.858E+01 | 3.310E+00 | 0.004 |
| | | 70.82 | | 3.303E+00 | 1.040E+01 | 1.599E+01 | 1.840E+00 | 0.207 |
| | | 80.30 | | 1.596E+01 | 1.986E+01 | 2.539E+01 | 2.935E+00 | 0.628 |
| | | 135.34 | | 3.570E+01 | 7.202E+01 | 1.206E+02 | 8.000E+00 | 0.296 |
| TL-202 | | 167.43 | * | -2.743E+00 | 2.131E+01 | 3.423E+01 | 2.176E+00 | -0.080 |
| | | 68.90 | | 4.777E-03 | 7.431E-01 | 1.126E+00 | 1.303E-01 | 0.004 |
| | | 70.82 | | 1.297E-01 | 4.085E-01 | 6.280E-01 | 7.227E-02 | 0.207 |
| | | 80.30 | | 6.268E-01 | 7.801E-01 | 9.974E-01 | 1.153E-01 | 0.628 |
| HG-203 | | 439.56 | * | -3.703E-02 | 9.130E-02 | 1.449E-01 | 8.219E-03 | -0.256 |
| | | 70.83 | | 4.571E-01 | 1.447E+00 | 2.223E+00 | 3.467E-01 | 0.206 |
| | | 72.87 | | 1.156E+00 | 7.735E-01 | 1.338E+00 | 2.036E-01 | 0.864 |
| BI-207 | + | 82.60 | | 2.054E+00 | 1.527E+00 | 2.049E+00 | 3.244E-01 | 1.002 |
| | | 279.20 | * | 1.968E-02 | 4.336E-02 | 7.486E-02 | 5.212E-03 | 0.263 |
| | | 72.80 | | 2.863E-01 | 2.075E-01 | 3.623E-01 | 4.154E-02 | 0.790 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| TL-207 | + | 74.97 | 7.776E-01 | 1.908E-01 | 2.759E-01 | 3.160E-02 | 2.819 |
| | + | 84.90 | 3.327E-01 | 2.447E-01 | 3.272E-01 | 3.861E-02 | 1.017 |
| | | 569.67 | 3.291E-02 | 3.318E-02 | 5.743E-02 | 3.102E-03 | 0.573 |
| | | 1063.62 * | -3.356E-03 | 5.115E-02 | 8.235E-02 | 5.857E-03 | -0.041 |
| | | 1770.23 | 5.564E-01 | 3.957E-01 | 8.227E-01 | 4.998E-02 | 0.676 |
| | | 81.07 | -1.935E-02 | 2.891E-01 | 3.431E-01 | 3.977E-02 | -0.056 |
| | + | 83.78 | 2.193E-01 | 1.613E-01 | 2.242E-01 | 2.630E-02 | 0.978 |
| | | 94.90 | 2.051E-01 | 2.398E-01 | 3.740E-01 | 3.854E-02 | 0.548 |
| | | 122.32 | 7.424E-01 | 1.654E+00 | 2.776E+00 | 2.136E-01 | 0.267 |
| | | 144.24 | -1.695E-01 | 6.417E-01 | 1.020E+00 | 7.980E-02 | -0.166 |
| | | 154.21 | 4.271E-01 | 4.016E-01 | 6.824E-01 | 5.145E-02 | 0.626 |
| | + | 269.46 | 3.586E-01 | 2.645E-01 | 3.433E-01 | 2.368E-02 | 1.044 |
| | | 323.87 * | 1.069E-01 | 7.309E-01 | 1.090E+00 | 1.824E-01 | 0.098 |
| | + | 338.28 | 7.821E+00 | 1.974E+00 | 2.812E+00 | 3.039E-01 | 2.781 |
| PO-209 | | 445.03 | 1.262E+00 | 2.230E+00 | 3.810E+00 | 3.886E-01 | 0.331 |
| | | 260.50 | -2.645E+00 | 9.303E+00 | 1.552E+01 | 1.036E+00 | -0.170 |
| | | 262.80 | -2.306E+00 | 2.548E+01 | 4.293E+01 | 2.866E+00 | -0.054 |
| | | 896.60 * | -7.051E+00 | 7.737E+00 | 1.124E+01 | 9.223E-01 | -0.627 |
| BI-210 | | 46.50 * | 3.501E+00 | 9.162E+00 | 1.558E+01 | 1.358E+00 | 0.225 |
| PB-210 | | 46.50 * | 3.501E+00 | 9.162E+00 | 1.558E+01 | 1.358E+00 | 0.225 |
| PO-210 | | 46.50 * | 3.501E+00 | 9.161E+00 | 1.558E+01 | 1.210E+00 | 0.225 |
| PB-211 | | 404.84 * | -1.263E+00 | 1.233E+00 | 1.413E+00 | 8.807E-01 | -0.894 |
| BI-212 | | 427.08 | -6.639E-02 | 2.165E+00 | 3.502E+00 | 2.164E+00 | -0.019 |
| | | 831.96 | -6.478E-01 | 1.325E+00 | 1.986E+00 | 1.241E+00 | -0.326 |
| | + | 727.18 * | 1.096E+00 | 5.621E-01 | 6.572E-01 | 5.023E-02 | 1.667 |
| | | 785.46 | 5.205E-01 | 1.798E+00 | 3.065E+00 | 1.995E-01 | 0.170 |
| PO-215 | | 1620.62 | 1.024E+00 | 1.289E+00 | 2.396E+00 | 1.564E-01 | 0.427 |
| | | 81.07 | -1.935E-02 | 2.891E-01 | 3.431E-01 | 3.977E-02 | -0.056 |
| | + | 83.78 | 2.193E-01 | 1.613E-01 | 2.242E-01 | 2.630E-02 | 0.978 |
| | | 94.90 | 2.051E-01 | 2.398E-01 | 3.740E-01 | 3.854E-02 | 0.548 |
| RN-219 | | 122.32 | 7.424E-01 | 1.654E+00 | 2.776E+00 | 2.136E-01 | 0.267 |
| | | 144.24 | -1.695E-01 | 6.417E-01 | 1.020E+00 | 7.980E-02 | -0.166 |
| | | 154.21 | 4.271E-01 | 4.016E-01 | 6.824E-01 | 5.145E-02 | 0.626 |
| | + | 269.46 | 3.586E-01 | 2.645E-01 | 3.433E-01 | 2.368E-02 | 1.044 |
| RN-220 | | 323.87 * | 1.069E-01 | 7.309E-01 | 1.090E+00 | 1.824E-01 | 0.098 |
| | + | 338.28 | 7.821E+00 | 1.974E+00 | 2.812E+00 | 3.039E-01 | 2.781 |
| | | 445.03 | 1.262E+00 | 2.230E+00 | 3.810E+00 | 3.886E-01 | 0.331 |
| | + | 271.23 | 4.600E-01 | 3.403E-01 | 4.442E-01 | 3.884E-02 | 1.036 |
| RA-223 | | 401.81 * | -2.097E-02 | 4.134E-01 | 6.795E-01 | 9.200E-02 | -0.031 |
| | | 549.76 * | 3.931E+00 | 2.301E+01 | 3.779E+01 | 2.070E+00 | 0.104 |
| RA-223 | | 81.07 | -1.935E-02 | 2.891E-01 | 3.431E-01 | 3.977E-02 | -0.056 |
| | + | 83.78 | 2.193E-01 | 1.613E-01 | 2.242E-01 | 2.630E-02 | 0.978 |
| | | 94.90 | 2.051E-01 | 2.398E-01 | 3.740E-01 | 3.854E-02 | 0.548 |
| | | 122.32 | 7.424E-01 | 1.654E+00 | 2.776E+00 | 2.136E-01 | 0.267 |
| | | 144.24 | -1.695E-01 | 6.417E-01 | 1.020E+00 | 7.980E-02 | -0.166 |
| | | 154.21 | 4.271E-01 | 4.016E-01 | 6.824E-01 | 5.145E-02 | 0.626 |
| | + | 269.46 | 3.586E-01 | 2.645E-01 | 3.433E-01 | 2.368E-02 | 1.044 |
| | | 323.87 * | 1.069E-01 | 7.309E-01 | 1.090E+00 | 1.824E-01 | 0.098 |
| | + | 338.28 | 7.821E+00 | 1.974E+00 | 2.812E+00 | 3.039E-01 | 2.781 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AC-227 | | 445.03 | | 1.262E+00 | 2.230E+00 | 3.810E+00 | 3.886E-01 | 0.331 |
| | | 79.80 | | 6.583E-01 | 2.253E+00 | 2.760E+00 | 6.301E-01 | 0.239 |
| | | 236.00 | | 1.811E-01 | 2.728E-01 | 4.009E-01 | 4.390E-02 | 0.452 |
| | | 256.20 | * | 3.809E-02 | 3.719E-01 | 6.338E-01 | 9.094E-02 | 0.060 |
| | | 286.10 | | -9.944E-02 | 1.531E+00 | 2.571E+00 | 3.084E-01 | -0.039 |
| | | 299.80 | | 2.286E+00 | 1.620E+00 | 2.584E+00 | 4.282E-01 | 0.885 |
| TH-227 | | 304.40 | | 2.178E-01 | 1.849E+00 | 3.124E+00 | 5.486E-01 | 0.070 |
| | | 334.20 | | 7.973E-01 | 2.537E+00 | 3.821E+00 | 7.071E-01 | 0.209 |
| | | 79.80 | | 6.583E-01 | 2.253E+00 | 2.760E+00 | 6.372E-01 | 0.239 |
| | | 94.00 | | 3.340E+00 | 2.165E+00 | 3.554E+00 | 8.027E-01 | 0.940 |
| | | 236.00 | | 1.811E-01 | 2.726E-01 | 4.009E-01 | 3.860E-02 | 0.452 |
| | | 256.20 | * | 3.809E-02 | 3.719E-01 | 6.338E-01 | 1.092E-01 | 0.060 |
| TH-229 | | 286.10 | | -9.944E-02 | 1.535E+00 | 2.571E+00 | 2.577E+00 | -0.039 |
| | | 299.80 | | 2.286E+00 | 1.620E+00 | 2.584E+00 | 4.282E-01 | 0.885 |
| | | 304.40 | | 2.178E-01 | 1.849E+00 | 3.124E+00 | 5.486E-01 | 0.070 |
| | | 334.20 | | 7.973E-01 | 2.537E+00 | 3.821E+00 | 7.071E-01 | 0.209 |
| | | 85.43 | | 3.701E-01 | 1.873E-01 | 3.284E-01 | 3.886E-02 | 1.127 |
| | + | 88.47 | | 5.875E-01 | 1.530E-01 | 2.223E-01 | 2.643E-02 | 2.642 |
| PA-231 | | 100.00 | | 2.216E-01 | 1.829E-01 | 3.178E-01 | 2.980E-02 | 0.697 |
| | | 193.63 | * | -3.613E-01 | 5.086E-01 | 7.832E-01 | 5.083E-02 | -0.461 |
| | | 210.97 | | 8.906E-01 | 8.701E-01 | 1.319E+00 | 8.674E-02 | 0.675 |
| TH-231 | | 283.67 | * | -4.041E-01 | 1.512E+00 | 2.508E+00 | 3.549E-01 | -0.161 |
| | | 301.29 | | 6.721E-01 | 6.182E-01 | 1.026E+00 | 1.117E-01 | 0.655 |
| U-231 | | 81.07 | | -1.935E-02 | 2.891E-01 | 3.431E-01 | 3.977E-02 | -0.056 |
| | + | 83.78 | | 2.193E-01 | 1.613E-01 | 2.242E-01 | 2.630E-02 | 0.978 |
| | | 94.90 | | 2.051E-01 | 2.398E-01 | 3.740E-01 | 3.854E-02 | 0.548 |
| | | 122.32 | | 7.424E-01 | 1.654E+00 | 2.776E+00 | 2.136E-01 | 0.267 |
| | | 144.24 | | -1.695E-01 | 6.417E-01 | 1.020E+00 | 7.980E-02 | -0.166 |
| | | 154.21 | | 4.271E-01 | 4.016E-01 | 6.824E-01 | 5.145E-02 | 0.626 |
| PA-233 | + | 269.46 | | 3.586E-01 | 2.645E-01 | 3.433E-01 | 2.368E-02 | 1.044 |
| | | 323.87 | * | 1.069E-01 | 7.309E-01 | 1.090E+00 | 1.824E-01 | 0.098 |
| | + | 338.28 | | 7.821E+00 | 1.974E+00 | 2.812E+00 | 3.039E-01 | 2.781 |
| | | 445.03 | | 1.262E+00 | 2.230E+00 | 3.810E+00 | 3.886E-01 | 0.331 |
| | + | 84.21 | | 2.095E+01 | 1.541E+01 | 2.137E+01 | 2.513E+00 | 0.980 |
| | | 92.29 | | 1.333E+01 | 4.983E+00 | 8.648E+00 | 9.409E-01 | 1.542 |
| PA-234 | | 95.87 | * | -9.737E-01 | 2.509E+00 | 3.644E+00 | 3.684E-01 | -0.267 |
| | | 108.00 | | -1.399E+00 | 4.604E+00 | 7.504E+00 | 6.212E-01 | -0.186 |
| | + | 75.28 | | 2.269E+01 | 6.266E+00 | 8.294E+00 | 1.418E+00 | 2.735 |
| | + | 86.59 | | 8.424E+00 | 3.065E+00 | 3.397E+00 | 9.530E-01 | 2.480 |
| | | 300.12 | | 7.406E-01 | 4.454E-01 | 7.240E-01 | 9.980E-02 | 1.023 |
| | | 311.98 | * | -3.634E-03 | 6.184E-02 | 1.033E-01 | 7.044E-03 | -0.035 |
| PA-234 | | 340.50 | | 1.440E+00 | 7.918E-01 | 1.211E+00 | 2.795E-01 | 1.190 |
| | | 398.62 | | -1.370E+00 | 2.195E+00 | 3.418E+00 | 8.824E-01 | -0.401 |
| | | 415.76 | | 6.501E-01 | 1.787E+00 | 3.005E+00 | 6.175E-01 | 0.216 |
| | | 63.00 | | 1.621E+00 | 2.113E+00 | 3.617E+00 | 6.355E-01 | 0.448 |
| | | 94.67 | | 2.281E-01 | 1.754E-01 | 2.769E-01 | 3.784E-02 | 0.824 |
| | | 98.44 | | -6.260E-03 | 9.481E-02 | 1.496E-01 | 8.369E-02 | -0.042 |
| | | 99.86 | | 5.461E-01 | 4.625E-01 | 8.030E-01 | 7.547E-02 | 0.680 |
| | | 111.00 | | -1.205E-01 | 1.885E-01 | 2.948E-01 | 3.424E-02 | -0.409 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 131.20 | | 8.859E-02 | 1.071E-01 | 1.651E-01 | 1.107E-02 | 0.537 |
| | | 152.70 | | 4.858E-01 | 3.350E-01 | 5.658E-01 | 9.084E-02 | 0.859 |
| | + | 186.00 | | 5.027E+00 | 2.550E+00 | 2.497E+00 | 7.663E-01 | 2.013 |
| | | 226.40 | | 3.899E-02 | 4.103E-01 | 6.555E-01 | 7.866E-02 | 0.059 |
| | | 227.20 | | 3.791E-01 | 4.348E-01 | 7.245E-01 | 4.807E-02 | 0.523 |
| | | 248.90 | | -1.496E-01 | 7.894E-01 | 1.230E+00 | 2.673E-01 | -0.122 |
| | + | 293.70 | | 7.969E+00 | 1.876E+00 | 1.811E+00 | 2.967E-01 | 4.401 |
| | | 369.80 | | 2.899E-01 | 8.209E-01 | 1.392E+00 | 2.903E-01 | 0.208 |
| | | 568.70 | | 5.391E-01 | 1.102E+00 | 1.837E+00 | 9.927E-02 | 0.294 |
| | | 569.50 | | 2.831E-01 | 2.957E-01 | 5.104E-01 | 2.757E-02 | 0.555 |
| | | 574.00 | | -6.496E-01 | 1.429E+00 | 2.195E+00 | 1.182E-01 | -0.296 |
| | | 699.00 | | -7.716E-03 | 7.418E-01 | 1.243E+00 | 2.217E-01 | -0.006 |
| | | 706.10 | | -4.268E-01 | 1.104E+00 | 1.764E+00 | 7.775E-01 | -0.242 |
| | | 733.00 | | 2.749E-01 | 3.933E-01 | 6.196E-01 | 1.317E-01 | 0.444 |
| | | 742.81 | | 2.385E-01 | 1.391E+00 | 2.342E+00 | 1.567E+00 | 0.102 |
| | | 796.30 | | 1.487E+00 | 1.057E+00 | 1.827E+00 | 4.840E-01 | 0.814 |
| | | 805.60 | | -1.884E-02 | 9.138E-01 | 1.513E+00 | 4.567E-01 | -0.012 |
| | | 819.60 | | 2.474E-01 | 1.194E+00 | 2.014E+00 | 7.592E-01 | 0.123 |
| | | 826.30 | | 4.418E-02 | 7.509E-01 | 1.251E+00 | 5.564E-01 | 0.035 |
| | | 831.60 | | -4.641E-01 | 6.666E-01 | 1.005E+00 | 2.962E-01 | -0.462 |
| | | 876.40 | | 2.693E-02 | 8.216E-01 | 1.359E+00 | 1.396E+00 | 0.020 |
| | | 880.51 | | 1.580E-01 | 2.735E-01 | 4.780E-01 | 3.799E-02 | 0.331 |
| | | 883.24 | | -2.264E-01 | 3.323E-01 | 4.366E-01 | 2.931E-01 | -0.519 |
| | | 899.00 | | -1.559E-01 | 8.314E-01 | 1.314E+00 | 5.736E-01 | -0.119 |
| | | 925.00 | | -1.981E-01 | 1.141E+00 | 1.835E+00 | 1.486E-01 | -0.108 |
| | | 926.50 | | 5.359E-02 | 1.664E-01 | 2.824E-01 | 7.088E-02 | 0.190 |
| | | 946.00 | * | -1.228E-02 | 2.656E-01 | 4.326E-01 | 7.994E-02 | -0.028 |
| | | 949.00 | | -1.828E-02 | 4.275E-01 | 6.969E-01 | 5.551E-02 | -0.026 |
| | | 980.50 | | -5.949E-01 | 6.387E-01 | 9.033E-01 | 7.016E-02 | -0.659 |
| | | 1394.10 | | -1.358E-01 | 1.074E+00 | 1.740E+00 | 1.129E+00 | -0.078 |
| PA-234M | | 766.42 | | 1.406E+01 | 1.507E+01 | 2.158E+01 | 1.087E+01 | 0.651 |
| | | 1001.03 | * | -1.677E+00 | 4.439E+00 | 7.089E+00 | 6.463E-01 | -0.237 |
| TH-234 | | 63.29 | * | 1.189E+00 | 1.745E+00 | 2.978E+00 | 5.892E-01 | 0.399 |
| | | 92.38 | | 1.594E+00 | 6.414E-01 | 1.023E+00 | 1.969E-01 | 1.559 |
| U-235 | + | 89.95 | | 3.115E+00 | 1.802E+00 | 1.975E+00 | 6.276E-01 | 1.577 |
| | | 93.35 | | 1.560E+00 | 7.946E-01 | 1.176E+00 | 3.376E-01 | 1.327 |
| | | 105.00 | | 1.402E+00 | 1.124E+00 | 1.829E+00 | 5.460E-01 | 0.767 |
| | | 143.76 | * | 5.338E-02 | 1.949E-01 | 3.182E-01 | 5.274E-02 | 0.168 |
| | | 163.35 | | 2.961E-01 | 4.625E-01 | 7.679E-01 | 1.395E-01 | 0.386 |
| | + | 185.71 | | 1.862E-01 | 7.617E-02 | 9.222E-02 | 5.946E-03 | 2.019 |
| | | 205.31 | | -4.152E-01 | 5.914E-01 | 7.906E-01 | 1.442E-01 | -0.525 |
| NP-236 | | 94.67 | | 1.740E-01 | 1.322E-01 | 2.102E-01 | 2.176E-02 | 0.828 |
| | | 98.44 | | -4.797E-03 | 7.162E-02 | 1.131E-01 | 1.090E-02 | -0.042 |
| | | 111.00 | | -9.112E-02 | 1.424E-01 | 2.230E-01 | 1.771E-02 | -0.409 |
| | | 160.31 | * | -3.085E-02 | 7.815E-02 | 1.241E-01 | 7.924E-03 | -0.249 |
| U-238 | | 63.29 | * | 1.189E+00 | 1.745E+00 | 2.978E+00 | 5.892E-01 | 0.399 |
| | | 92.38 | | 1.594E+00 | 5.892E-01 | 1.023E+00 | 1.110E-01 | 1.559 |
| NP-239 | | 99.55 | | 1.854E-01 | 1.521E-01 | 2.646E-01 | 2.500E-02 | 0.701 |
| | | 117.00 | * | 3.612E-02 | 1.819E-01 | 3.024E-01 | 2.225E-02 | 0.119 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | + | 209.75 | | 1.960E+00 | 1.117E+00 | 1.460E+00 | 9.593E-02 | 1.342 |
| | | 228.18 | | 2.964E-03 | 2.284E-01 | 3.630E-01 | 2.410E-02 | 0.008 |
| | | 277.60 | | -4.504E-02 | 1.879E-01 | 3.088E-01 | 2.054E-02 | -0.146 |
| | | 334.30 | | 4.271E-01 | 1.434E+00 | 2.160E+00 | 1.366E-01 | 0.198 |
| AM-241 | | 59.54 | * | -2.069E-02 | 2.236E-01 | 3.722E-01 | 4.700E-02 | -0.056 |
| CM-243 | | 99.55 | | 1.909E-01 | 1.565E-01 | 2.723E-01 | 2.574E-02 | 0.701 |
| | | 103.76 | * | -5.584E-02 | 9.775E-02 | 1.575E-01 | 1.388E-02 | -0.355 |
| | | 117.00 | | 3.717E-02 | 1.872E-01 | 3.112E-01 | 2.290E-02 | 0.119 |
| | + | 209.75 | | 1.932E+00 | 1.101E+00 | 1.440E+00 | 9.460E-02 | 1.342 |
| | | 228.18 | | 2.996E-03 | 2.308E-01 | 3.670E-01 | 2.436E-02 | 0.008 |
| | | 277.60 | | -4.542E-02 | 1.895E-01 | 3.114E-01 | 2.072E-02 | -0.146 |
| AM-246 | | 798.80 | | -2.921E-01 | 1.573E-01 | 2.145E-01 | 1.437E-02 | -1.362 |
| | | 1036.00 | | 1.362E-01 | 3.137E-01 | 5.345E-01 | 3.929E-02 | 0.255 |
| | | 1062.04 | | -1.763E-01 | 2.430E-01 | 3.604E-01 | 2.568E-02 | -0.489 |
| | | 1078.86 | * | 1.155E-02 | 1.502E-01 | 2.456E-01 | 1.712E-02 | 0.047 |
| CM-247 | | 278.00 | | 7.521E-02 | 7.681E-01 | 1.284E+00 | 8.541E-02 | 0.059 |
| | | 287.40 | | 1.117E+00 | 1.215E+00 | 2.145E+00 | 1.420E-01 | 0.521 |
| | | 402.60 | * | 2.361E-03 | 3.720E-02 | 6.163E-02 | 3.478E-03 | 0.038 |
| CF-249 | | 252.85 | | 1.452E-01 | 7.965E-01 | 1.365E+00 | 9.115E-02 | 0.106 |
| | | 333.44 | | -6.954E-02 | 2.256E-01 | 2.695E-01 | 1.706E-02 | -0.258 |
| | | 387.95 | * | 1.500E-02 | 3.982E-02 | 6.754E-02 | 3.837E-03 | 0.222 |
| CF-251 | | 176.60 | * | 6.733E-02 | 1.252E-01 | 2.073E-01 | 1.327E-02 | 0.325 |
| | | 227.00 | | 2.823E-01 | 3.883E-01 | 6.421E-01 | 4.260E-02 | 0.440 |
| | | 285.00 | | -1.683E-02 | 1.733E+00 | 2.919E+00 | 1.935E-01 | -0.006 |

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388006
* Acquisition date   : 4-FEB-2010 10:41:41 Detector SN#      :
* Detector ID        : GAM04 Sensitivity                    : 5.000
* Geometry           : CAN Energy tolerance                : 1.500
* Elapsed live time   : 0 02:00:00.00 Abundance limit       : 75.000
* Elapsed real time   : 0 02:00:01.14 Half life ratio      : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G245388006 Analyst initials       : MXR1
* Batch Number       : 944964 Sample Quantity          : 1.1867E+02 GRAM
* Recovery           : 1.00000 Carrier Weight           : 0.00000
*****
*
*                               QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41 MS Isotope      :
* MSD DPM             : 0.000 MSD Isotope                  :
* LCS DPM             : 0.000 LCS Isotope                   :
* LCSD DPM            : 0.000 LCSD Isotope                  :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 1.974E+01 | 2.054E+00 | 5.207E-01 | 0.000E+00 |
| CD-109 | 4.410E+00 | 1.126E+00 | 1.239E+00 | 0.000E+00 |
| SN-126 | 4.303E-01 | 1.099E-01 | 1.219E-01 | 0.000E+00 |
| TL-208 | 6.154E-01 | 9.124E-02 | 5.611E-02 | 0.000E+00 |
| BI-211 | 4.570E+00 | 5.709E-01 | 2.935E-01 | 0.000E+00 |
| PB-212 | 1.691E+00 | 1.766E-01 | 9.122E-02 | 0.000E+00 |
| PO-212 | 1.691E+00 | 1.766E-01 | 9.122E-02 | 0.000E+00 |
| BI-214 | 1.430E+00 | 1.939E-01 | 1.064E-01 | 0.000E+00 |
| PB-214 | 1.590E+00 | 2.146E-01 | 1.023E-01 | 0.000E+00 |
| PO-214 | 1.590E+00 | 2.146E-01 | 1.023E-01 | 0.000E+00 |
| PO-216 | 1.691E+00 | 1.766E-01 | 9.122E-02 | 0.000E+00 |
| PO-218 | 1.590E+00 | 2.146E-01 | 1.023E-01 | 0.000E+00 |
| RA-224 | 4.649E+00 | 1.370E+00 | 1.038E+00 | 0.000E+00 |
| RA-226 | 1.430E+00 | 1.939E-01 | 1.064E-01 | 0.000E+00 |
| AC-228 | 1.734E+00 | 3.628E-01 | 1.765E-01 | 0.000E+00 |
| RA-228 | 1.734E+00 | 3.628E-01 | 1.765E-01 | 0.000E+00 |
| TH-228 | 1.725E+00 | 1.801E-01 | 9.305E-02 | 0.000E+00 |
| TH-230 | 1.430E+00 | 1.939E-01 | 1.064E-01 | 0.000E+00 |
| TH-232 | 1.734E+00 | 3.628E-01 | 1.765E-01 | 0.000E+00 |
| U-234 | 1.430E+00 | 1.939E-01 | 1.064E-01 | 0.000E+00 |
| NP-237 | 1.264E+00 | 4.115E-01 | 3.646E-01 | 0.000E+00 |
| AM-243 | 4.331E-01 | 1.041E-01 | 1.027E-01 | 0.000E+00 |
| ANH-511 | 1.506E-01 | 6.490E-02 | 4.464E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | -1.236E-01 | 3.468E-01 | 5.661E-01 | 0.000E+00 NOT IDENT. |
| NA-22 | -3.098E-02 | 4.177E-02 | 6.484E-02 | 0.000E+00 NOT IDENT. |
| NA-24 | 0.000E+00 | 1.490E+08 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| AL-26 | -2.362E-03 | 2.303E-02 | 3.680E-02 | 0.000E+00 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| TI-44 | 0.000E+00 | 7.951E-02 | 8.849E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | 2.248E-03 | 4.212E-02 | 6.893E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | 1.635E-02 | 7.407E-02 | 1.272E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | 1.374E-01 | 4.014E-01 | 7.094E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 4.609E-02 | 3.823E-01 | 6.577E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | 1.340E-02 | 3.941E-02 | 6.871E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -5.449E-03 | 4.179E-02 | 6.983E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | -2.574E-03 | 2.395E-02 | 4.095E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -4.259E-03 | 3.801E-02 | 6.382E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -1.056E-01 | 9.694E-02 | 1.378E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | -1.052E-02 | 3.859E-02 | 6.317E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 4.873E-03 | 1.060E-01 | 1.519E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | 1.109E+00 | 1.193E+00 | 2.184E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | -6.332E-01 | 1.559E+00 | 2.742E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | -5.304E-02 | 1.113E-01 | 1.754E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -8.109E-03 | 4.570E-02 | 7.370E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 0.000E+00 | 4.127E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SR-82 | -1.566E-01 | 4.064E-01 | 6.667E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | -4.606E-02 | 7.057E-02 | 1.108E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | -3.242E-03 | 7.547E-02 | 1.241E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 7.787E+00 | 8.066E+00 | 1.293E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 4.201E-02 | 4.351E-02 | 6.977E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 4.975E-01 | 9.085E-01 | 1.599E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | -6.218E-03 | 3.576E-02 | 5.656E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -1.798E-02 | 3.108E-02 | 5.081E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | 3.666E+00 | 1.891E+01 | 3.166E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -4.777E-03 | 3.444E-02 | 5.858E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 7.082E-03 | 5.130E-02 | 7.735E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 3.962E-02 | 1.495E-01 | 2.227E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 1.009E-01 | 7.428E-02 | 1.408E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 1.051E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 2.154E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 8.735E+00 | 3.641E+01 | 6.370E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 2.221E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -2.531E-03 | 3.268E-02 | 5.322E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -7.880E-03 | 3.015E-02 | 4.964E-02 | 0.000E+00 | FAIL ABUN |
| RU-103 | -1.587E-03 | 4.204E-02 | 7.017E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | -7.880E-02 | 3.403E-01 | 5.470E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | -7.880E-02 | 3.402E-01 | 5.470E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -1.322E-02 | 3.098E-02 | 5.066E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | -2.024E-02 | 3.308E-02 | 5.414E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | -1.671E-01 | 3.772E+00 | 5.476E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -2.360E-02 | 4.385E-02 | 7.190E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | -2.360E-02 | 4.385E-02 | 7.190E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 5.351E-02 | 2.033E-01 | 3.083E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 0.000E+00 | 4.634E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SN-117M | 5.100E-02 | 6.569E-02 | 1.153E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | -6.699E-01 | 7.559E+00 | 1.243E+01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 2.428E+09 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 2.092E-02 | 2.717E-02 | 4.768E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -7.877E-01 | 1.700E+00 | 2.298E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | -5.301E-02 | 7.803E-02 | 1.093E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | 9.548E-03 | 9.587E-02 | 1.615E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | 1.168E-01 | 9.899E+00 | 1.679E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | -2.449E-04 | 2.146E-01 | 3.707E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | -3.578E-02 | 2.079E-01 | 3.036E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | 3.673E+00 | 3.306E+00 | 6.149E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 6.628E-02 | 5.129E-02 | 9.068E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 7.291E-02 | 1.682E-01 | 2.969E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | 3.139E-02 | 1.912E+00 | 3.158E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | -1.091E-02 | 4.470E-02 | 6.593E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 2.802E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 0.000E+00 | 4.997E-02 | 9.748E-02 | 0.000E+00 | NOT IDENT. |
| CS-135 | 1.647E-01 | 1.659E-01 | 2.743E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 1.056E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -6.747E-03 | 1.329E-01 | 2.192E-01 | 0.000E+00 | FAIL ABUN |
| BA-137M | -1.568E-02 | 3.569E-02 | 6.194E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | -1.658E-02 | 3.773E-02 | 6.548E-02 | 0.000E+00 | NOT IDENT. |
| CE-139 | 6.995E-03 | 3.015E-02 | 5.142E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | 1.809E-01 | 3.260E-01 | 5.606E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -2.658E-01 | 1.317E-01 | 1.407E-01 | 0.000E+00 | FAIL ABUN |
| CE-141 | -9.022E-02 | 6.650E-02 | 1.052E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 2.510E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | -1.275E-01 | 2.051E-01 | 3.215E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | 6.139E-03 | 3.705E-02 | 6.399E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | 4.171E-01 | 2.517E+00 | 4.347E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 2.864E-02 | 4.462E-02 | 7.869E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | -2.974E-01 | 7.367E-01 | 1.180E+00 | 0.000E+00 | FAIL ABUN |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-149 | 0.000E+00 | 4.032E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| EU-152 | 2.546E-02 | 9.610E-02 | 1.569E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | -4.769E-02 | 8.401E-02 | 1.263E-01 | 0.000E+00 | FAIL ABUN |
| EU-154 | -3.396E-02 | 1.112E-01 | 1.824E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 1.374E-01 | 1.062E-01 | 1.934E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 5.521E-02 | 1.396E-01 | 2.451E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | -2.725E-02 | 6.389E-02 | 1.060E-01 | 0.000E+00 | NOT IDENT. |
| TM-171 | -2.970E+00 | 3.399E+01 | 5.945E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | 1.122E-02 | 2.395E-02 | 4.271E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 2.542E+00 | 3.396E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -2.366E-01 | 1.973E-01 | 3.080E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | 1.052E-02 | 4.500E-02 | 7.698E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | -6.264E-01 | 4.700E-01 | 7.686E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | -4.429E-02 | 1.945E-01 | 3.256E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | -4.759E-02 | 1.103E-01 | 1.822E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | 3.947E-02 | 2.122E-01 | 3.773E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | -1.201E-02 | 4.587E-02 | 7.781E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 1.211E-01 | 1.768E-01 | 3.087E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | -1.022E+01 | 8.403E+00 | 1.161E+01 | 0.000E+00 | NOT IDENT. |
| IR-192 | 8.024E-03 | 3.351E-02 | 5.896E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 1.006E-01 | 2.224E-01 | 3.943E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 9.525E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | -2.743E+00 | 2.088E+01 | 3.497E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | -3.703E-02 | 8.947E-02 | 1.465E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | 1.968E-02 | 4.249E-02 | 7.605E-02 | 0.000E+00 | FAIL ABUN |
| BI-207 | -3.356E-03 | 5.013E-02 | 8.242E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | 1.069E-01 | 7.163E-01 | 1.105E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | -7.051E+00 | 7.583E+00 | 1.127E+01 | 0.000E+00 | NOT IDENT. |
| BI-210 | 3.501E+00 | 8.979E+00 | 1.614E+01 | 0.000E+00 | NOT IDENT. |
| PB-210 | 3.501E+00 | 8.979E+00 | 1.614E+01 | 0.000E+00 | NOT IDENT. |
| PO-210 | 3.501E+00 | 8.978E+00 | 1.614E+01 | 0.000E+00 | NOT IDENT. |
| PB-211 | -1.263E+00 | 1.209E+00 | 1.430E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 5.509E-01 | 6.605E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | 1.069E-01 | 7.163E-01 | 1.105E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | -2.097E-02 | 4.051E-01 | 6.875E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | 3.931E+00 | 2.255E+01 | 3.810E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | 1.069E-01 | 7.163E-01 | 1.105E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | 3.809E-02 | 3.645E-01 | 6.445E-01 | 0.000E+00 | NOT IDENT. |
| TH-227 | 3.809E-02 | 3.645E-01 | 6.445E-01 | 0.000E+00 | NOT IDENT. |
| TH-229 | -3.613E-01 | 4.984E-01 | 7.988E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | -4.041E-01 | 1.481E+00 | 2.548E+00 | 0.000E+00 | NOT IDENT. |
| TH-231 | 1.069E-01 | 7.163E-01 | 1.105E+00 | 0.000E+00 | FAIL ABUN |
| U-231 | -9.737E-01 | 2.459E+00 | 3.745E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | -3.634E-03 | 6.061E-02 | 1.048E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | -1.228E-02 | 2.603E-01 | 4.335E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | -1.677E+00 | 4.350E+00 | 7.099E+00 | 0.000E+00 | NOT IDENT. |
| TH-234 | 1.189E+00 | 1.711E+00 | 3.074E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | 5.338E-02 | 1.910E-01 | 3.256E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -3.085E-02 | 7.659E-02 | 1.268E-01 | 0.000E+00 | NOT IDENT. |
| U-238 | 1.189E+00 | 1.711E+00 | 3.074E+00 | 0.000E+00 | NOT IDENT. |
| NP-239 | 3.612E-02 | 1.783E-01 | 3.101E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | -2.069E-02 | 2.191E-01 | 3.846E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | -5.584E-02 | 9.579E-02 | 1.617E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | 1.155E-02 | 1.472E-01 | 2.457E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 2.361E-03 | 3.645E-02 | 6.235E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | 1.500E-02 | 3.902E-02 | 6.836E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | 6.733E-02 | 1.227E-01 | 2.117E-01 | 0.000E+00 | NOT IDENT. |


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388006.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:41:41.
Sample ID          : G245388006 Sample quantity : 1.18670E+02 GRAM
Detector name      : GAM04 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.14 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 944964 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Nuclide Line Activity Report

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|----------------------|---------------------|----------------|
| K-40 | 1460.81 | 715 | 10.67* | 1.075E+00 | 1.974E+01 | 1.974E+01 | 10.62 |
| CD-109 | 88.03 | 252 | 3.72* | 5.011E+00 | 4.280E+00 | 4.410E+00 | 26.05 |
| SN-126 | 64.28 | ----- | 9.60 | 2.203E+00 | ----- | Line Not Found | ----- |
| | 86.94 | 252 | 8.90 | 5.011E+00 | 1.789E+00 | 1.789E+00 | 48.11 |
| | 87.57 | 252 | 37.00* | 5.011E+00 | 4.303E-01 | 4.303E-01 | 26.05 |
| TL-208 | 277.35 | ----- | 6.80 | 4.326E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 130 | 21.60 | 2.732E+00 | 6.974E-01 | 6.974E-01 | 44.75 |
| | 583.14 | 402 | 84.20* | 2.454E+00 | 6.154E-01 | 6.154E-01 | 15.13 |
| | 860.37 | 61 | 12.46 | 1.744E+00 | 8.830E-01 | 8.830E-01 | 42.27 |
| BI-211 | 72.87 | ----- | 1.27 | 3.384E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 678 | 12.94* | 3.626E+00 | 4.570E+00 | 4.570E+00 | 12.75 |
| PB-212 | 74.81 | 329 | 10.70 | 3.635E+00 | 2.671E+00 | 2.671E+00 | 26.25 |
| | 77.11 | 540 | 18.00 | 3.920E+00 | 2.419E+00 | 2.419E+00 | 18.17 |
| | 87.30 | 252 | 8.00 | 5.011E+00 | 1.990E+00 | 1.990E+00 | 27.90 |
| | 238.63 | 1151 | 44.60* | 4.826E+00 | 1.691E+00 | 1.691E+00 | 10.66 |
| | 300.09 | ----- | 3.41 | 4.082E+00 | ----- | Line Not Found | ----- |
| PO-212 | 74.81 | 329 | 10.70 | 3.635E+00 | 2.671E+00 | 2.671E+00 | 26.25 |
| | 77.11 | 540 | 18.00 | 3.920E+00 | 2.419E+00 | 2.419E+00 | 18.17 |
| | 87.30 | 252 | 8.00 | 5.011E+00 | 1.990E+00 | 1.990E+00 | 27.90 |
| | 115.19 | ----- | 0.60 | 6.408E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1151 | 44.60* | 4.826E+00 | 1.691E+00 | 1.691E+00 | 10.66 |
| | 300.09 | ----- | 3.41 | 4.082E+00 | ----- | Line Not Found | ----- |
| BI-214 | 609.31 | 496 | 46.30* | 2.368E+00 | 1.430E+00 | 1.430E+00 | 13.84 |
| | 1120.29 | 112 | 15.10 | 1.358E+00 | 1.729E+00 | 1.730E+00 | 36.21 |
| | 1764.49 | 95 | 15.80 | 9.529E-01 | 2.005E+00 | 2.005E+00 | 23.78 |
| PB-214 | 74.81 | 329 | 6.21 | 3.635E+00 | 4.603E+00 | 4.603E+00 | 25.62 |
| | 77.11 | 540 | 10.50 | 3.920E+00 | 4.147E+00 | 4.147E+00 | 19.70 |
| | 87.30 | 252 | 4.67 | 5.011E+00 | 3.409E+00 | 3.409E+00 | 27.17 |
| | 241.98 | 278 | 7.49 | 4.782E+00 | 2.452E+00 | 2.452E+00 | 30.60 |
| | 295.21 | 416 | 19.20 | 4.133E+00 | 1.660E+00 | 1.660E+00 | 19.19 |
| | 351.92 | 678 | 37.20* | 3.626E+00 | 1.590E+00 | 1.590E+00 | 13.77 |
| PO-214 | 74.81 | 329 | 6.21 | 3.635E+00 | 4.603E+00 | 4.603E+00 | 25.62 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| | 77.11 | 540 | 10.50 | 3.920E+00 | 4.147E+00 | 4.147E+00 | 19.70 |
| | 87.30 | 252 | 4.67 | 5.011E+00 | 3.409E+00 | 3.409E+00 | 27.17 |
| | 241.98 | 278 | 7.49 | 4.782E+00 | 2.452E+00 | 2.452E+00 | 30.60 |
| | 295.21 | 416 | 19.20 | 4.133E+00 | 1.660E+00 | 1.660E+00 | 19.19 |
| | 351.92 | 678 | 37.20* | 3.626E+00 | 1.590E+00 | 1.590E+00 | 13.77 |
| PO-216 | 74.81 | 329 | 10.70 | 3.635E+00 | 2.671E+00 | 2.671E+00 | 26.25 |
| | 77.11 | 540 | 18.00 | 3.920E+00 | 2.419E+00 | 2.419E+00 | 18.17 |
| | 87.30 | 252 | 8.00 | 5.011E+00 | 1.990E+00 | 1.990E+00 | 27.90 |
| | 238.63 | 1151 | 44.60* | 4.826E+00 | 1.691E+00 | 1.691E+00 | 10.66 |
| | 300.09 | ----- | 3.41 | 4.082E+00 | ----- | Line Not Found | ----- |
| PO-218 | 74.81 | 329 | 6.21 | 3.635E+00 | 4.603E+00 | 4.603E+00 | 25.62 |
| | 77.11 | 540 | 10.50 | 3.920E+00 | 4.147E+00 | 4.147E+00 | 19.70 |
| | 87.30 | 252 | 4.67 | 5.011E+00 | 3.409E+00 | 3.409E+00 | 27.17 |
| | 241.98 | 278 | 7.49 | 4.782E+00 | 2.452E+00 | 2.452E+00 | 30.60 |
| | 295.21 | 416 | 19.20 | 4.133E+00 | 1.660E+00 | 1.660E+00 | 19.19 |
| | 351.92 | 678 | 37.20* | 3.626E+00 | 1.590E+00 | 1.590E+00 | 13.77 |
| RA-224 | 240.98 | 278 | 3.95* | 4.782E+00 | 4.649E+00 | 4.649E+00 | 30.08 |
| RA-226 | 609.31 | 496 | 46.30* | 2.368E+00 | 1.430E+00 | 1.430E+00 | 13.84 |
| | 1120.29 | 112 | 15.10 | 1.358E+00 | 1.729E+00 | 1.730E+00 | 36.21 |
| | 1764.49 | 95 | 15.80 | 9.529E-01 | 2.005E+00 | 2.005E+00 | 23.78 |
| AC-228 | 338.32 | 252 | 11.40 | 3.734E+00 | 1.873E+00 | 1.873E+00 | 46.78 |
| | 911.07 | 251 | 27.70* | 1.653E+00 | 1.734E+00 | 1.734E+00 | 21.35 |
| | 969.11 | 113 | 16.60 | 1.559E+00 | 1.379E+00 | 1.379E+00 | 36.70 |
| RA-228 | 338.32 | 252 | 11.40 | 3.734E+00 | 1.873E+00 | 1.873E+00 | 46.78 |
| | 911.07 | 251 | 27.70* | 1.653E+00 | 1.734E+00 | 1.734E+00 | 21.35 |
| | 969.11 | 113 | 16.60 | 1.559E+00 | 1.379E+00 | 1.379E+00 | 36.70 |
| TH-228 | 74.81 | 329 | 10.70 | 3.635E+00 | 2.671E+00 | 2.725E+00 | 24.56 |
| | 77.11 | 540 | 18.00 | 3.920E+00 | 2.419E+00 | 2.468E+00 | 18.17 |
| | 87.30 | 252 | 8.00 | 5.011E+00 | 1.990E+00 | 2.030E+00 | 26.05 |
| | 238.63 | 1151 | 44.60* | 4.826E+00 | 1.691E+00 | 1.725E+00 | 10.66 |
| | 300.09 | ----- | 3.41 | 4.082E+00 | ----- | Line Not Found | ----- |
| TH-230 | 609.31 | 496 | 46.30* | 2.368E+00 | 1.430E+00 | 1.430E+00 | 13.84 |
| | 1120.29 | 112 | 15.10 | 1.358E+00 | 1.729E+00 | 1.729E+00 | 36.21 |
| | 1764.49 | 95 | 15.80 | 9.529E-01 | 2.005E+00 | 2.005E+00 | 23.78 |
| TH-232 | 338.32 | 252 | 11.40 | 3.734E+00 | 1.873E+00 | 1.873E+00 | 23.66 |
| | 911.07 | 251 | 27.70* | 1.653E+00 | 1.734E+00 | 1.734E+00 | 21.35 |
| | 969.11 | 113 | 16.60 | 1.559E+00 | 1.379E+00 | 1.379E+00 | 36.70 |
| U-234 | 609.31 | 496 | 46.30* | 2.368E+00 | 1.430E+00 | 1.430E+00 | 13.84 |
| | 1120.29 | 112 | 15.10 | 1.358E+00 | 1.729E+00 | 1.729E+00 | 36.21 |
| | 1764.49 | 95 | 15.80 | 9.529E-01 | 2.005E+00 | 2.005E+00 | 23.78 |
| NP-237 | 86.50 | 252 | 12.60* | 5.011E+00 | 1.264E+00 | 1.264E+00 | 33.23 |
| | 95.87 | ----- | 2.60 | 5.678E+00 | ----- | Line Not Found | ----- |
| AM-243 | 74.67 | 329 | 66.00* | 3.635E+00 | 4.331E-01 | 4.331E-01 | 24.53 |
| | 86.72 | 252 | 0.34 | 5.011E+00 | 4.739E+01 | 4.739E+01 | 26.05 |
| | 117.66 | ----- | 0.55 | 6.445E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 6.417E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 130 | 100.00* | 2.732E+00 | 1.506E-01 | 1.506E-01 | 43.97 |

Flag: "*" = Keyline

Total number of lines in spectrum 29
Number of unidentified lines 1
Number of lines tentatively identified by NID 28 96.55%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|------------------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 1.974E+01 | 1.974E+01 | 0.210E+01 | 10.62 | |
| CD-109 | 464.00D | 1.03 | 4.280E+00 | 4.410E+00 | 1.149E+00 | 26.05 | |
| SN-126 | 1.00E+05Y | 1.00 | 4.303E-01 | 4.303E-01 | 1.121E-01 | 26.05 | |
| TL-208 | 1.41E+10Y | 1.00 | 6.154E-01 | 6.154E-01 | 0.931E-01 | 15.13 | |
| BI-211 | 7.04E+08Y | 1.00 | 4.570E+00 | 4.570E+00 | 0.583E+00 | 12.75 | |
| PB-212 | 1.41E+10Y | 1.00 | 1.691E+00 | 1.691E+00 | 0.180E+00 | 10.66 | |
| PO-212 | 1.41E+10Y | 1.00 | 1.691E+00 | 1.691E+00 | 0.180E+00 | 10.66 | |
| BI-214 | 1600.00Y | 1.00 | 1.430E+00 | 1.430E+00 | 0.198E+00 | 13.84 | |
| PB-214 | 1600.00Y | 1.00 | 1.590E+00 | 1.590E+00 | 0.219E+00 | 13.77 | |
| PO-214 | 1600.00Y | 1.00 | 1.590E+00 | 1.590E+00 | 0.219E+00 | 13.77 | |
| PO-216 | 1.41E+10Y | 1.00 | 1.691E+00 | 1.691E+00 | 0.180E+00 | 10.66 | |
| PO-218 | 1600.00Y | 1.00 | 1.590E+00 | 1.590E+00 | 0.219E+00 | 13.77 | |
| RA-224 | 1.41E+10Y | 1.00 | 4.649E+00 | 4.649E+00 | 1.398E+00 | 30.08 | |
| RA-226 | 1600.00Y | 1.00 | 1.430E+00 | 1.430E+00 | 0.198E+00 | 13.84 | |
| AC-228 | 1.41E+10Y | 1.00 | 1.734E+00 | 1.734E+00 | 0.370E+00 | 21.35 | |
| RA-228 | 1.41E+10Y | 1.00 | 1.734E+00 | 1.734E+00 | 0.370E+00 | 21.35 | |
| TH-228 | 1.91Y | 1.02 | 1.691E+00 | 1.725E+00 | 0.184E+00 | 10.66 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.430E+00 | 1.430E+00 | 0.198E+00 | 13.84 | |
| TH-232 | 1.41E+10Y | 1.00 | 1.734E+00 | 1.734E+00 | 0.370E+00 | 21.35 | |
| U-234 | 4.47E+09Y | 1.00 | 1.430E+00 | 1.430E+00 | 0.198E+00 | 13.84 | |
| NP-237 | 2.14E+06Y | 1.00 | 1.264E+00 | 1.264E+00 | 0.420E+00 | 33.23 | |
| AM-243 | 7380.00Y | 1.00 | 4.331E-01 | 4.331E-01 | 1.062E-01 | 24.53 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.506E-01 | 1.506E-01 | 0.662E-01 | 43.97 | |
| Total Activity : | | | 5.858E+01 | 5.875E+01 | | | |

Grand Total Activity : 5.858E+01 5.875E+01

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

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

Unidentified Energy Lines
Sample ID : G245388006

Page : 4
Acquisition date : 4-FEB-2010 10:41:41

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 3 | 83.80 | 80 | 293 | 1.13 | 167.63 | 164 | 28 | 1.11E-02 | 72.6 | 4.68E+00 | T |
| 3 | 89.79 | 139 | 311 | 1.26 | 179.63 | 164 | 28 | 1.93E-02 | 48.3 | 5.24E+00 | T |
| 0 | 128.95 | 95 | 266 | 1.24 | 257.95 | 254 | 8 | 1.32E-02 | 63.3 | 6.50E+00 | T |
| 0 | 186.04 | 181 | 293 | 1.31 | 372.14 | 368 | 11 | 2.51E-02 | 40.4 | 5.69E+00 | T |
| 0 | 209.29 | 106 | 244 | 1.30 | 418.65 | 414 | 9 | 1.47E-02 | 56.6 | 5.28E+00 | T |
| 0 | 270.13 | 68 | 171 | 0.85 | 540.34 | 536 | 9 | 9.44E-03 | 73.5 | 4.41E+00 | T |
| 0 | 327.65 | 55 | 142 | 1.34 | 655.39 | 652 | 9 | 7.65E-03 | 82.0 | 3.82E+00 | T |
| 0 | 462.86 | 74 | 71 | 0.95 | 925.82 | 921 | 10 | 1.03E-02 | 48.1 | 2.95E+00 | T |
| 0 | 727.55 | 83 | 73 | 1.56 | 1455.19 | 1448 | 16 | 1.15E-02 | 50.7 | 2.03E+00 | T |
| 0 | 768.08 | 72 | 28 | 1.79 | 1536.25 | 1530 | 11 | 1.00E-02 | 36.7 | 1.94E+00 | T |
| 1 | 964.62 | 48 | 39 | 1.87 | 1929.29 | 1922 | 23 | 6.69E-03 | 56.2 | 1.57E+00 | T |
| 0 | 1240.87 | 88 | 35 | 9.36 | 2481.72 | 2470 | 27 | 1.22E-02 | 45.4 | 1.23E+00 | |

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388006.CNF;1
* Acquisition date   : 4-FEB-2010 10:41:41.   Detector SN#      :
* Detector ID        : GAM04                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.14           Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 15-JAN-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G245388006             Analyst initials: MXR1
* Batch Number       : 944964                 Sample Quantity : 1.18670E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41.36MS Isotope      :
* MSD ID              :                          MSD Isotope   :
* LCS ID              : 1032-A                   LCS Isotope     :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 1.974E+01 | 2.096E+00 | 5.222E-01 | 3.711E-02 | 37.795 |
| CD-109 | 4.410E+00 | 1.149E+00 | 1.205E+00 | 1.448E-01 | 3.661 |
| SN-126 | 4.303E-01 | 1.121E-01 | 1.185E-01 | 1.421E-02 | 3.633 |
| TL-208 | 6.154E-01 | 9.310E-02 | 5.568E-02 | 3.504E-03 | 11.052 |
| BI-211 | 4.570E+00 | 5.825E-01 | 2.896E-01 | 1.957E-02 | 15.780 |
| PB-212 | 1.691E+00 | 1.802E-01 | 8.964E-02 | 7.199E-03 | 18.865 |
| PO-212 | 1.691E+00 | 1.802E-01 | 8.964E-02 | 7.199E-03 | 18.865 |
| BI-214 | 1.430E+00 | 1.979E-01 | 1.057E-01 | 7.766E-03 | 13.529 |
| PB-214 | 1.590E+00 | 2.190E-01 | 1.010E-01 | 8.612E-03 | 15.747 |
| PO-214 | 1.590E+00 | 2.190E-01 | 1.010E-01 | 8.612E-03 | 15.747 |
| PO-216 | 1.691E+00 | 1.802E-01 | 8.964E-02 | 7.199E-03 | 18.865 |
| PO-218 | 1.590E+00 | 2.190E-01 | 1.010E-01 | 8.612E-03 | 15.747 |
| RA-224 | 4.649E+00 | 1.398E+00 | 1.020E+00 | 6.803E-02 | 4.556 |
| RA-226 | 1.430E+00 | 1.979E-01 | 1.057E-01 | 7.766E-03 | 13.529 |
| AC-228 | 1.734E+00 | 3.702E-01 | 1.761E-01 | 1.920E-02 | 9.848 |
| RA-228 | 1.734E+00 | 3.702E-01 | 1.761E-01 | 1.920E-02 | 9.848 |
| TH-228 | 1.725E+00 | 1.838E-01 | 9.144E-02 | 7.343E-03 | 18.865 |
| TH-230 | 1.430E+00 | 1.979E-01 | 1.057E-01 | 7.766E-03 | 13.529 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-232 | 1.734E+00 | 3.702E-01 | 1.761E-01 | 1.920E-02 | 9.848 |
| U-234 | 1.430E+00 | 1.979E-01 | 1.057E-01 | 7.766E-03 | 13.529 |
| NP-237 | 1.264E+00 | 4.199E-01 | 3.544E-01 | 8.443E-02 | 3.566 |
| AM-243 | 4.331E-01 | 1.062E-01 | 9.970E-02 | 1.142E-02 | 4.344 |
| ANH-511 | 1.506E-01 | 6.623E-02 | 4.424E-02 | 2.474E-03 | 3.405 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | -1.236E-01 | | 3.539E-01 | 5.606E-01 | 3.713E-02 | -0.220 |
| NA-22 | -3.098E-02 | | 4.263E-02 | 6.493E-02 | 4.245E-03 | -0.477 |
| NA-24 | 4.782E+01 | | 7.601E+01 | Half-Life too short | | |
| AL-26 | -2.362E-03 | | 2.350E-02 | 3.700E-02 | 2.194E-03 | -0.064 |
| TI-44 | 4.465E-01 | + | 8.113E-02 | 8.591E-02 | 9.879E-03 | 5.197 |
| SC-46 | 2.248E-03 | | 4.298E-02 | 6.873E-02 | 5.559E-03 | 0.033 |
| V-48 | 1.635E-02 | | 7.558E-02 | 1.269E-01 | 9.835E-03 | 0.129 |
| CR-51 | 1.374E-01 | | 4.096E-01 | 6.994E-01 | 4.925E-02 | 0.197 |
| MN-52 | 4.609E-02 | | 3.901E-01 | 6.595E-01 | 4.500E-02 | 0.070 |
| MN-54 | 1.340E-02 | | 4.021E-02 | 6.847E-02 | 4.955E-03 | 0.196 |
| CO-56 | -5.449E-03 | | 4.264E-02 | 6.959E-02 | 5.163E-03 | -0.078 |
| CO-57 | -2.574E-03 | | 2.443E-02 | 3.995E-02 | 2.773E-03 | -0.064 |
| CO-58 | -4.259E-03 | | 3.878E-02 | 6.357E-02 | 4.389E-03 | -0.067 |
| FE-59 | -1.056E-01 | | 9.892E-02 | 1.377E-01 | 1.052E-02 | -0.767 |
| CO-60 | -1.052E-02 | | 3.938E-02 | 6.328E-02 | 4.336E-03 | -0.166 |
| ZN-65 | 4.873E-03 | | 1.081E-01 | 1.518E-01 | 1.004E-02 | 0.032 |
| GE-68 | 1.109E+00 | | 1.217E+00 | 2.182E+00 | 1.524E-01 | 0.508 |
| AS-73 | -6.332E-01 | | 1.591E+00 | 2.651E+00 | 3.468E-01 | -0.239 |
| AS-74 | -5.304E-02 | | 1.136E-01 | 1.742E-01 | 9.195E-03 | -0.305 |
| SE-75 | -8.109E-03 | | 4.663E-02 | 7.250E-02 | 4.877E-03 | -0.112 |
| BR-77 | -1.640E-05 | | 2.106E-05 | Half-Life too short | | |
| SR-82 | -1.566E-01 | | 4.147E-01 | 6.639E-01 | 4.237E-02 | -0.236 |
| RB-83 | -4.606E-02 | | 7.201E-02 | 1.098E-01 | 6.116E-03 | -0.419 |
| RB-84 | -3.242E-03 | | 7.701E-02 | 1.238E-01 | 9.856E-03 | -0.026 |
| KR-85 | 7.787E+00 | | 8.230E+00 | 1.282E+01 | 7.160E-01 | 0.608 |
| SR-85 | 4.201E-02 | | 4.440E-02 | 6.915E-02 | 3.862E-03 | 0.608 |
| RB-86 | 4.975E-01 | | 9.270E-01 | 1.598E+00 | 1.117E-01 | 0.311 |
| Y-88 | -6.218E-03 | | 3.649E-02 | 5.687E-02 | 3.318E-03 | -0.109 |
| ZR-88 | -1.798E-02 | | 3.171E-02 | 5.021E-02 | 2.826E-03 | -0.358 |
| Y-91 | 3.666E+00 | | 1.930E+01 | 3.168E+01 | 1.942E+00 | 0.116 |
| NB-94 | -4.777E-03 | | 3.514E-02 | 5.826E-02 | 3.139E-03 | -0.082 |
| NB-95 | 7.082E-03 | | 5.235E-02 | 7.700E-02 | 4.799E-03 | 0.092 |
| NB-95M | 3.962E-02 | | 1.526E-01 | 2.188E-01 | 1.796E-02 | 0.181 |
| ZR-95 | 1.009E-01 | | 7.580E-02 | 1.402E-01 | 1.021E-02 | 0.720 |
| NB-97 | -6.916E+00 | | 5.361E+00 | Half-Life too short | | |
| ZR-97 | 3.045E+02 | | 1.099E+02 | Half-Life too short | | |
| MO-99 | 8.735E+00 | | 3.715E+01 | 6.339E+01 | 8.755E+00 | 0.138 |
| TC-99M | -1.073E+16 | | 1.133E+16 | Half-Life too short | | |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| RH-101 | -2.531E-03 | | 3.335E-02 | 5.219E-02 | 3.399E-03 | -0.048 |
| RH-102 | -7.880E-03 | | 3.076E-02 | 4.916E-02 | 2.779E-03 | -0.160 |
| RU-103 | -1.587E-03 | | 4.290E-02 | 6.952E-02 | 8.734E-03 | -0.023 |
| RH-106 | -7.880E-02 | | 3.473E-01 | 5.433E-01 | 6.207E-02 | -0.145 |
| RU-106 | -7.880E-02 | | 3.472E-01 | 5.433E-01 | 2.791E-02 | -0.145 |
| AG-108M | -1.322E-02 | | 3.162E-02 | 5.011E-02 | 3.096E-03 | -0.264 |
| AG-110M | -2.024E-02 | | 3.375E-02 | 5.381E-02 | 2.875E-03 | -0.376 |
| IN-111 | -1.671E-01 | | 3.849E+00 | 5.383E+00 | 3.592E-01 | -0.031 |
| IN-113M | -2.360E-02 | | 4.475E-02 | 7.104E-02 | 4.281E-03 | -0.332 |
| SN-113 | -2.360E-02 | | 4.475E-02 | 7.104E-02 | 4.281E-03 | -0.332 |
| IN-114M | 5.351E-02 | | 2.075E-01 | 3.022E-01 | 1.956E-02 | 0.177 |
| CD-115 | 2.009E-05 | | 2.365E-05 | Half-Life | too short | |
| SN-117M | 5.100E-02 | | 6.703E-02 | 1.128E-01 | 7.214E-03 | 0.452 |
| SB-122 | -6.699E-01 | | 7.713E+00 | 1.233E+01 | 6.691E-01 | -0.054 |
| I-123 | 1.869E+03 | | 1.239E+03 | Half-Life | too short | |
| TE-123M | 2.092E-02 | | 2.773E-02 | 4.664E-02 | 3.015E-03 | 0.449 |
| I-124 | -7.877E-01 | | 1.735E+00 | 2.282E+00 | 1.197E-01 | -0.345 |
| SB-124 | -5.301E-02 | | 7.962E-02 | 1.098E-01 | 7.458E-03 | -0.483 |
| SB-125 | 9.548E-03 | | 9.782E-02 | 1.598E-01 | 9.457E-03 | 0.060 |
| TE-125M | 1.168E-01 | | 1.010E+01 | 1.636E+01 | 1.626E+00 | 0.007 |
| I-126 | -2.449E-04 | | 2.190E-01 | 3.684E-01 | 1.817E-02 | -0.001 |
| SB-126 | -3.578E-02 | | 2.122E-01 | 3.020E-01 | 1.697E-02 | -0.118 |
| SB-127 | 3.673E+00 | | 3.373E+00 | 6.113E+00 | 6.671E-01 | 0.601 |
| XE-127 | 6.628E-02 | | 5.234E-02 | 8.895E-02 | 5.814E-03 | 0.745 |
| I-131 | 7.291E-02 | | 1.716E-01 | 2.931E-01 | 1.966E-02 | 0.249 |
| TE-132 | 3.139E-02 | | 1.951E+00 | 3.101E+00 | 4.893E-01 | 0.010 |
| BA-133 | -1.091E-02 | | 4.562E-02 | 6.508E-02 | 7.623E-03 | -0.168 |
| I-133 | -6.714E-02 | | 1.430E-01 | Half-Life | too short | |
| CS-134 | 1.004E-01 | | 5.099E-02 | 9.708E-02 | 6.543E-03 | 1.035 |
| CS-135 | 1.647E-01 | | 1.693E-01 | 2.699E-01 | 2.250E-02 | 0.610 |
| I-135 | 2.367E+14 | | 5.388E+14 | Half-Life | too short | |
| CS-136 | -6.747E-03 | | 1.356E-01 | 2.190E-01 | 1.684E-02 | -0.031 |
| BA-137M | -1.568E-02 | | 3.642E-02 | 6.156E-02 | 3.002E-03 | -0.255 |
| CS-137 | -1.658E-02 | | 3.850E-02 | 6.508E-02 | 3.193E-03 | -0.255 |
| CE-139 | 6.995E-03 | | 3.076E-02 | 5.033E-02 | 3.198E-03 | 0.139 |
| BA-140 | 1.809E-01 | | 3.327E-01 | 5.559E-01 | 1.805E-01 | 0.326 |
| LA-140 | -2.658E-01 | | 1.344E-01 | 1.412E-01 | 9.301E-03 | -1.883 |
| CE-141 | -9.022E-02 | | 6.786E-02 | 1.028E-01 | 6.901E-03 | -0.878 |
| CE-143 | 7.648E-03 | | 1.281E-03 | Half-Life | too short | |
| CE-144 | -1.275E-01 | | 2.093E-01 | 3.139E-01 | 4.576E-02 | -0.406 |
| PM-144 | 6.139E-03 | | 3.780E-02 | 6.363E-02 | 3.383E-03 | 0.096 |
| PR-144 | 4.171E-01 | | 2.568E+00 | 4.323E+00 | 2.295E-01 | 0.096 |
| PM-146 | 2.864E-02 | | 4.553E-02 | 7.788E-02 | 6.647E-03 | 0.368 |
| ND-147 | -2.974E-01 | | 7.517E-01 | 1.170E+00 | 1.569E-01 | -0.254 |
| PM-149 | 4.573E-05 | | 2.057E-04 | Half-Life | too short | |
| EU-152 | 2.546E-02 | | 9.806E-02 | 1.548E-01 | 1.071E-02 | 0.164 |
| GD-153 | -4.769E-02 | | 8.572E-02 | 1.229E-01 | 1.206E-02 | -0.388 |
| EU-154 | -3.396E-02 | | 1.134E-01 | 1.827E-01 | 1.792E-02 | -0.186 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| EU-155 | 1.374E-01 | | 1.084E-01 | 1.883E-01 | 1.641E-02 | 0.730 |
| TB-160 | 5.521E-02 | | 1.425E-01 | 2.444E-01 | 1.938E-02 | 0.226 |
| HO-166M | -2.725E-02 | | 6.520E-02 | 1.054E-01 | 5.802E-03 | -0.258 |
| TM-171 | -2.970E+00 | | 3.468E+01 | 5.762E+01 | 6.736E+00 | -0.052 |
| LU-176 | 1.122E-02 | | 2.444E-02 | 4.209E-02 | 2.748E-03 | 0.267 |
| LU-177 | 4.550E+00 | + | 2.593E+00 | 3.332E+00 | 2.187E-01 | 1.365 |
| LU-177M | -2.366E-01 | | 2.013E-01 | 3.045E-01 | 1.723E-02 | -0.777 |
| HF-181 | 1.052E-02 | | 4.592E-02 | 7.623E-02 | 4.304E-03 | 0.138 |
| W-181 | -6.264E-01 | | 4.796E-01 | 7.447E-01 | 8.777E-02 | -0.841 |
| TA-182 | -4.429E-02 | | 1.984E-01 | 3.258E-01 | 2.028E-02 | -0.136 |
| RE-183 | -4.759E-02 | | 1.125E-01 | 1.782E-01 | 1.136E-02 | -0.267 |
| RE-184 | 3.947E-02 | | 2.165E-01 | 3.710E-01 | 2.478E-02 | 0.106 |
| OS-185 | -1.201E-02 | | 4.680E-02 | 7.731E-02 | 3.854E-03 | -0.155 |
| RE-188 | 1.211E-01 | | 1.804E-01 | 3.019E-01 | 1.939E-02 | 0.401 |
| W-188 | -1.022E+01 | | 8.575E+00 | 1.143E+01 | 7.557E-01 | -0.894 |
| IR-192 | 8.024E-03 | | 3.420E-02 | 5.812E-02 | 3.773E-03 | 0.138 |
| AU-195 | 1.006E-01 | | 2.269E-01 | 3.838E-01 | 3.670E-02 | 0.262 |
| TL-200 | -4.958E-03 | | 4.860E-03 | Half-Life | too short | |
| TL-201 | -2.743E+00 | | 2.131E+01 | 3.423E+01 | 2.176E+00 | -0.080 |
| TL-202 | -3.703E-02 | | 9.130E-02 | 1.449E-01 | 8.219E-03 | -0.256 |
| HG-203 | 1.968E-02 | | 4.336E-02 | 7.486E-02 | 5.212E-03 | 0.263 |
| BI-207 | -3.356E-03 | | 5.115E-02 | 8.235E-02 | 5.857E-03 | -0.041 |
| TL-207 | 1.069E-01 | | 7.309E-01 | 1.090E+00 | 1.824E-01 | 0.098 |
| PO-209 | -7.051E+00 | | 7.737E+00 | 1.124E+01 | 9.223E-01 | -0.627 |
| BI-210 | 3.501E+00 | | 9.162E+00 | 1.558E+01 | 1.358E+00 | 0.225 |
| PB-210 | 3.501E+00 | | 9.162E+00 | 1.558E+01 | 1.358E+00 | 0.225 |
| PO-210 | 3.501E+00 | | 9.161E+00 | 1.558E+01 | 1.210E+00 | 0.225 |
| PB-211 | -1.263E+00 | | 1.233E+00 | 1.413E+00 | 8.807E-01 | -0.894 |
| BI-212 | 1.096E+00 | + | 5.621E-01 | 6.572E-01 | 5.023E-02 | 1.667 |
| PO-215 | 1.069E-01 | | 7.309E-01 | 1.090E+00 | 1.824E-01 | 0.098 |
| RN-219 | -2.097E-02 | | 4.134E-01 | 6.795E-01 | 9.200E-02 | -0.031 |
| RN-220 | 3.931E+00 | | 2.301E+01 | 3.779E+01 | 2.070E+00 | 0.104 |
| RA-223 | 1.069E-01 | | 7.309E-01 | 1.090E+00 | 1.824E-01 | 0.098 |
| AC-227 | 3.809E-02 | | 3.719E-01 | 6.338E-01 | 9.094E-02 | 0.060 |
| TH-227 | 3.809E-02 | | 3.719E-01 | 6.338E-01 | 1.092E-01 | 0.060 |
| TH-229 | -3.613E-01 | | 5.086E-01 | 7.832E-01 | 5.083E-02 | -0.461 |
| PA-231 | -4.041E-01 | | 1.512E+00 | 2.508E+00 | 3.549E-01 | -0.161 |
| TH-231 | 1.069E-01 | | 7.309E-01 | 1.090E+00 | 1.824E-01 | 0.098 |
| U-231 | -9.737E-01 | | 2.509E+00 | 3.644E+00 | 3.684E-01 | -0.267 |
| PA-233 | -3.634E-03 | | 6.184E-02 | 1.033E-01 | 7.044E-03 | -0.035 |
| PA-234 | -1.228E-02 | | 2.656E-01 | 4.326E-01 | 7.994E-02 | -0.028 |
| PA-234M | -1.677E+00 | | 4.439E+00 | 7.089E+00 | 6.463E-01 | -0.237 |
| TH-234 | 1.189E+00 | | 1.745E+00 | 2.978E+00 | 5.892E-01 | 0.399 |
| U-235 | 5.338E-02 | | 1.949E-01 | 3.182E-01 | 5.274E-02 | 0.168 |
| NP-236 | -3.085E-02 | | 7.815E-02 | 1.241E-01 | 7.924E-03 | -0.249 |
| U-238 | 1.189E+00 | | 1.745E+00 | 2.978E+00 | 5.892E-01 | 0.399 |
| NP-239 | 3.612E-02 | | 1.819E-01 | 3.024E-01 | 2.225E-02 | 0.119 |
| AM-241 | -2.069E-02 | | 2.236E-01 | 3.722E-01 | 4.700E-02 | -0.056 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | -5.584E-02 | | 9.775E-02 | 1.575E-01 | 1.388E-02 | -0.355 |
| AM-246 | 1.155E-02 | | 1.502E-01 | 2.456E-01 | 1.712E-02 | 0.047 |
| CM-247 | 2.361E-03 | | 3.720E-02 | 6.163E-02 | 3.478E-03 | 0.038 |
| CF-249 | 1.500E-02 | | 3.982E-02 | 6.754E-02 | 3.837E-03 | 0.222 |
| CF-251 | 6.733E-02 | | 1.252E-01 | 2.073E-01 | 1.327E-02 | 0.325 |

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]G245388006          *
* Acquisition date   : 4-FEB-2010 10:41:41 Detector SN#                   *
* Detector ID        : GAM04 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.14 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245388006 Analyst initials: MXR1                  *
* Batch Number       : 944964 Sample Quantity : 1.1867E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41 MS Isotope :                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 1.974E+01 | 2.054E+00 | 2.605E-01 | 1.048E+00 |
| CD-109 | 4.410E+00 | 1.126E+00 | 6.200E-01 | 5.744E-01 |
| SN-126 | 4.303E-01 | 1.099E-01 | 6.097E-02 | 5.605E-02 |
| TL-208 | 6.154E-01 | 9.124E-02 | 2.807E-02 | 4.655E-02 |
| BI-211 | 4.570E+00 | 5.709E-01 | 1.468E-01 | 2.913E-01 |
| PB-212 | 1.691E+00 | 1.766E-01 | 4.564E-02 | 9.009E-02 |
| PO-212 | 1.691E+00 | 1.766E-01 | 4.564E-02 | 9.009E-02 |
| BI-214 | 1.430E+00 | 1.939E-01 | 5.325E-02 | 9.895E-02 |
| PB-214 | 1.590E+00 | 2.146E-01 | 5.118E-02 | 1.095E-01 |
| PO-214 | 1.590E+00 | 2.146E-01 | 5.118E-02 | 1.095E-01 |
| PO-216 | 1.691E+00 | 1.766E-01 | 4.564E-02 | 9.009E-02 |
| PO-218 | 1.590E+00 | 2.146E-01 | 5.118E-02 | 1.095E-01 |
| RA-224 | 4.649E+00 | 1.370E+00 | 5.195E-01 | 6.992E-01 |
| RA-226 | 1.430E+00 | 1.939E-01 | 5.325E-02 | 9.895E-02 |
| AC-228 | 1.734E+00 | 3.628E-01 | 8.832E-02 | 1.851E-01 |
| RA-228 | 1.734E+00 | 3.628E-01 | 8.832E-02 | 1.851E-01 |
| TH-228 | 1.725E+00 | 1.801E-01 | 4.655E-02 | 9.190E-02 |
| TH-230 | 1.430E+00 | 1.939E-01 | 5.325E-02 | 9.895E-02 |
| TH-232 | 1.734E+00 | 3.628E-01 | 8.832E-02 | 1.851E-01 |
| U-234 | 1.430E+00 | 1.939E-01 | 5.325E-02 | 9.895E-02 |
| NP-237 | 1.264E+00 | 4.115E-01 | 1.824E-01 | 2.100E-01 |
| AM-243 | 4.331E-01 | 1.041E-01 | 5.140E-02 | 5.312E-02 |
| ANH-511 | 1.506E-01 | 6.490E-02 | 2.233E-02 | 3.311E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | -1.236E-01 | 3.468E-01 | 2.832E-01 | 1.770E-01 NOT IDENT. |
| NA-22 | -3.098E-02 | 4.177E-02 | 3.244E-02 | 2.131E-02 NOT IDENT. |
| NA-24 | 4.782E+07 | 1.490E+08 | 0.000E+00 | 7.601E+07 SHORT HLIF |
| AL-26 | -2.362E-03 | 2.303E-02 | 1.841E-02 | 1.175E-02 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| TI-44 | 4.465E-01 | 7.951E-02 | 4.427E-02 | 4.057E-02 | FAIL ABUN |
| SC-46 | 2.248E-03 | 4.212E-02 | 3.448E-02 | 2.149E-02 | FAIL ABUN |
| V-48 | 1.635E-02 | 7.407E-02 | 6.362E-02 | 3.779E-02 | NOT IDENT. |
| CR-51 | 1.374E-01 | 4.014E-01 | 3.549E-01 | 2.048E-01 | NOT IDENT. |
| MN-52 | 4.609E-02 | 3.823E-01 | 3.291E-01 | 1.951E-01 | NOT IDENT. |
| MN-54 | 1.340E-02 | 3.941E-02 | 3.438E-02 | 2.011E-02 | NOT IDENT. |
| CO-56 | -5.449E-03 | 4.179E-02 | 3.493E-02 | 2.132E-02 | NOT IDENT. |
| CO-57 | -2.574E-03 | 2.395E-02 | 2.049E-02 | 1.222E-02 | NOT IDENT. |
| CO-58 | -4.259E-03 | 3.801E-02 | 3.193E-02 | 1.939E-02 | NOT IDENT. |
| FE-59 | -1.056E-01 | 9.694E-02 | 6.892E-02 | 4.946E-02 | NOT IDENT. |
| CO-60 | -1.052E-02 | 3.859E-02 | 3.160E-02 | 1.969E-02 | NOT IDENT. |
| ZN-65 | 4.873E-03 | 1.060E-01 | 7.598E-02 | 5.406E-02 | NOT IDENT. |
| GE-68 | 1.109E+00 | 1.193E+00 | 1.092E+00 | 6.087E-01 | NOT IDENT. |
| AS-73 | -6.332E-01 | 1.559E+00 | 1.372E+00 | 7.955E-01 | NOT IDENT. |
| AS-74 | -5.304E-02 | 1.113E-01 | 8.777E-02 | 5.681E-02 | NOT IDENT. |
| SE-75 | -8.109E-03 | 4.570E-02 | 3.687E-02 | 2.331E-02 | NOT IDENT. |
| BR-77 | -1.640E+01 | 4.127E+01 | 0.000E+00 | 2.106E+01 | SHORT HLIF |
| SR-82 | -1.566E-01 | 4.064E-01 | 3.336E-01 | 2.074E-01 | NOT IDENT. |
| RB-83 | -4.606E-02 | 7.057E-02 | 5.543E-02 | 3.600E-02 | NOT IDENT. |
| RB-84 | -3.242E-03 | 7.547E-02 | 6.210E-02 | 3.850E-02 | NOT IDENT. |
| KR-85 | 7.787E+00 | 8.066E+00 | 6.471E+00 | 4.115E+00 | NOT IDENT. |
| SR-85 | 4.201E-02 | 4.351E-02 | 3.491E-02 | 2.220E-02 | NOT IDENT. |
| RB-86 | 4.975E-01 | 9.085E-01 | 7.999E-01 | 4.635E-01 | NOT IDENT. |
| Y-88 | -6.218E-03 | 3.576E-02 | 2.829E-02 | 1.824E-02 | NOT IDENT. |
| ZR-88 | -1.798E-02 | 3.108E-02 | 2.542E-02 | 1.586E-02 | NOT IDENT. |
| Y-91 | 3.666E+00 | 1.891E+01 | 1.584E+01 | 9.648E+00 | NOT IDENT. |
| NB-94 | -4.777E-03 | 3.444E-02 | 2.931E-02 | 1.757E-02 | NOT IDENT. |
| NB-95 | 7.082E-03 | 5.130E-02 | 3.870E-02 | 2.617E-02 | NOT IDENT. |
| NB-95M | 3.962E-02 | 1.495E-01 | 1.114E-01 | 7.628E-02 | NOT IDENT. |
| ZR-95 | 1.009E-01 | 7.428E-02 | 7.046E-02 | 3.790E-02 | NOT IDENT. |
| NB-97 | -6.916E+06 | 1.051E+07 | 0.000E+00 | 5.361E+06 | SHORT HLIF |
| ZR-97 | 3.045E+08 | 2.154E+08 | 0.000E+00 | 1.099E+08 | SHORT HLIF |
| MO-99 | 8.735E+00 | 3.641E+01 | 3.187E+01 | 1.857E+01 | NOT IDENT. |
| TC-99M | -1.073E+22 | 2.221E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -2.531E-03 | 3.268E-02 | 2.663E-02 | 1.667E-02 | NOT IDENT. |
| RH-102 | -7.880E-03 | 3.015E-02 | 2.484E-02 | 1.538E-02 | FAIL ABUN |
| RU-103 | -1.587E-03 | 4.204E-02 | 3.511E-02 | 2.145E-02 | FAIL ABUN |
| RH-106 | -7.880E-02 | 3.403E-01 | 2.737E-01 | 1.736E-01 | FAIL ABUN |
| RU-106 | -7.880E-02 | 3.402E-01 | 2.737E-01 | 1.736E-01 | FAIL ABUN |
| AG-108M | -1.322E-02 | 3.098E-02 | 2.534E-02 | 1.581E-02 | NOT IDENT. |
| AG-110M | -2.024E-02 | 3.308E-02 | 2.709E-02 | 1.688E-02 | NOT IDENT. |
| IN-111 | -1.671E-01 | 3.772E+00 | 2.740E+00 | 1.924E+00 | NOT IDENT. |
| IN-113M | -2.360E-02 | 4.385E-02 | 3.597E-02 | 2.237E-02 | NOT IDENT. |
| SN-113 | -2.360E-02 | 4.385E-02 | 3.597E-02 | 2.237E-02 | NOT IDENT. |
| IN-114M | 5.351E-02 | 2.033E-01 | 1.542E-01 | 1.037E-01 | NOT IDENT. |
| CD-115 | 2.009E+01 | 4.634E+01 | 0.000E+00 | 2.365E+01 | SHORT HLIF |
| SN-117M | 5.100E-02 | 6.569E-02 | 5.768E-02 | 3.352E-02 | NOT IDENT. |
| SB-122 | -6.699E-01 | 7.559E+00 | 6.219E+00 | 3.856E+00 | NOT IDENT. |
| I-123 | 1.869E+09 | 2.428E+09 | 0.000E+00 | 1.239E+09 | SHORT HLIF |
| TE-123M | 2.092E-02 | 2.717E-02 | 2.385E-02 | 1.386E-02 | NOT IDENT. |
| I-124 | -7.877E-01 | 1.700E+00 | 1.150E+00 | 8.675E-01 | NOT IDENT. |
| SB-124 | -5.301E-02 | 7.803E-02 | 5.466E-02 | 3.981E-02 | FAIL ABUN |
| SB-125 | 9.548E-03 | 9.587E-02 | 8.081E-02 | 4.891E-02 | FAIL ABUN |
| TE-125M | 1.168E-01 | 9.899E+00 | 8.399E+00 | 5.051E+00 | NOT IDENT. |
| I-126 | -2.449E-04 | 2.146E-01 | 1.854E-01 | 1.095E-01 | NOT IDENT. |
| SB-126 | -3.578E-02 | 2.079E-01 | 1.519E-01 | 1.061E-01 | FAIL ABUN |
| SB-127 | 3.673E+00 | 3.306E+00 | 3.076E+00 | 1.687E+00 | NOT IDENT. |
| XE-127 | 6.628E-02 | 5.129E-02 | 4.537E-02 | 2.617E-02 | NOT IDENT. |
| I-131 | 7.291E-02 | 1.682E-01 | 1.485E-01 | 8.581E-02 | NOT IDENT. |
| TE-132 | 3.139E-02 | 1.912E+00 | 1.580E+00 | 9.753E-01 | NOT IDENT. |
| BA-133 | -1.091E-02 | 4.470E-02 | 3.299E-02 | 2.281E-02 | NOT IDENT. |
| I-133 | -6.714E+04 | 2.802E+05 | 0.000E+00 | 1.430E+05 | SHORT HLIF |
| CS-134 | 1.004E-01 | 4.997E-02 | 4.877E-02 | 2.550E-02 | NOT IDENT. |
| CS-135 | 1.647E-01 | 1.659E-01 | 1.372E-01 | 8.466E-02 | NOT IDENT. |
| I-135 | 2.367E+20 | 1.056E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -6.747E-03 | 1.329E-01 | 1.097E-01 | 6.780E-02 | FAIL ABUN |
| BA-137M | -1.568E-02 | 3.569E-02 | 3.099E-02 | 1.821E-02 | NOT IDENT. |
| CS-137 | -1.658E-02 | 3.773E-02 | 3.276E-02 | 1.925E-02 | NOT IDENT. |
| CE-139 | 6.995E-03 | 3.015E-02 | 2.573E-02 | 1.538E-02 | NOT IDENT. |
| BA-140 | 1.809E-01 | 3.260E-01 | 2.805E-01 | 1.663E-01 | NOT IDENT. |
| LA-140 | -2.658E-01 | 1.317E-01 | 7.038E-02 | 6.722E-02 | FAIL ABUN |
| CE-141 | -9.022E-02 | 6.650E-02 | 5.262E-02 | 3.393E-02 | NOT IDENT. |
| CE-143 | 7.648E+03 | 2.510E+03 | 0.000E+00 | 1.281E+03 | SHORT HLIF |
| CE-144 | -1.275E-01 | 2.051E-01 | 1.608E-01 | 1.047E-01 | NOT IDENT. |
| PM-144 | 6.139E-03 | 3.705E-02 | 3.201E-02 | 1.890E-02 | NOT IDENT. |
| PR-144 | 4.171E-01 | 2.517E+00 | 2.175E+00 | 1.284E+00 | NOT IDENT. |
| PM-146 | 2.864E-02 | 4.462E-02 | 3.937E-02 | 2.277E-02 | NOT IDENT. |
| ND-147 | -2.974E-01 | 7.367E-01 | 5.904E-01 | 3.759E-01 | FAIL ABUN |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-149 | 4.573E+01 | 4.032E+02 | 0.000E+00 | 2.057E+02 | SHORT HLIF |
| EU-152 | 2.546E-02 | 9.610E-02 | 7.849E-02 | 4.903E-02 | FAIL ABUN |
| GD-153 | -4.769E-02 | 8.401E-02 | 6.319E-02 | 4.286E-02 | FAIL ABUN |
| EU-154 | -3.396E-02 | 1.112E-01 | 9.127E-02 | 5.672E-02 | NOT IDENT. |
| EU-155 | 1.374E-01 | 1.062E-01 | 9.673E-02 | 5.420E-02 | FAIL ABUN |
| TB-160 | 5.521E-02 | 1.396E-01 | 1.226E-01 | 7.123E-02 | FAIL ABUN |
| HO-166M | -2.725E-02 | 6.389E-02 | 5.302E-02 | 3.260E-02 | NOT IDENT. |
| TM-171 | -2.970E+00 | 3.399E+01 | 2.974E+01 | 1.734E+01 | NOT IDENT. |
| LU-176 | 1.122E-02 | 2.395E-02 | 2.137E-02 | 1.222E-02 | FAIL ABUN |
| LU-177 | 4.550E+00 | 2.542E+00 | 1.699E+00 | 1.297E+00 | FAIL ABUN |
| LU-177M | -2.366E-01 | 1.973E-01 | 1.541E-01 | 1.007E-01 | FAIL ABUN |
| HF-181 | 1.052E-02 | 4.500E-02 | 3.851E-02 | 2.296E-02 | NOT IDENT. |
| W-181 | -6.264E-01 | 4.700E-01 | 3.845E-01 | 2.398E-01 | NOT IDENT. |
| TA-182 | -4.429E-02 | 1.945E-01 | 1.629E-01 | 9.922E-02 | FAIL ABUN |
| RE-183 | -4.759E-02 | 1.103E-01 | 9.113E-02 | 5.626E-02 | FAIL ABUN |
| RE-184 | 3.947E-02 | 2.122E-01 | 1.888E-01 | 1.083E-01 | NOT IDENT. |
| OS-185 | -1.201E-02 | 4.587E-02 | 3.893E-02 | 2.340E-02 | NOT IDENT. |
| RE-188 | 1.211E-01 | 1.768E-01 | 1.544E-01 | 9.018E-02 | NOT IDENT. |
| W-188 | -1.022E+01 | 8.403E+00 | 5.809E+00 | 4.287E+00 | NOT IDENT. |
| IR-192 | 8.024E-03 | 3.351E-02 | 2.950E-02 | 1.710E-02 | FAIL ABUN |
| AU-195 | 1.006E-01 | 2.224E-01 | 1.973E-01 | 1.135E-01 | FAIL ABUN |
| TL-200 | -4.958E+03 | 9.525E+03 | 0.000E+00 | 4.860E+03 | SHORT HLIF |
| TL-201 | -2.743E+00 | 2.088E+01 | 1.750E+01 | 1.065E+01 | NOT IDENT. |
| TL-202 | -3.703E-02 | 8.947E-02 | 7.327E-02 | 4.565E-02 | NOT IDENT. |
| HG-203 | 1.968E-02 | 4.249E-02 | 3.805E-02 | 2.168E-02 | FAIL ABUN |
| BI-207 | -3.356E-03 | 5.013E-02 | 4.123E-02 | 2.558E-02 | FAIL ABUN |
| TL-207 | 1.069E-01 | 7.163E-01 | 5.529E-01 | 3.655E-01 | FAIL ABUN |
| PO-209 | -7.051E+00 | 7.583E+00 | 5.638E+00 | 3.869E+00 | NOT IDENT. |
| BI-210 | 3.501E+00 | 8.979E+00 | 8.075E+00 | 4.581E+00 | NOT IDENT. |
| PB-210 | 3.501E+00 | 8.979E+00 | 8.075E+00 | 4.581E+00 | NOT IDENT. |
| PO-210 | 3.501E+00 | 8.978E+00 | 8.075E+00 | 4.581E+00 | NOT IDENT. |
| PB-211 | -1.263E+00 | 1.209E+00 | 7.152E-01 | 6.167E-01 | NOT IDENT. |
| BI-212 | 1.096E+00 | 5.509E-01 | 3.305E-01 | 2.811E-01 | FAIL ABUN |
| PO-215 | 1.069E-01 | 7.163E-01 | 5.529E-01 | 3.655E-01 | FAIL ABUN |
| RN-219 | -2.097E-02 | 4.051E-01 | 3.440E-01 | 2.067E-01 | FAIL ABUN |
| RN-220 | 3.931E+00 | 2.255E+01 | 1.906E+01 | 1.150E+01 | NOT IDENT. |
| RA-223 | 1.069E-01 | 7.163E-01 | 5.529E-01 | 3.655E-01 | FAIL ABUN |
| AC-227 | 3.809E-02 | 3.645E-01 | 3.224E-01 | 1.860E-01 | NOT IDENT. |
| TH-227 | 3.809E-02 | 3.645E-01 | 3.224E-01 | 1.860E-01 | NOT IDENT. |
| TH-229 | -3.613E-01 | 4.984E-01 | 3.996E-01 | 2.543E-01 | FAIL ABUN |
| PA-231 | -4.041E-01 | 1.481E+00 | 1.275E+00 | 7.558E-01 | NOT IDENT. |
| TH-231 | 1.069E-01 | 7.163E-01 | 5.529E-01 | 3.655E-01 | FAIL ABUN |
| U-231 | -9.737E-01 | 2.459E+00 | 1.874E+00 | 1.254E+00 | FAIL ABUN |
| PA-233 | -3.634E-03 | 6.061E-02 | 5.243E-02 | 3.092E-02 | FAIL ABUN |
| PA-234 | -1.228E-02 | 2.603E-01 | 2.169E-01 | 1.328E-01 | FAIL ABUN |
| PA-234M | -1.677E+00 | 4.350E+00 | 3.552E+00 | 2.220E+00 | NOT IDENT. |
| TH-234 | 1.189E+00 | 1.711E+00 | 1.538E+00 | 8.727E-01 | NOT IDENT. |
| U-235 | 5.338E-02 | 1.910E-01 | 1.629E-01 | 9.744E-02 | FAIL ABUN |
| NP-236 | -3.085E-02 | 7.659E-02 | 6.346E-02 | 3.908E-02 | NOT IDENT. |
| U-238 | 1.189E+00 | 1.711E+00 | 1.538E+00 | 8.727E-01 | NOT IDENT. |
| NP-239 | 3.612E-02 | 1.783E-01 | 1.552E-01 | 9.095E-02 | FAIL ABUN |
| AM-241 | -2.069E-02 | 2.191E-01 | 1.924E-01 | 1.118E-01 | NOT IDENT. |
| CM-243 | -5.584E-02 | 9.579E-02 | 8.090E-02 | 4.887E-02 | FAIL ABUN |
| AM-246 | 1.155E-02 | 1.472E-01 | 1.229E-01 | 7.509E-02 | NOT IDENT. |
| CM-247 | 2.361E-03 | 3.645E-02 | 3.120E-02 | 1.860E-02 | NOT IDENT. |
| CF-249 | 1.500E-02 | 3.902E-02 | 3.420E-02 | 1.991E-02 | NOT IDENT. |
| CF-251 | 6.733E-02 | 1.227E-01 | 1.059E-01 | 6.258E-02 | NOT IDENT. |

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*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD      *
*               CHARLESTON ,SC 29417  *
*               GAMMA SPECTROSCOPY BACKGROUND REPORT *
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| ENERGY | MDA COUNTS |
|--------|------------|
| 46.50 | 168.9870 |
| 46.50 | 168.9870 |
| 46.50 | 168.9870 |
| 48.70 | 201.0134 |
| 49.72 | 185.2375 |
| 51.35 | 186.0976 |
| 52.39 | 198.7921 |
| 52.97 | 206.0671 |
| 53.15 | 200.9501 |
| 53.44 | 197.6274 |
| 54.07 | 198.8401 |
| 56.28 | 184.2307 |
| 56.28 | 184.2323 |
| 57.37 | 0.0000 |
| 57.53 | 192.7606 |
| 57.53 | 192.7617 |
| 57.60 | 210.4032 |
| 57.98 | 220.3048 |
| 57.98 | 220.3048 |
| 59.32 | 213.1096 |
| 59.32 | 213.1096 |
| 59.40 | 213.1531 |
| 59.54 | 201.7271 |
| 59.72 | 203.5903 |
| 60.01 | 215.2564 |
| 61.10 | 242.4984 |
| 61.14 | 242.5227 |
| 61.30 | 242.6206 |
| 63.00 | 217.7652 |
| 63.29 | 210.7757 |
| 63.29 | 210.7757 |
| 63.58 | 231.4820 |
| 64.28 | 224.7150 |
| 65.12 | 257.4680 |
| 65.20 | 257.5176 |
| 65.20 | 257.5176 |
| 66.05 | 266.1347 |
| 66.72 | 231.4370 |
| 66.83 | 231.4984 |
| 66.91 | 238.7504 |
| 67.20 | 224.4886 |
| 67.20 | 224.4886 |
| 67.75 | 236.5154 |
| 67.85 | 236.5713 |
| 68.90 | 255.2541 |
| 68.90 | 255.2541 |
| 69.30 | 273.1577 |
| 69.67 | 252.9913 |
| 70.82 | 259.1119 |
| 70.82 | 259.1119 |
| 70.83 | 259.1177 |
| 72.80 | 261.1877 |
| 72.87 | 261.2284 |
| 72.87 | 261.2284 |
| 74.67 | 262.2729 |
| 74.81 | 262.3543 |
| 74.81 | 262.3543 |
| 74.81 | 262.3543 |
| 74.81 | 262.3543 |
| 74.81 | 262.3543 |
| 74.81 | 262.3543 |
| 74.97 | 262.4460 |
| 75.28 | 262.6249 |
| 75.70 | 262.8664 |
| 77.11 | 263.6708 |
| 77.11 | 263.6708 |

| | |
|--------|----------|
| 77.11 | 263.6708 |
| 77.11 | 263.6708 |
| 77.11 | 263.6708 |
| 77.11 | 263.6708 |
| 77.11 | 263.6708 |
| 78.38 | 264.3894 |
| 79.62 | 236.3531 |
| 79.80 | 236.4426 |
| 79.80 | 236.4426 |
| 80.11 | 211.5455 |
| 80.18 | 211.5762 |
| 80.30 | 211.6290 |
| 80.30 | 211.6290 |
| 80.57 | 236.8252 |
| 81.00 | 237.0379 |
| 81.07 | 237.0716 |
| 81.07 | 237.0716 |
| 81.07 | 237.0716 |
| 81.07 | 237.0716 |
| 82.60 | 237.8252 |
| 83.37 | 224.1870 |
| 83.78 | 224.3762 |
| 83.78 | 224.3762 |
| 83.78 | 224.3762 |
| 83.78 | 224.3762 |
| 84.21 | 224.5728 |
| 84.90 | 224.8877 |
| 85.43 | 225.1270 |
| 86.29 | 225.5164 |
| 86.50 | 225.6104 |
| 86.54 | 225.6287 |
| 86.59 | 225.6506 |
| 86.72 | 225.7092 |
| 86.79 | 225.7397 |
| 86.94 | 225.8081 |
| 87.30 | 225.9705 |
| 87.30 | 225.9705 |
| 87.30 | 225.9705 |
| 87.30 | 225.9705 |
| 87.30 | 225.9705 |
| 87.30 | 225.9705 |
| 87.57 | 226.0913 |
| 87.88 | 0.0000 |
| 88.03 | 226.2964 |
| 88.36 | 226.4441 |
| 88.47 | 226.4929 |
| 89.95 | 227.1484 |
| 91.11 | 227.6587 |
| 92.29 | 228.1750 |
| 92.38 | 228.2141 |
| 92.38 | 228.2141 |
| 93.35 | 228.6353 |
| 94.00 | 228.9172 |
| 94.67 | 210.5802 |
| 94.67 | 210.5824 |
| 94.90 | 214.9727 |
| 94.90 | 214.9727 |
| 94.90 | 214.9727 |
| 94.90 | 214.9727 |
| 95.87 | 229.7205 |
| 95.87 | 229.7205 |
| 96.73 | 243.0303 |
| 97.43 | 228.9446 |
| 98.44 | 229.6577 |
| 98.44 | 229.6577 |
| 98.88 | 219.4474 |
| 99.55 | 191.7691 |
| 99.55 | 191.7691 |
| 99.86 | 199.5900 |
| 100.00 | 199.6405 |
| 100.10 | 199.6784 |
| 103.18 | 269.6462 |
| 103.76 | 248.5625 |
| 105.00 | 199.4780 |
| 105.31 | 206.4015 |
| 108.00 | 250.4023 |
| 109.28 | 230.3647 |

| | |
|--------|----------|
| 111.00 | 240.8691 |
| 111.00 | 240.8691 |
| 111.76 | 234.2849 |
| 112.95 | 229.8204 |
| 115.19 | 213.8423 |
| 116.30 | 207.2885 |
| 117.00 | 207.5245 |
| 117.00 | 207.5245 |
| 117.66 | 210.7287 |
| 121.11 | 224.8901 |
| 121.62 | 218.0698 |
| 121.78 | 209.1190 |
| 122.06 | 209.2115 |
| 122.32 | 194.2763 |
| 122.32 | 194.2763 |
| 122.32 | 194.2763 |
| 122.32 | 194.2763 |
| 123.07 | 182.4740 |
| 127.23 | 227.0456 |
| 129.76 | 227.9228 |
| 131.20 | 184.2565 |
| 133.02 | 227.5106 |
| 133.54 | 229.8272 |
| 135.34 | 200.2030 |
| 136.00 | 201.4188 |
| 136.25 | 206.6070 |
| 136.48 | 208.7221 |
| 140.51 | 224.3490 |
| 140.51 | 0.0000 |
| 142.18 | 216.6309 |
| 142.65 | 199.2256 |
| 143.76 | 192.3007 |
| 144.24 | 210.0190 |
| 144.24 | 210.0190 |
| 144.24 | 210.0190 |
| 144.24 | 210.0190 |
| 145.22 | 238.2801 |
| 145.44 | 255.9700 |
| 147.16 | 199.4492 |
| 152.43 | 216.5852 |
| 152.70 | 204.1049 |
| 153.22 | 201.1055 |
| 154.21 | 215.0056 |
| 154.21 | 215.0056 |
| 154.21 | 215.0056 |
| 154.21 | 215.0056 |
| 155.03 | 218.3932 |
| 156.02 | 267.0431 |
| 158.56 | 187.7688 |
| 159.00 | 0.0000 |
| 159.00 | 184.7109 |
| 160.31 | 222.0334 |
| 161.27 | 233.9559 |
| 162.32 | 220.4922 |
| 162.64 | 207.8572 |
| 163.35 | 197.4339 |
| 163.89 | 195.4457 |
| 165.85 | 217.2335 |
| 167.43 | 225.1384 |
| 171.28 | 204.7833 |
| 171.86 | 203.8580 |
| 172.10 | 203.9179 |
| 176.55 | 192.0855 |
| 176.60 | 192.0982 |
| 181.06 | 216.1364 |
| 184.41 | 225.4945 |
| 185.71 | 210.5656 |
| 186.00 | 210.6363 |
| 190.27 | 180.9740 |
| 192.34 | 153.0401 |
| 193.63 | 213.6025 |
| 197.04 | 179.0579 |
| 198.01 | 184.7866 |
| 198.60 | 211.4807 |
| 200.40 | 0.0000 |
| 201.83 | 183.3507 |
| 202.84 | 177.9932 |
| 205.31 | 215.8431 |

| | |
|--------|----------|
| 208.36 | 182.9845 |
| 208.81 | 191.4705 |
| 209.75 | 200.0717 |
| 209.75 | 200.0717 |
| 210.97 | 188.5488 |
| 215.65 | 181.5918 |
| 216.55 | 181.7637 |
| 218.09 | 185.4509 |
| 222.10 | 165.7842 |
| 223.80 | 200.1986 |
| 226.40 | 175.6406 |
| 227.00 | 160.9113 |
| 227.08 | 156.3590 |
| 227.20 | 156.3785 |
| 228.16 | 172.5262 |
| 228.18 | 172.5293 |
| 228.18 | 172.5293 |
| 231.56 | 0.0000 |
| 235.69 | 200.3060 |
| 236.00 | 200.3662 |
| 236.00 | 200.3662 |
| 238.63 | 172.0221 |
| 238.63 | 172.0221 |
| 238.63 | 172.0221 |
| 238.63 | 172.0221 |
| 239.00 | 0.0000 |
| 240.98 | 172.4162 |
| 241.98 | 172.5844 |
| 241.98 | 172.5844 |
| 241.98 | 172.5844 |
| 244.69 | 144.5838 |
| 245.39 | 149.9095 |
| 247.94 | 135.5975 |
| 248.90 | 135.2543 |
| 249.79 | 0.0000 |
| 252.40 | 133.3618 |
| 252.85 | 131.6631 |
| 252.85 | 131.6631 |
| 254.15 | 0.0000 |
| 256.20 | 151.4455 |
| 256.20 | 151.4455 |
| 260.50 | 152.0485 |
| 260.90 | 0.0000 |
| 262.80 | 142.6241 |
| 264.65 | 144.3414 |
| 268.24 | 132.4660 |
| 268.79 | 133.9569 |
| 269.46 | 145.4446 |
| 269.46 | 145.4446 |
| 269.46 | 145.4446 |
| 269.46 | 145.4446 |
| 271.23 | 169.9527 |
| 273.65 | 183.2000 |
| 276.40 | 143.4717 |
| 277.35 | 169.6172 |
| 277.60 | 167.8594 |
| 277.60 | 167.8594 |
| 278.00 | 156.2432 |
| 278.60 | 137.4586 |
| 279.20 | 142.9243 |
| 279.53 | 158.2512 |
| 280.46 | 173.6782 |
| 281.68 | 0.0000 |
| 283.67 | 143.4775 |
| 284.30 | 135.4317 |
| 285.00 | 139.1254 |
| 285.90 | 0.0000 |
| 286.10 | 141.9698 |
| 286.10 | 141.9698 |
| 287.40 | 121.3066 |
| 288.45 | 0.0000 |
| 290.67 | 156.8663 |
| 290.80 | 156.8821 |
| 291.72 | 142.4661 |
| 293.26 | 0.0000 |
| 293.70 | 155.6289 |
| 295.21 | 155.8246 |
| 295.21 | 155.8246 |

| | |
|--------|----------|
| 295.21 | 155.8246 |
| 295.96 | 155.9237 |
| 296.50 | 197.0420 |
| 297.23 | 0.0000 |
| 298.57 | 127.2014 |
| 299.80 | 120.0131 |
| 299.80 | 120.0131 |
| 300.09 | 112.7234 |
| 300.09 | 112.7234 |
| 300.09 | 112.7234 |
| 300.09 | 112.7234 |
| 300.12 | 112.7253 |
| 301.29 | 130.6631 |
| 302.84 | 179.7365 |
| 303.76 | 0.0000 |
| 303.91 | 165.2097 |
| 304.40 | 130.3841 |
| 304.40 | 130.3841 |
| 304.84 | 122.1649 |
| 306.84 | 117.7637 |
| 308.46 | 141.8701 |
| 311.98 | 117.3281 |
| 316.51 | 106.6280 |
| 318.01 | 132.7467 |
| 319.02 | 127.2773 |
| 319.41 | 107.8013 |
| 320.08 | 111.5771 |
| 323.87 | 117.8770 |
| 323.87 | 117.8770 |
| 323.87 | 117.8770 |
| 323.87 | 117.8770 |
| 325.23 | 116.5087 |
| 328.77 | 125.8154 |
| 333.44 | 127.7698 |
| 334.20 | 115.8121 |
| 334.20 | 115.8121 |
| 334.30 | 115.8196 |
| 338.28 | 125.4100 |
| 338.28 | 125.4100 |
| 338.28 | 125.4100 |
| 338.28 | 125.4100 |
| 338.32 | 125.4140 |
| 338.32 | 125.4140 |
| 338.32 | 125.4140 |
| 340.50 | 113.3423 |
| 340.57 | 113.3478 |
| 344.27 | 97.2432 |
| 345.85 | 98.6219 |
| 350.59 | 0.0000 |
| 351.07 | 85.6755 |
| 351.92 | 85.7291 |
| 351.92 | 85.7291 |
| 351.92 | 85.7291 |
| 355.39 | 0.0000 |
| 356.01 | 97.8313 |
| 364.48 | 92.2778 |
| 366.43 | 108.7687 |
| 367.43 | 97.2874 |
| 367.94 | 0.0000 |
| 369.80 | 88.7670 |
| 374.96 | 94.8986 |
| 383.85 | 88.6645 |
| 387.95 | 93.7983 |
| 388.63 | 88.9533 |
| 391.69 | 100.8924 |
| 391.69 | 100.8924 |
| 392.90 | 103.9151 |
| 398.62 | 113.1715 |
| 400.65 | 83.7614 |
| 401.10 | 76.8860 |
| 401.81 | 98.6191 |
| 402.60 | 97.6827 |
| 404.84 | 120.5554 |
| 410.95 | 99.2111 |
| 411.60 | 104.2165 |
| 413.65 | 136.1575 |
| 414.70 | 115.3663 |
| 415.30 | 104.4665 |

| | |
|--------|----------|
| 415.76 | 101.5113 |
| 417.63 | 0.0000 |
| 418.52 | 108.6707 |
| 423.70 | 107.0310 |
| 427.08 | 88.2135 |
| 427.89 | 87.2562 |
| 432.53 | 88.5170 |
| 433.93 | 84.5665 |
| 439.47 | 0.0000 |
| 439.56 | 89.9140 |
| 439.89 | 85.8910 |
| 443.98 | 73.9501 |
| 444.90 | 71.9653 |
| 445.03 | 71.9707 |
| 445.03 | 71.9707 |
| 445.03 | 71.9707 |
| 445.03 | 71.9707 |
| 453.90 | 80.5128 |
| 463.38 | 78.7148 |
| 468.07 | 82.2229 |
| 473.00 | 81.4302 |
| 475.06 | 88.7518 |
| 475.35 | 83.6054 |
| 476.78 | 78.5095 |
| 477.59 | 86.8147 |
| 477.96 | 85.8002 |
| 482.03 | 72.5314 |
| 484.57 | 0.0000 |
| 487.03 | 69.6223 |
| 490.36 | 0.0000 |
| 492.35 | 0.0000 |
| 497.08 | 68.9739 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 67.3970 |
| 511.00 | 67.4033 |
| 511.85 | 89.3508 |
| 511.85 | 89.3508 |
| 513.99 | 75.9529 |
| 513.99 | 75.9529 |
| 520.41 | 77.2773 |
| 520.65 | 0.0000 |
| 527.90 | 0.0000 |
| 528.96 | 0.0000 |
| 529.64 | 65.9601 |
| 529.87 | 0.0000 |
| 531.02 | 70.2660 |
| 537.32 | 57.6832 |
| 543.00 | 54.6420 |
| 546.56 | 0.0000 |
| 549.76 | 49.4590 |
| 552.65 | 68.9160 |
| 555.20 | 50.6762 |
| 563.23 | 68.2083 |
| 563.90 | 80.1448 |
| 568.70 | 67.3111 |
| 569.32 | 56.4735 |
| 569.50 | 58.6505 |
| 569.67 | 57.5692 |
| 573.80 | 66.3967 |
| 574.00 | 65.3156 |
| 574.64 | 0.0000 |
| 578.91 | 0.0000 |
| 579.30 | 0.0000 |
| 583.14 | 61.2380 |
| 585.48 | 0.0000 |
| 591.81 | 48.3224 |
| 592.07 | 61.5081 |
| 593.00 | 70.3281 |
| 595.88 | 72.6266 |
| 600.56 | 69.4830 |
| 602.52 | 0.0000 |
| 602.71 | 75.9597 |
| 602.71 | 75.9597 |
| 603.60 | 70.6914 |
| 604.41 | 60.1109 |
| 604.70 | 56.5828 |
| 609.31 | 62.0242 |

| | |
|--------|---------|
| 609.31 | 62.0242 |
| 609.31 | 62.0242 |
| 609.31 | 62.0242 |
| 610.33 | 58.5089 |
| 612.46 | 78.0914 |
| 614.37 | 71.0566 |
| 618.01 | 72.2919 |
| 621.84 | 71.3066 |
| 621.84 | 71.3066 |
| 631.29 | 62.6702 |
| 633.02 | 63.8415 |
| 633.10 | 63.8432 |
| 634.78 | 68.3774 |
| 635.90 | 59.4406 |
| 636.97 | 49.3711 |
| 645.85 | 64.8949 |
| 646.12 | 73.0167 |
| 656.30 | 51.6201 |
| 657.75 | 65.2465 |
| 657.90 | 0.0000 |
| 661.65 | 52.6517 |
| 661.65 | 52.6517 |
| 664.57 | 0.0000 |
| 666.33 | 57.3106 |
| 666.33 | 57.3106 |
| 675.00 | 63.0114 |
| 677.61 | 55.7697 |
| 685.20 | 51.3680 |
| 692.80 | 55.2188 |
| 695.00 | 64.4834 |
| 696.49 | 69.1342 |
| 696.49 | 69.1342 |
| 697.00 | 63.6178 |
| 697.49 | 76.5420 |
| 698.33 | 85.7934 |
| 698.50 | 79.3421 |
| 699.00 | 70.1311 |
| 702.63 | 72.0891 |
| 706.10 | 73.1213 |
| 706.58 | 0.0000 |
| 706.67 | 58.3258 |
| 709.31 | 64.8799 |
| 711.68 | 74.2227 |
| 713.82 | 62.2171 |
| 717.42 | 60.4519 |
| 720.50 | 58.9776 |
| 721.93 | 0.0000 |
| 722.20 | 57.4662 |
| 722.78 | 49.7135 |
| 722.78 | 49.7135 |
| 722.89 | 49.7148 |
| 722.95 | 49.7161 |
| 723.30 | 49.7240 |
| 724.18 | 49.7422 |
| 727.18 | 46.6919 |
| 733.00 | 40.5636 |
| 735.90 | 51.5464 |
| 739.58 | 46.9312 |
| 742.81 | 54.5124 |
| 744.21 | 50.7819 |
| 747.13 | 51.7841 |
| 751.79 | 60.3719 |
| 752.31 | 66.0454 |
| 753.82 | 60.4203 |
| 755.35 | 0.0000 |
| 756.15 | 41.5787 |
| 756.87 | 45.3715 |
| 763.93 | 45.8164 |
| 765.79 | 63.2422 |
| 766.42 | 55.3497 |
| 766.84 | 55.3597 |
| 776.49 | 52.3964 |
| 778.00 | 59.0998 |
| 778.57 | 61.9738 |
| 778.89 | 51.4925 |
| 783.80 | 44.9036 |
| 785.46 | 54.4923 |
| 792.07 | 72.8438 |

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| 795.84 | 42.2351 |
| 796.30 | 48.0029 |
| 798.80 | 88.4107 |
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| 805.60 | 42.3935 |
| 810.29 | 49.2257 |
| 810.76 | 44.4075 |
| 815.85 | 45.4613 |
| 817.79 | 0.0000 |
| 818.51 | 36.7930 |
| 819.60 | 41.6510 |
| 826.30 | 38.8428 |
| 828.27 | 0.0000 |
| 831.60 | 62.2719 |
| 831.96 | 60.3334 |
| 834.83 | 56.5019 |
| 836.80 | 0.0000 |
| 846.75 | 51.8587 |
| 848.13 | 53.8439 |
| 856.28 | 0.0000 |
| 856.80 | 37.6464 |
| 860.37 | 44.2507 |
| 867.32 | 32.8613 |
| 867.82 | 36.6233 |
| 871.10 | 41.4617 |
| 873.19 | 33.5891 |
| 874.81 | 39.5391 |
| 875.33 | 0.0000 |
| 876.40 | 41.5396 |
| 879.36 | 37.6233 |
| 880.27 | 35.6546 |
| 880.51 | 35.6581 |
| 881.50 | 39.6338 |
| 883.24 | 49.5728 |
| 884.67 | 40.6707 |
| 889.25 | 40.7367 |
| 896.60 | 49.8071 |
| 898.02 | 40.8629 |
| 899.00 | 38.8829 |
| 903.28 | 42.7923 |
| 911.07 | 30.0359 |
| 911.07 | 30.0359 |
| 911.07 | 30.0359 |
| 919.63 | 31.5590 |
| 920.93 | 29.1331 |
| 925.00 | 40.2402 |
| 925.24 | 41.2492 |
| 926.50 | 34.2216 |
| 935.52 | 41.3944 |
| 937.48 | 59.6064 |
| 944.10 | 43.5396 |
| 946.00 | 32.4219 |
| 949.00 | 38.5399 |
| 962.29 | 52.6329 |
| 964.01 | 43.8293 |
| 966.15 | 43.8598 |
| 968.20 | 43.8902 |
| 969.11 | 43.9028 |
| 969.11 | 43.9028 |
| 969.11 | 43.9028 |
| 977.42 | 31.7372 |
| 980.50 | 36.8938 |
| 983.50 | 27.6974 |
| 989.30 | 41.1104 |
| 996.32 | 50.4738 |
| 1001.03 | 35.0758 |
| 1001.68 | 31.9877 |
| 1004.76 | 43.3812 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 43.7944 |
| 1036.00 | 37.5521 |
| 1037.82 | 22.9614 |
| 1038.57 | 32.3623 |
| 1038.76 | 0.0000 |
| 1045.16 | 30.3367 |
| 1046.59 | 31.3960 |
| 1048.07 | 36.6458 |

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| 1050.47 | 42.9599 |
| 1050.47 | 42.9599 |
| 1062.04 | 49.4211 |
| 1063.62 | 36.8218 |
| 1076.63 | 31.6860 |
| 1077.35 | 27.4676 |
| 1078.86 | 41.2204 |
| 1085.78 | 32.8331 |
| 1099.22 | 47.8521 |
| 1112.02 | 48.0322 |
| 1112.84 | 55.1632 |
| 1115.52 | 44.5211 |
| 1120.29 | 41.7289 |
| 1120.29 | 41.7289 |
| 1120.29 | 41.7289 |
| 1120.29 | 41.7289 |
| 1120.51 | 41.7327 |
| 1121.28 | 41.7422 |
| 1124.00 | 0.0000 |
| 1129.67 | 33.3791 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 42.3040 |
| 1173.22 | 36.9352 |
| 1175.09 | 52.1719 |
| 1177.93 | 55.4774 |
| 1189.05 | 42.5553 |
| 1204.90 | 38.3582 |
| 1205.75 | 0.0000 |
| 1213.00 | 45.0339 |
| 1221.42 | 48.6243 |
| 1230.97 | 48.2916 |
| 1235.34 | 44.2031 |
| 1236.41 | 0.0000 |
| 1238.25 | 41.4734 |
| 1246.25 | 30.0838 |
| 1260.41 | 0.0000 |
| 1271.85 | 36.2657 |
| 1274.45 | 32.5690 |
| 1274.54 | 39.0828 |
| 1291.56 | 35.5183 |
| 1298.22 | 0.0000 |
| 1312.09 | 28.1897 |
| 1325.50 | 24.5146 |
| 1325.50 | 24.5146 |
| 1332.49 | 28.3368 |
| 1333.61 | 29.2896 |
| 1360.21 | 21.8760 |
| 1362.66 | 0.0000 |
| 1365.15 | 27.6170 |
| 1368.21 | 17.1548 |
| 1368.53 | 0.0000 |
| 1376.25 | 20.0532 |
| 1384.27 | 19.1366 |
| 1394.10 | 18.2230 |
| 1395.20 | 26.8630 |
| 1407.95 | 22.1343 |
| 1434.06 | 15.4941 |
| 1436.60 | 21.3170 |
| 1457.56 | 0.0000 |
| 1460.81 | 16.5670 |
| 1489.15 | 18.6382 |
| 1509.49 | 13.7972 |
| 1596.49 | 37.1777 |
| 1620.62 | 11.1106 |
| 1678.03 | 0.0000 |
| 1691.02 | 14.3520 |
| 1691.02 | 14.3520 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 11.4462 |
| 1764.49 | 11.4462 |
| 1764.49 | 11.4462 |
| 1764.49 | 11.4462 |
| 1770.23 | 1.7859 |
| 1771.40 | 38.5537 |
| 1791.20 | 0.0000 |
| 1808.65 | 6.2979 |

1836.01

11.6078

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G245388006

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 3.5620E+00 | ug/g |
| Total Uranium Counting Unc. | 5.0896E+00 | ug/g |
| Total Uranium Tpu | 2.5967E-06 | ug/g |
| Total Uranium Mda | 4.5766E+00 | ug/g |

```

*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 944964                SAMPLE ID   : G245388006
*  ANALYST       : MXR1                  DETECTOR    : GAM04
*  SAMPLE DATE   : 15-JAN-2010 12:00:00.00 COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 4-FEB-2010 10:41:41.81 SAMPLE ALQT : 118.670 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.868E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.183E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.584E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.242E+00

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VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 12:43:13.58

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388007.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:42:06.
Sample ID          : G245388007 Sample quantity : 1.21070E+02 GRAM
Detector name      : GAM14 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.33 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 944964 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 | 47.49* | 38 | 492 | 1.58 | 94.56 | 87 | 12 | 5.31E-03 | 120.3 | |
| 2 | 0 | 63.40* | 51 | 602 | 1.99 | 126.35 | 122 | 10 | 7.09E-03 | 93.0 | |
| 3 | 2 | 74.97 | 516 | 491 | 1.34 | 149.46 | 144 | 16 | 7.17E-02 | 8.8 | 1.15E+00 |
| 4 | 2 | 77.21 | 756 | 428 | 1.23 | 153.94 | 144 | 16 | 1.05E-01 | 6.2 | |
| 5 | 1 | 84.39* | 104 | 530 | 1.55 | 168.28 | 161 | 31 | 1.44E-02 | 39.8 | 2.30E+00 |
| 6 | 1 | 87.26 | 258 | 491 | 1.55 | 174.03 | 161 | 31 | 3.59E-02 | 16.5 | |
| 7 | 1 | 89.89 | 175 | 395 | 1.39 | 179.28 | 161 | 31 | 2.43E-02 | 22.2 | |
| 8 | 1 | 92.82* | 240 | 399 | 1.56 | 185.14 | 161 | 31 | 3.34E-02 | 18.4 | |
| 9 | 0 | 129.05 | 83 | 305 | 0.80 | 257.53 | 254 | 8 | 1.15E-02 | 38.3 | |
| 10 | 0 | 186.02* | 212 | 311 | 1.62 | 371.35 | 365 | 10 | 2.94E-02 | 17.7 | |
| 11 | 0 | 208.93 | 125 | 383 | 1.29 | 417.14 | 411 | 13 | 1.74E-02 | 33.5 | |
| 12 | 4 | 238.56* | 1292 | 171 | 1.35 | 476.35 | 468 | 21 | 1.79E-01 | 3.4 | 9.70E-01 |
| 13 | 4 | 241.50 | 328 | 231 | 2.22 | 482.22 | 468 | 21 | 4.55E-02 | 15.1 | |
| 14 | 0 | 269.76 | 113 | 218 | 1.60 | 538.69 | 532 | 12 | 1.57E-02 | 27.9 | |
| 15 | 0 | 278.43 | 86 | 318 | 4.65 | 556.02 | 548 | 17 | 1.20E-02 | 48.9 | |
| 16 | 0 | 295.10 | 435 | 209 | 1.38 | 589.34 | 584 | 12 | 6.05E-02 | 8.2 | |
| 17 | 0 | 338.12 | 324 | 133 | 1.82 | 675.32 | 670 | 11 | 4.51E-02 | 8.8 | |
| 18 | 0 | 351.73* | 722 | 229 | 1.63 | 702.52 | 694 | 16 | 1.00E-01 | 6.0 | |
| 19 | 0 | 462.47 | 115 | 74 | 1.60 | 923.85 | 918 | 11 | 1.59E-02 | 17.3 | |
| 20 | 0 | 510.64* | 96 | 124 | 2.13 | 1020.14 | 1014 | 14 | 1.34E-02 | 30.8 | |
| 21 | 0 | 569.76* | 121 | 133 | 2.69 | 1138.32 | 1132 | 16 | 1.68E-02 | 24.1 | |
| 22 | 0 | 583.30* | 411 | 126 | 1.58 | 1165.40 | 1156 | 18 | 5.71E-02 | 8.2 | |
| 23 | 0 | 609.50* | 429 | 123 | 1.68 | 1217.77 | 1211 | 13 | 5.96E-02 | 7.3 | |
| 24 | 0 | 662.05 | 57 | 72 | 1.16 | 1322.83 | 1317 | 9 | 7.97E-03 | 29.7 | |
| 25 | 0 | 727.36 | 93 | 57 | 1.66 | 1453.42 | 1447 | 12 | 1.29E-02 | 19.3 | |
| 26 | 0 | 795.62 | 57 | 51 | 3.43 | 1589.91 | 1583 | 13 | 7.85E-03 | 29.4 | |
| 27 | 0 | 861.52 | 95 | 83 | 2.13 | 1721.69 | 1715 | 19 | 1.32E-02 | 25.0 | |
| 28 | 0 | 911.67 | 257 | 54 | 1.62 | 1821.98 | 1813 | 18 | 3.57E-02 | 9.2 | |
| 29 | 4 | 965.10 | 54 | 49 | 2.29 | 1928.85 | 1924 | 27 | 7.51E-03 | 25.6 | 1.27E+00 |
| 30 | 4 | 969.55* | 192 | 40 | 2.12 | 1937.74 | 1924 | 27 | 2.66E-02 | 10.5 | |
| 31 | 0 | 1121.13 | 122 | 60 | 1.88 | 2240.94 | 2232 | 16 | 1.70E-02 | 16.8 | |
| 32 | 0 | 1461.44 | 947 | 8 | 1.95 | 2921.86 | 2914 | 16 | 1.32E-01 | 3.3 | |
| 33 | 0 | 1765.07* | 83 | 4 | 1.20 | 3529.61 | 3521 | 17 | 1.15E-02 | 13.1 | |

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

VMS Nuclide Identification Report V3.1 Generated 4-FEB-2010 12:43:16

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388007.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:42:06
Sample ID         : G245388007 Sample quantity : 121.07 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA14 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.33 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

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 2.273E+01 | 2.236E+00 | 5.294E-01 | 3.844E-02 | 42.936 |
| CD-109 | + | 88.03 | * | 3.147E+00 | 1.076E+00 | 1.111E+00 | 9.715E-02 | 2.833 |
| SN-126 | + | 64.28 | | 3.551E-01 | 6.623E-01 | 7.302E-01 | 1.041E-01 | 0.486 |
| | + | 86.94 | | 1.277E+00 | 6.762E-01 | 4.544E-01 | 1.879E-01 | 2.810 |
| | + | 87.57 | * | 3.071E-01 | 1.050E-01 | 1.088E-01 | 9.465E-03 | 2.823 |
| BA-137M | + | 661.65 | * | 8.027E-02 | 4.794E-02 | 6.496E-02 | 3.863E-03 | 1.236 |
| CS-137 | + | 661.65 | * | 8.485E-02 | 5.068E-02 | 6.867E-02 | 4.100E-03 | 1.236 |
| HG-203 | | 70.83 | | -4.113E-01 | 1.179E+00 | 1.650E+00 | 2.107E-01 | -0.249 |
| | | 72.87 | | 2.651E+00 | 7.816E-01 | 1.156E+00 | 1.435E-01 | 2.294 |
| | | 82.60 | | 5.595E-01 | 1.815E+00 | 1.892E+00 | 2.550E-01 | 0.296 |
| | + | 279.20 | * | 9.334E-02 | 9.145E-02 | 6.834E-02 | 4.228E-03 | 1.366 |
| TL-208 | + | 277.35 | | 7.882E-01 | 7.752E-01 | 5.740E-01 | 6.070E-02 | 1.373 |
| | + | 510.84 | | 4.477E-01 | 2.798E-01 | 2.129E-01 | 2.171E-02 | 2.103 |
| | + | 583.14 | * | 5.490E-01 | 9.729E-02 | 5.452E-02 | 3.728E-03 | 10.071 |
| | + | 860.37 | | 1.216E+00 | 6.180E-01 | 4.741E-01 | 4.460E-02 | 2.565 |
| BI-210 | + | 46.50 | * | 1.471E+00 | 3.542E+00 | 3.817E+00 | 2.830E-01 | 0.385 |
| PB-210 | + | 46.50 | * | 1.471E+00 | 3.542E+00 | 3.817E+00 | 2.830E-01 | 0.385 |
| PO-210 | + | 46.50 | * | 1.471E+00 | 3.541E+00 | 3.817E+00 | 2.395E-01 | 0.385 |
| BI-211 | | 72.87 | | 1.240E+01 | 3.441E+00 | 5.407E+00 | 3.985E-01 | 2.294 |
| | + | 351.07 | * | 4.138E+00 | 5.602E-01 | 3.255E-01 | 2.062E-02 | 12.711 |
| PB-212 | + | 74.81 | | 2.454E+00 | 5.220E-01 | 5.255E-01 | 6.302E-02 | 4.670 |
| | + | 77.11 | | 2.061E+00 | 3.011E-01 | 3.016E-01 | 2.322E-02 | 6.835 |
| | + | 87.30 | | 1.420E+00 | 5.059E-01 | 5.041E-01 | 6.673E-02 | 2.818 |
| | + | 238.63 | * | 1.612E+00 | 1.602E-01 | 8.822E-02 | 6.426E-03 | 18.278 |
| | | 300.09 | | 1.235E+00 | 8.635E-01 | 1.361E+00 | 1.126E-01 | 0.907 |
| PO-212 | + | 74.81 | | 2.454E+00 | 5.220E-01 | 5.255E-01 | 6.302E-02 | 4.670 |
| | + | 77.11 | | 2.061E+00 | 3.011E-01 | 3.016E-01 | 2.322E-02 | 6.835 |
| | + | 87.30 | | 1.420E+00 | 5.059E-01 | 5.041E-01 | 6.673E-02 | 2.818 |
| | | 115.19 | | 1.853E+00 | 3.598E+00 | 5.914E+00 | 4.304E-01 | 0.313 |
| | + | 238.63 | * | 1.612E+00 | 1.602E-01 | 8.822E-02 | 6.426E-03 | 18.278 |
| | | 300.09 | | 1.235E+00 | 8.635E-01 | 1.361E+00 | 1.126E-01 | 0.907 |
| BI-214 | + | 609.31 | * | 1.083E+00 | 1.798E-01 | 1.121E-01 | 8.871E-03 | 9.662 |
| | + | 1120.29 | | 1.650E+00 | 5.747E-01 | 4.234E-01 | 3.923E-02 | 3.897 |
| | + | 1764.49 | | 1.538E+00 | 4.141E-01 | 2.950E-01 | 1.770E-02 | 5.213 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PB-214 | + | 74.81 | | 4.228E+00 | 8.665E-01 | 9.055E-01 | 9.555E-02 | 4.670 |
| | + | 77.11 | | 3.534E+00 | 5.822E-01 | 5.171E-01 | 5.601E-02 | 6.835 |
| | + | 87.30 | | 2.433E+00 | 8.527E-01 | 8.636E-01 | 1.002E-01 | 2.818 |
| | + | 241.98 | | 2.459E+00 | 7.702E-01 | 5.308E-01 | 4.264E-02 | 4.632 |
| | + | 295.21 | | 1.471E+00 | 2.721E-01 | 2.288E-01 | 1.956E-02 | 6.430 |
| PO-214 | + | 351.92 | * | 1.439E+00 | 2.088E-01 | 1.135E-01 | 9.310E-03 | 12.685 |
| | + | 74.81 | | 4.228E+00 | 8.665E-01 | 9.055E-01 | 9.555E-02 | 4.670 |
| | + | 77.11 | | 3.534E+00 | 5.822E-01 | 5.171E-01 | 5.601E-02 | 6.835 |
| | + | 87.30 | | 2.433E+00 | 8.527E-01 | 8.636E-01 | 1.002E-01 | 2.818 |
| | + | 241.98 | | 2.459E+00 | 7.702E-01 | 5.308E-01 | 4.264E-02 | 4.632 |
| PO-216 | + | 295.21 | | 1.471E+00 | 2.721E-01 | 2.288E-01 | 1.956E-02 | 6.430 |
| | + | 351.92 | * | 1.439E+00 | 2.088E-01 | 1.135E-01 | 9.310E-03 | 12.685 |
| | + | 74.81 | | 2.454E+00 | 5.220E-01 | 5.255E-01 | 6.302E-02 | 4.670 |
| | + | 77.11 | | 2.061E+00 | 3.011E-01 | 3.016E-01 | 2.322E-02 | 6.835 |
| | + | 87.30 | | 1.420E+00 | 5.059E-01 | 5.041E-01 | 6.673E-02 | 2.818 |
| PO-218 | + | 238.63 | * | 1.612E+00 | 1.602E-01 | 8.822E-02 | 6.426E-03 | 18.278 |
| | + | 300.09 | | 1.235E+00 | 8.635E-01 | 1.361E+00 | 1.126E-01 | 0.907 |
| | + | 74.81 | | 4.228E+00 | 8.665E-01 | 9.055E-01 | 9.555E-02 | 4.670 |
| | + | 77.11 | | 3.534E+00 | 5.822E-01 | 5.171E-01 | 5.601E-02 | 6.835 |
| | + | 87.30 | | 2.433E+00 | 8.527E-01 | 8.636E-01 | 1.002E-01 | 2.818 |
| RA-224 | + | 241.98 | | 2.459E+00 | 7.702E-01 | 5.308E-01 | 4.264E-02 | 4.632 |
| | + | 295.21 | | 1.471E+00 | 2.721E-01 | 2.288E-01 | 1.956E-02 | 6.430 |
| | + | 351.92 | * | 1.439E+00 | 2.088E-01 | 1.135E-01 | 9.310E-03 | 12.685 |
| | + | 240.98 | * | 4.662E+00 | 1.437E+00 | 1.003E+00 | 5.768E-02 | 4.646 |
| | + | 609.31 | * | 1.083E+00 | 1.798E-01 | 1.121E-01 | 8.871E-03 | 9.662 |
| AC-228 | + | 1120.29 | | 1.650E+00 | 5.747E-01 | 4.234E-01 | 3.923E-02 | 3.897 |
| | + | 1764.49 | | 1.538E+00 | 4.141E-01 | 2.950E-01 | 1.770E-02 | 5.213 |
| | + | 338.32 | | 2.048E+00 | 9.096E-01 | 3.435E-01 | 1.400E-01 | 5.961 |
| | + | 911.07 | * | 1.561E+00 | 3.396E-01 | 2.006E-01 | 2.356E-02 | 7.783 |
| | + | 969.11 | | 2.055E+00 | 6.464E-01 | 3.564E-01 | 8.322E-02 | 5.767 |
| TH-228 | + | 338.32 | | 2.048E+00 | 9.096E-01 | 3.435E-01 | 1.400E-01 | 5.961 |
| | + | 911.07 | * | 1.561E+00 | 3.396E-01 | 2.006E-01 | 2.356E-02 | 7.783 |
| | + | 969.11 | | 2.055E+00 | 6.464E-01 | 3.564E-01 | 8.322E-02 | 5.767 |
| | + | 74.81 | | 2.503E+00 | 4.791E-01 | 5.360E-01 | 4.073E-02 | 4.670 |
| | + | 77.11 | | 2.103E+00 | 3.071E-01 | 3.077E-01 | 2.369E-02 | 6.835 |
| TH-230 | + | 87.30 | | 1.449E+00 | 4.953E-01 | 5.142E-01 | 4.459E-02 | 2.818 |
| | + | 238.63 | * | 1.645E+00 | 1.634E-01 | 8.999E-02 | 6.555E-03 | 18.278 |
| | + | 300.09 | | 1.259E+00 | 1.147E+00 | 1.388E+00 | 8.182E-01 | 0.907 |
| | + | 609.31 | * | 1.083E+00 | 1.798E-01 | 1.121E-01 | 8.870E-03 | 9.662 |
| | + | 1120.29 | | 1.650E+00 | 5.747E-01 | 4.234E-01 | 3.923E-02 | 3.897 |
| TH-232 | + | 1764.49 | | 1.538E+00 | 4.141E-01 | 2.950E-01 | 1.770E-02 | 5.213 |
| | + | 338.32 | | 2.048E+00 | 3.802E-01 | 3.435E-01 | 1.974E-02 | 5.961 |
| | + | 911.07 | * | 1.561E+00 | 3.396E-01 | 2.006E-01 | 2.356E-02 | 7.783 |
| | + | 969.11 | | 2.055E+00 | 6.464E-01 | 3.564E-01 | 8.322E-02 | 5.767 |
| | + | 63.29 | * | 8.971E-01 | 1.675E+00 | 1.865E+00 | 3.206E-01 | 0.481 |
| U-234 | + | 92.38 | | 1.882E+00 | 7.704E-01 | 7.220E-01 | 1.297E-01 | 2.607 |
| | + | 609.31 | * | 1.083E+00 | 1.798E-01 | 1.121E-01 | 8.870E-03 | 9.662 |
| | + | 1120.29 | | 1.650E+00 | 5.747E-01 | 4.234E-01 | 3.923E-02 | 3.897 |
| | + | 1764.49 | | 1.538E+00 | 4.141E-01 | 2.950E-01 | 1.770E-02 | 5.213 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| NP-237 | + | 86.50 | * | 9.018E-01 | 3.601E-01 | 3.220E-01 | 7.198E-02 | 2.800 |
| | | 95.87 | | -7.725E-01 | 1.116E+00 | 1.500E+00 | 3.670E-01 | -0.515 |
| U-238 | + | 63.29 | * | 8.971E-01 | 1.675E+00 | 1.865E+00 | 3.206E-01 | 0.481 |
| | + | 92.38 | | 1.882E+00 | 7.099E-01 | 7.220E-01 | 6.040E-02 | 2.607 |
| AM-243 | + | 74.67 | * | 3.979E-01 | 7.602E-02 | 8.539E-02 | 6.408E-03 | 4.659 |
| | + | 86.72 | | 3.382E+01 | 1.156E+01 | 1.206E+01 | 1.038E+00 | 2.805 |
| | | 117.66 | | -4.503E+00 | 3.893E+00 | 5.948E+00 | 4.288E-01 | -0.757 |
| | | 142.18 | | 1.627E+01 | 1.838E+01 | 3.034E+01 | 1.908E+00 | 0.536 |
| ANH-511 | + | 511.00 | * | 9.670E-02 | 5.990E-02 | 4.600E-02 | 2.703E-03 | 2.102 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| BE-7 | | 477.59 | * | 1.043E-01 | 3.408E-01 | 5.703E-01 | 3.844E-02 | 0.183 |
| NA-22 | | 1274.54 | * | -3.303E-02 | 4.479E-02 | 6.778E-02 | 4.428E-03 | -0.487 |
| NA-24 | | 1368.53 | * | 7.372E+01 | 4.479E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | -8.032E-01 | 1.754E+00 | 2.626E+00 | 1.658E-01 | -0.306 |
| | | 1808.65 | * | -1.211E-02 | 2.831E-02 | 4.107E-02 | 2.380E-03 | -0.295 |
| TI-44 | | 67.85 | | -3.040E-02 | 4.824E-02 | 6.671E-02 | 4.695E-03 | -0.456 |
| | + | 78.38 | * | 3.805E-01 | 5.558E-02 | 8.126E-02 | 6.345E-03 | 4.682 |
| SC-46 | | 889.25 | * | -8.599E-03 | 3.877E-02 | 6.350E-02 | 5.868E-03 | -0.135 |
| | + | 1120.51 | | 2.939E-01 | 1.005E-01 | 1.439E-01 | 9.317E-03 | 2.043 |
| V-48 | | 944.10 | | 3.385E-01 | 1.024E+00 | 1.763E+00 | 1.576E-01 | 0.192 |
| | | 983.50 | * | 1.052E-02 | 8.450E-02 | 1.424E-01 | 1.209E-02 | 0.074 |
| | | 1312.09 | | 3.432E-02 | 8.260E-02 | 1.433E-01 | 9.903E-03 | 0.240 |
| CR-51 | | 320.08 | * | -4.072E-01 | 4.270E-01 | 6.717E-01 | 4.340E-02 | -0.606 |
| MN-52 | | 744.21 | | 3.177E-01 | 4.259E-01 | 7.316E-01 | 5.163E-02 | 0.434 |
| | | 848.13 | | -5.636E-01 | 1.245E+01 | 2.080E+01 | 1.787E+00 | -0.027 |
| | | 935.52 | | 7.165E-01 | 4.631E-01 | 8.655E-01 | 7.811E-02 | 0.828 |
| | | 1246.25 | | -5.643E+00 | 1.386E+01 | 2.197E+01 | 1.369E+00 | -0.257 |
| | | 1333.61 | | -2.429E+00 | 8.943E+00 | 1.417E+01 | 1.010E+00 | -0.171 |
| | | 1434.06 | * | 4.587E-01 | 4.445E-01 | 8.226E-01 | 5.765E-02 | 0.558 |
| MN-54 | | 834.83 | * | 1.548E-02 | 3.747E-02 | 6.486E-02 | 5.441E-03 | 0.239 |
| CO-56 | | 846.75 | * | -3.726E-02 | 4.155E-02 | 6.402E-02 | 5.487E-03 | -0.582 |
| | | 977.42 | | -1.042E+00 | 3.429E+00 | 4.702E+00 | 4.027E-01 | -0.222 |
| | | 1037.82 | | -2.411E-03 | 2.925E-01 | 4.857E-01 | 4.024E-02 | -0.005 |
| | | 1175.09 | | 4.718E-02 | 2.450E+00 | 4.045E+00 | 2.235E-01 | 0.012 |
| | | 1238.25 | | 3.927E-02 | 1.038E-01 | 1.759E-01 | 1.142E-02 | 0.223 |
| | | 1360.21 | | -6.007E-03 | 8.954E-01 | 1.467E+00 | 1.042E-01 | -0.004 |
| | | 1771.40 | | 9.244E-02 | 2.247E-01 | 3.544E-01 | 2.115E-02 | 0.261 |
| CO-57 | | 122.06 | * | -1.109E-03 | 2.597E-02 | 4.173E-02 | 2.969E-03 | -0.027 |
| | | 136.48 | | -7.917E-02 | 2.189E-01 | 3.462E-01 | 2.541E-02 | -0.229 |
| CO-58 | | 810.76 | * | -1.646E-02 | 3.855E-02 | 5.898E-02 | 4.745E-03 | -0.279 |
| FE-59 | | 142.65 | | 2.854E+00 | 3.029E+00 | 5.011E+00 | 3.142E-01 | 0.570 |
| | | 192.34 | | -4.586E-01 | 1.036E+00 | 1.666E+00 | 1.945E-01 | -0.275 |
| | | 1099.22 | * | -2.652E-02 | 9.341E-02 | 1.503E-01 | 1.157E-02 | -0.176 |
| | | 1291.56 | | 1.563E-01 | 1.321E-01 | 2.431E-01 | 1.980E-02 | 0.643 |
| CO-60 | | 1173.22 | | 2.105E-02 | 4.630E-02 | 7.939E-02 | 4.373E-03 | 0.265 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 1332.49 | * | | -3.194E-02 | 3.925E-02 | 5.756E-02 | 4.102E-03 | -0.555 |
| ZN-65 | 1115.52 | * | | 3.580E-02 | 9.405E-02 | 1.414E-01 | 9.292E-03 | 0.253 |
| GE-68 | 1077.35 | * | | -6.022E-01 | 1.218E+00 | 1.918E+00 | 1.379E-01 | -0.314 |
| AS-73 | 53.44 | * | | -7.724E-02 | 7.007E-01 | 1.101E+00 | 7.177E-02 | -0.070 |
| AS-74 | 595.88 | * | | -6.823E-02 | 1.121E-01 | 1.732E-01 | 1.036E-02 | -0.394 |
| | 634.78 | | | 3.142E-01 | 4.244E-01 | 7.297E-01 | 4.359E-02 | 0.431 |
| SE-75 | 66.05 | | | 2.893E+00 | 4.931E+00 | 7.205E+00 | 6.552E-01 | 0.401 |
| | 96.73 | | | -4.575E-01 | 8.922E-01 | 1.224E+00 | 1.626E-01 | -0.374 |
| | 121.11 | | | -8.402E-02 | 1.417E-01 | 2.221E-01 | 2.247E-02 | -0.378 |
| | 136.00 | | | -1.461E-02 | 4.185E-02 | 6.621E-02 | 4.373E-03 | -0.221 |
| | 198.60 | | | -2.011E-01 | 1.813E+00 | 3.038E+00 | 2.103E-01 | -0.066 |
| | 264.65 | * | | -1.976E-02 | 5.147E-02 | 7.275E-02 | 4.271E-03 | -0.272 |
| + | 279.53 | | | 2.388E-01 | 2.340E-01 | 1.945E-01 | 1.225E-02 | 1.227 |
| | 303.91 | | | -3.319E+00 | 2.246E+00 | 3.421E+00 | 3.269E-01 | -0.970 |
| | 400.65 | | | 2.181E-01 | 2.792E-01 | 4.796E-01 | 4.271E-02 | 0.455 |
| BR-77 | 87.88 | | | 2.761E-03 | 2.792E-01 | Half-Life | too short | |
| | 200.40 | | | -2.004E-04 | 2.792E-01 | Half-Life | too short | |
| + | 239.00 | | | 1.059E-03 | 2.792E-01 | Half-Life | too short | |
| | 249.79 | | | -9.314E-05 | 2.792E-01 | Half-Life | too short | |
| | 281.68 | | | 2.749E-04 | 2.792E-01 | Half-Life | too short | |
| | 297.23 | | | 1.081E-03 | 2.792E-01 | Half-Life | too short | |
| | 303.76 | | | -9.390E-04 | 2.792E-01 | Half-Life | too short | |
| | 439.47 | | | 5.023E-04 | 2.792E-01 | Half-Life | too short | |
| | 484.57 | | | -5.989E-04 | 2.792E-01 | Half-Life | too short | |
| | 520.65 | * | | 7.387E-07 | 2.792E-01 | Half-Life | too short | |
| | 574.64 | | | -5.347E-04 | 2.792E-01 | Half-Life | too short | |
| | 578.91 | | | -3.902E-04 | 2.792E-01 | Half-Life | too short | |
| | 585.48 | | | 7.240E-03 | 2.792E-01 | Half-Life | too short | |
| | 755.35 | | | 8.947E-04 | 2.792E-01 | Half-Life | too short | |
| | 817.79 | | | 1.387E-04 | 2.792E-01 | Half-Life | too short | |
| SR-82 | 698.33 | | | 1.563E+01 | 4.044E+01 | 6.730E+01 | 4.326E+00 | 0.232 |
| | 776.49 | * | | -4.397E-01 | 4.663E-01 | 6.829E-01 | 5.134E-02 | -0.644 |
| | 1395.20 | | | -4.194E+00 | 9.795E+00 | 1.479E+01 | 1.045E+00 | -0.284 |
| RB-83 | 520.41 | * | | 1.124E-02 | 6.917E-02 | 1.144E-01 | 6.745E-03 | 0.098 |
| | 529.64 | | | -2.538E-02 | 1.086E-01 | 1.741E-01 | 1.030E-02 | -0.146 |
| | 552.65 | | | -6.302E-02 | 2.044E-01 | 3.251E-01 | 1.934E-02 | -0.194 |
| RB-84 | 881.50 | * | | -4.014E-02 | 7.554E-02 | 1.201E-01 | 1.094E-02 | -0.334 |
| KR-85 | 513.99 | * | | 1.124E+01 | 8.612E+00 | 1.353E+01 | 7.958E-01 | 0.831 |
| SR-85 | 513.99 | * | | 6.062E-02 | 4.645E-02 | 7.299E-02 | 4.293E-03 | 0.831 |
| RB-86 | 1076.63 | * | | -7.633E-01 | 8.821E-01 | 1.324E+00 | 9.532E-02 | -0.577 |
| Y-88 | 898.02 | | | 1.317E-02 | 3.979E-02 | 6.857E-02 | 6.459E-03 | 0.192 |
| | 1836.01 | * | | 1.573E-02 | 3.253E-02 | 5.797E-02 | 3.292E-03 | 0.271 |
| ZR-88 | 392.90 | * | | -1.789E-02 | 3.201E-02 | 5.098E-02 | 2.776E-03 | -0.351 |
| Y-91 | 1204.90 | * | | 2.809E+00 | 1.879E+01 | 3.145E+01 | 1.829E+00 | 0.089 |
| NB-94 | 702.63 | * | | -3.446E-03 | 3.489E-02 | 5.587E-02 | 3.623E-03 | -0.062 |
| | 871.10 | | | 1.915E-02 | 3.701E-02 | 5.712E-02 | 5.113E-03 | 0.335 |
| NB-95 | 765.79 | * | | 8.798E-03 | 4.504E-02 | 7.365E-02 | 5.424E-03 | 0.119 |
| NB-95M | 235.69 | * | | 5.160E-01 | 1.720E-01 | 2.798E-01 | 2.091E-02 | 1.844 |
| ZR-95 | 724.18 | | | 2.031E-02 | 1.126E-01 | 1.599E-01 | 1.232E-02 | 0.127 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| NB-97 | 756.15 | * | | 9.127E-02 | 7.496E-02 | 1.330E-01 | 1.097E-02 | 0.686 |
| | 657.90 | * | | 6.114E+00 | 7.496E-02 | Half-Life | too short | |
| | 1024.50 | | | -2.940E+02 | 7.496E-02 | Half-Life | too short | |
| ZR-97 | 254.15 | | | 7.416E+01 | 7.496E-02 | Half-Life | too short | |
| | 355.39 | | | 4.763E+02 | 7.496E-02 | Half-Life | too short | |
| | 507.63 | * | | 4.517E+02 | 7.496E-02 | Half-Life | too short | |
| | 602.52 | | | 4.306E+01 | 7.496E-02 | Half-Life | too short | |
| | 1021.30 | | | 5.967E+02 | 7.496E-02 | Half-Life | too short | |
| | 1147.95 | | | -4.989E+02 | 7.496E-02 | Half-Life | too short | |
| | 1362.66 | | | -6.456E+02 | 7.496E-02 | Half-Life | too short | |
| MO-99 | 1750.46 | | | 4.291E+02 | 7.496E-02 | Half-Life | too short | |
| | 140.51 | | | -1.927E+01 | 9.384E+01 | 1.466E+02 | 3.968E+01 | -0.131 |
| | 181.06 | | | -2.865E+01 | 6.500E+01 | 9.300E+01 | 1.583E+01 | -0.308 |
| | 366.43 | | | -1.665E+01 | 2.673E+02 | 4.403E+02 | 2.472E+01 | -0.038 |
| | 739.58 | * | | -5.710E+00 | 3.994E+01 | 6.350E+01 | 9.096E+00 | -0.090 |
| | 778.00 | | | -1.303E+02 | 1.211E+02 | 1.742E+02 | 1.314E+01 | -0.748 |
| | 140.51 | * | | -5.178E+15 | 1.211E+02 | Half-Life | too short | |
| RH-101 | 127.23 | | | 6.783E-02 | 3.798E-02 | 5.800E-02 | 3.990E-03 | 1.170 |
| | 198.01 | * | | -4.976E-03 | 3.243E-02 | 5.425E-02 | 3.010E-03 | -0.092 |
| | 325.23 | | | -3.530E-02 | 2.359E-01 | 3.888E-01 | 2.250E-02 | -0.091 |
| RH-102 | 418.52 | | | -1.788E-01 | 2.936E-01 | 4.529E-01 | 2.521E-02 | -0.395 |
| | 475.06 | * | | 1.963E-02 | 2.898E-02 | 4.969E-02 | 2.872E-03 | 0.395 |
| | 631.29 | | | -2.349E-02 | 5.562E-02 | 8.697E-02 | 5.197E-03 | -0.270 |
| | 697.49 | | | 7.783E-02 | 7.607E-02 | 1.329E-01 | 8.529E-03 | 0.585 |
| | 766.84 | | | 6.375E-02 | 1.129E-01 | 1.898E-01 | 1.400E-02 | 0.336 |
| | 1046.59 | | | 3.329E-02 | 1.026E-01 | 1.761E-01 | 1.348E-02 | 0.189 |
| | 1112.84 | | | -2.041E-01 | 2.600E-01 | 3.273E-01 | 2.163E-02 | -0.623 |
| RU-103 | 497.08 | * | | 3.603E-02 | 4.338E-02 | 7.484E-02 | 9.477E-03 | 0.481 |
| RH-106 | 610.33 | + | | 1.273E+01 | 2.709E+00 | 3.212E+00 | 4.975E-01 | 3.963 |
| | 511.85 | + | | 4.874E-01 | 3.019E-01 | 4.285E-01 | 2.518E-02 | 1.138 |
| | 621.84 | * | | -2.619E-01 | 3.078E-01 | 4.586E-01 | 5.424E-02 | -0.571 |
| RU-106 | 1050.47 | | | -6.082E-01 | 2.076E+00 | 3.337E+00 | 2.535E-01 | -0.182 |
| | 511.85 | + | | 4.874E-01 | 3.019E-01 | 4.285E-01 | 2.518E-02 | 1.138 |
| | 621.84 | * | | -2.619E-01 | 3.066E-01 | 4.586E-01 | 2.742E-02 | -0.571 |
| AG-108M | 1050.47 | | | -6.082E-01 | 2.076E+00 | 3.337E+00 | 2.535E-01 | -0.182 |
| | 433.93 | * | | -8.347E-03 | 3.372E-02 | 5.458E-02 | 3.353E-03 | -0.153 |
| | 614.37 | | | 3.561E-03 | 4.297E-02 | 6.081E-02 | 3.928E-03 | 0.059 |
| AG-110M | 722.95 | | | -2.860E-02 | 4.738E-02 | 6.059E-02 | 4.355E-03 | -0.472 |
| | 657.75 | * | | 1.580E-02 | 3.734E-02 | 5.499E-02 | 3.474E-03 | 0.287 |
| | 677.61 | | | 8.962E-02 | 3.249E-01 | 5.373E-01 | 3.486E-02 | 0.167 |
| | 706.67 | | | -9.260E-02 | 2.170E-01 | 3.375E-01 | 2.312E-02 | -0.274 |
| | 763.93 | | | -1.289E-01 | 1.685E-01 | 2.517E-01 | 1.919E-02 | -0.512 |
| | 884.67 | | | 2.953E-02 | 4.652E-02 | 8.229E-02 | 7.758E-03 | 0.359 |
| | 937.48 | | | -1.364E-02 | 1.122E-01 | 1.852E-01 | 1.723E-02 | -0.074 |
| IN-111 | 1384.27 | | | -1.506E-01 | 1.560E-01 | 2.181E-01 | 1.608E-02 | -0.691 |
| | 171.28 | | | -9.340E-01 | 3.421E+00 | 5.397E+00 | 2.911E-01 | -0.173 |
| | 245.39 | * | | 2.640E+00 | 3.466E+00 | 5.312E+00 | 3.061E-01 | 0.497 |
| IN-113M | 391.69 | * | | -1.918E-02 | 4.475E-02 | 7.185E-02 | 4.205E-03 | -0.267 |
| SN-113 | 391.69 | * | | -1.918E-02 | 4.475E-02 | 7.185E-02 | 4.205E-03 | -0.267 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| IN-114M | 190.27 | * | | -1.108E-01 | 2.141E-01 | 3.048E-01 | 1.678E-02 | -0.363 |
| CD-115 | 260.90 | | | 1.633E-04 | 2.141E-01 | Half-Life too short | | |
| | 492.35 | | | 1.605E-05 | 2.141E-01 | Half-Life too short | | |
| | 527.90 | * | | 2.725E-06 | 2.141E-01 | Half-Life too short | | |
| SN-117M | 156.02 | | | 1.407E+00 | 3.061E+00 | 4.990E+00 | 2.872E-01 | 0.282 |
| | 158.56 | * | | 8.664E-02 | 7.412E-02 | 1.240E-01 | 7.016E-03 | 0.699 |
| SB-122 | 563.90 | * | | 4.646E+00 | 7.942E+00 | 1.189E+01 | 7.090E-01 | 0.391 |
| | 692.80 | | | -2.174E+02 | 1.472E+02 | 2.038E+02 | 1.295E+01 | -1.067 |
| I-123 | 159.00 | * | | 2.683E+03 | 1.472E+02 | Half-Life too short | | |
| | 528.96 | | | -1.124E+04 | 1.472E+02 | Half-Life too short | | |
| TE-123M | 159.00 | * | | 3.002E-02 | 3.092E-02 | 5.137E-02 | 2.938E-03 | 0.584 |
| I-124 | 602.71 | * | | -2.275E-03 | 1.814E+00 | 2.545E+00 | 1.522E-01 | -0.001 |
| | 722.78 | | | -7.046E+00 | 1.099E+01 | 1.398E+01 | 9.449E-01 | -0.504 |
| | 1325.50 | | | 1.557E+01 | 7.751E+01 | 1.303E+02 | 9.192E+00 | 0.119 |
| | 1376.25 | | | 9.462E+01 | 6.739E+01 | 1.278E+02 | 9.060E+00 | 0.740 |
| | 1509.49 | | | 1.960E+01 | 3.922E+01 | 6.800E+01 | 4.665E+00 | 0.288 |
| | 1691.02 | | | 2.285E+00 | 8.666E+00 | 1.474E+01 | 9.285E-01 | 0.155 |
| SB-124 | 602.71 | | | -6.277E-05 | 5.004E-02 | 7.020E-02 | 4.201E-03 | -0.001 |
| | 645.85 | | | -8.804E-02 | 5.156E-01 | 8.229E-01 | 5.505E-02 | -0.107 |
| | 709.31 | | | -3.943E-01 | 2.951E+00 | 4.707E+00 | 3.095E-01 | -0.084 |
| | 713.82 | | | -6.329E-01 | 1.754E+00 | 2.738E+00 | 2.932E-01 | -0.231 |
| | 722.78 | | | -2.818E-01 | 4.397E-01 | 5.590E-01 | 3.911E-02 | -0.504 |
| | + 968.20 | | | 2.237E+01 | 5.095E+00 | 8.741E+00 | 7.579E-01 | 2.559 |
| | 1045.16 | | | 2.958E-01 | 2.382E+00 | 4.007E+00 | 3.075E-01 | 0.074 |
| | 1325.50 | | | 6.649E-01 | 3.311E+00 | 5.567E+00 | 3.926E-01 | 0.119 |
| | 1368.21 | | | 8.909E-01 | 1.653E+00 | 2.914E+00 | 3.658E-01 | 0.306 |
| | 1436.60 | | | 1.108E+00 | 4.233E+00 | 7.162E+00 | 5.017E-01 | 0.155 |
| | 1691.02 | * | | 2.156E-02 | 8.175E-02 | 1.390E-01 | 9.396E-03 | 0.155 |
| SB-125 | 427.89 | * | | 1.686E-02 | 9.216E-02 | 1.534E-01 | 8.992E-03 | 0.110 |
| | + 463.38 | | | 1.039E+00 | 3.656E-01 | 5.647E-01 | 3.791E-02 | 1.839 |
| | 600.56 | | | 1.208E-01 | 1.872E-01 | 3.180E-01 | 2.184E-02 | 0.380 |
| | 635.90 | | | 2.426E-01 | 2.572E-01 | 4.499E-01 | 3.122E-02 | 0.539 |
| TE-125M | 109.28 | * | | -1.141E+01 | 1.048E+01 | 1.612E+01 | 1.516E+00 | -0.708 |
| I-126 | 388.63 | | | -4.462E-02 | 2.682E-01 | 4.384E-01 | 2.395E-02 | -0.102 |
| | 666.33 | * | | 1.414E-01 | 2.855E-01 | 4.204E-01 | 2.525E-02 | 0.336 |
| | 753.82 | | | 1.944E+00 | 1.820E+00 | 3.210E+00 | 2.309E-01 | 0.606 |
| SB-126 | 223.80 | | | -6.272E-01 | 5.291E+00 | 8.833E+00 | 5.017E-01 | -0.071 |
| | + 278.60 | | | 6.826E+00 | 6.686E+00 | 5.828E+00 | 3.398E-01 | 1.171 |
| | + 296.50 | | | 1.919E+01 | 3.340E+00 | 4.866E+00 | 2.838E-01 | 3.943 |
| | 414.70 | | | -1.204E-02 | 1.014E-01 | 1.657E-01 | 9.198E-03 | -0.073 |
| | 415.30 | | | -1.762E+00 | 8.376E+00 | 1.362E+01 | 7.561E-01 | -0.129 |
| | 555.20 | | | 4.932E+00 | 5.191E+00 | 9.052E+00 | 5.387E-01 | 0.545 |
| | 573.80 | | | -1.625E-01 | 1.972E+00 | 2.390E+00 | 1.427E-01 | -0.068 |
| | 593.00 | | | -4.190E-01 | 1.206E+00 | 1.905E+00 | 1.139E-01 | -0.220 |
| | 656.30 | | | -2.090E+00 | 5.027E+00 | 6.654E+00 | 3.961E-01 | -0.314 |
| | 666.33 | | | 5.973E-02 | 1.207E-01 | 1.776E-01 | 1.067E-02 | 0.336 |
| | 675.00 | | | -2.189E-01 | 2.806E+00 | 4.509E+00 | 2.759E-01 | -0.049 |
| | 695.00 | | | -3.683E-02 | 9.890E-02 | 1.544E-01 | 9.857E-03 | -0.239 |
| | 697.00 | | | 2.398E-01 | 3.456E-01 | 5.901E-01 | 3.783E-02 | 0.406 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|----------------|-----------|---------|
| SB-127 | | 720.50 | * | 6.080E-03 | 2.076E-01 | 2.897E-01 | 1.949E-02 | 0.021 |
| | | 856.80 | | -1.210E-01 | 7.148E-01 | 1.012E+00 | 8.830E-02 | -0.120 |
| | | 989.30 | | -9.459E-01 | 1.582E+00 | 2.473E+00 | 2.082E-01 | -0.383 |
| | | 1034.80 | | -3.147E-01 | 1.082E+01 | 1.792E+01 | 1.402E+00 | -0.018 |
| | | 1213.00 | | -1.665E+00 | 6.010E+00 | 9.658E+00 | 5.696E-01 | -0.172 |
| | | 61.10 | | 1.941E+02 | 1.349E+02 | 2.009E+02 | 2.310E+01 | 0.966 |
| | | 252.40 | | 3.024E+00 | 1.010E+01 | 1.699E+01 | 7.134E+00 | 0.178 |
| | | 290.80 | | 2.509E+01 | 5.387E+01 | 8.056E+01 | 8.877E+00 | 0.311 |
| | | 411.60 | | 2.911E+01 | 3.036E+01 | 5.223E+01 | 8.104E+00 | 0.557 |
| | | 444.90 | | -1.312E+01 | 2.256E+01 | 3.546E+01 | 4.372E+00 | -0.370 |
| | | 473.00 | | -2.542E+00 | 4.068E+00 | 6.358E+00 | 8.084E-01 | -0.400 |
| | | 543.00 | | -4.506E+00 | 3.706E+01 | 5.984E+01 | 8.573E+00 | -0.075 |
| | | 603.60 | | -1.088E+01 | 3.457E+01 | 4.691E+01 | 5.841E+00 | -0.232 |
| | | 685.20 | * | -3.294E-01 | 3.202E+00 | 5.128E+00 | 5.881E-01 | -0.064 |
| | | 698.50 | | 1.501E+01 | 3.768E+01 | 6.266E+01 | 9.993E+00 | 0.239 |
| | | 722.20 | | -3.808E+01 | 7.990E+01 | 1.039E+02 | 1.198E+01 | -0.366 |
| XE-127 | | 783.80 | | 9.569E+00 | 9.220E+00 | 1.557E+01 | 2.060E+00 | 0.615 |
| | | 57.60 | | -3.621E+00 | 5.971E+00 | 8.771E+00 | 5.776E-01 | -0.413 |
| | | 145.22 | | 2.047E-02 | 7.804E-01 | 1.253E+00 | 7.731E-02 | 0.016 |
| | | 172.10 | | -1.171E-01 | 1.391E-01 | 2.137E-01 | 1.153E-02 | -0.548 |
| | | 202.84 | * | -3.823E-04 | 5.639E-02 | 8.258E-02 | 4.604E-03 | -0.005 |
| I-131 | | 374.96 | | 1.652E-01 | 2.139E-01 | 3.693E-01 | 2.053E-02 | 0.447 |
| | | 80.18 | | -2.869E+00 | 1.088E+01 | 1.085E+01 | 8.759E-01 | -0.264 |
| | | 284.30 | | -9.109E-01 | 2.417E+00 | 3.398E+00 | 2.220E-01 | -0.268 |
| | | 364.48 | * | 7.849E-02 | 1.626E-01 | 2.770E-01 | 1.765E-02 | 0.283 |
| TE-132 | | 636.97 | | 5.214E-01 | 2.254E+00 | 3.728E+00 | 2.498E-01 | 0.140 |
| | | 722.89 | | -7.456E+00 | 1.209E+01 | 1.543E+01 | 1.062E+00 | -0.483 |
| | | 49.72 | | -1.802E+01 | 4.377E+01 | 6.126E+01 | 6.632E+00 | -0.294 |
| | | 111.76 | | -5.864E+00 | 8.597E+01 | 1.383E+02 | 1.578E+01 | -0.042 |
| BA-133 | | 116.30 | | 9.866E+00 | 7.791E+01 | 1.262E+02 | 1.429E+01 | 0.078 |
| | | 228.16 | * | -4.249E-01 | 1.965E+00 | 3.264E+00 | 5.028E-01 | -0.130 |
| | | 53.15 | | -1.032E+00 | 2.902E+00 | 4.514E+00 | 2.941E-01 | -0.229 |
| | | 79.62 | | 2.696E+00 | 2.112E+00 | 2.313E+00 | 3.432E-01 | 1.166 |
| I-133 | | 81.00 | | -1.257E-01 | 1.530E-01 | 1.441E-01 | 2.244E-02 | -0.873 |
| | | 276.40 | | 3.376E-01 | 4.944E-01 | 6.608E-01 | 8.575E-02 | 0.511 |
| | | 302.84 | | 7.738E-03 | 1.490E-01 | 2.421E-01 | 2.826E-02 | 0.032 |
| | | 356.01 | * | 1.821E-02 | 4.664E-02 | 6.916E-02 | 7.950E-03 | 0.263 |
| | | 383.85 | | 1.577E-01 | 3.136E-01 | 5.318E-01 | 5.698E-02 | 0.296 |
| | + | 510.53 | | 4.679E+01 | 3.136E-01 | Half-Life | too short | |
| | | 529.87 | * | -4.463E-02 | 3.136E-01 | Half-Life | too short | |
| | | 706.58 | | -4.068E+00 | 3.136E-01 | Half-Life | too short | |
| | | 856.28 | | -1.764E+01 | 3.136E-01 | Half-Life | too short | |
| | | 875.33 | | -2.850E+00 | 3.136E-01 | Half-Life | too short | |
| CS-134 | | 1236.41 | | -1.492E+01 | 3.136E-01 | Half-Life | too short | |
| | | 1298.22 | | -6.972E+00 | 3.136E-01 | Half-Life | too short | |
| | | 475.35 | | 2.472E+00 | 1.890E+00 | 3.365E+00 | 1.945E-01 | 0.735 |
| | | 563.23 | | 1.288E-01 | 4.194E-01 | 6.098E-01 | 3.707E-02 | 0.211 |
| | + | 569.32 | | 8.820E-01 | 4.278E-01 | 5.268E-01 | 3.232E-02 | 1.674 |
| | | 604.70 | | -2.519E-02 | 4.278E-02 | 5.622E-02 | 3.381E-03 | -0.448 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|------------------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| CS-135 I-135 | + | 795.84 | * | 1.111E-01 | 6.603E-02 | 8.920E-02 | 7.020E-03 | 1.246 |
| | | 801.93 | | -2.180E-01 | 4.919E-01 | 6.476E-01 | 5.145E-02 | -0.337 |
| | | 1038.57 | | 5.397E-01 | 3.410E+00 | 5.763E+00 | 4.477E-01 | 0.094 |
| | | 1167.94 | | -1.762E+00 | 2.342E+00 | 3.563E+00 | 1.999E-01 | -0.495 |
| | | 1365.15 | | -4.103E-01 | 1.073E+00 | 1.652E+00 | 1.251E-01 | -0.248 |
| | | 268.24 | * | 2.736E-01 | 1.862E-01 | 2.929E-01 | 2.247E-02 | 0.934 |
| | | 288.45 | | -3.988E+14 | 1.862E-01 | Half-Life | too short | |
| | | 417.63 | | -2.525E+15 | 1.862E-01 | Half-Life | too short | |
| | | 546.56 | | 8.763E+14 | 1.862E-01 | Half-Life | too short | |
| | | 836.80 | | -3.805E+14 | 1.862E-01 | Half-Life | too short | |
| | | 1038.76 | | 6.623E+14 | 1.862E-01 | Half-Life | too short | |
| | | 1124.00 | | 1.430E+16 | 1.862E-01 | Half-Life | too short | |
| | | 1131.51 | | -3.914E+13 | 1.862E-01 | Half-Life | too short | |
| | | 1260.41 | * | -2.433E+14 | 1.862E-01 | Half-Life | too short | |
| | | 1457.56 | | 3.505E+16 | 1.862E-01 | Half-Life | too short | |
| CS-136 | | 1678.03 | | 2.306E+15 | 1.862E-01 | Half-Life | too short | |
| | | 1706.46 | | 4.573E+14 | 1.862E-01 | Half-Life | too short | |
| | | 1791.20 | | -1.586E+15 | 1.862E-01 | Half-Life | too short | |
| | | 66.91 | | -4.556E-01 | 1.041E+00 | 1.452E+00 | 2.118E-01 | -0.314 |
| | + | 86.29 | | 5.168E+00 | 1.834E+00 | 2.602E+00 | 3.336E-01 | 1.986 |
| | | 153.22 | | 4.651E-01 | 8.786E-01 | 1.437E+00 | 1.046E-01 | 0.324 |
| | | 163.89 | | -1.962E-01 | 1.419E+00 | 2.255E+00 | 1.574E-01 | -0.087 |
| | | 176.55 | | 1.232E-01 | 5.069E-01 | 8.171E-01 | 5.060E-02 | 0.151 |
| | | 273.65 | | -3.580E-02 | 9.325E-01 | 9.025E-01 | 5.997E-02 | -0.040 |
| | | 340.57 | | 6.185E-01 | 2.031E-01 | 3.431E-01 | 2.098E-02 | 1.803 |
| | | 818.51 | | 2.259E-02 | 9.067E-02 | 1.555E-01 | 1.268E-02 | 0.145 |
| | | 1048.07 | * | 8.907E-02 | 1.225E-01 | 2.185E-01 | 1.759E-02 | 0.408 |
| | | 1235.34 | | -5.246E-01 | 8.563E-01 | 1.342E+00 | 1.367E-01 | -0.391 |
| | | 165.85 | * | 1.718E-04 | 3.147E-02 | 5.030E-02 | 2.701E-03 | 0.003 |
| | | 162.64 | | -5.800E-01 | 1.020E+00 | 1.589E+00 | 9.940E-02 | -0.365 |
| CE-139 BA-140 | | 304.84 | | -2.161E+00 | 1.775E+00 | 2.601E+00 | 7.098E-01 | -0.831 |
| | | 423.70 | | -7.408E-01 | 2.425E+00 | 3.892E+00 | 1.235E+00 | -0.190 |
| | | 537.32 | * | 2.583E-01 | 3.552E-01 | 5.936E-01 | 1.932E-01 | 0.435 |
| | | 328.77 | | 2.717E-01 | 3.931E-01 | 6.739E-01 | 4.364E-02 | 0.403 |
| | | 432.53 | | 4.417E-01 | 2.770E+00 | 4.601E+00 | 2.876E-01 | 0.096 |
| | | 487.03 | | -1.427E-02 | 1.726E-01 | 2.810E-01 | 1.848E-02 | -0.051 |
| | | 751.79 | | -1.885E+00 | 2.250E+00 | 3.325E+00 | 2.743E-01 | -0.567 |
| | | 815.85 | | -1.022E-01 | 4.081E-01 | 6.701E-01 | 6.131E-02 | -0.153 |
| | | 867.82 | | 1.119E+00 | 2.146E+00 | 3.292E+00 | 3.076E-01 | 0.340 |
| | | 919.63 | | -1.302E+00 | 4.285E+00 | 5.918E+00 | 6.574E-01 | -0.220 |
| | | 925.24 | | 4.885E-01 | 1.406E+00 | 2.423E+00 | 2.336E-01 | 0.202 |
| | | 1596.49 | * | 3.339E-02 | 1.130E-01 | 1.920E-01 | 1.273E-02 | 0.174 |
| | | 145.44 | * | -2.223E-02 | 7.223E-02 | 1.143E-01 | 7.296E-03 | -0.194 |
| | | 57.37 | | -6.351E-03 | 7.223E-02 | Half-Life | too short | |
| | | 231.56 | | 1.709E-02 | 7.223E-02 | Half-Life | too short | |
| CE-141 CE-143 | | 293.26 | * | 1.269E-02 | 7.223E-02 | Half-Life | too short | |
| | + | 350.59 | | 3.742E-01 | 7.223E-02 | Half-Life | too short | |
| | | 490.36 | | 1.852E-02 | 7.223E-02 | Half-Life | too short | |
| | | 664.57 | | 6.470E-03 | 7.223E-02 | Half-Life | too short | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 721.93 | | -2.468E-03 | 7.223E-02 | Half-Life | too short | |
| CE-144 | | 80.11 | | -6.647E-01 | 3.345E+00 | 3.355E+00 | 2.671E-01 | -0.198 |
| | | 133.54 | * | 8.446E-02 | 2.426E-01 | 3.463E-01 | 5.042E-02 | 0.244 |
| PM-144 | | 476.78 | | 1.023E-01 | 6.673E-02 | 1.202E-01 | 8.330E-03 | 0.851 |
| | | 618.01 | | 1.258E-02 | 3.132E-02 | 5.263E-02 | 3.327E-03 | 0.239 |
| | | 696.49 | * | 1.210E-02 | 3.472E-02 | 5.771E-02 | 3.699E-03 | 0.210 |
| | | 778.57 | | -1.653E+00 | 2.400E+00 | 3.602E+00 | 2.721E-01 | -0.459 |
| PR-144 | | 696.49 | * | 8.218E-01 | 2.359E+00 | 3.920E+00 | 2.510E-01 | 0.210 |
| | | 1489.15 | | -2.367E+00 | 1.167E+01 | 1.843E+01 | 1.273E+00 | -0.128 |
| PM-146 | | 453.90 | * | -2.419E-03 | 4.658E-02 | 7.624E-02 | 6.527E-03 | -0.032 |
| | | 633.02 | | -5.233E-01 | 1.420E+00 | 2.210E+00 | 8.143E-01 | -0.237 |
| | | 735.90 | | 9.992E-02 | 1.497E-01 | 2.515E-01 | 7.077E-02 | 0.397 |
| | | 747.13 | | -1.325E-02 | 8.911E-02 | 1.414E-01 | 1.861E-02 | -0.094 |
| ND-147 | + | 91.11 | | 9.511E-01 | 4.307E-01 | 7.169E-01 | 6.591E-02 | 1.327 |
| | | 319.41 | | -3.311E+00 | 4.516E+00 | 7.199E+00 | 4.180E-01 | -0.460 |
| | | 439.89 | | 9.251E+00 | 7.856E+00 | 1.386E+01 | 7.846E-01 | 0.667 |
| | | 531.02 | * | 6.183E-02 | 7.704E-01 | 1.265E+00 | 1.717E-01 | 0.049 |
| PM-149 | | 285.90 | * | -1.772E-04 | 7.704E-01 | Half-Life | too short | |
| EU-152 | | 121.78 | | 4.298E-04 | 7.386E-02 | 1.189E-01 | 1.029E-02 | 0.004 |
| | | 244.69 | | 4.271E-01 | 3.424E-01 | 5.384E-01 | 3.102E-02 | 0.793 |
| | | 344.27 | * | 5.378E-02 | 1.313E-01 | 1.565E-01 | 1.013E-02 | 0.344 |
| | | 443.98 | | -7.394E-01 | 9.455E-01 | 1.468E+00 | 8.325E-02 | -0.504 |
| | | 778.89 | | -7.069E-02 | 2.644E-01 | 4.140E-01 | 3.127E-02 | -0.171 |
| | | 867.32 | | 3.985E-01 | 1.013E+00 | 1.531E+00 | 1.361E-01 | 0.260 |
| | + | 964.01 | | 6.683E-01 | 3.476E-01 | 6.099E-01 | 5.318E-02 | 1.096 |
| | | 1085.78 | | -9.773E-02 | 4.031E-01 | 6.527E-01 | 4.605E-02 | -0.150 |
| | | 1112.02 | | -1.304E-01 | 3.389E-01 | 4.768E-01 | 3.157E-02 | -0.273 |
| | | 1407.95 | | 8.399E-02 | 1.901E-01 | 3.283E-01 | 2.314E-02 | 0.256 |
| GD-153 | | 69.67 | | -9.748E-01 | 1.893E+00 | 2.439E+00 | 1.744E-01 | -0.400 |
| | + | 83.37 | | 2.248E+01 | 1.799E+01 | 2.408E+01 | 1.991E+00 | 0.933 |
| | | 97.43 | * | 1.007E-01 | 8.605E-02 | 1.288E-01 | 1.033E-02 | 0.782 |
| | | 103.18 | | -5.554E-02 | 1.101E-01 | 1.743E-01 | 1.345E-02 | -0.319 |
| EU-154 | | 123.07 | | 2.904E-03 | 5.343E-02 | 8.318E-02 | 8.510E-03 | 0.035 |
| | | 247.94 | | -1.294E-01 | 3.924E-01 | 5.578E-01 | 5.312E-02 | -0.232 |
| | | 591.81 | | 1.941E-01 | 6.299E-01 | 9.927E-01 | 9.810E-02 | 0.195 |
| | | 723.30 | | -3.933E-02 | 1.914E-01 | 2.589E-01 | 2.043E-02 | -0.152 |
| | | 756.87 | | 5.503E-01 | 7.655E-01 | 1.308E+00 | 1.442E-01 | 0.421 |
| | | 873.19 | | -2.090E-01 | 2.938E-01 | 4.449E-01 | 5.563E-02 | -0.470 |
| | | 996.32 | | -2.514E-01 | 3.668E-01 | 5.660E-01 | 9.978E-02 | -0.444 |
| | | 1004.76 | | 2.347E-02 | 2.111E-01 | 3.550E-01 | 4.029E-02 | 0.066 |
| | | 1274.45 | * | -9.437E-02 | 1.248E-01 | 1.880E-01 | 1.843E-02 | -0.502 |
| EU-155 | + | 48.70 | | 1.303E+00 | 3.137E+00 | 2.865E+00 | 1.836E-01 | 0.455 |
| | | 60.01 | | -2.001E-01 | 4.934E+00 | 6.976E+00 | 4.637E-01 | -0.029 |
| | + | 86.54 | | 3.706E-01 | 1.268E-01 | 1.841E-01 | 1.598E-02 | 2.013 |
| | | 105.31 | * | 1.112E-01 | 1.115E-01 | 1.863E-01 | 1.442E-02 | 0.597 |
| TB-160 | + | 86.79 | | 1.035E+00 | 3.538E-01 | 5.102E-01 | 4.397E-02 | 2.028 |
| | | 197.04 | | -2.105E-01 | 5.830E-01 | 9.675E-01 | 5.362E-02 | -0.218 |
| | | 215.65 | | -3.196E-01 | 8.396E-01 | 1.258E+00 | 7.096E-02 | -0.254 |
| | | 298.57 | | 1.718E-01 | 1.335E-01 | 2.091E-01 | 1.220E-02 | 0.821 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| HO-166M | | 879.36 | * | 6.230E-02 | 1.324E-01 | 2.313E-01 | 2.101E-02 | 0.269 |
| | | 962.29 | | 3.494E-01 | 6.395E-01 | 9.764E-01 | 8.532E-02 | 0.358 |
| | + | 966.15 | | 4.803E-01 | 2.498E-01 | 5.161E-01 | 4.487E-02 | 0.931 |
| | | 1177.93 | | -3.685E-01 | 3.991E-01 | 6.079E-01 | 3.376E-02 | -0.606 |
| | | 1271.85 | | -4.313E-01 | 7.747E-01 | 1.200E+00 | 7.792E-02 | -0.359 |
| | | 80.57 | | -2.758E-01 | 4.206E-01 | 4.053E-01 | 3.243E-02 | -0.680 |
| | | 184.41 | | 1.152E-01 | 4.201E-02 | 6.955E-02 | 3.804E-03 | 1.656 |
| | | 280.46 | | 8.525E-02 | 8.914E-02 | 1.380E-01 | 8.046E-03 | 0.618 |
| | | 410.95 | | 1.904E-01 | 2.527E-01 | 4.341E-01 | 2.402E-02 | 0.439 |
| | | 711.68 | * | 1.165E-02 | 5.976E-02 | 9.809E-02 | 6.482E-03 | 0.119 |
| TM-171 | | 752.31 | | -1.084E-01 | 2.715E-01 | 4.203E-01 | 3.014E-02 | -0.258 |
| | | 810.29 | | -3.174E-02 | 5.692E-02 | 8.587E-02 | 6.883E-03 | -0.370 |
| | | 51.35 | | -6.129E+00 | 2.611E+01 | 3.694E+01 | 2.395E+00 | -0.166 |
| | | 52.39 | | -9.120E+00 | 1.408E+01 | 1.948E+01 | 1.267E+00 | -0.468 |
| | | 59.40 | | -1.509E+01 | 2.623E+01 | 3.610E+01 | 2.392E+00 | -0.418 |
| LU-176 | + | 66.72 | * | 1.133E+01 | 2.848E+01 | 4.130E+01 | 2.880E+00 | 0.274 |
| | | 88.36 | | 7.284E-01 | 2.490E-01 | 3.738E-01 | 3.257E-02 | 1.949 |
| | | 201.83 | | -1.390E-02 | 3.090E-02 | 4.625E-02 | 2.576E-03 | -0.301 |
| LU-177 | | 306.84 | * | 2.230E-03 | 2.393E-02 | 3.999E-02 | 2.329E-03 | 0.056 |
| | | 401.10 | | 5.822E+00 | 7.008E+00 | 1.209E+01 | 6.632E-01 | 0.482 |
| | | 112.95 | | 2.819E-01 | 2.762E+00 | 4.472E+00 | 3.284E-01 | 0.063 |
| LU-177M | + | 208.36 | * | 4.566E+00 | 3.071E+00 | 3.407E+00 | 1.909E-01 | 1.340 |
| | | 52.97 | | -4.063E-01 | 1.388E+00 | 2.071E+00 | 1.348E-01 | -0.196 |
| | | 54.07 | | 1.620E-01 | 6.828E-01 | 1.125E+00 | 7.344E-02 | 0.144 |
| HF-181 | | 61.30 | | 2.511E+00 | 1.493E+00 | 2.260E+00 | 1.515E-01 | 1.111 |
| | | 121.62 | | -1.065E-01 | 3.889E-01 | 6.188E-01 | 4.401E-02 | -0.172 |
| | | 147.16 | | -6.367E-01 | 6.924E-01 | 1.065E+00 | 6.496E-02 | -0.598 |
| | | 171.86 | | -4.203E-01 | 5.230E-01 | 8.046E-01 | 4.342E-02 | -0.522 |
| | | 218.09 | | -3.661E-01 | 8.554E-01 | 1.410E+00 | 7.972E-02 | -0.260 |
| | + | 268.79 | | 2.198E+00 | 1.231E+00 | 1.520E+00 | 8.843E-02 | 1.446 |
| | | 319.02 | | -1.580E-01 | 2.640E-01 | 4.241E-01 | 2.461E-02 | -0.373 |
| | | 367.43 | | -4.395E-01 | 8.972E-01 | 1.438E+00 | 8.063E-02 | -0.306 |
| | | 413.65 | * | 8.225E-02 | 1.862E-01 | 3.147E-01 | 1.745E-02 | 0.261 |
| | | 56.28 | | 2.850E-01 | 8.297E-01 | 1.371E+00 | 8.995E-02 | 0.208 |
| | | 57.53 | | -3.174E-01 | 4.952E-01 | 7.262E-01 | 4.782E-02 | -0.437 |
| | | 65.20 | | 1.433E+00 | 1.027E+00 | 1.547E+00 | 1.066E-01 | 0.926 |
| | | 133.02 | | 1.194E-02 | 8.371E-02 | 1.183E-01 | 7.860E-03 | 0.101 |
| | | 136.25 | | -8.925E-02 | 5.095E-01 | 8.122E-01 | 5.293E-02 | -0.110 |
| | | 345.85 | | 9.931E-02 | 2.263E-01 | 3.371E-01 | 1.927E-02 | 0.295 |
| W-181 | | 482.03 | * | -3.660E-02 | 4.458E-02 | 6.846E-02 | 3.971E-03 | -0.535 |
| | | 56.28 | | 1.062E-01 | 3.085E-01 | 5.098E-01 | 3.345E-02 | 0.208 |
| | | 57.53 | | -1.183E-01 | 1.843E-01 | 2.702E-01 | 1.779E-02 | -0.438 |
| TA-182 | | 65.20 | * | 5.289E-01 | 3.793E-01 | 5.713E-01 | 3.936E-02 | 0.926 |
| | | 67.75 | | -7.814E-02 | 1.184E-01 | 1.635E-01 | 1.150E-02 | -0.478 |
| | | 100.10 | | 1.046E-01 | 1.900E-01 | 3.030E-01 | 2.384E-02 | 0.345 |
| | | 152.43 | | 1.579E-01 | 3.618E-01 | 5.897E-01 | 3.476E-02 | 0.268 |
| | | 222.10 | | -1.079E-01 | 3.560E-01 | 5.899E-01 | 3.346E-02 | -0.183 |
| | | 1001.68 | | -2.716E-01 | 2.101E+00 | 3.486E+00 | 2.881E-01 | -0.078 |
| | + | 1121.28 | | 8.031E-01 | 2.746E-01 | 3.904E-01 | 2.523E-02 | 2.057 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| RE-183 | | 1189.05 | | -5.880E-02 | 3.240E-01 | 5.262E-01 | 2.979E-02 | -0.112 |
| | | 1221.42 | * | 7.432E-02 | 1.991E-01 | 3.391E-01 | 2.029E-02 | 0.219 |
| | | 1230.97 | | 5.388E-01 | 5.415E-01 | 9.590E-01 | 5.828E-02 | 0.562 |
| | | 57.98 | | -7.303E-02 | 1.989E-01 | 2.791E-01 | 1.841E-02 | -0.262 |
| | | 59.32 | | -6.605E-02 | 1.125E-01 | 1.548E-01 | 1.025E-02 | -0.427 |
| | | 67.20 | | -1.343E-01 | 2.159E-01 | 2.988E-01 | 2.091E-02 | -0.449 |
| | | 162.32 | * | -5.084E-02 | 1.199E-01 | 1.882E-01 | 1.037E-02 | -0.270 |
| | + | 208.81 | | 2.615E+00 | 1.759E+00 | 1.943E+00 | 1.089E-01 | 1.346 |
| | | 291.72 | | 9.524E-01 | 1.085E+00 | 1.664E+00 | 9.710E-02 | 0.572 |
| | | 57.98 | | -2.617E-01 | 7.128E-01 | 1.000E+00 | 6.595E-02 | -0.262 |
| RE-184 | | 59.32 | | -2.365E-01 | 4.029E-01 | 5.542E-01 | 3.671E-02 | -0.427 |
| | | 67.20 | | -4.809E-01 | 7.734E-01 | 1.070E+00 | 7.491E-02 | -0.449 |
| | | 161.27 | | -2.155E-01 | 3.818E-01 | 5.955E-01 | 3.305E-02 | -0.362 |
| | | 216.55 | | -1.726E-01 | 2.730E-01 | 4.337E-01 | 2.448E-02 | -0.398 |
| | | 252.85 | * | 1.025E-01 | 2.306E-01 | 3.934E-01 | 2.276E-02 | 0.260 |
| | | 318.01 | | -2.143E-01 | 4.461E-01 | 7.213E-01 | 4.187E-02 | -0.297 |
| | | 792.07 | | -2.384E-01 | 1.174E+00 | 1.579E+00 | 1.223E-01 | -0.151 |
| | | 903.28 | | -6.775E-01 | 1.187E+00 | 1.579E+00 | 1.474E-01 | -0.429 |
| | | 920.93 | | 1.033E-01 | 4.754E-01 | 7.753E-01 | 7.110E-02 | 0.133 |
| | | 59.72 | | -9.411E-02 | 3.013E-01 | 4.203E-01 | 2.789E-02 | -0.224 |
| OS-185 | | 61.14 | | 2.480E-01 | 1.656E-01 | 2.491E-01 | 1.668E-02 | 0.996 |
| | | 69.30 | | -1.959E-01 | 3.853E-01 | 4.461E-01 | 3.179E-02 | -0.439 |
| | | 592.07 | | 1.136E+00 | 2.586E+00 | 4.247E+00 | 2.539E-01 | 0.267 |
| | | 646.12 | * | -2.644E-02 | 4.433E-02 | 6.804E-02 | 4.058E-03 | -0.389 |
| | | 717.42 | | 7.029E-02 | 9.171E-01 | 1.490E+00 | 9.960E-02 | 0.047 |
| | | 874.81 | | -2.375E-01 | 5.564E-01 | 8.920E-01 | 8.037E-02 | -0.266 |
| | | 880.27 | | -2.254E-01 | 7.697E-01 | 1.253E+00 | 1.139E-01 | -0.180 |
| | | 155.03 | * | -1.273E-01 | 1.935E-01 | 3.012E-01 | 1.746E-02 | -0.423 |
| | | 477.96 | | -4.579E-01 | 3.290E+00 | 5.342E+00 | 3.092E-01 | -0.086 |
| | | 633.10 | | -1.071E+00 | 2.982E+00 | 4.689E+00 | 2.801E-01 | -0.228 |
| W-188 | + | 63.58 | | 3.784E+01 | 7.041E+01 | 8.377E+01 | 5.703E+00 | 0.452 |
| | | 227.08 | | 3.512E+00 | 1.361E+01 | 2.306E+01 | 1.313E+00 | 0.152 |
| IR-192 | + | 290.67 | * | 3.874E+00 | 8.201E+00 | 1.228E+01 | 7.166E-01 | 0.315 |
| | | 295.96 | | 1.174E+00 | 2.047E-01 | 3.054E-01 | 1.809E-02 | 3.844 |
| AU-195 | | 308.46 | | -1.966E-02 | 9.774E-02 | 1.608E-01 | 9.465E-03 | -0.122 |
| | | 316.51 | * | 8.460E-03 | 3.499E-02 | 5.889E-02 | 3.438E-03 | 0.144 |
| | | 468.07 | | 1.024E-01 | 7.108E-02 | 1.155E-01 | 7.679E-03 | 0.887 |
| | | 604.41 | | -2.728E-01 | 5.922E-01 | 7.901E-01 | 9.042E-02 | -0.345 |
| | | 612.46 | | 2.632E+00 | 1.051E+00 | 1.746E+00 | 1.347E-01 | 1.507 |
| | | 65.12 | | 2.520E-01 | 1.743E-01 | 2.630E-01 | 1.811E-02 | 0.958 |
| | | 66.83 | | 3.417E-02 | 9.536E-02 | 1.381E-01 | 9.635E-03 | 0.247 |
| | + | 75.70 | | 1.311E+00 | 2.505E-01 | 4.764E-01 | 3.613E-02 | 2.753 |
| | | 98.88 | * | 2.714E-01 | 2.582E-01 | 3.837E-01 | 3.045E-02 | 0.707 |
| | + | 129.76 | | 4.503E+00 | 3.459E+00 | 5.200E+00 | 3.523E-01 | 0.866 |
| TL-200 | | 367.94 | * | -4.637E-03 | 3.459E+00 | Half-Life | too short | |
| | | 579.30 | | -3.202E-02 | 3.459E+00 | Half-Life | too short | |
| | | 828.27 | | -3.698E-02 | 3.459E+00 | Half-Life | too short | |
| TL-201 | | 1205.75 | | 1.884E-02 | 3.459E+00 | Half-Life | too short | |
| | | 68.90 | | -1.877E+00 | 2.044E+01 | 2.076E+01 | 1.474E+00 | -0.090 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TL-202 | | 70.82 | | -2.975E+00 | 8.468E+00 | 1.186E+01 | 8.571E-01 | -0.251 |
| | | 80.30 | | -8.800E+00 | 2.344E+01 | 2.316E+01 | 1.848E+00 | -0.380 |
| | | 135.34 | | 1.013E+00 | 7.841E+01 | 1.260E+02 | 8.256E+00 | 0.008 |
| | | 167.43 | * | 1.313E+01 | 2.147E+01 | 3.520E+01 | 1.891E+00 | 0.373 |
| | | 68.90 | | -7.392E-02 | 8.050E-01 | 8.176E-01 | 5.806E-02 | -0.090 |
| | | 70.82 | | -1.168E-01 | 3.326E-01 | 4.658E-01 | 3.366E-02 | -0.251 |
| BI-207 | | 80.30 | | -3.457E-01 | 9.207E-01 | 9.098E-01 | 7.259E-02 | -0.380 |
| | | 439.56 | * | 7.818E-02 | 9.210E-02 | 1.594E-01 | 9.015E-03 | 0.490 |
| | | 72.80 | | 6.696E-01 | 1.985E-01 | 3.112E-01 | 2.292E-02 | 2.152 |
| | + | 74.97 | | 7.143E-01 | 1.365E-01 | 2.346E-01 | 1.766E-02 | 3.045 |
| | + | 84.90 | | 2.868E-01 | 2.295E-01 | 3.302E-01 | 2.781E-02 | 0.869 |
| | + | 569.67 | | 1.369E-01 | 6.637E-02 | 8.244E-02 | 4.919E-03 | 1.660 |
| TL-207 | | 1063.62 | * | 8.529E-03 | 5.026E-02 | 8.481E-02 | 6.277E-03 | 0.101 |
| | | 1770.23 | | 2.853E-01 | 4.492E-01 | 7.459E-01 | 4.455E-02 | 0.382 |
| | | 81.07 | | -2.821E-01 | 3.352E-01 | 3.172E-01 | 2.553E-02 | -0.889 |
| | + | 83.78 | | 1.890E-01 | 1.513E-01 | 2.040E-01 | 1.695E-02 | 0.927 |
| | | 94.90 | | 4.614E-01 | 2.733E-01 | 4.124E-01 | 3.374E-02 | 1.119 |
| | | 122.32 | | 5.024E-01 | 1.746E+00 | 2.844E+00 | 2.232E-01 | 0.177 |
| PO-209 | | 144.24 | | 3.465E-02 | 7.122E-01 | 1.139E+00 | 8.619E-02 | 0.030 |
| | | 154.21 | | -2.886E-01 | 4.228E-01 | 6.572E-01 | 4.623E-02 | -0.439 |
| | + | 269.46 | | 5.040E-01 | 2.825E-01 | 3.466E-01 | 2.108E-02 | 1.454 |
| | | 323.87 | * | -1.336E-01 | 7.040E-01 | 1.157E+00 | 1.911E-01 | -0.115 |
| | + | 338.28 | | 8.552E+00 | 1.757E+00 | 2.567E+00 | 2.696E-01 | 3.331 |
| | | 445.03 | | -1.360E+00 | 2.196E+00 | 3.444E+00 | 3.512E-01 | -0.395 |
| PB-211 | | 260.50 | | 8.775E-01 | 9.618E+00 | 1.614E+01 | 9.365E-01 | 0.054 |
| | | 262.80 | | -1.660E+01 | 2.977E+01 | 4.370E+01 | 2.538E+00 | -0.380 |
| | | 896.60 | * | -6.750E-01 | 6.689E+00 | 1.108E+01 | 1.037E+00 | -0.061 |
| | | 404.84 | * | -1.168E+00 | 1.233E+00 | 1.529E+00 | 9.527E-01 | -0.764 |
| | | 427.08 | | -7.220E-01 | 2.143E+00 | 3.373E+00 | 2.084E+00 | -0.214 |
| | | 831.96 | | -3.802E-01 | 1.234E+00 | 1.979E+00 | 1.239E+00 | -0.192 |
| BI-212 | + | 727.18 | * | 1.078E+00 | 4.252E-01 | 6.499E-01 | 5.528E-02 | 1.658 |
| | | 785.46 | | 1.845E+00 | 1.865E+00 | 3.157E+00 | 2.415E-01 | 0.584 |
| | | 1620.62 | | 9.017E-01 | 1.450E+00 | 2.559E+00 | 1.676E-01 | 0.352 |
| | | 81.07 | | -2.821E-01 | 3.352E-01 | 3.172E-01 | 2.553E-02 | -0.889 |
| | + | 83.78 | | 1.890E-01 | 1.513E-01 | 2.040E-01 | 1.695E-02 | 0.927 |
| | | 94.90 | | 4.614E-01 | 2.733E-01 | 4.124E-01 | 3.374E-02 | 1.119 |
| PO-215 | | 122.32 | | 5.024E-01 | 1.746E+00 | 2.844E+00 | 2.232E-01 | 0.177 |
| | | 144.24 | | 3.465E-02 | 7.122E-01 | 1.139E+00 | 8.619E-02 | 0.030 |
| | | 154.21 | | -2.886E-01 | 4.228E-01 | 6.572E-01 | 4.623E-02 | -0.439 |
| | + | 269.46 | | 5.040E-01 | 2.825E-01 | 3.466E-01 | 2.108E-02 | 1.454 |
| | | 323.87 | * | -1.336E-01 | 7.040E-01 | 1.157E+00 | 1.911E-01 | -0.115 |
| | + | 338.28 | | 8.552E+00 | 1.757E+00 | 2.567E+00 | 2.696E-01 | 3.331 |
| RN-219 | | 445.03 | | -1.360E+00 | 2.196E+00 | 3.444E+00 | 3.512E-01 | -0.395 |
| | + | 271.23 | | 6.466E-01 | 3.641E-01 | 4.462E-01 | 3.623E-02 | 1.449 |
| | | 401.81 | * | 3.036E-01 | 4.389E-01 | 7.488E-01 | 1.009E-01 | 0.405 |
| | | 549.76 | * | -1.565E+01 | 2.477E+01 | 3.824E+01 | 2.273E+00 | -0.409 |
| | | 81.07 | | -2.821E-01 | 3.352E-01 | 3.172E-01 | 2.553E-02 | -0.889 |
| | + | 83.78 | | 1.890E-01 | 1.513E-01 | 2.040E-01 | 1.695E-02 | 0.927 |
| RA-223 | | 94.90 | | 4.614E-01 | 2.733E-01 | 4.124E-01 | 3.374E-02 | 1.119 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| AC-227 | | 122.32 | 5.024E-01 | 1.746E+00 | 2.844E+00 | 2.232E-01 | 0.177 |
| | | 144.24 | 3.465E-02 | 7.122E-01 | 1.139E+00 | 8.619E-02 | 0.030 |
| | | 154.21 | -2.886E-01 | 4.228E-01 | 6.572E-01 | 4.623E-02 | -0.439 |
| | + | 269.46 | 5.040E-01 | 2.825E-01 | 3.466E-01 | 2.108E-02 | 1.454 |
| | | 323.87 | * -1.336E-01 | 7.040E-01 | 1.157E+00 | 1.911E-01 | -0.115 |
| | + | 338.28 | 8.552E+00 | 1.757E+00 | 2.567E+00 | 2.696E-01 | 3.331 |
| | | 445.03 | -1.360E+00 | 2.196E+00 | 3.444E+00 | 3.512E-01 | -0.395 |
| | | 79.80 | 1.953E+00 | 2.636E+00 | 2.801E+00 | 5.949E-01 | 0.697 |
| | | 236.00 | 2.039E+00 | 3.848E-01 | 5.895E-01 | 6.139E-02 | 3.458 |
| | | 256.20 | * -3.902E-02 | 3.852E-01 | 6.410E-01 | 8.946E-02 | -0.061 |
| TH-227 | | 286.10 | -7.422E-01 | 1.558E+00 | 2.280E+00 | 2.640E-01 | -0.326 |
| | | 299.80 | 2.420E+00 | 1.635E+00 | 2.532E+00 | 4.126E-01 | 0.956 |
| | | 304.40 | -3.027E+00 | 1.970E+00 | 2.900E+00 | 5.019E-01 | -1.044 |
| | | 334.20 | 1.157E+00 | 2.384E+00 | 3.556E+00 | 6.515E-01 | 0.325 |
| | | 79.80 | 1.953E+00 | 2.637E+00 | 2.801E+00 | 6.027E-01 | 0.697 |
| | + | 94.00 | 7.274E+00 | 3.105E+00 | 3.730E+00 | 8.068E-01 | 1.950 |
| | | 236.00 | 2.039E+00 | 3.698E-01 | 5.895E-01 | 5.313E-02 | 3.458 |
| | | 256.20 | * -3.902E-02 | 3.852E-01 | 6.410E-01 | 1.083E-01 | -0.061 |
| | | 286.10 | -7.422E-01 | 1.724E+00 | 2.280E+00 | 2.284E+00 | -0.326 |
| | | 299.80 | 2.420E+00 | 1.635E+00 | 2.532E+00 | 4.126E-01 | 0.956 |
| TH-229 | | 304.40 | -3.027E+00 | 1.970E+00 | 2.900E+00 | 5.019E-01 | -1.044 |
| | | 334.20 | 1.157E+00 | 2.384E+00 | 3.556E+00 | 6.515E-01 | 0.325 |
| | + | 85.43 | 2.830E-01 | 2.265E-01 | 3.447E-01 | 2.921E-02 | 0.821 |
| | + | 88.47 | 4.193E-01 | 1.433E-01 | 2.149E-01 | 1.870E-02 | 1.951 |
| | | 100.00 | 1.158E-01 | 1.920E-01 | 3.067E-01 | 2.415E-02 | 0.378 |
| | | 193.63 | * 5.974E-01 | 5.000E-01 | 8.779E-01 | 4.849E-02 | 0.680 |
| | | 210.97 | 1.524E+00 | 8.746E-01 | 1.391E+00 | 7.814E-02 | 1.096 |
| | | 283.67 | * -2.020E-04 | 1.611E+00 | 2.334E+00 | 3.219E-01 | 0.000 |
| | | 301.29 | 9.921E-01 | 6.390E-01 | 1.010E+00 | 1.057E-01 | 0.983 |
| | | 81.07 | -2.821E-01 | 3.352E-01 | 3.172E-01 | 2.553E-02 | -0.889 |
| PA-231 | + | 83.78 | 1.890E-01 | 1.513E-01 | 2.040E-01 | 1.695E-02 | 0.927 |
| | | 94.90 | 4.614E-01 | 2.733E-01 | 4.124E-01 | 3.374E-02 | 1.119 |
| | | 122.32 | 5.024E-01 | 1.746E+00 | 2.844E+00 | 2.232E-01 | 0.177 |
| | | 144.24 | 3.465E-02 | 7.122E-01 | 1.139E+00 | 8.619E-02 | 0.030 |
| | | 154.21 | -2.886E-01 | 4.228E-01 | 6.572E-01 | 4.623E-02 | -0.439 |
| | + | 269.46 | 5.040E-01 | 2.825E-01 | 3.466E-01 | 2.108E-02 | 1.454 |
| | | 323.87 | * -1.336E-01 | 7.040E-01 | 1.157E+00 | 1.911E-01 | -0.115 |
| | + | 338.28 | 8.552E+00 | 1.757E+00 | 2.567E+00 | 2.696E-01 | 3.331 |
| | | 445.03 | -1.360E+00 | 2.196E+00 | 3.444E+00 | 3.512E-01 | -0.395 |
| | + | 84.21 | 1.806E+01 | 1.445E+01 | 1.967E+01 | 1.643E+00 | 0.918 |
| U-231 | + | 92.29 | 1.594E+01 | 6.011E+00 | 8.812E+00 | 7.378E-01 | 1.809 |
| | | 95.87 | * -1.942E+00 | 2.771E+00 | 3.772E+00 | 3.062E-01 | -0.515 |
| | | 108.00 | -3.912E-01 | 4.714E+00 | 7.584E+00 | 5.699E-01 | -0.052 |
| | + | 75.28 | 2.084E+01 | 4.781E+00 | 7.249E+00 | 1.071E+00 | 2.875 |
| | + | 86.59 | 6.012E+00 | 2.560E+00 | 2.978E+00 | 7.986E-01 | 2.019 |
| | | 300.12 | 6.361E-01 | 4.512E-01 | 7.029E-01 | 9.455E-02 | 0.905 |
| | | 311.98 | * -4.764E-02 | 6.269E-02 | 9.976E-02 | 6.159E-03 | -0.478 |
| | | 340.50 | 2.510E+00 | 9.522E-01 | 1.315E+00 | 3.017E-01 | 1.909 |
| | | 398.62 | 1.013E+00 | 2.256E+00 | 3.790E+00 | 9.773E-01 | 0.267 |
| | | | | | | | |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| PA-234 | + | 415.76 | -4.569E-01 | 1.683E+00 | 2.721E+00 | 5.584E-01 | -0.168 |
| | | 63.00 | 1.046E+00 | 1.951E+00 | 2.385E+00 | 3.472E-01 | 0.438 |
| | | 94.67 | 5.616E-01 | 2.026E-01 | 3.054E-01 | 3.700E-02 | 1.839 |
| | | 98.44 | 1.549E-01 | 1.327E-01 | 1.541E-01 | 8.582E-02 | 1.005 |
| | | 99.86 | 4.834E-01 | 4.816E-01 | 7.805E-01 | 6.152E-02 | 0.619 |
| | | 111.00 | 9.575E-02 | 1.892E-01 | 3.107E-01 | 3.497E-02 | 0.308 |
| | | 131.20 | 1.124E-01 | 1.234E-01 | 1.815E-01 | 1.219E-02 | 0.619 |
| | | 152.70 | 1.340E-01 | 3.385E-01 | 5.498E-01 | 8.709E-02 | 0.244 |
| | | 186.00 | 5.030E+00 | 2.348E+00 | 2.596E+00 | 7.918E-01 | 1.937 |
| | | 226.40 | -3.674E-02 | 4.106E-01 | 6.861E-01 | 7.895E-02 | -0.054 |
| | | 227.20 | 1.085E-01 | 4.379E-01 | 7.416E-01 | 4.223E-02 | 0.146 |
| | | 248.90 | -7.284E-01 | 8.343E-01 | 1.229E+00 | 2.640E-01 | -0.593 |
| | | 293.70 | 7.063E+00 | 1.623E+00 | 1.802E+00 | 2.900E-01 | 3.919 |
| | | 369.80 | -1.115E-01 | 8.148E-01 | 1.335E+00 | 2.773E-01 | -0.084 |
| | | 568.70 | 4.454E+00 | 2.159E+00 | 2.623E+00 | 1.565E-01 | 1.698 |
| | | 569.50 | 1.215E+00 | 5.889E-01 | 7.294E-01 | 4.351E-02 | 1.665 |
| | | 574.00 | -3.770E-01 | 2.152E+00 | 2.575E+00 | 1.537E-01 | -0.146 |
| | | 699.00 | 4.181E-01 | 7.273E-01 | 1.223E+00 | 2.226E-01 | 0.342 |
| | | 706.10 | -3.057E-02 | 1.066E+00 | 1.717E+00 | 7.594E-01 | -0.018 |
| | | 733.00 | -4.723E-02 | 4.301E-01 | 5.885E-01 | 1.270E-01 | -0.080 |
| | | 742.81 | -4.466E-01 | 1.423E+00 | 2.175E+00 | 1.458E+00 | -0.205 |
| | | 796.30 | 2.150E+00 | 1.391E+00 | 1.745E+00 | 4.677E-01 | 1.232 |
| | | 805.60 | 6.031E-01 | 9.830E-01 | 1.644E+00 | 5.010E-01 | 0.367 |
| | | 819.60 | 8.889E-02 | 1.189E+00 | 2.008E+00 | 7.616E-01 | 0.044 |
| | | 826.30 | 1.987E-02 | 7.982E-01 | 1.342E+00 | 5.996E-01 | 0.015 |
| | | 831.60 | -3.867E-02 | 6.104E-01 | 1.019E+00 | 3.032E-01 | -0.038 |
| | | 876.40 | -5.430E-01 | 9.597E-01 | 1.218E+00 | 1.253E+00 | -0.446 |
| | | 880.51 | -1.042E-01 | 2.660E-01 | 4.285E-01 | 3.900E-02 | -0.243 |
| | | 883.24 | 1.313E-01 | 2.901E-01 | 4.821E-01 | 3.244E-01 | 0.272 |
| | | 899.00 | 1.802E-01 | 7.809E-01 | 1.328E+00 | 5.824E-01 | 0.136 |
| | | 925.00 | 3.257E-01 | 1.138E+00 | 1.951E+00 | 1.781E-01 | 0.167 |
| | | 926.50 | -7.964E-02 | 1.730E-01 | 2.744E-01 | 6.984E-02 | -0.290 |
| | | 946.00 | 2.733E-01 | 2.830E-01 | 5.071E-01 | 9.584E-02 | 0.539 |
| | | 949.00 | -2.928E-01 | 4.473E-01 | 6.996E-01 | 6.215E-02 | -0.418 |
| | | 980.50 | 1.633E-01 | 7.852E-01 | 1.242E+00 | 1.059E-01 | 0.131 |
| | | 1394.10 | -2.010E-02 | 9.055E-01 | 1.477E+00 | 9.589E-01 | -0.014 |
| PA-234M | | 766.42 | 6.296E+00 | 1.199E+01 | 1.944E+01 | 9.823E+00 | 0.324 |
| | | 1001.03 | -5.889E-01 | 4.631E+00 | 7.684E+00 | 7.428E-01 | -0.077 |
| U-235 | + | 89.95 | 2.793E+00 | 1.508E+00 | 1.932E+00 | 5.959E-01 | 1.445 |
| | | 93.35 | 2.263E+00 | 1.045E+00 | 1.191E+00 | 3.326E-01 | 1.900 |
| | | 105.00 | 1.567E+00 | 1.180E+00 | 1.847E+00 | 5.462E-01 | 0.849 |
| | | 143.76 | 1.591E-01 | 2.220E-01 | 3.622E-01 | 5.962E-02 | 0.439 |
| | | 163.35 | -2.565E-01 | 4.839E-01 | 7.521E-01 | 1.345E-01 | -0.341 |
| | | 185.71 | 1.863E-01 | 6.662E-02 | 9.593E-02 | 5.254E-03 | 1.942 |
| NP-236 | + | 205.31 | -6.270E-02 | 5.797E-01 | 8.436E-01 | 1.511E-01 | -0.074 |
| | | 94.67 | 4.278E-01 | 1.490E-01 | 2.318E-01 | 1.901E-02 | 1.845 |
| | | 98.44 | 1.171E-01 | 7.681E-02 | 1.165E-01 | 9.273E-03 | 1.005 |
| | | 111.00 | 7.243E-02 | 1.430E-01 | 2.350E-01 | 1.740E-02 | 0.308 |
| | | 160.31 | -4.495E-02 | 8.533E-02 | 1.334E-01 | 7.455E-03 | -0.337 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| NP-239 | | 99.55 | | 1.583E-01 | 1.695E-01 | 2.633E-01 | 2.080E-02 | 0.601 |
| | | 117.00 | * | -1.762E-01 | 1.972E-01 | 3.056E-01 | 2.208E-02 | -0.577 |
| | + | 209.75 | | 1.967E+00 | 1.323E+00 | 1.443E+00 | 8.098E-02 | 1.363 |
| | | 228.18 | | -5.076E-02 | 2.299E-01 | 3.820E-01 | 2.177E-02 | -0.133 |
| | + | 277.60 | | 3.801E-01 | 3.723E-01 | 3.163E-01 | 1.844E-02 | 1.202 |
| AM-241 | | 334.30 | | 6.415E-01 | 1.345E+00 | 2.013E+00 | 1.159E-01 | 0.319 |
| | | 59.54 | * | -7.856E-02 | 1.523E-01 | 2.102E-01 | 1.561E-02 | -0.374 |
| CM-243 | | 99.55 | | 1.630E-01 | 1.744E-01 | 2.710E-01 | 2.141E-02 | 0.601 |
| | | 103.76 | * | 5.567E-02 | 9.985E-02 | 1.645E-01 | 1.265E-02 | 0.338 |
| | | 117.00 | | -1.813E-01 | 2.030E-01 | 3.145E-01 | 2.273E-02 | -0.577 |
| | + | 209.75 | | 1.939E+00 | 1.304E+00 | 1.423E+00 | 7.986E-02 | 1.363 |
| | | 228.18 | | -5.131E-02 | 2.324E-01 | 3.861E-01 | 2.200E-02 | -0.133 |
| AM-246 | + | 277.60 | | 3.833E-01 | 3.755E-01 | 3.190E-01 | 1.859E-02 | 1.202 |
| | | 798.80 | | -1.442E-01 | 1.716E-01 | 2.097E-01 | 1.645E-02 | -0.687 |
| | | 1036.00 | | -1.153E-01 | 2.826E-01 | 4.496E-01 | 3.509E-02 | -0.256 |
| | | 1062.04 | | 1.348E-01 | 2.188E-01 | 3.845E-01 | 2.855E-02 | 0.351 |
| | | 1078.86 | * | 9.799E-02 | 1.396E-01 | 2.467E-01 | 1.768E-02 | 0.397 |
| CM-247 | + | 278.00 | | 1.576E+00 | 1.544E+00 | 1.317E+00 | 7.675E-02 | 1.197 |
| | | 287.40 | | -7.852E-02 | 1.219E+00 | 1.911E+00 | 1.115E-01 | -0.041 |
| | | 402.60 | * | 3.260E-02 | 3.890E-02 | 6.711E-02 | 3.686E-03 | 0.486 |
| CF-249 | | 252.85 | | 3.769E-01 | 8.483E-01 | 1.447E+00 | 8.372E-02 | 0.260 |
| | | 333.44 | | -1.004E-01 | 1.898E-01 | 2.617E-01 | 1.508E-02 | -0.384 |
| | | 387.95 | * | 2.034E-02 | 4.066E-02 | 6.905E-02 | 3.775E-03 | 0.295 |
| CF-251 | | 176.60 | * | 3.503E-02 | 1.356E-01 | 2.188E-01 | 1.187E-02 | 0.160 |
| | | 227.00 | | 1.032E-01 | 3.893E-01 | 6.598E-01 | 3.757E-02 | 0.156 |
| | | 285.00 | | -6.619E-01 | 1.888E+00 | 2.660E+00 | 1.552E-01 | -0.249 |

VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
*                               DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388007
* Acquisition date   : 4-FEB-2010 10:42:06 Detector SN#      :
* Detector ID        : GAM14 Sensitivity      : 5.000
* Geometry           : CAN Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 02:00:01.33 Half life ratio : 8.000
*****
*                               SAMPLE DATA                             *
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G245388007 Analyst initials: MXR1
* Batch Number       : 944964 Sample Quantity : 1.2107E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*                               QC DATA                                *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 6-MAR-2009 11:43:06 MS Isotope      :
* MSD DPM             : 0.000 MSD Isotope      :
* LCS DPM             : 0.000 LCS Isotope      :
* LCSD DPM            : 0.000 LCSD Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.273E+01 | 2.191E+00 | 5.283E-01 | 0.000E+00 |
| CD-109 | 3.147E+00 | 1.054E+00 | 1.147E+00 | 0.000E+00 |
| SN-126 | 3.071E-01 | 1.029E-01 | 1.123E-01 | 0.000E+00 |
| BA-137M | 8.027E-02 | 4.698E-02 | 6.547E-02 | 0.000E+00 |
| CS-137 | 8.485E-02 | 4.967E-02 | 6.920E-02 | 0.000E+00 |
| HG-203 | 9.334E-02 | 8.963E-02 | 6.960E-02 | 0.000E+00 |
| TL-208 | 5.490E-01 | 9.535E-02 | 5.503E-02 | 0.000E+00 |
| BI-210 | 1.471E+00 | 3.471E+00 | 3.971E+00 | 0.000E+00 |
| PB-210 | 1.471E+00 | 3.471E+00 | 3.971E+00 | 0.000E+00 |
| PO-210 | 1.471E+00 | 3.471E+00 | 3.971E+00 | 0.000E+00 |
| BI-211 | 4.138E+00 | 5.490E-01 | 3.306E-01 | 0.000E+00 |
| PB-212 | 1.612E+00 | 1.570E-01 | 9.002E-02 | 0.000E+00 |
| PO-212 | 1.612E+00 | 1.570E-01 | 9.002E-02 | 0.000E+00 |
| BI-214 | 1.083E+00 | 1.762E-01 | 1.131E-01 | 0.000E+00 |
| PB-214 | 1.439E+00 | 2.047E-01 | 1.152E-01 | 0.000E+00 |
| PO-214 | 1.439E+00 | 2.047E-01 | 1.152E-01 | 0.000E+00 |
| PO-216 | 1.612E+00 | 1.570E-01 | 9.002E-02 | 0.000E+00 |
| PO-218 | 1.439E+00 | 2.047E-01 | 1.152E-01 | 0.000E+00 |
| RA-224 | 4.662E+00 | 1.408E+00 | 1.024E+00 | 0.000E+00 |
| RA-226 | 1.083E+00 | 1.762E-01 | 1.131E-01 | 0.000E+00 |
| AC-228 | 1.561E+00 | 3.328E-01 | 2.013E-01 | 0.000E+00 |
| RA-228 | 1.561E+00 | 3.328E-01 | 2.013E-01 | 0.000E+00 |
| TH-228 | 1.645E+00 | 1.601E-01 | 9.182E-02 | 0.000E+00 |
| TH-230 | 1.083E+00 | 1.762E-01 | 1.131E-01 | 0.000E+00 |
| TH-232 | 1.561E+00 | 3.328E-01 | 2.013E-01 | 0.000E+00 |
| TH-234 | 8.971E-01 | 1.642E+00 | 1.933E+00 | 0.000E+00 |
| U-234 | 1.083E+00 | 1.762E-01 | 1.131E-01 | 0.000E+00 |
| NP-237 | 9.018E-01 | 3.529E-01 | 3.326E-01 | 0.000E+00 |
| U-238 | 8.971E-01 | 1.642E+00 | 1.933E+00 | 0.000E+00 |
| AM-243 | 3.979E-01 | 7.450E-02 | 8.834E-02 | 0.000E+00 |
| ANH-511 | 9.670E-02 | 5.870E-02 | 4.651E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM | K.L. Act error) Ided | MDA (pCi/GRAM |) | |
|---------|-----------------------------------|--------------------------|------------------|-----------|------------|
| BE-7 | 1.043E-01 | 3.339E-01 | 5.771E-01 | 0.000E+00 | NOT IDENT. |
| NA-22 | -3.303E-02 | 4.390E-02 | 6.776E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 1.366E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | -1.211E-02 | 2.774E-02 | 4.087E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 5.446E-02 | 8.402E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | -8.599E-03 | 3.800E-02 | 6.376E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | 1.052E-02 | 8.281E-02 | 1.428E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | -4.072E-01 | 4.184E-01 | 6.829E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 4.587E-01 | 4.357E-01 | 8.210E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | 1.548E-02 | 3.672E-02 | 6.518E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -3.726E-02 | 4.072E-02 | 6.432E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | -1.109E-03 | 2.545E-02 | 4.292E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -1.646E-02 | 3.778E-02 | 5.929E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -2.652E-02 | 9.154E-02 | 1.505E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | -3.194E-02 | 3.847E-02 | 5.751E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 3.580E-02 | 9.217E-02 | 1.415E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | -6.022E-01 | 1.194E+00 | 1.922E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | -7.724E-02 | 6.867E-01 | 1.143E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | -6.823E-02 | 1.099E-01 | 1.748E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -1.976E-02 | 5.045E-02 | 7.414E-02 | 0.000E+00 | FAIL ABUN |
| BR-77 | 0.000E+00 | 3.989E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SR-82 | -4.397E-01 | 4.569E-01 | 6.868E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | 1.124E-02 | 6.778E-02 | 1.157E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | -4.014E-02 | 7.403E-02 | 1.206E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 1.124E+01 | 8.440E+00 | 1.368E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 6.062E-02 | 4.553E-02 | 7.379E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | -7.633E-01 | 8.644E-01 | 1.326E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 1.573E-02 | 3.188E-02 | 5.768E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -1.789E-02 | 3.137E-02 | 5.171E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | 2.809E+00 | 1.841E+01 | 3.146E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -3.446E-03 | 3.419E-02 | 5.626E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 8.798E-03 | 4.414E-02 | 7.409E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 0.000E+00 | 1.685E-01 | 2.855E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 9.127E-02 | 7.346E-02 | 1.338E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 1.176E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 2.300E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | -5.710E+00 | 3.914E+01 | 6.391E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 2.475E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -4.976E-03 | 3.178E-02 | 5.548E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | 1.963E-02 | 2.840E-02 | 5.029E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | 3.603E-02 | 4.251E-02 | 7.569E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | -2.619E-01 | 3.016E-01 | 4.626E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | -2.619E-01 | 3.005E-01 | 4.626E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -8.347E-03 | 3.305E-02 | 5.529E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | 1.580E-02 | 3.659E-02 | 5.543E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | 2.640E+00 | 3.396E+00 | 5.418E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -1.918E-02 | 4.386E-02 | 7.288E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | -1.918E-02 | 4.386E-02 | 7.288E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | -1.108E-01 | 2.098E-01 | 3.119E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 0.000E+00 | 4.584E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SN-117M | 8.664E-02 | 7.264E-02 | 1.272E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | 4.646E+00 | 7.783E+00 | 1.201E+01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 2.708E+09 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 3.002E-02 | 3.030E-02 | 5.268E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -2.275E-03 | 1.778E+00 | 2.567E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | 2.156E-02 | 8.011E-02 | 1.384E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | 1.686E-02 | 9.032E-02 | 1.555E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | -1.141E+01 | 1.027E+01 | 1.660E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 1.414E-01 | 2.798E-01 | 4.236E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | 6.080E-03 | 2.034E-01 | 2.917E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | -3.294E-01 | 3.138E+00 | 5.166E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | -3.823E-04 | 5.526E-02 | 8.443E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 7.849E-02 | 1.594E-01 | 2.812E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | -4.249E-01 | 1.926E+00 | 3.332E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | 1.821E-02 | 4.571E-02 | 7.023E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 2.804E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 0.000E+00 | 6.471E-02 | 8.969E-02 | 0.000E+00 | FAIL ABUN |
| CS-135 | 2.736E-01 | 1.825E-01 | 2.984E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 1.061E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | 8.907E-02 | 1.200E-01 | 2.189E-01 | 0.000E+00 | FAIL ABUN |
| CE-139 | 1.718E-04 | 3.084E-02 | 5.155E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | 2.583E-01 | 3.481E-01 | 5.997E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | 3.339E-02 | 1.107E-01 | 1.914E-01 | 0.000E+00 | NOT IDENT. |
| CE-141 | -2.223E-02 | 7.079E-02 | 1.173E-01 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| CE-143 | 0.000E+00 | 3.543E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | 8.446E-02 | 2.377E-01 | 3.559E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | 1.210E-02 | 3.403E-02 | 5.812E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | 8.218E-01 | 2.312E+00 | 3.948E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | -2.419E-03 | 4.565E-02 | 7.719E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | 6.183E-02 | 7.550E-01 | 1.279E+00 | 0.000E+00 | FAIL ABUN |
| PM-149 | 0.000E+00 | 4.315E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| EU-152 | 5.378E-02 | 1.287E-01 | 1.590E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | 1.007E-01 | 8.433E-02 | 1.328E-01 | 0.000E+00 | FAIL ABUN |
| EU-154 | -9.437E-02 | 1.223E-01 | 1.879E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 1.112E-01 | 1.093E-01 | 1.919E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 6.230E-02 | 1.297E-01 | 2.323E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | 1.165E-02 | 5.857E-02 | 9.877E-02 | 0.000E+00 | NOT IDENT. |
| TM-171 | 1.133E+01 | 2.791E+01 | 4.279E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | 2.230E-03 | 2.345E-02 | 4.068E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 3.010E+00 | 3.482E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | 8.225E-02 | 1.825E-01 | 3.190E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | -3.660E-02 | 4.369E-02 | 6.926E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | 5.289E-01 | 3.717E-01 | 5.920E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | 7.432E-02 | 1.951E-01 | 3.392E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | -5.084E-02 | 1.175E-01 | 1.929E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | 1.025E-01 | 2.260E-01 | 4.011E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | -2.644E-02 | 4.344E-02 | 6.859E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | -1.273E-01 | 1.897E-01 | 3.090E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | 3.874E+00 | 8.037E+00 | 1.250E+01 | 0.000E+00 | FAIL ABUN |
| IR-192 | 8.460E-03 | 3.429E-02 | 5.989E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 2.714E-01 | 2.530E-01 | 3.957E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 9.429E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | 1.313E+01 | 2.104E+01 | 3.607E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 7.818E-02 | 9.026E-02 | 1.615E-01 | 0.000E+00 | NOT IDENT. |
| BI-207 | 8.529E-03 | 4.925E-02 | 8.497E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | -1.336E-01 | 6.899E-01 | 1.177E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | -6.750E-01 | 6.556E+00 | 1.112E+01 | 0.000E+00 | NOT IDENT. |
| PB-211 | -1.168E+00 | 1.209E+00 | 1.550E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 4.167E-01 | 6.542E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | -1.336E-01 | 6.899E-01 | 1.177E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | 3.036E-01 | 4.301E-01 | 7.592E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | -1.565E+01 | 2.428E+01 | 3.863E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -1.336E-01 | 6.899E-01 | 1.177E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | -3.902E-02 | 3.775E-01 | 6.535E-01 | 0.000E+00 | NOT IDENT. |
| TH-227 | -3.902E-02 | 3.775E-01 | 6.535E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | 5.974E-01 | 4.900E-01 | 8.981E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | -2.020E-04 | 1.579E+00 | 2.376E+00 | 0.000E+00 | NOT IDENT. |
| TH-231 | -1.336E-01 | 6.899E-01 | 1.177E+00 | 0.000E+00 | FAIL ABUN |
| U-231 | -1.942E+00 | 2.715E+00 | 3.891E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | -4.764E-02 | 6.143E-02 | 1.015E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | 2.733E-01 | 2.773E-01 | 5.087E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | -5.889E-01 | 4.538E+00 | 7.704E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | 1.591E-01 | 2.176E-01 | 3.718E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -4.495E-02 | 8.363E-02 | 1.368E-01 | 0.000E+00 | NOT IDENT. |
| NP-239 | -1.762E-01 | 1.933E-01 | 3.145E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | -7.856E-02 | 1.492E-01 | 2.181E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | 5.567E-02 | 9.786E-02 | 1.696E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | 9.799E-02 | 1.368E-01 | 2.471E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 3.260E-02 | 3.812E-02 | 6.804E-02 | 0.000E+00 | FAIL ABUN |
| CF-249 | 2.034E-02 | 3.985E-02 | 7.004E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | 3.503E-02 | 1.329E-01 | 2.240E-01 | 0.000E+00 | NOT IDENT. |

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388007.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 10:42:06.
Sample ID          : G245388007 Sample quantity : 1.21070E+02 GRAM
Detector name      : GAM14 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.33 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 944964 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
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Nuclide Line Activity Report

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|----------------------|---------------------|----------------|
| K-40 | 1460.81 | 947 | 10.67* | 1.211E+00 | 2.273E+01 | 2.273E+01 | 9.83 |
| CD-109 | 88.03 | 258 | 3.72* | 7.051E+00 | 3.055E+00 | 3.147E+00 | 34.19 |
| SN-126 | 64.28 | 51 | 9.60 | 4.643E+00 | 3.551E-01 | 3.551E-01 | 186.50 |
| | 86.94 | 258 | 8.90 | 7.051E+00 | 1.277E+00 | 1.277E+00 | 52.96 |
| | 87.57 | 258 | 37.00* | 7.051E+00 | 3.071E-01 | 3.071E-01 | 34.19 |
| BA-137M | 661.65 | 57 | 89.98* | 2.467E+00 | 8.017E-02 | 8.027E-02 | 59.73 |
| CS-137 | 661.65 | 57 | 85.12* | 2.467E+00 | 8.475E-02 | 8.485E-02 | 59.73 |
| HG-203 | 70.83 | ----- | 4.75 | 5.642E+00 | ----- | Line Not Found | ----- |
| | 72.87 | ----- | 8.00 | 5.875E+00 | ----- | Line Not Found | ----- |
| | 82.60 | ----- | 3.55 | 6.755E+00 | ----- | Line Not Found | ----- |
| | 279.20 | 86 | 77.30* | 4.987E+00 | 6.933E-02 | 9.334E-02 | 97.98 |
| TL-208 | 277.35 | 86 | 6.80 | 4.987E+00 | 7.882E-01 | 7.882E-01 | 98.35 |
| | 510.84 | 96 | 21.60 | 3.090E+00 | 4.477E-01 | 4.477E-01 | 62.51 |
| | 583.14 | 411 | 84.20* | 2.758E+00 | 5.490E-01 | 5.490E-01 | 17.72 |
| | 860.37 | 95 | 12.46 | 1.942E+00 | 1.216E+00 | 1.216E+00 | 50.81 |
| BI-210 | 46.50 | 38 | 4.05* | 1.993E+00 | 1.469E+00 | 1.471E+00 | 240.72 |
| PB-210 | 46.50 | 38 | 4.05* | 1.993E+00 | 1.469E+00 | 1.471E+00 | 240.72 |
| PO-210 | 46.50 | 38 | 4.05* | 1.993E+00 | 1.469E+00 | 1.471E+00 | 240.69 |
| BI-211 | 72.87 | ----- | 1.27 | 5.875E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 722 | 12.94* | 4.179E+00 | 4.138E+00 | 4.138E+00 | 13.54 |
| PB-212 | 74.81 | 516 | 10.70 | 6.097E+00 | 2.454E+00 | 2.454E+00 | 21.27 |
| | 77.11 | 756 | 18.00 | 6.314E+00 | 2.061E+00 | 2.061E+00 | 14.61 |
| | 87.30 | 258 | 8.00 | 7.051E+00 | 1.420E+00 | 1.420E+00 | 35.62 |
| | 238.63 | 1292 | 44.60* | 5.568E+00 | 1.612E+00 | 1.612E+00 | 9.93 |
| | 300.09 | ----- | 3.41 | 4.718E+00 | ----- | Line Not Found | ----- |
| PO-212 | 74.81 | 516 | 10.70 | 6.097E+00 | 2.454E+00 | 2.454E+00 | 21.27 |
| | 77.11 | 756 | 18.00 | 6.314E+00 | 2.061E+00 | 2.061E+00 | 14.61 |
| | 87.30 | 258 | 8.00 | 7.051E+00 | 1.420E+00 | 1.420E+00 | 35.62 |
| | 115.19 | ----- | 0.60 | 7.689E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1292 | 44.60* | 5.568E+00 | 1.612E+00 | 1.612E+00 | 9.93 |
| | 300.09 | ----- | 3.41 | 4.718E+00 | ----- | Line Not Found | ----- |
| BI-214 | 609.31 | 429 | 46.30* | 2.654E+00 | 1.083E+00 | 1.083E+00 | 16.60 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| | 1120.29 | 122 | 15.10 | 1.523E+00 | 1.650E+00 | 1.650E+00 | 34.83 |
| | 1764.49 | 83 | 15.80 | 1.059E+00 | 1.538E+00 | 1.538E+00 | 26.93 |
| PB-214 | 74.81 | 516 | 6.21 | 6.097E+00 | 4.228E+00 | 4.228E+00 | 20.49 |
| | 77.11 | 756 | 10.50 | 6.314E+00 | 3.534E+00 | 3.534E+00 | 16.47 |
| | 87.30 | 258 | 4.67 | 7.051E+00 | 2.433E+00 | 2.433E+00 | 35.05 |
| | 241.98 | 328 | 7.49 | 5.521E+00 | 2.459E+00 | 2.459E+00 | 31.33 |
| | 295.21 | 435 | 19.20 | 4.777E+00 | 1.471E+00 | 1.471E+00 | 18.49 |
| | 351.92 | 722 | 37.20* | 4.179E+00 | 1.439E+00 | 1.439E+00 | 14.51 |
| PO-214 | 74.81 | 516 | 6.21 | 6.097E+00 | 4.228E+00 | 4.228E+00 | 20.49 |
| | 77.11 | 756 | 10.50 | 6.314E+00 | 3.534E+00 | 3.534E+00 | 16.47 |
| | 87.30 | 258 | 4.67 | 7.051E+00 | 2.433E+00 | 2.433E+00 | 35.05 |
| | 241.98 | 328 | 7.49 | 5.521E+00 | 2.459E+00 | 2.459E+00 | 31.33 |
| | 295.21 | 435 | 19.20 | 4.777E+00 | 1.471E+00 | 1.471E+00 | 18.49 |
| | 351.92 | 722 | 37.20* | 4.179E+00 | 1.439E+00 | 1.439E+00 | 14.51 |
| PO-216 | 74.81 | 516 | 10.70 | 6.097E+00 | 2.454E+00 | 2.454E+00 | 21.27 |
| | 77.11 | 756 | 18.00 | 6.314E+00 | 2.061E+00 | 2.061E+00 | 14.61 |
| | 87.30 | 258 | 8.00 | 7.051E+00 | 1.420E+00 | 1.420E+00 | 35.62 |
| | 238.63 | 1292 | 44.60* | 5.568E+00 | 1.612E+00 | 1.612E+00 | 9.93 |
| | 300.09 | ----- | 3.41 | 4.718E+00 | ----- | Line Not Found | ----- |
| PO-218 | 74.81 | 516 | 6.21 | 6.097E+00 | 4.228E+00 | 4.228E+00 | 20.49 |
| | 77.11 | 756 | 10.50 | 6.314E+00 | 3.534E+00 | 3.534E+00 | 16.47 |
| | 87.30 | 258 | 4.67 | 7.051E+00 | 2.433E+00 | 2.433E+00 | 35.05 |
| | 241.98 | 328 | 7.49 | 5.521E+00 | 2.459E+00 | 2.459E+00 | 31.33 |
| | 295.21 | 435 | 19.20 | 4.777E+00 | 1.471E+00 | 1.471E+00 | 18.49 |
| | 351.92 | 722 | 37.20* | 4.179E+00 | 1.439E+00 | 1.439E+00 | 14.51 |
| RA-224 | 240.98 | 328 | 3.95* | 5.521E+00 | 4.662E+00 | 4.662E+00 | 30.82 |
| RA-226 | 609.31 | 429 | 46.30* | 2.654E+00 | 1.083E+00 | 1.083E+00 | 16.60 |
| | 1120.29 | 122 | 15.10 | 1.523E+00 | 1.650E+00 | 1.650E+00 | 34.83 |
| | 1764.49 | 83 | 15.80 | 1.059E+00 | 1.538E+00 | 1.538E+00 | 26.93 |
| AC-228 | 338.32 | 324 | 11.40 | 4.308E+00 | 2.048E+00 | 2.048E+00 | 44.42 |
| | 911.07 | 257 | 27.70* | 1.843E+00 | 1.561E+00 | 1.561E+00 | 21.76 |
| | 969.11 | 192 | 16.60 | 1.741E+00 | 2.055E+00 | 2.055E+00 | 31.45 |
| RA-228 | 338.32 | 324 | 11.40 | 4.308E+00 | 2.048E+00 | 2.048E+00 | 44.42 |
| | 911.07 | 257 | 27.70* | 1.843E+00 | 1.561E+00 | 1.561E+00 | 21.76 |
| | 969.11 | 192 | 16.60 | 1.741E+00 | 2.055E+00 | 2.055E+00 | 31.45 |
| TH-228 | 74.81 | 516 | 10.70 | 6.097E+00 | 2.454E+00 | 2.503E+00 | 19.14 |
| | 77.11 | 756 | 18.00 | 6.314E+00 | 2.061E+00 | 2.103E+00 | 14.61 |
| | 87.30 | 258 | 8.00 | 7.051E+00 | 1.420E+00 | 1.449E+00 | 34.19 |
| | 238.63 | 1292 | 44.60* | 5.568E+00 | 1.612E+00 | 1.645E+00 | 9.93 |
| | 300.09 | ----- | 3.41 | 4.718E+00 | ----- | Line Not Found | ----- |
| TH-230 | 609.31 | 429 | 46.30* | 2.654E+00 | 1.083E+00 | 1.083E+00 | 16.60 |
| | 1120.29 | 122 | 15.10 | 1.523E+00 | 1.650E+00 | 1.650E+00 | 34.83 |
| | 1764.49 | 83 | 15.80 | 1.059E+00 | 1.538E+00 | 1.538E+00 | 26.93 |
| TH-232 | 338.32 | 324 | 11.40 | 4.308E+00 | 2.048E+00 | 2.048E+00 | 18.56 |
| | 911.07 | 257 | 27.70* | 1.843E+00 | 1.561E+00 | 1.561E+00 | 21.76 |
| | 969.11 | 192 | 16.60 | 1.741E+00 | 2.055E+00 | 2.055E+00 | 31.45 |
| TH-234 | 63.29 | 51 | 3.80* | 4.643E+00 | 8.971E-01 | 8.971E-01 | 186.75 |
| | 92.38 | 240 | 5.41 | 7.316E+00 | 1.882E+00 | 1.882E+00 | 40.93 |
| U-234 | 609.31 | 429 | 46.30* | 2.654E+00 | 1.083E+00 | 1.083E+00 | 16.60 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| | 1120.29 | 122 | 15.10 | 1.523E+00 | 1.650E+00 | 1.650E+00 | 34.83 |
| | 1764.49 | 83 | 15.80 | 1.059E+00 | 1.538E+00 | 1.538E+00 | 26.93 |
| NP-237 | 86.50 | 258 | 12.60* | 7.051E+00 | 9.018E-01 | 9.018E-01 | 39.93 |
| | 95.87 | ----- | 2.60 | 7.425E+00 | ----- | Line Not Found | ----- |
| U-238 | 63.29 | 51 | 3.80* | 4.643E+00 | 8.971E-01 | 8.971E-01 | 186.75 |
| | 92.38 | 240 | 5.41 | 7.316E+00 | 1.882E+00 | 1.882E+00 | 37.72 |
| AM-243 | 74.67 | 516 | 66.00* | 6.097E+00 | 3.978E-01 | 3.979E-01 | 19.11 |
| | 86.72 | 258 | 0.34 | 7.051E+00 | 3.382E+01 | 3.382E+01 | 34.19 |
| | 117.66 | ----- | 0.55 | 7.685E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 7.399E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 96 | 100.00* | 3.090E+00 | 9.670E-02 | 9.670E-02 | 61.95 |

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G245388007

Page : 4
Acquisition date : 4-FEB-2010 10:42:06

Total number of lines in spectrum 33
Number of unidentified lines 0
Number of lines tentatively identified by NID 33 100.00%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|------------------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 2.273E+01 | 2.273E+01 | 0.224E+01 | 9.83 | |
| CD-109 | 464.00D | 1.03 | 3.055E+00 | 3.147E+00 | 1.076E+00 | 34.19 | |
| SN-126 | 1.00E+05Y | 1.00 | 3.071E-01 | 3.071E-01 | 1.050E-01 | 34.19 | |
| BA-137M | 30.17Y | 1.00 | 8.017E-02 | 8.027E-02 | 4.794E-02 | 59.73 | |
| CS-137 | 30.17Y | 1.00 | 8.475E-02 | 8.485E-02 | 5.068E-02 | 59.73 | |
| HG-203 | 46.60D | 1.35 | 6.933E-02 | 9.334E-02 | 9.145E-02 | 97.98 | |
| TL-208 | 1.41E+10Y | 1.00 | 5.490E-01 | 5.490E-01 | 0.973E-01 | 17.72 | |
| BI-210 | 22.26Y | 1.00 | 1.469E+00 | 1.471E+00 | 3.542E+00 | 240.72 | |
| PB-210 | 22.26Y | 1.00 | 1.469E+00 | 1.471E+00 | 3.542E+00 | 240.72 | |
| PO-210 | 22.26Y | 1.00 | 1.469E+00 | 1.471E+00 | 3.541E+00 | 240.69 | |
| BI-211 | 7.04E+08Y | 1.00 | 4.138E+00 | 4.138E+00 | 0.560E+00 | 13.54 | |
| PB-212 | 1.41E+10Y | 1.00 | 1.612E+00 | 1.612E+00 | 0.160E+00 | 9.93 | |
| PO-212 | 1.41E+10Y | 1.00 | 1.612E+00 | 1.612E+00 | 0.160E+00 | 9.93 | |
| BI-214 | 1600.00Y | 1.00 | 1.083E+00 | 1.083E+00 | 0.180E+00 | 16.60 | |
| PB-214 | 1600.00Y | 1.00 | 1.439E+00 | 1.439E+00 | 0.209E+00 | 14.51 | |
| PO-214 | 1600.00Y | 1.00 | 1.439E+00 | 1.439E+00 | 0.209E+00 | 14.51 | |
| PO-216 | 1.41E+10Y | 1.00 | 1.612E+00 | 1.612E+00 | 0.160E+00 | 9.93 | |
| PO-218 | 1600.00Y | 1.00 | 1.439E+00 | 1.439E+00 | 0.209E+00 | 14.51 | |
| RA-224 | 1.41E+10Y | 1.00 | 4.662E+00 | 4.662E+00 | 1.437E+00 | 30.82 | |
| RA-226 | 1600.00Y | 1.00 | 1.083E+00 | 1.083E+00 | 0.180E+00 | 16.60 | |
| AC-228 | 1.41E+10Y | 1.00 | 1.561E+00 | 1.561E+00 | 0.340E+00 | 21.76 | |
| RA-228 | 1.41E+10Y | 1.00 | 1.561E+00 | 1.561E+00 | 0.340E+00 | 21.76 | |
| TH-228 | 1.91Y | 1.02 | 1.612E+00 | 1.645E+00 | 0.163E+00 | 9.93 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.083E+00 | 1.083E+00 | 0.180E+00 | 16.60 | |
| TH-232 | 1.41E+10Y | 1.00 | 1.561E+00 | 1.561E+00 | 0.340E+00 | 21.76 | |
| TH-234 | 4.47E+09Y | 1.00 | 8.971E-01 | 8.971E-01 | 16.75E-01 | 186.75 | |
| U-234 | 4.47E+09Y | 1.00 | 1.083E+00 | 1.083E+00 | 0.180E+00 | 16.60 | |
| NP-237 | 2.14E+06Y | 1.00 | 9.018E-01 | 9.018E-01 | 3.601E-01 | 39.93 | |
| U-238 | 4.47E+09Y | 1.00 | 8.971E-01 | 8.971E-01 | 16.75E-01 | 186.75 | |
| AM-243 | 7380.00Y | 1.00 | 3.978E-01 | 3.979E-01 | 0.760E-01 | 19.11 | |
| ANH-511 | 1.00E+09Y | 1.00 | 9.670E-02 | 9.670E-02 | 5.990E-02 | 61.95 | |
| Total Activity : | | | 6.305E+01 | 6.321E+01 | | | |

Grand Total Activity : 6.305E+01 6.321E+01

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

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

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|--------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 1 | 84.39 | 104 | 530 | 1.55 | 168.28 | 161 | 31 | 1.44E-02 | 79.6 | 6.88E+00 | T |
| 1 | 89.89 | 175 | 395 | 1.39 | 179.28 | 161 | 31 | 2.43E-02 | 44.3 | 7.19E+00 | T |
| 0 | 129.05 | 83 | 305 | 0.80 | 257.53 | 254 | 8 | 1.15E-02 | 76.5 | 7.60E+00 | T |
| 0 | 186.02 | 212 | 311 | 1.62 | 371.35 | 365 | 10 | 2.94E-02 | 35.3 | 6.53E+00 | T |
| 0 | 208.93 | 125 | 383 | 1.29 | 417.14 | 411 | 13 | 1.74E-02 | 67.0 | 6.08E+00 | T |
| 0 | 269.76 | 113 | 218 | 1.60 | 538.69 | 532 | 12 | 1.57E-02 | 55.7 | 5.10E+00 | T |
| 0 | 462.47 | 115 | 74 | 1.60 | 923.85 | 918 | 11 | 1.59E-02 | 34.6 | 3.36E+00 | T |
| 0 | 569.76 | 121 | 133 | 2.69 | 1138.32 | 1132 | 16 | 1.68E-02 | 48.1 | 2.81E+00 | T |
| 0 | 727.36 | 93 | 57 | 1.66 | 1453.42 | 1447 | 12 | 1.29E-02 | 38.5 | 2.27E+00 | T |
| 0 | 795.62 | 57 | 51 | 3.43 | 1589.91 | 1583 | 13 | 7.85E-03 | 58.9 | 2.09E+00 | T |
| 4 | 965.10 | 54 | 49 | 2.29 | 1928.85 | 1924 | 27 | 7.51E-03 | 51.3 | 1.75E+00 | T |

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388007.CNF;1  *
* Acquisition date   : 4-FEB-2010 10:42:06.  Detector SN#      :             *
* Detector ID        : GAM14                      Sensitivity    : 5.00000      *
* Geometry           : CAN                      Energy tolerance: 1.50000      *
* Elapsed live time  : 0 02:00:00.00           Abundance limit  : 75.00000      *
* Elapsed real time  : 0 02:00:01.33           Half life ratio  : 8.00000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 15-JAN-2010 12:00:00   Nuclide Library  : SOLID        *
* Sample ID          : G245388007             Analyst initials: MXR1          *
* Batch Number       : 944964                 Sample Quantity  : 1.21070E+02 GRAM *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 6-MAR-2009 11:43:06.61MS Isotope      :             *
* MSD ID             :                      MSD Isotope       :             *
* LCS ID             : 1032-A                 LCS Isotope     :             *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 2.273E+01 | 2.236E+00 | 5.294E-01 | 3.844E-02 | 42.936 |
| CD-109 | 3.147E+00 | 1.076E+00 | 1.111E+00 | 9.715E-02 | 2.833 |
| SN-126 | 3.071E-01 | 1.050E-01 | 1.088E-01 | 9.465E-03 | 2.823 |
| BA-137M | 8.027E-02 | 4.794E-02 | 6.496E-02 | 3.863E-03 | 1.236 |
| CS-137 | 8.485E-02 | 5.068E-02 | 6.867E-02 | 4.100E-03 | 1.236 |
| HG-203 | 9.334E-02 | 9.145E-02 | 6.834E-02 | 4.228E-03 | 1.366 |
| TL-208 | 5.490E-01 | 9.729E-02 | 5.452E-02 | 3.728E-03 | 10.071 |
| BI-210 | 1.471E+00 | 3.542E+00 | 3.817E+00 | 2.830E-01 | 0.385 |
| PB-210 | 1.471E+00 | 3.542E+00 | 3.817E+00 | 2.830E-01 | 0.385 |
| PO-210 | 1.471E+00 | 3.541E+00 | 3.817E+00 | 2.395E-01 | 0.385 |
| BI-211 | 4.138E+00 | 5.602E-01 | 3.255E-01 | 2.062E-02 | 12.711 |
| PB-212 | 1.612E+00 | 1.602E-01 | 8.822E-02 | 6.426E-03 | 18.278 |
| PO-212 | 1.612E+00 | 1.602E-01 | 8.822E-02 | 6.426E-03 | 18.278 |
| BI-214 | 1.083E+00 | 1.798E-01 | 1.121E-01 | 8.871E-03 | 9.662 |
| PB-214 | 1.439E+00 | 2.088E-01 | 1.135E-01 | 9.310E-03 | 12.685 |
| PO-214 | 1.439E+00 | 2.088E-01 | 1.135E-01 | 9.310E-03 | 12.685 |
| PO-216 | 1.612E+00 | 1.602E-01 | 8.822E-02 | 6.426E-03 | 18.278 |
| PO-218 | 1.439E+00 | 2.088E-01 | 1.135E-01 | 9.310E-03 | 12.685 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| RA-224 | 4.662E+00 | 1.437E+00 | 1.003E+00 | 5.768E-02 | 4.646 |
| RA-226 | 1.083E+00 | 1.798E-01 | 1.121E-01 | 8.871E-03 | 9.662 |
| AC-228 | 1.561E+00 | 3.396E-01 | 2.006E-01 | 2.356E-02 | 7.783 |
| RA-228 | 1.561E+00 | 3.396E-01 | 2.006E-01 | 2.356E-02 | 7.783 |
| TH-228 | 1.645E+00 | 1.634E-01 | 8.999E-02 | 6.555E-03 | 18.278 |
| TH-230 | 1.083E+00 | 1.798E-01 | 1.121E-01 | 8.870E-03 | 9.662 |
| TH-232 | 1.561E+00 | 3.396E-01 | 2.006E-01 | 2.356E-02 | 7.783 |
| TH-234 | 8.971E-01 | 1.675E+00 | 1.865E+00 | 3.206E-01 | 0.481 |
| U-234 | 1.083E+00 | 1.798E-01 | 1.121E-01 | 8.870E-03 | 9.662 |
| NP-237 | 9.018E-01 | 3.601E-01 | 3.220E-01 | 7.198E-02 | 2.800 |
| U-238 | 8.971E-01 | 1.675E+00 | 1.865E+00 | 3.206E-01 | 0.481 |
| AM-243 | 3.979E-01 | 7.602E-02 | 8.539E-02 | 6.408E-03 | 4.659 |
| ANH-511 | 9.670E-02 | 5.990E-02 | 4.600E-02 | 2.703E-03 | 2.102 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| BE-7 | 1.043E-01 | | 3.408E-01 | 5.703E-01 | 3.844E-02 | 0.183 |
| NA-22 | -3.303E-02 | | 4.479E-02 | 6.778E-02 | 4.428E-03 | -0.487 |
| NA-24 | 7.372E+01 | | 6.970E+01 | Half-Life | too short | |
| AL-26 | -1.211E-02 | | 2.831E-02 | 4.107E-02 | 2.380E-03 | -0.295 |
| TI-44 | 3.805E-01 | + | 5.558E-02 | 8.126E-02 | 6.345E-03 | 4.682 |
| SC-46 | -8.599E-03 | | 3.877E-02 | 6.350E-02 | 5.868E-03 | -0.135 |
| V-48 | 1.052E-02 | | 8.450E-02 | 1.424E-01 | 1.209E-02 | 0.074 |
| CR-51 | -4.072E-01 | | 4.270E-01 | 6.717E-01 | 4.340E-02 | -0.606 |
| MN-52 | 4.587E-01 | | 4.445E-01 | 8.226E-01 | 5.765E-02 | 0.558 |
| MN-54 | 1.548E-02 | | 3.747E-02 | 6.486E-02 | 5.441E-03 | 0.239 |
| CO-56 | -3.726E-02 | | 4.155E-02 | 6.402E-02 | 5.487E-03 | -0.582 |
| CO-57 | -1.109E-03 | | 2.597E-02 | 4.173E-02 | 2.969E-03 | -0.027 |
| CO-58 | -1.646E-02 | | 3.855E-02 | 5.898E-02 | 4.745E-03 | -0.279 |
| FE-59 | -2.652E-02 | | 9.341E-02 | 1.503E-01 | 1.157E-02 | -0.176 |
| CO-60 | -3.194E-02 | | 3.925E-02 | 5.756E-02 | 4.102E-03 | -0.555 |
| ZN-65 | 3.580E-02 | | 9.405E-02 | 1.414E-01 | 9.292E-03 | 0.253 |
| GE-68 | -6.022E-01 | | 1.218E+00 | 1.918E+00 | 1.379E-01 | -0.314 |
| AS-73 | -7.724E-02 | | 7.007E-01 | 1.101E+00 | 7.177E-02 | -0.070 |
| AS-74 | -6.823E-02 | | 1.121E-01 | 1.732E-01 | 1.036E-02 | -0.394 |
| SE-75 | -1.976E-02 | | 5.147E-02 | 7.275E-02 | 4.271E-03 | -0.272 |
| BR-77 | 7.387E-07 | | 2.035E-05 | Half-Life | too short | |
| SR-82 | -4.397E-01 | | 4.663E-01 | 6.829E-01 | 5.134E-02 | -0.644 |
| RB-83 | 1.124E-02 | | 6.917E-02 | 1.144E-01 | 6.745E-03 | 0.098 |
| RB-84 | -4.014E-02 | | 7.554E-02 | 1.201E-01 | 1.094E-02 | -0.334 |
| KR-85 | 1.124E+01 | | 8.612E+00 | 1.353E+01 | 7.958E-01 | 0.831 |
| SR-85 | 6.062E-02 | | 4.645E-02 | 7.299E-02 | 4.293E-03 | 0.831 |
| RB-86 | -7.633E-01 | | 8.821E-01 | 1.324E+00 | 9.532E-02 | -0.577 |
| Y-88 | 1.573E-02 | | 3.253E-02 | 5.797E-02 | 3.292E-03 | 0.271 |
| ZR-88 | -1.789E-02 | | 3.201E-02 | 5.098E-02 | 2.776E-03 | -0.351 |
| Y-91 | 2.809E+00 | | 1.879E+01 | 3.145E+01 | 1.829E+00 | 0.089 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| NB-94 | -3.446E-03 | | 3.489E-02 | 5.587E-02 | 3.623E-03 | -0.062 |
| NB-95 | 8.798E-03 | | 4.504E-02 | 7.365E-02 | 5.424E-03 | 0.119 |
| NB-95M | 5.160E-01 | | 1.720E-01 | 2.798E-01 | 2.091E-02 | 1.844 |
| ZR-95 | 9.127E-02 | | 7.496E-02 | 1.330E-01 | 1.097E-02 | 0.686 |
| NB-97 | 6.114E+00 | | 5.998E+00 | Half-Life | too short | |
| ZR-97 | 4.517E+02 | | 1.174E+02 | Half-Life | too short | |
| MO-99 | -5.710E+00 | | 3.994E+01 | 6.350E+01 | 9.096E+00 | -0.090 |
| TC-99M | -5.178E+15 | | 1.263E+16 | Half-Life | too short | |
| RH-101 | -4.976E-03 | | 3.243E-02 | 5.425E-02 | 3.010E-03 | -0.092 |
| RH-102 | 1.963E-02 | | 2.898E-02 | 4.969E-02 | 2.872E-03 | 0.395 |
| RU-103 | 3.603E-02 | | 4.338E-02 | 7.484E-02 | 9.477E-03 | 0.481 |
| RH-106 | -2.619E-01 | | 3.078E-01 | 4.586E-01 | 5.424E-02 | -0.571 |
| RU-106 | -2.619E-01 | | 3.066E-01 | 4.586E-01 | 2.742E-02 | -0.571 |
| AG-108M | -8.347E-03 | | 3.372E-02 | 5.458E-02 | 3.353E-03 | -0.153 |
| AG-110M | 1.580E-02 | | 3.734E-02 | 5.499E-02 | 3.474E-03 | 0.287 |
| IN-111 | 2.640E+00 | | 3.466E+00 | 5.312E+00 | 3.061E-01 | 0.497 |
| IN-113M | -1.918E-02 | | 4.475E-02 | 7.185E-02 | 4.205E-03 | -0.267 |
| SN-113 | -1.918E-02 | | 4.475E-02 | 7.185E-02 | 4.205E-03 | -0.267 |
| IN-114M | -1.108E-01 | | 2.141E-01 | 3.048E-01 | 1.678E-02 | -0.363 |
| CD-115 | 2.725E-06 | | 2.339E-05 | Half-Life | too short | |
| SN-117M | 8.664E-02 | | 7.412E-02 | 1.240E-01 | 7.016E-03 | 0.699 |
| SB-122 | 4.646E+00 | | 7.942E+00 | 1.189E+01 | 7.090E-01 | 0.391 |
| I-123 | 2.683E+03 | | 1.382E+03 | Half-Life | too short | |
| TE-123M | 3.002E-02 | | 3.092E-02 | 5.137E-02 | 2.938E-03 | 0.584 |
| I-124 | -2.275E-03 | | 1.814E+00 | 2.545E+00 | 1.522E-01 | -0.001 |
| SB-124 | 2.156E-02 | | 8.175E-02 | 1.390E-01 | 9.396E-03 | 0.155 |
| SB-125 | 1.686E-02 | | 9.216E-02 | 1.534E-01 | 8.992E-03 | 0.110 |
| TE-125M | -1.141E+01 | | 1.048E+01 | 1.612E+01 | 1.516E+00 | -0.708 |
| I-126 | 1.414E-01 | | 2.855E-01 | 4.204E-01 | 2.525E-02 | 0.336 |
| SB-126 | 6.080E-03 | | 2.076E-01 | 2.897E-01 | 1.949E-02 | 0.021 |
| SB-127 | -3.294E-01 | | 3.202E+00 | 5.128E+00 | 5.881E-01 | -0.064 |
| XE-127 | -3.823E-04 | | 5.639E-02 | 8.258E-02 | 4.604E-03 | -0.005 |
| I-131 | 7.849E-02 | | 1.626E-01 | 2.770E-01 | 1.765E-02 | 0.283 |
| TE-132 | -4.249E-01 | | 1.965E+00 | 3.264E+00 | 5.028E-01 | -0.130 |
| BA-133 | 1.821E-02 | | 4.664E-02 | 6.916E-02 | 7.950E-03 | 0.263 |
| I-133 | -4.463E-02 | | 1.431E-01 | Half-Life | too short | |
| CS-134 | 1.111E-01 | + | 6.603E-02 | 8.920E-02 | 7.020E-03 | 1.246 |
| CS-135 | 2.736E-01 | | 1.862E-01 | 2.929E-01 | 2.247E-02 | 0.934 |
| I-135 | -2.433E+14 | | 5.414E+14 | Half-Life | too short | |
| CS-136 | 8.907E-02 | | 1.225E-01 | 2.185E-01 | 1.759E-02 | 0.408 |
| CE-139 | 1.718E-04 | | 3.147E-02 | 5.030E-02 | 2.701E-03 | 0.003 |
| BA-140 | 2.583E-01 | | 3.552E-01 | 5.936E-01 | 1.932E-01 | 0.435 |
| LA-140 | 3.339E-02 | | 1.130E-01 | 1.920E-01 | 1.273E-02 | 0.174 |
| CE-141 | -2.223E-02 | | 7.223E-02 | 1.143E-01 | 7.296E-03 | -0.194 |
| CE-143 | 1.269E-02 | | 1.808E-03 | Half-Life | too short | |
| CE-144 | 8.446E-02 | | 2.426E-01 | 3.463E-01 | 5.042E-02 | 0.244 |
| PM-144 | 1.210E-02 | | 3.472E-02 | 5.771E-02 | 3.699E-03 | 0.210 |
| PR-144 | 8.218E-01 | | 2.359E+00 | 3.920E+00 | 2.510E-01 | 0.210 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| PM-146 | -2.419E-03 | | 4.658E-02 | 7.624E-02 | 6.527E-03 | -0.032 |
| ND-147 | 6.183E-02 | | 7.704E-01 | 1.265E+00 | 1.717E-01 | 0.049 |
| PM-149 | -1.772E-04 | | 2.201E-04 | Half-Life | too short | |
| EU-152 | 5.378E-02 | | 1.313E-01 | 1.565E-01 | 1.013E-02 | 0.344 |
| GD-153 | 1.007E-01 | | 8.605E-02 | 1.288E-01 | 1.033E-02 | 0.782 |
| EU-154 | -9.437E-02 | | 1.248E-01 | 1.880E-01 | 1.843E-02 | -0.502 |
| EU-155 | 1.112E-01 | | 1.115E-01 | 1.863E-01 | 1.442E-02 | 0.597 |
| TB-160 | 6.230E-02 | | 1.324E-01 | 2.313E-01 | 2.101E-02 | 0.269 |
| HO-166M | 1.165E-02 | | 5.976E-02 | 9.809E-02 | 6.482E-03 | 0.119 |
| TM-171 | 1.133E+01 | | 2.848E+01 | 4.130E+01 | 2.880E+00 | 0.274 |
| LU-176 | 2.230E-03 | | 2.393E-02 | 3.999E-02 | 2.329E-03 | 0.056 |
| LU-177 | 4.566E+00 | + | 3.071E+00 | 3.407E+00 | 1.909E-01 | 1.340 |
| LU-177M | 8.225E-02 | | 1.862E-01 | 3.147E-01 | 1.745E-02 | 0.261 |
| HF-181 | -3.660E-02 | | 4.458E-02 | 6.846E-02 | 3.971E-03 | -0.535 |
| W-181 | 5.289E-01 | | 3.793E-01 | 5.713E-01 | 3.936E-02 | 0.926 |
| TA-182 | 7.432E-02 | | 1.991E-01 | 3.391E-01 | 2.029E-02 | 0.219 |
| RE-183 | -5.084E-02 | | 1.199E-01 | 1.882E-01 | 1.037E-02 | -0.270 |
| RE-184 | 1.025E-01 | | 2.306E-01 | 3.934E-01 | 2.276E-02 | 0.260 |
| OS-185 | -2.644E-02 | | 4.433E-02 | 6.804E-02 | 4.058E-03 | -0.389 |
| RE-188 | -1.273E-01 | | 1.935E-01 | 3.012E-01 | 1.746E-02 | -0.423 |
| W-188 | 3.874E+00 | | 8.201E+00 | 1.228E+01 | 7.166E-01 | 0.315 |
| IR-192 | 8.460E-03 | | 3.499E-02 | 5.889E-02 | 3.438E-03 | 0.144 |
| AU-195 | 2.714E-01 | | 2.582E-01 | 3.837E-01 | 3.045E-02 | 0.707 |
| TL-200 | -4.637E-03 | | 4.811E-03 | Half-Life | too short | |
| TL-201 | 1.313E+01 | | 2.147E+01 | 3.520E+01 | 1.891E+00 | 0.373 |
| TL-202 | 7.818E-02 | | 9.210E-02 | 1.594E-01 | 9.015E-03 | 0.490 |
| BI-207 | 8.529E-03 | | 5.026E-02 | 8.481E-02 | 6.277E-03 | 0.101 |
| TL-207 | -1.336E-01 | | 7.040E-01 | 1.157E+00 | 1.911E-01 | -0.115 |
| PO-209 | -6.750E-01 | | 6.689E+00 | 1.108E+01 | 1.037E+00 | -0.061 |
| PB-211 | -1.168E+00 | | 1.233E+00 | 1.529E+00 | 9.527E-01 | -0.764 |
| BI-212 | 1.078E+00 | + | 4.252E-01 | 6.499E-01 | 5.528E-02 | 1.658 |
| PO-215 | -1.336E-01 | | 7.040E-01 | 1.157E+00 | 1.911E-01 | -0.115 |
| RN-219 | 3.036E-01 | | 4.389E-01 | 7.488E-01 | 1.009E-01 | 0.405 |
| RN-220 | -1.565E+01 | | 2.477E+01 | 3.824E+01 | 2.273E+00 | -0.409 |
| RA-223 | -1.336E-01 | | 7.040E-01 | 1.157E+00 | 1.911E-01 | -0.115 |
| AC-227 | -3.902E-02 | | 3.852E-01 | 6.410E-01 | 8.946E-02 | -0.061 |
| TH-227 | -3.902E-02 | | 3.852E-01 | 6.410E-01 | 1.083E-01 | -0.061 |
| TH-229 | 5.974E-01 | | 5.000E-01 | 8.779E-01 | 4.849E-02 | 0.680 |
| PA-231 | -2.020E-04 | | 1.611E+00 | 2.334E+00 | 3.219E-01 | 0.000 |
| TH-231 | -1.336E-01 | | 7.040E-01 | 1.157E+00 | 1.911E-01 | -0.115 |
| U-231 | -1.942E+00 | | 2.771E+00 | 3.772E+00 | 3.062E-01 | -0.515 |
| PA-233 | -4.764E-02 | | 6.269E-02 | 9.976E-02 | 6.159E-03 | -0.478 |
| PA-234 | 2.733E-01 | | 2.830E-01 | 5.071E-01 | 9.584E-02 | 0.539 |
| PA-234M | -5.889E-01 | | 4.631E+00 | 7.684E+00 | 7.428E-01 | -0.077 |
| U-235 | 1.591E-01 | | 2.220E-01 | 3.622E-01 | 5.962E-02 | 0.439 |
| NP-236 | -4.495E-02 | | 8.533E-02 | 1.334E-01 | 7.455E-03 | -0.337 |
| NP-239 | -1.762E-01 | | 1.972E-01 | 3.056E-01 | 2.208E-02 | -0.577 |
| AM-241 | -7.856E-02 | | 1.523E-01 | 2.102E-01 | 1.561E-02 | -0.374 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | 5.567E-02 | | 9.985E-02 | 1.645E-01 | 1.265E-02 | 0.338 |
| AM-246 | 9.799E-02 | | 1.396E-01 | 2.467E-01 | 1.768E-02 | 0.397 |
| CM-247 | 3.260E-02 | | 3.890E-02 | 6.711E-02 | 3.686E-03 | 0.486 |
| CF-249 | 2.034E-02 | | 4.066E-02 | 6.905E-02 | 3.775E-03 | 0.295 |
| CF-251 | 3.503E-02 | | 1.356E-01 | 2.188E-01 | 1.187E-02 | 0.160 |

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245388007            *
* Acquisition date   : 4-FEB-2010 10:42:06 Detector SN#      :              *
* Detector ID        : GAM14                      Sensitivity   : 5.000        *
* Geometry           : CAN                          Energy tolerance: 1.500      *
* Elapsed live time  : 0 02:00:00.00              Abundance limit : 75.000      *
* Elapsed real time  : 0 02:00:01.33              Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID          : G245388007              Analyst initials: MXR1         *
* Batch Number       : 944964                  Sample Quantity : 1.2107E+02 GRAM  *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 6-MAR-2009 11:43:06 MS Isotope       :                *
* MSD DPM             : 0.000                      MSD Isotope   :                *
* LCS DPM             : 0.000                      LCS Isotope   :                *
* LCSD DPM            : 0.000                      LCSD Isotope  :                *
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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.273E+01 | 2.191E+00 | 2.643E-01 | 1.118E+00 |
| CD-109 | 3.147E+00 | 1.054E+00 | 5.739E-01 | 5.380E-01 |
| SN-126 | 3.071E-01 | 1.029E-01 | 5.620E-02 | 5.250E-02 |
| BA-137M | 8.027E-02 | 4.698E-02 | 3.275E-02 | 2.397E-02 |
| CS-137 | 8.485E-02 | 4.967E-02 | 3.462E-02 | 2.534E-02 |
| HG-203 | 9.334E-02 | 8.963E-02 | 3.482E-02 | 4.573E-02 |
| TL-208 | 5.490E-01 | 9.535E-02 | 2.753E-02 | 4.865E-02 |
| BI-210 | 1.471E+00 | 3.471E+00 | 1.987E+00 | 1.771E+00 |
| PB-210 | 1.471E+00 | 3.471E+00 | 1.987E+00 | 1.771E+00 |
| PO-210 | 1.471E+00 | 3.471E+00 | 1.987E+00 | 1.771E+00 |
| BI-211 | 4.138E+00 | 5.490E-01 | 1.654E-01 | 2.801E-01 |
| PB-212 | 1.612E+00 | 1.570E-01 | 4.504E-02 | 8.009E-02 |
| PO-212 | 1.612E+00 | 1.570E-01 | 4.504E-02 | 8.009E-02 |
| BI-214 | 1.083E+00 | 1.762E-01 | 5.656E-02 | 8.989E-02 |
| PB-214 | 1.439E+00 | 2.047E-01 | 5.765E-02 | 1.044E-01 |
| PO-214 | 1.439E+00 | 2.047E-01 | 5.765E-02 | 1.044E-01 |
| PO-216 | 1.612E+00 | 1.570E-01 | 4.504E-02 | 8.009E-02 |
| PO-218 | 1.439E+00 | 2.047E-01 | 5.765E-02 | 1.044E-01 |
| RA-224 | 4.662E+00 | 1.408E+00 | 5.122E-01 | 7.184E-01 |
| RA-226 | 1.083E+00 | 1.762E-01 | 5.656E-02 | 8.989E-02 |
| AC-228 | 1.561E+00 | 3.328E-01 | 1.007E-01 | 1.698E-01 |
| RA-228 | 1.561E+00 | 3.328E-01 | 1.007E-01 | 1.698E-01 |
| TH-228 | 1.645E+00 | 1.601E-01 | 4.594E-02 | 8.169E-02 |
| TH-230 | 1.083E+00 | 1.762E-01 | 5.656E-02 | 8.989E-02 |
| TH-232 | 1.561E+00 | 3.328E-01 | 1.007E-01 | 1.698E-01 |
| TH-234 | 8.971E-01 | 1.642E+00 | 9.672E-01 | 8.377E-01 |
| U-234 | 1.083E+00 | 1.762E-01 | 5.656E-02 | 8.989E-02 |
| NP-237 | 9.018E-01 | 3.529E-01 | 1.664E-01 | 1.801E-01 |
| U-238 | 8.971E-01 | 1.642E+00 | 9.672E-01 | 8.377E-01 |
| AM-243 | 3.979E-01 | 7.450E-02 | 4.420E-02 | 3.801E-02 |
| ANH-511 | 9.670E-02 | 5.870E-02 | 2.327E-02 | 2.995E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | 1.043E-01 | 3.339E-01 | 2.887E-01 | 1.704E-01 NOT IDENT. |
| NA-22 | -3.303E-02 | 4.390E-02 | 3.390E-02 | 2.240E-02 NOT IDENT. |
| NA-24 | 7.372E+07 | 1.366E+08 | 0.000E+00 | 6.970E+07 SHORT HLIF |
| AL-26 | -1.211E-02 | 2.774E-02 | 2.045E-02 | 1.415E-02 NOT IDENT. |
| TI-44 | 3.805E-01 | 5.446E-02 | 4.204E-02 | 2.779E-02 FAIL ABUN |
| SC-46 | -8.599E-03 | 3.800E-02 | 3.190E-02 | 1.939E-02 FAIL ABUN |
| V-48 | 1.052E-02 | 8.281E-02 | 7.146E-02 | 4.225E-02 NOT IDENT. |
| CR-51 | -4.072E-01 | 4.184E-01 | 3.417E-01 | 2.135E-01 NOT IDENT. |
| MN-52 | 4.587E-01 | 4.357E-01 | 4.108E-01 | 2.223E-01 NOT IDENT. |
| MN-54 | 1.548E-02 | 3.672E-02 | 3.261E-02 | 1.874E-02 NOT IDENT. |
| CO-56 | -3.726E-02 | 4.072E-02 | 3.218E-02 | 2.077E-02 NOT IDENT. |
| CO-57 | -1.109E-03 | 2.545E-02 | 2.147E-02 | 1.298E-02 NOT IDENT. |
| CO-58 | -1.646E-02 | 3.778E-02 | 2.966E-02 | 1.928E-02 NOT IDENT. |
| FE-59 | -2.652E-02 | 9.154E-02 | 7.532E-02 | 4.671E-02 NOT IDENT. |
| CO-60 | -3.194E-02 | 3.847E-02 | 2.877E-02 | 1.963E-02 NOT IDENT. |
| ZN-65 | 3.580E-02 | 9.217E-02 | 7.081E-02 | 4.703E-02 NOT IDENT. |
| GE-68 | -6.022E-01 | 1.194E+00 | 9.614E-01 | 6.092E-01 NOT IDENT. |
| AS-73 | -7.724E-02 | 6.867E-01 | 5.721E-01 | 3.504E-01 NOT IDENT. |
| AS-74 | -6.823E-02 | 1.099E-01 | 8.746E-02 | 5.605E-02 NOT IDENT. |
| SE-75 | -1.976E-02 | 5.045E-02 | 3.709E-02 | 2.574E-02 FAIL ABUN |
| BR-77 | 7.387E-01 | 3.989E+01 | 0.000E+00 | 2.035E+01 SHORT HLIF |
| SR-82 | -4.397E-01 | 4.569E-01 | 3.436E-01 | 2.331E-01 NOT IDENT. |
| RB-83 | 1.124E-02 | 6.778E-02 | 5.786E-02 | 3.458E-02 NOT IDENT. |
| RB-84 | -4.014E-02 | 7.403E-02 | 6.032E-02 | 3.777E-02 NOT IDENT. |
| KR-85 | 1.124E+01 | 8.440E+00 | 6.844E+00 | 4.306E+00 NOT IDENT. |
| SR-85 | 6.062E-02 | 4.553E-02 | 3.692E-02 | 2.323E-02 NOT IDENT. |
| RB-86 | -7.633E-01 | 8.644E-01 | 6.635E-01 | 4.410E-01 NOT IDENT. |
| Y-88 | 1.573E-02 | 3.188E-02 | 2.886E-02 | 1.627E-02 NOT IDENT. |
| ZR-88 | -1.789E-02 | 3.137E-02 | 2.587E-02 | 1.600E-02 NOT IDENT. |
| Y-91 | 2.809E+00 | 1.841E+01 | 1.574E+01 | 9.394E+00 NOT IDENT. |
| NB-94 | -3.446E-03 | 3.419E-02 | 2.815E-02 | 1.744E-02 NOT IDENT. |
| NB-95 | 8.798E-03 | 4.414E-02 | 3.707E-02 | 2.252E-02 NOT IDENT. |
| NB-95M | 5.160E-01 | 1.685E-01 | 1.428E-01 | 8.599E-02 NOT IDENT. |
| ZR-95 | 9.127E-02 | 7.346E-02 | 6.693E-02 | 3.748E-02 NOT IDENT. |
| NB-97 | 6.114E+06 | 1.176E+07 | 0.000E+00 | 5.998E+06 SHORT HLIF |
| ZR-97 | 4.517E+08 | 2.300E+08 | 0.000E+00 | 1.174E+08 SHORT HLIF |
| MO-99 | -5.710E+00 | 3.914E+01 | 3.197E+01 | 1.997E+01 NOT IDENT. |
| TC-99M | -5.178E+21 | 2.475E+22 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| RH-101 | -4.976E-03 | 3.178E-02 | 2.776E-02 | 1.622E-02 NOT IDENT. |
| RH-102 | 1.963E-02 | 2.840E-02 | 2.516E-02 | 1.449E-02 NOT IDENT. |
| RU-103 | 3.603E-02 | 4.251E-02 | 3.787E-02 | 2.169E-02 FAIL ABUN |
| RH-106 | -2.619E-01 | 3.016E-01 | 2.314E-01 | 1.539E-01 FAIL ABUN |
| RU-106 | -2.619E-01 | 3.005E-01 | 2.314E-01 | 1.533E-01 FAIL ABUN |
| AG-108M | -8.347E-03 | 3.305E-02 | 2.766E-02 | 1.686E-02 NOT IDENT. |
| AG-110M | 1.580E-02 | 3.659E-02 | 2.773E-02 | 1.867E-02 NOT IDENT. |
| IN-111 | 2.640E+00 | 3.396E+00 | 2.711E+00 | 1.733E+00 NOT IDENT. |
| IN-113M | -1.918E-02 | 4.386E-02 | 3.646E-02 | 2.238E-02 NOT IDENT. |
| SN-113 | -1.918E-02 | 4.386E-02 | 3.646E-02 | 2.238E-02 NOT IDENT. |
| IN-114M | -1.108E-01 | 2.098E-01 | 1.560E-01 | 1.071E-01 NOT IDENT. |
| CD-115 | 2.725E+00 | 4.584E+01 | 0.000E+00 | 2.339E+01 SHORT HLIF |
| SN-117M | 8.664E-02 | 7.264E-02 | 6.363E-02 | 3.706E-02 NOT IDENT. |
| SB-122 | 4.646E+00 | 7.783E+00 | 6.009E+00 | 3.971E+00 NOT IDENT. |
| I-123 | 2.683E+09 | 2.708E+09 | 0.000E+00 | 1.382E+09 SHORT HLIF |
| TE-123M | 3.002E-02 | 3.030E-02 | 2.635E-02 | 1.546E-02 NOT IDENT. |
| I-124 | -2.275E-03 | 1.778E+00 | 1.284E+00 | 9.069E-01 NOT IDENT. |
| SB-124 | 2.156E-02 | 8.011E-02 | 6.927E-02 | 4.087E-02 FAIL ABUN |
| SB-125 | 1.686E-02 | 9.032E-02 | 7.777E-02 | 4.608E-02 FAIL ABUN |
| TE-125M | -1.141E+01 | 1.027E+01 | 8.306E+00 | 5.241E+00 NOT IDENT. |
| I-126 | 1.414E-01 | 2.798E-01 | 2.119E-01 | 1.428E-01 NOT IDENT. |
| SB-126 | 6.080E-03 | 2.034E-01 | 1.459E-01 | 1.038E-01 FAIL ABUN |
| SB-127 | -3.294E-01 | 3.138E+00 | 2.585E+00 | 1.601E+00 NOT IDENT. |
| XE-127 | -3.823E-04 | 5.526E-02 | 4.224E-02 | 2.820E-02 NOT IDENT. |
| I-131 | 7.849E-02 | 1.594E-01 | 1.407E-01 | 8.131E-02 NOT IDENT. |
| TE-132 | -4.249E-01 | 1.926E+00 | 1.667E+00 | 9.824E-01 NOT IDENT. |
| BA-133 | 1.821E-02 | 4.571E-02 | 3.514E-02 | 2.332E-02 NOT IDENT. |
| I-133 | -4.463E+04 | 2.804E+05 | 0.000E+00 | 1.431E+05 SHORT HLIF |
| CS-134 | 1.111E-01 | 6.471E-02 | 4.487E-02 | 3.302E-02 FAIL ABUN |
| CS-135 | 2.736E-01 | 1.825E-01 | 1.493E-01 | 9.310E-02 NOT IDENT. |
| I-135 | -2.433E+20 | 1.061E+21 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| CS-136 | 8.907E-02 | 1.200E-01 | 1.095E-01 | 6.124E-02 FAIL ABUN |
| CE-139 | 1.718E-04 | 3.084E-02 | 2.579E-02 | 1.573E-02 NOT IDENT. |
| BA-140 | 2.583E-01 | 3.481E-01 | 3.000E-01 | 1.776E-01 NOT IDENT. |
| LA-140 | 3.339E-02 | 1.107E-01 | 9.576E-02 | 5.648E-02 NOT IDENT. |
| CE-141 | -2.223E-02 | 7.079E-02 | 5.871E-02 | 3.612E-02 NOT IDENT. |

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|---------|------------|-----------|-----------|-----------|------------|
| CE-143 | 1.269E+04 | 3.543E+03 | 0.000E+00 | 1.808E+03 | SHORT HLIF |
| CE-144 | 8.446E-02 | 2.377E-01 | 1.780E-01 | 1.213E-01 | NOT IDENT. |
| PM-144 | 1.210E-02 | 3.403E-02 | 2.908E-02 | 1.736E-02 | NOT IDENT. |
| PR-144 | 8.218E-01 | 2.312E+00 | 1.975E+00 | 1.180E+00 | NOT IDENT. |
| PM-146 | -2.419E-03 | 4.565E-02 | 3.862E-02 | 2.329E-02 | NOT IDENT. |
| ND-147 | 6.183E-02 | 7.550E-01 | 6.397E-01 | 3.852E-01 | FAIL ABUN |
| PM-149 | -1.772E+02 | 4.315E+02 | 0.000E+00 | 2.201E+02 | SHORT HLIF |
| EU-152 | 5.378E-02 | 1.287E-01 | 7.954E-02 | 6.567E-02 | FAIL ABUN |
| GD-153 | 1.007E-01 | 8.433E-02 | 6.645E-02 | 4.302E-02 | FAIL ABUN |
| EU-154 | -9.437E-02 | 1.223E-01 | 9.402E-02 | 6.238E-02 | NOT IDENT. |
| EU-155 | 1.112E-01 | 1.093E-01 | 9.602E-02 | 5.576E-02 | FAIL ABUN |
| TB-160 | 6.230E-02 | 1.297E-01 | 1.162E-01 | 6.619E-02 | FAIL ABUN |
| HO-166M | 1.165E-02 | 5.857E-02 | 4.941E-02 | 2.988E-02 | NOT IDENT. |
| TM-171 | 1.133E+01 | 2.791E+01 | 2.141E+01 | 1.424E+01 | NOT IDENT. |
| LU-176 | 2.230E-03 | 2.345E-02 | 2.035E-02 | 1.196E-02 | FAIL ABUN |
| LU-177 | 4.566E+00 | 3.010E+00 | 1.742E+00 | 1.535E+00 | FAIL ABUN |
| LU-177M | 8.225E-02 | 1.825E-01 | 1.596E-01 | 9.312E-02 | FAIL ABUN |
| HF-181 | -3.660E-02 | 4.369E-02 | 3.465E-02 | 2.229E-02 | NOT IDENT. |
| W-181 | 5.289E-01 | 3.717E-01 | 2.962E-01 | 1.896E-01 | NOT IDENT. |
| TA-182 | 7.432E-02 | 1.951E-01 | 1.697E-01 | 9.953E-02 | FAIL ABUN |
| RE-183 | -5.084E-02 | 1.175E-01 | 9.652E-02 | 5.996E-02 | FAIL ABUN |
| RE-184 | 1.025E-01 | 2.260E-01 | 2.007E-01 | 1.153E-01 | NOT IDENT. |
| OS-185 | -2.644E-02 | 4.344E-02 | 3.431E-02 | 2.216E-02 | NOT IDENT. |
| RE-188 | -1.273E-01 | 1.897E-01 | 1.546E-01 | 9.677E-02 | NOT IDENT. |
| W-188 | 3.874E+00 | 8.037E+00 | 6.255E+00 | 4.100E+00 | FAIL ABUN |
| IR-192 | 8.460E-03 | 3.429E-02 | 2.996E-02 | 1.749E-02 | FAIL ABUN |
| AU-195 | 2.714E-01 | 2.530E-01 | 1.980E-01 | 1.291E-01 | FAIL ABUN |
| TL-200 | -4.637E+03 | 9.429E+03 | 0.000E+00 | 4.811E+03 | SHORT HLIF |
| TL-201 | 1.313E+01 | 2.104E+01 | 1.805E+01 | 1.073E+01 | NOT IDENT. |
| TL-202 | 7.818E-02 | 9.026E-02 | 8.079E-02 | 4.605E-02 | NOT IDENT. |
| BI-207 | 8.529E-03 | 4.925E-02 | 4.251E-02 | 2.513E-02 | FAIL ABUN |
| TL-207 | -1.336E-01 | 6.899E-01 | 5.887E-01 | 3.520E-01 | FAIL ABUN |
| PO-209 | -6.750E-01 | 6.556E+00 | 5.564E+00 | 3.345E+00 | NOT IDENT. |
| PB-211 | -1.168E+00 | 1.209E+00 | 7.755E-01 | 6.167E-01 | NOT IDENT. |
| BI-212 | 1.078E+00 | 4.167E-01 | 3.273E-01 | 2.126E-01 | FAIL ABUN |
| PO-215 | -1.336E-01 | 6.899E-01 | 5.887E-01 | 3.520E-01 | FAIL ABUN |
| RN-219 | 3.036E-01 | 4.301E-01 | 3.798E-01 | 2.195E-01 | FAIL ABUN |
| RN-220 | -1.565E+01 | 2.428E+01 | 1.932E+01 | 1.239E+01 | NOT IDENT. |
| RA-223 | -1.336E-01 | 6.899E-01 | 5.887E-01 | 3.520E-01 | FAIL ABUN |
| AC-227 | -3.902E-02 | 3.775E-01 | 3.269E-01 | 1.926E-01 | NOT IDENT. |
| TH-227 | -3.902E-02 | 3.775E-01 | 3.269E-01 | 1.926E-01 | FAIL ABUN |
| TH-229 | 5.974E-01 | 4.900E-01 | 4.493E-01 | 2.500E-01 | FAIL ABUN |
| PA-231 | -2.020E-04 | 1.579E+00 | 1.189E+00 | 8.054E-01 | NOT IDENT. |
| TH-231 | -1.336E-01 | 6.899E-01 | 5.887E-01 | 3.520E-01 | FAIL ABUN |
| U-231 | -1.942E+00 | 2.715E+00 | 1.947E+00 | 1.385E+00 | FAIL ABUN |
| PA-233 | -4.764E-02 | 6.143E-02 | 5.076E-02 | 3.134E-02 | FAIL ABUN |
| PA-234 | 2.733E-01 | 2.773E-01 | 2.545E-01 | 1.415E-01 | FAIL ABUN |
| PA-234M | -5.889E-01 | 4.538E+00 | 3.854E+00 | 2.315E+00 | NOT IDENT. |
| U-235 | 1.591E-01 | 2.176E-01 | 1.860E-01 | 1.110E-01 | FAIL ABUN |
| NP-236 | -4.495E-02 | 8.363E-02 | 6.843E-02 | 4.267E-02 | NOT IDENT. |
| NP-239 | -1.762E-01 | 1.933E-01 | 1.573E-01 | 9.862E-02 | FAIL ABUN |
| AM-241 | -7.856E-02 | 1.492E-01 | 1.091E-01 | 7.614E-02 | NOT IDENT. |
| CM-243 | 5.567E-02 | 9.786E-02 | 8.483E-02 | 4.993E-02 | FAIL ABUN |
| AM-246 | 9.799E-02 | 1.368E-01 | 1.236E-01 | 6.981E-02 | NOT IDENT. |
| CM-247 | 3.260E-02 | 3.812E-02 | 3.404E-02 | 1.945E-02 | FAIL ABUN |
| CF-249 | 2.034E-02 | 3.985E-02 | 3.504E-02 | 2.033E-02 | NOT IDENT. |
| CF-251 | 3.503E-02 | 1.329E-01 | 1.121E-01 | 6.781E-02 | NOT IDENT. |


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*                                     *
*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD       *
*               CHARLESTON ,SC 29417  *
*               GAMMA SPECTROSCOPY BACKGROUND REPORT *
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| ENERGY | MDA COUNTS |
|--------|------------|
|--------|------------|

| | |
|-------|----------|
| 46.50 | 384.0757 |
| 46.50 | 384.0757 |
| 46.50 | 384.0757 |
| 48.70 | 365.1060 |
| 49.72 | 368.8011 |
| 51.35 | 387.4706 |
| 52.39 | 422.2963 |
| 52.97 | 405.3719 |
| 53.15 | 411.8885 |
| 53.44 | 403.8268 |
| 54.07 | 390.4907 |
| 56.28 | 405.8106 |
| 56.28 | 405.8117 |
| 57.37 | 0.0000 |
| 57.53 | 449.9031 |
| 57.53 | 449.9039 |
| 57.60 | 449.9365 |
| 57.98 | 447.9218 |
| 57.98 | 447.9218 |
| 59.32 | 474.9372 |
| 59.32 | 474.9372 |
| 59.40 | 474.9767 |
| 59.54 | 476.6956 |
| 59.72 | 476.7847 |
| 60.01 | 476.9276 |
| 61.10 | 427.9001 |
| 61.14 | 427.9175 |
| 61.30 | 427.9879 |
| 63.00 | 463.4881 |
| 63.29 | 517.4370 |
| 63.29 | 517.4370 |
| 63.58 | 517.5872 |
| 64.28 | 538.6681 |
| 65.12 | 469.4464 |
| 65.20 | 469.4839 |
| 65.20 | 469.4839 |
| 66.05 | 478.1782 |
| 66.72 | 486.7977 |
| 66.83 | 486.8514 |
| 66.91 | 543.3881 |
| 67.20 | 543.5417 |
| 67.20 | 543.5417 |
| 67.75 | 548.8204 |
| 67.85 | 548.8727 |
| 68.90 | 516.1299 |
| 68.90 | 516.1299 |
| 69.30 | 555.1900 |
| 69.67 | 551.9162 |
| 70.82 | 545.4278 |
| 70.82 | 545.4278 |
| 70.83 | 545.4318 |
| 72.80 | 484.6092 |
| 72.87 | 484.6402 |
| 72.87 | 484.6402 |
| 74.67 | 562.4473 |
| 74.81 | 562.5190 |
| 74.81 | 562.5190 |
| 74.81 | 562.5190 |
| 74.81 | 562.5190 |
| 74.81 | 562.5190 |
| 74.81 | 562.5190 |
| 74.81 | 562.5190 |
| 74.97 | 562.6011 |
| 75.28 | 562.7600 |
| 75.70 | 562.9743 |
| 77.11 | 563.6921 |
| 77.11 | 563.6921 |

| | |
|--------|----------|
| 77.11 | 563.6921 |
| 77.11 | 563.6921 |
| 77.11 | 563.6921 |
| 77.11 | 563.6921 |
| 77.11 | 563.6921 |
| 78.38 | 537.4590 |
| 79.62 | 563.2719 |
| 79.80 | 563.3619 |
| 79.80 | 563.3619 |
| 80.11 | 563.5153 |
| 80.18 | 563.5500 |
| 80.30 | 563.6093 |
| 80.30 | 563.6093 |
| 80.57 | 563.7422 |
| 81.00 | 563.9548 |
| 81.07 | 563.9896 |
| 81.07 | 563.9896 |
| 81.07 | 563.9896 |
| 81.07 | 563.9896 |
| 82.60 | 514.1663 |
| 83.37 | 387.9874 |
| 83.78 | 388.1250 |
| 83.78 | 388.1250 |
| 83.78 | 388.1250 |
| 83.78 | 388.1250 |
| 84.21 | 388.2682 |
| 84.90 | 388.4970 |
| 85.43 | 388.6711 |
| 86.29 | 388.9532 |
| 86.50 | 389.0220 |
| 86.54 | 389.0361 |
| 86.59 | 389.0515 |
| 86.72 | 389.0950 |
| 86.79 | 389.1161 |
| 86.94 | 389.1666 |
| 87.30 | 389.2831 |
| 87.30 | 389.2831 |
| 87.30 | 389.2831 |
| 87.30 | 389.2831 |
| 87.30 | 389.2831 |
| 87.30 | 389.2831 |
| 87.57 | 389.3716 |
| 87.88 | 0.0000 |
| 88.03 | 389.5204 |
| 88.36 | 389.6285 |
| 88.47 | 389.6636 |
| 89.95 | 390.1409 |
| 91.11 | 390.5115 |
| 92.29 | 390.8863 |
| 92.38 | 390.9158 |
| 92.38 | 390.9158 |
| 93.35 | 391.2218 |
| 94.00 | 360.7934 |
| 94.67 | 393.3373 |
| 94.67 | 393.3387 |
| 94.90 | 437.6906 |
| 94.90 | 437.6906 |
| 94.90 | 437.6906 |
| 94.90 | 437.6906 |
| 95.87 | 451.6646 |
| 95.87 | 451.6646 |
| 96.73 | 402.5122 |
| 97.43 | 317.4079 |
| 98.44 | 319.3667 |
| 98.44 | 319.3667 |
| 98.88 | 341.6858 |
| 99.55 | 351.8351 |
| 99.55 | 351.8351 |
| 99.86 | 341.9458 |
| 100.00 | 360.3042 |
| 100.10 | 360.3325 |
| 103.18 | 399.5979 |
| 103.76 | 366.5492 |
| 105.00 | 340.0727 |
| 105.31 | 354.1007 |
| 108.00 | 384.9172 |
| 109.28 | 428.3301 |

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| 111.00 | 353.4398 |
| 111.00 | 353.4398 |
| 111.76 | 380.5889 |
| 112.95 | 369.0469 |
| 115.19 | 332.8920 |
| 116.30 | 338.5635 |
| 117.00 | 375.5271 |
| 117.00 | 375.5271 |
| 117.66 | 370.2882 |
| 121.11 | 339.7062 |
| 121.62 | 331.1411 |
| 121.78 | 320.3189 |
| 122.06 | 326.8970 |
| 122.32 | 308.4897 |
| 122.32 | 308.4897 |
| 122.32 | 308.4897 |
| 122.32 | 308.4897 |
| 123.07 | 314.2381 |
| 127.23 | 312.1378 |
| 129.76 | 349.3481 |
| 131.20 | 321.7080 |
| 133.02 | 337.8489 |
| 133.54 | 325.7043 |
| 135.34 | 336.3879 |
| 136.00 | 348.5889 |
| 136.25 | 338.7774 |
| 136.48 | 347.6015 |
| 140.51 | 350.6975 |
| 140.51 | 0.0000 |
| 142.18 | 313.6496 |
| 142.65 | 308.2388 |
| 143.76 | 321.6741 |
| 144.24 | 336.0952 |
| 144.24 | 336.0952 |
| 144.24 | 336.0952 |
| 144.24 | 336.0952 |
| 145.22 | 340.7105 |
| 145.44 | 355.0938 |
| 147.16 | 367.6155 |
| 152.43 | 327.8240 |
| 152.70 | 327.8782 |
| 153.22 | 320.2235 |
| 154.21 | 370.3070 |
| 154.21 | 370.3070 |
| 154.21 | 370.3070 |
| 154.21 | 370.3070 |
| 155.03 | 373.8182 |
| 156.02 | 329.6430 |
| 158.56 | 300.1266 |
| 159.00 | 0.0000 |
| 159.00 | 305.7642 |
| 160.31 | 352.7336 |
| 161.27 | 341.8008 |
| 162.32 | 330.8689 |
| 162.64 | 336.5013 |
| 163.35 | 321.0359 |
| 163.89 | 315.5595 |
| 165.85 | 309.2200 |
| 167.43 | 286.0371 |
| 171.28 | 311.2971 |
| 171.86 | 333.8018 |
| 172.10 | 333.8472 |
| 176.55 | 312.2177 |
| 176.60 | 312.2261 |
| 181.06 | 321.2482 |
| 184.41 | 288.7480 |
| 185.71 | 269.3868 |
| 186.00 | 237.8197 |
| 190.27 | 295.6888 |
| 192.34 | 306.0802 |
| 193.63 | 261.1512 |
| 197.04 | 310.6702 |
| 198.01 | 299.0107 |
| 198.60 | 297.2838 |
| 200.40 | 0.0000 |
| 201.83 | 299.2078 |
| 202.84 | 273.3307 |
| 205.31 | 291.9199 |

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| 208.36 | 296.0238 |
| 208.81 | 296.0910 |
| 209.75 | 296.2294 |
| 209.75 | 296.2294 |
| 210.97 | 265.3047 |
| 215.65 | 272.4704 |
| 216.55 | 279.2884 |
| 218.09 | 272.6639 |
| 222.10 | 273.1969 |
| 223.80 | 267.8962 |
| 226.40 | 275.6041 |
| 227.00 | 263.6964 |
| 227.08 | 263.7069 |
| 227.20 | 263.7209 |
| 228.16 | 274.9115 |
| 228.18 | 274.9152 |
| 228.18 | 274.9152 |
| 231.56 | 0.0000 |
| 235.69 | 293.1679 |
| 236.00 | 271.6055 |
| 236.00 | 271.6055 |
| 238.63 | 230.8372 |
| 238.63 | 230.8372 |
| 238.63 | 230.8372 |
| 238.63 | 230.8372 |
| 239.00 | 0.0000 |
| 240.98 | 231.0879 |
| 241.98 | 231.1943 |
| 241.98 | 231.1943 |
| 241.98 | 231.1943 |
| 244.69 | 176.6313 |
| 245.39 | 167.3888 |
| 247.94 | 204.8226 |
| 248.90 | 215.3897 |
| 249.79 | 0.0000 |
| 252.40 | 197.7692 |
| 252.85 | 196.8762 |
| 252.85 | 196.8762 |
| 254.15 | 0.0000 |
| 256.20 | 224.2683 |
| 256.20 | 224.2683 |
| 260.50 | 210.6491 |
| 260.90 | 0.0000 |
| 262.80 | 226.2568 |
| 264.65 | 211.0309 |
| 268.24 | 205.0953 |
| 268.79 | 194.1839 |
| 269.46 | 194.2394 |
| 269.46 | 194.2394 |
| 269.46 | 194.2394 |
| 269.46 | 194.2394 |
| 271.23 | 197.5210 |
| 273.65 | 197.7261 |
| 276.40 | 212.0966 |
| 277.35 | 183.3645 |
| 277.60 | 183.3859 |
| 277.60 | 183.3859 |
| 278.00 | 183.4167 |
| 278.60 | 183.4619 |
| 279.20 | 183.5093 |
| 279.53 | 183.5331 |
| 280.46 | 154.2276 |
| 281.68 | 0.0000 |
| 283.67 | 162.3143 |
| 284.30 | 171.8138 |
| 285.00 | 175.0183 |
| 285.90 | 0.0000 |
| 286.10 | 171.7171 |
| 286.10 | 171.7171 |
| 287.40 | 169.2735 |
| 288.45 | 0.0000 |
| 290.67 | 161.2032 |
| 290.80 | 161.2115 |
| 291.72 | 170.7583 |
| 293.26 | 0.0000 |
| 293.70 | 167.7320 |
| 295.21 | 211.8527 |
| 295.21 | 211.8527 |

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| 295.21 | 211.8527 |
| 295.96 | 250.2438 |
| 296.50 | 251.8826 |
| 297.23 | 0.0000 |
| 298.57 | 177.5771 |
| 299.80 | 164.9735 |
| 299.80 | 164.9735 |
| 300.09 | 166.5790 |
| 300.09 | 166.5790 |
| 300.09 | 166.5790 |
| 300.09 | 166.5790 |
| 300.12 | 166.5811 |
| 301.29 | 160.3112 |
| 302.84 | 192.7036 |
| 303.76 | 0.0000 |
| 303.91 | 228.7998 |
| 304.40 | 222.1720 |
| 304.40 | 222.1720 |
| 304.84 | 213.6258 |
| 306.84 | 162.2554 |
| 308.46 | 168.0895 |
| 311.98 | 176.9311 |
| 316.51 | 153.2910 |
| 318.01 | 167.7603 |
| 319.02 | 178.3734 |
| 319.41 | 182.2372 |
| 320.08 | 190.9180 |
| 323.87 | 199.8445 |
| 323.87 | 199.8445 |
| 323.87 | 199.8445 |
| 323.87 | 199.8445 |
| 325.23 | 200.9099 |
| 328.77 | 177.1157 |
| 333.44 | 171.9637 |
| 334.20 | 133.4312 |
| 334.20 | 133.4312 |
| 334.30 | 133.4363 |
| 338.28 | 146.8362 |
| 338.28 | 146.8362 |
| 338.28 | 146.8362 |
| 338.28 | 146.8362 |
| 338.32 | 136.8574 |
| 338.32 | 136.8574 |
| 338.32 | 136.8574 |
| 340.50 | 153.0820 |
| 340.57 | 153.0858 |
| 344.27 | 129.0902 |
| 345.85 | 134.0087 |
| 350.59 | 0.0000 |
| 351.07 | 149.4714 |
| 351.92 | 149.5184 |
| 351.92 | 149.5184 |
| 351.92 | 149.5184 |
| 355.39 | 0.0000 |
| 356.01 | 126.4025 |
| 364.48 | 113.1326 |
| 366.43 | 122.9715 |
| 367.43 | 138.6355 |
| 367.94 | 0.0000 |
| 369.80 | 128.9804 |
| 374.96 | 121.3829 |
| 383.85 | 138.4492 |
| 387.95 | 132.7440 |
| 388.63 | 142.6105 |
| 391.69 | 134.8828 |
| 391.69 | 134.8828 |
| 392.90 | 142.8176 |
| 398.62 | 144.0806 |
| 400.65 | 135.2908 |
| 401.10 | 131.3602 |
| 401.81 | 137.3185 |
| 402.60 | 132.4150 |
| 404.84 | 173.0582 |
| 410.95 | 129.8087 |
| 411.60 | 124.8818 |
| 413.65 | 130.9156 |
| 414.70 | 135.9213 |
| 415.30 | 134.9558 |

| | |
|--------|----------|
| 415.76 | 133.9849 |
| 417.63 | 0.0000 |
| 418.52 | 128.1449 |
| 423.70 | 120.4003 |
| 427.08 | 129.4954 |
| 427.89 | 115.5809 |
| 432.53 | 121.7394 |
| 433.93 | 126.7845 |
| 439.47 | 0.0000 |
| 439.56 | 104.0102 |
| 439.89 | 95.0186 |
| 443.98 | 121.1802 |
| 444.90 | 113.2000 |
| 445.03 | 113.2055 |
| 445.03 | 113.2055 |
| 445.03 | 113.2055 |
| 453.90 | 127.5814 |
| 463.38 | 102.4299 |
| 468.07 | 68.9448 |
| 473.00 | 117.2121 |
| 475.06 | 93.0197 |
| 475.35 | 82.9159 |
| 476.78 | 77.8929 |
| 477.59 | 99.1604 |
| 477.96 | 110.3039 |
| 482.03 | 107.3975 |
| 484.57 | 0.0000 |
| 487.03 | 95.3804 |
| 490.36 | 0.0000 |
| 492.35 | 0.0000 |
| 497.08 | 82.4327 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 97.0659 |
| 511.00 | 97.0706 |
| 511.85 | 102.2040 |
| 511.85 | 102.2040 |
| 513.99 | 107.3795 |
| 513.99 | 107.3795 |
| 520.41 | 85.0365 |
| 520.65 | 0.0000 |
| 527.90 | 0.0000 |
| 528.96 | 0.0000 |
| 529.64 | 93.4750 |
| 529.87 | 0.0000 |
| 531.02 | 92.4829 |
| 537.32 | 85.4398 |
| 543.00 | 80.4185 |
| 546.56 | 0.0000 |
| 549.76 | 87.7994 |
| 552.65 | 90.9691 |
| 555.20 | 74.4820 |
| 563.23 | 88.1211 |
| 563.90 | 77.7667 |
| 568.70 | 70.9459 |
| 569.32 | 91.3795 |
| 569.50 | 91.3838 |
| 569.67 | 91.3881 |
| 573.80 | 106.5640 |
| 574.00 | 106.5690 |
| 574.64 | 0.0000 |
| 578.91 | 0.0000 |
| 579.30 | 0.0000 |
| 583.14 | 77.1237 |
| 585.48 | 0.0000 |
| 591.81 | 73.1206 |
| 592.07 | 71.9650 |
| 593.00 | 86.7265 |
| 595.88 | 96.2024 |
| 600.56 | 90.0376 |
| 602.52 | 0.0000 |
| 602.71 | 103.0075 |
| 602.71 | 103.0075 |
| 603.60 | 113.5093 |
| 604.41 | 115.2798 |
| 604.70 | 120.5282 |
| 609.31 | 91.2905 |

| | |
|--------|----------|
| 609.31 | 91.2905 |
| 609.31 | 91.2905 |
| 609.31 | 91.2905 |
| 610.33 | 92.7133 |
| 612.46 | 101.5142 |
| 614.37 | 80.5505 |
| 618.01 | 67.3047 |
| 621.84 | 82.1076 |
| 621.84 | 82.1076 |
| 631.29 | 84.4121 |
| 633.02 | 83.3917 |
| 633.10 | 83.3936 |
| 634.78 | 65.4754 |
| 635.90 | 57.0428 |
| 636.97 | 67.6250 |
| 645.85 | 73.0682 |
| 646.12 | 82.6046 |
| 656.30 | 79.6252 |
| 657.75 | 60.1820 |
| 657.90 | 0.0000 |
| 661.65 | 99.9278 |
| 661.65 | 99.9278 |
| 664.57 | 0.0000 |
| 666.33 | 81.5931 |
| 666.33 | 81.5931 |
| 675.00 | 86.3829 |
| 677.61 | 75.7668 |
| 685.20 | 71.6275 |
| 692.80 | 89.9616 |
| 695.00 | 77.1504 |
| 696.49 | 72.8892 |
| 696.49 | 72.8892 |
| 697.00 | 66.4653 |
| 697.49 | 63.2565 |
| 698.33 | 79.3549 |
| 698.50 | 79.3585 |
| 699.00 | 72.9323 |
| 702.63 | 84.8016 |
| 706.10 | 79.4976 |
| 706.58 | 0.0000 |
| 706.67 | 84.8806 |
| 709.31 | 76.3319 |
| 711.68 | 67.7681 |
| 713.82 | 77.4879 |
| 717.42 | 67.8573 |
| 720.50 | 64.6714 |
| 721.93 | 0.0000 |
| 722.20 | 75.4807 |
| 722.78 | 79.0840 |
| 722.78 | 79.0840 |
| 722.89 | 79.0876 |
| 722.95 | 79.0876 |
| 723.30 | 70.1067 |
| 724.18 | 73.7169 |
| 727.18 | 57.2144 |
| 733.00 | 68.4591 |
| 735.90 | 57.3270 |
| 739.58 | 70.3654 |
| 742.81 | 72.5828 |
| 744.21 | 55.2670 |
| 747.13 | 63.9781 |
| 751.79 | 77.0704 |
| 752.31 | 69.4797 |
| 753.82 | 48.8694 |
| 755.35 | 0.0000 |
| 756.15 | 52.1543 |
| 756.87 | 56.5094 |
| 763.93 | 82.7205 |
| 765.79 | 74.0430 |
| 766.42 | 72.9639 |
| 766.84 | 76.2378 |
| 776.49 | 85.1297 |
| 778.00 | 82.9747 |
| 778.57 | 76.4326 |
| 778.89 | 66.6115 |
| 783.80 | 55.7501 |
| 785.46 | 55.7700 |
| 792.07 | 69.3559 |

| | |
|---------|---------|
| 795.84 | 51.1453 |
| 796.30 | 47.4974 |
| 798.80 | 80.4232 |
| 801.93 | 62.1867 |
| 805.60 | 50.5203 |
| 810.29 | 60.4651 |
| 810.76 | 56.0726 |
| 815.85 | 62.3693 |
| 817.79 | 0.0000 |
| 818.51 | 53.2280 |
| 819.60 | 56.9115 |
| 826.30 | 58.8294 |
| 828.27 | 0.0000 |
| 831.60 | 64.4159 |
| 831.96 | 70.8637 |
| 834.83 | 64.4586 |
| 836.80 | 0.0000 |
| 846.75 | 73.8493 |
| 848.13 | 63.7133 |
| 856.28 | 0.0000 |
| 856.80 | 66.6006 |
| 860.37 | 63.4752 |
| 867.32 | 61.9753 |
| 867.82 | 57.2143 |
| 871.10 | 46.1196 |
| 873.19 | 60.7471 |
| 874.81 | 52.9180 |
| 875.33 | 0.0000 |
| 876.40 | 57.5788 |
| 879.36 | 42.7450 |
| 880.27 | 55.7642 |
| 880.51 | 55.7666 |
| 881.50 | 60.4257 |
| 883.24 | 48.3575 |
| 884.67 | 42.7900 |
| 889.25 | 54.0021 |
| 896.60 | 47.5541 |
| 898.02 | 46.6339 |
| 899.00 | 47.5759 |
| 903.28 | 65.6226 |
| 911.07 | 50.4943 |
| 911.07 | 50.4943 |
| 911.07 | 50.4943 |
| 919.63 | 61.0158 |
| 920.93 | 51.7152 |
| 925.00 | 48.7563 |
| 925.24 | 46.8831 |
| 926.50 | 58.1490 |
| 935.52 | 40.3991 |
| 937.48 | 58.2726 |
| 944.10 | 44.2298 |
| 946.00 | 37.6563 |
| 949.00 | 63.1097 |
| 962.29 | 63.1342 |
| 964.01 | 61.5353 |
| 966.15 | 51.0293 |
| 968.20 | 51.0491 |
| 969.11 | 51.0579 |
| 969.11 | 51.0579 |
| 969.11 | 51.0579 |
| 977.42 | 51.9487 |
| 980.50 | 50.5349 |
| 983.50 | 48.3510 |
| 989.30 | 54.0974 |
| 996.32 | 60.8203 |
| 1001.03 | 51.3611 |
| 1001.68 | 51.3671 |
| 1004.76 | 52.3480 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 44.9766 |
| 1036.00 | 49.7720 |
| 1037.82 | 42.1291 |
| 1038.57 | 38.3040 |
| 1038.76 | 0.0000 |
| 1045.16 | 42.1846 |
| 1046.59 | 38.3594 |
| 1048.07 | 33.5730 |

| | |
|---------|---------|
| 1050.47 | 44.1432 |
| 1050.47 | 44.1432 |
| 1062.04 | 41.3483 |
| 1063.62 | 46.1699 |
| 1076.63 | 53.0239 |
| 1077.35 | 53.0306 |
| 1078.86 | 42.4352 |
| 1085.78 | 55.0402 |
| 1099.22 | 50.3285 |
| 1112.02 | 53.8334 |
| 1112.84 | 61.5316 |
| 1115.52 | 43.2584 |
| 1120.29 | 45.6517 |
| 1120.29 | 45.6517 |
| 1120.29 | 45.6517 |
| 1120.29 | 45.6517 |
| 1120.51 | 45.6536 |
| 1121.28 | 45.6594 |
| 1124.00 | 0.0000 |
| 1129.67 | 57.2042 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 55.8079 |
| 1173.22 | 48.9970 |
| 1175.09 | 55.8751 |
| 1177.93 | 69.6306 |
| 1189.05 | 61.8977 |
| 1204.90 | 51.2214 |
| 1205.75 | 0.0000 |
| 1213.00 | 61.1498 |
| 1221.42 | 55.3073 |
| 1230.97 | 65.2830 |
| 1235.34 | 96.0133 |
| 1236.41 | 0.0000 |
| 1238.25 | 81.2026 |
| 1246.25 | 64.4499 |
| 1260.41 | 0.0000 |
| 1271.85 | 53.7583 |
| 1274.45 | 53.7803 |
| 1274.54 | 53.7803 |
| 1291.56 | 29.9561 |
| 1298.22 | 0.0000 |
| 1312.09 | 23.0384 |
| 1325.50 | 33.1222 |
| 1325.50 | 33.1222 |
| 1332.49 | 40.1904 |
| 1333.61 | 34.1688 |
| 1360.21 | 22.1969 |
| 1362.66 | 0.0000 |
| 1365.15 | 24.2324 |
| 1368.21 | 19.1925 |
| 1368.53 | 0.0000 |
| 1376.25 | 21.2384 |
| 1384.27 | 33.4136 |
| 1394.10 | 16.2240 |
| 1395.20 | 19.2690 |
| 1407.95 | 27.4329 |
| 1434.06 | 19.3773 |
| 1436.60 | 26.5258 |
| 1457.56 | 0.0000 |
| 1460.81 | 22.5219 |
| 1489.15 | 21.5836 |
| 1509.49 | 26.7977 |
| 1596.49 | 19.8141 |
| 1620.62 | 20.9237 |
| 1678.03 | 0.0000 |
| 1691.02 | 13.7242 |
| 1691.02 | 13.7242 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 11.7202 |
| 1764.49 | 11.7202 |
| 1764.49 | 11.7202 |
| 1764.49 | 11.7202 |
| 1770.23 | 7.3111 |
| 1771.40 | 7.3122 |
| 1791.20 | 0.0000 |
| 1808.65 | 12.8550 |

1836.01

8.5980

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G245388007

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 2.7425E+00 | ug/g |
| Total Uranium Counting Unc. | 4.8855E+00 | ug/g |
| Total Uranium Tpu | 2.4926E-06 | ug/g |
| Total Uranium Mda | 2.8788E+00 | ug/g |

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 944964                          SAMPLE ID   : G245388007
*  ANALYST       : MXR1                             DETECTOR    : GAM14
*  SAMPLE DATE   : 15-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 4-FEB-2010 10:42:06.61          SAMPLE ALQT  : 121.070 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.861E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.574E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 3.481E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.695E+00

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VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 14:45:27.25

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388008.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 12:44:56.
Sample ID          : G245388008          Sample quantity  : 1.14100E+02 GRAM
Detector name      : GAM04              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time : 0 02:00:01.10  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 944964             Detector SN#      :
Matrix Spike ID    :                    LCS ID            : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 2 | 74.80 | 284 | 351 | 1.11 | 149.63 | 145 | 17 | 3.95E-02 | 12.2 | 6.55E-01 |
| 2 | 2 | 77.09 | 447 | 219 | 0.90 | 154.23 | 145 | 17 | 6.20E-02 | 6.9 | |
| 3 | 4 | 87.25 | 129 | 303 | 1.05 | 174.55 | 170 | 13 | 1.79E-02 | 22.8 | 8.32E-01 |
| 4 | 4 | 89.92 | 117 | 271 | 1.29 | 179.88 | 170 | 13 | 1.62E-02 | 24.5 | |
| 5 | 0 | 93.17* | 186 | 316 | 1.42 | 186.37 | 183 | 9 | 2.58E-02 | 19.7 | |
| 6 | 0 | 185.55* | 289 | 246 | 1.28 | 371.15 | 365 | 12 | 4.01E-02 | 12.6 | |
| 7 | 0 | 208.78 | 93 | 293 | 1.02 | 417.62 | 413 | 11 | 1.29E-02 | 37.2 | |
| 8 | 6 | 238.59* | 964 | 152 | 1.06 | 477.26 | 472 | 17 | 1.34E-01 | 3.9 | 5.27E-01 |
| 9 | 6 | 241.61* | 263 | 238 | 1.84 | 483.29 | 472 | 17 | 3.65E-02 | 15.6 | |
| 10 | 0 | 270.14 | 109 | 132 | 2.09 | 540.36 | 536 | 10 | 1.52E-02 | 21.8 | |
| 11 | 0 | 278.66 | 47 | 189 | 1.55 | 557.40 | 550 | 11 | 6.56E-03 | 58.2 | |
| 12 | 0 | 295.13* | 393 | 193 | 1.11 | 590.34 | 585 | 12 | 5.46E-02 | 8.8 | |
| 13 | 0 | 300.16 | 71 | 149 | 0.95 | 600.40 | 596 | 9 | 9.79E-03 | 33.4 | |
| 14 | 0 | 338.24 | 232 | 172 | 1.23 | 676.57 | 671 | 13 | 3.22E-02 | 13.3 | |
| 15 | 0 | 351.81* | 603 | 126 | 1.22 | 703.71 | 699 | 11 | 8.38E-02 | 5.5 | |
| 16 | 0 | 463.23 | 63 | 134 | 1.90 | 926.55 | 920 | 16 | 8.77E-03 | 42.6 | |
| 17 | 0 | 510.54* | 102 | 103 | 2.25 | 1021.18 | 1013 | 16 | 1.41E-02 | 27.7 | |
| 18 | 0 | 583.27* | 277 | 136 | 1.41 | 1166.64 | 1160 | 15 | 3.85E-02 | 11.2 | |
| 19 | 0 | 609.18* | 406 | 80 | 1.43 | 1218.45 | 1210 | 15 | 5.63E-02 | 7.0 | |
| 20 | 0 | 728.04 | 119 | 54 | 1.53 | 1456.17 | 1449 | 16 | 1.65E-02 | 16.7 | |
| 21 | 0 | 768.01 | 40 | 75 | 0.99 | 1536.10 | 1530 | 12 | 5.54E-03 | 46.2 | |
| 22 | 0 | 860.13 | 40 | 57 | 1.42 | 1720.34 | 1714 | 12 | 5.52E-03 | 41.2 | |
| 23 | 0 | 911.20* | 185 | 51 | 1.48 | 1822.46 | 1815 | 13 | 2.57E-02 | 11.1 | |
| 24 | 0 | 969.41* | 80 | 96 | 1.30 | 1938.87 | 1931 | 12 | 1.12E-02 | 27.0 | |
| 25 | 0 | 1120.54 | 105 | 56 | 1.34 | 2241.09 | 2233 | 16 | 1.46E-02 | 18.7 | |
| 26 | 0 | 1379.49 | 16 | 29 | 0.87 | 2758.89 | 2749 | 13 | 2.29E-03 | 74.6 | |
| 27 | 0 | 1460.80* | 776 | 21 | 1.90 | 2921.49 | 2913 | 16 | 1.08E-01 | 3.8 | |
| 28 | 0 | 1764.58* | 66 | 10 | 1.60 | 3528.87 | 3520 | 14 | 9.22E-03 | 16.6 | |

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

VMS Nuclide Identification Report V3.1 Generated 4-FEB-2010 14:45:30

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388008.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 12:44:56
Sample ID         : G245388008 Sample quantity : 114.10 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA4 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.10 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 2.228E+01 | 2.328E+00 | 5.431E-01 | 3.859E-02 | 41.023 |
| CD-109 | + | 88.03 | * | 2.339E+00 | 1.101E+00 | 1.466E+00 | 1.762E-01 | 1.595 |
| SN-126 | | 64.28 | | 4.354E-01 | 6.649E-01 | 1.136E+00 | 1.956E-01 | 0.383 |
| | + | 86.94 | | 9.486E-01 | 5.887E-01 | 6.057E-01 | 2.555E-01 | 1.566 |
| | + | 87.57 | * | 2.282E-01 | 1.074E-01 | 1.441E-01 | 1.729E-02 | 1.583 |
| HG-203 | | 70.83 | | -7.509E-01 | 1.424E+00 | 2.079E+00 | 3.243E-01 | -0.361 |
| | | 72.87 | | 1.148E+00 | 8.418E-01 | 1.335E+00 | 2.031E-01 | 0.860 |
| | | 82.60 | | -6.267E-01 | 1.752E+00 | 2.020E+00 | 3.198E-01 | -0.310 |
| | + | 279.20 | * | 6.289E-02 | 7.339E-02 | 7.204E-02 | 5.016E-03 | 0.873 |
| TL-208 | + | 277.35 | | 5.303E-01 | 6.206E-01 | 5.952E-01 | 6.577E-02 | 0.891 |
| | + | 510.84 | | 5.680E-01 | 3.201E-01 | 2.062E-01 | 2.069E-02 | 2.755 |
| | + | 583.14 | * | 4.408E-01 | 1.022E-01 | 6.335E-02 | 3.986E-03 | 6.958 |
| | + | 860.37 | | 6.014E-01 | 4.981E-01 | 4.227E-01 | 3.526E-02 | 1.423 |
| BI-211 | | 72.87 | | 5.365E+00 | 3.897E+00 | 6.238E+00 | 7.151E-01 | 0.860 |
| | + | 351.07 | * | 4.229E+00 | 5.439E-01 | 3.263E-01 | 2.204E-02 | 12.962 |
| PB-212 | + | 74.81 | | 2.404E+00 | 6.868E-01 | 6.069E-01 | 8.971E-02 | 3.962 |
| | + | 77.11 | | 2.080E+00 | 3.744E-01 | 3.350E-01 | 3.843E-02 | 6.208 |
| | + | 87.30 | | 1.055E+00 | 5.077E-01 | 6.697E-01 | 1.045E-01 | 1.576 |
| | + | 238.63 | * | 1.473E+00 | 1.645E-01 | 9.292E-02 | 7.462E-03 | 15.851 |
| | + | 300.09 | | 1.667E+00 | 1.122E+00 | 1.275E+00 | 1.123E-01 | 1.307 |
| PO-212 | + | 74.81 | | 2.404E+00 | 6.868E-01 | 6.069E-01 | 8.971E-02 | 3.962 |
| | + | 77.11 | | 2.080E+00 | 3.744E-01 | 3.350E-01 | 3.843E-02 | 6.208 |
| | + | 87.30 | | 1.055E+00 | 5.077E-01 | 6.697E-01 | 1.045E-01 | 1.576 |
| | | 115.19 | | -1.361E+00 | 3.544E+00 | 5.730E+00 | 4.312E-01 | -0.238 |
| | + | 238.63 | * | 1.473E+00 | 1.645E-01 | 9.292E-02 | 7.462E-03 | 15.851 |
| | + | 300.09 | | 1.667E+00 | 1.122E+00 | 1.275E+00 | 1.123E-01 | 1.307 |
| BI-214 | + | 609.31 | * | 1.217E+00 | 1.930E-01 | 1.069E-01 | 7.858E-03 | 11.383 |
| | + | 1120.29 | | 1.685E+00 | 6.492E-01 | 4.943E-01 | 4.605E-02 | 3.410 |
| | + | 1764.49 | | 1.450E+00 | 4.903E-01 | 3.590E-01 | 2.189E-02 | 4.039 |
| PB-214 | + | 74.81 | | 4.143E+00 | 1.160E+00 | 1.046E+00 | 1.426E-01 | 3.962 |
| | + | 77.11 | | 3.565E+00 | 6.970E-01 | 5.743E-01 | 7.909E-02 | 6.208 |
| | + | 87.30 | | 1.808E+00 | 8.621E-01 | 1.147E+00 | 1.634E-01 | 1.576 |
| | + | 241.98 | | 2.414E+00 | 7.801E-01 | 5.597E-01 | 4.877E-02 | 4.313 |
| | + | 295.21 | | 1.629E+00 | 3.222E-01 | 1.976E-01 | 1.794E-02 | 8.246 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 351.92 | * | 1.471E+00 | 2.042E-01 | 1.134E-01 | 9.675E-03 | 12.971 |
| | + | 74.81 | | 4.143E+00 | 1.160E+00 | 1.046E+00 | 1.426E-01 | 3.962 |
| | + | 77.11 | | 3.565E+00 | 6.970E-01 | 5.743E-01 | 7.909E-02 | 6.208 |
| | + | 87.30 | | 1.808E+00 | 8.621E-01 | 1.147E+00 | 1.634E-01 | 1.576 |
| | + | 241.98 | | 2.414E+00 | 7.801E-01 | 5.597E-01 | 4.877E-02 | 4.313 |
| PO-216 | + | 295.21 | | 1.629E+00 | 3.222E-01 | 1.976E-01 | 1.794E-02 | 8.246 |
| | + | 351.92 | * | 1.471E+00 | 2.042E-01 | 1.134E-01 | 9.675E-03 | 12.971 |
| | + | 74.81 | | 2.404E+00 | 6.868E-01 | 6.069E-01 | 8.971E-02 | 3.962 |
| | + | 77.11 | | 2.080E+00 | 3.744E-01 | 3.350E-01 | 3.843E-02 | 6.208 |
| | + | 87.30 | | 1.055E+00 | 5.077E-01 | 6.697E-01 | 1.045E-01 | 1.576 |
| PO-218 | + | 238.63 | * | 1.473E+00 | 1.645E-01 | 9.292E-02 | 7.462E-03 | 15.851 |
| | + | 300.09 | | 1.667E+00 | 1.122E+00 | 1.275E+00 | 1.123E-01 | 1.307 |
| | + | 74.81 | | 4.143E+00 | 1.160E+00 | 1.046E+00 | 1.426E-01 | 3.962 |
| | + | 77.11 | | 3.565E+00 | 6.970E-01 | 5.743E-01 | 7.909E-02 | 6.208 |
| | + | 87.30 | | 1.808E+00 | 8.621E-01 | 1.147E+00 | 1.634E-01 | 1.576 |
| RA-224 | + | 241.98 | | 2.414E+00 | 7.801E-01 | 5.597E-01 | 4.877E-02 | 4.313 |
| | + | 295.21 | | 1.629E+00 | 3.222E-01 | 1.976E-01 | 1.794E-02 | 8.246 |
| | + | 351.92 | * | 1.471E+00 | 2.042E-01 | 1.134E-01 | 9.675E-03 | 12.971 |
| | + | 240.98 | * | 4.578E+00 | 1.457E+00 | 1.058E+00 | 7.051E-02 | 4.328 |
| | + | 609.31 | * | 1.217E+00 | 1.930E-01 | 1.069E-01 | 7.858E-03 | 11.383 |
| AC-228 | + | 1120.29 | | 1.685E+00 | 6.492E-01 | 4.943E-01 | 4.605E-02 | 3.410 |
| | + | 1764.49 | | 1.450E+00 | 4.903E-01 | 3.590E-01 | 2.189E-02 | 4.039 |
| | + | 338.32 | | 1.792E+00 | 8.735E-01 | 3.791E-01 | 1.548E-01 | 4.727 |
| | + | 911.07 | * | 1.329E+00 | 3.282E-01 | 2.480E-01 | 2.703E-02 | 5.358 |
| | + | 969.11 | | 1.024E+00 | 6.014E-01 | 3.362E-01 | 7.753E-02 | 3.045 |
| TH-228 | + | 338.32 | | 1.792E+00 | 8.735E-01 | 3.791E-01 | 1.548E-01 | 4.727 |
| | + | 911.07 | * | 1.329E+00 | 3.282E-01 | 2.480E-01 | 2.703E-02 | 5.358 |
| | + | 969.11 | | 1.024E+00 | 6.014E-01 | 3.362E-01 | 7.753E-02 | 3.045 |
| | + | 74.81 | | 2.453E+00 | 6.626E-01 | 6.191E-01 | 7.124E-02 | 3.962 |
| | + | 77.11 | | 2.122E+00 | 3.820E-01 | 3.417E-01 | 3.921E-02 | 6.208 |
| TH-230 | + | 87.30 | | 1.077E+00 | 5.066E-01 | 6.832E-01 | 8.179E-02 | 1.576 |
| | + | 238.63 | * | 1.502E+00 | 1.678E-01 | 9.479E-02 | 7.612E-03 | 15.851 |
| | + | 300.09 | | 1.700E+00 | 1.514E+00 | 1.301E+00 | 7.679E-01 | 1.307 |
| | + | 609.31 | * | 1.217E+00 | 1.930E-01 | 1.069E-01 | 7.858E-03 | 11.383 |
| | + | 1120.29 | | 1.685E+00 | 6.492E-01 | 4.943E-01 | 4.605E-02 | 3.410 |
| TH-232 | + | 1764.49 | | 1.450E+00 | 4.903E-01 | 3.590E-01 | 2.189E-02 | 4.039 |
| | + | 338.32 | | 1.792E+00 | 4.902E-01 | 3.791E-01 | 2.383E-02 | 4.727 |
| | + | 911.07 | * | 1.329E+00 | 3.282E-01 | 2.480E-01 | 2.703E-02 | 5.358 |
| | + | 969.11 | | 1.024E+00 | 6.014E-01 | 3.362E-01 | 7.753E-02 | 3.045 |
| | + | 609.31 | * | 1.217E+00 | 1.930E-01 | 1.069E-01 | 7.858E-03 | 11.383 |
| U-234 | + | 1120.29 | | 1.685E+00 | 6.492E-01 | 4.943E-01 | 4.605E-02 | 3.410 |
| | + | 1764.49 | | 1.450E+00 | 4.903E-01 | 3.590E-01 | 2.189E-02 | 4.039 |
| | + | 86.50 | * | 6.701E-01 | 3.443E-01 | 4.312E-01 | 1.027E-01 | 1.554 |
| | + | 95.87 | | -6.656E-01 | 1.039E+00 | 1.465E+00 | 3.691E-01 | -0.454 |
| | + | 74.67 | * | 3.898E-01 | 1.052E-01 | 9.887E-02 | 1.132E-02 | 3.943 |
| AM-243 | + | 86.72 | | 2.513E+01 | 1.182E+01 | 1.611E+01 | 1.921E+00 | 1.560 |
| | + | 117.66 | | -1.101E+00 | 3.752E+00 | 6.086E+00 | 4.443E-01 | -0.181 |
| | + | 142.18 | | 4.596E+00 | 1.735E+01 | 2.835E+01 | 1.855E+00 | 0.162 |
| | + | 511.00 | * | 1.227E-01 | 6.837E-02 | 4.455E-02 | 2.491E-03 | 2.754 |
| | + | 511.00 | * | 1.227E-01 | 6.837E-02 | 4.455E-02 | 2.491E-03 | 2.754 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| BE-7 | | 477.59 | * | -5.849E-02 | 3.599E-01 | 5.789E-01 | 3.835E-02 | -0.101 |
| NA-22 | | 1274.54 | * | -4.428E-02 | 4.535E-02 | 6.676E-02 | 4.365E-03 | -0.663 |
| NA-24 | | 1368.53 | * | -9.362E+01 | 4.535E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | 5.221E-01 | 1.875E+00 | 3.121E+00 | 2.013E-01 | 0.167 |
| | | 1808.65 | * | 2.971E-02 | 3.241E-02 | 6.256E-02 | 3.710E-03 | 0.475 |
| TI-44 | | 67.85 | | 4.545E-02 | 5.570E-02 | 9.671E-02 | 1.125E-02 | 0.470 |
| | + | 78.38 | * | 3.839E-01 | 6.911E-02 | 8.623E-02 | 9.916E-03 | 4.452 |
| SC-46 | | 889.25 | * | -1.167E-02 | 4.376E-02 | 6.734E-02 | 5.447E-03 | -0.173 |
| | + | 1120.51 | | 3.005E-01 | 1.140E-01 | 1.613E-01 | 1.056E-02 | 1.863 |
| V-48 | | 944.10 | | -1.113E-01 | 1.256E+00 | 2.040E+00 | 1.631E-01 | -0.055 |
| | | 983.50 | * | 1.876E-04 | 9.447E-02 | 1.543E-01 | 1.196E-02 | 0.001 |
| | | 1312.09 | | -3.790E-02 | 1.065E-01 | 1.698E-01 | 1.144E-02 | -0.223 |
| CR-51 | | 320.08 | * | 9.189E-02 | 4.251E-01 | 7.209E-01 | 5.076E-02 | 0.127 |
| MN-52 | | 744.21 | | -3.037E-01 | 4.451E-01 | 6.933E-01 | 4.115E-02 | -0.438 |
| | | 848.13 | | -6.454E+00 | 1.277E+01 | 1.995E+01 | 1.484E+00 | -0.324 |
| | | 935.52 | | 2.648E-01 | 4.865E-01 | 8.428E-01 | 6.778E-02 | 0.314 |
| | | 1246.25 | | -2.985E+00 | 1.497E+01 | 2.461E+01 | 1.566E+00 | -0.121 |
| | | 1333.61 | | 2.231E+00 | 9.293E+00 | 1.599E+01 | 1.096E+00 | 0.139 |
| | | 1434.06 | * | -1.858E-02 | 3.980E-01 | 6.541E-01 | 4.464E-02 | -0.028 |
| MN-54 | | 834.83 | * | -2.154E-02 | 4.060E-02 | 6.377E-02 | 4.615E-03 | -0.338 |
| CO-56 | | 846.75 | * | 3.991E-02 | 3.978E-02 | 7.243E-02 | 5.374E-03 | 0.551 |
| | | 977.42 | | -1.222E+00 | 2.807E+00 | 4.317E+00 | 3.362E-01 | -0.283 |
| | | 1037.82 | | -1.250E-01 | 3.877E-01 | 6.090E-01 | 4.794E-02 | -0.205 |
| | | 1175.09 | | 7.749E-02 | 2.269E+00 | 3.668E+00 | 2.185E-01 | 0.021 |
| | | 1238.25 | | 1.235E-01 | 1.078E-01 | 1.964E-01 | 1.307E-02 | 0.629 |
| | | 1360.21 | | 7.128E-03 | 9.802E-01 | 1.633E+00 | 1.120E-01 | 0.004 |
| | | 1771.40 | | -5.391E-01 | 3.528E-01 | 4.104E-01 | 2.491E-02 | -1.314 |
| CO-57 | | 122.06 | * | 5.197E-03 | 2.519E-02 | 4.182E-02 | 2.903E-03 | 0.124 |
| | | 136.48 | | -3.744E-02 | 2.123E-01 | 3.440E-01 | 2.559E-02 | -0.109 |
| CO-58 | | 810.76 | * | -3.679E-02 | 3.679E-02 | 5.338E-02 | 3.685E-03 | -0.689 |
| FE-59 | | 142.65 | | 1.554E-01 | 2.957E+00 | 4.785E+00 | 3.128E-01 | 0.032 |
| | | 192.34 | | -1.831E-01 | 1.099E+00 | 1.747E+00 | 2.125E-01 | -0.105 |
| | | 1099.22 | * | 3.256E-03 | 1.054E-01 | 1.713E-01 | 1.309E-02 | 0.019 |
| | | 1291.56 | | 2.753E-02 | 1.443E-01 | 2.463E-01 | 1.991E-02 | 0.112 |
| CO-60 | | 1173.22 | | 4.106E-02 | 4.287E-02 | 7.698E-02 | 4.578E-03 | 0.533 |
| | | 1332.49 | * | -3.895E-02 | 4.079E-02 | 5.862E-02 | 4.017E-03 | -0.664 |
| ZN-65 | | 1115.52 | * | 2.424E-02 | 1.074E-01 | 1.553E-01 | 1.027E-02 | 0.156 |
| GE-68 | | 1077.35 | * | 5.455E-01 | 1.343E+00 | 2.278E+00 | 1.591E-01 | 0.240 |
| AS-73 | | 53.44 | * | -3.414E-01 | 1.645E+00 | 2.767E+00 | 3.620E-01 | -0.123 |
| AS-74 | | 595.88 | * | -4.177E-02 | 1.168E-01 | 1.809E-01 | 9.550E-03 | -0.231 |
| | | 634.78 | | -2.167E-01 | 4.740E-01 | 7.222E-01 | 3.653E-02 | -0.300 |
| SE-75 | | 66.05 | | -5.414E+00 | 6.531E+00 | 1.045E+01 | 1.371E+00 | -0.518 |
| | | 96.73 | | -1.090E+00 | 8.830E-01 | 1.188E+00 | 1.723E-01 | -0.918 |
| | | 121.11 | | 1.132E-01 | 1.389E-01 | 2.366E-01 | 2.374E-02 | 0.478 |
| | | 136.00 | | 1.668E-02 | 3.995E-02 | 6.662E-02 | 4.465E-03 | 0.250 |
| | | 198.60 | | -7.573E-01 | 1.988E+00 | 3.059E+00 | 2.361E-01 | -0.248 |
| | | 264.65 | * | -5.099E-03 | 4.706E-02 | 7.350E-02 | 4.944E-03 | -0.069 |
| | + | 279.53 | | 1.607E-01 | 1.876E-01 | 1.949E-01 | 1.376E-02 | 0.825 |
| | | 303.91 | | -3.176E-01 | 2.539E+00 | 3.719E+00 | 3.723E-01 | -0.085 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| BR-77 | + | 400.65 | | 1.628E-01 | 2.537E-01 | 4.379E-01 | 3.943E-02 | 0.372 |
| | | 87.88 | | 2.103E-03 | 2.537E-01 | Half-Life | too short | |
| | + | 200.40 | | -2.643E-04 | 2.537E-01 | Half-Life | too short | |
| | | 239.00 | | 9.915E-04 | 2.537E-01 | Half-Life | too short | |
| | | 249.79 | | 6.402E-05 | 2.537E-01 | Half-Life | too short | |
| | | 281.68 | | 3.819E-04 | 2.537E-01 | Half-Life | too short | |
| | | 297.23 | | 7.169E-04 | 2.537E-01 | Half-Life | too short | |
| | | 303.76 | | 8.506E-05 | 2.537E-01 | Half-Life | too short | |
| | | 439.47 | | -3.731E-05 | 2.537E-01 | Half-Life | too short | |
| | | 484.57 | | -9.744E-04 | 2.537E-01 | Half-Life | too short | |
| | | 520.65 | * | -4.829E-06 | 2.537E-01 | Half-Life | too short | |
| | | 574.64 | | -1.626E-04 | 2.537E-01 | Half-Life | too short | |
| | | 578.91 | | 2.445E-05 | 2.537E-01 | Half-Life | too short | |
| | | 585.48 | | 3.526E-03 | 2.537E-01 | Half-Life | too short | |
| | | 755.35 | | 2.493E-04 | 2.537E-01 | Half-Life | too short | |
| | | 817.79 | | 8.832E-05 | 2.537E-01 | Half-Life | too short | |
| SR-82 | | 698.33 | | 5.991E+00 | 3.991E+01 | 6.706E+01 | 3.576E+00 | 0.089 |
| | | 776.49 | * | -7.433E-01 | 4.085E-01 | 5.309E-01 | 3.389E-02 | -1.400 |
| RB-83 | | 1395.20 | | -1.290E+01 | 1.278E+01 | 1.762E+01 | 1.206E+00 | -0.732 |
| | | 520.41 | * | -3.048E-02 | 7.117E-02 | 1.106E-01 | 6.160E-03 | -0.276 |
| | | 529.64 | | 2.888E-02 | 1.147E-01 | 1.897E-01 | 1.052E-02 | 0.152 |
| RB-84 | | 552.65 | | -1.118E-01 | 2.032E-01 | 3.096E-01 | 1.693E-02 | -0.361 |
| | | 881.50 | * | -3.547E-02 | 8.678E-02 | 1.344E-01 | 1.071E-02 | -0.264 |
| KR-85 | | 513.99 | * | 3.611E+00 | 8.077E+00 | 1.204E+01 | 6.723E-01 | 0.300 |
| SR-85 | | 513.99 | * | 1.950E-02 | 4.361E-02 | 6.498E-02 | 3.630E-03 | 0.300 |
| RB-86 | | 1076.63 | * | 6.655E-01 | 1.012E+00 | 1.761E+00 | 1.231E-01 | 0.378 |
| Y-88 | | 898.02 | | 1.791E-02 | 4.386E-02 | 7.423E-02 | 6.142E-03 | 0.241 |
| | | 1836.01 | * | 1.721E-02 | 3.552E-02 | 6.391E-02 | 3.729E-03 | 0.269 |
| ZR-88 | | 392.90 | * | -5.332E-03 | 3.175E-02 | 5.179E-02 | 2.915E-03 | -0.103 |
| Y-91 | | 1204.90 | * | -4.452E+00 | 2.333E+01 | 3.672E+01 | 2.250E+00 | -0.121 |
| NB-94 | | 702.63 | * | 9.400E-03 | 3.253E-02 | 5.591E-02 | 3.012E-03 | 0.168 |
| | | 871.10 | | -2.111E-02 | 3.358E-02 | 5.125E-02 | 3.997E-03 | -0.412 |
| NB-95 | | 765.79 | * | 6.708E-02 | 4.900E-02 | 8.286E-02 | 5.164E-03 | 0.810 |
| NB-95M | | 235.69 | * | -3.021E-02 | 1.564E-01 | 2.170E-01 | 1.781E-02 | -0.139 |
| ZR-95 | | 724.18 | | -3.001E-02 | 1.271E-01 | 1.799E-01 | 1.214E-02 | -0.167 |
| | | 756.15 | * | 3.752E-02 | 7.397E-02 | 1.291E-01 | 9.401E-03 | 0.291 |
| NB-97 | | 657.90 | * | -8.064E+00 | 7.397E-02 | Half-Life | too short | |
| | | 1024.50 | | 2.202E+02 | 7.397E-02 | Half-Life | too short | |
| ZR-97 | | 254.15 | | 7.855E+01 | 7.397E-02 | Half-Life | too short | |
| | | 355.39 | | -4.273E+02 | 7.397E-02 | Half-Life | too short | |
| | | 507.63 | * | 1.141E+02 | 7.397E-02 | Half-Life | too short | |
| | | 602.52 | | -1.256E+02 | 7.397E-02 | Half-Life | too short | |
| | | 1021.30 | | 1.481E+02 | 7.397E-02 | Half-Life | too short | |
| | | 1147.95 | | 5.482E+02 | 7.397E-02 | Half-Life | too short | |
| | | 1362.66 | | 4.261E+02 | 7.397E-02 | Half-Life | too short | |
| MO-99 | | 1750.46 | | 7.875E+02 | 7.397E-02 | Half-Life | too short | |
| | | 140.51 | | -1.087E+01 | 8.962E+01 | 1.453E+02 | 3.942E+01 | -0.075 |
| | | 181.06 | | 6.773E+00 | 6.088E+01 | 8.805E+01 | 1.529E+01 | 0.077 |
| | | 366.43 | | -2.068E+02 | 2.950E+02 | 4.645E+02 | 2.777E+01 | -0.445 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 739.58 | * | | 4.191E+01 | 4.166E+01 | 7.504E+01 | 1.036E+01 | 0.559 |
| | 778.00 | | | -1.191E+02 | 1.095E+02 | 1.595E+02 | 1.022E+01 | -0.747 |
| TC-99M | 140.51 | * | | -3.620E+15 | 1.095E+02 | Half-Life | too short | |
| RH-101 | 127.23 | | | -3.366E-02 | 3.150E-02 | 4.878E-02 | 3.313E-03 | -0.690 |
| | 198.01 | * | | -6.649E-03 | 3.569E-02 | 5.558E-02 | 3.620E-03 | -0.120 |
| | 325.23 | | | -3.031E-01 | 2.316E-01 | 3.545E-01 | 2.269E-02 | -0.855 |
| RH-102 | 418.52 | | | -1.738E-01 | 3.003E-01 | 4.721E-01 | 2.673E-02 | -0.368 |
| | 475.06 | * | | 1.019E-02 | 2.964E-02 | 4.972E-02 | 2.811E-03 | 0.205 |
| | 631.29 | | | 5.502E-02 | 5.812E-02 | 1.011E-01 | 5.137E-03 | 0.544 |
| | 697.49 | | | -3.658E-02 | 7.859E-02 | 1.250E-01 | 6.652E-03 | -0.293 |
| | 766.84 | + | | 2.022E-01 | 1.872E-01 | 2.274E-01 | 1.420E-02 | 0.889 |
| | 1046.59 | | | 1.574E-02 | 1.157E-01 | 1.911E-01 | 1.388E-02 | 0.082 |
| | 1112.84 | | | 2.905E-01 | 2.534E-01 | 4.193E-01 | 2.781E-02 | 0.693 |
| RU-103 | 497.08 | * | | -2.867E-02 | 4.493E-02 | 6.859E-02 | 8.618E-03 | -0.418 |
| | 610.33 | + | | 1.433E+01 | 2.967E+00 | 3.397E+00 | 5.165E-01 | 4.219 |
| RH-106 | 511.85 | + | | 6.185E-01 | 3.447E-01 | 4.575E-01 | 2.558E-02 | 1.352 |
| | 621.84 | * | | -1.316E-01 | 3.296E-01 | 5.046E-01 | 5.765E-02 | -0.261 |
| | 1050.47 | | | -4.302E-01 | 2.252E+00 | 3.568E+00 | 2.579E-01 | -0.121 |
| RU-106 | 511.85 | + | | 6.185E-01 | 3.447E-01 | 4.575E-01 | 2.558E-02 | 1.352 |
| | 621.84 | * | | -1.316E-01 | 3.293E-01 | 5.046E-01 | 2.593E-02 | -0.261 |
| | 1050.47 | | | -4.302E-01 | 2.252E+00 | 3.568E+00 | 2.579E-01 | -0.121 |
| AG-108M | 433.93 | * | | -1.561E-02 | 3.124E-02 | 4.905E-02 | 3.030E-03 | -0.318 |
| | 614.37 | | | 5.497E-03 | 3.841E-02 | 5.479E-02 | 3.137E-03 | 0.100 |
| | 722.95 | | | 5.802E-03 | 5.049E-02 | 7.447E-02 | 4.583E-03 | 0.078 |
| AG-110M | 657.75 | * | | -2.324E-02 | 3.703E-02 | 5.905E-02 | 3.155E-03 | -0.394 |
| | 677.61 | | | -2.038E-01 | 2.937E-01 | 4.599E-01 | 2.517E-02 | -0.443 |
| | 706.67 | | | -8.396E-02 | 2.091E-01 | 3.376E-01 | 1.961E-02 | -0.249 |
| | 763.93 | | | 1.384E-01 | 1.630E-01 | 2.650E-01 | 1.733E-02 | 0.522 |
| | 884.67 | | | 3.931E-02 | 5.390E-02 | 9.512E-02 | 7.906E-03 | 0.413 |
| | 937.48 | | | -1.334E-01 | 1.222E-01 | 1.751E-01 | 1.465E-02 | -0.762 |
| | 1384.27 | | | 1.150E-01 | 1.604E-01 | 2.689E-01 | 1.923E-02 | 0.428 |
| IN-111 | 171.28 | | | -5.605E-02 | 3.419E+00 | 5.518E+00 | 3.517E-01 | -0.010 |
| | 245.39 | * | | 2.183E+00 | 3.842E+00 | 5.663E+00 | 3.779E-01 | 0.385 |
| IN-113M | 391.69 | * | | -2.360E-02 | 4.614E-02 | 7.333E-02 | 4.418E-03 | -0.322 |
| SN-113 | 391.69 | * | | -2.360E-02 | 4.614E-02 | 7.333E-02 | 4.418E-03 | -0.322 |
| IN-114M | 190.27 | * | | 1.130E-01 | 2.215E-01 | 3.280E-01 | 2.123E-02 | 0.344 |
| CD-115 | 260.90 | | | 5.722E-05 | 2.215E-01 | Half-Life | too short | |
| | 492.35 | | | 1.079E-04 | 2.215E-01 | Half-Life | too short | |
| | 527.90 | * | | 1.162E-05 | 2.215E-01 | Half-Life | too short | |
| SN-117M | 156.02 | | | -2.583E+00 | 2.911E+00 | 4.502E+00 | 2.888E-01 | -0.574 |
| | 158.56 | * | | -5.526E-03 | 6.869E-02 | 1.109E-01 | 7.096E-03 | -0.050 |
| SB-122 | 563.90 | * | | 6.964E+00 | 8.019E+00 | 1.384E+01 | 7.507E-01 | 0.503 |
| | 692.80 | | | 9.724E+01 | 1.463E+02 | 2.598E+02 | 1.367E+01 | 0.374 |
| I-123 | 159.00 | * | | -8.251E+01 | 1.463E+02 | Half-Life | too short | |
| | 528.96 | | | 1.076E+05 | 1.463E+02 | Half-Life | too short | |
| TE-123M | 159.00 | * | | -8.290E-04 | 2.830E-02 | 4.583E-02 | 2.962E-03 | -0.018 |
| I-124 | 602.71 | * | | -3.899E-01 | 1.746E+00 | 2.368E+00 | 1.242E-01 | -0.165 |
| | 722.78 | | | 1.733E+00 | 1.194E+01 | 1.768E+01 | 9.985E-01 | 0.098 |
| | 1325.50 | | | 5.189E+01 | 6.999E+01 | 1.291E+02 | 8.794E+00 | 0.402 |

Sample ID : G245388008

Acquisition date : 4-FEB-2010 12:44:56

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SB-124 | | 1376.25 | | 1.179E+02 | 9.473E+01 | 1.619E+02 | 1.109E+01 | 0.728 |
| | | 1509.49 | | 1.512E+01 | 3.819E+01 | 6.675E+01 | 4.501E+00 | 0.227 |
| | | 1691.02 | | -8.394E-01 | 7.398E+00 | 1.173E+01 | 7.432E-01 | -0.072 |
| | | 602.71 | | -1.062E-02 | 4.754E-02 | 6.446E-02 | 3.382E-03 | -0.165 |
| | | 645.85 | | 1.007E-02 | 4.793E-01 | 8.098E-01 | 4.725E-02 | 0.012 |
| | | 709.31 | | 9.631E-01 | 2.904E+00 | 5.006E+00 | 2.740E-01 | 0.192 |
| | | 713.82 | | 1.186E+00 | 1.675E+00 | 2.977E+00 | 2.995E-01 | 0.398 |
| | | 722.78 | | 6.841E-02 | 4.713E-01 | 6.976E-01 | 4.136E-02 | 0.098 |
| | + | 968.20 | | 1.115E+01 | 6.089E+00 | 8.297E+00 | 6.511E-01 | 1.344 |
| | | 1045.16 | | -2.644E+00 | 2.849E+00 | 4.106E+00 | 2.987E-01 | -0.644 |
| | | 1325.50 | | 2.187E+00 | 2.950E+00 | 5.441E+00 | 3.707E-01 | 0.402 |
| | | 1368.21 | | -7.386E-01 | 2.002E+00 | 3.151E+00 | 3.914E-01 | -0.234 |
| | | 1436.60 | | 1.803E+00 | 3.307E+00 | 6.032E+00 | 4.116E-01 | 0.299 |
| | | 1691.02 | * | -7.814E-03 | 6.887E-02 | 1.092E-01 | 7.418E-03 | -0.072 |
| SB-125 | | 427.89 | * | -3.781E-02 | 9.667E-02 | 1.517E-01 | 8.978E-03 | -0.249 |
| | + | 463.38 | | 6.907E-01 | 5.907E-01 | 5.783E-01 | 3.844E-02 | 1.194 |
| | | 600.56 | | 5.160E-02 | 1.816E-01 | 2.894E-01 | 1.807E-02 | 0.178 |
| | | 635.90 | | -2.635E-01 | 2.967E-01 | 4.299E-01 | 2.650E-02 | -0.613 |
| TE-125M | | 109.28 | * | 3.573E+00 | 1.020E+01 | 1.675E+01 | 1.665E+00 | 0.213 |
| | | 388.63 | | 6.591E-02 | 2.732E-01 | 4.592E-01 | 2.605E-02 | 0.144 |
| I-126 | | 666.33 | * | 1.404E-01 | 2.634E-01 | 4.605E-01 | 2.271E-02 | 0.305 |
| | | 753.82 | | 5.927E-01 | 1.955E+00 | 3.350E+00 | 2.032E-01 | 0.177 |
| SB-126 | | 223.80 | | 3.277E+00 | 5.436E+00 | 8.947E+00 | 5.926E-01 | 0.366 |
| | + | 278.60 | | 4.615E+00 | 5.385E+00 | 6.012E+00 | 3.997E-01 | 0.768 |
| | + | 296.50 | | 2.135E+01 | 4.006E+00 | 5.345E+00 | 3.519E-01 | 3.994 |
| | | 414.70 | | 6.752E-02 | 1.066E-01 | 1.831E-01 | 1.036E-02 | 0.369 |
| | | 415.30 | | 2.324E+00 | 8.743E+00 | 1.466E+01 | 8.298E-01 | 0.158 |
| | | 555.20 | | -2.253E+00 | 5.230E+00 | 8.074E+00 | 4.407E-01 | -0.279 |
| | | 573.80 | | 2.509E-01 | 1.366E+00 | 2.236E+00 | 1.204E-01 | 0.112 |
| | | 593.00 | | -4.229E-01 | 1.317E+00 | 2.049E+00 | 1.085E-01 | -0.206 |
| | | 656.30 | | -2.512E-01 | 4.405E+00 | 7.384E+00 | 3.629E-01 | -0.034 |
| | | 666.33 | | 5.932E-02 | 1.113E-01 | 1.946E-01 | 9.599E-03 | 0.305 |
| SB-127 | | 675.00 | | -2.938E-01 | 2.569E+00 | 4.274E+00 | 2.154E-01 | -0.069 |
| | | 695.00 | | -3.910E-02 | 1.016E-01 | 1.646E-01 | 8.704E-03 | -0.238 |
| | | 697.00 | | -2.086E-01 | 3.520E-01 | 5.520E-01 | 2.934E-02 | -0.378 |
| | | 720.50 | * | 2.803E-01 | 2.143E-01 | 3.709E-01 | 2.084E-02 | 0.756 |
| | | 856.80 | | 1.724E-01 | 7.365E-01 | 1.090E+00 | 8.254E-02 | 0.158 |
| | | 989.30 | | 8.265E-01 | 1.778E+00 | 3.050E+00 | 2.350E-01 | 0.271 |
| | | 1034.80 | | 4.546E+00 | 1.307E+01 | 2.206E+01 | 1.624E+00 | 0.206 |
| | | 1213.00 | | -6.108E+00 | 6.773E+00 | 9.727E+00 | 6.007E-01 | -0.628 |
| | | 61.10 | | -2.962E+02 | 1.952E+02 | 2.931E+02 | 4.484E+01 | -1.011 |
| | | 252.40 | | -2.204E+00 | 1.023E+01 | 1.708E+01 | 7.196E+00 | -0.129 |
| | | 290.80 | | -1.549E+01 | 5.400E+01 | 7.811E+01 | 8.967E+00 | -0.198 |
| | | 411.60 | | -1.159E+01 | 3.136E+01 | 5.022E+01 | 7.825E+00 | -0.231 |
| | | 444.90 | | 1.000E+01 | 2.474E+01 | 4.175E+01 | 5.160E+00 | 0.240 |
| | | 473.00 | | -2.408E+00 | 4.208E+00 | 6.514E+00 | 8.268E-01 | -0.370 |
| | | 543.00 | | -2.595E+01 | 4.268E+01 | 6.482E+01 | 9.190E+00 | -0.400 |
| | | 603.60 | | -6.559E+00 | 3.279E+01 | 4.460E+01 | 5.416E+00 | -0.147 |
| | | 685.20 | * | -1.153E+00 | 2.933E+00 | 4.723E+00 | 5.169E-01 | -0.244 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| XE-127 | | 698.50 | | 3.251E+00 | 3.818E+01 | 6.382E+01 | 9.932E+00 | 0.051 |
| | | 722.20 | | 5.489E+01 | 8.617E+01 | 1.346E+02 | 1.474E+01 | 0.408 |
| | | 783.80 | | 3.124E+00 | 8.772E+00 | 1.506E+01 | 1.903E+00 | 0.207 |
| | | 57.60 | | 3.259E+00 | 1.025E+01 | 1.762E+01 | 2.206E+00 | 0.185 |
| | | 145.22 | | 5.181E-03 | 7.645E-01 | 1.246E+00 | 8.109E-02 | 0.004 |
| | | 172.10 | | 7.318E-02 | 1.332E-01 | 2.212E-01 | 1.411E-02 | 0.331 |
| I-131 | | 202.84 | * | 1.138E-02 | 5.272E-02 | 8.533E-02 | 5.578E-03 | 0.133 |
| | | 374.96 | | -4.150E-02 | 2.237E-01 | 3.660E-01 | 2.147E-02 | -0.113 |
| | | 80.18 | | -1.447E+00 | 7.774E+00 | 1.155E+01 | 1.344E+00 | -0.125 |
| | | 284.30 | | -5.433E-01 | 2.286E+00 | 3.799E+00 | 2.757E-01 | -0.143 |
| | | 364.48 | * | 9.883E-02 | 1.849E-01 | 3.177E-01 | 2.131E-02 | 0.311 |
| | | 636.97 | | 9.754E-02 | 2.456E+00 | 3.936E+00 | 2.319E-01 | 0.025 |
| TE-132 | | 722.89 | | 1.735E+00 | 1.301E+01 | 1.923E+01 | 1.114E+00 | 0.090 |
| | | 49.72 | | -3.424E+00 | 1.232E+02 | 2.096E+02 | 3.167E+01 | -0.016 |
| | | 111.76 | | -1.440E+01 | 8.232E+01 | 1.347E+02 | 1.583E+01 | -0.107 |
| BA-133 | | 116.30 | | 2.582E+01 | 7.584E+01 | 1.269E+02 | 1.455E+01 | 0.203 |
| | | 228.16 | * | -8.706E-01 | 2.009E+00 | 3.098E+00 | 4.894E-01 | -0.281 |
| | | 53.15 | | -1.042E+00 | 6.781E+00 | 1.144E+01 | 1.498E+00 | -0.091 |
| | | 79.62 | | 1.441E-01 | 1.436E+00 | 2.173E+00 | 3.703E-01 | 0.066 |
| | | 81.00 | | -1.527E-01 | 1.172E-01 | 1.580E-01 | 2.791E-02 | -0.967 |
| | | 276.40 | | 2.401E-01 | 4.286E-01 | 6.211E-01 | 8.302E-02 | 0.387 |
| I-133 | | 302.84 | | 3.522E-02 | 1.662E-01 | 2.502E-01 | 3.014E-02 | 0.141 |
| | | 356.01 | * | -1.696E-02 | 5.116E-02 | 7.244E-02 | 8.486E-03 | -0.234 |
| | | 383.85 | | 3.889E-02 | 3.320E-01 | 5.535E-01 | 6.000E-02 | 0.070 |
| | + | 510.53 | | 6.356E+01 | 3.320E-01 | Half-Life | too short | |
| | | 529.87 | * | -9.780E-04 | 3.320E-01 | Half-Life | too short | |
| | | 706.58 | | -8.871E+00 | 3.320E-01 | Half-Life | too short | |
| CS-134 | | 856.28 | | -7.196E+00 | 3.320E-01 | Half-Life | too short | |
| | | 875.33 | | 6.744E+00 | 3.320E-01 | Half-Life | too short | |
| | | 1236.41 | | 2.134E+01 | 3.320E-01 | Half-Life | too short | |
| | | 1298.22 | | -9.982E+00 | 3.320E-01 | Half-Life | too short | |
| | | 475.35 | | 6.944E-01 | 1.942E+00 | 3.261E+00 | 1.844E-01 | 0.213 |
| | | 563.23 | | 9.579E-02 | 3.999E-01 | 6.572E-01 | 3.652E-02 | 0.146 |
| CS-135 | | 569.32 | | -1.525E-01 | 2.206E-01 | 3.314E-01 | 1.852E-02 | -0.460 |
| | | 604.70 | | 7.322E-03 | 3.985E-02 | 5.697E-02 | 3.002E-03 | 0.129 |
| | | 795.84 | * | 7.598E-02 | 5.065E-02 | 9.421E-02 | 6.349E-03 | 0.806 |
| | | 801.93 | | -9.110E-02 | 3.955E-01 | 6.485E-01 | 4.416E-02 | -0.140 |
| | | 1038.57 | | 1.540E+00 | 4.510E+00 | 7.594E+00 | 5.566E-01 | 0.203 |
| | | 1167.94 | | -7.580E-01 | 2.561E+00 | 3.974E+00 | 2.388E-01 | -0.191 |
| I-135 | | 1365.15 | | 1.434E-01 | 1.264E+00 | 2.138E+00 | 1.570E-01 | 0.067 |
| | | 268.24 | * | 1.125E-01 | 1.647E-01 | 2.587E-01 | 2.157E-02 | 0.435 |
| | | 288.45 | | -2.001E+15 | 1.647E-01 | Half-Life | too short | |
| | | 417.63 | | 2.798E+15 | 1.647E-01 | Half-Life | too short | |
| | | 546.56 | | 1.214E+15 | 1.647E-01 | Half-Life | too short | |
| | | 836.80 | | 4.321E+15 | 1.647E-01 | Half-Life | too short | |
| I-135 | | 1038.76 | | 2.726E+15 | 1.647E-01 | Half-Life | too short | |
| | | 1124.00 | | -8.655E+14 | 1.647E-01 | Half-Life | too short | |
| | | 1131.51 | | 1.157E+15 | 1.647E-01 | Half-Life | too short | |
| | | 1260.41 | * | 5.097E+14 | 1.647E-01 | Half-Life | too short | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| CS-136 | | 1457.56 | | 8.996E+16 | 1.647E-01 | Half-Life | too short | |
| | | 1678.03 | | 8.815E+14 | 1.647E-01 | Half-Life | too short | |
| | | 1706.46 | | 4.921E+14 | 1.647E-01 | Half-Life | too short | |
| | | 1791.20 | | -5.727E+14 | 1.647E-01 | Half-Life | too short | |
| | | 66.91 | | 8.423E-02 | 1.264E+00 | 2.113E+00 | 3.663E-01 | 0.040 |
| | + | 86.29 | | 3.858E+00 | 1.852E+00 | 2.781E+00 | 4.240E-01 | 1.387 |
| | | 153.22 | | 5.688E-01 | 8.504E-01 | 1.425E+00 | 1.104E-01 | 0.399 |
| | | 163.89 | | -8.996E-02 | 1.378E+00 | 2.224E+00 | 1.716E-01 | -0.040 |
| | | 176.55 | | -3.570E-01 | 4.785E-01 | 7.389E-01 | 5.220E-02 | -0.483 |
| | | 273.65 | | -1.268E-01 | 8.378E-01 | 8.900E-01 | 6.575E-02 | -0.142 |
| BA-137M | | 340.57 | | 3.936E-01 | 1.903E-01 | 3.215E-01 | 2.126E-02 | 1.224 |
| | | 818.51 | | 2.249E-02 | 1.018E-01 | 1.723E-01 | 1.208E-02 | 0.131 |
| | | 1048.07 | * | 5.733E-02 | 1.347E-01 | 2.304E-01 | 1.771E-02 | 0.249 |
| | | 1235.34 | | 9.360E-02 | 8.714E-01 | 1.475E+00 | 1.518E-01 | 0.063 |
| | | 661.65 | * | -3.718E-02 | 4.258E-02 | 6.934E-02 | 3.382E-03 | -0.536 |
| | | 661.65 | * | -3.930E-02 | 4.501E-02 | 7.330E-02 | 3.596E-03 | -0.536 |
| | | 165.85 | * | -2.290E-02 | 3.052E-02 | 4.735E-02 | 3.008E-03 | -0.484 |
| | | 162.64 | | 9.348E-01 | 9.655E-01 | 1.638E+00 | 1.152E-01 | 0.571 |
| | | 304.84 | | 2.330E-01 | 1.914E+00 | 2.859E+00 | 7.850E-01 | 0.081 |
| | | 423.70 | | 1.899E-01 | 2.433E+00 | 4.023E+00 | 1.278E+00 | 0.047 |
| LA-140 | | 537.32 | * | -3.869E-02 | 3.158E-01 | 5.038E-01 | 1.636E-01 | -0.077 |
| | | 328.77 | | 5.567E-01 | 4.005E-01 | 7.186E-01 | 5.038E-02 | 0.775 |
| | | 432.53 | | -4.680E-01 | 2.681E+00 | 4.338E+00 | 2.728E-01 | -0.108 |
| | | 487.03 | | -1.691E-03 | 1.748E-01 | 2.843E-01 | 1.826E-02 | -0.006 |
| | | 751.79 | | 9.291E-02 | 2.267E+00 | 3.796E+00 | 2.768E-01 | 0.024 |
| | | 815.85 | | 1.521E-01 | 4.176E-01 | 7.180E-01 | 5.852E-02 | 0.212 |
| | | 867.82 | | 2.328E-01 | 1.640E+00 | 2.752E+00 | 2.271E-01 | 0.085 |
| | | 919.63 | | -2.586E-01 | 3.777E+00 | 6.156E+00 | 6.311E-01 | -0.042 |
| | | 925.24 | | -2.488E-01 | 1.472E+00 | 2.369E+00 | 2.054E-01 | -0.105 |
| | | 1596.49 | * | -3.033E-02 | 1.304E-01 | 2.062E-01 | 1.358E-02 | -0.147 |
| CE-141 | | 145.44 | * | -2.178E-03 | 7.052E-02 | 1.147E-01 | 7.702E-03 | -0.019 |
| | | 57.37 | | 4.591E-03 | 7.052E-02 | Half-Life | too short | |
| | | 231.56 | | 5.501E-03 | 7.052E-02 | Half-Life | too short | |
| | | 293.26 | * | 9.701E-03 | 7.052E-02 | Half-Life | too short | |
| | + | 350.59 | | 3.993E-01 | 7.052E-02 | Half-Life | too short | |
| | | 490.36 | | 1.186E-02 | 7.052E-02 | Half-Life | too short | |
| | | 664.57 | | 7.247E-03 | 7.052E-02 | Half-Life | too short | |
| | | 721.93 | | 2.844E-02 | 7.052E-02 | Half-Life | too short | |
| | | 80.11 | | -3.923E-01 | 2.375E+00 | 3.535E+00 | 4.084E-01 | -0.111 |
| | | 133.54 | * | -6.152E-02 | 2.118E-01 | 3.414E-01 | 4.977E-02 | -0.180 |
| PM-144 | | 476.78 | | -2.887E-03 | 7.019E-02 | 1.141E-01 | 7.782E-03 | -0.025 |
| | | 618.01 | | 1.066E-02 | 3.050E-02 | 5.059E-02 | 2.809E-03 | 0.211 |
| | | 696.49 | * | -1.854E-02 | 3.488E-02 | 5.505E-02 | 2.927E-03 | -0.337 |
| | | 778.57 | | -1.555E+00 | 2.095E+00 | 3.190E+00 | 2.048E-01 | -0.487 |
| | | 696.49 | * | -1.259E+00 | 2.369E+00 | 3.740E+00 | 1.985E-01 | -0.337 |
| | | 1489.15 | | 8.754E-01 | 1.111E+01 | 1.862E+01 | 1.261E+00 | 0.047 |
| | | 453.90 | * | 2.138E-02 | 4.669E-02 | 7.900E-02 | 6.742E-03 | 0.271 |
| | | 633.02 | | 2.249E-01 | 1.536E+00 | 2.484E+00 | 9.119E-01 | 0.091 |
| | | 735.90 | | -2.909E-02 | 1.672E-01 | 2.486E-01 | 6.932E-02 | -0.117 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|---------------------|-----------|---------|
| ND-147 | + | 747.13 | | -2.381E-02 | 8.949E-02 | 1.453E-01 | 1.829E-02 | -0.164 |
| | | 91.11 | | 9.284E-01 | 4.689E-01 | 6.940E-01 | 8.139E-02 | 1.338 |
| | | 319.41 | | -5.433E-01 | 4.542E+00 | 7.546E+00 | 4.867E-01 | -0.072 |
| | | 439.89 | | 9.152E-01 | 7.861E+00 | 1.301E+01 | 7.387E-01 | 0.070 |
| PM-149 | * | 531.02 | | 2.017E-01 | 8.161E-01 | 1.348E+00 | 1.808E-01 | 0.150 |
| | | 285.90 | | -1.663E-04 | 8.161E-01 | Half-Life too short | | |
| EU-152 | | 121.78 | | 2.494E-02 | 7.277E-02 | 1.216E-01 | 1.036E-02 | 0.205 |
| | | 244.69 | | 3.712E-01 | 3.535E-01 | 5.409E-01 | 3.609E-02 | 0.686 |
| | | 344.27 | * | 2.196E-02 | 1.109E-01 | 1.655E-01 | 1.146E-02 | 0.133 |
| | | 443.98 | | 7.463E-01 | 9.768E-01 | 1.694E+00 | 9.611E-02 | 0.441 |
| | | 778.89 | | -4.570E-02 | 2.315E-01 | 3.765E-01 | 2.416E-02 | -0.121 |
| | | 867.32 | | 2.185E-02 | 7.755E-01 | 1.250E+00 | 9.674E-02 | 0.017 |
| | | 964.01 | | 5.499E-01 | 3.688E-01 | 6.150E-01 | 4.843E-02 | 0.894 |
| | | 1085.78 | | 8.318E-02 | 3.728E-01 | 6.217E-01 | 4.292E-02 | 0.134 |
| | | 1112.02 | | 3.953E-01 | 3.399E-01 | 5.954E-01 | 3.953E-02 | 0.664 |
| | | 1407.95 | | 2.281E-01 | 2.115E-01 | 3.967E-01 | 2.713E-02 | 0.575 |
| GD-153 | | 69.67 | | -2.092E+00 | 2.060E+00 | 3.122E+00 | 3.605E-01 | -0.670 |
| | | 83.37 | | 3.497E+00 | 1.942E+01 | 2.697E+01 | 3.157E+00 | 0.130 |
| | | 97.43 | * | -6.062E-03 | 8.589E-02 | 1.273E-01 | 1.249E-02 | -0.048 |
| EU-154 | | 103.18 | | -4.978E-02 | 1.033E-01 | 1.670E-01 | 1.486E-02 | -0.298 |
| | | 123.07 | | -5.581E-02 | 5.177E-02 | 7.994E-02 | 8.091E-03 | -0.698 |
| | | 247.94 | | -1.962E-01 | 3.742E-01 | 5.694E-01 | 5.750E-02 | -0.345 |
| | | 591.81 | | -2.717E-01 | 6.683E-01 | 1.031E+00 | 9.777E-02 | -0.264 |
| | | 723.30 | | -7.980E-02 | 2.159E-01 | 3.000E-01 | 2.089E-02 | -0.266 |
| | | 756.87 | | 1.111E-01 | 7.648E-01 | 1.292E+00 | 1.333E-01 | 0.086 |
| | | 873.19 | | -1.834E-01 | 3.162E-01 | 4.876E-01 | 5.706E-02 | -0.376 |
| EU-155 | | 996.32 | | -2.461E-02 | 3.740E-01 | 6.056E-01 | 1.049E-01 | -0.041 |
| | | 1004.76 | | -4.690E-02 | 2.253E-01 | 3.585E-01 | 3.909E-02 | -0.131 |
| | | 1274.45 | * | -1.094E-01 | 1.266E-01 | 1.890E-01 | 1.854E-02 | -0.579 |
| | | 48.70 | | -2.457E+00 | 6.023E+00 | 9.857E+00 | 1.136E+00 | -0.249 |
| | | 60.01 | | -3.898E+00 | 6.948E+00 | 1.125E+01 | 1.367E+00 | -0.346 |
| | | 86.54 | | 2.753E-01 | 1.296E-01 | 2.005E-01 | 2.402E-02 | 1.373 |
| | | 105.31 | * | -6.492E-02 | 1.071E-01 | 1.718E-01 | 1.497E-02 | -0.378 |
| | | 86.79 | | 7.695E-01 | 3.621E-01 | 5.633E-01 | 6.722E-02 | 1.366 |
| | | 197.04 | | -3.602E-01 | 6.540E-01 | 9.998E-01 | 6.506E-02 | -0.360 |
| | | 215.65 | | 4.320E-01 | 7.687E-01 | 1.266E+00 | 8.345E-02 | 0.341 |
| TB-160 | + | 298.57 | | 1.282E-01 | 1.831E-01 | 2.160E-01 | 1.420E-02 | 0.594 |
| | | 879.36 | * | -1.995E-01 | 1.644E-01 | 2.348E-01 | 1.862E-02 | -0.850 |
| | | 962.29 | | -1.188E-01 | 7.362E-01 | 1.020E+00 | 8.042E-02 | -0.116 |
| | | 966.15 | | 5.699E-01 | 3.187E-01 | 5.302E-01 | 4.168E-02 | 1.075 |
| | | 1177.93 | | -2.083E-01 | 3.799E-01 | 5.684E-01 | 3.396E-02 | -0.367 |
| | | 1271.85 | | 4.956E-01 | 8.086E-01 | 1.440E+00 | 9.373E-02 | 0.344 |
| | | 80.57 | | -7.242E-02 | 2.971E-01 | 4.398E-01 | 5.089E-02 | -0.165 |
| | | 184.41 | | 2.316E-01 | 6.040E-02 | 6.579E-02 | 4.238E-03 | 3.519 |
| | | 280.46 | | 3.790E-02 | 9.551E-02 | 1.465E-01 | 9.733E-03 | 0.259 |
| | | 410.95 | | 2.903E-02 | 2.502E-01 | 4.155E-01 | 2.350E-02 | 0.070 |
| | | 711.68 | * | 8.153E-04 | 6.088E-02 | 1.021E-01 | 5.617E-03 | 0.008 |
| | | 752.31 | | 1.157E-01 | 2.784E-01 | 4.818E-01 | 2.913E-02 | 0.240 |
| HO-166M | + | 810.29 | | -3.946E-02 | 5.144E-02 | 7.710E-02 | 5.297E-03 | -0.512 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TM-171 | | 51.35 | | -2.245E+01 | 6.370E+01 | 1.065E+02 | 1.379E+01 | -0.211 |
| | | 52.39 | | 9.768E+00 | 3.088E+01 | 5.327E+01 | 6.968E+00 | 0.183 |
| | | 59.40 | | -1.540E+01 | 3.802E+01 | 6.213E+01 | 7.577E+00 | -0.248 |
| | | 66.72 | * | 3.217E+00 | 3.577E+01 | 5.986E+01 | 6.999E+00 | 0.054 |
| LU-176 | + | 88.36 | | 5.412E-01 | 2.547E-01 | 3.856E-01 | 4.596E-02 | 1.404 |
| | | 201.83 | | -1.889E-02 | 2.917E-02 | 4.492E-02 | 2.934E-03 | -0.421 |
| | | 306.84 | * | -5.769E-03 | 2.550E-02 | 4.220E-02 | 2.755E-03 | -0.137 |
| | | 401.10 | | 2.650E-01 | 6.660E+00 | 1.102E+01 | 6.218E-01 | 0.024 |
| LU-177 | | 112.95 | | -3.528E-01 | 2.680E+00 | 4.394E+00 | 3.402E-01 | -0.080 |
| | + | 208.36 | * | 4.161E+00 | 3.109E+00 | 3.458E+00 | 2.269E-01 | 1.203 |
| LU-177M | | 52.97 | | 1.971E-02 | 3.116E+00 | 5.301E+00 | 6.941E-01 | 0.004 |
| | | 54.07 | | 1.920E-01 | 1.569E+00 | 2.681E+00 | 3.496E-01 | 0.072 |
| | | 61.30 | | -2.933E+00 | 2.047E+00 | 3.173E+00 | 3.828E-01 | -0.924 |
| | | 121.62 | | 3.953E-01 | 3.717E-01 | 6.414E-01 | 4.467E-02 | 0.616 |
| | | 147.16 | | 2.352E-01 | 6.804E-01 | 1.126E+00 | 7.304E-02 | 0.209 |
| | | 171.86 | | 2.566E-01 | 4.985E-01 | 8.263E-01 | 5.269E-02 | 0.311 |
| | | 218.09 | | -7.208E-02 | 8.602E-01 | 1.363E+00 | 9.000E-02 | -0.053 |
| | + | 268.79 | | 2.612E+00 | 1.152E+00 | 1.428E+00 | 9.526E-02 | 1.829 |
| | | 319.02 | | -6.911E-02 | 2.595E-01 | 4.268E-01 | 2.752E-02 | -0.162 |
| | | 367.43 | | -3.860E-01 | 9.231E-01 | 1.485E+00 | 8.857E-02 | -0.260 |
| | | 413.65 | * | 8.406E-03 | 1.924E-01 | 3.177E-01 | 1.798E-02 | 0.026 |
| HF-181 | | 56.28 | | 5.730E-01 | 1.670E+00 | 2.878E+00 | 3.669E-01 | 0.199 |
| | | 57.53 | | 2.872E-01 | 8.541E-01 | 1.470E+00 | 1.842E-01 | 0.195 |
| | | 65.20 | | -1.106E+00 | 1.354E+00 | 2.170E+00 | 2.557E-01 | -0.510 |
| | | 133.02 | | -2.874E-02 | 7.173E-02 | 1.151E-01 | 7.680E-03 | -0.250 |
| | | 136.25 | | 6.385E-02 | 4.956E-01 | 8.153E-01 | 5.398E-02 | 0.078 |
| | | 345.85 | | -4.431E-02 | 2.293E-01 | 3.488E-01 | 2.167E-02 | -0.127 |
| | | 482.03 | * | 2.018E-02 | 4.381E-02 | 7.429E-02 | 4.194E-03 | 0.272 |
| W-181 | | 56.28 | | 2.140E-01 | 6.206E-01 | 1.069E+00 | 1.363E-01 | 0.200 |
| | | 57.53 | | 1.068E-01 | 3.176E-01 | 5.466E-01 | 6.850E-02 | 0.195 |
| | | 65.20 | * | -4.078E-01 | 4.994E-01 | 8.003E-01 | 9.433E-02 | -0.510 |
| TA-182 | | 67.75 | | 7.109E-02 | 1.395E-01 | 2.371E-01 | 2.758E-02 | 0.300 |
| | | 100.10 | | 1.157E-01 | 1.828E-01 | 3.116E-01 | 2.916E-02 | 0.371 |
| | | 152.43 | | -1.172E-01 | 3.493E-01 | 5.580E-01 | 3.595E-02 | -0.210 |
| | | 222.10 | | -5.926E-02 | 3.666E-01 | 5.776E-01 | 3.823E-02 | -0.103 |
| | | 1001.68 | | 1.383E+00 | 2.227E+00 | 3.937E+00 | 3.000E-01 | 0.351 |
| | + | 1121.28 | | 8.209E-01 | 3.115E-01 | 4.356E-01 | 2.849E-02 | 1.885 |
| | | 1189.05 | | -2.734E-01 | 3.405E-01 | 4.943E-01 | 2.984E-02 | -0.553 |
| | | 1221.42 | * | -9.829E-02 | 2.071E-01 | 3.313E-01 | 2.062E-02 | -0.297 |
| | | 1230.97 | | 2.004E-01 | 5.496E-01 | 9.507E-01 | 5.969E-02 | 0.211 |
| RE-183 | | 57.98 | | 7.140E-02 | 3.127E-01 | 5.357E-01 | 6.671E-02 | 0.133 |
| | | 59.32 | | -6.145E-02 | 1.641E-01 | 2.686E-01 | 3.279E-02 | -0.229 |
| | | 67.20 | | 5.334E-02 | 2.600E-01 | 4.370E-01 | 5.097E-02 | 0.122 |
| | | 162.32 | * | 1.120E-01 | 1.126E-01 | 1.915E-01 | 1.220E-02 | 0.585 |
| | + | 208.81 | | 2.364E+00 | 1.766E+00 | 1.958E+00 | 1.285E-01 | 1.207 |
| | | 291.72 | | 5.372E-01 | 1.033E+00 | 1.599E+00 | 1.056E-01 | 0.336 |
| RE-184 | | 57.98 | | 2.557E-01 | 1.120E+00 | 1.919E+00 | 2.389E-01 | 0.133 |
| | | 59.32 | | -2.199E-01 | 5.871E-01 | 9.612E-01 | 1.173E-01 | -0.229 |
| | | 67.20 | | 1.910E-01 | 9.308E-01 | 1.565E+00 | 1.825E-01 | 0.122 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| OS-185 | | 161.27 | | -1.030E-01 | 3.566E-01 | 5.690E-01 | 3.629E-02 | -0.181 |
| | | 216.55 | | 5.740E-02 | 2.693E-01 | 4.346E-01 | 2.867E-02 | 0.132 |
| | | 252.85 | * | -7.075E-02 | 2.263E-01 | 3.773E-01 | 2.520E-02 | -0.188 |
| | | 318.01 | | -3.976E-01 | 4.521E-01 | 7.120E-01 | 4.596E-02 | -0.558 |
| | | 792.07 | | -9.567E-01 | 1.087E+00 | 1.594E+00 | 1.053E-01 | -0.600 |
| | | 903.28 | | -1.432E-02 | 1.104E+00 | 1.644E+00 | 1.349E-01 | -0.009 |
| | | 920.93 | | 2.269E-01 | 4.683E-01 | 8.095E-01 | 6.573E-02 | 0.280 |
| | | 59.72 | | -1.270E-01 | 4.248E-01 | 6.979E-01 | 8.490E-02 | -0.182 |
| | | 61.14 | | -3.603E-01 | 2.350E-01 | 3.565E-01 | 4.305E-02 | -1.011 |
| | | 69.30 | | -1.625E-01 | 3.555E-01 | 5.859E-01 | 6.774E-02 | -0.277 |
| | | 592.07 | | -9.682E-01 | 2.840E+00 | 4.412E+00 | 2.338E-01 | -0.219 |
| | | 646.12 | * | -4.830E-03 | 4.014E-02 | 6.690E-02 | 3.335E-03 | -0.072 |
| | | 717.42 | | -8.467E-01 | 9.575E-01 | 1.470E+00 | 8.200E-02 | -0.576 |
| | | 874.81 | | 3.450E-01 | 6.620E-01 | 1.147E+00 | 9.011E-02 | 0.301 |
| | | 880.27 | | -4.545E-01 | 8.601E-01 | 1.336E+00 | 1.061E-01 | -0.340 |
| RE-188 | | 155.03 | * | 1.567E-01 | 1.793E-01 | 3.033E-01 | 1.948E-02 | 0.517 |
| | | 477.96 | | 1.368E-01 | 3.341E+00 | 5.465E+00 | 3.088E-01 | 0.025 |
| | | 633.10 | | 3.876E-01 | 3.243E+00 | 5.238E+00 | 2.655E-01 | 0.074 |
| W-188 | | 63.58 | | 6.066E+01 | 7.285E+01 | 1.256E+02 | 1.495E+01 | 0.483 |
| | | 227.08 | | 5.212E+00 | 1.352E+01 | 2.198E+01 | 1.459E+00 | 0.237 |
| IR-192 | | 290.67 | * | -2.641E+00 | 8.086E+00 | 1.166E+01 | 7.705E-01 | -0.227 |
| | + | 295.96 | | 1.301E+00 | 2.445E-01 | 3.396E-01 | 2.264E-02 | 3.831 |
| | | 308.46 | | 2.254E-02 | 1.022E-01 | 1.736E-01 | 1.142E-02 | 0.130 |
| | | 316.51 | * | -1.775E-02 | 3.547E-02 | 5.744E-02 | 3.729E-03 | -0.309 |
| | | 468.07 | | -3.463E-02 | 8.006E-02 | 1.085E-01 | 7.127E-03 | -0.319 |
| AU-195 | | 604.41 | | -4.505E-03 | 5.610E-01 | 7.831E-01 | 8.671E-02 | -0.006 |
| | | 612.46 | | 7.108E-01 | 7.630E-01 | 1.200E+00 | 8.539E-02 | 0.592 |
| | | 65.12 | | -1.765E-01 | 2.300E-01 | 3.697E-01 | 4.359E-02 | -0.477 |
| | | 66.83 | | 1.013E-02 | 1.195E-01 | 2.000E-01 | 2.337E-02 | 0.051 |
| | + | 75.70 | | 1.285E+00 | 3.469E-01 | 5.479E-01 | 6.277E-02 | 2.346 |
| | | 98.88 | * | 2.712E-01 | 2.282E-01 | 3.970E-01 | 3.796E-02 | 0.683 |
| TL-200 | | 129.76 | | 5.401E+00 | 2.962E+00 | 5.213E+00 | 3.511E-01 | 1.036 |
| | | 367.94 | * | -1.400E-03 | 2.962E+00 | Half-Life | too short | |
| | | 579.30 | | 2.246E-02 | 2.962E+00 | Half-Life | too short | |
| | | 828.27 | | 7.618E-02 | 2.962E+00 | Half-Life | too short | |
| TL-201 | | 1205.75 | | 4.419E-02 | 2.962E+00 | Half-Life | too short | |
| | | 68.90 | | -4.929E+00 | 1.721E+01 | 2.862E+01 | 3.314E+00 | -0.172 |
| | | 70.82 | | -5.636E+00 | 1.041E+01 | 1.521E+01 | 1.750E+00 | -0.371 |
| | | 80.30 | | -3.758E+00 | 1.693E+01 | 2.510E+01 | 2.902E+00 | -0.150 |
| | | 135.34 | | 2.852E+01 | 7.775E+01 | 1.294E+02 | 8.583E+00 | 0.220 |
| TL-202 | | 167.43 | * | 1.478E+01 | 2.047E+01 | 3.435E+01 | 2.184E+00 | 0.430 |
| | | 68.90 | | -1.913E-01 | 6.680E-01 | 1.111E+00 | 1.286E-01 | -0.172 |
| | | 70.82 | | -2.181E-01 | 4.028E-01 | 5.886E-01 | 6.774E-02 | -0.371 |
| | | 80.30 | | -1.455E-01 | 6.555E-01 | 9.719E-01 | 1.124E-01 | -0.150 |
| BI-207 | | 439.56 | * | -3.720E-03 | 8.995E-02 | 1.470E-01 | 8.338E-03 | -0.025 |
| | | 72.80 | | 2.883E-01 | 2.264E-01 | 3.614E-01 | 4.144E-02 | 0.798 |
| | + | 74.97 | | 6.999E-01 | 1.889E-01 | 2.710E-01 | 3.104E-02 | 2.582 |
| | | 84.90 | | 1.836E-01 | 2.213E-01 | 3.446E-01 | 4.066E-02 | 0.533 |
| | | 569.67 | | -2.757E-02 | 3.491E-02 | 5.202E-02 | 2.810E-03 | -0.530 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| TL-207 | | 1063.62 | * | 2.816E-02 | 5.892E-02 | 1.005E-01 | 7.146E-03 | 0.280 |
| | | 1770.23 | | -3.028E+00 | 9.500E-01 | 7.805E-01 | 4.742E-02 | -3.880 |
| | | 81.07 | | -3.407E-01 | 2.541E-01 | 3.474E-01 | 4.027E-02 | -0.981 |
| | | 83.78 | | 5.921E-02 | 1.476E-01 | 2.258E-01 | 2.649E-02 | 0.262 |
| | | 94.90 | | 2.748E-01 | 2.354E-01 | 3.736E-01 | 3.850E-02 | 0.735 |
| | | 122.32 | | -4.415E-01 | 1.731E+00 | 2.808E+00 | 2.160E-01 | -0.157 |
| | | 144.24 | | -1.900E-01 | 6.763E-01 | 1.075E+00 | 8.406E-02 | -0.177 |
| | | 154.21 | | 5.342E-01 | 3.903E-01 | 6.734E-01 | 5.078E-02 | 0.793 |
| | + | 269.46 | | 5.987E-01 | 2.642E-01 | 3.491E-01 | 2.408E-02 | 1.715 |
| | | 323.87 | * | -4.564E-01 | 7.012E-01 | 1.120E+00 | 1.875E-01 | -0.408 |
| PO-209 | + | 338.28 | | 7.482E+00 | 2.150E+00 | 2.672E+00 | 2.888E-01 | 2.800 |
| | | 445.03 | | 9.379E-01 | 2.376E+00 | 4.009E+00 | 4.088E-01 | 0.234 |
| | | 260.50 | | 9.091E-01 | 9.245E+00 | 1.574E+01 | 1.051E+00 | 0.058 |
| | | 262.80 | | 1.021E+01 | 2.595E+01 | 4.487E+01 | 2.995E+00 | 0.228 |
| | | 896.60 | * | 6.677E+00 | 7.770E+00 | 1.371E+01 | 1.125E+00 | 0.487 |
| BI-210 | | 46.50 | * | 7.357E+00 | 9.807E+00 | 1.694E+01 | 1.476E+00 | 0.434 |
| PB-210 | | 46.50 | * | 7.357E+00 | 9.807E+00 | 1.694E+01 | 1.476E+00 | 0.434 |
| PO-210 | | 46.50 | * | 7.357E+00 | 9.803E+00 | 1.694E+01 | 1.316E+00 | 0.434 |
| PB-211 | | 404.84 | * | -4.815E-01 | 1.014E+00 | 1.540E+00 | 9.600E-01 | -0.313 |
| BI-212 | | 427.08 | | -1.762E+00 | 2.443E+00 | 3.319E+00 | 2.051E+00 | -0.531 |
| | | 831.96 | | -8.094E-01 | 1.339E+00 | 1.914E+00 | 1.196E+00 | -0.423 |
| | + | 727.18 | * | 1.635E+00 | 5.611E-01 | 7.326E-01 | 5.600E-02 | 2.231 |
| | | 785.46 | | 1.102E-02 | 1.754E+00 | 2.917E+00 | 1.899E-01 | 0.004 |
| | | 1620.62 | | 5.942E-01 | 1.467E+00 | 2.560E+00 | 1.672E-01 | 0.232 |
| PO-215 | | 81.07 | | -3.407E-01 | 2.541E-01 | 3.474E-01 | 4.027E-02 | -0.981 |
| | | 83.78 | | 5.921E-02 | 1.476E-01 | 2.258E-01 | 2.649E-02 | 0.262 |
| | | 94.90 | | 2.748E-01 | 2.354E-01 | 3.736E-01 | 3.850E-02 | 0.735 |
| | | 122.32 | | -4.415E-01 | 1.731E+00 | 2.808E+00 | 2.160E-01 | -0.157 |
| | | 144.24 | | -1.900E-01 | 6.763E-01 | 1.075E+00 | 8.406E-02 | -0.177 |
| | | 154.21 | | 5.342E-01 | 3.903E-01 | 6.734E-01 | 5.078E-02 | 0.793 |
| | + | 269.46 | | 5.987E-01 | 2.642E-01 | 3.491E-01 | 2.408E-02 | 1.715 |
| | | 323.87 | * | -4.564E-01 | 7.012E-01 | 1.120E+00 | 1.875E-01 | -0.408 |
| | + | 338.28 | | 7.482E+00 | 2.150E+00 | 2.672E+00 | 2.888E-01 | 2.800 |
| | | 445.03 | | 9.379E-01 | 2.376E+00 | 4.009E+00 | 4.088E-01 | 0.234 |
| RN-219 | + | 271.23 | | 7.682E-01 | 3.415E-01 | 4.480E-01 | 3.917E-02 | 1.715 |
| | | 401.81 | * | -4.078E-02 | 4.154E-01 | 6.802E-01 | 9.210E-02 | -0.060 |
| | | 549.76 | * | -1.196E+01 | 2.652E+01 | 4.093E+01 | 2.242E+00 | -0.292 |
| RN-220 | | 81.07 | | -3.407E-01 | 2.541E-01 | 3.474E-01 | 4.027E-02 | -0.981 |
| RA-223 | | 83.78 | | 5.921E-02 | 1.476E-01 | 2.258E-01 | 2.649E-02 | 0.262 |
| | | 94.90 | | 2.748E-01 | 2.354E-01 | 3.736E-01 | 3.850E-02 | 0.735 |
| | | 122.32 | | -4.415E-01 | 1.731E+00 | 2.808E+00 | 2.160E-01 | -0.157 |
| | | 144.24 | | -1.900E-01 | 6.763E-01 | 1.075E+00 | 8.406E-02 | -0.177 |
| | | 154.21 | | 5.342E-01 | 3.903E-01 | 6.734E-01 | 5.078E-02 | 0.793 |
| | + | 269.46 | | 5.987E-01 | 2.642E-01 | 3.491E-01 | 2.408E-02 | 1.715 |
| | | 323.87 | * | -4.564E-01 | 7.012E-01 | 1.120E+00 | 1.875E-01 | -0.408 |
| | + | 338.28 | | 7.482E+00 | 2.150E+00 | 2.672E+00 | 2.888E-01 | 2.800 |
| | | 445.03 | | 9.379E-01 | 2.376E+00 | 4.009E+00 | 4.088E-01 | 0.234 |
| | | 79.80 | | 1.264E-01 | 1.814E+00 | 2.739E+00 | 6.253E-01 | 0.046 |
| AC-227 | | 236.00 | | 1.564E-01 | 2.715E-01 | 3.977E-01 | 4.355E-02 | 0.393 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TH-227 | | 256.20 | * | 3.436E-02 | 3.588E-01 | 6.116E-01 | 8.775E-02 | 0.056 |
| | | 286.10 | | 9.382E-02 | 1.461E+00 | 2.472E+00 | 2.965E-01 | 0.038 |
| | + | 299.80 | | 3.089E+00 | 2.123E+00 | 2.828E+00 | 4.687E-01 | 1.092 |
| | | 304.40 | | 7.754E-01 | 2.092E+00 | 3.185E+00 | 5.594E-01 | 0.243 |
| | | 334.20 | | -4.875E-01 | 2.507E+00 | 3.615E+00 | 6.690E-01 | -0.135 |
| | | 79.80 | | 1.264E-01 | 1.814E+00 | 2.739E+00 | 6.324E-01 | 0.046 |
| | + | 94.00 | | 7.935E+00 | 3.604E+00 | 3.750E+00 | 8.470E-01 | 2.116 |
| | | 236.00 | | 1.564E-01 | 2.714E-01 | 3.977E-01 | 3.829E-02 | 0.393 |
| | | 256.20 | * | 3.436E-02 | 3.588E-01 | 6.116E-01 | 1.053E-01 | 0.056 |
| | | 286.10 | | 9.382E-02 | 1.464E+00 | 2.472E+00 | 2.477E+00 | 0.038 |
| TH-229 | + | 299.80 | | 3.089E+00 | 2.123E+00 | 2.828E+00 | 4.687E-01 | 1.092 |
| | | 304.40 | | 7.754E-01 | 2.092E+00 | 3.185E+00 | 5.594E-01 | 0.243 |
| | | 334.20 | | -4.875E-01 | 2.507E+00 | 3.615E+00 | 6.690E-01 | -0.135 |
| | | 85.43 | | 2.372E-01 | 2.186E-01 | 3.434E-01 | 4.064E-02 | 0.691 |
| | + | 88.47 | | 3.115E-01 | 1.466E-01 | 2.210E-01 | 2.627E-02 | 1.410 |
| | | 100.00 | | 1.260E-01 | 1.848E-01 | 3.155E-01 | 2.959E-02 | 0.399 |
| | | 193.63 | * | 1.430E-01 | 5.546E-01 | 9.012E-01 | 5.848E-02 | 0.159 |
| | | 210.97 | | 9.138E-01 | 8.591E-01 | 1.310E+00 | 8.615E-02 | 0.697 |
| | PA-231 | 283.67 | * | 2.325E-01 | 1.566E+00 | 2.578E+00 | 3.649E-01 | 0.090 |
| | + | 301.29 | | 1.235E+00 | 8.352E-01 | 1.122E+00 | 1.222E-01 | 1.101 |
| TH-231 | | 81.07 | | -3.407E-01 | 2.541E-01 | 3.474E-01 | 4.027E-02 | -0.981 |
| | | 83.78 | | 5.921E-02 | 1.476E-01 | 2.258E-01 | 2.649E-02 | 0.262 |
| | | 94.90 | | 2.748E-01 | 2.354E-01 | 3.736E-01 | 3.850E-02 | 0.735 |
| | | 122.32 | | -4.415E-01 | 1.731E+00 | 2.808E+00 | 2.160E-01 | -0.157 |
| | | 144.24 | | -1.900E-01 | 6.763E-01 | 1.075E+00 | 8.406E-02 | -0.177 |
| | | 154.21 | | 5.342E-01 | 3.903E-01 | 6.734E-01 | 5.078E-02 | 0.793 |
| | + | 269.46 | | 5.987E-01 | 2.642E-01 | 3.491E-01 | 2.408E-02 | 1.715 |
| | | 323.87 | * | -4.564E-01 | 7.012E-01 | 1.120E+00 | 1.875E-01 | -0.408 |
| | + | 338.28 | | 7.482E+00 | 2.150E+00 | 2.672E+00 | 2.888E-01 | 2.800 |
| | | 445.03 | | 9.379E-01 | 2.376E+00 | 4.009E+00 | 4.088E-01 | 0.234 |
| U-231 | | 84.21 | | 1.162E+01 | 1.413E+01 | 2.202E+01 | 2.589E+00 | 0.527 |
| | + | 92.29 | | 1.763E+01 | 7.190E+00 | 9.148E+00 | 9.953E-01 | 1.928 |
| | | 95.87 | * | -1.697E+00 | 2.621E+00 | 3.735E+00 | 3.777E-01 | -0.454 |
| | | 108.00 | | -3.446E-01 | 4.648E+00 | 7.657E+00 | 6.339E-01 | -0.045 |
| | PA-233 | 75.28 | | 2.042E+01 | 6.090E+00 | 7.988E+00 | 1.366E+00 | 2.556 |
| | + | 86.59 | | 4.467E+00 | 2.389E+00 | 3.258E+00 | 9.139E-01 | 1.371 |
| | + | 300.12 | | 8.611E-01 | 5.866E-01 | 7.879E-01 | 1.086E-01 | 1.093 |
| | | 311.98 | * | -8.353E-03 | 6.478E-02 | 1.077E-01 | 7.346E-03 | -0.078 |
| | | 340.50 | | 1.677E+00 | 8.147E-01 | 1.239E+00 | 2.861E-01 | 1.354 |
| | | 398.62 | | -1.210E+00 | 2.092E+00 | 3.262E+00 | 8.423E-01 | -0.371 |
| PA-234 | | 415.76 | | 1.017E+00 | 1.756E+00 | 2.989E+00 | 6.142E-01 | 0.340 |
| | | 63.00 | | 9.937E-01 | 2.058E+00 | 3.502E+00 | 6.152E-01 | 0.284 |
| | | 94.67 | | 3.208E-01 | 1.747E-01 | 2.808E-01 | 3.837E-02 | 1.143 |
| | | 98.44 | | 1.131E-01 | 1.128E-01 | 1.574E-01 | 8.807E-02 | 0.719 |
| | | 99.86 | | 3.509E-01 | 4.698E-01 | 8.042E-01 | 7.559E-02 | 0.436 |
| | | 111.00 | | -7.711E-02 | 1.913E-01 | 3.026E-01 | 3.515E-02 | -0.255 |
| | | 131.20 | | 9.954E-03 | 1.058E-01 | 1.740E-01 | 1.167E-02 | 0.057 |
| | | 152.70 | | -5.038E-03 | 3.282E-01 | 5.331E-01 | 8.558E-02 | -0.009 |
| | + | 186.00 | | 8.336E+00 | 3.314E+00 | 2.674E+00 | 8.206E-01 | 3.117 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 226.40 | | 3.420E-02 | 4.138E-01 | 6.609E-01 | 7.930E-02 | 0.052 |
| | | 227.20 | | 1.482E-01 | 4.339E-01 | 7.036E-01 | 4.668E-02 | 0.211 |
| | | 248.90 | | -5.670E-01 | 8.655E-01 | 1.293E+00 | 2.811E-01 | -0.439 |
| | + | 293.70 | | 7.820E+00 | 1.879E+00 | 1.909E+00 | 3.128E-01 | 4.097 |
| | | 369.80 | | 2.428E-01 | 8.172E-01 | 1.382E+00 | 2.884E-01 | 0.176 |
| | | 568.70 | | -3.855E-01 | 1.103E+00 | 1.713E+00 | 9.257E-02 | -0.225 |
| | | 569.50 | | -2.041E-01 | 3.043E-01 | 4.582E-01 | 2.475E-02 | -0.445 |
| | | 574.00 | | -9.058E-02 | 1.498E+00 | 2.396E+00 | 1.290E-01 | -0.038 |
| | | 699.00 | | 1.927E-01 | 7.053E-01 | 1.209E+00 | 2.157E-01 | 0.159 |
| | | 706.10 | | -5.560E-01 | 1.037E+00 | 1.602E+00 | 7.061E-01 | -0.347 |
| | | 733.00 | | 1.358E-01 | 3.985E-01 | 6.055E-01 | 1.287E-01 | 0.224 |
| | | 742.81 | | 4.436E-01 | 1.426E+00 | 2.397E+00 | 1.604E+00 | 0.185 |
| | | 796.30 | | 1.530E+00 | 1.047E+00 | 1.816E+00 | 4.812E-01 | 0.842 |
| | | 805.60 | | 2.264E-01 | 8.678E-01 | 1.478E+00 | 4.463E-01 | 0.153 |
| | | 819.60 | | 1.048E+00 | 1.315E+00 | 2.250E+00 | 8.482E-01 | 0.466 |
| | | 826.30 | | -7.225E-01 | 8.871E-01 | 1.239E+00 | 5.508E-01 | -0.583 |
| | | 831.60 | | -6.254E-01 | 6.717E-01 | 9.621E-01 | 2.834E-01 | -0.650 |
| | | 876.40 | | 1.185E+00 | 1.497E+00 | 1.629E+00 | 1.673E+00 | 0.728 |
| | | 880.51 | | -1.433E-01 | 3.014E-01 | 4.713E-01 | 3.746E-02 | -0.304 |
| | | 883.24 | | -1.048E-02 | 3.077E-01 | 4.956E-01 | 3.327E-01 | -0.021 |
| | | 899.00 | | -6.475E-01 | 9.145E-01 | 1.289E+00 | 5.624E-01 | -0.502 |
| | | 925.00 | | 5.680E-02 | 1.154E+00 | 1.906E+00 | 1.543E-01 | 0.030 |
| | | 926.50 | | -1.116E-01 | 1.765E-01 | 2.639E-01 | 6.625E-02 | -0.423 |
| | | 946.00 | * | 1.541E-01 | 3.321E-01 | 5.681E-01 | 1.050E-01 | 0.271 |
| | | 949.00 | | 3.459E-03 | 4.920E-01 | 8.065E-01 | 6.425E-02 | 0.004 |
| | | 980.50 | | -2.157E-02 | 7.146E-01 | 1.163E+00 | 9.035E-02 | -0.019 |
| | | 1394.10 | | -9.751E-02 | 1.060E+00 | 1.729E+00 | 1.122E+00 | -0.056 |
| PA-234M | | 766.42 | | 2.366E+01 | 1.791E+01 | 2.324E+01 | 1.171E+01 | 1.018 |
| | | 1001.03 | * | 1.482E+00 | 5.187E+00 | 8.856E+00 | 8.074E-01 | 0.167 |
| TH-234 | | 63.29 | * | 1.109E+00 | 1.756E+00 | 2.995E+00 | 5.925E-01 | 0.370 |
| | + | 92.38 | | 2.053E+00 | 8.987E-01 | 1.064E+00 | 2.048E-01 | 1.931 |
| U-235 | + | 89.95 | | 2.712E+00 | 1.585E+00 | 2.057E+00 | 6.536E-01 | 1.318 |
| | + | 93.35 | | 2.469E+00 | 1.203E+00 | 1.252E+00 | 3.594E-01 | 1.972 |
| | | 105.00 | | -4.289E-01 | 1.039E+00 | 1.672E+00 | 4.992E-01 | -0.256 |
| | | 143.76 | * | -1.290E-01 | 2.180E-01 | 3.401E-01 | 5.638E-02 | -0.379 |
| | | 163.35 | | 1.190E-01 | 4.617E-01 | 7.569E-01 | 1.375E-01 | 0.157 |
| | + | 185.71 | | 3.087E-01 | 8.053E-02 | 9.927E-02 | 6.401E-03 | 3.110 |
| | | 205.31 | | 4.299E-01 | 5.863E-01 | 8.711E-01 | 1.589E-01 | 0.494 |
| NP-236 | + | 94.67 | | 5.367E-01 | 2.188E-01 | 2.132E-01 | 2.208E-02 | 2.517 |
| | | 98.44 | | 8.552E-02 | 7.104E-02 | 1.190E-01 | 1.147E-02 | 0.719 |
| | | 111.00 | | -5.833E-02 | 1.446E-01 | 2.289E-01 | 1.818E-02 | -0.255 |
| | | 160.31 | * | -2.851E-02 | 7.901E-02 | 1.256E-01 | 8.021E-03 | -0.227 |
| U-238 | | 63.29 | * | 1.109E+00 | 1.756E+00 | 2.995E+00 | 5.925E-01 | 0.370 |
| | + | 92.38 | | 2.053E+00 | 8.374E-01 | 1.064E+00 | 1.155E-01 | 1.931 |
| NP-239 | | 99.55 | | 1.675E-01 | 1.560E-01 | 2.703E-01 | 2.554E-02 | 0.620 |
| | | 117.00 | * | 4.966E-02 | 1.876E-01 | 3.128E-01 | 2.302E-02 | 0.159 |
| | + | 209.75 | | 1.776E+00 | 1.327E+00 | 1.438E+00 | 9.444E-02 | 1.235 |
| | | 228.18 | | -1.018E-01 | 2.305E-01 | 3.559E-01 | 2.362E-02 | -0.286 |
| | + | 277.60 | | 2.558E-01 | 2.984E-01 | 3.230E-01 | 2.148E-02 | 0.792 |

Sample ID : G245388008

Acquisition date : 4-FEB-2010 12:44:56

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 334.30 | | -2.934E-01 | 1.419E+00 | 2.045E+00 | 1.293E-01 | -0.144 |
| AM-241 | | 59.54 | * | -9.377E-02 | 2.185E-01 | 3.565E-01 | 4.500E-02 | -0.263 |
| CM-243 | | 99.55 | | 1.725E-01 | 1.606E-01 | 2.782E-01 | 2.629E-02 | 0.620 |
| | | 103.76 | * | -3.403E-02 | 9.384E-02 | 1.526E-01 | 1.345E-02 | -0.223 |
| | | 117.00 | | 5.111E-02 | 1.930E-01 | 3.219E-01 | 2.369E-02 | 0.159 |
| | + | 209.75 | | 1.751E+00 | 1.309E+00 | 1.418E+00 | 9.313E-02 | 1.235 |
| | | 228.18 | | -1.029E-01 | 2.330E-01 | 3.598E-01 | 2.388E-02 | -0.286 |
| | + | 277.60 | | 2.579E-01 | 3.010E-01 | 3.257E-01 | 2.167E-02 | 0.792 |
| AM-246 | | 798.80 | | -1.495E-01 | 1.549E-01 | 2.336E-01 | 1.566E-02 | -0.640 |
| | | 1036.00 | | 2.455E-01 | 3.377E-01 | 5.906E-01 | 4.342E-02 | 0.416 |
| | | 1062.04 | | -1.026E-01 | 2.610E-01 | 4.050E-01 | 2.886E-02 | -0.253 |
| | | 1078.86 | * | -2.080E-02 | 1.526E-01 | 2.435E-01 | 1.697E-02 | -0.085 |
| CM-247 | + | 278.00 | | 1.061E+00 | 1.238E+00 | 1.374E+00 | 9.135E-02 | 0.772 |
| | | 287.40 | | 2.475E-01 | 1.145E+00 | 1.954E+00 | 1.294E-01 | 0.127 |
| | | 402.60 | * | -1.051E-02 | 3.675E-02 | 5.930E-02 | 3.347E-03 | -0.177 |
| CF-249 | | 252.85 | | -2.602E-01 | 8.324E-01 | 1.387E+00 | 9.266E-02 | -0.188 |
| | | 333.44 | | -2.385E-02 | 1.888E-01 | 2.743E-01 | 1.736E-02 | -0.087 |
| | | 387.95 | * | 1.987E-02 | 4.193E-02 | 7.153E-02 | 4.064E-03 | 0.278 |
| CF-251 | | 176.60 | * | -9.852E-02 | 1.272E-01 | 1.961E-01 | 1.255E-02 | -0.502 |
| | | 227.00 | | 1.370E-01 | 3.884E-01 | 6.302E-01 | 4.181E-02 | 0.217 |
| | | 285.00 | | -1.538E-01 | 1.722E+00 | 2.887E+00 | 1.914E-01 | -0.053 |

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]G245388008      *
* Acquisition date   : 4-FEB-2010 12:44:56 Detector SN#      :              *
* Detector ID        : GAM04          Sensitivity             : 5.000         *
* Geometry           : CAN              Energy tolerance:     1.500         *
* Elapsed live time  : 0 02:00:00.00   Abundance limit :     75.000        *
* Elapsed real time  : 0 02:00:01.10   Half life ratio  :      8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245388008      Analyst initials:  MXR1             *
* Batch Number       : 944964          Sample Quantity : 1.1410E+02 GRAM     *
* Recovery           : 1.00000         Carrier Weight  : 0.00000           *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                                *
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41 MS Isotope      :                *
* MSD DPM             : 0.000          MSD Isotope         :                *
* LCS DPM             : 0.000          LCS Isotope         :                *
* LCSD DPM           : 0.000          LCSD Isotope        :                *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.228E+01 | 2.281E+00 | 5.407E-01 | 0.000E+00 |
| CD-109 | 2.339E+00 | 1.078E+00 | 1.497E+00 | 0.000E+00 |
| SN-126 | 2.282E-01 | 1.052E-01 | 1.472E-01 | 0.000E+00 |
| HG-203 | 6.289E-02 | 7.192E-02 | 7.283E-02 | 0.000E+00 |
| TL-208 | 4.408E-01 | 1.001E-01 | 6.361E-02 | 0.000E+00 |
| BI-211 | 4.229E+00 | 5.331E-01 | 3.292E-01 | 0.000E+00 |
| PB-212 | 1.473E+00 | 1.612E-01 | 9.407E-02 | 0.000E+00 |
| PO-212 | 1.473E+00 | 1.612E-01 | 9.407E-02 | 0.000E+00 |
| BI-214 | 1.217E+00 | 1.891E-01 | 1.073E-01 | 0.000E+00 |
| PB-214 | 1.471E+00 | 2.001E-01 | 1.144E-01 | 0.000E+00 |
| PO-214 | 1.471E+00 | 2.001E-01 | 1.144E-01 | 0.000E+00 |
| PO-216 | 1.473E+00 | 1.612E-01 | 9.407E-02 | 0.000E+00 |
| PO-218 | 1.471E+00 | 2.001E-01 | 1.144E-01 | 0.000E+00 |
| RA-224 | 4.578E+00 | 1.428E+00 | 1.071E+00 | 0.000E+00 |
| RA-226 | 1.217E+00 | 1.891E-01 | 1.073E-01 | 0.000E+00 |
| AC-228 | 1.329E+00 | 3.217E-01 | 2.480E-01 | 0.000E+00 |
| RA-228 | 1.329E+00 | 3.217E-01 | 2.480E-01 | 0.000E+00 |
| TH-228 | 1.502E+00 | 1.644E-01 | 9.596E-02 | 0.000E+00 |
| TH-230 | 1.217E+00 | 1.891E-01 | 1.073E-01 | 0.000E+00 |
| TH-232 | 1.329E+00 | 3.217E-01 | 2.480E-01 | 0.000E+00 |
| U-234 | 1.217E+00 | 1.891E-01 | 1.073E-01 | 0.000E+00 |
| NP-237 | 6.701E-01 | 3.374E-01 | 4.405E-01 | 0.000E+00 |
| AM-243 | 3.898E-01 | 1.031E-01 | 1.011E-01 | 0.000E+00 |
| ANH-511 | 1.227E-01 | 6.701E-02 | 4.479E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | -5.849E-02 | 3.527E-01 | 5.824E-01 | 0.000E+00 NOT IDENT. |
| NA-22 | -4.428E-02 | 4.444E-02 | 6.656E-02 | 0.000E+00 NOT IDENT. |
| NA-24 | 0.000E+00 | 1.844E+08 | 0.000E+00 | 0.000E+00 SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| AL-26 | 2.971E-02 | 3.176E-02 | 6.217E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 6.773E-02 | 8.817E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | -1.167E-02 | 4.288E-02 | 6.737E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | 1.876E-04 | 9.258E-02 | 1.543E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | 9.189E-02 | 4.166E-01 | 7.278E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | -1.858E-02 | 3.900E-01 | 6.514E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | -2.154E-02 | 3.979E-02 | 6.383E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | 3.991E-02 | 3.898E-02 | 7.249E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | 5.197E-03 | 2.469E-02 | 4.260E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -3.679E-02 | 3.605E-02 | 5.345E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | 3.256E-03 | 1.033E-01 | 1.710E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | -3.895E-02 | 3.997E-02 | 5.842E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 2.424E-02 | 1.053E-01 | 1.550E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | 5.455E-01 | 1.316E+00 | 2.274E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | -3.414E-01 | 1.612E+00 | 2.839E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | -4.177E-02 | 1.144E-01 | 1.816E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -5.099E-03 | 4.612E-02 | 7.434E-02 | 0.000E+00 | FAIL ABUN |
| BR-77 | 0.000E+00 | 4.154E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SR-82 | -7.433E-01 | 4.004E-01 | 5.318E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | -3.048E-02 | 6.975E-02 | 1.112E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | -3.547E-02 | 8.504E-02 | 1.345E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 3.611E+00 | 7.916E+00 | 1.210E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 1.950E-02 | 4.274E-02 | 6.533E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 6.655E-01 | 9.916E-01 | 1.758E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 1.721E-02 | 3.481E-02 | 6.350E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -5.332E-03 | 3.111E-02 | 5.220E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | -4.452E+00 | 2.286E+01 | 3.663E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | 9.400E-03 | 3.188E-02 | 5.605E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 6.708E-02 | 4.802E-02 | 8.300E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | -3.021E-02 | 1.533E-01 | 2.197E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 3.752E-02 | 7.249E-02 | 1.293E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 1.259E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 2.379E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 4.191E+01 | 4.082E+01 | 7.519E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 2.926E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -6.649E-03 | 3.498E-02 | 5.637E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | 1.019E-02 | 2.904E-02 | 5.002E-02 | 0.000E+00 | FAIL ABUN |
| RU-103 | -2.867E-02 | 4.403E-02 | 6.898E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | -1.316E-01 | 3.230E-01 | 5.065E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | -1.316E-01 | 3.227E-01 | 5.065E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -1.561E-02 | 3.061E-02 | 4.938E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | -2.324E-02 | 3.629E-02 | 5.923E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | 2.183E+00 | 3.765E+00 | 5.732E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -2.360E-02 | 4.522E-02 | 7.390E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | -2.360E-02 | 4.522E-02 | 7.390E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 1.130E-01 | 2.171E-01 | 3.327E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 0.000E+00 | 4.947E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SN-117M | -5.526E-03 | 6.731E-02 | 1.127E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | 6.964E+00 | 7.858E+00 | 1.390E+01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 2.761E+09 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | -8.290E-04 | 2.774E-02 | 4.657E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -3.899E-01 | 1.711E+00 | 2.377E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | -7.814E-03 | 6.749E-02 | 1.085E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | -3.781E-02 | 9.474E-02 | 1.527E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | 3.573E+00 | 9.997E+00 | 1.708E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 1.404E-01 | 2.581E-01 | 4.618E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | 2.803E-01 | 2.100E-01 | 3.718E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | -1.153E+00 | 2.874E+00 | 4.735E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 1.138E-02 | 5.167E-02 | 8.652E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 9.883E-02 | 1.812E-01 | 3.204E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | -8.706E-01 | 1.969E+00 | 3.138E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | -1.696E-02 | 5.013E-02 | 7.307E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 3.179E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 7.598E-02 | 4.964E-02 | 9.433E-02 | 0.000E+00 | NOT IDENT. |
| CS-135 | 1.125E-01 | 1.614E-01 | 2.616E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 1.265E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | 5.733E-02 | 1.320E-01 | 2.301E-01 | 0.000E+00 | FAIL ABUN |
| BA-137M | -3.718E-02 | 4.173E-02 | 6.955E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | -3.930E-02 | 4.411E-02 | 7.353E-02 | 0.000E+00 | NOT IDENT. |
| CE-139 | -2.290E-02 | 2.991E-02 | 4.809E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -3.869E-02 | 3.095E-01 | 5.063E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -3.033E-02 | 1.278E-01 | 2.051E-01 | 0.000E+00 | NOT IDENT. |
| CE-141 | -2.178E-03 | 6.911E-02 | 1.167E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 2.970E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | -6.152E-02 | 2.076E-01 | 3.475E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | -1.854E-02 | 3.418E-02 | 5.519E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | -1.259E+00 | 2.322E+00 | 3.750E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 2.138E-02 | 4.576E-02 | 7.951E-02 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| ND-147 | 2.017E-01 | 7.998E-01 | 1.355E+00 | 0.000E+00 | FAIL ABUN |
| PM-149 | 0.000E+00 | 4.065E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| EU-152 | 2.196E-02 | 1.087E-01 | 1.670E-01 | 0.000E+00 | NOT IDENT. |
| GD-153 | -6.062E-03 | 8.417E-02 | 1.299E-01 | 0.000E+00 | NOT IDENT. |
| EU-154 | -1.094E-01 | 1.240E-01 | 1.885E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | -6.492E-02 | 1.049E-01 | 1.752E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | -1.995E-01 | 1.611E-01 | 2.349E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | 8.153E-04 | 5.966E-02 | 1.023E-01 | 0.000E+00 | FAIL ABUN |
| TM-171 | 3.217E+00 | 3.506E+01 | 6.130E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | -5.769E-03 | 2.499E-02 | 4.263E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 3.047E+00 | 3.505E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | 8.406E-03 | 1.885E-01 | 3.201E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | 2.018E-02 | 4.293E-02 | 7.474E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | -4.078E-01 | 4.895E-01 | 8.197E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | -9.829E-02 | 2.030E-01 | 3.304E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | 1.120E-01 | 1.104E-01 | 1.945E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | -7.075E-02 | 2.218E-01 | 3.818E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | -4.830E-03 | 3.934E-02 | 6.712E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 1.567E-01 | 1.757E-01 | 3.082E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | -2.641E+00 | 7.925E+00 | 1.178E+01 | 0.000E+00 | NOT IDENT. |
| IR-192 | -1.775E-02 | 3.476E-02 | 5.800E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 2.712E-01 | 2.236E-01 | 4.051E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 1.001E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | 1.478E+01 | 2.006E+01 | 3.489E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | -3.720E-03 | 8.815E-02 | 1.480E-01 | 0.000E+00 | NOT IDENT. |
| BI-207 | 2.816E-02 | 5.774E-02 | 1.003E-01 | 0.000E+00 | FAIL ABUN |
| TL-207 | -4.564E-01 | 6.872E-01 | 1.131E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | 6.677E+00 | 7.615E+00 | 1.372E+01 | 0.000E+00 | NOT IDENT. |
| BI-210 | 7.357E+00 | 9.611E+00 | 1.740E+01 | 0.000E+00 | NOT IDENT. |
| PB-210 | 7.357E+00 | 9.611E+00 | 1.740E+01 | 0.000E+00 | NOT IDENT. |
| PO-210 | 7.357E+00 | 9.607E+00 | 1.740E+01 | 0.000E+00 | NOT IDENT. |
| PB-211 | -4.815E-01 | 9.940E-01 | 1.552E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 5.499E-01 | 7.342E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | -4.564E-01 | 6.872E-01 | 1.131E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | -4.078E-02 | 4.071E-01 | 6.854E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | -1.196E+01 | 2.599E+01 | 4.112E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -4.564E-01 | 6.872E-01 | 1.131E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | 3.436E-02 | 3.516E-01 | 6.187E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | 3.436E-02 | 3.517E-01 | 6.187E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | 1.430E-01 | 5.435E-01 | 9.140E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | 2.325E-01 | 1.535E+00 | 2.606E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | -4.564E-01 | 6.872E-01 | 1.131E+00 | 0.000E+00 | FAIL ABUN |
| U-231 | -1.697E+00 | 2.569E+00 | 3.813E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | -8.353E-03 | 6.349E-02 | 1.088E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | 1.541E-01 | 3.254E-01 | 5.680E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 1.482E+00 | 5.083E+00 | 8.849E+00 | 0.000E+00 | NOT IDENT. |
| TH-234 | 1.109E+00 | 1.721E+00 | 3.068E+00 | 0.000E+00 | FAIL ABUN |
| U-235 | -1.290E-01 | 2.136E-01 | 3.459E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -2.851E-02 | 7.743E-02 | 1.276E-01 | 0.000E+00 | FAIL ABUN |
| U-238 | 1.109E+00 | 1.721E+00 | 3.068E+00 | 0.000E+00 | FAIL ABUN |
| NP-239 | 4.966E-02 | 1.838E-01 | 3.187E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | -9.377E-02 | 2.141E-01 | 3.654E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | -3.403E-02 | 9.196E-02 | 1.556E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | -2.080E-02 | 1.496E-01 | 2.431E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | -1.051E-02 | 3.601E-02 | 5.976E-02 | 0.000E+00 | FAIL ABUN |
| CF-249 | 1.987E-02 | 4.109E-02 | 7.210E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -9.852E-02 | 1.247E-01 | 1.991E-01 | 0.000E+00 | NOT IDENT. |

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388008.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 12:44:56.
Sample ID          : G245388008 Sample quantity : 1.14100E+02 GRAM
Detector name      : GAM04 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.10 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 5.00000
Batch ID          : 944964 Detector SN# :
Matrix Spike ID   : LCS ID : 1032-A
*****

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Nuclide Line Activity Report

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| K-40 | 1460.81 | 776 | 10.67* | 1.075E+00 | 2.228E+01 | 2.228E+01 | 10.45 |
| CD-109 | 88.03 | 129 | 3.72* | 5.017E+00 | 2.270E+00 | 2.339E+00 | 47.06 |
| SN-126 | 64.28 | ----- | 9.60 | 2.203E+00 | ----- | Line Not Found | ----- |
| | 86.94 | 129 | 8.90 | 5.017E+00 | 9.486E-01 | 9.486E-01 | 62.05 |
| | 87.57 | 129 | 37.00* | 5.017E+00 | 2.282E-01 | 2.282E-01 | 47.06 |
| HG-203 | 70.83 | ----- | 4.75 | 3.109E+00 | ----- | Line Not Found | ----- |
| | 72.87 | ----- | 8.00 | 3.384E+00 | ----- | Line Not Found | ----- |
| | 82.60 | ----- | 3.55 | 4.559E+00 | ----- | Line Not Found | ----- |
| | 279.20 | 47 | 77.30* | 4.311E+00 | 4.665E-02 | 6.289E-02 | 116.70 |
| TL-208 | 277.35 | 47 | 6.80 | 4.311E+00 | 5.303E-01 | 5.303E-01 | 117.02 |
| | 510.84 | 102 | 21.60 | 2.732E+00 | 5.680E-01 | 5.680E-01 | 56.35 |
| | 583.14 | 277 | 84.20* | 2.454E+00 | 4.408E-01 | 4.408E-01 | 23.18 |
| | 860.37 | 40 | 12.46 | 1.745E+00 | 6.014E-01 | 6.014E-01 | 82.82 |
| BI-211 | 72.87 | ----- | 1.27 | 3.384E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 603 | 12.94* | 3.627E+00 | 4.229E+00 | 4.229E+00 | 12.86 |
| PB-212 | 74.81 | 284 | 10.70 | 3.636E+00 | 2.404E+00 | 2.404E+00 | 28.56 |
| | 77.11 | 447 | 18.00 | 3.926E+00 | 2.080E+00 | 2.080E+00 | 18.00 |
| | 87.30 | 129 | 8.00 | 5.017E+00 | 1.055E+00 | 1.055E+00 | 48.11 |
| | 238.63 | 964 | 44.60* | 4.826E+00 | 1.473E+00 | 1.473E+00 | 11.17 |
| | 300.09 | 71 | 3.41 | 4.081E+00 | 1.667E+00 | 1.667E+00 | 67.30 |
| PO-212 | 74.81 | 284 | 10.70 | 3.636E+00 | 2.404E+00 | 2.404E+00 | 28.56 |
| | 77.11 | 447 | 18.00 | 3.926E+00 | 2.080E+00 | 2.080E+00 | 18.00 |
| | 87.30 | 129 | 8.00 | 5.017E+00 | 1.055E+00 | 1.055E+00 | 48.11 |
| | 115.19 | ----- | 0.60 | 6.408E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 964 | 44.60* | 4.826E+00 | 1.473E+00 | 1.473E+00 | 11.17 |
| | 300.09 | 71 | 3.41 | 4.081E+00 | 1.667E+00 | 1.667E+00 | 67.30 |
| BI-214 | 609.31 | 406 | 46.30* | 2.368E+00 | 1.217E+00 | 1.217E+00 | 15.86 |
| | 1120.29 | 105 | 15.10 | 1.357E+00 | 1.685E+00 | 1.685E+00 | 38.52 |
| | 1764.49 | 66 | 15.80 | 9.529E-01 | 1.450E+00 | 1.450E+00 | 33.81 |
| PB-214 | 74.81 | 284 | 6.21 | 3.636E+00 | 4.143E+00 | 4.143E+00 | 27.99 |
| | 77.11 | 447 | 10.50 | 3.926E+00 | 3.565E+00 | 3.565E+00 | 19.55 |
| | 87.30 | 129 | 4.67 | 5.017E+00 | 1.808E+00 | 1.808E+00 | 47.68 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 241.98 | 263 | 7.49 | 4.783E+00 | 2.414E+00 | 2.414E+00 | 32.31 |
| | 295.21 | 393 | 19.20 | 4.133E+00 | 1.629E+00 | 1.629E+00 | 19.78 |
| | 351.92 | 603 | 37.20* | 3.627E+00 | 1.471E+00 | 1.471E+00 | 13.88 |
| | 74.81 | 284 | 6.21 | 3.636E+00 | 4.143E+00 | 4.143E+00 | 27.99 |
| | 77.11 | 447 | 10.50 | 3.926E+00 | 3.565E+00 | 3.565E+00 | 19.55 |
| | 87.30 | 129 | 4.67 | 5.017E+00 | 1.808E+00 | 1.808E+00 | 47.68 |
| PO-216 | 241.98 | 263 | 7.49 | 4.783E+00 | 2.414E+00 | 2.414E+00 | 32.31 |
| | 295.21 | 393 | 19.20 | 4.133E+00 | 1.629E+00 | 1.629E+00 | 19.78 |
| | 351.92 | 603 | 37.20* | 3.627E+00 | 1.471E+00 | 1.471E+00 | 13.88 |
| | 74.81 | 284 | 10.70 | 3.636E+00 | 2.404E+00 | 2.404E+00 | 28.56 |
| | 77.11 | 447 | 18.00 | 3.926E+00 | 2.080E+00 | 2.080E+00 | 18.00 |
| | 87.30 | 129 | 8.00 | 5.017E+00 | 1.055E+00 | 1.055E+00 | 48.11 |
| PO-218 | 238.63 | 964 | 44.60* | 4.826E+00 | 1.473E+00 | 1.473E+00 | 11.17 |
| | 300.09 | 71 | 3.41 | 4.081E+00 | 1.667E+00 | 1.667E+00 | 67.30 |
| | 74.81 | 284 | 6.21 | 3.636E+00 | 4.143E+00 | 4.143E+00 | 27.99 |
| | 77.11 | 447 | 10.50 | 3.926E+00 | 3.565E+00 | 3.565E+00 | 19.55 |
| | 87.30 | 129 | 4.67 | 5.017E+00 | 1.808E+00 | 1.808E+00 | 47.68 |
| | 241.98 | 263 | 7.49 | 4.783E+00 | 2.414E+00 | 2.414E+00 | 32.31 |
| RA-224 | 295.21 | 393 | 19.20 | 4.133E+00 | 1.629E+00 | 1.629E+00 | 19.78 |
| | 351.92 | 603 | 37.20* | 3.627E+00 | 1.471E+00 | 1.471E+00 | 13.88 |
| | 240.98 | 263 | 3.95* | 4.783E+00 | 4.578E+00 | 4.578E+00 | 31.82 |
| | 609.31 | 406 | 46.30* | 2.368E+00 | 1.217E+00 | 1.217E+00 | 15.86 |
| | 1120.29 | 105 | 15.10 | 1.357E+00 | 1.685E+00 | 1.685E+00 | 38.52 |
| | 1764.49 | 66 | 15.80 | 9.529E-01 | 1.450E+00 | 1.450E+00 | 33.81 |
| AC-228 | 338.32 | 232 | 11.40 | 3.735E+00 | 1.792E+00 | 1.792E+00 | 48.75 |
| | 911.07 | 185 | 27.70* | 1.652E+00 | 1.329E+00 | 1.329E+00 | 24.70 |
| | 969.11 | 80 | 16.60 | 1.558E+00 | 1.024E+00 | 1.024E+00 | 58.76 |
| | 338.32 | 232 | 11.40 | 3.735E+00 | 1.792E+00 | 1.792E+00 | 48.75 |
| | 911.07 | 185 | 27.70* | 1.652E+00 | 1.329E+00 | 1.329E+00 | 24.70 |
| | 969.11 | 80 | 16.60 | 1.558E+00 | 1.024E+00 | 1.024E+00 | 58.76 |
| TH-228 | 74.81 | 284 | 10.70 | 3.636E+00 | 2.404E+00 | 2.453E+00 | 27.01 |
| | 77.11 | 447 | 18.00 | 3.926E+00 | 2.080E+00 | 2.122E+00 | 18.00 |
| | 87.30 | 129 | 8.00 | 5.017E+00 | 1.055E+00 | 1.077E+00 | 47.06 |
| | 238.63 | 964 | 44.60* | 4.826E+00 | 1.473E+00 | 1.502E+00 | 11.17 |
| | 300.09 | 71 | 3.41 | 4.081E+00 | 1.667E+00 | 1.700E+00 | 89.08 |
| | 609.31 | 406 | 46.30* | 2.368E+00 | 1.217E+00 | 1.217E+00 | 15.86 |
| TH-230 | 1120.29 | 105 | 15.10 | 1.357E+00 | 1.685E+00 | 1.685E+00 | 38.52 |
| | 1764.49 | 66 | 15.80 | 9.529E-01 | 1.450E+00 | 1.450E+00 | 33.81 |
| | 338.32 | 232 | 11.40 | 3.735E+00 | 1.792E+00 | 1.792E+00 | 27.36 |
| | 911.07 | 185 | 27.70* | 1.652E+00 | 1.329E+00 | 1.329E+00 | 24.70 |
| | 969.11 | 80 | 16.60 | 1.558E+00 | 1.024E+00 | 1.024E+00 | 58.76 |
| | 609.31 | 406 | 46.30* | 2.368E+00 | 1.217E+00 | 1.217E+00 | 15.86 |
| U-234 | 1120.29 | 105 | 15.10 | 1.357E+00 | 1.685E+00 | 1.685E+00 | 38.52 |
| | 1764.49 | 66 | 15.80 | 9.529E-01 | 1.450E+00 | 1.450E+00 | 33.81 |
| | 86.50 | 129 | 12.60* | 5.017E+00 | 6.701E-01 | 6.701E-01 | 51.38 |
| | 95.87 | ----- | 2.60 | 5.678E+00 | ----- | Line Not Found | ----- |
| | 74.67 | 284 | 66.00* | 3.636E+00 | 3.898E-01 | 3.898E-01 | 26.99 |
| | 86.72 | 129 | 0.34 | 5.017E+00 | 2.513E+01 | 2.513E+01 | 47.06 |
| AM-243 | 117.66 | ----- | 0.55 | 6.445E+00 | ----- | Line Not Found | ----- |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| | 142.18 | ----- | 0.13 | 6.417E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 102 | 100.00* | 2.732E+00 | 1.227E-01 | 1.227E-01 | 55.73 |

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G245388008

Page : 4
Acquisition date : 4-FEB-2010 12:44:56

Total number of lines in spectrum 28
Number of unidentified lines 1
Number of lines tentatively identified by NID 27 96.43%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|------------------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 2.228E+01 | 2.228E+01 | 0.233E+01 | 10.45 | |
| CD-109 | 464.00D | 1.03 | 2.270E+00 | 2.339E+00 | 1.101E+00 | 47.06 | |
| SN-126 | 1.00E+05Y | 1.00 | 2.282E-01 | 2.282E-01 | 1.074E-01 | 47.06 | |
| HG-203 | 46.60D | 1.35 | 4.665E-02 | 6.289E-02 | 7.339E-02 | 116.70 | |
| TL-208 | 1.41E+10Y | 1.00 | 4.408E-01 | 4.408E-01 | 1.022E-01 | 23.18 | |
| BI-211 | 7.04E+08Y | 1.00 | 4.229E+00 | 4.229E+00 | 0.544E+00 | 12.86 | |
| PB-212 | 1.41E+10Y | 1.00 | 1.473E+00 | 1.473E+00 | 0.164E+00 | 11.17 | |
| PO-212 | 1.41E+10Y | 1.00 | 1.473E+00 | 1.473E+00 | 0.164E+00 | 11.17 | |
| BI-214 | 1600.00Y | 1.00 | 1.217E+00 | 1.217E+00 | 0.193E+00 | 15.86 | |
| PB-214 | 1600.00Y | 1.00 | 1.471E+00 | 1.471E+00 | 0.204E+00 | 13.88 | |
| PO-214 | 1600.00Y | 1.00 | 1.471E+00 | 1.471E+00 | 0.204E+00 | 13.88 | |
| PO-216 | 1.41E+10Y | 1.00 | 1.473E+00 | 1.473E+00 | 0.164E+00 | 11.17 | |
| PO-218 | 1600.00Y | 1.00 | 1.471E+00 | 1.471E+00 | 0.204E+00 | 13.88 | |
| RA-224 | 1.41E+10Y | 1.00 | 4.578E+00 | 4.578E+00 | 1.457E+00 | 31.82 | |
| RA-226 | 1600.00Y | 1.00 | 1.217E+00 | 1.217E+00 | 0.193E+00 | 15.86 | |
| AC-228 | 1.41E+10Y | 1.00 | 1.329E+00 | 1.329E+00 | 0.328E+00 | 24.70 | |
| RA-228 | 1.41E+10Y | 1.00 | 1.329E+00 | 1.329E+00 | 0.328E+00 | 24.70 | |
| TH-228 | 1.91Y | 1.02 | 1.473E+00 | 1.502E+00 | 0.168E+00 | 11.17 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.217E+00 | 1.217E+00 | 0.193E+00 | 15.86 | |
| TH-232 | 1.41E+10Y | 1.00 | 1.329E+00 | 1.329E+00 | 0.328E+00 | 24.70 | |
| U-234 | 4.47E+09Y | 1.00 | 1.217E+00 | 1.217E+00 | 0.193E+00 | 15.86 | |
| NP-237 | 2.14E+06Y | 1.00 | 6.701E-01 | 6.701E-01 | 3.443E-01 | 51.38 | |
| AM-243 | 7380.00Y | 1.00 | 3.898E-01 | 3.898E-01 | 1.052E-01 | 26.99 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.227E-01 | 1.227E-01 | 0.684E-01 | 55.73 | |
| Total Activity : | | | 5.441E+01 | 5.453E+01 | | | |

Grand Total Activity : 5.441E+01 5.453E+01

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

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

Unidentified Energy Lines
Sample ID : G245388008

Page : 5
Acquisition date : 4-FEB-2010 12:44:56

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 4 | 89.92 | 117 | 271 | 1.29 | 179.88 | 170 | 13 | 1.62E-02 | 49.1 | 5.25E+00 | T |
| 0 | 93.17 | 186 | 316 | 1.42 | 186.37 | 183 | 9 | 2.58E-02 | 39.4 | 5.50E+00 | T |
| 0 | 185.55 | 289 | 246 | 1.28 | 371.15 | 365 | 12 | 4.01E-02 | 25.3 | 5.70E+00 | T |
| 0 | 208.78 | 93 | 293 | 1.02 | 417.62 | 413 | 11 | 1.29E-02 | 74.4 | 5.29E+00 | T |
| 0 | 270.14 | 109 | 132 | 2.09 | 540.36 | 536 | 10 | 1.52E-02 | 43.6 | 4.41E+00 | T |
| 0 | 463.23 | 63 | 134 | 1.90 | 926.55 | 920 | 16 | 8.77E-03 | 85.3 | 2.95E+00 | T |
| 0 | 728.04 | 119 | 54 | 1.53 | 1456.17 | 1449 | 16 | 1.65E-02 | 33.5 | 2.03E+00 | T |
| 0 | 768.01 | 40 | 75 | 0.99 | 1536.10 | 1530 | 12 | 5.54E-03 | 92.4 | 1.94E+00 | T |
| 0 | 1379.49 | 16 | 29 | 0.87 | 2758.89 | 2749 | 13 | 2.29E-03 | **** | 1.13E+00 | |

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388008.CNF;1
* Acquisition date   : 4-FEB-2010 12:44:56.   Detector SN#      :
* Detector ID        : GAM04                   Sensitivity       : 5.00000
* Geometry           : CAN                     Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit   : 75.00000
* Elapsed real time  : 0 02:00:01.10           Half life ratio   : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 15-JAN-2010 12:00:00   Nuclide Library  : SOLID
* Sample ID          : G245388008             Analyst initials : MXR1
* Batch Number       : 944964                 Sample Quantity  : 1.14100E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41.36MS Isotope      :
* MSD ID              :                          MSD Isotope   :
* LCS ID              : 1032-A                  LCS Isotope        :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 2.228E+01 | 2.328E+00 | 5.431E-01 | 3.859E-02 | 41.023 |
| CD-109 | 2.339E+00 | 1.101E+00 | 1.466E+00 | 1.762E-01 | 1.595 |
| SN-126 | 2.282E-01 | 1.074E-01 | 1.441E-01 | 1.729E-02 | 1.583 |
| HG-203 | 6.289E-02 | 7.339E-02 | 7.204E-02 | 5.016E-03 | 0.873 |
| TL-208 | 4.408E-01 | 1.022E-01 | 6.335E-02 | 3.986E-03 | 6.958 |
| BI-211 | 4.229E+00 | 5.439E-01 | 3.263E-01 | 2.204E-02 | 12.962 |
| PB-212 | 1.473E+00 | 1.645E-01 | 9.292E-02 | 7.462E-03 | 15.851 |
| PO-212 | 1.473E+00 | 1.645E-01 | 9.292E-02 | 7.462E-03 | 15.851 |
| BI-214 | 1.217E+00 | 1.930E-01 | 1.069E-01 | 7.858E-03 | 11.383 |
| PB-214 | 1.471E+00 | 2.042E-01 | 1.134E-01 | 9.675E-03 | 12.971 |
| PO-214 | 1.471E+00 | 2.042E-01 | 1.134E-01 | 9.675E-03 | 12.971 |
| PO-216 | 1.473E+00 | 1.645E-01 | 9.292E-02 | 7.462E-03 | 15.851 |
| PO-218 | 1.471E+00 | 2.042E-01 | 1.134E-01 | 9.675E-03 | 12.971 |
| RA-224 | 4.578E+00 | 1.457E+00 | 1.058E+00 | 7.051E-02 | 4.328 |
| RA-226 | 1.217E+00 | 1.930E-01 | 1.069E-01 | 7.858E-03 | 11.383 |
| AC-228 | 1.329E+00 | 3.282E-01 | 2.480E-01 | 2.703E-02 | 5.358 |
| RA-228 | 1.329E+00 | 3.282E-01 | 2.480E-01 | 2.703E-02 | 5.358 |
| TH-228 | 1.502E+00 | 1.678E-01 | 9.479E-02 | 7.612E-03 | 15.851 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-230 | 1.217E+00 | 1.930E-01 | 1.069E-01 | 7.858E-03 | 11.383 |
| TH-232 | 1.329E+00 | 3.282E-01 | 2.480E-01 | 2.703E-02 | 5.358 |
| U-234 | 1.217E+00 | 1.930E-01 | 1.069E-01 | 7.858E-03 | 11.383 |
| NP-237 | 6.701E-01 | 3.443E-01 | 4.312E-01 | 1.027E-01 | 1.554 |
| AM-243 | 3.898E-01 | 1.052E-01 | 9.887E-02 | 1.132E-02 | 3.943 |
| ANH-511 | 1.227E-01 | 6.837E-02 | 4.455E-02 | 2.491E-03 | 2.754 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | -5.849E-02 | | 3.599E-01 | 5.789E-01 | 3.835E-02 | -0.101 |
| NA-22 | -4.428E-02 | | 4.535E-02 | 6.676E-02 | 4.365E-03 | -0.663 |
| NA-24 | -9.362E+01 | | 9.408E+01 | Half-Life too short | | |
| AL-26 | 2.971E-02 | | 3.241E-02 | 6.256E-02 | 3.710E-03 | 0.475 |
| TI-44 | 3.839E-01 | + | 6.911E-02 | 8.623E-02 | 9.916E-03 | 4.452 |
| SC-46 | -1.167E-02 | | 4.376E-02 | 6.734E-02 | 5.447E-03 | -0.173 |
| V-48 | 1.876E-04 | | 9.447E-02 | 1.543E-01 | 1.196E-02 | 0.001 |
| CR-51 | 9.189E-02 | | 4.251E-01 | 7.209E-01 | 5.076E-02 | 0.127 |
| MN-52 | -1.858E-02 | | 3.980E-01 | 6.541E-01 | 4.464E-02 | -0.028 |
| MN-54 | -2.154E-02 | | 4.060E-02 | 6.377E-02 | 4.615E-03 | -0.338 |
| CO-56 | 3.991E-02 | | 3.978E-02 | 7.243E-02 | 5.374E-03 | 0.551 |
| CO-57 | 5.197E-03 | | 2.519E-02 | 4.182E-02 | 2.903E-03 | 0.124 |
| CO-58 | -3.679E-02 | | 3.679E-02 | 5.338E-02 | 3.685E-03 | -0.689 |
| FE-59 | 3.256E-03 | | 1.054E-01 | 1.713E-01 | 1.309E-02 | 0.019 |
| CO-60 | -3.895E-02 | | 4.079E-02 | 5.862E-02 | 4.017E-03 | -0.664 |
| ZN-65 | 2.424E-02 | | 1.074E-01 | 1.553E-01 | 1.027E-02 | 0.156 |
| GE-68 | 5.455E-01 | | 1.343E+00 | 2.278E+00 | 1.591E-01 | 0.240 |
| AS-73 | -3.414E-01 | | 1.645E+00 | 2.767E+00 | 3.620E-01 | -0.123 |
| AS-74 | -4.177E-02 | | 1.168E-01 | 1.809E-01 | 9.550E-03 | -0.231 |
| SE-75 | -5.099E-03 | | 4.706E-02 | 7.350E-02 | 4.944E-03 | -0.069 |
| BR-77 | -4.829E-06 | | 2.119E-05 | Half-Life too short | | |
| SR-82 | -7.433E-01 | | 4.085E-01 | 5.309E-01 | 3.389E-02 | -1.400 |
| RB-83 | -3.048E-02 | | 7.117E-02 | 1.106E-01 | 6.160E-03 | -0.276 |
| RB-84 | -3.547E-02 | | 8.678E-02 | 1.344E-01 | 1.071E-02 | -0.264 |
| KR-85 | 3.611E+00 | | 8.077E+00 | 1.204E+01 | 6.723E-01 | 0.300 |
| SR-85 | 1.950E-02 | | 4.361E-02 | 6.498E-02 | 3.630E-03 | 0.300 |
| RB-86 | 6.655E-01 | | 1.012E+00 | 1.761E+00 | 1.231E-01 | 0.378 |
| Y-88 | 1.721E-02 | | 3.552E-02 | 6.391E-02 | 3.729E-03 | 0.269 |
| ZR-88 | -5.332E-03 | | 3.175E-02 | 5.179E-02 | 2.915E-03 | -0.103 |
| Y-91 | -4.452E+00 | | 2.333E+01 | 3.672E+01 | 2.250E+00 | -0.121 |
| NB-94 | 9.400E-03 | | 3.253E-02 | 5.591E-02 | 3.012E-03 | 0.168 |
| NB-95 | 6.708E-02 | | 4.900E-02 | 8.286E-02 | 5.164E-03 | 0.810 |
| NB-95M | -3.021E-02 | | 1.564E-01 | 2.170E-01 | 1.781E-02 | -0.139 |
| ZR-95 | 3.752E-02 | | 7.397E-02 | 1.291E-01 | 9.401E-03 | 0.291 |
| NB-97 | -8.064E+00 | | 6.423E+00 | Half-Life too short | | |
| ZR-97 | 1.141E+02 | | 1.214E+02 | Half-Life too short | | |
| MO-99 | 4.191E+01 | | 4.166E+01 | 7.504E+01 | 1.036E+01 | 0.559 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| TC-99M | -3.620E+15 | | 1.493E+16 | Half-Life too short | | |
| RH-101 | -6.649E-03 | | 3.569E-02 | 5.558E-02 | 3.620E-03 | -0.120 |
| RH-102 | 1.019E-02 | | 2.964E-02 | 4.972E-02 | 2.811E-03 | 0.205 |
| RU-103 | -2.867E-02 | | 4.493E-02 | 6.859E-02 | 8.618E-03 | -0.418 |
| RH-106 | -1.316E-01 | | 3.296E-01 | 5.046E-01 | 5.765E-02 | -0.261 |
| RU-106 | -1.316E-01 | | 3.293E-01 | 5.046E-01 | 2.593E-02 | -0.261 |
| AG-108M | -1.561E-02 | | 3.124E-02 | 4.905E-02 | 3.030E-03 | -0.318 |
| AG-110M | -2.324E-02 | | 3.703E-02 | 5.905E-02 | 3.155E-03 | -0.394 |
| IN-111 | 2.183E+00 | | 3.842E+00 | 5.663E+00 | 3.779E-01 | 0.385 |
| IN-113M | -2.360E-02 | | 4.614E-02 | 7.333E-02 | 4.418E-03 | -0.322 |
| SN-113 | -2.360E-02 | | 4.614E-02 | 7.333E-02 | 4.418E-03 | -0.322 |
| IN-114M | 1.130E-01 | | 2.215E-01 | 3.280E-01 | 2.123E-02 | 0.344 |
| CD-115 | 1.162E-05 | | 2.524E-05 | Half-Life too short | | |
| SN-117M | -5.526E-03 | | 6.869E-02 | 1.109E-01 | 7.096E-03 | -0.050 |
| SB-122 | 6.964E+00 | | 8.019E+00 | 1.384E+01 | 7.507E-01 | 0.503 |
| I-123 | -8.251E+01 | | 1.409E+03 | Half-Life too short | | |
| TE-123M | -8.290E-04 | | 2.830E-02 | 4.583E-02 | 2.962E-03 | -0.018 |
| I-124 | -3.899E-01 | | 1.746E+00 | 2.368E+00 | 1.242E-01 | -0.165 |
| SB-124 | -7.814E-03 | | 6.887E-02 | 1.092E-01 | 7.418E-03 | -0.072 |
| SB-125 | -3.781E-02 | | 9.667E-02 | 1.517E-01 | 8.978E-03 | -0.249 |
| TE-125M | 3.573E+00 | | 1.020E+01 | 1.675E+01 | 1.665E+00 | 0.213 |
| I-126 | 1.404E-01 | | 2.634E-01 | 4.605E-01 | 2.271E-02 | 0.305 |
| SB-126 | 2.803E-01 | | 2.143E-01 | 3.709E-01 | 2.084E-02 | 0.756 |
| SB-127 | -1.153E+00 | | 2.933E+00 | 4.723E+00 | 5.169E-01 | -0.244 |
| XE-127 | 1.138E-02 | | 5.272E-02 | 8.533E-02 | 5.578E-03 | 0.133 |
| I-131 | 9.883E-02 | | 1.849E-01 | 3.177E-01 | 2.131E-02 | 0.311 |
| TE-132 | -8.706E-01 | | 2.009E+00 | 3.098E+00 | 4.894E-01 | -0.281 |
| BA-133 | -1.696E-02 | | 5.116E-02 | 7.244E-02 | 8.486E-03 | -0.234 |
| I-133 | -9.780E-04 | | 1.622E-01 | Half-Life too short | | |
| CS-134 | 7.598E-02 | | 5.065E-02 | 9.421E-02 | 6.349E-03 | 0.806 |
| CS-135 | 1.125E-01 | | 1.647E-01 | 2.587E-01 | 2.157E-02 | 0.435 |
| I-135 | 5.097E+14 | | 6.456E+14 | Half-Life too short | | |
| CS-136 | 5.733E-02 | | 1.347E-01 | 2.304E-01 | 1.771E-02 | 0.249 |
| BA-137M | -3.718E-02 | | 4.258E-02 | 6.934E-02 | 3.382E-03 | -0.536 |
| CS-137 | -3.930E-02 | | 4.501E-02 | 7.330E-02 | 3.596E-03 | -0.536 |
| CE-139 | -2.290E-02 | | 3.052E-02 | 4.735E-02 | 3.008E-03 | -0.484 |
| BA-140 | -3.869E-02 | | 3.158E-01 | 5.038E-01 | 1.636E-01 | -0.077 |
| LA-140 | -3.033E-02 | | 1.304E-01 | 2.062E-01 | 1.358E-02 | -0.147 |
| CE-141 | -2.178E-03 | | 7.052E-02 | 1.147E-01 | 7.702E-03 | -0.019 |
| CE-143 | 9.701E-03 | | 1.515E-03 | Half-Life too short | | |
| CE-144 | -6.152E-02 | | 2.118E-01 | 3.414E-01 | 4.977E-02 | -0.180 |
| PM-144 | -1.854E-02 | | 3.488E-02 | 5.505E-02 | 2.927E-03 | -0.337 |
| PR-144 | -1.259E+00 | | 2.369E+00 | 3.740E+00 | 1.985E-01 | -0.337 |
| PM-146 | 2.138E-02 | | 4.669E-02 | 7.900E-02 | 6.742E-03 | 0.271 |
| ND-147 | 2.017E-01 | | 8.161E-01 | 1.348E+00 | 1.808E-01 | 0.150 |
| PM-149 | -1.663E-04 | | 2.074E-04 | Half-Life too short | | |
| EU-152 | 2.196E-02 | | 1.109E-01 | 1.655E-01 | 1.146E-02 | 0.133 |
| GD-153 | -6.062E-03 | | 8.589E-02 | 1.273E-01 | 1.249E-02 | -0.048 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| EU-154 | -1.094E-01 | | 1.266E-01 | 1.890E-01 | 1.854E-02 | -0.579 |
| EU-155 | -6.492E-02 | | 1.071E-01 | 1.718E-01 | 1.497E-02 | -0.378 |
| TB-160 | -1.995E-01 | | 1.644E-01 | 2.348E-01 | 1.862E-02 | -0.850 |
| HO-166M | 8.153E-04 | | 6.088E-02 | 1.021E-01 | 5.617E-03 | 0.008 |
| TM-171 | 3.217E+00 | | 3.577E+01 | 5.986E+01 | 6.999E+00 | 0.054 |
| LU-176 | -5.769E-03 | | 2.550E-02 | 4.220E-02 | 2.755E-03 | -0.137 |
| LU-177 | 4.161E+00 | + | 3.109E+00 | 3.458E+00 | 2.269E-01 | 1.203 |
| LU-177M | 8.406E-03 | | 1.924E-01 | 3.177E-01 | 1.798E-02 | 0.026 |
| HF-181 | 2.018E-02 | | 4.381E-02 | 7.429E-02 | 4.194E-03 | 0.272 |
| W-181 | -4.078E-01 | | 4.994E-01 | 8.003E-01 | 9.433E-02 | -0.510 |
| TA-182 | -9.829E-02 | | 2.071E-01 | 3.313E-01 | 2.062E-02 | -0.297 |
| RE-183 | 1.120E-01 | | 1.126E-01 | 1.915E-01 | 1.220E-02 | 0.585 |
| RE-184 | -7.075E-02 | | 2.263E-01 | 3.773E-01 | 2.520E-02 | -0.188 |
| OS-185 | -4.830E-03 | | 4.014E-02 | 6.690E-02 | 3.335E-03 | -0.072 |
| RE-188 | 1.567E-01 | | 1.793E-01 | 3.033E-01 | 1.948E-02 | 0.517 |
| W-188 | -2.641E+00 | | 8.086E+00 | 1.166E+01 | 7.705E-01 | -0.227 |
| IR-192 | -1.775E-02 | | 3.547E-02 | 5.744E-02 | 3.729E-03 | -0.309 |
| AU-195 | 2.712E-01 | | 2.282E-01 | 3.970E-01 | 3.796E-02 | 0.683 |
| TL-200 | -1.400E-03 | | 5.106E-03 | Half-Life too short | | |
| TL-201 | 1.478E+01 | | 2.047E+01 | 3.435E+01 | 2.184E+00 | 0.430 |
| TL-202 | -3.720E-03 | | 8.995E-02 | 1.470E-01 | 8.338E-03 | -0.025 |
| BI-207 | 2.816E-02 | | 5.892E-02 | 1.005E-01 | 7.146E-03 | 0.280 |
| TL-207 | -4.564E-01 | | 7.012E-01 | 1.120E+00 | 1.875E-01 | -0.408 |
| PO-209 | 6.677E+00 | | 7.770E+00 | 1.371E+01 | 1.125E+00 | 0.487 |
| BI-210 | 7.357E+00 | | 9.807E+00 | 1.694E+01 | 1.476E+00 | 0.434 |
| PB-210 | 7.357E+00 | | 9.807E+00 | 1.694E+01 | 1.476E+00 | 0.434 |
| PO-210 | 7.357E+00 | | 9.803E+00 | 1.694E+01 | 1.316E+00 | 0.434 |
| PB-211 | -4.815E-01 | | 1.014E+00 | 1.540E+00 | 9.600E-01 | -0.313 |
| BI-212 | 1.635E+00 | + | 5.611E-01 | 7.326E-01 | 5.600E-02 | 2.231 |
| PO-215 | -4.564E-01 | | 7.012E-01 | 1.120E+00 | 1.875E-01 | -0.408 |
| RN-219 | -4.078E-02 | | 4.154E-01 | 6.802E-01 | 9.210E-02 | -0.060 |
| RN-220 | -1.196E+01 | | 2.652E+01 | 4.093E+01 | 2.242E+00 | -0.292 |
| RA-223 | -4.564E-01 | | 7.012E-01 | 1.120E+00 | 1.875E-01 | -0.408 |
| AC-227 | 3.436E-02 | | 3.588E-01 | 6.116E-01 | 8.775E-02 | 0.056 |
| TH-227 | 3.436E-02 | | 3.588E-01 | 6.116E-01 | 1.053E-01 | 0.056 |
| TH-229 | 1.430E-01 | | 5.546E-01 | 9.012E-01 | 5.848E-02 | 0.159 |
| PA-231 | 2.325E-01 | | 1.566E+00 | 2.578E+00 | 3.649E-01 | 0.090 |
| TH-231 | -4.564E-01 | | 7.012E-01 | 1.120E+00 | 1.875E-01 | -0.408 |
| U-231 | -1.697E+00 | | 2.621E+00 | 3.735E+00 | 3.777E-01 | -0.454 |
| PA-233 | -8.353E-03 | | 6.478E-02 | 1.077E-01 | 7.346E-03 | -0.078 |
| PA-234 | 1.541E-01 | | 3.321E-01 | 5.681E-01 | 1.050E-01 | 0.271 |
| PA-234M | 1.482E+00 | | 5.187E+00 | 8.856E+00 | 8.074E-01 | 0.167 |
| TH-234 | 1.109E+00 | | 1.756E+00 | 2.995E+00 | 5.925E-01 | 0.370 |
| U-235 | -1.290E-01 | | 2.180E-01 | 3.401E-01 | 5.638E-02 | -0.379 |
| NP-236 | -2.851E-02 | | 7.901E-02 | 1.256E-01 | 8.021E-03 | -0.227 |
| U-238 | 1.109E+00 | | 1.756E+00 | 2.995E+00 | 5.925E-01 | 0.370 |
| NP-239 | 4.966E-02 | | 1.876E-01 | 3.128E-01 | 2.302E-02 | 0.159 |
| AM-241 | -9.377E-02 | | 2.185E-01 | 3.565E-01 | 4.500E-02 | -0.263 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | -3.403E-02 | | 9.384E-02 | 1.526E-01 | 1.345E-02 | -0.223 |
| AM-246 | -2.080E-02 | | 1.526E-01 | 2.435E-01 | 1.697E-02 | -0.085 |
| CM-247 | -1.051E-02 | | 3.675E-02 | 5.930E-02 | 3.347E-03 | -0.177 |
| CF-249 | 1.987E-02 | | 4.193E-02 | 7.153E-02 | 4.064E-03 | 0.278 |
| CF-251 | -9.852E-02 | | 1.272E-01 | 1.961E-01 | 1.255E-02 | -0.502 |

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]G245388008          *
* Acquisition date   : 4-FEB-2010 12:44:56 Detector SN#                   *
* Detector ID        : GAM04 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.10 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G245388008 Analyst initials: MXR1                 *
* Batch Number       : 944964 Sample Quantity : 1.1410E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41 MS Isotope :                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.228E+01 | 2.281E+00 | 2.705E-01 | 1.164E+00 |
| CD-109 | 2.339E+00 | 1.078E+00 | 7.492E-01 | 5.503E-01 |
| SN-126 | 2.282E-01 | 1.052E-01 | 7.366E-02 | 5.369E-02 |
| HG-203 | 6.289E-02 | 7.192E-02 | 3.644E-02 | 3.670E-02 |
| TL-208 | 4.408E-01 | 1.001E-01 | 3.183E-02 | 5.108E-02 |
| BI-211 | 4.229E+00 | 5.331E-01 | 1.647E-01 | 2.720E-01 |
| PB-212 | 1.473E+00 | 1.612E-01 | 4.706E-02 | 8.223E-02 |
| PO-212 | 1.473E+00 | 1.612E-01 | 4.706E-02 | 8.223E-02 |
| BI-214 | 1.217E+00 | 1.891E-01 | 5.370E-02 | 9.650E-02 |
| PB-214 | 1.471E+00 | 2.001E-01 | 5.724E-02 | 1.021E-01 |
| PO-214 | 1.471E+00 | 2.001E-01 | 5.724E-02 | 1.021E-01 |
| PO-216 | 1.473E+00 | 1.612E-01 | 4.706E-02 | 8.223E-02 |
| PO-218 | 1.471E+00 | 2.001E-01 | 5.724E-02 | 1.021E-01 |
| RA-224 | 4.578E+00 | 1.428E+00 | 5.357E-01 | 7.284E-01 |
| RA-226 | 1.217E+00 | 1.891E-01 | 5.370E-02 | 9.650E-02 |
| AC-228 | 1.329E+00 | 3.217E-01 | 1.241E-01 | 1.641E-01 |
| RA-228 | 1.329E+00 | 3.217E-01 | 1.241E-01 | 1.641E-01 |
| TH-228 | 1.502E+00 | 1.644E-01 | 4.801E-02 | 8.388E-02 |
| TH-230 | 1.217E+00 | 1.891E-01 | 5.370E-02 | 9.650E-02 |
| TH-232 | 1.329E+00 | 3.217E-01 | 1.241E-01 | 1.641E-01 |
| U-234 | 1.217E+00 | 1.891E-01 | 5.370E-02 | 9.650E-02 |
| NP-237 | 6.701E-01 | 3.374E-01 | 2.204E-01 | 1.721E-01 |
| AM-243 | 3.898E-01 | 1.031E-01 | 5.060E-02 | 5.260E-02 |
| ANH-511 | 1.227E-01 | 6.701E-02 | 2.241E-02 | 3.419E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | -5.849E-02 | 3.527E-01 | 2.914E-01 | 1.799E-01 NOT IDENT. |
| NA-22 | -4.428E-02 | 4.444E-02 | 3.330E-02 | 2.268E-02 NOT IDENT. |
| NA-24 | -9.362E+07 | 1.844E+08 | 0.000E+00 | 9.408E+07 SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| AL-26 | 2.971E-02 | 3.176E-02 | 3.110E-02 | 1.621E-02 | NOT IDENT. |
| TI-44 | 3.839E-01 | 6.773E-02 | 4.411E-02 | 3.456E-02 | FAIL ABUN |
| SC-46 | -1.167E-02 | 4.288E-02 | 3.370E-02 | 2.188E-02 | FAIL ABUN |
| V-48 | 1.876E-04 | 9.258E-02 | 7.717E-02 | 4.723E-02 | NOT IDENT. |
| CR-51 | 9.189E-02 | 4.166E-01 | 3.641E-01 | 2.125E-01 | NOT IDENT. |
| MN-52 | -1.858E-02 | 3.900E-01 | 3.259E-01 | 1.990E-01 | NOT IDENT. |
| MN-54 | -2.154E-02 | 3.979E-02 | 3.193E-02 | 2.030E-02 | NOT IDENT. |
| CO-56 | 3.991E-02 | 3.898E-02 | 3.627E-02 | 1.989E-02 | NOT IDENT. |
| CO-57 | 5.197E-03 | 2.469E-02 | 2.131E-02 | 1.260E-02 | NOT IDENT. |
| CO-58 | -3.679E-02 | 3.605E-02 | 2.674E-02 | 1.839E-02 | NOT IDENT. |
| FE-59 | 3.256E-03 | 1.033E-01 | 8.554E-02 | 5.272E-02 | NOT IDENT. |
| CO-60 | -3.895E-02 | 3.997E-02 | 2.923E-02 | 2.039E-02 | NOT IDENT. |
| ZN-65 | 2.424E-02 | 1.053E-01 | 7.754E-02 | 5.370E-02 | NOT IDENT. |
| GE-68 | 5.455E-01 | 1.316E+00 | 1.138E+00 | 6.715E-01 | NOT IDENT. |
| AS-73 | -3.414E-01 | 1.612E+00 | 1.420E+00 | 8.223E-01 | NOT IDENT. |
| AS-74 | -4.177E-02 | 1.144E-01 | 9.086E-02 | 5.838E-02 | NOT IDENT. |
| SE-75 | -5.099E-03 | 4.612E-02 | 3.719E-02 | 2.353E-02 | FAIL ABUN |
| BR-77 | -4.829E+00 | 4.154E+01 | 0.000E+00 | 2.119E+01 | SHORT HLIF |
| SR-82 | -7.433E-01 | 4.004E-01 | 2.660E-01 | 2.043E-01 | NOT IDENT. |
| RB-83 | -3.048E-02 | 6.975E-02 | 5.563E-02 | 3.558E-02 | NOT IDENT. |
| RB-84 | -3.547E-02 | 8.504E-02 | 6.728E-02 | 4.339E-02 | NOT IDENT. |
| KR-85 | 3.611E+00 | 7.916E+00 | 6.054E+00 | 4.039E+00 | NOT IDENT. |
| SR-85 | 1.950E-02 | 4.274E-02 | 3.268E-02 | 2.181E-02 | NOT IDENT. |
| RB-86 | 6.655E-01 | 9.916E-01 | 8.796E-01 | 5.059E-01 | NOT IDENT. |
| Y-88 | 1.721E-02 | 3.481E-02 | 3.177E-02 | 1.776E-02 | NOT IDENT. |
| ZR-88 | -5.332E-03 | 3.111E-02 | 2.611E-02 | 1.587E-02 | NOT IDENT. |
| Y-91 | -4.452E+00 | 2.286E+01 | 1.832E+01 | 1.166E+01 | NOT IDENT. |
| NB-94 | 9.400E-03 | 3.188E-02 | 2.804E-02 | 1.627E-02 | NOT IDENT. |
| NB-95 | 6.708E-02 | 4.802E-02 | 4.153E-02 | 2.450E-02 | NOT IDENT. |
| NB-95M | -3.021E-02 | 1.533E-01 | 1.099E-01 | 7.821E-02 | NOT IDENT. |
| ZR-95 | 3.752E-02 | 7.249E-02 | 6.471E-02 | 3.699E-02 | NOT IDENT. |
| NB-97 | -8.064E+06 | 1.259E+07 | 0.000E+00 | 6.423E+06 | SHORT HLIF |
| ZR-97 | 1.141E+08 | 2.379E+08 | 0.000E+00 | 1.214E+08 | SHORT HLIF |
| MO-99 | 4.191E+01 | 4.082E+01 | 3.762E+01 | 2.083E+01 | NOT IDENT. |
| TC-99M | -3.620E+21 | 2.926E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -6.649E-03 | 3.498E-02 | 2.820E-02 | 1.785E-02 | NOT IDENT. |
| RH-102 | 1.019E-02 | 2.904E-02 | 2.502E-02 | 1.482E-02 | FAIL ABUN |
| RU-103 | -2.867E-02 | 4.403E-02 | 3.451E-02 | 2.247E-02 | FAIL ABUN |
| RH-106 | -1.316E-01 | 3.230E-01 | 2.534E-01 | 1.648E-01 | FAIL ABUN |
| RU-106 | -1.316E-01 | 3.227E-01 | 2.534E-01 | 1.646E-01 | FAIL ABUN |
| AG-108M | -1.561E-02 | 3.061E-02 | 2.471E-02 | 1.562E-02 | NOT IDENT. |
| AG-110M | -2.324E-02 | 3.629E-02 | 2.963E-02 | 1.851E-02 | NOT IDENT. |
| IN-111 | 2.183E+00 | 3.765E+00 | 2.868E+00 | 1.921E+00 | NOT IDENT. |
| IN-113M | -2.360E-02 | 4.522E-02 | 3.697E-02 | 2.307E-02 | NOT IDENT. |
| SN-113 | -2.360E-02 | 4.522E-02 | 3.697E-02 | 2.307E-02 | NOT IDENT. |
| IN-114M | 1.130E-01 | 2.171E-01 | 1.665E-01 | 1.108E-01 | NOT IDENT. |
| CD-115 | 1.162E+01 | 4.947E+01 | 0.000E+00 | 2.524E+01 | SHORT HLIF |
| SN-117M | -5.526E-03 | 6.731E-02 | 5.639E-02 | 3.434E-02 | NOT IDENT. |
| SB-122 | 6.964E+00 | 7.858E+00 | 6.954E+00 | 4.009E+00 | NOT IDENT. |
| I-123 | -8.251E+07 | 2.761E+09 | 0.000E+00 | 1.409E+09 | SHORT HLIF |
| TE-123M | -8.290E-04 | 2.774E-02 | 2.330E-02 | 1.415E-02 | NOT IDENT. |
| I-124 | -3.899E-01 | 1.711E+00 | 1.189E+00 | 8.730E-01 | NOT IDENT. |
| SB-124 | -7.814E-03 | 6.749E-02 | 5.431E-02 | 3.444E-02 | FAIL ABUN |
| SB-125 | -3.781E-02 | 9.474E-02 | 7.642E-02 | 4.834E-02 | FAIL ABUN |
| TE-125M | 3.573E+00 | 9.997E+00 | 8.543E+00 | 5.101E+00 | NOT IDENT. |
| I-126 | 1.404E-01 | 2.581E-01 | 2.311E-01 | 1.371E-01 | NOT IDENT. |
| SB-126 | 2.803E-01 | 2.100E-01 | 1.860E-01 | 1.071E-01 | FAIL ABUN |
| SB-127 | -1.153E+00 | 2.874E+00 | 2.369E+00 | 1.466E+00 | NOT IDENT. |
| XE-127 | 1.138E-02 | 5.167E-02 | 4.328E-02 | 2.636E-02 | NOT IDENT. |
| I-131 | 9.883E-02 | 1.812E-01 | 1.603E-01 | 9.246E-02 | NOT IDENT. |
| TE-132 | -8.706E-01 | 1.969E+00 | 1.570E+00 | 1.005E+00 | NOT IDENT. |
| BA-133 | -1.696E-02 | 5.013E-02 | 3.656E-02 | 2.558E-02 | NOT IDENT. |
| I-133 | -9.780E+02 | 3.179E+05 | 0.000E+00 | 1.622E+05 | SHORT HLIF |
| CS-134 | 7.598E-02 | 4.964E-02 | 4.720E-02 | 2.533E-02 | NOT IDENT. |
| CS-135 | 1.125E-01 | 1.614E-01 | 1.309E-01 | 8.236E-02 | NOT IDENT. |
| I-135 | 5.097E+20 | 1.265E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | 5.733E-02 | 1.320E-01 | 1.151E-01 | 6.735E-02 | FAIL ABUN |
| BA-137M | -3.718E-02 | 4.173E-02 | 3.480E-02 | 2.129E-02 | NOT IDENT. |
| CS-137 | -3.930E-02 | 4.411E-02 | 3.678E-02 | 2.250E-02 | NOT IDENT. |
| CE-139 | -2.290E-02 | 2.991E-02 | 2.406E-02 | 1.526E-02 | NOT IDENT. |
| BA-140 | -3.869E-02 | 3.095E-01 | 2.533E-01 | 1.579E-01 | NOT IDENT. |
| LA-140 | -3.033E-02 | 1.278E-01 | 1.026E-01 | 6.521E-02 | NOT IDENT. |
| CE-141 | -2.178E-03 | 6.911E-02 | 5.837E-02 | 3.526E-02 | NOT IDENT. |
| CE-143 | 9.701E+03 | 2.970E+03 | 0.000E+00 | 1.515E+03 | SHORT HLIF |
| CE-144 | -6.152E-02 | 2.076E-01 | 1.738E-01 | 1.059E-01 | NOT IDENT. |
| PM-144 | -1.854E-02 | 3.418E-02 | 2.761E-02 | 1.744E-02 | NOT IDENT. |
| PR-144 | -1.259E+00 | 2.322E+00 | 1.876E+00 | 1.185E+00 | NOT IDENT. |
| PM-146 | 2.138E-02 | 4.576E-02 | 3.978E-02 | 2.335E-02 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| ND-147 | 2.017E-01 | 7.998E-01 | 6.779E-01 | 4.081E-01 | FAIL ABUN |
| PM-149 | -1.663E+02 | 4.065E+02 | 0.000E+00 | 2.074E+02 | SHORT HLIF |
| EU-152 | 2.196E-02 | 1.087E-01 | 8.356E-02 | 5.546E-02 | NOT IDENT. |
| GD-153 | -6.062E-03 | 8.417E-02 | 6.497E-02 | 4.294E-02 | NOT IDENT. |
| EU-154 | -1.094E-01 | 1.240E-01 | 9.429E-02 | 6.328E-02 | NOT IDENT. |
| EU-155 | -6.492E-02 | 1.049E-01 | 8.764E-02 | 5.354E-02 | FAIL ABUN |
| TB-160 | -1.995E-01 | 1.611E-01 | 1.175E-01 | 8.218E-02 | FAIL ABUN |
| HO-166M | 8.153E-04 | 5.966E-02 | 5.118E-02 | 3.044E-02 | FAIL ABUN |
| TM-171 | 3.217E+00 | 3.506E+01 | 3.067E+01 | 1.789E+01 | NOT IDENT. |
| LU-176 | -5.769E-03 | 2.499E-02 | 2.133E-02 | 1.275E-02 | FAIL ABUN |
| LU-177 | 4.161E+00 | 3.047E+00 | 1.754E+00 | 1.555E+00 | FAIL ABUN |
| LU-177M | 8.406E-03 | 1.885E-01 | 1.601E-01 | 9.619E-02 | FAIL ABUN |
| HF-181 | 2.018E-02 | 4.293E-02 | 3.739E-02 | 2.190E-02 | NOT IDENT. |
| W-181 | -4.078E-01 | 4.895E-01 | 4.101E-01 | 2.497E-01 | NOT IDENT. |
| TA-182 | -9.829E-02 | 2.030E-01 | 1.653E-01 | 1.036E-01 | FAIL ABUN |
| RE-183 | 1.120E-01 | 1.104E-01 | 9.731E-02 | 5.632E-02 | FAIL ABUN |
| RE-184 | -7.075E-02 | 2.218E-01 | 1.910E-01 | 1.132E-01 | NOT IDENT. |
| OS-185 | -4.830E-03 | 3.934E-02 | 3.358E-02 | 2.007E-02 | NOT IDENT. |
| RE-188 | 1.567E-01 | 1.757E-01 | 1.542E-01 | 8.967E-02 | NOT IDENT. |
| W-188 | -2.641E+00 | 7.925E+00 | 5.894E+00 | 4.043E+00 | NOT IDENT. |
| IR-192 | -1.775E-02 | 3.476E-02 | 2.902E-02 | 1.773E-02 | FAIL ABUN |
| AU-195 | 2.712E-01 | 2.236E-01 | 2.026E-01 | 1.141E-01 | FAIL ABUN |
| TL-200 | -1.400E+03 | 1.001E+04 | 0.000E+00 | 5.106E+03 | SHORT HLIF |
| TL-201 | 1.478E+01 | 2.006E+01 | 1.745E+01 | 1.023E+01 | NOT IDENT. |
| TL-202 | -3.720E-03 | 8.815E-02 | 7.404E-02 | 4.498E-02 | NOT IDENT. |
| BI-207 | 2.816E-02 | 5.774E-02 | 5.020E-02 | 2.946E-02 | FAIL ABUN |
| TL-207 | -4.564E-01 | 6.872E-01 | 5.657E-01 | 3.506E-01 | FAIL ABUN |
| PO-209 | 6.677E+00 | 7.615E+00 | 6.862E+00 | 3.885E+00 | NOT IDENT. |
| BI-210 | 7.357E+00 | 9.611E+00 | 8.704E+00 | 4.903E+00 | NOT IDENT. |
| PB-210 | 7.357E+00 | 9.611E+00 | 8.704E+00 | 4.903E+00 | NOT IDENT. |
| PO-210 | 7.357E+00 | 9.607E+00 | 8.704E+00 | 4.901E+00 | NOT IDENT. |
| PB-211 | -4.815E-01 | 9.940E-01 | 7.765E-01 | 5.072E-01 | NOT IDENT. |
| BI-212 | 1.635E+00 | 5.499E-01 | 3.673E-01 | 2.806E-01 | FAIL ABUN |
| PO-215 | -4.564E-01 | 6.872E-01 | 5.657E-01 | 3.506E-01 | FAIL ABUN |
| RN-219 | -4.078E-02 | 4.071E-01 | 3.429E-01 | 2.077E-01 | FAIL ABUN |
| RN-220 | -1.196E+01 | 2.599E+01 | 2.057E+01 | 1.326E+01 | NOT IDENT. |
| RA-223 | -4.564E-01 | 6.872E-01 | 5.657E-01 | 3.506E-01 | FAIL ABUN |
| AC-227 | 3.436E-02 | 3.516E-01 | 3.096E-01 | 1.794E-01 | FAIL ABUN |
| TH-227 | 3.436E-02 | 3.517E-01 | 3.096E-01 | 1.794E-01 | FAIL ABUN |
| TH-229 | 1.430E-01 | 5.435E-01 | 4.573E-01 | 2.773E-01 | FAIL ABUN |
| PA-231 | 2.325E-01 | 1.535E+00 | 1.304E+00 | 7.830E-01 | FAIL ABUN |
| TH-231 | -4.564E-01 | 6.872E-01 | 5.657E-01 | 3.506E-01 | FAIL ABUN |
| U-231 | -1.697E+00 | 2.569E+00 | 1.907E+00 | 1.311E+00 | FAIL ABUN |
| PA-233 | -8.353E-03 | 6.349E-02 | 5.443E-02 | 3.239E-02 | FAIL ABUN |
| PA-234 | 1.541E-01 | 3.254E-01 | 2.841E-01 | 1.660E-01 | FAIL ABUN |
| PA-234M | 1.482E+00 | 5.083E+00 | 4.427E+00 | 2.594E+00 | NOT IDENT. |
| TH-234 | 1.109E+00 | 1.721E+00 | 1.535E+00 | 8.781E-01 | FAIL ABUN |
| U-235 | -1.290E-01 | 2.136E-01 | 1.731E-01 | 1.090E-01 | FAIL ABUN |
| NP-236 | -2.851E-02 | 7.743E-02 | 6.385E-02 | 3.950E-02 | FAIL ABUN |
| U-238 | 1.109E+00 | 1.721E+00 | 1.535E+00 | 8.781E-01 | FAIL ABUN |
| NP-239 | 4.966E-02 | 1.838E-01 | 1.594E-01 | 9.378E-02 | FAIL ABUN |
| AM-241 | -9.377E-02 | 2.141E-01 | 1.828E-01 | 1.092E-01 | NOT IDENT. |
| CM-243 | -3.403E-02 | 9.196E-02 | 7.785E-02 | 4.692E-02 | FAIL ABUN |
| AM-246 | -2.080E-02 | 1.496E-01 | 1.216E-01 | 7.631E-02 | NOT IDENT. |
| CM-247 | -1.051E-02 | 3.601E-02 | 2.990E-02 | 1.837E-02 | FAIL ABUN |
| CF-249 | 1.987E-02 | 4.109E-02 | 3.607E-02 | 2.096E-02 | NOT IDENT. |
| CF-251 | -9.852E-02 | 1.247E-01 | 9.960E-02 | 6.360E-02 | NOT IDENT. |

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*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT             *
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| ENERGY | MDA COUNTS |
|--------|------------|
| 46.50 | 171.5474 |
| 46.50 | 171.5474 |
| 46.50 | 171.5474 |
| 48.70 | 195.0002 |
| 49.72 | 180.0681 |
| 51.35 | 187.8287 |
| 52.39 | 171.8814 |
| 52.97 | 175.6353 |
| 53.15 | 183.5518 |
| 53.44 | 191.5332 |
| 54.07 | 176.1654 |
| 56.28 | 173.7032 |
| 56.28 | 173.7047 |
| 57.37 | 0.0000 |
| 57.53 | 175.1569 |
| 57.53 | 175.1579 |
| 57.60 | 175.1893 |
| 57.98 | 173.6002 |
| 57.98 | 173.6002 |
| 59.32 | 183.0444 |
| 59.32 | 183.0444 |
| 59.40 | 183.0817 |
| 59.54 | 183.1470 |
| 59.72 | 178.8054 |
| 60.01 | 190.4532 |
| 61.10 | 224.7330 |
| 61.14 | 224.7555 |
| 61.30 | 224.8462 |
| 63.00 | 196.3457 |
| 63.29 | 197.3789 |
| 63.29 | 197.3789 |
| 63.58 | 194.8382 |
| 64.28 | 205.9142 |
| 65.12 | 250.2912 |
| 65.20 | 250.3394 |
| 65.20 | 250.3394 |
| 66.05 | 257.1437 |
| 66.72 | 223.3322 |
| 66.83 | 223.3915 |
| 66.91 | 224.3353 |
| 67.20 | 219.9808 |
| 67.20 | 219.9808 |
| 67.75 | 211.2389 |
| 67.85 | 211.2889 |
| 68.90 | 239.8665 |
| 68.90 | 239.8665 |
| 69.30 | 239.1829 |
| 69.67 | 258.9761 |
| 70.82 | 246.8382 |
| 70.82 | 246.8382 |
| 70.83 | 246.8437 |
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| 72.87 | 237.0237 |
| 72.87 | 237.0237 |
| 74.67 | 238.4299 |
| 74.81 | 238.5039 |
| 74.81 | 238.5039 |
| 74.81 | 238.5039 |
| 74.81 | 238.5039 |
| 74.81 | 238.5039 |
| 74.81 | 238.5039 |
| 74.97 | 238.5872 |
| 75.28 | 238.7499 |
| 75.70 | 238.9694 |
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| 77.11 | 239.7007 |

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| 77.11 | 239.7007 |
| 77.11 | 239.7007 |
| 77.11 | 239.7007 |
| 77.11 | 239.7007 |
| 78.38 | 240.3540 |
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| 79.80 | 228.0975 |
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| 80.18 | 235.2393 |
| 80.30 | 235.2980 |
| 80.30 | 235.2980 |
| 80.57 | 234.0390 |
| 81.00 | 288.6285 |
| 81.07 | 288.6696 |
| 81.07 | 288.6696 |
| 81.07 | 288.6696 |
| 81.07 | 288.6696 |
| 82.60 | 274.1984 |
| 83.37 | 278.3655 |
| 83.78 | 270.6538 |
| 83.78 | 270.6538 |
| 83.78 | 270.6538 |
| 83.78 | 270.6538 |
| 84.21 | 258.2587 |
| 84.90 | 265.6486 |
| 85.43 | 264.5242 |
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| 86.50 | 308.8042 |
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| 86.59 | 308.8593 |
| 86.72 | 308.9395 |
| 86.79 | 308.9813 |
| 86.94 | 309.0749 |
| 87.30 | 309.2971 |
| 87.30 | 309.2971 |
| 87.30 | 309.2971 |
| 87.30 | 309.2971 |
| 87.30 | 309.2971 |
| 87.30 | 309.2971 |
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| 88.03 | 309.7432 |
| 88.36 | 309.9453 |
| 88.47 | 310.0122 |
| 89.95 | 244.1846 |
| 91.11 | 244.7331 |
| 92.29 | 245.2882 |
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| 92.38 | 245.3302 |
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| 94.67 | 174.7691 |
| 94.90 | 183.4434 |
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| 94.90 | 183.4434 |
| 94.90 | 183.4434 |
| 95.87 | 229.7205 |
| 95.87 | 229.7205 |
| 96.73 | 240.1542 |
| 97.43 | 204.4663 |
| 98.44 | 181.1872 |
| 98.44 | 181.1872 |
| 98.88 | 186.7228 |
| 99.55 | 189.8418 |
| 99.55 | 189.8418 |
| 99.86 | 200.5542 |
| 100.00 | 200.6050 |
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| 111.00 | 224.1557 |
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| 121.78 | 199.1134 |
| 122.06 | 199.2014 |
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| 129.76 | 196.5201 |
| 131.20 | 223.3413 |
| 133.02 | 232.0913 |
| 133.54 | 234.3097 |
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| 142.18 | 202.1888 |
| 142.65 | 218.8385 |
| 143.76 | 241.9266 |
| 144.24 | 216.2265 |
| 144.24 | 216.2265 |
| 144.24 | 216.2265 |
| 144.24 | 216.2265 |
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| 145.44 | 229.0258 |
| 147.16 | 223.3416 |
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| 152.70 | 221.8987 |
| 153.22 | 201.1055 |
| 154.21 | 179.3461 |
| 154.21 | 179.3461 |
| 154.21 | 179.3461 |
| 154.21 | 179.3461 |
| 155.03 | 194.2440 |
| 156.02 | 230.2458 |
| 158.56 | 197.2627 |
| 159.00 | 0.0000 |
| 159.00 | 193.1549 |
| 160.31 | 209.3458 |
| 161.27 | 204.3145 |
| 162.32 | 175.9697 |
| 162.64 | 179.2238 |
| 163.35 | 191.0651 |
| 163.89 | 203.9434 |
| 165.85 | 216.1686 |
| 167.43 | 168.5870 |
| 171.28 | 202.6390 |
| 171.86 | 187.7640 |
| 172.10 | 187.8192 |
| 176.55 | 208.2725 |
| 176.60 | 208.2862 |
| 181.06 | 167.6359 |
| 184.41 | 179.7420 |
| 185.71 | 180.0172 |
| 186.00 | 180.0777 |
| 190.27 | 185.9096 |
| 192.34 | 217.6864 |
| 193.63 | 214.7035 |
| 197.04 | 219.9539 |
| 198.01 | 199.1711 |
| 198.60 | 200.4084 |
| 200.40 | 0.0000 |
| 201.83 | 201.1301 |
| 202.84 | 186.8928 |
| 205.31 | 172.3399 |

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| 208.36 | 186.9016 |
| 208.81 | 186.9916 |
| 209.75 | 187.1819 |
| 209.75 | 187.1819 |
| 210.97 | 168.3472 |
| 215.65 | 151.1385 |
| 216.55 | 160.3134 |
| 218.09 | 161.7042 |
| 222.10 | 172.5973 |
| 223.80 | 155.8364 |
| 226.40 | 165.3759 |
| 227.00 | 155.2052 |
| 227.08 | 152.9351 |
| 227.20 | 152.9542 |
| 228.16 | 170.2411 |
| 228.18 | 170.2441 |
| 228.18 | 170.2441 |
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| 235.69 | 202.0328 |
| 236.00 | 184.8206 |
| 236.00 | 184.8206 |
| 238.63 | 170.8676 |
| 238.63 | 170.8676 |
| 238.63 | 170.8676 |
| 238.63 | 170.8676 |
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| 241.98 | 171.4261 |
| 241.98 | 171.4261 |
| 241.98 | 171.4261 |
| 244.69 | 116.7122 |
| 245.39 | 123.7625 |
| 247.94 | 150.2756 |
| 248.90 | 155.0760 |
| 249.79 | 0.0000 |
| 252.40 | 143.8904 |
| 252.85 | 141.3184 |
| 252.85 | 141.3184 |
| 254.15 | 0.0000 |
| 256.20 | 130.3136 |
| 256.20 | 130.3136 |
| 260.50 | 132.6004 |
| 260.90 | 0.0000 |
| 262.80 | 128.4503 |
| 264.65 | 134.8763 |
| 268.24 | 119.6467 |
| 268.79 | 114.0059 |
| 269.46 | 114.0742 |
| 269.46 | 114.0742 |
| 269.46 | 114.0742 |
| 269.46 | 114.0742 |
| 271.23 | 119.6096 |
| 273.65 | 132.3906 |
| 276.40 | 120.1575 |
| 277.35 | 131.0271 |
| 277.60 | 131.0560 |
| 277.60 | 131.0560 |
| 278.00 | 131.1006 |
| 278.60 | 133.6852 |
| 279.20 | 135.1938 |
| 279.53 | 142.4261 |
| 280.46 | 131.0236 |
| 281.68 | 0.0000 |
| 283.67 | 126.8480 |
| 284.30 | 135.4317 |
| 285.00 | 128.2845 |
| 285.90 | 0.0000 |
| 286.10 | 117.5546 |
| 286.10 | 117.5546 |
| 287.40 | 109.5381 |
| 288.45 | 0.0000 |
| 290.67 | 119.1022 |
| 290.80 | 119.1142 |
| 291.72 | 110.4839 |
| 293.26 | 0.0000 |
| 293.70 | 112.1256 |
| 295.21 | 104.9766 |
| 295.21 | 104.9766 |

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|--------|----------|
| 295.21 | 104.9766 |
| 295.96 | 105.0434 |
| 296.50 | 131.3613 |
| 297.23 | 0.0000 |
| 298.57 | 131.5876 |
| 299.80 | 128.7945 |
| 299.80 | 128.7945 |
| 300.09 | 134.6825 |
| 300.09 | 134.6825 |
| 300.09 | 134.6825 |
| 300.09 | 134.6825 |
| 300.12 | 134.6848 |
| 301.29 | 140.6766 |
| 302.84 | 130.5840 |
| 303.76 | 0.0000 |
| 303.91 | 138.0418 |
| 304.40 | 116.0602 |
| 304.40 | 116.0602 |
| 304.84 | 126.3902 |
| 306.84 | 129.7240 |
| 308.46 | 117.9180 |
| 311.98 | 120.0996 |
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| 319.02 | 113.3418 |
| 319.41 | 116.1652 |
| 320.08 | 112.5070 |
| 323.87 | 140.8183 |
| 323.87 | 140.8183 |
| 323.87 | 140.8183 |
| 323.87 | 140.8183 |
| 325.23 | 149.3701 |
| 328.77 | 108.5907 |
| 333.44 | 114.2412 |
| 334.20 | 111.2999 |
| 334.20 | 111.2999 |
| 334.30 | 111.3071 |
| 338.28 | 111.2660 |
| 338.28 | 111.2660 |
| 338.28 | 111.2660 |
| 338.28 | 111.2660 |
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| 340.50 | 98.2300 |
| 340.57 | 98.2347 |
| 344.27 | 104.5680 |
| 345.85 | 113.7946 |
| 350.59 | 0.0000 |
| 351.07 | 100.5259 |
| 351.92 | 100.0172 |
| 351.92 | 100.0172 |
| 351.92 | 100.0172 |
| 355.39 | 0.0000 |
| 356.01 | 114.6460 |
| 364.48 | 96.1227 |
| 366.43 | 105.8810 |
| 367.43 | 99.2139 |
| 367.94 | 0.0000 |
| 369.80 | 82.0130 |
| 374.96 | 101.6771 |
| 383.85 | 110.0998 |
| 387.95 | 94.7754 |
| 388.63 | 93.8408 |
| 391.69 | 98.9333 |
| 391.69 | 98.9333 |
| 392.90 | 91.1708 |
| 398.62 | 95.4577 |
| 400.65 | 74.8925 |
| 401.10 | 88.7146 |
| 401.81 | 92.7019 |
| 402.60 | 92.7493 |
| 404.84 | 104.7449 |
| 410.95 | 93.2585 |
| 411.60 | 106.2016 |
| 413.65 | 99.3851 |
| 414.70 | 90.5029 |
| 415.30 | 92.5275 |

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| 415.76 | 86.5832 |
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| 432.53 | 80.4700 |
| 433.93 | 77.5193 |
| 439.47 | 0.0000 |
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| 439.89 | 74.7757 |
| 443.98 | 69.8981 |
| 444.90 | 78.0469 |
| 445.03 | 78.0527 |
| 445.03 | 78.0527 |
| 445.03 | 78.0527 |
| 445.03 | 78.0527 |
| 453.90 | 80.5128 |
| 463.38 | 73.7952 |
| 468.07 | 80.5784 |
| 473.00 | 83.4917 |
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| 475.35 | 69.1551 |
| 476.78 | 76.4435 |
| 477.59 | 80.6136 |
| 477.96 | 75.4628 |
| 482.03 | 58.0251 |
| 484.57 | 0.0000 |
| 487.03 | 65.4657 |
| 490.36 | 0.0000 |
| 492.35 | 0.0000 |
| 497.08 | 76.2893 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 63.1847 |
| 511.00 | 63.1906 |
| 511.85 | 63.2199 |
| 511.85 | 63.2199 |
| 513.99 | 72.5772 |
| 513.99 | 72.5772 |
| 520.41 | 67.7500 |
| 520.65 | 0.0000 |
| 527.90 | 0.0000 |
| 528.96 | 0.0000 |
| 529.64 | 65.9601 |
| 529.87 | 0.0000 |
| 531.02 | 68.1367 |
| 537.32 | 55.5468 |
| 543.00 | 76.0702 |
| 546.56 | 0.0000 |
| 549.76 | 67.7373 |
| 552.65 | 64.6088 |
| 555.20 | 64.6930 |
| 563.23 | 73.6217 |
| 563.90 | 64.9823 |
| 568.70 | 71.6537 |
| 569.32 | 77.1081 |
| 569.50 | 77.1146 |
| 569.67 | 81.4659 |
| 573.80 | 58.7774 |
| 574.00 | 62.0498 |
| 574.64 | 0.0000 |
| 578.91 | 0.0000 |
| 579.30 | 0.0000 |
| 583.14 | 73.2669 |
| 585.48 | 0.0000 |
| 591.81 | 71.3853 |
| 592.07 | 71.3933 |
| 593.00 | 70.3281 |
| 595.88 | 69.3254 |
| 600.56 | 56.7208 |
| 602.52 | 0.0000 |
| 602.71 | 67.1271 |
| 602.71 | 67.1271 |
| 603.60 | 68.9241 |
| 604.41 | 68.9508 |
| 604.70 | 67.1921 |
| 609.31 | 58.7014 |

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| 609.31 | 58.7014 |
| 609.31 | 58.7014 |
| 609.31 | 58.7014 |
| 610.33 | 51.4169 |
| 612.46 | 44.3701 |
| 614.37 | 44.4104 |
| 618.01 | 46.7117 |
| 621.84 | 61.2791 |
| 621.84 | 61.2791 |
| 631.29 | 49.2408 |
| 633.02 | 62.7214 |
| 633.10 | 62.7231 |
| 634.78 | 68.3774 |
| 635.90 | 71.7773 |
| 636.97 | 56.1035 |
| 645.85 | 46.8686 |
| 646.12 | 48.6778 |
| 656.30 | 59.7706 |
| 657.75 | 72.4961 |
| 657.90 | 0.0000 |
| 661.65 | 77.1620 |
| 661.65 | 77.1620 |
| 664.57 | 0.0000 |
| 666.33 | 69.1366 |
| 666.33 | 69.1366 |
| 675.00 | 55.7057 |
| 677.61 | 56.6840 |
| 685.20 | 47.6988 |
| 692.80 | 46.0156 |
| 695.00 | 62.6410 |
| 696.49 | 60.8381 |
| 696.49 | 60.8381 |
| 697.00 | 60.8518 |
| 697.49 | 62.7091 |
| 698.33 | 56.2731 |
| 698.50 | 59.0453 |
| 699.00 | 55.3667 |
| 702.63 | 52.6805 |
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| 706.58 | 0.0000 |
| 706.67 | 61.1032 |
| 709.31 | 51.9039 |
| 711.68 | 55.6670 |
| 713.82 | 43.6448 |
| 717.42 | 66.9621 |
| 720.50 | 45.2310 |
| 721.93 | 0.0000 |
| 722.20 | 55.9131 |
| 722.78 | 63.6955 |
| 722.78 | 63.6955 |
| 722.89 | 63.6971 |
| 722.95 | 63.6988 |
| 723.30 | 71.4782 |
| 724.18 | 77.7222 |
| 727.18 | 65.3687 |
| 733.00 | 42.1238 |
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| 739.58 | 43.1767 |
| 742.81 | 49.8130 |
| 744.21 | 59.2455 |
| 747.13 | 50.8425 |
| 751.79 | 51.8821 |
| 752.31 | 48.1188 |
| 753.82 | 50.0356 |
| 755.35 | 0.0000 |
| 756.15 | 44.4136 |
| 756.87 | 48.2072 |
| 763.93 | 33.1774 |
| 765.79 | 39.5264 |
| 766.42 | 44.2798 |
| 766.84 | 45.8695 |
| 776.49 | 60.0177 |
| 778.00 | 52.4272 |
| 778.57 | 46.7187 |
| 778.89 | 39.0961 |
| 783.80 | 47.7698 |
| 785.46 | 50.6683 |
| 792.07 | 63.2591 |

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| 795.84 | 43.1949 |
| 796.30 | 41.2825 |
| 798.80 | 71.1130 |
| 801.93 | 41.3718 |
| 805.60 | 32.7586 |
| 810.29 | 40.5388 |
| 810.76 | 44.4075 |
| 815.85 | 39.6577 |
| 817.79 | 0.0000 |
| 818.51 | 46.4754 |
| 819.60 | 36.8079 |
| 826.30 | 52.4377 |
| 828.27 | 0.0000 |
| 831.60 | 59.3529 |
| 831.96 | 55.4678 |
| 834.83 | 62.3469 |
| 836.80 | 0.0000 |
| 846.75 | 31.3109 |
| 848.13 | 49.9280 |
| 856.28 | 0.0000 |
| 856.80 | 45.8304 |
| 860.37 | 36.0562 |
| 867.32 | 33.9567 |
| 867.82 | 32.5384 |
| 871.10 | 44.4232 |
| 873.19 | 50.3837 |
| 874.81 | 42.5045 |
| 875.33 | 0.0000 |
| 876.40 | 30.6602 |
| 879.36 | 62.3755 |
| 880.27 | 50.5107 |
| 880.51 | 50.5156 |
| 881.50 | 50.5331 |
| 883.24 | 42.6326 |
| 884.67 | 38.6867 |
| 889.25 | 41.7303 |
| 896.60 | 29.8843 |
| 898.02 | 32.8896 |
| 899.00 | 44.8649 |
| 903.28 | 39.9395 |
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| 911.07 | 55.0658 |
| 911.07 | 55.0658 |
| 919.63 | 42.1743 |
| 920.93 | 35.1606 |
| 925.00 | 36.2162 |
| 925.24 | 39.2371 |
| 926.50 | 43.2803 |
| 935.52 | 38.3655 |
| 937.48 | 56.5756 |
| 944.10 | 49.6149 |
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| 949.00 | 46.6536 |
| 962.29 | 64.5177 |
| 964.01 | 44.1691 |
| 966.15 | 62.8997 |
| 968.20 | 56.1387 |
| 969.11 | 32.3315 |
| 969.11 | 32.3315 |
| 969.11 | 32.3315 |
| 977.42 | 33.7847 |
| 980.50 | 34.8442 |
| 983.50 | 42.0590 |
| 989.30 | 36.9993 |
| 996.32 | 39.1430 |
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| 1001.68 | 30.9558 |
| 1004.76 | 43.3812 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 40.6663 |
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| 1038.57 | 43.8457 |
| 1038.76 | 0.0000 |
| 1045.16 | 50.2125 |
| 1046.59 | 34.5356 |
| 1048.07 | 29.3166 |

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| 1050.47 | 34.5775 |
| 1050.47 | 34.5775 |
| 1062.04 | 49.4211 |
| 1063.62 | 39.9779 |
| 1076.63 | 33.7984 |
| 1077.35 | 35.9191 |
| 1078.86 | 41.2204 |
| 1085.78 | 28.5965 |
| 1099.22 | 40.4084 |
| 1112.02 | 28.0188 |
| 1112.84 | 26.6919 |
| 1115.52 | 39.1786 |
| 1120.29 | 43.8688 |
| 1120.29 | 43.8688 |
| 1120.29 | 43.8688 |
| 1120.29 | 43.8688 |
| 1120.51 | 43.8728 |
| 1121.28 | 43.8828 |
| 1124.00 | 0.0000 |
| 1129.67 | 41.8431 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 41.2192 |
| 1173.22 | 26.0719 |
| 1175.09 | 34.7813 |
| 1177.93 | 42.4239 |
| 1189.05 | 51.2846 |
| 1204.90 | 55.8933 |
| 1205.75 | 0.0000 |
| 1213.00 | 57.1162 |
| 1221.42 | 51.3766 |
| 1230.97 | 54.2706 |
| 1235.34 | 64.4629 |
| 1236.41 | 0.0000 |
| 1238.25 | 53.4546 |
| 1246.25 | 51.7230 |
| 1260.41 | 0.0000 |
| 1271.85 | 32.5462 |
| 1274.45 | 41.8744 |
| 1274.54 | 42.8049 |
| 1291.56 | 33.6489 |
| 1298.22 | 0.0000 |
| 1312.09 | 33.8276 |
| 1325.50 | 15.0859 |
| 1325.50 | 15.0859 |
| 1332.49 | 33.0596 |
| 1333.61 | 22.6758 |
| 1360.21 | 19.0226 |
| 1362.66 | 0.0000 |
| 1365.15 | 20.9508 |
| 1368.21 | 26.6852 |
| 1368.53 | 0.0000 |
| 1376.25 | 24.5550 |
| 1384.27 | 11.4819 |
| 1394.10 | 16.3048 |
| 1395.20 | 26.8630 |
| 1407.95 | 19.2472 |
| 1434.06 | 15.4941 |
| 1436.60 | 9.6895 |
| 1457.56 | 0.0000 |
| 1460.81 | 16.5670 |
| 1489.15 | 12.7524 |
| 1509.49 | 17.7393 |
| 1596.49 | 22.1056 |
| 1620.62 | 16.1608 |
| 1678.03 | 0.0000 |
| 1691.02 | 8.2012 |
| 1691.02 | 8.2012 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 12.4868 |
| 1764.49 | 12.4868 |
| 1764.49 | 12.4868 |
| 1764.49 | 12.4868 |
| 1770.23 | 70.8389 |
| 1771.40 | 31.2598 |
| 1791.20 | 0.0000 |
| 1808.65 | 6.2979 |

1836.01

7.3868

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G245388008

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 3.2389E+00 | ug/g |
| Total Uranium Counting Unc. | 5.1213E+00 | ug/g |
| Total Uranium Tpu | 2.6129E-06 | ug/g |
| Total Uranium Mda | 4.5671E+00 | ug/g |

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*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
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*
*  BATCH ID      : 944964                      SAMPLE ID : G245388008
*  ANALYST       : MXR1                        DETECTOR  : GAM04
*  SAMPLE DATE   : 15-JAN-2010 12:00:00.00    COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 4-FEB-2010 12:44:56.28    SAMPLE ALQT: 114.100 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.111E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.264E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.442E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.171E+00

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VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 15:31:38.79

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388009.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 13:31:10.
Sample ID          : G245388009 Sample quantity : 1.07970E+02 GRAM
Detector name      : GAM16 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.83 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 944964 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 | 63.53* | 88 | 446 | 0.99 | 127.24 | 123 | 9 | 1.22E-02 | 45.9 | |
| 2 | 3 | 74.90* | 425 | 335 | 0.80 | 150.00 | 146 | 13 | 5.91E-02 | 8.2 | 1.52E+00 |
| 3 | 3 | 77.15* | 679 | 313 | 0.86 | 154.49 | 146 | 13 | 9.43E-02 | 5.6 | |
| 4 | 2 | 87.22* | 244 | 351 | 1.00 | 174.63 | 172 | 12 | 3.39E-02 | 14.1 | 7.28E+00 |
| 5 | 2 | 89.88 | 136 | 328 | 0.82 | 179.95 | 172 | 12 | 1.89E-02 | 21.2 | |
| 6 | 0 | 93.18* | 316 | 529 | 1.77 | 186.55 | 183 | 12 | 4.39E-02 | 16.2 | |
| 7 | 0 | 129.06 | 142 | 314 | 1.11 | 258.32 | 254 | 9 | 1.98E-02 | 24.0 | |
| 8 | 0 | 186.05* | 243 | 273 | 1.27 | 372.29 | 367 | 10 | 3.38E-02 | 14.9 | |
| 9 | 0 | 209.30 | 136 | 285 | 0.97 | 418.80 | 415 | 9 | 1.89E-02 | 24.0 | |
| 10 | 5 | 238.64* | 1517 | 136 | 0.98 | 477.47 | 472 | 18 | 2.11E-01 | 2.9 | 1.49E+00 |
| 11 | 5 | 241.71 | 364 | 214 | 1.70 | 483.62 | 472 | 18 | 5.06E-02 | 9.8 | |
| 12 | 1 | 270.29 | 128 | 110 | 1.22 | 540.78 | 537 | 11 | 1.77E-02 | 16.5 | 2.89E+00 |
| 13 | 1 | 272.01 | 52 | 116 | 1.22 | 544.22 | 537 | 11 | 7.28E-03 | 39.9 | |
| 14 | 4 | 295.20 | 432 | 91 | 1.03 | 590.59 | 583 | 23 | 6.00E-02 | 5.9 | 1.93E+00 |
| 15 | 4 | 299.94 | 127 | 128 | 1.67 | 600.08 | 583 | 23 | 1.77E-02 | 20.1 | |
| 16 | 0 | 328.37 | 43 | 156 | 0.88 | 656.93 | 653 | 9 | 6.00E-03 | 54.7 | |
| 17 | 0 | 338.31* | 250 | 165 | 1.08 | 676.80 | 673 | 10 | 3.47E-02 | 11.7 | |
| 18 | 0 | 351.98* | 707 | 124 | 1.11 | 704.16 | 700 | 10 | 9.83E-02 | 4.9 | |
| 19 | 0 | 409.52 | 51 | 104 | 1.57 | 819.22 | 815 | 9 | 7.01E-03 | 38.9 | |
| 20 | 0 | 463.17 | 69 | 83 | 1.31 | 926.50 | 921 | 9 | 9.61E-03 | 26.6 | |
| 21 | 0 | 510.68* | 115 | 116 | 1.31 | 1021.52 | 1014 | 15 | 1.60E-02 | 25.8 | |
| 22 | 0 | 583.30* | 438 | 116 | 1.20 | 1166.75 | 1160 | 14 | 6.09E-02 | 7.2 | |
| 23 | 0 | 609.49* | 478 | 103 | 1.15 | 1219.11 | 1213 | 11 | 6.64E-02 | 6.2 | |
| 24 | 0 | 727.63* | 103 | 46 | 1.55 | 1455.35 | 1451 | 10 | 1.43E-02 | 16.4 | |
| 25 | 1 | 768.31 | 55 | 30 | 1.64 | 1536.70 | 1531 | 19 | 7.68E-03 | 25.9 | 2.09E+00 |
| 26 | 1 | 771.81 | 40 | 50 | 1.64 | 1543.70 | 1531 | 19 | 5.56E-03 | 33.6 | |
| 27 | 0 | 795.31 | 54 | 66 | 1.73 | 1590.69 | 1583 | 12 | 7.50E-03 | 33.0 | |
| 28 | 0 | 860.44* | 55 | 40 | 0.94 | 1720.91 | 1716 | 11 | 7.67E-03 | 26.4 | |
| 29 | 0 | 911.35* | 309 | 69 | 1.33 | 1822.70 | 1815 | 16 | 4.29E-02 | 8.4 | |
| 30 | 1 | 964.93 | 37 | 32 | 1.76 | 1929.84 | 1924 | 32 | 5.18E-03 | 35.6 | 1.63E+00 |
| 31 | 1 | 969.11* | 160 | 27 | 1.74 | 1938.19 | 1924 | 32 | 2.22E-02 | 10.3 | |
| 32 | 0 | 988.38 | 19 | 35 | 3.69 | 1976.72 | 1969 | 11 | 2.69E-03 | 58.7 | |
| 33 | 0 | 1120.71* | 112 | 52 | 1.96 | 2241.30 | 2234 | 14 | 1.56E-02 | 17.0 | |
| 34 | 0 | 1378.13 | 34 | 16 | 1.22 | 2755.94 | 2751 | 10 | 4.66E-03 | 28.9 | |
| 35 | 0 | 1461.14* | 789 | 10 | 1.67 | 2921.87 | 2916 | 15 | 1.10E-01 | 3.7 | |
| 36 | 0 | 1509.36 | 24 | 9 | 1.38 | 3018.27 | 3012 | 12 | 3.36E-03 | 32.1 | |
| 37 | 0 | 1622.12 | 29 | 10 | 1.01 | 3243.67 | 3237 | 17 | 4.07E-03 | 29.6 | |
| 38 | 0 | 1730.23 | 26 | 8 | 1.11 | 3459.78 | 3455 | 10 | 3.59E-03 | 29.7 | |

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|-----|
| 39 | 0 | 1764.90* | 85 | 6 | 1.92 | 3529.09 | 3523 | 12 | 1.17E-02 | 13.0 | |

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

VMS Nuclide Identification Report V3.1 Generated 4-FEB-2010 15:31:42

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388009.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 13:31:10
Sample ID        : G245388009 Sample quantity : 107.97 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA16 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.83 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 2.129E+01 | 2.453E+00 | 4.344E-01 | 3.818E-02 | 49.000 |
| CD-109 | + | 88.03 | * | 3.755E+00 | 1.116E+00 | 1.455E+00 | 1.402E-01 | 2.581 |
| SN-126 | + | 64.28 | | 8.922E-01 | 8.291E-01 | 7.265E-01 | 1.058E-01 | 1.228 |
| | + | 86.94 | | 1.523E+00 | 7.646E-01 | 5.767E-01 | 2.396E-01 | 2.641 |
| | + | 87.57 | * | 3.663E-01 | 1.089E-01 | 1.426E-01 | 1.367E-02 | 2.570 |
| TL-208 | | 277.35 | | 2.371E-01 | 4.021E-01 | 6.629E-01 | 9.854E-02 | 0.358 |
| | + | 510.84 | | 6.260E-01 | 3.321E-01 | 1.976E-01 | 2.499E-02 | 3.168 |
| | + | 583.14 | * | 6.787E-01 | 1.186E-01 | 5.970E-02 | 5.918E-03 | 11.368 |
| | + | 860.37 | | 8.032E-01 | 4.319E-01 | 3.738E-01 | 3.742E-02 | 2.149 |
| BI-211 | | 72.87 | | 4.888E+00 | 3.103E+00 | 5.093E+00 | 4.140E-01 | 0.960 |
| | + | 351.07 | * | 4.825E+00 | 7.048E-01 | 3.399E-01 | 3.717E-02 | 14.194 |
| BI-212 | + | 727.18 | * | 1.364E+00 | 4.682E-01 | 4.697E-01 | 4.907E-02 | 2.903 |
| | | 785.46 | | 2.720E+00 | 1.999E+00 | 3.681E+00 | 3.421E-01 | 0.739 |
| | + | 1620.62 | | 3.319E+00 | 1.983E+00 | 1.168E+00 | 9.919E-02 | 2.843 |
| PB-212 | + | 74.81 | | 2.701E+00 | 5.567E-01 | 5.457E-01 | 6.817E-02 | 4.950 |
| | + | 77.11 | | 2.444E+00 | 3.435E-01 | 3.096E-01 | 2.630E-02 | 7.894 |
| | + | 87.30 | | 1.694E+00 | 5.315E-01 | 6.611E-01 | 9.144E-02 | 2.563 |
| | + | 238.63 | * | 2.263E+00 | 2.983E-01 | 8.928E-02 | 1.057E-02 | 25.351 |
| | + | 300.09 | | 2.925E+00 | 1.238E+00 | 1.197E+00 | 1.568E-01 | 2.443 |
| PO-212 | + | 74.81 | | 2.701E+00 | 5.567E-01 | 5.457E-01 | 6.817E-02 | 4.950 |
| | + | 77.11 | | 2.444E+00 | 3.435E-01 | 3.096E-01 | 2.630E-02 | 7.894 |
| | + | 87.30 | | 1.694E+00 | 5.315E-01 | 6.611E-01 | 9.144E-02 | 2.563 |
| | | 115.19 | | -4.394E-01 | 3.475E+00 | 5.806E+00 | 4.844E-01 | -0.076 |
| | + | 238.63 | * | 2.263E+00 | 2.983E-01 | 8.928E-02 | 1.057E-02 | 25.351 |
| | + | 300.09 | | 2.925E+00 | 1.238E+00 | 1.197E+00 | 1.568E-01 | 2.443 |
| BI-214 | + | 609.31 | * | 1.394E+00 | 2.278E-01 | 1.214E-01 | 1.284E-02 | 11.480 |
| | + | 1120.29 | | 1.702E+00 | 6.073E-01 | 5.119E-01 | 5.496E-02 | 3.324 |
| | + | 1764.49 | | 1.763E+00 | 4.822E-01 | 3.043E-01 | 2.519E-02 | 5.793 |
| PB-214 | + | 74.81 | | 4.654E+00 | 9.219E-01 | 9.402E-01 | 1.045E-01 | 4.950 |
| | + | 77.11 | | 4.190E+00 | 6.698E-01 | 5.307E-01 | 6.056E-02 | 7.894 |
| | + | 87.30 | | 2.902E+00 | 8.916E-01 | 1.133E+00 | 1.391E-01 | 2.563 |
| | + | 241.98 | | 3.266E+00 | 7.582E-01 | 5.378E-01 | 6.662E-02 | 6.073 |
| | + | 295.21 | | 1.743E+00 | 3.112E-01 | 2.096E-01 | 2.798E-02 | 8.315 |
| | + | 351.92 | * | 1.679E+00 | 2.604E-01 | 1.187E-01 | 1.435E-02 | 14.142 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 74.81 | | 4.654E+00 | 9.219E-01 | 9.402E-01 | 1.045E-01 | 4.950 |
| | + | 77.11 | | 4.190E+00 | 6.698E-01 | 5.307E-01 | 6.056E-02 | 7.894 |
| | + | 87.30 | | 2.902E+00 | 8.916E-01 | 1.133E+00 | 1.391E-01 | 2.563 |
| | + | 241.98 | | 3.266E+00 | 7.582E-01 | 5.378E-01 | 6.662E-02 | 6.073 |
| | + | 295.21 | | 1.743E+00 | 3.112E-01 | 2.096E-01 | 2.798E-02 | 8.315 |
| PO-216 | + | 351.92 | * | 1.679E+00 | 2.604E-01 | 1.187E-01 | 1.435E-02 | 14.142 |
| | + | 74.81 | | 2.701E+00 | 5.567E-01 | 5.457E-01 | 6.817E-02 | 4.950 |
| | + | 77.11 | | 2.444E+00 | 3.435E-01 | 3.096E-01 | 2.630E-02 | 7.894 |
| | + | 87.30 | | 1.694E+00 | 5.315E-01 | 6.611E-01 | 9.144E-02 | 2.563 |
| | + | 238.63 | * | 2.263E+00 | 2.983E-01 | 8.928E-02 | 1.057E-02 | 25.351 |
| PO-218 | + | 300.09 | | 2.925E+00 | 1.238E+00 | 1.197E+00 | 1.568E-01 | 2.443 |
| | + | 74.81 | | 4.654E+00 | 9.219E-01 | 9.402E-01 | 1.045E-01 | 4.950 |
| | + | 77.11 | | 4.190E+00 | 6.698E-01 | 5.307E-01 | 6.056E-02 | 7.894 |
| | + | 87.30 | | 2.902E+00 | 8.916E-01 | 1.133E+00 | 1.391E-01 | 2.563 |
| | + | 241.98 | | 3.266E+00 | 7.582E-01 | 5.378E-01 | 6.662E-02 | 6.073 |
| RA-224 | + | 295.21 | | 1.743E+00 | 3.112E-01 | 2.096E-01 | 2.798E-02 | 8.315 |
| | + | 351.92 | * | 1.679E+00 | 2.604E-01 | 1.187E-01 | 1.435E-02 | 14.142 |
| | + | 240.98 | * | 6.193E+00 | 1.395E+00 | 1.016E+00 | 1.120E-01 | 6.094 |
| | + | 609.31 | * | 1.394E+00 | 2.278E-01 | 1.214E-01 | 1.284E-02 | 11.480 |
| | + | 1120.29 | | 1.702E+00 | 6.073E-01 | 5.119E-01 | 5.496E-02 | 3.324 |
| AC-228 | + | 1764.49 | | 1.763E+00 | 4.822E-01 | 3.043E-01 | 2.519E-02 | 5.793 |
| | + | 338.32 | | 1.880E+00 | 9.008E-01 | 3.992E-01 | 1.669E-01 | 4.711 |
| | + | 911.07 | * | 2.125E+00 | 4.367E-01 | 2.284E-01 | 2.713E-02 | 9.304 |
| | + | 969.11 | | 1.938E+00 | 6.067E-01 | 3.672E-01 | 8.659E-02 | 5.276 |
| | + | 338.32 | | 1.880E+00 | 9.008E-01 | 3.992E-01 | 1.669E-01 | 4.711 |
| RA-228 | + | 911.07 | * | 2.125E+00 | 4.367E-01 | 2.284E-01 | 2.713E-02 | 9.304 |
| | + | 969.11 | | 1.938E+00 | 6.067E-01 | 3.672E-01 | 8.659E-02 | 5.276 |
| | + | 74.81 | | 2.755E+00 | 5.072E-01 | 5.567E-01 | 4.657E-02 | 4.950 |
| | + | 77.11 | | 2.493E+00 | 3.504E-01 | 3.158E-01 | 2.683E-02 | 7.894 |
| | + | 87.30 | | 1.728E+00 | 5.140E-01 | 6.745E-01 | 6.445E-02 | 2.563 |
| TH-228 | + | 238.63 | * | 2.309E+00 | 3.044E-01 | 9.109E-02 | 1.078E-02 | 25.351 |
| | + | 300.09 | | 2.984E+00 | 2.151E+00 | 1.221E+00 | 7.304E-01 | 2.443 |
| | + | 609.31 | * | 1.394E+00 | 2.278E-01 | 1.214E-01 | 1.284E-02 | 11.480 |
| | + | 1120.29 | | 1.702E+00 | 6.073E-01 | 5.119E-01 | 5.496E-02 | 3.324 |
| | + | 1764.49 | | 1.763E+00 | 4.822E-01 | 3.043E-01 | 2.519E-02 | 5.793 |
| TH-232 | + | 338.32 | | 1.880E+00 | 4.855E-01 | 3.992E-01 | 4.357E-02 | 4.711 |
| | + | 911.07 | * | 2.125E+00 | 4.367E-01 | 2.284E-01 | 2.713E-02 | 9.304 |
| | + | 969.11 | | 1.938E+00 | 6.067E-01 | 3.672E-01 | 8.659E-02 | 5.276 |
| | + | 63.29 | * | 2.254E+00 | 2.106E+00 | 1.911E+00 | 3.334E-01 | 1.179 |
| | + | 92.38 | | 3.072E+00 | 1.143E+00 | 6.346E-01 | 1.167E-01 | 4.840 |
| U-234 | + | 609.31 | * | 1.394E+00 | 2.278E-01 | 1.214E-01 | 1.284E-02 | 11.480 |
| | + | 1120.29 | | 1.702E+00 | 6.073E-01 | 5.119E-01 | 5.496E-02 | 3.324 |
| | + | 1764.49 | | 1.763E+00 | 4.822E-01 | 3.043E-01 | 2.519E-02 | 5.793 |
| | + | 86.50 | * | 1.076E+00 | 3.893E-01 | 4.092E-01 | 9.290E-02 | 2.629 |
| | + | 95.87 | | 4.880E-01 | 9.828E-01 | 1.526E+00 | 3.780E-01 | 0.320 |
| U-238 | + | 63.29 | * | 2.254E+00 | 2.106E+00 | 1.911E+00 | 3.334E-01 | 1.179 |
| | + | 92.38 | | 3.072E+00 | 1.034E+00 | 6.346E-01 | 5.856E-02 | 4.840 |
| | + | 74.67 | * | 4.379E-01 | 8.045E-02 | 8.873E-02 | 7.346E-03 | 4.935 |
| | + | 86.72 | | 4.034E+01 | 1.200E+01 | 1.531E+01 | 1.453E+00 | 2.635 |
| | + | | | | | | | |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 117.66 | | -3.359E+00 | 3.775E+00 | 6.072E+00 | 5.052E-01 | -0.553 |
| | | 142.18 | | -1.334E+01 | 1.761E+01 | 2.824E+01 | 2.408E+00 | -0.472 |
| ANH-511 | + | 511.00 | * | 1.352E-01 | 7.085E-02 | 4.269E-02 | 4.060E-03 | 3.167 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| BE-7 | | 477.59 | * | 3.443E-04 | 3.338E-01 | 5.532E-01 | 5.596E-02 | 0.001 |
| NA-22 | | 1274.54 | * | -2.302E-02 | 4.899E-02 | 7.574E-02 | 6.302E-03 | -0.304 |
| NA-24 | | 1368.53 | * | -8.548E+01 | 4.899E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | -3.493E-01 | 1.735E+00 | 2.779E+00 | 2.329E-01 | -0.126 |
| | | 1808.65 | * | -6.542E-03 | 2.835E-02 | 4.404E-02 | 3.602E-03 | -0.149 |
| TI-44 | | 67.85 | | 2.328E-02 | 4.985E-02 | 7.295E-02 | 5.649E-03 | 0.319 |
| | + | 78.38 | * | 4.511E-01 | 6.339E-02 | 7.777E-02 | 6.697E-03 | 5.801 |
| SC-46 | | 889.25 | * | 1.661E-02 | 3.856E-02 | 6.727E-02 | 6.359E-03 | 0.247 |
| | + | 1120.51 | | 3.035E-01 | 1.064E-01 | 1.602E-01 | 1.353E-02 | 1.894 |
| V-48 | | 944.10 | | -1.132E+00 | 1.230E+00 | 1.834E+00 | 1.714E-01 | -0.617 |
| | | 983.50 | * | -5.508E-02 | 1.068E-01 | 1.413E-01 | 1.301E-02 | -0.390 |
| | | 1312.09 | | -2.843E-02 | 1.034E-01 | 1.610E-01 | 1.351E-02 | -0.177 |
| CR-51 | | 320.08 | * | -1.195E-01 | 4.560E-01 | 7.079E-01 | 8.277E-02 | -0.169 |
| MN-52 | | 744.21 | | -1.524E-01 | 4.584E-01 | 7.083E-01 | 6.503E-02 | -0.215 |
| | | 848.13 | | 2.068E+00 | 1.161E+01 | 1.983E+01 | 1.866E+00 | 0.104 |
| | | 935.52 | | 4.670E-01 | 5.294E-01 | 9.454E-01 | 8.856E-02 | 0.494 |
| | | 1246.25 | | -3.172E+00 | 1.272E+01 | 2.003E+01 | 1.651E+00 | -0.158 |
| | | 1333.61 | | -8.206E+00 | 9.747E+00 | 1.371E+01 | 1.157E+00 | -0.598 |
| | | 1434.06 | * | 3.062E-01 | 4.881E-01 | 8.547E-01 | 7.293E-02 | 0.358 |
| MN-54 | | 834.83 | * | 3.844E-02 | 3.804E-02 | 6.910E-02 | 6.490E-03 | 0.556 |
| CO-56 | | 846.75 | * | -6.699E-03 | 4.024E-02 | 6.637E-02 | 6.246E-03 | -0.101 |
| | | 977.42 | | -9.769E-01 | 3.472E+00 | 4.767E+00 | 4.399E-01 | -0.205 |
| | | 1037.82 | | -1.979E-01 | 2.952E-01 | 4.447E-01 | 4.180E-02 | -0.445 |
| | | 1175.09 | | 1.369E+00 | 2.434E+00 | 4.200E+00 | 3.380E-01 | 0.326 |
| | | 1238.25 | | 2.122E-01 | 1.037E-01 | 1.950E-01 | 1.655E-02 | 1.088 |
| | | 1360.21 | | -9.497E-02 | 1.017E+00 | 1.609E+00 | 1.363E-01 | -0.059 |
| | | 1771.40 | | -7.753E-01 | 3.506E-01 | 3.340E-01 | 2.760E-02 | -2.321 |
| CO-57 | | 122.06 | * | -1.968E-02 | 2.525E-02 | 4.073E-02 | 3.384E-03 | -0.483 |
| | | 136.48 | | -1.226E-01 | 2.020E-01 | 3.264E-01 | 2.967E-02 | -0.376 |
| CO-58 | | 810.76 | * | -3.985E-02 | 3.907E-02 | 5.846E-02 | 5.477E-03 | -0.682 |
| FE-59 | | 142.65 | | -1.873E+00 | 3.041E+00 | 4.827E+00 | 4.121E-01 | -0.388 |
| | | 192.34 | | -2.528E-01 | 1.051E+00 | 1.696E+00 | 2.401E-01 | -0.149 |
| | | 1099.22 | * | -3.960E-02 | 1.020E-01 | 1.602E-01 | 1.489E-02 | -0.247 |
| | | 1291.56 | | 3.080E-02 | 1.184E-01 | 1.989E-01 | 1.899E-02 | 0.155 |
| CO-60 | | 1173.22 | | 9.658E-03 | 4.654E-02 | 7.765E-02 | 6.244E-03 | 0.124 |
| | | 1332.49 | * | -2.960E-02 | 4.326E-02 | 6.305E-02 | 5.318E-03 | -0.469 |
| ZN-65 | | 1115.52 | * | -5.320E-02 | 1.138E-01 | 1.503E-01 | 1.277E-02 | -0.354 |
| GE-68 | | 1077.35 | * | -1.352E-03 | 1.292E+00 | 2.126E+00 | 1.857E-01 | -0.001 |
| AS-73 | | 53.44 | * | -2.096E-02 | 9.073E-01 | 1.420E+00 | 1.084E-01 | -0.015 |
| AS-74 | | 595.88 | * | -2.462E-02 | 1.199E-01 | 1.920E-01 | 1.782E-02 | -0.128 |
| | | 634.78 | | -5.008E-01 | 4.411E-01 | 6.296E-01 | 5.707E-02 | -0.795 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SE-75 | | 66.05 | | 7.391E-02 | 5.326E+00 | 7.605E+00 | 7.317E-01 | 0.010 |
| | | 96.73 | | -5.778E-01 | 8.463E-01 | 1.236E+00 | 1.708E-01 | -0.468 |
| | | 121.11 | | 5.130E-02 | 1.363E-01 | 2.319E-01 | 2.546E-02 | 0.221 |
| | | 136.00 | | -1.829E-02 | 3.867E-02 | 6.296E-02 | 5.344E-03 | -0.290 |
| | | 198.60 | | -6.269E-01 | 1.942E+00 | 3.117E+00 | 3.342E-01 | -0.201 |
| | | 264.65 | * | 2.447E-02 | 4.695E-02 | 7.758E-02 | 9.053E-03 | 0.315 |
| | | 279.53 | | -1.874E-01 | 1.273E-01 | 1.815E-01 | 2.221E-02 | -1.033 |
| | | 303.91 | | 4.065E-02 | 2.398E+00 | 3.391E+00 | 4.712E-01 | 0.012 |
| | | 400.65 | | 1.581E-01 | 2.724E-01 | 4.726E-01 | 5.502E-02 | 0.334 |
| BR-77 | + | 87.88 | | 3.408E-03 | 2.724E-01 | Half-Life | too short | |
| | | 200.40 | | 7.934E-05 | 2.724E-01 | Half-Life | too short | |
| | + | 239.00 | | 1.538E-03 | 2.724E-01 | Half-Life | too short | |
| | | 249.79 | | -2.369E-04 | 2.724E-01 | Half-Life | too short | |
| | | 281.68 | | 1.381E-04 | 2.724E-01 | Half-Life | too short | |
| | | 297.23 | | 6.729E-04 | 2.724E-01 | Half-Life | too short | |
| | | 303.76 | | 2.719E-05 | 2.724E-01 | Half-Life | too short | |
| | | 439.47 | | 5.414E-04 | 2.724E-01 | Half-Life | too short | |
| | | 484.57 | | -3.079E-05 | 2.724E-01 | Half-Life | too short | |
| | | 520.65 | * | 1.787E-05 | 2.724E-01 | Half-Life | too short | |
| | | 574.64 | | -2.395E-04 | 2.724E-01 | Half-Life | too short | |
| | | 578.91 | | 9.308E-05 | 2.724E-01 | Half-Life | too short | |
| | | 585.48 | | 5.852E-03 | 2.724E-01 | Half-Life | too short | |
| | | 755.35 | | 5.792E-04 | 2.724E-01 | Half-Life | too short | |
| | | 817.79 | | 3.185E-04 | 2.724E-01 | Half-Life | too short | |
| SR-82 | | 698.33 | | -7.353E+00 | 4.404E+01 | 6.987E+01 | 6.305E+00 | -0.105 |
| | | 776.49 | * | -1.850E-01 | 5.280E-01 | 6.956E-01 | 6.449E-02 | -0.266 |
| | | 1395.20 | | 8.963E+00 | 1.223E+01 | 2.194E+01 | 1.866E+00 | 0.409 |
| RB-83 | | 520.41 | * | 1.882E-02 | 7.370E-02 | 1.239E-01 | 1.177E-02 | 0.152 |
| | | 529.64 | | -1.112E-01 | 1.188E-01 | 1.796E-01 | 1.704E-02 | -0.619 |
| | | 552.65 | | -2.256E-02 | 2.161E-01 | 3.512E-01 | 3.316E-02 | -0.064 |
| RB-84 | | 881.50 | * | 1.540E-02 | 7.533E-02 | 1.286E-01 | 1.215E-02 | 0.120 |
| KR-85 | | 513.99 | * | 8.784E+00 | 8.209E+00 | 1.309E+01 | 1.244E+00 | 0.671 |
| SR-85 | | 513.99 | * | 4.744E-02 | 4.433E-02 | 7.068E-02 | 6.721E-03 | 0.671 |
| RB-86 | | 1076.63 | * | -1.577E-01 | 9.674E-01 | 1.563E+00 | 1.365E-01 | -0.101 |
| Y-88 | | 898.02 | | 2.564E-02 | 4.439E-02 | 7.804E-02 | 7.412E-03 | 0.329 |
| | | 1836.01 | * | 2.702E-02 | 3.713E-02 | 6.958E-02 | 5.649E-03 | 0.388 |
| ZR-88 | | 392.90 | * | -1.100E-02 | 3.068E-02 | 5.019E-02 | 4.642E-03 | -0.219 |
| Y-91 | | 1204.90 | * | 5.609E+00 | 2.029E+01 | 3.401E+01 | 2.766E+00 | 0.165 |
| NB-94 | | 702.63 | * | -1.800E-02 | 3.801E-02 | 5.854E-02 | 5.292E-03 | -0.308 |
| | | 871.10 | | -1.362E-02 | 3.290E-02 | 5.260E-02 | 4.964E-03 | -0.259 |
| NB-95 | | 765.79 | * | 4.169E-02 | 5.004E-02 | 7.751E-02 | 7.165E-03 | 0.538 |
| NB-95M | | 235.69 | * | 2.205E-02 | 1.414E-01 | 2.058E-01 | 2.447E-02 | 0.107 |
| ZR-95 | | 724.18 | | -9.385E-03 | 1.164E-01 | 1.612E-01 | 1.584E-02 | -0.058 |
| | | 756.15 | * | 9.519E-02 | 8.261E-02 | 1.455E-01 | 1.461E-02 | 0.654 |
| NB-97 | | 657.90 | * | -7.259E+00 | 8.261E-02 | Half-Life | too short | |
| | | 1024.50 | | -1.340E+02 | 8.261E-02 | Half-Life | too short | |
| ZR-97 | | 254.15 | | -1.919E+02 | 8.261E-02 | Half-Life | too short | |
| | | 355.39 | | -2.674E+02 | 8.261E-02 | Half-Life | too short | |
| | | 507.63 | * | 3.723E+01 | 8.261E-02 | Half-Life | too short | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 602.52 | | | -2.402E+02 | 8.261E-02 | Half-Life | too short | |
| | 1021.30 | | | 3.073E+01 | 8.261E-02 | Half-Life | too short | |
| | 1147.95 | | | 3.677E+02 | 8.261E-02 | Half-Life | too short | |
| | 1362.66 | | | -2.922E+02 | 8.261E-02 | Half-Life | too short | |
| | 1750.46 | | | 2.485E+02 | 8.261E-02 | Half-Life | too short | |
| MO-99 | 140.51 | | | -1.574E+01 | 9.081E+01 | 1.479E+02 | 4.090E+01 | -0.106 |
| | 181.06 | | | -1.197E+01 | 6.640E+01 | 9.621E+01 | 1.798E+01 | -0.124 |
| | 366.43 | | | -2.178E+02 | 2.934E+02 | 4.690E+02 | 4.744E+01 | -0.464 |
| | 739.58 | * | | 3.726E+01 | 4.369E+01 | 7.516E+01 | 1.165E+01 | 0.496 |
| | 778.00 | | | -3.233E+01 | 1.288E+02 | 1.829E+02 | 1.697E+01 | -0.177 |
| TC-99M | 140.51 | * | | -5.681E+15 | 1.288E+02 | Half-Life | too short | |
| RH-101 | 127.23 | | | 1.863E-02 | 3.338E-02 | 5.170E-02 | 4.305E-03 | 0.360 |
| | 198.01 | * | | -2.515E-05 | 3.452E-02 | 5.634E-02 | 5.562E-03 | 0.000 |
| | 325.23 | | | -4.960E-02 | 2.802E-01 | 3.870E-01 | 4.345E-02 | -0.128 |
| RH-102 | 418.52 | | | -5.440E-02 | 2.857E-01 | 4.712E-01 | 4.413E-02 | -0.115 |
| | 475.06 | * | | -3.602E-03 | 2.943E-02 | 4.831E-02 | 4.592E-03 | -0.075 |
| | 631.29 | | | 6.606E-02 | 5.523E-02 | 9.890E-02 | 8.988E-03 | 0.668 |
| | 697.49 | | | 6.806E-02 | 8.877E-02 | 1.517E-01 | 1.368E-02 | 0.449 |
| | 766.84 | + | | 2.704E-01 | 1.425E-01 | 2.101E-01 | 1.943E-02 | 1.287 |
| | 1046.59 | | | 1.118E-02 | 1.095E-01 | 1.826E-01 | 1.627E-02 | 0.061 |
| | 1112.84 | | | 9.148E-02 | 2.462E-01 | 3.851E-01 | 3.274E-02 | 0.238 |
| RU-103 | 497.08 | * | | -7.276E-03 | 4.552E-02 | 7.423E-02 | 1.093E-02 | -0.098 |
| | 610.33 | + | | 1.642E+01 | 3.462E+00 | 3.792E+00 | 6.446E-01 | 4.330 |
| RH-106 | 511.85 | + | | 6.817E-01 | 3.572E-01 | 4.719E-01 | 4.487E-02 | 1.445 |
| | 621.84 | * | | -1.327E-01 | 3.299E-01 | 5.149E-01 | 7.055E-02 | -0.258 |
| | 1050.47 | | | -2.757E-01 | 2.124E+00 | 3.445E+00 | 3.062E-01 | -0.080 |
| RU-106 | 511.85 | + | | 6.817E-01 | 3.572E-01 | 4.719E-01 | 4.487E-02 | 1.445 |
| | 621.84 | * | | -1.327E-01 | 3.296E-01 | 5.149E-01 | 4.708E-02 | -0.258 |
| | 1050.47 | | | -2.757E-01 | 2.124E+00 | 3.445E+00 | 3.062E-01 | -0.080 |
| AG-108M | 433.93 | * | | -2.624E-02 | 3.132E-02 | 4.860E-02 | 4.731E-03 | -0.540 |
| | 614.37 | | | -1.830E-02 | 4.406E-02 | 5.929E-02 | 5.636E-03 | -0.309 |
| | 722.95 | | | -1.764E-03 | 5.131E-02 | 7.156E-02 | 6.750E-03 | -0.025 |
| AG-110M | 657.75 | * | | -1.881E-02 | 3.757E-02 | 5.788E-02 | 5.297E-03 | -0.325 |
| | 677.61 | | | 1.806E-01 | 3.224E-01 | 5.474E-01 | 5.023E-02 | 0.330 |
| | 706.67 | | | 9.925E-02 | 2.419E-01 | 4.026E-01 | 3.736E-02 | 0.247 |
| | 763.93 | | | 1.058E-01 | 1.790E-01 | 2.708E-01 | 2.564E-02 | 0.391 |
| | 884.67 | | | -3.544E-02 | 4.879E-02 | 7.493E-02 | 7.271E-03 | -0.473 |
| | 937.48 | | | -1.277E-01 | 1.236E-01 | 1.837E-01 | 1.772E-02 | -0.695 |
| | 1384.27 | | | 7.665E-02 | 1.765E-01 | 2.792E-01 | 2.441E-02 | 0.274 |
| IN-111 | 171.28 | | | -2.974E+00 | 3.527E+00 | 5.554E+00 | 5.106E-01 | -0.535 |
| | 245.39 | * | | 1.280E+00 | 3.806E+00 | 5.613E+00 | 6.251E-01 | 0.228 |
| IN-113M | 391.69 | * | | 1.117E-02 | 4.340E-02 | 7.416E-02 | 7.040E-03 | 0.151 |
| SN-113 | 391.69 | * | | 1.117E-02 | 4.340E-02 | 7.416E-02 | 7.040E-03 | 0.151 |
| IN-114M | 190.27 | * | | 1.110E-01 | 2.088E-01 | 3.161E-01 | 3.057E-02 | 0.351 |
| CD-115 | 260.90 | | | -2.779E-04 | 2.088E-01 | Half-Life | too short | |
| | 492.35 | | | -2.538E-05 | 2.088E-01 | Half-Life | too short | |
| | 527.90 | * | | 7.164E-06 | 2.088E-01 | Half-Life | too short | |
| SN-117M | 156.02 | | | -1.474E+00 | 2.893E+00 | 4.668E+00 | 4.117E-01 | -0.316 |
| | 158.56 | * | | -7.254E-03 | 7.020E-02 | 1.155E-01 | 1.025E-02 | -0.063 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SB-122 | 563.90 | * | | 5.813E+00 | 7.877E+00 | 1.339E+01 | 1.260E+00 | 0.434 |
| | 692.80 | | | -1.032E+02 | 1.788E+02 | 2.730E+02 | 2.458E+01 | -0.378 |
| I-123 | 159.00 | * | | 5.067E+02 | 1.788E+02 | Half-Life | too short | |
| | 528.96 | | | -1.116E+05 | 1.788E+02 | Half-Life | too short | |
| TE-123M | 159.00 | * | | 4.889E-03 | 2.912E-02 | 4.850E-02 | 4.337E-03 | 0.101 |
| I-124 | 602.71 | * | | -7.050E-01 | 1.873E+00 | 2.718E+00 | 2.513E-01 | -0.259 |
| | 722.78 | | | 3.799E+00 | 1.167E+01 | 1.705E+01 | 1.554E+00 | 0.223 |
| | 1325.50 | | | -2.198E+01 | 8.407E+01 | 1.309E+02 | 1.102E+01 | -0.168 |
| | 1376.25 | | | 1.072E+02 | 9.946E+01 | 1.612E+02 | 1.368E+01 | 0.665 |
| + | 1509.49 | | | 6.878E+01 | 4.448E+01 | 7.510E+01 | 6.422E+00 | 0.916 |
| | 1691.02 | | | -2.814E+00 | 8.302E+00 | 1.273E+01 | 1.071E+00 | -0.221 |
| SB-124 | 602.71 | | | -1.910E-02 | 5.074E-02 | 7.362E-02 | 6.810E-03 | -0.259 |
| | 645.85 | | | 1.380E-01 | 5.562E-01 | 9.216E-01 | 8.744E-02 | 0.150 |
| | 709.31 | | | -3.583E-01 | 3.357E+00 | 5.348E+00 | 4.848E-01 | -0.067 |
| | 713.82 | | | 1.615E-01 | 1.860E+00 | 3.015E+00 | 3.730E-01 | 0.054 |
| | 722.78 | | | 1.492E-01 | 4.584E-01 | 6.696E-01 | 6.220E-02 | 0.223 |
| + | 968.20 | | | 2.112E+01 | 4.769E+00 | 8.655E+00 | 8.017E-01 | 2.440 |
| | 1045.16 | | | 8.176E-01 | 2.451E+00 | 4.196E+00 | 3.742E-01 | 0.195 |
| | 1325.50 | | | -9.220E-01 | 3.526E+00 | 5.491E+00 | 4.624E-01 | -0.168 |
| | 1368.21 | | | -8.896E-01 | 1.981E+00 | 2.964E+00 | 3.968E-01 | -0.300 |
| | 1436.60 | | | 2.226E+00 | 4.334E+00 | 7.752E+00 | 6.616E-01 | 0.287 |
| | 1691.02 | * | | -2.607E-02 | 7.691E-02 | 1.180E-01 | 1.033E-02 | -0.221 |
| SB-125 | 427.89 | * | | -9.309E-02 | 9.657E-02 | 1.494E-01 | 1.428E-02 | -0.623 |
| + | 463.38 | | | 7.366E-01 | 3.992E-01 | 5.746E-01 | 5.807E-02 | 1.282 |
| | 600.56 | | | 4.192E-02 | 1.996E-01 | 3.304E-01 | 3.256E-02 | 0.127 |
| | 635.90 | | | -3.124E-01 | 2.713E-01 | 3.845E-01 | 3.739E-02 | -0.812 |
| TE-125M | 109.28 | * | | 2.723E+00 | 9.195E+00 | 1.567E+01 | 1.598E+00 | 0.174 |
| I-126 | 388.63 | | | 1.389E-01 | 2.683E-01 | 4.653E-01 | 4.354E-02 | 0.299 |
| | 666.33 | * | | -5.491E-03 | 2.641E-01 | 4.260E-01 | 3.789E-02 | -0.013 |
| | 753.82 | | | 1.349E+00 | 2.157E+00 | 3.648E+00 | 3.359E-01 | 0.370 |
| SB-126 | 223.80 | | | -3.441E+00 | 5.562E+00 | 8.688E+00 | 9.176E-01 | -0.396 |
| | 278.60 | | | 3.673E+00 | 3.559E+00 | 5.987E+00 | 7.181E-01 | 0.614 |
| + | 296.50 | | | 2.288E+01 | 3.827E+00 | 5.262E+00 | 6.196E-01 | 4.348 |
| | 414.70 | | | 5.875E-03 | 1.063E-01 | 1.658E-01 | 1.550E-02 | 0.035 |
| | 415.30 | | | -2.504E-01 | 8.290E+00 | 1.338E+01 | 1.252E+00 | -0.019 |
| | 555.20 | | | -1.570E-01 | 5.434E+00 | 8.884E+00 | 8.380E-01 | -0.018 |
| | 573.80 | | | -7.703E-01 | 1.450E+00 | 2.260E+00 | 2.119E-01 | -0.341 |
| | 593.00 | | | -4.801E-02 | 1.281E+00 | 2.082E+00 | 1.935E-01 | -0.023 |
| | 656.30 | | | 5.170E-01 | 4.401E+00 | 7.203E+00 | 6.421E-01 | 0.072 |
| | 666.33 | | | -2.321E-03 | 1.116E-01 | 1.801E-01 | 1.602E-02 | -0.013 |
| | 675.00 | | | -8.610E-01 | 2.822E+00 | 4.424E+00 | 3.951E-01 | -0.195 |
| | 695.00 | | | 1.270E-01 | 1.184E-01 | 2.066E-01 | 1.862E-02 | 0.615 |
| | 697.00 | | | 3.100E-01 | 4.055E-01 | 6.931E-01 | 6.250E-02 | 0.447 |
| | 720.50 | * | | 1.541E-01 | 2.011E-01 | 3.453E-01 | 3.144E-02 | 0.446 |
| | 856.80 | | | 4.096E-01 | 5.915E-01 | 9.540E-01 | 8.989E-02 | 0.429 |
| + | 989.30 | | | 1.797E+00 | 2.118E+00 | 3.240E+00 | 2.975E-01 | 0.555 |
| | 1034.80 | | | 3.969E+00 | 1.073E+01 | 1.847E+01 | 1.657E+00 | 0.215 |
| | 1213.00 | | | -4.663E+00 | 6.197E+00 | 9.230E+00 | 7.526E-01 | -0.505 |
| SB-127 | 61.10 | | | -3.704E+01 | 1.471E+02 | 2.072E+02 | 2.459E+01 | -0.179 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 252.40 | | 1.352E+01 | 1.232E+01 | 1.875E+01 | 8.084E+00 | 0.721 |
| | | 290.80 | | -1.790E+01 | 6.071E+01 | 8.364E+01 | 1.266E+01 | -0.214 |
| | | 411.60 | | 2.385E+01 | 3.425E+01 | 5.335E+01 | 9.215E+00 | 0.447 |
| | | 444.90 | | -1.631E+01 | 2.336E+01 | 3.656E+01 | 5.301E+00 | -0.446 |
| | | 473.00 | | -6.534E-01 | 4.190E+00 | 6.863E+00 | 1.017E+00 | -0.095 |
| | | 543.00 | | 1.175E+01 | 4.000E+01 | 6.726E+01 | 1.086E+01 | 0.175 |
| | | 603.60 | | 4.243E+00 | 3.697E+01 | 5.332E+01 | 7.648E+00 | 0.080 |
| | | 685.20 | * | 2.868E+00 | 3.576E+00 | 6.155E+00 | 8.117E-01 | 0.466 |
| | | 698.50 | | -3.162E+01 | 4.332E+01 | 6.478E+01 | 1.114E+01 | -0.488 |
| | | 722.20 | | 4.498E+01 | 8.502E+01 | 1.272E+02 | 1.665E+01 | 0.354 |
| | | 783.80 | | 7.080E+00 | 1.020E+01 | 1.722E+01 | 2.461E+00 | 0.411 |
| XE-127 | | 57.60 | | 1.426E-01 | 6.887E+00 | 1.077E+01 | 7.787E-01 | 0.013 |
| | | 145.22 | | 2.878E-01 | 7.706E-01 | 1.299E+00 | 1.116E-01 | 0.221 |
| | | 172.10 | | -5.209E-02 | 1.334E-01 | 2.153E-01 | 1.983E-02 | -0.242 |
| | | 202.84 | * | -4.847E-02 | 5.138E-02 | 7.915E-02 | 7.916E-03 | -0.612 |
| | | 374.96 | | -7.503E-02 | 2.095E-01 | 3.441E-01 | 3.384E-02 | -0.218 |
| I-131 | | 80.18 | | -6.597E-01 | 6.952E+00 | 1.065E+01 | 9.453E-01 | -0.062 |
| | | 284.30 | | -1.287E+00 | 2.511E+00 | 3.866E+00 | 4.758E-01 | -0.333 |
| | | 364.48 | * | -1.686E-02 | 1.796E-01 | 3.011E-01 | 3.195E-02 | -0.056 |
| | | 636.97 | | -7.603E-01 | 2.337E+00 | 3.665E+00 | 3.499E-01 | -0.207 |
| | | 722.89 | | 3.808E+00 | 1.267E+01 | 1.845E+01 | 1.698E+00 | 0.206 |
| TE-132 | | 49.72 | | 4.412E+00 | 5.644E+01 | 8.912E+01 | 1.062E+01 | 0.050 |
| | | 111.76 | | 2.444E+01 | 8.059E+01 | 1.372E+02 | 1.664E+01 | 0.178 |
| | | 116.30 | | 6.459E+01 | 7.582E+01 | 1.313E+02 | 1.586E+01 | 0.492 |
| | | 228.16 | * | 1.647E+00 | 2.092E+00 | 3.494E+00 | 6.247E-01 | 0.471 |
| BA-133 | | 53.15 | | 6.898E-01 | 3.722E+00 | 5.892E+00 | 4.515E-01 | 0.117 |
| | | 79.62 | | -1.445E+00 | 1.319E+00 | 1.891E+00 | 2.891E-01 | -0.764 |
| | | 81.00 | | -5.150E-02 | 9.951E-02 | 1.487E-01 | 2.381E-02 | -0.346 |
| | | 276.40 | | 2.691E-01 | 4.171E-01 | 6.583E-01 | 1.096E-01 | 0.409 |
| | | 302.84 | | 3.633E-02 | 1.592E-01 | 2.295E-01 | 3.544E-02 | 0.158 |
| | | 356.01 | * | -1.698E-02 | 4.802E-02 | 6.926E-02 | 1.001E-02 | -0.245 |
| | | 383.85 | | -2.186E-01 | 3.001E-01 | 4.774E-01 | 6.321E-02 | -0.458 |
| I-133 | + | 510.53 | | 7.187E+01 | 3.001E-01 | Half-Life | too short | |
| | | 529.87 | * | -3.284E-01 | 3.001E-01 | Half-Life | too short | |
| | | 706.58 | | 1.064E+01 | 3.001E-01 | Half-Life | too short | |
| | | 856.28 | | 1.637E+01 | 3.001E-01 | Half-Life | too short | |
| | | 875.33 | | -2.656E+00 | 3.001E-01 | Half-Life | too short | |
| | | 1236.41 | | 4.141E+01 | 3.001E-01 | Half-Life | too short | |
| | | 1298.22 | | -2.701E-01 | 3.001E-01 | Half-Life | too short | |
| CS-134 | | 475.35 | | -7.732E-01 | 1.920E+00 | 3.078E+00 | 2.926E-01 | -0.251 |
| | | 563.23 | | 1.370E-01 | 3.821E-01 | 6.322E-01 | 5.996E-02 | 0.217 |
| | | 569.32 | | 9.485E-02 | 2.201E-01 | 3.718E-01 | 3.531E-02 | 0.255 |
| | | 604.70 | | 1.575E-02 | 4.273E-02 | 6.326E-02 | 5.857E-03 | 0.249 |
| | + | 795.84 | * | 1.210E-01 | 8.072E-02 | 1.053E-01 | 9.874E-03 | 1.149 |
| | | 801.93 | | -2.629E-01 | 4.470E-01 | 6.937E-01 | 6.504E-02 | -0.379 |
| | | 1038.57 | | -2.648E+00 | 3.610E+00 | 5.397E+00 | 4.832E-01 | -0.491 |
| | | 1167.94 | | -1.976E+00 | 2.395E+00 | 3.512E+00 | 2.839E-01 | -0.563 |
| | | 1365.15 | | 2.812E-01 | 1.236E+00 | 2.063E+00 | 1.831E-01 | 0.136 |
| CS-135 | | 268.24 | * | -3.459E-03 | 1.810E-01 | 2.576E-01 | 3.285E-02 | -0.013 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| I-135 | | 288.45 | | -6.496E+15 | 1.810E-01 | Half-Life | too short | |
| | | 417.63 | | -2.413E+15 | 1.810E-01 | Half-Life | too short | |
| | | 546.56 | | -2.548E+15 | 1.810E-01 | Half-Life | too short | |
| | | 836.80 | | 3.432E+15 | 1.810E-01 | Half-Life | too short | |
| | | 1038.76 | | -2.583E+15 | 1.810E-01 | Half-Life | too short | |
| | | 1124.00 | | 1.525E+16 | 1.810E-01 | Half-Life | too short | |
| | | 1131.51 | | 4.010E+14 | 1.810E-01 | Half-Life | too short | |
| | | 1260.41 | * | 4.094E+14 | 1.810E-01 | Half-Life | too short | |
| | | 1457.56 | | 3.862E+16 | 1.810E-01 | Half-Life | too short | |
| | | 1678.03 | | -7.603E+14 | 1.810E-01 | Half-Life | too short | |
| | | 1706.46 | | 3.520E+15 | 1.810E-01 | Half-Life | too short | |
| | | 1791.20 | | 4.158E+15 | 1.810E-01 | Half-Life | too short | |
| CS-136 | | 66.91 | | -1.354E-01 | 1.097E+00 | 1.552E+00 | 2.317E-01 | -0.087 |
| | + | 86.29 | | 6.203E+00 | 1.937E+00 | 2.681E+00 | 3.597E-01 | 2.314 |
| | | 153.22 | | 7.804E-01 | 8.614E-01 | 1.478E+00 | 1.442E-01 | 0.528 |
| | | 163.89 | | 5.028E-01 | 1.442E+00 | 2.339E+00 | 2.343E-01 | 0.215 |
| | | 176.55 | | 5.509E-02 | 4.801E-01 | 7.932E-01 | 7.765E-02 | 0.069 |
| | | 273.65 | | 5.766E-01 | 6.335E-01 | 9.659E-01 | 1.187E-01 | 0.597 |
| | | 340.57 | | 1.403E-01 | 1.887E-01 | 2.973E-01 | 3.289E-02 | 0.472 |
| | | 818.51 | | 5.581E-02 | 9.320E-02 | 1.654E-01 | 1.551E-02 | 0.337 |
| | | 1048.07 | * | -8.208E-02 | 1.349E-01 | 2.059E-01 | 1.907E-02 | -0.399 |
| | | 1235.34 | | -4.253E-01 | 8.407E-01 | 1.300E+00 | 1.503E-01 | -0.327 |
| BA-137M | | 661.65 | * | 9.319E-03 | 3.841E-02 | 6.344E-02 | 5.630E-03 | 0.147 |
| CS-137 | | 661.65 | * | 9.851E-03 | 4.061E-02 | 6.706E-02 | 5.962E-03 | 0.147 |
| CE-139 | | 165.85 | * | -3.017E-02 | 3.113E-02 | 4.874E-02 | 4.421E-03 | -0.619 |
| BA-140 | | 162.64 | | -4.524E-01 | 1.031E+00 | 1.613E+00 | 1.527E-01 | -0.281 |
| | | 304.84 | | -5.497E-01 | 1.984E+00 | 2.707E+00 | 7.875E-01 | -0.203 |
| LA-140 | | 423.70 | | 7.568E-01 | 2.595E+00 | 4.402E+00 | 1.436E+00 | 0.172 |
| | | 537.32 | * | -4.190E-01 | 3.751E-01 | 5.111E-01 | 1.706E-01 | -0.820 |
| | + | 328.77 | | 5.250E-01 | 5.777E-01 | 7.294E-01 | 8.406E-02 | 0.720 |
| | | 432.53 | | 2.959E+00 | 2.625E+00 | 4.709E+00 | 4.615E-01 | 0.628 |
| | | 487.03 | | 9.009E-02 | 1.780E-01 | 3.060E-01 | 3.059E-02 | 0.294 |
| | | 751.79 | | -1.749E+00 | 2.524E+00 | 3.751E+00 | 3.778E-01 | -0.466 |
| | | 815.85 | | 7.054E-02 | 4.117E-01 | 7.036E-01 | 7.234E-02 | 0.100 |
| | | 867.82 | | 1.276E+00 | 1.755E+00 | 3.083E+00 | 3.038E-01 | 0.414 |
| | | 919.63 | | 6.208E-02 | 4.045E+00 | 6.575E+00 | 7.427E-01 | 0.009 |
| | | 925.24 | | -1.395E+00 | 1.635E+00 | 2.485E+00 | 2.459E-01 | -0.561 |
| CE-141 | | 1596.49 | * | -4.230E-02 | 1.158E-01 | 1.813E-01 | 1.544E-02 | -0.233 |
| | | 145.44 | * | 9.576E-03 | 6.994E-02 | 1.168E-01 | 1.022E-02 | 0.082 |
| CE-143 | | 57.37 | | -4.572E-03 | 6.994E-02 | Half-Life | too short | |
| | | 231.56 | | -3.249E-02 | 6.994E-02 | Half-Life | too short | |
| | | 293.26 | * | 6.970E-03 | 6.994E-02 | Half-Life | too short | |
| | + | 350.59 | | 4.630E-01 | 6.994E-02 | Half-Life | too short | |
| | | 490.36 | | -9.667E-03 | 6.994E-02 | Half-Life | too short | |
| | | 664.57 | | -4.623E-03 | 6.994E-02 | Half-Life | too short | |
| | | 721.93 | | 8.026E-03 | 6.994E-02 | Half-Life | too short | |
| CE-144 | | 80.11 | | -3.530E-01 | 2.109E+00 | 3.218E+00 | 2.825E-01 | -0.110 |
| | | 133.54 | * | 1.101E-01 | 2.244E-01 | 3.445E-01 | 5.320E-02 | 0.319 |
| PM-144 | | 476.78 | | -3.417E-02 | 6.946E-02 | 1.105E-01 | 1.132E-02 | -0.309 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| | | 618.01 | | 9.589E-03 | 3.238E-02 | 5.406E-02 | 5.078E-03 | 0.177 |
| | | 696.49 | * | 4.349E-02 | 4.045E-02 | 7.053E-02 | 6.363E-03 | 0.617 |
| | | 778.57 | | 2.366E-01 | 2.432E+00 | 3.786E+00 | 3.514E-01 | 0.063 |
| PR-144 | | 696.49 | * | 2.955E+00 | 2.748E+00 | 4.792E+00 | 4.321E-01 | 0.617 |
| | | 1489.15 | | 4.259E+00 | 1.073E+01 | 1.917E+01 | 1.639E+00 | 0.222 |
| PM-146 | | 453.90 | * | 1.164E-02 | 4.618E-02 | 7.812E-02 | 8.921E-03 | 0.149 |
| | | 633.02 | | -4.064E-02 | 1.387E+00 | 2.244E+00 | 8.411E-01 | -0.018 |
| | | 735.90 | | -9.825E-02 | 1.718E-01 | 2.565E-01 | 7.379E-02 | -0.383 |
| | | 747.13 | | -2.151E-02 | 9.557E-02 | 1.494E-01 | 2.150E-02 | -0.144 |
| ND-147 | + | 91.11 | | 9.337E-01 | 4.067E-01 | 6.822E-01 | 6.820E-02 | 1.369 |
| | | 319.41 | | -1.328E+00 | 4.816E+00 | 7.468E+00 | 8.481E-01 | -0.178 |
| | | 439.89 | | 6.949E+00 | 7.787E+00 | 1.378E+01 | 1.301E+00 | 0.504 |
| | | 531.02 | * | -1.158E-01 | 8.471E-01 | 1.378E+00 | 2.131E-01 | -0.084 |
| PM-149 | | 285.90 | * | 3.519E-04 | 8.471E-01 | Half-Life too short | | |
| EU-152 | | 121.78 | | -4.789E-02 | 7.277E-02 | 1.181E-01 | 1.140E-02 | -0.405 |
| | | 244.69 | | 6.715E-02 | 3.525E-01 | 5.140E-01 | 5.714E-02 | 0.131 |
| | | 344.27 | * | 2.859E-02 | 1.014E-01 | 1.629E-01 | 1.821E-02 | 0.175 |
| | | 443.98 | | -5.508E-01 | 9.488E-01 | 1.507E+00 | 1.424E-01 | -0.366 |
| | | 778.89 | | -1.472E-02 | 2.743E-01 | 4.193E-01 | 3.891E-02 | -0.035 |
| | | 867.32 | | 4.346E-01 | 8.479E-01 | 1.420E+00 | 1.340E-01 | 0.306 |
| | + | 964.01 | | 5.213E-01 | 3.740E-01 | 5.904E-01 | 5.477E-02 | 0.883 |
| | | 1085.78 | | 8.221E-04 | 4.149E-01 | 6.822E-01 | 5.922E-02 | 0.001 |
| | | 1112.02 | | -8.962E-02 | 3.299E-01 | 5.096E-01 | 4.335E-02 | -0.176 |
| | | 1407.95 | | 1.832E-01 | 2.282E-01 | 4.023E-01 | 3.426E-02 | 0.455 |
| GD-153 | | 69.67 | | -1.781E+00 | 1.554E+00 | 2.548E+00 | 2.008E-01 | -0.699 |
| | | 83.37 | | 3.738E+00 | 1.571E+01 | 2.430E+01 | 2.215E+00 | 0.154 |
| | | 97.43 | * | -1.462E-01 | 9.124E-02 | 1.245E-01 | 1.106E-02 | -1.174 |
| | | 103.18 | | -5.704E-02 | 1.022E-01 | 1.682E-01 | 1.450E-02 | -0.339 |
| EU-154 | | 123.07 | | -8.931E-03 | 5.026E-02 | 8.346E-02 | 9.287E-03 | -0.107 |
| | | 247.94 | | 7.482E-02 | 3.559E-01 | 5.803E-01 | 7.849E-02 | 0.129 |
| | | 591.81 | | -2.529E-02 | 6.331E-01 | 1.029E+00 | 1.253E-01 | -0.025 |
| | | 723.30 | | -2.038E-02 | 2.166E-01 | 2.998E-01 | 2.991E-02 | -0.068 |
| | | 756.87 | | 4.601E-01 | 8.421E-01 | 1.415E+00 | 1.757E-01 | 0.325 |
| | | 873.19 | | -2.773E-01 | 2.788E-01 | 4.095E-01 | 5.255E-02 | -0.677 |
| | | 996.32 | | -5.420E-02 | 3.373E-01 | 5.477E-01 | 9.875E-02 | -0.099 |
| | | 1004.76 | | 5.251E-03 | 2.054E-01 | 3.408E-01 | 4.093E-02 | 0.015 |
| | | 1274.45 | * | -3.680E-02 | 1.343E-01 | 2.126E-01 | 2.355E-02 | -0.173 |
| EU-155 | | 48.70 | | -6.176E-01 | 2.510E+00 | 3.894E+00 | 3.199E-01 | -0.159 |
| | | 60.01 | | 7.901E-01 | 5.387E+00 | 7.794E+00 | 5.567E-01 | 0.101 |
| | + | 86.54 | | 4.420E-01 | 1.316E-01 | 1.951E-01 | 1.863E-02 | 2.265 |
| | | 105.31 | * | 1.431E-02 | 1.038E-01 | 1.760E-01 | 1.523E-02 | 0.081 |
| TB-160 | + | 86.79 | | 1.236E+00 | 3.675E-01 | 5.549E-01 | 5.270E-02 | 2.227 |
| | | 197.04 | | 1.439E-01 | 6.195E-01 | 1.022E+00 | 1.007E-01 | 0.141 |
| | | 215.65 | | 2.326E-01 | 8.348E-01 | 1.374E+00 | 1.421E-01 | 0.169 |
| | + | 298.57 | | 4.463E-01 | 1.870E-01 | 2.298E-01 | 2.698E-02 | 1.942 |
| | | 879.36 | * | 1.063E-01 | 1.427E-01 | 2.557E-01 | 2.416E-02 | 0.416 |
| | | 962.29 | | -1.106E-01 | 6.043E-01 | 8.689E-01 | 8.066E-02 | -0.127 |
| | + | 966.15 | | 3.751E-01 | 2.691E-01 | 5.000E-01 | 4.635E-02 | 0.750 |
| | | 1177.93 | | 1.506E-01 | 3.851E-01 | 6.543E-01 | 5.270E-02 | 0.230 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| HO-166M | 1271.85 | | | 4.534E-01 | 8.252E-01 | 1.418E+00 | 1.178E-01 | 0.320 |
| | 80.57 | | | 1.830E-01 | 2.614E-01 | 4.152E-01 | 3.664E-02 | 0.441 |
| | 184.41 | | | 3.351E-02 | 4.175E-02 | 6.618E-02 | 6.300E-03 | 0.506 |
| | 280.46 | | | -6.847E-02 | 9.585E-02 | 1.459E-01 | 1.750E-02 | -0.469 |
| | 410.95 | | + | 4.460E-01 | 3.499E-01 | 4.615E-01 | 4.308E-02 | 0.966 |
| | 711.68 | | * | 3.566E-02 | 6.628E-02 | 1.117E-01 | 1.013E-02 | 0.319 |
| TM-171 | 752.31 | | | -8.621E-02 | 3.085E-01 | 4.802E-01 | 4.421E-02 | -0.180 |
| | 810.29 | | | -5.533E-02 | 5.731E-02 | 8.662E-02 | 8.098E-03 | -0.639 |
| | 51.35 | | | -2.253E+01 | 3.223E+01 | 4.856E+01 | 3.827E+00 | -0.464 |
| | 52.39 | | | 1.364E+01 | 1.618E+01 | 2.648E+01 | 2.053E+00 | 0.515 |
| | 59.40 | | | 7.806E+00 | 2.964E+01 | 4.321E+01 | 3.068E+00 | 0.181 |
| | 66.72 | | * | -5.360E+00 | 3.092E+01 | 4.363E+01 | 3.343E+00 | -0.123 |
| LU-176 | 88.36 | | + | 8.688E-01 | 2.584E-01 | 3.689E-01 | 3.542E-02 | 2.355 |
| | 201.83 | | | -1.369E-02 | 2.804E-02 | 4.447E-02 | 4.435E-03 | -0.308 |
| | 306.84 | | * | 9.264E-03 | 2.652E-02 | 4.248E-02 | 4.927E-03 | 0.218 |
| | 401.10 | | | 3.905E+00 | 6.933E+00 | 1.203E+01 | 1.117E+00 | 0.325 |
| LU-177 | 112.95 | | | -2.511E+00 | 2.636E+00 | 4.236E+00 | 3.547E-01 | -0.593 |
| | 208.36 | | + | 6.021E+00 | 2.953E+00 | 3.715E+00 | 3.770E-01 | 1.621 |
| LU-177M | 52.97 | | | 3.466E-01 | 1.722E+00 | 2.729E+00 | 2.097E-01 | 0.127 |
| | 54.07 | | | 5.146E-01 | 8.909E-01 | 1.438E+00 | 1.087E-01 | 0.358 |
| | 61.30 | | | -4.499E-01 | 1.590E+00 | 2.235E+00 | 1.621E-01 | -0.201 |
| | 121.62 | | | -1.637E-01 | 3.785E-01 | 6.216E-01 | 5.159E-02 | -0.263 |
| | 147.16 | | | -1.887E-01 | 6.567E-01 | 1.075E+00 | 9.273E-02 | -0.175 |
| | 171.86 | | | -2.011E-01 | 4.997E-01 | 8.056E-01 | 7.418E-02 | -0.250 |
| | 218.09 | | | -3.295E-01 | 9.306E-01 | 1.482E+00 | 1.542E-01 | -0.222 |
| | 268.79 | | | 1.477E+00 | 9.497E-01 | 1.495E+00 | 1.756E-01 | 0.988 |
| | 319.02 | | | -6.663E-02 | 2.800E-01 | 4.354E-01 | 4.947E-02 | -0.153 |
| | 367.43 | | | -4.006E-01 | 9.227E-01 | 1.510E+00 | 1.523E-01 | -0.265 |
| HF-181 | 413.65 | | * | 3.544E-02 | 2.049E-01 | 3.070E-01 | 2.869E-02 | 0.115 |
| | 56.28 | | | -4.277E-01 | 1.038E+00 | 1.587E+00 | 1.165E-01 | -0.270 |
| | 57.53 | | | -2.647E-02 | 5.704E-01 | 8.891E-01 | 6.432E-02 | -0.030 |
| | 65.20 | | | -1.583E-01 | 1.116E+00 | 1.579E+00 | 1.193E-01 | -0.100 |
| | 133.02 | | | 5.809E-02 | 7.590E-02 | 1.185E-01 | 9.938E-03 | 0.490 |
| | 136.25 | | | -2.823E-01 | 4.738E-01 | 7.664E-01 | 6.461E-02 | -0.368 |
| W-181 | 345.85 | | | -1.218E-01 | 2.036E-01 | 3.310E-01 | 3.547E-02 | -0.368 |
| | 482.03 | | * | -2.576E-02 | 4.658E-02 | 7.359E-02 | 6.999E-03 | -0.350 |
| | 56.28 | | | -1.586E-01 | 3.857E-01 | 5.893E-01 | 4.326E-02 | -0.269 |
| | 57.53 | | | -1.026E-02 | 2.120E-01 | 3.304E-01 | 2.390E-02 | -0.031 |
| | 65.20 | | * | -5.837E-02 | 4.114E-01 | 5.823E-01 | 4.397E-02 | -0.100 |
| | 67.75 | | | 5.412E-02 | 1.225E-01 | 1.790E-01 | 1.385E-02 | 0.302 |
| TA-182 | 100.10 | | | 2.551E-01 | 1.821E-01 | 3.222E-01 | 2.818E-02 | 0.792 |
| | 152.43 | | | -6.681E-02 | 3.487E-01 | 5.725E-01 | 5.002E-02 | -0.117 |
| | 222.10 | | | 9.607E-03 | 3.708E-01 | 6.019E-01 | 6.330E-02 | 0.016 |
| | 1001.68 | | | -1.351E+00 | 2.124E+00 | 3.256E+00 | 2.973E-01 | -0.415 |
| | 1121.28 | | + | 8.289E-01 | 2.907E-01 | 4.248E-01 | 3.587E-02 | 1.951 |
| | 1189.05 | | | -8.120E-03 | 3.095E-01 | 5.035E-01 | 4.072E-02 | -0.016 |
| RE-183 | 1221.42 | | * | -1.929E-01 | 2.114E-01 | 3.096E-01 | 2.532E-02 | -0.623 |
| | 1230.97 | | | 1.458E-01 | 4.731E-01 | 7.944E-01 | 6.517E-02 | 0.183 |
| | 57.98 | | | 1.550E-01 | 2.136E-01 | 3.456E-01 | 2.488E-02 | 0.448 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| RE-184 | | 59.32 | | 7.096E-02 | 1.254E-01 | 1.860E-01 | 1.322E-02 | 0.381 |
| | | 67.20 | | 6.999E-02 | 2.235E-01 | 3.245E-01 | 2.498E-02 | 0.216 |
| | | 162.32 | * | 1.003E-02 | 1.157E-01 | 1.918E-01 | 1.722E-02 | 0.052 |
| | + | 208.81 | | 3.410E+00 | 1.673E+00 | 2.133E+00 | 2.167E-01 | 1.599 |
| | | 291.72 | | 3.115E-01 | 1.141E+00 | 1.653E+00 | 1.958E-01 | 0.188 |
| | | 57.98 | | 5.548E-01 | 7.647E-01 | 1.237E+00 | 8.909E-02 | 0.448 |
| | | 59.32 | | 2.539E-01 | 4.485E-01 | 6.656E-01 | 4.730E-02 | 0.381 |
| | | 67.20 | | 2.505E-01 | 8.001E-01 | 1.162E+00 | 8.940E-02 | 0.216 |
| | | 161.27 | | -1.369E-02 | 3.623E-01 | 5.972E-01 | 5.344E-02 | -0.023 |
| | | 216.55 | | 3.084E-02 | 2.889E-01 | 4.715E-01 | 4.889E-02 | 0.065 |
| | | 252.85 | * | 2.298E-01 | 2.469E-01 | 4.168E-01 | 4.724E-02 | 0.551 |
| | | 318.01 | | -2.588E-01 | 4.816E-01 | 7.308E-01 | 8.319E-02 | -0.354 |
| OS-185 | | 792.07 | | 1.554E-01 | 1.233E+00 | 1.839E+00 | 1.712E-01 | 0.085 |
| | | 903.28 | | -2.587E-01 | 1.143E+00 | 1.756E+00 | 1.659E-01 | -0.147 |
| | | 920.93 | | 1.391E-01 | 4.980E-01 | 8.513E-01 | 8.008E-02 | 0.163 |
| | | 59.72 | | 4.123E-02 | 3.367E-01 | 4.865E-01 | 3.462E-02 | 0.085 |
| | | 61.14 | | -4.595E-02 | 1.780E-01 | 2.507E-01 | 1.816E-02 | -0.183 |
| | | 69.30 | | -2.773E-01 | 2.852E-01 | 4.714E-01 | 3.701E-02 | -0.588 |
| | | 592.07 | | 4.963E-01 | 2.730E+00 | 4.523E+00 | 4.206E-01 | 0.110 |
| | | 646.12 | * | 1.498E-02 | 4.629E-02 | 7.722E-02 | 6.941E-03 | 0.194 |
| | | 717.42 | | -6.970E-01 | 9.818E-01 | 1.460E+00 | 1.328E-01 | -0.477 |
| | | 874.81 | | -2.781E-01 | 5.628E-01 | 8.887E-01 | 8.391E-02 | -0.313 |
| | | 880.27 | | 1.093E-01 | 8.101E-01 | 1.373E+00 | 1.297E-01 | 0.080 |
| | | 155.03 | * | 1.146E-01 | 1.804E-01 | 3.066E-01 | 2.697E-02 | 0.374 |
| RE-188 | | 477.96 | | -2.205E-02 | 3.171E+00 | 5.251E+00 | 4.993E-01 | -0.004 |
| | | 633.10 | | 2.377E-01 | 2.889E+00 | 4.726E+00 | 4.289E-01 | 0.050 |
| W-188 | + | 63.58 | | 9.518E+01 | 8.764E+01 | 9.471E+01 | 7.040E+00 | 1.005 |
| IR-192 | | 227.08 | | 3.340E+00 | 1.417E+01 | 2.322E+01 | 2.473E+00 | 0.144 |
| | * | 290.67 | | -2.919E+00 | 9.050E+00 | 1.244E+01 | 1.476E+00 | -0.235 |
| IR-192 | + | 295.96 | | 1.392E+00 | 2.333E-01 | 3.432E-01 | 4.059E-02 | 4.056 |
| | | 308.46 | | -2.373E-03 | 1.060E-01 | 1.680E-01 | 1.949E-02 | -0.014 |
| AU-195 | | 316.51 | * | 7.626E-03 | 3.704E-02 | 5.955E-02 | 6.805E-03 | 0.128 |
| | | 468.07 | | 1.486E-02 | 7.843E-02 | 1.222E-01 | 1.230E-02 | 0.122 |
| AU-195 | | 604.41 | | 2.551E-01 | 6.051E-01 | 8.997E-01 | 1.209E-01 | 0.284 |
| | | 612.46 | | 5.724E-01 | 8.521E-01 | 1.304E+00 | 1.357E-01 | 0.439 |
| AU-195 | | 65.12 | | -1.486E-02 | 1.892E-01 | 2.689E-01 | 2.029E-02 | -0.055 |
| | | 66.83 | | -1.672E-02 | 1.036E-01 | 1.463E-01 | 1.122E-02 | -0.114 |
| TL-200 | + | 75.70 | | 1.444E+00 | 2.653E-01 | 4.846E-01 | 4.055E-02 | 2.979 |
| | * | 98.88 | | 4.152E-01 | 2.448E-01 | 3.986E-01 | 3.510E-02 | 1.042 |
| TL-200 | + | 129.76 | | 9.246E+00 | 4.500E+00 | 5.354E+00 | 4.470E-01 | 1.727 |
| | | 367.94 | * | -7.902E-04 | 4.500E+00 | Half-Life | too short | |
| TL-200 | | 579.30 | | 4.852E-02 | 4.500E+00 | Half-Life | too short | |
| | | 828.27 | | 3.510E-03 | 4.500E+00 | Half-Life | too short | |
| TL-201 | | 1205.75 | | -1.998E-02 | 4.500E+00 | Half-Life | too short | |
| | | 68.90 | | -3.856E+00 | 1.332E+01 | 2.263E+01 | 1.770E+00 | -0.170 |
| TL-201 | | 70.82 | | 6.199E+00 | 8.482E+00 | 1.355E+01 | 1.079E+00 | 0.458 |
| | | 80.30 | | 4.351E-01 | 1.532E+01 | 2.360E+01 | 2.076E+00 | 0.018 |
| TL-201 | | 135.34 | | -2.366E+00 | 7.572E+01 | 1.260E+02 | 1.061E+01 | -0.019 |
| | * | 167.43 | | -7.582E+00 | 2.160E+01 | 3.497E+01 | 3.183E+00 | -0.217 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TL-202 | | 68.90 | | -1.488E-01 | 5.141E-01 | 8.733E-01 | 6.831E-02 | -0.170 |
| | | 70.82 | | 2.386E-01 | 3.265E-01 | 5.215E-01 | 4.154E-02 | 0.458 |
| | | 80.30 | | 1.675E-02 | 5.898E-01 | 9.086E-01 | 7.994E-02 | 0.018 |
| | | 439.56 | * | 6.481E-02 | 9.092E-02 | 1.590E-01 | 1.501E-02 | 0.408 |
| HG-203 | | 70.83 | | 8.584E-01 | 1.155E+00 | 1.840E+00 | 2.429E-01 | 0.467 |
| | | 72.87 | | 1.047E+00 | 6.725E-01 | 1.090E+00 | 1.405E-01 | 0.960 |
| | | 82.60 | | -5.935E-01 | 1.118E+00 | 1.845E+00 | 2.584E-01 | -0.322 |
| | | 279.20 | * | -4.133E-03 | 4.654E-02 | 7.393E-02 | 9.010E-03 | -0.056 |
| BI-207 | | 72.80 | | 2.939E-01 | 1.817E-01 | 2.985E-01 | 2.425E-02 | 0.984 |
| | + | 74.97 | | 7.862E-01 | 1.444E-01 | 2.417E-01 | 2.008E-02 | 3.252 |
| | | 84.90 | | 2.241E-01 | 1.952E-01 | 3.125E-01 | 2.900E-02 | 0.717 |
| | | 569.67 | | 1.338E-02 | 3.490E-02 | 5.870E-02 | 5.511E-03 | 0.228 |
| | | 1063.62 | * | -2.145E-02 | 4.755E-02 | 7.380E-02 | 6.506E-03 | -0.291 |
| | | 1770.23 | | 9.273E-02 | 3.815E-01 | 5.940E-01 | 4.909E-02 | 0.156 |
| TL-207 | | 81.07 | | -1.039E-01 | 2.192E-01 | 3.290E-01 | 2.920E-02 | -0.316 |
| | | 83.78 | | 5.327E-02 | 1.330E-01 | 2.071E-01 | 1.896E-02 | 0.257 |
| | | 94.90 | | 3.137E-01 | 2.400E-01 | 3.874E-01 | 3.502E-02 | 0.810 |
| | | 122.32 | | -8.661E-01 | 1.693E+00 | 2.766E+00 | 2.477E-01 | -0.313 |
| | | 144.24 | | 3.138E-01 | 7.055E-01 | 1.173E+00 | 1.125E-01 | 0.268 |
| | | 154.21 | | 4.105E-01 | 3.977E-01 | 6.852E-01 | 6.593E-02 | 0.599 |
| | + | 269.46 | | 6.822E-01 | 2.395E-01 | 3.763E-01 | 4.475E-02 | 1.813 |
| | | 323.87 | * | 1.924E-01 | 8.205E-01 | 1.175E+00 | 2.248E-01 | 0.164 |
| | + | 338.28 | | 7.853E+00 | 2.142E+00 | 2.828E+00 | 3.963E-01 | 2.777 |
| | | 445.03 | | -1.536E+00 | 2.232E+00 | 3.502E+00 | 4.446E-01 | -0.439 |
| PO-209 | | 260.50 | | 8.220E+00 | 9.688E+00 | 1.630E+01 | 1.880E+00 | 0.504 |
| | | 262.80 | | -1.571E+01 | 2.788E+01 | 4.302E+01 | 4.987E+00 | -0.365 |
| | | 896.60 | * | -1.916E+00 | 7.737E+00 | 1.260E+01 | 1.192E+00 | -0.152 |
| BI-210 | | 46.50 | * | -1.638E+00 | 3.711E+00 | 5.627E+00 | 5.248E-01 | -0.291 |
| PB-210 | | 46.50 | * | -1.638E+00 | 3.711E+00 | 5.627E+00 | 5.248E-01 | -0.291 |
| PO-210 | | 46.50 | * | -1.638E+00 | 3.711E+00 | 5.627E+00 | 4.753E-01 | -0.291 |
| PB-211 | | 404.84 | * | -2.163E-01 | 1.117E+00 | 1.608E+00 | 1.009E+00 | -0.135 |
| | | 427.08 | | -5.739E-01 | 2.096E+00 | 3.380E+00 | 2.104E+00 | -0.170 |
| | | 831.96 | | -9.907E-01 | 1.399E+00 | 1.950E+00 | 1.224E+00 | -0.508 |
| PO-215 | | 81.07 | | -1.039E-01 | 2.192E-01 | 3.290E-01 | 2.920E-02 | -0.316 |
| | | 83.78 | | 5.327E-02 | 1.330E-01 | 2.071E-01 | 1.896E-02 | 0.257 |
| | | 94.90 | | 3.137E-01 | 2.400E-01 | 3.874E-01 | 3.502E-02 | 0.810 |
| | | 122.32 | | -8.661E-01 | 1.693E+00 | 2.766E+00 | 2.477E-01 | -0.313 |
| | | 144.24 | | 3.138E-01 | 7.055E-01 | 1.173E+00 | 1.125E-01 | 0.268 |
| | | 154.21 | | 4.105E-01 | 3.977E-01 | 6.852E-01 | 6.593E-02 | 0.599 |
| | + | 269.46 | | 6.822E-01 | 2.395E-01 | 3.763E-01 | 4.475E-02 | 1.813 |
| | | 323.87 | * | 1.924E-01 | 8.205E-01 | 1.175E+00 | 2.248E-01 | 0.164 |
| | + | 338.28 | | 7.853E+00 | 2.142E+00 | 2.828E+00 | 3.963E-01 | 2.777 |
| | | 445.03 | | -1.536E+00 | 2.232E+00 | 3.502E+00 | 4.446E-01 | -0.439 |
| RN-219 | + | 271.23 | | 3.609E-01 | 2.916E-01 | 5.165E-01 | 6.764E-02 | 0.699 |
| | | 401.81 | * | -9.088E-02 | 4.336E-01 | 7.168E-01 | 1.106E-01 | -0.127 |
| RN-220 | | 549.76 | * | 1.851E+01 | 2.521E+01 | 4.392E+01 | 4.150E+00 | 0.421 |
| RA-223 | | 81.07 | | -1.039E-01 | 2.192E-01 | 3.290E-01 | 2.920E-02 | -0.316 |
| | | 83.78 | | 5.327E-02 | 1.330E-01 | 2.071E-01 | 1.896E-02 | 0.257 |
| | | 94.90 | | 3.137E-01 | 2.400E-01 | 3.874E-01 | 3.502E-02 | 0.810 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|----------------|-----------|---------|
| AC-227 | | 122.32 | | -8.661E-01 | 1.693E+00 | 2.766E+00 | 2.477E-01 | -0.313 |
| | | 144.24 | | 3.138E-01 | 7.055E-01 | 1.173E+00 | 1.125E-01 | 0.268 |
| | | 154.21 | | 4.105E-01 | 3.977E-01 | 6.852E-01 | 6.593E-02 | 0.599 |
| | + | 269.46 | | 6.822E-01 | 2.395E-01 | 3.763E-01 | 4.475E-02 | 1.813 |
| | | 323.87 | * | 1.924E-01 | 8.205E-01 | 1.175E+00 | 2.248E-01 | 0.164 |
| | + | 338.28 | | 7.853E+00 | 2.142E+00 | 2.828E+00 | 3.963E-01 | 2.777 |
| | | 445.03 | | -1.536E+00 | 2.232E+00 | 3.502E+00 | 4.446E-01 | -0.439 |
| | | 79.80 | | -1.753E+00 | 1.693E+00 | 2.407E+00 | 5.187E-01 | -0.728 |
| | | 236.00 | | 5.431E-03 | 2.525E-01 | 3.641E-01 | 5.074E-02 | 0.015 |
| | | 256.20 | * | -2.833E-01 | 4.019E-01 | 6.127E-01 | 1.046E-01 | -0.462 |
| | | 286.10 | | 1.389E+00 | 1.626E+00 | 2.714E+00 | 4.223E-01 | 0.512 |
| | + | 299.80 | | 5.420E+00 | 2.416E+00 | 2.956E+00 | 5.679E-01 | 1.833 |
| TH-227 | | 304.40 | | -5.454E-01 | 2.191E+00 | 3.003E+00 | 6.015E-01 | -0.182 |
| | | 334.20 | | 4.065E+00 | 2.833E+00 | 4.302E+00 | 8.856E-01 | 0.945 |
| | | 79.80 | | -1.753E+00 | 1.694E+00 | 2.407E+00 | 5.253E-01 | -0.728 |
| | + | 94.00 | | 1.187E+01 | 4.648E+00 | 3.831E+00 | 8.417E-01 | 3.099 |
| | | 236.00 | | 5.431E-03 | 2.525E-01 | 3.641E-01 | 4.704E-02 | 0.015 |
| | | 256.20 | * | -2.833E-01 | 4.028E-01 | 6.127E-01 | 1.198E-01 | -0.462 |
| | | 286.10 | | 1.389E+00 | 2.134E+00 | 2.714E+00 | 2.733E+00 | 0.512 |
| | + | 299.80 | | 5.420E+00 | 2.416E+00 | 2.956E+00 | 5.679E-01 | 1.833 |
| | | 304.40 | | -5.454E-01 | 2.191E+00 | 3.003E+00 | 6.015E-01 | -0.182 |
| | | 334.20 | | 4.065E+00 | 2.833E+00 | 4.302E+00 | 8.856E-01 | 0.945 |
| | | 85.43 | | 3.344E-01 | 1.900E-01 | 3.108E-01 | 2.903E-02 | 1.076 |
| | + | 88.47 | | 5.001E-01 | 1.487E-01 | 2.123E-01 | 2.036E-02 | 2.356 |
| PA-231 | | 100.00 | | 2.366E-01 | 1.875E-01 | 3.261E-01 | 2.853E-02 | 0.726 |
| | | 193.63 | * | -4.347E-02 | 5.261E-01 | 8.563E-01 | 8.356E-02 | -0.051 |
| | | 210.97 | | 1.059E+00 | 8.871E-01 | 1.377E+00 | 1.407E-01 | 0.769 |
| | | 283.67 | * | -2.118E-01 | 1.625E+00 | 2.571E+00 | 4.446E-01 | -0.082 |
| | + | 301.29 | | 2.168E+00 | 9.279E-01 | 1.096E+00 | 1.597E-01 | 1.979 |
| | | 81.07 | | -1.039E-01 | 2.192E-01 | 3.290E-01 | 2.920E-02 | -0.316 |
| | | 83.78 | | 5.327E-02 | 1.330E-01 | 2.071E-01 | 1.896E-02 | 0.257 |
| | | 94.90 | | 3.137E-01 | 2.400E-01 | 3.874E-01 | 3.502E-02 | 0.810 |
| | | 122.32 | | -8.661E-01 | 1.693E+00 | 2.766E+00 | 2.477E-01 | -0.313 |
| | | 144.24 | | 3.138E-01 | 7.055E-01 | 1.173E+00 | 1.125E-01 | 0.268 |
| | | 154.21 | | 4.105E-01 | 3.977E-01 | 6.852E-01 | 6.593E-02 | 0.599 |
| | + | 269.46 | | 6.822E-01 | 2.395E-01 | 3.763E-01 | 4.475E-02 | 1.813 |
| U-231 | | 323.87 | * | 1.924E-01 | 8.205E-01 | 1.175E+00 | 2.248E-01 | 0.164 |
| | + | 338.28 | | 7.853E+00 | 2.142E+00 | 2.828E+00 | 3.963E-01 | 2.777 |
| | | 445.03 | | -1.536E+00 | 2.232E+00 | 3.502E+00 | 4.446E-01 | -0.439 |
| | | 84.21 | | 5.975E+00 | 1.292E+01 | 2.016E+01 | 1.856E+00 | 0.296 |
| | + | 92.29 | | 2.652E+01 | 8.926E+00 | 9.353E+00 | 8.637E-01 | 2.835 |
| | | 95.87 | * | 1.251E+00 | 2.503E+00 | 3.913E+00 | 3.512E-01 | 0.320 |
| | | 108.00 | | -5.632E+00 | 4.435E+00 | 7.015E+00 | 5.941E-01 | -0.803 |
| | + | 75.28 | | 2.294E+01 | 5.122E+00 | 7.156E+00 | 1.087E+00 | 3.205 |
| | + | 86.59 | | 7.171E+00 | 2.804E+00 | 3.177E+00 | 8.611E-01 | 2.257 |
| | + | 300.12 | | 1.511E+00 | 6.592E-01 | 8.205E-01 | 1.383E-01 | 1.842 |
| | | 311.98 | * | 1.830E-02 | 6.597E-02 | 1.066E-01 | 1.247E-02 | 0.172 |
| | | 340.50 | | 6.582E-01 | 7.286E-01 | 1.136E+00 | 2.809E-01 | 0.580 |
| | | 398.62 | | 7.560E-02 | 2.125E+00 | 3.573E+00 | 9.593E-01 | 0.021 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PA-234 | + | 415.76 | | 4.244E-01 | 1.633E+00 | 2.777E+00 | 6.070E-01 | 0.153 |
| | + | 63.00 | | 2.627E+00 | 2.443E+00 | 2.627E+00 | 3.902E-01 | 1.000 |
| | + | 94.67 | | 1.058E+00 | 3.686E-01 | 2.923E-01 | 3.715E-02 | 3.621 |
| | | 98.44 | | 3.565E-02 | 1.015E-01 | 1.530E-01 | 8.542E-02 | 0.233 |
| | | 99.86 | | 6.744E-01 | 4.922E-01 | 8.288E-01 | 7.258E-02 | 0.814 |
| | | 111.00 | | 1.000E-01 | 1.746E-01 | 3.002E-01 | 3.583E-02 | 0.333 |
| | | 131.20 | | -3.321E-03 | 1.134E-01 | 1.695E-01 | 1.418E-02 | -0.020 |
| | | 152.70 | | 1.498E-02 | 3.261E-01 | 5.412E-01 | 9.260E-02 | 0.028 |
| | + | 186.00 | | 6.889E+00 | 2.986E+00 | 2.852E+00 | 8.980E-01 | 2.416 |
| | | 226.40 | | -7.000E-02 | 4.295E-01 | 6.892E-01 | 1.006E-01 | -0.102 |
| | | 227.20 | | 1.020E-01 | 4.553E-01 | 7.457E-01 | 7.944E-02 | 0.137 |
| | | 248.90 | | -6.509E-01 | 8.435E-01 | 1.269E+00 | 2.986E-01 | -0.513 |
| | + | 293.70 | | 8.366E+00 | 1.880E+00 | 1.839E+00 | 3.512E-01 | 4.549 |
| | | 369.80 | | 9.127E-01 | 8.463E-01 | 1.484E+00 | 3.319E-01 | 0.615 |
| | | 568.70 | | 6.094E-02 | 1.137E+00 | 1.869E+00 | 1.755E-01 | 0.033 |
| | | 569.50 | | 1.516E-01 | 3.049E-01 | 5.172E-01 | 4.856E-02 | 0.293 |
| | | 574.00 | | -8.393E-01 | 1.579E+00 | 2.462E+00 | 2.307E-01 | -0.341 |
| | | 699.00 | | -9.802E-01 | 8.465E-01 | 1.187E+00 | 2.288E-01 | -0.825 |
| | | 706.10 | | 4.710E-01 | 1.233E+00 | 2.019E+00 | 9.018E-01 | 0.233 |
| | | 733.00 | | 6.020E-01 | 4.242E-01 | 6.821E-01 | 1.528E-01 | 0.883 |
| | | 742.81 | | -1.344E+00 | 1.734E+00 | 2.147E+00 | 1.445E+00 | -0.626 |
| | + | 796.30 | | 2.340E+00 | 1.673E+00 | 1.985E+00 | 5.416E-01 | 1.179 |
| | | 805.60 | | 1.113E+00 | 1.063E+00 | 1.856E+00 | 5.726E-01 | 0.600 |
| | | 819.60 | | 3.304E-01 | 1.158E+00 | 1.991E+00 | 7.607E-01 | 0.166 |
| | | 826.30 | | 9.612E-02 | 7.935E-01 | 1.347E+00 | 6.047E-01 | 0.071 |
| | | 831.60 | | -5.128E-01 | 6.665E-01 | 1.010E+00 | 3.036E-01 | -0.508 |
| | | 876.40 | | -5.294E-02 | 7.863E-01 | 1.302E+00 | 1.340E+00 | -0.041 |
| | | 880.51 | | 1.253E-01 | 2.773E-01 | 4.841E-01 | 4.573E-02 | 0.259 |
| | | 883.24 | | -7.958E-02 | 2.843E-01 | 4.527E-01 | 3.048E-01 | -0.176 |
| | | 899.00 | | 6.994E-01 | 8.979E-01 | 1.521E+00 | 6.674E-01 | 0.460 |
| | | 925.00 | | -7.547E-01 | 1.284E+00 | 2.013E+00 | 1.891E-01 | -0.375 |
| | | 926.50 | | -1.329E-01 | 1.953E-01 | 2.986E-01 | 7.630E-02 | -0.445 |
| | | 946.00 | * | -1.818E-01 | 3.290E-01 | 5.140E-01 | 9.820E-02 | -0.354 |
| | | 949.00 | | 5.291E-01 | 4.835E-01 | 8.801E-01 | 8.208E-02 | 0.601 |
| | | 980.50 | | 1.072E+00 | 9.031E-01 | 1.323E+00 | 1.220E-01 | 0.810 |
| | | 1394.10 | | 3.494E-01 | 1.189E+00 | 1.969E+00 | 1.281E+00 | 0.178 |
| PA-234M | | 766.42 | | 9.756E+00 | 1.454E+01 | 2.077E+01 | 1.056E+01 | 0.470 |
| | | 1001.03 | * | -4.975E+00 | 4.883E+00 | 7.142E+00 | 7.436E-01 | -0.697 |
| U-235 | + | 89.95 | | 2.721E+00 | 1.430E+00 | 1.992E+00 | 6.195E-01 | 1.366 |
| | + | 93.35 | | 3.693E+00 | 1.586E+00 | 1.297E+00 | 3.656E-01 | 2.848 |
| | | 105.00 | | 6.249E-01 | 1.003E+00 | 1.707E+00 | 5.092E-01 | 0.366 |
| | | 143.76 | * | 1.115E-01 | 2.175E-01 | 3.615E-01 | 6.318E-02 | 0.308 |
| | | 163.35 | | 2.927E-02 | 4.886E-01 | 7.827E-01 | 1.507E-01 | 0.037 |
| NP-236 | + | 185.71 | | 2.552E-01 | 7.983E-02 | 1.050E-01 | 1.003E-02 | 2.430 |
| | | 205.31 | | 4.446E-01 | 5.855E-01 | 8.704E-01 | 1.721E-01 | 0.511 |
| | + | 94.67 | | 8.028E-01 | 2.702E-01 | 2.219E-01 | 2.010E-02 | 3.617 |
| | | 98.44 | | 2.683E-02 | 7.525E-02 | 1.157E-01 | 1.021E-02 | 0.232 |
| | | 111.00 | | 7.566E-02 | 1.319E-01 | 2.271E-01 | 1.909E-02 | 0.333 |
| | | 160.31 | * | 1.530E-02 | 8.071E-02 | 1.345E-01 | 1.200E-02 | 0.114 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| NP-239 | | 99.55 | | 2.568E-01 | 1.644E-01 | 2.784E-01 | 2.442E-02 | 0.922 |
| | | 117.00 | * | -2.213E-02 | 1.830E-01 | 3.056E-01 | 2.544E-02 | -0.072 |
| | + | 209.75 | | 2.562E+00 | 1.257E+00 | 1.589E+00 | 1.619E-01 | 1.612 |
| | | 228.18 | | 1.868E-01 | 2.373E-01 | 3.988E-01 | 4.259E-02 | 0.469 |
| | | 277.60 | | 1.823E-01 | 1.929E-01 | 3.236E-01 | 3.874E-02 | 0.563 |
| AM-241 | | 334.30 | | 2.237E+00 | 1.550E+00 | 2.425E+00 | 2.671E-01 | 0.922 |
| | | 59.54 | * | 2.931E-02 | 1.716E-01 | 2.488E-01 | 1.952E-02 | 0.118 |
| | CM-243 | 99.55 | | 2.644E-01 | 1.692E-01 | 2.866E-01 | 2.514E-02 | 0.922 |
| | | 103.76 | * | 3.628E-03 | 9.196E-02 | 1.555E-01 | 1.337E-02 | 0.023 |
| | | 117.00 | | -2.277E-02 | 1.884E-01 | 3.145E-01 | 2.618E-02 | -0.072 |
| | + | 209.75 | | 2.526E+00 | 1.239E+00 | 1.567E+00 | 1.596E-01 | 1.612 |
| | | 228.18 | | 1.889E-01 | 2.399E-01 | 4.031E-01 | 4.305E-02 | 0.469 |
| | | 277.60 | | 1.838E-01 | 1.945E-01 | 3.264E-01 | 3.906E-02 | 0.563 |
| | AM-246 | 798.80 | | -1.151E-03 | 1.596E-01 | 2.341E-01 | 2.183E-02 | -0.005 |
| | | 1036.00 | | 3.857E-02 | 2.752E-01 | 4.617E-01 | 4.140E-02 | 0.084 |
| | | 1062.04 | | -1.662E-01 | 2.115E-01 | 3.129E-01 | 2.761E-02 | -0.531 |
| | | 1078.86 | * | 8.972E-02 | 1.507E-01 | 2.627E-01 | 2.292E-02 | 0.342 |
| | CM-247 | 278.00 | | 1.081E+00 | 8.042E-01 | 1.370E+00 | 1.642E-01 | 0.789 |
| | | 287.40 | | -4.605E-02 | 1.338E+00 | 2.129E+00 | 2.535E-01 | -0.022 |
| | | 402.60 | * | -9.344E-03 | 3.847E-02 | 6.345E-02 | 5.900E-03 | -0.147 |
| CF-249 | | 252.85 | | 8.448E-01 | 9.078E-01 | 1.533E+00 | 1.737E-01 | 0.551 |
| | | 333.44 | | 1.508E-01 | 2.326E-01 | 3.156E-01 | 3.483E-02 | 0.478 |
| | | 387.95 | * | 1.629E-02 | 3.949E-02 | 6.811E-02 | 6.390E-03 | 0.239 |
| CF-251 | | 176.60 | * | 1.650E-02 | 1.277E-01 | 2.111E-01 | 1.968E-02 | 0.078 |
| | | 227.00 | | 7.341E-02 | 4.058E-01 | 6.631E-01 | 7.061E-02 | 0.111 |
| | | 285.00 | | -1.015E+00 | 1.934E+00 | 2.977E+00 | 3.554E-01 | -0.341 |

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]G245388009
* Acquisition date   : 4-FEB-2010 13:31:10 Detector SN#      :
* Detector ID        : GAM16 Sensitivity                    : 5.000
* Geometry           : CAN Energy tolerance                : 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit        : 75.000
* Elapsed real time  : 0 02:00:01.83 Half life ratio        : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G245388009 Analyst initials: MXR1
* Batch Number       : 944964 Sample Quantity: 1.0797E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*
*                               QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16 MS Isotope      :
* MSD DPM            : 0.000 MSD Isotope                    :
* LCS DPM            : 0.000 LCS Isotope                     :
* LCSD DPM           : 0.000 LCSD Isotope                    :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.129E+01 | 2.404E+00 | 4.317E-01 | 0.000E+00 |
| CD-109 | 3.755E+00 | 1.094E+00 | 1.471E+00 | 0.000E+00 |
| SN-126 | 3.663E-01 | 1.067E-01 | 1.442E-01 | 0.000E+00 |
| TL-208 | 6.787E-01 | 1.162E-01 | 5.968E-02 | 0.000E+00 |
| BI-211 | 4.825E+00 | 6.907E-01 | 3.409E-01 | 0.000E+00 |
| BI-212 | 1.364E+00 | 4.588E-01 | 4.689E-01 | 0.000E+00 |
| PB-212 | 2.263E+00 | 2.924E-01 | 8.976E-02 | 0.000E+00 |
| PO-212 | 2.263E+00 | 2.924E-01 | 8.976E-02 | 0.000E+00 |
| BI-214 | 1.394E+00 | 2.233E-01 | 1.213E-01 | 0.000E+00 |
| PB-214 | 1.679E+00 | 2.552E-01 | 1.190E-01 | 0.000E+00 |
| PO-214 | 1.679E+00 | 2.552E-01 | 1.190E-01 | 0.000E+00 |
| PO-216 | 2.263E+00 | 2.924E-01 | 8.976E-02 | 0.000E+00 |
| PO-218 | 1.679E+00 | 2.552E-01 | 1.190E-01 | 0.000E+00 |
| RA-224 | 6.193E+00 | 1.367E+00 | 1.022E+00 | 0.000E+00 |
| RA-226 | 1.394E+00 | 2.233E-01 | 1.213E-01 | 0.000E+00 |
| AC-228 | 2.125E+00 | 4.280E-01 | 2.277E-01 | 0.000E+00 |
| RA-228 | 2.125E+00 | 4.280E-01 | 2.277E-01 | 0.000E+00 |
| TH-228 | 2.309E+00 | 2.983E-01 | 9.157E-02 | 0.000E+00 |
| TH-230 | 1.394E+00 | 2.233E-01 | 1.213E-01 | 0.000E+00 |
| TH-232 | 2.125E+00 | 4.280E-01 | 2.277E-01 | 0.000E+00 |
| TH-234 | 2.254E+00 | 2.064E+00 | 1.937E+00 | 0.000E+00 |
| U-234 | 1.394E+00 | 2.233E-01 | 1.213E-01 | 0.000E+00 |
| NP-237 | 1.076E+00 | 3.816E-01 | 4.140E-01 | 0.000E+00 |
| U-238 | 2.254E+00 | 2.064E+00 | 1.937E+00 | 0.000E+00 |
| AM-243 | 4.379E-01 | 7.884E-02 | 8.985E-02 | 0.000E+00 |
| ANH-511 | 1.352E-01 | 6.944E-02 | 4.271E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | 3.443E-04 | 3.272E-01 | 5.537E-01 | 0.000E+00 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-22 | -2.302E-02 | 4.801E-02 | 7.534E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 1.866E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | -6.542E-03 | 2.778E-02 | 4.371E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 6.213E-02 | 7.872E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | 1.661E-02 | 3.778E-02 | 6.706E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | -5.508E-02 | 1.047E-01 | 1.408E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | -1.195E-01 | 4.469E-01 | 7.104E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 3.062E-01 | 4.783E-01 | 8.495E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | 3.844E-02 | 3.728E-02 | 6.892E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -6.699E-03 | 3.944E-02 | 6.619E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | -1.968E-02 | 2.474E-02 | 4.111E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -3.985E-02 | 3.829E-02 | 5.832E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -3.960E-02 | 9.994E-02 | 1.595E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | -2.960E-02 | 4.239E-02 | 6.270E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | -5.320E-02 | 1.115E-01 | 1.497E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | -1.352E-03 | 1.267E+00 | 2.117E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | -2.096E-02 | 8.892E-01 | 1.441E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | -2.462E-02 | 1.175E-01 | 1.919E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | 2.447E-02 | 4.601E-02 | 7.794E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 0.000E+00 | 4.496E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SR-82 | -1.850E-01 | 5.174E-01 | 6.940E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | 1.882E-02 | 7.223E-02 | 1.239E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | 1.540E-02 | 7.383E-02 | 1.282E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 8.784E+00 | 8.045E+00 | 1.309E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 4.744E-02 | 4.345E-02 | 7.071E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | -1.577E-01 | 9.481E-01 | 1.556E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 2.702E-02 | 3.639E-02 | 6.905E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -1.100E-02 | 3.007E-02 | 5.029E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | 5.609E+00 | 1.989E+01 | 3.384E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -1.800E-02 | 3.725E-02 | 5.845E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 4.169E-02 | 4.904E-02 | 7.735E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 2.205E-02 | 1.385E-01 | 2.069E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 9.519E-02 | 8.095E-02 | 1.452E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 1.325E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 2.540E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 3.726E+01 | 4.281E+01 | 7.502E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 3.215E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -2.515E-05 | 3.383E-02 | 5.670E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -3.602E-03 | 2.884E-02 | 4.836E-02 | 0.000E+00 | FAIL ABUN |
| RU-103 | -7.276E-03 | 4.461E-02 | 7.428E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | -1.327E-01 | 3.233E-01 | 5.145E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | -1.327E-01 | 3.230E-01 | 5.145E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -2.624E-02 | 3.070E-02 | 4.868E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | -1.881E-02 | 3.682E-02 | 5.781E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | 1.280E+00 | 3.730E+00 | 5.641E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | 1.117E-02 | 4.253E-02 | 7.433E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | 1.117E-02 | 4.253E-02 | 7.433E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 1.110E-01 | 2.047E-01 | 3.182E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 0.000E+00 | 5.014E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SN-117M | -7.254E-03 | 6.880E-02 | 1.164E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | 5.813E+00 | 7.719E+00 | 1.339E+01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 2.958E+09 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 4.889E-03 | 2.854E-02 | 4.888E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -7.050E-01 | 1.836E+00 | 2.716E+00 | 0.000E+00 | FAIL ABUN |
| SB-124 | -2.607E-02 | 7.537E-02 | 1.171E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | -9.309E-02 | 9.463E-02 | 1.497E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | 2.723E+00 | 9.011E+00 | 1.583E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | -5.491E-03 | 2.588E-01 | 4.255E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | 1.541E-01 | 1.970E-01 | 3.447E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | 2.868E+00 | 3.504E+00 | 6.147E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | -4.847E-02 | 5.035E-02 | 7.965E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | -1.686E-02 | 1.760E-01 | 3.019E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | 1.647E+00 | 2.050E+00 | 3.513E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | -1.698E-02 | 4.706E-02 | 6.945E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 3.420E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 0.000E+00 | 7.910E-02 | 1.051E-01 | 0.000E+00 | FAIL ABUN |
| CS-135 | -3.459E-03 | 1.774E-01 | 2.588E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 1.551E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -8.208E-02 | 1.322E-01 | 2.050E-01 | 0.000E+00 | FAIL ABUN |
| BA-137M | 9.319E-03 | 3.765E-02 | 6.337E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | 9.851E-03 | 3.980E-02 | 6.699E-02 | 0.000E+00 | NOT IDENT. |
| CE-139 | -3.017E-02 | 3.050E-02 | 4.911E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -4.190E-01 | 3.676E-01 | 5.112E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -4.230E-02 | 1.135E-01 | 1.800E-01 | 0.000E+00 | FAIL ABUN |
| CE-141 | 9.576E-03 | 6.854E-02 | 1.178E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 2.544E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | 1.101E-01 | 2.199E-01 | 3.476E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | 4.349E-02 | 3.964E-02 | 7.043E-02 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | 2.955E+00 | 2.693E+00 | 4.785E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 1.164E-02 | 4.525E-02 | 7.821E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | -1.158E-01 | 8.302E-01 | 1.378E+00 | 0.000E+00 | FAIL ABUN |
| PM-149 | 0.000E+00 | 4.534E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| EU-152 | 2.859E-02 | 9.933E-02 | 1.634E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | -1.462E-01 | 8.942E-02 | 1.258E-01 | 0.000E+00 | NOT IDENT. |
| EU-154 | -3.680E-02 | 1.316E-01 | 2.115E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 1.431E-02 | 1.017E-01 | 1.779E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 1.063E-01 | 1.399E-01 | 2.550E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | 3.566E-02 | 6.495E-02 | 1.115E-01 | 0.000E+00 | FAIL ABUN |
| TM-171 | -5.360E+00 | 3.030E+01 | 4.421E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | 9.264E-03 | 2.599E-02 | 4.264E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 2.894E+00 | 3.738E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | 3.544E-02 | 2.008E-01 | 3.075E-01 | 0.000E+00 | NOT IDENT. |
| HF-181 | -2.576E-02 | 4.564E-02 | 7.365E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | -5.837E-02 | 4.031E-01 | 5.901E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | -1.929E-01 | 2.072E-01 | 3.080E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | 1.003E-02 | 1.134E-01 | 1.933E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | 2.298E-01 | 2.419E-01 | 4.189E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | 1.498E-02 | 5.37E-02 | 7.714E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 1.146E-01 | 1.768E-01 | 3.090E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | -2.919E+00 | 8.869E+00 | 1.249E+01 | 0.000E+00 | FAIL ABUN |
| IR-192 | 7.626E-03 | 3.630E-02 | 5.976E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 0.000E+00 | 2.399E-01 | 4.029E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 1.056E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | -7.582E+00 | 2.116E+01 | 3.523E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 6.481E-02 | 8.911E-02 | 1.592E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | -4.133E-03 | 4.561E-02 | 7.425E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | -2.145E-02 | 4.660E-02 | 7.349E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | 1.924E-01 | 8.041E-01 | 1.179E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | -1.916E+00 | 7.582E+00 | 1.256E+01 | 0.000E+00 | NOT IDENT. |
| BI-210 | -1.638E+00 | 3.637E+00 | 5.715E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | -1.638E+00 | 3.637E+00 | 5.715E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | -1.638E+00 | 3.636E+00 | 5.715E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | -2.163E-01 | 1.095E+00 | 1.611E+00 | 0.000E+00 | NOT IDENT. |
| PO-215 | 1.924E-01 | 8.041E-01 | 1.179E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | -9.088E-02 | 4.249E-01 | 7.183E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | 1.851E+01 | 2.471E+01 | 4.392E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | 1.924E-01 | 8.041E-01 | 1.179E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | -2.833E-01 | 3.939E-01 | 6.157E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | -2.833E-01 | 3.948E-01 | 6.157E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | -4.347E-02 | 5.156E-01 | 8.620E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | -2.118E-01 | 1.592E+00 | 2.581E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | 1.924E-01 | 8.041E-01 | 1.179E+00 | 0.000E+00 | FAIL ABUN |
| U-231 | 1.251E+00 | 2.453E+00 | 3.956E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 1.830E-02 | 6.466E-02 | 1.070E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | -1.818E-01 | 3.224E-01 | 5.123E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | -4.975E+00 | 4.785E+00 | 7.115E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | 1.115E-01 | 2.131E-01 | 3.646E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | 1.530E-02 | 7.909E-02 | 1.355E-01 | 0.000E+00 | FAIL ABUN |
| NP-239 | -2.213E-02 | 1.794E-01 | 3.086E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | 2.931E-02 | 1.682E-01 | 2.523E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | 3.628E-03 | 9.012E-02 | 1.571E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | 8.972E-02 | 1.477E-01 | 2.616E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | -9.344E-03 | 3.770E-02 | 6.358E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | 1.629E-02 | 3.870E-02 | 6.826E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | 1.650E-02 | 1.251E-01 | 2.126E-01 | 0.000E+00 | NOT IDENT. |

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388009.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 13:31:10.
Sample ID          : G245388009 Sample quantity : 1.07970E+02 GRAM
Detector name      : GAM16 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.83 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 944964 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Nuclide Line Activity Report

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| K-40 | 1460.81 | 789 | 10.67* | 1.208E+00 | 2.129E+01 | 2.129E+01 | 11.52 |
| CD-109 | 88.03 | 244 | 3.72* | 6.257E+00 | 3.644E+00 | 3.755E+00 | 29.74 |
| SN-126 | 64.28 | 88 | 9.60 | 3.567E+00 | 8.922E-01 | 8.922E-01 | 92.92 |
| | 86.94 | 244 | 8.90 | 6.257E+00 | 1.523E+00 | 1.523E+00 | 50.20 |
| | 87.57 | 244 | 37.00* | 6.257E+00 | 3.663E-01 | 3.663E-01 | 29.74 |
| TL-208 | 277.35 | ----- | 6.80 | 4.695E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 115 | 21.60 | 2.965E+00 | 6.260E-01 | 6.260E-01 | 53.06 |
| | 583.14 | 438 | 84.20* | 2.667E+00 | 6.787E-01 | 6.787E-01 | 17.47 |
| | 860.37 | 55 | 12.46 | 1.919E+00 | 8.032E-01 | 8.032E-01 | 53.77 |
| BI-211 | 72.87 | ----- | 1.27 | 4.872E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 707 | 12.94* | 3.939E+00 | 4.825E+00 | 4.825E+00 | 14.61 |
| BI-212 | 727.18 | 103 | 11.80* | 2.220E+00 | 1.364E+00 | 1.364E+00 | 34.33 |
| | 785.46 | ----- | 1.97 | 2.079E+00 | ----- | Line Not Found | ----- |
| PB-212 | 1620.62 | 29 | 2.75 | 1.116E+00 | 3.319E+00 | 3.319E+00 | 59.75 |
| | 74.81 | 425 | 10.70 | 5.116E+00 | 2.701E+00 | 2.701E+00 | 20.61 |
| | 77.11 | 679 | 18.00 | 5.367E+00 | 2.444E+00 | 2.444E+00 | 14.05 |
| | 87.30 | 244 | 8.00 | 6.257E+00 | 1.694E+00 | 1.694E+00 | 31.37 |
| | 238.63 | 1517 | 44.60* | 5.224E+00 | 2.263E+00 | 2.263E+00 | 13.18 |
| | 300.09 | 127 | 3.41 | 4.434E+00 | 2.925E+00 | 2.925E+00 | 42.31 |
| PO-212 | 74.81 | 425 | 10.70 | 5.116E+00 | 2.701E+00 | 2.701E+00 | 20.61 |
| | 77.11 | 679 | 18.00 | 5.367E+00 | 2.444E+00 | 2.444E+00 | 14.05 |
| | 87.30 | 244 | 8.00 | 6.257E+00 | 1.694E+00 | 1.694E+00 | 31.37 |
| | 115.19 | ----- | 0.60 | 7.166E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1517 | 44.60* | 5.224E+00 | 2.263E+00 | 2.263E+00 | 13.18 |
| | 300.09 | 127 | 3.41 | 4.434E+00 | 2.925E+00 | 2.925E+00 | 42.31 |
| BI-214 | 609.31 | 478 | 46.30* | 2.574E+00 | 1.394E+00 | 1.394E+00 | 16.35 |
| | 1120.29 | 112 | 15.10 | 1.516E+00 | 1.702E+00 | 1.702E+00 | 35.69 |
| | 1764.49 | 85 | 15.80 | 1.056E+00 | 1.763E+00 | 1.763E+00 | 27.35 |
| PB-214 | 74.81 | 425 | 6.21 | 5.116E+00 | 4.654E+00 | 4.654E+00 | 19.81 |
| | 77.11 | 679 | 10.50 | 5.367E+00 | 4.190E+00 | 4.190E+00 | 15.99 |
| | 87.30 | 244 | 4.67 | 6.257E+00 | 2.902E+00 | 2.902E+00 | 30.72 |
| | 241.98 | 364 | 7.49 | 5.178E+00 | 3.266E+00 | 3.266E+00 | 23.22 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 295.21 | 432 | 19.20 | 4.486E+00 | 1.743E+00 | 1.743E+00 | 17.86 |
| | 351.92 | 707 | 37.20* | 3.939E+00 | 1.678E+00 | 1.679E+00 | 15.51 |
| | 74.81 | 425 | 6.21 | 5.116E+00 | 4.654E+00 | 4.654E+00 | 19.81 |
| | 77.11 | 679 | 10.50 | 5.367E+00 | 4.190E+00 | 4.190E+00 | 15.99 |
| | 87.30 | 244 | 4.67 | 6.257E+00 | 2.902E+00 | 2.902E+00 | 30.72 |
| PO-216 | 241.98 | 364 | 7.49 | 5.178E+00 | 3.266E+00 | 3.266E+00 | 23.22 |
| | 295.21 | 432 | 19.20 | 4.486E+00 | 1.743E+00 | 1.743E+00 | 17.86 |
| | 351.92 | 707 | 37.20* | 3.939E+00 | 1.678E+00 | 1.679E+00 | 15.51 |
| | 74.81 | 425 | 10.70 | 5.116E+00 | 2.701E+00 | 2.701E+00 | 20.61 |
| | 77.11 | 679 | 18.00 | 5.367E+00 | 2.444E+00 | 2.444E+00 | 14.05 |
| PO-218 | 87.30 | 244 | 8.00 | 6.257E+00 | 1.694E+00 | 1.694E+00 | 31.37 |
| | 238.63 | 1517 | 44.60* | 5.224E+00 | 2.263E+00 | 2.263E+00 | 13.18 |
| | 300.09 | 127 | 3.41 | 4.434E+00 | 2.925E+00 | 2.925E+00 | 42.31 |
| | 74.81 | 425 | 6.21 | 5.116E+00 | 4.654E+00 | 4.654E+00 | 19.81 |
| | 77.11 | 679 | 10.50 | 5.367E+00 | 4.190E+00 | 4.190E+00 | 15.99 |
| RA-224 | 87.30 | 244 | 4.67 | 6.257E+00 | 2.902E+00 | 2.902E+00 | 30.72 |
| | 241.98 | 364 | 7.49 | 5.178E+00 | 3.266E+00 | 3.266E+00 | 23.22 |
| | 295.21 | 432 | 19.20 | 4.486E+00 | 1.743E+00 | 1.743E+00 | 17.86 |
| | 351.92 | 707 | 37.20* | 3.939E+00 | 1.678E+00 | 1.679E+00 | 15.51 |
| | 240.98 | 364 | 3.95* | 5.178E+00 | 6.193E+00 | 6.193E+00 | 22.53 |
| RA-226 | 609.31 | 478 | 46.30* | 2.574E+00 | 1.394E+00 | 1.394E+00 | 16.35 |
| | 1120.29 | 112 | 15.10 | 1.516E+00 | 1.702E+00 | 1.702E+00 | 35.69 |
| | 1764.49 | 85 | 15.80 | 1.056E+00 | 1.763E+00 | 1.763E+00 | 27.35 |
| | 338.32 | 250 | 11.40 | 4.057E+00 | 1.880E+00 | 1.880E+00 | 47.90 |
| | 911.07 | 309 | 27.70* | 1.824E+00 | 2.125E+00 | 2.125E+00 | 20.55 |
| AC-228 | 969.11 | 160 | 16.60 | 1.727E+00 | 1.938E+00 | 1.938E+00 | 31.31 |
| | 338.32 | 250 | 11.40 | 4.057E+00 | 1.880E+00 | 1.880E+00 | 47.90 |
| | 911.07 | 309 | 27.70* | 1.824E+00 | 2.125E+00 | 2.125E+00 | 20.55 |
| | 969.11 | 160 | 16.60 | 1.727E+00 | 1.938E+00 | 1.938E+00 | 31.31 |
| | 74.81 | 425 | 10.70 | 5.116E+00 | 2.701E+00 | 2.755E+00 | 18.41 |
| TH-228 | 77.11 | 679 | 18.00 | 5.367E+00 | 2.444E+00 | 2.493E+00 | 14.05 |
| | 87.30 | 244 | 8.00 | 6.257E+00 | 1.694E+00 | 1.728E+00 | 29.74 |
| | 238.63 | 1517 | 44.60* | 5.224E+00 | 2.263E+00 | 2.309E+00 | 13.18 |
| | 300.09 | 127 | 3.41 | 4.434E+00 | 2.925E+00 | 2.984E+00 | 72.08 |
| | 609.31 | 478 | 46.30* | 2.574E+00 | 1.394E+00 | 1.394E+00 | 16.35 |
| TH-230 | 1120.29 | 112 | 15.10 | 1.516E+00 | 1.702E+00 | 1.702E+00 | 35.69 |
| | 1764.49 | 85 | 15.80 | 1.056E+00 | 1.763E+00 | 1.763E+00 | 27.35 |
| | 338.32 | 250 | 11.40 | 4.057E+00 | 1.880E+00 | 1.880E+00 | 25.82 |
| | 911.07 | 309 | 27.70* | 1.824E+00 | 2.125E+00 | 2.125E+00 | 20.55 |
| | 969.11 | 160 | 16.60 | 1.727E+00 | 1.938E+00 | 1.938E+00 | 31.31 |
| TH-232 | 63.29 | 88 | 3.80* | 3.567E+00 | 2.254E+00 | 2.254E+00 | 93.42 |
| | 92.38 | 316 | 5.41 | 6.616E+00 | 3.072E+00 | 3.072E+00 | 37.23 |
| | 609.31 | 478 | 46.30* | 2.574E+00 | 1.394E+00 | 1.394E+00 | 16.35 |
| | 1120.29 | 112 | 15.10 | 1.516E+00 | 1.702E+00 | 1.702E+00 | 35.69 |
| | 1764.49 | 85 | 15.80 | 1.056E+00 | 1.763E+00 | 1.763E+00 | 27.35 |
| TH-234 | 86.50 | 244 | 12.60* | 6.257E+00 | 1.076E+00 | 1.076E+00 | 36.19 |
| | 95.87 | --- | 2.60 | 6.742E+00 | ----- | Line Not Found | ----- |
| | 63.29 | 88 | 3.80* | 3.567E+00 | 2.254E+00 | 2.254E+00 | 93.42 |
| | 92.38 | 316 | 5.41 | 6.616E+00 | 3.072E+00 | 3.072E+00 | 33.66 |
| | | | | | | | |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| AM-243 | 74.67 | 425 | 66.00* | 5.116E+00 | 4.379E-01 | 4.379E-01 | 18.37 |
| | 86.72 | 244 | 0.34 | 6.257E+00 | 4.034E+01 | 4.034E+01 | 29.74 |
| | 117.66 | ----- | 0.55 | 7.175E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 6.968E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 115 | 100.00* | 2.965E+00 | 1.352E-01 | 1.352E-01 | 52.40 |

Flag: "*" = Keyline

Total number of lines in spectrum 39
Number of unidentified lines 3
Number of lines tentatively identified by NID 36 92.31%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|------------------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 2.129E+01 | 2.129E+01 | 0.245E+01 | 11.52 | |
| CD-109 | 464.00D | 1.03 | 3.644E+00 | 3.755E+00 | 1.116E+00 | 29.74 | |
| SN-126 | 1.00E+05Y | 1.00 | 3.663E-01 | 3.663E-01 | 1.089E-01 | 29.74 | |
| TL-208 | 1.41E+10Y | 1.00 | 6.787E-01 | 6.787E-01 | 1.186E-01 | 17.47 | |
| BI-211 | 7.04E+08Y | 1.00 | 4.825E+00 | 4.825E+00 | 0.705E+00 | 14.61 | |
| BI-212 | 1.41E+10Y | 1.00 | 1.364E+00 | 1.364E+00 | 0.468E+00 | 34.33 | |
| PB-212 | 1.41E+10Y | 1.00 | 2.263E+00 | 2.263E+00 | 0.298E+00 | 13.18 | |
| PO-212 | 1.41E+10Y | 1.00 | 2.263E+00 | 2.263E+00 | 0.298E+00 | 13.18 | |
| BI-214 | 1600.00Y | 1.00 | 1.394E+00 | 1.394E+00 | 0.228E+00 | 16.35 | |
| PB-214 | 1600.00Y | 1.00 | 1.678E+00 | 1.679E+00 | 0.260E+00 | 15.51 | |
| PO-214 | 1600.00Y | 1.00 | 1.678E+00 | 1.679E+00 | 0.260E+00 | 15.51 | |
| PO-216 | 1.41E+10Y | 1.00 | 2.263E+00 | 2.263E+00 | 0.298E+00 | 13.18 | |
| PO-218 | 1600.00Y | 1.00 | 1.678E+00 | 1.679E+00 | 0.260E+00 | 15.51 | |
| RA-224 | 1.41E+10Y | 1.00 | 6.193E+00 | 6.193E+00 | 1.395E+00 | 22.53 | |
| RA-226 | 1600.00Y | 1.00 | 1.394E+00 | 1.394E+00 | 0.228E+00 | 16.35 | |
| AC-228 | 1.41E+10Y | 1.00 | 2.125E+00 | 2.125E+00 | 0.437E+00 | 20.55 | |
| RA-228 | 1.41E+10Y | 1.00 | 2.125E+00 | 2.125E+00 | 0.437E+00 | 20.55 | |
| TH-228 | 1.91Y | 1.02 | 2.263E+00 | 2.309E+00 | 0.304E+00 | 13.18 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.394E+00 | 1.394E+00 | 0.228E+00 | 16.35 | |
| TH-232 | 1.41E+10Y | 1.00 | 2.125E+00 | 2.125E+00 | 0.437E+00 | 20.55 | |
| TH-234 | 4.47E+09Y | 1.00 | 2.254E+00 | 2.254E+00 | 2.106E+00 | 93.42 | |
| U-234 | 4.47E+09Y | 1.00 | 1.394E+00 | 1.394E+00 | 0.228E+00 | 16.35 | |
| NP-237 | 2.14E+06Y | 1.00 | 1.076E+00 | 1.076E+00 | 0.389E+00 | 36.19 | |
| U-238 | 4.47E+09Y | 1.00 | 2.254E+00 | 2.254E+00 | 2.106E+00 | 93.42 | |
| AM-243 | 7380.00Y | 1.00 | 4.379E-01 | 4.379E-01 | 0.804E-01 | 18.37 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.352E-01 | 1.352E-01 | 0.709E-01 | 52.40 | |
| Total Activity : | | | 7.055E+01 | 7.071E+01 | | | |

Grand Total Activity : 7.055E+01 7.071E+01

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

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

Unidentified Energy Lines
Sample ID : G245388009

Page : 5
Acquisition date : 4-FEB-2010 13:31:10

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 2 | 89.88 | 136 | 328 | 0.82 | 179.95 | 172 | 12 | 1.89E-02 | 42.4 | 6.43E+00 | T |
| 0 | 129.06 | 142 | 314 | 1.11 | 258.32 | 254 | 9 | 1.98E-02 | 48.0 | 7.13E+00 | T |
| 0 | 186.05 | 243 | 273 | 1.27 | 372.29 | 367 | 10 | 3.38E-02 | 29.8 | 6.14E+00 | T |
| 0 | 209.30 | 136 | 285 | 0.97 | 418.80 | 415 | 9 | 1.89E-02 | 48.0 | 5.71E+00 | T |
| 1 | 270.29 | 128 | 110 | 1.22 | 540.78 | 537 | 11 | 1.77E-02 | 33.0 | 4.78E+00 | T |
| 1 | 272.01 | 52 | 116 | 1.22 | 544.22 | 537 | 11 | 7.28E-03 | 79.7 | 4.76E+00 | T |
| 0 | 328.37 | 43 | 156 | 0.88 | 656.93 | 653 | 9 | 6.00E-03 | **** | 4.15E+00 | T |
| 0 | 409.52 | 51 | 104 | 1.57 | 819.22 | 815 | 9 | 7.01E-03 | 77.9 | 3.52E+00 | T |
| 0 | 463.17 | 69 | 83 | 1.31 | 926.50 | 921 | 9 | 9.61E-03 | 53.2 | 3.20E+00 | T |
| 1 | 768.31 | 55 | 30 | 1.64 | 1536.70 | 1531 | 19 | 7.68E-03 | 51.9 | 2.12E+00 | T |
| 1 | 771.81 | 40 | 50 | 1.64 | 1543.70 | 1531 | 19 | 5.56E-03 | 67.2 | 2.11E+00 | |
| 0 | 795.31 | 54 | 66 | 1.73 | 1590.69 | 1583 | 12 | 7.50E-03 | 66.1 | 2.06E+00 | T |
| 1 | 964.93 | 37 | 32 | 1.76 | 1929.84 | 1924 | 32 | 5.18E-03 | 71.1 | 1.73E+00 | T |
| 0 | 988.38 | 19 | 35 | 3.69 | 1976.72 | 1969 | 11 | 2.69E-03 | **** | 1.70E+00 | T |
| 0 | 1378.13 | 34 | 16 | 1.22 | 2755.94 | 2751 | 10 | 4.66E-03 | 57.7 | 1.27E+00 | |
| 0 | 1509.36 | 24 | 9 | 1.38 | 3018.27 | 3012 | 12 | 3.36E-03 | 64.1 | 1.18E+00 | T |
| 0 | 1730.23 | 26 | 8 | 1.11 | 3459.78 | 3455 | 10 | 3.59E-03 | 59.5 | 1.07E+00 | |

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388009.CNF;1
* Acquisition date   : 4-FEB-2010 13:31:10.   Detector SN#      :
* Detector ID        : GAM16                   Sensitivity         : 5.00000
* Geometry           : CAN                     Energy tolerance    : 1.50000
* Elapsed live time  : 0 02:00:00.00           Abundance limit     : 75.00000
* Elapsed real time  : 0 02:00:01.83           Half life ratio     : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 15-JAN-2010 12:00:00   Nuclide Library     : SOLID
* Sample ID          : G245388009             Analyst initials    : MXR1
* Batch Number       : 944964                 Sample Quantity     : 1.07970E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 16-NOV-2009 11:22:16.1MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A                LCS Isotope        :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 2.129E+01 | 2.453E+00 | 4.344E-01 | 3.818E-02 | 49.000 |
| CD-109 | 3.755E+00 | 1.116E+00 | 1.455E+00 | 1.402E-01 | 2.581 |
| SN-126 | 3.663E-01 | 1.089E-01 | 1.426E-01 | 1.367E-02 | 2.570 |
| TL-208 | 6.787E-01 | 1.186E-01 | 5.970E-02 | 5.918E-03 | 11.368 |
| BI-211 | 4.825E+00 | 7.048E-01 | 3.399E-01 | 3.717E-02 | 14.194 |
| BI-212 | 1.364E+00 | 4.682E-01 | 4.697E-01 | 4.907E-02 | 2.903 |
| PB-212 | 2.263E+00 | 2.983E-01 | 8.928E-02 | 1.057E-02 | 25.351 |
| PO-212 | 2.263E+00 | 2.983E-01 | 8.928E-02 | 1.057E-02 | 25.351 |
| BI-214 | 1.394E+00 | 2.278E-01 | 1.214E-01 | 1.284E-02 | 11.480 |
| PB-214 | 1.679E+00 | 2.604E-01 | 1.187E-01 | 1.435E-02 | 14.142 |
| PO-214 | 1.679E+00 | 2.604E-01 | 1.187E-01 | 1.435E-02 | 14.142 |
| PO-216 | 2.263E+00 | 2.983E-01 | 8.928E-02 | 1.057E-02 | 25.351 |
| PO-218 | 1.679E+00 | 2.604E-01 | 1.187E-01 | 1.435E-02 | 14.142 |
| RA-224 | 6.193E+00 | 1.395E+00 | 1.016E+00 | 1.120E-01 | 6.094 |
| RA-226 | 1.394E+00 | 2.278E-01 | 1.214E-01 | 1.284E-02 | 11.480 |
| AC-228 | 2.125E+00 | 4.367E-01 | 2.284E-01 | 2.713E-02 | 9.304 |
| RA-228 | 2.125E+00 | 4.367E-01 | 2.284E-01 | 2.713E-02 | 9.304 |
| TH-228 | 2.309E+00 | 3.044E-01 | 9.109E-02 | 1.078E-02 | 25.351 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-230 | 1.394E+00 | 2.278E-01 | 1.214E-01 | 1.284E-02 | 11.480 |
| TH-232 | 2.125E+00 | 4.367E-01 | 2.284E-01 | 2.713E-02 | 9.304 |
| TH-234 | 2.254E+00 | 2.106E+00 | 1.911E+00 | 3.334E-01 | 1.179 |
| U-234 | 1.394E+00 | 2.278E-01 | 1.214E-01 | 1.284E-02 | 11.480 |
| NP-237 | 1.076E+00 | 3.893E-01 | 4.092E-01 | 9.290E-02 | 2.629 |
| U-238 | 2.254E+00 | 2.106E+00 | 1.911E+00 | 3.334E-01 | 1.179 |
| AM-243 | 4.379E-01 | 8.045E-02 | 8.873E-02 | 7.346E-03 | 4.935 |
| ANH-511 | 1.352E-01 | 7.085E-02 | 4.269E-02 | 4.060E-03 | 3.167 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| BE-7 | 3.443E-04 | | 3.338E-01 | 5.532E-01 | 5.596E-02 | 0.001 |
| NA-22 | -2.302E-02 | | 4.899E-02 | 7.574E-02 | 6.302E-03 | -0.304 |
| NA-24 | -8.548E+01 | | 9.522E+01 | Half-Life | too short | |
| AL-26 | -6.542E-03 | | 2.835E-02 | 4.404E-02 | 3.602E-03 | -0.149 |
| TI-44 | 4.511E-01 | + | 6.339E-02 | 7.777E-02 | 6.697E-03 | 5.801 |
| SC-46 | 1.661E-02 | | 3.856E-02 | 6.727E-02 | 6.359E-03 | 0.247 |
| V-48 | -5.508E-02 | | 1.068E-01 | 1.413E-01 | 1.301E-02 | -0.390 |
| CR-51 | -1.195E-01 | | 4.560E-01 | 7.079E-01 | 8.277E-02 | -0.169 |
| MN-52 | 3.062E-01 | | 4.881E-01 | 8.547E-01 | 7.293E-02 | 0.358 |
| MN-54 | 3.844E-02 | | 3.804E-02 | 6.910E-02 | 6.490E-03 | 0.556 |
| CO-56 | -6.699E-03 | | 4.024E-02 | 6.637E-02 | 6.246E-03 | -0.101 |
| CO-57 | -1.968E-02 | | 2.525E-02 | 4.073E-02 | 3.384E-03 | -0.483 |
| CO-58 | -3.985E-02 | | 3.907E-02 | 5.846E-02 | 5.477E-03 | -0.682 |
| FE-59 | -3.960E-02 | | 1.020E-01 | 1.602E-01 | 1.489E-02 | -0.247 |
| CO-60 | -2.960E-02 | | 4.326E-02 | 6.305E-02 | 5.318E-03 | -0.469 |
| ZN-65 | -5.320E-02 | | 1.138E-01 | 1.503E-01 | 1.277E-02 | -0.354 |
| GE-68 | -1.352E-03 | | 1.292E+00 | 2.126E+00 | 1.857E-01 | -0.001 |
| AS-73 | -2.096E-02 | | 9.073E-01 | 1.420E+00 | 1.084E-01 | -0.015 |
| AS-74 | -2.462E-02 | | 1.199E-01 | 1.920E-01 | 1.782E-02 | -0.128 |
| SE-75 | 2.447E-02 | | 4.695E-02 | 7.758E-02 | 9.053E-03 | 0.315 |
| BR-77 | 1.787E-05 | | 2.294E-05 | Half-Life | too short | |
| SR-82 | -1.850E-01 | | 5.280E-01 | 6.956E-01 | 6.449E-02 | -0.266 |
| RB-83 | 1.882E-02 | | 7.370E-02 | 1.239E-01 | 1.177E-02 | 0.152 |
| RB-84 | 1.540E-02 | | 7.533E-02 | 1.286E-01 | 1.215E-02 | 0.120 |
| KR-85 | 8.784E+00 | | 8.209E+00 | 1.309E+01 | 1.244E+00 | 0.671 |
| SR-85 | 4.744E-02 | | 4.433E-02 | 7.068E-02 | 6.721E-03 | 0.671 |
| RB-86 | -1.577E-01 | | 9.674E-01 | 1.563E+00 | 1.365E-01 | -0.101 |
| Y-88 | 2.702E-02 | | 3.713E-02 | 6.958E-02 | 5.649E-03 | 0.388 |
| ZR-88 | -1.100E-02 | | 3.068E-02 | 5.019E-02 | 4.642E-03 | -0.219 |
| Y-91 | 5.609E+00 | | 2.029E+01 | 3.401E+01 | 2.766E+00 | 0.165 |
| NB-94 | -1.800E-02 | | 3.801E-02 | 5.854E-02 | 5.292E-03 | -0.308 |
| NB-95 | 4.169E-02 | | 5.004E-02 | 7.751E-02 | 7.165E-03 | 0.538 |
| NB-95M | 2.205E-02 | | 1.414E-01 | 2.058E-01 | 2.447E-02 | 0.107 |
| ZR-95 | 9.519E-02 | | 8.261E-02 | 1.455E-01 | 1.461E-02 | 0.654 |
| NB-97 | -7.259E+00 | | 6.759E+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 |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| ZR-97 | 3.723E+01 | | 1.296E+02 | Half-Life too short | | |
| MO-99 | 3.726E+01 | | 4.369E+01 | 7.516E+01 | 1.165E+01 | 0.496 |
| TC-99M | -5.681E+15 | | 1.640E+16 | Half-Life too short | | |
| RH-101 | -2.515E-05 | | 3.452E-02 | 5.634E-02 | 5.562E-03 | 0.000 |
| RH-102 | -3.602E-03 | | 2.943E-02 | 4.831E-02 | 4.592E-03 | -0.075 |
| RU-103 | -7.276E-03 | | 4.552E-02 | 7.423E-02 | 1.093E-02 | -0.098 |
| RH-106 | -1.327E-01 | | 3.299E-01 | 5.149E-01 | 7.055E-02 | -0.258 |
| RU-106 | -1.327E-01 | | 3.296E-01 | 5.149E-01 | 4.708E-02 | -0.258 |
| AG-108M | -2.624E-02 | | 3.132E-02 | 4.860E-02 | 4.731E-03 | -0.540 |
| AG-110M | -1.881E-02 | | 3.757E-02 | 5.788E-02 | 5.297E-03 | -0.325 |
| IN-111 | 1.280E+00 | | 3.806E+00 | 5.613E+00 | 6.251E-01 | 0.228 |
| IN-113M | 1.117E-02 | | 4.340E-02 | 7.416E-02 | 7.040E-03 | 0.151 |
| SN-113 | 1.117E-02 | | 4.340E-02 | 7.416E-02 | 7.040E-03 | 0.151 |
| IN-114M | 1.110E-01 | | 2.088E-01 | 3.161E-01 | 3.057E-02 | 0.351 |
| CD-115 | 7.164E-06 | | 2.558E-05 | Half-Life too short | | |
| SN-117M | -7.254E-03 | | 7.020E-02 | 1.155E-01 | 1.025E-02 | -0.063 |
| SB-122 | 5.813E+00 | | 7.877E+00 | 1.339E+01 | 1.260E+00 | 0.434 |
| I-123 | 5.067E+02 | | 1.509E+03 | Half-Life too short | | |
| TE-123M | 4.889E-03 | | 2.912E-02 | 4.850E-02 | 4.337E-03 | 0.101 |
| I-124 | -7.050E-01 | | 1.873E+00 | 2.718E+00 | 2.513E-01 | -0.259 |
| SB-124 | -2.607E-02 | | 7.691E-02 | 1.180E-01 | 1.033E-02 | -0.221 |
| SB-125 | -9.309E-02 | | 9.657E-02 | 1.494E-01 | 1.428E-02 | -0.623 |
| TE-125M | 2.723E+00 | | 9.195E+00 | 1.567E+01 | 1.598E+00 | 0.174 |
| I-126 | -5.491E-03 | | 2.641E-01 | 4.260E-01 | 3.789E-02 | -0.013 |
| SB-126 | 1.541E-01 | | 2.011E-01 | 3.453E-01 | 3.144E-02 | 0.446 |
| SB-127 | 2.868E+00 | | 3.576E+00 | 6.155E+00 | 8.117E-01 | 0.466 |
| XE-127 | -4.847E-02 | | 5.138E-02 | 7.915E-02 | 7.916E-03 | -0.612 |
| I-131 | -1.686E-02 | | 1.796E-01 | 3.011E-01 | 3.195E-02 | -0.056 |
| TE-132 | 1.647E+00 | | 2.092E+00 | 3.494E+00 | 6.247E-01 | 0.471 |
| BA-133 | -1.698E-02 | | 4.802E-02 | 6.926E-02 | 1.001E-02 | -0.245 |
| I-133 | -3.284E-01 | | 1.745E-01 | Half-Life too short | | |
| CS-134 | 1.210E-01 | + | 8.072E-02 | 1.053E-01 | 9.874E-03 | 1.149 |
| CS-135 | -3.459E-03 | | 1.810E-01 | 2.576E-01 | 3.285E-02 | -0.013 |
| I-135 | 4.094E+14 | | 7.915E+14 | Half-Life too short | | |
| CS-136 | -8.208E-02 | | 1.349E-01 | 2.059E-01 | 1.907E-02 | -0.399 |
| BA-137M | 9.319E-03 | | 3.841E-02 | 6.344E-02 | 5.630E-03 | 0.147 |
| CS-137 | 9.851E-03 | | 4.061E-02 | 6.706E-02 | 5.962E-03 | 0.147 |
| CE-139 | -3.017E-02 | | 3.113E-02 | 4.874E-02 | 4.421E-03 | -0.619 |
| BA-140 | -4.190E-01 | | 3.751E-01 | 5.111E-01 | 1.706E-01 | -0.820 |
| LA-140 | -4.230E-02 | | 1.158E-01 | 1.813E-01 | 1.544E-02 | -0.233 |
| CE-141 | 9.576E-03 | | 6.994E-02 | 1.168E-01 | 1.022E-02 | 0.082 |
| CE-143 | 6.970E-03 | | 1.298E-03 | Half-Life too short | | |
| CE-144 | 1.101E-01 | | 2.244E-01 | 3.445E-01 | 5.320E-02 | 0.319 |
| PM-144 | 4.349E-02 | | 4.045E-02 | 7.053E-02 | 6.363E-03 | 0.617 |
| PR-144 | 2.955E+00 | | 2.748E+00 | 4.792E+00 | 4.321E-01 | 0.617 |
| PM-146 | 1.164E-02 | | 4.618E-02 | 7.812E-02 | 8.921E-03 | 0.149 |
| ND-147 | -1.158E-01 | | 8.471E-01 | 1.378E+00 | 2.131E-01 | -0.084 |
| PM-149 | 3.519E-04 | | 2.313E-04 | 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 |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| EU-152 | 2.859E-02 | | 1.014E-01 | 1.629E-01 | 1.821E-02 | 0.175 |
| GD-153 | -1.462E-01 | | 9.124E-02 | 1.245E-01 | 1.106E-02 | -1.174 |
| EU-154 | -3.680E-02 | | 1.343E-01 | 2.126E-01 | 2.355E-02 | -0.173 |
| EU-155 | 1.431E-02 | | 1.038E-01 | 1.760E-01 | 1.523E-02 | 0.081 |
| TB-160 | 1.063E-01 | | 1.427E-01 | 2.557E-01 | 2.416E-02 | 0.416 |
| HO-166M | 3.566E-02 | | 6.628E-02 | 1.117E-01 | 1.013E-02 | 0.319 |
| TM-171 | -5.360E+00 | | 3.092E+01 | 4.363E+01 | 3.343E+00 | -0.123 |
| LU-176 | 9.264E-03 | | 2.652E-02 | 4.248E-02 | 4.927E-03 | 0.218 |
| LU-177 | 6.021E+00 | + | 2.953E+00 | 3.715E+00 | 3.770E-01 | 1.621 |
| LU-177M | 3.544E-02 | | 2.049E-01 | 3.070E-01 | 2.869E-02 | 0.115 |
| HF-181 | -2.576E-02 | | 4.658E-02 | 7.359E-02 | 6.999E-03 | -0.350 |
| W-181 | -5.837E-02 | | 4.114E-01 | 5.823E-01 | 4.397E-02 | -0.100 |
| TA-182 | -1.929E-01 | | 2.114E-01 | 3.096E-01 | 2.532E-02 | -0.623 |
| RE-183 | 1.003E-02 | | 1.157E-01 | 1.918E-01 | 1.722E-02 | 0.052 |
| RE-184 | 2.298E-01 | | 2.469E-01 | 4.168E-01 | 4.724E-02 | 0.551 |
| OS-185 | 1.498E-02 | | 4.629E-02 | 7.722E-02 | 6.941E-03 | 0.194 |
| RE-188 | 1.146E-01 | | 1.804E-01 | 3.066E-01 | 2.697E-02 | 0.374 |
| W-188 | -2.919E+00 | | 9.050E+00 | 1.244E+01 | 1.476E+00 | -0.235 |
| IR-192 | 7.626E-03 | | 3.704E-02 | 5.955E-02 | 6.805E-03 | 0.128 |
| AU-195 | 4.152E-01 | | 2.448E-01 | 3.986E-01 | 3.510E-02 | 1.042 |
| TL-200 | -7.902E-04 | | 5.386E-03 | Half-Life too short | | |
| TL-201 | -7.582E+00 | | 2.160E+01 | 3.497E+01 | 3.183E+00 | -0.217 |
| TL-202 | 6.481E-02 | | 9.092E-02 | 1.590E-01 | 1.501E-02 | 0.408 |
| HG-203 | -4.133E-03 | | 4.654E-02 | 7.393E-02 | 9.010E-03 | -0.056 |
| BI-207 | -2.145E-02 | | 4.755E-02 | 7.380E-02 | 6.506E-03 | -0.291 |
| TL-207 | 1.924E-01 | | 8.205E-01 | 1.175E+00 | 2.248E-01 | 0.164 |
| PO-209 | -1.916E+00 | | 7.737E+00 | 1.260E+01 | 1.192E+00 | -0.152 |
| BI-210 | -1.638E+00 | | 3.711E+00 | 5.627E+00 | 5.248E-01 | -0.291 |
| PB-210 | -1.638E+00 | | 3.711E+00 | 5.627E+00 | 5.248E-01 | -0.291 |
| PO-210 | -1.638E+00 | | 3.711E+00 | 5.627E+00 | 4.753E-01 | -0.291 |
| PB-211 | -2.163E-01 | | 1.117E+00 | 1.608E+00 | 1.009E+00 | -0.135 |
| PO-215 | 1.924E-01 | | 8.205E-01 | 1.175E+00 | 2.248E-01 | 0.164 |
| RN-219 | -9.088E-02 | | 4.336E-01 | 7.168E-01 | 1.106E-01 | -0.127 |
| RN-220 | 1.851E+01 | | 2.521E+01 | 4.392E+01 | 4.150E+00 | 0.421 |
| RA-223 | 1.924E-01 | | 8.205E-01 | 1.175E+00 | 2.248E-01 | 0.164 |
| AC-227 | -2.833E-01 | | 4.019E-01 | 6.127E-01 | 1.046E-01 | -0.462 |
| TH-227 | -2.833E-01 | | 4.028E-01 | 6.127E-01 | 1.198E-01 | -0.462 |
| TH-229 | -4.347E-02 | | 5.261E-01 | 8.563E-01 | 8.356E-02 | -0.051 |
| PA-231 | -2.118E-01 | | 1.625E+00 | 2.571E+00 | 4.446E-01 | -0.082 |
| TH-231 | 1.924E-01 | | 8.205E-01 | 1.175E+00 | 2.248E-01 | 0.164 |
| U-231 | 1.251E+00 | | 2.503E+00 | 3.913E+00 | 3.512E-01 | 0.320 |
| PA-233 | 1.830E-02 | | 6.597E-02 | 1.066E-01 | 1.247E-02 | 0.172 |
| PA-234 | -1.818E-01 | | 3.290E-01 | 5.140E-01 | 9.820E-02 | -0.354 |
| PA-234M | -4.975E+00 | | 4.883E+00 | 7.142E+00 | 7.436E-01 | -0.697 |
| U-235 | 1.115E-01 | | 2.175E-01 | 3.615E-01 | 6.318E-02 | 0.308 |
| NP-236 | 1.530E-02 | | 8.071E-02 | 1.345E-01 | 1.200E-02 | 0.114 |
| NP-239 | -2.213E-02 | | 1.830E-01 | 3.056E-01 | 2.544E-02 | -0.072 |
| AM-241 | 2.931E-02 | | 1.716E-01 | 2.488E-01 | 1.952E-02 | 0.118 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | 3.628E-03 | | 9.196E-02 | 1.555E-01 | 1.337E-02 | 0.023 |
| AM-246 | 8.972E-02 | | 1.507E-01 | 2.627E-01 | 2.292E-02 | 0.342 |
| CM-247 | -9.344E-03 | | 3.847E-02 | 6.345E-02 | 5.900E-03 | -0.147 |
| CF-249 | 1.629E-02 | | 3.949E-02 | 6.811E-02 | 6.390E-03 | 0.239 |
| CF-251 | 1.650E-02 | | 1.277E-01 | 2.111E-01 | 1.968E-02 | 0.078 |

VAX/VMS Nuclide Identification Report Generated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245388009             *
* Acquisition date   : 4-FEB-2010 13:31:10 Detector SN#      :               *
* Detector ID        : GAM16 Sensitivity      : 5.000          *
* Geometry           : CAN Energy tolerance: 1.500          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000   *
* Elapsed real time  : 0 02:00:01.83 Half life ratio : 8.000   *
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G245388009 Analyst initials: MXR1          *
* Batch Number       : 944964 Sample Quantity : 1.0797E+02 GRAM   *
* Recovery           : 1.00000 Carrier Weight : 0.00000          *
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME  : 16-NOV-2009 11:22:16 MS Isotope      :               *
* MSD DPM           : 0.000 MSD Isotope      :               *
* LCS DPM           : 0.000 LCS Isotope      :               *
* LCSD DPM          : 0.000 LCSD Isotope     :               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.129E+01 | 2.404E+00 | 2.160E-01 | 1.227E+00 |
| CD-109 | 3.755E+00 | 1.094E+00 | 7.361E-01 | 5.582E-01 |
| SN-126 | 3.663E-01 | 1.067E-01 | 7.215E-02 | 5.446E-02 |
| TL-208 | 6.787E-01 | 1.162E-01 | 2.986E-02 | 5.929E-02 |
| BI-211 | 4.825E+00 | 6.907E-01 | 1.706E-01 | 3.524E-01 |
| BI-212 | 1.364E+00 | 4.588E-01 | 2.346E-01 | 2.341E-01 |
| PB-212 | 2.263E+00 | 2.924E-01 | 4.491E-02 | 1.492E-01 |
| PO-212 | 2.263E+00 | 2.924E-01 | 4.491E-02 | 1.492E-01 |
| BI-214 | 1.394E+00 | 2.233E-01 | 6.071E-02 | 1.139E-01 |
| PB-214 | 1.679E+00 | 2.552E-01 | 5.955E-02 | 1.302E-01 |
| PO-214 | 1.679E+00 | 2.552E-01 | 5.955E-02 | 1.302E-01 |
| PO-216 | 2.263E+00 | 2.924E-01 | 4.491E-02 | 1.492E-01 |
| PO-218 | 1.679E+00 | 2.552E-01 | 5.955E-02 | 1.302E-01 |
| RA-224 | 6.193E+00 | 1.367E+00 | 5.111E-01 | 6.975E-01 |
| RA-226 | 1.394E+00 | 2.233E-01 | 6.071E-02 | 1.139E-01 |
| AC-228 | 2.125E+00 | 4.280E-01 | 1.139E-01 | 2.184E-01 |
| RA-228 | 2.125E+00 | 4.280E-01 | 1.139E-01 | 2.184E-01 |
| TH-228 | 2.309E+00 | 2.983E-01 | 4.581E-02 | 1.522E-01 |
| TH-230 | 1.394E+00 | 2.233E-01 | 6.070E-02 | 1.139E-01 |
| TH-232 | 2.125E+00 | 4.280E-01 | 1.139E-01 | 2.184E-01 |
| TH-234 | 2.254E+00 | 2.064E+00 | 9.693E-01 | 1.053E+00 |
| U-234 | 1.394E+00 | 2.233E-01 | 6.070E-02 | 1.139E-01 |
| NP-237 | 1.076E+00 | 3.816E-01 | 2.071E-01 | 1.947E-01 |
| U-238 | 2.254E+00 | 2.064E+00 | 9.693E-01 | 1.053E+00 |
| AM-243 | 4.379E-01 | 7.884E-02 | 4.495E-02 | 4.022E-02 |
| ANH-511 | 1.352E-01 | 6.944E-02 | 2.137E-02 | 3.543E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | 3.443E-04 | 3.272E-01 | 2.770E-01 | 1.669E-01 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-22 | -2.302E-02 | 4.801E-02 | 3.769E-02 | 2.449E-02 | NOT IDENT. |
| NA-24 | -8.548E+07 | 1.866E+08 | 0.000E+00 | 9.522E+07 | SHORT HLIF |
| AL-26 | -6.542E-03 | 2.778E-02 | 2.187E-02 | 1.417E-02 | NOT IDENT. |
| TI-44 | 4.511E-01 | 6.213E-02 | 3.938E-02 | 3.170E-02 | FAIL ABUN |
| SC-46 | 1.661E-02 | 3.778E-02 | 3.355E-02 | 1.928E-02 | FAIL ABUN |
| V-48 | -5.508E-02 | 1.047E-01 | 7.044E-02 | 5.342E-02 | NOT IDENT. |
| CR-51 | -1.195E-01 | 4.469E-01 | 3.554E-01 | 2.280E-01 | NOT IDENT. |
| MN-52 | 3.062E-01 | 4.783E-01 | 4.250E-01 | 2.441E-01 | NOT IDENT. |
| MN-54 | 3.844E-02 | 3.728E-02 | 3.448E-02 | 1.902E-02 | NOT IDENT. |
| CO-56 | -6.699E-03 | 3.944E-02 | 3.312E-02 | 2.012E-02 | NOT IDENT. |
| CO-57 | -1.968E-02 | 2.474E-02 | 2.057E-02 | 1.262E-02 | NOT IDENT. |
| CO-58 | -3.985E-02 | 3.829E-02 | 2.918E-02 | 1.953E-02 | NOT IDENT. |
| FE-59 | -3.960E-02 | 9.994E-02 | 7.981E-02 | 5.099E-02 | NOT IDENT. |
| CO-60 | -2.960E-02 | 4.239E-02 | 3.137E-02 | 2.163E-02 | NOT IDENT. |
| ZN-65 | -5.320E-02 | 1.115E-01 | 7.487E-02 | 5.688E-02 | NOT IDENT. |
| GE-68 | -1.352E-03 | 1.267E+00 | 1.059E+00 | 6.462E-01 | NOT IDENT. |
| AS-73 | -2.096E-02 | 8.892E-01 | 7.210E-01 | 4.537E-01 | NOT IDENT. |
| AS-74 | -2.462E-02 | 1.175E-01 | 9.600E-02 | 5.993E-02 | NOT IDENT. |
| SE-75 | 2.447E-02 | 4.601E-02 | 3.899E-02 | 2.348E-02 | NOT IDENT. |
| BR-77 | 1.787E+01 | 4.496E+01 | 0.000E+00 | 2.294E+01 | SHORT HLIF |
| SR-82 | -1.850E-01 | 5.174E-01 | 3.472E-01 | 2.640E-01 | NOT IDENT. |
| RB-83 | 1.882E-02 | 7.223E-02 | 6.199E-02 | 3.685E-02 | NOT IDENT. |
| RB-84 | 1.540E-02 | 7.383E-02 | 6.413E-02 | 3.767E-02 | NOT IDENT. |
| KR-85 | 8.784E+00 | 8.045E+00 | 6.550E+00 | 4.104E+00 | NOT IDENT. |
| SR-85 | 4.744E-02 | 4.345E-02 | 3.538E-02 | 2.217E-02 | NOT IDENT. |
| RB-86 | -1.577E-01 | 9.481E-01 | 7.785E-01 | 4.837E-01 | NOT IDENT. |
| Y-88 | 2.702E-02 | 3.639E-02 | 3.455E-02 | 1.857E-02 | NOT IDENT. |
| ZR-88 | -1.100E-02 | 3.007E-02 | 2.516E-02 | 1.534E-02 | NOT IDENT. |
| Y-91 | 5.609E+00 | 1.989E+01 | 1.693E+01 | 1.015E+01 | NOT IDENT. |
| NB-94 | -1.800E-02 | 3.725E-02 | 2.924E-02 | 1.900E-02 | NOT IDENT. |
| NB-95 | 4.169E-02 | 4.904E-02 | 3.870E-02 | 2.502E-02 | NOT IDENT. |
| NB-95M | 2.205E-02 | 1.385E-01 | 1.035E-01 | 7.068E-02 | NOT IDENT. |
| ZR-95 | 9.519E-02 | 8.095E-02 | 7.265E-02 | 4.130E-02 | NOT IDENT. |
| NB-97 | -7.259E+06 | 1.325E+07 | 0.000E+00 | 6.759E+06 | SHORT HLIF |
| ZR-97 | 3.723E+07 | 2.540E+08 | 0.000E+00 | 1.296E+08 | SHORT HLIF |
| MO-99 | 3.726E+01 | 4.281E+01 | 3.753E+01 | 2.184E+01 | NOT IDENT. |
| TC-99M | -5.681E+21 | 3.215E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -2.515E-05 | 3.383E-02 | 2.837E-02 | 1.726E-02 | NOT IDENT. |
| RH-102 | -3.602E-03 | 2.884E-02 | 2.419E-02 | 1.471E-02 | FAIL ABUN |
| RU-103 | -7.276E-03 | 4.461E-02 | 3.716E-02 | 2.276E-02 | FAIL ABUN |
| RH-106 | -1.327E-01 | 3.233E-01 | 2.574E-01 | 1.649E-01 | FAIL ABUN |
| RU-106 | -1.327E-01 | 3.230E-01 | 2.574E-01 | 1.648E-01 | FAIL ABUN |
| AG-108M | -2.624E-02 | 3.070E-02 | 2.435E-02 | 1.566E-02 | NOT IDENT. |
| AG-110M | -1.881E-02 | 3.682E-02 | 2.892E-02 | 1.879E-02 | NOT IDENT. |
| IN-111 | 1.280E+00 | 3.730E+00 | 2.822E+00 | 1.903E+00 | NOT IDENT. |
| IN-113M | 1.117E-02 | 4.253E-02 | 3.718E-02 | 2.170E-02 | NOT IDENT. |
| SN-113 | 1.117E-02 | 4.253E-02 | 3.718E-02 | 2.170E-02 | NOT IDENT. |
| IN-114M | 1.110E-01 | 2.047E-01 | 1.592E-01 | 1.044E-01 | NOT IDENT. |
| CD-115 | 7.164E+00 | 5.014E+01 | 0.000E+00 | 2.558E+01 | SHORT HLIF |
| SN-117M | -7.254E-03 | 6.880E-02 | 5.822E-02 | 3.510E-02 | NOT IDENT. |
| SB-122 | 5.813E+00 | 7.719E+00 | 6.700E+00 | 3.938E+00 | NOT IDENT. |
| I-123 | 5.067E+08 | 2.958E+09 | 0.000E+00 | 1.509E+09 | SHORT HLIF |
| TE-123M | 4.889E-03 | 2.854E-02 | 2.445E-02 | 1.456E-02 | NOT IDENT. |
| I-124 | -7.050E-01 | 1.836E+00 | 1.359E+00 | 9.365E-01 | FAIL ABUN |
| SB-124 | -2.607E-02 | 7.537E-02 | 5.859E-02 | 3.845E-02 | FAIL ABUN |
| SB-125 | -9.309E-02 | 9.463E-02 | 7.487E-02 | 4.828E-02 | FAIL ABUN |
| TE-125M | 2.723E+00 | 9.011E+00 | 7.922E+00 | 4.598E+00 | NOT IDENT. |
| I-126 | -5.491E-03 | 2.588E-01 | 2.129E-01 | 1.320E-01 | NOT IDENT. |
| SB-126 | 1.541E-01 | 1.970E-01 | 1.725E-01 | 1.005E-01 | FAIL ABUN |
| SB-127 | 2.868E+00 | 3.504E+00 | 3.075E+00 | 1.788E+00 | NOT IDENT. |
| XE-127 | -4.847E-02 | 5.035E-02 | 3.985E-02 | 2.569E-02 | NOT IDENT. |
| I-131 | -1.686E-02 | 1.760E-01 | 1.510E-01 | 8.978E-02 | NOT IDENT. |
| TE-132 | 1.647E+00 | 2.050E+00 | 1.758E+00 | 1.046E+00 | NOT IDENT. |
| BA-133 | -1.698E-02 | 4.706E-02 | 3.475E-02 | 2.401E-02 | NOT IDENT. |
| I-133 | -3.284E+05 | 3.420E+05 | 0.000E+00 | 1.745E+05 | SHORT HLIF |
| CS-134 | 1.210E-01 | 7.910E-02 | 5.256E-02 | 4.036E-02 | FAIL ABUN |
| CS-135 | -3.459E-03 | 1.774E-01 | 1.295E-01 | 9.049E-02 | NOT IDENT. |
| I-135 | 4.094E+20 | 1.551E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -8.208E-02 | 1.322E-01 | 1.026E-01 | 6.743E-02 | FAIL ABUN |
| BA-137M | 9.319E-03 | 3.765E-02 | 3.170E-02 | 1.921E-02 | NOT IDENT. |
| CS-137 | 9.851E-03 | 3.980E-02 | 3.351E-02 | 2.030E-02 | NOT IDENT. |
| CE-139 | -3.017E-02 | 3.050E-02 | 2.457E-02 | 1.556E-02 | NOT IDENT. |
| BA-140 | -4.190E-01 | 3.676E-01 | 2.558E-01 | 1.876E-01 | NOT IDENT. |
| LA-140 | -4.230E-02 | 1.135E-01 | 9.007E-02 | 5.792E-02 | FAIL ABUN |
| CE-141 | 9.576E-03 | 6.854E-02 | 5.894E-02 | 3.497E-02 | NOT IDENT. |
| CE-143 | 6.970E+03 | 2.544E+03 | 0.000E+00 | 1.298E+03 | SHORT HLIF |
| CE-144 | 1.101E-01 | 2.199E-01 | 1.739E-01 | 1.122E-01 | NOT IDENT. |
| PM-144 | 4.349E-02 | 3.964E-02 | 3.524E-02 | 2.022E-02 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | 2.955E+00 | 2.693E+00 | 2.394E+00 | 1.374E+00 | NOT IDENT. |
| PM-146 | 1.164E-02 | 4.525E-02 | 3.913E-02 | 2.309E-02 | NOT IDENT. |
| ND-147 | -1.158E-01 | 8.302E-01 | 6.895E-01 | 4.235E-01 | FAIL ABUN |
| PM-149 | 3.519E+02 | 4.534E+02 | 0.000E+00 | 2.313E+02 | SHORT HLIF |
| EU-152 | 2.859E-02 | 9.933E-02 | 8.176E-02 | 5.068E-02 | FAIL ABUN |
| GD-153 | -1.462E-01 | 8.942E-02 | 6.296E-02 | 4.562E-02 | NOT IDENT. |
| EU-154 | -3.680E-02 | 1.316E-01 | 1.058E-01 | 6.714E-02 | NOT IDENT. |
| EU-155 | 1.431E-02 | 1.017E-01 | 8.900E-02 | 5.189E-02 | FAIL ABUN |
| TB-160 | 1.063E-01 | 1.399E-01 | 1.276E-01 | 7.136E-02 | FAIL ABUN |
| HO-166M | 3.566E-02 | 6.495E-02 | 5.578E-02 | 3.314E-02 | FAIL ABUN |
| TM-171 | -5.360E+00 | 3.030E+01 | 2.212E+01 | 1.546E+01 | NOT IDENT. |
| LU-176 | 9.264E-03 | 2.599E-02 | 2.133E-02 | 1.326E-02 | FAIL ABUN |
| LU-177 | 6.021E+00 | 2.894E+00 | 1.870E+00 | 1.477E+00 | FAIL ABUN |
| LU-177M | 3.544E-02 | 2.008E-01 | 1.538E-01 | 1.025E-01 | NOT IDENT. |
| HF-181 | -2.576E-02 | 4.564E-02 | 3.685E-02 | 2.329E-02 | NOT IDENT. |
| W-181 | -5.837E-02 | 4.031E-01 | 2.952E-01 | 2.057E-01 | NOT IDENT. |
| TA-182 | -1.929E-01 | 2.072E-01 | 1.541E-01 | 1.057E-01 | FAIL ABUN |
| RE-183 | 1.003E-02 | 1.134E-01 | 9.670E-02 | 5.787E-02 | FAIL ABUN |
| RE-184 | 2.298E-01 | 2.419E-01 | 2.096E-01 | 1.234E-01 | NOT IDENT. |
| OS-185 | 1.498E-02 | 4.537E-02 | 3.859E-02 | 2.315E-02 | NOT IDENT. |
| RE-188 | 1.146E-01 | 1.768E-01 | 1.546E-01 | 9.021E-02 | NOT IDENT. |
| W-188 | -2.919E+00 | 8.869E+00 | 6.249E+00 | 4.525E+00 | FAIL ABUN |
| IR-192 | 7.626E-03 | 3.630E-02 | 2.990E-02 | 1.852E-02 | FAIL ABUN |
| AU-195 | 4.152E-01 | 2.399E-01 | 2.016E-01 | 1.224E-01 | FAIL ABUN |
| TL-200 | -7.902E+02 | 1.056E+04 | 0.000E+00 | 5.386E+03 | SHORT HLIF |
| TL-201 | -7.582E+00 | 2.116E+01 | 1.763E+01 | 1.080E+01 | NOT IDENT. |
| TL-202 | 6.481E-02 | 8.911E-02 | 7.967E-02 | 4.546E-02 | NOT IDENT. |
| HG-203 | -4.133E-03 | 4.561E-02 | 3.715E-02 | 2.327E-02 | NOT IDENT. |
| BI-207 | -2.145E-02 | 4.660E-02 | 3.677E-02 | 2.378E-02 | FAIL ABUN |
| TL-207 | 1.924E-01 | 8.041E-01 | 5.899E-01 | 4.102E-01 | FAIL ABUN |
| PO-209 | -1.916E+00 | 7.582E+00 | 6.284E+00 | 3.869E+00 | NOT IDENT. |
| BI-210 | -1.638E+00 | 3.637E+00 | 2.859E+00 | 1.856E+00 | NOT IDENT. |
| PB-210 | -1.638E+00 | 3.637E+00 | 2.859E+00 | 1.856E+00 | NOT IDENT. |
| PO-210 | -1.638E+00 | 3.636E+00 | 2.859E+00 | 1.855E+00 | NOT IDENT. |
| PO-211 | -2.163E-01 | 1.095E+00 | 8.060E-01 | 5.585E-01 | NOT IDENT. |
| PO-215 | 1.924E-01 | 8.041E-01 | 5.899E-01 | 4.102E-01 | FAIL ABUN |
| RN-219 | -9.088E-02 | 4.249E-01 | 3.593E-01 | 2.168E-01 | FAIL ABUN |
| RN-220 | 1.851E+01 | 2.471E+01 | 2.198E+01 | 1.261E+01 | NOT IDENT. |
| RA-223 | 1.924E-01 | 8.041E-01 | 5.899E-01 | 4.102E-01 | FAIL ABUN |
| AC-227 | -2.833E-01 | 3.939E-01 | 3.080E-01 | 2.010E-01 | FAIL ABUN |
| TH-227 | -2.833E-01 | 3.948E-01 | 3.080E-01 | 2.014E-01 | FAIL ABUN |
| TH-229 | -4.347E-02 | 5.156E-01 | 4.312E-01 | 2.630E-01 | FAIL ABUN |
| PA-231 | -2.118E-01 | 1.592E+00 | 1.291E+00 | 8.125E-01 | FAIL ABUN |
| TH-231 | 1.924E-01 | 8.041E-01 | 5.899E-01 | 4.102E-01 | FAIL ABUN |
| U-231 | 1.251E+00 | 2.453E+00 | 1.979E+00 | 1.251E+00 | FAIL ABUN |
| PA-233 | 1.830E-02 | 6.466E-02 | 5.355E-02 | 3.299E-02 | FAIL ABUN |
| PA-234 | -1.818E-01 | 3.224E-01 | 2.563E-01 | 1.645E-01 | FAIL ABUN |
| PA-234M | -4.975E+00 | 4.785E+00 | 3.560E+00 | 2.441E+00 | NOT IDENT. |
| U-235 | 1.115E-01 | 2.131E-01 | 1.824E-01 | 1.087E-01 | FAIL ABUN |
| NP-236 | 1.530E-02 | 7.909E-02 | 6.779E-02 | 4.035E-02 | FAIL ABUN |
| NP-239 | -2.213E-02 | 1.794E-01 | 1.544E-01 | 9.152E-02 | FAIL ABUN |
| AM-241 | 2.931E-02 | 1.682E-01 | 1.262E-01 | 8.582E-02 | NOT IDENT. |
| CM-243 | 3.628E-03 | 9.012E-02 | 7.861E-02 | 4.598E-02 | FAIL ABUN |
| AM-246 | 8.972E-02 | 1.477E-01 | 1.309E-01 | 7.535E-02 | NOT IDENT. |
| CM-247 | -9.344E-03 | 3.770E-02 | 3.181E-02 | 1.924E-02 | NOT IDENT. |
| CF-249 | 1.629E-02 | 3.870E-02 | 3.415E-02 | 1.974E-02 | NOT IDENT. |
| CF-251 | 1.650E-02 | 1.251E-01 | 1.064E-01 | 6.384E-02 | NOT IDENT. |

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

| ENERGY | MDA COUNTS |
|--------|------------|
| 46.50 | 191.6026 |
| 46.50 | 191.6026 |
| 46.50 | 191.6026 |
| 48.70 | 215.4078 |
| 49.72 | 205.3940 |
| 51.35 | 235.0332 |
| 52.39 | 196.2621 |
| 52.97 | 219.3708 |
| 53.15 | 219.4857 |
| 53.44 | 229.2730 |
| 54.07 | 208.0430 |
| 56.28 | 235.9684 |
| 56.28 | 235.9699 |
| 57.37 | 0.0000 |
| 57.53 | 245.2894 |
| 57.53 | 245.2906 |
| 57.60 | 245.3368 |
| 57.98 | 227.3555 |
| 57.98 | 227.3555 |
| 59.32 | 237.5404 |
| 59.32 | 237.5404 |
| 59.40 | 252.2377 |
| 59.54 | 255.5889 |
| 59.72 | 255.7123 |
| 60.01 | 249.3915 |
| 61.10 | 255.0203 |
| 61.14 | 255.0468 |
| 61.30 | 255.1544 |
| 63.00 | 251.3631 |
| 63.29 | 251.5522 |
| 63.29 | 251.5522 |
| 63.58 | 251.7405 |
| 64.28 | 252.1927 |
| 65.12 | 294.0298 |
| 65.20 | 294.0882 |
| 65.20 | 294.0882 |
| 66.05 | 283.1300 |
| 66.72 | 295.2145 |
| 66.83 | 295.2960 |
| 66.91 | 293.6964 |
| 67.20 | 275.6417 |
| 67.20 | 275.6417 |
| 67.75 | 277.6793 |
| 67.85 | 277.7490 |
| 68.90 | 307.6464 |
| 68.90 | 307.6464 |
| 69.30 | 341.3284 |
| 69.67 | 345.8128 |
| 70.82 | 301.5399 |
| 70.82 | 301.5399 |
| 70.83 | 301.5472 |
| 72.80 | 292.8639 |
| 72.87 | 292.9117 |
| 72.87 | 292.9117 |
| 74.67 | 339.7886 |
| 74.81 | 339.8970 |
| 74.81 | 339.8970 |
| 74.81 | 339.8970 |
| 74.81 | 339.8970 |
| 74.81 | 339.8970 |
| 74.81 | 339.8970 |
| 74.81 | 339.8970 |
| 74.97 | 340.0238 |
| 75.28 | 340.2671 |
| 75.70 | 340.5942 |
| 77.11 | 341.6902 |
| 77.11 | 341.6902 |

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|--------|----------|
| 77.11 | 341.6902 |
| 77.11 | 341.6902 |
| 77.11 | 341.6902 |
| 77.11 | 341.6902 |
| 77.11 | 341.6902 |
| 78.38 | 333.7193 |
| 79.62 | 338.4897 |
| 79.80 | 338.6246 |
| 79.80 | 338.6246 |
| 80.11 | 304.2005 |
| 80.18 | 304.2475 |
| 80.30 | 304.3271 |
| 80.30 | 304.3271 |
| 80.57 | 272.3868 |
| 81.00 | 330.5165 |
| 81.07 | 330.5675 |
| 81.07 | 330.5675 |
| 81.07 | 330.5675 |
| 81.07 | 330.5675 |
| 82.60 | 322.6357 |
| 83.37 | 315.4136 |
| 83.78 | 319.5743 |
| 83.78 | 319.5743 |
| 83.78 | 319.5743 |
| 83.78 | 319.5743 |
| 84.21 | 319.8683 |
| 84.90 | 285.3209 |
| 85.43 | 280.4480 |
| 86.29 | 365.5045 |
| 86.50 | 391.6913 |
| 86.54 | 391.7235 |
| 86.59 | 391.7648 |
| 86.72 | 391.8705 |
| 86.79 | 391.9256 |
| 86.94 | 392.0518 |
| 87.30 | 419.7188 |
| 87.30 | 419.7188 |
| 87.30 | 419.7188 |
| 87.30 | 419.7188 |
| 87.30 | 419.7188 |
| 87.30 | 419.7188 |
| 87.57 | 419.9546 |
| 87.88 | 0.0000 |
| 88.03 | 420.3550 |
| 88.36 | 420.6425 |
| 88.47 | 420.7383 |
| 89.95 | 422.0157 |
| 91.11 | 194.4273 |
| 92.29 | 194.8902 |
| 92.38 | 194.9252 |
| 92.38 | 194.9252 |
| 93.35 | 254.6848 |
| 94.00 | 255.0147 |
| 94.67 | 255.3489 |
| 94.67 | 255.3519 |
| 94.90 | 255.4667 |
| 94.90 | 255.4667 |
| 94.90 | 255.4667 |
| 94.90 | 255.4667 |
| 95.87 | 249.3217 |
| 95.87 | 249.3217 |
| 96.73 | 281.6240 |
| 97.43 | 316.5895 |
| 98.44 | 245.2327 |
| 98.44 | 245.2341 |
| 98.88 | 201.4213 |
| 99.55 | 221.1788 |
| 99.55 | 221.1788 |
| 99.86 | 226.6552 |
| 100.00 | 231.7053 |
| 100.10 | 231.7516 |
| 103.18 | 256.4004 |
| 103.76 | 237.8298 |
| 105.00 | 216.7845 |
| 105.31 | 242.1093 |
| 108.00 | 267.7125 |
| 109.28 | 223.0026 |

| | |
|--------|----------|
| 111.00 | 220.0461 |
| 111.00 | 220.0461 |
| 111.76 | 229.4453 |
| 112.95 | 267.3315 |
| 115.19 | 245.4717 |
| 116.30 | 210.1496 |
| 117.00 | 231.5332 |
| 117.00 | 231.5332 |
| 117.66 | 261.2260 |
| 121.11 | 218.3343 |
| 121.62 | 240.7415 |
| 121.78 | 248.2143 |
| 122.06 | 248.3302 |
| 122.32 | 234.5315 |
| 122.32 | 234.5315 |
| 122.32 | 234.5315 |
| 122.32 | 234.5315 |
| 123.07 | 230.1803 |
| 127.23 | 210.2474 |
| 129.76 | 236.4269 |
| 131.20 | 232.7337 |
| 133.02 | 207.9345 |
| 133.54 | 218.0100 |
| 135.34 | 226.1874 |
| 136.00 | 229.2604 |
| 136.25 | 230.2943 |
| 136.48 | 230.3759 |
| 140.51 | 232.7363 |
| 140.51 | 0.0000 |
| 142.18 | 264.8694 |
| 142.65 | 250.7022 |
| 143.76 | 219.4840 |
| 144.24 | 222.5151 |
| 144.24 | 222.5151 |
| 144.24 | 222.5151 |
| 144.24 | 222.5151 |
| 145.22 | 242.0460 |
| 145.44 | 242.1229 |
| 147.16 | 240.8015 |
| 152.43 | 241.6519 |
| 152.70 | 236.8888 |
| 153.22 | 217.6312 |
| 154.21 | 211.1216 |
| 154.21 | 211.1216 |
| 154.21 | 211.1216 |
| 154.21 | 211.1216 |
| 155.03 | 219.1566 |
| 156.02 | 237.9908 |
| 158.56 | 223.1665 |
| 159.00 | 0.0000 |
| 159.00 | 217.4224 |
| 160.31 | 224.6811 |
| 161.27 | 223.0098 |
| 162.32 | 222.3423 |
| 162.64 | 236.2158 |
| 163.35 | 218.7097 |
| 163.89 | 212.9524 |
| 165.85 | 246.1302 |
| 167.43 | 223.8619 |
| 171.28 | 245.8970 |
| 171.86 | 223.1683 |
| 172.10 | 223.2366 |
| 176.55 | 208.4761 |
| 176.60 | 208.4909 |
| 181.06 | 219.2390 |
| 184.41 | 220.1506 |
| 185.71 | 203.7726 |
| 186.00 | 203.8462 |
| 190.27 | 178.9081 |
| 192.34 | 216.6539 |
| 193.63 | 215.9625 |
| 197.04 | 219.9147 |
| 198.01 | 221.1938 |
| 198.60 | 229.5809 |
| 200.40 | 0.0000 |
| 201.83 | 198.4082 |
| 202.84 | 213.1227 |
| 205.31 | 172.7431 |

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|--------|----------|
| 208.36 | 234.2422 |
| 208.81 | 209.3627 |
| 209.75 | 209.5836 |
| 209.75 | 209.5836 |
| 210.97 | 192.6417 |
| 215.65 | 200.4622 |
| 216.55 | 202.7615 |
| 218.09 | 210.4696 |
| 222.10 | 188.1309 |
| 223.80 | 200.1204 |
| 226.40 | 198.5505 |
| 227.00 | 188.0517 |
| 227.08 | 185.9428 |
| 227.20 | 185.9660 |
| 228.16 | 171.2623 |
| 228.18 | 171.2656 |
| 228.18 | 171.2656 |
| 231.56 | 0.0000 |
| 235.69 | 175.2872 |
| 236.00 | 184.9957 |
| 236.00 | 184.9957 |
| 238.63 | 165.6004 |
| 238.63 | 165.6004 |
| 238.63 | 165.6004 |
| 238.63 | 165.6004 |
| 239.00 | 0.0000 |
| 240.98 | 165.9952 |
| 241.98 | 166.1628 |
| 241.98 | 166.1628 |
| 241.98 | 166.1628 |
| 244.69 | 141.1891 |
| 245.39 | 134.7927 |
| 247.94 | 136.7615 |
| 248.90 | 160.7925 |
| 249.79 | 0.0000 |
| 252.40 | 127.5510 |
| 252.85 | 135.2415 |
| 252.85 | 135.2415 |
| 254.15 | 0.0000 |
| 256.20 | 166.3188 |
| 256.20 | 166.3188 |
| 260.50 | 124.1570 |
| 260.90 | 0.0000 |
| 262.80 | 156.3612 |
| 264.65 | 135.6749 |
| 268.24 | 151.0742 |
| 268.79 | 127.8978 |
| 269.46 | 131.3018 |
| 269.46 | 131.3018 |
| 269.46 | 131.3018 |
| 269.46 | 131.3018 |
| 271.23 | 142.0599 |
| 273.65 | 120.1311 |
| 276.40 | 148.5357 |
| 277.35 | 149.5559 |
| 277.60 | 140.6605 |
| 277.60 | 140.6605 |
| 278.00 | 132.8945 |
| 278.60 | 144.1408 |
| 279.20 | 153.1606 |
| 279.53 | 194.5853 |
| 280.46 | 179.0788 |
| 281.68 | 0.0000 |
| 283.67 | 142.5546 |
| 284.30 | 157.2351 |
| 285.00 | 159.5795 |
| 285.90 | 0.0000 |
| 286.10 | 122.6139 |
| 286.10 | 122.6139 |
| 287.40 | 146.4060 |
| 288.45 | 0.0000 |
| 290.67 | 142.3114 |
| 290.80 | 142.3268 |
| 291.72 | 133.9634 |
| 293.26 | 0.0000 |
| 293.70 | 124.5691 |
| 295.21 | 124.7325 |
| 295.21 | 124.7325 |

| | |
|--------|----------|
| 295.21 | 124.7325 |
| 295.96 | 124.8153 |
| 296.50 | 124.8735 |
| 297.23 | 0.0000 |
| 298.57 | 125.0950 |
| 299.80 | 125.2271 |
| 299.80 | 125.2271 |
| 300.09 | 125.2584 |
| 300.09 | 125.2584 |
| 300.09 | 125.2584 |
| 300.09 | 125.2584 |
| 300.12 | 125.2629 |
| 301.29 | 121.3986 |
| 302.84 | 114.7105 |
| 303.76 | 0.0000 |
| 303.91 | 116.5284 |
| 304.40 | 121.7192 |
| 304.40 | 121.7192 |
| 304.84 | 125.1947 |
| 306.84 | 111.0906 |
| 308.46 | 123.8577 |
| 311.98 | 111.5701 |
| 316.51 | 109.6795 |
| 318.01 | 125.9980 |
| 319.02 | 123.7884 |
| 319.41 | 124.9849 |
| 320.08 | 129.6846 |
| 323.87 | 130.6664 |
| 323.87 | 130.6664 |
| 323.87 | 130.6664 |
| 323.87 | 130.6664 |
| 325.23 | 143.0195 |
| 328.77 | 128.2662 |
| 333.44 | 126.4043 |
| 334.20 | 101.8859 |
| 334.20 | 101.8859 |
| 334.30 | 101.8947 |
| 338.28 | 130.4101 |
| 338.28 | 130.4101 |
| 338.28 | 130.4101 |
| 338.28 | 130.4101 |
| 338.32 | 130.4146 |
| 338.32 | 130.4146 |
| 338.32 | 130.4146 |
| 340.50 | 128.5175 |
| 340.57 | 128.5242 |
| 344.27 | 105.0501 |
| 345.85 | 119.6555 |
| 350.59 | 0.0000 |
| 351.07 | 115.3281 |
| 351.92 | 115.7594 |
| 351.92 | 115.7594 |
| 351.92 | 115.7594 |
| 355.39 | 0.0000 |
| 356.01 | 111.4728 |
| 364.48 | 107.8638 |
| 366.43 | 112.5202 |
| 367.43 | 108.0981 |
| 367.94 | 0.0000 |
| 369.80 | 79.4103 |
| 374.96 | 99.6355 |
| 383.85 | 109.3872 |
| 387.95 | 92.3357 |
| 388.63 | 94.2082 |
| 391.69 | 85.2448 |
| 391.69 | 85.2448 |
| 392.90 | 95.4084 |
| 398.62 | 100.3929 |
| 400.65 | 95.9210 |
| 401.10 | 96.8738 |
| 401.81 | 111.6890 |
| 402.60 | 109.9029 |
| 404.84 | 110.9949 |
| 410.95 | 89.1650 |
| 411.60 | 90.6898 |
| 413.65 | 93.7925 |
| 414.70 | 91.8722 |
| 415.30 | 88.3597 |

| | |
|--------|----------|
| 415.76 | 86.6568 |
| 417.63 | 0.0000 |
| 418.52 | 92.4167 |
| 423.70 | 92.7339 |
| 427.08 | 92.9394 |
| 427.89 | 108.9571 |
| 432.53 | 65.9486 |
| 433.93 | 88.6385 |
| 439.47 | 0.0000 |
| 439.56 | 73.8177 |
| 439.89 | 69.1003 |
| 443.98 | 89.2108 |
| 444.90 | 88.3128 |
| 445.03 | 88.3213 |
| 445.03 | 88.3213 |
| 445.03 | 88.3213 |
| 445.03 | 88.3213 |
| 453.90 | 88.8138 |
| 463.38 | 72.2373 |
| 468.07 | 82.2057 |
| 473.00 | 84.0622 |
| 475.06 | 80.2973 |
| 475.35 | 83.2141 |
| 476.78 | 87.1587 |
| 477.59 | 73.6366 |
| 477.96 | 74.6219 |
| 482.03 | 84.5175 |
| 484.57 | 0.0000 |
| 487.03 | 67.2301 |
| 490.36 | 0.0000 |
| 492.35 | 0.0000 |
| 497.08 | 79.3883 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 61.2479 |
| 511.00 | 61.2536 |
| 511.85 | 61.2824 |
| 511.85 | 61.2824 |
| 513.99 | 74.4197 |
| 513.99 | 74.4197 |
| 520.41 | 70.5168 |
| 520.65 | 0.0000 |
| 527.90 | 0.0000 |
| 528.96 | 0.0000 |
| 529.64 | 91.8456 |
| 529.87 | 0.0000 |
| 531.02 | 84.9222 |
| 537.32 | 86.2178 |
| 543.00 | 62.3481 |
| 546.56 | 0.0000 |
| 549.76 | 53.4933 |
| 552.65 | 73.7931 |
| 555.20 | 70.8566 |
| 563.23 | 60.9924 |
| 563.90 | 57.9619 |
| 568.70 | 87.6718 |
| 569.32 | 78.5227 |
| 569.50 | 78.5298 |
| 569.67 | 82.6166 |
| 573.80 | 80.7503 |
| 574.00 | 80.7575 |
| 574.64 | 0.0000 |
| 578.91 | 0.0000 |
| 579.30 | 0.0000 |
| 583.14 | 68.8136 |
| 585.48 | 0.0000 |
| 591.81 | 66.0234 |
| 592.07 | 66.0313 |
| 593.00 | 69.1592 |
| 595.88 | 77.5291 |
| 600.56 | 81.8569 |
| 602.52 | 0.0000 |
| 602.71 | 95.4281 |
| 602.71 | 95.4281 |
| 603.60 | 91.3193 |
| 604.41 | 83.0518 |
| 604.70 | 83.0640 |
| 609.31 | 80.1300 |

| | |
|--------|---------|
| 609.31 | 80.1300 |
| 609.31 | 80.1300 |
| 609.31 | 80.1300 |
| 610.33 | 59.9713 |
| 612.46 | 65.0375 |
| 614.37 | 70.1060 |
| 618.01 | 58.5259 |
| 621.84 | 67.0117 |
| 621.84 | 67.0117 |
| 631.29 | 45.2295 |
| 633.02 | 57.9004 |
| 633.10 | 54.7438 |
| 634.78 | 71.6461 |
| 635.90 | 68.5210 |
| 636.97 | 59.0642 |
| 645.85 | 59.3120 |
| 646.12 | 58.2613 |
| 656.30 | 56.4095 |
| 657.75 | 71.3593 |
| 657.90 | 0.0000 |
| 661.65 | 66.1531 |
| 661.65 | 66.1531 |
| 664.57 | 0.0000 |
| 666.33 | 74.8492 |
| 666.33 | 74.8492 |
| 675.00 | 67.6316 |
| 677.61 | 52.6651 |
| 685.20 | 53.9246 |
| 692.80 | 83.3258 |
| 695.00 | 63.9101 |
| 696.49 | 65.0354 |
| 696.49 | 65.0354 |
| 697.00 | 67.2184 |
| 697.49 | 68.3179 |
| 698.33 | 77.0214 |
| 698.50 | 88.9618 |
| 699.00 | 93.3224 |
| 702.63 | 80.4294 |
| 706.10 | 72.9316 |
| 706.58 | 0.0000 |
| 706.67 | 69.6836 |
| 709.31 | 74.1239 |
| 711.68 | 58.9241 |
| 713.82 | 61.1628 |
| 717.42 | 66.7281 |
| 720.50 | 52.5776 |
| 721.93 | 0.0000 |
| 722.20 | 54.3696 |
| 722.78 | 57.8918 |
| 722.78 | 57.8918 |
| 722.89 | 57.8950 |
| 722.95 | 66.6688 |
| 723.30 | 68.4328 |
| 724.18 | 63.1934 |
| 727.18 | 58.0014 |
| 733.00 | 33.4782 |
| 735.90 | 71.6690 |
| 739.58 | 48.5896 |
| 742.81 | 68.5618 |
| 744.21 | 57.5367 |
| 747.13 | 56.4987 |
| 751.79 | 71.0391 |
| 752.31 | 66.6138 |
| 753.82 | 56.6575 |
| 755.35 | 0.0000 |
| 756.15 | 47.8160 |
| 756.87 | 53.3921 |
| 763.93 | 42.8379 |
| 765.79 | 46.4433 |
| 766.42 | 57.1766 |
| 766.84 | 71.4824 |
| 776.49 | 57.4109 |
| 778.00 | 50.8644 |
| 778.57 | 48.7379 |
| 778.89 | 48.7445 |
| 783.80 | 59.6056 |
| 785.46 | 54.9194 |
| 792.07 | 63.1880 |

| | |
|---------|---------|
| 795.84 | 57.2567 |
| 796.30 | 60.2816 |
| 798.80 | 54.3062 |
| 801.93 | 61.4220 |
| 805.60 | 40.8395 |
| 810.29 | 56.3722 |
| 810.76 | 54.5640 |
| 815.85 | 44.6491 |
| 817.79 | 0.0000 |
| 818.51 | 39.2218 |
| 819.60 | 39.2386 |
| 826.30 | 43.9148 |
| 828.27 | 0.0000 |
| 831.60 | 64.1741 |
| 831.96 | 64.1826 |
| 834.83 | 44.0590 |
| 836.80 | 0.0000 |
| 846.75 | 47.9477 |
| 848.13 | 39.6700 |
| 856.28 | 0.0000 |
| 856.80 | 29.3094 |
| 860.37 | 30.5846 |
| 867.32 | 38.3295 |
| 867.82 | 34.0769 |
| 871.10 | 45.5942 |
| 873.19 | 47.4913 |
| 874.81 | 42.8611 |
| 875.33 | 0.0000 |
| 876.40 | 40.0889 |
| 879.36 | 35.4664 |
| 880.27 | 43.8812 |
| 880.51 | 39.2161 |
| 881.50 | 40.1645 |
| 883.24 | 44.8629 |
| 884.67 | 48.6269 |
| 889.25 | 35.5944 |
| 896.60 | 50.7160 |
| 898.02 | 42.2853 |
| 899.00 | 37.6006 |
| 903.28 | 54.1337 |
| 911.07 | 50.9796 |
| 911.07 | 50.9796 |
| 911.07 | 50.9796 |
| 919.63 | 50.5039 |
| 920.93 | 47.3694 |
| 925.00 | 56.9238 |
| 925.24 | 60.7234 |
| 926.50 | 58.8531 |
| 935.52 | 47.6111 |
| 937.48 | 63.8430 |
| 944.10 | 56.3496 |
| 946.00 | 56.3856 |
| 949.00 | 39.2243 |
| 962.29 | 44.8483 |
| 964.01 | 36.8612 |
| 966.15 | 42.3414 |
| 968.20 | 42.3704 |
| 969.11 | 42.3844 |
| 969.11 | 42.3844 |
| 969.11 | 42.3844 |
| 977.42 | 41.8586 |
| 980.50 | 22.5626 |
| 983.50 | 50.0105 |
| 989.30 | 30.7111 |
| 996.32 | 36.9387 |
| 1001.03 | 50.6264 |
| 1001.68 | 42.8474 |
| 1004.76 | 38.9912 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 30.5141 |
| 1036.00 | 32.4957 |
| 1037.82 | 38.4249 |
| 1038.57 | 40.4054 |
| 1038.76 | 0.0000 |
| 1045.16 | 32.5907 |
| 1046.59 | 35.5693 |
| 1048.07 | 42.5045 |

| | |
|---------|---------|
| 1050.47 | 34.6240 |
| 1050.47 | 34.6240 |
| 1062.04 | 40.7077 |
| 1063.62 | 36.7543 |
| 1076.63 | 42.8866 |
| 1077.35 | 41.8995 |
| 1078.86 | 38.9238 |
| 1085.78 | 43.0084 |
| 1099.22 | 47.2020 |
| 1112.02 | 45.9293 |
| 1112.84 | 38.8991 |
| 1115.52 | 57.1924 |
| 1120.29 | 52.5586 |
| 1120.29 | 52.5586 |
| 1120.29 | 52.5586 |
| 1120.29 | 52.5586 |
| 1120.51 | 52.5611 |
| 1121.28 | 52.5738 |
| 1124.00 | 0.0000 |
| 1129.67 | 45.6108 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 46.1250 |
| 1173.22 | 44.1422 |
| 1175.09 | 41.0859 |
| 1177.93 | 41.1191 |
| 1189.05 | 42.2813 |
| 1204.90 | 44.5432 |
| 1205.75 | 0.0000 |
| 1213.00 | 53.9906 |
| 1221.42 | 60.3619 |
| 1230.97 | 42.7817 |
| 1235.34 | 69.9967 |
| 1236.41 | 0.0000 |
| 1238.25 | 40.7767 |
| 1246.25 | 39.8202 |
| 1260.41 | 0.0000 |
| 1271.85 | 36.9312 |
| 1274.45 | 41.1823 |
| 1274.54 | 44.3502 |
| 1291.56 | 23.3374 |
| 1298.22 | 0.0000 |
| 1312.09 | 33.0631 |
| 1325.50 | 32.1094 |
| 1325.50 | 32.1094 |
| 1332.49 | 36.4554 |
| 1333.61 | 34.3219 |
| 1360.21 | 20.5178 |
| 1362.66 | 0.0000 |
| 1365.15 | 20.5437 |
| 1368.21 | 28.1341 |
| 1368.53 | 0.0000 |
| 1376.25 | 30.7212 |
| 1384.27 | 18.6253 |
| 1394.10 | 18.5157 |
| 1395.20 | 15.2523 |
| 1407.95 | 27.3230 |
| 1434.06 | 19.7991 |
| 1436.60 | 21.0955 |
| 1457.56 | 0.0000 |
| 1460.81 | 11.9934 |
| 1489.15 | 12.0743 |
| 1509.49 | 14.3984 |
| 1596.49 | 20.9419 |
| 1620.62 | 4.9217 |
| 1678.03 | 0.0000 |
| 1691.02 | 12.6308 |
| 1691.02 | 12.6308 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 9.8653 |
| 1764.49 | 9.8653 |
| 1764.49 | 9.8653 |
| 1764.49 | 9.8653 |
| 1770.23 | 5.0795 |
| 1771.40 | 38.5287 |
| 1791.20 | 0.0000 |
| 1808.65 | 9.9536 |

1836.01

8.0062

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G245388009

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 6.7572E+00 | ug/g |
| Total Uranium Counting Unc. | 6.1401E+00 | ug/g |
| Total Uranium Tpu | 3.1327E-06 | ug/g |
| Total Uranium Mda | 2.8848E+00 | ug/g |

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 944964                          SAMPLE ID   : G245388009
*  ANALYST       : MXR1                             DETECTOR    : GAM16
*  SAMPLE DATE   : 15-JAN-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 4-FEB-2010 13:31:10.83          SAMPLE ALQT  : 107.970 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.033E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.459E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.216E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.034E+00

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VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 15:43:15.73

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388010.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 13:42:42.
Sample ID          : G245388010 Sample quantity : 1.14460E+02 GRAM
Detector name      : GAM01 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:00.98 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 944964 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 0 | 63.40* | 50 | 366 | 1.17 | 127.53 | 124 | 9 | 6.99E-03 | 72.4 | |
| 2 | 2 | 74.94* | 293 | 327 | 1.26 | 150.59 | 144 | 18 | 4.07E-02 | 13.0 | 2.35E+00 |
| 3 | 2 | 77.12* | 508 | 304 | 1.31 | 154.96 | 144 | 18 | 7.06E-02 | 8.0 | |
| 4 | 0 | 87.84 | 277 | 480 | 1.31 | 176.39 | 173 | 10 | 3.85E-02 | 15.9 | |
| 5 | 0 | 92.96* | 127 | 377 | 1.36 | 186.61 | 183 | 9 | 1.76E-02 | 31.3 | |
| 6 | 0 | 186.26* | 90 | 277 | 1.29 | 373.10 | 369 | 9 | 1.24E-02 | 37.7 | |
| 7 | 4 | 238.98* | 887 | 176 | 1.25 | 478.49 | 471 | 21 | 1.23E-01 | 4.4 | 1.25E+00 |
| 8 | 4 | 241.94* | 179 | 195 | 1.88 | 484.41 | 471 | 21 | 2.48E-02 | 21.9 | |
| 9 | 0 | 270.54 | 65 | 176 | 1.30 | 541.58 | 537 | 10 | 9.02E-03 | 40.3 | |
| 10 | 1 | 295.63* | 336 | 140 | 1.44 | 591.73 | 584 | 23 | 4.66E-02 | 8.5 | 9.93E-01 |
| 11 | 1 | 300.40 | 63 | 140 | 1.47 | 601.27 | 584 | 23 | 8.70E-03 | 36.9 | |
| 12 | 0 | 328.76 | 49 | 184 | 1.10 | 657.95 | 654 | 11 | 6.82E-03 | 55.4 | |
| 13 | 0 | 338.61* | 154 | 213 | 1.34 | 677.65 | 672 | 14 | 2.14E-02 | 21.9 | |
| 14 | 0 | 352.38* | 498 | 176 | 1.46 | 705.17 | 698 | 15 | 6.91E-02 | 7.4 | |
| 15 | 0 | 511.55* | 65 | 121 | 1.49 | 1023.30 | 1018 | 14 | 8.97E-03 | 44.3 | |
| 16 | 0 | 583.60* | 267 | 89 | 1.59 | 1167.31 | 1161 | 15 | 3.71E-02 | 10.2 | |
| 17 | 0 | 609.83* | 351 | 59 | 1.51 | 1219.74 | 1214 | 15 | 4.88E-02 | 7.5 | |
| 18 | 0 | 662.04 | 112 | 44 | 1.11 | 1324.10 | 1318 | 11 | 1.55E-02 | 14.9 | |
| 19 | 0 | 728.35 | 55 | 99 | 1.95 | 1456.65 | 1448 | 18 | 7.64E-03 | 44.5 | |
| 20 | 0 | 795.44 | 28 | 44 | 1.49 | 1590.74 | 1583 | 11 | 3.91E-03 | 49.3 | |
| 21 | 0 | 861.49 | 54 | 53 | 1.73 | 1722.74 | 1714 | 18 | 7.50E-03 | 34.6 | |
| 22 | 0 | 911.59* | 168 | 61 | 1.64 | 1822.88 | 1817 | 15 | 2.34E-02 | 13.1 | |
| 23 | 0 | 965.14* | 45 | 25 | 2.13 | 1929.90 | 1922 | 12 | 6.18E-03 | 27.4 | |
| 24 | 0 | 969.20* | 126 | 22 | 1.57 | 1938.02 | 1934 | 13 | 1.74E-02 | 12.0 | |
| 25 | 0 | 1120.64* | 75 | 33 | 1.66 | 2240.68 | 2234 | 12 | 1.03E-02 | 19.7 | |
| 26 | 0 | 1377.70 | 37 | 3 | 2.60 | 2754.41 | 2748 | 13 | 5.13E-03 | 19.3 | |
| 27 | 0 | 1461.23* | 677 | 14 | 2.07 | 2921.35 | 2912 | 18 | 9.41E-02 | 4.1 | |
| 28 | 0 | 1620.57* | 19 | 4 | 1.48 | 3239.77 | 3232 | 15 | 2.59E-03 | 35.1 | |
| 29 | 0 | 1630.19 | 13 | 5 | 1.30 | 3259.00 | 3254 | 10 | 1.81E-03 | 42.5 | |
| 30 | 0 | 1729.77 | 16 | 6 | 0.81 | 3458.00 | 3452 | 12 | 2.22E-03 | 39.5 | |
| 31 | 0 | 1765.34* | 65 | 0 | 1.11 | 3529.08 | 3522 | 15 | 8.99E-03 | 13.9 | |

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

VMS Nuclide Identification Report V3.1 Generated 4-FEB-2010 15:43:19

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388010.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 13:42:42
Sample ID         : G245388010 Sample quantity : 114.46 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA1 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:00.98 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 2.203E+01 | 2.664E+00 | 5.386E-01 | 4.788E-02 | 40.893 |
| CD-109 | + | 88.03 | * | 4.813E+00 | 1.599E+00 | 1.504E+00 | 1.423E-01 | 3.200 |
| SN-126 | + | 64.28 | | 6.163E-01 | 8.965E-01 | 9.002E-01 | 1.325E-01 | 0.685 |
| | + | 86.94 | | 1.952E+00 | 1.022E+00 | 6.616E-01 | 2.747E-01 | 2.951 |
| | + | 87.57 | * | 4.696E-01 | 1.560E-01 | 1.475E-01 | 1.389E-02 | 3.183 |
| BA-137M | + | 661.65 | * | 2.122E-01 | 6.552E-02 | 6.770E-02 | 5.545E-03 | 3.135 |
| CS-137 | + | 661.65 | * | 2.244E-01 | 6.927E-02 | 7.156E-02 | 5.874E-03 | 3.135 |
| TL-208 | | 277.35 | | 1.822E-01 | 4.422E-01 | 7.450E-01 | 9.468E-02 | 0.245 |
| | + | 510.84 | | 4.101E-01 | 3.668E-01 | 2.762E-01 | 3.283E-02 | 1.485 |
| | + | 583.14 | * | 4.858E-01 | 1.083E-01 | 6.440E-02 | 5.849E-03 | 7.544 |
| | + | 860.37 | | 9.348E-01 | 6.539E-01 | 4.722E-01 | 4.525E-02 | 1.980 |
| BI-211 | | 72.87 | | 4.310E+00 | 3.934E+00 | 5.961E+00 | 4.889E-01 | 0.723 |
| | + | 351.07 | * | 3.911E+00 | 6.821E-01 | 3.740E-01 | 3.402E-02 | 10.459 |
| BI-212 | + | 727.18 | * | 8.643E-01 | 7.743E-01 | 5.138E-01 | 5.092E-02 | 1.682 |
| | | 785.46 | | 2.782E+00 | 1.995E+00 | 3.696E+00 | 3.230E-01 | 0.753 |
| | + | 1620.62 | | 2.547E+00 | 1.803E+00 | 2.207E+00 | 1.899E-01 | 1.154 |
| PB-212 | + | 74.81 | | 2.155E+00 | 6.222E-01 | 6.061E-01 | 7.585E-02 | 3.556 |
| | + | 77.11 | | 2.114E+00 | 3.831E-01 | 3.420E-01 | 2.902E-02 | 6.182 |
| | + | 87.30 | | 2.172E+00 | 7.534E-01 | 7.314E-01 | 1.003E-01 | 2.970 |
| | + | 238.63 | * | 1.501E+00 | 2.008E-01 | 1.061E-01 | 1.074E-02 | 14.144 |
| | + | 300.09 | | 1.650E+00 | 1.230E+00 | 1.453E+00 | 1.571E-01 | 1.135 |
| PO-212 | + | 74.81 | | 2.155E+00 | 6.222E-01 | 6.061E-01 | 7.585E-02 | 3.556 |
| | + | 77.11 | | 2.114E+00 | 3.831E-01 | 3.420E-01 | 2.902E-02 | 6.182 |
| | + | 87.30 | | 2.172E+00 | 7.534E-01 | 7.314E-01 | 1.003E-01 | 2.970 |
| | | 115.19 | | 1.366E+00 | 4.170E+00 | 6.731E+00 | 5.849E-01 | 0.203 |
| | + | 238.63 | * | 1.501E+00 | 2.008E-01 | 1.061E-01 | 1.074E-02 | 14.144 |
| | + | 300.09 | | 1.650E+00 | 1.230E+00 | 1.453E+00 | 1.571E-01 | 1.135 |
| BI-214 | + | 609.31 | * | 1.206E+00 | 2.164E-01 | 1.202E-01 | 1.186E-02 | 10.031 |
| | + | 1120.29 | | 1.357E+00 | 5.550E-01 | 4.993E-01 | 5.342E-02 | 2.717 |
| | + | 1764.49 | | 1.627E+00 | 4.723E-01 | 3.111E-01 | 2.609E-02 | 5.231 |
| PB-214 | + | 74.81 | | 3.714E+00 | 1.051E+00 | 1.044E+00 | 1.164E-01 | 3.556 |
| | + | 77.11 | | 3.624E+00 | 7.124E-01 | 5.863E-01 | 6.686E-02 | 6.182 |
| | + | 87.30 | | 3.721E+00 | 1.269E+00 | 1.253E+00 | 1.522E-01 | 2.970 |
| | + | 241.98 | | 1.818E+00 | 8.182E-01 | 6.392E-01 | 6.828E-02 | 2.844 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 295.21 | | 1.550E+00 | 3.137E-01 | 2.545E-01 | 2.810E-02 | 6.091 |
| | + | 351.92 | * | 1.361E+00 | 2.477E-01 | 1.304E-01 | 1.366E-02 | 10.437 |
| | + | 74.81 | | 3.714E+00 | 1.051E+00 | 1.044E+00 | 1.164E-01 | 3.556 |
| | + | 77.11 | | 3.624E+00 | 7.124E-01 | 5.863E-01 | 6.686E-02 | 6.182 |
| | + | 87.30 | | 3.721E+00 | 1.269E+00 | 1.253E+00 | 1.522E-01 | 2.970 |
| | + | 241.98 | | 1.818E+00 | 8.182E-01 | 6.392E-01 | 6.828E-02 | 2.844 |
| PO-216 | + | 295.21 | | 1.550E+00 | 3.137E-01 | 2.545E-01 | 2.810E-02 | 6.091 |
| | + | 351.92 | * | 1.361E+00 | 2.477E-01 | 1.304E-01 | 1.366E-02 | 10.437 |
| | + | 74.81 | | 2.155E+00 | 6.222E-01 | 6.061E-01 | 7.585E-02 | 3.556 |
| | + | 77.11 | | 2.114E+00 | 3.831E-01 | 3.420E-01 | 2.902E-02 | 6.182 |
| | + | 87.30 | | 2.172E+00 | 7.534E-01 | 7.314E-01 | 1.003E-01 | 2.970 |
| | + | 238.63 | * | 1.501E+00 | 2.008E-01 | 1.061E-01 | 1.074E-02 | 14.144 |
| PO-218 | + | 300.09 | | 1.650E+00 | 1.230E+00 | 1.453E+00 | 1.571E-01 | 1.135 |
| | + | 74.81 | | 3.714E+00 | 1.051E+00 | 1.044E+00 | 1.164E-01 | 3.556 |
| | + | 77.11 | | 3.624E+00 | 7.124E-01 | 5.863E-01 | 6.686E-02 | 6.182 |
| | + | 87.30 | | 3.721E+00 | 1.269E+00 | 1.253E+00 | 1.522E-01 | 2.970 |
| | + | 241.98 | | 1.818E+00 | 8.182E-01 | 6.392E-01 | 6.828E-02 | 2.844 |
| | + | 295.21 | | 1.550E+00 | 3.137E-01 | 2.545E-01 | 2.810E-02 | 6.091 |
| RA-224 | + | 351.92 | * | 1.361E+00 | 2.477E-01 | 1.304E-01 | 1.366E-02 | 10.437 |
| RA-226 | + | 240.98 | * | 3.448E+00 | 1.539E+00 | 1.208E+00 | 1.098E-01 | 2.854 |
| AC-228 | + | 609.31 | * | 1.206E+00 | 2.164E-01 | 1.202E-01 | 1.186E-02 | 10.031 |
| | + | 1120.29 | | 1.357E+00 | 5.550E-01 | 4.993E-01 | 5.342E-02 | 2.717 |
| | + | 1764.49 | | 1.627E+00 | 4.723E-01 | 3.111E-01 | 2.609E-02 | 5.231 |
| | + | 338.32 | | 1.331E+00 | 8.011E-01 | 4.227E-01 | 1.746E-01 | 3.149 |
| | + | 911.07 | * | 1.382E+00 | 3.946E-01 | 2.352E-01 | 2.723E-02 | 5.873 |
| | + | 969.11 | | 1.818E+00 | 6.097E-01 | 2.178E-01 | 5.111E-02 | 8.347 |
| RA-228 | + | 338.32 | | 1.331E+00 | 8.011E-01 | 4.227E-01 | 1.746E-01 | 3.149 |
| | + | 911.07 | * | 1.382E+00 | 3.946E-01 | 2.352E-01 | 2.723E-02 | 5.873 |
| | + | 969.11 | | 1.818E+00 | 6.097E-01 | 2.178E-01 | 5.111E-02 | 8.347 |
| | + | 74.81 | | 2.199E+00 | 6.011E-01 | 6.183E-01 | 5.194E-02 | 3.556 |
| | + | 77.11 | | 2.157E+00 | 3.908E-01 | 3.489E-01 | 2.961E-02 | 6.182 |
| | + | 87.30 | | 2.216E+00 | 7.359E-01 | 7.461E-01 | 7.007E-02 | 2.970 |
| TH-228 | + | 238.63 | * | 1.531E+00 | 2.048E-01 | 1.083E-01 | 1.096E-02 | 14.144 |
| | + | 300.09 | | 1.683E+00 | 1.593E+00 | 1.483E+00 | 8.799E-01 | 1.135 |
| | + | 609.31 | * | 1.206E+00 | 2.164E-01 | 1.202E-01 | 1.186E-02 | 10.031 |
| | + | 1120.29 | | 1.357E+00 | 5.550E-01 | 4.993E-01 | 5.342E-02 | 2.717 |
| | + | 1764.49 | | 1.627E+00 | 4.722E-01 | 3.111E-01 | 2.609E-02 | 5.231 |
| | + | 338.32 | | 1.331E+00 | 5.943E-01 | 4.227E-01 | 3.721E-02 | 3.149 |
| TH-232 | + | 911.07 | * | 1.382E+00 | 3.946E-01 | 2.352E-01 | 2.723E-02 | 5.873 |
| | + | 969.11 | | 1.818E+00 | 6.097E-01 | 2.178E-01 | 5.111E-02 | 8.347 |
| | + | 63.29 | * | 1.557E+00 | 2.270E+00 | 2.378E+00 | 4.180E-01 | 0.655 |
| | + | 92.38 | | 1.396E+00 | 9.105E-01 | 9.418E-01 | 1.726E-01 | 1.482 |
| | + | 609.31 | * | 1.206E+00 | 2.164E-01 | 1.202E-01 | 1.186E-02 | 10.031 |
| | + | 1120.29 | | 1.357E+00 | 5.550E-01 | 4.993E-01 | 5.342E-02 | 2.717 |
| U-234 | + | 1764.49 | | 1.627E+00 | 4.722E-01 | 3.111E-01 | 2.609E-02 | 5.231 |
| | + | 86.50 | * | 1.379E+00 | 5.392E-01 | 4.580E-01 | 1.037E-01 | 3.011 |
| | + | 95.87 | | -6.082E-01 | 1.196E+00 | 1.633E+00 | 4.042E-01 | -0.372 |
| | + | 63.29 | * | 1.557E+00 | 2.270E+00 | 2.378E+00 | 4.180E-01 | 0.655 |
| | + | 92.38 | | 1.396E+00 | 8.830E-01 | 9.418E-01 | 8.600E-02 | 1.482 |
| | + | 92.38 | | 1.396E+00 | 8.830E-01 | 9.418E-01 | 8.600E-02 | 1.482 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AM-243 | + | 74.67 | * | 3.494E-01 | 9.544E-02 | 9.859E-02 | 8.198E-03 | 3.544 |
| | + | 86.72 | | 5.171E+01 | 1.718E+01 | 1.757E+01 | 1.639E+00 | 2.943 |
| | | 117.66 | | -4.763E+00 | 4.550E+00 | 6.812E+00 | 5.939E-01 | -0.699 |
| | | 142.18 | | 8.417E+00 | 1.923E+01 | 3.315E+01 | 2.836E+00 | 0.254 |
| ANH-511 | + | 511.00 | * | 8.857E-02 | 7.888E-02 | 5.639E-02 | 4.779E-03 | 1.571 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| BE-7 | | 477.59 | * | -3.591E-02 | 4.399E-01 | 7.008E-01 | 6.375E-02 | -0.051 |
| NA-22 | | 1274.54 | * | 2.454E-02 | 4.428E-02 | 7.911E-02 | 6.643E-03 | 0.310 |
| NA-24 | | 1368.53 | * | -1.467E+02 | 4.428E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | 9.164E-01 | 2.026E+00 | 3.427E+00 | 2.862E-01 | 0.267 |
| | | 1808.65 | * | 2.423E-02 | 2.849E-02 | 5.673E-02 | 4.700E-03 | 0.427 |
| TI-44 | | 67.85 | | 2.187E-03 | 6.060E-02 | 8.758E-02 | 6.944E-03 | 0.025 |
| | + | 78.38 | * | 3.902E-01 | 7.071E-02 | 8.826E-02 | 7.574E-03 | 4.421 |
| SC-46 | | 889.25 | * | -8.593E-03 | 4.798E-02 | 7.683E-02 | 6.945E-03 | -0.112 |
| | + | 1120.51 | | 2.419E-01 | 9.767E-02 | 1.594E-01 | 1.339E-02 | 1.518 |
| V-48 | | 944.10 | | -1.573E-02 | 1.331E+00 | 2.164E+00 | 1.949E-01 | -0.007 |
| | | 983.50 | * | -3.138E-02 | 9.145E-02 | 1.414E-01 | 1.263E-02 | -0.222 |
| | | 1312.09 | | 1.721E-02 | 1.236E-01 | 2.093E-01 | 1.774E-02 | 0.082 |
| CR-51 | | 320.08 | * | -8.367E-02 | 4.766E-01 | 7.715E-01 | 7.257E-02 | -0.108 |
| MN-52 | | 744.21 | | 2.480E-01 | 4.956E-01 | 8.587E-01 | 7.367E-02 | 0.289 |
| | | 848.13 | | -8.194E+00 | 1.514E+01 | 2.336E+01 | 2.088E+00 | -0.351 |
| | | 935.52 | | 6.016E-01 | 5.335E-01 | 9.721E-01 | 8.768E-02 | 0.619 |
| | | 1246.25 | | -7.327E+00 | 1.559E+01 | 2.473E+01 | 2.055E+00 | -0.296 |
| | | 1333.61 | | -4.761E+00 | 9.961E+00 | 1.536E+01 | 1.309E+00 | -0.310 |
| | | 1434.06 | * | 1.462E-01 | 5.473E-01 | 9.408E-01 | 8.122E-02 | 0.155 |
| MN-54 | | 834.83 | * | -3.246E-02 | 4.356E-02 | 6.572E-02 | 5.849E-03 | -0.494 |
| CO-56 | | 846.75 | * | -1.176E-02 | 4.940E-02 | 7.897E-02 | 7.055E-03 | -0.149 |
| | | 977.42 | | -1.134E+00 | 3.822E+00 | 5.347E+00 | 4.782E-01 | -0.212 |
| | | 1037.82 | | -7.898E-02 | 3.678E-01 | 5.785E-01 | 5.333E-02 | -0.137 |
| | | 1175.09 | | -7.150E-01 | 2.596E+00 | 4.227E+00 | 3.424E-01 | -0.169 |
| | | 1238.25 | | 9.384E-02 | 1.115E-01 | 1.996E-01 | 1.707E-02 | 0.470 |
| | | 1360.21 | | -6.698E-01 | 1.144E+00 | 1.721E+00 | 1.473E-01 | -0.389 |
| | | 1771.40 | | -4.455E-02 | 2.947E-01 | 3.879E-01 | 3.247E-02 | -0.115 |
| CO-57 | | 122.06 | * | -4.479E-03 | 3.009E-02 | 4.736E-02 | 4.169E-03 | -0.095 |
| | | 136.48 | | -4.998E-02 | 2.306E-01 | 3.878E-01 | 3.582E-02 | -0.129 |
| CO-58 | | 810.76 | * | 7.913E-03 | 4.447E-02 | 7.456E-02 | 6.596E-03 | 0.106 |
| FE-59 | | 142.65 | | 1.548E+00 | 3.241E+00 | 5.593E+00 | 4.783E-01 | 0.277 |
| | | 192.34 | | 4.629E-01 | 1.163E+00 | 1.982E+00 | 2.677E-01 | 0.234 |
| | | 1099.22 | * | 2.061E-02 | 1.082E-01 | 1.785E-01 | 1.646E-02 | 0.115 |
| | | 1291.56 | | 1.144E-02 | 1.598E-01 | 2.687E-01 | 2.584E-02 | 0.043 |
| CO-60 | | 1173.22 | | 5.583E-03 | 4.792E-02 | 8.148E-02 | 6.594E-03 | 0.069 |
| | | 1332.49 | * | -3.322E-02 | 4.369E-02 | 6.428E-02 | 5.479E-03 | -0.517 |
| ZN-65 | | 1115.52 | * | -8.153E-02 | 1.216E-01 | 1.478E-01 | 1.247E-02 | -0.551 |
| GE-68 | | 1077.35 | * | 9.741E-01 | 1.296E+00 | 2.297E+00 | 1.978E-01 | 0.424 |
| AS-73 | | 53.44 | * | -6.945E-01 | 1.096E+00 | 1.728E+00 | 1.398E-01 | -0.402 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AS-74 | | 595.88 | * | 4.825E-02 | 1.309E-01 | 2.256E-01 | 1.901E-02 | 0.214 |
| | | 634.78 | | 2.189E-01 | 4.656E-01 | 8.103E-01 | 6.732E-02 | 0.270 |
| SE-75 | | 66.05 | | -3.528E+00 | 6.515E+00 | 9.100E+00 | 8.922E-01 | -0.388 |
| | | 96.73 | | -1.413E+00 | 1.065E+00 | 1.362E+00 | 1.882E-01 | -1.037 |
| | | 121.11 | | 1.002E-01 | 1.634E-01 | 2.666E-01 | 3.024E-02 | 0.376 |
| | | 136.00 | | 2.319E-03 | 4.422E-02 | 7.524E-02 | 6.512E-03 | 0.031 |
| | | 198.60 | | 1.979E+00 | 2.284E+00 | 3.783E+00 | 3.681E-01 | 0.523 |
| | | 264.65 | * | -1.609E-02 | 5.602E-02 | 8.401E-02 | 7.717E-03 | -0.192 |
| | | 279.53 | | 5.625E-02 | 1.294E-01 | 2.185E-01 | 2.065E-02 | 0.257 |
| | | 303.91 | | 1.179E+00 | 2.692E+00 | 4.025E+00 | 4.756E-01 | 0.293 |
| | | 400.65 | | -1.690E-01 | 3.221E-01 | 5.003E-01 | 5.361E-02 | -0.338 |
| BR-77 | + | 87.88 | | 4.378E-03 | 3.221E-01 | Half-Life | too short | |
| | | 200.40 | | 4.555E-04 | 3.221E-01 | Half-Life | too short | |
| | + | 239.00 | | 1.022E-03 | 3.221E-01 | Half-Life | too short | |
| | | 249.79 | | -9.702E-05 | 3.221E-01 | Half-Life | too short | |
| | | 281.68 | | -4.212E-04 | 3.221E-01 | Half-Life | too short | |
| | | 297.23 | | 1.749E-03 | 3.221E-01 | Half-Life | too short | |
| | | 303.76 | | 5.436E-04 | 3.221E-01 | Half-Life | too short | |
| | | 439.47 | | 4.180E-04 | 3.221E-01 | Half-Life | too short | |
| | | 484.57 | | -2.813E-04 | 3.221E-01 | Half-Life | too short | |
| | | 520.65 | * | 2.352E-05 | 3.221E-01 | Half-Life | too short | |
| | | 574.64 | | 3.126E-04 | 3.221E-01 | Half-Life | too short | |
| | | 578.91 | | -1.434E-04 | 3.221E-01 | Half-Life | too short | |
| | | 585.48 | | 6.131E-03 | 3.221E-01 | Half-Life | too short | |
| | | 755.35 | | 1.259E-05 | 3.221E-01 | Half-Life | too short | |
| | | 817.79 | | -1.056E-04 | 3.221E-01 | Half-Life | too short | |
| SR-82 | | 698.33 | | -1.635E+01 | 4.572E+01 | 7.342E+01 | 6.148E+00 | -0.223 |
| | | 776.49 | * | -2.110E-01 | 4.768E-01 | 7.480E-01 | 6.513E-02 | -0.282 |
| | | 1395.20 | | -5.931E+00 | 1.009E+01 | 1.441E+01 | 1.240E+00 | -0.412 |
| RB-83 | | 520.41 | * | 4.496E-02 | 8.175E-02 | 1.371E-01 | 1.163E-02 | 0.328 |
| | | 529.64 | | -3.949E-02 | 1.375E-01 | 2.198E-01 | 1.865E-02 | -0.180 |
| | | 552.65 | | 4.047E-02 | 2.447E-01 | 4.167E-01 | 3.537E-02 | 0.097 |
| RB-84 | | 881.50 | * | 2.972E-02 | 8.317E-02 | 1.418E-01 | 1.279E-02 | 0.210 |
| KR-85 | | 513.99 | * | 1.985E+01 | 1.036E+01 | 1.703E+01 | 1.444E+00 | 1.166 |
| SR-85 | | 513.99 | * | 1.072E-01 | 5.594E-02 | 9.198E-02 | 7.798E-03 | 1.166 |
| RB-86 | | 1076.63 | * | 1.922E-01 | 9.589E-01 | 1.591E+00 | 1.370E-01 | 0.121 |
| Y-88 | | 898.02 | | -2.826E-02 | 5.236E-02 | 8.033E-02 | 7.309E-03 | -0.352 |
| | | 1836.01 | * | 4.940E-02 | 3.618E-02 | 7.721E-02 | 6.350E-03 | 0.640 |
| ZR-88 | | 392.90 | * | 8.555E-04 | 3.955E-02 | 6.422E-02 | 5.171E-03 | 0.013 |
| Y-91 | | 1204.90 | * | 2.766E+00 | 2.442E+01 | 4.135E+01 | 3.388E+00 | 0.067 |
| NB-94 | | 702.63 | * | 3.066E-02 | 4.025E-02 | 7.089E-02 | 5.951E-03 | 0.432 |
| | | 871.10 | | 1.338E-02 | 3.696E-02 | 6.303E-02 | 5.672E-03 | 0.212 |
| NB-95 | | 765.79 | * | -2.046E-02 | 5.263E-02 | 8.370E-02 | 7.253E-03 | -0.244 |
| NB-95M | | 235.69 | * | 8.260E-02 | 1.707E-01 | 2.570E-01 | 2.636E-02 | 0.321 |
| ZR-95 | | 724.18 | | 4.463E-02 | 1.242E-01 | 1.870E-01 | 1.729E-02 | 0.239 |
| | | 756.15 | * | -7.009E-03 | 8.345E-02 | 1.366E-01 | 1.298E-02 | -0.051 |
| NB-97 | | 657.90 | * | -1.334E+01 | 8.345E-02 | Half-Life | too short | |
| | | 1024.50 | | -6.468E+01 | 8.345E-02 | Half-Life | too short | |
| ZR-97 | | 254.15 | | 1.042E+02 | 8.345E-02 | Half-Life | too short | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 355.39 | | 4.316E+02 | 8.345E-02 | Half-Life | too short | |
| | | 507.63 | * | 3.097E+02 | 8.345E-02 | Half-Life | too short | |
| | | 602.52 | | -2.894E+02 | 8.345E-02 | Half-Life | too short | |
| | | 1021.30 | | -2.410E+02 | 8.345E-02 | Half-Life | too short | |
| | | 1147.95 | | -7.981E+00 | 8.345E-02 | Half-Life | too short | |
| | | 1362.66 | | 8.120E+02 | 8.345E-02 | Half-Life | too short | |
| | | 1750.46 | | 5.997E-01 | 8.345E-02 | Half-Life | too short | |
| MO-99 | | 140.51 | | -8.372E+01 | 1.039E+02 | 1.617E+02 | 4.475E+01 | -0.518 |
| | | 181.06 | | -7.213E+00 | 7.022E+01 | 1.089E+02 | 1.993E+01 | -0.066 |
| | | 366.43 | | -2.254E+00 | 3.492E+02 | 5.679E+02 | 4.803E+01 | -0.004 |
| | | 739.58 | * | 1.396E+01 | 4.592E+01 | 7.812E+01 | 1.184E+01 | 0.179 |
| | | 778.00 | | 3.898E-01 | 1.307E+02 | 2.155E+02 | 1.877E+01 | 0.002 |
| TC-99M | | 140.51 | * | -3.083E+16 | 1.307E+02 | Half-Life | too short | |
| RH-101 | | 127.23 | | 8.570E-03 | 3.620E-02 | 5.801E-02 | 5.046E-03 | 0.148 |
| | | 198.01 | * | 2.086E-02 | 4.097E-02 | 6.702E-02 | 5.898E-03 | 0.311 |
| | | 325.23 | | 1.854E-01 | 2.903E-01 | 4.395E-01 | 3.922E-02 | 0.422 |
| RH-102 | | 418.52 | | -5.285E-02 | 3.493E-01 | 5.577E-01 | 4.570E-02 | -0.095 |
| | | 475.06 | * | -3.480E-03 | 3.720E-02 | 5.922E-02 | 4.980E-03 | -0.059 |
| | | 631.29 | | 3.677E-03 | 5.913E-02 | 9.929E-02 | 8.261E-03 | 0.037 |
| | | 697.49 | | -6.310E-02 | 9.044E-02 | 1.404E-01 | 1.175E-02 | -0.450 |
| | | 766.84 | | 9.795E-02 | 1.232E-01 | 2.172E-01 | 1.883E-02 | 0.451 |
| | | 1046.59 | | 7.939E-02 | 1.328E-01 | 2.298E-01 | 2.008E-02 | 0.345 |
| | | 1112.84 | | 1.692E-01 | 2.656E-01 | 4.259E-01 | 3.596E-02 | 0.397 |
| RU-103 | | 497.08 | * | -2.096E-02 | 5.302E-02 | 8.162E-02 | 1.148E-02 | -0.257 |
| | + | 610.33 | | 1.421E+01 | 3.175E+00 | 3.753E+00 | 6.218E-01 | 3.787 |
| RH-106 | + | 511.85 | | 4.466E-01 | 3.977E-01 | 5.291E-01 | 4.485E-02 | 0.844 |
| | | 621.84 | * | 8.993E-02 | 3.356E-01 | 5.745E-01 | 7.577E-02 | 0.157 |
| | | 1050.47 | | 7.979E-01 | 2.788E+00 | 4.656E+00 | 4.061E-01 | 0.171 |
| RU-106 | + | 511.85 | | 4.466E-01 | 3.977E-01 | 5.291E-01 | 4.485E-02 | 0.844 |
| | | 621.84 | * | 8.993E-02 | 3.354E-01 | 5.745E-01 | 4.799E-02 | 0.157 |
| | | 1050.47 | | 7.979E-01 | 2.788E+00 | 4.656E+00 | 4.061E-01 | 0.171 |
| AG-108M | | 433.93 | * | -3.317E-02 | 3.904E-02 | 5.826E-02 | 5.024E-03 | -0.569 |
| | | 614.37 | | 4.143E-02 | 4.158E-02 | 6.851E-02 | 5.977E-03 | 0.605 |
| | | 722.95 | | 1.694E-02 | 5.129E-02 | 7.705E-02 | 6.803E-03 | 0.220 |
| AG-110M | | 657.75 | * | -3.677E-02 | 4.568E-02 | 5.852E-02 | 4.962E-03 | -0.628 |
| | | 677.61 | | 3.860E-02 | 3.625E-01 | 6.084E-01 | 5.187E-02 | 0.063 |
| | | 706.67 | | -1.399E-01 | 2.602E-01 | 3.943E-01 | 3.413E-02 | -0.355 |
| | | 763.93 | | -2.556E-01 | 1.947E-01 | 2.768E-01 | 2.464E-02 | -0.923 |
| | | 884.67 | | -8.387E-03 | 5.608E-02 | 9.007E-02 | 8.372E-03 | -0.093 |
| | | 937.48 | | -5.667E-02 | 1.379E-01 | 2.143E-01 | 1.996E-02 | -0.264 |
| | | 1384.27 | | 1.378E-01 | 1.932E-01 | 3.204E-01 | 2.831E-02 | 0.430 |
| IN-111 | | 171.28 | | 7.154E-01 | 3.790E+00 | 6.434E+00 | 5.507E-01 | 0.111 |
| | | 245.39 | * | -1.995E+00 | 4.574E+00 | 6.438E+00 | 5.862E-01 | -0.310 |
| IN-113M | | 391.69 | * | -2.019E-04 | 5.552E-02 | 8.999E-02 | 7.496E-03 | -0.002 |
| SN-113 | | 391.69 | * | -2.019E-04 | 5.552E-02 | 8.999E-02 | 7.496E-03 | -0.002 |
| IN-114M | | 190.27 | * | -1.163E-01 | 2.568E-01 | 3.684E-01 | 3.216E-02 | -0.316 |
| CD-115 | | 260.90 | | -2.446E-04 | 2.568E-01 | Half-Life | too short | |
| | | 492.35 | | 6.146E-05 | 2.568E-01 | Half-Life | too short | |
| | | 527.90 | * | 7.542E-07 | 2.568E-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 |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SN-117M | | 156.02 | | 8.582E-01 | 3.303E+00 | 5.639E+00 | 4.802E-01 | 0.152 |
| | | 158.56 | * | -8.903E-03 | 7.970E-02 | 1.339E-01 | 1.140E-02 | -0.066 |
| SB-122 | | 563.90 | * | 1.247E+00 | 8.382E+00 | 1.425E+01 | 1.208E+00 | 0.088 |
| | | 692.80 | | -5.167E+01 | 1.837E+02 | 2.816E+02 | 2.350E+01 | -0.184 |
| I-123 | | 159.00 | * | 9.134E+02 | 1.837E+02 | Half-Life | too short | |
| | | 528.96 | | -1.294E+05 | 1.837E+02 | Half-Life | too short | |
| TE-123M | | 159.00 | * | 8.724E-03 | 3.290E-02 | 5.616E-02 | 4.811E-03 | 0.155 |
| I-124 | | 602.71 | * | -4.238E-02 | 1.788E+00 | 2.822E+00 | 2.373E-01 | -0.015 |
| | | 722.78 | | 4.510E+00 | 1.223E+01 | 1.845E+01 | 1.566E+00 | 0.244 |
| | | 1325.50 | | 9.806E+01 | 7.899E+01 | 1.540E+02 | 1.311E+01 | 0.637 |
| | + | 1376.25 | | 2.116E+02 | 8.345E+01 | 1.637E+02 | 1.405E+01 | 1.292 |
| | | 1509.49 | | 3.251E+01 | 3.955E+01 | 7.372E+01 | 6.383E+00 | 0.441 |
| | | 1691.02 | | 2.193E+00 | 1.023E+01 | 1.749E+01 | 1.490E+00 | 0.125 |
| SB-124 | | 602.71 | | -1.147E-03 | 4.839E-02 | 7.635E-02 | 6.422E-03 | -0.015 |
| | | 645.85 | | -1.817E-01 | 6.016E-01 | 9.747E-01 | 8.578E-02 | -0.186 |
| | | 709.31 | | -7.968E-01 | 3.330E+00 | 5.395E+00 | 4.546E-01 | -0.148 |
| | | 713.82 | | 1.557E+00 | 2.062E+00 | 3.631E+00 | 4.326E-01 | 0.429 |
| | | 722.78 | | 1.769E-01 | 4.796E-01 | 7.238E-01 | 6.279E-02 | 0.244 |
| | + | 968.20 | | 1.981E+01 | 5.069E+00 | 9.309E+00 | 8.343E-01 | 2.128 |
| | | 1045.16 | | 1.178E+00 | 2.941E+00 | 4.988E+00 | 4.360E-01 | 0.236 |
| | | 1325.50 | | 4.108E+00 | 3.309E+00 | 6.453E+00 | 5.491E-01 | 0.637 |
| | | 1368.21 | | -1.096E+00 | 2.000E+00 | 3.011E+00 | 4.048E-01 | -0.364 |
| | | 1436.60 | | -1.030E+00 | 4.754E+00 | 7.600E+00 | 6.563E-01 | -0.136 |
| | | 1691.02 | * | 2.029E-02 | 9.467E-02 | 1.618E-01 | 1.434E-02 | 0.125 |
| SB-125 | | 427.89 | * | 6.715E-02 | 1.141E-01 | 1.920E-01 | 1.616E-02 | 0.350 |
| | | 463.38 | | 2.536E-01 | 3.567E-01 | 6.021E-01 | 5.461E-02 | 0.421 |
| | | 600.56 | | -8.001E-02 | 2.100E-01 | 3.405E-01 | 3.087E-02 | -0.235 |
| | | 635.90 | | 4.419E-02 | 2.921E-01 | 4.944E-01 | 4.461E-02 | 0.089 |
| TE-125M | | 109.28 | * | -2.979E+00 | 1.170E+01 | 1.840E+01 | 1.909E+00 | -0.162 |
| I-126 | | 388.63 | | -9.487E-02 | 3.186E-01 | 5.053E-01 | 4.093E-02 | -0.188 |
| | | 666.33 | * | 3.664E-01 | 2.983E-01 | 4.949E-01 | 4.066E-02 | 0.740 |
| | | 753.82 | | 4.073E-01 | 2.082E+00 | 3.507E+00 | 3.023E-01 | 0.116 |
| SB-126 | | 223.80 | | 5.452E-02 | 6.099E+00 | 1.016E+01 | 9.144E-01 | 0.005 |
| | | 278.60 | | 3.855E+00 | 3.794E+00 | 6.581E+00 | 6.019E-01 | 0.586 |
| | + | 296.50 | | 2.035E+01 | 3.918E+00 | 6.043E+00 | 5.499E-01 | 3.368 |
| | | 414.70 | | 6.010E-02 | 1.141E-01 | 1.919E-01 | 1.569E-02 | 0.313 |
| | | 415.30 | | 4.764E+00 | 9.498E+00 | 1.595E+01 | 1.304E+00 | 0.299 |
| | | 555.20 | | 5.117E-01 | 6.200E+00 | 1.049E+01 | 8.903E-01 | 0.049 |
| | | 573.80 | | 9.223E-01 | 1.447E+00 | 2.557E+00 | 2.165E-01 | 0.361 |
| | | 593.00 | | -1.080E+00 | 1.471E+00 | 2.309E+00 | 1.947E-01 | -0.468 |
| | | 656.30 | | 2.760E-01 | 5.374E+00 | 7.834E+00 | 6.437E-01 | 0.035 |
| | | 666.33 | | 1.549E-01 | 1.261E-01 | 2.092E-01 | 1.718E-02 | 0.740 |
| | | 675.00 | | 2.041E+00 | 3.073E+00 | 5.399E+00 | 4.459E-01 | 0.378 |
| | | 695.00 | | 8.566E-02 | 1.084E-01 | 1.929E-01 | 1.612E-02 | 0.444 |
| | | 697.00 | | -1.193E-01 | 4.120E-01 | 6.658E-01 | 5.571E-02 | -0.179 |
| | | 720.50 | * | 1.789E-02 | 2.422E-01 | 3.517E-01 | 2.981E-02 | 0.051 |
| | | 856.80 | | -9.027E-02 | 8.230E-01 | 1.147E+00 | 1.028E-01 | -0.079 |
| | | 989.30 | | 5.251E-01 | 1.961E+00 | 3.282E+00 | 2.925E-01 | 0.160 |
| | | 1034.80 | | 1.171E+00 | 1.227E+01 | 2.010E+01 | 1.764E+00 | 0.058 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SB-127 | 1213.00 | | | 1.243E+00 | 7.800E+00 | 1.325E+01 | 1.089E+00 | 0.094 |
| | 61.10 | | | 1.977E+02 | 1.704E+02 | 2.622E+02 | 3.174E+01 | 0.754 |
| | 252.40 | | | 1.283E-01 | 1.221E+01 | 2.024E+01 | 8.618E+00 | 0.006 |
| | 290.80 | | | 5.450E+00 | 6.804E+01 | 9.891E+01 | 1.296E+01 | 0.055 |
| | 411.60 | | | -1.778E+01 | 3.819E+01 | 5.952E+01 | 9.920E+00 | -0.299 |
| | 444.90 | | | -5.623E+00 | 2.828E+01 | 4.475E+01 | 6.169E+00 | -0.126 |
| | 473.00 | | | 2.621E+00 | 5.005E+00 | 8.358E+00 | 1.182E+00 | 0.314 |
| | 543.00 | | | -1.129E+01 | 4.456E+01 | 7.336E+01 | 1.144E+01 | -0.154 |
| | 603.60 | | | -1.848E+01 | 3.646E+01 | 4.969E+01 | 6.867E+00 | -0.372 |
| | 685.20 | * | | 9.537E-01 | 3.732E+00 | 6.345E+00 | 8.090E-01 | 0.150 |
| | 698.50 | | | -1.840E+01 | 4.380E+01 | 6.981E+01 | 1.177E+01 | -0.264 |
| | 722.20 | | | -1.472E+01 | 9.589E+01 | 1.349E+02 | 1.709E+01 | -0.109 |
| | 783.80 | | | 9.411E-01 | 1.029E+01 | 1.710E+01 | 2.384E+00 | 0.055 |
| | 57.60 | | | 9.529E-01 | 7.820E+00 | 1.278E+01 | 9.818E-01 | 0.075 |
| XE-127 | 145.22 | | | 2.194E-01 | 8.968E-01 | 1.496E+00 | 1.277E-01 | 0.147 |
| | 172.10 | | | -1.814E-02 | 1.473E-01 | 2.466E-01 | 2.112E-02 | -0.074 |
| | 202.84 | * | | -7.811E-02 | 5.947E-02 | 9.263E-02 | 8.189E-03 | -0.843 |
| | 374.96 | | | -8.747E-03 | 2.554E-01 | 4.053E-01 | 3.375E-02 | -0.022 |
| I-131 | 80.18 | | | 2.662E+00 | 8.097E+00 | 1.183E+01 | 1.044E+00 | 0.225 |
| | 284.30 | | | 8.181E-01 | 2.727E+00 | 4.569E+00 | 4.386E-01 | 0.179 |
| | 364.48 | * | | 1.102E-01 | 2.105E-01 | 3.550E-01 | 3.194E-02 | 0.311 |
| | 636.97 | | | -4.696E-01 | 2.557E+00 | 4.191E+00 | 3.705E-01 | -0.112 |
| TE-132 | 722.89 | | | 4.443E+00 | 1.325E+01 | 1.991E+01 | 1.709E+00 | 0.223 |
| | 49.72 | | | -2.122E+01 | 7.455E+01 | 1.199E+02 | 1.462E+01 | -0.177 |
| | 111.76 | | | -1.886E+01 | 1.007E+02 | 1.587E+02 | 1.955E+01 | -0.119 |
| | 116.30 | | | -4.868E+01 | 9.412E+01 | 1.454E+02 | 1.795E+01 | -0.335 |
| BA-133 | 228.16 | * | | -1.053E-01 | 2.283E+00 | 3.791E+00 | 6.424E-01 | -0.028 |
| | 53.15 | | | -2.229E+00 | 4.629E+00 | 7.360E+00 | 5.980E-01 | -0.303 |
| | 79.62 | | | 9.593E-01 | 1.522E+00 | 2.253E+00 | 3.438E-01 | 0.426 |
| | 81.00 | | | -1.696E-01 | 1.270E-01 | 1.637E-01 | 2.615E-02 | -1.036 |
| | 276.40 | | | 5.055E-01 | 4.613E-01 | 7.483E-01 | 1.105E-01 | 0.675 |
| | 302.84 | | | 2.597E-01 | 1.840E-01 | 2.921E-01 | 3.968E-02 | 0.889 |
| I-133 | 356.01 | * | | 2.688E-03 | 5.591E-02 | 8.013E-02 | 1.057E-02 | 0.034 |
| | 383.85 | | | 2.906E-02 | 3.726E-01 | 6.081E-01 | 7.485E-02 | 0.048 |
| | 510.53 | + | | 4.738E+01 | 3.726E-01 | Half-Life | too short | |
| | 529.87 | * | | -6.327E-02 | 3.726E-01 | Half-Life | too short | |
| | 706.58 | | | -1.476E+01 | 3.726E-01 | Half-Life | too short | |
| | 856.28 | | | -6.696E+00 | 3.726E-01 | Half-Life | too short | |
| | 875.33 | | | -2.168E+00 | 3.726E-01 | Half-Life | too short | |
| | 1236.41 | | | 2.521E+01 | 3.726E-01 | Half-Life | too short | |
| | 1298.22 | | | -8.742E+00 | 3.726E-01 | Half-Life | too short | |
| | 475.35 | | | -5.724E-01 | 2.471E+00 | 3.889E+00 | 3.271E-01 | -0.147 |
| CS-134 | 563.23 | | | 2.267E-01 | 3.952E-01 | 6.944E-01 | 5.946E-02 | 0.327 |
| | 569.32 | | | -6.087E-03 | 2.220E-01 | 3.696E-01 | 3.175E-02 | -0.016 |
| | 604.70 | | | -1.651E-02 | 4.219E-02 | 5.841E-02 | 4.922E-03 | -0.283 |
| | 795.84 | + | * | 7.486E-02 | 7.418E-02 | 1.054E-01 | 9.319E-03 | 0.710 |
| | 801.93 | | | -3.123E-01 | 4.654E-01 | 7.067E-01 | 6.250E-02 | -0.442 |
| | 1038.57 | | | 2.238E+00 | 4.240E+00 | 7.312E+00 | 6.409E-01 | 0.306 |
| | 1167.94 | | | 1.180E+00 | 2.912E+00 | 5.086E+00 | 4.133E-01 | 0.232 |

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|------------------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| CS-135 I-135 | | 1365.15 | | 4.435E-01 | 1.318E+00 | 2.303E+00 | 2.064E-01 | 0.193 |
| | | 268.24 | * | 1.667E-01 | 1.999E-01 | 3.078E-01 | 3.210E-02 | 0.541 |
| | | 288.45 | | -1.525E+15 | 1.999E-01 | Half-Life | too short | |
| | | 417.63 | | -4.381E+15 | 1.999E-01 | Half-Life | too short | |
| | | 546.56 | | -1.206E+15 | 1.999E-01 | Half-Life | too short | |
| | | 836.80 | | -2.303E+15 | 1.999E-01 | Half-Life | too short | |
| | | 1038.76 | | 3.446E+15 | 1.999E-01 | Half-Life | too short | |
| | | 1124.00 | | -1.999E+15 | 1.999E-01 | Half-Life | too short | |
| | | 1131.51 | | -9.817E+14 | 1.999E-01 | Half-Life | too short | |
| | | 1260.41 | * | 1.689E+15 | 1.999E-01 | Half-Life | too short | |
| CS-136 | | 1457.56 | | 5.361E+16 | 1.999E-01 | Half-Life | too short | |
| | | 1678.03 | | 3.433E+15 | 1.999E-01 | Half-Life | too short | |
| | | 1706.46 | | 4.511E+15 | 1.999E-01 | Half-Life | too short | |
| | | 1791.20 | | 5.805E+14 | 1.999E-01 | Half-Life | too short | |
| | | 66.91 | | -1.006E+00 | 1.341E+00 | 1.840E+00 | 2.768E-01 | -0.547 |
| | | 86.29 | | 4.012E+00 | 2.047E+00 | 3.091E+00 | 4.115E-01 | 1.298 |
| | | 153.22 | | 4.952E-01 | 9.695E-01 | 1.671E+00 | 1.596E-01 | 0.296 |
| | | 163.89 | | -1.997E-01 | 1.622E+00 | 2.671E+00 | 2.556E-01 | -0.075 |
| | | 176.55 | | -1.621E-01 | 5.370E-01 | 8.905E-01 | 8.113E-02 | -0.182 |
| | | 273.65 | | -4.001E-01 | 7.743E-01 | 1.075E+00 | 1.042E-01 | -0.372 |
| CE-139 BA-140 | | 340.57 | | 8.140E-01 | 2.402E-01 | 4.140E-01 | 3.738E-02 | 1.966 |
| | | 818.51 | | 1.983E-02 | 1.089E-01 | 1.824E-01 | 1.617E-02 | 0.109 |
| | | 1048.07 | * | -1.096E-01 | 1.690E-01 | 2.508E-01 | 2.282E-02 | -0.437 |
| | | 1235.34 | | -9.219E-01 | 9.151E-01 | 1.374E+00 | 1.596E-01 | -0.671 |
| | | 165.85 | * | 1.799E-03 | 3.478E-02 | 5.875E-02 | 5.004E-03 | 0.031 |
| | | 162.64 | | -1.178E-01 | 1.141E+00 | 1.880E+00 | 1.696E-01 | -0.063 |
| | | 304.84 | | -2.758E-02 | 2.039E+00 | 2.932E+00 | 8.258E-01 | -0.009 |
| | | 423.70 | | -4.477E+00 | 3.490E+00 | 4.563E+00 | 1.474E+00 | -0.981 |
| | | 537.32 | * | -1.227E-01 | 4.058E-01 | 6.642E-01 | 2.199E-01 | -0.185 |
| | | 328.77 | | 6.864E-01 | 7.628E-01 | 8.774E-01 | 8.215E-02 | 0.782 |
| LA-140 | + | 432.53 | | -1.142E+00 | 3.179E+00 | 4.970E+00 | 4.323E-01 | -0.230 |
| | | 487.03 | | -8.495E-03 | 2.047E-01 | 3.267E-01 | 2.934E-02 | -0.026 |
| | | 751.79 | | -1.219E-01 | 2.450E+00 | 4.027E+00 | 3.839E-01 | -0.030 |
| | | 815.85 | | -7.812E-02 | 4.562E-01 | 7.350E-01 | 7.213E-02 | -0.106 |
| | | 867.82 | | -2.004E+00 | 2.367E+00 | 2.837E+00 | 2.674E-01 | -0.706 |
| | | 919.63 | | -2.300E+00 | 4.464E+00 | 6.032E+00 | 6.629E-01 | -0.381 |
| | | 925.24 | | 3.874E-01 | 1.583E+00 | 2.659E+00 | 2.539E-01 | 0.146 |
| | | 1596.49 | * | -4.423E-02 | 1.433E-01 | 2.233E-01 | 1.927E-02 | -0.198 |
| | | 145.44 | * | 4.500E-03 | 8.162E-02 | 1.351E-01 | 1.175E-02 | 0.033 |
| | | 57.37 | | 5.188E-04 | 8.162E-02 | Half-Life | too short | |
| CE-141 CE-143 | | 231.56 | | -2.681E-02 | 8.162E-02 | Half-Life | too short | |
| | | 293.26 | * | 4.310E-03 | 8.162E-02 | Half-Life | too short | |
| | | 350.59 | | 2.594E-01 | 8.162E-02 | Half-Life | too short | |
| | | 490.36 | | -2.157E-02 | 8.162E-02 | Half-Life | too short | |
| | | 664.57 | | 2.857E-02 | 8.162E-02 | Half-Life | too short | |
| | | 721.93 | | -5.388E-03 | 8.162E-02 | Half-Life | too short | |
| CE-144 | | 80.11 | | 7.382E-01 | 2.459E+00 | 3.589E+00 | 3.129E-01 | 0.206 |
| | | 133.54 | * | 2.025E-01 | 2.488E-01 | 4.058E-01 | 6.317E-02 | 0.499 |
| PM-144 | | 476.78 | | 5.904E-02 | 8.514E-02 | 1.439E-01 | 1.330E-02 | 0.410 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| | | 618.01 | | 6.932E-03 | 3.349E-02 | 5.234E-02 | 4.508E-03 | 0.132 |
| | | 696.49 | * | 1.501E-02 | 3.874E-02 | 6.653E-02 | 5.569E-03 | 0.226 |
| | | 778.57 | | 6.306E-01 | 2.473E+00 | 4.187E+00 | 3.651E-01 | 0.151 |
| PR-144 | | 696.49 | * | 1.020E+00 | 2.632E+00 | 4.520E+00 | 3.781E-01 | 0.226 |
| | | 1489.15 | | -6.366E+00 | 1.393E+01 | 2.107E+01 | 1.824E+00 | -0.302 |
| PM-146 | | 453.90 | * | -1.198E-02 | 5.408E-02 | 8.539E-02 | 8.970E-03 | -0.140 |
| | | 633.02 | | 1.393E-01 | 1.533E+00 | 2.578E+00 | 9.616E-01 | 0.054 |
| | | 735.90 | | -4.967E-02 | 1.964E-01 | 2.707E-01 | 7.737E-02 | -0.183 |
| | | 747.13 | | -3.681E-02 | 1.026E-01 | 1.631E-01 | 2.286E-02 | -0.226 |
| ND-147 | | 91.11 | | 9.717E-01 | 6.176E-01 | 7.686E-01 | 7.598E-02 | 1.264 |
| | | 319.41 | | -4.084E-01 | 5.097E+00 | 8.305E+00 | 7.452E-01 | -0.049 |
| | | 439.89 | | 5.365E+00 | 9.592E+00 | 1.613E+01 | 1.338E+00 | 0.333 |
| | | 531.02 | * | -2.578E-01 | 9.782E-01 | 1.567E+00 | 2.331E-01 | -0.165 |
| PM-149 | | 285.90 | * | 2.073E-04 | 9.782E-01 | Half-Life too short | | |
| EU-152 | | 121.78 | | -7.492E-03 | 8.651E-02 | 1.366E-01 | 1.376E-02 | -0.055 |
| | | 244.69 | | 1.880E-01 | 4.267E-01 | 6.418E-01 | 5.842E-02 | 0.293 |
| | | 344.27 | * | -2.252E-02 | 1.278E-01 | 1.794E-01 | 1.659E-02 | -0.125 |
| | | 443.98 | | -4.946E-01 | 1.166E+00 | 1.812E+00 | 1.505E-01 | -0.273 |
| | | 778.89 | | 6.684E-02 | 2.824E-01 | 4.773E-01 | 4.159E-02 | 0.140 |
| | | 867.32 | | -8.110E-01 | 1.042E+00 | 1.261E+00 | 1.133E-01 | -0.643 |
| | + | 964.01 | | 7.421E-01 | 4.119E-01 | 6.509E-01 | 5.839E-02 | 1.140 |
| | | 1085.78 | | 6.464E-02 | 4.173E-01 | 6.872E-01 | 5.891E-02 | 0.094 |
| | | 1112.02 | | 1.795E-01 | 3.446E-01 | 5.779E-01 | 4.881E-02 | 0.311 |
| | | 1407.95 | | -1.049E-01 | 2.448E-01 | 3.824E-01 | 3.294E-02 | -0.274 |
| GD-153 | | 69.67 | | 1.035E+00 | 2.149E+00 | 3.178E+00 | 2.549E-01 | 0.326 |
| | | 83.37 | | 1.587E+01 | 2.044E+01 | 2.792E+01 | 2.514E+00 | 0.568 |
| | | 97.43 | * | -5.346E-02 | 1.046E-01 | 1.426E-01 | 1.266E-02 | -0.375 |
| | | 103.18 | | -1.874E-01 | 1.213E-01 | 1.764E-01 | 1.538E-02 | -1.063 |
| EU-154 | | 123.07 | | -2.332E-02 | 6.041E-02 | 9.377E-02 | 1.077E-02 | -0.249 |
| | | 247.94 | | 2.060E-01 | 4.699E-01 | 7.067E-01 | 8.375E-02 | 0.291 |
| | | 591.81 | | -3.163E-01 | 7.696E-01 | 1.167E+00 | 1.347E-01 | -0.271 |
| | | 723.30 | | 9.303E-02 | 2.097E-01 | 3.198E-01 | 3.010E-02 | 0.291 |
| | | 756.87 | | 2.359E-01 | 8.493E-01 | 1.441E+00 | 1.727E-01 | 0.164 |
| | | 873.19 | | 4.065E-02 | 3.283E-01 | 5.450E-01 | 6.822E-02 | 0.075 |
| | | 996.32 | | -2.286E-01 | 4.242E-01 | 6.390E-01 | 1.144E-01 | -0.358 |
| | | 1004.76 | | -1.919E-01 | 2.910E-01 | 4.311E-01 | 5.099E-02 | -0.445 |
| | | 1274.45 | * | 8.636E-02 | 1.216E-01 | 2.211E-01 | 2.462E-02 | 0.391 |
| EU-155 | | 48.70 | | -2.494E+00 | 3.268E+00 | 5.123E+00 | 4.384E-01 | -0.487 |
| | | 60.01 | | 3.830E+00 | 6.145E+00 | 9.245E+00 | 6.989E-01 | 0.414 |
| | + | 86.54 | | 5.666E-01 | 1.883E-01 | 2.209E-01 | 2.075E-02 | 2.565 |
| | | 105.31 | * | 1.471E-01 | 1.218E-01 | 2.046E-01 | 1.800E-02 | 0.719 |
| TB-160 | + | 86.79 | | 1.584E+00 | 5.262E-01 | 6.207E-01 | 5.796E-02 | 2.552 |
| | | 197.04 | | -4.313E-01 | 7.390E-01 | 1.152E+00 | 1.012E-01 | -0.375 |
| | | 215.65 | | 3.518E-01 | 9.146E-01 | 1.552E+00 | 1.388E-01 | 0.227 |
| | | 298.57 | | 1.729E-01 | 1.451E-01 | 2.524E-01 | 2.294E-02 | 0.685 |
| | | 879.36 | * | -1.266E-02 | 1.619E-01 | 2.623E-01 | 2.366E-02 | -0.048 |
| | | 962.29 | | 4.767E-01 | 6.471E-01 | 1.016E+00 | 9.121E-02 | 0.469 |
| | + | 966.15 | | 5.340E-01 | 2.964E-01 | 5.629E-01 | 5.047E-02 | 0.949 |
| | | 1177.93 | | 1.934E-02 | 4.144E-01 | 6.989E-01 | 5.667E-02 | 0.028 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| HO-166M | 1271.85 | | | 3.076E-01 | 7.515E-01 | 1.321E+00 | 1.107E-01 | 0.233 |
| | 80.57 | | | -6.905E-02 | 3.212E-01 | 4.543E-01 | 3.979E-02 | -0.152 |
| | 184.41 | | | 9.720E-02 | 4.643E-02 | 7.525E-02 | 6.530E-03 | 1.292 |
| | 280.46 | | | -8.969E-02 | 9.900E-02 | 1.538E-01 | 1.407E-02 | -0.583 |
| | 410.95 | | | 2.080E-01 | 3.114E-01 | 5.260E-01 | 4.290E-02 | 0.395 |
| | 711.68 | * | | -1.357E-02 | 7.049E-02 | 1.147E-01 | 9.680E-03 | -0.118 |
| | 752.31 | | | -7.686E-02 | 2.998E-01 | 4.819E-01 | 4.150E-02 | -0.159 |
| TM-171 | 810.29 | | | 1.075E-02 | 6.449E-02 | 1.080E-01 | 9.530E-03 | 0.100 |
| | 51.35 | | | 6.847E+01 | 3.939E+01 | 6.885E+01 | 5.730E+00 | 0.994 |
| | 52.39 | | | 1.411E+01 | 2.026E+01 | 3.406E+01 | 2.796E+00 | 0.414 |
| | 59.40 | | | -1.577E+01 | 3.568E+01 | 5.025E+01 | 3.787E+00 | -0.314 |
| | 66.72 | * | | -2.732E+01 | 3.736E+01 | 5.156E+01 | 4.061E+00 | -0.530 |
| LU-176 | 88.36 | | + | 1.114E+00 | 3.699E-01 | 4.370E-01 | 4.122E-02 | 2.548 |
| | 201.83 | | | -4.133E-02 | 3.359E-02 | 5.266E-02 | 4.651E-03 | -0.785 |
| | 306.84 | * | | -4.304E-02 | 2.949E-02 | 4.118E-02 | 3.727E-03 | -1.045 |
| | 401.10 | | | -2.398E+00 | 8.000E+00 | 1.266E+01 | 1.025E+00 | -0.189 |
| LU-177 | 112.95 | | | -1.586E+00 | 3.293E+00 | 5.049E+00 | 4.378E-01 | -0.314 |
| | 208.36 | * | | 1.515E+00 | 2.187E+00 | 3.752E+00 | 3.334E-01 | 0.404 |
| LU-177M | 52.97 | | | -6.430E-01 | 2.160E+00 | 3.468E+00 | 2.825E-01 | -0.185 |
| | 54.07 | | | -1.052E+00 | 1.102E+00 | 1.704E+00 | 1.367E-01 | -0.618 |
| | 61.30 | | | 2.090E+00 | 1.827E+00 | 2.824E+00 | 2.154E-01 | 0.740 |
| | 121.62 | | | 3.629E-02 | 4.508E-01 | 7.181E-01 | 6.308E-02 | 0.051 |
| | 147.16 | | | -2.255E-01 | 7.381E-01 | 1.233E+00 | 1.052E-01 | -0.183 |
| | 171.86 | | | -5.493E-02 | 5.524E-01 | 9.258E-01 | 7.929E-02 | -0.059 |
| | 218.09 | | | 1.899E-01 | 1.028E+00 | 1.729E+00 | 1.549E-01 | 0.110 |
| | 268.79 | | | 1.562E+00 | 1.054E+00 | 1.685E+00 | 1.542E-01 | 0.927 |
| | 319.02 | | | 3.904E-04 | 2.971E-01 | 4.870E-01 | 4.369E-02 | 0.001 |
| | 367.43 | | | -7.831E-01 | 1.103E+00 | 1.696E+00 | 1.432E-01 | -0.462 |
| | 413.65 | * | | -2.312E-01 | 2.250E-01 | 3.340E-01 | 2.729E-02 | -0.692 |
| | 56.28 | | | 8.753E-02 | 1.218E+00 | 1.988E+00 | 1.550E-01 | 0.044 |
| HF-181 | 57.53 | | | 1.140E-01 | 6.515E-01 | 1.068E+00 | 8.206E-02 | 0.107 |
| | 65.20 | | | 3.871E-01 | 1.342E+00 | 1.970E+00 | 1.538E-01 | 0.197 |
| | 133.02 | | | 6.374E-02 | 8.655E-02 | 1.414E-01 | 1.219E-02 | 0.451 |
| | 136.25 | | | -8.190E-02 | 5.424E-01 | 9.150E-01 | 7.863E-02 | -0.090 |
| | 345.85 | | | -2.768E-01 | 3.439E-01 | 3.666E-01 | 3.197E-02 | -0.755 |
| | 482.03 | * | | -4.959E-02 | 5.538E-02 | 8.124E-02 | 6.846E-03 | -0.610 |
| | 56.28 | | | 3.314E-02 | 4.523E-01 | 7.382E-01 | 5.757E-02 | 0.045 |
| W-181 | 57.53 | | | 4.275E-02 | 2.422E-01 | 3.969E-01 | 3.050E-02 | 0.108 |
| | 65.20 | * | | 1.427E-01 | 4.949E-01 | 7.262E-01 | 5.669E-02 | 0.197 |
| TA-182 | 67.75 | | | 3.525E-03 | 1.490E-01 | 2.153E-01 | 1.706E-02 | 0.016 |
| | 100.10 | | | 3.265E-01 | 2.089E-01 | 3.552E-01 | 3.123E-02 | 0.919 |
| | 152.43 | | | 1.469E-01 | 3.882E-01 | 6.663E-01 | 5.676E-02 | 0.220 |
| | 222.10 | | | -1.787E-02 | 4.167E-01 | 6.928E-01 | 6.225E-02 | -0.026 |
| | 1001.68 | | | 1.358E+00 | 2.612E+00 | 4.538E+00 | 4.030E-01 | 0.299 |
| RE-183 | 1121.28 | | + | 6.609E-01 | 2.668E-01 | 4.340E-01 | 3.644E-02 | 1.523 |
| | 1189.05 | | | -3.490E-02 | 3.166E-01 | 5.241E-01 | 4.269E-02 | -0.067 |
| | 1221.42 | * | | 1.108E-01 | 2.346E-01 | 4.102E-01 | 3.381E-02 | 0.270 |
| | 1230.97 | | | -1.511E-01 | 5.177E-01 | 8.389E-01 | 6.938E-02 | -0.180 |
| | 57.98 | | | -9.870E-02 | 2.454E-01 | 3.907E-01 | 2.988E-02 | -0.253 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| RE-184 | | 59.32 | | -6.783E-02 | 1.535E-01 | 2.162E-01 | 1.631E-02 | -0.314 |
| | | 67.20 | | -1.660E-01 | 2.774E-01 | 3.862E-01 | 3.050E-02 | -0.430 |
| | | 162.32 | * | -1.191E-02 | 1.339E-01 | 2.209E-01 | 1.880E-02 | -0.054 |
| | | 208.81 | | 1.176E+00 | 1.240E+00 | 2.146E+00 | 1.908E-01 | 0.548 |
| | | 291.72 | | -1.347E-01 | 1.289E+00 | 1.844E+00 | 1.681E-01 | -0.073 |
| | | 57.98 | | -3.534E-01 | 8.785E-01 | 1.399E+00 | 1.070E-01 | -0.253 |
| | | 59.32 | | -2.427E-01 | 5.492E-01 | 7.735E-01 | 5.834E-02 | -0.314 |
| | | 67.20 | | -5.943E-01 | 9.928E-01 | 1.382E+00 | 1.092E-01 | -0.430 |
| | | 161.27 | | -2.502E-01 | 4.085E-01 | 6.702E-01 | 5.706E-02 | -0.373 |
| | | 216.55 | | 7.327E-02 | 3.136E-01 | 5.287E-01 | 4.731E-02 | 0.139 |
| | | 252.85 | * | 5.978E-02 | 2.750E-01 | 4.609E-01 | 4.207E-02 | 0.130 |
| | | 318.01 | | 2.047E-01 | 5.123E-01 | 8.617E-01 | 7.738E-02 | 0.238 |
| | | 792.07 | | -7.112E-02 | 1.316E+00 | 1.863E+00 | 1.632E-01 | -0.038 |
| | | 903.28 | | -6.570E-01 | 1.112E+00 | 1.681E+00 | 1.522E-01 | -0.391 |
| OS-185 | | 920.93 | | 1.198E-02 | 4.908E-01 | 7.814E-01 | 7.062E-02 | 0.015 |
| | | 59.72 | | 2.785E-02 | 3.908E-01 | 5.687E-01 | 4.289E-02 | 0.049 |
| | | 61.14 | | 2.380E-01 | 2.047E-01 | 3.168E-01 | 2.414E-02 | 0.751 |
| | | 69.30 | | 2.850E-01 | 3.916E-01 | 5.864E-01 | 4.692E-02 | 0.486 |
| | | 592.07 | | -2.049E+00 | 3.197E+00 | 4.909E+00 | 4.140E-01 | -0.417 |
| | | 646.12 | * | -2.550E-02 | 5.090E-02 | 8.088E-02 | 6.682E-03 | -0.315 |
| | | 717.42 | | -6.719E-01 | 1.108E+00 | 1.729E+00 | 1.463E-01 | -0.389 |
| | | 874.81 | | -6.642E-02 | 6.696E-01 | 1.083E+00 | 9.752E-02 | -0.061 |
| | | 880.27 | | -3.344E-02 | 8.723E-01 | 1.420E+00 | 1.281E-01 | -0.024 |
| | | 155.03 | * | 1.555E-01 | 2.074E-01 | 3.603E-01 | 3.068E-02 | 0.432 |
| W-188 | | 477.96 | | -3.708E-02 | 4.098E+00 | 6.566E+00 | 5.527E-01 | -0.006 |
| | | 633.10 | | 8.646E-01 | 3.189E+00 | 5.456E+00 | 4.536E-01 | 0.158 |
| | + | 63.58 | | 6.575E+01 | 9.529E+01 | 1.137E+02 | 8.797E+00 | 0.578 |
| IR-192 | | 227.08 | | 5.785E-01 | 1.520E+01 | 2.535E+01 | 2.286E+00 | 0.023 |
| | | 290.67 | * | 6.018E-01 | 1.013E+01 | 1.471E+01 | 1.341E+00 | 0.041 |
| | + | 295.96 | | 1.238E+00 | 2.386E-01 | 3.700E-01 | 3.390E-02 | 3.345 |
| | | 308.46 | | -1.972E-02 | 1.128E-01 | 1.830E-01 | 1.662E-02 | -0.108 |
| | | 316.51 | * | -1.170E-02 | 4.201E-02 | 6.758E-02 | 6.089E-03 | -0.173 |
| AU-195 | | 468.07 | | -1.704E-02 | 8.282E-02 | 1.306E-01 | 1.179E-02 | -0.130 |
| | | 604.41 | | -3.257E-01 | 6.169E-01 | 8.389E-01 | 1.080E-01 | -0.388 |
| | | 612.46 | | 2.928E+00 | 1.060E+00 | 1.896E+00 | 1.838E-01 | 1.544 |
| | | 65.12 | | 9.010E-02 | 2.282E-01 | 3.367E-01 | 2.627E-02 | 0.268 |
| | | 66.83 | | -1.002E-01 | 1.258E-01 | 1.729E-01 | 1.363E-02 | -0.580 |
| | + | 75.70 | | 1.152E+00 | 3.147E-01 | 5.241E-01 | 4.395E-02 | 2.198 |
| | | 98.88 | * | 2.838E-01 | 2.675E-01 | 4.409E-01 | 3.893E-02 | 0.644 |
| | | 129.76 | | 2.825E+00 | 3.419E+00 | 5.612E+00 | 4.862E-01 | 0.503 |
| TL-200 | | 367.94 | * | -4.937E-03 | 3.419E+00 | Half-Life | too short | |
| | | 579.30 | | -4.031E-02 | 3.419E+00 | Half-Life | too short | |
| | | 828.27 | | 1.252E-02 | 3.419E+00 | Half-Life | too short | |
| TL-201 | | 1205.75 | | -4.201E-03 | 3.419E+00 | Half-Life | too short | |
| | | 68.90 | | 1.811E+01 | 2.033E+01 | 2.825E+01 | 2.255E+00 | 0.641 |
| | | 70.82 | | 2.224E+00 | 1.055E+01 | 1.537E+01 | 1.243E+00 | 0.145 |
| | | 80.30 | | -3.404E+00 | 1.838E+01 | 2.606E+01 | 2.276E+00 | -0.131 |
| | | 135.34 | | 2.056E+01 | 9.290E+01 | 1.484E+02 | 1.276E+01 | 0.139 |
| | | 167.43 | * | -1.715E+00 | 2.472E+01 | 4.153E+01 | 3.541E+00 | -0.041 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TL-202 | | 68.90 | | 6.979E-01 | 7.835E-01 | 1.089E+00 | 8.691E-02 | 0.641 |
| | | 70.82 | | 8.550E-02 | 4.056E-01 | 5.910E-01 | 4.777E-02 | 0.145 |
| | | 80.30 | | -1.309E-01 | 7.068E-01 | 1.002E+00 | 8.752E-02 | -0.131 |
| HG-203 | | 439.56 | * | 6.243E-02 | 1.105E-01 | 1.858E-01 | 1.540E-02 | 0.336 |
| | | 70.83 | | 3.062E-01 | 1.429E+00 | 2.082E+00 | 2.764E-01 | 0.147 |
| | | 72.87 | | 9.229E-01 | 8.474E-01 | 1.276E+00 | 1.651E-01 | 0.723 |
| | | 82.60 | | 1.171E-01 | 1.499E+00 | 2.156E+00 | 3.006E-01 | 0.054 |
| BI-207 | | 279.20 | * | 5.701E-02 | 5.017E-02 | 8.760E-02 | 8.214E-03 | 0.651 |
| | | 72.80 | | 2.041E-01 | 2.280E-01 | 3.426E-01 | 2.809E-02 | 0.596 |
| | + | 74.97 | | 6.274E-01 | 1.714E-01 | 2.512E-01 | 2.094E-02 | 2.497 |
| | | 84.90 | | 3.093E-01 | 2.395E-01 | 3.618E-01 | 3.310E-02 | 0.855 |
| | | 569.67 | | 2.744E-04 | 3.506E-02 | 5.855E-02 | 4.960E-03 | 0.005 |
| | | 1063.62 | * | 2.572E-02 | 6.120E-02 | 1.037E-01 | 8.994E-03 | 0.248 |
| TL-207 | | 1770.23 | | -1.572E-01 | 6.561E-01 | 8.440E-01 | 7.068E-02 | -0.186 |
| | | 81.07 | | -3.791E-01 | 2.752E-01 | 3.601E-01 | 3.169E-02 | -1.053 |
| | | 83.78 | | 1.362E-01 | 1.592E-01 | 2.363E-01 | 2.137E-02 | 0.576 |
| | | 94.90 | | 4.273E-01 | 2.844E-01 | 4.374E-01 | 3.933E-02 | 0.977 |
| | | 122.32 | | -9.828E-01 | 2.081E+00 | 3.218E+00 | 3.028E-01 | -0.305 |
| | | 144.24 | | 3.819E-01 | 7.941E-01 | 1.336E+00 | 1.279E-01 | 0.286 |
| | | 154.21 | | 2.049E-01 | 4.496E-01 | 7.733E-01 | 7.258E-02 | 0.265 |
| | + | 269.46 | | 3.954E-01 | 3.209E-01 | 4.024E-01 | 3.750E-02 | 0.983 |
| | | 323.87 | * | -3.715E-02 | 8.640E-01 | 1.235E+00 | 2.205E-01 | -0.030 |
| | + | 338.28 | | 5.558E+00 | 2.529E+00 | 2.871E+00 | 3.572E-01 | 1.936 |
| PO-209 | | 445.03 | | -9.601E-01 | 2.740E+00 | 4.280E+00 | 5.080E-01 | -0.224 |
| | | 260.50 | | -4.454E+00 | 1.098E+01 | 1.773E+01 | 1.621E+00 | -0.251 |
| | | 262.80 | | 2.769E+01 | 3.023E+01 | 5.242E+01 | 4.794E+00 | 0.528 |
| | | 896.60 | * | -1.157E+00 | 8.877E+00 | 1.429E+01 | 1.294E+00 | -0.081 |
| BI-210 | | 46.50 | * | 2.882E-01 | 4.828E+00 | 7.820E+00 | 7.382E-01 | 0.037 |
| PB-210 | | 46.50 | * | 2.882E-01 | 4.828E+00 | 7.820E+00 | 7.382E-01 | 0.037 |
| PO-210 | | 46.50 | * | 2.882E-01 | 4.828E+00 | 7.820E+00 | 6.704E-01 | 0.037 |
| PB-211 | | 404.84 | * | -6.244E-01 | 1.200E+00 | 1.761E+00 | 1.102E+00 | -0.355 |
| PO-215 | | 427.08 | | 1.772E-01 | 2.541E+00 | 4.118E+00 | 2.557E+00 | 0.043 |
| | | 831.96 | | -1.931E-01 | 1.403E+00 | 2.262E+00 | 1.418E+00 | -0.085 |
| | | 81.07 | | -3.791E-01 | 2.752E-01 | 3.601E-01 | 3.169E-02 | -1.053 |
| | | 83.78 | | 1.362E-01 | 1.592E-01 | 2.363E-01 | 2.137E-02 | 0.576 |
| | | 94.90 | | 4.273E-01 | 2.844E-01 | 4.374E-01 | 3.933E-02 | 0.977 |
| | | 122.32 | | -9.828E-01 | 2.081E+00 | 3.218E+00 | 3.028E-01 | -0.305 |
| | | 144.24 | | 3.819E-01 | 7.941E-01 | 1.336E+00 | 1.279E-01 | 0.286 |
| | | 154.21 | | 2.049E-01 | 4.496E-01 | 7.733E-01 | 7.258E-02 | 0.265 |
| | + | 269.46 | | 3.954E-01 | 3.209E-01 | 4.024E-01 | 3.750E-02 | 0.983 |
| | | 323.87 | * | -3.715E-02 | 8.640E-01 | 1.235E+00 | 2.205E-01 | -0.030 |
| RN-219 | | 338.28 | | 5.558E+00 | 2.529E+00 | 2.871E+00 | 3.572E-01 | 1.936 |
| | | 445.03 | | -9.601E-01 | 2.740E+00 | 4.280E+00 | 5.080E-01 | -0.224 |
| | + | 271.23 | | 5.074E-01 | 4.126E-01 | 5.095E-01 | 5.482E-02 | 0.996 |
| | | 401.81 | * | -1.323E-03 | 4.845E-01 | 7.844E-01 | 1.156E-01 | -0.002 |
| RN-220 | | 549.76 | * | -9.709E+00 | 3.160E+01 | 5.149E+01 | 4.371E+00 | -0.189 |
| RA-223 | | 81.07 | | -3.791E-01 | 2.752E-01 | 3.601E-01 | 3.169E-02 | -1.053 |
| | | 83.78 | | 1.362E-01 | 1.592E-01 | 2.363E-01 | 2.137E-02 | 0.576 |
| | | 94.90 | | 4.273E-01 | 2.844E-01 | 4.374E-01 | 3.933E-02 | 0.977 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AC-227 | | 122.32 | | -9.828E-01 | 2.081E+00 | 3.218E+00 | 3.028E-01 | -0.305 |
| | | 144.24 | | 3.819E-01 | 7.941E-01 | 1.336E+00 | 1.279E-01 | 0.286 |
| | | 154.21 | | 2.049E-01 | 4.496E-01 | 7.733E-01 | 7.258E-02 | 0.265 |
| | + | 269.46 | | 3.954E-01 | 3.209E-01 | 4.024E-01 | 3.750E-02 | 0.983 |
| | | 323.87 | * | -3.715E-02 | 8.640E-01 | 1.235E+00 | 2.205E-01 | -0.030 |
| | + | 338.28 | | 5.558E+00 | 2.529E+00 | 2.871E+00 | 3.572E-01 | 1.936 |
| | | 445.03 | | -9.601E-01 | 2.740E+00 | 4.280E+00 | 5.080E-01 | -0.224 |
| | | 79.80 | | 9.435E-01 | 1.908E+00 | 2.801E+00 | 6.031E-01 | 0.337 |
| | | 236.00 | | 1.289E-01 | 3.079E-01 | 4.613E-01 | 5.795E-02 | 0.279 |
| | | 256.20 | * | -6.919E-02 | 4.338E-01 | 7.115E-01 | 1.113E-01 | -0.097 |
| | | 286.10 | | 4.790E-01 | 1.846E+00 | 3.085E+00 | 4.177E-01 | 0.155 |
| | + | 299.80 | | 3.057E+00 | 2.319E+00 | 3.169E+00 | 5.616E-01 | 0.965 |
| TH-227 | | 304.40 | | 2.785E-01 | 2.284E+00 | 3.326E+00 | 6.203E-01 | 0.084 |
| | | 334.20 | | -1.249E-01 | 4.374E+00 | 4.487E+00 | 8.755E-01 | -0.028 |
| | | 79.80 | | 9.435E-01 | 1.908E+00 | 2.801E+00 | 6.108E-01 | 0.337 |
| | + | 94.00 | | 5.395E+00 | 3.579E+00 | 4.296E+00 | 9.428E-01 | 1.256 |
| | | 236.00 | | 1.289E-01 | 3.078E-01 | 4.613E-01 | 5.271E-02 | 0.279 |
| | | 256.20 | * | -6.919E-02 | 4.338E-01 | 7.115E-01 | 1.303E-01 | -0.097 |
| | | 286.10 | | 4.790E-01 | 1.907E+00 | 3.085E+00 | 3.097E+00 | 0.155 |
| | + | 299.80 | | 3.057E+00 | 2.319E+00 | 3.169E+00 | 5.616E-01 | 0.965 |
| | | 304.40 | | 2.785E-01 | 2.284E+00 | 3.326E+00 | 6.203E-01 | 0.084 |
| | | 334.20 | | -1.249E-01 | 4.374E+00 | 4.487E+00 | 8.755E-01 | -0.028 |
| | | 85.43 | | 4.985E-01 | 2.428E-01 | 3.757E-01 | 3.457E-02 | 1.327 |
| | + | 88.47 | | 6.411E-01 | 2.130E-01 | 2.505E-01 | 2.361E-02 | 2.559 |
| TH-229 | | 100.00 | | 2.960E-01 | 2.147E-01 | 3.578E-01 | 3.147E-02 | 0.827 |
| | | 193.63 | * | 8.449E-02 | 5.803E-01 | 9.787E-01 | 8.575E-02 | 0.086 |
| | | 210.97 | | 9.030E-01 | 9.013E-01 | 1.564E+00 | 1.393E-01 | 0.577 |
| | | 283.67 | * | -1.605E-01 | 1.799E+00 | 2.949E+00 | 4.567E-01 | -0.054 |
| | + | 301.29 | | 1.223E+00 | 9.149E-01 | 1.279E+00 | 1.608E-01 | 0.956 |
| | | 81.07 | | -3.791E-01 | 2.752E-01 | 3.601E-01 | 3.169E-02 | -1.053 |
| | | 83.78 | | 1.362E-01 | 1.592E-01 | 2.363E-01 | 2.137E-02 | 0.576 |
| | | 94.90 | | 4.273E-01 | 2.844E-01 | 4.374E-01 | 3.933E-02 | 0.977 |
| | | 122.32 | | -9.828E-01 | 2.081E+00 | 3.218E+00 | 3.028E-01 | -0.305 |
| | | 144.24 | | 3.819E-01 | 7.941E-01 | 1.336E+00 | 1.279E-01 | 0.286 |
| | | 154.21 | | 2.049E-01 | 4.496E-01 | 7.733E-01 | 7.258E-02 | 0.265 |
| | + | 269.46 | | 3.954E-01 | 3.209E-01 | 4.024E-01 | 3.750E-02 | 0.983 |
| U-231 | | 323.87 | * | -3.715E-02 | 8.640E-01 | 1.235E+00 | 2.205E-01 | -0.030 |
| | + | 338.28 | | 5.558E+00 | 2.529E+00 | 2.871E+00 | 3.572E-01 | 1.936 |
| | | 445.03 | | -9.601E-01 | 2.740E+00 | 4.280E+00 | 5.080E-01 | -0.224 |
| | | 84.21 | | 1.460E+01 | 1.553E+01 | 2.313E+01 | 2.101E+00 | 0.631 |
| | + | 92.29 | | 1.207E+01 | 7.633E+00 | 1.034E+01 | 9.445E-01 | 1.167 |
| | | 95.87 | * | -1.561E+00 | 3.048E+00 | 4.192E+00 | 3.750E-01 | -0.372 |
| | | 108.00 | | -1.638E+00 | 5.494E+00 | 8.625E+00 | 7.477E-01 | -0.190 |
| | + | 75.28 | | 1.830E+01 | 5.513E+00 | 7.670E+00 | 1.166E+00 | 2.386 |
| | + | 86.59 | | 9.193E+00 | 3.844E+00 | 3.588E+00 | 9.707E-01 | 2.562 |
| | + | 300.12 | | 8.523E-01 | 6.417E-01 | 8.933E-01 | 1.353E-01 | 0.954 |
| | | 311.98 | * | 9.292E-02 | 7.492E-02 | 1.316E-01 | 1.218E-02 | 0.706 |
| | | 340.50 | | 3.204E+00 | 1.153E+00 | 1.571E+00 | 3.754E-01 | 2.039 |
| | | 398.62 | | 4.933E-02 | 2.546E+00 | 4.131E+00 | 1.093E+00 | 0.012 |
| PA-233 | | | | | | | | |
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---- Non-Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA | | |
|---------|-----------|--------------|------------|---------------------|-----------|----------------|-----------|-----------|-----------|-------|
| PA-234 | + | 415.76 | | 8.639E-01 | 1.954E+00 | 3.252E+00 | 6.954E-01 | 0.266 | | |
| | | 63.00 | | 1.815E+00 | 2.641E+00 | 3.200E+00 | 4.805E-01 | 0.567 | | |
| | | 94.67 | | 4.575E-01 | 2.155E-01 | 3.324E-01 | 4.212E-02 | 1.376 | | |
| | | 98.44 | | 8.084E-02 | 1.210E-01 | 1.753E-01 | 9.787E-02 | 0.461 | | |
| | | 99.86 | | 7.431E-01 | 5.433E-01 | 9.052E-01 | 7.966E-02 | 0.821 | | |
| | | 111.00 | | 2.733E-02 | 2.161E-01 | 3.460E-01 | 4.193E-02 | 0.079 | | |
| | | 131.20 | | -1.285E-02 | 1.305E-01 | 2.054E-01 | 1.776E-02 | -0.063 | | |
| | | 152.70 | | 2.208E-01 | 3.665E-01 | 6.316E-01 | 1.073E-01 | 0.350 | | |
| | | 186.00 | | 2.847E+00 | 2.324E+00 | 2.982E+00 | 9.315E-01 | 0.955 | | |
| | | 226.40 | | -2.183E-01 | 4.611E-01 | 7.477E-01 | 1.007E-01 | -0.292 | | |
| | | 227.20 | | 5.536E-02 | 4.908E-01 | 8.215E-01 | 7.407E-02 | 0.067 | | |
| | | 248.90 | | -1.830E-01 | 1.034E+00 | 1.568E+00 | 3.546E-01 | -0.117 | | |
| | | 293.70 | | 3.887E+00 | 1.164E+00 | 1.825E+00 | 3.204E-01 | 2.130 | | |
| | | 369.80 | | -1.592E-01 | 9.757E-01 | 1.566E+00 | 3.398E-01 | -0.102 | | |
| | | 568.70 | | -5.216E-01 | 1.139E+00 | 1.828E+00 | 1.549E-01 | -0.285 | | |
| | | 569.50 | | -1.610E-02 | 3.094E-01 | 5.141E-01 | 4.355E-02 | -0.031 | | |
| | + | 574.00 | | 1.085E+00 | 1.545E+00 | 2.747E+00 | 2.325E-01 | 0.395 | | |
| | | 699.00 | | -1.379E-01 | 8.379E-01 | 1.370E+00 | 2.598E-01 | -0.101 | | |
| | | 706.10 | | -5.541E-01 | 1.278E+00 | 1.916E+00 | 8.535E-01 | -0.289 | | |
| | | 733.00 | | -8.129E-02 | 5.111E-01 | 7.173E-01 | 1.590E-01 | -0.113 | | |
| | | 742.81 | | 9.284E-01 | 1.725E+00 | 2.802E+00 | 1.883E+00 | 0.331 | | |
| | | 796.30 | | 1.448E+00 | 1.482E+00 | 1.989E+00 | 5.390E-01 | 0.728 | | |
| | | 805.60 | | 1.539E-01 | 1.122E+00 | 1.872E+00 | 5.746E-01 | 0.082 | | |
| | | 819.60 | | 7.303E-01 | 1.425E+00 | 2.424E+00 | 9.231E-01 | 0.301 | | |
| | | 826.30 | | -4.292E-01 | 9.910E-01 | 1.521E+00 | 6.813E-01 | -0.282 | | |
| | | 831.60 | | -2.545E-02 | 7.313E-01 | 1.196E+00 | 3.580E-01 | -0.021 | | |
| | | 876.40 | | -2.734E-01 | 9.682E-01 | 1.462E+00 | 1.504E+00 | -0.187 | | |
| | | 880.51 | | 2.693E-02 | 2.998E-01 | 4.958E-01 | 4.472E-02 | 0.054 | | |
| | | 883.24 | | -1.334E-01 | 3.399E-01 | 5.105E-01 | 3.434E-01 | -0.261 | | |
| | | 899.00 | | 2.359E-02 | 1.000E+00 | 1.638E+00 | 7.177E-01 | 0.014 | | |
| | | 925.00 | | 3.075E-01 | 1.257E+00 | 2.112E+00 | 1.908E-01 | 0.146 | | |
| | | 926.50 | | 2.997E-02 | 1.882E-01 | 3.126E-01 | 7.946E-02 | 0.096 | | |
| | | 946.00 | * | -8.844E-02 | 3.739E-01 | 5.922E-01 | 1.122E-01 | -0.149 | | |
| | | 949.00 | | 4.576E-01 | 5.290E-01 | 9.443E-01 | 8.497E-02 | 0.485 | | |
| | | 980.50 | | 2.459E-01 | 7.321E-01 | 1.243E+00 | 1.110E-01 | 0.198 | | |
| | | 1394.10 | | -1.547E-01 | 1.041E+00 | 1.667E+00 | 1.085E+00 | -0.093 | | |
| | | PA-234M | | 766.42 | | 7.210E+00 | 1.311E+01 | 2.187E+01 | 1.110E+01 | 0.330 |
| | | | | 1001.03 | * | 2.366E+00 | 5.550E+00 | 9.585E+00 | 9.770E-01 | 0.247 |
| | | U-235 | + | 89.95 | | 1.190E+00 | 1.791E+00 | 2.075E+00 | 6.443E-01 | 0.574 |
| | | | | 93.35 | | 1.678E+00 | 1.152E+00 | 1.412E+00 | 3.977E-01 | 1.189 |
| 105.00 | | | | 1.202E+00 | 1.229E+00 | 1.969E+00 | 5.881E-01 | 0.610 | | |
| 143.76 | * | | | 1.180E-01 | 2.468E-01 | 4.142E-01 | 7.237E-02 | 0.285 | | |
| 163.35 | | | -1.517E-01 | 5.514E-01 | 9.007E-01 | 1.714E-01 | -0.168 | | | |
| + | 185.71 | | | 1.054E-01 | 8.004E-02 | 1.114E-01 | 9.678E-03 | 0.947 | | |
| | 205.31 | | | 7.127E-02 | 6.144E-01 | 1.013E+00 | 1.944E-01 | 0.070 | | |
| | NP-236 | | | 94.67 | | 3.496E-01 | 1.606E-01 | 2.524E-01 | 2.273E-02 | 1.385 |
| | | | 98.44 | | 6.109E-02 | 8.506E-02 | 1.325E-01 | 1.172E-02 | 0.461 | |
| | | 111.00 | | 2.068E-02 | 1.634E-01 | 2.617E-01 | 2.268E-02 | 0.079 | | |
| | | 160.31 | * | -3.667E-02 | 9.042E-02 | 1.499E-01 | 1.276E-02 | -0.245 | | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| NF-239 | | 99.55 | | 2.307E-01 | 1.812E-01 | 3.010E-01 | 2.651E-02 | 0.767 |
| | | 117.00 | * | -2.291E-01 | 2.288E-01 | 3.439E-01 | 2.995E-02 | -0.666 |
| | | 209.75 | | 1.266E+00 | 9.221E-01 | 1.618E+00 | 1.439E-01 | 0.782 |
| | | 228.18 | | -1.528E-02 | 2.601E-01 | 4.316E-01 | 3.894E-02 | -0.035 |
| | | 277.60 | | 7.927E-02 | 2.121E-01 | 3.569E-01 | 3.265E-02 | 0.222 |
| AM-241 | | 334.30 | | -1.092E-01 | 2.477E+00 | 2.535E+00 | 2.241E-01 | -0.043 |
| | | 59.54 | * | 1.566E-02 | 1.991E-01 | 2.898E-01 | 2.388E-02 | 0.054 |
| CM-243 | | 99.55 | | 2.375E-01 | 1.865E-01 | 3.098E-01 | 2.729E-02 | 0.767 |
| | | 103.76 | * | -1.273E-01 | 1.104E-01 | 1.650E-01 | 1.437E-02 | -0.772 |
| | | 117.00 | | -2.357E-01 | 2.355E-01 | 3.539E-01 | 3.082E-02 | -0.666 |
| | | 209.75 | | 1.248E+00 | 9.093E-01 | 1.595E+00 | 1.419E-01 | 0.782 |
| | | 228.18 | | -1.545E-02 | 2.629E-01 | 4.363E-01 | 3.936E-02 | -0.035 |
| AM-246 | | 277.60 | | 7.994E-02 | 2.139E-01 | 3.599E-01 | 3.292E-02 | 0.222 |
| | | 798.80 | | -7.603E-02 | 1.770E-01 | 2.350E-01 | 2.065E-02 | -0.323 |
| | | 1036.00 | | 8.244E-02 | 3.264E-01 | 5.452E-01 | 4.783E-02 | 0.151 |
| | | 1062.04 | | 6.951E-02 | 2.662E-01 | 4.434E-01 | 3.847E-02 | 0.157 |
| | | 1078.86 | * | 1.623E-01 | 1.507E-01 | 2.756E-01 | 2.371E-02 | 0.589 |
| CM-247 | | 278.00 | | 1.366E-01 | 8.805E-01 | 1.465E+00 | 1.340E-01 | 0.093 |
| | | 287.40 | | 2.025E-01 | 1.481E+00 | 2.459E+00 | 2.245E-01 | 0.082 |
| CF-249 | | 402.60 | * | 5.443E-03 | 4.263E-02 | 6.970E-02 | 5.653E-03 | 0.078 |
| | | 252.85 | | 2.198E-01 | 1.011E+00 | 1.695E+00 | 1.547E-01 | 0.130 |
| | | 333.44 | | 1.750E-01 | 3.055E-01 | 3.435E-01 | 3.040E-02 | 0.510 |
| CF-251 | | 387.95 | * | 1.763E-02 | 4.743E-02 | 7.901E-02 | 6.409E-03 | 0.223 |
| | | 176.60 | * | -4.134E-02 | 1.427E-01 | 2.368E-01 | 2.038E-02 | -0.175 |
| | | 227.00 | | -1.370E-02 | 4.337E-01 | 7.208E-01 | 6.499E-02 | -0.019 |
| | | 285.00 | | 1.595E+00 | 2.075E+00 | 3.562E+00 | 3.254E-01 | 0.448 |

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]G245388010
* Acquisition date   : 4-FEB-2010 13:42:42 Detector SN#      :
* Detector ID        : GAM01 Sensitivity                    : 5.000
* Geometry           : CAN Energy tolerance                : 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit        : 75.000
* Elapsed real time  : 0 02:00:00.98 Half life ratio        : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library   : SOLID
* Sample ID          : G245388010 Analyst initials          : MXR1
* Batch Number       : 944964 Sample Quantity              : 1.1446E+02 GRAM
* Recovery           : 1.00000 Carrier Weight              : 0.00000
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 MS Isotope      :
* MSD DPM             : 0.000 MSD Isotope                   :
* LCS DPM             : 0.000 LCS Isotope                    :
* LCSD DPM            : 0.000 LCSD Isotope                   :
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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.203E+01 | 2.610E+00 | 5.364E-01 | 0.000E+00 |
| CD-109 | 4.813E+00 | 1.567E+00 | 1.537E+00 | 0.000E+00 |
| SN-126 | 4.696E-01 | 1.529E-01 | 1.508E-01 | 0.000E+00 |
| BA-137M | 2.122E-01 | 6.421E-02 | 6.792E-02 | 0.000E+00 |
| CS-137 | 2.244E-01 | 6.788E-02 | 7.180E-02 | 0.000E+00 |
| TL-208 | 4.858E-01 | 1.061E-01 | 6.469E-02 | 0.000E+00 |
| BI-211 | 3.911E+00 | 6.685E-01 | 3.774E-01 | 0.000E+00 |
| BI-212 | 8.643E-01 | 7.588E-01 | 5.150E-01 | 0.000E+00 |
| PB-212 | 1.501E+00 | 1.968E-01 | 1.075E-01 | 0.000E+00 |
| PO-212 | 1.501E+00 | 1.968E-01 | 1.075E-01 | 0.000E+00 |
| BI-214 | 1.206E+00 | 2.120E-01 | 1.207E-01 | 0.000E+00 |
| PB-214 | 1.361E+00 | 2.427E-01 | 1.316E-01 | 0.000E+00 |
| PO-214 | 1.361E+00 | 2.427E-01 | 1.316E-01 | 0.000E+00 |
| PO-216 | 1.501E+00 | 1.968E-01 | 1.075E-01 | 0.000E+00 |
| PO-218 | 1.361E+00 | 2.427E-01 | 1.316E-01 | 0.000E+00 |
| RA-224 | 3.448E+00 | 1.509E+00 | 1.223E+00 | 0.000E+00 |
| RA-226 | 1.206E+00 | 2.120E-01 | 1.207E-01 | 0.000E+00 |
| AC-228 | 1.382E+00 | 3.867E-01 | 2.353E-01 | 0.000E+00 |
| RA-228 | 1.382E+00 | 3.867E-01 | 2.353E-01 | 0.000E+00 |
| TH-228 | 1.531E+00 | 2.007E-01 | 1.096E-01 | 0.000E+00 |
| TH-230 | 1.206E+00 | 2.120E-01 | 1.207E-01 | 0.000E+00 |
| TH-232 | 1.382E+00 | 3.867E-01 | 2.353E-01 | 0.000E+00 |
| TH-234 | 1.557E+00 | 2.224E+00 | 2.438E+00 | 0.000E+00 |
| U-234 | 1.206E+00 | 2.120E-01 | 1.207E-01 | 0.000E+00 |
| NP-237 | 1.379E+00 | 5.284E-01 | 4.681E-01 | 0.000E+00 |
| U-238 | 1.557E+00 | 2.224E+00 | 2.438E+00 | 0.000E+00 |
| AM-243 | 3.494E-01 | 9.353E-02 | 1.009E-01 | 0.000E+00 |
| ANH-511 | 8.857E-02 | 7.730E-02 | 5.671E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) |
|---------|-------------------------------------|--------------------------|--------------------|
|---------|-------------------------------------|--------------------------|--------------------|

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| BE-7 | -3.591E-02 | 4.311E-01 | 7.052E-01 | 0.000E+00 | NOT IDENT. |
| NA-22 | 2.454E-02 | 4.339E-02 | 7.888E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 1.941E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | 2.423E-02 | 2.792E-02 | 5.638E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 6.930E-02 | 9.030E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | -8.593E-03 | 4.702E-02 | 7.687E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | -3.138E-02 | 8.962E-02 | 1.414E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | -8.367E-02 | 4.671E-01 | 7.792E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 1.462E-01 | 5.363E-01 | 9.370E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | -3.246E-02 | 4.269E-02 | 6.579E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -1.176E-02 | 4.841E-02 | 7.904E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | -4.479E-03 | 2.949E-02 | 4.826E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | 7.913E-03 | 4.358E-02 | 7.467E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | 2.061E-02 | 1.060E-01 | 1.783E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | -3.322E-02 | 4.281E-02 | 6.407E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | -8.153E-02 | 1.192E-01 | 1.476E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | 9.741E-01 | 1.270E+00 | 2.294E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | -6.945E-01 | 1.074E+00 | 1.774E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | 4.825E-02 | 1.283E-01 | 2.265E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -1.609E-02 | 5.490E-02 | 8.500E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 0.000E+00 | 4.902E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SR-82 | -2.110E-01 | 4.673E-01 | 7.494E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | 4.496E-02 | 8.012E-02 | 1.379E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | 2.972E-02 | 8.150E-02 | 1.419E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 0.000E+00 | 1.015E+01 | 1.712E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 0.000E+00 | 5.482E-02 | 9.250E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 1.922E-01 | 9.398E-01 | 1.589E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 4.940E-02 | 3.546E-02 | 7.672E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | 8.555E-04 | 3.876E-02 | 6.475E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | 2.766E+00 | 2.393E+01 | 4.126E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | 3.066E-02 | 3.945E-02 | 7.108E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | -2.046E-02 | 5.158E-02 | 8.386E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 8.260E-02 | 1.673E-01 | 2.603E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | -7.009E-03 | 8.178E-02 | 1.369E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 1.615E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 2.905E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 1.396E+01 | 4.500E+01 | 7.830E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 3.829E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 2.086E-02 | 4.015E-02 | 6.800E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -3.480E-03 | 3.646E-02 | 5.960E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | -2.096E-02 | 5.196E-02 | 8.211E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | 8.993E-02 | 3.289E-01 | 5.768E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | 8.993E-02 | 3.287E-01 | 5.768E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -3.317E-02 | 3.826E-02 | 5.868E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | -3.677E-02 | 4.477E-02 | 5.872E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | -1.995E+00 | 4.482E+00 | 6.519E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -2.019E-04 | 5.440E-02 | 9.073E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | -2.019E-04 | 5.440E-02 | 9.073E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | -1.163E-01 | 2.517E-01 | 3.739E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 0.000E+00 | 5.549E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SN-117M | -8.903E-03 | 7.811E-02 | 1.362E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | 1.247E+00 | 8.215E+00 | 1.432E+01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 3.376E+09 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 8.724E-03 | 3.224E-02 | 5.709E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -4.238E-02 | 1.753E+00 | 2.833E+00 | 0.000E+00 | FAIL ABUN |
| SB-124 | 2.029E-02 | 9.277E-02 | 1.609E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | 6.715E-02 | 1.118E-01 | 1.935E-01 | 0.000E+00 | NOT IDENT. |
| TE-125M | -2.979E+00 | 1.146E+01 | 1.876E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 3.664E-01 | 2.923E-01 | 4.965E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | 1.789E-02 | 2.374E-01 | 3.526E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | 9.537E-01 | 3.657E+00 | 6.364E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | -7.811E-02 | 5.828E-02 | 9.395E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 1.102E-01 | 2.063E-01 | 3.581E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | -1.053E-01 | 2.237E+00 | 3.841E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | 2.688E-03 | 5.479E-02 | 8.086E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 3.940E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 7.486E-02 | 7.269E-02 | 1.056E-01 | 0.000E+00 | FAIL ABUN |
| CS-135 | 1.667E-01 | 1.959E-01 | 3.115E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 1.466E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -1.096E-01 | 1.656E-01 | 2.506E-01 | 0.000E+00 | NOT IDENT. |
| CE-139 | 1.799E-03 | 3.408E-02 | 5.970E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -1.227E-01 | 3.977E-01 | 6.676E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -4.423E-02 | 1.404E-01 | 2.222E-01 | 0.000E+00 | FAIL ABUN |
| CE-141 | 4.500E-03 | 7.999E-02 | 1.374E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 2.491E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | 2.025E-01 | 2.438E-01 | 4.132E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | 1.501E-02 | 3.796E-02 | 6.672E-02 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | 1.020E+00 | 2.579E+00 | 4.533E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | -1.198E-02 | 5.300E-02 | 8.598E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | -2.578E-01 | 9.587E-01 | 1.575E+00 | 0.000E+00 | NOT IDENT. |
| PM-149 | 0.000E+00 | 5.096E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| EU-152 | -2.252E-02 | 1.252E-01 | 1.811E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | -5.346E-02 | 1.025E-01 | 1.456E-01 | 0.000E+00 | NOT IDENT. |
| EU-154 | 8.636E-02 | 1.192E-01 | 2.204E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 1.471E-01 | 1.194E-01 | 2.088E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | -1.266E-02 | 1.586E-01 | 2.625E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | -1.357E-02 | 6.908E-02 | 1.150E-01 | 0.000E+00 | NOT IDENT. |
| TM-171 | -2.732E+01 | 3.662E+01 | 5.283E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | -4.304E-02 | 2.890E-02 | 4.161E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 1.515E+00 | 2.143E+00 | 3.805E+00 | 0.000E+00 | NOT IDENT. |
| LU-177M | -2.312E-01 | 2.205E-01 | 3.366E-01 | 0.000E+00 | NOT IDENT. |
| HF-181 | -4.959E-02 | 5.427E-02 | 8.175E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | 1.427E-01 | 4.850E-01 | 7.442E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | 1.108E-01 | 2.299E-01 | 4.092E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | -1.191E-02 | 1.312E-01 | 2.245E-01 | 0.000E+00 | NOT IDENT. |
| RE-184 | 5.978E-02 | 2.695E-01 | 4.666E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | -2.550E-02 | 4.988E-02 | 8.116E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 1.555E-01 | 2.033E-01 | 3.663E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | 6.018E-01 | 9.932E+00 | 1.487E+01 | 0.000E+00 | FAIL ABUN |
| IR-192 | -1.170E-02 | 4.117E-02 | 6.827E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 2.838E-01 | 2.622E-01 | 4.502E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 1.247E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | -1.715E+00 | 2.423E+01 | 4.220E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 6.243E-02 | 1.082E-01 | 1.871E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | 5.701E-02 | 4.916E-02 | 8.860E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | 2.572E-02 | 5.998E-02 | 1.036E-01 | 0.000E+00 | FAIL ABUN |
| TL-207 | -3.715E-02 | 8.468E-01 | 1.247E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | -1.157E+00 | 8.699E+00 | 1.430E+01 | 0.000E+00 | NOT IDENT. |
| BI-210 | 2.882E-01 | 4.731E+00 | 8.038E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | 2.882E-01 | 4.731E+00 | 8.038E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | 2.882E-01 | 4.731E+00 | 8.038E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | -6.244E-01 | 1.176E+00 | 1.775E+00 | 0.000E+00 | NOT IDENT. |
| PO-215 | -3.715E-02 | 8.468E-01 | 1.247E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | -1.323E-03 | 4.748E-01 | 7.906E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | -9.709E+00 | 3.097E+01 | 5.175E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -3.715E-02 | 8.468E-01 | 1.247E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | -6.919E-02 | 4.251E-01 | 7.201E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | -6.919E-02 | 4.252E-01 | 7.201E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | 8.449E-02 | 5.687E-01 | 9.931E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | -1.605E-01 | 1.763E+00 | 2.983E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | -3.715E-02 | 8.468E-01 | 1.247E+00 | 0.000E+00 | FAIL ABUN |
| U-231 | -1.561E+00 | 2.987E+00 | 4.281E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 9.292E-02 | 7.342E-02 | 1.330E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | -8.844E-02 | 3.664E-01 | 5.922E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 2.366E+00 | 5.439E+00 | 9.579E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | 1.180E-01 | 2.419E-01 | 4.215E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -3.667E-02 | 8.861E-02 | 1.524E-01 | 0.000E+00 | NOT IDENT. |
| NP-239 | -2.291E-01 | 2.243E-01 | 3.506E-01 | 0.000E+00 | NOT IDENT. |
| AM-241 | 1.566E-02 | 1.951E-01 | 2.972E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | -1.273E-01 | 1.082E-01 | 1.683E-01 | 0.000E+00 | NOT IDENT. |
| AM-246 | 1.623E-01 | 1.477E-01 | 2.753E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 5.443E-03 | 4.178E-02 | 7.025E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | 1.763E-02 | 4.649E-02 | 7.966E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -4.134E-02 | 1.399E-01 | 2.405E-01 | 0.000E+00 | NOT IDENT. |


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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388010.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 13:42:42.
Sample ID          : G245388010 Sample quantity : 1.14460E+02 GRAM
Detector name      : GAM01 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.98 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 944964 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
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Nuclide Line Activity Report

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| K-40 | 1460.81 | 677 | 10.67* | 9.454E-01 | 2.203E+01 | 2.203E+01 | 12.09 |
| CD-109 | 88.03 | 277 | 3.72* | 5.228E+00 | 4.671E+00 | 4.813E+00 | 33.21 |
| SN-126 | 64.28 | 50 | 9.60 | 2.791E+00 | 6.163E-01 | 6.163E-01 | 145.46 |
| | 86.94 | 277 | 8.90 | 5.228E+00 | 1.952E+00 | 1.952E+00 | 52.34 |
| | 87.57 | 277 | 37.00* | 5.228E+00 | 4.696E-01 | 4.696E-01 | 33.21 |
| BA-137M | 661.65 | 112 | 89.98* | 1.923E+00 | 2.120E-01 | 2.122E-01 | 30.87 |
| CS-137 | 661.65 | 112 | 85.12* | 1.923E+00 | 2.241E-01 | 2.244E-01 | 30.87 |
| TL-208 | 277.35 | ----- | 6.80 | 3.885E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 65 | 21.60 | 2.391E+00 | 4.101E-01 | 4.101E-01 | 89.44 |
| | 583.14 | 267 | 84.20* | 2.142E+00 | 4.858E-01 | 4.858E-01 | 22.29 |
| | 860.37 | 54 | 12.46 | 1.520E+00 | 9.348E-01 | 9.348E-01 | 69.95 |
| BI-211 | 72.87 | ----- | 1.27 | 3.944E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 498 | 12.94* | 3.225E+00 | 3.911E+00 | 3.911E+00 | 17.44 |
| BI-212 | 727.18 | 55 | 11.80* | 1.769E+00 | 8.643E-01 | 8.643E-01 | 89.59 |
| | 785.46 | ----- | 1.97 | 1.653E+00 | ----- | Line Not Found | ----- |
| PB-212 | 1620.62 | 19 | 2.75 | 8.736E-01 | 2.547E+00 | 2.547E+00 | 70.78 |
| | 74.81 | 293 | 10.70 | 4.164E+00 | 2.155E+00 | 2.155E+00 | 28.87 |
| | 77.11 | 508 | 18.00 | 4.382E+00 | 2.114E+00 | 2.114E+00 | 18.12 |
| | 87.30 | 277 | 8.00 | 5.228E+00 | 2.172E+00 | 2.172E+00 | 34.69 |
| | 238.63 | 887 | 44.60* | 4.346E+00 | 1.501E+00 | 1.501E+00 | 13.38 |
| | 300.09 | 63 | 3.41 | 3.653E+00 | 1.650E+00 | 1.650E+00 | 74.54 |
| PO-212 | 74.81 | 293 | 10.70 | 4.164E+00 | 2.155E+00 | 2.155E+00 | 28.87 |
| | 77.11 | 508 | 18.00 | 4.382E+00 | 2.114E+00 | 2.114E+00 | 18.12 |
| | 87.30 | 277 | 8.00 | 5.228E+00 | 2.172E+00 | 2.172E+00 | 34.69 |
| | 115.19 | ----- | 0.60 | 6.043E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 887 | 44.60* | 4.346E+00 | 1.501E+00 | 1.501E+00 | 13.38 |
| | 300.09 | 63 | 3.41 | 3.653E+00 | 1.650E+00 | 1.650E+00 | 74.54 |
| BI-214 | 609.31 | 351 | 46.30* | 2.064E+00 | 1.206E+00 | 1.206E+00 | 17.94 |
| | 1120.29 | 75 | 15.10 | 1.193E+00 | 1.357E+00 | 1.357E+00 | 40.91 |
| | 1764.49 | 65 | 15.80 | 8.254E-01 | 1.627E+00 | 1.627E+00 | 29.02 |
| PB-214 | 74.81 | 293 | 6.21 | 4.164E+00 | 3.713E+00 | 3.714E+00 | 28.30 |
| | 77.11 | 508 | 10.50 | 4.382E+00 | 3.624E+00 | 3.624E+00 | 19.66 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 87.30 | 277 | 4.67 | 5.228E+00 | 3.721E+00 | 3.721E+00 | 34.10 |
| | 241.98 | 179 | 7.49 | 4.306E+00 | 1.818E+00 | 1.818E+00 | 45.00 |
| | 295.21 | 336 | 19.20 | 3.699E+00 | 1.550E+00 | 1.550E+00 | 20.24 |
| | 351.92 | 498 | 37.20* | 3.225E+00 | 1.361E+00 | 1.361E+00 | 18.20 |
| | 74.81 | 293 | 6.21 | 4.164E+00 | 3.713E+00 | 3.714E+00 | 28.30 |
| | 77.11 | 508 | 10.50 | 4.382E+00 | 3.624E+00 | 3.624E+00 | 19.66 |
| | 87.30 | 277 | 4.67 | 5.228E+00 | 3.721E+00 | 3.721E+00 | 34.10 |
| | 241.98 | 179 | 7.49 | 4.306E+00 | 1.818E+00 | 1.818E+00 | 45.00 |
| | 295.21 | 336 | 19.20 | 3.699E+00 | 1.550E+00 | 1.550E+00 | 20.24 |
| | 351.92 | 498 | 37.20* | 3.225E+00 | 1.361E+00 | 1.361E+00 | 18.20 |
| PO-216 | 74.81 | 293 | 10.70 | 4.164E+00 | 2.155E+00 | 2.155E+00 | 28.87 |
| | 77.11 | 508 | 18.00 | 4.382E+00 | 2.114E+00 | 2.114E+00 | 18.12 |
| | 87.30 | 277 | 8.00 | 5.228E+00 | 2.172E+00 | 2.172E+00 | 34.69 |
| | 238.63 | 887 | 44.60* | 4.346E+00 | 1.501E+00 | 1.501E+00 | 13.38 |
| | 300.09 | 63 | 3.41 | 3.653E+00 | 1.650E+00 | 1.650E+00 | 74.54 |
| | 74.81 | 293 | 6.21 | 4.164E+00 | 3.713E+00 | 3.714E+00 | 28.30 |
| | 77.11 | 508 | 10.50 | 4.382E+00 | 3.624E+00 | 3.624E+00 | 19.66 |
| | 87.30 | 277 | 4.67 | 5.228E+00 | 3.721E+00 | 3.721E+00 | 34.10 |
| | 241.98 | 179 | 7.49 | 4.306E+00 | 1.818E+00 | 1.818E+00 | 45.00 |
| | 295.21 | 336 | 19.20 | 3.699E+00 | 1.550E+00 | 1.550E+00 | 20.24 |
| RA-224 | 351.92 | 498 | 37.20* | 3.225E+00 | 1.361E+00 | 1.361E+00 | 18.20 |
| | 240.98 | 179 | 3.95* | 4.306E+00 | 3.448E+00 | 3.448E+00 | 44.65 |
| | 609.31 | 351 | 46.30* | 2.064E+00 | 1.206E+00 | 1.206E+00 | 17.94 |
| | 1120.29 | 75 | 15.10 | 1.193E+00 | 1.357E+00 | 1.357E+00 | 40.91 |
| | 1764.49 | 65 | 15.80 | 8.254E-01 | 1.627E+00 | 1.627E+00 | 29.02 |
| | 338.32 | 154 | 11.40 | 3.327E+00 | 1.331E+00 | 1.331E+00 | 60.18 |
| | 911.07 | 168 | 27.70* | 1.444E+00 | 1.382E+00 | 1.382E+00 | 28.56 |
| | 969.11 | 126 | 16.60 | 1.364E+00 | 1.818E+00 | 1.818E+00 | 33.54 |
| | 338.32 | 154 | 11.40 | 3.327E+00 | 1.331E+00 | 1.331E+00 | 60.18 |
| | 911.07 | 168 | 27.70* | 1.444E+00 | 1.382E+00 | 1.382E+00 | 28.56 |
| TH-228 | 969.11 | 126 | 16.60 | 1.364E+00 | 1.818E+00 | 1.818E+00 | 33.54 |
| | 74.81 | 293 | 10.70 | 4.164E+00 | 2.155E+00 | 2.199E+00 | 27.34 |
| | 77.11 | 508 | 18.00 | 4.382E+00 | 2.114E+00 | 2.157E+00 | 18.12 |
| | 87.30 | 277 | 8.00 | 5.228E+00 | 2.172E+00 | 2.216E+00 | 33.21 |
| | 238.63 | 887 | 44.60* | 4.346E+00 | 1.501E+00 | 1.531E+00 | 13.38 |
| | 300.09 | 63 | 3.41 | 3.653E+00 | 1.650E+00 | 1.683E+00 | 94.66 |
| | 609.31 | 351 | 46.30* | 2.064E+00 | 1.206E+00 | 1.206E+00 | 17.94 |
| | 1120.29 | 75 | 15.10 | 1.193E+00 | 1.357E+00 | 1.357E+00 | 40.91 |
| | 1764.49 | 65 | 15.80 | 8.254E-01 | 1.627E+00 | 1.627E+00 | 29.02 |
| | 338.32 | 154 | 11.40 | 3.327E+00 | 1.331E+00 | 1.331E+00 | 44.65 |
| TH-232 | 911.07 | 168 | 27.70* | 1.444E+00 | 1.382E+00 | 1.382E+00 | 28.56 |
| | 969.11 | 126 | 16.60 | 1.364E+00 | 1.818E+00 | 1.818E+00 | 33.54 |
| | 63.29 | 50 | 3.80* | 2.791E+00 | 1.557E+00 | 1.557E+00 | 145.78 |
| | 92.38 | 127 | 5.41 | 5.508E+00 | 1.396E+00 | 1.396E+00 | 65.22 |
| | 609.31 | 351 | 46.30* | 2.064E+00 | 1.206E+00 | 1.206E+00 | 17.94 |
| | 1120.29 | 75 | 15.10 | 1.193E+00 | 1.357E+00 | 1.357E+00 | 40.91 |
| | 1764.49 | 65 | 15.80 | 8.254E-01 | 1.627E+00 | 1.627E+00 | 29.02 |
| | 86.50 | 277 | 12.60* | 5.228E+00 | 1.379E+00 | 1.379E+00 | 39.10 |
| | 95.87 | ----- | 2.60 | 5.636E+00 | ----- | Line Not Found | ----- |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| U-238 | 63.29 | 50 | 3.80* | 2.791E+00 | 1.557E+00 | 1.557E+00 | 145.78 |
| | 92.38 | 127 | 5.41 | 5.508E+00 | 1.396E+00 | 1.396E+00 | 63.25 |
| AM-243 | 74.67 | 293 | 66.00* | 4.164E+00 | 3.494E-01 | 3.494E-01 | 27.32 |
| | 86.72 | 277 | 0.34 | 5.228E+00 | 5.171E+01 | 5.171E+01 | 33.21 |
| | 117.66 | ----- | 0.55 | 6.054E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 5.887E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 65 | 100.00* | 2.391E+00 | 8.857E-02 | 8.857E-02 | 89.05 |

Flag: "*" = Keyline

Total number of lines in spectrum 31
Number of unidentified lines 2
Number of lines tentatively identified by NID 29 93.55%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|---------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 2.203E+01 | 2.203E+01 | 0.266E+01 | 12.09 | |
| CD-109 | 464.00D | 1.03 | 4.671E+00 | 4.813E+00 | 1.599E+00 | 33.21 | |
| SN-126 | 1.00E+05Y | 1.00 | 4.696E-01 | 4.696E-01 | 1.560E-01 | 33.21 | |
| BA-137M | 30.17Y | 1.00 | 2.120E-01 | 2.122E-01 | 0.655E-01 | 30.87 | |
| CS-137 | 30.17Y | 1.00 | 2.241E-01 | 2.244E-01 | 0.693E-01 | 30.87 | |
| TL-208 | 1.41E+10Y | 1.00 | 4.858E-01 | 4.858E-01 | 1.083E-01 | 22.29 | |
| BI-211 | 7.04E+08Y | 1.00 | 3.911E+00 | 3.911E+00 | 0.682E+00 | 17.44 | |
| BI-212 | 1.41E+10Y | 1.00 | 8.643E-01 | 8.643E-01 | 7.743E-01 | 89.59 | |
| PB-212 | 1.41E+10Y | 1.00 | 1.501E+00 | 1.501E+00 | 0.201E+00 | 13.38 | |
| PO-212 | 1.41E+10Y | 1.00 | 1.501E+00 | 1.501E+00 | 0.201E+00 | 13.38 | |
| BI-214 | 1600.00Y | 1.00 | 1.206E+00 | 1.206E+00 | 0.216E+00 | 17.94 | |
| PB-214 | 1600.00Y | 1.00 | 1.361E+00 | 1.361E+00 | 0.248E+00 | 18.20 | |
| PO-214 | 1600.00Y | 1.00 | 1.361E+00 | 1.361E+00 | 0.248E+00 | 18.20 | |
| PO-216 | 1.41E+10Y | 1.00 | 1.501E+00 | 1.501E+00 | 0.201E+00 | 13.38 | |
| PO-218 | 1600.00Y | 1.00 | 1.361E+00 | 1.361E+00 | 0.248E+00 | 18.20 | |
| RA-224 | 1.41E+10Y | 1.00 | 3.448E+00 | 3.448E+00 | 1.539E+00 | 44.65 | |
| RA-226 | 1600.00Y | 1.00 | 1.206E+00 | 1.206E+00 | 0.216E+00 | 17.94 | |
| AC-228 | 1.41E+10Y | 1.00 | 1.382E+00 | 1.382E+00 | 0.395E+00 | 28.56 | |
| RA-228 | 1.41E+10Y | 1.00 | 1.382E+00 | 1.382E+00 | 0.395E+00 | 28.56 | |
| TH-228 | 1.91Y | 1.02 | 1.501E+00 | 1.531E+00 | 0.205E+00 | 13.38 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.206E+00 | 1.206E+00 | 0.216E+00 | 17.94 | |
| TH-232 | 1.41E+10Y | 1.00 | 1.382E+00 | 1.382E+00 | 0.395E+00 | 28.56 | |
| TH-234 | 4.47E+09Y | 1.00 | 1.557E+00 | 1.557E+00 | 2.270E+00 | 145.78 | |
| U-234 | 4.47E+09Y | 1.00 | 1.206E+00 | 1.206E+00 | 0.216E+00 | 17.94 | |
| NP-237 | 2.14E+06Y | 1.00 | 1.379E+00 | 1.379E+00 | 0.539E+00 | 39.10 | |
| U-238 | 4.47E+09Y | 1.00 | 1.557E+00 | 1.557E+00 | 2.270E+00 | 145.78 | |
| AM-243 | 7380.00Y | 1.00 | 3.494E-01 | 3.494E-01 | 0.954E-01 | 27.32 | |
| ANH-511 | 1.00E+09Y | 1.00 | 8.857E-02 | 8.857E-02 | 7.888E-02 | 89.05 | |

Total Activity : 6.030E+01 6.047E+01

Grand Total Activity : 6.030E+01 6.047E+01

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

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

Unidentified Energy Lines
Sample ID : G245388010

Page : 5
Acquisition date : 4-FEB-2010 13:42:42

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 186.26 | 90 | 277 | 1.29 | 373.10 | 369 | 9 | 1.24E-02 | 75.4 | 5.16E+00 | T |
| 0 | 270.54 | 65 | 176 | 1.30 | 541.58 | 537 | 10 | 9.02E-03 | 80.6 | 3.96E+00 | T |
| 0 | 328.76 | 49 | 184 | 1.10 | 657.95 | 654 | 11 | 6.82E-03 | **** | 3.41E+00 | T |
| 0 | 795.44 | 28 | 44 | 1.49 | 1590.74 | 1583 | 11 | 3.91E-03 | 98.7 | 1.63E+00 | T |
| 0 | 965.14 | 45 | 25 | 2.13 | 1929.90 | 1922 | 12 | 6.18E-03 | 54.8 | 1.37E+00 | T |
| 0 | 1377.70 | 37 | 3 | 2.60 | 2754.41 | 2748 | 13 | 5.13E-03 | 38.5 | 9.93E-01 | T |
| 0 | 1630.19 | 13 | 5 | 1.30 | 3259.00 | 3254 | 10 | 1.81E-03 | 85.0 | 8.70E-01 | |
| 0 | 1729.77 | 16 | 6 | 0.81 | 3458.00 | 3452 | 12 | 2.22E-03 | 79.1 | 8.36E-01 | |

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*                               *                                               *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388010.CNF;1    *
* Acquisition date   : 4-FEB-2010 13:42:42.  Detector SN#      :                *
* Detector ID        : GAM01                      Sensitivity   : 5.00000        *
* Geometry           : CAN                      Energy tolerance: 1.50000        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000        *
* Elapsed real time  : 0 02:00:00.98             Half life ratio : 8.00000        *
*****
*                               SAMPLE DATA                               *
*                               *                                               *
* Sample date        : 15-JAN-2010 12:00:00  Nuclide Library : SOLID             *
* Sample ID          : G245388010             Analyst initials: MXR1            *
* Batch Number       : 944964                 Sample Quantity : 1.14460E+02 GRAM  *
*****
*                               QC DATA                               *
*                               *                                               *
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52.7MS Isotope      :                *
* MSD ID              :                      MSD Isotope      :                *
* LCS ID              : 1032-A                LCS Isotope      :                *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 2.203E+01 | 2.664E+00 | 5.386E-01 | 4.788E-02 | 40.893 |
| CD-109 | 4.813E+00 | 1.599E+00 | 1.504E+00 | 1.423E-01 | 3.200 |
| SN-126 | 4.696E-01 | 1.560E-01 | 1.475E-01 | 1.389E-02 | 3.183 |
| BA-137M | 2.122E-01 | 6.552E-02 | 6.770E-02 | 5.545E-03 | 3.135 |
| CS-137 | 2.244E-01 | 6.927E-02 | 7.156E-02 | 5.874E-03 | 3.135 |
| TL-208 | 4.858E-01 | 1.083E-01 | 6.440E-02 | 5.849E-03 | 7.544 |
| BI-211 | 3.911E+00 | 6.821E-01 | 3.740E-01 | 3.402E-02 | 10.459 |
| BI-212 | 8.643E-01 | 7.743E-01 | 5.138E-01 | 5.092E-02 | 1.682 |
| PB-212 | 1.501E+00 | 2.008E-01 | 1.061E-01 | 1.074E-02 | 14.144 |
| PO-212 | 1.501E+00 | 2.008E-01 | 1.061E-01 | 1.074E-02 | 14.144 |
| BI-214 | 1.206E+00 | 2.164E-01 | 1.202E-01 | 1.186E-02 | 10.031 |
| PB-214 | 1.361E+00 | 2.477E-01 | 1.304E-01 | 1.366E-02 | 10.437 |
| PO-214 | 1.361E+00 | 2.477E-01 | 1.304E-01 | 1.366E-02 | 10.437 |
| PO-216 | 1.501E+00 | 2.008E-01 | 1.061E-01 | 1.074E-02 | 14.144 |
| PO-218 | 1.361E+00 | 2.477E-01 | 1.304E-01 | 1.366E-02 | 10.437 |
| RA-224 | 3.448E+00 | 1.539E+00 | 1.208E+00 | 1.098E-01 | 2.854 |
| RA-226 | 1.206E+00 | 2.164E-01 | 1.202E-01 | 1.186E-02 | 10.031 |
| AC-228 | 1.382E+00 | 3.946E-01 | 2.352E-01 | 2.723E-02 | 5.873 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| RA-228 | 1.382E+00 | 3.946E-01 | 2.352E-01 | 2.723E-02 | 5.873 |
| TH-228 | 1.531E+00 | 2.048E-01 | 1.083E-01 | 1.096E-02 | 14.144 |
| TH-230 | 1.206E+00 | 2.164E-01 | 1.202E-01 | 1.186E-02 | 10.031 |
| TH-232 | 1.382E+00 | 3.946E-01 | 2.352E-01 | 2.723E-02 | 5.873 |
| TH-234 | 1.557E+00 | 2.270E+00 | 2.378E+00 | 4.180E-01 | 0.655 |
| U-234 | 1.206E+00 | 2.164E-01 | 1.202E-01 | 1.186E-02 | 10.031 |
| NP-237 | 1.379E+00 | 5.392E-01 | 4.580E-01 | 1.037E-01 | 3.011 |
| U-238 | 1.557E+00 | 2.270E+00 | 2.378E+00 | 4.180E-01 | 0.655 |
| AM-243 | 3.494E-01 | 9.544E-02 | 9.859E-02 | 8.198E-03 | 3.544 |
| ANH-511 | 8.857E-02 | 7.888E-02 | 5.639E-02 | 4.779E-03 | 1.571 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | -3.591E-02 | | 4.399E-01 | 7.008E-01 | 6.375E-02 | -0.051 |
| NA-22 | 2.454E-02 | | 4.428E-02 | 7.911E-02 | 6.643E-03 | 0.310 |
| NA-24 | -1.467E+02 | | 9.901E+01 | Half-Life too short | | |
| AL-26 | 2.423E-02 | | 2.849E-02 | 5.673E-02 | 4.700E-03 | 0.427 |
| TI-44 | 3.902E-01 | + | 7.071E-02 | 8.826E-02 | 7.574E-03 | 4.421 |
| SC-46 | -8.593E-03 | | 4.798E-02 | 7.683E-02 | 6.945E-03 | -0.112 |
| V-48 | -3.138E-02 | | 9.145E-02 | 1.414E-01 | 1.263E-02 | -0.222 |
| CR-51 | -8.367E-02 | | 4.766E-01 | 7.715E-01 | 7.257E-02 | -0.108 |
| MN-52 | 1.462E-01 | | 5.473E-01 | 9.408E-01 | 8.122E-02 | 0.155 |
| MN-54 | -3.246E-02 | | 4.356E-02 | 6.572E-02 | 5.849E-03 | -0.494 |
| CO-56 | -1.176E-02 | | 4.940E-02 | 7.897E-02 | 7.055E-03 | -0.149 |
| CO-57 | -4.479E-03 | | 3.009E-02 | 4.736E-02 | 4.169E-03 | -0.095 |
| CO-58 | 7.913E-03 | | 4.447E-02 | 7.456E-02 | 6.596E-03 | 0.106 |
| FE-59 | 2.061E-02 | | 1.082E-01 | 1.785E-01 | 1.646E-02 | 0.115 |
| CO-60 | -3.322E-02 | | 4.369E-02 | 6.428E-02 | 5.479E-03 | -0.517 |
| ZN-65 | -8.153E-02 | | 1.216E-01 | 1.478E-01 | 1.247E-02 | -0.551 |
| GE-68 | 9.741E-01 | | 1.296E+00 | 2.297E+00 | 1.978E-01 | 0.424 |
| AS-73 | -6.945E-01 | | 1.096E+00 | 1.728E+00 | 1.398E-01 | -0.402 |
| AS-74 | 4.825E-02 | | 1.309E-01 | 2.256E-01 | 1.901E-02 | 0.214 |
| SE-75 | -1.609E-02 | | 5.602E-02 | 8.401E-02 | 7.717E-03 | -0.192 |
| BR-77 | 2.352E-05 | | 2.501E-05 | Half-Life too short | | |
| SR-82 | -2.110E-01 | | 4.768E-01 | 7.480E-01 | 6.513E-02 | -0.282 |
| RB-83 | 4.496E-02 | | 8.175E-02 | 1.371E-01 | 1.163E-02 | 0.328 |
| RB-84 | 2.972E-02 | | 8.317E-02 | 1.418E-01 | 1.279E-02 | 0.210 |
| KR-85 | 1.985E+01 | | 1.036E+01 | 1.703E+01 | 1.444E+00 | 1.166 |
| SR-85 | 1.072E-01 | | 5.594E-02 | 9.198E-02 | 7.798E-03 | 1.166 |
| RB-86 | 1.922E-01 | | 9.589E-01 | 1.591E+00 | 1.370E-01 | 0.121 |
| Y-88 | 4.940E-02 | | 3.618E-02 | 7.721E-02 | 6.350E-03 | 0.640 |
| ZR-88 | 8.555E-04 | | 3.955E-02 | 6.422E-02 | 5.171E-03 | 0.013 |
| Y-91 | 2.766E+00 | | 2.442E+01 | 4.135E+01 | 3.388E+00 | 0.067 |
| NB-94 | 3.066E-02 | | 4.025E-02 | 7.089E-02 | 5.951E-03 | 0.432 |
| NB-95 | -2.046E-02 | | 5.263E-02 | 8.370E-02 | 7.253E-03 | -0.244 |
| NB-95M | 8.260E-02 | | 1.707E-01 | 2.570E-01 | 2.636E-02 | 0.321 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| ZR-95 | -7.009E-03 | | 8.345E-02 | 1.366E-01 | 1.298E-02 | -0.051 |
| NB-97 | -1.334E+01 | | 8.239E+00 | Half-Life too short | | |
| ZR-97 | 3.097E+02 | | 1.482E+02 | Half-Life too short | | |
| MO-99 | 1.396E+01 | | 4.592E+01 | 7.812E+01 | 1.184E+01 | 0.179 |
| TC-99M | -3.083E+16 | | 1.954E+16 | Half-Life too short | | |
| RH-101 | 2.086E-02 | | 4.097E-02 | 6.702E-02 | 5.898E-03 | 0.311 |
| RH-102 | -3.480E-03 | | 3.720E-02 | 5.922E-02 | 4.980E-03 | -0.059 |
| RU-103 | -2.096E-02 | | 5.302E-02 | 8.162E-02 | 1.148E-02 | -0.257 |
| RH-106 | 8.993E-02 | | 3.356E-01 | 5.745E-01 | 7.577E-02 | 0.157 |
| RU-106 | 8.993E-02 | | 3.354E-01 | 5.745E-01 | 4.799E-02 | 0.157 |
| AG-108M | -3.317E-02 | | 3.904E-02 | 5.826E-02 | 5.024E-03 | -0.569 |
| AG-110M | -3.677E-02 | | 4.568E-02 | 5.852E-02 | 4.962E-03 | -0.628 |
| IN-111 | -1.995E+00 | | 4.574E+00 | 6.438E+00 | 5.862E-01 | -0.310 |
| IN-113M | -2.019E-04 | | 5.552E-02 | 8.999E-02 | 7.496E-03 | -0.002 |
| SN-113 | -2.019E-04 | | 5.552E-02 | 8.999E-02 | 7.496E-03 | -0.002 |
| IN-114M | -1.163E-01 | | 2.568E-01 | 3.684E-01 | 3.216E-02 | -0.316 |
| CD-115 | 7.542E-07 | | 2.831E-05 | Half-Life too short | | |
| SN-117M | -8.903E-03 | | 7.970E-02 | 1.339E-01 | 1.140E-02 | -0.066 |
| SB-122 | 1.247E+00 | | 8.382E+00 | 1.425E+01 | 1.208E+00 | 0.088 |
| I-123 | 9.134E+02 | | 1.722E+03 | Half-Life too short | | |
| TE-123M | 8.724E-03 | | 3.290E-02 | 5.616E-02 | 4.811E-03 | 0.155 |
| I-124 | -4.238E-02 | | 1.788E+00 | 2.822E+00 | 2.373E-01 | -0.015 |
| SB-124 | 2.029E-02 | | 9.467E-02 | 1.618E-01 | 1.434E-02 | 0.125 |
| SB-125 | 6.715E-02 | | 1.141E-01 | 1.920E-01 | 1.616E-02 | 0.350 |
| TE-125M | -2.979E+00 | | 1.170E+01 | 1.840E+01 | 1.909E+00 | -0.162 |
| I-126 | 3.664E-01 | | 2.983E-01 | 4.949E-01 | 4.066E-02 | 0.740 |
| SB-126 | 1.789E-02 | | 2.422E-01 | 3.517E-01 | 2.981E-02 | 0.051 |
| SB-127 | 9.537E-01 | | 3.732E+00 | 6.345E+00 | 8.090E-01 | 0.150 |
| XE-127 | -7.811E-02 | | 5.947E-02 | 9.263E-02 | 8.189E-03 | -0.843 |
| I-131 | 1.102E-01 | | 2.105E-01 | 3.550E-01 | 3.194E-02 | 0.311 |
| TE-132 | -1.053E-01 | | 2.283E+00 | 3.791E+00 | 6.424E-01 | -0.028 |
| BA-133 | 2.688E-03 | | 5.591E-02 | 8.013E-02 | 1.057E-02 | 0.034 |
| I-133 | -6.327E-02 | | 2.010E-01 | Half-Life too short | | |
| CS-134 | 7.486E-02 | + | 7.418E-02 | 1.054E-01 | 9.319E-03 | 0.710 |
| CS-135 | 1.667E-01 | | 1.999E-01 | 3.078E-01 | 3.210E-02 | 0.541 |
| I-135 | 1.689E+15 | | 7.480E+14 | Half-Life too short | | |
| CS-136 | -1.096E-01 | | 1.690E-01 | 2.508E-01 | 2.282E-02 | -0.437 |
| CE-139 | 1.799E-03 | | 3.478E-02 | 5.875E-02 | 5.004E-03 | 0.031 |
| BA-140 | -1.227E-01 | | 4.058E-01 | 6.642E-01 | 2.199E-01 | -0.185 |
| LA-140 | -4.423E-02 | | 1.433E-01 | 2.233E-01 | 1.927E-02 | -0.198 |
| CE-141 | 4.500E-03 | | 8.162E-02 | 1.351E-01 | 1.175E-02 | 0.033 |
| CE-143 | 4.310E-03 | | 1.271E-03 | Half-Life too short | | |
| CE-144 | 2.025E-01 | | 2.488E-01 | 4.058E-01 | 6.317E-02 | 0.499 |
| PM-144 | 1.501E-02 | | 3.874E-02 | 6.653E-02 | 5.569E-03 | 0.226 |
| PR-144 | 1.020E+00 | | 2.632E+00 | 4.520E+00 | 3.781E-01 | 0.226 |
| PM-146 | -1.198E-02 | | 5.408E-02 | 8.539E-02 | 8.970E-03 | -0.140 |
| ND-147 | -2.578E-01 | | 9.782E-01 | 1.567E+00 | 2.331E-01 | -0.165 |
| PM-149 | 2.073E-04 | | 2.600E-04 | 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 |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| EU-152 | -2.252E-02 | | 1.278E-01 | 1.794E-01 | 1.659E-02 | -0.125 |
| GD-153 | -5.346E-02 | | 1.046E-01 | 1.426E-01 | 1.266E-02 | -0.375 |
| EU-154 | 8.636E-02 | | 1.216E-01 | 2.211E-01 | 2.462E-02 | 0.391 |
| EU-155 | 1.471E-01 | | 1.218E-01 | 2.046E-01 | 1.800E-02 | 0.719 |
| TB-160 | -1.266E-02 | | 1.619E-01 | 2.623E-01 | 2.366E-02 | -0.048 |
| HO-166M | -1.357E-02 | | 7.049E-02 | 1.147E-01 | 9.680E-03 | -0.118 |
| TM-171 | -2.732E+01 | | 3.736E+01 | 5.156E+01 | 4.061E+00 | -0.530 |
| LU-176 | -4.304E-02 | | 2.949E-02 | 4.118E-02 | 3.727E-03 | -1.045 |
| LU-177 | 1.515E+00 | | 2.187E+00 | 3.752E+00 | 3.334E-01 | 0.404 |
| LU-177M | -2.312E-01 | | 2.250E-01 | 3.340E-01 | 2.729E-02 | -0.692 |
| HF-181 | -4.959E-02 | | 5.538E-02 | 8.124E-02 | 6.846E-03 | -0.610 |
| W-181 | 1.427E-01 | | 4.949E-01 | 7.262E-01 | 5.669E-02 | 0.197 |
| TA-182 | 1.108E-01 | | 2.346E-01 | 4.102E-01 | 3.381E-02 | 0.270 |
| RE-183 | -1.191E-02 | | 1.339E-01 | 2.209E-01 | 1.880E-02 | -0.054 |
| RE-184 | 5.978E-02 | | 2.750E-01 | 4.609E-01 | 4.207E-02 | 0.130 |
| OS-185 | -2.550E-02 | | 5.090E-02 | 8.088E-02 | 6.682E-03 | -0.315 |
| RE-188 | 1.555E-01 | | 2.074E-01 | 3.603E-01 | 3.068E-02 | 0.432 |
| W-188 | 6.018E-01 | | 1.013E+01 | 1.471E+01 | 1.341E+00 | 0.041 |
| IR-192 | -1.170E-02 | | 4.201E-02 | 6.758E-02 | 6.089E-03 | -0.173 |
| AU-195 | 2.838E-01 | | 2.675E-01 | 4.409E-01 | 3.893E-02 | 0.644 |
| TL-200 | -4.937E-03 | | 6.361E-03 | Half-Life too short | | |
| TL-201 | -1.715E+00 | | 2.472E+01 | 4.153E+01 | 3.541E+00 | -0.041 |
| TL-202 | 6.243E-02 | | 1.105E-01 | 1.858E-01 | 1.540E-02 | 0.336 |
| HG-203 | 5.701E-02 | | 5.017E-02 | 8.760E-02 | 8.214E-03 | 0.651 |
| BI-207 | 2.572E-02 | | 6.120E-02 | 1.037E-01 | 8.994E-03 | 0.248 |
| TL-207 | -3.715E-02 | | 8.640E-01 | 1.235E+00 | 2.205E-01 | -0.030 |
| PO-209 | -1.157E+00 | | 8.877E+00 | 1.429E+01 | 1.294E+00 | -0.081 |
| BI-210 | 2.882E-01 | | 4.828E+00 | 7.820E+00 | 7.382E-01 | 0.037 |
| PB-210 | 2.882E-01 | | 4.828E+00 | 7.820E+00 | 7.382E-01 | 0.037 |
| PO-210 | 2.882E-01 | | 4.828E+00 | 7.820E+00 | 6.704E-01 | 0.037 |
| PB-211 | -6.244E-01 | | 1.200E+00 | 1.761E+00 | 1.102E+00 | -0.355 |
| PO-215 | -3.715E-02 | | 8.640E-01 | 1.235E+00 | 2.205E-01 | -0.030 |
| RN-219 | -1.323E-03 | | 4.845E-01 | 7.844E-01 | 1.156E-01 | -0.002 |
| RN-220 | -9.709E+00 | | 3.160E+01 | 5.149E+01 | 4.371E+00 | -0.189 |
| RA-223 | -3.715E-02 | | 8.640E-01 | 1.235E+00 | 2.205E-01 | -0.030 |
| AC-227 | -6.919E-02 | | 4.338E-01 | 7.115E-01 | 1.113E-01 | -0.097 |
| TH-227 | -6.919E-02 | | 4.338E-01 | 7.115E-01 | 1.303E-01 | -0.097 |
| TH-229 | 8.449E-02 | | 5.803E-01 | 9.787E-01 | 8.575E-02 | 0.086 |
| PA-231 | -1.605E-01 | | 1.799E+00 | 2.949E+00 | 4.567E-01 | -0.054 |
| TH-231 | -3.715E-02 | | 8.640E-01 | 1.235E+00 | 2.205E-01 | -0.030 |
| U-231 | -1.561E+00 | | 3.048E+00 | 4.192E+00 | 3.750E-01 | -0.372 |
| PA-233 | 9.292E-02 | | 7.492E-02 | 1.316E-01 | 1.218E-02 | 0.706 |
| PA-234 | -8.844E-02 | | 3.739E-01 | 5.922E-01 | 1.122E-01 | -0.149 |
| PA-234M | 2.366E+00 | | 5.550E+00 | 9.585E+00 | 9.770E-01 | 0.247 |
| U-235 | 1.180E-01 | | 2.468E-01 | 4.142E-01 | 7.237E-02 | 0.285 |
| NP-236 | -3.667E-02 | | 9.042E-02 | 1.499E-01 | 1.276E-02 | -0.245 |
| NP-239 | -2.291E-01 | | 2.288E-01 | 3.439E-01 | 2.995E-02 | -0.666 |
| AM-241 | 1.566E-02 | | 1.991E-01 | 2.898E-01 | 2.388E-02 | 0.054 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | -1.273E-01 | | 1.104E-01 | 1.650E-01 | 1.437E-02 | -0.772 |
| AM-246 | 1.623E-01 | | 1.507E-01 | 2.756E-01 | 2.371E-02 | 0.589 |
| CM-247 | 5.443E-03 | | 4.263E-02 | 6.970E-02 | 5.653E-03 | 0.078 |
| CF-249 | 1.763E-02 | | 4.743E-02 | 7.901E-02 | 6.409E-03 | 0.223 |
| CF-251 | -4.134E-02 | | 1.427E-01 | 2.368E-01 | 2.038E-02 | -0.175 |

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G245388010
* Acquisition date   : 4-FEB-2010 13:42:42 Detector SN#      :
* Detector ID        : GAM01 Sensitivity                    : 5.000
* Geometry           : CAN Energy tolerance                 : 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit        : 75.000
* Elapsed real time  : 0 02:00:00.98 Half life ratio        : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 15-JAN-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G245388010 Analyst initials: MXR1
* Batch Number       : 944964 Sample Quantity : 1.1446E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 MS Isotope      :
* MSD DPM             : 0.000 MSD Isotope                   :
* LCS DPM             : 0.000 LCS Isotope                   :
* LCSD DPM            : 0.000 LCSD Isotope                  :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.203E+01 | 2.610E+00 | 2.683E-01 | 1.332E+00 |
| CD-109 | 4.813E+00 | 1.567E+00 | 7.691E-01 | 7.993E-01 |
| SN-126 | 4.696E-01 | 1.529E-01 | 7.543E-02 | 7.799E-02 |
| BA-137M | 2.122E-01 | 6.421E-02 | 3.398E-02 | 3.276E-02 |
| CS-137 | 2.244E-01 | 6.788E-02 | 3.592E-02 | 3.463E-02 |
| TL-208 | 4.858E-01 | 1.061E-01 | 3.236E-02 | 5.415E-02 |
| BI-211 | 3.911E+00 | 6.685E-01 | 1.888E-01 | 3.411E-01 |
| BI-212 | 8.643E-01 | 7.588E-01 | 2.577E-01 | 3.871E-01 |
| PB-212 | 1.501E+00 | 1.968E-01 | 5.377E-02 | 1.004E-01 |
| PO-212 | 1.501E+00 | 1.968E-01 | 5.377E-02 | 1.004E-01 |
| BI-214 | 1.206E+00 | 2.120E-01 | 6.040E-02 | 1.082E-01 |
| PB-214 | 1.361E+00 | 2.427E-01 | 6.582E-02 | 1.238E-01 |
| PO-214 | 1.361E+00 | 2.427E-01 | 6.582E-02 | 1.238E-01 |
| PO-216 | 1.501E+00 | 1.968E-01 | 5.377E-02 | 1.004E-01 |
| PO-218 | 1.361E+00 | 2.427E-01 | 6.582E-02 | 1.238E-01 |
| RA-224 | 3.448E+00 | 1.509E+00 | 6.120E-01 | 7.697E-01 |
| RA-226 | 1.206E+00 | 2.120E-01 | 6.040E-02 | 1.082E-01 |
| AC-228 | 1.382E+00 | 3.867E-01 | 1.177E-01 | 1.973E-01 |
| RA-228 | 1.382E+00 | 3.867E-01 | 1.177E-01 | 1.973E-01 |
| TH-228 | 1.531E+00 | 2.007E-01 | 5.486E-02 | 1.024E-01 |
| TH-230 | 1.206E+00 | 2.120E-01 | 6.040E-02 | 1.082E-01 |
| TH-232 | 1.382E+00 | 3.867E-01 | 1.177E-01 | 1.973E-01 |
| TH-234 | 1.557E+00 | 2.224E+00 | 1.220E+00 | 1.135E+00 |
| U-234 | 1.206E+00 | 2.120E-01 | 6.040E-02 | 1.082E-01 |
| NP-237 | 1.379E+00 | 5.284E-01 | 2.342E-01 | 2.696E-01 |
| U-238 | 1.557E+00 | 2.224E+00 | 1.220E+00 | 1.135E+00 |
| AM-243 | 3.494E-01 | 9.353E-02 | 5.048E-02 | 4.772E-02 |
| ANH-511 | 8.857E-02 | 7.730E-02 | 2.837E-02 | 3.944E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|-----|
|---------|-------------------------------------|---------------|--------------------|-----|

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| BE-7 | -3.591E-02 | 4.311E-01 | 3.528E-01 | 2.199E-01 | NOT IDENT. |
| NA-22 | 2.454E-02 | 4.339E-02 | 3.946E-02 | 2.214E-02 | NOT IDENT. |
| NA-24 | -1.467E+08 | 1.941E+08 | 0.000E+00 | 9.901E+07 | SHORT HLIF |
| AL-26 | 2.423E-02 | 2.792E-02 | 2.821E-02 | 1.424E-02 | NOT IDENT. |
| TI-44 | 3.902E-01 | 6.930E-02 | 4.518E-02 | 3.536E-02 | FAIL ABUN |
| SC-46 | -8.593E-03 | 4.702E-02 | 3.846E-02 | 2.399E-02 | FAIL ABUN |
| V-48 | -3.138E-02 | 8.962E-02 | 7.072E-02 | 4.573E-02 | NOT IDENT. |
| CR-51 | -8.367E-02 | 4.671E-01 | 3.899E-01 | 2.383E-01 | NOT IDENT. |
| MN-52 | 1.462E-01 | 5.363E-01 | 4.688E-01 | 2.736E-01 | NOT IDENT. |
| MN-54 | -3.246E-02 | 4.269E-02 | 3.291E-02 | 2.178E-02 | NOT IDENT. |
| CO-56 | -1.176E-02 | 4.841E-02 | 3.954E-02 | 2.470E-02 | NOT IDENT. |
| CO-57 | -4.479E-03 | 2.949E-02 | 2.415E-02 | 1.505E-02 | NOT IDENT. |
| CO-58 | 7.913E-03 | 4.358E-02 | 3.736E-02 | 2.223E-02 | NOT IDENT. |
| FE-59 | 2.061E-02 | 1.060E-01 | 8.918E-02 | 5.408E-02 | NOT IDENT. |
| CO-60 | -3.322E-02 | 4.281E-02 | 3.205E-02 | 2.184E-02 | NOT IDENT. |
| ZN-65 | -8.153E-02 | 1.192E-01 | 7.384E-02 | 6.080E-02 | NOT IDENT. |
| GE-68 | 9.741E-01 | 1.270E+00 | 1.148E+00 | 6.480E-01 | NOT IDENT. |
| AS-73 | -6.945E-01 | 1.074E+00 | 8.873E-01 | 5.482E-01 | NOT IDENT. |
| AS-74 | 4.825E-02 | 1.283E-01 | 1.133E-01 | 6.545E-02 | NOT IDENT. |
| SE-75 | -1.609E-02 | 5.490E-02 | 4.253E-02 | 2.801E-02 | NOT IDENT. |
| BR-77 | 2.352E+01 | 4.902E+01 | 0.000E+00 | 2.501E+01 | SHORT HLIF |
| SR-82 | -2.110E-01 | 4.673E-01 | 3.749E-01 | 2.384E-01 | NOT IDENT. |
| RB-83 | 4.496E-02 | 8.012E-02 | 6.899E-02 | 4.088E-02 | NOT IDENT. |
| RB-84 | 2.972E-02 | 8.150E-02 | 7.097E-02 | 4.158E-02 | NOT IDENT. |
| KR-85 | 1.985E+01 | 1.015E+01 | 8.567E+00 | 5.179E+00 | NOT IDENT. |
| SR-85 | 1.072E-01 | 5.482E-02 | 4.628E-02 | 2.797E-02 | NOT IDENT. |
| RB-86 | 1.922E-01 | 9.398E-01 | 7.948E-01 | 4.795E-01 | NOT IDENT. |
| Y-88 | 4.940E-02 | 3.546E-02 | 3.838E-02 | 1.809E-02 | NOT IDENT. |
| ZR-88 | 8.555E-04 | 3.876E-02 | 3.239E-02 | 1.978E-02 | NOT IDENT. |
| Y-91 | 2.766E+00 | 2.393E+01 | 2.064E+01 | 1.221E+01 | NOT IDENT. |
| NB-94 | 3.066E-02 | 3.945E-02 | 3.556E-02 | 2.013E-02 | NOT IDENT. |
| NB-95 | -2.046E-02 | 5.158E-02 | 4.196E-02 | 2.632E-02 | NOT IDENT. |
| NB-95M | 8.260E-02 | 1.673E-01 | 1.302E-01 | 8.534E-02 | NOT IDENT. |
| ZR-95 | -7.009E-03 | 8.178E-02 | 6.850E-02 | 4.172E-02 | NOT IDENT. |
| NB-97 | -1.334E+07 | 1.615E+07 | 0.000E+00 | 8.239E+06 | SHORT HLIF |
| ZR-97 | 3.097E+08 | 2.905E+08 | 0.000E+00 | 1.482E+08 | SHORT HLIF |
| MO-99 | 1.396E+01 | 4.500E+01 | 3.917E+01 | 2.296E+01 | NOT IDENT. |
| TC-99M | -3.083E+22 | 3.829E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 2.086E-02 | 4.015E-02 | 3.402E-02 | 2.049E-02 | NOT IDENT. |
| RH-102 | -3.480E-03 | 3.646E-02 | 2.982E-02 | 1.860E-02 | NOT IDENT. |
| RU-103 | -2.096E-02 | 5.196E-02 | 4.108E-02 | 2.651E-02 | FAIL ABUN |
| RH-106 | 8.993E-02 | 3.289E-01 | 2.886E-01 | 1.678E-01 | FAIL ABUN |
| RU-106 | 8.993E-02 | 3.287E-01 | 2.886E-01 | 1.677E-01 | FAIL ABUN |
| AG-108M | -3.317E-02 | 3.826E-02 | 2.936E-02 | 1.952E-02 | NOT IDENT. |
| AG-110M | -3.677E-02 | 4.477E-02 | 2.938E-02 | 2.284E-02 | NOT IDENT. |
| IN-111 | -1.995E+00 | 4.482E+00 | 3.261E+00 | 2.287E+00 | NOT IDENT. |
| IN-113M | -2.019E-04 | 5.440E-02 | 4.539E-02 | 2.776E-02 | NOT IDENT. |
| SN-113 | -2.019E-04 | 5.440E-02 | 4.539E-02 | 2.776E-02 | NOT IDENT. |
| IN-114M | -1.163E-01 | 2.517E-01 | 1.870E-01 | 1.284E-01 | NOT IDENT. |
| CD-115 | 7.542E-01 | 5.549E+01 | 0.000E+00 | 2.831E+01 | SHORT HLIF |
| SN-117M | -8.903E-03 | 7.811E-02 | 6.812E-02 | 3.985E-02 | NOT IDENT. |
| SB-122 | 1.247E+00 | 8.215E+00 | 7.163E+00 | 4.191E+00 | NOT IDENT. |
| I-123 | 9.134E+08 | 3.376E+09 | 0.000E+00 | 1.722E+09 | SHORT HLIF |
| TE-123M | 8.724E-03 | 3.224E-02 | 2.856E-02 | 1.645E-02 | NOT IDENT. |
| I-124 | -4.238E-02 | 1.753E+00 | 1.418E+00 | 8.942E-01 | FAIL ABUN |
| SB-124 | 2.029E-02 | 9.277E-02 | 8.050E-02 | 4.733E-02 | FAIL ABUN |
| SB-125 | 6.715E-02 | 1.118E-01 | 9.678E-02 | 5.703E-02 | NOT IDENT. |
| TE-125M | -2.979E+00 | 1.146E+01 | 9.388E+00 | 5.849E+00 | NOT IDENT. |
| I-126 | 3.664E-01 | 2.923E-01 | 2.484E-01 | 1.491E-01 | NOT IDENT. |
| SB-126 | 1.789E-02 | 2.374E-01 | 1.764E-01 | 1.211E-01 | FAIL ABUN |
| SB-127 | 9.537E-01 | 3.657E+00 | 3.184E+00 | 1.866E+00 | NOT IDENT. |
| XE-127 | -7.811E-02 | 5.828E-02 | 4.700E-02 | 2.974E-02 | NOT IDENT. |
| I-131 | 1.102E-01 | 2.063E-01 | 1.792E-01 | 1.053E-01 | NOT IDENT. |
| TE-132 | -1.053E-01 | 2.237E+00 | 1.921E+00 | 1.142E+00 | NOT IDENT. |
| BA-133 | 2.688E-03 | 5.479E-02 | 4.045E-02 | 2.795E-02 | NOT IDENT. |
| I-133 | -6.327E+04 | 3.940E+05 | 0.000E+00 | 2.010E+05 | SHORT HLIF |
| CS-134 | 7.486E-02 | 7.269E-02 | 5.284E-02 | 3.709E-02 | FAIL ABUN |
| CS-135 | 1.667E-01 | 1.959E-01 | 1.558E-01 | 9.994E-02 | NOT IDENT. |
| I-135 | 1.689E+21 | 1.466E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -1.096E-01 | 1.656E-01 | 1.254E-01 | 8.449E-02 | NOT IDENT. |
| CE-139 | 1.799E-03 | 3.408E-02 | 2.987E-02 | 1.739E-02 | NOT IDENT. |
| BA-140 | -1.227E-01 | 3.977E-01 | 3.340E-01 | 2.029E-01 | NOT IDENT. |
| LA-140 | -4.423E-02 | 1.404E-01 | 1.112E-01 | 7.166E-02 | FAIL ABUN |
| CE-141 | 4.500E-03 | 7.999E-02 | 6.875E-02 | 4.081E-02 | NOT IDENT. |
| CE-143 | 4.310E+03 | 2.491E+03 | 0.000E+00 | 1.271E+03 | SHORT HLIF |
| CE-144 | 2.025E-01 | 2.438E-01 | 2.067E-01 | 1.244E-01 | NOT IDENT. |
| PM-144 | 1.501E-02 | 3.796E-02 | 3.338E-02 | 1.937E-02 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | 1.020E+00 | 2.579E+00 | 2.268E+00 | 1.316E+00 | NOT IDENT. |
| PM-146 | -1.198E-02 | 5.300E-02 | 4.301E-02 | 2.704E-02 | NOT IDENT. |
| ND-147 | -2.578E-01 | 9.587E-01 | 7.880E-01 | 4.891E-01 | NOT IDENT. |
| PM-149 | 2.073E+02 | 5.096E+02 | 0.000E+00 | 2.600E+02 | SHORT HLIF |
| EU-152 | -2.252E-02 | 1.252E-01 | 9.062E-02 | 6.388E-02 | FAIL ABUN |
| GD-153 | -5.346E-02 | 1.025E-01 | 7.284E-02 | 5.232E-02 | NOT IDENT. |
| EU-154 | 8.636E-02 | 1.192E-01 | 1.103E-01 | 6.081E-02 | NOT IDENT. |
| EU-155 | 1.471E-01 | 1.194E-01 | 1.045E-01 | 6.092E-02 | FAIL ABUN |
| TB-160 | -1.266E-02 | 1.586E-01 | 1.313E-01 | 8.093E-02 | FAIL ABUN |
| HO-166M | -1.357E-02 | 6.908E-02 | 5.755E-02 | 3.524E-02 | NOT IDENT. |
| TM-171 | -2.732E+01 | 3.662E+01 | 2.643E+01 | 1.868E+01 | NOT IDENT. |
| LU-176 | -4.304E-02 | 2.890E-02 | 2.082E-02 | 1.475E-02 | FAIL ABUN |
| LU-177 | 1.515E+00 | 2.143E+00 | 1.904E+00 | 1.093E+00 | NOT IDENT. |
| LU-177M | -2.312E-01 | 2.205E-01 | 1.684E-01 | 1.125E-01 | NOT IDENT. |
| HF-181 | -4.959E-02 | 5.427E-02 | 4.090E-02 | 2.769E-02 | NOT IDENT. |
| W-181 | 1.427E-01 | 4.850E-01 | 3.723E-01 | 2.475E-01 | NOT IDENT. |
| TA-182 | 1.108E-01 | 2.299E-01 | 2.047E-01 | 1.173E-01 | FAIL ABUN |
| RE-183 | -1.191E-02 | 1.312E-01 | 1.123E-01 | 6.696E-02 | NOT IDENT. |
| RE-184 | 5.978E-02 | 2.695E-01 | 2.334E-01 | 1.375E-01 | NOT IDENT. |
| OS-185 | -2.550E-02 | 4.988E-02 | 4.060E-02 | 2.545E-02 | NOT IDENT. |
| RE-188 | 1.555E-01 | 2.033E-01 | 1.833E-01 | 1.037E-01 | NOT IDENT. |
| W-188 | 6.018E-01 | 9.932E+00 | 7.439E+00 | 5.067E+00 | FAIL ABUN |
| IR-192 | -1.170E-02 | 4.117E-02 | 3.415E-02 | 2.101E-02 | FAIL ABUN |
| AU-195 | 2.838E-01 | 2.622E-01 | 2.252E-01 | 1.338E-01 | FAIL ABUN |
| TL-200 | -4.937E+03 | 1.247E+04 | 0.000E+00 | 6.361E+03 | SHORT HLIF |
| TL-201 | -1.715E+00 | 2.423E+01 | 2.111E+01 | 1.236E+01 | NOT IDENT. |
| TL-202 | 6.243E-02 | 1.082E-01 | 9.361E-02 | 5.523E-02 | NOT IDENT. |
| HG-203 | 5.701E-02 | 4.916E-02 | 4.432E-02 | 2.508E-02 | NOT IDENT. |
| BI-207 | 2.572E-02 | 5.998E-02 | 5.184E-02 | 3.060E-02 | FAIL ABUN |
| TL-207 | -3.715E-02 | 8.468E-01 | 6.239E-01 | 4.320E-01 | FAIL ABUN |
| PO-209 | -1.157E+00 | 8.699E+00 | 7.153E+00 | 4.438E+00 | NOT IDENT. |
| BI-210 | 2.882E-01 | 4.731E+00 | 4.021E+00 | 2.414E+00 | NOT IDENT. |
| PB-210 | 2.882E-01 | 4.731E+00 | 4.021E+00 | 2.414E+00 | NOT IDENT. |
| PO-210 | 2.882E-01 | 4.731E+00 | 4.021E+00 | 2.414E+00 | NOT IDENT. |
| PB-211 | -6.244E-01 | 1.176E+00 | 8.879E-01 | 6.000E-01 | NOT IDENT. |
| PO-215 | -3.715E-02 | 8.468E-01 | 6.239E-01 | 4.320E-01 | FAIL ABUN |
| RN-219 | -1.323E-03 | 4.748E-01 | 3.955E-01 | 2.423E-01 | FAIL ABUN |
| RN-220 | -9.709E+00 | 3.097E+01 | 2.589E+01 | 1.580E+01 | NOT IDENT. |
| RA-223 | -3.715E-02 | 8.468E-01 | 6.239E-01 | 4.320E-01 | FAIL ABUN |
| AC-227 | -6.919E-02 | 4.251E-01 | 3.603E-01 | 2.169E-01 | FAIL ABUN |
| TH-227 | -6.919E-02 | 4.252E-01 | 3.603E-01 | 2.169E-01 | FAIL ABUN |
| TH-229 | 8.449E-02 | 5.687E-01 | 4.969E-01 | 2.902E-01 | FAIL ABUN |
| PA-231 | -1.605E-01 | 1.763E+00 | 1.492E+00 | 8.997E-01 | FAIL ABUN |
| TH-231 | -3.715E-02 | 8.468E-01 | 6.239E-01 | 4.320E-01 | FAIL ABUN |
| U-231 | -1.561E+00 | 2.987E+00 | 2.142E+00 | 1.524E+00 | FAIL ABUN |
| PA-233 | 9.292E-02 | 7.342E-02 | 6.653E-02 | 3.746E-02 | FAIL ABUN |
| PA-234 | -8.844E-02 | 3.664E-01 | 2.963E-01 | 1.870E-01 | FAIL ABUN |
| PA-234M | 2.366E+00 | 5.439E+00 | 4.793E+00 | 2.775E+00 | NOT IDENT. |
| U-235 | 1.180E-01 | 2.419E-01 | 2.109E-01 | 1.234E-01 | FAIL ABUN |
| NP-236 | -3.667E-02 | 8.861E-02 | 7.623E-02 | 4.521E-02 | NOT IDENT. |
| NP-239 | -2.291E-01 | 2.243E-01 | 1.754E-01 | 1.144E-01 | NOT IDENT. |
| AM-241 | 1.566E-02 | 1.951E-01 | 1.487E-01 | 9.953E-02 | NOT IDENT. |
| CM-243 | -1.273E-01 | 1.082E-01 | 8.422E-02 | 5.522E-02 | NOT IDENT. |
| AM-246 | 1.623E-01 | 1.477E-01 | 1.377E-01 | 7.534E-02 | NOT IDENT. |
| CM-247 | 5.443E-03 | 4.178E-02 | 3.515E-02 | 2.132E-02 | NOT IDENT. |
| CF-249 | 1.763E-02 | 4.649E-02 | 3.985E-02 | 2.372E-02 | NOT IDENT. |
| CF-251 | -4.134E-02 | 1.399E-01 | 1.203E-01 | 7.136E-02 | NOT IDENT. |

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*                                     GEL Laboratories LLC                      *
*                                     2040 SAVAGE ROAD                        *
*                                     CHARLESTON , SC 29417                    *
*                                     GAMMA SPECTROSCOPY BACKGROUND REPORT      *
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| ENERGY | MDA COUNTS |
|--------|------------|
|--------|------------|

| | |
|-------|----------|
| 46.50 | 211.8911 |
| 46.50 | 211.8911 |
| 46.50 | 211.8911 |
| 48.70 | 240.6347 |
| 49.72 | 237.0161 |
| 51.35 | 177.8312 |
| 52.39 | 209.2803 |
| 52.97 | 243.7482 |
| 53.15 | 243.8337 |
| 53.44 | 239.8196 |
| 54.07 | 249.4684 |
| 56.28 | 219.2093 |
| 56.28 | 219.2104 |
| 57.37 | 0.0000 |
| 57.53 | 223.9113 |
| 57.53 | 223.9121 |
| 57.60 | 223.9404 |
| 57.98 | 238.7594 |
| 57.98 | 238.7594 |
| 59.32 | 264.5457 |
| 59.32 | 264.5457 |
| 59.40 | 264.5841 |
| 59.54 | 237.8718 |
| 59.72 | 237.9501 |
| 60.01 | 214.4258 |
| 61.10 | 206.9503 |
| 61.14 | 206.9650 |
| 61.30 | 207.0247 |
| 63.00 | 270.5290 |
| 63.29 | 270.6673 |
| 63.29 | 270.6673 |
| 63.58 | 270.8057 |
| 64.28 | 271.1377 |
| 65.12 | 297.5201 |
| 65.20 | 297.5615 |
| 65.20 | 297.5615 |
| 66.05 | 318.7134 |
| 66.72 | 325.4596 |
| 66.83 | 330.3090 |
| 66.91 | 330.3532 |
| 67.20 | 330.5159 |
| 67.20 | 330.5159 |
| 67.75 | 311.6456 |
| 67.85 | 311.6992 |
| 68.90 | 275.4202 |
| 68.90 | 275.4202 |
| 69.30 | 288.4227 |
| 69.67 | 299.8246 |
| 70.82 | 306.8194 |
| 70.82 | 306.8194 |
| 70.83 | 306.8238 |
| 72.80 | 317.4797 |
| 72.87 | 317.5158 |
| 72.87 | 317.5158 |
| 74.67 | 311.4282 |
| 74.81 | 311.4987 |
| 74.81 | 311.4987 |
| 74.81 | 311.4987 |
| 74.81 | 311.4987 |
| 74.81 | 311.4987 |
| 74.81 | 311.4987 |
| 74.81 | 311.4987 |
| 74.97 | 311.5767 |
| 75.28 | 311.7310 |
| 75.70 | 311.9368 |
| 77.11 | 312.6277 |
| 77.11 | 312.6277 |

| | |
|--------|----------|
| 77.11 | 312.6277 |
| 77.11 | 312.6277 |
| 77.11 | 312.6277 |
| 77.11 | 312.6277 |
| 77.11 | 312.6277 |
| 78.38 | 313.2450 |
| 79.62 | 265.5167 |
| 79.80 | 262.3313 |
| 79.80 | 262.3313 |
| 80.11 | 262.4554 |
| 80.18 | 262.4824 |
| 80.30 | 291.8815 |
| 80.30 | 291.8815 |
| 80.57 | 292.0017 |
| 81.00 | 359.1180 |
| 81.07 | 359.1566 |
| 81.07 | 359.1566 |
| 81.07 | 359.1566 |
| 81.07 | 359.1566 |
| 82.60 | 322.3487 |
| 83.37 | 283.9478 |
| 83.78 | 291.7705 |
| 83.78 | 291.7705 |
| 83.78 | 291.7705 |
| 83.78 | 291.7705 |
| 84.21 | 293.5968 |
| 84.90 | 284.0433 |
| 85.43 | 280.9787 |
| 86.29 | 378.3984 |
| 86.50 | 378.5142 |
| 86.54 | 378.5352 |
| 86.59 | 398.3145 |
| 86.72 | 398.3901 |
| 86.79 | 398.4289 |
| 86.94 | 398.5157 |
| 87.30 | 397.0767 |
| 87.30 | 397.0767 |
| 87.30 | 397.0767 |
| 87.30 | 397.0767 |
| 87.30 | 397.0767 |
| 87.30 | 397.0767 |
| 87.30 | 397.0767 |
| 87.57 | 347.7833 |
| 87.88 | 0.0000 |
| 88.03 | 348.0135 |
| 88.36 | 348.1777 |
| 88.47 | 348.2324 |
| 89.95 | 334.0832 |
| 91.11 | 334.6303 |
| 92.29 | 335.1820 |
| 92.38 | 335.2252 |
| 92.38 | 335.2252 |
| 93.35 | 264.2208 |
| 94.00 | 241.1718 |
| 94.67 | 243.0578 |
| 94.67 | 243.0589 |
| 94.90 | 241.4705 |
| 94.90 | 241.4705 |
| 94.90 | 241.4705 |
| 94.90 | 241.4705 |
| 95.87 | 273.4731 |
| 95.87 | 273.4731 |
| 96.73 | 310.5218 |
| 97.43 | 269.0380 |
| 98.44 | 238.2792 |
| 98.44 | 238.2803 |
| 98.88 | 225.4726 |
| 99.55 | 214.5020 |
| 99.55 | 214.5020 |
| 99.86 | 212.3545 |
| 100.00 | 212.3941 |
| 100.10 | 211.3051 |
| 103.18 | 272.7756 |
| 103.76 | 266.2417 |
| 105.00 | 211.5335 |
| 105.31 | 211.6176 |
| 108.00 | 269.9472 |
| 109.28 | 270.3811 |

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|--------|----------|
| 111.00 | 252.8225 |
| 111.00 | 252.8225 |
| 111.76 | 266.6771 |
| 112.95 | 271.6138 |
| 115.19 | 242.7278 |
| 116.30 | 264.7347 |
| 117.00 | 276.3771 |
| 117.00 | 276.3771 |
| 117.66 | 273.1673 |
| 121.11 | 220.3457 |
| 121.62 | 234.2574 |
| 121.78 | 240.0442 |
| 122.06 | 240.1223 |
| 122.32 | 252.8375 |
| 122.32 | 252.8375 |
| 122.32 | 252.8375 |
| 122.32 | 252.8375 |
| 123.07 | 242.7056 |
| 127.23 | 227.6876 |
| 129.76 | 237.6110 |
| 131.20 | 277.4670 |
| 133.02 | 243.1275 |
| 133.54 | 230.4642 |
| 135.34 | 239.0833 |
| 136.00 | 238.0872 |
| 136.25 | 241.6548 |
| 136.48 | 241.7148 |
| 140.51 | 253.3206 |
| 140.51 | 0.0000 |
| 142.18 | 237.0271 |
| 142.65 | 243.3172 |
| 143.76 | 229.4797 |
| 144.24 | 226.0625 |
| 144.24 | 226.0625 |
| 144.24 | 226.0625 |
| 144.24 | 226.0625 |
| 145.22 | 235.1346 |
| 145.44 | 235.1873 |
| 147.16 | 254.2080 |
| 152.43 | 236.8799 |
| 152.70 | 234.2725 |
| 153.22 | 240.6335 |
| 154.21 | 240.8746 |
| 154.21 | 240.8746 |
| 154.21 | 240.8746 |
| 154.21 | 240.8746 |
| 155.03 | 239.2866 |
| 156.02 | 241.3092 |
| 158.56 | 240.1249 |
| 159.00 | 0.0000 |
| 159.00 | 229.4727 |
| 160.31 | 248.6157 |
| 161.27 | 248.8482 |
| 162.32 | 231.1161 |
| 162.64 | 231.1886 |
| 163.35 | 237.6487 |
| 163.89 | 234.1690 |
| 165.85 | 235.5137 |
| 167.43 | 237.6756 |
| 171.28 | 215.8654 |
| 171.86 | 221.4266 |
| 172.10 | 221.4768 |
| 176.55 | 226.0366 |
| 176.60 | 226.0461 |
| 181.06 | 218.4239 |
| 184.41 | 229.1174 |
| 185.71 | 233.7933 |
| 186.00 | 232.5665 |
| 190.27 | 239.1616 |
| 192.34 | 207.0554 |
| 193.63 | 213.7638 |
| 197.04 | 234.8075 |
| 198.01 | 202.4922 |
| 198.60 | 190.5124 |
| 200.40 | 0.0000 |
| 201.83 | 249.7390 |
| 202.84 | 243.4230 |
| 205.31 | 214.0184 |

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| 208.36 | 233.2950 |
| 208.81 | 226.8215 |
| 209.75 | 209.1731 |
| 209.75 | 209.1731 |
| 210.97 | 210.3213 |
| 215.65 | 196.9803 |
| 216.55 | 195.2375 |
| 218.09 | 202.0879 |
| 222.10 | 197.9945 |
| 223.80 | 187.8230 |
| 226.40 | 194.8573 |
| 227.00 | 181.6345 |
| 227.08 | 180.6951 |
| 227.20 | 180.7125 |
| 228.16 | 187.5086 |
| 228.18 | 187.5116 |
| 228.18 | 187.5116 |
| 231.56 | 0.0000 |
| 235.69 | 199.1212 |
| 236.00 | 212.9574 |
| 236.00 | 212.9574 |
| 238.63 | 182.2926 |
| 238.63 | 182.2926 |
| 238.63 | 182.2926 |
| 238.63 | 182.2926 |
| 239.00 | 0.0000 |
| 240.98 | 182.6129 |
| 241.98 | 182.7492 |
| 241.98 | 182.7492 |
| 241.98 | 182.7492 |
| 244.69 | 161.9130 |
| 245.39 | 168.1676 |
| 247.94 | 148.3887 |
| 248.90 | 164.9909 |
| 249.79 | 0.0000 |
| 252.40 | 154.1028 |
| 252.85 | 152.2135 |
| 252.85 | 152.2135 |
| 254.15 | 0.0000 |
| 256.20 | 152.5801 |
| 256.20 | 152.5801 |
| 260.50 | 154.0220 |
| 260.90 | 0.0000 |
| 262.80 | 125.9549 |
| 264.65 | 149.9080 |
| 268.24 | 133.2939 |
| 268.79 | 128.6395 |
| 269.46 | 128.6996 |
| 269.46 | 128.6996 |
| 269.46 | 128.6996 |
| 269.46 | 128.6996 |
| 271.23 | 149.2841 |
| 273.65 | 168.4205 |
| 276.40 | 131.4128 |
| 277.35 | 151.8804 |
| 277.60 | 150.9199 |
| 277.60 | 150.9199 |
| 278.00 | 154.9062 |
| 278.60 | 134.2423 |
| 279.20 | 123.4341 |
| 279.53 | 139.2637 |
| 280.46 | 161.0948 |
| 281.68 | 0.0000 |
| 283.67 | 142.6223 |
| 284.30 | 138.7183 |
| 285.00 | 128.8693 |
| 285.90 | 0.0000 |
| 286.10 | 141.8610 |
| 286.10 | 141.8610 |
| 287.40 | 143.9668 |
| 288.45 | 0.0000 |
| 290.67 | 136.9134 |
| 290.80 | 136.9260 |
| 291.72 | 141.7872 |
| 293.26 | 0.0000 |
| 293.70 | 140.5762 |
| 295.21 | 140.7139 |
| 295.21 | 140.7139 |

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| 295.21 | 140.7139 |
| 295.96 | 140.7805 |
| 296.50 | 140.8300 |
| 297.23 | 0.0000 |
| 298.57 | 141.0194 |
| 299.80 | 141.1291 |
| 299.80 | 141.1291 |
| 300.09 | 141.1571 |
| 300.09 | 141.1571 |
| 300.09 | 141.1571 |
| 300.09 | 141.1571 |
| 300.12 | 141.1592 |
| 301.29 | 125.0342 |
| 302.84 | 101.0892 |
| 303.76 | 0.0000 |
| 303.91 | 110.7925 |
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| 304.40 | 109.2200 |
| 304.84 | 110.8565 |
| 306.84 | 141.3329 |
| 308.46 | 116.7469 |
| 311.98 | 100.8652 |
| 316.51 | 122.3921 |
| 318.01 | 103.2685 |
| 319.02 | 110.4237 |
| 319.41 | 111.4636 |
| 320.08 | 114.5501 |
| 323.87 | 118.6767 |
| 323.87 | 118.6767 |
| 323.87 | 118.6767 |
| 323.87 | 118.6767 |
| 325.23 | 110.6395 |
| 328.77 | 141.6512 |
| 333.44 | 110.3681 |
| 334.20 | 130.8672 |
| 334.20 | 130.8672 |
| 334.30 | 130.8750 |
| 338.28 | 110.6862 |
| 338.28 | 110.6862 |
| 338.28 | 110.6862 |
| 338.28 | 110.6862 |
| 338.32 | 110.6878 |
| 338.32 | 110.6878 |
| 338.32 | 110.6878 |
| 340.50 | 90.3055 |
| 340.57 | 90.3096 |
| 344.27 | 110.2523 |
| 345.85 | 129.0205 |
| 350.59 | 0.0000 |
| 351.07 | 105.3167 |
| 351.92 | 105.3680 |
| 351.92 | 105.3680 |
| 351.92 | 105.3680 |
| 355.39 | 0.0000 |
| 356.01 | 99.4014 |
| 364.48 | 94.6755 |
| 366.43 | 101.0288 |
| 367.43 | 111.5062 |
| 367.94 | 0.0000 |
| 369.80 | 96.0009 |
| 374.96 | 89.9945 |
| 383.85 | 106.2044 |
| 387.95 | 93.7911 |
| 388.63 | 104.3687 |
| 391.69 | 101.3701 |
| 391.69 | 101.3701 |
| 392.90 | 104.6059 |
| 398.62 | 100.6824 |
| 400.65 | 109.2772 |
| 401.10 | 101.8755 |
| 401.81 | 94.4810 |
| 402.60 | 89.2103 |
| 404.84 | 109.5161 |
| 410.95 | 101.3289 |
| 411.60 | 118.4355 |
| 413.65 | 117.4910 |
| 414.70 | 79.0823 |
| 415.30 | 79.1060 |

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| 415.76 | 83.4023 |
| 417.63 | 0.0000 |
| 418.52 | 95.2972 |
| 423.70 | 121.3126 |
| 427.08 | 92.4825 |
| 427.89 | 84.9899 |
| 432.53 | 87.3430 |
| 433.93 | 94.9556 |
| 439.47 | 0.0000 |
| 439.56 | 77.9073 |
| 439.89 | 77.9194 |
| 443.98 | 91.0880 |
| 444.90 | 83.5349 |
| 445.03 | 87.8794 |
| 445.03 | 87.8794 |
| 445.03 | 87.8794 |
| 445.03 | 87.8794 |
| 453.90 | 90.4355 |
| 463.38 | 88.6543 |
| 468.07 | 82.2681 |
| 473.00 | 73.6626 |
| 475.06 | 88.0396 |
| 475.35 | 92.4531 |
| 476.78 | 74.8928 |
| 477.59 | 89.2439 |
| 477.96 | 85.9528 |
| 482.03 | 86.1135 |
| 484.57 | 0.0000 |
| 487.03 | 67.4997 |
| 490.36 | 0.0000 |
| 492.35 | 0.0000 |
| 497.08 | 76.6995 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 87.6826 |
| 511.00 | 78.2934 |
| 511.85 | 78.3222 |
| 511.85 | 78.3222 |
| 513.99 | 69.8839 |
| 513.99 | 69.8839 |
| 520.41 | 56.1539 |
| 520.65 | 0.0000 |
| 527.90 | 0.0000 |
| 528.96 | 0.0000 |
| 529.64 | 75.7723 |
| 529.87 | 0.0000 |
| 531.02 | 77.6205 |
| 537.32 | 77.8304 |
| 543.00 | 65.3168 |
| 546.56 | 0.0000 |
| 549.76 | 70.0501 |
| 552.65 | 69.2238 |
| 555.20 | 69.2962 |
| 563.23 | 55.8040 |
| 563.90 | 65.8846 |
| 568.70 | 67.8466 |
| 569.32 | 60.5279 |
| 569.50 | 62.3671 |
| 569.67 | 62.3704 |
| 573.80 | 49.6125 |
| 574.00 | 46.8600 |
| 574.64 | 0.0000 |
| 578.91 | 0.0000 |
| 579.30 | 0.0000 |
| 583.14 | 58.0981 |
| 585.48 | 0.0000 |
| 591.81 | 70.5610 |
| 592.07 | 75.0674 |
| 593.00 | 77.7677 |
| 595.88 | 63.9530 |
| 600.56 | 76.1423 |
| 602.52 | 0.0000 |
| 602.71 | 66.2159 |
| 602.71 | 66.2159 |
| 603.60 | 72.8236 |
| 604.41 | 74.3965 |
| 604.70 | 68.2057 |
| 609.31 | 56.8360 |

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| 609.31 | 56.8360 |
| 609.31 | 56.8360 |
| 609.31 | 56.8360 |
| 610.33 | 56.8584 |
| 612.46 | 46.6431 |
| 614.37 | 35.7859 |
| 618.01 | 40.0656 |
| 621.84 | 46.8109 |
| 621.84 | 46.8109 |
| 631.29 | 50.7371 |
| 633.02 | 52.6504 |
| 633.10 | 48.8909 |
| 634.78 | 46.0990 |
| 635.90 | 48.9430 |
| 636.97 | 52.7283 |
| 645.85 | 58.5715 |
| 646.12 | 62.3568 |
| 656.30 | 48.9976 |
| 657.75 | 63.2552 |
| 657.90 | 0.0000 |
| 661.65 | 58.9121 |
| 661.65 | 58.9121 |
| 664.57 | 0.0000 |
| 666.33 | 42.8313 |
| 666.33 | 42.8313 |
| 675.00 | 50.6036 |
| 677.61 | 55.4285 |
| 685.20 | 49.8291 |
| 692.80 | 51.8840 |
| 695.00 | 41.3476 |
| 696.49 | 50.9892 |
| 696.49 | 50.9892 |
| 697.00 | 63.5073 |
| 697.49 | 69.2930 |
| 698.33 | 65.4633 |
| 698.50 | 67.3921 |
| 699.00 | 63.5524 |
| 702.63 | 54.9557 |
| 706.10 | 59.8476 |
| 706.58 | 0.0000 |
| 706.67 | 63.7216 |
| 709.31 | 57.0151 |
| 711.68 | 58.0298 |
| 713.82 | 49.3614 |
| 717.42 | 63.9584 |
| 720.50 | 50.1215 |
| 721.93 | 0.0000 |
| 722.20 | 58.2393 |
| 722.78 | 46.9244 |
| 722.78 | 46.9244 |
| 722.89 | 46.9256 |
| 722.95 | 46.9268 |
| 723.30 | 43.6959 |
| 724.18 | 50.1845 |
| 727.18 | 49.5868 |
| 733.00 | 56.8294 |
| 735.90 | 52.0091 |
| 739.58 | 45.8893 |
| 742.81 | 46.9160 |
| 744.21 | 43.0268 |
| 747.13 | 50.8993 |
| 751.79 | 46.0763 |
| 752.31 | 48.0454 |
| 753.82 | 43.1643 |
| 755.35 | 0.0000 |
| 756.15 | 48.1052 |
| 756.87 | 43.2072 |
| 763.93 | 69.8820 |
| 765.79 | 64.0161 |
| 766.42 | 48.2679 |
| 766.84 | 48.2739 |
| 776.49 | 48.4258 |
| 778.00 | 44.4946 |
| 778.57 | 39.5576 |
| 778.89 | 39.5615 |
| 783.80 | 51.5112 |
| 785.46 | 34.6898 |
| 792.07 | 49.6606 |

| | |
|---------|---------|
| 795.84 | 36.4617 |
| 796.30 | 39.7822 |
| 798.80 | 48.1080 |
| 801.93 | 49.8169 |
| 805.60 | 42.8919 |
| 810.29 | 38.9591 |
| 810.76 | 37.9657 |
| 815.85 | 40.0273 |
| 817.79 | 0.0000 |
| 818.51 | 40.0605 |
| 819.60 | 37.0677 |
| 826.30 | 50.1953 |
| 828.27 | 0.0000 |
| 831.60 | 48.2666 |
| 831.96 | 48.2719 |
| 834.83 | 56.3664 |
| 836.80 | 0.0000 |
| 846.75 | 49.5000 |
| 848.13 | 52.5522 |
| 856.28 | 0.0000 |
| 856.80 | 45.5966 |
| 860.37 | 34.4881 |
| 867.32 | 42.3523 |
| 867.82 | 45.7471 |
| 871.10 | 32.5625 |
| 873.19 | 35.6375 |
| 874.81 | 37.6919 |
| 875.33 | 0.0000 |
| 876.40 | 39.7484 |
| 879.36 | 37.7425 |
| 880.27 | 35.7118 |
| 880.51 | 33.6735 |
| 881.50 | 31.6418 |
| 883.24 | 42.8921 |
| 884.67 | 38.8229 |
| 889.25 | 42.9669 |
| 896.60 | 44.0844 |
| 898.02 | 50.2561 |
| 899.00 | 43.0890 |
| 903.28 | 42.1151 |
| 911.07 | 38.0912 |
| 911.07 | 38.0912 |
| 911.07 | 38.0912 |
| 919.63 | 39.8060 |
| 920.93 | 30.9712 |
| 925.00 | 31.0071 |
| 925.24 | 31.0093 |
| 926.50 | 32.0543 |
| 935.52 | 29.0261 |
| 937.48 | 48.7487 |
| 944.10 | 41.5654 |
| 946.00 | 46.7853 |
| 949.00 | 29.1354 |
| 962.29 | 31.3308 |
| 964.01 | 29.6040 |
| 966.15 | 10.4546 |
| 968.20 | 10.4604 |
| 969.11 | 10.4631 |
| 969.11 | 10.4631 |
| 969.11 | 10.4631 |
| 977.42 | 37.4529 |
| 980.50 | 25.1895 |
| 983.50 | 32.5629 |
| 989.30 | 35.7697 |
| 996.32 | 42.1611 |
| 1001.03 | 34.8264 |
| 1001.68 | 36.9440 |
| 1004.76 | 52.8198 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 28.7481 |
| 1036.00 | 29.8225 |
| 1037.82 | 36.2296 |
| 1038.57 | 27.7113 |
| 1038.76 | 0.0000 |
| 1045.16 | 30.9612 |
| 1046.59 | 30.9725 |
| 1048.07 | 44.8731 |

| | |
|---------|---------|
| 1050.47 | 36.3491 |
| 1050.47 | 36.3491 |
| 1062.04 | 34.3109 |
| 1063.62 | 33.2523 |
| 1076.63 | 25.8293 |
| 1077.35 | 22.6047 |
| 1078.86 | 21.5361 |
| 1085.78 | 28.0452 |
| 1099.22 | 31.3860 |
| 1112.02 | 27.7455 |
| 1112.84 | 27.9241 |
| 1115.52 | 45.2759 |
| 1120.29 | 34.8125 |
| 1120.29 | 34.8125 |
| 1120.29 | 34.8125 |
| 1120.29 | 34.8125 |
| 1120.51 | 36.2663 |
| 1121.28 | 39.9001 |
| 1124.00 | 0.0000 |
| 1129.67 | 35.9826 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 38.5154 |
| 1173.22 | 34.8905 |
| 1175.09 | 41.3361 |
| 1177.93 | 37.6868 |
| 1189.05 | 33.1772 |
| 1204.90 | 49.0233 |
| 1205.75 | 0.0000 |
| 1213.00 | 52.8229 |
| 1221.42 | 41.7810 |
| 1230.97 | 42.8031 |
| 1235.34 | 66.1320 |
| 1236.41 | 0.0000 |
| 1238.25 | 46.6024 |
| 1246.25 | 45.7521 |
| 1260.41 | 0.0000 |
| 1271.85 | 22.5371 |
| 1274.45 | 19.7319 |
| 1274.54 | 21.6112 |
| 1291.56 | 33.0105 |
| 1298.22 | 0.0000 |
| 1312.09 | 31.2625 |
| 1325.50 | 11.4009 |
| 1325.50 | 11.4009 |
| 1332.49 | 28.5449 |
| 1333.61 | 24.7453 |
| 1360.21 | 23.9278 |
| 1362.66 | 0.0000 |
| 1365.15 | 16.2875 |
| 1368.21 | 22.0501 |
| 1368.53 | 0.0000 |
| 1376.25 | 18.1090 |
| 1384.27 | 13.1920 |
| 1394.10 | 12.5303 |
| 1395.20 | 12.5329 |
| 1407.95 | 31.8976 |
| 1434.06 | 20.4070 |
| 1436.60 | 21.3895 |
| 1457.56 | 0.0000 |
| 1460.81 | 12.7001 |
| 1489.15 | 18.6660 |
| 1509.49 | 11.8354 |
| 1596.49 | 21.0555 |
| 1620.62 | 12.0854 |
| 1678.03 | 0.0000 |
| 1691.02 | 10.1994 |
| 1691.02 | 10.1994 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 7.0834 |
| 1764.49 | 7.0834 |
| 1764.49 | 7.0834 |
| 1764.49 | 7.0834 |
| 1770.23 | 12.4082 |
| 1771.40 | 8.8647 |
| 1791.20 | 0.0000 |
| 1808.65 | 3.1223 |

1836.01

2.0910

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G245388010

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 4.6866E+00 | ug/g |
| Total Uranium Counting Unc. | 6.6184E+00 | ug/g |
| Total Uranium Tpu | 3.3767E-06 | ug/g |
| Total Uranium Mda | 3.6293E+00 | ug/g |


```

*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 944964                SAMPLE ID   : G245388010
*  ANALYST       : MXR1                  DETECTOR    : GAM01
*  SAMPLE DATE   : 15-JAN-2010 12:00:00.00  COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 4-FEB-2010 13:42:42.20  SAMPLE ALQT  : 114.460 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.324E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.512E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.075E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.963E+00

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VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 16:42:24.61

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388011.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 14:41:51.
Sample ID          : G245388011 Sample quantity : 1.04710E+02 GRAM
Detector name      : GAM11 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.46 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 944964 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 0 | 46.48* | 49 | 321 | 0.81 | 91.81 | 88 | 8 | 6.87E-03 | 66.7 | |
| 2 | 0 | 62.91* | 76 | 331 | 1.02 | 124.69 | 121 | 7 | 1.05E-02 | 43.1 | |
| 3 | 2 | 73.22 | 69 | 220 | 0.95 | 145.33 | 143 | 14 | 9.64E-03 | 31.6 | 2.55E+00 |
| 4 | 2 | 74.90 | 414 | 321 | 0.95 | 148.71 | 143 | 14 | 5.75E-02 | 8.6 | |
| 5 | 2 | 77.10 | 684 | 307 | 0.93 | 153.09 | 143 | 14 | 9.50E-02 | 5.7 | |
| 6 | 0 | 84.01* | 105 | 331 | 1.26 | 166.92 | 164 | 7 | 1.46E-02 | 31.0 | |
| 7 | 0 | 86.77 | 152 | 427 | 1.08 | 172.46 | 171 | 7 | 2.11E-02 | 23.6 | |
| 8 | 4 | 89.91* | 120 | 195 | 1.00 | 178.74 | 177 | 13 | 1.67E-02 | 18.6 | 3.36E+00 |
| 9 | 4 | 92.79* | 265 | 300 | 1.20 | 184.50 | 177 | 13 | 3.67E-02 | 13.5 | |
| 10 | 0 | 186.17* | 198 | 295 | 1.11 | 371.41 | 367 | 10 | 2.76E-02 | 18.5 | |
| 11 | 0 | 209.45 | 130 | 272 | 1.27 | 418.00 | 413 | 11 | 1.81E-02 | 26.1 | |
| 12 | 6 | 238.71* | 1125 | 151 | 0.94 | 476.56 | 472 | 17 | 1.56E-01 | 3.5 | 1.49E+00 |
| 13 | 6 | 241.71 | 326 | 207 | 1.78 | 482.57 | 472 | 17 | 4.53E-02 | 13.3 | |
| 14 | 0 | 270.29 | 102 | 158 | 1.13 | 539.77 | 535 | 8 | 1.42E-02 | 23.5 | |
| 15 | 0 | 295.33* | 361 | 171 | 1.15 | 589.88 | 586 | 11 | 5.01E-02 | 8.9 | |
| 16 | 0 | 300.41 | 69 | 110 | 0.92 | 600.04 | 596 | 8 | 9.62E-03 | 29.0 | |
| 17 | 0 | 328.60 | 62 | 161 | 0.91 | 656.46 | 650 | 12 | 8.65E-03 | 42.8 | |
| 18 | 0 | 338.41 | 215 | 124 | 1.08 | 676.09 | 671 | 9 | 2.99E-02 | 11.6 | |
| 19 | 0 | 351.92* | 565 | 153 | 1.11 | 703.14 | 697 | 13 | 7.85E-02 | 6.2 | |
| 20 | 0 | 463.15 | 66 | 113 | 1.55 | 925.74 | 919 | 13 | 9.10E-03 | 35.8 | |
| 21 | 0 | 510.92* | 106 | 94 | 1.90 | 1021.33 | 1015 | 13 | 1.48E-02 | 25.2 | |
| 22 | 0 | 583.53* | 273 | 109 | 1.28 | 1166.64 | 1161 | 13 | 3.79E-02 | 10.1 | |
| 23 | 0 | 609.54* | 389 | 73 | 1.15 | 1218.70 | 1212 | 11 | 5.40E-02 | 6.8 | |
| 24 | 0 | 662.20 | 84 | 90 | 1.42 | 1324.07 | 1318 | 14 | 1.16E-02 | 26.2 | |
| 25 | 0 | 727.90 | 75 | 54 | 1.01 | 1455.54 | 1450 | 11 | 1.05E-02 | 22.2 | |
| 26 | 0 | 861.97* | 59 | 60 | 2.38 | 1723.80 | 1716 | 20 | 8.13E-03 | 37.3 | |
| 27 | 0 | 911.54* | 237 | 42 | 1.31 | 1823.00 | 1816 | 15 | 3.29E-02 | 9.1 | |
| 28 | 0 | 969.87* | 112 | 79 | 1.35 | 1939.70 | 1932 | 14 | 1.56E-02 | 19.8 | |
| 29 | 0 | 1121.50* | 62 | 71 | 1.44 | 2243.08 | 2236 | 15 | 8.62E-03 | 32.8 | |
| 30 | 0 | 1239.14 | 35 | 46 | 2.04 | 2478.45 | 2469 | 13 | 4.79E-03 | 43.8 | |
| 31 | 0 | 1378.23 | 39 | 12 | 1.32 | 2756.70 | 2752 | 10 | 5.39E-03 | 23.4 | |
| 32 | 0 | 1461.63* | 851 | 14 | 1.64 | 2923.55 | 2916 | 14 | 1.18E-01 | 3.6 | |
| 33 | 0 | 1588.16 | 25 | 6 | 1.24 | 3176.66 | 3172 | 11 | 3.49E-03 | 27.0 | |
| 34 | 0 | 1765.36* | 73 | 6 | 1.88 | 3531.10 | 3526 | 11 | 1.01E-02 | 13.9 | |
| 35 | 0 | 1848.94 | 11 | 6 | 0.61 | 3698.29 | 3693 | 8 | 1.56E-03 | 48.1 | |

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

VMS Nuclide Identification Report V3.1 Generated 4-FEB-2010 16:42:27

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388011.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 14:41:51
Sample ID        : G245388011 Sample quantity : 104.71 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA11 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.46 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 2.335E+01 | 2.626E+00 | 4.816E-01 | 4.164E-02 | 48.495 |
| CD-109 | + | 88.03 | * | 2.235E+00 | 1.077E+00 | 1.241E+00 | 1.177E-01 | 1.801 |
| SN-126 | + | 64.28 | | 6.705E-01 | 5.859E-01 | 6.020E-01 | 8.733E-02 | 1.114 |
| | + | 86.94 | | 9.065E-01 | 5.704E-01 | 4.097E-01 | 1.701E-01 | 2.213 |
| | + | 87.57 | * | 2.181E-01 | 1.051E-01 | 1.215E-01 | 1.146E-02 | 1.795 |
| BA-137M | + | 661.65 | * | 1.388E-01 | 7.397E-02 | 5.627E-02 | 5.324E-03 | 2.467 |
| CS-137 | + | 661.65 | * | 1.468E-01 | 7.820E-02 | 5.948E-02 | 5.637E-03 | 2.467 |
| TL-208 | | 277.35 | | 4.073E-01 | 3.768E-01 | 6.390E-01 | 1.133E-01 | 0.637 |
| | + | 510.84 | | 5.968E-01 | 3.116E-01 | 2.304E-01 | 3.123E-02 | 2.591 |
| | + | 583.14 | * | 4.364E-01 | 9.988E-02 | 5.764E-02 | 6.225E-03 | 7.572 |
| | | 860.37 | | 5.226E-01 | 3.337E-01 | 6.225E-01 | 6.484E-02 | 0.839 |
| BI-210 | + | 46.50 | * | 2.910E+00 | 3.890E+00 | 3.746E+00 | 3.488E-01 | 0.777 |
| PB-210 | + | 46.50 | * | 2.910E+00 | 3.890E+00 | 3.746E+00 | 3.488E-01 | 0.777 |
| PO-210 | + | 46.50 | * | 2.910E+00 | 3.888E+00 | 3.746E+00 | 3.158E-01 | 0.777 |
| BI-211 | + | 72.87 | | 3.488E+00 | 2.220E+00 | 4.035E+00 | 3.205E-01 | 0.865 |
| | + | 351.07 | * | 3.993E+00 | 7.237E-01 | 2.997E-01 | 3.954E-02 | 13.326 |
| PB-212 | + | 74.81 | | 2.391E+00 | 5.054E-01 | 4.469E-01 | 5.529E-02 | 5.350 |
| | + | 77.11 | | 2.262E+00 | 3.176E-01 | 2.562E-01 | 2.129E-02 | 8.831 |
| | + | 87.30 | | 1.009E+00 | 4.965E-01 | 5.629E-01 | 7.725E-02 | 1.792 |
| | + | 238.63 | * | 1.736E+00 | 2.719E-01 | 8.669E-02 | 1.214E-02 | 20.022 |
| | + | 300.09 | | 1.652E+00 | 9.930E-01 | 1.090E+00 | 1.747E-01 | 1.515 |
| PO-212 | + | 74.81 | | 2.391E+00 | 5.054E-01 | 4.469E-01 | 5.529E-02 | 5.350 |
| | + | 77.11 | | 2.262E+00 | 3.176E-01 | 2.562E-01 | 2.129E-02 | 8.831 |
| | + | 87.30 | | 1.009E+00 | 4.965E-01 | 5.629E-01 | 7.725E-02 | 1.792 |
| | | 115.19 | | 3.156E+00 | 3.058E+00 | 5.429E+00 | 4.600E-01 | 0.581 |
| | + | 238.63 | * | 1.736E+00 | 2.719E-01 | 8.669E-02 | 1.214E-02 | 20.022 |
| | + | 300.09 | | 1.652E+00 | 9.930E-01 | 1.090E+00 | 1.747E-01 | 1.515 |
| BI-214 | + | 609.31 | * | 1.173E+00 | 2.077E-01 | 1.198E-01 | 1.354E-02 | 9.793 |
| | + | 1120.29 | | 9.636E-01 | 6.398E-01 | 4.988E-01 | 5.387E-02 | 1.932 |
| | + | 1764.49 | | 1.549E+00 | 4.476E-01 | 3.614E-01 | 2.978E-02 | 4.285 |
| PB-214 | + | 74.81 | | 4.120E+00 | 8.386E-01 | 7.701E-01 | 8.455E-02 | 5.350 |
| | + | 77.11 | | 3.878E+00 | 6.195E-01 | 4.392E-01 | 4.951E-02 | 8.831 |
| | + | 87.30 | | 1.728E+00 | 8.434E-01 | 9.642E-01 | 1.172E-01 | 1.792 |
| | + | 241.98 | | 3.023E+00 | 9.180E-01 | 5.223E-01 | 7.609E-02 | 5.788 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 295.21 | | 1.508E+00 | 3.641E-01 | 2.093E-01 | 3.414E-02 | 7.201 |
| | + | 351.92 | * | 1.389E+00 | 2.620E-01 | 1.045E-01 | 1.478E-02 | 13.297 |
| | + | 74.81 | | 4.120E+00 | 8.386E-01 | 7.701E-01 | 8.455E-02 | 5.350 |
| | + | 77.11 | | 3.878E+00 | 6.195E-01 | 4.392E-01 | 4.951E-02 | 8.831 |
| | + | 87.30 | | 1.728E+00 | 8.434E-01 | 9.642E-01 | 1.172E-01 | 1.792 |
| | + | 241.98 | | 3.023E+00 | 9.180E-01 | 5.223E-01 | 7.609E-02 | 5.788 |
| PO-216 | + | 295.21 | | 1.508E+00 | 3.641E-01 | 2.093E-01 | 3.414E-02 | 7.201 |
| | + | 351.92 | * | 1.389E+00 | 2.620E-01 | 1.045E-01 | 1.478E-02 | 13.297 |
| | + | 74.81 | | 2.391E+00 | 5.054E-01 | 4.469E-01 | 5.529E-02 | 5.350 |
| | + | 77.11 | | 2.262E+00 | 3.176E-01 | 2.562E-01 | 2.129E-02 | 8.831 |
| | + | 87.30 | | 1.009E+00 | 4.965E-01 | 5.629E-01 | 7.725E-02 | 1.792 |
| | + | 238.63 | * | 1.736E+00 | 2.719E-01 | 8.669E-02 | 1.214E-02 | 20.022 |
| PO-218 | + | 300.09 | | 1.652E+00 | 9.930E-01 | 1.090E+00 | 1.747E-01 | 1.515 |
| | + | 74.81 | | 4.120E+00 | 8.386E-01 | 7.701E-01 | 8.455E-02 | 5.350 |
| | + | 77.11 | | 3.878E+00 | 6.195E-01 | 4.392E-01 | 4.951E-02 | 8.831 |
| | + | 87.30 | | 1.728E+00 | 8.434E-01 | 9.642E-01 | 1.172E-01 | 1.792 |
| | + | 241.98 | | 3.023E+00 | 9.180E-01 | 5.223E-01 | 7.609E-02 | 5.788 |
| | + | 295.21 | | 1.508E+00 | 3.641E-01 | 2.093E-01 | 3.414E-02 | 7.201 |
| RA-224 | + | 351.92 | * | 1.389E+00 | 2.620E-01 | 1.045E-01 | 1.478E-02 | 13.297 |
| RA-226 | + | 240.98 | * | 5.732E+00 | 1.711E+00 | 9.869E-01 | 1.322E-01 | 5.808 |
| | + | 609.31 | * | 1.173E+00 | 2.077E-01 | 1.198E-01 | 1.354E-02 | 9.793 |
| AC-228 | + | 1120.29 | | 9.636E-01 | 6.398E-01 | 4.988E-01 | 5.387E-02 | 1.932 |
| | + | 1764.49 | | 1.549E+00 | 4.476E-01 | 3.614E-01 | 2.978E-02 | 4.285 |
| | + | 338.32 | | 1.675E+00 | 8.108E-01 | 3.467E-01 | 1.475E-01 | 4.830 |
| RA-228 | + | 911.07 | * | 1.670E+00 | 3.652E-01 | 1.731E-01 | 2.108E-02 | 9.647 |
| | + | 969.11 | | 1.398E+00 | 6.451E-01 | 4.210E-01 | 9.977E-02 | 3.320 |
| | + | 338.32 | | 1.675E+00 | 8.108E-01 | 3.467E-01 | 1.475E-01 | 4.830 |
| TH-228 | + | 911.07 | * | 1.670E+00 | 3.652E-01 | 1.731E-01 | 2.108E-02 | 9.647 |
| | + | 969.11 | | 1.398E+00 | 6.451E-01 | 4.210E-01 | 9.977E-02 | 3.320 |
| | + | 74.81 | | 2.440E+00 | 4.633E-01 | 4.560E-01 | 3.731E-02 | 5.350 |
| | + | 77.11 | | 2.308E+00 | 3.240E-01 | 2.614E-01 | 2.172E-02 | 8.831 |
| | + | 87.30 | | 1.029E+00 | 4.960E-01 | 5.742E-01 | 5.398E-02 | 1.792 |
| | + | 238.63 | * | 1.771E+00 | 2.774E-01 | 8.844E-02 | 1.239E-02 | 20.022 |
| TH-230 | + | 300.09 | | 1.685E+00 | 1.412E+00 | 1.112E+00 | 6.730E-01 | 1.515 |
| | + | 609.31 | * | 1.173E+00 | 2.077E-01 | 1.198E-01 | 1.354E-02 | 9.793 |
| | + | 1120.29 | | 9.636E-01 | 6.397E-01 | 4.988E-01 | 5.387E-02 | 1.932 |
| TH-232 | + | 1764.49 | | 1.549E+00 | 4.476E-01 | 3.614E-01 | 2.978E-02 | 4.285 |
| | + | 338.32 | | 1.675E+00 | 4.481E-01 | 3.467E-01 | 4.675E-02 | 4.830 |
| | + | 911.07 | * | 1.670E+00 | 3.652E-01 | 1.731E-01 | 2.108E-02 | 9.647 |
| TH-234 | + | 969.11 | | 1.398E+00 | 6.451E-01 | 4.210E-01 | 9.977E-02 | 3.320 |
| | + | 63.29 | * | 1.694E+00 | 1.489E+00 | 1.676E+00 | 2.916E-01 | 1.011 |
| | + | 92.38 | | 2.483E+00 | 8.089E-01 | 6.713E-01 | 1.231E-01 | 3.699 |
| U-234 | + | 609.31 | * | 1.173E+00 | 2.077E-01 | 1.198E-01 | 1.354E-02 | 9.793 |
| | + | 1120.29 | | 9.636E-01 | 6.397E-01 | 4.988E-01 | 5.387E-02 | 1.932 |
| | + | 1764.49 | | 1.549E+00 | 4.476E-01 | 3.614E-01 | 2.978E-02 | 4.285 |
| NP-237 | + | 86.50 | * | 6.403E-01 | 3.357E-01 | 2.951E-01 | 6.680E-02 | 2.170 |
| | + | 95.87 | | 9.482E-02 | 8.746E-01 | 1.256E+00 | 3.110E-01 | 0.075 |
| U-238 | + | 63.29 | * | 1.694E+00 | 1.489E+00 | 1.676E+00 | 2.916E-01 | 1.011 |
| | + | 92.38 | | 2.483E+00 | 7.060E-01 | 6.713E-01 | 6.147E-02 | 3.699 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AM-243 | + | 74.67 | * | 3.877E-01 | 7.349E-02 | 7.263E-02 | 5.878E-03 | 5.337 |
| | + | 86.72 | | 2.401E+01 | 1.157E+01 | 1.105E+01 | 1.031E+00 | 2.173 |
| | | 117.66 | | -2.964E+00 | 3.280E+00 | 5.327E+00 | 4.506E-01 | -0.556 |
| | | 142.18 | | -1.213E+01 | 1.600E+01 | 2.546E+01 | 2.270E+00 | -0.476 |
| ANH-511 | + | 511.00 | * | 1.289E-01 | 6.645E-02 | 4.977E-02 | 5.322E-03 | 2.590 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| BE-7 | | 477.59 | * | 1.005E-01 | 3.707E-01 | 6.249E-01 | 7.072E-02 | 0.161 |
| NA-22 | | 1274.54 | * | -2.747E-02 | 4.475E-02 | 6.691E-02 | 5.495E-03 | -0.411 |
| NA-24 | | 1368.53 | * | 1.816E+01 | 4.475E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | 2.335E+00 | 1.739E+00 | 3.133E+00 | 2.646E-01 | 0.745 |
| | | 1808.65 | * | 1.559E-03 | 2.906E-02 | 4.849E-02 | 3.958E-03 | 0.032 |
| TI-44 | | 67.85 | | -9.565E-03 | 3.747E-02 | 5.849E-02 | 4.432E-03 | -0.164 |
| | + | 78.38 | * | 4.175E-01 | 5.862E-02 | 6.280E-02 | 5.294E-03 | 6.649 |
| SC-46 | | 889.25 | * | -3.388E-02 | 3.842E-02 | 5.771E-02 | 5.684E-03 | -0.587 |
| | + | 1120.51 | | 1.719E-01 | 1.136E-01 | 1.378E-01 | 1.175E-02 | 1.248 |
| V-48 | | 944.10 | | -4.531E-01 | 9.527E-01 | 1.493E+00 | 1.444E-01 | -0.304 |
| | | 983.50 | * | 7.415E-03 | 8.179E-02 | 1.375E-01 | 1.304E-02 | 0.054 |
| | | 1312.09 | | -3.665E-02 | 8.569E-02 | 1.289E-01 | 1.062E-02 | -0.284 |
| CR-51 | | 320.08 | * | -1.421E-01 | 4.271E-01 | 6.649E-01 | 9.650E-02 | -0.214 |
| MN-52 | | 744.21 | | 1.072E-01 | 4.438E-01 | 7.332E-01 | 7.124E-02 | 0.146 |
| | | 848.13 | | -8.856E+00 | 1.195E+01 | 1.848E+01 | 1.821E+00 | -0.479 |
| | | 935.52 | | 4.477E-01 | 4.651E-01 | 8.481E-01 | 8.234E-02 | 0.528 |
| | | 1246.25 | | 1.522E+00 | 1.328E+01 | 2.192E+01 | 1.789E+00 | 0.069 |
| | | 1333.61 | | -3.120E+00 | 1.077E+01 | 1.695E+01 | 1.401E+00 | -0.184 |
| | | 1434.06 | * | -8.254E-02 | 4.488E-01 | 6.988E-01 | 5.855E-02 | -0.118 |
| MN-54 | | 834.83 | * | 1.310E-02 | 3.942E-02 | 6.833E-02 | 6.728E-03 | 0.192 |
| CO-56 | | 846.75 | * | 1.149E-02 | 3.778E-02 | 6.561E-02 | 6.465E-03 | 0.175 |
| | | 977.42 | | 4.548E-01 | 3.100E+00 | 5.112E+00 | 4.865E-01 | 0.089 |
| | | 1037.82 | | -2.799E-01 | 3.025E-01 | 4.398E-01 | 4.221E-02 | -0.636 |
| | | 1175.09 | | 1.901E+00 | 2.206E+00 | 3.955E+00 | 3.179E-01 | 0.481 |
| | + | 1238.25 | | 1.571E-01 | 1.381E-01 | 1.753E-01 | 1.475E-02 | 0.896 |
| | | 1360.21 | | -5.807E-01 | 8.748E-01 | 1.222E+00 | 1.015E-01 | -0.475 |
| | | 1771.40 | | 1.394E-02 | 2.486E-01 | 3.596E-01 | 2.959E-02 | 0.039 |
| CO-57 | | 122.06 | * | 2.660E-03 | 2.183E-02 | 3.730E-02 | 3.156E-03 | 0.071 |
| | | 136.48 | | 2.732E-01 | 1.982E-01 | 3.521E-01 | 3.308E-02 | 0.776 |
| CO-58 | | 810.76 | * | 1.258E-02 | 4.074E-02 | 6.745E-02 | 6.641E-03 | 0.187 |
| FE-59 | | 142.65 | | 5.549E-01 | 2.679E+00 | 4.478E+00 | 4.000E-01 | 0.124 |
| | | 192.34 | | -4.869E-01 | 9.920E-01 | 1.596E+00 | 2.394E-01 | -0.305 |
| | | 1099.22 | * | 7.763E-02 | 9.558E-02 | 1.712E-01 | 1.610E-02 | 0.453 |
| | | 1291.56 | | 2.465E-02 | 1.308E-01 | 2.178E-01 | 2.055E-02 | 0.113 |
| CO-60 | | 1173.22 | | 7.062E-03 | 4.404E-02 | 7.344E-02 | 5.900E-03 | 0.096 |
| | | 1332.49 | * | -2.744E-02 | 4.420E-02 | 6.616E-02 | 5.467E-03 | -0.415 |
| ZN-65 | | 1115.52 | * | -4.871E-02 | 1.123E-01 | 1.479E-01 | 1.269E-02 | -0.329 |
| GE-68 | | 1077.35 | * | -3.907E-01 | 1.163E+00 | 1.839E+00 | 1.633E-01 | -0.212 |
| AS-73 | | 53.44 | * | -2.461E-01 | 6.409E-01 | 9.949E-01 | 7.471E-02 | -0.247 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AS-74 | | 595.88 | * | -2.221E-02 | 1.150E-01 | 1.855E-01 | 1.886E-02 | -0.120 |
| | | 634.78 | | -2.637E-02 | 4.172E-01 | 6.767E-01 | 6.619E-02 | -0.039 |
| SE-75 | | 66.05 | | 1.515E+00 | 4.290E+00 | 6.384E+00 | 6.067E-01 | 0.237 |
| | | 96.73 | | -2.001E-01 | 7.672E-01 | 1.072E+00 | 1.481E-01 | -0.187 |
| | | 121.11 | | 1.052E-02 | 1.191E-01 | 2.032E-01 | 2.254E-02 | 0.052 |
| | | 136.00 | | 3.589E-02 | 3.778E-02 | 6.626E-02 | 5.834E-03 | 0.542 |
| | | 198.60 | | -9.472E-01 | 1.795E+00 | 2.792E+00 | 3.339E-01 | -0.339 |
| | | 264.65 | * | 4.926E-03 | 4.754E-02 | 7.393E-02 | 1.087E-02 | 0.067 |
| | | 279.53 | | -7.614E-02 | 1.146E-01 | 1.732E-01 | 2.712E-02 | -0.440 |
| | | 303.91 | | 1.857E-01 | 2.213E+00 | 3.189E+00 | 5.301E-01 | 0.058 |
| | | 400.65 | | 5.324E-02 | 2.684E-01 | 4.595E-01 | 5.878E-02 | 0.116 |
| BR-77 | + | 87.88 | | 2.058E-03 | 2.684E-01 | Half-Life | too short | |
| | | 200.40 | | 4.218E-05 | 2.684E-01 | Half-Life | too short | |
| | + | 239.00 | | 1.196E-03 | 2.684E-01 | Half-Life | too short | |
| | | 249.79 | | 1.411E-04 | 2.684E-01 | Half-Life | too short | |
| | | 281.68 | | -3.674E-04 | 2.684E-01 | Half-Life | too short | |
| | | 297.23 | | 4.765E-04 | 2.684E-01 | Half-Life | too short | |
| | | 303.76 | | 6.322E-05 | 2.684E-01 | Half-Life | too short | |
| | | 439.47 | | 3.715E-04 | 2.684E-01 | Half-Life | too short | |
| | | 484.57 | | 1.823E-04 | 2.684E-01 | Half-Life | too short | |
| | | 520.65 | * | 1.308E-05 | 2.684E-01 | Half-Life | too short | |
| | | 574.64 | | 2.822E-04 | 2.684E-01 | Half-Life | too short | |
| | | 578.91 | | -2.143E-04 | 2.684E-01 | Half-Life | too short | |
| | | 585.48 | | 4.360E-03 | 2.684E-01 | Half-Life | too short | |
| | | 755.35 | | 9.669E-05 | 2.684E-01 | Half-Life | too short | |
| | | 817.79 | | -2.998E-04 | 2.684E-01 | Half-Life | too short | |
| SR-82 | | 698.33 | | -1.336E+01 | 3.939E+01 | 6.160E+01 | 5.908E+00 | -0.217 |
| | | 776.49 | * | -2.318E-01 | 4.269E-01 | 6.405E-01 | 6.264E-02 | -0.362 |
| | | 1395.20 | | -1.940E-01 | 1.155E+01 | 1.857E+01 | 1.550E+00 | -0.010 |
| RB-83 | | 520.41 | * | 5.666E-02 | 7.043E-02 | 1.242E-01 | 1.324E-02 | 0.456 |
| | | 529.64 | | 9.625E-04 | 1.013E-01 | 1.679E-01 | 1.782E-02 | 0.006 |
| | | 552.65 | | 9.293E-02 | 1.905E-01 | 3.285E-01 | 3.446E-02 | 0.283 |
| RB-84 | | 881.50 | * | 2.191E-02 | 7.798E-02 | 1.345E-01 | 1.326E-02 | 0.163 |
| KR-85 | | 513.99 | * | 1.454E+01 | 7.571E+00 | 1.306E+01 | 1.395E+00 | 1.113 |
| SR-85 | | 513.99 | * | 7.857E-02 | 4.091E-02 | 7.059E-02 | 7.541E-03 | 1.113 |
| RB-86 | | 1076.63 | * | 2.604E-01 | 8.396E-01 | 1.439E+00 | 1.279E-01 | 0.181 |
| Y-88 | | 898.02 | | -1.734E-02 | 4.271E-02 | 6.645E-02 | 6.566E-03 | -0.261 |
| | | 1836.01 | * | -2.321E-02 | 3.148E-02 | 4.111E-02 | 3.337E-03 | -0.565 |
| ZR-88 | | 392.90 | * | -1.921E-02 | 2.991E-02 | 4.813E-02 | 5.133E-03 | -0.399 |
| Y-91 | | 1204.90 | * | 7.972E+00 | 2.246E+01 | 3.793E+01 | 3.071E+00 | 0.210 |
| NB-94 | | 702.63 | * | 4.621E-02 | 3.261E-02 | 5.951E-02 | 5.716E-03 | 0.776 |
| | | 871.10 | | 2.022E-03 | 3.647E-02 | 5.557E-02 | 5.476E-03 | 0.036 |
| NB-95 | | 765.79 | * | -2.452E-02 | 5.123E-02 | 7.862E-02 | 7.674E-03 | -0.312 |
| NB-95M | | 235.69 | * | 1.916E-02 | 1.396E-01 | 2.058E-01 | 2.874E-02 | 0.093 |
| ZR-95 | | 724.18 | | -1.380E-01 | 1.203E-01 | 1.406E-01 | 1.453E-02 | -0.982 |
| | | 756.15 | * | -1.009E-02 | 6.576E-02 | 1.037E-01 | 1.092E-02 | -0.097 |
| NB-97 | | 657.90 | * | 4.558E+00 | 6.576E-02 | Half-Life | too short | |
| | | 1024.50 | | -1.716E+02 | 6.576E-02 | Half-Life | too short | |
| ZR-97 | | 254.15 | | -1.087E+02 | 6.576E-02 | Half-Life | too short | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 355.39 | | | -1.218E+02 | 6.576E-02 | Half-Life | too short | |
| | 507.63 | * | | 1.948E+02 | 6.576E-02 | Half-Life | too short | |
| | 602.52 | | | -2.409E+02 | 6.576E-02 | Half-Life | too short | |
| | 1021.30 | | | -1.502E+02 | 6.576E-02 | Half-Life | too short | |
| | 1147.95 | | | -3.642E+02 | 6.576E-02 | Half-Life | too short | |
| | 1362.66 | | | -2.430E+02 | 6.576E-02 | Half-Life | too short | |
| | 1750.46 | | | 1.641E+02 | 6.576E-02 | Half-Life | too short | |
| MO-99 | 140.51 | | | -6.802E+01 | 8.708E+01 | 1.347E+02 | 3.742E+01 | -0.505 |
| | 181.06 | | | -5.624E+01 | 5.976E+01 | 8.787E+01 | 1.686E+01 | -0.640 |
| | 366.43 | | | 1.964E+02 | 3.015E+02 | 5.014E+02 | 6.075E+01 | 0.392 |
| | 739.58 | * | | 2.130E+01 | 4.124E+01 | 6.985E+01 | 1.105E+01 | 0.305 |
| | 778.00 | | | 1.813E+01 | 1.130E+02 | 1.847E+02 | 1.807E+01 | 0.098 |
| TC-99M | 140.51 | * | | -2.777E+16 | 1.130E+02 | Half-Life | too short | |
| RH-101 | 127.23 | | | -2.615E-02 | 3.016E-02 | 4.785E-02 | 4.087E-03 | -0.546 |
| | 198.01 | * | | -3.516E-02 | 3.269E-02 | 4.903E-02 | 5.487E-03 | -0.717 |
| | 325.23 | | | -9.452E-02 | 2.495E-01 | 3.402E-01 | 4.774E-02 | -0.278 |
| RH-102 | 418.52 | | | 1.465E-01 | 2.868E-01 | 4.997E-01 | 5.372E-02 | 0.293 |
| | 475.06 | * | | -1.636E-02 | 3.025E-02 | 4.830E-02 | 5.207E-03 | -0.339 |
| | 631.29 | | | -1.723E-02 | 5.238E-02 | 8.258E-02 | 8.110E-03 | -0.209 |
| | 697.49 | | | -4.030E-02 | 7.792E-02 | 1.195E-01 | 1.146E-02 | -0.337 |
| | 766.84 | | | 1.059E-01 | 1.204E-01 | 2.078E-01 | 2.029E-02 | 0.509 |
| | 1046.59 | | | -5.539E-02 | 1.089E-01 | 1.689E-01 | 1.538E-02 | -0.328 |
| | 1112.84 | | | 1.473E-01 | 2.279E-01 | 3.921E-01 | 3.370E-02 | 0.376 |
| RU-103 | 497.08 | * | | 1.720E-02 | 3.923E-02 | 6.773E-02 | 1.053E-02 | 0.254 |
| | 610.33 | + | | 1.383E+01 | 3.064E+00 | 3.542E+00 | 6.183E-01 | 3.905 |
| RH-106 | 511.85 | + | | 6.500E-01 | 3.351E-01 | 4.798E-01 | 5.129E-02 | 1.355 |
| | 621.84 | * | | 1.205E-01 | 3.319E-01 | 5.600E-01 | 7.970E-02 | 0.215 |
| | 1050.47 | | | -1.371E-01 | 2.227E+00 | 3.658E+00 | 3.320E-01 | -0.037 |
| RU-106 | 511.85 | + | | 6.500E-01 | 3.351E-01 | 4.798E-01 | 5.129E-02 | 1.355 |
| | 621.84 | * | | 1.205E-01 | 3.317E-01 | 5.600E-01 | 5.556E-02 | 0.215 |
| | 1050.47 | | | -1.371E-01 | 2.227E+00 | 3.658E+00 | 3.320E-01 | -0.037 |
| AG-108M | 433.93 | * | | -1.884E-03 | 3.204E-02 | 5.362E-02 | 5.927E-03 | -0.035 |
| | 614.37 | | | 2.300E-03 | 4.445E-02 | 6.416E-02 | 6.601E-03 | 0.036 |
| | 722.95 | | | -1.975E-02 | 4.918E-02 | 6.540E-02 | 6.517E-03 | -0.302 |
| AG-110M | 657.75 | * | | 1.242E-02 | 3.482E-02 | 5.230E-02 | 5.096E-03 | 0.237 |
| | 677.61 | | | 2.125E-01 | 2.958E-01 | 5.148E-01 | 5.014E-02 | 0.413 |
| | 706.67 | | | -1.914E-01 | 2.210E-01 | 3.249E-01 | 3.194E-02 | -0.589 |
| | 763.93 | | | -1.105E-02 | 1.730E-01 | 2.762E-01 | 2.755E-02 | -0.040 |
| | 884.67 | | | 4.274E-02 | 5.163E-02 | 9.320E-02 | 9.409E-03 | 0.459 |
| | 937.48 | | | -1.955E-02 | 1.060E-01 | 1.734E-01 | 1.730E-02 | -0.113 |
| | 1384.27 | | | 5.584E-02 | 1.965E-01 | 2.901E-01 | 2.490E-02 | 0.192 |
| IN-111 | 171.28 | | | -1.054E+00 | 2.962E+00 | 4.837E+00 | 4.813E-01 | -0.218 |
| | 245.39 | * | | -2.013E-01 | 3.717E+00 | 5.382E+00 | 7.335E-01 | -0.037 |
| IN-113M | 391.69 | * | | -6.319E-04 | 4.174E-02 | 7.058E-02 | 7.677E-03 | -0.009 |
| SN-113 | 391.69 | * | | -6.319E-04 | 4.174E-02 | 7.058E-02 | 7.677E-03 | -0.009 |
| IN-114M | 190.27 | * | | 1.400E-02 | 1.943E-01 | 2.898E-01 | 3.136E-02 | 0.048 |
| CD-115 | 260.90 | | | -1.438E-04 | 1.943E-01 | Half-Life | too short | |
| | 492.35 | | | -4.962E-05 | 1.943E-01 | Half-Life | too short | |
| | 527.90 | * | | -1.126E-05 | 1.943E-01 | Half-Life | too short | |

Sample ID : G245388011

Acquisition date : 4-FEB-2010 14:41:51

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|----------------|-----------|---------|
| SN-117M | | 156.02 | | -4.520E-01 | 2.668E+00 | 4.434E+00 | 4.151E-01 | -0.102 |
| | | 158.56 | * | -3.853E-02 | 6.233E-02 | 1.008E-01 | 9.528E-03 | -0.382 |
| SB-122 | | 563.90 | * | 2.290E-01 | 7.389E+00 | 1.221E+01 | 1.272E+00 | 0.019 |
| | | 692.80 | | 1.479E+01 | 1.526E+02 | 2.498E+02 | 2.391E+01 | 0.059 |
| I-123 | | 159.00 | * | 4.198E+02 | 1.526E+02 | Half-Life | too short | |
| | | 528.96 | | 9.535E+04 | 1.526E+02 | Half-Life | too short | |
| TE-123M | | 159.00 | * | 3.807E-03 | 2.531E-02 | 4.269E-02 | 4.062E-03 | 0.089 |
| I-124 | | 602.71 | * | -2.126E-01 | 1.701E+00 | 2.546E+00 | 2.574E-01 | -0.084 |
| | | 722.78 | | -3.927E+00 | 1.182E+01 | 1.589E+01 | 1.536E+00 | -0.247 |
| | | 1325.50 | | 3.147E+01 | 8.330E+01 | 1.418E+02 | 1.171E+01 | 0.222 |
| | | 1376.25 | | 1.562E+02 | 9.173E+01 | 1.629E+02 | 1.355E+01 | 0.959 |
| | | 1509.49 | | 2.171E+01 | 3.671E+01 | 6.657E+01 | 5.603E+00 | 0.326 |
| | | 1691.02 | | -1.824E+00 | 8.313E+00 | 1.313E+01 | 1.095E+00 | -0.139 |
| SB-124 | | 602.71 | | -5.718E-03 | 4.573E-02 | 6.846E-02 | 6.921E-03 | -0.084 |
| | | 645.85 | | -1.088E-01 | 5.051E-01 | 8.046E-01 | 8.142E-02 | -0.135 |
| | | 709.31 | | 3.703E+00 | 3.024E+00 | 5.421E+00 | 5.217E-01 | 0.683 |
| | | 713.82 | | -1.222E+00 | 1.818E+00 | 2.725E+00 | 3.485E-01 | -0.449 |
| | | 722.78 | | -1.531E-01 | 4.607E-01 | 6.195E-01 | 6.089E-02 | -0.247 |
| | | 968.20 | | 1.535E+01 | 4.338E+00 | 8.245E+00 | 7.884E-01 | 1.862 |
| | | 1045.16 | | -4.469E-01 | 2.601E+00 | 4.221E+00 | 3.847E-01 | -0.106 |
| | | 1325.50 | | 1.310E+00 | 3.467E+00 | 5.903E+00 | 4.874E-01 | 0.222 |
| | | 1368.21 | | 6.551E-01 | 1.819E+00 | 3.104E+00 | 4.123E-01 | 0.211 |
| | | 1436.60 | | -2.206E+00 | 3.978E+00 | 5.734E+00 | 4.806E-01 | -0.385 |
| | | 1691.02 | * | -1.677E-02 | 7.642E-02 | 1.207E-01 | 1.049E-02 | -0.139 |
| SB-125 | | 427.89 | * | -4.547E-02 | 9.360E-02 | 1.517E-01 | 1.654E-02 | -0.300 |
| | + | 463.38 | | 7.220E-01 | 5.228E-01 | 5.814E-01 | 6.592E-02 | 1.242 |
| | | 600.56 | | -1.655E-01 | 1.916E-01 | 2.894E-01 | 3.089E-02 | -0.572 |
| | | 635.90 | | 1.685E-01 | 2.681E-01 | 4.633E-01 | 4.813E-02 | 0.364 |
| TE-125M | | 109.28 | * | -6.078E+00 | 8.225E+00 | 1.353E+01 | 1.390E+00 | -0.449 |
| I-126 | | 388.63 | | 1.857E-02 | 2.561E-01 | 4.360E-01 | 4.730E-02 | 0.043 |
| | | 666.33 | * | 9.927E-02 | 2.631E-01 | 3.932E-01 | 3.728E-02 | 0.252 |
| | | 753.82 | | -1.330E-01 | 1.839E+00 | 2.935E+00 | 2.858E-01 | -0.045 |
| SB-126 | | 223.80 | | -2.122E+00 | 4.950E+00 | 7.893E+00 | 9.858E-01 | -0.269 |
| | | 278.60 | | 1.970E+00 | 3.289E+00 | 5.420E+00 | 8.373E-01 | 0.363 |
| | + | 296.50 | | 1.984E+01 | 4.629E+00 | 5.049E+00 | 7.586E-01 | 3.930 |
| | | 414.70 | | -4.520E-03 | 9.040E-02 | 1.519E-01 | 1.631E-02 | -0.030 |
| | | 415.30 | | -1.900E+00 | 7.600E+00 | 1.257E+01 | 1.350E+00 | -0.151 |
| | | 555.20 | | -7.583E-01 | 4.967E+00 | 8.076E+00 | 8.459E-01 | -0.094 |
| | | 573.80 | | -6.485E-01 | 1.324E+00 | 2.075E+00 | 2.147E-01 | -0.313 |
| | | 593.00 | | -1.339E+00 | 1.172E+00 | 1.683E+00 | 1.716E-01 | -0.795 |
| | | 656.30 | | 5.956E-01 | 4.703E+00 | 6.824E+00 | 6.502E-01 | 0.087 |
| | | 666.33 | | 4.196E-02 | 1.112E-01 | 1.662E-01 | 1.576E-02 | 0.252 |
| | | 675.00 | | 1.992E-01 | 2.479E+00 | 4.062E+00 | 3.863E-01 | 0.049 |
| | | 695.00 | | 7.233E-02 | 9.858E-02 | 1.710E-01 | 1.639E-02 | 0.423 |
| | | 697.00 | | -2.180E-01 | 3.636E-01 | 5.527E-01 | 5.299E-02 | -0.394 |
| | | 720.50 | * | 2.150E-01 | 1.975E-01 | 3.503E-01 | 3.382E-02 | 0.614 |
| | | 856.80 | | 2.050E-01 | 5.905E-01 | 9.140E-01 | 9.008E-02 | 0.224 |
| | | 989.30 | | -1.047E-01 | 1.655E+00 | 2.733E+00 | 2.584E-01 | -0.038 |
| | | 1034.80 | | 4.537E+00 | 1.047E+01 | 1.824E+01 | 1.675E+00 | 0.249 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SB-127 | 1213.00 | | | -5.734E+00 | 6.449E+00 | 9.490E+00 | 7.696E-01 | -0.604 |
| | 61.10 | | | 9.088E+01 | 1.111E+02 | 1.705E+02 | 2.021E+01 | 0.533 |
| | 252.40 | | | -4.626E+00 | 1.032E+01 | 1.596E+01 | 7.005E+00 | -0.290 |
| | 290.80 | | | -1.443E+01 | 5.884E+01 | 8.242E+01 | 1.473E+01 | -0.175 |
| | 411.60 | | | -2.133E+01 | 2.824E+01 | 4.451E+01 | 8.046E+00 | -0.479 |
| | 444.90 | | | -9.475E+00 | 2.244E+01 | 3.627E+01 | 5.593E+00 | -0.261 |
| | 473.00 | | | -1.744E+00 | 4.172E+00 | 6.724E+00 | 1.055E+00 | -0.259 |
| | 543.00 | | | -1.616E-01 | 4.134E+01 | 6.831E+01 | 1.149E+01 | -0.002 |
| | 603.60 | | | 1.567E+01 | 3.164E+01 | 4.808E+01 | 7.176E+00 | 0.326 |
| | 685.20 | * | | 2.800E-01 | 2.930E+00 | 4.805E+00 | 6.536E-01 | 0.058 |
| XE-127 | 698.50 | | | -1.156E+01 | 3.768E+01 | 5.909E+01 | 1.034E+01 | -0.196 |
| | 722.20 | | | 8.099E+00 | 8.495E+01 | 1.214E+02 | 1.639E+01 | 0.067 |
| | 783.80 | | | 5.894E+00 | 9.585E+00 | 1.624E+01 | 2.378E+00 | 0.363 |
| | 57.60 | | | 5.152E+00 | 5.080E+00 | 8.500E+00 | 6.119E-01 | 0.606 |
| | 145.22 | | | -1.373E-01 | 6.836E-01 | 1.139E+00 | 1.026E-01 | -0.121 |
| | 172.10 | | | 8.230E-03 | 1.147E-01 | 1.919E-01 | 1.916E-02 | 0.043 |
| I-131 | 202.84 | * | | 8.602E-03 | 4.717E-02 | 7.860E-02 | 8.983E-03 | 0.109 |
| | 374.96 | | | -2.623E-02 | 2.421E-01 | 3.792E-01 | 4.417E-02 | -0.069 |
| | 80.18 | | | 4.224E+00 | 6.965E+00 | 9.212E+00 | 8.019E-01 | 0.459 |
| | 284.30 | | | -1.163E-01 | 2.209E+00 | 3.550E+00 | 5.551E-01 | -0.033 |
| | 364.48 | * | | 4.178E-03 | 1.823E-01 | 2.892E-01 | 3.639E-02 | 0.014 |
| TE-132 | 636.97 | | | 8.037E-01 | 2.370E+00 | 3.993E+00 | 4.082E-01 | 0.201 |
| | 722.89 | | | -4.812E+00 | 1.276E+01 | 1.704E+01 | 1.661E+00 | -0.282 |
| | 49.72 | | | 1.569E+01 | 4.152E+01 | 6.300E+01 | 7.455E+00 | 0.249 |
| | 111.76 | | | 2.113E+01 | 7.616E+01 | 1.279E+02 | 1.563E+01 | 0.165 |
| BA-133 | 116.30 | | | -9.452E+00 | 6.869E+01 | 1.162E+02 | 1.417E+01 | -0.081 |
| | 228.16 | * | | 6.104E-01 | 1.894E+00 | 3.154E+00 | 6.049E-01 | 0.194 |
| | 53.15 | | | 4.726E-01 | 2.625E+00 | 4.207E+00 | 3.171E-01 | 0.112 |
| | 79.62 | | | 4.130E-02 | 1.128E+00 | 1.631E+00 | 2.477E-01 | 0.025 |
| | 81.00 | | | -3.426E-02 | 8.765E-02 | 1.229E-01 | 1.956E-02 | -0.279 |
| | 276.40 | | | 3.859E-02 | 3.783E-01 | 6.152E-01 | 1.182E-01 | 0.063 |
| I-133 | 302.84 | | | 1.117E-03 | 1.441E-01 | 2.061E-01 | 3.699E-02 | 0.005 |
| | 356.01 | * | | 1.516E-02 | 4.592E-02 | 6.704E-02 | 1.081E-02 | 0.226 |
| | 383.85 | | | -1.678E-01 | 2.819E-01 | 4.556E-01 | 6.580E-02 | -0.368 |
| | 510.53 | + | | 7.127E+01 | 2.819E-01 | Half-Life | too short | |
| | 529.87 | * | | 2.786E-03 | 2.819E-01 | Half-Life | too short | |
| | 706.58 | | | -2.142E+01 | 2.819E-01 | Half-Life | too short | |
| | 856.28 | | | 4.863E+00 | 2.819E-01 | Half-Life | too short | |
| | 875.33 | | | -1.119E+00 | 2.819E-01 | Half-Life | too short | |
| | 1236.41 | | | 2.003E+01 | 2.819E-01 | Half-Life | too short | |
| | 1298.22 | | | 1.932E+00 | 2.819E-01 | Half-Life | too short | |
| CS-134 | 475.35 | | | -7.157E-01 | 1.983E+00 | 3.217E+00 | 3.468E-01 | -0.222 |
| | 563.23 | | | -3.625E-02 | 3.544E-01 | 5.788E-01 | 6.072E-02 | -0.063 |
| | 569.32 | | | 7.835E-02 | 1.781E-01 | 3.054E-01 | 3.199E-02 | 0.257 |
| | 604.70 | | | 2.565E-02 | 3.633E-02 | 5.593E-02 | 5.653E-03 | 0.459 |
| | 795.84 | * | | 7.887E-02 | 4.877E-02 | 8.951E-02 | 8.830E-03 | 0.881 |
| | 801.93 | | | 1.233E-01 | 4.408E-01 | 7.253E-01 | 7.151E-02 | 0.170 |
| | 1038.57 | | | -2.340E+00 | 3.636E+00 | 5.528E+00 | 5.062E-01 | -0.423 |
| | 1167.94 | | | 7.522E-01 | 2.502E+00 | 4.235E+00 | 3.424E-01 | 0.178 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|------------------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| CS-135 I-135 | 1365.15 | | | -6.154E-01 | 1.141E+00 | 1.660E+00 | 1.447E-01 | -0.371 |
| | 268.24 | * | | 2.513E-02 | 1.885E-01 | 2.734E-01 | 4.289E-02 | 0.092 |
| | 288.45 | | | 6.570E+15 | 1.885E-01 | Half-Life | too short | |
| | 417.63 | | | 2.236E+15 | 1.885E-01 | Half-Life | too short | |
| | 546.56 | | | 2.308E+15 | 1.885E-01 | Half-Life | too short | |
| | 836.80 | | | 5.647E+15 | 1.885E-01 | Half-Life | too short | |
| | 1038.76 | | | -1.959E+15 | 1.885E-01 | Half-Life | too short | |
| | 1124.00 | | | 7.816E+15 | 1.885E-01 | Half-Life | too short | |
| | 1131.51 | | | -7.464E+14 | 1.885E-01 | Half-Life | too short | |
| | 1260.41 | * | | -1.842E+15 | 1.885E-01 | Half-Life | too short | |
| | 1457.56 | | | 1.511E+16 | 1.885E-01 | Half-Life | too short | |
| | 1678.03 | | | -2.550E+14 | 1.885E-01 | Half-Life | too short | |
| | 1706.46 | | | -6.370E+14 | 1.885E-01 | Half-Life | too short | |
| | 1791.20 | | | 2.394E+15 | 1.885E-01 | Half-Life | too short | |
| | 66.91 | | | 2.163E-01 | 7.976E-01 | 1.278E+00 | 1.898E-01 | 0.169 |
| CS-136 + | 86.29 | | | 3.702E+00 | 1.819E+00 | 2.238E+00 | 2.978E-01 | 1.654 |
| | 153.22 | | | 3.438E-01 | 8.394E-01 | 1.407E+00 | 1.439E-01 | 0.244 |
| | 163.89 | | | 9.123E-01 | 1.307E+00 | 2.182E+00 | 2.309E-01 | 0.418 |
| | 176.55 | | | 5.294E-02 | 4.612E-01 | 7.718E-01 | 8.191E-02 | 0.069 |
| | 273.65 | | | -5.802E-01 | 6.580E-01 | 8.658E-01 | 1.342E-01 | -0.670 |
| | 340.57 | | | 9.304E-02 | 1.932E-01 | 2.788E-01 | 3.778E-02 | 0.334 |
| | 818.51 | | | -2.749E-03 | 9.381E-02 | 1.493E-01 | 1.470E-02 | -0.018 |
| | 1048.07 | * | | -2.442E-03 | 1.332E-01 | 2.199E-01 | 2.078E-02 | -0.011 |
| | 1235.34 | | | 2.816E-01 | 7.528E-01 | 1.126E+00 | 1.296E-01 | 0.250 |
| | 165.85 | * | | -5.704E-03 | 2.746E-02 | 4.536E-02 | 4.408E-03 | -0.126 |
| CE-139 BA-140 | 162.64 | | | 1.731E-01 | 9.270E-01 | 1.514E+00 | 1.521E-01 | 0.114 |
| | 304.84 | | | -4.968E-01 | 1.656E+00 | 2.451E+00 | 7.470E-01 | -0.203 |
| | 423.70 | | | -1.747E+00 | 2.571E+00 | 4.005E+00 | 1.324E+00 | -0.436 |
| | 537.32 | * | | -1.034E-01 | 3.186E-01 | 5.077E-01 | 1.711E-01 | -0.204 |
| LA-140 + | 328.77 | | | 7.863E-01 | 6.819E-01 | 7.315E-01 | 1.038E-01 | 1.075 |
| | 432.53 | | | 6.064E-01 | 2.594E+00 | 4.437E+00 | 4.932E-01 | 0.137 |
| | 487.03 | | | -1.097E-01 | 1.759E-01 | 2.769E-01 | 3.099E-02 | -0.396 |
| | 751.79 | | | 1.426E+00 | 2.214E+00 | 3.800E+00 | 4.012E-01 | 0.375 |
| | 815.85 | | | 5.240E-02 | 4.043E-01 | 6.563E-01 | 7.032E-02 | 0.080 |
| | 867.82 | | | 3.873E-01 | 1.944E+00 | 2.933E+00 | 3.009E-01 | 0.132 |
| | 919.63 | | | 5.411E-01 | 3.202E+00 | 5.333E+00 | 6.186E-01 | 0.101 |
| | 925.24 | | | -7.615E-01 | 1.451E+00 | 2.282E+00 | 2.335E-01 | -0.334 |
| | 1596.49 | * | | -8.207E-02 | 1.266E-01 | 1.836E-01 | 1.544E-02 | -0.447 |
| | 145.44 | * | | -2.919E-02 | 6.283E-02 | 1.033E-01 | 9.467E-03 | -0.283 |
| CE-141 CE-143 | 57.37 | | | 9.421E-03 | 6.283E-02 | Half-Life | too short | |
| | 231.56 | | | 1.412E-02 | 6.283E-02 | Half-Life | too short | |
| | 293.26 | * | | 4.290E-03 | 6.283E-02 | Half-Life | too short | |
| | 350.59 | | | 3.927E-01 | 6.283E-02 | Half-Life | too short | |
| | 490.36 | | | 3.300E-02 | 6.283E-02 | Half-Life | too short | |
| | 664.57 | | | 2.301E-02 | 6.283E-02 | Half-Life | too short | |
| | 721.93 | | | 1.585E-02 | 6.283E-02 | Half-Life | too short | |
| CE-144 | 80.11 | | | 1.374E+00 | 2.113E+00 | 2.804E+00 | 2.412E-01 | 0.490 |
| | 133.54 | * | | 1.829E-03 | 1.841E-01 | 3.113E-01 | 4.857E-02 | 0.006 |
| PM-144 | 476.78 | | | 3.894E-02 | 7.302E-02 | 1.253E-01 | 1.432E-02 | 0.311 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|---------------------|-----------|---------|
| | | 618.01 | | -1.111E-03 | 3.268E-02 | 5.330E-02 | 5.420E-03 | -0.021 |
| | | 696.49 | * | 9.561E-04 | 3.472E-02 | 5.640E-02 | 5.409E-03 | 0.017 |
| | | 778.57 | | -4.797E-01 | 2.181E+00 | 3.405E+00 | 3.333E-01 | -0.141 |
| PR-144 | | 696.49 | * | 6.496E-02 | 2.359E+00 | 3.832E+00 | 3.673E-01 | 0.017 |
| | | 1489.15 | | 3.592E+00 | 1.070E+01 | 1.899E+01 | 1.597E+00 | 0.189 |
| PM-146 | | 453.90 | * | 3.509E-02 | 4.167E-02 | 7.395E-02 | 9.272E-03 | 0.474 |
| | | 633.02 | | -1.371E+00 | 1.465E+00 | 2.005E+00 | 7.552E-01 | -0.684 |
| | | 735.90 | | -4.261E-02 | 1.391E-01 | 2.152E-01 | 6.229E-02 | -0.198 |
| | | 747.13 | | 4.883E-04 | 9.289E-02 | 1.497E-01 | 2.206E-02 | 0.003 |
| ND-147 | + | 91.11 | | 7.940E-01 | 3.062E-01 | 5.799E-01 | 5.747E-02 | 1.369 |
| | | 319.41 | | -3.969E+00 | 4.596E+00 | 6.797E+00 | 9.691E-01 | -0.584 |
| | | 439.89 | | 4.888E+00 | 7.866E+00 | 1.378E+01 | 1.487E+00 | 0.355 |
| | | 531.02 | * | 6.802E-02 | 6.999E-01 | 1.169E+00 | 1.892E-01 | 0.058 |
| PM-149 | | 285.90 | * | -4.391E-05 | 6.999E-01 | Half-Life too short | | |
| EU-152 | | 121.78 | | 2.119E-02 | 6.242E-02 | 1.077E-01 | 1.053E-02 | 0.197 |
| | | 244.69 | | -4.286E-02 | 3.450E-01 | 4.895E-01 | 6.653E-02 | -0.088 |
| | | 344.27 | * | -5.260E-03 | 9.574E-02 | 1.516E-01 | 2.055E-02 | -0.035 |
| | | 443.98 | | -3.845E-01 | 8.677E-01 | 1.400E+00 | 1.511E-01 | -0.275 |
| | | 778.89 | | -6.648E-02 | 2.449E-01 | 3.797E-01 | 3.715E-02 | -0.175 |
| | | 867.32 | | 4.705E-01 | 8.624E-01 | 1.367E+00 | 1.347E-01 | 0.344 |
| | | 964.01 | | 2.701E-01 | 3.354E-01 | 5.345E-01 | 5.122E-02 | 0.505 |
| | | 1085.78 | | -3.651E-01 | 3.895E-01 | 5.662E-01 | 4.991E-02 | -0.645 |
| | | 1112.02 | | 3.792E-01 | 2.978E-01 | 5.561E-01 | 4.783E-02 | 0.682 |
| | | 1407.95 | | 4.265E-02 | 2.041E-01 | 3.386E-01 | 2.830E-02 | 0.126 |
| GD-153 | | 69.67 | | 1.877E-01 | 1.473E+00 | 2.157E+00 | 1.661E-01 | 0.087 |
| | + | 83.37 | | 2.752E+01 | 1.725E+01 | 2.256E+01 | 2.018E+00 | 1.220 |
| | | 97.43 | * | -3.931E-02 | 7.982E-02 | 1.096E-01 | 9.735E-03 | -0.359 |
| | | 103.18 | | -2.847E-02 | 9.061E-02 | 1.530E-01 | 1.328E-02 | -0.186 |
| EU-154 | | 123.07 | | -3.128E-02 | 4.525E-02 | 7.406E-02 | 8.330E-03 | -0.422 |
| | | 247.94 | | 7.228E-02 | 3.520E-01 | 5.802E-01 | 9.116E-02 | 0.125 |
| | | 591.81 | | -3.689E-01 | 5.853E-01 | 8.967E-01 | 1.155E-01 | -0.411 |
| | | 723.30 | | -1.529E-01 | 2.127E-01 | 2.691E-01 | 2.821E-02 | -0.568 |
| | | 756.87 | | -3.396E-01 | 7.316E-01 | 1.110E+00 | 1.422E-01 | -0.306 |
| | | 873.19 | | 2.113E-01 | 2.745E-01 | 4.965E-01 | 6.525E-02 | 0.425 |
| | | 996.32 | | -1.784E-01 | 3.554E-01 | 5.542E-01 | 1.007E-01 | -0.322 |
| | | 1004.76 | | -1.683E-01 | 2.096E-01 | 3.141E-01 | 3.833E-02 | -0.536 |
| | | 1274.45 | * | -7.521E-02 | 1.250E-01 | 1.870E-01 | 2.056E-02 | -0.402 |
| EU-155 | | 48.70 | | 1.685E-01 | 1.768E+00 | 2.637E+00 | 2.133E-01 | 0.064 |
| | | 60.01 | | 2.531E-01 | 3.952E+00 | 5.818E+00 | 4.151E-01 | 0.044 |
| | + | 86.54 | | 2.631E-01 | 1.269E-01 | 1.680E-01 | 1.577E-02 | 1.566 |
| | | 105.31 | * | 4.736E-02 | 9.582E-02 | 1.602E-01 | 1.397E-02 | 0.296 |
| TB-160 | + | 86.79 | | 7.359E-01 | 3.547E-01 | 4.793E-01 | 4.476E-02 | 1.535 |
| | | 197.04 | | -5.679E-01 | 5.764E-01 | 8.697E-01 | 9.692E-02 | -0.653 |
| | | 215.65 | | 2.637E-01 | 7.407E-01 | 1.241E+00 | 1.498E-01 | 0.213 |
| | | 298.57 | | 3.810E-02 | 1.646E-01 | 1.910E-01 | 2.857E-02 | 0.199 |
| | | 879.36 | * | -2.092E-02 | 1.444E-01 | 2.388E-01 | 2.353E-02 | -0.088 |
| | | 962.29 | | -6.728E-01 | 6.132E-01 | 7.899E-01 | 7.576E-02 | -0.852 |
| | | 966.15 | | 3.343E-01 | 2.617E-01 | 4.325E-01 | 4.140E-02 | 0.773 |
| | | 1177.93 | | -2.013E-01 | 3.647E-01 | 5.576E-01 | 4.485E-02 | -0.361 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| HO-166M | 1271.85 | | | -2.672E-02 | 7.789E-01 | 1.262E+00 | 1.034E-01 | -0.021 |
| | 80.57 | | | -9.782E-02 | 2.806E-01 | 3.434E-01 | 2.969E-02 | -0.285 |
| | 184.41 | | | 3.113E-02 | 3.905E-02 | 6.288E-02 | 6.630E-03 | 0.495 |
| | 280.46 | | | -5.452E-02 | 8.474E-02 | 1.280E-01 | 1.978E-02 | -0.426 |
| | 410.95 | | | -3.515E-02 | 2.282E-01 | 3.808E-01 | 4.086E-02 | -0.092 |
| | 711.68 | * | | 6.581E-02 | 6.376E-02 | 1.126E-01 | 1.084E-02 | 0.585 |
| TM-171 | 752.31 | | | 1.327E-02 | 2.723E-01 | 4.405E-01 | 4.288E-02 | 0.030 |
| | 810.29 | | | 1.054E-02 | 6.065E-02 | 9.886E-02 | 9.715E-03 | 0.107 |
| | 51.35 | | | -7.345E+00 | 2.242E+01 | 3.527E+01 | 2.727E+00 | -0.208 |
| | 52.39 | | | 6.098E+00 | 1.138E+01 | 1.859E+01 | 1.416E+00 | 0.328 |
| | 59.40 | | | -1.736E+01 | 2.252E+01 | 3.134E+01 | 2.230E+00 | -0.554 |
| | 66.72 | * | | 7.547E+00 | 2.244E+01 | 3.608E+01 | 2.708E+00 | 0.209 |
| LU-176 | 88.36 | | | 6.620E-01 | 2.149E-01 | 3.168E-01 | 2.995E-02 | 2.090 |
| | 201.83 | | | -1.313E-02 | 2.649E-02 | 4.244E-02 | 4.830E-03 | -0.309 |
| | 306.84 | * | | 1.166E-02 | 2.350E-02 | 3.902E-02 | 5.737E-03 | 0.299 |
| | 401.10 | | | -1.372E+00 | 6.707E+00 | 1.118E+01 | 1.196E+00 | -0.123 |
| LU-177 | 112.95 | | | -3.956E-01 | 2.461E+00 | 4.058E+00 | 3.446E-01 | -0.097 |
| | 208.36 | * | | 5.961E+00 | 3.189E+00 | 3.376E+00 | 3.951E-01 | 1.766 |
| LU-177M | 52.97 | | | 4.120E-01 | 1.221E+00 | 1.974E+00 | 1.491E-01 | 0.209 |
| | 54.07 | | | -4.918E-01 | 6.506E-01 | 9.865E-01 | 7.351E-02 | -0.499 |
| | 61.30 | | | 1.051E+00 | 1.194E+00 | 1.843E+00 | 1.327E-01 | 0.570 |
| | 121.62 | | | 1.224E-01 | 3.274E-01 | 5.659E-01 | 4.781E-02 | 0.216 |
| | 147.16 | | | 1.533E-01 | 5.805E-01 | 9.885E-01 | 8.964E-02 | 0.155 |
| | 171.86 | | | 1.892E-02 | 4.288E-01 | 7.163E-01 | 7.145E-02 | 0.026 |
| | 218.09 | | | 8.223E-02 | 8.246E-01 | 1.362E+00 | 1.661E-01 | 0.060 |
| | 268.79 | | | 1.236E+00 | 1.002E+00 | 1.547E+00 | 2.306E-01 | 0.799 |
| | 319.02 | | | -2.075E-01 | 2.654E-01 | 3.958E-01 | 5.648E-02 | -0.524 |
| | 367.43 | | | 5.285E-02 | 9.323E-01 | 1.482E+00 | 1.788E-01 | 0.036 |
| HF-181 | 413.65 | * | | -9.238E-02 | 1.651E-01 | 2.660E-01 | 2.856E-02 | -0.347 |
| | 56.28 | | | 6.850E-01 | 7.519E-01 | 1.256E+00 | 9.143E-02 | 0.545 |
| | 57.53 | | | 4.397E-01 | 4.223E-01 | 7.074E-01 | 5.095E-02 | 0.622 |
| | 65.20 | | | -2.400E-02 | 8.831E-01 | 1.287E+00 | 9.538E-02 | -0.019 |
| | 133.02 | | | -1.443E-02 | 6.382E-02 | 1.040E-01 | 9.018E-03 | -0.139 |
| | 136.25 | | | 6.272E-01 | 4.638E-01 | 8.243E-01 | 7.214E-02 | 0.761 |
| | 345.85 | | | -7.633E-02 | 2.162E-01 | 3.156E-01 | 4.148E-02 | -0.242 |
| | 482.03 | * | | 5.572E-03 | 4.675E-02 | 7.869E-02 | 8.475E-03 | 0.071 |
| W-181 | 56.28 | | | 2.549E-01 | 2.792E-01 | 4.664E-01 | 3.395E-02 | 0.547 |
| | 57.53 | | | 1.635E-01 | 1.569E-01 | 2.628E-01 | 1.893E-02 | 0.622 |
| | 65.20 | * | | -8.846E-03 | 3.255E-01 | 4.742E-01 | 3.515E-02 | -0.019 |
| TA-182 | 67.75 | | | -2.468E-02 | 9.209E-02 | 1.437E-01 | 1.088E-02 | -0.172 |
| | 100.10 | | | 4.912E-02 | 1.538E-01 | 2.673E-01 | 2.346E-02 | 0.184 |
| | 152.43 | | | 5.351E-02 | 3.321E-01 | 5.507E-01 | 5.089E-02 | 0.097 |
| | 222.10 | | | 4.274E-01 | 3.270E-01 | 5.703E-01 | 7.073E-02 | 0.749 |
| | 1001.68 | | | 8.875E-01 | 1.969E+00 | 3.429E+00 | 3.218E-01 | 0.259 |
| | 1121.28 | * | | 4.695E-01 | 3.102E-01 | 3.831E-01 | 3.265E-02 | 1.226 |
| RE-183 | 1189.05 | | | -4.942E-02 | 2.964E-01 | 4.754E-01 | 3.834E-02 | -0.104 |
| | 1221.42 | * | | -1.651E-01 | 2.075E-01 | 3.086E-01 | 2.507E-02 | -0.535 |
| | 1230.97 | | | 1.845E-01 | 5.563E-01 | 8.232E-01 | 6.700E-02 | 0.224 |
| | 57.98 | | | -1.092E-02 | 1.631E-01 | 2.589E-01 | 1.858E-02 | -0.042 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| RE-184 | + | 59.32 | | -7.335E-02 | 9.688E-02 | 1.350E-01 | 9.605E-03 | -0.544 |
| | | 67.20 | | -3.654E-02 | 1.692E-01 | 2.647E-01 | 1.995E-02 | -0.138 |
| | | 162.32 | * | -1.440E-02 | 1.086E-01 | 1.745E-01 | 1.672E-02 | -0.083 |
| | | 208.81 | | 3.361E+00 | 1.798E+00 | 1.972E+00 | 2.312E-01 | 1.704 |
| | | 291.72 | | -5.542E-01 | 1.107E+00 | 1.509E+00 | 2.288E-01 | -0.367 |
| | | 57.98 | | -3.911E-02 | 5.837E-01 | 9.268E-01 | 6.653E-02 | -0.042 |
| | | 59.32 | | -2.624E-01 | 3.465E-01 | 4.827E-01 | 3.435E-02 | -0.544 |
| | | 67.20 | | -1.307E-01 | 6.054E-01 | 9.474E-01 | 7.138E-02 | -0.138 |
| | | 161.27 | | -2.274E-01 | 3.291E-01 | 5.300E-01 | 5.060E-02 | -0.429 |
| | | 216.55 | | 2.649E-01 | 2.597E-01 | 4.474E-01 | 5.421E-02 | 0.592 |
| | | 252.85 | * | -1.607E-01 | 2.303E-01 | 3.552E-01 | 4.984E-02 | -0.452 |
| | | 318.01 | | -2.273E-01 | 4.694E-01 | 7.217E-01 | 1.033E-01 | -0.315 |
| | | 792.07 | | -1.581E+00 | 1.093E+00 | 1.453E+00 | 1.424E-01 | -1.088 |
| | | 903.28 | | -5.977E-02 | 1.001E+00 | 1.623E+00 | 1.595E-01 | -0.037 |
| OS-185 | + | 920.93 | | 9.116E-02 | 4.154E-01 | 7.123E-01 | 6.956E-02 | 0.128 |
| | | 59.72 | | -1.488E-01 | 2.524E-01 | 3.556E-01 | 2.532E-02 | -0.418 |
| | | 61.14 | | 1.091E-01 | 1.330E-01 | 2.048E-01 | 1.473E-02 | 0.533 |
| | | 69.30 | | -9.469E-02 | 2.493E-01 | 3.862E-01 | 2.964E-02 | -0.245 |
| | | 592.07 | | -1.622E+00 | 2.492E+00 | 3.815E+00 | 3.891E-01 | -0.425 |
| | | 646.12 | * | 5.177E-03 | 4.083E-02 | 6.745E-02 | 6.511E-03 | 0.077 |
| | | 717.42 | | -5.916E-01 | 9.388E-01 | 1.412E+00 | 1.362E-01 | -0.419 |
| | | 874.81 | | -1.045E-02 | 5.597E-01 | 9.385E-01 | 9.248E-02 | -0.011 |
| | | 880.27 | | 2.797E-01 | 7.705E-01 | 1.342E+00 | 1.322E-01 | 0.208 |
| | | 155.03 | * | 1.231E-01 | 1.735E-01 | 2.942E-01 | 2.744E-02 | 0.418 |
| RE-188 | + | 477.96 | | 1.018E+00 | 3.486E+00 | 5.885E+00 | 6.342E-01 | 0.173 |
| | | 633.10 | | -2.908E+00 | 2.921E+00 | 4.253E+00 | 4.168E-01 | -0.684 |
| | | 63.58 | | 7.157E+01 | 6.190E+01 | 7.649E+01 | 5.599E+00 | 0.936 |
| W-188 | + | 227.08 | | 4.922E-01 | 1.222E+01 | 2.006E+01 | 2.539E+00 | 0.025 |
| | | 290.67 | * | -2.835E+00 | 8.735E+00 | 1.214E+01 | 1.844E+00 | -0.234 |
| IR-192 | + | 295.96 | | 1.205E+00 | 2.813E-01 | 3.301E-01 | 4.976E-02 | 3.649 |
| | | 308.46 | | -2.504E-02 | 1.011E-01 | 1.591E-01 | 2.334E-02 | -0.157 |
| | | 316.51 | * | 8.997E-03 | 3.661E-02 | 5.962E-02 | 8.570E-03 | 0.151 |
| | | 468.07 | | 5.510E-03 | 7.819E-02 | 1.160E-01 | 1.309E-02 | 0.048 |
| | | 604.41 | | 4.087E-01 | 5.179E-01 | 8.018E-01 | 1.125E-01 | 0.510 |
| AU-195 | + | 612.46 | | 1.036E-01 | 9.052E-01 | 1.315E+00 | 1.465E-01 | 0.079 |
| | | 65.12 | | 1.809E-03 | 1.486E-01 | 2.171E-01 | 1.608E-02 | 0.008 |
| | | 66.83 | | 2.242E-02 | 7.511E-02 | 1.206E-01 | 9.057E-03 | 0.186 |
| | | 75.70 | | 1.279E+00 | 2.424E-01 | 3.939E-01 | 3.223E-02 | 3.246 |
| | | 98.88 | * | 5.353E-02 | 1.916E-01 | 3.327E-01 | 2.936E-02 | 0.161 |
| | | 129.76 | | 1.583E+00 | 2.569E+00 | 4.463E+00 | 3.836E-01 | 0.355 |
| TL-200 | + | 367.94 | * | -9.518E-03 | 2.569E+00 | Half-Life | too short | |
| | | 579.30 | | -3.580E-02 | 2.569E+00 | Half-Life | too short | |
| | | 828.27 | | 1.258E-02 | 2.569E+00 | Half-Life | too short | |
| | | 1205.75 | | 2.861E-03 | 2.569E+00 | Half-Life | too short | |
| TL-201 | + | 68.90 | | -8.823E+00 | 1.219E+01 | 1.855E+01 | 1.419E+00 | -0.476 |
| | | 70.82 | | 4.953E+00 | 7.339E+00 | 1.107E+01 | 8.620E-01 | 0.447 |
| | | 80.30 | | 8.153E+00 | 1.534E+01 | 2.018E+01 | 1.740E+00 | 0.404 |
| | | 135.34 | | -8.817E+00 | 7.409E+01 | 1.245E+02 | 1.087E+01 | -0.071 |
| | | 167.43 | * | 1.485E+00 | 1.862E+01 | 3.122E+01 | 3.054E+00 | 0.048 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TL-202 | | 68.90 | | -3.377E-01 | 4.667E-01 | 7.099E-01 | 5.429E-02 | -0.476 |
| | | 70.82 | | 1.891E-01 | 2.801E-01 | 4.226E-01 | 3.290E-02 | 0.447 |
| | | 80.30 | | 3.113E-01 | 5.858E-01 | 7.706E-01 | 6.643E-02 | 0.404 |
| | | 439.56 | * | 5.627E-02 | 9.157E-02 | 1.603E-01 | 1.729E-02 | 0.351 |
| HG-203 | | 70.83 | | 6.649E-01 | 9.876E-01 | 1.486E+00 | 1.946E-01 | 0.447 |
| | + | 72.87 | | 7.473E-01 | 4.815E-01 | 9.070E-01 | 1.158E-01 | 0.824 |
| | + | 82.60 | | 2.172E+00 | 1.381E+00 | 1.589E+00 | 2.208E-01 | 1.367 |
| | | 279.20 | * | -1.131E-02 | 4.482E-02 | 7.013E-02 | 1.095E-02 | -0.161 |
| BI-207 | + | 72.80 | | 2.034E-01 | 1.295E-01 | 2.458E-01 | 1.951E-02 | 0.828 |
| | + | 74.97 | | 6.961E-01 | 1.320E-01 | 2.060E-01 | 1.672E-02 | 3.380 |
| | + | 84.90 | | 3.509E-01 | 2.200E-01 | 2.767E-01 | 2.523E-02 | 1.268 |
| | | 569.67 | | -4.205E-04 | 2.823E-02 | 4.642E-02 | 4.817E-03 | -0.009 |
| | | 1063.62 | * | 1.340E-03 | 5.012E-02 | 8.309E-02 | 7.464E-03 | 0.016 |
| | | 1770.23 | | -4.150E-02 | 4.580E-01 | 6.283E-01 | 5.171E-02 | -0.066 |
| TL-207 | | 81.07 | | -7.238E-02 | 1.931E-01 | 2.715E-01 | 2.362E-02 | -0.267 |
| | + | 83.78 | | 2.313E-01 | 1.450E-01 | 1.936E-01 | 1.741E-02 | 1.195 |
| | | 94.90 | | 1.385E-01 | 2.106E-01 | 3.137E-01 | 2.825E-02 | 0.442 |
| | | 122.32 | | -1.799E-01 | 1.493E+00 | 2.521E+00 | 2.294E-01 | -0.071 |
| | | 144.24 | | 6.177E-01 | 6.307E-01 | 1.086E+00 | 1.082E-01 | 0.569 |
| | | 154.21 | | 1.058E-01 | 3.878E-01 | 6.462E-01 | 6.527E-02 | 0.164 |
| | + | 269.46 | | 5.659E-01 | 2.789E-01 | 3.826E-01 | 5.756E-02 | 1.479 |
| | | 323.87 | * | 3.355E-02 | 7.411E-01 | 1.058E+00 | 2.213E-01 | 0.032 |
| | + | 338.28 | | 6.993E+00 | 1.970E+00 | 2.680E+00 | 4.315E-01 | 2.609 |
| | | 445.03 | | -9.463E-01 | 2.122E+00 | 3.424E+00 | 4.697E-01 | -0.276 |
| PO-209 | | 260.50 | | -1.959E+00 | 9.080E+00 | 1.451E+01 | 2.096E+00 | -0.135 |
| | | 262.80 | | -5.155E+00 | 2.602E+01 | 4.161E+01 | 6.065E+00 | -0.124 |
| | | 896.60 | * | 2.052E+00 | 6.814E+00 | 1.180E+01 | 1.161E+00 | 0.174 |
| PB-211 | | 404.84 | * | 2.541E-01 | 9.751E-01 | 1.652E+00 | 1.041E+00 | 0.154 |
| | | 427.08 | | 6.428E-01 | 2.100E+00 | 3.546E+00 | 2.215E+00 | 0.181 |
| | | 831.96 | | -8.094E-01 | 1.481E+00 | 2.068E+00 | 1.300E+00 | -0.391 |
| BI-212 | + | 727.18 | * | 1.032E+00 | 4.717E-01 | 6.988E-01 | 7.637E-02 | 1.477 |
| | | 785.46 | | 2.785E+00 | 1.988E+00 | 3.567E+00 | 3.494E-01 | 0.781 |
| | | 1620.62 | | 5.648E-01 | 1.424E+00 | 2.509E+00 | 2.107E-01 | 0.225 |
| PO-215 | | 81.07 | | -7.238E-02 | 1.931E-01 | 2.715E-01 | 2.362E-02 | -0.267 |
| | + | 83.78 | | 2.313E-01 | 1.450E-01 | 1.936E-01 | 1.741E-02 | 1.195 |
| | | 94.90 | | 1.385E-01 | 2.106E-01 | 3.137E-01 | 2.825E-02 | 0.442 |
| | | 122.32 | | -1.799E-01 | 1.493E+00 | 2.521E+00 | 2.294E-01 | -0.071 |
| | | 144.24 | | 6.177E-01 | 6.307E-01 | 1.086E+00 | 1.082E-01 | 0.569 |
| | | 154.21 | | 1.058E-01 | 3.878E-01 | 6.462E-01 | 6.527E-02 | 0.164 |
| | + | 269.46 | | 5.659E-01 | 2.789E-01 | 3.826E-01 | 5.756E-02 | 1.479 |
| | | 323.87 | * | 3.355E-02 | 7.411E-01 | 1.058E+00 | 2.213E-01 | 0.032 |
| | + | 338.28 | | 6.993E+00 | 1.970E+00 | 2.680E+00 | 4.315E-01 | 2.609 |
| | | 445.03 | | -9.463E-01 | 2.122E+00 | 3.424E+00 | 4.697E-01 | -0.276 |
| RN-219 | + | 271.23 | | 7.260E-01 | 3.600E-01 | 4.694E-01 | 7.542E-02 | 1.547 |
| | | 401.81 | * | 4.107E-02 | 4.010E-01 | 6.824E-01 | 1.113E-01 | 0.060 |
| RN-220 | | 549.76 | * | -6.393E+00 | 2.445E+01 | 3.936E+01 | 4.136E+00 | -0.162 |
| RA-223 | | 81.07 | | -7.238E-02 | 1.931E-01 | 2.715E-01 | 2.362E-02 | -0.267 |
| | + | 83.78 | | 2.313E-01 | 1.450E-01 | 1.936E-01 | 1.741E-02 | 1.195 |
| | | 94.90 | | 1.385E-01 | 2.106E-01 | 3.137E-01 | 2.825E-02 | 0.442 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AC-227 | | 122.32 | | -1.799E-01 | 1.493E+00 | 2.521E+00 | 2.294E-01 | -0.071 |
| | | 144.24 | | 6.177E-01 | 6.307E-01 | 1.086E+00 | 1.082E-01 | 0.569 |
| | | 154.21 | | 1.058E-01 | 3.878E-01 | 6.462E-01 | 6.527E-02 | 0.164 |
| | + | 269.46 | | 5.659E-01 | 2.789E-01 | 3.826E-01 | 5.756E-02 | 1.479 |
| | | 323.87 | * | 3.355E-02 | 7.411E-01 | 1.058E+00 | 2.213E-01 | 0.032 |
| | + | 338.28 | | 6.993E+00 | 1.970E+00 | 2.680E+00 | 4.315E-01 | 2.609 |
| | | 445.03 | | -9.463E-01 | 2.122E+00 | 3.424E+00 | 4.697E-01 | -0.276 |
| | | 79.80 | | 2.895E-01 | 1.441E+00 | 2.103E+00 | 4.518E-01 | 0.138 |
| | | 236.00 | | 1.539E-01 | 2.366E-01 | 3.605E-01 | 5.676E-02 | 0.427 |
| | | 256.20 | * | 1.867E-01 | 3.605E-01 | 6.029E-01 | 1.149E-01 | 0.310 |
| | | 286.10 | | -4.851E-01 | 1.498E+00 | 2.355E+00 | 4.306E-01 | -0.206 |
| | + | 299.80 | | 3.061E+00 | 1.890E+00 | 2.591E+00 | 5.522E-01 | 1.181 |
| TH-227 | | 304.40 | | -1.189E-01 | 1.961E+00 | 2.783E+00 | 6.124E-01 | -0.043 |
| | | 334.20 | | -1.840E+00 | 2.893E+00 | 3.393E+00 | 7.504E-01 | -0.542 |
| | | 79.80 | | 2.895E-01 | 1.441E+00 | 2.103E+00 | 4.576E-01 | 0.138 |
| | + | 94.00 | | 9.596E+00 | 3.336E+00 | 3.294E+00 | 7.232E-01 | 2.913 |
| | | 236.00 | | 1.539E-01 | 2.364E-01 | 3.605E-01 | 5.355E-02 | 0.427 |
| | | 256.20 | * | 1.867E-01 | 3.610E-01 | 6.029E-01 | 1.284E-01 | 0.310 |
| | | 286.10 | | -4.851E-01 | 1.574E+00 | 2.355E+00 | 2.382E+00 | -0.206 |
| | + | 299.80 | | 3.061E+00 | 1.890E+00 | 2.591E+00 | 5.522E-01 | 1.181 |
| | | 304.40 | | -1.189E-01 | 1.961E+00 | 2.783E+00 | 6.124E-01 | -0.043 |
| | | 334.20 | | -1.840E+00 | 2.893E+00 | 3.393E+00 | 7.504E-01 | -0.542 |
| | + | 85.43 | | 4.890E-01 | 2.357E-01 | 2.604E-01 | 2.390E-02 | 1.878 |
| | + | 88.47 | | 2.299E-01 | 8.827E-02 | 1.803E-01 | 1.703E-02 | 1.275 |
| TH-229 | | 100.00 | | 2.314E-02 | 1.566E-01 | 2.703E-01 | 2.373E-02 | 0.086 |
| | | 193.63 | * | -7.774E-02 | 4.790E-01 | 7.855E-01 | 8.625E-02 | -0.099 |
| | | 210.97 | | 1.249E+00 | 7.847E-01 | 1.265E+00 | 1.497E-01 | 0.987 |
| | | 283.67 | * | 3.681E-01 | 1.447E+00 | 2.375E+00 | 4.705E-01 | 0.155 |
| | + | 301.29 | | 1.224E+00 | 7.403E-01 | 1.013E+00 | 1.746E-01 | 1.208 |
| | TH-231 | 81.07 | | -7.238E-02 | 1.931E-01 | 2.715E-01 | 2.362E-02 | -0.267 |
| | + | 83.78 | | 2.313E-01 | 1.450E-01 | 1.936E-01 | 1.741E-02 | 1.195 |
| | | 94.90 | | 1.385E-01 | 2.106E-01 | 3.137E-01 | 2.825E-02 | 0.442 |
| | | 122.32 | | -1.799E-01 | 1.493E+00 | 2.521E+00 | 2.294E-01 | -0.071 |
| | | 144.24 | | 6.177E-01 | 6.307E-01 | 1.086E+00 | 1.082E-01 | 0.569 |
| | | 154.21 | | 1.058E-01 | 3.878E-01 | 6.462E-01 | 6.527E-02 | 0.164 |
| | + | 269.46 | | 5.659E-01 | 2.789E-01 | 3.826E-01 | 5.756E-02 | 1.479 |
| U-231 | | 323.87 | * | 3.355E-02 | 7.411E-01 | 1.058E+00 | 2.213E-01 | 0.032 |
| | + | 338.28 | | 6.993E+00 | 1.970E+00 | 2.680E+00 | 4.315E-01 | 2.609 |
| | | 445.03 | | -9.463E-01 | 2.122E+00 | 3.424E+00 | 4.697E-01 | -0.276 |
| | + | 84.21 | | 2.272E+01 | 1.424E+01 | 1.885E+01 | 1.704E+00 | 1.205 |
| | + | 92.29 | | 2.161E+01 | 6.145E+00 | 8.938E+00 | 8.190E-01 | 2.418 |
| | | 95.87 | * | 2.450E-01 | 2.259E+00 | 3.247E+00 | 2.908E-01 | 0.075 |
| | | 108.00 | | -5.852E-01 | 3.882E+00 | 6.588E+00 | 5.641E-01 | -0.089 |
| | PA-233 | 75.28 | | 2.031E+01 | 4.633E+00 | 6.070E+00 | 9.157E-01 | 3.346 |
| | + | 86.59 | | 4.269E+00 | 2.326E+00 | 2.748E+00 | 7.434E-01 | 1.553 |
| | + | 300.12 | | 8.534E-01 | 5.210E-01 | 7.187E-01 | 1.381E-01 | 1.187 |
| | | 311.98 | * | 3.234E-02 | 6.739E-02 | 1.113E-01 | 1.633E-02 | 0.290 |
| | | 340.50 | | 4.715E-01 | 7.358E-01 | 1.065E+00 | 2.762E-01 | 0.443 |
| | | 398.62 | | 1.301E-01 | 2.051E+00 | 3.483E+00 | 9.532E-01 | 0.037 |

Sample ID : G245388011

Acquisition date : 4-FEB-2010 14:41:51

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| PA-234 | + | 415.76 | | -2.370E-01 | 1.562E+00 | 2.602E+00 | 5.851E-01 | -0.091 |
| | | 63.00 | | 1.975E+00 | 1.727E+00 | 2.175E+00 | 3.220E-01 | 0.908 |
| | | 94.67 | | 1.842E-01 | 1.555E-01 | 2.368E-01 | 3.003E-02 | 0.778 |
| | | 98.44 | | 1.753E-02 | 7.637E-02 | 1.313E-01 | 7.330E-02 | 0.133 |
| | | 99.86 | | 7.553E-02 | 3.972E-01 | 6.868E-01 | 6.034E-02 | 0.110 |
| | | 111.00 | | 7.434E-02 | 1.646E-01 | 2.784E-01 | 3.345E-02 | 0.267 |
| | | 131.20 | | -2.051E-01 | 9.791E-02 | 1.423E-01 | 1.228E-02 | -1.441 |
| | | 152.70 | | 1.382E-01 | 3.136E-01 | 5.254E-01 | 9.127E-02 | 0.263 |
| | | 186.00 | | 5.782E+00 | 2.822E+00 | 2.793E+00 | 8.889E-01 | 2.070 |
| | | 226.40 | | -1.559E-01 | 3.762E-01 | 5.994E-01 | 9.654E-02 | -0.260 |
| | | 227.20 | | 6.779E-03 | 3.935E-01 | 6.452E-01 | 8.173E-02 | 0.011 |
| | | 248.90 | | 1.419E-01 | 8.088E-01 | 1.330E+00 | 3.308E-01 | 0.107 |
| | | 293.70 | | 4.084E+00 | 1.239E+00 | 1.642E+00 | 3.495E-01 | 2.488 |
| | | 369.80 | | -2.652E-01 | 8.680E-01 | 1.333E+00 | 3.105E-01 | -0.199 |
| | | 568.70 | | 5.378E-02 | 8.981E-01 | 1.488E+00 | 1.545E-01 | 0.036 |
| | | 569.50 | | 2.896E-02 | 2.535E-01 | 4.220E-01 | 4.379E-02 | 0.069 |
| | | 574.00 | | -3.704E-01 | 1.431E+00 | 2.297E+00 | 2.376E-01 | -0.161 |
| | | 699.00 | | -2.586E-02 | 7.058E-01 | 1.139E+00 | 2.225E-01 | -0.023 |
| | | 706.10 | | -1.380E+00 | 1.265E+00 | 1.559E+00 | 6.982E-01 | -0.885 |
| | | 733.00 | | 2.090E-01 | 3.555E-01 | 5.469E-01 | 1.238E-01 | 0.382 |
| | | 742.81 | | 5.264E-01 | 1.458E+00 | 2.366E+00 | 1.594E+00 | 0.222 |
| | | 796.30 | | 7.573E-01 | 1.008E+00 | 1.697E+00 | 4.659E-01 | 0.446 |
| | | 805.60 | | 5.164E-02 | 1.103E+00 | 1.774E+00 | 5.500E-01 | 0.029 |
| | | 819.60 | | 1.317E-01 | 1.185E+00 | 1.917E+00 | 7.346E-01 | 0.069 |
| | | 826.30 | | -5.634E-02 | 9.021E-01 | 1.429E+00 | 6.432E-01 | -0.039 |
| | | 831.60 | | -3.259E-01 | 7.347E-01 | 1.101E+00 | 3.326E-01 | -0.296 |
| | | 876.40 | | -5.233E-01 | 9.536E-01 | 1.224E+00 | 1.260E+00 | -0.428 |
| | | 880.51 | | 1.198E-01 | 2.711E-01 | 4.755E-01 | 4.685E-02 | 0.252 |
| | | 883.24 | | 7.318E-02 | 2.976E-01 | 5.047E-01 | 3.401E-01 | 0.145 |
| | | 899.00 | | -2.255E-01 | 8.427E-01 | 1.324E+00 | 5.824E-01 | -0.170 |
| | | 925.00 | | -6.987E-01 | 1.139E+00 | 1.770E+00 | 1.726E-01 | -0.395 |
| | | 926.50 | | -1.935E-02 | 1.729E-01 | 2.855E-01 | 7.332E-02 | -0.068 |
| | | 946.00 | * | 6.464E-02 | 2.734E-01 | 4.683E-01 | 9.023E-02 | 0.138 |
| | | 949.00 | | 5.626E-02 | 4.203E-01 | 7.117E-01 | 6.870E-02 | 0.079 |
| | | 980.50 | | -1.570E-01 | 7.002E-01 | 1.135E+00 | 1.078E-01 | -0.138 |
| | | 1394.10 | | -1.798E-01 | 1.133E+00 | 1.765E+00 | 1.148E+00 | -0.102 |
| PA-234M | + | 766.42 | | 2.188E+00 | 1.279E+01 | 2.078E+01 | 1.059E+01 | 0.105 |
| | | 1001.03 | * | 3.538E-01 | 4.309E+00 | 7.225E+00 | 7.685E-01 | 0.049 |
| U-235 | + | 89.95 | | 2.307E+00 | 1.119E+00 | 1.693E+00 | 5.258E-01 | 1.363 |
| | | 93.35 | | 2.985E+00 | 1.164E+00 | 1.232E+00 | 3.472E-01 | 2.423 |
| | + | 105.00 | | 5.483E-01 | 9.635E-01 | 1.596E+00 | 4.763E-01 | 0.344 |
| | | 143.76 | * | 1.563E-01 | 1.949E-01 | 3.313E-01 | 5.857E-02 | 0.472 |
| | + | 163.35 | | -2.523E-02 | 4.486E-01 | 7.239E-01 | 1.415E-01 | -0.035 |
| | | 185.71 | | 2.141E-01 | 8.245E-02 | 1.031E-01 | 1.093E-02 | 2.078 |
| NP-236 | + | 205.31 | | -5.466E-02 | 5.487E-01 | 7.934E-01 | 1.632E-01 | -0.069 |
| | | 94.67 | | 1.411E-01 | 1.173E-01 | 1.798E-01 | 1.622E-02 | 0.785 |
| | | 98.44 | | 1.325E-02 | 5.727E-02 | 9.927E-02 | 8.776E-03 | 0.133 |
| | | 111.00 | | 5.623E-02 | 1.244E-01 | 2.106E-01 | 1.794E-02 | 0.267 |
| | | 160.31 | * | 2.053E-02 | 7.017E-02 | 1.191E-01 | 1.133E-02 | 0.172 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| NP-239 | | 99.55 | | 3.772E-02 | 1.331E-01 | 2.311E-01 | 2.033E-02 | 0.163 |
| | | 117.00 | * | -8.241E-02 | 1.606E-01 | 2.664E-01 | 2.254E-02 | -0.309 |
| | + | 209.75 | | 2.523E+00 | 1.350E+00 | 1.485E+00 | 1.748E-01 | 1.700 |
| | | 228.18 | | 4.275E-02 | 2.152E-01 | 3.563E-01 | 4.531E-02 | 0.120 |
| | | 277.60 | | 2.585E-01 | 1.793E-01 | 3.091E-01 | 4.758E-02 | 0.836 |
| | | 334.30 | | -1.034E+00 | 1.630E+00 | 1.925E+00 | 2.629E-01 | -0.537 |
| AM-241 | | 59.54 | * | -1.030E-01 | 1.302E-01 | 1.808E-01 | 1.421E-02 | -0.569 |
| CM-243 | | 99.55 | | 3.883E-02 | 1.370E-01 | 2.379E-01 | 2.092E-02 | 0.163 |
| | | 103.76 | * | -3.023E-02 | 8.139E-02 | 1.370E-01 | 1.186E-02 | -0.221 |
| | | 117.00 | | -8.481E-02 | 1.653E-01 | 2.742E-01 | 2.320E-02 | -0.309 |
| | + | 209.75 | | 2.488E+00 | 1.331E+00 | 1.464E+00 | 1.724E-01 | 1.700 |
| | | 228.18 | | 4.321E-02 | 2.175E-01 | 3.601E-01 | 4.580E-02 | 0.120 |
| | | 277.60 | | 2.607E-01 | 1.809E-01 | 3.117E-01 | 4.798E-02 | 0.836 |
| AM-246 | | 798.80 | | -2.304E-01 | 1.642E-01 | 2.221E-01 | 2.179E-02 | -1.038 |
| | | 1036.00 | | -1.576E-01 | 2.788E-01 | 4.288E-01 | 3.934E-02 | -0.368 |
| | | 1062.04 | | 3.409E-02 | 2.132E-01 | 3.590E-01 | 3.229E-02 | 0.095 |
| | | 1078.86 | * | -1.280E-01 | 1.332E-01 | 1.918E-01 | 1.701E-02 | -0.667 |
| | | 278.00 | | 8.581E-01 | 7.627E-01 | 1.284E+00 | 1.979E-01 | 0.668 |
| CM-247 | | 287.40 | | -2.244E-01 | 1.247E+00 | 1.984E+00 | 3.031E-01 | -0.113 |
| | | 402.60 | * | 5.408E-03 | 3.718E-02 | 6.342E-02 | 6.788E-03 | 0.085 |
| CF-249 | | 252.85 | | -5.907E-01 | 8.465E-01 | 1.306E+00 | 1.832E-01 | -0.452 |
| | | 333.44 | | -4.913E-03 | 2.264E-01 | 2.506E-01 | 3.432E-02 | -0.020 |
| | | 387.95 | * | 1.201E-02 | 3.805E-02 | 6.582E-02 | 7.167E-03 | 0.182 |
| CF-251 | | 176.60 | * | 1.562E-02 | 1.223E-01 | 2.048E-01 | 2.087E-02 | 0.076 |
| | | 227.00 | | 1.577E-02 | 3.488E-01 | 5.729E-01 | 7.251E-02 | 0.028 |
| | | 285.00 | | 5.839E-02 | 1.702E+00 | 2.751E+00 | 4.220E-01 | 0.021 |

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388011      *
* Acquisition date   : 4-FEB-2010 14:41:51 Detector SN#                   *
* Detector ID        : GAM11 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.46 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 15-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID        : G245388011 Analyst initials: MXR1                   *
* Batch Number     : 944964 Sample Quantity : 1.0471E+02 GRAM            *
* Recovery         : 1.00000 Carrier Weight : 0.00000                    *
*****
*
*                                     QC DATA                               *
*
* Standard Weight   : 0.00000                                             *
* CALIB. DATE/TIME : 18-NOV-2009 15:33:22 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.335E+01 | 2.573E+00 | 4.781E-01 | 0.000E+00 |
| CD-109 | 2.235E+00 | 1.056E+00 | 1.249E+00 | 0.000E+00 |
| SN-126 | 2.181E-01 | 1.030E-01 | 1.222E-01 | 0.000E+00 |
| BA-137M | 1.388E-01 | 7.249E-02 | 5.608E-02 | 0.000E+00 |
| CS-137 | 1.468E-01 | 7.664E-02 | 5.928E-02 | 0.000E+00 |
| TL-208 | 4.364E-01 | 9.788E-02 | 5.748E-02 | 0.000E+00 |
| BI-210 | 2.910E+00 | 3.812E+00 | 3.781E+00 | 0.000E+00 |
| PB-210 | 2.910E+00 | 3.812E+00 | 3.781E+00 | 0.000E+00 |
| PO-210 | 2.910E+00 | 3.811E+00 | 3.781E+00 | 0.000E+00 |
| BI-211 | 3.993E+00 | 7.093E-01 | 2.996E-01 | 0.000E+00 |
| PB-212 | 1.736E+00 | 2.665E-01 | 8.682E-02 | 0.000E+00 |
| PO-212 | 1.736E+00 | 2.665E-01 | 8.682E-02 | 0.000E+00 |
| BI-214 | 1.173E+00 | 2.036E-01 | 1.194E-01 | 0.000E+00 |
| PB-214 | 1.389E+00 | 2.567E-01 | 1.044E-01 | 0.000E+00 |
| PO-214 | 1.389E+00 | 2.567E-01 | 1.044E-01 | 0.000E+00 |
| PO-216 | 1.736E+00 | 2.665E-01 | 8.682E-02 | 0.000E+00 |
| PO-218 | 1.389E+00 | 2.567E-01 | 1.044E-01 | 0.000E+00 |
| RA-224 | 5.732E+00 | 1.677E+00 | 9.883E-01 | 0.000E+00 |
| RA-226 | 1.173E+00 | 2.036E-01 | 1.194E-01 | 0.000E+00 |
| AC-228 | 1.670E+00 | 3.579E-01 | 1.723E-01 | 0.000E+00 |
| RA-228 | 1.670E+00 | 3.579E-01 | 1.723E-01 | 0.000E+00 |
| TH-228 | 1.771E+00 | 2.719E-01 | 8.858E-02 | 0.000E+00 |
| TH-230 | 1.173E+00 | 2.036E-01 | 1.194E-01 | 0.000E+00 |
| TH-232 | 1.670E+00 | 3.579E-01 | 1.723E-01 | 0.000E+00 |
| TH-234 | 1.694E+00 | 1.459E+00 | 1.689E+00 | 0.000E+00 |
| U-234 | 1.173E+00 | 2.036E-01 | 1.194E-01 | 0.000E+00 |
| NP-237 | 6.403E-01 | 3.290E-01 | 2.970E-01 | 0.000E+00 |
| U-238 | 1.694E+00 | 1.459E+00 | 1.689E+00 | 0.000E+00 |
| AM-243 | 3.877E-01 | 7.202E-02 | 7.315E-02 | 0.000E+00 |
| ANH-511 | 1.289E-01 | 6.512E-02 | 4.967E-02 | 0.000E+00 |

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

Key-Line

| Nuclide | Activity (pCi/GRAM | K.L. Act error) Ided | MDA (pCi/GRAM |) | |
|---------|-----------------------|--------------------------|------------------|-----------|------------|
| BE-7 | 1.005E-01 | 3.632E-01 | 6.237E-01 | 0.000E+00 | NOT IDENT. |
| NA-22 | -2.747E-02 | 4.386E-02 | 6.647E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 1.873E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | 1.559E-03 | 2.848E-02 | 4.809E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 5.745E-02 | 6.323E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | -3.388E-02 | 3.765E-02 | 5.743E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | 7.415E-03 | 8.016E-02 | 1.368E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | -1.421E-01 | 4.186E-01 | 6.650E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | -8.254E-02 | 4.399E-01 | 6.938E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | 1.310E-02 | 3.863E-02 | 6.802E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | 1.149E-02 | 3.702E-02 | 6.531E-02 | 0.000E+00 | FAIL ABUN |
| CO-57 | 2.660E-03 | 2.140E-02 | 3.748E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | 1.258E-02 | 3.993E-02 | 6.716E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | 7.763E-02 | 9.367E-02 | 1.702E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | -2.744E-02 | 4.331E-02 | 6.571E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | -4.871E-02 | 1.101E-01 | 1.470E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | -3.907E-01 | 1.140E+00 | 1.828E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | -2.461E-01 | 6.281E-01 | 1.004E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | -2.221E-02 | 1.127E-01 | 1.849E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | 4.926E-03 | 4.659E-02 | 7.401E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 0.000E+00 | 4.422E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SR-82 | -2.318E-01 | 4.184E-01 | 6.378E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | 5.666E-02 | 6.902E-02 | 1.240E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | 2.191E-02 | 7.642E-02 | 1.339E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 0.000E+00 | 7.420E+00 | 1.304E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 0.000E+00 | 4.010E-02 | 7.044E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 2.604E-01 | 8.228E-01 | 1.431E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | -2.321E-02 | 3.085E-02 | 4.077E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -1.921E-02 | 2.932E-02 | 4.809E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | 7.972E+00 | 2.201E+01 | 3.770E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | 4.621E-02 | 3.196E-02 | 5.930E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | -2.452E-02 | 5.021E-02 | 7.830E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 1.916E-02 | 1.368E-01 | 2.062E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | -1.009E-02 | 6.445E-02 | 1.033E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 1.281E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 2.454E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 2.130E+01 | 4.041E+01 | 6.957E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 3.555E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -3.516E-02 | 3.204E-02 | 4.914E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -1.636E-02 | 2.964E-02 | 4.821E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | 1.720E-02 | 3.844E-02 | 6.760E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | 1.205E-01 | 3.253E-01 | 5.583E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | 1.205E-01 | 3.251E-01 | 5.583E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -1.884E-03 | 3.140E-02 | 5.354E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | 1.242E-02 | 3.412E-02 | 5.212E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | -2.013E-01 | 3.643E+00 | 5.390E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -6.319E-04 | 4.090E-02 | 7.052E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | -6.319E-04 | 4.090E-02 | 7.052E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 1.400E-02 | 1.904E-01 | 2.906E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 0.000E+00 | 4.769E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SN-117M | -3.853E-02 | 6.108E-02 | 1.012E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | 2.290E-01 | 7.241E+00 | 1.218E+01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 2.734E+09 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 3.807E-03 | 2.480E-02 | 4.284E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -2.126E-01 | 1.667E+00 | 2.539E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | -1.677E-02 | 7.489E-02 | 1.197E-01 | 0.000E+00 | NOT IDENT. |
| SB-125 | -4.547E-02 | 9.173E-02 | 1.515E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | -6.078E+00 | 8.060E+00 | 1.360E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 9.927E-02 | 2.578E-01 | 3.919E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | 2.150E-01 | 1.935E-01 | 3.489E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | 2.800E-01 | 2.871E+00 | 4.788E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 8.602E-03 | 4.623E-02 | 7.878E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 4.178E-03 | 1.787E-01 | 2.891E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | 6.104E-01 | 1.856E+00 | 3.160E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | 1.516E-02 | 4.500E-02 | 6.701E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 2.967E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 7.887E-02 | 4.779E-02 | 8.912E-02 | 0.000E+00 | NOT IDENT. |
| CS-135 | 2.513E-02 | 1.848E-01 | 2.736E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 1.615E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -2.442E-03 | 1.305E-01 | 2.187E-01 | 0.000E+00 | FAIL ABUN |
| CE-139 | -5.704E-03 | 2.691E-02 | 4.551E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -1.034E-01 | 3.122E-01 | 5.065E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -8.207E-02 | 1.240E-01 | 1.822E-01 | 0.000E+00 | FAIL ABUN |
| CE-141 | -2.919E-02 | 6.158E-02 | 1.037E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 2.198E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| CE-144 | 1.829E-03 | 1.804E-01 | 3.126E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | 9.561E-04 | 3.403E-02 | 5.620E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | 6.496E-02 | 2.312E+00 | 3.818E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 3.509E-02 | 4.083E-02 | 7.383E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | 6.802E-02 | 6.859E-01 | 1.167E+00 | 0.000E+00 | FAIL ABUN |
| PM-149 | 0.000E+00 | 4.185E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| EU-152 | -5.260E-03 | 9.383E-02 | 1.515E-01 | 0.000E+00 | NOT IDENT. |
| GD-153 | -3.931E-02 | 7.822E-02 | 1.102E-01 | 0.000E+00 | FAIL ABUN |
| EU-154 | -7.521E-02 | 1.225E-01 | 1.858E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 4.736E-02 | 9.390E-02 | 1.610E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | -2.092E-02 | 1.415E-01 | 2.376E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | 6.581E-02 | 6.248E-02 | 1.122E-01 | 0.000E+00 | NOT IDENT. |
| TM-171 | 7.547E+00 | 2.199E+01 | 3.636E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | 1.166E-02 | 2.303E-02 | 3.904E-02 | 0.000E+00 | NOT IDENT. |
| LU-177 | 0.000E+00 | 3.125E+00 | 3.384E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -9.238E-02 | 1.618E-01 | 2.657E-01 | 0.000E+00 | NOT IDENT. |
| HF-181 | 5.572E-03 | 4.581E-02 | 7.855E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | -8.846E-03 | 3.190E-01 | 4.779E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | -1.651E-01 | 2.033E-01 | 3.066E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | -1.440E-02 | 1.064E-01 | 1.751E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | -1.607E-01 | 2.257E-01 | 3.557E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | 5.177E-03 | 4.001E-02 | 6.723E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 1.231E-01 | 1.701E-01 | 2.952E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | -2.835E+00 | 8.560E+00 | 1.215E+01 | 0.000E+00 | FAIL ABUN |
| IR-192 | 8.997E-03 | 3.588E-02 | 5.963E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 5.353E-02 | 1.878E-01 | 3.346E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 1.128E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | 1.485E+00 | 1.825E+01 | 3.132E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 5.627E-02 | 8.974E-02 | 1.601E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | -1.131E-02 | 4.392E-02 | 7.018E-02 | 0.000E+00 | FAIL ABUN |
| BI-207 | 1.340E-03 | 4.912E-02 | 8.262E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | 3.355E-02 | 7.262E-01 | 1.058E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | 2.052E+00 | 6.678E+00 | 1.174E+01 | 0.000E+00 | NOT IDENT. |
| PB-211 | 2.541E-01 | 9.556E-01 | 1.651E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 4.622E-01 | 6.961E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | 3.355E-02 | 7.262E-01 | 1.058E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | 4.107E-02 | 3.930E-01 | 6.817E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | -6.393E+00 | 2.397E+01 | 3.927E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | 3.355E-02 | 7.262E-01 | 1.058E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | 1.867E-01 | 3.533E-01 | 6.036E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | 1.867E-01 | 3.537E-01 | 6.036E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | -7.774E-02 | 4.694E-01 | 7.875E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | 3.681E-01 | 1.418E+00 | 2.376E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | 3.355E-02 | 7.262E-01 | 1.058E+00 | 0.000E+00 | FAIL ABUN |
| U-231 | 2.450E-01 | 2.214E+00 | 3.266E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 3.234E-02 | 6.605E-02 | 1.114E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | 6.464E-02 | 2.680E-01 | 4.659E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 3.538E-01 | 4.223E+00 | 7.186E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | 1.563E-01 | 1.910E-01 | 3.326E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | 2.053E-02 | 6.876E-02 | 1.195E-01 | 0.000E+00 | NOT IDENT. |
| NP-239 | -8.241E-02 | 1.574E-01 | 2.678E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | -1.030E-01 | 1.276E-01 | 1.823E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | -3.023E-02 | 7.976E-02 | 1.378E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | -1.280E-01 | 1.305E-01 | 1.907E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 5.408E-03 | 3.643E-02 | 6.336E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | 1.201E-02 | 3.729E-02 | 6.576E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | 1.562E-02 | 1.199E-01 | 2.054E-01 | 0.000E+00 | NOT IDENT. |

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388011.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 14:41:51.
Sample ID          : G245388011           Sample quantity  : 1.04710E+02 GRAM
Detector name      : GAM11                 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00         Elapsed real time: 0 02:00:01.46 0.0%
Energy tolerance   : 1.50000 keV           Analyst Initials : MXR1
Abundance limit    : 75.00000              Sensitivity       : 5.00000
Batch ID           : 944964                Detector SN#      :
Matrix Spike ID    :                       LCS ID         : 1032-A
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Nuclide Line Activity Report

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| K-40 | 1460.81 | 851 | 10.67* | 1.225E+00 | 2.335E+01 | 2.335E+01 | 11.24 |
| CD-109 | 88.03 | 152 | 3.72* | 6.764E+00 | 2.169E+00 | 2.235E+00 | 48.20 |
| SN-126 | 64.28 | 76 | 9.60 | 4.223E+00 | 6.705E-01 | 6.705E-01 | 87.39 |
| | 86.94 | 152 | 8.90 | 6.764E+00 | 9.065E-01 | 9.065E-01 | 62.92 |
| | 87.57 | 152 | 37.00* | 6.764E+00 | 2.181E-01 | 2.181E-01 | 48.20 |
| BA-137M | 661.65 | 84 | 89.98* | 2.402E+00 | 1.387E-01 | 1.388E-01 | 53.28 |
| CS-137 | 661.65 | 84 | 85.12* | 2.402E+00 | 1.466E-01 | 1.468E-01 | 53.29 |
| TL-208 | 277.35 | ----- | 6.80 | 4.676E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 106 | 21.60 | 2.954E+00 | 5.968E-01 | 5.968E-01 | 52.22 |
| | 583.14 | 273 | 84.20* | 2.660E+00 | 4.364E-01 | 4.364E-01 | 22.89 |
| | 860.37 | ----- | 12.46 | 1.927E+00 | ----- | Line Not Found | ----- |
| BI-210 | 46.50 | 49 | 4.05* | 1.506E+00 | 2.905E+00 | 2.910E+00 | 133.69 |
| PB-210 | 46.50 | 49 | 4.05* | 1.506E+00 | 2.905E+00 | 2.910E+00 | 133.69 |
| PO-210 | 46.50 | 49 | 4.05* | 1.506E+00 | 2.905E+00 | 2.910E+00 | 133.63 |
| BI-211 | 72.87 | 69 | 1.27 | 5.615E+00 | 3.488E+00 | 3.488E+00 | 63.65 |
| | 351.07 | 565 | 12.94* | 3.921E+00 | 3.993E+00 | 3.993E+00 | 18.12 |
| PB-212 | 74.81 | 414 | 10.70 | 5.799E+00 | 2.391E+00 | 2.391E+00 | 21.14 |
| | 77.11 | 684 | 18.00 | 6.021E+00 | 2.262E+00 | 2.262E+00 | 14.04 |
| | 87.30 | 152 | 8.00 | 6.764E+00 | 1.009E+00 | 1.009E+00 | 49.23 |
| | 238.63 | 1125 | 44.60* | 5.209E+00 | 1.736E+00 | 1.736E+00 | 15.67 |
| | 300.09 | 69 | 3.41 | 4.410E+00 | 1.652E+00 | 1.652E+00 | 60.12 |
| PO-212 | 74.81 | 414 | 10.70 | 5.799E+00 | 2.391E+00 | 2.391E+00 | 21.14 |
| | 77.11 | 684 | 18.00 | 6.021E+00 | 2.262E+00 | 2.262E+00 | 14.04 |
| | 87.30 | 152 | 8.00 | 6.764E+00 | 1.009E+00 | 1.009E+00 | 49.23 |
| | 115.19 | ----- | 0.60 | 7.407E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1125 | 44.60* | 5.209E+00 | 1.736E+00 | 1.736E+00 | 15.67 |
| | 300.09 | 69 | 3.41 | 4.410E+00 | 1.652E+00 | 1.652E+00 | 60.12 |
| BI-214 | 609.31 | 389 | 46.30* | 2.569E+00 | 1.173E+00 | 1.173E+00 | 17.71 |
| | 1120.29 | 62 | 15.10 | 1.530E+00 | 9.636E-01 | 9.636E-01 | 66.39 |
| | 1764.49 | 73 | 15.80 | 1.071E+00 | 1.549E+00 | 1.549E+00 | 28.90 |
| PB-214 | 74.81 | 414 | 6.21 | 5.799E+00 | 4.120E+00 | 4.120E+00 | 20.35 |
| | 77.11 | 684 | 10.50 | 6.021E+00 | 3.878E+00 | 3.878E+00 | 15.97 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 87.30 | 152 | 4.67 | 6.764E+00 | 1.728E+00 | 1.728E+00 | 48.81 |
| | 241.98 | 326 | 7.49 | 5.163E+00 | 3.023E+00 | 3.023E+00 | 30.37 |
| | 295.21 | 361 | 19.20 | 4.466E+00 | 1.508E+00 | 1.508E+00 | 24.15 |
| | 351.92 | 565 | 37.20* | 3.921E+00 | 1.389E+00 | 1.389E+00 | 18.86 |
| | 74.81 | 414 | 6.21 | 5.799E+00 | 4.120E+00 | 4.120E+00 | 20.35 |
| | 77.11 | 684 | 10.50 | 6.021E+00 | 3.878E+00 | 3.878E+00 | 15.97 |
| | 87.30 | 152 | 4.67 | 6.764E+00 | 1.728E+00 | 1.728E+00 | 48.81 |
| | 241.98 | 326 | 7.49 | 5.163E+00 | 3.023E+00 | 3.023E+00 | 30.37 |
| PO-216 | 295.21 | 361 | 19.20 | 4.466E+00 | 1.508E+00 | 1.508E+00 | 24.15 |
| | 351.92 | 565 | 37.20* | 3.921E+00 | 1.389E+00 | 1.389E+00 | 18.86 |
| | 74.81 | 414 | 10.70 | 5.799E+00 | 2.391E+00 | 2.391E+00 | 21.14 |
| | 77.11 | 684 | 18.00 | 6.021E+00 | 2.262E+00 | 2.262E+00 | 14.04 |
| | 87.30 | 152 | 8.00 | 6.764E+00 | 1.009E+00 | 1.009E+00 | 49.23 |
| | 238.63 | 1125 | 44.60* | 5.209E+00 | 1.736E+00 | 1.736E+00 | 15.67 |
| | 300.09 | 69 | 3.41 | 4.410E+00 | 1.652E+00 | 1.652E+00 | 60.12 |
| | 74.81 | 414 | 6.21 | 5.799E+00 | 4.120E+00 | 4.120E+00 | 20.35 |
| PO-218 | 77.11 | 684 | 10.50 | 6.021E+00 | 3.878E+00 | 3.878E+00 | 15.97 |
| | 87.30 | 152 | 4.67 | 6.764E+00 | 1.728E+00 | 1.728E+00 | 48.81 |
| | 241.98 | 326 | 7.49 | 5.163E+00 | 3.023E+00 | 3.023E+00 | 30.37 |
| | 295.21 | 361 | 19.20 | 4.466E+00 | 1.508E+00 | 1.508E+00 | 24.15 |
| | 351.92 | 565 | 37.20* | 3.921E+00 | 1.389E+00 | 1.389E+00 | 18.86 |
| | 240.98 | 326 | 3.95* | 5.163E+00 | 5.732E+00 | 5.732E+00 | 29.85 |
| | 609.31 | 389 | 46.30* | 2.569E+00 | 1.173E+00 | 1.173E+00 | 17.71 |
| | 1120.29 | 62 | 15.10 | 1.530E+00 | 9.636E-01 | 9.636E-01 | 66.39 |
| AC-228 | 1764.49 | 73 | 15.80 | 1.071E+00 | 1.549E+00 | 1.549E+00 | 28.90 |
| | 338.32 | 215 | 11.40 | 4.038E+00 | 1.675E+00 | 1.675E+00 | 48.42 |
| | 911.07 | 237 | 27.70* | 1.833E+00 | 1.670E+00 | 1.670E+00 | 21.87 |
| | 969.11 | 112 | 16.60 | 1.737E+00 | 1.398E+00 | 1.398E+00 | 46.15 |
| | 338.32 | 215 | 11.40 | 4.038E+00 | 1.675E+00 | 1.675E+00 | 48.42 |
| | 911.07 | 237 | 27.70* | 1.833E+00 | 1.670E+00 | 1.670E+00 | 21.87 |
| | 969.11 | 112 | 16.60 | 1.737E+00 | 1.398E+00 | 1.398E+00 | 46.15 |
| | 338.32 | 215 | 11.40 | 4.038E+00 | 1.675E+00 | 1.675E+00 | 48.42 |
| TH-228 | 911.07 | 237 | 27.70* | 1.833E+00 | 1.670E+00 | 1.670E+00 | 21.87 |
| | 969.11 | 112 | 16.60 | 1.737E+00 | 1.398E+00 | 1.398E+00 | 46.15 |
| | 74.81 | 414 | 10.70 | 5.799E+00 | 2.391E+00 | 2.440E+00 | 18.99 |
| | 77.11 | 684 | 18.00 | 6.021E+00 | 2.262E+00 | 2.308E+00 | 14.04 |
| | 87.30 | 152 | 8.00 | 6.764E+00 | 1.009E+00 | 1.029E+00 | 48.20 |
| | 238.63 | 1125 | 44.60* | 5.209E+00 | 1.736E+00 | 1.771E+00 | 15.67 |
| | 300.09 | 69 | 3.41 | 4.410E+00 | 1.652E+00 | 1.685E+00 | 83.78 |
| | 609.31 | 389 | 46.30* | 2.569E+00 | 1.173E+00 | 1.173E+00 | 17.71 |
| TH-230 | 1120.29 | 62 | 15.10 | 1.530E+00 | 9.636E-01 | 9.636E-01 | 66.39 |
| | 1764.49 | 73 | 15.80 | 1.071E+00 | 1.549E+00 | 1.549E+00 | 28.90 |
| | 338.32 | 215 | 11.40 | 4.038E+00 | 1.675E+00 | 1.675E+00 | 26.76 |
| | 911.07 | 237 | 27.70* | 1.833E+00 | 1.670E+00 | 1.670E+00 | 21.87 |
| | 969.11 | 112 | 16.60 | 1.737E+00 | 1.398E+00 | 1.398E+00 | 46.15 |
| | 63.29 | 76 | 3.80* | 4.223E+00 | 1.694E+00 | 1.694E+00 | 87.92 |
| | 92.38 | 265 | 5.41 | 7.059E+00 | 2.483E+00 | 2.483E+00 | 32.58 |
| | 609.31 | 389 | 46.30* | 2.569E+00 | 1.173E+00 | 1.173E+00 | 17.71 |
| U-234 | 1120.29 | 62 | 15.10 | 1.530E+00 | 9.636E-01 | 9.636E-01 | 66.39 |
| | 1764.49 | 73 | 15.80 | 1.071E+00 | 1.549E+00 | 1.549E+00 | 28.90 |
| | 86.50 | 152 | 12.60* | 6.764E+00 | 6.403E-01 | 6.403E-01 | 52.43 |
| | 95.87 | ----- | 2.60 | 7.169E+00 | ----- | Line Not Found | ----- |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| U-238 | 63.29 | 76 | 3.80* | 4.223E+00 | 1.694E+00 | 1.694E+00 | 87.92 |
| | 92.38 | 265 | 5.41 | 7.059E+00 | 2.483E+00 | 2.483E+00 | 28.43 |
| AM-243 | 74.67 | 414 | 66.00* | 5.799E+00 | 3.877E-01 | 3.877E-01 | 18.96 |
| | 86.72 | 152 | 0.34 | 6.764E+00 | 2.401E+01 | 2.401E+01 | 48.20 |
| | 117.66 | ----- | 0.55 | 7.397E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 7.065E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 106 | 100.00* | 2.954E+00 | 1.289E-01 | 1.289E-01 | 51.55 |

Flag: "*" = Keyline

Total number of lines in spectrum 35
Number of unidentified lines 4
Number of lines tentatively identified by NID 31 88.57%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|---------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 2.335E+01 | 2.335E+01 | 0.263E+01 | 11.24 | |
| CD-109 | 464.00D | 1.03 | 2.169E+00 | 2.235E+00 | 1.077E+00 | 48.20 | |
| SN-126 | 1.00E+05Y | 1.00 | 2.181E-01 | 2.181E-01 | 1.051E-01 | 48.20 | |
| BA-137M | 30.17Y | 1.00 | 1.387E-01 | 1.388E-01 | 0.740E-01 | 53.28 | |
| CS-137 | 30.17Y | 1.00 | 1.466E-01 | 1.468E-01 | 0.782E-01 | 53.29 | |
| TL-208 | 1.41E+10Y | 1.00 | 4.364E-01 | 4.364E-01 | 0.999E-01 | 22.89 | |
| BI-210 | 22.26Y | 1.00 | 2.905E+00 | 2.910E+00 | 3.890E+00 | 133.69 | |
| PB-210 | 22.26Y | 1.00 | 2.905E+00 | 2.910E+00 | 3.890E+00 | 133.69 | |
| PO-210 | 22.26Y | 1.00 | 2.905E+00 | 2.910E+00 | 3.888E+00 | 133.63 | |
| BI-211 | 7.04E+08Y | 1.00 | 3.993E+00 | 3.993E+00 | 0.724E+00 | 18.12 | |
| PB-212 | 1.41E+10Y | 1.00 | 1.736E+00 | 1.736E+00 | 0.272E+00 | 15.67 | |
| PO-212 | 1.41E+10Y | 1.00 | 1.736E+00 | 1.736E+00 | 0.272E+00 | 15.67 | |
| BI-214 | 1600.00Y | 1.00 | 1.173E+00 | 1.173E+00 | 0.208E+00 | 17.71 | |
| PB-214 | 1600.00Y | 1.00 | 1.389E+00 | 1.389E+00 | 0.262E+00 | 18.86 | |
| PO-214 | 1600.00Y | 1.00 | 1.389E+00 | 1.389E+00 | 0.262E+00 | 18.86 | |
| PO-216 | 1.41E+10Y | 1.00 | 1.736E+00 | 1.736E+00 | 0.272E+00 | 15.67 | |
| PO-218 | 1600.00Y | 1.00 | 1.389E+00 | 1.389E+00 | 0.262E+00 | 18.86 | |
| RA-224 | 1.41E+10Y | 1.00 | 5.732E+00 | 5.732E+00 | 1.711E+00 | 29.85 | |
| RA-226 | 1600.00Y | 1.00 | 1.173E+00 | 1.173E+00 | 0.208E+00 | 17.71 | |
| AC-228 | 1.41E+10Y | 1.00 | 1.670E+00 | 1.670E+00 | 0.365E+00 | 21.87 | |
| RA-228 | 1.41E+10Y | 1.00 | 1.670E+00 | 1.670E+00 | 0.365E+00 | 21.87 | |
| TH-228 | 1.91Y | 1.02 | 1.736E+00 | 1.771E+00 | 0.277E+00 | 15.67 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.173E+00 | 1.173E+00 | 0.208E+00 | 17.71 | |
| TH-232 | 1.41E+10Y | 1.00 | 1.670E+00 | 1.670E+00 | 0.365E+00 | 21.87 | |
| TH-234 | 4.47E+09Y | 1.00 | 1.694E+00 | 1.694E+00 | 1.489E+00 | 87.92 | |
| U-234 | 4.47E+09Y | 1.00 | 1.173E+00 | 1.173E+00 | 0.208E+00 | 17.71 | |
| NP-237 | 2.14E+06Y | 1.00 | 6.403E-01 | 6.403E-01 | 3.357E-01 | 52.43 | |
| U-238 | 4.47E+09Y | 1.00 | 1.694E+00 | 1.694E+00 | 1.489E+00 | 87.92 | |
| AM-243 | 7380.00Y | 1.00 | 3.877E-01 | 3.877E-01 | 0.735E-01 | 18.96 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.289E-01 | 1.289E-01 | 0.665E-01 | 51.55 | |

Total Activity : 7.026E+01 7.038E+01

Grand Total Activity : 7.026E+01 7.038E+01

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

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

Unidentified Energy Lines
Sample ID : G245388011

Page : 5
Acquisition date : 4-FEB-2010 14:41:51

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 84.01 | 105 | 331 | 1.26 | 166.92 | 164 | 7 | 1.46E-02 | 62.0 | 6.59E+00 | T |
| 4 | 89.91 | 120 | 195 | 1.00 | 178.74 | 177 | 13 | 1.67E-02 | 37.3 | 6.93E+00 | T |
| 0 | 186.17 | 198 | 295 | 1.11 | 371.41 | 367 | 10 | 2.76E-02 | 37.0 | 6.15E+00 | T |
| 0 | 209.45 | 130 | 272 | 1.27 | 418.00 | 413 | 11 | 1.81E-02 | 52.2 | 5.70E+00 | T |
| 0 | 270.29 | 102 | 158 | 1.13 | 539.77 | 535 | 8 | 1.42E-02 | 46.9 | 4.76E+00 | T |
| 0 | 328.60 | 62 | 161 | 0.91 | 656.46 | 650 | 12 | 8.65E-03 | 85.5 | 4.13E+00 | T |
| 0 | 463.15 | 66 | 113 | 1.55 | 925.74 | 919 | 13 | 9.10E-03 | 71.5 | 3.19E+00 | T |
| 0 | 727.90 | 75 | 54 | 1.01 | 1455.54 | 1450 | 11 | 1.05E-02 | 44.4 | 2.22E+00 | T |
| 0 | 861.97 | 59 | 60 | 2.38 | 1723.80 | 1716 | 20 | 8.13E-03 | 74.6 | 1.92E+00 | |
| 0 | 1239.14 | 35 | 46 | 2.04 | 2478.45 | 2469 | 13 | 4.79E-03 | 87.5 | 1.40E+00 | T |
| 0 | 1378.23 | 39 | 12 | 1.32 | 2756.70 | 2752 | 10 | 5.39E-03 | 46.7 | 1.28E+00 | |
| 0 | 1588.16 | 25 | 6 | 1.24 | 3176.66 | 3172 | 11 | 3.49E-03 | 54.1 | 1.15E+00 | |
| 0 | 1848.94 | 11 | 6 | 0.61 | 3698.29 | 3693 | 8 | 1.56E-03 | 96.1 | 1.04E+00 | |

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G245388011.CNF;1
* Acquisition date   : 4-FEB-2010 14:41:51.  Detector SN#      :
* Detector ID        : GAM11                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit   : 75.00000
* Elapsed real time  : 0 02:00:01.46          Half life ratio   : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 15-JAN-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G245388011            Analyst initials: MXR1
* Batch Number       : 944964                Sample Quantity  : 1.04710E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 18-NOV-2009 15:33:22.2MS Isotope      :
* MSD ID             :                      MSD Isotope      :
* LCS ID             : 1032-A               LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 2.335E+01 | 2.626E+00 | 4.816E-01 | 4.164E-02 | 48.495 |
| CD-109 | 2.235E+00 | 1.077E+00 | 1.241E+00 | 1.177E-01 | 1.801 |
| SN-126 | 2.181E-01 | 1.051E-01 | 1.215E-01 | 1.146E-02 | 1.795 |
| BA-137M | 1.388E-01 | 7.397E-02 | 5.627E-02 | 5.324E-03 | 2.467 |
| CS-137 | 1.468E-01 | 7.820E-02 | 5.948E-02 | 5.637E-03 | 2.467 |
| TL-208 | 4.364E-01 | 9.988E-02 | 5.764E-02 | 6.225E-03 | 7.572 |
| BI-210 | 2.910E+00 | 3.890E+00 | 3.746E+00 | 3.488E-01 | 0.777 |
| PB-210 | 2.910E+00 | 3.890E+00 | 3.746E+00 | 3.488E-01 | 0.777 |
| PO-210 | 2.910E+00 | 3.888E+00 | 3.746E+00 | 3.158E-01 | 0.777 |
| BI-211 | 3.993E+00 | 7.237E-01 | 2.997E-01 | 3.954E-02 | 13.326 |
| PB-212 | 1.736E+00 | 2.719E-01 | 8.669E-02 | 1.214E-02 | 20.022 |
| PO-212 | 1.736E+00 | 2.719E-01 | 8.669E-02 | 1.214E-02 | 20.022 |
| BI-214 | 1.173E+00 | 2.077E-01 | 1.198E-01 | 1.354E-02 | 9.793 |
| PB-214 | 1.389E+00 | 2.620E-01 | 1.045E-01 | 1.478E-02 | 13.297 |
| PO-214 | 1.389E+00 | 2.620E-01 | 1.045E-01 | 1.478E-02 | 13.297 |
| PO-216 | 1.736E+00 | 2.719E-01 | 8.669E-02 | 1.214E-02 | 20.022 |
| PO-218 | 1.389E+00 | 2.620E-01 | 1.045E-01 | 1.478E-02 | 13.297 |
| RA-224 | 5.732E+00 | 1.711E+00 | 9.869E-01 | 1.322E-01 | 5.808 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| RA-226 | 1.173E+00 | 2.077E-01 | 1.198E-01 | 1.354E-02 | 9.793 |
| AC-228 | 1.670E+00 | 3.652E-01 | 1.731E-01 | 2.108E-02 | 9.647 |
| RA-228 | 1.670E+00 | 3.652E-01 | 1.731E-01 | 2.108E-02 | 9.647 |
| TH-228 | 1.771E+00 | 2.774E-01 | 8.844E-02 | 1.239E-02 | 20.022 |
| TH-230 | 1.173E+00 | 2.077E-01 | 1.198E-01 | 1.354E-02 | 9.793 |
| TH-232 | 1.670E+00 | 3.652E-01 | 1.731E-01 | 2.108E-02 | 9.647 |
| TH-234 | 1.694E+00 | 1.489E+00 | 1.676E+00 | 2.916E-01 | 1.011 |
| U-234 | 1.173E+00 | 2.077E-01 | 1.198E-01 | 1.354E-02 | 9.793 |
| NP-237 | 6.403E-01 | 3.357E-01 | 2.951E-01 | 6.680E-02 | 2.170 |
| U-238 | 1.694E+00 | 1.489E+00 | 1.676E+00 | 2.916E-01 | 1.011 |
| AM-243 | 3.877E-01 | 7.349E-02 | 7.263E-02 | 5.878E-03 | 5.337 |
| ANH-511 | 1.289E-01 | 6.645E-02 | 4.977E-02 | 5.322E-03 | 2.590 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| BE-7 | 1.005E-01 | | 3.707E-01 | 6.249E-01 | 7.072E-02 | 0.161 |
| NA-22 | -2.747E-02 | | 4.475E-02 | 6.691E-02 | 5.495E-03 | -0.411 |
| NA-24 | 1.816E+01 | | 9.557E+01 | Half-Life | too short | |
| AL-26 | 1.559E-03 | | 2.906E-02 | 4.849E-02 | 3.958E-03 | 0.032 |
| TI-44 | 4.175E-01 | + | 5.862E-02 | 6.280E-02 | 5.294E-03 | 6.649 |
| SC-46 | -3.388E-02 | | 3.842E-02 | 5.771E-02 | 5.684E-03 | -0.587 |
| V-48 | 7.415E-03 | | 8.179E-02 | 1.375E-01 | 1.304E-02 | 0.054 |
| CR-51 | -1.421E-01 | | 4.271E-01 | 6.649E-01 | 9.650E-02 | -0.214 |
| MN-52 | -8.254E-02 | | 4.488E-01 | 6.988E-01 | 5.855E-02 | -0.118 |
| MN-54 | 1.310E-02 | | 3.942E-02 | 6.833E-02 | 6.728E-03 | 0.192 |
| CO-56 | 1.149E-02 | | 3.778E-02 | 6.561E-02 | 6.465E-03 | 0.175 |
| CO-57 | 2.660E-03 | | 2.183E-02 | 3.730E-02 | 3.156E-03 | 0.071 |
| CO-58 | 1.258E-02 | | 4.074E-02 | 6.745E-02 | 6.641E-03 | 0.187 |
| FE-59 | 7.763E-02 | | 9.558E-02 | 1.712E-01 | 1.610E-02 | 0.453 |
| CO-60 | -2.744E-02 | | 4.420E-02 | 6.616E-02 | 5.467E-03 | -0.415 |
| ZN-65 | -4.871E-02 | | 1.123E-01 | 1.479E-01 | 1.269E-02 | -0.329 |
| GE-68 | -3.907E-01 | | 1.163E+00 | 1.839E+00 | 1.633E-01 | -0.212 |
| AS-73 | -2.461E-01 | | 6.409E-01 | 9.949E-01 | 7.471E-02 | -0.247 |
| AS-74 | -2.221E-02 | | 1.150E-01 | 1.855E-01 | 1.886E-02 | -0.120 |
| SE-75 | 4.926E-03 | | 4.754E-02 | 7.393E-02 | 1.087E-02 | 0.067 |
| BR-77 | 1.308E-05 | | 2.256E-05 | Half-Life | too short | |
| SR-82 | -2.318E-01 | | 4.269E-01 | 6.405E-01 | 6.264E-02 | -0.362 |
| RB-83 | 5.666E-02 | | 7.043E-02 | 1.242E-01 | 1.324E-02 | 0.456 |
| RB-84 | 2.191E-02 | | 7.798E-02 | 1.345E-01 | 1.326E-02 | 0.163 |
| KR-85 | 1.454E+01 | | 7.571E+00 | 1.306E+01 | 1.395E+00 | 1.113 |
| SR-85 | 7.857E-02 | | 4.091E-02 | 7.059E-02 | 7.541E-03 | 1.113 |
| RB-86 | 2.604E-01 | | 8.396E-01 | 1.439E+00 | 1.279E-01 | 0.181 |
| Y-88 | -2.321E-02 | | 3.148E-02 | 4.111E-02 | 3.337E-03 | -0.565 |
| ZR-88 | -1.921E-02 | | 2.991E-02 | 4.813E-02 | 5.133E-03 | -0.399 |
| Y-91 | 7.972E+00 | | 2.246E+01 | 3.793E+01 | 3.071E+00 | 0.210 |
| NB-94 | 4.621E-02 | | 3.261E-02 | 5.951E-02 | 5.716E-03 | 0.776 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| NB-95 | -2.452E-02 | | 5.123E-02 | 7.862E-02 | 7.674E-03 | -0.312 |
| NB-95M | 1.916E-02 | | 1.396E-01 | 2.058E-01 | 2.874E-02 | 0.093 |
| ZR-95 | -1.009E-02 | | 6.576E-02 | 1.037E-01 | 1.092E-02 | -0.097 |
| NB-97 | 4.558E+00 | | 6.535E+00 | Half-Life | too short | |
| ZR-97 | 1.948E+02 | | 1.252E+02 | Half-Life | too short | |
| MO-99 | 2.130E+01 | | 4.124E+01 | 6.985E+01 | 1.105E+01 | 0.305 |
| TC-99M | -2.777E+16 | | 1.814E+16 | Half-Life | too short | |
| RH-101 | -3.516E-02 | | 3.269E-02 | 4.903E-02 | 5.487E-03 | -0.717 |
| RH-102 | -1.636E-02 | | 3.025E-02 | 4.830E-02 | 5.207E-03 | -0.339 |
| RU-103 | 1.720E-02 | | 3.923E-02 | 6.773E-02 | 1.053E-02 | 0.254 |
| RH-106 | 1.205E-01 | | 3.319E-01 | 5.600E-01 | 7.970E-02 | 0.215 |
| RU-106 | 1.205E-01 | | 3.317E-01 | 5.600E-01 | 5.556E-02 | 0.215 |
| AG-108M | -1.884E-03 | | 3.204E-02 | 5.362E-02 | 5.927E-03 | -0.035 |
| AG-110M | 1.242E-02 | | 3.482E-02 | 5.230E-02 | 5.096E-03 | 0.237 |
| IN-111 | -2.013E-01 | | 3.717E+00 | 5.382E+00 | 7.335E-01 | -0.037 |
| IN-113M | -6.319E-04 | | 4.174E-02 | 7.058E-02 | 7.677E-03 | -0.009 |
| SN-113 | -6.319E-04 | | 4.174E-02 | 7.058E-02 | 7.677E-03 | -0.009 |
| IN-114M | 1.400E-02 | | 1.943E-01 | 2.898E-01 | 3.136E-02 | 0.048 |
| CD-115 | -1.126E-05 | | 2.433E-05 | Half-Life | too short | |
| SN-117M | -3.853E-02 | | 6.233E-02 | 1.008E-01 | 9.528E-03 | -0.382 |
| SB-122 | 2.290E-01 | | 7.389E+00 | 1.221E+01 | 1.272E+00 | 0.019 |
| I-123 | 4.198E+02 | | 1.395E+03 | Half-Life | too short | |
| TE-123M | 3.807E-03 | | 2.531E-02 | 4.269E-02 | 4.062E-03 | 0.089 |
| I-124 | -2.126E-01 | | 1.701E+00 | 2.546E+00 | 2.574E-01 | -0.084 |
| SB-124 | -1.677E-02 | | 7.642E-02 | 1.207E-01 | 1.049E-02 | -0.139 |
| SB-125 | -4.547E-02 | | 9.360E-02 | 1.517E-01 | 1.654E-02 | -0.300 |
| TE-125M | -6.078E+00 | | 8.225E+00 | 1.353E+01 | 1.390E+00 | -0.449 |
| I-126 | 9.927E-02 | | 2.631E-01 | 3.932E-01 | 3.728E-02 | 0.252 |
| SB-126 | 2.150E-01 | | 1.975E-01 | 3.503E-01 | 3.382E-02 | 0.614 |
| SB-127 | 2.800E-01 | | 2.930E+00 | 4.805E+00 | 6.536E-01 | 0.058 |
| XE-127 | 8.602E-03 | | 4.717E-02 | 7.860E-02 | 8.983E-03 | 0.109 |
| I-131 | 4.178E-03 | | 1.823E-01 | 2.892E-01 | 3.639E-02 | 0.014 |
| TE-132 | 6.104E-01 | | 1.894E+00 | 3.154E+00 | 6.049E-01 | 0.194 |
| BA-133 | 1.516E-02 | | 4.592E-02 | 6.704E-02 | 1.081E-02 | 0.226 |
| I-133 | 2.786E-03 | | 1.514E-01 | Half-Life | too short | |
| CS-134 | 7.887E-02 | | 4.877E-02 | 8.951E-02 | 8.830E-03 | 0.881 |
| CS-135 | 2.513E-02 | | 1.885E-01 | 2.734E-01 | 4.289E-02 | 0.092 |
| I-135 | -1.842E+15 | | 8.242E+14 | Half-Life | too short | |
| CS-136 | -2.442E-03 | | 1.332E-01 | 2.199E-01 | 2.078E-02 | -0.011 |
| CE-139 | -5.704E-03 | | 2.746E-02 | 4.536E-02 | 4.408E-03 | -0.126 |
| BA-140 | -1.034E-01 | | 3.186E-01 | 5.077E-01 | 1.711E-01 | -0.204 |
| LA-140 | -8.207E-02 | | 1.266E-01 | 1.836E-01 | 1.544E-02 | -0.447 |
| CE-141 | -2.919E-02 | | 6.283E-02 | 1.033E-01 | 9.467E-03 | -0.283 |
| CE-143 | 4.290E-03 | | 1.121E-03 | Half-Life | too short | |
| CE-144 | 1.829E-03 | | 1.841E-01 | 3.113E-01 | 4.857E-02 | 0.006 |
| PM-144 | 9.561E-04 | | 3.472E-02 | 5.640E-02 | 5.409E-03 | 0.017 |
| PR-144 | 6.496E-02 | | 2.359E+00 | 3.832E+00 | 3.673E-01 | 0.017 |
| PM-146 | 3.509E-02 | | 4.167E-02 | 7.395E-02 | 9.272E-03 | 0.474 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| ND-147 | 6.802E-02 | | 6.999E-01 | 1.169E+00 | 1.892E-01 | 0.058 |
| PM-149 | -4.391E-05 | | 2.135E-04 | Half-Life too short | | |
| EU-152 | -5.260E-03 | | 9.574E-02 | 1.516E-01 | 2.055E-02 | -0.035 |
| GD-153 | -3.931E-02 | | 7.982E-02 | 1.096E-01 | 9.735E-03 | -0.359 |
| EU-154 | -7.521E-02 | | 1.250E-01 | 1.870E-01 | 2.056E-02 | -0.402 |
| EU-155 | 4.736E-02 | | 9.582E-02 | 1.602E-01 | 1.397E-02 | 0.296 |
| TB-160 | -2.092E-02 | | 1.444E-01 | 2.388E-01 | 2.353E-02 | -0.088 |
| HO-166M | 6.581E-02 | | 6.376E-02 | 1.126E-01 | 1.084E-02 | 0.585 |
| TM-171 | 7.547E+00 | | 2.244E+01 | 3.608E+01 | 2.708E+00 | 0.209 |
| LU-176 | 1.166E-02 | | 2.350E-02 | 3.902E-02 | 5.737E-03 | 0.299 |
| LU-177 | 5.961E+00 | + | 3.189E+00 | 3.376E+00 | 3.951E-01 | 1.766 |
| LU-177M | -9.238E-02 | | 1.651E-01 | 2.660E-01 | 2.856E-02 | -0.347 |
| HF-181 | 5.572E-03 | | 4.675E-02 | 7.869E-02 | 8.475E-03 | 0.071 |
| W-181 | -8.846E-03 | | 3.255E-01 | 4.742E-01 | 3.515E-02 | -0.019 |
| TA-182 | -1.651E-01 | | 2.075E-01 | 3.086E-01 | 2.507E-02 | -0.535 |
| RE-183 | -1.440E-02 | | 1.086E-01 | 1.745E-01 | 1.672E-02 | -0.083 |
| RE-184 | -1.607E-01 | | 2.303E-01 | 3.552E-01 | 4.984E-02 | -0.452 |
| OS-185 | 5.177E-03 | | 4.083E-02 | 6.745E-02 | 6.511E-03 | 0.077 |
| RE-188 | 1.231E-01 | | 1.735E-01 | 2.942E-01 | 2.744E-02 | 0.418 |
| W-188 | -2.835E+00 | | 8.735E+00 | 1.214E+01 | 1.844E+00 | -0.234 |
| IR-192 | 8.997E-03 | | 3.661E-02 | 5.962E-02 | 8.570E-03 | 0.151 |
| AU-195 | 5.353E-02 | | 1.916E-01 | 3.327E-01 | 2.936E-02 | 0.161 |
| TL-200 | -9.518E-03 | | 5.756E-03 | Half-Life too short | | |
| TL-201 | 1.485E+00 | | 1.862E+01 | 3.122E+01 | 3.054E+00 | 0.048 |
| TL-202 | 5.627E-02 | | 9.157E-02 | 1.603E-01 | 1.729E-02 | 0.351 |
| HG-203 | -1.131E-02 | | 4.482E-02 | 7.013E-02 | 1.095E-02 | -0.161 |
| BI-207 | 1.340E-03 | | 5.012E-02 | 8.309E-02 | 7.464E-03 | 0.016 |
| TL-207 | 3.355E-02 | | 7.411E-01 | 1.058E+00 | 2.213E-01 | 0.032 |
| PO-209 | 2.052E+00 | | 6.814E+00 | 1.180E+01 | 1.161E+00 | 0.174 |
| PB-211 | 2.541E-01 | | 9.751E-01 | 1.652E+00 | 1.041E+00 | 0.154 |
| BI-212 | 1.032E+00 | + | 4.717E-01 | 6.988E-01 | 7.637E-02 | 1.477 |
| PO-215 | 3.355E-02 | | 7.411E-01 | 1.058E+00 | 2.213E-01 | 0.032 |
| RN-219 | 4.107E-02 | | 4.010E-01 | 6.824E-01 | 1.113E-01 | 0.060 |
| RN-220 | -6.393E+00 | | 2.445E+01 | 3.936E+01 | 4.136E+00 | -0.162 |
| RA-223 | 3.355E-02 | | 7.411E-01 | 1.058E+00 | 2.213E-01 | 0.032 |
| AC-227 | 1.867E-01 | | 3.605E-01 | 6.029E-01 | 1.149E-01 | 0.310 |
| TH-227 | 1.867E-01 | | 3.610E-01 | 6.029E-01 | 1.284E-01 | 0.310 |
| TH-229 | -7.774E-02 | | 4.790E-01 | 7.855E-01 | 8.625E-02 | -0.099 |
| PA-231 | 3.681E-01 | | 1.447E+00 | 2.375E+00 | 4.705E-01 | 0.155 |
| TH-231 | 3.355E-02 | | 7.411E-01 | 1.058E+00 | 2.213E-01 | 0.032 |
| U-231 | 2.450E-01 | | 2.259E+00 | 3.247E+00 | 2.908E-01 | 0.075 |
| PA-233 | 3.234E-02 | | 6.739E-02 | 1.113E-01 | 1.633E-02 | 0.290 |
| PA-234 | 6.464E-02 | | 2.734E-01 | 4.683E-01 | 9.023E-02 | 0.138 |
| PA-234M | 3.538E-01 | | 4.309E+00 | 7.225E+00 | 7.685E-01 | 0.049 |
| U-235 | 1.563E-01 | | 1.949E-01 | 3.313E-01 | 5.857E-02 | 0.472 |
| NP-236 | 2.053E-02 | | 7.017E-02 | 1.191E-01 | 1.133E-02 | 0.172 |
| NP-239 | -8.241E-02 | | 1.606E-01 | 2.664E-01 | 2.254E-02 | -0.309 |
| AM-241 | -1.030E-01 | | 1.302E-01 | 1.808E-01 | 1.421E-02 | -0.569 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | -3.023E-02 | | 8.139E-02 | 1.370E-01 | 1.186E-02 | -0.221 |
| AM-246 | -1.280E-01 | | 1.332E-01 | 1.918E-01 | 1.701E-02 | -0.667 |
| CM-247 | 5.408E-03 | | 3.718E-02 | 6.342E-02 | 6.788E-03 | 0.085 |
| CF-249 | 1.201E-02 | | 3.805E-02 | 6.582E-02 | 7.167E-03 | 0.182 |
| CF-251 | 1.562E-02 | | 1.223E-01 | 2.048E-01 | 2.087E-02 | 0.076 |

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]G245388011          *
* Acquisition date   : 4-FEB-2010 14:41:51 Detector SN#                   *
* Detector ID        : GAM11 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                       *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000            *
* Elapsed real time  : 0 02:00:01.46 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date       : 15-JAN-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G245388011 Analyst initials: MXR1                  *
* Batch Number      : 944964 Sample Quantity : 1.0471E+02 GRAM           *
* Recovery          : 1.00000 Carrier Weight : 0.00000                   *
*****
*                                     QC DATA                               *
*                                     *                                       *
* CALIB. DATE/TIME  : 18-NOV-2009 15:33:22 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.335E+01 | 2.573E+00 | 2.392E-01 | 1.313E+00 |
| CD-109 | 2.235E+00 | 1.056E+00 | 6.248E-01 | 5.387E-01 |
| SN-126 | 2.181E-01 | 1.030E-01 | 6.115E-02 | 5.255E-02 |
| BA-137M | 1.388E-01 | 7.249E-02 | 2.806E-02 | 3.699E-02 |
| CS-137 | 1.468E-01 | 7.664E-02 | 2.966E-02 | 3.910E-02 |
| TL-208 | 4.364E-01 | 9.788E-02 | 2.876E-02 | 4.994E-02 |
| BI-210 | 2.910E+00 | 3.812E+00 | 1.892E+00 | 1.945E+00 |
| PB-210 | 2.910E+00 | 3.812E+00 | 1.892E+00 | 1.945E+00 |
| PO-210 | 2.910E+00 | 3.811E+00 | 1.892E+00 | 1.944E+00 |
| BI-211 | 3.993E+00 | 7.093E-01 | 1.499E-01 | 3.619E-01 |
| PB-212 | 1.736E+00 | 2.665E-01 | 4.344E-02 | 1.360E-01 |
| PO-212 | 1.736E+00 | 2.665E-01 | 4.344E-02 | 1.360E-01 |
| BI-214 | 1.173E+00 | 2.036E-01 | 5.974E-02 | 1.039E-01 |
| PB-214 | 1.389E+00 | 2.567E-01 | 5.225E-02 | 1.310E-01 |
| PO-214 | 1.389E+00 | 2.567E-01 | 5.225E-02 | 1.310E-01 |
| PO-216 | 1.736E+00 | 2.665E-01 | 4.344E-02 | 1.360E-01 |
| PO-218 | 1.389E+00 | 2.567E-01 | 5.225E-02 | 1.310E-01 |
| RA-224 | 5.732E+00 | 1.677E+00 | 4.945E-01 | 8.554E-01 |
| RA-226 | 1.173E+00 | 2.036E-01 | 5.974E-02 | 1.039E-01 |
| AC-228 | 1.670E+00 | 3.579E-01 | 8.619E-02 | 1.826E-01 |
| RA-228 | 1.670E+00 | 3.579E-01 | 8.619E-02 | 1.826E-01 |
| TH-228 | 1.771E+00 | 2.719E-01 | 4.431E-02 | 1.387E-01 |
| TH-230 | 1.173E+00 | 2.036E-01 | 5.974E-02 | 1.039E-01 |
| TH-232 | 1.670E+00 | 3.579E-01 | 8.619E-02 | 1.826E-01 |
| TH-234 | 1.694E+00 | 1.459E+00 | 8.451E-01 | 7.446E-01 |
| U-234 | 1.173E+00 | 2.036E-01 | 5.974E-02 | 1.039E-01 |
| NP-237 | 6.403E-01 | 3.290E-01 | 1.486E-01 | 1.679E-01 |
| U-238 | 1.694E+00 | 1.459E+00 | 8.451E-01 | 7.446E-01 |
| AM-243 | 3.877E-01 | 7.202E-02 | 3.659E-02 | 3.675E-02 |
| ANH-511 | 1.289E-01 | 6.512E-02 | 2.485E-02 | 3.323E-02 |

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

Key-Line

| Nuclide | Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|---------------|--------------------|----------------------|
| BE-7 | 1.005E-01 | 3.632E-01 | 3.120E-01 | 1.853E-01 NOT IDENT. |
| NA-22 | -2.747E-02 | 4.386E-02 | 3.326E-02 | 2.238E-02 NOT IDENT. |
| NA-24 | 1.816E+07 | 1.873E+08 | 0.000E+00 | 9.557E+07 SHORT HLIF |
| AL-26 | 1.559E-03 | 2.848E-02 | 2.406E-02 | 1.453E-02 NOT IDENT. |
| TI-44 | 4.175E-01 | 5.745E-02 | 3.163E-02 | 2.931E-02 FAIL ABUN |
| SC-46 | -3.388E-02 | 3.765E-02 | 2.873E-02 | 1.921E-02 FAIL ABUN |
| V-48 | 7.415E-03 | 8.016E-02 | 6.843E-02 | 4.090E-02 NOT IDENT. |
| CR-51 | -1.421E-01 | 4.186E-01 | 3.327E-01 | 2.136E-01 NOT IDENT. |
| MN-52 | -8.254E-02 | 4.399E-01 | 3.471E-01 | 2.244E-01 NOT IDENT. |
| MN-54 | 1.310E-02 | 3.863E-02 | 3.403E-02 | 1.971E-02 NOT IDENT. |
| CO-56 | 1.149E-02 | 3.702E-02 | 3.268E-02 | 1.889E-02 FAIL ABUN |
| CO-57 | 2.660E-03 | 2.140E-02 | 1.875E-02 | 1.092E-02 NOT IDENT. |
| CO-58 | 1.258E-02 | 3.993E-02 | 3.360E-02 | 2.037E-02 NOT IDENT. |
| FE-59 | 7.763E-02 | 9.367E-02 | 8.517E-02 | 4.779E-02 NOT IDENT. |
| CO-60 | -2.744E-02 | 4.331E-02 | 3.287E-02 | 2.210E-02 NOT IDENT. |
| ZN-65 | -4.871E-02 | 1.101E-01 | 7.355E-02 | 5.617E-02 NOT IDENT. |
| GE-68 | -3.907E-01 | 1.140E+00 | 9.146E-01 | 5.815E-01 NOT IDENT. |
| AS-73 | -2.461E-01 | 6.281E-01 | 5.021E-01 | 3.205E-01 NOT IDENT. |
| AS-74 | -2.221E-02 | 1.127E-01 | 9.252E-02 | 5.751E-02 NOT IDENT. |
| SE-75 | 4.926E-03 | 4.659E-02 | 3.703E-02 | 2.377E-02 NOT IDENT. |
| BR-77 | 1.308E+01 | 4.422E+01 | 0.000E+00 | 2.256E+01 SHORT HLIF |
| SR-82 | -2.318E-01 | 4.184E-01 | 3.191E-01 | 2.135E-01 NOT IDENT. |
| RB-83 | 5.666E-02 | 6.902E-02 | 6.202E-02 | 3.522E-02 NOT IDENT. |
| RB-84 | 2.191E-02 | 7.642E-02 | 6.699E-02 | 3.899E-02 NOT IDENT. |
| KR-85 | 1.454E+01 | 7.420E+00 | 6.521E+00 | 3.786E+00 NOT IDENT. |
| SR-85 | 7.857E-02 | 4.010E-02 | 3.524E-02 | 2.046E-02 NOT IDENT. |
| RB-86 | 2.604E-01 | 8.228E-01 | 7.160E-01 | 4.198E-01 NOT IDENT. |
| Y-88 | -2.321E-02 | 3.085E-02 | 2.039E-02 | 1.574E-02 NOT IDENT. |
| ZR-88 | -1.921E-02 | 2.932E-02 | 2.406E-02 | 1.496E-02 NOT IDENT. |
| Y-91 | 7.972E+00 | 2.201E+01 | 1.886E+01 | 1.123E+01 NOT IDENT. |
| NB-94 | 4.621E-02 | 3.196E-02 | 2.967E-02 | 1.631E-02 NOT IDENT. |
| NB-95 | -2.452E-02 | 5.021E-02 | 3.917E-02 | 2.562E-02 NOT IDENT. |
| NB-95M | 1.916E-02 | 1.368E-01 | 1.031E-01 | 6.982E-02 NOT IDENT. |
| ZR-95 | -1.009E-02 | 6.445E-02 | 5.169E-02 | 3.288E-02 NOT IDENT. |
| NB-97 | 4.558E+06 | 1.281E+07 | 0.000E+00 | 6.535E+06 SHORT HLIF |
| ZR-97 | 1.948E+08 | 2.454E+08 | 0.000E+00 | 1.252E+08 SHORT HLIF |
| MO-99 | 2.130E+01 | 4.041E+01 | 3.481E+01 | 2.062E+01 NOT IDENT. |
| TC-99M | -2.777E+22 | 3.555E+22 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| RH-101 | -3.516E-02 | 3.204E-02 | 2.459E-02 | 1.635E-02 NOT IDENT. |
| RH-102 | -1.636E-02 | 2.964E-02 | 2.412E-02 | 1.512E-02 NOT IDENT. |
| RU-103 | 1.720E-02 | 3.844E-02 | 3.382E-02 | 1.961E-02 FAIL ABUN |
| RH-106 | 1.205E-01 | 3.253E-01 | 2.793E-01 | 1.660E-01 FAIL ABUN |
| RU-106 | 1.205E-01 | 3.251E-01 | 2.793E-01 | 1.658E-01 FAIL ABUN |
| AG-108M | -1.884E-03 | 3.140E-02 | 2.679E-02 | 1.602E-02 NOT IDENT. |
| AG-110M | 1.242E-02 | 3.412E-02 | 2.608E-02 | 1.741E-02 NOT IDENT. |
| IN-111 | -2.013E-01 | 3.643E+00 | 2.696E+00 | 1.859E+00 NOT IDENT. |
| IN-113M | -6.319E-04 | 4.090E-02 | 3.528E-02 | 2.087E-02 NOT IDENT. |
| SN-113 | -6.319E-04 | 4.090E-02 | 3.528E-02 | 2.087E-02 NOT IDENT. |
| IN-114M | 1.400E-02 | 1.904E-01 | 1.454E-01 | 9.716E-02 NOT IDENT. |
| CD-115 | -1.126E+01 | 4.769E+01 | 0.000E+00 | 2.433E+01 SHORT HLIF |
| SN-117M | -3.853E-02 | 6.108E-02 | 5.061E-02 | 3.116E-02 NOT IDENT. |
| SB-122 | 2.290E-01 | 7.241E+00 | 6.093E+00 | 3.694E+00 NOT IDENT. |
| I-123 | 4.198E+08 | 2.734E+09 | 0.000E+00 | 1.395E+09 SHORT HLIF |
| TE-123M | 3.807E-03 | 2.480E-02 | 2.143E-02 | 1.265E-02 NOT IDENT. |
| I-124 | -2.126E-01 | 1.667E+00 | 1.270E+00 | 8.505E-01 NOT IDENT. |
| SB-124 | -1.677E-02 | 7.489E-02 | 5.990E-02 | 3.821E-02 NOT IDENT. |
| SB-125 | -4.547E-02 | 9.173E-02 | 7.581E-02 | 4.680E-02 FAIL ABUN |
| TE-125M | -6.078E+00 | 8.060E+00 | 6.804E+00 | 4.112E+00 NOT IDENT. |
| I-126 | 9.927E-02 | 2.578E-01 | 1.961E-01 | 1.315E-01 NOT IDENT. |
| SB-126 | 2.150E-01 | 1.935E-01 | 1.746E-01 | 9.873E-02 FAIL ABUN |
| SB-127 | 2.800E-01 | 2.871E+00 | 2.396E+00 | 1.465E+00 NOT IDENT. |
| XE-127 | 8.602E-03 | 4.623E-02 | 3.941E-02 | 2.359E-02 NOT IDENT. |
| I-131 | 4.178E-03 | 1.787E-01 | 1.446E-01 | 9.117E-02 NOT IDENT. |
| TE-132 | 6.104E-01 | 1.856E+00 | 1.581E+00 | 9.470E-01 NOT IDENT. |
| BA-133 | 1.516E-02 | 4.500E-02 | 3.353E-02 | 2.296E-02 NOT IDENT. |
| I-133 | 2.786E+03 | 2.967E+05 | 0.000E+00 | 1.514E+05 SHORT HLIF |
| CS-134 | 7.887E-02 | 4.779E-02 | 4.459E-02 | 2.438E-02 NOT IDENT. |
| CS-135 | 2.513E-02 | 1.848E-01 | 1.369E-01 | 9.426E-02 NOT IDENT. |
| I-135 | -1.842E+21 | 1.615E+21 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| CS-136 | -2.442E-03 | 1.305E-01 | 1.094E-01 | 6.660E-02 FAIL ABUN |
| CE-139 | -5.704E-03 | 2.691E-02 | 2.277E-02 | 1.373E-02 NOT IDENT. |
| BA-140 | -1.034E-01 | 3.122E-01 | 2.534E-01 | 1.593E-01 NOT IDENT. |
| LA-140 | -8.207E-02 | 1.240E-01 | 9.115E-02 | 6.328E-02 FAIL ABUN |
| CE-141 | -2.919E-02 | 6.158E-02 | 5.188E-02 | 3.142E-02 NOT IDENT. |
| CE-143 | 4.290E+03 | 2.198E+03 | 0.000E+00 | 1.121E+03 SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| CE-144 | 1.829E-03 | 1.804E-01 | 1.564E-01 | 9.203E-02 | NOT IDENT. |
| PM-144 | 9.561E-04 | 3.403E-02 | 2.812E-02 | 1.736E-02 | NOT IDENT. |
| PR-144 | 6.496E-02 | 2.312E+00 | 1.910E+00 | 1.180E+00 | NOT IDENT. |
| PM-146 | 3.509E-02 | 4.083E-02 | 3.694E-02 | 2.083E-02 | NOT IDENT. |
| ND-147 | 6.802E-02 | 6.859E-01 | 5.837E-01 | 3.500E-01 | FAIL ABUN |
| PM-149 | -4.391E+01 | 4.185E+02 | 0.000E+00 | 2.135E+02 | SHORT HLIF |
| EU-152 | -5.260E-03 | 9.383E-02 | 7.581E-02 | 4.787E-02 | NOT IDENT. |
| GD-153 | -3.931E-02 | 7.822E-02 | 5.514E-02 | 3.991E-02 | FAIL ABUN |
| EU-154 | -7.521E-02 | 1.225E-01 | 9.294E-02 | 6.248E-02 | NOT IDENT. |
| EU-155 | 4.736E-02 | 9.390E-02 | 8.056E-02 | 4.791E-02 | FAIL ABUN |
| TB-160 | -2.092E-02 | 1.415E-01 | 1.189E-01 | 7.218E-02 | FAIL ABUN |
| HO-166M | 6.581E-02 | 6.248E-02 | 5.612E-02 | 3.188E-02 | NOT IDENT. |
| TM-171 | 7.547E+00 | 2.199E+01 | 1.819E+01 | 1.122E+01 | NOT IDENT. |
| LU-176 | 1.166E-02 | 2.303E-02 | 1.953E-02 | 1.175E-02 | NOT IDENT. |
| LU-177 | 5.961E+00 | 3.125E+00 | 1.693E+00 | 1.594E+00 | FAIL ABUN |
| LU-177M | -9.238E-02 | 1.618E-01 | 1.329E-01 | 8.255E-02 | NOT IDENT. |
| HF-181 | 5.572E-03 | 4.581E-02 | 3.930E-02 | 2.337E-02 | NOT IDENT. |
| W-181 | -8.846E-03 | 3.190E-01 | 2.391E-01 | 1.627E-01 | NOT IDENT. |
| TA-182 | -1.651E-01 | 2.033E-01 | 1.534E-01 | 1.037E-01 | FAIL ABUN |
| RE-183 | -1.440E-02 | 1.064E-01 | 8.758E-02 | 5.430E-02 | FAIL ABUN |
| RE-184 | -1.607E-01 | 2.257E-01 | 1.779E-01 | 1.151E-01 | NOT IDENT. |
| OS-185 | 5.177E-03 | 4.001E-02 | 3.363E-02 | 2.041E-02 | NOT IDENT. |
| RE-188 | 1.231E-01 | 1.701E-01 | 1.477E-01 | 8.676E-02 | NOT IDENT. |
| W-188 | -2.835E+00 | 8.560E+00 | 6.077E+00 | 4.367E+00 | FAIL ABUN |
| IR-192 | 8.997E-03 | 3.588E-02 | 2.983E-02 | 1.831E-02 | FAIL ABUN |
| AU-195 | 5.353E-02 | 1.878E-01 | 1.674E-01 | 9.582E-02 | FAIL ABUN |
| TL-200 | -9.518E+03 | 1.128E+04 | 0.000E+00 | 5.756E+03 | SHORT HLIF |
| TL-201 | 1.485E+00 | 1.825E+01 | 1.567E+01 | 9.312E+00 | NOT IDENT. |
| TL-202 | 5.627E-02 | 8.974E-02 | 8.009E-02 | 4.579E-02 | NOT IDENT. |
| HG-203 | -1.131E-02 | 4.392E-02 | 3.511E-02 | 2.241E-02 | FAIL ABUN |
| BI-207 | 1.340E-03 | 4.912E-02 | 4.134E-02 | 2.506E-02 | FAIL ABUN |
| TL-207 | 3.355E-02 | 7.262E-01 | 5.292E-01 | 3.705E-01 | FAIL ABUN |
| PO-209 | 2.052E+00 | 6.678E+00 | 5.873E+00 | 3.407E+00 | NOT IDENT. |
| PB-211 | 2.541E-01 | 9.556E-01 | 8.259E-01 | 4.875E-01 | NOT IDENT. |
| BI-212 | 1.032E+00 | 4.622E-01 | 3.483E-01 | 2.358E-01 | FAIL ABUN |
| PO-215 | 3.355E-02 | 7.262E-01 | 5.292E-01 | 3.705E-01 | FAIL ABUN |
| RN-219 | 4.107E-02 | 3.930E-01 | 3.410E-01 | 2.005E-01 | FAIL ABUN |
| RN-220 | -6.393E+00 | 2.397E+01 | 1.964E+01 | 1.223E+01 | NOT IDENT. |
| RA-223 | 3.355E-02 | 7.262E-01 | 5.292E-01 | 3.705E-01 | FAIL ABUN |
| AC-227 | 1.867E-01 | 3.533E-01 | 3.020E-01 | 1.803E-01 | FAIL ABUN |
| TH-227 | 1.867E-01 | 3.537E-01 | 3.020E-01 | 1.805E-01 | FAIL ABUN |
| TH-229 | -7.774E-02 | 4.694E-01 | 3.940E-01 | 2.395E-01 | FAIL ABUN |
| PA-231 | 3.681E-01 | 1.418E+00 | 1.189E+00 | 7.237E-01 | FAIL ABUN |
| TH-231 | 3.355E-02 | 7.262E-01 | 5.292E-01 | 3.705E-01 | FAIL ABUN |
| U-231 | 2.450E-01 | 2.214E+00 | 1.634E+00 | 1.130E+00 | FAIL ABUN |
| PA-233 | 3.234E-02 | 6.605E-02 | 5.571E-02 | 3.370E-02 | FAIL ABUN |
| PA-234 | 6.464E-02 | 2.680E-01 | 2.331E-01 | 1.367E-01 | FAIL ABUN |
| PA-234M | 3.538E-01 | 4.223E+00 | 3.595E+00 | 2.155E+00 | NOT IDENT. |
| U-235 | 1.563E-01 | 1.910E-01 | 1.664E-01 | 9.743E-02 | FAIL ABUN |
| NP-236 | 2.053E-02 | 6.876E-02 | 5.980E-02 | 3.508E-02 | NOT IDENT. |
| NP-239 | -8.241E-02 | 1.574E-01 | 1.340E-01 | 8.030E-02 | FAIL ABUN |
| AM-241 | -1.030E-01 | 1.276E-01 | 9.118E-02 | 6.510E-02 | NOT IDENT. |
| CM-243 | -3.023E-02 | 7.976E-02 | 6.892E-02 | 4.070E-02 | FAIL ABUN |
| AM-246 | -1.280E-01 | 1.305E-01 | 9.542E-02 | 6.660E-02 | NOT IDENT. |
| CM-247 | 5.408E-03 | 3.643E-02 | 3.170E-02 | 1.859E-02 | NOT IDENT. |
| CF-249 | 1.201E-02 | 3.729E-02 | 3.290E-02 | 1.902E-02 | NOT IDENT. |
| CF-251 | 1.562E-02 | 1.199E-01 | 1.028E-01 | 6.117E-02 | NOT IDENT. |

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*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT             *
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| ENERGY | MDA COUNTS |
|--------|------------|
|--------|------------|

| | |
|-------|----------|
| 46.50 | 188.1345 |
| 46.50 | 188.1345 |
| 46.50 | 188.1345 |
| 48.70 | 175.3424 |
| 49.72 | 173.0232 |
| 51.35 | 203.4617 |
| 52.39 | 165.3270 |
| 52.97 | 177.8699 |
| 53.15 | 177.9742 |
| 53.44 | 192.6155 |
| 54.07 | 201.9327 |
| 56.28 | 176.3872 |
| 56.28 | 176.3890 |
| 57.37 | 0.0000 |
| 57.53 | 190.6092 |
| 57.53 | 190.6104 |
| 57.60 | 190.6504 |
| 57.98 | 224.7563 |
| 57.98 | 224.7563 |
| 59.32 | 243.4408 |
| 59.32 | 243.4408 |
| 59.40 | 243.4997 |
| 59.54 | 243.6021 |
| 59.72 | 233.1368 |
| 60.01 | 206.0665 |
| 61.10 | 193.0554 |
| 61.14 | 193.0780 |
| 61.30 | 193.1691 |
| 63.00 | 235.0223 |
| 63.29 | 267.7293 |
| 63.29 | 267.7293 |
| 63.58 | 267.9536 |
| 64.28 | 236.2735 |
| 65.12 | 253.7556 |
| 65.20 | 256.8896 |
| 65.20 | 256.8896 |
| 66.05 | 248.2542 |
| 66.72 | 242.1522 |
| 66.83 | 242.2287 |
| 66.91 | 242.2813 |
| 67.20 | 265.6810 |
| 67.20 | 265.6810 |
| 67.75 | 266.0846 |
| 67.85 | 266.1580 |
| 68.90 | 283.2435 |
| 68.90 | 283.2435 |
| 69.30 | 270.7156 |
| 69.67 | 258.5307 |
| 70.82 | 245.2694 |
| 70.82 | 245.2694 |
| 70.83 | 245.2758 |
| 72.80 | 293.6732 |
| 72.87 | 293.7264 |
| 72.87 | 293.7264 |
| 74.67 | 275.7720 |
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| 75.70 | 276.5026 |
| 77.11 | 277.4928 |
| 77.11 | 277.4928 |

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| 77.11 | 277.4928 |
| 77.11 | 277.4928 |
| 77.11 | 277.4928 |
| 77.11 | 277.4928 |
| 78.38 | 238.9511 |
| 79.62 | 239.6866 |
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| 80.11 | 223.1781 |
| 80.18 | 223.2165 |
| 80.30 | 223.2817 |
| 80.30 | 223.2817 |
| 80.57 | 264.2712 |
| 81.00 | 258.1365 |
| 81.07 | 258.1808 |
| 81.07 | 258.1808 |
| 81.07 | 258.1808 |
| 81.07 | 258.1808 |
| 82.60 | 260.7468 |
| 83.37 | 251.5513 |
| 83.78 | 232.4297 |
| 83.78 | 232.4297 |
| 83.78 | 232.4297 |
| 83.78 | 232.4297 |
| 84.21 | 232.6670 |
| 84.90 | 225.7651 |
| 85.43 | 226.0461 |
| 86.29 | 226.5016 |
| 86.50 | 226.6123 |
| 86.54 | 226.6336 |
| 86.59 | 226.6605 |
| 86.72 | 226.7287 |
| 86.79 | 219.4492 |
| 86.94 | 219.5261 |
| 87.30 | 336.8888 |
| 87.30 | 336.8888 |
| 87.30 | 336.8888 |
| 87.30 | 336.8888 |
| 87.30 | 336.8888 |
| 87.30 | 336.8888 |
| 87.57 | 337.0973 |
| 87.88 | 0.0000 |
| 88.03 | 337.4552 |
| 88.36 | 215.3527 |
| 88.47 | 215.4064 |
| 89.95 | 316.8330 |
| 91.11 | 234.7578 |
| 92.29 | 235.3774 |
| 92.38 | 235.4240 |
| 92.38 | 235.4240 |
| 93.35 | 235.9302 |
| 94.00 | 236.2677 |
| 94.67 | 195.2466 |
| 94.67 | 195.2490 |
| 94.90 | 195.3463 |
| 94.90 | 195.3463 |
| 94.90 | 195.3463 |
| 94.90 | 195.3463 |
| 95.87 | 192.4413 |
| 95.87 | 192.4413 |
| 96.73 | 209.4207 |
| 97.43 | 219.7207 |
| 98.44 | 201.0099 |
| 98.44 | 201.0111 |
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| 99.55 | 208.1712 |
| 99.55 | 208.1712 |
| 99.86 | 208.3080 |
| 100.00 | 208.3688 |
| 100.10 | 200.0443 |
| 103.18 | 211.4340 |
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| 105.00 | 189.3931 |
| 105.31 | 185.2825 |
| 108.00 | 194.7912 |
| 109.28 | 206.3711 |

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| 111.00 | 181.3993 |
| 111.00 | 181.3993 |
| 111.76 | 184.2385 |
| 112.95 | 200.1230 |
| 115.19 | 171.6533 |
| 116.30 | 194.4889 |
| 117.00 | 191.2831 |
| 117.00 | 191.2831 |
| 117.66 | 205.3860 |
| 121.11 | 175.3035 |
| 121.62 | 169.3563 |
| 121.78 | 169.4056 |
| 122.06 | 174.7345 |
| 122.32 | 180.0614 |
| 122.32 | 180.0614 |
| 122.32 | 180.0614 |
| 122.32 | 180.0614 |
| 123.07 | 199.5626 |
| 127.23 | 227.5071 |
| 129.76 | 189.5472 |
| 131.20 | 237.9705 |
| 133.02 | 185.2733 |
| 133.54 | 191.6790 |
| 135.34 | 213.7273 |
| 136.00 | 188.0032 |
| 136.25 | 177.3347 |
| 136.48 | 177.4032 |
| 140.51 | 209.2635 |
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| 142.18 | 203.5034 |
| 142.65 | 187.3684 |
| 143.76 | 175.0103 |
| 144.24 | 172.4233 |
| 144.24 | 172.4233 |
| 144.24 | 172.4233 |
| 144.24 | 172.4233 |
| 145.22 | 199.0547 |
| 145.44 | 204.5792 |
| 147.16 | 175.9664 |
| 152.43 | 193.0554 |
| 152.70 | 190.3775 |
| 153.22 | 197.8947 |
| 154.21 | 199.1162 |
| 154.21 | 199.1162 |
| 154.21 | 199.1162 |
| 154.21 | 199.1162 |
| 155.03 | 180.9078 |
| 156.02 | 192.2747 |
| 158.56 | 180.9518 |
| 159.00 | 0.0000 |
| 159.00 | 160.6424 |
| 160.31 | 163.7485 |
| 161.27 | 191.9347 |
| 162.32 | 177.3036 |
| 162.64 | 170.8514 |
| 163.35 | 179.4414 |
| 163.89 | 158.0713 |
| 165.85 | 176.3475 |
| 167.43 | 152.3068 |
| 171.28 | 159.7681 |
| 171.86 | 153.2758 |
| 172.10 | 153.3285 |
| 176.55 | 185.7166 |
| 176.60 | 185.7304 |
| 181.06 | 200.0979 |
| 184.41 | 180.5019 |
| 185.71 | 172.6215 |
| 186.00 | 172.6870 |
| 190.27 | 157.1732 |
| 192.34 | 190.6765 |
| 193.63 | 174.4296 |
| 197.04 | 180.0918 |
| 198.01 | 185.2144 |
| 198.60 | 168.6809 |
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| 202.84 | 155.7836 |
| 205.31 | 167.6378 |

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| 208.36 | 147.9178 |
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| 209.75 | 148.1694 |
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| 210.97 | 132.9541 |
| 215.65 | 149.2289 |
| 216.55 | 138.3608 |
| 218.09 | 151.6728 |
| 222.10 | 115.0495 |
| 223.80 | 149.6591 |
| 226.40 | 150.1093 |
| 227.00 | 134.9888 |
| 227.08 | 135.0010 |
| 227.20 | 136.0351 |
| 228.16 | 140.2503 |
| 228.18 | 144.3184 |
| 228.18 | 144.3184 |
| 231.56 | 0.0000 |
| 235.69 | 164.5115 |
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| 236.00 | 144.5743 |
| 238.63 | 146.0258 |
| 238.63 | 146.0258 |
| 238.63 | 146.0258 |
| 238.63 | 146.0258 |
| 239.00 | 0.0000 |
| 240.98 | 146.4043 |
| 241.98 | 146.5661 |
| 241.98 | 146.5661 |
| 241.98 | 146.5661 |
| 244.69 | 125.7777 |
| 245.39 | 125.8728 |
| 247.94 | 127.7784 |
| 248.90 | 131.0295 |
| 249.79 | 0.0000 |
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| 252.85 | 136.8035 |
| 252.85 | 136.8035 |
| 254.15 | 0.0000 |
| 256.20 | 111.0874 |
| 256.20 | 111.0874 |
| 260.50 | 120.0071 |
| 260.90 | 0.0000 |
| 262.80 | 125.5683 |
| 264.65 | 126.8628 |
| 268.24 | 144.8341 |
| 268.79 | 132.1749 |
| 269.46 | 118.9863 |
| 269.46 | 118.9863 |
| 269.46 | 118.9863 |
| 269.46 | 118.9863 |
| 271.23 | 126.1160 |
| 273.65 | 148.8233 |
| 276.40 | 137.9995 |
| 277.35 | 112.4298 |
| 277.60 | 101.7473 |
| 277.60 | 101.7473 |
| 278.00 | 105.0023 |
| 278.60 | 112.5687 |
| 279.20 | 127.6529 |
| 279.53 | 133.0593 |
| 280.46 | 123.5141 |
| 281.68 | 0.0000 |
| 283.67 | 102.3523 |
| 284.30 | 109.9604 |
| 285.00 | 111.1139 |
| 285.90 | 0.0000 |
| 286.10 | 116.6309 |
| 286.10 | 116.6309 |
| 287.40 | 123.2657 |
| 288.45 | 0.0000 |
| 290.67 | 126.9047 |
| 290.80 | 125.2942 |
| 291.72 | 130.2881 |
| 293.26 | 0.0000 |
| 293.70 | 107.6891 |
| 295.21 | 116.0120 |
| 295.21 | 116.0120 |

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| 295.21 | 116.0120 |
| 295.96 | 116.0944 |
| 296.50 | 116.1529 |
| 297.23 | 0.0000 |
| 298.57 | 118.0173 |
| 299.80 | 96.8185 |
| 299.80 | 96.8185 |
| 300.09 | 96.8455 |
| 300.09 | 96.8455 |
| 300.09 | 96.8455 |
| 300.09 | 96.8455 |
| 300.12 | 96.8473 |
| 301.29 | 85.4490 |
| 302.84 | 92.1536 |
| 303.76 | 0.0000 |
| 303.91 | 93.8914 |
| 304.40 | 98.8788 |
| 304.40 | 98.8788 |
| 304.84 | 102.8758 |
| 306.84 | 89.1887 |
| 308.46 | 110.2722 |
| 311.98 | 107.3055 |
| 316.51 | 101.0772 |
| 318.01 | 113.4447 |
| 319.02 | 112.4332 |
| 319.41 | 114.6994 |
| 320.08 | 109.1953 |
| 323.87 | 103.9703 |
| 323.87 | 103.9703 |
| 323.87 | 103.9703 |
| 323.87 | 103.9703 |
| 325.23 | 110.8090 |
| 328.77 | 104.4131 |
| 333.44 | 91.3063 |
| 334.20 | 115.0530 |
| 334.20 | 115.0530 |
| 334.30 | 115.0634 |
| 338.28 | 91.6820 |
| 338.28 | 91.6820 |
| 338.28 | 91.6820 |
| 338.28 | 91.6820 |
| 338.32 | 91.6853 |
| 338.32 | 91.6853 |
| 338.32 | 91.6853 |
| 340.50 | 108.8633 |
| 340.57 | 108.8711 |
| 344.27 | 93.2827 |
| 345.85 | 97.0495 |
| 350.59 | 0.0000 |
| 351.07 | 83.5122 |
| 351.92 | 83.5701 |
| 351.92 | 83.5701 |
| 351.92 | 83.5701 |
| 355.39 | 0.0000 |
| 356.01 | 77.5319 |
| 364.48 | 89.0469 |
| 366.43 | 77.6023 |
| 367.43 | 84.6186 |
| 367.94 | 0.0000 |
| 369.80 | 90.5842 |
| 374.96 | 104.9432 |
| 383.85 | 90.6971 |
| 387.95 | 82.1470 |
| 388.63 | 86.6083 |
| 391.69 | 77.9507 |
| 391.69 | 77.9507 |
| 392.90 | 89.5463 |
| 398.62 | 88.1492 |
| 400.65 | 93.6310 |
| 401.10 | 96.3391 |
| 401.81 | 86.5727 |
| 402.60 | 91.9811 |
| 404.84 | 95.7099 |
| 410.95 | 83.5575 |
| 411.60 | 90.7884 |
| 413.65 | 82.8205 |
| 414.70 | 73.8746 |
| 415.30 | 77.5110 |

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| 415.76 | 80.2421 |
| 417.63 | 0.0000 |
| 418.52 | 78.5942 |
| 423.70 | 95.2043 |
| 427.08 | 79.9796 |
| 427.89 | 91.8472 |
| 432.53 | 72.0735 |
| 433.93 | 78.5359 |
| 439.47 | 0.0000 |
| 439.56 | 71.5075 |
| 439.89 | 69.6902 |
| 443.98 | 69.8851 |
| 444.90 | 73.6096 |
| 445.03 | 73.6157 |
| 445.03 | 73.6157 |
| 445.03 | 73.6157 |
| 445.03 | 73.6157 |
| 453.90 | 60.1718 |
| 463.38 | 64.2769 |
| 468.07 | 74.7534 |
| 473.00 | 80.6171 |
| 475.06 | 85.4180 |
| 475.35 | 83.5556 |
| 476.78 | 71.4170 |
| 477.59 | 76.1550 |
| 477.96 | 75.2332 |
| 482.03 | 72.5999 |
| 484.57 | 0.0000 |
| 487.03 | 74.7219 |
| 490.36 | 0.0000 |
| 492.35 | 0.0000 |
| 497.08 | 49.4951 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 77.7525 |
| 511.00 | 77.7599 |
| 511.85 | 77.8007 |
| 511.85 | 77.8007 |
| 513.99 | 47.7022 |
| 513.99 | 47.7022 |
| 520.41 | 54.0654 |
| 520.65 | 0.0000 |
| 527.90 | 0.0000 |
| 528.96 | 0.0000 |
| 529.64 | 55.3336 |
| 529.87 | 0.0000 |
| 531.02 | 52.4641 |
| 537.32 | 59.4847 |
| 543.00 | 65.5524 |
| 546.56 | 0.0000 |
| 549.76 | 57.9503 |
| 552.65 | 48.2075 |
| 555.20 | 57.1451 |
| 563.23 | 63.3418 |
| 563.90 | 63.3652 |
| 568.70 | 51.6239 |
| 569.32 | 47.6689 |
| 569.50 | 54.6257 |
| 569.67 | 54.6307 |
| 573.80 | 63.7168 |
| 574.00 | 60.7357 |
| 574.64 | 0.0000 |
| 578.91 | 0.0000 |
| 579.30 | 0.0000 |
| 583.14 | 60.0421 |
| 585.48 | 0.0000 |
| 591.81 | 59.3187 |
| 592.07 | 60.3333 |
| 593.00 | 65.3928 |
| 595.88 | 67.5091 |
| 600.56 | 83.8409 |
| 602.52 | 0.0000 |
| 602.71 | 71.4646 |
| 602.71 | 71.4646 |
| 603.60 | 58.2768 |
| 604.41 | 48.5859 |
| 604.70 | 48.5933 |
| 609.31 | 73.0679 |

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| 609.31 | 73.0679 |
| 609.31 | 73.0679 |
| 609.31 | 73.0679 |
| 610.33 | 71.4807 |
| 612.46 | 76.4416 |
| 614.37 | 63.4931 |
| 618.01 | 60.1469 |
| 621.84 | 56.1816 |
| 621.84 | 56.1816 |
| 631.29 | 53.3759 |
| 633.02 | 63.6972 |
| 633.10 | 63.6991 |
| 634.78 | 51.4145 |
| 635.90 | 46.2991 |
| 636.97 | 50.4415 |
| 645.85 | 50.6688 |
| 646.12 | 44.4697 |
| 656.30 | 46.5678 |
| 657.75 | 38.2791 |
| 657.90 | 0.0000 |
| 661.65 | 53.1525 |
| 661.65 | 53.1525 |
| 664.57 | 0.0000 |
| 666.33 | 50.1401 |
| 666.33 | 50.1401 |
| 675.00 | 46.1565 |
| 677.61 | 39.9123 |
| 685.20 | 39.0042 |
| 692.80 | 50.7832 |
| 695.00 | 43.4224 |
| 696.49 | 55.1104 |
| 696.49 | 55.1104 |
| 697.00 | 64.6654 |
| 697.49 | 62.5597 |
| 698.33 | 60.4633 |
| 698.50 | 60.4668 |
| 699.00 | 55.1754 |
| 702.63 | 37.2014 |
| 706.10 | 74.5224 |
| 706.58 | 0.0000 |
| 706.67 | 68.1523 |
| 709.31 | 42.6477 |
| 711.68 | 45.8975 |
| 713.82 | 63.0368 |
| 717.42 | 57.7919 |
| 720.50 | 43.9404 |
| 721.93 | 0.0000 |
| 722.20 | 54.9156 |
| 722.78 | 61.7959 |
| 722.78 | 61.7959 |
| 722.89 | 61.7994 |
| 722.95 | 61.8012 |
| 723.30 | 68.6777 |
| 724.18 | 73.8580 |
| 727.18 | 39.7743 |
| 733.00 | 29.3167 |
| 735.90 | 44.2494 |
| 739.58 | 43.2410 |
| 742.81 | 47.6349 |
| 744.21 | 45.4979 |
| 747.13 | 48.8109 |
| 751.79 | 40.2158 |
| 752.31 | 46.7491 |
| 753.82 | 44.6035 |
| 755.35 | 0.0000 |
| 756.15 | 38.1157 |
| 756.87 | 46.8423 |
| 763.93 | 56.8226 |
| 765.79 | 76.5540 |
| 766.42 | 67.8239 |
| 766.84 | 57.9882 |
| 776.49 | 49.4412 |
| 778.00 | 39.5793 |
| 778.57 | 42.8883 |
| 778.89 | 41.7944 |
| 783.80 | 49.5978 |
| 785.46 | 45.2204 |
| 792.07 | 70.7871 |

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| 795.84 | 35.4502 |
| 796.30 | 49.8615 |
| 798.80 | 78.7526 |
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| 810.29 | 43.4668 |
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| 817.79 | 0.0000 |
| 818.51 | 39.1411 |
| 819.60 | 36.9216 |
| 826.30 | 50.4863 |
| 828.27 | 0.0000 |
| 831.60 | 61.8381 |
| 831.96 | 61.8481 |
| 834.83 | 53.1389 |
| 836.80 | 0.0000 |
| 846.75 | 36.1992 |
| 848.13 | 47.9911 |
| 856.28 | 0.0000 |
| 856.80 | 30.2873 |
| 860.37 | 40.9460 |
| 867.32 | 31.9341 |
| 867.82 | 36.5029 |
| 871.10 | 37.8552 |
| 873.19 | 29.2641 |
| 874.81 | 36.6025 |
| 875.33 | 0.0000 |
| 876.40 | 43.9512 |
| 879.36 | 43.0849 |
| 880.27 | 35.7636 |
| 880.51 | 35.7670 |
| 881.50 | 40.3681 |
| 883.24 | 42.2311 |
| 884.67 | 36.7432 |
| 889.25 | 45.0893 |
| 896.60 | 33.2209 |
| 898.02 | 41.5481 |
| 899.00 | 40.6398 |
| 903.28 | 41.1176 |
| 911.07 | 27.8364 |
| 911.07 | 27.8364 |
| 911.07 | 27.8364 |
| 919.63 | 28.9601 |
| 920.93 | 31.6642 |
| 925.00 | 43.8376 |
| 925.24 | 43.8422 |
| 926.50 | 41.0631 |
| 935.52 | 32.7723 |
| 937.48 | 39.3555 |
| 944.10 | 33.8150 |
| 946.00 | 31.9588 |
| 949.00 | 35.7577 |
| 962.29 | 62.1350 |
| 964.01 | 45.7290 |
| 966.15 | 48.9193 |
| 968.20 | 53.0619 |
| 969.11 | 53.0797 |
| 969.11 | 53.0797 |
| 969.11 | 53.0797 |
| 977.42 | 36.9701 |
| 980.50 | 38.0674 |
| 983.50 | 33.3448 |
| 989.30 | 39.1402 |
| 996.32 | 42.1083 |
| 1001.03 | 36.4256 |
| 1001.68 | 33.5576 |
| 1004.76 | 46.0711 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 27.1523 |
| 1036.00 | 37.8346 |
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| 1038.57 | 38.8379 |
| 1038.76 | 0.0000 |
| 1045.16 | 39.8989 |
| 1046.59 | 38.9434 |
| 1048.07 | 35.0666 |

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| 1050.47 | 36.0696 |
| 1050.47 | 36.0696 |
| 1062.04 | 32.2942 |
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| 1076.63 | 27.5324 |
| 1077.35 | 35.4076 |
| 1078.86 | 41.3294 |
| 1085.78 | 44.3804 |
| 1099.22 | 29.7158 |
| 1112.02 | 24.8645 |
| 1112.84 | 34.2678 |
| 1115.52 | 49.7852 |
| 1120.29 | 47.8664 |
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| 1120.29 | 47.8664 |
| 1120.29 | 47.8664 |
| 1120.51 | 47.8688 |
| 1121.28 | 47.8805 |
| 1124.00 | 0.0000 |
| 1129.67 | 26.2538 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 38.4583 |
| 1173.22 | 38.5195 |
| 1175.09 | 29.4135 |
| 1177.93 | 43.6509 |
| 1189.05 | 38.7051 |
| 1204.90 | 52.1928 |
| 1205.75 | 0.0000 |
| 1213.00 | 57.4465 |
| 1221.42 | 55.5319 |
| 1230.97 | 42.9688 |
| 1235.34 | 34.4189 |
| 1236.41 | 0.0000 |
| 1238.25 | 41.3379 |
| 1246.25 | 38.3261 |
| 1260.41 | 0.0000 |
| 1271.85 | 36.5210 |
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| 1274.54 | 39.6811 |
| 1291.56 | 28.3302 |
| 1298.22 | 0.0000 |
| 1312.09 | 23.2160 |
| 1325.50 | 25.4203 |
| 1325.50 | 25.4203 |
| 1332.49 | 32.8966 |
| 1333.61 | 31.8457 |
| 1360.21 | 19.2445 |
| 1362.66 | 0.0000 |
| 1365.15 | 21.4111 |
| 1368.21 | 18.2144 |
| 1368.53 | 0.0000 |
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| 1384.27 | 21.5195 |
| 1394.10 | 19.4177 |
| 1395.20 | 17.2656 |
| 1407.95 | 24.9013 |
| 1434.06 | 20.7098 |
| 1436.60 | 21.8135 |
| 1457.56 | 0.0000 |
| 1460.81 | 14.2664 |
| 1489.15 | 11.9727 |
| 1509.49 | 16.6611 |
| 1596.49 | 24.7425 |
| 1620.62 | 17.1057 |
| 1678.03 | 0.0000 |
| 1691.02 | 11.5859 |
| 1691.02 | 11.5859 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 13.4542 |
| 1764.49 | 13.4542 |
| 1764.49 | 13.4542 |
| 1764.49 | 13.4542 |
| 1770.23 | 8.4194 |
| 1771.40 | 8.4215 |
| 1791.20 | 0.0000 |
| 1808.65 | 8.9121 |

1836.01

10.9543

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G245388011

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 5.1118E+00 | ug/g |
| Total Uranium Counting Unc. | 4.3428E+00 | ug/g |
| Total Uranium Tpu | 2.2157E-06 | ug/g |
| Total Uranium Mda | 2.5152E+00 | ug/g |

```

*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 944964                SAMPLE ID   : G245388011                *
*  ANALYST       : MXR1                  DETECTOR    : GAM11                  *
*  SAMPLE DATE   : 15-JAN-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00          *
*  ANALYSIS DATE : 4-FEB-2010 14:41:51.93  SAMPLE ALQT: 104.710 GRAM          *
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.965E+00
GROSS GAMMA ERROR (pCi/GRAM ) : 1.439E+00
GROSS GAMMA MDA (pCi/GRAM ) : 3.523E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.695E+00

```

VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 19:08:33.74

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202023713.CNF;1
Sample date        : 27-JAN-2010 00:00:00 Acquisition date : 4-FEB-2010 17:08:10.
Sample ID          : G1202023713      Sample quantity   : 1.51990E+02 GRAM
Detector name      : GAM04             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:00.42  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity      : 5.00000
Batch ID           : 944964            Detector SN#     :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|---------|------|-------|------|---------|------|----|----------|-------|-----|
| 1 | 0 | 185.52* | 24 | 49 | 1.22 | 371.11 | 367 | 9 | 3.35E-03 | 64.9 | |
| 2 | 0 | 510.71* | 11 | 31 | 2.91 | 1021.52 | 1015 | 14 | 1.47E-03 | 171.8 | |
| 3 | 0 | 708.95 | 9 | 14 | 1.38 | 1418.00 | 1410 | 11 | 1.28E-03 | 84.6 | |
| 4 | 0 | 885.97 | 11 | 0 | 1.47 | 1772.00 | 1769 | 6 | 1.53E-03 | 30.2 | |
| 5 | 0 | 968.46* | 14 | 3 | 3.71 | 1936.98 | 1931 | 10 | 1.90E-03 | 40.9 | |

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202023713.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 27-JAN-2010 00:00:00 Acquisition date : 4-FEB-2010 17:08:10
Sample ID         : G1202023713 Sample quantity : 151.99 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA4 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.42 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| ANH-511 | + | 511.00 | * | 9.545E-03 | 3.281E-02 | 2.365E-02 | 1.322E-03 | 0.404 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|---------------------|-----------|---------|
| BE-7 | | 477.59 | * | 4.231E-02 | 1.260E-01 | 2.156E-01 | 1.428E-02 | 0.196 |
| NA-22 | | 1274.54 | * | 1.126E-02 | 1.665E-02 | 3.188E-02 | 2.085E-03 | 0.353 |
| NA-24 | | 1368.53 | * | 8.196E-05 | 1.665E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | -2.307E-01 | 7.119E-01 | 1.064E+00 | 6.862E-02 | -0.217 |
| | | 1808.65 | * | -3.911E-04 | 1.319E-02 | 2.115E-02 | 1.254E-03 | -0.018 |
| K-40 | | 1460.81 | * | 1.713E-01 | 1.968E-01 | 3.859E-01 | 2.742E-02 | 0.444 |
| TI-44 | | 67.85 | | 1.079E-02 | 1.819E-02 | 3.234E-02 | 3.761E-03 | 0.334 |
| | | 78.38 | * | -1.947E-03 | 1.284E-02 | 2.123E-02 | 2.441E-03 | -0.092 |
| SC-46 | | 889.25 | * | -2.427E-03 | 2.031E-02 | 2.647E-02 | 2.141E-03 | -0.092 |
| | | 1120.51 | | 1.019E-02 | 1.782E-02 | 3.242E-02 | 2.124E-03 | 0.314 |
| V-48 | | 944.10 | | 7.406E-02 | 2.911E-01 | 5.010E-01 | 4.005E-02 | 0.148 |
| | | 983.50 | * | -8.525E-03 | 1.696E-02 | 2.338E-02 | 1.812E-03 | -0.365 |
| | | 1312.09 | | -1.022E-02 | 2.125E-02 | 3.032E-02 | 2.043E-03 | -0.337 |
| CR-51 | | 320.08 | * | -1.041E-01 | 1.377E-01 | 2.104E-01 | 1.481E-02 | -0.495 |
| MN-52 | | 744.21 | | 5.295E-03 | 4.369E-02 | 7.445E-02 | 4.419E-03 | 0.071 |
| | | 848.13 | | -9.056E-02 | 1.650E+00 | 2.705E+00 | 2.012E-01 | -0.033 |
| | | 935.52 | | -2.456E-02 | 4.216E-02 | 5.907E-02 | 4.750E-03 | -0.416 |
| | | 1246.25 | | 9.425E-01 | 1.236E+00 | 2.381E+00 | 1.515E-01 | 0.396 |
| | | 1333.61 | | 1.795E-01 | 1.001E+00 | 1.737E+00 | 1.190E-01 | 0.103 |
| | | 1434.06 | * | 2.037E-02 | 4.757E-02 | 8.754E-02 | 5.974E-03 | 0.233 |
| MN-54 | | 834.83 | * | 7.008E-04 | 1.618E-02 | 2.697E-02 | 1.952E-03 | 0.026 |
| CO-56 | | 846.75 | * | -2.922E-04 | 1.918E-02 | 3.163E-02 | 2.346E-03 | -0.009 |
| | | 977.42 | | -3.617E-01 | 9.625E-01 | 1.411E+00 | 1.099E-01 | -0.256 |
| | | 1037.82 | | -9.799E-02 | 1.110E-01 | 1.354E-01 | 1.066E-02 | -0.724 |
| | | 1175.09 | | 2.084E-02 | 9.444E-01 | 1.527E+00 | 9.097E-02 | 0.014 |
| | | 1238.25 | | -8.978E-03 | 2.335E-02 | 3.512E-02 | 2.337E-03 | -0.256 |
| | | 1360.21 | | 1.529E-01 | 3.797E-01 | 6.979E-01 | 4.784E-02 | 0.219 |
| | | 1771.40 | | -7.507E-02 | 1.497E-01 | 2.105E-01 | 1.278E-02 | -0.357 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| CO-57 | 122.06 | * | | -3.790E-03 | 9.194E-03 | 1.447E-02 | 1.005E-03 | -0.262 |
| | 136.48 | | | -5.944E-02 | 8.097E-02 | 1.228E-01 | 9.132E-03 | -0.484 |
| CO-58 | 810.76 | * | | 6.453E-03 | 1.168E-02 | 2.180E-02 | 1.505E-03 | 0.296 |
| FE-59 | 142.65 | | | -3.932E-01 | 1.035E+00 | 1.574E+00 | 1.029E-01 | -0.250 |
| | 192.34 | | | 2.471E-02 | 3.456E-01 | 5.586E-01 | 6.793E-02 | 0.044 |
| | 1099.22 | * | | 3.787E-03 | 3.125E-02 | 5.207E-02 | 3.979E-03 | 0.073 |
| | 1291.56 | | | 9.386E-03 | 4.424E-02 | 7.749E-02 | 6.262E-03 | 0.121 |
| CO-60 | 1173.22 | | | 2.068E-02 | 1.889E-02 | 3.693E-02 | 2.196E-03 | 0.560 |
| | 1332.49 | * | | 4.211E-03 | 1.646E-02 | 2.912E-02 | 1.995E-03 | 0.145 |
| ZN-65 | 1115.52 | * | | -3.708E-02 | 3.521E-02 | 4.133E-02 | 2.734E-03 | -0.897 |
| GE-68 | 1077.35 | * | | 4.216E-01 | 4.704E-01 | 9.134E-01 | 6.380E-02 | 0.462 |
| AS-73 | 53.44 | * | | 1.737E-01 | 5.322E-01 | 9.323E-01 | 1.220E-01 | 0.186 |
| AS-74 | 595.88 | * | | 1.072E-02 | 3.347E-02 | 5.634E-02 | 2.974E-03 | 0.190 |
| | 634.78 | | | -3.047E-02 | 1.481E-01 | 2.291E-01 | 1.159E-02 | -0.133 |
| SE-75 | 66.05 | | | -2.344E+00 | 2.265E+00 | 3.249E+00 | 4.263E-01 | -0.722 |
| | 96.73 | | | 1.538E-02 | 2.860E-01 | 4.774E-01 | 6.924E-02 | 0.032 |
| | 121.11 | | | -2.289E-02 | 4.958E-02 | 7.770E-02 | 7.798E-03 | -0.295 |
| | 136.00 | | | -7.299E-03 | 1.470E-02 | 2.287E-02 | 1.533E-03 | -0.319 |
| | 198.60 | | | 1.401E-03 | 8.117E-01 | 1.229E+00 | 9.488E-02 | 0.001 |
| | 264.65 | * | | -1.550E-03 | 1.648E-02 | 2.761E-02 | 1.857E-03 | -0.056 |
| | 279.53 | | | -1.343E-02 | 4.418E-02 | 7.227E-02 | 5.103E-03 | -0.186 |
| | 303.91 | | | 1.214E-02 | 7.976E-01 | 1.341E+00 | 1.343E-01 | 0.009 |
| | 400.65 | | | 9.272E-03 | 9.430E-02 | 1.578E-01 | 1.421E-02 | 0.059 |
| BR-77 | 87.88 | | | 3.447E+00 | 8.832E+00 | 1.526E+01 | 1.833E+00 | 0.226 |
| | 200.40 | | | -1.877E+00 | 1.058E+01 | 1.662E+01 | 1.085E+00 | -0.113 |
| | 239.00 | | | -3.682E-01 | 6.964E-01 | 1.065E+00 | 7.098E-02 | -0.346 |
| | 249.79 | | | 2.402E+00 | 4.275E+00 | 7.624E+00 | 5.091E-01 | 0.315 |
| | 281.68 | | | 4.686E+00 | 5.911E+00 | 1.071E+01 | 7.111E-01 | 0.438 |
| | 297.23 | | | -7.616E-01 | 3.278E+00 | 5.376E+00 | 3.537E-01 | -0.142 |
| | 303.76 | | | -1.255E+00 | 1.115E+01 | 1.849E+01 | 1.210E+00 | -0.068 |
| | 439.47 | | | -7.302E+00 | 9.935E+00 | 1.457E+01 | 8.266E-01 | -0.501 |
| | 484.57 | | | 4.084E+00 | 1.677E+01 | 2.822E+01 | 1.592E+00 | 0.145 |
| | 520.65 | * | | 8.613E-03 | 6.794E-01 | 1.103E+00 | 6.143E-02 | 0.008 |
| | 574.64 | | | -1.681E+01 | 1.343E+01 | 1.616E+01 | 8.694E-01 | -1.040 |
| | 578.91 | | | -1.553E+00 | 5.784E+00 | 8.880E+00 | 4.760E-01 | -0.175 |
| | 585.48 | | | -8.210E+00 | 1.244E+01 | 1.795E+01 | 9.566E-01 | -0.458 |
| | 755.35 | | | 8.416E+00 | 8.996E+00 | 1.760E+01 | 1.071E+00 | 0.478 |
| | 817.79 | | | 1.908E+00 | 7.360E+00 | 1.287E+01 | 8.986E-01 | 0.148 |
| SR-82 | 698.33 | | | -6.393E-01 | 1.323E+01 | 2.138E+01 | 1.140E+00 | -0.030 |
| | 776.49 | * | | -1.537E-01 | 1.298E-01 | 1.632E-01 | 1.042E-02 | -0.942 |
| | 1395.20 | | | 8.117E-01 | 4.499E+00 | 7.785E+00 | 5.329E-01 | 0.104 |
| RB-83 | 520.41 | * | | -1.639E-03 | 2.802E-02 | 4.497E-02 | 2.505E-03 | -0.036 |
| | 529.64 | | | 3.316E-02 | 4.100E-02 | 7.491E-02 | 4.153E-03 | 0.443 |
| | 552.65 | | | -8.585E-03 | 7.858E-02 | 1.244E-01 | 6.800E-03 | -0.069 |
| RB-84 | 881.50 | * | | -2.347E-03 | 2.923E-02 | 3.927E-02 | 3.127E-03 | -0.060 |
| KR-85 | 513.99 | * | | 5.352E+00 | 3.763E+00 | 6.598E+00 | 3.685E-01 | 0.811 |
| SR-85 | 513.99 | * | | 2.565E-02 | 1.804E-02 | 3.163E-02 | 1.767E-03 | 0.811 |
| RB-86 | 1076.63 | * | | 8.414E-02 | 2.497E-01 | 4.355E-01 | 3.045E-02 | 0.193 |
| Y-88 | 898.02 | | | -7.408E-03 | 2.006E-02 | 2.964E-02 | 2.453E-03 | -0.250 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| | 1836.01 | * | | -4.653E-04 | 1.414E-02 | 2.261E-02 | 1.319E-03 | -0.021 |
| ZR-88 | 392.90 | * | | 1.248E-03 | 1.201E-02 | 2.011E-02 | 1.132E-03 | 0.062 |
| Y-91 | 1204.90 | * | | 3.060E-01 | 6.244E+00 | 1.015E+01 | 6.221E-01 | 0.030 |
| NB-94 | 702.63 | * | | -3.194E-03 | 1.636E-02 | 2.280E-02 | 1.228E-03 | -0.140 |
| | 871.10 | | | 2.076E-03 | 1.488E-02 | 2.518E-02 | 1.963E-03 | 0.082 |
| NB-95 | 765.79 | * | | 1.960E-03 | 1.513E-02 | 2.576E-02 | 1.606E-03 | 0.076 |
| NB-95M | 235.69 | * | | -2.087E-02 | 5.028E-02 | 7.621E-02 | 6.254E-03 | -0.274 |
| ZR-95 | 724.18 | | | -1.125E-02 | 3.743E-02 | 5.966E-02 | 4.026E-03 | -0.189 |
| | 756.15 | * | | 9.064E-03 | 2.247E-02 | 4.050E-02 | 2.949E-03 | 0.224 |
| NB-97 | 657.90 | * | | -6.093E-05 | 2.247E-02 | Half-Life too short | | |
| | 1024.50 | | | 4.044E-03 | 2.247E-02 | Half-Life too short | | |
| ZR-97 | 254.15 | | | 7.540E-04 | 2.247E-02 | Half-Life too short | | |
| | 355.39 | | | -6.169E-04 | 2.247E-02 | Half-Life too short | | |
| | 507.63 | * | | 2.670E-03 | 2.247E-02 | Half-Life too short | | |
| | 602.52 | | | -1.572E-03 | 2.247E-02 | Half-Life too short | | |
| | 1021.30 | | | -9.345E-03 | 2.247E-02 | Half-Life too short | | |
| | 1147.95 | | | -2.067E-03 | 2.247E-02 | Half-Life too short | | |
| | 1362.66 | | | -6.564E-04 | 2.247E-02 | Half-Life too short | | |
| | 1750.46 | | | -7.965E-05 | 2.247E-02 | Half-Life too short | | |
| MO-99 | 140.51 | | | -3.050E-01 | 2.062E+00 | 3.317E+00 | 8.997E-01 | -0.092 |
| | 181.06 | | | -6.271E-01 | 1.526E+00 | 2.060E+00 | 3.576E-01 | -0.304 |
| | 366.43 | | | 1.105E+00 | 7.595E+00 | 1.282E+01 | 7.661E-01 | 0.086 |
| | 739.58 | * | | -4.038E-01 | 9.298E-01 | 1.426E+00 | 1.969E-01 | -0.283 |
| | 778.00 | | | -2.156E+00 | 2.522E+00 | 3.410E+00 | 2.184E-01 | -0.632 |
| TC-99M | 140.51 | * | | -4.604E+01 | 2.522E+00 | Half-Life too short | | |
| RH-101 | 127.23 | | | -8.974E-03 | 1.099E-02 | 1.640E-02 | 1.114E-03 | -0.547 |
| | 198.01 | * | | -8.606E-03 | 1.573E-02 | 2.256E-02 | 1.469E-03 | -0.381 |
| | 325.23 | | | 5.388E-02 | 9.356E-02 | 1.659E-01 | 1.062E-02 | 0.325 |
| RH-102 | 418.52 | | | 2.475E-02 | 1.228E-01 | 2.075E-01 | 1.175E-02 | 0.119 |
| | 475.06 | * | | -2.785E-03 | 1.298E-02 | 2.051E-02 | 1.159E-03 | -0.136 |
| | 631.29 | | | 6.586E-03 | 2.621E-02 | 4.356E-02 | 2.213E-03 | 0.151 |
| | 697.49 | | | -2.607E-02 | 3.756E-02 | 5.507E-02 | 2.931E-03 | -0.473 |
| | 766.84 | | | 1.045E-02 | 4.164E-02 | 7.226E-02 | 4.514E-03 | 0.145 |
| | 1046.59 | | | -3.286E-03 | 5.464E-02 | 8.777E-02 | 6.374E-03 | -0.037 |
| | 1112.84 | | | -1.338E-02 | 7.718E-02 | 1.189E-01 | 7.886E-03 | -0.113 |
| RU-103 | 497.08 | * | | 4.381E-03 | 1.620E-02 | 2.737E-02 | 3.439E-03 | 0.160 |
| | 610.33 | | | -1.846E-01 | 3.932E-01 | 5.442E-01 | 8.274E-02 | -0.339 |
| RH-106 | + 511.85 | | | 4.711E-02 | 1.619E-01 | 2.405E-01 | 1.345E-02 | 0.196 |
| | 621.84 | * | | 1.542E-01 | 1.442E-01 | 2.678E-01 | 3.060E-02 | 0.576 |
| | 1050.47 | | | -4.119E-01 | 9.364E-01 | 1.362E+00 | 9.842E-02 | -0.302 |
| RU-106 | + 511.85 | | | 4.711E-02 | 1.619E-01 | 2.405E-01 | 1.345E-02 | 0.196 |
| | 621.84 | * | | 1.542E-01 | 1.434E-01 | 2.678E-01 | 1.376E-02 | 0.576 |
| | 1050.47 | | | -4.119E-01 | 9.364E-01 | 1.362E+00 | 9.842E-02 | -0.302 |
| AG-108M | 433.93 | * | | 2.531E-03 | 1.579E-02 | 2.644E-02 | 1.633E-03 | 0.096 |
| | 614.37 | | | 1.507E-02 | 1.621E-02 | 2.984E-02 | 1.709E-03 | 0.505 |
| | 722.95 | | | 6.943E-03 | 1.795E-02 | 3.174E-02 | 1.954E-03 | 0.219 |
| CD-109 | 88.03 | * | | 1.020E-01 | 2.614E-01 | 4.515E-01 | 5.426E-02 | 0.226 |
| AG-110M | 657.75 | * | | -1.136E-02 | 1.668E-02 | 2.543E-02 | 1.359E-03 | -0.447 |
| | 677.61 | | | -3.199E-02 | 1.274E-01 | 2.055E-01 | 1.125E-02 | -0.156 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| | | 706.67 | | 5.476E-02 | 9.955E-02 | 1.621E-01 | 9.415E-03 | 0.338 |
| | | 763.93 | | -1.980E-02 | 5.972E-02 | 9.315E-02 | 6.093E-03 | -0.213 |
| | + | 884.67 | | 2.260E-02 | 1.376E-02 | 3.446E-02 | 2.864E-03 | 0.656 |
| | | 937.48 | | -3.291E-02 | 4.450E-02 | 6.050E-02 | 5.061E-03 | -0.544 |
| | | 1384.27 | | -3.636E-02 | 6.692E-02 | 9.371E-02 | 6.703E-03 | -0.388 |
| IN-111 | | 171.28 | | -4.787E-02 | 9.170E-02 | 1.408E-01 | 8.972E-03 | -0.340 |
| | | 245.39 | * | -8.457E-03 | 8.675E-02 | 1.355E-01 | 9.039E-03 | -0.062 |
| IN-113M | | 391.69 | * | 1.622E-03 | 1.788E-02 | 2.990E-02 | 1.801E-03 | 0.054 |
| SN-113 | | 391.69 | * | 1.622E-03 | 1.788E-02 | 2.990E-02 | 1.801E-03 | 0.054 |
| IN-114M | | 190.27 | * | -1.974E-02 | 7.554E-02 | 1.041E-01 | 6.735E-03 | -0.190 |
| CD-115 | | 260.90 | | -3.603E+00 | 7.205E+00 | 1.158E+01 | 7.729E-01 | -0.311 |
| | | 492.35 | | 9.346E-01 | 2.244E+00 | 3.866E+00 | 2.177E-01 | 0.242 |
| | | 527.90 | * | 4.195E-01 | 6.105E-01 | 1.097E+00 | 6.085E-02 | 0.383 |
| SN-117M | | 156.02 | | -1.454E-01 | 6.497E-01 | 1.032E+00 | 6.619E-02 | -0.141 |
| | | 158.56 | * | 1.342E-02 | 1.698E-02 | 2.939E-02 | 1.880E-03 | 0.457 |
| SB-122 | | 563.90 | * | 3.362E-02 | 1.725E-01 | 2.866E-01 | 1.555E-02 | 0.117 |
| | | 692.80 | | 2.128E+00 | 3.634E+00 | 6.611E+00 | 3.479E-01 | 0.322 |
| I-123 | | 159.00 | * | 6.894E-04 | 3.634E+00 | Half-Life | too short | |
| | | 528.96 | | 4.255E-02 | 3.634E+00 | Half-Life | too short | |
| TE-123M | | 159.00 | * | 1.095E-02 | 1.182E-02 | 2.065E-02 | 1.335E-03 | 0.530 |
| I-124 | | 602.71 | * | -2.576E-02 | 1.130E-01 | 1.749E-01 | 9.174E-03 | -0.147 |
| | | 722.78 | | 3.185E-01 | 6.440E-01 | 1.156E+00 | 6.530E-02 | 0.276 |
| | | 1325.50 | | -3.097E+00 | 6.413E+00 | 9.658E+00 | 6.581E-01 | -0.321 |
| | | 1376.25 | | 1.285E+00 | 3.928E+00 | 7.105E+00 | 4.868E-01 | 0.181 |
| | | 1509.49 | | 3.859E-01 | 2.832E+00 | 4.824E+00 | 3.253E-01 | 0.080 |
| | | 1691.02 | | -2.945E-01 | 7.989E-01 | 1.165E+00 | 7.384E-02 | -0.253 |
| SB-124 | | 602.71 | | -4.022E-03 | 1.764E-02 | 2.731E-02 | 1.433E-03 | -0.147 |
| | | 645.85 | | -3.361E-02 | 1.896E-01 | 3.106E-01 | 1.812E-02 | -0.108 |
| | + | 709.31 | | 8.527E-01 | 1.444E+00 | 2.206E+00 | 1.207E-01 | 0.387 |
| | | 713.82 | | -1.159E-01 | 6.851E-01 | 1.005E+00 | 1.011E-01 | -0.115 |
| | | 722.78 | | 7.208E-02 | 1.457E-01 | 2.616E-01 | 1.551E-02 | 0.276 |
| | + | 968.20 | | 1.245E+00 | 1.022E+00 | 1.949E+00 | 1.529E-01 | 0.639 |
| | | 1045.16 | | 9.636E-01 | 1.005E+00 | 1.932E+00 | 1.406E-01 | 0.499 |
| | | 1325.50 | | -7.484E-01 | 1.550E+00 | 2.334E+00 | 1.590E-01 | -0.321 |
| | | 1368.21 | | 1.354E-01 | 6.815E-01 | 1.192E+00 | 1.481E-01 | 0.114 |
| | | 1436.60 | | -7.219E-01 | 1.750E+00 | 2.591E+00 | 1.768E-01 | -0.279 |
| | | 1691.02 | * | -1.572E-02 | 4.265E-02 | 6.218E-02 | 4.225E-03 | -0.253 |
| SB-125 | | 427.89 | * | -1.911E-02 | 4.715E-02 | 7.099E-02 | 4.202E-03 | -0.269 |
| | | 463.38 | | 1.227E-01 | 1.183E-01 | 2.193E-01 | 1.458E-02 | 0.559 |
| | | 600.56 | | 5.826E-03 | 8.771E-02 | 1.420E-01 | 8.865E-03 | 0.041 |
| | | 635.90 | | -3.963E-02 | 1.490E-01 | 2.285E-01 | 1.409E-02 | -0.173 |
| TE-125M | | 109.28 | * | 1.027E+00 | 3.826E+00 | 6.032E+00 | 5.978E-01 | 0.170 |
| I-126 | | 388.63 | | -2.991E-03 | 6.401E-02 | 1.052E-01 | 5.968E-03 | -0.028 |
| | | 666.33 | * | -6.391E-02 | 5.257E-02 | 6.964E-02 | 3.435E-03 | -0.918 |
| | | 753.82 | | -5.008E-02 | 3.887E-01 | 6.320E-01 | 3.834E-02 | -0.079 |
| SB-126 | | 223.80 | | -1.739E-03 | 1.059E+00 | 1.684E+00 | 1.115E-01 | -0.001 |
| | | 278.60 | | -4.531E-01 | 7.210E-01 | 1.139E+00 | 7.572E-02 | -0.398 |
| | | 296.50 | | -2.882E-02 | 4.272E-01 | 6.955E-01 | 4.579E-02 | -0.041 |
| | | 414.70 | | 5.964E-03 | 2.328E-02 | 3.956E-02 | 2.239E-03 | 0.151 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 415.30 | | | -1.141E-01 | 1.927E+00 | 3.147E+00 | 1.781E-01 | -0.036 |
| | 555.20 | | | 5.461E-01 | 1.269E+00 | 2.181E+00 | 1.190E-01 | 0.250 |
| | 573.80 | | | -3.945E-01 | 2.997E-01 | 3.520E-01 | 1.895E-02 | -1.121 |
| | 593.00 | | | -3.348E-01 | 2.901E-01 | 3.630E-01 | 1.922E-02 | -0.922 |
| | 656.30 | | | 7.337E-01 | 1.046E+00 | 1.930E+00 | 9.488E-02 | 0.380 |
| | 666.33 | | | -2.632E-02 | 2.165E-02 | 2.868E-02 | 1.415E-03 | -0.918 |
| | 675.00 | | | 1.344E-01 | 5.554E-01 | 9.701E-01 | 4.889E-02 | 0.139 |
| | 695.00 | | | 1.562E-02 | 2.366E-02 | 4.340E-02 | 2.296E-03 | 0.360 |
| | 697.00 | | | -8.215E-02 | 8.980E-02 | 1.256E-01 | 6.676E-03 | -0.654 |
| | 720.50 | * | | 2.586E-02 | 4.377E-02 | 7.964E-02 | 4.475E-03 | 0.325 |
| | 856.80 | | | -7.681E-02 | 1.366E-01 | 2.000E-01 | 1.515E-02 | -0.384 |
| | 989.30 | | | -8.861E-02 | 3.341E-01 | 5.097E-01 | 3.928E-02 | -0.174 |
| | 1034.80 | | | 1.339E+00 | 2.170E+00 | 4.062E+00 | 2.990E-01 | 0.329 |
| | 1213.00 | | | -1.081E+00 | 1.114E+00 | 1.244E+00 | 7.681E-02 | -0.869 |
| SN-126 | 64.28 | | | -7.606E-02 | 2.538E-01 | 4.008E-01 | 6.904E-02 | -0.190 |
| | 86.94 | | | -2.011E-02 | 1.148E-01 | 1.880E-01 | 7.929E-02 | -0.107 |
| | 87.57 | * | | 4.442E-03 | 2.650E-02 | 4.490E-02 | 5.385E-03 | 0.099 |
| SB-127 | 61.10 | | | -9.473E+00 | 1.013E+01 | 1.477E+01 | 1.884E+00 | -0.641 |
| | 252.40 | | | 5.295E-01 | 6.267E-01 | 1.076E+00 | 4.441E-01 | 0.492 |
| | 290.80 | | | 1.714E+00 | 2.817E+00 | 5.020E+00 | 3.903E-01 | 0.341 |
| | 411.60 | | | 9.989E-01 | 1.660E+00 | 2.932E+00 | 3.839E-01 | 0.341 |
| | 444.90 | | | -5.264E-01 | 1.367E+00 | 2.116E+00 | 1.910E-01 | -0.249 |
| | 473.00 | | | -5.563E-02 | 2.403E-01 | 3.790E-01 | 3.590E-02 | -0.147 |
| | 543.00 | | | 1.210E+00 | 2.212E+00 | 3.882E+00 | 4.420E-01 | 0.312 |
| | 603.60 | | | -5.358E-01 | 1.834E+00 | 2.814E+00 | 2.455E-01 | -0.190 |
| | 685.20 | * | | -1.226E-01 | 1.582E-01 | 2.248E-01 | 1.565E-02 | -0.546 |
| | 698.50 | | | -5.813E-01 | 2.285E+00 | 3.586E+00 | 4.687E-01 | -0.162 |
| | 722.20 | | | 1.850E+00 | 4.114E+00 | 7.331E+00 | 5.110E-01 | 0.252 |
| | 783.80 | | | -1.887E-01 | 4.159E-01 | 6.261E-01 | 5.889E-02 | -0.301 |
| XE-127 | 57.60 | | | 2.553E+00 | 3.135E+00 | 5.683E+00 | 7.115E-01 | 0.449 |
| | 145.22 | | | -1.764E-02 | 2.307E-01 | 3.731E-01 | 2.428E-02 | -0.047 |
| | 172.10 | | | -2.314E-02 | 4.770E-02 | 7.357E-02 | 4.692E-03 | -0.315 |
| | 202.84 | * | | -5.027E-03 | 1.827E-02 | 2.844E-02 | 1.859E-03 | -0.177 |
| | 374.96 | | | -5.719E-02 | 7.559E-02 | 1.127E-01 | 6.613E-03 | -0.507 |
| I-131 | 80.18 | | | 2.922E-01 | 9.062E-01 | 1.563E+00 | 1.808E-01 | 0.187 |
| | 284.30 | | | -1.591E-01 | 3.575E-01 | 5.739E-01 | 4.111E-02 | -0.277 |
| | 364.48 | * | | -5.252E-04 | 2.969E-02 | 4.919E-02 | 3.251E-03 | -0.011 |
| | 636.97 | | | 2.006E-01 | 4.764E-01 | 8.066E-01 | 4.658E-02 | 0.249 |
| | 722.89 | | | 6.905E-01 | 1.744E+00 | 3.087E+00 | 1.753E-01 | 0.224 |
| TE-132 | 49.72 | | | 1.489E+00 | 4.206E+00 | 7.393E+00 | 9.539E-01 | 0.201 |
| | 111.76 | | | -2.644E+00 | 2.971E+00 | 4.478E+00 | 3.913E-01 | -0.590 |
| | 116.30 | | | -5.646E-01 | 2.479E+00 | 3.988E+00 | 3.327E-01 | -0.142 |
| | 228.16 | * | | 5.564E-02 | 7.156E-02 | 1.229E-01 | 1.684E-02 | 0.453 |
| BA-133 | 53.15 | | | 9.690E-01 | 2.428E+00 | 4.284E+00 | 5.608E-01 | 0.226 |
| | 79.62 | | | -3.380E-01 | 4.736E-01 | 7.344E-01 | 1.252E-01 | -0.460 |
| | 81.00 | | | -5.568E-03 | 3.341E-02 | 5.500E-02 | 9.717E-03 | -0.101 |
| | 276.40 | | | 4.490E-02 | 1.610E-01 | 2.655E-01 | 3.549E-02 | 0.169 |
| | 302.84 | | | 4.836E-02 | 5.708E-02 | 1.039E-01 | 1.252E-02 | 0.465 |
| | 356.01 | * | | -1.186E-02 | 1.898E-02 | 2.910E-02 | 3.409E-03 | -0.408 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| I-133 | + | 383.85 | | 1.024E-01 | 1.325E-01 | 2.385E-01 | 2.585E-02 | 0.429 |
| | | 510.53 | | 5.797E-04 | 1.325E-01 | Half-Life | too short | |
| | | 529.87 | * | 1.246E-05 | 1.325E-01 | Half-Life | too short | |
| | | 706.58 | | 6.734E-04 | 1.325E-01 | Half-Life | too short | |
| | | 856.28 | | -1.759E-04 | 1.325E-01 | Half-Life | too short | |
| | | 875.33 | | 5.160E-05 | 1.325E-01 | Half-Life | too short | |
| | | 1236.41 | | -7.551E-04 | 1.325E-01 | Half-Life | too short | |
| CS-134 | | 1298.22 | | -4.391E-04 | 1.325E-01 | Half-Life | too short | |
| | | 475.35 | | -3.345E-02 | 8.330E-01 | 1.351E+00 | 7.636E-02 | -0.025 |
| | | 563.23 | | 1.663E-02 | 1.565E-01 | 2.565E-01 | 1.425E-02 | 0.065 |
| | | 569.32 | | -3.709E-02 | 9.199E-02 | 1.363E-01 | 7.617E-03 | -0.272 |
| | | 604.70 | | -6.908E-03 | 1.705E-02 | 2.573E-02 | 1.356E-03 | -0.268 |
| | | 795.84 | * | 1.013E-02 | 1.582E-02 | 2.957E-02 | 1.993E-03 | 0.342 |
| | | 801.93 | | -3.981E-02 | 1.612E-01 | 2.653E-01 | 1.807E-02 | -0.150 |
| | | 1038.57 | | -1.540E+00 | 1.481E+00 | 1.692E+00 | 1.240E-01 | -0.911 |
| | | 1167.94 | | -7.614E-01 | 1.049E+00 | 1.393E+00 | 8.376E-02 | -0.546 |
| | | 1365.15 | | -1.580E-01 | 5.140E-01 | 7.815E-01 | 5.737E-02 | -0.202 |
| CS-135 | | 268.24 | * | 4.116E-02 | 6.398E-02 | 1.146E-01 | 9.552E-03 | 0.359 |
| I-135 | | 288.45 | | 1.810E+01 | 6.398E-02 | Half-Life | too short | |
| | | 417.63 | | 9.057E+02 | 6.398E-02 | Half-Life | too short | |
| | | 546.56 | | 2.200E+01 | 6.398E-02 | Half-Life | too short | |
| | | 836.80 | | 1.256E+03 | 6.398E-02 | Half-Life | too short | |
| | | 1038.76 | | -8.426E+02 | 6.398E-02 | Half-Life | too short | |
| | | 1124.00 | | -1.130E+03 | 6.398E-02 | Half-Life | too short | |
| | | 1131.51 | | 2.494E+01 | 6.398E-02 | Half-Life | too short | |
| | | 1260.41 | * | 8.648E+01 | 6.398E-02 | Half-Life | too short | |
| | | 1457.56 | | -5.850E+02 | 6.398E-02 | Half-Life | too short | |
| | | 1678.03 | | -6.361E+01 | 6.398E-02 | Half-Life | too short | |
| | | 1706.46 | | -1.106E+02 | 6.398E-02 | Half-Life | too short | |
| | | 1791.20 | | -1.899E+02 | 6.398E-02 | Half-Life | too short | |
| | | 66.91 | | -3.443E-02 | 2.446E-01 | 3.848E-01 | 6.669E-02 | -0.089 |
| | | 86.29 | | 1.183E-02 | 2.538E-01 | 4.255E-01 | 6.484E-02 | 0.028 |
| CS-136 | | 153.22 | | -9.159E-02 | 1.851E-01 | 2.862E-01 | 2.214E-02 | -0.320 |
| | | 163.89 | | 1.481E-02 | 3.074E-01 | 5.000E-01 | 3.852E-02 | 0.030 |
| | | 176.55 | | -9.667E-02 | 1.156E-01 | 1.711E-01 | 1.207E-02 | -0.565 |
| | | 273.65 | | -1.699E-02 | 1.285E-01 | 2.142E-01 | 1.580E-02 | -0.079 |
| | | 340.57 | | -1.136E-02 | 3.826E-02 | 6.171E-02 | 4.072E-03 | -0.184 |
| | | 818.51 | | 1.345E-02 | 1.997E-02 | 3.742E-02 | 2.617E-03 | 0.359 |
| | | 1048.07 | * | 1.478E-02 | 3.457E-02 | 6.089E-02 | 4.674E-03 | 0.243 |
| | | 1235.34 | | -3.963E-02 | 1.252E-01 | 1.936E-01 | 1.991E-02 | -0.205 |
| | | 661.65 | * | -1.671E-02 | 1.860E-02 | 3.069E-02 | 1.497E-03 | -0.545 |
| | | 661.65 | * | -1.767E-02 | 1.966E-02 | 3.244E-02 | 1.592E-03 | -0.545 |
| CE-139 | | 165.85 | * | -3.661E-03 | 1.196E-02 | 1.878E-02 | 1.193E-03 | -0.195 |
| BA-140 | | 162.64 | | -1.244E-01 | 2.259E-01 | 3.468E-01 | 2.440E-02 | -0.359 |
| | | 304.84 | | -5.561E-02 | 3.654E-01 | 6.024E-01 | 1.654E-01 | -0.092 |
| | | 423.70 | | 1.958E-01 | 6.274E-01 | 1.066E+00 | 3.386E-01 | 0.184 |
| | | 537.32 | * | -2.664E-03 | 6.923E-02 | 1.111E-01 | 3.608E-02 | -0.024 |
| LA-140 | | 328.77 | | -2.631E-02 | 8.443E-02 | 1.360E-01 | 9.536E-03 | -0.193 |
| | | 432.53 | | 1.792E-01 | 7.101E-01 | 1.201E+00 | 7.555E-02 | 0.149 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 487.03 | | 1.299E-03 | 4.842E-02 | 7.911E-02 | 5.082E-03 | 0.016 |
| | | 751.79 | | 4.527E-02 | 4.720E-01 | 8.008E-01 | 5.841E-02 | 0.057 |
| | | 815.85 | | -7.419E-03 | 7.449E-02 | 1.205E-01 | 9.822E-03 | -0.062 |
| | | 867.82 | | 3.274E-01 | 4.441E-01 | 8.234E-01 | 6.794E-02 | 0.398 |
| | | 919.63 | | 7.453E-01 | 7.737E-01 | 1.509E+00 | 1.547E-01 | 0.494 |
| | | 925.24 | | -2.777E-01 | 2.939E-01 | 3.574E-01 | 3.099E-02 | -0.777 |
| | | 1596.49 | * | 6.033E-04 | 3.715E-02 | 6.122E-02 | 4.032E-03 | 0.010 |
| CE-141 | | 145.44 | * | -1.723E-02 | 2.128E-02 | 3.187E-02 | 2.139E-03 | -0.541 |
| CE-143 | | 57.37 | | 1.654E+01 | 2.535E+01 | 4.534E+01 | 6.190E+00 | 0.365 |
| | | 231.56 | | -4.046E+01 | 4.752E+01 | 6.096E+01 | 1.901E+01 | -0.664 |
| | | 293.26 | * | 3.882E-01 | 2.286E+00 | 3.904E+00 | 8.142E-01 | 0.099 |
| | | 350.59 | | -1.256E+01 | 3.115E+01 | 4.600E+01 | 1.404E+01 | -0.273 |
| | | 490.36 | | 2.319E+01 | 5.426E+01 | 9.266E+01 | 2.871E+01 | 0.250 |
| | | 664.57 | | -2.902E+01 | 2.369E+01 | 2.860E+01 | 9.043E+00 | -1.015 |
| | | 721.93 | | 2.200E+01 | 2.385E+01 | 4.393E+01 | 1.253E+01 | 0.501 |
| CE-144 | | 80.11 | | -1.305E-01 | 7.436E-01 | 1.225E+00 | 1.415E-01 | -0.107 |
| | | 133.54 | * | 2.683E-02 | 7.211E-02 | 1.222E-01 | 1.781E-02 | 0.219 |
| PM-144 | | 476.78 | | 1.772E-02 | 2.953E-02 | 5.214E-02 | 3.554E-03 | 0.340 |
| | | 618.01 | | -6.713E-03 | 1.543E-02 | 2.294E-02 | 1.272E-03 | -0.293 |
| | | 696.49 | * | -1.104E-02 | 1.624E-02 | 2.373E-02 | 1.260E-03 | -0.465 |
| | | 778.57 | | -3.701E-01 | 8.795E-01 | 1.341E+00 | 8.602E-02 | -0.276 |
| PR-144 | | 696.49 | * | -7.457E-01 | 1.097E+00 | 1.603E+00 | 8.508E-02 | -0.465 |
| | | 1489.15 | | 3.237E+00 | 5.472E+00 | 1.045E+01 | 7.071E-01 | 0.310 |
| PM-146 | | 453.90 | * | 1.524E-02 | 1.805E-02 | 3.298E-02 | 2.815E-03 | 0.462 |
| | | 633.02 | | -1.247E-01 | 7.262E-01 | 1.127E+00 | 4.137E-01 | -0.111 |
| | | 735.90 | | 3.365E-02 | 6.163E-02 | 1.110E-01 | 3.096E-02 | 0.303 |
| | | 747.13 | | 4.946E-03 | 3.715E-02 | 6.340E-02 | 7.982E-03 | 0.078 |
| ND-147 | | 91.11 | | 1.535E-02 | 6.335E-02 | 1.077E-01 | 1.262E-02 | 0.143 |
| | | 319.41 | | -1.203E+00 | 1.024E+00 | 1.490E+00 | 9.602E-02 | -0.807 |
| | | 439.89 | | -1.357E+00 | 1.801E+00 | 2.644E+00 | 1.500E-01 | -0.513 |
| | | 531.02 | * | -9.862E-02 | 1.620E-01 | 2.338E-01 | 3.136E-02 | -0.422 |
| PM-149 | | 285.90 | * | -3.370E+00 | 4.963E+00 | 7.689E+00 | 1.116E+00 | -0.438 |
| EU-152 | | 121.78 | | -1.193E-02 | 2.703E-02 | 4.241E-02 | 3.614E-03 | -0.281 |
| | | 244.69 | | -6.607E-02 | 1.292E-01 | 1.906E-01 | 1.272E-02 | -0.347 |
| | | 344.27 | * | 7.508E-03 | 4.045E-02 | 6.886E-02 | 4.766E-03 | 0.109 |
| | | 443.98 | | 1.270E-01 | 4.223E-01 | 7.202E-01 | 4.085E-02 | 0.176 |
| | | 778.89 | | -8.510E-04 | 9.174E-02 | 1.523E-01 | 9.772E-03 | -0.006 |
| | | 867.32 | | 2.757E-01 | 3.862E-01 | 7.116E-01 | 5.507E-02 | 0.387 |
| | | 964.01 | | 9.206E-02 | 1.136E-01 | 1.987E-01 | 1.565E-02 | 0.463 |
| | | 1085.78 | | 1.935E-01 | 1.574E-01 | 3.204E-01 | 2.212E-02 | 0.604 |
| | | 1112.02 | | -1.031E-02 | 1.118E-01 | 1.764E-01 | 1.171E-02 | -0.058 |
| | | 1407.95 | | -9.667E-02 | 7.452E-02 | 6.411E-02 | 4.385E-03 | -1.508 |
| GD-153 | | 69.67 | | -5.975E-01 | 6.704E-01 | 1.027E+00 | 1.186E-01 | -0.582 |
| | | 83.37 | | 4.501E-01 | 4.902E+00 | 8.266E+00 | 9.676E-01 | 0.054 |
| | | 97.43 | * | 5.092E-03 | 3.002E-02 | 5.060E-02 | 4.967E-03 | 0.101 |
| | | 103.18 | | 1.704E-02 | 3.746E-02 | 6.469E-02 | 5.756E-03 | 0.263 |
| EU-154 | | 123.07 | | 8.808E-03 | 1.937E-02 | 3.317E-02 | 3.358E-03 | 0.266 |
| | | 247.94 | | -1.861E-02 | 1.545E-01 | 2.405E-01 | 2.428E-02 | -0.077 |
| | | 591.81 | | -1.718E-01 | 2.685E-01 | 3.795E-01 | 3.600E-02 | -0.453 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| EU-155 | | 723.30 | 9.985E-03 | 7.546E-02 | 1.287E-01 | 8.962E-03 | 0.078 |
| | | 756.87 | -1.652E-01 | 2.844E-01 | 4.164E-01 | 4.296E-02 | -0.397 |
| | | 873.19 | -5.194E-02 | 1.260E-01 | 1.900E-01 | 2.223E-02 | -0.273 |
| | | 996.32 | -6.957E-02 | 1.445E-01 | 2.077E-01 | 3.597E-02 | -0.335 |
| | | 1004.76 | 1.718E-02 | 7.476E-02 | 1.288E-01 | 1.404E-02 | 0.133 |
| | | 1274.45 | * 3.229E-02 | 4.689E-02 | 8.986E-02 | 8.815E-03 | 0.359 |
| | | 48.70 | -8.114E-02 | 2.375E+00 | 3.736E+00 | 4.305E-01 | -0.022 |
| | | 60.01 | -2.314E+00 | 2.818E+00 | 4.146E+00 | 5.036E-01 | -0.558 |
| | | 86.54 | 3.952E-03 | 3.254E-02 | 5.493E-02 | 6.579E-03 | 0.072 |
| | | 105.31 | * 2.044E-02 | 4.025E-02 | 6.967E-02 | 6.073E-03 | 0.293 |
| TB-160 | | 86.79 | 8.108E-03 | 8.216E-02 | 1.384E-01 | 1.651E-02 | 0.059 |
| | | 197.04 | -6.616E-02 | 2.490E-01 | 3.674E-01 | 2.391E-02 | -0.180 |
| | | 215.65 | 1.356E-01 | 3.096E-01 | 5.147E-01 | 3.394E-02 | 0.263 |
| | | 298.57 | -4.737E-02 | 4.197E-02 | 6.137E-02 | 4.034E-03 | -0.772 |
| | | 879.36 | * 1.294E-02 | 5.307E-02 | 8.975E-02 | 7.117E-03 | 0.144 |
| | | 962.29 | 1.872E-01 | 1.665E-01 | 3.218E-01 | 2.537E-02 | 0.582 |
| | | 966.15 | 1.180E-02 | 8.799E-02 | 1.290E-01 | 1.014E-02 | 0.091 |
| | | 1177.93 | -8.040E-02 | 1.410E-01 | 1.959E-01 | 1.170E-02 | -0.410 |
| | | 1271.85 | -2.925E-01 | 2.682E-01 | 3.218E-01 | 2.095E-02 | -0.909 |
| | | 80.57 | 1.002E-02 | 9.289E-02 | 1.571E-01 | 1.818E-02 | 0.064 |
| HO-166M | + | 184.41 | 1.452E-02 | 1.887E-02 | 2.476E-02 | 1.595E-03 | 0.587 |
| | | 280.46 | -1.741E-03 | 3.678E-02 | 6.176E-02 | 4.104E-03 | -0.028 |
| | | 410.95 | 5.376E-02 | 1.052E-01 | 1.843E-01 | 1.042E-02 | 0.292 |
| | | 711.68 | * 1.051E-02 | 2.794E-02 | 4.428E-02 | 2.437E-03 | 0.237 |
| | | 752.31 | 7.639E-03 | 1.064E-01 | 1.797E-01 | 1.086E-02 | 0.043 |
| | | 810.29 | 7.645E-03 | 2.022E-02 | 3.626E-02 | 2.491E-03 | 0.211 |
| | | 51.35 | 8.215E-01 | 2.297E+01 | 3.923E+01 | 5.080E+00 | 0.021 |
| | | 52.39 | -6.139E+00 | 1.145E+01 | 1.840E+01 | 2.407E+00 | -0.334 |
| | | 59.40 | -1.204E+01 | 1.531E+01 | 2.256E+01 | 2.751E+00 | -0.534 |
| | | 66.72 | * 4.057E+00 | 1.284E+01 | 1.992E+01 | 2.329E+00 | -0.204 |
| LU-176 | | 88.36 | 3.052E-02 | 5.960E-02 | 1.041E-01 | 1.241E-02 | 0.293 |
| | | 201.83 | -2.374E-03 | 1.165E-02 | 1.823E-02 | 1.191E-03 | -0.130 |
| | | 306.84 | * 7.947E-03 | 1.082E-02 | 1.668E-02 | 1.089E-03 | -0.477 |
| | | 401.10 | -1.871E-01 | 2.705E+00 | 4.420E+00 | 2.494E-01 | -0.042 |
| | | 112.95 | -7.444E-02 | 3.009E-01 | 4.840E-01 | 3.747E-02 | -0.154 |
| | | 208.36 | * 3.990E-02 | 2.377E-01 | 3.733E-01 | 2.450E-02 | -0.107 |
| | | 52.97 | -1.062E-01 | 1.118E+00 | 1.884E+00 | 2.467E-01 | -0.056 |
| | | 54.07 | -1.752E-01 | 5.518E-01 | 9.075E-01 | 1.183E-01 | -0.193 |
| | | 61.30 | -5.235E-01 | 7.476E-01 | 1.178E+00 | 1.422E-01 | -0.444 |
| | | 121.62 | -8.435E-02 | 1.379E-01 | 2.125E-01 | 1.480E-02 | -0.397 |
| LU-177 | | 147.16 | -6.541E-02 | 2.359E-01 | 3.734E-01 | 2.422E-02 | -0.175 |
| | | 171.86 | -1.109E-01 | 2.105E-01 | 3.233E-01 | 2.061E-02 | -0.343 |
| | | 218.09 | -3.166E-02 | 3.586E-01 | 5.659E-01 | 3.737E-02 | -0.056 |
| | | 268.79 | 2.822E-01 | 3.128E-01 | 5.725E-01 | 3.818E-02 | 0.493 |
| | | 319.02 | -6.279E-02 | 1.075E-01 | 1.679E-01 | 1.082E-02 | -0.374 |
| | | 367.43 | 1.599E-01 | 3.758E-01 | 6.557E-01 | 3.911E-02 | 0.244 |
| | | 413.65 | * 5.599E-02 | 8.023E-02 | 1.204E-01 | 6.809E-03 | -0.465 |
| | | 56.28 | -2.040E-01 | 5.372E-01 | 8.779E-01 | 1.119E-01 | -0.232 |
| | | 57.53 | 2.230E-01 | 2.695E-01 | 4.890E-01 | 6.128E-02 | 0.456 |
| HF-181 | | | | | | | |
| | | | | | | | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| W-181 | | 65.20 | | -4.813E-01 | 4.179E-01 | 5.899E-01 | 6.953E-02 | -0.816 |
| | | 133.02 | | 1.623E-03 | 2.019E-02 | 3.332E-02 | 2.224E-03 | 0.049 |
| | | 136.25 | | -9.644E-02 | 1.602E-01 | 2.463E-01 | 1.631E-02 | -0.392 |
| | | 345.85 | | 1.547E-02 | 7.135E-02 | 1.219E-01 | 7.572E-03 | 0.127 |
| | | 482.03 | * | 2.559E-03 | 1.715E-02 | 2.854E-02 | 1.611E-03 | 0.090 |
| TA-182 | | 56.28 | | -8.534E-02 | 2.251E-01 | 3.678E-01 | 4.689E-02 | -0.232 |
| | | 57.53 | | 9.357E-02 | 1.130E-01 | 2.051E-01 | 2.570E-02 | 0.456 |
| | | 65.20 | * | -2.002E-01 | 1.739E-01 | 2.454E-01 | 2.892E-02 | -0.816 |
| | | 67.75 | | 3.321E-04 | 4.629E-02 | 7.398E-02 | 8.607E-03 | 0.004 |
| | | 100.10 | | -6.583E-04 | 6.423E-02 | 1.064E-01 | 9.963E-03 | -0.006 |
| RE-183 | | 152.43 | | -3.417E-02 | 1.258E-01 | 1.990E-01 | 1.282E-02 | -0.172 |
| | | 222.10 | | -9.508E-02 | 1.301E-01 | 1.880E-01 | 1.244E-02 | -0.506 |
| | | 1001.68 | | -1.196E+00 | 8.696E-01 | 1.085E+00 | 8.267E-02 | -1.102 |
| | | 1121.28 | | 7.398E-03 | 5.062E-02 | 8.451E-02 | 5.529E-03 | 0.088 |
| | | 1189.05 | | 4.975E-02 | 9.772E-02 | 1.779E-01 | 1.074E-02 | 0.280 |
| RE-184 | | 1221.42 | * | -3.779E-02 | 6.503E-02 | 9.438E-02 | 5.873E-03 | -0.400 |
| | | 1230.97 | | 1.031E-01 | 1.547E-01 | 2.945E-01 | 1.849E-02 | 0.350 |
| | | 57.98 | | 6.420E-02 | 1.075E-01 | 1.917E-01 | 2.387E-02 | 0.335 |
| | | 59.32 | | -4.221E-02 | 6.004E-02 | 8.957E-02 | 1.094E-02 | -0.471 |
| | | 67.20 | | -8.288E-03 | 8.146E-02 | 1.286E-01 | 1.500E-02 | -0.064 |
| OS-185 | | 162.32 | * | -3.165E-02 | 4.391E-02 | 6.623E-02 | 4.220E-03 | -0.478 |
| | | 208.81 | | -1.026E-02 | 3.834E-01 | 6.107E-01 | 4.009E-02 | -0.017 |
| | | 291.72 | | -1.392E-01 | 3.912E-01 | 6.356E-01 | 4.198E-02 | -0.219 |
| | | 57.98 | | 2.455E-01 | 4.111E-01 | 7.332E-01 | 9.129E-02 | 0.335 |
| | | 59.32 | | -1.613E-01 | 2.294E-01 | 3.423E-01 | 4.179E-02 | -0.471 |
| RE-188 | | 67.20 | | -3.169E-02 | 3.114E-01 | 4.917E-01 | 5.735E-02 | -0.064 |
| | | 161.27 | | -7.595E-02 | 1.452E-01 | 2.234E-01 | 1.425E-02 | -0.340 |
| | | 216.55 | | 3.543E-02 | 1.164E-01 | 1.910E-01 | 1.260E-02 | 0.185 |
| | | 252.85 | * | 3.934E-02 | 9.727E-02 | 1.710E-01 | 1.142E-02 | 0.230 |
| | | 318.01 | | -9.061E-03 | 1.891E-01 | 3.149E-01 | 2.033E-02 | -0.029 |
| W-188 | | 792.07 | | 1.265E-01 | 4.185E-01 | 6.548E-01 | 4.325E-02 | 0.193 |
| | | 903.28 | | -8.032E-02 | 3.769E-01 | 5.910E-01 | 4.849E-02 | -0.136 |
| | | 920.93 | | 1.239E-01 | 1.717E-01 | 3.233E-01 | 2.625E-02 | 0.383 |
| | | 59.72 | | -1.267E-01 | 1.600E-01 | 2.357E-01 | 2.867E-02 | -0.537 |
| | | 61.14 | | -8.063E-02 | 8.688E-02 | 1.269E-01 | 1.533E-02 | -0.635 |
| IR-192 | | 69.30 | | -1.503E-01 | 1.178E-01 | 1.716E-01 | 1.984E-02 | -0.876 |
| | | 592.07 | | -1.144E+00 | 1.119E+00 | 1.466E+00 | 7.768E-02 | -0.781 |
| | | 646.12 | * | 6.802E-03 | 1.514E-02 | 2.745E-02 | 1.368E-03 | 0.248 |
| | | 717.42 | | -3.606E-02 | 3.604E-01 | 5.933E-01 | 3.310E-02 | -0.061 |
| | | 874.81 | | 3.833E-02 | 2.263E-01 | 3.859E-01 | 3.032E-02 | 0.099 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|----------------|-----------|---------|
| AU-195 | | 316.51 | * | 6.057E-03 | 1.481E-02 | 2.583E-02 | 1.677E-03 | 0.235 |
| | | 468.07 | | -1.876E-02 | 3.032E-02 | 4.532E-02 | 2.976E-03 | -0.414 |
| | | 604.41 | | -6.818E-02 | 2.210E-01 | 3.386E-01 | 3.749E-02 | -0.201 |
| | | 612.46 | | -4.260E-01 | 3.301E-01 | 4.168E-01 | 2.966E-02 | -1.022 |
| | | 65.12 | | -9.167E-02 | 8.190E-02 | 1.162E-01 | 1.370E-02 | -0.789 |
| | | 66.83 | | -1.539E-02 | 4.137E-02 | 6.375E-02 | 7.448E-03 | -0.241 |
| | | 75.70 | | 6.604E-02 | 6.783E-02 | 1.223E-01 | 1.401E-02 | 0.540 |
| | | 98.88 | * | 6.040E-03 | 8.433E-02 | 1.409E-01 | 1.347E-02 | 0.043 |
| TL-200 | | 129.76 | | 9.742E-01 | 8.980E-01 | 1.633E+00 | 1.100E-01 | 0.596 |
| | | 367.94 | * | 8.062E-07 | 8.980E-01 | Half-Life | too short | |
| | | 579.30 | | -1.186E-05 | 8.980E-01 | Half-Life | too short | |
| | | 828.27 | | 0.000E+00 | 8.980E-01 | Half-Life | too short | |
| TL-201 | | 1205.75 | | 2.271E-06 | 8.980E-01 | Half-Life | too short | |
| | | 68.90 | | -5.542E-01 | 4.585E-01 | 6.725E-01 | 7.787E-02 | -0.824 |
| | | 70.82 | | 7.379E-02 | 2.571E-01 | 4.432E-01 | 5.101E-02 | 0.166 |
| | | 80.30 | | 1.434E-01 | 4.001E-01 | 6.919E-01 | 7.999E-02 | 0.207 |
| TL-202 | | 135.34 | | -4.703E-01 | 2.228E+00 | 3.567E+00 | 2.367E-01 | -0.132 |
| | | 167.43 | * | 8.684E-03 | 6.569E-01 | 1.064E+00 | 6.762E-02 | 0.008 |
| | | 68.90 | | -1.490E-01 | 1.233E-01 | 1.808E-01 | 2.094E-02 | -0.824 |
| | | 70.82 | | 1.978E-02 | 6.892E-02 | 1.188E-01 | 1.368E-02 | 0.166 |
| HG-203 | | 80.30 | | 3.846E-02 | 1.073E-01 | 1.856E-01 | 2.145E-02 | 0.207 |
| | | 439.56 | * | -1.591E-02 | 2.165E-02 | 3.176E-02 | 1.801E-03 | -0.501 |
| | | 70.83 | | 1.139E-01 | 3.906E-01 | 6.734E-01 | 1.050E-01 | 0.169 |
| | | 72.87 | | -1.575E-02 | 2.183E-01 | 3.646E-01 | 5.547E-02 | -0.043 |
| BI-207 | | 82.60 | | -7.378E-03 | 3.454E-01 | 5.766E-01 | 9.128E-02 | -0.013 |
| | | 279.20 | * | -7.935E-03 | 1.555E-02 | 2.488E-02 | 1.732E-03 | -0.319 |
| | | 72.80 | | 8.283E-03 | 7.071E-02 | 1.200E-01 | 1.376E-02 | 0.069 |
| | | 74.97 | | -8.769E-03 | 3.935E-02 | 6.478E-02 | 7.419E-03 | -0.135 |
| TL-207 | | 84.90 | | -4.254E-03 | 6.333E-02 | 1.051E-01 | 1.240E-02 | -0.040 |
| | | 569.67 | | -4.122E-03 | 1.434E-02 | 2.168E-02 | 1.171E-03 | -0.190 |
| | | 1063.62 | * | 5.615E-03 | 2.367E-02 | 4.025E-02 | 2.862E-03 | 0.140 |
| | | 1770.23 | | -3.243E-01 | 3.325E-01 | 3.948E-01 | 2.398E-02 | -0.822 |
| TL-208 | | 81.07 | | -1.282E-02 | 7.369E-02 | 1.212E-01 | 1.405E-02 | -0.106 |
| | | 83.78 | | 2.101E-02 | 4.167E-02 | 7.283E-02 | 8.543E-03 | 0.289 |
| | | 94.90 | | -1.221E-01 | 9.464E-02 | 1.388E-01 | 1.430E-02 | -0.880 |
| | | 122.32 | | -1.064E-01 | 6.426E-01 | 1.038E+00 | 7.988E-02 | -0.102 |
| PO-209 | | 144.24 | | 1.931E-01 | 2.784E-01 | 4.649E-01 | 3.636E-02 | 0.415 |
| | | 154.21 | | 6.273E-03 | 1.516E-01 | 2.473E-01 | 1.865E-02 | 0.025 |
| | | 269.46 | | 6.697E-02 | 7.684E-02 | 1.401E-01 | 9.662E-03 | 0.478 |
| | | 323.87 | * | 1.522E-01 | 2.920E-01 | 5.128E-01 | 8.584E-02 | 0.297 |
| TL-208 | | 338.28 | | 4.907E-01 | 4.184E-01 | 7.772E-01 | 8.399E-02 | 0.631 |
| | | 445.03 | | -4.606E-01 | 9.993E-01 | 1.526E+00 | 1.557E-01 | -0.302 |
| | | 277.35 | | -3.232E-02 | 1.643E-01 | 2.585E-01 | 2.857E-02 | -0.125 |
| | | 510.84 | | 4.419E-02 | 1.519E-01 | 2.442E-01 | 2.451E-02 | 0.181 |
| PO-209 | | 583.14 | * | 1.337E-02 | 1.839E-02 | 3.203E-02 | 2.016E-03 | 0.417 |
| | | 860.37 | | -1.143E-01 | 1.227E-01 | 1.638E-01 | 1.366E-02 | -0.698 |
| | | 260.50 | | -1.247E+00 | 3.965E+00 | 6.506E+00 | 4.344E-01 | -0.192 |
| | | 262.80 | | -1.084E+00 | 1.045E+01 | 1.750E+01 | 1.168E+00 | -0.062 |
| | | 896.60 | * | -7.923E-01 | 3.856E+00 | 5.908E+00 | 4.849E-01 | -0.134 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|----------------|-----------|---------|
| BI-210 | 46.50 | * | | 2.577E+00 | 4.073E+00 | 6.846E+00 | 5.966E-01 | 0.376 |
| PB-210 | 46.50 | * | | 2.577E+00 | 4.073E+00 | 6.846E+00 | 5.966E-01 | 0.376 |
| PO-210 | 46.50 | * | | 2.577E+00 | 4.071E+00 | 6.846E+00 | 5.318E-01 | 0.376 |
| BI-211 | 72.87 | | | -8.712E-02 | 1.207E+00 | 2.016E+00 | 2.312E-01 | -0.043 |
| | 351.07 | * | | -4.010E-02 | 9.956E-02 | 1.484E-01 | 1.003E-02 | -0.270 |
| PB-211 | 404.84 | * | | -1.673E-02 | 3.778E-01 | 6.189E-01 | 3.858E-01 | -0.027 |
| | 427.08 | | | -9.734E-01 | 1.245E+00 | 1.539E+00 | 9.511E-01 | -0.633 |
| | 831.96 | | | -1.202E-01 | 4.730E-01 | 7.327E-01 | 4.578E-01 | -0.164 |
| BI-212 | 727.18 | * | | -3.800E-03 | 1.100E-01 | 1.827E-01 | 1.397E-02 | -0.021 |
| | 785.46 | | | -3.868E-01 | 6.736E-01 | 9.909E-01 | 6.451E-02 | -0.390 |
| | 1620.62 | | | 1.309E-01 | 6.643E-01 | 1.147E+00 | 7.486E-02 | 0.114 |
| PB-212 | 74.81 | | | -4.840E-02 | 1.386E-01 | 2.255E-01 | 3.333E-02 | -0.215 |
| | 77.11 | | | 3.056E-02 | 7.386E-02 | 1.281E-01 | 1.470E-02 | 0.239 |
| | 87.30 | | | -3.311E-03 | 1.230E-01 | 2.046E-01 | 3.192E-02 | -0.016 |
| | 238.63 | * | | -2.071E-02 | 2.805E-02 | 4.193E-02 | 3.367E-03 | -0.494 |
| | 300.09 | | | -4.403E-02 | 2.918E-01 | 4.819E-01 | 4.243E-02 | -0.091 |
| PO-212 | 74.81 | | | -4.840E-02 | 1.386E-01 | 2.255E-01 | 3.333E-02 | -0.215 |
| | 77.11 | | | 3.056E-02 | 7.386E-02 | 1.281E-01 | 1.470E-02 | 0.239 |
| | 87.30 | | | -3.311E-03 | 1.230E-01 | 2.046E-01 | 3.192E-02 | -0.016 |
| | 115.19 | | | -5.675E-01 | 1.252E+00 | 1.966E+00 | 1.479E-01 | -0.289 |
| | 238.63 | * | | -2.071E-02 | 2.805E-02 | 4.193E-02 | 3.367E-03 | -0.494 |
| | 300.09 | | | -4.403E-02 | 2.918E-01 | 4.819E-01 | 4.243E-02 | -0.091 |
| BI-214 | 609.31 | * | | -7.922E-03 | 4.067E-02 | 5.894E-02 | 4.331E-03 | -0.134 |
| | 1120.29 | | | 4.679E-02 | 1.121E-01 | 1.976E-01 | 1.841E-02 | 0.237 |
| | 1764.49 | | | 9.020E-02 | 1.336E-01 | 2.797E-01 | 1.705E-02 | 0.323 |
| PB-214 | 74.81 | | | -8.339E-02 | 2.388E-01 | 3.885E-01 | 5.299E-02 | -0.215 |
| | 77.11 | | | 5.240E-02 | 1.267E-01 | 2.197E-01 | 3.025E-02 | 0.239 |
| | 87.30 | | | -5.672E-03 | 2.106E-01 | 3.506E-01 | 4.992E-02 | -0.016 |
| | 241.98 | | | -9.524E-02 | 1.613E-01 | 2.092E-01 | 1.823E-02 | -0.455 |
| | 295.21 | | | 1.243E-02 | 6.335E-02 | 1.059E-01 | 9.619E-03 | 0.117 |
| | 351.92 | * | | 1.398E-02 | 3.443E-02 | 5.624E-02 | 4.797E-03 | 0.249 |
| PO-214 | 74.81 | | | -8.339E-02 | 2.388E-01 | 3.885E-01 | 5.299E-02 | -0.215 |
| | 77.11 | | | 5.240E-02 | 1.267E-01 | 2.197E-01 | 3.025E-02 | 0.239 |
| | 87.30 | | | -5.672E-03 | 2.106E-01 | 3.506E-01 | 4.992E-02 | -0.016 |
| | 241.98 | | | -9.524E-02 | 1.613E-01 | 2.092E-01 | 1.823E-02 | -0.455 |
| | 295.21 | | | 1.243E-02 | 6.335E-02 | 1.059E-01 | 9.619E-03 | 0.117 |
| | 351.92 | * | | 1.398E-02 | 3.443E-02 | 5.624E-02 | 4.797E-03 | 0.249 |
| PO-215 | 81.07 | | | -1.282E-02 | 7.369E-02 | 1.212E-01 | 1.405E-02 | -0.106 |
| | 83.78 | | | 2.101E-02 | 4.167E-02 | 7.283E-02 | 8.543E-03 | 0.289 |
| | 94.90 | | | -1.221E-01 | 9.464E-02 | 1.388E-01 | 1.430E-02 | -0.880 |
| | 122.32 | | | -1.064E-01 | 6.426E-01 | 1.038E+00 | 7.988E-02 | -0.102 |
| | 144.24 | | | 1.931E-01 | 2.784E-01 | 4.649E-01 | 3.636E-02 | 0.415 |
| | 154.21 | | | 6.273E-03 | 1.516E-01 | 2.473E-01 | 1.865E-02 | 0.025 |
| | 269.46 | | | 6.697E-02 | 7.684E-02 | 1.401E-01 | 9.662E-03 | 0.478 |
| | 323.87 | * | | 1.522E-01 | 2.920E-01 | 5.128E-01 | 8.584E-02 | 0.297 |
| | 338.28 | | | 4.907E-01 | 4.184E-01 | 7.772E-01 | 8.399E-02 | 0.631 |
| | 445.03 | | | -4.606E-01 | 9.993E-01 | 1.526E+00 | 1.557E-01 | -0.302 |
| PO-216 | 74.81 | | | -4.840E-02 | 1.386E-01 | 2.255E-01 | 3.333E-02 | -0.215 |
| | 77.11 | | | 3.056E-02 | 7.386E-02 | 1.281E-01 | 1.470E-02 | 0.239 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-218 | 87.30 | | | -3.311E-03 | 1.230E-01 | 2.046E-01 | 3.192E-02 | -0.016 |
| | 238.63 | * | | -2.071E-02 | 2.805E-02 | 4.193E-02 | 3.367E-03 | -0.494 |
| | 300.09 | | | -4.403E-02 | 2.918E-01 | 4.819E-01 | 4.243E-02 | -0.091 |
| | 74.81 | | | -8.339E-02 | 2.388E-01 | 3.885E-01 | 5.299E-02 | -0.215 |
| | 77.11 | | | 5.240E-02 | 1.267E-01 | 2.197E-01 | 3.025E-02 | 0.239 |
| | 87.30 | | | -5.672E-03 | 2.106E-01 | 3.506E-01 | 4.992E-02 | -0.016 |
| RN-219 | 241.98 | | | -9.524E-02 | 1.613E-01 | 2.092E-01 | 1.823E-02 | -0.455 |
| | 295.21 | | | 1.243E-02 | 6.335E-02 | 1.059E-01 | 9.619E-03 | 0.117 |
| | 351.92 | * | | 1.398E-02 | 3.443E-02 | 5.624E-02 | 4.797E-03 | 0.249 |
| | 271.23 | | | -1.156E-02 | 9.904E-02 | 1.655E-01 | 1.447E-02 | -0.070 |
| RN-220 | 401.81 | * | | 8.077E-03 | 1.631E-01 | 2.709E-01 | 3.668E-02 | 0.030 |
| RA-223 | 549.76 | * | | -9.367E+00 | 1.016E+01 | 1.330E+01 | 7.285E-01 | -0.704 |
| | 81.07 | | | -1.282E-02 | 7.369E-02 | 1.212E-01 | 1.405E-02 | -0.106 |
| | 83.78 | | | 2.101E-02 | 4.167E-02 | 7.283E-02 | 8.543E-03 | 0.289 |
| | 94.90 | | | -1.221E-01 | 9.464E-02 | 1.388E-01 | 1.430E-02 | -0.880 |
| | 122.32 | | | -1.064E-01 | 6.426E-01 | 1.038E+00 | 7.988E-02 | -0.102 |
| | 144.24 | | | 1.931E-01 | 2.784E-01 | 4.649E-01 | 3.636E-02 | 0.415 |
| | 154.21 | | | 6.273E-03 | 1.516E-01 | 2.473E-01 | 1.865E-02 | 0.025 |
| | 269.46 | | | 6.697E-02 | 7.684E-02 | 1.401E-01 | 9.662E-03 | 0.478 |
| | 323.87 | * | | 1.522E-01 | 2.920E-01 | 5.128E-01 | 8.584E-02 | 0.297 |
| | 338.28 | | | 4.907E-01 | 4.184E-01 | 7.772E-01 | 8.399E-02 | 0.631 |
| | 445.03 | | | -4.606E-01 | 9.993E-01 | 1.526E+00 | 1.557E-01 | -0.302 |
| RA-224 | 240.98 | * | | -2.155E-01 | 3.286E-01 | 4.346E-01 | 2.897E-02 | -0.496 |
| RA-226 | 609.31 | * | | -7.922E-03 | 4.067E-02 | 5.894E-02 | 4.331E-03 | -0.134 |
| AC-227 | 1120.29 | | | 4.679E-02 | 1.121E-01 | 1.976E-01 | 1.841E-02 | 0.237 |
| | 1764.49 | | | 9.020E-02 | 1.336E-01 | 2.797E-01 | 1.705E-02 | 0.323 |
| | 79.80 | | | -3.208E-01 | 5.904E-01 | 9.304E-01 | 2.124E-01 | -0.345 |
| | 236.00 | | | -9.136E-02 | 1.023E-01 | 1.462E-01 | 1.601E-02 | -0.625 |
| | 256.20 | * | | -1.094E-01 | 1.643E-01 | 2.597E-01 | 3.726E-02 | -0.421 |
| | 286.10 | | | -4.152E-01 | 6.034E-01 | 9.332E-01 | 1.119E-01 | -0.445 |
| TH-227 | 299.80 | | | -4.231E-02 | 5.381E-01 | 8.960E-01 | 1.485E-01 | -0.047 |
| | 304.40 | | | -6.548E-02 | 7.809E-01 | 1.299E+00 | 2.281E-01 | -0.050 |
| | 334.20 | | | -5.564E-01 | 9.867E-01 | 1.533E+00 | 2.837E-01 | -0.363 |
| | 79.80 | | | -3.208E-01 | 5.905E-01 | 9.304E-01 | 2.148E-01 | -0.345 |
| | 94.00 | | | -1.110E+00 | 8.903E-01 | 1.236E+00 | 2.792E-01 | -0.898 |
| | 236.00 | | | -9.136E-02 | 1.022E-01 | 1.462E-01 | 1.408E-02 | -0.625 |
| | 256.20 | * | | -1.094E-01 | 1.647E-01 | 2.597E-01 | 4.473E-02 | -0.421 |
| | 286.10 | | | -4.152E-01 | 7.313E-01 | 9.332E-01 | 9.352E-01 | -0.445 |
| | 299.80 | | | -4.231E-02 | 5.381E-01 | 8.960E-01 | 1.485E-01 | -0.047 |
| | 304.40 | | | -6.548E-02 | 7.809E-01 | 1.299E+00 | 2.281E-01 | -0.050 |
| AC-228 | 334.20 | | | -5.564E-01 | 9.867E-01 | 1.533E+00 | 2.837E-01 | -0.363 |
| | 338.32 | | | 1.161E-01 | 1.100E-01 | 1.857E-01 | 7.582E-02 | 0.625 |
| | 911.07 | * | | -2.686E-02 | 5.873E-02 | 9.625E-02 | 1.049E-02 | -0.279 |
| | + 969.11 | | | 1.302E-01 | 1.105E-01 | 1.901E-01 | 4.383E-02 | 0.685 |
| RA-228 | 338.32 | | | 1.161E-01 | 1.100E-01 | 1.857E-01 | 7.582E-02 | 0.625 |
| TH-228 | + 911.07 | * | | -2.686E-02 | 5.873E-02 | 9.625E-02 | 1.049E-02 | -0.279 |
| | + 969.11 | | | 1.302E-01 | 1.105E-01 | 1.901E-01 | 4.383E-02 | 0.685 |
| | 74.81 | | | -4.882E-02 | 1.397E-01 | 2.275E-01 | 2.617E-02 | -0.215 |
| | 77.11 | | | 3.083E-02 | 7.451E-02 | 1.292E-01 | 1.483E-02 | 0.239 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TH-229 | | 87.30 | | -3.340E-03 | 1.240E-01 | 2.064E-01 | 2.471E-02 | -0.016 |
| | | 238.63 | * | -2.089E-02 | 2.829E-02 | 4.229E-02 | 3.397E-03 | -0.494 |
| | | 300.09 | | -4.442E-02 | 2.955E-01 | 4.861E-01 | 2.869E-01 | -0.091 |
| | | 85.43 | | 5.378E-03 | 6.004E-02 | 1.011E-01 | 1.197E-02 | 0.053 |
| | | 88.47 | | 1.637E-02 | 3.412E-02 | 5.943E-02 | 7.065E-03 | 0.275 |
| TH-230 | | 100.00 | | -1.799E-05 | 6.939E-02 | 1.151E-01 | 1.079E-02 | 0.000 |
| | | 193.63 | * | -1.163E-02 | 2.113E-01 | 3.371E-01 | 2.187E-02 | -0.034 |
| | | 210.97 | | 1.402E-01 | 3.146E-01 | 5.244E-01 | 3.447E-02 | 0.267 |
| | | 609.31 | * | -7.922E-03 | 4.067E-02 | 5.894E-02 | 4.331E-03 | -0.134 |
| | | 1120.29 | | 4.679E-02 | 1.121E-01 | 1.976E-01 | 1.841E-02 | 0.237 |
| PA-231 | | 1764.49 | | 9.020E-02 | 1.336E-01 | 2.797E-01 | 1.705E-02 | 0.323 |
| | | 283.67 | * | 5.445E-02 | 6.439E-01 | 1.095E+00 | 1.549E-01 | 0.050 |
| TH-231 | | 301.29 | | 3.678E-02 | 2.199E-01 | 3.761E-01 | 4.097E-02 | 0.098 |
| | | 81.07 | | -1.282E-02 | 7.369E-02 | 1.212E-01 | 1.405E-02 | -0.106 |
| | | 83.78 | | 2.101E-02 | 4.167E-02 | 7.283E-02 | 8.543E-03 | 0.289 |
| | | 94.90 | | -1.221E-01 | 9.464E-02 | 1.388E-01 | 1.430E-02 | -0.880 |
| | | 122.32 | | -1.064E-01 | 6.426E-01 | 1.038E+00 | 7.988E-02 | -0.102 |
| U-231 | | 144.24 | | 1.931E-01 | 2.784E-01 | 4.649E-01 | 3.636E-02 | 0.415 |
| | | 154.21 | | 6.273E-03 | 1.516E-01 | 2.473E-01 | 1.865E-02 | 0.025 |
| | | 269.46 | | 6.697E-02 | 7.684E-02 | 1.401E-01 | 9.662E-03 | 0.478 |
| | | 323.87 | * | 1.522E-01 | 2.920E-01 | 5.128E-01 | 8.584E-02 | 0.297 |
| | | 338.28 | | 4.907E-01 | 4.184E-01 | 7.772E-01 | 8.399E-02 | 0.631 |
| | | 445.03 | | -4.606E-01 | 9.993E-01 | 1.526E+00 | 1.557E-01 | -0.302 |
| | | 84.21 | | 1.563E-01 | 6.366E-01 | 1.087E+00 | 1.278E-01 | 0.144 |
| | | 92.29 | | -1.019E-01 | 3.025E-01 | 4.758E-01 | 5.176E-02 | -0.214 |
| | | 95.87 | * | -4.257E-02 | 1.461E-01 | 2.365E-01 | 2.391E-02 | -0.180 |
| | | 108.00 | | 1.706E-01 | 2.786E-01 | 4.848E-01 | 4.013E-02 | 0.352 |
| TH-232 | | 338.32 | | 1.161E-01 | 9.951E-02 | 1.857E-01 | 1.167E-02 | 0.625 |
| | | 911.07 | * | -2.686E-02 | 5.873E-02 | 9.625E-02 | 1.049E-02 | -0.279 |
| PA-233 | + | 969.11 | | 1.302E-01 | 1.105E-01 | 1.901E-01 | 4.383E-02 | 0.685 |
| | | 75.28 | | -2.163E-01 | 1.158E+00 | 1.912E+00 | 3.270E-01 | -0.113 |
| | | 86.59 | | 6.698E-02 | 5.304E-01 | 8.951E-01 | 2.511E-01 | 0.075 |
| | | 300.12 | | -2.165E-02 | 1.509E-01 | 2.494E-01 | 3.439E-02 | -0.087 |
| | | 311.98 | * | -7.088E-03 | 2.871E-02 | 4.686E-02 | 3.196E-03 | -0.151 |
| PA-234 | | 340.50 | | -7.509E-02 | 2.607E-01 | 4.201E-01 | 9.699E-02 | -0.179 |
| | | 398.62 | | -1.773E-01 | 8.150E-01 | 1.301E+00 | 3.358E-01 | -0.136 |
| | | 415.76 | | 2.412E-01 | 7.558E-01 | 1.290E+00 | 2.651E-01 | 0.187 |
| | | 63.00 | | 2.704E-01 | 8.059E-01 | 1.346E+00 | 2.365E-01 | 0.201 |
| | | 94.67 | | -7.906E-02 | 6.775E-02 | 1.001E-01 | 1.368E-02 | -0.790 |
| | | 98.44 | | 1.059E-02 | 3.609E-02 | 6.065E-02 | 3.394E-02 | 0.175 |
| | | 99.86 | | 2.317E-03 | 1.760E-01 | 2.924E-01 | 2.748E-02 | 0.008 |
| | | 111.00 | | -4.495E-02 | 8.001E-02 | 1.156E-01 | 1.343E-02 | -0.389 |
| | | 131.20 | | -3.301E-02 | 3.634E-02 | 5.348E-02 | 3.587E-03 | -0.617 |
| | | 152.70 | | -4.265E-02 | 1.276E-01 | 2.003E-01 | 3.216E-02 | -0.213 |
| | + | 186.00 | | 5.228E-01 | 6.972E-01 | 9.155E-01 | 2.809E-01 | 0.571 |
| | | 226.40 | | 1.076E-01 | 1.637E-01 | 2.783E-01 | 3.339E-02 | 0.387 |
| | | 227.20 | | 1.800E-01 | 1.691E-01 | 3.002E-01 | 1.992E-02 | 0.599 |
| | | 248.90 | | -2.384E-02 | 3.633E-01 | 5.695E-01 | 1.238E-01 | -0.042 |
| | | 293.70 | | 1.842E-01 | 3.011E-01 | 5.198E-01 | 8.518E-02 | 0.354 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 369.80 | | | -2.065E-01 | 3.883E-01 | 5.983E-01 | 1.248E-01 | -0.345 |
| | 568.70 | | | -1.476E-01 | 4.535E-01 | 6.793E-01 | 3.672E-02 | -0.217 |
| | 569.50 | | | -3.963E-02 | 1.269E-01 | 1.909E-01 | 1.031E-02 | -0.208 |
| | 574.00 | | | -6.084E-01 | 5.926E-01 | 7.520E-01 | 4.048E-02 | -0.809 |
| | 699.00 | | | 8.580E-02 | 3.188E-01 | 5.544E-01 | 9.890E-02 | 0.155 |
| | 706.10 | | | 9.873E-02 | 5.235E-01 | 7.915E-01 | 3.489E-01 | 0.125 |
| | 733.00 | | | 3.556E-02 | 1.564E-01 | 2.707E-01 | 5.754E-02 | 0.131 |
| | 742.81 | | | -5.664E-02 | 5.299E-01 | 8.648E-01 | 5.788E-01 | -0.065 |
| | 796.30 | | | 1.088E-01 | 3.049E-01 | 5.413E-01 | 1.434E-01 | 0.201 |
| | 805.60 | | | 1.017E-01 | 3.648E-01 | 6.373E-01 | 1.924E-01 | 0.160 |
| | 819.60 | | | -5.030E-02 | 4.694E-01 | 7.598E-01 | 2.864E-01 | -0.066 |
| | 826.30 | | | -1.205E-01 | 2.975E-01 | 4.384E-01 | 1.950E-01 | -0.275 |
| | 831.60 | | | -1.581E-01 | 2.550E-01 | 3.619E-01 | 1.066E-01 | -0.437 |
| | 876.40 | | | -9.285E-02 | 3.634E-01 | 5.470E-01 | 5.620E-01 | -0.170 |
| | 880.51 | | | 1.666E-02 | 1.268E-01 | 1.961E-01 | 1.559E-02 | 0.085 |
| | 883.24 | | | 5.379E-02 | 1.349E-01 | 2.015E-01 | 1.353E-01 | 0.267 |
| | 899.00 | | | -3.032E-01 | 4.408E-01 | 5.744E-01 | 2.507E-01 | -0.528 |
| | 925.00 | | | -4.560E-01 | 4.447E-01 | 5.286E-01 | 4.281E-02 | -0.863 |
| | 926.50 | | | -2.255E-02 | 6.260E-02 | 9.290E-02 | 2.332E-02 | -0.243 |
| | 946.00 | * | | -4.615E-02 | 1.344E-01 | 2.046E-01 | 3.781E-02 | -0.226 |
| | 949.00 | | | 5.824E-02 | 1.678E-01 | 2.959E-01 | 2.357E-02 | 0.197 |
| | 980.50 | | | 1.899E-01 | 2.239E-01 | 4.471E-01 | 3.473E-02 | 0.425 |
| PA-234M | 1394.10 | | | -4.092E-01 | 6.722E-01 | 8.620E-01 | 5.593E-01 | -0.475 |
| | 766.42 | | | 1.025E+00 | 4.412E+00 | 7.585E+00 | 3.822E+00 | 0.135 |
| TH-234 | 1001.03 | * | | -3.014E+00 | 2.021E+00 | 2.394E+00 | 2.182E-01 | -1.259 |
| | 63.29 | * | | 4.169E-02 | 6.846E-01 | 1.119E+00 | 2.215E-01 | 0.037 |
| | 92.38 | | | -9.333E-02 | 2.294E-01 | 3.581E-01 | 6.894E-02 | -0.261 |
| U-234 | 609.31 | * | | -7.922E-03 | 4.067E-02 | 5.894E-02 | 4.331E-03 | -0.134 |
| | 1120.29 | | | 4.679E-02 | 1.121E-01 | 1.976E-01 | 1.841E-02 | 0.237 |
| | 1764.49 | | | 9.020E-02 | 1.336E-01 | 2.797E-01 | 1.705E-02 | 0.323 |
| U-235 | 89.95 | | | -7.194E-01 | 4.608E-01 | 5.594E-01 | 1.777E-01 | -1.286 |
| | 93.35 | | | -6.917E-02 | 2.686E-01 | 4.238E-01 | 1.217E-01 | -0.163 |
| | 105.00 | | | 1.459E-01 | 3.963E-01 | 6.745E-01 | 2.013E-01 | 0.216 |
| | 143.76 | * | | 3.479E-02 | 8.441E-02 | 1.374E-01 | 2.277E-02 | 0.253 |
| | 163.35 | | | 3.536E-02 | 1.888E-01 | 3.110E-01 | 5.652E-02 | 0.114 |
| + | 185.71 | | | 1.936E-02 | 2.516E-02 | 3.429E-02 | 2.211E-03 | 0.565 |
| | 205.31 | | | 1.997E-01 | 2.177E-01 | 3.742E-01 | 6.824E-02 | 0.534 |
| NP-236 | 94.67 | | | -5.996E-02 | 5.111E-02 | 7.594E-02 | 7.863E-03 | -0.790 |
| | 98.44 | | | 8.019E-03 | 2.692E-02 | 4.586E-02 | 4.419E-03 | 0.175 |
| | 111.00 | | | -3.400E-02 | 6.046E-02 | 8.748E-02 | 6.949E-03 | -0.389 |
| | 160.31 | * | | 1.761E-02 | 3.421E-02 | 5.793E-02 | 3.699E-03 | 0.304 |
| NP-237 | 86.50 | * | | 9.349E-03 | 7.959E-02 | 1.343E-01 | 3.199E-02 | 0.070 |
| | 95.87 | | | -1.081E-01 | 3.718E-01 | 6.005E-01 | 1.513E-01 | -0.180 |
| U-238 | 63.29 | * | | 4.169E-02 | 6.846E-01 | 1.119E+00 | 2.215E-01 | 0.037 |
| | 92.38 | | | -9.333E-02 | 2.289E-01 | 3.581E-01 | 3.888E-02 | -0.261 |
| NP-239 | 99.55 | | | -8.027E-03 | 6.055E-02 | 9.924E-02 | 9.378E-03 | -0.081 |
| | 117.00 | * | | -2.181E-02 | 6.798E-02 | 1.082E-01 | 7.964E-03 | -0.202 |
| | 209.75 | | | 9.224E-02 | 3.109E-01 | 5.113E-01 | 3.359E-02 | 0.180 |
| | 228.18 | | | 7.051E-02 | 9.093E-02 | 1.568E-01 | 1.040E-02 | 0.450 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 277.60 | | -2.941E-02 | 7.930E-02 | 1.224E-01 | 8.145E-03 | -0.240 |
| | | 334.30 | | -3.605E-01 | 5.513E-01 | 8.505E-01 | 5.378E-02 | -0.424 |
| AM-241 | | 59.54 | * | -5.740E-02 | 8.727E-02 | 1.302E-01 | 1.644E-02 | -0.441 |
| AM-243 | | 74.67 | * | -6.728E-03 | 2.267E-02 | 3.708E-02 | 4.247E-03 | -0.181 |
| | | 86.72 | | 2.753E-01 | 2.992E+00 | 5.036E+00 | 6.006E-01 | 0.055 |
| | | 117.66 | | -3.668E-01 | 1.409E+00 | 2.260E+00 | 1.650E-01 | -0.162 |
| | | 142.18 | | -3.565E+00 | 7.214E+00 | 1.080E+01 | 7.062E-01 | -0.330 |
| CM-243 | | 99.55 | | -8.256E-03 | 6.228E-02 | 1.021E-01 | 9.646E-03 | -0.081 |
| | | 103.76 | * | -1.067E-02 | 3.652E-02 | 5.877E-02 | 5.182E-03 | -0.181 |
| | | 117.00 | | -2.243E-02 | 6.991E-02 | 1.113E-01 | 8.190E-03 | -0.202 |
| | | 209.75 | | 9.089E-02 | 3.063E-01 | 5.038E-01 | 3.310E-02 | 0.180 |
| | | 228.18 | | 7.121E-02 | 9.184E-02 | 1.583E-01 | 1.051E-02 | 0.450 |
| | | 277.60 | | -2.963E-02 | 7.992E-02 | 1.234E-01 | 8.208E-03 | -0.240 |
| AM-246 | | 798.80 | | -7.568E-02 | 5.395E-02 | 6.064E-02 | 4.064E-03 | -1.248 |
| | | 1036.00 | | 3.424E-02 | 9.677E-02 | 1.726E-01 | 1.269E-02 | 0.198 |
| | | 1062.04 | | -1.636E-02 | 9.964E-02 | 1.560E-01 | 1.111E-02 | -0.105 |
| | | 1078.86 | * | 2.503E-03 | 6.499E-02 | 1.062E-01 | 7.402E-03 | 0.024 |
| CM-247 | | 278.00 | | -2.614E-01 | 3.301E-01 | 4.851E-01 | 3.226E-02 | -0.539 |
| | | 287.40 | | -3.687E-01 | 4.856E-01 | 7.458E-01 | 4.939E-02 | -0.494 |
| | | 402.60 | * | 4.228E-03 | 1.426E-02 | 2.450E-02 | 1.383E-03 | 0.173 |
| CF-249 | | 252.85 | | 1.515E-01 | 3.747E-01 | 6.587E-01 | 4.399E-02 | 0.230 |
| | | 333.44 | | 8.363E-03 | 7.216E-02 | 1.220E-01 | 7.723E-03 | 0.069 |
| | | 387.95 | * | -1.059E-03 | 1.786E-02 | 2.932E-02 | 1.666E-03 | -0.036 |
| CF-251 | | 176.60 | * | -4.695E-02 | 5.583E-02 | 8.262E-02 | 5.288E-03 | -0.568 |
| | | 227.00 | | 1.154E-01 | 1.553E-01 | 2.668E-01 | 1.770E-02 | 0.433 |
| | | 285.00 | | -2.329E-01 | 7.051E-01 | 1.145E+00 | 7.594E-02 | -0.203 |

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]G1202023713
* Acquisition date   : 4-FEB-2010 17:08:10 Detector SN#      :
* Detector ID        : GAM04                               Sensitivity      : 5.000
* Geometry           : CAN                                  Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00                      Abundance limit : 75.000
* Elapsed real time  : 0 02:00:00.42                      Half life ratio  : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 27-JAN-2010 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1202023713          Analyst initials: MXR1
* Batch Number       : 944964              Sample Quantity : 1.5199E+02 GRAM
* Recovery           : 1.00000             Carrier Weight  : 0.00000
*****
*
*                               QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41 MS Isotope      :
* MSD DPM            : 0.000                MSD Isotope     :
* LCS DPM            : 0.000                LCS Isotope      :
* LCSD DPM           : 0.000                LCSD Isotope     :
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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| ANH-511 | 9.545E-03 | 3.215E-02 | 2.448E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | 4.231E-02 | 1.235E-01 | 2.236E-01 | 0.000E+00 NOT IDENT. |
| NA-22 | 1.126E-02 | 1.631E-02 | 3.224E-02 | 0.000E+00 NOT IDENT. |
| NA-24 | 0.000E+00 | 2.584E+02 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| AL-26 | -3.911E-04 | 1.292E-02 | 2.119E-02 | 0.000E+00 NOT IDENT. |
| K-40 | 1.713E-01 | 1.929E-01 | 3.888E-01 | 0.000E+00 NOT IDENT. |
| TI-44 | -1.947E-03 | 1.258E-02 | 2.300E-02 | 0.000E+00 NOT IDENT. |
| SC-46 | -2.427E-03 | 1.990E-02 | 2.702E-02 | 0.000E+00 NOT IDENT. |
| V-48 | -8.525E-03 | 1.662E-02 | 2.381E-02 | 0.000E+00 NOT IDENT. |
| CR-51 | -1.041E-01 | 1.350E-01 | 2.204E-01 | 0.000E+00 NOT IDENT. |
| MN-52 | 2.037E-02 | 4.662E-02 | 8.824E-02 | 0.000E+00 NOT IDENT. |
| MN-54 | 7.008E-04 | 1.586E-02 | 2.758E-02 | 0.000E+00 NOT IDENT. |
| CO-56 | -2.922E-04 | 1.879E-02 | 3.232E-02 | 0.000E+00 NOT IDENT. |
| CO-57 | -3.790E-03 | 9.010E-03 | 1.552E-02 | 0.000E+00 NOT IDENT. |
| CO-58 | 6.453E-03 | 1.144E-02 | 2.231E-02 | 0.000E+00 NOT IDENT. |
| FE-59 | 3.787E-03 | 3.063E-02 | 5.286E-02 | 0.000E+00 NOT IDENT. |
| CO-60 | 4.211E-03 | 1.614E-02 | 2.941E-02 | 0.000E+00 NOT IDENT. |
| ZN-65 | -3.708E-02 | 3.450E-02 | 4.194E-02 | 0.000E+00 NOT IDENT. |
| GE-68 | 4.216E-01 | 4.610E-01 | 9.277E-01 | 0.000E+00 NOT IDENT. |
| AS-73 | 1.737E-01 | 5.215E-01 | 1.019E+00 | 0.000E+00 NOT IDENT. |
| AS-74 | 1.072E-02 | 3.280E-02 | 5.810E-02 | 0.000E+00 NOT IDENT. |
| SE-75 | -1.550E-03 | 1.615E-02 | 2.906E-02 | 0.000E+00 NOT IDENT. |
| BR-77 | 8.613E-03 | 6.658E-01 | 1.142E+00 | 0.000E+00 NOT IDENT. |
| SR-82 | -1.537E-01 | 1.272E-01 | 1.672E-01 | 0.000E+00 NOT IDENT. |
| RB-83 | -1.639E-03 | 2.746E-02 | 4.654E-02 | 0.000E+00 NOT IDENT. |
| RB-84 | -2.347E-03 | 2.865E-02 | 4.010E-02 | 0.000E+00 NOT IDENT. |
| KR-85 | 5.352E+00 | 3.688E+00 | 6.831E+00 | 0.000E+00 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| SR-85 | 2.565E-02 | 1.768E-02 | 3.274E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 8.414E-02 | 2.447E-01 | 4.423E-01 | 0.000E+00 | NOT IDENT. |
| Y-88 | -4.653E-04 | 1.385E-02 | 2.264E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | 1.248E-03 | 1.177E-02 | 2.096E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | 3.060E-01 | 6.119E+00 | 1.028E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -3.194E-03 | 1.603E-02 | 2.342E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 1.960E-03 | 1.482E-02 | 2.640E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | -2.087E-02 | 4.928E-02 | 8.044E-02 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 9.064E-03 | 2.202E-02 | 4.151E-02 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 8.468E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 1.894E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | -4.038E-01 | 9.112E-01 | 1.462E+00 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 3.049E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -8.606E-03 | 1.541E-02 | 2.391E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -2.785E-03 | 1.272E-02 | 2.127E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | 4.381E-03 | 1.588E-02 | 2.836E-02 | 0.000E+00 | NOT IDENT. |
| RH-106 | 1.542E-01 | 1.413E-01 | 2.759E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | 1.542E-01 | 1.405E-01 | 2.759E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | 2.531E-03 | 1.548E-02 | 2.748E-02 | 0.000E+00 | NOT IDENT. |
| CD-109 | 1.020E-01 | 2.562E-01 | 4.878E-01 | 0.000E+00 | NOT IDENT. |
| AG-110M | -1.136E-02 | 1.634E-02 | 2.616E-02 | 0.000E+00 | FAIL ABUN |
| IN-111 | -8.457E-03 | 8.501E-02 | 1.428E-01 | 0.000E+00 | NOT IDENT. |
| IN-113M | 1.622E-03 | 1.752E-02 | 3.116E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | 1.622E-03 | 1.752E-02 | 3.116E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | -1.974E-02 | 7.403E-02 | 1.104E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 4.195E-01 | 5.983E-01 | 1.135E+00 | 0.000E+00 | NOT IDENT. |
| SN-117M | 1.342E-02 | 1.664E-02 | 3.132E-02 | 0.000E+00 | NOT IDENT. |
| SB-122 | 3.362E-02 | 1.690E-01 | 2.960E-01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 7.292E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 1.095E-02 | 1.158E-02 | 2.201E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -2.576E-02 | 1.107E-01 | 1.804E-01 | 0.000E+00 | NOT IDENT. |
| SB-124 | -1.572E-02 | 4.179E-02 | 6.240E-02 | 0.000E+00 | FAIL ABUN |
| SB-125 | -1.911E-02 | 4.621E-02 | 7.383E-02 | 0.000E+00 | NOT IDENT. |
| TE-125M | 1.027E+00 | 3.750E+00 | 6.485E+00 | 0.000E+00 | NOT IDENT. |
| I-126 | -6.391E-02 | 5.152E-02 | 7.161E-02 | 0.000E+00 | NOT IDENT. |
| SB-126 | 2.586E-02 | 4.290E-02 | 8.174E-02 | 0.000E+00 | NOT IDENT. |
| SN-126 | 4.442E-03 | 2.597E-02 | 4.852E-02 | 0.000E+00 | NOT IDENT. |
| SB-127 | -1.226E-01 | 1.550E-01 | 2.310E-01 | 0.000E+00 | NOT IDENT. |
| XE-127 | -5.027E-03 | 1.791E-02 | 3.013E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | -5.252E-04 | 2.910E-02 | 5.136E-02 | 0.000E+00 | NOT IDENT. |
| TE-132 | 5.564E-02 | 7.013E-02 | 1.298E-01 | 0.000E+00 | NOT IDENT. |
| BA-133 | -1.186E-02 | 1.860E-02 | 3.041E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 1.415E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 1.013E-02 | 1.550E-02 | 3.027E-02 | 0.000E+00 | NOT IDENT. |
| CS-135 | 4.116E-02 | 6.270E-02 | 1.206E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 1.931E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | 1.478E-02 | 3.387E-02 | 6.189E-02 | 0.000E+00 | NOT IDENT. |
| BA-137M | -1.671E-02 | 1.823E-02 | 3.157E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | -1.767E-02 | 1.927E-02 | 3.337E-02 | 0.000E+00 | NOT IDENT. |
| CE-139 | -3.661E-03 | 1.172E-02 | 1.999E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -2.664E-03 | 6.785E-02 | 1.149E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | 6.033E-04 | 3.640E-02 | 6.153E-02 | 0.000E+00 | NOT IDENT. |
| CE-141 | -1.723E-02 | 2.086E-02 | 3.403E-02 | 0.000E+00 | NOT IDENT. |
| CE-143 | 3.882E-01 | 2.240E+00 | 4.099E+00 | 0.000E+00 | NOT IDENT. |
| CE-144 | 2.683E-02 | 7.067E-02 | 1.308E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | -1.104E-02 | 1.592E-02 | 2.438E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | -7.457E-01 | 1.075E+00 | 1.646E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 1.524E-02 | 1.769E-02 | 3.425E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | -9.862E-02 | 1.588E-01 | 2.419E-01 | 0.000E+00 | NOT IDENT. |
| PM-149 | -3.370E+00 | 4.864E+00 | 8.077E+00 | 0.000E+00 | NOT IDENT. |
| EU-152 | 7.508E-03 | 3.964E-02 | 7.201E-02 | 0.000E+00 | NOT IDENT. |
| GD-153 | 5.092E-03 | 2.942E-02 | 5.454E-02 | 0.000E+00 | NOT IDENT. |
| EU-154 | 3.229E-02 | 4.595E-02 | 9.086E-02 | 0.000E+00 | NOT IDENT. |
| EU-155 | 2.044E-02 | 3.945E-02 | 7.497E-02 | 0.000E+00 | NOT IDENT. |
| TB-160 | 1.294E-02 | 5.201E-02 | 9.164E-02 | 0.000E+00 | NOT IDENT. |
| HO-166M | 1.051E-02 | 2.738E-02 | 4.546E-02 | 0.000E+00 | FAIL ABUN |
| TM-171 | -4.057E+00 | 1.258E+01 | 2.166E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | -7.947E-03 | 1.060E-02 | 1.749E-02 | 0.000E+00 | NOT IDENT. |
| LU-177 | -3.990E-02 | 2.330E-01 | 3.952E-01 | 0.000E+00 | NOT IDENT. |
| LU-177M | -5.599E-02 | 7.862E-02 | 1.253E-01 | 0.000E+00 | NOT IDENT. |
| HF-181 | 2.559E-03 | 1.680E-02 | 2.959E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | -2.002E-01 | 1.704E-01 | 2.670E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | -3.779E-02 | 6.373E-02 | 9.553E-02 | 0.000E+00 | NOT IDENT. |
| RE-183 | -3.165E-02 | 4.303E-02 | 7.053E-02 | 0.000E+00 | NOT IDENT. |
| RE-184 | 3.934E-02 | 9.533E-02 | 1.802E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | 6.802E-03 | 1.484E-02 | 2.825E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 2.594E-02 | 6.040E-02 | 1.110E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | 1.848E+00 | 2.849E+00 | 5.453E+00 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| IR-192 | 6.057E-03 | 1.452E-02 | 2.706E-02 | 0.000E+00 | NOT IDENT. |
| AU-195 | 6.040E-03 | 8.265E-02 | 1.518E-01 | 0.000E+00 | NOT IDENT. |
| TL-200 | 0.000E+00 | 3.262E+00 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | 8.684E-03 | 6.438E-01 | 1.132E+00 | 0.000E+00 | NOT IDENT. |
| TL-202 | -1.591E-02 | 2.122E-02 | 3.301E-02 | 0.000E+00 | NOT IDENT. |
| HG-203 | -7.935E-03 | 1.524E-02 | 2.615E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | 5.615E-03 | 2.320E-02 | 4.089E-02 | 0.000E+00 | NOT IDENT. |
| TL-207 | 1.522E-01 | 2.862E-01 | 5.370E-01 | 0.000E+00 | NOT IDENT. |
| TL-208 | 1.337E-02 | 1.802E-02 | 3.306E-02 | 0.000E+00 | FAIL ABUN |
| PO-209 | -7.923E-01 | 3.779E+00 | 6.030E+00 | 0.000E+00 | NOT IDENT. |
| BI-210 | 2.577E+00 | 3.991E+00 | 7.506E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | 2.577E+00 | 3.991E+00 | 7.506E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | 2.577E+00 | 3.990E+00 | 7.506E+00 | 0.000E+00 | NOT IDENT. |
| BI-211 | -4.010E-02 | 9.757E-02 | 1.551E-01 | 0.000E+00 | NOT IDENT. |
| PB-211 | -1.673E-02 | 3.702E-01 | 6.446E-01 | 0.000E+00 | NOT IDENT. |
| BI-212 | -3.800E-03 | 1.078E-01 | 1.875E-01 | 0.000E+00 | NOT IDENT. |
| PB-212 | -2.071E-02 | 2.748E-02 | 4.424E-02 | 0.000E+00 | NOT IDENT. |
| PO-212 | -2.071E-02 | 2.748E-02 | 4.424E-02 | 0.000E+00 | NOT IDENT. |
| BI-214 | -7.922E-03 | 3.985E-02 | 6.075E-02 | 0.000E+00 | NOT IDENT. |
| PB-214 | 1.398E-02 | 3.374E-02 | 5.877E-02 | 0.000E+00 | NOT IDENT. |
| PO-214 | 1.398E-02 | 3.374E-02 | 5.877E-02 | 0.000E+00 | NOT IDENT. |
| PO-215 | 1.522E-01 | 2.862E-01 | 5.370E-01 | 0.000E+00 | NOT IDENT. |
| PO-216 | -2.071E-02 | 2.748E-02 | 4.424E-02 | 0.000E+00 | NOT IDENT. |
| PO-218 | 1.398E-02 | 3.374E-02 | 5.877E-02 | 0.000E+00 | NOT IDENT. |
| RN-219 | 8.077E-03 | 1.598E-01 | 2.822E-01 | 0.000E+00 | NOT IDENT. |
| RN-220 | -9.367E+00 | 9.958E+00 | 1.374E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | 1.522E-01 | 2.862E-01 | 5.370E-01 | 0.000E+00 | NOT IDENT. |
| RA-224 | -2.155E-01 | 3.221E-01 | 4.584E-01 | 0.000E+00 | NOT IDENT. |
| RA-226 | -7.922E-03 | 3.985E-02 | 6.075E-02 | 0.000E+00 | NOT IDENT. |
| AC-227 | -1.094E-01 | 1.611E-01 | 2.736E-01 | 0.000E+00 | NOT IDENT. |
| TH-227 | -1.094E-01 | 1.614E-01 | 2.736E-01 | 0.000E+00 | NOT IDENT. |
| AC-228 | -2.686E-02 | 5.756E-02 | 9.819E-02 | 0.000E+00 | FAIL ABUN |
| RA-228 | -2.686E-02 | 5.756E-02 | 9.819E-02 | 0.000E+00 | FAIL ABUN |
| TH-228 | -2.089E-02 | 2.772E-02 | 4.463E-02 | 0.000E+00 | NOT IDENT. |
| TH-229 | -1.163E-02 | 2.071E-01 | 3.575E-01 | 0.000E+00 | NOT IDENT. |
| TH-230 | -7.922E-03 | 3.985E-02 | 6.075E-02 | 0.000E+00 | NOT IDENT. |
| PA-231 | 5.445E-02 | 6.310E-01 | 1.150E+00 | 0.000E+00 | NOT IDENT. |
| TH-231 | 1.522E-01 | 2.862E-01 | 5.370E-01 | 0.000E+00 | NOT IDENT. |
| U-231 | -4.257E-02 | 1.432E-01 | 2.550E-01 | 0.000E+00 | NOT IDENT. |
| TH-232 | -2.686E-02 | 5.756E-02 | 9.819E-02 | 0.000E+00 | FAIL ABUN |
| PA-233 | -7.088E-03 | 2.813E-02 | 4.912E-02 | 0.000E+00 | NOT IDENT. |
| PA-234 | -4.615E-02 | 1.317E-01 | 2.085E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | -3.014E+00 | 1.980E+00 | 2.436E+00 | 0.000E+00 | NOT IDENT. |
| TH-234 | 4.169E-02 | 6.709E-01 | 1.219E+00 | 0.000E+00 | NOT IDENT. |
| U-234 | -7.922E-03 | 3.985E-02 | 6.075E-02 | 0.000E+00 | NOT IDENT. |
| U-235 | 3.479E-02 | 8.272E-02 | 1.467E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | 1.761E-02 | 3.352E-02 | 6.171E-02 | 0.000E+00 | NOT IDENT. |
| NP-237 | 9.349E-03 | 7.800E-02 | 1.451E-01 | 0.000E+00 | NOT IDENT. |
| U-238 | 4.169E-02 | 6.709E-01 | 1.219E+00 | 0.000E+00 | NOT IDENT. |
| NP-239 | -2.181E-02 | 6.662E-02 | 1.162E-01 | 0.000E+00 | NOT IDENT. |
| AM-241 | -5.740E-02 | 8.552E-02 | 1.419E-01 | 0.000E+00 | NOT IDENT. |
| AM-243 | -6.728E-03 | 2.221E-02 | 4.022E-02 | 0.000E+00 | NOT IDENT. |
| CM-243 | -1.067E-02 | 3.579E-02 | 6.326E-02 | 0.000E+00 | NOT IDENT. |
| AM-246 | 2.503E-03 | 6.369E-02 | 1.078E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 4.228E-03 | 1.397E-02 | 2.552E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | -1.059E-03 | 1.750E-02 | 3.057E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -4.695E-02 | 5.471E-02 | 8.781E-02 | 0.000E+00 | NOT IDENT. |


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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202023713.CNF;1
Sample date        : 27-JAN-2010 00:00:00 Acquisition date : 4-FEB-2010 17:08:10.
Sample ID          : G1202023713      Sample quantity   : 1.51990E+02 GRAM
Detector name      : GAM04            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:00.42  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials  : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 944964           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 |
|---------|--------|------|---------|-----------|-------------------------|------------------------|-------------------|
| ANH-511 | 511.00 | 11 | 100.00* | 2.731E+00 | 9.545E-03 | 9.545E-03 | 343.73 |

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202023713

Page : 2
Acquisition date : 4-FEB-2010 17:08:10

Total number of lines in spectrum 5
Number of unidentified lines 0
Number of lines tentatively identified by NID 5 100.00%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|------------------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| ANH-511 | 1.00E+09Y | 1.00 | 9.545E-03 | 9.545E-03 | 32.81E-03 | 343.73 | |
| Total Activity : | | | 9.545E-03 | 9.545E-03 | | | |

Grand Total Activity : 9.545E-03 9.545E-03

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

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

Unidentified Energy Lines
Sample ID : G1202023713

Page : 3
Acquisition date : 4-FEB-2010 17:08:10

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|--------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 185.52 | 24 | 49 | 1.22 | 371.11 | 367 | 9 | 3.35E-03 | **** | 5.70E+00 | T |
| 0 | 708.95 | 9 | 14 | 1.38 | 1418.00 | 1410 | 11 | 1.28E-03 | **** | 2.08E+00 | T |
| 0 | 885.97 | 11 | 0 | 1.47 | 1772.00 | 1769 | 6 | 1.53E-03 | 60.3 | 1.70E+00 | T |
| 0 | 968.46 | 14 | 3 | 3.71 | 1936.98 | 1931 | 10 | 1.90E-03 | 81.7 | 1.56E+00 | T |

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202023713.CNF;1
* Acquisition date   : 4-FEB-2010 17:08:10. Detector SN#      :
* Detector ID        : GAM04                      Sensitivity   : 5.00000
* Geometry           : CAN                        Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00              Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:00.42              Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 27-JAN-2010 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1202023713          Analyst initials: MXR1
* Batch Number       : 944964              Sample Quantity : 1.51990E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41.36MS Isotope      :
* MSD ID             :                      MSD Isotope       :
* LCS ID             : 1032-A              LCS Isotope       :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| ANH-511 | 9.545E-03 | 3.281E-02 | 2.365E-02 | 1.322E-03 | 0.404 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | 4.231E-02 | | 1.260E-01 | 2.156E-01 | 1.428E-02 | 0.196 |
| NA-22 | 1.126E-02 | | 1.665E-02 | 3.188E-02 | 2.085E-03 | 0.353 |
| NA-24 | 8.196E-05 | | 1.318E-04 | Half-Life too short | | |
| AL-26 | -3.911E-04 | | 1.319E-02 | 2.115E-02 | 1.254E-03 | -0.018 |
| K-40 | 1.713E-01 | | 1.968E-01 | 3.859E-01 | 2.742E-02 | 0.444 |
| TI-44 | -1.947E-03 | | 1.284E-02 | 2.123E-02 | 2.441E-03 | -0.092 |
| SC-46 | -2.427E-03 | | 2.031E-02 | 2.647E-02 | 2.141E-03 | -0.092 |
| V-48 | -8.525E-03 | | 1.696E-02 | 2.338E-02 | 1.812E-03 | -0.365 |
| CR-51 | -1.041E-01 | | 1.377E-01 | 2.104E-01 | 1.481E-02 | -0.495 |
| MN-52 | 2.037E-02 | | 4.757E-02 | 8.754E-02 | 5.974E-03 | 0.233 |
| MN-54 | 7.008E-04 | | 1.618E-02 | 2.697E-02 | 1.952E-03 | 0.026 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CO-56 | -2.922E-04 | | 1.918E-02 | 3.163E-02 | 2.346E-03 | -0.009 |
| CO-57 | -3.790E-03 | | 9.194E-03 | 1.447E-02 | 1.005E-03 | -0.262 |
| CO-58 | 6.453E-03 | | 1.168E-02 | 2.180E-02 | 1.505E-03 | 0.296 |
| FE-59 | 3.787E-03 | | 3.125E-02 | 5.207E-02 | 3.979E-03 | 0.073 |
| CO-60 | 4.211E-03 | | 1.646E-02 | 2.912E-02 | 1.995E-03 | 0.145 |
| ZN-65 | -3.708E-02 | | 3.521E-02 | 4.133E-02 | 2.734E-03 | -0.897 |
| GE-68 | 4.216E-01 | | 4.704E-01 | 9.134E-01 | 6.380E-02 | 0.462 |
| AS-73 | 1.737E-01 | | 5.322E-01 | 9.323E-01 | 1.220E-01 | 0.186 |
| AS-74 | 1.072E-02 | | 3.347E-02 | 5.634E-02 | 2.974E-03 | 0.190 |
| SE-75 | -1.550E-03 | | 1.648E-02 | 2.761E-02 | 1.857E-03 | -0.056 |
| BR-77 | 8.613E-03 | | 6.794E-01 | 1.103E+00 | 6.143E-02 | 0.008 |
| SR-82 | -1.537E-01 | | 1.298E-01 | 1.632E-01 | 1.042E-02 | -0.942 |
| RB-83 | -1.639E-03 | | 2.802E-02 | 4.497E-02 | 2.505E-03 | -0.036 |
| RB-84 | -2.347E-03 | | 2.923E-02 | 3.927E-02 | 3.127E-03 | -0.060 |
| KR-85 | 5.352E+00 | | 3.763E+00 | 6.598E+00 | 3.685E-01 | 0.811 |
| SR-85 | 2.565E-02 | | 1.804E-02 | 3.163E-02 | 1.767E-03 | 0.811 |
| RB-86 | 8.414E-02 | | 2.497E-01 | 4.355E-01 | 3.045E-02 | 0.193 |
| Y-88 | -4.653E-04 | | 1.414E-02 | 2.261E-02 | 1.319E-03 | -0.021 |
| ZR-88 | 1.248E-03 | | 1.201E-02 | 2.011E-02 | 1.132E-03 | 0.062 |
| Y-91 | 3.060E-01 | | 6.244E+00 | 1.015E+01 | 6.221E-01 | 0.030 |
| NB-94 | -3.194E-03 | | 1.636E-02 | 2.280E-02 | 1.228E-03 | -0.140 |
| NB-95 | 1.960E-03 | | 1.513E-02 | 2.576E-02 | 1.606E-03 | 0.076 |
| NB-95M | -2.087E-02 | | 5.028E-02 | 7.621E-02 | 6.254E-03 | -0.274 |
| ZR-95 | 9.064E-03 | | 2.247E-02 | 4.050E-02 | 2.949E-03 | 0.224 |
| NB-97 | -6.093E-05 | | 4.321E-05 | Half-Life | too short | |
| ZR-97 | 2.670E-03 | | 9.661E-04 | Half-Life | too short | |
| MO-99 | -4.038E-01 | | 9.298E-01 | 1.426E+00 | 1.969E-01 | -0.283 |
| TC-99M | -4.604E+01 | | 1.556E+02 | Half-Life | too short | |
| RH-101 | -8.606E-03 | | 1.573E-02 | 2.256E-02 | 1.469E-03 | -0.381 |
| RH-102 | -2.785E-03 | | 1.298E-02 | 2.051E-02 | 1.159E-03 | -0.136 |
| RU-103 | 4.381E-03 | | 1.620E-02 | 2.737E-02 | 3.439E-03 | 0.160 |
| RH-106 | 1.542E-01 | | 1.442E-01 | 2.678E-01 | 3.060E-02 | 0.576 |
| RU-106 | 1.542E-01 | | 1.434E-01 | 2.678E-01 | 1.376E-02 | 0.576 |
| AG-108M | 2.531E-03 | | 1.579E-02 | 2.644E-02 | 1.633E-03 | 0.096 |
| CD-109 | 1.020E-01 | | 2.614E-01 | 4.515E-01 | 5.426E-02 | 0.226 |
| AG-110M | -1.136E-02 | | 1.668E-02 | 2.543E-02 | 1.359E-03 | -0.447 |
| IN-111 | -8.457E-03 | | 8.675E-02 | 1.355E-01 | 9.039E-03 | -0.062 |
| IN-113M | 1.622E-03 | | 1.788E-02 | 2.990E-02 | 1.801E-03 | 0.054 |
| SN-113 | 1.622E-03 | | 1.788E-02 | 2.990E-02 | 1.801E-03 | 0.054 |
| IN-114M | -1.974E-02 | | 7.554E-02 | 1.041E-01 | 6.735E-03 | -0.190 |
| CD-115 | 4.195E-01 | | 6.105E-01 | 1.097E+00 | 6.085E-02 | 0.383 |
| SN-117M | 1.342E-02 | | 1.698E-02 | 2.939E-02 | 1.880E-03 | 0.457 |
| SB-122 | 3.362E-02 | | 1.725E-01 | 2.866E-01 | 1.555E-02 | 0.117 |
| I-123 | 6.894E-04 | | 3.720E-04 | Half-Life | too short | |
| TE-123M | 1.095E-02 | | 1.182E-02 | 2.065E-02 | 1.335E-03 | 0.530 |
| I-124 | -2.576E-02 | | 1.130E-01 | 1.749E-01 | 9.174E-03 | -0.147 |
| SB-124 | -1.572E-02 | | 4.265E-02 | 6.218E-02 | 4.225E-03 | -0.253 |
| SB-125 | -1.911E-02 | | 4.715E-02 | 7.099E-02 | 4.202E-03 | -0.269 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| TE-125M | 1.027E+00 | | 3.826E+00 | 6.032E+00 | 5.978E-01 | 0.170 |
| I-126 | -6.391E-02 | | 5.257E-02 | 6.964E-02 | 3.435E-03 | -0.918 |
| SB-126 | 2.586E-02 | | 4.377E-02 | 7.964E-02 | 4.475E-03 | 0.325 |
| SN-126 | 4.442E-03 | | 2.650E-02 | 4.490E-02 | 5.385E-03 | 0.099 |
| SB-127 | -1.226E-01 | | 1.582E-01 | 2.248E-01 | 1.565E-02 | -0.546 |
| XE-127 | -5.027E-03 | | 1.827E-02 | 2.844E-02 | 1.859E-03 | -0.177 |
| I-131 | -5.252E-04 | | 2.969E-02 | 4.919E-02 | 3.251E-03 | -0.011 |
| TE-132 | 5.564E-02 | | 7.156E-02 | 1.229E-01 | 1.684E-02 | 0.453 |
| BA-133 | -1.186E-02 | | 1.898E-02 | 2.910E-02 | 3.409E-03 | -0.408 |
| I-133 | 1.246E-05 | | 7.222E-06 | Half-Life | too short | |
| CS-134 | 1.013E-02 | | 1.582E-02 | 2.957E-02 | 1.993E-03 | 0.342 |
| CS-135 | 4.116E-02 | | 6.398E-02 | 1.146E-01 | 9.552E-03 | 0.359 |
| I-135 | 8.648E+01 | | 9.854E+01 | Half-Life | too short | |
| CS-136 | 1.478E-02 | | 3.457E-02 | 6.089E-02 | 4.674E-03 | 0.243 |
| BA-137M | -1.671E-02 | | 1.860E-02 | 3.069E-02 | 1.497E-03 | -0.545 |
| CS-137 | -1.767E-02 | | 1.966E-02 | 3.244E-02 | 1.592E-03 | -0.545 |
| CE-139 | -3.661E-03 | | 1.196E-02 | 1.878E-02 | 1.193E-03 | -0.195 |
| BA-140 | -2.664E-03 | | 6.923E-02 | 1.111E-01 | 3.608E-02 | -0.024 |
| LA-140 | 6.033E-04 | | 3.715E-02 | 6.122E-02 | 4.032E-03 | 0.010 |
| CE-141 | -1.723E-02 | | 2.128E-02 | 3.187E-02 | 2.139E-03 | -0.541 |
| CE-143 | 3.882E-01 | | 2.286E+00 | 3.904E+00 | 8.142E-01 | 0.099 |
| CE-144 | 2.683E-02 | | 7.211E-02 | 1.222E-01 | 1.781E-02 | 0.219 |
| PM-144 | -1.104E-02 | | 1.624E-02 | 2.373E-02 | 1.260E-03 | -0.465 |
| PR-144 | -7.457E-01 | | 1.097E+00 | 1.603E+00 | 8.508E-02 | -0.465 |
| PM-146 | 1.524E-02 | | 1.805E-02 | 3.298E-02 | 2.815E-03 | 0.462 |
| ND-147 | -9.862E-02 | | 1.620E-01 | 2.338E-01 | 3.136E-02 | -0.422 |
| PM-149 | -3.370E+00 | | 4.963E+00 | 7.689E+00 | 1.116E+00 | -0.438 |
| EU-152 | 7.508E-03 | | 4.045E-02 | 6.886E-02 | 4.766E-03 | 0.109 |
| GD-153 | 5.092E-03 | | 3.002E-02 | 5.060E-02 | 4.967E-03 | 0.101 |
| EU-154 | 3.229E-02 | | 4.689E-02 | 8.986E-02 | 8.815E-03 | 0.359 |
| EU-155 | 2.044E-02 | | 4.025E-02 | 6.967E-02 | 6.073E-03 | 0.293 |
| TB-160 | 1.294E-02 | | 5.307E-02 | 8.975E-02 | 7.117E-03 | 0.144 |
| HO-166M | 1.051E-02 | | 2.794E-02 | 4.428E-02 | 2.437E-03 | 0.237 |
| TM-171 | -4.057E+00 | | 1.284E+01 | 1.992E+01 | 2.329E+00 | -0.204 |
| LU-176 | -7.947E-03 | | 1.082E-02 | 1.668E-02 | 1.089E-03 | -0.477 |
| LU-177 | -3.990E-02 | | 2.377E-01 | 3.733E-01 | 2.450E-02 | -0.107 |
| LU-177M | -5.599E-02 | | 8.023E-02 | 1.204E-01 | 6.809E-03 | -0.465 |
| HF-181 | 2.559E-03 | | 1.715E-02 | 2.854E-02 | 1.611E-03 | 0.090 |
| W-181 | -2.002E-01 | | 1.739E-01 | 2.454E-01 | 2.892E-02 | -0.816 |
| TA-182 | -3.779E-02 | | 6.503E-02 | 9.438E-02 | 5.873E-03 | -0.400 |
| RE-183 | -3.165E-02 | | 4.391E-02 | 6.623E-02 | 4.220E-03 | -0.478 |
| RE-184 | 3.934E-02 | | 9.727E-02 | 1.710E-01 | 1.142E-02 | 0.230 |
| OS-185 | 6.802E-03 | | 1.514E-02 | 2.745E-02 | 1.368E-03 | 0.248 |
| RE-188 | 2.594E-02 | | 6.163E-02 | 1.041E-01 | 6.684E-03 | 0.249 |
| W-188 | 1.848E+00 | | 2.907E+00 | 5.193E+00 | 3.432E-01 | 0.356 |
| IR-192 | 6.057E-03 | | 1.481E-02 | 2.583E-02 | 1.677E-03 | 0.235 |
| AU-195 | 6.040E-03 | | 8.433E-02 | 1.409E-01 | 1.347E-02 | 0.043 |
| TL-200 | 8.062E-07 | | 1.664E-06 | 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 |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| TL-201 | 8.684E-03 | | 6.569E-01 | 1.064E+00 | 6.762E-02 | 0.008 |
| TL-202 | -1.591E-02 | | 2.165E-02 | 3.176E-02 | 1.801E-03 | -0.501 |
| HG-203 | -7.935E-03 | | 1.555E-02 | 2.488E-02 | 1.732E-03 | -0.319 |
| BI-207 | 5.615E-03 | | 2.367E-02 | 4.025E-02 | 2.862E-03 | 0.140 |
| TL-207 | 1.522E-01 | | 2.920E-01 | 5.128E-01 | 8.584E-02 | 0.297 |
| TL-208 | 1.337E-02 | | 1.839E-02 | 3.203E-02 | 2.016E-03 | 0.417 |
| PO-209 | -7.923E-01 | | 3.856E+00 | 5.908E+00 | 4.849E-01 | -0.134 |
| BI-210 | 2.577E+00 | | 4.073E+00 | 6.846E+00 | 5.966E-01 | 0.376 |
| PB-210 | 2.577E+00 | | 4.073E+00 | 6.846E+00 | 5.966E-01 | 0.376 |
| PO-210 | 2.577E+00 | | 4.071E+00 | 6.846E+00 | 5.318E-01 | 0.376 |
| BI-211 | -4.010E-02 | | 9.956E-02 | 1.484E-01 | 1.003E-02 | -0.270 |
| PB-211 | -1.673E-02 | | 3.778E-01 | 6.189E-01 | 3.858E-01 | -0.027 |
| BI-212 | -3.800E-03 | | 1.100E-01 | 1.827E-01 | 1.397E-02 | -0.021 |
| PB-212 | -2.071E-02 | | 2.805E-02 | 4.193E-02 | 3.367E-03 | -0.494 |
| PO-212 | -2.071E-02 | | 2.805E-02 | 4.193E-02 | 3.367E-03 | -0.494 |
| BI-214 | -7.922E-03 | | 4.067E-02 | 5.894E-02 | 4.331E-03 | -0.134 |
| PB-214 | 1.398E-02 | | 3.443E-02 | 5.624E-02 | 4.797E-03 | 0.249 |
| PO-214 | 1.398E-02 | | 3.443E-02 | 5.624E-02 | 4.797E-03 | 0.249 |
| PO-215 | 1.522E-01 | | 2.920E-01 | 5.128E-01 | 8.584E-02 | 0.297 |
| PO-216 | -2.071E-02 | | 2.805E-02 | 4.193E-02 | 3.367E-03 | -0.494 |
| PO-218 | 1.398E-02 | | 3.443E-02 | 5.624E-02 | 4.797E-03 | 0.249 |
| RN-219 | 8.077E-03 | | 1.631E-01 | 2.709E-01 | 3.668E-02 | 0.030 |
| RN-220 | -9.367E+00 | | 1.016E+01 | 1.330E+01 | 7.285E-01 | -0.704 |
| RA-223 | 1.522E-01 | | 2.920E-01 | 5.128E-01 | 8.584E-02 | 0.297 |
| RA-224 | -2.155E-01 | | 3.286E-01 | 4.346E-01 | 2.897E-02 | -0.496 |
| RA-226 | -7.922E-03 | | 4.067E-02 | 5.894E-02 | 4.331E-03 | -0.134 |
| AC-227 | -1.094E-01 | | 1.643E-01 | 2.597E-01 | 3.726E-02 | -0.421 |
| TH-227 | -1.094E-01 | | 1.647E-01 | 2.597E-01 | 4.473E-02 | -0.421 |
| AC-228 | -2.686E-02 | | 5.873E-02 | 9.625E-02 | 1.049E-02 | -0.279 |
| RA-228 | -2.686E-02 | | 5.873E-02 | 9.625E-02 | 1.049E-02 | -0.279 |
| TH-228 | -2.089E-02 | | 2.829E-02 | 4.229E-02 | 3.397E-03 | -0.494 |
| TH-229 | -1.163E-02 | | 2.113E-01 | 3.371E-01 | 2.187E-02 | -0.034 |
| TH-230 | -7.922E-03 | | 4.067E-02 | 5.894E-02 | 4.331E-03 | -0.134 |
| PA-231 | 5.445E-02 | | 6.439E-01 | 1.095E+00 | 1.549E-01 | 0.050 |
| TH-231 | 1.522E-01 | | 2.920E-01 | 5.128E-01 | 8.584E-02 | 0.297 |
| U-231 | -4.257E-02 | | 1.461E-01 | 2.365E-01 | 2.391E-02 | -0.180 |
| TH-232 | -2.686E-02 | | 5.873E-02 | 9.625E-02 | 1.049E-02 | -0.279 |
| PA-233 | -7.088E-03 | | 2.871E-02 | 4.686E-02 | 3.196E-03 | -0.151 |
| PA-234 | -4.615E-02 | | 1.344E-01 | 2.046E-01 | 3.781E-02 | -0.226 |
| PA-234M | -3.014E+00 | | 2.021E+00 | 2.394E+00 | 2.182E-01 | -1.259 |
| TH-234 | 4.169E-02 | | 6.846E-01 | 1.119E+00 | 2.215E-01 | 0.037 |
| U-234 | -7.922E-03 | | 4.067E-02 | 5.894E-02 | 4.331E-03 | -0.134 |
| U-235 | 3.479E-02 | | 8.441E-02 | 1.374E-01 | 2.277E-02 | 0.253 |
| NP-236 | 1.761E-02 | | 3.421E-02 | 5.793E-02 | 3.699E-03 | 0.304 |
| NP-237 | 9.349E-03 | | 7.959E-02 | 1.343E-01 | 3.199E-02 | 0.070 |
| U-238 | 4.169E-02 | | 6.846E-01 | 1.119E+00 | 2.215E-01 | 0.037 |
| NP-239 | -2.181E-02 | | 6.798E-02 | 1.082E-01 | 7.964E-03 | -0.202 |
| AM-241 | -5.740E-02 | | 8.727E-02 | 1.302E-01 | 1.644E-02 | -0.441 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| AM-243 | -6.728E-03 | | 2.267E-02 | 3.708E-02 | 4.247E-03 | -0.181 |
| CM-243 | -1.067E-02 | | 3.652E-02 | 5.877E-02 | 5.182E-03 | -0.181 |
| AM-246 | 2.503E-03 | | 6.499E-02 | 1.062E-01 | 7.402E-03 | 0.024 |
| CM-247 | 4.228E-03 | | 1.426E-02 | 2.450E-02 | 1.383E-03 | 0.173 |
| CF-249 | -1.059E-03 | | 1.786E-02 | 2.932E-02 | 1.666E-03 | -0.036 |
| CF-251 | -4.695E-02 | | 5.583E-02 | 8.262E-02 | 5.288E-03 | -0.568 |

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]G1202023713          *
* Acquisition date   : 4-FEB-2010 17:08:10 Detector SN# :                   *
* Detector ID        : GAM04 Sensitivity : 5.000                            *
* Geometry           : CAN Energy tolerance: 1.500                          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000               *
* Elapsed real time  : 0 02:00:00.42 Half life ratio : 8.000                *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 27-JAN-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202023713 Analyst initials: MXR1                  *
* Batch Number       : 944964 Sample Quantity : 1.5199E+02 GRAM            *
* Recovery           : 1.00000 Carrier Weight : 0.00000                   *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41 MS Isotope :                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                               *
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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| ANH-511 | 9.545E-03 | 3.215E-02 | 1.225E-02 | 1.640E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU | |
|---------|-------------------------------------|---------------|--------------------|-----------|------------|
| BE-7 | 4.231E-02 | 1.235E-01 | 1.119E-01 | 6.301E-02 | NOT IDENT. |
| NA-22 | 1.126E-02 | 1.631E-02 | 1.613E-02 | 8.323E-03 | NOT IDENT. |
| NA-24 | 8.196E+01 | 2.584E+02 | 0.000E+00 | 1.318E+02 | SHORT HLIF |
| AL-26 | -3.911E-04 | 1.292E-02 | 1.060E-02 | 6.594E-03 | NOT IDENT. |
| K-40 | 1.713E-01 | 1.929E-01 | 1.945E-01 | 9.840E-02 | NOT IDENT. |
| TI-44 | -1.947E-03 | 1.258E-02 | 1.150E-02 | 6.421E-03 | NOT IDENT. |
| SC-46 | -2.427E-03 | 1.990E-02 | 1.352E-02 | 1.015E-02 | NOT IDENT. |
| V-48 | -8.525E-03 | 1.662E-02 | 1.191E-02 | 8.479E-03 | NOT IDENT. |
| CR-51 | -1.041E-01 | 1.350E-01 | 1.102E-01 | 6.886E-02 | NOT IDENT. |
| MN-52 | 2.037E-02 | 4.662E-02 | 4.415E-02 | 2.379E-02 | NOT IDENT. |
| MN-54 | 7.008E-04 | 1.586E-02 | 1.380E-02 | 8.091E-03 | NOT IDENT. |
| CO-56 | -2.922E-04 | 1.879E-02 | 1.617E-02 | 9.589E-03 | NOT IDENT. |
| CO-57 | -3.790E-03 | 9.010E-03 | 7.764E-03 | 4.597E-03 | NOT IDENT. |
| CO-58 | 6.453E-03 | 1.144E-02 | 1.116E-02 | 5.839E-03 | NOT IDENT. |
| FE-59 | 3.787E-03 | 3.063E-02 | 2.644E-02 | 1.563E-02 | NOT IDENT. |
| CO-60 | 4.211E-03 | 1.614E-02 | 1.471E-02 | 8.232E-03 | NOT IDENT. |
| ZN-65 | -3.708E-02 | 3.450E-02 | 2.098E-02 | 1.760E-02 | NOT IDENT. |
| GE-68 | 4.216E-01 | 4.610E-01 | 4.641E-01 | 2.352E-01 | NOT IDENT. |
| AS-73 | 1.737E-01 | 5.215E-01 | 5.098E-01 | 2.661E-01 | NOT IDENT. |
| AS-74 | 1.072E-02 | 3.280E-02 | 2.907E-02 | 1.673E-02 | NOT IDENT. |
| SE-75 | -1.550E-03 | 1.615E-02 | 1.454E-02 | 8.239E-03 | NOT IDENT. |
| BR-77 | 8.613E-03 | 6.658E-01 | 5.712E-01 | 3.397E-01 | NOT IDENT. |
| SR-82 | -1.537E-01 | 1.272E-01 | 8.365E-02 | 6.490E-02 | NOT IDENT. |
| RB-83 | -1.639E-03 | 2.746E-02 | 2.328E-02 | 1.401E-02 | NOT IDENT. |
| RB-84 | -2.347E-03 | 2.865E-02 | 2.006E-02 | 1.462E-02 | NOT IDENT. |
| KR-85 | 5.352E+00 | 3.688E+00 | 3.417E+00 | 1.881E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| SR-85 | 2.565E-02 | 1.768E-02 | 1.638E-02 | 9.019E-03 | NOT IDENT. |
| RB-86 | 8.414E-02 | 2.447E-01 | 2.213E-01 | 1.249E-01 | NOT IDENT. |
| Y-88 | -4.653E-04 | 1.385E-02 | 1.132E-02 | 7.068E-03 | NOT IDENT. |
| ZR-88 | 1.248E-03 | 1.177E-02 | 1.049E-02 | 6.003E-03 | NOT IDENT. |
| Y-91 | 3.060E-01 | 6.119E+00 | 5.143E+00 | 3.122E+00 | NOT IDENT. |
| NB-94 | -3.194E-03 | 1.603E-02 | 1.172E-02 | 8.178E-03 | NOT IDENT. |
| NB-95 | 1.960E-03 | 1.482E-02 | 1.321E-02 | 7.564E-03 | NOT IDENT. |
| NB-95M | -2.087E-02 | 4.928E-02 | 4.024E-02 | 2.514E-02 | NOT IDENT. |
| ZR-95 | 9.064E-03 | 2.202E-02 | 2.077E-02 | 1.123E-02 | NOT IDENT. |
| NB-97 | -6.093E+01 | 8.468E+01 | 0.000E+00 | 4.321E+01 | SHORT HLIF |
| ZR-97 | 2.670E+03 | 1.894E+03 | 0.000E+00 | 9.661E+02 | SHORT HLIF |
| MO-99 | -4.038E-01 | 9.112E-01 | 7.315E-01 | 4.649E-01 | NOT IDENT. |
| TC-99M | -4.604E+07 | 3.049E+08 | 0.000E+00 | 1.556E+08 | SHORT HLIF |
| RH-101 | -8.606E-03 | 1.541E-02 | 1.196E-02 | 7.865E-03 | NOT IDENT. |
| RH-102 | -2.785E-03 | 1.272E-02 | 1.064E-02 | 6.490E-03 | NOT IDENT. |
| RU-103 | 4.381E-03 | 1.588E-02 | 1.419E-02 | 8.100E-03 | NOT IDENT. |
| RH-106 | 1.542E-01 | 1.413E-01 | 1.380E-01 | 7.211E-02 | FAIL ABUN |
| RU-106 | 1.542E-01 | 1.405E-01 | 1.380E-01 | 7.168E-02 | FAIL ABUN |
| AG-108M | 2.531E-03 | 1.548E-02 | 1.375E-02 | 7.897E-03 | NOT IDENT. |
| CD-109 | 1.020E-01 | 2.562E-01 | 2.441E-01 | 1.307E-01 | NOT IDENT. |
| AG-110M | -1.136E-02 | 1.634E-02 | 1.309E-02 | 8.339E-03 | FAIL ABUN |
| IN-111 | -8.457E-03 | 8.501E-02 | 7.146E-02 | 4.337E-02 | NOT IDENT. |
| IN-113M | 1.622E-03 | 1.752E-02 | 1.559E-02 | 8.941E-03 | NOT IDENT. |
| SN-113 | 1.622E-03 | 1.752E-02 | 1.559E-02 | 8.941E-03 | NOT IDENT. |
| IN-114M | -1.974E-02 | 7.403E-02 | 5.524E-02 | 3.777E-02 | NOT IDENT. |
| CD-115 | 4.195E-01 | 5.983E-01 | 5.676E-01 | 3.053E-01 | NOT IDENT. |
| SN-117M | 1.342E-02 | 1.664E-02 | 1.567E-02 | 8.488E-03 | NOT IDENT. |
| SB-122 | 3.362E-02 | 1.690E-01 | 1.481E-01 | 8.624E-02 | NOT IDENT. |
| I-123 | 6.894E+02 | 7.292E+02 | 0.000E+00 | 3.720E+02 | SHORT HLIF |
| TE-123M | 1.095E-02 | 1.158E-02 | 1.101E-02 | 5.908E-03 | NOT IDENT. |
| I-124 | -2.576E-02 | 1.107E-01 | 9.023E-02 | 5.649E-02 | NOT IDENT. |
| SB-124 | -1.572E-02 | 4.179E-02 | 3.122E-02 | 2.132E-02 | FAIL ABUN |
| SB-125 | -1.911E-02 | 4.621E-02 | 3.694E-02 | 2.358E-02 | NOT IDENT. |
| TE-125M | 1.027E+00 | 3.750E+00 | 3.244E+00 | 1.913E+00 | NOT IDENT. |
| I-126 | -6.391E-02 | 5.152E-02 | 3.583E-02 | 2.629E-02 | NOT IDENT. |
| SB-126 | 2.586E-02 | 4.290E-02 | 4.089E-02 | 2.189E-02 | NOT IDENT. |
| SN-126 | 4.442E-03 | 2.597E-02 | 2.428E-02 | 1.325E-02 | NOT IDENT. |
| SB-127 | -1.226E-01 | 1.550E-01 | 1.156E-01 | 7.910E-02 | NOT IDENT. |
| XE-127 | -5.027E-03 | 1.791E-02 | 1.507E-02 | 9.137E-03 | NOT IDENT. |
| I-131 | -5.252E-04 | 2.910E-02 | 2.570E-02 | 1.485E-02 | NOT IDENT. |
| TE-132 | 5.564E-02 | 7.013E-02 | 6.494E-02 | 3.578E-02 | NOT IDENT. |
| BA-133 | -1.186E-02 | 1.860E-02 | 1.521E-02 | 9.490E-03 | NOT IDENT. |
| I-133 | 1.246E+01 | 1.415E+01 | 0.000E+00 | 7.222E+00 | SHORT HLIF |
| CS-134 | 1.013E-02 | 1.550E-02 | 1.514E-02 | 7.910E-03 | NOT IDENT. |
| CS-135 | 4.116E-02 | 6.270E-02 | 6.032E-02 | 3.199E-02 | NOT IDENT. |
| I-135 | 8.648E+07 | 1.931E+08 | 0.000E+00 | 9.854E+07 | SHORT HLIF |
| CS-136 | 1.478E-02 | 3.387E-02 | 3.096E-02 | 1.728E-02 | NOT IDENT. |
| BA-137M | -1.671E-02 | 1.823E-02 | 1.579E-02 | 9.299E-03 | NOT IDENT. |
| CS-137 | -1.767E-02 | 1.927E-02 | 1.669E-02 | 9.831E-03 | NOT IDENT. |
| CE-139 | -3.661E-03 | 1.172E-02 | 1.000E-02 | 5.980E-03 | NOT IDENT. |
| BA-140 | -2.664E-03 | 6.785E-02 | 5.748E-02 | 3.462E-02 | NOT IDENT. |
| LA-140 | 6.033E-04 | 3.640E-02 | 3.078E-02 | 1.857E-02 | NOT IDENT. |
| CE-141 | -1.723E-02 | 2.086E-02 | 1.703E-02 | 1.064E-02 | NOT IDENT. |
| CE-143 | 3.882E-01 | 2.240E+00 | 2.051E+00 | 1.143E+00 | NOT IDENT. |
| CE-144 | 2.683E-02 | 7.067E-02 | 6.543E-02 | 3.606E-02 | NOT IDENT. |
| PM-144 | -1.104E-02 | 1.592E-02 | 1.220E-02 | 8.120E-03 | NOT IDENT. |
| PR-144 | -7.457E-01 | 1.075E+00 | 8.236E-01 | 5.484E-01 | NOT IDENT. |
| PM-146 | 1.524E-02 | 1.769E-02 | 1.713E-02 | 9.027E-03 | NOT IDENT. |
| ND-147 | -9.862E-02 | 1.588E-01 | 1.210E-01 | 8.102E-02 | NOT IDENT. |
| PM-149 | -3.370E+00 | 4.864E+00 | 4.041E+00 | 2.482E+00 | NOT IDENT. |
| EU-152 | 7.508E-03 | 3.964E-02 | 3.603E-02 | 2.023E-02 | NOT IDENT. |
| GD-153 | 5.092E-03 | 2.942E-02 | 2.729E-02 | 1.501E-02 | NOT IDENT. |
| EU-154 | 3.229E-02 | 4.595E-02 | 4.546E-02 | 2.345E-02 | NOT IDENT. |
| EU-155 | 2.044E-02 | 3.945E-02 | 3.751E-02 | 2.013E-02 | NOT IDENT. |
| TB-160 | 1.294E-02 | 5.201E-02 | 4.585E-02 | 2.654E-02 | NOT IDENT. |
| HO-166M | 1.051E-02 | 2.738E-02 | 2.275E-02 | 1.397E-02 | FAIL ABUN |
| TM-171 | -4.057E+00 | 1.258E+01 | 1.084E+01 | 6.420E+00 | NOT IDENT. |
| LU-176 | -7.947E-03 | 1.060E-02 | 8.750E-03 | 5.410E-03 | NOT IDENT. |
| LU-177 | -3.990E-02 | 2.330E-01 | 1.977E-01 | 1.189E-01 | NOT IDENT. |
| LU-177M | -5.599E-02 | 7.862E-02 | 6.268E-02 | 4.011E-02 | NOT IDENT. |
| HF-181 | 2.559E-03 | 1.680E-02 | 1.480E-02 | 8.573E-03 | NOT IDENT. |
| W-181 | -2.002E-01 | 1.704E-01 | 1.336E-01 | 8.693E-02 | NOT IDENT. |
| TA-182 | -3.779E-02 | 6.373E-02 | 4.780E-02 | 3.251E-02 | NOT IDENT. |
| RE-183 | -3.165E-02 | 4.303E-02 | 3.529E-02 | 2.195E-02 | NOT IDENT. |
| RE-184 | 3.934E-02 | 9.533E-02 | 9.014E-02 | 4.864E-02 | NOT IDENT. |
| OS-185 | 6.802E-03 | 1.484E-02 | 1.413E-02 | 7.572E-03 | NOT IDENT. |
| RE-188 | 2.594E-02 | 6.040E-02 | 5.552E-02 | 3.081E-02 | NOT IDENT. |
| W-188 | 1.848E+00 | 2.849E+00 | 2.728E+00 | 1.453E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| IR-192 | 6.057E-03 | 1.452E-02 | 1.354E-02 | 7.406E-03 | NOT IDENT. |
| AU-195 | 6.040E-03 | 8.265E-02 | 7.595E-02 | 4.217E-02 | NOT IDENT. |
| TL-200 | 8.062E-01 | 3.262E+00 | 0.000E+00 | 1.664E+00 | SHORT HLIF |
| TL-201 | 8.684E-03 | 6.438E-01 | 5.663E-01 | 3.285E-01 | NOT IDENT. |
| TL-202 | -1.591E-02 | 2.122E-02 | 1.651E-02 | 1.083E-02 | NOT IDENT. |
| HG-203 | -7.935E-03 | 1.524E-02 | 1.308E-02 | 7.775E-03 | NOT IDENT. |
| BI-207 | 5.615E-03 | 2.320E-02 | 2.046E-02 | 1.184E-02 | NOT IDENT. |
| TL-207 | 1.522E-01 | 2.862E-01 | 2.687E-01 | 1.460E-01 | NOT IDENT. |
| TL-208 | 1.337E-02 | 1.802E-02 | 1.654E-02 | 9.196E-03 | FAIL ABUN |
| PO-209 | -7.923E-01 | 3.779E+00 | 3.017E+00 | 1.928E+00 | NOT IDENT. |
| BI-210 | 2.577E+00 | 3.991E+00 | 3.755E+00 | 2.036E+00 | NOT IDENT. |
| PB-210 | 2.577E+00 | 3.991E+00 | 3.755E+00 | 2.036E+00 | NOT IDENT. |
| PO-210 | 2.577E+00 | 3.990E+00 | 3.755E+00 | 2.036E+00 | NOT IDENT. |
| BI-211 | -4.010E-02 | 9.757E-02 | 7.761E-02 | 4.978E-02 | NOT IDENT. |
| PB-211 | -1.673E-02 | 3.702E-01 | 3.225E-01 | 1.889E-01 | NOT IDENT. |
| BI-212 | -3.800E-03 | 1.078E-01 | 9.380E-02 | 5.498E-02 | NOT IDENT. |
| PB-212 | -2.071E-02 | 2.748E-02 | 2.213E-02 | 1.402E-02 | NOT IDENT. |
| PO-212 | -2.071E-02 | 2.748E-02 | 2.213E-02 | 1.402E-02 | NOT IDENT. |
| BI-214 | -7.922E-03 | 3.985E-02 | 3.039E-02 | 2.033E-02 | NOT IDENT. |
| PB-214 | 1.398E-02 | 3.374E-02 | 2.940E-02 | 1.722E-02 | NOT IDENT. |
| PO-214 | 1.398E-02 | 3.374E-02 | 2.940E-02 | 1.722E-02 | NOT IDENT. |
| PO-215 | 1.522E-01 | 2.862E-01 | 2.687E-01 | 1.460E-01 | NOT IDENT. |
| PO-216 | -2.071E-02 | 2.748E-02 | 2.213E-02 | 1.402E-02 | NOT IDENT. |
| PO-218 | 1.398E-02 | 3.374E-02 | 2.940E-02 | 1.722E-02 | NOT IDENT. |
| RN-219 | 8.077E-03 | 1.598E-01 | 1.412E-01 | 8.156E-02 | NOT IDENT. |
| RN-220 | -9.367E+00 | 9.958E+00 | 6.875E+00 | 5.081E+00 | NOT IDENT. |
| RA-223 | 1.522E-01 | 2.862E-01 | 2.687E-01 | 1.460E-01 | NOT IDENT. |
| RA-224 | -2.155E-01 | 3.221E-01 | 2.293E-01 | 1.643E-01 | NOT IDENT. |
| RA-226 | -7.922E-03 | 3.985E-02 | 3.039E-02 | 2.033E-02 | NOT IDENT. |
| AC-227 | -1.094E-01 | 1.611E-01 | 1.369E-01 | 8.217E-02 | NOT IDENT. |
| TH-227 | -1.094E-01 | 1.614E-01 | 1.369E-01 | 8.234E-02 | NOT IDENT. |
| AC-228 | -2.686E-02 | 5.756E-02 | 4.912E-02 | 2.937E-02 | FAIL ABUN |
| RA-228 | -2.686E-02 | 5.756E-02 | 4.912E-02 | 2.937E-02 | FAIL ABUN |
| TH-228 | -2.089E-02 | 2.772E-02 | 2.233E-02 | 1.415E-02 | NOT IDENT. |
| TH-229 | -1.163E-02 | 2.071E-01 | 1.788E-01 | 1.057E-01 | NOT IDENT. |
| TH-230 | -7.922E-03 | 3.985E-02 | 3.039E-02 | 2.033E-02 | NOT IDENT. |
| PA-231 | 5.445E-02 | 6.310E-01 | 5.754E-01 | 3.219E-01 | NOT IDENT. |
| TH-231 | 1.522E-01 | 2.862E-01 | 2.687E-01 | 1.460E-01 | NOT IDENT. |
| U-231 | -4.257E-02 | 1.432E-01 | 1.276E-01 | 7.305E-02 | NOT IDENT. |
| TH-232 | -2.686E-02 | 5.756E-02 | 4.912E-02 | 2.937E-02 | FAIL ABUN |
| PA-233 | -7.088E-03 | 2.813E-02 | 2.458E-02 | 1.435E-02 | NOT IDENT. |
| PA-234 | -4.615E-02 | 1.317E-01 | 1.043E-01 | 6.722E-02 | FAIL ABUN |
| PA-234M | -3.014E+00 | 1.980E+00 | 1.219E+00 | 1.010E+00 | NOT IDENT. |
| TH-234 | 4.169E-02 | 6.709E-01 | 6.098E-01 | 3.423E-01 | NOT IDENT. |
| U-234 | -7.922E-03 | 3.985E-02 | 3.039E-02 | 2.033E-02 | NOT IDENT. |
| U-235 | 3.479E-02 | 8.272E-02 | 7.341E-02 | 4.221E-02 | FAIL ABUN |
| NP-236 | 1.761E-02 | 3.352E-02 | 3.087E-02 | 1.710E-02 | NOT IDENT. |
| NP-237 | 9.349E-03 | 7.800E-02 | 7.260E-02 | 3.979E-02 | NOT IDENT. |
| U-238 | 4.169E-02 | 6.709E-01 | 6.098E-01 | 3.423E-01 | NOT IDENT. |
| NP-239 | -2.181E-02 | 6.662E-02 | 5.812E-02 | 3.399E-02 | NOT IDENT. |
| AM-241 | -5.740E-02 | 8.552E-02 | 7.101E-02 | 4.363E-02 | NOT IDENT. |
| AM-243 | -6.728E-03 | 2.221E-02 | 2.012E-02 | 1.133E-02 | NOT IDENT. |
| CM-243 | -1.067E-02 | 3.579E-02 | 3.165E-02 | 1.826E-02 | NOT IDENT. |
| AM-246 | 2.503E-03 | 6.369E-02 | 5.395E-02 | 3.249E-02 | NOT IDENT. |
| CM-247 | 4.228E-03 | 1.397E-02 | 1.277E-02 | 7.130E-03 | NOT IDENT. |
| CF-249 | -1.059E-03 | 1.750E-02 | 1.529E-02 | 8.931E-03 | NOT IDENT. |
| CF-251 | -4.695E-02 | 5.471E-02 | 4.393E-02 | 2.791E-02 | NOT IDENT. |

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*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON , SC 29417                          *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT            *
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| ENERGY | MDA COUNTS |
|--------|------------|
| 46.50 | 43.5270 |
| 46.50 | 43.5270 |
| 46.50 | 43.5270 |
| 48.70 | 45.5287 |
| 49.72 | 42.2169 |
| 51.35 | 42.4129 |
| 52.39 | 49.4810 |
| 52.97 | 45.2130 |
| 53.15 | 37.4063 |
| 53.44 | 39.1772 |
| 54.07 | 46.2216 |
| 56.28 | 51.7600 |
| 56.28 | 51.7605 |
| 57.37 | 41.3514 |
| 57.53 | 37.8480 |
| 57.53 | 37.8482 |
| 57.60 | 37.8550 |
| 57.98 | 40.5361 |
| 57.98 | 40.5361 |
| 59.32 | 52.1721 |
| 59.32 | 52.1721 |
| 59.40 | 52.1827 |
| 59.54 | 48.6623 |
| 59.72 | 52.2253 |
| 60.01 | 54.0355 |
| 61.10 | 59.5143 |
| 61.14 | 59.5202 |
| 61.30 | 59.5443 |
| 63.00 | 40.1616 |
| 63.29 | 44.6559 |
| 63.29 | 44.6559 |
| 63.58 | 50.9439 |
| 64.28 | 48.3451 |
| 65.12 | 57.4145 |
| 65.20 | 57.4255 |
| 65.20 | 57.4255 |
| 66.05 | 57.5426 |
| 66.72 | 44.1261 |
| 66.83 | 44.1378 |
| 66.91 | 38.7406 |
| 67.20 | 37.8655 |
| 67.20 | 37.8655 |
| 67.75 | 37.9147 |
| 67.85 | 37.9236 |
| 68.90 | 62.4558 |
| 68.90 | 62.4558 |
| 69.30 | 65.2317 |
| 69.67 | 61.6610 |
| 70.82 | 51.8224 |
| 70.82 | 51.8224 |
| 70.83 | 51.8235 |
| 72.80 | 56.6211 |
| 72.87 | 58.4567 |
| 72.87 | 58.4567 |
| 74.67 | 66.0267 |
| 74.81 | 66.0472 |
| 74.81 | 66.0472 |
| 74.81 | 66.0472 |
| 74.81 | 66.0472 |
| 74.81 | 66.0472 |
| 74.81 | 66.0472 |
| 74.81 | 66.0472 |
| 74.97 | 62.3997 |
| 75.28 | 64.2788 |
| 75.70 | 48.7130 |
| 77.11 | 53.4717 |
| 77.11 | 53.4717 |

| | |
|--------|---------|
| 77.11 | 53.4717 |
| 77.11 | 53.4717 |
| 77.11 | 53.4717 |
| 77.11 | 53.4717 |
| 77.11 | 53.4717 |
| 78.38 | 57.3152 |
| 79.62 | 62.1006 |
| 79.80 | 58.4152 |
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| 92.38 | 53.2500 |
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| 94.90 | 88.8554 |
| 94.90 | 88.8554 |
| 94.90 | 88.8554 |
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| 295.21 | 41.0065 |

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| 621.84 | 13.3700 |
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| 969.11 | 5.1050 |
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| 1691.02 | 8.2012 |
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| 1764.49 | 1.0406 |
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1836.01

3.1658

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202023713

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 1.4013E-01 | ug/g |
| Total Uranium Counting Unc. | 1.9964E+00 | ug/g |
| Total Uranium Tpu | 1.0186E-06 | ug/g |
| Total Uranium Mda | 1.8145E+00 | ug/g |

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 944964                          SAMPLE ID   : G1202023713
*  ANALYST       : MXR1                             DETECTOR    : GAM04
*  SAMPLE DATE   : 27-JAN-2010 00:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 4-FEB-2010 17:08:10.02           SAMPLE ALQT  : 151.990 GRAM
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 6.857E-02
GROSS GAMMA ERROR   (pCi/GRAM ) : 5.926E-02
GROSS GAMMA MDA     (pCi/GRAM ) : 1.861E-01
GROSS GAMMA DLC     (pCi/GRAM ) : 8.554E-02

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VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 19:09:48.61

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*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202023714.CNF;1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 17:09:15.
Sample ID        : G1202023714 Sample quantity : 1.27670E+02 GRAM
Detector name    : GAM13 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.60 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 944964 Detector SN# :
Matrix Spike ID  : LCS ID : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 0 | 46.33* | 89 | 450 | 0.82 | 92.42 | 89 | 8 | 1.24E-02 | 45.4 | |
| 2 | 0 | 63.21* | 141 | 704 | 1.20 | 126.19 | 122 | 9 | 1.95E-02 | 38.5 | |
| 3 | 3 | 74.67 | 623 | 549 | 1.22 | 149.12 | 142 | 19 | 8.65E-02 | 7.5 | 1.59E+00 |
| 4 | 3 | 76.92* | 977 | 529 | 1.19 | 153.61 | 142 | 19 | 1.36E-01 | 5.4 | |
| 5 | 4 | 87.09 | 192 | 469 | 0.85 | 173.95 | 169 | 24 | 2.66E-02 | 17.4 | 4.92E+00 |
| 6 | 4 | 89.67 | 151 | 496 | 1.08 | 179.11 | 169 | 24 | 2.09E-02 | 23.7 | |
| 7 | 4 | 92.62* | 195 | 537 | 1.31 | 185.02 | 169 | 24 | 2.70E-02 | 26.9 | |
| 8 | 0 | 143.73* | 86 | 303 | 1.16 | 287.26 | 284 | 8 | 1.19E-02 | 38.8 | |
| 9 | 0 | 185.65* | 211 | 474 | 1.44 | 371.13 | 365 | 12 | 2.93E-02 | 23.2 | |
| 10 | 0 | 209.01 | 107 | 345 | 1.30 | 417.87 | 414 | 10 | 1.49E-02 | 33.7 | |
| 11 | 6 | 238.43* | 1130 | 209 | 1.22 | 476.72 | 470 | 19 | 1.57E-01 | 3.8 | 1.22E+00 |
| 12 | 6 | 241.36 | 291 | 293 | 1.74 | 482.57 | 470 | 19 | 4.04E-02 | 15.4 | |
| 13 | 0 | 295.11 | 344 | 234 | 1.19 | 590.10 | 584 | 11 | 4.78E-02 | 10.2 | |
| 14 | 0 | 338.15* | 220 | 242 | 1.51 | 676.20 | 671 | 13 | 3.05E-02 | 16.3 | |
| 15 | 0 | 351.62* | 608 | 210 | 1.44 | 703.16 | 698 | 11 | 8.44E-02 | 6.3 | |
| 16 | 0 | 462.68 | 95 | 131 | 1.58 | 925.34 | 919 | 12 | 1.31E-02 | 26.4 | |
| 17 | 0 | 510.60* | 99 | 207 | 1.82 | 1021.21 | 1013 | 16 | 1.37E-02 | 38.1 | |
| 18 | 0 | 582.91* | 370 | 161 | 1.62 | 1165.87 | 1157 | 18 | 5.13E-02 | 9.9 | |
| 19 | 0 | 609.03* | 417 | 130 | 1.45 | 1218.13 | 1213 | 13 | 5.80E-02 | 7.6 | |
| 20 | 0 | 727.40 | 58 | 132 | 1.02 | 1454.95 | 1449 | 14 | 7.99E-03 | 44.9 | |
| 21 | 0 | 911.03* | 236 | 141 | 2.10 | 1822.35 | 1814 | 19 | 3.28E-02 | 13.8 | |
| 22 | 6 | 963.91 | 42 | 46 | 2.18 | 1928.16 | 1924 | 19 | 5.83E-03 | 31.6 | 2.51E+00 |
| 23 | 6 | 968.44 | 170 | 47 | 2.26 | 1937.21 | 1924 | 19 | 2.35E-02 | 11.5 | |
| 24 | 0 | 1119.77 | 112 | 90 | 1.88 | 2240.01 | 2230 | 19 | 1.55E-02 | 22.5 | |
| 25 | 0 | 1238.03 | 64 | 68 | 1.88 | 2476.63 | 2469 | 15 | 8.82E-03 | 31.5 | |
| 26 | 0 | 1460.09 | 768 | 55 | 2.17 | 2920.97 | 2910 | 20 | 1.07E-01 | 4.3 | |
| 27 | 0 | 1763.95* | 67 | 22 | 3.25 | 3529.00 | 3521 | 16 | 9.27E-03 | 21.3 | |

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

VMS Nuclide Identification Report V3.1 Generated 4-FEB-2010 19:09:51

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202023714.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 17:09:15
Sample ID         : G1202023714 Sample quantity : 127.67 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA13 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.60 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00
    
```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 2.033E+01 | 2.150E+00 | 7.206E-01 | 4.406E-02 | 28.218 |
| CD-109 | + | 88.03 | * | 2.155E+00 | 7.681E-01 | 1.088E+00 | 8.586E-02 | 1.981 |
| SN-126 | + | 64.28 | | 5.823E-01 | 4.574E-01 | 4.053E-01 | 6.310E-02 | 1.437 |
| | + | 86.94 | | 8.739E-01 | 4.711E-01 | 4.398E-01 | 1.813E-01 | 1.987 |
| | + | 87.57 | * | 2.102E-01 | 7.493E-02 | 1.060E-01 | 8.384E-03 | 1.983 |
| TL-208 | | 277.35 | | 2.830E-01 | 4.353E-01 | 7.388E-01 | 8.653E-02 | 0.383 |
| | + | 510.84 | | 5.295E-01 | 4.078E-01 | 2.846E-01 | 3.093E-02 | 1.861 |
| | + | 583.14 | * | 5.719E-01 | 1.226E-01 | 6.869E-02 | 5.686E-03 | 8.326 |
| | | 860.37 | | 5.511E-01 | 4.215E-01 | 7.548E-01 | 6.364E-02 | 0.730 |
| BI-210 | + | 46.50 | * | 8.884E-01 | 8.094E-01 | 8.163E-01 | 6.654E-02 | 1.088 |
| PB-210 | + | 46.50 | * | 8.884E-01 | 8.094E-01 | 8.163E-01 | 6.654E-02 | 1.088 |
| PO-210 | + | 46.50 | * | 8.884E-01 | 8.086E-01 | 8.163E-01 | 5.820E-02 | 1.088 |
| BI-211 | | 72.87 | | 3.726E+00 | 2.031E+00 | 3.547E+00 | 3.102E-01 | 1.050 |
| | + | 351.07 | * | 3.946E+00 | 5.751E-01 | 4.073E-01 | 2.969E-02 | 9.687 |
| PB-212 | + | 74.81 | | 2.325E+00 | 4.558E-01 | 3.780E-01 | 4.808E-02 | 6.151 |
| | + | 77.11 | | 2.173E+00 | 2.986E-01 | 2.259E-01 | 1.919E-02 | 9.619 |
| | + | 87.30 | | 9.722E-01 | 3.599E-01 | 4.898E-01 | 6.250E-02 | 1.985 |
| | + | 238.63 | * | 1.580E+00 | 1.872E-01 | 9.680E-02 | 8.794E-03 | 16.324 |
| | | 300.09 | | 1.405E+00 | 1.022E+00 | 1.592E+00 | 1.515E-01 | 0.882 |
| PO-212 | + | 74.81 | | 2.325E+00 | 4.558E-01 | 3.780E-01 | 4.808E-02 | 6.151 |
| | + | 77.11 | | 2.173E+00 | 2.986E-01 | 2.259E-01 | 1.919E-02 | 9.619 |
| | + | 87.30 | | 9.722E-01 | 3.599E-01 | 4.898E-01 | 6.250E-02 | 1.985 |
| | | 115.19 | | -1.557E+00 | 3.676E+00 | 5.908E+00 | 6.852E-01 | -0.264 |
| | + | 238.63 | * | 1.580E+00 | 1.872E-01 | 9.680E-02 | 8.794E-03 | 16.324 |
| | | 300.09 | | 1.405E+00 | 1.022E+00 | 1.592E+00 | 1.515E-01 | 0.882 |
| BI-214 | + | 609.31 | * | 1.221E+00 | 2.189E-01 | 1.439E-01 | 1.345E-02 | 8.483 |
| | + | 1120.29 | | 1.687E+00 | 7.744E-01 | 5.750E-01 | 5.144E-02 | 2.933 |
| | + | 1764.49 | | 1.382E+00 | 5.940E-01 | 4.337E-01 | 2.463E-02 | 3.187 |
| PB-214 | + | 74.81 | | 4.006E+00 | 7.514E-01 | 6.513E-01 | 7.407E-02 | 6.151 |
| | + | 77.11 | | 3.726E+00 | 5.853E-01 | 3.873E-01 | 4.420E-02 | 9.619 |
| | + | 87.30 | | 1.666E+00 | 6.074E-01 | 8.391E-01 | 9.277E-02 | 1.985 |
| | + | 241.98 | | 2.443E+00 | 7.897E-01 | 5.833E-01 | 5.647E-02 | 4.187 |
| | + | 295.21 | | 1.308E+00 | 2.949E-01 | 2.510E-01 | 2.459E-02 | 5.209 |
| | + | 351.92 | * | 1.373E+00 | 2.125E-01 | 1.420E-01 | 1.272E-02 | 9.664 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 74.81 | | 4.006E+00 | 7.514E-01 | 6.513E-01 | 7.407E-02 | 6.151 |
| | + | 77.11 | | 3.726E+00 | 5.853E-01 | 3.873E-01 | 4.420E-02 | 9.619 |
| | + | 87.30 | | 1.666E+00 | 6.074E-01 | 8.391E-01 | 9.277E-02 | 1.985 |
| | + | 241.98 | | 2.443E+00 | 7.897E-01 | 5.833E-01 | 5.647E-02 | 4.187 |
| | + | 295.21 | | 1.308E+00 | 2.949E-01 | 2.510E-01 | 2.459E-02 | 5.209 |
| PO-216 | + | 351.92 | * | 1.373E+00 | 2.125E-01 | 1.420E-01 | 1.272E-02 | 9.664 |
| | + | 74.81 | | 2.325E+00 | 4.558E-01 | 3.780E-01 | 4.808E-02 | 6.151 |
| | + | 77.11 | | 2.173E+00 | 2.986E-01 | 2.259E-01 | 1.919E-02 | 9.619 |
| | + | 87.30 | | 9.722E-01 | 3.599E-01 | 4.898E-01 | 6.250E-02 | 1.985 |
| | + | 238.63 | * | 1.580E+00 | 1.872E-01 | 9.680E-02 | 8.794E-03 | 16.324 |
| PO-218 | + | 300.09 | | 1.405E+00 | 1.022E+00 | 1.592E+00 | 1.515E-01 | 0.882 |
| | + | 74.81 | | 4.006E+00 | 7.514E-01 | 6.513E-01 | 7.407E-02 | 6.151 |
| | + | 77.11 | | 3.726E+00 | 5.853E-01 | 3.873E-01 | 4.420E-02 | 9.619 |
| | + | 87.30 | | 1.666E+00 | 6.074E-01 | 8.391E-01 | 9.277E-02 | 1.985 |
| | + | 241.98 | | 2.443E+00 | 7.897E-01 | 5.833E-01 | 5.647E-02 | 4.187 |
| RA-224 | + | 295.21 | | 1.308E+00 | 2.949E-01 | 2.510E-01 | 2.459E-02 | 5.209 |
| | + | 351.92 | * | 1.373E+00 | 2.125E-01 | 1.420E-01 | 1.272E-02 | 9.664 |
| | + | 240.98 | * | 4.631E+00 | 1.475E+00 | 1.102E+00 | 8.700E-02 | 4.202 |
| | + | 609.31 | * | 1.221E+00 | 2.189E-01 | 1.439E-01 | 1.345E-02 | 8.483 |
| | + | 1120.29 | | 1.687E+00 | 7.744E-01 | 5.750E-01 | 5.144E-02 | 2.933 |
| RA-226 | + | 1764.49 | | 1.382E+00 | 5.940E-01 | 4.337E-01 | 2.463E-02 | 3.187 |
| | + | 338.32 | | 1.568E+00 | 8.217E-01 | 4.497E-01 | 1.841E-01 | 3.487 |
| | + | 911.07 | * | 1.642E+00 | 4.827E-01 | 2.617E-01 | 2.717E-02 | 6.274 |
| | + | 969.11 | | 2.068E+00 | 6.692E-01 | 4.144E-01 | 9.465E-02 | 4.989 |
| | + | 338.32 | | 1.568E+00 | 8.217E-01 | 4.497E-01 | 1.841E-01 | 3.487 |
| RA-228 | + | 911.07 | * | 1.642E+00 | 4.827E-01 | 2.617E-01 | 2.717E-02 | 6.274 |
| | + | 969.11 | | 2.068E+00 | 6.692E-01 | 4.144E-01 | 9.465E-02 | 4.989 |
| | + | 74.81 | | 2.372E+00 | 4.097E-01 | 3.856E-01 | 3.356E-02 | 6.151 |
| | + | 77.11 | | 2.217E+00 | 3.047E-01 | 2.305E-01 | 1.958E-02 | 9.619 |
| | + | 87.30 | | 9.920E-01 | 3.536E-01 | 4.998E-01 | 3.961E-02 | 1.985 |
| TH-228 | + | 238.63 | * | 1.612E+00 | 1.911E-01 | 9.877E-02 | 8.973E-03 | 16.324 |
| | + | 300.09 | | 1.433E+00 | 1.337E+00 | 1.625E+00 | 9.606E-01 | 0.882 |
| | + | 609.31 | * | 1.221E+00 | 2.189E-01 | 1.439E-01 | 1.345E-02 | 8.483 |
| | + | 1120.29 | | 1.687E+00 | 7.744E-01 | 5.750E-01 | 5.144E-02 | 2.933 |
| | + | 1764.49 | | 1.382E+00 | 5.940E-01 | 4.336E-01 | 2.463E-02 | 3.187 |
| TH-232 | + | 338.32 | | 1.568E+00 | 5.242E-01 | 4.497E-01 | 3.131E-02 | 3.487 |
| | + | 911.07 | * | 1.642E+00 | 4.827E-01 | 2.617E-01 | 2.717E-02 | 6.274 |
| | + | 969.11 | | 2.068E+00 | 6.692E-01 | 4.144E-01 | 9.465E-02 | 4.989 |
| | + | 63.29 | * | 1.471E+00 | 1.164E+00 | 1.003E+00 | 1.840E-01 | 1.467 |
| | + | 92.38 | | 1.473E+00 | 8.349E-01 | 7.357E-01 | 1.324E-01 | 2.002 |
| U-234 | + | 609.31 | * | 1.221E+00 | 2.189E-01 | 1.439E-01 | 1.345E-02 | 8.483 |
| | + | 1120.29 | | 1.687E+00 | 7.744E-01 | 5.750E-01 | 5.144E-02 | 2.933 |
| | + | 1764.49 | | 1.382E+00 | 5.940E-01 | 4.336E-01 | 2.463E-02 | 3.187 |
| | + | 89.95 | | 2.273E+00 | 1.282E+00 | 1.463E+00 | 4.495E-01 | 1.554 |
| | + | 93.35 | | 1.770E+00 | 1.073E+00 | 8.872E-01 | 2.485E-01 | 1.996 |
| U-235 | + | 105.00 | | 1.776E+00 | 1.160E+00 | 1.802E+00 | 5.463E-01 | 0.986 |
| | + | 143.76 | * | 3.806E-01 | 3.034E-01 | 3.685E-01 | 6.803E-02 | 1.033 |
| | + | 163.35 | | -1.503E-01 | 5.481E-01 | 8.373E-01 | 1.580E-01 | -0.180 |
| | + | 185.71 | | 2.079E-01 | 9.807E-02 | 7.616E-02 | 6.011E-03 | 2.730 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| NP-237 | + | 205.31 | * | -3.743E-01 | 6.375E-01 | 8.975E-01 | 1.685E-01 | -0.417 |
| | | 86.50 | | 6.173E-01 | 2.542E-01 | 3.103E-01 | 6.863E-02 | 1.989 |
| | | 95.87 | | 6.405E-01 | 9.261E-01 | 1.400E+00 | 3.464E-01 | 0.457 |
| U-238 | + | 63.29 | * | 1.471E+00 | 1.164E+00 | 1.003E+00 | 1.840E-01 | 1.467 |
| | | 92.38 | | 1.473E+00 | 8.014E-01 | 7.357E-01 | 6.210E-02 | 2.002 |
| AM-243 | + | 74.67 | * | 3.769E-01 | 6.495E-02 | 6.126E-02 | 5.291E-03 | 6.153 |
| | | 86.72 | | 2.315E+01 | 8.251E+00 | 1.164E+01 | 9.264E-01 | 1.988 |
| | | 117.66 | | -1.600E+00 | 3.822E+00 | 6.129E+00 | 7.335E-01 | -0.261 |
| ANH-511 | + | 142.18 | * | -1.857E+00 | 2.277E+01 | 3.273E+01 | 3.468E+00 | -0.057 |
| | | 511.00 | | 1.144E-01 | 8.757E-02 | 6.148E-02 | 4.291E-03 | 1.860 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| BE-7 | | 477.59 | * | -1.404E-01 | 4.420E-01 | 7.251E-01 | 5.452E-02 | -0.194 |
| NA-22 | | 1274.54 | * | -4.844E-03 | 5.220E-02 | 8.603E-02 | 4.856E-03 | -0.056 |
| NA-24 | | 1368.53 | * | 4.701E+01 | 5.220E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | * | 1.281E-01 | 2.399E+00 | 3.716E+00 | 2.202E-01 | 0.034 |
| | | 1808.65 | | 1.490E-02 | 3.932E-02 | 6.921E-02 | 3.905E-03 | 0.215 |
| TI-44 | | 67.85 | * | 1.521E-02 | 2.666E-02 | 4.382E-02 | 3.967E-03 | 0.347 |
| | | 78.38 | | 4.011E-01 | 5.511E-02 | 5.737E-02 | 4.832E-03 | 6.992 |
| SC-46 | + | 889.25 | * | 1.991E-02 | 5.743E-02 | 9.751E-02 | 7.384E-03 | 0.204 |
| | | 1120.51 | | 3.012E-01 | 1.368E-01 | 1.617E-01 | 9.722E-03 | 1.863 |
| V-48 | | 944.10 | * | 1.904E+00 | 1.561E+00 | 2.796E+00 | 2.042E-01 | 0.681 |
| | | 983.50 | | -1.367E-02 | 1.157E-01 | 1.879E-01 | 3.129E-02 | -0.073 |
| CR-51 | | 1312.09 | * | -4.191E-02 | 1.193E-01 | 1.905E-01 | 1.080E-02 | -0.220 |
| | | 320.08 | | -3.100E-01 | 5.090E-01 | 8.038E-01 | 6.256E-02 | -0.386 |
| MN-52 | | 744.21 | * | 3.870E-01 | 6.268E-01 | 1.053E+00 | 8.550E-02 | 0.368 |
| | | 848.13 | | -2.137E+00 | 1.684E+01 | 2.774E+01 | 2.160E+00 | -0.077 |
| | | 935.52 | * | 5.042E-01 | 6.369E-01 | 1.112E+00 | 8.169E-02 | 0.453 |
| | | 1246.25 | | 1.272E+01 | 1.905E+01 | 3.019E+01 | 1.689E+00 | 0.421 |
| | | 1333.61 | * | -3.199E+00 | 1.205E+01 | 1.940E+01 | 1.104E+00 | -0.165 |
| | | 1434.06 | | 1.931E-01 | 5.301E-01 | 9.113E-01 | 5.237E-02 | 0.212 |
| MN-54 | | 834.83 | * | -2.699E-02 | 5.165E-02 | 8.279E-02 | 6.496E-03 | -0.326 |
| CO-56 | | 846.75 | * | 6.416E-03 | 5.394E-02 | 9.052E-02 | 7.055E-03 | 0.071 |
| | | 977.42 | | -1.888E+00 | 4.015E+00 | 6.313E+00 | 4.490E-01 | -0.299 |
| | | 1037.82 | * | 1.241E-01 | 4.204E-01 | 7.037E-01 | 5.126E-02 | 0.176 |
| | | 1175.09 | | -4.114E-01 | 3.112E+00 | 4.959E+00 | 2.727E-01 | -0.083 |
| | + | 1238.25 | * | 2.806E-01 | 1.774E-01 | 2.287E-01 | 1.364E-02 | 1.227 |
| | | 1360.21 | | -3.579E-01 | 1.414E+00 | 2.274E+00 | 1.298E-01 | -0.157 |
| CO-57 | | 1771.40 | * | -2.276E-02 | 3.381E-01 | 4.708E-01 | 2.671E-02 | -0.048 |
| | | 122.06 | | -1.762E-02 | 2.720E-02 | 4.301E-02 | 5.440E-03 | -0.410 |
| CO-58 | | 136.48 | * | 1.041E-01 | 2.363E-01 | 3.888E-01 | 4.551E-02 | 0.268 |
| | | 810.76 | | -5.040E-02 | 5.297E-02 | 8.155E-02 | 6.495E-03 | -0.618 |
| FE-59 | + | 142.65 | * | 5.315E+00 | 4.158E+00 | 5.454E+00 | 5.752E-01 | 0.974 |
| | | 192.34 | | -1.947E-01 | 1.073E+00 | 1.808E+00 | 2.346E-01 | -0.108 |
| | | 1099.22 | * | -7.348E-02 | 1.468E-01 | 2.286E-01 | 1.633E-02 | -0.321 |
| | | 1291.56 | | 2.735E-02 | 1.651E-01 | 2.783E-01 | 2.033E-02 | 0.098 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| CO-60 | | 1173.22 | | 5.168E-02 | 5.673E-02 | 9.865E-02 | 5.422E-03 | 0.524 |
| | | 1332.49 | * | -2.565E-02 | 5.076E-02 | 7.959E-02 | 4.527E-03 | -0.322 |
| ZN-65 | | 1115.52 | * | 6.899E-02 | 1.406E-01 | 2.062E-01 | 1.252E-02 | 0.335 |
| GE-68 | | 1077.35 | * | 4.584E-01 | 1.652E+00 | 2.751E+00 | 1.758E-01 | 0.167 |
| AS-73 | | 53.44 | * | 2.727E-01 | 2.491E-01 | 4.235E-01 | 3.577E-02 | 0.644 |
| AS-74 | | 595.88 | * | -7.417E-02 | 1.554E-01 | 2.468E-01 | 1.896E-02 | -0.300 |
| | | 634.78 | | 1.228E-01 | 5.489E-01 | 9.102E-01 | 7.253E-02 | 0.135 |
| SE-75 | | 66.05 | | -1.170E+00 | 2.867E+00 | 4.283E+00 | 4.665E-01 | -0.273 |
| | | 96.73 | | -1.319E-01 | 7.767E-01 | 1.141E+00 | 1.583E-01 | -0.116 |
| | | 121.11 | | 7.616E-03 | 1.430E-01 | 2.339E-01 | 3.371E-02 | 0.033 |
| | | 136.00 | | 1.879E-02 | 4.429E-02 | 7.288E-02 | 8.233E-03 | 0.258 |
| | | 198.60 | | -2.048E+00 | 2.035E+00 | 3.179E+00 | 2.840E-01 | -0.644 |
| | | 264.65 | * | -1.975E-02 | 4.881E-02 | 7.928E-02 | 6.210E-03 | -0.249 |
| | | 279.53 | | -5.703E-02 | 1.268E-01 | 2.047E-01 | 1.647E-02 | -0.279 |
| | | 303.91 | | -2.119E+00 | 2.427E+00 | 3.777E+00 | 4.013E-01 | -0.561 |
| | | 400.65 | | -1.342E-01 | 3.329E-01 | 5.202E-01 | 4.781E-02 | -0.258 |
| BR-77 | + | 87.88 | | 2.044E-03 | 3.329E-01 | Half-Life | too short | |
| | | 200.40 | | 5.517E-05 | 3.329E-01 | Half-Life | too short | |
| | + | 239.00 | | 1.122E-03 | 3.329E-01 | Half-Life | too short | |
| | | 249.79 | | -2.061E-04 | 3.329E-01 | Half-Life | too short | |
| | | 281.68 | | -1.611E-04 | 3.329E-01 | Half-Life | too short | |
| | | 297.23 | | 3.316E-04 | 3.329E-01 | Half-Life | too short | |
| | | 303.76 | | -1.283E-03 | 3.329E-01 | Half-Life | too short | |
| | | 439.47 | | 5.367E-04 | 3.329E-01 | Half-Life | too short | |
| | | 484.57 | | -6.162E-04 | 3.329E-01 | Half-Life | too short | |
| | | 520.65 | * | -1.980E-05 | 3.329E-01 | Half-Life | too short | |
| | | 574.64 | | -1.127E-03 | 3.329E-01 | Half-Life | too short | |
| | | 578.91 | | 4.711E-04 | 3.329E-01 | Half-Life | too short | |
| | | 585.48 | | 5.548E-03 | 3.329E-01 | Half-Life | too short | |
| | | 755.35 | | 3.685E-04 | 3.329E-01 | Half-Life | too short | |
| | | 817.79 | | 2.272E-04 | 3.329E-01 | Half-Life | too short | |
| SR-82 | | 698.33 | | -1.217E+00 | 5.325E+01 | 8.597E+01 | 7.019E+00 | -0.014 |
| | | 776.49 | * | -2.017E-01 | 5.598E-01 | 9.131E-01 | 7.349E-02 | -0.221 |
| | | 1395.20 | | -1.245E+01 | 1.731E+01 | 2.621E+01 | 1.501E+00 | -0.475 |
| RB-83 | | 520.41 | * | -7.752E-03 | 8.754E-02 | 1.444E-01 | 1.020E-02 | -0.054 |
| | | 529.64 | | 7.816E-02 | 1.328E-01 | 2.284E-01 | 1.631E-02 | 0.342 |
| | | 552.65 | | 1.923E-01 | 2.685E-01 | 4.631E-01 | 3.397E-02 | 0.415 |
| RB-84 | | 881.50 | * | -1.107E-02 | 1.050E-01 | 1.725E-01 | 1.314E-02 | -0.064 |
| KR-85 | | 513.99 | * | 1.117E+01 | 9.910E+00 | 1.559E+01 | 1.092E+00 | 0.716 |
| SR-85 | | 513.99 | * | 6.044E-02 | 5.361E-02 | 8.436E-02 | 5.909E-03 | 0.716 |
| RB-86 | | 1076.63 | * | 1.537E-01 | 1.253E+00 | 2.059E+00 | 1.318E-01 | 0.075 |
| Y-88 | | 898.02 | | 1.489E-02 | 5.774E-02 | 9.741E-02 | 7.373E-03 | 0.153 |
| | | 1836.01 | * | 1.355E-02 | 4.250E-02 | 7.430E-02 | 4.184E-03 | 0.182 |
| ZR-88 | | 392.90 | * | 1.940E-03 | 3.868E-02 | 6.234E-02 | 3.651E-03 | 0.031 |
| Y-91 | | 1204.90 | * | 1.098E+01 | 2.576E+01 | 4.439E+01 | 2.460E+00 | 0.247 |
| NB-94 | | 702.63 | * | -9.223E-03 | 4.579E-02 | 7.291E-02 | 5.952E-03 | -0.126 |
| | | 871.10 | | -3.657E-03 | 4.585E-02 | 7.557E-02 | 5.799E-03 | -0.048 |
| NB-95 | | 765.79 | * | 1.002E-01 | 6.466E-02 | 1.172E-01 | 9.463E-03 | 0.855 |
| NB-95M | | 235.69 | * | 2.574E-01 | 1.577E-01 | 2.510E-01 | 2.322E-02 | 1.025 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| ZR-95 | | 724.18 | | 1.374E-01 | 1.584E-01 | 2.380E-01 | 2.126E-02 | 0.577 |
| | | 756.15 | * | 7.167E-02 | 9.685E-02 | 1.645E-01 | 1.483E-02 | 0.436 |
| NB-97 | | 657.90 | * | -1.028E+01 | 9.685E-02 | Half-Life | too short | |
| | | 1024.50 | | 2.061E+02 | 9.685E-02 | Half-Life | too short | |
| ZR-97 | | 254.15 | | 2.980E+02 | 9.685E-02 | Half-Life | too short | |
| | | 355.39 | | -3.729E+02 | 9.685E-02 | Half-Life | too short | |
| | | 507.63 | * | 8.406E+02 | 9.685E-02 | Half-Life | too short | |
| | | 602.52 | | -7.804E+02 | 9.685E-02 | Half-Life | too short | |
| | | 1021.30 | | -7.104E+01 | 9.685E-02 | Half-Life | too short | |
| | | 1147.95 | | 4.653E+02 | 9.685E-02 | Half-Life | too short | |
| | | 1362.66 | | -4.888E+02 | 9.685E-02 | Half-Life | too short | |
| | | 1750.46 | | 2.217E+01 | 9.685E-02 | Half-Life | too short | |
| MO-99 | | 140.51 | | -2.214E+01 | 1.173E+02 | 1.669E+02 | 4.745E+01 | -0.133 |
| | | 181.06 | | 1.008E+01 | 7.600E+01 | 1.079E+02 | 1.937E+01 | 0.093 |
| | | 366.43 | | 2.136E+02 | 3.620E+02 | 6.056E+02 | 3.896E+01 | 0.353 |
| | | 739.58 | * | 2.876E+01 | 5.602E+01 | 9.348E+01 | 1.394E+01 | 0.308 |
| | | 778.00 | | 7.634E+01 | 1.583E+02 | 2.741E+02 | 2.205E+01 | 0.279 |
| TC-99M | | 140.51 | * | -1.169E+16 | 1.583E+02 | Half-Life | too short | |
| RH-101 | | 127.23 | | -2.684E-02 | 3.547E-02 | 5.570E-02 | 6.764E-03 | -0.482 |
| | | 198.01 | * | -2.305E-02 | 3.600E-02 | 5.727E-02 | 4.535E-03 | -0.402 |
| | | 325.23 | | -3.220E-01 | 2.710E-01 | 4.129E-01 | 2.960E-02 | -0.780 |
| RH-102 | | 418.52 | | -3.031E-03 | 3.735E-01 | 5.798E-01 | 3.544E-02 | -0.005 |
| | | 475.06 | * | -1.061E-02 | 3.750E-02 | 6.167E-02 | 4.104E-03 | -0.172 |
| | | 631.29 | | -1.066E-02 | 7.053E-02 | 1.138E-01 | 9.039E-03 | -0.094 |
| | | 697.49 | | 4.909E-02 | 1.020E-01 | 1.706E-01 | 1.393E-02 | 0.288 |
| | | 766.84 | | 1.943E-01 | 1.553E-01 | 2.777E-01 | 2.242E-02 | 0.700 |
| | | 1046.59 | | -2.653E-02 | 1.494E-01 | 2.396E-01 | 1.590E-02 | -0.111 |
| | | 1112.84 | | -1.617E-01 | 3.348E-01 | 4.335E-01 | 2.637E-02 | -0.373 |
| RU-103 | | 497.08 | * | -3.330E-03 | 5.712E-02 | 9.483E-02 | 1.248E-02 | -0.035 |
| | + | 610.33 | | 1.442E+01 | 3.220E+00 | 3.690E+00 | 6.005E-01 | 3.908 |
| RH-106 | + | 511.85 | | 5.767E-01 | 4.416E-01 | 5.252E-01 | 3.669E-02 | 1.098 |
| | | 621.84 | * | -6.373E-02 | 4.354E-01 | 7.042E-01 | 9.077E-02 | -0.090 |
| | | 1050.47 | | 1.001E+00 | 3.106E+00 | 5.202E+00 | 3.437E-01 | 0.193 |
| RU-106 | + | 511.85 | | 5.767E-01 | 4.416E-01 | 5.252E-01 | 3.669E-02 | 1.098 |
| | | 621.84 | * | -6.373E-02 | 4.354E-01 | 7.042E-01 | 5.546E-02 | -0.090 |
| | | 1050.47 | | 1.001E+00 | 3.106E+00 | 5.202E+00 | 3.437E-01 | 0.193 |
| AG-108M | | 433.93 | * | 9.228E-03 | 3.874E-02 | 6.615E-02 | 4.450E-03 | 0.139 |
| | | 614.37 | | -1.046E-02 | 5.509E-02 | 7.641E-02 | 6.259E-03 | -0.137 |
| | | 722.95 | | -1.064E-02 | 6.391E-02 | 8.715E-02 | 7.411E-03 | -0.122 |
| AG-110M | | 657.75 | * | -3.427E-02 | 5.403E-02 | 8.415E-02 | 7.069E-03 | -0.407 |
| | | 677.61 | | -3.358E-01 | 4.096E-01 | 6.196E-01 | 5.218E-02 | -0.542 |
| | | 706.67 | | -7.672E-02 | 2.912E-01 | 4.611E-01 | 3.879E-02 | -0.166 |
| | | 763.93 | | 6.802E-02 | 2.421E-01 | 4.130E-01 | 3.444E-02 | 0.165 |
| | | 884.67 | | -3.418E-02 | 6.948E-02 | 1.106E-01 | 8.750E-03 | -0.309 |
| | | 937.48 | | -1.541E-01 | 1.528E-01 | 2.300E-01 | 1.771E-02 | -0.670 |
| | | 1384.27 | | -3.430E-02 | 2.327E-01 | 3.780E-01 | 2.299E-02 | -0.091 |
| IN-111 | | 171.28 | | -1.609E+00 | 3.799E+00 | 5.922E+00 | 4.649E-01 | -0.272 |
| | | 245.39 | * | -5.090E-01 | 4.505E+00 | 6.565E+00 | 5.173E-01 | -0.078 |
| IN-113M | | 391.69 | * | -2.517E-02 | 5.507E-02 | 8.586E-02 | 5.350E-03 | -0.293 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| SN-113 | | 391.69 | * | -2.517E-02 | 5.507E-02 | 8.586E-02 | 5.350E-03 | -0.293 |
| IN-114M | | 190.27 | * | 1.934E-01 | 2.390E-01 | 3.520E-01 | 2.782E-02 | 0.550 |
| CD-115 | | 260.90 | | 1.093E-05 | 2.390E-01 | Half-Life too short | | |
| | | 492.35 | | -1.230E-05 | 2.390E-01 | Half-Life too short | | |
| | | 527.90 | * | 2.042E-05 | 2.390E-01 | Half-Life too short | | |
| SN-117M | | 156.02 | | 5.638E-02 | 3.326E+00 | 5.337E+00 | 4.821E-01 | 0.011 |
| | | 158.56 | * | -3.621E-02 | 7.926E-02 | 1.242E-01 | 1.085E-02 | -0.292 |
| SB-122 | | 563.90 | * | 1.018E+00 | 9.412E+00 | 1.563E+01 | 1.161E+00 | 0.065 |
| | | 692.80 | | -1.345E+02 | 2.160E+02 | 3.327E+02 | 2.717E+01 | -0.404 |
| I-123 | | 159.00 | * | -2.495E+03 | 2.160E+02 | Half-Life too short | | |
| | | 528.96 | | 1.215E+05 | 2.160E+02 | Half-Life too short | | |
| TE-123M | | 159.00 | * | -1.989E-02 | 3.249E-02 | 5.051E-02 | 4.411E-03 | -0.394 |
| I-124 | | 602.71 | * | -9.185E-01 | 2.348E+00 | 3.203E+00 | 2.476E-01 | -0.287 |
| | | 722.78 | | -3.155E+00 | 1.551E+01 | 2.106E+01 | 1.716E+00 | -0.150 |
| | | 1325.50 | | 2.182E+01 | 1.031E+02 | 1.744E+02 | 9.907E+00 | 0.125 |
| | | 1376.25 | | 1.040E+02 | 1.039E+02 | 1.861E+02 | 1.064E+01 | 0.559 |
| | | 1509.49 | | 8.761E+00 | 4.833E+01 | 8.074E+01 | 4.655E+00 | 0.109 |
| SB-124 | | 1691.02 | | 9.865E+00 | 1.137E+01 | 2.089E+01 | 1.196E+00 | 0.472 |
| | | 602.71 | | -2.431E-02 | 6.213E-02 | 8.476E-02 | 6.555E-03 | -0.287 |
| | | 645.85 | | -2.450E-01 | 7.514E-01 | 1.196E+00 | 1.028E-01 | -0.205 |
| | | 709.31 | | 2.582E+00 | 3.914E+00 | 6.618E+00 | 5.400E-01 | 0.390 |
| | | 713.82 | | -9.749E-01 | 2.316E+00 | 3.610E+00 | 4.228E-01 | -0.270 |
| | | 722.78 | | -1.210E-01 | 5.951E-01 | 8.081E-01 | 6.743E-02 | -0.150 |
| | + | 968.20 | | 2.257E+01 | 5.424E+00 | 9.289E+00 | 6.657E-01 | 2.430 |
| | | 1045.16 | | -8.767E-01 | 3.237E+00 | 5.143E+00 | 3.419E-01 | -0.170 |
| | | 1325.50 | | 8.943E-01 | 4.224E+00 | 7.145E+00 | 4.060E-01 | 0.125 |
| | | 1368.21 | | 5.135E-01 | 2.581E+00 | 4.348E+00 | 5.143E-01 | 0.118 |
| | | 1436.60 | | -1.663E-01 | 4.924E+00 | 8.059E+00 | 4.632E-01 | -0.021 |
| | | 1691.02 | * | 8.927E-02 | 1.029E-01 | 1.890E-01 | 1.177E-02 | 0.472 |
| SB-125 | | 427.89 | * | -2.045E-02 | 1.064E-01 | 1.775E-01 | 1.142E-02 | -0.115 |
| | + | 463.38 | | 9.850E-01 | 5.243E-01 | 6.554E-01 | 4.858E-02 | 1.503 |
| | | 600.56 | | -4.486E-02 | 2.412E-01 | 3.907E-01 | 3.289E-02 | -0.115 |
| | | 635.90 | | 2.051E-01 | 3.386E-01 | 5.765E-01 | 5.030E-02 | 0.356 |
| TE-125M | | 109.28 | * | -5.662E+00 | 9.483E+00 | 1.515E+01 | 1.842E+00 | -0.374 |
| I-126 | | 388.63 | | -2.306E-01 | 3.339E-01 | 5.135E-01 | 3.041E-02 | -0.449 |
| | | 666.33 | * | -2.178E-01 | 3.353E-01 | 5.193E-01 | 4.237E-02 | -0.420 |
| | | 753.82 | | 1.204E+00 | 2.601E+00 | 4.325E+00 | 3.503E-01 | 0.278 |
| SB-126 | | 223.80 | | 3.712E+00 | 5.583E+00 | 9.632E+00 | 7.635E-01 | 0.385 |
| | | 278.60 | | 2.027E+00 | 3.739E+00 | 6.328E+00 | 4.868E-01 | 0.320 |
| | + | 296.50 | | 1.731E+01 | 3.751E+00 | 5.072E+00 | 3.819E-01 | 3.413 |
| | | 414.70 | | -1.028E-01 | 1.255E-01 | 1.897E-01 | 1.152E-02 | -0.542 |
| | | 415.30 | | -6.128E+00 | 1.028E+01 | 1.578E+01 | 9.595E-01 | -0.388 |
| | | 555.20 | | 3.245E+00 | 6.847E+00 | 1.164E+01 | 8.564E-01 | 0.279 |
| | | 573.80 | | -9.994E-01 | 1.813E+00 | 2.681E+00 | 2.013E-01 | -0.373 |
| | | 593.00 | | 8.627E-01 | 1.579E+00 | 2.686E+00 | 2.057E-01 | 0.321 |
| | | 656.30 | | -4.124E+00 | 6.638E+00 | 1.034E+01 | 8.395E-01 | -0.399 |
| | | 666.33 | | -9.210E-02 | 1.418E-01 | 2.195E-01 | 1.791E-02 | -0.420 |
| | | 675.00 | | -2.802E-01 | 3.335E+00 | 5.373E+00 | 4.386E-01 | -0.052 |
| | | 695.00 | | 9.992E-04 | 1.386E-01 | 2.243E-01 | 1.132E-02 | 0.004 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SB-127 | | 697.00 | | 3.776E-01 | 4.621E-01 | 7.904E-01 | 6.453E-02 | 0.478 |
| | | 720.50 | * | -1.535E-02 | 2.922E-01 | 4.037E-01 | 3.290E-02 | -0.038 |
| | | 856.80 | | 1.702E-01 | 9.070E-01 | 1.526E+00 | 1.182E-01 | 0.112 |
| | | 989.30 | | -5.644E-01 | 2.164E+00 | 3.465E+00 | 2.439E-01 | -0.163 |
| | | 1034.80 | | 2.987E+00 | 1.607E+01 | 2.664E+01 | 1.792E+00 | 0.112 |
| | | 1213.00 | | -4.367E+00 | 7.790E+00 | 1.244E+01 | 6.908E-01 | -0.351 |
| | | 61.10 | | 4.589E+00 | 6.752E+01 | 1.035E+02 | 1.388E+01 | 0.044 |
| | | 252.40 | | 8.762E+00 | 1.210E+01 | 1.987E+01 | 8.414E+00 | 0.441 |
| | | 290.80 | | 1.080E+01 | 6.522E+01 | 9.537E+01 | 1.157E+01 | 0.113 |
| | | 411.60 | | 2.179E+01 | 3.831E+01 | 6.319E+01 | 9.972E+00 | 0.345 |
| | | 444.90 | | 1.932E+00 | 2.862E+01 | 4.832E+01 | 6.165E+00 | 0.040 |
| | | 473.00 | | 2.548E+00 | 5.516E+00 | 9.447E+00 | 1.249E+00 | 0.270 |
| | | 543.00 | | -8.744E+00 | 5.489E+01 | 8.983E+01 | 1.347E+01 | -0.097 |
| | | 603.60 | | -4.389E+01 | 4.574E+01 | 5.842E+01 | 7.871E+00 | -0.751 |
| | | 685.20 | * | -2.019E+00 | 4.665E+00 | 7.301E+00 | 9.276E-01 | -0.277 |
| | | 698.50 | | -3.585E+00 | 5.114E+01 | 8.227E+01 | 1.382E+01 | -0.044 |
| | | 722.20 | | -7.184E+00 | 1.113E+02 | 1.535E+02 | 1.917E+01 | -0.047 |
| XE-127 | | 783.80 | | 6.327E+00 | 1.240E+01 | 2.140E+01 | 2.902E+00 | 0.296 |
| | | 57.60 | | 6.880E-01 | 2.383E+00 | 4.094E+00 | 3.784E-01 | 0.168 |
| | + | 145.22 | | 1.386E+00 | 1.084E+00 | 1.353E+00 | 1.388E-01 | 1.025 |
| | | 172.10 | | 1.637E-03 | 1.419E-01 | 2.260E-01 | 1.775E-02 | 0.007 |
| I-131 | | 202.84 | * | 7.740E-03 | 5.412E-02 | 9.203E-02 | 7.293E-03 | 0.084 |
| | | 374.96 | | 3.670E-02 | 2.636E-01 | 4.288E-01 | 2.678E-02 | 0.086 |
| | | 80.18 | | -2.655E+00 | 5.862E+00 | 8.680E+00 | 7.310E-01 | -0.306 |
| | | 284.30 | | 1.169E+00 | 2.497E+00 | 4.217E+00 | 3.456E-01 | 0.277 |
| TE-132 | | 364.48 | * | -1.264E-02 | 2.150E-01 | 3.464E-01 | 2.472E-02 | -0.037 |
| | | 636.97 | | 7.623E-02 | 3.116E+00 | 5.090E+00 | 4.349E-01 | 0.015 |
| | | 722.89 | | -2.962E+00 | 1.669E+01 | 2.273E+01 | 1.876E+00 | -0.130 |
| | | 49.72 | | -6.624E+00 | 1.209E+01 | 1.818E+01 | 2.132E+00 | -0.364 |
| BA-133 | | 111.76 | | -1.253E+01 | 9.232E+01 | 1.465E+02 | 2.076E+01 | -0.086 |
| | | 116.30 | | -7.040E+00 | 8.156E+01 | 1.329E+02 | 1.954E+01 | -0.053 |
| | | 228.16 | * | 5.717E-01 | 2.126E+00 | 3.603E+00 | 5.917E-01 | 0.159 |
| | | 53.15 | | 1.117E+00 | 1.010E+00 | 1.718E+00 | 1.442E-01 | 0.650 |
| I-133 | | 79.62 | | -9.769E-01 | 1.069E+00 | 1.538E+00 | 2.318E-01 | -0.635 |
| | | 81.00 | | -1.559E-01 | 8.938E-02 | 1.201E-01 | 1.884E-02 | -1.298 |
| | | 276.40 | | 8.184E-01 | 4.353E-01 | 7.555E-01 | 1.052E-01 | 1.083 |
| | | 302.84 | | -2.259E-01 | 1.700E-01 | 2.557E-01 | 3.214E-02 | -0.883 |
| CS-134 | | 356.01 | * | -5.206E-02 | 6.453E-02 | 8.470E-02 | 1.017E-02 | -0.615 |
| | | 383.85 | | 1.822E-01 | 3.885E-01 | 6.416E-01 | 7.058E-02 | 0.284 |
| | + | 510.53 | | 6.862E+01 | 3.885E-01 | Half-Life | too short | |
| | | 529.87 | * | 2.492E-01 | 3.885E-01 | Half-Life | too short | |
| | | 706.58 | | -8.614E+00 | 3.885E-01 | Half-Life | too short | |
| | | 856.28 | | -1.104E+01 | 3.885E-01 | Half-Life | too short | |
| | | 875.33 | | -3.910E+00 | 3.885E-01 | Half-Life | too short | |
| | | 1236.41 | | 1.270E+02 | 3.885E-01 | Half-Life | too short | |
| | | 1298.22 | | 9.414E+00 | 3.885E-01 | Half-Life | too short | |
| | | 475.35 | | -7.701E-01 | 2.484E+00 | 4.079E+00 | 2.716E-01 | -0.189 |
| | | 563.23 | | -1.001E-01 | 4.473E-01 | 7.260E-01 | 5.457E-02 | -0.138 |
| | | 569.32 | | 1.267E-01 | 2.540E-01 | 4.164E-01 | 3.167E-02 | 0.304 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|-----------------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| CS-135 I-135 | | 604.70 | | -4.295E-02 | 5.208E-02 | 6.789E-02 | 5.276E-03 | -0.633 |
| | | 795.84 | * | 5.288E-02 | 6.406E-02 | 1.126E-01 | 9.075E-03 | 0.470 |
| | | 801.93 | | -3.344E-01 | 5.964E-01 | 8.731E-01 | 7.007E-02 | -0.383 |
| | | 1038.57 | | 8.829E-01 | 4.856E+00 | 8.056E+00 | 5.395E-01 | 0.110 |
| | | 1167.94 | | -1.970E+00 | 3.139E+00 | 4.760E+00 | 2.642E-01 | -0.414 |
| | | 1365.15 | | 3.882E-02 | 1.702E+00 | 2.817E+00 | 1.772E-01 | 0.014 |
| | | 268.24 | * | 1.337E-01 | 1.791E-01 | 3.060E-01 | 2.827E-02 | 0.437 |
| | | 288.45 | | 4.146E+15 | 1.791E-01 | Half-Life | too short | |
| | | 417.63 | | 1.698E+15 | 1.791E-01 | Half-Life | too short | |
| | | 546.56 | | -1.913E+15 | 1.791E-01 | Half-Life | too short | |
| | | 836.80 | | 2.644E+15 | 1.791E-01 | Half-Life | too short | |
| | | 1038.76 | | -2.740E+14 | 1.791E-01 | Half-Life | too short | |
| | | 1124.00 | | -2.215E+15 | 1.791E-01 | Half-Life | too short | |
| | | 1131.51 | | 4.134E+14 | 1.791E-01 | Half-Life | too short | |
| | | 1260.41 | * | -1.002E+15 | 1.791E-01 | Half-Life | too short | |
| | | 1457.56 | | 2.875E+17 | 1.791E-01 | Half-Life | too short | |
| | | 1678.03 | | -7.175E+14 | 1.791E-01 | Half-Life | too short | |
| | | 1706.46 | | -1.718E+13 | 1.791E-01 | Half-Life | too short | |
| | | 1791.20 | | -1.237E+15 | 1.791E-01 | Half-Life | too short | |
| CS-136 + | | 66.91 | | -1.117E-01 | 6.073E-01 | 9.157E-01 | 1.439E-01 | -0.122 |
| | | 86.29 | | 3.588E+00 | 1.324E+00 | 2.253E+00 | 2.802E-01 | 1.592 |
| | | 153.22 | | 7.653E-01 | 9.740E-01 | 1.610E+00 | 1.659E-01 | 0.475 |
| | | 163.89 | | 2.675E-01 | 1.608E+00 | 2.507E+00 | 2.303E-01 | 0.107 |
| | | 176.55 | | 2.385E-01 | 5.466E-01 | 8.853E-01 | 7.451E-02 | 0.269 |
| | | 273.65 | | -1.355E+00 | 7.131E-01 | 1.062E+00 | 8.885E-02 | -1.276 |
| | | 340.57 | | 3.993E-01 | 2.195E-01 | 3.497E-01 | 2.533E-02 | 1.142 |
| | | 818.51 | | 2.100E-02 | 1.358E-01 | 2.290E-01 | 1.815E-02 | 0.092 |
| | | 1048.07 | * | 1.045E-02 | 1.855E-01 | 3.039E-01 | 2.159E-02 | 0.034 |
| | | 1235.34 | | 1.701E+00 | 1.152E+00 | 1.866E+00 | 1.841E-01 | 0.912 |
| BA-137M | | 661.65 | * | 6.391E-02 | 5.446E-02 | 9.437E-02 | 7.697E-03 | 0.677 |
| CS-137 | | 661.65 | * | 6.756E-02 | 5.757E-02 | 9.976E-02 | 8.154E-03 | 0.677 |
| CE-139 | | 165.85 | * | -1.493E-02 | 3.362E-02 | 5.252E-02 | 4.118E-03 | -0.284 |
| BA-140 | | 162.64 | | -8.885E-02 | 1.154E+00 | 1.783E+00 | 1.562E-01 | -0.050 |
| | | 304.84 | | -4.144E-01 | 1.781E+00 | 2.877E+00 | 7.966E-01 | -0.144 |
| | | 423.70 | | 1.366E-01 | 2.992E+00 | 4.791E+00 | 1.526E+00 | 0.029 |
| LA-140 | | 537.32 | * | 4.255E-01 | 4.507E-01 | 7.544E-01 | 2.475E-01 | 0.564 |
| | | 328.77 | | 5.612E-01 | 4.712E-01 | 8.107E-01 | 6.238E-02 | 0.692 |
| | | 432.53 | | 3.738E+00 | 3.273E+00 | 5.844E+00 | 3.984E-01 | 0.640 |
| | | 487.03 | | 7.511E-02 | 2.128E-01 | 3.631E-01 | 2.698E-02 | 0.207 |
| | | 751.79 | | 4.427E-01 | 2.988E+00 | 4.854E+00 | 4.407E-01 | 0.091 |
| | | 815.85 | | -1.189E-01 | 5.791E-01 | 9.517E-01 | 8.559E-02 | -0.125 |
| | | 867.82 | | 2.466E-01 | 2.582E+00 | 4.314E+00 | 3.536E-01 | 0.057 |
| | | 919.63 | | -4.434E-01 | 5.047E+00 | 7.073E+00 | 6.864E-01 | -0.063 |
| | | 925.24 | | -2.642E-01 | 1.864E+00 | 3.037E+00 | 2.436E-01 | -0.087 |
| | | 1596.49 | * | -1.556E-01 | 1.557E-01 | 2.180E-01 | 1.257E-02 | -0.713 |
| CE-141 | | 145.44 | * | 5.548E-03 | 8.453E-02 | 1.218E-01 | 1.263E-02 | 0.046 |
| CE-143 | | 57.37 | | 8.114E-04 | 8.453E-02 | Half-Life | too short | |
| | | 231.56 | | -2.245E-02 | 8.453E-02 | Half-Life | too short | |
| | | 293.26 | * | 1.004E-02 | 8.453E-02 | Half-Life | too short | |

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

| Nuclide | Line Ided | Energy (keV) | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|---------------------|-----------|----------------|-----------|---------|
| | + | 350.59 | 4.086E-01 | 8.453E-02 | Half-Life | too short | |
| | | 490.36 | -2.609E-02 | 8.453E-02 | Half-Life | too short | |
| | | 664.57 | -6.702E-03 | 8.453E-02 | Half-Life | too short | |
| | | 721.93 | -1.065E-03 | 8.453E-02 | Half-Life | too short | |
| CE-144 | | 80.11 | -8.449E-01 | 1.757E+00 | 2.599E+00 | 2.163E-01 | -0.325 |
| | | 133.54 | 4.071E-02 | 2.233E-01 | 3.645E-01 | 6.317E-02 | 0.112 |
| PM-144 | | 476.78 | -4.928E-02 | 8.802E-02 | 1.422E-01 | 1.093E-02 | -0.347 |
| | | 618.01 | 1.157E-02 | 4.093E-02 | 6.826E-02 | 5.536E-03 | 0.169 |
| | * | 696.49 | 3.995E-02 | 4.482E-02 | 7.706E-02 | 6.296E-03 | 0.518 |
| | | 778.57 | 1.555E+00 | 2.973E+00 | 5.161E+00 | 4.154E-01 | 0.301 |
| PR-144 | | 696.49 | 2.714E+00 | 3.046E+00 | 5.236E+00 | 4.275E-01 | 0.518 |
| | | 1489.15 | -1.644E+01 | 1.577E+01 | 2.201E+01 | 1.268E+00 | -0.747 |
| PM-146 | | 453.90 | -1.599E-02 | 5.132E-02 | 8.448E-02 | 7.667E-03 | -0.189 |
| | | 633.02 | -2.135E+00 | 2.023E+00 | 2.723E+00 | 1.013E+00 | -0.784 |
| | | 735.90 | -1.216E-01 | 2.098E-01 | 3.070E-01 | 8.737E-02 | -0.396 |
| | | 747.13 | 2.970E-02 | 1.254E-01 | 2.051E-01 | 2.817E-02 | 0.145 |
| ND-147 | + | 91.11 | 7.875E-01 | 3.790E-01 | 6.904E-01 | 6.227E-02 | 1.141 |
| | | 319.41 | -1.981E+00 | 5.623E+00 | 9.020E+00 | 6.545E-01 | -0.220 |
| | | 439.89 | 8.221E+00 | 9.451E+00 | 1.667E+01 | 1.055E+00 | 0.493 |
| | * | 531.02 | 3.197E-01 | 9.282E-01 | 1.572E+00 | 2.225E-01 | 0.203 |
| PM-149 | | 285.90 | -1.416E-04 | 9.282E-01 | Half-Life | too short | |
| EU-152 | | 121.78 | -1.257E-02 | 7.616E-02 | 1.233E-01 | 1.668E-02 | -0.102 |
| | | 244.69 | 3.960E-03 | 3.925E-01 | 5.768E-01 | 4.546E-02 | 0.007 |
| | * | 344.27 | -4.470E-02 | 1.283E-01 | 1.770E-01 | 1.327E-02 | -0.253 |
| | | 443.98 | 8.507E-01 | 1.129E+00 | 1.979E+00 | 1.259E-01 | 0.430 |
| | | 778.89 | 1.753E-01 | 3.490E-01 | 6.045E-01 | 4.861E-02 | 0.290 |
| | | 867.32 | 4.231E-01 | 1.147E+00 | 1.955E+00 | 1.504E-01 | 0.216 |
| | + | 964.01 | 5.898E-01 | 3.751E-01 | 7.207E-01 | 5.182E-02 | 0.818 |
| | | 1085.78 | -2.304E-01 | 5.243E-01 | 8.174E-01 | 5.167E-02 | -0.282 |
| | | 1112.02 | -1.663E-01 | 4.774E-01 | 6.309E-01 | 3.842E-02 | -0.264 |
| | | 1407.95 | -7.482E-02 | 2.430E-01 | 3.864E-01 | 2.216E-02 | -0.194 |
| GD-153 | | 69.67 | 1.165E-01 | 1.079E+00 | 1.643E+00 | 1.469E-01 | 0.071 |
| | | 83.37 | -1.696E+01 | 1.446E+01 | 2.018E+01 | 1.643E+00 | -0.840 |
| | * | 97.43 | -3.412E-02 | 8.079E-02 | 1.144E-01 | 1.041E-02 | -0.298 |
| | | 103.18 | -9.142E-02 | 1.034E-01 | 1.640E-01 | 1.620E-02 | -0.558 |
| EU-154 | | 123.07 | -1.802E-02 | 5.532E-02 | 8.884E-02 | 1.295E-02 | -0.203 |
| | | 247.94 | 9.192E-02 | 3.992E-01 | 6.511E-01 | 7.112E-02 | 0.141 |
| | | 591.81 | -3.189E-01 | 8.117E-01 | 1.256E+00 | 1.379E-01 | -0.254 |
| | | 723.30 | -1.182E-02 | 2.695E-01 | 3.725E-01 | 3.391E-02 | -0.032 |
| | | 756.87 | -3.505E-02 | 1.037E+00 | 1.660E+00 | 1.926E-01 | -0.021 |
| | | 873.19 | -3.251E-01 | 4.044E-01 | 6.245E-01 | 7.237E-02 | -0.521 |
| | | 996.32 | -2.870E-01 | 4.997E-01 | 7.750E-01 | 1.320E-01 | -0.370 |
| | | 1004.76 | -2.181E-01 | 2.991E-01 | 4.588E-01 | 4.796E-02 | -0.475 |
| | * | 1274.45 | -1.609E-02 | 1.452E-01 | 2.388E-01 | 2.206E-02 | -0.067 |
| EU-155 | | 48.70 | 2.124E-01 | 4.455E-01 | 7.057E-01 | 5.326E-02 | 0.301 |
| | | 60.01 | 5.281E-01 | 2.191E+00 | 3.386E+00 | 3.241E-01 | 0.156 |
| | + | 86.54 | 2.537E-01 | 9.047E-02 | 1.607E-01 | 1.296E-02 | 1.578 |
| | * | 105.31 | 1.894E-01 | 1.073E-01 | 1.854E-01 | 1.902E-02 | 1.022 |
| TB-160 | + | 86.79 | 7.101E-01 | 2.531E-01 | 4.474E-01 | 3.558E-02 | 1.587 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| HO-166M | | 197.04 | | -8.764E-02 | 6.309E-01 | 1.025E+00 | 8.116E-02 | -0.085 |
| | | 215.65 | | 5.369E-01 | 8.557E-01 | 1.475E+00 | 1.170E-01 | 0.364 |
| | | 298.57 | | 2.247E-01 | 1.536E-01 | 2.414E-01 | 1.813E-02 | 0.930 |
| | | 879.36 | * | 1.448E-01 | 1.948E-01 | 3.408E-01 | 2.600E-02 | 0.425 |
| | | 962.29 | | 8.071E-01 | 8.510E-01 | 1.317E+00 | 9.483E-02 | 0.613 |
| | | 966.15 | | 1.584E+00 | 3.718E-01 | 7.156E-01 | 5.137E-02 | 2.213 |
| | | 1177.93 | | -3.851E-01 | 4.950E-01 | 7.405E-01 | 4.075E-02 | -0.520 |
| | | 1271.85 | | -2.754E-01 | 9.343E-01 | 1.512E+00 | 8.508E-02 | -0.182 |
| | | 80.57 | | -2.307E-01 | 2.309E-01 | 3.330E-01 | 2.763E-02 | -0.693 |
| | + | 184.41 | | 1.560E-01 | 7.356E-02 | 8.379E-02 | 6.611E-03 | 1.861 |
| | | 280.46 | | -1.432E-01 | 9.733E-02 | 1.478E-01 | 1.135E-02 | -0.969 |
| | | 410.95 | | 3.375E-01 | 3.050E-01 | 5.196E-01 | 3.138E-02 | 0.649 |
| | | 711.68 | * | -3.730E-02 | 8.240E-02 | 1.283E-01 | 1.047E-02 | -0.291 |
| | | 752.31 | | 1.517E-01 | 3.586E-01 | 5.953E-01 | 4.824E-02 | 0.255 |
| TM-171 | | 810.29 | | -7.604E-02 | 7.600E-02 | 1.165E-01 | 9.252E-03 | -0.653 |
| | | 51.35 | | -9.855E+00 | 6.921E+00 | 1.117E+01 | 8.993E-01 | -0.882 |
| | | 52.39 | | 1.599E+00 | 4.123E+00 | 6.870E+00 | 5.666E-01 | 0.233 |
| | | 59.40 | | 9.460E+00 | 1.145E+01 | 1.810E+01 | 1.735E+00 | 0.523 |
| LU-176 | | 66.72 | * | -3.791E+00 | 1.683E+01 | 2.534E+01 | 2.313E+00 | -0.150 |
| | + | 88.36 | | 4.986E-01 | 1.777E-01 | 3.093E-01 | 2.453E-02 | 1.612 |
| | | 201.83 | | 4.138E-03 | 3.061E-02 | 5.203E-02 | 4.123E-03 | 0.080 |
| | | 306.84 | * | -2.292E-02 | 2.709E-02 | 4.218E-02 | 3.127E-03 | -0.544 |
| LU-177 | | 401.10 | | -1.161E+00 | 8.447E+00 | 1.343E+01 | 7.979E-01 | -0.086 |
| | | 112.95 | | 9.886E-01 | 2.909E+00 | 4.699E+00 | 5.294E-01 | 0.210 |
| LU-177M | + | 208.36 | * | 4.522E+00 | 3.065E+00 | 3.575E+00 | 2.835E-01 | 1.265 |
| | | 52.97 | | 5.594E-01 | 4.578E-01 | 7.806E-01 | 6.524E-02 | 0.717 |
| HF-181 | | 54.07 | | 2.313E-01 | 2.603E-01 | 4.399E-01 | 3.768E-02 | 0.526 |
| | | 61.30 | | 6.129E-01 | 7.363E-01 | 1.159E+00 | 1.099E-01 | 0.529 |
| | | 121.62 | | -5.286E-02 | 3.993E-01 | 6.476E-01 | 8.142E-02 | -0.082 |
| | | 147.16 | | 4.207E-01 | 7.931E-01 | 1.171E+00 | 1.177E-01 | 0.359 |
| | | 171.86 | | -1.686E-02 | 5.260E-01 | 8.361E-01 | 6.565E-02 | -0.020 |
| | | 218.09 | | -5.979E-01 | 9.417E-01 | 1.540E+00 | 1.221E-01 | -0.388 |
| | | 268.79 | | 1.540E+00 | 9.242E-01 | 1.632E+00 | 1.267E-01 | 0.944 |
| | | 319.02 | | -2.667E-02 | 3.214E-01 | 5.231E-01 | 3.796E-02 | -0.051 |
| | | 367.43 | | 3.844E-01 | 1.091E+00 | 1.801E+00 | 1.154E-01 | 0.213 |
| | | 413.65 | * | -3.661E-01 | 2.328E-01 | 3.327E-01 | 2.018E-02 | -1.100 |
| | | 56.28 | | -3.221E-01 | 3.413E-01 | 5.615E-01 | 5.047E-02 | -0.574 |
| | | 57.53 | | 6.032E-02 | 1.963E-01 | 3.375E-01 | 3.114E-02 | 0.179 |
| | | 65.20 | | 5.474E-02 | 5.768E-01 | 8.814E-01 | 8.130E-02 | 0.062 |
| | | 133.02 | | -2.425E-02 | 7.706E-02 | 1.232E-01 | 1.424E-02 | -0.197 |
| W-181 | | 136.25 | | 3.061E-01 | 5.489E-01 | 9.071E-01 | 1.018E-01 | 0.338 |
| | | 345.85 | | -1.596E-01 | 3.013E-01 | 3.774E-01 | 2.579E-02 | -0.423 |
| | | 482.03 | * | -2.314E-02 | 5.653E-02 | 9.199E-02 | 6.180E-03 | -0.251 |
| | | 56.28 | | -1.194E-01 | 1.266E-01 | 2.082E-01 | 1.872E-02 | -0.573 |
| TA-182 | | 57.53 | | 2.226E-02 | 7.284E-02 | 1.252E-01 | 1.155E-02 | 0.178 |
| | | 65.20 | * | 2.015E-02 | 2.124E-01 | 3.245E-01 | 2.993E-02 | 0.062 |
| | | 67.75 | | 3.666E-02 | 6.538E-02 | 1.074E-01 | 9.734E-03 | 0.341 |
| | | 100.10 | | -2.364E-02 | 1.741E-01 | 2.763E-01 | 2.613E-02 | -0.086 |
| | | 152.43 | | 7.060E-02 | 3.923E-01 | 6.348E-01 | 6.001E-02 | 0.111 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| RE-183 | | 222.10 | | 2.675E-01 | 3.757E-01 | 6.493E-01 | 5.148E-02 | 0.412 |
| | | 1001.68 | | 4.927E+00 | 2.910E+00 | 5.333E+00 | 3.710E-01 | 0.924 |
| | | 1121.28 | | 6.582E-01 | 2.541E-01 | 4.343E-01 | 2.608E-02 | 1.516 |
| | | 1189.05 | | 2.223E-01 | 4.047E-01 | 7.048E-01 | 3.891E-02 | 0.315 |
| | | 1221.42 | * | 1.118E-01 | 2.619E-01 | 4.505E-01 | 2.507E-02 | 0.248 |
| | | 1230.97 | | -5.305E-01 | 7.098E-01 | 9.236E-01 | 5.152E-02 | -0.574 |
| | | 57.98 | | 2.836E-02 | 7.653E-02 | 1.317E-01 | 1.227E-02 | 0.215 |
| | | 59.32 | | 3.912E-02 | 4.904E-02 | 7.745E-02 | 7.414E-03 | 0.505 |
| | | 67.20 | | 6.007E-05 | 1.258E-01 | 1.912E-01 | 1.739E-02 | 0.000 |
| | | 162.32 | * | -4.199E-02 | 1.357E-01 | 2.075E-01 | 1.717E-02 | -0.202 |
| RE-184 | + | 208.81 | | 2.525E+00 | 1.712E+00 | 2.030E+00 | 1.610E-01 | 1.244 |
| | | 291.72 | | -3.552E-01 | 1.176E+00 | 1.660E+00 | 1.258E-01 | -0.214 |
| | | 57.98 | | 1.015E-01 | 2.738E-01 | 4.712E-01 | 4.389E-02 | 0.215 |
| | | 59.32 | | 1.398E-01 | 1.753E-01 | 2.768E-01 | 2.650E-02 | 0.505 |
| | | 67.20 | | 2.148E-04 | 4.500E-01 | 6.837E-01 | 6.219E-02 | 0.000 |
| | | 161.27 | | -1.478E-01 | 4.009E-01 | 6.302E-01 | 5.296E-02 | -0.235 |
| | | 216.55 | | 2.906E-01 | 2.929E-01 | 5.113E-01 | 4.055E-02 | 0.568 |
| | | 252.85 | * | -1.502E-02 | 2.551E-01 | 4.233E-01 | 3.323E-02 | -0.035 |
| | | 318.01 | | 2.552E-01 | 5.450E-01 | 9.128E-01 | 6.637E-02 | 0.280 |
| | | 792.07 | | 1.727E+00 | 1.418E+00 | 2.541E+00 | 2.034E-01 | 0.679 |
| OS-185 | | 903.28 | | -1.389E-02 | 1.542E+00 | 2.189E+00 | 1.641E-01 | -0.006 |
| | | 920.93 | | -5.401E-01 | 6.211E-01 | 8.540E-01 | 6.335E-02 | -0.632 |
| | | 59.72 | | 5.897E-02 | 1.344E-01 | 2.093E-01 | 2.008E-02 | 0.282 |
| | | 61.14 | | 1.808E-02 | 8.021E-02 | 1.237E-01 | 1.174E-02 | 0.146 |
| | | 69.30 | | 1.295E-02 | 1.977E-01 | 3.006E-01 | 2.694E-02 | 0.043 |
| | | 592.07 | | -1.290E+00 | 3.440E+00 | 5.335E+00 | 4.081E-01 | -0.242 |
| | | 646.12 | * | -2.030E-02 | 6.262E-02 | 9.965E-02 | 8.021E-03 | -0.204 |
| | | 717.42 | | 7.165E-01 | 1.232E+00 | 2.073E+00 | 1.690E-01 | 0.346 |
| | | 874.81 | | -3.998E-01 | 8.273E-01 | 1.319E+00 | 1.009E-01 | -0.303 |
| | | 880.27 | | 2.776E-01 | 1.092E+00 | 1.844E+00 | 1.406E-01 | 0.151 |
| RE-188 | | 155.03 | * | 1.568E-01 | 2.039E-01 | 3.368E-01 | 3.082E-02 | 0.465 |
| | | 477.96 | | 3.141E-01 | 4.071E+00 | 6.835E+00 | 4.567E-01 | 0.046 |
| | | 633.10 | | -4.598E+00 | 3.962E+00 | 5.763E+00 | 4.586E-01 | -0.798 |
| W-188 | + | 63.58 | | 6.222E+01 | 4.825E+01 | 6.206E+01 | 5.791E+00 | 1.003 |
| | | 227.08 | | -4.262E+00 | 1.388E+01 | 2.296E+01 | 1.819E+00 | -0.186 |
| IR-192 | | 290.67 | * | 1.798E+00 | 9.500E+00 | 1.392E+01 | 1.056E+00 | 0.129 |
| | + | 295.96 | | 1.046E+00 | 2.269E-01 | 3.224E-01 | 2.452E-02 | 3.244 |
| | | 308.46 | | 2.954E-02 | 1.107E-01 | 1.841E-01 | 1.371E-02 | 0.160 |
| | | 316.51 | * | 1.080E-02 | 4.403E-02 | 7.293E-02 | 5.335E-03 | 0.148 |
| AU-195 | | 468.07 | | -1.738E-02 | 1.024E-01 | 1.470E-01 | 1.085E-02 | -0.118 |
| | | 604.41 | | -6.290E-01 | 7.366E-01 | 9.532E-01 | 1.187E-01 | -0.660 |
| | | 612.46 | | 8.193E-01 | 1.151E+00 | 1.728E+00 | 1.589E-01 | 0.474 |
| | | 65.12 | | 3.656E-02 | 9.802E-02 | 1.514E-01 | 1.397E-02 | 0.242 |
| | | 66.83 | | -1.140E-02 | 5.669E-02 | 8.544E-02 | 7.791E-03 | -0.133 |
| | + | 75.70 | | 1.243E+00 | 2.143E-01 | 3.603E-01 | 3.090E-02 | 3.451 |
| | | 98.88 | * | -5.540E-02 | 2.249E-01 | 3.408E-01 | 3.167E-02 | -0.163 |
| TL-200 | | 129.76 | | 2.679E+00 | 3.200E+00 | 5.340E+00 | 6.350E-01 | 0.502 |
| | | 367.94 | * | -7.442E-05 | 3.200E+00 | Half-Life too short | | |
| | | 579.30 | | 1.879E-01 | 3.200E+00 | Half-Life too short | | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TL-201 | | 828.27 | | 2.499E-02 | 3.200E+00 | Half-Life | too short | |
| | | 1205.75 | | 4.438E-02 | 3.200E+00 | Half-Life | too short | |
| | | 68.90 | | 4.632E+00 | 9.589E+00 | 1.482E+01 | 1.332E+00 | 0.313 |
| | | 70.82 | | -8.035E-01 | 5.712E+00 | 8.599E+00 | 7.626E-01 | -0.093 |
| | | 80.30 | | -5.392E+00 | 1.318E+01 | 1.956E+01 | 1.626E+00 | -0.276 |
| TL-202 | | 135.34 | | -1.305E+01 | 9.044E+01 | 1.456E+02 | 1.648E+01 | -0.090 |
| | | 167.43 | * | -8.957E+00 | 2.381E+01 | 3.728E+01 | 2.921E+00 | -0.240 |
| | | 68.90 | | 1.742E-01 | 3.606E-01 | 5.573E-01 | 5.009E-02 | 0.313 |
| | | 70.82 | | -3.014E-02 | 2.142E-01 | 3.225E-01 | 2.860E-02 | -0.093 |
| | | 80.30 | | -2.023E-01 | 4.946E-01 | 7.337E-01 | 6.099E-02 | -0.276 |
| HG-203 | | 439.56 | * | 8.066E-02 | 1.077E-01 | 1.890E-01 | 1.194E-02 | 0.427 |
| | | 70.83 | | -1.042E-01 | 7.506E-01 | 1.130E+00 | 1.555E-01 | -0.092 |
| | | 72.87 | | 7.994E-01 | 4.432E-01 | 7.611E-01 | 1.011E-01 | 1.050 |
| | | 82.60 | | -8.429E-01 | 1.362E+00 | 1.557E+00 | 2.099E-01 | -0.541 |
| | | 279.20 | * | -9.507E-03 | 4.999E-02 | 8.182E-02 | 6.514E-03 | -0.116 |
| BI-207 | | 72.80 | | 1.874E-01 | 1.171E-01 | 2.040E-01 | 1.785E-02 | 0.919 |
| | + | 74.97 | | 6.767E-01 | 1.166E-01 | 1.709E-01 | 1.473E-02 | 3.960 |
| | | 84.90 | | 8.791E-02 | 1.720E-01 | 2.625E-01 | 2.115E-02 | 0.335 |
| | | 569.67 | | 1.876E-02 | 3.937E-02 | 6.444E-02 | 4.816E-03 | 0.291 |
| | | 1063.62 | * | -2.639E-02 | 7.068E-02 | 1.113E-01 | 7.236E-03 | -0.237 |
| TL-207 | | 1770.23 | | -2.434E-01 | 6.446E-01 | 8.216E-01 | 4.662E-02 | -0.296 |
| | | 81.07 | | -3.432E-01 | 1.919E-01 | 2.651E-01 | 2.192E-02 | -1.295 |
| | | 83.78 | | -7.732E-02 | 1.207E-01 | 1.728E-01 | 1.402E-02 | -0.448 |
| | | 94.90 | | 6.460E-02 | 2.185E-01 | 3.653E-01 | 3.203E-02 | 0.177 |
| | | 122.32 | | -1.383E+00 | 1.875E+00 | 2.949E+00 | 3.854E-01 | -0.469 |
| PO-209 | + | 144.24 | | 1.234E+00 | 9.665E-01 | 1.290E+00 | 1.449E-01 | 0.957 |
| | | 154.21 | | 2.566E-01 | 4.501E-01 | 7.383E-01 | 7.422E-02 | 0.348 |
| | | 269.46 | | 4.339E-01 | 2.129E-01 | 3.798E-01 | 3.022E-02 | 1.142 |
| | + | 323.87 | * | -6.674E-01 | 8.120E-01 | 1.255E+00 | 2.140E-01 | -0.532 |
| | + | 338.28 | | 6.548E+00 | 2.263E+00 | 2.682E+00 | 3.008E-01 | 2.442 |
| PB-211 | | 445.03 | | 1.678E-01 | 2.653E+00 | 4.477E+00 | 4.746E-01 | 0.037 |
| | | 260.50 | | -6.207E-01 | 1.048E+01 | 1.736E+01 | 1.356E+00 | -0.036 |
| | | 262.80 | | 6.171E+00 | 2.939E+01 | 4.872E+01 | 3.800E+00 | 0.127 |
| | | 896.60 | * | -1.256E+01 | 1.024E+01 | 1.518E+01 | 1.143E+00 | -0.827 |
| | | 404.84 | * | -6.874E-01 | 1.261E+00 | 1.832E+00 | 1.142E+00 | -0.375 |
| BI-212 | | 427.08 | | -1.304E+00 | 2.630E+00 | 3.848E+00 | 2.380E+00 | -0.339 |
| | | 831.96 | | 6.400E-01 | 1.638E+00 | 2.722E+00 | 1.703E+00 | 0.235 |
| | + | 727.18 | * | 7.721E-01 | 6.975E-01 | 8.046E-01 | 7.724E-02 | 0.960 |
| | | 785.46 | | 1.591E+00 | 2.375E+00 | 4.146E+00 | 3.327E-01 | 0.384 |
| | | 1620.62 | | -1.152E+00 | 1.904E+00 | 2.597E+00 | 1.495E-01 | -0.444 |
| PO-215 | | 81.07 | | -3.432E-01 | 1.919E-01 | 2.651E-01 | 2.192E-02 | -1.295 |
| | | 83.78 | | -7.732E-02 | 1.207E-01 | 1.728E-01 | 1.402E-02 | -0.448 |
| | | 94.90 | | 6.460E-02 | 2.185E-01 | 3.653E-01 | 3.203E-02 | 0.177 |
| | | 122.32 | | -1.383E+00 | 1.875E+00 | 2.949E+00 | 3.854E-01 | -0.469 |
| | + | 144.24 | | 1.234E+00 | 9.665E-01 | 1.290E+00 | 1.449E-01 | 0.957 |
| PO-215 | | 154.21 | | 2.566E-01 | 4.501E-01 | 7.383E-01 | 7.422E-02 | 0.348 |
| | | 269.46 | | 4.339E-01 | 2.129E-01 | 3.798E-01 | 3.022E-02 | 1.142 |
| | + | 323.87 | * | -6.674E-01 | 8.120E-01 | 1.255E+00 | 2.140E-01 | -0.532 |
| | + | 338.28 | | 6.548E+00 | 2.263E+00 | 2.682E+00 | 3.008E-01 | 2.442 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| RN-219 | | 445.03 | | 1.678E-01 | 2.653E+00 | 4.477E+00 | 4.746E-01 | 0.037 |
| | | 271.23 | | 1.648E-01 | 2.764E-01 | 4.691E-01 | 4.501E-02 | 0.351 |
| | | 401.81 | * | 3.621E-02 | 5.137E-01 | 8.274E-01 | 1.131E-01 | 0.044 |
| RN-220 | | 549.76 | * | -2.099E+00 | 3.420E+01 | 5.627E+01 | 4.114E+00 | -0.037 |
| RA-223 | | 81.07 | | -3.432E-01 | 1.919E-01 | 2.651E-01 | 2.192E-02 | -1.295 |
| | | 83.78 | | -7.732E-02 | 1.207E-01 | 1.728E-01 | 1.402E-02 | -0.448 |
| | | 94.90 | | 6.460E-02 | 2.185E-01 | 3.653E-01 | 3.203E-02 | 0.177 |
| | | 122.32 | | -1.383E+00 | 1.875E+00 | 2.949E+00 | 3.854E-01 | -0.469 |
| | + | 144.24 | | 1.234E+00 | 9.665E-01 | 1.290E+00 | 1.449E-01 | 0.957 |
| | | 154.21 | | 2.566E-01 | 4.501E-01 | 7.383E-01 | 7.422E-02 | 0.348 |
| | | 269.46 | | 4.339E-01 | 2.129E-01 | 3.798E-01 | 3.022E-02 | 1.142 |
| | | 323.87 | * | -6.674E-01 | 8.120E-01 | 1.255E+00 | 2.140E-01 | -0.532 |
| | + | 338.28 | | 6.548E+00 | 2.263E+00 | 2.682E+00 | 3.008E-01 | 2.442 |
| AC-227 | | 445.03 | | 1.678E-01 | 2.653E+00 | 4.477E+00 | 4.746E-01 | 0.037 |
| | | 79.80 | | -1.231E+00 | 1.372E+00 | 1.956E+00 | 4.184E-01 | -0.630 |
| | | 236.00 | | 9.282E-01 | 3.105E-01 | 4.981E-01 | 5.854E-02 | 1.863 |
| | | 256.20 | * | -2.033E-02 | 4.115E-01 | 6.825E-01 | 1.018E-01 | -0.030 |
| | | 286.10 | | -5.694E-01 | 1.688E+00 | 2.731E+00 | 3.436E-01 | -0.208 |
| | | 299.80 | | 2.883E+00 | 1.929E+00 | 2.961E+00 | 5.023E-01 | 0.974 |
| | | 304.40 | | -5.237E-01 | 2.022E+00 | 3.266E+00 | 5.852E-01 | -0.160 |
| | | 334.20 | | 2.027E-01 | 3.043E+00 | 4.359E+00 | 8.177E-01 | 0.046 |
| | | 79.80 | | -1.231E+00 | 1.372E+00 | 1.956E+00 | 4.238E-01 | -0.630 |
| TH-227 | + | 94.00 | | 5.691E+00 | 3.299E+00 | 3.868E+00 | 8.430E-01 | 1.471 |
| | | 236.00 | | 9.282E-01 | 3.067E-01 | 4.981E-01 | 5.246E-02 | 1.863 |
| | | 256.20 | * | -2.033E-02 | 4.115E-01 | 6.825E-01 | 1.208E-01 | -0.030 |
| | | 286.10 | | -5.694E-01 | 1.781E+00 | 2.731E+00 | 2.739E+00 | -0.208 |
| | | 299.80 | | 2.883E+00 | 1.929E+00 | 2.961E+00 | 5.023E-01 | 0.974 |
| | | 304.40 | | -5.237E-01 | 2.022E+00 | 3.266E+00 | 5.852E-01 | -0.160 |
| TH-229 | | 334.20 | | 2.027E-01 | 3.043E+00 | 4.359E+00 | 8.177E-01 | 0.046 |
| | | 85.43 | | 9.880E-02 | 1.776E-01 | 2.710E-01 | 2.175E-02 | 0.365 |
| | + | 88.47 | | 2.265E-01 | 1.087E-01 | 1.769E-01 | 1.406E-02 | 1.280 |
| | | 100.00 | | -1.679E-02 | 1.754E-01 | 2.788E-01 | 2.633E-02 | -0.060 |
| | | 193.63 | * | 2.885E-02 | 5.253E-01 | 8.929E-01 | 7.063E-02 | 0.032 |
| | | 210.97 | | 5.340E-01 | 9.224E-01 | 1.414E+00 | 1.121E-01 | 0.378 |
| PA-231 | | 283.67 | * | -6.964E-01 | 1.677E+00 | 2.702E+00 | 3.960E-01 | -0.258 |
| TH-231 | | 301.29 | | 8.045E-01 | 6.823E-01 | 1.140E+00 | 1.308E-01 | 0.706 |
| | | 81.07 | | -3.432E-01 | 1.919E-01 | 2.651E-01 | 2.192E-02 | -1.295 |
| | | 83.78 | | -7.732E-02 | 1.207E-01 | 1.728E-01 | 1.402E-02 | -0.448 |
| | | 94.90 | | 6.460E-02 | 2.185E-01 | 3.653E-01 | 3.203E-02 | 0.177 |
| | | 122.32 | | -1.383E+00 | 1.875E+00 | 2.949E+00 | 3.854E-01 | -0.469 |
| | + | 144.24 | | 1.234E+00 | 9.665E-01 | 1.290E+00 | 1.449E-01 | 0.957 |
| | | 154.21 | | 2.566E-01 | 4.501E-01 | 7.383E-01 | 7.422E-02 | 0.348 |
| | | 269.46 | | 4.339E-01 | 2.129E-01 | 3.798E-01 | 3.022E-02 | 1.142 |
| | | 323.87 | * | -6.674E-01 | 8.120E-01 | 1.255E+00 | 2.140E-01 | -0.532 |
| | + | 338.28 | | 6.548E+00 | 2.263E+00 | 2.682E+00 | 3.008E-01 | 2.442 |
| | | 445.03 | | 1.678E-01 | 2.653E+00 | 4.477E+00 | 4.746E-01 | 0.037 |
| | | 84.21 | | -7.778E+00 | 1.207E+01 | 1.727E+01 | 1.398E+00 | -0.450 |
| U-231 | + | 92.29 | | 1.303E+01 | 7.093E+00 | 1.022E+01 | 8.613E-01 | 1.276 |
| | | 95.87 | * | 1.683E+00 | 2.403E+00 | 3.681E+00 | 3.274E-01 | 0.457 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| PA-233 | | 108.00 | -4.840E+00 | 4.663E+00 | 7.297E+00 | 7.699E-01 | -0.663 |
| | + | 75.28 | 1.974E+01 | 4.226E+00 | 5.352E+00 | 8.208E-01 | 3.689 |
| | + | 86.59 | 4.115E+00 | 1.801E+00 | 2.605E+00 | 6.932E-01 | 1.580 |
| | | 300.12 | 7.232E-01 | 5.333E-01 | 8.223E-01 | 1.172E-01 | 0.879 |
| | | 311.98 | * -1.636E-02 | 7.519E-02 | 1.217E-01 | 9.293E-03 | -0.134 |
| | | 340.50 | 1.569E+00 | 8.892E-01 | 1.310E+00 | 3.049E-01 | 1.198 |
| PA-234 | | 398.62 | -2.179E-01 | 2.613E+00 | 4.170E+00 | 1.079E+00 | -0.052 |
| | | 415.76 | 1.106E-01 | 2.050E+00 | 3.190E+00 | 6.594E-01 | 0.035 |
| | + | 63.00 | 1.715E+00 | 1.348E+00 | 1.710E+00 | 2.724E-01 | 1.003 |
| | | 94.67 | 2.253E-01 | 1.640E-01 | 2.792E-01 | 3.486E-02 | 0.807 |
| | | 98.44 | -2.144E-02 | 9.562E-02 | 1.359E-01 | 7.594E-02 | -0.158 |
| | | 99.86 | 9.766E-02 | 4.395E-01 | 7.073E-01 | 6.666E-02 | 0.138 |
| | | 111.00 | 1.221E-02 | 1.812E-01 | 2.981E-01 | 4.136E-02 | 0.041 |
| | | 131.20 | -9.994E-03 | 1.159E-01 | 1.874E-01 | 2.201E-02 | -0.053 |
| | | 152.70 | 1.667E-01 | 3.665E-01 | 5.978E-01 | 1.044E-01 | 0.279 |
| | + | 186.00 | 5.614E+00 | 3.138E+00 | 3.223E+00 | 9.998E-01 | 1.742 |
| | | 226.40 | -3.682E-01 | 4.184E-01 | 6.696E-01 | 8.544E-02 | -0.550 |
| | | 227.20 | -5.836E-02 | 4.448E-01 | 7.417E-01 | 5.877E-02 | -0.079 |
| | | 248.90 | -3.314E-02 | 8.640E-01 | 1.437E+00 | 3.181E-01 | -0.023 |
| | + | 293.70 | 6.277E+00 | 1.654E+00 | 1.837E+00 | 3.086E-01 | 3.416 |
| | | 369.80 | -4.342E-01 | 1.028E+00 | 1.611E+00 | 3.381E-01 | -0.270 |
| | | 568.70 | 4.233E-01 | 1.299E+00 | 2.108E+00 | 1.574E-01 | 0.201 |
| | | 569.50 | 1.703E-01 | 3.495E-01 | 5.725E-01 | 4.278E-02 | 0.297 |
| | | 574.00 | -1.182E+00 | 1.952E+00 | 2.871E+00 | 2.156E-01 | -0.412 |
| | | 699.00 | -7.189E-01 | 9.860E-01 | 1.494E+00 | 2.820E-01 | -0.481 |
| | | 706.10 | -5.134E-01 | 1.449E+00 | 2.251E+00 | 1.002E+00 | -0.228 |
| | | 733.00 | 3.162E-01 | 5.553E-01 | 8.145E-01 | 1.793E-01 | 0.388 |
| | | 742.81 | 1.116E+00 | 2.040E+00 | 3.186E+00 | 2.139E+00 | 0.350 |
| | | 796.30 | 9.873E-01 | 1.257E+00 | 2.162E+00 | 5.807E-01 | 0.457 |
| | | 805.60 | 1.755E+00 | 1.393E+00 | 2.356E+00 | 7.180E-01 | 0.745 |
| | | 819.60 | 1.694E+00 | 1.843E+00 | 3.076E+00 | 1.165E+00 | 0.551 |
| | | 826.30 | -5.697E-01 | 1.108E+00 | 1.724E+00 | 7.688E-01 | -0.331 |
| | | 831.60 | 2.950E-01 | 8.237E-01 | 1.400E+00 | 4.149E-01 | 0.211 |
| | | 876.40 | -2.497E-01 | 1.149E+00 | 1.824E+00 | 1.874E+00 | -0.137 |
| | | 880.51 | 8.196E-02 | 3.789E-01 | 6.383E-01 | 4.865E-02 | 0.128 |
| | | 883.24 | -2.800E-02 | 3.888E-01 | 6.397E-01 | 4.292E-01 | -0.044 |
| | | 899.00 | -1.113E-01 | 1.116E+00 | 1.830E+00 | 7.964E-01 | -0.061 |
| | | 925.00 | -3.794E-01 | 1.466E+00 | 2.362E+00 | 1.748E-01 | -0.161 |
| | | 926.50 | 1.565E-01 | 2.186E-01 | 3.770E-01 | 9.381E-02 | 0.415 |
| | | 946.00 | * 5.487E-02 | 4.314E-01 | 7.169E-01 | 1.304E-01 | 0.077 |
| | | 949.00 | -6.244E-02 | 6.341E-01 | 1.004E+00 | 7.301E-02 | -0.062 |
| | | 980.50 | 1.418E-01 | 9.294E-01 | 1.545E+00 | 1.096E-01 | 0.092 |
| | | 1394.10 | 8.556E-01 | 1.672E+00 | 2.751E+00 | 1.782E+00 | 0.311 |
| PA-234M | | 766.42 | 2.210E+01 | 1.977E+01 | 2.944E+01 | 1.491E+01 | 0.751 |
| NP-236 | | 1001.03 | * 4.111E+00 | 6.732E+00 | 1.141E+01 | 9.779E-01 | 0.360 |
| | | 94.67 | 1.745E-01 | 1.236E-01 | 2.121E-01 | 1.853E-02 | 0.823 |
| | | 98.44 | -1.620E-02 | 7.173E-02 | 1.027E-01 | 9.485E-03 | -0.158 |
| | | 111.00 | 9.233E-03 | 1.371E-01 | 2.255E-01 | 2.477E-02 | 0.041 |
| | | 160.31 | * -3.636E-02 | 8.854E-02 | 1.390E-01 | 1.184E-02 | -0.262 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| NP-239 | | 99.55 | | 1.439E-03 | 1.464E-01 | 2.336E-01 | 2.192E-02 | 0.006 |
| | | 117.00 | * | -6.451E-02 | 1.927E-01 | 3.105E-01 | 3.685E-02 | -0.208 |
| | + | 209.75 | | 1.894E+00 | 1.284E+00 | 1.544E+00 | 1.225E-01 | 1.226 |
| | | 228.18 | | 1.035E-01 | 2.331E-01 | 3.983E-01 | 3.155E-02 | 0.260 |
| | | 277.60 | | 1.312E-01 | 2.086E-01 | 3.543E-01 | 2.728E-02 | 0.370 |
| AM-241 | | 334.30 | | 4.459E-02 | 1.721E+00 | 2.458E+00 | 1.728E-01 | 0.018 |
| | | 59.54 | * | 5.845E-02 | 6.680E-02 | 1.057E-01 | 1.075E-02 | 0.553 |
| CM-243 | | 99.55 | | 1.481E-03 | 1.507E-01 | 2.405E-01 | 2.257E-02 | 0.006 |
| | | 103.76 | * | -1.262E-02 | 9.445E-02 | 1.548E-01 | 1.542E-02 | -0.082 |
| | | 117.00 | | -6.640E-02 | 1.983E-01 | 3.195E-01 | 3.792E-02 | -0.208 |
| | + | 209.75 | | 1.868E+00 | 1.266E+00 | 1.523E+00 | 1.208E-01 | 1.226 |
| | | 228.18 | | 1.046E-01 | 2.356E-01 | 4.026E-01 | 3.189E-02 | 0.260 |
| AM-246 | | 277.60 | | 1.323E-01 | 2.104E-01 | 3.573E-01 | 2.751E-02 | 0.370 |
| | | 798.80 | | -2.951E-01 | 1.944E-01 | 2.877E-01 | 2.297E-02 | -1.026 |
| | | 1036.00 | | 2.372E-01 | 3.986E-01 | 6.829E-01 | 4.586E-02 | 0.347 |
| | | 1062.04 | | -6.497E-02 | 3.038E-01 | 4.852E-01 | 3.162E-02 | -0.134 |
| | | 1078.86 | * | 5.680E-02 | 1.825E-01 | 3.050E-01 | 1.945E-02 | 0.186 |
| CM-247 | | 278.00 | | 7.978E-01 | 8.569E-01 | 1.473E+00 | 1.134E-01 | 0.542 |
| | | 287.40 | | -1.970E-01 | 1.343E+00 | 2.197E+00 | 1.673E-01 | -0.090 |
| | | 402.60 | * | 2.688E-02 | 4.507E-02 | 7.490E-02 | 4.460E-03 | 0.359 |
| CF-249 | | 252.85 | | -5.518E-02 | 9.374E-01 | 1.556E+00 | 1.221E-01 | -0.035 |
| | | 333.44 | | 4.387E-02 | 2.266E-01 | 3.277E-01 | 2.308E-02 | 0.134 |
| | | 387.95 | * | -1.978E-02 | 5.038E-02 | 7.909E-02 | 4.697E-03 | -0.250 |
| CF-251 | | 176.60 | * | 4.796E-02 | 1.449E-01 | 2.336E-01 | 1.838E-02 | 0.205 |
| | | 227.00 | | -1.373E-01 | 3.952E-01 | 6.523E-01 | 5.169E-02 | -0.210 |
| | | 285.00 | | 2.742E-02 | 1.908E+00 | 3.150E+00 | 2.407E-01 | 0.009 |

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]G1202023714      *
* Acquisition date   : 4-FEB-2010 17:09:15 Detector SN# :                   *
* Detector ID        : GAM13 Sensitivity : 5.000                             *
* Geometry           : CAN Energy tolerance: 1.500                          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000              *
* Elapsed real time  : 0 02:00:01.60 Half life ratio : 8.000                *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 15-JAN-2010 12:00:00 Nuclide Library : SOLID           *
* Sample ID         : G1202023714 Analyst initials: MXR1                   *
* Batch Number      : 944964 Sample Quantity : 1.2767E+02 GRAM             *
* Recovery          : 1.00000 Carrier Weight : 0.00000                     *
*****
*
*                                     QC DATA                               *
*
* Standard Weight   : 0.00000                                                *
* CALIB. DATE/TIME  : 2-FEB-2009 10:41:22 MS Isotope :                     *
* MSD DPM           : 0.000 MSD Isotope :                                   *
* LCS DPM           : 0.000 LCS Isotope :                                   *
* LCSD DPM          : 0.000 LCSD Isotope :                                  *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.033E+01 | 2.107E+00 | 7.206E-01 | 0.000E+00 |
| CD-109 | 2.155E+00 | 7.528E-01 | 1.135E+00 | 0.000E+00 |
| SN-126 | 2.102E-01 | 7.343E-02 | 1.106E-01 | 0.000E+00 |
| TL-208 | 5.719E-01 | 1.202E-01 | 6.967E-02 | 0.000E+00 |
| BI-210 | 8.884E-01 | 7.932E-01 | 8.592E-01 | 0.000E+00 |
| PB-210 | 8.884E-01 | 7.932E-01 | 8.592E-01 | 0.000E+00 |
| PO-210 | 8.884E-01 | 7.925E-01 | 8.592E-01 | 0.000E+00 |
| BI-211 | 3.946E+00 | 5.636E-01 | 4.163E-01 | 0.000E+00 |
| PB-212 | 1.580E+00 | 1.835E-01 | 9.950E-02 | 0.000E+00 |
| PO-212 | 1.580E+00 | 1.835E-01 | 9.950E-02 | 0.000E+00 |
| BI-214 | 1.221E+00 | 2.145E-01 | 1.458E-01 | 0.000E+00 |
| PB-214 | 1.373E+00 | 2.083E-01 | 1.451E-01 | 0.000E+00 |
| PO-214 | 1.373E+00 | 2.083E-01 | 1.451E-01 | 0.000E+00 |
| PO-216 | 1.580E+00 | 1.835E-01 | 9.950E-02 | 0.000E+00 |
| PO-218 | 1.373E+00 | 2.083E-01 | 1.451E-01 | 0.000E+00 |
| RA-224 | 4.631E+00 | 1.445E+00 | 1.133E+00 | 0.000E+00 |
| RA-226 | 1.221E+00 | 2.145E-01 | 1.458E-01 | 0.000E+00 |
| AC-228 | 1.642E+00 | 4.731E-01 | 2.636E-01 | 0.000E+00 |
| RA-228 | 1.642E+00 | 4.731E-01 | 2.636E-01 | 0.000E+00 |
| TH-228 | 1.612E+00 | 1.872E-01 | 1.015E-01 | 0.000E+00 |
| TH-230 | 1.221E+00 | 2.145E-01 | 1.458E-01 | 0.000E+00 |
| TH-232 | 1.642E+00 | 4.731E-01 | 2.636E-01 | 0.000E+00 |
| TH-234 | 1.471E+00 | 1.141E+00 | 1.051E+00 | 0.000E+00 |
| U-234 | 1.221E+00 | 2.145E-01 | 1.458E-01 | 0.000E+00 |
| U-235 | 3.806E-01 | 2.973E-01 | 3.816E-01 | 0.000E+00 |
| NP-237 | 6.173E-01 | 2.491E-01 | 3.237E-01 | 0.000E+00 |
| U-238 | 1.471E+00 | 1.141E+00 | 1.051E+00 | 0.000E+00 |
| AM-243 | 3.769E-01 | 6.365E-02 | 6.404E-02 | 0.000E+00 |
| ANH-511 | 1.144E-01 | 8.582E-02 | 6.248E-02 | 0.000E+00 |

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

| Key-Line Activity | K.L. Act error | MDA |
|----------------------|----------------|-----|
|----------------------|----------------|-----|

| Nuclide | (pCi/GRAM |) Ided | (pCi/GRAM |) | |
|---------|------------|-----------|-----------|-----------|------------|
| BE-7 | -1.404E-01 | 4.332E-01 | 7.376E-01 | 0.000E+00 | NOT IDENT. |
| NA-22 | -4.844E-03 | 5.116E-02 | 8.620E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 2.889E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | 1.490E-02 | 3.854E-02 | 6.897E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 5.401E-02 | 5.994E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | 1.991E-02 | 5.629E-02 | 9.826E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | -1.367E-02 | 1.134E-01 | 1.890E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | -3.100E-01 | 4.989E-01 | 8.226E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 1.931E-01 | 5.195E-01 | 9.115E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | -2.699E-02 | 5.062E-02 | 8.350E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | 6.416E-03 | 5.286E-02 | 9.128E-02 | 0.000E+00 | FAIL ABUN |
| CO-57 | -1.762E-02 | 2.666E-02 | 4.465E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -5.040E-02 | 5.191E-02 | 8.229E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -7.348E-02 | 1.439E-01 | 2.296E-01 | 0.000E+00 | FAIL ABUN |
| CO-60 | -2.565E-02 | 4.975E-02 | 7.970E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 6.899E-02 | 1.378E-01 | 2.071E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | 4.584E-01 | 1.619E+00 | 2.764E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | 2.727E-01 | 2.442E-01 | 4.448E-01 | 0.000E+00 | NOT IDENT. |
| AS-74 | -7.417E-02 | 1.523E-01 | 2.503E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -1.975E-02 | 4.784E-02 | 8.137E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 0.000E+00 | 5.510E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SR-82 | -2.017E-01 | 5.486E-01 | 9.220E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | -7.752E-03 | 8.579E-02 | 1.467E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | -1.107E-02 | 1.029E-01 | 1.738E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 1.117E+01 | 9.712E+00 | 1.585E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 6.044E-02 | 5.253E-02 | 8.572E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 1.537E-01 | 1.228E+00 | 2.069E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 1.355E-02 | 4.165E-02 | 7.403E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | 1.940E-03 | 3.790E-02 | 6.361E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | 1.098E+01 | 2.524E+01 | 4.452E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -9.223E-03 | 4.488E-02 | 7.374E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 1.002E-01 | 6.337E-02 | 1.184E-01 | 0.000E+00 | NOT IDENT. |
| NB-95M | 2.574E-01 | 1.545E-01 | 2.581E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 7.167E-02 | 9.492E-02 | 1.661E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 2.188E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 4.021E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 2.876E+01 | 5.489E+01 | 9.447E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 6.076E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -2.305E-02 | 3.528E-02 | 5.903E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -1.061E-02 | 3.675E-02 | 6.274E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | -3.330E-03 | 5.598E-02 | 9.642E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | -6.373E-02 | 4.267E-01 | 7.136E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | -6.373E-02 | 4.267E-01 | 7.136E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | 9.228E-03 | 3.797E-02 | 6.740E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | -3.427E-02 | 5.295E-02 | 8.519E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | -5.090E-01 | 4.415E+00 | 6.745E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -2.517E-02 | 5.397E-02 | 8.761E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | -2.517E-02 | 5.397E-02 | 8.761E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 1.934E-01 | 2.343E-01 | 3.630E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 0.000E+00 | 6.405E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| SN-117M | -3.621E-02 | 7.768E-02 | 1.285E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | 1.018E+00 | 9.224E+00 | 1.586E+01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 3.995E+09 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | -1.989E-02 | 3.185E-02 | 5.223E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -9.185E-01 | 2.301E+00 | 3.247E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | 8.927E-02 | 1.008E-01 | 1.886E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | -2.045E-02 | 1.043E-01 | 1.808E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | -5.662E+00 | 9.293E+00 | 1.575E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | -2.178E-01 | 3.286E-01 | 5.256E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | -1.535E-02 | 2.864E-01 | 4.081E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | -2.019E+00 | 4.572E+00 | 7.386E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 7.740E-03 | 5.304E-02 | 9.482E-02 | 0.000E+00 | FAIL ABUN |
| I-131 | -1.264E-02 | 2.107E-01 | 3.538E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | 5.717E-01 | 2.083E+00 | 3.706E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | -5.206E-02 | 6.324E-02 | 8.655E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 4.212E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 5.288E-02 | 6.277E-02 | 1.137E-01 | 0.000E+00 | NOT IDENT. |
| CS-135 | 1.337E-01 | 1.755E-01 | 3.140E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 2.760E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | 1.045E-02 | 1.818E-01 | 3.055E-01 | 0.000E+00 | FAIL ABUN |
| BA-137M | 6.391E-02 | 5.337E-02 | 9.553E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | 6.756E-02 | 5.642E-02 | 1.010E-01 | 0.000E+00 | NOT IDENT. |
| CE-139 | -1.493E-02 | 3.295E-02 | 5.428E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | 4.255E-01 | 4.417E-01 | 7.661E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -1.556E-01 | 1.526E-01 | 2.177E-01 | 0.000E+00 | NOT IDENT. |
| CE-141 | 5.548E-03 | 8.284E-02 | 1.261E-01 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| CE-143 | 0.000E+00 | 3.403E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | 4.071E-02 | 2.188E-01 | 3.779E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | 3.995E-02 | 4.393E-02 | 7.794E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | 2.714E+00 | 2.985E+00 | 5.296E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | -1.599E-02 | 5.029E-02 | 8.601E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | 3.197E-01 | 9.096E-01 | 1.597E+00 | 0.000E+00 | FAIL ABUN |
| PM-149 | 0.000E+00 | 4.891E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| EU-152 | -4.470E-02 | 1.257E-01 | 1.809E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | -3.412E-02 | 7.917E-02 | 1.192E-01 | 0.000E+00 | NOT IDENT. |
| EU-154 | -1.609E-02 | 1.423E-01 | 2.393E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 1.894E-01 | 1.051E-01 | 1.928E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 1.448E-01 | 1.909E-01 | 3.435E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | -3.730E-02 | 8.075E-02 | 1.297E-01 | 0.000E+00 | FAIL ABUN |
| TM-171 | -3.791E+00 | 1.650E+01 | 2.654E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | -2.292E-02 | 2.655E-02 | 4.319E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 3.004E+00 | 3.683E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -3.661E-01 | 2.282E-01 | 3.392E-01 | 0.000E+00 | NOT IDENT. |
| HF-181 | -2.314E-02 | 5.540E-02 | 9.357E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | 2.015E-02 | 2.081E-01 | 3.399E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | 1.118E-01 | 2.566E-01 | 4.517E-01 | 0.000E+00 | NOT IDENT. |
| RE-183 | -4.199E-02 | 1.330E-01 | 2.145E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | -1.502E-02 | 2.500E-01 | 4.348E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | -2.030E-02 | 6.137E-02 | 1.009E-01 | 0.000E+00 | NOT IDENT. |
| RE-188 | 1.568E-01 | 1.998E-01 | 3.484E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | 1.798E+00 | 9.310E+00 | 1.426E+01 | 0.000E+00 | FAIL ABUN |
| IR-192 | 1.080E-02 | 4.315E-02 | 7.465E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | -5.540E-02 | 2.204E-01 | 3.548E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 1.386E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | -8.957E+00 | 2.334E+01 | 3.852E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 8.066E-02 | 1.056E-01 | 1.925E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | -9.507E-03 | 4.899E-02 | 8.390E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | -2.639E-02 | 6.926E-02 | 1.118E-01 | 0.000E+00 | FAIL ABUN |
| TL-207 | -6.674E-01 | 7.958E-01 | 1.284E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | -1.256E+01 | 1.004E+01 | 1.530E+01 | 0.000E+00 | NOT IDENT. |
| PB-211 | -6.874E-01 | 1.236E+00 | 1.868E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 7.721E-01 | 6.835E-01 | 8.133E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | -6.674E-01 | 7.958E-01 | 1.284E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | 3.621E-02 | 5.035E-01 | 8.439E-01 | 0.000E+00 | NOT IDENT. |
| RN-220 | -2.099E+00 | 3.351E+01 | 5.712E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -6.674E-01 | 7.958E-01 | 1.284E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | -2.033E-02 | 4.032E-01 | 7.008E-01 | 0.000E+00 | NOT IDENT. |
| TH-227 | -2.033E-02 | 4.032E-01 | 7.008E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | 2.885E-02 | 5.148E-01 | 9.206E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | -6.964E-01 | 1.644E+00 | 2.770E+00 | 0.000E+00 | NOT IDENT. |
| TH-231 | -6.674E-01 | 7.958E-01 | 1.284E+00 | 0.000E+00 | FAIL ABUN |
| U-231 | 1.683E+00 | 2.355E+00 | 3.834E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | -1.636E-02 | 7.368E-02 | 1.246E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | 5.487E-02 | 4.228E-01 | 7.217E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 4.111E+00 | 6.597E+00 | 1.148E+01 | 0.000E+00 | NOT IDENT. |
| NP-236 | -3.636E-02 | 8.677E-02 | 1.437E-01 | 0.000E+00 | NOT IDENT. |
| NP-239 | -6.451E-02 | 1.889E-01 | 3.225E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | 5.845E-02 | 6.546E-02 | 1.108E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | -1.262E-02 | 9.256E-02 | 1.611E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | 5.680E-02 | 1.789E-01 | 3.064E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 2.688E-02 | 4.417E-02 | 7.640E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | -1.978E-02 | 4.938E-02 | 8.071E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | 4.796E-02 | 1.420E-01 | 2.412E-01 | 0.000E+00 | NOT IDENT. |

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202023714.CNF;1
Sample date        : 15-JAN-2010 12:00:00 Acquisition date : 4-FEB-2010 17:09:15.
Sample ID          : G1202023714 Sample quantity      : 1.27670E+02 GRAM
Detector name      : GAM13 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.60 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials    : MXR1
Abundance limit    : 75.00000 Sensitivity           : 5.00000
Batch ID           : 944964 Detector SN#           :
Matrix Spike ID    : LCS ID                        : 1032-A
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Nuclide Line Activity Report

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| K-40 | 1460.81 | 768 | 10.67* | 1.041E+00 | 2.033E+01 | 2.033E+01 | 10.57 |
| CD-109 | 88.03 | 192 | 3.72* | 7.248E+00 | 2.091E+00 | 2.155E+00 | 35.64 |
| SN-126 | 64.28 | 141 | 9.60 | 7.391E+00 | 5.823E-01 | 5.823E-01 | 78.54 |
| | 86.94 | 192 | 8.90 | 7.248E+00 | 8.739E-01 | 8.739E-01 | 53.91 |
| | 87.57 | 192 | 37.00* | 7.248E+00 | 2.102E-01 | 2.102E-01 | 35.64 |
| TL-208 | 277.35 | ----- | 6.80 | 4.225E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 99 | 21.60 | 2.538E+00 | 5.295E-01 | 5.295E-01 | 77.02 |
| | 583.14 | 370 | 84.20* | 2.257E+00 | 5.719E-01 | 5.719E-01 | 21.44 |
| | 860.37 | ----- | 12.46 | 1.606E+00 | ----- | Line Not Found | ----- |
| BI-210 | 46.50 | 89 | 4.05* | 7.296E+00 | 8.868E-01 | 8.884E-01 | 91.11 |
| PB-210 | 46.50 | 89 | 4.05* | 7.296E+00 | 8.868E-01 | 8.884E-01 | 91.11 |
| PO-210 | 46.50 | 89 | 4.05* | 7.296E+00 | 8.868E-01 | 8.884E-01 | 91.02 |
| BI-211 | 72.87 | ----- | 1.27 | 7.369E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 608 | 12.94* | 3.499E+00 | 3.946E+00 | 3.946E+00 | 14.58 |
| PB-212 | 74.81 | 623 | 10.70 | 7.359E+00 | 2.325E+00 | 2.325E+00 | 19.61 |
| | 77.11 | 977 | 18.00 | 7.344E+00 | 2.173E+00 | 2.173E+00 | 13.74 |
| | 87.30 | 192 | 8.00 | 7.248E+00 | 9.722E-01 | 9.722E-01 | 37.02 |
| | 238.63 | 1130 | 44.60* | 4.716E+00 | 1.580E+00 | 1.580E+00 | 11.85 |
| | 300.09 | ----- | 3.41 | 3.976E+00 | ----- | Line Not Found | ----- |
| PO-212 | 74.81 | 623 | 10.70 | 7.359E+00 | 2.325E+00 | 2.325E+00 | 19.61 |
| | 77.11 | 977 | 18.00 | 7.344E+00 | 2.173E+00 | 2.173E+00 | 13.74 |
| | 87.30 | 192 | 8.00 | 7.248E+00 | 9.722E-01 | 9.722E-01 | 37.02 |
| | 115.19 | ----- | 0.60 | 6.822E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1130 | 44.60* | 4.716E+00 | 1.580E+00 | 1.580E+00 | 11.85 |
| | 300.09 | ----- | 3.41 | 3.976E+00 | ----- | Line Not Found | ----- |
| BI-214 | 609.31 | 417 | 46.30* | 2.171E+00 | 1.221E+00 | 1.221E+00 | 17.93 |
| | 1120.29 | 112 | 15.10 | 1.288E+00 | 1.687E+00 | 1.687E+00 | 45.91 |
| | 1764.49 | 67 | 15.80 | 8.989E-01 | 1.382E+00 | 1.382E+00 | 42.98 |
| PB-214 | 74.81 | 623 | 6.21 | 7.359E+00 | 4.006E+00 | 4.006E+00 | 18.76 |
| | 77.11 | 977 | 10.50 | 7.344E+00 | 3.726E+00 | 3.726E+00 | 15.71 |
| | 87.30 | 192 | 4.67 | 7.248E+00 | 1.665E+00 | 1.666E+00 | 36.47 |
| | 241.98 | 291 | 7.49 | 4.676E+00 | 2.442E+00 | 2.443E+00 | 32.33 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 295.21 | 344 | 19.20 | 4.029E+00 | 1.308E+00 | 1.308E+00 | 22.55 |
| | 351.92 | 608 | 37.20* | 3.499E+00 | 1.372E+00 | 1.373E+00 | 15.48 |
| | 74.81 | 623 | 6.21 | 7.359E+00 | 4.006E+00 | 4.006E+00 | 18.76 |
| | 77.11 | 977 | 10.50 | 7.344E+00 | 3.726E+00 | 3.726E+00 | 15.71 |
| | 87.30 | 192 | 4.67 | 7.248E+00 | 1.665E+00 | 1.666E+00 | 36.47 |
| PO-216 | 241.98 | 291 | 7.49 | 4.676E+00 | 2.442E+00 | 2.443E+00 | 32.33 |
| | 295.21 | 344 | 19.20 | 4.029E+00 | 1.308E+00 | 1.308E+00 | 22.55 |
| | 351.92 | 608 | 37.20* | 3.499E+00 | 1.372E+00 | 1.373E+00 | 15.48 |
| | 74.81 | 623 | 10.70 | 7.359E+00 | 2.325E+00 | 2.325E+00 | 19.61 |
| | 77.11 | 977 | 18.00 | 7.344E+00 | 2.173E+00 | 2.173E+00 | 13.74 |
| PO-218 | 87.30 | 192 | 8.00 | 7.248E+00 | 9.722E-01 | 9.722E-01 | 37.02 |
| | 238.63 | 1130 | 44.60* | 4.716E+00 | 1.580E+00 | 1.580E+00 | 11.85 |
| | 300.09 | ----- | 3.41 | 3.976E+00 | ----- | Line Not Found | ----- |
| | 74.81 | 623 | 6.21 | 7.359E+00 | 4.006E+00 | 4.006E+00 | 18.76 |
| | 77.11 | 977 | 10.50 | 7.344E+00 | 3.726E+00 | 3.726E+00 | 15.71 |
| RA-224 | 87.30 | 192 | 4.67 | 7.248E+00 | 1.665E+00 | 1.666E+00 | 36.47 |
| | 241.98 | 291 | 7.49 | 4.676E+00 | 2.442E+00 | 2.443E+00 | 32.33 |
| | 295.21 | 344 | 19.20 | 4.029E+00 | 1.308E+00 | 1.308E+00 | 22.55 |
| | 351.92 | 608 | 37.20* | 3.499E+00 | 1.372E+00 | 1.373E+00 | 15.48 |
| | 240.98 | 291 | 3.95* | 4.676E+00 | 4.631E+00 | 4.631E+00 | 31.84 |
| RA-226 | 609.31 | 417 | 46.30* | 2.171E+00 | 1.221E+00 | 1.221E+00 | 17.93 |
| | 1120.29 | 112 | 15.10 | 1.288E+00 | 1.687E+00 | 1.687E+00 | 45.91 |
| | 1764.49 | 67 | 15.80 | 8.989E-01 | 1.382E+00 | 1.382E+00 | 42.98 |
| | 338.32 | 220 | 11.40 | 3.613E+00 | 1.568E+00 | 1.568E+00 | 52.40 |
| | 911.07 | 236 | 27.70* | 1.529E+00 | 1.642E+00 | 1.642E+00 | 29.41 |
| AC-228 | 969.11 | 170 | 16.60 | 1.452E+00 | 2.068E+00 | 2.068E+00 | 32.37 |
| | 338.32 | 220 | 11.40 | 3.613E+00 | 1.568E+00 | 1.568E+00 | 52.40 |
| | 911.07 | 236 | 27.70* | 1.529E+00 | 1.642E+00 | 1.642E+00 | 29.41 |
| | 969.11 | 170 | 16.60 | 1.452E+00 | 2.068E+00 | 2.068E+00 | 32.37 |
| | 74.81 | 623 | 10.70 | 7.359E+00 | 2.325E+00 | 2.325E+00 | 17.27 |
| TH-228 | 77.11 | 977 | 18.00 | 7.344E+00 | 2.173E+00 | 2.217E+00 | 13.74 |
| | 87.30 | 192 | 8.00 | 7.248E+00 | 9.722E-01 | 9.920E-01 | 35.64 |
| | 238.63 | 1130 | 44.60* | 4.716E+00 | 1.580E+00 | 1.612E+00 | 11.85 |
| | 300.09 | ----- | 3.41 | 3.976E+00 | ----- | Line Not Found | ----- |
| | 609.31 | 417 | 46.30* | 2.171E+00 | 1.221E+00 | 1.221E+00 | 17.93 |
| TH-230 | 1120.29 | 112 | 15.10 | 1.288E+00 | 1.687E+00 | 1.687E+00 | 45.91 |
| | 1764.49 | 67 | 15.80 | 8.989E-01 | 1.382E+00 | 1.382E+00 | 42.98 |
| | 338.32 | 220 | 11.40 | 3.613E+00 | 1.568E+00 | 1.568E+00 | 33.43 |
| | 911.07 | 236 | 27.70* | 1.529E+00 | 1.642E+00 | 1.642E+00 | 29.41 |
| | 969.11 | 170 | 16.60 | 1.452E+00 | 2.068E+00 | 2.068E+00 | 32.37 |
| TH-232 | 63.29 | 141 | 3.80* | 7.391E+00 | 1.471E+00 | 1.471E+00 | 79.13 |
| | 92.38 | 195 | 5.41 | 7.180E+00 | 1.473E+00 | 1.473E+00 | 56.69 |
| | 609.31 | 417 | 46.30* | 2.171E+00 | 1.221E+00 | 1.221E+00 | 17.93 |
| | 1120.29 | 112 | 15.10 | 1.288E+00 | 1.687E+00 | 1.687E+00 | 45.91 |
| | 1764.49 | 67 | 15.80 | 8.989E-01 | 1.382E+00 | 1.382E+00 | 42.98 |
| U-234 | 89.95 | 151 | 2.70 | 7.218E+00 | 2.273E+00 | 2.273E+00 | 56.40 |
| | 93.35 | 195 | 4.50 | 7.180E+00 | 1.770E+00 | 1.770E+00 | 60.60 |
| | 105.00 | ----- | 2.10 | 6.995E+00 | ----- | Line Not Found | ----- |
| | 143.76 | 86 | 10.50* | 6.293E+00 | 3.806E-01 | 3.806E-01 | 79.70 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| | 163.35 | ----- | 4.70 | 5.928E+00 | ----- | Line Not Found | ----- |
| | 185.71 | 211 | 54.00 | 5.532E+00 | 2.079E-01 | 2.079E-01 | 47.16 |
| | 205.31 | ----- | 4.70 | 5.207E+00 | ----- | Line Not Found | ----- |
| NP-237 | 86.50 | 192 | 12.60* | 7.248E+00 | 6.173E-01 | 6.173E-01 | 41.19 |
| | 95.87 | ----- | 2.60 | 7.135E+00 | ----- | Line Not Found | ----- |
| U-238 | 63.29 | 141 | 3.80* | 7.391E+00 | 1.471E+00 | 1.471E+00 | 79.13 |
| | 92.38 | 195 | 5.41 | 7.180E+00 | 1.473E+00 | 1.473E+00 | 54.42 |
| AM-243 | 74.67 | 623 | 66.00* | 7.359E+00 | 3.769E-01 | 3.769E-01 | 17.23 |
| | 86.72 | 192 | 0.34 | 7.248E+00 | 2.315E+01 | 2.315E+01 | 35.64 |
| | 117.66 | ----- | 0.55 | 6.778E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 6.323E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 99 | 100.00* | 2.538E+00 | 1.144E-01 | 1.144E-01 | 76.57 |

Flag: "*" = Keyline

Total number of lines in spectrum 27
Number of unidentified lines 0
Number of lines tentatively identified by NID 27 100.00%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|---------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 2.033E+01 | 2.033E+01 | 0.215E+01 | 10.57 | |
| CD-109 | 464.00D | 1.03 | 2.091E+00 | 2.155E+00 | 0.768E+00 | 35.64 | |
| SN-126 | 1.00E+05Y | 1.00 | 2.102E-01 | 2.102E-01 | 0.749E-01 | 35.64 | |
| TL-208 | 1.41E+10Y | 1.00 | 5.719E-01 | 5.719E-01 | 1.226E-01 | 21.44 | |
| BI-210 | 22.26Y | 1.00 | 8.868E-01 | 8.884E-01 | 8.094E-01 | 91.11 | |
| PB-210 | 22.26Y | 1.00 | 8.868E-01 | 8.884E-01 | 8.094E-01 | 91.11 | |
| PO-210 | 22.26Y | 1.00 | 8.868E-01 | 8.884E-01 | 8.086E-01 | 91.02 | |
| BI-211 | 7.04E+08Y | 1.00 | 3.946E+00 | 3.946E+00 | 0.575E+00 | 14.58 | |
| PB-212 | 1.41E+10Y | 1.00 | 1.580E+00 | 1.580E+00 | 0.187E+00 | 11.85 | |
| PO-212 | 1.41E+10Y | 1.00 | 1.580E+00 | 1.580E+00 | 0.187E+00 | 11.85 | |
| BI-214 | 1600.00Y | 1.00 | 1.221E+00 | 1.221E+00 | 0.219E+00 | 17.93 | |
| PB-214 | 1600.00Y | 1.00 | 1.372E+00 | 1.373E+00 | 0.213E+00 | 15.48 | |
| PO-214 | 1600.00Y | 1.00 | 1.372E+00 | 1.373E+00 | 0.213E+00 | 15.48 | |
| PO-216 | 1.41E+10Y | 1.00 | 1.580E+00 | 1.580E+00 | 0.187E+00 | 11.85 | |
| PO-218 | 1600.00Y | 1.00 | 1.372E+00 | 1.373E+00 | 0.213E+00 | 15.48 | |
| RA-224 | 1.41E+10Y | 1.00 | 4.631E+00 | 4.631E+00 | 1.475E+00 | 31.84 | |
| RA-226 | 1600.00Y | 1.00 | 1.221E+00 | 1.221E+00 | 0.219E+00 | 17.93 | |
| AC-228 | 1.41E+10Y | 1.00 | 1.642E+00 | 1.642E+00 | 0.483E+00 | 29.41 | |
| RA-228 | 1.41E+10Y | 1.00 | 1.642E+00 | 1.642E+00 | 0.483E+00 | 29.41 | |
| TH-228 | 1.91Y | 1.02 | 1.580E+00 | 1.612E+00 | 0.191E+00 | 11.85 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.221E+00 | 1.221E+00 | 0.219E+00 | 17.93 | |
| TH-232 | 1.41E+10Y | 1.00 | 1.642E+00 | 1.642E+00 | 0.483E+00 | 29.41 | |
| TH-234 | 4.47E+09Y | 1.00 | 1.471E+00 | 1.471E+00 | 1.164E+00 | 79.13 | |
| U-234 | 4.47E+09Y | 1.00 | 1.221E+00 | 1.221E+00 | 0.219E+00 | 17.93 | |
| U-235 | 7.04E+08Y | 1.00 | 3.806E-01 | 3.806E-01 | 3.034E-01 | 79.70 | |
| NP-237 | 2.14E+06Y | 1.00 | 6.173E-01 | 6.173E-01 | 2.542E-01 | 41.19 | |
| U-238 | 4.47E+09Y | 1.00 | 1.471E+00 | 1.471E+00 | 1.164E+00 | 79.13 | |
| AM-243 | 7380.00Y | 1.00 | 3.769E-01 | 3.769E-01 | 0.650E-01 | 17.23 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.144E-01 | 1.144E-01 | 0.876E-01 | 76.57 | |

Total Activity : 5.912E+01 5.922E+01

Grand Total Activity : 5.912E+01 5.922E+01

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

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

Unidentified Energy Lines
Sample ID : G1202023714

Page : 5
Acquisition date : 4-FEB-2010 17:09:15

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 209.01 | 107 | 345 | 1.30 | 417.87 | 414 | 10 | 1.49E-02 | 67.3 | 5.15E+00 | T |
| 0 | 462.68 | 95 | 131 | 1.58 | 925.34 | 919 | 12 | 1.31E-02 | 52.7 | 2.77E+00 | T |
| 0 | 727.40 | 58 | 132 | 1.02 | 1454.95 | 1449 | 14 | 7.99E-03 | 89.8 | 1.86E+00 | T |
| 6 | 963.91 | 42 | 46 | 2.18 | 1928.16 | 1924 | 19 | 5.83E-03 | 63.2 | 1.46E+00 | T |
| 0 | 1238.03 | 64 | 68 | 1.88 | 2476.63 | 2469 | 15 | 8.82E-03 | 62.9 | 1.19E+00 | T |

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202023714.CNF;1
* Acquisition date   : 4-FEB-2010 17:09:15.  Detector SN#      :
* Detector ID        : GAM13                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:01.60             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 15-JAN-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G1202023714           Analyst initials: MXR1
* Batch Number       : 944964                Sample Quantity : 1.27670E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-FEB-2009 10:41:22.03MS Isotope       :
* MSD ID             :                      MSD Isotope        :
* LCS ID             : 1032-A                LCS Isotope       :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 2.033E+01 | 2.150E+00 | 7.206E-01 | 4.406E-02 | 28.218 |
| CD-109 | 2.155E+00 | 7.681E-01 | 1.088E+00 | 8.586E-02 | 1.981 |
| SN-126 | 2.102E-01 | 7.493E-02 | 1.060E-01 | 8.384E-03 | 1.983 |
| TL-208 | 5.719E-01 | 1.226E-01 | 6.869E-02 | 5.686E-03 | 8.326 |
| BI-210 | 8.884E-01 | 8.094E-01 | 8.163E-01 | 6.654E-02 | 1.088 |
| PB-210 | 8.884E-01 | 8.094E-01 | 8.163E-01 | 6.654E-02 | 1.088 |
| PO-210 | 8.884E-01 | 8.086E-01 | 8.163E-01 | 5.820E-02 | 1.088 |
| BI-211 | 3.946E+00 | 5.751E-01 | 4.073E-01 | 2.969E-02 | 9.687 |
| PB-212 | 1.580E+00 | 1.872E-01 | 9.680E-02 | 8.794E-03 | 16.324 |
| PO-212 | 1.580E+00 | 1.872E-01 | 9.680E-02 | 8.794E-03 | 16.324 |
| BI-214 | 1.221E+00 | 2.189E-01 | 1.439E-01 | 1.345E-02 | 8.483 |
| PB-214 | 1.373E+00 | 2.125E-01 | 1.420E-01 | 1.272E-02 | 9.664 |
| PO-214 | 1.373E+00 | 2.125E-01 | 1.420E-01 | 1.272E-02 | 9.664 |
| PO-216 | 1.580E+00 | 1.872E-01 | 9.680E-02 | 8.794E-03 | 16.324 |
| PO-218 | 1.373E+00 | 2.125E-01 | 1.420E-01 | 1.272E-02 | 9.664 |
| RA-224 | 4.631E+00 | 1.475E+00 | 1.102E+00 | 8.700E-02 | 4.202 |
| RA-226 | 1.221E+00 | 2.189E-01 | 1.439E-01 | 1.345E-02 | 8.483 |
| AC-228 | 1.642E+00 | 4.827E-01 | 2.617E-01 | 2.717E-02 | 6.274 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| RA-228 | 1.642E+00 | 4.827E-01 | 2.617E-01 | 2.717E-02 | 6.274 |
| TH-228 | 1.612E+00 | 1.911E-01 | 9.877E-02 | 8.973E-03 | 16.324 |
| TH-230 | 1.221E+00 | 2.189E-01 | 1.439E-01 | 1.345E-02 | 8.483 |
| TH-232 | 1.642E+00 | 4.827E-01 | 2.617E-01 | 2.717E-02 | 6.274 |
| TH-234 | 1.471E+00 | 1.164E+00 | 1.003E+00 | 1.840E-01 | 1.467 |
| U-234 | 1.221E+00 | 2.189E-01 | 1.439E-01 | 1.345E-02 | 8.483 |
| U-235 | 3.806E-01 | 3.034E-01 | 3.685E-01 | 6.803E-02 | 1.033 |
| NP-237 | 6.173E-01 | 2.542E-01 | 3.103E-01 | 6.863E-02 | 1.989 |
| U-238 | 1.471E+00 | 1.164E+00 | 1.003E+00 | 1.840E-01 | 1.467 |
| AM-243 | 3.769E-01 | 6.495E-02 | 6.126E-02 | 5.291E-03 | 6.153 |
| ANH-511 | 1.144E-01 | 8.757E-02 | 6.148E-02 | 4.291E-03 | 1.860 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | -1.404E-01 | | 4.420E-01 | 7.251E-01 | 5.452E-02 | -0.194 |
| NA-22 | -4.844E-03 | | 5.220E-02 | 8.603E-02 | 4.856E-03 | -0.056 |
| NA-24 | 4.701E+01 | | 1.474E+02 | Half-Life too short | | |
| AL-26 | 1.490E-02 | | 3.932E-02 | 6.921E-02 | 3.905E-03 | 0.215 |
| TI-44 | 4.011E-01 | + | 5.511E-02 | 5.737E-02 | 4.832E-03 | 6.992 |
| SC-46 | 1.991E-02 | | 5.743E-02 | 9.751E-02 | 7.384E-03 | 0.204 |
| V-48 | -1.367E-02 | | 1.157E-01 | 1.879E-01 | 1.329E-02 | -0.073 |
| CR-51 | -3.100E-01 | | 5.090E-01 | 8.038E-01 | 6.256E-02 | -0.386 |
| MN-52 | 1.931E-01 | | 5.301E-01 | 9.113E-01 | 5.237E-02 | 0.212 |
| MN-54 | -2.699E-02 | | 5.165E-02 | 8.279E-02 | 6.496E-03 | -0.326 |
| CO-56 | 6.416E-03 | | 5.394E-02 | 9.052E-02 | 7.055E-03 | 0.071 |
| CO-57 | -1.762E-02 | | 2.720E-02 | 4.301E-02 | 5.440E-03 | -0.410 |
| CO-58 | -5.040E-02 | | 5.297E-02 | 8.155E-02 | 6.495E-03 | -0.618 |
| FE-59 | -7.348E-02 | | 1.468E-01 | 2.286E-01 | 1.633E-02 | -0.321 |
| CO-60 | -2.565E-02 | | 5.076E-02 | 7.959E-02 | 4.527E-03 | -0.322 |
| ZN-65 | 6.899E-02 | | 1.406E-01 | 2.062E-01 | 1.252E-02 | 0.335 |
| GE-68 | 4.584E-01 | | 1.652E+00 | 2.751E+00 | 1.758E-01 | 0.167 |
| AS-73 | 2.727E-01 | | 2.491E-01 | 4.235E-01 | 3.577E-02 | 0.644 |
| AS-74 | -7.417E-02 | | 1.554E-01 | 2.468E-01 | 1.896E-02 | -0.300 |
| SE-75 | -1.975E-02 | | 4.881E-02 | 7.928E-02 | 6.210E-03 | -0.249 |
| BR-77 | -1.980E-05 | | 2.811E-05 | Half-Life too short | | |
| SR-82 | -2.017E-01 | | 5.598E-01 | 9.131E-01 | 7.349E-02 | -0.221 |
| RB-83 | -7.752E-03 | | 8.754E-02 | 1.444E-01 | 1.020E-02 | -0.054 |
| RB-84 | -1.107E-02 | | 1.050E-01 | 1.725E-01 | 1.314E-02 | -0.064 |
| KR-85 | 1.117E+01 | | 9.910E+00 | 1.559E+01 | 1.092E+00 | 0.716 |
| SR-85 | 6.044E-02 | | 5.361E-02 | 8.436E-02 | 5.909E-03 | 0.716 |
| RB-86 | 1.537E-01 | | 1.253E+00 | 2.059E+00 | 1.318E-01 | 0.075 |
| Y-88 | 1.355E-02 | | 4.250E-02 | 7.430E-02 | 4.184E-03 | 0.182 |
| ZR-88 | 1.940E-03 | | 3.868E-02 | 6.234E-02 | 3.651E-03 | 0.031 |
| Y-91 | 1.098E+01 | | 2.576E+01 | 4.439E+01 | 2.460E+00 | 0.247 |
| NB-94 | -9.223E-03 | | 4.579E-02 | 7.291E-02 | 5.952E-03 | -0.126 |
| NB-95 | 1.002E-01 | | 6.466E-02 | 1.172E-01 | 9.463E-03 | 0.855 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| NB-95M | 2.574E-01 | | 1.577E-01 | 2.510E-01 | 2.322E-02 | 1.025 |
| ZR-95 | 7.167E-02 | | 9.685E-02 | 1.645E-01 | 1.483E-02 | 0.436 |
| NB-97 | -1.028E+01 | | 1.116E+01 | Half-Life too short | | |
| ZR-97 | 8.406E+02 | | 2.052E+02 | Half-Life too short | | |
| MO-99 | 2.876E+01 | | 5.602E+01 | 9.348E+01 | 1.394E+01 | 0.308 |
| TC-99M | -1.169E+16 | | 3.100E+16 | Half-Life too short | | |
| RH-101 | -2.305E-02 | | 3.600E-02 | 5.727E-02 | 4.535E-03 | -0.402 |
| RH-102 | -1.061E-02 | | 3.750E-02 | 6.167E-02 | 4.104E-03 | -0.172 |
| RU-103 | -3.330E-03 | | 5.712E-02 | 9.483E-02 | 1.248E-02 | -0.035 |
| RH-106 | -6.373E-02 | | 4.354E-01 | 7.042E-01 | 9.077E-02 | -0.090 |
| RU-106 | -6.373E-02 | | 4.354E-01 | 7.042E-01 | 5.546E-02 | -0.090 |
| AG-108M | 9.228E-03 | | 3.874E-02 | 6.615E-02 | 4.450E-03 | 0.139 |
| AG-110M | -3.427E-02 | | 5.403E-02 | 8.415E-02 | 7.069E-03 | -0.407 |
| IN-111 | -5.090E-01 | | 4.505E+00 | 6.565E+00 | 5.173E-01 | -0.078 |
| IN-113M | -2.517E-02 | | 5.507E-02 | 8.586E-02 | 5.350E-03 | -0.293 |
| SN-113 | -2.517E-02 | | 5.507E-02 | 8.586E-02 | 5.350E-03 | -0.293 |
| IN-114M | 1.934E-01 | | 2.390E-01 | 3.520E-01 | 2.782E-02 | 0.550 |
| CD-115 | 2.042E-05 | | 3.268E-05 | Half-Life too short | | |
| SN-117M | -3.621E-02 | | 7.926E-02 | 1.242E-01 | 1.085E-02 | -0.292 |
| SB-122 | 1.018E+00 | | 9.412E+00 | 1.563E+01 | 1.161E+00 | 0.065 |
| I-123 | -2.495E+03 | | 2.038E+03 | Half-Life too short | | |
| TE-123M | -1.989E-02 | | 3.249E-02 | 5.051E-02 | 4.411E-03 | -0.394 |
| I-124 | -9.185E-01 | | 2.348E+00 | 3.203E+00 | 2.476E-01 | -0.287 |
| SB-124 | 8.927E-02 | | 1.029E-01 | 1.890E-01 | 1.177E-02 | 0.472 |
| SB-125 | -2.045E-02 | | 1.064E-01 | 1.775E-01 | 1.142E-02 | -0.115 |
| TE-125M | -5.662E+00 | | 9.483E+00 | 1.515E+01 | 1.842E+00 | -0.374 |
| I-126 | -2.178E-01 | | 3.353E-01 | 5.193E-01 | 4.237E-02 | -0.420 |
| SB-126 | -1.535E-02 | | 2.922E-01 | 4.037E-01 | 3.290E-02 | -0.038 |
| SB-127 | -2.019E+00 | | 4.665E+00 | 7.301E+00 | 9.276E-01 | -0.277 |
| XE-127 | 7.740E-03 | | 5.412E-02 | 9.203E-02 | 7.293E-03 | 0.084 |
| I-131 | -1.264E-02 | | 2.150E-01 | 3.464E-01 | 2.472E-02 | -0.037 |
| TE-132 | 5.717E-01 | | 2.126E+00 | 3.603E+00 | 5.917E-01 | 0.159 |
| BA-133 | -5.206E-02 | | 6.453E-02 | 8.470E-02 | 1.017E-02 | -0.615 |
| I-133 | 2.492E-01 | | 2.149E-01 | Half-Life too short | | |
| CS-134 | 5.288E-02 | | 6.406E-02 | 1.126E-01 | 9.075E-03 | 0.470 |
| CS-135 | 1.337E-01 | | 1.791E-01 | 3.060E-01 | 2.827E-02 | 0.437 |
| I-135 | -1.002E+15 | | 1.408E+15 | Half-Life too short | | |
| CS-136 | 1.045E-02 | | 1.855E-01 | 3.039E-01 | 2.159E-02 | 0.034 |
| BA-137M | 6.391E-02 | | 5.446E-02 | 9.437E-02 | 7.697E-03 | 0.677 |
| CS-137 | 6.756E-02 | | 5.757E-02 | 9.976E-02 | 8.154E-03 | 0.677 |
| CE-139 | -1.493E-02 | | 3.362E-02 | 5.252E-02 | 4.118E-03 | -0.284 |
| BA-140 | 4.255E-01 | | 4.507E-01 | 7.544E-01 | 2.475E-01 | 0.564 |
| LA-140 | -1.556E-01 | | 1.557E-01 | 2.180E-01 | 1.257E-02 | -0.713 |
| CE-141 | 5.548E-03 | | 8.453E-02 | 1.218E-01 | 1.263E-02 | 0.046 |
| CE-143 | 1.004E-02 | | 1.736E-03 | Half-Life too short | | |
| CE-144 | 4.071E-02 | | 2.233E-01 | 3.645E-01 | 6.317E-02 | 0.112 |
| PM-144 | 3.995E-02 | | 4.482E-02 | 7.706E-02 | 6.296E-03 | 0.518 |
| PR-144 | 2.714E+00 | | 3.046E+00 | 5.236E+00 | 4.275E-01 | 0.518 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| PM-146 | -1.599E-02 | | 5.132E-02 | 8.448E-02 | 7.667E-03 | -0.189 |
| ND-147 | 3.197E-01 | | 9.282E-01 | 1.572E+00 | 2.225E-01 | 0.203 |
| PM-149 | -1.416E-04 | | 2.495E-04 | Half-Life too short | | |
| EU-152 | -4.470E-02 | | 1.283E-01 | 1.770E-01 | 1.327E-02 | -0.253 |
| GD-153 | -3.412E-02 | | 8.079E-02 | 1.144E-01 | 1.041E-02 | -0.298 |
| EU-154 | -1.609E-02 | | 1.452E-01 | 2.388E-01 | 2.206E-02 | -0.067 |
| EU-155 | 1.894E-01 | | 1.073E-01 | 1.854E-01 | 1.902E-02 | 1.022 |
| TB-160 | 1.448E-01 | | 1.948E-01 | 3.408E-01 | 2.600E-02 | 0.425 |
| HO-166M | -3.730E-02 | | 8.240E-02 | 1.283E-01 | 1.047E-02 | -0.291 |
| TM-171 | -3.791E+00 | | 1.683E+01 | 2.534E+01 | 2.313E+00 | -0.150 |
| LU-176 | -2.292E-02 | | 2.709E-02 | 4.218E-02 | 3.127E-03 | -0.544 |
| LU-177 | 4.522E+00 | + | 3.065E+00 | 3.575E+00 | 2.835E-01 | 1.265 |
| LU-177M | -3.661E-01 | | 2.328E-01 | 3.327E-01 | 2.018E-02 | -1.100 |
| HF-181 | -2.314E-02 | | 5.653E-02 | 9.199E-02 | 6.180E-03 | -0.251 |
| W-181 | 2.015E-02 | | 2.124E-01 | 3.245E-01 | 2.993E-02 | 0.062 |
| TA-182 | 1.118E-01 | | 2.619E-01 | 4.505E-01 | 2.507E-02 | 0.248 |
| RE-183 | -4.199E-02 | | 1.357E-01 | 2.075E-01 | 1.717E-02 | -0.202 |
| RE-184 | -1.502E-02 | | 2.551E-01 | 4.233E-01 | 3.323E-02 | -0.035 |
| OS-185 | -2.030E-02 | | 6.262E-02 | 9.965E-02 | 8.021E-03 | -0.204 |
| RE-188 | 1.568E-01 | | 2.039E-01 | 3.368E-01 | 3.082E-02 | 0.465 |
| W-188 | 1.798E+00 | | 9.500E+00 | 1.392E+01 | 1.056E+00 | 0.129 |
| IR-192 | 1.080E-02 | | 4.403E-02 | 7.293E-02 | 5.335E-03 | 0.148 |
| AU-195 | -5.540E-02 | | 2.249E-01 | 3.408E-01 | 3.167E-02 | -0.163 |
| TL-200 | -7.442E-05 | | 7.074E-03 | Half-Life too short | | |
| TL-201 | -8.957E+00 | | 2.381E+01 | 3.728E+01 | 2.921E+00 | -0.240 |
| TL-202 | 8.066E-02 | | 1.077E-01 | 1.890E-01 | 1.194E-02 | 0.427 |
| HG-203 | -9.507E-03 | | 4.999E-02 | 8.182E-02 | 6.514E-03 | -0.116 |
| BI-207 | -2.639E-02 | | 7.068E-02 | 1.113E-01 | 7.236E-03 | -0.237 |
| TL-207 | -6.674E-01 | | 8.120E-01 | 1.255E+00 | 2.140E-01 | -0.532 |
| PO-209 | -1.256E+01 | | 1.024E+01 | 1.518E+01 | 1.143E+00 | -0.827 |
| PB-211 | -6.874E-01 | | 1.261E+00 | 1.832E+00 | 1.142E+00 | -0.375 |
| BI-212 | 7.721E-01 | + | 6.975E-01 | 8.046E-01 | 7.724E-02 | 0.960 |
| PO-215 | -6.674E-01 | | 8.120E-01 | 1.255E+00 | 2.140E-01 | -0.532 |
| RN-219 | 3.621E-02 | | 5.137E-01 | 8.274E-01 | 1.131E-01 | 0.044 |
| RN-220 | -2.099E+00 | | 3.420E+01 | 5.627E+01 | 4.114E+00 | -0.037 |
| RA-223 | -6.674E-01 | | 8.120E-01 | 1.255E+00 | 2.140E-01 | -0.532 |
| AC-227 | -2.033E-02 | | 4.115E-01 | 6.825E-01 | 1.018E-01 | -0.030 |
| TH-227 | -2.033E-02 | | 4.115E-01 | 6.825E-01 | 1.208E-01 | -0.030 |
| TH-229 | 2.885E-02 | | 5.253E-01 | 8.929E-01 | 7.063E-02 | 0.032 |
| PA-231 | -6.964E-01 | | 1.677E+00 | 2.702E+00 | 3.960E-01 | -0.258 |
| TH-231 | -6.674E-01 | | 8.120E-01 | 1.255E+00 | 2.140E-01 | -0.532 |
| U-231 | 1.683E+00 | | 2.403E+00 | 3.681E+00 | 3.274E-01 | 0.457 |
| PA-233 | -1.636E-02 | | 7.519E-02 | 1.217E-01 | 9.293E-03 | -0.134 |
| PA-234 | 5.487E-02 | | 4.314E-01 | 7.169E-01 | 1.304E-01 | 0.077 |
| PA-234M | 4.111E+00 | | 6.732E+00 | 1.141E+01 | 9.779E-01 | 0.360 |
| NP-236 | -3.636E-02 | | 8.854E-02 | 1.390E-01 | 1.184E-02 | -0.262 |
| NP-239 | -6.451E-02 | | 1.927E-01 | 3.105E-01 | 3.685E-02 | -0.208 |
| AM-241 | 5.845E-02 | | 6.680E-02 | 1.057E-01 | 1.075E-02 | 0.553 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | -1.262E-02 | | 9.445E-02 | 1.548E-01 | 1.542E-02 | -0.082 |
| AM-246 | 5.680E-02 | | 1.825E-01 | 3.050E-01 | 1.945E-02 | 0.186 |
| CM-247 | 2.688E-02 | | 4.507E-02 | 7.490E-02 | 4.460E-03 | 0.359 |
| CF-249 | -1.978E-02 | | 5.038E-02 | 7.909E-02 | 4.697E-03 | -0.250 |
| CF-251 | 4.796E-02 | | 1.449E-01 | 2.336E-01 | 1.838E-02 | 0.205 |

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]G1202023714 *
* Acquisition date   : 4-FEB-2010 17:09:15 Detector SN#      : *
* Detector ID       : GAM13          Sensitivity             : 5.000 *
* Geometry          : CAN            Energy tolerance        : 1.500 *
* Elapsed live time : 0 02:00:00.00 Abundance limit         : 75.000 *
* Elapsed real time : 0 02:00:01.60 Half life ratio         : 8.000 *
*****
*               SAMPLE DATA          *
*                                     *
* Sample date       : 15-JAN-2010 12:00:00 Nuclide Library : SOLID *
* Sample ID        : G1202023714    Analyst initials: MXR1 *
* Batch Number     : 944964          Sample Quantity : 1.2767E+02 GRAM *
* Recovery         : 1.00000         Carrier Weight  : 0.00000 *
*****
*               QC DATA              *
*                                     *
* CALIB. DATE/TIME : 2-FEB-2009 10:41:22 MS Isotope       : *
* MSD DPM          : 0.000           MSD Isotope          : *
* LCS DPM          : 0.000           LCS Isotope          : *
* LCSD DPM         : 0.000           LCSD Isotope         : *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.033E+01 | 2.107E+00 | 3.605E-01 | 1.075E+00 |
| CD-109 | 2.155E+00 | 7.528E-01 | 5.678E-01 | 3.841E-01 |
| SN-126 | 2.102E-01 | 7.343E-02 | 5.531E-02 | 3.746E-02 |
| TL-208 | 5.719E-01 | 1.202E-01 | 3.486E-02 | 6.131E-02 |
| BI-210 | 8.884E-01 | 7.932E-01 | 4.299E-01 | 4.047E-01 |
| PB-210 | 8.884E-01 | 7.932E-01 | 4.299E-01 | 4.047E-01 |
| PO-210 | 8.884E-01 | 7.925E-01 | 4.299E-01 | 4.043E-01 |
| BI-211 | 3.946E+00 | 5.636E-01 | 2.083E-01 | 2.876E-01 |
| PB-212 | 1.580E+00 | 1.835E-01 | 4.978E-02 | 9.362E-02 |
| PO-212 | 1.580E+00 | 1.835E-01 | 4.978E-02 | 9.362E-02 |
| BI-214 | 1.221E+00 | 2.145E-01 | 7.297E-02 | 1.094E-01 |
| PB-214 | 1.373E+00 | 2.083E-01 | 7.262E-02 | 1.063E-01 |
| PO-214 | 1.373E+00 | 2.083E-01 | 7.262E-02 | 1.063E-01 |
| PO-216 | 1.580E+00 | 1.835E-01 | 4.978E-02 | 9.362E-02 |
| PO-218 | 1.373E+00 | 2.083E-01 | 7.262E-02 | 1.063E-01 |
| RA-224 | 4.631E+00 | 1.445E+00 | 5.667E-01 | 7.373E-01 |
| RA-226 | 1.221E+00 | 2.145E-01 | 7.297E-02 | 1.094E-01 |
| AC-228 | 1.642E+00 | 4.731E-01 | 1.319E-01 | 2.414E-01 |
| RA-228 | 1.642E+00 | 4.731E-01 | 1.319E-01 | 2.414E-01 |
| TH-228 | 1.612E+00 | 1.872E-01 | 5.079E-02 | 9.553E-02 |
| TH-230 | 1.221E+00 | 2.145E-01 | 7.297E-02 | 1.094E-01 |
| TH-232 | 1.642E+00 | 4.731E-01 | 1.319E-01 | 2.414E-01 |
| TH-234 | 1.471E+00 | 1.141E+00 | 5.258E-01 | 5.821E-01 |
| U-234 | 1.221E+00 | 2.145E-01 | 7.297E-02 | 1.094E-01 |
| U-235 | 3.806E-01 | 2.973E-01 | 1.909E-01 | 1.517E-01 |
| NP-237 | 6.173E-01 | 2.491E-01 | 1.619E-01 | 1.271E-01 |
| U-238 | 1.471E+00 | 1.141E+00 | 5.258E-01 | 5.821E-01 |
| AM-243 | 3.769E-01 | 6.365E-02 | 3.204E-02 | 3.248E-02 |
| ANH-511 | 1.144E-01 | 8.582E-02 | 3.126E-02 | 4.378E-02 |

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

| Key-Line Activity | K.L Act error | DLC | TPU |
|----------------------|---------------|-----|-----|
|----------------------|---------------|-----|-----|

| Nuclide | (pCi/GRAM) | | (pCi/GRAM) | | |
|---------|-------------|-----------|-------------|-----------|------------|
| BE-7 | -1.404E-01 | 4.332E-01 | 3.690E-01 | 2.210E-01 | NOT IDENT. |
| NA-22 | -4.844E-03 | 5.116E-02 | 4.313E-02 | 2.610E-02 | NOT IDENT. |
| NA-24 | 4.701E+07 | 2.889E+08 | 0.000E+00 | 1.474E+08 | SHORT HLIF |
| AL-26 | 1.490E-02 | 3.854E-02 | 3.451E-02 | 1.966E-02 | NOT IDENT. |
| TI-44 | 4.011E-01 | 5.401E-02 | 2.999E-02 | 2.756E-02 | FAIL ABUN |
| SC-46 | 1.991E-02 | 5.629E-02 | 4.916E-02 | 2.872E-02 | FAIL ABUN |
| V-48 | -1.367E-02 | 1.134E-01 | 9.457E-02 | 5.787E-02 | NOT IDENT. |
| CR-51 | -3.100E-01 | 4.989E-01 | 4.115E-01 | 2.545E-01 | NOT IDENT. |
| MN-52 | 1.931E-01 | 5.195E-01 | 4.560E-01 | 2.650E-01 | NOT IDENT. |
| MN-54 | -2.699E-02 | 5.062E-02 | 4.178E-02 | 2.582E-02 | NOT IDENT. |
| CO-56 | 6.416E-03 | 5.286E-02 | 4.567E-02 | 2.697E-02 | FAIL ABUN |
| CO-57 | -1.762E-02 | 2.666E-02 | 2.234E-02 | 1.360E-02 | NOT IDENT. |
| CO-58 | -5.040E-02 | 5.191E-02 | 4.117E-02 | 2.649E-02 | NOT IDENT. |
| FE-59 | -7.348E-02 | 1.439E-01 | 1.149E-01 | 7.341E-02 | FAIL ABUN |
| CO-60 | -2.565E-02 | 4.975E-02 | 3.987E-02 | 2.538E-02 | NOT IDENT. |
| ZN-65 | 6.899E-02 | 1.378E-01 | 1.036E-01 | 7.032E-02 | NOT IDENT. |
| GE-68 | 4.584E-01 | 1.619E+00 | 1.383E+00 | 8.259E-01 | NOT IDENT. |
| AS-73 | 2.727E-01 | 2.442E-01 | 2.226E-01 | 1.246E-01 | NOT IDENT. |
| AS-74 | -7.417E-02 | 1.523E-01 | 1.252E-01 | 7.768E-02 | NOT IDENT. |
| SE-75 | -1.975E-02 | 4.784E-02 | 4.071E-02 | 2.441E-02 | NOT IDENT. |
| BR-77 | -1.980E+01 | 5.510E+01 | 0.000E+00 | 2.811E+01 | SHORT HLIF |
| SR-82 | -2.017E-01 | 5.486E-01 | 4.613E-01 | 2.799E-01 | NOT IDENT. |
| RB-83 | -7.752E-03 | 8.579E-02 | 7.342E-02 | 4.377E-02 | NOT IDENT. |
| RB-84 | -1.107E-02 | 1.029E-01 | 8.696E-02 | 5.248E-02 | NOT IDENT. |
| KR-85 | 1.117E+01 | 9.712E+00 | 7.928E+00 | 4.955E+00 | NOT IDENT. |
| SR-85 | 6.044E-02 | 5.253E-02 | 4.288E-02 | 2.680E-02 | NOT IDENT. |
| RB-86 | 1.537E-01 | 1.228E+00 | 1.035E+00 | 6.265E-01 | NOT IDENT. |
| Y-88 | 1.355E-02 | 4.165E-02 | 3.704E-02 | 2.125E-02 | NOT IDENT. |
| ZR-88 | 1.940E-03 | 3.790E-02 | 3.182E-02 | 1.934E-02 | NOT IDENT. |
| Y-91 | 1.098E+01 | 2.524E+01 | 2.227E+01 | 1.288E+01 | NOT IDENT. |
| NB-94 | -9.223E-03 | 4.488E-02 | 3.689E-02 | 2.290E-02 | NOT IDENT. |
| NB-95 | 1.002E-01 | 6.337E-02 | 5.921E-02 | 3.233E-02 | NOT IDENT. |
| NB-95M | 2.574E-01 | 1.545E-01 | 1.291E-01 | 7.884E-02 | NOT IDENT. |
| ZR-95 | 7.167E-02 | 9.492E-02 | 8.312E-02 | 4.843E-02 | NOT IDENT. |
| NB-97 | -1.028E+07 | 2.188E+07 | 0.000E+00 | 1.116E+07 | SHORT HLIF |
| ZR-97 | 8.406E+08 | 4.021E+08 | 0.000E+00 | 2.052E+08 | SHORT HLIF |
| MO-99 | 2.876E+01 | 5.489E+01 | 4.726E+01 | 2.801E+01 | NOT IDENT. |
| TC-99M | -1.169E+22 | 6.076E+22 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -2.305E-02 | 3.528E-02 | 2.953E-02 | 1.800E-02 | NOT IDENT. |
| RH-102 | -1.061E-02 | 3.675E-02 | 3.139E-02 | 1.875E-02 | NOT IDENT. |
| RU-103 | -3.330E-03 | 5.598E-02 | 4.824E-02 | 2.856E-02 | FAIL ABUN |
| RH-106 | -6.373E-02 | 4.267E-01 | 3.570E-01 | 2.177E-01 | FAIL ABUN |
| RU-106 | -6.373E-02 | 4.267E-01 | 3.570E-01 | 2.177E-01 | FAIL ABUN |
| AG-108M | 9.228E-03 | 3.797E-02 | 3.372E-02 | 1.937E-02 | NOT IDENT. |
| AG-110M | -3.427E-02 | 5.295E-02 | 4.262E-02 | 2.702E-02 | NOT IDENT. |
| IN-111 | -5.090E-01 | 4.415E+00 | 3.375E+00 | 2.252E+00 | NOT IDENT. |
| IN-113M | -2.517E-02 | 5.397E-02 | 4.383E-02 | 2.754E-02 | NOT IDENT. |
| SN-113 | -2.517E-02 | 5.397E-02 | 4.383E-02 | 2.754E-02 | NOT IDENT. |
| IN-114M | 1.934E-01 | 2.343E-01 | 1.816E-01 | 1.195E-01 | NOT IDENT. |
| CD-115 | 2.042E+01 | 6.405E+01 | 0.000E+00 | 3.268E+01 | SHORT HLIF |
| SN-117M | -3.621E-02 | 7.768E-02 | 6.427E-02 | 3.963E-02 | NOT IDENT. |
| SB-122 | 1.018E+00 | 9.224E+00 | 7.934E+00 | 4.706E+00 | NOT IDENT. |
| I-123 | -2.495E+09 | 3.995E+09 | 0.000E+00 | 2.038E+09 | SHORT HLIF |
| TE-123M | -1.989E-02 | 3.185E-02 | 2.613E-02 | 1.625E-02 | NOT IDENT. |
| I-124 | -9.185E-01 | 2.301E+00 | 1.624E+00 | 1.174E+00 | NOT IDENT. |
| SB-124 | 8.927E-02 | 1.008E-01 | 9.434E-02 | 5.145E-02 | FAIL ABUN |
| SB-125 | -2.045E-02 | 1.043E-01 | 9.047E-02 | 5.321E-02 | FAIL ABUN |
| TE-125M | -5.662E+00 | 9.293E+00 | 7.881E+00 | 4.741E+00 | NOT IDENT. |
| I-126 | -2.178E-01 | 3.286E-01 | 2.629E-01 | 1.677E-01 | NOT IDENT. |
| SB-126 | -1.535E-02 | 2.864E-01 | 2.042E-01 | 1.461E-01 | FAIL ABUN |
| SB-127 | -2.019E+00 | 4.572E+00 | 3.695E+00 | 2.333E+00 | NOT IDENT. |
| XE-127 | 7.740E-03 | 5.304E-02 | 4.744E-02 | 2.706E-02 | FAIL ABUN |
| I-131 | -1.264E-02 | 2.107E-01 | 1.770E-01 | 1.075E-01 | NOT IDENT. |
| TE-132 | 5.717E-01 | 2.083E+00 | 1.854E+00 | 1.063E+00 | NOT IDENT. |
| BA-133 | -5.206E-02 | 6.324E-02 | 4.330E-02 | 3.227E-02 | NOT IDENT. |
| I-133 | 2.492E+05 | 4.212E+05 | 0.000E+00 | 2.149E+05 | SHORT HLIF |
| CS-134 | 5.288E-02 | 6.277E-02 | 5.686E-02 | 3.203E-02 | NOT IDENT. |
| CS-135 | 1.337E-01 | 1.755E-01 | 1.571E-01 | 8.953E-02 | NOT IDENT. |
| I-135 | -1.002E+21 | 2.760E+21 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | 1.045E-02 | 1.818E-01 | 1.528E-01 | 9.276E-02 | FAIL ABUN |
| BA-137M | 6.391E-02 | 5.337E-02 | 4.779E-02 | 2.723E-02 | NOT IDENT. |
| CS-137 | 6.756E-02 | 5.642E-02 | 5.052E-02 | 2.879E-02 | NOT IDENT. |
| CE-139 | -1.493E-02 | 3.295E-02 | 2.716E-02 | 1.681E-02 | NOT IDENT. |
| BA-140 | 4.255E-01 | 4.417E-01 | 3.833E-01 | 2.254E-01 | NOT IDENT. |
| LA-140 | -1.556E-01 | 1.526E-01 | 1.089E-01 | 7.783E-02 | NOT IDENT. |
| CE-141 | 5.548E-03 | 8.284E-02 | 6.310E-02 | 4.226E-02 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| CE-143 | 1.004E+04 | 3.403E+03 | 0.000E+00 | 1.736E+03 | SHORT HLIF |
| CE-144 | 4.071E-02 | 2.188E-01 | 1.890E-01 | 1.116E-01 | NOT IDENT. |
| PM-144 | 3.995E-02 | 4.393E-02 | 3.899E-02 | 2.241E-02 | NOT IDENT. |
| PR-144 | 2.714E+00 | 2.985E+00 | 2.649E+00 | 1.523E+00 | NOT IDENT. |
| PM-146 | -1.599E-02 | 5.029E-02 | 4.303E-02 | 2.566E-02 | NOT IDENT. |
| ND-147 | 3.197E-01 | 9.096E-01 | 7.988E-01 | 4.641E-01 | FAIL ABUN |
| PM-149 | -1.416E+02 | 4.891E+02 | 0.000E+00 | 2.495E+02 | SHORT HLIF |
| EU-152 | -4.470E-02 | 1.257E-01 | 9.051E-02 | 6.414E-02 | FAIL ABUN |
| GD-153 | -3.412E-02 | 7.917E-02 | 5.961E-02 | 4.039E-02 | NOT IDENT. |
| EU-154 | -1.609E-02 | 1.423E-01 | 1.197E-01 | 7.258E-02 | NOT IDENT. |
| EU-155 | 1.894E-01 | 1.051E-01 | 9.647E-02 | 5.365E-02 | FAIL ABUN |
| TB-160 | 1.448E-01 | 1.909E-01 | 1.718E-01 | 9.741E-02 | FAIL ABUN |
| HO-166M | -3.730E-02 | 8.075E-02 | 6.491E-02 | 4.120E-02 | FAIL ABUN |
| TM-171 | -3.791E+00 | 1.650E+01 | 1.328E+01 | 8.416E+00 | NOT IDENT. |
| LU-176 | -2.292E-02 | 2.655E-02 | 2.161E-02 | 1.355E-02 | FAIL ABUN |
| LU-177 | 4.522E+00 | 3.004E+00 | 1.842E+00 | 1.532E+00 | FAIL ABUN |
| LU-177M | -3.661E-01 | 2.282E-01 | 1.697E-01 | 1.164E-01 | NOT IDENT. |
| HF-181 | -2.314E-02 | 5.540E-02 | 4.681E-02 | 2.827E-02 | NOT IDENT. |
| W-181 | 2.015E-02 | 2.081E-01 | 1.701E-01 | 1.062E-01 | NOT IDENT. |
| TA-182 | 1.118E-01 | 2.566E-01 | 2.260E-01 | 1.309E-01 | NOT IDENT. |
| RE-183 | -4.199E-02 | 1.330E-01 | 1.073E-01 | 6.786E-02 | FAIL ABUN |
| RE-184 | -1.502E-02 | 2.500E-01 | 2.175E-01 | 1.275E-01 | NOT IDENT. |
| OS-185 | -2.030E-02 | 6.137E-02 | 5.049E-02 | 3.131E-02 | NOT IDENT. |
| RE-188 | 1.568E-01 | 1.998E-01 | 1.743E-01 | 1.019E-01 | NOT IDENT. |
| W-188 | 1.798E+00 | 9.310E+00 | 7.136E+00 | 4.750E+00 | FAIL ABUN |
| IR-192 | 1.080E-02 | 4.315E-02 | 3.735E-02 | 2.202E-02 | FAIL ABUN |
| AU-195 | -5.540E-02 | 2.204E-01 | 1.775E-01 | 1.125E-01 | FAIL ABUN |
| TL-200 | -7.442E+01 | 1.386E+04 | 0.000E+00 | 7.074E+03 | SHORT HLIF |
| TL-201 | -8.957E+00 | 2.334E+01 | 1.927E+01 | 1.191E+01 | NOT IDENT. |
| TL-202 | 8.066E-02 | 1.056E-01 | 9.629E-02 | 5.387E-02 | NOT IDENT. |
| HG-203 | -9.507E-03 | 4.899E-02 | 4.198E-02 | 2.499E-02 | NOT IDENT. |
| BI-207 | -2.639E-02 | 6.926E-02 | 5.594E-02 | 3.534E-02 | FAIL ABUN |
| TL-207 | -6.674E-01 | 7.958E-01 | 6.425E-01 | 4.060E-01 | FAIL ABUN |
| PO-209 | -1.256E+01 | 1.004E+01 | 7.653E+00 | 5.121E+00 | NOT IDENT. |
| PB-211 | -6.874E-01 | 1.236E+00 | 9.348E-01 | 6.305E-01 | NOT IDENT. |
| BI-212 | 7.721E-01 | 6.835E-01 | 4.069E-01 | 3.487E-01 | FAIL ABUN |
| PO-215 | -6.674E-01 | 7.958E-01 | 6.425E-01 | 4.060E-01 | FAIL ABUN |
| RN-219 | 3.621E-02 | 5.035E-01 | 4.222E-01 | 2.569E-01 | NOT IDENT. |
| RN-220 | -2.099E+00 | 3.351E+01 | 2.858E+01 | 1.710E+01 | NOT IDENT. |
| RA-223 | -6.674E-01 | 7.958E-01 | 6.425E-01 | 4.060E-01 | FAIL ABUN |
| AC-227 | -2.033E-02 | 4.032E-01 | 3.506E-01 | 2.057E-01 | NOT IDENT. |
| TH-227 | -2.033E-02 | 4.032E-01 | 3.506E-01 | 2.057E-01 | FAIL ABUN |
| TH-229 | 2.885E-02 | 5.148E-01 | 4.606E-01 | 2.626E-01 | FAIL ABUN |
| PA-231 | -6.964E-01 | 1.644E+00 | 1.386E+00 | 8.387E-01 | NOT IDENT. |
| TH-231 | -6.674E-01 | 7.958E-01 | 6.425E-01 | 4.060E-01 | FAIL ABUN |
| U-231 | 1.683E+00 | 2.355E+00 | 1.918E+00 | 1.201E+00 | FAIL ABUN |
| PA-233 | -1.636E-02 | 7.368E-02 | 6.233E-02 | 3.759E-02 | FAIL ABUN |
| PA-234 | 5.487E-02 | 4.228E-01 | 3.611E-01 | 2.157E-01 | FAIL ABUN |
| PA-234M | 4.111E+00 | 6.597E+00 | 5.741E+00 | 3.366E+00 | NOT IDENT. |
| NP-236 | -3.636E-02 | 8.677E-02 | 7.189E-02 | 4.427E-02 | NOT IDENT. |
| NP-239 | -6.451E-02 | 1.889E-01 | 1.614E-01 | 9.636E-02 | FAIL ABUN |
| AM-241 | 5.845E-02 | 6.546E-02 | 5.545E-02 | 3.340E-02 | NOT IDENT. |
| CM-243 | -1.262E-02 | 9.256E-02 | 8.059E-02 | 4.723E-02 | FAIL ABUN |
| AM-246 | 5.680E-02 | 1.789E-01 | 1.533E-01 | 9.125E-02 | NOT IDENT. |
| CM-247 | 2.688E-02 | 4.417E-02 | 3.822E-02 | 2.254E-02 | NOT IDENT. |
| CF-249 | -1.978E-02 | 4.938E-02 | 4.038E-02 | 2.519E-02 | NOT IDENT. |
| CF-251 | 4.796E-02 | 1.420E-01 | 1.207E-01 | 7.246E-02 | NOT IDENT. |

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*                                     GEL Laboratories LLC                      *
*                                     2040 SAVAGE ROAD                        *
*                                     CHARLESTON ,SC 29417                     *
*                                     GAMMA SPECTROSCOPY BACKGROUND REPORT      *
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| ENERGY | MDA COUNTS |
|--------|------------|
|--------|------------|

| | |
|-------|----------|
| 46.50 | 310.3047 |
| 46.50 | 310.3047 |
| 46.50 | 310.3047 |
| 48.70 | 273.1171 |
| 49.72 | 323.3372 |
| 51.35 | 360.5223 |
| 52.39 | 309.4539 |
| 52.97 | 294.8656 |
| 53.15 | 304.4278 |
| 53.44 | 304.7729 |
| 54.07 | 308.9331 |
| 56.28 | 399.3270 |
| 56.28 | 399.3318 |
| 57.37 | 0.0000 |
| 57.53 | 368.3407 |
| 57.53 | 368.3439 |
| 57.60 | 371.8955 |
| 57.98 | 375.8815 |
| 57.98 | 375.8815 |
| 59.32 | 366.8455 |
| 59.32 | 366.8455 |
| 59.40 | 366.9516 |
| 59.54 | 367.1371 |
| 59.72 | 390.9091 |
| 60.01 | 391.3174 |
| 61.10 | 424.3737 |
| 61.14 | 424.4341 |
| 61.30 | 422.0448 |
| 63.00 | 424.1245 |
| 63.29 | 424.5502 |
| 63.29 | 424.5502 |
| 63.58 | 424.9759 |
| 64.28 | 442.3825 |
| 65.12 | 458.3027 |
| 65.20 | 458.4268 |
| 65.20 | 458.4268 |
| 66.05 | 467.7597 |
| 66.72 | 464.7855 |
| 66.83 | 464.9602 |
| 66.91 | 465.0820 |
| 67.20 | 457.4799 |
| 67.20 | 457.4799 |
| 67.75 | 437.6119 |
| 67.85 | 437.7585 |
| 68.90 | 442.5017 |
| 68.90 | 442.5017 |
| 69.30 | 464.6882 |
| 69.67 | 455.7813 |
| 70.82 | 468.3211 |
| 70.82 | 468.3211 |
| 70.83 | 468.3369 |
| 72.80 | 470.8006 |
| 72.87 | 470.9031 |
| 72.87 | 470.9031 |
| 74.67 | 473.5327 |
| 74.81 | 473.7352 |
| 74.81 | 473.7352 |
| 74.81 | 473.7352 |
| 74.81 | 473.7352 |
| 74.81 | 473.7352 |
| 74.81 | 473.7352 |
| 74.97 | 473.9692 |
| 75.28 | 474.4163 |
| 75.70 | 475.0237 |
| 77.11 | 477.0485 |
| 77.11 | 477.0485 |

| | |
|--------|----------|
| 77.11 | 477.0485 |
| 77.11 | 477.0485 |
| 77.11 | 477.0485 |
| 77.11 | 477.0485 |
| 77.11 | 477.0485 |
| 78.38 | 478.8550 |
| 79.62 | 447.6053 |
| 79.80 | 447.8405 |
| 79.80 | 447.8405 |
| 80.11 | 428.6949 |
| 80.18 | 428.7839 |
| 80.30 | 428.9315 |
| 80.30 | 428.9315 |
| 80.57 | 471.2169 |
| 81.00 | 520.8034 |
| 81.07 | 520.9099 |
| 81.07 | 520.9099 |
| 81.07 | 520.9099 |
| 81.07 | 520.9099 |
| 82.60 | 486.6338 |
| 83.37 | 541.2539 |
| 83.78 | 519.3081 |
| 83.78 | 519.3081 |
| 83.78 | 519.3081 |
| 83.78 | 519.3081 |
| 84.21 | 519.9370 |
| 84.90 | 481.3052 |
| 85.43 | 524.5468 |
| 86.29 | 430.1117 |
| 86.50 | 430.3611 |
| 86.54 | 430.4073 |
| 86.59 | 430.4673 |
| 86.72 | 430.6197 |
| 86.79 | 430.7005 |
| 86.94 | 430.8806 |
| 87.30 | 431.3055 |
| 87.30 | 431.3055 |
| 87.30 | 431.3055 |
| 87.30 | 431.3055 |
| 87.30 | 431.3055 |
| 87.30 | 431.3055 |
| 87.57 | 431.6242 |
| 87.88 | 0.0000 |
| 88.03 | 432.1646 |
| 88.36 | 432.5525 |
| 88.47 | 432.6818 |
| 89.95 | 434.4067 |
| 91.11 | 435.7507 |
| 92.29 | 437.1085 |
| 92.38 | 437.2124 |
| 92.38 | 437.2124 |
| 93.35 | 438.3208 |
| 94.00 | 439.0597 |
| 94.67 | 439.8148 |
| 94.67 | 439.8217 |
| 94.90 | 440.0804 |
| 94.90 | 440.0804 |
| 94.90 | 440.0804 |
| 94.90 | 440.0804 |
| 95.87 | 320.6778 |
| 95.87 | 320.6778 |
| 96.73 | 334.5302 |
| 97.43 | 311.7046 |
| 98.44 | 312.4960 |
| 98.44 | 312.4960 |
| 98.88 | 310.1968 |
| 99.55 | 294.2368 |
| 99.55 | 294.2368 |
| 99.86 | 288.5733 |
| 100.00 | 303.4018 |
| 100.10 | 303.4788 |
| 103.18 | 357.2231 |
| 103.76 | 339.8859 |
| 105.00 | 286.2349 |
| 105.31 | 286.4458 |
| 108.00 | 347.3212 |
| 109.28 | 320.2461 |

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|--------|----------|
| 111.00 | 311.4361 |
| 111.00 | 311.4361 |
| 111.76 | 317.0233 |
| 112.95 | 301.6817 |
| 115.19 | 336.7746 |
| 116.30 | 301.9047 |
| 117.00 | 309.5206 |
| 117.00 | 309.5206 |
| 117.66 | 303.8310 |
| 121.11 | 288.5862 |
| 121.62 | 301.2824 |
| 121.78 | 301.3849 |
| 122.06 | 325.3180 |
| 122.32 | 332.7307 |
| 122.32 | 332.7307 |
| 122.32 | 332.7307 |
| 122.32 | 332.7307 |
| 123.07 | 322.9100 |
| 127.23 | 367.4858 |
| 129.76 | 324.2671 |
| 131.20 | 337.8428 |
| 133.02 | 323.2324 |
| 133.54 | 306.6470 |
| 135.34 | 334.2709 |
| 136.00 | 304.9521 |
| 136.25 | 305.1010 |
| 136.48 | 315.8737 |
| 140.51 | 331.2043 |
| 140.51 | 0.0000 |
| 142.18 | 320.9671 |
| 142.65 | 329.3242 |
| 143.76 | 317.0734 |
| 144.24 | 310.8809 |
| 144.24 | 310.8809 |
| 144.24 | 310.8809 |
| 144.24 | 310.8809 |
| 145.22 | 314.6935 |
| 145.44 | 303.4641 |
| 147.16 | 280.0118 |
| 152.43 | 316.6788 |
| 152.70 | 308.0612 |
| 153.22 | 300.6658 |
| 154.21 | 307.7910 |
| 154.21 | 307.7910 |
| 154.21 | 307.7910 |
| 154.21 | 307.7910 |
| 155.03 | 297.2324 |
| 156.02 | 315.3960 |
| 158.56 | 305.7271 |
| 159.00 | 0.0000 |
| 159.00 | 305.9601 |
| 160.31 | 302.2093 |
| 161.27 | 297.1456 |
| 162.32 | 290.9912 |
| 162.64 | 279.9953 |
| 163.35 | 281.4492 |
| 163.89 | 263.8219 |
| 165.85 | 290.4924 |
| 167.43 | 268.7704 |
| 171.28 | 270.4869 |
| 171.86 | 252.6195 |
| 172.10 | 256.1168 |
| 176.55 | 273.9453 |
| 176.60 | 279.6749 |
| 181.06 | 270.7373 |
| 184.41 | 276.1979 |
| 185.71 | 276.7522 |
| 186.00 | 276.8762 |
| 190.27 | 239.6204 |
| 192.34 | 272.8250 |
| 193.63 | 259.2886 |
| 197.04 | 244.6976 |
| 198.01 | 266.2754 |
| 198.60 | 278.9006 |
| 200.40 | 0.0000 |
| 201.83 | 272.2044 |
| 202.84 | 261.0179 |
| 205.31 | 271.7751 |

| | |
|--------|----------|
| 208.36 | 270.0756 |
| 208.81 | 266.8314 |
| 209.75 | 267.1826 |
| 209.75 | 267.1826 |
| 210.97 | 268.1788 |
| 215.65 | 248.5090 |
| 216.55 | 232.4688 |
| 218.09 | 268.4466 |
| 222.10 | 219.5782 |
| 223.80 | 213.6556 |
| 226.40 | 242.9158 |
| 227.00 | 229.2942 |
| 227.08 | 229.3189 |
| 227.20 | 224.7476 |
| 228.16 | 218.5748 |
| 228.18 | 211.2020 |
| 228.18 | 211.2020 |
| 231.56 | 0.0000 |
| 235.69 | 223.5022 |
| 236.00 | 223.5901 |
| 236.00 | 223.5901 |
| 238.63 | 221.5311 |
| 238.63 | 221.5311 |
| 238.63 | 221.5311 |
| 238.63 | 221.5311 |
| 239.00 | 0.0000 |
| 240.98 | 222.1866 |
| 241.98 | 222.4642 |
| 241.98 | 222.4642 |
| 241.98 | 222.4642 |
| 244.69 | 212.4776 |
| 245.39 | 218.6930 |
| 247.94 | 196.6853 |
| 248.90 | 195.9687 |
| 249.79 | 0.0000 |
| 252.40 | 177.7864 |
| 252.85 | 199.7621 |
| 252.85 | 199.7621 |
| 254.15 | 0.0000 |
| 256.20 | 200.5640 |
| 256.20 | 200.5640 |
| 260.50 | 199.6687 |
| 260.90 | 0.0000 |
| 262.80 | 182.8796 |
| 264.65 | 197.7429 |
| 268.24 | 209.2170 |
| 268.79 | 188.0293 |
| 269.46 | 179.4418 |
| 269.46 | 179.4418 |
| 269.46 | 179.4418 |
| 269.46 | 179.4418 |
| 271.23 | 218.6829 |
| 273.65 | 294.3274 |
| 276.40 | 177.9232 |
| 277.35 | 213.3430 |
| 277.60 | 211.4451 |
| 277.60 | 211.4451 |
| 278.00 | 199.7884 |
| 278.60 | 204.8223 |
| 279.20 | 214.7661 |
| 279.53 | 216.8050 |
| 280.46 | 236.6717 |
| 281.68 | 0.0000 |
| 283.67 | 188.2342 |
| 284.30 | 164.6939 |
| 285.00 | 177.6517 |
| 285.90 | 0.0000 |
| 286.10 | 186.7563 |
| 286.10 | 186.7563 |
| 287.40 | 180.0949 |
| 288.45 | 0.0000 |
| 290.67 | 174.7727 |
| 290.80 | 174.7982 |
| 291.72 | 176.5621 |
| 293.26 | 0.0000 |
| 293.70 | 191.2822 |
| 295.21 | 201.5685 |
| 295.21 | 201.5685 |

| | |
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| 295.21 | 201.5685 |
| 295.96 | 274.8305 |
| 296.50 | 276.5846 |
| 297.23 | 0.0000 |
| 298.57 | 179.4543 |
| 299.80 | 179.6840 |
| 299.80 | 179.6840 |
| 300.09 | 184.5531 |
| 300.09 | 184.5531 |
| 300.09 | 184.5531 |
| 300.09 | 184.5531 |
| 300.12 | 184.5587 |
| 301.29 | 181.3429 |
| 302.84 | 225.3193 |
| 303.76 | 0.0000 |
| 303.91 | 196.3657 |
| 304.40 | 170.2713 |
| 304.40 | 170.2713 |
| 304.84 | 162.2848 |
| 306.84 | 175.7523 |
| 308.46 | 155.8094 |
| 311.98 | 183.7839 |
| 316.51 | 184.6263 |
| 318.01 | 171.6222 |
| 319.02 | 190.2033 |
| 319.41 | 199.4840 |
| 320.08 | 196.5439 |
| 323.87 | 210.6430 |
| 323.87 | 210.6430 |
| 323.87 | 210.6430 |
| 323.87 | 210.6430 |
| 325.23 | 220.1846 |
| 328.77 | 176.5499 |
| 333.44 | 175.8963 |
| 334.20 | 176.0257 |
| 334.20 | 176.0257 |
| 334.30 | 176.0439 |
| 338.28 | 183.3799 |
| 338.28 | 183.3799 |
| 338.28 | 183.3799 |
| 338.28 | 183.3799 |
| 338.32 | 183.3879 |
| 338.32 | 183.3879 |
| 338.32 | 183.3879 |
| 340.50 | 153.6957 |
| 340.57 | 153.7069 |
| 344.27 | 162.6242 |
| 345.85 | 170.0016 |
| 350.59 | 0.0000 |
| 351.07 | 182.4240 |
| 351.92 | 182.5665 |
| 351.92 | 182.5665 |
| 351.92 | 182.5665 |
| 355.39 | 0.0000 |
| 356.01 | 174.5669 |
| 364.48 | 150.5010 |
| 366.43 | 134.7248 |
| 367.43 | 136.9844 |
| 367.94 | 0.0000 |
| 369.80 | 155.5029 |
| 374.96 | 146.5129 |
| 383.85 | 157.4145 |
| 387.95 | 165.5913 |
| 388.63 | 165.6864 |
| 391.69 | 148.6296 |
| 391.69 | 148.6296 |
| 392.90 | 141.1233 |
| 398.62 | 151.6913 |
| 400.65 | 160.7524 |
| 401.10 | 156.4078 |
| 401.81 | 148.7851 |
| 402.60 | 133.4423 |
| 404.84 | 166.8336 |
| 410.95 | 131.0233 |
| 411.60 | 139.9793 |
| 413.65 | 181.3828 |
| 414.70 | 157.0350 |
| 415.30 | 148.1963 |

| | |
|--------|----------|
| 415.76 | 124.8430 |
| 417.63 | 0.0000 |
| 418.52 | 136.2894 |
| 423.70 | 123.3891 |
| 427.08 | 134.9652 |
| 427.89 | 129.6475 |
| 432.53 | 114.7558 |
| 433.93 | 125.7346 |
| 439.47 | 0.0000 |
| 439.56 | 111.7450 |
| 439.89 | 111.7736 |
| 443.98 | 112.1219 |
| 444.90 | 121.3219 |
| 445.03 | 120.4210 |
| 445.03 | 120.4210 |
| 445.03 | 120.4210 |
| 445.03 | 120.4210 |
| 453.90 | 126.7353 |
| 463.38 | 138.7225 |
| 468.07 | 143.8386 |
| 473.00 | 134.1070 |
| 475.06 | 139.9017 |
| 475.35 | 143.6606 |
| 476.78 | 146.6106 |
| 477.59 | 141.0888 |
| 477.96 | 128.0412 |
| 482.03 | 126.5378 |
| 484.57 | 0.0000 |
| 487.03 | 103.4688 |
| 490.36 | 0.0000 |
| 492.35 | 0.0000 |
| 497.08 | 127.8743 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 130.0351 |
| 511.00 | 130.0492 |
| 511.85 | 130.1247 |
| 511.85 | 130.1247 |
| 513.99 | 113.3838 |
| 513.99 | 113.3838 |
| 520.41 | 108.7377 |
| 520.65 | 0.0000 |
| 527.90 | 0.0000 |
| 528.96 | 0.0000 |
| 529.64 | 94.8777 |
| 529.87 | 0.0000 |
| 531.02 | 95.9328 |
| 537.32 | 95.3538 |
| 543.00 | 123.0438 |
| 546.56 | 0.0000 |
| 549.76 | 117.6914 |
| 552.65 | 103.1671 |
| 555.20 | 105.3020 |
| 563.23 | 109.7887 |
| 563.90 | 103.8951 |
| 568.70 | 94.2810 |
| 569.32 | 88.3590 |
| 569.50 | 88.3699 |
| 569.67 | 88.3786 |
| 573.80 | 110.7530 |
| 574.00 | 110.7665 |
| 574.64 | 0.0000 |
| 578.91 | 0.0000 |
| 579.30 | 0.0000 |
| 583.14 | 91.1089 |
| 585.48 | 0.0000 |
| 591.81 | 108.4672 |
| 592.07 | 108.4830 |
| 593.00 | 95.6749 |
| 595.88 | 133.1666 |
| 600.56 | 127.4643 |
| 602.52 | 0.0000 |
| 602.71 | 124.9232 |
| 602.71 | 124.9232 |
| 603.60 | 143.5689 |
| 604.41 | 138.5652 |
| 604.70 | 138.5885 |
| 609.31 | 111.8477 |

| | |
|--------|----------|
| 609.31 | 111.8477 |
| 609.31 | 111.8477 |
| 609.31 | 111.8477 |
| 610.33 | 100.0450 |
| 612.46 | 118.8428 |
| 614.37 | 103.6772 |
| 618.01 | 95.0366 |
| 621.84 | 111.6319 |
| 621.84 | 111.6319 |
| 631.29 | 97.8157 |
| 633.02 | 109.2478 |
| 633.10 | 109.2530 |
| 634.78 | 88.7232 |
| 635.90 | 80.5213 |
| 636.97 | 96.0629 |
| 645.85 | 117.2982 |
| 646.12 | 117.3148 |
| 656.30 | 137.8072 |
| 657.75 | 145.2306 |
| 657.90 | 0.0000 |
| 661.65 | 117.2691 |
| 661.65 | 117.2691 |
| 664.57 | 0.0000 |
| 666.33 | 127.0116 |
| 666.33 | 127.0116 |
| 675.00 | 88.5835 |
| 677.61 | 104.5446 |
| 685.20 | 107.0856 |
| 692.80 | 110.7057 |
| 695.00 | 103.3704 |
| 696.49 | 83.1873 |
| 696.49 | 83.1873 |
| 697.00 | 85.3438 |
| 697.49 | 94.9688 |
| 698.33 | 107.8205 |
| 698.50 | 106.7603 |
| 699.00 | 119.6043 |
| 702.63 | 110.1994 |
| 706.10 | 111.4674 |
| 706.58 | 0.0000 |
| 706.67 | 110.4258 |
| 709.31 | 88.0299 |
| 711.68 | 105.3356 |
| 713.82 | 100.0681 |
| 717.42 | 84.0823 |
| 720.50 | 93.5687 |
| 721.93 | 0.0000 |
| 722.20 | 93.6491 |
| 722.78 | 100.8825 |
| 722.78 | 100.8825 |
| 722.89 | 100.8870 |
| 722.95 | 100.8916 |
| 723.30 | 100.9075 |
| 724.18 | 99.1504 |
| 727.18 | 98.5759 |
| 733.00 | 76.0481 |
| 735.90 | 97.9167 |
| 739.58 | 80.6539 |
| 742.81 | 87.3320 |
| 744.21 | 87.3926 |
| 747.13 | 88.6096 |
| 751.79 | 84.4255 |
| 752.31 | 78.9627 |
| 753.82 | 83.4107 |
| 755.35 | 0.0000 |
| 756.15 | 72.5178 |
| 756.87 | 89.0288 |
| 763.93 | 119.4761 |
| 765.79 | 100.2648 |
| 766.42 | 106.7369 |
| 766.84 | 106.7581 |
| 776.49 | 90.6049 |
| 778.00 | 79.5664 |
| 778.57 | 78.6620 |
| 778.89 | 83.3020 |
| 783.80 | 94.6268 |
| 785.46 | 89.1289 |
| 792.07 | 88.4730 |

| | |
|---------|----------|
| 795.84 | 90.4935 |
| 796.30 | 89.5781 |
| 798.80 | 122.3781 |
| 801.93 | 87.9395 |
| 805.60 | 64.6594 |
| 810.29 | 92.0325 |
| 810.76 | 91.1131 |
| 815.85 | 89.4394 |
| 817.79 | 0.0000 |
| 818.51 | 88.6050 |
| 819.60 | 77.3304 |
| 826.30 | 87.0230 |
| 828.27 | 0.0000 |
| 831.60 | 80.5902 |
| 831.96 | 80.6040 |
| 834.83 | 105.3926 |
| 836.80 | 0.0000 |
| 846.75 | 78.2664 |
| 848.13 | 82.1350 |
| 856.28 | 0.0000 |
| 856.80 | 98.7419 |
| 860.37 | 84.4909 |
| 867.32 | 79.9284 |
| 867.82 | 86.6895 |
| 871.10 | 79.0938 |
| 873.19 | 88.8180 |
| 874.81 | 85.9815 |
| 875.33 | 0.0000 |
| 876.40 | 80.2391 |
| 879.36 | 66.7890 |
| 880.27 | 75.5292 |
| 880.51 | 75.5371 |
| 881.50 | 79.4425 |
| 883.24 | 79.5009 |
| 884.67 | 88.2803 |
| 889.25 | 79.7028 |
| 896.60 | 96.5226 |
| 898.02 | 75.1170 |
| 899.00 | 78.0745 |
| 903.28 | 75.4196 |
| 911.07 | 65.7146 |
| 911.07 | 65.7146 |
| 911.07 | 65.7146 |
| 919.63 | 59.0540 |
| 920.93 | 73.5289 |
| 925.00 | 67.0745 |
| 925.24 | 66.0949 |
| 926.50 | 54.2839 |
| 935.52 | 67.3595 |
| 937.48 | 91.2045 |
| 944.10 | 64.6086 |
| 946.00 | 83.5557 |
| 949.00 | 76.6851 |
| 962.29 | 78.9454 |
| 964.01 | 73.8463 |
| 966.15 | 74.1942 |
| 968.20 | 70.5259 |
| 969.11 | 53.3440 |
| 969.11 | 53.3440 |
| 969.11 | 53.3440 |
| 977.42 | 73.5124 |
| 980.50 | 62.5083 |
| 983.50 | 69.6472 |
| 989.30 | 68.7900 |
| 996.32 | 82.1602 |
| 1001.03 | 61.9829 |
| 1001.68 | 59.9663 |
| 1004.76 | 89.5451 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 69.9700 |
| 1036.00 | 61.7651 |
| 1037.82 | 61.8066 |
| 1038.57 | 58.7325 |
| 1038.76 | 0.0000 |
| 1045.16 | 63.0055 |
| 1046.59 | 68.2048 |
| 1048.07 | 67.2085 |

| | |
|---------|---------|
| 1050.47 | 66.2318 |
| 1050.47 | 66.2318 |
| 1062.04 | 71.7037 |
| 1063.62 | 75.9021 |
| 1076.63 | 65.8096 |
| 1077.35 | 63.7353 |
| 1078.86 | 60.6338 |
| 1085.78 | 72.3102 |
| 1099.22 | 94.7607 |
| 1112.02 | 72.5195 |
| 1112.84 | 72.5391 |
| 1115.52 | 72.6060 |
| 1120.29 | 66.8170 |
| 1120.29 | 66.8170 |
| 1120.29 | 66.8170 |
| 1120.29 | 66.8170 |
| 1120.51 | 66.8221 |
| 1121.28 | 70.9323 |
| 1124.00 | 0.0000 |
| 1129.67 | 74.0520 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 73.2821 |
| 1173.22 | 57.2161 |
| 1175.09 | 76.6942 |
| 1177.93 | 82.1725 |
| 1189.05 | 69.7579 |
| 1204.90 | 75.7256 |
| 1205.75 | 0.0000 |
| 1213.00 | 85.2935 |
| 1221.42 | 78.9434 |
| 1230.97 | 89.0815 |
| 1235.34 | 74.3362 |
| 1236.41 | 0.0000 |
| 1238.25 | 67.7911 |
| 1246.25 | 61.8812 |
| 1260.41 | 0.0000 |
| 1271.85 | 61.0982 |
| 1274.45 | 53.5039 |
| 1274.54 | 53.5059 |
| 1291.56 | 50.9020 |
| 1298.22 | 0.0000 |
| 1312.09 | 47.3491 |
| 1325.50 | 44.6267 |
| 1325.50 | 44.6267 |
| 1332.49 | 51.5249 |
| 1333.61 | 47.6516 |
| 1360.21 | 48.0208 |
| 1362.66 | 0.0000 |
| 1365.15 | 45.1449 |
| 1368.21 | 44.2011 |
| 1368.53 | 0.0000 |
| 1376.25 | 48.2412 |
| 1384.27 | 50.3259 |
| 1394.10 | 35.6221 |
| 1395.20 | 49.4908 |
| 1407.95 | 44.7018 |
| 1434.06 | 27.0151 |
| 1436.60 | 32.0402 |
| 1457.56 | 0.0000 |
| 1460.81 | 34.2680 |
| 1489.15 | 38.5911 |
| 1509.49 | 33.6940 |
| 1596.49 | 40.7152 |
| 1620.62 | 29.4063 |
| 1678.03 | 0.0000 |
| 1691.02 | 13.8869 |
| 1691.02 | 13.8869 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 20.2839 |
| 1764.49 | 20.2839 |
| 1764.49 | 20.2839 |
| 1764.49 | 20.2839 |
| 1770.23 | 18.6174 |
| 1771.40 | 16.9298 |
| 1791.20 | 0.0000 |
| 1808.65 | 15.3647 |

1836.01

13.5258

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202023714

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 4.5529E+00 | ug/g |
| Total Uranium Counting Unc. | 3.3970E+00 | ug/g |
| Total Uranium Tpu | 1.7332E-06 | ug/g |
| Total Uranium Mda | 1.5669E+00 | ug/g |

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 944964                      SAMPLE ID : G1202023714
*  ANALYST       : MXR1                        DETECTOR  : GAM13
*  SAMPLE DATE   : 15-JAN-2010 12:00:00.00    COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 4-FEB-2010 17:09:15.25    SAMPLE ALQT: 127.670 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.028E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.269E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.828E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.373E+00

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VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 18:10:37.42

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202023715.CNF;1
Sample date        : 27-JAN-2010 00:00:00 Acquisition date : 4-FEB-2010 17:10:09.
Sample ID          : G1202023715      Sample quantity   : 1.51730E+02 GRAM
Detector name      : GAM06             Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00     Elapsed real time: 0 01:00:01.42  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 944964             Detector SN#      :
Matrix Spike ID    :                    LCS ID           : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 0 | 59.28 | 2325 | 895 | 1.06 | 118.56 | 113 | 11 | 6.46E-01 | 3.3 | |
| 2 | 1 | 74.54 | 195 | 392 | 1.38 | 149.08 | 143 | 16 | 5.40E-02 | 19.6 | 1.91E+00 |
| 3 | 1 | 76.87 | 295 | 365 | 1.19 | 153.75 | 143 | 16 | 8.19E-02 | 12.4 | |
| 4 | 0 | 87.85 | 1219 | 715 | 1.06 | 175.70 | 170 | 11 | 3.39E-01 | 5.1 | |
| 5 | 0 | 92.59* | 88 | 309 | 1.44 | 185.19 | 182 | 9 | 2.45E-02 | 38.5 | |
| 6 | 0 | 121.76 | 249 | 309 | 1.07 | 243.51 | 239 | 9 | 6.91E-02 | 14.2 | |
| 7 | 0 | 187.95 | 100 | 554 | 3.09 | 375.90 | 364 | 17 | 2.79E-02 | 54.9 | |
| 8 | 0 | 238.31* | 369 | 421 | 1.02 | 476.62 | 473 | 9 | 1.03E-01 | 11.3 | |
| 9 | 0 | 294.99* | 185 | 203 | 1.15 | 589.98 | 586 | 11 | 5.14E-02 | 16.6 | |
| 10 | 0 | 338.29* | 99 | 179 | 1.50 | 676.57 | 671 | 10 | 2.76E-02 | 27.4 | |
| 11 | 0 | 351.67* | 273 | 223 | 1.38 | 703.34 | 697 | 13 | 7.57E-02 | 12.9 | |
| 12 | 0 | 511.17* | 76 | 140 | 1.66 | 1022.34 | 1015 | 15 | 2.10E-02 | 38.5 | |
| 13 | 0 | 583.01* | 215 | 81 | 1.47 | 1166.01 | 1159 | 13 | 5.97E-02 | 11.1 | |
| 14 | 0 | 609.29* | 187 | 101 | 1.43 | 1218.57 | 1213 | 14 | 5.21E-02 | 13.7 | |
| 15 | 0 | 661.44 | 1928 | 108 | 1.49 | 1322.88 | 1316 | 13 | 5.36E-01 | 2.5 | |
| 16 | 0 | 910.74* | 129 | 96 | 1.52 | 1821.47 | 1815 | 14 | 3.59E-02 | 18.4 | |
| 17 | 0 | 968.95* | 68 | 78 | 1.76 | 1937.89 | 1932 | 11 | 1.90E-02 | 28.5 | |
| 18 | 0 | 1173.05 | 1536 | 52 | 1.92 | 2346.11 | 2338 | 16 | 4.27E-01 | 2.8 | |
| 19 | 0 | 1332.37 | 1427 | 18 | 2.19 | 2664.74 | 2656 | 19 | 3.96E-01 | 2.7 | |
| 20 | 0 | 1460.77* | 22 | 7 | 3.10 | 2921.55 | 2914 | 13 | 6.09E-03 | 33.7 | |

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

VMS Nuclide Identification Report V3.1 Generated 4-FEB-2010 18:10:40

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202023715.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 27-JAN-2010 00:00:00 Acquisition date : 4-FEB-2010 17:10:09
Sample ID         : G1202023715 Sample quantity : 151.73 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA6 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.42 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 1.056E+00 | 7.150E-01 | 8.597E-01 | 5.687E-02 | 1.228 |
| CO-57 | + | 122.06 | * | 2.434E-01 | 7.082E-02 | 7.780E-02 | 4.752E-03 | 3.128 |
| | | 136.48 | | 1.118E-01 | 3.934E-01 | 6.523E-01 | 4.383E-02 | 0.171 |
| CO-60 | + | 1173.22 | | 6.562E+00 | 5.310E-01 | 1.456E-01 | 8.617E-03 | 45.059 |
| | + | 1332.49 | * | 6.818E+00 | 5.689E-01 | 1.067E-01 | 6.701E-03 | 63.910 |
| CD-109 | + | 88.03 | * | 3.159E+01 | 4.505E+00 | 2.794E+00 | 2.759E-01 | 11.305 |
| SN-126 | | 64.28 | | 5.390E-01 | 1.131E+00 | 1.710E+00 | 2.631E-01 | 0.315 |
| | + | 86.94 | | 1.303E+01 | 5.590E+00 | 1.168E+00 | 4.859E-01 | 11.163 |
| | + | 87.57 | * | 3.135E+00 | 4.471E-01 | 2.788E-01 | 2.743E-02 | 11.246 |
| BA-137M | + | 661.65 | * | 5.470E+00 | 3.870E-01 | 1.267E-01 | 6.255E-03 | 43.187 |
| CS-137 | + | 661.65 | * | 5.782E+00 | 4.103E-01 | 1.339E-01 | 6.651E-03 | 43.187 |
| TL-208 | | 277.35 | | 7.383E-01 | 8.169E-01 | 1.356E+00 | 1.445E-01 | 0.544 |
| | + | 510.84 | | 7.212E-01 | 5.594E-01 | 4.886E-01 | 4.903E-02 | 1.476 |
| | + | 583.14 | * | 5.856E-01 | 1.350E-01 | 1.174E-01 | 7.418E-03 | 4.989 |
| | | 860.37 | | 5.346E-01 | 7.842E-01 | 1.363E+00 | 1.042E-01 | 0.392 |
| BI-211 | | 72.87 | | 1.032E+01 | 6.817E+00 | 1.057E+01 | 9.489E-01 | 0.977 |
| | + | 351.07 | * | 3.214E+00 | 8.548E-01 | 7.230E-01 | 4.667E-02 | 4.446 |
| PB-212 | + | 74.81 | | 2.199E+00 | 9.069E-01 | 1.062E+00 | 1.380E-01 | 2.071 |
| | + | 77.11 | | 1.873E+00 | 4.965E-01 | 5.988E-01 | 5.467E-02 | 3.127 |
| | + | 87.30 | | 1.450E+01 | 2.525E+00 | 1.293E+00 | 1.812E-01 | 11.211 |
| | + | 238.63 | * | 9.371E-01 | 2.226E-01 | 2.177E-01 | 1.605E-02 | 4.305 |
| | | 300.09 | | 9.019E-01 | 1.890E+00 | 2.849E+00 | 2.385E-01 | 0.317 |
| PO-212 | + | 74.81 | | 2.199E+00 | 9.069E-01 | 1.062E+00 | 1.380E-01 | 2.071 |
| | + | 77.11 | | 1.873E+00 | 4.965E-01 | 5.988E-01 | 5.467E-02 | 3.127 |
| | + | 87.30 | | 1.450E+01 | 2.525E+00 | 1.293E+00 | 1.812E-01 | 11.211 |
| | | 115.19 | | 1.216E+00 | 6.794E+00 | 1.127E+01 | 7.439E-01 | 0.108 |
| | + | 238.63 | * | 9.371E-01 | 2.226E-01 | 2.177E-01 | 1.605E-02 | 4.305 |
| | | 300.09 | | 9.019E-01 | 1.890E+00 | 2.849E+00 | 2.385E-01 | 0.317 |
| PB-214 | + | 74.81 | | 3.789E+00 | 1.548E+00 | 1.829E+00 | 2.138E-01 | 2.071 |
| | + | 77.11 | | 3.210E+00 | 8.855E-01 | 1.026E+00 | 1.221E-01 | 3.127 |
| | + | 87.30 | | 2.484E+01 | 4.027E+00 | 2.216E+00 | 2.766E-01 | 11.211 |
| | | 241.98 | | 8.720E-01 | 9.362E-01 | 1.375E+00 | 1.116E-01 | 0.634 |
| | + | 295.21 | | 1.281E+00 | 4.396E-01 | 4.653E-01 | 4.023E-02 | 2.754 |
| | + | 351.92 | * | 1.118E+00 | 3.030E-01 | 2.520E-01 | 2.091E-02 | 4.436 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 74.81 | | 3.789E+00 | 1.548E+00 | 1.829E+00 | 2.138E-01 | 2.071 |
| | + | 77.11 | | 3.210E+00 | 8.855E-01 | 1.026E+00 | 1.221E-01 | 3.127 |
| | + | 87.30 | | 2.484E+01 | 4.027E+00 | 2.216E+00 | 2.766E-01 | 11.211 |
| | | 241.98 | | 8.720E-01 | 9.362E-01 | 1.375E+00 | 1.116E-01 | 0.634 |
| | + | 295.21 | | 1.281E+00 | 4.396E-01 | 4.653E-01 | 4.023E-02 | 2.754 |
| | + | 351.92 | * | 1.118E+00 | 3.030E-01 | 2.520E-01 | 2.091E-02 | 4.436 |
| PO-216 | + | 74.81 | | 2.199E+00 | 9.069E-01 | 1.062E+00 | 1.380E-01 | 2.071 |
| | + | 77.11 | | 1.873E+00 | 4.965E-01 | 5.988E-01 | 5.467E-02 | 3.127 |
| | + | 87.30 | | 1.450E+01 | 2.525E+00 | 1.293E+00 | 1.812E-01 | 11.211 |
| | + | 238.63 | * | 9.371E-01 | 2.226E-01 | 2.177E-01 | 1.605E-02 | 4.305 |
| | | 300.09 | | 9.019E-01 | 1.890E+00 | 2.849E+00 | 2.385E-01 | 0.317 |
| PO-218 | + | 74.81 | | 3.789E+00 | 1.548E+00 | 1.829E+00 | 2.138E-01 | 2.071 |
| | + | 77.11 | | 3.210E+00 | 8.855E-01 | 1.026E+00 | 1.221E-01 | 3.127 |
| | + | 87.30 | | 2.484E+01 | 4.027E+00 | 2.216E+00 | 2.766E-01 | 11.211 |
| | | 241.98 | | 8.720E-01 | 9.362E-01 | 1.375E+00 | 1.116E-01 | 0.634 |
| | + | 295.21 | | 1.281E+00 | 4.396E-01 | 4.653E-01 | 4.023E-02 | 2.754 |
| | + | 351.92 | * | 1.118E+00 | 3.030E-01 | 2.520E-01 | 2.091E-02 | 4.436 |
| AC-228 | + | 338.32 | | 1.289E+00 | 8.803E-01 | 7.744E-01 | 3.158E-01 | 1.664 |
| | + | 911.07 | * | 1.577E+00 | 6.018E-01 | 6.153E-01 | 6.287E-02 | 2.563 |
| | + | 969.11 | | 1.474E+00 | 9.038E-01 | 1.120E+00 | 2.555E-01 | 1.316 |
| RA-228 | + | 338.32 | | 1.289E+00 | 8.803E-01 | 7.744E-01 | 3.158E-01 | 1.664 |
| | + | 911.07 | * | 1.577E+00 | 6.018E-01 | 6.153E-01 | 6.287E-02 | 2.563 |
| | + | 969.11 | | 1.474E+00 | 9.038E-01 | 1.120E+00 | 2.555E-01 | 1.316 |
| TH-228 | + | 74.81 | | 2.218E+00 | 8.914E-01 | 1.071E+00 | 9.752E-02 | 2.071 |
| | + | 77.11 | | 1.889E+00 | 5.008E-01 | 6.040E-01 | 5.515E-02 | 3.127 |
| | + | 87.30 | | 1.463E+01 | 2.086E+00 | 1.305E+00 | 1.281E-01 | 11.211 |
| | + | 238.63 | * | 9.453E-01 | 2.246E-01 | 2.196E-01 | 1.619E-02 | 4.305 |
| | | 300.09 | | 9.098E-01 | 1.979E+00 | 2.874E+00 | 1.694E+00 | 0.317 |
| TH-232 | + | 338.32 | | 1.289E+00 | 7.102E-01 | 7.744E-01 | 4.555E-02 | 1.664 |
| | + | 911.07 | * | 1.577E+00 | 6.018E-01 | 6.153E-01 | 6.287E-02 | 2.563 |
| | + | 969.11 | | 1.474E+00 | 9.038E-01 | 1.120E+00 | 2.555E-01 | 1.316 |
| NP-237 | + | 86.50 | * | 9.206E+00 | 2.309E+00 | 8.409E-01 | 1.919E-01 | 10.948 |
| | | 95.87 | | -1.016E+00 | 1.851E+00 | 2.583E+00 | 6.357E-01 | -0.393 |
| AM-241 | + | 59.54 | * | 1.440E+01 | 1.694E+00 | 7.063E-01 | 6.905E-02 | 20.394 |
| AM-243 | + | 74.67 | * | 3.565E-01 | 1.432E-01 | 1.727E-01 | 1.560E-02 | 2.064 |
| | + | 86.72 | | 3.452E+02 | 4.923E+01 | 3.101E+01 | 3.029E+00 | 11.133 |
| | | 117.66 | | 3.142E+00 | 8.386E+00 | 1.236E+01 | 7.925E-01 | 0.254 |
| | | 142.18 | | 2.117E+00 | 3.123E+01 | 5.117E+01 | 2.922E+00 | 0.041 |
| ANH-511 | + | 511.00 | * | 1.558E-01 | 1.201E-01 | 1.056E-01 | 5.901E-03 | 1.476 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| BE-7 | | 477.59 | * | 8.391E-01 | 7.869E-01 | 1.361E+00 | 8.988E-02 | 0.617 |
| NA-22 | | 1274.54 | * | -1.937E-02 | 6.430E-02 | 9.997E-02 | 6.173E-03 | -0.194 |
| NA-24 | | 1368.53 | * | 4.415E-04 | 6.430E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | 2.497E-02 | 3.855E+00 | 6.334E+00 | 3.945E-01 | 0.004 |
| | | 1808.65 | * | 7.759E-03 | 5.919E-02 | 1.004E-01 | 5.768E-03 | 0.077 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TI-44 | | 67.85 | | -1.641E-02 | 9.332E-02 | 1.498E-01 | 1.337E-02 | -0.110 |
| | | 78.38 | * | 2.675E-01 | 8.332E-02 | 1.325E-01 | 1.218E-02 | 2.018 |
| SC-46 | | 889.25 | * | -6.541E-02 | 9.878E-02 | 1.568E-01 | 1.124E-02 | -0.417 |
| | | 1120.51 | | 7.655E-02 | 1.084E-01 | 1.879E-01 | 1.182E-02 | 0.407 |
| V-48 | | 944.10 | | -5.996E-01 | 2.086E+00 | 3.402E+00 | 2.429E-01 | -0.176 |
| | | 983.50 | * | 3.818E-02 | 1.428E-01 | 2.410E-01 | 1.687E-02 | 0.158 |
| | | 1312.09 | | 1.062E-03 | 8.984E-02 | 1.464E-01 | 9.138E-03 | 0.007 |
| CR-51 | | 320.08 | * | 3.670E-03 | 6.843E-01 | 1.148E+00 | 7.563E-02 | 0.003 |
| MN-52 | | 744.21 | | -2.061E-01 | 2.544E-01 | 3.813E-01 | 2.174E-02 | -0.540 |
| | | 848.13 | | -4.686E+00 | 7.907E+00 | 1.266E+01 | 8.531E-01 | -0.370 |
| | | 935.52 | | 4.093E-01 | 3.491E-01 | 6.172E-01 | 4.422E-02 | 0.663 |
| | | 1246.25 | | -1.397E-01 | 5.220E+00 | 8.491E+00 | 5.178E-01 | -0.016 |
| | + | 1333.61 | | 3.959E+02 | 3.304E+01 | 4.833E+01 | 3.036E+00 | 8.193 |
| | | 1434.06 | * | 9.294E-02 | 1.713E-01 | 3.035E-01 | 1.910E-02 | 0.306 |
| MN-54 | | 834.83 | * | -1.055E-02 | 8.918E-02 | 1.479E-01 | 9.764E-03 | -0.071 |
| CO-56 | | 846.75 | * | 4.728E-02 | 9.527E-02 | 1.643E-01 | 1.105E-02 | 0.288 |
| | | 977.42 | | -1.010E+00 | 7.623E+00 | 1.251E+01 | 8.791E-01 | -0.081 |
| | | 1037.82 | | -3.234E-01 | 8.130E-01 | 1.303E+00 | 9.565E-02 | -0.248 |
| | | 1175.09 | | 2.714E+02 | 2.223E+01 | 3.490E+01 | 2.066E+00 | 7.777 |
| | | 1238.25 | | 1.349E-01 | 1.268E-01 | 2.309E-01 | 1.484E-02 | 0.584 |
| | | 1360.21 | | 1.545E-01 | 9.885E-01 | 1.668E+00 | 1.049E-01 | 0.093 |
| | | 1771.40 | | -1.062E+00 | 5.299E-01 | 5.434E-01 | 3.173E-02 | -1.955 |
| CO-58 | | 810.76 | * | 1.590E-02 | 8.644E-02 | 1.467E-01 | 9.363E-03 | 0.108 |
| FE-59 | | 142.65 | | -2.590E-01 | 4.397E+00 | 7.165E+00 | 4.086E-01 | -0.036 |
| | | 192.34 | | -7.165E-01 | 1.924E+00 | 2.655E+00 | 3.108E-01 | -0.270 |
| | | 1099.22 | * | -9.779E-04 | 2.105E-01 | 3.463E-01 | 2.540E-02 | -0.003 |
| | | 1291.56 | | -1.696E-02 | 1.491E-01 | 2.379E-01 | 1.841E-02 | -0.071 |
| ZN-65 | | 1115.52 | * | 8.831E-05 | 1.988E-01 | 3.268E-01 | 2.070E-02 | 0.000 |
| GE-68 | | 1077.35 | * | -2.183E+00 | 3.139E+00 | 4.879E+00 | 3.198E-01 | -0.447 |
| AS-73 | | 53.44 | * | 1.439E+00 | 2.919E+00 | 4.394E+00 | 4.018E-01 | 0.328 |
| AS-74 | | 595.88 | * | 5.742E-03 | 1.616E-01 | 2.638E-01 | 1.403E-02 | 0.022 |
| | | 634.78 | | 1.615E-01 | 6.594E-01 | 1.088E+00 | 5.563E-02 | 0.148 |
| SE-75 | | 66.05 | | -4.994E+00 | 9.175E+00 | 1.503E+01 | 1.609E+00 | -0.332 |
| | | 96.73 | | 2.027E-01 | 1.457E+00 | 2.136E+00 | 2.889E-01 | 0.095 |
| | + | 121.11 | | 1.282E+00 | 3.842E-01 | 5.512E-01 | 5.217E-02 | 2.325 |
| | | 136.00 | | 4.987E-02 | 7.201E-02 | 1.213E-01 | 7.150E-03 | 0.411 |
| | | 198.60 | | -6.023E-01 | 3.613E+00 | 5.800E+00 | 4.049E-01 | -0.104 |
| | | 264.65 | * | -1.664E-03 | 9.472E-02 | 1.513E-01 | 9.074E-03 | -0.011 |
| | | 279.53 | | 6.232E-02 | 2.151E-01 | 3.674E-01 | 2.360E-02 | 0.170 |
| | | 303.91 | | -1.627E+00 | 4.434E+00 | 7.324E+00 | 7.064E-01 | -0.222 |
| | | 400.65 | | 2.605E-01 | 5.651E-01 | 9.603E-01 | 8.603E-02 | 0.271 |
| BR-77 | + | 87.88 | | 1.059E+03 | 1.510E+02 | 1.671E+02 | 1.649E+01 | 6.337 |
| | | 200.40 | | -4.375E+01 | 5.224E+01 | 8.123E+01 | 4.576E+00 | -0.539 |
| | + | 239.00 | | 2.312E+01 | 5.395E+00 | 8.345E+00 | 4.883E-01 | 2.771 |
| | | 249.79 | | -4.264E+00 | 2.226E+01 | 3.532E+01 | 2.082E+00 | -0.121 |
| | | 281.68 | | -3.244E+01 | 2.907E+01 | 4.640E+01 | 2.769E+00 | -0.699 |
| | | 297.23 | | 1.992E+01 | 2.128E+01 | 3.280E+01 | 1.959E+00 | 0.607 |
| | | 303.76 | | -1.857E+01 | 6.039E+01 | 1.001E+02 | 5.973E+00 | -0.186 |
| | | 439.47 | | 4.001E+01 | 5.597E+01 | 9.586E+01 | 5.393E+00 | 0.417 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 484.57 | | -2.600E+01 | 8.336E+01 | 1.346E+02 | 7.568E+00 | -0.193 |
| | | 520.65 | * | 4.974E-01 | 3.919E+00 | 6.475E+00 | 3.608E-01 | 0.077 |
| | | 574.64 | | 8.388E+00 | 7.135E+01 | 1.143E+02 | 6.181E+00 | 0.073 |
| | | 578.91 | | -5.350E+00 | 3.156E+01 | 4.366E+01 | 2.354E+00 | -0.123 |
| | | 585.48 | | 2.226E+02 | 6.522E+01 | 1.177E+02 | 6.315E+00 | 1.891 |
| | | 755.35 | | 2.876E+01 | 5.623E+01 | 9.414E+01 | 5.470E+00 | 0.306 |
| | | 817.79 | | 4.671E+00 | 5.038E+01 | 8.488E+01 | 5.455E+00 | 0.055 |
| SR-82 | | 698.33 | | -2.513E+01 | 6.512E+01 | 1.020E+02 | 5.376E+00 | -0.246 |
| | | 776.49 | * | -3.291E-01 | 7.469E-01 | 1.215E+00 | 7.310E-02 | -0.271 |
| | | 1395.20 | | 8.387E-01 | 1.334E+01 | 2.188E+01 | 1.378E+00 | 0.038 |
| RB-83 | | 520.41 | * | 4.838E-02 | 1.618E-01 | 2.701E-01 | 1.505E-02 | 0.179 |
| | | 529.64 | | 6.748E-02 | 2.293E-01 | 3.829E-01 | 2.125E-02 | 0.176 |
| | | 552.65 | | -3.324E-01 | 4.330E-01 | 6.693E-01 | 3.672E-02 | -0.497 |
| RB-84 | | 881.50 | * | -1.536E-01 | 1.654E-01 | 2.573E-01 | 1.823E-02 | -0.597 |
| KR-85 | | 513.99 | * | 9.578E+00 | 1.735E+01 | 2.586E+01 | 1.444E+00 | 0.370 |
| SR-85 | | 513.99 | * | 4.590E-02 | 8.317E-02 | 1.239E-01 | 6.922E-03 | 0.370 |
| RB-86 | | 1076.63 | * | -8.755E-01 | 1.600E+00 | 2.520E+00 | 1.653E-01 | -0.347 |
| Y-88 | | 898.02 | | 4.584E-03 | 1.130E-01 | 1.886E-01 | 1.379E-02 | 0.024 |
| | | 1836.01 | * | 5.245E-02 | 5.720E-02 | 1.119E-01 | 6.358E-03 | 0.469 |
| ZR-88 | | 392.90 | * | -8.073E-03 | 6.898E-02 | 1.140E-01 | 6.324E-03 | -0.071 |
| Y-91 | | 1204.90 | * | 5.255E+00 | 2.684E+01 | 4.494E+01 | 2.696E+00 | 0.117 |
| NB-94 | | 702.63 | * | -3.124E-02 | 7.706E-02 | 1.204E-01 | 6.397E-03 | -0.259 |
| | | 871.10 | | 8.465E-02 | 8.471E-02 | 1.509E-01 | 1.052E-02 | 0.561 |
| NB-95 | | 765.79 | * | 3.993E-02 | 9.217E-02 | 1.527E-01 | 9.026E-03 | 0.261 |
| NB-95M | | 235.69 | * | 3.351E-01 | 2.987E-01 | 4.435E-01 | 3.352E-02 | 0.756 |
| ZR-95 | | 724.18 | | -1.223E-03 | 2.086E-01 | 3.358E-01 | 2.222E-02 | -0.004 |
| | | 756.15 | * | 8.029E-02 | 1.446E-01 | 2.430E-01 | 1.713E-02 | 0.330 |
| NB-97 | | 657.90 | * | 2.841E-03 | 1.446E-01 | Half-Life | too short | |
| | | 1024.50 | | -1.093E-03 | 1.446E-01 | Half-Life | too short | |
| ZR-97 | | 254.15 | | -6.671E-03 | 1.446E-01 | Half-Life | too short | |
| | | 355.39 | | -1.363E-03 | 1.446E-01 | Half-Life | too short | |
| | | 507.63 | * | 6.855E-03 | 1.446E-01 | Half-Life | too short | |
| | | 602.52 | | 2.276E-03 | 1.446E-01 | Half-Life | too short | |
| | | 1021.30 | | -3.393E-02 | 1.446E-01 | Half-Life | too short | |
| | | 1147.95 | | 3.655E-03 | 1.446E-01 | Half-Life | too short | |
| | | 1362.66 | | -2.022E-02 | 1.446E-01 | Half-Life | too short | |
| | | 1750.46 | | 7.820E-03 | 1.446E-01 | Half-Life | too short | |
| MO-99 | | 140.51 | | -1.493E+01 | 1.037E+01 | 1.457E+01 | 3.923E+00 | -1.025 |
| | | 181.06 | | 4.840E+00 | 7.375E+00 | 1.082E+01 | 1.845E+00 | 0.447 |
| | | 366.43 | | 9.756E+00 | 3.997E+01 | 6.742E+01 | 3.867E+00 | 0.145 |
| | | 739.58 | * | -1.265E+00 | 5.230E+00 | 8.237E+00 | 1.130E+00 | -0.154 |
| | | 778.00 | | -9.318E-01 | 1.552E+01 | 2.594E+01 | 1.564E+00 | -0.036 |
| TC-99M | | 140.51 | * | -2.150E+03 | 1.552E+01 | Half-Life | too short | |
| RH-101 | | 127.23 | | -4.352E-02 | 6.506E-02 | 9.547E-02 | 5.701E-03 | -0.456 |
| | | 198.01 | * | 1.332E-02 | 6.783E-02 | 1.106E-01 | 6.214E-03 | 0.120 |
| | | 325.23 | | -2.926E-01 | 4.747E-01 | 7.714E-01 | 4.572E-02 | -0.379 |
| RH-102 | | 418.52 | | -1.412E-01 | 6.746E-01 | 1.105E+00 | 6.191E-02 | -0.128 |
| | | 475.06 | * | 4.621E-03 | 7.978E-02 | 1.318E-01 | 7.422E-03 | 0.035 |
| | | 631.29 | | -8.557E-02 | 1.364E-01 | 2.116E-01 | 1.086E-02 | -0.404 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|---------------------|-----------|---------|
| | | 697.49 | | -6.798E-02 | 1.721E-01 | 2.692E-01 | 1.417E-02 | -0.252 |
| | | 766.84 | | 6.350E-03 | 2.504E-01 | 4.027E-01 | 2.384E-02 | 0.016 |
| | | 1046.59 | | -6.800E-02 | 2.877E-01 | 4.659E-01 | 3.131E-02 | -0.146 |
| | | 1112.84 | | -1.721E-01 | 5.054E-01 | 8.061E-01 | 5.110E-02 | -0.213 |
| RU-103 | | 497.08 | * | 1.040E-01 | 8.661E-02 | 1.509E-01 | 1.895E-02 | 0.689 |
| | + | 610.33 | | 9.292E+00 | 2.907E+00 | 3.747E+00 | 5.702E-01 | 2.480 |
| RH-106 | + | 511.85 | | 7.687E-01 | 5.928E-01 | 7.062E-01 | 3.947E-02 | 1.089 |
| | | 621.84 | * | -2.528E-02 | 7.345E-01 | 1.190E+00 | 1.362E-01 | -0.021 |
| | | 1050.47 | | -3.857E+00 | 5.615E+00 | 8.733E+00 | 5.851E-01 | -0.442 |
| RU-106 | + | 511.85 | | 7.687E-01 | 5.928E-01 | 7.062E-01 | 3.947E-02 | 1.089 |
| | | 621.84 | * | -2.528E-02 | 7.345E-01 | 1.190E+00 | 6.171E-02 | -0.021 |
| | | 1050.47 | | -3.857E+00 | 5.615E+00 | 8.733E+00 | 5.851E-01 | -0.442 |
| AG-108M | | 433.93 | * | -2.784E-02 | 8.357E-02 | 1.358E-01 | 8.330E-03 | -0.205 |
| | | 614.37 | | 4.336E-02 | 9.232E-02 | 1.361E-01 | 7.849E-03 | 0.319 |
| | | 722.95 | | -1.121E-01 | 1.037E-01 | 1.535E-01 | 9.235E-03 | -0.730 |
| AG-110M | | 657.75 | * | 3.840E-01 | 1.107E-01 | 1.942E-01 | 1.048E-02 | 1.978 |
| | | 677.61 | | 3.549E-01 | 6.629E-01 | 1.116E+00 | 6.119E-02 | 0.318 |
| | | 706.67 | | 1.454E-01 | 4.712E-01 | 7.773E-01 | 4.449E-02 | 0.187 |
| | | 763.93 | | 3.124E-01 | 3.730E-01 | 6.361E-01 | 3.972E-02 | 0.491 |
| | | 884.67 | | 5.162E-02 | 1.276E-01 | 2.184E-01 | 1.628E-02 | 0.236 |
| | | 937.48 | | 2.153E-01 | 3.405E-01 | 5.856E-01 | 4.410E-02 | 0.368 |
| | | 1384.27 | | -9.201E-02 | 2.451E-01 | 3.694E-01 | 2.447E-02 | -0.249 |
| IN-111 | | 171.28 | | 3.083E-01 | 3.964E-01 | 6.663E-01 | 3.622E-02 | 0.463 |
| | | 245.39 | * | -9.280E-01 | 5.192E-01 | 7.586E-01 | 4.460E-02 | -1.223 |
| IN-113M | | 391.69 | * | -4.505E-02 | 1.002E-01 | 1.625E-01 | 9.673E-03 | -0.277 |
| SN-113 | | 391.69 | * | -4.505E-02 | 1.002E-01 | 1.625E-01 | 9.673E-03 | -0.277 |
| IN-114M | | 190.27 | * | 8.782E-02 | 3.658E-01 | 5.258E-01 | 2.926E-02 | 0.167 |
| CD-115 | | 260.90 | | 7.197E+00 | 3.930E+01 | 6.343E+01 | 3.762E+00 | 0.113 |
| | | 492.35 | | -2.424E+00 | 1.201E+01 | 1.951E+01 | 1.096E+00 | -0.124 |
| | | 527.90 | * | -9.197E-01 | 3.340E+00 | 5.371E+00 | 2.984E-01 | -0.171 |
| SN-117M | | 156.02 | | -2.150E+00 | 3.133E+00 | 4.956E+00 | 2.738E-01 | -0.434 |
| | | 158.56 | * | -5.280E-05 | 7.590E-02 | 1.237E-01 | 6.798E-03 | 0.000 |
| SB-122 | | 563.90 | * | 6.020E-01 | 8.277E-01 | 1.421E+00 | 7.745E-02 | 0.424 |
| | | 692.80 | | 1.241E+01 | 1.785E+01 | 3.046E+01 | 1.590E+00 | 0.407 |
| I-123 | | 159.00 | * | 3.110E-05 | 1.785E+01 | Half-Life too short | | |
| | | 528.96 | | 7.166E-02 | 1.785E+01 | Half-Life too short | | |
| TE-123M | | 159.00 | * | 5.059E-04 | 5.255E-02 | 8.572E-02 | 4.774E-03 | 0.006 |
| I-124 | | 602.71 | * | -5.989E-02 | 5.710E-01 | 7.938E-01 | 4.195E-02 | -0.075 |
| | | 722.78 | | -4.120E+00 | 3.729E+00 | 5.509E+00 | 3.029E-01 | -0.748 |
| | | 1325.50 | | -3.110E+00 | 2.628E+01 | 3.569E+01 | 2.237E+00 | -0.087 |
| | | 1376.25 | | 1.066E+01 | 1.557E+01 | 2.807E+01 | 1.767E+00 | 0.380 |
| | | 1509.49 | | -8.668E-01 | 8.198E+00 | 1.292E+01 | 8.084E-01 | -0.067 |
| | | 1691.02 | | 6.341E-01 | 2.133E+00 | 3.765E+00 | 2.265E-01 | 0.168 |
| SB-124 | | 602.71 | | -9.378E-03 | 8.941E-02 | 1.243E-01 | 6.572E-03 | -0.075 |
| | | 645.85 | | -1.359E-01 | 1.080E+00 | 1.733E+00 | 1.020E-01 | -0.078 |
| | | 709.31 | | 3.462E+00 | 5.945E+00 | 1.000E+01 | 5.373E-01 | 0.346 |
| | | 713.82 | | -2.757E+00 | 3.436E+00 | 5.152E+00 | 5.151E-01 | -0.535 |
| | | 722.78 | | -9.351E-01 | 8.467E-01 | 1.250E+00 | 7.236E-02 | -0.748 |
| | + | 968.20 | | 1.409E+01 | 8.082E+00 | 1.211E+01 | 8.546E-01 | 1.164 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SB-125 | | 1045.16 | | 3.582E-01 | 5.942E+00 | 9.851E+00 | 6.627E-01 | 0.036 |
| | | 1325.50 | | -7.539E-01 | 6.370E+00 | 8.653E+00 | 5.424E-01 | -0.087 |
| | | 1368.21 | | 7.526E-01 | 2.061E+00 | 3.599E+00 | 4.362E-01 | 0.209 |
| | | 1436.60 | | 6.162E+00 | 5.012E+00 | 9.956E+00 | 6.265E-01 | 0.619 |
| | | 1691.02 | * | 3.395E-02 | 1.142E-01 | 2.016E-01 | 1.309E-02 | 0.168 |
| | | 427.89 | * | 2.662E-02 | 2.280E-01 | 3.797E-01 | 2.228E-02 | 0.070 |
| | | 463.38 | | 4.464E-01 | 7.292E-01 | 1.238E+00 | 8.197E-02 | 0.361 |
| | | 600.56 | | -8.997E-02 | 3.890E-01 | 6.224E-01 | 3.907E-02 | -0.145 |
| | | 635.90 | | -3.969E-01 | 6.541E-01 | 1.014E+00 | 6.294E-02 | -0.391 |
| | | 109.28 | * | 1.233E+01 | 1.547E+01 | 2.626E+01 | 2.383E+00 | 0.469 |
| TE-125M | | 388.63 | | -1.354E-01 | 3.378E-01 | 5.499E-01 | 3.064E-02 | -0.246 |
| I-126 | | 666.33 | * | -3.014E-04 | 3.136E-01 | 4.377E-01 | 2.180E-02 | -0.001 |
| SB-126 | | 753.82 | | -7.213E-01 | 2.462E+00 | 3.861E+00 | 2.238E-01 | -0.187 |
| | | 223.80 | | -1.722E+00 | 5.922E+00 | 9.400E+00 | 5.430E-01 | -0.183 |
| | | 278.60 | | 1.658E+00 | 3.544E+00 | 6.097E+00 | 3.637E-01 | 0.272 |
| | | 296.50 | | 3.923E+00 | 2.662E+00 | 4.189E+00 | 2.502E-01 | 0.937 |
| | | 414.70 | | 7.267E-02 | 1.188E-01 | 2.034E-01 | 1.138E-02 | 0.357 |
| | | 415.30 | | 4.889E+00 | 9.961E+00 | 1.695E+01 | 9.485E-01 | 0.288 |
| | | 555.20 | | -1.601E+00 | 6.156E+00 | 9.872E+00 | 5.409E-01 | -0.162 |
| | | 573.80 | | -1.218E-01 | 1.536E+00 | 2.491E+00 | 1.348E-01 | -0.049 |
| | | 593.00 | | 4.432E-01 | 1.396E+00 | 2.327E+00 | 1.241E-01 | 0.190 |
| | | 656.30 | | 2.430E+00 | 6.392E+00 | 9.278E+00 | 4.616E-01 | 0.262 |
| SB-127 | | 666.33 | | -1.241E-04 | 1.291E-01 | 1.802E-01 | 8.976E-03 | -0.001 |
| | | 675.00 | | -4.806E-01 | 3.060E+00 | 4.885E+00 | 2.471E-01 | -0.098 |
| | | 695.00 | | -7.747E-02 | 1.241E-01 | 1.911E-01 | 1.001E-02 | -0.405 |
| | | 697.00 | | -1.308E-01 | 4.230E-01 | 6.663E-01 | 3.504E-02 | -0.196 |
| | | 720.50 | * | 4.642E-02 | 2.270E-01 | 3.716E-01 | 2.036E-02 | 0.125 |
| | | 856.80 | | -3.603E-01 | 9.035E-01 | 1.470E+00 | 1.004E-01 | -0.245 |
| | | 989.30 | | -1.134E+00 | 2.389E+00 | 3.817E+00 | 2.664E-01 | -0.297 |
| | | 1034.80 | | 8.287E+00 | 1.676E+01 | 2.864E+01 | 1.942E+00 | 0.289 |
| | | 1213.00 | | -1.251E+00 | 4.712E+00 | 7.433E+00 | 4.473E-01 | -0.168 |
| | | 61.10 | | 8.513E+02 | 1.070E+02 | 1.294E+02 | 1.291E+01 | 6.580 |
| XE-127 | | 252.40 | | 8.643E-01 | 2.988E+00 | 4.821E+00 | 1.984E+00 | 0.179 |
| | | 290.80 | | 2.792E-02 | 1.531E+01 | 2.246E+01 | 1.626E+00 | 0.001 |
| | | 411.60 | | -8.766E-01 | 8.699E+00 | 1.435E+01 | 1.874E+00 | -0.061 |
| | | 444.90 | | 1.023E+00 | 7.987E+00 | 1.328E+01 | 1.195E+00 | 0.077 |
| | | 473.00 | | 3.883E-02 | 1.426E+00 | 2.352E+00 | 2.224E-01 | 0.017 |
| | | 543.00 | | -7.045E+00 | 1.265E+01 | 1.991E+01 | 2.269E+00 | -0.354 |
| | | 603.60 | | 2.394E+00 | 8.574E+00 | 1.241E+01 | 1.085E+00 | 0.193 |
| | | 685.20 | * | -5.216E-01 | 9.007E-01 | 1.381E+00 | 9.592E-02 | -0.378 |
| | | 698.50 | | -3.612E+00 | 1.084E+01 | 1.702E+01 | 2.220E+00 | -0.212 |
| | | 722.20 | | -2.120E+01 | 2.268E+01 | 3.388E+01 | 2.320E+00 | -0.626 |
| I-131 | | 783.80 | | 1.775E+00 | 2.798E+00 | 4.874E+00 | 4.450E-01 | 0.364 |
| | | 57.60 | | 3.128E+02 | 3.879E+01 | 4.872E+01 | 4.484E+00 | 6.420 |
| | | 145.22 | | 1.190E+00 | 1.101E+00 | 1.881E+00 | 1.066E-01 | 0.632 |
| | | 172.10 | | 8.017E-02 | 1.995E-01 | 3.303E-01 | 1.797E-02 | 0.243 |
| | | 202.84 | * | 3.856E-02 | 8.486E-02 | 1.398E-01 | 7.898E-03 | 0.276 |
| | | 374.96 | | -1.118E-01 | 3.990E-01 | 6.548E-01 | 3.718E-02 | -0.171 |
| | | 80.18 | | -8.009E+00 | 5.957E+00 | 8.112E+00 | 7.552E-01 | -0.987 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|---------------------|-----------|---------|
| TE-132 | | 284.30 | | 5.016E-01 | 1.768E+00 | 3.018E+00 | 1.978E-01 | 0.166 |
| | | 364.48 | * | -3.715E-02 | 1.569E-01 | 2.585E-01 | 1.649E-02 | -0.144 |
| | | 636.97 | | -7.347E-01 | 2.131E+00 | 3.370E+00 | 1.962E-01 | -0.218 |
| | | 722.89 | | -1.093E+01 | 1.004E+01 | 1.484E+01 | 8.207E-01 | -0.737 |
| | | 49.72 | | -6.138E+00 | 1.616E+01 | 2.690E+01 | 2.547E+00 | -0.228 |
| | | 111.76 | | 1.909E+00 | 1.377E+01 | 2.284E+01 | 1.794E+00 | 0.084 |
| BA-133 | | 116.30 | | 2.295E+01 | 1.487E+01 | 2.319E+01 | 1.749E+00 | 0.989 |
| | | 228.16 | * | -2.371E-02 | 3.722E-01 | 5.969E-01 | 7.946E-02 | -0.040 |
| | | 53.15 | | 9.189E-01 | 1.287E+01 | 2.014E+01 | 1.838E+00 | 0.046 |
| | | 79.62 | | -8.528E-01 | 2.832E+00 | 4.085E+00 | 6.371E-01 | -0.209 |
| | | 81.00 | | -5.080E-01 | 2.607E-01 | 3.012E-01 | 4.903E-02 | -1.687 |
| | | 276.40 | | 3.387E-01 | 8.255E-01 | 1.342E+00 | 1.749E-01 | 0.252 |
| I-133 | | 302.84 | | 9.175E-02 | 3.234E-01 | 5.367E-01 | 6.302E-02 | 0.171 |
| | | 356.01 | * | -1.573E-02 | 1.089E-01 | 1.563E-01 | 1.807E-02 | -0.101 |
| | | 383.85 | | -1.963E-01 | 7.198E-01 | 1.181E+00 | 1.272E-01 | -0.166 |
| | + | 510.53 | | 9.317E-03 | 7.198E-01 | Half-Life too short | | |
| | | 529.87 | * | 3.418E-05 | 7.198E-01 | Half-Life too short | | |
| | | 706.58 | | 1.684E-03 | 7.198E-01 | Half-Life too short | | |
| CS-134 | | 856.28 | | -6.204E-04 | 7.198E-01 | Half-Life too short | | |
| | | 875.33 | | -1.184E-03 | 7.198E-01 | Half-Life too short | | |
| | | 1236.41 | | 4.121E-03 | 7.198E-01 | Half-Life too short | | |
| | | 1298.22 | | -2.178E-03 | 7.198E-01 | Half-Life too short | | |
| | | 475.35 | | 2.346E+00 | 5.191E+00 | 8.743E+00 | 4.923E-01 | 0.268 |
| | | 563.23 | | 1.228E-01 | 7.666E-01 | 1.266E+00 | 7.066E-02 | 0.097 |
| CS-135 | | 569.32 | | -6.376E-02 | 4.137E-01 | 6.675E-01 | 3.747E-02 | -0.096 |
| | | 604.70 | | -1.996E-02 | 8.133E-02 | 1.113E-01 | 5.912E-03 | -0.179 |
| | | 795.84 | * | -6.134E-03 | 1.085E-01 | 1.812E-01 | 1.140E-02 | -0.034 |
| | | 801.93 | | 2.492E-01 | 9.304E-01 | 1.588E+00 | 1.006E-01 | 0.157 |
| | | 1038.57 | | -5.848E+00 | 1.054E+01 | 1.668E+01 | 1.128E+00 | -0.351 |
| | | 1167.94 | | 2.328E+00 | 6.797E+00 | 9.941E+00 | 5.921E-01 | 0.234 |
| I-135 | | 1365.15 | | -3.614E-01 | 1.421E+00 | 2.160E+00 | 1.474E-01 | -0.167 |
| | | 268.24 | * | 1.268E-01 | 3.572E-01 | 5.801E-01 | 4.508E-02 | 0.219 |
| | | 288.45 | | 3.532E+03 | 3.572E-01 | Half-Life too short | | |
| | | 417.63 | | -2.979E+03 | 3.572E-01 | Half-Life too short | | |
| | | 546.56 | | 1.351E+03 | 3.572E-01 | Half-Life too short | | |
| | | 836.80 | | 2.544E+02 | 3.572E-01 | Half-Life too short | | |
| CS-136 | | 1038.76 | | -1.425E+03 | 3.572E-01 | Half-Life too short | | |
| | | 1124.00 | | -8.471E+03 | 3.572E-01 | Half-Life too short | | |
| | | 1131.51 | | -2.608E+02 | 3.572E-01 | Half-Life too short | | |
| | | 1260.41 | * | -5.200E+02 | 3.572E-01 | Half-Life too short | | |
| | | 1457.56 | | 3.618E+03 | 3.572E-01 | Half-Life too short | | |
| | | 1678.03 | | -1.978E+02 | 3.572E-01 | Half-Life too short | | |
| CS-136 | | 1706.46 | | 6.875E+02 | 3.572E-01 | Half-Life too short | | |
| | | 1791.20 | | -1.892E+03 | 3.572E-01 | Half-Life too short | | |
| | | 66.91 | | -6.055E-01 | 1.091E+00 | 1.784E+00 | 2.784E-01 | -0.339 |
| | | 86.29 | | 2.545E+01 | 4.224E+00 | 4.535E+00 | 6.176E-01 | 5.611 |
| | | 153.22 | | 4.493E-01 | 8.726E-01 | 1.455E+00 | 1.022E-01 | 0.309 |
| | | 163.89 | | -5.853E-01 | 1.459E+00 | 2.333E+00 | 1.622E-01 | -0.251 |
| | | 176.55 | | -4.071E-01 | 4.924E-01 | 7.675E-01 | 4.773E-02 | -0.530 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 273.65 | | -6.241E-01 | 7.408E-01 | 1.132E+00 | 7.637E-02 | -0.551 |
| | | 340.57 | | 2.514E-01 | 2.074E-01 | 3.265E-01 | 2.033E-02 | 0.770 |
| | | 818.51 | | 7.109E-02 | 1.303E-01 | 2.262E-01 | 1.456E-02 | 0.314 |
| | | 1048.07 | * | -5.045E-02 | 1.887E-01 | 3.046E-01 | 2.184E-02 | -0.166 |
| | | 1235.34 | | 3.782E-01 | 5.965E-01 | 1.046E+00 | 1.061E-01 | 0.362 |
| CE-139 | | 165.85 | * | -4.160E-04 | 5.411E-02 | 8.805E-02 | 4.761E-03 | -0.005 |
| BA-140 | | 162.64 | | 6.918E-02 | 1.025E+00 | 1.674E+00 | 1.039E-01 | 0.041 |
| | | 304.84 | | -1.899E+00 | 2.053E+00 | 3.192E+00 | 8.723E-01 | -0.595 |
| | | 423.70 | | -1.039E+00 | 3.280E+00 | 5.314E+00 | 1.687E+00 | -0.196 |
| | | 537.32 | * | -1.863E-01 | 4.112E-01 | 6.445E-01 | 2.093E-01 | -0.289 |
| LA-140 | | 328.77 | | 4.358E-01 | 4.415E-01 | 7.720E-01 | 5.096E-02 | 0.564 |
| | | 432.53 | | -2.531E+00 | 3.663E+00 | 5.832E+00 | 3.642E-01 | -0.434 |
| | | 487.03 | | -1.014E-01 | 2.296E-01 | 3.673E-01 | 2.354E-02 | -0.276 |
| | | 751.79 | | -1.087E+00 | 2.928E+00 | 4.566E+00 | 3.231E-01 | -0.238 |
| | | 815.85 | | -2.129E-01 | 5.616E-01 | 9.149E-01 | 7.037E-02 | -0.233 |
| | | 867.82 | | -2.932E+00 | 2.480E+00 | 3.760E+00 | 2.820E-01 | -0.780 |
| | | 919.63 | | -3.804E-01 | 6.058E+00 | 9.817E+00 | 9.366E-01 | -0.039 |
| | | 925.24 | | 9.094E-01 | 2.304E+00 | 3.925E+00 | 3.075E-01 | 0.232 |
| | | 1596.49 | * | -1.691E-02 | 1.062E-01 | 1.725E-01 | 1.065E-02 | -0.098 |
| CE-141 | | 145.44 | * | 8.884E-02 | 9.882E-02 | 1.676E-01 | 9.887E-03 | 0.530 |
| CE-143 | | 57.37 | | 1.762E+03 | 2.661E+02 | 3.425E+02 | 3.645E+01 | 5.145 |
| | | 231.56 | | -8.740E+01 | 2.188E+02 | 3.424E+02 | 1.062E+02 | -0.255 |
| | | 293.26 | * | 2.798E+01 | 1.396E+01 | 2.101E+01 | 4.341E+00 | 1.332 |
| | + | 350.59 | | 1.000E+03 | 3.993E+02 | 3.534E+02 | 1.076E+02 | 2.831 |
| | | 490.36 | | -9.881E+00 | 2.703E+02 | 4.435E+02 | 1.374E+02 | -0.022 |
| | | 664.57 | | 1.776E+03 | 6.013E+02 | 4.346E+02 | 1.374E+02 | 4.086 |
| | | 721.93 | | -1.000E+02 | 1.330E+02 | 1.970E+02 | 5.615E+01 | -0.508 |
| CE-144 | | 80.11 | | -6.150E+00 | 4.700E+00 | 6.416E+00 | 5.960E-01 | -0.958 |
| | | 133.54 | * | -3.217E-01 | 3.942E-01 | 6.205E-01 | 8.824E-02 | -0.518 |
| PM-144 | | 476.78 | | 2.131E-01 | 1.784E-01 | 3.100E-01 | 2.108E-02 | 0.687 |
| | | 618.01 | | 3.179E-03 | 7.331E-02 | 1.163E-01 | 6.498E-03 | 0.027 |
| | | 696.49 | * | -1.578E-02 | 7.743E-02 | 1.230E-01 | 6.467E-03 | -0.128 |
| | | 778.57 | | 1.026E+00 | 5.563E+00 | 9.449E+00 | 5.705E-01 | 0.109 |
| PR-144 | | 696.49 | * | -1.066E+00 | 5.229E+00 | 8.309E+00 | 4.366E-01 | -0.128 |
| | | 1489.15 | | 9.470E+00 | 2.020E+01 | 3.534E+01 | 2.216E+00 | 0.268 |
| PM-146 | | 453.90 | * | 1.050E-01 | 1.157E-01 | 1.991E-01 | 1.695E-02 | 0.527 |
| | | 633.02 | | 2.659E-01 | 3.298E+00 | 5.379E+00 | 1.975E+00 | 0.049 |
| | | 735.90 | | -2.358E-01 | 3.745E-01 | 5.639E-01 | 1.570E-01 | -0.418 |
| | | 747.13 | | 1.437E-01 | 2.151E-01 | 3.626E-01 | 4.524E-02 | 0.396 |
| ND-147 | + | 91.11 | | 4.958E-01 | 3.848E-01 | 5.395E-01 | 5.377E-02 | 0.919 |
| | | 319.41 | | -1.708E+00 | 4.782E+00 | 7.878E+00 | 4.682E-01 | -0.217 |
| | | 439.89 | | 2.576E+00 | 1.016E+01 | 1.701E+01 | 9.571E-01 | 0.151 |
| | | 531.02 | * | 5.540E-01 | 8.377E-01 | 1.427E+00 | 1.915E-01 | 0.388 |
| PM-149 | | 285.90 | * | 1.659E+00 | 2.553E+01 | 4.313E+01 | 6.137E+00 | 0.038 |
| EU-152 | + | 121.78 | | 7.174E-01 | 2.117E-01 | 3.089E-01 | 2.426E-02 | 2.323 |
| | | 244.69 | | -1.074E+00 | 7.951E-01 | 1.141E+00 | 6.707E-02 | -0.941 |
| | | 344.27 | * | -1.386E-01 | 2.351E-01 | 3.261E-01 | 2.149E-02 | -0.425 |
| | | 443.98 | | 1.256E-01 | 2.517E+00 | 4.170E+00 | 2.347E-01 | 0.030 |
| | | 778.89 | | 1.626E-02 | 6.421E-01 | 1.080E+00 | 6.519E-02 | 0.015 |

Sample ID : G1202023715

Acquisition date : 4-FEB-2010 17:10:09

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| GD-153 | | 867.32 | | -3.519E+00 | 2.104E+00 | 3.047E+00 | 2.114E-01 | -1.155 |
| | | 964.01 | | -1.042E-01 | 9.121E-01 | 1.288E+00 | 9.110E-02 | -0.081 |
| | | 1085.78 | | -7.915E-01 | 1.040E+00 | 1.607E+00 | 1.045E-01 | -0.493 |
| | | 1112.02 | | -3.574E-01 | 7.086E-01 | 1.112E+00 | 7.058E-02 | -0.321 |
| | | 1407.95 | | 6.259E-02 | 2.495E-01 | 4.241E-01 | 2.671E-02 | 0.148 |
| | | 69.67 | | 7.727E-01 | 3.473E+00 | 5.160E+00 | 4.606E-01 | 0.150 |
| | | 83.37 | | 1.154E+01 | 3.363E+01 | 4.993E+01 | 4.745E+00 | 0.231 |
| | | 97.43 | * | 1.090E-01 | 1.517E-01 | 2.294E-01 | 1.917E-02 | 0.475 |
| | | 103.18 | | 5.485E-02 | 1.833E-01 | 3.067E-01 | 2.356E-02 | 0.179 |
| | | 123.07 | | 5.034E-01 | 1.512E-01 | 2.146E-01 | 2.055E-02 | 2.345 |
| EU-154 | + | 247.94 | | -1.657E-01 | 7.952E-01 | 1.261E+00 | 1.210E-01 | -0.131 |
| | | 591.81 | | -2.880E-01 | 1.338E+00 | 2.143E+00 | 2.038E-01 | -0.134 |
| | | 723.30 | | -4.250E-01 | 4.320E-01 | 6.440E-01 | 4.405E-02 | -0.660 |
| | | 756.87 | | 5.677E-01 | 1.680E+00 | 2.775E+00 | 2.817E-01 | 0.205 |
| | | 873.19 | | 2.262E-02 | 7.967E-01 | 1.331E+00 | 1.486E-01 | 0.017 |
| | | 996.32 | | -3.792E-01 | 9.647E-01 | 1.547E+00 | 2.633E-01 | -0.245 |
| | | 1004.76 | | -3.925E-01 | 6.050E-01 | 9.541E-01 | 9.961E-02 | -0.411 |
| | | 1274.45 | * | -4.961E-02 | 1.809E-01 | 2.825E-01 | 2.704E-02 | -0.176 |
| | | 48.70 | | -2.357E+00 | 7.864E+00 | 1.313E+01 | 1.099E+00 | -0.180 |
| | + | 60.01 | | 4.674E+02 | 5.269E+01 | 4.708E+01 | 4.312E+00 | 9.928 |
| EU-155 | + | 86.54 | | 3.766E+00 | 5.391E-01 | 5.996E-01 | 5.894E-02 | 6.281 |
| | | 105.31 | * | -8.993E-02 | 1.914E-01 | 3.096E-01 | 2.348E-02 | -0.291 |
| | + | 86.79 | | 9.483E+00 | 1.352E+00 | 1.531E+00 | 1.496E-01 | 6.195 |
| | | 197.04 | | 1.076E+00 | 1.081E+00 | 1.819E+00 | 1.021E-01 | 0.591 |
| | | 215.65 | | -1.928E-01 | 1.466E+00 | 2.343E+00 | 1.342E-01 | -0.082 |
| | | 298.57 | | 2.582E-02 | 2.540E-01 | 3.746E-01 | 2.237E-02 | 0.069 |
| | | 879.36 | * | 4.322E-02 | 3.490E-01 | 5.867E-01 | 4.144E-02 | 0.074 |
| | | 962.29 | | -1.919E-01 | 1.561E+00 | 2.202E+00 | 1.559E-01 | -0.087 |
| | | 966.15 | | 9.305E-01 | 5.912E-01 | 9.507E-01 | 6.718E-02 | 0.979 |
| | | 1177.93 | | 6.064E-01 | 7.048E-01 | 1.116E+00 | 6.619E-02 | 0.543 |
| HO-166M | | 1271.85 | | 2.924E-01 | 9.885E-01 | 1.680E+00 | 1.034E-01 | 0.174 |
| | | 80.57 | | -1.324E+00 | 6.379E-01 | 8.282E-01 | 7.716E-02 | -1.598 |
| | | 184.41 | | 7.545E-02 | 6.776E-02 | 1.153E-01 | 6.371E-03 | 0.654 |
| | | 280.46 | | -4.528E-02 | 1.757E-01 | 2.929E-01 | 1.748E-02 | -0.155 |
| | | 410.95 | | -4.790E-02 | 5.571E-01 | 9.198E-01 | 5.140E-02 | -0.052 |
| | | 711.68 | * | 1.065E-02 | 1.372E-01 | 2.225E-01 | 1.200E-02 | 0.048 |
| | | 752.31 | | -3.186E-01 | 6.586E-01 | 1.017E+00 | 5.878E-02 | -0.313 |
| | | 810.29 | | 2.976E-03 | 1.397E-01 | 2.344E-01 | 1.489E-02 | 0.013 |
| | | 51.35 | | -2.474E+00 | 1.001E+02 | 1.682E+02 | 1.509E+01 | -0.015 |
| | | 52.39 | | -1.533E+00 | 5.236E+01 | 8.796E+01 | 7.983E+00 | -0.017 |
| TM-171 | + | 59.40 | | 2.449E+03 | 2.760E+02 | 2.600E+02 | 2.390E+01 | 9.416 |
| | | 66.72 | * | -4.656E+01 | 5.591E+01 | 9.059E+01 | 8.092E+00 | -0.514 |
| | + | 88.36 | | 7.436E+00 | 1.060E+00 | 1.156E+00 | 1.133E-01 | 6.434 |
| | | 201.83 | | -6.188E-02 | 6.120E-02 | 9.441E-02 | 5.327E-03 | -0.655 |
| | | 306.84 | * | -1.270E-02 | 5.410E-02 | 8.988E-02 | 5.361E-03 | -0.141 |
| | | 401.10 | | 3.511E-01 | 1.565E+01 | 2.601E+01 | 1.448E+00 | 0.013 |
| | | 112.95 | | -7.554E-01 | 1.549E+00 | 2.501E+00 | 1.695E-01 | -0.302 |
| | | 208.36 | * | 1.040E+00 | 1.184E+00 | 1.978E+00 | 1.124E-01 | 0.526 |
| | | 52.97 | | 8.051E-01 | 5.673E+00 | 8.893E+00 | 8.108E-01 | 0.091 |
| | | | | | | | | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| HF-181 | | 54.07 | | 2.835E+00 | 3.101E+00 | 4.720E+00 | 4.329E-01 | 0.601 |
| | | 61.30 | | 4.646E+01 | 6.337E+00 | 9.008E+00 | 8.191E-01 | 5.158 |
| | + | 121.62 | | 3.582E+00 | 1.042E+00 | 1.541E+00 | 9.439E-02 | 2.324 |
| | | 147.16 | | -5.138E-01 | 1.170E+00 | 1.876E+00 | 1.058E-01 | -0.274 |
| | | 171.86 | | 3.274E-01 | 8.825E-01 | 1.459E+00 | 7.936E-02 | 0.224 |
| | | 218.09 | | -1.285E+00 | 1.719E+00 | 2.661E+00 | 1.528E-01 | -0.483 |
| | | 268.79 | | 9.285E-01 | 1.755E+00 | 2.872E+00 | 1.709E-01 | 0.323 |
| | | 319.02 | | -2.787E-01 | 5.421E-01 | 8.859E-01 | 5.265E-02 | -0.315 |
| | | 367.43 | | 8.341E-01 | 2.078E+00 | 3.532E+00 | 2.023E-01 | 0.236 |
| | | 413.65 | * | -1.189E-01 | 3.906E-01 | 6.367E-01 | 3.561E-02 | -0.187 |
| | | 56.28 | | 2.792E+00 | 3.261E+00 | 4.942E+00 | 4.550E-01 | 0.565 |
| | | 57.53 | | 2.491E+01 | 3.159E+00 | 4.054E+00 | 3.732E-01 | 6.144 |
| | | 65.20 | | -4.194E-01 | 1.760E+00 | 2.822E+00 | 2.528E-01 | -0.149 |
| | | 133.02 | | -6.044E-02 | 1.145E-01 | 1.836E-01 | 1.076E-02 | -0.329 |
| | | 136.25 | | 4.692E-01 | 7.843E-01 | 1.317E+00 | 7.640E-02 | 0.356 |
| | | 345.85 | | -8.815E-02 | 4.168E-01 | 5.961E-01 | 3.487E-02 | -0.148 |
| | | 482.03 | * | -6.056E-02 | 9.588E-02 | 1.520E-01 | 8.550E-03 | -0.399 |
| W-181 | | 56.28 | | 1.172E+00 | 1.366E+00 | 2.071E+00 | 1.907E-01 | 0.566 |
| | | 57.53 | | 1.042E+01 | 1.322E+00 | 1.699E+00 | 1.564E-01 | 6.132 |
| | | 65.20 | * | -1.745E-01 | 7.323E-01 | 1.174E+00 | 1.052E-01 | -0.149 |
| TA-182 | | 67.75 | | -3.696E-02 | 2.145E-01 | 3.445E-01 | 3.074E-02 | -0.107 |
| | | 100.10 | | -3.444E-02 | 3.040E-01 | 5.006E-01 | 4.018E-02 | -0.069 |
| | | 152.43 | | 1.333E-01 | 5.969E-01 | 9.840E-01 | 5.481E-02 | 0.135 |
| | | 222.10 | | 2.423E-01 | 6.833E-01 | 1.118E+00 | 6.449E-02 | 0.217 |
| | | 1001.68 | | 6.339E+00 | 5.045E+00 | 9.042E+00 | 6.265E-01 | 0.701 |
| | | 1121.28 | | 1.226E-01 | 3.082E-01 | 5.221E-01 | 3.281E-02 | 0.235 |
| | | 1189.05 | | -1.630E-01 | 4.804E-01 | 7.540E-01 | 4.492E-02 | -0.216 |
| | | 1221.42 | * | -8.772E-03 | 2.698E-01 | 4.390E-01 | 2.651E-02 | -0.020 |
| | | 1230.97 | | -2.918E-01 | 6.085E-01 | 9.412E-01 | 5.705E-02 | -0.310 |
| RE-183 | + | 57.98 | | 1.649E+01 | 1.858E+00 | 1.894E+00 | 1.742E-01 | 8.706 |
| | + | 59.32 | | 9.476E+00 | 1.068E+00 | 1.013E+00 | 9.313E-02 | 9.352 |
| | | 67.20 | | -1.416E-01 | 3.665E-01 | 6.043E-01 | 5.395E-02 | -0.234 |
| | | 162.32 | * | 6.268E-02 | 1.978E-01 | 3.266E-01 | 1.779E-02 | 0.192 |
| | | 208.81 | | 1.315E+00 | 1.943E+00 | 3.221E+00 | 1.832E-01 | 0.408 |
| | | 291.72 | | -4.361E-01 | 2.005E+00 | 2.897E+00 | 1.731E-01 | -0.151 |
| RE-184 | + | 57.98 | | 6.305E+01 | 7.108E+00 | 7.242E+00 | 6.664E-01 | 8.706 |
| | + | 59.32 | | 3.621E+01 | 4.082E+00 | 3.872E+00 | 3.559E-01 | 9.352 |
| | | 67.20 | | -5.413E-01 | 1.401E+00 | 2.311E+00 | 2.063E-01 | -0.234 |
| | | 161.27 | | 2.112E-01 | 6.580E-01 | 1.087E+00 | 5.935E-02 | 0.194 |
| | | 216.55 | | -4.442E-01 | 5.420E-01 | 8.368E-01 | 4.799E-02 | -0.531 |
| | | 252.85 | * | 7.097E-02 | 4.945E-01 | 7.975E-01 | 4.710E-02 | 0.089 |
| | | 318.01 | | -4.461E-01 | 9.392E-01 | 1.538E+00 | 9.144E-02 | -0.290 |
| | | 792.07 | | 8.188E-01 | 2.258E+00 | 3.876E+00 | 2.391E-01 | 0.211 |
| | | 903.28 | | -2.530E+00 | 3.225E+00 | 4.506E+00 | 3.266E-01 | -0.561 |
| | | 920.93 | | 3.346E-03 | 1.320E+00 | 2.196E+00 | 1.582E-01 | 0.002 |
| OS-185 | + | 59.72 | | 2.627E+01 | 2.961E+00 | 2.712E+00 | 2.489E-01 | 9.687 |
| | | 61.14 | | 6.874E+00 | 8.341E-01 | 1.088E+00 | 9.902E-02 | 6.318 |
| | | 69.30 | | 3.410E-01 | 6.043E-01 | 9.114E-01 | 8.134E-02 | 0.374 |
| | | 592.07 | | -3.304E-01 | 5.157E+00 | 8.358E+00 | 4.459E-01 | -0.040 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| RE-188 | 646.12 | * | | -3.016E-02 | 9.609E-02 | 1.521E-01 | 7.668E-03 | -0.198 |
| | 717.42 | | | -6.968E-01 | 1.894E+00 | 2.958E+00 | 1.612E-01 | -0.236 |
| | 874.81 | | | -9.253E-01 | 1.497E+00 | 2.388E+00 | 1.675E-01 | -0.388 |
| | 880.27 | | | 5.449E-01 | 1.986E+00 | 3.371E+00 | 2.384E-01 | 0.162 |
| | 155.03 | * | | -5.340E-03 | 3.033E-01 | 4.945E-01 | 2.738E-02 | -0.011 |
| W-188 | 477.96 | | | 6.410E+00 | 7.710E+00 | 1.320E+01 | 7.429E-01 | 0.486 |
| | 633.10 | | | 7.775E-01 | 6.280E+00 | 1.028E+01 | 5.265E-01 | 0.076 |
| | 63.58 | | | 3.558E+01 | 1.118E+02 | 1.681E+02 | 1.513E+01 | 0.212 |
| IR-192 | 227.08 | | | -3.733E+00 | 2.546E+01 | 4.067E+01 | 2.356E+00 | -0.092 |
| | 290.67 | * | | 2.180E-01 | 1.581E+01 | 2.322E+01 | 1.387E+00 | 0.009 |
| | 295.96 | | + | 9.200E-01 | 3.105E-01 | 4.355E-01 | 2.640E-02 | 2.112 |
| | 308.46 | | | -1.277E-01 | 2.015E-01 | 3.282E-01 | 1.978E-02 | -0.389 |
| | 316.51 | * | | -4.092E-02 | 7.237E-02 | 1.181E-01 | 7.059E-03 | -0.347 |
| AU-195 | 468.07 | | | -5.329E-03 | 1.655E-01 | 2.724E-01 | 1.782E-02 | -0.020 |
| | 604.41 | | | -3.207E-01 | 1.038E+00 | 1.410E+00 | 1.564E-01 | -0.227 |
| | 612.46 | | | 1.438E+00 | 1.623E+00 | 2.476E+00 | 1.771E-01 | 0.581 |
| | 65.12 | | | -6.963E-02 | 3.441E-01 | 5.526E-01 | 4.951E-02 | -0.126 |
| | 66.83 | | + | -1.539E-01 | 1.813E-01 | 2.935E-01 | 2.622E-02 | -0.524 |
| TL-200 | 75.70 | | | 1.126E+00 | 4.523E-01 | 7.488E-01 | 6.791E-02 | 1.504 |
| | 98.88 | * | | 2.142E-01 | 4.082E-01 | 6.674E-01 | 5.456E-02 | 0.321 |
| | 129.76 | | | 5.436E+00 | 5.208E+00 | 8.888E+00 | 5.261E-01 | 0.612 |
| | 367.94 | * | | 7.342E-06 | 5.208E+00 | Half-Life | too short | |
| | 579.30 | | | 2.288E-05 | 5.208E+00 | Half-Life | too short | |
| TL-201 | 828.27 | | | -1.327E-04 | 5.208E+00 | Half-Life | too short | |
| | 1205.75 | | | 1.416E-05 | 5.208E+00 | Half-Life | too short | |
| | 68.90 | | | 1.161E+00 | 2.399E+00 | 3.606E+00 | 3.218E-01 | 0.322 |
| | 70.82 | | | 6.952E-01 | 1.324E+00 | 1.992E+00 | 1.781E-01 | 0.349 |
| | 80.30 | | | -3.607E+00 | 2.613E+00 | 3.550E+00 | 3.302E-01 | -1.016 |
| TL-202 | 135.34 | | | 3.804E+00 | 1.113E+01 | 1.850E+01 | 1.076E+00 | 0.206 |
| | 167.43 | * | | -4.165E-01 | 3.066E+00 | 4.959E+00 | 2.684E-01 | -0.084 |
| | 68.90 | | | 3.133E-01 | 6.472E-01 | 9.727E-01 | 8.679E-02 | 0.322 |
| | 70.82 | | | 1.870E-01 | 3.562E-01 | 5.359E-01 | 4.790E-02 | 0.349 |
| | 80.30 | | | -9.706E-01 | 7.032E-01 | 9.553E-01 | 8.884E-02 | -1.016 |
| HG-203 | 439.56 | * | | 8.759E-02 | 1.225E-01 | 2.099E-01 | 1.181E-02 | 0.417 |
| | 70.83 | | | 1.055E+00 | 2.022E+00 | 3.037E+00 | 4.194E-01 | 0.348 |
| | 72.87 | | | 1.866E+00 | 1.247E+00 | 1.911E+00 | 2.568E-01 | 0.977 |
| | 82.60 | | | -7.849E-01 | 2.727E+00 | 3.304E+00 | 4.718E-01 | -0.238 |
| | 279.20 | * | | 1.764E-02 | 7.706E-02 | 1.312E-01 | 8.288E-03 | 0.134 |
| BI-207 | 72.80 | | | 5.407E-01 | 3.956E-01 | 6.109E-01 | 5.483E-02 | 0.885 |
| | 74.97 | | + | 6.397E-01 | 2.570E-01 | 4.043E-01 | 3.656E-02 | 1.582 |
| | 84.90 | | | 9.790E-01 | 4.506E-01 | 7.025E-01 | 6.758E-02 | 1.394 |
| | 569.67 | | | -2.205E-02 | 6.436E-02 | 1.023E-01 | 5.555E-03 | -0.215 |
| | 1063.62 | * | | 1.252E-01 | 1.311E-01 | 2.314E-01 | 1.534E-02 | 0.541 |
| TL-207 | 1770.23 | | | -2.953E+00 | 1.183E+00 | 1.022E+00 | 5.973E-02 | -2.889 |
| | 81.07 | | | -1.109E+00 | 5.561E-01 | 6.666E-01 | 6.231E-02 | -1.664 |
| | 83.78 | | | 2.542E-01 | 2.912E-01 | 4.404E-01 | 4.199E-02 | 0.577 |
| | 94.90 | | | -2.023E-01 | 4.393E-01 | 6.222E-01 | 5.417E-02 | -0.325 |
| | 122.32 | | + | 1.710E+01 | 5.009E+00 | 7.455E+00 | 5.183E-01 | 2.294 |
| | 144.24 | | | 2.600E-01 | 1.240E+00 | 2.044E+00 | 1.459E-01 | 0.127 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 154.21 | | 4.153E-01 | 7.322E-01 | 1.223E+00 | 8.326E-02 | 0.340 |
| | | 269.46 | | 3.443E-01 | 4.260E-01 | 7.054E-01 | 4.379E-02 | 0.488 |
| | | 323.87 | * | -1.364E+00 | 1.440E+00 | 2.272E+00 | 3.762E-01 | -0.600 |
| | + | 338.28 | | 5.381E+00 | 3.003E+00 | 4.147E+00 | 4.387E-01 | 1.298 |
| | | 445.03 | | 8.799E-01 | 5.920E+00 | 9.856E+00 | 1.003E+00 | 0.089 |
| PO-209 | | 260.50 | | -7.349E+00 | 2.160E+01 | 3.396E+01 | 2.014E+00 | -0.216 |
| | | 262.80 | | -1.100E+01 | 5.932E+01 | 9.393E+01 | 5.576E+00 | -0.117 |
| | | 896.60 | * | 2.844E+00 | 2.060E+01 | 3.462E+01 | 2.508E+00 | 0.082 |
| BI-210 | | 46.50 | * | -4.901E+00 | 1.133E+01 | 1.885E+01 | 1.552E+00 | -0.260 |
| PB-210 | | 46.50 | * | -4.901E+00 | 1.133E+01 | 1.885E+01 | 1.552E+00 | -0.260 |
| PO-210 | | 46.50 | * | -4.901E+00 | 1.132E+01 | 1.885E+01 | 1.361E+00 | -0.260 |
| PB-211 | | 404.84 | * | -1.440E+00 | 2.363E+00 | 3.503E+00 | 2.183E+00 | -0.411 |
| | | 427.08 | | 1.556E+00 | 5.105E+00 | 8.436E+00 | 5.213E+00 | 0.184 |
| | | 831.96 | | 2.918E+00 | 3.378E+00 | 5.091E+00 | 3.178E+00 | 0.573 |
| BI-212 | | 727.18 | * | 3.752E-01 | 7.547E-01 | 1.254E+00 | 9.434E-02 | 0.299 |
| | | 785.46 | | -9.484E-01 | 4.390E+00 | 7.264E+00 | 4.434E-01 | -0.131 |
| | | 1620.62 | | -5.615E-01 | 2.091E+00 | 3.308E+00 | 2.029E-01 | -0.170 |
| BI-214 | + | 609.31 | * | 9.636E-01 | 2.728E-01 | 3.924E-01 | 2.896E-02 | 2.456 |
| | | 1120.29 | | 5.310E-01 | 6.734E-01 | 1.172E+00 | 1.071E-01 | 0.453 |
| | | 1764.49 | | 1.470E+00 | 5.455E-01 | 1.188E+00 | 6.956E-02 | 1.238 |
| PO-215 | | 81.07 | | -1.109E+00 | 5.561E-01 | 6.666E-01 | 6.231E-02 | -1.664 |
| | | 83.78 | | 2.542E-01 | 2.912E-01 | 4.404E-01 | 4.199E-02 | 0.577 |
| | | 94.90 | | -2.023E-01 | 4.393E-01 | 6.222E-01 | 5.417E-02 | -0.325 |
| | + | 122.32 | | 1.710E+01 | 5.009E+00 | 7.455E+00 | 5.183E-01 | 2.294 |
| | | 144.24 | | 2.600E-01 | 1.240E+00 | 2.044E+00 | 1.459E-01 | 0.127 |
| | | 154.21 | | 4.153E-01 | 7.322E-01 | 1.223E+00 | 8.326E-02 | 0.340 |
| | | 269.46 | | 3.443E-01 | 4.260E-01 | 7.054E-01 | 4.379E-02 | 0.488 |
| | | 323.87 | * | -1.364E+00 | 1.440E+00 | 2.272E+00 | 3.762E-01 | -0.600 |
| | + | 338.28 | | 5.381E+00 | 3.003E+00 | 4.147E+00 | 4.387E-01 | 1.298 |
| | | 445.03 | | 8.799E-01 | 5.920E+00 | 9.856E+00 | 1.003E+00 | 0.089 |
| RN-219 | | 271.23 | | 8.792E-01 | 5.436E-01 | 9.264E-01 | 7.611E-02 | 0.949 |
| | | 401.81 | * | -7.986E-02 | 9.616E-01 | 1.590E+00 | 2.147E-01 | -0.050 |
| RN-220 | | 549.76 | * | 4.700E+01 | 6.112E+01 | 1.048E+02 | 5.762E+00 | 0.448 |
| RA-223 | | 81.07 | | -1.109E+00 | 5.561E-01 | 6.666E-01 | 6.231E-02 | -1.664 |
| | | 83.78 | | 2.542E-01 | 2.912E-01 | 4.404E-01 | 4.199E-02 | 0.577 |
| | | 94.90 | | -2.023E-01 | 4.393E-01 | 6.222E-01 | 5.417E-02 | -0.325 |
| | + | 122.32 | | 1.710E+01 | 5.009E+00 | 7.455E+00 | 5.183E-01 | 2.294 |
| | | 144.24 | | 2.600E-01 | 1.240E+00 | 2.044E+00 | 1.459E-01 | 0.127 |
| | | 154.21 | | 4.153E-01 | 7.322E-01 | 1.223E+00 | 8.326E-02 | 0.340 |
| | | 269.46 | | 3.443E-01 | 4.260E-01 | 7.054E-01 | 4.379E-02 | 0.488 |
| | | 323.87 | * | -1.364E+00 | 1.440E+00 | 2.272E+00 | 3.762E-01 | -0.600 |
| | + | 338.28 | | 5.381E+00 | 3.003E+00 | 4.147E+00 | 4.387E-01 | 1.298 |
| | | 445.03 | | 8.799E-01 | 5.920E+00 | 9.856E+00 | 1.003E+00 | 0.089 |
| RA-224 | | 240.98 | * | 4.861E+00 | 1.853E+00 | 2.917E+00 | 1.709E-01 | 1.667 |
| RA-226 | + | 609.31 | * | 9.636E-01 | 2.728E-01 | 3.924E-01 | 2.896E-02 | 2.456 |
| | | 1120.29 | | 5.310E-01 | 6.734E-01 | 1.172E+00 | 1.071E-01 | 0.453 |
| | | 1764.49 | | 1.470E+00 | 5.455E-01 | 1.188E+00 | 6.956E-02 | 1.238 |
| AC-227 | | 79.80 | | -1.513E+00 | 3.592E+00 | 5.134E+00 | 1.118E+00 | -0.295 |
| | | 236.00 | | 1.589E+00 | 6.339E-01 | 9.739E-01 | 1.020E-01 | 1.631 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TH-227 | | 256.20 | * | -3.650E-01 | 8.386E-01 | 1.310E+00 | 1.835E-01 | -0.279 |
| | | 286.10 | | -6.699E-01 | 3.222E+00 | 5.375E+00 | 6.261E-01 | -0.125 |
| | | 299.80 | | 2.148E+00 | 3.500E+00 | 5.298E+00 | 8.660E-01 | 0.405 |
| | | 304.40 | | -3.648E+00 | 4.190E+00 | 6.682E+00 | 1.160E+00 | -0.546 |
| | | 334.20 | | -3.817E+00 | 5.625E+00 | 7.726E+00 | 1.419E+00 | -0.494 |
| | | 79.80 | | -1.513E+00 | 3.592E+00 | 5.134E+00 | 1.132E+00 | -0.295 |
| | + | 94.00 | | 5.713E+00 | 4.574E+00 | 5.577E+00 | 1.219E+00 | 1.024 |
| | | 236.00 | | 1.589E+00 | 6.285E-01 | 9.739E-01 | 8.845E-02 | 1.631 |
| | | 256.20 | * | -3.650E-01 | 8.394E-01 | 1.310E+00 | 2.219E-01 | -0.279 |
| | | 286.10 | | -6.699E-01 | 3.290E+00 | 5.375E+00 | 5.385E+00 | -0.125 |
| TH-229 | | 299.80 | | 2.148E+00 | 3.500E+00 | 5.298E+00 | 8.660E-01 | 0.405 |
| | | 304.40 | | -3.648E+00 | 4.190E+00 | 6.682E+00 | 1.160E+00 | -0.546 |
| | | 334.20 | | -3.817E+00 | 5.625E+00 | 7.726E+00 | 1.419E+00 | -0.494 |
| | | 85.43 | | 1.921E+00 | 5.012E-01 | 7.831E-01 | 7.565E-02 | 2.453 |
| | + | 88.47 | | 4.280E+00 | 6.104E-01 | 6.620E-01 | 6.479E-02 | 6.465 |
| | | 100.00 | | -1.559E-02 | 3.290E-01 | 5.432E-01 | 4.367E-02 | -0.029 |
| | | 193.63 | * | -5.507E-01 | 1.115E+00 | 1.622E+00 | 9.061E-02 | -0.340 |
| | | 210.97 | | 1.375E+00 | 1.621E+00 | 2.704E+00 | 1.542E-01 | 0.509 |
| | + | 609.31 | * | 9.636E-01 | 2.728E-01 | 3.924E-01 | 2.896E-02 | 2.456 |
| | | 1120.29 | | 5.310E-01 | 6.734E-01 | 1.172E+00 | 1.071E-01 | 0.453 |
| PA-231 | | 1764.49 | | 1.470E+00 | 5.455E-01 | 1.188E+00 | 6.955E-02 | 1.238 |
| | | 283.67 | * | 7.865E-01 | 3.145E+00 | 5.359E+00 | 7.424E-01 | 0.147 |
| TH-231 | | 301.29 | | 8.226E-01 | 1.400E+00 | 2.122E+00 | 2.238E-01 | 0.388 |
| | | 81.07 | | -1.109E+00 | 5.561E-01 | 6.666E-01 | 6.231E-02 | -1.664 |
| | | 83.78 | | 2.542E-01 | 2.912E-01 | 4.404E-01 | 4.199E-02 | 0.577 |
| | | 94.90 | | -2.023E-01 | 4.393E-01 | 6.222E-01 | 5.417E-02 | -0.325 |
| | + | 122.32 | | 1.710E+01 | 5.009E+00 | 7.455E+00 | 5.183E-01 | 2.294 |
| | | 144.24 | | 2.600E-01 | 1.240E+00 | 2.044E+00 | 1.459E-01 | 0.127 |
| | | 154.21 | | 4.153E-01 | 7.322E-01 | 1.223E+00 | 8.326E-02 | 0.340 |
| | | 269.46 | | 3.443E-01 | 4.260E-01 | 7.054E-01 | 4.379E-02 | 0.488 |
| | + | 323.87 | * | -1.364E+00 | 1.440E+00 | 2.272E+00 | 3.762E-01 | -0.600 |
| | | 338.28 | | 5.381E+00 | 3.003E+00 | 4.147E+00 | 4.387E-01 | 1.298 |
| U-231 | | 445.03 | | 8.799E-01 | 5.920E+00 | 9.856E+00 | 1.003E+00 | 0.089 |
| | | 84.21 | | 5.776E+00 | 4.329E+00 | 6.637E+00 | 6.349E-01 | 0.870 |
| | + | 92.29 | | 1.955E+00 | 1.515E+00 | 2.065E+00 | 1.881E-01 | 0.947 |
| | | 95.87 | * | -3.988E-01 | 7.208E-01 | 1.014E+00 | 8.688E-02 | -0.393 |
| | | 108.00 | | -9.749E-01 | 1.291E+00 | 2.061E+00 | 1.485E-01 | -0.473 |
| PA-233 | + | 75.28 | | 1.867E+01 | 7.867E+00 | 1.224E+01 | 1.909E+00 | 1.525 |
| | + | 86.59 | | 6.137E+01 | 1.788E+01 | 9.797E+00 | 2.665E+00 | 6.264 |
| | | 300.12 | | 4.648E-01 | 9.779E-01 | 1.472E+00 | 1.989E-01 | 0.316 |
| | | 311.98 | * | 7.848E-02 | 1.473E-01 | 2.530E-01 | 1.596E-02 | 0.310 |
| | | 340.50 | | 1.895E+00 | 1.481E+00 | 2.250E+00 | 5.172E-01 | 0.842 |
| PA-234 | | 398.62 | | -1.377E+00 | 4.913E+00 | 8.019E+00 | 2.069E+00 | -0.172 |
| | | 415.76 | | 7.694E-01 | 3.799E+00 | 6.361E+00 | 1.306E+00 | 0.121 |
| | | 63.00 | | 1.508E+00 | 3.517E+00 | 5.308E+00 | 8.349E-01 | 0.284 |
| | | 94.67 | | -7.397E-02 | 3.163E-01 | 4.542E-01 | 5.672E-02 | -0.163 |
| | | 98.44 | | 1.450E-01 | 1.927E-01 | 2.793E-01 | 1.557E-01 | 0.519 |
| | | 99.86 | | 3.413E-02 | 8.362E-01 | 1.386E+00 | 1.116E-01 | 0.025 |
| | | 111.00 | | -7.385E-02 | 3.407E-01 | 5.562E-01 | 6.092E-02 | -0.133 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 131.20 | | 1.182E-01 | 1.990E-01 | 3.341E-01 | 1.969E-02 | 0.354 |
| | | 152.70 | | 2.273E-01 | 5.992E-01 | 9.927E-01 | 1.561E-01 | 0.229 |
| | | 186.00 | | 3.584E+00 | 2.713E+00 | 4.280E+00 | 1.306E+00 | 0.837 |
| | | 226.40 | | 1.409E-01 | 8.328E-01 | 1.350E+00 | 1.560E-01 | 0.104 |
| | | 227.20 | | -1.715E-01 | 9.154E-01 | 1.460E+00 | 8.457E-02 | -0.118 |
| | | 248.90 | | -1.269E+00 | 1.835E+00 | 2.806E+00 | 6.036E-01 | -0.452 |
| | + | 293.70 | | 6.151E+00 | 2.270E+00 | 2.805E+00 | 4.529E-01 | 2.193 |
| | | 369.80 | | 1.188E+00 | 2.011E+00 | 3.425E+00 | 7.123E-01 | 0.347 |
| | | 568.70 | | -7.742E-02 | 2.137E+00 | 3.478E+00 | 1.889E-01 | -0.022 |
| | | 569.50 | | -1.540E-01 | 5.743E-01 | 9.185E-01 | 4.986E-02 | -0.168 |
| | | 574.00 | | -8.594E-01 | 3.200E+00 | 5.116E+00 | 2.768E-01 | -0.168 |
| | | 699.00 | | -2.933E-01 | 1.612E+00 | 2.564E+00 | 4.570E-01 | -0.114 |
| | | 706.10 | | 1.357E+00 | 2.459E+00 | 4.010E+00 | 1.767E+00 | 0.338 |
| | | 733.00 | | 8.325E-01 | 9.500E-01 | 1.598E+00 | 3.389E-01 | 0.521 |
| | | 742.81 | | -2.052E+00 | 3.411E+00 | 4.742E+00 | 3.173E+00 | -0.433 |
| | | 796.30 | | -2.487E-01 | 2.094E+00 | 3.480E+00 | 9.180E-01 | -0.071 |
| | | 805.60 | | 4.818E-01 | 2.409E+00 | 4.084E+00 | 1.228E+00 | 0.118 |
| | | 819.60 | | 2.324E+00 | 3.167E+00 | 5.359E+00 | 2.015E+00 | 0.434 |
| | | 826.30 | | -1.497E+00 | 2.086E+00 | 3.124E+00 | 1.386E+00 | -0.479 |
| | | 831.60 | | 1.365E+00 | 1.552E+00 | 2.661E+00 | 7.802E-01 | 0.513 |
| | | 876.40 | | 1.235E+00 | 2.600E+00 | 3.920E+00 | 4.025E+00 | 0.315 |
| | | 880.51 | | 2.401E-02 | 7.645E-01 | 1.277E+00 | 9.035E-02 | 0.019 |
| | | 883.24 | | -2.336E-01 | 7.870E-01 | 1.259E+00 | 8.441E-01 | -0.186 |
| | | 899.00 | | 8.425E-01 | 2.444E+00 | 4.110E+00 | 1.787E+00 | 0.205 |
| | | 925.00 | | 1.039E+00 | 3.413E+00 | 5.782E+00 | 4.159E-01 | 0.180 |
| | | 926.50 | | 1.572E-01 | 4.964E-01 | 8.396E-01 | 2.084E-01 | 0.187 |
| | | 946.00 | * | -4.728E-01 | 9.196E-01 | 1.471E+00 | 2.667E-01 | -0.321 |
| | | 949.00 | | -4.631E-01 | 1.351E+00 | 2.194E+00 | 1.563E-01 | -0.211 |
| | | 980.50 | | 4.990E-01 | 1.977E+00 | 3.333E+00 | 2.338E-01 | 0.150 |
| | | 1394.10 | | 4.463E-02 | 1.710E+00 | 2.784E+00 | 1.804E+00 | 0.016 |
| PA-234M | | 766.42 | | 6.797E+00 | 2.651E+01 | 4.301E+01 | 2.165E+01 | 0.158 |
| | | 1001.03 | * | 2.904E+00 | 1.227E+01 | 2.063E+01 | 1.764E+00 | 0.141 |
| TH-234 | | 63.29 | * | 1.354E+00 | 2.982E+00 | 4.501E+00 | 8.183E-01 | 0.301 |
| | + | 92.38 | | 1.478E+00 | 1.170E+00 | 1.556E+00 | 2.849E-01 | 0.950 |
| U-234 | + | 609.31 | * | 9.636E-01 | 2.728E-01 | 3.924E-01 | 2.896E-02 | 2.456 |
| | | 1120.29 | | 5.310E-01 | 6.734E-01 | 1.172E+00 | 1.071E-01 | 0.453 |
| | | 1764.49 | | 1.470E+00 | 5.455E-01 | 1.188E+00 | 6.955E-02 | 1.238 |
| U-235 | | 89.95 | | 1.415E+01 | 5.448E+00 | 4.452E+00 | 1.385E+00 | 3.180 |
| | + | 93.35 | | 1.777E+00 | 1.457E+00 | 1.817E+00 | 5.111E-01 | 0.978 |
| | | 105.00 | | -2.679E-01 | 1.872E+00 | 3.070E+00 | 9.069E-01 | -0.087 |
| | | 143.76 | * | -1.352E-01 | 3.841E-01 | 6.169E-01 | 1.003E-01 | -0.219 |
| | | 163.35 | | 5.639E-02 | 9.002E-01 | 1.470E+00 | 2.627E-01 | 0.038 |
| | | 185.71 | | 1.060E-01 | 9.100E-02 | 1.551E-01 | 8.582E-03 | 0.684 |
| | | 205.31 | | -5.198E-01 | 1.117E+00 | 1.762E+00 | 3.162E-01 | -0.295 |
| NP-236 | | 94.67 | | -5.404E-02 | 2.399E-01 | 3.448E-01 | 3.014E-02 | -0.157 |
| | | 98.44 | | 1.097E-01 | 1.325E-01 | 2.111E-01 | 1.738E-02 | 0.519 |
| | | 111.00 | | -5.586E-02 | 2.577E-01 | 4.207E-01 | 2.920E-02 | -0.133 |
| | | 160.31 | * | 5.850E-02 | 1.537E-01 | 2.545E-01 | 1.393E-02 | 0.230 |
| U-238 | | 63.29 | * | 1.354E+00 | 2.982E+00 | 4.501E+00 | 8.183E-01 | 0.301 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| NP-239 | + | 92.38 | 1.478E+00 | 1.146E+00 | 1.556E+00 | 1.415E-01 | 0.950 |
| | | 99.55 | 1.071E-01 | 2.786E-01 | 4.679E-01 | 3.787E-02 | 0.229 |
| | | 117.00 * | 3.791E-01 | 4.108E-01 | 6.230E-01 | 4.025E-02 | 0.609 |
| | | 209.75 | 1.107E+00 | 1.653E+00 | 2.738E+00 | 1.559E-01 | 0.404 |
| | | 228.18 | -3.246E-02 | 4.773E-01 | 7.651E-01 | 4.437E-02 | -0.042 |
| CM-243 | | 277.60 | 3.087E-01 | 3.937E-01 | 6.521E-01 | 3.889E-02 | 0.473 |
| | | 334.30 | -2.177E+00 | 3.165E+00 | 4.375E+00 | 2.580E-01 | -0.498 |
| | | 99.55 | 1.102E-01 | 2.865E-01 | 4.813E-01 | 3.895E-02 | 0.229 |
| | | 103.76 * | 9.848E-02 | 1.717E-01 | 2.903E-01 | 2.212E-02 | 0.339 |
| | | 117.00 | 3.899E-01 | 4.224E-01 | 6.407E-01 | 4.139E-02 | 0.609 |
| AM-246 | | 209.75 | 1.091E+00 | 1.629E+00 | 2.698E+00 | 1.536E-01 | 0.404 |
| | | 228.18 | -3.278E-02 | 4.820E-01 | 7.728E-01 | 4.482E-02 | -0.042 |
| | | 277.60 | 3.111E-01 | 3.967E-01 | 6.571E-01 | 3.919E-02 | 0.473 |
| | | 798.80 | -1.174E-01 | 3.261E-01 | 5.327E-01 | 3.322E-02 | -0.220 |
| | | 1036.00 | -4.169E-01 | 8.110E-01 | 1.287E+00 | 8.719E-02 | -0.324 |
| CM-247 | | 1062.04 | 7.125E-02 | 5.976E-01 | 9.940E-01 | 6.599E-02 | 0.072 |
| | | 1078.86 * | 4.594E-02 | 3.610E-01 | 6.004E-01 | 3.930E-02 | 0.077 |
| | | 278.00 | 9.835E-01 | 1.543E+00 | 2.671E+00 | 1.593E-01 | 0.368 |
| | | 287.40 | 4.690E-01 | 2.570E+00 | 4.365E+00 | 2.607E-01 | 0.107 |
| | | 402.60 * | 1.192E-02 | 8.633E-02 | 1.443E-01 | 8.043E-03 | 0.083 |
| CF-249 | | 252.85 | 2.734E-01 | 1.905E+00 | 3.072E+00 | 1.815E-01 | 0.089 |
| | | 333.44 | -2.380E-01 | 4.172E-01 | 5.825E-01 | 3.437E-02 | -0.409 |
| | | 387.95 * | 2.462E-02 | 9.240E-02 | 1.558E-01 | 8.687E-03 | 0.158 |
| CF-251 | | 176.60 * | -2.000E-01 | 2.379E-01 | 3.707E-01 | 2.028E-02 | -0.540 |
| | | 227.00 | 2.729E-01 | 7.958E-01 | 1.301E+00 | 7.535E-02 | 0.210 |
| | | 285.00 | 2.654E-01 | 3.583E+00 | 6.058E+00 | 3.618E-01 | 0.044 |

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]G1202023715      *
* Acquisition date   : 4-FEB-2010 17:10:09 Detector SN#      :              *
* Detector ID        : GAM06                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time  : 0 01:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 01:00:01.42             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 27-JAN-2010 00:00:00 Nuclide Library : SOLID            *
* Sample ID         : G1202023715             Analyst initials: MXR1          *
* Batch Number      : 944964                  Sample Quantity : 1.5173E+02 GRAM   *
* Recovery          : 1.00000                  Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                               *
*
* Standard Weight   : 0.00000                                                         *
* CALIB. DATE/TIME  : 4-FEB-2009 13:05:54 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 | 1.056E+00 | 7.007E-01 | 8.660E-01 | 0.000E+00 |
| CO-57 | 2.434E-01 | 6.940E-02 | 8.340E-02 | 0.000E+00 |
| CO-60 | 6.818E+00 | 5.575E-01 | 1.077E-01 | 0.000E+00 |
| CD-109 | 3.159E+01 | 4.415E+00 | 3.018E+00 | 0.000E+00 |
| SN-126 | 3.135E+00 | 4.382E-01 | 3.011E-01 | 0.000E+00 |
| BA-137M | 5.470E+00 | 3.793E-01 | 1.303E-01 | 0.000E+00 |
| CS-137 | 5.782E+00 | 4.021E-01 | 1.377E-01 | 0.000E+00 |
| TL-208 | 5.856E-01 | 1.323E-01 | 1.211E-01 | 0.000E+00 |
| BI-211 | 3.214E+00 | 8.378E-01 | 7.555E-01 | 0.000E+00 |
| PB-212 | 9.371E-01 | 2.182E-01 | 2.296E-01 | 0.000E+00 |
| PO-212 | 9.371E-01 | 2.182E-01 | 2.296E-01 | 0.000E+00 |
| PB-214 | 1.118E+00 | 2.970E-01 | 2.634E-01 | 0.000E+00 |
| PO-214 | 1.118E+00 | 2.970E-01 | 2.634E-01 | 0.000E+00 |
| PO-216 | 9.371E-01 | 2.182E-01 | 2.296E-01 | 0.000E+00 |
| PO-218 | 1.118E+00 | 2.970E-01 | 2.634E-01 | 0.000E+00 |
| AC-228 | 1.577E+00 | 5.897E-01 | 6.276E-01 | 0.000E+00 |
| RA-228 | 1.577E+00 | 5.897E-01 | 6.276E-01 | 0.000E+00 |
| TH-228 | 9.453E-01 | 2.201E-01 | 2.316E-01 | 0.000E+00 |
| TH-232 | 1.577E+00 | 5.897E-01 | 6.276E-01 | 0.000E+00 |
| NP-237 | 9.206E+00 | 2.263E+00 | 9.086E-01 | 0.000E+00 |
| AM-241 | 1.440E+01 | 1.660E+00 | 7.697E-01 | 0.000E+00 |
| AM-243 | 3.565E-01 | 1.403E-01 | 1.873E-01 | 0.000E+00 |
| ANH-511 | 1.558E-01 | 1.177E-01 | 1.093E-01 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | 8.391E-01 | 7.712E-01 | 1.411E+00 | 0.000E+00 NOT IDENT. |
| NA-22 | -1.937E-02 | 6.302E-02 | 1.011E-01 | 0.000E+00 NOT IDENT. |
| NA-24 | 0.000E+00 | 7.035E+02 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| AL-26 | 7.759E-03 | 5.801E-02 | 1.006E-01 | 0.000E+00 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| TI-44 | 0.000E+00 | 8.166E-02 | 1.435E-01 | 0.000E+00 | NOT IDENT. |
| SC-46 | -6.541E-02 | 9.680E-02 | 1.600E-01 | 0.000E+00 | NOT IDENT. |
| V-48 | 3.818E-02 | 1.399E-01 | 2.453E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | 3.670E-03 | 6.706E-01 | 1.202E+00 | 0.000E+00 | NOT IDENT. |
| MN-52 | 9.294E-02 | 1.678E-01 | 3.059E-01 | 0.000E+00 | FAIL ABUN |
| MN-54 | -1.055E-02 | 8.740E-02 | 1.512E-01 | 0.000E+00 | NOT IDENT. |
| CO-56 | 4.728E-02 | 9.337E-02 | 1.679E-01 | 0.000E+00 | NOT IDENT. |
| CO-58 | 1.590E-02 | 8.471E-02 | 1.500E-01 | 0.000E+00 | NOT IDENT. |
| FE-59 | -9.779E-04 | 2.063E-01 | 3.514E-01 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 8.831E-05 | 1.949E-01 | 3.316E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | -2.183E+00 | 3.076E+00 | 4.955E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | 1.439E+00 | 2.860E+00 | 4.800E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | 5.742E-03 | 1.584E-01 | 2.720E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -1.664E-03 | 9.283E-02 | 1.592E-01 | 0.000E+00 | FAIL ABUN |
| BR-77 | 4.974E-01 | 3.840E+00 | 6.699E+00 | 0.000E+00 | FAIL ABUN |
| SR-82 | -3.291E-01 | 7.320E-01 | 1.245E+00 | 0.000E+00 | NOT IDENT. |
| RB-83 | 4.838E-02 | 1.586E-01 | 2.794E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | -1.536E-01 | 1.620E-01 | 2.627E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 9.578E+00 | 1.701E+01 | 2.677E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 4.590E-02 | 8.151E-02 | 1.283E-01 | 0.000E+00 | NOT IDENT. |
| RB-86 | -8.755E-01 | 1.568E+00 | 2.560E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 5.245E-02 | 5.606E-02 | 1.120E-01 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -8.073E-03 | 6.760E-02 | 1.188E-01 | 0.000E+00 | NOT IDENT. |
| Y-91 | 5.255E+00 | 2.631E+01 | 4.551E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -3.124E-02 | 7.552E-02 | 1.237E-01 | 0.000E+00 | NOT IDENT. |
| NB-95 | 3.993E-02 | 9.032E-02 | 1.564E-01 | 0.000E+00 | NOT IDENT. |
| NB-95M | 3.351E-01 | 2.927E-01 | 4.680E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 8.029E-02 | 1.417E-01 | 2.491E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 6.018E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 7.753E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | -1.265E+00 | 5.125E+00 | 8.447E+00 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 1.396E+09 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 1.332E-02 | 6.647E-02 | 1.172E-01 | 0.000E+00 | NOT IDENT. |
| RH-102 | 4.621E-03 | 7.819E-02 | 1.367E-01 | 0.000E+00 | NOT IDENT. |
| RU-103 | 1.040E-01 | 8.488E-02 | 1.563E-01 | 0.000E+00 | FAIL ABUN |
| RH-106 | -2.528E-02 | 7.198E-01 | 1.226E+00 | 0.000E+00 | FAIL ABUN |
| RU-106 | -2.528E-02 | 7.198E-01 | 1.226E+00 | 0.000E+00 | FAIL ABUN |
| AG-108M | -2.784E-02 | 8.190E-02 | 1.412E-01 | 0.000E+00 | NOT IDENT. |
| AG-110M | 0.000E+00 | 1.085E-01 | 1.997E-01 | 0.000E+00 | NOT IDENT. |
| IN-111 | -9.280E-01 | 5.089E-01 | 7.997E-01 | 0.000E+00 | NOT IDENT. |
| IN-113M | -4.505E-02 | 9.816E-02 | 1.694E-01 | 0.000E+00 | NOT IDENT. |
| SN-113 | -4.505E-02 | 9.816E-02 | 1.694E-01 | 0.000E+00 | NOT IDENT. |
| IN-114M | 8.782E-02 | 3.585E-01 | 5.577E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | -9.197E-01 | 3.274E+00 | 5.555E+00 | 0.000E+00 | NOT IDENT. |
| SN-117M | -5.280E-05 | 7.438E-02 | 1.318E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | 6.020E-01 | 8.111E-01 | 1.468E+00 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 3.166E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 5.059E-04 | 5.150E-02 | 9.131E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -5.989E-02 | 5.596E-01 | 8.183E-01 | 0.000E+00 | NOT IDENT. |
| SB-124 | 3.395E-02 | 1.119E-01 | 2.023E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | 2.662E-02 | 2.234E-01 | 3.948E-01 | 0.000E+00 | NOT IDENT. |
| TE-125M | 1.233E+01 | 1.516E+01 | 2.822E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | -3.014E-04 | 3.074E-01 | 4.501E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | 4.642E-02 | 2.225E-01 | 3.813E-01 | 0.000E+00 | NOT IDENT. |
| SB-127 | -5.216E-01 | 8.827E-01 | 1.419E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 3.856E-02 | 8.316E-02 | 1.481E-01 | 0.000E+00 | NOT IDENT. |
| I-131 | -3.715E-02 | 1.537E-01 | 2.699E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | -2.371E-02 | 3.648E-01 | 6.303E-01 | 0.000E+00 | NOT IDENT. |
| BA-133 | -1.573E-02 | 1.067E-01 | 1.633E-01 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 7.930E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | -6.134E-03 | 1.063E-01 | 1.854E-01 | 0.000E+00 | NOT IDENT. |
| CS-135 | 1.268E-01 | 3.500E-01 | 6.102E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 7.069E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -5.045E-02 | 1.850E-01 | 3.096E-01 | 0.000E+00 | NOT IDENT. |
| CE-139 | -4.160E-04 | 5.302E-02 | 9.370E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -1.863E-01 | 4.030E-01 | 6.663E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -1.691E-02 | 1.041E-01 | 1.734E-01 | 0.000E+00 | NOT IDENT. |
| CE-141 | 8.884E-02 | 9.684E-02 | 1.789E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 1.368E+01 | 2.205E+01 | 0.000E+00 | FAIL ABUN |
| CE-144 | -3.217E-01 | 3.864E-01 | 6.637E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | -1.578E-02 | 7.589E-02 | 1.264E-01 | 0.000E+00 | NOT IDENT. |
| PR-144 | -1.066E+00 | 5.125E+00 | 8.534E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 1.050E-01 | 1.134E-01 | 2.068E-01 | 0.000E+00 | NOT IDENT. |
| ND-147 | 5.540E-01 | 8.210E-01 | 1.476E+00 | 0.000E+00 | FAIL ABUN |
| PM-149 | 1.659E+00 | 2.502E+01 | 4.530E+01 | 0.000E+00 | NOT IDENT. |
| EU-152 | -1.386E-01 | 2.304E-01 | 3.410E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | 1.090E-01 | 1.487E-01 | 2.471E-01 | 0.000E+00 | NOT IDENT. |
| EU-154 | -4.961E-02 | 1.773E-01 | 2.856E-01 | 0.000E+00 | FAIL ABUN |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| EU-155 | -8.993E-02 | 1.876E-01 | 3.330E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 4.322E-02 | 3.420E-01 | 5.990E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | 1.065E-02 | 1.344E-01 | 2.284E-01 | 0.000E+00 | NOT IDENT. |
| TM-171 | -4.656E+01 | 5.479E+01 | 9.848E+01 | 0.000E+00 | FAIL ABUN |
| LU-176 | -1.270E-02 | 5.302E-02 | 9.423E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 1.040E+00 | 1.160E+00 | 2.093E+00 | 0.000E+00 | NOT IDENT. |
| LU-177M | -1.189E-01 | 3.828E-01 | 6.626E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | -6.056E-02 | 9.397E-02 | 1.575E-01 | 0.000E+00 | NOT IDENT. |
| W-181 | -1.745E-01 | 7.176E-01 | 1.277E+00 | 0.000E+00 | NOT IDENT. |
| TA-182 | -8.772E-03 | 2.644E-01 | 4.444E-01 | 0.000E+00 | NOT IDENT. |
| RE-183 | 6.268E-02 | 1.938E-01 | 3.477E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | 7.097E-02 | 4.846E-01 | 8.401E-01 | 0.000E+00 | FAIL ABUN |
| OS-185 | -3.016E-02 | 9.417E-02 | 1.565E-01 | 0.000E+00 | FAIL ABUN |
| RE-188 | -5.340E-03 | 2.972E-01 | 5.271E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | 2.180E-01 | 1.549E+01 | 2.437E+01 | 0.000E+00 | NOT IDENT. |
| IR-192 | -4.092E-02 | 7.092E-02 | 1.237E-01 | 0.000E+00 | FAIL ABUN |
| AU-195 | 2.142E-01 | 4.000E-01 | 7.190E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 1.759E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | -4.165E-01 | 3.005E+00 | 5.276E+00 | 0.000E+00 | NOT IDENT. |
| TL-202 | 8.759E-02 | 1.201E-01 | 2.181E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | 1.764E-02 | 7.552E-02 | 1.379E-01 | 0.000E+00 | NOT IDENT. |
| BI-207 | 1.252E-01 | 1.285E-01 | 2.350E-01 | 0.000E+00 | FAIL ABUN |
| TL-207 | -1.364E+00 | 1.411E+00 | 2.378E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | 2.844E+00 | 2.019E+01 | 3.532E+01 | 0.000E+00 | NOT IDENT. |
| BI-210 | -4.901E+00 | 1.110E+01 | 2.065E+01 | 0.000E+00 | NOT IDENT. |
| PB-210 | -4.901E+00 | 1.110E+01 | 2.065E+01 | 0.000E+00 | NOT IDENT. |
| PO-210 | -4.901E+00 | 1.110E+01 | 2.065E+01 | 0.000E+00 | NOT IDENT. |
| PB-211 | -1.440E+00 | 2.316E+00 | 3.647E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 3.752E-01 | 7.396E-01 | 1.287E+00 | 0.000E+00 | NOT IDENT. |
| BI-214 | 0.000E+00 | 2.673E-01 | 4.044E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | -1.364E+00 | 1.411E+00 | 2.378E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | -7.986E-02 | 9.424E-01 | 1.655E+00 | 0.000E+00 | NOT IDENT. |
| RN-220 | 4.700E+01 | 5.990E+01 | 1.083E+02 | 0.000E+00 | NOT IDENT. |
| RA-223 | -1.364E+00 | 1.411E+00 | 2.378E+00 | 0.000E+00 | FAIL ABUN |
| RA-224 | 0.000E+00 | 1.816E+00 | 3.076E+00 | 0.000E+00 | NOT IDENT. |
| RA-226 | 0.000E+00 | 2.673E-01 | 4.044E-01 | 0.000E+00 | FAIL ABUN |
| AC-227 | -3.650E-01 | 8.219E-01 | 1.380E+00 | 0.000E+00 | NOT IDENT. |
| TH-227 | -3.650E-01 | 8.226E-01 | 1.380E+00 | 0.000E+00 | FAIL ABUN |
| TH-229 | -5.507E-01 | 1.093E+00 | 1.719E+00 | 0.000E+00 | FAIL ABUN |
| TH-230 | 0.000E+00 | 2.673E-01 | 4.044E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | 7.865E-01 | 3.082E+00 | 5.629E+00 | 0.000E+00 | NOT IDENT. |
| TH-231 | -1.364E+00 | 1.411E+00 | 2.378E+00 | 0.000E+00 | FAIL ABUN |
| U-231 | -3.988E-01 | 7.064E-01 | 1.093E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 7.848E-02 | 1.443E-01 | 2.651E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | -4.728E-01 | 9.012E-01 | 1.499E+00 | 0.000E+00 | FAIL ABUN |
| PA-234M | 2.904E+00 | 1.203E+01 | 2.099E+01 | 0.000E+00 | NOT IDENT. |
| TH-234 | 1.354E+00 | 2.923E+00 | 4.899E+00 | 0.000E+00 | FAIL ABUN |
| U-234 | 0.000E+00 | 2.673E-01 | 4.044E-01 | 0.000E+00 | FAIL ABUN |
| U-235 | -1.352E-01 | 3.765E-01 | 6.587E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | 5.850E-02 | 1.506E-01 | 2.710E-01 | 0.000E+00 | NOT IDENT. |
| U-238 | 1.354E+00 | 2.923E+00 | 4.899E+00 | 0.000E+00 | FAIL ABUN |
| NP-239 | 3.791E-01 | 4.026E-01 | 6.685E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | 9.848E-02 | 1.683E-01 | 3.123E-01 | 0.000E+00 | NOT IDENT. |
| AM-246 | 4.594E-02 | 3.538E-01 | 6.097E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 1.192E-02 | 8.460E-02 | 1.503E-01 | 0.000E+00 | NOT IDENT. |
| CF-249 | 2.462E-02 | 9.055E-02 | 1.623E-01 | 0.000E+00 | NOT IDENT. |
| CF-251 | -2.000E-01 | 2.332E-01 | 3.939E-01 | 0.000E+00 | NOT IDENT. |

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                          *
*                                     Charleston, SC 29414                      *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202023715.CNF;1
Sample date        : 27-JAN-2010 00:00:00 Acquisition date : 4-FEB-2010 17:10:09.
Sample ID          : G1202023715 Sample quantity : 1.51730E+02 GRAM
Detector name      : GAM06 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.42 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 944964 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
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Nuclide Line Activity Report

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|---------|-----------|----------------------|---------------------|----------------|
| K-40 | 1460.81 | 22 | 10.67* | 9.623E-01 | 1.056E+00 | 1.056E+00 | 67.71 |
| CO-57 | 122.06 | 249 | 85.51* | 6.047E+00 | 2.380E-01 | 2.434E-01 | 29.10 |
| | 136.48 | ----- | 10.60 | 5.955E+00 | ----- | Line Not Found | ----- |
| CO-60 | 1173.22 | 1536 | 100.00 | 1.162E+00 | 6.542E+00 | 6.562E+00 | 8.09 |
| | 1332.49 | 1427 | 100.00* | 1.039E+00 | 6.796E+00 | 6.818E+00 | 8.34 |
| CD-109 | 88.03 | 1219 | 3.72* | 5.199E+00 | 3.118E+01 | 3.159E+01 | 14.26 |
| SN-126 | 64.28 | ----- | 9.60 | 2.881E+00 | ----- | Line Not Found | ----- |
| | 86.94 | 1219 | 8.90 | 5.199E+00 | 1.303E+01 | 1.303E+01 | 42.89 |
| | 87.57 | 1219 | 37.00* | 5.199E+00 | 3.135E+00 | 3.135E+00 | 14.26 |
| BA-137M | 661.65 | 1928 | 89.98* | 1.939E+00 | 5.467E+00 | 5.470E+00 | 7.08 |
| CS-137 | 661.65 | 1928 | 85.12* | 1.939E+00 | 5.779E+00 | 5.782E+00 | 7.10 |
| TL-208 | 277.35 | ----- | 6.80 | 3.899E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 76 | 21.60 | 2.405E+00 | 7.212E-01 | 7.212E-01 | 77.56 |
| | 583.14 | 215 | 84.20* | 2.158E+00 | 5.856E-01 | 5.856E-01 | 23.05 |
| | 860.37 | ----- | 12.46 | 1.539E+00 | ----- | Line Not Found | ----- |
| BI-211 | 72.87 | ----- | 1.27 | 3.913E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 273 | 12.94* | 3.243E+00 | 3.214E+00 | 3.214E+00 | 26.59 |
| PB-212 | 74.81 | 195 | 10.70 | 4.092E+00 | 2.199E+00 | 2.199E+00 | 41.24 |
| | 77.11 | 295 | 18.00 | 4.326E+00 | 1.873E+00 | 1.873E+00 | 26.51 |
| | 87.30 | 1219 | 8.00 | 5.199E+00 | 1.450E+01 | 1.450E+01 | 17.42 |
| | 238.63 | 369 | 44.60* | 4.368E+00 | 9.371E-01 | 9.371E-01 | 23.76 |
| | 300.09 | ----- | 3.41 | 3.669E+00 | ----- | Line Not Found | ----- |
| PO-212 | 74.81 | 195 | 10.70 | 4.092E+00 | 2.199E+00 | 2.199E+00 | 41.24 |
| | 77.11 | 295 | 18.00 | 4.326E+00 | 1.873E+00 | 1.873E+00 | 26.51 |
| | 87.30 | 1219 | 8.00 | 5.199E+00 | 1.450E+01 | 1.450E+01 | 17.42 |
| | 115.19 | ----- | 0.60 | 6.030E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 369 | 44.60* | 4.368E+00 | 9.371E-01 | 9.371E-01 | 23.76 |
| | 300.09 | ----- | 3.41 | 3.669E+00 | ----- | Line Not Found | ----- |
| PB-214 | 74.81 | 195 | 6.21 | 4.092E+00 | 3.789E+00 | 3.789E+00 | 40.85 |
| | 77.11 | 295 | 10.50 | 4.326E+00 | 3.210E+00 | 3.210E+00 | 27.59 |
| | 87.30 | 1219 | 4.67 | 5.199E+00 | 2.484E+01 | 2.484E+01 | 16.21 |
| | 241.98 | ----- | 7.49 | 4.320E+00 | ----- | Line Not Found | ----- |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 295.21 | 185 | 19.20 | 3.718E+00 | 1.281E+00 | 1.281E+00 | 34.30 |
| | 351.92 | 273 | 37.20* | 3.243E+00 | 1.118E+00 | 1.118E+00 | 27.10 |
| | 74.81 | 195 | 6.21 | 4.092E+00 | 3.789E+00 | 3.789E+00 | 40.85 |
| | 77.11 | 295 | 10.50 | 4.326E+00 | 3.210E+00 | 3.210E+00 | 27.59 |
| | 87.30 | 1219 | 4.67 | 5.199E+00 | 2.484E+01 | 2.484E+01 | 16.21 |
| | 241.98 | ----- | 7.49 | 4.320E+00 | ----- | Line Not Found | ----- |
| PO-216 | 295.21 | 185 | 19.20 | 3.718E+00 | 1.281E+00 | 1.281E+00 | 34.30 |
| | 351.92 | 273 | 37.20* | 3.243E+00 | 1.118E+00 | 1.118E+00 | 27.10 |
| | 74.81 | 195 | 10.70 | 4.092E+00 | 2.199E+00 | 2.199E+00 | 41.24 |
| | 77.11 | 295 | 18.00 | 4.326E+00 | 1.873E+00 | 1.873E+00 | 26.51 |
| | 87.30 | 1219 | 8.00 | 5.199E+00 | 1.450E+01 | 1.450E+01 | 17.42 |
| | 238.63 | 369 | 44.60* | 4.368E+00 | 9.371E-01 | 9.371E-01 | 23.76 |
| | 300.09 | ----- | 3.41 | 3.669E+00 | ----- | Line Not Found | ----- |
| PO-218 | 74.81 | 195 | 6.21 | 4.092E+00 | 3.789E+00 | 3.789E+00 | 40.85 |
| | 77.11 | 295 | 10.50 | 4.326E+00 | 3.210E+00 | 3.210E+00 | 27.59 |
| | 87.30 | 1219 | 4.67 | 5.199E+00 | 2.484E+01 | 2.484E+01 | 16.21 |
| | 241.98 | ----- | 7.49 | 4.320E+00 | ----- | Line Not Found | ----- |
| | 295.21 | 185 | 19.20 | 3.718E+00 | 1.281E+00 | 1.281E+00 | 34.30 |
| AC-228 | 351.92 | 273 | 37.20* | 3.243E+00 | 1.118E+00 | 1.118E+00 | 27.10 |
| | 338.32 | 99 | 11.40 | 3.343E+00 | 1.289E+00 | 1.289E+00 | 68.31 |
| | 911.07 | 129 | 27.70* | 1.462E+00 | 1.577E+00 | 1.577E+00 | 38.16 |
| RA-228 | 969.11 | 68 | 16.60 | 1.382E+00 | 1.474E+00 | 1.474E+00 | 61.31 |
| | 338.32 | 99 | 11.40 | 3.343E+00 | 1.289E+00 | 1.289E+00 | 68.31 |
| TH-228 | 911.07 | 129 | 27.70* | 1.462E+00 | 1.577E+00 | 1.577E+00 | 38.16 |
| | 969.11 | 68 | 16.60 | 1.382E+00 | 1.474E+00 | 1.474E+00 | 61.31 |
| | 74.81 | 195 | 10.70 | 4.092E+00 | 2.199E+00 | 2.218E+00 | 40.19 |
| | 77.11 | 295 | 18.00 | 4.326E+00 | 1.873E+00 | 1.889E+00 | 26.51 |
| | 87.30 | 1219 | 8.00 | 5.199E+00 | 1.450E+01 | 1.463E+01 | 14.26 |
| | 238.63 | 369 | 44.60* | 4.368E+00 | 9.371E-01 | 9.453E-01 | 23.76 |
| | 300.09 | ----- | 3.41 | 3.669E+00 | ----- | Line Not Found | ----- |
| TH-232 | 338.32 | 99 | 11.40 | 3.343E+00 | 1.289E+00 | 1.289E+00 | 55.11 |
| | 911.07 | 129 | 27.70* | 1.462E+00 | 1.577E+00 | 1.577E+00 | 38.16 |
| | 969.11 | 68 | 16.60 | 1.382E+00 | 1.474E+00 | 1.474E+00 | 61.31 |
| NP-237 | 86.50 | 1219 | 12.60* | 5.199E+00 | 9.206E+00 | 9.206E+00 | 25.08 |
| | 95.87 | ----- | 2.60 | 5.611E+00 | ----- | Line Not Found | ----- |
| AM-241 | 59.54 | 2325 | 35.90* | 2.225E+00 | 1.440E+01 | 1.440E+01 | 11.76 |
| AM-243 | 74.67 | 195 | 66.00* | 4.092E+00 | 3.565E-01 | 3.565E-01 | 40.17 |
| | 86.72 | 1219 | 0.34 | 5.199E+00 | 3.452E+02 | 3.452E+02 | 14.26 |
| | 117.66 | ----- | 0.55 | 6.042E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 5.887E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 76 | 100.00* | 2.405E+00 | 1.558E-01 | 1.558E-01 | 77.12 |

Flag: "*" = Keyline

Total number of lines in spectrum 20
Number of unidentified lines 1
Number of lines tentatively identified by NID 19 95.00%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|---------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 1.056E+00 | 1.056E+00 | 0.715E+00 | 67.71 | |
| CO-57 | 270.90D | 1.02 | 2.380E-01 | 2.434E-01 | 0.708E-01 | 29.10 | |
| CO-60 | 5.27Y | 1.00 | 6.796E+00 | 6.818E+00 | 0.569E+00 | 8.34 | |
| CD-109 | 464.00D | 1.01 | 3.118E+01 | 3.159E+01 | 0.451E+01 | 14.26 | |
| SN-126 | 1.00E+05Y | 1.00 | 3.135E+00 | 3.135E+00 | 0.447E+00 | 14.26 | |
| BA-137M | 30.17Y | 1.00 | 5.467E+00 | 5.470E+00 | 0.387E+00 | 7.08 | |
| CS-137 | 30.17Y | 1.00 | 5.779E+00 | 5.782E+00 | 0.410E+00 | 7.10 | |
| TL-208 | 1.41E+10Y | 1.00 | 5.856E-01 | 5.856E-01 | 1.350E-01 | 23.05 | |
| BI-211 | 7.04E+08Y | 1.00 | 3.214E+00 | 3.214E+00 | 0.855E+00 | 26.59 | |
| PB-212 | 1.41E+10Y | 1.00 | 9.371E-01 | 9.371E-01 | 2.226E-01 | 23.76 | |
| PO-212 | 1.41E+10Y | 1.00 | 9.371E-01 | 9.371E-01 | 2.226E-01 | 23.76 | |
| PB-214 | 1600.00Y | 1.00 | 1.118E+00 | 1.118E+00 | 0.303E+00 | 27.10 | |
| PO-214 | 1600.00Y | 1.00 | 1.118E+00 | 1.118E+00 | 0.303E+00 | 27.10 | |
| PO-216 | 1.41E+10Y | 1.00 | 9.371E-01 | 9.371E-01 | 2.226E-01 | 23.76 | |
| PO-218 | 1600.00Y | 1.00 | 1.118E+00 | 1.118E+00 | 0.303E+00 | 27.10 | |
| AC-228 | 1.41E+10Y | 1.00 | 1.577E+00 | 1.577E+00 | 0.602E+00 | 38.16 | |
| RA-228 | 1.41E+10Y | 1.00 | 1.577E+00 | 1.577E+00 | 0.602E+00 | 38.16 | |
| TH-228 | 1.91Y | 1.01 | 9.371E-01 | 9.453E-01 | 2.246E-01 | 23.76 | |
| TH-232 | 1.41E+10Y | 1.00 | 1.577E+00 | 1.577E+00 | 0.602E+00 | 38.16 | |
| NP-237 | 2.14E+06Y | 1.00 | 9.206E+00 | 9.206E+00 | 2.309E+00 | 25.08 | |
| AM-241 | 432.20Y | 1.00 | 1.440E+01 | 1.440E+01 | 0.169E+01 | 11.76 | |
| AM-243 | 7380.00Y | 1.00 | 3.565E-01 | 3.565E-01 | 1.432E-01 | 40.17 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.558E-01 | 1.558E-01 | 1.201E-01 | 77.12 | |

Total Activity : 9.341E+01 9.386E+01

Grand Total Activity : 9.341E+01 9.386E+01

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

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

Unidentified Energy Lines
Sample ID : G1202023715

Page : 4
Acquisition date : 4-FEB-2010 17:10:09

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|--------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 92.59 | 88 | 309 | 1.44 | 185.19 | 182 | 9 | 2.45E-02 | 77.0 | 5.46E+00 | T |
| 0 | 187.95 | 100 | 554 | 3.09 | 375.90 | 364 | 17 | 2.79E-02 | **** | 5.14E+00 | |
| 0 | 609.29 | 187 | 101 | 1.43 | 1218.57 | 1213 | 14 | 5.21E-02 | 27.3 | 2.08E+00 | T |

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 4-FEB-2010 18:10:44.54

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202023715.CNF;1
* Acquisition date   : 4-FEB-2010 17:10:09.  Detector SN#      :
* Detector ID        : GAM06                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 01:00:00.00          Abundance limit : 75.00000
* Elapsed real time  : 0 01:00:01.42          Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 27-JAN-2010 00:00:00  Nuclide Library : SOLID
* Sample ID          : G1202023715          Analyst initials: MXR1
* Batch Number       : 944964               Sample Quantity : 1.51730E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 4-FEB-2009 13:05:54.47MS 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 | 1.056E+00 | 7.150E-01 | 8.597E-01 | 5.687E-02 | 1.228 |
| CO-57 | 2.434E-01 | 7.082E-02 | 7.780E-02 | 4.752E-03 | 3.128 |
| CO-60 | 6.818E+00 | 5.689E-01 | 1.067E-01 | 6.701E-03 | 63.910 |
| CD-109 | 3.159E+01 | 4.505E+00 | 2.794E+00 | 2.759E-01 | 11.305 |
| SN-126 | 3.135E+00 | 4.471E-01 | 2.788E-01 | 2.743E-02 | 11.246 |
| BA-137M | 5.470E+00 | 3.870E-01 | 1.267E-01 | 6.255E-03 | 43.187 |
| CS-137 | 5.782E+00 | 4.103E-01 | 1.339E-01 | 6.651E-03 | 43.187 |
| TL-208 | 5.856E-01 | 1.350E-01 | 1.174E-01 | 7.418E-03 | 4.989 |
| BI-211 | 3.214E+00 | 8.548E-01 | 7.230E-01 | 4.667E-02 | 4.446 |
| PB-212 | 9.371E-01 | 2.226E-01 | 2.177E-01 | 1.605E-02 | 4.305 |
| PO-212 | 9.371E-01 | 2.226E-01 | 2.177E-01 | 1.605E-02 | 4.305 |
| PB-214 | 1.118E+00 | 3.030E-01 | 2.520E-01 | 2.091E-02 | 4.436 |
| PO-214 | 1.118E+00 | 3.030E-01 | 2.520E-01 | 2.091E-02 | 4.436 |
| PO-216 | 9.371E-01 | 2.226E-01 | 2.177E-01 | 1.605E-02 | 4.305 |
| PO-218 | 1.118E+00 | 3.030E-01 | 2.520E-01 | 2.091E-02 | 4.436 |
| AC-228 | 1.577E+00 | 6.018E-01 | 6.153E-01 | 6.287E-02 | 2.563 |
| RA-228 | 1.577E+00 | 6.018E-01 | 6.153E-01 | 6.287E-02 | 2.563 |
| TH-228 | 9.453E-01 | 2.246E-01 | 2.196E-01 | 1.619E-02 | 4.305 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-232 | 1.577E+00 | 6.018E-01 | 6.153E-01 | 6.287E-02 | 2.563 |
| NP-237 | 9.206E+00 | 2.309E+00 | 8.409E-01 | 1.919E-01 | 10.948 |
| AM-241 | 1.440E+01 | 1.694E+00 | 7.063E-01 | 6.905E-02 | 20.394 |
| AM-243 | 3.565E-01 | 1.432E-01 | 1.727E-01 | 1.560E-02 | 2.064 |
| ANH-511 | 1.558E-01 | 1.201E-01 | 1.056E-01 | 5.901E-03 | 1.476 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | 8.391E-01 | | 7.869E-01 | 1.361E+00 | 8.988E-02 | 0.617 |
| NA-22 | -1.937E-02 | | 6.430E-02 | 9.997E-02 | 6.173E-03 | -0.194 |
| NA-24 | 4.415E-04 | | 3.589E-04 | Half-Life too short | | |
| AL-26 | 7.759E-03 | | 5.919E-02 | 1.004E-01 | 5.768E-03 | 0.077 |
| TI-44 | 2.675E-01 | | 8.332E-02 | 1.325E-01 | 1.218E-02 | 2.018 |
| SC-46 | -6.541E-02 | | 9.878E-02 | 1.568E-01 | 1.124E-02 | -0.417 |
| V-48 | 3.818E-02 | | 1.428E-01 | 2.410E-01 | 1.687E-02 | 0.158 |
| CR-51 | 3.670E-03 | | 6.843E-01 | 1.148E+00 | 7.563E-02 | 0.003 |
| MN-52 | 9.294E-02 | | 1.713E-01 | 3.035E-01 | 1.910E-02 | 0.306 |
| MN-54 | -1.055E-02 | | 8.918E-02 | 1.479E-01 | 9.764E-03 | -0.071 |
| CO-56 | 4.728E-02 | | 9.527E-02 | 1.643E-01 | 1.105E-02 | 0.288 |
| CO-58 | 1.590E-02 | | 8.644E-02 | 1.467E-01 | 9.363E-03 | 0.108 |
| FE-59 | -9.779E-04 | | 2.105E-01 | 3.463E-01 | 2.540E-02 | -0.003 |
| ZN-65 | 8.831E-05 | | 1.988E-01 | 3.268E-01 | 2.070E-02 | 0.000 |
| GE-68 | -2.183E+00 | | 3.139E+00 | 4.879E+00 | 3.198E-01 | -0.447 |
| AS-73 | 1.439E+00 | | 2.919E+00 | 4.394E+00 | 4.018E-01 | 0.328 |
| AS-74 | 5.742E-03 | | 1.616E-01 | 2.638E-01 | 1.403E-02 | 0.022 |
| SE-75 | -1.664E-03 | | 9.472E-02 | 1.513E-01 | 9.074E-03 | -0.011 |
| BR-77 | 4.974E-01 | | 3.919E+00 | 6.475E+00 | 3.608E-01 | 0.077 |
| SR-82 | -3.291E-01 | | 7.469E-01 | 1.215E+00 | 7.310E-02 | -0.271 |
| RB-83 | 4.838E-02 | | 1.618E-01 | 2.701E-01 | 1.505E-02 | 0.179 |
| RB-84 | -1.536E-01 | | 1.654E-01 | 2.573E-01 | 1.823E-02 | -0.597 |
| KR-85 | 9.578E+00 | | 1.735E+01 | 2.586E+01 | 1.444E+00 | 0.370 |
| SR-85 | 4.590E-02 | | 8.317E-02 | 1.239E-01 | 6.922E-03 | 0.370 |
| RB-86 | -8.755E-01 | | 1.600E+00 | 2.520E+00 | 1.653E-01 | -0.347 |
| Y-88 | 5.245E-02 | | 5.720E-02 | 1.119E-01 | 6.358E-03 | 0.469 |
| ZR-88 | -8.073E-03 | | 6.898E-02 | 1.140E-01 | 6.324E-03 | -0.071 |
| Y-91 | 5.255E+00 | | 2.684E+01 | 4.494E+01 | 2.696E+00 | 0.117 |
| NB-94 | -3.124E-02 | | 7.706E-02 | 1.204E-01 | 6.397E-03 | -0.259 |
| NB-95 | 3.993E-02 | | 9.217E-02 | 1.527E-01 | 9.026E-03 | 0.261 |
| NB-95M | 3.351E-01 | | 2.987E-01 | 4.435E-01 | 3.352E-02 | 0.756 |
| ZR-95 | 8.029E-02 | | 1.446E-01 | 2.430E-01 | 1.713E-02 | 0.330 |
| NB-97 | 2.841E-03 | | 3.070E-04 | Half-Life too short | | |
| ZR-97 | 6.855E-03 | | 3.956E-03 | Half-Life too short | | |
| MO-99 | -1.265E+00 | | 5.230E+00 | 8.237E+00 | 1.130E+00 | -0.154 |
| TC-99M | -2.150E+03 | | 7.120E+02 | Half-Life too short | | |
| RH-101 | 1.332E-02 | | 6.783E-02 | 1.106E-01 | 6.214E-03 | 0.120 |
| RH-102 | 4.621E-03 | | 7.978E-02 | 1.318E-01 | 7.422E-03 | 0.035 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| RU-103 | 1.040E-01 | | 8.661E-02 | 1.509E-01 | 1.895E-02 | 0.689 |
| RH-106 | -2.528E-02 | | 7.345E-01 | 1.190E+00 | 1.362E-01 | -0.021 |
| RU-106 | -2.528E-02 | | 7.345E-01 | 1.190E+00 | 6.171E-02 | -0.021 |
| AG-108M | -2.784E-02 | | 8.357E-02 | 1.358E-01 | 8.330E-03 | -0.205 |
| AG-110M | 3.840E-01 | | 1.107E-01 | 1.942E-01 | 1.048E-02 | 1.978 |
| IN-111 | -9.280E-01 | | 5.192E-01 | 7.586E-01 | 4.460E-02 | -1.223 |
| IN-113M | -4.505E-02 | | 1.002E-01 | 1.625E-01 | 9.673E-03 | -0.277 |
| SN-113 | -4.505E-02 | | 1.002E-01 | 1.625E-01 | 9.673E-03 | -0.277 |
| IN-114M | 8.782E-02 | | 3.658E-01 | 5.258E-01 | 2.926E-02 | 0.167 |
| CD-115 | -9.197E-01 | | 3.340E+00 | 5.371E+00 | 2.984E-01 | -0.171 |
| SN-117M | -5.280E-05 | | 7.590E-02 | 1.237E-01 | 6.798E-03 | 0.000 |
| SB-122 | 6.020E-01 | | 8.277E-01 | 1.421E+00 | 7.745E-02 | 0.424 |
| I-123 | 3.110E-05 | | 1.615E-03 | Half-Life | too short | |
| TE-123M | 5.059E-04 | | 5.255E-02 | 8.572E-02 | 4.774E-03 | 0.006 |
| I-124 | -5.989E-02 | | 5.710E-01 | 7.938E-01 | 4.195E-02 | -0.075 |
| SB-124 | 3.395E-02 | | 1.142E-01 | 2.016E-01 | 1.309E-02 | 0.168 |
| SB-125 | 2.662E-02 | | 2.280E-01 | 3.797E-01 | 2.228E-02 | 0.070 |
| TE-125M | 1.233E+01 | | 1.547E+01 | 2.626E+01 | 2.383E+00 | 0.469 |
| I-126 | -3.014E-04 | | 3.136E-01 | 4.377E-01 | 2.180E-02 | -0.001 |
| SB-126 | 4.642E-02 | | 2.270E-01 | 3.716E-01 | 2.036E-02 | 0.125 |
| SB-127 | -5.216E-01 | | 9.007E-01 | 1.381E+00 | 9.592E-02 | -0.378 |
| XE-127 | 3.856E-02 | | 8.486E-02 | 1.398E-01 | 7.898E-03 | 0.276 |
| I-131 | -3.715E-02 | | 1.569E-01 | 2.585E-01 | 1.649E-02 | -0.144 |
| TE-132 | -2.371E-02 | | 3.722E-01 | 5.969E-01 | 7.946E-02 | -0.040 |
| BA-133 | -1.573E-02 | | 1.089E-01 | 1.563E-01 | 1.807E-02 | -0.101 |
| I-133 | 3.418E-05 | | 4.046E-05 | Half-Life | too short | |
| CS-134 | -6.134E-03 | | 1.085E-01 | 1.812E-01 | 1.140E-02 | -0.034 |
| CS-135 | 1.268E-01 | | 3.572E-01 | 5.801E-01 | 4.508E-02 | 0.219 |
| I-135 | -5.200E+02 | | 3.606E+02 | Half-Life | too short | |
| CS-136 | -5.045E-02 | | 1.887E-01 | 3.046E-01 | 2.184E-02 | -0.166 |
| CE-139 | -4.160E-04 | | 5.411E-02 | 8.805E-02 | 4.761E-03 | -0.005 |
| BA-140 | -1.863E-01 | | 4.112E-01 | 6.445E-01 | 2.093E-01 | -0.289 |
| LA-140 | -1.691E-02 | | 1.062E-01 | 1.725E-01 | 1.065E-02 | -0.098 |
| CE-141 | 8.884E-02 | | 9.882E-02 | 1.676E-01 | 9.887E-03 | 0.530 |
| CE-143 | 2.798E+01 | | 1.396E+01 | 2.101E+01 | 4.341E+00 | 1.332 |
| CE-144 | -3.217E-01 | | 3.942E-01 | 6.205E-01 | 8.824E-02 | -0.518 |
| PM-144 | -1.578E-02 | | 7.743E-02 | 1.230E-01 | 6.467E-03 | -0.128 |
| PR-144 | -1.066E+00 | | 5.229E+00 | 8.309E+00 | 4.366E-01 | -0.128 |
| PM-146 | 1.050E-01 | | 1.157E-01 | 1.991E-01 | 1.695E-02 | 0.527 |
| ND-147 | 5.540E-01 | | 8.377E-01 | 1.427E+00 | 1.915E-01 | 0.388 |
| PM-149 | 1.659E+00 | | 2.553E+01 | 4.313E+01 | 6.137E+00 | 0.038 |
| EU-152 | -1.386E-01 | | 2.351E-01 | 3.261E-01 | 2.149E-02 | -0.425 |
| GD-153 | 1.090E-01 | | 1.517E-01 | 2.294E-01 | 1.917E-02 | 0.475 |
| EU-154 | -4.961E-02 | | 1.809E-01 | 2.825E-01 | 2.704E-02 | -0.176 |
| EU-155 | -8.993E-02 | | 1.914E-01 | 3.096E-01 | 2.348E-02 | -0.291 |
| TB-160 | 4.322E-02 | | 3.490E-01 | 5.867E-01 | 4.144E-02 | 0.074 |
| HO-166M | 1.065E-02 | | 1.372E-01 | 2.225E-01 | 1.200E-02 | 0.048 |
| TM-171 | -4.656E+01 | | 5.591E+01 | 9.059E+01 | 8.092E+00 | -0.514 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| LU-176 | -1.270E-02 | | 5.410E-02 | 8.988E-02 | 5.361E-03 | -0.141 |
| LU-177 | 1.040E+00 | | 1.184E+00 | 1.978E+00 | 1.124E-01 | 0.526 |
| LU-177M | -1.189E-01 | | 3.906E-01 | 6.367E-01 | 3.561E-02 | -0.187 |
| HF-181 | -6.056E-02 | | 9.588E-02 | 1.520E-01 | 8.550E-03 | -0.399 |
| W-181 | -1.745E-01 | | 7.323E-01 | 1.174E+00 | 1.052E-01 | -0.149 |
| TA-182 | -8.772E-03 | | 2.698E-01 | 4.390E-01 | 2.651E-02 | -0.020 |
| RE-183 | 6.268E-02 | | 1.978E-01 | 3.266E-01 | 1.779E-02 | 0.192 |
| RE-184 | 7.097E-02 | | 4.945E-01 | 7.975E-01 | 4.710E-02 | 0.089 |
| OS-185 | -3.016E-02 | | 9.609E-02 | 1.521E-01 | 7.668E-03 | -0.198 |
| RE-188 | -5.340E-03 | | 3.033E-01 | 4.945E-01 | 2.738E-02 | -0.011 |
| W-188 | 2.180E-01 | | 1.581E+01 | 2.322E+01 | 1.387E+00 | 0.009 |
| IR-192 | -4.092E-02 | | 7.237E-02 | 1.181E-01 | 7.059E-03 | -0.347 |
| AU-195 | 2.142E-01 | | 4.082E-01 | 6.674E-01 | 5.456E-02 | 0.321 |
| TL-200 | 7.342E-06 | | 8.974E-06 | Half-Life | too short | |
| TL-201 | -4.165E-01 | | 3.066E+00 | 4.959E+00 | 2.684E-01 | -0.084 |
| TL-202 | 8.759E-02 | | 1.225E-01 | 2.099E-01 | 1.181E-02 | 0.417 |
| HG-203 | 1.764E-02 | | 7.706E-02 | 1.312E-01 | 8.288E-03 | 0.134 |
| BI-207 | 1.252E-01 | | 1.311E-01 | 2.314E-01 | 1.534E-02 | 0.541 |
| TL-207 | -1.364E+00 | | 1.440E+00 | 2.272E+00 | 3.762E-01 | -0.600 |
| PO-209 | 2.844E+00 | | 2.060E+01 | 3.462E+01 | 2.508E+00 | 0.082 |
| BI-210 | -4.901E+00 | | 1.133E+01 | 1.885E+01 | 1.552E+00 | -0.260 |
| PB-210 | -4.901E+00 | | 1.133E+01 | 1.885E+01 | 1.552E+00 | -0.260 |
| PO-210 | -4.901E+00 | | 1.132E+01 | 1.885E+01 | 1.361E+00 | -0.260 |
| PB-211 | -1.440E+00 | | 2.363E+00 | 3.503E+00 | 2.183E+00 | -0.411 |
| BI-212 | 3.752E-01 | | 7.547E-01 | 1.254E+00 | 9.434E-02 | 0.299 |
| BI-214 | 9.636E-01 | + | 2.728E-01 | 3.924E-01 | 2.896E-02 | 2.456 |
| PO-215 | -1.364E+00 | | 1.440E+00 | 2.272E+00 | 3.762E-01 | -0.600 |
| RN-219 | -7.986E-02 | | 9.616E-01 | 1.590E+00 | 2.147E-01 | -0.050 |
| RN-220 | 4.700E+01 | | 6.112E+01 | 1.048E+02 | 5.762E+00 | 0.448 |
| RA-223 | -1.364E+00 | | 1.440E+00 | 2.272E+00 | 3.762E-01 | -0.600 |
| RA-224 | 4.861E+00 | | 1.853E+00 | 2.917E+00 | 1.709E-01 | 1.667 |
| RA-226 | 9.636E-01 | + | 2.728E-01 | 3.924E-01 | 2.896E-02 | 2.456 |
| AC-227 | -3.650E-01 | | 8.386E-01 | 1.310E+00 | 1.835E-01 | -0.279 |
| TH-227 | -3.650E-01 | | 8.394E-01 | 1.310E+00 | 2.219E-01 | -0.279 |
| TH-229 | -5.507E-01 | | 1.115E+00 | 1.622E+00 | 9.061E-02 | -0.340 |
| TH-230 | 9.636E-01 | + | 2.728E-01 | 3.924E-01 | 2.896E-02 | 2.456 |
| PA-231 | 7.865E-01 | | 3.145E+00 | 5.359E+00 | 7.424E-01 | 0.147 |
| TH-231 | -1.364E+00 | | 1.440E+00 | 2.272E+00 | 3.762E-01 | -0.600 |
| U-231 | -3.988E-01 | | 7.208E-01 | 1.014E+00 | 8.688E-02 | -0.393 |
| PA-233 | 7.848E-02 | | 1.473E-01 | 2.530E-01 | 1.596E-02 | 0.310 |
| PA-234 | -4.728E-01 | | 9.196E-01 | 1.471E+00 | 2.667E-01 | -0.321 |
| PA-234M | 2.904E+00 | | 1.227E+01 | 2.063E+01 | 1.764E+00 | 0.141 |
| TH-234 | 1.354E+00 | | 2.982E+00 | 4.501E+00 | 8.183E-01 | 0.301 |
| U-234 | 9.636E-01 | + | 2.728E-01 | 3.924E-01 | 2.896E-02 | 2.456 |
| U-235 | -1.352E-01 | | 3.841E-01 | 6.169E-01 | 1.003E-01 | -0.219 |
| NP-236 | 5.850E-02 | | 1.537E-01 | 2.545E-01 | 1.393E-02 | 0.230 |
| U-238 | 1.354E+00 | | 2.982E+00 | 4.501E+00 | 8.183E-01 | 0.301 |
| NP-239 | 3.791E-01 | | 4.108E-01 | 6.230E-01 | 4.025E-02 | 0.609 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | 9.848E-02 | | 1.717E-01 | 2.903E-01 | 2.212E-02 | 0.339 |
| AM-246 | 4.594E-02 | | 3.610E-01 | 6.004E-01 | 3.930E-02 | 0.077 |
| CM-247 | 1.192E-02 | | 8.633E-02 | 1.443E-01 | 8.043E-03 | 0.083 |
| CF-249 | 2.462E-02 | | 9.240E-02 | 1.558E-01 | 8.687E-03 | 0.158 |
| CF-251 | -2.000E-01 | | 2.379E-01 | 3.707E-01 | 2.028E-02 | -0.540 |

VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202023715          *
* Acquisition date   : 4-FEB-2010 17:10:09 Detector SN# :                  *
* Detector ID        : GAM06 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 01:00:01.42 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 27-JAN-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202023715 Analyst initials: MXR1                 *
* Batch Number       : 944964 Sample Quantity : 1.5173E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 4-FEB-2009 13:05:54 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 | 1.056E+00 | 7.007E-01 | 4.333E-01 | 3.575E-01 |
| CO-57 | 2.434E-01 | 6.940E-02 | 4.172E-02 | 3.541E-02 |
| CO-60 | 6.818E+00 | 5.575E-01 | 5.389E-02 | 2.844E-01 |
| CD-109 | 3.159E+01 | 4.415E+00 | 1.510E+00 | 2.253E+00 |
| SN-126 | 3.135E+00 | 4.382E-01 | 1.507E-01 | 2.235E-01 |
| BA-137M | 5.470E+00 | 3.793E-01 | 6.517E-02 | 1.935E-01 |
| CS-137 | 5.782E+00 | 4.021E-01 | 6.889E-02 | 2.051E-01 |
| TL-208 | 5.856E-01 | 1.323E-01 | 6.059E-02 | 6.750E-02 |
| BI-211 | 3.214E+00 | 8.378E-01 | 3.780E-01 | 4.274E-01 |
| PB-212 | 9.371E-01 | 2.182E-01 | 1.149E-01 | 1.113E-01 |
| PO-212 | 9.371E-01 | 2.182E-01 | 1.149E-01 | 1.113E-01 |
| PB-214 | 1.118E+00 | 2.970E-01 | 1.318E-01 | 1.515E-01 |
| PO-214 | 1.118E+00 | 2.970E-01 | 1.318E-01 | 1.515E-01 |
| PO-216 | 9.371E-01 | 2.182E-01 | 1.149E-01 | 1.113E-01 |
| PO-218 | 1.118E+00 | 2.970E-01 | 1.318E-01 | 1.515E-01 |
| AC-228 | 1.577E+00 | 5.897E-01 | 3.140E-01 | 3.009E-01 |
| RA-228 | 1.577E+00 | 5.897E-01 | 3.140E-01 | 3.009E-01 |
| TH-228 | 9.453E-01 | 2.201E-01 | 1.159E-01 | 1.123E-01 |
| TH-232 | 1.577E+00 | 5.897E-01 | 3.140E-01 | 3.009E-01 |
| NP-237 | 9.206E+00 | 2.263E+00 | 4.546E-01 | 1.155E+00 |
| AM-241 | 1.440E+01 | 1.660E+00 | 3.851E-01 | 8.468E-01 |
| AM-243 | 3.565E-01 | 1.403E-01 | 9.369E-02 | 7.160E-02 |
| ANH-511 | 1.558E-01 | 1.177E-01 | 5.467E-02 | 6.007E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | 8.391E-01 | 7.712E-01 | 7.059E-01 | 3.934E-01 NOT IDENT. |
| NA-22 | -1.937E-02 | 6.302E-02 | 5.057E-02 | 3.215E-02 NOT IDENT. |
| NA-24 | 4.415E+02 | 7.035E+02 | 0.000E+00 | 3.589E+02 SHORT HLIF |
| AL-26 | 7.759E-03 | 5.801E-02 | 5.032E-02 | 2.960E-02 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| TI-44 | 2.675E-01 | 8.166E-02 | 7.180E-02 | 4.166E-02 | NOT IDENT. |
| SC-46 | -6.541E-02 | 9.680E-02 | 8.005E-02 | 4.939E-02 | NOT IDENT. |
| V-48 | 3.818E-02 | 1.399E-01 | 1.227E-01 | 7.140E-02 | NOT IDENT. |
| CR-51 | 3.670E-03 | 6.706E-01 | 6.014E-01 | 3.421E-01 | NOT IDENT. |
| MN-52 | 9.294E-02 | 1.678E-01 | 1.530E-01 | 8.563E-02 | FAIL ABUN |
| MN-54 | -1.055E-02 | 8.740E-02 | 7.566E-02 | 4.459E-02 | NOT IDENT. |
| CO-56 | 4.728E-02 | 9.337E-02 | 8.401E-02 | 4.764E-02 | NOT IDENT. |
| CO-58 | 1.590E-02 | 8.471E-02 | 7.507E-02 | 4.322E-02 | NOT IDENT. |
| FE-59 | -9.779E-04 | 2.063E-01 | 1.758E-01 | 1.053E-01 | NOT IDENT. |
| ZN-65 | 8.831E-05 | 1.949E-01 | 1.659E-01 | 9.941E-02 | NOT IDENT. |
| GE-68 | -2.183E+00 | 3.076E+00 | 2.479E+00 | 1.570E+00 | NOT IDENT. |
| AS-73 | 1.439E+00 | 2.860E+00 | 2.402E+00 | 1.459E+00 | NOT IDENT. |
| AS-74 | 5.742E-03 | 1.584E-01 | 1.361E-01 | 8.080E-02 | NOT IDENT. |
| SE-75 | -1.664E-03 | 9.283E-02 | 7.963E-02 | 4.736E-02 | FAIL ABUN |
| BR-77 | 4.974E-01 | 3.840E+00 | 3.352E+00 | 1.959E+00 | FAIL ABUN |
| SR-82 | -3.291E-01 | 7.320E-01 | 6.227E-01 | 3.734E-01 | NOT IDENT. |
| RB-83 | 4.838E-02 | 1.586E-01 | 1.398E-01 | 8.091E-02 | NOT IDENT. |
| RB-84 | -1.536E-01 | 1.620E-01 | 1.314E-01 | 8.268E-02 | NOT IDENT. |
| KR-85 | 9.578E+00 | 1.701E+01 | 1.339E+01 | 8.677E+00 | NOT IDENT. |
| SR-85 | 4.590E-02 | 8.151E-02 | 6.418E-02 | 4.159E-02 | NOT IDENT. |
| RB-86 | -8.755E-01 | 1.568E+00 | 1.281E+00 | 8.000E-01 | NOT IDENT. |
| Y-88 | 5.245E-02 | 5.606E-02 | 5.603E-02 | 2.860E-02 | NOT IDENT. |
| ZR-88 | -8.073E-03 | 6.760E-02 | 5.941E-02 | 3.449E-02 | NOT IDENT. |
| Y-91 | 5.255E+00 | 2.631E+01 | 2.277E+01 | 1.342E+01 | NOT IDENT. |
| NB-94 | -3.124E-02 | 7.552E-02 | 6.187E-02 | 3.853E-02 | NOT IDENT. |
| NB-95 | 3.993E-02 | 9.032E-02 | 7.827E-02 | 4.608E-02 | NOT IDENT. |
| NB-95M | 3.351E-01 | 2.927E-01 | 2.341E-01 | 1.493E-01 | NOT IDENT. |
| ZR-95 | 8.029E-02 | 1.417E-01 | 1.246E-01 | 7.232E-02 | NOT IDENT. |
| NB-97 | 2.841E+03 | 6.018E+02 | 0.000E+00 | 3.070E+02 | SHORT HLIF |
| ZR-97 | 6.855E+03 | 7.753E+03 | 0.000E+00 | 3.956E+03 | SHORT HLIF |
| MO-99 | -1.265E+00 | 5.125E+00 | 4.226E+00 | 2.615E+00 | NOT IDENT. |
| TC-99M | -2.150E+09 | 1.396E+09 | 0.000E+00 | 7.120E+08 | SHORT HLIF |
| RH-101 | 1.332E-02 | 6.647E-02 | 5.864E-02 | 3.391E-02 | NOT IDENT. |
| RH-102 | 4.621E-03 | 7.819E-02 | 6.839E-02 | 3.989E-02 | NOT IDENT. |
| RU-103 | 1.040E-01 | 8.488E-02 | 7.819E-02 | 4.330E-02 | FAIL ABUN |
| RH-106 | -2.528E-02 | 7.198E-01 | 6.133E-01 | 3.673E-01 | FAIL ABUN |
| RU-106 | -2.528E-02 | 7.198E-01 | 6.133E-01 | 3.673E-01 | FAIL ABUN |
| AG-108M | -2.784E-02 | 8.190E-02 | 7.063E-02 | 4.178E-02 | NOT IDENT. |
| AG-110M | 3.840E-01 | 1.085E-01 | 9.992E-02 | 5.535E-02 | NOT IDENT. |
| IN-111 | -9.280E-01 | 5.089E-01 | 4.001E-01 | 2.596E-01 | NOT IDENT. |
| IN-113M | -4.505E-02 | 9.816E-02 | 8.474E-02 | 5.008E-02 | NOT IDENT. |
| SN-113 | -4.505E-02 | 9.816E-02 | 8.474E-02 | 5.008E-02 | NOT IDENT. |
| IN-114M | 8.782E-02 | 3.585E-01 | 2.790E-01 | 1.829E-01 | NOT IDENT. |
| CD-115 | -9.197E-01 | 3.274E+00 | 2.779E+00 | 1.670E+00 | NOT IDENT. |
| SN-117M | -5.280E-05 | 7.438E-02 | 6.595E-02 | 3.795E-02 | NOT IDENT. |
| SB-122 | 6.020E-01 | 8.111E-01 | 7.342E-01 | 4.139E-01 | NOT IDENT. |
| I-123 | 3.110E+01 | 3.166E+03 | 0.000E+00 | 1.615E+03 | SHORT HLIF |
| TE-123M | 5.059E-04 | 5.150E-02 | 4.568E-02 | 2.628E-02 | NOT IDENT. |
| I-124 | -5.989E-02 | 5.596E-01 | 4.094E-01 | 2.855E-01 | NOT IDENT. |
| SB-124 | 3.395E-02 | 1.119E-01 | 1.012E-01 | 5.709E-02 | FAIL ABUN |
| SB-125 | 2.662E-02 | 2.234E-01 | 1.975E-01 | 1.140E-01 | NOT IDENT. |
| TE-125M | 1.233E+01 | 1.516E+01 | 1.412E+01 | 7.734E+00 | NOT IDENT. |
| I-126 | -3.014E-04 | 3.074E-01 | 2.252E-01 | 1.568E-01 | NOT IDENT. |
| SB-126 | 4.642E-02 | 2.225E-01 | 1.908E-01 | 1.135E-01 | NOT IDENT. |
| SB-127 | -5.216E-01 | 8.827E-01 | 7.099E-01 | 4.504E-01 | NOT IDENT. |
| XE-127 | 3.856E-02 | 8.316E-02 | 7.407E-02 | 4.243E-02 | NOT IDENT. |
| I-131 | -3.715E-02 | 1.537E-01 | 1.350E-01 | 7.844E-02 | NOT IDENT. |
| TE-132 | -2.371E-02 | 3.648E-01 | 3.153E-01 | 1.861E-01 | NOT IDENT. |
| BA-133 | -1.573E-02 | 1.067E-01 | 8.169E-02 | 5.444E-02 | NOT IDENT. |
| I-133 | 3.418E+01 | 7.930E+01 | 0.000E+00 | 4.046E+01 | SHORT HLIF |
| CS-134 | -6.134E-03 | 1.063E-01 | 9.277E-02 | 5.424E-02 | NOT IDENT. |
| CS-135 | 1.268E-01 | 3.500E-01 | 3.053E-01 | 1.786E-01 | NOT IDENT. |
| I-135 | -5.200E+08 | 7.069E+08 | 0.000E+00 | 3.606E+08 | SHORT HLIF |
| CS-136 | -5.045E-02 | 1.850E-01 | 1.549E-01 | 9.437E-02 | NOT IDENT. |
| CE-139 | -4.160E-04 | 5.302E-02 | 4.688E-02 | 2.705E-02 | NOT IDENT. |
| BA-140 | -1.863E-01 | 4.030E-01 | 3.334E-01 | 2.056E-01 | NOT IDENT. |
| LA-140 | -1.691E-02 | 1.041E-01 | 8.675E-02 | 5.312E-02 | NOT IDENT. |
| CE-141 | 8.884E-02 | 9.684E-02 | 8.950E-02 | 4.941E-02 | NOT IDENT. |
| CE-143 | 2.798E+01 | 1.368E+01 | 1.103E+01 | 6.981E+00 | FAIL ABUN |
| CE-144 | -3.217E-01 | 3.864E-01 | 3.321E-01 | 1.971E-01 | NOT IDENT. |
| PM-144 | -1.578E-02 | 7.589E-02 | 6.322E-02 | 3.872E-02 | NOT IDENT. |
| PR-144 | -1.066E+00 | 5.125E+00 | 4.269E+00 | 2.615E+00 | NOT IDENT. |
| PM-146 | 1.050E-01 | 1.134E-01 | 1.034E-01 | 5.787E-02 | NOT IDENT. |
| ND-147 | 5.540E-01 | 8.210E-01 | 7.386E-01 | 4.189E-01 | FAIL ABUN |
| PM-149 | 1.659E+00 | 2.502E+01 | 2.266E+01 | 1.276E+01 | NOT IDENT. |
| EU-152 | -1.386E-01 | 2.304E-01 | 1.706E-01 | 1.176E-01 | FAIL ABUN |
| GD-153 | 1.090E-01 | 1.487E-01 | 1.236E-01 | 7.585E-02 | NOT IDENT. |
| EU-154 | -4.961E-02 | 1.773E-01 | 1.429E-01 | 9.045E-02 | FAIL ABUN |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| EU-155 | -8.993E-02 | 1.876E-01 | 1.666E-01 | 9.571E-02 | FAIL ABUN |
| TB-160 | 4.322E-02 | 3.420E-01 | 2.997E-01 | 1.745E-01 | FAIL ABUN |
| HO-166M | 1.065E-02 | 1.344E-01 | 1.143E-01 | 6.859E-02 | NOT IDENT. |
| TM-171 | -4.656E+01 | 5.479E+01 | 4.927E+01 | 2.795E+01 | FAIL ABUN |
| LU-176 | -1.270E-02 | 5.302E-02 | 4.714E-02 | 2.705E-02 | FAIL ABUN |
| LU-177 | 1.040E+00 | 1.160E+00 | 1.047E+00 | 5.920E-01 | NOT IDENT. |
| LU-177M | -1.189E-01 | 3.828E-01 | 3.315E-01 | 1.953E-01 | FAIL ABUN |
| HF-181 | -6.056E-02 | 9.397E-02 | 7.882E-02 | 4.794E-02 | NOT IDENT. |
| W-181 | -1.745E-01 | 7.176E-01 | 6.389E-01 | 3.661E-01 | NOT IDENT. |
| TA-182 | -8.772E-03 | 2.644E-01 | 2.223E-01 | 1.349E-01 | NOT IDENT. |
| RE-183 | 6.268E-02 | 1.938E-01 | 1.740E-01 | 9.890E-02 | FAIL ABUN |
| RE-184 | 7.097E-02 | 4.846E-01 | 4.203E-01 | 2.472E-01 | FAIL ABUN |
| OS-185 | -3.016E-02 | 9.417E-02 | 7.831E-02 | 4.804E-02 | FAIL ABUN |
| RE-188 | -5.340E-03 | 2.972E-01 | 2.637E-01 | 1.516E-01 | NOT IDENT. |
| W-188 | 2.180E-01 | 1.549E+01 | 1.219E+01 | 7.905E+00 | NOT IDENT. |
| IR-192 | -4.092E-02 | 7.092E-02 | 6.190E-02 | 3.618E-02 | FAIL ABUN |
| AU-195 | 2.142E-01 | 4.000E-01 | 3.597E-01 | 2.041E-01 | FAIL ABUN |
| TL-200 | 7.342E+00 | 1.759E+01 | 0.000E+00 | 8.974E+00 | SHORT HLIF |
| TL-201 | -4.165E-01 | 3.005E+00 | 2.640E+00 | 1.533E+00 | NOT IDENT. |
| TL-202 | 8.759E-02 | 1.201E-01 | 1.091E-01 | 6.127E-02 | NOT IDENT. |
| HG-203 | 1.764E-02 | 7.552E-02 | 6.900E-02 | 3.853E-02 | NOT IDENT. |
| BI-207 | 1.252E-01 | 1.285E-01 | 1.176E-01 | 6.555E-02 | FAIL ABUN |
| TL-207 | -1.364E+00 | 1.411E+00 | 1.190E+00 | 7.200E-01 | FAIL ABUN |
| PO-209 | 2.844E+00 | 2.019E+01 | 1.767E+01 | 1.030E+01 | NOT IDENT. |
| BI-210 | -4.901E+00 | 1.110E+01 | 1.033E+01 | 5.663E+00 | NOT IDENT. |
| PB-210 | -4.901E+00 | 1.110E+01 | 1.033E+01 | 5.663E+00 | NOT IDENT. |
| PO-210 | -4.901E+00 | 1.110E+01 | 1.033E+01 | 5.662E+00 | NOT IDENT. |
| PB-211 | -1.440E+00 | 2.316E+00 | 1.825E+00 | 1.182E+00 | NOT IDENT. |
| BI-212 | 3.752E-01 | 7.396E-01 | 6.439E-01 | 3.774E-01 | NOT IDENT. |
| BI-214 | 9.636E-01 | 2.673E-01 | 2.023E-01 | 1.364E-01 | FAIL ABUN |
| PO-215 | -1.364E+00 | 1.411E+00 | 1.190E+00 | 7.200E-01 | FAIL ABUN |
| RN-219 | -7.986E-02 | 9.424E-01 | 8.282E-01 | 4.808E-01 | NOT IDENT. |
| RN-220 | 4.700E+01 | 5.990E+01 | 5.419E+01 | 3.056E+01 | NOT IDENT. |
| RA-223 | -1.364E+00 | 1.411E+00 | 1.190E+00 | 7.200E-01 | FAIL ABUN |
| RA-224 | 4.861E+00 | 1.816E+00 | 1.539E+00 | 9.265E-01 | NOT IDENT. |
| RA-226 | 9.636E-01 | 2.673E-01 | 2.023E-01 | 1.364E-01 | FAIL ABUN |
| AC-227 | -3.650E-01 | 8.219E-01 | 6.902E-01 | 4.193E-01 | NOT IDENT. |
| TH-227 | -3.650E-01 | 8.226E-01 | 6.902E-01 | 4.197E-01 | FAIL ABUN |
| TH-229 | -5.507E-01 | 1.093E+00 | 8.601E-01 | 5.576E-01 | FAIL ABUN |
| TH-230 | 9.636E-01 | 2.673E-01 | 2.023E-01 | 1.364E-01 | FAIL ABUN |
| PA-231 | 7.865E-01 | 3.082E+00 | 2.816E+00 | 1.573E+00 | NOT IDENT. |
| TH-231 | -1.364E+00 | 1.411E+00 | 1.190E+00 | 7.200E-01 | FAIL ABUN |
| U-231 | -3.988E-01 | 7.064E-01 | 5.468E-01 | 3.604E-01 | FAIL ABUN |
| PA-233 | 7.848E-02 | 1.443E-01 | 1.326E-01 | 7.364E-02 | FAIL ABUN |
| PA-234 | -4.728E-01 | 9.012E-01 | 7.500E-01 | 4.598E-01 | FAIL ABUN |
| PA-234M | 2.904E+00 | 1.203E+01 | 1.050E+01 | 6.136E+00 | NOT IDENT. |
| TH-234 | 1.354E+00 | 2.923E+00 | 2.451E+00 | 1.491E+00 | FAIL ABUN |
| U-234 | 9.636E-01 | 2.673E-01 | 2.023E-01 | 1.364E-01 | FAIL ABUN |
| U-235 | -1.352E-01 | 3.765E-01 | 3.296E-01 | 1.921E-01 | FAIL ABUN |
| NP-236 | 5.850E-02 | 1.506E-01 | 1.356E-01 | 7.684E-02 | NOT IDENT. |
| U-238 | 1.354E+00 | 2.923E+00 | 2.451E+00 | 1.491E+00 | FAIL ABUN |
| NP-239 | 3.791E-01 | 4.026E-01 | 3.344E-01 | 2.054E-01 | NOT IDENT. |
| CM-243 | 9.848E-02 | 1.683E-01 | 1.563E-01 | 8.587E-02 | NOT IDENT. |
| AM-246 | 4.594E-02 | 3.538E-01 | 3.051E-01 | 1.805E-01 | NOT IDENT. |
| CM-247 | 1.192E-02 | 8.460E-02 | 7.521E-02 | 4.316E-02 | NOT IDENT. |
| CF-249 | 2.462E-02 | 9.055E-02 | 8.122E-02 | 4.620E-02 | NOT IDENT. |
| CF-251 | -2.000E-01 | 2.332E-01 | 1.971E-01 | 1.190E-01 | NOT IDENT. |

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

| ENERGY | MDA COUNTS |
|--------|------------|
| 46.50 | 589.0357 |
| 46.50 | 589.0357 |
| 46.50 | 589.0357 |
| 48.70 | 616.7714 |
| 49.72 | 645.1438 |
| 51.35 | 664.2881 |
| 52.39 | 706.5514 |
| 52.97 | 711.5109 |
| 53.15 | 717.8213 |
| 53.44 | 681.8364 |
| 54.07 | 684.0222 |
| 56.28 | 783.5448 |
| 56.28 | 783.5480 |
| 57.37 | 783.4629 |
| 57.53 | 783.6658 |
| 57.53 | 783.6674 |
| 57.60 | 810.2715 |
| 57.98 | 810.7666 |
| 57.98 | 810.7666 |
| 59.32 | 619.5303 |
| 59.32 | 619.5303 |
| 59.40 | 619.6084 |
| 59.54 | 619.7454 |
| 59.72 | 619.9219 |
| 60.01 | 442.1848 |
| 61.10 | 417.7547 |
| 61.14 | 417.7805 |
| 61.30 | 417.8846 |
| 63.00 | 377.3785 |
| 63.29 | 377.5448 |
| 63.29 | 377.5448 |
| 63.58 | 389.6083 |
| 64.28 | 379.6004 |
| 65.12 | 417.3425 |
| 65.20 | 417.3921 |
| 65.20 | 417.3921 |
| 66.05 | 417.9219 |
| 66.72 | 434.2080 |
| 66.83 | 434.2807 |
| 66.91 | 417.5193 |
| 67.20 | 413.9589 |
| 67.20 | 413.9589 |
| 67.75 | 407.2110 |
| 67.85 | 407.2708 |
| 68.90 | 382.1996 |
| 68.90 | 382.1996 |
| 69.30 | 371.9228 |
| 69.67 | 384.1266 |
| 70.82 | 378.7444 |
| 70.82 | 378.7444 |
| 70.83 | 378.7506 |
| 72.80 | 417.4849 |
| 72.87 | 417.5255 |
| 72.87 | 417.5255 |
| 74.67 | 413.6592 |
| 74.81 | 413.7394 |
| 74.81 | 413.7394 |
| 74.81 | 413.7394 |
| 74.81 | 413.7394 |
| 74.81 | 413.7394 |
| 74.81 | 413.7394 |
| 74.81 | 413.7394 |
| 74.97 | 413.8297 |
| 75.28 | 414.0068 |
| 75.70 | 414.2440 |
| 77.11 | 415.0394 |
| 77.11 | 415.0394 |

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| 77.11 | 415.0394 |
| 77.11 | 415.0394 |
| 77.11 | 415.0394 |
| 77.11 | 415.0394 |
| 78.38 | 394.8671 |
| 79.62 | 448.7623 |
| 79.80 | 448.8685 |
| 79.80 | 448.8685 |
| 80.11 | 497.7649 |
| 80.18 | 497.8108 |
| 80.30 | 497.8886 |
| 80.30 | 497.8886 |
| 80.57 | 552.8992 |
| 81.00 | 569.5947 |
| 81.07 | 569.6471 |
| 81.07 | 569.6471 |
| 81.07 | 569.6471 |
| 81.07 | 569.6471 |
| 82.60 | 491.2445 |
| 83.37 | 486.1262 |
| 83.78 | 471.0892 |
| 83.78 | 471.0892 |
| 83.78 | 471.0892 |
| 83.78 | 471.0892 |
| 84.21 | 456.0469 |
| 84.90 | 450.3221 |
| 85.43 | 470.5510 |
| 86.29 | 553.9225 |
| 86.50 | 554.0702 |
| 86.54 | 554.0966 |
| 86.59 | 554.1319 |
| 86.72 | 538.8719 |
| 86.79 | 538.9169 |
| 86.94 | 539.0198 |
| 87.30 | 539.2640 |
| 87.30 | 539.2640 |
| 87.30 | 539.2640 |
| 87.30 | 539.2640 |
| 87.30 | 539.2640 |
| 87.30 | 539.2640 |
| 87.57 | 539.4461 |
| 87.88 | 539.6561 |
| 88.03 | 539.7567 |
| 88.36 | 307.6794 |
| 88.47 | 307.7222 |
| 89.95 | 362.2362 |
| 91.11 | 362.7526 |
| 92.29 | 355.5440 |
| 92.38 | 355.5833 |
| 92.38 | 355.5833 |
| 93.35 | 280.1567 |
| 94.00 | 295.8658 |
| 94.67 | 310.0531 |
| 94.67 | 310.0549 |
| 94.90 | 310.1404 |
| 94.90 | 310.1404 |
| 94.90 | 310.1404 |
| 94.90 | 310.1404 |
| 95.87 | 298.0781 |
| 95.87 | 298.0781 |
| 96.73 | 281.2869 |
| 97.43 | 259.7429 |
| 98.44 | 267.3155 |
| 98.44 | 267.3166 |
| 98.88 | 280.4359 |
| 99.55 | 276.7566 |
| 99.55 | 276.7566 |
| 99.86 | 286.6036 |
| 100.00 | 286.6496 |
| 100.10 | 286.6843 |
| 103.18 | 271.0583 |
| 103.76 | 262.4232 |
| 105.00 | 274.5558 |
| 105.31 | 285.4407 |
| 108.00 | 308.9213 |
| 109.28 | 256.1537 |

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| 111.00 | 295.1288 |
| 111.76 | 288.4556 |
| 112.95 | 311.5742 |
| 115.19 | 307.3605 |
| 116.30 | 254.1172 |
| 117.00 | 278.1447 |
| 117.00 | 278.1447 |
| 117.66 | 302.1944 |
| 121.11 | 328.8129 |
| 121.62 | 307.4255 |
| 121.78 | 292.3007 |
| 122.06 | 292.3845 |
| 122.32 | 287.6671 |
| 122.32 | 287.6671 |
| 122.32 | 287.6671 |
| 122.32 | 287.6671 |
| 123.07 | 284.6881 |
| 127.23 | 322.5512 |
| 129.76 | 279.7519 |
| 131.20 | 287.2005 |
| 133.02 | 325.0586 |
| 133.54 | 332.2932 |
| 135.34 | 278.2332 |
| 136.00 | 271.3206 |
| 136.25 | 273.4113 |
| 136.48 | 284.6124 |
| 140.51 | 318.2297 |
| 140.51 | 0.0000 |
| 142.18 | 258.6451 |
| 142.65 | 267.9260 |
| 143.76 | 283.4976 |
| 144.24 | 268.3193 |
| 144.24 | 268.3193 |
| 144.24 | 268.3193 |
| 144.24 | 268.3193 |
| 145.22 | 244.0527 |
| 145.44 | 250.2300 |
| 147.16 | 291.5405 |
| 152.43 | 268.2542 |
| 152.70 | 265.2338 |
| 153.22 | 266.3844 |
| 154.21 | 260.4391 |
| 154.21 | 260.4391 |
| 154.21 | 260.4391 |
| 154.21 | 260.4391 |
| 155.03 | 284.3218 |
| 156.02 | 307.2511 |
| 158.56 | 282.0978 |
| 159.00 | 0.0000 |
| 159.00 | 281.1703 |
| 160.31 | 275.2785 |
| 161.27 | 268.2556 |
| 162.32 | 273.6780 |
| 162.64 | 283.0851 |
| 163.35 | 275.9929 |
| 163.89 | 287.5382 |
| 165.85 | 264.1002 |
| 167.43 | 268.6135 |
| 171.28 | 242.3157 |
| 171.86 | 245.5674 |
| 172.10 | 245.6158 |
| 176.55 | 269.5841 |
| 176.60 | 269.5939 |
| 181.06 | 252.6617 |
| 184.41 | 273.3854 |
| 185.71 | 273.6640 |
| 186.00 | 273.7272 |
| 190.27 | 256.1839 |
| 192.34 | 271.8828 |
| 193.63 | 291.9947 |
| 197.04 | 256.8660 |
| 198.01 | 281.5856 |
| 198.60 | 295.5805 |
| 200.40 | 313.0762 |
| 201.83 | 332.6608 |
| 202.84 | 271.8943 |
| 205.31 | 329.2254 |

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| 208.36 | 294.4906 |
| 208.81 | 299.9625 |
| 209.75 | 305.5440 |
| 209.75 | 305.5440 |
| 210.97 | 290.7374 |
| 215.65 | 270.1035 |
| 216.55 | 285.4105 |
| 218.09 | 274.8979 |
| 222.10 | 243.1116 |
| 223.80 | 267.3039 |
| 226.40 | 247.1001 |
| 227.00 | 243.9353 |
| 227.08 | 266.8192 |
| 227.20 | 266.8416 |
| 228.16 | 260.4763 |
| 228.18 | 260.4799 |
| 228.18 | 260.4799 |
| 231.56 | 282.9276 |
| 235.69 | 304.9651 |
| 236.00 | 296.2637 |
| 236.00 | 296.2637 |
| 238.63 | 339.1498 |
| 238.63 | 339.1498 |
| 238.63 | 339.1498 |
| 238.63 | 339.1498 |
| 239.00 | 398.7353 |
| 240.98 | 302.5222 |
| 241.98 | 316.8018 |
| 241.98 | 316.8018 |
| 241.98 | 316.8018 |
| 244.69 | 322.4018 |
| 245.39 | 331.8413 |
| 247.94 | 244.0473 |
| 248.90 | 255.2487 |
| 249.79 | 236.5997 |
| 252.40 | 220.3846 |
| 252.85 | 225.9872 |
| 252.85 | 225.9872 |
| 254.15 | 0.0000 |
| 256.20 | 239.7898 |
| 256.20 | 239.7898 |
| 260.50 | 242.6654 |
| 260.90 | 226.0271 |
| 262.80 | 230.7524 |
| 264.65 | 228.7857 |
| 268.24 | 243.8329 |
| 268.79 | 241.6783 |
| 269.46 | 238.4192 |
| 269.46 | 238.4192 |
| 269.46 | 238.4192 |
| 269.46 | 238.4192 |
| 271.23 | 211.7858 |
| 273.65 | 279.4297 |
| 276.40 | 228.1861 |
| 277.35 | 204.6972 |
| 277.60 | 208.1024 |
| 277.60 | 208.1024 |
| 278.00 | 209.7284 |
| 278.60 | 210.7028 |
| 279.20 | 216.1846 |
| 279.53 | 208.1171 |
| 280.46 | 219.0500 |
| 281.68 | 239.0564 |
| 283.67 | 194.1797 |
| 284.30 | 193.3497 |
| 285.00 | 195.2358 |
| 285.90 | 202.5762 |
| 286.10 | 210.7381 |
| 286.10 | 210.7381 |
| 287.40 | 200.0385 |
| 288.45 | 0.0000 |
| 290.67 | 191.9573 |
| 290.80 | 191.9702 |
| 291.72 | 198.1231 |
| 293.26 | 198.3017 |
| 293.70 | 198.3523 |
| 295.21 | 208.2217 |
| 295.21 | 208.2217 |

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| 295.21 | 208.2217 |
| 295.96 | 208.3140 |
| 296.50 | 262.3686 |
| 297.23 | 245.7883 |
| 298.57 | 218.6455 |
| 299.80 | 212.7230 |
| 299.80 | 212.7230 |
| 300.09 | 217.3163 |
| 300.09 | 217.3163 |
| 300.09 | 217.3163 |
| 300.09 | 217.3163 |
| 300.12 | 217.3192 |
| 301.29 | 212.9024 |
| 302.84 | 216.1346 |
| 303.76 | 225.6890 |
| 303.91 | 225.7071 |
| 304.40 | 238.5671 |
| 304.40 | 238.5671 |
| 304.84 | 237.7102 |
| 306.84 | 207.7748 |
| 308.46 | 221.7053 |
| 311.98 | 206.5347 |
| 316.51 | 212.5724 |
| 318.01 | 196.1722 |
| 319.02 | 198.1218 |
| 319.41 | 196.3204 |
| 320.08 | 189.0169 |
| 323.87 | 212.5057 |
| 323.87 | 212.5057 |
| 323.87 | 212.5057 |
| 323.87 | 212.5057 |
| 325.23 | 208.0371 |
| 328.77 | 176.0121 |
| 333.44 | 201.2154 |
| 334.20 | 199.7490 |
| 334.20 | 199.7490 |
| 334.30 | 199.7595 |
| 338.28 | 164.4885 |
| 338.28 | 164.4885 |
| 338.28 | 164.4885 |
| 338.28 | 164.4885 |
| 338.32 | 164.4906 |
| 338.32 | 164.4906 |
| 338.32 | 164.4906 |
| 340.50 | 156.9125 |
| 340.57 | 156.9166 |
| 344.27 | 177.4570 |
| 345.85 | 169.8113 |
| 350.59 | 170.2282 |
| 351.07 | 174.3319 |
| 351.92 | 174.4068 |
| 351.92 | 174.4068 |
| 351.92 | 174.4068 |
| 355.39 | 0.0000 |
| 356.01 | 176.9625 |
| 364.48 | 192.5026 |
| 366.43 | 185.1353 |
| 367.43 | 177.6660 |
| 367.94 | 0.0000 |
| 369.80 | 171.2518 |
| 374.96 | 177.3784 |
| 383.85 | 192.4376 |
| 387.95 | 169.9083 |
| 388.63 | 185.2402 |
| 391.69 | 184.5539 |
| 391.69 | 184.5539 |
| 392.90 | 181.7896 |
| 398.62 | 179.4031 |
| 400.65 | 158.4479 |
| 401.10 | 173.8501 |
| 401.81 | 174.8684 |
| 402.60 | 171.0882 |
| 404.84 | 188.5854 |
| 410.95 | 167.8913 |
| 411.60 | 165.0467 |
| 413.65 | 166.1673 |
| 414.70 | 144.0164 |
| 415.30 | 147.9237 |

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| 415.76 | 154.7246 |
| 417.63 | 0.0000 |
| 418.52 | 168.4733 |
| 423.70 | 177.6029 |
| 427.08 | 164.2654 |
| 427.89 | 174.0487 |
| 432.53 | 189.0245 |
| 433.93 | 187.1906 |
| 439.47 | 164.1937 |
| 439.56 | 164.1999 |
| 439.89 | 182.7975 |
| 443.98 | 186.0618 |
| 444.90 | 179.2783 |
| 445.03 | 179.2895 |
| 445.03 | 179.2895 |
| 445.03 | 179.2895 |
| 445.03 | 179.2895 |
| 453.90 | 170.1427 |
| 463.38 | 183.6705 |
| 468.07 | 185.0232 |
| 473.00 | 183.4237 |
| 475.06 | 188.5411 |
| 475.35 | 179.6323 |
| 476.78 | 154.9126 |
| 477.59 | 154.9660 |
| 477.96 | 160.9499 |
| 482.03 | 165.2016 |
| 484.57 | 142.4606 |
| 487.03 | 142.6055 |
| 490.36 | 138.8049 |
| 492.35 | 145.9127 |
| 497.08 | 112.1477 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 121.8264 |
| 511.00 | 121.8338 |
| 511.85 | 121.8759 |
| 511.85 | 121.8759 |
| 513.99 | 115.9293 |
| 513.99 | 115.9293 |
| 520.41 | 132.3912 |
| 520.65 | 132.4040 |
| 527.90 | 118.5882 |
| 528.96 | 0.0000 |
| 529.64 | 111.5684 |
| 529.87 | 0.0000 |
| 531.02 | 99.4499 |
| 537.32 | 114.9477 |
| 543.00 | 135.5847 |
| 546.56 | 0.0000 |
| 549.76 | 105.2707 |
| 552.65 | 123.8005 |
| 555.20 | 107.5327 |
| 563.23 | 98.6086 |
| 563.90 | 85.2776 |
| 568.70 | 100.8663 |
| 569.32 | 99.8607 |
| 569.50 | 100.8974 |
| 569.67 | 100.9022 |
| 573.80 | 96.9306 |
| 574.00 | 102.0937 |
| 574.64 | 98.5650 |
| 578.91 | 96.4209 |
| 579.30 | 0.0000 |
| 583.14 | 85.8774 |
| 585.48 | 63.8587 |
| 591.81 | 97.5617 |
| 592.07 | 93.4189 |
| 593.00 | 89.2964 |
| 595.88 | 106.0167 |
| 600.56 | 108.2758 |
| 602.52 | 0.0000 |
| 602.71 | 104.1895 |
| 602.71 | 104.1895 |
| 603.60 | 90.3271 |
| 604.41 | 104.2529 |
| 604.70 | 104.2627 |
| 609.31 | 103.3868 |

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| 609.31 | 103.3868 |
| 609.31 | 103.3868 |
| 609.31 | 103.3868 |
| 610.33 | 103.4231 |
| 612.46 | 90.6064 |
| 614.37 | 85.4370 |
| 618.01 | 100.0930 |
| 621.84 | 104.8853 |
| 621.84 | 104.8853 |
| 631.29 | 126.2725 |
| 633.02 | 104.2352 |
| 633.10 | 104.2376 |
| 634.78 | 101.1375 |
| 635.90 | 116.9836 |
| 636.97 | 110.7012 |
| 645.85 | 99.3999 |
| 646.12 | 105.7544 |
| 656.30 | 99.0391 |
| 657.75 | 90.2399 |
| 657.90 | 0.0000 |
| 661.65 | 92.1278 |
| 661.65 | 92.1278 |
| 664.57 | 97.5368 |
| 666.33 | 85.1719 |
| 666.33 | 85.1719 |
| 675.00 | 88.6151 |
| 677.61 | 75.8674 |
| 685.20 | 84.6222 |
| 692.80 | 68.7219 |
| 695.00 | 99.9319 |
| 696.49 | 99.9795 |
| 696.49 | 99.9795 |
| 697.00 | 99.9954 |
| 697.49 | 101.0867 |
| 698.33 | 104.3389 |
| 698.50 | 102.1946 |
| 699.00 | 98.9831 |
| 702.63 | 104.4810 |
| 706.10 | 88.4203 |
| 706.58 | 0.0000 |
| 706.67 | 92.7503 |
| 709.31 | 87.4310 |
| 711.68 | 88.5764 |
| 713.82 | 98.3626 |
| 717.42 | 88.7346 |
| 720.50 | 86.6523 |
| 721.93 | 114.8661 |
| 722.20 | 120.2938 |
| 722.78 | 130.0693 |
| 722.78 | 130.0693 |
| 722.89 | 130.0752 |
| 722.95 | 130.0781 |
| 723.30 | 127.9246 |
| 724.18 | 108.4399 |
| 727.18 | 116.1378 |
| 733.00 | 91.3356 |
| 735.90 | 108.8306 |
| 739.58 | 86.0707 |
| 742.81 | 92.6990 |
| 744.21 | 100.3757 |
| 747.13 | 79.7172 |
| 751.79 | 99.5113 |
| 752.31 | 99.5268 |
| 753.82 | 94.1024 |
| 755.35 | 72.2503 |
| 756.15 | 70.0781 |
| 756.87 | 72.2842 |
| 763.93 | 82.3132 |
| 765.79 | 93.3402 |
| 766.42 | 96.6518 |
| 766.84 | 101.0585 |
| 776.49 | 100.9788 |
| 778.00 | 90.9212 |
| 778.57 | 100.1207 |
| 778.89 | 100.1296 |
| 783.80 | 98.4338 |
| 785.46 | 114.1283 |
| 792.07 | 93.1381 |

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| 795.84 | 99.7009 |
| 796.30 | 97.8676 |
| 798.80 | 98.8627 |
| 801.93 | 88.7793 |
| 805.60 | 91.6483 |
| 810.29 | 88.0632 |
| 810.76 | 84.3664 |
| 815.85 | 98.4153 |
| 817.79 | 91.0376 |
| 818.51 | 84.5516 |
| 819.60 | 81.7892 |
| 826.30 | 98.7043 |
| 828.27 | 0.0000 |
| 831.60 | 81.1324 |
| 831.96 | 76.4780 |
| 834.83 | 102.6752 |
| 836.80 | 0.0000 |
| 846.75 | 92.7118 |
| 848.13 | 109.6113 |
| 856.28 | 0.0000 |
| 856.80 | 125.8349 |
| 860.37 | 106.2180 |
| 867.32 | 115.8355 |
| 867.82 | 108.3155 |
| 871.10 | 73.5313 |
| 873.19 | 100.9264 |
| 874.81 | 110.4088 |
| 875.33 | 0.0000 |
| 876.40 | 96.2932 |
| 879.36 | 98.2596 |
| 880.27 | 97.3399 |
| 880.51 | 103.9620 |
| 881.50 | 116.2784 |
| 883.24 | 105.9274 |
| 884.67 | 90.8301 |
| 889.25 | 107.9929 |
| 896.60 | 104.4073 |
| 898.02 | 112.0414 |
| 899.00 | 111.1205 |
| 903.28 | 138.3452 |
| 911.07 | 117.1893 |
| 911.07 | 117.1893 |
| 911.07 | 117.1893 |
| 919.63 | 125.0018 |
| 920.93 | 122.2656 |
| 925.00 | 109.0065 |
| 925.24 | 106.1447 |
| 926.50 | 103.3110 |
| 935.52 | 112.1797 |
| 937.48 | 125.6643 |
| 944.10 | 132.6038 |
| 946.00 | 133.6297 |
| 949.00 | 130.8452 |
| 962.29 | 125.7663 |
| 964.01 | 129.1304 |
| 966.15 | 104.3547 |
| 968.20 | 117.9418 |
| 969.11 | 124.7378 |
| 969.11 | 124.7378 |
| 969.11 | 124.7378 |
| 977.42 | 99.8022 |
| 980.50 | 91.1505 |
| 983.50 | 88.3081 |
| 989.30 | 101.0674 |
| 996.32 | 97.3470 |
| 1001.03 | 95.5097 |
| 1001.68 | 75.0543 |
| 1004.76 | 117.0557 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 85.4813 |
| 1036.00 | 99.2616 |
| 1037.82 | 102.2565 |
| 1038.57 | 102.2734 |
| 1038.76 | 0.0000 |
| 1045.16 | 84.7052 |
| 1046.59 | 83.7480 |
| 1048.07 | 79.8333 |

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|---------|---------|
| 1050.47 | 85.7964 |
| 1050.47 | 85.7964 |
| 1062.04 | 85.0412 |
| 1063.62 | 67.2668 |
| 1076.63 | 90.2891 |
| 1077.35 | 91.2962 |
| 1078.86 | 79.4141 |
| 1085.78 | 95.4492 |
| 1099.22 | 83.7744 |
| 1112.02 | 73.0149 |
| 1112.84 | 73.0297 |
| 1115.52 | 73.0713 |
| 1120.29 | 67.1390 |
| 1120.29 | 67.1390 |
| 1120.29 | 67.1390 |
| 1120.29 | 67.1390 |
| 1120.51 | 67.1418 |
| 1121.28 | 73.1663 |
| 1124.00 | 0.0000 |
| 1129.67 | 68.2822 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 71.1723 |
| 1173.22 | 53.7311 |
| 1175.09 | 36.5112 |
| 1177.93 | 36.5332 |
| 1189.05 | 39.6729 |
| 1204.90 | 32.6615 |
| 1205.75 | 0.0000 |
| 1213.00 | 32.7174 |
| 1221.42 | 30.7275 |
| 1230.97 | 28.7360 |
| 1235.34 | 28.7622 |
| 1236.41 | 0.0000 |
| 1238.25 | 28.7793 |
| 1246.25 | 33.9749 |
| 1260.41 | 0.0000 |
| 1271.85 | 21.7340 |
| 1274.45 | 25.8870 |
| 1274.54 | 25.8881 |
| 1291.56 | 18.7031 |
| 1298.22 | 0.0000 |
| 1312.09 | 19.8234 |
| 1325.50 | 30.4864 |
| 1325.50 | 30.4864 |
| 1332.49 | 23.0465 |
| 1333.61 | 23.0509 |
| 1360.21 | 7.3726 |
| 1362.66 | 0.0000 |
| 1365.15 | 10.5420 |
| 1368.21 | 9.4937 |
| 1368.53 | 0.0000 |
| 1376.25 | 13.7342 |
| 1384.27 | 19.0459 |
| 1394.10 | 13.7808 |
| 1395.20 | 13.7839 |
| 1407.95 | 11.6911 |
| 1434.06 | 12.8164 |
| 1436.60 | 6.4111 |
| 1457.56 | 0.0000 |
| 1460.81 | 14.7199 |
| 1489.15 | 12.9463 |
| 1509.49 | 14.0759 |
| 1596.49 | 17.9033 |
| 1620.62 | 15.1384 |
| 1678.03 | 0.0000 |
| 1691.02 | 8.6155 |
| 1691.02 | 8.6155 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 4.8432 |
| 1764.49 | 4.8432 |
| 1764.49 | 4.8432 |
| 1764.49 | 4.8432 |
| 1770.23 | 40.7197 |
| 1771.40 | 33.9392 |
| 1791.20 | 0.0000 |
| 1808.65 | 11.7045 |

1836.01

5.8770

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202023715

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 3.9643E+00 | ug/g |
| Total Uranium Counting Unc. | 8.6966E+00 | ug/g |
| Total Uranium Tpu | 4.4371E-06 | ug/g |
| Total Uranium Mda | 7.2929E+00 | ug/g |

```

*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 944964          SAMPLE ID   : G1202023715
*  ANALYST       : MXR1           DETECTOR    : GAM06
*  SAMPLE DATE   : 27-JAN-2010 00:00:00.00  COUNT TIME : 0 01:00:00.00
*  ANALYSIS DATE: 4-FEB-2010 17:10:09.69  SAMPLE ALQT: 151.730 GRAM
*
*****

```

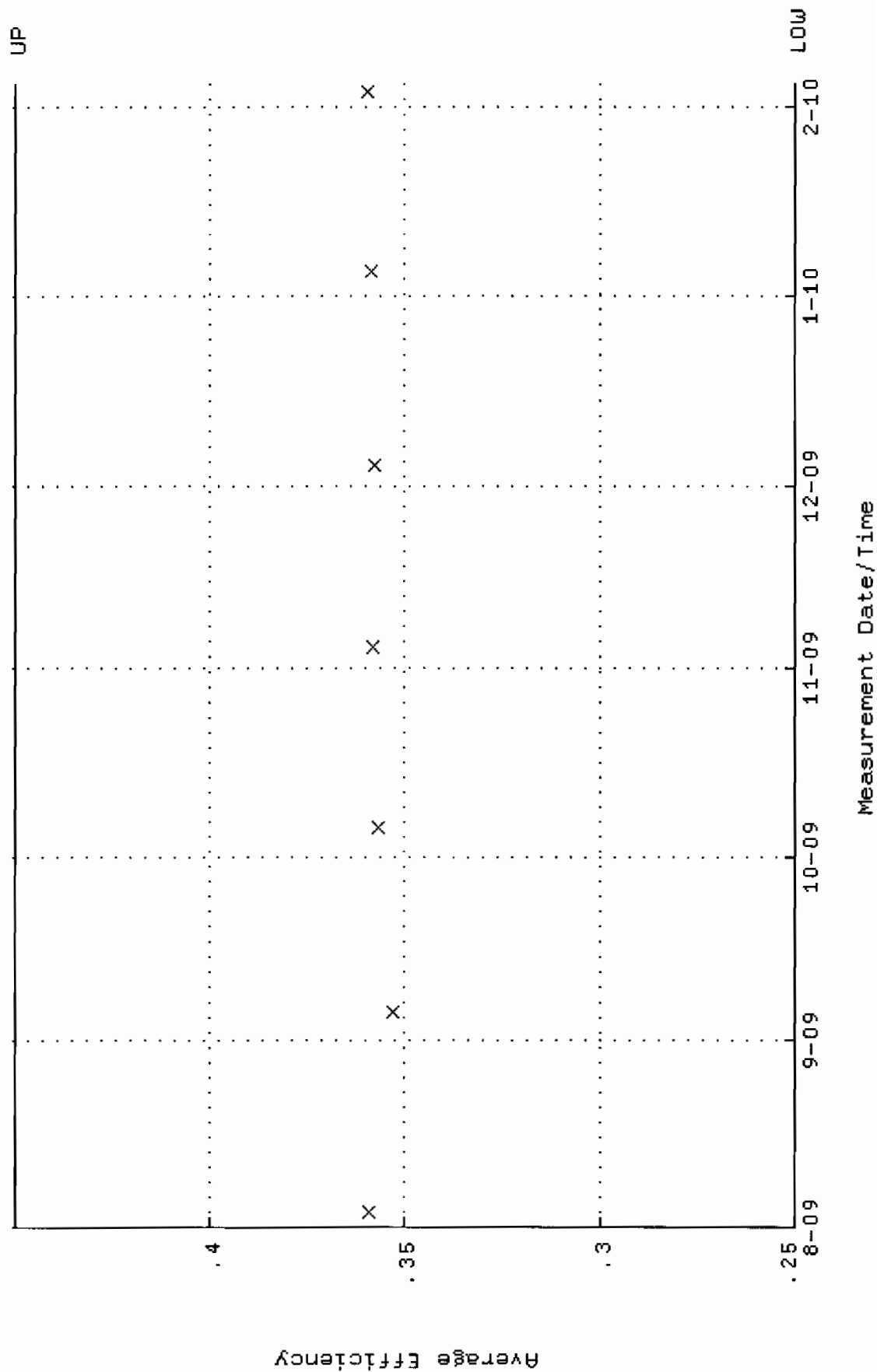
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.866E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 3.009E+00
GROSS GAMMA MDA (pCi/GRAM )     : 5.654E+00
GROSS GAMMA DLC (pCi/GRAM )     : 2.769E+00

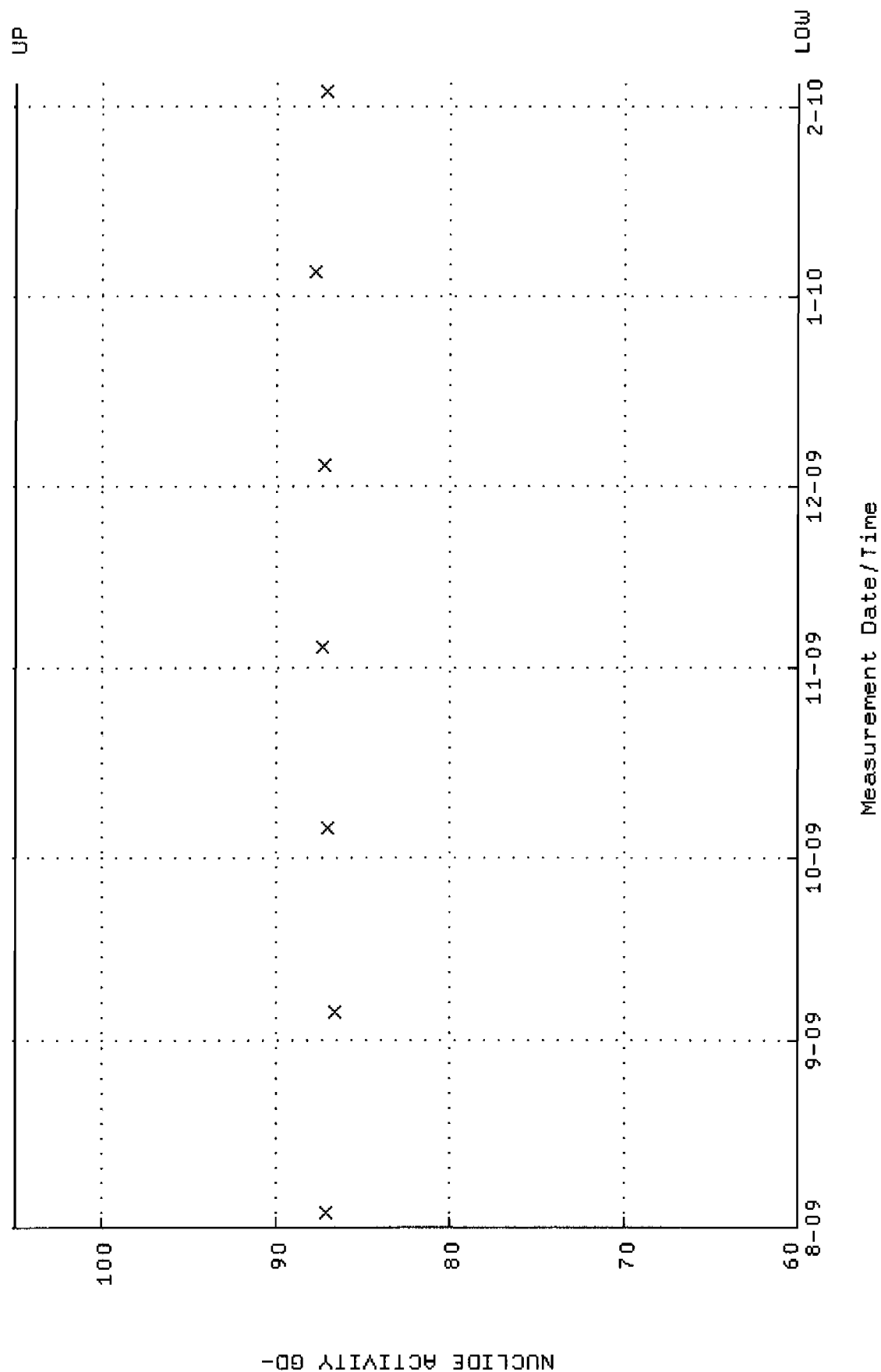
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BACKGROUND AND EFFICIENCY DATA

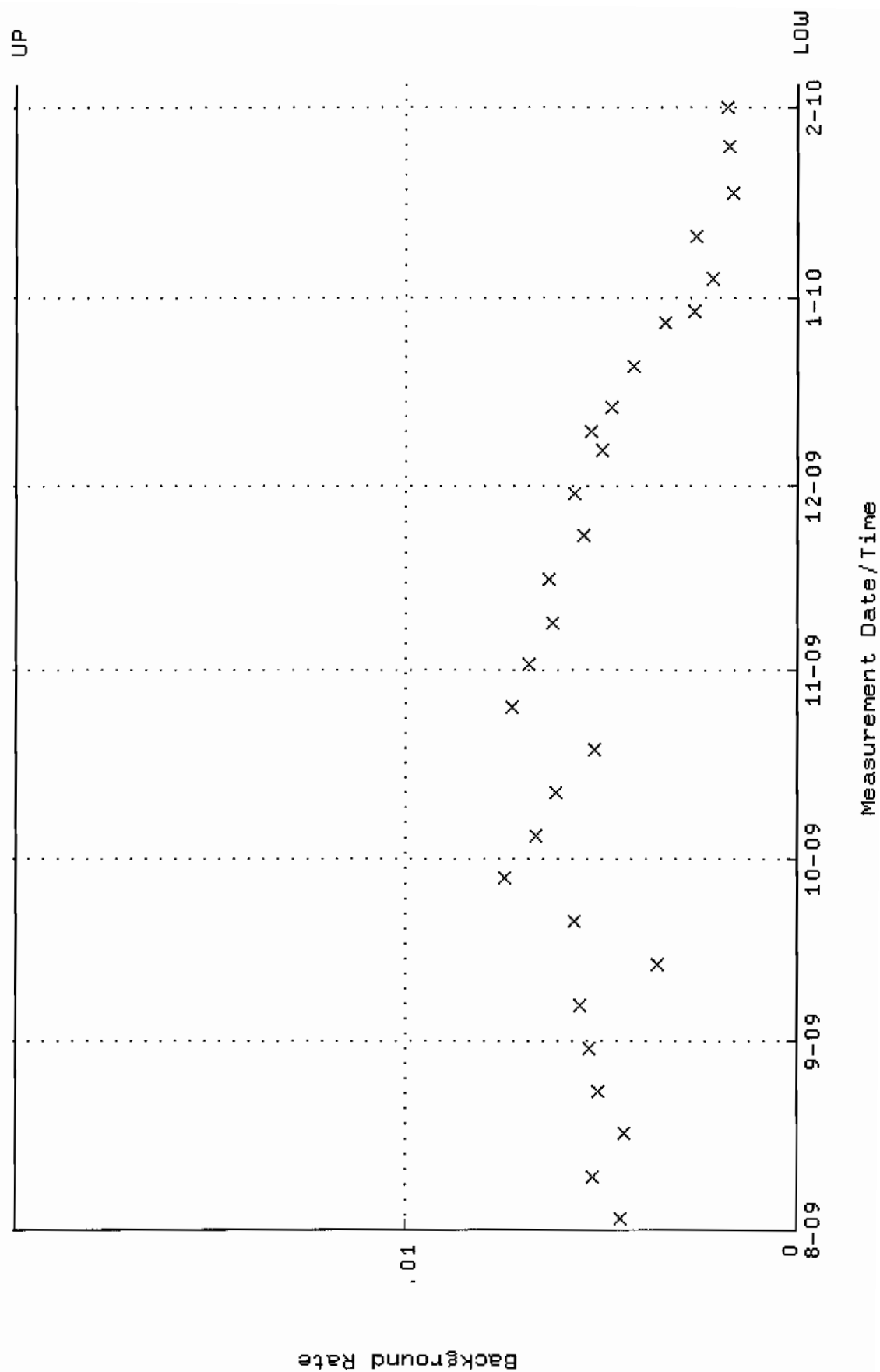
QA filename : DKA100:[ENV_ALPHA.QA.W]W037.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:43 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



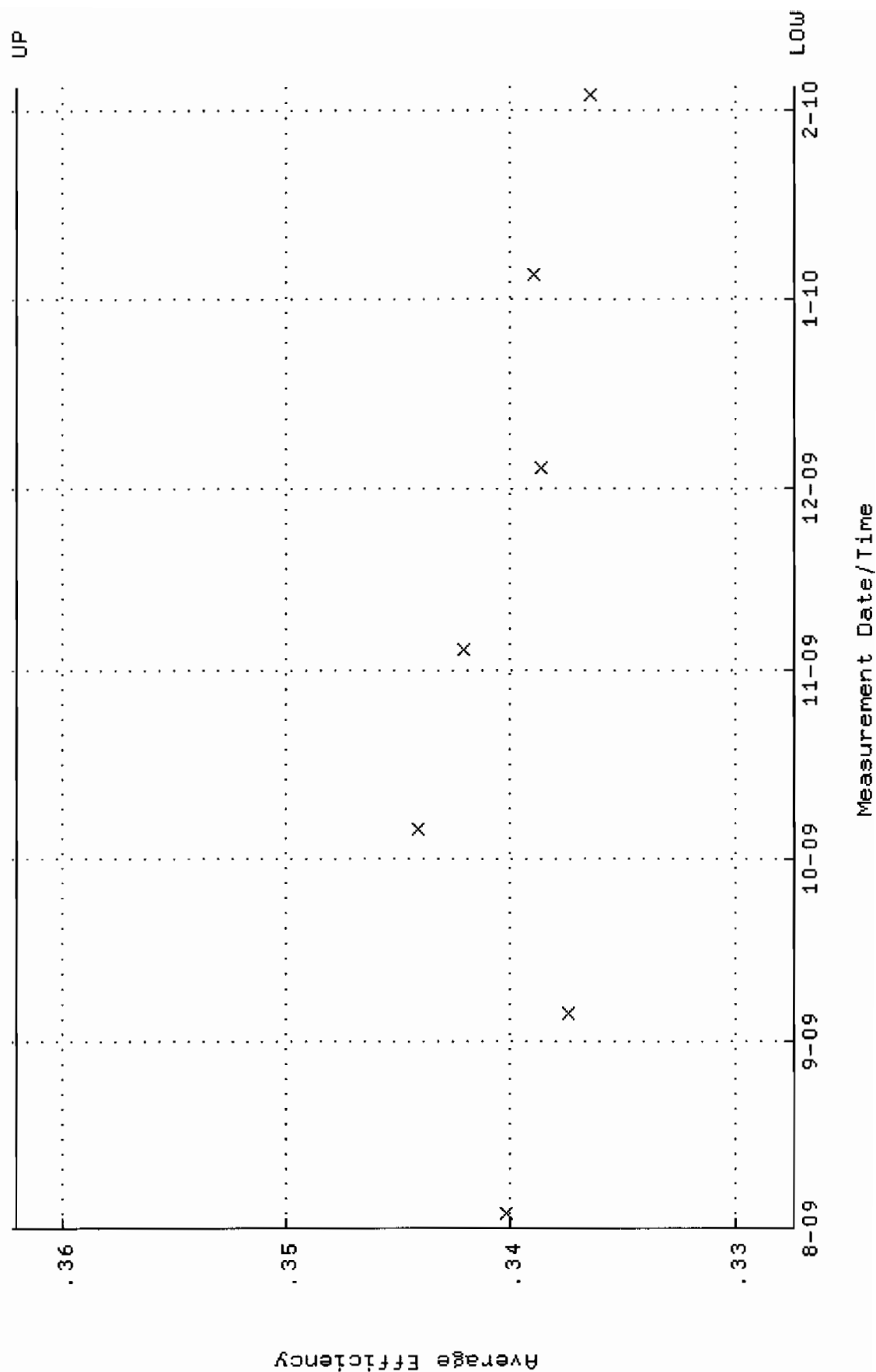
QA filename : DKA100:[ENV_ALPHA.QA.W]W037.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:43 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.000



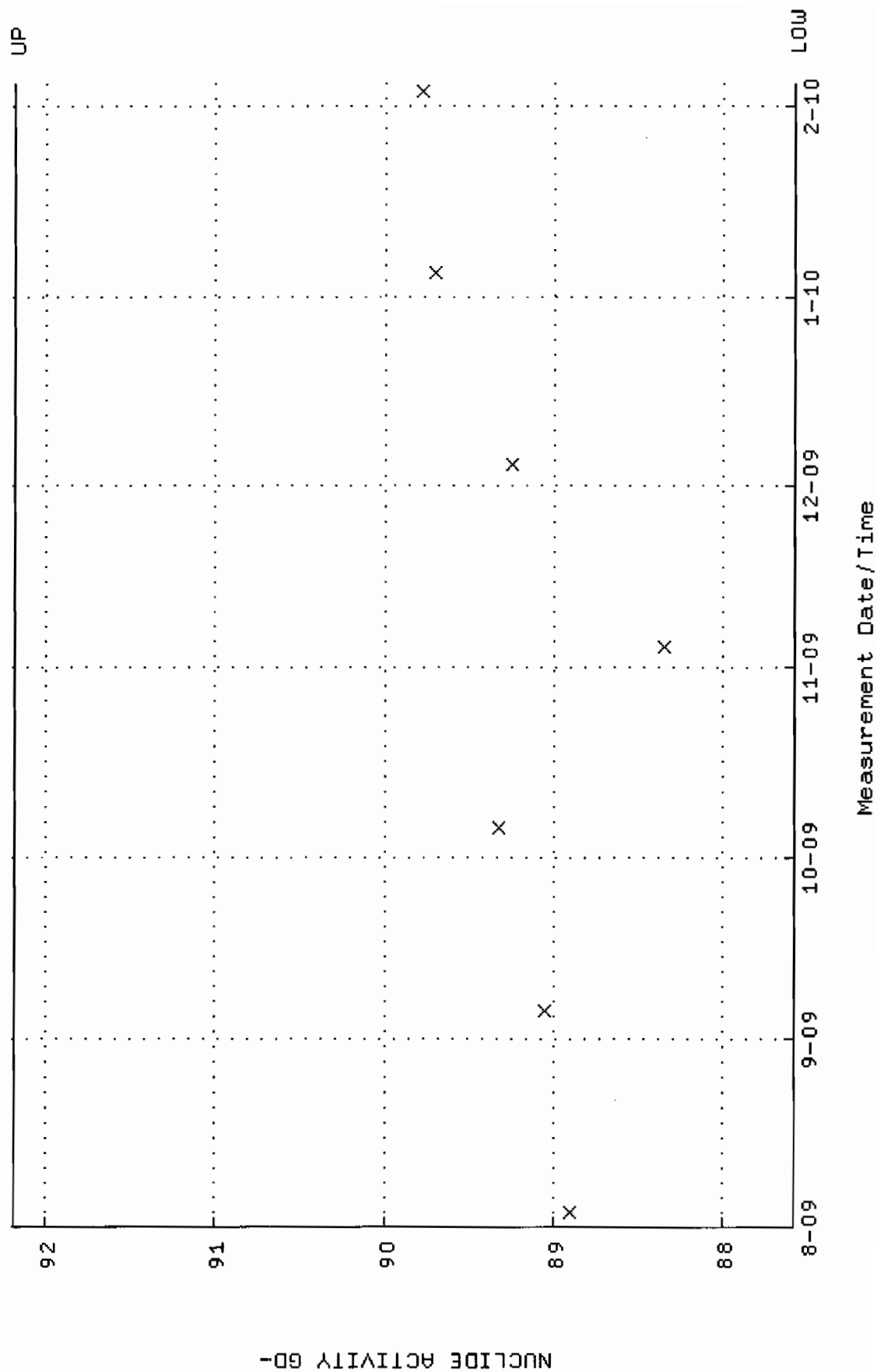
QA filename : DKA100:[ENV_ALPHA.QA.B]B037.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:36 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



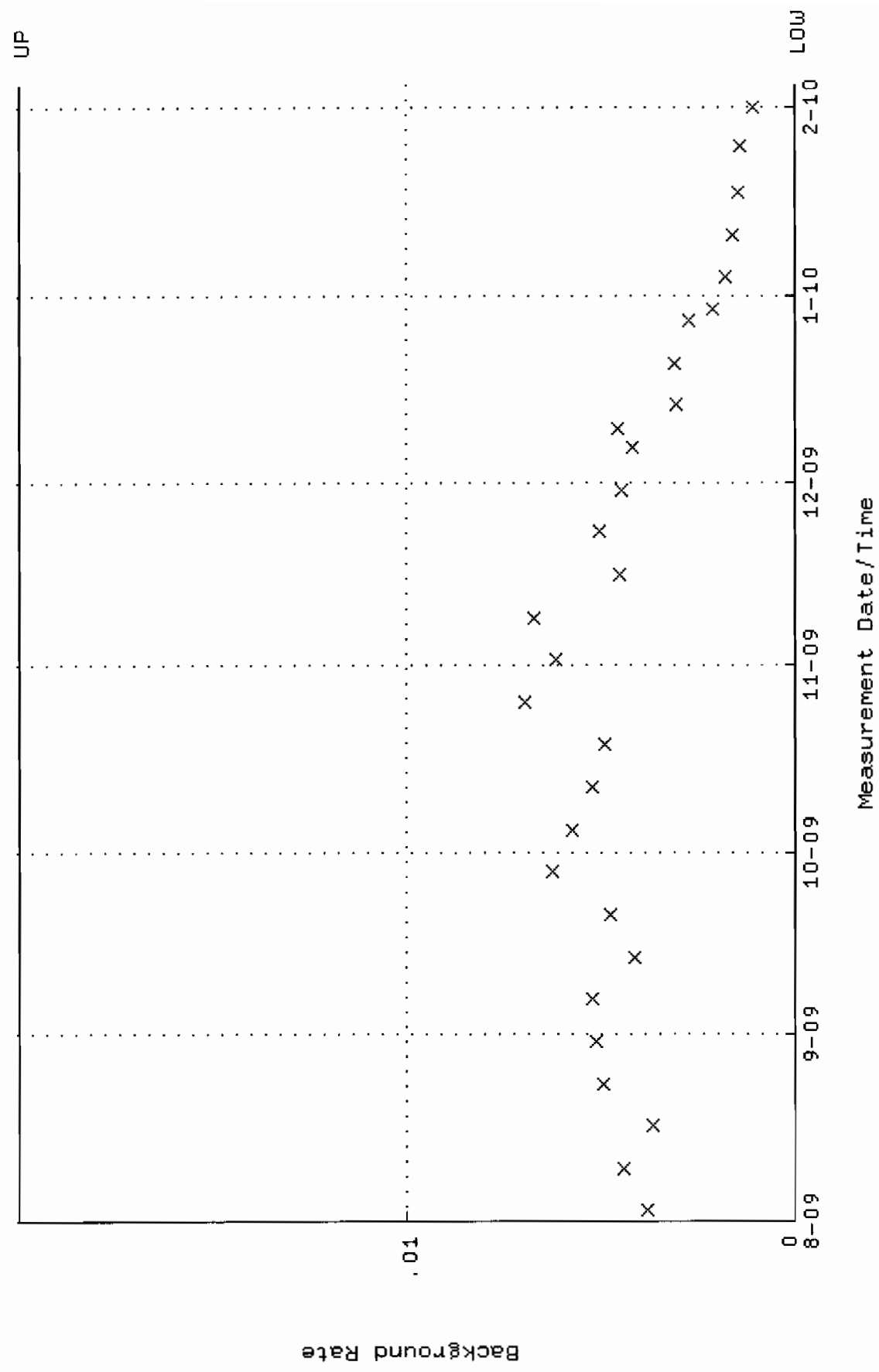
QA filename : DKA100:[ENV_ALPHA.QA.W]W038.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:43 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.327380 through 0.362086



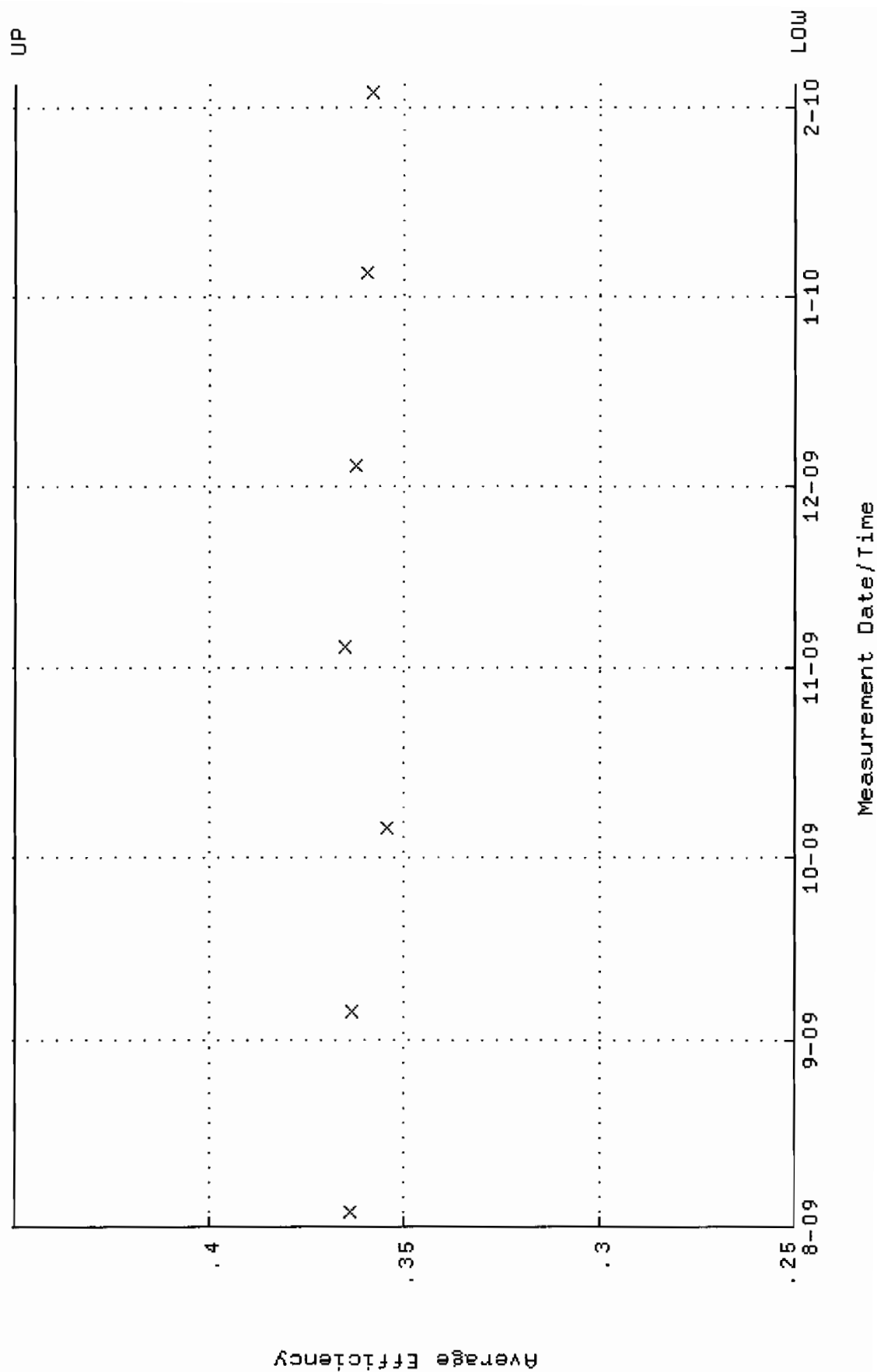
QA filename : DKA100:[ENV_ALPHA.QA.W]W038.QAF;3
Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-AUG-2009 10:53:43 through 4-FEB-2010 12:00:00
Lower/Upper Lmts: 87.5715 through 92.1899



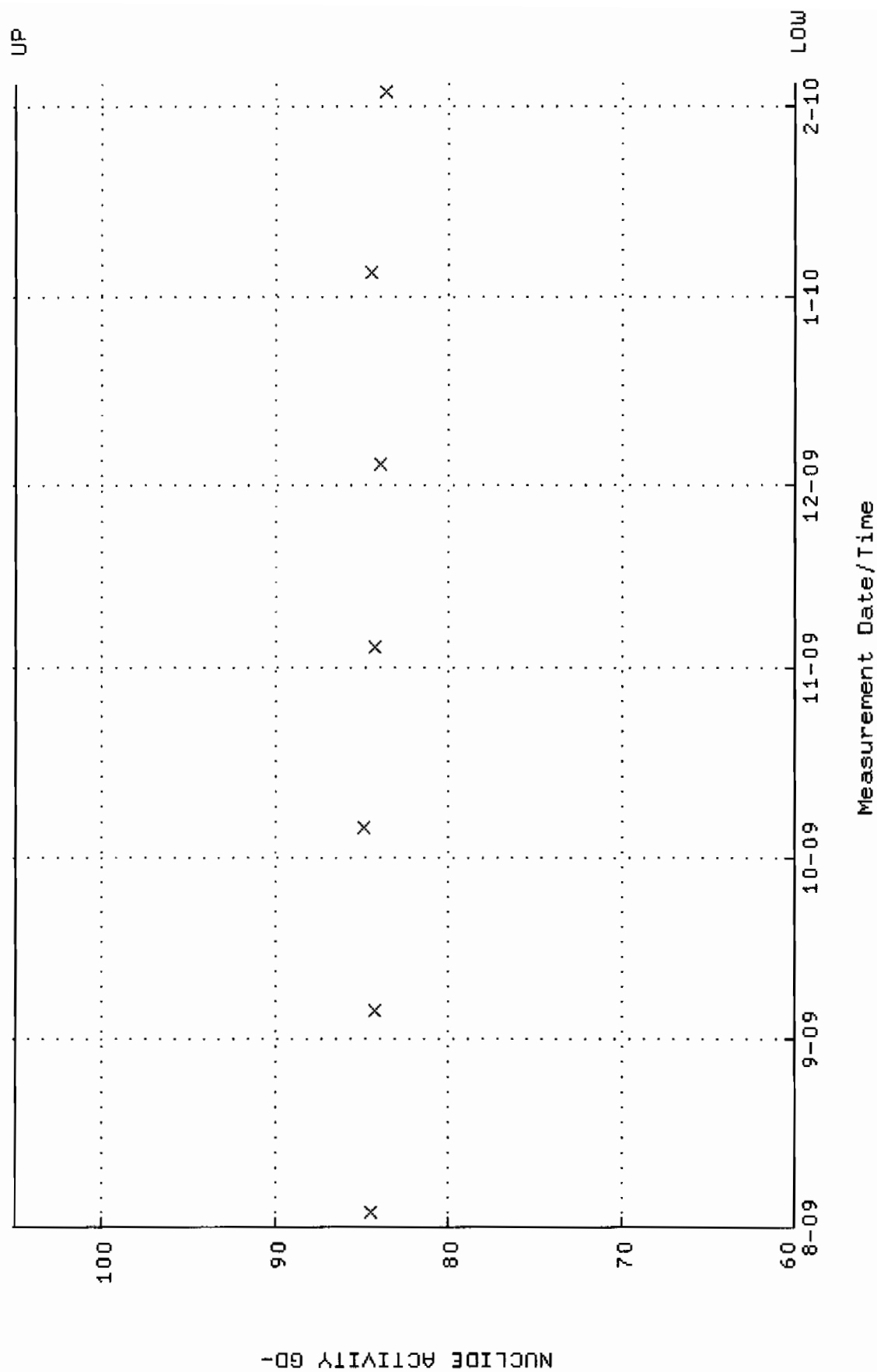
QA filename : DKA100:[ENV_ALPHA.QA.B]B038.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:36 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



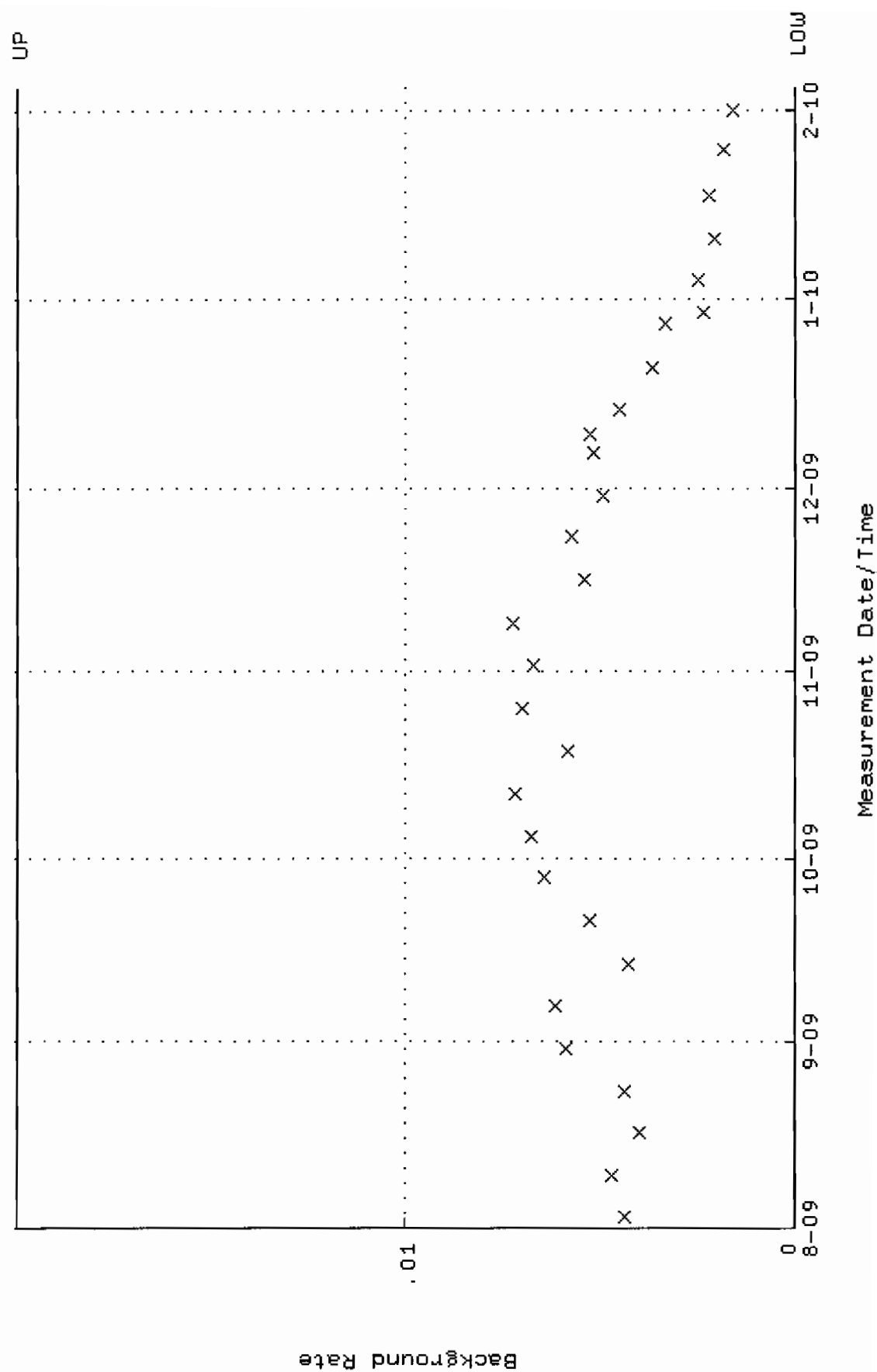
QA filename : DKA100:[ENV_ALPHA.QA.W]W039.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:43 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



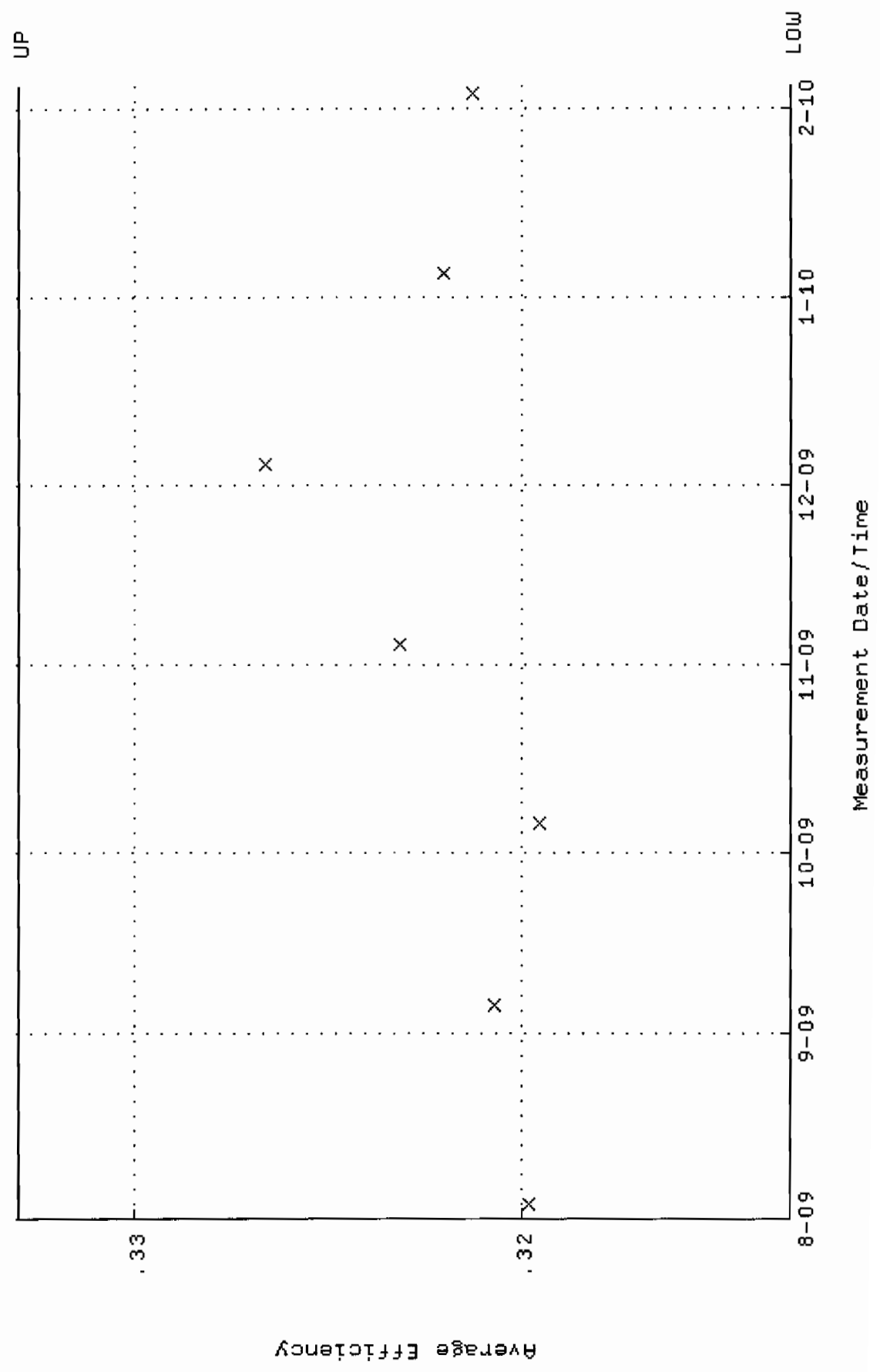
QA filename : DKA100:[ENV_ALPHA.QA.W]W039.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:43 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.000



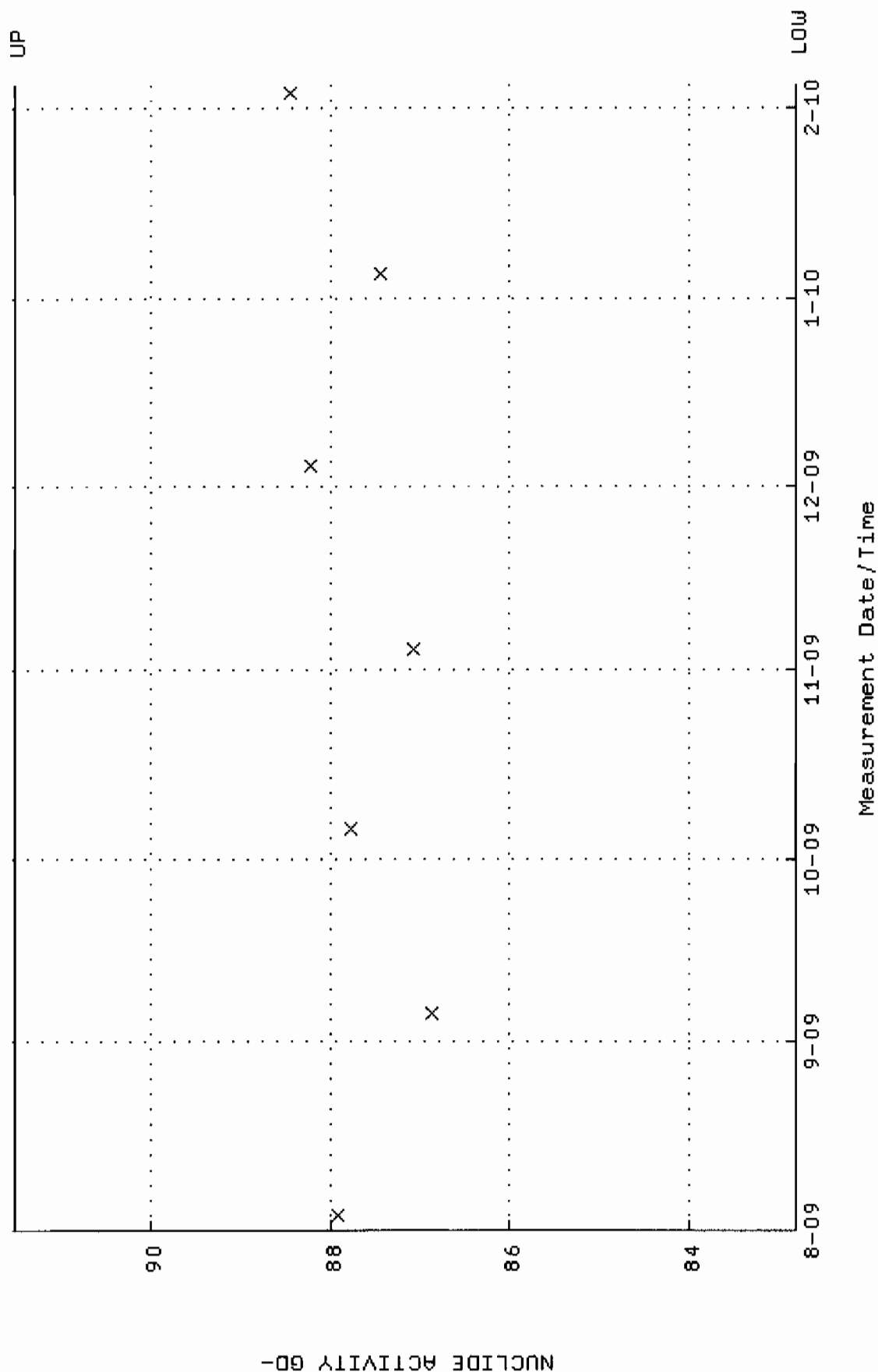
| | |
|------------------|---|
| QA filename | : DKA100:[ENV_ALPHA.QA.B]B039.QAF;1 |
| Parameter Name | : BACKRATE (Background Rate) |
| Start/End Dates | : 2-AUG-2009 17:38:36 through 4-FEB-2010 17:38:36 |
| Lower/Upper Lmts | : 0.000000E+00 through 2.000000E-02 |



QA filename : DKA100:[ENV_ALPHA.QA.W]W040.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:43 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.313016 through 0.333016



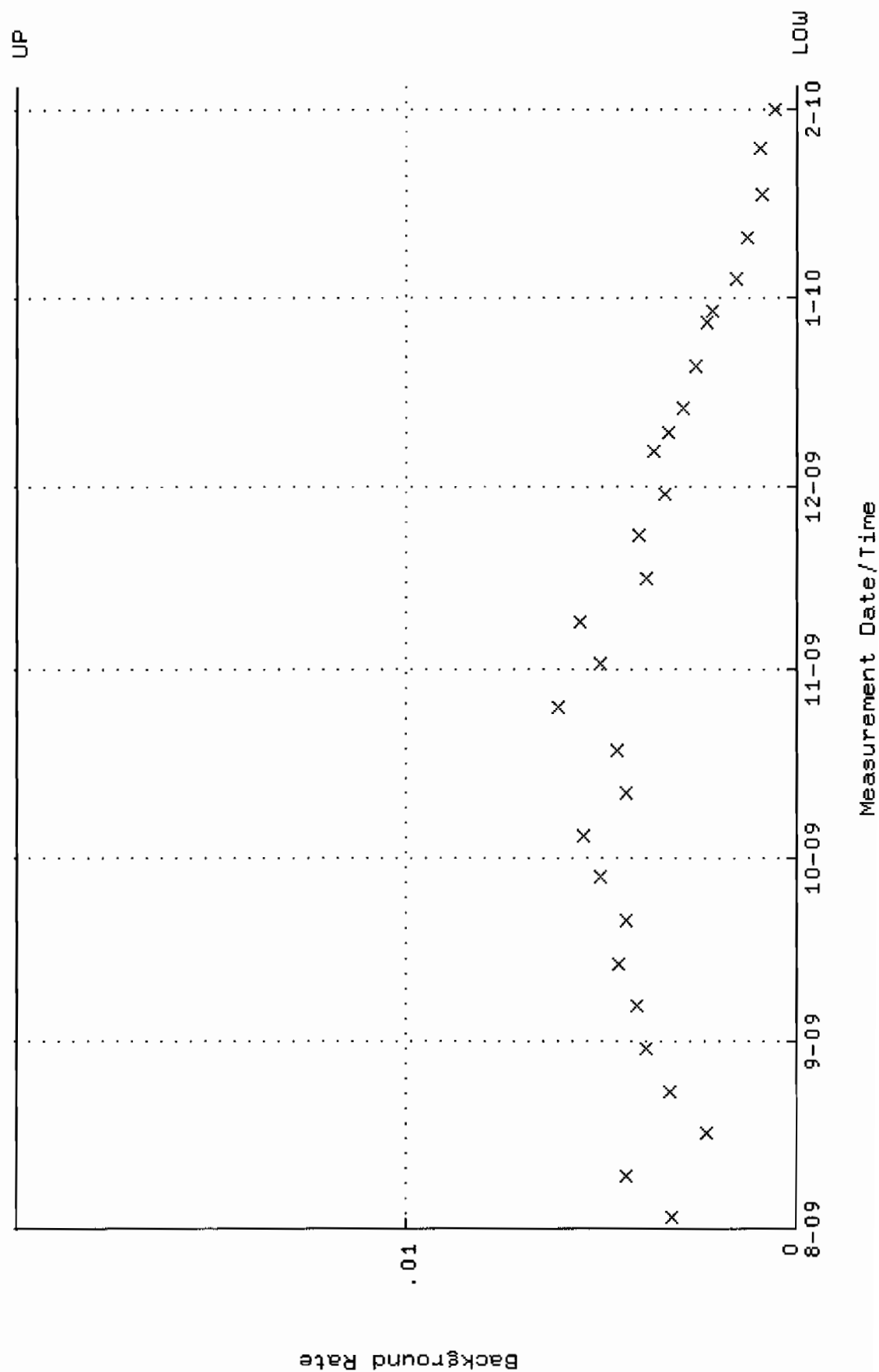
QA filename : DKA100:[ENV-ALPHA.QA.W]W040.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:43 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 82.8065 through 91.5229



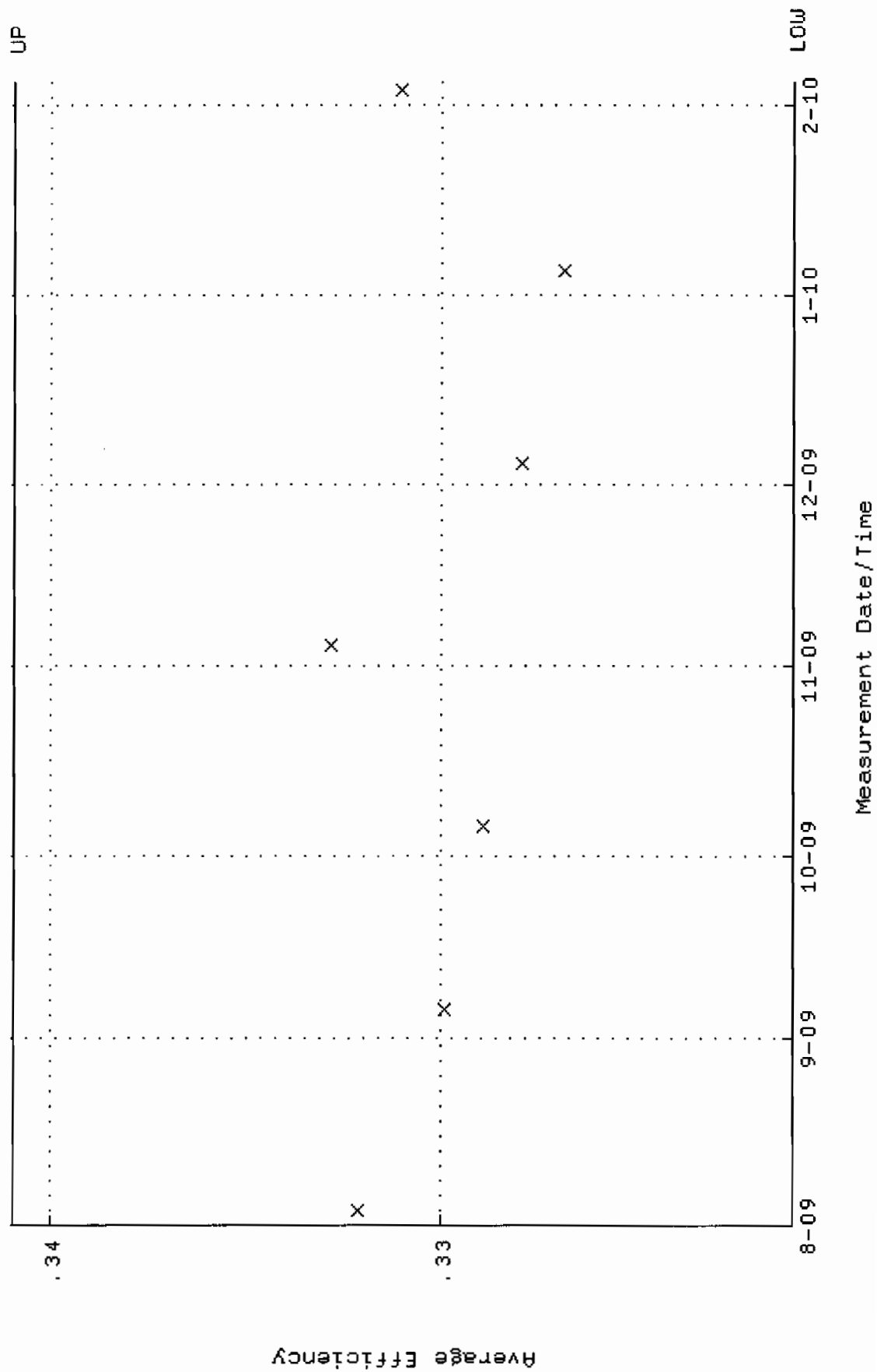
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QA filename      : DKA100:[ENV-ALPHA.QA.B]B040.QAF;1
Parameter Name   : BACKRATE (Background Rate)
Start/End Dates  : 2-AUG-2009 17:38:36 through 4-FEB-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

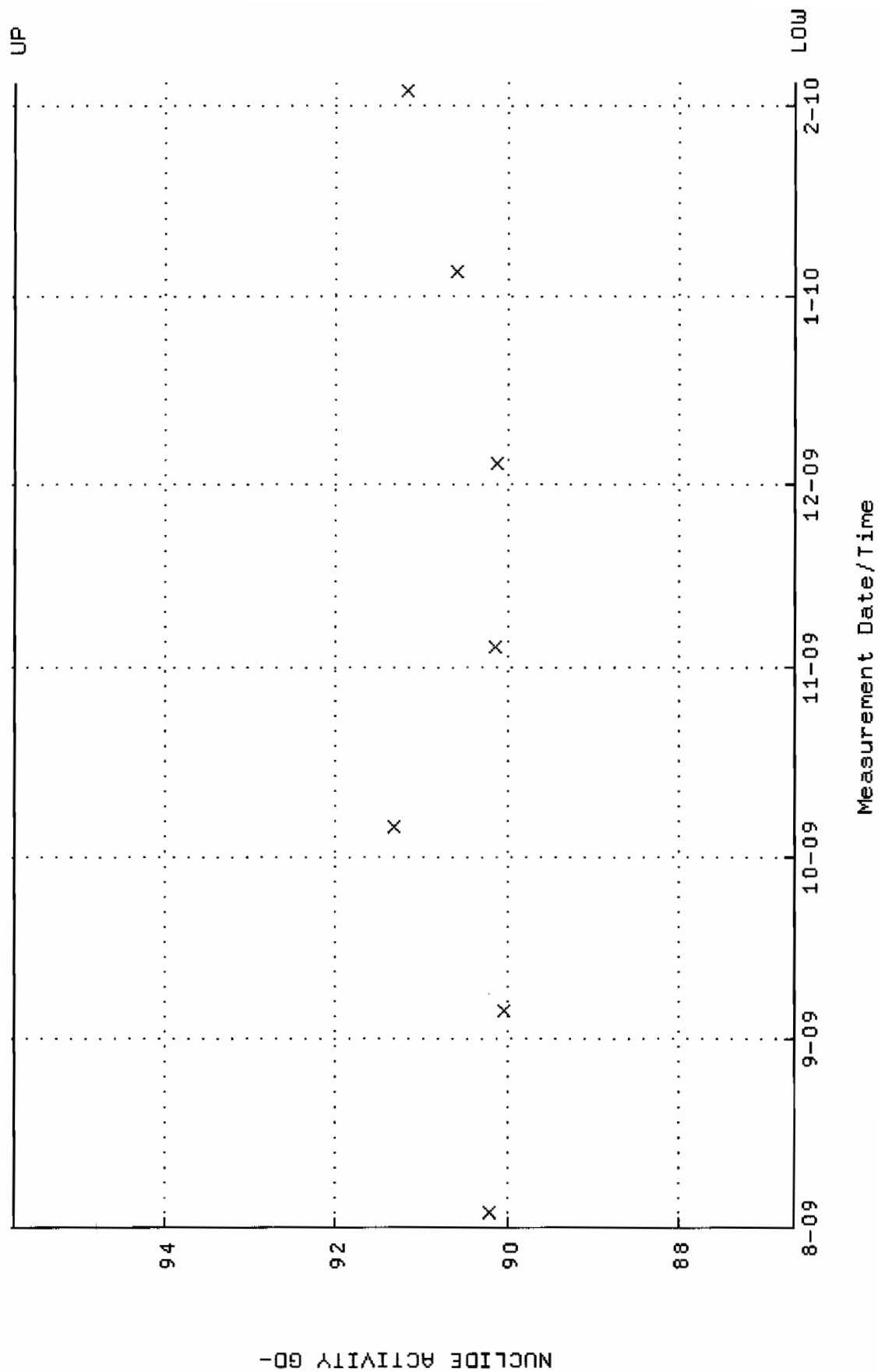
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QA filename : DKA100:[ENV_ALPHA.QA.W]W041.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:43 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.320943 through 0.340943



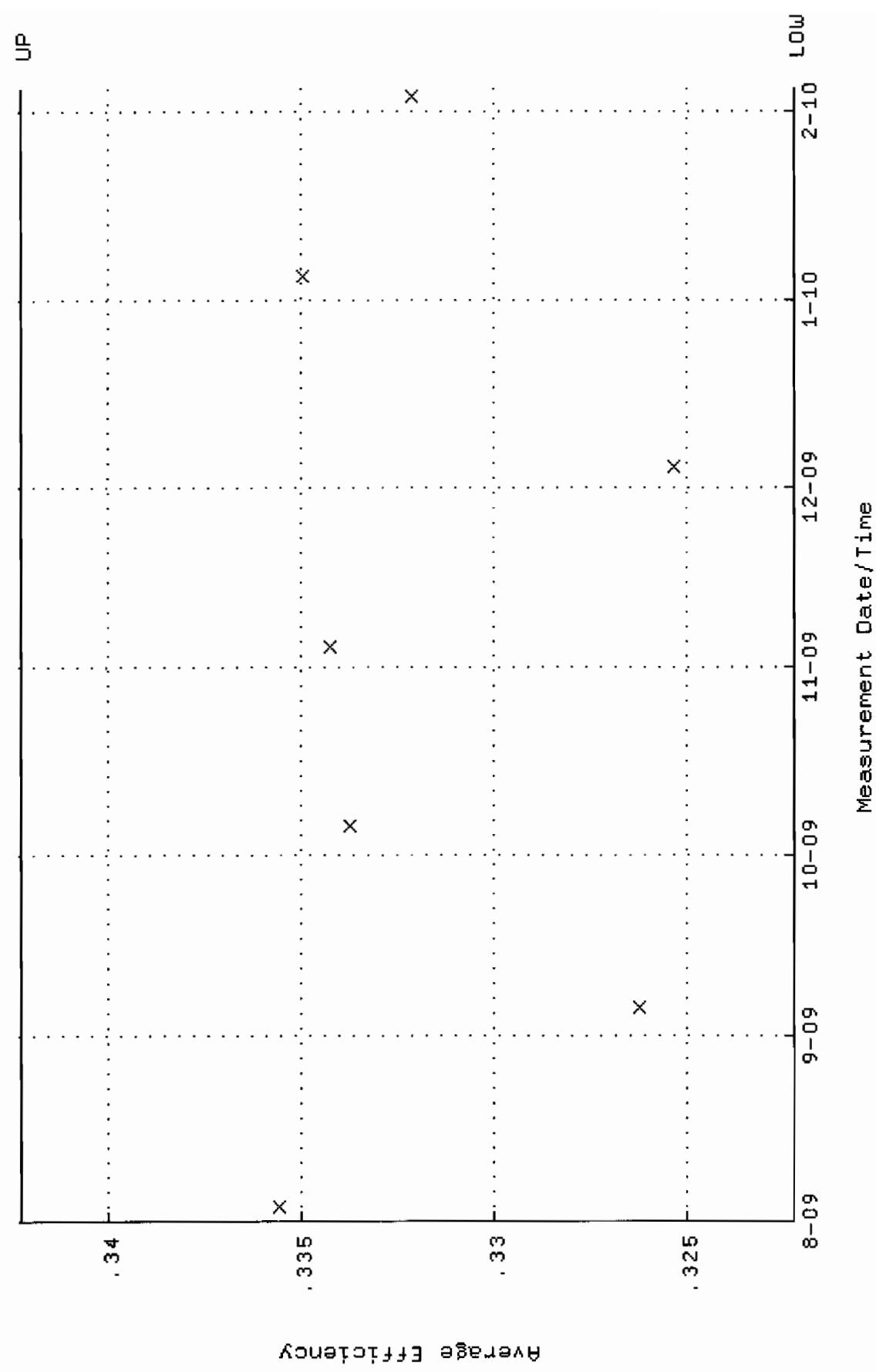
QA filename : DKA100:[ENV_ALPHA.QA.W]U041.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:43 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 86.6435 through 95.7639



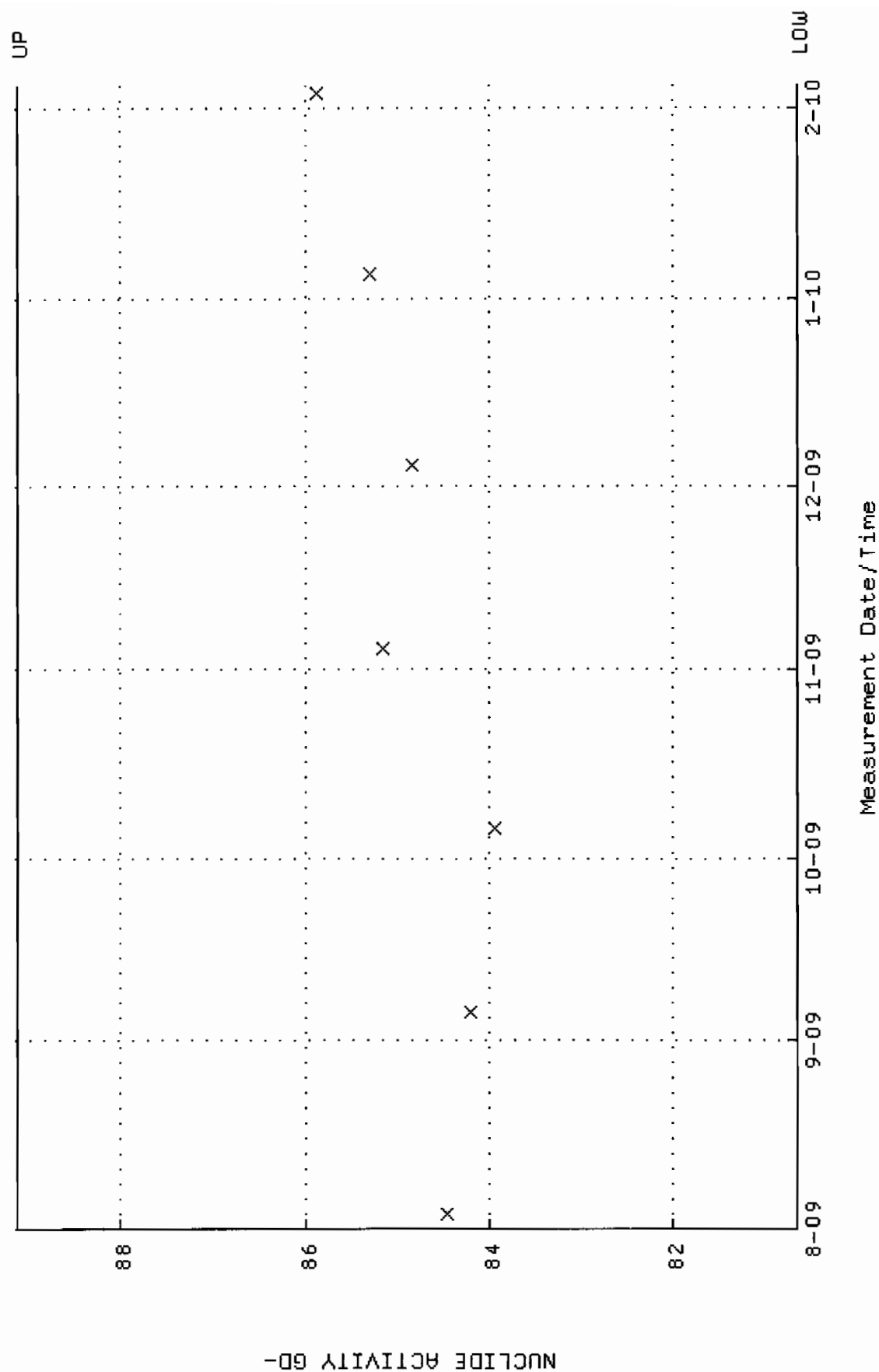
Lower/Upper Lmts: 0.00000E+00 through 2.00000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W042.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:43 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.322243 through 0.342243



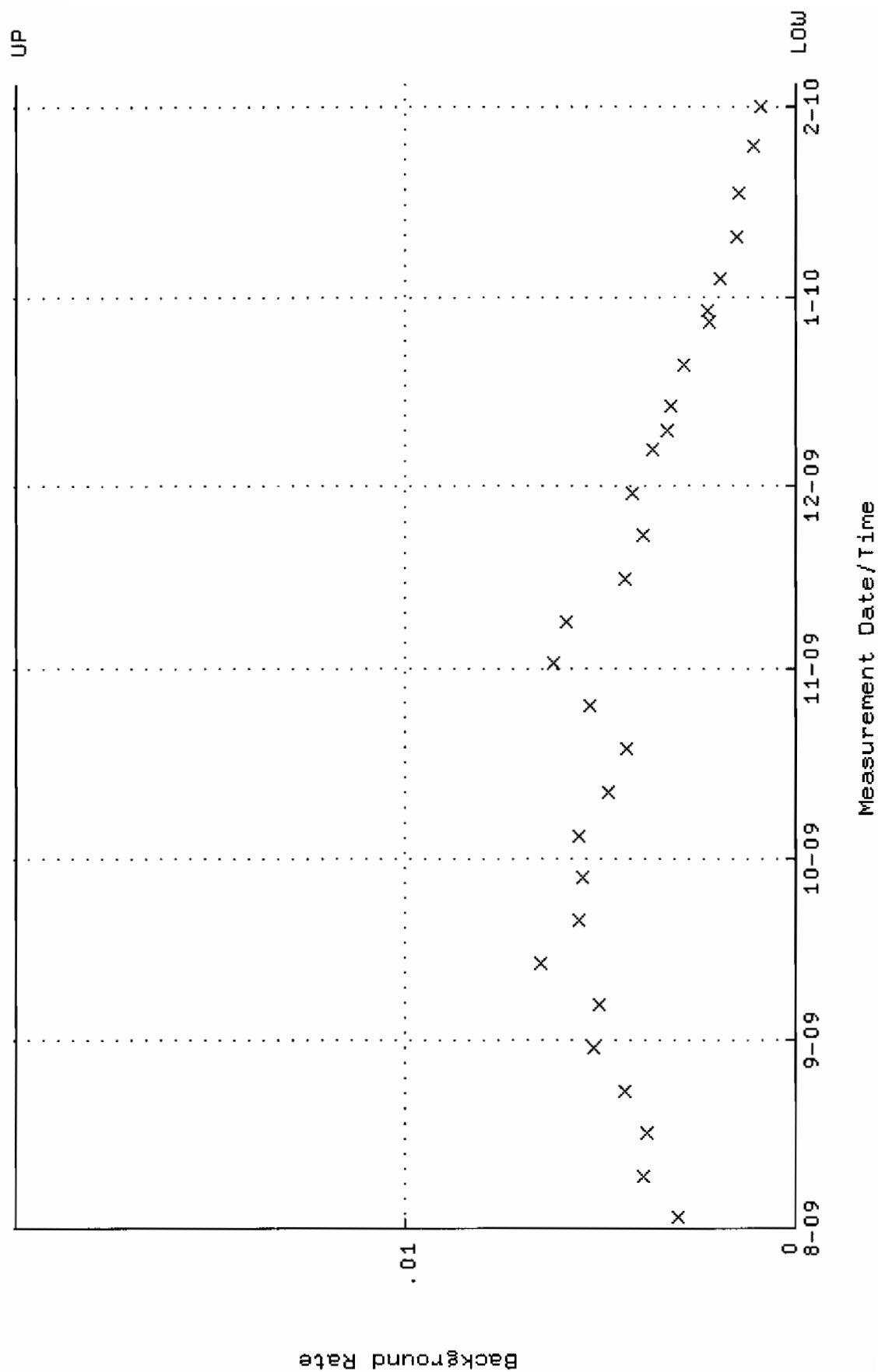
QA filename : DKA100:[ENV_ALPHA.QA.W]W042.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:43 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 80.6389 through 89.1273



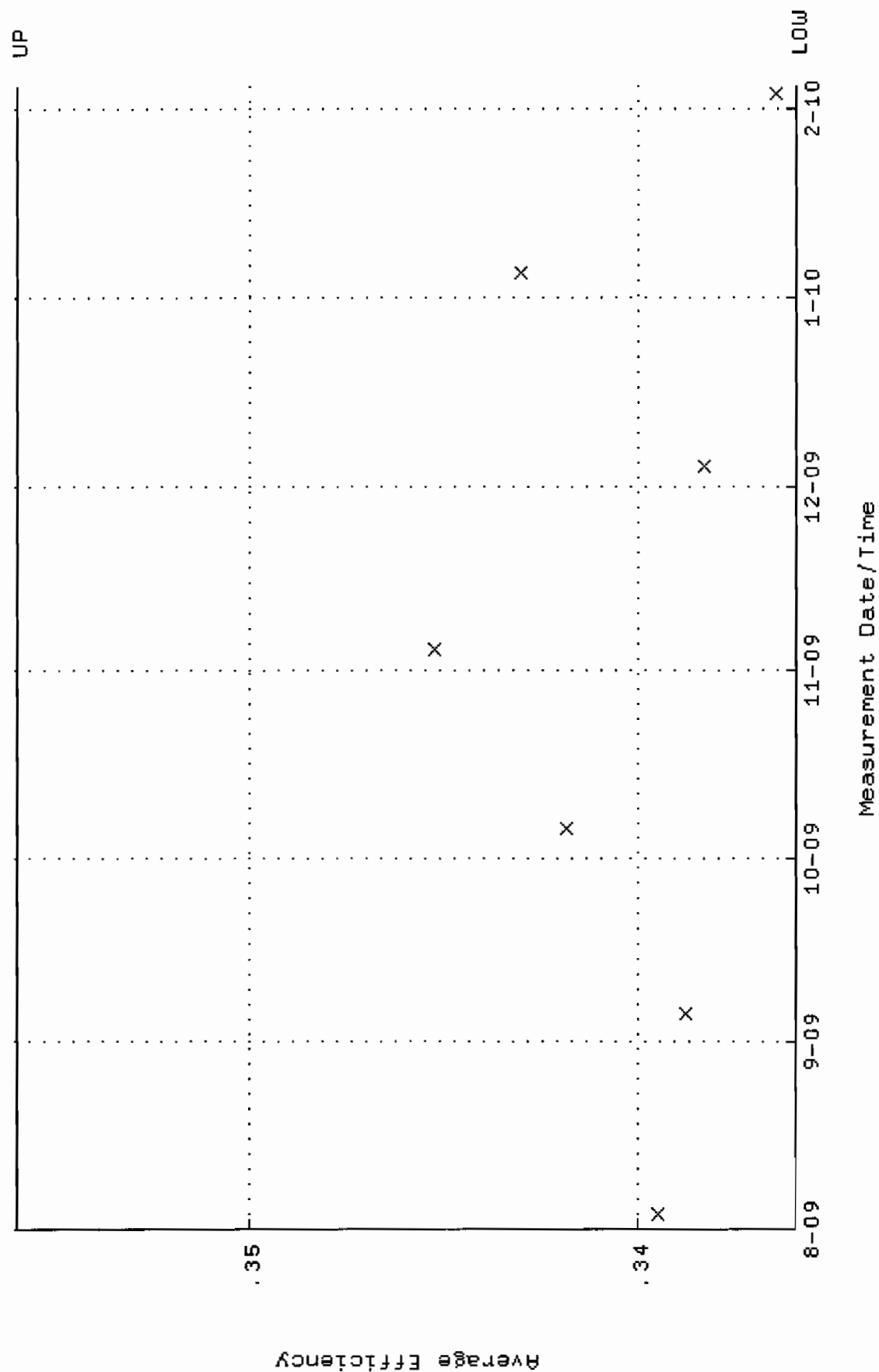

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: DKA100:[ENV_ALPHA.QA.B]B042.QAF;1
: BACKRATE (Background Rate)
: 2-AUG-2009 17:38:36 through 4-FEB-
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

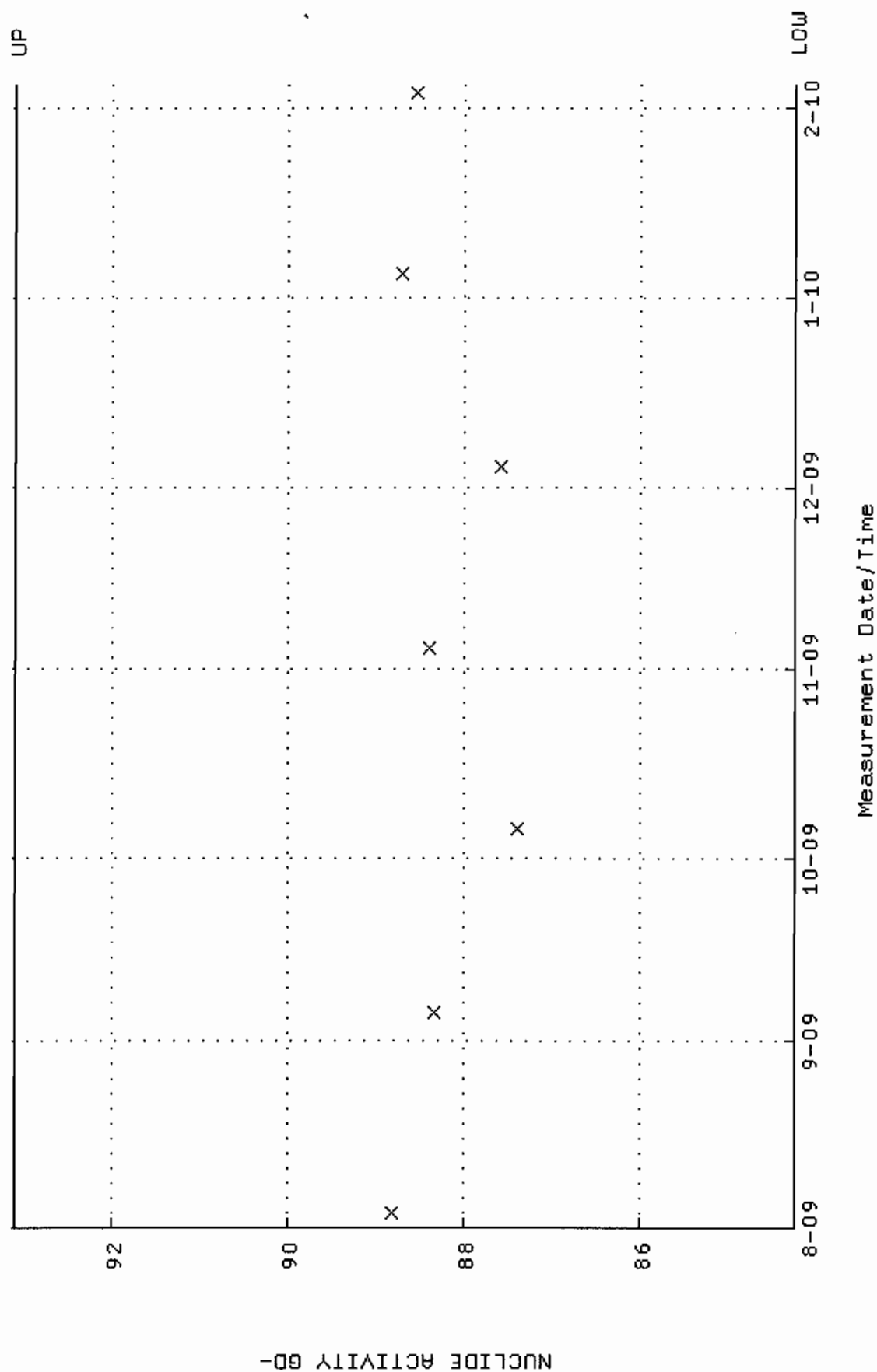
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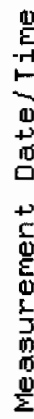
QA filename : DKA100:[ENV_ALPHA.QA.w]W043.QAF;102
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.335973 through 0.355973



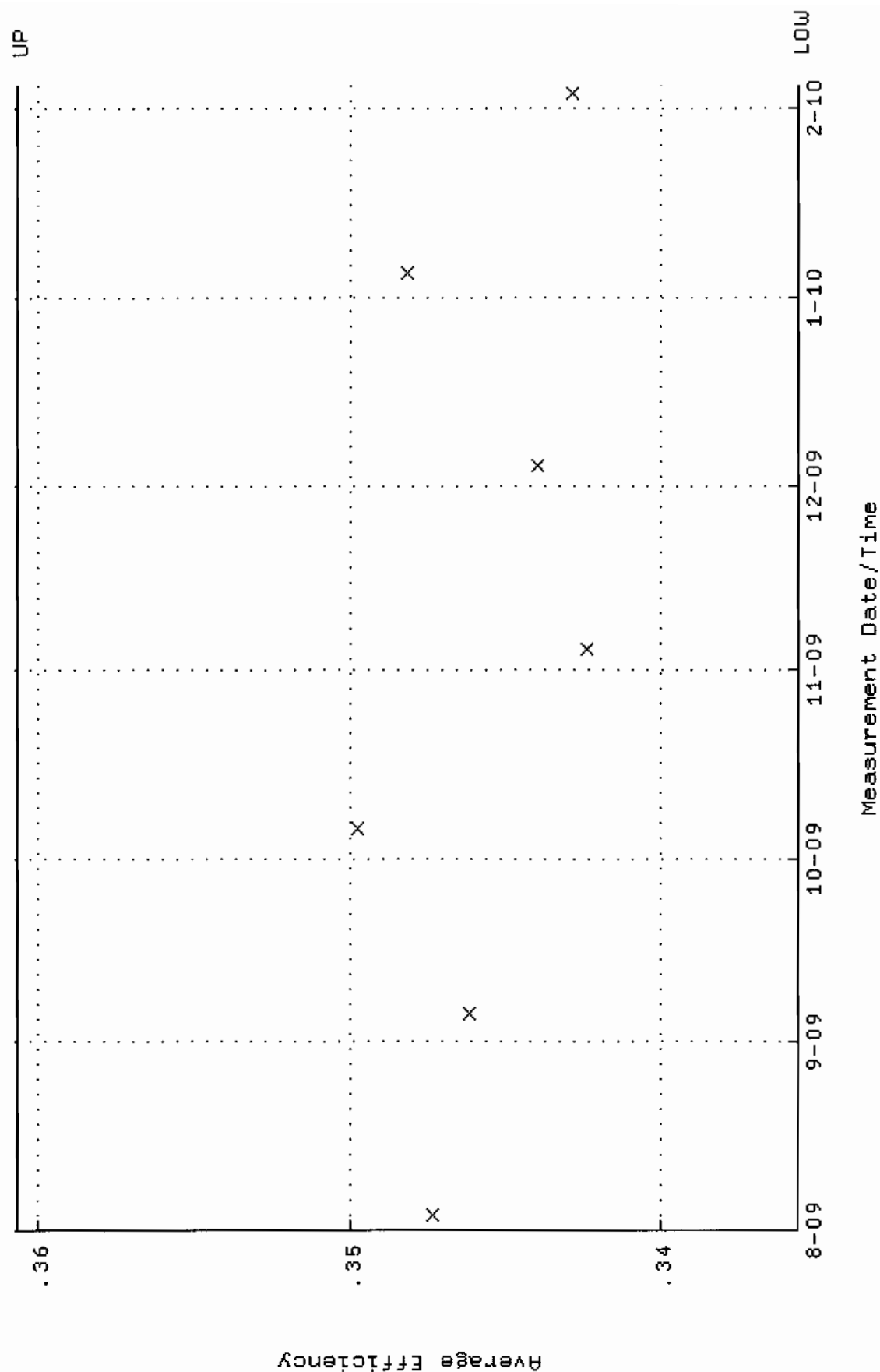
QA filename : DKA100:[ENV_ALPHA.QA.W]W043.QAF;102
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 84.2440 through 93.1118



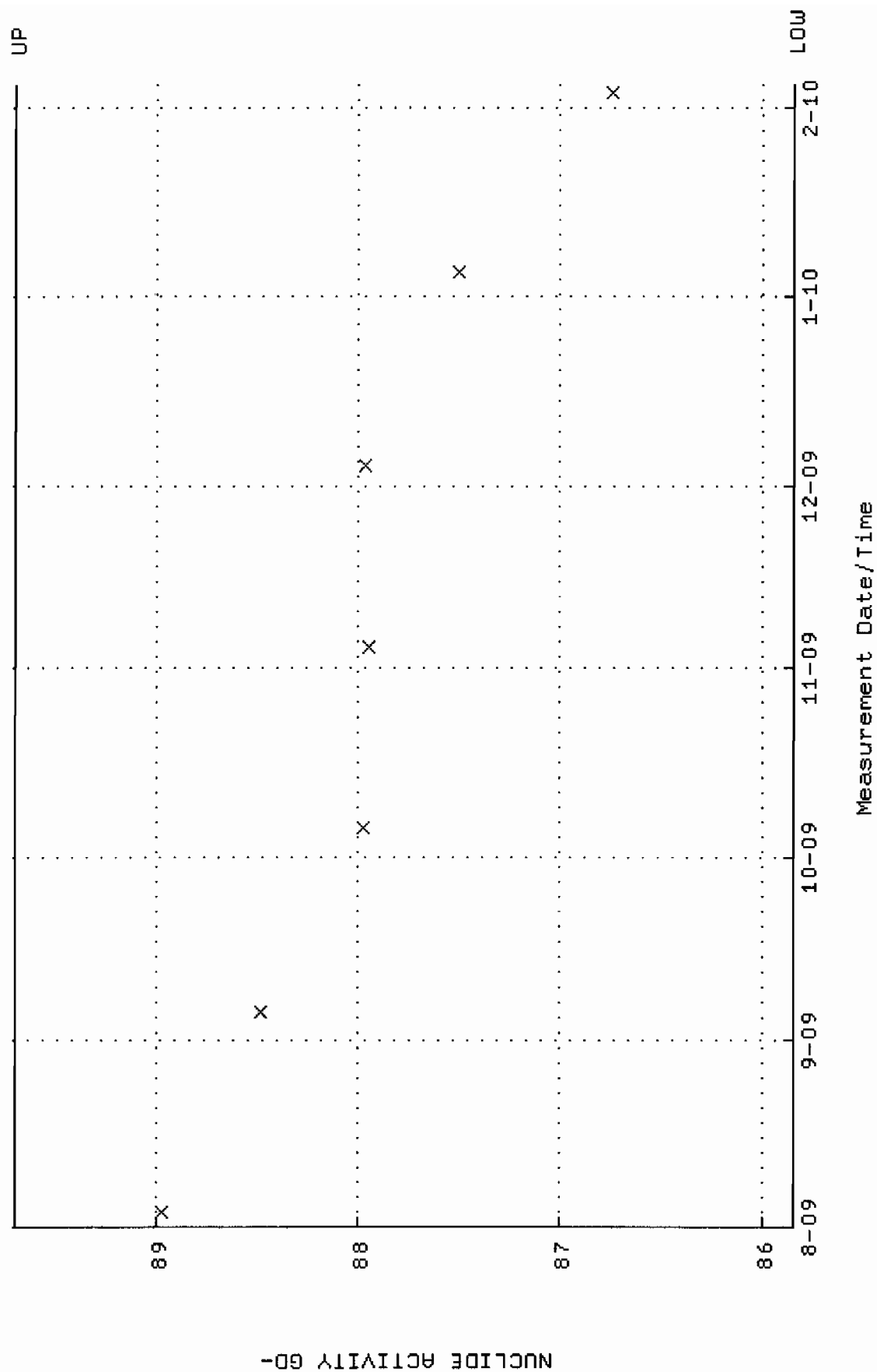
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



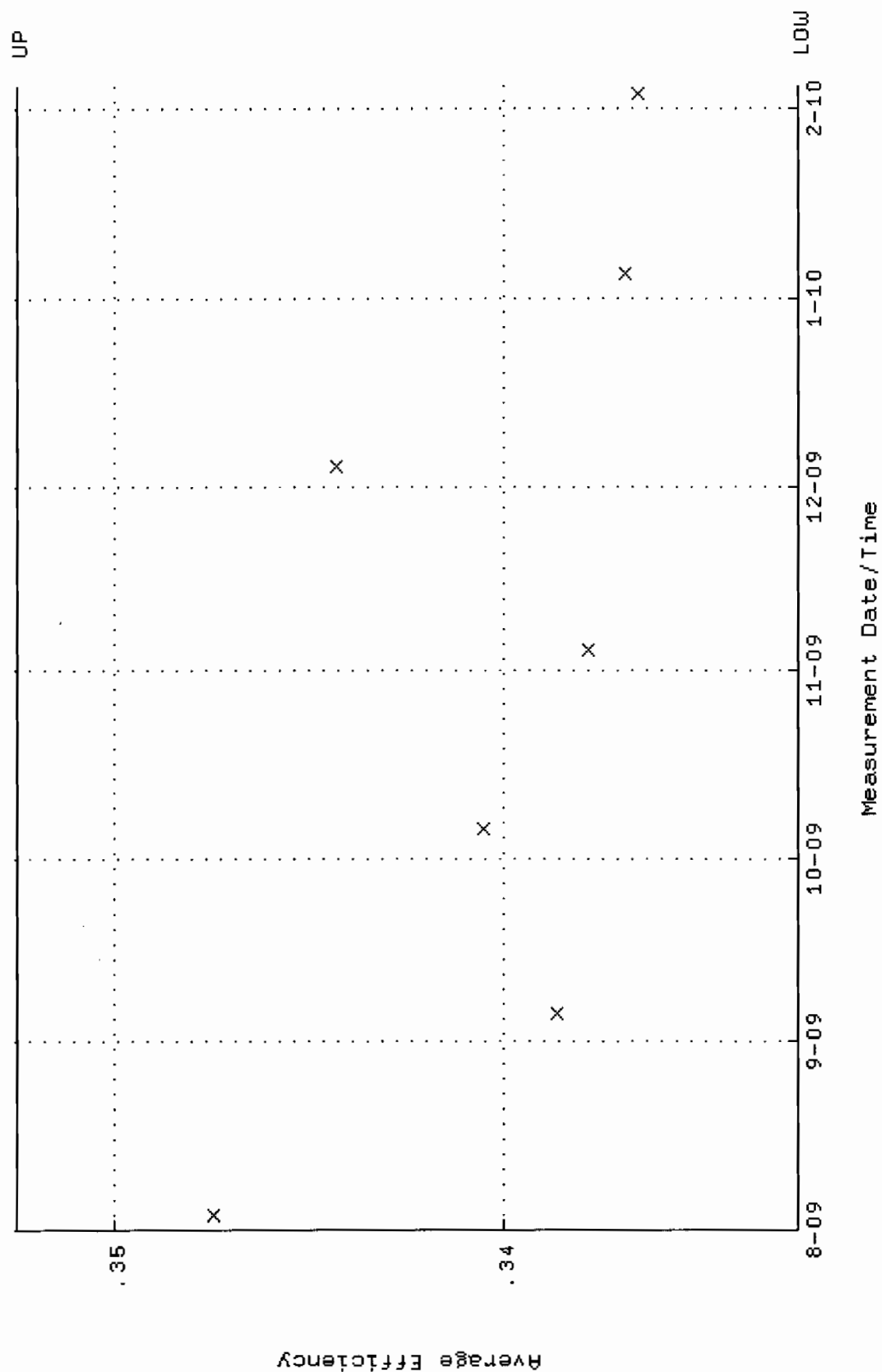
QA filename : DKA100:[ENV_ALPHA.QA.W]W044.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.335557 through 0.360677



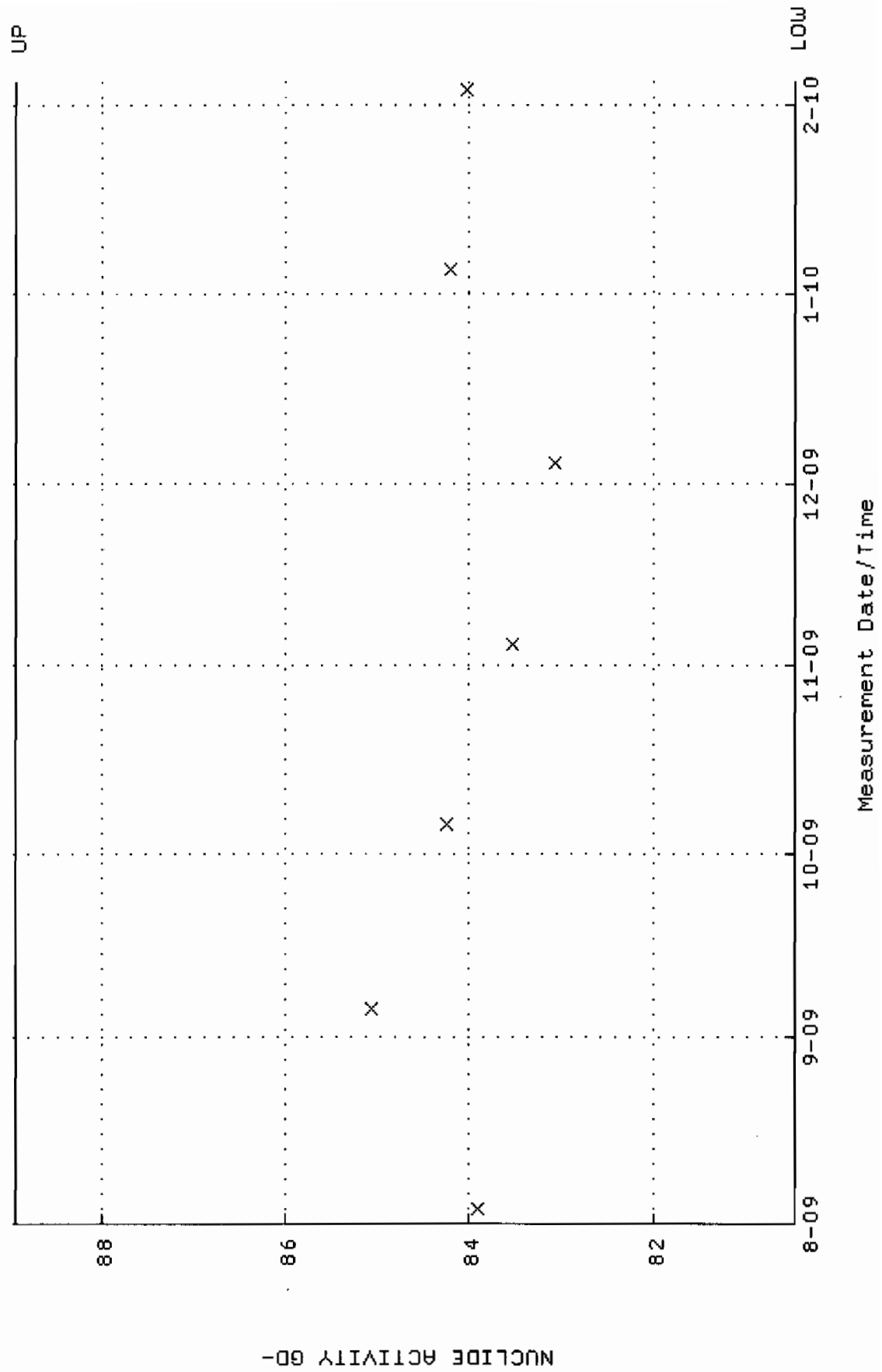
QA filename : DKA100:[ENV-ALPHA.QA.W]W044.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 85.8425 through 89.6949



QA filename : DKA100:[ENV_ALPHA.QA.W]W045.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.332472 through 0.352472



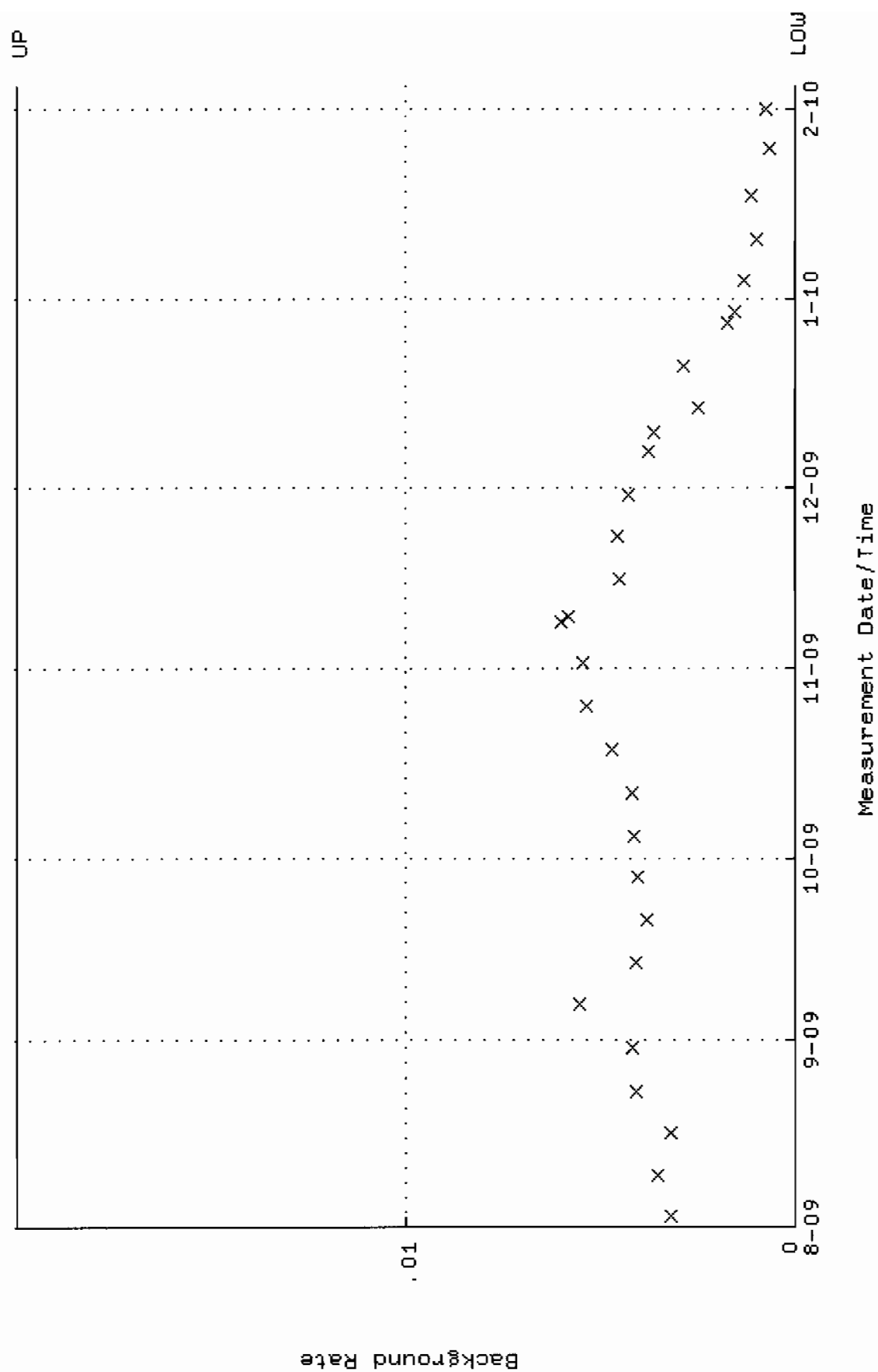
QA filename : DKA100:[ENV_ALPHA.QA.W]W045.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 80.4622 through 88.9320



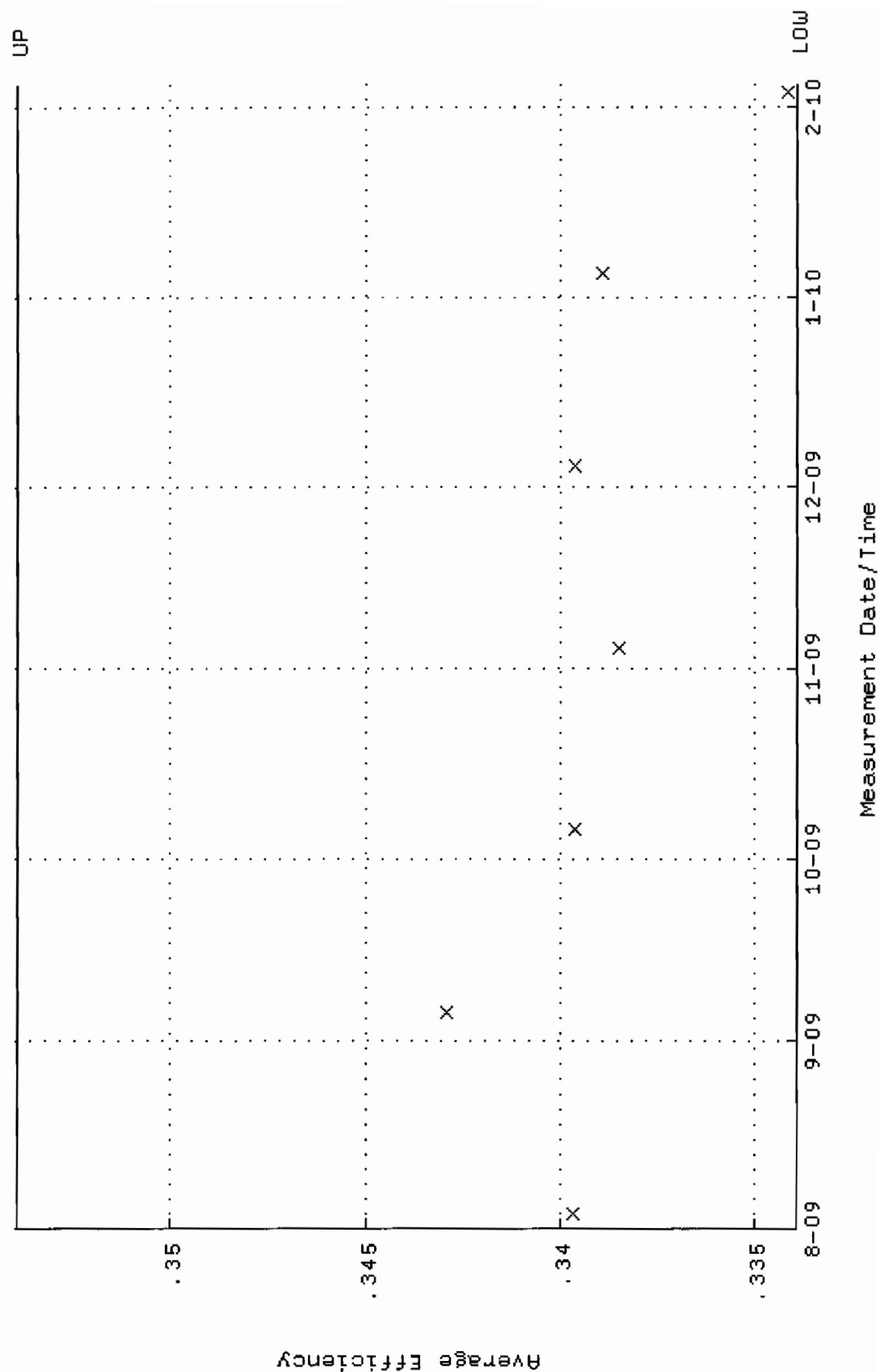
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: DKA100:[ENV_ALPHA.QA.B]B045.QAF;1
: BACKRATE (Background Rate)
: 2-AUG-2009 17:38:37 through 4-FEB-
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

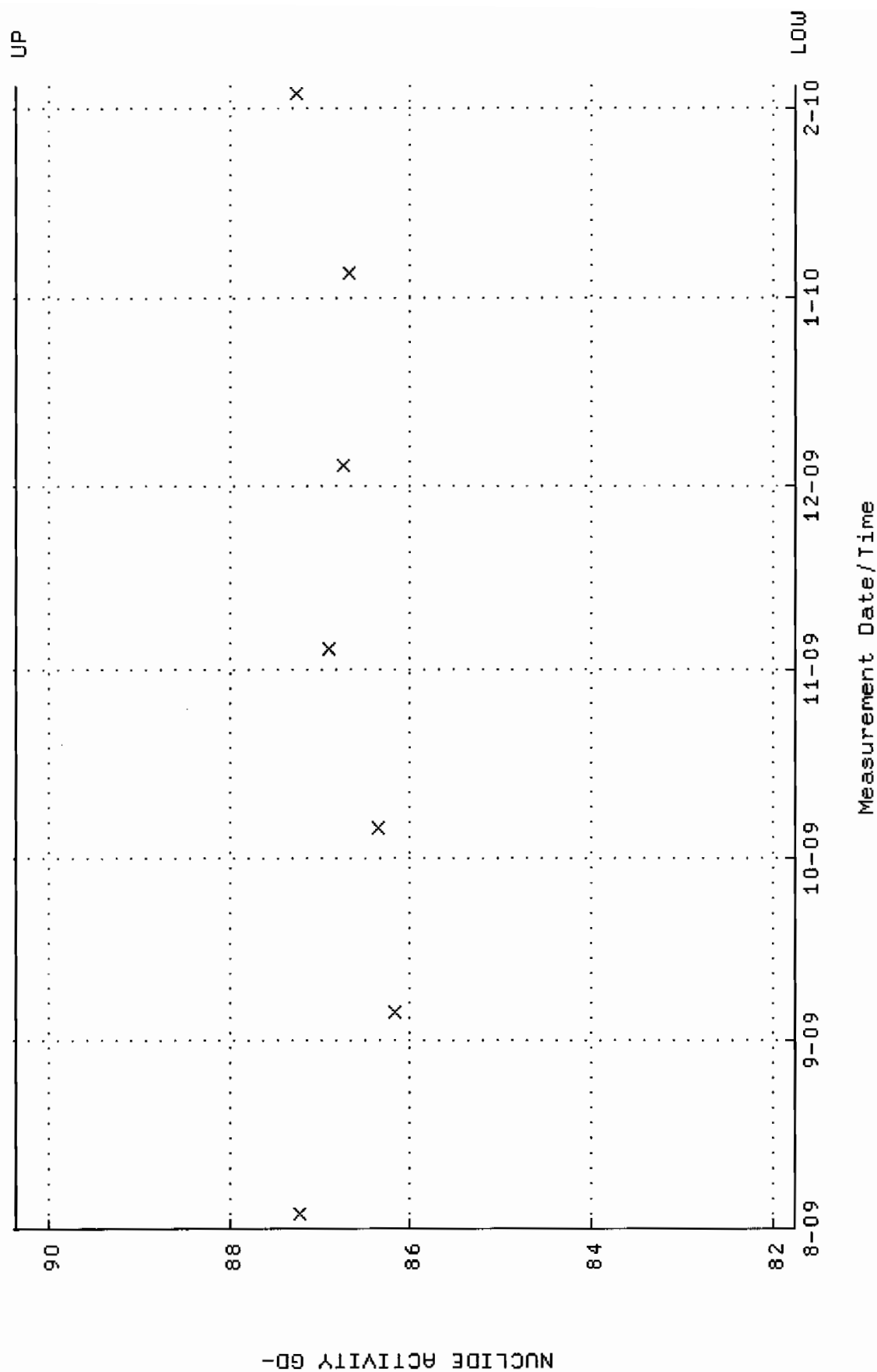
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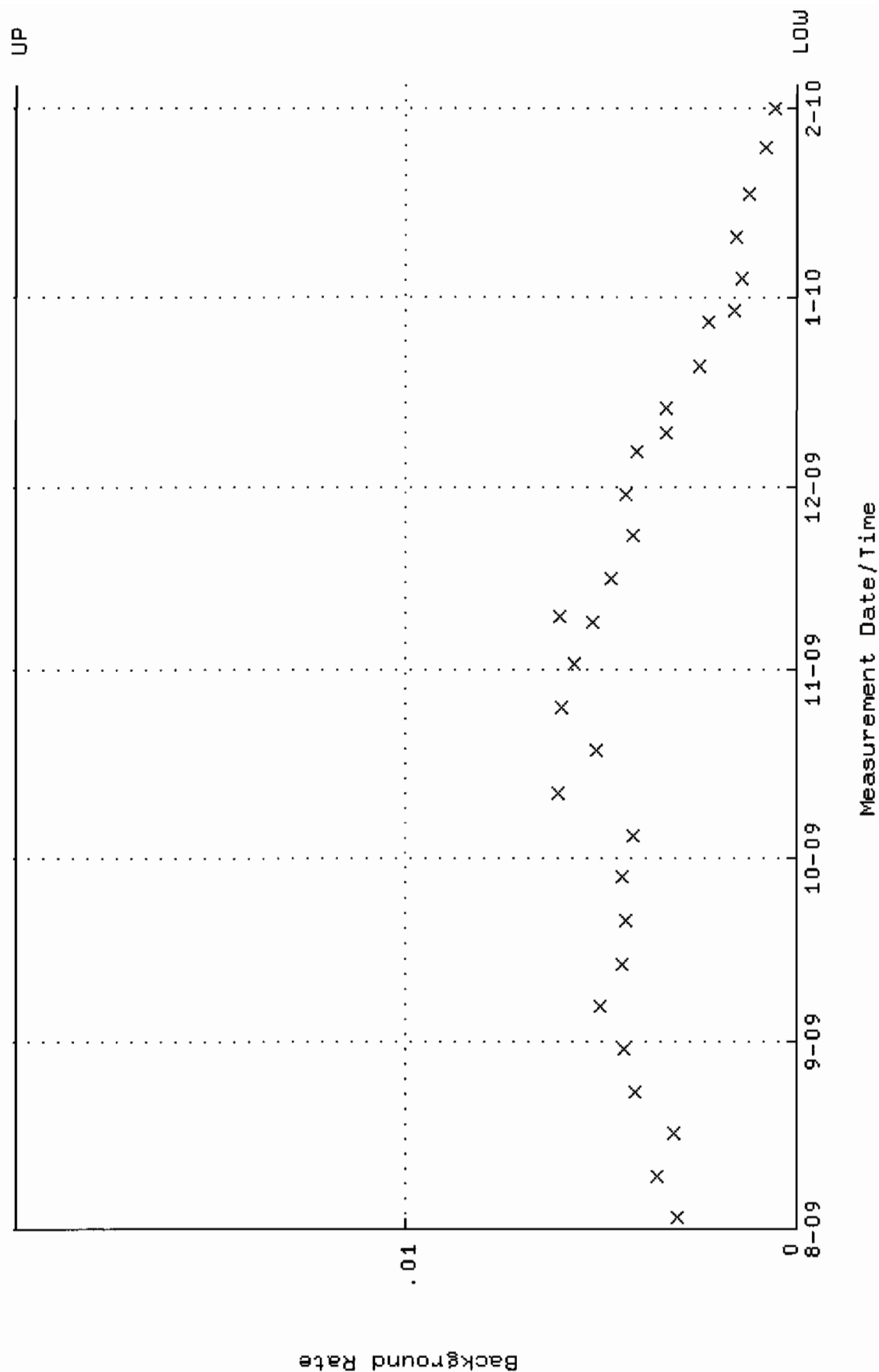
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 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.333927 through 0.353927



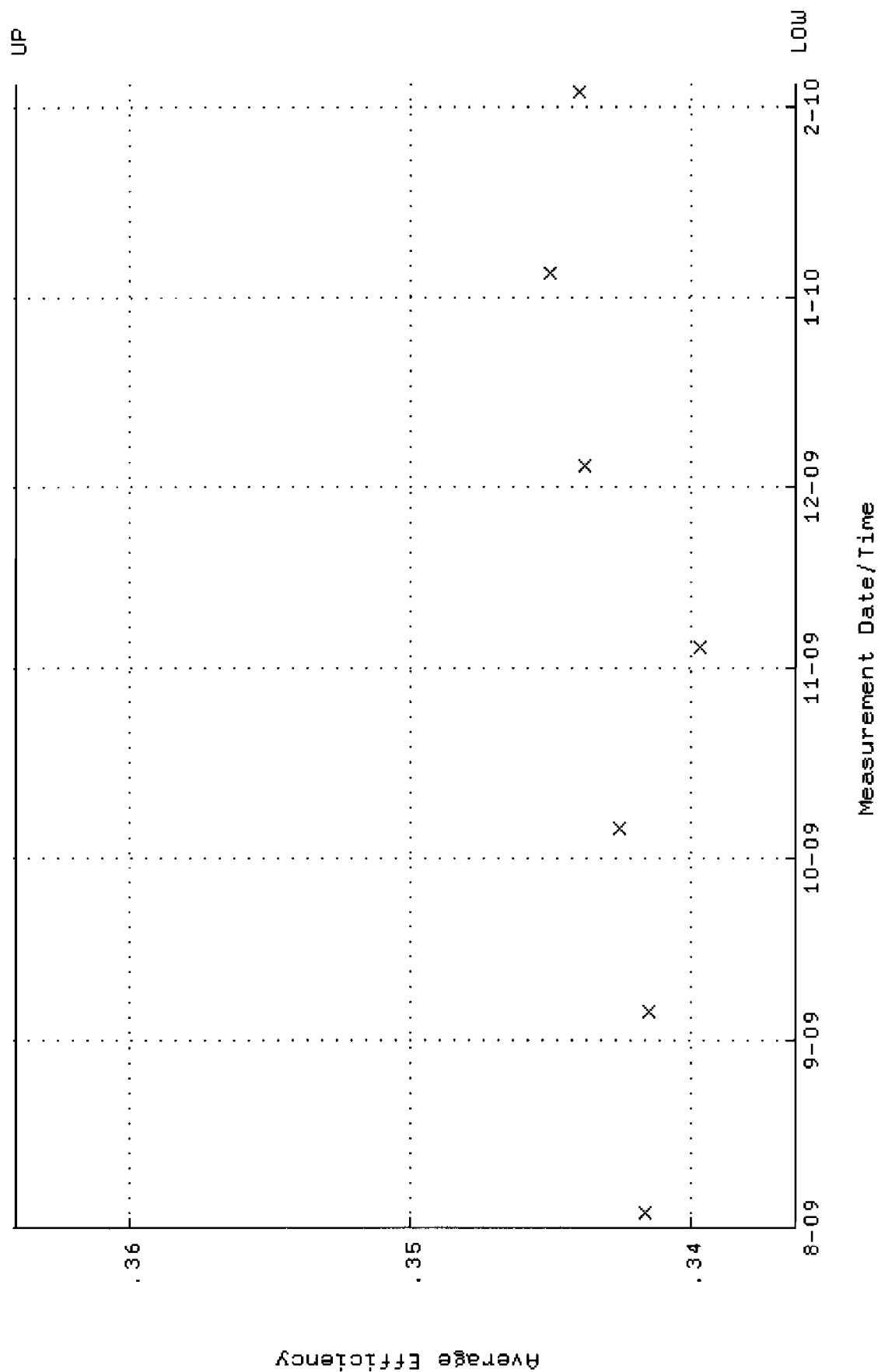
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 81.7568 through 90.3628



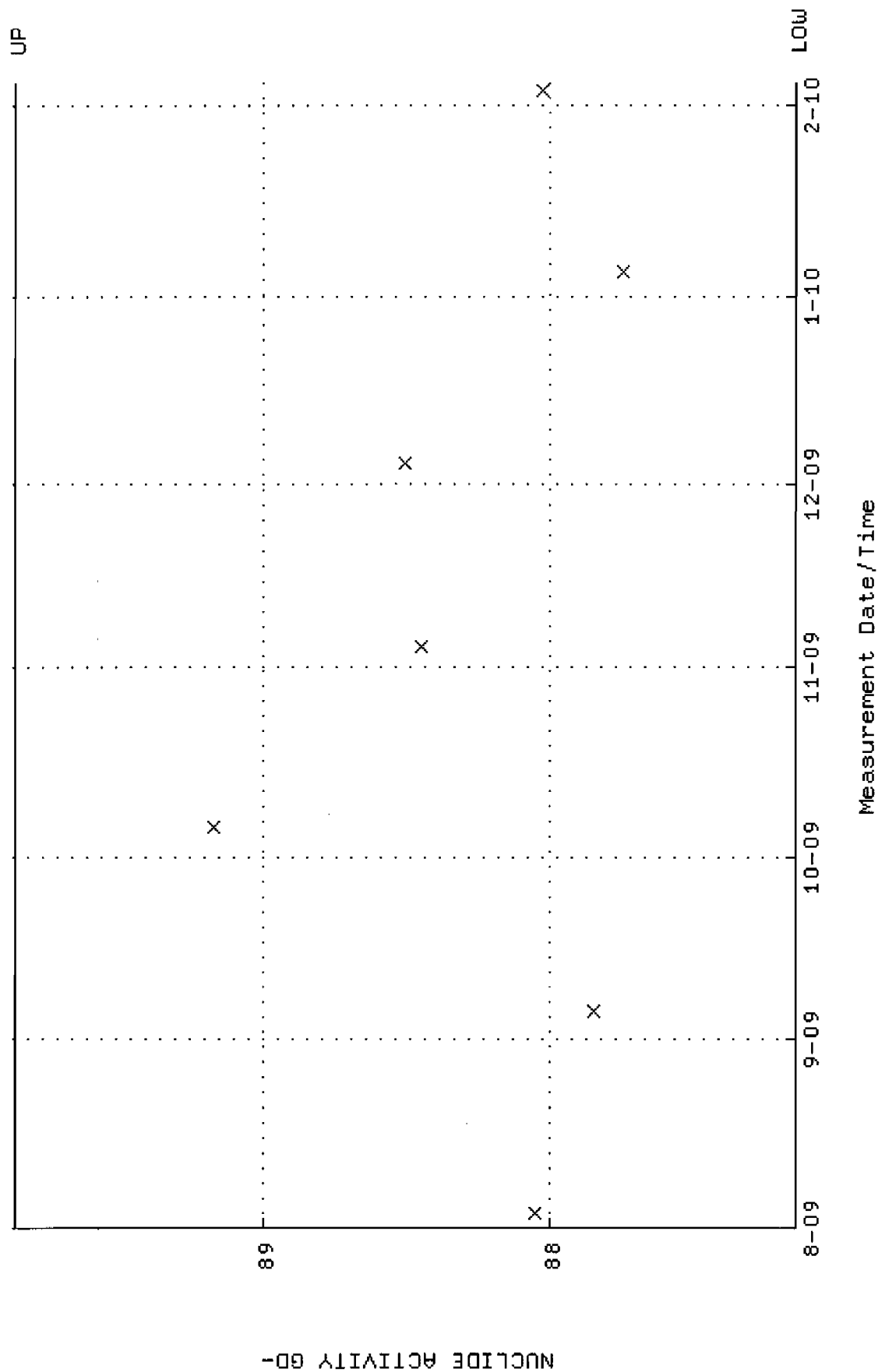
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 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:37 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W047.QAF;5
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00
Lower/Upper Lmts: 0.336276 through 0.364038



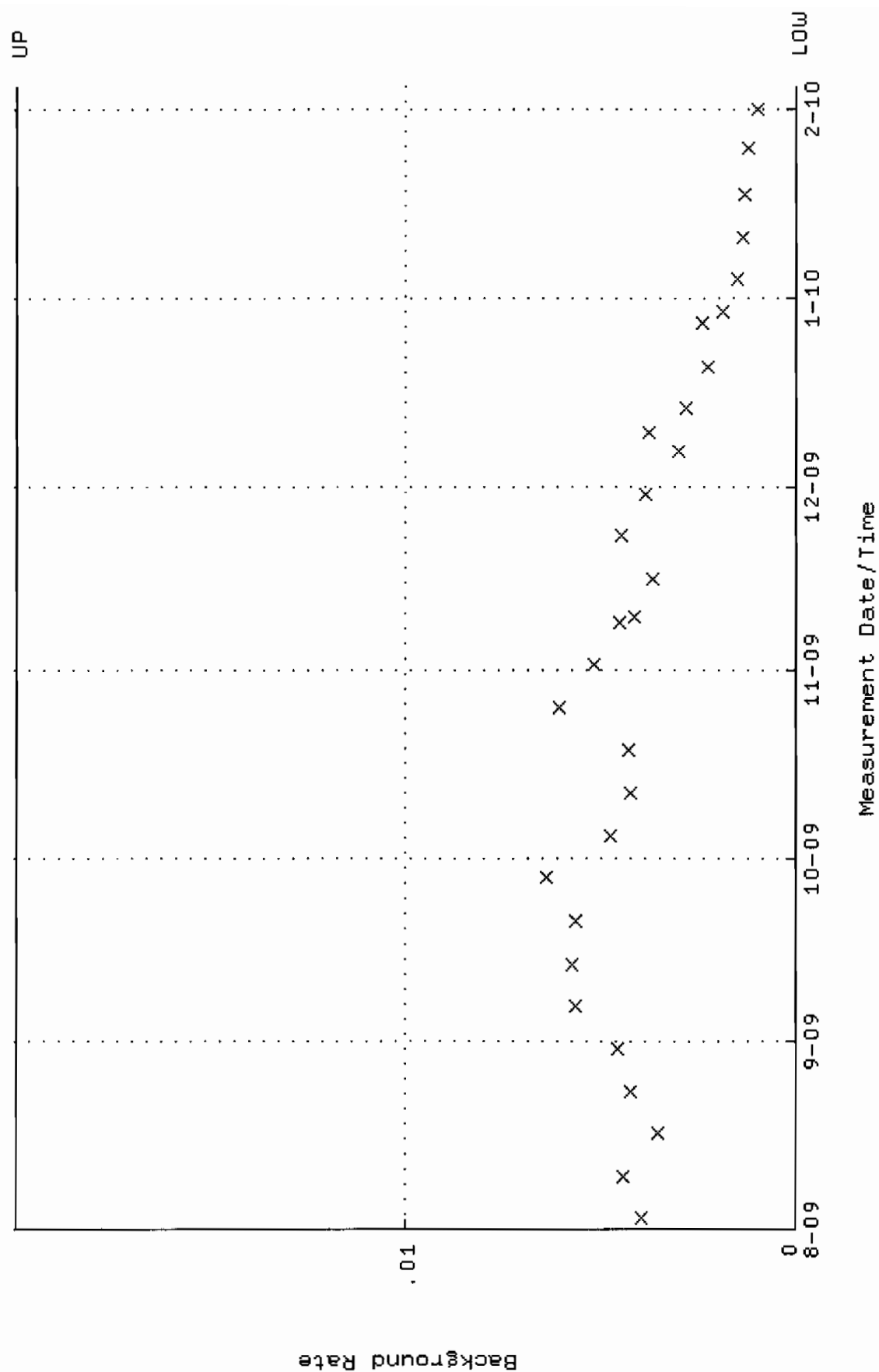
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 87.1403 through 89.8631



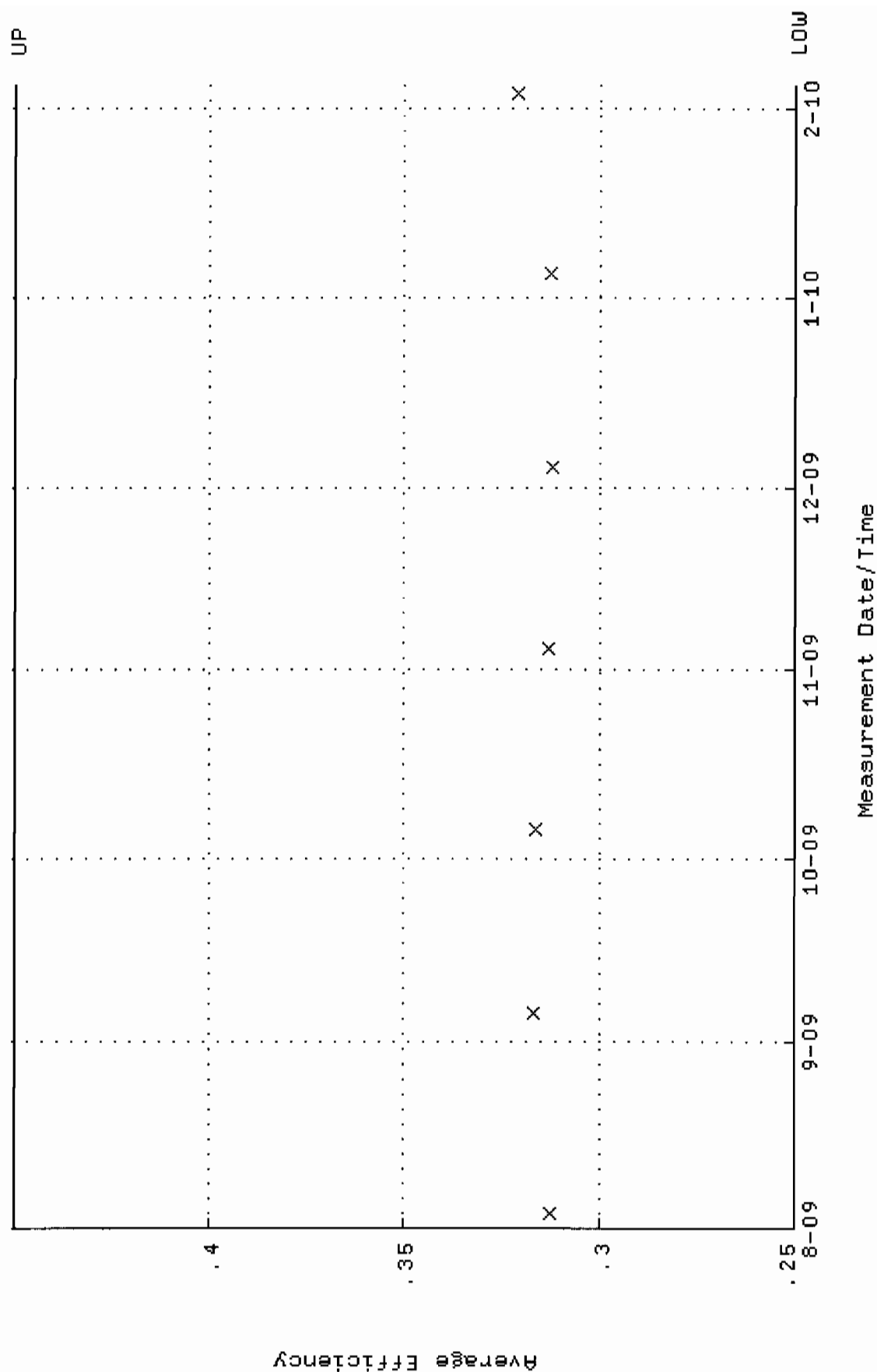
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QA filename      : DKA100:[ENV-ALPHA.QA.B]B047.QAF;2
Parameter Name   : BACKRATE (Background Rate)
Start/End Dates  : 2-AUG-2009 17:38:37 through 4-FEB-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

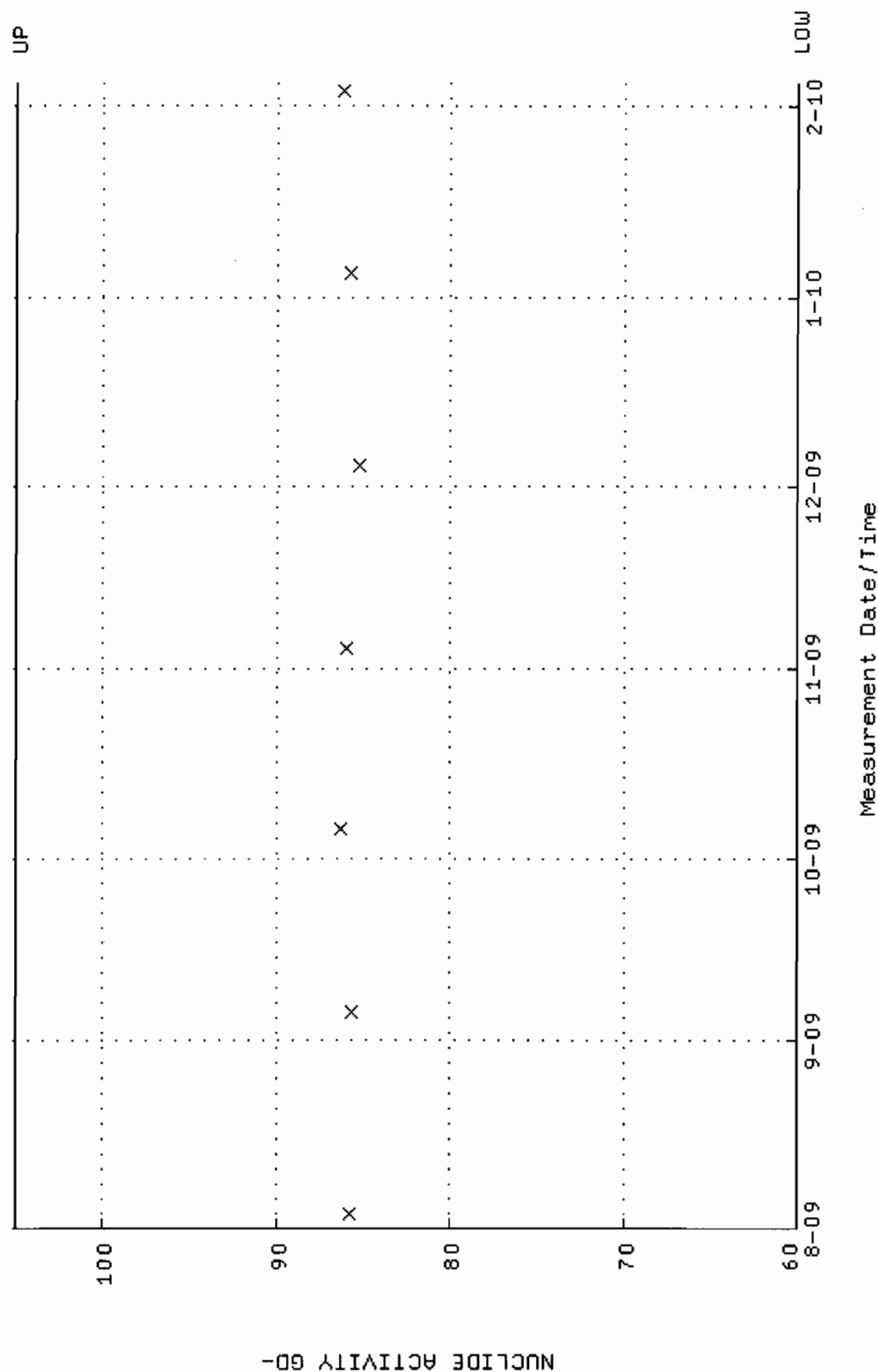
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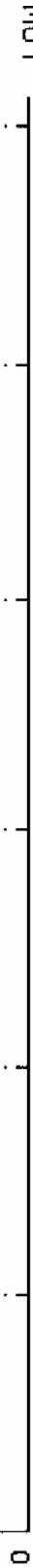
QA filename : DKA100:[ENV-ALPHA.QA.W]W048.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



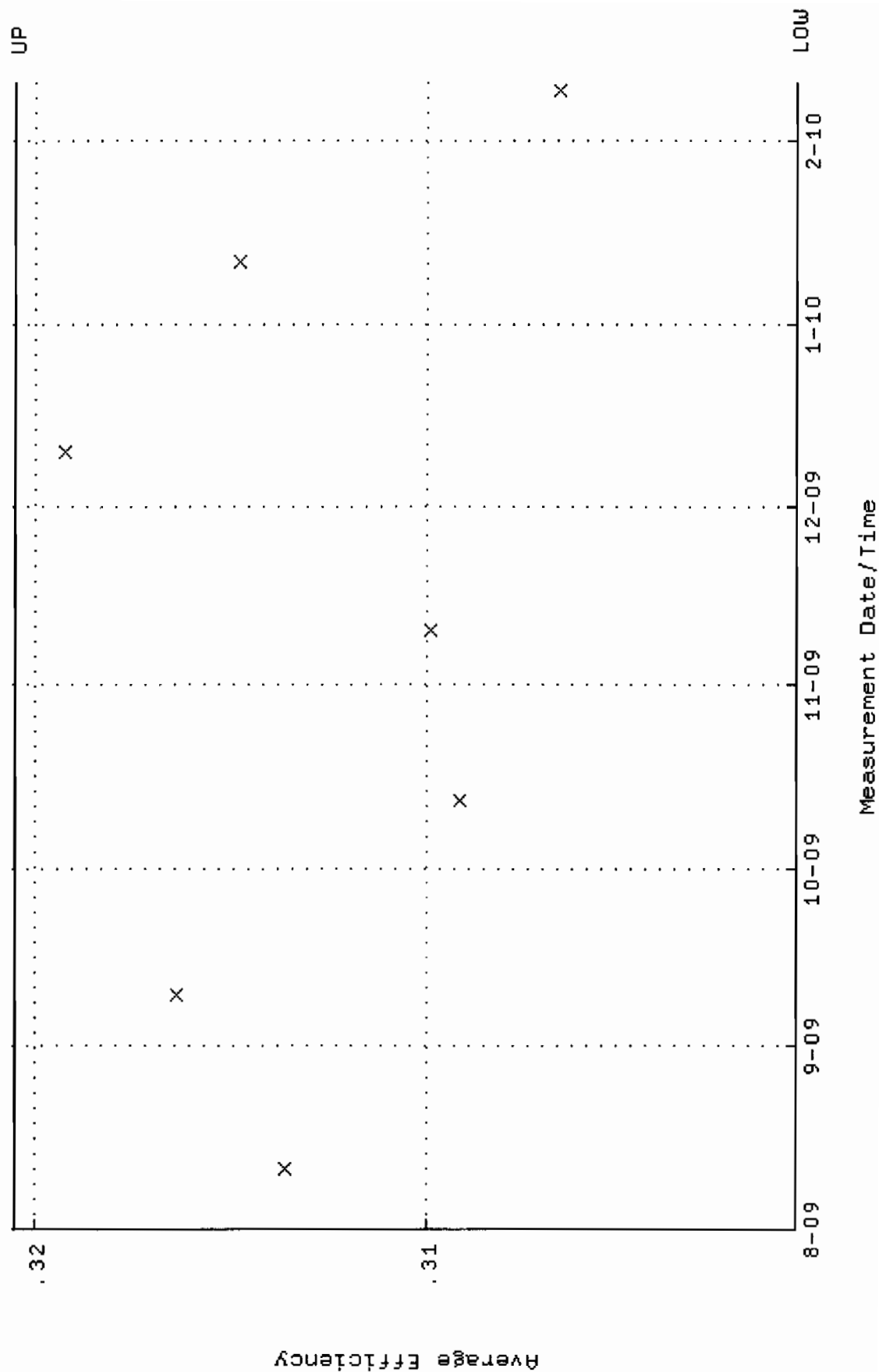
QA filename : DKA100:[ENV_ALPHA.QA.W]W048.QAF;6
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:44 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.000



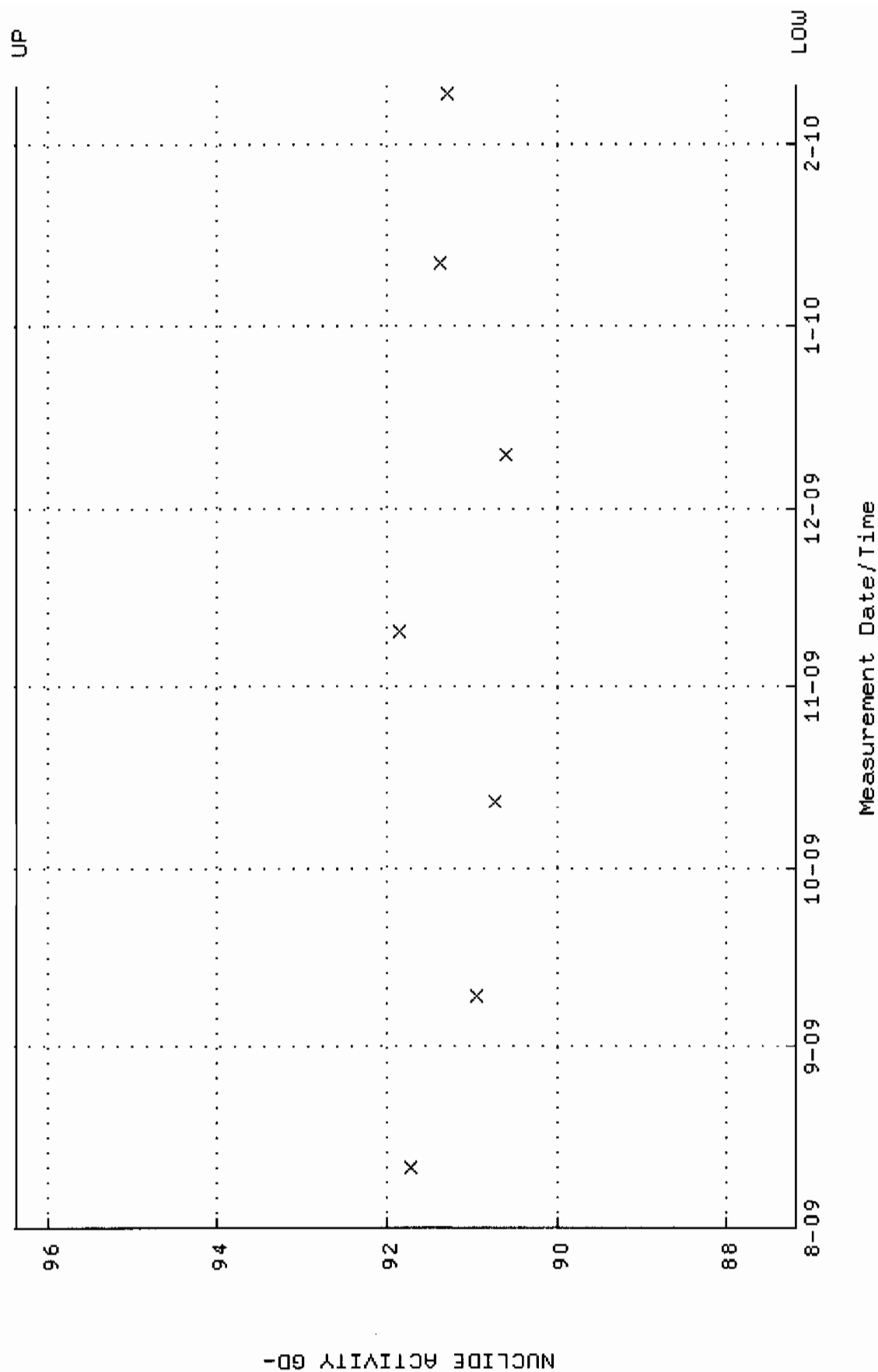
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



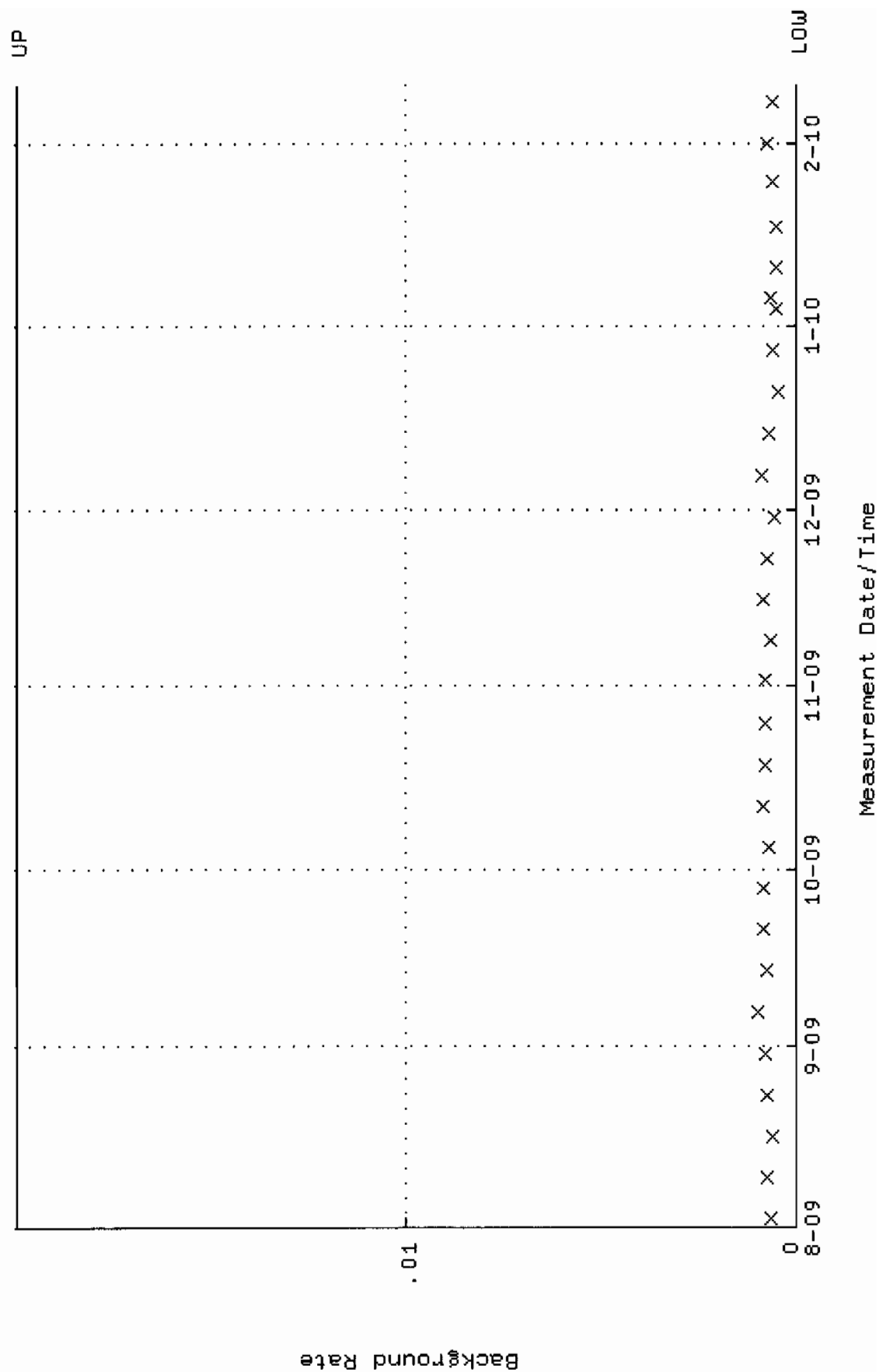
QA filename : DKA100:[ENV_ALPHA.QA.W]W087.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.300530 through 0.320530



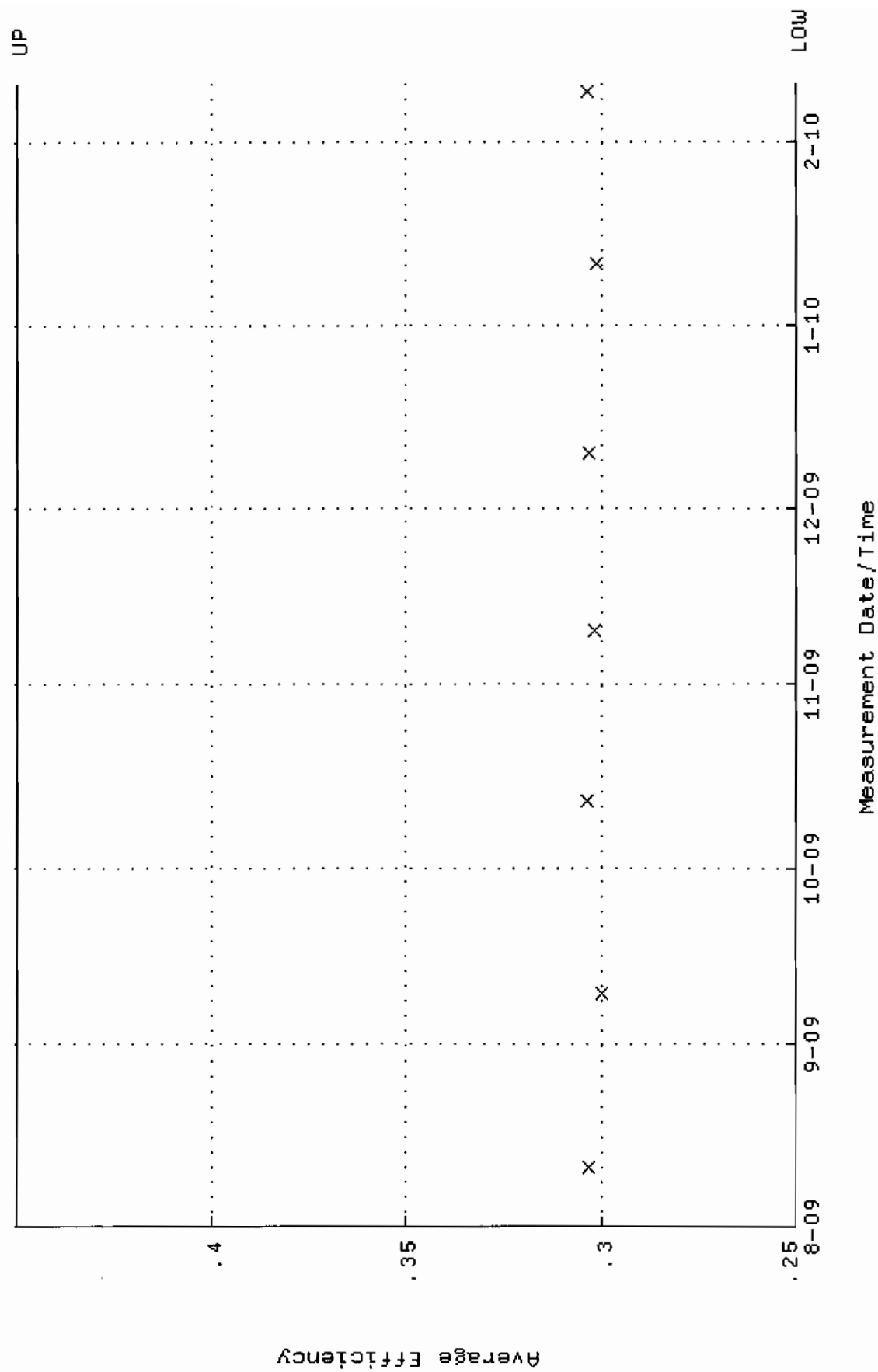
QA filename : DKA100:[ENV_ALPHA.QA.W]W087.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 87.1845 through 96.3619



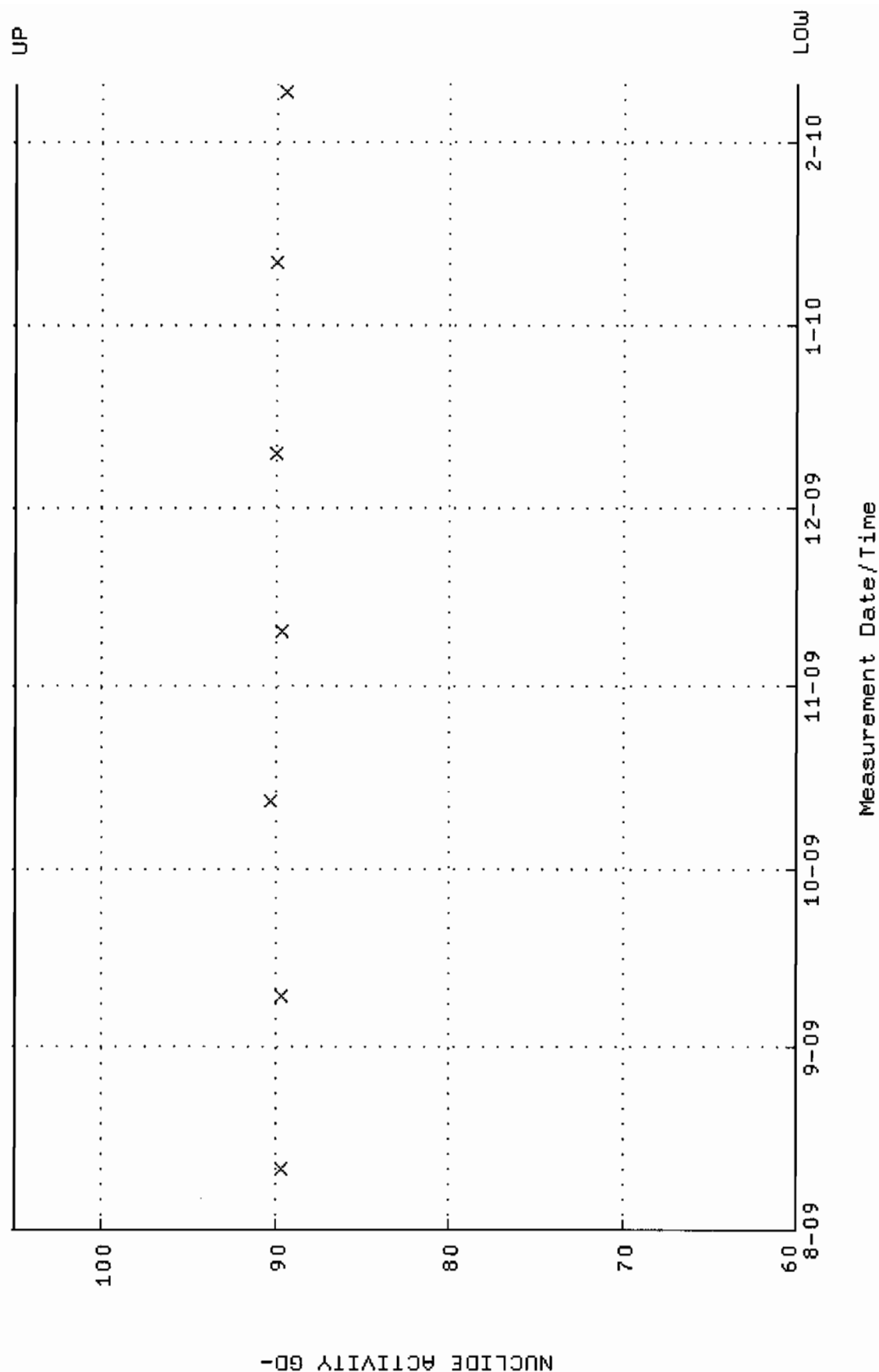
QA filename : DKA100:[ENV-ALPHA.QA.B]B087.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:41 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



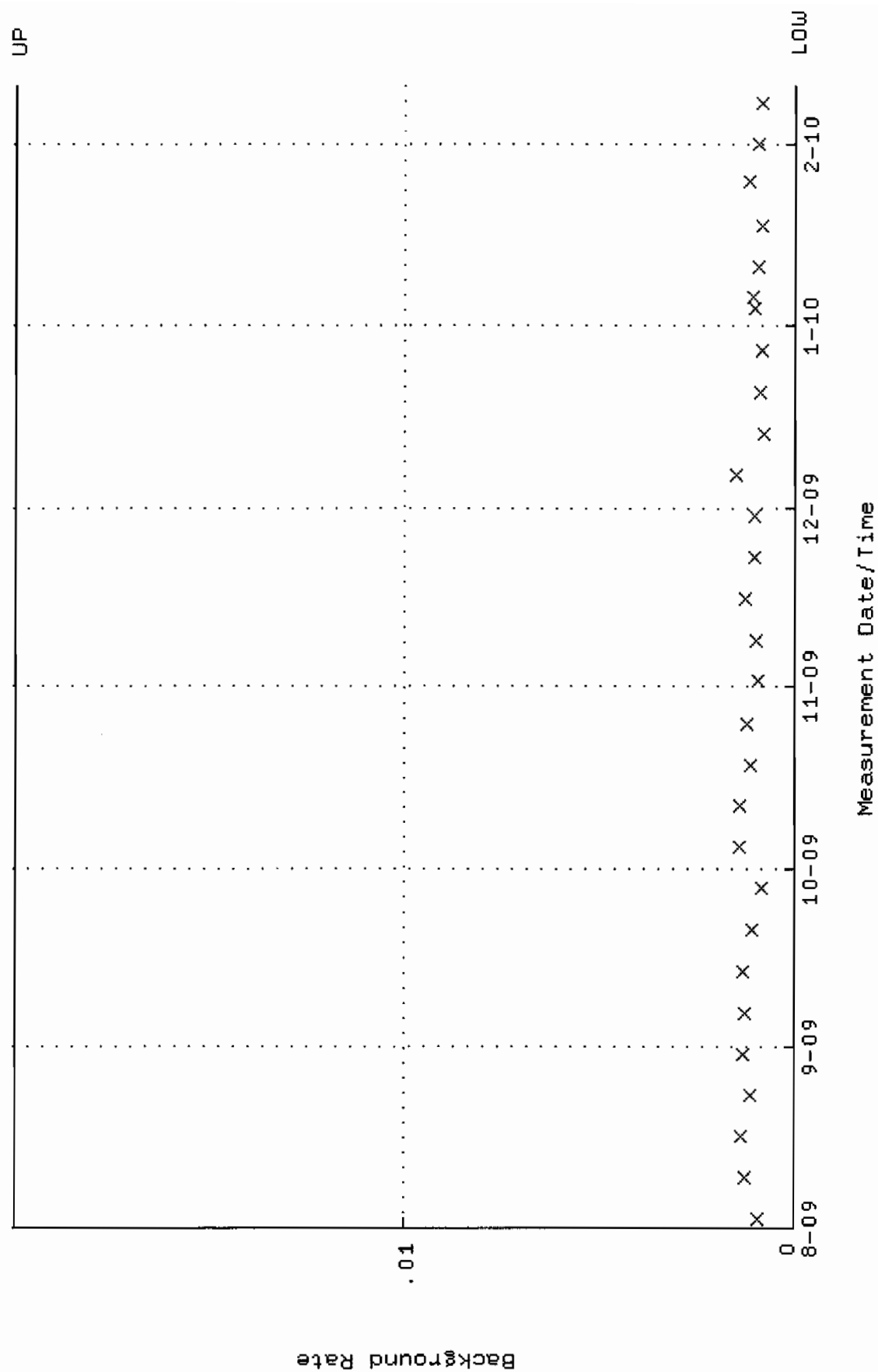
QA filename : DKA100:[ENV_ALPHA.QA.W]W088.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



QA filename : DKA100:[ENV_ALPHA.QA.W]W088.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.000



QA filename : DKA100:[ENV_ALPHA.QA.B]B088.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:41 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

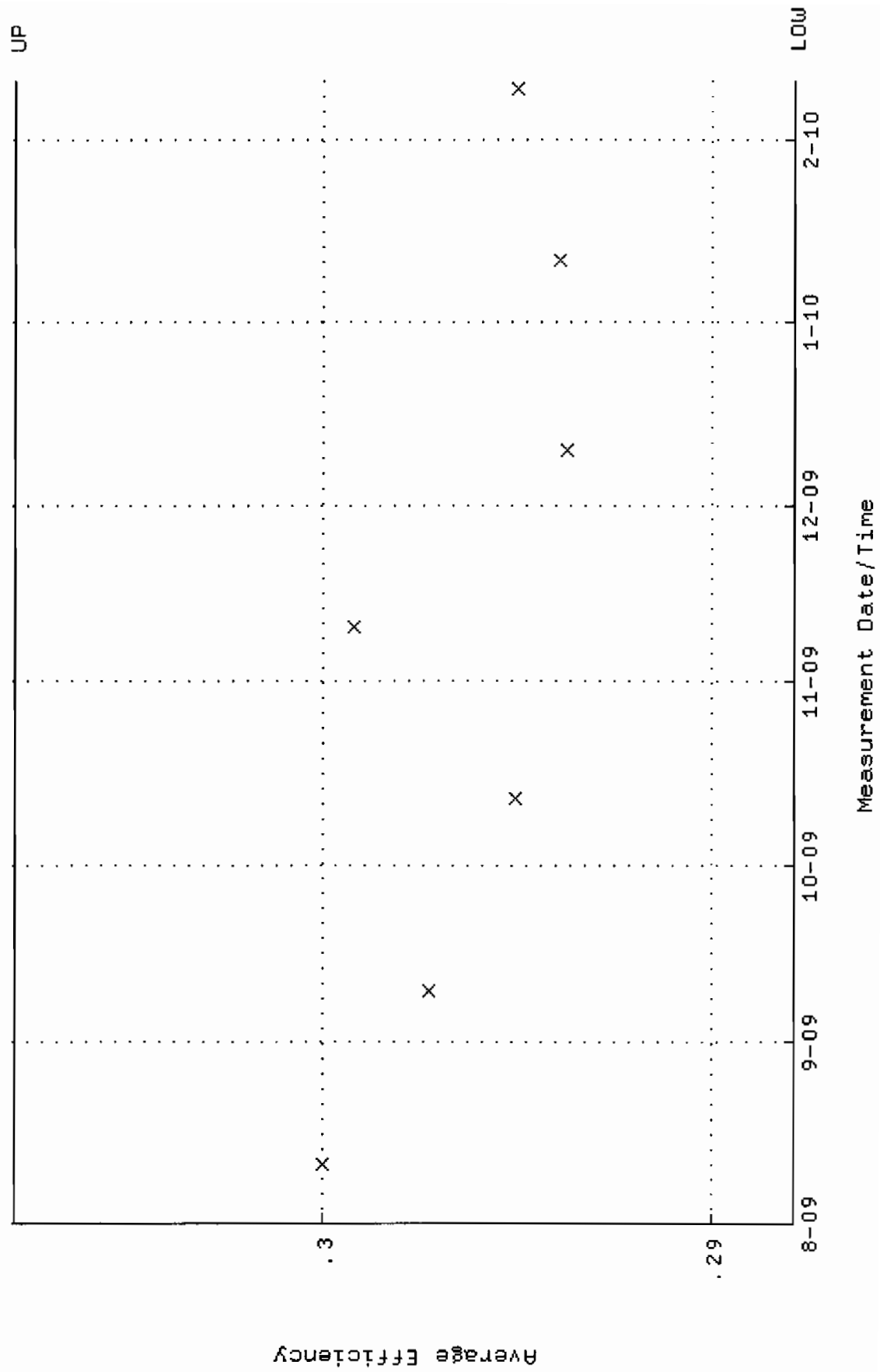


QA filename : DKA100:[ENV_ALPHA.QA.W]W089.QAF;1

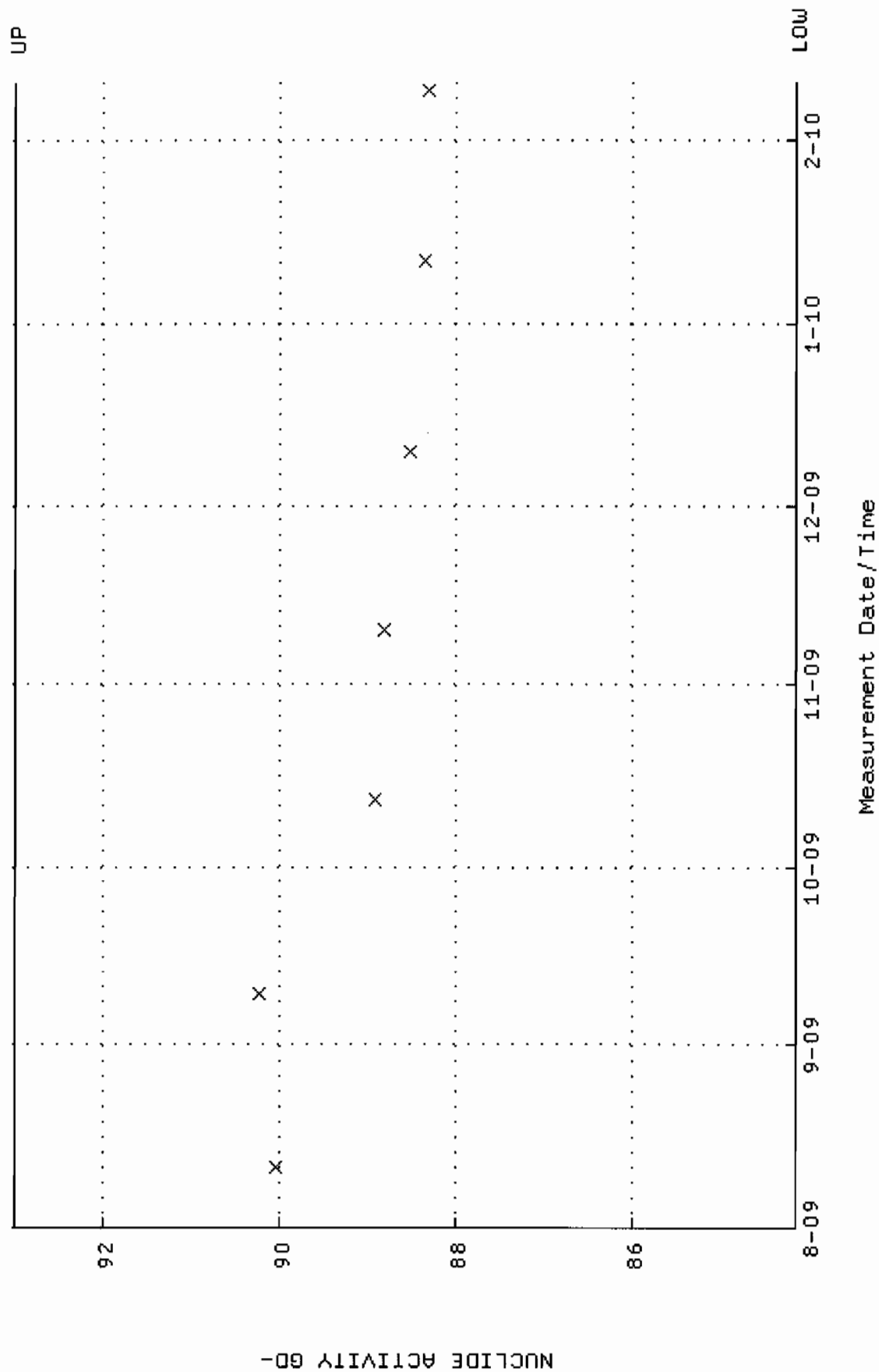
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00

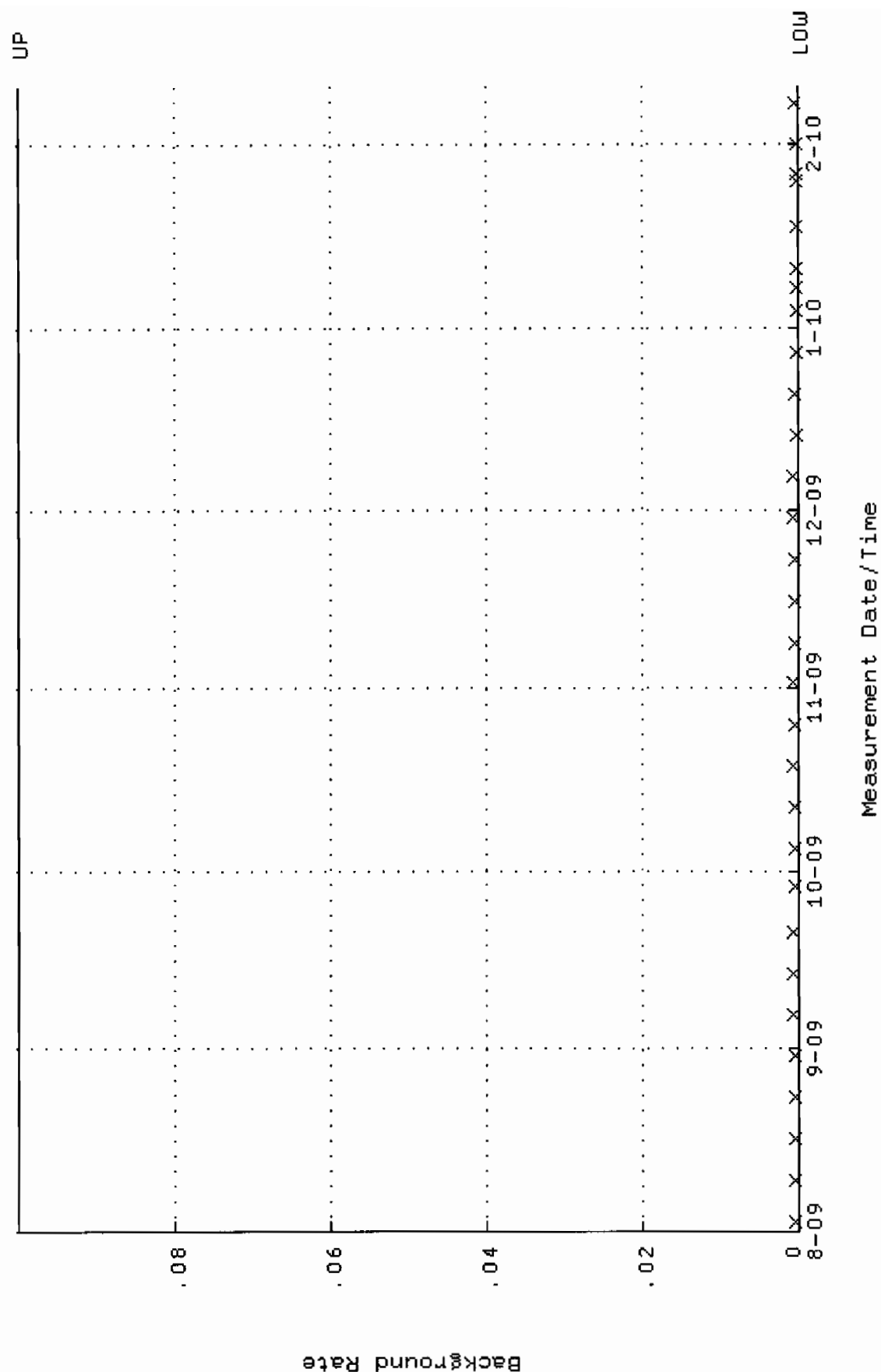
Lower/Upper Lmts: 0.287888 through 0.307888



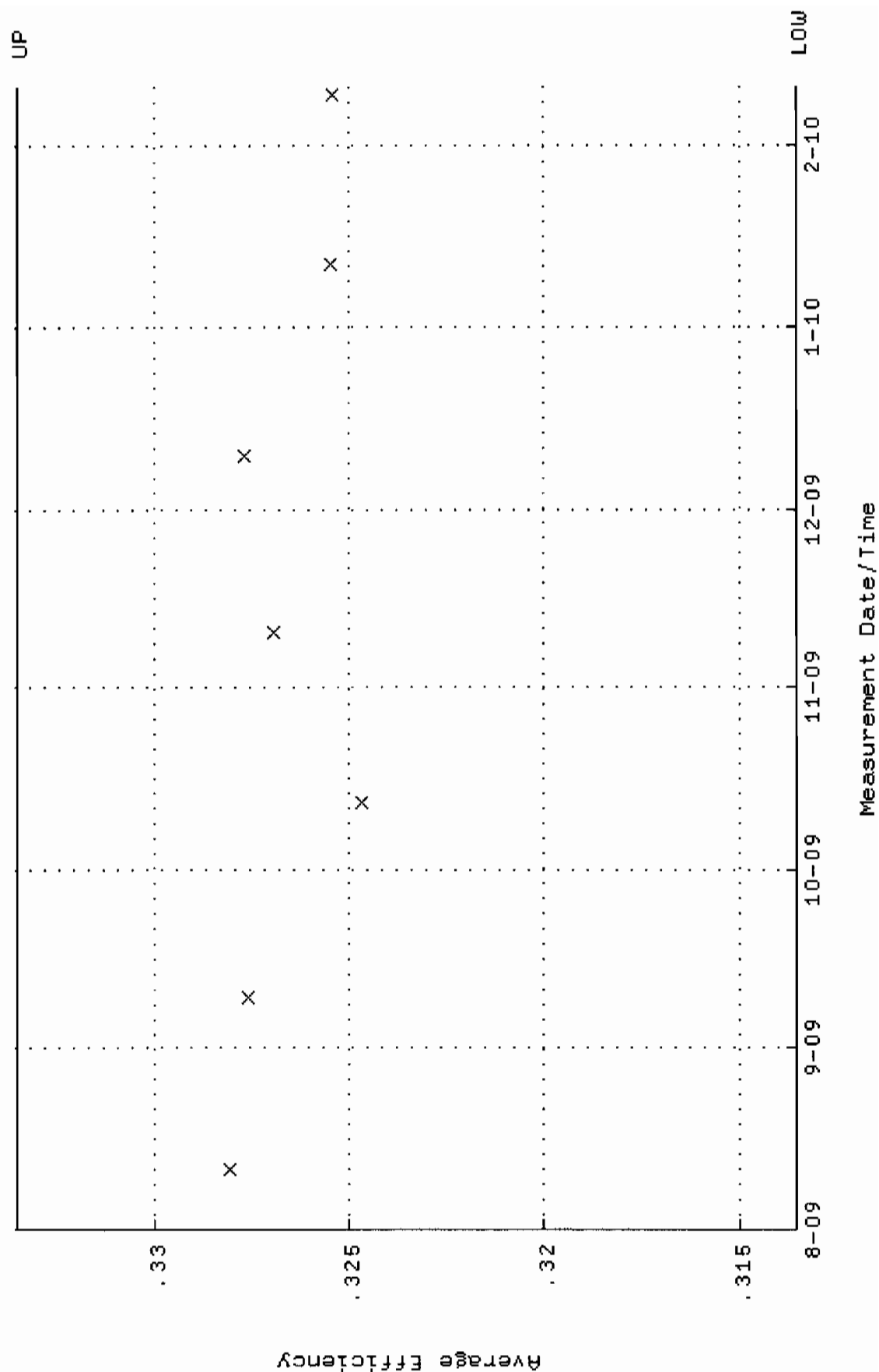
QA filename : DKA100:[ENV_ALPHA.QA.W]W089.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 84.1413 through 92.9983



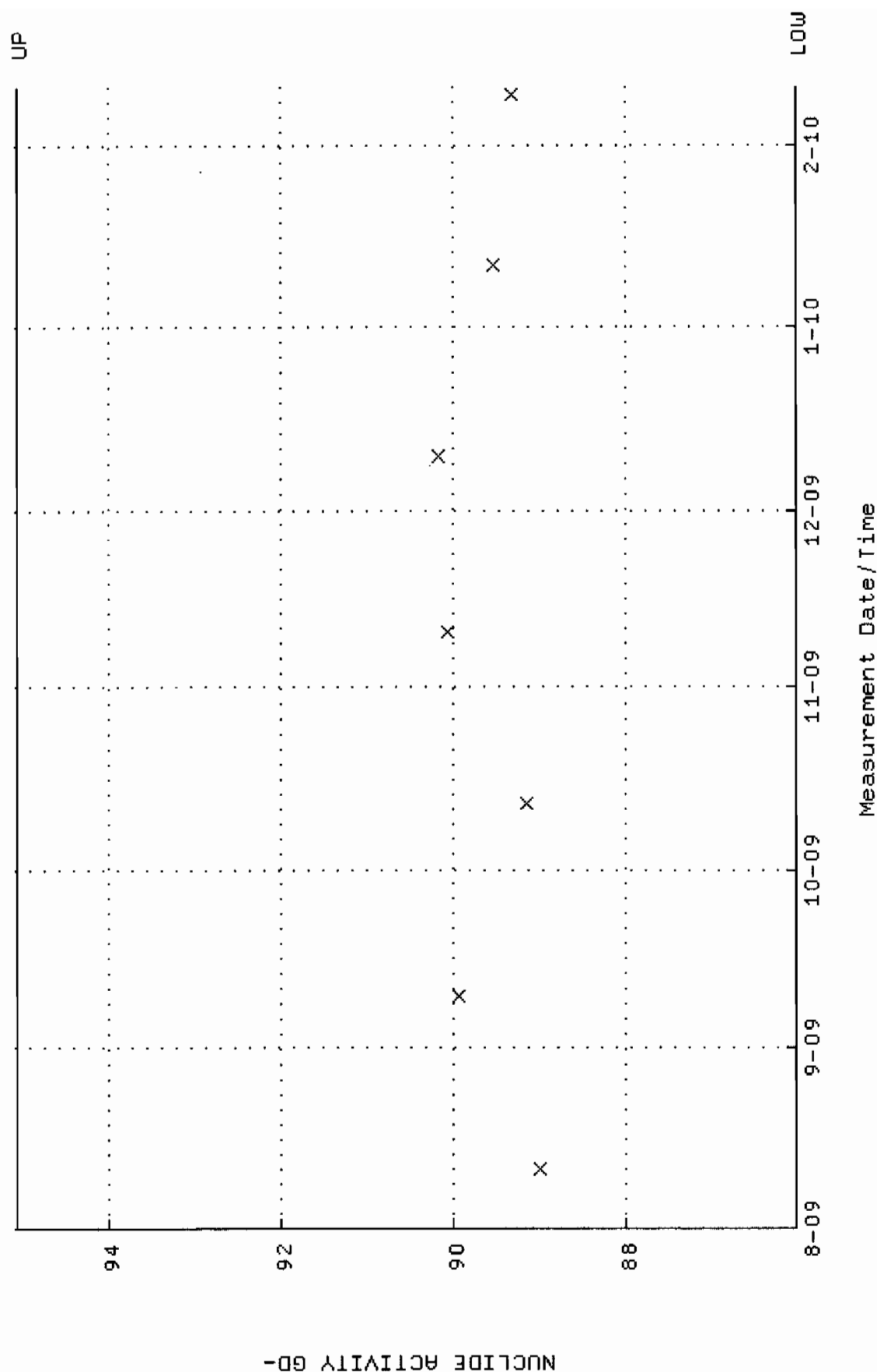
QA filename : DKA100:[ENV_ALPHA.QA.B]B089.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:42 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



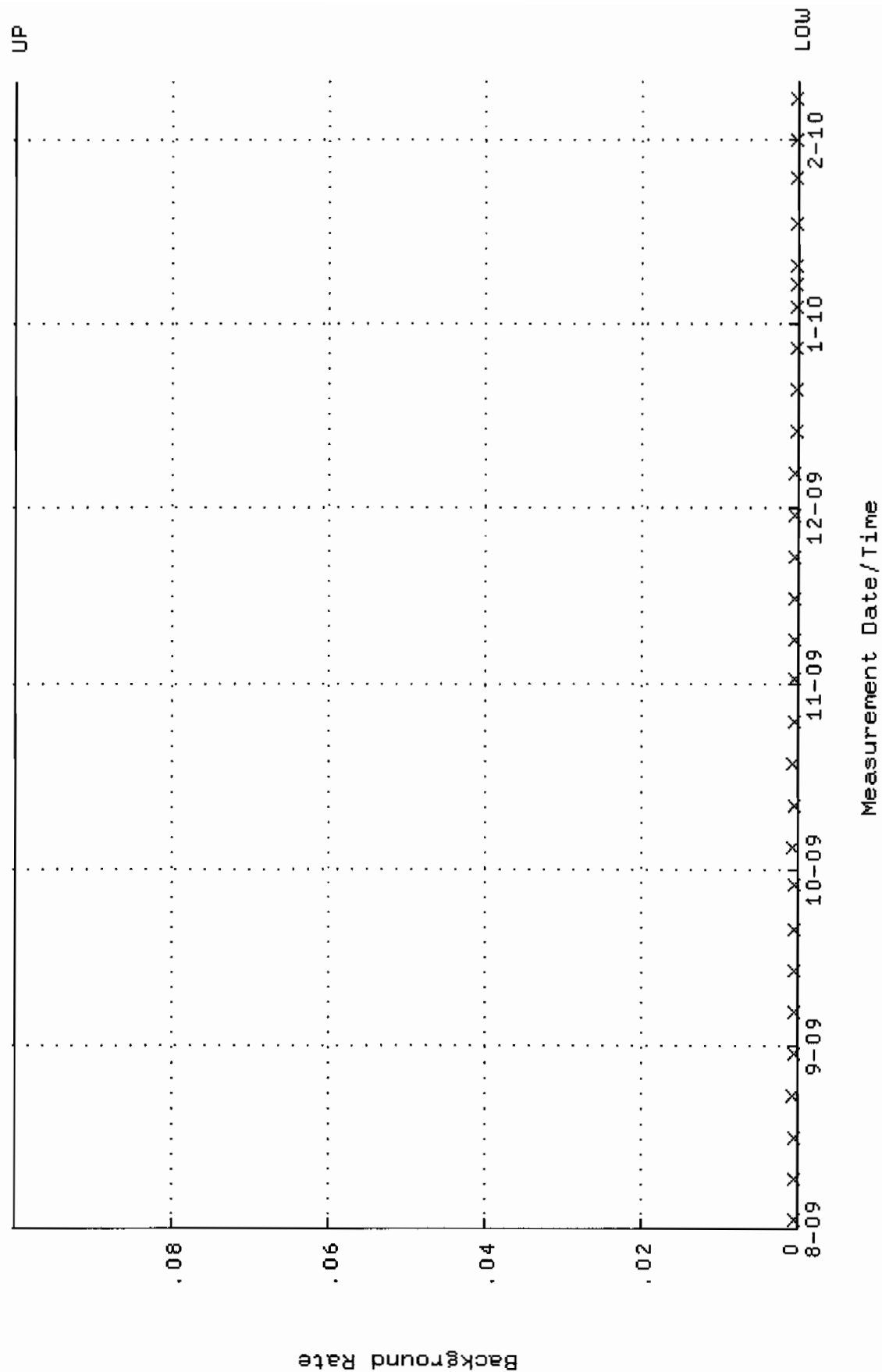
QA filename : DKA100:[ENV_ALPHA.QA.W]W090.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.313529 through 0.333529



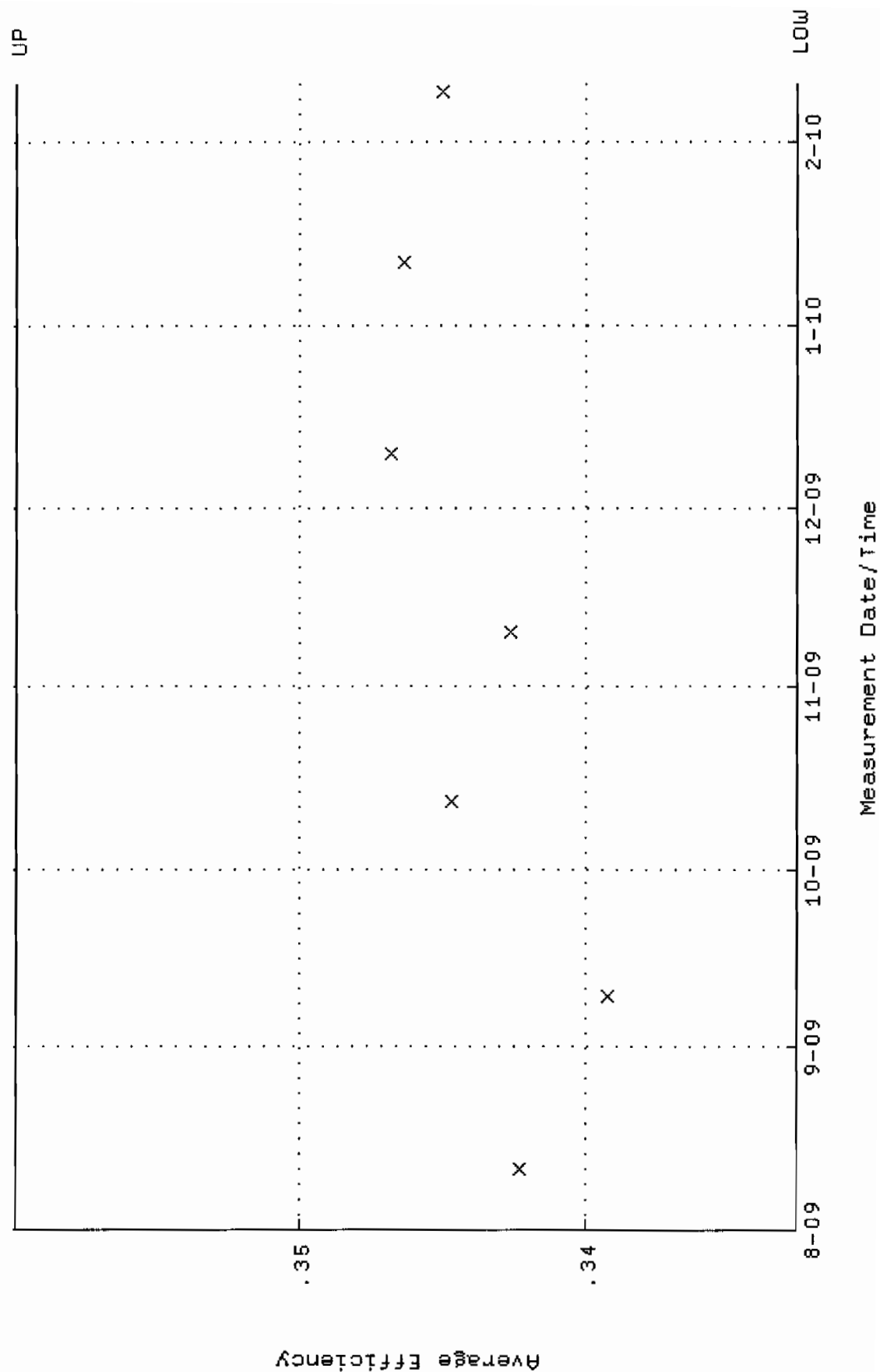
QA filename : DKA100:[ENV-ALPHA.QA.W]W090.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 86.0139 through 95.0680



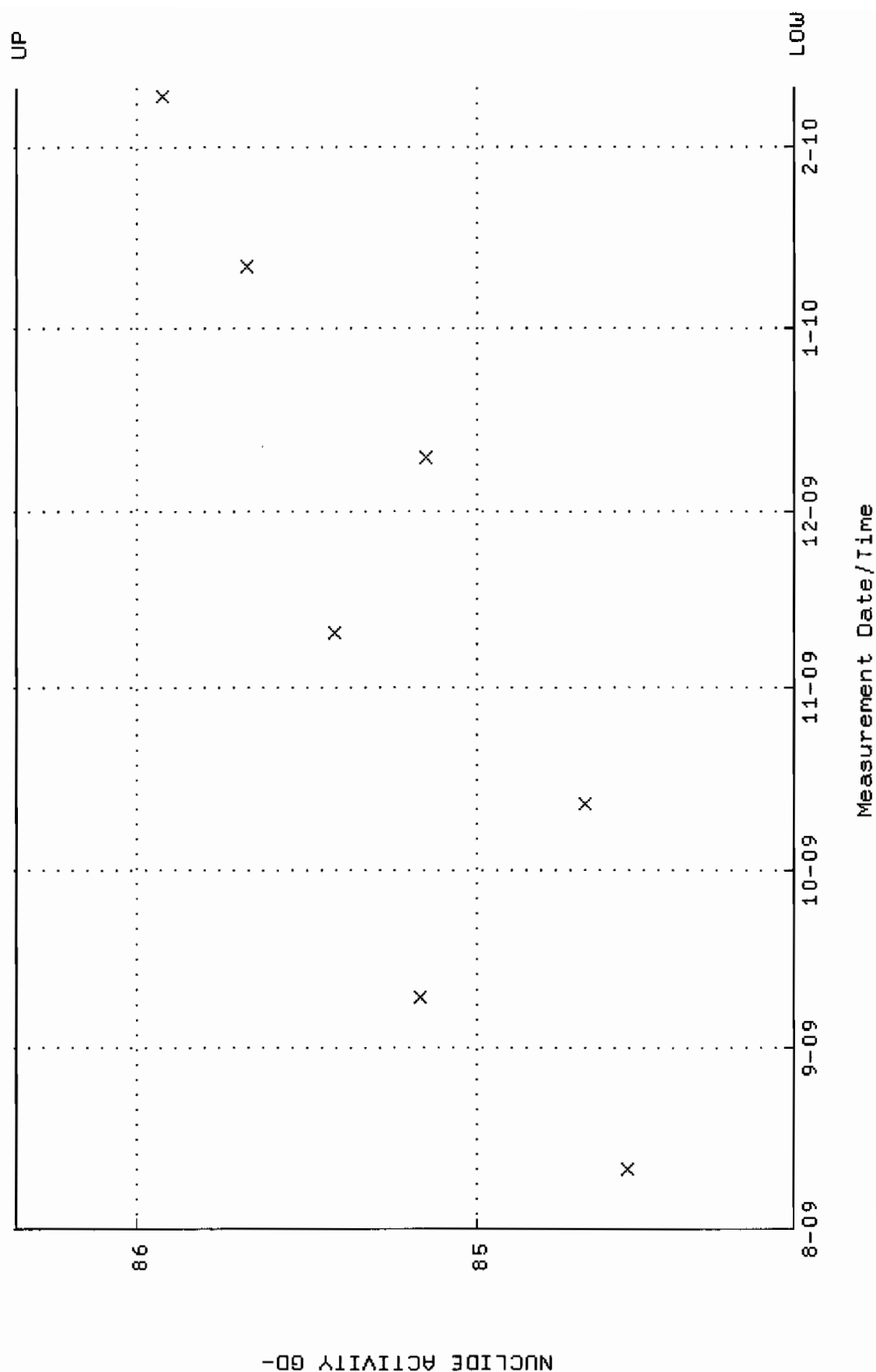
QA filename : DKA100:[ENV_ALPHA.QA.B]B090.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:42 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



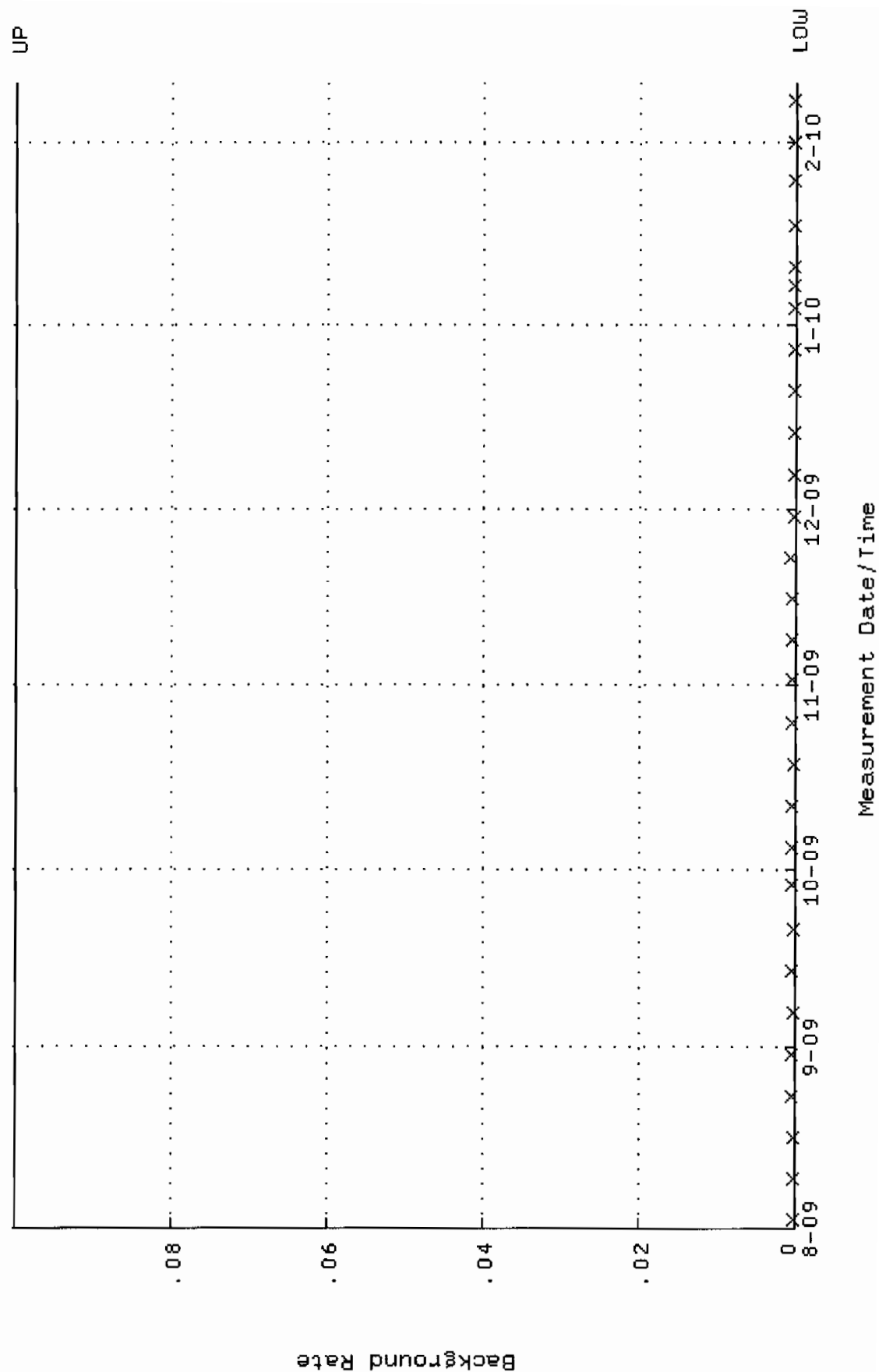
QA filename : DKA100:[ENV_ALPHA.QA.W]W091.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.332648 through 0.359902



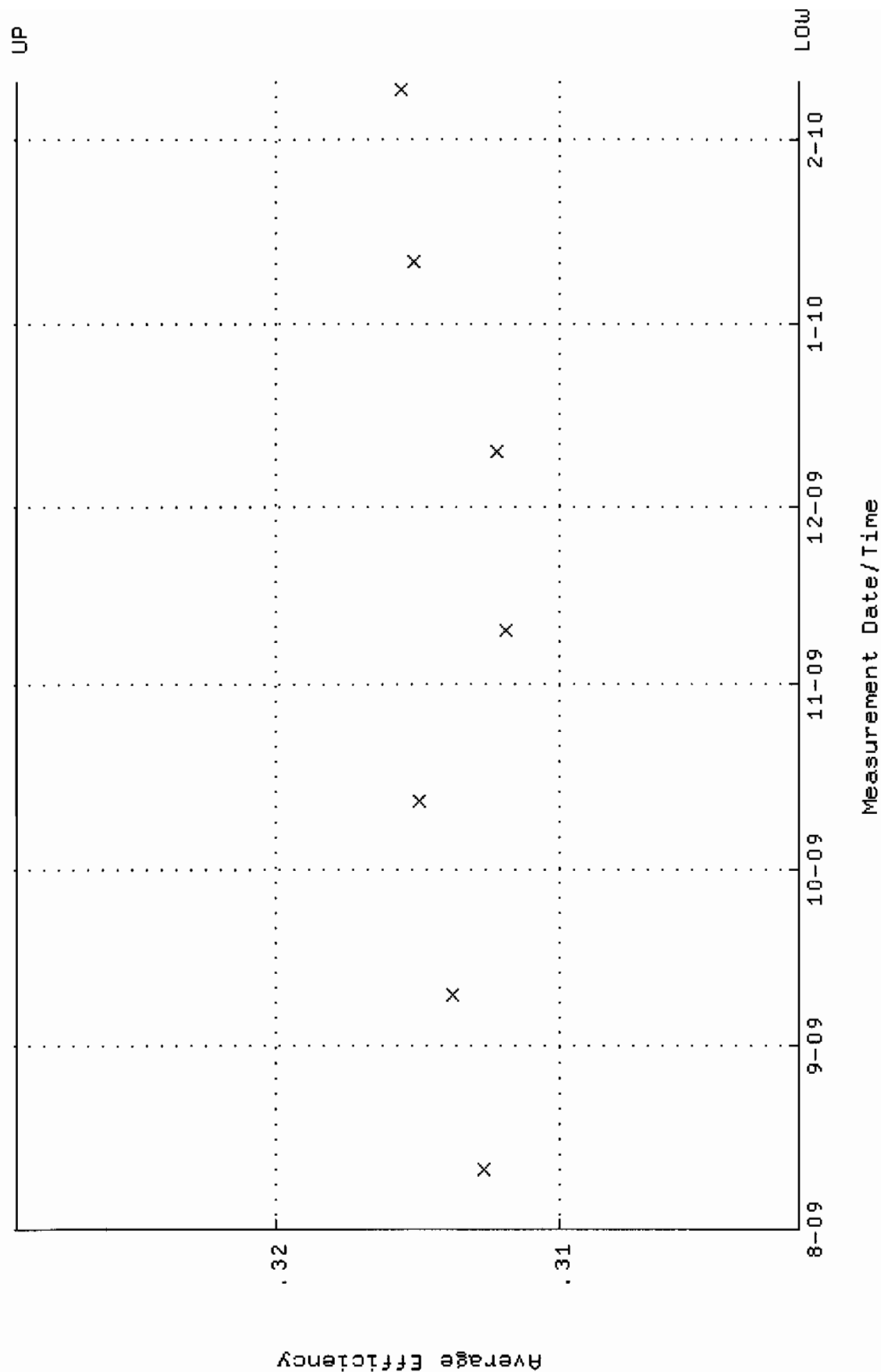
QA filename : DKA100:[ENV_ALPHA.QA.W]W091.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GO-148)
 Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 84.0764 through 86.3518



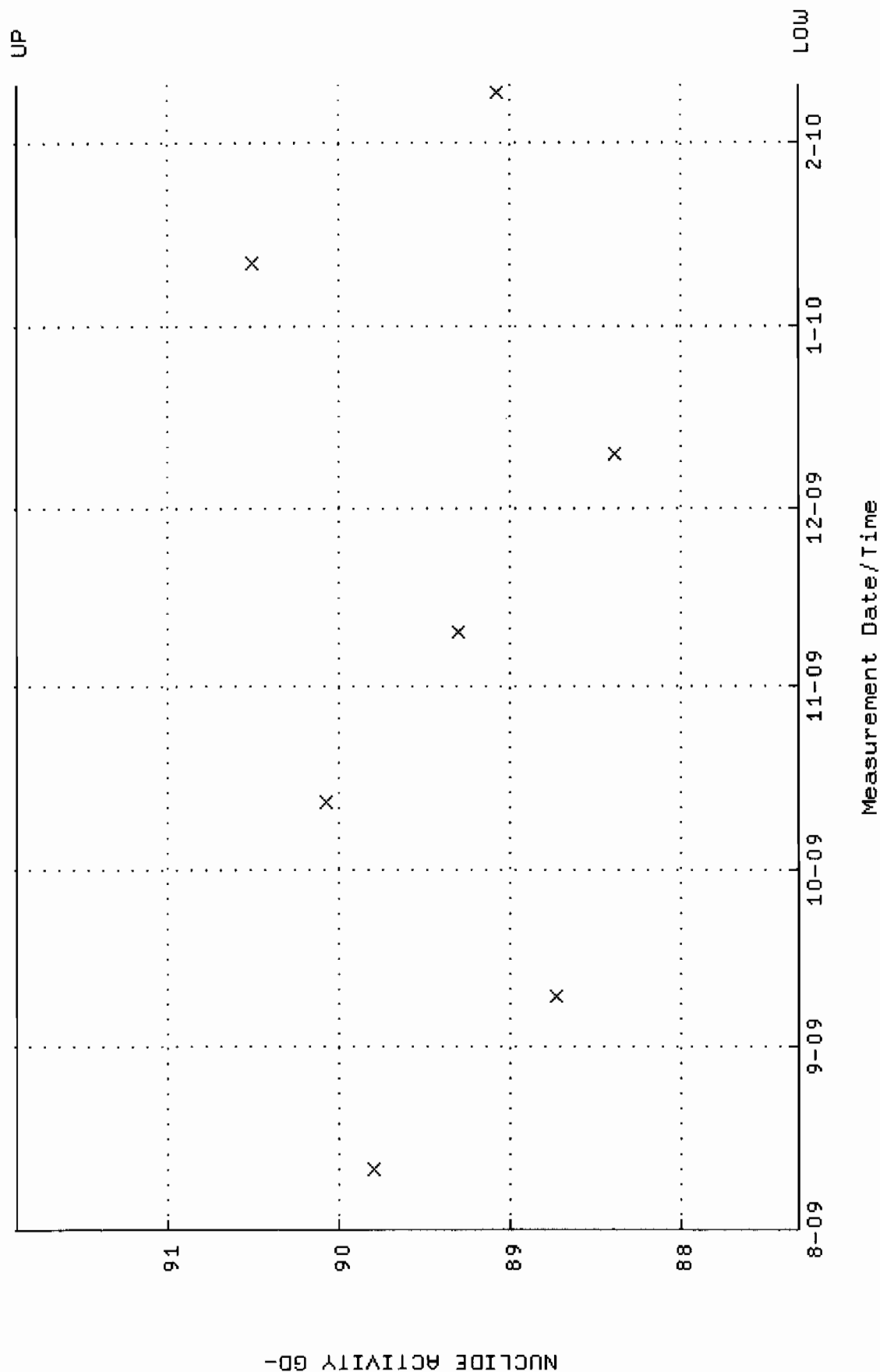
QA filename : DKA100:[ENV_ALPHA.QA.B]B091.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:42 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W092.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.301529 through 0.329133



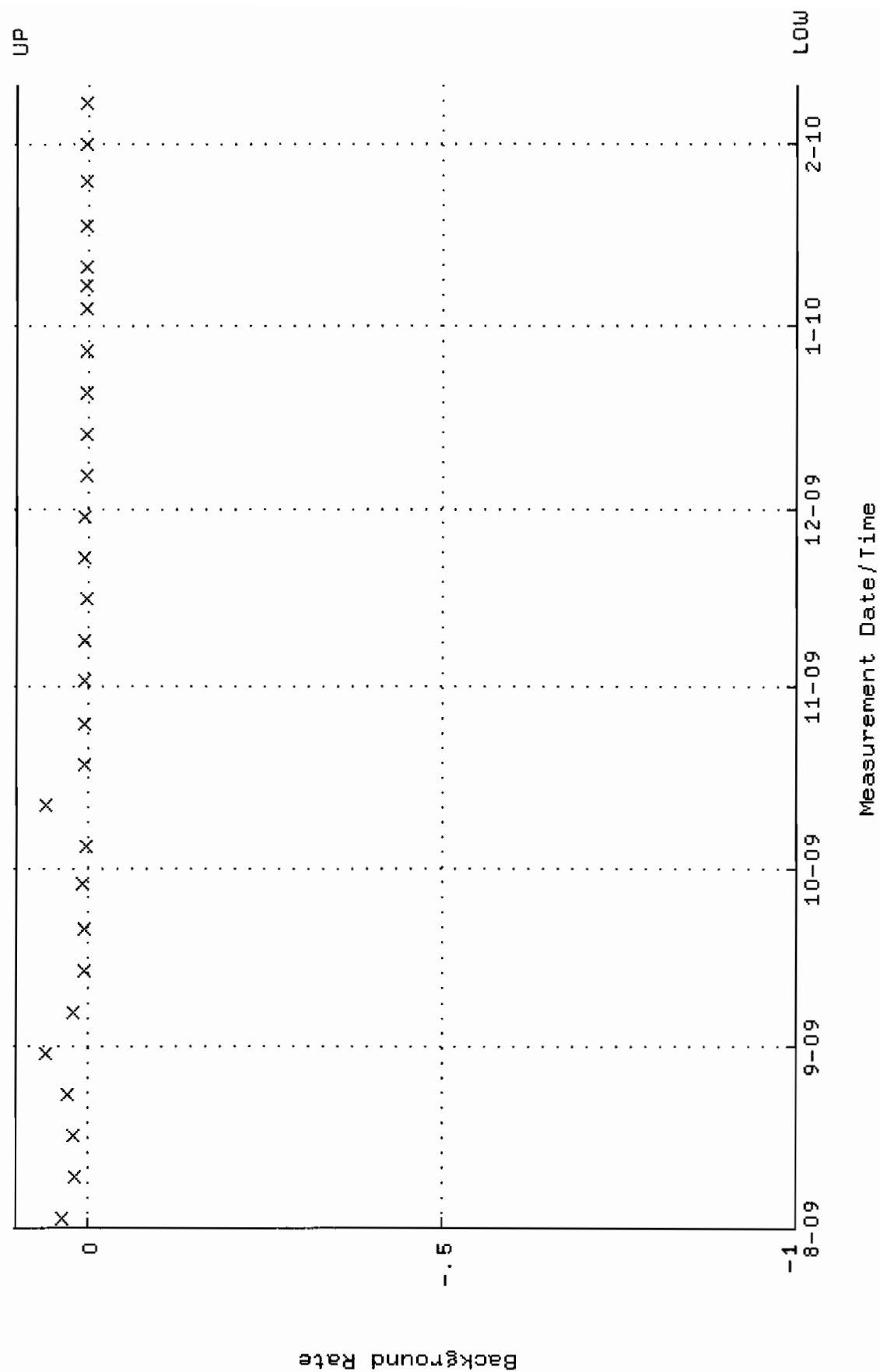
QA filename : DKA100:[ENV-ALPHA.QA.W]W092.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 87.3140 through 91.8878



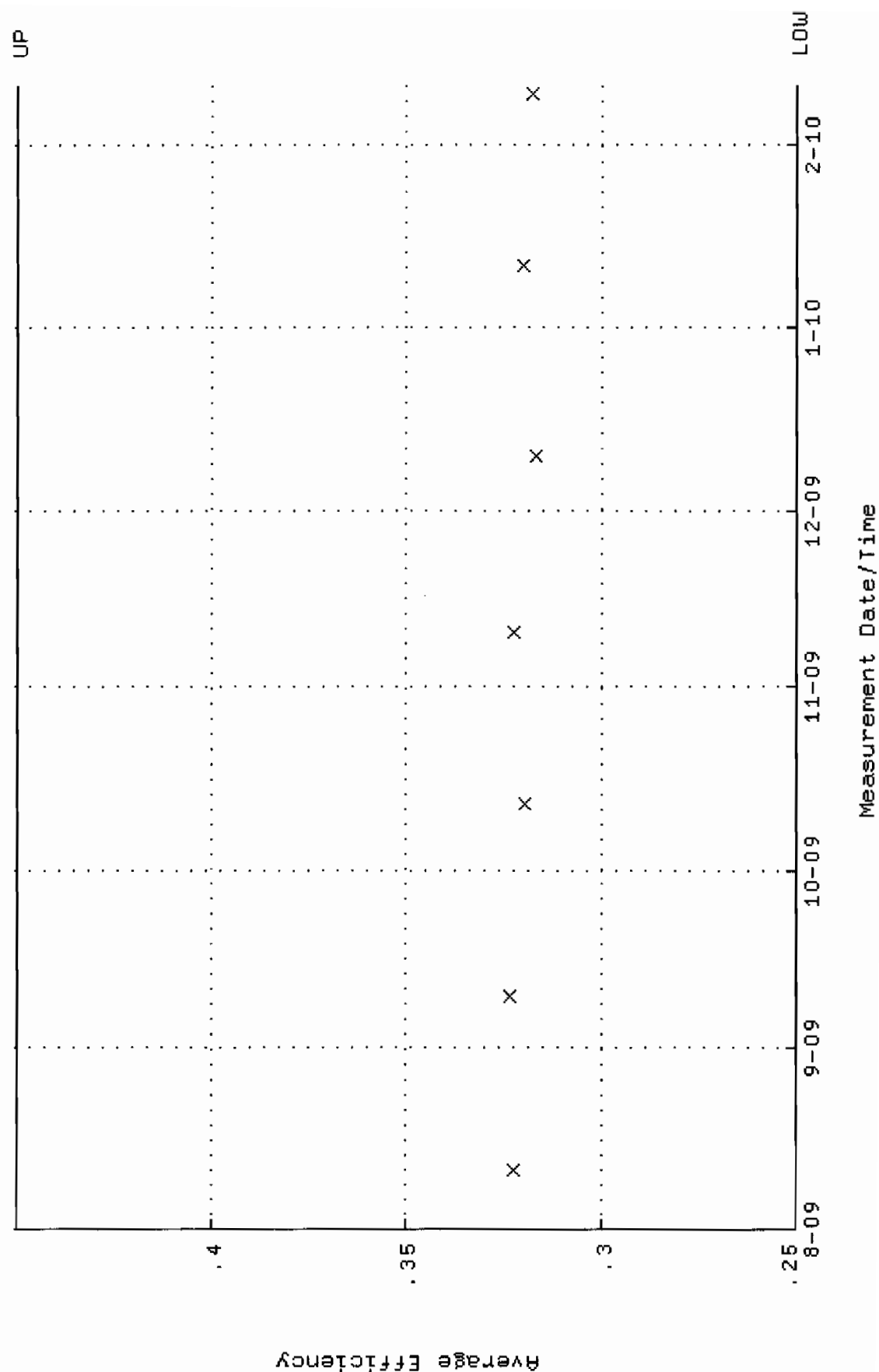
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QA filename      : DKA100:[ENV-ALPHA.QA.B]B092.QAF;1
Parameter Name   : BACKRATE (Background Rate)
Start/End Dates  : 2-AUG-2009 17:38:42 through 10-FEB-2010 12:00:00
Lower/Upper Lmts: -1.00000 through 0.10000

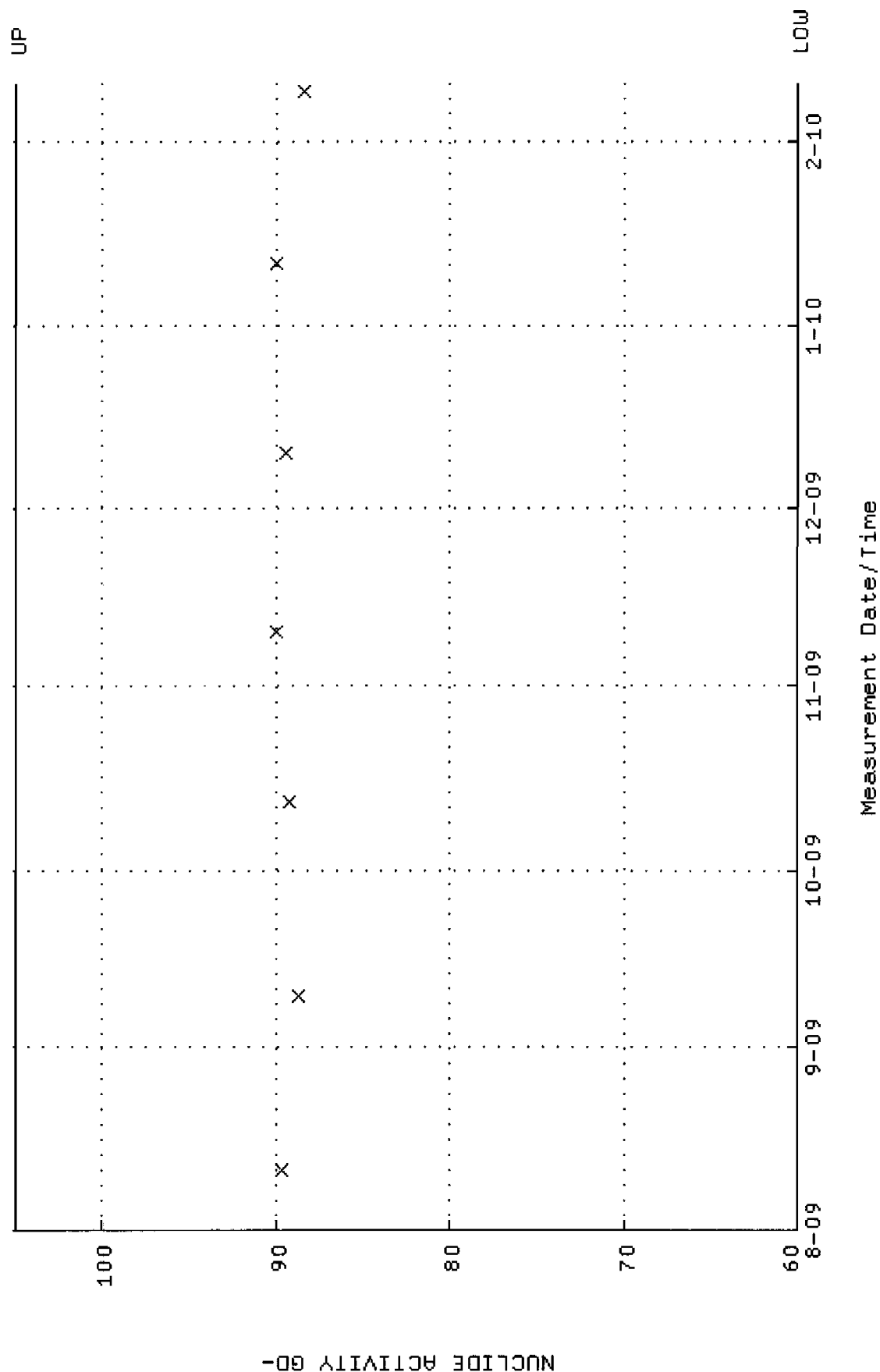
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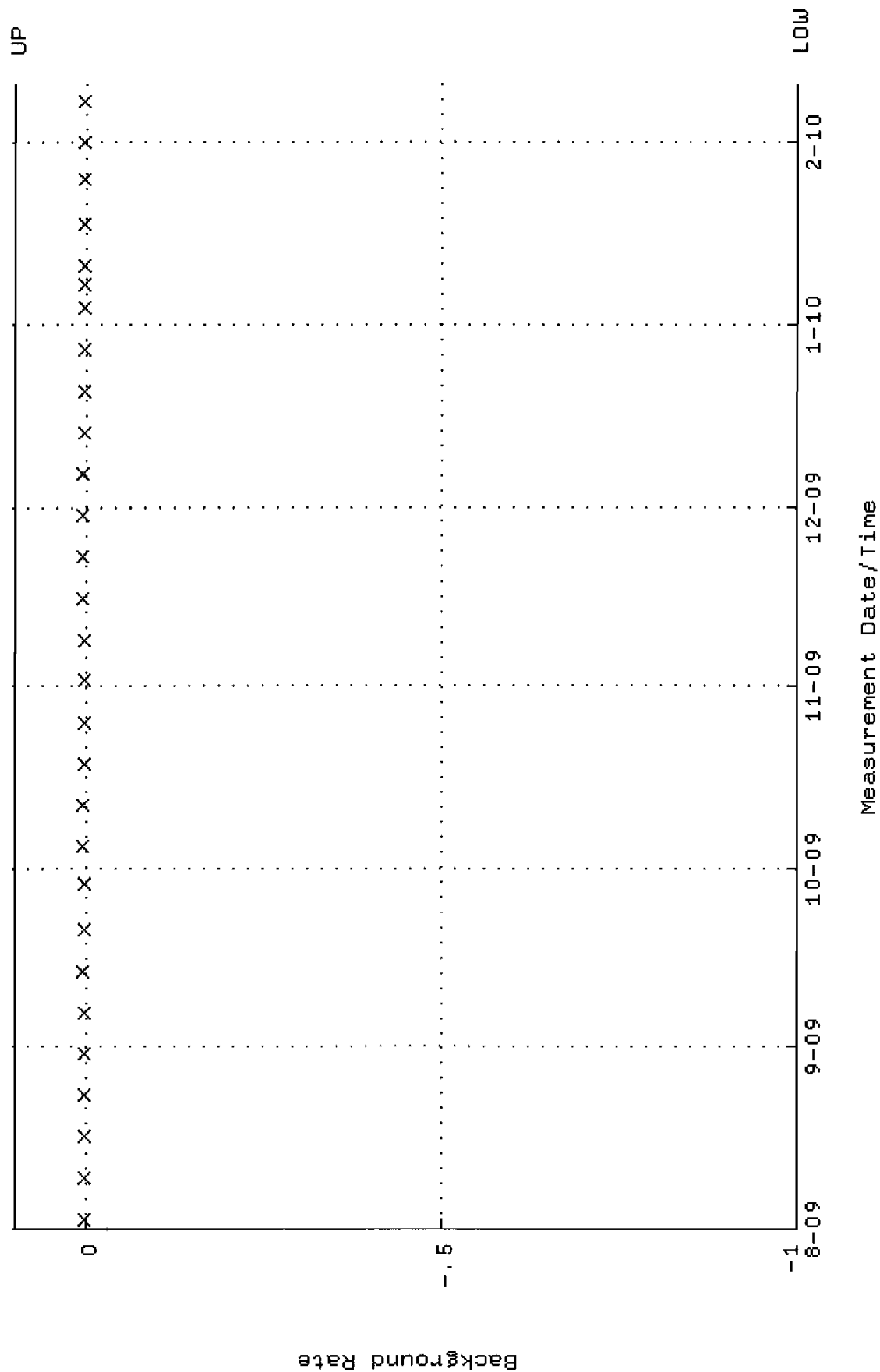
QA filename : DKA100:[ENV_ALPHA,QA.W]W093.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



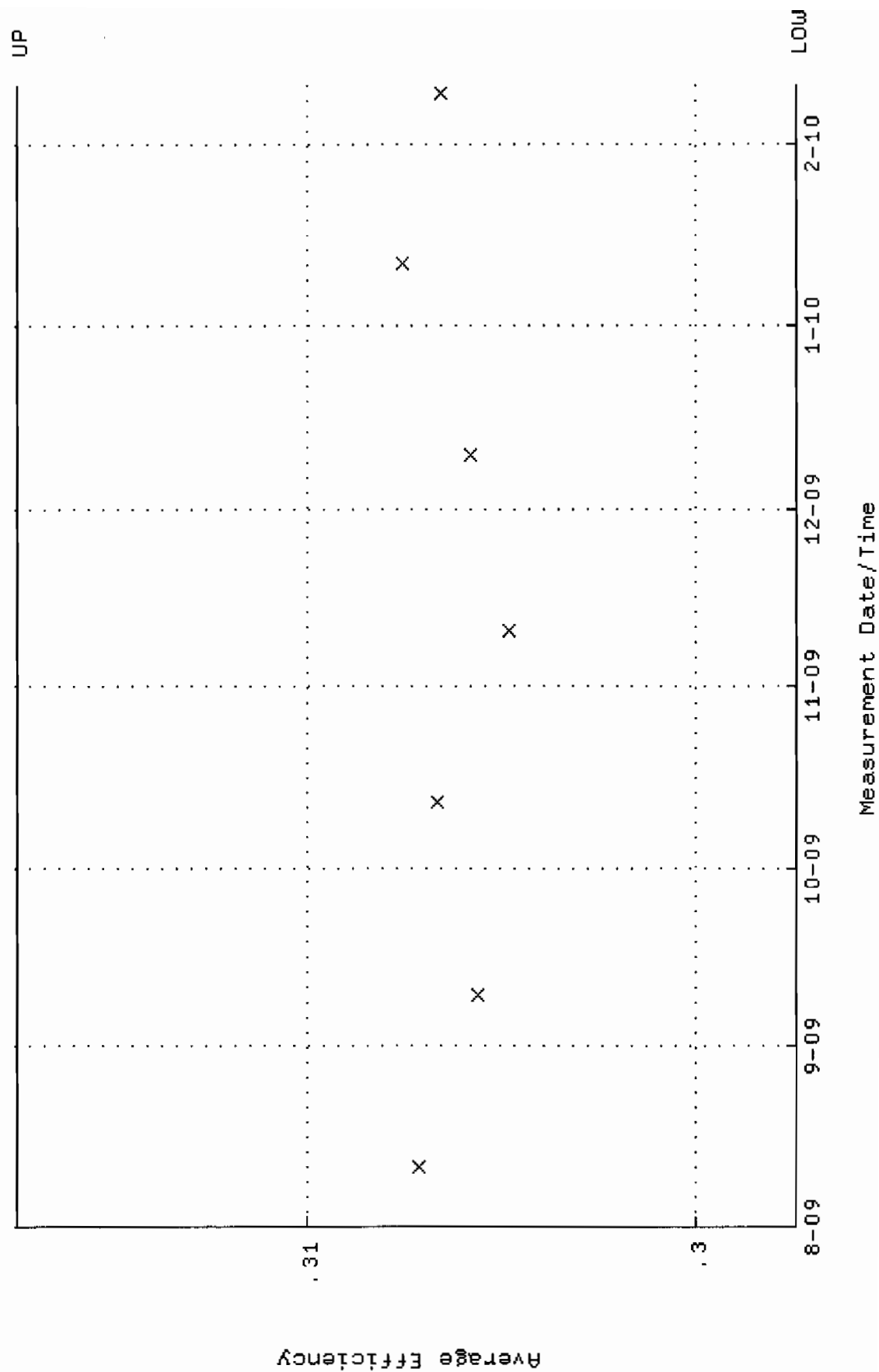
QA filename : DKA100:[ENV_ALPHA.QA.W]W093.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.0000



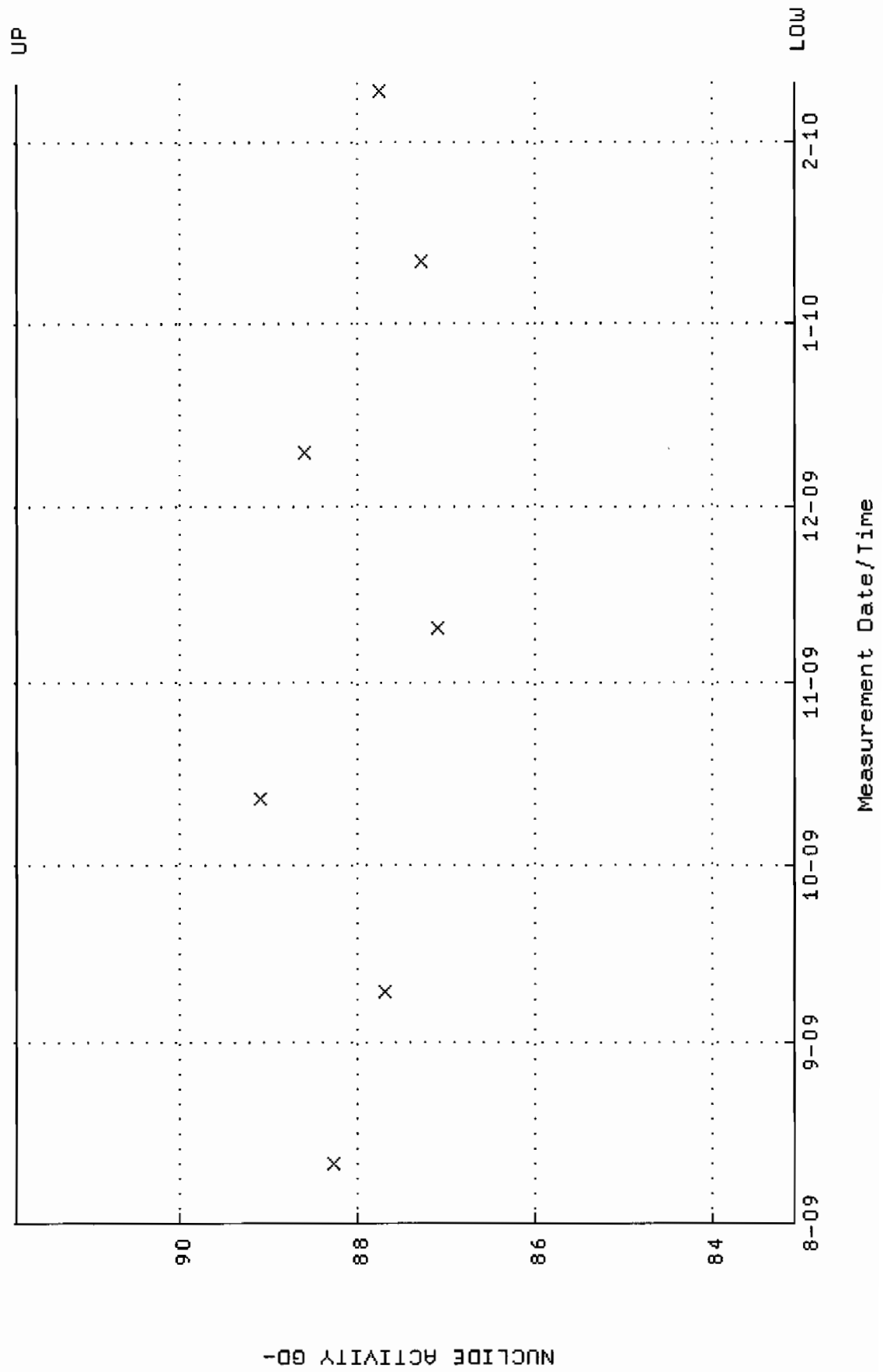
QA filename : DKA100:[ENV_ALPHA.QA.B]B093.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:42 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: -1.00000 through 0.100000



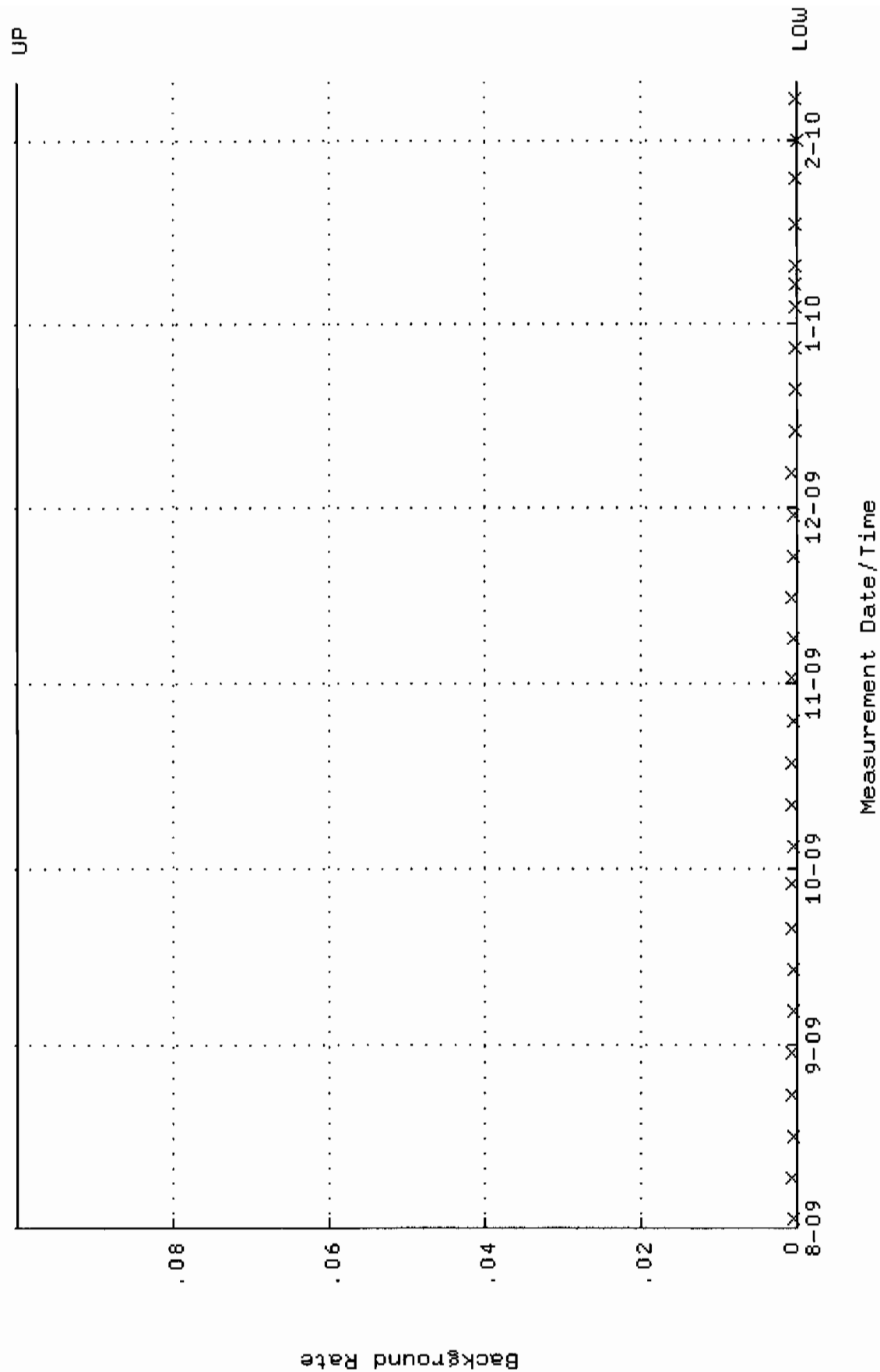
QA filename : DKA100:[ENV_ALPHA.QA.W]W094.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.297429 through 0.317429



QA filename : DKA100:[ENV_ALPHA.QA.W]W094.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 83.0827 through 91.8283



QA filename : DKA100:[ENV_ALPHA.QA.B]B094.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:42 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

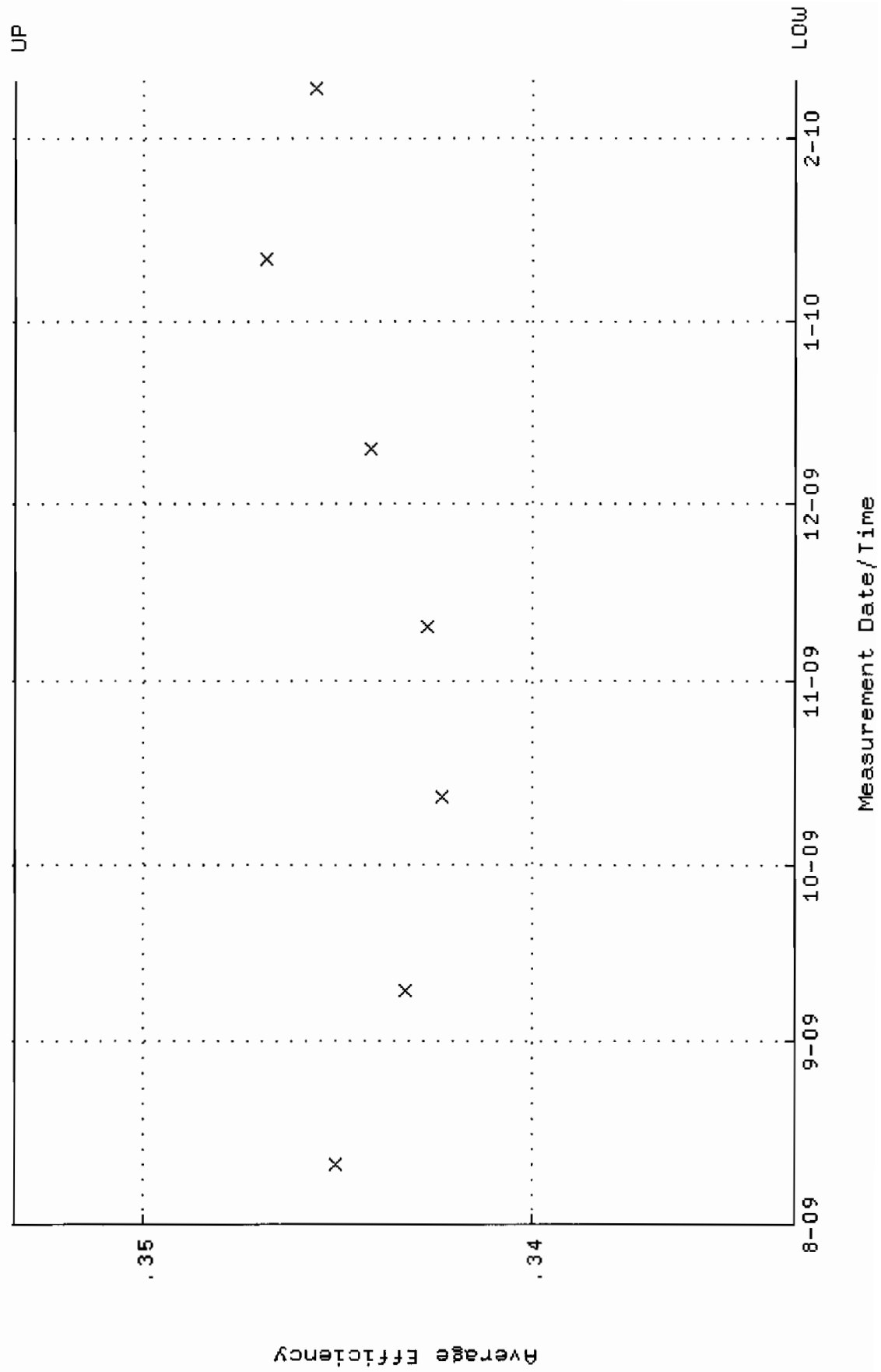


QA filename : DKA100:[ENV_ALPHA.QA.W]W097.QAF;2

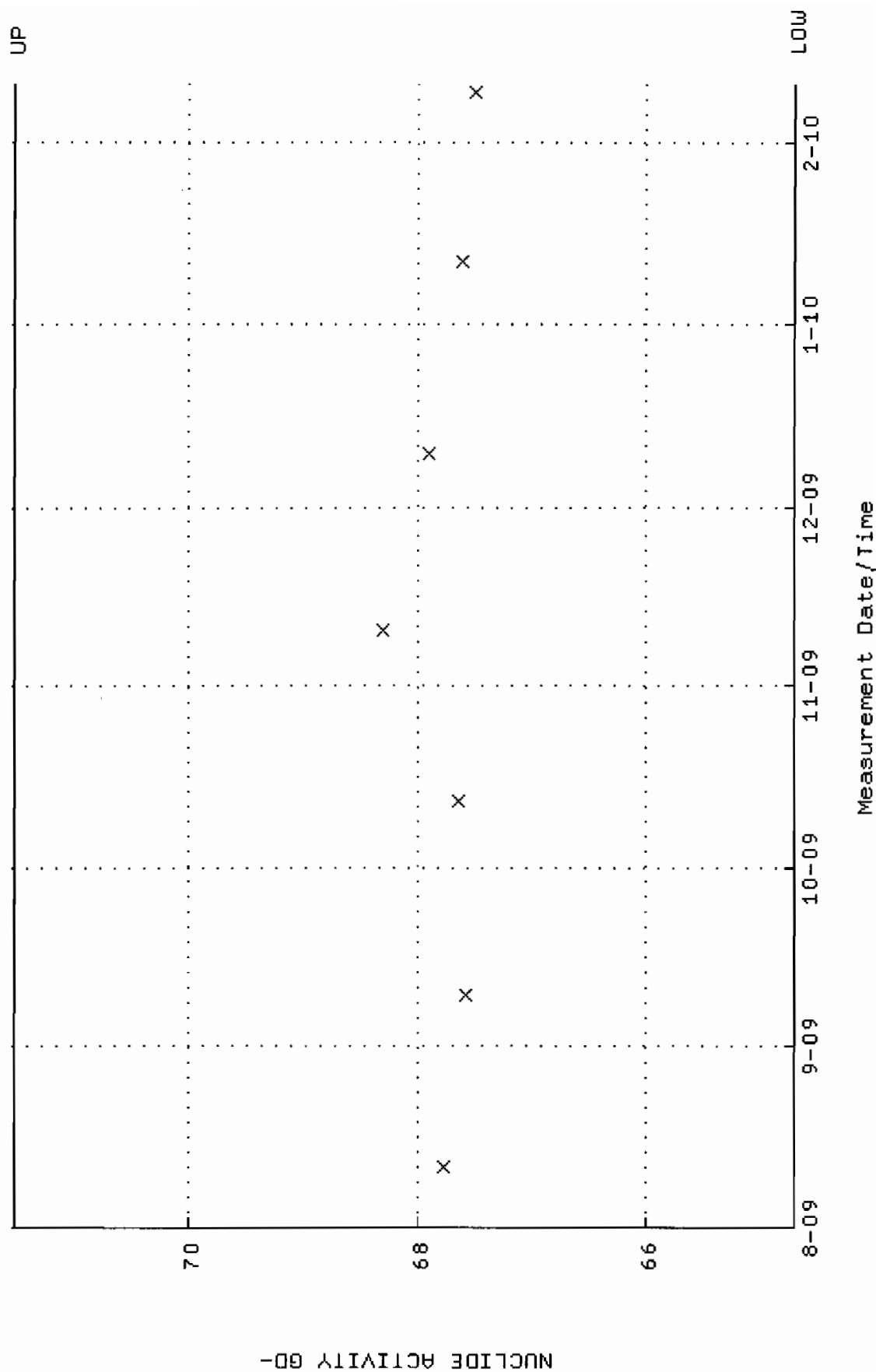
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 11-AUG-2009 07:20:16 through 10-FEB-2010 12:00:00

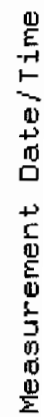
Lower/Upper Lmts: 0.333275 through 0.353275



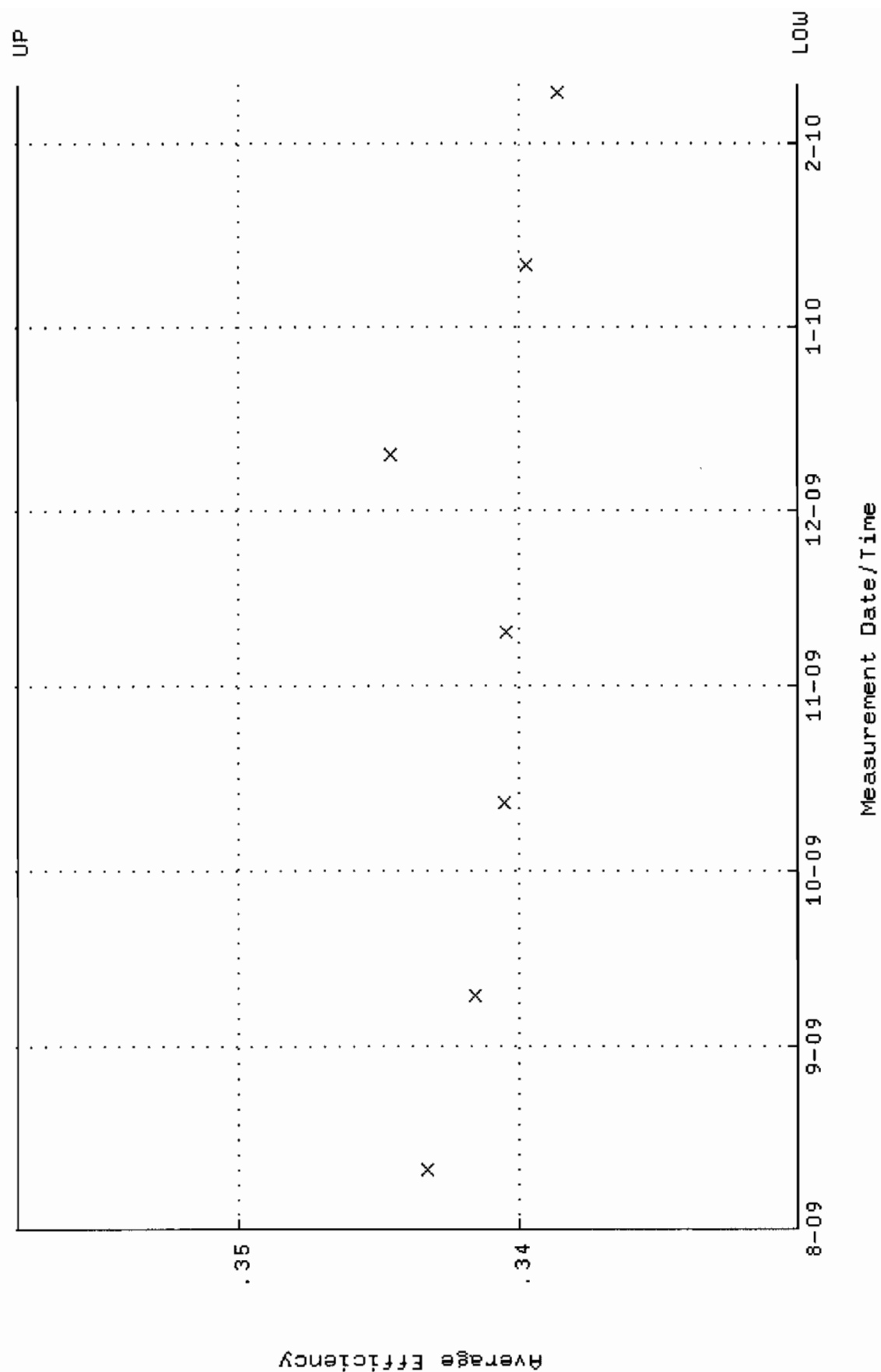
QA filename : DKA100:[ENV_ALPHA.QA.W]W097.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:16 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 64.7068 through 71.5180



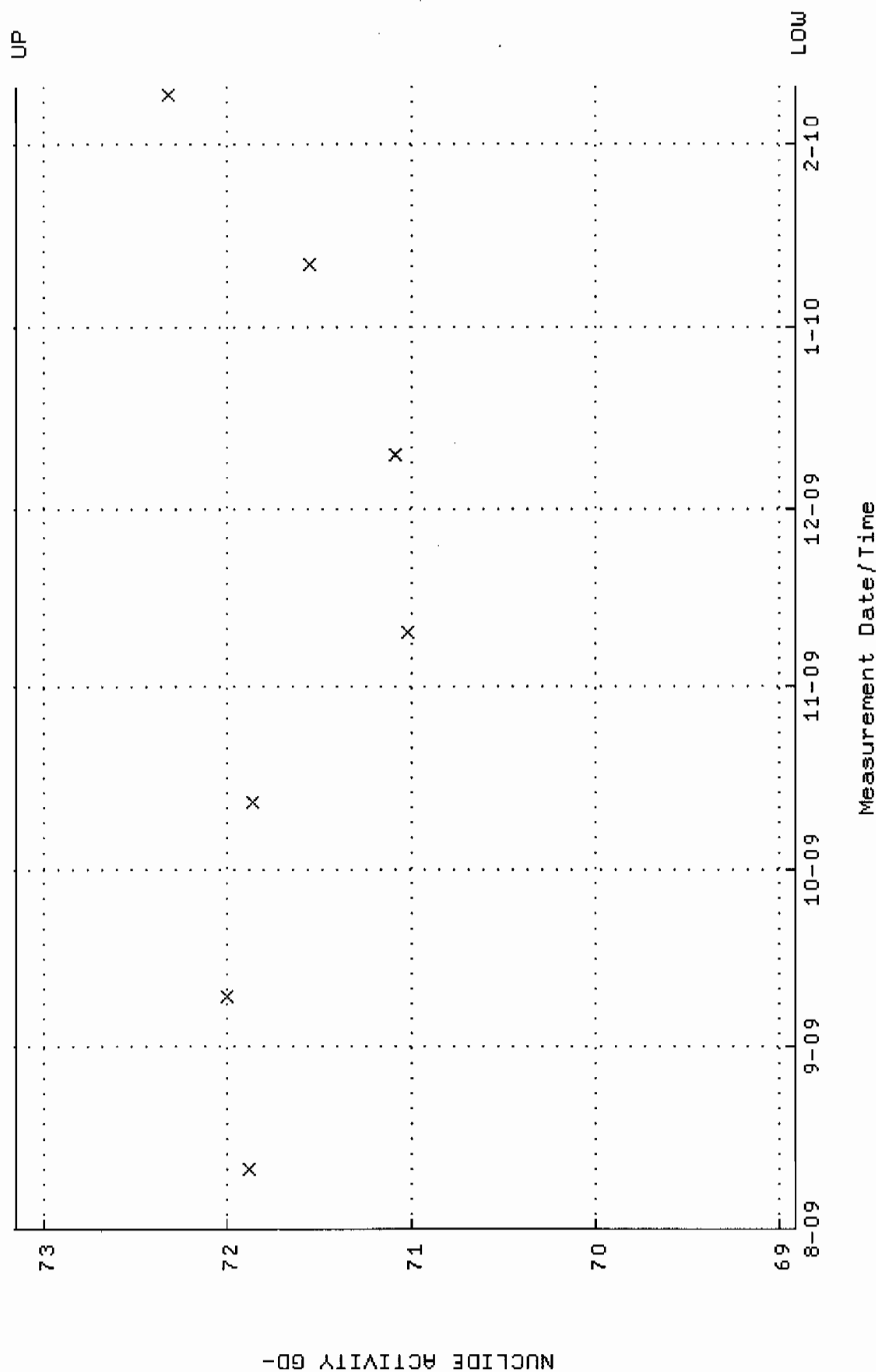
Lower/Upper Lmts: 0.00000E+00 through 0.100000



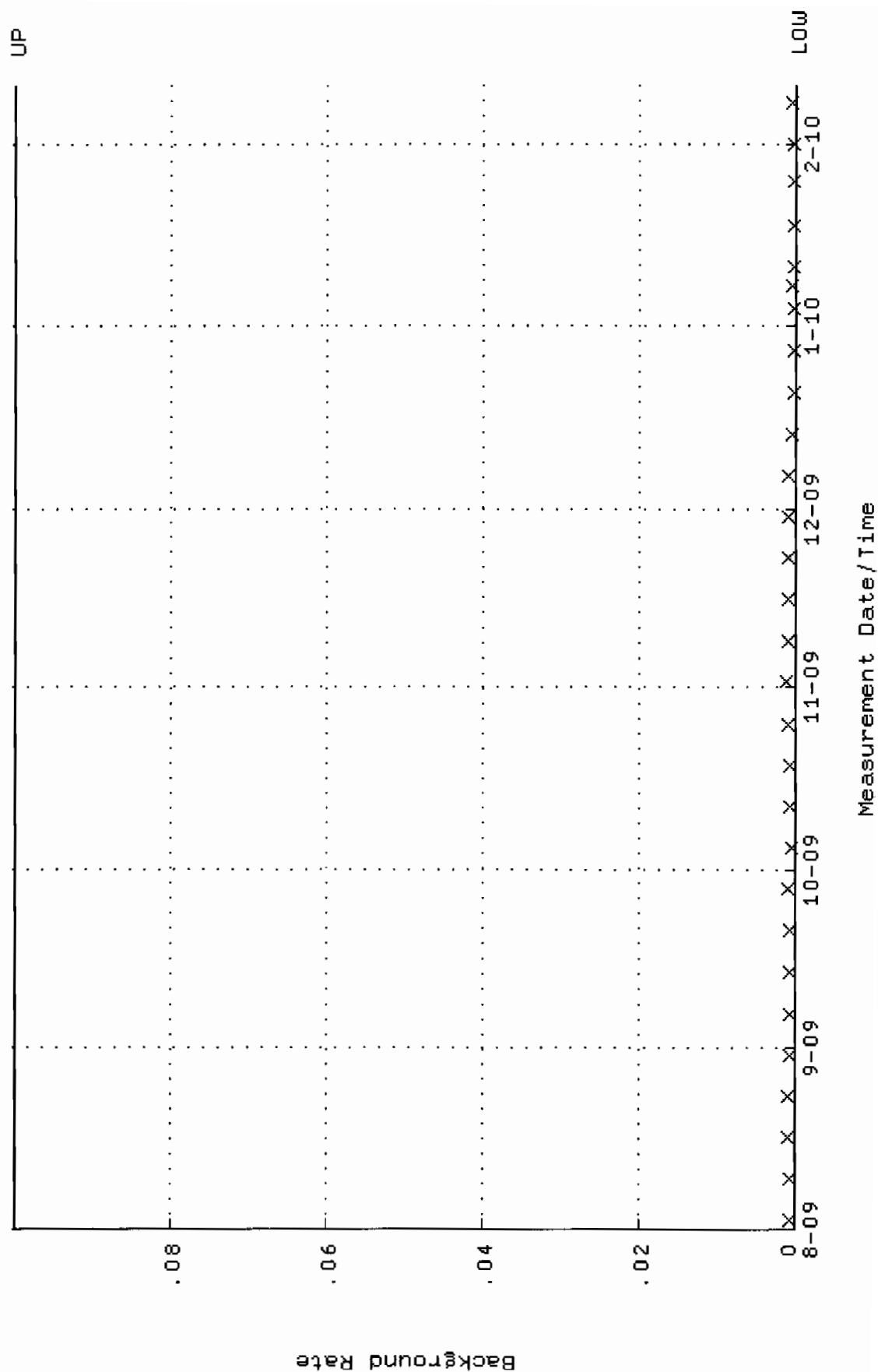
QA filename : DKA100:[ENV_ALPHA.QA.W]W099.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:16 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.330127 through 0.357809



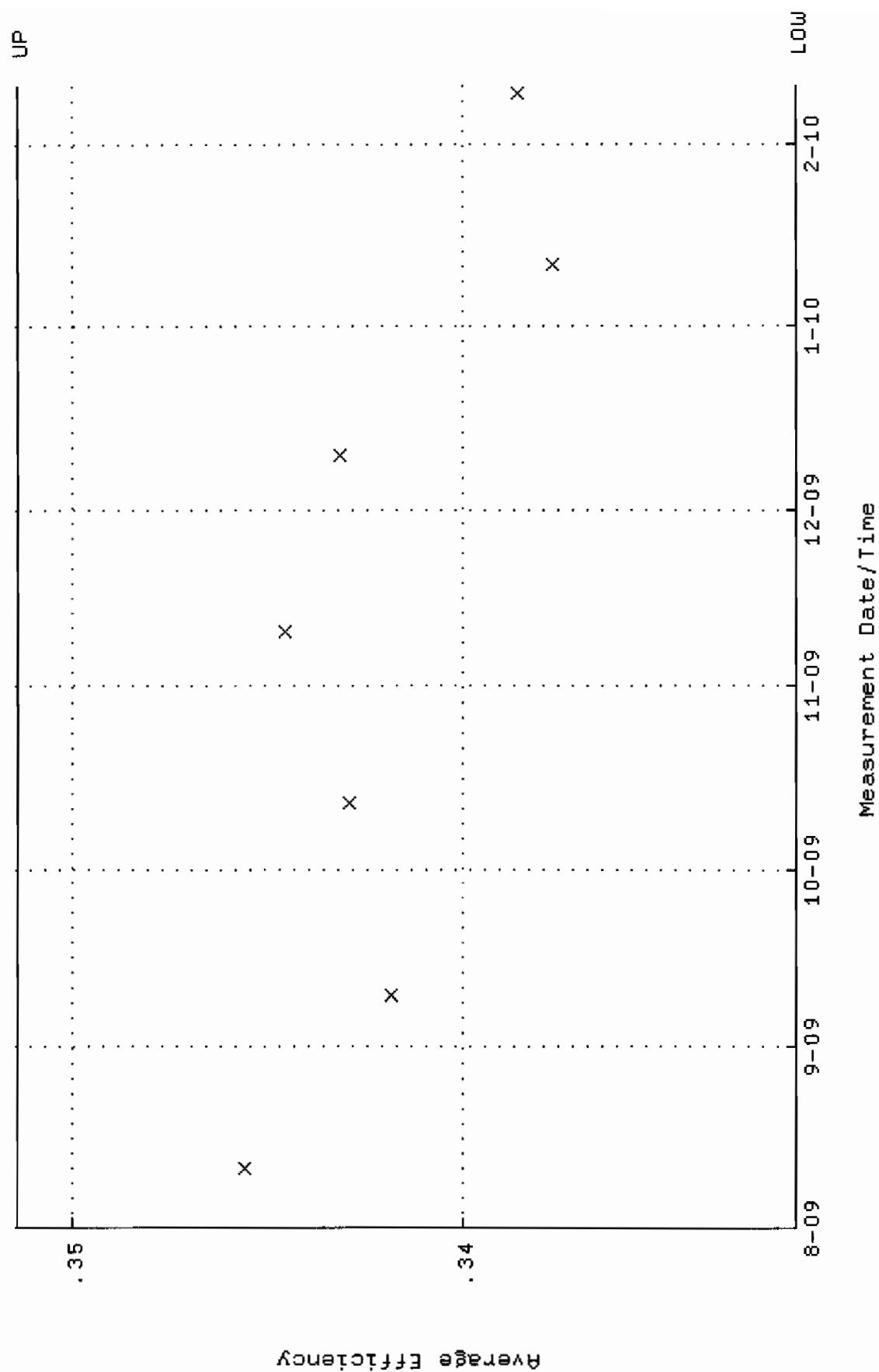
QA filename : DKA100:[ENV-ALPHA.QA.W]W099.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:16 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 68.9116 through 73.1498



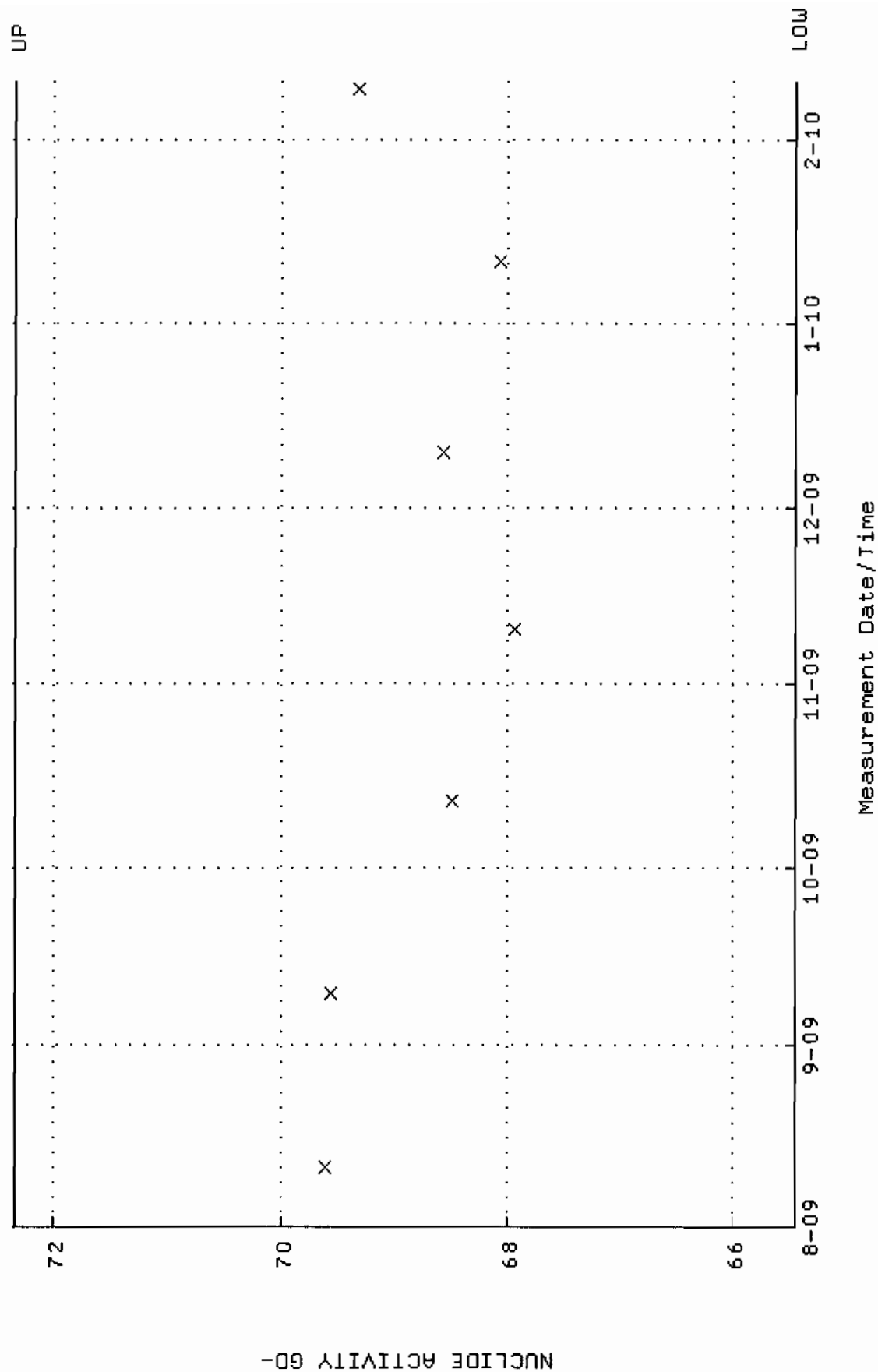
QA filename : DKA100:[ENV_ALPHA.QA.B]B099.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:43 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



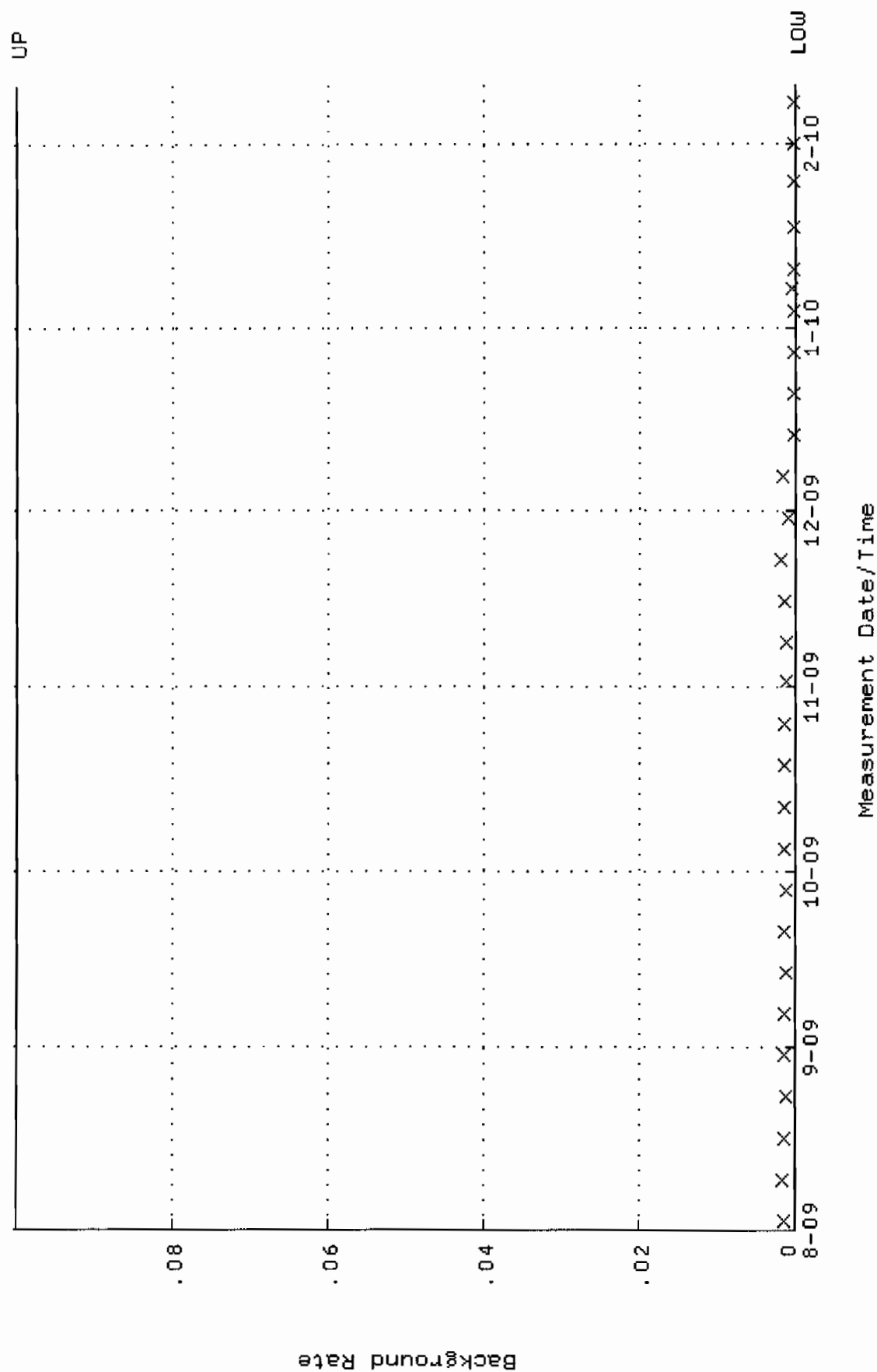
QA filename : DKA100:[ENV_ALPHA.QA.W]W100.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:16 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.331433 through 0.351433



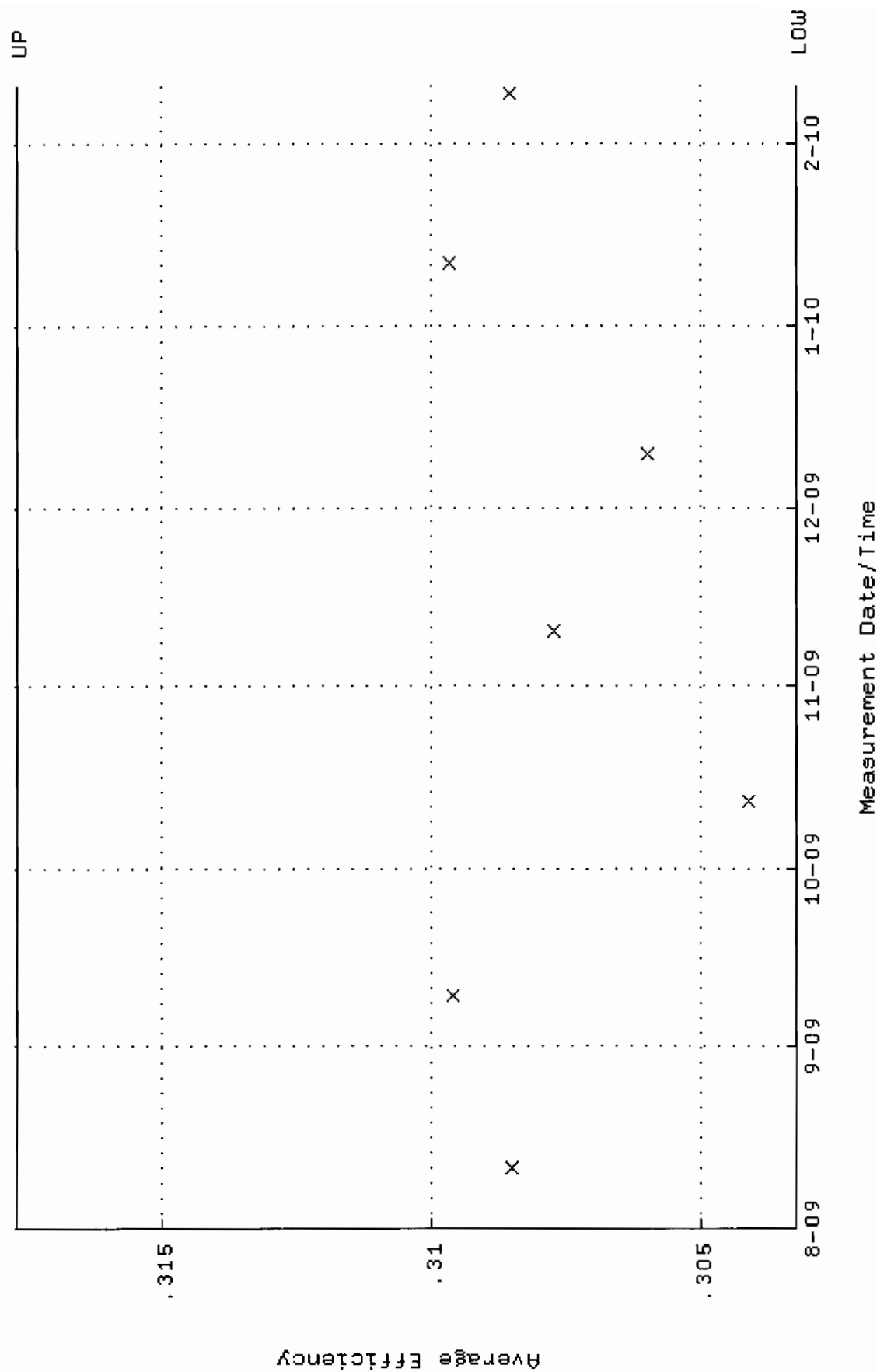
QA filename : DKA100:[ENV_ALPHA.QA.W]W100.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:16 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 65.4550 through 72.3450



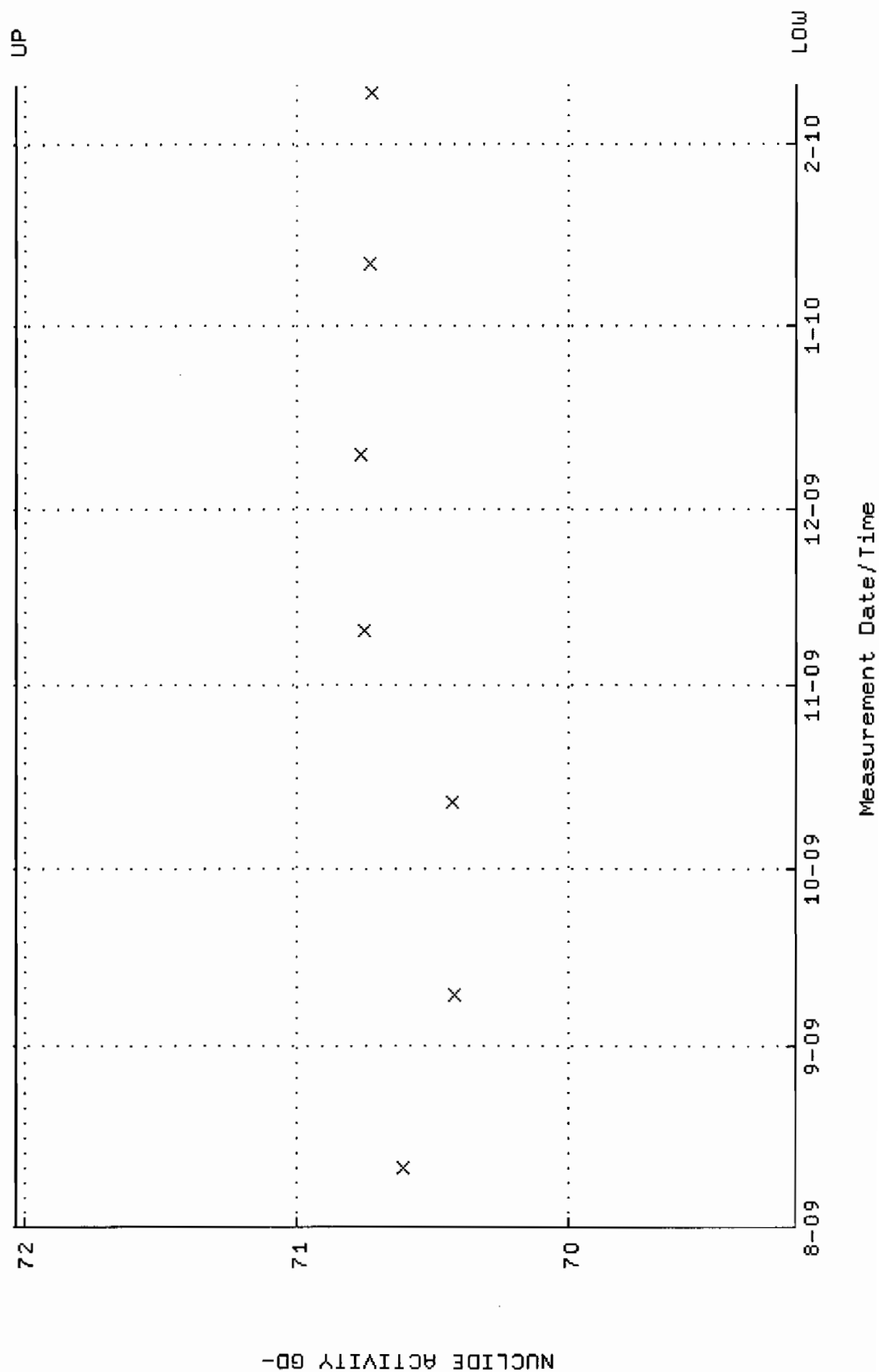
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 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:43 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



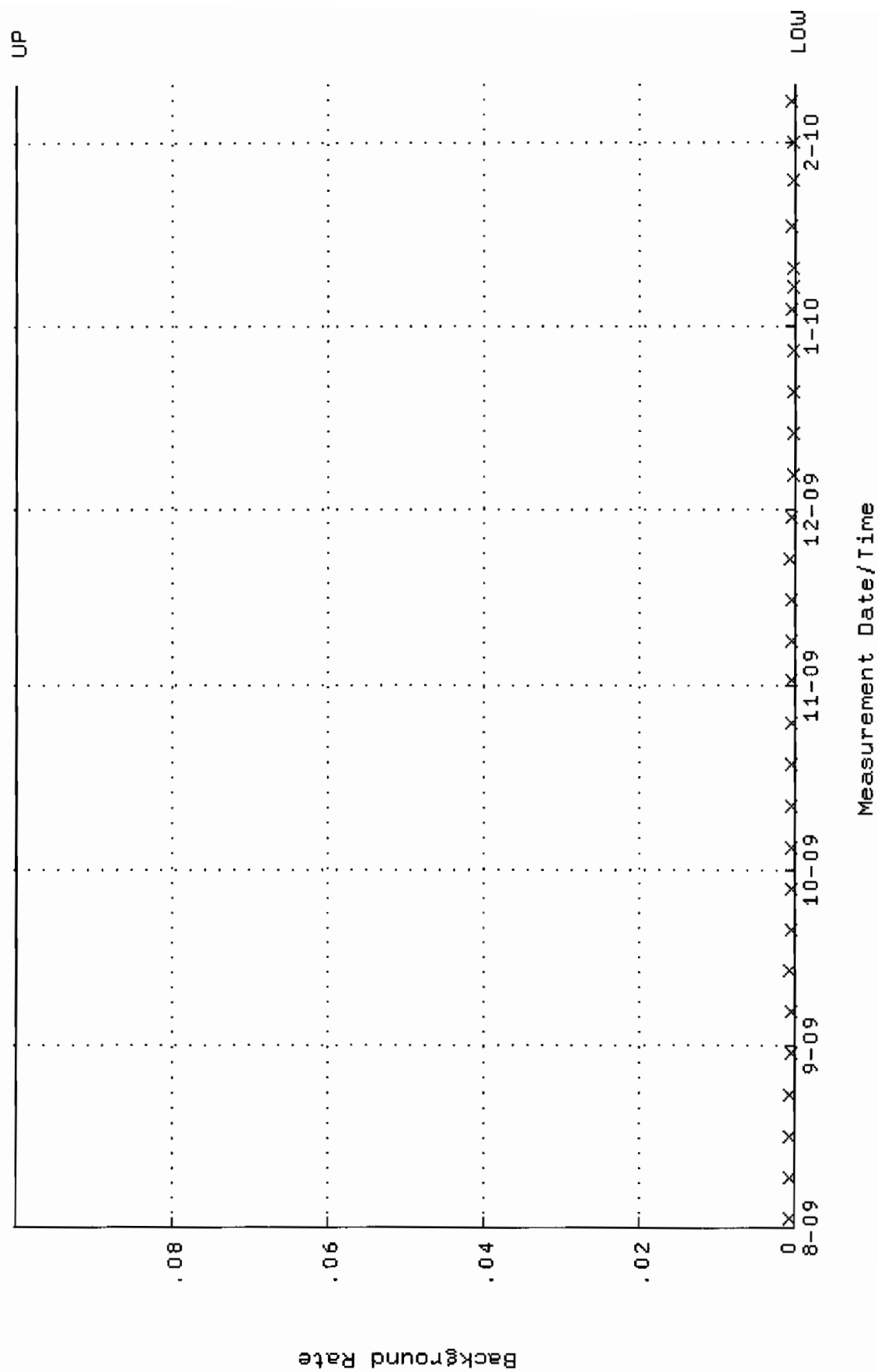
QA filename : DKA100:[ENV_ALPHA.QA.W]W107.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:19 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.303231 through 0.317703



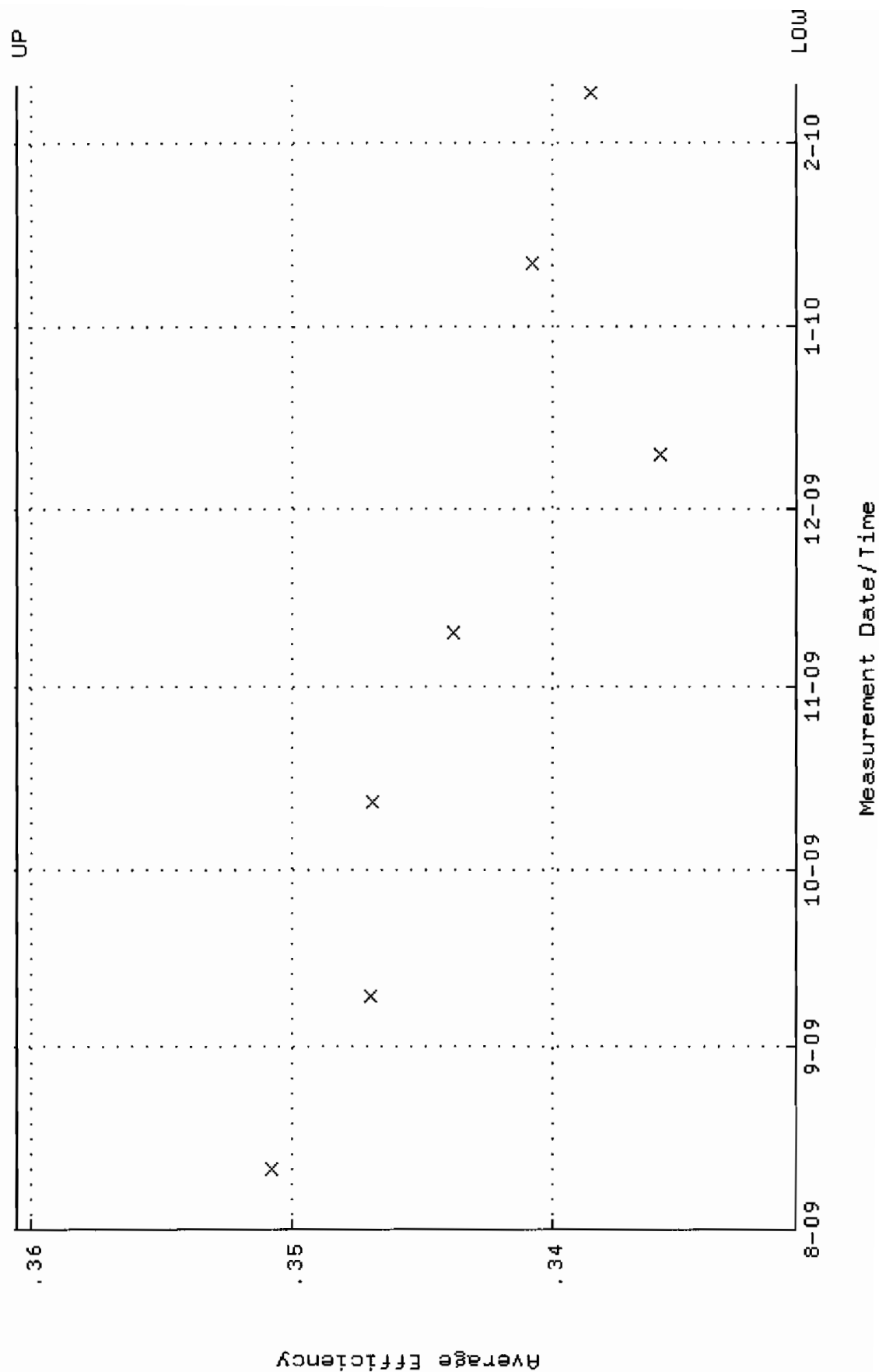
QA filename : DKA100:[ENV_ALPHA.QA.W]W107.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:19 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 69.1572 through 72.0358



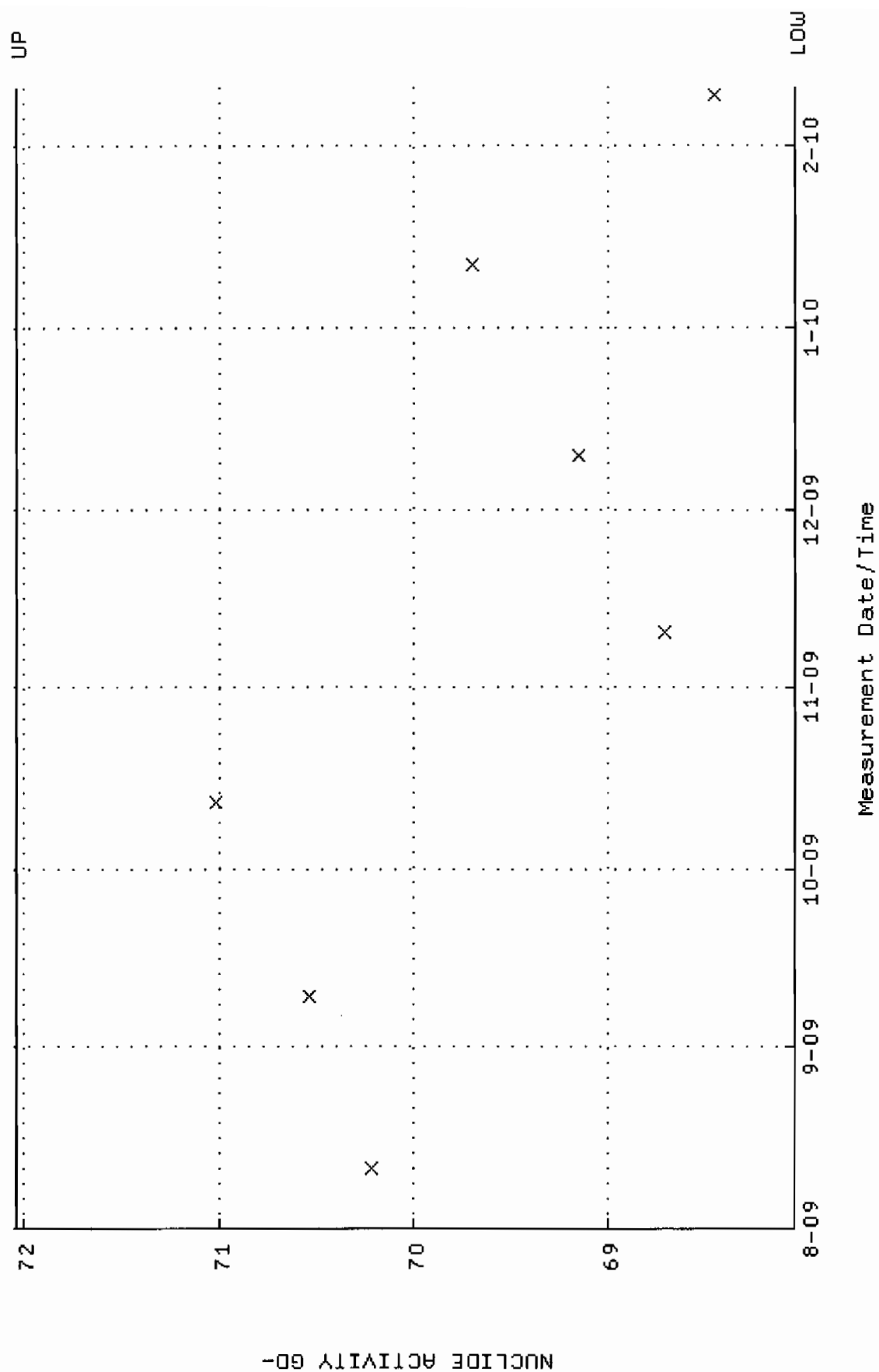
QA filename : DKA100:[ENV_ALPHA.QA.B]B107.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:44 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



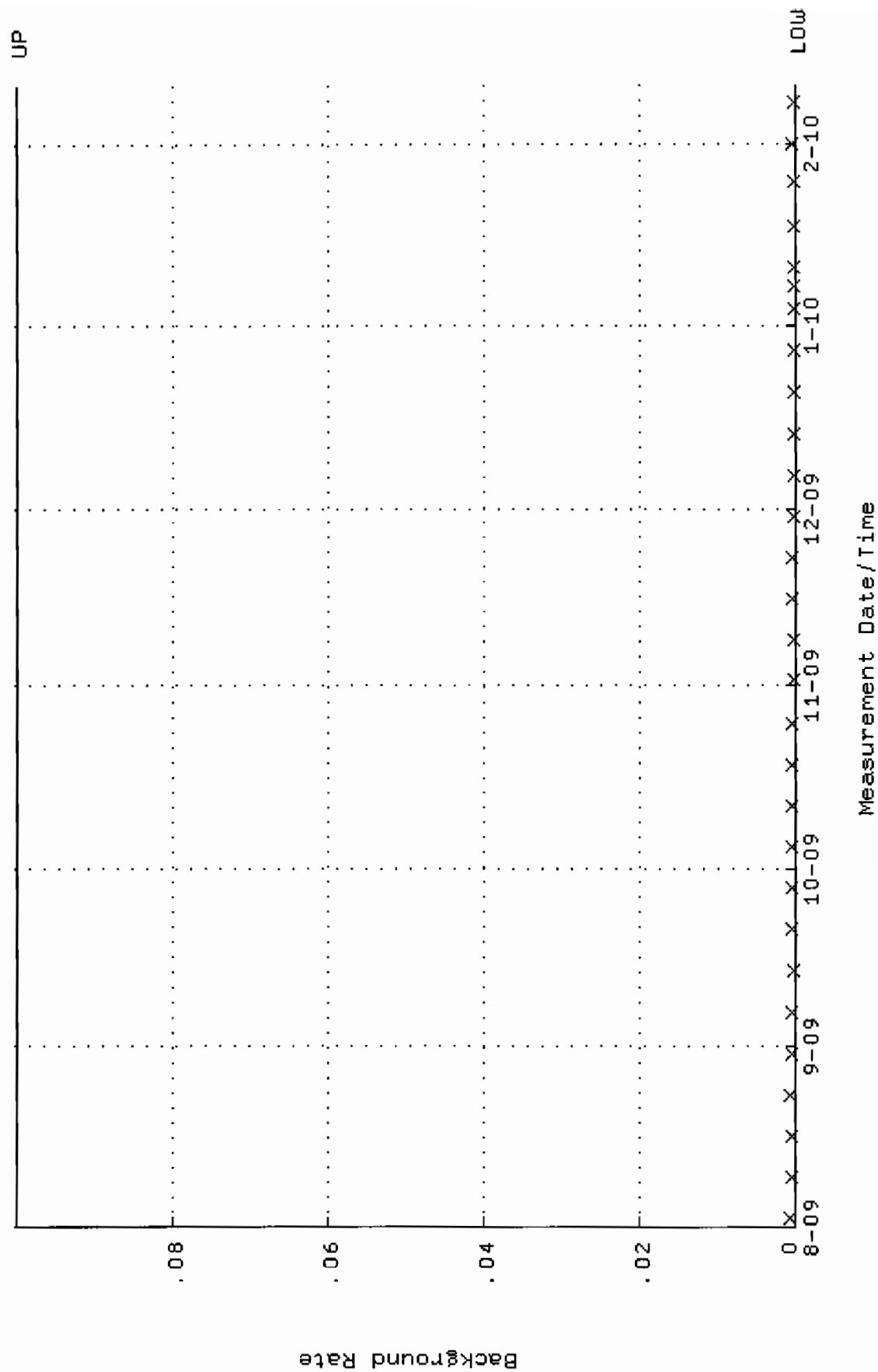
QA filename : DKA100:[ENV_ALPHA,QA.W]W108.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:19 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.330641 through 0.360561



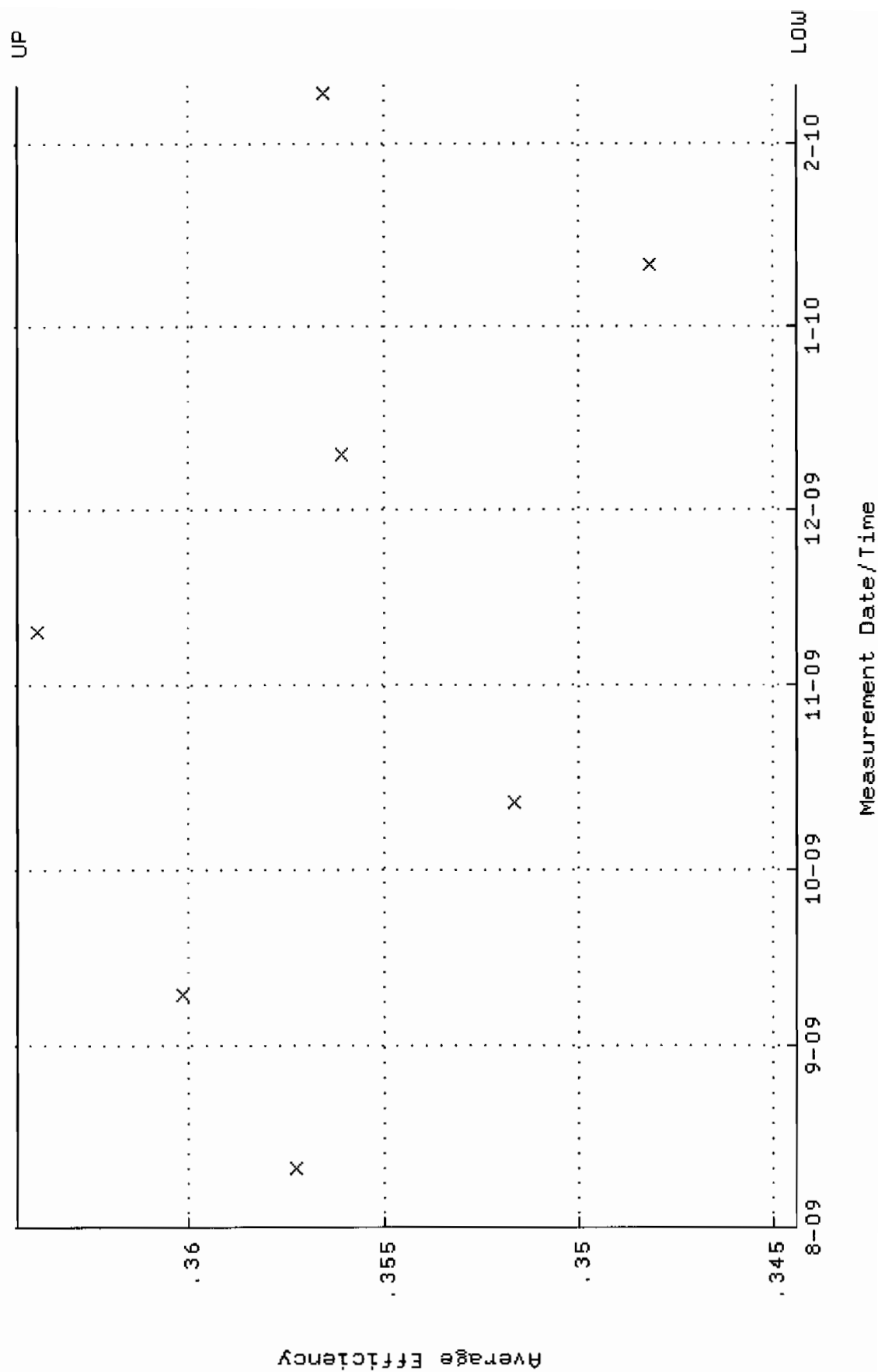
QA filename : DKA100:[ENV_ALPHA.QA.W]W108.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:19 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 68.0460 through 72.0402



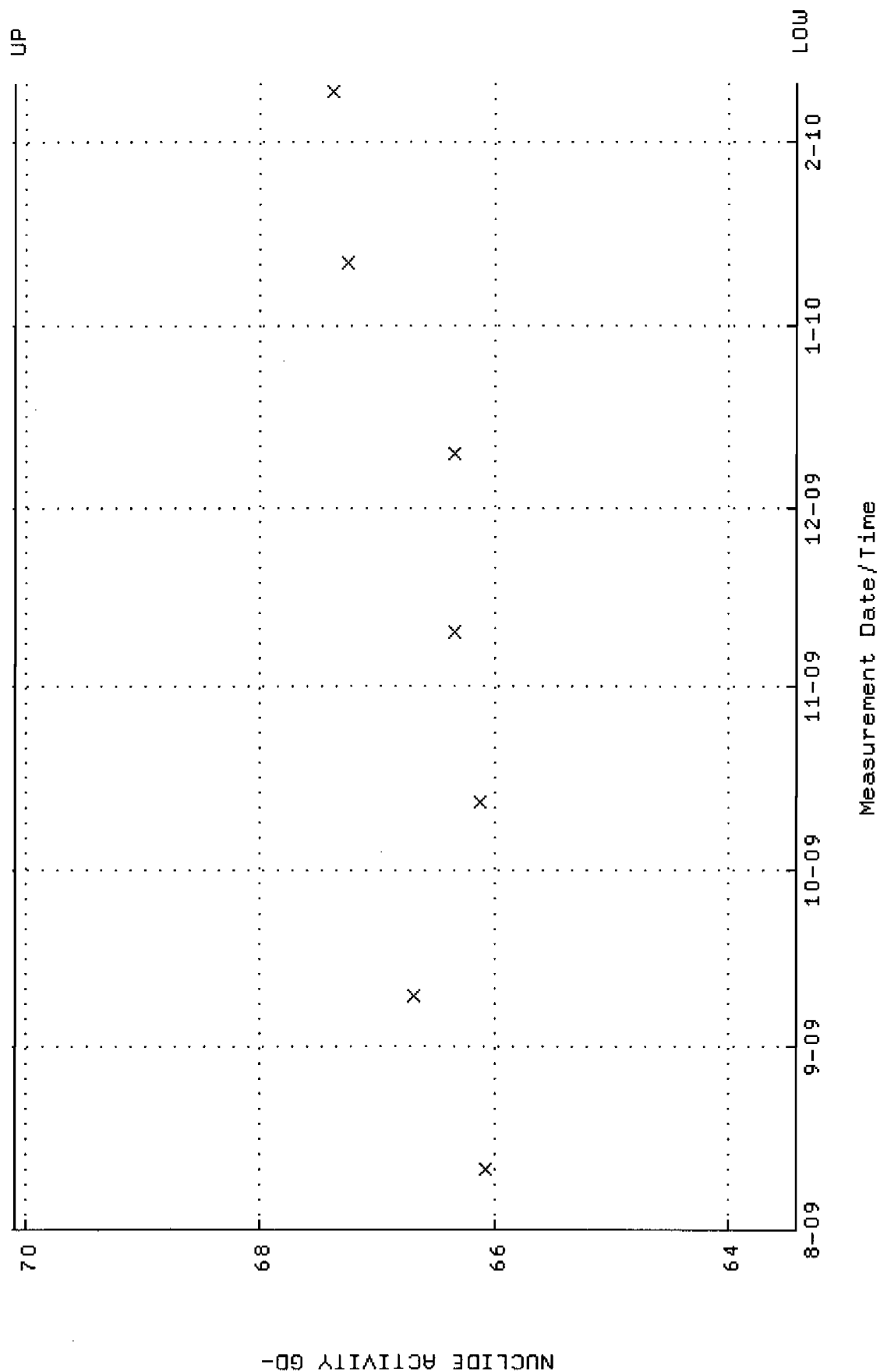
QA filename : DKA100:[ENV_ALPHA.QA.B]B108.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:44 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



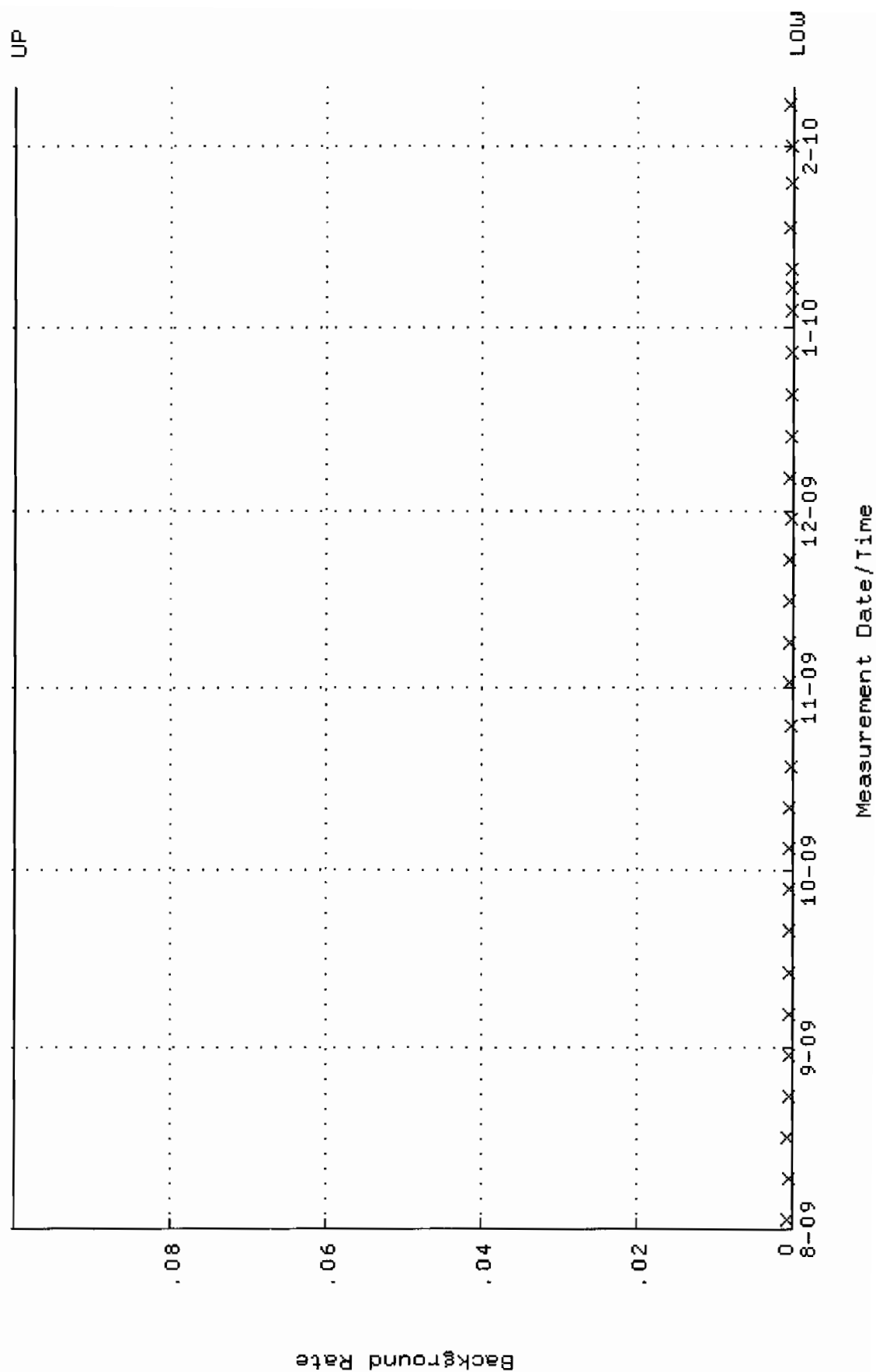
QA filename : DKA100:[ENV_ALPHA.QA.W]W109.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:19 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.344397 through 0.364397



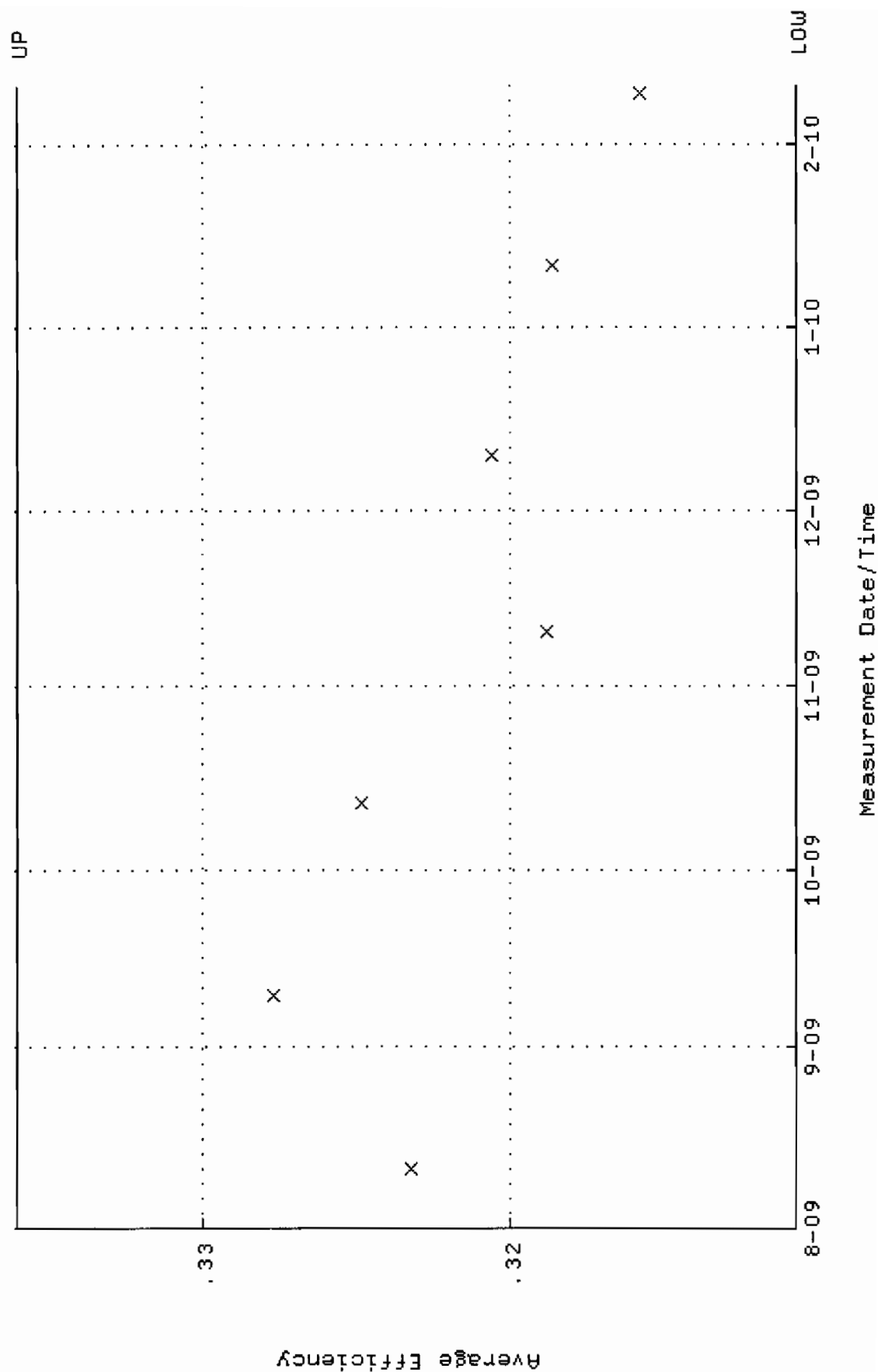
QA filename : DKA100:[ENV-ALPHA.QA.W]W109.QAF;2
 Parameter Name : NLAITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:19 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 63.4194 through 70.0952



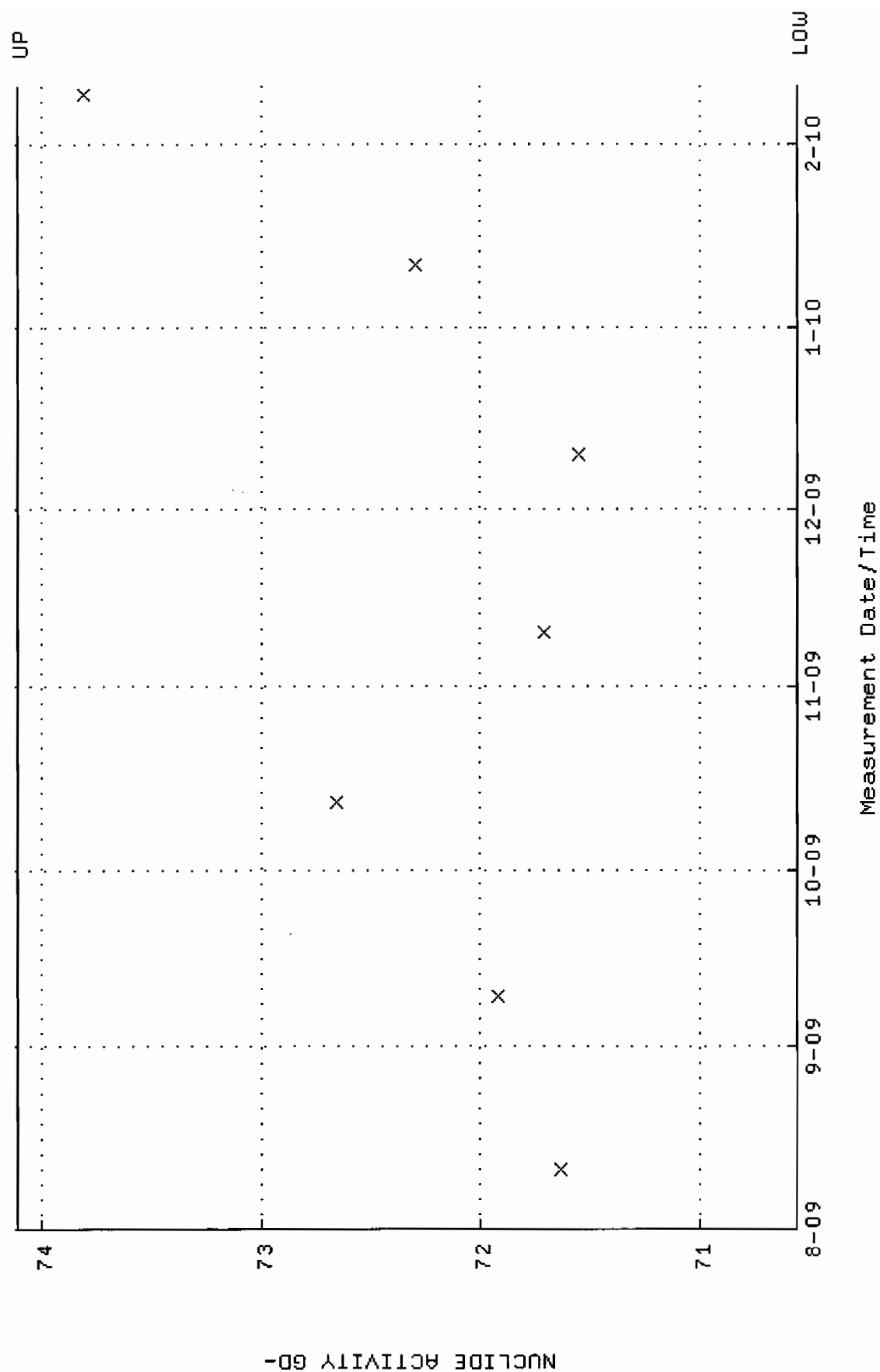
QA filename : DKA100:[ENV_ALPHA.QA.B]B109.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:44 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



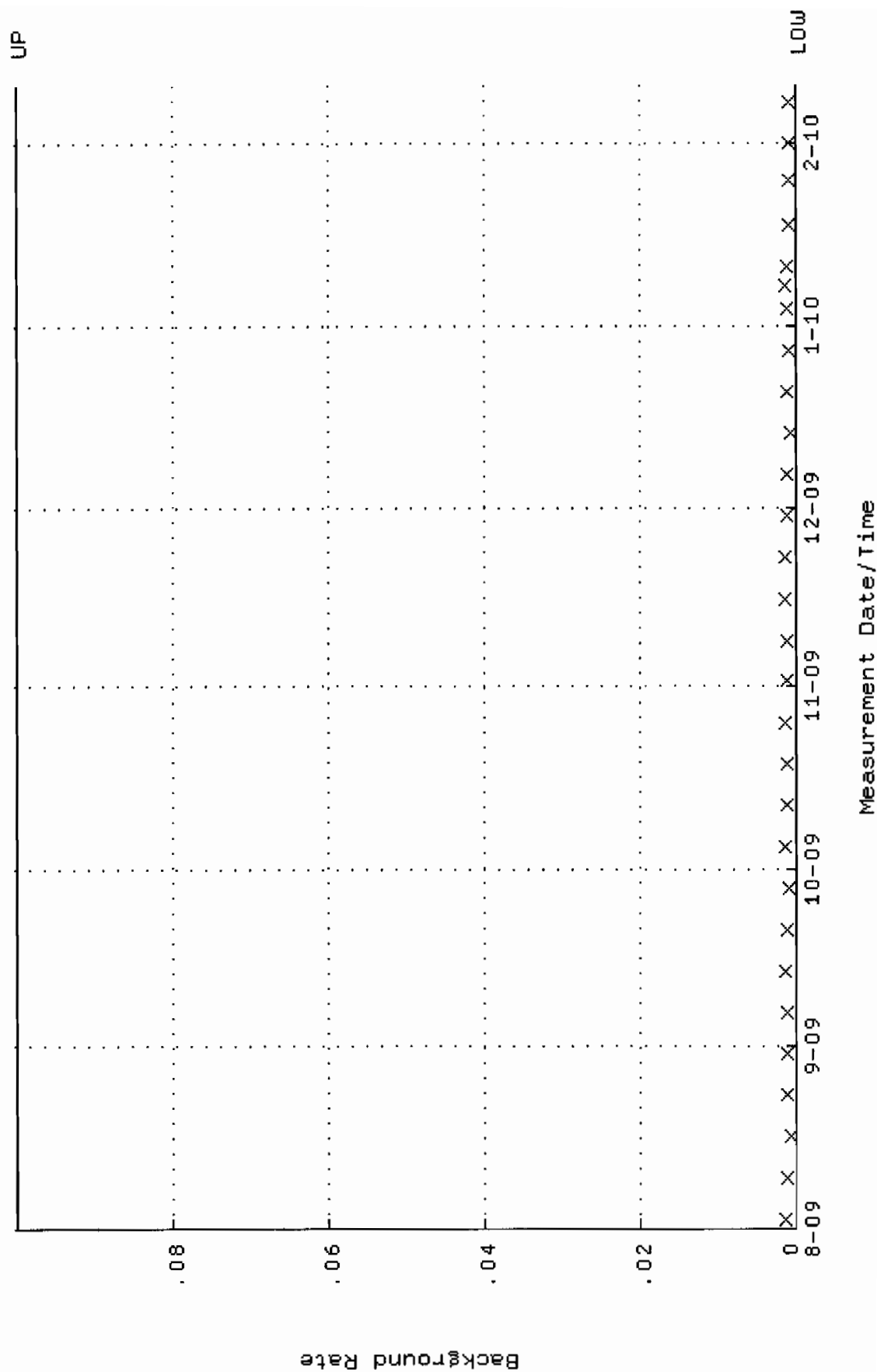
QA filename : DKA100:[ENV_ALPHA.QA.W]W110.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:19 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.310708 through 0.336004



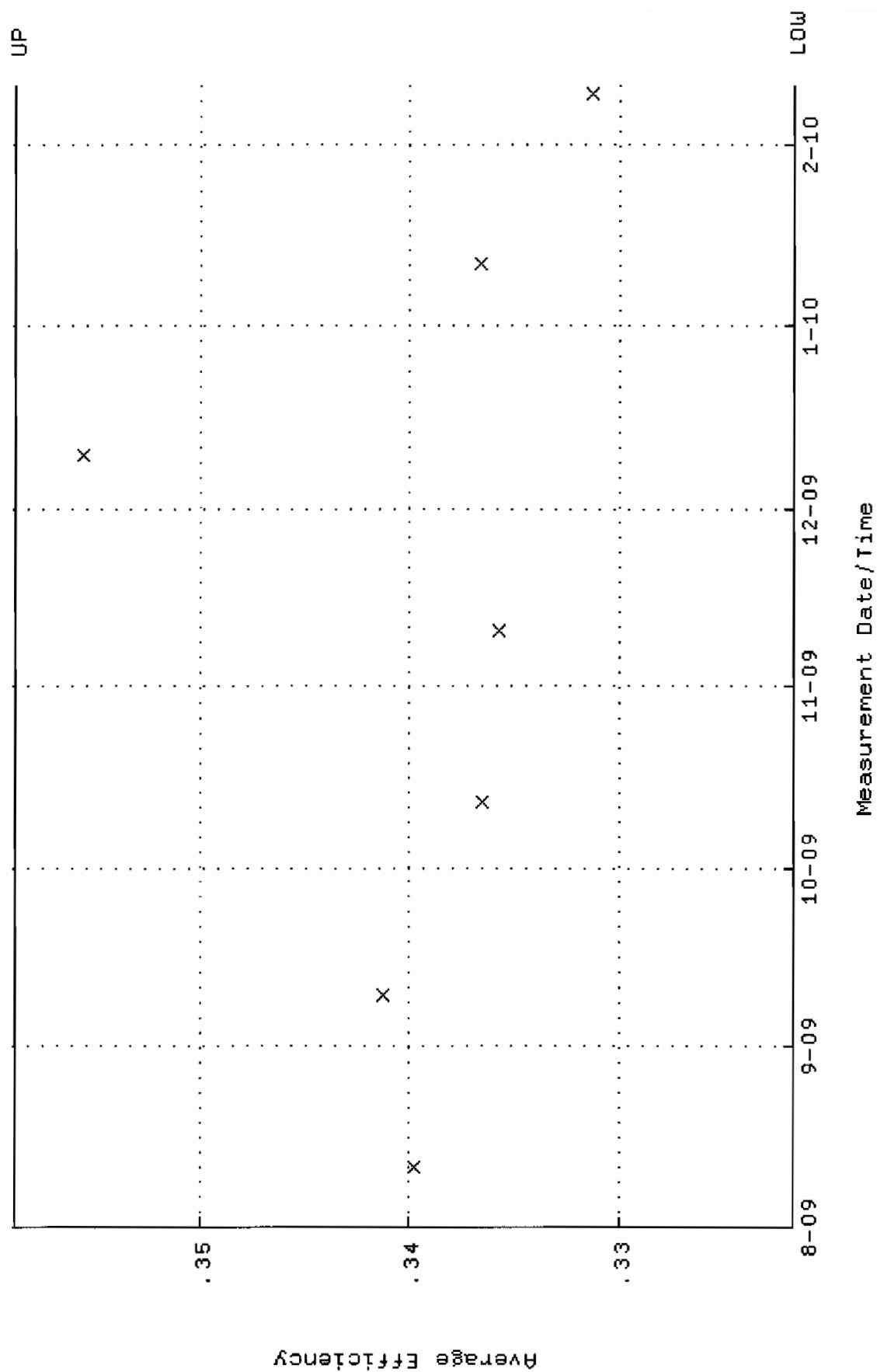
QA filename : DKA100:[ENV_ALPHA.QA.W]w110.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:19 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 70.5525 through 74.1111



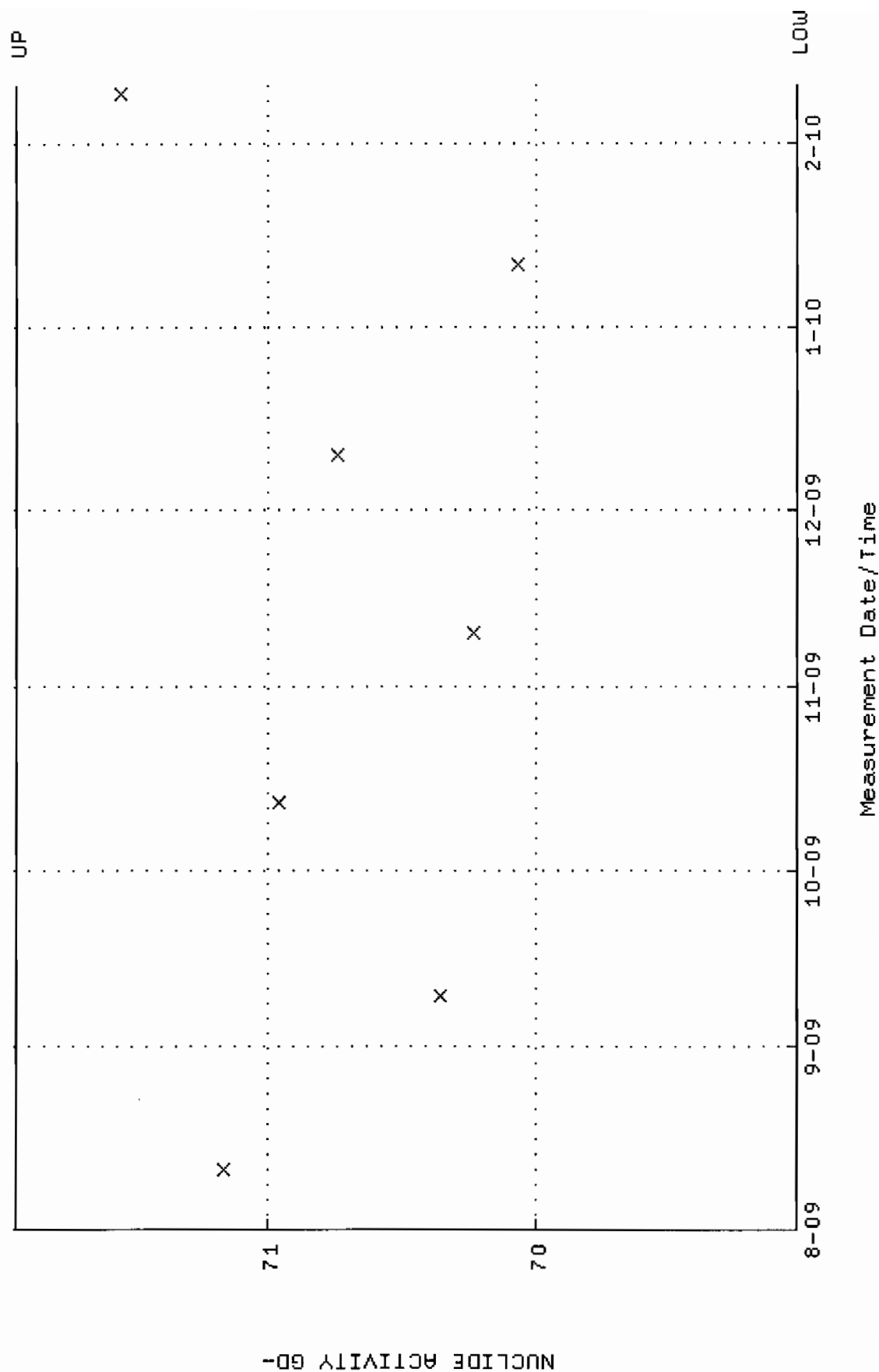
QA filename : DKA100:[ENV_ALPHA.QA.B]B110.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:44 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



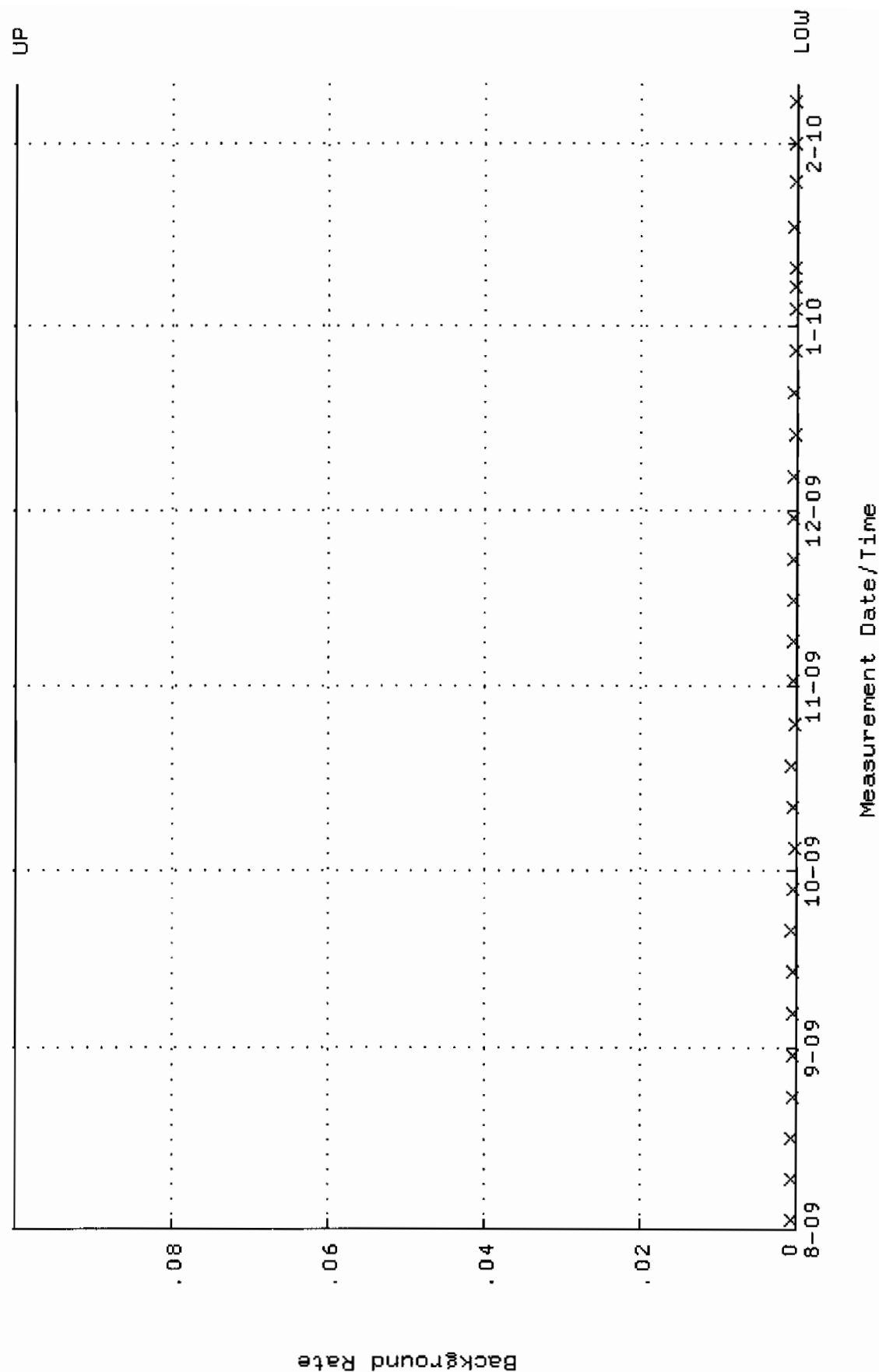
QA filename : DKA100:[ENV_ALPHA.QA.W]W111.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:19 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.321662 through 0.358794



QA filename : DKA100:[ENV-ALPHA.QA.W]W111.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:19 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 69.0200 through 71.9448



QA filename : DKA100:[ENV_ALPHA.QA.B]B111.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:44 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

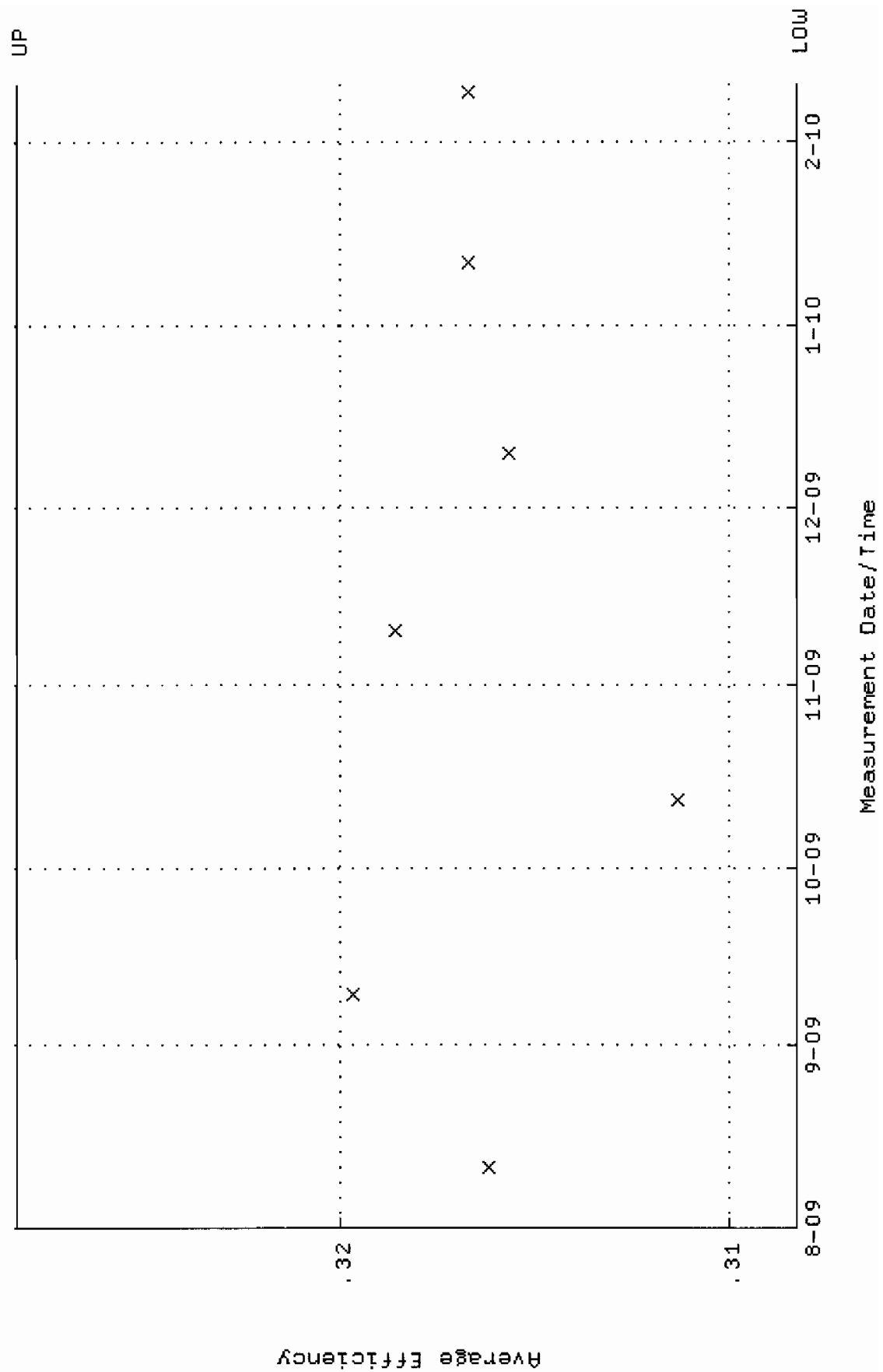


QA filename : DKA100:[ENV_ALPHA.QA.W]W112.QAF;3

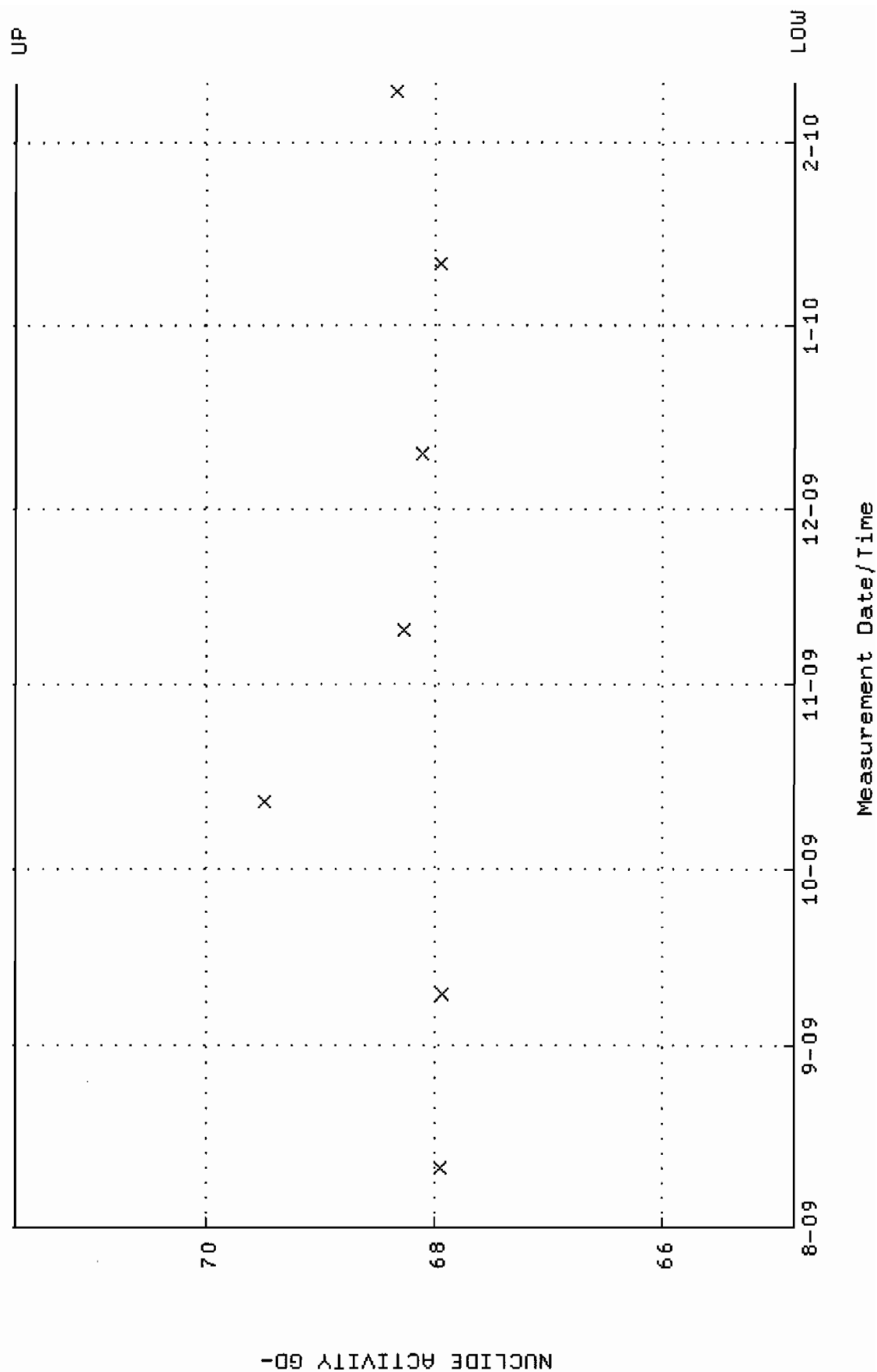
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 11-AUG-2009 07:20:19 through 10-FEB-2010 12:00:00

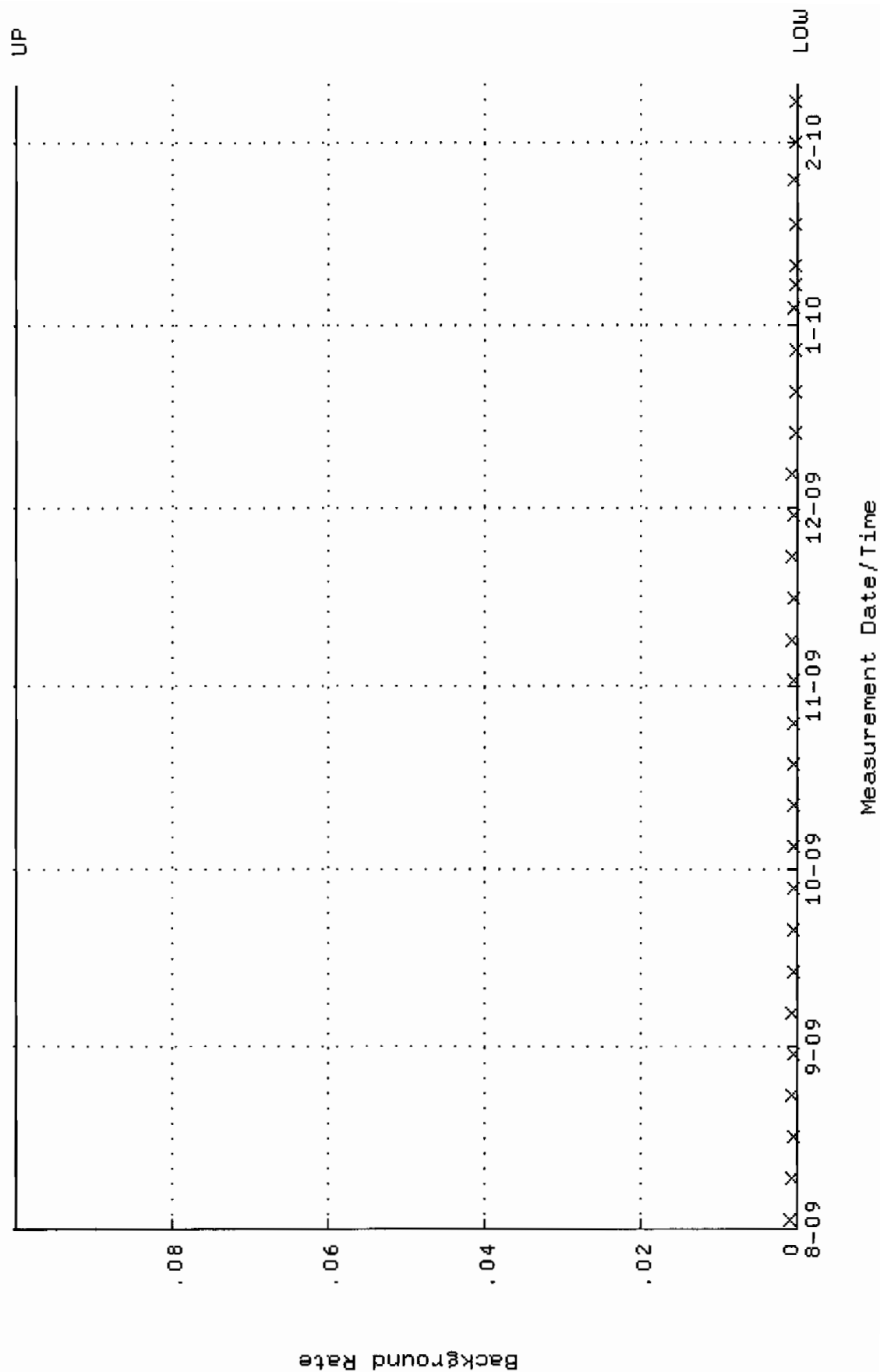
Lower/Upper Lmts: 0.308263 through 0.328263



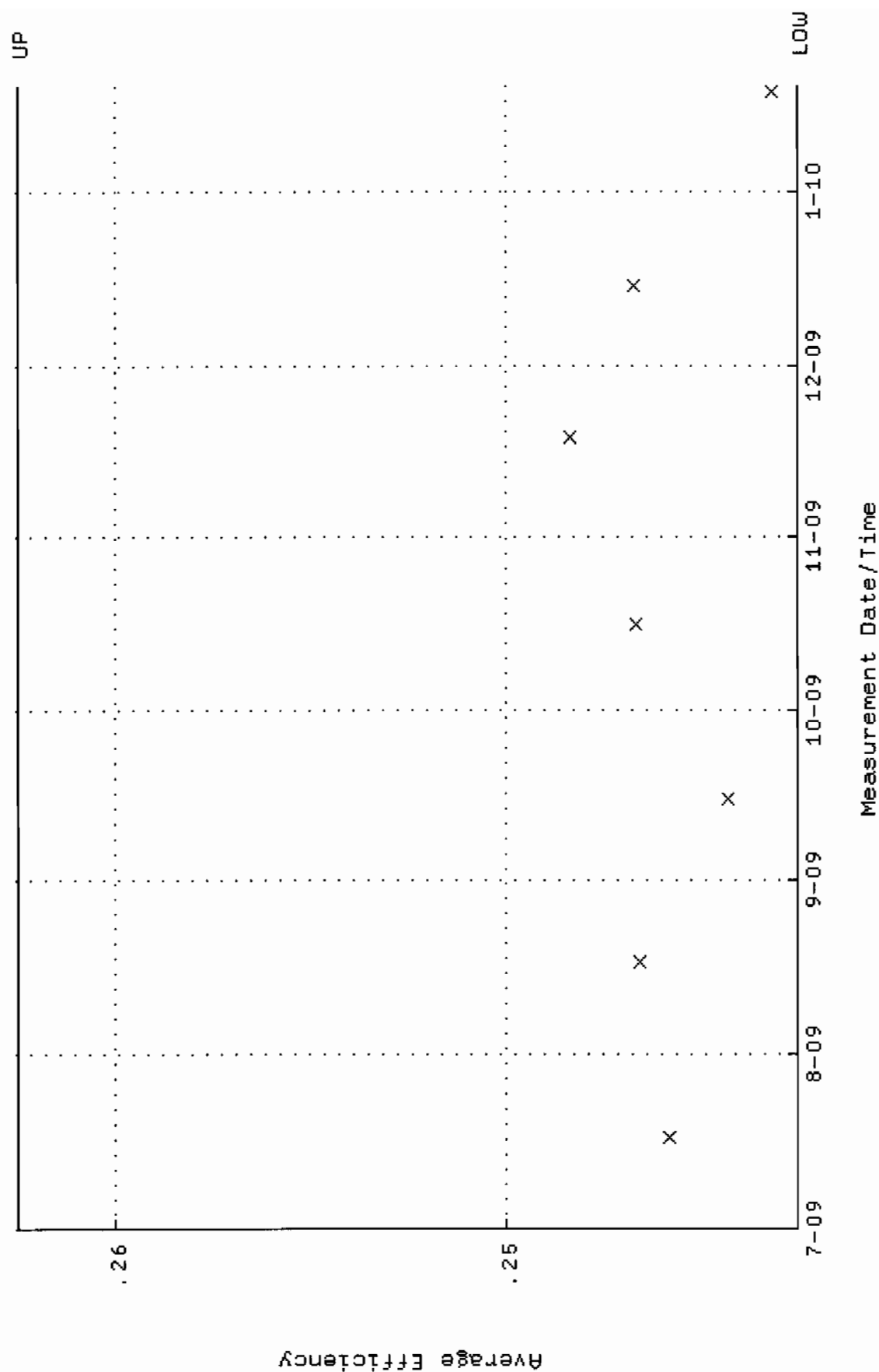
QA filename : DKA100:[ENV-ALPHA.QA.W]W112.QAF:3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:19 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 64.8451 through 71.6709



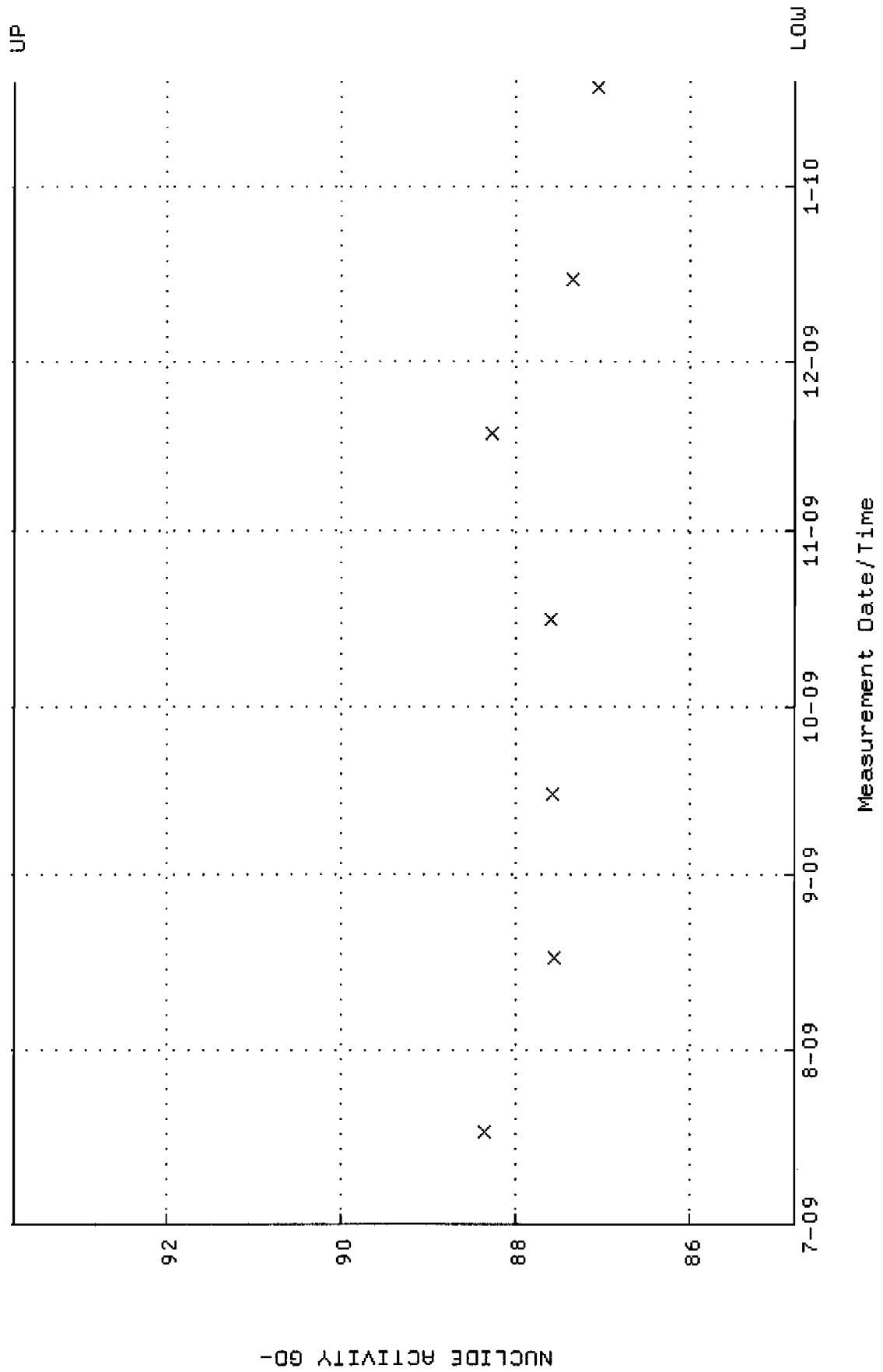
QA filename : DKA100:[ENV_ALPHA.QA.B]B112.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:44 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W149.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-JUL-2009 09:13:39 through 19-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.242495 through 0.262495



QA filename : DKA100:[ENV_ALPHA.QA.W]W149.QAF;1
 Parameter Name : NLAIVITY-GO148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-JUL-2009 09:13:39 through 19-JAN-2010 12:00:00
 Lower/Upper Lmts: 84.8126 through 93.7402

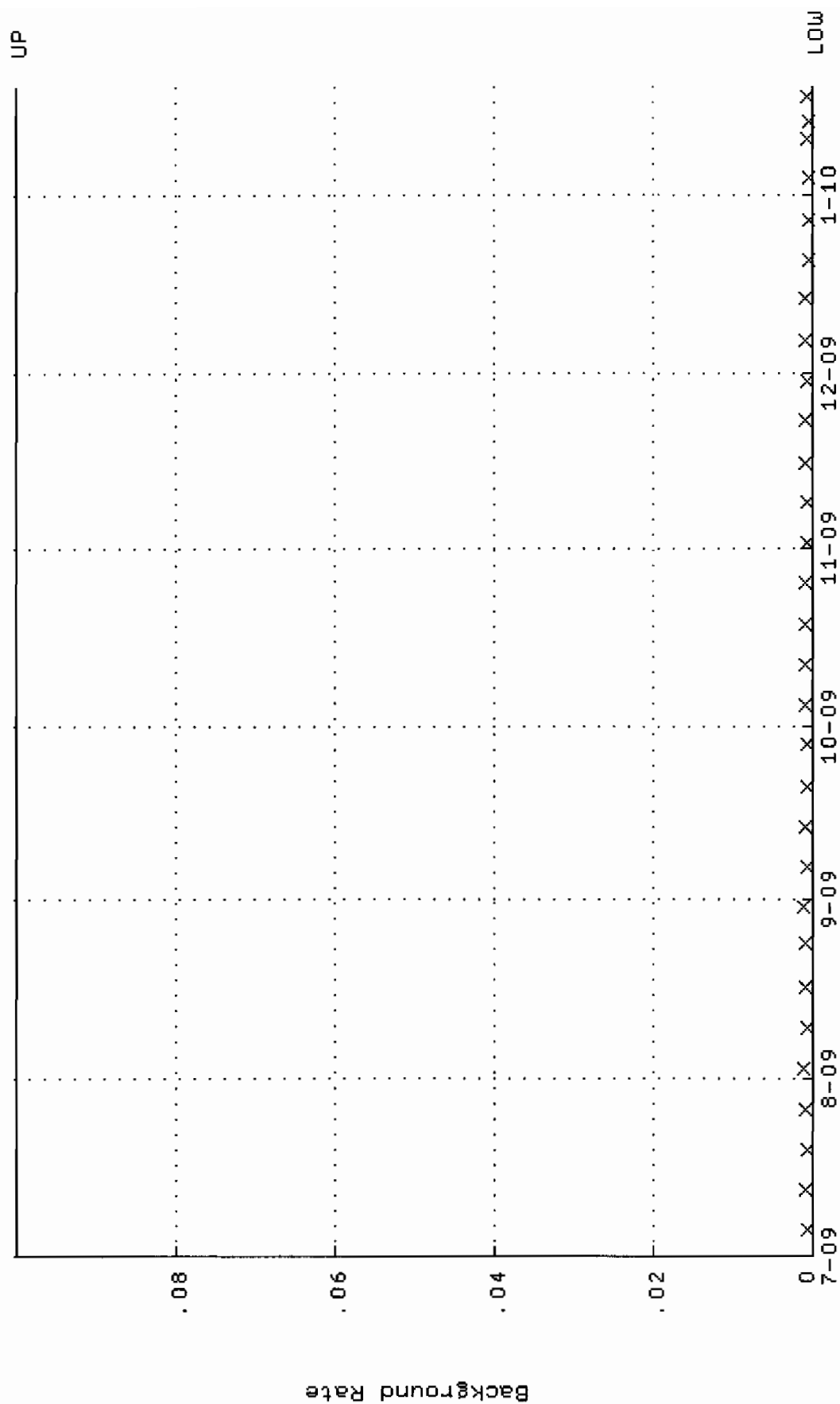


QA filename : DKA100:[ENV_ALPHA.QA.B]B149.QAF;1

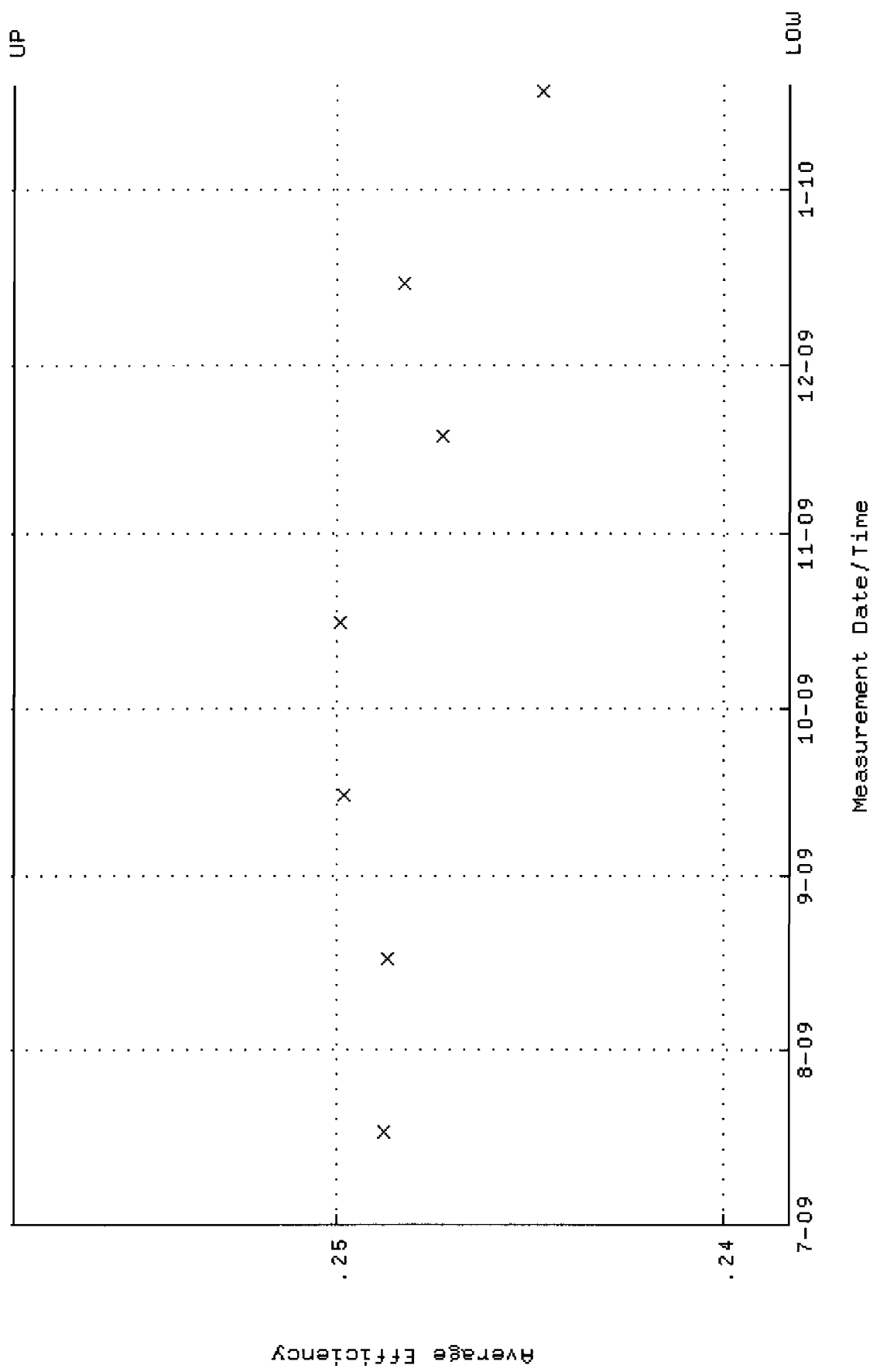
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 5-JUL-2009 14:57:43 through 19-JAN-2010 12:00:00

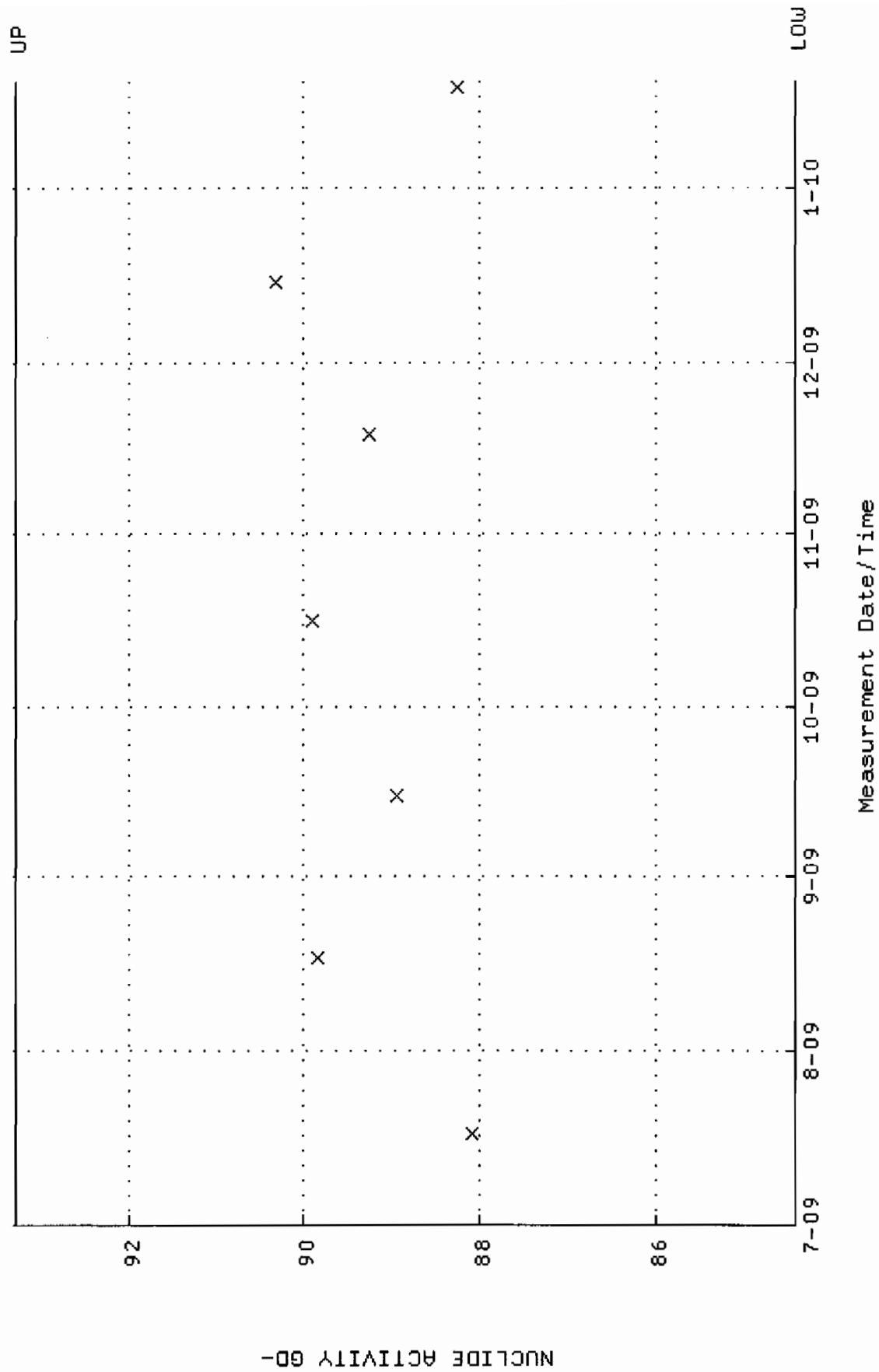
Lower/Upper Lmts: 0.000000E+00 through 0.100000



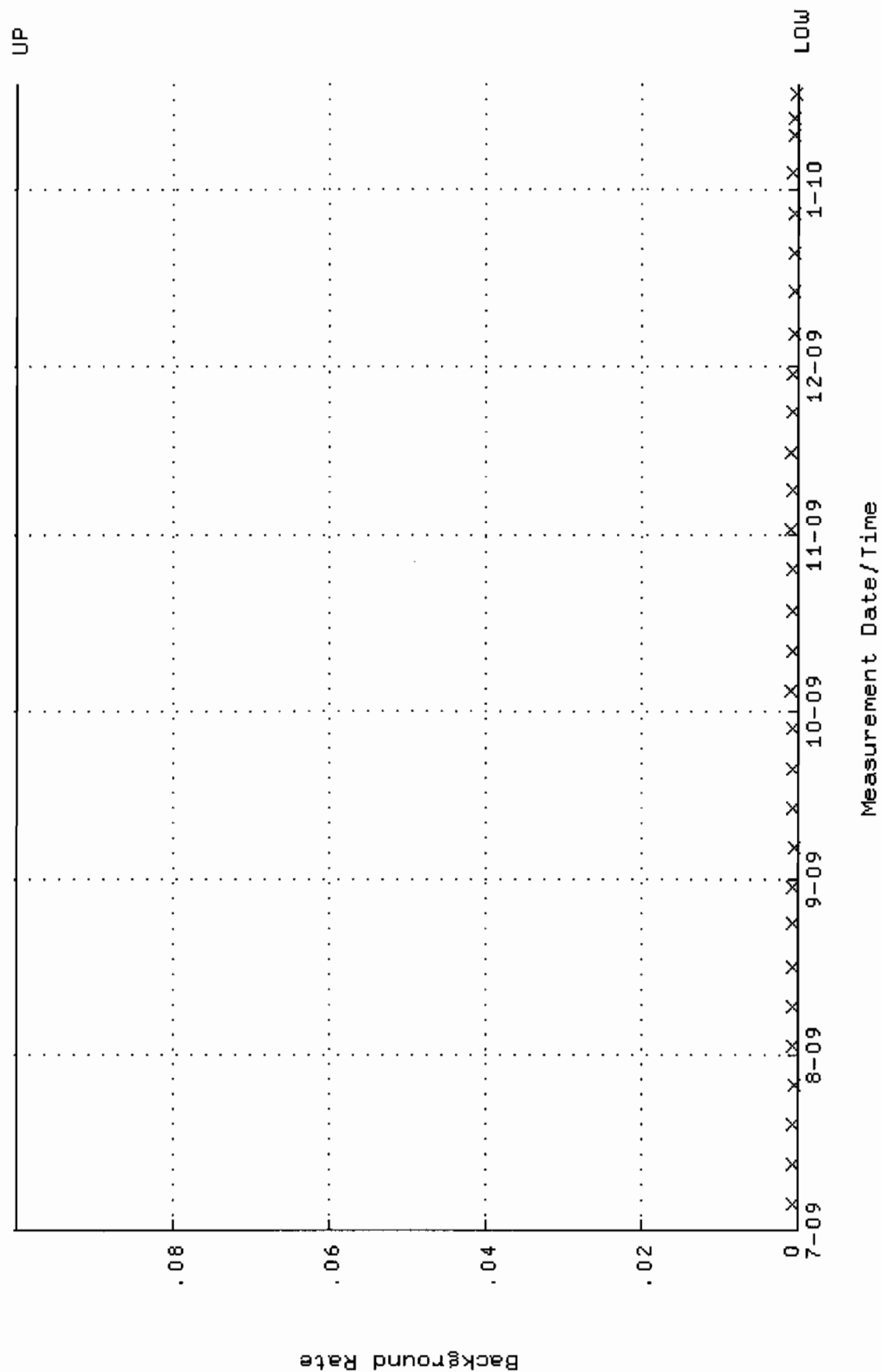
QA filename : DKA100:[ENV_ALPHA.QA.W]U150.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-JUL-2009 09:13:44 through 19-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.238314 through 0.258314



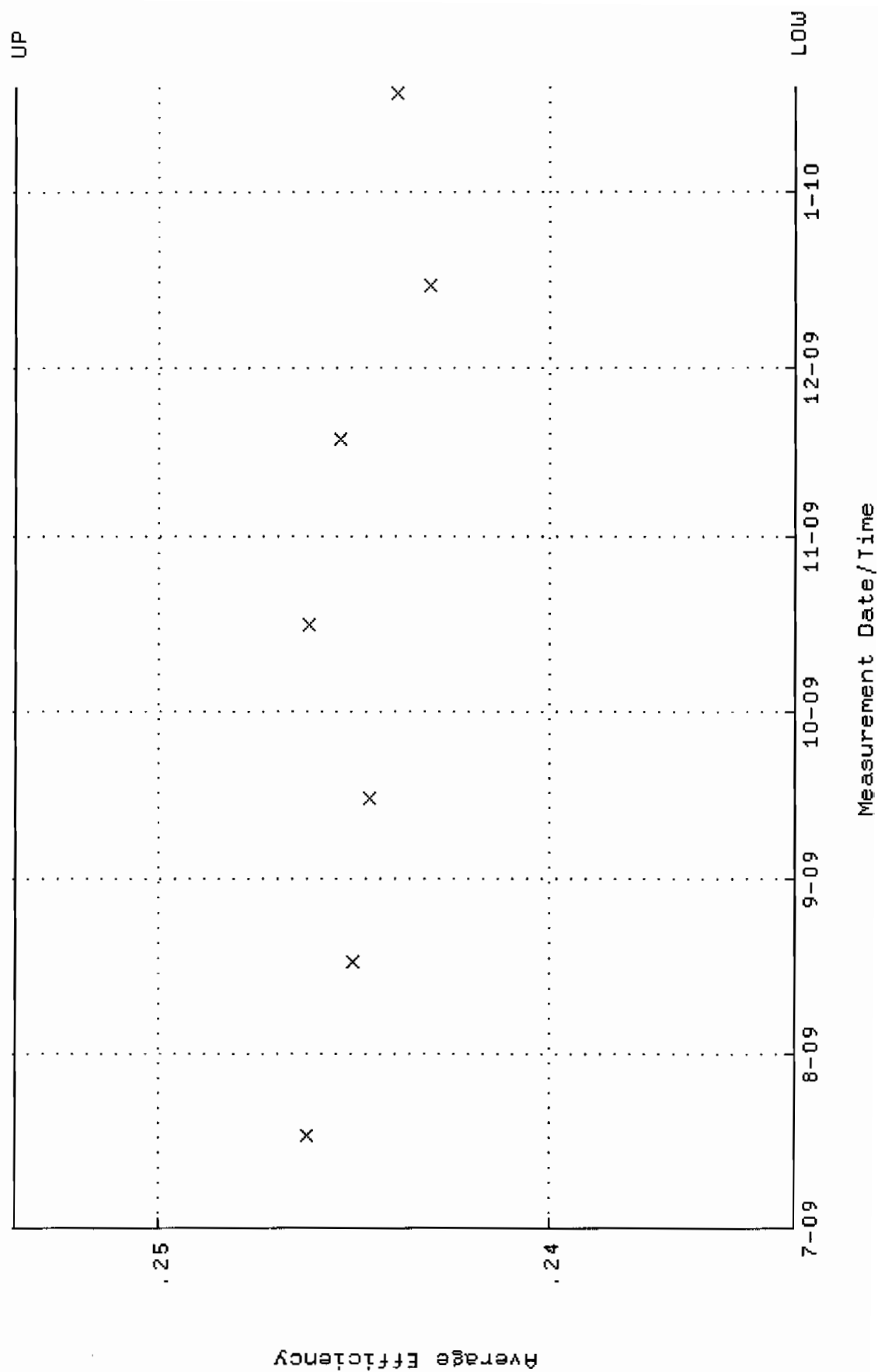
QA filename : DKA100:[ENV_ALPHA.QA.W]W150.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-JUL-2009 09:13:44 through 19-JAN-2010 12:00:00
 Lower/Upper Lmts: 84.4039 through 93.2885



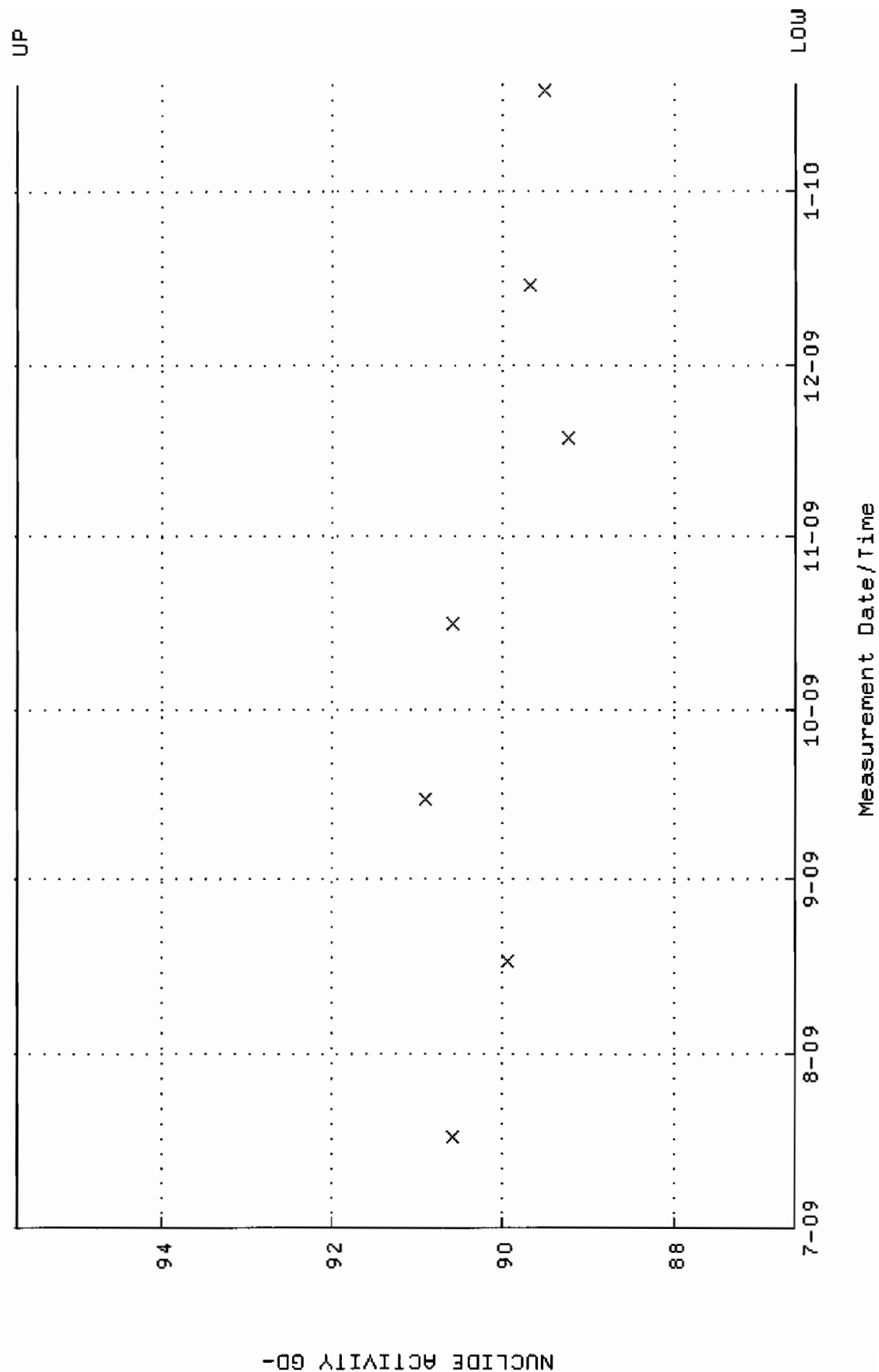
QA filename : DKA100:[ENV_ALPHA.QA.B]B150.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 14:57:48 through 19-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



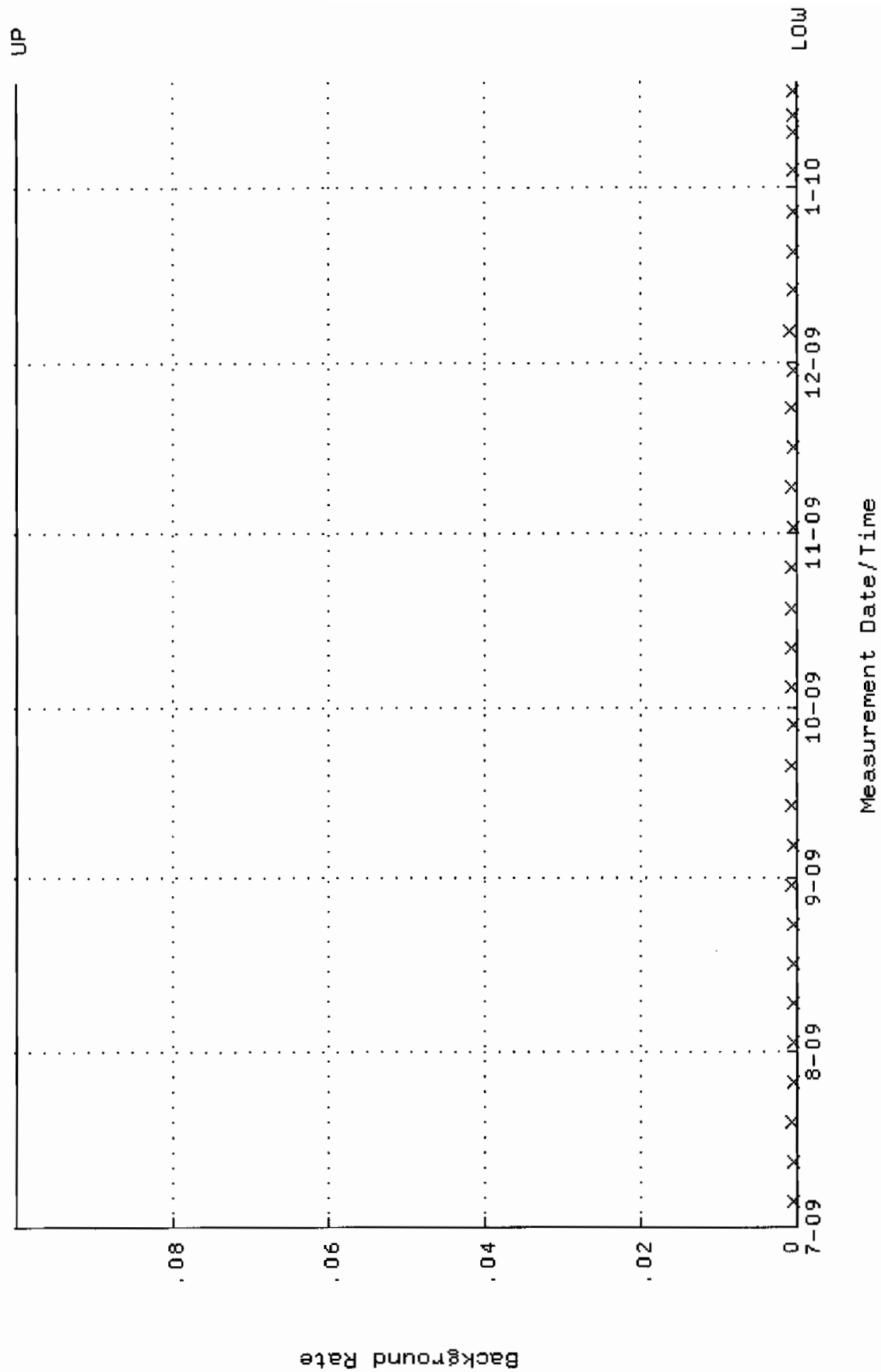
QA filename : DKA100:[ENV_ALPHA.QA.W]U151.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-JUL-2009 09:13:48 through 19-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.233693 through 0.253693



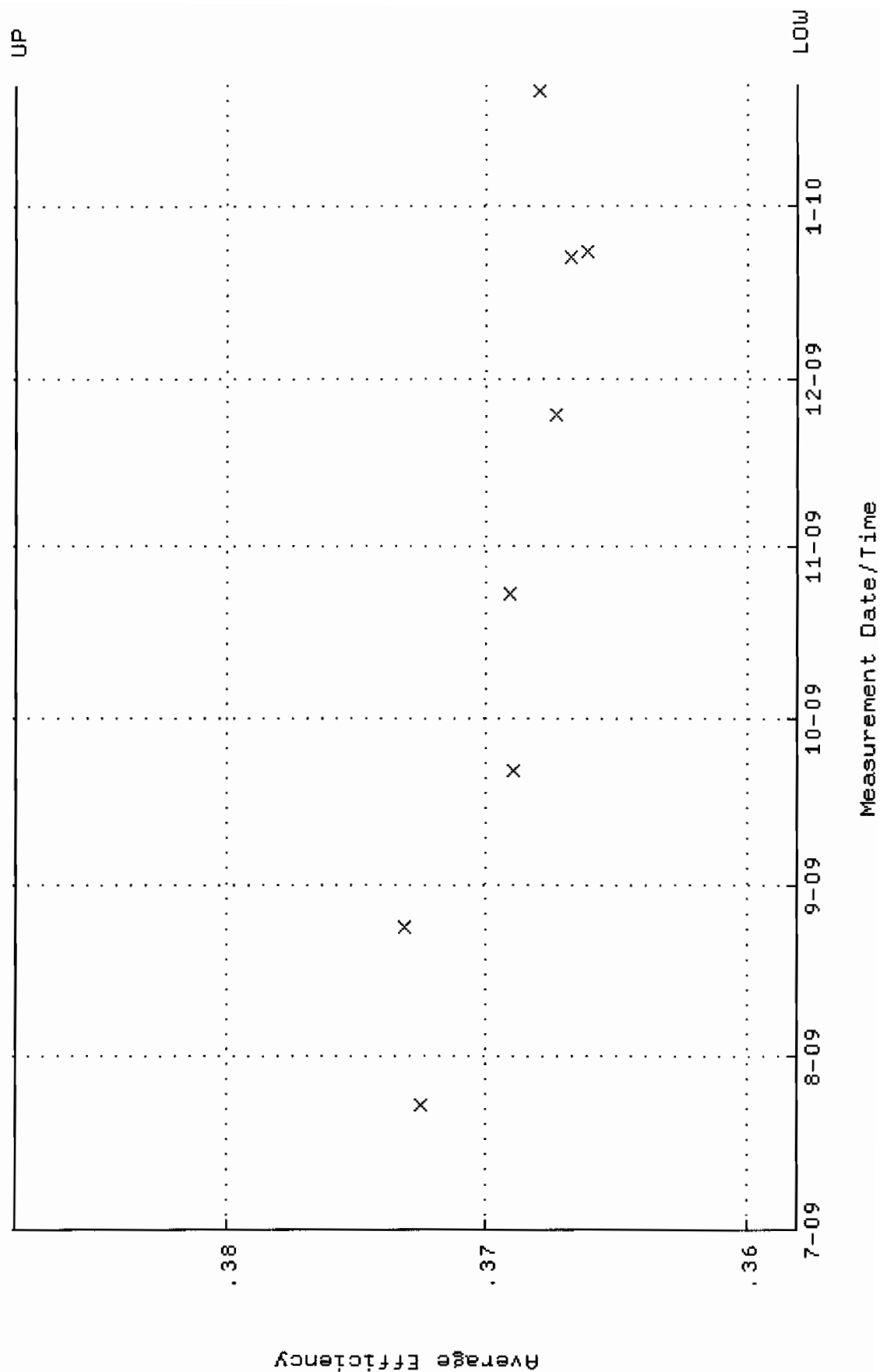
QA filename : DKA100:[ENV_ALPHA.QA.W]W151.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-JUL-2009 09:13:48 through 19-JAN-2010 12:00:00
 Lower/Upper Lmts: 86.5749 through 95.6881



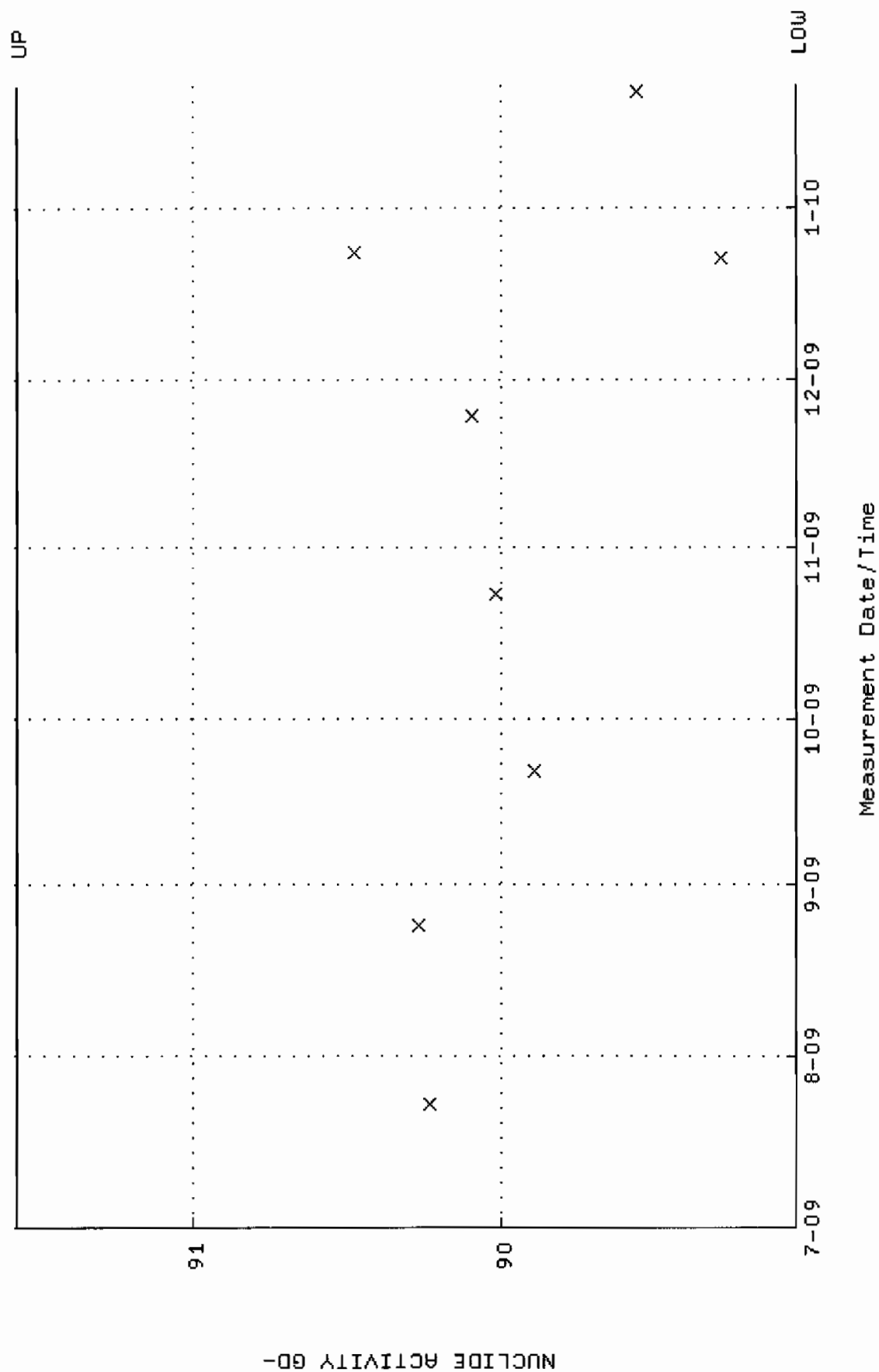
QA filename : DKA100:[ENV_ALPHA.QA.B]B151.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 14:57:53 through 19-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



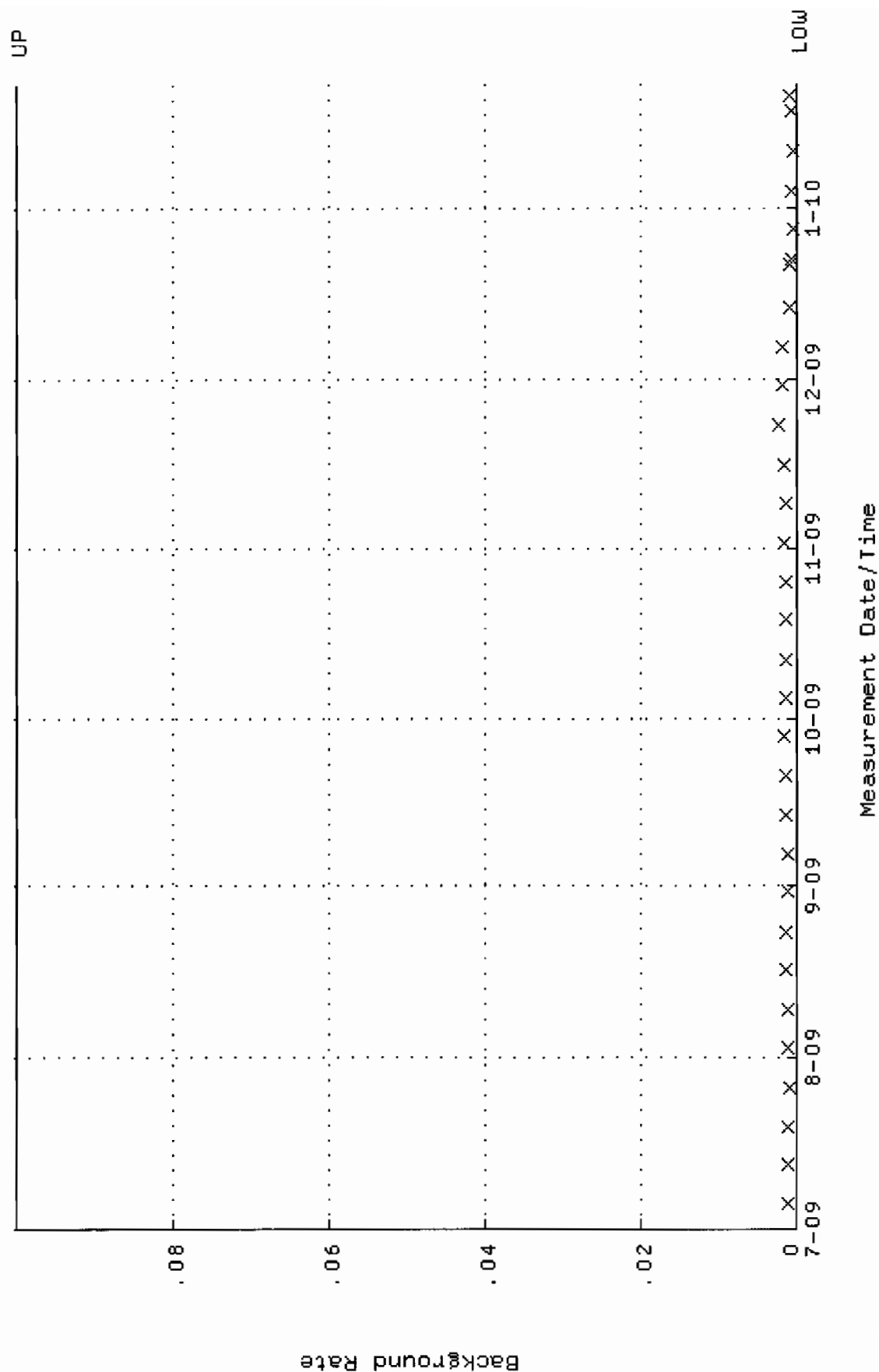
QA filename : DKA100:[ENV_ALPHA.QA.W]W161.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 23-JUL-2009 08:06:57 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.358070 through 0.388144



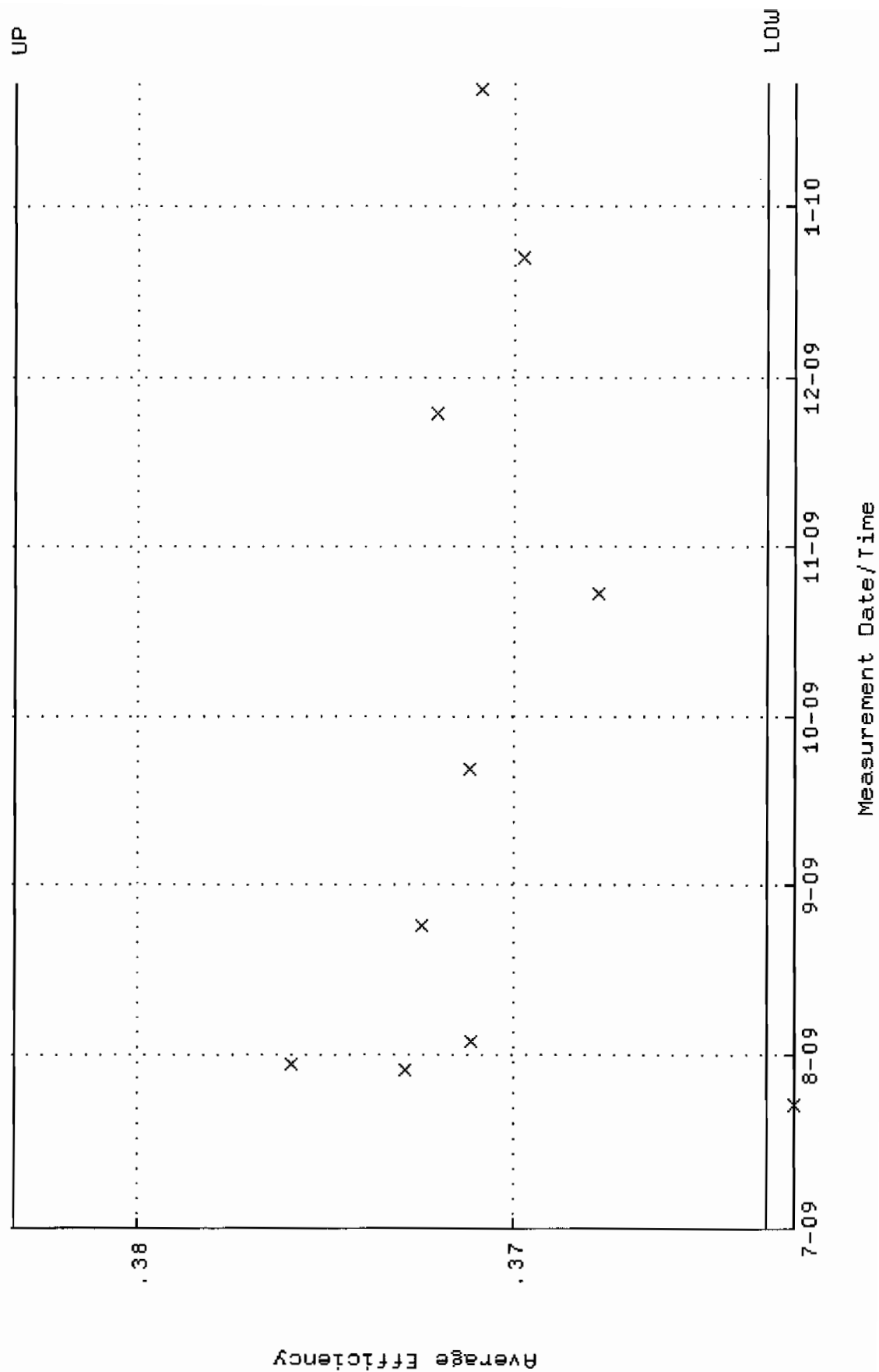
QA filename : DKA100:[ENV_ALPHA.QA.W]W161.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 23-JUL-2009 08:06:57 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 89.0418 through 91.5702



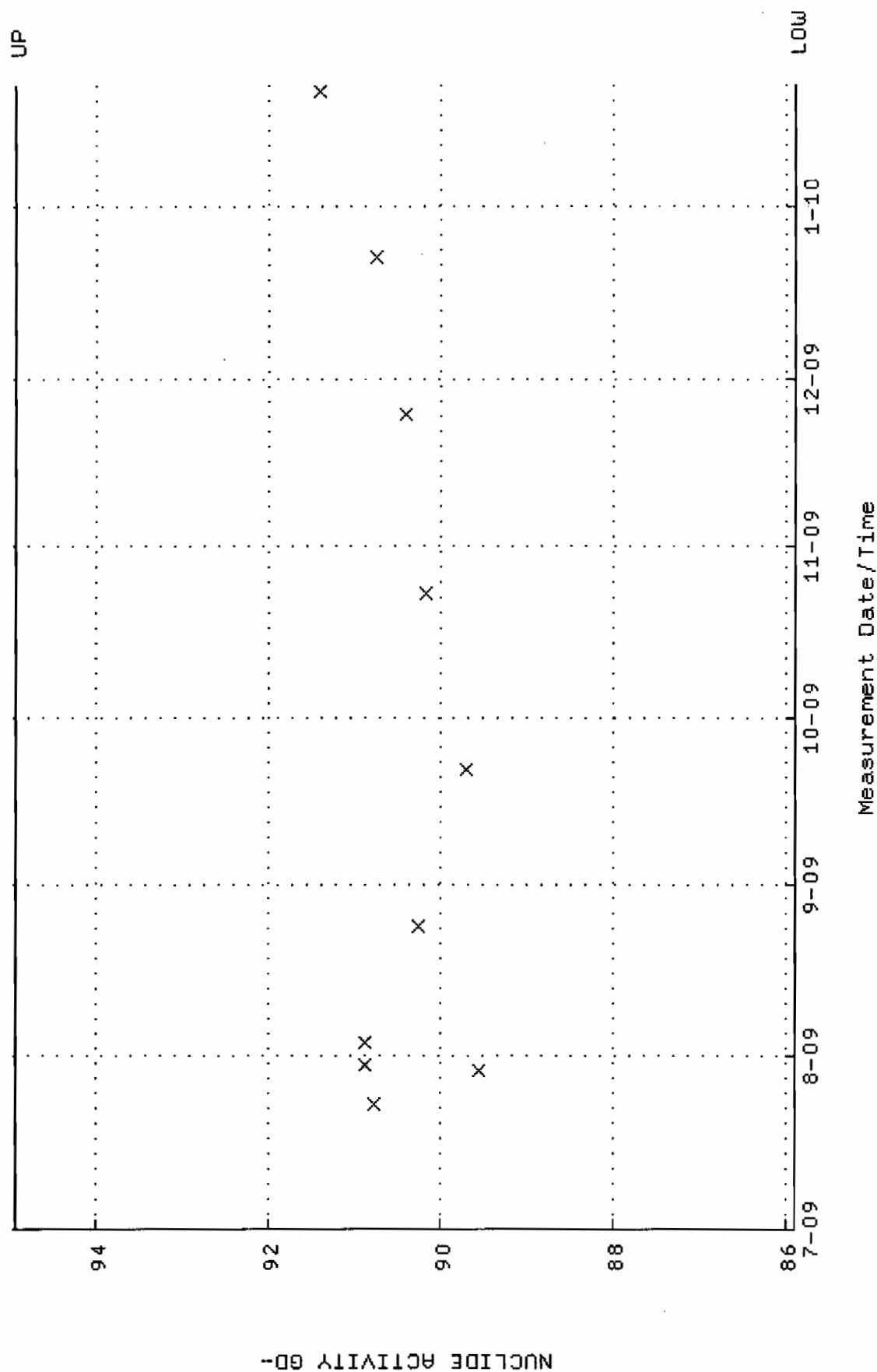
QA filename : DKA100:[ENV_ALPHA.QA.B]B161.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 14:59:28 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



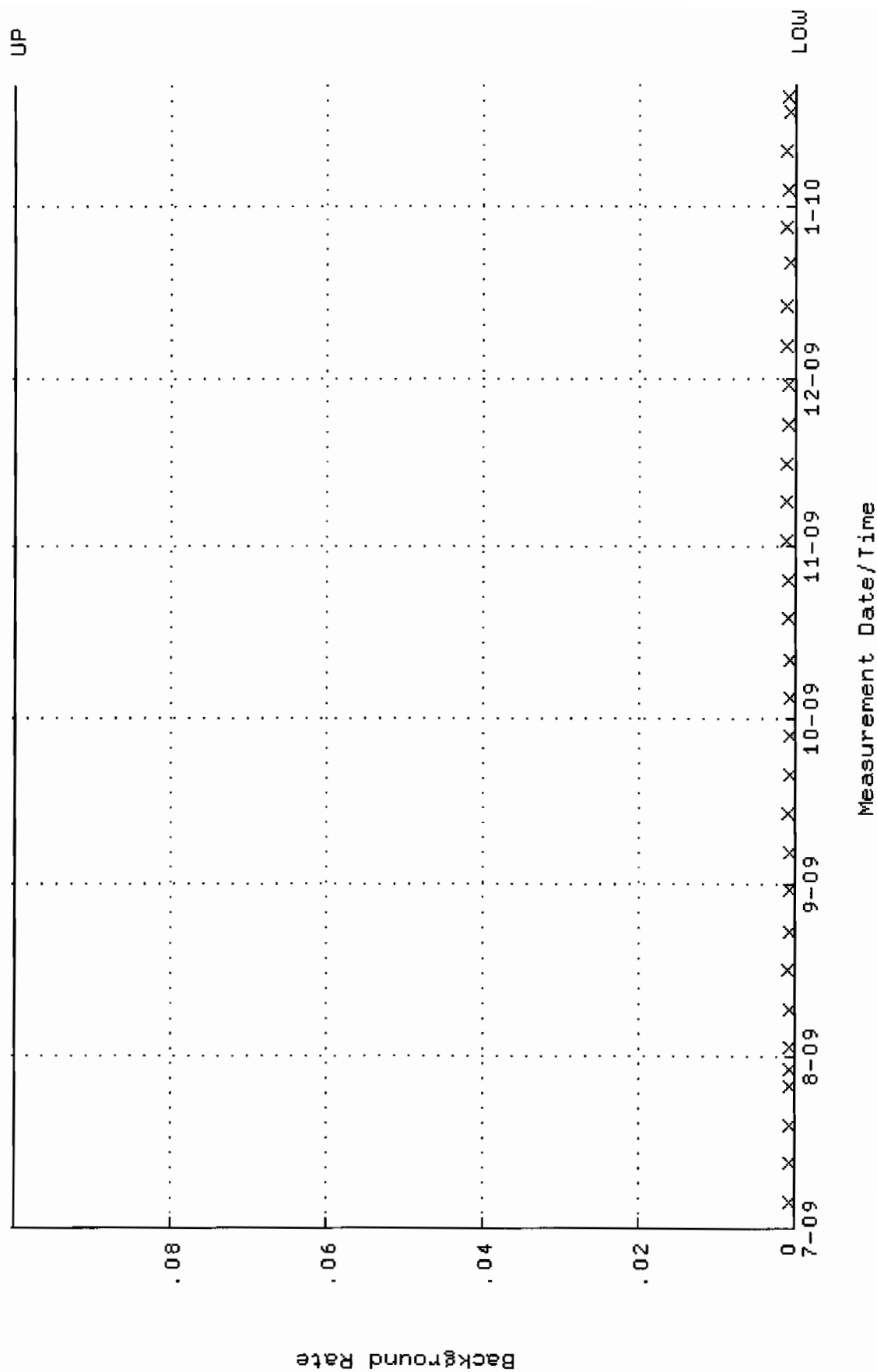
QA filename : DKA100:[ENV_ALPHA.QA.W]W162.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 23-JUL-2009 08:07:02 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.363287 through 0.383287



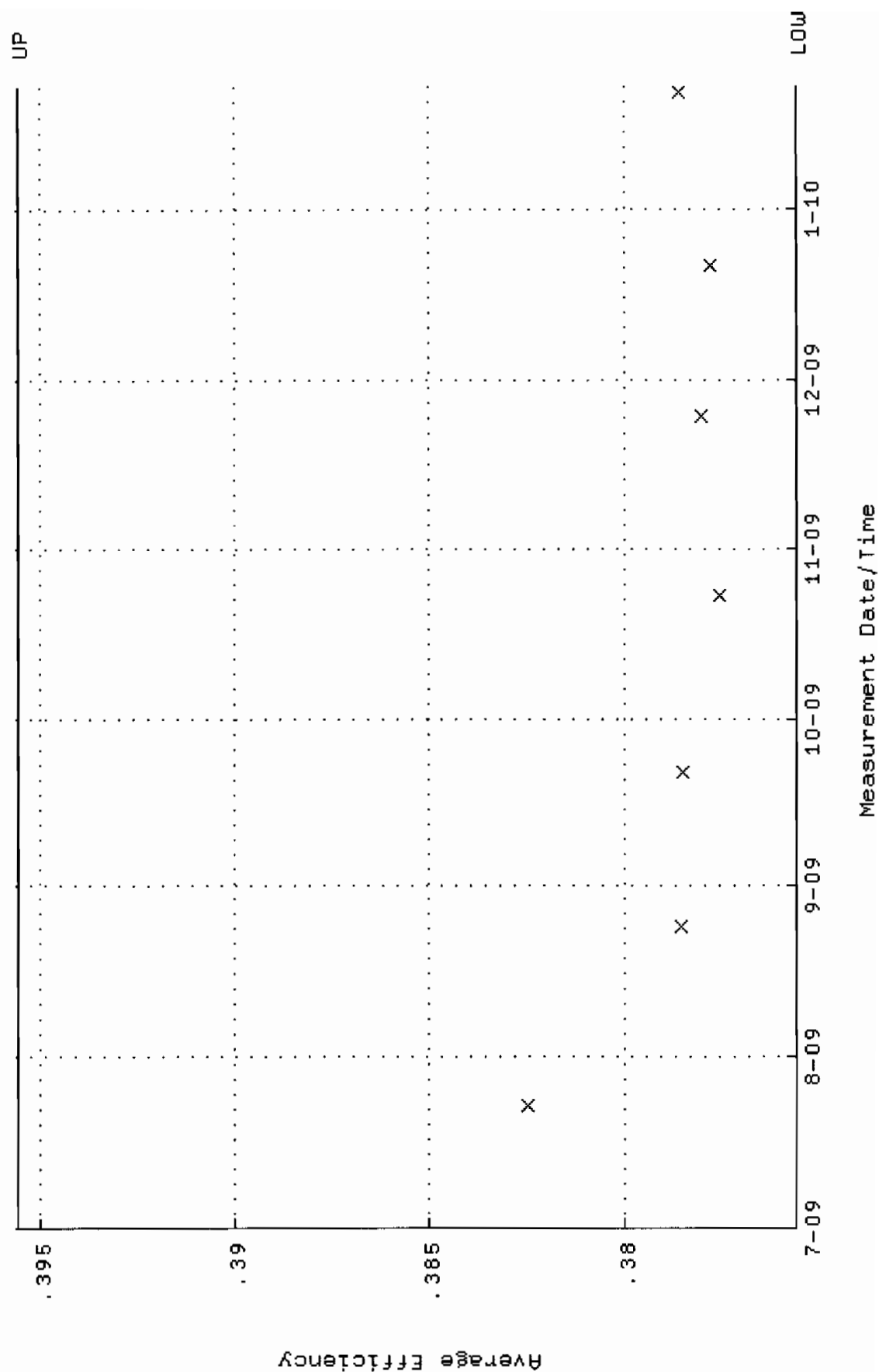
QA filename : DKA100:[ENV_ALPHA.QA.W]W162.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 23-JUL-2009 08:07:02 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 85.8969 through 94.9387



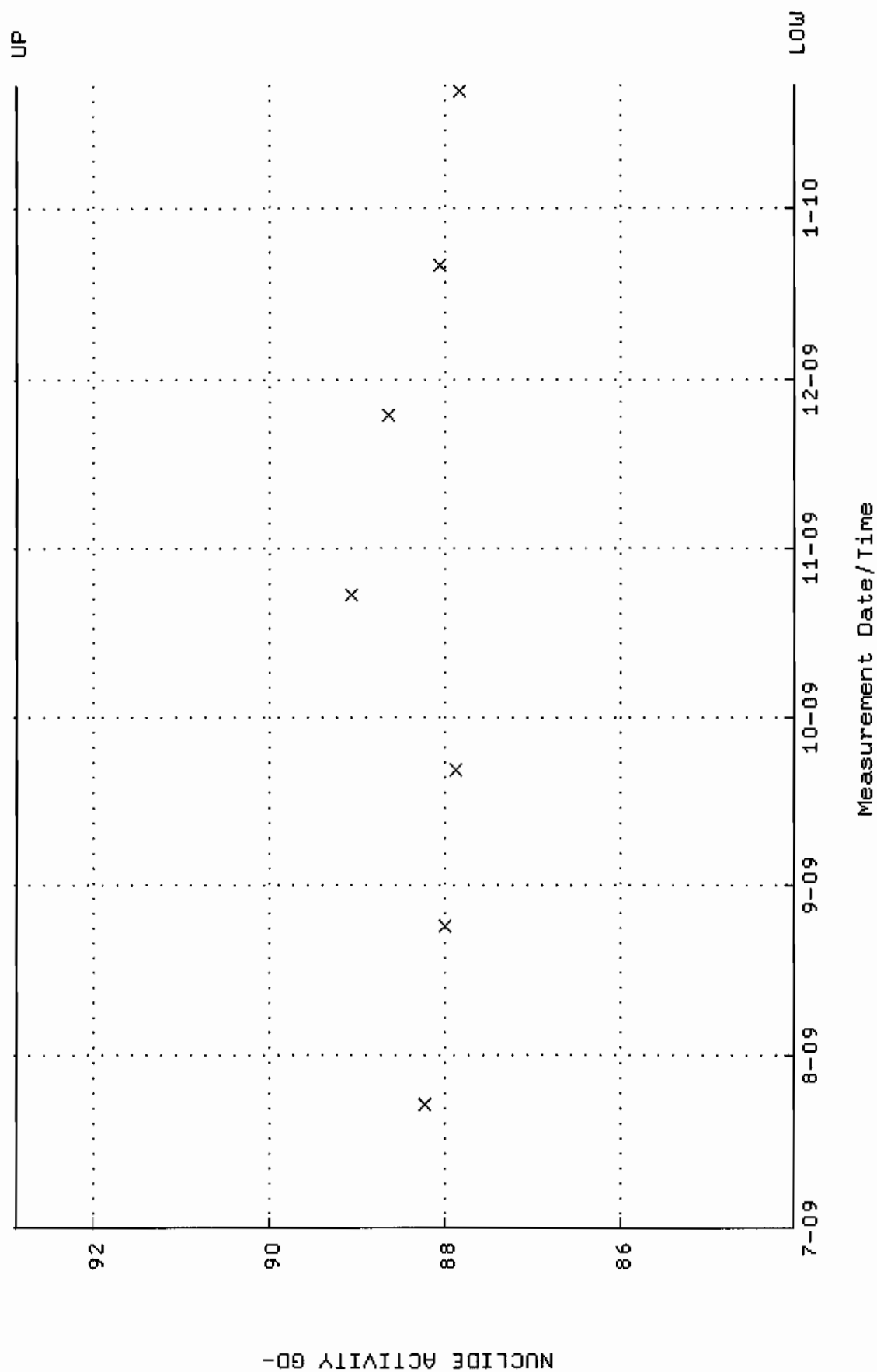
QA filename : DKA100:[ENV_ALPHA.QA.B]B162.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 14:59:33 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



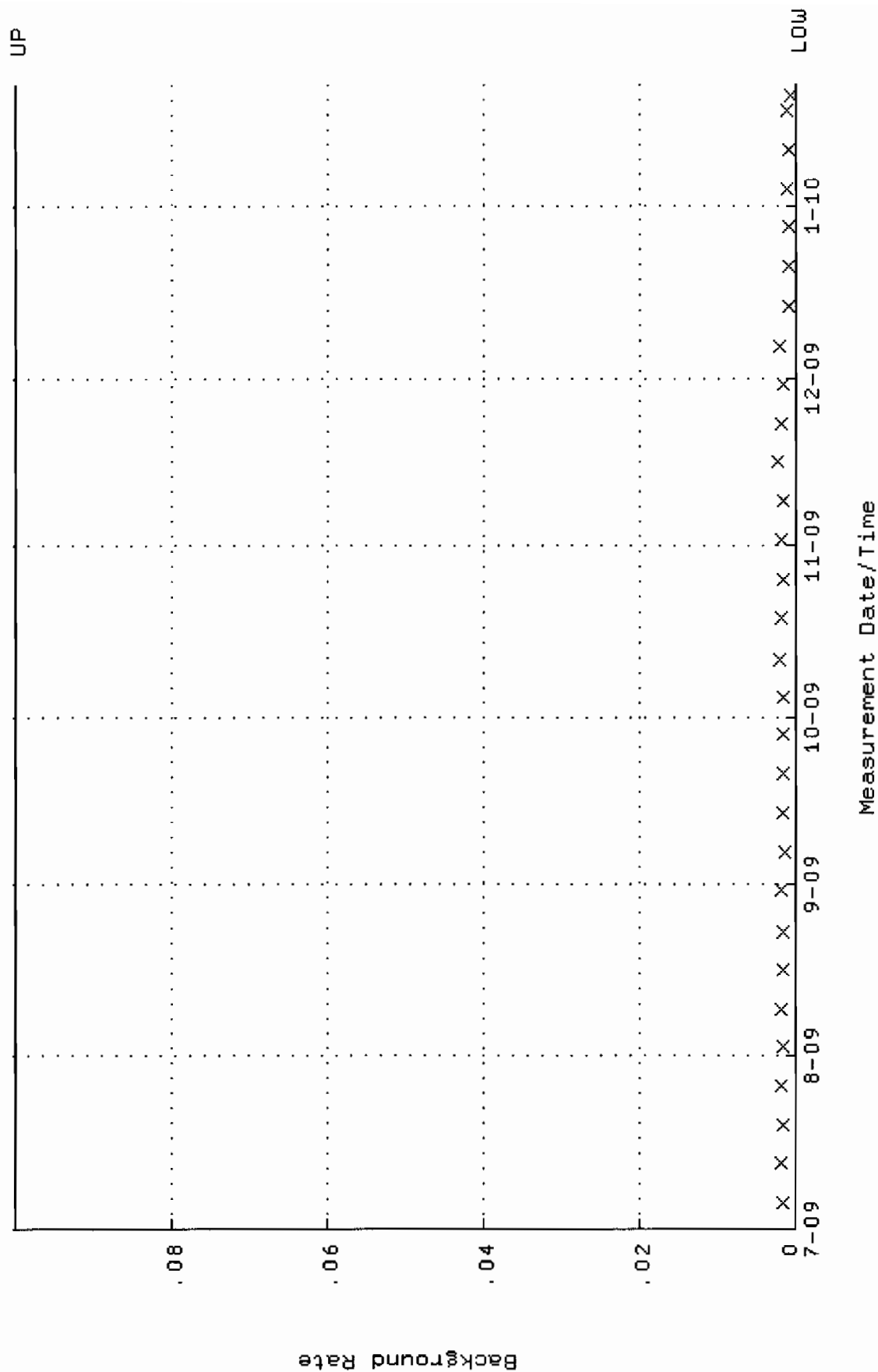
QA filename : DKA100:[ENV_ALPHA.QA.W]W163.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 23-JUL-2009 08:07:06 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.375557 through 0.395557



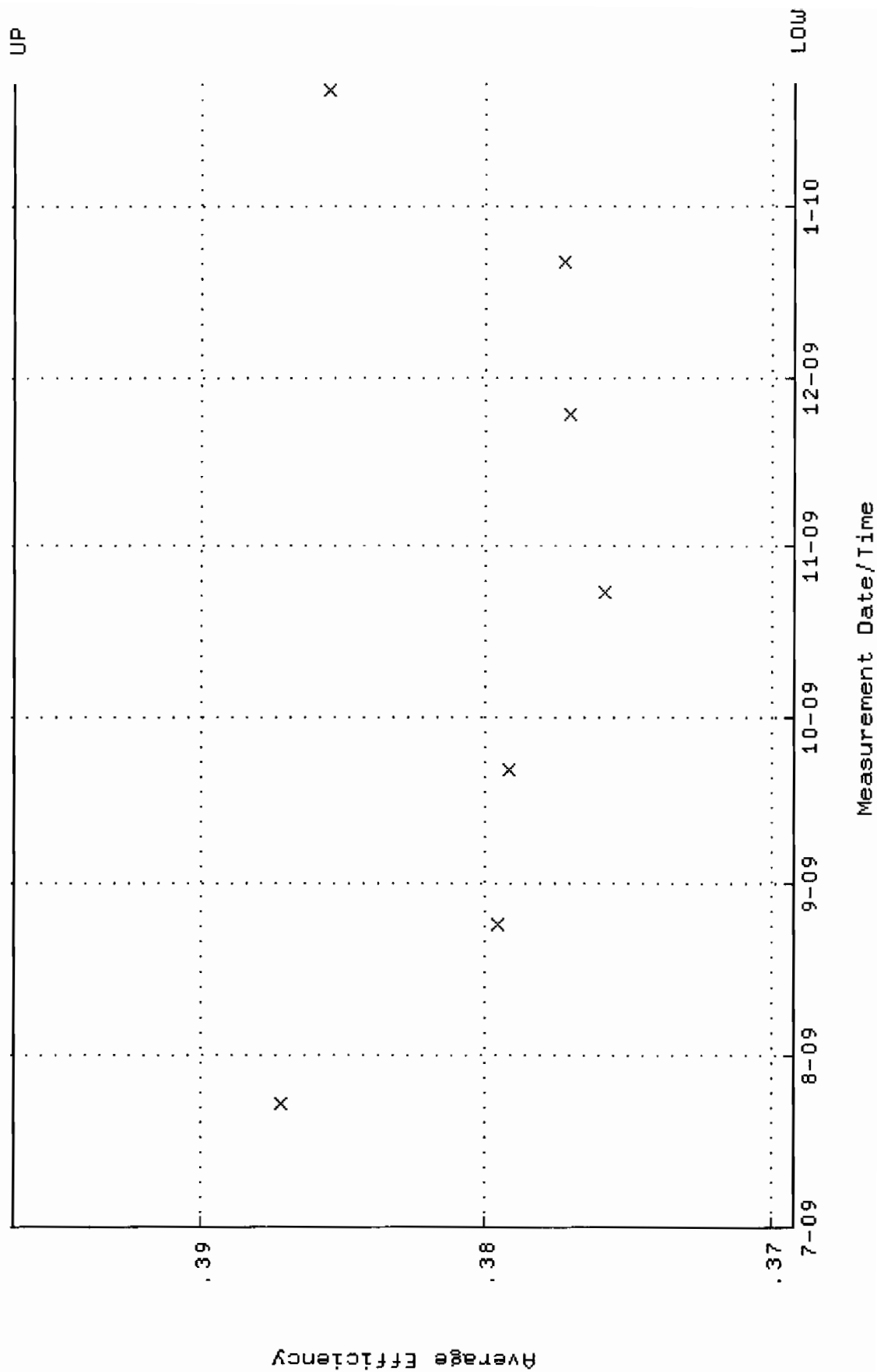
QA filename : DKA100:[ENV_ALPHA.QA.W]W163.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 23-JUL-2009 08:07:06 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 84.0322 through 92.8777



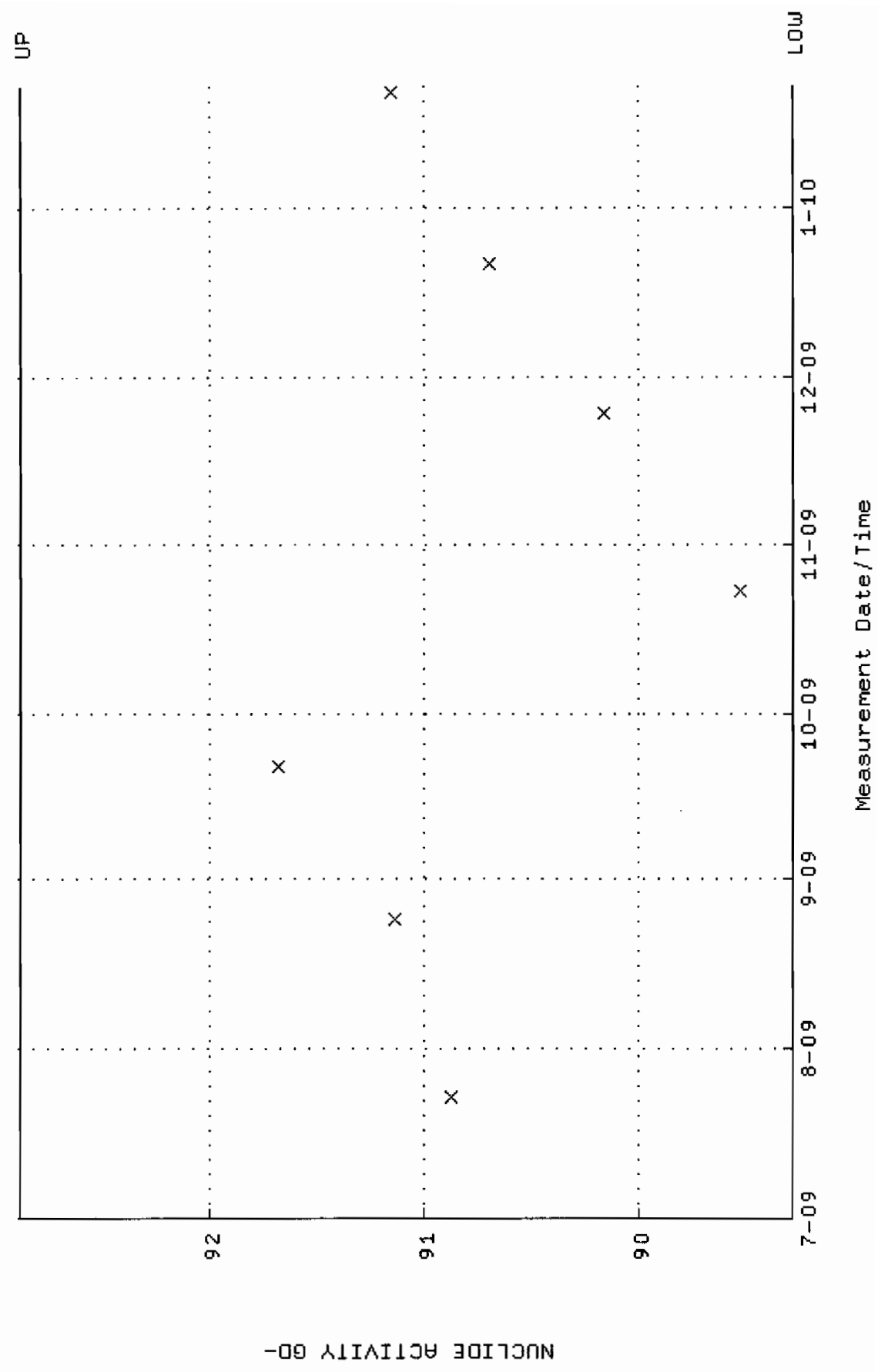
QA filename : DKA100:[ENV_ALPHA.QA.B]B163.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 14:59:38 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



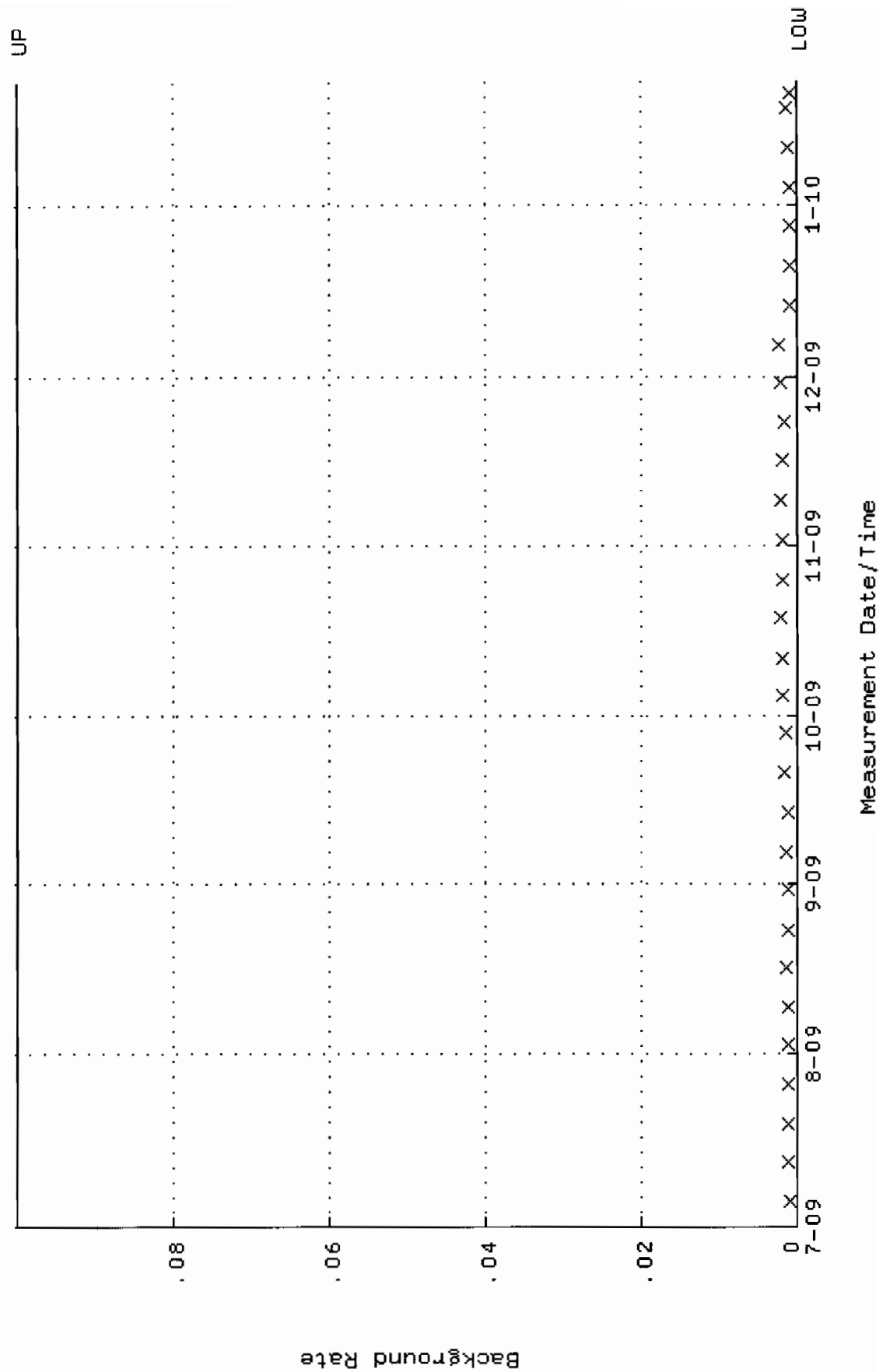
QA filename : DKA100:[ENV_ALPHA.QA.W]W164.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 23-JUL-2009 08:07:11 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.369199 through 0.396555



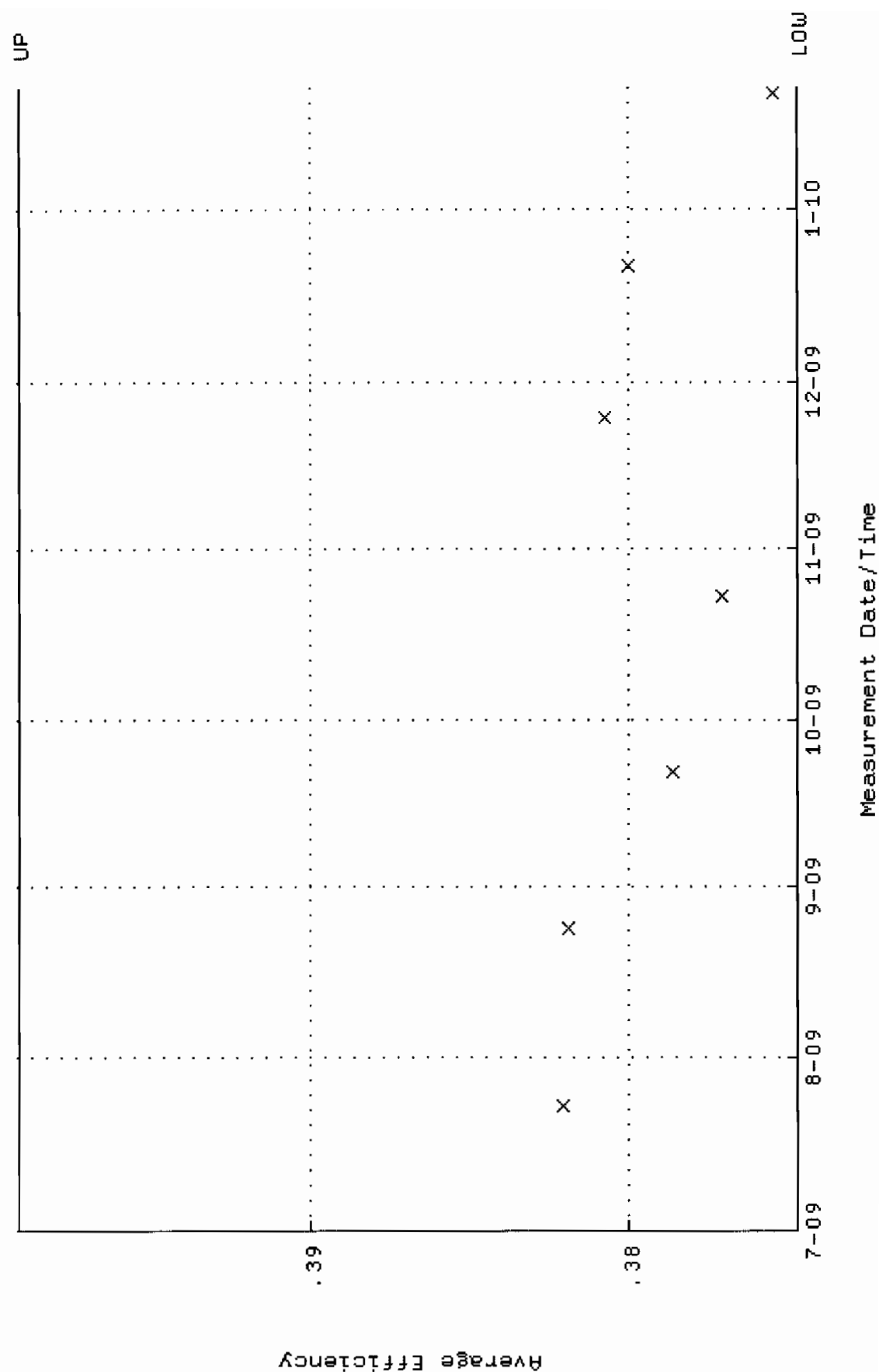
QA filename : DKA100:[ENV_ALPHA.QA.W]W164.QAF;1
Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 23-JUL-2009 08:07:11 through 22-JAN-2010 12:00:00
Lower/Upper Lmts: 89.2764 through 92.8786



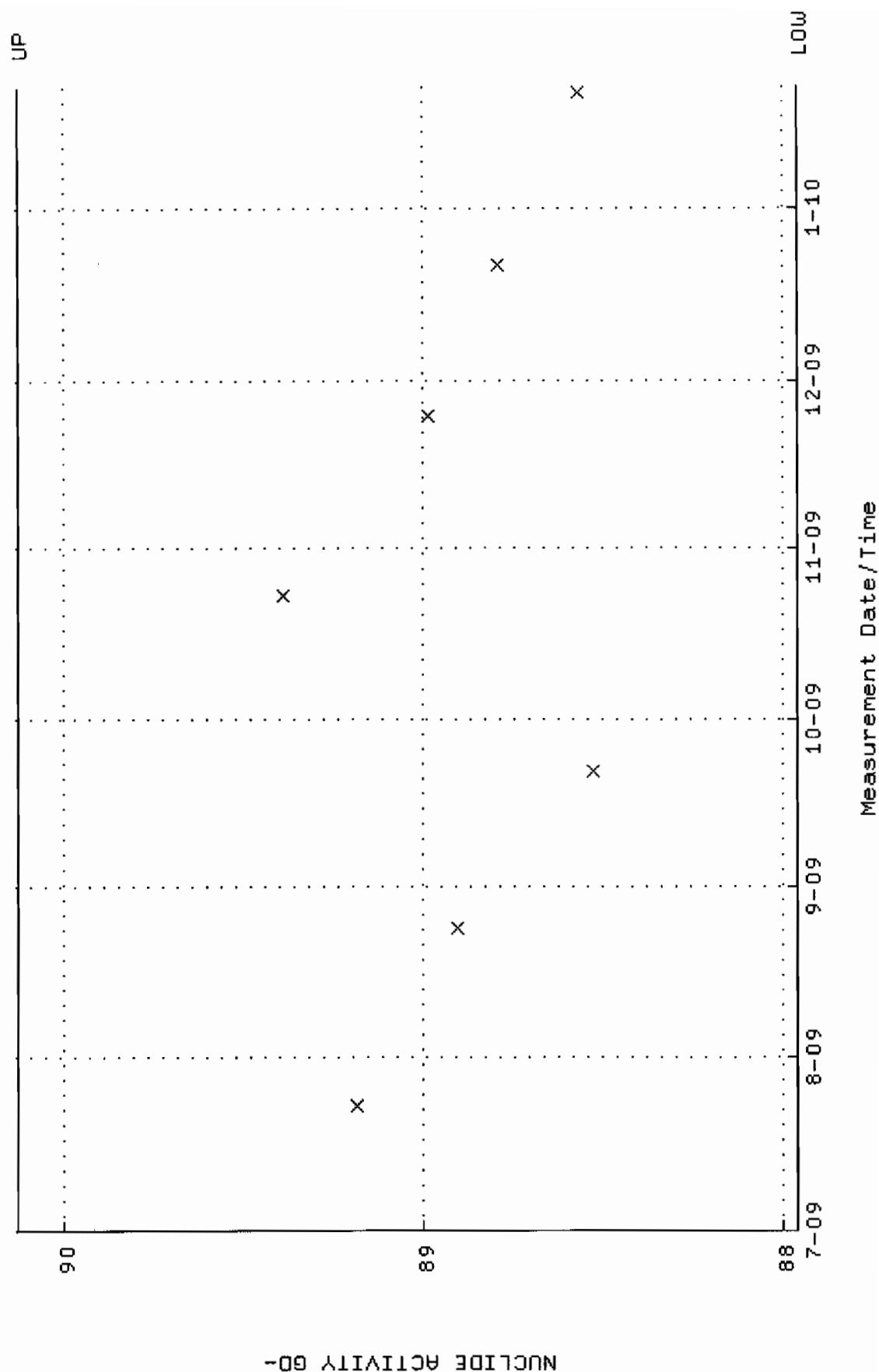
QA filename : DKA100:[ENV_ALPHA.QA.B]B164.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 14:59:44 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



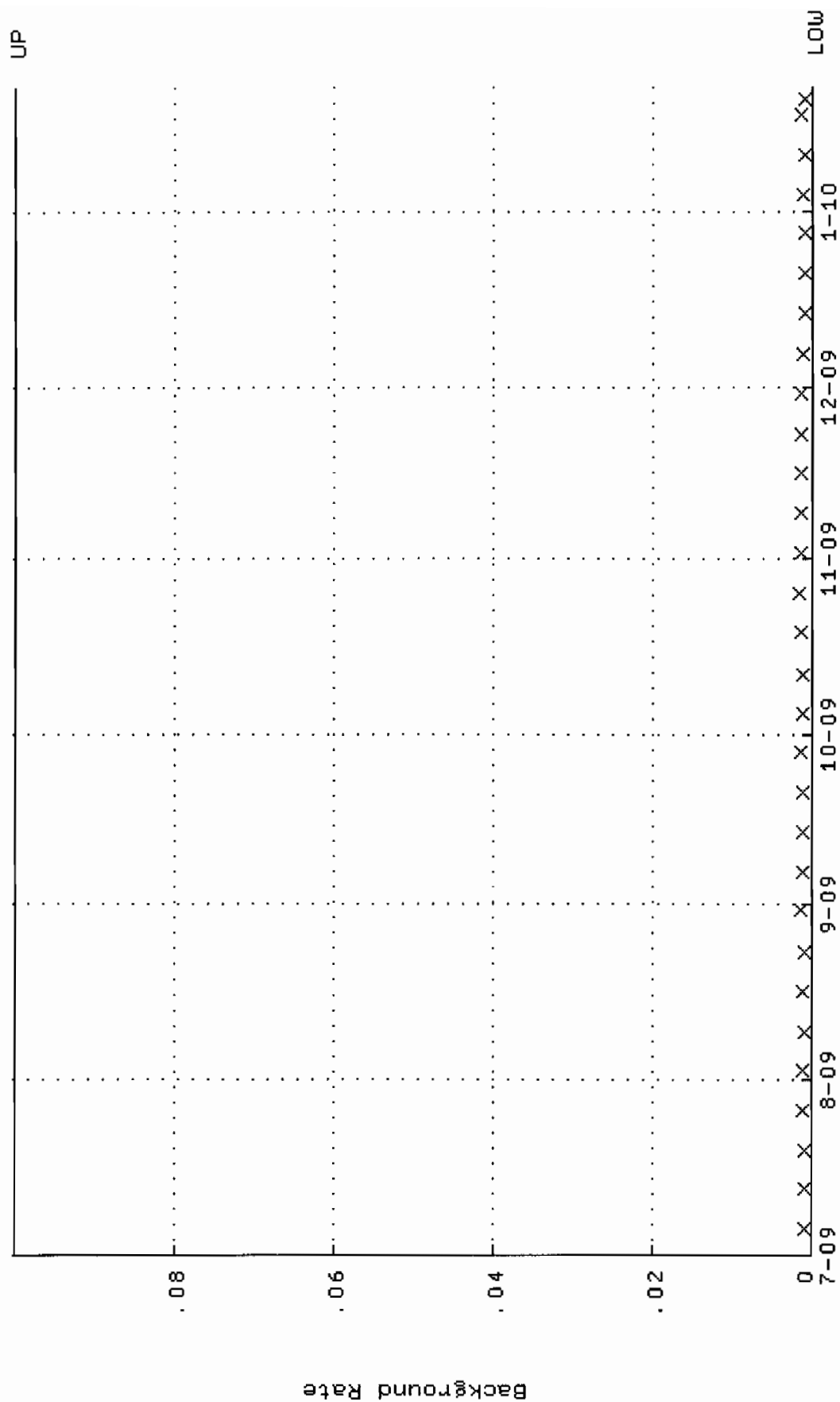
QA filename : DKA100:[ENV_ALPHA.QA.W]W165.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 23-JUL-2009 08:07:15 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.374689 through 0.399127



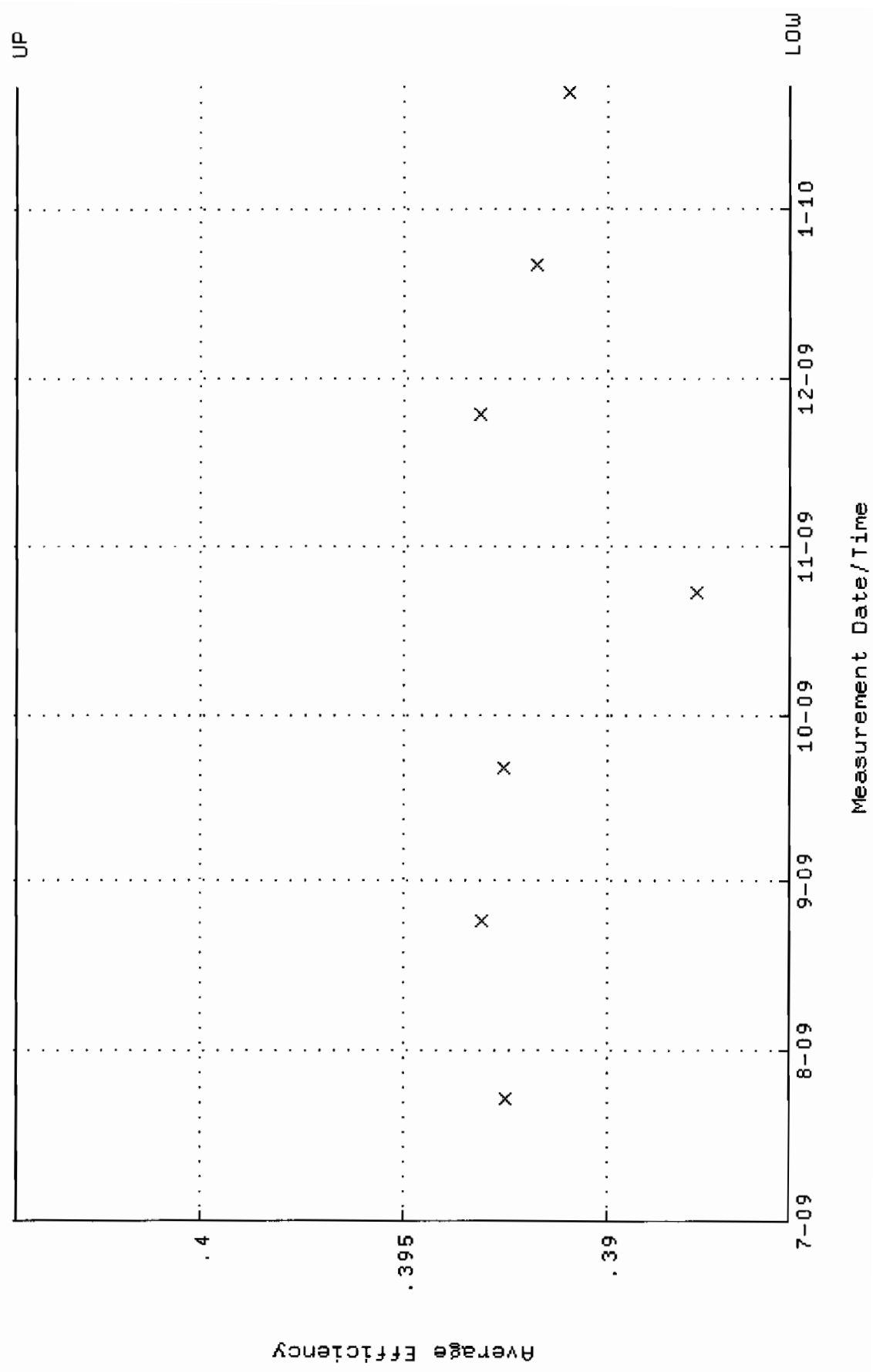
QA filename : DKA100:[ENV_ALPHA.QA.W]W165.QAF;1
 Parameter Name : NLACTVY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 23-JUL-2009 08:07:15 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 87.9613 through 90.1269



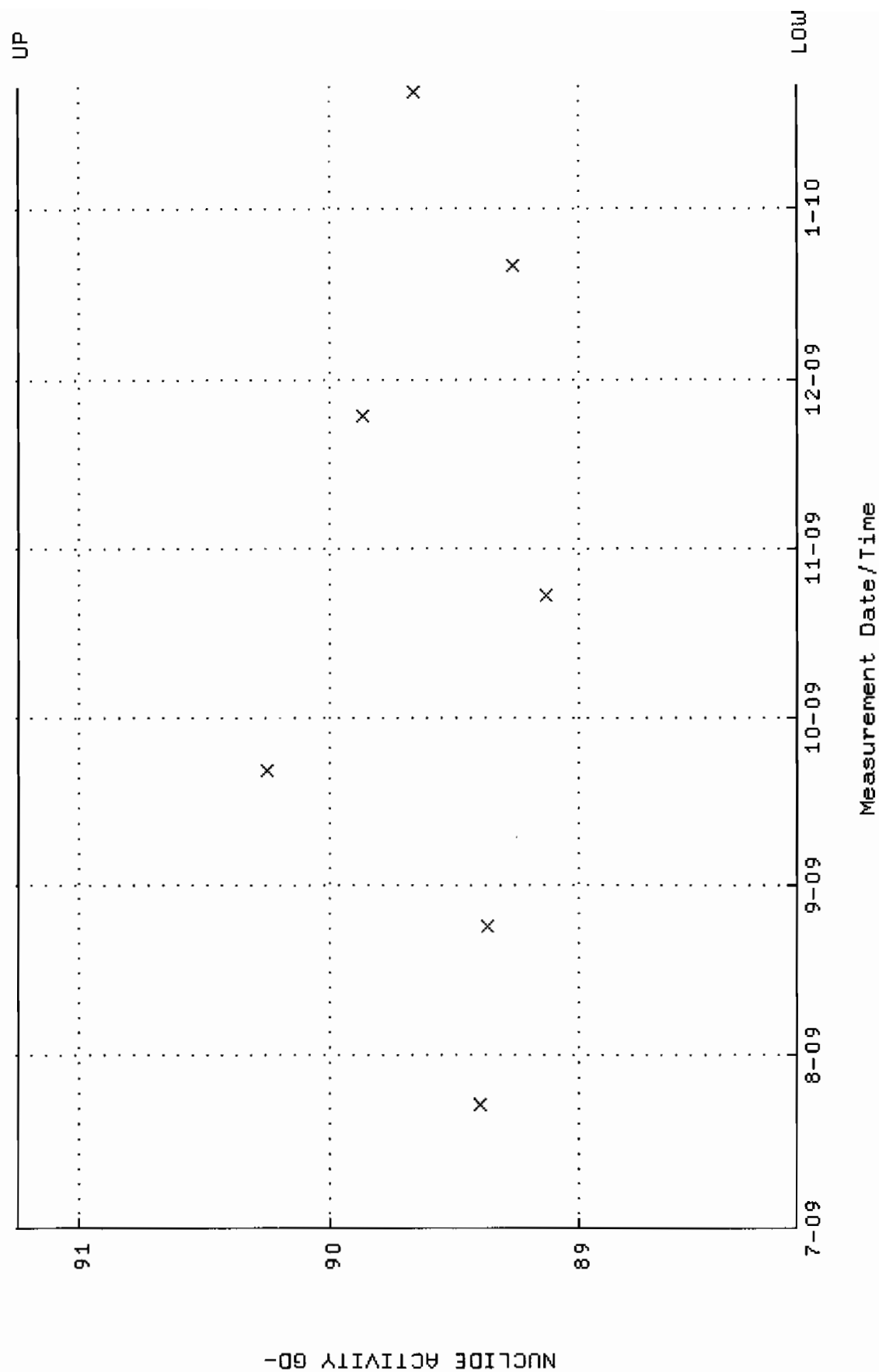
QA filename : DKA100:[ENV_ALPHA.QA.B]B165.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 14:59:49 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



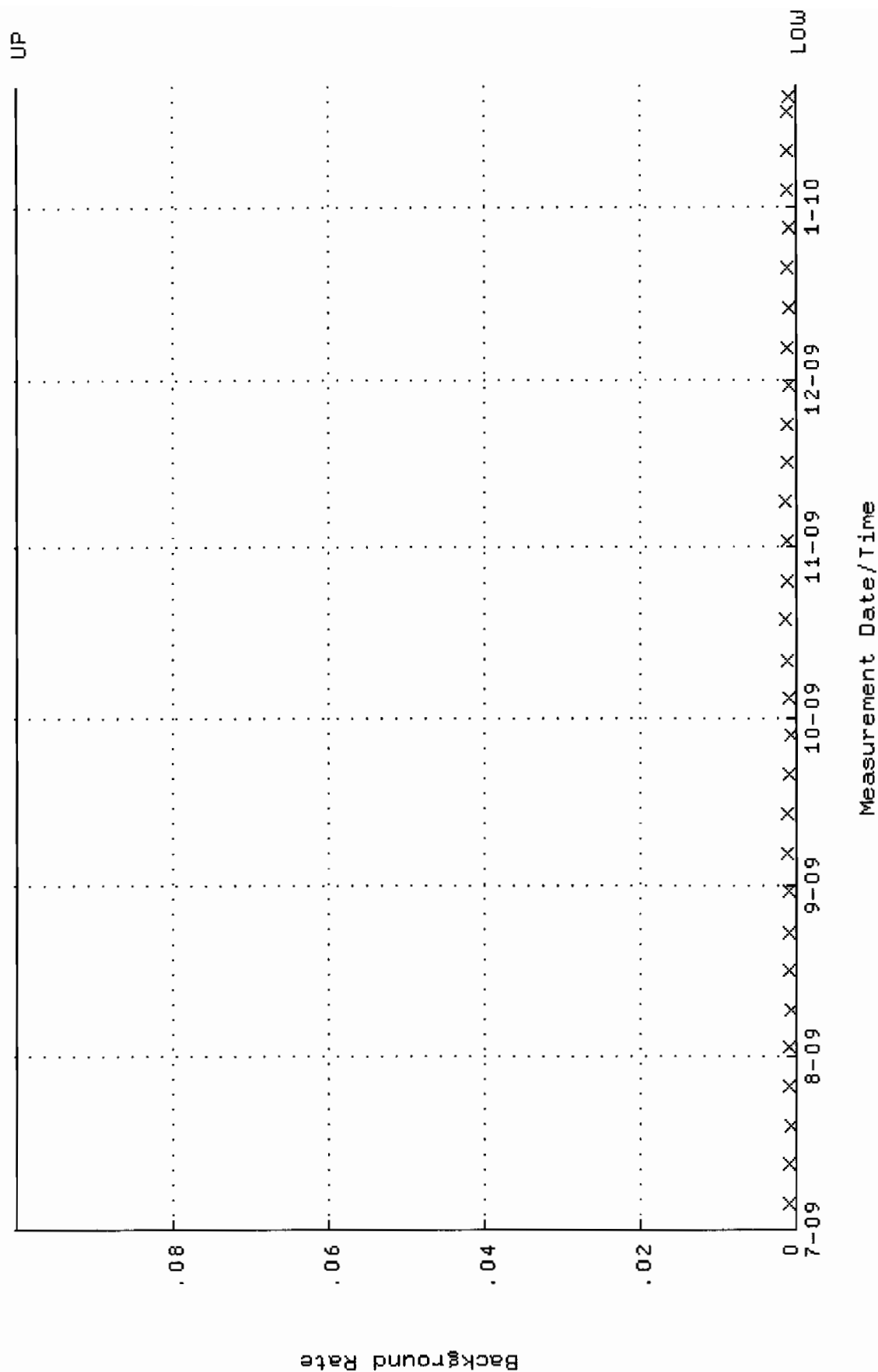
QA filename : DKA100:[ENV-ALPHA.QA.W]W166.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 23-JUL-2009 08:07:19 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.385564 through 0.404504



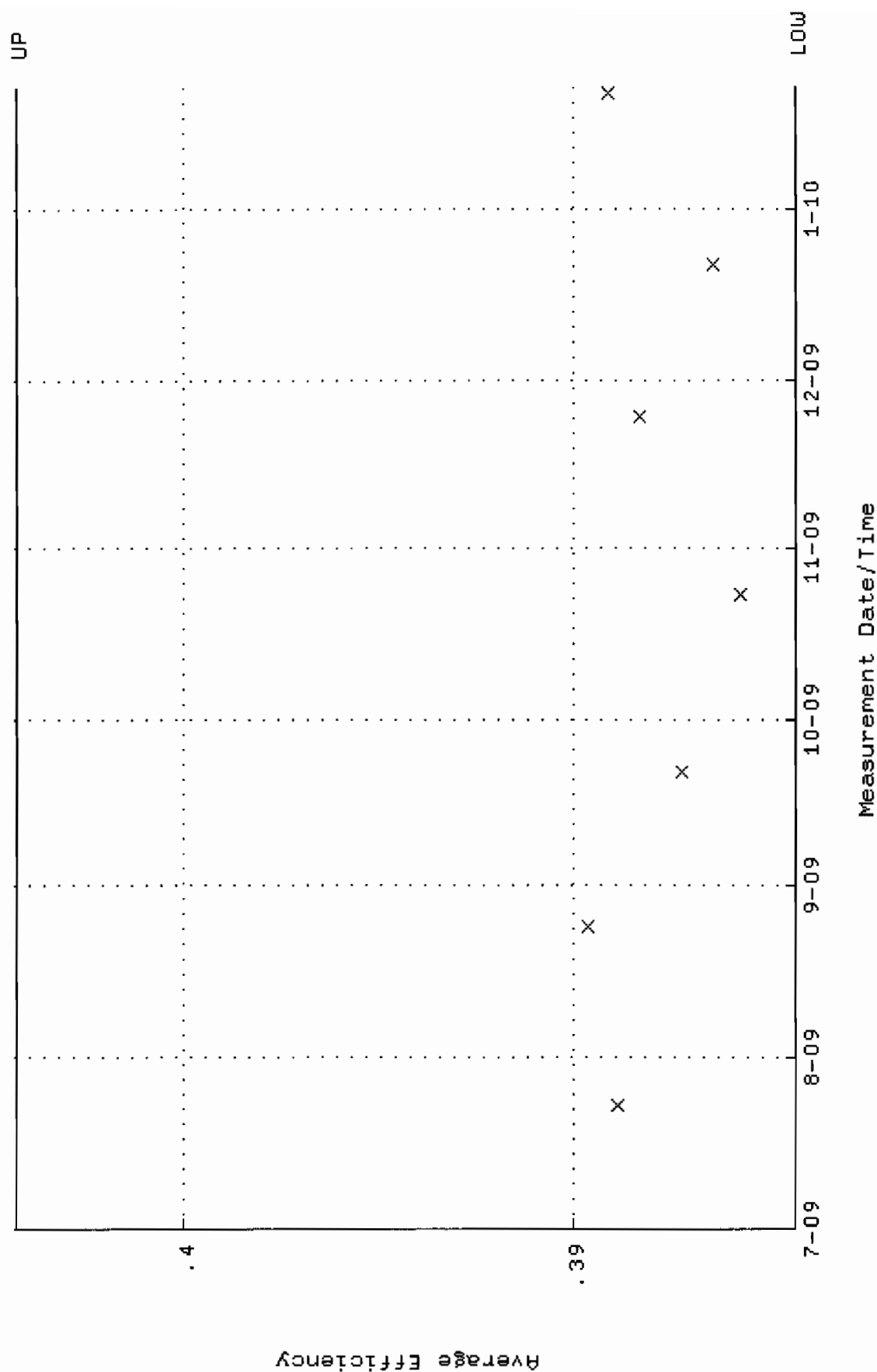
QA filename : DKA100:[ENV_ALPHA.QA.W]W166.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 23-JUL-2009 08:07:19 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 88.1264 through 91.2442



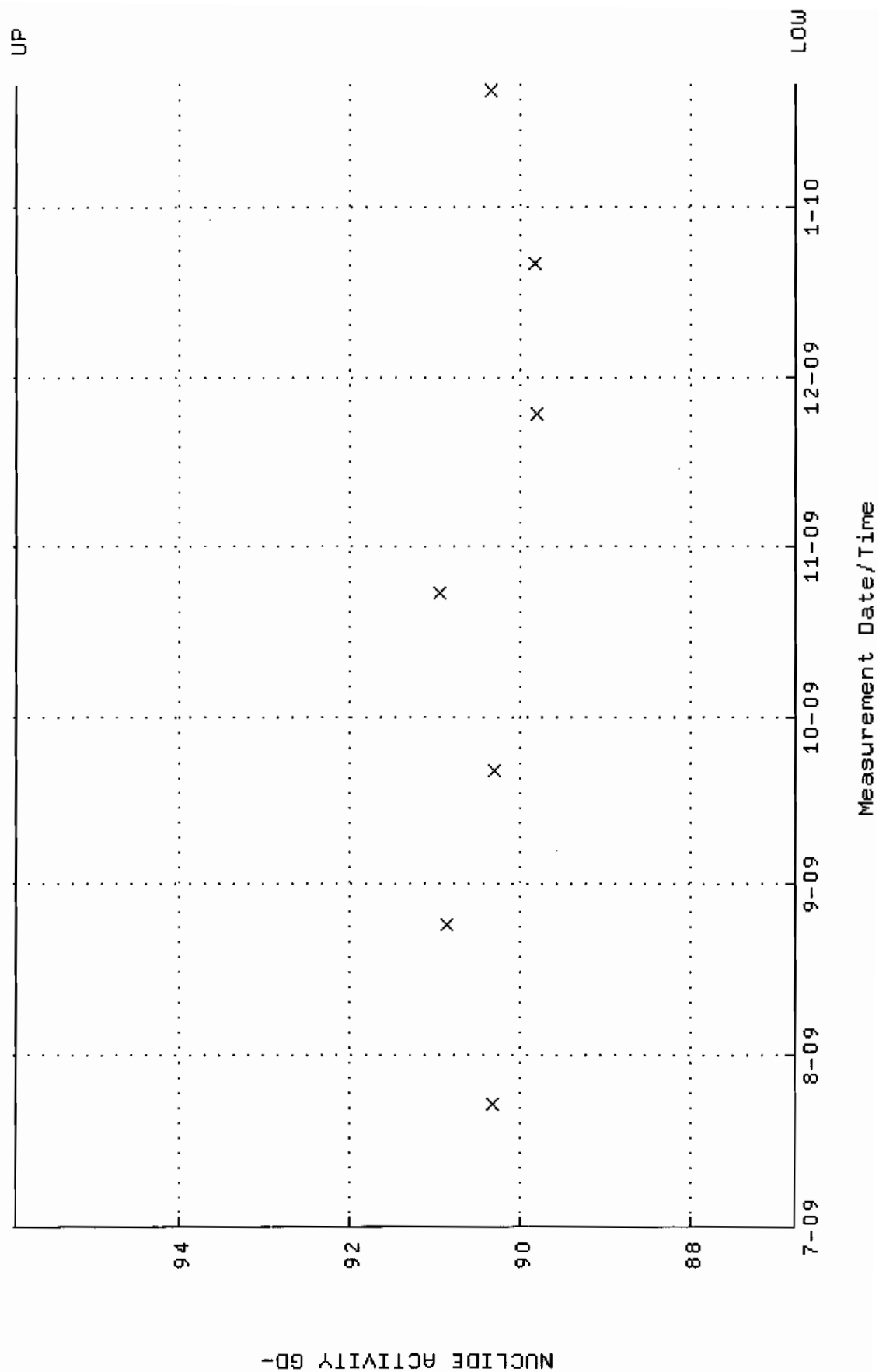
QA filename : DKA100:[ENV_ALPHA.QA.B]B166.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 14:59:54 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



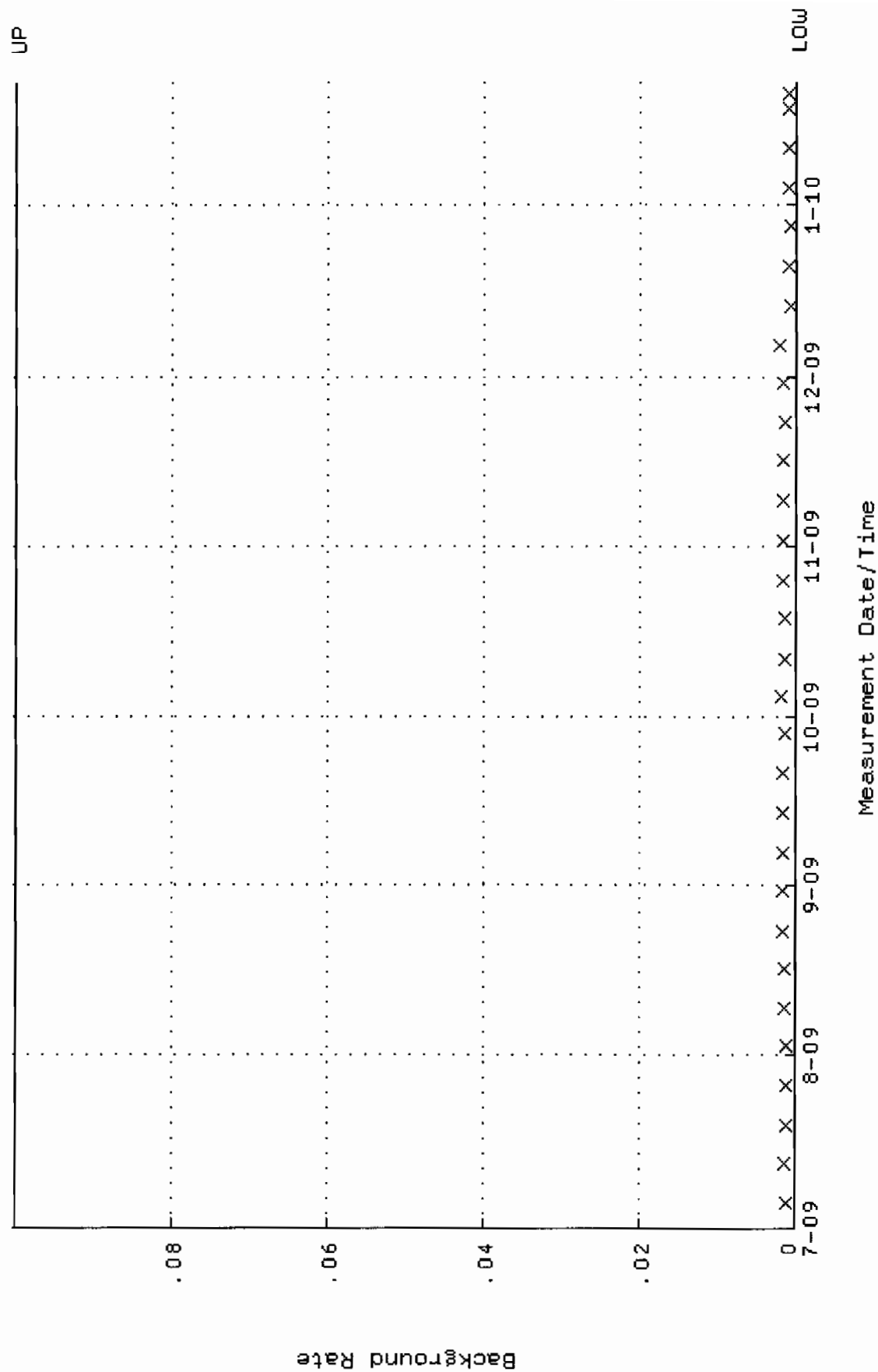
QA filename : DKA100:[ENV_ALPHA.QA.W]W167.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 23-JUL-2009 08:07:23 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.384285 through 0.404285



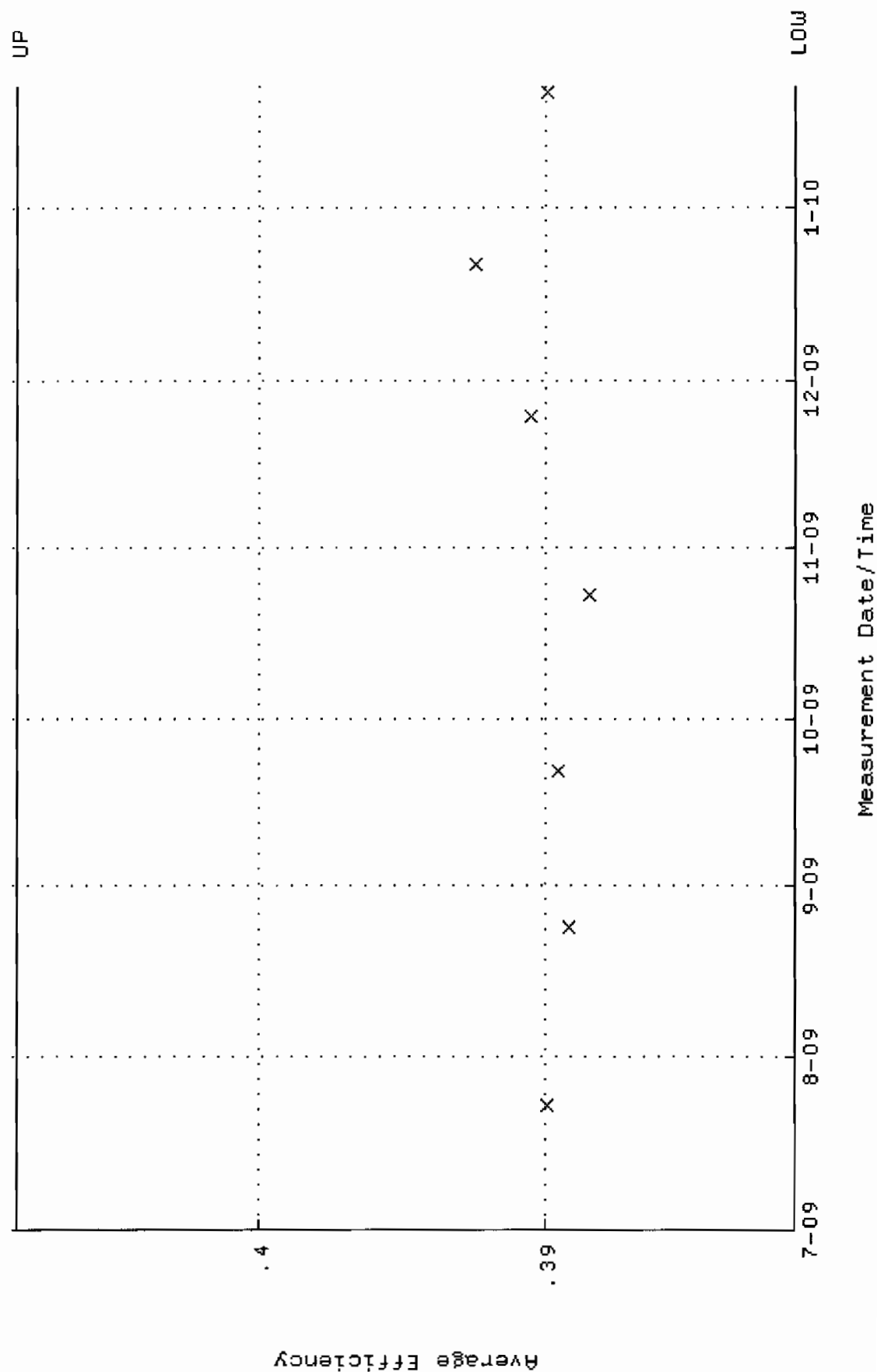
QA filename : DKA100:[ENV_ALPHA.QA.W]w167.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 23-JUL-2009 08:07:23 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 86.7740 through 95.9082



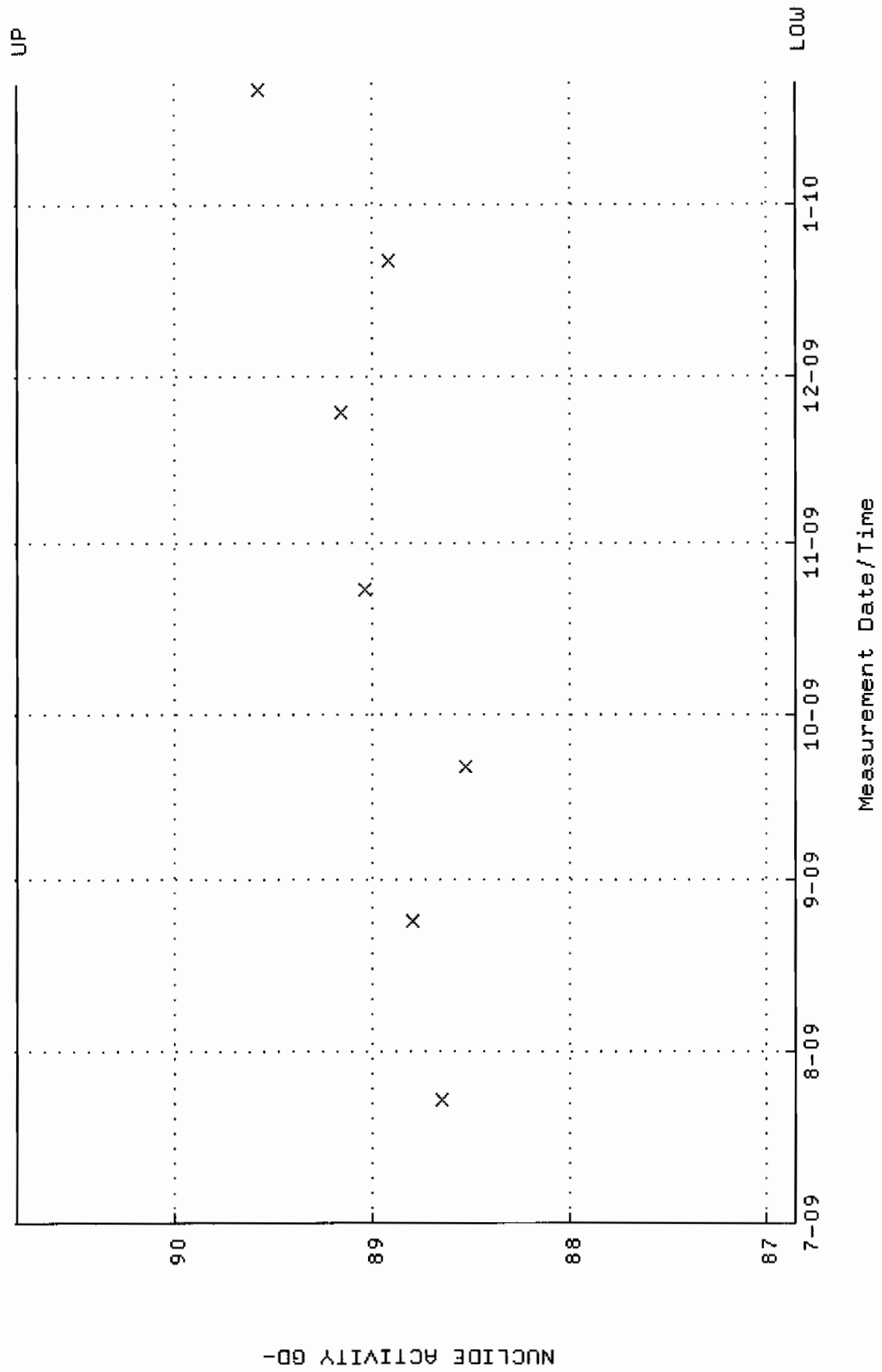
QA filename : DKA100:[ENV_ALPHA.QA.B]B167.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 14:59:59 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



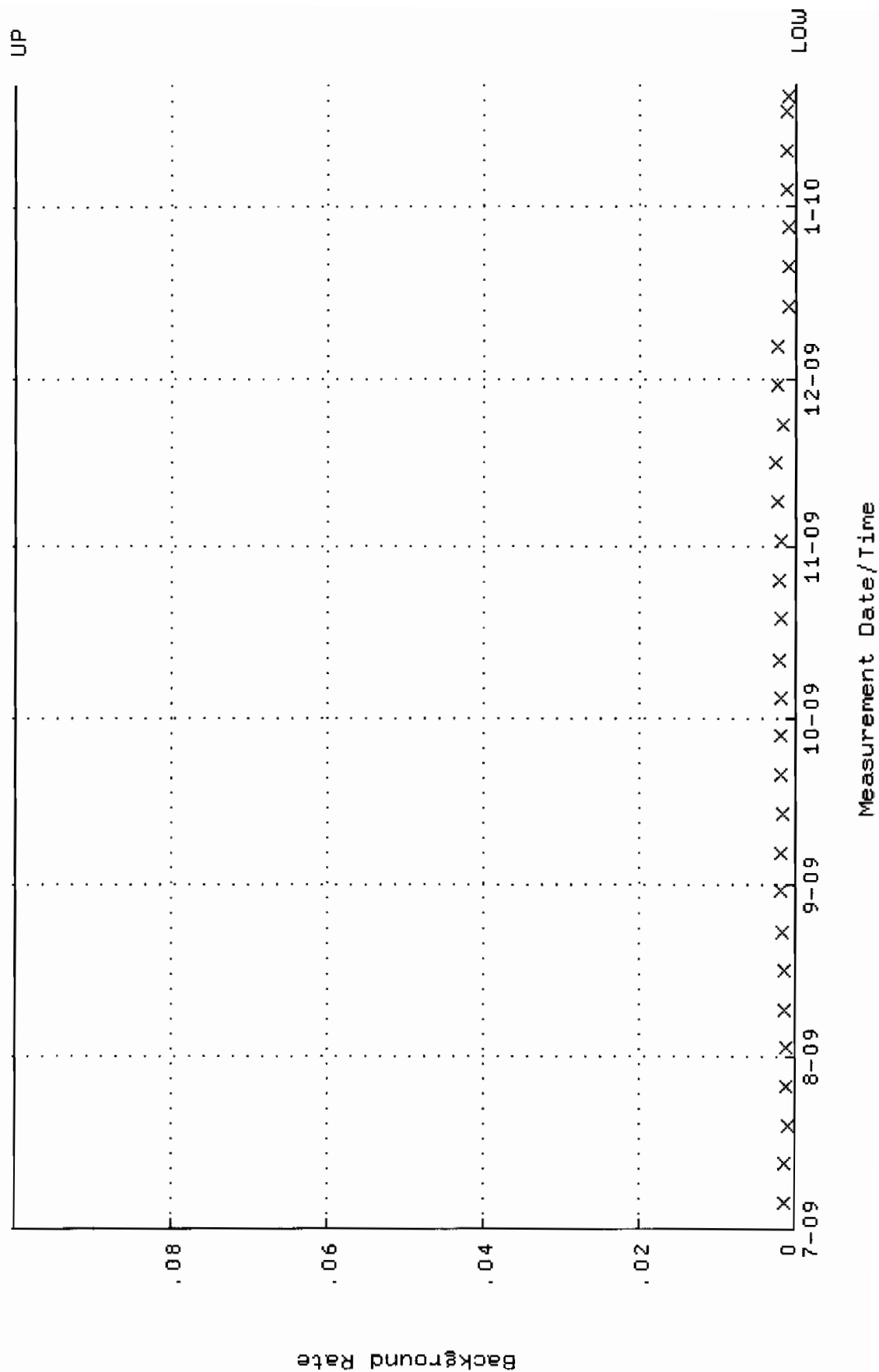
QA filename : DKA100:[ENV_ALPHA.QA.W]W168.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 23-JUL-2009 08:07:28 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.381339 through 0.408495



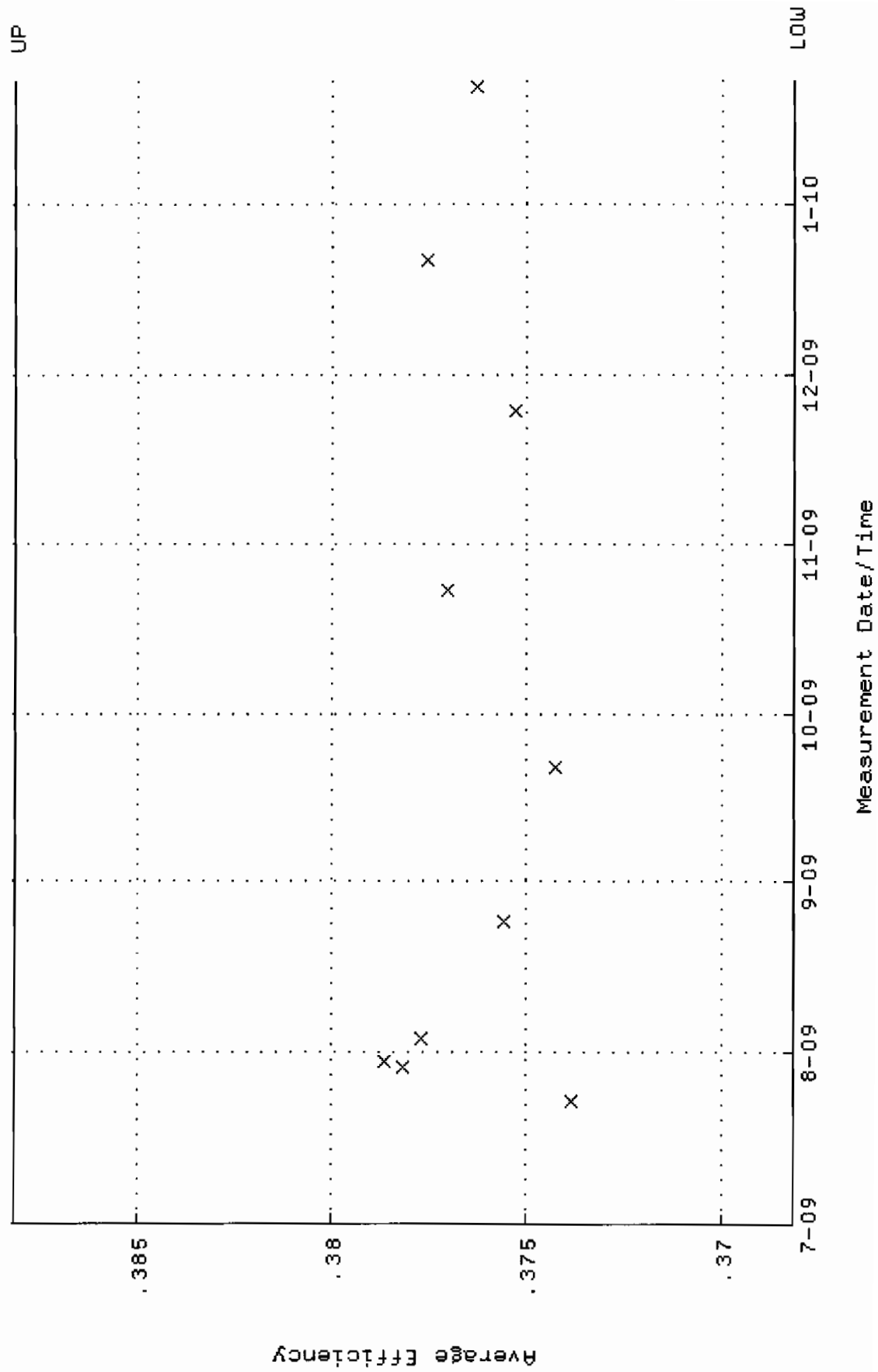
QA filename : DKA100:[ENV_ALPHA.QA.W]W168.QAF;1
Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 23-JUL-2009 08:07:28 through 22-JAN-2010 12:00:00
Lower/Upper Lmts: 86.8544 through 90.7976



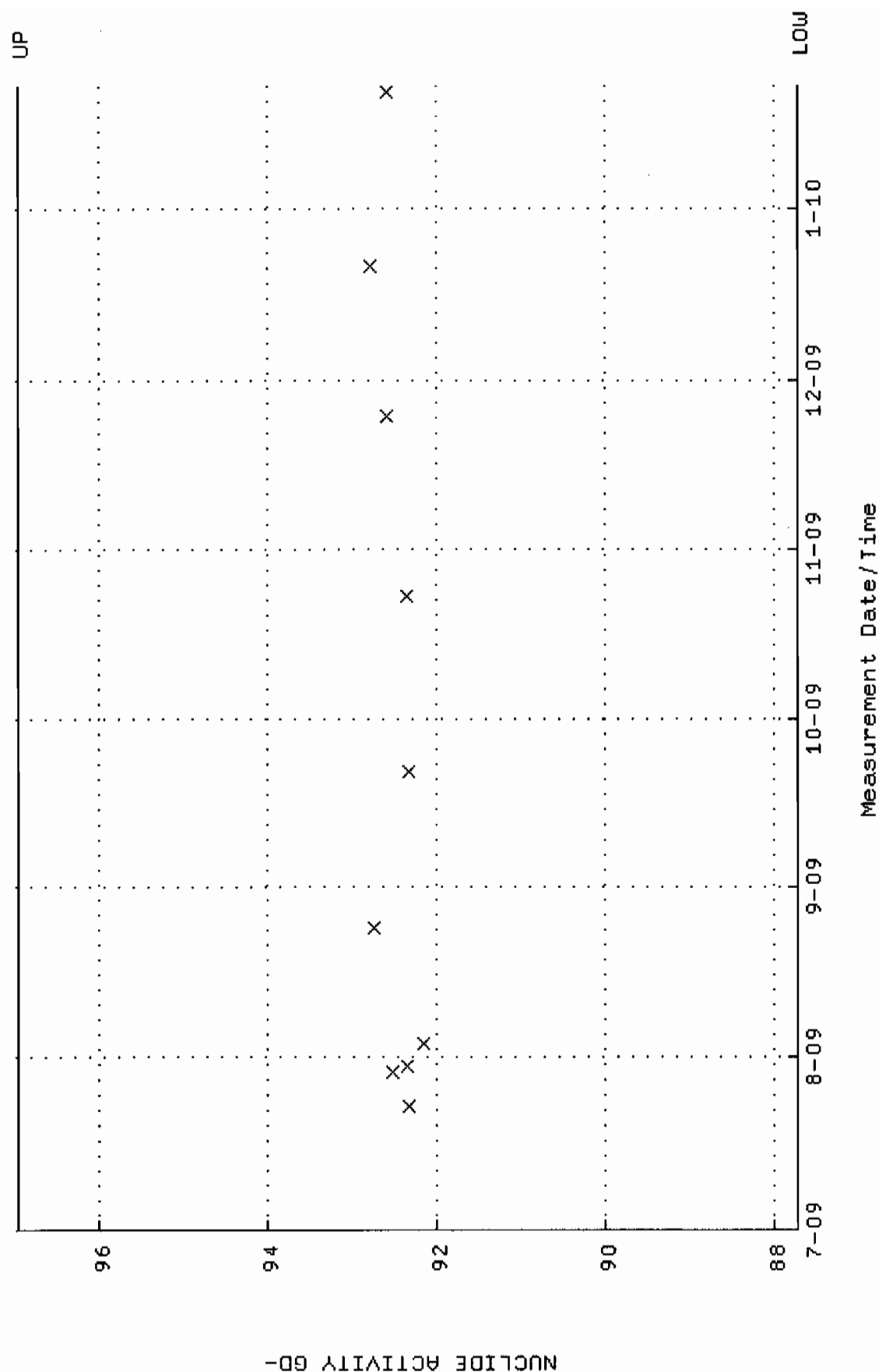
QA filename : DKA100:[ENV_ALPHA.QA.B]B168.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:00:04 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



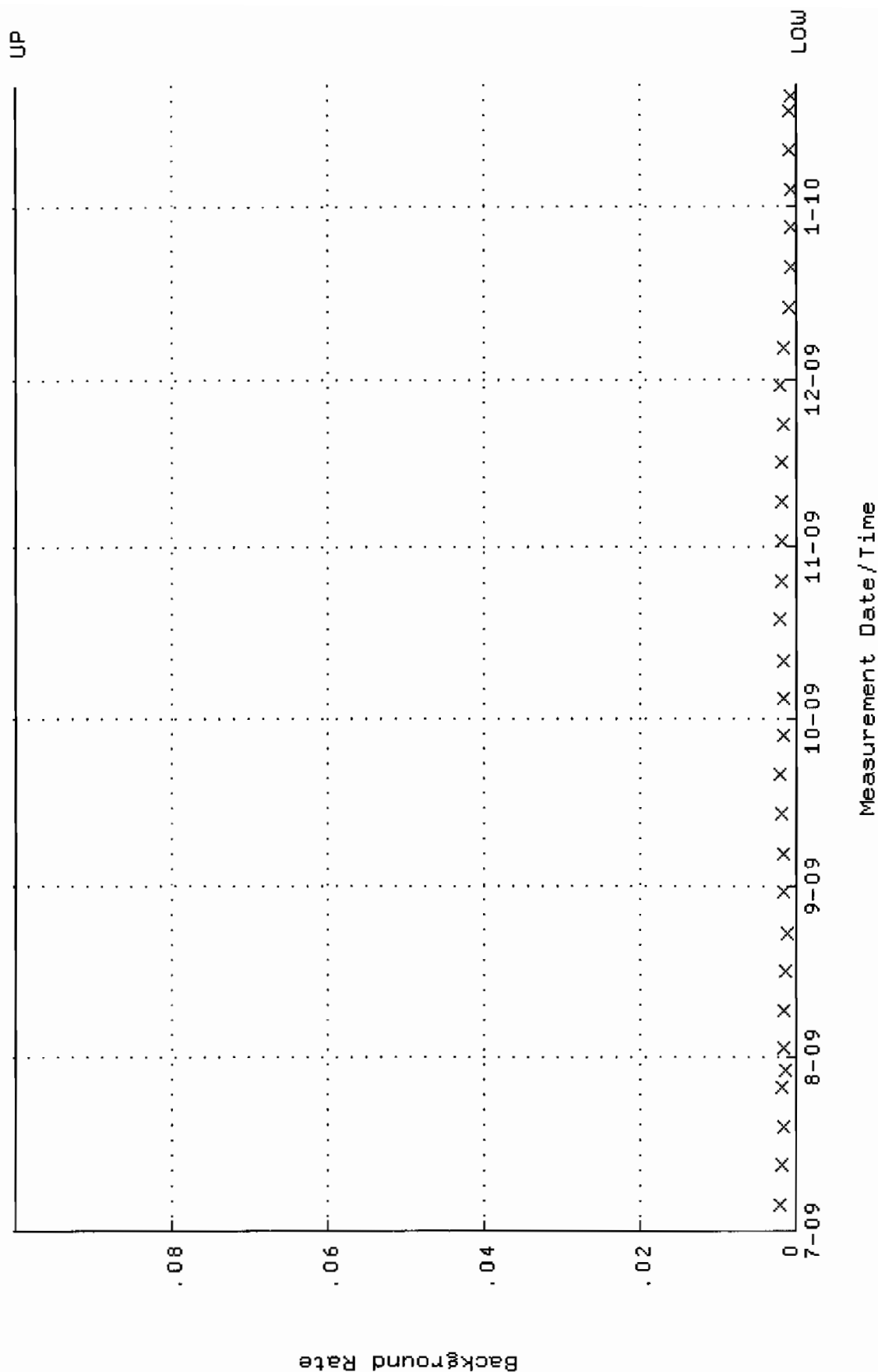
QA filename : DKA100:[ENV_ALPHA.QA.W]W169.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 23-JUL-2009 08:07:32 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.368144 through 0.388144



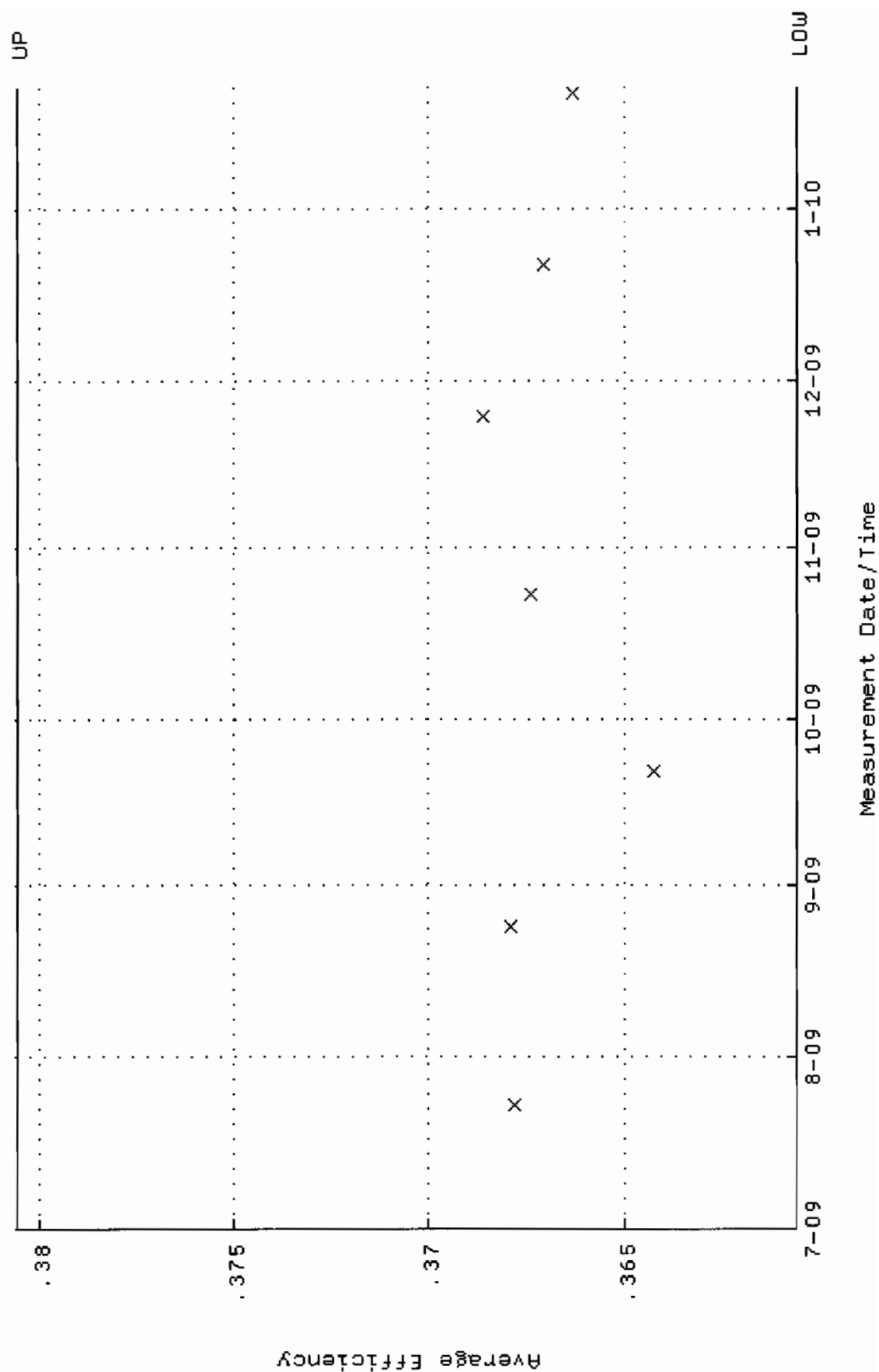
QA filename : DKA100:[ENV_ALPHA.QA.W]W169.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 23-JUL-2009 08:07:32 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 87.7141 through 96.9471



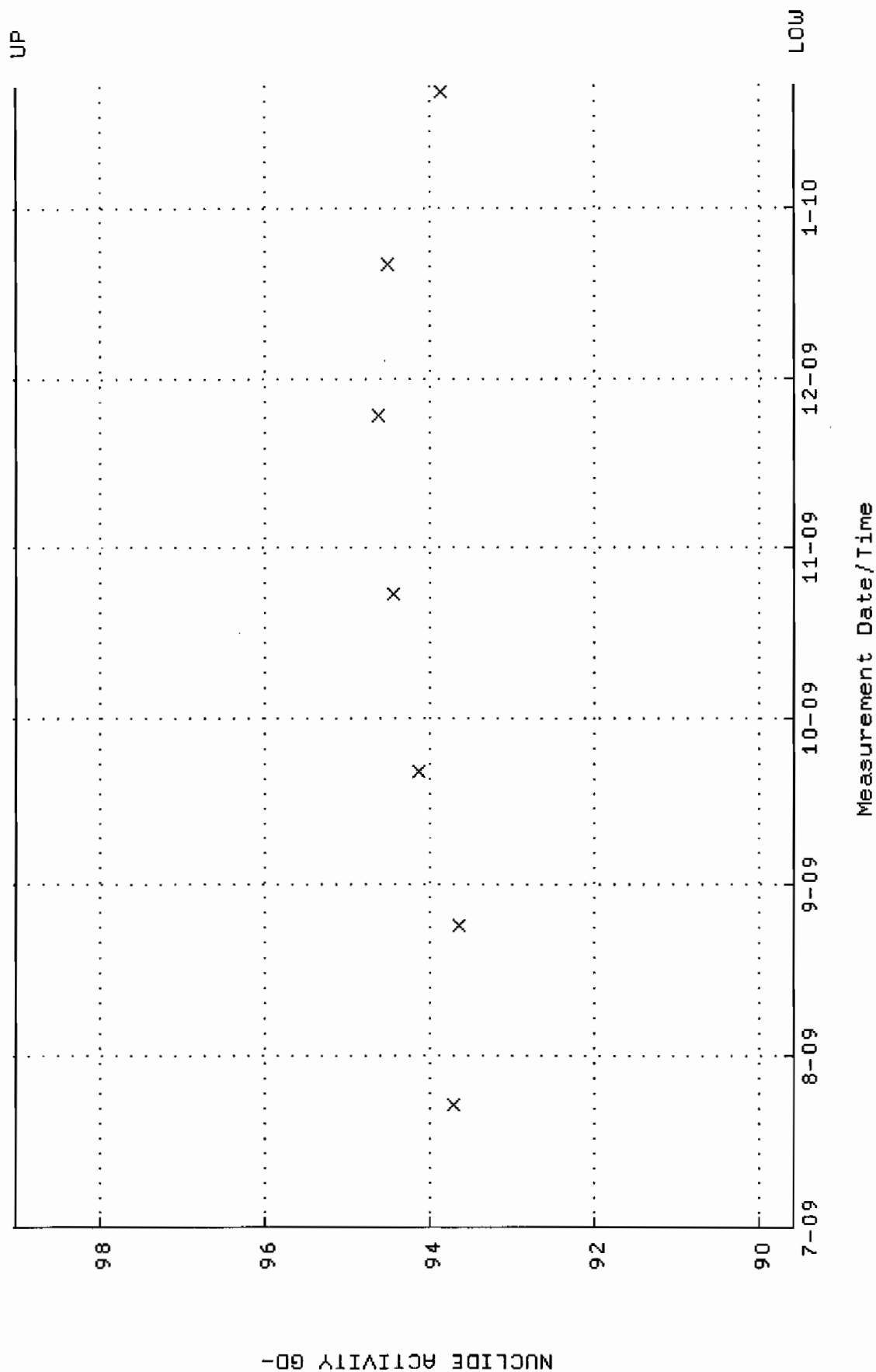
QA filename : DKA100:[ENV_ALPHA.QA.B]B169.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:00:09 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



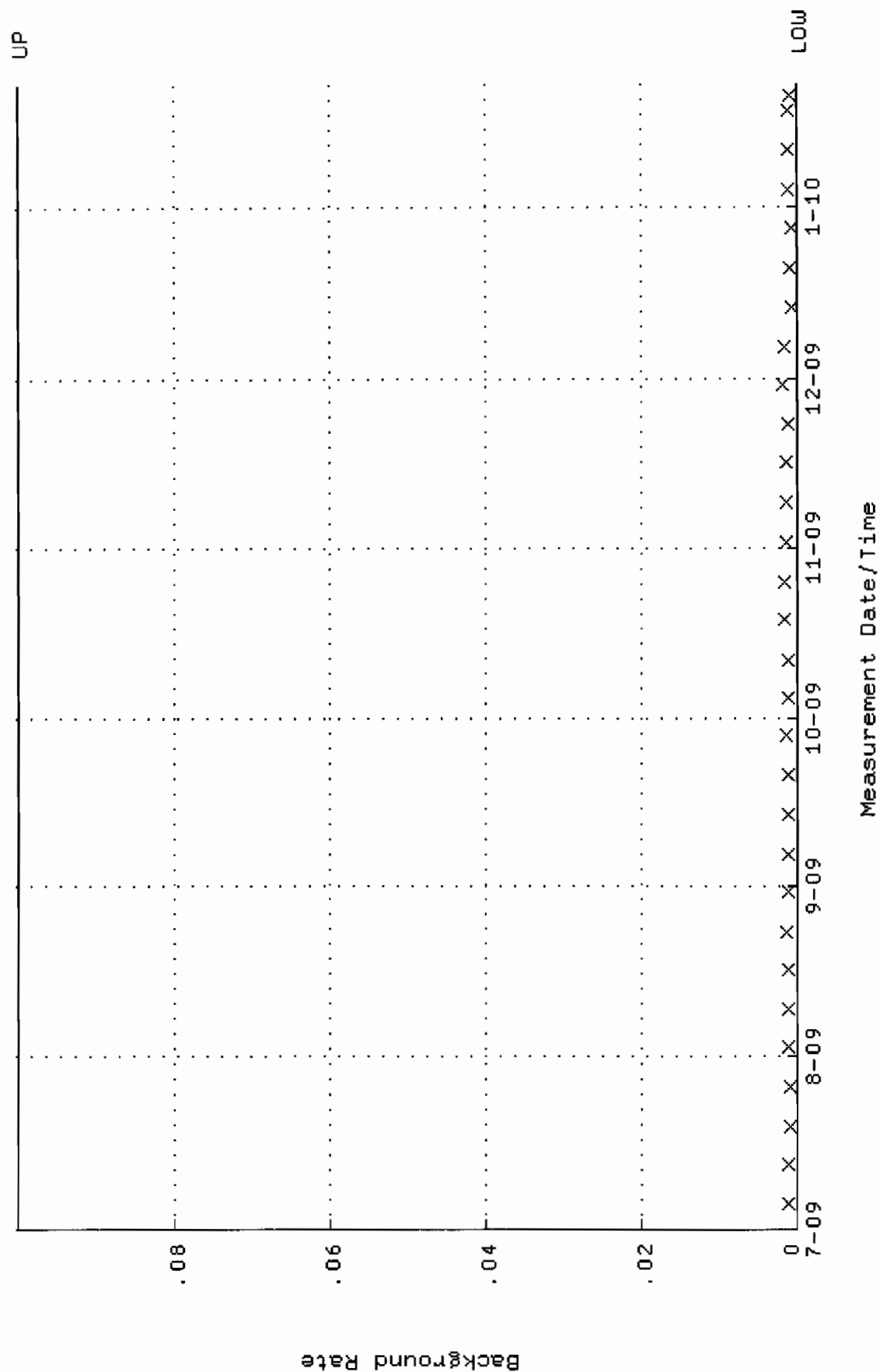
QA filename : DKA100:[ENV-ALPHA.QA.W]W170.QAF;1
 Parameter Name : AVREFF (Average Efficiency)
 Start/End Dates : 23-JUL-2009 08:07:36 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.360563 through 0.380563



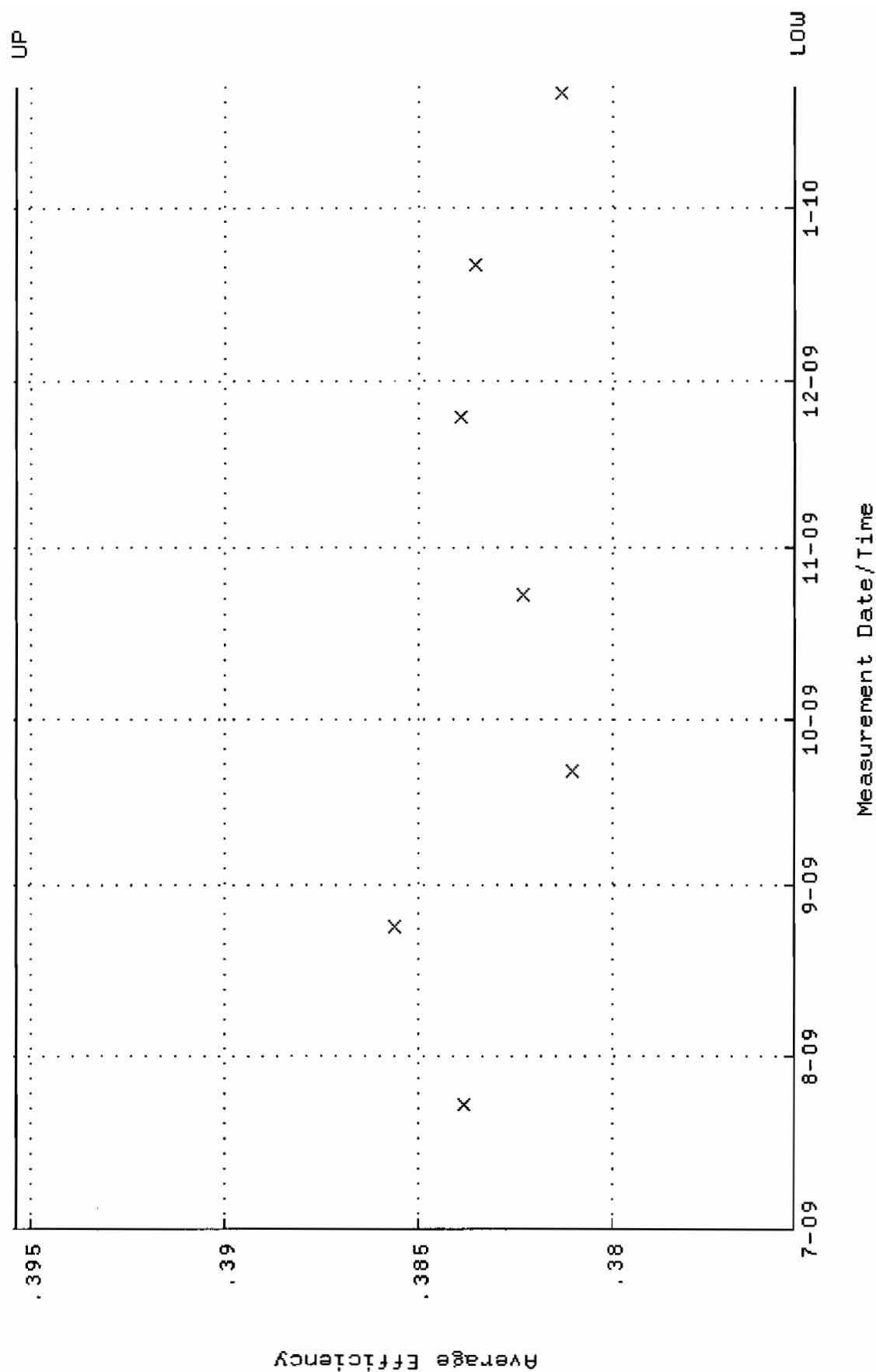
QA filename : DKA100:[ENV_ALPHA.QA.W]W170.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 23-JUL-2009 08:07:36 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 89.5841 through 99.0139



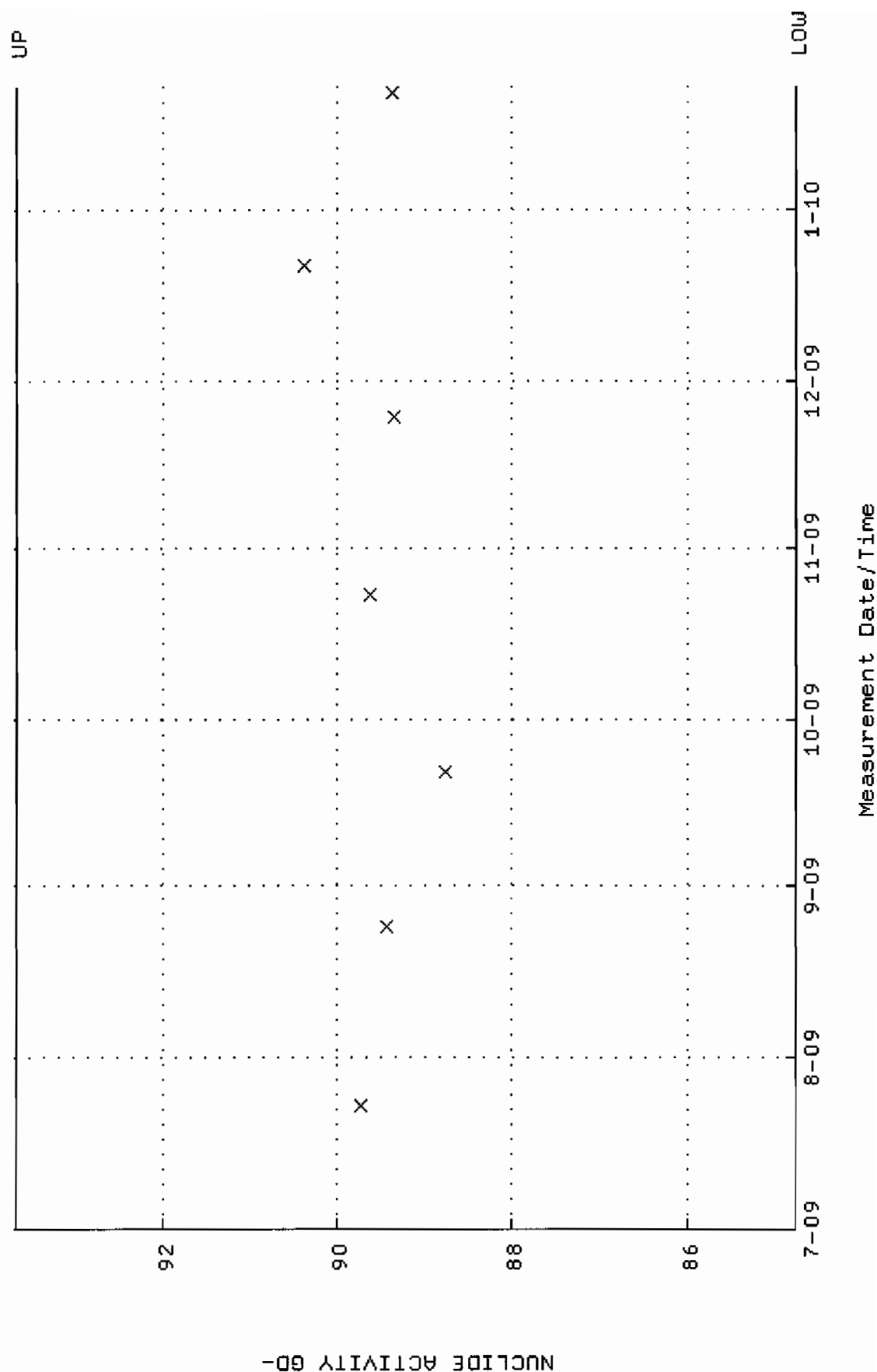
QA filename : DKA100:[ENV_ALPHA.QA.B]B170.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:00:14 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



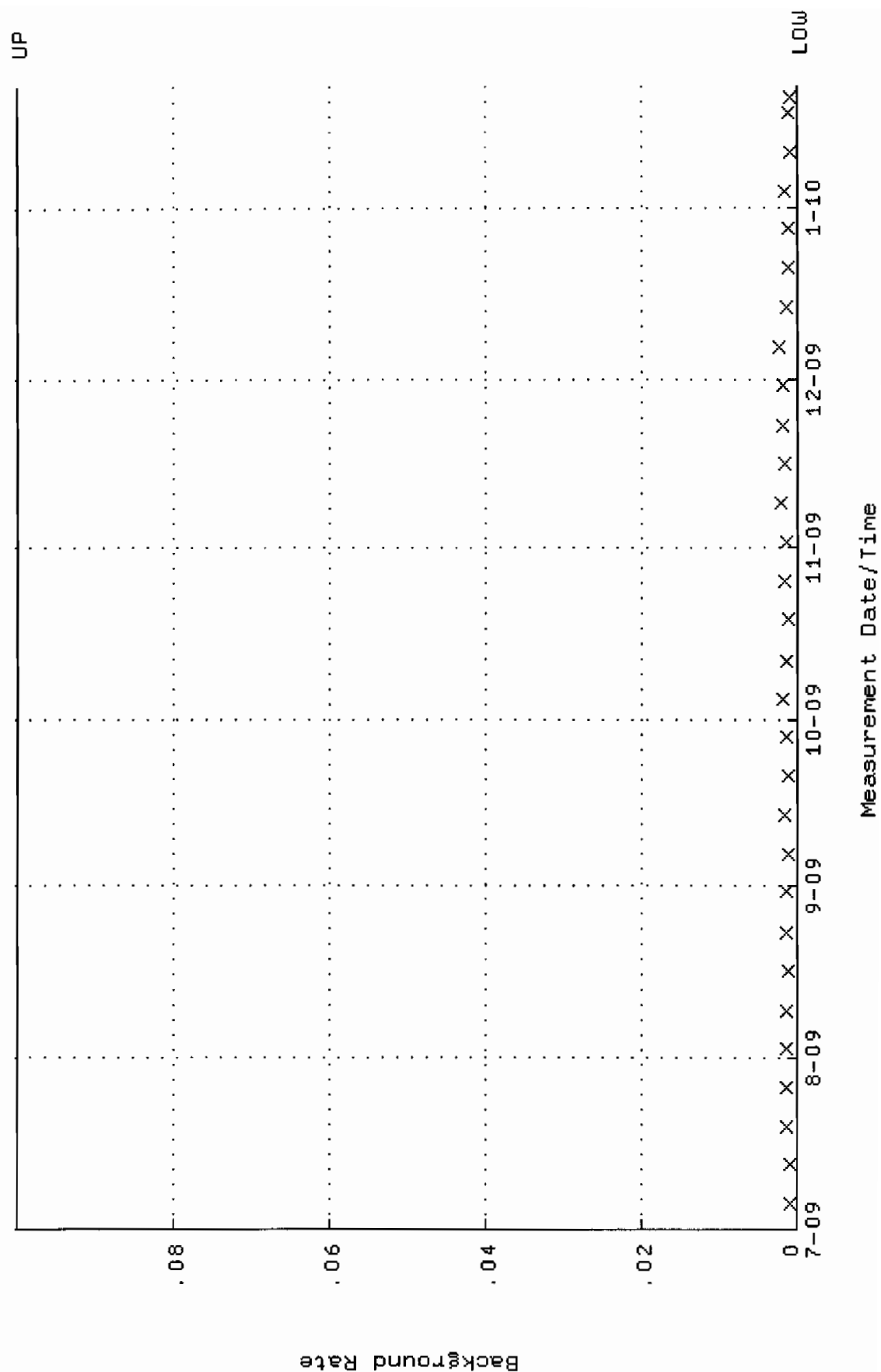
QA filename : DKA100:[ENV_ALPHA.QA.W]W171.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 23-JUL-2009 08:07:41 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.375364 through 0.395364



QA filename : DKA100:[ENV_ALPHA.QA.W]W171.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 23-JUL-2009 08:07:41 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 84.7539 through 93.6753



QA filename : DKA100:[ENV_ALPHA.QA.B]B171.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:00:19 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

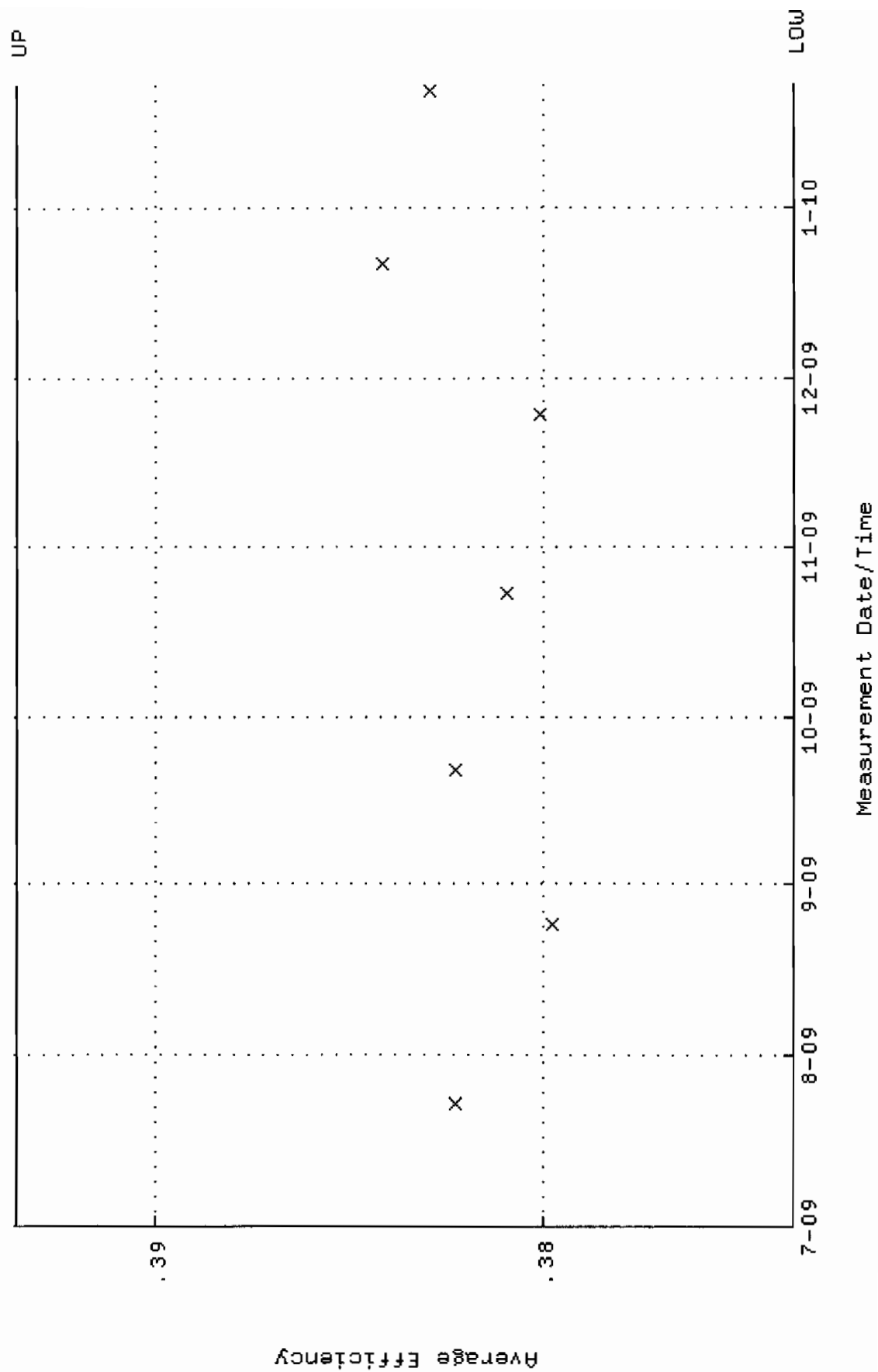


QA filename : DKA100:[ENV_ALPHA.QA.W]W172.QAF;1

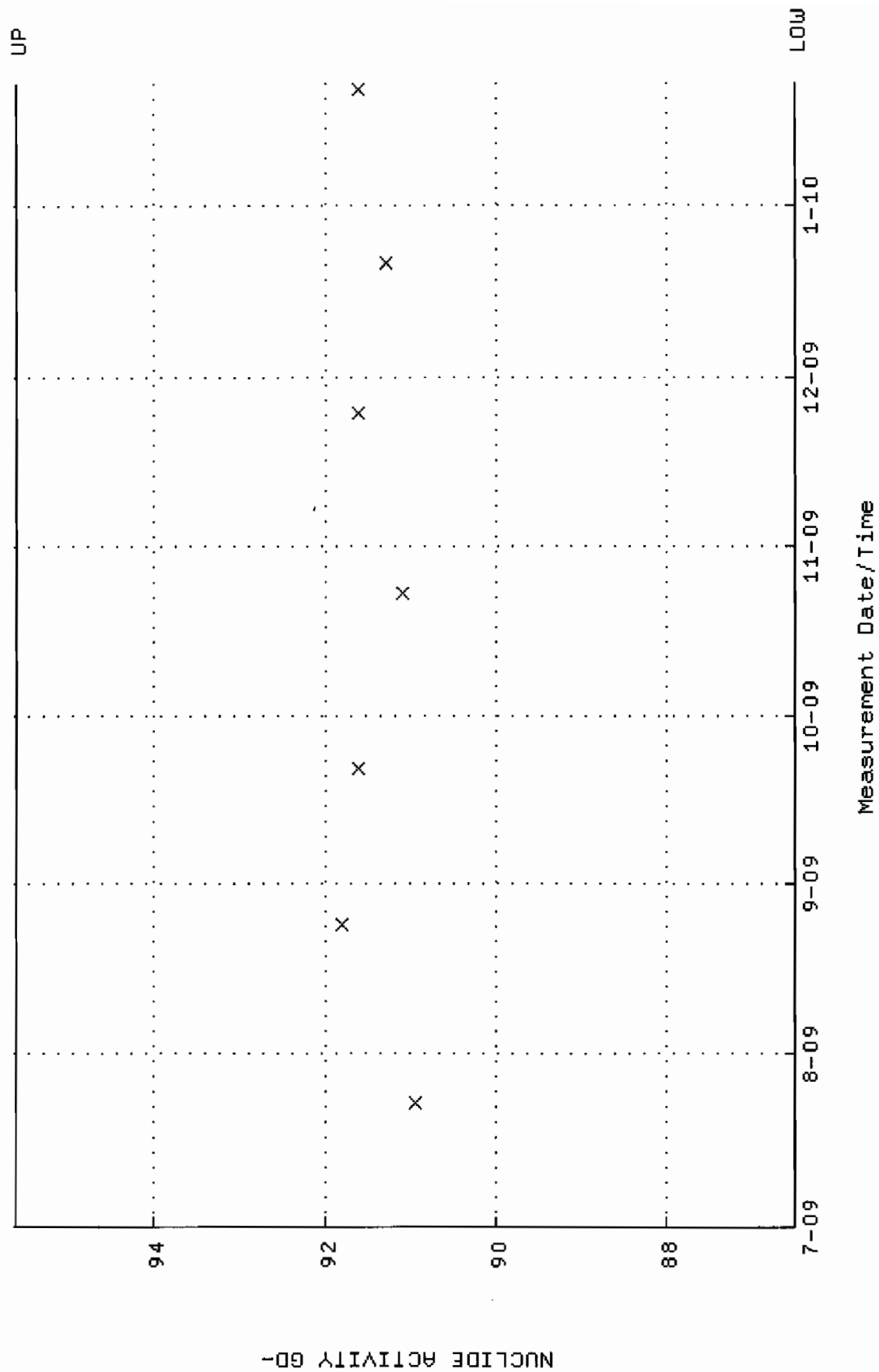
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 23-JUL-2009 08:07:46 through 22-JAN-2010 12:00:00

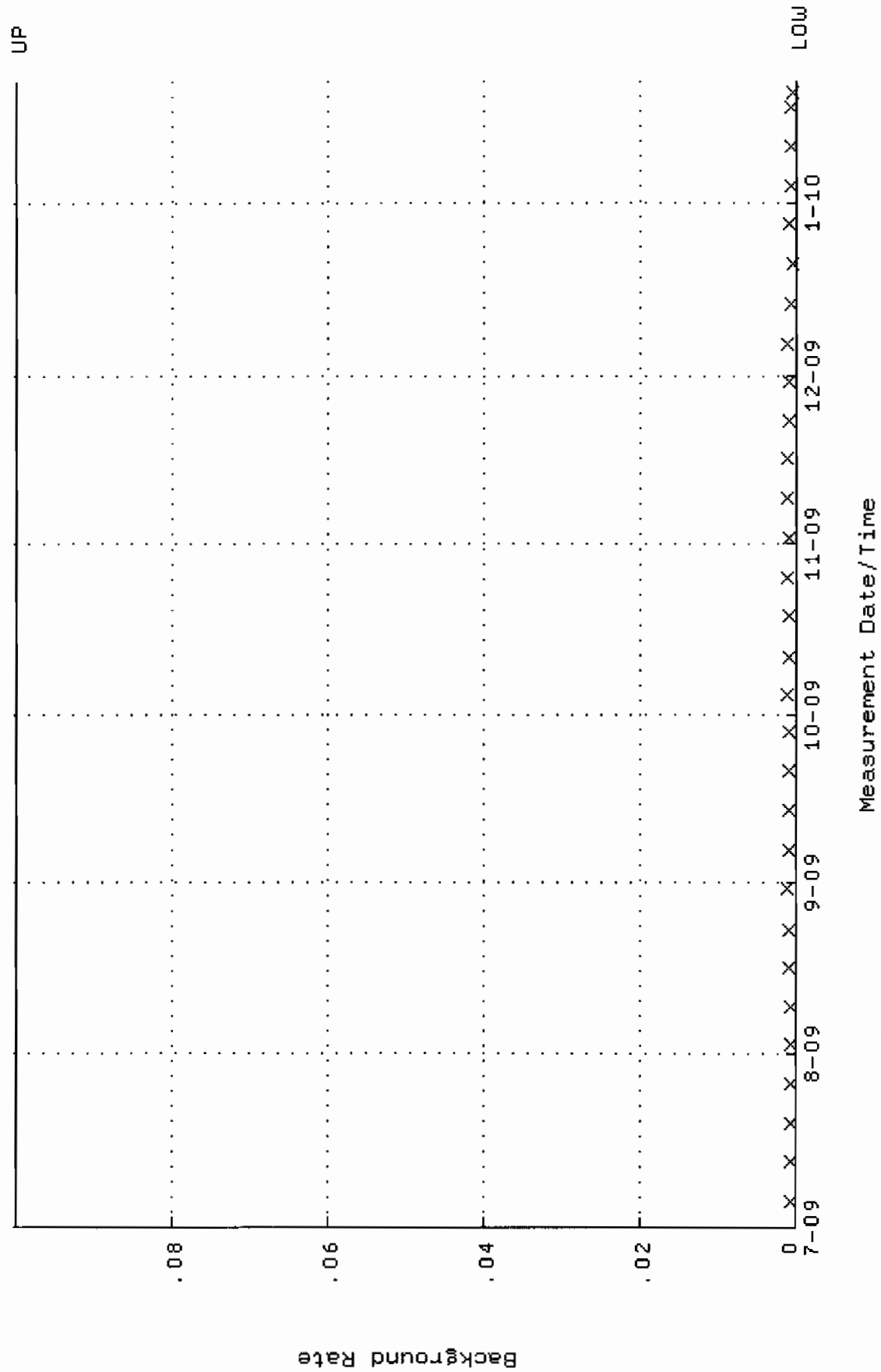
Lower/Upper Lmts: 0.373575 through 0.393575



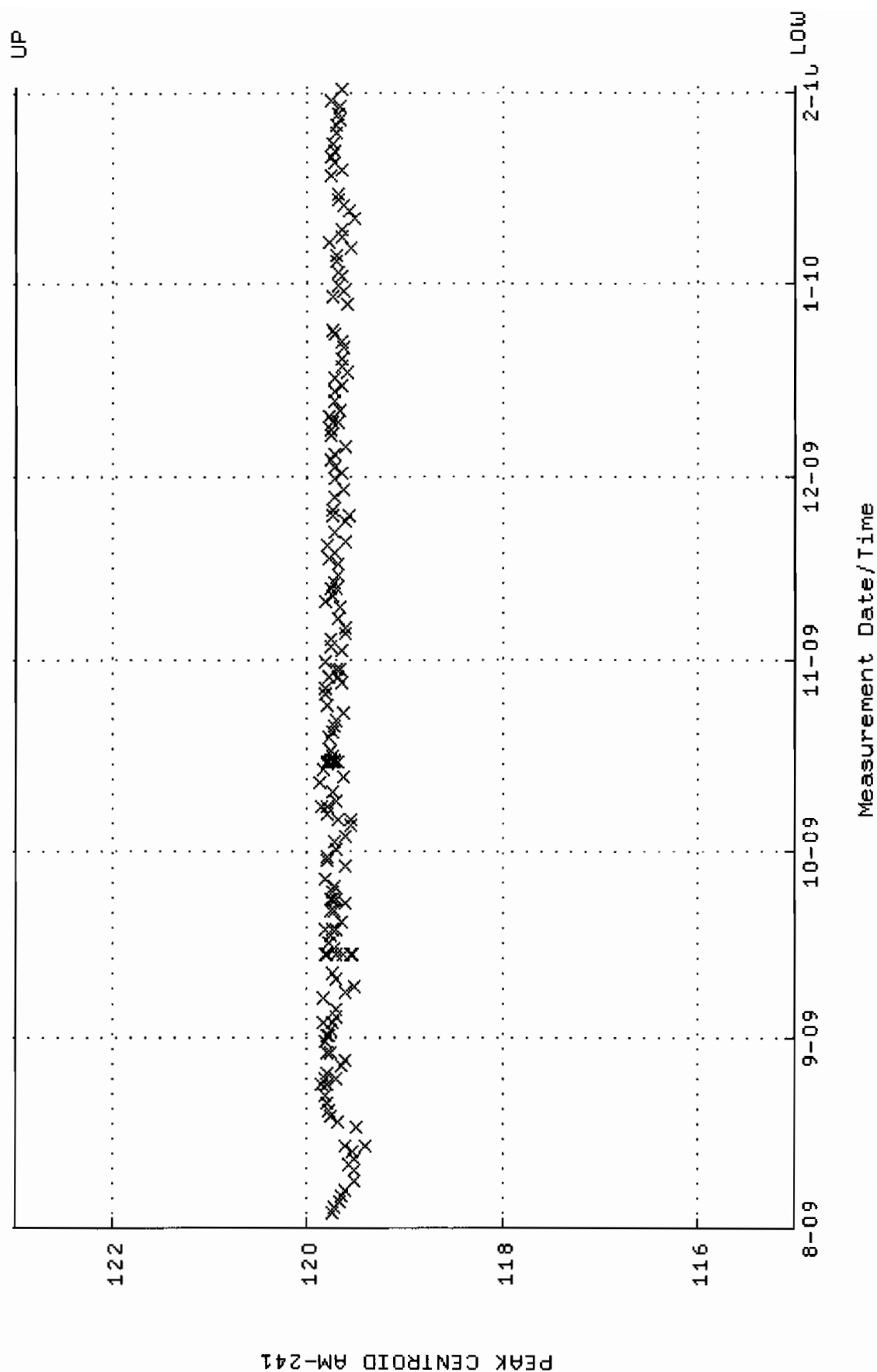
QA filename : DKA100:[ENV_ALPHA.QA.W]W172.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 23-JUL-2009 08:07:46 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 86.5089 through 95.6151



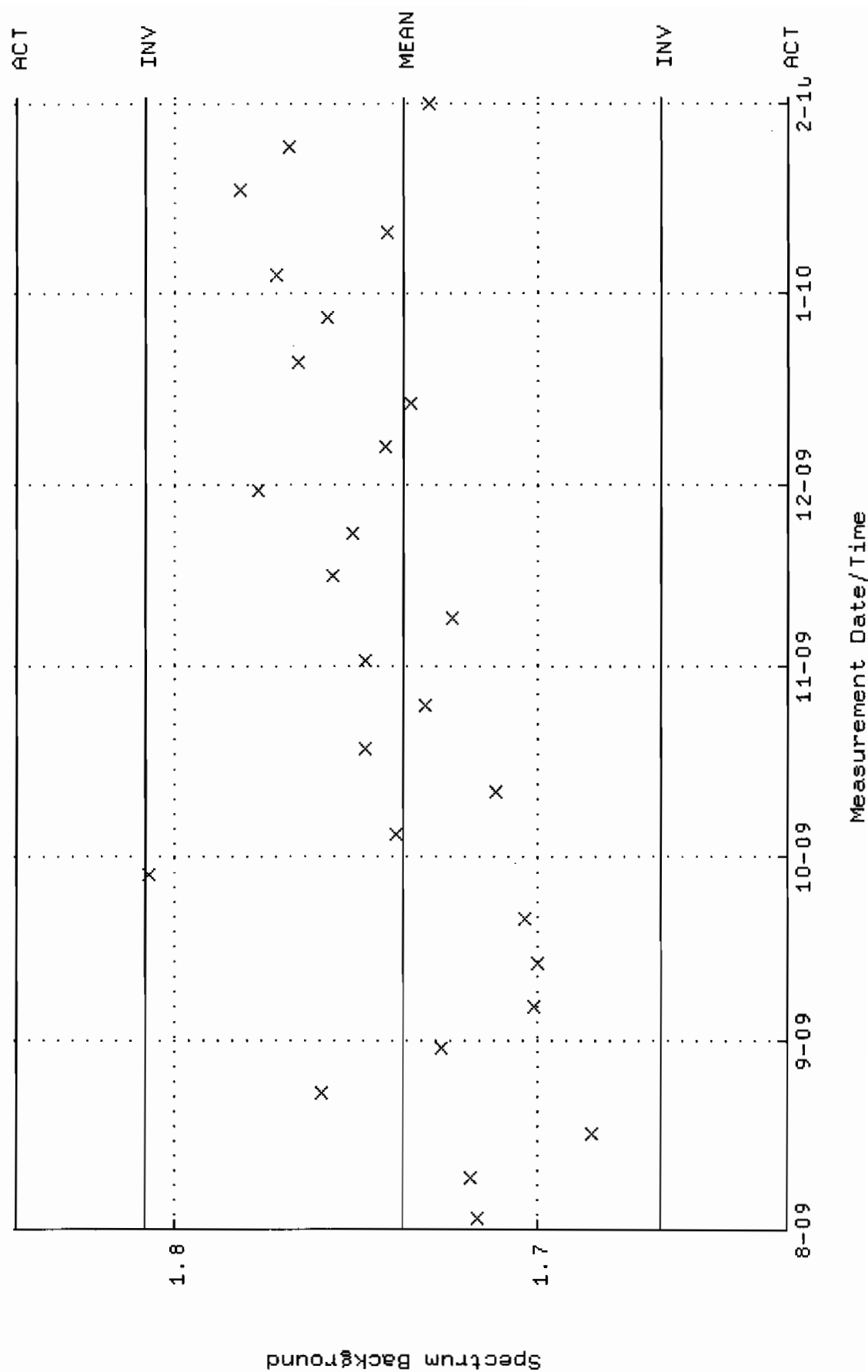
QA filename : DKA100:[ENV_ALPHA.QA.B]B172.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:00:24 through 22-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



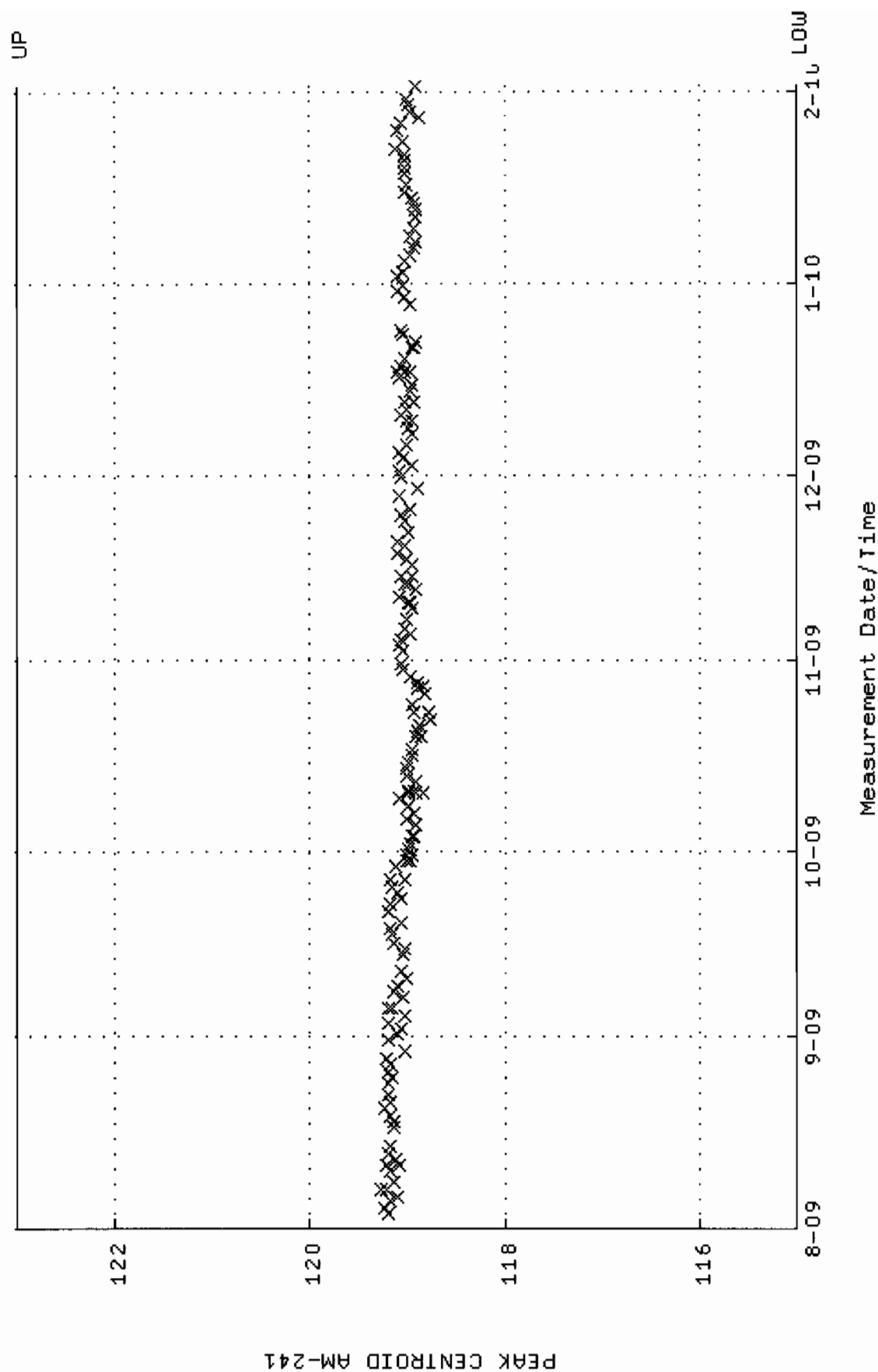
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM01-500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-AUG-2009 09:08:48 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



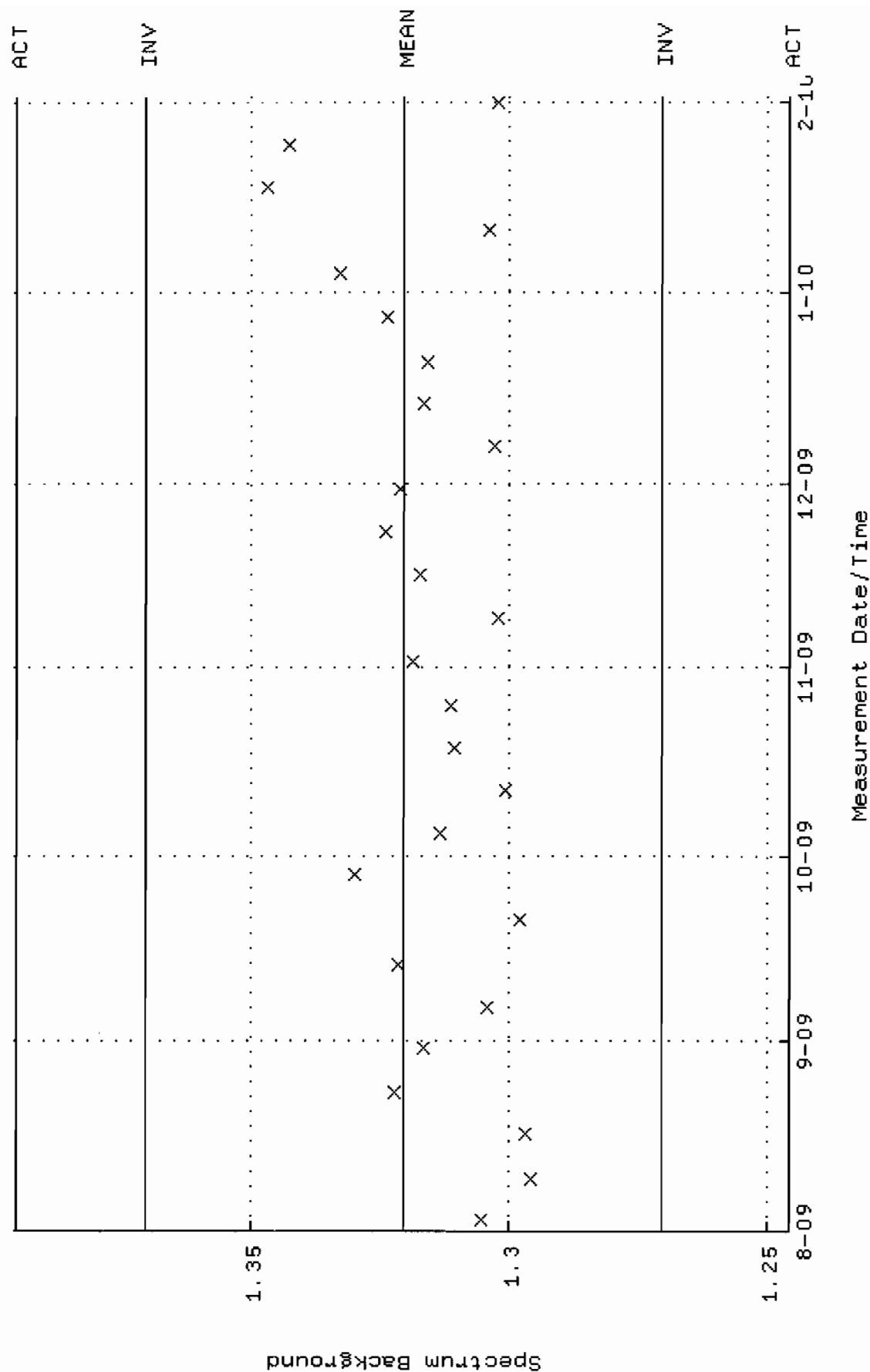
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM01.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:21:01 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.73723 +- 3.552524E-02 (2.04 %)



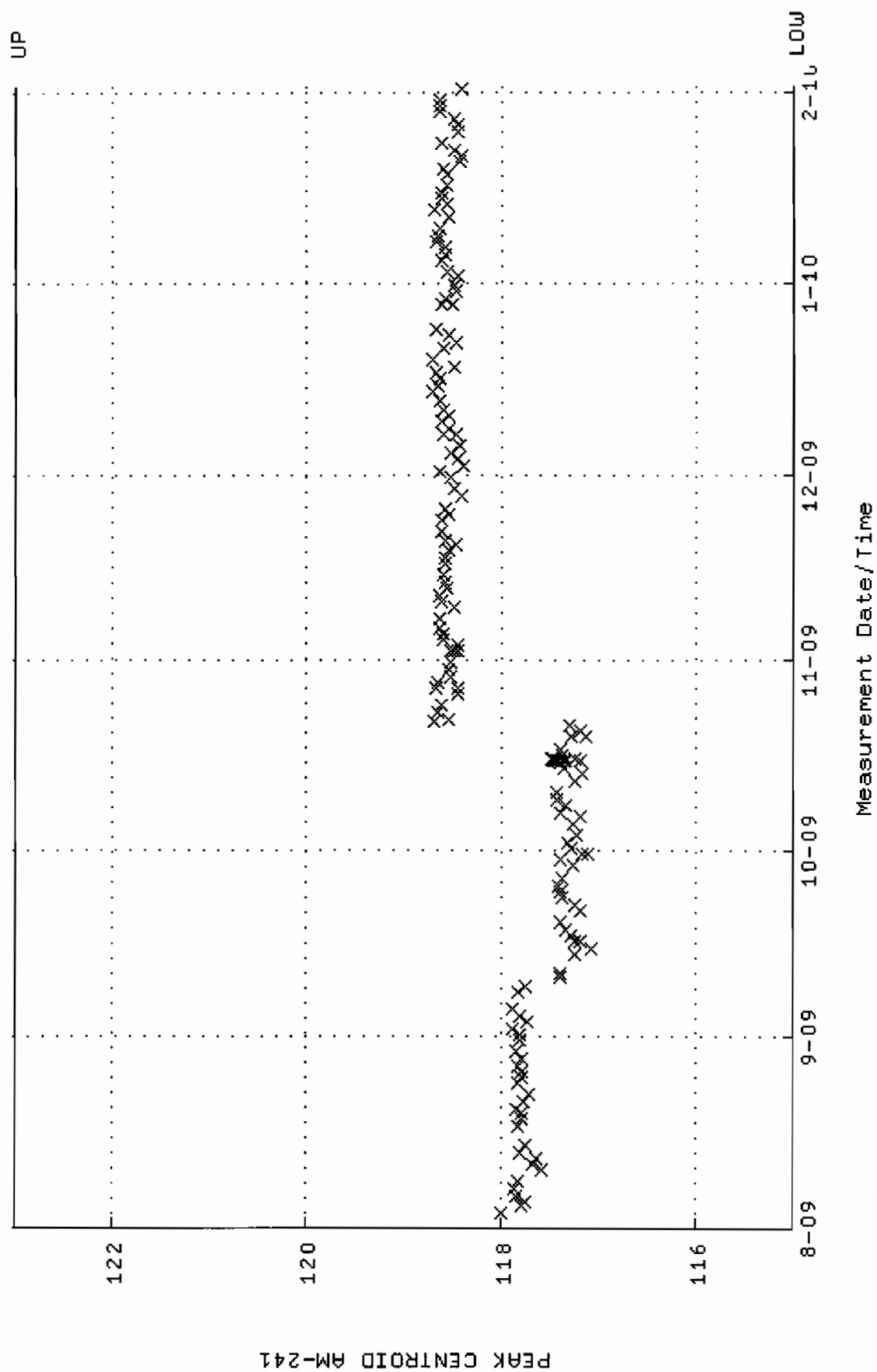
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM04-CAN.QAF;1
 Parameter Name : PSCENTROD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-AUG-2009 09:11:46 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



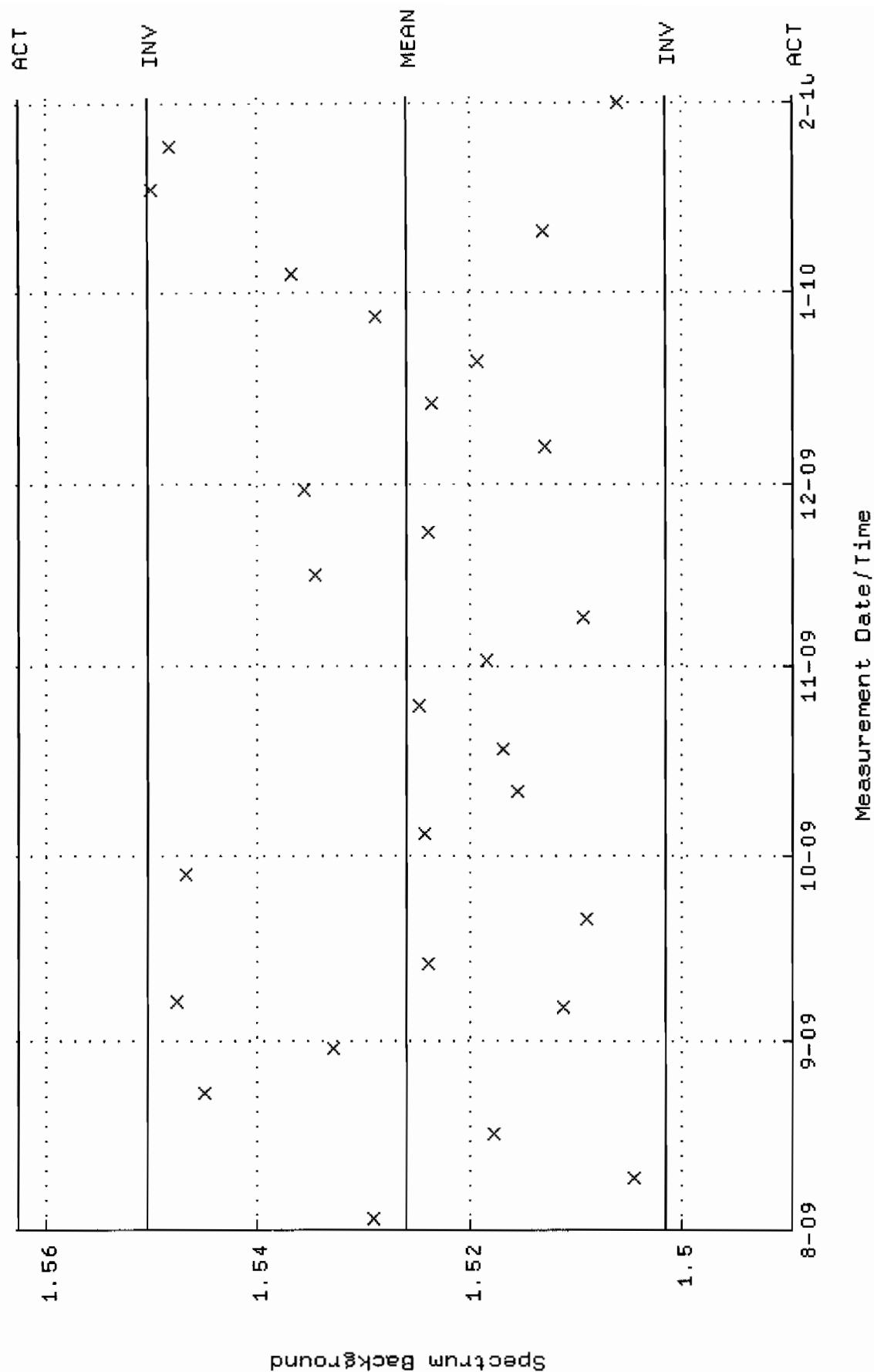
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM04.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:22:48 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.32050 +- 2.495234E-02 (1.89 %)



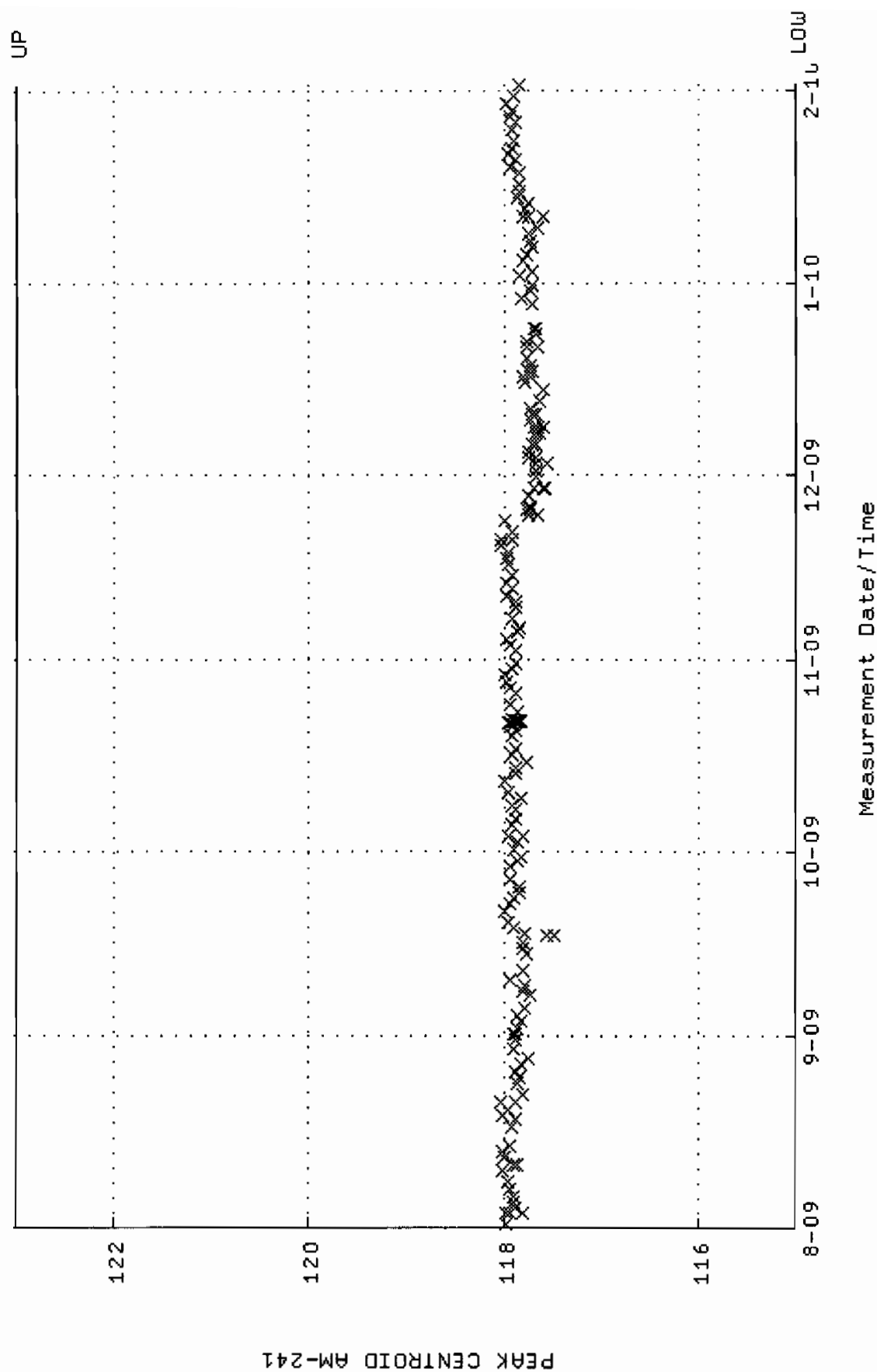
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM06_500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-AUG-2009 09:13:43 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



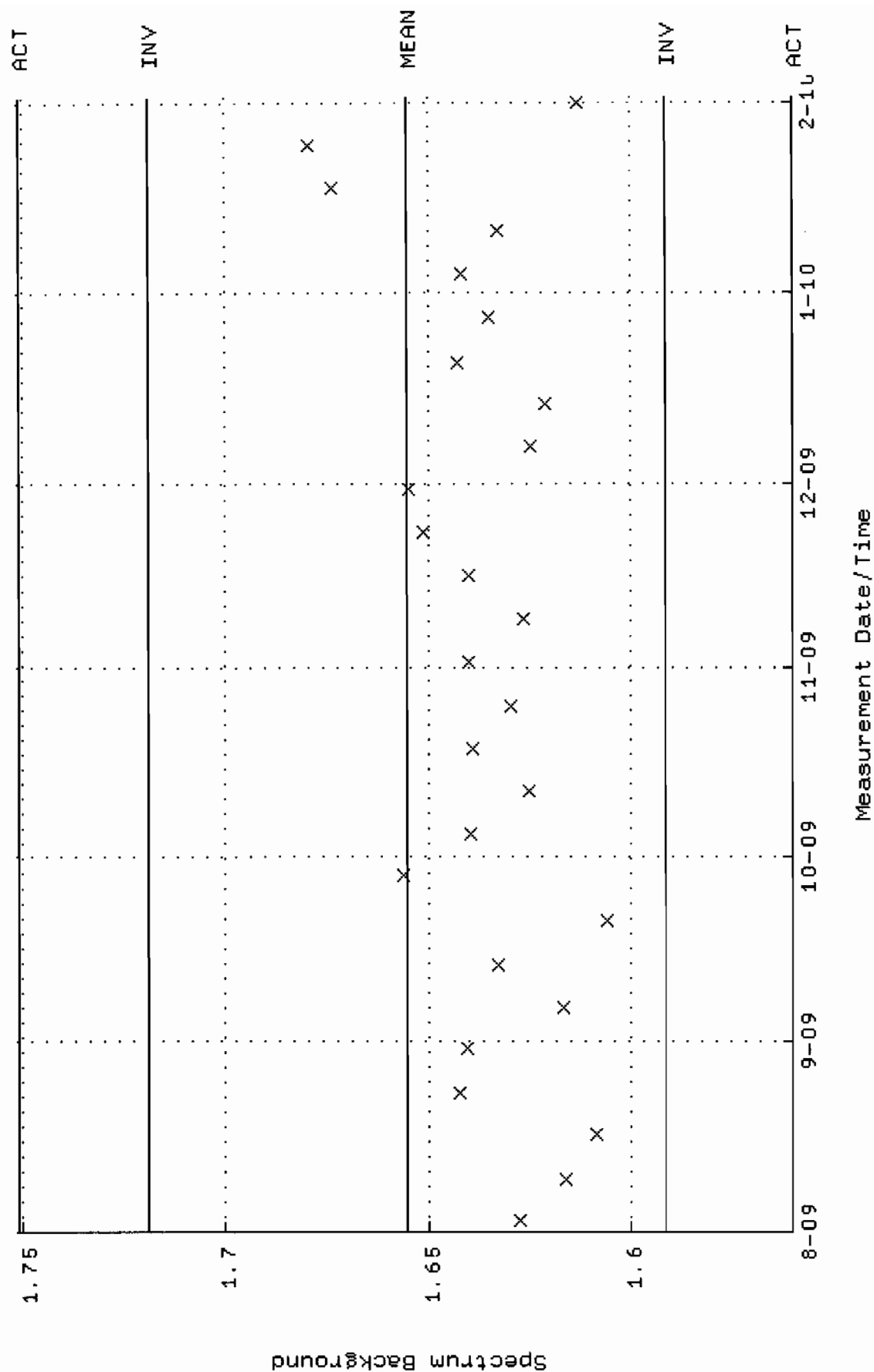
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM06.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:23:13 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.52603 +- 1.215987E-02 (0.80 %)



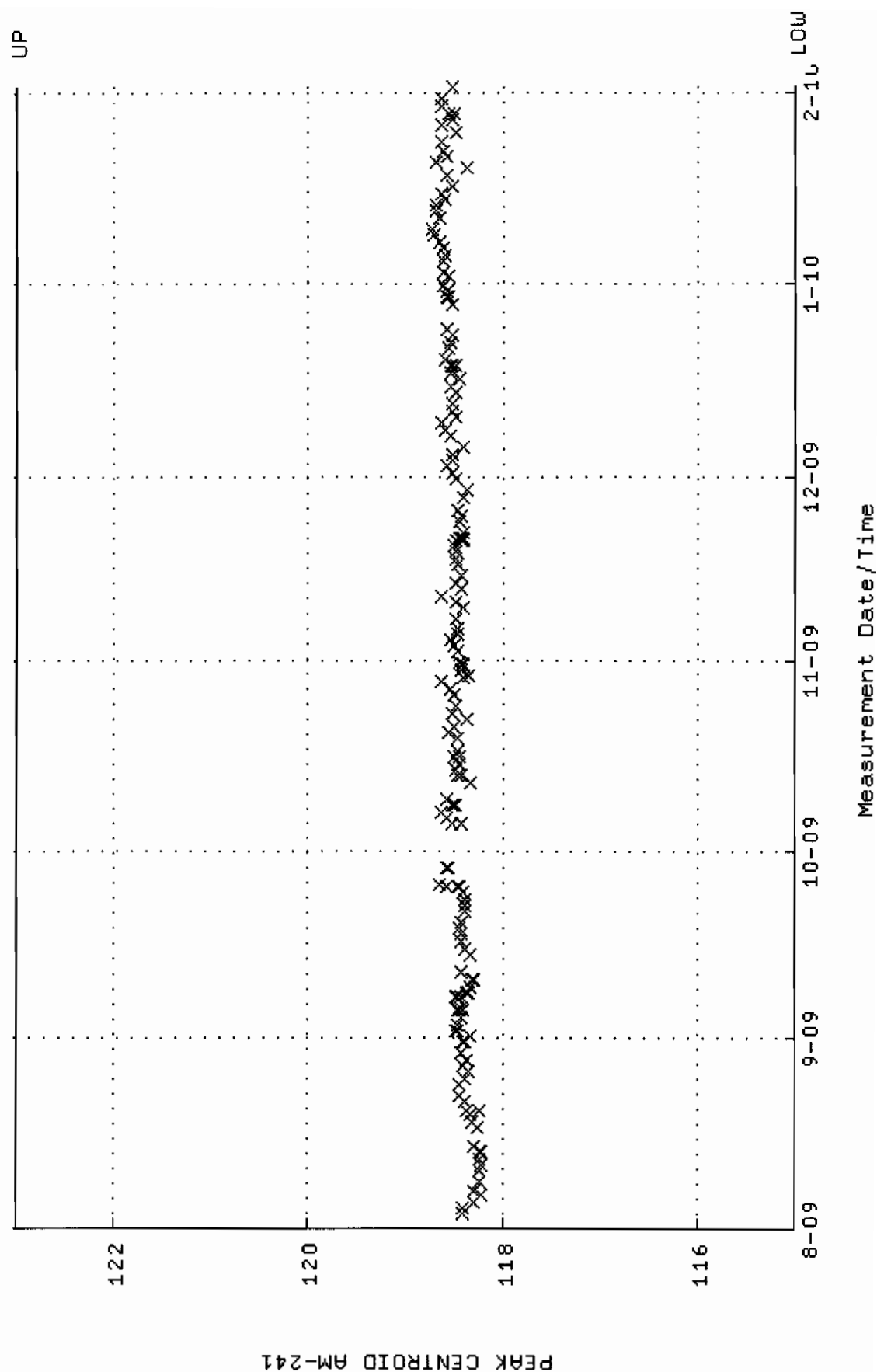
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM11-JAR.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 1-AUG-2009 13:27:21 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



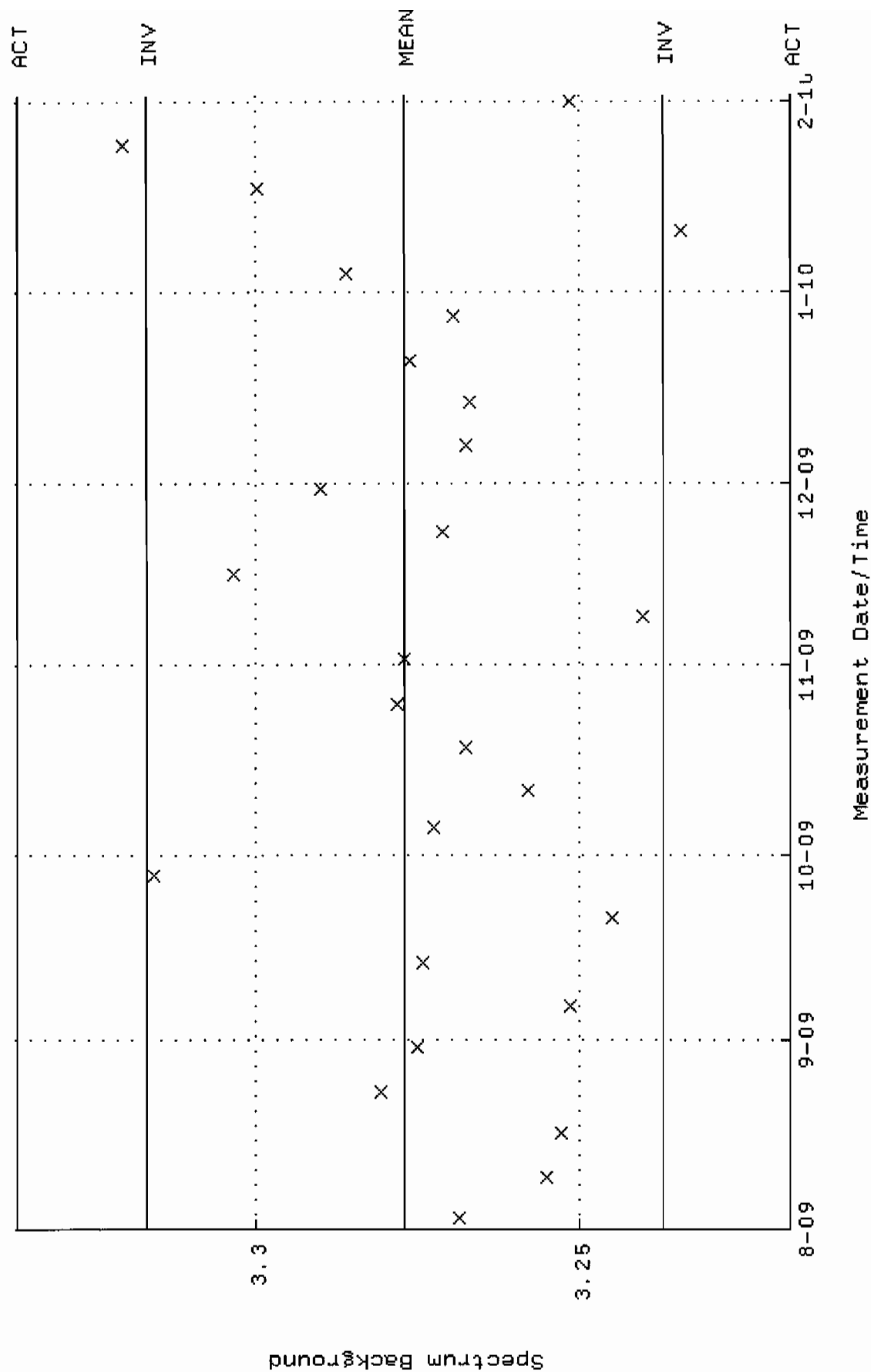
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM11.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:23:55 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.65552 +- 3.175806E-02 (1.92 %)



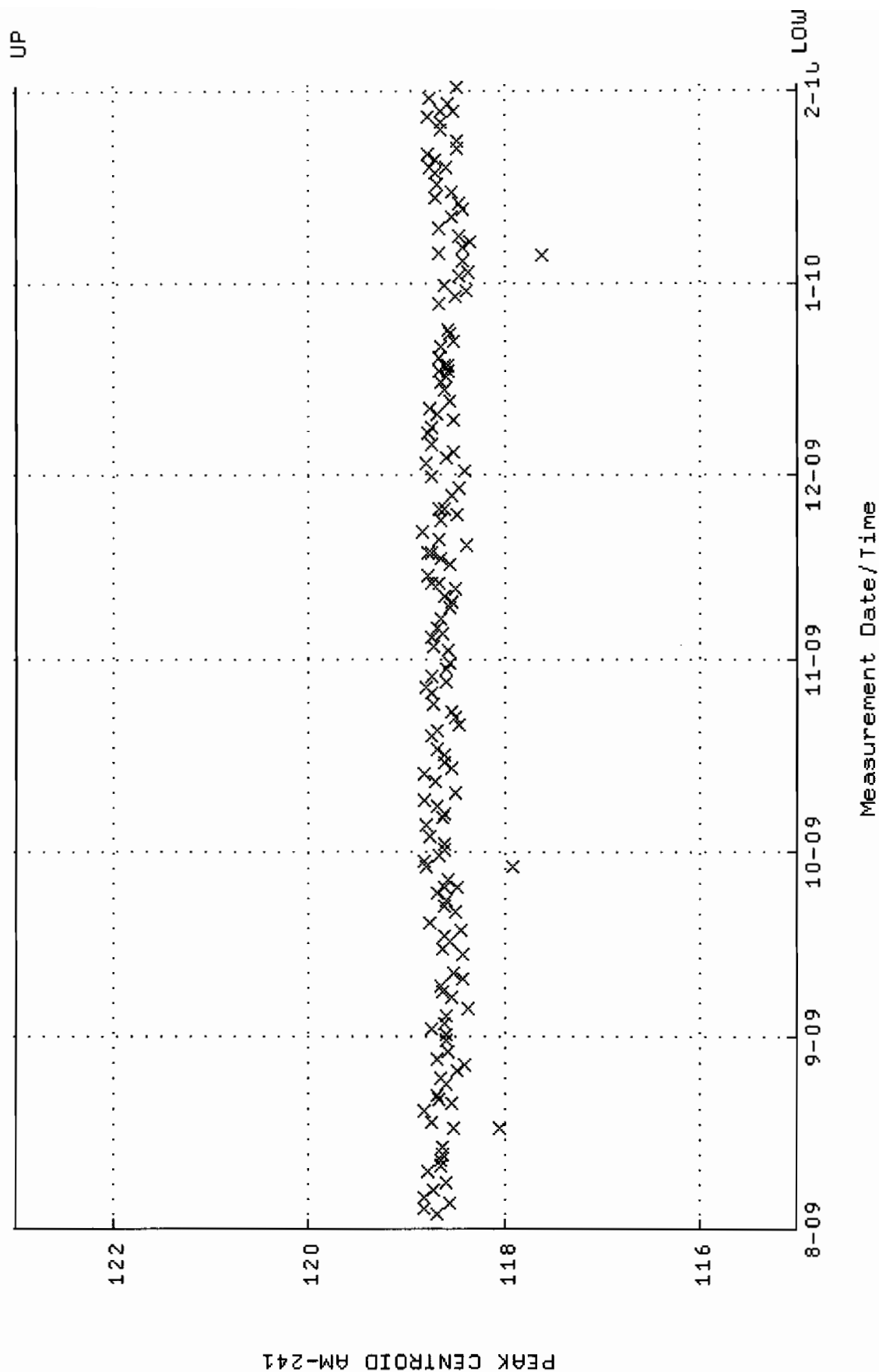
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM13-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-AUG-2009 09:34:18 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



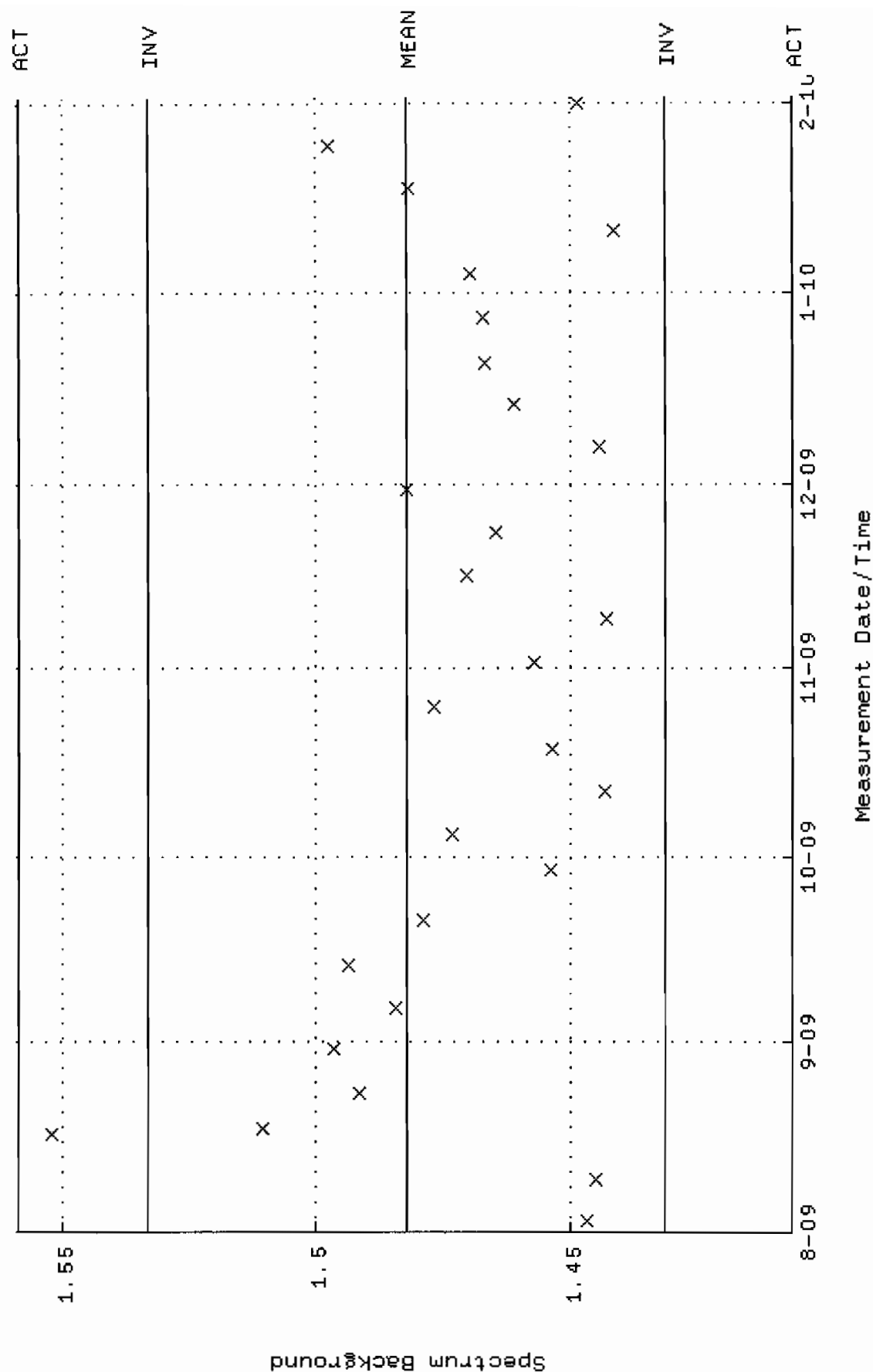
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM13.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:24:20 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 3.27712 +- 1.999120E-02 (0.61 %)



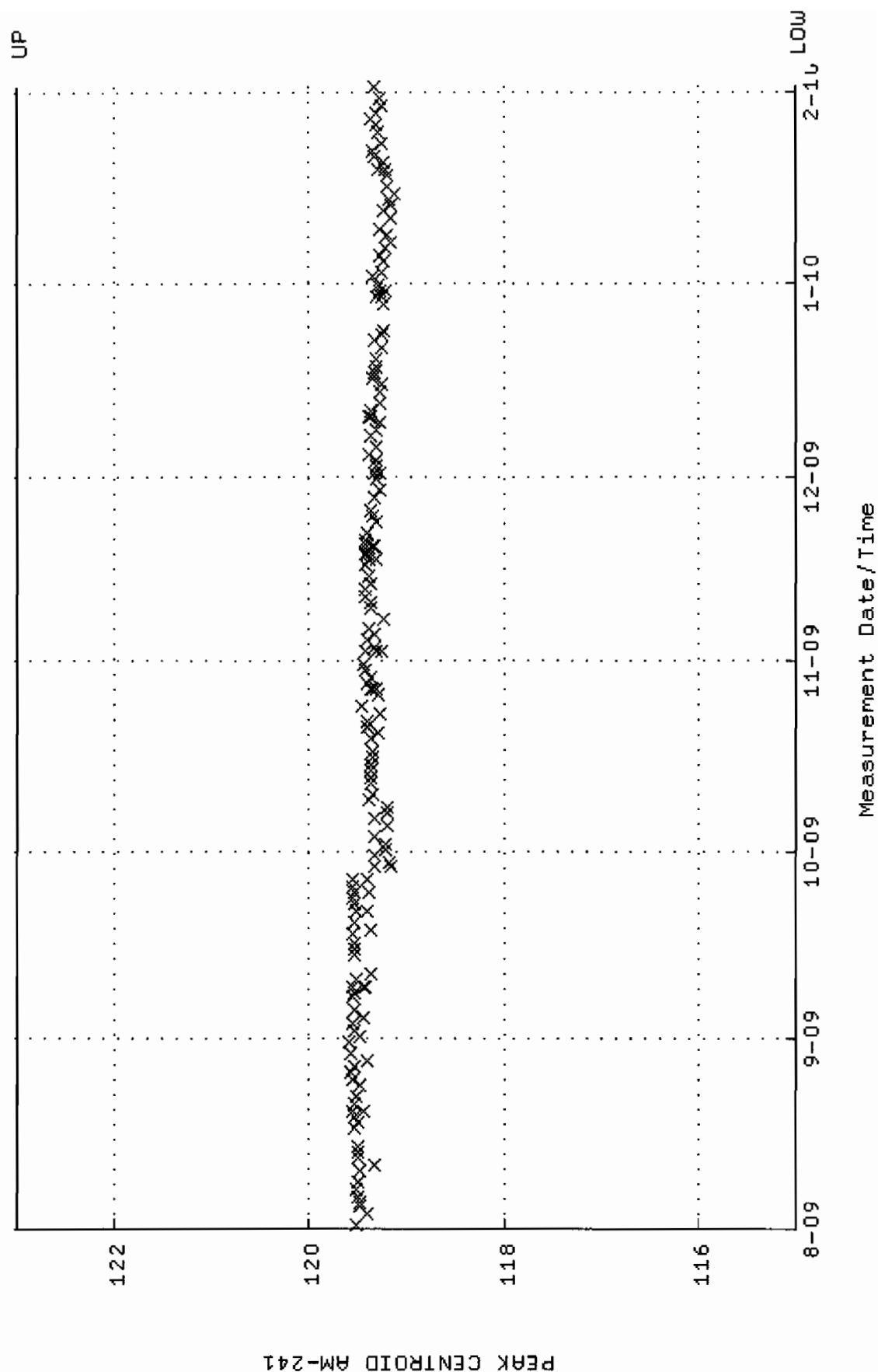
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM14_2LMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-AUG-2009 09:15:54 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



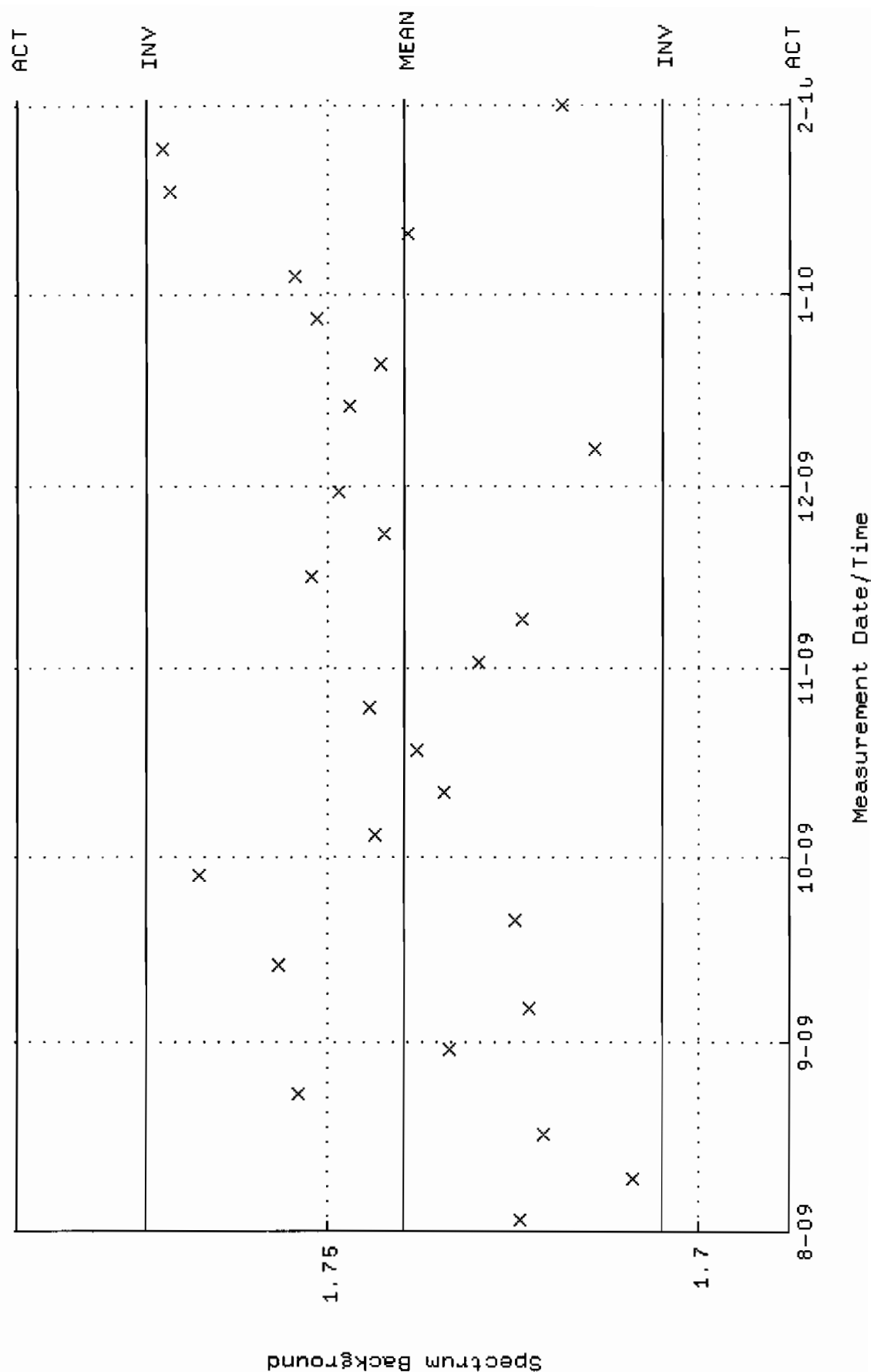
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM14.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:24:33 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.48240 +- 2.535500E-02 (1.71 %)



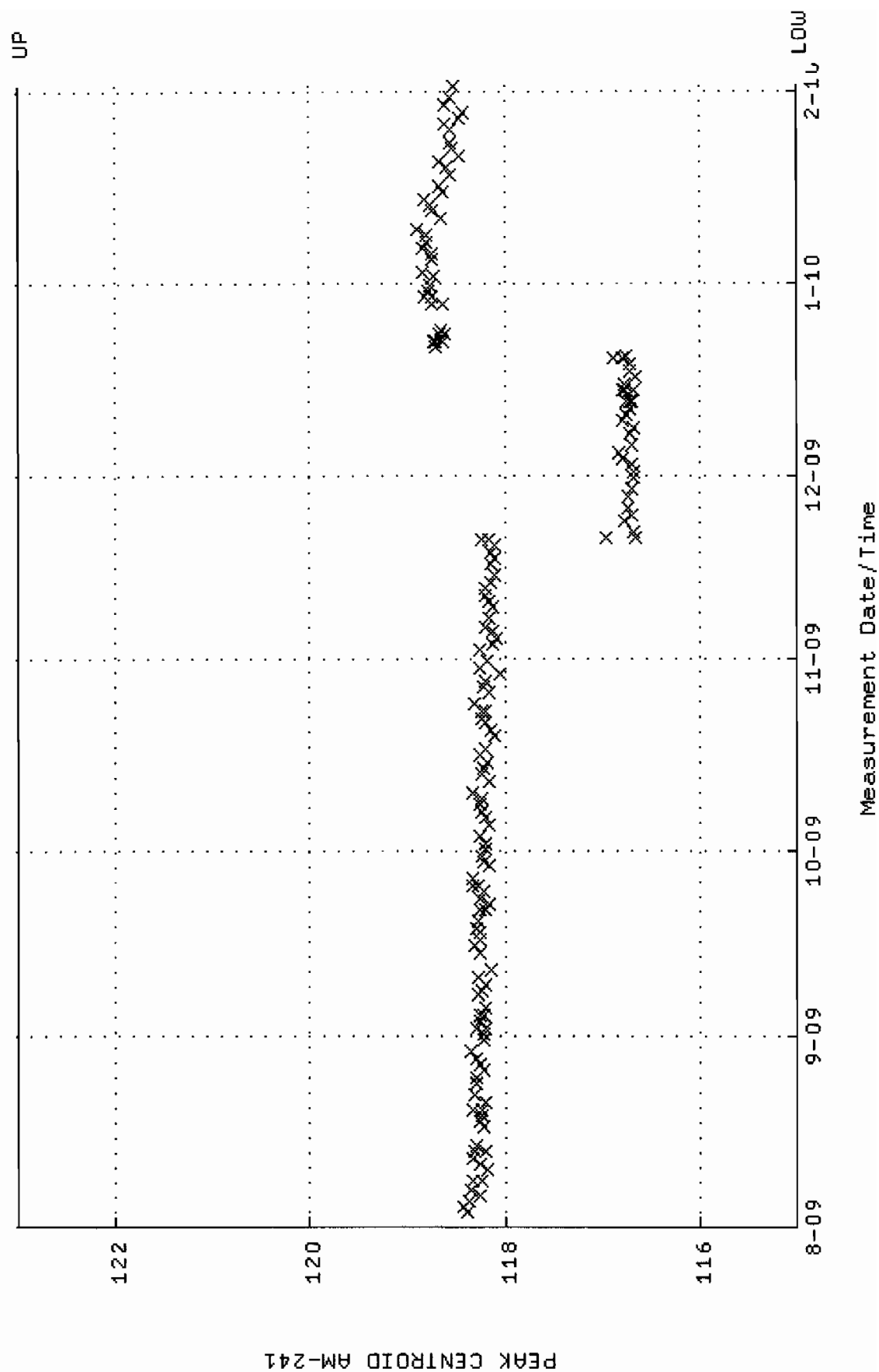
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM16_CAN.QAF;1
 Parameter Name : PSCENTROD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 1-AUG-2009 13:27:30 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



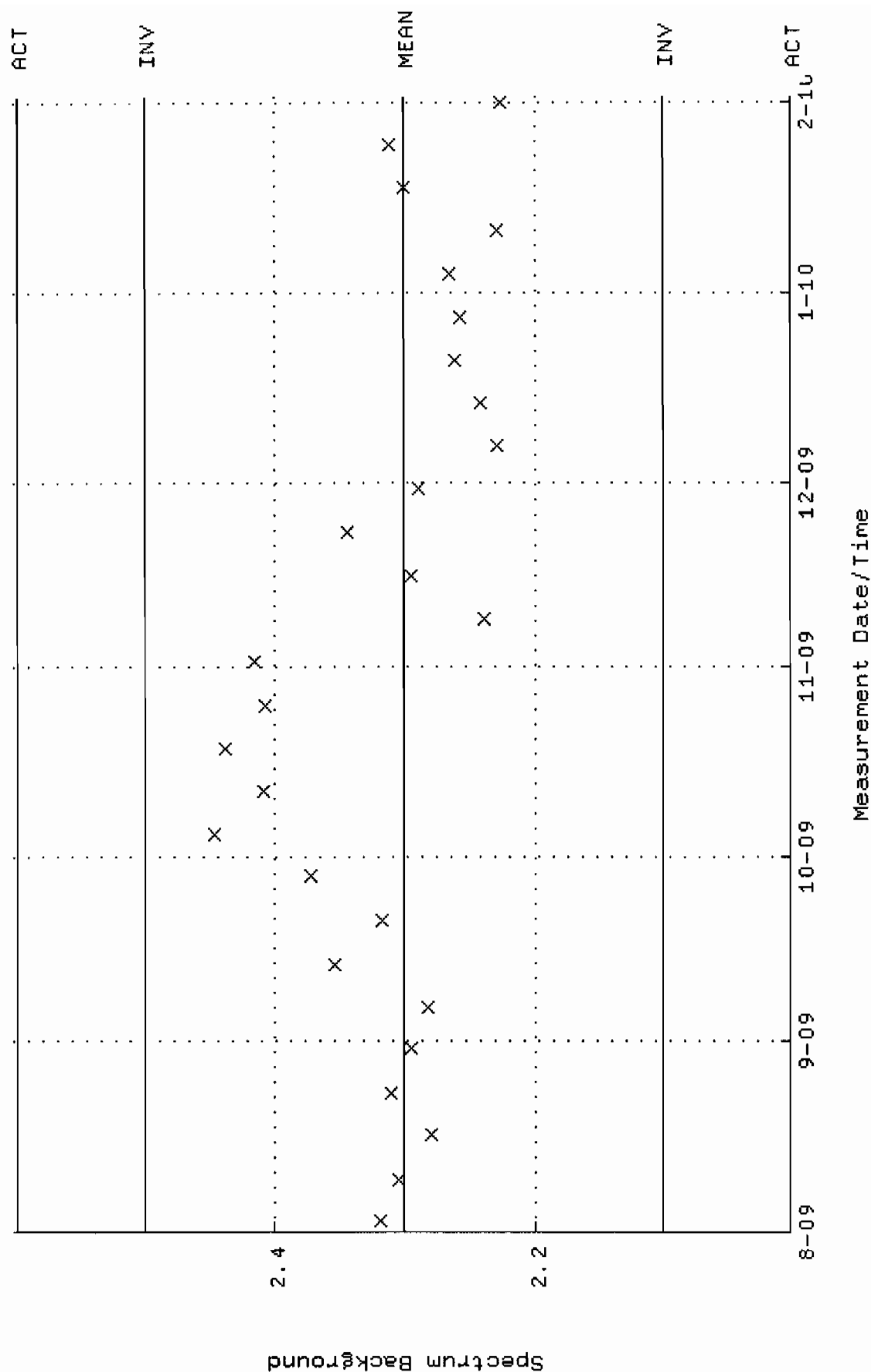
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM16.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:24:58 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.73980 +- 1.729897E-02 (0.99 %)



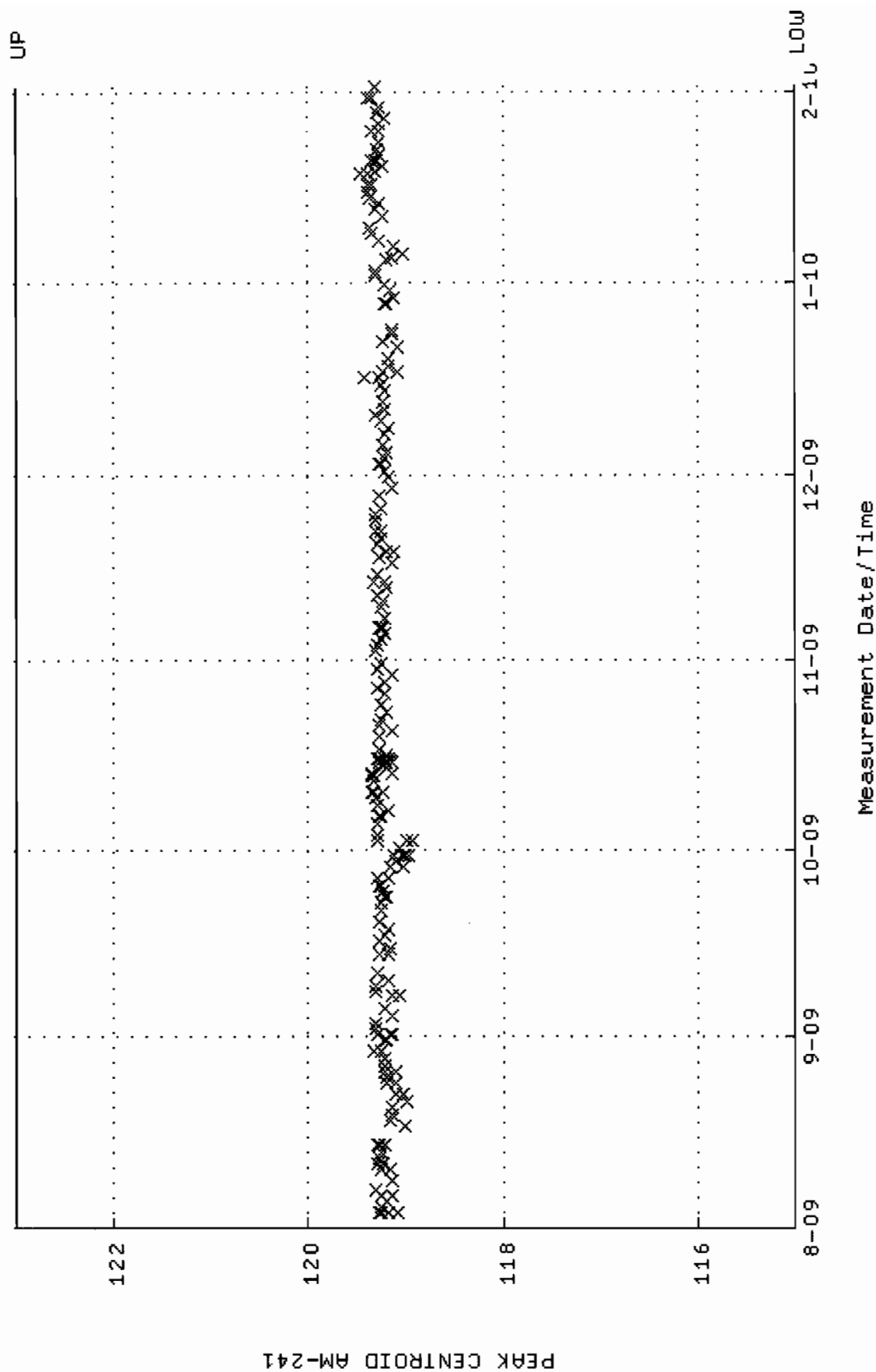
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM18-CAN.QAF;1
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-AUG-2009 10:02:47 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



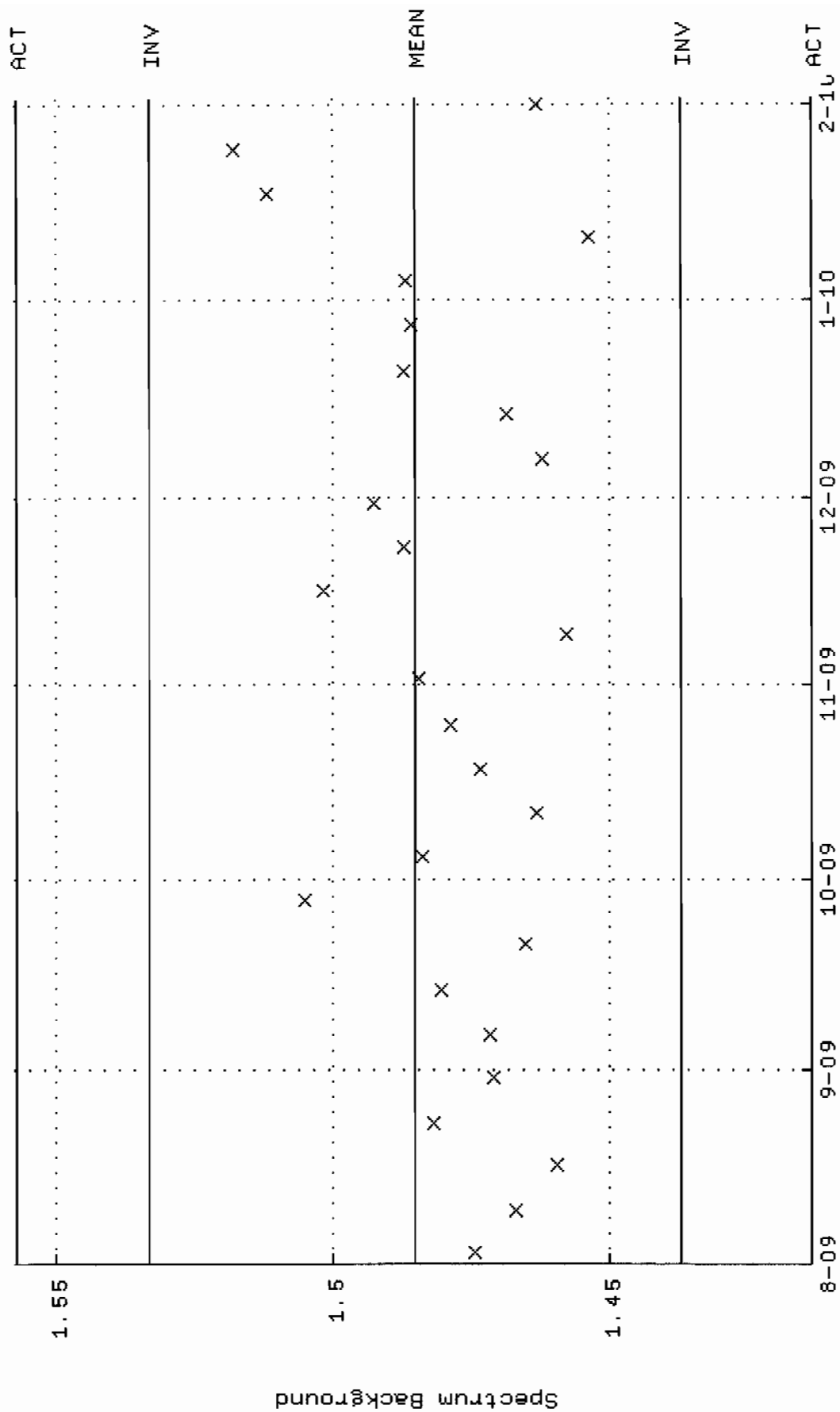
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM18.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:25:23 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 2.30164 +- 9.930626E-02 (4.31 %)



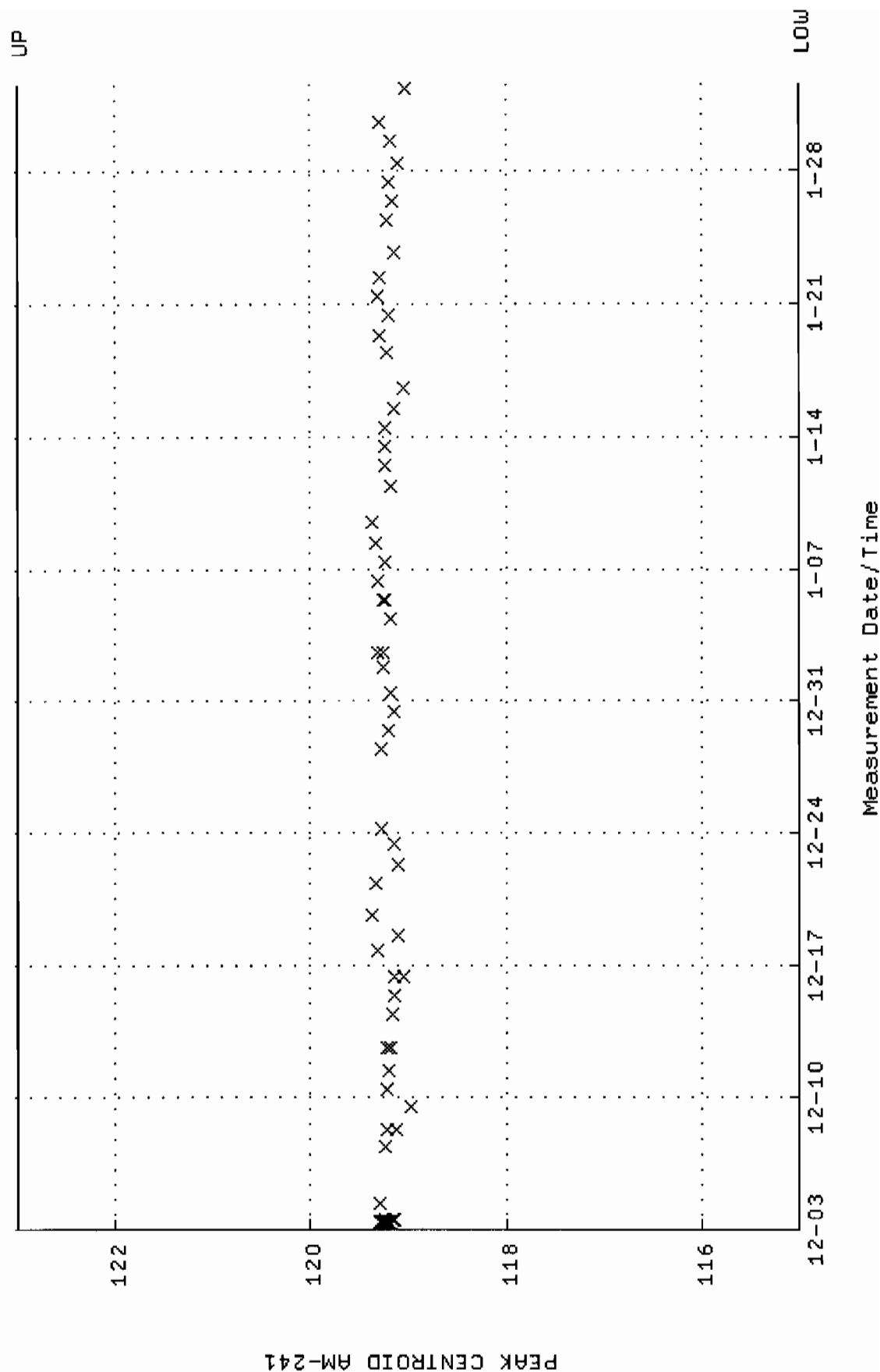
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM20-500MLMB.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 3-AUG-2009 09:19:21 through 1-FEB-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



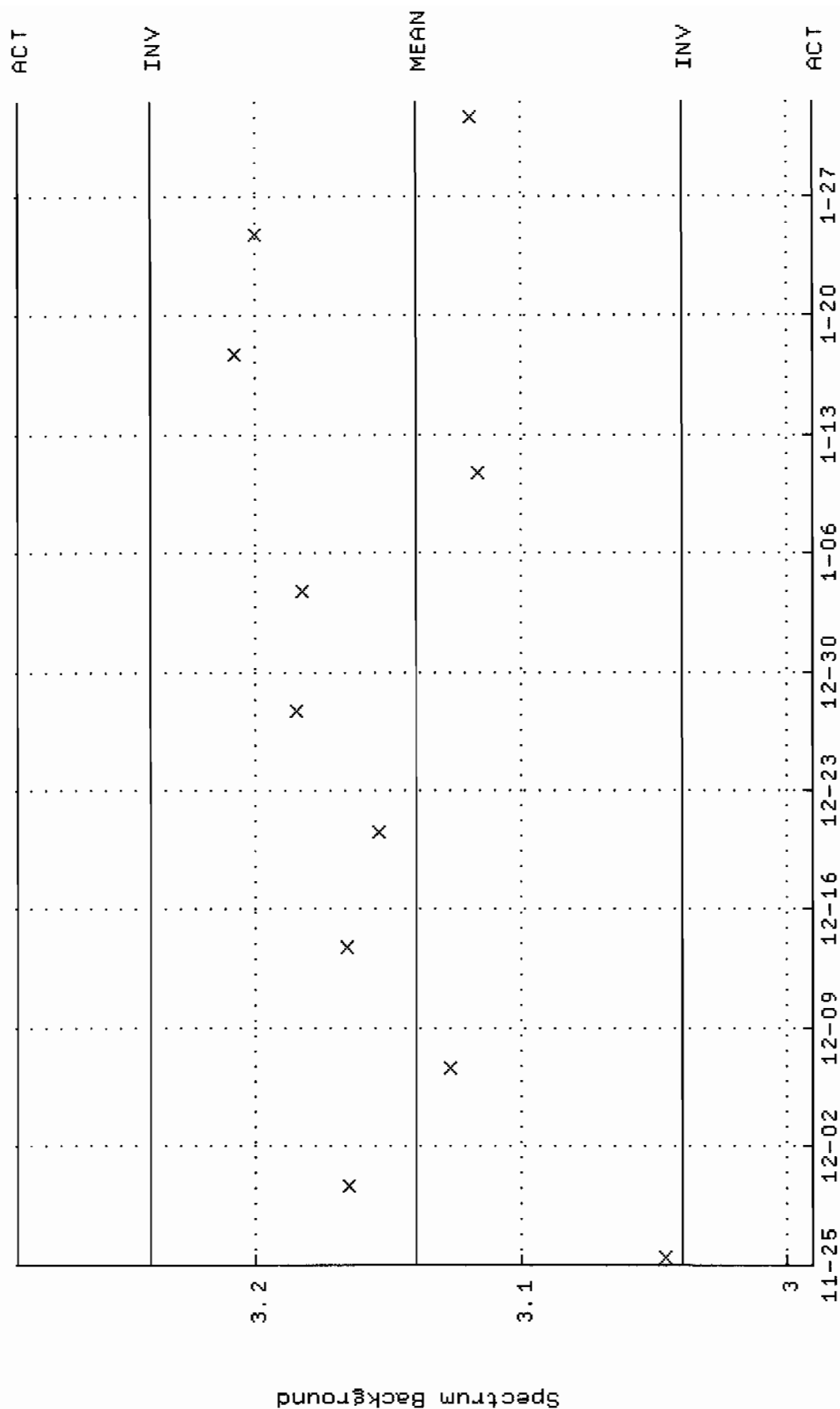
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM20.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:25:55 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.48527 +- 2.388665E-02 (1.61 %)



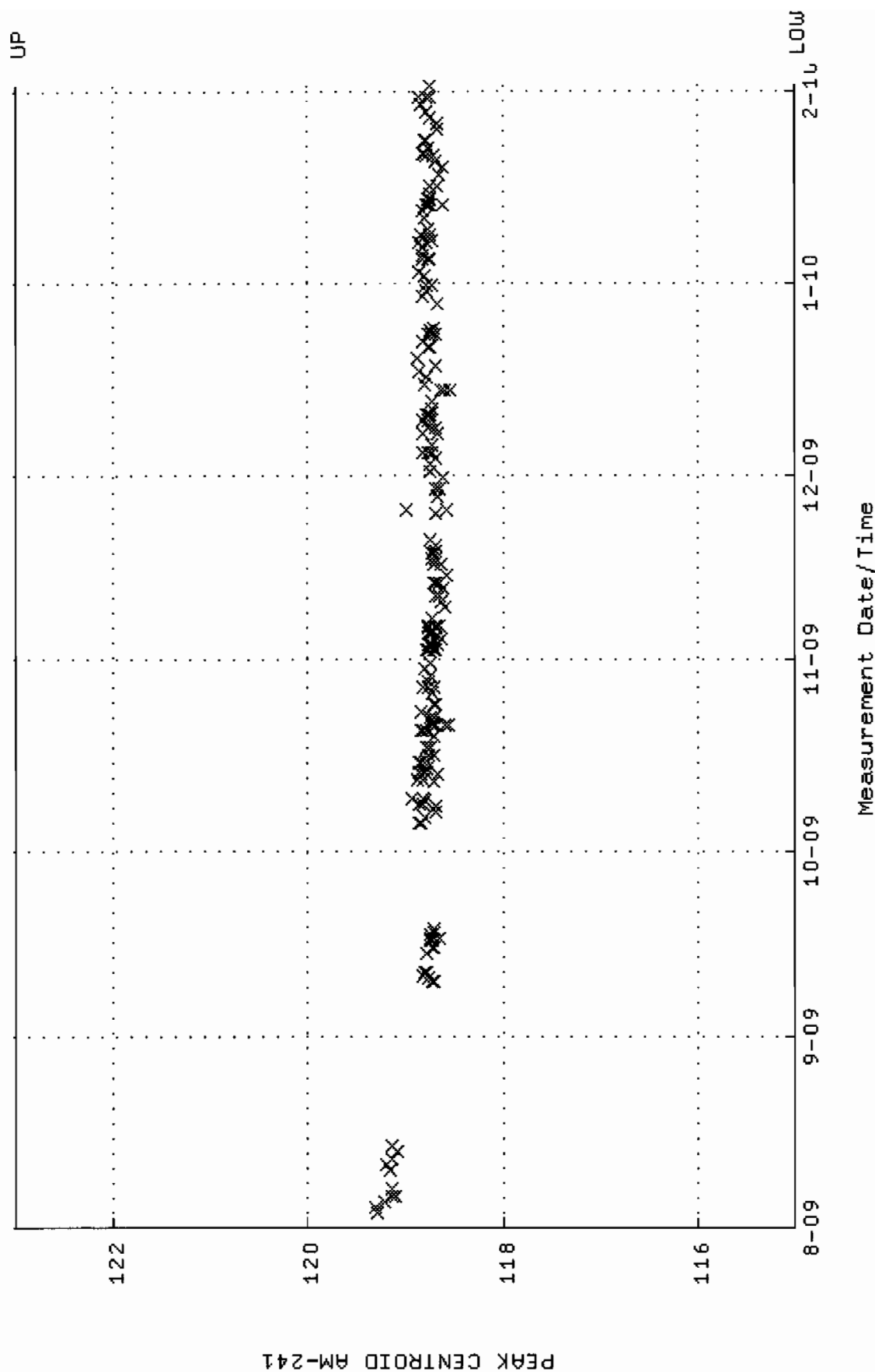
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM22-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-DEC-2009 09:11:39 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



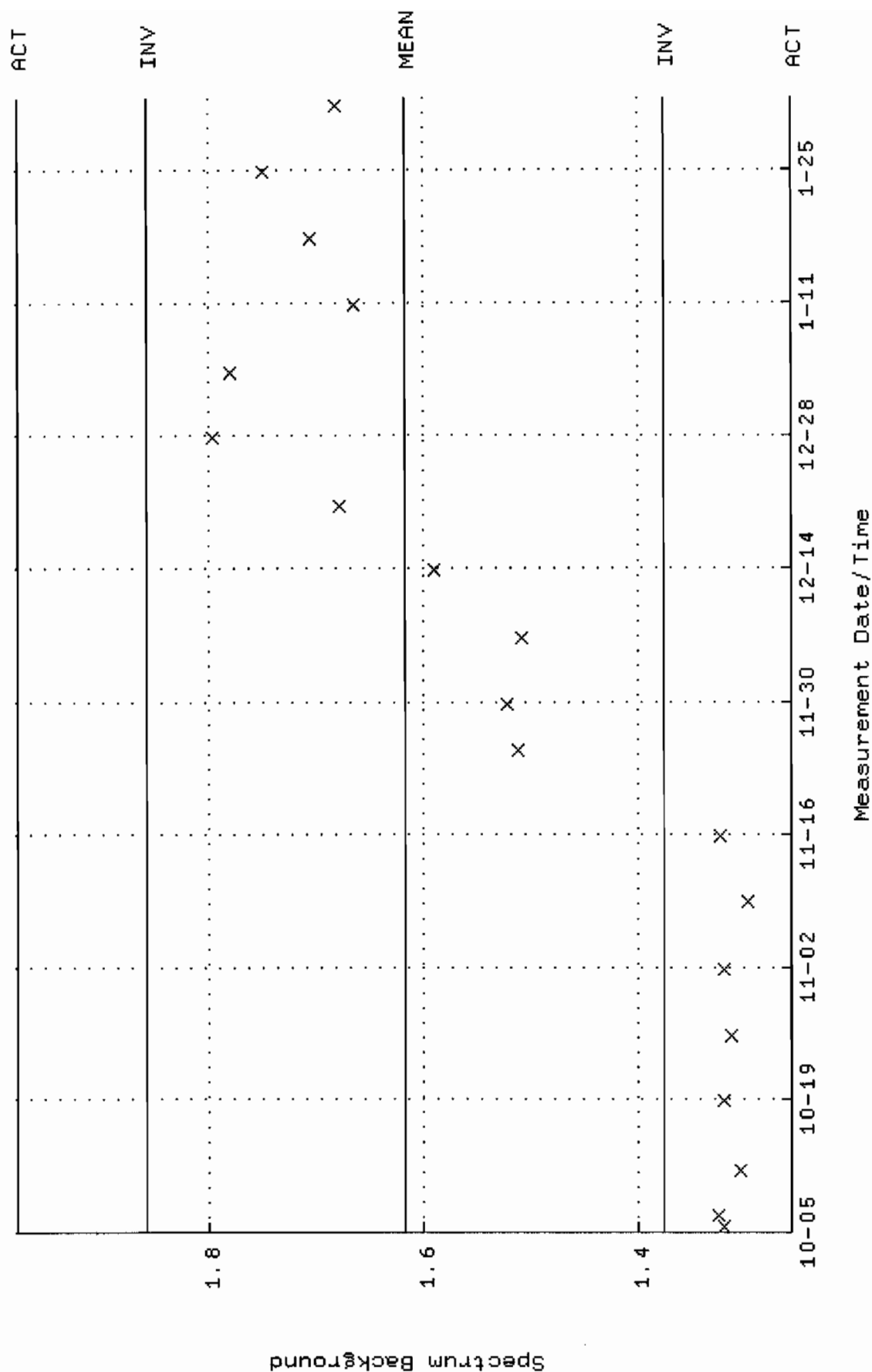
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM22.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 25-NOV-2009 10:28:37 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 3.13961 +- 4.985064E-02 (1.59 %)



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM23-CAN.QAF;1
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-AUG-2009 09:16:07 through 1-FEB-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-FEB-2010 12:00:00
 Mean +- Std Dev : 1.61827 +- 0.119991 (7.41 %)



STANDARDS DATA

1032

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

74047-278

5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytix maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: October 1, 2006 12:00 EST

| ISOTOPE | GAMMA-RAY ENERGY | HALF-LIFE | GAMMA-RAYS PER SECOND | TOTAL UNCERTAINTY % |
|---------|---------------------|-----------|--------------------------|---------------------------|
| Am-241 | 59.5 | 432 y | 3339 | 3.0 |
| Cd-109 | 88 | 462.6 d | 4815 | 3.3 |
| Co-57 | 122 | 271.79 d | 2409 | 3.0 |
| Ce-139 | 166 | 137.6 d | 3408 | 2.8 |
| Hg-203 | 279 | 46.61 d | 7522 | 2.7 |
| Sn-113 | 392 | 115.1 d | 4728 | 2.6 |
| Cs-137 | 662 | 30.07 y | 2973 | 3.0 |
| Y-88 | 898 | 106.6 d | 11600 | 2.6 |
| Co-60 | 1173 | 5.2714 y | 5780 | 2.7 |
| Co-60 | 1332 | 5.2714 y | 5783 | 2.6 |
| Y-88 | 1836 | 106.6 d | 12260 | 2.6 |

5.31725 grams 4M HCl solution.

P O NUMBER 2734RD, Item 1

SOURCE PREPARED BY:

M. Dimitrova
M. Dimitrova, Radiochemist

Q A APPROVED:

J.M. [Signature] 11-28-06

This standard will expire one year after the calibration date.

rec'd 11/30/06
RC-S-045-073-0

1380 Seaboard Industrial Blvd.
 Atlanta, Georgia 30318

Tel 404-352-8677

Fax 404-352-2837

www.analytiscinc.com

ANALYSIS OF UNCERTAINTY FOR MIXED GAMMA STANDARDS BATCH 127

CALIBRATION DATE: October 1, 2006 12:00 EST

| Isotope | Energy (keV) | Calibration Method ¹ | Statistics ² | Calibration ² | Peak Fitting ² | Geometry ² | Impurities ² | Weighing | Combined Standard Uncertainty | Relative Expanded Uncertainty (k=2) |
|---------|--------------|---------------------------------|-------------------------|--------------------------|---------------------------|-----------------------|-------------------------|----------|-------------------------------|-------------------------------------|
| Cd-109 | 88 | HPGe | 0.16 | 1.1 | 0.88 | 0.8 | 0 | 0.2 | 1.64 | 3.3 |
| Co-57 | 122 | HPGe | 0.23 | 1.1 | 0.71 | 0.7 | 0 | 0.2 | 1.52 | 3.0 |
| Ce-139 | 166 | HPGe | 0.17 | 1.0 | 0.58 | 0.7 | 0 | 0.2 | 1.38 | 2.8 |
| Hg-203 | 279 | HPGe | 0.11 | 1.1 | 0.34 | 0.7 | 0 | 0.2 | 1.37 | 2.7 |
| Sn-113 | 392 | HPGe | 0.21 | 1.0 | 0.35 | 0.7 | 0 | 0.2 | 1.30 | 2.6 |
| Cs-137 | 662 | HPGe | 0.36 | 1.1 | 0.60 | 0.7 | 0 | 0.2 | 1.49 | 3.0 |
| Y-88 | 898 | HPGe | 0.19 | 1.0 | 0.33 | 0.7 | 0 | 0.2 | 1.29 | 2.6 |
| Co-60 | 1173 | HPGe | 0.31 | .97 | 0.45 | 0.7 | 0 | 0.2 | 1.33 | 2.7 |
| Co-60 | 1332 | HPGe | 0.33 | .93 | 0.48 | 0.7 | 0 | 0.2 | 1.32 | 2.6 |
| Y-88 | 1836 | HPGe | 0.24 | 1.0 | 0.35 | 0.7 | 0 | 0.2 | 1.31 | 2.6 |

Optional Additional Isotopes

| | | | | | | | | | | |
|--------|------|-------|------|-----|---|-----|------|-----|------|-----|
| Pb-210 | 46.5 | 4π LS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.2 | 1.50 | 3.0 |
| Am-241 | 59.5 | 4π LS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.2 | 1.50 | 3.0 |
| Sr-85 | 514 | IC | 0.30 | 1.1 | 0 | 0.7 | 0.17 | 0.2 | 1.36 | 2.7 |
| Cs-134 | 605 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Cs-134 | 796 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Mn-54 | 835 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Zn-65 | 1116 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |

¹Calibration Methods:

4π LS (4 pi Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

²As Percent (%) from counting data

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.



Standard Traceability Log Rad

| Source Material Info | | A Solution Material Info | |
|----------------------|--------------|--------------------------|-------------|
| Parent Code: | 1032 | Isotope: | Mixed Gamma |
| Prepared By: | Daniel Roy | Prepared By: | Daniel Roy |
| Carrier Conc: | 4 M HCL | Prep Date: | 11/30/2006 |
| Reference Date: | 10/01/2006 | Verification Date: | 12/02/2009 |
| Ampoule Mass (g): | 5.31725 g | Expiration Date: | 12/02/2010 |
| Uncertainty: | +/- 2.81 % | Primary Code: | 1032-A |
| LogBook No: | RC-S-045-073 | Dilution(mL): | 100 mL |
| | | Mass of Parent(g): | 5.2579 g |
| | | Density(g/mL): | 1.0611 |
| | | Balance ID: | 38080204 |

Calculations Converting parent activity to dpm/mL/dpm/g

| |
|--|
| $(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$ |
| $(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$ |
| $(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2163.7461 \text{ dpm/mL}$ |
| $(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (1.0611 \text{ g/mL}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2039.2400 \text{ dpm/g}$ |

Secondary Standards

| Prep Date | Preparer | Mass Primary | Dilution (mL) | Code | Conc dpm/mL | Verification Date | Expiration Date |
|-----------|----------|--------------|---------------|------|-------------|-------------------|-----------------|
|-----------|----------|--------------|---------------|------|-------------|-------------------|-----------------|

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Am-241

| Isotope | Result | pCi/L - Ver. Jar. 1 |
|----------------|--------|---------------------|
| Mixed Gamma N1 | 2534 | pCi/L - Ver. Jar. 3 |
| Mixed Gamma N2 | 2510 | pCi/L - Ver. Jar. 5 |
| Mixed Gamma N3 | 2413 | |

Mean Value (Counting) = 2485.67 Pass
Stdev = 64.065 Rule 3 (Pass/Fail)

Certificate Value = 2485.68018
Lower Limit = 2357.536524
Upper Limit = 2613.796809
Rule 1 (Pass/Fail) Pass
Two sigma = 128.1301422
10 % of Mean = 248.5666667
Rule 2 (Pass/Fail) Pass

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

M. Stamps
12/2/09
invented, 12/2/09

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Cs-137

| Isotope | Result | pCi/L - Ver. Tab. 1 |
|----------------|--------|---------------------|
| Mixed Gamma N1 | 854.2 | pCi/L - Ver. Tab. 3 |
| Mixed Gamma N2 | 907.6 | pCi/L - Ver. Tab. 2 |
| Mixed Gamma N3 | 898.9 | |

Mean Value (Counting) =
Stdev =

886.90
28.651

95.01

Pass
Rule 3 (Pass/Fail)

Certificate Value =

Lower Limit =

Upper Limit =

Rule 1 (Pass/Fail)

Two sigma =

10 % of Mean =

Rule 2 (Pass/Fail)

933.44144

829.597644

944.202356

Pass

57.30235597

88.69000000

Pass

pCi/L

pCi/L

pCi/L

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

Handwritten: 12/2/09
12/2/09
M. Stamps

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Co-60 (1332.5)

| Isotope | Result | pCi/L - Ver - Jan. 5 |
|----------------|--------|----------------------|
| Mixed Gamma N1 | 1572 | pCi/L - Ver - Jan. 2 |
| Mixed Gamma N2 | 1495 | pCi/L - Ver - Jan. 3 |
| Mixed Gamma N3 | 1501 | |

Mean Value (Counting) = 1522.67
Stdev = 42.829
98.50 Pass
Rule 3 (Pass/Fail)

Certificate Value = 1545.8378
Lower Limit = 1437.008431
Upper Limit = 1608.324902
Rule 1 (Pass/Fail) Pass
Two sigma = 85.65823564
10 % of Mean = 152.26666667
Rule 2 (Pass/Fail) Pass

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

U. Stamps issued 12/2/09

0244-A Characterization

| Sample # | Uranium-233/234 Result (pCi/g) | Uranium-238 Result (pCi/g) | Thorium-230 Result (pCi/g) |
|------------------|-----------------------------------|-------------------------------|-------------------------------|
| 0244-A 1 | 6.59 | 6.12 | 25.3 |
| 0244-A 2 | 6.36 | 6.07 | 28.5 |
| 0244-A 3 | 5.78 | 5.53 | 26.5 |
| 0244-A 4 | 6.48 | 5.97 | 25.5 |
| 0244-A 5 | 5.65 | 5.59 | 26.2 |
| 0244-A 6 | 6.96 | 5.78 | 27.0 |
| 0244-A 7 | 5.95 | 5.75 | 24.2 |
| 0244-A 8 | 5.29 | 5.67 | 27.2 |
| 0244-A 9 | 5.51 | 6.05 | 24.3 |
| 0244-A 10 | 6.37 | 5.57 | 25.6 |
| 0244-A 11 | 6.50 | 5.80 | 25.8 |
| 0244-A 12 | 6.13 | 5.42 | 22.4 |
| 0244-A 13 | 5.49 | 5.24 | 24.7 |
| 0244-A 14 | 6.19 | 5.21 | 26.9 |
| 0244-A 15 | 6.50 | 6.27 | 27.6 |
| 0244-A 16 | 6.50 | 5.24 | 24.9 |
| 0244-A 17 | 6.25 | 6.05 | 24.7 |
| 0244-A 18 | 6.14 | 6.00 | 25.4 |
| 0244-A 19 | 6.19 | 6.14 | 26.4 |
| 0244-A 20 | 5.67 | 5.61 | 23.2 |
| Mean Value | 6.13 | 5.75 | 25.62 |
| 1 sigma | 0.439 | 0.325 | 1.493 |
| 2 sigma | 0.878 | 0.650 | 2.986 |
| 75% Limit | 4.60 | 4.31 | 19.22 |
| 125% Limit | 7.66 | 7.19 | 32.03 |
| Expected Result | 6.2 +/- 4.0 | 6.0 +/- 4.0 | 24.5 +/- 0.6 |
| Achieved Results | 6.13 +/- 0.439 | 5.75 +/- 0.325 | 25.62 +/- 1.493 |

REFERENCE PATH 4/11/2000

fit c cell 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 |
| Tn-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 | 24 | 22.1 ± 1.2 | 56.0 ± 2.1 | 38.9 ± 2.0 |

9911627-01-205

SF 2001-COC (10-97)

Internal Lab

Batch No.

SARAWR No. N/A

Press F1 for instructions for each field.

AR/COC-

Page 1 of 1

602945

[illegible]

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 DATE 4/14/2000

Amanda L. Lehn 4/30/04
 Lott & Staley 5/1/04

PREPARATION AND CHARACTERIZATION OF THE PERFORMANCE EVALUATION SOIL SAMPLE PEM-1

INTRODUCTION

Rust Geotech (Rust) was contracted by Los Alamos National Laboratory (LANL) to prepare and characterize a soil performance evaluation sample designated PEM-1. This report describes sample preparation, homogeneity assessment, and determination of the concentrations of 28 elements and radioactive isotopes in the sample.

SAMPLE PREPARATION

Rust received nine five-gallon buckets of soil from LANL. The soils were dried overnight in ovens at 103 °C. The large pieces of leaves and sticks were removed and the soils were ground with ceramic-plate grinders to a particle size that passed through a 325 mesh screen. The samples were blended at the proportions specified by LANL for 48 hours in a 3-cubic-foot cross-flow blender. The sample identifications and the amounts used are listed in Table 1.

Table 1. Sample Identifications and Amounts Used to Prepare PEM-1

| LANL Sample ID | Amount Used (kg) |
|----------------|------------------|
| AAA 1592 | 1.7 |
| AAA 2505-1 | 10.9 |
| AAA 2505-2 | 12.8 |
| AAA 2750-1 | 8.4 |
| AAA 2750-2 | 8.4 |
| AAA 3205 | 12.6 |
| AAA 8581 | 4.2 |
| AAB 3417 | 12.8 |
| AAB 3475 | 12.6 |

The blended sample was transferred to three five-gallon plastic containers. While the sample was being transferred, 10 samples were taken at pre-determined time intervals to be used for homogeneity assessment and sample characterization. These samples are believed to be representative of the bulk material.

by Slater At 6 EL
Not For Lead

SF 2001-COC (10-97)

Supervisors (3-97) leave

Internal Lab

Batch No.

SARAWR No. N/A

Press F1 for instructions for each field.

ANALYSIS REQUEST AND CHAIN OF CUSTODY

Page 1 of 1

AR/COC-602945

| | | | | | |
|---|--|---|--|--|--|
| Dept. No./Mail Stop: 7132/1042 | | Date Samples Shipped: 11-16-99 | | Contract No.: AJ-2480A | |
| Project/Task Manager: PAM PUISSANT | | Case No.: 10204 13 | | SMO Authorization: <i>[Signature]</i> | |
| Project Name: | | Lab Contact: EDIE KENT | | Bill to: Sandia National Laboratories | |
| Record Center Code: N/A | | Lab Destination: G.E.L. | | Supplier Services, Dept. | |
| Logbook Ref. No.: N/A | | SMO Contact/Phone: Doug Salim / 844-3110 | | P.O. Box 5800 MS 0154 | |
| Service Order No.: | | Send Report to SMO: Suzi Jensen/844-3184 | | | |

| Location | | Tech Area VI | | Reference LOV (available at SMO) | | | | LAB USE | | | | |
|--------------|-----------------------|--------------|-----|----------------------------------|----------------|--------------|--------------|--------------------------|-------------|----|---|---------------|
| Building | Sample No. - Fraction | Room | N/A | Sample Matrix | Container Type | Volume | Preservative | Sample Collection Method | Sample Type | | | |
| 050484 - 001 | PEM-1 | | | N/A | N/A | 11/15/9 1100 | S | 1 L | 4 C | SA | Parameter & Method Requested: <i>See Special Instructions Below</i> | Lab Sample ID |
| 050485 - 001 | TRM-2 | | | N/A | N/A | 11/15/9 1100 | S | 1 L | 4 C | SA | | |
| 050486 - 001 | NRMT-2 | | | N/A | N/A | 11/15/9 1100 | S | 1 L | 4 C | SA | | |
| - | | | | | | | | | | | | |
| - | | | | | | | | | | | | |
| - | | | | | | | | | | | | |
| - | | | | | | | | | | | | |
| - | | | | | | | | | | | | |
| - | | | | | | | | | | | | |
| - | | | | | | | | | | | | |

| | | | |
|---|--------------------|--|----------|
| RMMA <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ref. No. | | Special Instructions/QC Requirements | |
| Sample Disposal <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by lab | | EDD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Raw data package <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Turnaround Time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush Required Report Date | | These samples are not characterized and materials being sent to G.E.L. in barrels at Hank Mission. | |
| Name | Signature | Company/Organization/Phone | Initials |
| Douglas E. Perry | <i>[Signature]</i> | Weston 17577 / 845-0867 | |
| 1. Relinquished by <i>[Signature]</i> Date 11-16-99 Time 0900 | | 4. Relinquished by | |
| 1. Received by | Org. | 4. Received by | Org. |
| 2. Relinquished by | Org. | 5. Relinquished by | Org. |
| 2. Received by | Org. | 5. Received by | Org. |
| 3. Relinquished by | Org. | 6. Relinquished by | Org. |
| 3. Received by | Org. | 6. Received by | Org. |

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 \pm 40 years | P.O.No.: | 9290-RAD |
| Catalog No.: | 7243 | Reference Date: | January 1 1994 12:00 PST. |
| Source No.: | 445-96-2 | Contained Radioactivity: | (Am-243) 101.2 μ Ci |
| | | Contained Radioactivity: | (Am-243) 3750 kBq |

Description of Solution

| | |
|----------------------|--|
| a. Mass of solution: | 5.3739 g (in a 5 ml Flame Sealed Ampoule) |
| b. Chemical form: | Am(NO ₃) ₃ in 2N HNO ₃ |
| c. Carrier content: | None added |
| d. Density: | 1.0651 g/ml @ 20°C. |

Radioimpurities None detected

Radioactive Daughters

Np-239 (beta active) in equilibrium

Radionuclide Concentration

(Am-243) 18.84 μ Ci/g

Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry for Np-239:

| | | |
|----------------------------------|---------------|-----------------------|
| Energy peak(s) integrated under: | 228, 278 | keV. |
| Branching ratio(s) used: | 0.108, 0.1420 | gamma rays per decay. |

Uncertainty of Measurement

| | |
|--|-------------|
| a. Systematic uncertainty in instrument calibration: | $\pm 3.0\%$ |
| b. Random uncertainty in assay: | $\pm 0.4\%$ |
| c. Random uncertainty in weighing(s): | $\pm 0.0\%$ |
| d. Total uncertainty at the 99% confidence level: | $\pm 3.0\%$ |

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES
1800 North Keystone Street
Burbank, California 91504
(818) 843 - 7000

Anna H. Khan
QUALITY CONTROL

Jan 3, 1994
Date Signed

THE LEAK TEST(S) INDICATED BY THE CHECKED BOX(ES) WAS(WERE) APPLIED TO
DETERMINE THE INTEGRITY OF THE SOURCE DESCRIBED ON THE FRONT SIDE



1. STANDARD WIPE TEST

The source is wiped over its entire surface with a moistened filter paper disk. After drying, the disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



2. SOAK TEST

The source is immersed in distilled water and maintained at $50 \pm 10^\circ \text{C}$ for a minimum of four hours. After removal of the source, the liquid is a) checked for activity using a liquid scintillation counter, or b) evaporated in a planchet and the residue is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



3. SOAK TEST -- BERYLLIUM WINDOW

The source is immersed in distilled water and maintained at $50 \pm 10^\circ \text{C}$ for 20 minutes. The entire surface of the source is then wiped with a moistened cotton swab or filter paper disk. After drying, the swab or disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



4. GAS SOURCE TEST (Radioactive Gas)

The source is placed in a vacuum desiccator and maintained at a pressure of less than 1 mm Hg for not less than 12 hours. The activity is checked by introducing air into the desiccator and monitoring the air with an end-window G.M. tube. Activity levels exceeding 1000 cpm are cause for rejection of the source.



5. OTHER LEAK TEST

The ampoule is kept in an inverted position on a filter paper disk for a minimum of 16 hours. The filter paper disk is then checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



6. LEAK TEST NOT APPLICABLE

The active area of this source is uncovered or is protected by a very thin coating. Although the deposit is adherent, it is not designed or certified to pass a standard leak test. The inactive portions of the source have been checked using the standard wipe test. Levels of removable activity did not exceed 0.001 μCi beta-gamma or 0.0001 μCi alpha at the time of shipment.

Standard Traceability Log Rad

| Source Material Info | | A Solution Material Info | |
|----------------------|--------------|--------------------------|----------------|
| Parent Code: | 445-96-2 | Isotope: | Americium-243 |
| Prepared By: | Genie Bost | Prepared By: | Angela Johnson |
| Carrier Conc: | 2M HNO3 | Prep Date: | 01/05/1994 |
| Reference Date: | 01/01/1994 | Verification Date: | 05/11/2009 |
| Ampoule Mass (g): | 5.3739 g | Expiration Date: | 05/11/2010 |
| Uncertainty: | +/- 3 % | Primary Code: | 445-96-2-A |
| LogBook No: | RC S 005 032 | Dilution(mL): | 100 mL |
| | | Mass of Parent(g): | 5.3419 g |
| | | Density(g/mL): | 1.0785 |
| | | Balance ID: | 38080204 |

Calculations Converting parent activity to dpm/mL|dpm/g

| |
|---|
| $(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$ |
| $(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$ |
| $(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (100 \text{ mL}) = 2234238.9912 \text{ dpm/mL}$ |
| $(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (1.0785 \text{ g/mL}) / (100 \text{ mL}) = 2071617.0528 \text{ dpm/g}$ |

Secondary Standards

| Prep Date | Preparer | Mass Primary | Dilution (mL) | Code | Conc dpm/mL | Verification Date | Expiration Date |
|------------|----------------|--------------|---------------|-------------|-----------------|-------------------|-----------------|
| 01/05/1994 | Genie Bost | .0058 | 100 | 445-96-2-B | 120.1 dpm/ml | 01/05/1995 | 01/05/1996 |
| 09/10/2004 | Amanda Fehr | .0325 | 1000 | 445-96-2-BB | 67.328 dpm/mL | 09/10/2005 | 09/10/2006 |
| 01/05/1994 | Genie Bost | .0025 | 100 | 445-96-2-C | 51.77 dpm/ml | 01/05/1995 | 01/05/1996 |
| 05/27/2005 | Brenda Burke | .000246 | 100 | 445-96-2-CC | 5.10613 dpm/mL | 05/31/2005 | 05/31/2006 |
| 03/25/1994 | Genie Bost | .0064 | 100 | 445-96-2-D | 132.53 dpm/ml | 01/05/1995 | 01/05/1996 |
| 08/16/2005 | Brenda Burke | .001224 | 500 | 445-96-2-DD | 5.07144 dpm/mL | 08/18/2007 | 08/18/2008 |
| 08/04/1994 | Genie Bost | .0094 | 100 | 445-96-2-E | 194.65 dpm/ml | 01/05/1995 | 01/05/1996 |
| 10/13/2005 | Brenda Burke | .0017 | 500 | 445-96-2-EE | 7.0435 dpm/mL | 11/15/2005 | 11/15/2006 |
| 08/04/1994 | Genie Bost | .0046 | 100 | 445-96-2-F | 95.25 dpm/ml | 01/05/1995 | 01/05/1996 |
| 10/14/2005 | Mary Aders | .0141 | 500 | 445-96-2-FF | 58.4196 dpm/mL | 10/14/2005 | 10/14/2006 |
| 09/01/1994 | Genie Bost | .0031 | 100 | 445-96-2-G | 64.19 dpm/ml | 01/05/1995 | 01/05/1996 |
| 05/10/2006 | Mary Aders | 2.0753 | 1000 | 445-96-2-GG | 4299.227 dpm/mL | 09/30/2008 | 09/30/2009 |
| 10/17/1994 | Genie Bost | .0969 | 100 | 445-96-2-H | 2006.52 dpm/ml | 01/05/1995 | 01/05/1996 |
| 06/07/2006 | Mary Aders | .0365 | 1000 | 445-96-2-HH | 75.614 dpm/mL | 06/19/2006 | 06/19/2007 |
| 02/06/1995 | Genie Bost | .0043 | 100 | 445-96-2-I | 89.04 dpm/ml | 01/05/1995 | 01/05/1996 |
| 05/11/2006 | Brenda Burke | .000009739 | 100 | 445-96-2-II | .201761 dpm/mL | 07/26/2006 | 07/26/2007 |
| 07/20/1995 | Theresa Austin | .0041 | 100 | 445-96-2-J | 84.9 dpm/ml | 01/05/1995 | 01/05/1996 |
| 05/01/2007 | Daniel Roy | .0352 | 1000 | 445-96-2-JJ | 72.9209 dpm/ml | 04/30/2008 | 04/30/2009 |
| 08/10/1995 | Garret Ray | .0952 | 100 | 445-96-2-K | 1971.32 dpm/ml | 01/05/1995 | 01/05/1996 |
| 06/12/2007 | Julie Strock | .01038 | 250 | 445-96-2-KK | 22.1496 dpm/mL | 05/28/2008 | 05/28/2009 |

| | | | | | | | |
|------------|-----------------|-----------|------|----------------|-----------------|------------|------------|
| 09/11/1995 | Theresa Austin | 1.0525 | 100 | 445-96-2-L | 21794.23 dpm/ml | 01/05/1995 | 01/05/1996 |
| 09/11/1995 | Theresa Austin | .5107 | 100 | 445-96-2-L-1 | 111.3 dpm/ml | 01/05/1995 | 01/05/1996 |
| 04/28/1998 | Richard Kinney | .1264 | 100 | 445-96-2-M | 2617.4 dpm/ml | 04/28/1998 | 04/28/1999 |
| 11/01/2007 | Eric Williamson | .001274 | 500 | 445-96-2-MM | 5.27945 dpm/mL | 04/06/2008 | 04/06/2010 |
| 10/12/1998 | Gregory Smith | .1348 | 100 | 445-96-2-N | 2791.32 dpm/mL | 01/05/1995 | 01/05/1996 |
| 01/25/1999 | Gregory Smith | 1.9382 | 100 | 445-96-2-N-1 | 50.16 dpm/ml | 01/05/1995 | 01/05/1996 |
| 04/19/2008 | Daniel Roy | .0424 | 1000 | 445-96-2-NN | 87.8366 dpm/ml | 04/16/2009 | 04/16/2010 |
| 04/21/1999 | Greg Smith | .1645 | 100 | 445-96-2-O | 3406.32 dpm/mL | 04/21/1999 | 04/21/2000 |
| 07/27/1999 | Gregory Smith | 1.567 | 100 | 445-96-2-O-2 | 50.56 dpm/ml | 05/13/1999 | 05/13/2000 |
| 10/12/1999 | Richard Kinney | 1.5589 | 100 | 445-96-2-O-3 | 50.31 dpm/mL | 05/13/1999 | 05/13/2000 |
| 04/21/1999 | Greg Smith | 1.5309 | 100 | 445-96-2-O-1 | 49.4 dpm/mL | 04/21/1999 | 04/21/2000 |
| 11/10/1999 | Joe Davis | .1809 | 100 | 445-96-2-P | 3745.92 dpm/mL | 05/13/1999 | 05/13/2000 |
| 01/04/2008 | Julie Strock | .00001005 | 100 | 445-96-2-PP | .20819 dpm/mL | 12/29/2008 | 12/29/2009 |
| 01/28/2000 | Angela Johnson | .0354 | 1000 | 445-96-2-Q | 73.3 dpm/mL | 02/08/2001 | 02/08/2002 |
| 09/29/2008 | Julie Strock | .0025219 | 250 | 445-96-2-QQ | 20.8977 dpm/mL | 09/30/2008 | 09/29/2009 |
| 04/18/2000 | Robert Timm | .429 | 250 | 445-96-2-R | 3553.34 dpm/mL | 04/18/2000 | 04/18/2001 |
| 04/23/2009 | Tina Schoneman | .001251 | 500 | 445-96-2-RR | 4.8075 dpm/mL | 04/23/2009 | 04/23/2010 |
| 04/13/2001 | Angela Johnson | .1869 | 100 | 445-96-2-S | 3870.16 dpm/mL | 04/13/2001 | 04/13/2002 |
| 05/08/2009 | Mary Aders | .0141 | 1000 | 445-96-2-SS | 29.2098 dpm/ml | 05/11/2009 | 05/11/2010 |
| 07/03/2001 | Lonnie Morris | 2.0057 | 1000 | 445-96-2-T-103 | 4153.225 dpm/mL | 07/03/2002 | 07/03/2003 |
| 07/03/2001 | Lonnie Morris | 2.0057 | 1000 | 445-96-2-T-203 | 4153.225 dpm/mL | 07/03/2002 | 07/03/2003 |

| | | | | | | | |
|------------|-----------------|-----------|------|----------------|------------------|------------|------------|
| 07/03/2001 | Lonnie Morris | 2.0057 | 1000 | 445-96-2-T-303 | 4153.225 dpm/mL | 07/03/2002 | 07/03/2003 |
| 06/03/2009 | Julie Strock | .00000927 | 100 | 445-96-2-TT | .1923 dpm/mL | 06/05/2009 | 06/03/2010 |
| 08/23/2001 | Angela Johnson | .0194 | 500 | 445-96-2-U-103 | 80.34 dpm/mL | 08/23/2001 | 08/23/2002 |
| 08/23/2001 | Angela Johnson | .0194 | 500 | 445-96-2-U-203 | 80.34 dpm/mL | 08/23/2001 | 08/23/2002 |
| 08/23/2001 | Angela Johnson | .0194 | 500 | 445-96-2-U-303 | 80.34 dpm/ml | 08/23/2001 | 08/23/2002 |
| 06/02/2009 | Mary Aders | 2.1177 | 1000 | 445-96-2-UU | 4385.1449 dpm/ml | 06/04/2009 | 06/04/2010 |
| 08/27/2001 | Angela Johnson | .0394 | 1000 | 445-96-2-V-103 | 81.586 dpm/mL | 08/27/2002 | 08/27/2003 |
| 08/27/2001 | Angela Johnson | .0394 | 1000 | 445-96-2-V-203 | 81.586 dpm/mL | 08/27/2002 | 08/27/2003 |
| 08/27/2001 | Angela Johnson | .0394 | 1000 | 445-96-2-V-303 | 81.586 dpm/mL | 08/27/2002 | 08/27/2003 |
| 03/17/2003 | Angela Johnson | 2.1108 | 1000 | 445-96-2-W | 4370.857 dpm/mL | 03/14/2006 | 03/14/2007 |
| 04/14/2003 | Lonnie Morris | .0315 | 1000 | 445-96-2-X | 65.2559 dpm/mL | 04/14/2004 | 04/14/2005 |
| 05/03/2003 | Tim Chandler | .0103 | 1000 | 445-96-2-Y | 21.3376 dpm/mL | 05/05/2003 | 05/05/2004 |
| 05/05/2003 | Eric Williamson | .011 | 1000 | 445-96-2-Z | 22.7877 dpm/mL | 04/03/2007 | 04/03/2008 |

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Am-243 Standard 445-96-2-SS

| | | | |
|-------------------------|----------------|--------------------|-------------|
| M. Aders 5/15/2009 | Isotope | Value | Uncertainty |
| | 445-96-2-SS #1 | 1.360 | 0.1690 |
| | 445-96-2-SS #2 | 1.370 | 0.1690 |
| | 445-96-2-SS #3 | 1.290 | 0.1590 |
| Mean Value (Counting) = | 1.340 | 101.99 | Pass |
| Stdev = | 0.043588989 | Rule 3 (Pass/Fail) | |
| Target = | 1.314 | | |
| Lower Limit = | 1.252822021 | | |
| Upper Limit = | 1.427177979 | | |
| Rule 1 Pass/Fail | Pass | | |
| Two sigma = | 0.087177979 | | |
| 10 % of Mean = | 0.134 | | |
| Rule 2 (Pass/Fail) | Pass | | |

The analyst prepared three standard verification sources for standard **445-96-2-SS** using 0.1 mL for each source. Each standard was combined with 0.1 mL of **Cm-244** standard **0533-O** and 50 micrograms of neodymium carrier in a disposable centrifuge tube. Each standard was diluted with 4 mL of 2 M HCl and 6 mL of DI Water. Two mL of 48% HF was added to precipitate Nd (and Americium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Am-243 were calculated by comparison to Am-241 certified values.

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

Mary G. Aders 5/15/09
Taheri 07509



Eckert & Ziegler

Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404-352-8677
Fax 404-352-2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

78747-278

1283

U-232 5 mL Liquid in Flame Sealed Vial

Customer: GEL Laboratories, LLC
P.O. No.: 7319 RD, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

| | |
|---|----------------------------|
| Isotope: | U-232 |
| Activity (Bq): | 3.754 E3 |
| Half-Life: | 68.9 years |
| Calibration Date: | December 9, 2008 12:00 EST |
| Relative Expanded Uncertainty (k=2): | 5.0% |

Comments:

Impurities: U-233 <0.3%, Am-241 <0.15%
5.20453 grams 1M HNO₃ solution.

Source Prepared By:

W. Mao
W. Mao, Radiochemist

QA Approved:

D. M. Montgomery
D. M. Montgomery, QA Manager

Date: 12-11-08

Standard Traceability Log Rad

| Source Material Info | | A Solution Material Info | |
|----------------------|--------------|--------------------------|-------------|
| Parent Code: | 1283 | Isotope: | Uranium-232 |
| Prepared By: | Daniel Roy | Prepared By: | Daniel Roy |
| Carrier Conc: | 1M HNO3 | Prep Date: | 12/16/2008 |
| Reference Date: | 12/09/2008 | Verification Date: | 12/30/2008 |
| Ampoule Mass (g): | 5.20453 g | Expiration Date: | 12/30/2009 |
| Uncertainty: | +/- 5 % | Primary Code: | 1283-A |
| LogBook No: | RC-S-051-002 | Dilution(mL): | 100 mL |
| | | Mass of Parent(g): | 5.0245 g |
| | | Density(g/mL): | 1.0285 |
| | | Balance ID: | |

Calculations Converting parent activity to dpm/mL/dpm/g

| |
|--|
| $(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$ |
| $(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$ |
| $(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2174.4872 \text{ dpm/mL}$ |
| $(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (1.0285 \text{ g/mL}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2114.1700 \text{ dpm/g}$ |

Secondary Standards

| Prep Date | Preparer | Mass Primary | Dilution (mL) | Code | Conc dpm/mL | Verification Date | Expiration Date |
|------------|-----------------|--------------|---------------|--------|----------------|-------------------|-----------------|
| 12/16/2008 | Daniel Roy | 25.1813 | 1000 | 1283-B | 53.2375 dpm/ml | 12/16/2008 | 12/16/2009 |
| 12/30/2008 | Tina Schoneman | 2.05 | 250 | 1283-C | 17.336 dpm/mL | 12/02/2009 | 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
12/14/09



National Institute of Standards & Technology Certificate

Standard Reference Material 4334H Plutonium-242 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive plutonium-242 nitrate and nitric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of alpha-particle counting instruments and for the monitoring of radiochemical procedures.

Radiological Hazard: The SRM ampoule contains plutonium-242 with a total activity of approximately 150 Bq. Plutonium-242 decays by alpha-particle emission. None of the alpha particles escape from the SRM ampoule. During the decay process, X-rays and gamma rays with energies from 10 keV to 160 keV are also emitted. Most of these photons escape from the SRM ampoule but their intensities are so small that they do not represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]*. The SRM should be used only by persons qualified to handle radioactive material.

Chemical Hazard: The SRM ampoule contains nitric acid (HNO_3) with a concentration of 3 moles per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

Storage and Handling: The SRM should be stored and used at a temperature between 5 °C and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least January 2015. The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

Preparation: This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, M.P. Unterwieser, Acting Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group. The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program.

RECEIVED
21/01/05

Lisa R. Karam, Acting Chief
Ionizing Radiation Division

Gaithersburg, Maryland 20899
January 2005

Robert L. Watters, Jr., Chief
Measurement Services Division

Recommended Procedure for Opening the SRM Ampoule

- 1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.
- 2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood. In addition to the radioactive material, the solution contains strong acid and is corrosive.
- 3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.
- 4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.
- 5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.
- 6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.
- 7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.
- 8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. **NEVER PIPETTE BY MOUTH.**
- 9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]*.

PROPERTIES OF SRM 4334H

Certified values

| | |
|-------------------------------------|---|
| Radionuclide | Plutonium-242 |
| Reference time | 1200 EST, 07 June 1994 [b]* |
| Massic activity of the solution [c] | 26.31 Bq·g ⁻¹ |
| Relative expanded uncertainty (k=2) | 0.72% [d] [e] |
| Solution density | (1.105 ± 0.002) g·mL ⁻¹ at 20 °C [f] |

Uncertified values

| | | | |
|--|---|--------------------------------------|--------------------------------------|
| Physical Properties: | | | |
| Source description | Liquid in flame-sealed NIST borosilicate-glass ampoule | | |
| Ampoule specifications | Body outside diameter | (16.5 ± 0.5) mm | |
| | Wall thickness | (0.60 ± 0.04) mm | |
| | Barium content | Less than 2.5% | |
| | Lead-oxide content | Less than 0.02% | |
| | Other heavy elements | Trace quantities | |
| Solution mass | Approximately 5.5 g | | |
| Chemical Properties: | | | |
| Solution composition | Chemical Formula | Concentration (mol·L ⁻¹) | Mass Fraction (g·g ⁻¹) |
| | H ₂ O HNO ₃ ²⁴² Pu ⁺⁶ | 50 3.2 8 × 10 ⁻⁷ | 0.81 0.19 2 × 10 ⁻⁷ |
| Radiological Properties: | | | |
| Alpha-particle-emitting impurities | None detected [g] [h]. See table on page 5. | | |
| Beta-particle-emitting impurities | Plutonium-241: (0.092 ± 0.018) Bq·g ⁻¹ [f] [h] | | |
| Photon-emitting impurities | None detected [i] | | |
| Half lives used | Plutonium-242: (373 500 ± 1100) a [j] [5] Plutonium-241: (14.35 ± 0.10) a [j] [5] Americium-241: (432.2 ± 0.7) a [j] [5] | | |
| Calibration method and measuring instrument(s) | Three 4π α liquid-scintillation counters, a calibrated germanium detector system, and a silicon surface-barrier detector | | |

EVALUATION OF THE UNCERTAINTY OF THE MASSIC ACTIVITY [d] [e]*

| Input Quantity x_i , the source of uncertainty (and individual uncertainty components where appropriate) | Method Used To Evaluate $u(x_i)$, the standard uncertainty of x_i (A) denotes evaluation by statistical methods (B) denotes evaluation by other methods | Relative Uncertainty Of Input Quantity, $u(x_i)/x_i$, (%) [k] | Relative Sensitivity Factor, $ \partial y/\partial x_i \cdot$ (x_i/y) [m] | Relative Uncertainty Of Output Quantity, $u_c(y)/y$, (%) [n] |
|--|---|---|---|--|
| Massic alpha-particle emission rate, corrected for background and decay | Standard deviation of the mean for 80 sets of $4\pi\alpha$ liquid- scintillation measurements (A) | 0.05 | 1.0 | 0.05 |
| Half life of Pu-242 | Standard uncertainty of the half life (A) | 0.32 [p] | 0.00001 [q] | 0.000003 |
| Decay-scheme data | Standard uncertainty of the probability of decay by alpha- particle emission (A) | 0.001 | 1.0 | 0.001 |
| Extrapolation of alpha- particle-count-rate- versus-energy to zero energy | Estimated (B) | 0.25 | 1.0 | 0.25 |
| Gravimetric measurements | Estimated (B) | 0.10 | 1.0 | 0.10 |
| Live time [r] | Estimated (B) | 0.10 | 1.0 | 0.10 |
| Alpha-particle detection efficiency of scintillators | Estimated (B) | 0.15 | 1.0 | 0.15 |
| Alpha-particle-emitting impurities | Limit of detection (B) [s] | 100. | 0.001 | 0.10 |
| Photon-emitting impurities | Limit of detection (B) [s] | 100. | 0.001 | 0.10 |
| Relative Combined Standard Uncertainty of the Output Quantity, $u_c(y)/y$, (%) | | | | 0.36 |
| Coverage Factor, k | | | | <u>x 2</u> |
| Relative Expanded Uncertainty of the Output Quantity, U/y , (%) | | | | 0.72 |

RELATIVE ACTIVITIES OF RADIONUCLIDIC IMPURITIES AT THE REFERENCE TIME [b]

| Radionuclide | Half Life (years) [j] [5] | Relative Activity As Determined By | |
|---------------|------------------------------|---|---|
| | | LLNL | NIST |
| Plutonium-242 | 373 500 ± 1100 | 1.000 000 | 1.000 000 |
| Plutonium-241 | 14.35 ± 0.10 | -- | 0.0035 ± 0.0004 [t] |
| Plutonium-240 | 6 564 ± 11 | ²³⁹ Pu + ²⁴⁰ Pu <0.000 001 [u] | ²³⁹ Pu + ²⁴⁰ Pu 0.000 020 ± 0.000 021 [v] |
| Plutonium-239 | 24 110 ± 30 | | |
| Plutonium-238 | 87.7 ± 0.1 | ²³⁸ Pu + ²⁴¹ Am <0.000 016 [u] | 0.000 009 ± 0.000 016 [v] |
| Americium-241 | 432.2 ± 0.7 | | 0.000 000 assumed [t] |

NOTES

- [a] The Sievert is the SI unit for dose equivalent. See reference [1]. One μSv is equal to 0.1 mrem.
Distance from Ampoule (cm): 1 30 100
Approximate Dose Rate ($\mu\text{Sv/h}$): <0.1 - -
- [b] The plutonium-242 master solution was chemically purified at 1200 EST, 07 June 1994.
- [c] **Massic activity** is the preferred name for the quantity activity divided by the total mass of the sample. See reference [1].
- [d] The reported value, y , of massic activity (activity per unit mass) at the reference time was not measured directly but was derived from measurements and calculations of other quantities. This can be expressed as $y = f(x_1, x_2, x_3, \dots, x_n)$, where f is a mathematical function derived from the assumed model of the measurement process. The value, x_i , used for each input quantity i has a **standard uncertainty**, $u(x_i)$, that generates a corresponding uncertainty in y , $u_i(y) \approx |\partial y / \partial x_i| \cdot u(x_i)$, called a **component of combined standard uncertainty** of y . The **combined standard uncertainty** of y , $u_c(y)$, is the positive square root of the sum of the squares of the components of combined standard uncertainty. The combined standard uncertainty is multiplied by a **coverage factor** of $k=2$ to obtain U , the **expanded uncertainty** of y .

Since it can be assumed that the possible estimated values of the massic activity are approximately normally distributed with approximate standard deviation $u_c(y)$, the unknown value of the massic activity is believed to lie in the interval $y \pm U$ with a level of confidence of approximately 95 percent.

For further information on the expression of uncertainties, see references [2] and [3].

- [e] The value of each component of combined standard uncertainty, and hence the value of the expanded uncertainty itself, is a best estimate based upon all available information, but is only approximately known. That is to say, the "uncertainty of the uncertainty" is large and not well known. This is true for uncertainties evaluated by statistical methods (e.g., the relative standard deviation of the standard deviation of the mean for the massic response is approximately 50%) and for uncertainties evaluated by other methods (which could easily be over estimated or under estimated by substantial amounts). The unknown value of the expanded uncertainty is believed to lie in the interval $U/2$ to $2U$ (i.e., within a factor of 2 of the estimated value).
- [f] The stated uncertainty is two times the standard uncertainty.
- [g] Estimated limits of detection for alpha-particle-emitting impurities, expressed as massic alpha-particle emission rates (numbers of alpha particles per second per gram), are:
 $0.003 \text{ s}^{-1}\text{g}^{-1}$ for energies less than 3.1 MeV,
 $0.03 \text{ s}^{-1}\text{g}^{-1}$ for energies between 3.1 and 4.4 MeV, and
 $0.003 \text{ s}^{-1}\text{g}^{-1}$ for energies greater than 5.0 MeV.
- [h] The plutonium-242 master solution was chemically purified at 1200 EST, 07 June 1994. Americium-241, the daughter of plutonium-241, was removed but has been growing in since that time.
- [i] Estimated limits of detection for photon-emitting impurities, expressed as massic photon emission rates (numbers of photons per second per gram), are:
 $5 \times 10^{-5} \text{ s}^{-1}\text{g}^{-1}$ for energies between 19 and 39 keV,
 $7 \times 10^{-5} \text{ s}^{-1}\text{g}^{-1}$ for energies between 49 and 92 keV,
 $2 \times 10^{-5} \text{ s}^{-1}\text{g}^{-1}$ for energies between 106 and 507 keV,
 $1 \times 10^{-5} \text{ s}^{-1}\text{g}^{-1}$ for energies between 515 and 1456 keV, and
 $5 \times 10^{-6} \text{ s}^{-1}\text{g}^{-1}$ for energies between 1465 and 2750 keV,
provided that the photons are separated in energy by 4 keV or more from photons emitted in the decay of plutonium-242, plutonium-241, or americium-241.
- [j] The stated uncertainty is the standard uncertainty.
- [k] Relative standard uncertainty of the input quantity x_i .
- [m] The relative change in the output quantity y divided by the relative change in the input quantity x_i . If $|\partial y / \partial x_i| \cdot (x_i / y) = 1.0$, then a 1% change in x_i results in a 1% change in y . If $|\partial y / \partial x_i| \cdot (x_i / y) = 0.05$, then a 1% change in x_i results in a 0.05% change in y .
- [n] Relative component of combined standard uncertainty of output quantity y , rounded to two significant figures or less. The relative component of combined standard uncertainty of y is given by $u_i(y)/y \equiv |\partial y / \partial x_i| \cdot u(x_i)/y = |\partial y / \partial x_i| \cdot (x_i / y) \cdot u(x_i)/x_i$. The numerical values of $u(x_i)/x_i$, $|\partial y / \partial x_i| \cdot (x_i / y)$, and $u_i(y)/y$, all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.

- [p] The relative standard uncertainty of $\lambda \cdot t$ is determined by the relative standard uncertainty of λ (i.e., of the half life). The relative standard uncertainty of t is negligible.
- [q] $|\partial y / \partial x_i| \cdot (x_i / y) = |\lambda \cdot t|$
- [r] The live time is determined by counting the pulses from a gated crystal-controlled oscillator.
- [s] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e. $u(x_i) / x_i = 100\%$. $|\partial y / \partial x_i| \cdot (x_i / y) = \{(\text{response per Bq of impurity}) / (\text{response per Bq of Pu-242})\} \cdot \{(\text{Bq of impurity}) / (\text{Bq of Pu-242})\}$. Thus $u(y) / y$ is the relative change in y if the impurity were present with a massic activity equal to the estimated limit of detection.
- [t] The stated uncertainty is the standard uncertainty. The plutonium-241 activity was calculated from a gamma-ray measurement of the americium-241 ingrowth as of 25 November 1998, assuming that americium-241 was completely removed at the time of chemical purification.
- [u] Using alpha-particle spectrometry, no alpha-particle emission was detected that could reliably be ascribed to these radionuclides. The value shown is an estimated upper limit based upon background and counting statistics. Measurements were made at the Lawrence Livermore National Laboratory (LLNL) in July of 1994.
- [v] Using alpha-particle spectrometry, no alpha-particle emission was detected that could reliably be ascribed to these radionuclides. The stated uncertainty is the standard uncertainty. Measurements were made at the National Institute of Standards and Technology (NIST) in June and July of 1999.

REFERENCES

- [1] International Organization for Standardization (ISO), *ISO Standards Handbook - Quantities and Units*, 1993. Available from Global Engineering Documents, 12 Inverness Way East, Englewood, CO 80112, U.S.A. Telephone 1-800-854-7179.
- [2] International Organization for Standardization (ISO), *Guide to the Expression of Uncertainty in Measurement*, 1993 (corrected and reprinted, 1995). Available from Global Engineering Documents, 12 Inverness Way East, Englewood, CO 80112, U.S.A. Telephone 1-800-854-7179.
- [3] B.N. Taylor and C.E. Kuyatt, *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*, NIST Technical Note 1297, 1994. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20407, U.S.A.
- [4] National Council on Radiation Protection and Measurements Report No. 58, *A Handbook of Radioactivity Measurements Procedures*, Second Edition, 1985. Available from the National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Bethesda, MD 20814 U.S.A.
- [5] Evaluated Nuclear Structure Data File (ENSDF), January 2005.

Standard Traceability Log Rad

| Source Material Info | | A Solution Material Info | |
|----------------------|--------------|--------------------------|-----------------|
| Parent Code: | 1374 | Isotope: | Plutonium-242 |
| Prepared By: | Mary Aders | Prepared By: | Ashley Drochter |
| Carrier Conc: | 0.5M HNO3 | Prep Date: | 12/02/2009 |
| Reference Date: | 06/07/1994 | Verification Date: | 12/08/2009 |
| Ampoule Mass (g): | 5.5 g | Expiration Date: | 12/08/2010 |
| Uncertainty: | +/- .72 % | Primary Code: | 1374-A |
| LogBook No: | RC-S-051-093 | Dilution(mL): | 250 mL |
| | | Mass of Parent(g): | 5.3616 g |
| | | Density(g/mL): | 1.0136 |
| | | Balance ID: | 38080204 |

Calculations Converting parent activity to dpm/mL/dpm/g

| |
|---|
| $(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$ |
| $(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$ |
| $(5.3616 \text{ g}) * (26.31 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (250 \text{ mL}) = 33.8553 \text{ dpm/mL}$ |
| $(5.3616 \text{ g}) * (26.31 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (1.0136 \text{ g/mL}) / (250 \text{ mL}) = 33.4010 \text{ dpm/g}$ |

Secondary Standards

| Prep Date | Preparer | Mass Primary | Dilution (mL) | Code | Conc dpm/mL | Verification Date | Expiration Date |
|-----------|----------|--------------|---------------|------|-------------|-------------------|-----------------|
|-----------|----------|--------------|---------------|------|-------------|-------------------|-----------------|

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Pu-242 Standard 1374-A

| | | | |
|-------------------------|-------------|--------|--------------------|
| A.Drochter 12/8/2009 | Isotope | Value | Uncertainty |
| | 1374-A | 1.610 | 0.2480 |
| | 1374-A | 1.580 | 0.2510 |
| | 1374-A | 1.530 | 0.2440 |
| Mean Value (Counting) = | 1.573 | 103.17 | Pass |
| Stdev = | 0.040414519 | | Rule 3 (Pass/Fail) |
| Target = | 1.52 | | |
| Lower Limit = | 1.492504296 | | |
| Upper Limit = | 1.654162371 | | |
| Rule 1 Pass/Fail | Pass | | |
| Two sigma = | 0.080829038 | | |
| 10 % of Mean = | 0.157333333 | | |
| Rule 2 (Pass/Fail) | Pass | | |

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

The analyst prepared three standard verification sources for standard 1374-A using 0.1 mL for each source. Each standard was combined with 0.1 mL of Pu239 standard 0338-BB and 50 micrograms of neodymium carrier in a disposable centrifuge tube containing 4 mL of 2 M HCl and 6 mL of DI water. Four drops of 25% Hydrazine dihydrochloride were added to each centrifuge tube and swirled. Two mL of 49% HF was added to precipitate neodymium (and plutonium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Pu-242 were calculated by comparison to Pu-239 certified values.

Handwritten: Not called
12/11/09
12/9/09
12/9/09

RUNLOGS

Instrument Run Log

Instrument Type: GAMMA SPECTROMETER

Batch ID: 944964

| Sample ID | Sample Type | Analyst | Instrument | Run Date | Status | Geometry | Calibration Date |
|------------|-------------|---------|------------|-----------------|--------|----------|------------------|
| 245388001 | SAMPLE | MXR1 | GAM16 | 04-FEB-10 10:28 | DONE | CAN | 16-NOV-09 00:00 |
| 245388002 | SAMPLE | MXR1 | GAM18 | 04-FEB-10 10:29 | DONE | CAN | 23-APR-09 00:00 |
| 245388003 | SAMPLE | MXR1 | GAM20 | 04-FEB-10 10:29 | DONE | CAN | 26-AUG-09 00:00 |
| 245388004 | SAMPLE | MXR1 | GAM22 | 04-FEB-10 10:30 | DONE | CAN | 02-DEC-09 00:00 |
| 245388005 | SAMPLE | MXR1 | GAM23 | 04-FEB-10 10:30 | DONE | CAN | 02-JUN-09 00:00 |
| 245388006 | SAMPLE | MXR1 | GAM04 | 04-FEB-10 10:41 | DONE | CAN | 05-MAY-09 00:00 |
| 245388007 | SAMPLE | MXR1 | GAM14 | 04-FEB-10 10:42 | DONE | CAN | 06-MAR-09 00:00 |
| 245388008 | SAMPLE | MXR1 | GAM04 | 04-FEB-10 12:44 | DONE | CAN | 05-MAY-09 00:00 |
| 245388009 | SAMPLE | MXR1 | GAM16 | 04-FEB-10 13:31 | DONE | CAN | 16-NOV-09 00:00 |
| 245388010 | SAMPLE | MXR1 | GAM01 | 04-FEB-10 13:42 | DONE | CAN | 12-JAN-10 00:00 |
| 245388011 | SAMPLE | MXR1 | GAM11 | 04-FEB-10 14:41 | DONE | CAN | 18-NOV-09 00:00 |
| 245393001 | SAMPLE | MXR1 | GAM17 | 04-FEB-10 14:42 | DONE | CAN | 06-JAN-10 00:00 |
| 245393002 | SAMPLE | MXR1 | GAM18 | 04-FEB-10 14:42 | DONE | CAN | 23-APR-09 00:00 |
| 245393003 | SAMPLE | MXR1 | GAM22 | 04-FEB-10 14:43 | DONE | CAN | 02-DEC-09 00:00 |
| 245393004 | SAMPLE | MXR1 | GAM23 | 04-FEB-10 14:43 | DONE | CAN | 02-JUN-09 00:00 |
| 245393005 | SAMPLE | MXR1 | GAM07 | 04-FEB-10 14:48 | DONE | CAN | 20-JUL-09 00:00 |
| 245393006 | SAMPLE | MXR1 | GAM21 | 04-FEB-10 14:48 | DONE | CAN | 28-JUL-09 00:00 |
| 245393007 | SAMPLE | MXR1 | GAM04 | 04-FEB-10 14:51 | DONE | CAN | 05-MAY-09 00:00 |
| 245393008 | SAMPLE | MXR1 | GAM06 | 04-FEB-10 14:52 | DONE | | |
| 245393009 | SAMPLE | MXR1 | GAM14 | 04-FEB-10 14:52 | DONE | CAN | 06-MAR-09 00:00 |
| 1202023713 | MB | MXR1 | GAM04 | 04-FEB-10 17:08 | DONE | CAN | 05-MAY-09 00:00 |
| 1202023714 | DUP | MXR1 | GAM13 | 04-FEB-10 17:09 | DONE | CAN | 02-FEB-09 00:00 |
| 1202023715 | LCS | MXR1 | GAM06 | 04-FEB-10 17:10 | DONE | CAN | 04-FEB-09 00:00 |

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 944979

| Sample ID | Sample Type | Analyst | Instrument | Run Date | Status | Geometry | Calibration Date |
|------------|-------------|---------|------------|-----------------|--------|----------|------------------|
| 1202023757 | MB | HAKB | 1087 | 02-FEB-10 15:01 | DONE | | |
| 1202023758 | DUP | HAKB | 1088 | 02-FEB-10 15:01 | DONE | | |
| 1202023759 | LCS | HAKB | 1089 | 02-FEB-10 15:01 | DONE | | |
| 245393002 | SAMPLE | HAKB | 1087 | 04-FEB-10 14:50 | DONE | | |
| 245393003 | SAMPLE | HAKB | 1088 | 04-FEB-10 14:50 | DONE | | |
| 245388001 | SAMPLE | HAKB | 1089 | 04-FEB-10 14:50 | DONE | | |
| 245388002 | SAMPLE | HAKB | 1090 | 04-FEB-10 14:50 | DONE | | |
| 245388003 | SAMPLE | HAKB | 1091 | 04-FEB-10 14:50 | DONE | | |
| 245388004 | SAMPLE | HAKB | 1092 | 04-FEB-10 14:50 | DONE | | |
| 245388005 | SAMPLE | HAKB | 1093 | 04-FEB-10 14:50 | DONE | | |
| 245388006 | SAMPLE | HAKB | 1094 | 04-FEB-10 14:50 | DONE | | |
| 245393004 | SAMPLE | HAKB | 1095 | 04-FEB-10 14:50 | DONE | | |
| 245393005 | SAMPLE | HAKB | 1097 | 04-FEB-10 14:50 | DONE | | |
| 245393006 | SAMPLE | HAKB | 1099 | 04-FEB-10 14:50 | DONE | | |
| 245393007 | SAMPLE | HAKB | 1100 | 04-FEB-10 14:50 | DONE | | |
| 245388007 | SAMPLE | HAKB | 1107 | 04-FEB-10 14:50 | DONE | | |
| 245388008 | SAMPLE | HAKB | 1108 | 04-FEB-10 14:50 | DONE | | |
| 245388009 | SAMPLE | HAKB | 1109 | 04-FEB-10 14:50 | DONE | | |
| 245388010 | SAMPLE | HAKB | 1110 | 04-FEB-10 14:50 | DONE | | |
| 245388011 | SAMPLE | HAKB | 1111 | 04-FEB-10 14:50 | DONE | | |
| 245393001 | SAMPLE | HAKB | 1112 | 04-FEB-10 14:50 | DONE | | |
| 245393008 | SAMPLE | HAKB | 1101 | 05-FEB-10 10:26 | DONE | | |
| 245393009 | SAMPLE | HAKB | 1102 | 05-FEB-10 10:26 | DUSE | | |

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 944980

| Sample ID | Sample Type | Analyst | Instrument | Run Date | Status | Geometry | Calibration Date |
|------------|-------------|---------|------------|-----------------|--------|----------|------------------|
| 1202023760 | MB | HAKB | 1097 | 02-FEB-10 15:01 | DONE | | |
| 1202023761 | DUP | HAKB | 1099 | 02-FEB-10 15:01 | DONE | | |
| 1202023762 | LCS | HAKB | 1100 | 02-FEB-10 15:01 | DONE | | |
| 245388001 | SAMPLE | HAKB | 1037 | 12-FEB-10 12:50 | DONE | | |
| 245388002 | SAMPLE | HAKB | 1038 | 12-FEB-10 12:50 | DONE | | |
| 245388003 | SAMPLE | HAKB | 1039 | 12-FEB-10 12:50 | DONE | | |
| 245388004 | SAMPLE | HAKB | 1040 | 12-FEB-10 12:50 | DONE | | |
| 245388005 | SAMPLE | HAKB | 1041 | 12-FEB-10 12:50 | DONE | | |
| 245388006 | SAMPLE | HAKB | 1042 | 12-FEB-10 12:50 | DONE | | |
| 245388007 | SAMPLE | HAKB | 1043 | 12-FEB-10 12:51 | DONE | | |
| 245388008 | SAMPLE | HAKB | 1044 | 12-FEB-10 12:51 | DONE | | |
| 245388009 | SAMPLE | HAKB | 1045 | 12-FEB-10 12:51 | DONE | | |
| 245388010 | SAMPLE | HAKB | 1046 | 12-FEB-10 12:51 | DONE | | |
| 245388011 | SAMPLE | HAKB | 1047 | 12-FEB-10 12:51 | DONE | | |
| 245393001 | SAMPLE | HAKB | 1048 | 12-FEB-10 12:51 | DONE | | |
| 245393002 | SAMPLE | HAKB | 1077 | 12-FEB-10 12:51 | DONE | | |
| 245393003 | SAMPLE | HAKB | 1079 | 12-FEB-10 12:51 | DONE | | |
| 245393004 | SAMPLE | HAKB | 1080 | 12-FEB-10 12:51 | DONE | | |
| 245393005 | SAMPLE | HAKB | 1081 | 12-FEB-10 12:51 | DONE | | |
| 245393006 | SAMPLE | HAKB | 1082 | 12-FEB-10 12:51 | DONE | | |
| 245393007 | SAMPLE | HAKB | 1107 | 12-FEB-10 12:51 | DONE | | |
| 245393008 | SAMPLE | HAKB | 1108 | 12-FEB-10 12:51 | DONE | | |
| 245393009 | SAMPLE | HAKB | 1109 | 12-FEB-10 12:51 | DONE | | |

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 949544

| Sample ID | Sample Type | Analyst | Instrument | Run Date | Status | Geometry | Calibration Date |
|------------|-------------|---------|------------|-----------------|--------|----------|------------------|
| 245393007 | SAMPLE | HAKB | 1145 | 12-FEB-10 13:57 | DONE | | |
| 245393008 | SAMPLE | HAKB | 1146 | 12-FEB-10 13:57 | DONE | | |
| 245393009 | SAMPLE | HAKB | 1148 | 12-FEB-10 13:57 | DONE | | |
| 1202034406 | MB | HAKB | 1149 | 12-FEB-10 13:57 | DONE | | |
| 1202034407 | DUP | HAKB | 1150 | 12-FEB-10 13:57 | DONE | | |
| 1202034408 | LCS | HAKB | 1151 | 12-FEB-10 13:57 | DONE | | |
| 245393002 | SAMPLE | HAKB | 1152 | 12-FEB-10 13:57 | DONE | | |
| 245393003 | SAMPLE | HAKB | 1153 | 12-FEB-10 13:57 | DONE | | |
| 245393004 | SAMPLE | HAKB | 1154 | 12-FEB-10 13:57 | DONE | | |
| 245393005 | SAMPLE | HAKB | 1155 | 12-FEB-10 13:57 | DONE | | |
| 245393006 | SAMPLE | HAKB | 1156 | 12-FEB-10 13:57 | DONE | | |
| 245388001 | SAMPLE | HAKB | 1161 | 12-FEB-10 13:57 | DONE | | |
| 245388007 | SAMPLE | HAKB | 1162 | 12-FEB-10 13:57 | DONE | | |
| 245388002 | SAMPLE | HAKB | 1163 | 12-FEB-10 13:57 | DONE | | |
| 245388008 | SAMPLE | HAKB | 1164 | 12-FEB-10 13:58 | DONE | | |
| 245388003 | SAMPLE | HAKB | 1165 | 12-FEB-10 13:58 | DONE | | |
| 245388009 | SAMPLE | HAKB | 1166 | 12-FEB-10 13:58 | DONE | | |
| 245388004 | SAMPLE | HAKB | 1167 | 12-FEB-10 13:58 | DONE | | |
| 245388010 | SAMPLE | HAKB | 1168 | 12-FEB-10 13:58 | DONE | | |
| 245388005 | SAMPLE | HAKB | 1169 | 12-FEB-10 13:58 | DONE | | |
| 245388011 | SAMPLE | HAKB | 1170 | 12-FEB-10 13:58 | DONE | | |
| 245388006 | SAMPLE | HAKB | 1171 | 12-FEB-10 13:58 | DONE | | |
| 245393001 | SAMPLE | HAKB | 1172 | 12-FEB-10 13:58 | DONE | | |